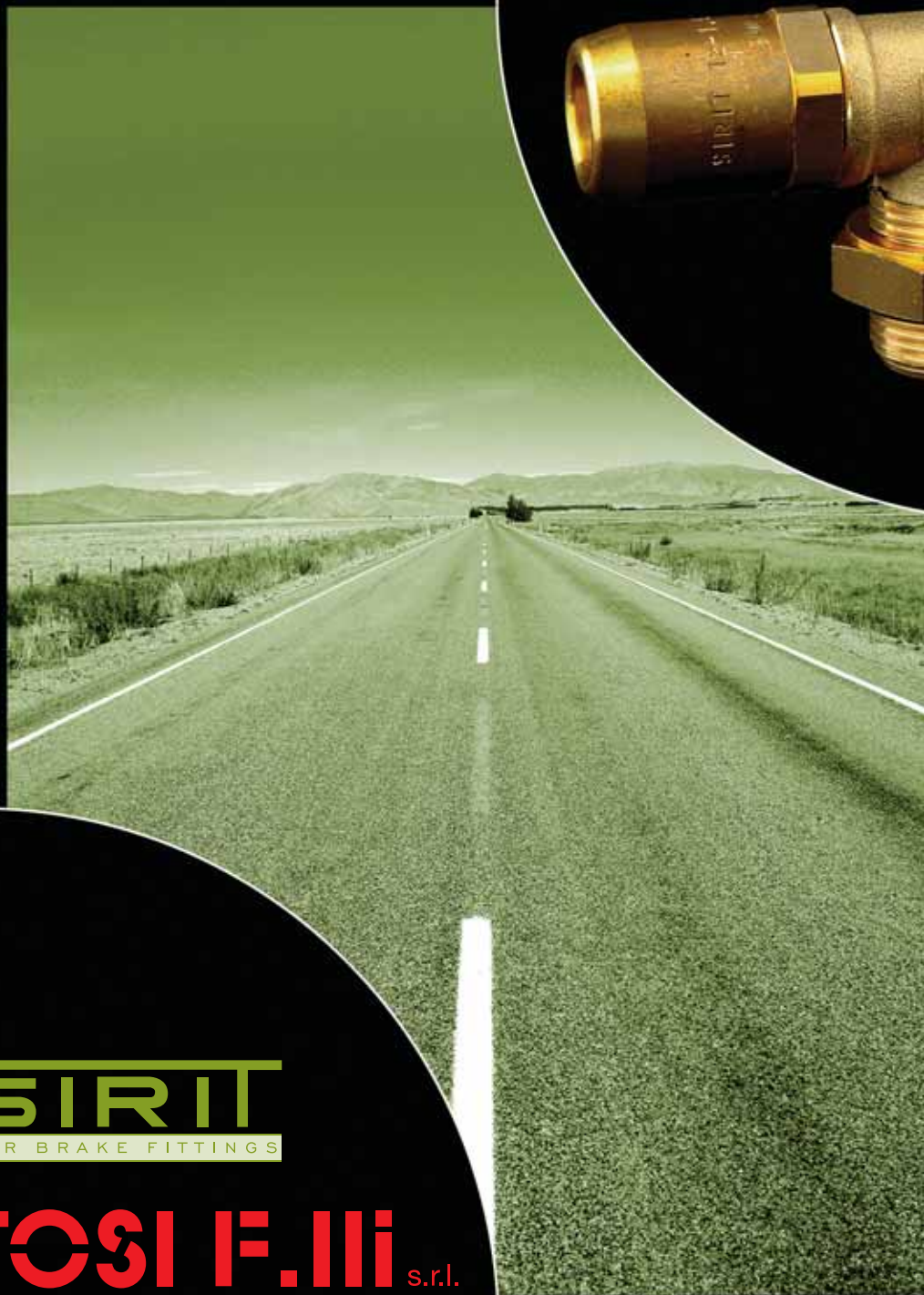


RACCORDI PER IMPIANTI FRENANTI  
A I R B R A K E F I T T I N G S  
SCHNELL- UND SCHNEIDRINGVERSCHRAUBUNGEN  
FÜR DRUCKLUFTBREMSSYSTEME  
RACCORDS POUR SYSTEMES DE FREINAGE



**SIRT**  
AIR BRAKE FITTINGS

**TOSI F.lli** s.r.l.

EDITION 01/'07

**TÜV AUTOMOTIVE**

**TOSI F.lli s.r.l.**

**I - 13019 Varallo ( VC ), Via Monte Rosa, 1**

The enterprise gets by the certificate with the No. 00 10 9288 001 and the according to the test report 474-97-TA-GA-KB belonging to it right to mark their described as follows with the here shown test mark of the certification body of the TÜV Automotive GmbH, TÜV Süddeutschland n Group.



This product fulfills the bsical requirements for pull force, sealing, resistance and vibration resistance according to the testing requirements of TÜV Automotive GmbH, TÜV Süddeutschland Group.

**Product Description:**

Push-In Fittings for compressed air for vehicle braking systems

Gaimersheim, 13.03.2002

TÜV AUTOMOTIVE GmbH  
TÜV Süddeutschland Group  
Produktzertifizierung

IZ-Gaimersheim

Laboratory

Kölbl Martin

UNTERNEHMENSGRUPPE TÜV SÜDDEUTSCHLAND

**TÜV**



# [ CERTO ]

## ATTESTATO DI CERTIFICAZIONE

*Certificate of Approval*

**N ° 26/B**

SI CERTIFICA CHE IL SISTEMA QUALITÀ DI:  
*We hereby certify that the Quality System Operated by:*

**TOSI F.LLI S.R.L.**

UNITÀ OPERATIVE:  
*Operative Units:*

**Via Monte Rosa, 1 – Zona Ind.le – Fraz. Roccapietra – 13019 VARALLO (VC)**

E' CONFORME ALLA NORMA UNI EN ISO 9001 : 2000  
*Is in compliance with the UNI EN ISO 9001 : 2000*

PER IL SEGUENTE CAMPO DI APPLICAZIONE:  
*Concerning the following scope:*

**Progettazione e fabbricazione di raccordi per impianti frenanti dei veicoli industriali. Fabbricazione di minuterie tornite in ottone, acciaio automatico e rame, a disegno cliente, per applicazioni industriali, in particolare per i settori rubinetteria e automotive.**

*Design and manufacture of pipe fittings for braking systems of industrial vehicles. Production of turned findings made of brass, free cutting steel, and copper, to the customer's drawing, for industrial applications, intended in particular for taps and automotive sectors.*

Il presente certificato è soggetto al rispetto delle prescrizioni contrattuali sottoscritte dall'Organizzazione.  
*This Certificate is valid under the conditions agreed by the Organization.*

| LUOGO E DATA DI RILASCIO<br><i>Place and date</i> |                               | DATA DI SCADENZA<br><i>Expiry date</i> | PER L'ORGANISMO DI CERTIFICAZIONE<br><i>For The Certification Body</i>      |
|---------------------------------------------------|-------------------------------|----------------------------------------|-----------------------------------------------------------------------------|
| Prima emissione<br><i>First issue</i>             | <b>Torino,<br/>10/01/1997</b> |                                        | L'Amministratore Delegato<br><i>Managing Director</i><br>(Dr. Domenico Gai) |
| Aggiornamenti<br><i>Updating</i>                  | <b>10/01/2006</b>             | <b>10/01/2009</b>                      |                                                                             |

La validità del presente Certificato è subordinata a sorveglianza periodica annuale ed al riesame completo del sistema con periodicità triennale.

*The validity of this Certificate is subordinated to a scheduled survey to be carried out once in a year, as well as to a complete reassessment of the system every three years.*

Ulteriori chiarimenti riguardanti lo scopo di questo certificato e l'applicabilità dei requisiti ISO 9001:2000 possono essere ottenuti consultando l'organizzazione, mentre per informazioni puntuali e aggiornate circa eventuali variazioni intervenute, contattare CERTO s.r.l. al n° di fax 011.51.65.777 o e-mail certo.sistema@certo.it

*Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2000 requirements may be obtained by consulting the organization, however if you need some other or update information you can contact CERTO to fax n° +39011.51.65.777 or to e-mail certo.sistema@certo.it.*

**RACCORDI ISTANTANEI PER IMPIANTI FRENANTI  
INSTANTANEOUS FITTINGS FOR BRAKING SYSTEMS  
SCHNELLVERSCHRAUBUNGEN FÜR DRUCKLUFTBREMSANLAGEN  
RACCORDS RAPIDES POUR SYSTEMES DE FREINAGE**

**Da pagina A4 a pagina A36  
From page A4 to page A36  
Von Seite A4 bis A36  
De page A4 à page A36**

**RACCORDI PER IMPIANTI FRENANTI AD ANELLO TAGLIENTE  
FITTINGS FOR BRAKING SYSTEMS WITH CUTTING RING  
SCHNEIDRINGVERSCHRAUBUNGEN FÜR DRUCKLUFTBREMSANLAGEN  
RACCORDS POUR SYSTEMES DE FREINAGE A BAGUE COUPANTE**

**Da pagina B1 a pagina B19  
From page B1 to page B19  
Von Seite B1 bis B19  
De page B1 à page B19**

### I CARATTERISTICHE E CAMPO D'IMPIEGO

Il raccordo istantaneo SIRIT, costruito in ottone, è stato progettato per essere impiegato con tubi di poliammide 11/12 (Rilsan) o poliestere elastomerico (Hytrel) sui circuiti pneumatici di impianti ausiliari e frenanti di autocarri e rimorchi. È un raccordo di sicurezza già pronto per l'impiego che non richiede mezzi o attrezzi ausiliari per l'accoppiamento con il tubo.

La sola operazione richiesta è l'inserimento manuale del tubo nella sede del raccordo.

Ne consegue un tempo di montaggio estremamente ridotto rispetto ai raccordi tradizionali ad anello tagliente.

Si valuta una riduzione dei tempi di montaggio pari al 70÷80%.

Le tolleranze dei tubi impiegati devono strettamente attenersi a quanto stabilito dalla Norma ISO 7628 e DIN 74324/73378.

Il campo termico d'impiego del raccordo istantaneo SIRIT è di +100°C / -40°C.

La tenuta in queste condizioni è garantita da speciali mescole scelte per gli O-Ring.

### GB CHARACTERISTICS AND SCOPE OF USE

The SIRIT brass instantaneous push-in fitting has been designed to be used with (Rilsan) 11/12 polyamide or (Hytrel) elastomeric polyester tubings on the pneumatic circuits of auxiliary and braking systems on trucks and trailers.

It is a ready-to-use safety fitting that does not require additional tools or equipment for coupling with the tubings.

The only operation required is the manual insertion of the tubing in the seat of the fitting. This make for a much shorter assembly time than with traditional cutting ring-type coupling.

Assembly time are estimated to be 70%÷80% shorter.

The tolerance of the used tubings must comply strictly with those set forth in ISO standard 7628 and DIN standard 74324/73378.

The operating heat range for the SIRIT instantaneous fitting is +100°C / -40°C. The seal in these conditions is ensured by means of a specific design mix selected for the SIRIT O-Ring.

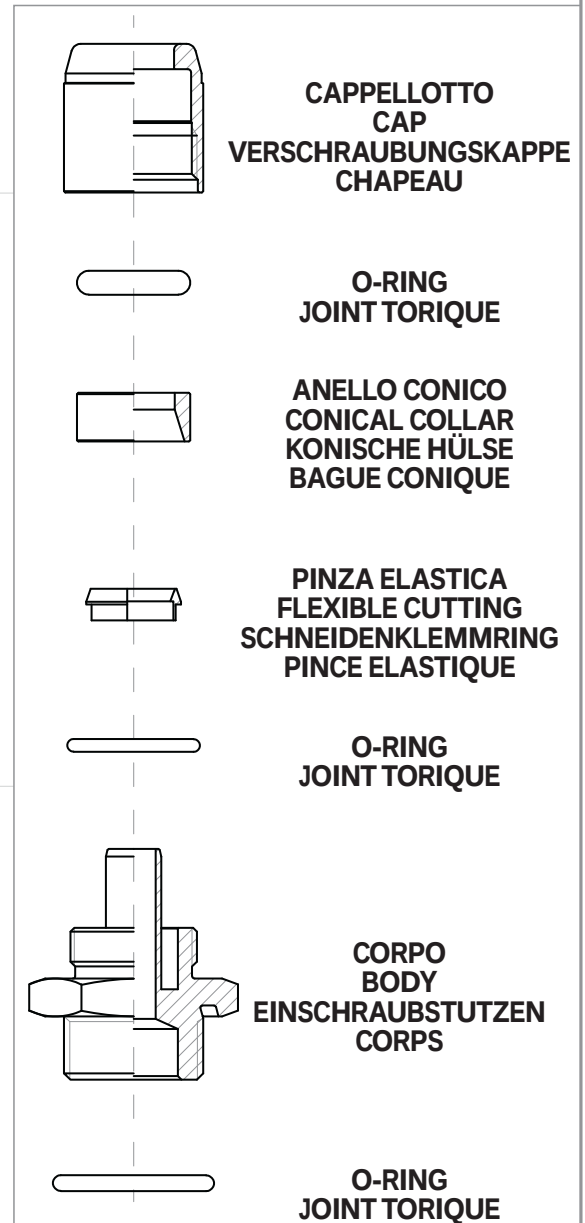
### D EIGENSCHAFTEN UND EINSATZBEREICHE

Die SIRIT-Messing-Schnellsteckverbindungen wurden ausgelegt für den Einsatz von Polyamidrohren (PA11/P12) im Bereich der Druckluftbremsanlagen und Nebenverbrauchern von Nutzfahrzeugen und Anhänger sowie für Polyesterelastomerrohre (Hytrel) im Pneumatiksektor. Die Sicherheitsverbinder sind einbaufertig und ohne besondere Werkzeuge zu montieren. Das Rohr wird von Hand in die Steckverbinder eingesteckt. Hierdurch wird die Montagezeit im Vergleich zur klassischen Schneidringverschraubung um ca. 70 bis 80 % reduziert. Die Toleranzen der Rohre sollten nach ISO 7628 und DIN 73378 / DIN 74324 ausgelegt sein.

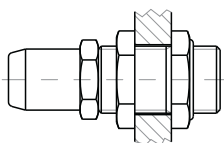
### FR CARACTERISTIQUES ET UTILISATION

Le raccord rapide SIRIT, réalisé en laiton, a été projeté pour être employé avec tubes en polyamide 11/12 (Rilsan) au polyester élastomère (Hytrel) sur circuits pneumatiques d'installations auxiliaires et ensembles de freins des poids lourds et remorques. Il est un raccord de sûreté prêt à être utilisé, il ne nécessite pas de moyen ou outils pour l'accouplement avec le tube.

On vous demande seulement de enclencher manuellement le tube dans le logement du raccord. Il s'ensuit que le temps d'assemblage est extrêmement réduit par rapport aux raccords traditionnels à bague coupante. On peut évaluer une réduction du temps d'assemblage égal au 70-80%. Les tolérances des tubes employés doivent strictement se conformer aux Normes ISO 7628 et DIN 74324/73378. Le champ thermique d'utilisation du raccord rapide SIRIT est de +100°C/-40°C. L'étanchéité dans ces conditions est garantie par particuliers mélanges choisies pour les Joints-toriques.

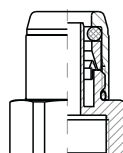


**A29**



803

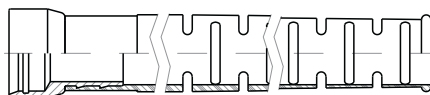
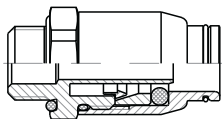
Terminali Passaparatia - Stud Bulkhead Terminal  
Gerade Schott Einschraubsteckverbindungen  
Raccords Passe Cloison



808

Terminali Femmina - Straight Female Terminal  
Gerade Aufschraubsteckverbindungen - Raccords Femelle

**A30**



Terminale diritto con molla plastica per rinforzo tubo - Straight terminal with plastic support for tubings - Gerade Einschraubsteckverbindung mit Kunststofffeder für die Stütze des Rohres - Raccord droit avec ressort plastique pour tube

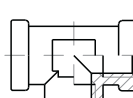
**A31**



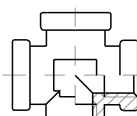
750



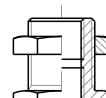
760



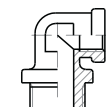
770



780



753  
653



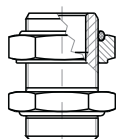
763  
663



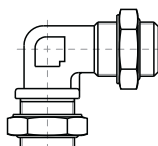
703  
603

Adattatori / Adattatori passaparete - Threaded Adaptors / Bulkhead threaded adaptors  
Verbindungsstutzen / Schottverbindungstutzen - Adaptateurs / Adaptateurs Passe Cloison

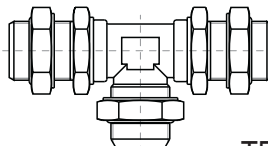
**A32**



703.B



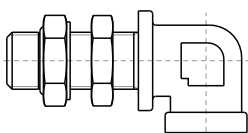
GMM



TEM

Giunzioni a tenuta frontale - Couplin with front sealing  
Einschraubstutzen mit Kontermutter - Unions à étanche frontale

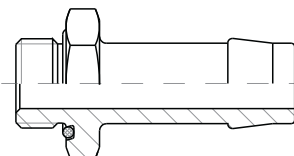
**A33**



763

Passaparete M/F  
90° Prolungato

Male/Female 90° Bulkhead Extended Elbow  
Drehbare Schott-Einschraubsteckverbindung -  
Passe - Cloison M/F 90° Prolongé



697

Portagomma - Hosetails  
Einschraubbarer Schlauchstutzen  
- Embout

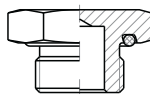
**A34**



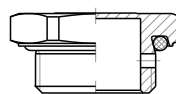
692



698



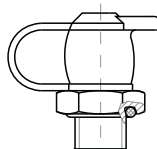
695



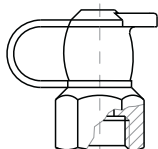
696

Accessori - Accessories - Zubehör - Accessoires

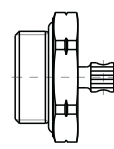
**A35**



790



VFF

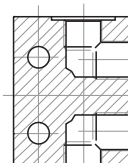
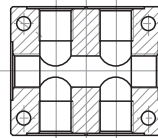
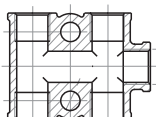
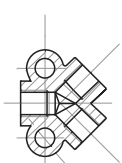


VSM

Presa di pressione pneumatica - Test point  
Ein- und aufschraubbare Prüfanschlüsse  
Prise de pression pneumatique

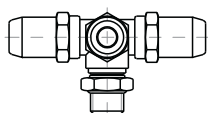
Valvola di spurgo condensa - Drain valve  
Abläßventil - Valve de pourge

**A36**

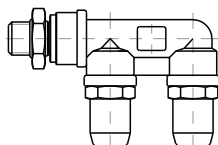


Blocchetti di distribuzione - Distribution blocks  
Verteilerblöcke für SIRIT-System - Blocs de distribution



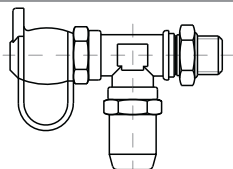
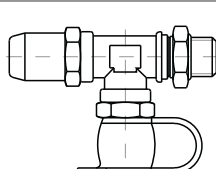
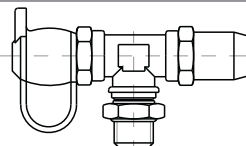
**A21**


849



851

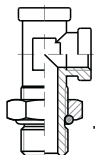
Terminali Girevoli - Swivel Studs - Einschraubdrehgelenksteckverbindungen (drehbar 360°) - Raccords Tournants

**A22**

826  
827

828  
829

836  
837

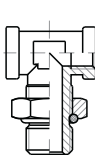
Terminali Girevoli con Presa Pressione - Swivel Studs with Test Point - Einschraubdrehgelenksteckverbindungen (drehbar 360°) mit Prüfanschluß - Raccords Tournants avec prise de pression

**A23**

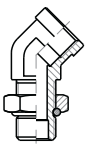

710



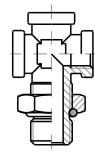
720



730



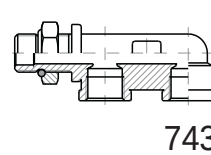
740



741

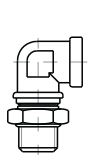


742

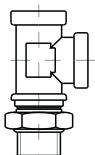


743

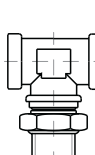
Adattatori Orientabili - Pivoted Adaptors  
Einschraub-Stutzen - Adaptateurs Orientables

**A24**


715



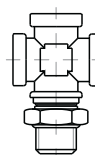
725



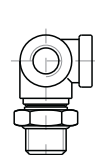
735



745

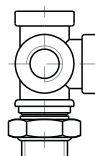


746

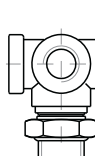


747

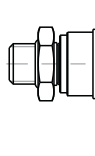
Adattatori Girevoli - Swivel Adaptors (threaded)  
Einschraubbarer Drehgelenkstutzen - Adaptateurs Tournants

**A25**


748

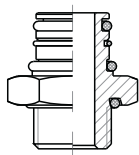


749

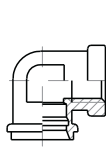


751

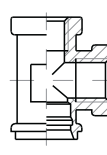
Adattatori Girevoli - Swivel Adaptors (threaded)  
Einschraubbarer Drehgelenkstutzen - Adaptateurs Tournants

**A26**


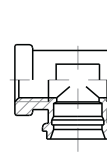
660



615



625

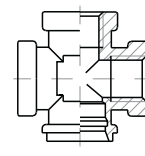


635

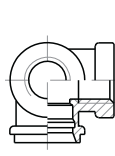
Blocchetti Girevoli - Swivels  
Adapter der Serie 6..und Drehgelenkstutzen mit O-Ring - Blocs Tournants

**A27**

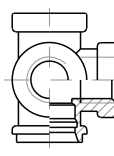

645



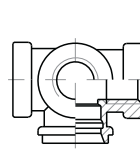
646



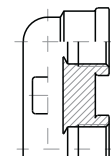
647



648

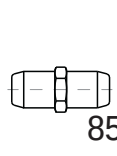


649

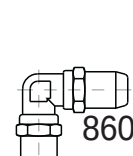


651

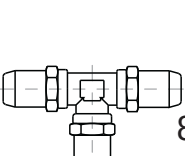
Blocchetti Girevoli - Swivels  
Adapter der Serie 6..und Drehgelenkstutzen mit O-Ring - Blocs Tournants

**A28**


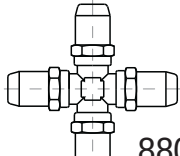
850



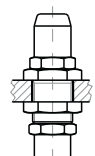
860



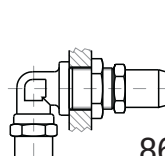
870



880



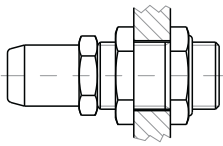
853



863

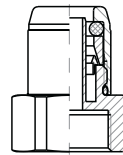
Unioni / Unioni passaparete - Unions / Bulkhead unions  
Steckeinheiten / Verbindungen - Unions/ Unions Passe Cloison

**A29**



**803**

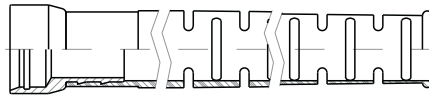
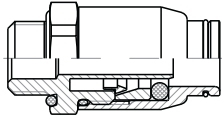
Terminali Passaparatia - Stud Bulkhead Terminal  
Gerade Schott Einschraubsteckverbindungen  
Raccords Passe Cloison



**808**

Terminali Femmina - Straight Female Terminal  
Gerade Aufschraubsteckverbindungen - Raccords Femelle

**A30**



Terminale diritto con molla plastica per rinforzo tubo - Straight terminal with plastic support for tubings - Gerade Einschraubsteckverbindung mit Kunststofffeder für die Stütze des Rohres - Raccord droit avec ressort plastique pour tube

**A31**



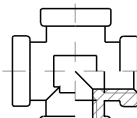
**750**



**760**



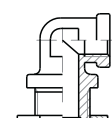
**770**



**780**



**753  
653**



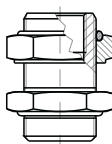
**763  
663**



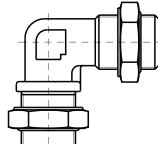
**703  
603**

Adattatori / Adattatori passaparete - Threaded Adaptors / Bulkhead threaded adaptors  
Verbindungsstutzen / Schottverbindungstutzen - Adaptateurs / Adaptateurs Passe Cloison

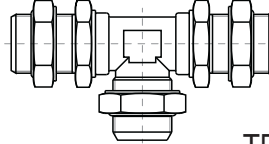
**A32**



**703.B**



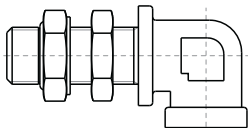
**GMM**



**TEM**

Giunzioni a tenuta frontale - Couplin with front sealing  
Einschraubstutzen mit Kontermutter - Unions à étanche frontale

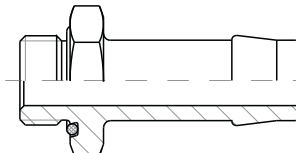
**A33**



**763**

Passaparete M/F  
90° Prolungato

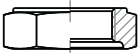
Male/Female 90° Bulkhead Extended Elbow  
Drehbare Schott-Einschraubsteckverbindung -  
Passe - Cloison M/F 90° Prolongé



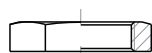
**697**

Portagomma - Hosetails  
Einschraubbarer Schlauchstutzen  
- Embout

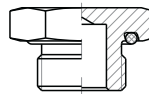
**A34**



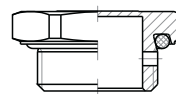
**692**



**698**



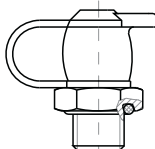
**695**



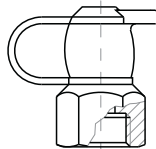
**696**

Accessori - Accessories - Zubehör - Accessoires

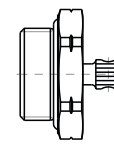
**A35**



**790**



**VFF**

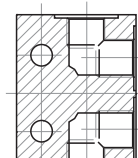
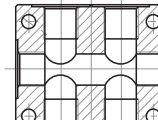
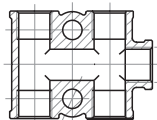
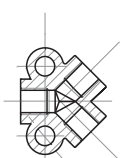


**VSM**

Presa di pressione pneumatica - Test point  
Ein- und aufschraubbare Prüfanschlüsse  
Prise de pression pneumatique

Valvola di spurgo condensa - Drain valve  
Abläßventil - Valve de pourge

**A36**



Blocchetti di distribuzione - Distribution blocks  
Verteilerblöcke für SIRIT-System - Blocs de distribution



# ESEMPIO CODIFICA CATALOGO IR HOW TO READ OUR PART NUMBER ENTSCHLÜSSELUNG DER ARTIKELNUMMER EXEMPLE CODIFICATION CATALOGUE IR

(2) 800 120901615

800 12 090 16 15

ARTICOLO: **TERMINALE DIRITTO MASCHIO**  
ARTICLE: **STRAIGHT MALE COUPLING**  
ARTIKEL: **GERADE EINSCHRAUBSTECKVERBINDUNG**  
ARTICLE: **RACCORD DROIT MÂLE**

DIAMETRO ESTERNO TUBO:  
EXTERNAL DIAMETER OF THE TUBE:  
ROHRAUßENDURCHMESSER:  
DIAMETRE EXTERIEUR TUBE:  
**ø 12 mm**

DIAMETRO INTERNO TUBO:  
INNER DIAMETER OF THE TUBE:  
ROHRINNENDURCHMESSER:  
DIAMETRE INTERIEUR TUBE:  
**ø 9 mm**

DIAMETRO ESTERNO FILETTATURA:  
THREAD EXTERNAL DIAMETER:  
AUßENGEWINDE:  
DIAMETRE EXTERIEUR FILETAGE:  
**M 16**

PASSO DELLA FILETTATURA:  
THREAD PITCH:  
STEIGUNG:  
PAS DE FILETAGE:  
**1,5 mm**

(2) 810 1209016155

810 12 090 16 15 5

ARTICOLO: **TERMINALE ORIENTABILE**  
ARTICLE: **PIVOTED STUDS**  
ARTIKEL: **EINSCHRAUBSTECKVERBINDUNGEN (POSITIONIERBAR)**  
ARTICLE: **RACCORD ORIENTABLE**

DIAMETRO ESTERNO TUBO:  
EXTERNAL DIAMETER OF THE TUBE:  
ROHRAUßENDURCHMESSER:  
DIAMETRE EXTERIEUR TUBE:  
**ø 12 mm**

DIAMETRO INTERNO TUBO:  
INNER DIAMETER OF THE TUBE:  
ROHRINNENDURCHMESSER:  
DIAMETRE INTERIEUR TUBE:  
**ø 9 mm**

DIAMETRO ESTERNO FILETTATURA:  
THREAD EXTERNAL DIAMETER:  
AUßENGEWINDE:  
DIAMETRE EXTERIEUR FILETAGE:  
**M 16**

TIPO FILETTO FEMMINA:  
FEMALE THREAD TYPE:  
INNENGEWINDE:  
TYPE DE FILETAGE FEMELLE:  
**M12x1,5 = 3**  
**M16x1,5 = 5**  
**M22x1,5 = 7**  
PASSO DELLA FILETTATURA:  
THREAD PITCH:  
STEIGUNG:  
PAS DE FILETAGE:  
**1,5 mm**

(2)815 1209016155B

815 12 090 16 15 5 B

ARTICOLO: **TERMINALE GIREVOLE**  
ARTICLE: **SWIVEL STUD**  
ARTIKEL: **EINSCHRAUB-DREHGELENKSTUTZEN**  
ARTICLE: **RACCORD TOURNANT**

DIAMETRO ESTERNO TUBO:  
EXTERNAL DIAMETER OF THE TUBE:  
ROHRAUßENDURCHMESSER:  
DIAMETRE EXTERIEUR TUBE:  
**ø 12 mm**

DIAMETRO INTERNO TUBO:  
INNER DIAMETER OF THE TUBE:  
ROHRINNENDURCHMESSER:  
DIAMETRE INTERIEUR TUBE:  
**ø 9 mm**

DIAMETRO ESTERNO FILETTATURA:  
THREAD EXTERNAL DIAMETER:  
AUßENGEWINDE:  
DIAMETRE EXTERIEUR FILETAGE:  
**M 16**

PASSO DELLA FILETTATURA:  
THREAD PITCH:  
STEIGUNG:  
PAS DE FILETAGE:  
**1,5 mm**

TIPO INNESTO:  
STUD TYPE:  
SCHNELLANSCHLUßSTUTZEN:  
TYPE EMBASE:  
TIPO / TYPE / TYP /TYPE "B"  
TIPO FILETTO FEMMINA:  
FEMALE THREAD TYPE:  
INNENGEWINDE:  
TYPE DE FILET FEMELLE:  
**M12x1,5 = 3**  
**M16x1,5 = 5**  
**M22x1,5 = 7**

- IL "2" CHE PRECEDE IL CODICE COMPARE IN TUTTI I DOCUMENTI DA NOI EMESSI MA PUO' ESSERE OMESSO IN FASE D'ORDINE.
- THE NUMBER "2" BEFORE THE PART NUMBER APPEARS IN ALL OUR DOCUMENTS BUT CAN BE OMITTED WHEN ORDERING.
- DIE NUMMER "2" VOR DER ARTIKELNUMMER IST OHNE WEITERE BEDEUTUNG UND KANN BEI BESTELLUNGEN VERNACHLÄSSIGT WERDEN.
- LE NUMERO "2" QUE PRECEDE LE CODE IL PARAÎT DANS TOUT LES DOCUMENTS PAR NOUS EMIS. MAIS IL PEUT ÊTRE OMIS AU MOMENT DE LA COMMANDE.

# ESEMPIO CODIFICA CATALOGO IR HOW TO READ OUR PART NUMBER ENTSCHLÜSSELUNG DER ARTIKELNUMMER EXEMPLE CODIFICATION CATALOGUE IR

(2) 710 51615

710 5 16 15

ARTICOLO: **ADATTATORE ORIENTABILE**  
ARTICLE: **PIVOTED ADAPTOR**  
ARTIKEL: **EINSCHRAUB-STUTZEN**  
ARTICLE: **ADAPTATEUR ORIENTABLE**

TIPO FILETTO FEMMINA:  
FEMALE THREAD TYPE:  
INNENGEWINDE:  
TYPE FILETAGE FEMELLE:

**M16X1,5**

DIAMETRO ESTERNO FILETTATURA:  
THREAD EXTERNAL DIAMETER:  
AUßENGEWINDE:  
DIAMETRE EXTERIEUR FILETAGE:

**M16**

PASSO DELLA FILETTATURA:  
THREAD PITCH:  
STEIGUNG:  
PAS DE FILETAGE:

**1,5 mm**

(2) 715 51615B

715 5 16 15 B

ARTICOLO: **ADATTATORE GIREVOLE**  
ARTICLE: **SWIVEL ADAPTOR**  
ARTIKEL: **EINSCHRAUBBARER DREHGELENKSTUTZEN**  
ARTICLE: **ADAPTATEUR TOURNANT**

TIPO FILETTO FEMMINA:  
FEMALE THREAD TYPE:  
INNENGEWINDE:  
TYPE FILETAGE FEMELLE:

**M 16 x1,5**

DIAMETRO ESTERNO FILETTATURA:  
THREAD EXTERNAL DIAMETER:  
AUßENGEWINDE:  
DIAMETRE EXTERIEUR FILETAGE:

**M 16**

PASSO DELLA FILETTATURA:  
THREAD PITCH:  
STEIGUNG:  
PAS DE FILETAGE:

**1,5 mm**

TIPO INNESTO:  
STUD TYPE:  
SCHNELLANSCHLUßSTUTZEN:  
TYPE EMBASE:  
TIPO / TYPE / TYP / TYPE "B"

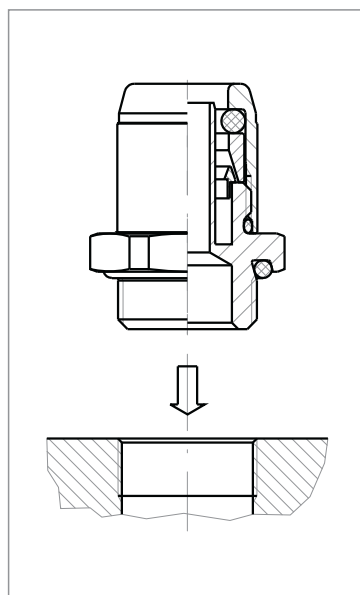
- IL "2" CHE PRECEDE IL CODICE COMPARE IN TUTTI I DOCUMENTI DA NOI EMESSI MA PUO' ESSERE OMESSO IN FASE D'ORDINE.
- THE NUMBER "2" BEFORE THE PART NUMBER APPEARS IN ALL OUR DOCUMENTS BUT CAN BE OMITTED WHEN ORDERING.
- DIE NUMMER "2" VOR DER ARTIKELNUMMER IST OHNE WEITERE BEDEUTUNG UND KANN BEI BESTELLUNGEN VERNACHLÄSSIGT WERDEN.
- LE NUMERO "2" QUE PRECEDE LE CODE IL PARAÎT DANS TOUT LES DOCUMENTS PAR NOUS EMIS MAIS IL PEUT ÊTRE OMIS AU MOMENT DE LA COMMANDE.

# ISTRUZIONI DI MONTAGGIO TERMINALI DIRITTI

## STRAIGHT TERMINAL ASSEMBLY INSTRUCTIONS

### MONTAGE-ANLEITUNG FÜR GERADE EINSCHRAUBSTECKVERBINDER

### INSTRUCTIONS ASSEMBLAGE RACCORDS DROITS



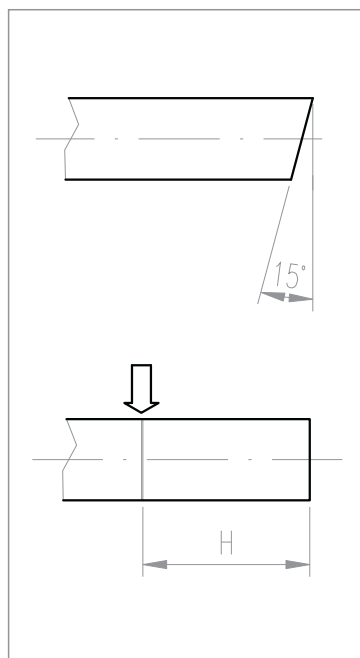
**I** La tenuta dei terminali diritti si riferisce a quanto stabilito dalla norma ISO 6149 DIN 3482. Per ottenere un corretto montaggio su tutti i raccordi terminali occorre attenersi scrupolosamente ai valori di serraggio indicati nella seguente tabella:

**GB** The seal of the stud coupling is specified by what is laid down in ISO standard 6149-80 and DIN standard 3482. To obtain the correct assembly on all terminal fittings it is essential to adhere to the tightening torques shown in the following table.

**D** Das metrische Außengewinde entspricht der Normenwerke nach ISO 6149-80 und den DIN 3482. Um eine korrekte Verbindung zu gewährleisten, sollten die Anzugsdrehmomente gemäß der nachfolgenden Tabelle eingehalten werden.

**FR** L'étanchéité des raccords droits se réfère à ce qu'a été établi par la norme ISO 6149 DIN 3482. Pour obtenir un assemblage correct pour tous les raccords droits est nécessaire se conformer rigoureusement aux valeurs de serrage indiqués dans la table suivante.

| FILETTO<br>THREAD<br>METRISCHES<br>FILETAGE | COPPIA DI SERRAGGIO<br>TIGHTENING TORQUE<br>GEWINDEANZUGSDREHMOMENT<br>COUPLE DE SERRAGE<br>(Nm)±10% |
|---------------------------------------------|------------------------------------------------------------------------------------------------------|
| M 10 x 1                                    | 22                                                                                                   |
| M 12 x 1,5                                  | 24                                                                                                   |
| M 14 x 1,5                                  | 30                                                                                                   |
| M 16 x 1,5                                  | 35                                                                                                   |
| M 18 x 1,5                                  | 36                                                                                                   |
| M 22 x 1,5                                  | 40                                                                                                   |
| M 26 x 1,5                                  | 45                                                                                                   |



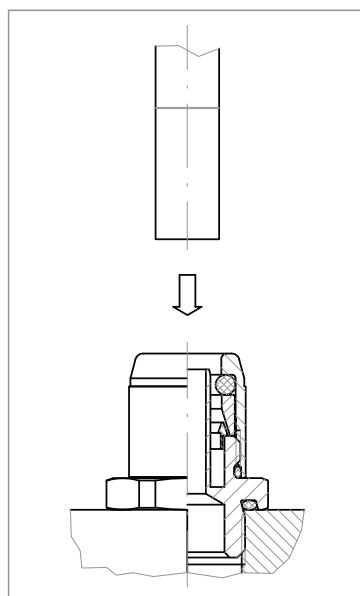
**I** Il tubo deve essere tagliato ad angolo retto con una tolleranza massima di 15°. Il corretto montaggio si realizza solo con l'inserimento del tubo fino alla battuta nella sede del raccordo. Per avere l'assoluta certezza che si realizzi tale condizione è opportuno segnare graficamente la profondità d'innesto del tubo (quota H).

**GB** The tubing must be cut at right angles with a maximum tolerance of 15°. Correct assembly is performed only when the tubing inserted touches the end of the tube seat. To be absolutely certain that this is the case it is advisable to mark the depth of the tubing coupling (distance H).

**D** Das Rohrende muß rechtwinklig abgeschnitten werden, wobei eine Abweichung von max. 15° zulässig ist. Das Rohr wird von Hand bis zum Anschlag des Steckverbinders eingeschoben. Zur visuellen Kontrolle empfehlen wir die Kennzeichnung der Einstecklänge (H) auf dem Rohr gemäß Tabelle vor Bestückung.

**FR** Le tube doit être coupé à angle droit avec écart maximum de 15°. L'assemblage correct se réalise avec le branchement du tube jusqu'à la feuillure dans le logement du raccord. Afin d'avoir la certitude absolue que telle condition se réalise il est opportun marquer graphiquement le profondeur d'embase du tube (cote H).

| Ø TUBO<br>Ø PIPE<br>Ø Rohraußen- X<br>Innendurchm.<br>Ø TUBE | PROFONDITÀ D'INNESTO (H)<br>DEPTH OF COUPLING (H)<br>EINSTECKLÄNGE (H)<br>PROFONDEUR D'EMBASE (H) |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 6 x 4                                                        | 19,8                                                                                              |
| 8 x 6                                                        | 20,5                                                                                              |
| 10 x 7                                                       | 24                                                                                                |
| 10 x 7,5                                                     | 24                                                                                                |
| 10 x 8                                                       | 24                                                                                                |
| 12 x 9                                                       | 25                                                                                                |
| 15 x 12                                                      | 27                                                                                                |
| 16 x 12                                                      | 27                                                                                                |
| 18 x 14                                                      | 27                                                                                                |



**I** L'innesto tubo-raccordo non necessita di utensili. Per agevolare l'operazione è sufficiente ruotare lievemente il tubo. Lo sforzo necessario all'innesto è riportato nella seguente tabella.

**GB** The tubing/fitting coupling does not require tools. To make the operation easier it is sufficient to slightly turn the tubing. The force required for the fitting is shown in the following table.

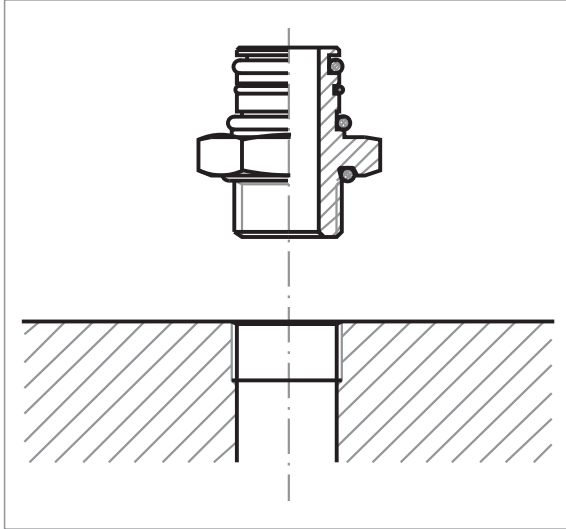
**D** Der Montagevorgang geschieht ohne Werkzeug durch gleichzeitiges Drücken und Drehen des Rohres in die Steckverbindung. Die erforderliche Einsteckkraft entnehmen Sie der nachstehenden Tabelle.

**FR** L'embase tube-raccord ne nécessite pas d'outils. Pour faciliter l'action est suffisant une légère rotation du tube. L'effort nécessaire à l'embase est rapporté dans la table suivante.

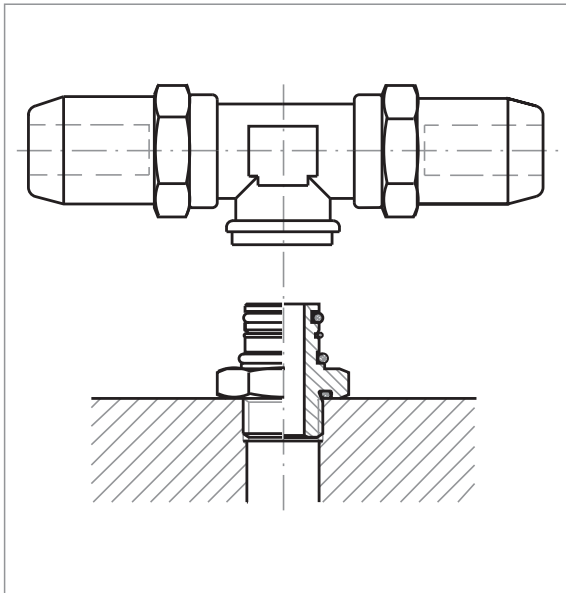
| Ø TUBO<br>Ø PIPE<br>Ø Rohr-außendurchmesser<br>Ø TUBE | FORZA D'INNESTO N<br>FITTING FORCE N<br>MAX. EINSTECKKRAFT<br>FORCE D'EMBASE N |
|-------------------------------------------------------|--------------------------------------------------------------------------------|
| 6                                                     | 60                                                                             |
| 8                                                     | 80                                                                             |
| 10                                                    | 82                                                                             |
| 12                                                    | 95                                                                             |
| 15                                                    | 100                                                                            |
| 16                                                    | 100                                                                            |
| 18                                                    | 100                                                                            |



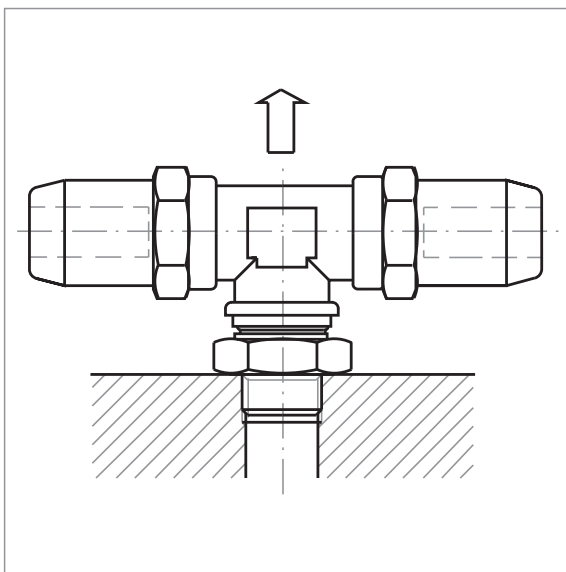
**ISTRUZIONI DI MONTAGGIO RACCORDO GIREVOLE**  
**STRAIGHT TERMINAL ASSEMBLY INSTRUCTIONS**  
**MONTAGE-ANLEITUNG FÜR GERADE EINSCHRAUBSTECKVERBINDER**  
**INSTRUCTIONS ASSEMBLAGE RACCORDS TOURNANTS**



- I** Avvitare l'innesto girevole nella femmina.
- GB** Screw the swivel coupling into the thread ensuring correct torque (overtightening can cause damage to both the fitting and the component).
- D** Schrauben Sie den Stutzen von Hand in das Gewinde ein und ziehen Sie den Stutzen mit dem erforderlichen Drehmoment fest.
- FR** Visser l'embase tournante dans la femelle.



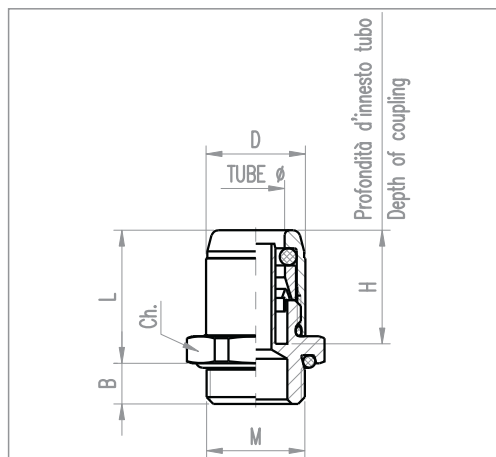
- I** Quindi innestare il componente spingendo verso il basso con leggera torsione.
- GB** Then fit the component by means of push and twist.
- D** Stecken Sie das Formteil auf den Stutzen und bringen es zum Einrasten durch eine Druck- und Drehbewegung. Hierdurch entsteht eine nicht lösbare aber positionierbare Verbindung.
- FR** Donc brancher le composant poussant vers le bas avec une légère torsion.



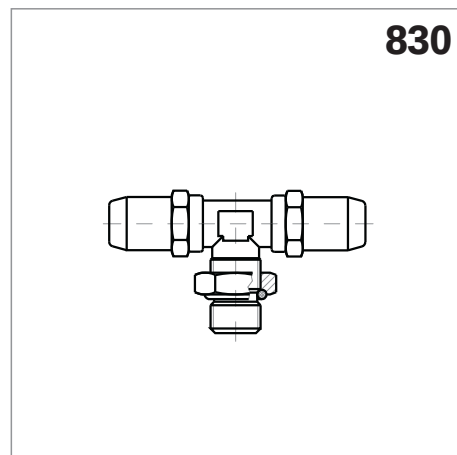
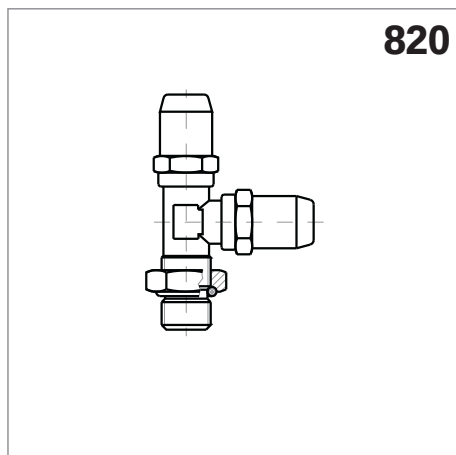
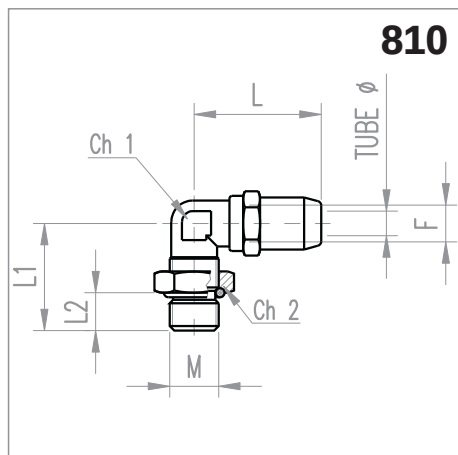
- I** **IMPORTANTE:**  
Controllare che il componente sia effettivamente innestato.  
Per verificare ciò occorre applicare una trazione.
- GB** **IMPORTANT:**  
Check the component is coupled properly.  
Pull the component to ensure this is the case.
- D** **ACHTUNG WICHTIG!**  
Überprüfen Sie die Verriegelung der Kupplung durch leichten Zug am Formteil. Diese Verbindung ist nicht zulässig zwischen Achse und Fahrgestellrahmen, flexible und bewegliche Verbindungen zwischen beispielsweise Ventilen oder als Teil einer Verbindung zwischen ziehenden und gezogenen Fahrzeug.
- FR** **IMPORTANT:**  
Contrôler que le composant soit effectivement branché.  
Pour vérifier ceci il faut appliquer une traction.

- **DIMENSIONI:** Le quote riportate nelle tabelle del catalogo sono soltanto indicative.  
La ditta TOSI F.Ili, qualora motivi tecnici lo richiedano, si riserva il diritto di apportare le dovute variazioni.
- **DIMENSIONS:** the dimensions shown in the tables in the catalogue are only shown as a guide.  
TOSI F.Ili reserved the right to make any due alteration when required for technical reasons.
- **WICHTIG:** die in den Tabellen unseres Kataloges angegebenen Maße sind unverbindlich.  
TOSI F.Ili s.r.l. behält sich das Recht vor, Änderungen im Zuge von erforderlichen Weiterentwicklungen vorzunehmen.
- **DIMENSIONS:** Les cotes dans le catalogue sont seulement à titre indicatif.  
La TOSI F.Ili s.r.l., au cas où pour raisons techniques soit nécessaire, se réserve le droit d'apporter des variations.



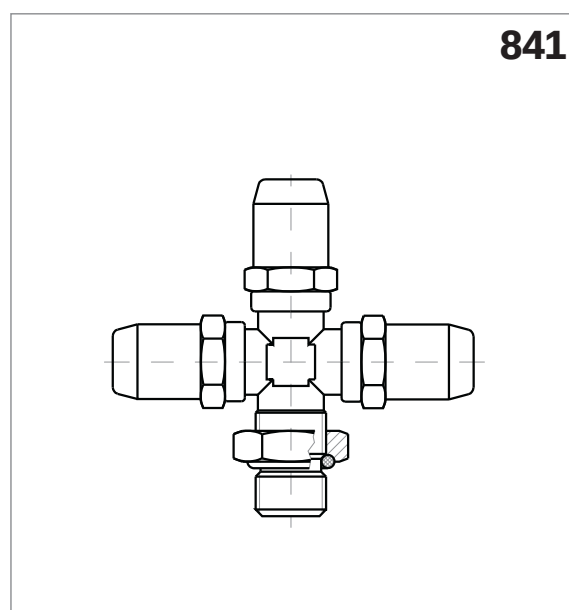
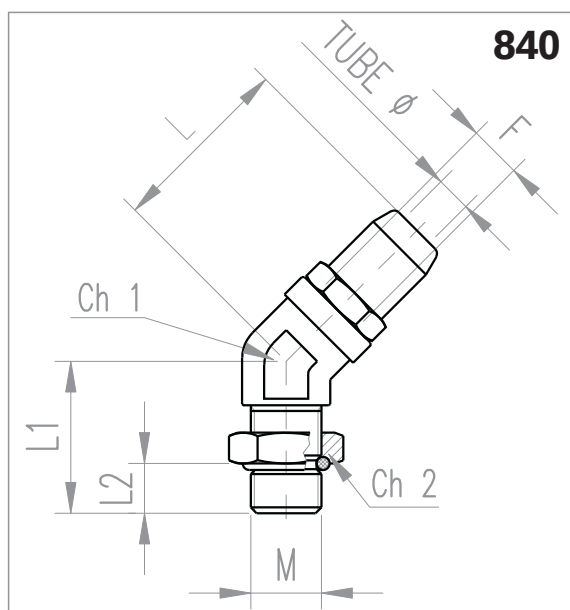


| PART NUMBER   | TUBE Ø | M       | B   | D  | H    | L    | Ch |
|---------------|--------|---------|-----|----|------|------|----|
| 800 06040GC18 | 6X4    | G 1/8   | 6   | 16 | 19,8 | 24,5 | 16 |
| 800 06040GC14 | 6X4    | G 1/4   | 6   | 16 | 19,8 | 25,5 | 20 |
| 800 060401010 | 6X4    | 10X1    | 8   | 16 | 19,8 | 24,5 | 16 |
| 800 060401210 | 6X4    | 12X1    | 8   | 16 | 19,8 | 24,5 | 18 |
| 800 060401212 | 6X4    | 12X1,25 | 8   | 16 | 19,8 | 24,5 | 18 |
| 800 060401215 | 6X4    | 12X1,5  | 8   | 16 | 19,8 | 24,5 | 18 |
| 800 060401415 | 6X4    | 14X1,5  | 9   | 16 | 19,8 | 24,5 | 20 |
| 800 060401615 | 6X4    | 16X1,5  | 8,5 | 16 | 19,8 | 25   | 22 |
| 800 060402215 | 6X4    | 22X1,5  | 9   | 16 | 19,8 | 25,5 | 28 |
| 800 08060GC18 | 8X6    | G 1/8   | 6   | 18 | 20,5 | 25,5 | 18 |
| 800 08060GC14 | 8X6    | G 1/4   | 6   | 18 | 20,5 | 25,5 | 20 |
| 800 080601010 | 8X6    | 10X1    | 8   | 18 | 20,5 | 25,5 | 18 |
| 800 080601210 | 8X6    | 12X1    | 8   | 18 | 20,5 | 25,5 | 18 |
| 800 080601212 | 8X6    | 12X1,25 | 8   | 18 | 20,5 | 25,5 | 18 |
| 800 080601215 | 8X6    | 12X1,5  | 8   | 18 | 20,5 | 25,5 | 18 |
| 800 080601415 | 8X6    | 14X1,5  | 9   | 18 | 20,5 | 25,5 | 20 |
| 800 080601615 | 8X6    | 16X1,5  | 8,5 | 18 | 20,5 | 25,5 | 22 |
| 800 080602215 | 8X6    | 22X1,5  | 9   | 18 | 20,5 | 26   | 28 |
| 800 090601215 | 9x6    | 12x1,5  | 8   | 18 | 20,5 | 25,5 | 18 |
| 800 090601615 | 9x6    | 16X1,5  | 8,5 | 18 | 20,5 | 25,5 | 22 |
| 800 090602215 | 9x6    | 22X1,5  | 9   | 18 | 20,5 | 26   | 28 |
| 800 100701010 | 10X7   | 10X1    | 8   | 20 | 24   | 29,5 | 20 |
| 800 100701215 | 10X7   | 12X1,5  | 8   | 20 | 24   | 28,5 | 20 |
| 800 100701415 | 10X7   | 14X1,5  | 9   | 20 | 24   | 28,5 | 20 |
| 800 100701615 | 10X7   | 16X1,5  | 8,5 | 20 | 24   | 28,5 | 22 |
| 800 100702215 | 10X7   | 22X1,5  | 9   | 20 | 24   | 29   | 28 |
| 800 100801010 | 10X8   | 10X1    | 8   | 20 | 24   | 29,5 | 20 |
| 800 100801215 | 10X8   | 12X1,5  | 8   | 20 | 24   | 28,5 | 20 |
| 800 100801415 | 10X8   | 14X1,5  | 9   | 20 | 24   | 28,5 | 20 |
| 800 100801615 | 10X8   | 16X1,5  | 8,5 | 20 | 24   | 28,5 | 22 |
| 800 100802215 | 10X8   | 22X1,5  | 9   | 20 | 24   | 29   | 28 |
| 800 100751010 | 10X7,5 | 10X1    | 8   | 20 | 24   | 29,5 | 20 |
| 800 100751215 | 10X7,5 | 12X1,5  | 8   | 20 | 24   | 28,5 | 20 |
| 800 100751415 | 10X7,5 | 14X1,5  | 9   | 20 | 24   | 28,5 | 20 |
| 800 100751615 | 10X7,5 | 16X1,5  | 8,5 | 20 | 24   | 28,5 | 22 |
| 800 100752215 | 10X7,5 | 22X1,5  | 9   | 20 | 24   | 29   | 28 |
| 800 110801215 | 11x8   | 12x1,5  | 8   | 20 | 24   | 28,5 | 20 |
| 800 110801615 | 11x8   | 16X1,5  | 8,5 | 20 | 24   | 28,5 | 22 |
| 800 110802215 | 11x8   | 22X1,5  | 9   | 20 | 24   | 29   | 28 |
| 800 120901215 | 12X9   | 12X1,5  | 8   | 22 | 25   | 30,2 | 22 |
| 800 120901415 | 12X9   | 14X1,5  | 9   | 22 | 25   | 29,5 | 22 |
| 800 120901615 | 12X9   | 16X1,5  | 8,5 | 22 | 25   | 29,5 | 22 |
| 800 120902215 | 12X9   | 22X1,5  | 9   | 22 | 25   | 29,5 | 28 |
| 800 120801615 | 12X8   | 16X1,5  | 8,5 | 22 | 25   | 29,5 | 22 |
| 800 120802215 | 12X8   | 22X1,5  | 9   | 22 | 25   | 29,5 | 28 |
| 800 151201615 | 15X12  | 16X1,5  | 8,5 | 28 | 27   | 33   | 28 |
| 800 151202215 | 15X12  | 22X1,5  | 9   | 28 | 27   | 31,5 | 28 |
| 800 151202615 | 15X12  | 26X1,5  | 10  | 28 | 27   | 32,5 | 32 |
| 800 161201615 | 16X12  | 16X1,5  | 8,5 | 28 | 27   | 33   | 28 |
| 800 161202215 | 16X12  | 22X1,5  | 9   | 28 | 27   | 31,5 | 28 |
| 800 161202615 | 16X12  | 26X1,5  | 10  | 28 | 27   | 32,5 | 32 |
| 800 181401615 | 18X14  | 16X1,5  | 8,5 | 30 | 27   | 33   | 30 |
| 800 181402215 | 18X14  | 22X1,5  | 9   | 30 | 27   | 31,5 | 30 |
| 800 181402615 | 18X14  | 26X1,5  | 10  | 30 | 27   | 32,5 | 32 |
| 800 201602215 | 20x16  | 22X1,5  | 10  | 32 | 27   | 32,5 | 32 |
| 800 201602615 | 20x16  | 26X1,5  | 10  | 32 | 27   | 32,5 | 32 |

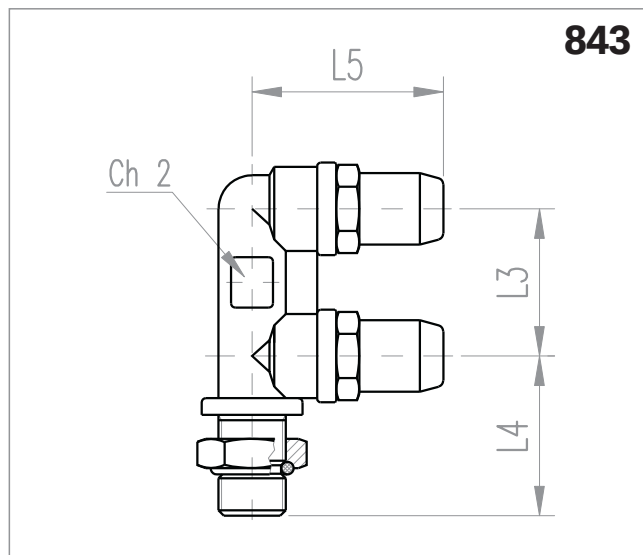
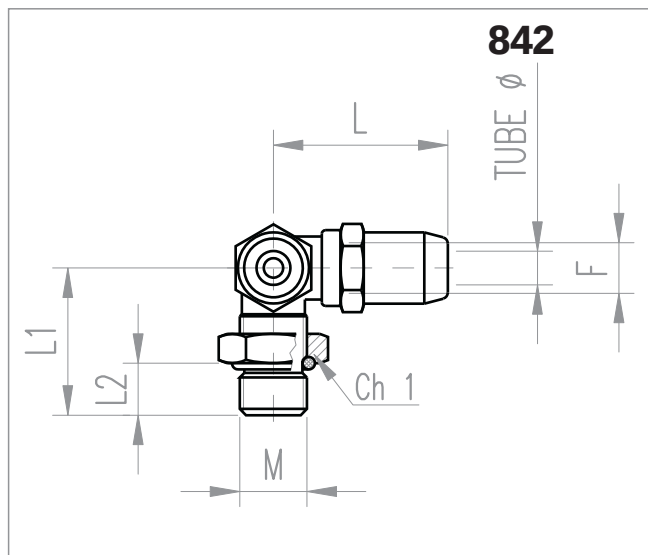


| PART NUMBER    | PART NUMBER    | PART NUMBER    | TUBE Ø | M      | F      | L    | L1   | L2 | Ch1 | Ch2 |
|----------------|----------------|----------------|--------|--------|--------|------|------|----|-----|-----|
| 810 0604010103 | 820 0604010103 | 830 0604010103 | 6X4    | 10X1   | 12X1,5 | 40   | 31,5 | 9  | 17  | 14  |
| 810 0604012153 | 820 0604012153 | 830 0604012153 | 6X4    | 12X1,5 | 12X1,5 | 40   | 34   | 10 | 17  | 17  |
| 810 0604016153 | 820 0604016153 | 830 0604016153 | 6X4    | 16X1,5 | 12X1,5 | 40   | 34   | 10 | 17  | 22  |
| 810 0604022153 | 820 0604022153 | 830 0604022153 | 6X4    | 22X1,5 | 12X1,5 | 40   | 34   | 10 | 17  | 28  |
| 810 0806010103 | 820 0806010103 | 830 0806010153 | 8X6    | 10X1   | 12X1,5 | 41   | 31,5 | 9  | 17  | 14  |
| 810 0806012153 | 820 0806012153 | 830 0806012153 | 8X6    | 12X1,5 | 12X1,5 | 41   | 34   | 10 | 17  | 17  |
| 810 0806016153 | 820 0806016153 | 830 0806016153 | 8X6    | 16X1,5 | 12X1,5 | 41   | 34   | 10 | 17  | 22  |
| 810 0806022153 | 820 0806022153 | 830 0806022153 | 8X6    | 22X1,5 | 12X1,5 | 41   | 34   | 10 | 17  | 28  |
| 810 1007012153 | 820 1007012153 | 830 1007012153 | 10X7   | 12X1,5 | 12X1,5 | 44   | 34   | 10 | 17  | 17  |
| 810 1007016153 | 820 1007016153 | 830 1007016153 | 10X7   | 16X1,5 | 12X1,5 | 44   | 34   | 10 | 17  | 22  |
| 810 1007022153 | 820 1007022153 | 830 1007022153 | 10X7   | 22X1,5 | 12X1,5 | 44   | 34   | 10 | 17  | 28  |
| 810 1008012153 | 820 1008012153 | 830 1008012153 | 10X8   | 12X1,5 | 12X1,5 | 44   | 34   | 10 | 17  | 17  |
| 810 1008016153 | 820 1008016153 | 830 1008016153 | 10X8   | 16X1,5 | 12X1,5 | 44   | 34   | 10 | 17  | 22  |
| 810 1008022153 | 820 1008022153 | 830 1008022153 | 10X8   | 22X1,5 | 12X1,5 | 44   | 34   | 10 | 17  | 28  |
| 810 1007512153 | 820 1007512153 | 830 1007512153 | 10X7,5 | 12X1,5 | 12X1,5 | 44   | 34   | 10 | 17  | 17  |
| 810 1007516153 | 820 1007516153 | 830 1007516153 | 10X7,5 | 16X1,5 | 12X1,5 | 44   | 34   | 10 | 17  | 22  |
| 810 1007522153 | 820 1007522153 | 830 1007522153 | 10X7,5 | 22X1,5 | 12X1,5 | 44   | 34   | 10 | 17  | 28  |
| 810 1209012155 | 820 1209012155 | 830 1209012155 | 12X9   | 12X1,5 | 16X1,5 | 47   | 36   | 10 | 22  | 17  |
| 810 1209016155 | 820 1209016155 | 830 1209016155 | 12X9   | 16X1,5 | 16X1,5 | 47   | 36   | 10 | 22  | 22  |
| 810 1209022155 | 820 1209022155 | 830 1209022155 | 12X9   | 22X1,5 | 16X1,5 | 47   | 36   | 10 | 22  | 28  |
| 810 1512016155 | 820 1512016155 | 830 1512016155 | 15X12  | 16X1,5 | 16X1,5 | 50,5 | 36   | 10 | 22  | 22  |
| 810 1512022155 | 820 1512022155 | 830 1512022155 | 15X12  | 22X1,5 | 16X1,5 | 50,5 | 36   | 10 | 22  | 28  |
| 810 1512022157 | 820 1512022157 | 830 1512022157 | 15X12  | 22X1,5 | 22X1,5 | 56   | 41   | 10 | 24  | 28  |
| 810 1612016155 | 820 1612016155 | 830 1612016155 | 16X12  | 16X1,5 | 16X1,5 | 50,5 | 36   | 10 | 22  | 22  |
| 810 1612022155 | 820 1612022155 | 830 1612022155 | 16X12  | 22X1,5 | 16X1,5 | 50,5 | 36   | 10 | 22  | 28  |
| 810 1612022157 | 820 1612022157 | 830 1612022157 | 16X12  | 22X1,5 | 22X1,5 | 56   | 41   | 10 | 24  | 28  |
| 810 1814016155 | 820 1814016155 | 830 1814016155 | 18X14  | 16X1,5 | 16X1,5 | 50,5 | 36   | 10 | 22  | 22  |
| 810 1814022155 | 820 1814022155 | 830 1814022155 | 18X14  | 22X1,5 | 16X1,5 | 50,5 | 36   | 10 | 22  | 28  |
| 810 1814022157 | 820 1814022157 | 830 1814022157 | 18X14  | 22X1,5 | 22X1,5 | 56   | 41   | 10 | 24  | 28  |

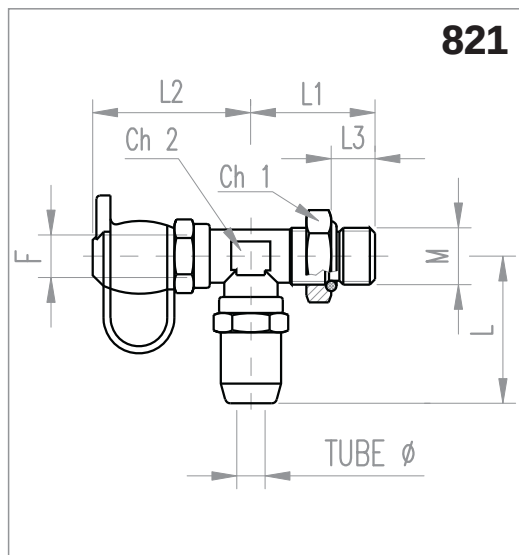
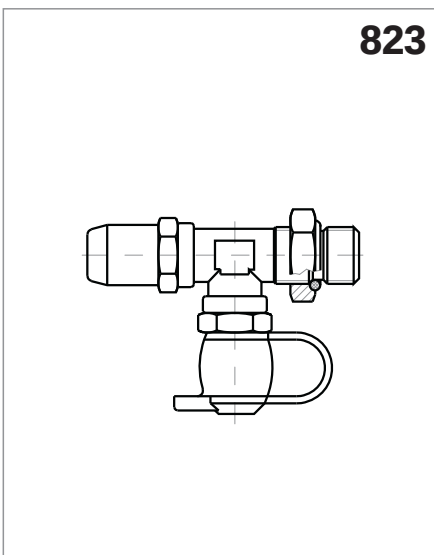
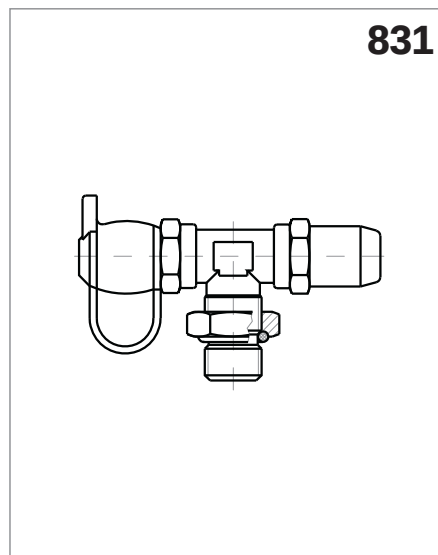




| PART NUMBER    | PART NUMBER    | TUBE ø | M      | F      | L    | L1 | L2 | Ch1 | Ch2 |
|----------------|----------------|--------|--------|--------|------|----|----|-----|-----|
| 840 0604016155 | 841 0604016155 | 6X4    | 16X1,5 | 16X1,5 | 45,5 | 36 | 10 | 22  | 22  |
|                | 841 0604022155 | 6X4    | 22X1,5 | 16X1,5 | 46   | 37 | 10 | 22  | 28  |
| 840 0604022157 |                | 6X4    | 22X1,5 | 22X1,5 | 45,5 | 39 | 10 | 24  | 28  |
| 840 0806016155 | 841 0806016155 | 8X6    | 16X1,5 | 16X1,5 | 46   | 36 | 10 | 22  | 22  |
|                | 841 0806022155 | 8X6    | 22X1,5 | 16X1,5 | 46,5 | 37 | 10 | 22  | 28  |
| 840 0806022157 |                | 8X6    | 22X1,5 | 22X1,5 | 46   | 39 | 10 | 24  | 28  |
| 840 1007016155 | 841 1007016155 | 10X7   | 16X1,5 | 16X1,5 | 49   | 36 | 10 | 22  | 22  |
|                | 841 1007022155 | 10X7   | 22X1,5 | 16X1,5 | 49,5 | 37 | 10 | 22  | 28  |
| 840 1007022157 |                | 10X7   | 22X1,5 | 22X1,5 | 49   | 39 | 10 | 24  | 28  |
| 840 1008016155 | 841 1008016155 | 10X8   | 16X1,5 | 16X1,5 | 49   | 36 | 10 | 22  | 22  |
|                | 841 1008022155 | 10X8   | 22X1,5 | 16X1,5 | 49,5 | 37 | 10 | 22  | 28  |
| 840 1008022157 |                | 10X8   | 22X1,5 | 22X1,5 | 49   | 39 | 10 | 24  | 28  |
| 840 1007516155 | 841 1007516155 | 10X7,5 | 16X1,5 | 16X1,5 | 49   | 36 | 10 | 22  | 22  |
|                | 841 1007522155 | 10X7,5 | 22X1,5 | 16X1,5 | 49,5 | 37 | 10 | 22  | 28  |
| 840 1007522157 |                | 10X7,5 | 22X1,5 | 22X1,5 | 49   | 39 | 10 | 24  | 28  |
| 840 1209016155 | 841 1209016155 | 12X9   | 16X1,5 | 16X1,5 | 50   | 36 | 10 | 22  | 22  |
|                | 841 1209022155 | 12X9   | 22X1,5 | 16X1,5 | 50   | 37 | 10 | 22  | 28  |
| 840 1209022157 |                | 12X9   | 22X1,5 | 22X1,5 | 49,5 | 39 | 10 | 24  | 28  |
| 840 1512016155 | 841 1512016155 | 15X12  | 16X1,5 | 16X1,5 | 53,5 | 36 | 10 | 22  | 22  |
|                | 841 1512022155 | 15X12  | 22X1,5 | 16X1,5 | 52   | 37 | 10 | 22  | 28  |
| 840 1512022157 |                | 15X12  | 22X1,5 | 22X1,5 | 51,5 | 39 | 10 | 24  | 28  |
| 840 1612016155 | 841 1612016155 | 16X12  | 16X1,5 | 16X1,5 | 53,5 | 36 | 10 | 22  | 22  |
|                | 841 1612022155 | 16X12  | 22X1,5 | 16X1,5 | 52   | 37 | 10 | 22  | 28  |
| 840 1612022157 |                | 16X12  | 22X1,5 | 22X1,5 | 51,5 | 39 | 10 | 24  | 28  |
| 840 1814016155 | 841 1814016155 | 18X14  | 16X1,5 | 16X1,5 | 53,5 | 36 | 10 | 22  | 22  |
|                | 841 1814022155 | 18X14  | 22X1,5 | 16X1,5 | 52   | 37 | 10 | 22  | 28  |
| 840 1814022157 |                | 18X14  | 22X1,5 | 22X1,5 | 51,5 | 39 | 10 | 24  | 28  |



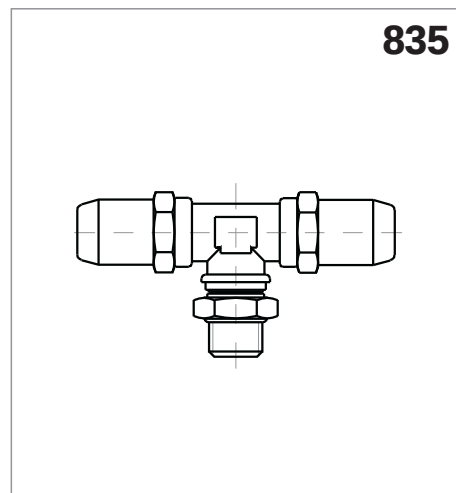
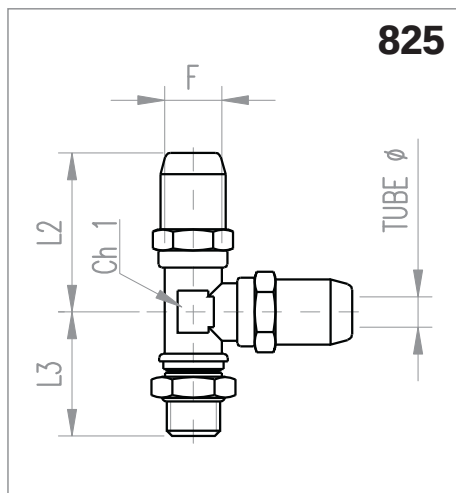
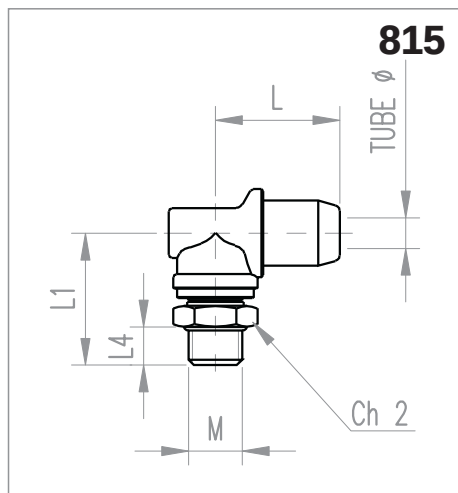
| PART NUMBER    | PART NUMBER    | TUBE Ø | M      | F      | L    | L1 | L2 | L3 | L4 | L5   | Ch1 | Ch2 |
|----------------|----------------|--------|--------|--------|------|----|----|----|----|------|-----|-----|
| 842 0604012153 |                | 6X4    | 12X1,5 | 12X1,5 | 43,5 | 37 | 10 |    |    |      | 17  |     |
| 842 0604016155 | 843 0604016155 | 6X4    | 16X1,5 | 16X1,5 | 45,5 | 36 | 10 | 35 | 38 | 36,5 | 22  | 16  |
| 842 0604022155 | 843 0604022155 | 6X4    | 22X1,5 | 16X1,5 | 46   | 37 | 10 | 35 | 38 | 36,5 | 28  | 16  |
| 842 0806012153 |                | 8X6    | 12X1,5 | 12X1,5 | 44,5 | 37 | 10 |    |    |      | 17  |     |
| 842 0806016155 | 8430806016155  | 8X6    | 16X1,5 | 16X1,5 | 46   | 36 | 10 | 35 | 38 | 37   | 22  | 16  |
| 842 0806022155 | 843 0806022155 | 8X6    | 22X1,5 | 16X1,5 | 46,5 | 37 | 10 | 35 | 38 | 37   | 28  | 16  |
| 842 1007012153 |                | 10X7   | 12X1,5 | 12X1,5 | 47,5 | 37 | 10 |    |    |      | 17  |     |
| 842 1007016155 | 843 1007016155 | 10X7   | 16X1,5 | 16X1,5 | 49   | 36 | 10 | 35 | 38 | 40   | 22  | 16  |
| 842 1007022155 | 843 1007022155 | 10X7   | 22X1,5 | 16X1,5 | 49,5 | 37 | 10 | 35 | 38 | 40   | 28  | 16  |
| 842 1008012153 |                | 10X8   | 12X1,5 | 12X1,5 | 47,5 | 37 | 10 |    |    |      | 17  |     |
| 842 1008016155 | 843 1008016155 | 10X8   | 16X1,5 | 16X1,5 | 49   | 36 | 10 | 35 | 38 | 40   | 22  | 16  |
| 842 1008022155 | 843 1008022155 | 10X8   | 22X1,5 | 16X1,5 | 49,5 | 37 | 10 | 35 | 38 | 40   | 28  | 16  |
| 842 1007512153 |                | 10X7,5 | 12X1,5 | 12X1,5 | 47,5 | 37 | 10 |    |    |      | 17  |     |
| 842 1007516155 | 843 1007516155 | 10X7,5 | 16X1,5 | 16X1,5 | 49   | 36 | 10 | 35 | 38 | 40   | 22  | 16  |
| 842 1007522155 | 843 1007522155 | 10X7,5 | 22X1,5 | 16X1,5 | 49,5 | 37 | 10 | 35 | 38 | 40   | 28  | 16  |
| 842 1209016155 | 843 1209016155 | 12X9   | 16X1,5 | 16X1,5 | 50   | 36 | 10 | 35 | 38 | 41   | 22  | 16  |
| 842 1209022155 | 843 1209022155 | 12X9   | 22X1,5 | 16X1,5 | 50   | 37 | 10 | 35 | 38 | 41   | 28  | 16  |
| 842 1512016155 | 843 1512016155 | 15X12  | 16X1,5 | 16X1,5 | 53,5 | 36 | 10 | 35 | 38 | 44,5 | 22  | 16  |
| 842 1512022155 | 843 1512022155 | 15X12  | 22X1,5 | 16X1,5 | 52   | 37 | 10 | 35 | 38 | 44,5 | 28  | 16  |
| 842 1612016155 | 843 1612016155 | 16X12  | 16X1,5 | 16X1,5 | 53,5 | 36 | 10 | 35 | 38 | 44,5 | 22  | 16  |
| 842 1612022155 | 843 1612022155 | 16X12  | 22X1,5 | 16X1,5 | 52   | 37 | 10 | 35 | 38 | 44,5 | 28  | 16  |
| 842 1814016155 | 843 1814016155 | 18X14  | 16X1,5 | 16X1,5 | 53,5 | 36 | 10 | 35 | 38 | 44,5 | 22  | 16  |
| 842 1814022155 | 843 1814022155 | 18X14  | 22X1,5 | 16X1,5 | 52   | 37 | 10 | 35 | 38 | 44,5 | 28  | 16  |


**821**

**823**

**831**


- I terminali sono ordinabili anche senza presa pressione (790); in tal caso utilizzare rispettivamente i seguenti codici:
- All the above components can also be ordered without test point (790); in this case please use the following codes respectively:
- Die obengenannten Bauteile können auch ohne Prüfanschluß (790) bestellt werden. Hierzu bitte die nachstehenden Bestellbezeichnungen einsetzen, Artikel Nr.:
- Les raccords se peuvent commander même sans prise de pression (790); en pareil ce utiliser respectivement les suivantes codes:

**822**  
**824**  
**832**

| PART NUMBER    | PART NUMBER    | PART NUMBER    | TUBE Ø | M      | F      | L    | L1 | L2   | L3 | Ch1 | Ch2 |
|----------------|----------------|----------------|--------|--------|--------|------|----|------|----|-----|-----|
| 821 0604012153 | 823 0604012153 | 831 0604012153 | 6X4    | 12X1,5 | 12X1,5 | 40   | 34 | 45,5 | 10 | 17  | 17  |
| 821 0604016153 | 823 0604016153 | 831 0604016153 | 6X4    | 16X1,5 | 12X1,5 | 40   | 34 | 45,5 | 10 | 22  | 17  |
| 821 0604022153 | 823 0604022153 | 831 0604022153 | 6X4    | 22X1,5 | 12X1,5 | 40   | 34 | 45,5 | 10 | 28  | 17  |
| 821 0806010103 | 823 0806010103 | 831 0806010103 | 8X6    | 10X1   | 12X1,5 | 41   | 34 | 45,5 | 9  | 17  | 17  |
| 821 0806012153 | 823 0806012153 | 831 0806012153 | 8X6    | 12X1,5 | 12X1,5 | 41   | 34 | 45,5 | 10 | 17  | 17  |
| 821 0806016153 | 823 0806016153 | 831 0806016153 | 8X6    | 16X1,5 | 12X1,5 | 41   | 34 | 45,5 | 10 | 22  | 17  |
| 821 0806022153 | 823 0806022153 | 831 0806022153 | 8X6    | 22X1,5 | 12X1,5 | 41   | 34 | 45,5 | 10 | 28  | 17  |
| 821 1007012153 | 823 1007012153 | 831 1007012153 | 10X7   | 12X1,5 | 12X1,5 | 44   | 34 | 45,5 | 10 | 17  | 17  |
| 821 1007016153 | 823 1007016153 | 831 1007016153 | 10X7   | 16X1,5 | 12X1,5 | 44   | 34 | 45,5 | 10 | 22  | 17  |
| 821 1007022153 | 823 1007022153 | 831 1007022153 | 10X7   | 22X1,5 | 12X1,5 | 44   | 34 | 45,5 | 10 | 28  | 17  |
| 821 1008012153 | 823 1008012153 | 831 1008012153 | 10X8   | 12X1,5 | 12X1,5 | 44   | 34 | 45,5 | 10 | 17  | 17  |
| 821 1008016153 | 823 1008016153 | 831 1008016153 | 10X8   | 16X1,5 | 12X1,5 | 44   | 34 | 45,5 | 10 | 22  | 17  |
| 821 1008022153 | 823 1008022153 | 831 1008022153 | 10X8   | 22X1,5 | 12X1,5 | 44   | 34 | 45,5 | 10 | 28  | 17  |
| 821 1007512153 | 823 1007512153 | 831 1007512153 | 10X7,5 | 12X1,5 | 12X1,5 | 44   | 34 | 45,5 | 10 | 17  | 17  |
| 821 1007516153 | 823 1007516153 | 831 1007516153 | 10X7,5 | 16X1,5 | 12X1,5 | 44   | 34 | 45,5 | 10 | 22  | 17  |
| 821 1007522153 | 823 1007522153 | 831 1007522153 | 10X7,5 | 22X1,5 | 12X1,5 | 44   | 34 | 45,5 | 10 | 28  | 17  |
| 821 1209012155 | 823 1209012155 | 831 1209012155 | 12X9   | 12X1,5 | 16X1,5 | 47   | 36 | 45,5 | 10 | 17  | 22  |
| 821 1209016155 | 823 1209016155 | 831 1209016155 | 12X9   | 16X1,5 | 16X1,5 | 47   | 36 | 45,5 | 10 | 22  | 22  |
| 821 1209022155 | 823 1209022155 | 831 1209022155 | 12X9   | 22X1,5 | 16X1,5 | 47   | 36 | 45,5 | 10 | 28  | 22  |
| 821 1512016155 | 823 1512016155 | 831 1512016155 | 15X12  | 16X1,5 | 16X1,5 | 50,5 | 36 | 45,5 | 10 | 22  | 22  |
| 821 1512022155 | 823 1512022155 | 831 1512022155 | 15X12  | 22X1,5 | 16X1,5 | 50,5 | 36 | 45,5 | 10 | 28  | 22  |
| 821 1512022157 | 823 1512022157 | 831 1512022157 | 15X12  | 22X1,5 | 22X1,5 | 56   | 41 | 52,5 | 10 | 28  | 24  |
| 821 1612016155 | 823 1612016155 | 831 1612016155 | 16X12  | 16X1,5 | 16X1,5 | 50,5 | 36 | 45,5 | 10 | 22  | 22  |
| 821 1612022155 | 823 1612022155 | 831 1612022155 | 16X12  | 22X1,5 | 16X1,5 | 50,5 | 36 | 45,5 | 10 | 28  | 22  |
| 821 1612022157 | 823 1612022157 | 831 1612022157 | 16X12  | 22X1,5 | 22X1,5 | 56   | 41 | 52,5 | 10 | 28  | 24  |
| 821 1814016155 | 823 1814016155 | 831 1814016155 | 18X14  | 16X1,5 | 16X1,5 | 50,5 | 36 | 45,5 | 10 | 22  | 22  |
| 821 1814022155 | 823 1814022155 | 831 1814022155 | 18X14  | 22X1,5 | 16X1,5 | 50,5 | 36 | 45,5 | 10 | 28  | 22  |
| 821 1814022157 | 823 1814022157 | 831 1814022157 | 18X14  | 22X1,5 | 22X1,5 | 56   | 41 | 52,5 | 10 | 28  | 24  |



- I terminali girevoli sono ordinabili anche senza il perno. In tal caso utilizzare i codici senza l'indicazione della filettatura, sostituendo ad essi una serie di O.  
ESEMPIO: 815 1209000005B anziché 815 1209016155B.
- It is possible to order the swivel studs also without the male stud. When ordering substitute thread dimension with four O.  
EG: 815 1209000005B instead of 815 1209016155B.
- Es ist ebenfalls möglich diese Verbindung ohne Einschraubstutzen zu bestellen, diese hat in der Bestell. Nr. 4 x die Zahl O.  
BEISPIEL: 815 1209000005B statt 815 1209016155B.
- Les raccords tournants se peuvent commander même sans le pivot. En pareil cas utiliser les codes sans l'indication de le filetage, en ajoutant une série de O.  
PAR EXEMPLE: 815 1209000005B au lieu de 815 1209016155B.

| PART NUMBER      | PART NUMBER     | PART NUMBER     | TUBE Ø | M      | F      | L    | L1   | L2   | L3   | L4  | Ch1 | Ch2 |
|------------------|-----------------|-----------------|--------|--------|--------|------|------|------|------|-----|-----|-----|
| 815 0604010103A  | 825 0604010103A | 835 0604010103A | 6X4    | 10X1   | 12X1,5 | 32   | 31,5 | 42,5 | 32,5 | 8   | 19  | 18  |
| 815 0604012153A  | 825 0604012153A | 835 0604012153A | 6X4    | 12X1,5 | 12X1,5 | 32   | 31,5 | 42,5 | 32,5 | 8   | 19  | 18  |
| 815 0604016153A  | 825 0604016153A | 835 0604016153A | 6X4    | 16X1,5 | 12X1,5 | 32   | 32   | 42,5 | 33   | 8,5 | 19  | 22  |
| 815 0604022153A  | 825 0604022153A | 835 0604022153A | 6X4    | 22X1,5 | 12X1,5 | 32   | 33   | 42,5 | 35   | 9   | 19  | 28  |
| 815 0806010103A  | 825 0806010103A | 835 0806010103A | 8X6    | 10X1   | 12X1,5 | 32,5 | 31,5 | 43,5 | 32,5 | 8   | 19  | 18  |
| 815 0806012153A  | 825 0806012153A | 835 0806012153A | 8X6    | 12X1,5 | 12X1,5 | 32,5 | 31,5 | 43,5 | 32,5 | 8   | 19  | 18  |
| 815 0806016153A  | 825 0806016153A | 835 0806016153A | 8X6    | 16X1,5 | 12X1,5 | 32,5 | 32   | 43,5 | 33   | 8,5 | 19  | 22  |
| 815 0806022153A  | 825 0806022153A | 835 0806022153A | 8X6    | 22X1,5 | 12X1,5 | 32,5 | 33   | 43,5 | 35   | 9   | 19  | 28  |
| 815 1007012153A  | 825 1007012153A | 835 1007012153A | 10X7   | 12X1,5 | 12X1,5 | 35,5 | 31,5 | 46,5 | 32,5 | 8   | 19  | 18  |
| 815 1007016153A  | 825 1007016153A | 835 1007016153A | 10X7   | 16X1,5 | 12X1,5 | 35,5 | 32   | 46,5 | 33   | 8,5 | 19  | 22  |
| 815 1007022153A  | 825 1007022153A | 835 1007022153A | 10X7   | 22X1,5 | 12X1,5 | 35,5 | 33   | 46,5 | 35   | 9   | 19  | 28  |
| 815 1008012153A  | 825 1008012153A | 835 1008012153A | 10X8   | 12X1,5 | 12X1,5 | 35,5 | 31,5 | 46,5 | 32,5 | 8   | 19  | 18  |
| 815 1008016153A  | 825 1008016153A | 835 1008016153A | 10X8   | 16X1,5 | 12X1,5 | 35,5 | 32   | 46,5 | 33   | 8,5 | 19  | 22  |
| 815 1008022153A  | 825 1008022153A | 835 1008022153A | 10X8   | 22X1,5 | 12X1,5 | 35,5 | 33   | 46,5 | 35   | 9   | 19  | 28  |
| 815 1007512153A  | 825 1007512153A | 835 1007512153A | 10X7,5 | 12X1,5 | 12X1,5 | 35,5 | 31,5 | 46,5 | 32,5 | 8   | 19  | 18  |
| 815 1007516153A  | 825 1007516153A | 835 1007516153A | 10X7,5 | 16X1,5 | 12X1,5 | 35,5 | 32   | 46,5 | 33   | 8,5 | 19  | 22  |
| 815 1007522153A  | 825 1007522153A | 835 1007522153A | 10X7,5 | 22X1,5 | 12X1,5 | 35,5 | 33   | 46,5 | 35   | 9   | 19  | 28  |
| 815 1209012155B  | 825 1209012155B | 835 1209012155B | 12X9   | 12X1,5 | 16X1,5 | 36   | 31,5 | 50   | 35   | 8   | 22  | 20  |
| 815 1209014155B  | 825 1209014155B | 835 1209014155B | 12X9   | 14X1,5 | 16X1,5 | 36   | 32,5 | 50   | 36   | 9   | 22  | 20  |
| 815 1209016155B  | 825 1209016155B | 835 1209016155B | 12X9   | 16X1,5 | 16X1,5 | 36   | 32   | 50   | 35,5 | 8,5 | 22  | 22  |
| 815 1209022155B  | 825 1209022155B | 835 1209022155B | 12X9   | 22X1,5 | 16X1,5 | 36   | 33   | 50   | 36,5 | 9   | 22  | 29  |
| 815 1512016155B  | 825 1512016155B | 835 1512016155B | 15X12  | 16X1,5 | 16X1,5 | 39,5 | 33,5 | 53,5 | 35,5 | 8,5 | 22  | 22  |
| 815 1512022155B  | 825 1512022155B | 835 1512022155B | 15X12  | 22X1,5 | 16X1,5 | 39,5 | 34,5 | 53,5 | 36,5 | 9   | 22  | 29  |
| 815 1612016155B  | 825 1612016155B | 835 1612016155B | 16X12  | 16X1,5 | 16X1,5 | 39,5 | 33,5 | 53,5 | 35,5 | 8,5 | 22  | 22  |
| 815 1612022155B  | 825 1612022155B | 835 1612022155B | 16X12  | 22X1,5 | 16X1,5 | 39,5 | 34,5 | 53,5 | 36,5 | 9   | 22  | 29  |
| *815 1814016155B | 825 1814016155B | 835 1814016155B | 18X14  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 53,5 | 35,5 | 8,5 | 22  | 22  |
| *815 1814022155B | 825 1814022155B | 835 1814022155B | 18X14  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 53,5 | 36,5 | 9   | 22  | 29  |

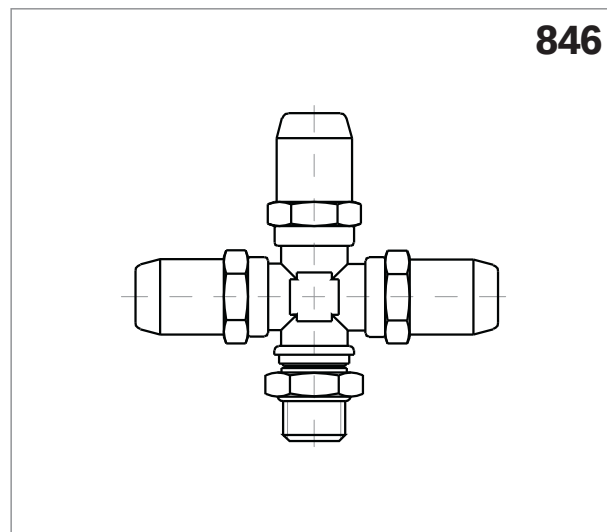
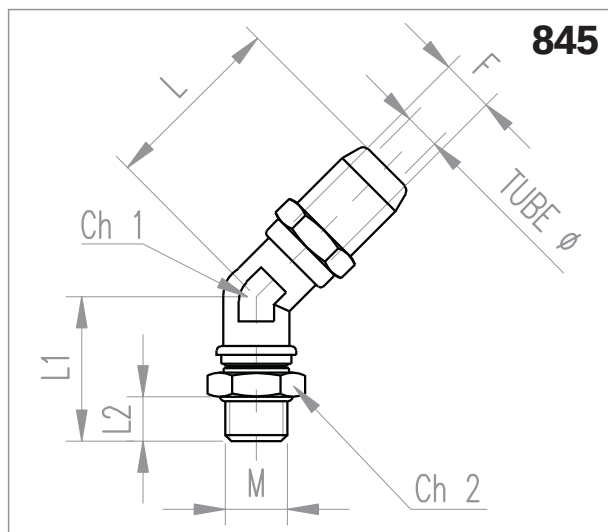
\* FORNITO IN 2 PEZZI

\* DELIVERED IN TWO PARTS

\* IN ZWEI TEILE GELIEFERT

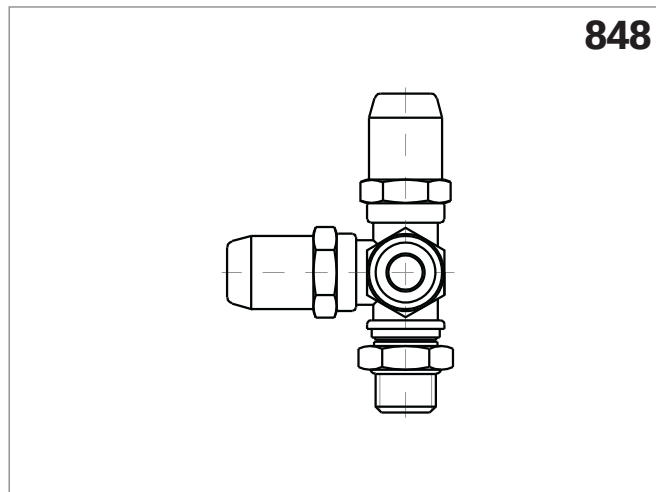
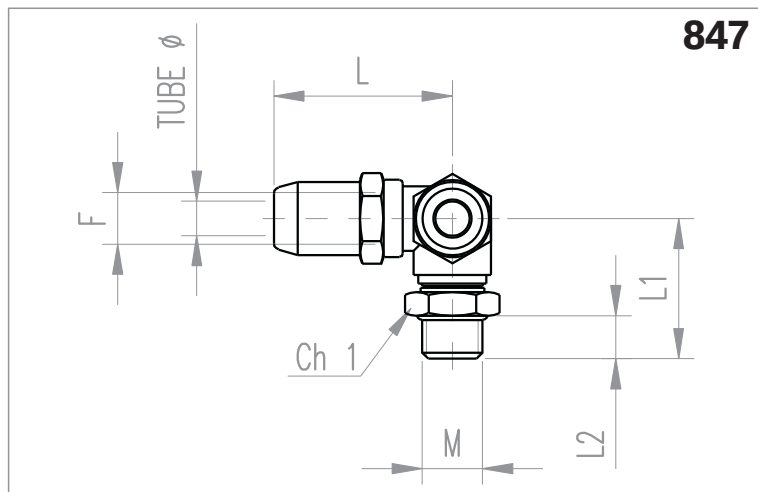
\* FOURNIS EN 2 PIECES





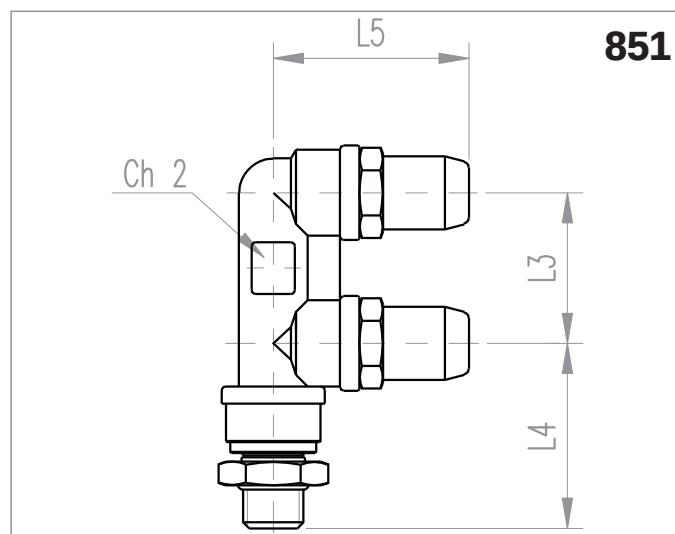
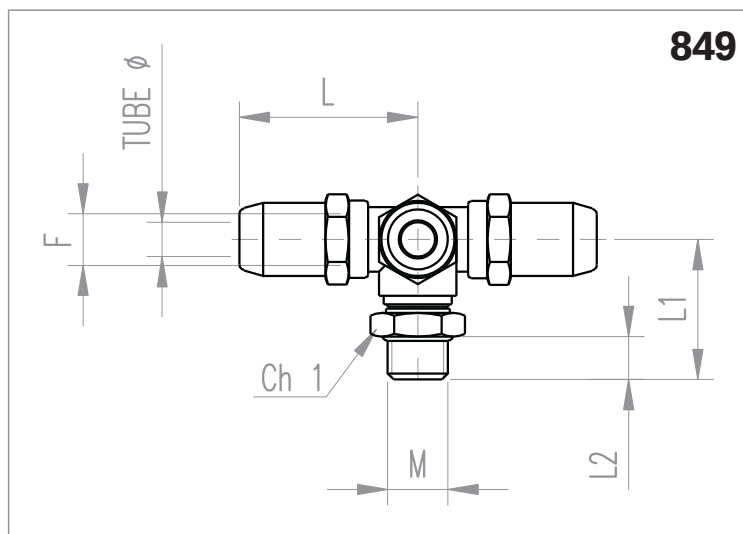
- I terminali girevoli sono ordinabili anche senza il perno. In tal caso utilizzare i codici senza l'indicazione della filettatura, sostituendo ad essi una serie di O.  
ESEMPIO: 845 1209000005B anziché 845 1209016155B.
- It is possible to order the swivel studs also without the male stud. When ordering substitute thread dimension with four O.  
EG: 845 1209000005B instead of 845 1209016155B.
- Es ist ebenfalls möglich diese Verbindung ohne Einschraubstutzen zu bestellen, diese hat in der Bestell. Nr. 4 x die Zahl O.  
BEISPIEL: 845 1209000005B statt 845 1209016155B.
- Les raccords tournants se peuvent commander même sans le pivot. En pareil cas utiliser les codes sans l'indication de le filetage, en ajoutant une série de O.  
PAR EXEMPLE: 845 1209000005B au lieu de 845 1209016155B.

| PART NUMBER     | PART NUMBER     | TUBE Ø | M      | F      | L    | L1   | L2  | Ch1 | Ch2 |
|-----------------|-----------------|--------|--------|--------|------|------|-----|-----|-----|
| 845 0604010103A | 846 0604010103A | 6X4    | 10X1   | 16X1,5 | 45   | 35   | 8   | 22  | 20  |
| 845 0604012153A | 846 0604012153A | 6X4    | 12X1,5 | 16X1,5 | 45   | 35   | 8   | 22  | 20  |
| 845 0604016153A | 846 0604016153A | 6X4    | 16X1,5 | 16X1,5 | 45   | 35,5 | 8,5 | 22  | 22  |
| 845 0604022153A | 846 0604022153A | 6X4    | 22X1,5 | 16X1,5 | 45   | 37,5 | 9   | 22  | 29  |
| 845 0806010103A | 846 0806010103A | 8X6    | 10X1   | 16X1,5 | 46   | 35   | 8   | 22  | 20  |
| 845 0806012153A | 846 0806012153A | 8X6    | 12X1,5 | 16X1,5 | 46   | 35   | 8   | 22  | 20  |
| 845 0806016153A | 846 0806016153A | 8X6    | 16X1,5 | 16X1,5 | 46   | 35,5 | 8,5 | 22  | 22  |
| 845 0806022153A | 846 0806022153A | 8X6    | 22X1,5 | 16X1,5 | 46   | 37,5 | 9   | 22  | 29  |
| 845 1007012153A | 846 1007012153A | 10X7   | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 22  | 20  |
| 845 1007016153A | 846 1007016153A | 10X7   | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 22  | 22  |
| 845 1007022153A | 846 1007022153A | 10X7   | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 22  | 29  |
| 845 1008012153A | 846 1008012153A | 10X8   | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 22  | 20  |
| 845 1008016153A | 846 1008016153A | 10X8   | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 22  | 22  |
| 845 1008022153A | 846 1008022153A | 10X8   | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 22  | 29  |
| 845 1007512153A | 846 1007512153A | 10X7,5 | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 22  | 20  |
| 845 1007516153A | 846 1007516153A | 10X7,5 | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 22  | 22  |
| 845 1007522153A | 846 1007522153A | 10X7,5 | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 22  | 29  |
| 845 1209012155B | 846 1209012155B | 12X9   | 12X1,5 | 16X1,5 | 50   | 35   | 8   | 22  | 20  |
| 845 1209016155B | 846 1209016155B | 12X9   | 16X1,5 | 16X1,5 | 50   | 35,5 | 8,5 | 22  | 22  |
| 845 1209022155B | 846 1209022155B | 12X9   | 22X1,5 | 16X1,5 | 50   | 36,5 | 9   | 22  | 29  |
| 845 1512016155B | 846 1512016155B | 15X12  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 22  | 22  |
| 845 1512022155B | 846 1512022155B | 15X12  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 22  | 29  |
| 845 1612016155B | 846 1612016155B | 16X12  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 22  | 22  |
| 845 1612022155B | 846 1612022155B | 16X12  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 22  | 29  |
| 845 1814016155B | 846 1814016155B | 18X14  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 22  | 22  |
| 845 1814022155B | 846 1814022155B | 18X14  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 22  | 29  |



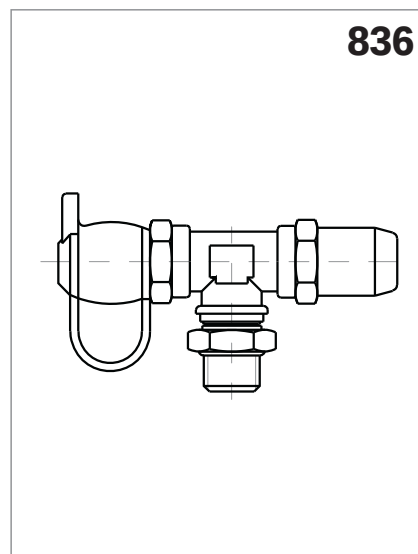
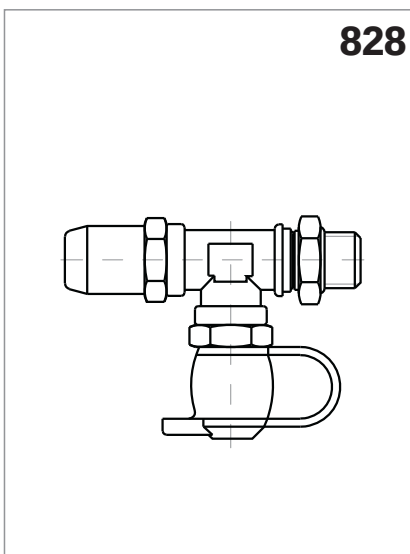
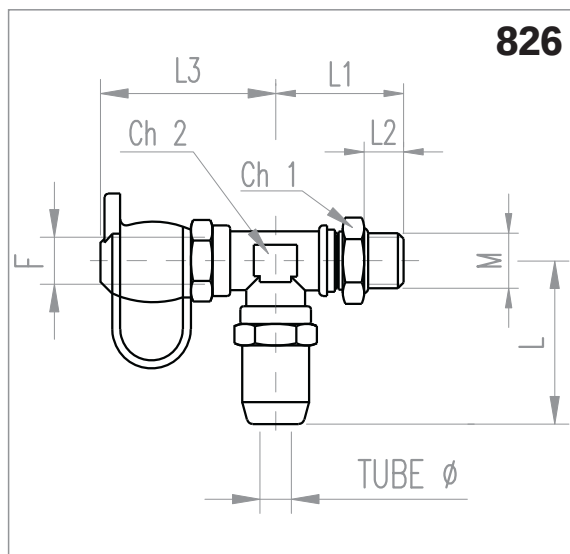
- I terminali girevoli sono ordinabili anche senza il perno. In tal caso utilizzare i codici senza l'indicazione della filettatura, sostituendo ad essi una serie di O.  
ESEMPIO: 847 1209000005B anziché 847 1209016155B.
- It is possible to order the swivel studs also without the male stud. When ordering substitute thread dimension with four O.  
EG: 847 1209000005B instead of 847 1209016155B.
- Es ist ebenfalls möglich diese Verbindung ohne Einschraubstutzen zu bestellen, diese hat in der Bestell. Nr. 4 x die Zahl O.  
BEISPIEL: 847 1209000005B statt 847 1209016155B.
- Les raccords tournants se peuvent commander même sans le pivot. En pareil cas utiliser les codes sans l'indication de le filetage, en ajoutant une série de O.  
PAR EXEMPLE: 847 1209000005B au lieu de 847 1209016155B.

| PART NUMBER     | PART NUMBER     | TUBE Ø | M      | F      | L    | L1   | L2  | Ch1 |
|-----------------|-----------------|--------|--------|--------|------|------|-----|-----|
| 847 0604010103A | 848 0604010103A | 6X4    | 10X1   | 16X1,5 | 45   | 35   | 8   | 20  |
| 847 0604012153A | 848 0604012153A | 6X4    | 12X1,5 | 16X1,5 | 45   | 35   | 8   | 20  |
| 847 0604016153A | 848 0604016153A | 6X4    | 16X1,5 | 16X1,5 | 45   | 35,5 | 8,5 | 22  |
| 847 0604022153A | 848 0604022153A | 6X4    | 22X1,5 | 16X1,5 | 45   | 37,5 | 9   | 29  |
| 847 0806010103A | 848 0806010103A | 8X6    | 10X1   | 16X1,5 | 46   | 35   | 8   | 20  |
| 847 0806012153A | 848 0806012153A | 8X6    | 12X1,5 | 16X1,5 | 46   | 35   | 8   | 20  |
| 847 0806016153A | 848 0806016153A | 8X6    | 16X1,5 | 16X1,5 | 46   | 35,5 | 8,5 | 22  |
| 847 0806022153A | 848 0806022153A | 8X6    | 22X1,5 | 16X1,5 | 46   | 37,5 | 9   | 29  |
| 847 1007012153A | 848 1007012153A | 10X7   | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 20  |
| 847 1007016153A | 848 1007016153A | 10X7   | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 22  |
| 847 1007022153A | 848 1007022153A | 10X7   | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 29  |
| 847 1008012153A | 848 1008012153A | 10X8   | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 20  |
| 847 1008016153A | 848 1008016153A | 10X8   | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 22  |
| 847 1008022153A | 848 1008022153A | 10X8   | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 29  |
| 847 1007512153A | 848 1007512153A | 10X7,5 | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 20  |
| 847 1007516153A | 848 1007516153A | 10X7,5 | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 22  |
| 847 1007522153A | 848 1007522153A | 10X7,5 | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 29  |
| 847 1209012155B | 848 1209012155B | 12X9   | 12X1,5 | 16X1,5 | 50   | 35   | 8   | 20  |
| 847 1209016155B | 848 1209016155B | 12X9   | 16X1,5 | 16X1,5 | 50   | 35,5 | 8,5 | 22  |
| 847 1209022155B | 848 1209022155B | 12X9   | 22X1,5 | 16X1,5 | 50   | 36,5 | 9   | 29  |
| 847 1512016155B | 848 1512016155B | 15X12  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 22  |
| 847 1512022155B | 848 1512022155B | 15X12  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 29  |
| 847 1612016155B | 848 1612016155B | 16X12  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 22  |
| 847 1612022155B | 848 1612022155B | 16X12  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 29  |
| 847 1814016155B | 848 1814016155B | 18X14  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 22  |
| 847 1814022155B | 848 1814022155B | 18X14  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 29  |



- I terminali girevoli sono ordinabili anche senza il perno. In tal caso utilizzare i codici senza l'indicazione della filettatura, sostituendo ad essi una serie di O.  
ESEMPIO: 849 1209000005B anziché 849 1209016155B.
- It is possible to order the swivel studs also without the male stud. When ordering substitute thread dimension with four O.  
EG: 849 1209000005B instead of 849 1209016155B.
- Es ist ebenfalls möglich diese Verbindung ohne Einschraubstutzen zu bestellen, diese hat in der Bestell. Nr. 4 x die Zahl 0.  
BEISPIEL: 849 1209000005B statt 849 1209016155B.
- Les raccords tournants se peuvent commander même sans le pivot. En pareil cas utiliser les codes sans l'indication de le filetage, en ajoutant une série de O.  
PAR EXEMPLE: 849 1209000005B au lieu de 849 1209016155B.

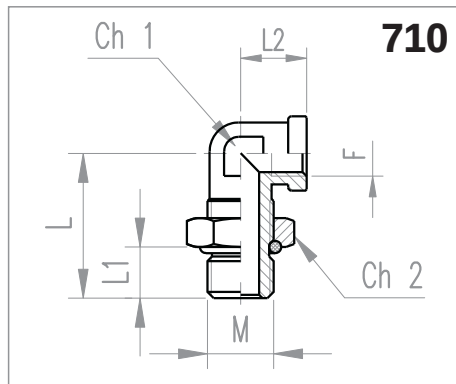
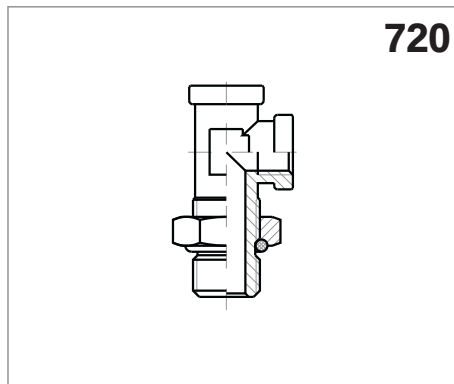
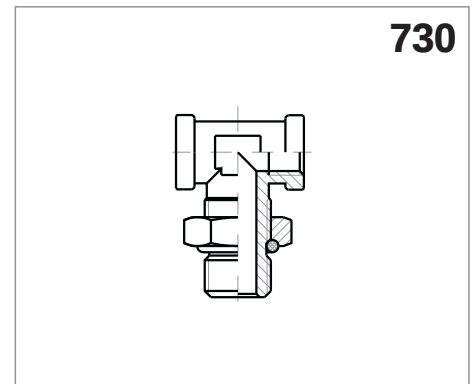
| PART NUMBER     | PART NUMBER     | TUBE Ø | M      | F      | L    | L1   | L2  | L3 | L4   | L5   | Ch1 | Ch2 |
|-----------------|-----------------|--------|--------|--------|------|------|-----|----|------|------|-----|-----|
| 849 0604010103A | 851 0604010105B | 6X4    | 10X1   | 16X1,5 | 45   | 35   | 8   | 35 | 40   | 36,5 | 20  | 16  |
| 849 0604012153A | 851 0604012155B | 6X4    | 12X1,5 | 16X1,5 | 45   | 35   | 8   | 35 | 40   | 36,5 | 20  | 16  |
| 849 0604016153A | 851 0604016155B | 6X4    | 16X1,5 | 16X1,5 | 45   | 35,5 | 8,5 | 35 | 40,5 | 36,5 | 22  | 16  |
| 849 0604022153A | 851 0604022155B | 6X4    | 22X1,5 | 16X1,5 | 45   | 37,5 | 9   | 35 | 41   | 36,5 | 29  | 16  |
| 849 0806010103A | 851 0806010105B | 8X6    | 10X1   | 16X1,5 | 46   | 35   | 8   | 35 | 40   | 37   | 20  | 16  |
| 849 0806012153A | 851 0806012155B | 8X6    | 12X1,5 | 16X1,5 | 46   | 35   | 8   | 35 | 40   | 37   | 20  | 16  |
| 849 0806016153A | 851 0806016155B | 8X6    | 16X1,5 | 16X1,5 | 46   | 35,5 | 8,5 | 35 | 40,5 | 37   | 22  | 16  |
| 849 0806022153A | 851 0806022155B | 8X6    | 22X1,5 | 16X1,5 | 46   | 37,5 | 9   | 35 | 41   | 37   | 29  | 16  |
| 849 1007012153A | 851 1007012155B | 10X7   | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 35 | 40   | 40   | 20  | 16  |
| 849 1007016153A | 851 1007016155B | 10X7   | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 35 | 40,5 | 40   | 22  | 16  |
| 849 1007022153A | 851 1007022155B | 10X7   | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 35 | 41   | 40   | 29  | 16  |
| 849 1008012153A | 851 1008012155B | 10X8   | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 35 | 40   | 40   | 20  | 16  |
| 849 1008016153A | 851 1008016155B | 10X8   | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 35 | 40,5 | 40   | 22  | 16  |
| 849 1008022153A | 851 1008022155B | 10X8   | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 35 | 41   | 40   | 29  | 16  |
| 849 1007512153A | 851 1007512155B | 10X7,5 | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 35 | 40   | 40   | 20  | 16  |
| 849 1007516153A | 851 1007516155B | 10X7,5 | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 35 | 40,5 | 40   | 22  | 16  |
| 849 1007522153A | 851 1007522155B | 10X7,5 | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 35 | 41   | 40   | 29  | 16  |
| 849 1209012155B | 851 1209012155B | 12X9   | 12X1,5 | 16X1,5 | 50   | 35   | 8   | 35 | 40   | 41   | 20  | 16  |
| 849 1209016155B | 851 1209016155B | 12X9   | 16X1,5 | 16X1,5 | 50   | 35,5 | 8,5 | 35 | 40,5 | 41   | 22  | 16  |
| 849 1209022155B | 851 1209022155B | 12X9   | 22X1,5 | 16X1,5 | 50   | 36,5 | 9   | 35 | 41   | 41   | 29  | 16  |
| 849 1512016155B | 851 1512016155B | 15X12  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 35 | 40,5 | 44,5 | 22  | 16  |
| 849 1512022155B | 851 1512022155B | 15X12  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 35 | 41   | 44,5 | 29  | 16  |
| 849 1612016155B | 851 1612016155B | 16X12  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 35 | 40,5 | 44,5 | 22  | 16  |
| 849 1612022155B | 851 1612022155B | 16X12  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 35 | 41   | 44,5 | 29  | 16  |
| 849 1814016155B | 851 1814016155B | 18X14  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 35 | 40,5 | 44,5 | 22  | 16  |
| 849 1814022155B | 851 1814022155B | 18X14  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 35 | 41   | 44,5 | 29  | 16  |



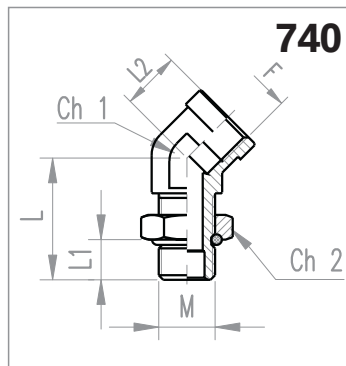
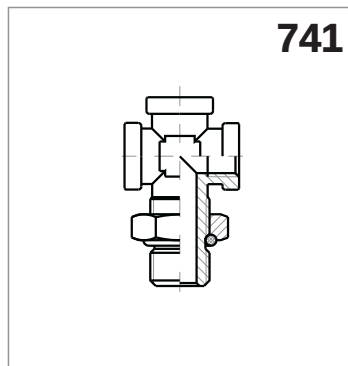
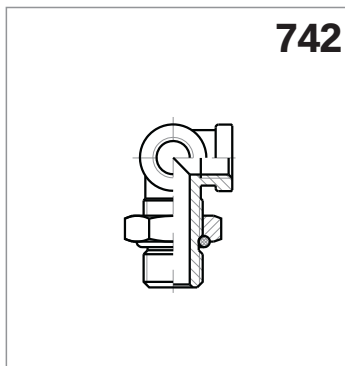
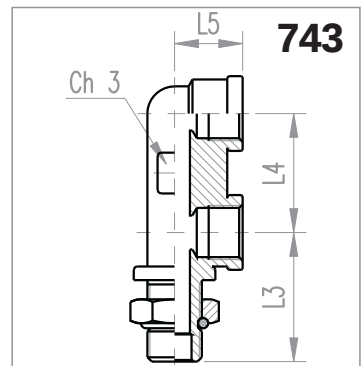
- I terminali sono ordinabili anche senza presa pressione (790); in tal caso utilizzare rispettivamente i seguenti codici:
- All the above components can also be ordered without test point (790); in this case please use the following codes respectively:
- Die obengenannten Bauteile können auch ohne Prüfanschluß (790) bestellt werden. Hierzu bitte die nachstehenden Bestellbezeichnungen einsetzen, Artikel Nr.:
- Les raccords se peuvent commander même sans prise de pression (790); en pareil cas utiliser respectivement les suivantes codes:

**827**  
**829**  
**837**

| PART NUMBER     | PART NUMBER     | PART NUMBER     | TUBE Ø | M      | F      | L    | L1   | L2  | L3   | Ch1 | Ch2 |
|-----------------|-----------------|-----------------|--------|--------|--------|------|------|-----|------|-----|-----|
| 826 0604012153A | 828 0604012153A | 836 0604012153A | 6X4    | 12X1,5 | 12X1,5 | 42,5 | 32,5 | 8   | 48   | 18  | 19  |
| 826 0604016153A | 828 0604016153A | 836 0604016153A | 6X4    | 16X1,5 | 12X1,5 | 42,5 | 33   | 8,5 | 48   | 22  | 19  |
| 826 0604022153A | 828 0604022153A | 836 0604022153A | 6X4    | 22X1,5 | 12X1,5 | 42,5 | 35   | 9   | 48   | 28  | 19  |
| 826 0806012153A | 828 0806012153A | 836 0806012153A | 8X6    | 12X1,5 | 12X1,5 | 43,5 | 32,5 | 8   | 48   | 18  | 19  |
| 826 0806016153A | 828 0806016153A | 836 0806016153A | 8X6    | 16X1,5 | 12X1,5 | 43,5 | 33   | 8,5 | 48   | 22  | 19  |
| 826 0806022153A | 828 0806022153A | 836 0806022153A | 8X6    | 22X1,5 | 12X1,5 | 43,5 | 35   | 9   | 48   | 28  | 19  |
| 826 1007012153A | 828 1007012153A | 836 1007012153A | 10X7   | 12X1,5 | 12X1,5 | 46,5 | 32,5 | 8   | 48   | 18  | 19  |
| 826 1007016153A | 828 1007016153A | 836 1007016153A | 10X7   | 16X1,5 | 12X1,5 | 46,5 | 33   | 8,5 | 48   | 22  | 19  |
| 826 1007022153A | 828 1007022153A | 836 1007022153A | 10X7   | 22X1,5 | 12X1,5 | 46,5 | 35   | 9   | 48   | 28  | 19  |
| 826 1008012153A | 828 1008012153A | 836 1008012153A | 10X8   | 12X1,5 | 12X1,5 | 46,5 | 32,5 | 8   | 48   | 18  | 19  |
| 826 1008016153A | 828 1008016153A | 836 1008016153A | 10X8   | 16X1,5 | 12X1,5 | 46,5 | 33   | 8,5 | 48   | 22  | 19  |
| 826 1008022153A | 828 1008022153A | 836 1008022153A | 10X8   | 22X1,5 | 12X1,5 | 46,5 | 35   | 9   | 48   | 28  | 19  |
| 826 1007512153A | 828 1007512153A | 836 1007512153A | 10X7,5 | 12X1,5 | 12X1,5 | 46,5 | 32,5 | 8   | 48   | 18  | 19  |
| 826 1007516153A | 828 1007516153A | 836 1007516153A | 10X7,5 | 16X1,5 | 12X1,5 | 46,5 | 33   | 8,5 | 48   | 22  | 19  |
| 826 1007522153A | 828 1007522153A | 836 1007522153A | 10X7,5 | 22X1,5 | 12X1,5 | 46,5 | 35   | 9   | 48   | 28  | 19  |
| 826 1209012155B | 828 1209012155B | 836 1209012155B | 12X9   | 12X1,5 | 16X1,5 | 50   | 35   | 8   | 48,5 | 20  | 22  |
| 826 1209016155B | 828 1209016155B | 836 1209016155B | 12X9   | 16X1,5 | 16X1,5 | 50   | 35,5 | 8,5 | 48,5 | 22  | 22  |
| 826 1209022155B | 828 1209022155B | 836 1209022155B | 12X9   | 22X1,5 | 16X1,5 | 50   | 36,5 | 9   | 48,5 | 29  | 22  |
| 826 1512016155B | 828 1512016155B | 836 1512016155B | 15X12  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 48,5 | 22  | 22  |
| 826 1512022155B | 828 1512022155B | 836 1512022155B | 15X12  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 48,5 | 29  | 22  |
| 826 1612016155B | 828 1612016155B | 836 1612016155B | 16X12  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 48,5 | 22  | 22  |
| 826 1612022155B | 828 1612022155B | 836 1612022155B | 16X12  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 48,5 | 29  | 22  |
| 826 1814016155B | 828 1814016155B | 836 1814016155B | 18X14  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 48,5 | 22  | 22  |
| 826 1814022155B | 828 1814022155B | 836 1814022155B | 18X14  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 48,5 | 29  | 22  |


**710**

**720**

**730**

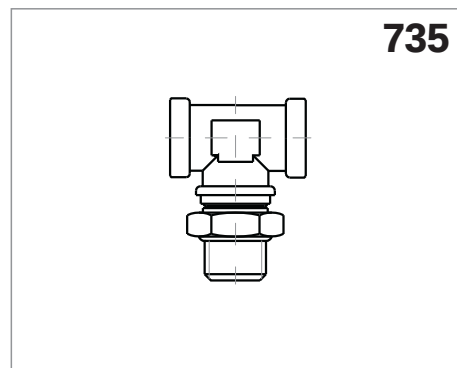
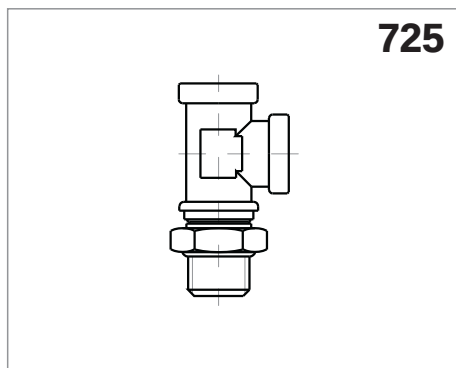
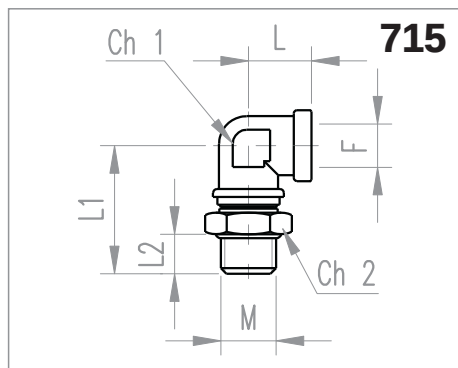

| PART NUMBER | PART NUMBER | PART NUMBER | M      | F      | L    | L1 | L2   | Ch1 | Ch2 |
|-------------|-------------|-------------|--------|--------|------|----|------|-----|-----|
|             | 720 3GK18 # |             | R 1/8  | 12X1,5 | 23   | /  | 15,5 | 17  | /   |
| 710 31010   | 720 31010   | 730 31010   | 10X1   | 12X1,5 | 31,5 | 9  | 15,5 | 17  | 14  |
| 710 31215   | 720 31215   | 730 31215   | 12X1,5 | 12X1,5 | 34   | 10 | 15,5 | 17  | 17  |
| 710 31615   | 720 31615   | 730 31615   | 16X1,5 | 12X1,5 | 34   | 10 | 15,5 | 17  | 22  |
| 710 32215   | 720 32215   | 730 32215   | 22X1,5 | 12X1,5 | 34   | 10 | 15,5 | 17  | 28  |
| 710 51215   | 720 51215   | 730 51215   | 12X1,5 | 16X1,5 | 36   | 10 | 17,5 | 22  | 17  |
| 710 51615   | 720 51615   | 730 51615   | 16X1,5 | 16X1,5 | 36   | 10 | 17,5 | 22  | 22  |
| 710 52215   | 720 52215   | 730 52215   | 22X1,5 | 16X1,5 | 36   | 10 | 17,5 | 22  | 28  |
| 710 72215   | 720 72215   | 730 72215   | 22X1,5 | 22X1,5 | 41   | 10 | 24,5 | 24  | 28  |


**740**

**741**

**742**

**743**

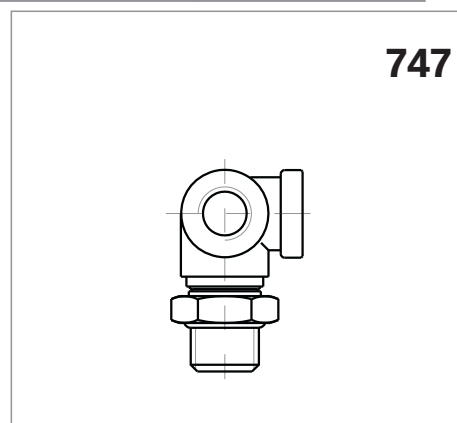
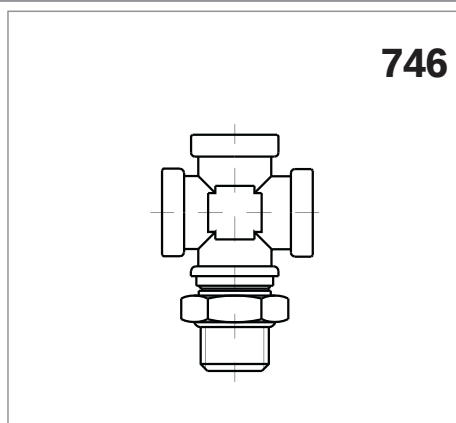
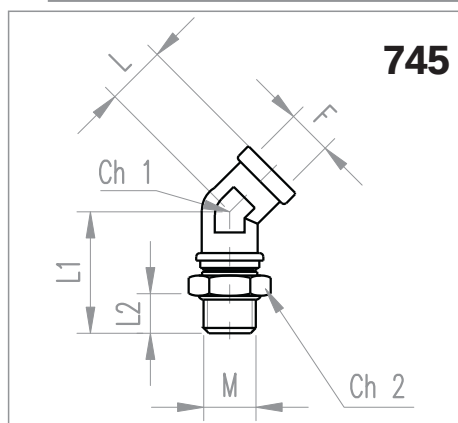

| PART NUMBER | PART NUMBER | PART NUMBER | PART NUMBER | M      | F      | L  | L1 | L2 | L3 | L4 | L5 | Ch1 | Ch2 | Ch3 |
|-------------|-------------|-------------|-------------|--------|--------|----|----|----|----|----|----|-----|-----|-----|
|             |             | 742 31215   |             | 12X1,5 | 12X1,5 | 37 | 10 | 19 |    |    |    | 22  | 17  |     |
| 740 51615   | 741 51615   | 742 51615   | 743 51615   | 16X1,5 | 16X1,5 | 37 | 10 | 19 | 38 | 35 | 20 | 22  | 22  | 16  |
|             | 741 52215   | 742 52215   | 743 52215   | 22X1,5 | 16X1,5 | 36 | 10 | 19 | 38 | 35 | 20 | 22  | 28  | 16  |
| 740 72215   |             |             |             | 22X1,5 | 22X1,5 | 39 | 10 | 20 |    |    |    | 24  | 28  |     |

# Senza ghiera e O-Ring - # Without nut and O-Ring - # Ohne Sechskantmutter und O-Ring - # Sans contré-écrou et joint- torique

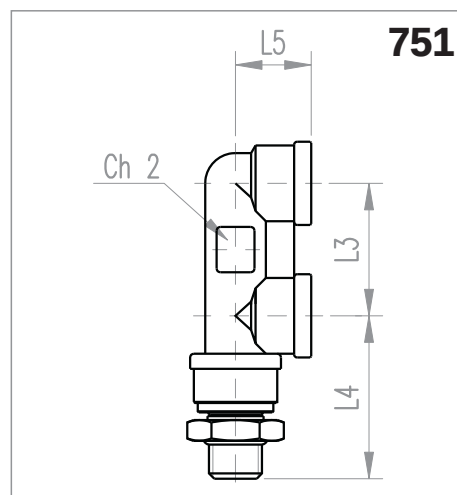
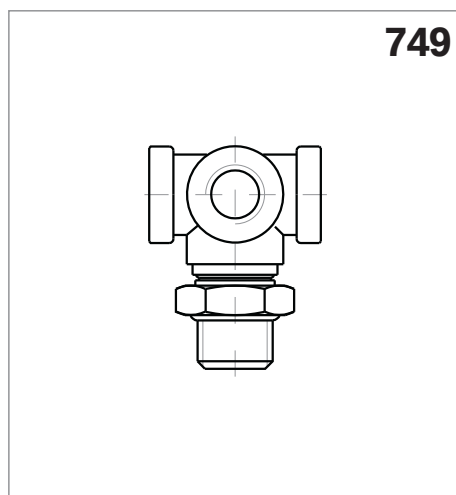
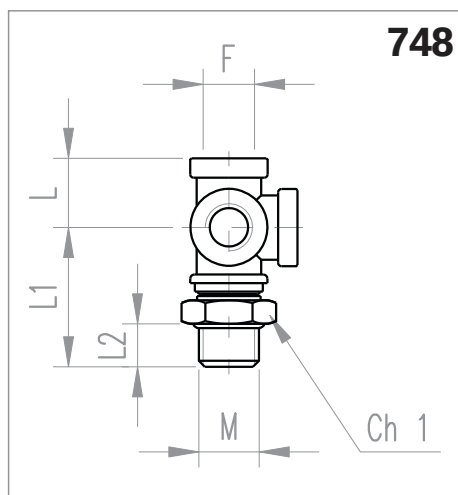




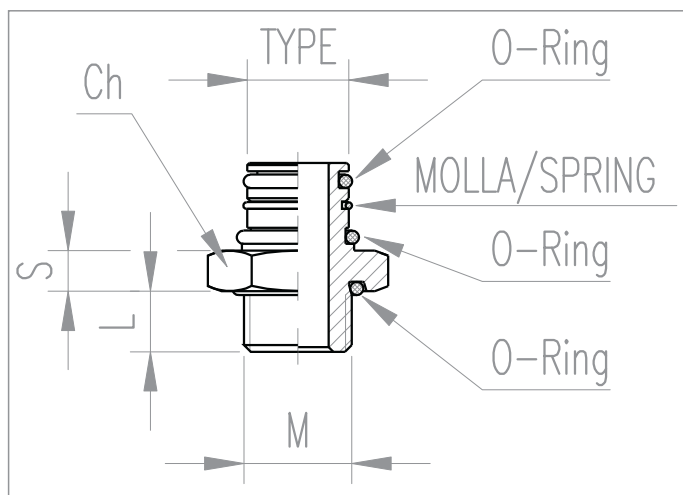
| PART NUMBER | PART NUMBER | PART NUMBER | M      | F      | L    | L1   | L2  | Ch1 | Ch2 |
|-------------|-------------|-------------|--------|--------|------|------|-----|-----|-----|
| 715 31010A  | 725 31010A  | 735 31010A  | 10X1   | 12X1,5 | 18   | 32,5 | 8   | 19  | 18  |
| 715 31215A  | 725 31215A  | 735 31215A  | 12X1,5 | 12X1,5 | 18   | 32,5 | 8   | 19  | 18  |
| 715 31415A  | 725 31415A  | 735 31415A  | 14x1,5 | 12X1,5 | 18   | 33,5 | 9   | 19  | 20  |
| 715 31615A  | 725 31615A  | 735 31615A  | 16X1,5 | 12X1,5 | 18   | 33,0 | 8,5 | 19  | 22  |
| 715 32215A  | 725 32215A  | 735 32215A  | 22X1,5 | 12X1,5 | 18   | 35   | 9   | 19  | 28  |
| 715 51010B  | 725 51010B  | 735 51010B  | 10X1   | 16X1,5 | 20,5 | 35   | 8   | 22  | 20  |
| 715 51215B  | 725 51215B  | 735 51215A  | 12X1,5 | 16X1,5 | 20,5 | 35   | 8   | 22  | 20  |
| 715 51415B  | 725 51415B  | 735 51415A  | 14X1,5 | 16X1,5 | 20,5 | 36   | 9   | 22  | 20  |
| 715 51615B  | 725 51615B  | 735 51615A  | 16X1,5 | 16X1,5 | 20,5 | 35,5 | 8,5 | 22  | 22  |
| 715 52215B  | 725 52215B  | 735 52215A  | 22X1,5 | 16X1,5 | 20,5 | 36,5 | 9   | 22  | 29  |



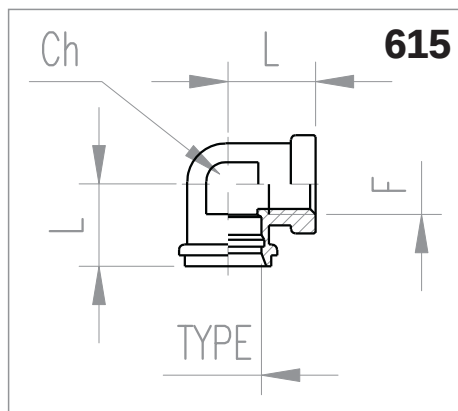
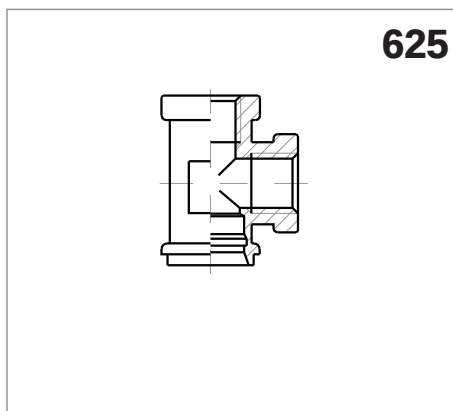
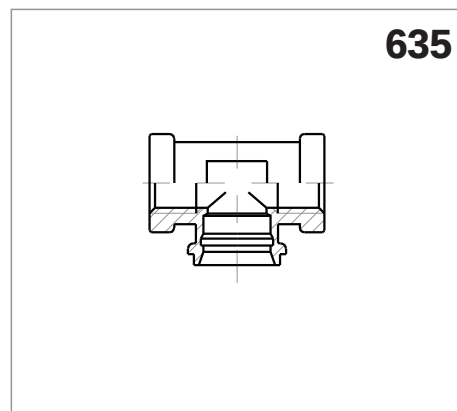
| PART NUMBER | PART NUMBER | PART NUMBER | M      | F      | L    | L1   | L2  | Ch2 |
|-------------|-------------|-------------|--------|--------|------|------|-----|-----|
| 745 51010B  | 746 51010B  | 747 51010B  | 10X1   | 16X1,5 | 20,5 | 35   | 8   | 20  |
| 745 51215B  | 746 51215B  | 747 51215B  | 12X1,5 | 16X1,5 | 20,5 | 35   | 8   | 20  |
| 745 51415B  | 746 51415B  | 747 51415B  | 14X1,5 | 16X1,5 | 20,5 | 36   | 9   | 20  |
| 745 51615B  | 746 51615B  | 747 51615B  | 16X1,5 | 16X1,5 | 20,5 | 35,5 | 8,5 | 22  |
| 745 52215B  | 746 52215B  | 747 52215B  | 22X1,5 | 16X1,5 | 20,5 | 36,5 | 9   | 28  |



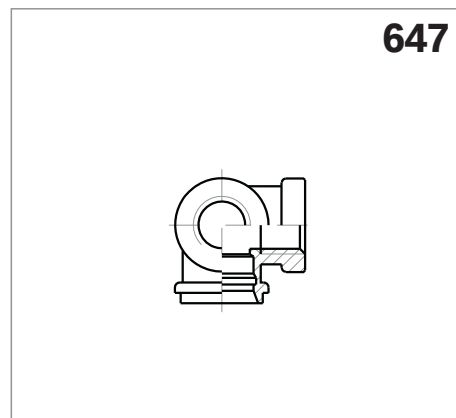
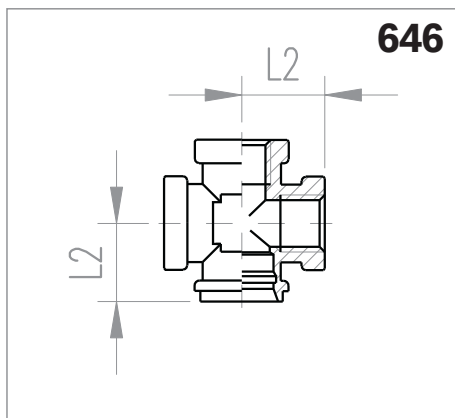
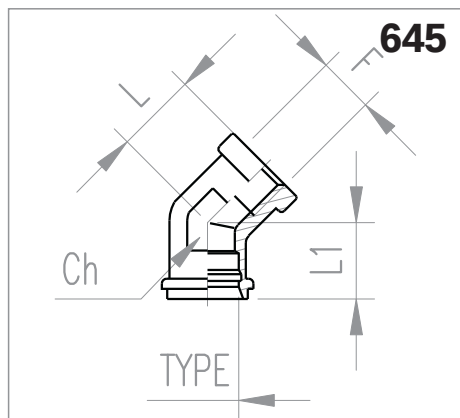
| PART NUMBER | PART NUMBER | PART NUMBER | M      | F      | L    | L1   | L2  | L3 | L4   | L5 | Ch1 | Ch2 |
|-------------|-------------|-------------|--------|--------|------|------|-----|----|------|----|-----|-----|
| 748 51010B  | 749 51010B  | 751 51010B  | 10X1   | 16X1,5 | 20,5 | 35   | 8   | 35 | 40   | 20 | 20  | 16  |
| 748 51215B  | 749 51215B  | 751 51215B  | 12X1,5 | 16X1,5 | 20,5 | 35   | 8   | 35 | 40   | 20 | 20  | 16  |
| 748 51415B  | 749 51415B  | 751 51415B  | 14X1,5 | 16X1,5 | 20,5 | 36   | 9   | 35 | 41   | 20 | 20  | 16  |
| 748 51615B  | 749 51615B  | 751 51615B  | 16X1,5 | 16X1,5 | 20,5 | 35,5 | 8,5 | 35 | 40,5 | 20 | 22  | 16  |
| 748 52215B  | 749 52215B  | 751 52215B  | 22X1,5 | 16X1,5 | 20,5 | 36,5 | 9   | 35 | 41,5 | 20 | 28  | 16  |


**660**
**INNESTO**  
**SWIVEL STUD**  
**SCHNELLANSCHLUSSSTUTZEN**  
**EMBASE**

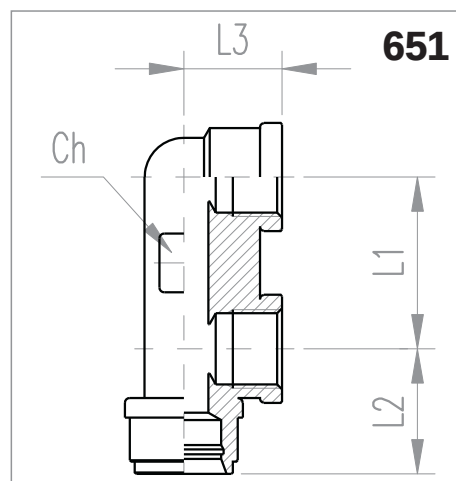
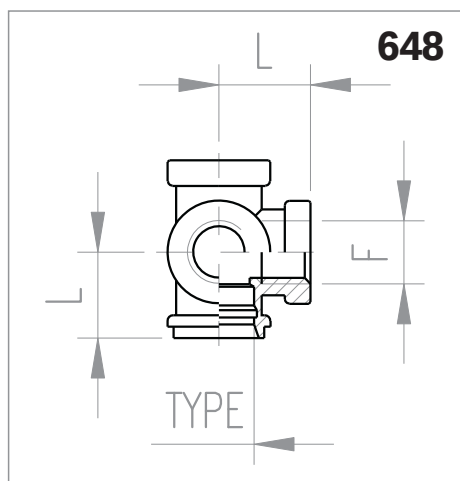

| PART NUMBER | TYPE | M       | L   | S   | Ch |
|-------------|------|---------|-----|-----|----|
| 660 GC18A   | A    | 1/8 GAS | 6   | 5,5 | 18 |
| 660 GC14A   |      | 1/4 GAS | 6   | 5,5 | 20 |
| 660 1010A   |      | 10X1    | 8   | 5,5 | 18 |
| 660 1210A   |      | 12X1    | 8   | 5,5 | 18 |
| 660 1212A   |      | 12X1,25 | 8   | 5,5 | 18 |
| 660 1215A   |      | 12X1,5  | 8   | 5,5 | 18 |
| 660 1415A   |      | 14X1,5  | 9   | 5,5 | 20 |
| 660 1615A   |      | 16X1,5  | 8,5 | 5,5 | 22 |
| 660 2215A   |      | 22X1,5  | 9   | 7   | 28 |
| 660 GC14B   |      | 1/4 GAS | 6   | 5,5 | 20 |
| 660 GC18B   | B    | 1/8 GAS | 7   | 5,5 | 20 |
| 660 GK14B   |      | 1/4 NPT | 13  | 5,5 | 20 |
| 660 1010B   |      | 10X1    | 8   | 5,5 | 20 |
| 660 1215B   |      | 12X1,5  | 8   | 5,5 | 20 |
| 660 1415B   |      | 14X1,5  | 9   | 5,5 | 20 |
| 660 1615B   |      | 16X1,5  | 8,5 | 5,5 | 22 |
| 660 1815B   |      | 18X1,5  | 9   | 5,5 | 24 |
| 660 2215B   |      | 22X1,5  | 9   | 6   | 29 |
| 660 2615B   |      | 26X1,5  | 10  | 7   | 32 |


**615**

**625**

**635**

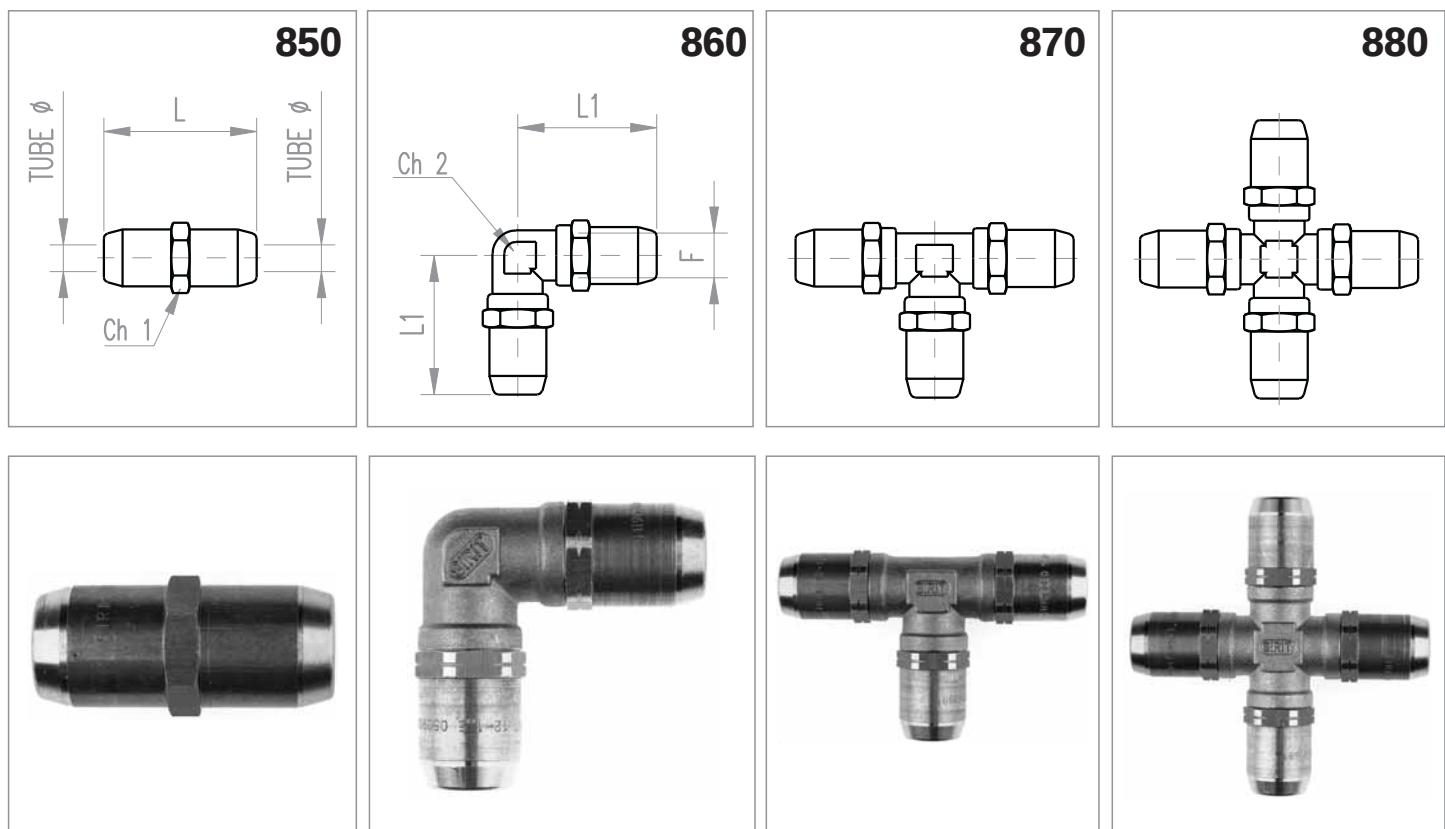

| PART NUMBER | PART NUMBER | PART NUMBER | TYPE | F      | L    | Ch |
|-------------|-------------|-------------|------|--------|------|----|
| 615 3A      | 625 3A      | 635 3A      | A    | 12X1,5 | 18   | 19 |
| 615 5B      | 625 5B      | 635 5B      | B    | 16X1,5 | 20,5 | 22 |



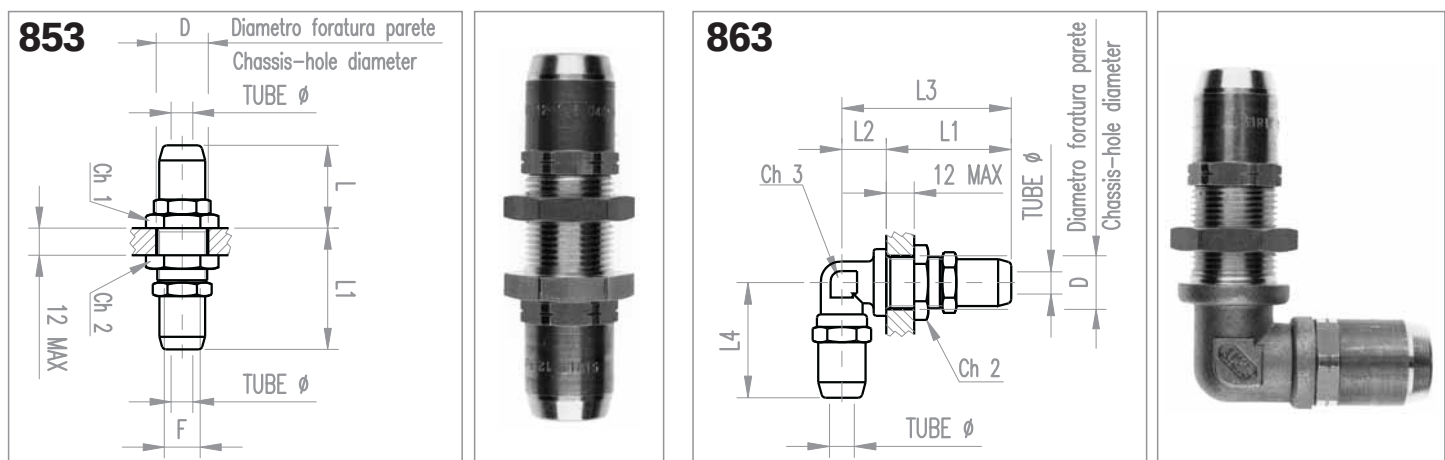
| PART NUMBER | PART NUMBER | PART NUMBER | TYPE | Ch | F      | L    | L1   | L2   |
|-------------|-------------|-------------|------|----|--------|------|------|------|
| 645 5B      | 646 5B      | 647 5B      | B    | 22 | 16X1,5 | 20,5 | 17,5 | 14,5 |



| PART NUMBER | PART NUMBER | PART NUMBER | TYPE | Ch | F      | L    | L1 | L2   | L3 |
|-------------|-------------|-------------|------|----|--------|------|----|------|----|
| 648 5B      | 649 5B      | 651 5B      | B    | 16 | 16X1,5 | 20,5 | 35 | 25,5 | 20 |

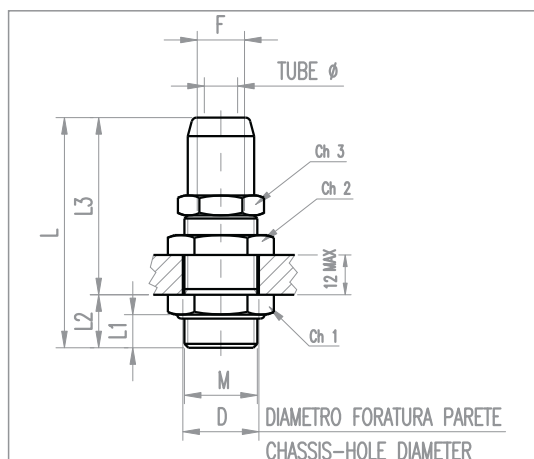


| PART NUMBER | PART NUMBER | PART NUMBER | PART NUMBER | TUBE Ø | F      | L  | L1   | Ch1 | Ch2 |
|-------------|-------------|-------------|-------------|--------|--------|----|------|-----|-----|
| 850 060403  | 860 060403  | 870 060403  | 880 060403  | 6X4    | 12X1,5 | 44 | 42,5 | 18  | 19  |
| 850 080603  | 860 080603  | 870 080603  | 880 080603  | 8X6    | 12X1,5 | 45 | 43,5 | 18  | 19  |
| 850 090603  | 860 090603  | 870 090603  | 880 090603  | 9X6    | 12X1,5 | 45 | 43,5 | 18  | 19  |
| 850 100703  | 860 100703  | 870 100703  | 880 100703  | 10X7   | 12X1,5 | 51 | 46,5 | 20  | 19  |
| 850 100803  | 860 100803  | 870 100803  | 880 100803  | 10X8   | 12X1,5 | 51 | 46,5 | 20  | 19  |
| 850 100753  | 860 100753  | 870 100753  | 880 100753  | 10X7,5 | 12X1,5 | 51 | 46,5 | 20  | 19  |
| 850 110803  | 860 110803  | 870 110803  | 880 110803  | 11X8   | 12X1,5 | 51 | 46,5 | 20  | 19  |
| 850 120905  | 860 120905  | 870 120905  | 880 120905  | 12X9   | 16X1,5 | 53 | 50   | 22  | 22  |
| 850 151205  | 860 151205  | 870 151205  | 880 151205  | 15X12  | 16X1,5 | 58 | 53,5 | 28  | 22  |
| 850 161205  | 860 161205  | 870 161205  | 880 161205  | 16X12  | 16X1,5 | 58 | 53,5 | 28  | 22  |
| 850 181405  | 860 181405  | 870 181405  | 880 181405  | 18X14  | 16X1,5 | 58 | 53,5 | 30  | 22  |

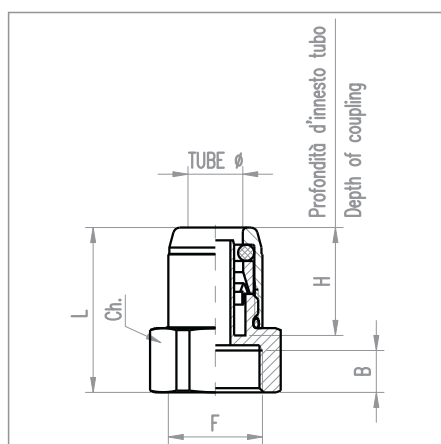


| PART NUMBER | PART NUMBER | TUBE Ø | F      | D  | L    | L1   | L2 | L3   | L4   | Ch1 | Ch2 | Ch3 |
|-------------|-------------|--------|--------|----|------|------|----|------|------|-----|-----|-----|
| 853 060403  | 863 060403  | 6X4    | 12X1,5 | 19 | 30,5 | 44,5 | 14 | 58,5 | 40   | 22  | 24  | 17  |
| 853 080603  | 863 080603  | 8X6    | 12X1,5 | 19 | 31,5 | 45,5 | 14 | 59,5 | 41   | 22  | 24  | 17  |
| 853 100703  | 863 100703  | 10X7   | 12X1,5 | 19 | 34,5 | 48,5 | 14 | 62,5 | 44   | 22  | 24  | 17  |
| 853 100803  | 863 100803  | 10X8   | 12X1,5 | 19 | 34,5 | 48,5 | 14 | 62,5 | 44   | 22  | 24  | 17  |
| 853 100753  | 863 100753  | 10X7,5 | 12X1,5 | 19 | 34,5 | 48,5 | 14 | 62,5 | 44   | 22  | 24  | 17  |
| 853 120905  | 863 120905  | 12X9   | 16X1,5 | 23 | 35,5 | 53,5 | 20 | 73,5 | 50   | 28  | 28  | 22  |
| 853 151205  | 863 151205  | 15X12  | 16X1,5 | 23 | 39   | 57   | 20 | 77   | 53,5 | 28  | 28  | 22  |
| 853 161205  | 863 161205  | 16X12  | 16X1,5 | 23 | 39   | 57   | 20 | 77   | 53,5 | 28  | 28  | 22  |
| 853 181405  | 863 181405  | 18X14  | 16X1,5 | 23 | 39   | 57   | 20 | 77   | 53,5 | 28  | 28  | 22  |





| PART NUMBER    | TUBE Ø | M      | F      | D  | L    | L1  | L2 | L3   | Ch1 | Ch2 | Ch3 |
|----------------|--------|--------|--------|----|------|-----|----|------|-----|-----|-----|
| 803 0806016153 | 8X6    | 16X1,5 | 12X1,5 | 19 | 60,5 | 9   | 15 | 45,5 | 22  | 24  | 18  |
| 803 0806022153 | 8X6    | 22X1,5 | 12X1,5 | 19 | 60,5 | 9   | 15 | 45,5 | 28  | 24  | 18  |
| 803 1007016153 | 10X7   | 16X1,5 | 12X1,5 | 19 | 63,5 | 9   | 15 | 48,5 | 22  | 24  | 20  |
| 803 1007022153 | 10X7   | 22X1,5 | 12X1,5 | 19 | 63,5 | 9   | 15 | 48,5 | 28  | 24  | 20  |
| 803 1008016153 | 10X8   | 16X1,5 | 12X1,5 | 19 | 63,5 | 9   | 15 | 48,5 | 22  | 24  | 20  |
| 803 1008022153 | 10X8   | 22X1,5 | 12X1,5 | 19 | 63,5 | 9   | 15 | 48,5 | 28  | 24  | 20  |
| 803 1007516153 | 10X7,5 | 16X1,5 | 12X1,5 | 19 | 63,5 | 9   | 15 | 48,5 | 22  | 24  | 20  |
| 803 1007522153 | 10X7,5 | 22X1,5 | 12X1,5 | 19 | 63,5 | 9   | 15 | 48,5 | 28  | 24  | 20  |
| 803 1209016155 | 12X9   | 16X1,5 | 16X1,5 | 23 | 69,5 | 8,5 | 16 | 53,5 | 28  | 28  | 22  |
| 803 1209022155 | 12X9   | 22X1,5 | 16X1,5 | 23 | 68,5 | 9   | 15 | 53,5 | 28  | 28  | 22  |
| 803 1512016155 | 15X12  | 16X1,5 | 16X1,5 | 23 | 73   | 8,5 | 16 | 57   | 28  | 28  | 28  |
| 803 1512022155 | 15X12  | 22X1,5 | 16X1,5 | 23 | 72   | 9   | 15 | 57   | 28  | 28  | 28  |
| 803 1612016155 | 16X12  | 16X1,5 | 16X1,5 | 23 | 73   | 8,5 | 16 | 57   | 28  | 28  | 28  |
| 803 1612022155 | 16X12  | 22X1,5 | 16X1,5 | 23 | 72   | 9   | 15 | 57   | 28  | 28  | 28  |

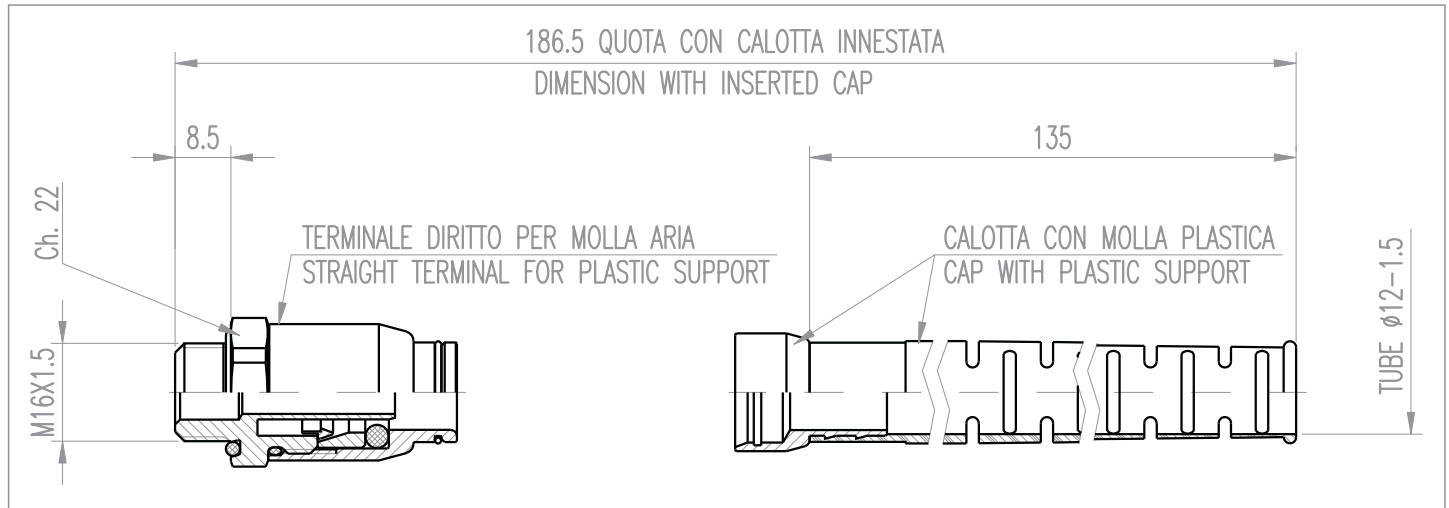
**TERMINALI FEMMINA  
 STRAIGHT FEMALE TERMINALS  
 GERADE AUFSCHRAUBSTECKVERBINDUNGEN  
 RACCORDS FEMELLE**


| PART NUMBER   | TUBE Ø | F      | L    | B  | H    | Ch |
|---------------|--------|--------|------|----|------|----|
| 808 060401215 | 6X4    | 12X1,5 | 33,5 | 10 | 19,8 | 18 |
| 808 060401615 | 6X4    | 16X1,5 | 33,5 | 10 | 19,8 | 22 |
| 808 080601215 | 8X6    | 12X1,5 | 34   | 10 | 20,5 | 18 |
| 808 080601615 | 8X6    | 16X1,5 | 34   | 10 | 20,5 | 22 |
| 808 100701215 | 10X7   | 12X1,5 | 38   | 10 | 24   | 20 |
| 808 100701615 | 10X7   | 16X1,5 | 38   | 10 | 24   | 22 |
| 808 100801215 | 10X8   | 12X1,5 | 38   | 10 | 24   | 20 |
| 808 100801615 | 10X8   | 16X1,5 | 38   | 10 | 24   | 22 |
| 808 100751215 | 10X7,5 | 12X1,5 | 38   | 10 | 24   | 20 |
| 808 100751615 | 10X7,5 | 16X1,5 | 38   | 10 | 24   | 22 |
| 808 120901215 | 12X9   | 12X1,5 | 38,5 | 10 | 25   | 22 |
| 808 120901615 | 12X9   | 16X1,5 | 38,5 | 10 | 25   | 22 |
| 808 120902215 | 12X9   | 22X1,5 | 39,5 | 11 | 25   | 28 |
| 808 151201615 | 15X12  | 16X1,5 | 41,5 | 10 | 27   | 28 |
| 808 151202215 | 15X12  | 22X1,5 | 41,5 | 11 | 27   | 28 |
| 808 161201615 | 16X12  | 16X1,5 | 41,5 | 10 | 27   | 28 |
| 808 161202215 | 16X12  | 22X1,5 | 41,5 | 11 | 27   | 28 |
| 808 181401615 | 18X14  | 16X1,5 | 41,5 | 10 | 27   | 30 |
| 808 181402215 | 18X14  | 22X1,5 | 41,5 | 11 | 27   | 30 |

- A seconda della disponibilità i particolari possono venire forniti con raccordo maschio assemblato su manicotto femmina.
- According to the stock availability the parts can be delivered with the male fitting assembled on a female adaptor.
- Nach der Verfügbarkeit können wir Artikel in zwei Teile liefern: Eine Einschraubverschraubung mit einer Ausschraubmuffen.
- Selon disponibilité les pieces peuvent être fournis avec raccords mâle assemblé sur mancon femelle.

**TERMINALE DIRITTO CON MOLLA PLASTICA PER RINFORZO TUBO**  
**STRAIGHT TERMINAL WITH PLASTIC SUPPORT FOR TUBINGS**  
**GERADE EINSCHRAUBSTECKVERBINDUNG MIT KUNSTSTOFFFEDER FÜR**  
**DIE STÜTZE DES ROHRES**  
**RACCORD DROIT AVEC RESSORT PLASTIQUE POUR TUBE**

**800 120901615M**



**I ISTRUZIONI DI MONTAGGIO PER TERMINALE DIRITTO CON MOLLA PLASTICA**

- Inserire il tubo aria all'interno della calotta con molla plastica montata.
- Innestare il tubo aria all'interno del terminale diritto come indicato nelle istruzioni di montaggio a pag. A10.
- Innestare la calotta sull'estremità del terminale diritto.

**APPLICAZIONI**

- Spirali aria • Giunto di accoppiamento • Cilindro di frenatura

**GB ASSEMBLY INSTRUCTIONS FOR STRAIGHT TERMINALS WITH PLASTIC SUPPORT**

- Insert the tube through the cap with the plastic support.
- Insert the tube in the straight terminal as stated in the assembly instructions on page A10.
- Insert the cap with plastic support on the upper side of the straight terminal.

**APPLICATIONS**

- Air brake coils • Palm couplings • Brake chambers

**D MONTAGE-ANLEITUNG FÜR GERADE EINSCHRAUBSTECKVERBINDUNG MIT KUNSTSTOFFFEDER**

- Stecken Sie das Rohr in die Kappe mit der montierten Kunststofffeder ein.
- Stecken Sie das Rohr in die Einschraubsteckverbindung ein, wie in der Montage-Anleitung auf Seite A10 gezeigt ist.
- Stecken Sie die Kappe mit der Kunststofffederung auf das Ende der Einschraubsteckverbindung.

**ANWENDUNGEN**

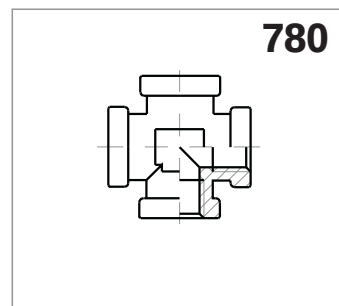
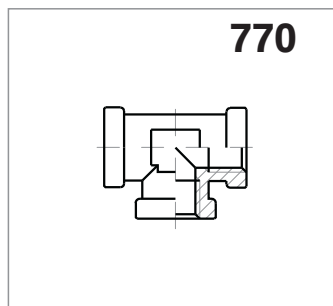
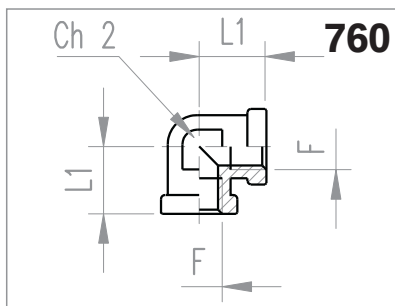
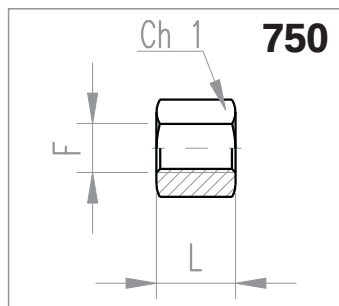
- Luftbremswendel • Kupplungsköpfe • Bremszylinder

**FR MODE D'EMPLOI POUR RACCORD DROIT AVEC RESSORT PLASTIQUE**

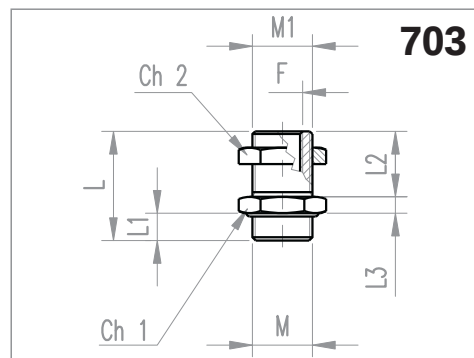
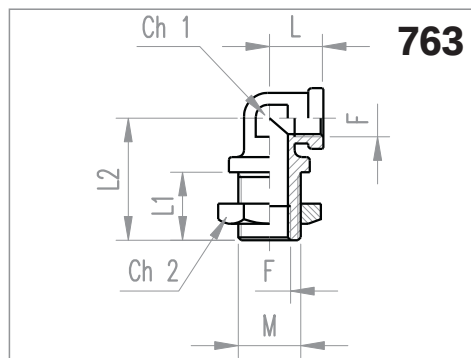
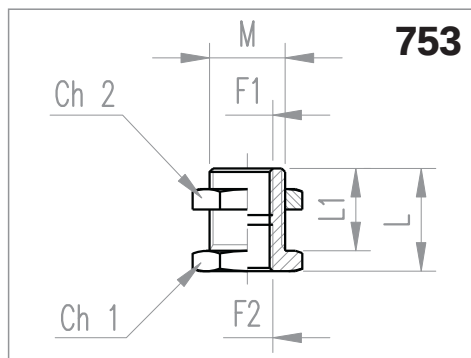
- Insérer le tube air à l'intérieur du chapeau avec ressort plastique assemblé.
- Emmancher le tube air à l'intérieur de raccord droit comme indiqué dans le mode d'emploi à pag. A10
- Emmancher le chapeau au bout du raccord droit.

**APPLICATIONS**

- Spirales air-Joint de accouplement-Cylindre de freinage.



| PART NUMBER | PART NUMBER | PART NUMBER | PART NUMBER | F      | L  | L1   | Ch1 | Ch2 |
|-------------|-------------|-------------|-------------|--------|----|------|-----|-----|
| 750 2       |             |             |             | 10X1   | 22 |      | 18  |     |
| 750 3       | 760 3       | 770 3       | 780 3       | 12X1,5 | 22 | 18   | 18  | 19  |
| 750 5       | 760 5       | 770 5       | 780 5       | 16X1,5 | 22 | 20,5 | 22  | 22  |
| 750 7       | 760 7       | 770 7       |             | 22X1,5 | 26 | 27,5 | 28  | 16  |



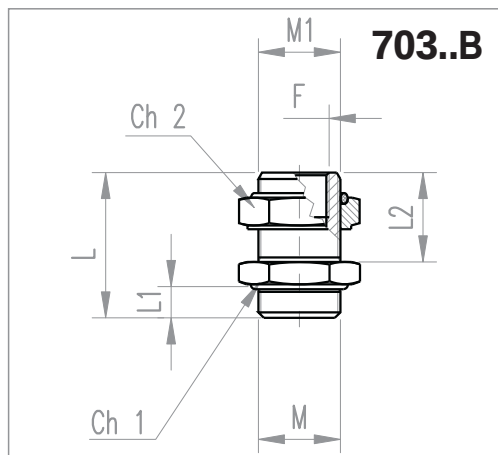
- CON GHIERA 698 / WITH LOCKNUT 698 / MIT SECHSKAKTMUTTER 698 / AVEC CONTRE-ECROU 698
- SENZA GHIERA 698 / WITHOUT LOCKNUT 698 / OHNE SECHSKANTMUTTER 698 / SANS CONTRE-ECROU 698

**753 763 703**  
**653 663 603**

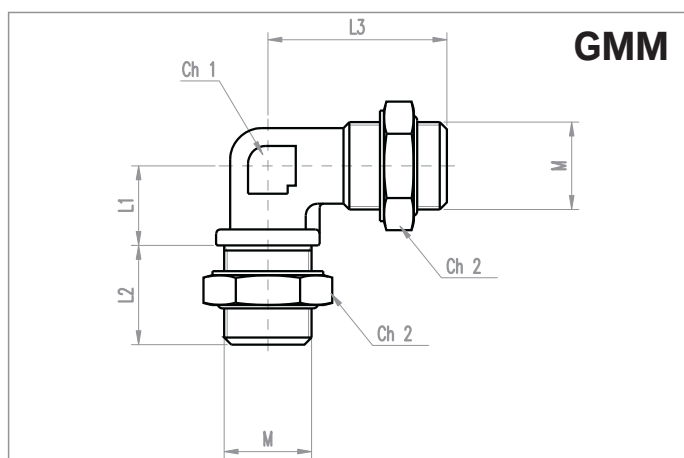
| PART NUMBER | M      | F1     | F2     | L  | L1 | Ch1 | Ch2 |
|-------------|--------|--------|--------|----|----|-----|-----|
| 753 3GC14   | 18X1,5 | 12X1,5 | G 1/4" | 37 | 20 | 24  | 24  |
| 753 5GC18   | 22X1,5 | 16X1,5 | G 1/8" | 30 | 24 | 28  | 28  |
| 753 3       | 18X1,5 | 12X1,5 | 12X1,5 | 26 | 20 | 22  | 24  |
| 753 5       | 22X1,5 | 16X1,5 | 16X1,5 | 30 | 24 | 28  | 28  |
| 753 7       | 28X1,5 | 22X1,5 | 22X1,5 | 31 | 24 | 32  | 36  |

| PART NUMBER | M      | F      | L    | L1 | L2 | Ch1 | Ch2 |
|-------------|--------|--------|------|----|----|-----|-----|
| 763 3       | 18X1,5 | 12X1,5 | 15,5 | 20 | 34 | 17  | 24  |
| 763 5       | 22X1,5 | 16X1,5 | 20,5 | 24 | 44 | 22  | 28  |

| PART NUMBER    | M      | M1     | F      | L    | L1  | L2 | L3  | Ch1 | Ch2 |
|----------------|--------|--------|--------|------|-----|----|-----|-----|-----|
| 703 21615      | 16X1,5 | 16X1,5 | 10x1   | 34   | 8,5 | 20 | 6   | 22  | 22  |
| 703 22215      | 22X1,5 | 16X1,5 | 10x1   | 35   | 9   | 20 | 6   | 28  | 22  |
| 703 31215      | 12X1,5 | 18X1,5 | 12X1,5 | 36,8 | 9   | 20 | 6   | 22  | 24  |
| 703 31615      | 16X1,5 | 18X1,5 | 12X1,5 | 35   | 9   | 20 | 6   | 22  | 24  |
| 703 32215      | 22X1,5 | 18X1,5 | 12X1,5 | 35   | 9   | 20 | 6   | 28  | 24  |
| 703 51215      | 12X1,5 | 22X1,5 | 16X1,5 | 41   | 9   | 24 | 6   | 28  | 28  |
| 703 51615      | 16X1,5 | 22X1,5 | 16X1,5 | 40   | 8,5 | 24 | 7,5 | 28  | 28  |
| 703 52215      | 22X1,5 | 22X1,5 | 16X1,5 | 39   | 9   | 24 | 6   | 28  | 28  |
| 703 52615      | 26X1,5 | 22X1,5 | 16X1,5 | 41   | 10  | 24 | 6   | 32  | 28  |
| 703 72215      | 22X1,5 | 28X1,5 | 22X1,5 | 43   | 10  | 24 | 6   | 32  | 36  |
| 703 516150PZ01 | 16X1,5 | 22X1,5 | 16X1,5 | 57   | 9   | 24 | 24  | 28  | 28  |

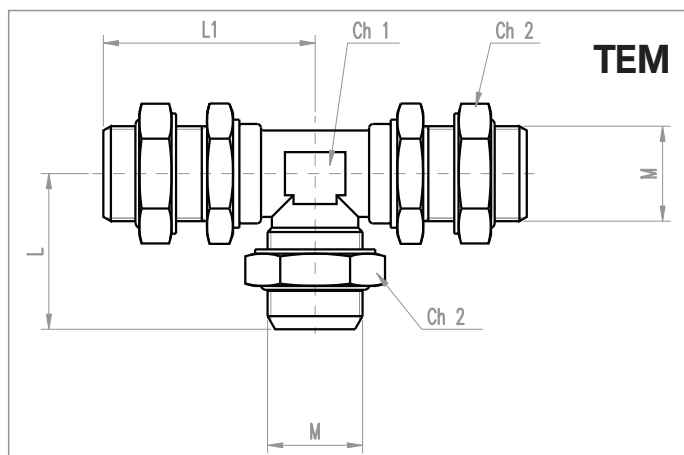


| PART NUMBER | M      | M1     | F      | L  | L1  | L2 | Ch1 | Ch2 |
|-------------|--------|--------|--------|----|-----|----|-----|-----|
| 703 21615B  | 16X1,5 | 16X1,5 | 10x1   | 34 | 8,5 | 20 | 22  | 22  |
| 703 51615B  | 16X1,5 | 22X1,5 | 16X1,5 | 40 | 8,5 | 24 | 28  | 28  |
| 703 52215B  | 22X1,5 | 22X1,5 | 16X1,5 | 41 | 9   | 24 | 28  | 28  |



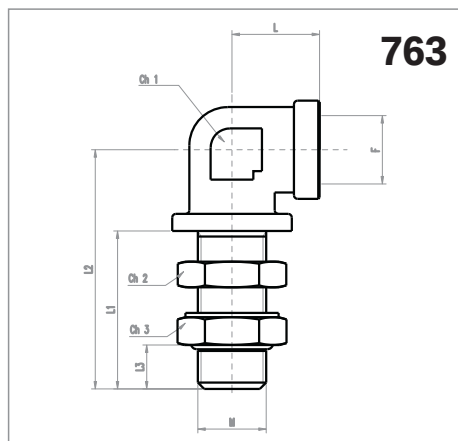
| PART NUMBER   | M      | L1 | L2 | L3 | D  | Ch1 | Ch2 |
|---------------|--------|----|----|----|----|-----|-----|
| GMM 22215LOCA | 22X1,5 | 20 | 25 | 45 | 12 | 19  | 28  |

- É possible ordinar il giunto con solo le ghiere senza O-ring, in questo caso il codice in caso d'ordine sarà GMM 22215LOX.
- It is possible to order the union with only the nuts without O-ring, when ordering the part number in GMM 22215LOX.
- Es ist ebenfalls möglich diese Verschraubung nur mit den Sechskantmuttern ohne O-Ring zu bestellen. Die Bestell. Nr. ist GMM 22215LOX.
- Il est possible commander le joint avec seulement le contre-ecrou sans O-ring, dans ce cas là le code serait GMM 22215LOX.

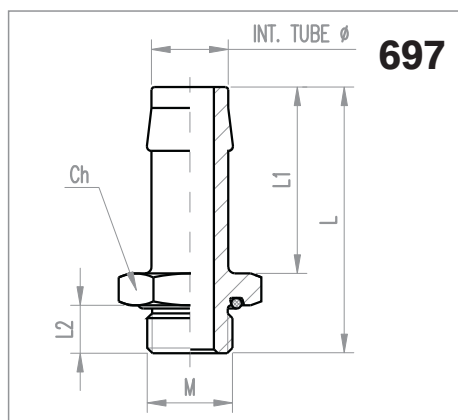


| PART NUMBER   | M      | L  | L1 | D  | Ch1 | Ch2 |
|---------------|--------|----|----|----|-----|-----|
| TEM 22215LOCA | 22X1,5 | 42 | 49 | 12 | 19  | 28  |

- É possible ordinar il giunto con solo le ghiere senza O-ring, in questo caso il codice in caso d'ordine sarà TEM 22215LOX.
- It is possible to order the union with only the nuts without O-ring, when ordering the part number in TEM 22215LOX.
- Es ist ebenfalls möglich diese Verschraubung nur mit den Sechskantmuttern ohne O-Ring zu bestellen. Die Bestell. Nr. ist TEM 22215LOX.
- Il est possible commander l'union avec seulement le contre-ecrou sans O-ring, dans ce cas là le code serait TEM 22215LOX.

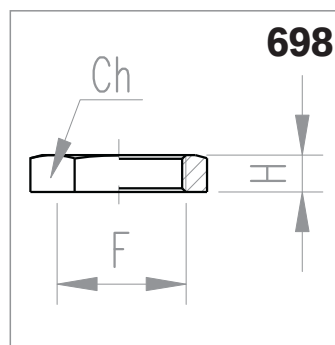
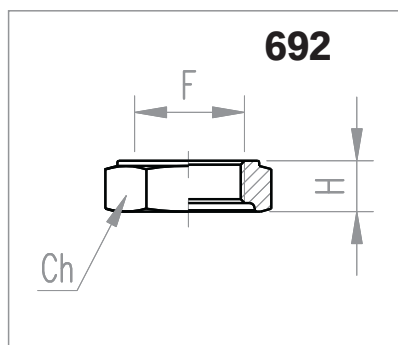


| PART NUMBER | M      | F      | L    | L1 | L2 | L3 | Ch1 | Ch2 | Ch3 |
|-------------|--------|--------|------|----|----|----|-----|-----|-----|
| 763 30PG01  | 12X1,5 | 12X1,5 | 20,5 | 37 | 51 | 10 | 22  | 17  | 17  |
| 763 50PG01  | 16X1,5 | 16X1,5 | 20,5 | 37 | 56 | 10 | 22  | 22  | 22  |

**PORTAGOMMA**  
**HOSETAILS**  
**EINSCHRAUBBARER SCHLAUCHSTUTZEN**  
**EMBOUT**


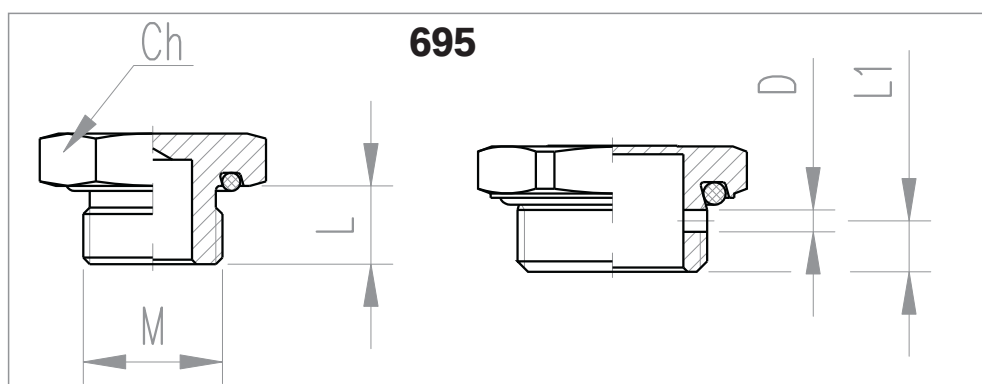
| PART NUMBER | TUBE Ø | M      | L    | L1 | L2  | Ch |
|-------------|--------|--------|------|----|-----|----|
| 697 1001615 | 10     | 16X1,5 | 46,5 | 32 | 9   | 22 |
| 697 1002215 | 10     | 22X1,5 | 48   | 32 | 10  | 28 |
| 697 1101215 | 11     | 12X1,5 | 46,5 | 32 | 9   | 18 |
| 697 1101615 | 11     | 16X1,5 | 46,5 | 32 | 9   | 22 |
| 697 1102215 | 11     | 22X1,5 | 48   | 32 | 10  | 28 |
| 697 1301615 | 13     | 16X1,5 | 54,5 | 38 | 8,5 | 22 |
| 697 1302215 | 13     | 22X1,5 | 51   | 35 | 10  | 28 |
| 697 1451615 | 14,5   | 16X1,5 | 49,5 | 35 | 9   | 22 |
| 697 1452215 | 14,5   | 22X1,5 | 51   | 35 | 10  | 28 |



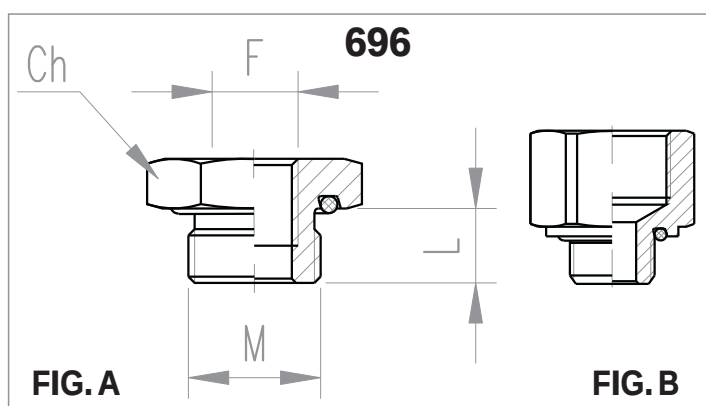


| PART NUMBER<br>WITHOUT O-RING | F      | H   | Ch | PART NUMBER<br>WITH O-RING | PART NUMBER<br>O-RING |
|-------------------------------|--------|-----|----|----------------------------|-----------------------|
| 692 1010                      | 10X1   | 6,5 | 14 | 692 1010OR                 | OR 0800200N           |
| 692 1215                      | 12X1,5 | 7,5 | 17 | 692 1215OR                 | OR 0900300N           |
| 692 1415                      | 14X1,5 | 7,5 | 20 | 692 1415OR                 | OR 1400200N           |
| 692 1615                      | 16X1,5 | 7,5 | 22 | 692 1615OR                 | OR 1300300N           |
| 692 2215                      | 22X1,5 | 8,5 | 28 | 692 2215OR                 | OR 1900300N           |

| PART NUMBER | F      | H | Ch |
|-------------|--------|---|----|
| 698 1215    | 12X1,5 | 6 | 17 |
| 698 1415    | 14X1,5 | 6 | 19 |
| 698 1615    | 16X1,5 | 6 | 22 |
| 698 1815    | 18x1,5 | 6 | 24 |
| 698 2215    | 22x1,5 | 6 | 28 |
| 698 2615    | 26X1,5 | 6 | 32 |
| 698 2815    | 28x1,5 | 8 | 36 |



| PART NUMBER  | M      | L   | L1  | D   | Ch |
|--------------|--------|-----|-----|-----|----|
| *695 1010    | 10X1   | 9   | /   | /   | 16 |
| 695 1215     | 12x1,5 | 9   | /   | /   | 18 |
| 695 1615     | 16x1,5 | 8,5 | /   | /   | 22 |
| 695 2215     | 22x1,5 | 8,5 | /   | /   | 28 |
| 695 2215HX01 | 22x1,5 | 8,5 | 5,9 | 2,5 | 28 |

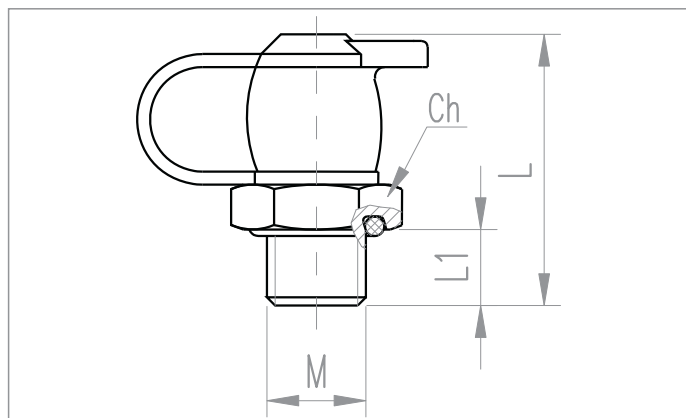


| PART NUMBER | M      | F      | L   | Ch | FIG. |
|-------------|--------|--------|-----|----|------|
| 696 31215   | 12X1,5 | 12x1,5 | 9   | 17 | B    |
| 696 31615   | 16x1,5 | 12x1,5 | 9   | 22 | A    |
| 696 32215   | 22x1,5 | 12x1,5 | 8,5 | 28 | A    |
| 696 52215   | 22x1,5 | 16x1,5 | 8,5 | 28 | A    |
| 696 71615   | 16x1,5 | 22X1,5 | 9   | 28 | B    |
| *696 31010  | 10X1   | 12X1,5 | 8   | 17 | B    |
| *696 51215  | 12X1,5 | 16X1,5 | 12  | 22 | B    |
| *696 51415  | 14X1,5 | 16X1,5 | 12  | 22 | B    |
| *696 71215  | 12X1,5 | 22X1,5 | 12  | 30 | B    |

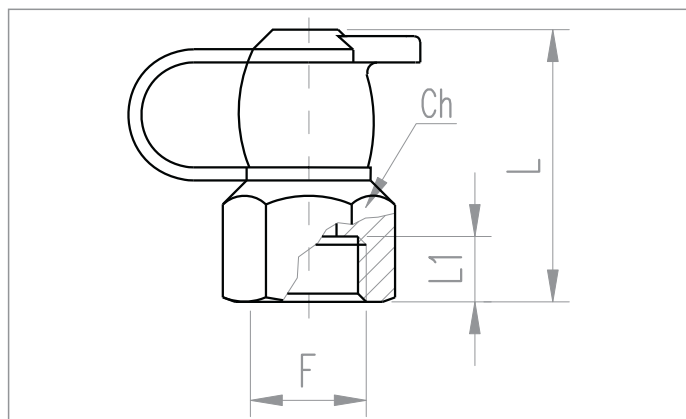


\* A seconda della disponibilità i particolari possono essere forniti in ottone o in acciaio con o senza O-Ring.  
 \* According to the stock availability the parts can be delivered in brass or steel with or without o-ring.  
 \* Nach der Verfügbarkeit koennen Artikel aus Messing oder Stahl, mit oder ohne O-ring geliefert werden.  
 \* Selon disponibilité les pieces peuvent être fournis en laiton ou en acier avec ou sans joint-torque.

• SI DIFFIDA DALL'UTILIZZARE PARTICOLARI DI RICAMBIO NON ORIGINALI.  
 • YOU ARE ADVISE NOT TO USE NON-GENUINE SPARE PARTS.  
 • WIR EMPFEHLEN IHNEN DEN EINSATZ VON ERSATZTEILEN IN ERSTAUSRÜSTERQUALITÄT.  
 • NE PAS UTILISER PARTICULIERS DE RECARGE NON ORIGINALS.



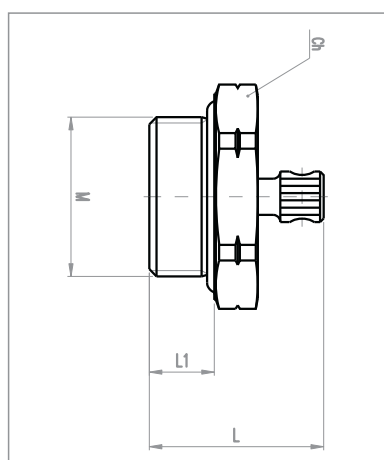
| PART NUMBER | M      | Ch | L  | L1 |
|-------------|--------|----|----|----|
| 790 1215    | 12X1,5 | 18 | 39 | 9  |
| 790 1615    | 16X1,5 | 22 | 37 | 9  |
| 790 2215    | 22X1,5 | 28 | 37 | 9  |



| PART NUMBER | F      | Ch | L  | L1   |
|-------------|--------|----|----|------|
| VFF 1215    | 12X1,5 | 17 | 39 | 10   |
| VFF 1615    | 16X1,5 | 22 | 45 | 10,8 |
| VFF 1815    | 18X1,5 | 24 | 47 | 10,5 |
| VFF 2215    | 22X1,5 | 27 | 45 | 11   |

**VALVOLA DI SPURGO CONDENSA  
DRAIN VALVE  
ABLAßVENTIL  
VALVE DE PURGE**

**VSM**



**VSM 2215**



**VSM 2215A**

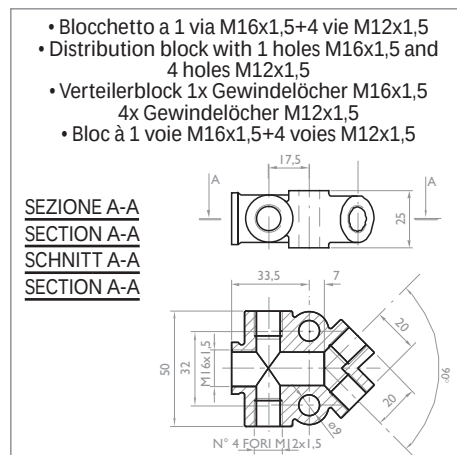
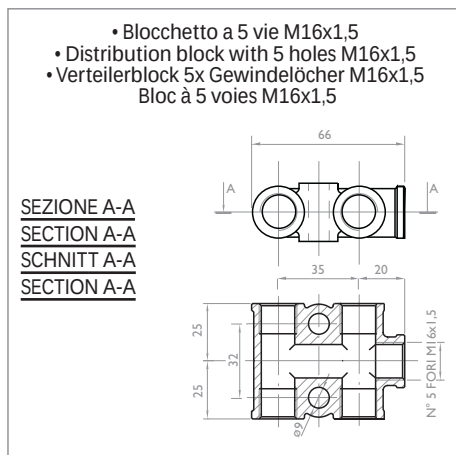
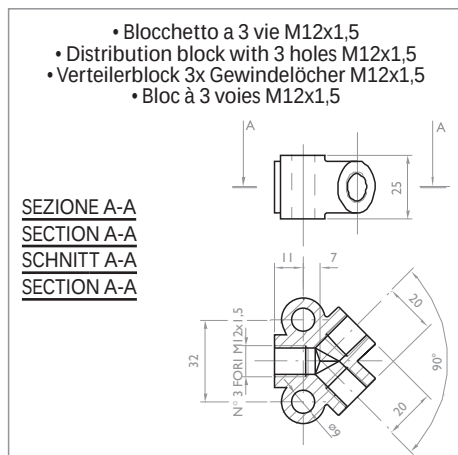


| PART NUMBER | M      | Ch | L  | L1 |
|-------------|--------|----|----|----|
| VSM 2215A   | 22X1,5 | 27 | 27 | 12 |
| VSM 2215    | 22X1,5 | 27 | 27 | 12 |

- SENZA ANELLO DI MANOVRA
- WITHOUT PULL RING
- OHNE ZIEH-RING
- SANS ANNEAU

- CON ANELLO DI MANOVRA
- WITH PULL RING
- MIT ZIEH-RING
- AVEC ANNEAU

**BLOCCHETTI DI DISTRIBUZIONE**  
**DISTRIBUTION BLOCKS**  
**VERTEILERBLÖCKE FÜR SIRIT-SYSTEM**  
**BLOCS DE DISTRIBUTION**

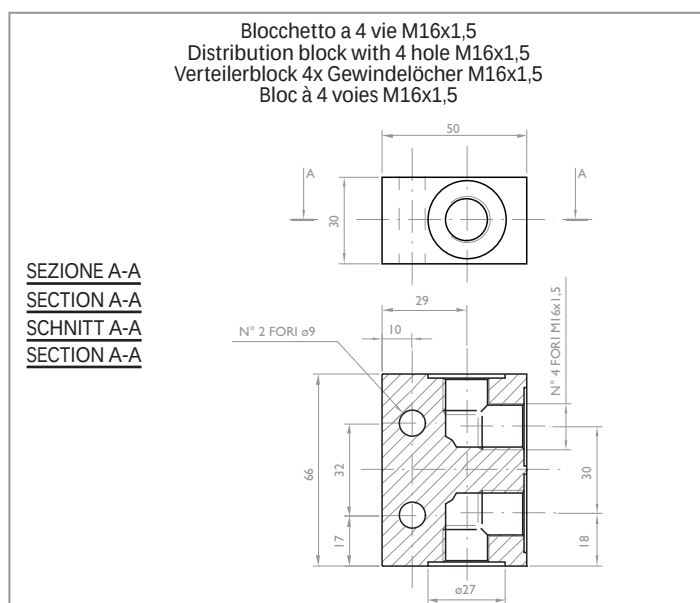
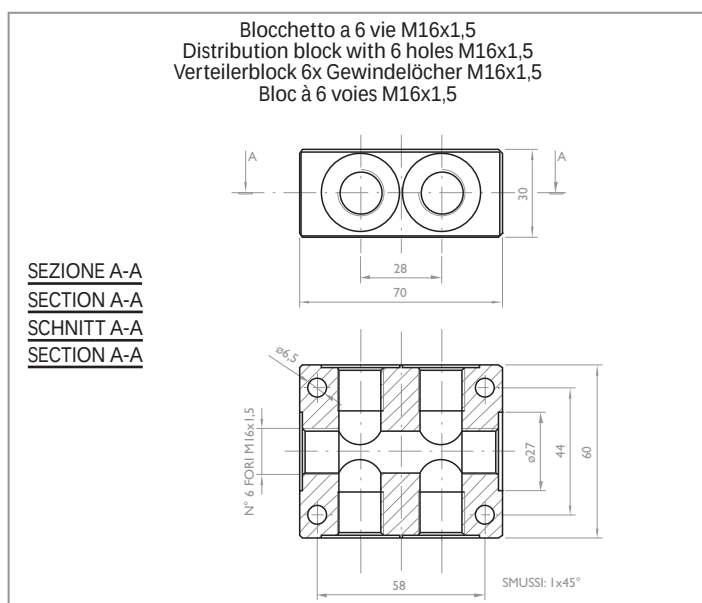


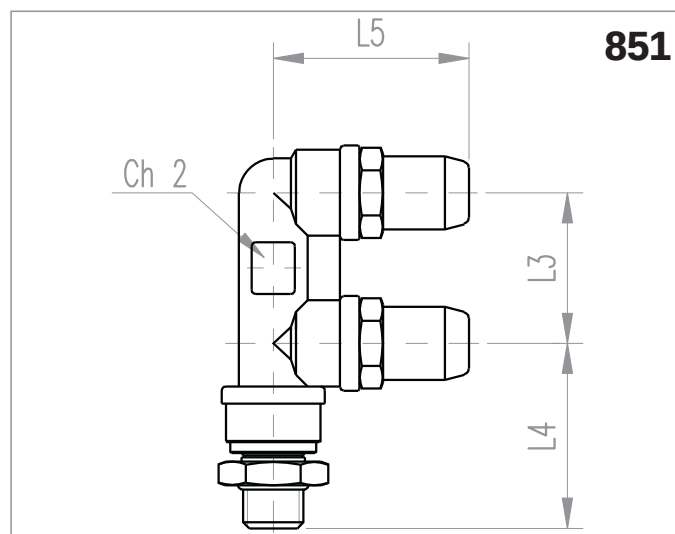
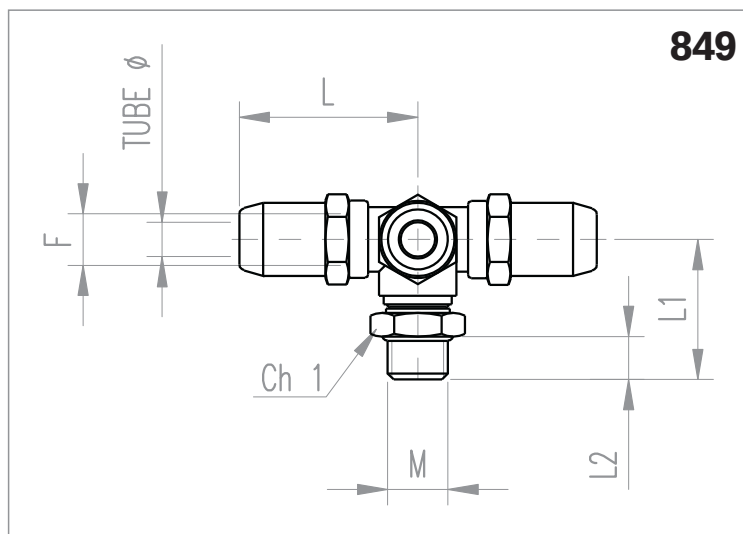
ESEMPI DI BLOCCHETTI A DISEGNO CLIENTE (NON DISPONIBILE A MAGAZZINO).

EXAMPLE OF A DISTRIBUTION BLOCK ACCORDING TO CUSTOMER'S DRAWING (NOT AVAILABLE IN STOCK).

ANFERTIGUNG NACH KUNDENZEICHNUNG (NICHT ALS LAGERBESTAND VORRÄTIG).

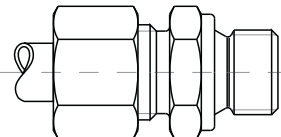
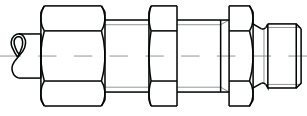
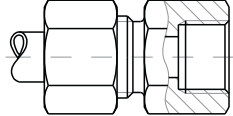
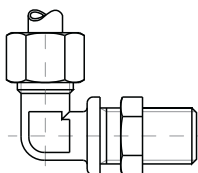
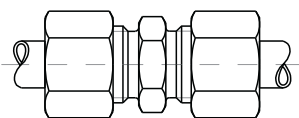
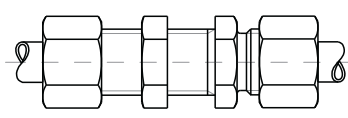
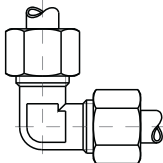
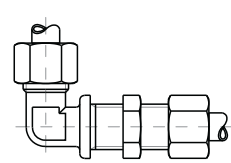
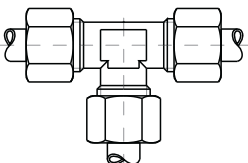
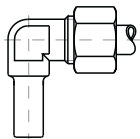
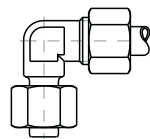
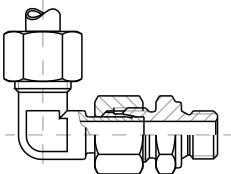
EXAMPLE DE BLOCS À DESSIN CLIENT (PAS DISPONIBLE DANS LE STOCK).





- I terminali girevoli sono ordinabili anche senza il perno. In tal caso utilizzare i codici senza l'indicazione della filettatura, sostituendo ad essi una serie di O.  
ESEMPIO: 849 1209000005B anziché 849 1209016155B.
- It is possible to order the swivel studs also without the male stud. When ordering substitute thread dimension with four O.  
EG: 849 1209000005B instead of 849 1209016155B.
- Es ist ebenfalls möglich diese Verbindung ohne Einschraubstutzen zu bestellen, diese hat in der Bestell. Nr. 4 x die Zahl 0.  
BEISPIEL: 849 1209000005B statt 849 1209016155B.
- Les raccords tournants se peuvent commander même sans le pivot. En pareil cas utiliser les codes sans l'indication de le filetage, en ajoutant une série de O.  
PAR EXEMPLE: 849 1209000005B au lieu de 849 1209016155B.

| PART NUMBER     | PART NUMBER     | TUBE Ø | M      | F      | L    | L1   | L2  | L3 | L4   | L5   | Ch1 | Ch2 |
|-----------------|-----------------|--------|--------|--------|------|------|-----|----|------|------|-----|-----|
| 849 0604010103A | 851 0604010105B | 6X4    | 10X1   | 16X1,5 | 45   | 35   | 8   | 35 | 40   | 36,5 | 20  | 16  |
| 849 0604012153A | 851 0604012155B | 6X4    | 12X1,5 | 16X1,5 | 45   | 35   | 8   | 35 | 40   | 36,5 | 20  | 16  |
| 849 0604016153A | 851 0604016155B | 6X4    | 16X1,5 | 16X1,5 | 45   | 35,5 | 8,5 | 35 | 40,5 | 36,5 | 22  | 16  |
| 849 0604022153A | 851 0604022155B | 6X4    | 22X1,5 | 16X1,5 | 45   | 37,5 | 9   | 35 | 41   | 36,5 | 29  | 16  |
| 849 0806010103A | 851 0806010105B | 8X6    | 10X1   | 16X1,5 | 46   | 35   | 8   | 35 | 40   | 37   | 20  | 16  |
| 849 0806012153A | 851 0806012155B | 8X6    | 12X1,5 | 16X1,5 | 46   | 35   | 8   | 35 | 40   | 37   | 20  | 16  |
| 849 0806016153A | 851 0806016155B | 8X6    | 16X1,5 | 16X1,5 | 46   | 35,5 | 8,5 | 35 | 40,5 | 37   | 22  | 16  |
| 849 0806022153A | 851 0806022155B | 8X6    | 22X1,5 | 16X1,5 | 46   | 37,5 | 9   | 35 | 41   | 37   | 29  | 16  |
| 849 1007012153A | 851 1007012155B | 10X7   | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 35 | 40   | 40   | 20  | 16  |
| 849 1007016153A | 851 1007016155B | 10X7   | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 35 | 40,5 | 40   | 22  | 16  |
| 849 1007022153A | 851 1007022155B | 10X7   | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 35 | 41   | 40   | 29  | 16  |
| 849 1008012153A | 851 1008012155B | 10X8   | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 35 | 40   | 40   | 20  | 16  |
| 849 1008016153A | 851 1008016155B | 10X8   | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 35 | 40,5 | 40   | 22  | 16  |
| 849 1008022153A | 851 1008022155B | 10X8   | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 35 | 41   | 40   | 29  | 16  |
| 849 1007512153A | 851 1007512155B | 10X7,5 | 12X1,5 | 16X1,5 | 49   | 35   | 8   | 35 | 40   | 40   | 20  | 16  |
| 849 1007516153A | 851 1007516155B | 10X7,5 | 16X1,5 | 16X1,5 | 49   | 35,5 | 8,5 | 35 | 40,5 | 40   | 22  | 16  |
| 849 1007522153A | 851 1007522155B | 10X7,5 | 22X1,5 | 16X1,5 | 49   | 37,5 | 9   | 35 | 41   | 40   | 29  | 16  |
| 849 1209012155B | 851 1209012155B | 12X9   | 12X1,5 | 16X1,5 | 50   | 35   | 8   | 35 | 40   | 41   | 20  | 16  |
| 849 1209016155B | 851 1209016155B | 12X9   | 16X1,5 | 16X1,5 | 50   | 35,5 | 8,5 | 35 | 40,5 | 41   | 22  | 16  |
| 849 1209022155B | 851 1209022155B | 12X9   | 22X1,5 | 16X1,5 | 50   | 36,5 | 9   | 35 | 41   | 41   | 29  | 16  |
| 849 1512016155B | 851 1512016155B | 15X12  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 35 | 40,5 | 44,5 | 22  | 16  |
| 849 1512022155B | 851 1512022155B | 15X12  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 35 | 41   | 44,5 | 29  | 16  |
| 849 1612016155B | 851 1612016155B | 16X12  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 35 | 40,5 | 44,5 | 22  | 16  |
| 849 1612022155B | 851 1612022155B | 16X12  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 35 | 41   | 44,5 | 29  | 16  |
| 849 1814016155B | 851 1814016155B | 18X14  | 16X1,5 | 16X1,5 | 53,5 | 35,5 | 8,5 | 35 | 40,5 | 44,5 | 22  | 16  |
| 849 1814022155B | 851 1814022155B | 18X14  | 22X1,5 | 16X1,5 | 53,5 | 36,5 | 9   | 35 | 41   | 44,5 | 29  | 16  |

|                                                                                                                                                                                |                                                                                     |                                                                                                                                                                                              |                                                                                       |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|
| B5                                                                                                                                                                             |    | DMM                                                                                                                                                                                          |                                                                                       |          |
| Terminale Diritto - Male Connector<br>Gerade Einschraubverschraubung - Raccord droit                                                                                           |                                                                                     |                                                                                                                                                                                              |                                                                                       |          |
| B6                                                                                                                                                                             |    | PDM                                                                                                                                                                                          |     | DFM      |
| Terminale Passaparatia Diritto<br>Bulkhead Male Connector<br>Gerade Schott-Einschraubverschraubung<br>Raccord passe-cloison droit                                              |                                                                                     | Terminale Diritto Femmina - Female Connector<br>Gerade Aufschraubverschraubung<br>Raccord droit femelle                                                                                      |                                                                                       |          |
| B7                                                                                                                                                                             |    | TGP                                                                                                                                                                                          |                                                                                       |          |
| Terminale a Gomito - Male Elbow<br>Winkeleinschraubverschraubung positionierbar - Raccord coude                                                                                |                                                                                     |                                                                                                                                                                                              |                                                                                       |          |
| B8                                                                                                                                                                             |   | GID                                                                                                                                                                                          |   | IDP      |
| Giunto Diritto Intermedio - Union<br>Gerade Verschraubung - Joint droit                                                                                                        |                                                                                     | Giunto Diritto Passaparatia - Bulkhead Union<br>Gerade Schottverschraubung<br>Joint droit passe- cloison                                                                                     |                                                                                       |          |
| B9                                                                                                                                                                             |  | GIG                                                                                                                                                                                          |  | IGP      |
| Giunto a Gomito Intermedio - Union Elbow<br>Winkelverschraubung 90° -Joint coude                                                                                               |                                                                                     | Giunto a Gomito Passaparatia - Bulkhead Union Elbow<br>Winkel-Schottverschraubung 90° - Joint coude passe- cloison                                                                           |                                                                                       |          |
| B10                                                                                                                                                                            |  | GIT                                                                                                                                                                                          |                                                                                       |          |
| Giunto A Tee Intermedio - Union TEE<br>T-Verschraubung - Joint en té                                                                                                           |                                                                                     |                                                                                                                                                                                              |                                                                                       |          |
| B11                                                                                                                                                                            |  | GOG LANA                                                                                                                                                                                     |  | GOG LACA |
| Gomito Girevole con Codolo Liscio<br>Swivel Nut Elbow without Pre-formed Cutting Ring<br>Einstellbare Winkelverschraubung<br>Joint tournant avec cône lisse                    |                                                                                     | Gomito Girevole con Dado e Anello Premontato<br>Swivel Nut Elbow with Pre-Formed Cutting Ring<br>Einstellbare Winkelverschraubung vormontiert<br>Coude tournant avec écrou et bague prémonté |                                                                                       |          |
| B12                                                                                                                                                                            |  | EGG                                                                                                                                                                                          |                                                                                       |          |
| Terminale a Gomito Orientabile - Swivel Elbow - Einstellbare Winkelverschraubung, vormontiert mit Schneidring, Überwurfmutter und Einschraubstutzen - Raccord coude orientable |                                                                                     |                                                                                                                                                                                              |                                                                                       |          |



|                                                                                                                                                                                     |  |                                                                                                                                                                                                                                           |  |                                                                 |  |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------|--|-----|
| B13                                                                                                                                                                                 |  | TOP LANA                                                                                                                                                                                                                                  |  | TOP LACA                                                        |  |     |
| Tee Girevole al Piede con Codolo Liscio<br>Swivel Nut Branch Tee without Pre-formed Cutting Ring<br>Einstellbare T-Verschraubung - Té Tournant au pied avec cône lisse              |  | Tee Girevole al Piede con Dado e Anello Premontato<br>Swivel nut Branch Tee with Pre-formed Cutting Ring - Einstellbare T-Verschraubung, vormontiert mit Schneidring und Überwurfmutter<br>Té Tournant au pied avec écrou, bague prémonté |  |                                                                 |  |     |
| B14                                                                                                                                                                                 |  |                                                                                                                                                                                                                                           |  | ETP                                                             |  |     |
| Terminale a Tee Orientabile al Piede - Swivel Branch Tee<br>T-Verschraubung mit Einschraubstutzen, vormontiert - Té orientable au pied                                              |  |                                                                                                                                                                                                                                           |  |                                                                 |  |     |
| B15                                                                                                                                                                                 |  | TOB LANA                                                                                                                                                                                                                                  |  | TOB LACA                                                        |  |     |
| Tee Girev. al Braccio con Codolo Liscio<br>Swivel Nut Run Tee without Pre-formed Cutting Ring - Einstellbare L-Verschraubung - Té tournant au bras avec cône lisse                  |  | Tee Girev. al Braccio con Dado, Anello Premontato<br>Swivel Nut Run Tee with Pre-formed Cutting Ring - Einstellbare L-Verschraubung, vormontiert mit Schneidring und Überwurfmutter<br>Té tournant au bras avec écrou, bague prémonté     |  |                                                                 |  |     |
| B16                                                                                                                                                                                 |  |                                                                                                                                                                                                                                           |  | ETB                                                             |  |     |
| Terminale a Tee Orientabile al Braccio - Swivel Run Tee - Einstellbare - L-Verschraubung, vormontiert mit Schneidring, Überwurfmutter und Einschraubstutzen - Té orientable au bras |  |                                                                                                                                                                                                                                           |  |                                                                 |  |     |
| B17                                                                                                                                                                                 |  | ORM                                                                                                                                                                                                                                       |  | DAD                                                             |  | ANT |
| Intermedio di Orientazione - Stud-Stand-pipe Adaptor - Gerade Aufsteckstutzen - Intermédiair d'orientation                                                                          |  | Dado di Serraggio - Nut - Überwurfmutter für Schlauchstutzen<br>Écrou de serrage                                                                                                                                                          |  | Anello Tagliente - Cutting Ring - Schneidring<br>Bague coupante |  |     |
| B18                                                                                                                                                                                 |  | FBL                                                                                                                                                                                                                                       |  | FDB                                                             |  | FPL |
| Boccola di Rinforzo per Tubo Monostrato - Reinforcing Insert for Din Plastic Tube - Stützhülse für DIN-Kunststoffrohr - Fourrure de renfort pour tube mono couche                   |  |                                                                                                                                                                                                                                           |  | Anello in Ottone<br>Brass Ring - DruckRing<br>Bague laiton      |  |     |
| B19                                                                                                                                                                                 |  |                                                                                                                                                                                                                                           |  | ANE                                                             |  |     |
| Anello di Contenimento e O-Ring - Thrust Ring and O-Ring<br>Druckring und O-Ring - Bague et joint torique                                                                           |  |                                                                                                                                                                                                                                           |  |                                                                 |  |     |

**ESEMPIO CODIFICA CATALOGO TRADIZIONALE**  
**HOW TO READ OUR PART NUMBER**  
**ENTSCHLÜSSELUNG DER ARTIKELNUMMER**  
**EXEMPLE CODIFICATION CATALOGUE TRADITIONNEL**

**(2) DMM 121615LACA**

**DMM 12 16 12 L A C A**

|                                                      |                                                               |                                                             |                                                                                    |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                         |                                                                                                                                                                                                   |
|------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ARTICOLO:<br><b>DIRITTO MASCHIO METRICO</b>          | DIAMETRO ESTERNO TUBO:<br>EXTERNAL DIAMETER OF THE TUBE:      | DIAMETRO ESTERNO FILETTATURA:<br>THREAD EXTERNAL DIAMETER:  | PASSO DELLA FILETTATURA:<br>THREAD PITCH:<br>GEWINDE-STEIGUNG:<br>PAS DE FILETAGE: | SERIE:<br><b>LEGGERA</b><br>RANGE:<br><b>LIGHT</b><br>AUSFÜHRUNG:<br><b>LEICHTE</b><br>SERIE:<br><b>LEGERE</b> | TRATTAMENTO:<br><b>ZINCATURA</b><br>TREATMENT:<br><b>ZINC PLATING</b><br>OBERFLÄCHEN BEHANDLUNG:<br><b>VERZINKUNG</b><br>TRAITEMENT:<br><b>GALVANISATION</b> | PRIMO MONTAGGIO:<br><b>MONTAGGIO COMPLETO</b><br>FIRST ASSEMBLY:<br><b>COMPLETE ASSEMBLY</b><br>ERSTER MONTAGESCHRITT:<br><b>KOMPLETT VORMONTIERT</b><br>PREMIER ASSEMBLAGE:<br><b>ASSEMBLAGE TOTAL</b> | SECONDO MONTAGGIO:<br><b>ANELLO ACCIAIO</b><br>SECOND ASSEMBLY:<br><b>STEEL CUTTING RING</b><br>ZWEITER MONTAGESCHRITT:<br><b>STAHL-SCHNEIDRING</b><br>DEUXIEME ASSEMBLAGE:<br><b>BAGUE ACIER</b> |
| ARTICLE:<br><b>STRAIGHT MALE COUPLING</b>            | ROHRAUBEN-DURCHMESSER:<br>DIAMETRE EXTERIEUR TUBE:<br>ø 12 mm | AUßENGEWINDE:<br>DIAMETRE EXTERIEUR FILETAGE:<br><b>M16</b> | <b>1,5 mm</b>                                                                      |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                         |                                                                                                                                                                                                   |
| ARTIKEL:<br><b>GERADE EINSCHRAUB-<br/>UBKUPPLUNG</b> |                                                               |                                                             |                                                                                    |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                         |                                                                                                                                                                                                   |
| ARTICLE:<br><b>RACCORD DROIT MÂLE</b>                |                                                               |                                                             |                                                                                    |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                         |                                                                                                                                                                                                   |

**(2)GOG 12LANA**

**GOG 12 L A N A**

|                                                   |                                                               |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                                       |                                                                                                                                                                                                   |
|---------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ARTICOLO:<br><b>GOMITO GIREVOLE CODOLO LISCIO</b> | DIAMETRO ESTERNO TUBO:<br>EXTERNAL DIAMETER OF THE TUBE:      | SERIE:<br><b>LEGGERA</b><br>RANGE:<br><b>LIGHT</b><br>AUSFÜHRUNG:<br><b>LEICHTE</b><br>SERIE:<br><b>LEGERE</b> | TRATTAMENTO:<br><b>ZINCATURA</b><br>TREATMENT:<br><b>ZINC PLATING</b><br>OBERFLÄCHEN BEHANDLUNG:<br><b>VERZINKUNG</b><br>TRAITEMENT:<br><b>GALVANISATION</b> | PRIMO MONTAGGIO:<br><b>DADO E ANELLO AVVITATO</b><br>FIRST ASSEMBLY:<br><b>ASSEMBLED WITH NUT AND RING</b><br>ERSTER MONTAGESCHRITT:<br><b>KOMPLETT VORMONTIERT</b><br>PREMIER ASSEMBLAGE:<br><b>ASSEMBLAGE TOTAL</b> | SECONDO MONTAGGIO:<br><b>ANELLO ACCIAIO</b><br>SECOND ASSEMBLY:<br><b>STEEL CUTTING RING</b><br>ZWEITER MONTAGESCHRITT:<br><b>STAHL-SCHNEIDRING</b><br>DEUXIEME ASSEMBLAGE:<br><b>BAGUE ACIER</b> |
| ARTICLE:<br><b>SWIVEL STEM ELBOW</b>              | ROHRAUBEN-DURCHMESSER:<br>DIAMETRE EXTERIEUR TUBE:<br>ø 12 mm |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                                       |                                                                                                                                                                                                   |
| ARTIKEL:<br><b>90° BOGEN MIT DREHGELENK</b>       |                                                               |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                                       |                                                                                                                                                                                                   |
| ARTICLE:<br><b>JOINT TOURNANT CÔNE LISSE</b>      |                                                               |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                                       |                                                                                                                                                                                                   |

**(2)TGP 121615LAKA**

**TGP 12 16 15 L A K A**

|                                                                  |                                                               |                                                             |                                                                                    |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                   |
|------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ARTICOLO:<br><b>TERMINALE GOMITO</b>                             | DIAMETRO ESTERNO TUBO:<br>EXTERNAL DIAMETER OF THE TUBE:      | DIAMETRO ESTERNO FILETTATURA:<br>THREAD EXTERNAL DIAMETER:  | PASSO DELLA FILETTATURA:<br>THREAD PITCH:<br>GEWINDE-STEIGUNG:<br>PAS DE FILETAGE: | SERIE:<br><b>LEGGERA</b><br>RANGE:<br><b>LIGHT</b><br>AUSFÜHRUNG:<br><b>LEICHTE</b><br>SERIE:<br><b>LEGERE</b> | TRATTAMENTO:<br><b>ZINCATURA</b><br>TREATMENT:<br><b>ZINC PLATING</b><br>OBERFLÄCHEN BEHANDLUNG:<br><b>VERZINKUNG</b><br>TRAITEMENT:<br><b>GALVANISATION</b> | PRIMO MONTAGGIO:<br><b>MONTAGGIO COMPLETO SENZA ANELLO CONT. E O-RING</b><br>FIRST ASSEMBLY:<br><b>COMPLETE ASSEMBLY WITHOUT O-RING AND THRUST RING</b><br>MONTAGESCHRITT 1:<br><b>KOMPLETT VORMONTIERT OHNE O-RING UND DRUCKRING</b><br>PREMIER ASSEMBLAGE:<br><b>ASSEMBLAGE TOTAL SANS BAGUE ET JOINT-TORIQUE</b> | SECONDO MONTAGGIO:<br><b>ANELLO ACCIAIO</b><br>SECOND ASSEMBLY:<br><b>STEEL CUTTING RING</b><br>ZWEITER MONTAGESCHRITT:<br><b>STAHL-SCHNEIDRING</b><br>DEUXIEME ASSEMBLAGE:<br><b>BAGUE ACIER</b> |
| ARTICLE:<br><b>MALE ELBOW</b>                                    | ROHRAUBEN-DURCHMESSER:<br>DIAMETRE EXTERIEUR TUBE:<br>ø 12 mm | AUßENGEWINDE:<br>DIAMETRE EXTERIEUR FILETAGE:<br><b>M16</b> | <b>1,5 mm</b>                                                                      |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                   |
| ARTIKEL:<br><b>WINKEL-EINSCHRAUBVERSCHRAUBUNG POSITIONIERBAR</b> |                                                               |                                                             |                                                                                    |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                   |
| ARTICLE:<br><b>RACCORD COUDE</b>                                 |                                                               |                                                             |                                                                                    |                                                                                                                |                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                   |

• Le sigle d'ordine qui riportate si riferiscono ai raccordi completi di dado e anello di serraggio. E' possibile ordinare solo il corpo (privo di dado e anello avvitato). Esempio: (2)DMM 121615LA.

Desiderando ordinare i raccordi con l'anello in ottone sostituire la lettera "A" alla fine della sigla d'ordine con la lettera "P". Esempio: (2)DMM121615LACP.

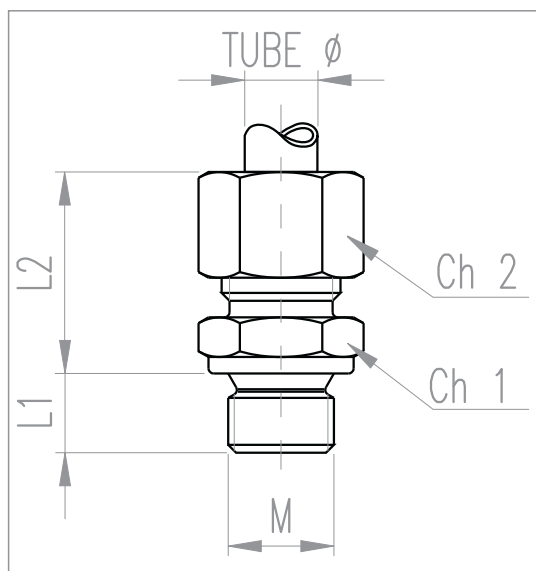
• The ordering codes quoted here refer to fittings complete with nut and cutting ring. It is also possible to order only the body (without nut and ring). For example: (2)DMM 121615LA.

When ordering fittings with brass ring you should substitute the letter "A" to the end of the ordering code with the letter "P". For example: (2)DMM 121615LACP.

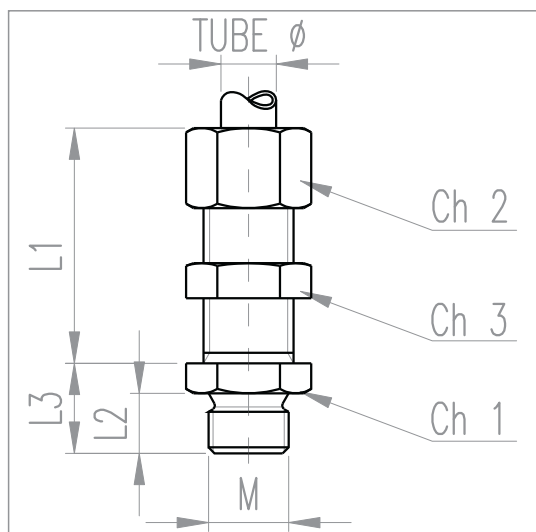
• Die Bestellnummern beziehen sich auf die kompletten Verschraubungen mit Überwurfmutter und Schneidringen. Auf Wunsch ist auch nur die Einschraubverschraubung lieferbar (ohne Überwurfmutter und Schneidring). Bestellbeispiel: (2)DMM 121615LA. Wenn man die Verschraubungen mit Messing-Druckring bestellen will, ersetzen Sie bitte den Buchstabe "A" am Ende der Bestellnummer mit dem Buchstabe "P". Bestellbeispiel: (2) DMM121615LACP.

• Les codes de commande ci-joint se rapportent aux raccords complets de écrou et bague de serrage. Il est possible commander seulement le corps (sans écrou et vissée). Exemple: (2)DMM121615LA. Désirant les raccords avec bague en laiton remplacer la lettre "A" à la fin du code de commande avec la lettre "P". Exemple: (2)DMM 121615LACP.

• IL "2" CHE PRECEDE IL CODICE COMPARE IN TUTTI I DOCUMENTI DA NOI EMESSI MA PUO' ESSERE OMESSO IN FASE D'ORDINE.  
• THE NUMBER "2" BEFORE THE PART NUMBER APPEARS IN ALL OUR DOCUMENTS BUT CAN BE OMITTED WHEN ORDERING.  
• DIE NUMMER "2" VOR DER ARTIKELNUMMER IST OHNE WEITERE BEDEUTUNG UND KANN BEI BESTELLUNGEN VERNACHLÄSSIGT WERDEN.  
• LE NUMERO "2" QUE PRECEDE LE CODE IL PARAÎT DANS TOUT LES DOCUMENTS PAR NOUS EMIS. MAIS IL PEUT ÊTRE OMIS AU MOMENT DE LA COMMANDE.

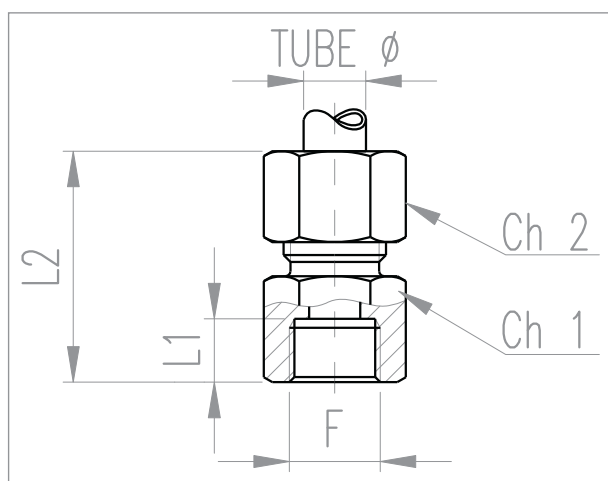


| PART NUMBER    | TUBE Ø | M      | Ch1 | Ch2 | L1 | L2   |
|----------------|--------|--------|-----|-----|----|------|
| DMM 061010LACA | 6      | 10X1   | 14  | 14  | 8  | 23   |
| DMM 061215LACA | 6      | 12X1,5 | 17  | 14  | 12 | 24,5 |
| DMM 061615LACA | 6      | 16X1,5 | 22  | 14  | 12 | 23,5 |
| DMM 062215LACA | 6      | 22X1,5 | 27  | 14  | 12 | 23,5 |
| DMM 081010LACA | 8      | 10X1   | 14  | 17  | 8  | 23,5 |
| DMM 081215LACA | 8      | 12X1,5 | 17  | 17  | 12 | 25   |
| DMM 081615LACA | 8      | 16X1,5 | 22  | 17  | 12 | 24   |
| DMM 082215LACA | 8      | 22X1,5 | 27  | 17  | 12 | 24   |
| DMM 101215LACA | 10     | 12X1,5 | 17  | 19  | 12 | 26   |
| DMM 101615LACA | 10     | 16X1,5 | 22  | 19  | 10 | 23   |
| DMM 102215LACA | 10     | 22X1,5 | 27  | 19  | 12 | 25   |
| DMM 121215LACA | 12     | 12X1,5 | 19  | 22  | 12 | 25,5 |
| DMM 121615LACA | 12     | 16X1,5 | 22  | 22  | 12 | 27   |
| DMM 122215LACA | 12     | 22X1,5 | 27  | 22  | 12 | 24,5 |
| DMM 141615LACA | 14     | 16X1,5 | 22  | 24  | 12 | 28   |
| DMM 142215LACA | 14     | 22X1,5 | 27  | 24  | 12 | 28,5 |
| DMM 151615LACA | 15     | 16X1,5 | 22  | 27  | 12 | 27   |
| DMM 152215LACA | 15     | 22X1,5 | 27  | 27  | 12 | 29   |
| DMM 152615LACA | 15     | 26X1,5 | 32  | 27  | 16 | 30   |
| DMM 161615LACA | 16     | 16X1,5 | 22  | 27  | 12 | 27   |
| DMM 162215LACA | 16     | 22X1,5 | 27  | 27  | 12 | 29   |
| DMM 162615LACA | 16     | 26X1,5 | 32  | 27  | 16 | 30   |
| DMM 182215LACA | 18     | 22X1,5 | 27  | 32  | 14 | 31   |
| DMM 182615LACA | 18     | 26X1,5 | 32  | 32  | 16 | 33   |
| DMM 202215LACA | 20     | 22X1,5 | 27  | 32  | 14 | 32   |
| DMM 202615LACA | 20     | 26X1,5 | 32  | 32  | 16 | 33   |

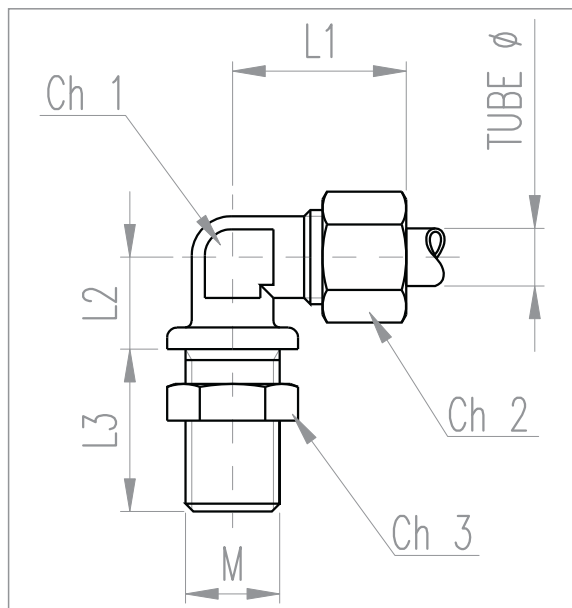


| PART NUMBER    | TUBE Ø | M      | Ch1 | Ch2 | Ch3 | L1   | L2 | L3 |
|----------------|--------|--------|-----|-----|-----|------|----|----|
| PDM 061215LACA | 6      | 12X1,5 | 17  | 14  | 17  | 41,5 | 12 | 17 |
| PDM 081215LACA | 8      | 12X1,5 | 17  | 17  | 19  | 42   | 12 | 17 |
| PDM 081615LACA | 8      | 16X1,5 | 22  | 17  | 19  | 42   | 12 | 18 |
| PDM 082215LACA | 8      | 22X1,5 | 27  | 17  | 19  | 42   | 12 | 20 |
| PDM 101615LACA | 10     | 16X1,5 | 22  | 19  | 22  | 42   | 12 | 18 |
| PDM 102215LACA | 10     | 22X1,5 | 27  | 19  | 22  | 42   | 12 | 20 |
| PDM 121615LACA | 12     | 16X1,5 | 22  | 22  | 24  | 41,5 | 12 | 20 |
| PDM 122215LACA | 12     | 22X1,5 | 27  | 22  | 24  | 41,5 | 12 | 20 |
| PDM 152215LACA | 15     | 22X1,5 | 27  | 27  | 28  | 46   | 12 | 20 |
| PDM 162215LACA | 16     | 22X1,5 | 27  | 27  | 28  | 46   | 12 | 20 |

**TERMINALE DIRITTO FEMMINA**  
**FEMALE CONNECTOR**  
**GERADE AUFSCHRAUBVERSCHRAUBUNG**  
**RACCORD DROIT FEMELLE**

**DFM**


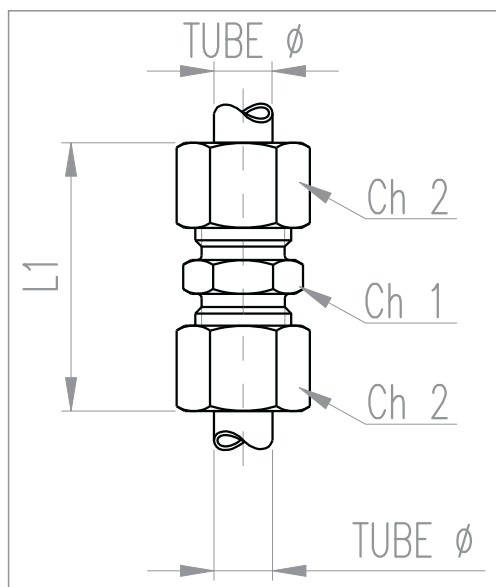
| PART NUMBER    | TUBE Ø | F      | Ch1 | Ch2 | L1   | L2   |
|----------------|--------|--------|-----|-----|------|------|
| DFM 061010LACA | 6      | 10X1   | 14  | 14  | 12,5 | 34   |
| DFM 062215LACA | 6      | 22X1,5 | 27  | 14  | 14   | 39   |
| DFM 081215LACA | 8      | 12X1,5 | 17  | 17  | 14   | 37   |
| DFM 081615LACA | 8      | 16X1,5 | 22  | 17  | 12   | 36   |
| DFM 082215LACA | 8      | 22X1,5 | 27  | 17  | 14   | 37,5 |
| DFM 101615LACA | 10     | 16X1,5 | 22  | 19  | 14   | 38   |
| DFM 102215LACA | 10     | 22X1,5 | 27  | 19  | 14   | 38   |
| DFM 121615LACA | 12     | 16X1,5 | 22  | 22  | 12   | 36   |
| DFM 122215LACA | 12     | 22X1,5 | 27  | 22  | 14   | 38   |
| DFM 152215LACA | 15     | 22X1,5 | 27  | 27  | 14   | 38   |
| DFM 162215LACA | 16     | 22X1,5 | 27  | 27  | 14   | 38   |
| DFM 182215LACA | 18     | 22X1,5 | 27  | 32  | 14   | 40   |
| DFM 202215LACA | 20     | 22X1,5 | 27  | 32  | 14   | 42   |



| PART NUMBER    | TUBE Ø | M      | Ch1 | Ch2 | Ch3 | L1   | L2 | L3 |
|----------------|--------|--------|-----|-----|-----|------|----|----|
| TGP 061010LAKA | 6      | 10X1   | 12  | 14  | 14  | 29   | 12 | 16 |
| TGP 061215LAKA | 6      | 12X1,5 | 14  | 14  | 17  | 29   | 12 | 19 |
| TGP 061615LAKA | 6      | 16X1,5 | 14  | 14  | 22  | 29   | 18 | 25 |
| TGP 062215LAKA | 6      | 22X1,5 | 19  | 14  | 28  | 35   | 22 | 25 |
| TGP 081215LAKA | 8      | 12X1,5 | 12  | 17  | 17  | 30   | 10 | 20 |
| TGP 081415LAKA | 8      | 14X1,5 | 14  | 17  | 19  | 30   | 17 | 20 |
| TGP 081615LAKA | 8      | 16X1,5 | 14  | 17  | 22  | 30   | 18 | 25 |
| TGP 082215LAKA | 8      | 22X1,5 | 19  | 17  | 28  | 35   | 22 | 25 |
| TGP 101215LAKA | 10     | 12X1,5 | 14  | 19  | 17  | 30   | 11 | 20 |
| TGP 101415LAKA | 10     | 14X1,5 | 14  | 19  | 19  | 30   | 17 | 20 |
| TGP 101615LAKA | 10     | 16X1,5 | 14  | 19  | 22  | 30   | 18 | 25 |
| TGP 101815LAKA | 10     | 18X1,5 | 17  | 19  | 24  | 32   | 20 | 25 |
| TGP 102215LAKA | 10     | 22X1,5 | 19  | 19  | 28  | 35   | 22 | 25 |
| TGP 121215LAKA | 12     | 12X1,5 | 17  | 22  | 17  | 32   | 20 | 20 |
| TGP 121415LAKA | 12     | 14X1,5 | 17  | 22  | 19  | 32   | 20 | 20 |
| TGP 121615LAKA | 12     | 16X1,5 | 17  | 22  | 22  | 32   | 20 | 25 |
| TGP 122215LAKA | 12     | 22X1,5 | 19  | 22  | 28  | 35   | 20 | 25 |
| TGP 142215LAKA | 14     | 22X1,5 | 19  | 24  | 28  | 34,5 | 22 | 25 |
| TGP 151615LAKA | 15     | 16X1,5 | 19  | 27  | 22  | 39   | 18 | 25 |
| TGP 152215LAKA | 15     | 22X1,5 | 19  | 27  | 28  | 36   | 24 | 25 |
| TGP 161615LAKA | 16     | 16X1,5 | 19  | 27  | 22  | 36   | 20 | 25 |
| TGP 162215LAKA | 16     | 22X1,5 | 19  | 27  | 28  | 36   | 22 | 25 |
| TGP 182215LAKA | 18     | 22X1,5 | 24  | 32  | 28  | 42   | 26 | 25 |
| TGP 202215LAKA | 20     | 22X1,5 | 24  | 32  | 28  | 42   | 26 | 25 |

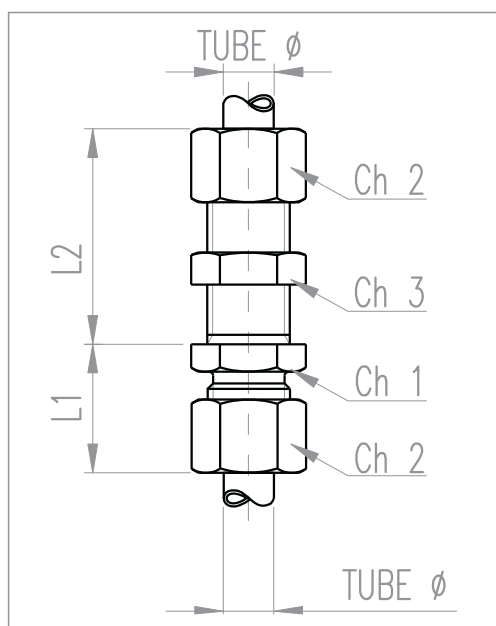
- I terminali a gomito possono essere forniti completi di anello di contenimento e O-Ring (vedere pag. B19).  
Alla sigla d'ordine occorre sostituire la lettera K con la lettera C. (Esempio TGP 121615LACA).
- Elbows can be delivered with thrust ring and O-Ring (see p. B19).  
When ordering substitute the letter K with letter C. EG.: TGP 121615LACA
- Die Bögen sind auch bestellbar komplett mit Druckring und O-Ring (siehe hierzu Katalog seite B19). Hierbei wird in der Bestell Nr. der Buchstabe K durch C ersetzt. BEISPIEL: TGP 121615LAKA (ohne Druckring / O-Ring) TGP 121615LACA (Komplett mit Druckring / O-Ring)
- Les raccords coudés peuvent être fournis complets de bague et joint-torique (voir pag B19)  
Pour la commande il faut remplacer la lettre K avec la lettre C. (Exemple TGP 121615LACA).



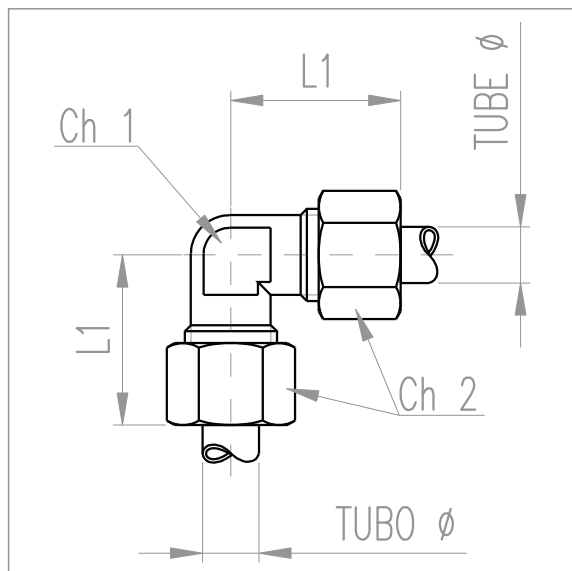


| PART NUMBER | TUBE Ø | Ch1 | Ch2 | L1 |
|-------------|--------|-----|-----|----|
| GID 06LACA  | 6      | 12  | 14  | 39 |
| GID 08LACA  | 8      | 14  | 17  | 40 |
| GID 10LACA  | 10     | 17  | 19  | 42 |
| GID 12LACA  | 12     | 19  | 22  | 43 |
| GID 15LACA  | 15     | 24  | 27  | 46 |
| GID 16LACA  | 16     | 24  | 27  | 46 |
| GID 18LACA  | 18     | 27  | 32  | 48 |
| GID 20LACA  | 20     | 27  | 32  | 50 |

**GIUNTO DIRITTO PASSAPARATIA**  
**BULKHEAD UNION**  
**GERADE SCHOTTVERSCHRAUBUNG**  
**JOINT DROIT PASSE-CLOISON**

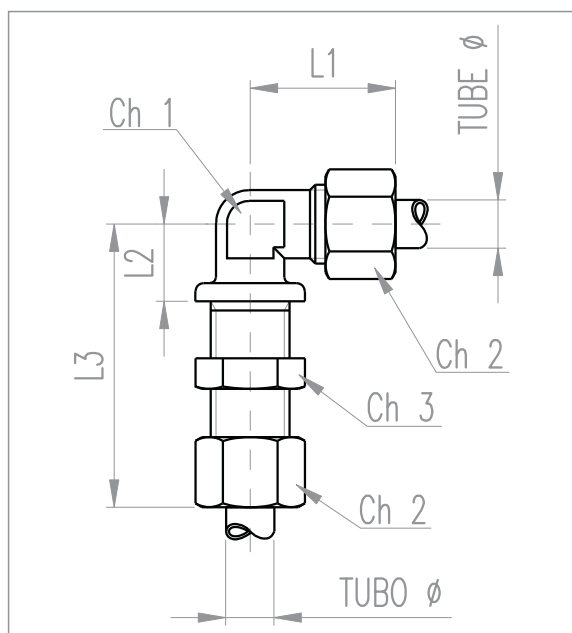
**IDP**


| PART NUMBER | TUBE Ø | Ch1 | Ch2 | Ch3 | L1 | L2 |
|-------------|--------|-----|-----|-----|----|----|
| IDP 06LACA  | 6      | 17  | 14  | 17  | 22 | 42 |
| IDP 08LACA  | 8      | 19  | 17  | 19  | 23 | 42 |
| IDP 10LACA  | 10     | 22  | 19  | 22  | 25 | 43 |
| IDP 12LACA  | 12     | 24  | 22  | 24  | 25 | 44 |
| IDP 15LACA  | 15     | 27  | 27  | 28  | 27 | 46 |
| IDP 16LACA  | 16     | 27  | 27  | 28  | 27 | 46 |
| IDP 18LACA  | 18     | 32  | 32  | 36  | 33 | 49 |
| IDP 20LACA  | 20     | 32  | 32  | 36  | 31 | 51 |

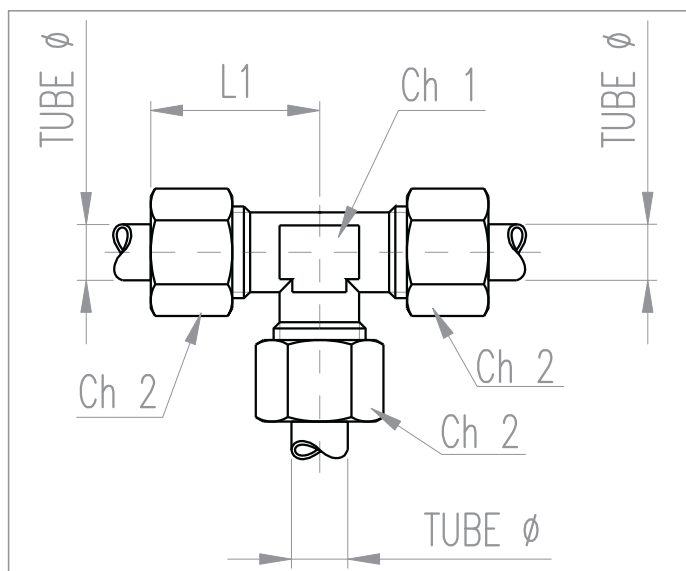


| PART NUMBER | TUBE ø | Ch1 | Ch2 | L1 |
|-------------|--------|-----|-----|----|
| GIG 06LACA  | 6      | 12  | 14  | 27 |
| GIG 08LACA  | 8      | 12  | 17  | 29 |
| GIG 10LACA  | 10     | 14  | 19  | 30 |
| GIG 12LACA  | 12     | 17  | 22  | 32 |
| GIG 15LACA  | 15     | 19  | 27  | 36 |
| GIG 16LACA  | 16     | 19  | 27  | 36 |
| GIG 18LACA  | 18     | 24  | 32  | 40 |
| GIG 20LACA  | 20     | 24  | 32  | 42 |

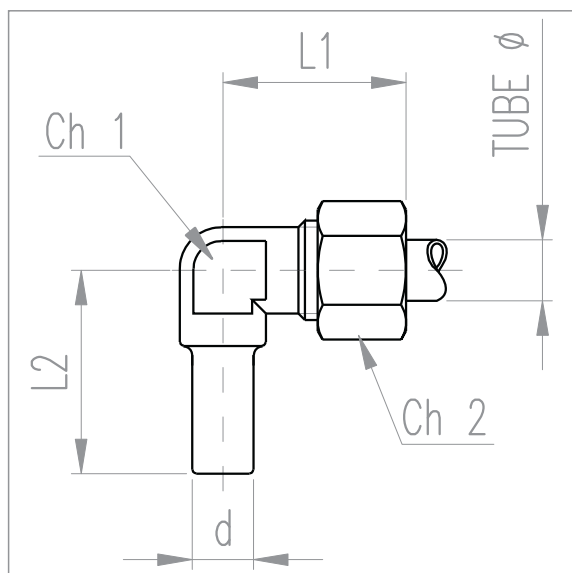
**GIUNTO A GOMITO PASSAPARATIA**  
**BULKHEAD UNION ELBOW**  
**WINKEL-SCHOTTVERSCHRAUBUNG**  
**JOINT COUDE PASSE-CLOISON**



| PART NUMBER | TUBE ø | Ch1 | Ch2 | Ch3 | L1 | L2 | L3 |
|-------------|--------|-----|-----|-----|----|----|----|
| IGP 06LACA  | 6      | 12  | 14  | 17  | 27 | 14 | 56 |
| IGP 08LACA  | 8      | 12  | 17  | 19  | 29 | 17 | 59 |
| IGP 10LACA  | 10     | 14  | 19  | 22  | 30 | 18 | 61 |
| IGP 12LACA  | 12     | 17  | 22  | 24  | 32 | 20 | 64 |
| IGP 15LACA  | 15     | 19  | 27  | 28  | 36 | 23 | 69 |
| IGP 16LACA  | 16     | 19  | 27  | 28  | 36 | 23 | 69 |
| IGP 18LACA  | 18     | 24  | 32  | 32  | 44 | 24 | 77 |

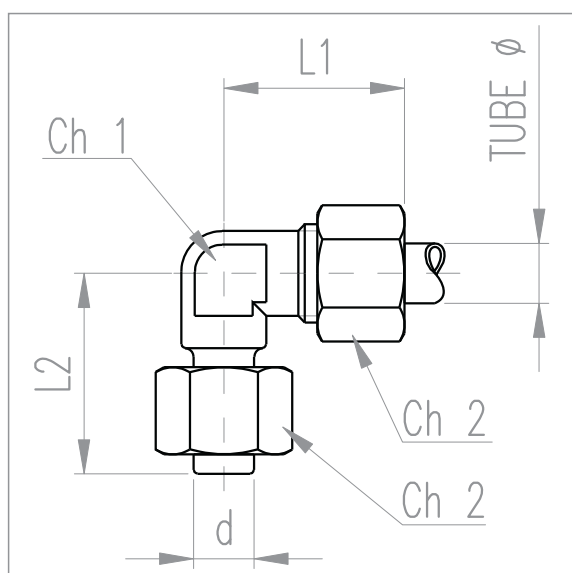


| PART NUMBER | TUBE Ø | Ch1 | Ch2 | L1 |
|-------------|--------|-----|-----|----|
| GIT 06LACA  | 6      | 12  | 14  | 27 |
| GIT 08LACA  | 8      | 12  | 17  | 29 |
| GIT 10LACA  | 10     | 14  | 19  | 30 |
| GIT 12LACA  | 12     | 17  | 22  | 32 |
| GIT 15LACA  | 15     | 19  | 27  | 36 |
| GIT 16LACA  | 16     | 19  | 27  | 36 |
| GIT 20LACA  | 20     | 24  | 32  | 42 |



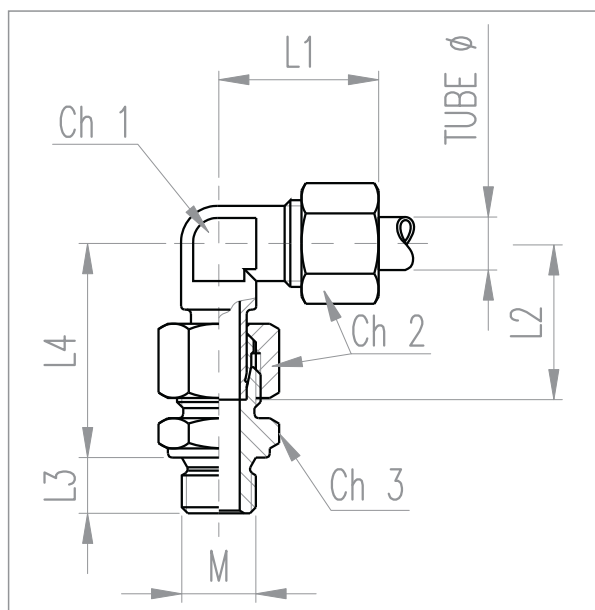
| PART NUMBER | TUBE Ø | d  | Ch1 | Ch2 | L1 | L2   |
|-------------|--------|----|-----|-----|----|------|
| GOG 06LANA  | 6      | 6  | 12  | 14  | 27 | 26   |
| GOG 08LANA  | 8      | 8  | 12  | 17  | 29 | 27   |
| GOG 10LANA  | 10     | 10 | 14  | 19  | 30 | 28,5 |
| GOG 12LANA  | 12     | 12 | 17  | 22  | 32 | 29   |
| GOG 15LANA  | 15     | 15 | 19  | 27  | 36 | 32   |
| GOG 16LANA  | 16     | 16 | 19  | 27  | 36 | 32   |
| GOG 18LANA  | 18     | 18 | 24  | 32  | 40 | 35   |
| GOG 20LANA  | 20     | 20 | 24  | 32  | 42 | 37   |

**GOMITO GIREVOLE CON DADO E ANELLO PREMONTATO**  
**SWIVEL NUT ELBOW WITH PRE-FORMED CUTTING RING**  
**EINSTELLBARE WINKELVERSCHRAUBUNG VORMONTIERT**  
**COUDE TOURNANT AVEC ÊCROU ET BAGUE PRÉMONTÉ**



| PART NUMBER | TUBE Ø | d  | Ch1 | Ch2 | L1 | L2   |
|-------------|--------|----|-----|-----|----|------|
| GOG 06LACA  | 6      | 6  | 12  | 14  | 27 | 26   |
| GOG 08LACA  | 8      | 8  | 12  | 17  | 29 | 27   |
| GOG 10LACA  | 10     | 10 | 14  | 19  | 30 | 28,5 |
| GOG 12LACA  | 12     | 12 | 17  | 22  | 32 | 29   |
| GOG 15LACA  | 15     | 15 | 19  | 27  | 36 | 32   |
| GOG 16LACA  | 16     | 16 | 19  | 27  | 36 | 32   |
| GOG 18LACA  | 18     | 18 | 24  | 32  | 40 | 35   |
| GOG 20LACA  | 20     | 20 | 24  | 32  | 42 | 37   |

**EINSTELLBARE WINKELVERSCHRAUBUNG, VORMONTIERT  
MIT SCHNEIDRING, ÜBERWUFMUTTER UND EINSCHRAUBSTUTZEN  
RACCORD COUDE ORIENTABLE**

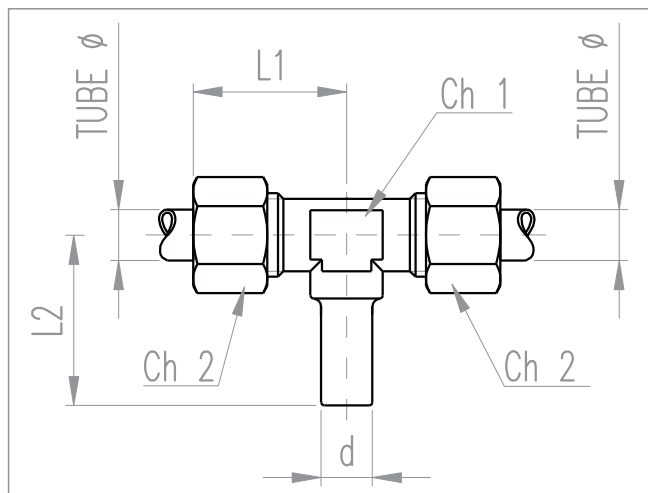


| PART NUMBER    | TUBE Ø | M      | Ch1 | Ch2 | Ch3 | L1   | L2   | L1 | L2   |
|----------------|--------|--------|-----|-----|-----|------|------|----|------|
| EGG 061010LACA | 6      | 10X1   | 12  | 14  | 14  | 27   | 26   | 8  | 34,5 |
| EGG 061215LACA | 6      | 12X1,5 | 12  | 14  | 17  | 27   | 26   | 12 | 36   |
| EGG 061615LACA | 6      | 16X1,5 | 12  | 14  | 22  | 27   | 26   | 12 | 35   |
| EGG 062215LACA | 6      | 22X1,5 | 12  | 14  | 27  | 27   | 26   | 12 | 35   |
| EGG 081215LACA | 8      | 12X1,5 | 12  | 17  | 17  | 29   | 27   | 12 | 37   |
| EGG 081615LACA | 8      | 16X1,5 | 12  | 17  | 22  | 29   | 27   | 12 | 36   |
| EGG 082215LACA | 8      | 22X1,5 | 12  | 17  | 27  | 29   | 27   | 12 | 36   |
| EGG 101215LACA | 10     | 12X1,5 | 14  | 19  | 17  | 30   | 28,5 | 12 | 39,5 |
| EGG 101615LACA | 10     | 16X1,5 | 14  | 19  | 22  | 30   | 28,5 | 10 | 36,5 |
| EGG 102215LACA | 10     | 22X1,5 | 14  | 19  | 27  | 30   | 28,5 | 12 | 38,5 |
| EGG 121215LACA | 12     | 12X1,5 | 17  | 22  | 19  | 32   | 29   | 12 | 40   |
| EGG 121615LACA | 12     | 16X1,5 | 17  | 22  | 22  | 32   | 29   | 12 | 41,5 |
| EGG 122215LACA | 12     | 22X1,5 | 17  | 22  | 27  | 32   | 29   | 12 | 39   |
| EGG 141615LACA | 14     | 16X1,5 | 19  | 24  | 22  | 34,5 | 32   | 12 | 45,5 |
| EGG 142215LACA | 14     | 22X1,5 | 19  | 24  | 27  | 34,5 | 32   | 12 | 46   |
| EGG 151615LACA | 15     | 16X1,5 | 19  | 27  | 22  | 36   | 32   | 12 | 44   |
| EGG 152215LACA | 15     | 22X1,5 | 19  | 27  | 27  | 36   | 32   | 12 | 46   |
| EGG 161615LACA | 16     | 16X1,5 | 19  | 27  | 22  | 36   | 32   | 12 | 44   |
| EGG 162215LACA | 16     | 22X1,5 | 19  | 27  | 27  | 36   | 32   | 12 | 46   |
| EGG 182215LACA | 18     | 22X1,5 | 24  | 32  | 27  | 40   | 35   | 14 | 50   |
| EGG 202215LACA | 20     | 22X1,5 | 24  | 32  | 27  | 42   | 37   | 14 | 50   |



**TEE GIREVOLE AL PIEDE CON CODOLO LISCIO**  
**SWIVEL NUT BRANCH TEE WITHOUT PRE-FORMED CUTTING RING**  
**EINSTELLBARE T-VERSCHRAUBUNG**  
**TE TOURNANT AU PIED AVEC CÔNE LISSE**

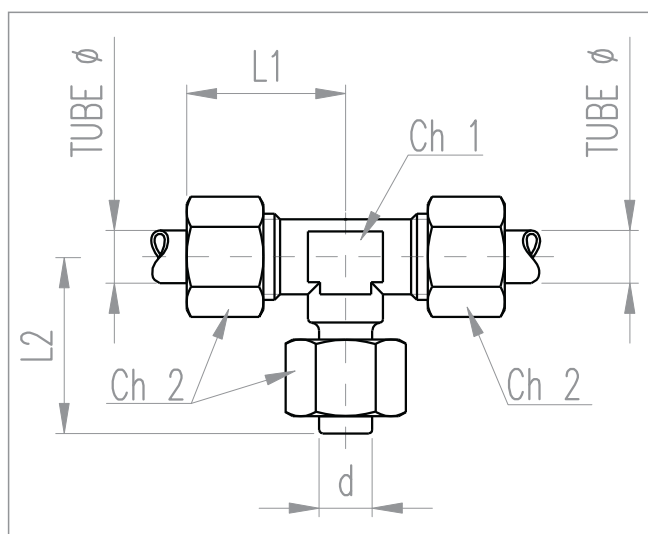
**TOP**



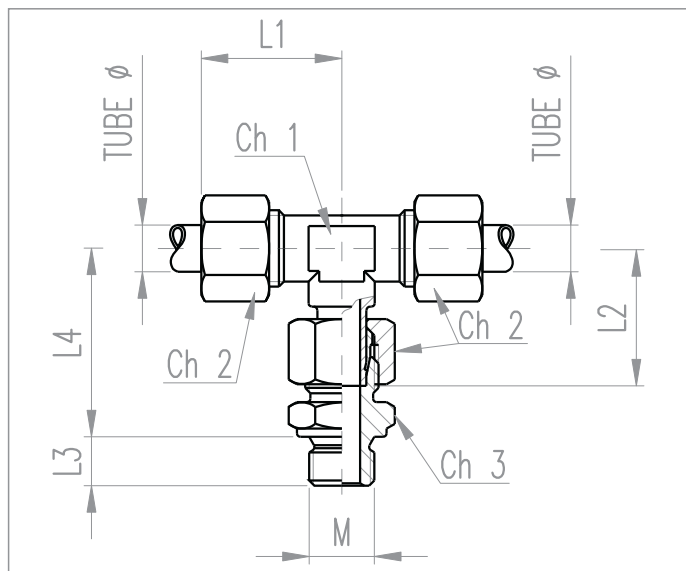
| PART NUMBER | TUBE ø | d  | Ch1 | Ch2 | L1 | L2   |
|-------------|--------|----|-----|-----|----|------|
| TOP 06LANA  | 6      | 6  | 12  | 14  | 27 | 26   |
| TOP 08LANA  | 8      | 8  | 12  | 17  | 29 | 27   |
| TOP 10LANA  | 10     | 10 | 14  | 19  | 30 | 28,5 |
| TOP 12LANA  | 12     | 12 | 17  | 22  | 32 | 29   |
| TOP 15LANA  | 15     | 15 | 19  | 27  | 36 | 32   |
| TOP 16LANA  | 16     | 16 | 19  | 27  | 36 | 32   |
| TOP 18LANA  | 18     | 18 | 24  | 32  | 40 | 35   |
| TOP 20LANA  | 20     | 20 | 24  | 32  | 42 | 37   |

**TEE GIREVOLE AL PIEDE CON DADO E ANELLO PREMONTATO**  
**SWIVEL NUT BRANCH TEE WITH PRE-FORMED CUTTING RING**  
**EINSTELLBARE T-VERSCHRAUBUNG, VORMONTIERT MIT SCHNEIDRING**  
**UND ÜBERWURFMUTTER**  
**TE TOURNANT AU PIED AVEC ECROU ET BAGUE PREMONTÉE**

**TOP**



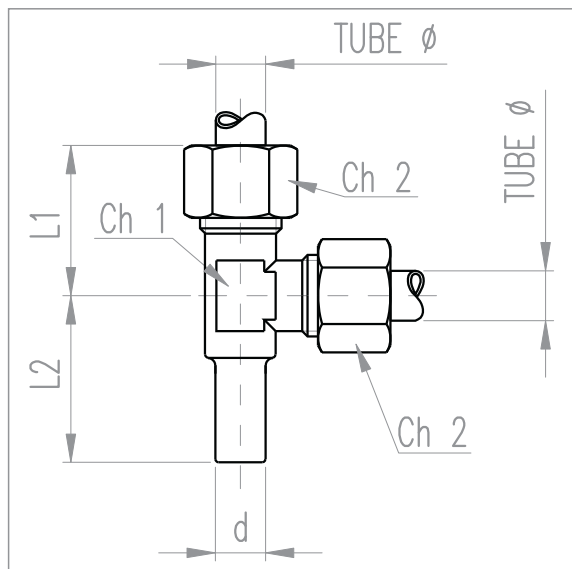
| PART NUMBER | TUBE ø | d  | Ch1 | Ch2 | L1 | L2   |
|-------------|--------|----|-----|-----|----|------|
| TOP 06LACA  | 6      | 6  | 12  | 14  | 27 | 26   |
| TOP 08LACA  | 8      | 8  | 12  | 17  | 29 | 27   |
| TOP 10LACA  | 10     | 10 | 14  | 19  | 30 | 28,5 |
| TOP 12LACA  | 12     | 12 | 17  | 22  | 32 | 29   |
| TOP 15LACA  | 15     | 15 | 19  | 27  | 36 | 32   |
| TOP 16LACA  | 16     | 16 | 19  | 27  | 36 | 32   |
| TOP 18LACA  | 18     | 18 | 24  | 32  | 40 | 35   |
| TOP 20LACA  | 20     | 20 | 24  | 32  | 42 | 37   |



| PART NUMBER    | TUBE Ø | M      | Ch1 | Ch2 | Ch3 | L1 | L2   | L3 | L4   |
|----------------|--------|--------|-----|-----|-----|----|------|----|------|
| ETP 061010LACA | 6      | 10X1   | 12  | 14  | 14  | 27 | 26   | 8  | 34,5 |
| ETP 061215LACA | 6      | 12X1,5 | 12  | 14  | 17  | 27 | 26   | 12 | 36   |
| ETP 061615LACA | 6      | 16X1,5 | 12  | 14  | 22  | 27 | 26   | 12 | 35   |
| ETP 062215LACA | 6      | 22X1,5 | 12  | 14  | 27  | 27 | 26   | 12 | 35   |
| ETP 081215LACA | 8      | 12X1,5 | 12  | 17  | 17  | 29 | 27   | 12 | 37   |
| ETP 081615LACA | 8      | 16X1,5 | 12  | 17  | 22  | 29 | 27   | 12 | 36   |
| ETP 082215LACA | 8      | 22X1,5 | 12  | 17  | 27  | 29 | 27   | 12 | 36   |
| ETP 101215LACA | 10     | 12X1,5 | 14  | 19  | 17  | 30 | 28,5 | 12 | 39,5 |
| ETP 101615LACA | 10     | 16X1,5 | 14  | 19  | 22  | 30 | 28,5 | 10 | 36,5 |
| ETP 102215LACA | 10     | 22X1,5 | 14  | 19  | 27  | 30 | 28,5 | 12 | 38,5 |
| ETP 121215LACA | 12     | 12X1,5 | 17  | 22  | 19  | 32 | 29   | 12 | 40   |
| ETP 121615LACA | 12     | 16X1,5 | 17  | 22  | 22  | 32 | 29   | 12 | 41,5 |
| ETP 122215LACA | 12     | 22X1,5 | 17  | 22  | 27  | 32 | 29   | 12 | 39   |
| ETP 151615LACA | 15     | 16X1,5 | 19  | 27  | 22  | 36 | 32   | 12 | 44   |
| ETP 152215LACA | 15     | 22X1,5 | 19  | 27  | 27  | 36 | 32   | 12 | 46   |
| ETP 161615LACA | 16     | 16X1,5 | 19  | 27  | 22  | 36 | 32   | 12 | 44   |
| ETP 162215LACA | 16     | 22X1,5 | 19  | 27  | 27  | 36 | 32   | 12 | 46   |
| ETP 182215LACA | 18     | 22X1,5 | 24  | 32  | 27  | 40 | 35   | 14 | 50   |
| ETP 202215LACA | 20     | 22X1,5 | 24  | 32  | 27  | 42 | 37   | 14 | 50   |

**TEE GIREVOLE AL BRACCIO CON CODOLO LISCIO**  
**SWIVEL NUT RUN TEE WITHOUT PRE-FORMED CUTTING RING**  
**EINSTELLBARE L-VERSCHRAUBUNG**  
**TE TOURNANT AU BRAS AVEC CÔNE LISSE**

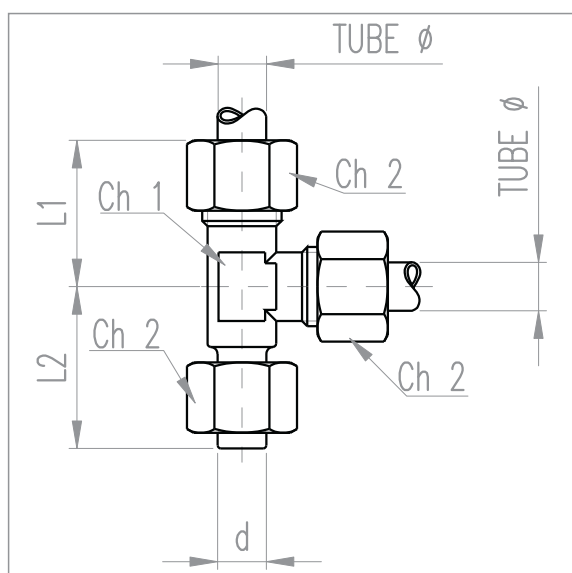
**TOB**



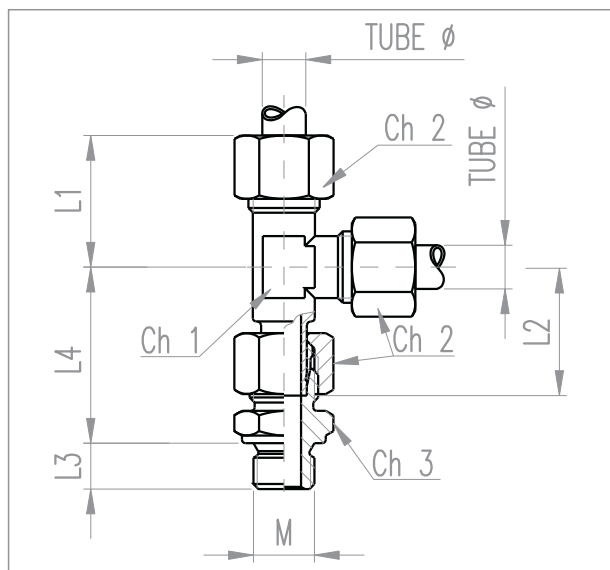
| PART NUMBER | TUBE Ø | d  | Ch1 | Ch2 | L1 | L2   |
|-------------|--------|----|-----|-----|----|------|
| TOB 06LANA  | 6      | 6  | 12  | 14  | 27 | 26   |
| TOB 08LANA  | 8      | 8  | 12  | 17  | 29 | 27   |
| TOB 10LANA  | 10     | 10 | 14  | 19  | 30 | 28,5 |
| TOB 12LANA  | 12     | 12 | 17  | 22  | 32 | 29   |
| TOB 15LANA  | 15     | 15 | 19  | 27  | 36 | 32   |
| TOB 16LANA  | 16     | 16 | 19  | 27  | 36 | 32   |
| TOB 18LANA  | 18     | 18 | 24  | 32  | 40 | 35   |
| TOB 20LANA  | 20     | 20 | 24  | 32  | 42 | 37   |

**TEE GIREVOLE AL BRACCIO CON DADO E ANELLO PREMONTATO**  
**SWIVEL NUT RUN TEE WITH PRE-FORMED CUTTING RING**  
**EINSTELLBARE L-VERSCHRAUBUNG, VORMONTIERT MIT SCHNEIDRING**  
**UND ÜBERWURFMUTTER**  
**TE TOURNANT AU BRAS AVEC ECROU ET BAGUE PREMONTE**

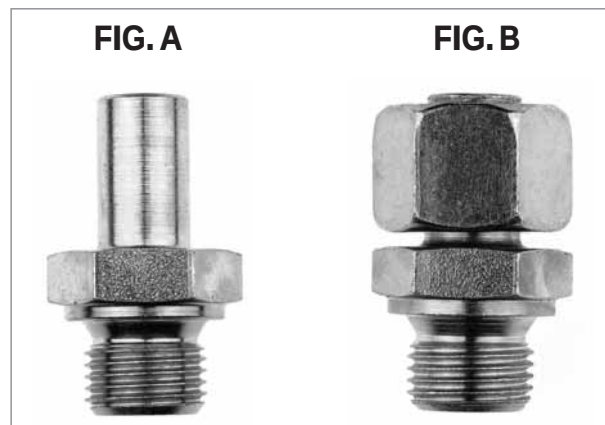
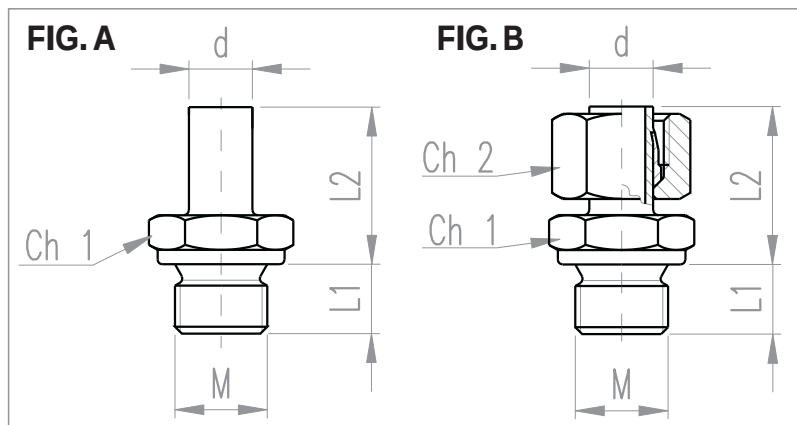
**TOB**



| PART NUMBER | TUBE Ø | d  | Ch1 | Ch2 | L1 | L2   |
|-------------|--------|----|-----|-----|----|------|
| TOB 06LACA  | 6      | 6  | 12  | 14  | 27 | 26   |
| TOB 08LACA  | 8      | 8  | 12  | 17  | 29 | 27   |
| TOB 10LACA  | 10     | 10 | 14  | 19  | 30 | 28,5 |
| TOB 12LACA  | 12     | 12 | 17  | 22  | 32 | 29   |
| TOB 15LACA  | 15     | 15 | 19  | 27  | 36 | 32   |
| TOB 16LACA  | 16     | 16 | 19  | 27  | 36 | 32   |
| TOB 18LACA  | 18     | 18 | 24  | 32  | 40 | 35   |
| TOB 20LACA  | 20     | 20 | 24  | 32  | 42 | 37   |

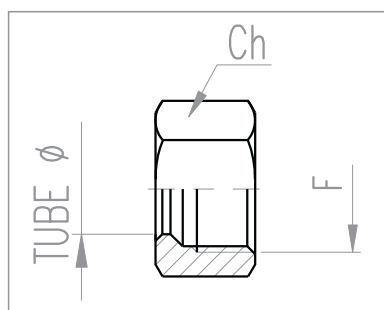


| PART NUMBER    | TUBE Ø | M      | Ch1 | Ch2 | Ch3 | L1 | L2   | L3 | L4   |
|----------------|--------|--------|-----|-----|-----|----|------|----|------|
| ETB 061010LACA | 6      | 10X1   | 12  | 14  | 14  | 27 | 26   | 8  | 34,5 |
| ETB 061215LACA | 6      | 12X1,5 | 12  | 14  | 17  | 27 | 26   | 12 | 36   |
| ETB 061615LACA | 6      | 16X1,5 | 12  | 14  | 22  | 27 | 26   | 12 | 35   |
| ETB 062215LACA | 6      | 22X1,5 | 12  | 14  | 27  | 27 | 26   | 12 | 35   |
| ETB 081215LACA | 8      | 12X1,5 | 12  | 17  | 17  | 29 | 27   | 12 | 37   |
| ETB 081615LACA | 8      | 16X1,5 | 12  | 17  | 22  | 29 | 27   | 12 | 36   |
| ETB 082215LACA | 8      | 22X1,5 | 12  | 17  | 27  | 29 | 27   | 12 | 36   |
| ETB 101215LACA | 10     | 12X1,5 | 14  | 19  | 17  | 30 | 28,5 | 12 | 39,5 |
| ETB 101615LACA | 10     | 16X1,5 | 14  | 19  | 22  | 30 | 28,5 | 10 | 36,5 |
| ETB 102215LACA | 10     | 22X1,5 | 14  | 19  | 27  | 30 | 28,5 | 12 | 38,5 |
| ETB 121215LACA | 12     | 12X1,5 | 17  | 22  | 19  | 32 | 29   | 12 | 40   |
| ETB 121615LACA | 12     | 16X1,5 | 17  | 22  | 22  | 32 | 29   | 12 | 41,5 |
| ETB 122215LACA | 12     | 22X1,5 | 17  | 22  | 27  | 32 | 29   | 12 | 39   |
| ETB 151615LACA | 15     | 16X1,5 | 19  | 27  | 22  | 36 | 32   | 12 | 44   |
| ETB 152215LACA | 15     | 22X1,5 | 19  | 27  | 27  | 36 | 32   | 12 | 46   |
| ETB 161615LACA | 16     | 16X1,5 | 19  | 27  | 22  | 36 | 32   | 12 | 44   |
| ETB 162215LACA | 16     | 22X1,5 | 19  | 27  | 27  | 36 | 32   | 12 | 46   |
| ETB 182215LACA | 18     | 22X1,5 | 24  | 32  | 27  | 40 | 35   | 14 | 50   |
| ETB 202215LACA | 20     | 22X1,5 | 24  | 32  | 27  | 42 | 37   | 14 | 50   |



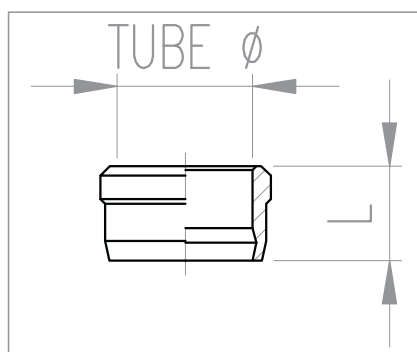
| PART NUMBER A | PART NUMBER B | d  | M      | Ch1 | Ch2 | L1 | L2   |
|---------------|---------------|----|--------|-----|-----|----|------|
| ORM 061215LA  | ORM 061215LAY | 6  | 12X1,5 | 17  | 14  | 12 | 25   |
| ORM 062215LA  | ORM 062215LAY | 6  | 22X1,5 | 27  | 14  | 12 | 27   |
| ORM 081615LA  | ORM 081615LAY | 8  | 16X1,5 | 22  | 17  | 12 | 27   |
| ORM 082215LA  | ORM 082215LAY | 8  | 22X1,5 | 27  | 17  | 14 | 26   |
| ORM 101615LA  | ORM 101615LAY | 10 | 16X1,5 | 22  | 19  | 13 | 25,5 |
| ORM 102215LA  | ORM 102215LAY | 10 | 22X1,5 | 27  | 19  | 12 | 28,5 |
| ORM 121215LA  | ORM 121215LAY | 12 | 12X1,5 | 17  | 22  | 12 | 27   |
| ORM 121615LA  | ORM 121615LAY | 12 | 16X1,5 | 22  | 22  | 12 | 29   |
| ORM 122215LA  | ORM 122215LAY | 12 | 22X1,5 | 27  | 22  | 12 | 29   |
| ORM 151615LA  | ORM 151615LAY | 15 | 16X1,5 | 22  | 27  | 13 | 26,5 |
| ORM 152215LA  | ORM 152215LAY | 15 | 22X1,5 | 27  | 27  | 12 | 30   |
| ORM 161615LA  | ORM 161615LAY | 16 | 16X1,5 | 22  | 27  | 12 | 32   |
| ORM 162215LA  | ORM 162215LAY | 16 | 22X1,5 | 27  | 27  | 12 | 32   |
| ORM 182215LA  | ORM 182215LAY | 18 | 22X1,5 | 27  | 32  | 14 | 32   |
| ORM 202215LA  | ORM 202215LAY | 20 | 22X1,5 | 27  | 32  | 14 | 31   |

### DADO DI SERRAGGIO NUT ÜBERWURFMUTTER FÜR SCHLAUCHSTUTZEN CROU DE SERRAGE

**DAD**


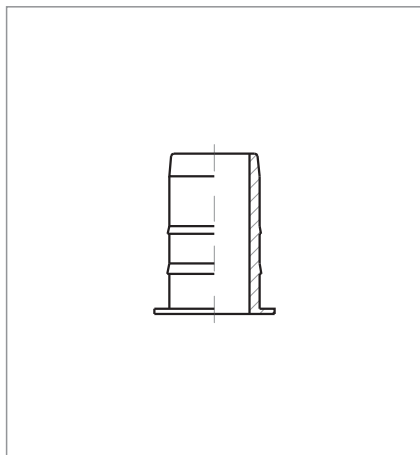
| PART NUMBER | TUBE Ø | M      | Ch |
|-------------|--------|--------|----|
| DAD 06LA    | 6      | 12X1,5 | 14 |
| DAD 08LA    | 8      | 14X1,5 | 17 |
| DAD 10LA    | 10     | 16X1,5 | 19 |
| DAD 12LA    | 12     | 18X1,5 | 22 |
| DAD 15LA    | 15     | 22X1,5 | 27 |
| DAD 16LA    | 16     | 22X1,5 | 27 |
| DAD 18LA    | 18     | 26X1,5 | 32 |
| DAD 20LA    | 20     | 26X1,5 | 32 |

### ANELLO TAGLIANTE CUTTING RING SCHNEIDRING BAGUE COUPANTE

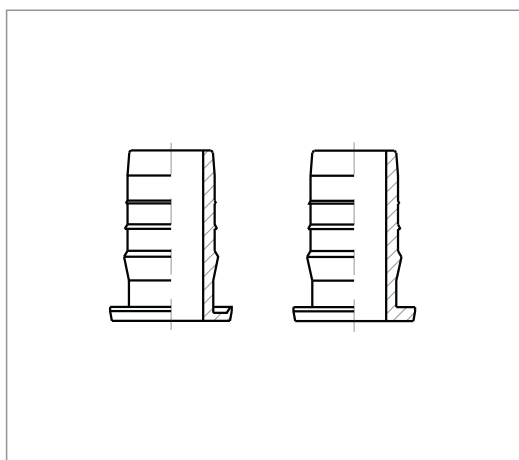
**ANT**


| PART NUMBER | TUBE Ø | L   |
|-------------|--------|-----|
| ANT 06LA    | 6      | 9,5 |
| ANT 08LA    | 8      | 9,5 |
| ANT 10LA    | 10     | 10  |
| ANT 12LA    | 12     | 10  |
| ANT 15LA    | 15     | 10  |
| ANT 16LA    | 16     | 10  |
| ANT 18LA    | 18     | 10  |
| ANT 20LA    | 20     | 12  |

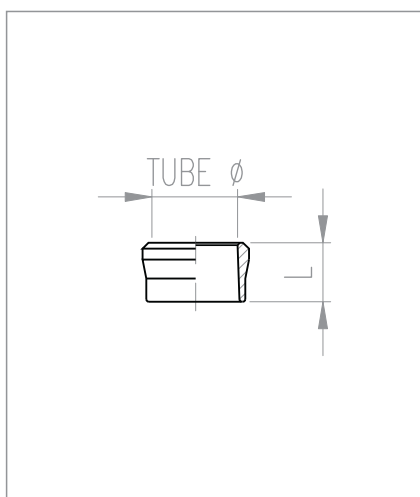




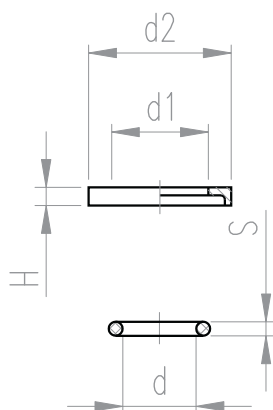
| PART NUMBER | TUBE   |        |
|-------------|--------|--------|
|             | Ø EXT. | Ø INT. |
| FBL 0402L0  | 4      | 2      |
| FBL 0604L0  | 6      | 4      |
| FBL 0806L0  | 8      | 6      |
| FBL 1008L0  | 10     | 8      |
| FBL 1007L0  | 10     | 7      |
| FBL 1006L0  | 10     | 6      |
| FBL 1209L0  | 12     | 9      |
| FBL 1208L0  | 12     | 8      |
| FBL 1410L0  | 14     | 10     |
| FBL 1512L0  | 15     | 12     |
| FBL 1612L0  | 16     | 12     |
| FBL 1814L0  | 18     | 14     |
| FBL 2016L0  | 20     | 16     |



| PART NUMBER | TUBE   |        |
|-------------|--------|--------|
|             | Ø EXT. | Ø INT. |
| FBD 06L0    | 6      | 4      |
| FBD 08L0    | 8      | 6      |
| FBD 10L0    | 10     | 7      |
| FBD 12L0    | 12     | 8,8    |
| FBD 16L0    | 16     | 11,3   |



| PART NUMBER | TUBE Ø | L   |
|-------------|--------|-----|
| FPL 06L0    | 6      | 8,5 |
| FPL 08L0    | 8      | 8,5 |
| FPL 10L0    | 10     | 9,2 |
| FPL 12L0    | 12     | 9,2 |
| FPL 15L0    | 15     | 9,8 |
| FPL 16L0    | 16     | 9,8 |
| FPL 18L0    | 18     | 9,8 |



THRUST RING



O-RING

| PART NUMBER<br>WITHOUT O-RING | THREAD | d1   | d2 | H   | d     | s    | PART NUMBER<br>WITH O-RING | PART NUMBER<br>O-RING |
|-------------------------------|--------|------|----|-----|-------|------|----------------------------|-----------------------|
| ANE 1010LA                    | 10X1   | 10,2 | 14 | 2   | 9,25  | 1,78 | ANE 1010LAOR               | OR 0925178N           |
| ANE 1215LA                    | 12X1,5 | 12,2 | 18 | 2,3 | 10,78 | 2,62 | ANE 1215LAOR               | OR 1078262N           |
| ANE 1415LA                    | 14X1,5 | 14,2 | 20 | 2,3 | 13,1  | 2,62 | ANE 1415LAOR               | OR 1310262N           |
| ANE 1615LA                    | 16X1,5 | 16,2 | 22 | 2,3 | 15,08 | 2,62 | ANE 1615LAOR               | OR 1508262N           |
| ANE 1815LA                    | 18X1,5 | 18,2 | 24 | 2,3 | 17,13 | 2,62 | ANE 1815LAOR               | OR 1713262N           |
| ANE 2015LA                    | 20X1,5 | 20,2 | 26 | 2,3 | 18,72 | 2,62 | ANE 2015LAOR               | OR 1872262N           |
| ANE 2215LA                    | 22X1,5 | 22,2 | 28 | 2,3 | 20,63 | 2,62 | ANE 2215LAOR               | OR 2063262N           |
| ANE 2615LA                    | 26X1,5 | 26,2 | 32 | 2,3 | 25,07 | 2,62 | ANE 2615LAOR               | OR 2507262N           |
| ANE 3015LA                    | 30X1,5 | 30,2 | 37 | 2,3 | 29,82 | 2,62 | ANE 3015LAOR               | OR 2982262N           |

## TUBO NYLON P/10 LINEARE FLESSIBILE - *NYLON P10 LINEAR FLEXIBLE*

| DIMENSIONI<br><i>DIMENSIONS</i> |             | PESO<br><i>WEIGHT</i> | RAGGIO DI<br>CURVATURA        | PRESSIONI-PRESSURE a 20°C |                             |
|---------------------------------|-------------|-----------------------|-------------------------------|---------------------------|-----------------------------|
| <i>o Øe</i>                     | <i>i Øi</i> | GR.MT                 | <i>RADIUS OF CUR.<br/>Mm.</i> | SCOPPIO<br><i>BURST</i>   | ESERCIZIO<br><i>WORKING</i> |
| 4                               | 2,5         | 7,65                  | 25                            | 72                        | 24                          |
| 6                               | 4           | 15,70                 | 35                            | 62                        | 21                          |
| 8                               | 6           | 21,98                 | 40                            | 44                        | 15                          |
| 10                              | 8           | 28,26                 | 60                            | 34                        | 11                          |
| 12                              | 10          | 34,54                 | 85                            | 28                        | 9                           |

### TEMPERATURE °C.

Il P.10 può essere impiegato in una gamma di temperature variante da -20°C a +60°C.

*P.10 can be used in a range of temperatures from -20°C to +60°C.*

### TOLLERANZE - *TOLLERANCE* :

± 0,07 sullo spessore della parete - *on the thickness of the wall.*

± 0,07 su Øe - *on the Øo*

± 0,5% sul peso - *on the weight*

Il tubo è fornito in rotoli da 100mt.

*The hose is delivered in rolls of 100mt. each.*

### SCHEDA TECNICA P10 - DATA SHEET

#### Proprietà generali - *General proprieties*

#### Valori tipici - *Typical values*

|                                                                 |   |                                    |                   |              |         |
|-----------------------------------------------------------------|---|------------------------------------|-------------------|--------------|---------|
| D E N S I T A'                                                  | - | <i>D E N S I T Y</i>               | g/cm <sup>3</sup> | ISO R 1183 D | 1       |
| PUNTO DI FUSIONE                                                | - | <i>MELTING POINT</i>               | °C                | ASTM D 789   | 222     |
| MODULO A FLESSIONE                                              | - | <i>FLEXURAL MODULUS</i>            | Mpa               | ISO 178      | 300     |
| RIGIDITA' ALLA ROTTURA                                          | - | <i>TENSILE STRENGTH AT YIELD</i>   | %                 | ISO 62       | 9 ~ 10  |
| ALLUNGAMENTO ALLA ROTTURA<br><i>TENSILE ELONGATION AT BREAK</i> |   |                                    | Mpa<br>%          | ISO 527      | 35 ~ 40 |
| TEMPERATURE DI FORMAZIONE                                       | - | <i>HEAT DISTORTION TEMPERATURE</i> | °C                | ISO 75       | 57      |
| 4,6 bars (66 psi)                                               |   |                                    |                   |              |         |
| DUREZZA                                                         | - | <i>HARDNESS</i>                    | Shore D           | ISO 868      | 55 ~ 63 |

## SPIRALI IN NYLON P/10 - *NYLON P/10 SPIRAL HOSES*

| DIMENSIONI<br><i>DIMENSIONS</i> |             | LUNGHEZZE SPIRALI MT.<br><i>SPIRAL LENGHT MT.</i> |                                | DIAMETRI - <i>DIAMETER</i>         |                                 |
|---------------------------------|-------------|---------------------------------------------------|--------------------------------|------------------------------------|---------------------------------|
| <i>o Øe</i>                     | <i>i Øi</i> | TUBO<br>LINEARE<br><i>LINEAR HOSE</i>             | A RIPOSO<br><i>OUT OF WORK</i> | UTILIZZO MT.<br><i>USE MAX MT.</i> | INT./EST.Mm<br><i>INS./OUT.</i> |
| 6                               | 4           | 30                                                | 0,950                          | 20                                 | 55/67                           |
| 8                               | 6           | 30                                                | 1,000                          | 20                                 | 70/86                           |
| 10                              | 8           | 30                                                | 1,000                          | 20                                 | 90/120                          |

Spirali di tipo economico, ideali per il "Fai da te".

*Spiral of economic type, ideal for "bricolage".*

# ELASTOLLAN® SERIE C 98 LINEARI FLESSIBILI

## TYPE C98 POLYURETHAN LINEAR FLEXIBLE HOSES

| DIMENSIONI<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA | PRESSIONI-PRESSURE at 20°C |                      |
|--------------------------|------|----------------|------------------------|----------------------------|----------------------|
| o Øe                     | i Øi | GR.MT          | RADIUS OF CUR.<br>Mm.  | SCOPPIO<br>BURST           | ESERCIZIO<br>WORKING |
| 4                        | 2    | 11,68          | 20                     | 67                         | 22                   |
| 4                        | 2,5  | 9,49           | 20                     | 46                         | 15                   |
| 4,3                      | 2,7  | 10,90          | 20                     | 46                         | 15                   |
| 5                        | 3    | 15,57          | 25                     | 50                         | 17                   |
| 6                        | 4    | 19,47          | 30                     | 40                         | 13                   |
| 8                        | 5    | 37,96          | 40                     | 46                         | 15                   |
| 8                        | 5,5  | 32,85          | 45                     | 37                         | 12                   |
| 8                        | 6    | 30,00          | 40                     | 29                         | 10                   |
| 10                       | 6,5  | 56,21          | 30                     | 42                         | 14                   |
| 10                       | 7    | 49,64          | 35                     | 35                         | 12                   |
| 10                       | 7,5  | 42,59          | 40                     | 29                         | 10                   |
| 10                       | 8    | 40,00          | 50                     | 22                         | 7                    |
| 12                       | 8    | 77,87          | 30                     | 40                         | 13                   |
| 12                       | 9    | 61,32          | 50                     | 29                         | 10                   |

Il tubo è fornito in rotoli da 100mt.

*The hose is delivered in rolls of 100mt. each.*

Il poliuretano ELASTOLLAN C viene utilizzato nel rivestimento interno per cavi, elementi schermaggio, soffietti, guarnizioni per elementi idraulici, parti tecniche per automobili, catene da neve, monofilamenti, pezzi di cavi, films, manicotti, rivestimento interno di tubi per trasporto di materiale abrasivo in acqua, cinghie di trasmissione, tubi per aria compressa.

*ELASTOLLAN TYPE C polyurethan can be used for the inner fining of canles, screening elements, bellows, gaskets for hydraulic elements, technical components for cars, skid chains, cable pieces, films, couplings, inner lining, hoses for the transport of abrasive material in water, driving belts, pneumatic hoses .*

### TEMPERATURE °C.

Il POLIURETANO serie C può essere impiegato in una gamma di temperature da -40°C a +60°C. Qui di seguito riportiamo una tabella delle pressioni espresse in % in fuazione delle temperature *POLYURETHAN type C, can be used in a range of temperatures from -40°C to + 60°C. Here we state a table concerning the working pressures expressed in % in as a function of temperatures*

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| 20°  | 30  | 40° | 50° | 60° |
| 100% | 83% | 72% | 64% | 47% |

### TOLLERANZE - TOLLERANCE :

± 0,07 sullo spessore della parete - *on the thickness of the wall.*

± 0,07 su Ø esterno - *on the outside Ø*

± 0,07 su Ø interno - *on the inside Ø*

± 0,05% sul peso - *on the weighth*

### SCHEDA TECNICA PU SERIE C - TYPE C DATA SHEET

### Proprietà generali - General proprieties

### Valori tipici - Typical values

|                           |   |                             |         |              |           |
|---------------------------|---|-----------------------------|---------|--------------|-----------|
| D E N S I T A'            | - | D E N S I T Y               | g/cm³   | DIN 53479    | 1,21-1,23 |
| PERDITA DI ABRASIONE      | - | LOSS OF ABRASION            | mm³     | DIN53516     | ≤45       |
| RESISTENZA ALLA ROTTURA   | - | STRESS AT YIELD             | N/mm³   | DIN 53504-S2 | ≥35       |
| ALLUNGAMENTO ALLA ROTTURA | - | TENSILE ELONGATION AT BREAK | %       | DIN 53504    | ≥400      |
| RESISTENZA ALLO STRAPPO   | - | STRENGHT AT BREAK           | N/mm    | DIN 53515    | ≥110      |
| DUREZZA                   | - | HARDNESS                    | Shore D | DIN 53505    | 49-55     |



Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ELASTOGRAN e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ELASTOGRAN Research Center and data selected from the litearature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.

# ELASTOLLAN® SERIE 1198 LINEARI ANTI U.V.

## TYPE 1198 POLYURETHAN LINEAR ANTI-ULTRAVIOLET

| DIMENSIONI<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA | PRESSIONI-PRESSURE a 20°C |                      |
|--------------------------|------|----------------|------------------------|---------------------------|----------------------|
| o Øe                     | i Øi | GR.MT          | RADIUS OF CUR.<br>Mm.  | SCOPPIO<br>BURST          | ESERCIZIO<br>WORKING |
| 4                        | 2,5  | 9,03           | 20                     | 37                        | 12                   |
| 6                        | 4    | 20,67          | 30                     | 32                        | 11                   |
| 8                        | 5    | 36,13          | 40                     | 37                        | 12                   |
| 8                        | 5,5  | 30,00          | 40                     | 30                        | 10                   |
| 10                       | 6,5  | 53,49          | 30                     | 34                        | 11                   |
| 10                       | 7,5  | 37,70          | 50                     | 23                        | 8                    |
| 12                       | 8    | 74,10          | 30                     | 32                        | 11                   |
| 12                       | 9    | 58,36          | 50                     | 23                        | 8                    |

### TEMPERATURE °C.

Il POLIURETANO può essere impiegato in una gamma di temperature da -40°C a + 60°C. Qui di seguito riportiamo una tabella delle pressioni espresse in % in funzione delle temperature.

*POLYURETHAN can be used in a range of temperatures from -40°C to + 60°C. Here we state a table concerning the working pressures expressed in % as a function of temperatures*

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| 20°  | 30  | 40° | 50° | 60° |
| 100% | 83% | 72% | 64% | 47% |

### TOLLERANZE - TOLLERANCE :

± 0,07 sullo spessore della parete - *on the thickness of the wall.*

± 0,07 su Ø esterno - *on the outside Ø*

± 0,07 su Ø interno - *on the inside Ø*

± 0,05% sul peso - *on the weight*

**COLORI DISPONIBILI TRASPARENTI:** neutro, azzurro, viola, rosso, verde.

**AVAILABLE TRANSPARENT COLOURS :** *neutral, light blue, violet, red, green.*



### SCHEMA TECNICA PU 1198 - TYPE 1198 DATA SHEET

### Proprietà generali - General proprieties

### Valori tipici - Typical values

|                           |   |                             |         |              |           |
|---------------------------|---|-----------------------------|---------|--------------|-----------|
| D E N S I T A'            | - | D E N S I T Y               | g/cm³   | DIN 53479    | 1,14-1,16 |
| PERDITA DI ABRASIONE      | - | LOSS OF ABRASION            | mm³     | DIN53516     | ≤45       |
| RESISTENZA ALLA ROTTURA   | - | STRESS AT YIELD             | N/mm³   | DIN 53504-S2 | ≥35       |
| ALLUNGAMENTO ALLA ROTTURA | - | TENSILE ELONGATION AT BREAK | %       | DIN 53504    | ≥400      |
| RESISTENZA ALLO STRAPPO   | - | STRENGHT AT BREAK           | N/mm    | DIN 53515    | ≥110      |
| DUREZZA                   | - | HARDNESS                    | Shore D | DIN 53505    | 49-55     |

Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ELASTOGRAN e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ELASTOGRAN Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.

# ELASTOLLAN® SERIE 1190 LINEARI FLESSIBILI

## TYPE 1190 POLYURETHAN LINEAR FLEXIBLE HOSES

| DIMENSIONI<br>DIMENSIONS |         | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA | PRESSIONI-PRESSURE at 20°C |                          |
|--------------------------|---------|----------------|------------------------|----------------------------|--------------------------|
| ø Øe                     | i Øi    | GR.MT          | RADIUS OF CUR.<br>MM   | SCOPPIO<br>BURST ATM       | ESERCIZIO<br>WORKING ATM |
| 3                        | 1,5     | 6,09           | 15                     | 53                         | 18                       |
| 3,17                     | 1,6     | 6,76           | 15                     | 53                         | 18                       |
| 4                        | 2       | 10,83          | 20                     | 53                         | 18                       |
| 4                        | 2,5     | 8,80           | 20                     | 37                         | 12                       |
| 4,3                      | 2,7     | 10,11          | 20                     | 37                         | 12                       |
| 5                        | 3       | 14,44          | 25                     | 40                         | 13                       |
| 6                        | 3,2     | 23,25          | 25                     | 49                         | 16                       |
| 6                        | 3,6     | 20,80          | 30                     | 40                         | 13                       |
| 6                        | 4 (3,8) | 18,06          | 30                     | 32                         | 11                       |
| 8                        | 4       | 43,33          | 30                     | 53                         | 18                       |
| 8                        | 5       | 35,21          | 40                     | 37                         | 12                       |
| 8                        | 5,5     | 30,47          | 45                     | 30                         | 10                       |
| 8                        | 6 (5,7) | 25,28          | 40                     | 23                         | 8                        |
| 10                       | 5       | 67,71          | 20                     | 53                         | 18                       |
| 10                       | 6       | 62,97          | 25                     | 46                         | 15                       |
| 10                       | 6,5     | 52,13          | 30                     | 34                         | 11                       |
| 10                       | 7       | 46,04          | 35                     | 28                         | 9                        |
| 12                       | 7,5     | 79,22          | 25                     | 37                         | 12                       |
| 12                       | 8       | 72,22          | 30                     | 32                         | 11                       |
| 12                       | 8,5     | 64,77          | 40                     | 27                         | 9                        |
| 12                       | 9       | 56,87          | 50                     | 23                         | 8                        |
| 14                       | 8,5     | 111,72         | 30                     | 39                         | 13                       |
| 14                       | 9,5     | 95,47          | 60                     | 31                         | 10                       |
| 14                       | 9       | 103,82         | 50                     | 35                         | 12                       |
| 14                       | 10      | 86,66          | 120                    | 27                         | 9                        |
| 16                       | 10      | 140,83         | 105                    | 37                         | 12                       |
| 16                       | 10,5    | 131,58         | 100                    | 33                         | 11                       |
| 16                       | 11      | 121,87         | 110                    | 30                         | 10                       |
| 16                       | 12      | 101,11         | 125                    | 23                         | 8                        |
| 19                       | 13      | 173,33         | 145                    | 30                         | 10                       |

### TEMPERATURE °C.

Il POLIURETANO può essere impiegato in una gamma di temperature da -40°C a + 60°C. Qui di seguito riportiamo una tabella delle pressioni espresse in % in funzione delle temperature.

*POLYURETHAN can be used in a range of temperatures from -40°C to + 60°C. Here we state a table concerning the working pressures expressed in % as a function of temperatures*

|      |     |     |
|------|-----|-----|
| 20°  | 30  | 40° |
| 100% | 60% | 40% |

### TOLLERANZE - TOLLERANCE :

± 0,07 sullo spessore della parete - *on the thickness of the wall.*

± 0,07 su Ø esterno - *on the outside Ø*

± 0,07 su Ø interno - *on the inside Ø*

± 0,05% sul peso - *on the weigh*

### SCHEDA TECNICA ELASTOLLAN 1190A - PU TYPE 1190 DATA SHEET

### Proprietà generali - General proprieties

### Valori tipici - Typical values

|                           |   |                             |         |              |           |
|---------------------------|---|-----------------------------|---------|--------------|-----------|
| DENSITA'                  | - | DENSITY                     | g/cm³   | DIN 53479    | 1,14-1,16 |
| PERDITA DI ABRASIONE      | - | LOSS OF ABRASION            | mm³     | DIN53516     | ≤35       |
| RESISTENZA ALLA ROTTURA   | - | STRESS AT YIELD             | N/mm³   | DIN 53504-S2 | ≥45       |
| ALLUNGAMENTO ALLA ROTTURA | - | TENSILE ELONGATION AT BREAK | %       | DIN 53504    | ≥400      |
| RESISTENZA ALLO STRAPPO   | - | STRENGHT AT BREAK           | N/mm    | DIN 53515    | ≥90       |
| DUREZZA                   | - | HARDNESS                    | Shore D | DIN 53505    | 42-48     |

# ELASTOLLAN® SERIE 1185 LINEARI FLESSIBILI

## TYPE 1185 POLYURETHAN LINEAR FLEXIBLE HOSES

| DIMENSIONI<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA | PRESSIONI-PRESSURE at 20°C |                          |
|--------------------------|------|----------------|------------------------|----------------------------|--------------------------|
| ø Øe                     | i Øi | GR.MT          | RADIUS OF CUR.<br>Mm.  | SCOPPIO ATM<br>BURST       | ESERCIZIO ATM<br>WORKING |
| 18                       | 12   | 162,50         | 120                    | 16                         | 5                        |
| 20                       | 14   | 184,16         | 125                    | 14                         | 4                        |
| 24                       | 18   | 227,49         | 230                    | 11                         | 3,5                      |

### APPLICAZIONI - APPLICATIONS

TUBO IDONEO AL PASSAGGIO DI POLVERI DI VERNICE  
*PARTICULARLY FIT TO THE PASSAGE OF VARNISH DUST*

Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ELASTOGRAN e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ELASTOGRAN Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied commitment from our part.



RILSAN® PA 11 - P 40 TL - TUBI LINEARI FLESSIBILI - *L I N E A R F L E X I B I L E H O S E S*

| DIMENSIONI<br><i>D I M E N S I O N S</i> |             | PESO<br><i>W E I G H T</i> | RAGGIO DI<br>CURVATURA MM.       | PRESSIONI-PRESSURE at 20°C        |                                         |
|------------------------------------------|-------------|----------------------------|----------------------------------|-----------------------------------|-----------------------------------------|
| <i>o Øe</i>                              | <i>i Øi</i> | GR.MT                      | <i>R A D I U S O F C U R V .</i> | SCOPPIO<br><i>B U R S T A T M</i> | ESERCIZIO<br><i>W O R K I N G A T M</i> |
| 1,1                                      | 0,5         | 0,79                       | 10                               | 150                               | 50                                      |
| 2                                        | 1           | 2,47                       | 10                               | 133                               | 44                                      |
| 2                                        | 1,5         | 1,44                       | 20                               | 57                                | 19                                      |
| 2,5                                      | 1,5         | 3,30                       | 20                               | 100                               | 33                                      |
| 2,5                                      | 1,6         | 3,04                       | 20                               | 88                                | 29                                      |
| 3                                        | 1           | 6,59                       | 15                               | 200                               | 67                                      |
| 3                                        | 1,5         | 5,56                       | 12                               | 133                               | 44                                      |
| 3                                        | 2           | 4,12                       | 15                               | 80                                | 27                                      |
| 3                                        | 2,5         | 2,27                       | 25                               | 36                                | 12                                      |
| 3,17                                     | 1,6         | 6,17                       | 10                               | 132                               | 44                                      |
| 3,17                                     | 2,18        | 4,37                       | 20                               | 74                                | 25                                      |
| 3,5                                      | 3           | 2,68                       | 30                               | 31                                | 10                                      |
| 4                                        | 1           | 12,36                      | 10                               | 240                               | 80                                      |
| 4                                        | 1,5         | 11,33                      | 15                               | 182                               | 61                                      |
| 4                                        | 2           | 9,89                       | 20                               | 133                               | 44                                      |
| 4                                        | 2,3         | 8,83                       | 20                               | 108                               | 36                                      |
| 4                                        | 2,5         | 8,04                       | 20                               | 92                                | 31                                      |
| 4                                        | 2,7         | 7,18                       | 25                               | 78                                | 26                                      |
| 4                                        | 3           | 5,77                       | 25                               | 57                                | 19                                      |
| 4                                        | 3,5         | 3,09                       | 35                               | 27                                | 9                                       |
| 4,75                                     | 3,1         | 10,68                      | 30                               | 84                                | 28                                      |
| 5                                        | 3           | 13,19                      | 25                               | 100                               | 33                                      |
| 5                                        | 3,25        | 11,90                      | 27                               | 85                                | 28                                      |
| 5                                        | 3,5         | 10,51                      | 30                               | 71                                | 24                                      |
| 5                                        | 4           | 7,42                       | 50                               | 44                                | 15                                      |
| 6                                        | 4           | 16,49                      | 35                               | 80                                | 27                                      |
| 6                                        | 4,5         | 12,98                      | 40                               | 57                                | 19                                      |
| 6,35                                     | 4,35        | 17,64                      | 40                               | 75                                | 25                                      |
| 7                                        | 5           | 19,78                      | 38                               | 67                                | 22                                      |
| 7,93                                     | 6,35        | 18,60                      | 50                               | 44                                | 15                                      |
| 8                                        | 6           | 23,08                      | 40                               | 57                                | 19                                      |
| 9                                        | 7           | 26,38                      | 55                               | 50                                | 17                                      |
| 9,52                                     | 7           | 34,31                      | 50                               | 61                                | 20                                      |
| 10                                       | 8           | 29,67                      | 60                               | 44                                | 15                                      |
| 12                                       | 10          | 36,27                      | 85                               | 36                                | 12                                      |

TEMPERATURE °C.

Il RILSAN può essere impiegato in una gamma di temperature da –40°C a +80°C.

Qui di seguito riportiamo una tabella delle pressioni espresse in % in funzione delle temperature.

*RILSAN can be used in a range of temperatures from -40°C to + 80°C. Here we state a table concerning the pressures expressed in % as a function of temperatures.*

|      |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|
| 20°  | 30° | 40° | 50° | 60° | 70° | 80° |
| 100% | 83% | 72% | 64% | 58% | 52% | 47% |

TOLLERANZE - *T O L L E R A N C E* :

- ± 0,07 sullo spessore della parete – *on the thickness of the wall*
- ± 0,07 sul Øe fino a 10 mm – *on the outside Ø until 10 mm*
- ± 0,1 sul Øe da 12 a 25 mm – *on the outside Ø from 12 to 25 mm*
- ± 0,15 sul Øe da 26 a 40 mm – *on the outside Ø from 26 to 40 mm*
- ± 0,5% sul peso – *on the weight*

Fino al Øe 5 il tubo è fornito in rotoli da mt. 100, dal Øe 6 in rotoli da mt. 100 e su richiesta da mt. 50 o mt. 25.

*Until outside Ø 5 the hose is delivered in rolls of 100 mt.*

*From outsideØ 6 in rolls of 100mt. each, on request of 50 and 25mt.*

RILSAN®

E' un marchio concesso da ARKEMA

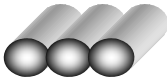
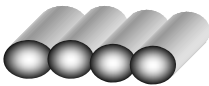
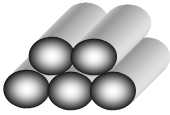
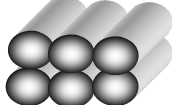
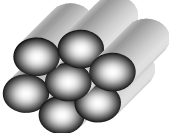
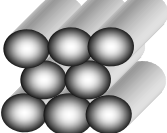
*Is an international trade mark granted by ARKEMA*

I tubi realizzati con **RILSAN PA 11** sono idonei all’ utilizzo su impianti frenanti poiché il prodotto soddisfa i requisiti della Norma **DIN 74324**.

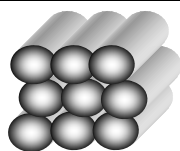
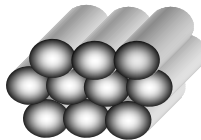
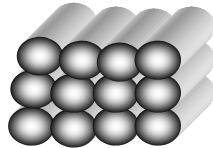
*Tubes realized with **RILSAN PA11** are fit for airbrake beacause the product has all the necessary qualification as provided in **DIN 74324** Norm.*

# RILSAN® PA11 POLYTUBE

## GUAINA POLIURETANO ANTI ABRASIONE - ANTI-ABRASION POLYURETHAN JACKET

| DIMESIONI<br>DIMENSIONS<br>o Øe i Øi |     | N° TUBI<br>N° OF HOSES |  | INGOMBRO<br>MM. |  | SEZIONE - SECTION                                                                     |
|--------------------------------------|-----|------------------------|--|-----------------|--|---------------------------------------------------------------------------------------|
| 4                                    | 2   | 2 TUBI - HOSES         |  | 9x5             |  |    |
| 4                                    | 2,7 | 2 TUBI - HOSES         |  | 9x5             |  |                                                                                       |
| 6                                    | 4   | 2 TUBI - HOSES         |  | 13x7            |  |                                                                                       |
| 8                                    | 6   | 2 TUBI - HOSES         |  | 18x10           |  |                                                                                       |
| 10                                   | 8   | 2 TUBI - HOSES         |  | 22x12           |  |                                                                                       |
| 12                                   | 10  | 2 TUBI - HOSES         |  | 26x14           |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
| 4                                    | 2   | 3 TUBI - HOSES         |  | 13x5            |  |    |
| 4                                    | 2,7 | 3 TUBI - HOSES         |  | 13x5            |  |                                                                                       |
| 6                                    | 4   | 3 TUBI - HOSES         |  | 20x8            |  |                                                                                       |
| 8                                    | 6   | 3 TUBI - HOSES         |  | 26x10           |  |                                                                                       |
| 10                                   | 8   | 3 TUBI - HOSES         |  | 32x12           |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
| 4                                    | 2   | 4 TUBI - HOSES         |  | 17x5            |  |    |
| 4                                    | 2,7 | 4 TUBI - HOSES         |  | 17x5            |  |                                                                                       |
| 6                                    | 4   | 4 TUBI - HOSES         |  | 14X14-26X8      |  |                                                                                       |
| 8                                    | 6   | 4 TUBI - HOSES         |  | 18X18           |  |                                                                                       |
| 10                                   | 8   | 4 TUBI - HOSES         |  | 22X22           |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
| 4                                    | 2   | 5 TUBI - HOSES         |  | 13x8            |  |  |
| 4                                    | 2,7 | 5 TUBI - HOSES         |  | 13x8            |  |                                                                                       |
| 6                                    | 4   | 5 TUBI - HOSES         |  | 20x12           |  |                                                                                       |
| 8                                    | 6   | 5 TUBI - HOSES         |  | 26x16           |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
| 4                                    | 2   | 6 TUBI - HOSES         |  | 14x10           |  |  |
| 4                                    | 2,7 | 6 TUBI - HOSES         |  | 14x10           |  |                                                                                       |
| 6                                    | 4   | 6 TUBI - HOSES         |  | 20x14           |  |                                                                                       |
| 8                                    | 6   | 6 TUBI - HOSES         |  | 26x18           |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
| 4                                    | 2   | 7 TUBI - HOSES         |  | 14x14           |  |  |
| 4                                    | 2,7 | 7 TUBI - HOSES         |  | 14x14           |  |                                                                                       |
| 6                                    | 4   | 7 TUBI - HOSES         |  | 20x20           |  |                                                                                       |
| 8                                    | 6   | 7 TUBI - HOSES         |  | 26x26           |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |
| 4                                    | 2   | 8 TUBI - HOSES         |  | 14x13           |  |  |
| 4                                    | 2,7 | 8 TUBI - HOSES         |  | 14x13           |  |                                                                                       |
| 6                                    | 4   | 8 TUBI - HOSES         |  | 20x19           |  |                                                                                       |
| 8                                    | 6   | 8 TUBI - HOSES         |  | 28x26           |  |                                                                                       |
|                                      |     |                        |  |                 |  |                                                                                       |

## GUAINA POLIURETANO ANTI ABRASIONE - ANTI-ABRASION POLYURETHAN JACKET

| DIMESIONI<br>DIMENSIONS<br>o Øe i Øi |     | N° TUBI<br>N° OF HOSES |  | INGOMBRO<br>MM. |  | SEZIONE - SECTION                                                                   |
|--------------------------------------|-----|------------------------|--|-----------------|--|-------------------------------------------------------------------------------------|
|                                      |     |                        |  |                 |  |  |
| 4                                    | 2   | 9 TUBI - HOSES         |  | 14X14           |  |                                                                                     |
| 4                                    | 2,7 | 9 TUBI - HOSES         |  | 14x14           |  |                                                                                     |
| 6                                    | 4   | 9 TUBI - HOSES         |  | 20x20           |  |                                                                                     |
| 8                                    | 6   | 9 TUBI - HOSES         |  | 32x26           |  |                                                                                     |
|                                      |     |                        |  |                 |  |                                                                                     |
|                                      |     |                        |  |                 |  |                                                                                     |
|                                      |     |                        |  |                 |  |  |
| 4                                    | 2   | 10 TUBI - HOSES        |  | 18x14           |  |                                                                                     |
| 4                                    | 2,7 | 10 TUBI - HOSES        |  | 18x14           |  |                                                                                     |
| 6                                    | 4   | 10 TUBI - HOSES        |  | 26x20           |  |                                                                                     |
| 8                                    | 6   | 10 TUBI - HOSES        |  | 36x26           |  |                                                                                     |
|                                      |     |                        |  |                 |  |                                                                                     |
|                                      |     |                        |  |                 |  |                                                                                     |
|                                      |     |                        |  |                 |  |  |
| 4                                    | 2   | 12 TUBI - HOSES        |  | 18x14           |  |                                                                                     |
| 4                                    | 2,7 | 12 TUBI - HOSES        |  | 18x14           |  |                                                                                     |
| 6                                    | 4   | 12 TUBI - HOSES        |  | 26x20           |  |                                                                                     |
|                                      |     |                        |  |                 |  |                                                                                     |

### SU RICHIESTA - UNDER REQUEST :

#### TUBI DI DIAMETRO DIVERSO - HOSES WITH DIFFERENT DIAMETER :

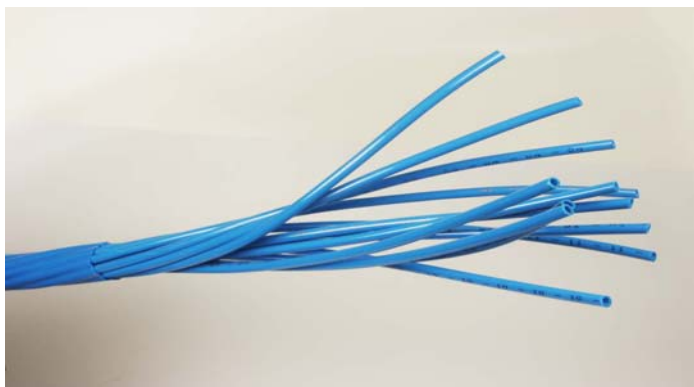
a) Tubi con cavi elettrici (ELETTROTUBI) anche in matasse da mt.500

*On request we could combine hoses with eletric cable in rolls of 500 meters too.*

b) Tubi di prodotti diversi - Polytube with different products.

Es.-Ex.: RILSAN + POLIETILENE / POLYETHILEN - RILSAN + POLIURETANO / POLYURETHAN

c) Con il multitubo si trasformano spirali - *We could produce spiral with polytube.*



RILSAN® PA 11 - MB3504 - TUBI LINEARI FLESSIBILI - *LINEAR FLEXIBLE HOSES*

| DIMENSIONI<br><i>DIMENSIONS</i> |             | PESO<br><i>WEIGHT</i> | RAGGIO DI<br>CURVATURA MM. | PRESSIONI-PRESSURE at 20°C |                             |
|---------------------------------|-------------|-----------------------|----------------------------|----------------------------|-----------------------------|
| <i>o Øe</i>                     | <i>i Øi</i> | GR.MT                 | <i>RADIUS OF CUR.</i>      | SCOPPIO<br><i>BURST</i>    | ESERCIZIO<br><i>WORKING</i> |
| 6                               | 3           | 21,94                 | 30                         | 133                        | 44                          |
| 6                               | 3,5         | 19,30                 | 30                         | 105                        | 35                          |
| 6                               | 3,6         | 18,72                 | 30                         | 100                        | 33                          |
| 7                               | 4           | 26,81                 | 45                         | 109                        | 36                          |
| 8                               | 4           | 39,00                 | 40                         | 133                        | 44                          |
| 8                               | 5           | 31,69                 | 40                         | 92                         | 31                          |
| 10                              | 6           | 52,00                 | 60                         | 100                        | 33                          |
| 10                              | 6,5         | 46,92                 | 60                         | 85                         | 28                          |
| 10                              | 7           | 41,44                 | 60                         | 71                         | 24                          |
| 10                              | 7,5         | 35,55                 | 50                         | 57                         | 19                          |
| 12                              | 8           | 65,00                 | 60                         | 80                         | 27                          |
| 12                              | 9           | 51,19                 | 70                         | 57                         | 19                          |
| 12,7                            | 9,52        | 57,41                 | 65                         | 57                         | 19                          |
| 14                              | 10          | 78,00                 | 80                         | 67                         | 22                          |
| 14                              | 11          | 60,94                 | 85                         | 48                         | 16                          |
| 14                              | 12          | 42,25                 | 90                         | 31                         | 10                          |
| 15                              | 11          | 84,50                 | 90                         | 62                         | 21                          |
| 15                              | 12          | 65,81                 | 90                         | 44                         | 15                          |
| 15                              | 12,5        | 55,86                 | 100                        | 36                         | 12                          |
| 15                              | 13          | 45,50                 | 95                         | 29                         | 10                          |
| 16                              | 12          | 91,00                 | 95                         | 57                         | 19                          |
| 16                              | 14          | 48,75                 | 100                        | 27                         | 9                           |
| 18                              | 14          | 104,00                | 100                        | 50                         | 17                          |
| 18                              | 15          | 80,44                 | 140                        | 36                         | 12                          |
| 18                              | 16          | 55,25                 | 350                        | 24                         | 8                           |
| 20                              | 16          | 117,00                | 130                        | 44                         | 15                          |
| 20                              | 18          | 61,75                 | 400                        | 21                         | 7                           |
| 22                              | 18          | 130,00                | 200                        | 40                         | 13                          |
| 22                              | 19          | 99,93                 | 250                        | 29                         | 10                          |
| 22                              | 20          | 68,25                 | 400                        | 19                         | 6                           |
| 24                              | 20          | 143,00                | 300                        | 36                         | 12                          |
| 25                              | 22          | 114,56                | 300                        | 26                         | 9                           |
| 28                              | 24          | 168,99                | 350                        | 31                         | 10                          |
| 30                              | 25          | 223,43                | 400                        | 36                         | 12                          |
| 40                              | 34          | 360,74                | 500                        | 32                         | 11                          |

SCHEDA TECNICA MB 3504 - DATA SHEET

Proprietà generali - General proprieties

Valori tipici - Typical Values

|                                          |   |                                  |         |              |                                                                   |
|------------------------------------------|---|----------------------------------|---------|--------------|-------------------------------------------------------------------|
| D E N S I T A'                           | - | D E N S I T Y                    | G/cm³   | ISO R 1183 D | 1,035                                                             |
| PUNTO DI FUSIONE                         | - | MELTING POINT                    | °C      | ASTM D 789   | 183-187                                                           |
| ASSORBIMENTO D'ACQUA all'equilibrio      | - | WATER ABSORBPTION at equilibrium |         | P 921 LC 002 | 0,6<br>1,4                                                        |
| A 23 ° C & 50% UR                        | - | AT 23 ° C & 50% HR               | %       |              |                                                                   |
| A 23 ° C in acqua                        | - | AT 23 ° C in water               | %       |              |                                                                   |
| MODULO A FLESSIONE                       | - | FLEXURAL MODULUS                 | Mpa     | ISO 178      | 450                                                               |
| RESISTENZA ALLA TRAZIONE E ALLA ROTTURA  | - | CARPY IMPACT                     |         | ISO 179/1eU  |                                                                   |
| A + 23 °C senza intaglio                 | - | AT + 23 °C unnotched             | Kj/m²   |              | NON SI ROMPE/NO BREAK                                             |
| A - 30 °C senza intaglio                 | - | AT - 30 °C unnotched             | "       | ISO 179/1Ea  | NON SI ROMPE/NO BREAK                                             |
| A + 23 °C con intaglio                   | - | AT + 23 °C notched               | "       |              | NON SI ROMPE/NO BREAK                                             |
| A - 30 °C con intaglio                   | - | AT - 30 °C notched               | "       |              | 10,2                                                              |
| TRAZIONE                                 | - | TENSILE                          |         | ISO R 527    |                                                                   |
| SOGLIA DI TENSIONE                       | - | STRESS AT YELD                   | Mpa     |              | 29                                                                |
| SOGLIA DI ALLUNGAMENTO                   | - | ELONGATION AT YELD               | %       |              | 26                                                                |
| RIGIDITA' ALLA ROTTURA                   | - | STRENGHT AT BREAK                | Mpa     |              | 48                                                                |
| ALLUNGAMENTO ALLA ROTTURA                | - | ELONGATION AT BREAK              | %       |              | 280                                                               |
| TEMPERATURE DI DEFORMAZIONE SOTTO CARICO |   |                                  |         | ISO 75       |                                                                   |
| HEAT DISTORTION TEMPERATURE UNDER STRESS |   |                                  |         |              |                                                                   |
| sotto 0,46 mpa                           | - | under 0,46 mpa                   | °C      |              | 130                                                               |
| sotto 1,85 mpa                           | - | under 1,85 mpa                   | °C      |              | 50                                                                |
| TENUTA ALLA FIAMMA                       | - | FLAME RESISTANCE                 |         | ASTM D 635   | brucia alla velocità di 9mm./min.<br>burns at a rate of 9mm./min. |
| DUREZZA                                  | - | HARDNESS                         | shore D | ISO 868      | 63                                                                |

Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ARKEMA e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ARKEMA Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.

# TUBI IN RILSAN® PA11 SPIRALATI - *RILSAN® PA11 SPIRAL HOSES*

| DIMENSIONI MM.<br>DIMENSIONS |      | LUNGHEZZE SPIRALI / MT.<br>SPIRALS LENGHT / MT. |                                 |                                    | DIAMETRI MM.<br>DIAMETERS             |
|------------------------------|------|-------------------------------------------------|---------------------------------|------------------------------------|---------------------------------------|
| o Øe                         | i Øi | TUBO LINEARE MT.<br>LINEAR HOSES MT.            | A RIPOSO MT.<br>OUT OF WORK MT. | ULTIZZO MAX./MT.<br>WORKING LENGHT | INTERNO / ESTERNO<br>INSIDE / OUTSIDE |
| 4                            | 2    | 10                                              | 0,460                           | 6,50                               | 20-28                                 |
| 4                            | 2    | 10                                              | 0,400                           | 6,50                               | 30-38                                 |
| 4                            | 2,5  | 10                                              | 0,460                           | 6,50                               | 20-28                                 |
| 4                            | 2,5  | 10                                              | 0,400                           | 6,50                               | 30-38                                 |
| 6                            | 4    | 25                                              | 0,870                           | 16                                 | 50-60                                 |
| 6                            | 4    | 30                                              | 0,950                           | 20                                 | 55-67                                 |
| 8                            | 6    | 25                                              | 1,000                           | 16                                 | 60-76                                 |
| 8                            | 6    | 30                                              | 1,000                           | 20                                 | 70-86                                 |
| 10                           | 8    | 25                                              | 0,950                           | 16                                 | 80-100                                |
| 10                           | 8    | 30                                              | 1,000                           | 20                                 | 90-110                                |
| 12                           | 10   | 30                                              | 1,000                           | 20                                 | 110-134                               |
| 15                           | 12   | 30                                              | 0,920                           | 20                                 | 150-180                               |
| 16                           | 12   | 30                                              | 0,880                           | 20                                 | 160-196                               |
| 18                           | 14   | 30                                              | 0,970                           | 20                                 | 160-196                               |
| 18                           | 15   | 30                                              | 0,970                           | 20                                 | 160-196                               |
| 22                           | 18   | 60                                              | 0,980                           | 40                                 | 400-444                               |
| 24                           | 20   | 25                                              | 0,950                           | 18                                 | 200-248                               |
| 24                           | 20   | 50                                              | 0,980                           | 35                                 | 400-448                               |

## COLORI STANDARD - STANDARD COLOURS :

Blu, arancio e su richiesta rosso, giallo, verde, nero, neutro, azzurro.

*Blue, orange and on request red, yellow, green, black, neutral, light blue.*

## TEMPERATURE °C :

Per pressioni di esercizio in funzione delle temperature, vedi tabella tubi LINEARI.

*For working pressures related to temperature, pls. see the table of LINEAR hoses.*

Per evitare deformazioni si consiglia di utilizzare le spirali in RILSAN entro le temperature -20° / +60°C.

*To avoid any alteration we advise you to employ RILSAN spiral within -20° / +60°.*

I nostri tubi e spirali in RILSAN® per il settore dell' auto sono realizzati con materiali conformi alle normative internazionali oggi in vigore per il settore: SAE - NF - DIN - BS - ISO.

*Our normal and spiral hoses in RILSAN ® produced for cars, are according to the most known international regulations, such as : SAE - NF - DIN - BS - ISO.*

## SI ESEGUONO SPIRALI A DISEGNO

*We make spiral to design*

## TANGENTIAL STRAIGH TERMINALS

## ONE TANGENTIAL STRAIGH TERMINAL AND ONE PARALLEL

## WITH STRAIGH TERMINALS

## WITHOUT STRAIGH TERMINALS

Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ARKEMA e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ARKEMA Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.

# TUBI RILSAN® PA11 SPIRALATI CON TERMINALI DIRITTI

## - SPIRAL HOSES WITH STRAIGHT TERMINALS -

| DIMENSIONI<br>DIMENSIONS |             | LUNGHEZZA SPIRALI / MT.<br>SPIRAL LENGHT / MT. |                                 |                                    |                   | DIAMETRI MM.<br>DIAMETERS  | LUNGHEZZA TERMINALI<br>TERMINALS LENGHT |
|--------------------------|-------------|------------------------------------------------|---------------------------------|------------------------------------|-------------------|----------------------------|-----------------------------------------|
| <i>o Øe</i>              | <i>i Øi</i> | TUBO LINEARE MT.<br>LINEAR HOSE MT.            | A RIPOSO MM.<br>OUT OF WORK MM. | ULTIZZO MAX./MT.<br>WORKING LENGHT | SPIRE N.<br>COILS | INT./EST.<br>ISIDE OUTSIDE | MM.                                     |
| 4                        | 2           | 2,5                                            | 90                              | 1,5                                | 22                | 30-38                      | 100                                     |
| 4                        | 2,5         | 2,5                                            | 90                              | 1,5                                | 22                | 30-38                      | 100                                     |
| 6                        | 4           | 7,5                                            | 252                             | 5                                  | 41                | 50-62                      | 130                                     |
| 6                        | 4           | 10                                             | 340                             | 6,5                                | 55                | 50-62                      | 130                                     |
| 6                        | 4           | 15                                             | 515                             | 10                                 | 84                | 50-62                      | 130                                     |
| 8                        | 6           | 7,5                                            | 285                             | 5                                  | 33                | 60-76                      | 130                                     |
| 8                        | 6           | 10                                             | 390                             | 6,5                                | 45                | 60-76                      | 130                                     |
| 8                        | 6           | 15                                             | 586                             | 10                                 | 68                | 60-76                      | 130                                     |
| 10                       | 8           | 7,5                                            | 280                             | 5                                  | 25                | 80-100                     | 170                                     |
| 10                       | 8           | 10                                             | 380                             | 6,5                                | 34                | 80-100                     | 170                                     |
| 10                       | 8           | 15                                             | 565                             | 10                                 | 51                | 80-100                     | 170                                     |
| 12                       | 10          | 7,5                                            | 240                             | 5                                  | 19                | 100-120                    | 180                                     |
| 12                       | 10          | 10                                             | 350                             | 6,5                                | 27                | 100-120                    | 180                                     |
| 12                       | 10          | 15                                             | 535                             | 10                                 | 41                | 100-120                    | 180                                     |
| 15                       | 12          | 10                                             | 285                             | 6                                  | 17                | 160-190                    | 200                                     |
| 15                       | 12          | 15                                             | 436                             | 10                                 | 26                | 160-190                    | 200                                     |
| 18                       | 14          | 10                                             | 300                             | 6                                  | 16                | 160-196                    | 200                                     |
| 18                       | 14          | 15                                             | 470                             | 10                                 | 25                | 160-196                    | 200                                     |
| 18                       | 15          | 10                                             | 300                             | 6                                  | 16                | 160-196                    | 200                                     |
| 18                       | 15          | 15                                             | 470                             | 10                                 | 25                | 160-196                    | 200                                     |

Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ARKEMA e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ARKEMA Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.



# TUBI NYLON 6 LINEARI - *NYLON 6 LINEAR FLEXIBLE HOSES*

| DIMENSIONI<br><i>DIMENSIONS</i> |             | PESO<br><i>WEIGHT</i> | RAGGIO DI<br>CURVATURA MM. | PRESSIONI-PRESSURE at 20°C |                             |
|---------------------------------|-------------|-----------------------|----------------------------|----------------------------|-----------------------------|
| <i>o</i> Øe                     | <i>i</i> Øi | GR.MT                 | <i>RADIUS OF CUR.</i>      | SCOPPIO<br><i>BURST</i>    | ESERCIZIO<br><i>WORKING</i> |
| 2                               | 1           | 2,66                  | 20                         | 167                        | 56                          |
| 2                               | 1,5         | 1,55                  | 25                         | 71                         | 24                          |
| 3                               | 1,5         | 5,99                  | 20                         | 167                        | 56                          |
| 3                               | 2           | 4,44                  | 25                         | 100                        | 33                          |
| 4                               | 2           | 10,64                 | 25                         | 167                        | 56                          |
| 4                               | 2,5         | 8,65                  | 30                         | 115                        | 38                          |
| 4                               | 3           | 6,21                  | 30                         | 71                         | 24                          |
| 5                               | 3           | 14,19                 | 30                         | 125                        | 42                          |
| 5                               | 3,5         | 11,31                 | 35                         | 88                         | 29                          |
| 6                               | 3           | 23,95                 | 38                         | 167                        | 56                          |
| 6                               | 3,5         | 21,07                 | 38                         | 132                        | 44                          |
| 6                               | 4           | 17,74                 | 45                         | 100                        | 33                          |
| 7                               | 3,5         | 32,60                 | 45                         | 167                        | 56                          |
| 7                               | 5           | 21,29                 | 50                         | 83                         | 28                          |
| 8                               | 5           | 34,59                 | 62                         | 115                        | 38                          |
| 8                               | 6           | 24,84                 | 65                         | 71                         | 24                          |
| 9                               | 7           | 28,39                 | 70                         | 63                         | 21                          |
| 10                              | 5           | 66,53                 | 70                         | 167                        | 56                          |
| 10                              | 6           | 56,77                 | 70                         | 125                        | 42                          |
| 10                              | 6,5         | 51,23                 | 75                         | 106                        | 35                          |
| 10                              | 7           | 45,24                 | 75                         | 88                         | 29                          |
| 10                              | 8           | 31,93                 | 80                         | 56                         | 19                          |
| 12                              | 8           | 70,96                 | 80                         | 100                        | 33                          |
| 12                              | 9           | 55,88                 | 100                        | 71                         | 24                          |
| 12                              | 10          | 39,03                 | 100                        | 45                         | 15                          |
| 14                              | 10          | 85,16                 | 90                         | 83                         | 28                          |
| 14                              | 12          | 46,13                 | 100                        | 38                         | 13                          |
| 15                              | 12          | 71,85                 | 120                        | 56                         | 19                          |
| 15                              | 12,5        | 60,98                 | 140                        | 45                         | 15                          |
| 15                              | 13          | 49,67                 | 150                        | 36                         | 12                          |
| 16                              | 12          | 99,35                 | 120                        | 71                         | 24                          |
| 16                              | 14          | 53,22                 | 140                        | 33                         | 11                          |
| 18                              | 14          | 113,54                | 150                        | 63                         | 21                          |
| 18                              | 15          | 87,82                 | 200                        | 45                         | 15                          |
| 18                              | 16          | 60,32                 | 410                        | 29                         | 10                          |

## TEMPERATURE °C.

Il NYLON 6 può essere impiegato in una gamma di temperature variante da -10°C a +80°C. Qui di seguito riportiamo una tabella delle pressioni in % in funzione delle temperature.  
*NYLON 6 can be used in a range of temperatures from -10°C to +80°C. Here we state a table concerning the pressures expressed in % as a function of temperatures.*

|      |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|
| 20°  | 30° | 40° | 50° | 60° | 70° | 80° |
| 100% | 83% | 72% | 64% | 57% | 52% | 47% |

## TOLLERANZE - *TOLLERANCE* :

± 0,05 sullo spessore della parete - *on the thickness of the wall.*  
± 0,05 sul Ø e fino a 10 mm. - *on the outside Ø until 10 mm.*  
± 0,1 sul e da 12 a 18 mm.- *on the outside from 12 to 18 mm.*  
± 0,5% sul peso - *on the weight*

Fino al Øe 12 il tubo è fornito in rotoli da mt.100 e su richiesta anche da mt. 50. Dal Øe 14 al Øe 18 in rotoli da mt. 50.  
*Until Øo. 12 the hose is delivered in rolls of 100mt. and on request of 50 mt. From Øo 14 to Øo 18 in rolls of 50 mt. each.*

## COLORI DISPONIBILI - *AVAILABLE COLOURS* :

Dal Øe 4 al Øe 12 neutro, rosso, giallo, blu, verde, nero e azzurro  
Per altre misure: neutro.  
*From Øo 4 to Øo 12 neutral, red, yellow, blue, light blue, green and black. As regards other measures: neutral.*

## SCHEDA TECNICA NYLON 6 - DATA SHEET

### Proprietà generali - *General proprieties*

### Valori tipici - *Typical values*

|                                                                                                     |   |                                      |         |                        |           |
|-----------------------------------------------------------------------------------------------------|---|--------------------------------------|---------|------------------------|-----------|
| D E N S I T A'                                                                                      | - | <i>D E N S I T Y</i>                 |         | ASTM D 792             | 1,13      |
| PUNTO DI FUSIONE                                                                                    | - | <i>MELTING POINT</i>                 | °C      | ASTM D 789             | 220       |
| ASSORBIMENTO D'ACQUA all'equilibrio                                                                 | - | <i>WATER ABSORPTION at equil,</i>    | %       | ASTM D 570             | 9 10      |
| COEFFICIENTE DILATAZIONE TERMICA                                                                    | - | <i>THERMAL EXPANSION</i>             |         | ASTM D 696             | 7 10      |
| CALORE SPECIFICO                                                                                    | - | <i>SPECIFIC HEAT</i>                 | J/(g-K) | ASTM D 696             | 1,7       |
| CONDUTTIVITA' TERMICA                                                                               | - | <i>THERMAL CONDUCTIVITY</i>          | W/(m-K) | DIN 52612              | 0,23      |
| TEMPERATURA D'IMPIEGO CONTINUO SENZA SOLLECIT.<br><i>Working temperature without stress</i>         |   |                                      | °C      | ISO 75                 | 70/85     |
| TEMPERATURE LIMITE D'IMPIEGO PER BREVI DURATE<br><i>Maximun working temperature for short terms</i> |   |                                      | °C      | ISO 75                 | 180       |
| INFIAMMABILITA'                                                                                     | - | <i>FLAMABILITY</i>                   |         | ASTM D 635<br>UL 94    | V2        |
| MODULO ELASTICO A TRAZIONE                                                                          | - | <i>TENSILE MODULUS OF ELASTICITY</i> | Mpa     | DIN 53457<br>ISO R 527 | 3000/1000 |
| CARICO DI SNERVAMENTO                                                                               | - | <i>TENSILE YIELD STRENGTH</i>        | Mpa     | DIN 53455<br>ISO R/527 | 90/45     |
| ALLUNGAMENTO A ROTTURA                                                                              | - | <i>TENSION AT STRENGHT</i>           | %       | DIN 53455<br>ISO R/528 | 4,5/20    |
| RIGIDITA' DIELETTRICA                                                                               | - | <i>DIELECTRIC HARDNESS</i>           | Kv/mm   | DIN 53481<br>ISO 303   | 100/60    |
| COSTANTE DIELETTRICA                                                                                | - | <i>DIELECTRIC COSTANT</i>            |         | ISO 303/4              | 3,5/7     |
| FATTORE DI DISSIPAZIONE                                                                             | - | <i>DISSIPATION FACTOR</i>            |         | ISO 303/4              | 0,023/0,3 |
| DUREZZA                                                                                             | - | <i>HARDNESS</i>                      | shore D | ISO 868                | 85        |
|                                                                                                     |   |                                      |         |                        |           |

# GRILAMID® PA12 LINEARE FLESSIBILE AUTOESTINGUENTE

## - SELF EXTINGUISH LINEAR FLEXIBLE HOSES -

| DIMENSIONI<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA | PRESSIONI-PRESSURE at 20°C |                      |
|--------------------------|------|----------------|------------------------|----------------------------|----------------------|
| o Øe                     | i Øi | GR.MT          | RADIUS OF CUR.         | SCOPPIO<br>BURST           | ESERCIZIO<br>WORKING |
| 4                        | 2,7  | 7,25           | 25                     | 85                         | 28                   |
| 6                        | 4    | 16,64          | 35                     | 88                         | 29                   |
| 8                        | 6    | 23,30          | 40                     | 63                         | 21                   |
| 10                       | 8    | 29,96          | 60                     | 49                         | 16                   |
| 12                       | 10   | 36,61          | 85                     | 40                         | 13                   |
| 15                       | 12,5 | 57,21          | 100                    | 40                         | 13                   |
| 15                       | 12   | 67,40          | 90                     | 49                         | 16                   |
| 18                       | 15   | 82,38          | 140                    | 40                         | 13                   |
| 22                       | 18   | 133,14         | 200                    | 44                         | 15                   |
| 24                       | 20   | 146,45         | 300                    | 40                         | 13                   |
| 28                       | 24   | 173,08         | 350                    | 34                         | 11                   |
| 30                       | 25   | 228,83         | 400                    | 40                         | 13                   |
| 40                       | 34   | 369,45         | 500                    | 36                         | 12                   |

### TEMPERATURE °C.

Il PA12 può essere impiegato in una gamma di temperature variante da -30°C a +70°C. Qui di seguito riportiamo una tabella delle pressioni in % in funzione delle temperature. *PA12 can be used in a range of temperatures from -30°C to +70° c, Here we state a table concerning the pressures expressed in % as a function of temperatures.*

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| 20°  | 30° | 40° | 50° | 60° |
| 100% | 72% | 64% | 52% | 47% |

### TOLLERANZE - TOLLERANCE :

± 0,07 sullo spessore della parete - *on the tickness of the wall*  
± 0,07 sul Øe fino al Ø 12 - *on the outside Ø until Ø 12*  
± 0,1 sul Ø e dal Ø 14 al 24 - *on the outside up Ø 14 to 24*  
± 0,15 sul Ø e dal Ø 25 al 40 - *on the outside up Ø 25 to 40*  
± 0,5% sul peso - *on the weigh*

### SCHEDA TECNICA PA12 AUTO. - DATA SHEET SELF EXTINGUISH

### Proprietà generali - General prorieties

### Valori tipici - Typical values

|                    |   |                  |         |              |      |
|--------------------|---|------------------|---------|--------------|------|
| D E N S I T A'     | - | D E N S I T Y    | G/cm³   | ISO R 1183 D | 1,06 |
| MODULO A FLESSIONE | - | FLEXURAL MODULUS | Mpa     | ISO 178      | 700  |
| TENUTA ALLA FIAMMA | - | FLAME RESISTANCE | UL94    |              | V2   |
| DUREZZA            | - | HARDNESS         | shore D | ISO 868      | 70   |

- ☺ PRODOTTO SENZA ALOGENI - *PRODUCT WITHOUT HALOGEN*
  - ☺ INODORE - *INODOURUS*
  - ☺ SUPERFICIE LISCIA - *SMOOTH SURFACE*
  - ☺ ALLUNGAMENTO A 10 BAR DI BARRA DA 4MT. 1mm - *EXTENTION AT 10 BARS OF BAR OF 4MT. 1mm*
  - ☺ RIDOTTO ALLUNGAMENTO IN BASE ALLA PRESSIONE E ALLA TEMPERATURA *REDUCED EXTENTION ON THE GROUND OF PRESSURE AND TEMPERATURE*
  - ☺ ALLUNGAMENTO IN BASE ALLA TEMPERATURA 0,1mm OGNI °C - *EXTENTION ON THE GROUND OF TEMPERATURE 0,1mm EVERY °C*
- ES. BARRA DA 4MT. DA 15°C A 40°C (>TX 0,1) = 25 X 0,1 = 2,5mm. LA BARRA RISULTERA' DA mm. 4002,5  
EX. BAR OF 4MT. OF 15°C TO 40°C (>TX 0,1) = 25 X 0,1 = 2,5mm. THE BAR WILL RESULT OF mm. 4002,5



Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche EMS e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by EMS Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.

TUBI IN POLIETILENE BASSA DENSITA' LINEARI FLESSIBILI PER USO PNEUMATICO

POLYETHYLENE LOW DENSITY LINEAR FLEXIBLE HOSES FOR PNEUMATIC USE

| DIMENSIONE<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI CUR.<br>RADIUS OF CUR. | PRESSIONE<br>PRESSURE at 20°C |                      |
|--------------------------|------|----------------|----------------------------------|-------------------------------|----------------------|
| o Øe                     | i Øi | g/Mt.          | Mm.                              | SCOPPIO<br>BURST              | ESERCIZIO<br>WORKING |
| 2                        | 1    | 2,17           | 10                               | 63                            | 21                   |
| 2,5                      | 1,5  | 2,90           | 15                               | 48                            | 16                   |
| 3                        | 1,5  | 4,89           | 15                               | 63                            | 21                   |
| 4                        | 2    | 8,69           | 18                               | 63                            | 21                   |
| 4                        | 2,5  | 7,06           | 20                               | 44                            | 15                   |
| 5                        | 3    | 11,58          | 25                               | 48                            | 16                   |
| 6                        | 3,5  | 17,19          | 25                               | 50                            | 17                   |
| 6                        | 4    | 14,48          | 30                               | 38                            | 13                   |
| 6,35                     | 4,35 | 15,49          | 30                               | 36                            | 12                   |
| 7                        | 5    | 17,37          | 35                               | 32                            | 11                   |
| 8                        | 4    | 34,74          | 35                               | 63                            | 21                   |
| 8                        | 5    | 28,23          | 40                               | 44                            | 15                   |
| 8                        | 6    | 20,27          | 40                               | 27                            | 9                    |
| 9                        | 7    | 23,16          | 45                               | 24                            | 8                    |
| 9,52                     | 6,35 | 36,41          | 50                               | 38                            | 13                   |
| 10                       | 6    | 46,32          | 55                               | 48                            | 16                   |
| 10                       | 6,5  | 41,80          | 55                               | 40                            | 13                   |
| 10                       | 7    | 36,91          | 60                               | 34                            | 11                   |
| 10                       | 8    | 26,06          | 60                               | 21                            | 7                    |
| 12                       | 8    | 57,90          | 60                               | 38                            | 13                   |
| 12                       | 9    | 45,60          | 65                               | 27                            | 9                    |
| 12,7                     | 9,52 | 51,14          | 65                               | 27                            | 9                    |
| 12                       | 10   | 31,85          | 80                               | 17                            | 6                    |
| 14                       | 10   | 69,48          | 80                               | 32                            | 11                   |
| 14                       | 11   | 54,28          | 80                               | 23                            | 8                    |
| 15                       | 12   | 58,63          | 85                               | 21                            | 7                    |
| 15                       | 12,5 | 49,76          | 100                              | 17                            | 6                    |
| 16                       | 12   | 81,06          | 100                              | 27                            | 9                    |
| 18                       | 10   | 162,12         | 105                              | 54                            | 18                   |
| 18                       | 14   | 92,64          | 120                              | 24                            | 8                    |
| 18                       | 15   | 71,65          | 160                              | 17                            | 6                    |
| 20                       | 14   | 147,65         | 130                              | 34                            | 11                   |
| 20                       | 15   | 126,66         | 140                              | 27                            | 9                    |
| 20                       | 16   | 104,22         | 150                              | 21                            | 7                    |
| 25                       | 18   | 217,85         | 180                              | 31                            | 10                   |
| 25                       | 21   | 133,17         | 250                              | 17                            | 6                    |
| 26                       | 20   | 199,76         | 200                              | 25                            | 8                    |
| 26                       | 22   | 138,96         | 260                              | 16                            | 5                    |
| 32                       | 25   | 288,78         | 290                              | 23                            | 8                    |
| 32                       | 26   | 251,87         | 300                              | 20                            | 7                    |

TEMPERATURE °C.

Il Polietilene può essere impiegato in una gamma di temperature da -10°C a +60°C. Qui di seguito riportiamo una tabella delle pressioni espresse in % in funzione delle temperature.

Polyethylene can be used in a range of temperatures from -10°C to + 60°C. Here we state a table concerning the working pressures expressed in % as a function of temperatures.

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| 20°  | 30° | 40° | 50° | 60° |
| 100% | 83% | 72% | 64% | 57% |

TOLLERANZE - TOLLERANCE :

- ± 0,07 sullo spessore della parete - on the thickness of the wall .
- ± 0,07 sul Øe fino al Øe 10 - on the outside diametre up to 10.
- ± 0,1 dal Øe da 12 a 32 - on the outside diametre from 12 to 32.
- ± 0,5% sul peso - on the weight.

Fino a Øe 16 il tubo è fornito in rotoli da mt. 100.  
Dal Ø 18 al Ø 32 in rotoli da mt. 50.  
Up to Øo 16 the hoses is delivered in rolls of 100 mt. each.  
From Ø18 to Ø 32 outside in rolls of 50 mt. each

COLORI DISPONIBILI - AVAILABLE COLOURS :

Dal Øe 4 al Øe 12 : neutro, rosso, giallo, blu, verde, nero e azzurro  
Per altre misure colore neutro,  
From outside Ø 4 to outside Ø 12 : neutral,red, yellow,blue, light blue, green and black. The other measures are usually produced in neutral colour.

SCHEDA TECNICA POLIETILENE - POLYETHYLENE DATA SHEET

| Proprietà generali - General proprieties                        |   |                        | Valori tipici - Typical value. |                |         |
|-----------------------------------------------------------------|---|------------------------|--------------------------------|----------------|---------|
| D E N S I T A'                                                  | - | DENSITY                | g/cm³                          | ASTM 1505 D    | 0,922   |
| PUNTO DI FUSIONE                                                | - | MELTING POINT          | °C                             | metodo interno | 113     |
| TEMPERATURA INFRAGILIMENTO                                      | - | CRUSHING TEMPERATURE   | °C.                            | ASTM 746 D     | -75     |
| TEMPERATURA RAMMOLLIMENTO                                       | - | SOFTENING TEMPERATURE  |                                | ASTM 1525 D    | 96      |
| CARICO DI SNERVAMENTO                                           | - | TENSILE YIELD STRENGTH | Mpa                            | ASTM 882 B     | 10~10   |
| CARICO DI ROTTURA                                               | - | TENSILE AL BREAK       | Mpa                            | ASTM 882 B     | 25~22   |
| ALLUNGAMENTO A ROTTURA                                          | - | TENSION AT STRENGHT    | %                              | ASTM 882 B     | 380~580 |
| MODULO SECANTE 1%                                               | - | SECANT MODULE 1%       | Mpa                            | ASTM 882 B     | 170~190 |
| RESISTENZA ALLA LACERAZIONE                                     | - | ABRASION RESISTANCE    | N/mm                           | ASTM 1922 D    | 40~53   |
| RESISTENZA ALL'IMPATTO                                          | - | STRENGTH AT BREAK      | g                              | ASTM 1709 D    | 260     |
| COEFFICIENTE DI FRIZIONE DINAMICO<br>DYNAMIC COEFFICIENT OF RUB |   |                        |                                | ASTM 1894 D    | > 0,5   |
| DUREZZA                                                         | - | HARDNESS               | shore D                        | ASTM 2240      | 46      |

TUBI IN POLIETILENE ALTA DENSITA' LINEARI FLESSIBILI PER USO PNEUMATICO

POLYETHYLENE HIGHT DENSITY LINEAR FLEXIBLE HOSES FOR PNEUMATC USE

| DIMENSIONE<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI CUR.<br>RADIUS OF CUR. | PRESSIONE<br>PRESSURE a 20°C |                      |
|--------------------------|------|----------------|----------------------------------|------------------------------|----------------------|
| o Øe                     | i Øi | g/Mt.          | Mm.                              | SCOPPIO<br>BURST             | ESERCIZIO<br>WORKING |
| 4                        | 2,5  | 6,90           | 20                               | 115                          | 38                   |
| 6                        | 4    | 14,07          | 35                               | 100                          | 33                   |
| 8                        | 5    | 27,60          | 40                               | 115                          | 38                   |
| 8                        | 6    | 19,36          | 40                               | 71                           | 24                   |
| 10                       | 8    | 24,45          | 60                               | 56                           | 19                   |
| 12                       | 9    | 43,56          | 70                               | 71                           | 24                   |

TEMPERATURE °C.

Il Polietilene HD può essere impiegato in una gamma di temperature da -10°C a +60°C. Qui di seguito riportiamo delle pressioni espresse in % in funzione delle temperature.

*Polyethylene HD can be used in a range of temperatures from -10°C to + 60°C. Here we state a table concerning the working pressures expressed in % as a function of temperatures.*

SCHEDA TECNICA POLIETILENE HD - POLYETHYLENE HD DATA SHEET

Proprietà generali - general proprieties

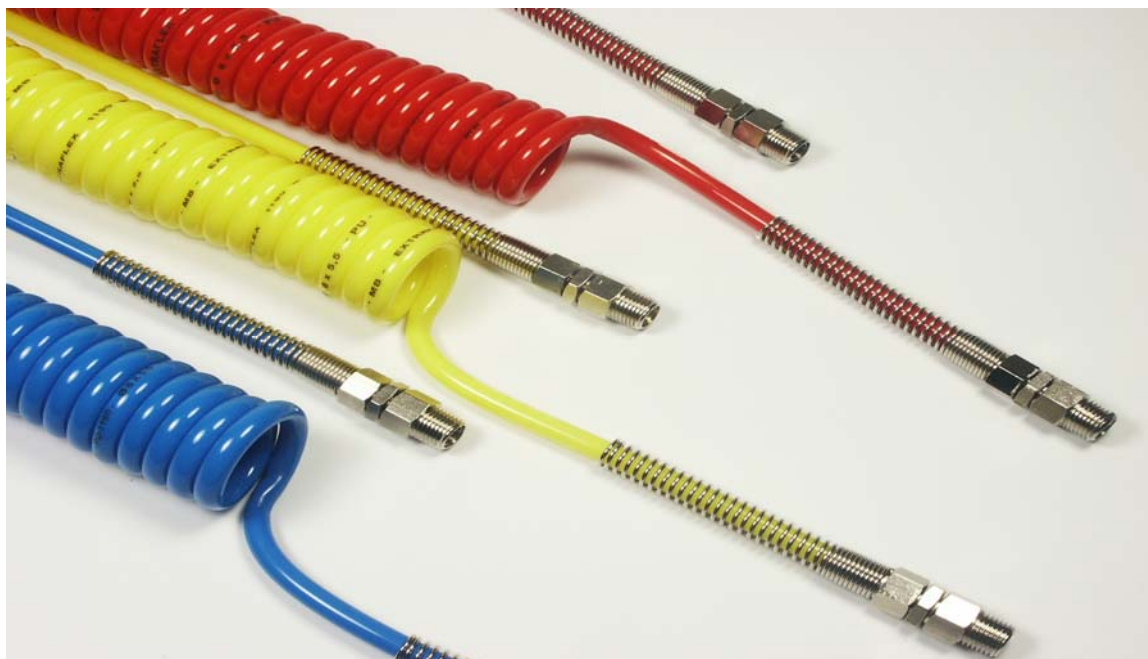
Valori tipici - Typical values

|                                              |   |                           |         |                      |       |
|----------------------------------------------|---|---------------------------|---------|----------------------|-------|
| PUNTO DI FUSIONE                             | - | MELT FLOW RATE            | C°      | ASTM D1525           | 125   |
| D E N S I T A'                               | - | DENSITY                   | g/cm³   | ISO 1872/1-1993      | 0,954 |
| CARICO DI SNERVAMENTO                        | - | TENSILE STRENGHT AT YIELD | Mpa     | ISO 527-2-1996       | 26    |
| ALLUNGAMENTO A ROTTURA                       | - | TENSION AT STRENGHT       | %       | ISO 527-2-1996       | >300  |
| MODULO FLESSIBILE                            | - | FLEXURAL MODULE           | Mpa     | ISO 178-1997         | 1030  |
| IMPATTO ROTTURA                              | - | IMPACT STRENGHT (CHARPY)  | Kg/m³   | ISO 179-1982         | 12    |
| RESISTENZA ALLA LACERAZIONE (F50 at 50°C)    | - | BBT ABRASION RESISTANCE   | Hours   | ASTM D1693 -97a      | 250   |
| RESISTENZA ALLA LACERAZIONE RESISTANCE (60°) | - | BOTTLE ABRASION           | Hours   | BP Chemicals' Method | 17    |
| DUREZZA                                      |   |                           | SHORE D | ASTM D2240           | 64    |

## TUBI SPIRALATI IN POLIURETANO CON TERMINALI DRITTI

### *POLYURETHAN SPIRAL HOSES WITH STRAIGHT TERMINAL*

| DIMENSIONI<br>DIMENSIONS |             | TUBO<br>LINEARE | A RIPOSO       | ULTIZZO        | SPIRE       | CODOLO SINISTRO-<br>DESTRO   | INTERNO    | ESTERNO     |
|--------------------------|-------------|-----------------|----------------|----------------|-------------|------------------------------|------------|-------------|
| <i>o Øe</i>              | <i>i Øi</i> | LINEAR HOSES    | OUT OF WORK Mm | WORKING<br>MT. | COILS<br>N. | TERMINALS LEFT-<br>RIGHT mm. | INSIDE Mm. | OUTSIDE Mm. |
| 4                        | 2,5         | 1,5             | 145            | 1              | 33          | 100 -100                     | 10         | 18          |
| 4                        | 2,5         | 3               | 300            | 2              | 68          | 100 - 100                    | 10         | 18          |
| 4                        | 2,5         | 4               | 210            | 3              | 50          | 100 - 100                    | 20         | 28          |
| 6                        | 4           | 2               | 140            | 1,5            | 21          | 100 - 100                    | 20         | 32          |
| 6                        | 4           | 4               | 325            | 3              | 47          | 100 - 100                    | 20         | 32          |
| 8                        | 5,5         | 2,5             | 190            | 2              | 22          | 120 - 500                    | 25         | 41          |
| 8                        | 5,5         | 5               | 410            | 4              | 46          | 120 - 500                    | 25         | 41          |
| 8                        | 5,5         | 7,5             | 660            | 6              | 78          | 120 - 500                    | 25         | 41          |
| 8                        | 5,5         | 10              | 800            | 8              | 94          | 120 - 500                    | 25         | 41          |
| 8                        | 5,5         | 12,5            | 1030           | 10             | 122         | 120 - 500                    | 25         | 41          |
| 10                       | 6,5         | 2,5             | 140            | 2              | 13          | 120 - 500                    | 40         | 41          |
| 10                       | 6,5         | 5               | 330            | 4              | 30          | 120 - 500                    | 40         | 60          |
| 10                       | 6,5         | 7,5             | 500            | 6              | 45          | 120 - 500                    | 40         | 60          |
| 10                       | 6,5         | 10              | 680            | 8              | 61          | 120 - 500                    | 40         | 60          |
| 10                       | 6,5         | 12,5            | 850            | 10             | 76          | 120 - 500                    | 40         | 60          |
| 12                       | 8           | 2,5             | 115            | 2              | 9           | 120 - 500                    | 50         | 60          |
| 12                       | 8           | 5               | 305            | 3              | 24          | 120 - 500                    | 50         | 74          |
| 12                       | 8           | 7,5             | 430            | 6              | 35          | 120 - 500                    | 50         | 74          |
| 12                       | 8           | 10              | 600            | 8              | 48          | 120 - 500                    | 50         | 74          |
| 12                       | 8           | 12,5            | 800            | 10             | 63          | 120 - 500                    | 50         | 74          |
| 12                       | 8           | 15              | 930            | 13             | 77          | 120 - 120                    | 50         | 74          |



Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ELASTOGRAN e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ELASTOGRAN Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied commitment from our part.

# TUBI NYLON PA 6.6 LINEARI FLESSIBILI - *NYLON PA 6.6 LINEAR HOSES*

| DIMENSIONI<br><i>DIMENSION</i> |             | PESO<br><i>WEIGHT</i> | RAGGIO DI<br>CURVATURA MM | PRESSIONI-PRESSURE a 20°C |                             |
|--------------------------------|-------------|-----------------------|---------------------------|---------------------------|-----------------------------|
| <i>o Øe</i>                    | <i>i Øi</i> | GR.MT                 | <i>RADIUS OF CUR.</i>     | SCOPPIO<br><i>BURST</i>   | ESERCIZIO<br><i>WORKING</i> |
| 4                              | 1,5         | 12,20                 | 35                        | 409                       | 136                         |
| 4                              | 2           | 10,64                 | 25                        | 300                       | 100                         |
| 4                              | 2,5         | 8,65                  | 30                        | 208                       | 69                          |
| 4                              | 3           | 6,21                  | 40                        | 129                       | 43                          |
| 6                              | 3,6         | 20,44                 | 25                        | 225                       | 75                          |
| 6                              | 4           | 17,74                 | 40                        | 180                       | 60                          |
| 8                              | 5           | 34,59                 | 50                        | 208                       | 69                          |
| 8                              | 6           | 24,84                 | 60                        | 129                       | 43                          |
| 10                             | 8           | 31,93                 | 70                        | 100                       | 33                          |

**TEMPERATURE °C.**

Il NYLON 6.6 può essere usato in una gamma di temperature da 0°C a +100 °C.  
*NYLON 6.6 can be used in a range of temperatures between 0°C to +100°C.*

Particolarmente idoneo per il passaggio di olio e grasso.  
*Particularly fit to the passage of oil and fat.*

**SCHEDA TECNICA NYLON 6.6 - DATA SHEET**

**Proprietà generali - General proprieties**      **Valori tipici - Typical values**

|                                                                                                             |   |                                        |         |                        |           |
|-------------------------------------------------------------------------------------------------------------|---|----------------------------------------|---------|------------------------|-----------|
| D E N S I T A'                                                                                              | - | D E N S I T Y                          |         | ASTM D 792             | 1,13      |
| PUNTO DI FUSIONE                                                                                            | - | MELTING POINT                          | °C      | ASTM D 789             | 260       |
| ASSORBIMENTO D'ACQUA all'equilibrio                                                                         | - | WATER ABSORBPTION at equilibrium       | %       | ASTM D 570             | 8    9    |
| COEFFICIENTE DILATAZIONE TERMICA                                                                            | - | COEFFICENT OF LINEAR THERMAL EXPANSION |         | ASTM D 696             | 7    10   |
| CALORE SPECIFICO                                                                                            | - | SPECIFIC HEAT                          | J/(g-K) | ASTM D 696             | 1,7       |
| CONDUTTIVITA' TERMICA                                                                                       | - | THERMAL CONDUCTIVITY                   | W/(m-K) | DIN 52612              | 0,23      |
| TEMPERATURA D'IMPIEGO CONTINUO SENZA SOLLECITAZIONI<br><i>CONTONUOUS WORKING TEMPERATURE WITHOUT STRESS</i> |   |                                        | °C      | ISO 75                 | 70/85     |
| TEMPERATURE LIMITE D'IMPIEGO PER BREVI DURATE<br><i>MAXIMUM WORKING TEMPERATURE FOR SHORT TERMS</i>         |   |                                        | °C      | ISO 75                 | >200      |
| INFIAMMABILITA'                                                                                             | - | FLAMABILITY                            |         | ASTM D 635<br>UL 94    | V2        |
| MODULO ELASTICO A TRAZIONE                                                                                  | - | TENSILE MODULUS OF ELASTICITY          | Mpa     | DIN 53457<br>ISO R 527 | 3200/1600 |
| CARICO DI SNERVAMENTO                                                                                       | - | TENSILE YIELD STRENGTH                 | Mpa     | DIN 53455<br>ISO R/527 | 80/60     |
| ALLUNGAMENTO A ROTTURA                                                                                      | - | TENSION AT STRENGHT                    | %       | DIN 53455<br>ISO R/528 | 5,2       |
| RIGIDITA' DIELETTRICA                                                                                       | - | DIELECTRIC HARDNESS                    | Kv/mm   | DIN 53481<br>ISO 303   | 120/80    |
| COSTANTE DIELETTRICA                                                                                        | - | DIELECTRIC COSTANT                     |         | ISO 303/4              | 3,2/5     |
| FATTORE DI DISSIPAZIONE                                                                                     | - | DISSIPATION FACTOR                     |         | ISO 303/4              | 0,026/0,2 |
| DUREZZA                                                                                                     | - | HARDNESS                               | shore D | ISO 868                | 96        |



RILSAN® PA 12 - TUBI LINEARI FLESSIBILI - LINEAR FLEXIBLE HOSES

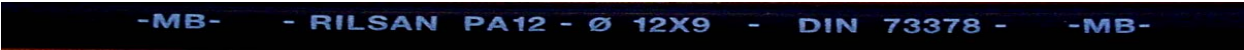
| DIMENSIONI<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA MM. | PRESSIONI-PRESSURE a 20°C |                      |
|--------------------------|------|----------------|----------------------------|---------------------------|----------------------|
| o Øe                     | i Øi | GR.MT          | RADIUS OF CUR.             | SCOPPIO<br>BURST          | ESERCIZIO<br>WORKING |
| 2                        | 1    | 2,43           | 10                         | 133                       | 44                   |
| 3                        | 1,5  | 5,46           | 15                         | 133                       | 44                   |
| 3                        | 2    | 4,04           | 15                         | 80                        | 27                   |
| 3,3                      | 1,9  | 5,89           | 15                         | 108                       | 36                   |
| 4                        | 2    | 9,70           | 15                         | 133                       | 44                   |
| 4                        | 2,5  | 7,88           | 20                         | 92                        | 31                   |
| 4                        | 2,7  | 7,04           | 25                         | 78                        | 26                   |
| 6                        | 4    | 16,17          | 35                         | 80                        | 27                   |
| 8                        | 5,5  | 27,29          | 40                         | 74                        | 25                   |
| 8                        | 5    | 31,53          | 40                         | 92                        | 31                   |
| 8                        | 6    | 22,64          | 40                         | 57                        | 19                   |
| 10                       | 7,5  | 35,37          | 50                         | 57                        | 19                   |
| 10                       | 8    | 29,11          | 60                         | 44                        | 15                   |
| 12                       | 9    | 50,94          | 70                         | 57                        | 19                   |
| 12                       | 10   | 35,58          | 85                         | 36                        | 12                   |
| 14                       | 11   | 60,64          | 85                         | 48                        | 16                   |
| 14                       | 12   | 42,04          | 90                         | 31                        | 10                   |
| 15                       | 12   | 65,49          | 90                         | 44                        | 15                   |
| 15                       | 12,5 | 55,59          | 100                        | 36                        | 12                   |
| 22                       | 18   | 129,37         | 200                        | 40                        | 13                   |

TUBO PA 12 PHL PER CARICAMENTO GRANULI  
PA 12 PHL FOR AUTOMATIC LOADING OF GRAINS

|     |    |         |                                |
|-----|----|---------|--------------------------------|
| 51  | 44 | 537,69  | BARRE DA MT.6<br>IN MT. 6 BARS |
| 60  | 50 | 889,41  |                                |
| 63  | 55 | 763,27  |                                |
| 70  | 60 | 1051,12 |                                |
| 70  | 62 | 853,83  |                                |
| 80  | 70 | 1212,83 |                                |
| 90  | 80 | 1374,54 |                                |
| 100 | 90 | 1536,25 |                                |

SCHEDA TECNICA PA12 - DATA SHEET

| SCHEDA TECNICA PA12 - DATA SHEET                                                    |   |                      | Proprietà generali - General proprieties |              | Valori tipici - Typical values    |  |
|-------------------------------------------------------------------------------------|---|----------------------|------------------------------------------|--------------|-----------------------------------|--|
| D E N S I T A'                                                                      | - | D E N S I T Y        | G/cm³                                    | ISO R 1183 D | 1,03                              |  |
| PUNTO DI FUSIONE                                                                    | - | MELTING POINT        | °C                                       | ASTM D 789   | 171-172                           |  |
| ASSORBIMENTO D'ACQUA all'equilibrio-WATER ABSORBPTION at equilibrium                |   |                      |                                          |              |                                   |  |
| A 23 ° C & 50% UR                                                                   | - | At 23 ° C & 50% HR   | %                                        | P 921 LC 002 | 0,6                               |  |
| A 23 ° C in acqua                                                                   | - | At 23 ° C in water   | %                                        |              | 1,4                               |  |
| MODULO A FLESSIONE                                                                  | - | FLEXURAL MODULUS     | Mpa                                      | ISO 178      | 340                               |  |
| RESISTENZA A TRAZIONE E ROTTURA                                                     | - | CHARPY IMPACT        |                                          | ISO 179/1eU  |                                   |  |
| A + 23 °C senza intaglio                                                            | - | At + 23 °C unnotched | Kj/m²                                    |              | NON SI ROMPE / NO BREAK           |  |
| A - 30 °C senza intaglio                                                            | - | At - 30 °C unnotched | "                                        | ISO 179/1Ea  | NON SI ROMPE / NO BREAK           |  |
| A + 23 °C con intaglio                                                              | - | At + 23 °C notched   | "                                        |              | NON SI ROMPE / NO BREAK           |  |
| A - 30 °C con intaglio                                                              | - | At - 30 °C notched   | "                                        |              | 8,2                               |  |
| TRAZIONE                                                                            | - | TENSILE              |                                          | ISO R 527    |                                   |  |
| SOGLIA DI TENSIONE                                                                  | - | STRESS AT YELD       | Mpa                                      |              | 24                                |  |
| SOGLIA DI ALLUNGAMENTO                                                              | - | ELONGATION AT YELD   | %                                        |              | 25                                |  |
| RIGIDITA' ALLA ROTTURA                                                              | - | STRENGHT AT BREAK    | Mpa                                      |              | 46                                |  |
| ALLUNGAMENTO ALLA ROTTURA                                                           | - | ELONGATION AT BREAK  | %                                        |              | 280                               |  |
| Temperature di deformazione sotto carico -Heat distortion temperature under load of |   |                      |                                          | ISO 75       |                                   |  |
| sotto 0,46 mpa                                                                      | - | under 0,46 mpa       | °C                                       |              | 111                               |  |
| sotto 1,85 mpa                                                                      | - | under 1,85 mpa       | °C                                       |              | 46                                |  |
| TENUTA ALLA FIAMMA                                                                  | - | FLAME RESISTANCE     |                                          | ASTM D 635   | brucia alla velocità di 9mm./min. |  |
|                                                                                     |   |                      |                                          |              | burns at a rate of 9mm./min.      |  |
| DUREZZA                                                                             | - | HARDNESS             | shore D                                  | ISO 868      | 61                                |  |



Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ARKEMA e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ARKEMA Research Center and data selected from the litearature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.

TEMPERATURE °C.

RILSAN può essere impiegato in una gamma di temperature variante da -40°C a +60°C. Qui di seguito riportiamo una tabella delle pressioni in % in funzione delle temperature. RILSAN can be used in a range of temperatures from -20°C to + 60°C. Here we state a table concerning the pressures expressed in % as a function of temperatures.

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| 20°  | 30° | 40° | 50° | 60° |
| 100% | 72% | 64% | 52% | 47% |

TOLLERANZE - TOLLERANCE :

± 0,07 sullo spessore della parete - on the thickness of the wall  
± 0,07 sul Ø e fino a 10mm. - on the outside Ø until 10mm.  
± 0,1 sul e da 12 a 22mm.- on the outside from 12 to 22mm.  
± 0,5% sul peso - on the weight

Fino al Øe 5 il tubo è fornito in rotoli da mt.100 dal Øe 6 in rotoli da mt.100, su richiesta da 50 e 25mt.  
Up to outsideØ 5 the hose is delivered in rolls of 100mt.  
From outsideØ 6 in rolls of 100mt. each, on request of 50 or 25mt.

I tubi realizzati con RILSAN PA 12 sono idonei all’ utilizzo su impianti frenanti poiché il prodotto soddisfa i requisiti della Norma DIN 73378.  
Tubes realized with RILSAN PA12 are fit for airbrake beacause the product has all the necessary qualification as provided in DIN 73378 Norm.

# FLEXIBLE FLAME RESISTANT HOSES

❖ DOUCLE LAYER TUBES - LINEAR FLEXIBLE (DS)

❖

DS is a calibrated spatter resistant hose in polyammid 12. It is make stronger by another layer to improve the protection from sparks and welding. The external case can be removed for the use of rapid fittings

CHARACTERISTICS OF INTERNAL HOSE: PA J 7 HOSE

CHARACTERISTICS OF EXTERNAL HOSE: POLYURETHAN 85S  
HARDNESS 85 SHORE A  
ANTI-ABRASION POLYURETHAN  
UNFLAMMABLE: UL94V0

| DIMENSIONS |            | EXTERNAL COVER | WEIGHT | RADIUS OF CURVATURE | PRESSURE at 20°C |         |
|------------|------------|----------------|--------|---------------------|------------------|---------|
| <i>O</i> ø | <i>i</i> Ø | øØ FINAL       | GR.MT  |                     | BURST            | WORKING |
| 4          | 2          | 6              | 31,00  | 10                  | 167              | 56      |
| 6          | 4          | 8              | 46,00  | 20                  | 100              | 33      |
| 8          | 6          | 10             | 68,00  | 30                  | 71               | 24      |
| 10         | 7,5        | 12             | 80,00  | 40                  | 71               | 24      |
| 12         | 9          | 14             | 100,00 | 70                  | 71               | 24      |

| TEMPERATURE °C.                                                                                                                                                  |     |     |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|
| PA12 DS can be used in a range of temperatures from -40°C to +80°C. Here we state a table concerning the pressures expressed in % as a function of temperatures. |     |     |     |
| 20°                                                                                                                                                              | 40° | 60° | 80° |
| 100%                                                                                                                                                             | 85% | 60% | 40% |

| PA12 J7 LONG LIFE - DATA SHEET |  | - General proprieties | - Typical values |      |
|--------------------------------|--|-----------------------|------------------|------|
| D E N S I T Y                  |  | g/cm³                 | ISO R 1183 D     | 1,01 |
| MELTING POINT                  |  | °C                    | ASTM D 789       | 173  |
| FLEXURAL MODULUS               |  | Mpa                   | ASTM D 790       | 330  |
| TENSILE STRENGTH AT YELD       |  | Mpa                   | ASTM D 638       | 20   |
| TENSILE ELONGATION AT BREAK    |  | %                     |                  | 212  |
| FLEXURAL STRENGTH              |  | Mpa                   | ASTM D 790       | 16   |
| HARDNESS                       |  |                       | ISO 868          | 64   |

|                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche UBE e non possono costituire impegno o garanzia da parte nostra.                                                                                                          |
| The informations contained in this document are based on trials carried out by UBE Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part. |

# RILSAN® PA 12 HR tipo "0" TUBI LINEARI ALTA RESISTENZA

## PA12 HR type "0" LINEAR HIGH RESISTANCE HOSES

| DIMENSIONI<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA MM. | PRESSIONI-PRESSURE a 20°C |                      |
|--------------------------|------|----------------|----------------------------|---------------------------|----------------------|
| o Øe                     | i Øi | GR.MT          | RADIUS OF CUR.             | SCOPPIO<br>BURST          | ESERCIZIO<br>WORKING |
| 4                        | 2,5  | 7,88           | 30                         | 115                       | 38                   |
| 4                        | 3    | 5,66           | 30                         | 71                        | 24                   |
| 6                        | 3    | 21,83          | 45                         | 167                       | 56                   |
| 6                        | 4    | 16,17          | 45                         | 100                       | 33                   |
| 8                        | 5    | 31,53          | 62                         | 115                       | 38                   |
| 8                        | 6    | 22,64          | 65                         | 71                        | 24                   |
| 10                       | 8    | 29,11          | 80                         | 56                        | 19                   |
| 12                       | 10   | 35,58          | 100                        | 45                        | 15                   |

### TEMPERATURE °C.

RILSAN può essere impiegato in una gamma di temperature variante da -40°C a +80°C. Qui di seguito riportiamo una tabella delle pressioni in % in funzione delle temperature. *RILSAN can be used in a range of temperatures from -20°C to + 60°C. Here we state a table concerning the pressures expressed in % as a function of temperatures.*

|      |      |      |     |     |     |     |     |
|------|------|------|-----|-----|-----|-----|-----|
| -10° | 0°   | 20°  | 30° | 40° | 50° | 60° | 80° |
| 120% | 110% | 100% | 83% | 72% | 64% | 52% | 47% |

### TOLLERANZE - TOLLERANCE :

± 0,07 sullo spessore della parete - *on the thickness of the wall*  
± 0,07 sul Ø e fino a 10mm. - *on the outside Ø until 10mm.*  
± 0,1 sul Ø 12 - *on the outside from 12*  
± 0,5% sul peso - *on the weight*

### COLORI DISPONIBILI - AVAILABLE COLOURS

NEUTRO E NERO - NEUTRAL AND BLACK

IL TUBO E' FORNITO IN ROTOLI DA MT.100

THE HOSE IS DELIVERED IN ROLLS OF 100 MT.

### APPLICAZIONI - APPLICATIONS

PARTICOLARMENTE IDONEO PER IL PASSAGGIO DI OLIO E GRASSO (INGRASSATORI)

PARTICULARLY FIT TO THE PASSAGE OF OIL AND FAT

### RILSAN®

è un marchio concesso da ARKEMA

Is an international trade mark granted by ARKEMA

### SCHEMA TECNICA PA12 TIPO ZERO - DATA SHEET

### Proprietà generali - General proprieties

### Valori tipici - Typical values

|                                                                                     |   |                      |         |              |                                   |
|-------------------------------------------------------------------------------------|---|----------------------|---------|--------------|-----------------------------------|
| D E N S I T A'                                                                      | - | D E N S I T Y        | G/cm³   | ISO R 1183 D | 1,02                              |
| PUNTO DI FUSIONE                                                                    | - | MELTING POINT        | °C      | ASTM D 789   | 174-177                           |
| ASSORBIMENTO D'ACQUA all'equilibrio-WATER ABSORBPTION at equilibrium                |   |                      |         | ASTM D570    | 0,8                               |
| MODULO A FLESSIONE                                                                  | - | FLEXURAL MODULUS     | Mpa     | ISO 178      | 1200                              |
| RESISTENZA A TRAZIONE E ROTTURA                                                     | - | CHARPY IMPACT        |         | ISO 179/1eU  |                                   |
| A + 23 °C senza intaglio                                                            | - | At + 23 °C unnotched | Kj/m²   |              | NON SI ROMPE/NO BREAK             |
| A - 30 °C senza intaglio                                                            | - | At - 30 °C unnotched | "       | ISO 179/1Ea  | NON SI ROMPE/NO BREAK             |
| A + 23 °C con intaglio                                                              | - | At + 23 °C notched   | "       |              | NON SI ROMPE/NO BREAK             |
| A - 30 °C con intaglio                                                              | - | At - 30 °C notched   | "       |              | 8                                 |
| TRAZIONE                                                                            | - | TENSILE              |         | ISO R 527    |                                   |
| SOGLIA DI TENSIONE                                                                  | - | STRESS AT YELD       | Mpa     |              | 35                                |
| SOGLIA DI ALLUNGAMENTO                                                              | - | ELONGATION AT YELD   | %       |              | 8                                 |
| RIGIDITA' ALLA ROTTURA                                                              | - | STRENGHT AT BREAK    | Mpa     |              | 53                                |
| ALLUNGAMENTO ALLA ROTTURA                                                           | - | ELONGATION AT BREAK  | %       |              | 300                               |
| Temperature di deformazione sotto carico -Heat distortion temperature under load of |   |                      |         | ISO 75       |                                   |
| sotto 0,46 mpa                                                                      | - | under 0,46 mpa       | °C      |              | 135                               |
| sotto 1,85 mpa                                                                      | - | under 1,85 mpa       | °C      |              | 55                                |
| TENUTA ALLA FIAMMA                                                                  | - | FLAME RESISTANCE     |         | ASTM D 635   | brucia alla velocità di 9mm./min. |
|                                                                                     |   |                      |         |              | burns at a rate of 9mm./min.      |
| DUREZZA                                                                             | - | HARDNESS             | shore D | ISO 868      | 72                                |

Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ARKEMA e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ARKEMA Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied commitment from our part.

# TUBI PA12 J7 UBESTA® -LONG LIFE LINEARI FLESSIBILI

## LINEAR FLEXIBLE HOSES

- ❖ prodotto studiato per soddisfare le norme DIN 73378 / 74324 PA 12 HIPHL  
*product studied to satisfy norms DIN 73378/74324 PA 12 HIPHL*
- ❖ prodotto senza migrazione di plastificante  
*product without migration of plasticizer*
- ❖ ottima stabilità dimensionale alle alte temperature  
*excellent dimensional stability to the tall temperatures*
- ❖ ottima resistenza all'invecchiamento  
*excellent resistance to the aging*

| DIMENSIONI<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA | PRESSIONI a -PRESSURE at 20°C |                      |
|--------------------------|------|----------------|------------------------|-------------------------------|----------------------|
| o Øe                     | i Øi | GR.MT          | RADIUS OF CUR.         | SCOPPIO<br>BURST              | ESERCIZIO<br>WORKING |
| 4                        | 2    | 9,51           | 20                     | 167                           | 56                   |
| 4                        | 2,5  | 7,73           | 25                     | 115                           | 38                   |
| 4                        | 2,7  | 6,91           | 25                     | 97                            | 32                   |
| 6                        | 4    | 15,86          | 35                     | 100                           | 33                   |
| 8                        | 5    | 30,92          | 40                     | 115                           | 38                   |
| 8                        | 6    | 22,20          | 40                     | 71                            | 24                   |
| 10                       | 8    | 28,54          | 60                     | 56                            | 19                   |
| 12                       | 9    | 49,95          | 70                     | 71                            | 24                   |
| 12                       | 10   | 34,89          | 85                     | 45                            | 15                   |
| 14                       | 11   | 59,46          | 85                     | 60                            | 20                   |

### TOLLERANZE - TOLLERANCE :

± 0,05 sullo spessore della parete - *on the thickness of the wall*

± 0,05 sul Øe fino al Ø 12 - *on the outside Ø until Ø 12*

± 0,10 sul Øe dal Ø 14 - *from outside Ø 14*

± 0,5% sul peso - *on the weight*

### TEMPERATURE °C.

PA12 J7 può essere impiegato in una gamma di temperature da -40 a +100°C. Qui di seguito riportiamo una tabella delle pressioni in % in funzione delle temperature.

*PA12 J7 can be used in a range of temperatures from -40°C to +100°C. Here we state a table concerning the pressures expressed in % as a function of temperatures.*

|      |     |     |     |      |
|------|-----|-----|-----|------|
| 20°  | 40° | 60° | 80° | 100° |
| 100% | 85% | 60% | 40% | 35%  |

### SCHEDA TECNICA PA12 J7 LONG LIFE - DATA SHEET

#### Proprietà generali - General proprieties

#### Valori tipici - Typical values

|                           |   |                             |       |              |      |
|---------------------------|---|-----------------------------|-------|--------------|------|
| D E N S I T A'            | - | D E N S I T Y               | g/cm³ | ISO R 1183 D | 1,01 |
| PUNTO DI FUSIONE          | - | MELTING POINT               | °C    | ASTM D 789   | 173  |
| MODULO A FLESSIONE        | - | FLEXURAL MODULUS            | Mpa   | ASTM D 790   | 330  |
| RIGIDITA' ALLA ROTTURA    | - | TENSILE STRENGTH AT YELD    | Mpa   | ASTM D 638   | 20   |
| ALLUNGAMENTO ALLA ROTTURA | - | TENSILE ELONGATION AT BREAK | %     |              | 212  |
| RESISTENZA ALLA FLESSIONE | - | FLEXURAL STRENGTH           | Mpa   | ASTM D 790   | 16   |
| DUREZZA                   | - | HARDNESS                    |       | ISO 868      | 64   |

Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche UBE e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by UBE Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.

# TUBI PA12 J44 UBESTA®-LINEARI SUPERFLESSIBILI

## - *LINEAR EXTRAFLEXIBLE HOSES*

- ❖ prodotto senza migrazione di plastificante
- ❖ ottima stabilità dimensionale alle alte temperature
- ❖ ottima resistenza all'invecchiamento

*product without migration of plasticizer  
excellent dimensional stability to the tall temperatures  
excellent resistance to the aging*

| DIMENSIONI<br><i>DIMENSIONS</i>                                                        |             | PESO<br><i>WEIGHT</i> | RAGGIO DI<br>CURVATURA | PRESSIONI-PRESSURE at 20°C |                             |
|----------------------------------------------------------------------------------------|-------------|-----------------------|------------------------|----------------------------|-----------------------------|
| <i>o</i> Øe                                                                            | <i>i</i> Øi | GR.MT                 | <i>RADIUS OF CUR.</i>  | SCOPPIO<br><i>BURST</i>    | ESERCIZIO<br><i>WORKING</i> |
| 4                                                                                      | 2,7         | 6,84                  | 20                     | 60                         | 20                          |
| 6                                                                                      | 4           | 15,70                 | 35                     | 62                         | 21                          |
| 8                                                                                      | 5           | 30,62                 | 35                     | 72                         | 24                          |
| 8                                                                                      | 6           | 21,98                 | 40                     | 44                         | 15                          |
| 10                                                                                     | 8           | 28,26                 | 50                     | 34                         | 11                          |
| 12                                                                                     | 9           | 49,46                 | 50                     | 44                         | 15                          |
| 12                                                                                     | 10          | 34,54                 | 80                     | 28                         | 9                           |
| 14                                                                                     | 11          | 58,88                 | 120                    | 37                         | 12                          |
| MISURE PER CARICAMENTO AUTOMATICO INSERTI<br>- <i>MEASURES FOR AUTOMATIC LOADING</i> - |             |                       |                        |                            |                             |
| 10                                                                                     | 5           | 58,88                 | 20                     | 103                        | 34                          |
| 10                                                                                     | 6           | 50,24                 | 30                     | 78                         | 26                          |
| 10                                                                                     | 6,5         | 45,33                 | 30                     | 66                         | 22                          |
| 12                                                                                     | 7           | 74,58                 | 25                     | 82                         | 27                          |
| 12                                                                                     | 7,5         | 68,88                 | 25                     | 72                         | 24                          |
| 12                                                                                     | 8           | 62,80                 | 30                     | 62                         | 21                          |
| 14                                                                                     | 8,5         | 97,14                 | 30                     | 76                         | 25                          |
| 14                                                                                     | 9           | 90,28                 | 50                     | 67                         | 22                          |
| 14                                                                                     | 9,5         | 83,01                 | 60                     | 59                         | 20                          |
| 14                                                                                     | 10          | 75,36                 | 120                    | 52                         | 17                          |
| 15                                                                                     | 10          | 98,13                 | 110                    | 62                         | 21                          |
| 15                                                                                     | 10,5        | 90,08                 | 100                    | 55                         | 18                          |
| 16                                                                                     | 11          | 105,98                | 110                    | 57                         | 19                          |
| 16                                                                                     | 11,5        | 97,14                 | 120                    | 51                         | 17                          |

### TEMPERATURE °C

PA12 J44 può essere impiegato in una gamma di temperature variante da -40°C a +100°C. Qui di seguito riportiamo una tabella delle pressioni in % in funzione delle temperature.  
*PA12 J44 can be used in a range of temperatures from -40°C to + 100°C. Here we state a table concerning the pressurses to expressed in % as a function of temperatures.*

|      |     |     |     |      |
|------|-----|-----|-----|------|
| 20°  | 40° | 60° | 80° | 100° |
| 100% | 85% | 60% | 40% | 35%  |

### TOLLERANZE - *TOLLERANCE* :

± 0,05 sullo spessore della parete - *on the thickness of the wall*  
± 0,05 sul Øe fino al Ø 12 - *on the outside Ø until Ø 12*  
± 0,1 sul Øe dal Ø 14 - *from outside Ø 14*  
± 0,5% sul peso - *on the weight*

Prodotto idoneo per aria compressa, adatto per lo scorrimento interno di parti metalliche o legno, per vibratori, per parti meccaniche in movimento, manipolatori, utensili pneumatici, robot. Apprezzato per la particolare flessibilità ed elasticità.

*Fit product for compressed air, proper for the inside slide of metallic or wood parts, for vibrator, for mechanical parts in movement, manipulators, pneumatic, robots. Appreciated for the particular flexibility and elasticity.*

### SCHEDA TECNICA PA12 J44 - *POLYAMMIDE DATA SHEET*

### Proprietà generali - *General proprieties*

### Valori tipici - *Typical values*

|                             |   |                             |       |              |      |
|-----------------------------|---|-----------------------------|-------|--------------|------|
| DENSITA'                    | - | DENSITY                     | g/cm³ | ISO R 1183 D | 1    |
| PUNTO DI FUSIONE            | - | MELTING POINT               | °C    | ASTM D 789   | 169  |
| MODULO A FLESSIONE          | - | FLEXURAL MODULUS            | Mpa   | ASTM D 790   | 200  |
| RIGIDITA' ALLA ROTTURA      | - | TENSILE STRENGTH AT YELD    | Mpa   | ASTM D 638   | 16   |
| ALLUNGAMENTO ALLA ROTTURA   | - | TENSILE ELONGATION AT BREAK | %     |              | >300 |
| RESISTENZA ALLA FLESSIONE   | - | FLEXURAL STRENGTH           | Mpa   | ASTM D 790   | 9,8  |
| TEMPERATURE DI DEFORMAZIONE | - | HEAT DISTORTION TEMPERATURE | °C    | ISO 75       | 101  |
| 4,6 bars (66 psi)           |   |                             |       |              |      |
| DUREZZA                     | - | HARDNESS                    |       | ISO 868      | 50   |

Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche UBE e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by UBE Research Center and data selected from the litearature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.

ANTISTATICO - ANTISTATHIC : CEI-EN 50014/1993  
IGNIFUGO - UNFLAMMABLE : UL 94 V0

| DIMENSIONI<br>DIMENSIONS |     | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA | PRESSIONI-PRESSURE at 20°C |                          |
|--------------------------|-----|----------------|------------------------|----------------------------|--------------------------|
| oØe                      | iØi | GR.MT          | RADIUS OF CUR.<br>MM.  | SCOPPIO ATM<br>BURST       | ESERCIZIO ATM<br>WORKING |
| 4                        | 2,5 | 9,57           | 30                     | 74                         | 25                       |
| 6                        | 4   | 19,63          | 45                     | 45                         | 15                       |
| 8                        | 6   | 27,48          | 55                     | 29                         | 10                       |
| 10                       | 8   | 35,33          | 70                     | 21                         | 7                        |
| 12                       | 10  | 43,18          | 100                    | 16                         | 5                        |

TEMPERATURE °C.

Il PA12 può essere impiegato in una  
gamma di temperature da -20°C a +40°C.  
*PA12 can be used in a range of  
temperatures from -20°C to +40°C.*

TOLLERANZE - TOLLERANCE :

± 0,1        sullo spessore della parete - *on the thickness of the wall*  
± 0,1        su Øe        - *on outside Ø*  
± 0,5%      sul peso        - *on the weight*

Il tubo è fornito in rotoli da 100 mt.  
The hose is delivered in rolls of 100 mt.

*Prodotto idoneo per eliminare cariche elettrostatiche; impiegato nelle pompe di benzina e in maglieria per contatto con filati sintetici.*  
*Fit product to eliminate electrostatic positions employed in the pumps of gasoline and in hosiery for contact with synthetic yarns.*

| SCHEDA TECNICA PA12 ANTISTATICO IGNIFUGO |   |                             | Proprietà generali  |              | Valori tipici  |  |
|------------------------------------------|---|-----------------------------|---------------------|--------------|----------------|--|
| PA12 ANTISTATHIC UNFLAMMABLE DATA SHEET  |   |                             | General proprieties |              | Typical values |  |
| D E N S I T A'                           | - | D E N S I T Y               | g/cm³               | ISO R 1183 D | 1,25           |  |
| PUNTO DI FUSIONE                         | - | MELTING POINT               | °C                  | ASTM D 789   | 169            |  |
| MODULO A FLESSIONE                       | - | FLEXURAL MODULUS            | Mpa                 | ASTM D 790   | 200            |  |
| RIGIDITA' ALLA ROTTURA                   | - | TENSILE STRENGTH AT YELD    | Mpa                 | ASTM D 638   | 16             |  |
| ALLUNGAMENTO ALLA ROTTURA                | - | TENSILE ELONGATION AT BREAK | %                   |              | >300           |  |
| RESISTENZA ALLA FLESSIONE                | - | FLEXURAL STRENGTH           | Mpa                 | ASTM D 790   | 9,8            |  |
| TEMPERATURE DI DEFORMAZIONE              | - | HEAT DISTORTION TEMPERATURE | °C                  | ISO 75       | 101            |  |
| 4,6 bars (66 psi)                        |   |                             |                     |              |                |  |
| RESISTENZA ALLA FIAMMA                   | - | FLEME RESISTANCE            | UL94                | ASTM D635    | V - 0          |  |
| DUREZZA                                  | - | HARDNESS                    | shore D             | ISO 868      | 50             |  |
| RESISTENZA ELETTRICA                     | - | ELECTRIC RESISTANCE         | cm                  | Ω            | 10³ - 10⁴      |  |

-MB- -PA12-Ø 10 X 8- -ANTISTATICO :CEI-EN 50014/1993-IGNIFUGO: UL94/VO- -MB-



# PRODOTTI CHIMICI

## CHEMICAL PRODUCTS

### LEGENDA

OK = BUONO

NO = SCONSIGLIATO

Ok\* = limitatamente stabile-azione gonfiante/cristallizzante

Ok\* = limited, swelling or dissolving action.

### LEGEND

GOOD

USE IS NOT RECOMMENDED

RESISTENZA A 20°C

RESISTANCE TO 20° c

| SOSTANZA               | SUBSTANCE              | KYNAR  |        | RILSAN |      | NYLON | POLIETILENE |     | PU      |
|------------------------|------------------------|--------|--------|--------|------|-------|-------------|-----|---------|
|                        |                        | HD4000 | HD2800 | PA 11  | PA12 | PA6   | LD          | HD  | 98/1100 |
| 0-fenilfenolo          | 0-phenilphenol         | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Acetaldeide            | Acetaldehyde           | no     | no     | ok*    | -    | ok    | ok          | ok  | -       |
| Acetamide              | Acetamide              | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Acetica Anidride       | Acetic Anhydride       | no     | no     | ok*    | -    | no    | no          | -   | -       |
| Acetico Acido in acqua | Acetic Acid in water   | ok     | ok     | no     | no   | ok*   | ok*         | ok  | -       |
| Acetilacetone          | Acetylacetone          | no     | no     | -      | -    | -     | -           | -   | -       |
| Acetile Bromuro        | Acetyl Bromide         | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Acetile Cloruro        | Acetyl Chloride        | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Acetilene              | Acetylene              | ok     | ok     | ok     | -    | ok    | -           | -   | -       |
| Aceto                  | Vinegar                | ok     | ok     | ok*    | -    | ok    | ok          | -   | -       |
| Acetofenone            | Acetophenone           | no     | no     | -      | -    | -     | -           | -   | -       |
| Acetone                | Acetone                | no     | no     | ok*    | -    | ok    | ok*         | ok  | -       |
| Acetonitrile           | Acetonitrile           | ok*    | -      | -      | -    | -     | -           | -   | -       |
| Acidi grassi           | Adipic Acid            | ok     | ok     | ok     | -    | -     | ok*         | -   | -       |
| Acidi grassi solfanati | Sulphate Fat Acids     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Acqua                  | Water                  | ok     | ok     | ok     | ok   | ok    | ok          | ok  | ok      |
| Acqua di Bromo         | Bromine Water          | ok     | ok     | no     | -    | no    | -           | -   | -       |
| Acqua di cloro         | Chlorine Water         | ok     | ok     | no     | -    | -     | ok          | -   | -       |
| Acqua di mare          | Sea Water              | ok     | ok     | ok     | ok   | ok    | ok          | ok  | ok      |
| Acque luride           | Sewage Water           | ok     | ok     | ok     | -    | ok    | ok          | -   | -       |
| Acqua ossigenata       | Hydrogen Peroxide      | ok     | ok     | ok*    | -    | -     | ok*         | -   | -       |
| Acqua regia            | Aqua Regia             | ok     | ok*    | no     | -    | -     | no          | no  | -       |
| Acrilonitrile          | Acrylonitrile          | ok*    | ok*    | -      | -    | -     | ok*         | ok  | -       |
| Alcoolici              | Alcoholics             | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Allile cloruro         | Allyl Chloride         | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Allilico alcool        | Allyl Alcohol          | ok     | ok     | -      | -    | -     | ok*         | ok  | -       |
| Alluminio acetato      | Aluminum Acetate       | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Alluminio bromuro      | Aluminum Bromide       | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Alluminio cloruro      | Aluminum Chloride      | ok     | ok     | -      | -    | -     | ok          | ok  | -       |
| Alluminio fluoruro     | Aluminum Fluoride      | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Alluminio idrossido    | Aluminum Hydroxide     | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Alluminio nitrato      | Aluminum Nitrate       | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Alluminio ossicloruro  | Aluminum Oxychloride   | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Alluminio solfato      | Aluminum Sulphate      | ok     | ok     | ok     | -    | ok    | ok          | ok  | -       |
| Amido                  | Starch                 | no     | ok     | -      | -    | -     | ok          | ok  | -       |
| Amile acetato          | Amyl Acetate           | ok     | ok     | ok     | -    | -     | ok*         | ok  | -       |
| Amile cloruro          | Amyl Chloride          | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Amilico alcool         | Amyl Alcohol           | ok     | ok     | ok*    | -    | ok    | ok          | -   | -       |
| Ammoniaca gas          | Ammonia                | ok     | no     | ok     | -    | ok    | no          | no  | -       |
| Ammoniaca liquida      | Ammonia Liquid         | ok     | no     | ok     | -    | ok    | ok*         | ok* | -       |
| Ammonio Acetato        | Ammonium Acetate       | no     | ok     | ok*    | -    | -     | -           | -   | -       |
| Ammonio Bicromato      | Ammonium Dichromate    | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ammonio Bromuro        | Ammonium Bromide       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ammonio carbonato      | Ammonium Carbonate     | -      | ok     | ok*    | -    | -     | -           | -   | -       |
| Ammonio cloruro        | Ammonium Chloride      | -      | ok     | ok     | -    | -     | ok          | -   | -       |
| Ammonio fluoruro       | Ammonium Fluoride      | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ammonio fosfato        | Ammonium Phosphate     | -      | ok     | ok     | -    | ok    | -           | -   | -       |
| Ammonio idrossido      | Ammonium Hydroxide     | ok     | ok     | ok     | -    | -     | -           | -   | -       |
| Ammonio metafosfato    | Ammonium Metaphosphate | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ammonio nitrato        | Ammonium Nitrate       | -      | ok     | ok     | -    | -     | ok          | -   | -       |
| Ammonio persolfato     | Ammonium Persulfate    | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ammonio solfato        | Ammonium Sulfate       | -      | ok     | ok     | -    | ok    | -           | -   | -       |
| Ammonio solfuro        | Ammonium Sulfide       | -      | ok     | -      | -    | -     | ok          | -   | -       |
| Ammonio tiocianato     | Ammonium Thiocyanate   | -      | ok     | -      | -    | -     | -           | -   | -       |
| Anilina                | Aniline                | ok     | ok     | ok*    | -    | -     | ok*         | ok  | -       |
| Anilina cloridrato     | Aniline Hydrochloride  | -      | ok     | -      | -    | -     | -           | -   | -       |
| Argento cianuro        | Silver Cyanide         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Argento nitrato        | Silver Nitrate         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Argento solfato        | Sylver Sulfate         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Aria                   | Air                    | ok     | ok     | ok     | ok   | ok    | ok          | -   | -       |
| Arsenico acido         | Arsenic Acid           | -      | ok     | -      | -    | -     | -           | -   | -       |
| Asfalto                | Asphalt                | -      | ok     | ok     | -    | -     | -           | -   | -       |

| SOSTANZA                 | SUBSTANCE            | KYNAR  |        | RILSAN |      | NYLON | POLIETILENE |     | PU      |
|--------------------------|----------------------|--------|--------|--------|------|-------|-------------|-----|---------|
|                          |                      | HD4000 | HD2800 | PA 11  | PA12 | PA6   | LD          | HD  | 98/1100 |
| Azoto                    | Nitrogen             | -      | ok     | ok*    | -    | -     | -           | -   | -       |
| Azoto Biossido           | Nitrogen Dioxide     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Bagni Galvanici          | Bagni Galvanici      | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Barbabietola da zucchero | Beet Sugar Liquors   | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Bario Carbonato          | Bario Carbonato      | -      | ok     | -      | -    | -     | -           | -   | -       |
| Bario Cloruro            | Barium Chloride      | -      | ok     | ok     | -    | ok    | ok          | -   | -       |
| Bario idrossido          | Barium Hydroxide     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Bario nitrato            | Barium Nitrate       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Bario solfato            | Barium Sulfate       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Bario solfuro            | Barium Sulfide       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Benzaldeide              | Benzaldehyde         | no     | ok*    | ok*    | -    | -     | -           | -   | -       |
| Benzene                  | Benzene              | -      | ok     | ok*    | -    | -     | no          | -   | -       |
| Benzenosolfonico acido   | Benzenesulfonic Acid | ok*    | ok     | -      | -    | -     | -           | -   | -       |
| Benzilamina              | Benzylamine          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Benzile cloruro          | Benzyl Chloride      | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Benzilico alcool         | Benzyl Alcohol       | ok     | ok     | no     | -    | no    | ok*         | ok  | -       |
| Benzilico etere          | Benzyl Ether         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Benzina senza piombo     | Unleaded Petrol      | ok     | ok     | ok*    | ok   | ok    | ok*         | ok  | -       |
| Benzoico acido           | Benzoic Acid         | ok     | ok     | ok*    | -    | -     | ok          | ok  | -       |
| Benzoile cloruro         | Benzoyl Chloride     | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Benzoile perossido       | Benzoyl Peroxide     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Benzolo                  | Benzol               | ok     | -      | ok*    | -    | ok    | no          | ok* | -       |
| Birra                    | Beer                 | ok     | ok     | ok*    | -    | ok    | ok          | ok  | -       |
| Borace                   | Borax                | -      | ok     | ok     | -    | -     | -           | -   | -       |
| Borico acido             | Boric Acid           | ok     | ok     | ok     | -    | -     | ok          | -   | -       |
| Boro trifluoruro         | Boron Trifluoride    | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Bromico acido            | Bromic Acid          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Bromidrico acido         | Hydrobromic Acid     | ok     | ok     | -      | -    | -     | ok          | -   | -       |
| Bromo gas secco          | Bromine Gas (dry)    | ok     | ok     | no     | -    | -     | no          | no  | -       |
| Bromo liquido            | Liquid Bromine       | ok     | ok     | no     | -    | -     | no          | no  | -       |
| BromoBenzene             | Bromobenzene         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Bromoformio              | Bromoform            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Bromotoluene             | M-Bromotoulene       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Butadiene                | Butadiene            | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Butandiolo               | Butanediol           | -      | ok     | -      | -    | -     | ok          | ok  | -       |
| Butano                   | Butane               | -      | ok     | ok     | -    | ok    | -           | -   | -       |
| Butilamina               | Butylamine           | no     | no     | no     | -    | -     | -           | -   | -       |
| Butile acetato           | Butyl Acetate        | ok*    | ok*    | ok     | -    | -     | ok*         | ok* | -       |
| Butile acrilato          | Butyl Acrylate       | ok*    | ok     | -      | -    | -     | -           | -   | -       |
| Butile Bromuro           | Butyl Bromide        | ok     | ok     | ok*    | -    | -     | -           | -   | -       |
| Butile cloruro           | Butyl Chloride       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Butile stearato          | Butyl Stearate       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Butilene                 | Butylene             | -      | ok     | -      | -    | -     | -           | -   | -       |
| Butilfenolo              | Butylphenol          | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Butilico alcool          | Butyl Alcohol        | ok     | ok     | ok*    | -    | ok    | ok          | -   | -       |
| Butilico etere           | Butyl Ether          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Butilmercaptano          | Butyl Mercaptane     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Butirraldeide            | Butyraldehyde        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Butirrico acido          | Butyric Acid         | -      | ok     | -      | -    | -     | ok          | ok  | -       |
| Calcio acetato           | Calcium Acetate      | -      | ok     | -      | -    | -     | -           | -   | -       |
| Calcio bisolfato         | Calcium Bisulfate    | -      | ok     | -      | -    | -     | -           | -   | -       |
| Calcio bromuro           | Calcium Bromide      | -      | ok     | -      | -    | -     | -           | -   | -       |
| Calcio carbonato         | Calcium Carbonate    | -      | ok     | -      | -    | -     | ok*         | -   | -       |
| Calcio clorato           | Calcium Chlorate     | -      | ok     | -      | ok*  | -     | -           | -   | -       |
| Calcio cloruro           | Calcium Chloride     | -      | ok     | ok     | -    | ok    | ok          | -   | -       |
| Calcio disolfito         | Calcium Bisulfite    | -      | ok     | -      | -    | -     | -           | -   | -       |
| Calcio fosfato           | Calcium Phosphate    | -      | ok     | -      | -    | -     | -           | -   | -       |
| Calcio idrossido         | Calcium Hydroxide    | -      | ok     | -      | -    | -     | -           | -   | -       |
| Calcio ipoclorito        | Calcium Hypochlorite | -      | ok     | -      | -    | -     | ok*         | ok* | -       |
| Calcio nitrato           | Calcium Nitrate      | -      | ok     | ok     | -    | -     | ok          | -   | -       |
| Calcio ossido            | Calcium Oxide        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Calcio solfato           | Calcium Sulphate     | -      | ok     | -      | -    | -     | ok          | -   | -       |
| Caprilico acido          | Caprylic Acid        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Carbonico acido          | Carbonic Acid        | -      | ok     | -      | -    | -     | ok*         | -   | -       |
| Carbonio biossido        | Carbon Dioxide       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Carbonio monossido       | Carbon Oxide         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Carbonio tetracloruro    | Carbon Tetrachloride | ok     | ok     | no     | -    | ok    | no          | no  | -       |
| Carbonio solfuro         | Carbon Sulphide      | ok*    | ok     | -      | -    | ok    | no          | no  | -       |
| Carburante per jet       | Jet Fuel             | ok     | ok     | ok     | ok   | ok    | no          | no  | -       |
| Caseina                  | Casein               | -      | ok     | ok     | -    | -     | -           | -   | -       |

| SOSTANZA                | SUBSTANCE                   | KYNAR  |        | RILSAN |      | NYLON | POLIETILENE |     | PU      |
|-------------------------|-----------------------------|--------|--------|--------|------|-------|-------------|-----|---------|
|                         |                             | HD4000 | HD2800 | PA 11  | PA12 | PA6   | LD          | HD  | 98/1100 |
| Cherosene               | Kerosene                    | ok     | ok     | ok     | -    | ok    | -           | -   | -       |
| Cianidrico acido        | Hydrocyanic Acid            | ok*    | ok     | -      | -    | -     | ok*         | -   | -       |
| Cicloesano              | Cyclohexane                 | ok     | ok     | ok     | -    | ok    | ok*         | ok  | -       |
| Cicloesanolo            | Cyclohexanol                | ok     | ok     | ok*    | -    | -     | ok*         | -   | -       |
| Cicloesanone            | Cyclohexanone               | no     | ok     | ok*    | -    | ok    | no          | ok* | -       |
| Citrico acido           | Citric Acid                 | ok     | ok     | ok     | -    | ok    | ok          | -   | -       |
| Cloralio idrato         | Chloral Hydrate             | ok*    | ok     | -      | -    | -     | -           | -   | -       |
| Cloridrina              | Chlorohydrin                | -      | ok     | no     | -    | -     | -           | -   | -       |
| Cloridrico acido        | Hydrochloric Acid           | ok     | ok     | no     | -    | no    | ok          | ok  | -       |
| Cloro                   | Chlorine                    | -      | ok     | no     | -    | -     | no          | no  | -       |
| Cloro biossido          | Chlorine Dioxide            | -      | ok     | no     | -    | -     | -           | -   | -       |
| Cloro gas               | Chlorine Gas                | ok     | ok     | no     | -    | -     | no          | -   | -       |
| Cloro liquido           | Chlorine Liquid             | ok     | ok     | no     | -    | -     | no          | -   | -       |
| Cloroacetico acido      | Chloroacetic Acid           | no     | no     | -      | -    | no    | -           | -   | -       |
| Clorobenzene            | Chlorobenzene               | -      | ok     | no     | -    | -     | no          | -   | -       |
| Clorobenzensolfonico    | Chlorobenzenesulphonic Acid | -      | ok     | -      | -    | -     | no          | -   | -       |
| Clorobenzilcloruro      | Chlorinebenzil Chloride     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Cloroesanolo            | Chlorine Hexanol            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Clorofluorocarbonio     | Chlorofluorocarbon          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Cloroformio             | Chloroform                  | -      | ok     | no     | no   | -     | no          | no  | -       |
| Cloropicrina            | Chloropicrin                | -      | ok     | -      | -    | -     | -           | -   | -       |
| Clorosolfonico acido    | Chlorosulfonic Acid         | ok     | no     | no     | -    | no    | no          | no  | -       |
| Clorotrimetilsilano     | Chlorotrimethylsilane       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Cloruro rameoso         | Cuprous Chloride            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Colla                   | Glue                        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Cresilico acido         | Cresylic Acid               | -      | ok     | -      | -    | -     | -           | -   | -       |
| Cresolo                 | Cresol                      | ok     | ok     | no     | -    | -     | no          | ok* | -       |
| Criolite                | Cryolite                    | -      | ok     | -      | -    | -     | -           | -   | -       |
| Cromico acido           | Chromic Acid                | -      | ok     | no     | -    | no    | no          | no  | -       |
| Cromile cloruro         | Chromile Chloride           | -      | ok     | -      | -    | -     | -           | -   | -       |
| Cromo allume            | Chrome Alum                 | -      | ok     | -      | -    | -     | -           | -   | -       |
| D.D.t.                  | D.D.T.                      | -      | ok     | ok*    | -    | ok    | ok          | ok  | -       |
| Decalina                | Decaline                    | ok     | -      | ok     | -    | ok    | no          | ok* | -       |
| Destrina                | Dextrin                     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Destrosio               | Dextrose                    | -      | ok     | -      | -    | -     | -           | -   | -       |
| Diaceton alcool         | Diacetone Alcohol           | ok*    | ok*    | ok     | -    | ok    | -           | -   | -       |
| Dibromobenzene          | Dibromobenzene              | -      | ok     | -      | -    | -     | -           | -   | -       |
| Dibromopropano          | Dibromopropane              | -      | ok     | -      | -    | -     | -           | -   | -       |
| Dibutilamina            | Dibutylamine                | -      | ok     | -      | -    | -     | -           | -   | -       |
| Dibutilico ftalato      | Dibutylic Phtalate          | no     | no     | -      | -    | -     | no          | ok* | -       |
| Dibutilico sebacato     | Dibutylic Sebacate          | no     | no     | -      | -    | -     | -           | -   | -       |
| Dicloracetico acido     | Dichloroacetic Acid         | -      | ok     | -      | -    | -     | no          | ok* | -       |
| Dicloretilene           | Dichloroethylene            | -      | ok     | no     | -    | ok    | no          | no  | -       |
| Diclorobenzene          | Dichlorobenzene             | -      | ok     | -      | -    | -     | -           | -   | -       |
| DicloroDimetilsilano    | Dichlorodimethylsilane      | -      | ok     | -      | -    | -     | -           | -   | -       |
| Dicloropropionico acido | Dichloropropionic Acid      | -      | ok     | -      | -    | -     | -           | -   | -       |
| Diclorotoluene          | Dichlorotoluene             | -      | ok     | -      | -    | -     | -           | -   | -       |
| Dietanolamina           | Diethanolamine              | no     | no     | ok     | -    | ok    | -           | -   | -       |
| Dietilamina             | Diethylamine                | ok*    | ok*    | -      | -    | -     | no          | no  | -       |
| Dietilenetriamina       | Diethylenetriamine          | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Difeniletene            | Dyphenylethene              | -      | ok     | -      | -    | -     | -           | -   | -       |
| Diglicolico acido       | Dyglicolic Acid             | -      | ok*    | -      | -    | -     | ok          | ok  | -       |
| Diisobutilchetone       | Diisobutyl Ketone           | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Diisobutilene           | Diisobutylene               | -      | ok     | -      | -    | -     | -           | -   | -       |
| Diisopropilchetone      | Diisopropyl Ketone          | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Dimetilacetamide        | Dimethyl Acetamide          | no     | no     | -      | -    | -     | -           | -   | -       |
| Dimetilamina            | Dimethylamine               | no     | ok*    | -      | -    | -     | no          | no  | -       |
| Dimetilanilina          | Dimethylaniline             | ok*    | ok*    | -      | -    | -     | -           | -   | -       |
| Dimetileptanolo         | Dimethyl Heptanol           | -      | ok     | -      | -    | -     | -           | -   | -       |
| Dimetilesadiene         | Dimethyl Hexadiene          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Dimetilformamide        | Dimethyl Formamide          | no     | no     | ok*    | -    | -     | ok*         | ok  | -       |
| Dimetilico ftalato      | Dimethyl Phtalate           | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Dimetilico solfato      | Dimethyl Sulfate            | -      | ok*    | ok     | -    | -     | -           | -   | -       |
| Dimetilico solfossido   | Dimethyl Sulfoxide          | no     | no     | -      | -    | -     | -           | -   | -       |
| Dioctilfosfato          | Diocetyl Phosphate          | -      | ok*    | ok     | -    | -     | -           | -   | -       |
| Diossano                | Dioxane                     | no     | no     | ok     | -    | -     | ok*         | ok  | -       |
| Divinilbenzene          | Divinyl Benzene             | -      | ok     | -      | -    | -     | -           | -   | -       |
| Epsom sali di           | Epsom Salts                 | -      | -      | -      | -    | -     | -           | -   | -       |
| Eptano                  | Heptane                     | ok     | ok     | ok     | -    | -     | ok*         | ok  | -       |
| Esaclo-Butadiene        | Hexachloro-Butadiene        | -      | ok     | -      | -    | -     | -           | -   | -       |

| SOSTANZA                 | SUBSTANCE                  | KYNAR  |        | RILSAN |      | NYLON | POLIETILENE |     | PU      |
|--------------------------|----------------------------|--------|--------|--------|------|-------|-------------|-----|---------|
|                          |                            | HD4000 | HD2800 | PA 11  | PA12 | PA6   | LD          | HD  | 98/1100 |
| Esametilendiamina        | Hexamethylenediamine       | no     | no     | -      | -    | -     | -           | -   | -       |
| Esametilfosfotriamide    | Hexamethylphosphotriamide  | no     | no     | -      | -    | -     | -           | -   | -       |
| Esano                    | Hexane                     | ok     | ok     | ok     | ok   | -     | ok*         | ok  | -       |
| Esilico Alcool           | Hexyl Alcohol              | -      | ok     | -      | -    | -     | -           | -   | -       |
| Etanolamina              | Ethanolamine               | no     | no     | -      | -    | -     | -           | -   | -       |
| Etantiolo                | Ethanethiol                | -      | ok     | -      | -    | -     | -           | -   | -       |
| Etere metilico           | Methylic Ether             | -      | ok*    | -      | -    | -     | no          | no  | -       |
| Etere solforico          | Sulphuric Ether            | -      | -      | ok*    | -    | -     | -           | -   | -       |
| Etil-esanolo             | Ethyl-Hexanol              | -      | ok     | -      | -    | -     | -           | -   | -       |
| Etilbenzene              | Ethyl Benzene              | -      | ok     | -      | -    | -     | -           | -   | -       |
| Etile acetato            | Ethyl Acetate              | ok*    | ok     | ok     | ok   | si    | no          | ok  | -       |
| Etile acetoacetato       | Ethyl Acetoacetate         | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Etile acrilato           | Ethyl Acrylate             | ok*    | ok*    | -      | -    | -     | -           | -   | -       |
| Etile cianoacetato       | Ethyl Cyanoacetate         | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Etile cloroacetato       | Ethyl Chloroacetate        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Etile cloroformiato      | Ethyl Chloroformate        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Etile cloruro            | Ethyl Chloride             | -      | ok     | ok*    | -    | -     | no          | no  | -       |
| Etile formiato           | Ethyl Formate              | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Etilencloridrina         | Ethylene Chlorohydrin      | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Etilendiamina            | Ethylene Dyamine           | no     | ok     | -      | -    | -     | -           | ok* | -       |
| Etilene dicloruro        | Ethylene Dichloride        | ok     | ok     | -      | -    | -     | no          | -   | -       |
| Etilene ossido           | Ethylene Oxide             | ok     | no     | -      | -    | -     | -           | -   | -       |
| Etilico alcool           | Ethyl Alcohol              | ok     | ok     | ok*    | no   | ok    | ok          | ok  | ok      |
| Etilico etere            | Ethyl Ether                | -      | ok     | ok*    | -    | -     | -           | -   | -       |
| Etossi etile acetato     | Etoxy Ethyl Acetate        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Fenilico etere           | Phenyl Ether               | -      | ok     | -      | -    | -     | -           | -   | -       |
| Fenilidrazina            | Phenylhydrazine            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Fenilidrazina cloridrato | Phenylhydrazine Chlorinate | -      | ok     | -      | -    | -     | -           | -   | -       |
| Fenolo                   | Phenol                     | ok     | ok     | no     | -    | -     | ok*         | ok  | -       |
| Fenolo clorurato         | Phenol Chlorinate          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ferrico cloruro          | Ferric Chloride            | -      | ok     | -      | -    | -     | ok          | -   | -       |
| Ferrico idrossido        | Ferric Hydroxide           | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ferrico nitrato          | Ferric Nitrate             | -      | ok     | -      | -    | -     | ok          | -   | -       |
| Ferrico solfato          | Ferric Sulfate             | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ferrico solfuro          | Ferric Sulphide            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ferroso cloruro          | Ferrous Chloride           | -      | ok     | -      | -    | -     | ok          | -   | -       |
| Ferroso idrossido        | Ferrous Hydroxide          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ferroso nitrato          | Ferrous Nitrate            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ferroso solfato          | Ferrous Sulphate           | -      | ok     | -      | -    | -     | -           | -   | -       |
| Fluoridrico acido        | Hydrofluoric Acid          | -      | ok     | no     | -    | no    | ok*         | ok* | -       |
| Fluoro                   | Fluorine                   | ok*    | ok*    | no     | -    | -     | no          | no  | -       |
| Fluoroborico acido       | Fluoroboric Acid           | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Fluorosilicico acido     | Fluorosilic Acid           | ok     | ok     | no     | -    | no    | -           | -   | -       |
| Formaldeide              | Formaldehyde               | ok     | ok     | ok*    | -    | -     | ok          | ok  | -       |
| Formico acido            | Formic Acid                | ok     | ok     | no     | ok*  | no    | ok          | ok  | -       |
| Fosfato disodico         | Phosphate Disodium         | -      | ok     | ok     | -    | ok    | -           | -   | -       |
| Fosforico acido          | Phosphoric Acid            | ok     | ok     | ok*    | -    | no    | ok*         | ok  | -       |
| Fosforo ossicloruro      | Phosphorus Oxychloride     | ok     | no     | -      | -    | -     | -           | -   | -       |
| Fosforo pentacloruro     | Phosphorus Pentachloride   | no     | ok     | -      | -    | -     | -           | -   | -       |
| Fosforo pentossido       | Phosphorus Pentoxide       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Fosforo tricloruro       | Phosphorus Trichloride     | ok     | ok     | -      | -    | -     | no          | no  | -       |
| Fosforoso rosso          | Phosphorous Red            | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Fosgene                  | Phosgene                   | -      | ok     | -      | -    | -     | -           | -   | -       |
| Freni liquido            | Brakes Liquid              | -      | -      | ok     | -    | -     | -           | -   | -       |
| Freon 12/22              | Freon 12/22                | -      | -      | ok*    | -    | ok    | no          | no  | -       |
| Frutta succhi            | Fruit Juice                | -      | ok     | ok     | -    | ok    | ok          | ok  | -       |
| Fruttosio                | Fructose                   | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ftalico acido            | Phtalic Acid               | ok     | ok     | -      | -    | ok    | ok          | ok  | -       |
| Fumarico acido           | Fumaric Acid               | -      | ok     | -      | -    | -     | -           | -   | -       |
| Furano                   | Furan                      | no     | no     | -      | -    | -     | -           | -   | -       |
| Furfurilico alcool       | Furfuryl Alcohol           | ok     | ok     | ok     | -    | -     | -           | -   | -       |
| Furfurolo                | Furfural                   | ok*    | ok*    | ok*    | -    | no    | no          | ok* | -       |
| Gallico acido            | Gallic Acid                | ok*    | ok*    | -      | -    | -     | -           | -   | -       |
| Gas artificiale          | Manufactured Gas           | -      | ok     | ok     | -    | ok    | -           | -   | -       |
| Gas di carbone           | Coal Gas                   | -      | ok     | ok     | -    | ok    | -           | -   | -       |
| Gas naturale             | Natural Gas                | -      | ok     | ok     | -    | ok    | -           | -   | -       |
| Gasolio                  | Diesel Oil                 | -      | ok     | ok     | -    | ok    | ok*         | ok  | -       |
| Gelatina                 | Gelatin                    | -      | ok     | -      | -    | -     | ok          | -   | -       |
| Gin                      | Gin                        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Glicerina                | Glycerin                   | -      | ok     | ok*    | -    | ok    | ok          | ok  | -       |

| SOSTANZA             | SUBSTANCE               | KYNAR  |        | RILSAN |      | NYLON | POLIETILENE |     | PU      |
|----------------------|-------------------------|--------|--------|--------|------|-------|-------------|-----|---------|
|                      |                         | HD4000 | HD2800 | PA 11  | PA12 | PA6   | LD          | HD  | 98/1100 |
| Glicina              | Glycine                 | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Glicol polietilenico | Glycol Polyethile       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Glicol propilenico   | Glycol Propyle          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Glicole              | Glycole                 | -      | -      | ok*    | -    | ok    | ok          | ok  | ok      |
| Glicole etilenico    | Ethylene Glycol         | ok     | ok     | ok     | ok   | -     | ok          | ok  | ok      |
| Glicolico acido      | Glycolic Acid           | ok*    | ok*    | -      | -    | no    | -           | -   | -       |
| Glucosio             | Glucose                 | ok     | ok     | ok     | -    | ok    | -           | -   | -       |
| Glutammico acido     | Glutamic Acid           | -      | ok     | -      | -    | -     | -           | -   | -       |
| Idrazina             | Hydrazine               | -      | ok     | -      | -    | -     | -           | -   | -       |
| Idrazina idrata      | Hydrazine-Hydrate       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Idrazinabicloridrato | Hydrazine Dichloridrate | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Idrochinone          | hydroquinone            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Idrogeno             | Hydrogen                | ok     | ok     | ok     | -    | ok    | no          | no  | -       |
| Idrogeno perossido   | Hydrogen Peroxide       | ok     | ok     | ok*    | -    | -     | ok*         | -   | -       |
| Iodio                | Iodine                  | ok     | ok     | -      | -    | -     | ok*         | ok* | -       |
| Iodio gas            | Iodine Gas              | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Iodoformio           | Iodoform                | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Ipocloroso acido     | Hypochlorous Acid       | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Isoamilico etere     | Isohamyl Ether          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Isobutilico alcool   | Isobutyl Alcohol        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Isoottano            | Isooctane               | -      | ok     | ok*    | -    | -     | no          | ok* | -       |
| Isopropilbenzene     | Isoprophyl Benzene      | -      | ok     | -      | -    | -     | -           | -   | -       |
| Isopropile cloruro   | Isoprophyl Chloride     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Isopropilico alcool  | Isoprophyl Alcohol      | -      | ok     | no     | no   | -     | ok          | ok  | -       |
| Isopropilico etere   | Isoprophyl Ether        | -      | ok     | -      | -    | -     | ok*         | ok  | -       |
| Lacca                | Hair spray              | -      | ok     | -      | -    | -     | -           | -   | -       |
| LanoLina             | Lanolin                 | -      | ok     | ok     | -    | -     | -           | -   | -       |
| Latte                | Milk                    | ok     | ok     | ok     | -    | ok    | ok          | ok  | -       |
| Lattico acido        | Lactic Acid             | ok     | ok     | ok     | -    | ok    | ok          | ok  | -       |
| Laurico acido        | Lauric Acid             | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Laurile cloruro      | Lauryl Chloride         | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Laurile solfato      | Lauryl Sulphate         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Laurilmercaptano     | Laurylmercaptano        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Linoleico acido      | Linoleic Acid           | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Lisciva nera         | Black Lye               | -      | ok     | -      | -    | -     | ok*         | ok* | -       |
| Litio bromuro        | Lithium Bromide         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Litio cloruro        | Lithium Chloride        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Magnesio carbonato   | Magnesium Carbonate     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Magnesio citrato     | Magnesium Citrate       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Magnesio cloruro     | Magnesium Chloride      | -      | ok     | ok     | -    | ok    | ok          | -   | -       |
| Magnesio idrossido   | Magnesium Hydroxide     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Magnesio nitrato     | Magnesium Nitrate       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Maleica anidride     | Maleic Anhydride        | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Maleico acido        | Maleic Acid             | ok     | ok     | -      | -    | no    | ok          | ok  | -       |
| Malico acido         | Malic Acid              | ok     | ok     | -      | -    | ok    | ok          | ok  | -       |
| Manganese solfato    | Manganese Sulphate      | -      | ok     | -      | -    | -     | -           | -   | -       |
| Melassa              | Golden Syrup            | -      | ok     | -      | -    | -     | ok          | ok  | -       |
| Mercurico cianuro    | Mercuric Cyanide        | -      | ok     | -      | -    | -     | ok          | ok  | -       |
| Mercurico cloruro    | Mercuric Chloride       | -      | ok     | -      | -    | -     | ok          | ok  | -       |
| Mercurico nitrato    | Mercuric Nitrate        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Mercurio             | Mercury                 | ok     | ok     | ok     | -    | ok    | ok          | ok  | -       |
| Metacrilico acido    | Methacrylic Acid        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Metano               | Methane                 | ok     | ok     | ok     | -    | ok    | -           | -   | -       |
| Metansolfonico       | Methanesolponic Acid    | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Metilammina          | Methylamine             | no     | no     | -      | -    | -     | -           | -   | -       |
| Metiletilchetone     | Methy Ethyl Ketone      | no     | no     | ok*    | ok*  | ok    | no          | ok* | -       |
| Metilcloroformio     | Methyl Chloroform       | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Metile acetato       | Methyl Acetate          | -      | ok     | ok     | -    | ok    | -           | -   | -       |
| Metile acrilato      | Methyl Acrylate         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Metile bromuro       | Methyl Bromide          | ok     | ok     | ok*    | -    | ok    | -           | -   | -       |
| Metile cloroacetato  | Methyl Chloroacetate    | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Metile cloruro       | Methyl Chloride         | ok     | ok     | ok*    | -    | ok    | no          | no  | -       |
| Metile salicilato    | Methyl Salicylate       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Metile solfato       | Methyl Sulphate         | -      | ok     | ok*    | -    | -     | -           | -   | -       |
| Metile, etere cloro  | Methylchloromethylether | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Metilene bromuro     | Methylene Bromine       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Metilene cloruro     | Methylene Chloride      | ok     | no     | no     | -    | -     | no          | -   | -       |
| Metilene ioduro      | Methylene Iodine        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Metilico alcool      | Methylic Alcohol        | ok     | ok     | no     | no   | ok    | ok          | ok  | -       |
| Metilisobutilchetone | Methylisobutylketone    | no     | no     | ok     | -    | -     | no          | -   | -       |

| SOSTANZA                  | SUBSTANCE                    | KYNAR  |        | RILSAN |      | NYLON | POLIETILENE |     | PU      |
|---------------------------|------------------------------|--------|--------|--------|------|-------|-------------|-----|---------|
|                           |                              | HD4000 | HD2800 | PA 11  | PA12 | PA6   | LD          | HD  | 98/1100 |
| Metilmetacrilato          | Methyl Methacrylate          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Metilsolforico acido      | Methyl Sulphoric Acid        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Metiltriclorosilano       | Methyltrichlorosilane        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Morfolina                 | Morpholine                   | no     | ok*    | -      | -    | -     | -           | -   | -       |
| Nafta                     | Naphtha                      | ok     | ok     | ok     | -    | ok    | no          | ok* | -       |
| Naftalene                 | Naphtalene                   | -      | ok     | ok     | -    | -     | -           | -   | -       |
| Naftalina                 | Naphtalene                   | ok     | -      | ok*    | -    | ok    | ok*         | ok* | -       |
| Nichel acetato            | Nickel Acetate               | -      | ok     | -      | -    | -     | -           | -   | -       |
| Nichel cloruro            | Nickel Chloride              | -      | ok     | -      | -    | -     | -           | -   | -       |
| Nichel Nitrato            | Nickel Nitrate               | -      | ok     | -      | -    | -     | -           | -   | -       |
| Nichel solfato            | Nickel Sulphate              | -      | ok     | -      | -    | -     | -           | -   | -       |
| Nicotina                  | Nicotine                     | -      | ok*    | -      | -    | -     | -           | -   | -       |
| NicotiNico acido          | Nicotinic Acid               | -      | ok     | -      | -    | -     | -           | -   | -       |
| Nitrico acido             | Nitric Acid                  | ok     | ok*    | no     | ok*  | no    | ok*         | ok  | -       |
| Nitrobenzene              | Nitrobenzene                 | ok*    | ok*    | -      | -    | -     | -           | -   | -       |
| Nitroetano                | Nitroethane                  | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Nitroglicerina            | Nitroglycerin                | -      | ok     | -      | -    | -     | -           | -   | -       |
| Nitrometano               | Nitromethane                 | ok*    | ok     | -      | -    | -     | -           | -   | -       |
| Nitroso ossido            | Nitrous Oxide                | no     | no     | -      | -    | -     | -           | -   | -       |
| Nitrotoluene              | Nitrotoluene                 | -      | ok     | -      | -    | -     | -           | -   | -       |
| oleico acido              | Oleic Acid                   | ok     | ok     | ok     | -    | ok    | ok*         | ok  | -       |
| oleum                     | Oleum                        | no     | no     | ok*    | -    | -     | no          | no  | -       |
| Olio combustibile         | Fuel Oil                     | ok     | ok     | ok*    | ok*  | ok    | no          | ok* | -       |
| Olio da taglio            | Wasted Oil                   | -      | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di arachidi          | Peanut Oil                   | -      | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di cocco             | Coconut Oil                  | -      | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di cotone            | Cottonseed Oil               | -      | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di lardo             | Lard Oil                     | -      | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di limone            | Lemon Oil                    | -      | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di lino              | Linseed Oil                  | -      | ok     | ok     | ok   | ok    | ok*         | ok  | -       |
| Olio di mais              | Corn Oil                     | -      | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di oliva             | Olive Oil                    | -      | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di palma             | Palm Oil                     | ok     | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di paraffina         | Paraffin oil                 | ok     | ok     | ok*    | ok   | ok    | ok*         | ok  | -       |
| Olio di ricino            | Castor Plant                 | ok     | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di soia              | Soy Oil                      | ok     | ok     | ok     | ok   | ok    | ok*         | ok* | -       |
| Olio di silicone          | Silicon Oil                  | ok     | ok     | ok     | ok   | ok    | ok          | ok  | -       |
| Olio lubrificante         | Motor Oil                    | -      | ok     | ok     | ok   | ok    | no          | ok* | -       |
| Olio minerale             | Mineral Oil                  | ok     | ok     | ok     | ok   | ok    | no          | ok* | -       |
| Olio vegetale             | Vegetable Oil                | -      | ok     | ok*    | ok   | ok    | ok*         | ok* | -       |
| Ossalico acido            | Oxalic Acid                  | ok     | ok     | ok     | -    | ok*   | ok          | ok  | -       |
| Ossigeno                  | Oxygen                       | ok     | ok     | ok     | -    | -     | -           | -   | -       |
| Ottano                    | Octane                       | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Ottilene                  | Octene                       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Ozono                     | Ozone                        | ok     | ok     | no     | -    | -     | no          | no  | -       |
| Palmitico acido           | Palmitic Acid                | -      | ok     | -      | -    | ok    | -           | -   | -       |
| Paraffina                 | Paraffin                     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Perclorico acido          | Perchloric Acid              | ok     | ok     | -      | -    | -     | ok          | ok  | -       |
| Percloroetilene           | Perchloroethylene            | ok     | ok     | no     | -    | ok    | -           | -   | -       |
| PerclorometilmercaPtano   | Perchloromethylmercaptan     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Petrolio                  | Petroleum                    | ok     | ok     | ok     | -    | ok    | ok*         | ok  | -       |
| Petrolio greggio          | Raw Petroleum                | ok     | ok     | ok     | -    | ok    | no          | -   | -       |
| Picrico acido             | Picric Acid                  | ok     | -      | no     | -    | -     | -           | -   | -       |
| Piombo acetato            | Lead Acetate                 | -      | ok     | -      | -    | ok    | -           | -   | -       |
| Piombo cloruro            | Lead Chloride                | -      | ok     | -      | -    | -     | -           | -   | -       |
| Piombo nitrato            | Lead Nitrate                 | -      | ok     | -      | -    | -     | -           | -   | -       |
| Piombo solfato            | Lead Sulphate                | -      | ok     | -      | -    | -     | -           | -   | -       |
| Piombo tetraetile         | Tertaethyllead               | -      | ok     | ok*    | -    | ok    | -           | -   | -       |
| Pirico acido              | Pyric Acid                   | -      | ok*    | no     | -    | -     | -           | -   | -       |
| Piridina                  | Pyridine                     | no     | no     | no     | -    | no    | ok*         | ok* | -       |
| Pirogallico acido         | Pyrogallol Acid              | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Polivinile acetato        | Polyvinyl Acetate            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Polivinilico alcool       | Plyvinyl Alcohol             | -      | ok     | -      | -    | -     | -           | -   | -       |
| Potassa                   | Potassa                      | ok     | -      | -      | -    | ok*   | ok          | ok  | -       |
| Potassio                  | Potassium                    | no     | no     | ok*    | -    | -     | ok          | ok  | -       |
| Potassio acetato          | Potassium Acetate            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Potassio allume           | Potassium Alum               | -      | ok     | -      | -    | -     | -           | -   | -       |
| Potassio alluminiocloruro | Potassium Aluminium Chloride | -      | ok     | -      | -    | -     | -           | -   | -       |
| Potassio bicarbonato      | Potassium Bicarbonate        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Potassio bisolfato        | Potassium Bisulphate         | -      | ok     | -      | -    | -     | -           | -   | -       |

| SOSTANZA                 | SUBSTANCE                 | KYNAR  |        | RILSAN |      | NYLON | POLIETILENE |    | PU      |
|--------------------------|---------------------------|--------|--------|--------|------|-------|-------------|----|---------|
|                          |                           | HD4000 | HD2800 | PA 11  | PA12 | PA6   | LD          | HD | 98/1100 |
| Potassio borato          | Potassium Borate          | -      | ok     | -      | -    | -     | ok          | -  | -       |
| Potassio bromato         | Potassium Bromate         | -      | ok     | -      | -    | -     | -           | -  | -       |
| Potassio bromuro         | Potassium Bromide         | -      | ok     | -      | -    | -     | ok          | -  | -       |
| Potassio carbonato       | Potassium Carbonate       | -      | ok     | ok     | -    | -     | -           | -  | -       |
| Potassio cianuro         | Potassium Cyanide         | -      | ok     | -      | -    | -     | ok          | -  | -       |
| Potassio clorato         | Potassium Chlorinate      | -      | ok     | -      | -    | -     | -           | -  | -       |
| Potassio cloruro         | Potassium Chlorate        | -      | ok     | ok     | -    | -     | ok          | -  | -       |
| Potassio cromato         | Potassium Chromate        | -      | ok     | -      | -    | -     | ok*         | -  | -       |
| Potassio dicromato       | Potassium Dichromate      | -      | ok     | -      | -    | no    | -           | -  | -       |
| Potassio ferricianuro    | Potassium Ferricyanide    | -      | ok     | -      | -    | -     | -           | -  | -       |
| Potassio ferrocianuro    | Potassium Ferrocyanide    | -      | ok     | ok     | -    | -     | ok          | -  | -       |
| Potassio fluoruro        | Potassium Fluoride        | -      | ok     | -      | -    | -     | -           | -  | -       |
| Potassio idrossido       | Potassium Hydroxide       | no     | ok*    | ok*    | -    | no    | ok*         | -  | -       |
| Potassio ioduro          | Potassium Iodide          | -      | ok     | ok*    | -    | -     | -           | -  | -       |
| Potassio ipoclorito      | Potassium Hypochlorite    | -      | ok     | -      | -    | -     | -           | -  | -       |
| Potassio nitrato         | Potassium Nitrate         | -      | ok     | ok*    | -    | ok    | -           | -  | -       |
| Potassio Perborato       | Potassium Perborate       | -      | ok     | -      | -    | -     | -           | -  | -       |
| Potassio Perclorato      | Potassium Perchlorate     | -      | ok     | -      | -    | -     | -           | -  | -       |
| Potassio Permanganato    | Potassium Permanganate    | -      | ok     | no     | -    | -     | ok          | ok | -       |
| Potassio Persolfato      | Potassium Persulphate     | -      | ok     | -      | -    | -     | -           | -  | -       |
| Potassio solfato         | Potassium Sulphate        | -      | ok     | ok     | -    | ok    | -           | -  | -       |
| Potassio solfuro         | Potassium Sulphide        | -      | ok     | -      | -    | -     | ok          | -  | -       |
| Propano                  | Propane                   | ok     | ok     | ok     | -    | ok    | -           | -  | -       |
| Propilamina              | Propylamine               | no     | no     | -      | -    | -     | -           | -  | -       |
| Propile acetato          | Propyl Acetate            | -      | ok     | -      | -    | -     | -           | -  | -       |
| Propilene dibromuro      | Propylene Dibromide       | -      | ok     | -      | -    | -     | -           | -  | -       |
| Propilene dicloruro      | Propylene Dichloride      | -      | ok     | -      | -    | -     | -           | -  | -       |
| Propilene ossido         | Propylene Oxide           | no     | no     | -      | -    | -     | -           | -  | -       |
| Propilico alcool         | Propyl Alcohol            | ok     | ok     | -      | -    | -     | ok          | ok | -       |
| Rame acetato             | Copper Acetate            | -      | ok     | -      | -    | -     | -           | -  | -       |
| Rame carbonato basico    | Copper Basic Carbonate    | -      | ok     | -      | -    | -     | -           | -  | -       |
| Rame cianuro             | Copper Cyanide            | -      | ok     | -      | -    | -     | ok          | -  | -       |
| Rame cloruro             | Copper Chloride           | -      | ok     | -      | -    | -     | ok          | -  | -       |
| Rame fluoruro            | Copper Fluoride           | -      | ok     | -      | -    | -     | -           | -  | -       |
| Rame nitrato             | Copper Nitrate            | -      | ok     | -      | -    | -     | -           | -  | -       |
| Rame solfato             | Copper Sulphate           | -      | ok     | ok     | -    | ok    | ok          | -  | -       |
| Salamoia                 | Brine                     | -      | ok     | -      | -    | -     | -           | -  | -       |
| Salamoia acida           | Acid Brine                | -      | ok     | -      | -    | -     | -           | -  | -       |
| Salamoia acida clorurata | Chlorinate Acid Brine     | -      | ok     | -      | -    | -     | -           | -  | -       |
| Salamoia basica          | Basic Brine               | -      | ok     | -      | -    | -     | -           | -  | -       |
| Salicilaldeide           | Salicylaldehyde           | ok     | ok     | -      | -    | -     | -           | -  | -       |
| Salicilico acido         | Salicylic Acid            | ok     | ok     | ok*    | -    | ok    | -           | -  | -       |
| Sego                     | Tallow                    | -      | ok     | ok     | -    | -     | ok          | ok | -       |
| Selenico acido           | Selenic Acid              | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sidro                    | Cider                     | ok     | ok     | ok*    | -    | ok    | ok          | ok | -       |
| Silicio tetracloruro     | Silicon Tetrachloride     | -      | ok     | -      | -    | -     | -           | -  | -       |
| Soda                     | Soda                      | ok     | -      | ok*    | -    | ok*   | ok          | ok | -       |
| Sodio                    | Sodium                    | no     | no     | -      | -    | -     | -           | -  | -       |
| Sodio acetato            | Sodium Acetate            | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio amalgama di        | Sodium (Amalgam)          | no     | no     | -      | -    | -     | -           | -  | -       |
| Sodio benzoato           | Sodium Benzoate           | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio bicarbonato        | Sodium Bicarbonate        | -      | ok     | ok     | -    | ok    | -           | -  | -       |
| Sodio bisolfato          | Sodium Bisulphate         | -      | ok     | -      | -    | ok*   | -           | -  | -       |
| Sodio bisolfito          | Sodium Bisulphite         | -      | ok     | -      | -    | ok    | -           | -  | -       |
| Sodio bromato            | Sodium Bromate            | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio bromuro            | Sodium Bromide            | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio carbonato          | Sodium Carbonate          | -      | ok     | ok*    | -    | ok    | ok          | -  | -       |
| Sodio cianuro            | Sodium Cyanide            | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio clorato            | Sodium Chlorate           | -      | ok     | no     | -    | -     | -           | -  | -       |
| Sodio clorito            | Sodium Chlorite           | -      | ok     | no     | -    | -     | -           | -  | -       |
| Sodio cloruro            | Sodium Chloride           | -      | ok     | ok     | ok   | ok    | ok          | -  | -       |
| Sodio cromato            | Sodium Chromate           | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio dicromato          | Sodium Dichromate         | -      | ok     | -      | -    | ok    | -           | -  | -       |
| Sodio ditionito          | Sodium Dithionite         | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio ferricianuro       | Sodium Ferricyanide       | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio ferrocianuro       | Sodium Ferrocyanide       | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio fluoruro           | Sodium Fluoride           | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio fluosilicato       | Sodium Fluorsilicate      | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio fosfato            | Sodium Phosphate          | -      | ok     | -      | -    | -     | -           | -  | -       |
| Sodio idrogenofosfato    | Sodium Hydrogen Phosphate | -      | ok     | -      | -    | -     | -           | -  | -       |



| SOSTANZA                 | SUBSTANCE                | KYNAR  |        | RILSAN |      | NYLON | POLIETILENE |     | PU      |
|--------------------------|--------------------------|--------|--------|--------|------|-------|-------------|-----|---------|
|                          |                          | HD4000 | HD2800 | PA 11  | PA12 | PA6   | LD          | HD  | 98/1100 |
| Sodio idrossido          | Sodium Hydroxide         | no     | ok*    | ok*    | -    | no    | ok          | -   | -       |
| Sodio ioduro             | Sodium Iodide            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Sodio ipoclorito         | Sodium Hypochlorite      | -      | ok     | no     | -    | -     | no          | no  | -       |
| Sodio nitrato            | Sodium Nitrate           | -      | ok     | -      | -    | -     | -           | -   | -       |
| Sodio nitrito            | Sodium Nitrite           | -      | ok     | -      | -    | -     | -           | -   | -       |
| Sodio palmitato          | Sodium Palmitate         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Sodio perclorato         | Sodium Perchlorate       | -      | ok     | -      | -    | -     | -           | -   | -       |
| Sodio perossido          | Sodium Peroxide          | -      | ok     | -      | -    | -     | -           | -   | -       |
| Sodio solfuro            | Sodium Sulphate          | -      | ok     | ok*    | -    | -     | ok          | -   | -       |
| Sodio tiocianato         | SodiumThiocyanate        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Sodio tiosolfato         | Sodium Thiosulphate      | -      | ok     | -      | -    | -     | -           | -   | -       |
| Solfidrico acido         | Hydrogen Sulphide        | ok     | ok     | no     | -    | no    | ok*         | -   | -       |
| Solforico acido          | Sulphuric Acid           | ok     | ok     | no     | ok*  | no    | ok*         | ok  | -       |
| Solforico fumante acido  | Sulphuric Acid Fuming    | ok     | no     | no     | -    | -     | no          | no  | -       |
| Solforica anidride       | Sulphuric Anhydride      | no     | -      | no     | -    | -     | -           | -   | -       |
| Solforile cloruro        | Sulphuryl Chloride       | ok     | no     | -      | -    | -     | -           | -   | -       |
| Solforile fluoruro       | Sulphuryl Fluoride       | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Stannico cloruro         | Stannic Chloride         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Stannoso cloruro         | Stannous Chloride        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Stearico acido           | Stearic Acid             | ok     | ok     | ok     | -    | ok    | ok*         | ok* | -       |
| Stearina                 | Stearine                 | -      | -      | ok     | -    | ok    | -           | -   | -       |
| Stirolo                  | Styrene                  | no     | ok     | ok*    | -    | ok    | no          | no  | -       |
| Succinico acido          | Succinic Acid            | -      | ok     | ok*    | -    | -     | -           | -   | -       |
| Succo di pomodoro        | Tomato Juice             | -      | ok     | -      | -    | ok    | -           | -   | -       |
| Tallolio                 | Tall oil                 | -      | ok     | -      | -    | -     | -           | -   | -       |
| Tannico acido            | Tannic Acid              | -      | ok     | -      | -    | -     | ok          | ok  | -       |
| Tartarico acido          | Tartaric Acid            | ok     | ok     | ok     | -    | ok    | -           | -   | -       |
| Tetrabromoetano          | Tetrabroethane           | -      | ok     | -      | -    | -     | -           | -   | -       |
| Tetracloroetano          | Tetrachloroethane        | -      | ok     | -      | -    | ok    | -           | -   | -       |
| Tetraclorofenolo         | Tetrachlorophenol        | -      | -      | -      | -    | -     | -           | -   | -       |
| Tetraidrofurano          | Tetrahydrofuran          | no     | no     | -      | -    | no    | no          | no  | -       |
| Tetrametilammonio        | Tetramethyammonia        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Tetrametilurea           | Tetramethylurea          | no     | no     | -      | -    | -     | -           | -   | -       |
| Tiofosforile cloruro     | Thiophosphoryl Chloride  | no     | no     | -      | -    | -     | -           | -   | -       |
| Tioglicol                | Thioglycol               | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Tioglicolico acido       | Thioglycolic Acid        | -      | ok     | -      | -    | -     | -           | -   | -       |
| Tionile cloruro          | Thionyl Chloride         | ok*    | no     | -      | -    | -     | no          | no  | -       |
| Titanio Tetracloruro     | Titanium Tetrachloride   | ok     | ok     | -      | -    | -     | -           | -   | -       |
| Toluene                  | Toluene                  | ok     | ok     | ok*    | ok*  | -     | -           | -   | -       |
| Toluenosolfonile cloruro | Toluenesulfonyl Chloride | -      | ok     | -      | -    | -     | -           | -   | -       |
| Toluolo                  | Toluole                  | ok     | ok     | ok     | -    | ok    | no          | no  | -       |
| Trementina               | Turpentine               | ok     | ok     | ok     | -    | ok    | ok*         | ok  | -       |
| Tributilfosfato          | Trybutil Phosphate       | -      | ok*    | ok     | -    | -     | -           | -   | -       |
| Tricloro acetico acido   | Trichloroacetic Acid     | ok     | ok     | -      | -    | -     | no          | ok* | -       |
| Triclorobenzene          | Trichlorobenzene         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Tricloroetano            | Trichloroethane          | -      | ok     | no     | -    | ok    | no          | no  | -       |
| Tricloroetilene          | Trichloroethylene        | ok     | ok     | no     | ok*  | ok    | no          | no  | -       |
| Triclorofenolo           | Trichloro Phenol         | -      | ok     | -      | -    | -     | -           | -   | -       |
| Tricresilfosfato         | Tricresilphosphate       | no     | no     | ok     | -    | -     | -           | -   | -       |
| Trietanolamina           | Triethanolamine          | -      | ok     | -      | -    | -     | ok*         | ok  | -       |
| Trietilfosfato           | Triethylphosphate        | no     | no     | -      | -    | -     | -           | -   | -       |
| Trifluoroacetico acido   | Trifluoroacetic Acid     | -      | ok     | -      | -    | -     | -           | -   | -       |
| Trimetilamina            | Trimethylamine           | -      | ok     | -      | -    | -     | -           | -   | -       |
| Urea                     | Urea                     | ok     | ok     | ok     | -    | ok    | ok          | ok  | -       |
| Urico acido              | Uric Acid                | -      | -      | ok     | -    | ok    | no          | si  | -       |
| Vinile acetato           | Vinyl Acetate            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Vinile cloruro           | Vinyl Chloride           | -      | ok     | ok*    | -    | -     | -           | -   | -       |
| Vinilidene cloruro       | Vinylidene Chloride      | -      | ok     | -      | -    | -     | -           | -   | -       |
| Vino                     | Wine                     | -      | ok     | ok*    | -    | ok    | ok*         | ok* | -       |
| Whiskey                  | Whiskey                  | -      | ok     | -      | -    | -     | ok          | ok  | -       |
| Xilene                   | Xylene                   | -      | ok     | ok     | ok   | -     | ok*         | ok* | -       |
| Xilplo                   | Xilplo                   | -      | -      | -      | -    | ok    | -           | -   | -       |
| zinco acetato            | Zinc Acetate             | -      | ok     | -      | -    | ok    | -           | -   | -       |
| Zinco bromuro            | Zinc Bromide             | -      | ok     | -      | -    | -     | -           | -   | -       |
| Zinco cloruro            | Zinc Chloride            | -      | ok     | ok     | ok*  | -     | ok          | ok  | -       |
| Zinco nitrato            | Zinc Nitrate             | -      | ok     | -      | -    | -     | -           | -   | -       |
| Zinco solfato            | Zinc Sulphate            | -      | ok     | -      | -    | -     | -           | -   | -       |
| Zolfo                    | Sulphur                  | ok     | ok     | ok     | -    | ok    | -           | -   | -       |
| Zolfo biossido           | Sulphur Dioxide          | -      | ok     | no     | -    | -     | -           | -   | -       |
| Zolfo cloruro            | Sulphur Chloride         | -      | ok*    | -      | -    | -     | -           | -   | -       |
| Zolfo dicloruro          | Sulphur Dichloride       | -      | ok*    | -      | -    | -     | -           | -   | -       |

# TUBI FLESSIBILI IN PTFE

## PTFE LINEAR FLEXIBLE HOSES

### GENERALITA' - GENERAL CHARACTERISTICS :

PTFE è un fluoropolimero conosciuto per le ottime proprietà in numerose applicazioni.  
E' utilizzato quanto l'alta temperatura è abbinata ad ambienti di lavoro aggressivi e critici.

*Fluoropolymer materials are known for their outstanding properties under a variety of applications. They are used where high temperatures in combination with aggressive medias or critical environments require an excellen tubing.*

### CARATTERISTICHE - SPECIFIC CHARACTERISTICS:

- ☺ **PTFE ha un'ottima resistenza ai prodotti chimici** - *is the most chemically resistant plastic known*
- ☺ **PTFE è estremamente stabile fino a 260 °C (500 °F)** - *is extremely inert and stable up to a temperature of 260°C. (500°F)*
- ☺ **PTFE ha ottime proprietà dielettriche** - *has almost ideal dielectric properties*
- ☺ **PTFE rimane inalterato a contatto con ossigeno, ozono e raggi ultra-violetti** - *is virtually unaffected by oxigen, ozone and UV light.*
- ☺ **temperatura massima di utilizzo: -60 °C +260°C** - *maximum temperature of work: -60°C +260°C*
- ☺ **ignifugo UL 94 V 0** - *unflammable UL 94 V 0*

| TUBO<br>PTFE | Diametro<br>interno mm | tolleranza | parete | tolleranza | Diametro<br>esterno mm | Pressione<br>min. di<br>scoppio | Pressione max. di<br>esercizio | Peso gr/mt. |
|--------------|------------------------|------------|--------|------------|------------------------|---------------------------------|--------------------------------|-------------|
|              | I.D.                   | TOLL       | WALL   | TOLL       | O.D.                   | a 23°C                          | a 23° C                        | Weght       |
|              |                        |            |        |            |                        | bar                             | bar                            | gr/mt.      |
| 2x4          | 2                      | ± 0,10     | 1      | ± 0,20     | 4                      | 81                              | 27                             | ± 22        |
| 4x6          | 4                      | ± 0,15     | 1      | ± 0,20     | 6                      | 54                              | 18                             | ± 37        |
| 6x8          | 6                      | ± 0,20     | 1      | ± 0,20     | 8                      | 42                              | 14                             | ± 51        |
| 8x10         | 8                      | ± 0,30     | 1      | ± 0,20     | 10                     | 36                              | 12                             | ± 66        |
| 10x12        | 10                     | ± 0,30     | 1      | ± 0,20     | 12                     | 30                              | 10                             | ± 80        |
| 12x14        | 12                     | ± 0,30     | 1      | ± 0,20     | 14                     | 24                              | 8                              | ± 95        |
| 12,5x15      | 12,5                   | ± 0,30     | 1,25   | ± 0,30     | 15                     | 27                              | 9                              | ± 120       |

### SCHEDA TECNICA KYNAR FLEX 2800 - DATA SHEET      Proprietà generali - General proprieties      Valori tipici - Typical values

|                                        |   |                                    |          |                      |            |
|----------------------------------------|---|------------------------------------|----------|----------------------|------------|
| PESO SPECIFICO                         | - | SPECIFIC GRAVITY                   | g/cm³    | D 792                | 2,15       |
| PUNTO DI FUSIONE                       | - | MELTING POINT                      | °C       | ISO 3416C            | 327        |
| ASSORBIMENTO D'ACQUA                   | - | WATER ABSORPTION                   | %        | D 570                | < 0,01     |
| COSTANTE DIELETTICA                    | - | DIELECTRIC CONSTANT                |          | D 150 at 10(10x2) Hz | 2,1        |
| FATTORE DI DISSIPAZIONE DIELETT. -     | - | DIELECTRIC DISSIPATION FACTOR      |          | D 150 at 10(10x2) Hz | 0,0002     |
| RESISTENZA DIELETTICA (10 mils film) - | - | DIELECTRIC STRENGHT (10 mils film) | Volt/mil | D 149                | > 1400     |
| RESISTIVITA' DI VOLUME                 | - | VOLUME RESISTIVITY                 | Ohm-cm   | D 257                | >10(10x17) |
| MODULO A TRAZIONE                      | - | TENSILE MODULUS                    | PSI      | D 790                | 90000      |
| MODULO A FLESSIONE A 23 C°             | - | FLEXURAL MODULUS                   | PSI      | D 638                | 80000      |
| ALLUNGAMENTO                           | - | ELONGATION                         | %        | D 1708 -D 638        | 300        |
| RESISTENZA ALLA FIAMMA                 | - | FLAME RESISTANCE                   |          | UL 94                | V0         |
| DUREZZA                                | - | HARDNESS                           | Shore D  | D 2240               | 60         |

Le informazioni contenute in questo documento sono basate sulle prove prese dai nostri fornitori. Tutti i valori riportati sono solo raccomandazioni e non possono costituire impegno o garanzia da parte nostra.

*All above mentioned values are originate from raw material suppliers, all values stated are racomendations only and may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.*

# TUBI FLESSIBILI IN KYNAR® FLEX 2800

## KYNAR® FLEX 2800 LINEAR FLEXIBLE HOSES

### GENERALITA' - GENERAL CHARACTERISTICS :

Il KYNAR 2800 polifluoruro di vinilidene, è un copolimero progettato per tubi che richiedono grande flessibilità e comprovata resistenza all'urto.

KYNAR 2800 is a vinylidene poly-fluoride copolymer specifically designed for hoses requiring higher flexibility and improved resistance to impact.

### CARATTERISTICHE - SPECIFIC CHARACTERISTICS:

- ☺ **eccellente resistenza all' abrasione** - *improved resistance at the abrasion* ;
- ☺ **eccellente flessibilità a temperatura ambiente** - *exceptional flexibility in environmental temperature* ;
- ☺ **eccellente flessibilità sotto zero, fino a -20°C (-4°F)** - *excellent flexibility at subzero temperatures to -20°C (-4°F)* ;
- ☺ **eccellente resistenza alle sollecitazioni fino a -30°C (-22°F)** - *improved stress crack resistance until -30°C* ;
- ☺ **eccellente resistenza all' allungamento** - *improved elongation at break* ;
- ☺ **eccellente stabilità termica** - *excellent thermal stability* ;
- ☺ **ottimo mantenimento all' invecchiamento** - *excellent maintenance to the aging* ;
- ☺ **ottima resistenza ai prodotti chimici anche ai più aggressivi** - *excellent resistance to the chemical agents, most aggressive too* ;
- ☺ **resistente agli agenti atmosferici** - *resistant at the environmental agents* ;
- ☺ **resistente all' attacco dei funghi** - *resistant to the attack of the mushrooms* ;
- ☺ **ignifugo UL 94 V0** - *unflammable UL 94 V0*
- ☺ **temperatura massima di utilizzo : -40°C +90°C** -*maximum temperature of work : -40°C +90°C*

| DIMENSIONI<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA        | PRESSIONI-PRESSURE a 20°C |                      |
|--------------------------|------|----------------|-------------------------------|---------------------------|----------------------|
| o Øe                     | i Øi | GR.MT          | RADIUS OF<br>CURVATURE<br>MM. | SCOPPIO<br>BURST          | ESERCIZIO<br>WORKING |
| 2                        | 1    | 4,19           | 10                            | 167                       | 56                   |
| 3                        | 2    | 6,99           | 15                            | 100                       | 33                   |
| 4                        | 2    | 16,77          | 20                            | 167                       | 56                   |
| 4                        | 2,5  | 13,62          | 20                            | 115                       | 38                   |
| 6                        | 4    | 27,95          | 35                            | 100                       | 33                   |
| 8                        | 6    | 39,12          | 40                            | 71                        | 24                   |
| 10                       | 8    | 50,30          | 60                            | 56                        | 19                   |
| 12                       | 10   | 61,48          | 85                            | 45                        | 15                   |

### TOLLERANZE - TOLLERANCE :

- ± 0,05 sullo spessore - *on the thickness of the wall* .
- ± 0,05 sul Øe fino a 8mm - *on the outsideØ until 8mm* .
- ± 0,1 sul Øe fino a 12mm - *on the outsideØ up to 12mm*.

|                                                                                                                               |     |     |     |     |
|-------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|
| Pressione d'esercizio espresse in % in funzione delle temperature.<br>Pressures expressed in % as a function of temperatures. |     |     |     |     |
| 20°                                                                                                                           | 40° | 60° | 80° | 90° |
| 100%                                                                                                                          | 75% | 62% | 50% | 25% |

### SCHEDA TECNICA KYNAR FLEX 2800 - DATA SHEET

#### Proprietà generali - General proprieties

#### Valori tipici - Typical values

|                            |   |                     |         |            |      |
|----------------------------|---|---------------------|---------|------------|------|
| D E N S I T A'             | - | D E N S I T Y       | g/cm³   | ISO R1183D | 1,78 |
| PUNTO DI FUSIONE           | - | MELTING POINT       | °C      | ISO 3416C  | 142  |
| MODULO A FLESSIONE A 23 C° | - | FLEXURAL MODULUS    | Mpa     | ISO 178    | 650  |
| RIGIDITA' ALLA ROTTURA     | - | CARPY IMPACT        | J/m     | ISO 180    | 800  |
| RESISTENZA ALLA TRAZIONE   | - | STRENGTH AT YIELD   | Mpa     | ISO R527   | 26   |
| ALLUNGAMENTO ALLA TRAZIONE | - | ELONGATION AT YIELD | %       | ISO R 527  | 12   |
| ALLUNGAMENTO A ROTTURA     | - | ELONGATION AT BREAK | %       | ISO R527   | >100 |
| RESISTENZA ALLA FIAMMA     | - | FLAME RESISTANCE    |         | UL 94      | V0   |
| DUREZZA                    | - | HARDNESS            | Shore D | ISO 868    | 68   |

Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ATOFINA e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ATOFINA Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied committent from our part.

# TUBO AL.PE - *HOSES AL.PE*

## TIPO DI PRODOTTO - *TYPE OF PRODUCT* :

Anima interna in alluminio protetta da polietilene e rivestimento esterno in polietilene nero alta densità.

*Internal core in aluminium protected by polyethylene and cover by black high density polyethylene.*

## MODO D'IMPIEGO - *RANGE OF APPLICATION* :

ALPE può essere formato nella sagoma desiderata e mantenere la forma data senza impiego di utensili.

**ATTENZIONE: non è un tubo idoneo ad alte pressioni avendo l'anima interna in alluminio calandrato sormontato (non saldato).**

*ALPE can be formed in the desiderate shape and preserve it without to utilize creaser tools.*

**ATTENTION: it isn't a fit hose to tall pressures since it has the inside soul in calendered aluminium, surmounted (not settled)**

## CARATTERISTICHE - *CHARACTERISTICS* :

Temperatura di lavoro da -30°C a +70°C. - *Working temperatures: from -30°C to +70°C.*

Ottima resistenza alla luce e alle intemperie - *Perfect resistance to the light and environmental agents.*

Buona resistenza all'acqua, agli idrocarburi e agli oli - *Good resistance to water, hydrocarburies and oil.*

| DIMENSIONI<br><i>DIMENSION</i> | PESO<br><i>WEIGHT</i> | RAGGIO DI CURV.<br><i>RADIUS OF CURV.</i> | PRESSIONE A 25°C<br>ESERCIZIO | TOLLERANZE        |
|--------------------------------|-----------------------|-------------------------------------------|-------------------------------|-------------------|
| <i>oØe</i>                     | <i>GR/MT</i>          |                                           | <i>WORKING PRESSURE</i>       | <i>TOLLERANCE</i> |
| 6                              | 25                    | 45                                        | 17                            | ± 0,10            |
| 8                              | 42                    | 60                                        | 17                            | ± 0,10            |
| 10                             | 48                    | 110                                       | 17                            | ± 0,10            |
| 12                             | 59                    | 135                                       | 15                            | ± 0,12            |
| 14                             | 73                    | 135                                       | 15                            | ± 0,15            |



## TUBI IN SCATOLA - *HOSES IN BOX*

**A richiesta tutti i nostri tubi possono essere forniti confezionati in scatola.**

*On request all our hoses may be manufactured in boxes.*



## ACCESSORI - *ACCESSORY*

PINZE TAGLIATUBO

*PIPE CUTTERS*

MORSETTIERE FISSATUBO

*HOSE CLAMP*

RACCORDI

*FITTINGS*

NASTRO PTFE NON SINTERIZZATO

*UNSINTERED PTFE TAPE*



## ELASTOLLAN® SERIE 185CRT LINEARI FLESSIBILI CON RINFORZO TESSILE

### 185CRT POLYURETHAN LINEAR FLEXIBLE HOSES WITH BRAID REINFORCEMENT

| DIMENSIONI<br>DIMENSIONS |     | PRESSIONI-PRESSURE at 20°C |                      |
|--------------------------|-----|----------------------------|----------------------|
| oØe                      | iØi | SCOPPIO<br>BURST           | ESERCIZIO<br>WORKING |
| 6                        | 4   | 40                         | 13                   |
| 8                        | 5,5 | 40                         | 13                   |
| 10                       | 6,5 | 60                         | 20                   |
| 10                       | 7,5 | 40                         | 13                   |
| 12                       | 8   | 60                         | 20                   |
| 16                       | 11  | 45                         | 15                   |
| 19                       | 13  | 45                         | 15                   |

Il tubo è fornito in rotoli da 25 / 50 / 100 mt.

*The hose is delivered in rolls of 25 / 50 / 100 mt. each.*

COLORE: blu trasparente

*COLOUR: transparent blue*

#### TEMPERATURE °C.

Il POLIURETANO serie 1185 può essere impiegato in una gamma di temperature da -40°C a +60°C.

*POLYURETHAN type 1185, may be used in a range of temperatures between -40°C to +60°C.*

#### TOLLERANZE - TOLERANCES :

± 0,15 sullo spessore della parete - *on the thickness of the wall.*

± 0,15 su Ø esterno - *on the outside Ø*

± 0,15 su Ø interno - *on the inside Ø*

#### CARATTERISTICHE TECNICO-COSTRUTTIVE:

Anima interna in poliuretano a base etere 85 shore A, rinforzo con una treccia in fibra poliestere e rivestimento esterno in poliuretano.

Ottima resistenza all'abrasione

Ottima flessibilità ed elasticità

Ottima resistenza idrolitica

#### TECHNICAL-CONSTRUCTIVE FEATURES:

*Internal core in polyurethan (ether-hardness 85 shore A), polyester braid reinforcement, covered in polyurethan*

*Improved resistance to the abrasion*

*Excellent flexibility and elasticity*

*Excellent resistance in water*

#### APPLICAZIONI:

Le tubazioni della serie 1185 con rinforzo tessile sono state ideate per settore agricoltura, carrozzerie e gommisti.

#### APPLICATIONS:

*The hoses in 1185 with reinforcement have been created for farm equipment.*

#### RACCORDATURA:

Si raccomanda l'utilizzo di raccordi a calzamento.

#### FITTING:

*"Nut Fitting" recommended*



# TUBI IN KYNAR® HD 4000

## KYNAR® HD 4000 LINEAR HOSES

### GENERALITA' - GENERAL CHARACTERISTICS :

**Il KYNAR 4000 polifluoruro di vinilidene (PDVF) è un omopolimero semi-cristallino puro, contenente circa il 59% di fluoro.**

*KYNAR 4000 is a vinylidene poly-fluoride (PDVF) pure homopolymer semi-crystalline, containing around the 59% of fluorine.*

**Il KYNAR 4000 è un materiale nobile, senza alcun additivo, dalle proprietà notevoli, le più importanti delle quali sono:**

*KYNAR 4000 is a noble material, without any additive, from the notable ownership, the most important of which are:*

☺ **eccellente resistenza ai prodotti chimici, anche ai più aggressivi** - *excellent resistance to the chemical products, the most aggressive too* ;

☺ **eccezionale resistenza all'invecchiamento, grazie ad una totale inerzia all' effetto dei raggi ultravioletti**  
*exceptional resistance to the aging, thanks to a total inactivity at the effect of ultraviolet rays* ;

☺ **stabilità termica ottima alle temperature di utilizzazione e di messa in opera. Il KYNAR 4000 non si scurisce sotto l'azione del calore**  
*thermal stability, no sight yellowing under heat effect* ;

☺ **buona resistenza all'abrasione, il che autorizza il suo uso con liquidi caricati** - *good resistance to abrasion* ;

☺ **debole scorrimento, grande resistenza meccanica** - *good mechanical resistance* .

**Il tasso di cristallinità del KYNAR 4000 è stato scelto per ottenere eccellenti proprietà, quali l'impermeabilità ai gas o il limitatissimo rigonfiamento in alcuni solventi, pur conservando una notevole resistenza all' urto, ed una grande stabilità dimensionale.**

*The badger of crystallinity of Kynar 4000 has been selected to obtain excellent ownership, like impermeability to gas and the limited swelling in some solvents, preserving a notable resistance to the bump, and a great dimensional stability.*

### TEMPERATURA MASSIMA DI UTILIZZO -40°C + 100°C

*Maximum working temperature -40°C + 100°C*

Pressioni d'esercizio espresse in % in funzione delle temperature.

*Pressures expressed in % as a function of temperatures.*

|      |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|
| 20°  | 30° | 40° | 60° | 80° | 90° |
| 100% | 72% | 57% | 52% | 47% | 25% |

### TOLLERANZE - TOLERANCE

± 0,07 sullo spessore della parete – *on the thickness of the wall*

± 0,07 sul Øe fino a 8 mm – *on the outside Ø until 8 mm*

± 0,1 sul Øe da 10 – *on the outside Ø from 10*

± 0,5% sul peso – *on the weight*

| DIMENSIONI<br>DIMENSIONS |      | PESO<br>WEIGHT | RAGGIO DI<br>CURVATURA | PRESSIONI-PRESSURE at 20°C |                      |
|--------------------------|------|----------------|------------------------|----------------------------|----------------------|
| o Øe                     | i Øi | GR.MT          | RADIUS OF CUR.Mm.      | SCOPPIO<br>BURST           | ESERCIZIO<br>WORKING |
| 4                        | 2    | 16,77          | 25                     | 233                        | 78                   |
| 4                        | 2,5  | 13,62          | 30                     | 162                        | 54                   |
| 6                        | 4    | 27,95          | 45                     | 140                        | 47                   |
| 8                        | 6    | 39,12          | 65                     | 100                        | 33                   |
| 10                       | 8    | 50,30          | 80                     | 78                         | 26                   |
| 12                       | 10   | 61,48          | 100                    | 64                         | 21                   |

### SCHEDA TECNICA KYNAR HD 4000 - DATA SHEET

#### Proprietà generali - General proprieties

#### Valori tipici - Typical values

|                            |   |                     |                   |            |      |
|----------------------------|---|---------------------|-------------------|------------|------|
| DENSITA'                   | - | DENSITY             | g/cm <sup>3</sup> | ISO R1183D | 1,78 |
| PUNTO DI FUSIONE           | - | MELTING POINT       | °C                | ISO 3416C  | 170  |
| MODULO A FLESSIONE A 23 C° | - | FLEXURAL MODULUS    | Mpa               | ISO 178    | 2100 |
| RIGIDITA' ALLA ROTTURA     | - | CARPY IMPACT        | J/m               | ISO 180    | 140  |
| RESISTENZA ALLA TRAZIONE   | - | STRENGTH AT YIELD   | Mpa               | ISO R527   | 51   |
| ALLUNGAMENTO ALLA TRAZIONE | - | ELONGATION AT YIELD | %                 | ISO R 527  | 9    |
| ALLUNGAMENTO A ROTTURA     | - | ELONGATION AT BREAK | %                 | ISO R527   | >50  |
| RESISTENZA ALLA FIAMMA     | - | FLAME RESISTANCE    |                   | UL 94      | V0   |
| DUREZZA                    | - | HARDNESS            | Shore D           | ISO 868    | 80   |

Le informazioni contenute in questo documento sono basate sulle prove prese dal Centro Ricerche ATOFINA e non possono costituire impegno o garanzia da parte nostra.

The informations contained in this document are based on trials carried out by ATOFINA Research Center and data selected from the literature, may shall in no event be held to be constitute or imply any warranty, undertaking, express or implied commitment from our part.



## NOTE



**TOSI F.lli** s.r.l.