



**RAUFOSS**  
**COUPLINGS®**  
PRODUCT  
CATALOGUE



**KONGSBERG**  
AUTOMOTIVE

***Raufoss***®  
COUPLINGS



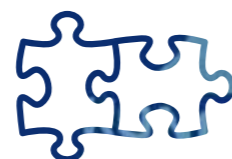
FOR MORE THAN 60 YEARS, KONGSBERG AUTOMOTIVE'S CULTURE HAS BEEN THE BASIS OF ITS ACHIEVEMENTS AND IT WILL CONTINUE TO CARRY THE GROUP INTO THE FUTURE. OUR VALUES SERVE AS GUIDES IN OUR EVERYDAY WORK LIFE, OUR WORK RELATIONS AND DAY-TO-DAY DECISION MAKING.



INTEGRITY



ACCOUNTABILITY



TEAMWORK



CREATIVITY



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# A GLOBAL COMPANY



**11,234**  
EMPLOYEES IN  
**19**  
COUNTRIES  
WORLDWIDE

**KONGSBERG AUTOMOTIVE PROVIDES WORLD-CLASS PRODUCTS TO THE GLOBAL VEHICLE INDUSTRY. OUR PRODUCTS ENHANCE THE DRIVING EXPERIENCE, MAKING IT SAFER, MORE COMFORTABLE AND SUSTAINABLE.**

With revenues of approximately EUR 969 million and more than 11,000 employees in 19 countries, Kongsberg Automotive is truly a global supplier. The company is headquartered in Zürich, Switzerland and has 27 production facilities worldwide. The product portfolio includes seat comfort systems, driver and motion control systems, fluid assemblies, and industrial driver interface products developed for global vehicle manufacturers.



- > RAUFOSS ABC™ SYSTEM
- > ABC NEWLINE™
- > ABC PUSH-IN™
- > ABC THREADLESS™
- > ABC INTEGRAL™
- > ABC ROTOLOCK™
- > ABC MANIFOLD™
- > ABC KARTRIDGE™
- > ABC TWISTLOCK™
- > ABC XR™



## Kongsberg Automotive, Couplings business unit is a technology leader of state-of-the-art compressed air couplings to the global commercial vehicle market.

Our quality engineered compressed air couplings, sold and distributed under the brand name Raufoss Couplings, fulfill all applicable international standards for air brake systems and are designed and optimized to meet individual specifications and requirements of the commercial vehicle OEMs.

The Raufoss ABC System from Kongsberg Automotive is designed to secure minimum system pressure loss, maximum air flow through the compressed air system and secure safe and durable assembly of tube and building blocks, which makes it unique versus its competitors and fully prepared to meet more severe laws, regulations and specifications going forward.

### THE SOLUTIONS

Using Raufoss Couplings, customers can search and select required dimensions and configurations within a complete product portfolio based on Push-In tube connections and modular building block system.

The extensive Raufoss ABC product range offers unique features and benefits, high flexibility and individual technical solutions tailored to specific requirements.

KArtridge solutions are designed for minimum space requirement and assembly time and the technology opens new ways of designing and using molded ports for direct press-in and push-in.

The ABC system offers full releasability of each single component in the ABC system as well as between tube and Push-In coupling which leads to reduced maintenance and repair cost.

### CUSTOMER ADVANTAGES

Our compressed air coupling solutions provide the best there is of high flexibility and modularity as well as integrated safety functions facilitating full compliance with system design requirements. The Raufoss ABC system is designed to be used in all different configurations required

while at the same time reducing the number of single part number. Intensive development activities and extended use of polymer technology will ensure fulfillment of customer expectations today and in the future.

Our highly skilled and dedicated team of specialists provides key account services and technical support to achieve fully optimized and cost-effective system solutions for each individual customer. They are driven by working on innovative projects and to continuously expanding the range of ABC Couplings – committed to introduce the next generation of Kongsberg Automotive couplings system.

Fully automated production, quality controlled in every process step, provides customers with cost-efficient solutions for application, and with the highest requirements for safety.

Kongsberg Automotive's understanding of compressed air system function combined with unique materials, and manufacturing expertise generates new and innovative products, contributing further to our customers continued and future success. We at Kongsberg Automotive are committed to offer our customers lowest Total Installed Cost as well as Total Lifetime Cost which leads to increased vehicle uptime and longer durability for the end user.

### NEW GLOBAL FOOTPRINTS

Our Couplings business unit is growing and expanding its operations, transforming from a single manufacturing location to global presence on all continents, committed to serve the commercial vehicle industry worldwide.

In 2020, Kongsberg Automotive Couplings business unit increased its market share in Asia, Europe, and in the Americas. Demand is now increasing from a global vehicle market welcoming the benefits of lighter weight, easier assembly, high functionality and flexibility, integrated safety, extensive testing, and validation.

Kongsberg Automotive's innovative and unique compressed air couplings are available at a location near you!

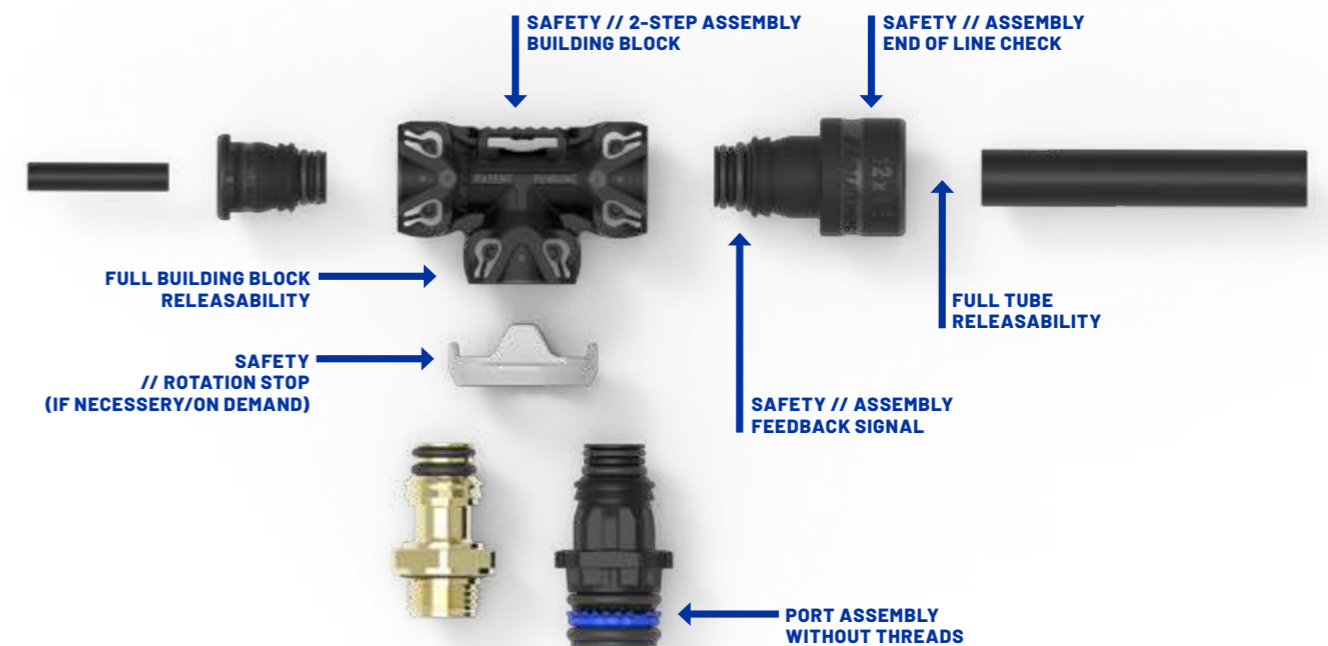


# RAUFOSS ABC™ SYSTEM

# RAUFOSS ABC™ SYSTEM

- > A NEW GENERATION OF COUPLINGS, BASED ON COMPOSITE MATERIALS IN COMBINATION WITH LEADING COUPLING TECHNOLOGY.
- > THE SYSTEM PROVIDES SIGNIFICANT IMPROVEMENT IN KEY COUPLING AREAS, AND ENABLES KONGSBERG AUTOMOTIVE TO TAKE A BROADER RESPONSIBILITY IN PNEUMATIC SYSTEM BUILDING ON COMMERCIAL VEHICLES.
- > NEW COMPOSITE MATERIALS REDUCE SYSTEM COST, WEIGHT, ARTICLE NUMBERS AND INCREASE DESIGN FLEXIBILITY.
- > BRASS COMPONENTS SECURE STRUCTURAL INTEGRITY IN HIGHLY STRESSED AREAS.
- > ONE GLOBAL SYSTEM, FULFILLING DIFFERENT ENGINEERING PHILOSOPHIES WITHIN TRUCK, BUS, TRAILER AND OFF-ROAD APPLICATIONS.

KONGSBERG AUTOMOTIVE'S MISSION AND PURPOSE STATEMENT IS TO BE THE GLOBAL PARTNER OF CHOICE FOR OUR CUSTOMERS, EMPLOYEES AND STAKEHOLDERS BY PROVIDING ADVANTAGEOUS SOLUTIONS THAT ENHANCE THE DRIVING EXPERIENCE.



# RAUFOSS ABC™ PUSH-IN FAMILY

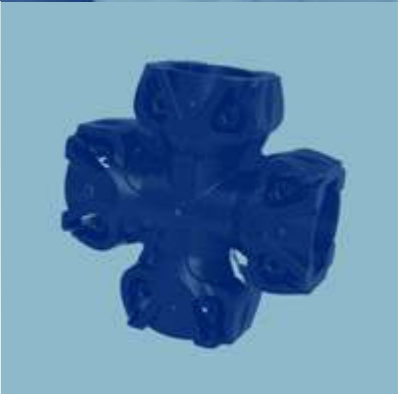
# ABC BUILDING BLOCK PROGRAM OVERVIEW



ABC NEWLINE™



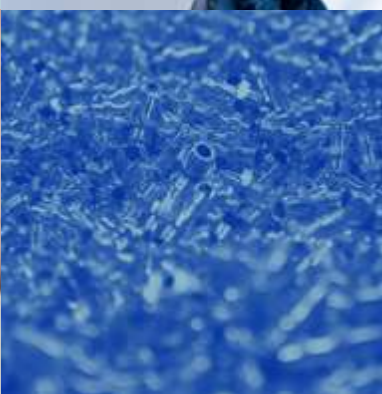
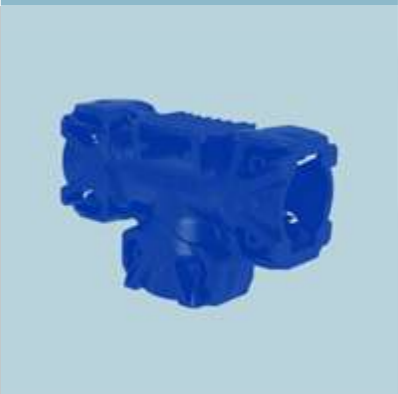
ABC KARTRIDGE™



ABC THREADLESS™



ABC INTEGRAL™



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GB // FR // DE // IT

### SYMBOLS // SYMBOLES // SYMBOLE // LEGENDA



HEXAGON WIDTH // CLÉ DE // SCHLÜSSELWEITE // CHIAVE [mm]



PACKING UNIT // UNITÉ EMBALLAGE // VERPACKUNGSEINHEIT // UNITÀ D'IMBALLO



WEIGHT // POIDS // GEWICHT // PESO [g]



## GENERAL SYSTEM INFORMATION

Kongsberg Automotive has, in cooperation with leading commercial vehicle manufacturers, developed and produced an air coupling system based on composite material and brass. The Raufoss ABC system is developed for use with Polyamide tubing for the compressed air circuits on commercial vehicles and is fulfilling all global requirements.

- ▶ The carefully developed, matured and thoughtful ABC couplings system consists of the following elements:
  - » ABC Push-In couplings
  - » ABC Swivels
  - » ABC Building Blocks
  - » Bulkhead couplings
  - » Test Points
  - » Hose nipples
  - » Accessories
- ▶ Raufoss ABC couplings can be used with polyamide (PA11, PA12) and HYTEL tubing to one of the following standards:
  - » ISO 7628
  - » DIN 74324 (DIN 73378)
  - » SAE J844
- ▶ For other tube materials like PA6.10, PA10.10, PA10.12 or Multi-layer tubing according ISO 7628, please ask for detailed releases.
- ▶ Operating temperature for ABC Couplings is between -40°C to +100°C, with peak-temperature up to +130°C (pressure less, for a period of approximately 2 hours.)
- ▶ The operating pressure for ABC Coupling is max 12,5 bar for the couplings. Please take into consideration the max allowed tube or other components operation pressure.
- ▶ The use of our couplings with other media than air is not permitted without prior written approval.
- ▶ Kongsberg Automotive quality system is approved according to the following international standards:
  - » IATF 16949
  - » ISO 14001
  - » ISO 9001:2015

For any further specific requirements, applications of our product or support for technical solutions, please ask for individual consultation from Kongsberg Automotive, our subsidiary Kongsberg Raufoss Distribution SAS or your distributor.

TABLE 1 // TABLEAU 1

PRODUCT // PRODUIT	MATERIAL DESIGNATION <sup>1</sup> // SPÉCIFICATION MATIÈRE <sup>1</sup>
Brass components // Composants laiton	EN 12164 CW617N (CuZn39Pb2)
ABC composite bodies // Corps ABC en composite	PA12 GF50
O-rings // Joints toriques	EPDM

1) Unless otherwise specified

## INFORMATIONS GÉNÉRALES SUR LE SYSTÈME

Kongsberg Automotive, en coopération avec des constructeurs de véhicules industriels, a développé un programme de raccords de freinage en matière composite et laiton pour tubes polyamide destiné aux circuits d'air comprimé des véhicules industriels.

- ▶ Le système de raccords de freinage ABC repose sur un concept réfléchi et soigneusement développé comprenant les éléments suivants:
  - » des unions mâles
  - » des embases orientables ABC
  - » des pièces de forme
  - » des passe-cloisons
  - » des prises de pression
  - » des raccords queues lisses et cannelées
  - » des accessoires
- ▶ Les raccords Raufoss ABC peuvent être utilisés avec des tubes polyamide (PA11, PA12) ou Hytrel conformes aux normes suivantes:
  - » ISO 7628
  - » DIN 74324 (DIN 73378)
  - » SAE J844
- ▶ Pour d'autres compositions de tubes comme le PA6.10, PA10.10, PA10.12 ou du tube Multicouche selon ISO 7628, merci de nous contacter pour validation préalable.
- ▶ La température de service des raccords ABC peut varier entre -40°C et +100°C, avec une température de pointe à +130°C (sans pression, pendant environ 2 heures).
- ▶ La pression de service des raccords est de 12,5 bar. Merci de tenir compte de la pression maximale autorisée des tubes.
- ▶ L'utilisation de nos raccords avec des fluides autre que l'air n'est pas autorisée sauf accord express de nos services techniques.
- ▶ Le système qualité de Kongsberg Automotive est certifié selon les normes suivantes:
  - » IATF 16949
  - » ISO 14001
  - » ISO 9001:2015

Pour tous renseignements complémentaires sur les applications de nos produits ou pour obtenir une aide technique, veuillez contacter votre revendeur ou Kongsberg Raufoss Distribution SAS.

1) Sauf mention contraire

## ALLGEMEINE SYSTEM INFORMATION

Kongsberg Automotive als kompetenter Systemlieferant der weltweiten Nutzfahrzeugindustrie hat, in Kooperation mit führenden Nutzfahrzeugherstellern, ein Steckverbindingssystem für Kunststoffrohre in der Druckluftanlage von Nutzfahrzeugen entwickelt.

- ▶ Das sorgfältig, entwickelte, ausgereifte und durchdachte ABC Couplings - Verschraubungssystem besteht aus den folgenden Komponenten:
  - » ABC Gerade Steckverbinder
  - » ABC Schnellanschlußstutzen
  - » ABC Baukastenteile
  - » Schottverschraubungen
  - » Prüfanschluß
  - » Schlauchstutzen
  - » Zubehörteile
- ▶ Raufoss ABC Verschraubungen können für Polyamid-Rohre (PA11, PA12) sowie Hytrel-Rohre der folgenden Normen verwendet werden:
  - » ISO 7628
  - » DIN 74324 (DIN 73378)
  - » SAE J844
- ▶ Für andere Rohrmaterialien wie PA6.10, PA10.10, PA10.12 oder Mehrschichtrohr nach ISO 7628, fragen sie nach den genauen Freigaben.
- ▶ Die Betriebstemperatur für das ABC Couplings ist -40°C bis +100°C ausgelegt, mit einer Spitztemperatur von bis +130°C (drucklos, für die Dauer von ca. 2 Stunden).
- ▶ Der zulässige Betriebsdruck für ABC Couplings ist 12,5 bar. Bitte beachten sie max. erlaubten Betriebsdruck der Rohre und anderen Komponenten.
- ▶ Andere Medien als Druckluft dürfen nur mit schriftlicher Freigabe verwendet werden.
- ▶ Das Qualitätssicherungssystem von Kongsberg Automotive ist nach den folgenden international anerkannten Normen zertifiziert:
  - » IATF 16949
  - » ISO 14001
  - » ISO 9001:2015

Für weitere spezielle Anforderungen, Anwendungen der Produkte oder technische Unterstützung stehen Ihnen die Anwendungsberater von Kongsberg Automotive oder von Kongsberg Raufoss Distribution SAS gerne zur Verfügung, sowie unsere Händler.

TABELLE 1 // TABELLA 1

PRODUCT // PRODUIT	MATERIAL SPEZIFIKATION <sup>1</sup> // DESCRIZIONE DEL MATERIALE <sup>1</sup>
Messing System-Komponenten // Parti in ottone	EN 12164 CW617N (CuZn39Pb2)
Gehäuse des ABC // Corpi dei raccordi ABC	PA12 GF50
O-Ringe // O-rings	EPDM

1) Abweichungen sind gekennzeichnet

Kongsberg Automotive, in collaborazione con i principali costruttori di veicoli industriali, ha sviluppato un sistema tecnologico di raccordi ad innesto rapido in materiale composito ed ottone idoneo al collegamento delle tubazioni termoplastiche degli impianti pneumatici.

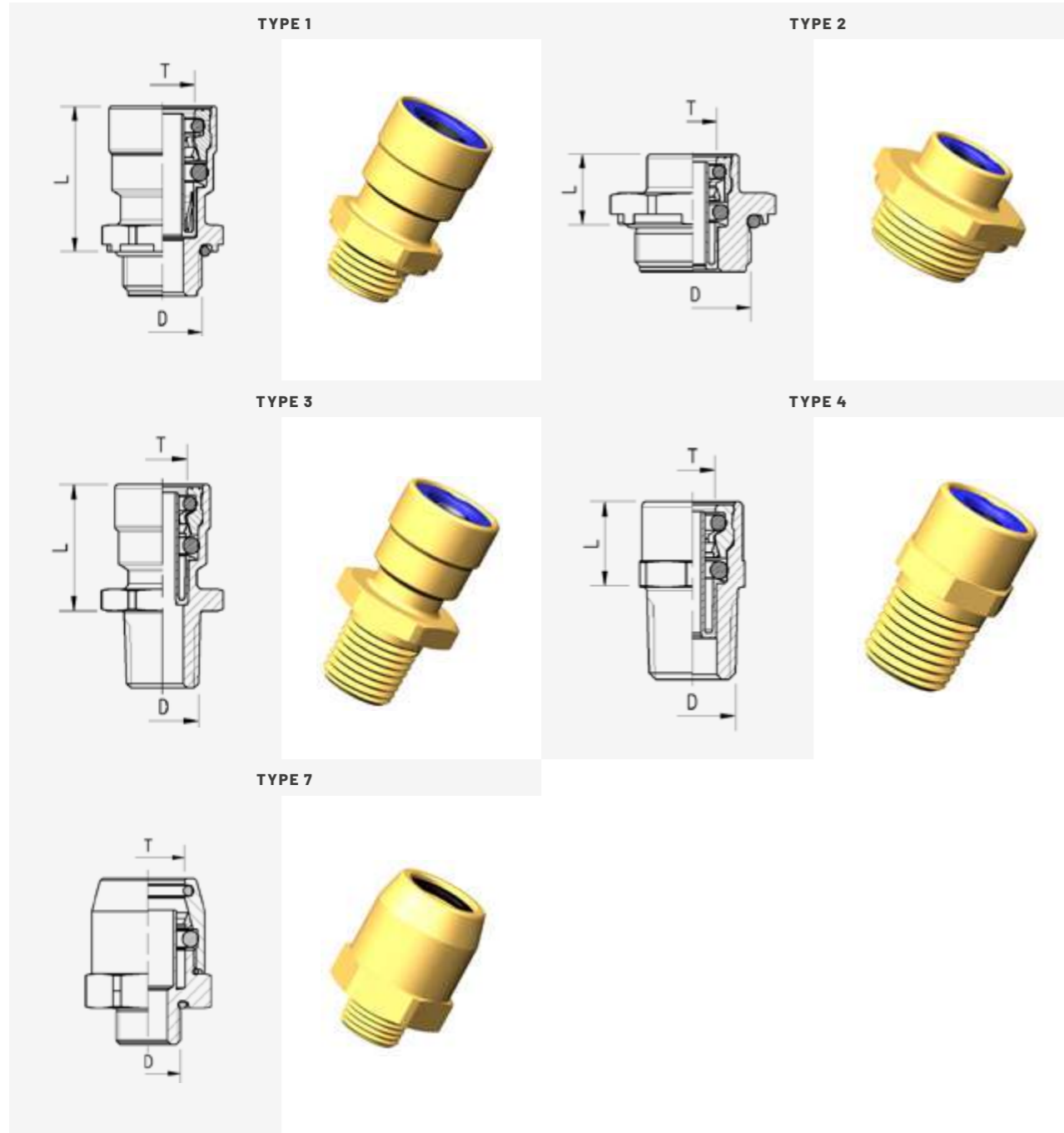
- ▶ La produzione del sistema di raccordi ABC Couplings è stata avviata dopo un'attenta fase di ricerca e sviluppo e consiste dei seguenti componenti:
  - » Raccordi ad innesto rapido ABC Newline
  - » Raccordi girevoli ABC
  - » Raccordi ABC multipli
  - » Raccordi di giunzione
  - » Raccordi presa pressione
  - » Bocchettoni
  - » Accessori
- ▶ I raccordi Raufoss ABC possono essere impiegati con tubazioni in poliamide (PA11, PA12) od in Hytrel conformi ai seguenti standard:
  - » ISO 7628
  - » DIN 74324 (DIN 73378)
  - » SAE J844
- ▶ Per altre composizioni con tubazioni PA6.10, PA10.10, PA10.12 o tubazione Multistrato, vogliate contattarci per validazione.
- ▶ La temperatura di lavoro prescritta è compresa tra -40°C ed +100°C, con una temperatura di picco di +130°C (senza pressione per un periodo max di 2 ore).
- ▶ La pressione di lavoro massima è di 12,5 bar, tenendo in considerazione la pressione massima prescritta per i tubi.
- ▶ Non è consentito l'uso del sistema con fluidi diversi dall'aria, salvo specifica approvazione.
- ▶ Il sistema Qualità Kongsberg Automotive è conforme ai seguenti standard:
  - » IATF 16949
  - » ISO 14001
  - » ISO 9001:2015




Per applicazioni diverse o per ricevere supporto tecnico sul sistema di raccordi Raufoss ABC Couplings, vogliate consultare Kongsberg Raufoss Distribution SAS.

1) Salvo diversa specifica

**ABC NEWLINE™ PUSH-IN COUPLING**  
**ABC NEWLINE™ STECKVERBINDER**




**UNION MÂLE ABC NEWLINE™**  
**ABC NEWLINE RAC CORDO AD INNESTO RAPIDO**



ARTICLE NO.	T	D	L	TYPE	SUPPORT SLEEVE			
623 7190	4x1	M10x1	14	7	/	16	275	19
623 7192	4x1	M12x1,5	14	7	/	18	275	22
90106 010	6x1	M10x1	24	1	black	16	200	20
90106 012	6x1	M12x1,5	23	1	black	18	170	25
90106 014	6x1	M14x1,5	16	2	black	20	150	26
90106 016	6x1	M16x1,5	12	2	black	22	175	29
90106 018	6x1	M18x1,5	12	2	black	24	140	35
90106 022	6x1	M22x1,5	12	2	black	28	100	55
90106 004	6x1	M12x1,5K	22	3	black	16	150	35
90106 049	6x1	1/8"NPTF	21	3	black	16	100	21
90106 050	6x1	1/4"NPTF	13	4	black	16	200	21
90106 060	6x1	G1/4"	16	1	black	19	60	22
90108 010	8x1	M10x1	26	1	black	18	150	24
90108 012	8x1	M12x1,5	25	1	black	18	150	28
90108 014	8x1	M14x1,5	24	1	black	20	150	33
90108 016	8x1	M16x1,5	17	1	black	22	150	30
90108 022	8x1	M22x1,5	13	2	black	28	100	52
90108 049	8x1	1/8"NPTF	25	3	black	18	150	25
90108 050	8x1	1/4"NPTF	23	3	black	20	150	34
90108 051	8x1	3/8"NPTF	15	4	black	20	150	32
90108 059	8x1	G1/8"	20	1	black	17	200	22
90108 060	8x1	G1/4"	25	1	black	20	100	32
90108 070	8x1	R1/4"	24	1	black	18	150	28
90110 010	10x1	M10x1	29	1	light grey	20	100	32
90110 012	10x1	M12x1,5	29	1	light grey	20	100	34
90110 014	10x1	M14x1,5	29	1	light grey	20	100	38
90110 016	10x1	M16x1,5	28	1	light grey	22	90	41
90110 022	10x1	M22x1,5	20	2	light grey	28	70	56
90110 112	10x1,25	M12x1,5	29	1	black	20	100	34
90110 114	10x1,25	M14x1,5	28	1	black	20	100	36
90110 116	10x1,25	M16x1,5	28	1	black	22	90	41
90110 122	10x1,25	M22x1,5	20	2	black	28	70	56
90110 160	10x1,25	G1/4"	29	1	black	20	100	38
90110 210	10x1,5	M10x1	29	3	dark grey	20	100	32
90110 212	10x1,5	M12x1,5	29	1	dark grey	20	100	34
90110 214	10x1,5	M14x1,5	28	1	dark grey	20	90	41
90110 216	10x1,5	M16x1,5	28	1	dark grey	22	90	41
90110 222	10x1,5	M22x1,5	20	2	dark grey	28	80	56
90110 250	10x1,5	1/4"-NPTF	27	3	dark grey	20	100	43
90112 010	12x1,5	M10x1	30	1	black	22	80	36
90112 012	12x1,5	M12x1,5	30	1	black	22	80	39

IF THE PRODUCT YOU ARE LOOKING FOR IS NOT IN THIS CATALOGUE, PLEASE CONTACT US FOR INFORMATION ON ALTERNATIVE SOLUTIONS.

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ARTICLE NO.	T	D	L	TYPE	SUPPORT SLEEVE			
90112014	12x1,5	M14x1,5	30	1	black	22	75	42
90112016	12x1,5	M16x1,5	30	1	black	22	75	43
90112022	12x1,5	M22x1,5	19	2	black	28	75	50
90112050	12x1,5	1/4"-NPTF	29	3	black	22	70	44
90112061	12x1,5	G3/8"	30	1	black	22	75	44
90114022	14x2	M22x1,5	23	1	black	28	50	47
90115014	15x1,5	M14x1,5	33	1	black	28	50	64
90115016	15x1,5	M16x1,5	33	1	black	28	50	64
90115022	15x1,5	M22x1,5	23	2	black	28	50	54
90115026	15x1,5	M26x1,5	23	2	black	28	50	54
90116012	16x2	M12x1,5	33	1	black	28	50	61
90116014	16x2	M14x1,5	33	1	black	28	50	63
90116016	16x2	M16x1,5	33	1	black	28	50	62
90116022	16x2	M22x1,5	30	1	black	28	50	66
90116026	16x2	M26x1,5	30	1	black	28	50	66
6237476	18x2	M16x1,5	32	7	brass	28	50	98
6237477	18x2	M22x1,5	32	7	brass	28	50	99
6237478	18x2	M26x1,5	32	7	brass	32	40	131
90163510	1/4"	M10x1	24	1	light grey	16	200	21
90163512	1/4"	M12x1,5	13	2	light grey	20	125	35
90163516	1/4"	M16x1,5	13	2	light grey	22	175	40
90163549	1/4"	1/8"NPTF	22	3	light grey	16	150	21
90163550	1/4"	1/4"NPTF	13	4	light grey	16	150	23
90163551	1/4"	3/8"NPTF	21	4	light grey	20	125	29
90195310	3/8"	M10x1	29	1	light grey	20	100	31
90195312	3/8"	M12x1,5	29	1	light grey	18	40	34
90195316	3/8"	M16x1,5	26	1	light grey	22	100	40
90195350	3/8"	1/4"NPTF	26	1	light grey	20	100	40
90195351	3/8"	3/8"NPTF	16	2	light grey	20	100	34
90195352	3/8"	1/2"NPTF	10	2	light grey	22	100	41
90112716	1/2"	M16x1,5	31	1	light grey	24	70	50
90112722	1/2"	M22x1,5	20	2	light grey	28	75	50
90112751	1/2"	3/8"NPTF	36	1	light grey	24	50	54
90112752	1/2"	1/2"NPTF	18	1	light grey	24	50	52
90115916	5/8"	M16x1,5	33	1	light grey	28	40	63
90115922	5/8"	M22x1,5	30	1	light grey	28	50	66
90115952	5/8"	1/2"NPTF	30	1	light grey	28	40	84
90119122	3/4"	M22x1,5	34	1	light grey	32	35	90

IF THE PRODUCT YOU ARE LOOKING FOR IS NOT IN THIS CATALOGUE, PLEASE CONTACT US FOR INFORMATION ON ALTERNATIVE SOLUTIONS.

**ABC NEWLINE™ PUSH-IN COUPLING WITH BULKHEAD**  
**ABC NEWLINE™ STECKVERBINDER MIT SCHOTTSTUTZEN**



**PASSE-CLOISON**  
**ABC NEWLINE™ RACCORDO AD INNESTO RAPIDO**

ARTICLE NO.	T	D1	D2	L	SUPPORT SLEEVE			
90906118	6x1	M18x1,5	M12x1,5	22	black	22	100	52
90908116	8x1	M16x1,5	M10x1,5	20	black	20	100	40

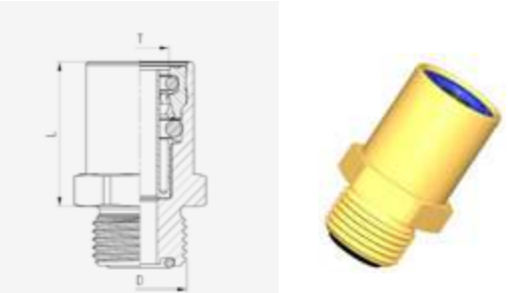
**ABC NEWLINE™ PUSH-IN COUPLING WITH 24° CONE CONNECTION**  
**ABC NEWLINE™ STECKVERBINDER MIT 24° KONUS ANSCHLUSS**






**PASSE-CLOISON**  
**ABC NEWLINE™ RACCORDO AD INNESTO RAPIDO**

ARTICLE NO.	T	D	K	L	L1	SUPPORT SLEEVE			
90906212	6x1	M12x1,5	24°-12	42	20	black	16	150	31
90908214	8x1	M14x1,5	24°-12	45	22	black	18	100	42

**ABC NEWLINE™ PUSH-IN COUPLING SAE J1453 SEALING (FACE SEAL)**  
**ABC NEWLINE™ STECKVERBINDER SAE J1453 DICHTUNG (KOPFDICHTUNG)**



**UNION MÂLE ABC NEWLINE™ JOINT SAE J1453 (JOINT DE TÊTE)**  
**ABC NEWLINE™ RACCORDO AD INNESTO RAPIDO, SAE J1453**

ARTICLE NO.	T	D	L	VER.	SUPPORT SLEEVE			
90110130	10x1,25	11/16"-16 UN	24	1	black	22	80	56

**BULKHEAD WITH ABC PUSH-IN COUPLING**  
**SCHOTTSTUTZEN MIT ABC-STECKVERBINDER**

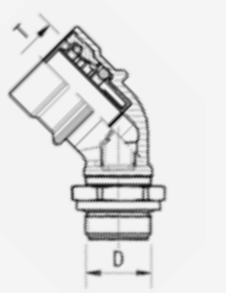


**UNION MÂLE ABC NEWLINE™ PASSE CLOISON**  
**PASSAPARETE CON ABC NEWLINE™**

ARTICLE NO.	T	D1	D2	L	SUPPORT SLEEVE			
90908016	8 x 1	16 x 1,5	M 20 x 1,5	26	black	24	100	60
90912016	12 x 1,5	16 x 1,5	M 24 x 1,5	30	black	28	50	75
90912022	12 x 1,5	22 x 1,5	M 24 x 1,5	26	black	28	50	71

IF THE PRODUCT YOU ARE LOOKING FOR IS NOT IN THIS CATALOGUE, PLEASE CONTACT US FOR INFORMATION ON ALTERNATIVE SOLUTIONS.

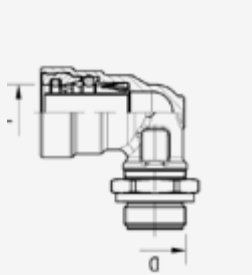
**ABC NEWLINE™ 45° PUSH-IN COUPLING**  
**ABC NEWLINE™ 45° STECKVERBINDER**



ARTICLE NO.	T	H	D	SUPPORT SLEEVE			
971 19 122	3/4"	M22x1,5	M22 x 1,5	light grey	28	TBD	163

**UNION MÂLE 45° ABC NEWLINE™**  
**ABC NEW 45° LINE RACCORDO AD INNESTO RAPIDO**

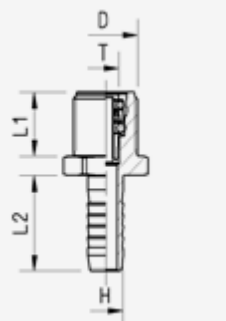
**ABC NEWLINE™ 90° PUSH-IN COUPLING**  
**ABC NEWLINE™ 90° STECKVERBINDER**



ARTICLE NO.	T	D	SUPPORT SLEEVE			
972 19 122	3/4"	M22 x 1,5	black	22	80	56

**UNION MÂLE 90° ABC NEWLINE™**  
**ABC NEW 90° LINE RACCORDO AD INNESTO RAPIDO**

**HOSE NIPPLE WITH ABC PUSH-IN COUPLING**  
**SCHLAUCHSTUTZEN MIT ABC-STECKVERBINDER**



ARTICLE NO.	T	H	D	L1	L2	SUPPORT SLEEVE			
910 08 011	8 x 1	Ø 11	M22 x 1,5	20	30	black	26	50	80

**UNION MÂLE ABC NEWLINE™ QUEUE CANNELEE**  
**BOCCHETTONE CON RACCORDO RAPIDO**

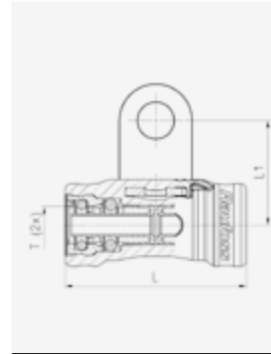
**ABC TUBE CONNECTOR**  
**ABC ROHRVERBINDER**



ARTICLE NO.	T	SUPPORT SLEEVE		
905 06 006	6 x 1	black	250	10
905 08 008	8 x 1	black	200	13
905 10 010	10x1	light grey	150	20
905 10 110	10x1,25	black	150	20
905 10 210	10x1,5	dark grey	150	20
905 12 012	12 x 1,5	black	150	23
905 15 015	15x1,5	black	100	34
905 16 016	16x2	black	100	35

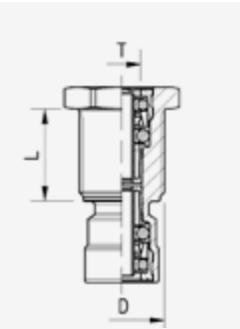
**UNION DOUBLE ABC**  
**ABC GIUNZIONE**

**ABC TUBE CONNECTOR WITH BRACKET**  
**GERADER ABC ROHRVERBINDER MIT LASCHE**



ARTICLE NO.	T	L	L1	SUPPORT SLEEVE		
905 06 022	6x1	42	25	black	125	22
905 08 022	8x1	45	26	black	100	25
905 12 022	12x1,5	54	28	black	75	35

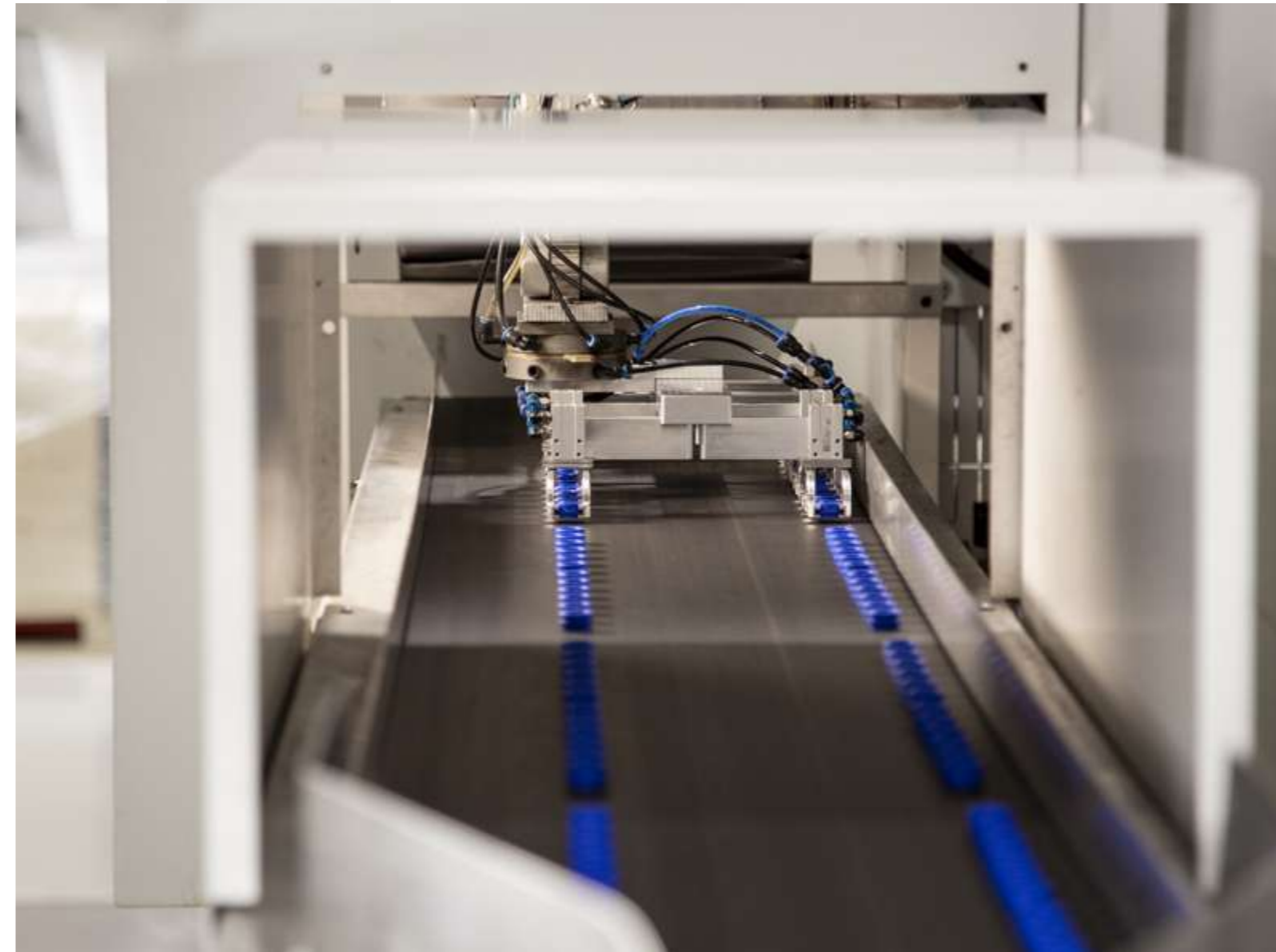
**BULKHEAD WITH ABC NEWLINE™ PUSH-IN CONNECTOR**  
**SCHOTTSTUTZEN MIT ABC NEWLINE™ ROHRVERBINDER**



ARTICLE NO.	T	D	SUPPORT SLEEVE		
936 06 006	6x1	M18x1,5	black	100	54
936 08 008	8x1	M20x1,5	black	75	62
936 12 012	12x1,5	M24x1,5	black	50	78
936 15 015	15x1,5	M30x2	black	25	145

**UNION DOUBLE ABC AVEC FIXATION**  
**GIUNZIONE ABC CON STAFFA**

IF THE PRODUCT YOU ARE LOOKING FOR IS NOT IN THIS CATALOGUE, PLEASE CONTACT US FOR INFORMATION ON ALTERNATIVE SOLUTIONS.



**ABC PORT SIZES**



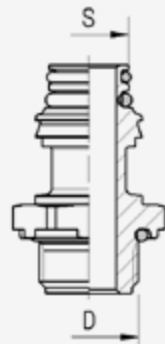
SWIVEL / BUILDING BLOCK SIZE	TUBE	A	CAP COLOR
small	6 x 1 / 8 x 1	15	white
regular	6 x 1 - 12 x 1,5	17	green
heavy duty	12 x 1,5 - 16 x 2	20	blue

**ABC SWIVEL  
ABC ANSCHLUSSSTUTZEN**

**ABC EMBASE FILETÉE  
ABC INNESTO GIREVOLE**

**TYPE 1**

**TYPE 2**



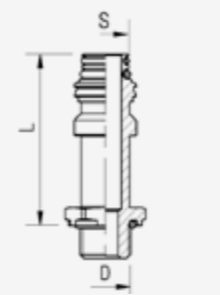
ARTICLE NO.	S	D	TYPE	CAP	ROTOLOCK			
93140010	small	M 10 x 1	1	white	964 42 018	18	175	25
93140012	small	M 12 x 1,5	1	white	964 42 018	18	175	25
93140014	small	M 14 x 1,5	1	white	/	20	150	32
93140016	small	M 16 x 1,5	1	white	964 42 022	22	125	37
93140049	small	1/8"-27 NPTF	2	white	964 42 016	16	200	22
93140050	small	1/4"-18 NPTF	2	white	964 42 016	16	150	27
93140051	small	3/8"-18 NPTF	2	white	964 42 018	18	125	38
93140059	small	G 1/8"	1	white	/	17	150	27
93140069	small	R 1/8"	2	white	964 42 016	16	175	20
93150010	regular	M 10 x 1	1	green	964 52 018	18	125	28
93150012	regular	M 12 x 1,5	1	green	964 52 018	18	125	29
93150014	regular	M 14 x 1,5	1	green	964 50 020	20	100	34
93150016	regular	M 16 x 1,5	1	green	964 50 022	22	100	39
93150018	regular	M 18x1,5	1	green	/	24	80	41
93150022	regular	M 22 x 1,5	1	green	964 52 028	28	70	51
93150049	regular	1/8"-27 NPTF	2	green	964 52 018	18	120	28
93150050	regular	1/4"-18 NPTF	2	green	964 52 018	18	100	31
93150051	regular	3/8"-18 NPTF	2	green	964 52 018	18	100	40
93150052	regular	1/2"-14 NPTF	2	green	964 50 022	22	65	50

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93150059	regular	G 1/8"	1	green	964 52 018	18	100	28
93150060	regular	G 1/4"	1	green	964 50 020	20	100	34
93150061	regular	G 3/8"	1	green	964 50 022	22	100	41
93150070	regular	R1/4"	2	green	964 52 018	18	250	31
93150071	regular	R3/8"	2	green	964 50 020	20	100	37
93150072	regular	R1/2"	2	green	964 50 022	22	70	59
93160016	heavy duty	M 16 x 1,5	1	blue	964 60 022	22	75	45
93160022	heavy duty	M 22 x 1,5	1	blue	964 62 028	28	50	60
93160026	heavy duty	M 26 x 1,5	1	blue	/	32	30	81
93160051	heavy duty	3/8"-18 NPTF	2	blue	964 60 022	22	70	50
93160052	heavy duty	1/2"-14 NPTF	2	blue	964 60 022	22	65	59
93160071	heavy duty	R 3/8"	2	blue	964 50 022	22	50	48
93160072	heavy duty	R 1/2"	2	blue	964 50 022	22	60	67

**ABC EXTENDED SWIVEL  
ABC ANSCHLUSSSTUTZEN, VERLÄNGERT**

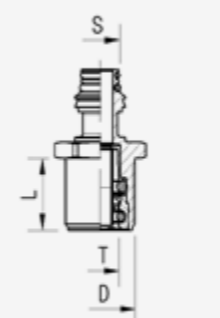
**EXTENSION D'EMBASE ABC  
GIREVOLE ABC CON PROLUNGA**



ARTICLE NO.	S	D	L	CAP			
93141016	small	M16x1,5	42	White	22	50	66
93151012	regular	M12x1,5	37	Green	18	50	38
93151014	regular	M14x1,5	48	Green	20	50	56
93159014	regular	M14x1,5	60	Green	20	50	63
93151022	regular	M22x1,5	42	Green	28	45	85

**ABC SWIVEL BULKHEAD WITH ABC NEWLINE™ PUSH-IN  
ABC-ANSCHLUSSSCHOTTSTUTZEN MIT  
ABC NEWLINE™ STECKVERBINDER**

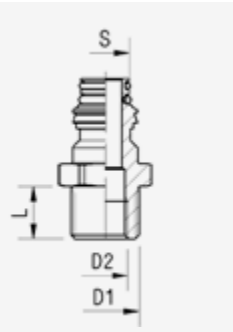
**ABC EMBASE FILETÉE PASSE-CLOISON  
AVEC UNION MÂLE ABC NEWLINE™  
ABC NEWLINE™ INNESTO GIREVOLE CON PASSAPARETE**



ARTICLE NO.	S	T	D	L	CAP	ROTOLOCK			
93450060	regular	6x1	M 18x1,5	18	green	964 50 022	22	75	54
93450080	regular	8 x 1	M 20 x 1,5	18	green	/	24	50	57
93450101	regular	10 x 1,25	M 22 x 1,5	23	green	/	26	50	70
93450120	regular	12 x 1,5	M 24 x 1,5	23	green	964 52 028	28	50	72
93460150	heavy duty	15x1,5	M 30x2	24	blue	/	34	50	132

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**ABC SWIVEL BULKHEAD WITH INTERNAL THREADS**  
**ABC ANSCHLUSSSCHOTTSTUTZEN MIT INNENGEWINDE**



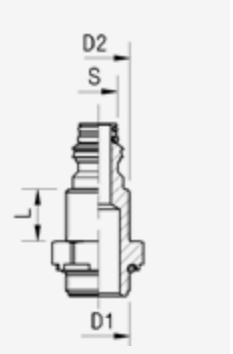
ARTICLE NO.	S	D1	D2	L	CAP	ROTOLOCK			
933 51 218	regular	M18x1,5	M12x1,5	14	green	964 50 022	22	50	58
933 52 217	regular	M22x1,5	M16x1,5	14	green	964 52 028	28	60	63
933 51 622	regular	M22x1,5	M16x1,5	23	green	964 52 028	28	40	84
933 62 228	heavy duty	M28x1,5	M22x1,5	24	blue	/	34	30	137

**ABC SWIVEL BULKHEAD**  
**ABC ANSCHLUSSSCHOTTSTUTZEN**



ART. NO.	S	D	L	K	CAP	ROTOLOCK			
933 52 416	regular	M 16x1,5	35	24°-10	green	964 50 022	22	50	79
933 53 418	regular	M 18x1,5	22	24°-12	green	964 500 22	22	125	55
933 52 418	regular	M 18x1,5	42	24°-12	green	/	24	50	98
933 62 418	heavy duty	M 18x1,5	42	24°-12	blue	/	24	30	111

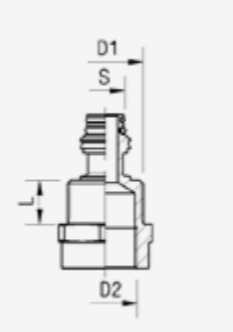
**ABC SWIVEL BULKHEAD**  
**ABC ANSCHLUSSSCHOTTSTUTZEN**



ARTICLE NO.	S	D1	D2	L	CAP			
933 52 216	regular	M 16x1,5	M 22x1,5	18	green	26	25	115
933 52 222	regular	M 22x1,5	M 22x1,5	18	green	28	40	102

**ABC EMBASE PASSE CLOISON FILETAGE FEMELLE**  
**ABC INNESTO GIREVOLE CON PASSAPARETE E FILETTO INTERNO**

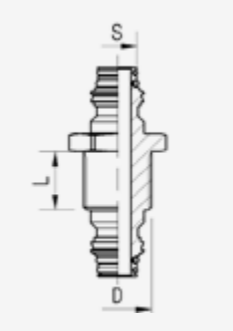
**ABC SWIVEL BULKHEAD**  
**ABC ANSCHLUSSSCHOTTSTUTZEN**



**ABC EMBASE FILETÉE PASSE-CLOISON**  
**ABC INNESTO GIREVOLE CON PASSAPARETE**

ARTICLE NO.	S	D1	D2	L	CAP			
933 52 226	regular	M26x1,5	M22x1,5	15	green	32	50	98

**ABC DOUBLE SWIVEL BULKHEAD**  
**ABC DOPPEL ANSCHLUSSSCHOTTSTUTZEN**



**ABC EMBASE FILETÉE DOUBLE/ PASSE-CLOISON**  
**ABC INNESTO GIREVOLE X2 CON PASSAPARETE**

ARTICLE NO.	S	D	L	CAP	ROTOLOCK			
933 52 205	regular	M22x1,5	20	green	964 52 028	28	30	120
933 62 206	heavy duty	M22x1,5	20	blue	964 62 028	28	30	140
933 62 216	heavy duty	M22x1,5	42	blue	964 62 028	28	30	187

**ROTOLOCK**  
**ROTOLOCK**

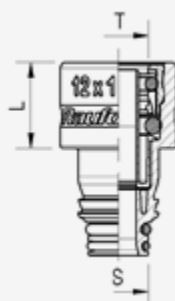




**ROTOLOCK**  
**ROTOLOCK**

ARTICLE NO.	S		COLOR CODE		
964 42 016	small	16	dark grey	500	2
964 42 018	small	18	light grey	500	2
964 42 022	small	22	light grey	500	2
964 52 018	regular	18	light grey	400	3
964 50 020	regular	20	dark grey	400	2
964 50 022	regular	22	light grey	400	2
964 52 028	regular	28	dark grey	300	2
964 60 022	heavy duty	22	light grey	250	4
964 62 028	heavy duty	28	dark grey	250	4

**ABC THREADLESS PUSH-IN COUPLING**  
**ABC THREADLESS GEWINDELOSER STECKVERBINDER**

**ABC UNION MÂLE ABC POUR TUBE À CLIPSER**  
**ABC RACCORDO AD INNESTO RAPIDO SENZA FILETTO**

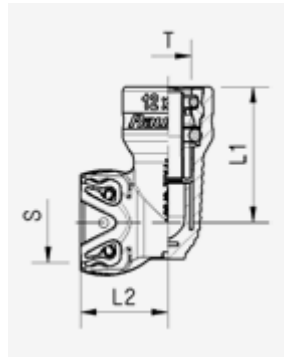


ARTICLE NO.	T	S	L	SUPPORT SLEEVE	CAP		
902 04 004	4 x 1	small (brass)	19	/	white	150	42
902 06 004	6 x 1	small	4	black	white	500	8
902 08 004	8 x 1	small	10	black	white	400	10
902 63 504	1/4"	small	5	light grey	white	250	4
902 04 005	4 x 1	regular (brass)	19	black	green	100	43
902 06 005	6 x 1	regular	4	black	green	450	10
902 08 005	8 x 1	regular	8	black	green	375	11
902 10 005	10 x 1	regular	11	light grey	green	275	12
902 10 105	10 x 1,25	regular	11	black	green	275	12
902 10 205	10 x 1,5	regular	11	dark grey	green	275	12
902 12 005	12 x 1,5	regular	18	black	green	200	17
902 63 505	1/4"	regular	4	light grey	green	250	6
902 95 305	3/8"	regular	11	light grey	green	275	9
902 12 705	1/2"	regular	20	light grey	green	150	14
902 12 006	12 x 1,5	heavy duty	11	black	blue	200	13
902 14 006	14 x 2	heavy duty	21	black	blue	120	18
902 15 006	15 x 1,5	heavy duty	21	black	blue	125	22
902 16 006	16 x 2	heavy duty	21	black	blue	120	22
902 15 906	5/8"	heavy duty	21	light grey	blue	120	20

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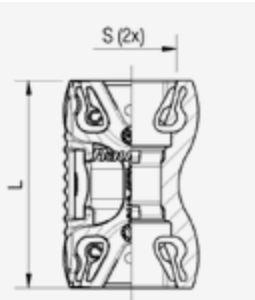
**90° ABC INTEGRAL PUSH-IN  
90° ABC PUSH-IN STECKVERBINDER**



**COUDE INTÉGRÉ ABC 90° À CLIPSER  
RACCORDO ABC 90° INTEGRATO**

ARTICLE NO.	T	S	L1	L2	SUPPORT SLEEVE		
903 06 004	6 x 1	small	32	18	black	150	12
903 08 004	8 x 1	small	34	18	black	150	12
903 63 504	1/4"	small	29	20	light grey	275	10
903 06 005	6 x 1	regular	31	21	black	150	14
903 08 005	8 x 1	regular	33	21	black	150	17
903 10 005	10 x 1	regular	35	24	light grey	125	18
903 10 105	10 x 1,25	regular	35	24	black	125	18
903 10 205	10 x 1,5	regular	35	24	dark grey	125	19
903 12 205	12 x 1,5	regular	37	24	black	120	19
903 95 305	3/8"	regular	35	24	light grey	125	17
903 12 705	1/2"	regular	38	24	light grey	100	21
903 15 006	15 x 1,5	heavy duty	46	31	black	60	36
903 16 006	16 x 2	heavy duty	46	31	black	70	35
903 15 906	5/8"	heavy duty	46	34	light grey	60	36

**ABC UNION FEMALE  
GERADER ABC VERBINDER**



**UNION DOUBLE ABC  
GIUNZIONE ABC FEMMINA X2**

ARTICLE NO.	S	L		
961 40 004	small	39	200	9
961 50 205	regular	45	80	13

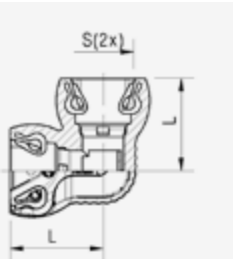
**45° ELBOW  
45° WINKEL**



**COUDE 45°  
GOMITO 45°**

ARTICLE NO.	S	L		
920 40 045	small	22	150	8
920 50 045	regular	25	120	13
920 60 045	heavy duty	30	75	21

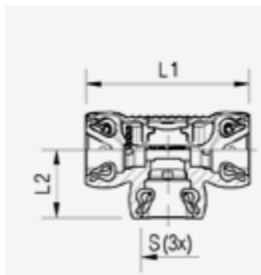
**90° ELBOW  
90° WINKEL**



**COUDE 90°  
GOMITO 90°**

ARTICLE NO.	S	L		
920 50 090	regular	29	100	15
920 60 090	heavy duty	34	60	25

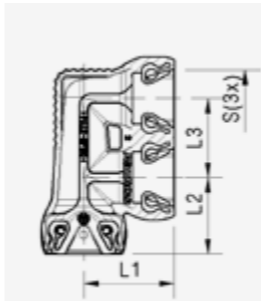
**UNION T&L  
T&L - STÜCK**



**UNION T&L  
RACCORDO A T&L**

ARTICLE NO.	S	L1	L2		
920 40 010	small	53	22	90	14
920 50 010	regular	62	26	70	22
920 60 010	heavy duty	73	31	40	34

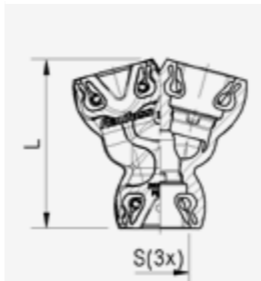
**UNION F  
F - STÜCK**



**COUDE F  
RACCORDO A F**

ARTICLE NO.	S	L1	L2	L3		
920 40 015	small	26.6	22.4	23	100	16
920 50 015	regular	31	26.1	27	50	25
920 60 015	heavy duty	36.3	30.6	32	35	40

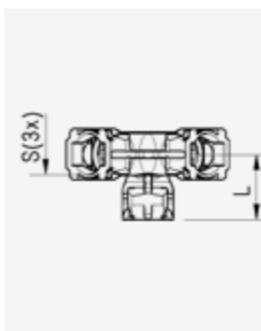
**UNION Y  
Y - STÜCK**



**UNION Y  
RACCORDO A Y**

ARTICLE NO.	S	L		
920 40 030	small	46.9	100	13
920 50 030	regular	54.8	70	21

**3 - WAY BLOCK  
3 - WEGE BLOCK**



**3 VOIES ABC  
RACCORDO A 3 VIE**

ARTICLE NO.	S	L		
920 40 060	small	24	75	15
920 52 060	regular	28	50	25
920 60 060	heavy duty	33	35	39

IF THE PRODUCT YOU ARE LOOKING FOR IS NOT IN THIS CATALOGUE, PLEASE CONTACT US FOR INFORMATION ON ALTERNATIVE SOLUTIONS.

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**4 - WAY CROSS  
KREUZSTÜCK**

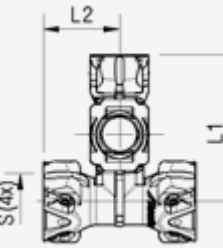
**CROIX  
RACCORDO A CROCE**



ARTICLE NO.	S	L		
920 50 070	regular	29	75	25
920 60 070	heavy duty	34	50	40

**4 - WAY BLOCK  
4 - WEGE BLOCK**

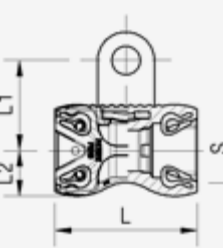
**BLOC 4 VOIES  
RACCORDO A 4 VIE**



ARTICLE NO.	S	L1	L2		
920 50 061	regular	50	28	50	28
920 60 061	heavy duty	59	33	30	44

**UNION FEMALE WITH STRAIGHT BRACKET CLIP  
GERADER ABC VERBINDER MIT LASCHE**

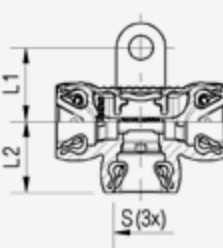
**UNION DOUBLE ABC AVEC FIXATION  
GIUNZIONE CON STAFFA**



ARTICLE NO.	S	L	L1	L2		
961 40 024	small	39	27	13	100	21
961 50 225	regular	45	29	15	75	25

**ABC UNION T W/ BRACKET CLIP  
ABC T-STÜCK MIT LASCHE**

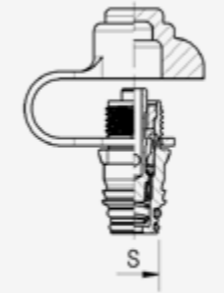
**TÉ ABC AVEC FIXATION  
ABC RACCORDO A T CON STAFFA**



ARTICLE NO.	S	L1	L2		
920 50 025	regular	27	26	50	34
920 60 025	heavy duty	28	31	30	46

**ABC THREADLESS TEST POINT ISO 3583  
ABC PRÜFANSCHLUSS ISO 3583**

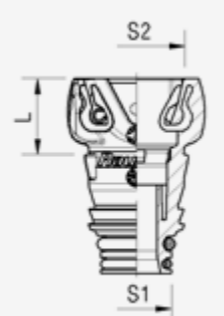
**PRISE DE PRESSION ABC À CLIPSER ISO 3583  
ABC PRESA PRESSIONE SENZA FILETTO ISO 3583**



ARTICLE NO.	S	CAP		
960 50 000	regular	green	200	14

**ABC REDUCER  
ABC REDUZIERSTÜCK**

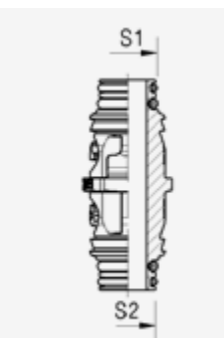
**RÉDUCTEUR ABC  
RIDUZIONE ABC**



ARTICLE NO.	S1	S2	L		
961 50 106	heavy duty	regular	15,1	175	12

**ABC UNION MALE  
ABC VERBINDER**

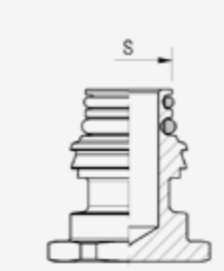
**JUNCTION ABC  
GIUNZIONE ABC MASCHIO X2**



ARTICLE NO.	S1	S2	ROTOLOCK		
965 40 004	small	small	964 42 018	120	8
965 40 005	small	regular	964 42 018	240	10
965 50 005	regular	regular	964 52 018	200	11
965 50 006	heavy duty	regular	964 52 018	150	13
965 60 006	heavy duty	heavy duty	964 60 022	140	16

**ABC THREADLESS SWIVEL PLUG  
GEWINDELOSER ABC STOPFEN**

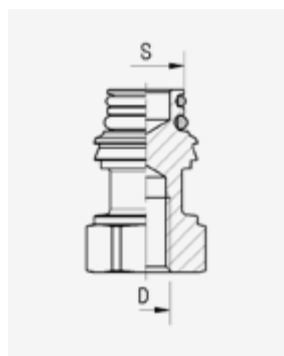
**OBTURATEUR ABC À CLIPSER  
TAPPO ABC SENZA FILETTO**



ARTICLE NO.	S	CAP		
962 40 000	small	white	170	20
962 50 000	regular	green	150	30
962 60 000	heavy duty	blue	100	42

**ABC THREADLESS SWIVEL PLUG WITH FIXATION THREAD**  
**GEWINDELOSER ABC STOPFEN MIT GEWINDEBEFESTIGUNG**

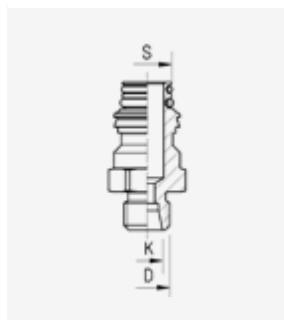
**OBTURATEUR ABC À CLIPSER AVEC FIXATION FILETÉE**  
**TAPPO ABC CON FILETTO INTERNO.**



ARTICLE NO.	S	D	CAP		
962 50 008	regular	M8	green	-	39

**ABC SWIVEL WITH 24° CONE CONNECTION**  
**ABC ANSCHLUSSSTUTZEN MIT 24° KONUS**

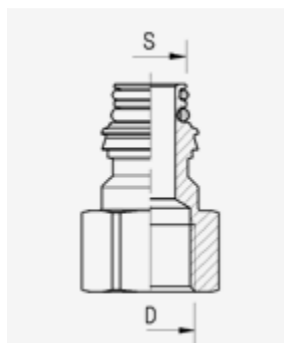
**EMBASE FILETÉE ABC AVEC CÔNE 24°**  
**RACCORDO GIREVOLE ABC CON CONO 24°**



ARTICLE NO.	S	D	K	ROTOLOCK			
93152 412	regular	M12x1,5	24°	964 52 018	18	100	40

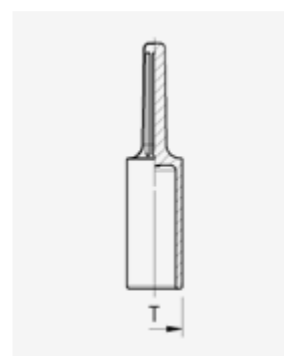
**ABC SWIVEL WITH INTERNAL THREADS**  
**ABC ANSCHLUSSSTUTZEN MIT INNENGEWINDE**

**ADAPTATEUR ABC À FILETAGE FEMELLE**  
**ADATTATORE RACCORDO GIREVOLE ABC CON FILETTO INTERNO**



ARTICLE NO.	S	D	CAP	ROTOLOCK			
93150 110	regular	M10 x 1	green	964 52 018	18	125	32
93150 112	regular	M12 x 1,5	green	964 52 018	18	150	30
93150 114	regular	M14 x 1,5	green	964 52 018	18	100	32
93150 116	regular	M16 x 1,5	green	964 50 022	22	80	52
93150 122	regular	M22 x 1,5	green	964 52 028	28	40	60
93150 149	regular	1/8"NPTF	green	964 52 018	18	100	33
93150 150	regular	1/4"NPTF	green	964 52 018	18	150	34
93150 160	regular	G1/4"	green	964 52 018	18	150	23

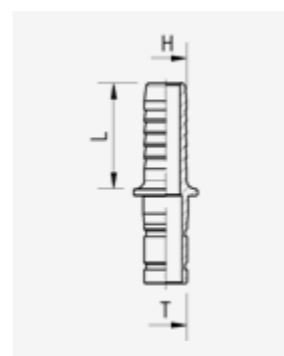
**PUSH - IN PLUG**  
**STOPFEN FÜR STECKVERBINDUNG**



**BOUCHON**  
**TAPPO PER INNESTO RAPIDO**

ARTICLE NO.	T		
962 10 004	4 x 1	1000	1
962 10 006	6 x 1	1000	1
962 10 008	8 x 1	700	1
962 10 010	10 x 1 / 10 x 1,25 / 10 x 1,5	250	1
962 10 012	12 x 1,5	250	2
962 10 015	15 x 1,5	150	3
962 10 016	16 x 2	150	4
962 10 635	1/4"	150	1
962 10 953	3/8"	150	2

**HOSE ADAPTER**  
**SCHLAUCH ADAPTER**

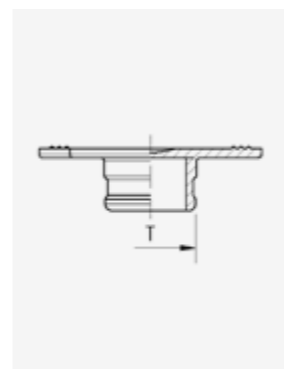


**ADAPTATEUR**  
**ADATTATORE PER BOCHETTONE**

ARTICLE NO.	T	H	L		
943 11 012	12 x 1,5	Ø11	30	150	30

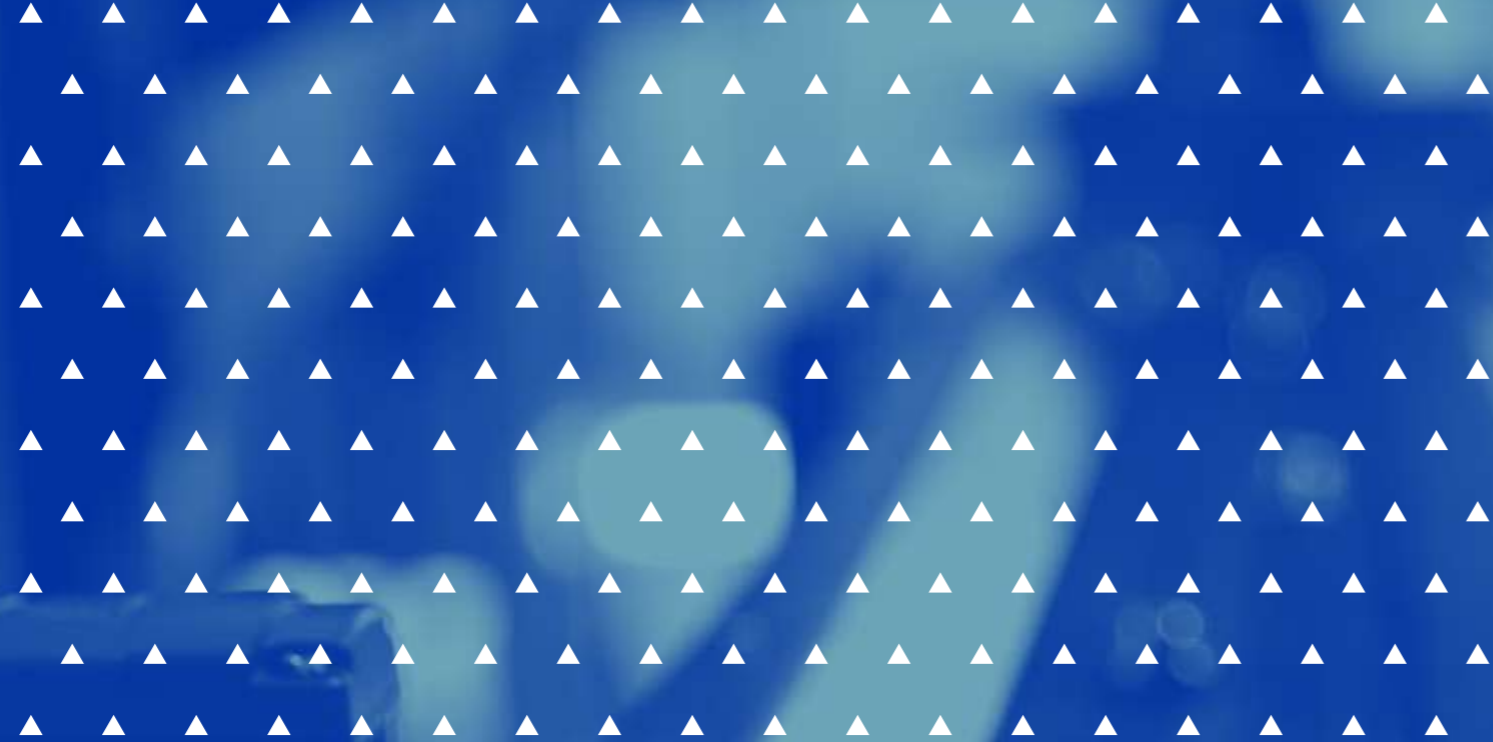
**Only to be used in combination Newline™ 901120XX**  
 Rubber hose must be fixed max. 500 mm behind Push-In  
**// A utiliser uniquement en combinaison avec raccord Newline™ 901120XX**  
 Le flexible en caoutchouc doit être fixé au maximum 500 mm après le Push-In  
**// Nur in Verbindung 901120xx verwenden**  
 Gummischlauch muss nach max. 500 mm fixiert werden  
**// Utilizzare solo in combinazione con raccordo 901120XX**  
 Il tubo flessibile in gomma deve essere fissato massimo a 500 mm doppio dal Push-In

**TRANSPORTATION PLUG**  
**TRANSPORT STOPFEN**



**BOUCHON POUR TRANSPORT**  
**TAPPO DI PROTEZIONE**

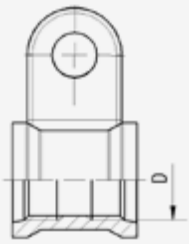
ARTICLE NO.	T	COLOUR		
967 06 000	6 x 1	red	1000	1
967 06 010	6 x 1	yellow	1000	1
967 08 000	8 x 1	red	1000	1
967 10 000	10 & 3/8"	red	250	1
967 12 000	12 x 1,5	red	500	1
967 15 000	15 x 1,5	red	250	1
967 16 000	16 x 2	red	250	2



# COMPLEMENTARY PRODUCTS

A

**UNION, 2 X THREAD WITH BRACKET**  
**GERADE BEFESTIGUNG, 2 X GEWINDE**



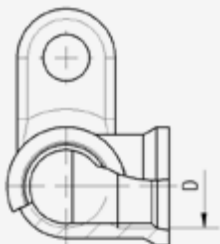
**UNION DOUBLE, AVEC FIXATION 2 X TARAUDAGES**  
**MANICOTTO FILETTATO, CON STAFFA DI FISSAGGIO**



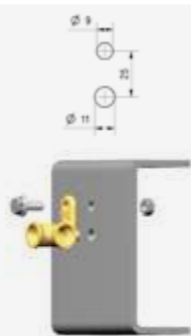
ARTICLE NO.	D		
623 7838	M 16 x 1,5	60	77

**GB: Assembly sketch**  
**FR: Dessin d'assemblage**  
**DE: Montageskizze**  
**IT: Istruzioni di installazione**

**UNION ELBOW, 2 X THREAD WITH BRACKET**  
**GERADE WINKEL BEFESTIGUNG, 2 X GEWINDE**



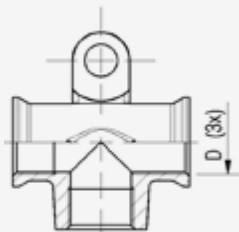
**UNION COUDE, AVEC FIXATION 2 X TARAUDAGES**  
**GOMITO A 90° FILETTATO, CON STAFFA DI FISSAGGIO**



ARTICLE NO.	D		
623 7839	M 16 x 1,5	40	95

**GB: Assembly sketch**  
**FR: Dessin d'assemblage**  
**DE: Montageskizze**  
**IT: Istruzioni di installazione**

**UNION T, 3 X THREAD WITH BRACKET**  
**T-BEFESTIGUNG, 3 X GEWINDE**



**TÉ TARAUDÉ, AVEC FIXATION**  
**RACCORDO A T, CON 3 FILETTATURE E STAFFA DI FISSAGGIO**



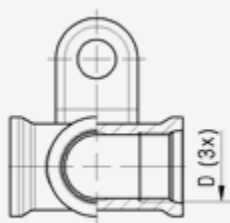
ARTICLE NO.	D		
623 7863	M 16 x 1,5	40	95

**TÉ 90°, AVEC FIXATION ET 3 TARAUDAGES**  
**RACCORDO A T 90°, CON 3 FILETTATURE E STAFFA DI FISSAGGIO A 90°**



ARTICLE NO.	D		
623 7840	M 16 x 1,5	30	112

**90° UNION T, 3 X THREAD WITH BRACKET**  
**90° T-BEFESTIGUNG, 3 X GEWINDE**



**BULKHEAD COUPLING**  
**SCHOTTSTUTZEN**



**PASSE-CLOISON**  
**PASSAPARETE**

ARTICLE NO.	D1	D2	L			
623 7722	M 16 x 1,5	M 10 x 1,0	20	22	150	35
616 1182	M 16 x 1,5	M 10 x 1,0	28	22	100	48
623 7723	M 16 x 1,5	M 10 x 1,0	35	22	75	48
623 7712	M 18 x 1,5	M 12 x 1,5	19	24	80	44
623 7726	M 22 x 1,5	M 16 x 1,5	24	28	80	57
623 7713	M 26 x 1,5	M 16 x 1,5	24	32	50	97

**ADAPTER FOR PRESSURE GAUGE**  
**ADAPTER FÜR MANOMETER**



**ADAPTATEUR POUR MANOMÈTRE**  
**ADATTATORE PER MANOMETRO**

ARTICLE NO.	D1	D2	D3	L			
623 7625	M 18 x 1,5	M 12 x 1,5	G1/4"-ISO837-1	22	20	120	38

**BULKHEAD COUPLING**  
**SCHOTTSTUTZEN**



**PASSE-CLOISON**  
**PASSAPARETE**

ARTICLE NO.	D1	D2	L			
623 7622	M 12 x 1,5	M 12 x 1,5	24	18	200	29
623 7624	M 12 x 1,5	M 14 x 1,5	24	20	200	34
623 7693	M 16 x 1,5	M 16 x 1,5	24	22	110	41
623 7697	M 16 x 1,5	M 16 x 1,5	35	22	75	50
623 7675	M 16 x 1,5	R 1/4"	24	22	100	45
623 7735	M 22 x 1,5	M 16 x 1,5	24	28	50	73

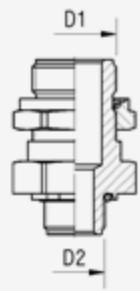
**BULKHEAD COUPLING**  
**SCHOTTSTUTZEN**



**PASSE-CLOISON**  
**PASSAPARETE**

ARTICLE NO.	D1	D2	D3	L			
623 7728	M 22 x 1,5	M 16 x 1,5	3/8-18 NPTF	24	28	60	83
623 7729	M 22 x 1,5	M 16 x 1,5	1/2-14 NPTF	24	28	50	88
623 7731	M 22 x 1,5	M 16 x 1,5	M 16 x 1,5	24	28	50	70
623 7733	M 22 x 1,5	M 16 x 1,5	M 16 x 1,5	40	28	50	94
623 7730	M 22 x 1,5	M 16 x 1,5	M 22 x 1,5	24	28	50	70
623 7721	M 22 x 1,5	M 16 x 1,5	M 22 x 1,5	40	28	40	94
623 7674	M 22 x 1,5	M 16 x 1,5	R1/2"	24	27	50	90

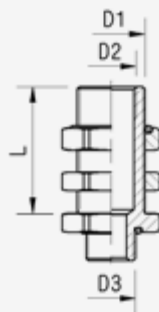
**BULKHEAD COUPLING, PRE-ASSEMBLED WITH O-RING AND NUT**  
**SCHOTTSTUTZEN, MIT VORMONTIERTER KONTERMUTTER INCL. O-RING**



ARTICLE NO.	D1	D2		
623 7834	M 16 x 1,5	M 16 x 1,5	70	58
623 7835	M 22 x 1,5	M 16 x 1,5	50	120
623 7887	M 22 x 1,5	M 22 x 1,5	50	83
623 7780	M 22 x 1,5	1/2"-14 NPTF	50	97

**PASSE-CLOISON, AVEC CONTRE-ÉCROU ET JOINTS**  
**IT: PASSAPARETE, COMPLETO DI DADO E O-RING**

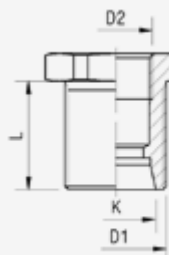
**BULKHEAD COUPLING**  
**SCHOTTSTUTZEN**



ARTICLE NO.	D1	D2	D3	L			
623 7999	M 22 x 1,5	M 16 x 1,5	M 16 x 1,5	40	28	40	127

**PASSE-CLOISON**  
**PASSAPARETE**

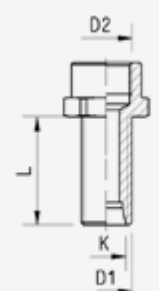
**BULKHEAD COUPLING, WITH 24° CONE**  
**SCHOTTSTUTZEN, MIT 24°-KONUS**



ARTICLE NO.	D1	K	D2	L			
623 7694	M 22 x 1,5	K 24° - 15	M 16 x 1,5	24	28	80	60

**PASSE-CLOISON, AVEC CÔNE 24°**  
**PASSAPARETE, CON CONO 24°**

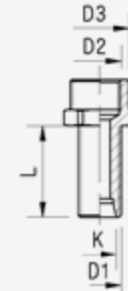
**BULKHEAD COUPLING, WITH 24° CONE**  
**SCHOTTSTUTZEN, MIT 24°-KONUS**



ARTICLE NO.	D1	K	D2	L			
623 7673	M 12 x 1,5	K 24° - 6	M 12 x 1,5	34	20	100	48
623 7695	M 16 x 1,5	K 24° - 10	M 16 x 1,5	34	24	50	76
623 7732	M 18 x 1,5	K 24° - 12	M 16 x 1,5	34	24	50	60
623 7799	M 22 x 1,5	K 24° - 15	M 22 x 1,5	34	28	40	105

**PASSE-CLOISON, AVEC CÔNE 24°**  
**PASSAPARETE, CON CONO 24°**

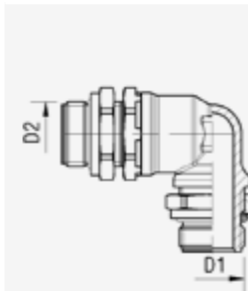
**BULKHEAD COUPLING, WITH 24° CONE**  
**SCHOTTSTUTZEN, MIT 24°-KONUS**



ARTICLE NO.	D1	K	D2	D3	L			
623 7696	M 16 x 1,5	K 24° - 10	M 16 x 1,5	M 22 x 1,5	34	24	50	70

**PASSE-CLOISON, AVEC CÔNE 24°**  
**PASSAPARETE, CON CONO 24°**

**90° ELBOW, FOR BULKHEAD**  
**90° WINKEL, MIT SCHOTTSTUTZEN**



ARTICLE NO.	D1	D2			
623 8883	M 22 x 1,5	M 22 x 1,5	28	25	210

**COUDE 90°, PASSE-CLOISON**  
**GOMITO A 90°, CON PASSAPARETE**

**45° ELBOW, FOR BULKHEAD**  
**45° WINKEL, MIT SCHOTTSTUTZEN**



ARTICLE NO.	D1	D2	D3	L		
623 7881	M 22 x 1,5	M 16 x 1,5	M 22 x 1,5	Min 21	40	125

**COUDE 45°, PASSE-CLOISON**  
**GOMITO A 45°, CON PASSAPARETE**

**45° ELBOW, FOR BULKHEAD WITH O-RING AND NUT**  
**45° WINKEL, MIT SCHOTTSTUTZEN MIT KONTERMUTTER INKL. O-RING**



ARTICLE NO.	D1	D2			
623 7831	M 16 x 1,5	M 16 x 1,5	22	40	59

**COUDE 45°, PASSE-CLOISON AVEC CONTRE-ÉCROU ET JOINT**  
**GOMITO A 45°, CON PASSAPARETE COMPLETO DI DADO E O-RING**

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**90° ELBOW, WITH 24° CONE FOR BULKHEAD**  
**90° WINKEL, MIT SCHOTTSTUTZEN UND 24°-KONUS**

**COUDE 90°, PASSE-CLOISON AVEC CÔNE 24°**  
**GOMITO A 90°, CON CONO 24° E PASSAPARETE**



ARTICLE NO.	D1	D2	K			
623 7962	M 16 x 1,5	M 18 x 1,5	K 24°-12	22	40	58
623 7960	M 22 x 1,5	M 18 x 1,5	K 24°-12	28	25	83

**90° ELBOW, FOR BULKHEAD**  
**90° WINKEL, MIT SCHOTTSTUTZEN**

**COUDE 90°, PASSE-CLOISON**  
**GOMITO A 90°, CON PASSAPARETE**



ARTICLE NO.	D1	D2	D3	VER.	L			
623 7809	M 22 x 1,5	M 16 x 1,5	M 16 x 1,5	2	20	50	75	
623 7819	M 22 x 1,5	M 16 x 1,5	M 16 x 1,5	1	28	35	112	
623 7880	M 22 x 1,5	M 16 x 1,5	M 22 x 1,5	2	22	25	190	

**90° ELBOW, FOR BULKHEAD**  
**90° WINKEL, MIT SCHOTTSTUTZEN**

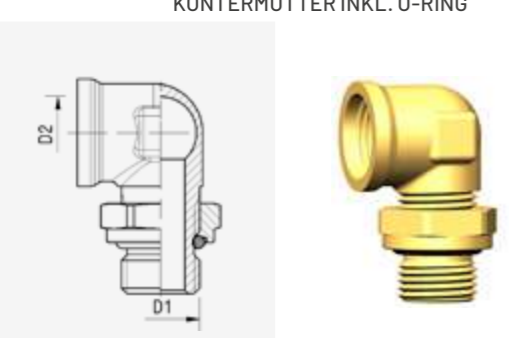
**COUDE 90°, PASSE-CLOISON**  
**GOMITO A 90°, CON PASSAPARETE**



ARTICLE NO.	D1	D2	L			
623 7807	M 12 x 1,5	M 12 x 1,5	17	80	45	
623 7808	M 16 x 1,5	M 16 x 1,5	22	50	62	

**90° ELBOW, FOR BULKHEAD PRE-ASSEMBLED WITH O-RING AND NUT**  
**90° WINKEL, MIT SCHOTTSTUTZEN MIT VORMONTIERTER KONTERMUTTER INKL. O-RING**

**COUDE 90°, PASSE-CLOISON AVEC CONTRE-ÉCROU ET JOINT**  
**GOMITO A 90°, CON PASSAPARETE COMPLETO DI DADO E O-RING**

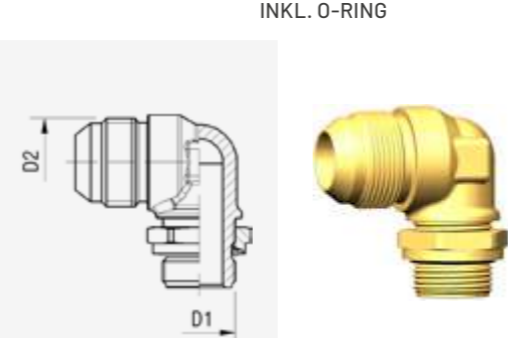


ARTICLE NO.	D1	D2				
623 7928	M 10 x 1,0	M 12 x 1,5		16	80	38
623 7929	M 12 x 1,5	M 12 x 1,5		18	130	43
623 8929	M 12 x 1,5	M 12 x 1,5	temp 150°C	18	130	43
623 8914	M 14 x 1,5	M 12 x 1,5		20	50	63
623 7830	M 16 x 1,5	M 16 x 1,5		22	70	65
623 7890	M 22 x 1,5	M 16 x 1,5		28	75	92
623 7891	M 22 x 1,5	M 22 x 1,5		28	35	129
623 9970	M 26 x 1,5	M 22 x 1,5	Steel	32	15	258

IF THE PRODUCT YOU ARE LOOKING FOR IS NOT IN THIS CATALOGUE, PLEASE CONTACT US FOR INFORMATION ON ALTERNATIVE SOLUTIONS.

**90° ELBOW SAE J512 (45° SEAL) WITH NUT AND O-RING**  
**90° WINKEL, SAE J512 (45° DICHTUNG), MIT KONTERMUTTER INKL. O-RING**


**COUDE 90°, SAE J512 (45°) PASSE-CLOISON AVEC CONTRE-ÉCROU ET JOINT**  
**GOMITO A 90°, SAE J512 (45°) CON PASSAPARETE COMPLETO DI DADO E O-RING**



ARTICLE NO.	D1	D2 (SAE J512)			
623 7755	M22 x 1,5	1-1/16-14UNS	28	20	195

**90° ELBOW ACCORDING SAE J1453 (FACE SEAL)**  
**90° WINKEL, MIT KONTERMUTTER INCL. O-RING NACH SAE J1453 - KOPFDICHTTUNG**


**COUDE 90°, SAE J1453 PASSE-CLOISON AVEC CONTRE-ÉCROU ET JOINT**  
**GOMITO A 90°, SAE J1453 CON PASSAPARETE COMPLETO DI DADO E O-RING**



ARTICLE NO.	D1	D2 (SAE J1453)			
623 7961	M22 x 1,5	1-3/16"-12UN	28	20	229

**L-COUPLING, FOR BULKHEAD**  
**L-SCHOTTSTUTZEN**

**RACCORD L PASSE-CLOISON**  
**RACCORDO A L, CON PASSAPARETE**



ARTICLE NO.	D1	D2			
623 7980	M 16 x 1,5	M 16 x 1,5	22	40	81
623 7982	M 22 x 1,5	M 16 x 1,5	28	40	102

**T-COUPLING, FOR BULKHEAD**  
**T-SCHOTTSTUTZEN**

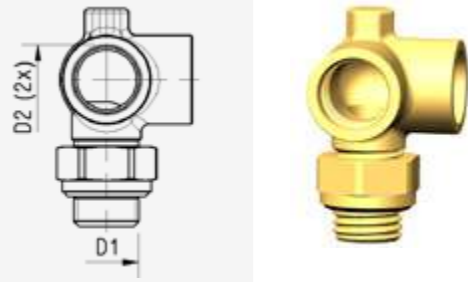
**TÉ PASSE-CLOISON**  
**RACCORDO A T, CON PASSAPARETE**



ARTICLE NO.	D1	D2			
623 7892	M 16 x 1,5	M 16 x 1,5		60	102

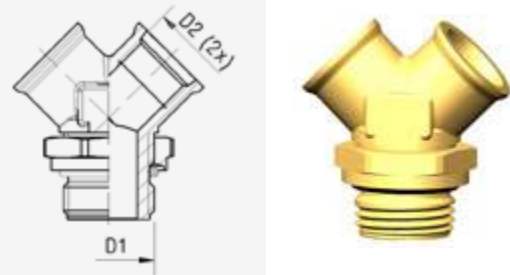
IF THE PRODUCT YOU ARE LOOKING FOR IS NOT IN THIS CATALOGUE, PLEASE CONTACT US FOR INFORMATION ON ALTERNATIVE SOLUTIONS.

**3-WAY COUPLING, FOR BULKHEAD  
3-WEGE SCHOTTSTUTZEN**



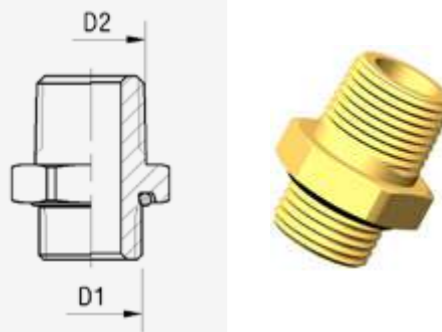
ARTICLE NO.	D1	D2	L			
623 7829	M 16 x 1,5	M 16 x 1,5	21	22	40	109

**Y BULKHEAD  
Y SCHOTTSTUTZEN**



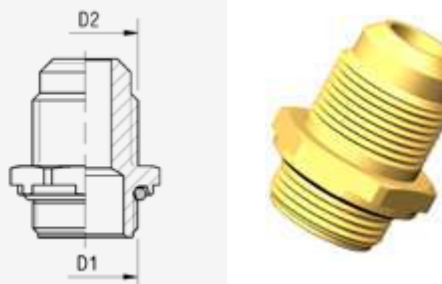
ARTICLE NO.	D1	D2			
623 7981	M 22 x 1,5	M 16 x 1,5	28	40	100

**TRANSFER ADAPTER  
ADAPTER**



ARTICLE NO.	D1	D2			
623 7714	M 16 x 1,5	3/8" - 18 NPTF	22	150	41
623 7900	M 16 x 1,5	M 22 x 1,5	24	125	50

**TRANSFER ADAPTER SAE J512 (45° FLARE)  
ADAPTER SAE J512 (45° DICHTUNG)**



ARTICLE NO.	D1	SPACE D2 - SAE J512			
623 7760	M22 X 1,5	7/8-14 UNF	28	50	77

**RACCORD À 3 VOIES, PASSE-CLOISON  
RACCORDO A 3 VIE, CON PASSAPARETE**

**PASSE-CLOISON Y  
Y CON PASSAPARETE**

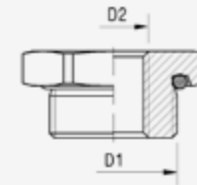
**ADAPTATEUR  
ADATTATORE FILETTATO**

**ADAPTATEUR SAE J512 (ÉVASÉ 45°)  
ADATTATORE SAE J512 (FLARE A 45°)**

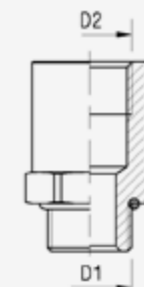
**TRANSFER ADAPTER  
ADAPTER**

**ADAPTATEUR  
ADATTATORE FILETTATO**

**TYPE 1**

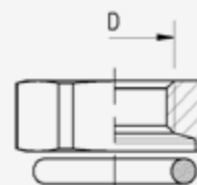


**TYPE 2**



ARTICLE NO.	D1	D2	TYPE			
623 7759	M 12 x 1,5	1/8" - 27 NPTF	1	18	250	23
623 7704	M 14 x 1,5	1/4" - 18 NPTF	2	20	200	32
623 7655	M 16 x 1,5	1/8" - 27 NPTF	1	22	200	25
623 7656	M 16 x 1,5	1/4" - 18 NPTF	1	22	150	33
623 7657	M 16 x 1,5	3/8" - 18 NPTF	2	22	100	40
623 7904	M 16 x 1,5	3/8" - 32 UNEF	1	22	250	25
623 7614	M 16 x 1,5	M 12 x 1,5	1	22	150	20
623 7692	M 16 x 1,5	M 16 x 1,5	2	22	100	57
623 7671	M 16 x 1,5	M 22 x 1,5	2	28	100	62
623 7615	M 22 x 1,5	M 12 x 1,5	1	28	150	44
623 7616	M 22 x 1,5	M 16 x 1,5	1	28	150	33
623 7762	M 22 x 1,5	1/2" - 14 NPTF	1	28	150	70
623 7618	M 26 x 1,5	M 16 x 1,5	1	32	100	73
623 7707	M 26 x 1,6	t. 200°C 1/4" - 18 NPTF	2	32	80	88
623 7626	1/4" - 18 NPTF	M 12 x 1,5	2	18	200	31
623 7628	1/4" - 18 NPTF	M 16 x 1,5	2	22	125	48
623 7633	3/8" - 18 NPTF	M 16 x 1,5	2	22	130	46
623 7710	3/4" - 14 NPTF	M 22 x 1,5	2	28	50	76
623 7677	R 1/4"	M 10 x 1	2	17	200	23
623 7676	R 3/8"	M 12 x 1,5	2	19	200	32
623 7678	R 1/2"	M 16 x 1,5	2	27	50	75

**LOCKING NUT, WITH O-RING  
KONTERMUTTER, MIT O-RING**



**CONTRE ÉCROU, AVEC JOINT TORIQUE  
CONTRODADO, CON O-RING**

ARTICLE NO.	D			
623 7745	M 12 x 1,5	18	200	9
623 7742	M 14 x 1,5	20	200	11
623 7746	M 16 x 1,5	22	200	12
623 7778	M 18 x 1,5	24	100	14
623 7747	M 22 x 1,5	28	100	17

**LOCKING NUT  
KONTERMUTTER**



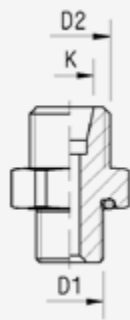
**CONTRE ÉCROU  
CONTRODADO**

ARTICLE NO.	D			
623 7679	M 12 x 1,5	17	200	8
623 7748	M 16 x 1,5	22	500	12
623 7775	M 18 x 1,5	24	300	14
623 7751	M 20 x 1,5	27	400	11
623 7749	M 22 x 1,5	28	300	16
623 7753	M 24 x 1,5	28	300	13
623 7779	M 26 x 1,5	32	200	19
623 7798	M 28 x 1,5	36	100	36
623 7800	M 30 x 2	38	100	43

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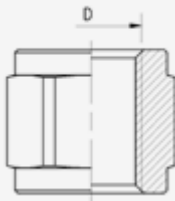
**TRANSFER ADAPTER, WITH O-RING AND 24° CONE**  
**ADAPTER, MIT O-RING UND 24°-KONUS**



**ADAPTATEUR, AVEC JOINT TORIQUE ET CÔNE 24°**  
**ADATTATORE FILETTATO, CON O-RING E CONO 24°**

ARTICLE NO.	D1	D2	K			
623 7781	M 10 x 1,0	M 12 x 1,5	K 24° - 6	16	400	20
623 7782	M 16 x 1,5	M 12 x 1,5	K 24° - 6	22	200	32
623 7783	M 12 x 1,5	M 16 x 1,5	K 24° - 10	18	200	25
623 7784	M 16 x 1,5	M 16 x 1,5	K 24° - 10	22	150	39
623 7786	M 22 x 1,5	M 16 x 1,5	K 24° - 10	28	100	51
623 7785	M 16 x 1,5	M 18 x 1,5	K 24° - 12	22	150	36
612 6278	M 22 x 1,5	M 22 x 1,5	K 24° - 15	28	75	69

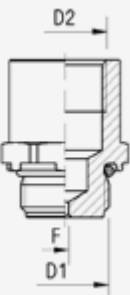
**SOCKET JOINT**  
**GEWINDEMUFFE**



**MANCHON**  
**MANICOTTO FILETTATO**

ARTICLE NO.	D			
623 7741	M 12 x 1,5	18	250	24
623 7743	M 16 x 1,5	22	175	35
623 7744	M 22 x 1,5	28	100	48

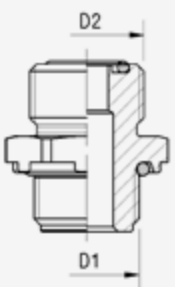
**TRANSFER ADAPTER, WITH AIR FLOW REDUCER**  
**ADAPTER MIT REDUZIERUNG**



**ADAPTATEUR, RÉDUCTEUR DE DÉBIT**  
**ADATTATORE FILETTATO, CON RIDUTTORE PER L'ARIA**

ARTICLE NO.	D1	D2	F	L			
623 7647	G 3/8	M 16 x 1,5	1,5	31	22	100	52

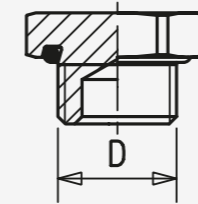
**TRANSFER ADAPTER SAE J1453 (FACE SEAL)**  
**TRANSFER ADAPTER SAE J1453 (KOPFDICHTUNG)**



**ADAPTATEUR SAE J1453 (JOINT FACIAL)**  
**TRANSFER ADAPTER SAE J1453 (SIGILLO FACCIALE)**

ARTICLE NO.	D1	D2				
623 7705	M 16 x 1,5	11/16"-16UN	22	150	40	
623 7602	M 22 x 1,5	11/16"-16UN	28	80	51	
623 7601	M 22 x 1,5	1-3/16"-12UN	high temperature 200°C	32	40	112

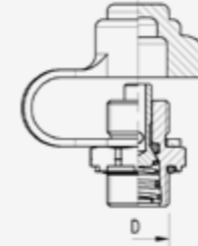
**PLUG**  
**STOPFEN**



**BOUCHON**  
**TAPPO**

ARTICLE NO.	D			
623 7604	M 10 x 1	16	350	14
623 7605	M 12 x 1,5	18	350	17
623 7606	M 14 x 1,5	20	250	23
623 7607	M 16 x 1,5	22	220	28
623 7608	M 22 x 1,5	28	120	44

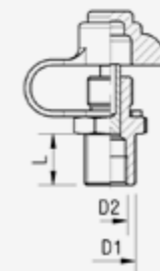
**TEST POINT, ISO 3583**  
**PRÜFANSCHLUSS, ISO 3583**



**PRISE DE PRESSION, ISO 3583**  
**RACCORDO PRESA PRESSIONE, ISO 3583**

ARTICLE NO.	D			
623 7776	M 16 x 1,5	22	75	40
623 7777	M 22 x 1,5	28	60	65

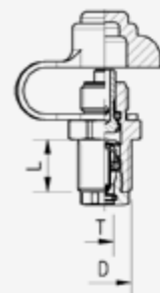
**TEST POINT, ISO 3583 FOR BULKHEAD**  
**PRÜFANSCHLUSS, ISO 3583 MIT SCHOTTSTUTZEN**



**PRISE DE PRESSION, ISO 3583 PASSE-CLOISON**  
**RACCORDO PRESA PRESSIONE, ISO 3583 CON PASSAPARETE**

ARTICLE NO.	D1	D2	L			
623 9144	M 18 x 1,5	M 12 x 1,5	18	22	50	57

**TEST POINT, ISO 3583 WITH INTEGRATED PUSH-IN FOR BULKHEAD**  
**PRÜFANSCHLUSS, ISO 3583 MIT STECKVERBINDER**

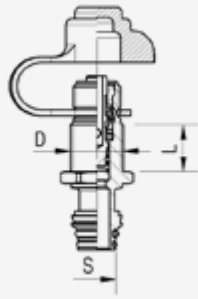


**PRISE DE PRESSION, ISO 3583 PASSE-CLOISON AVEC UNION MÂLE**  
**RACCORDO PRESA PRESSIONE, ISO 3583 CON PASSAPARETE**

ARTICLE NO.	D	T	L			
623 7207	M 18 x 1,5	6 x 1	18	22	60	68
623 7227	M 18 x 1,5	8 x 1	18	22	60	61



**TEST POINT ISO 3583, WITH ABC SWIVEL**  
**PRÜFANSCHLUSS ISO 3583, MIT ABC ANSCHLUSS-STUTZEN**



**PRISE DE PRESSION PASSE-CLOISON ISO 3583**  
 AVEC EMBASE ABC  
**RACCORDO PRESA PRESSIONE, ISO 3583 CON**  
 PASSAPARETE ISO

ARTICLE NO.	D	S	L	ROTOLOCK			
960 51 800	M 18 x 1,5	Regular	18	964 50 022	22	50	69

**DRAIN PLUG, DIN 74292**  
**ENTWÄSSERUNGSANSCHLUSS, DIN 74292**



ARTICLE NO.	D			
623 7787	M 22 x 1,5	28	75	36

with key ring

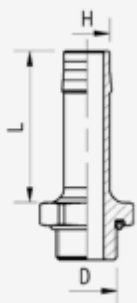
**DRAIN PLUG, DIN 74292**  
**ENTWÄSSERUNGSANSCHLUSS, DIN 74292**



ARTICLE NO.	D			
623 7788	M 22 x 1,5	28	75	35

without key ring

**HOSE NIPPLE, WITH O-RING DIN 74304**  
**SCHLAUCHSTUTZEN, DIN 74304**



**RACCORD QUEUE LISSE, AVEC JOINT TORIQUE INCORPORÉ**  
 DIN 74304

**BOCCHETTONE, CON O-RING DIN 74304**

ARTICLE NO.	H (Ø HOSE SIZE)	D	L			
623 7994	11	M 16 x 1,5	40	22	100	44
623 7997	11	M 22 x 1,5	40	28	50	69
623 7995	13	M 16 x 1,5	40	22	90	60
623 7996	13	M 22 x 1,5	40	28	50	70

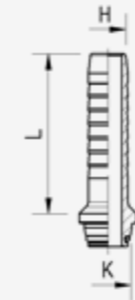
**HOSE NIPPLE, RAUFOSS COUPLINGS® STANDARD**  
**SCHLAUCHSTUTZEN, NACH RAUFOSS COUPLINGS® NORM**



**RACCORD QUEUE CANNELÉE, NORME RAUFOSS COUPLINGS®**  
**BOCCHETTONE, A NORMA RAUFOSS COUPLINGS®**

ARTICLE NO.	H (Ø HOSE SIZE)	D	L			
623 7926	9,5 (3/8")	M 16 x 1,5	30	22	45	43
623 7927	9,5 (3/8")	M 22 x 1,5	30	28	75	72
623 7905	10	M 16 x 1,5	30	22	100	46
623 7912	10	M 22 x 1,5	30	28	75	72
623 7906	11	M 12 x 1,5	30	22	150	47
623 7907	11	M 16 x 1,5	30	22	130	41
623 7915	11	M 22 x 1,5	30	28	75	68
623 7908	13	M 16 x 1,5	30	22	120	41
623 7914	13	M 22 x 1,5	30	28	60	67
623 7911	14,5	M 16 x 1,5	30	22	110	49
623 7913	14,5	M 22 x 1,5	30	28	75	79

**HOSE NIPPLE, WITH CONE AND O-RING**  
**SCHLAUCHSTUTZEN, MIT KONUS UND O-RING**



**RACCORD QUEUE CANNELÉE, AVEC CÔNE ET JOINT TORIQUE**  
**BOCCHETTONE, CON CONO E O-RING**

ARTICLE NO.	H (Ø HOSE SIZE)	K	NUT/ECROU MUTTER/DADO	L		
623 8992	9	K 24° - 10	6161146	40	200	18
623 8993	11	K 24° - 12	6161147	40	100	21

Remarks: a) Kindly purchase the nut separately.  
 b) Connection to bulkhead or adapter with cone (24°).  
 Remarques: a) Ecrou vendu séparément.  
 b) Raccordement à un passe-cloison ou un adaptateur avec cône (24°).  
 Hinweis: a) Bitte Überwurfmuttern extra bestellen.  
 b) Anschluß an Schottstutzen oder Ü - Stücke mit Konus (24°).  
 Note: a) Dado da ordinare separatamente.  
 b) Collegamento a passaparete o adattatore con attacco conico da 24°.

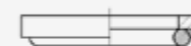
**NUT, FOR HOSE NIPPLE**  
**ÜBERWURFMUTTER, FÜR SCHLAUCHSTUTZEN**



**ÉCROU, POUR RACCORD QUEUE CANNELÉE**  
**DADO, PER BOCCHETTONE**

Article no.	D				
616 1146	M 16 x 1,5	6238992	19	300	19
616 1147	M 18 x 1,5	6238993	22	200	26

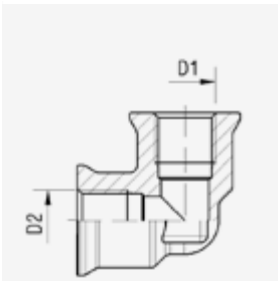
**PRESSURE RING, WITH O-RING**  
**DRUCKRING, MIT O-RING**



**CUVETTE, AVEC JOINT TORIQUE**  
**GUARNIZIONE PER RACCORDI, CON O-RING**

ARTICLE NO.	D	
623 9139	M 10 x 1,0	100
623 9140	M 12 x 1,5	100
623 9141	M 14 x 1,5	100
623 9142	M 16 x 1,5	100
623 9143	M 22 x 1,5	100
623 9149	M 26 x 1,5	100

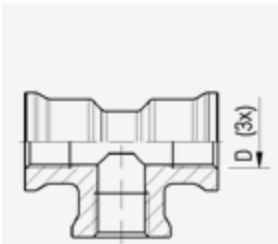
**90° ELBOW, 2 X THREAD**  
**90° BOGEN, 2X GEWINDE**



**COUDE 90°, TARAUDÉ**  
**GOMITO A 90°, CON 2 FILETTATURE**

ARTICLE NO.	D1	D2		
6237823	M 12 x 1,5	M 12 x 1,5	100	47
6237862	M 16 x 1,5	M 16 x 1,5	80	52
6237865	M 16 x 1,5	M 18 x 1,5	70	58
6237867	M 22 x 1,5	M 22 x 1,5	40	80

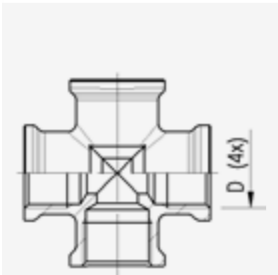
**UNION T, 3 X THREAD**  
**T-STÜCK, 3X GEWINDE**



**TÉ TARAUDÉ, 3 FILETAGES**  
**RACCORDO A T, CON 3 FILETTATURE**

ARTICLE NO.	D		
6237825	M12x1,5	80	64
6237864	M16x1,5	50	68
6237868	M22x1,5	30	95

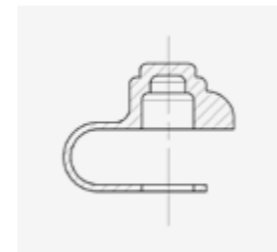
**4-WAY CROSS BLOCK, 4 X THREAD**  
**KREUZBLOCK, 4 X GEWINDE**



**CROIX TARAUDÉE, 4 FILETAGES**  
**RACCORDO A CROCE A 4 VIE, CON 4 FILETTATURE**

ARTICLE NO.	D		
6237828	M16 x 1,5	40	81

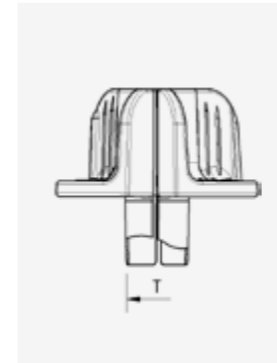
**SAFETY CAP, FOR TEST POINT**  
**SCHUTZKAPPE, FÜR PRÜFVENTIL**



**CAPUCHON, POUR PRISE DE PRESSION**  
**TAPPO DI PROTEZIONE, PER RACCORDO PRESA PRESSIONE**

ARTICLE NO.	
3579076	50

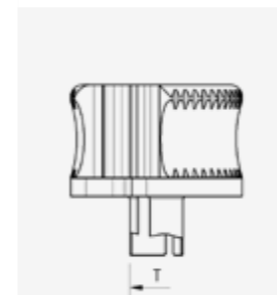
**RELEASE TOOL STANDARD**  
**DEMONTAGE WERKZEUG STANDARD**



**OUTIL DE DÉCONNEXION STANDARD**  
**ATTREZZO SMONTAGGIO TUBI STANDARD**

ARTICLE NO.	T	T	T	T(SAE)		
966 06 010	6 x 1			1/4"	150	5
966 08 010	8 x 1				125	5
966 10 010	10 x 1	10 x 1,25	10 x 1,5	3/8"	100	5
966 12 710	12 x 1,5			1/2"	100	5
966 14 010	14 x 2				75	7
966 15 010	15 x 1,5				75	7
966 16 010	16 x 2			5/8"	75	7
966 19 110				3/4"	50	7

**RELEASE TOOL PROFESSIONAL**  
**DEMONTAGE WERKZEUG PROFESSIONAL**



**OUTIL DE DÉCONNEXION MÉTALLIQUE**  
**ATTREZZO IN METALLO SMONTAGGIO TUBI**

ARTICLE NO.	T	T	T	T(SAE)		
966 06 021	6x1			1/4"	36	21
966 08 021	8x1				36	21
966 10 021	10x1	10x1,25	10x1,5	3/8"	36	20
966 12 021	12x1,5			1/2"	36	20
966 14 021	14x2				16	35
966 15 021	15x1,5				16	35
966 16 021	16x2			5/8"	16	34
966 19 121				3/4"	16	33

**PROFESSIONAL RELEASE TOOLS KIT**  
**PROFI-DEMONTAGE WERZEUGSKIT**



**KIT D'OUTILS DE DÉCONNEXION MÉTALLIQUES**  
**ATTREZZI IN METALLO SMONTAGGIO TUBI KIT**

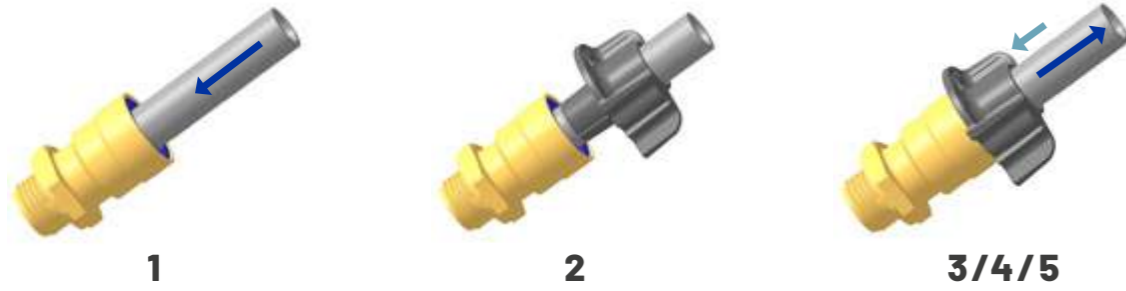


ARTICLE NO.	6 mm - 1/4"	8 mm	10 mm - 3/8"	12 mm - 1/2"	14 mm	15 x 1,5	16 x 2 - 5/8"	
2600921	1	1	1	1	1	1	1	1x7

IF THE PRODUCT YOU ARE LOOKING FOR IS NOT IN THIS CATALOGUE, PLEASE CONTACT US FOR INFORMATION ON ALTERNATIVE SOLUTIONS.

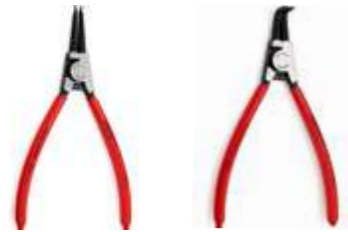
IF THE PRODUCT YOU ARE LOOKING FOR IS NOT IN THIS CATALOGUE, PLEASE CONTACT US FOR INFORMATION ON ALTERNATIVE SOLUTIONS.

**RELEASE TOOL INSTRUCTIONS**  
(SEE PAGE 66 FOR MORE DETAILS AND TRANSLATIONS)



1. Remove the pressure totally from the system, and clean the top of the ABC Push-In.
2. Push the tube to the bottom of the ABC Push-In to move the grip ring out of locking position.
3. Apply Release Tool on to the tube.
4. Push the Release Tool to stop with the flange at the top of the ABC Push-In without using extensive force.
5. While pushing the Release Tool towards the ABC Push-In; pull the tube out.
6. Before pushing the tube again into the ABC - Push-In please check if tube surface is ok. If not, shorten the tube. Please check leakage after repair. In case of leakage please exchange the ABC Push-In.

**CIRCLIP PLIER**  
**SEGERING ZANGE**



**PINCE À CIRCLIPS**  
**PINZE PER ANELLI ELASTICI**

ARTICLE NO.		
892001	straight version	1
892000	90° version	1

The circlip pliers can be purchased through our distribution center in Molsheim, Kongsberg Raufoss Distribution.

**ABC BUILDING BLOCK RELEASE INSTRUCTIONS**



**STANDARD CIRCLIP PLIER**  
**>> 90° ELBOW**

**STANDARD CIRCLIP PLIER**  
**>> STRAIGHT**



**TUBE CUTTER**  
**SCHLAUCHSCHNEIDER**



**A**



**B**

**PINCE À COUPER LES TUBES POLYAMIDE**  
**PINZE TAGLIATUBI**

ARTICLE NO.		
209010 (A)	Pocket plier for polyamide	1
209013 (B)	Workshop clamp for polyamide	1

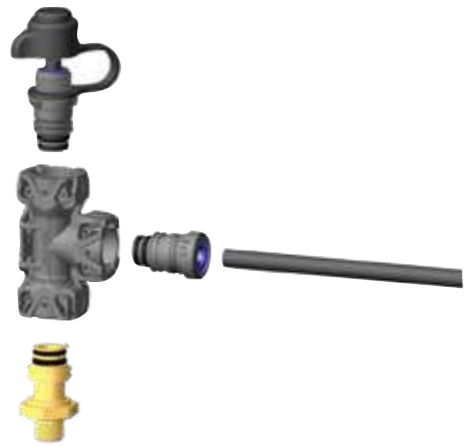
The cutters can be purchased through our distribution center in Molsheim, Kongsberg Raufoss Distribution

IF THE PRODUCT YOU ARE LOOKING FOR IS NOT IN THIS CATALOGUE, PLEASE CONTACT US FOR INFORMATION ON ALTERNATIVE SOLUTIONS.

# ASSEMBLY INFORMATION

**RAUFOSS ABC™ SYSTEM**  
ASSEMBLY PROPOSALS

**L-COUPLING WITH TEST POINT**



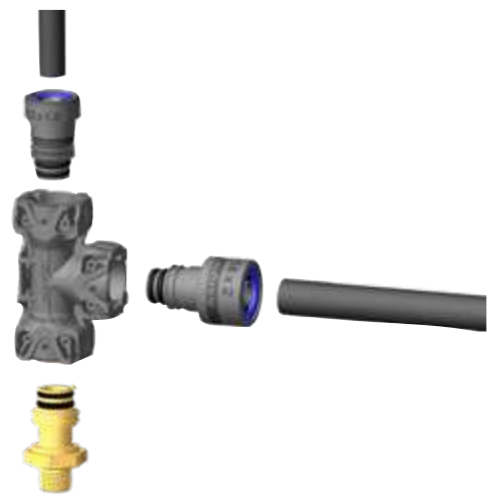
**INTEGRAL-COUPLING WITH ROTOLock**



**T-COUPLING**



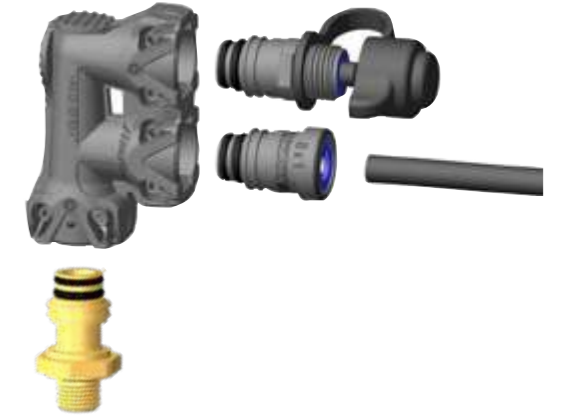
**L-COUPLING**



**BULKHEAD WITH INTEGRAL COUPLING**



**F-COUPLING**



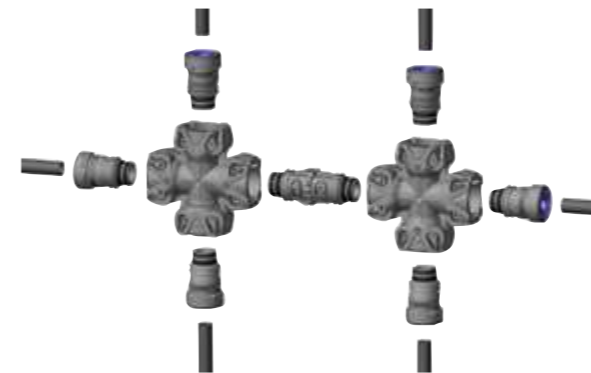
**REDUCER**



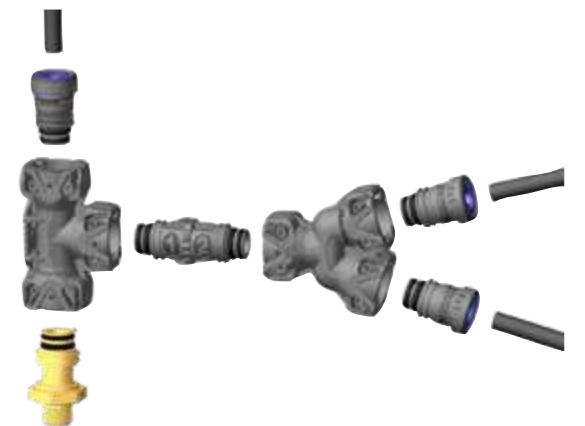
**4-WAY CROSS WITH REDUCER**



**4 - WAY UNION COUPLINGS**

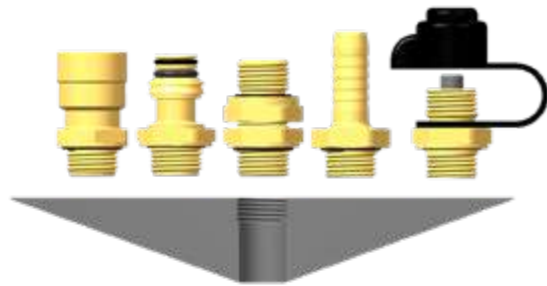


**COMBINED COUPLINGS**



## PARALLEL THREAD ASSEMBLY INSTRUCTIONS

### FILETAGE MÉTRIQUE INSTRUCTIONS DE MONTAGE



The installation of the "M"-thread of the ABC Push-In couplings, ABC swivels, and ABC Complementary can be directly tightened into the ports according: ISO 4039-1, ISO 4039-2, ISO 6149, ISO 9974-1, DIN 3852, Voss without any further preparation.

The installation of the "G"-threads ABC Push-In couplings, ABC swivels, and ABC Complementary can be directly tightened into the ports according: ISO 1179-1, DIN 3852-2 without any further preparation.

The necessary torque values are according to Table 2a.

Les filetages métriques des unions mâles ABC, embases et raccords ABC Complémentaires, sont vissés sans préparation, directement dans le taraudage récepteur de norme ISO 4039-1, ISO 4039-2, ISO 6149, ISO 9974-1, DIN 3852 ou Voss).

Les filetages de type Gaz "G" des unions mâle ABC, embases et raccords ABC Complémentaires sont vissés sans préparation, directement dans le taraudage récepteur de norme ISO 1179-1, DIN 3852-2.

Les couples de serrage sont indiqués dans le tableau 2a ci-dessous.

TABLE 2A // TABLEAU 2A // TABELLE 2A // TABELLA 2A

THREAD FILETAGE GEWINDE FILETTO	RECOMMENDED TORQUE <sup>1,2</sup> COUPLE DE SERRAGE RECOMMANDÉ <sup>1,2</sup> EMPFOHLENES ANZUGSDREHMOMENT <sup>1,2</sup> COPPIA DI SERRAGGIO PRESCRITTA <sup>1,2</sup>	MAX. TORQUE <sup>2</sup> COUPLE DE SERRAGE MAX <sup>2</sup> MAX. ANZUGSDREHMOMENT <sup>2</sup> COPPIA DI SERRAGGIO MAX. <sup>2</sup>
M10x1	15 Nm (11,1 lbf ft)	18 Nm (13,3 lbf ft)
M12x1,5	20 Nm (14,8 lbf ft)	24 Nm (17,7 lbf ft)
M14x1,5	24 Nm (17,7 lbf ft)	28 Nm (20,7 lbf ft)
M16x1,5	30 Nm (22,1 lbf ft)	35 Nm (25,8 lbf ft)
M18x1,5	30 Nm (22,1 lbf ft)	35 Nm (25,8 lbf ft)
M20x1,5	34 Nm (25,1 lbf ft)	40 Nm (29,5 lbf ft)
M22x1,5	34 Nm (25,1 lbf ft)	40 Nm (29,5 lbf ft)
M24x1,5	34 Nm (25,1 lbf ft)	40 Nm (29,5 lbf ft)
M26x1,5	43 Nm (31,7 lbf ft)	50 Nm (36,9 lbf ft)
M28x1,5	43 Nm (31,7 lbf ft)	50 Nm (36,9 lbf ft)
M30x2	47 Nm (35 lbf ft)	55 Nm (41 lbf ft)
G 1/8"	15 Nm (11,1 lbf ft)	18 Nm (13,3 lbf ft)
G 1/4"	24 Nm (17,7 lbf ft)	28 Nm (20,7 lbf ft)
G 3/8"	32 Nm (23,6 lbf ft)	38 Nm (28,0 lbf ft)

## PARALLEL GEWINDE MONTAGEHINWEISE

### FILETTATURA METRICA ISTRUZIONI DI MONTAGGIO

Das Einschrauben von „M“-Gewinden bei geraden ABC Steckverbinder, ABC Anschlussstutzen, und ABC Ergänzungsteilen erfolgt direkt ohne weitere Vorbehandlung in die Aufnahmegewinde gemäß DIN 3852, ISO 6149, ISO 4039-1, ISO 4039-2, Voss.

Das Einschrauben von „G“-Gewinden bei geraden ABC Steckverbinder, ABC Anschlussstutzen, und ABC Ergänzungsteilen erfolgt direkt ohne weitere Vorbehandlung in die Aufnahmegewinde gemäß ISO 1179-1, DIN 3852-2.

Die Anzugsdrehmomente sind der Tabelle 2a zu entnehmen.

I raccordi ad innesto rapido ABC Newline, girevoli e multipli con filettatura metrica "M" possono essere avvitati direttamente e senza alcun adattatore nelle sedi secondo i seguenti standard: ISO 4039-1, ISO 4039-2, ISO 6149, ISO 9974-1, DIN 3852, Voss.

I raccordi ad innesto rapido ABC Newline, girevoli e multipli con filettatura gas "G" possono essere avvitati direttamente e senza alcun adattatore nelle sedi secondo i seguenti standard: ISO 1179-1, DIN 3852-2.

I valori della coppia di serraggio da applicare sono indicati nella Tabella 2a.



Using the ABC Push-In couplings, ABC swivels, and ABC Complementary together with ABC bulkheads, the following reduced torque values (Table 2b) are applicable.

Pour le montage des unions mâles ABC, embases et raccords ABC Complémentaires dans les passe-cloisons ABC, appliquer les couples de serrage réduits selon le tableau 2b.

Bei Verwendung von geraden ABC Steckverbinder, ABC Anschlussstutzen, und ABC Ergänzungsteilen mit ABC Schottstutzen gelten die nachfolgenden, reduzierten Drehmomente gemäß Tabelle 2b.

I raccordi ad innesto rapido ABC Newline, girevoli, e multipli montati su raccordi passaparete ABC devono essere serrati con una coppia di serraggio ridotta come indicato nella Tabella 2b.

TABLE 2B // TABLEAU 2B // TABELLE 2B // TABELLA 2B

THREAD FILETAGE GEWINDE FILETTO	RECOMMENDED TORQUE <sup>1,2</sup> COUPLE DE SERRAGE RECOMMANDÉ <sup>1,2</sup> EMPFOHLENES ANZUGSDREHMOMENT <sup>1,2</sup> COPPIA DI SERRAGGIO PRESCRITTA <sup>1,2</sup>	MAX. TORQUE <sup>2</sup> COUPLE DE SERRAGE MAX <sup>2</sup> MAX. ANZUGSDREHMOMENT <sup>2</sup> COPPIA DI SERRAGGIO MAX. <sup>2</sup>
M10x1	10 Nm ( 7,4 lbf ft)	12 Nm ( 8,9 lbf ft)
M12x1,5	14 Nm (10,3 lbf ft)	16 Nm (11,8 lbf ft)
M16x1,5	20 Nm (14,8 lbf ft)	24 Nm (17,7 lbf ft)
M22x1,5	34 Nm (25,1 lbf ft)	40 Nm (29,5 lbf ft)

- 1) The recommended torques are based on threads without lubrication. The recommended torques applies to ports of aluminum, brass or steel. A "torque wrench" shall be used.
- 2) If lower max torque values are specified for valves, air reservoir etc, these are valid.

- 1) Die empfohlenen Anzugsdrehmomente gelten für nicht vorbehandelte Gewinde in Aluminium, Messing, oder Stahl. Ein Drehmomentschlüssel ist zu verwenden
- 2) Wenn das zulässige Anzugsdrehmoment des Ventils, Luftbehälter, etc. niedriger ist, ist dieses zu verwenden

- 1) Les couples de serrage recommandés sont indiqués pour des filetages non lubrifiés. Les couples de serrage recommandés s'appliquent aux taraudages en aluminium, en laiton ou en acier. Une clé à cliquet dynamométrique doit être utilisée.
- 2) Veuillez également ne pas dépasser le couple de serrage maximum autorisé pour les valves, bouteilles d'air etc.

- 1) Le coppie di serraggio raccomandate, da applicare con una chiave dinamometrica, prevedono filetti non lubrificati e sedi in alluminio o ottone o acciaio.
- 2) Se più bassa, applicare la coppia di serraggio massima prescritta per le valvole, serbatoi aria, ecc.

## CONICAL THREAD ASSEMBLY INSTRUCTIONS

### FILETAGE CONIQUE INSTRUCTIONS DE MONTAGE



For installation of the "NPTF" or "R" -thread of the ABC Push-In couplings, ABC swivels, and ABC Complementary an external sealing (tape or fluid) must be used. Note: unscrewing can damage the sealing.

The following Table 2c shows the recommended torque values.

Pour le montage des unions mâle ABC, embases et raccords ABC Complémentaires avec le filetage "NPTF" ou "R", il est nécessaire d'utiliser une pâte ou un fluide d'étanchéité avant de visser. Nota: chaque opération de dévissage peut endommager l'étanchéité.

Les couples de serrage sont indiqués dans le tableau 2c ci-dessous.

Das Einschrauben von „NPTF“ und „R“-Gewinden bei geraden ABC-Steckverbinder, ABC -Anschlussstutzen, und ABC-Ergänzungsteilen erfolgt mit einem separatem Dichtmittel (Band oder Flüssigkeit). Jedes Herausschrauben kann die Dichtung beschädigen.

Die Anzugsdrehmomente sind der Tabelle 2c zu entnehmen.

Prima del montaggio dei raccordi rapidi ABC Newline, girevoli e multipli con filettatura conica "NPTF" e "R" è necessario applicare sul filetto un nastro o colla sigillante. Nota: lo smontaggio del raccordo danneggia il filetto.

Le coppie di serraggio prescritte sono illustrate nella tabella 2c.

TABLE 2C // TABLEAU 2C // TABELLE 2C // TABELLA 2C

THREAD FILETAGE GEWINDE FILETTO	RECOMMENDED TORQUE <sup>1,2</sup> COUPLE DE SERRAGE RECOMMANDÉ <sup>1,2</sup> EMPFOHLENES ANZUGSDREHMOMENT <sup>1,2</sup> COPPIA DI SERRAGGIO PRESCRITTA <sup>1,2</sup>	MAX. TORQUE <sup>2</sup> COUPLE DE SERRAGE MAX <sup>2</sup> MAX. ANZUGSDREHMOMENT <sup>2</sup> COPPIA DI SERRAGGIO MAX. <sup>2</sup>
1/8"-27 NPTF	15 Nm (11,1 lbf ft)	18 Nm (13,3 lbf ft)
1/4"-18 NPTF	24 Nm (17,7 lbf ft)	28 Nm (20,7 lbf ft)
3/8"-18 NPTF	32 Nm (23,6 lbf ft)	38 Nm (28,0 lbf ft)
1/2"-14 NPTF	36 Nm (26,6 lbf ft)	42 Nm (31,0 lbf ft)
R 1/8"	15 Nm (11,1 lbf ft)	18 Nm (13,3 lbf ft)
R 1/4"	24 Nm (17,7 lbf ft)	28 Nm (20,7 lbf ft)
R 3/8"	32 Nm (23,6 lbf ft)	38 Nm (23,6 lbf ft)
R 1/2"	36 Nm (26,6 lbf ft)	42 Nm (31,0 lbf ft)
R 5/8"	43 Nm (31,7 lbf ft)	50 Nm (36,9 lbf ft)

1) The recommended torque are based on threads without lubrication. The recommended torque apply to ports of aluminum, brass or steel. A "torque wrench" shall be used.

2) If lower max torque values are specified for valves, air reservoir etc, these are valid.

1) Les couples de serrage recommandés sont indiqués pour des filetages non lubrifiés. Les couples de serrage recommandés s'appliquent aux taraudages en aluminium, en laiton ou en acier. Une clé à cliquet dynamométrique doit être utilisée.

2) Veuillez également ne pas dépasser le couple de serrage maximum autorisé pour les valves, bouteilles d'air etc.

1) Die empfohlenen Anzugsdrehmomente gelten für nicht vorbehandelte Gewinde in Aluminium, Messing, oder Stahl. Ein Drehmomentschlüssel ist zu verwenden.

2) Wenn das zulässige Anzugsdrehmoment des Ventils, Luftbehälter, etc. niedriger ist, ist dieses zu verwenden.

1) Le coppie di serraggio si riferiscono a montaggi su sedi in ottone, alluminio od acciaio e senza l'impiego di lubrificanti. Utilizzare chiavi dinamometriche.

2) Se più basse, considerare le coppie Max prescritte per le sedi dei componenti quali valvole, serbatoi aria, etc.

## KONISCHES GEWINDE MONTAGEHINWEISE

### SEDI CONICHE ISTRUZIONI DI MONTAGGI

## ASSEMBLY OF ROTOLOCK ASSEMBLY INSTRUCTIONS

### MONTAGE DES BAGUES DE BLOCAGE ROTOLOCK INSTRUCTIONS DE MONTAGE

## MONTAGE DES ROTOLOCK MONTAGEHINWEISE

### MONTAGGIO DEL ROTOLOCK ISTRUZIONI DI MONTAGGIO



1

Press RotoLock + ABC Building Block together.

Clipser la bague RotoLock sur le corps ABC.

Zusammenstecken von RotoLock + ABC Baukastenteil.

Montare il RotoLock sul raccordo multiplo.



2

Position the pre-assembled Building block on top of the swivel (1st step = locking position).

Clipser l'embase partiellement (1ère position de sécurité).

Stecken diese Kombination auf den Anschlußstutzen (1. Stufe = Verriegelungs-Position).

Montare l'insieme sul raccordo girevole premendo fino al primo scatto - posizione di sicurezza.



3

Define the orientation.

Choisir l'orientation désirée.

Ausrichtung.

Orientare il raccordo multiplo.



4

Click the ABC Building Block into the 2nd / locked position.

Emmancher l'embase complètement - 2ème position d'étanchéité.

Drücken das ABC Baukastenteil in die zweite / Dichtposition.

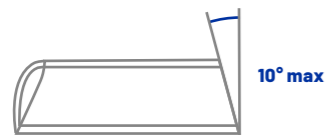
Premere il raccordo multiplo fino a raggiungere il secondo scatto - posizione di aggancio.

## TUBE ASSEMBLY ASSEMBLY INSTRUCTIONS

### MONTAGE DES TUBES INSTRUCTIONS DE MONTAGE

The tube has to be cut with a tube cutter by 90°. A maximum deviation of 10° is allowed. The tube end must be free of marks, burrs, stickers etc.

Couper le tube à angle droit (90°). Un écart angulaire de 10° maximum est admissible. L'extrémité du tube doit être exempte de toute trace de détérioration, d'adhésifs, etc.



Assembly of tube push-in is performed manually by hand without the need of special tooling. The tube Push-In is performed in one easy and simple Push-In operation.

#### Details during tube push-in sequence

1. Passing the Environmental seal O-ring
  2. Passing the grip ring
  3. Passing the Main Seal O-ring and reaching the mechanical stop at the bottom of the coupling
- > Pull back the tube by hand to secure the assembly. Customer decision depending on the criticality level of the application.
  - > All Push-In couplings have a one-time distinctive feedback signal to verify correct assembly of the tube.
  - > The maximum required tube push-in forces are shown in table 3. Approx. 2/3 of the given values is serial standard.

L'emmanchement du tube dans le raccord se fait manuellement sans avoir besoin d'un quelconque outil. L'emmanchement est effectué en une seule fois par une opération très simple "Push-In".

#### Ci-après les différentes étapes:

1. Passage du joint torique environnemental
  2. Passage de l'anneau de retenue
  3. Passage du joint torique et atteinte de la fin de course au fond du raccord
- > Tirez manuellement sur le tube pour s'assurer du bon emmanchement. La décision du client dépendra du niveau de criticité de l'application.
  - > Tous les raccords Push-in sont équipés d'un signal sonore (clip mécanique) qui permet de s'assurer de l'emmanchement correct du tube.
  - > Les forces d'emmanchement maximum sont indiquées sur le tableau ci-après. En pratique l'effort nécessaire équivaut aux 2/3 de ces valeurs.

## ROHRMONTAGE MONTAGEHINWEISE

### MONTAGGIO DEL TUBO ISTRUZIONI DI MONTAGGIO

Die Rohre werden rechtwinklig mit einem Rohrschneider abgeschnitten. Eine max. Abweichung von 10° ist zulässig. Das Rohrende muss frei sein von Beschädigungen, Aufklebern usw.

Il tubo deve essere tagliato con una taglierina effettuando un taglio netto. E' tollerato uno scostamento max di 10°. L'estremità del tubo deve essere libera da marcature, adesivi, ecc.



Die Montage des Rohrs erfolgt manuell ohne Werkzeuge. Das Einstecken des Rohrs erfolgt in einem einfachen Einsteckvorgang.

#### Die einzelnen Schritte des Push-In Vorgangs

1. Passieren des Umweltschmutz O-Rings
  2. Passieren des Klemmrings
  3. Passieren des Dicht O-Rings und Erreichen des mechanischen Anschlags am Fuß der Verschraubung
- > Prüfen der Verbindung durch manuelles. Ziehen des gesteckten Rohrs; Kundenentscheidung in Abhängigkeit der Sicherheitsstufe der Anwendung.
  - > Alle Push-In Verschraubungen haben ein einmaliges „Feedback“ Signals, um die korrekte Rohrmontage anzuzeigen.
  - > Die maximale Einsteckkraft entnehmen Sie bitte der Tabelle 3, der übliche Serienwert beträgt 2/3 dieser Kräfte.

L'innesto del tubo nel raccordo avviene manualmente e senza alcun utensile. L'operazione d'innesto è semplice ed immediata.

#### Cosa avviene al tubo all'interno del raccordo durante l'innesto

1. Supera l'oring parapolvere
  2. Supera il segmento in ottone per la tenuta meccanica
  3. Supera l'oring di tenuta pneumatica e fa scattare il meccanismo acustico di fine corsa al fondo del raccordo
- > Per un'ulteriore verifica di montaggio completato, tirare manualmente il tubo per serrare la tenuta meccanica. A discrezione del Cliente.
  - > Per un'ulteriore verifica di montaggio completato, tirare manualmente il tubo per serrare la tenuta meccanica. A discrezione del Cliente.
  - > La forza d'innesto massima di ogni raccordo è indicata nella Tabella 3. I valori medi sono i 2/3 dei valori massimi.



A marking for visual control of the push-in length is optional. The Push-In length is mentioned in Table 3. In cases the tube is not pushed in correctly, and only passing the grip ring (see above), a measurable controlled leakage will occur. An audible whistle can be heard to locate. Depending on the dimension the tube can be re-pushed under pressure, to secure a 100% assembly.

For connections between chassis and axle it is recommend using the tube size  $\leq 12 \times 1,5$ .

Pour un contrôle visuel de la longueur d'emmanchement, mentionnée sur le tableau 3, une marque peut être apposée sur le tube. Si le tube n'est pas emmanché correctement et a uniquement passé l'anneau de retenue, cela provoquera une fuite qui sera détectable par un sifflement sonore. Selon la taille et l'accessibilité du tube celui-ci peut être repoussé jusqu'en butée pour une parfaite étanchéité.

Il est recommandé d'utiliser un tube de diamètre  $\leq 12 \times 1,5$  pour une connexion entre essieu et châssis.

Für eine visuelle Kontrolle kann die Einstecklänge gemäß Tabelle 3 auf den Rohren gekennzeichnet werden. Wenn das Rohr nicht korrekt gesteckt ist, es wurde lediglich der Klemmring passiert, tritt eine messbare, kontrollierte Leckage auf. Ein Pfeifton ist hörbar zur Lokalisierung. In Abhängigkeit von Rohr-abmessung kann es unter Druck nachgesteckt werden.

Für Verbindungen Rahmen – Achse ist die Verwendung von Rohrabmessungen  $\leq 12 \times 1,5$  empfohlen.

A discrezione del Cliente, è possibile marcare i tubi per un ulteriore controllo visivo dell'innesto. La lunghezza d'innesto è indicata nella Tabella 3. Qualora il tubo non sia stato innestato correttamente, superando solamente la tenuta meccanica (Fase 2 sopra), si udirà il sibilo di una modesta perdita d'aria. In taluni casi e secondo la misura, il montaggio del tubo potrà essere completato anche in pressione.

Per collegamenti tra telaio e ponte è consigliabile l'impiego di tubazioni  $\leq 12 \times 1,5$ .

TABLE 3 // TABLEAU 3 // TABELLE 3 // TABELLA 3

TUBE TUBE ROHR TUBO	PUSH-IN LENGTH LONGUEUR D'EMMANCHEMENT EINSTECKLÄNGE LUNGHEZZA DI INNESTO	MAX. PUSH-IN FORCE* FORCE D'EMMANCHEMENT* MAX. EINSTECKKRAFT* FORZA D'INNESTO*
4x1	17,2 mm (0,72 in)	70 N (15,7 lbf)
6x1	19,5 mm (0,77 in)	80 N (18,0 lbf)
8x1	20,5 mm (0,81 in)	90 N (20,2 lbf)
10x1; x1,25; x1,5	24,0 mm (0,94 in)	100 N (21,5 lbf)
12x1,5	25,0 mm (0,98 in)	110 N (24,7 lbf)
14x2	25,0 mm (0,98 in)	120 N (27,0 lbf)
15x1,5	27,0 mm (1,06 in)	125 N (28,1 lbf)
16x2	27,0 mm (1,06 in)	130 N (29,2 lbf)
18x2	27,0 mm (1,06 in)	130 N (29,2 lbf)
1/8"	19,5 mm	80 N (18,0 lbf)
3/8"	23,5 mm	100 N (21,5 lbf)
1/2"	25,5 mm	110 N (24,7 lbf)
5/8"	27,5 mm	130 N (29,2 lbf)
3/4"	27,5 mm	130 N (29,2 lbf)

4) Tube diameter, tolerances, ovality and cutting quality may affect the Push-In force

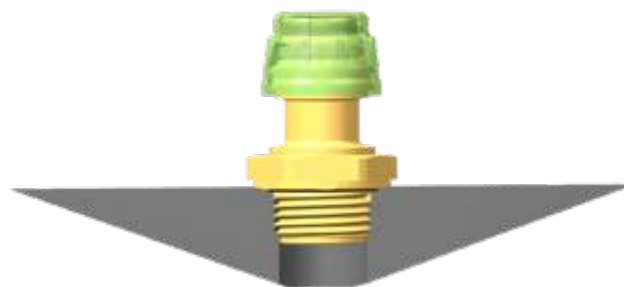
4) Rohrdurchmesser, Toleranzen, Qualität und Schnittqualität können die Einsteckkräfte beeinflussen.

4) Diamètre du tube, tolérances, rondeur et qualité de coupe peuvent influencer la force d'emmanchement.

4) Il diametro, le tolleranze, l'ovalizzazione del tubo e la qualità del taglio possono influire sulla forza d'innesto.

**ASSEMBLY OF THE ABC™  
BUILDING BLOCK SYSTEM**  
ASSEMBLY INSTRUCTIONS

**ASSEMBLAGE DES PIÈCES DE  
FORME DU SYSTÈME ABC™**  
INSTRUCTIONS DE MONTAGE



It is not allowed to mix the Raufoss ABC Building Block system with similar systems produced by other manufacturers.

The swivel should be mounted with the recommended torque (equal as for ABC Push-In). Remove the protection cap after mounting, directly before assembling the Building Block.

Il n'est pas permis de mélanger les pièces de forme Raufoss ABC avec des composants d'une autre marque.

Les embases filetées seront vissées selon les couples préconisés, les mêmes que pour les unions mâles ABC. Le capuchon de protection doit être enlevé juste avant utilisation.

Das ABC-Baukastensystem darf nicht mit ähnlichen Systemen anderer Hersteller gemischt werden.

Das Einschrauben des Stutzens erfolgt mit dem erforderlichen Drehmoment (siehe Steckverbindungen). Die Schutzkappe wird unmittelbar vor der Montage des Gegenstücks entfernt.

Non è consentito il montaggio dei raccordi del sistema ABC su raccordi di sistemi simili di altri produttori.

I raccordi girevoli devono essere montati rispettando le coppie di serraggio prescritte (medesime dei raccordi Newline). Montato il raccordo girevole, rimuovere il cappuccio subito prima del montaggio del raccordo multiplo.

**MONTAGE DES ABC™  
BAUKASTENSYSYSTEMS**  
MONTAGEHINWEISE

**MONTAGGIO DEL SISTEMA  
DI RACCORDI ABC™**  
ISTRUZIONI DI MONTAGGIO



The ABC Building Block system is a two step connection. The parts are pressed together by hand. The connecting swivel and Building Block can be turned for positioning.

When reaching the 1st step connection (safety), a controlled audible leakage will occur. Depending on the dimension and accessibility the connection can be re-pressed under pressure to seal the assembly.

Le système d'embases et de pièces de forme ABC est un système à assemblage en deux étapes. Les pièces sont assemblées entre elles à la main. Les embases et les pièces de formes peuvent être orientées après montage en fonction de la position désirée.

Lorsque la première étape de montage est atteinte (position de sécurité), une fuite sera audible par un sifflement. Si le diamètre du tube et l'accessibilité du raccord le permettent, il est possible de repousser le raccord sous pression pour étanchéifier l'assemblage.

Das ABC Baukastensystem hat eine zweistufige Verbindung. Die Teile werden von Hand zusammengefügt. Die Verbindung Anschlussstutzen und Baukastenteil ist drehbar zur Positionierung.

Wenn lediglich die erste Verriegelungsstufe (Sicherungsstufe) erreicht wird, tritt eine kontrollierte, leicht hörbare Leckage auf, die durch nachdrücken der Verbindung problemlos behoben werden kann.

Il sistema di innesto dei raccordi multipli ABC si esegue a mano e prevede 2 scatti: posizione di sicurezza e posizione di aggancio. Quando si ode il primo scatto, posizione di sicurezza, il montaggio del raccordo multiplo è incompleto in quanto è trattenuto solo meccanicamente e non pneumaticamente. Esso rilascerà una limitata e controllabile perdita d'aria non appena l'impianto verrà messo in pressione. Talvolta è possibile completare il montaggio raggiungendo il secondo scatto anche con l'impianto in pressione.

**IMPORTANT RECOMMENDATIONS**

- DON'T USE THE ABC BUILDING BLOCK
- > IN COMBINATION WITH "RUBBER" HOSES
- > BETWEEN TRUCK AND TRAILER

FOR ALL ABC BUILDING BLOCK SYSTEM CONNECTIONS BETWEEN AXLE AND CHASSIS THE ABC-BUILDING BLOCK HAS TO BE FIXED AGAINST THE SWIVEL BY USING A ROTOLock; A PROPER TUBE ROUTING IS REQUESTED.

**WICHTIGER HINWEIS**

- VERWENDEN SIE DAS ABC-BAUKASTENSYSYSTEM NICHT:
- > IN KOMBINATION MIT GUMMI-SCHLÄUCHEN
- > ZWISCHEN LKW UND ANHÄNGER

BEI DER VERWENDUNG DES ABC >BAUKASTENSYSYSTEMS ACHSE UND RAHMEN MUSS DAS ABC-BAUKASTENTEIL MIT EINEM ROTOLock GEGENÜBER DEM ABC-STUTZEN GESICHERT WERDEN. EINE ANGEPASSTE LEITUNGSFÜHRUNG IST SICHERZUSTELLEN.

**RECOMMANDATIONS IMPORTANTES**

- NE PAS UTILISER LE SYSTÈME DE PIÈCES DE FORMES ET D'UNIONS ABC
- > POUR CONNECTER DU TUBE CAOUTCHOUC
- > ENTRE LE TRACTEUR ET LA REMORQUE

POUR TOUTE CONNEXION DU SYSTÈME DE PIÈCES DE FORMES ET D'UNIONS ABC ENTRE CHÂSSIS ET ESSIEUX L'ORIENTATION DU TUBE DOIT ÊTRE OBLIGATOIREMENT FIGÉE AU MOYEN D'UN ROTOLock BLOQUANT LES EMBASES EN ROTATION. UN CHEMINEMENT ADÉQUAT DU TUBE EST REQUIS.

**RACCOMANDAZIONI IMPORTANTI:**

- NON UTILIZZARE IL SISTEMA ABC™ BUILDING BLOCK
- > IN COMBINAZIONE CON TUBI "IN GOMMA"
- > TRA AUTOCARRO E RIMORCHIO

PER TUTTI I COLLEGAMENTI DEL SISTEMA ABC BUILDING BLOCK TRA L'ASSE E IL TELAIO L'ABC BUILDING BLOCK DEVE ESSERE FISSATO CONTRO LA PARTE GIREVOLE UTILIZZANDO UN ROTOLock; È RICHIESTO UN CORRETTO POSIZIONAMENTO DEI TUBI.



## REPAIR INSTRUCTIONS GENERAL INFO

### CONSEILS POUR LA RÉPARATION

Please read the following instructions for your personal safety and the safe use of the couplings as a part of the brake system to avoid loss of brake function.

Only original Raufoss ABC Release tools shall be used when releasing tubes from Raufoss ABC Couplings. Use of other methods, tools or equipment than those stated in this manual is considered misuse of the products and will void any product warranty. KA does not take responsibility for any subsequent failures as a result of misuse or misapplication of the products.

When using the Raufoss ABC system, the exchange of valves, air reservoirs, air bellows etc. can be performed without any problem.

Before starting to work on the couplings:

- Remove air pressure completely out of the pneumatic system, to be able to release the tubing / couplings.
- Remove cable ties close to ABC-coupling. Tube / ABC-coupling block must be accessible, and tube as straight as possible
- Clean
  - » The Push-In area around the tube
  - » The locking area of the Building Block.
  - » Make sure that no dirt or contamination will be pushed into the tube, the coupling or the valve port

Merci de prendre connaissance des instructions suivantes, pour votre sécurité personnelle et l'utilisation en toute sécurité des raccords comme éléments du système de freinage, afin d'éviter toute perte de la fonction de freinage.

Seuls les outils de démontage originaux Raufoss ABC sont autorisés pour retirer les tubes des raccords Raufoss ABC. L'utilisation de toutes autres méthodes, outils ou équipements sera considérée comme utilisation inappropriée des produits et annulera toute garantie sur les produits. KA décline toute responsabilité en cas de défauts, de dommages, ou d'accidents liés à une mauvaise utilisation ou à une application inappropriée des produits.

Avec le système Raufoss ABC l'échange de valves, réservoirs, coussin d'air peut se faire sans problème.

Avant toute intervention sur les raccords:

- Dépressuriser complètement le système pneumatique, afin de pouvoir retirer les tubes/ raccords.
- Enlever les colliers de serrage à proximité du raccord, le tube doit être accessible et aussi droit que possible.
- Nettoyer
  - » La zone Push-In autour du tube
  - » La zone d'encliquetage des pièces de forme
  - » S'assurer qu'aucune impureté ne puisse s'introduire dans le tube, dans le raccord ou dans le filetage

## REPARATUR HINWEISE ALLGEMEINE HINWEISE

### ISTRUZIONI PER LA SOSTITUZIONE

Bitte lesen Sie die folgenden Anweisungen zu Ihrer persönlichen Sicherheit und zur sicheren Verwendung der des ABC- Verschraubungssystem als Teil des Bremssystems, um einen Ausfall der Bremse zu vermeiden.

Es dürfen nur KA-Raufoss Originalwerkzeuge zur Demontage von Rohren aus den ABC-Verschraubungen verwendet werden. Die Verwendung anderer, als der in diesem Handbuch angegebenen Methoden, Werkzeuge oder Geräte gelten als Produkt- Missbrauch und führt zum Erlöschen jeglicher Garantien. KA übernimmt keine Verantwortung für spätere Ausfälle aufgrund von Missbrauch oder falscher Anwendung der Produkte.

Bei Verwendung des Raufoss ABC Systems, ist der Austausch von Ventilen, Luftbehältern, Luftfederbälge problemlos möglich.

Bevor Sie mit den Arbeiten beginnen:

- Entlüften Sie Druckluftanlage vollständig, um das Rohr / Baukastenteil lösen zu können.
- Entfernen Sie der Kabelbinder nahe der Verschraubung, Rohr muss frei zugänglich, so gerade wie möglich, sein.
- Reinigen Sie
  - » Den Push-In Bereich
  - » Das ABC -Baukastenteil im Bereiche der Verriegelung
  - » Stellen Sie sicher, das kein Dreck oder Kontamination ins Rohr, in die Verschraubung oder in gas Gewinde gelangt

Leggere le seguenti istruzioni per la sicurezza personale e l'uso sicuro dei raccordi, come parte del sistema frenante, per evitare di perdere la funzione del freno.

Per il rilascio dei tubi dai raccordi Raufoss ABC devono essere utilizzati solo attrezzi originali Raufoss ABC Release. L'uso di metodi, strumenti o apparecchiature diversi da quelli indicati in questo manuale è considerato un uso improprio dei prodotti e invaliderà la garanzia del prodotto. KA non si assume alcuna responsabilità per eventuali guasti che avvengono a seguito di un uso improprio o di un'errata applicazione dei prodotti.

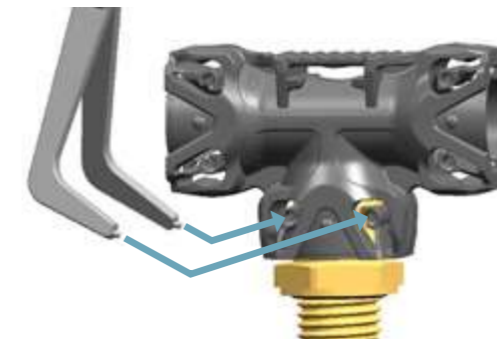
Con l'impiego del sistema Raufoss ABC, è possibile sostituire valvole, serbatoi, ecc, semplicemente smontando il tubo dal raccordo.

Prima di effettuare questa operazione:

- Scaricare completamente l'impianto pneumatico
- Garantire il miglior accesso possibile al tubo rimuovendo eventuali fascette o altro
- Rulire
  - » L'imboccatura del tubo
  - » L'area di innesto dei raccordi multipli
  - » Assicurarsi che nessuna impurità venga spinta all'interno del tubo, del raccordo, della sede valvola.

## REPAIR INSTRUCTIONS RELEASE OF BUILDING BLOCK

### INSTRUCTION POUR LE DÉMONTAGE DES COMPOSANTS ABC



The ABC Building Block system can be disconnected with a standard circlip plier<sup>1</sup>. The parts are reusable.

Please check before reassembly if the "snap arms" and sealing area are without any damage.

After re-assembly the operator needs to check that the Swivel/ Building block connection is still fixed in the main position and has to perform a leakage test. In case of damages or leakages the couplings have to be exchanged.

Le système de pièces de formes et raccords ABC peut être démonté à l'aide d'une pince à circlips ordinaire<sup>1</sup>. Les pièces sont réutilisables.

Merci de vérifier avant remontage si les bras de fixation des pièces de forme et la zone d'étanchéité ne sont pas endommagés.

Après remontage l'opérateur devra vérifier que la jonction embase/pièce de forme est bien fixée solidement dans la position de sécurité, et devra effectuer un test d'étanchéité. Dans le cas de fuite ou si les pièces sont abîmées, il faudra les remplacer.

1) Pliers with thin tips are to prefer; i.ex. Knipex 46 21 A2 or 46 11 A2.

1)De préférence des pinces avec des pointes fines p.ex Knipex 46 21 A2 or 46 11 A2.

## HINWEISE FÜR DIE BAUKASTEN DEMONTAGE

### ISTRUZIONI PER LO SMONTAGGIO DEL RACCORDO MULTIPLO



Die ABC Baukastenteile können mit einer Standard Seegerringzange<sup>1</sup> demontiert werden. Die Teile sind wiederverwendbar.

Bitte prüfen Sie vor Wiedermontage ob die „Verriegelungsarme“ und die Dichtflächen ohne Beschädigung sind.

Nach der Wiedermontage müssen Sie den korrekten Sitz der Bauteile überprüfen und einen Leckagetest durchführen. Im Fall von Beschädigungen oder Leckagen müssen die Teile ausgetauscht werden.

I raccordi multipli del sistema ABC possono essere smontati utilizzando una pinza standard per seeger<sup>1</sup>. Le parti sono riutilizzabili.

Si prega di controllare prima del rimontaggio che i "bracci a scatto" e l'area di tenuta non siano danneggiati.

Dopo il riassemblaggio, l'operatore deve controllare che la connessione tra raccordo Swivel/Building block sia ancora fissata nella posizione principale e deve eseguire una prova di tenuta. In caso di danni o perdite, i raccordi devono essere sostituiti.

1)Seegerringzange z.B Knipex 46 21 A2 oder 46 11 A2.

1)Consigliamo le pinze Knipex 4621 A2 oppure 4611 A2.

## REPAIR INSTRUCTIONS HANDLING OF ABC TUBE RELEASE TOOL

### CONSEILS POUR LA RÉPARATION MANIPULATION DE L'OUTIL DE DÉCONNEXION ABC DES TUBES

Only use original release tools delivered by KA. Never push any other parts or equipment into the coupling.

Utiliser uniquement les outils de démontage originaux fournis par KA. Ne jamais insérer d'autres pièces ou équipements dans les raccords.



1



2/3/4



5/6

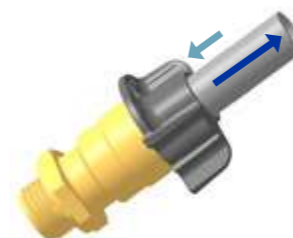
- 1. Check that the Release Tool is not damaged or blunt. If so, then replace it.**  
Vérifier que l'outil de déconnexion n'est pas endommagé. Il faut le remplacer le cas échéant.  
Prüfen, ob das Lösewerkzeug unbeschädigt ist, gegebenenfalls ersetzen.  
Verificare l'integrità dell'utensile. Sostituirlo se danneggiato.
- 2. Push the tube to the bottom of the coupling to move the grip ring out of locking position.**  
Pousser le tube au fond du raccord pour décoller l'anneau de retenue de tube.  
Drücken Sie das Rohr bis zum Anschlag in die Verschraubung zum lösen des Klemmrings.  
Ruotandolo, premere il tubo verso il raccordo.
- 3. Apply Release Tool onto tube.**  
Le disposer sur le tube en l'enveloppant étroitement.  
Stülpen des Lösewerkzeuges über das Rohr.  
Dilatate l'utensile premendo sulle apposite alette.
- 4. Ensure tight contact between Release Tool and tube.**  
Assurer un bon contact entre l'outil de déconnexion et le tube.  
Stellen sie Kontakt zwischen Lösewerkzeug und Rohr sicher.  
Calzare l'utensile sul tubo (lato sottile verso il raccordo) assicurandosi che esso sia aderente al tubo.
- 5. Push the Release tool into the coupling. Avoid using excessive force or rotation, while sliding the Release Tool down the tube. Make sure the flange of the Release Tool stops against the top of the coupling.**  
Pousser l'outil jusqu'à ce que la collerette touche le haut du raccord, sans force excessive.  
Drücken des Lösewerkzeugs in die Verschraubung, Vermeiden sie große Kraft oder Drehbewegungen beim hineindrücken. Stellen sie sicher, dass das Lösewerkzeug auf der Verschraubung aufliegt.  
Spingere l'utensile all'interno del raccordo. Non sforzare durante l'inserimento.
- 6. Silicone spray can be used to ease the injection of Release Tool.**  
Pour faciliter l'introduction de l'outil on peut pulvériser un peu de silicone.  
Silikonspray kann zum leichteren Einführen des Lösewerkzeuges verwendet werden.  
Può essere usato spray al silicone per facilitare l'operazione.

## REPARATUR HINWEISE HANDHABUNG DES ABC ROHR DEMONTAGE WERKZEUG

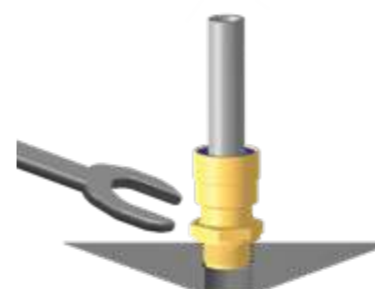
### ISTRUZIONI PER LA SOSTITUZIONE USO DELL'UTENSILE DI SGANCIO DEL TUBO

Es dürfen nur "Original-Lösewerkzeuge" von KA verwendet werden. Stecken sie niemals irgendwelche andere Teile oder in die Verschraubung.

Utilizzare solo strumenti di rilascio originali forniti da KA. Non inserire mai altre parti o apparecchiature nel giunto.



7/8



- 7. While pushing the Release Tool towards the coupling; pull the tube out. Rotating (a few degrees) the tube may ease the release.**  
Tenir l'outil de déconnexion et retirer le tube en le tournant légèrement.  
Drücken sie das Lösewerkzeug fest gegen die Verschraubung und ziehen das Rohr (eventuell leichtes drehen, wenige Grad) aus der Verschraubung.  
Mantenendo premuto l'utensile all'interno del raccordo, estrarre il tubo.
- 8. Remove the Release Tool.**  
Enlever l'outil de déconnexion.  
Entfernen das Lösewerkzeuges.  
Estrarre l'utensile.
- 9. Assure that tube end is clean and undamaged. If not cut the tube end.**  
Vérifier que le tube est propre et en bon état, dans le cas contraire il convient de couper le bout du tube.  
Prüfen, ob das Rohr sauber und unbeschädigt ist, wenn nicht Rohrende abschneiden.  
Prima di reinserire il tubo nel raccordo, verificare che esso sia pulito e non danneggiato. Eventualmente tagliare l'estremità danneggiata.
- 10. Visually inspect the tube Push-In section of the coupling for any contamination. Ensure no contamination is coming into the air flow, or on the O-ring seals of the coupling. Kongsberg Automotive does not take any responsibility for consequences of such contamination or damages caused by contamination.**  
Inspecter visuellement la section Push-In du raccord pour vérifier la présence éventuelle de contamination. S'assurer qu'aucune contamination ne se trouve dans le flux d'air ou sur les joints toriques du raccord. Kongsberg Automotive décline toute responsabilité quant aux conséquences d'une telle contamination ou de dommages causés par le non retrait des contaminations présentes.  
Überprüfen Sie den Push-In Bereich der Verschraubung auf eventuelle Verunreinigungen. Stellen Sie sicher, dass keine Verunreinigungen im Luftstrom oder auf den O-Ring-Dichtungen sich befindet. Kongsberg Automotive übernimmt keine Verantwortung für die Folgen von solcher Verunreinigungen oder Schäden verursacht durch Verunreinigungen.  
Prima del montaggio del tubo, controllare visivamente che l'imboccatura sia del tubo che del raccordo siano pulite e prive di impurità. Kongsberg Automotive non è responsabile per le conseguenze generate dalla presenza di impurità all'interno dell'impianto pneumatico.
- 11. Push-In the clean tube.**  
Emmancher le tube propre.  
Stecken des sauberen Rohres.  
Inserire il tubo applicando una leggera rotazione.
- 12. Perform a leakage test. In case of leakages please exchange the couplings.**  
Réaliser un test d'étanchéité. En cas de fuite les raccords doivent être remplacés.  
Führen Sie ein Leckagetest durch. Im Leckagefall tauschen sie die Verschraubung aus.  
Effettuare una prova di tenuta in pressione. In caso di perdita d'aria, sostituire il raccordo.

In cases where ABC Release tool is not available, the connection can be released together with the tube. Please unscrew with a standard wrench. The Push-In coupling is turning on the tube.

Sans outil de déconnexion, il reste possible de dévisser le raccord connecté au tube en utilisant une clé standard. Les unions mâles sont en libre rotation sur les tubes.

Sollte das ABC Release Tool nicht zur Verfügung stehen, kann die Verschraubung mit dem Rohr zusammen aus dem Anschluss geschraubt werden. Die Steckverbindung dreht sich um dem Rohr.

Qualora non sia disponibile l'utensile specifico per lo sgancio del tubo, è possibile svitare il raccordo con il tubo montato. Il raccordo ruoterà sul tubo.

# RAUFOSS COUPLINGS® HISTORY

**1896**  
PRODUCTION  
OF AMMUNITION  
ESTABLISHED  
AT RAUFOSS, NORWAY

1900



1950

**1978**  
PRODUCTION OF  
CONVENTIONAL  
COUPLINGS INITIATED



2000

**2002**  
R&D PROGRAM FOR  
COMPOSITE COUPLINGS  
ESTABLISHED



**2007**  
FIRST BATCH DELIVERY  
OF RAUFOSS ABC™  
COUPLINGS SYSTEM



1920



**1920**  
INITIAL CAR  
PRODUCTION



**1957**  
COMMERCIAL VEHICLE  
BUSINESS ESTABLISHED

1980



**1985**  
FIRST SERIAL  
DELIVERY OF  
BRASS PUSH-IN  
COUPLINGS



**2004**  
RAUFOSS COUPLINGS®  
ACQUIRED BY KONGSBERG  
AUTOMOTIVE



**PRODUCT  
DEVELOPMENT**

**2008**  
THREADLESS



**2006**  
NEWLINE™



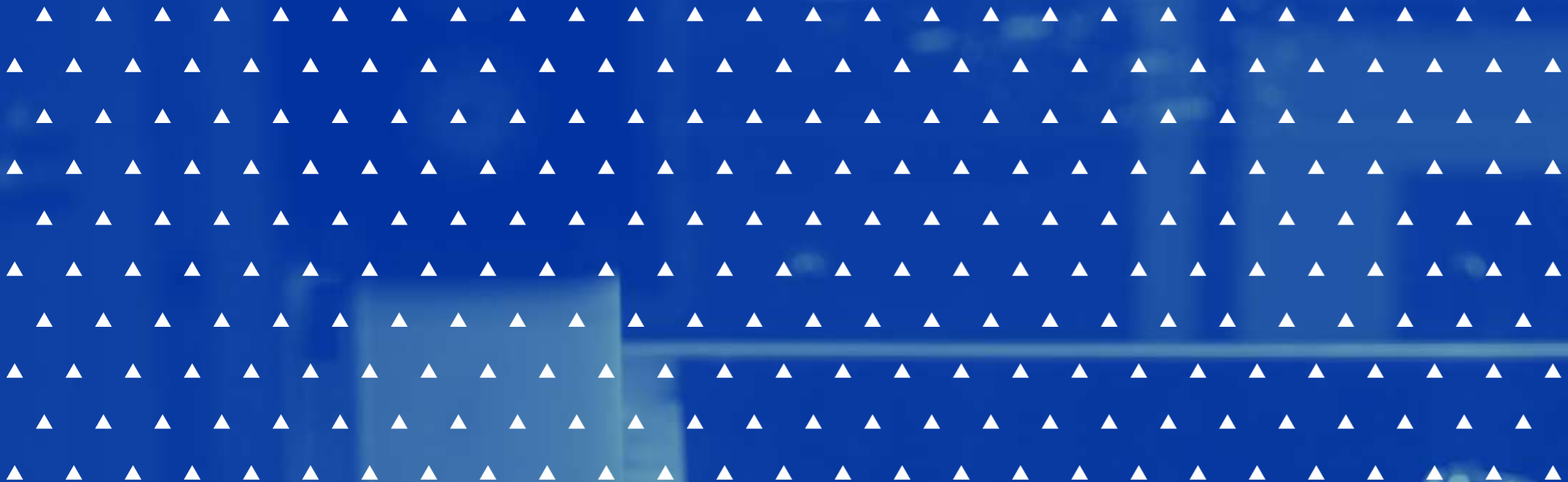
**2008**  
KARTRIDGE



2010



**2015**  
WEIGHT  
REDUCTION



**CROSS  
REFERENCE**



**BRK / NEWLINE™ + THREADLESS PUSH-IN**



BRK	T	D	NEWLINE™ ABC-SYSTEM	THREADLESS
6237185	4x1	1/8NPTF	stopped	
6237190	4x1	M10x1	91104010	
6237192	4x1	M12x1,5	91104012	90204004 small 90204005 regular
6237197	4x1	M22x1,5	stopped	
6237201	6x1	1/8NPTF	90106049	
6237203	6x1	1/4NPTF	90106050	
6237210	6x1	M10x1	90106010	
6237212	6x1	M12x1,5	90106012	90206004 small
6237214	6x1	M14x1,5	90106014	
6237216	6x1	M16x1,5	90106016	90206005 regular
6237217	6x1	M22x1,5	90106022	
6237223	8x1	1/4NPTF	90108050	
6237233	8x1	3/8NPTF	90108051	
6237230	8x1	M10x1	90108010	
6237232	8x1	M12x1,5	90108012	90208004 small
6237234	8x1	M14x1,5	90108014	
6237236	8x1	M16x1,5	90108016	90208005 regular
6237237	8x1	M22x1,5	90108022	
6237262	9x1,5	M12x1,5	stopped	
6237300	10x1	M10x1	90110010	
6237302	10x1	M12x1,5	90110012	
6237304	10x1	M14x1,5	90110014	
6237306	10x1	M16x1,5	90110016	90210005 regular
6237307	10x1	M22x1,5	90110022	
6237318	10x1,25	G 1/4	90110160	
6237311	10x1,25	R 1/4"	stopped	
6237322	10x1,25	R 3/8"	stopped	
	10x1,25	M10x1	90110110	
6237312	10x1,25	M12x1,5	90110112	
6237314	10x1,25	M14x1,5	90110114	
6237316	10x1,25	M16x1,5	90110116	90210105 regular
6237317	10x1,25	M22x1,5	90110122	
6237323	10x1,5	1/4NPTF	stopped	
6237330	10x1,5	M10x1	90110210	
6237332	10x1,5	M12x1,5	90110212	
6237334	10x1,5	M14x1,5	90110214	
6237336	10x1,5	M16x1,5	90110216	90210205 regular
6237337	10x1,5	M22x1,5	90110222	
6237356	11x1,5	M16x1,5	stopped	
6237363	12x1,5	1/4NPTF	90112050	
6237370	12x1,5	M10x1	90112010	

BRK	T	D	NEWLINE™ ABC-SYSTEM	THREADLESS
6237372	12x1,5	M12x1,5	90112012	
6237374	12x1,5	M14x1,5	90112014	
6237376	12x1,5	M16x1,5	90112016	90212005 regular 90212006 heavy duty
6237377	12x1,5	M22x1,5	90112022	
6237412	15x1,5	R1/2"		
6237444	15x1,5	M14x1,5	90115014	
6237446	15x1,5	M16x1,5	90115016	90215006 heavy duty
6237447	15x1,5	M22x1,5	90115022	
6237451	15x1,5	M26x1,5	90115026	
6237448	15x2	M16x1,5	stopped	
6237449	15x2	M22x1,5	stopped	
6237452	16x2	M12x1,5	90116012	
6237454	16x2	M14x1,5	90116014	
6237456	16x2	M16x1,5	90116016	90216006 heavy duty
6237457	16x2	M22x1,5	90116022	
6237468	16x2	M26x1,5	90116026	
6237476	18x2	M16x1,5	no change	
6237477	18x2	M22x1,5	no change	
6237478	18x2	M26x1,5	no change	
6237110	1/4"	M10x1	90163510	
623 7112	1/4"	M12x1,5	90163512	90263504 small
623 7114	1/4"	M14x1,5	tbd	
623 7116	1/4"	M16x1,5	90163516	90263505 regular
623 7101	1/4"	1/8NPTF	90163549	
623 7102	1/4"	1/4NPTF	90163550	
623 7104	1/4"	1/8NPTF	90163551	
623 7130	3/8"	M10x1,0	90195310	
623 7132	3/8"	M12x1,5	90195312	
623 7134	3/8"	M14x1,5		
623 7136	3/8"	M16x1,5	90195316	90295305 regular
623 7122	3/8"	1/4NPTF	90195350	
623 7124	3/8"	3/8NPTF	90195351	
623 7125	3/8"	1/2NPTF	90195352	
623 7152	1/2"	M12x1,5	90112712	
623 7154	1/2"	M14x1,5		
623 7156	1/2"	M16x1,5	90112716	90212705 regular
623 7142	1/2"	1/4NPTF	90112750	
623 7144	1/2"	3/8NPTF	90112751	
623 7145	1/2"	1/2NPTF	90112752	
623 7176	5/8"	M16x1,5	90115916	90215906 heavy duty
623 7177	5/8"	M22x1,5	90115922	
623 7164	5/8"	3/8NPTF	90115951	
	5/8"	1/2NPTF	90115952	
623 7165	3/4"	M22x1,5	90119122	



BRK	T	ABC-SYSTEM
6237221	6x1	90506060 + 96210006
6237371	12x1,5	90512012 + 96210012



BRK	T	D1	ABC-SYSTEM
6237208	6x1	M18x1,5	90906118
6237246	8x1	M16x1,5	90908116
6237320	10x1,25	M16x1,5	stopped
6237321	10x1,25	M16x1,5	stopped



BRK	T	D1	ABC-SYSTEM
6237202	6x1	M12x1,5	90906212
6237224	8x1	M14x1,5	90908214
6237385	12x1,5	M18x1,5	stopped



BRK	T	ABC-SYSTEM
6237195	4x1	
6237205	6x1	90506006
6237225	8x1	90508008
6237265	9x1,5	stopped
6237305	10x1	90510010
6237315	10x1,25	90510110
6237325	10x1,5	90510210
6237355	11x1,5	stopped
6237365	12x1,5	90512012
6237445	15x1,5	90515015
6237465	16x2	90516016

BRK	T	ABC-SYSTEM
6237465	16x2	90516016
6237475	18x2	no change
6237115	1/4"	
6237135	3/8"	
6237155	1/2"	
6237175	5/8"	

### P5 / ABC BUILDING BLOCK SYSTEM



P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE
6237031	P 5	1/8 NPTF	93140049	small
			93150049	regular
6237032	P 5	1/4 NPTF	93140050	small
			93150050	regular
6237033	P 5	3/8 NPTF	93140051	small
			93150051	regular
			93160051	heavy duty
6237034	P 5	1/2 NPTF	93150052	regular
			93160052	heavy duty
6237020	P 5	G1/8"	93140059	small
			93150059	regular
6237021	P 5	G1/4"	93150060	regular
6237025	P 5	R1/4"	93150070	regular
6237026	P 5	R3/8"	93150071	regular
			93160071	heavy duty
6237027	P 5	R1/2"	93150072	regular
			93160072	heavy duty
6237010	P 5	M10x1,0	93140010	small
			93150010	regular
6237012	P 5	M12x1,5	93140012	small
			93150012	regular
6237014	P 5	M14x1,5	93140014	small
			93150014	regular
6237016	P 5	M16x1,5	93140016	small
			93150016	regular
			93160016	heavy duty
6237017	P 5	M22x1,5	93150022	regular
			93160022	heavy duty
	P 5	M26x1,5	93160026	heavy duty



P5 - SYSTEM	S	D1	D2	ABC SYSTEM	ABC SIZE
6237043	P5	M22x1,5	3/8NPTF	stopped	
6237036	P5	M22x1,5	M16x1,5	93351622	regular
		M28x1,5	M22x1,5	93362228	heavy duty



P5 - SYSTEM	S	D1	K	ABC SYSTEM	ABC SIZE
6237037	P5	M18x1,5	K24°-12	93352418	regular



P5 - SYSTEM	S	D1	D2	ABC SYSTEM	ABC SIZE
6237038	P5	M16x1,5	M22x1,5	93352216	regular
		M22x1,5	M22x1,5	93352222	regular



		D1	ABC SYSTEM	ABC SIZE
		M22x1,5	93352205	regular
		M22x1,5	93362206	heavy duty



BRK PUSH-IN	PORT OF PUSH-IN	ABC SYSTEM	ABC SIZE
6237192	4x1	90204004	small
6237192		90204005	regular
6237212	6x1	90206004	small
6237216		90206005	regular
6237232	8x1	90208004	small
6237236		90208005	regular
6237306	10x1,0	90210005	regular
6237316	10x1,25	90210105	regular
6237336	10x1,5	90210205	regular
6237376	12x1,5	90212005	regular
	8x1	90212006	heavy duty
6237446	15x1,5	90215006	heavy duty
6237449	15x2	stopped	
6237456	16x2	90216006	heavy duty
6237112	1/4"	90263504	small
6237116		90263505	regular
6237136	3/8"	90295305	regular
6237156	1/2"	90212716	regular
7237156	5/8"	90215916	heavy duty



P5 - SYSTEM	T	D	ABC SYSTEM	ABC SIZE
6236816	6x1	P5	90306004	small
6236826	8x1	P5	90308004	small
			90308005	regular
6236991	10x1	P5	90310005	regular
6236814	10x1,25	P5	90310105	regular
6236824	10x1,5	P5	90310205	regular
6236836	12x1,5	P5	90312205	regular
6236992	15x1,5	P5	90315006	heavy duty
6236993	15x2	P5	stopped	
6236840	16x2	P5	90316006	heavy duty
	1/4"		90363504	small
	3/8"		90395305	regular
	1/2"		90312716	regular
	5/8"		90315916	heavy duty



P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE
6237057	P 5	M22x1,5	stopped	



P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE
6236832	P 5	M16x1,5	92040045	small
			92050045	regular
			92060045	heavy duty



P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE
6236803	P 5	M12x1,5	92050090	regular
6236833	P 5	M16x1,5	92050090	regular
			92060090	heavy duty



P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE
6236845	P 5	M16x1,5	92040015	small
			92050015	regular
			92060015	heavy duty



P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE
6236804	P 5	M12x1,5	92040010	small
6236834	P 5	M16x1,5	92050010	regular
			92060010	heavy duty



P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE
6236805	P 5	M12x1,5	92040010	small
6236835	P 5	M16x1,5	92050010	regular
			92060010	heavy duty



	ABC SYSTEM	ABC SIZE
	92040030	small
	92050030	regular



P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE (3X)
6236846	P 5	M16x1,5	92040060	small
			92052060	regular
			92060060	heavy duty



P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE (4X)
6236838	P 5	M16x1,5	92050070	regular
			92060070	heavy duty



P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE (4X)
6236839	P 5	M16x1,6	92050061	regular
			92060061	heavy duty





P5 - SYSTEM	S	D	ABC SYSTEM	ABC SIZE (4X)
6236837	P5	M16x1,5	92050061	regular
			92060061	heavy duty

### P5 / ABC BUILDING BLOCK SYSTEM

PARTLY REPLACED, BRASS VERSION WILL CONTINUE

TEILWEISER ERSATZ, MESSINGVERSION BLEIBT LIEFERBAR



PARTIELLEMENT REMPLACÉ,  
LA VERSION LAITON VA CONTINUER  
PARZIALMENTE SOSTITUITO,  
LA VERSIONE IN OTTONE CONTINUERA



P5 - SYSTEM	D	ABC SYSTEM	ABC SIZE
6237776	M16x1,5	96050000	regular



P5 - SYSTEM INSIDE THREAD	D1	D2	ABC SYSTEM	ABC SIZE
6237823	M12x1,5	M12x1,5	92050090	regular
6237862	M16x1,5	M16x1,5	92050090	regular
6237865	M16x1,5	M18x1,5	92050090	regular
6237867	M22x1,5	M22x1,5	92060090	heavy duty



P5 - SYSTEM	D	ABC SYSTEM	ABC SIZE
6237825	M12x1,5	92040010	small
6237864	M16x1,5	92050010	regular
6237868	M22x1,5	92060010	heavy duty



P5 - SYSTEM	D	ABC SYSTEM	ABC SIZE
6237827	M 12 x 1,5	92050070	regular
6237828	M 16 x 1,5	92050070	regular



P5 - SYSTEM	D	ABC SYSTEM	ABC SIZE
6237863	M 16 x 1,5	92040024	small
		92050225	regular





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