

■ Pipe Couplings List

Direct Quick Connection Fitting
System
RAUFOSS

■ 1st Edition

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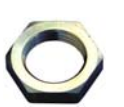



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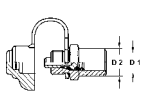








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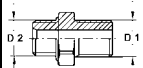

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Safety instructions

1. The RAUFOSS system was developed for compressed air circuits on commercial vehicles. The operating temperature is between -40° and +98°, in pressureless conditions up to +140° C (for a period of approx. 2 hours).
2. The operating pressure of the RAUFOSS Coupling System meets with the requirements for non metallic tubes.
3. If the depth of insertion is not adhered to, the brake may fail.

General information

The carefully developed and sophisticated RAUFOSS-System consists of the following elements:

- ♦ Push-in couplings
- ♦ Plug-ins P5
- ♦ Building-blocks for plug-ins P5
- ♦ Bulkhead couplings
- ♦ Accessories
- ♦ Hose Nipples

The RAUFOSS-System is used with polyamide or hytrel tubes to one of the following standards:

- ♦ ISO 7628 (Metric dimensions; international)
- ♦ DIN 74324
- ♦ DIN 73378 (Metric dimensions)
- ♦ SAE J1394 (Metric dimensions)
- ♦ NFR 12-632 (Metric dimensions)
- ♦ J844B
- ♦ SAE J844 (Imperial dimensions)

All parts manufactured from brass (CuZn39PB2/ CuZn39Pb3) in compliance with DIN 17600, unless otherwise specified.

The steel components are manufactured of 9SMnPb28 in compliance with DIN 1651 and yellow chromated according to ISO 4042 / A3C. The O-rings are manufactured from EPDM.

The RAUFOSS-System has been approved and certified by the following organisations:

TÜV
UTAC

The RAUFOSS quality system is approved according to the following international standards:

QS-9000
ISO 14001

For any further specific requirements, applications of our product or support for technical solutions, please ask for individual consultation from RAUFOSS subsidiaries or our distributors.

Installation instructions

Parallel Thread

The metric push-in couplings, plug-ins, locking nuts etc. are tightened directly into the thread (acc. DIN 3852, ISO 6149, ISO 4039-2) without further preparation. The required torque values according to table 1a.

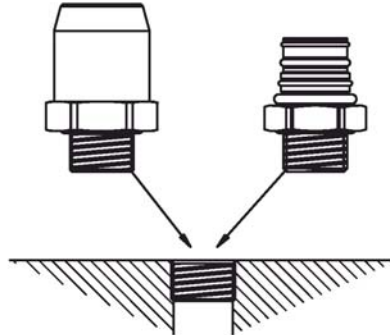


Tabelle 1a:

Thread	Max. torque **
G 1/4"	28 Nm
M 10 x 1.0	18 Nm
M 12 x 1.5	24 Nm
M 14 x 1.5	28 Nm
M 16 x 1.5	35 Nm
M 22 x 1.5	40 Nm

When using push-in couplings or plug-ins together with RAUFOSS bulkheads, the following reduced torque values (table 1b) are applicable:

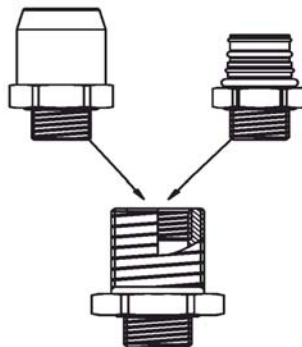
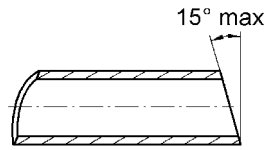


Tabelle 1b:

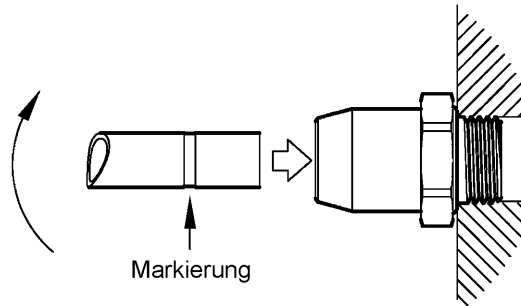
Thread	Max. torque **
M 10 x 1.0	12 Nm
M 12 x 1.5	16 Nm
M 16 x 1.5	24 Nm

** Please observe the max. torque of valve, air tank etc.

Tube assembly



The tube has to be cut at 90°. A maximum deviation of 15° is permissible.

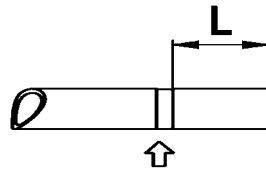


Assembly of the push-in couplings and the tube is performed manually without using a tool. Push-in is simplified by pushing and turning the tube at the same time. Positioning is accomplished in two distinct stages:

Stage 1: Passing the locking ring.

Stage 2: Reaching the position length (stop position at bottom of plug-in is felt)

The maximum required push-in forces are shown in table 2, approx. 2/3 of the given values in normal.



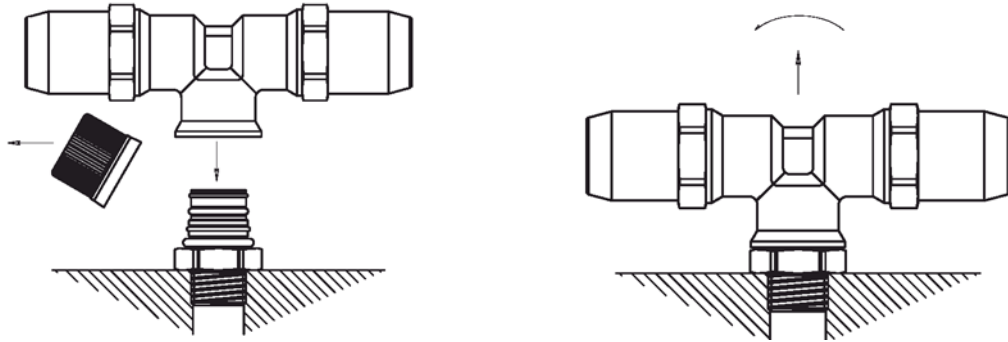
Marking the push-in length, mentioned in table 2, at the end of the tube is recommended for visual control.

Tabelle 2:

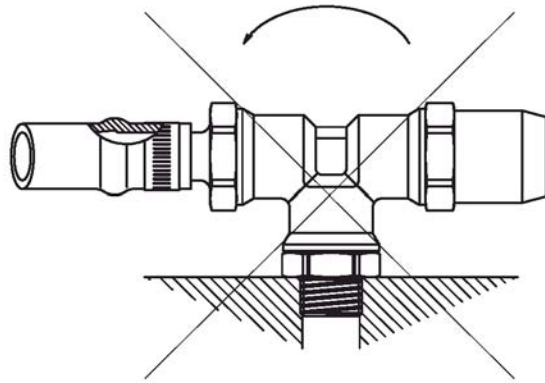
Ø External Tube	Push-in Length	Max. push-in force
4 mm	17.2 mm	70 N
6 mm	19.5 mm	80 N
8 mm	20.5 mm	90 N
10 mm	24.0 mm	100 N
12 mm	25.0 mm	110 N
15 mm	27.0 mm	125 N
16 mm	27.0 mm	130 N
18 mm	27.0 mm	130 N
25 mm	29.0 mm	150 N
1/8"	19.5 mm	80 N
3/8"	23.5 mm	100 N
1/2"	25.5 mm	110 N
5/8"	27.5 mm	130 N

Plug-in system P5 assembly

The P5 system cannot, and must not, be used with similar systems by other manufacturers.



The connection plug-in - building block forms a perfect junction that can be turned for positioning subsequent to assembly. Both parts are joined together manually. The plug-in is tightened with the required torque. The protective cap is only removed immediately before the counterpiece is mounted. If only the first locking position is reached, a controlled, slightly audible leakage is discharged. This leakage is stopped simply by pressing the connection in again.



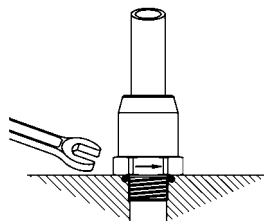
ATTENTION

The P5 connection must not be used:

- ♦ As part of the connection between the towing vehicle and the trailer vehicle (e.g. brake hose / brake coils)
- ♦ Between axle and chassis frame
- ♦ As rotary joint between valves

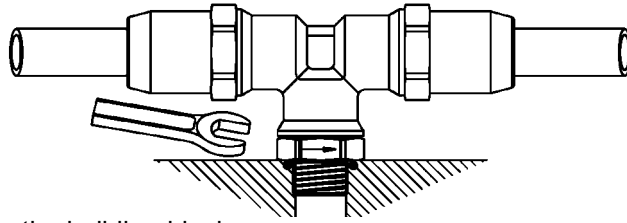
Repair notes

When using the Raufoss-System, the replacement of valves, air tanks, air bellows etc. can be performed without problems. Other than with cutting ring couplings, the couplings are here disconnected together with the tubes.



- ♦ The push-in coupling is turned out of the tube

Please check the the O-ring for proper contact with the thread sealing prior to assembly and replace if necessary.



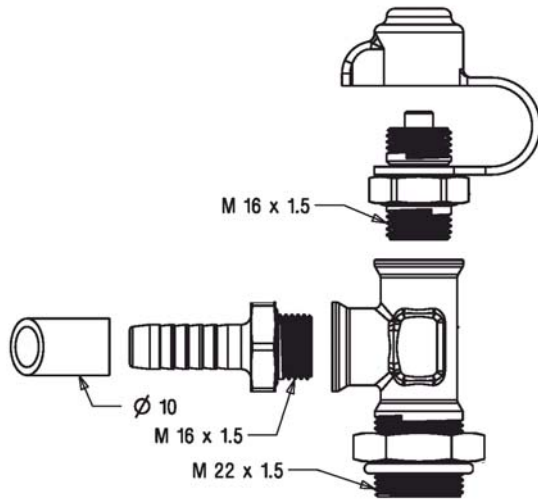
- ♦ The P5 plug-in turns in the building-block.

Please check the the O-ring for proper contact with the thread sealing prior to assembly and replace if necessary. If you are forced to re-use push-in couplings, e.g. during emergency repairs, please proceed as follows:

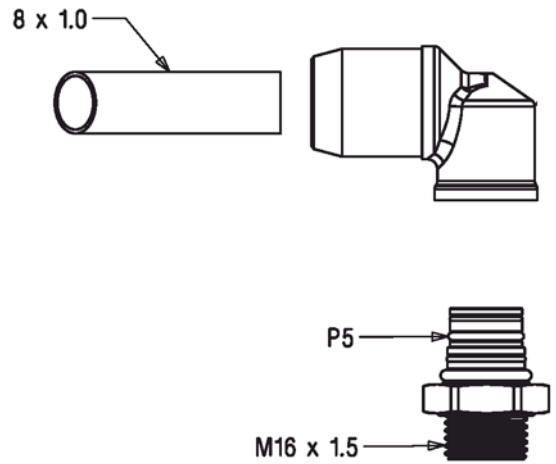
- ♦ Cut the PA-tube approx. 1 cm ahead of the push-in coupling.
- ♦ Dismantle the coupling using a pipe wrench and spanner.
- ♦ Carefully push the tube forward through the nut.
- ♦ Reassemble the two parts with same torque.
- ♦ Push a new PA -tube into the coupling.

Examples of installation

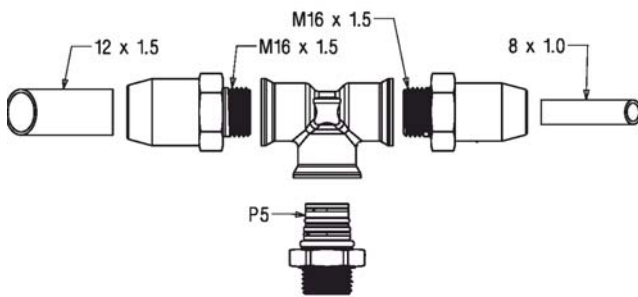
Reduction coupling



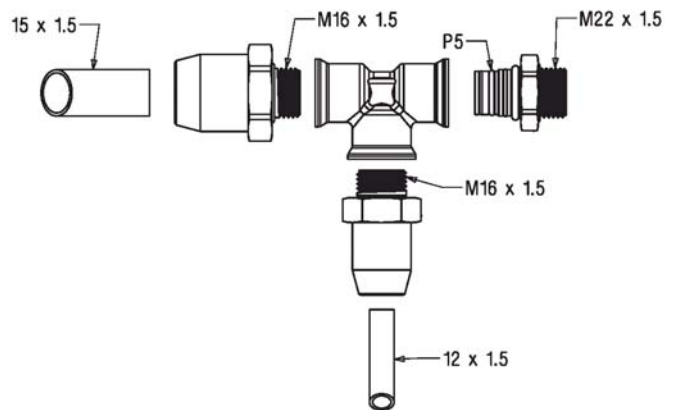
Rotary coupling



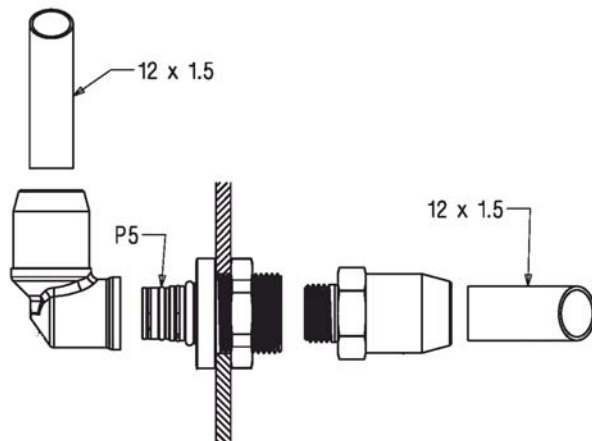
Rotary coupling unit "T"



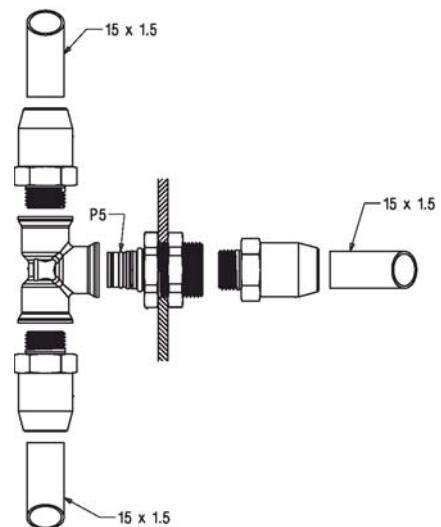
Rotary coupling unit "L"



Elbow bulkhead couplings, rotatable

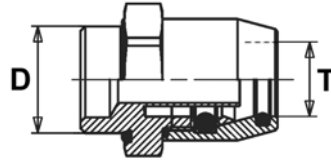


T-coupling for bulkhead, rotatable



Male Push-In Connector

Material Brass



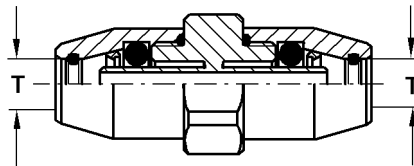
Order number	T Ø External Tube x wall thickness	D	Spanner width
893 803 035 0	6 x 1.0	M 10 x 1.0	16
893 803 022 0	6 x 1.0	M 12 x 1.5	18
893 803 980 0	6 x 1.0	M 14 x 1.5	20
893 803 023 0	6 x 1.0	M 16 x 1.5	22
893 803 024 0	6 x 1.0	M 22 x 1.5	28
893 803 036 0	8 x 1.0	1/4" - 18 NPTF*	18
893 803 025 0	8 x 1.0	M 10 x 1.0	18
893 803 950 0	8 x 1.0	M 12 x 1.5	18
893 803 026 0	8 x 1.0	M 14 x 1.5	20
893 803 960 0	8 x 1.0	M 16 x 1.5	22
893 803 970 0	8 x 1.0	M 22 x 1.5	28
893 803 982 0	10 x 1.0	M 12 x 1.5	20
893 803 892 0	10 x 1.0	M 14 x 1.5	20
893 803 880 0	10 x 1.0	M 16 x 1.5	22
893 803 891 0	10 x 1.25	G 1/4"	20
893 803 890 0	10 x 1.0	M 22 x 1.5	28
893 803 042 0	10 x 1.25	M 12 x 1.5	20
893 803 043 0	10 x 1.25	M 14 x 1.5	20
893 803 044 0	10 x 1.25	M 16 x 1.5	22
893 803 211 0	10 x 1.25	M 22 x 1.5	28
893 803 027 0	10 x 1.5	M 12 x 1.5	20
893 803 028 0	10 x 1.5	M 16 x 1.5	22
893 803 029 0	10 x 1.5	M 22 x 1.5	28
893 803 005 0	12 x 1.5	M 12 x 1.5	22
893 803 031 0	12 x 1.5	M 14 x 1.5	22
893 803 006 0	12 x 1.5	M 16 x 1.5	22
893 803 007 0	12 x 1.5	M 22 x 1.5	28
893 803 930 0	15 x 1.5	M 16 x 1.5	26

Order number	T Ø External Tube x wall thickness	D	Spanner width
893 803 971 0	15 x 1.5	M 22 x 1.5	28
893 803 990 0	15 x 1.5	M 26 x 1.5	32
893 803 032 0	15 x 2.0	M 16 x 1.5	26
893 803 033 0	15 x 2.0	M 22 x 1.5	28
893 803 011 0	16 x 2.0	M 16 x 1.5	26
893 803 012 0	16 x 2.0	M 22 x 1.5	28
893 803 983 0	18 x 2.0	M 16 x 1.5	28
893 803 013 0	18 x 2.0	M 22 x 1.5	28
893 803 989 0	18 x 2.0	M 26 x 1.5	32
893 770 056 0	1/2"	1/4 - 18 NPTF	22
893 770 061 0	1/2"	M 16 x 1.5	22

*Without O-ring sealing on thread

Pipe Coupling

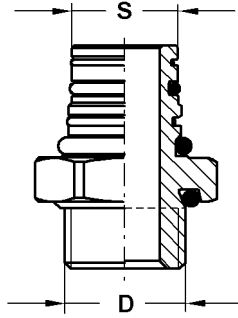
Material: Brass



Order number	T Ø External Tube x wall thickness
893 803 034 0	6 x 1.0
893 803 037 0	8 x 1.0
893 803 038 0	10 x 1.0
893 803 039 0	12 x 1.5
893 803 041 0	15 x 1.5

Screwed Socket with P5 Plug-In

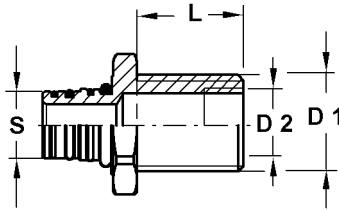
Material: Brass



Order number	S	D	Spanner width
893 129 191 2	P 5	M 12 x 1.5	18
893 820 887 2	P 5	M 14 x 1.5	20
893 129 192 2	P 5	M 16 x 1.5	22
893 129 193 2	P 5	M 22 x 1.5	28
893 129 453 2	P 5	1/4 - 18 NPTF	20
893 320 854 2	P 5	3/8 - 18 NPTF	20

Bulkhead with P5 Plug-In

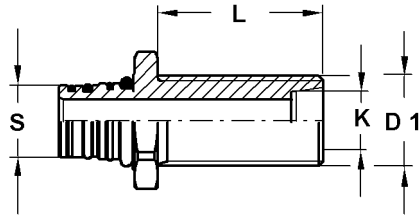
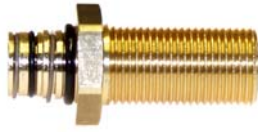
Material: Brass



Order number	S	D1	D2	L	Spanner width
893 129 196 2	P 5	M 22 x 1.5	M 16 x 1.5	24	28

Bulkhead with Cone and P5 Plug-In

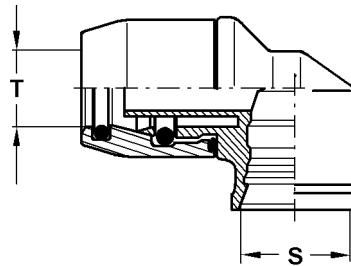
Material: Brass



Order number	S	D1	K	L	Spanner width
893 129 444 2	P5	M 18 x 1.5	K 24° -12	34	24

90° Push-In with Plug-In P5

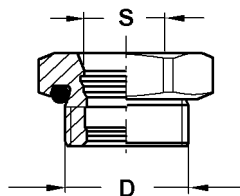
Material: Brass



Order number	Ø External Tube x wall thickness	S
893 803 981 0	6 x 1.0	P 5
893 831 177 0	8 x 1.0	P 5
893 831 178 0	10 x 1.0	P 5
893 831 501 0	10 x 1.25	P 5
893 401 002 0	10 x 1.5	P 5
893 831 182 0	12 x 1.5	P 5
893 831 181 0	15 x 1.5	P 5
893 831 183 0	16 x 2.0	P 5

Transfer Adapter with Plug-In P5

Material: Brass



Order number	S	D	Spanner width
893 803 981 2	P5	M 22 x 1.5	24

45° Elbow with Plug-In P5

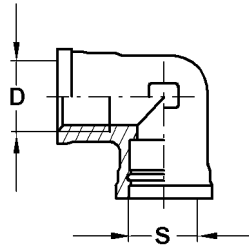
Material: Brass



Order number	S	D
893 401 797 4	P5	M 16 x 1.5

90° Elbow with Plug-In P5

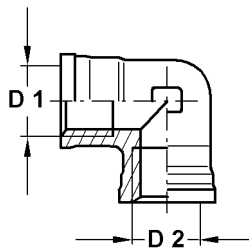
Material: Brass



Order number	S	D
893 401 827 2	P 5	M 12 x 1.5
893 401 015 2	P 5	M 16 x 1.5

90° Elbow

Material: Brass



Order number	D1	D2
893 401 011 4	M 12 x 1.5	M 12 x 1.5
893 401 012 4	M 16 x 1.5	M 16 x 1.5
893 401 013 4	M 22 x 1.5	M 22 x 1.5

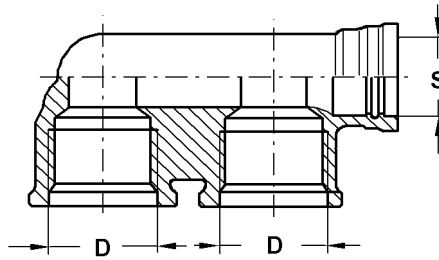
90° Elbow Combination



Order number	D	Ø External Tube x wall thickness
893 803 984 0	M 16 x 1.5	8 x 1.0
893 803 985 0	M 16 x 1.5	10 x 1.0
893 803 986 0	M 22 x 1.5	8 x 1.0
893 803 987 0	M 22 x 1.5	15 x 1.5

F-Union with Plug-In P5

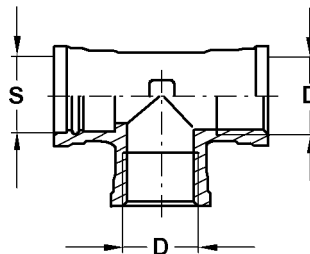
Material: Brass



Order number	S	D
893 401 818 4	P 5	M 16 x 1.5

L-union with plug-in P5

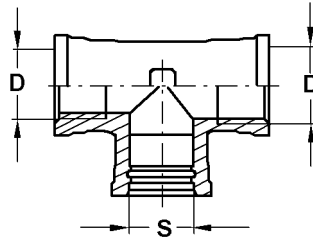
Material: Brass



Order number	S	D
893 501 193 4	P 5	M 12 x 1.5
893 501 194 4	P 5	M 16 x 1.5

T-Union with Plug-In P5

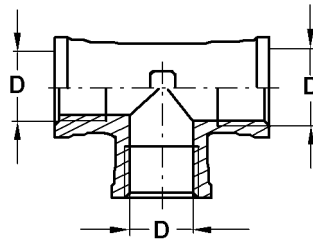
Material: Brass



Order number	S	D
893 501 195 4	P 5	M 12 x 1.5
893 501 196 4	P 5	M 16 x 1.5

T-Union

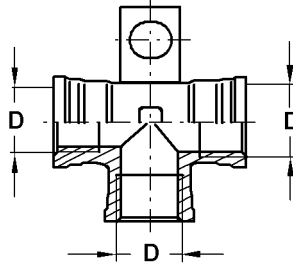
Material: Brass



Order number	D
893 501 005 4	M 12 x 1.5
893 501 191 4	M 16 x 1.5
893 501 197 4	M 22 x 1.5

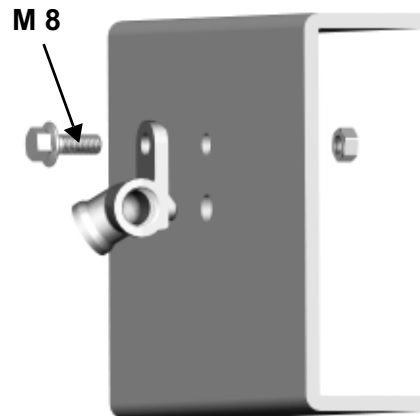
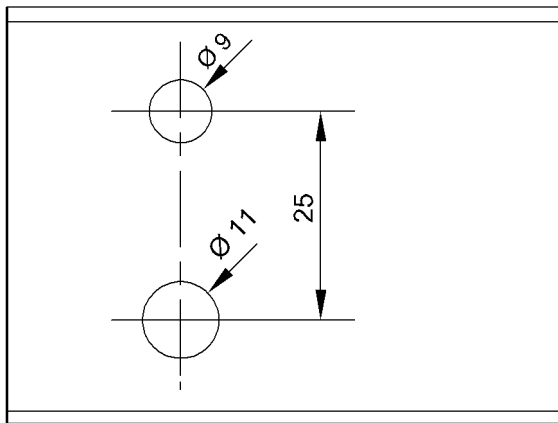
T-Union with Holder

Material: Brass



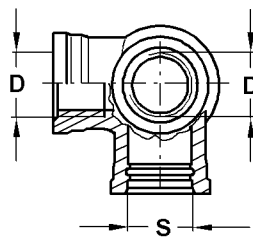
Order number	D
893 501 004 4	M 16 x 1.5

Hole dimension/ Assembly information



3-way block with plug-in P5 2 x thread

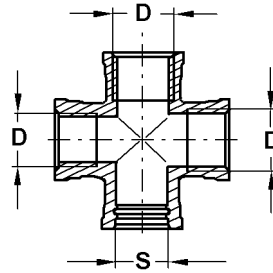
Material: Brass



Order number	S	D
893 401 294 4	P 5	M 16 x 1.5

4-Way Cross Block with Plug-In P5

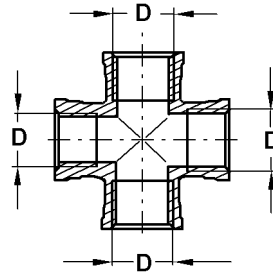
Material: Brass



Order number	S	D
893 550 001 4	P 5	M 16 x 1.5

4-Way Cross Block

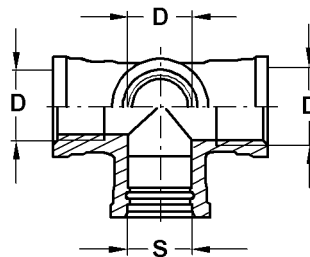
Material: Brass



Order number	D
893 550 101 4	M 16 x 1.5

4-way block "T" with plug-in P5 2 x thread

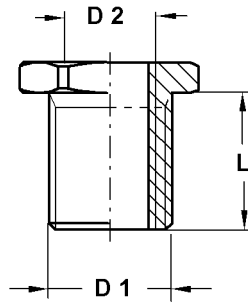
Material: Brass



Order number	S	D
893 550 002 4	P 5	M 16 x 1.5

Male/Female Reducing Stud with Bulkhead

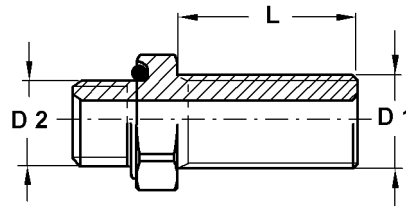
Material: Brass



Order number	D1	D2	L	Spanner width
893 104 057 4	M 16 x 1.5	M 10 x 1.0	20	22
893 104 058 4	M 22 x 1.5	M 16 x 1.5	24	28

Bulkhead with O-Ring

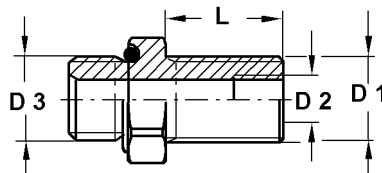
Material: brass



Order number	D1	D2	L	Spanner width
893 104 053 2	M 12 x 1.5	M 12 x 1.5	24	18
893 104 054 2	M 16 x 1.5	M 16 x 1.5	24	22
893 104 055 2	M 16 x 1.5	M 16 x 1.5	35	22
893 104 291 2	M 22 x 1.5	M 16 x 1.5	24	28

Bulkhead Male/ Female Stud with female thread and O-ring

Material: brass



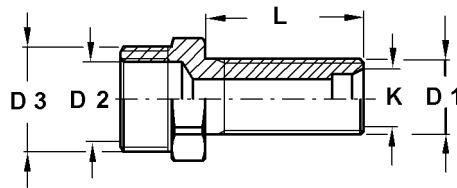
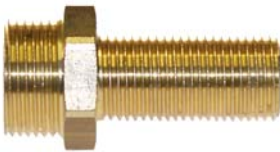
Order number	D1	D2	D3	L	Spanner width
893 104 292 2	M 22 x 1.5	M 16 x 1.5	M 16 x 1.5	24	28

Order number	D1	D2	D3	L	Spanner width
893 104 800 2	M 22 x 1.5	M 16 x 1.5	1/2" - 18 NPTF*	24	28
893 104 061 2	M 22 x 1.5	M 16 x 1.5	M 16 x 1.5	40	28
893 104 294 2	M 22 x 1.5	M 16 x 1.5	M 22 x 1.5	24	28
893 104 056 2	M 22 x 1.5	M 16 x 1.5	M 22 x 1.5	40	28

*Without O-ring seal on thread

Bulkhead with Cone

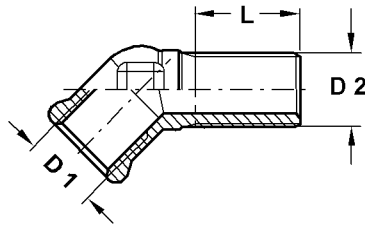
Material: Brass



Order number	D1	D2	D3	K	L	Spanner width
893 104 065 4	M 16 x 1.5	M 16 x 1.5	M 22 x 1.5	K 24° - 10	34	24

45° Elbow Bulkhead

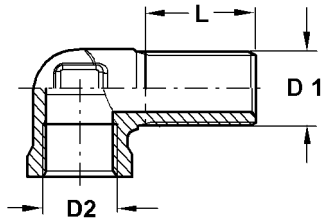
Material: Brass



Order number	D1	D2	L
893 831 747 4	M 16 x 1.5	M 16 x 1.5	25
893 401 782 4	M 22 x 1.5	M 22 x 1.5	23

90° Elbow Bulkhead

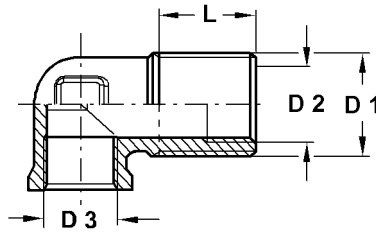
Material: Brass



Order number	D1	D2	L
893 401 008 4	M 12 x 1.5	M 12 x 1.5	18
893 401 292 4	M 16 x 1.5	M 16 x 1.5	22

90° Elbow for Bulkhead with female thread

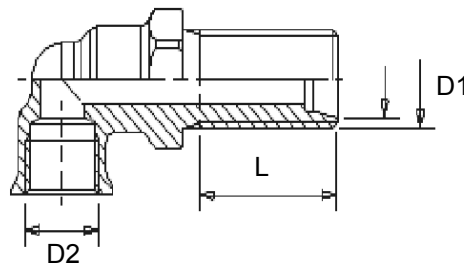
Material: Brass



Order number	D1	D2	D3	L
893 401 293 4	M 22 x 1.5	M 16 x 1.5	M 16 x 1.5	20
893 401 019 4	M 22 x 1.5	M 16 x 1.5	M 22 x 1.5	22

90° Elbow Bulkhead

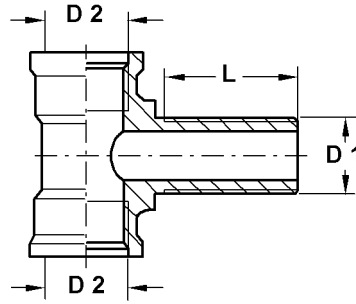
Material: brass



Order number	D1	D2	L
893 401 826 2	M 26 x 1.5	M 22 x 1.5	34

T-Coupling for Bulkhead

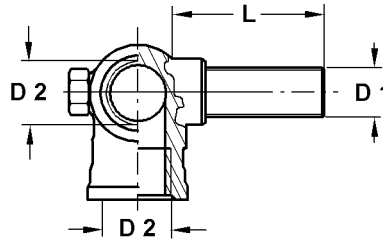
Material: Brass



Order number	D1	D2	L
893 501 001 4	M 16 x 1.5	M 16 x 1.5	21

3-way coupling for bulkhead

Material: Brass



Order number	D1	D2	L
893 401 014 4	M 16 x 1.5	M 16 x 1.5	21

Counternut with O-Ring

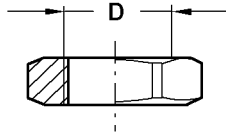
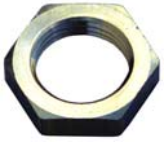
Material: Brass



Order number	D	Spanner width
891 503 000 2	M 12 x 1.5	18
891 503 075 2	M 16 x 1.5	22
891 503 076 2	M 22 x 1.5	28

Lock Nut

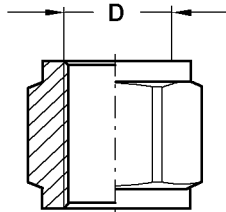
Material: Brass



Order number	D	Spanner width
891 503 003 4	M 16 x 1.5	22
891 503 005 4	M 18 x 1.5	24
891 503 076 4	M 22 x 1.5	28

Female/ Female Stud

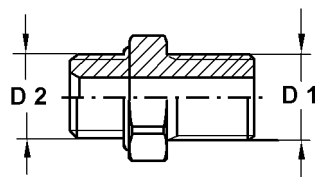
Material: Brass



Order number	D	Spanner width
893 104 063 4	M 12 x 1.5	18
893 104 064 4	M 16 x 1.5	22

Transfer Connector

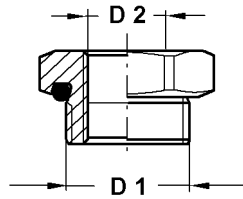
Material: Brass



Order number	D1	D2	Spanner width
893 184 001 2	1/8"-18 NPTF	M 16 x 1.5	22

Male/ Female Reducing Stud with O-ring

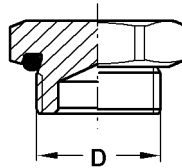
Material: Brass



Order number	D1	D2	Spanner width
893 104 066 4	M 16 x 1.5	M 12 x 1.5	22
893 104 051 4	M 22 x 1.5	M 12 x 1.5	28
893 104 052 2	M 22 x 1.5	M 16 x 1.5	28

Screw Plug with O-Ring

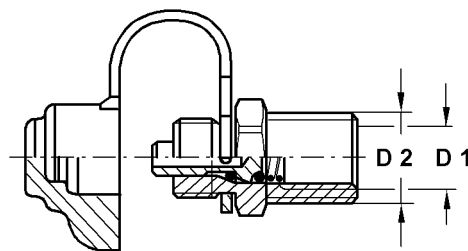
Material: Brass2



Order number	D	Spanner width
893 022 000 2	M 12 x 1.5	18
893 022 022 2	M 14 x 1.5	20
893 022 014 4	M 16 x 1.5	22
893 022 015 4	M 22 x 1.5	28

Test point with bulkhead

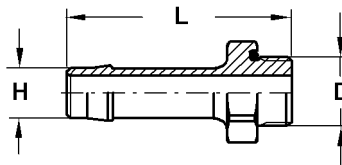
Material: Brass



Order number	D1	D2	Spanner width
463 703 204 0	M 18 x 1.5	M 12 x 1.5	22

Hose Nipple P Form Sealing with O-ring according to DIN

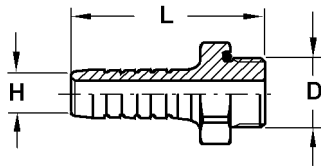
Material: Brass



Order number	D	H	L	Spanner width
893 129 194 2	M 16 x 1.5	11,0	40	22
893 129 195 2	M 22 x 1.5	11,0	40	28
893 129 445 2	M 16 x 1.5	13,0	40	22
893 129 446 2	M 22 x 1.5	13,0	40	28

Hose Nipple with O-ring (RAUFOSS Standard)

Material: Brass



Order number	D	H	L	Spanner width
893 129 442 2	M 16 x 1.5	13,0	30	22
893 129 443 2	M 22 x 1.5	13,0	30	28

