



Valves and connections for SF₆

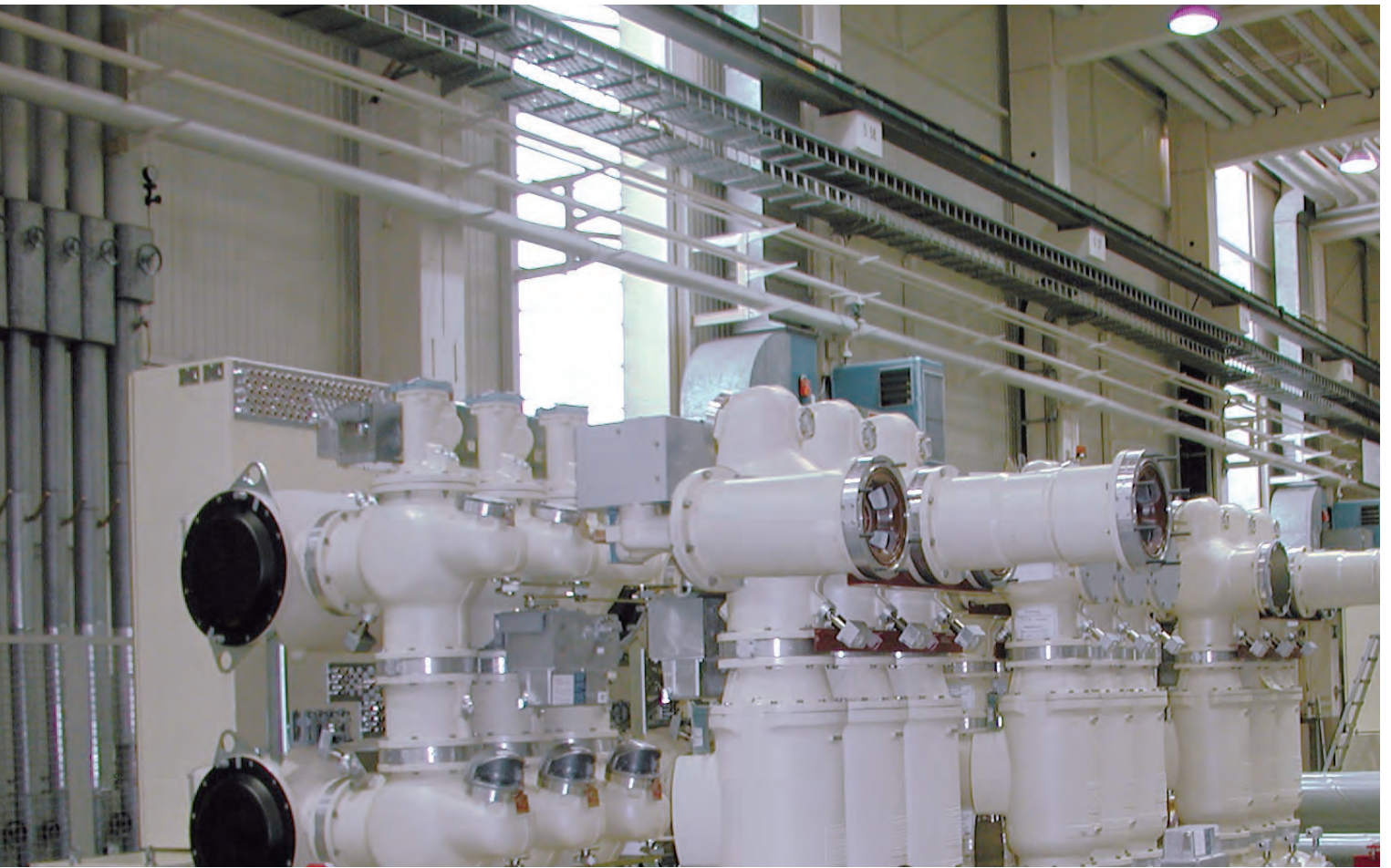


DILO. Sustainably tight.

Made ■
in ■
Germany ■

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DILO offers the widest valves and couplings product range in the world. Whether for medium voltage switchgear, high voltage switchgear or gas-insulated lines (GIL) our products always meet your requirements.

When using the DILO coupling system a leak rate of better than 1×10^{-8} mbar l/sec. is achieved corresponding to less than 1 cm^3 in 3 years.

The DILO sealing principle prevents the loss of SF_6 gas and moisture from penetrating the SF_6 gas system. DILO couplings will eliminate the loss of SF_6 gas by incorrect gas handling. Thanks to their reliability, quality and durability DILO couplings are the world's most widely used connecting system for SF_6 switchgear.

■ General

- The DILO seal principle 05
- Explanation of DILO-pressure stages 06
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The DILO seal principle

DILO is a seal principle without intermediate seal in the form of groove and tongue with little depth of immersion. This principle guarantees permanent tightness at high static and dynamic alternating stresses which might result from vacuum and pressure in connection with high temperatures and vibrations inside the tubing systems.

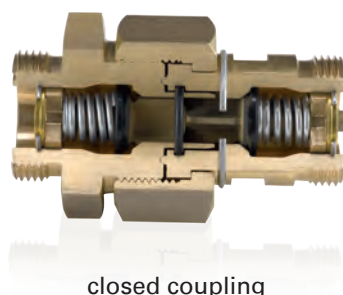
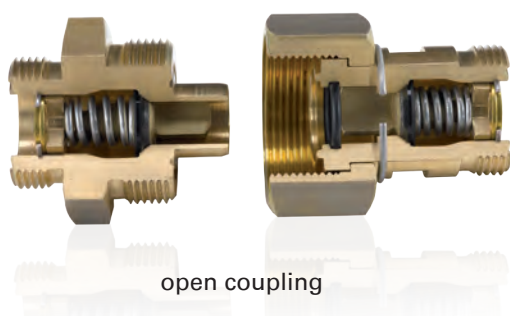
Sealing in accordance with the DILO principle is effected by direct contact of the sealing profiles of the groove and tongue parts. The different radii of curvature of groove and tongue are in a certain relation to each other.

Thus, two ring-shaped sealing areas are produced which create high stability.

The additional braking surface prevents plastic deformations at the ring-shaped sealing areas.

DILO fittings are easy to assemble and require no maintenance. They can be loosened and re-connected as often as desired. Thus, the re-use of the DILO seal is guaranteed. Due to the little depth of immersion of DILO groove and tongue the tubes can be immediately pulled out laterally after loosening the clamping nut.

The DILO seal principle



DILO couplings allow a connection to be made by simply screwing the two coupling parts together. Before the metal to metal seal closes the pressure and vacuum tight coupling is sealed

inside by means of an O-ring. When loosening the coupling parts again the same O-ring prevents gas loss whilst the self seal valves close.

Advantages of application

- Self-closing coupling system
- Pressure and vacuum-tight even when coupling and uncoupling
- Permanent tightness even when frequently connected and disconnected
- Applicable up to PN 64 bar
- Suitable for temperatures from -40 °C to +80 °C
- Direct connection to DILO service carts without adapter
- Available in different materials even for outdoor switchgear

Explanation of DILO-pressure stages

Series	ML1	Valves	Accessories	Hoses
Pressure stage up to	PN64			PN50 / 64

DILO-Type explanation

Explanation of abbreviations used in our catalogue

ML Soldering-stub unions with metric connecting dimensions

Illustration of different structural shapes of DILO-soldering unions

A Soldering union



B Screw-in stub-soldering union



M Gauge connecting union



Material standards

Material No. DIN	Material designation	DILO material code letter
1.4571	X6CrNiMoTi17-12-2	C
CW614N	CuZn39Pb3	P
EN AW-6082	EN AW-ALSi1MgMn	T
1.4305	X10CrNiS189	E
CW713R	CuZn37Mn3Al2PbSi	H

Surface treatment and cleaning

Before dispatch or storage, the finished valves and fittings must be treated as follows:

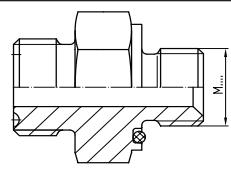
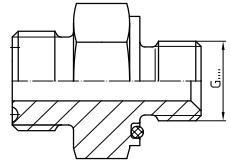
- austenitic material is cleaned
- brass material is cleaned
- aluminium material is anodised, the thread is lubricated with Molykote

Version

Version of the screw-in stub with O-ring sealing (can also be supplied in special design with edge acc. to DIN 3852-1 form B and DIN EN ISO 1179-4 form B).

Design of the screw-in holes for the isometric thread as well as for Whitworth-pipe threads according to DIN 3852-1 form X and DIN EN ISO 1179-1.

Technical data of threads

Type of thread	Standards	Code designation	Illustration
Metric thread	DIN 13 thread angle 60°	M	
Whitworth thread	DIN/ISO 228 thread angle 55°	G	

Soldering process

DILO-soldering unions can be soldered by the well-known „autogenous“ soldering techniques.

Packing

Parts are all hermetically sealed in PVC to ensure they are kept free of dust and dirt. The unions are protected against damage by plastic caps.

O-ring and rubber seal

For all coupling parts an EPDM rubber seal is used as sealing material.

Quality assurance

Quality assurance takes the first place within the DILO-organization. Our approved and authorized experts permanently check the material carefully. The entire raw material is ordered according to DILO approval-/ order regulations. Thus it is guaranteed that all necessary tests have been carried out which is confirmed in test certificates according to EN 10204 (3.1).

By marking of the raw materials and finished products, the identity of materials is guaranteed. Our fittings are TÜV-approved. Furthermore a certificate according to ISO 9001:2008 is available.

Approvals and tests

DILO products have been approved by international classification organisations such as:

- Certification according to ISO 9001:2008
- HP0 approval as pressure equipment manufacturer
- Production control in accordance with EC 97/23 regulations



Symbols for valves and fittings

Soldering stub soldering-union



Blanking disk



Screw-in stub-soldering union



Transition piece



Gauge connection union



Ball valve



Coupled coupling



Coupling halves



Hose



Mounting instructions

General

- Specify the pipe lengths exactly and cut off rectangularly.
- Burr the pipe extremity and clean it metallically bright.
- Apply the soldering flux where soldering is to be carried out.
- When soldering, use the auxiliary means recommended by DILO and observe the instructions of the soldering materials supplier.
- Do not touch the soldered parts until the solder has solidified and cooled down (Do not quench the soldering area with water).
- Remove the soldering material by rinsing with water and by pickling is.
- Dry union before mounting.
- When mounting only use the connecting components not being damaged by impacts or by overflowed soldering material.
- It must be strictly observed that the tubing system is tension-free supported and that the tubing sections align to each other. Possible divergences can be straightened with the DILO straightening tool.
- Before final mounting, check that all DILO-groove and tongue parts are clear of impurities.
- In order to reduce the friction, the tube unions should be greased with suitable grease at the threads and contact surfaces of the clamping nut, especially when made of austenitic materials. Thus the torque is better converted into axial force and galling of the threads is avoided. When selecting the grease, observe the operating temperatures, the media, the corrosive degree and the materials.
- A fast and strong tightening of the clamping nut guarantees perfect tightness.

The standard version of the screw-in stub of the DILO screw-in unions is equipped with O-ring sealing.

When mounting DILO screw-in unions we recommend using softmetal-sealings (e. g. copper plates opposite the housing or block) for sealing of screw-in stub DIN 3852-1 form B and DIN EN ISO 1179-4.

When all these instructions are observed the mounting will be simple and time-saving. Pipes which are too short or not precisely aligned will require extra work.

Mounting instructions

Mounting illustration:



1. Rectangularly saw off the pipes



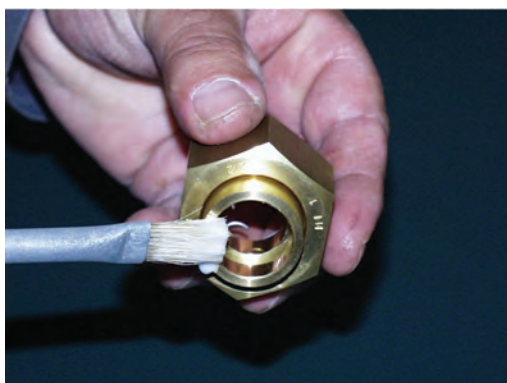
2. Deburring of the pipe extremities inside and outside



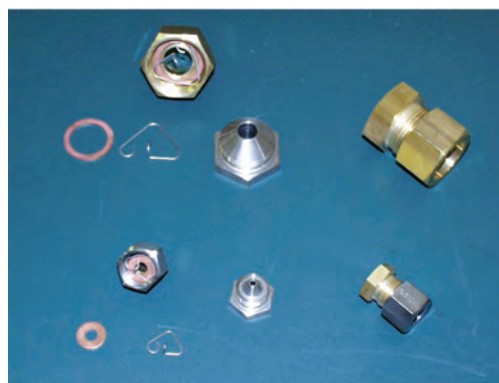
3. Clean to a bright metallic finish



4. Apply the soldering flux on the pipe

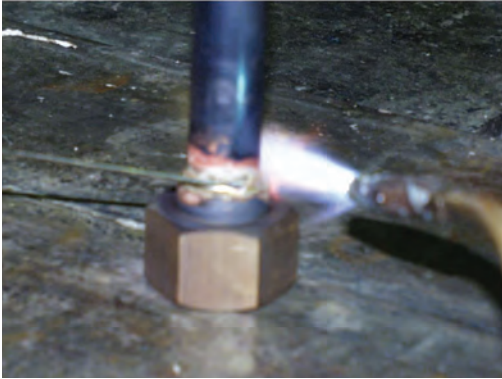


5. Apply the soldering flux at the part to be soldered



6. Use of auxiliary materials

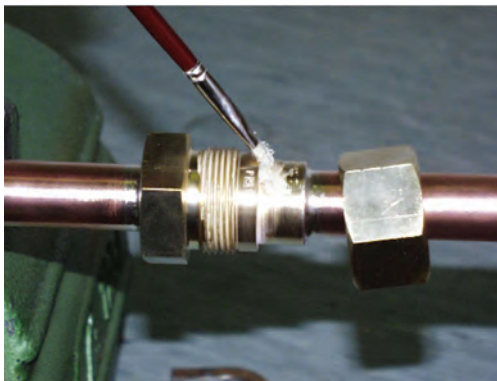
Mounting instructions



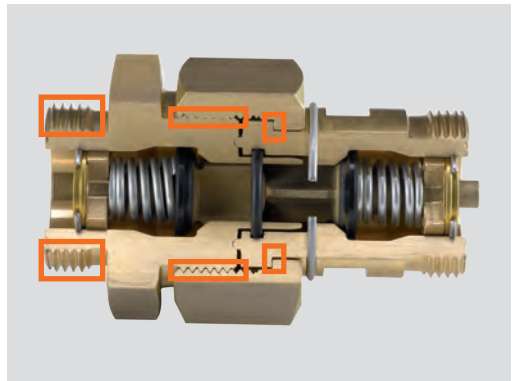
7. Observe the instructions of the soldering materials supplier



8. Before assembling clean the DILO tongue and groove part



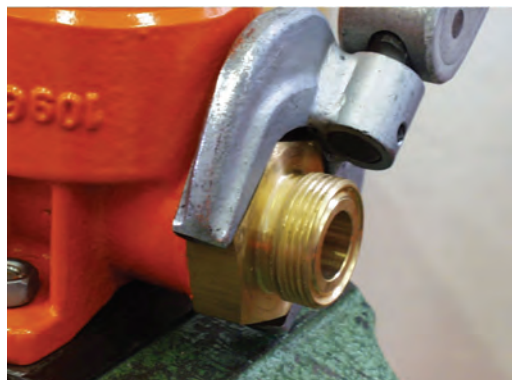
9. Lubricate with appropriate lubricants



10. Lubricating points at a DILO tube union



11. Tighten fast and strongly the clamping nut by counteracting force according to torque table



12. A screw in plug is sealed into a housing or block with an O ring or copper seal ring.

Mounting example

Screw-in stub with O-ring sealing

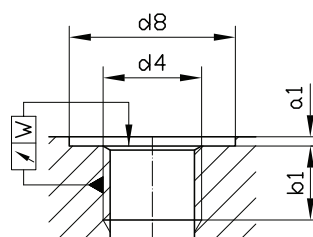
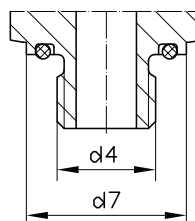
Torque see torque diagram

Screw-in thread

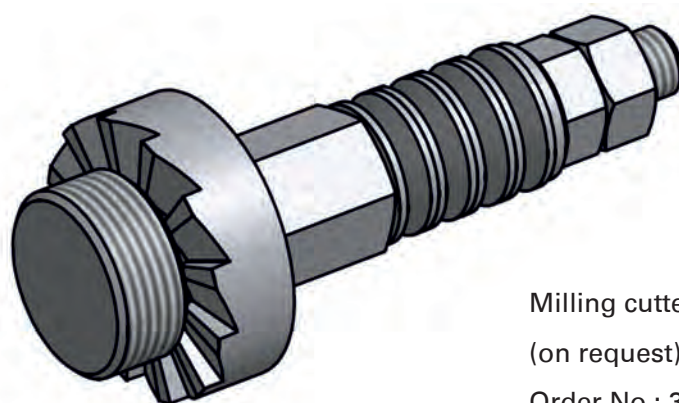
Screw-in hole see table

Make screw-in hole according to DIN 3852-1 form X and DIN EN ISO 1179-1

Use milling cutter for tight seat



DN	d4	d7	d8	a1	b1	W
8	M16 x 1,5 G 3/8 A	26	27	1,5	14	0,1
12	G 1/2 A	36	37	2,5	16	0,1
20	M33 x 2 G 1 A	49	50	2,5	20	0,2
40	G 1 1/2 A	65	66	2,5	24	0,2



Milling cutter

(on request)

Order No.: 3-216-...

Torque table

DILO profile connection		
Size of jaw	Material	Torque Nm
24	AL	40
24	Stainless steel / Brass	40
32	AL	62
32	Stainless steel / Brass	77
41	AL	88
41	Stainless steel / Brass	120
50	AL	110
50	Stainless steel / Brass	140
65	Stainless steel / Brass	150

Screw-in thread		
Screw-in thread	Material	Torque Nm
G1/4	AL	15
G3/8	AL	40
G3/8	Stainless steel / Brass	40
G1/2	AL	68
G1A	AL	120
G1A	Stainless steel / Brass	130
G1½	AL	120
G1½	Brass	140
M16x1,5	AL / Stainless steel / Brass	40
M33x2	AL	120
M33x2	Stainless steel / Brass	130

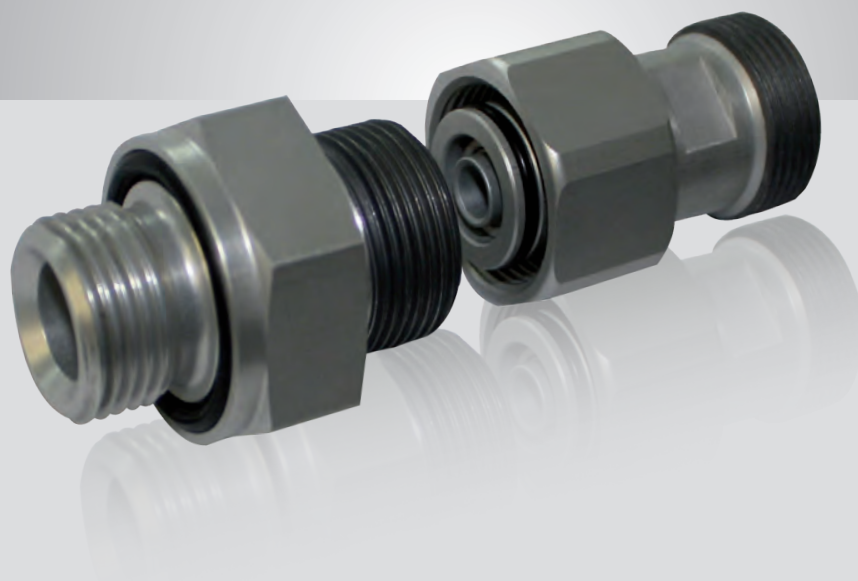
Coupling 3-408-R..	Torque 15 Nm
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Coupling 3-888-R..	Torque 15 Nm
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Coupling DN40	Torque 80 Nm
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Covering caps	
Size of jaw	Torque Nm
24	20
32	40
50	40

DILO couplings DN6



The coupling allows to establish a connection by simply fitting both coupling parts into each other. Before load relieving of the coupling seats the pressure- and vacuum tight coupling is sealed inside with an O-ring during the coupling process. The coupling is forced to be open in coupled position. If both coupling sides are separated again the sealing seats shut off automatically.

All couplings are temperature-resistant from -40 °C to +80 °C.

The suitable connecting parts for DILO couplings must be ordered separately.

■ DILO couplings DN6

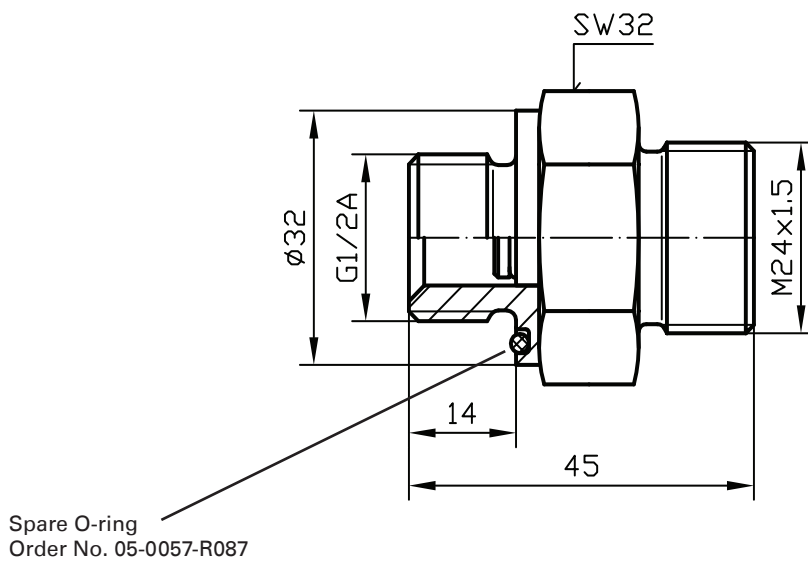
■ 3-408-R005	Coupling groove part / BG PN10 DN6	16
■ 3-408-R006	Flange coupling PN10 DN6	17
■ 3-408-R009	Gauge connecting piece DN6	18
■ 3-408-R007	Covering cap DN6	18
■ 3-408-R001	Coupling tongue part PN10 DN6	19
■ 6-1161-R013	Coupling tongue part PN10 DN6 with connecting coupling for measuring device	20
■ 3-408-R021/R022	Soldering stub connection DN16	21
■ 3-408-R020	Gauge connecting coupling DN6	21
■ 3-419-R004	Transition piece to DN8 connections	22
■ 3-419-R003	Adapter piece	23

BG PN10 DN6

Coupling groove part

Order No.: 3-408-R005 T

Material: AL

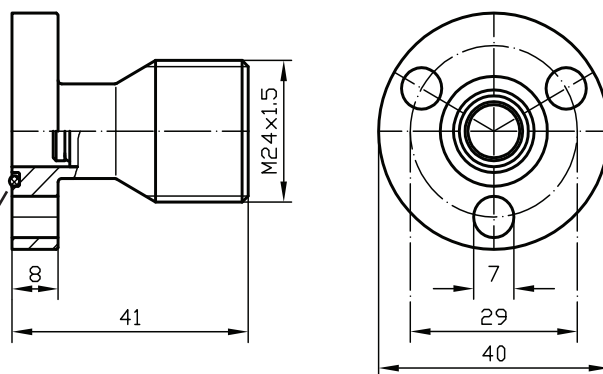


Suitable connecting parts

3-408-R001
3-408-R007
3-408-R020
3-408-R021/22

PN10 DN6
Flange coupling

Order No.: 3-408-R006 T
Material: AL



Spare O-ring
 Order No. 05-0057-R084

Suitable connecting parts

3-408-R001
3-408-R007
3-408-R020
3-408-R021/22

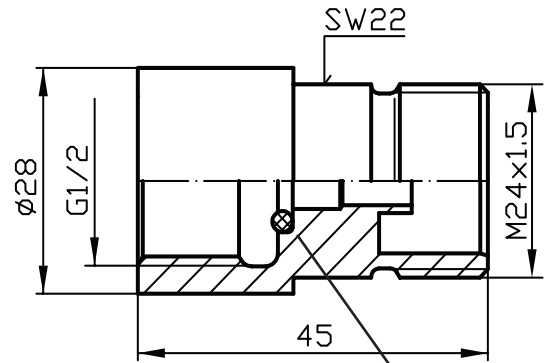
Other flanges are available on request.

PN10 DN6

Gauge connecting piece

Order No.: 3-408-R009 T

Material: AL



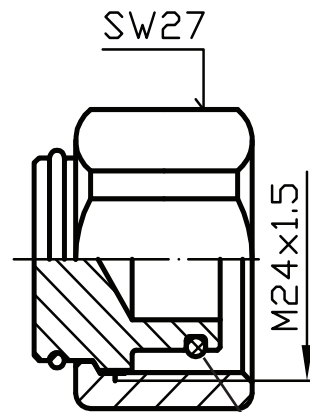
Spare O-ring
Order No. 05-0057-R086

PN10 DN6

Covering cap

Order No.: 3-408-R007 T

Material: AL



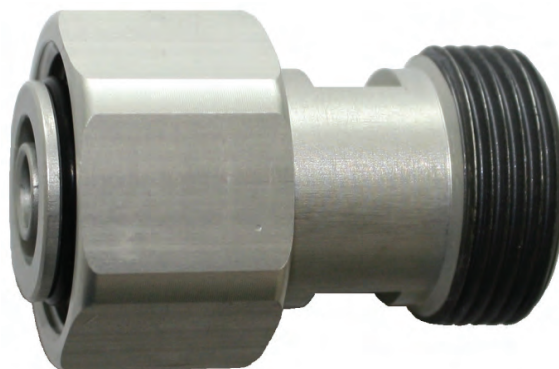
Spare O-ring
Order No. 05-0057-R084

PN10 DN6

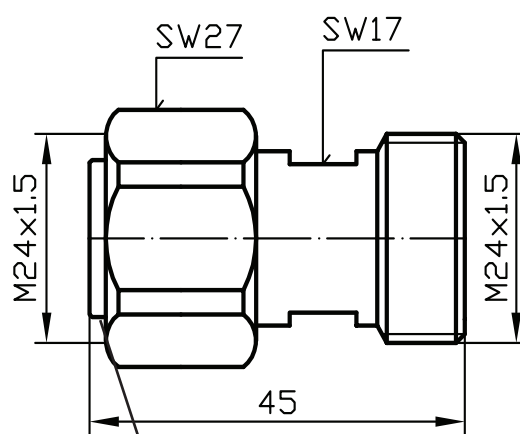
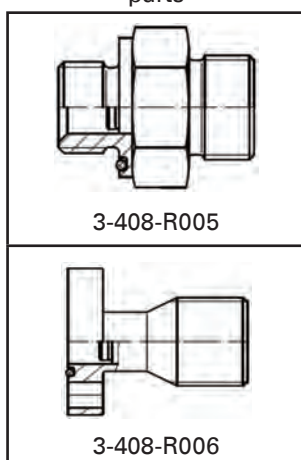
Coupling tongue part

Order No.: 3-408-R001 T

Material: AL

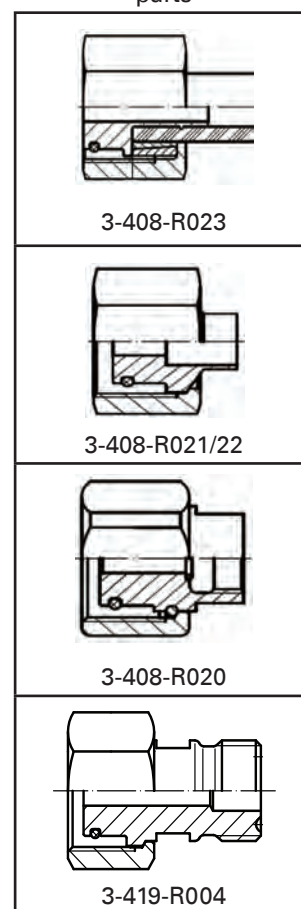


Suitable connecting parts



Spare O-ring
Order No. 05-0057-R084

Suitable connecting parts

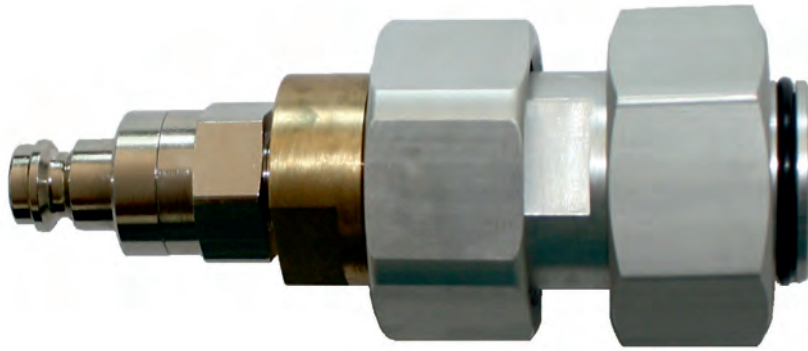


PN10 DN6

Coupling tongue part with connecting coupling for measuring device

Order No.: 6-1161-R013

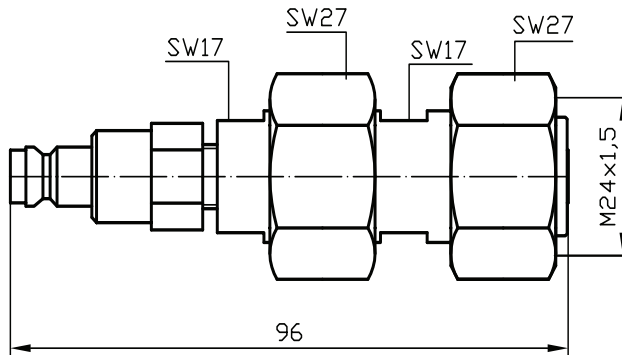
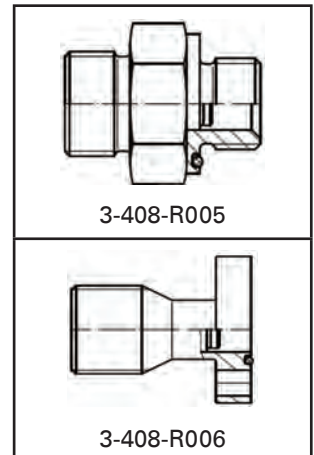
Material: AL / Brass



Suitable connecting parts



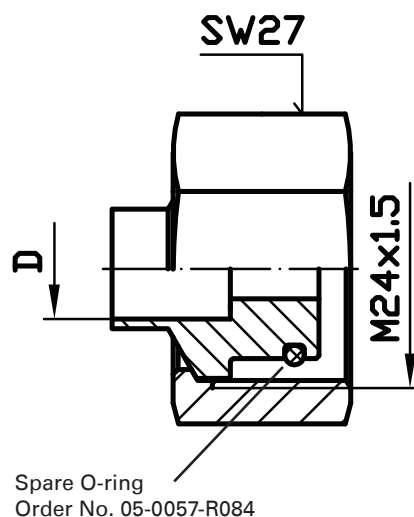
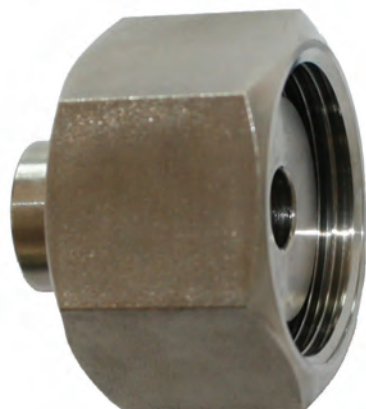
Suitable connecting parts



PN10 DN6 Soldering stub connection

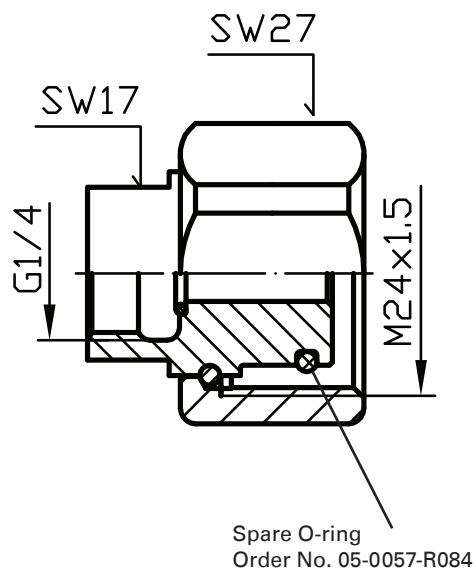
Order No.: 3-408-R021 C D = 10 mm
 3-408-R022 C D = 6 mm

Material: Stainless steel



PN10 DN6 Gauge connecting coupling

Order No.: 3-408-R020 T
 Material: AL

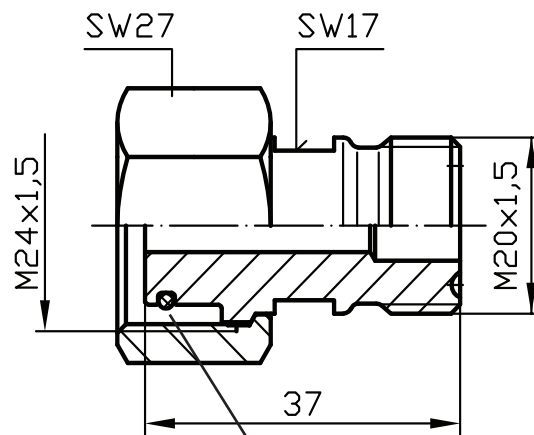
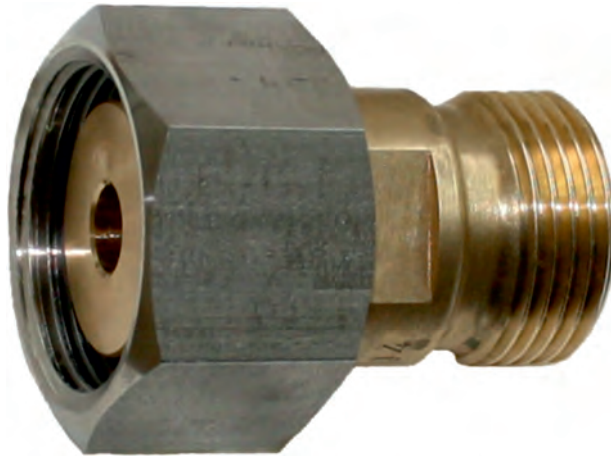


PN10 DN6

Transition piece to DN8 connections

Order No.: 3-419-R004

Material: Stainless steel / Brass

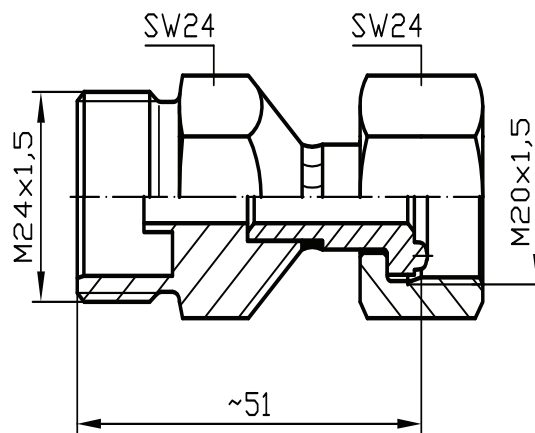
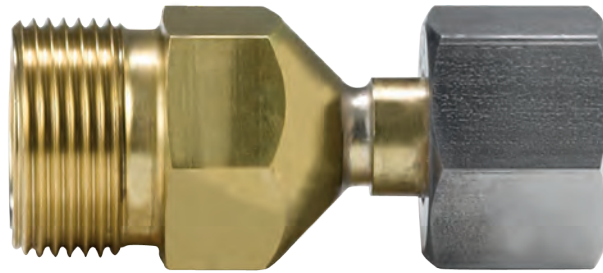


Spare O-ring
Order No. 05-0057-R084

PN10 DN6
Adapter piece

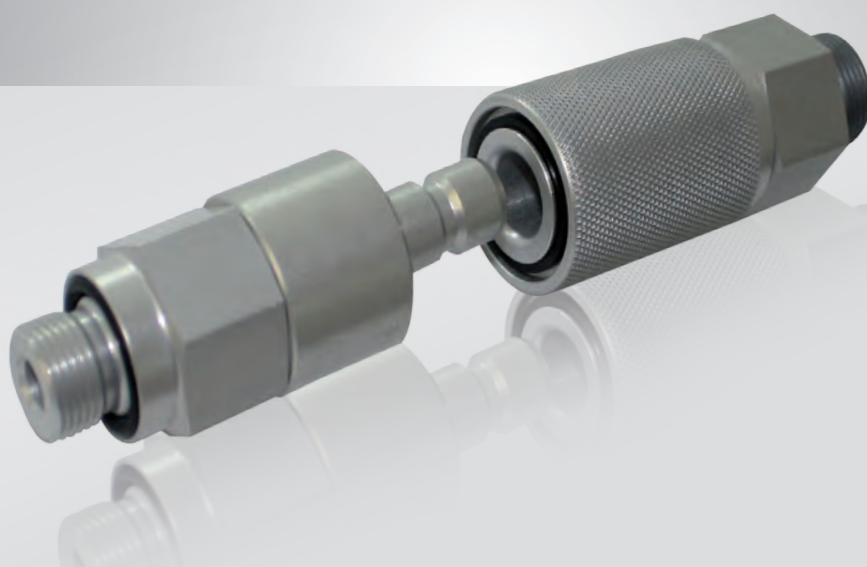
Order No.: 3-419-R003

Material: Stainless steel / Brass





DILO couplings DN7



The plug connection allows to establish a connection by simply fitting both coupling parts into each other. Before load relieving of the coupling seats the pressure- and vacuum tight coupling is sealed inside with an O-ring during the coupling process. The coupling is forced to be open in coupled position. If both coupling sides are separated again the sealing seats shut off automatically.

All couplings are temperature-resistant from -40 °C to +80 °C.

The suitable connecting parts for DILO couplings must be ordered separately.

■ DILO couplings DN7

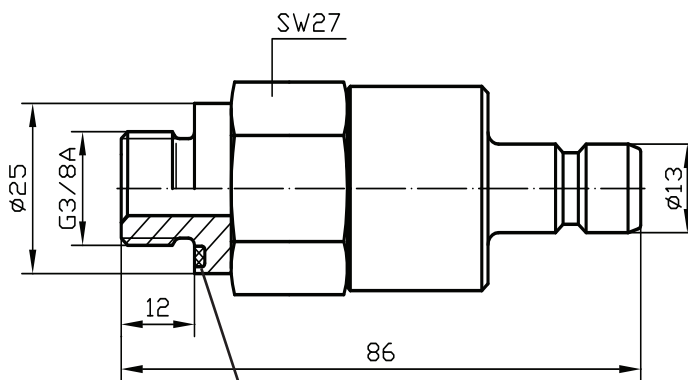
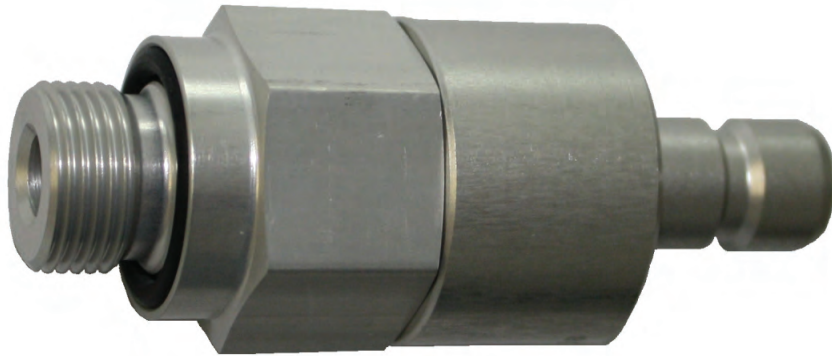
- 3-308-R003 Plug connection groove part PN30 DN7 26
- 3-308-R016 Covering cap for plug connection groove part PN30 DN7 27
- 3-308-R002 Plug connection tongue part PN30 DN7 28
- 6-11161-R015 Plug connection tongue part PN30 DN7 29 with connecting coupling for measuring device
- 3-308-R006 Covering cap for plug connection tongue part PN30 DN7 30

PN30 DN7

Plug connection groove part

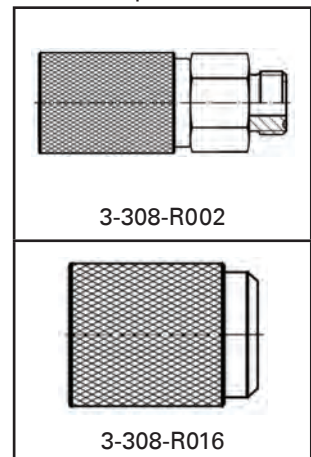
Order No.: 3-308-R003 T

Material: AL



Spare O-ring
Order No. 05-0057-R016

Suitable connecting parts

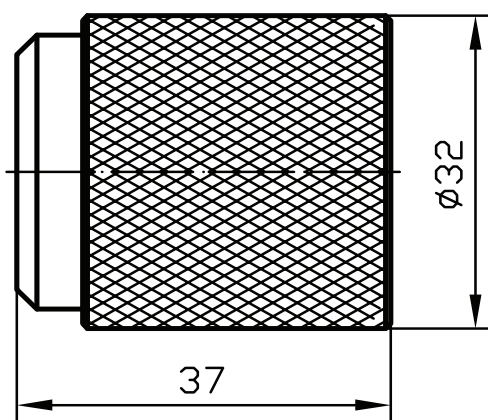


PN30 DN6

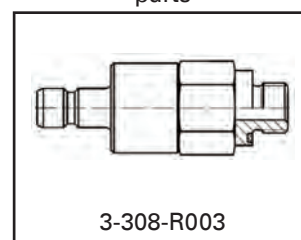
Covering cap for plug connection groove part

Order No.: 3-308-R016 T

Material: AL



Suitable connecting parts

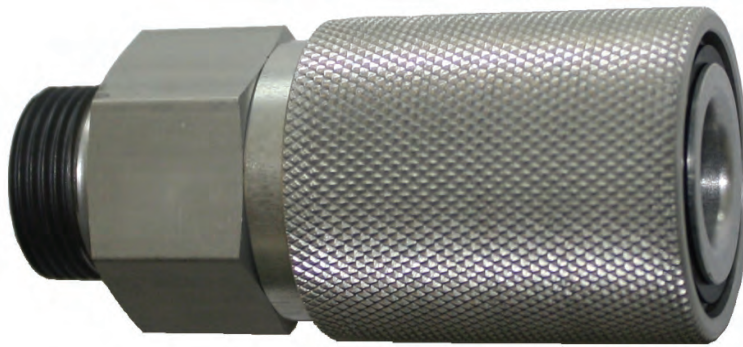


PN30 DN7

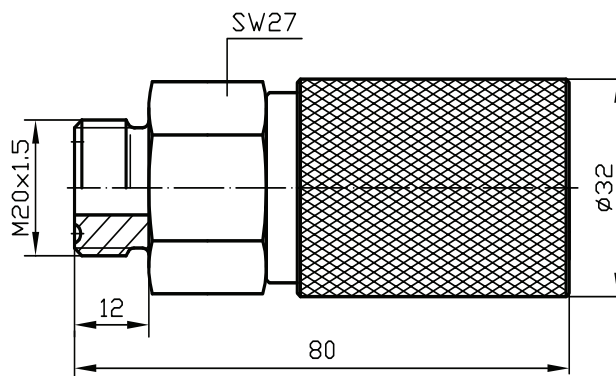
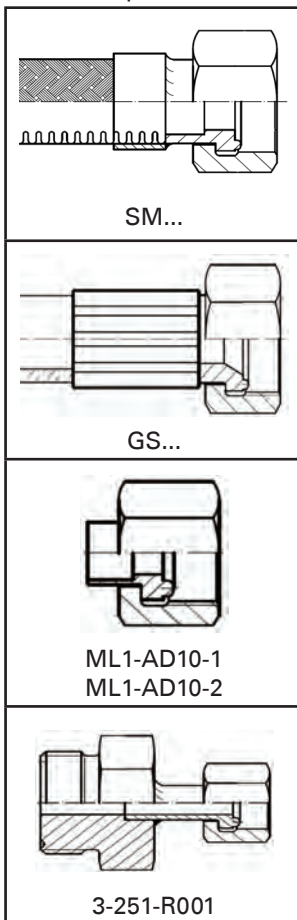
Plug connection tongue part

Order No.: 3-308-R002 T

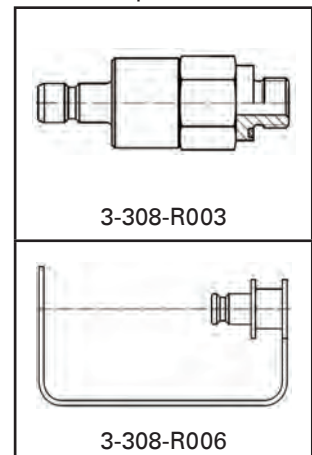
Material: AL



Suitable connecting parts



Suitable connecting parts



PN30 DN7

Plug connection tongue part with connecting coupling for measuring device

Order No.: 6-1161-R015

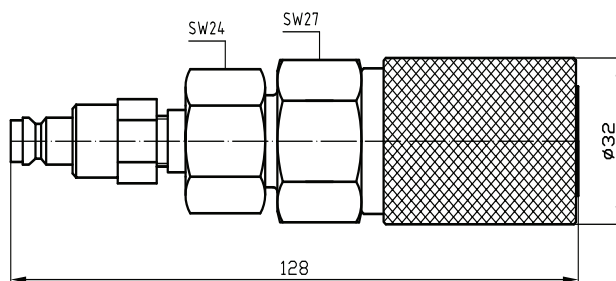
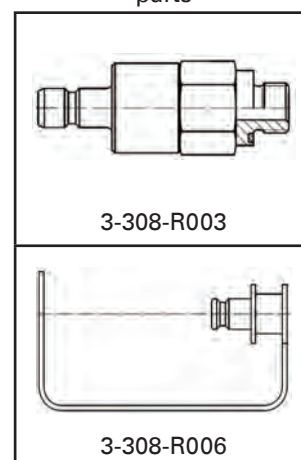
Material: AL



Suitable connecting parts



Suitable connecting parts

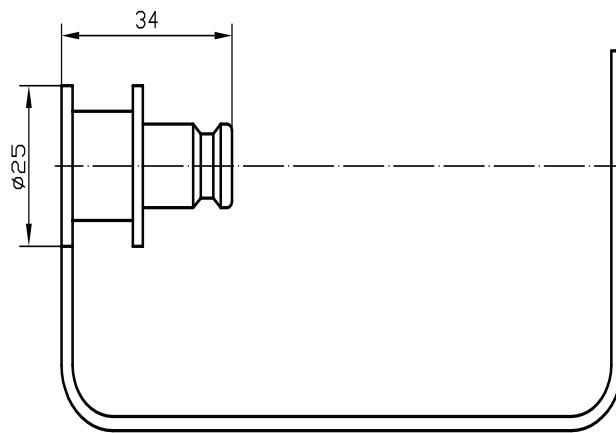


PN30 DN7

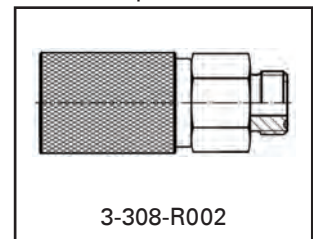
Covering cap for plug connection tongue part

Order No.: 3-308-R006

Material: PVC



Suitable connecting parts



DILO couplings DN8



The coupling allows to establish a connection by simply fitting both coupling parts into each other. Before load relieving of the coupling seats the pressure- and vacuum tight coupling is sealed inside with an O-ring during the coupling process. The coupling is forced to be open in coupled position. If both coupling sides are separated again the sealing seats shut off automatically.

All couplings are temperature-resistant from -40 °C to $+80\text{ °C}$.

In special version these couplings are also available for a temperature range of -60 °C to $+80\text{ °C}$.

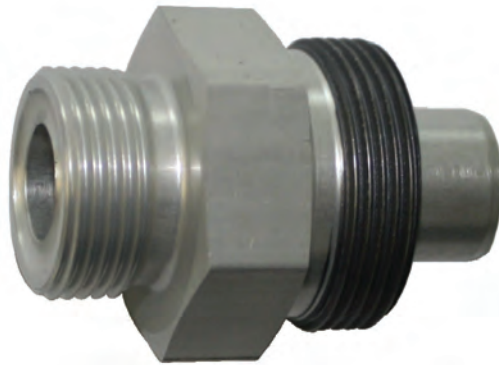
The suitable connecting parts for DILO couplings must be ordered separately.

■ DILO couplings DN8

■ VK/A-02/8	Coupling groove part / A PN64 DN8	32
■ VK/B(G)-03/8	Coupling groove part PN64 DN8 with O-ring	33
■ SK-272-R001	Flange coupling PN64 DN8	34
■ SK-272-R003	Flange coupling PN64 DN8	35
■ 3-778-R001	Flange coupling PN64 DN8 with 2-hole flange	36
■ VK/KN-04/8	Covering cap für coupling groove part PN64 DN8	37
■ VK/F-02/8	Coupling tongue part PN64 DN8	38
■ 6-1161-R011	Coupling tongue part PN64 DN8 with connecting coupling for measuring device	39
■ SK-372-R020/ R021	Gauge connecting coupling PN64 DN8	40

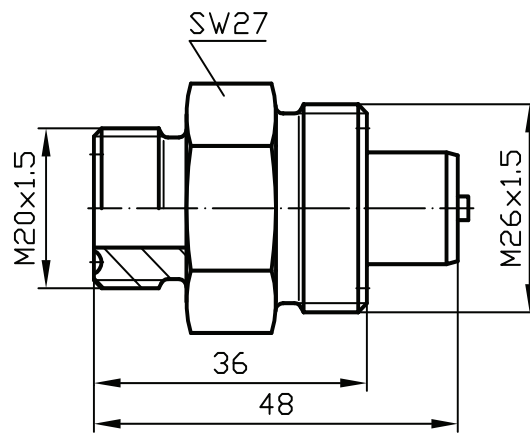
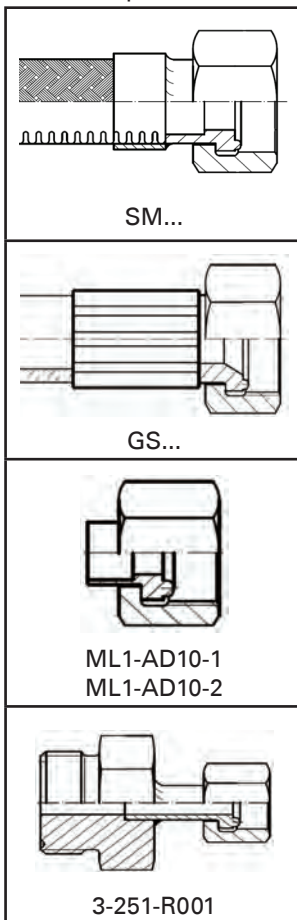
A PN64 DN8

Coupling groove part

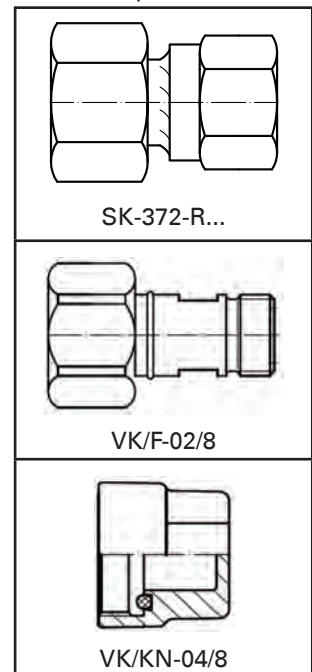


Order No.	Material
VK/A-02/8 T	AL
VK/A-02/8 E	Stainless steel
VK/A-02/8 P	Brass

Suitable connecting parts



Suitable connecting parts

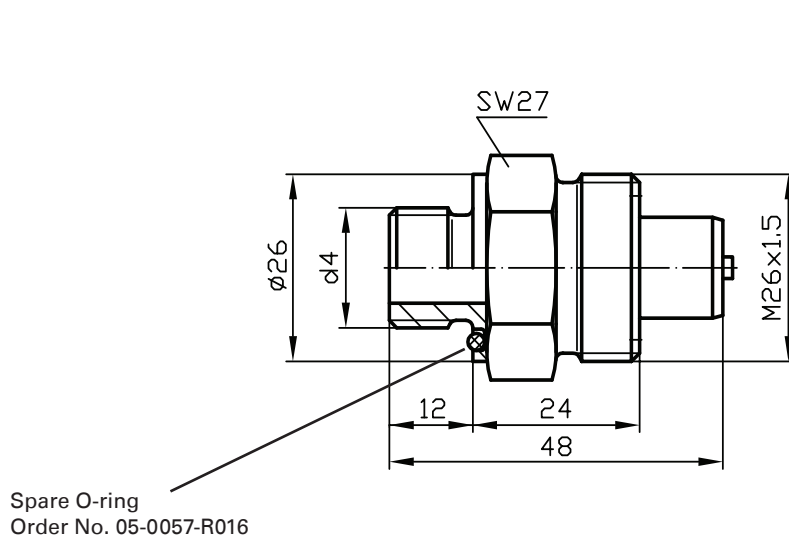


PN64 DN8

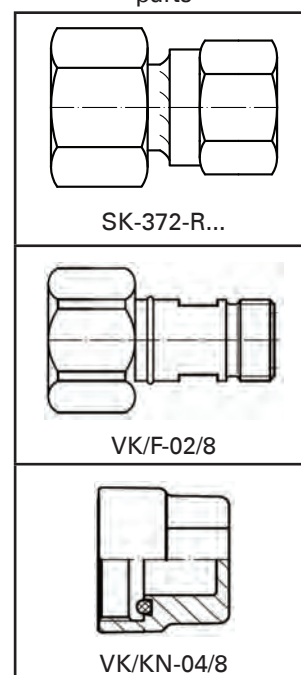
Coupling groove part with O-ring



d4	Order No.	Material
M16 x 1,5	VK/B-03/8 T	AL
M16 x 1,5	VK/B-03/8 E	Stainless steel
M16 x 1,5	VK/B-03/8 H	Brass
G 3/8 A	VK/BG-03/8 T	AL
G 3/8 A	VK/BG-03/8 E	Stainless steel
G 3/8 A	VK/BG-03/8 H	Brass



Suitable connecting parts



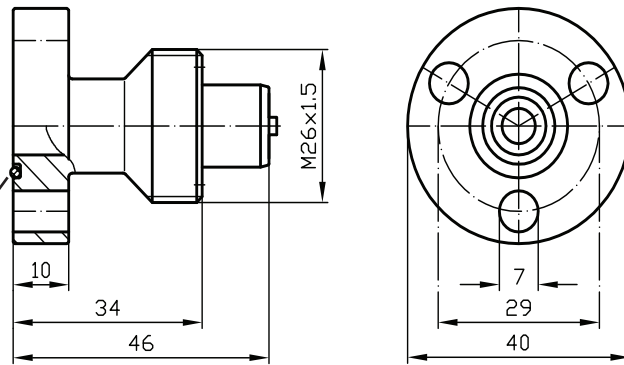
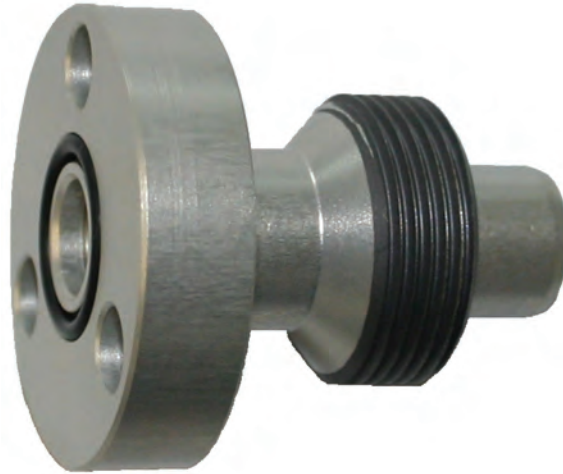
In special version the screw-in thread can also be supplied with sealing edge according to DIN 3852-1 and DIN EN ISO 1179.

PN64 DN8

Flange coupling

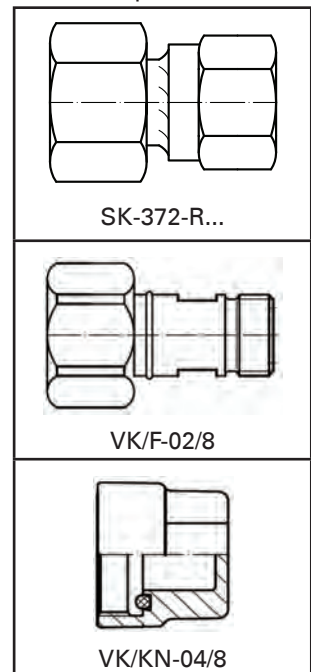
Order No.: SK-272-R001 T

Material: AL



Spare O-ring
Order No. 05-0057-R084

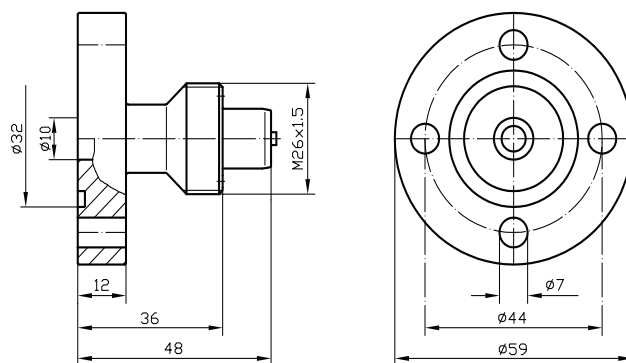
Suitable connecting parts



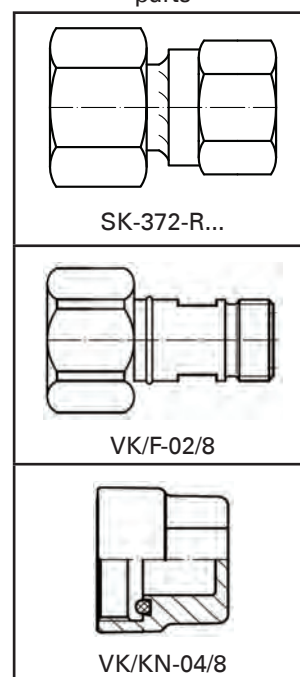
Other flanges are available on request.

PN64 DN8
Flange coupling

Order No.: SK-272-R003 T
Material: AL



Suitable connecting parts



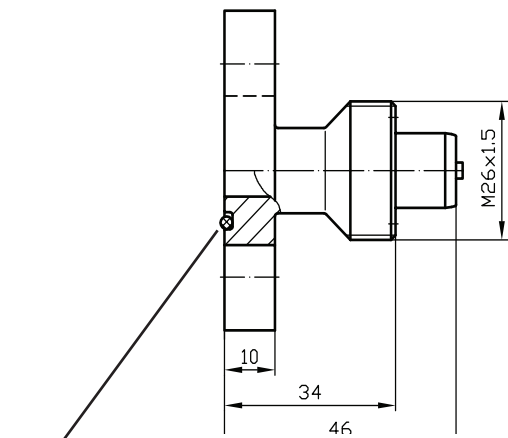
Other flanges are available on request.

PN64 DN8

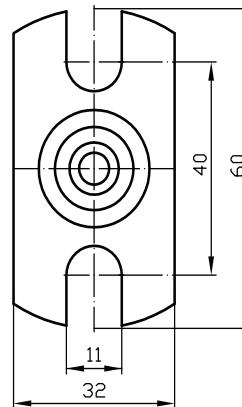
Flange coupling with 2-hole flange

Order No.: 3-778-R001 T

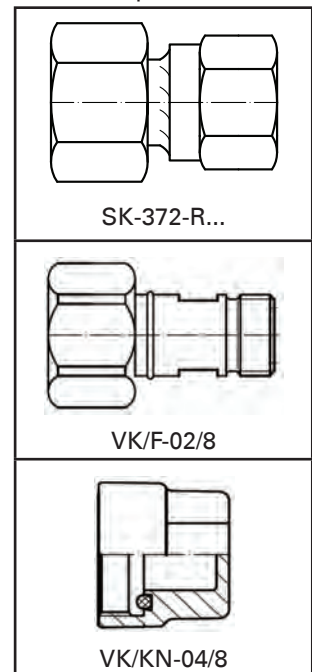
Material: AL



Spare O-ring
Order No. 05-0057-R125



Suitable connecting parts



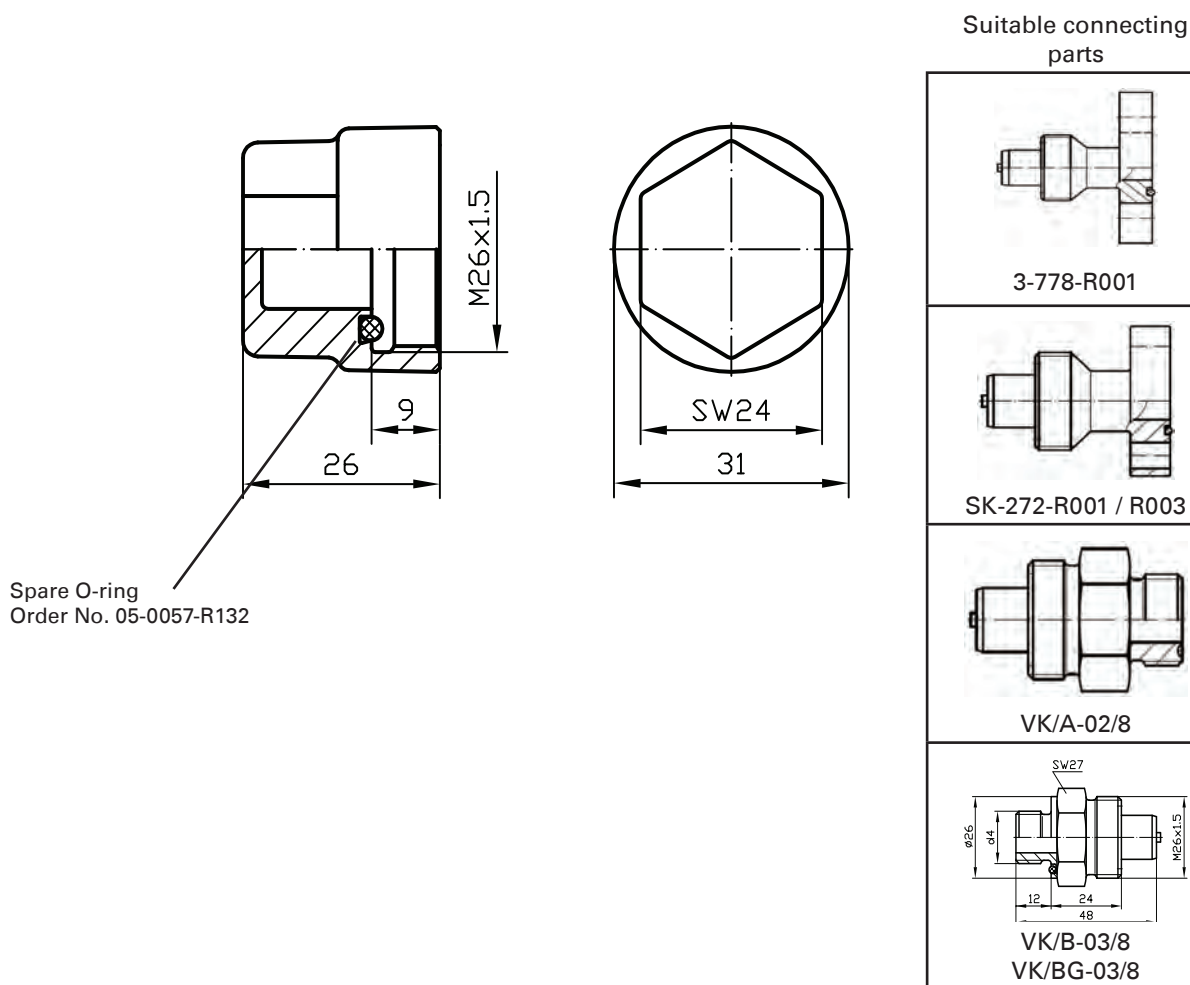
Other flanges are available on request.

PN64 DN8

Covering cap for coupling groove part



Order No.	Material
VK/KN-04/8 T	AL
VK/KN-04/8 E	Stainless steel



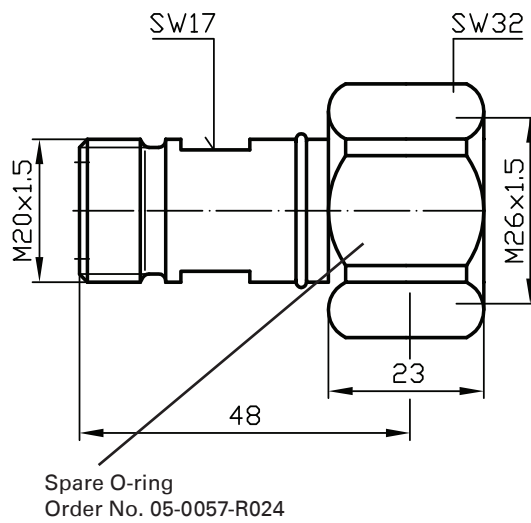
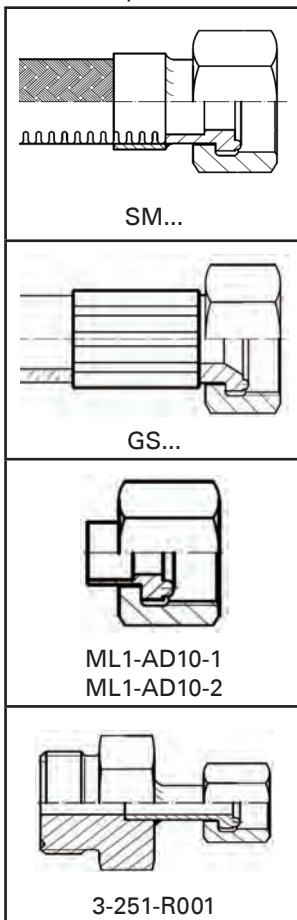
PN64 DN8

Coupling tongue part

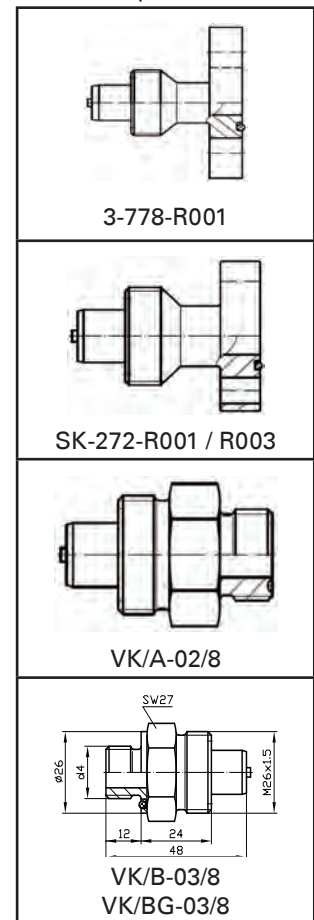


Order No.	Material
VK/F-02/8 T	AL
VK/F-02/8 E	Stainless steel
VK/F-02/8 P	Brass

Suitable connecting parts



Suitable connecting parts

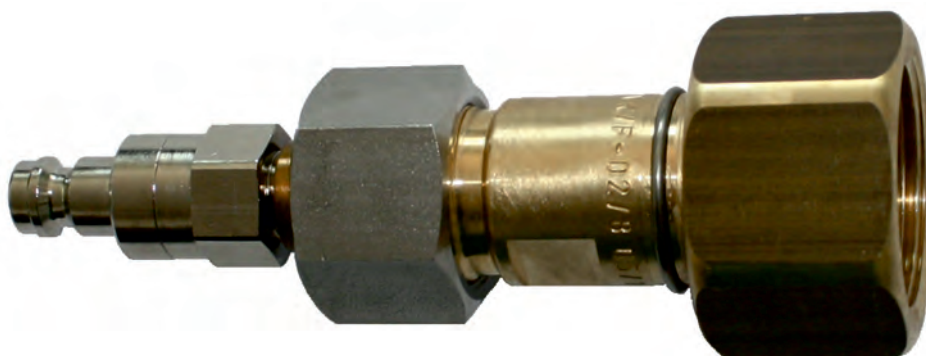


PN64 DN8

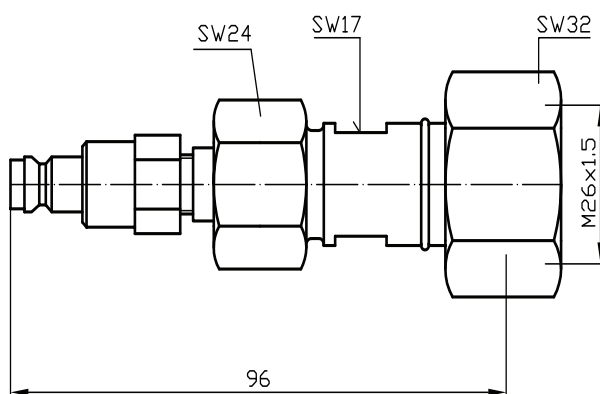
Coupling tongue part with connecting coupling for measuring device

Order No.: 6-1161-R011

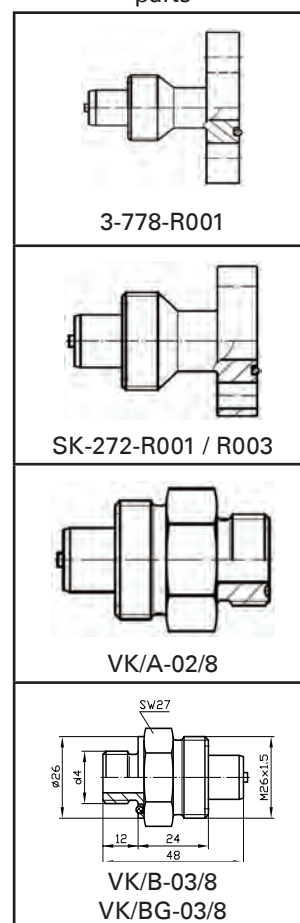
Material: Brass



Suitable connecting parts

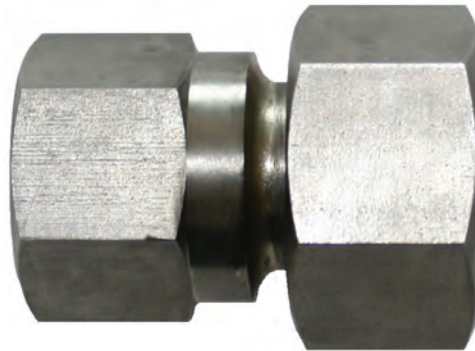


Suitable connecting parts



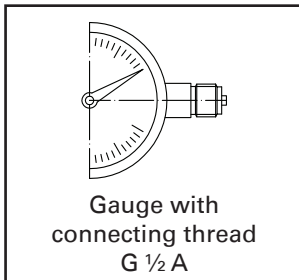
PN64 DN8

Gauge connecting coupling

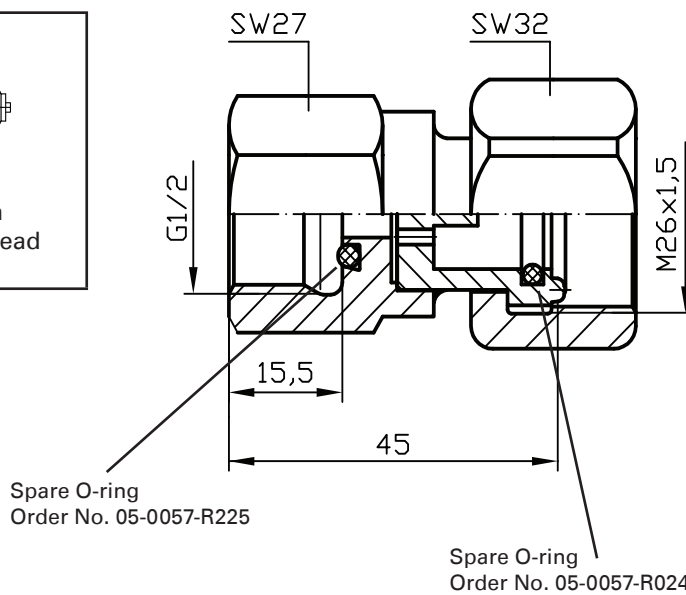
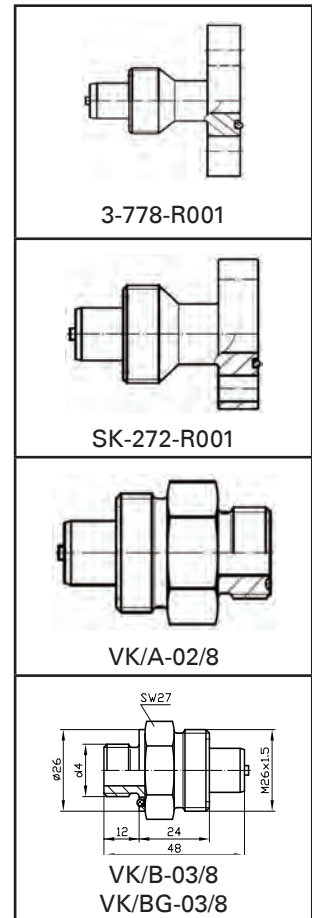


Order No.	Material
SK-372-R020 P	Brass
SK-372-R021 C	Stainless steel

Suitable connecting parts



Suitable connecting parts



Description

The gauge connecting coupling serves as connecting piece to a coupling groove part DN8. When coupling, a pin in the gauge connecting coupling opens the flow of the opposite coupling groove part (forced opening). This allows to read the present operating pressure on the screwed-in gauge. When disconnecting, the conical nipple of the groove part is closed by spring load (pressure and vacuum tight). If the gauge connecting coupling is not connected the gauge shows „zero pressure“. The connecting coupling allows to install the gauge in any required position (rotatable 360°).

DILO couplings DN12



The coupling allows to establish a connection by simply fitting both coupling parts into each other. Before load relieving of the coupling seats the pressure- and vacuum tight coupling is sealed inside with an O-ring during the coupling process. The coupling is forced to be open in coupled position. If both coupling sides are separated again the sealing seats shut off automatically.

All couplings are temperature-resistant from -40 °C to +80 °C.

In special version these couplings are also available for a temperature range of -60 °C to +80 °C.

The suitable connecting parts for DILO couplings must be ordered separately.

■ DILO couplings DN12

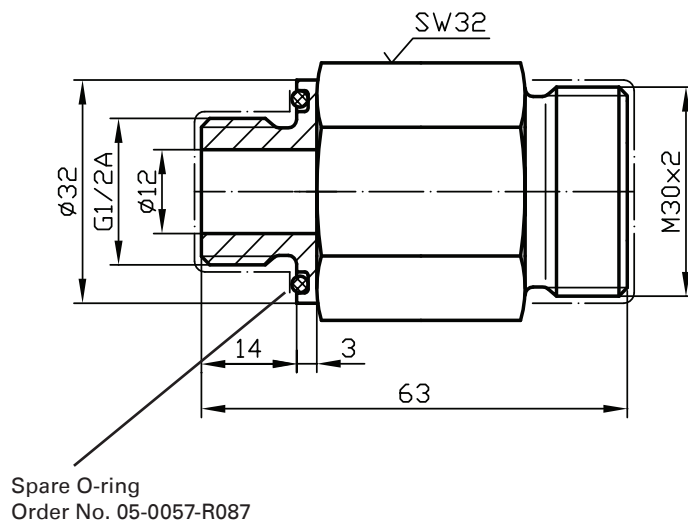
■ 3-888-R005	Coupling groove part / BG PN10 DN12	42
■ 3-888-R007	Covering cap	43
■ 3-888-R001	Coupling tongue part PN10 DN12	44
■ 6-1161-R014	Coupling tongue part PN10 DN12 with connecting coupling for measuring device	45
■ 3-888-R031	Gauge connecting coupling PN10 DN12	46
■ 3-888-R009	Gauge connecting coupling PN10 DN12	47

BG PN10 DN12

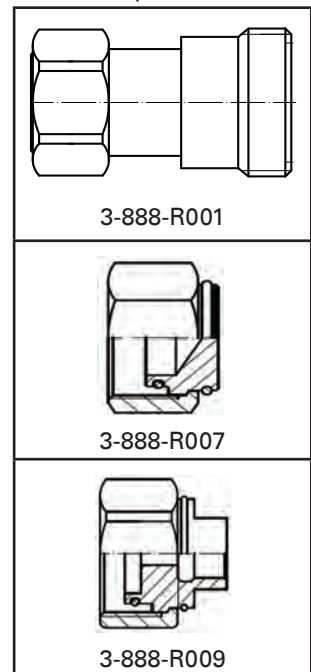
Coupling groove part

Order No.: 3-888-R005 T

Material: AL

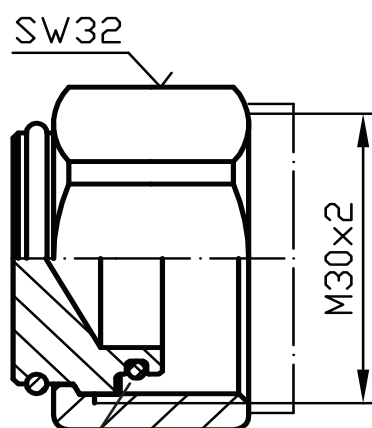


Suitable connecting parts



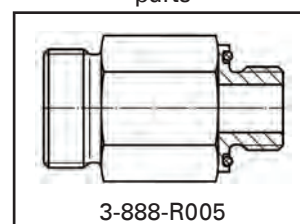
PN10 DN12
Covering cap

Order No.: 3-888-R007 T
Material: AL



Spare O-ring
 Order No. 05-0057-R096

Suitable connecting
 parts

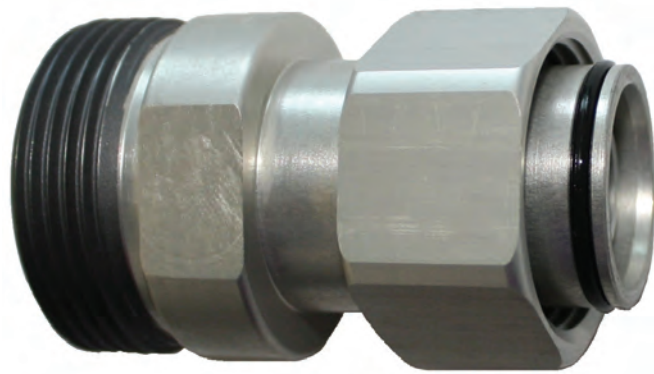


PN10 DN12

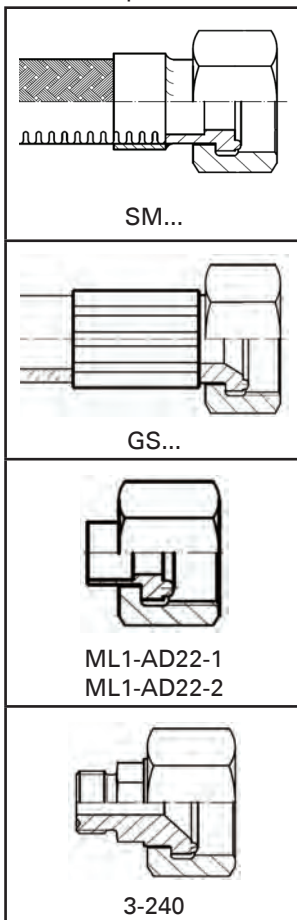
Coupling tongue part

Order No.: 3-888-R001 T

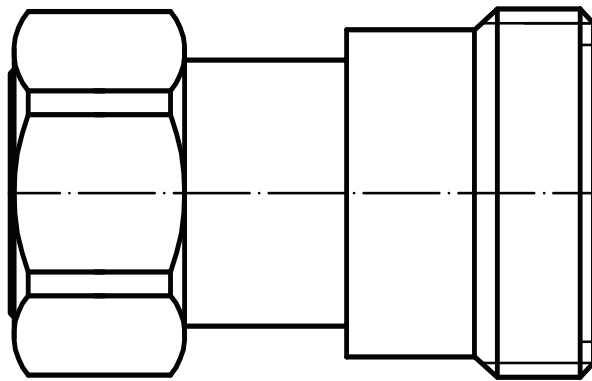
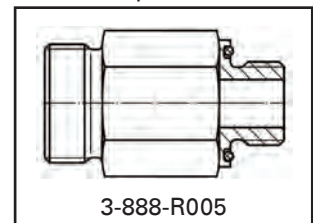
Material: AL



Suitable connecting parts



Suitable connecting parts

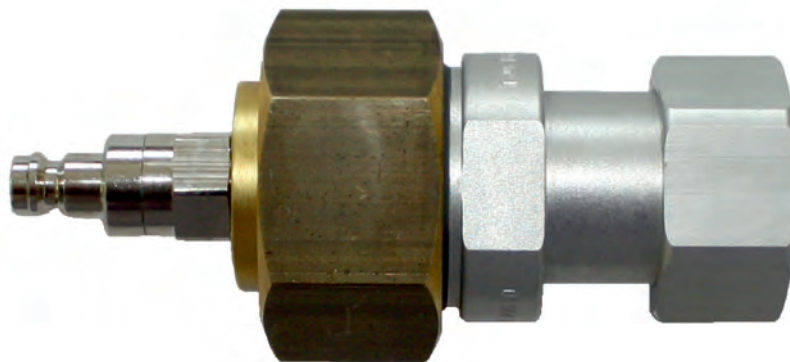


PN10 DN12

Coupling tongue part with connecting coupling for measuring device

Order No.: 6-1161-R014

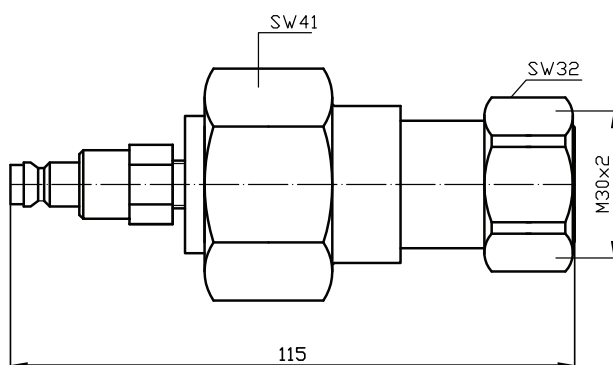
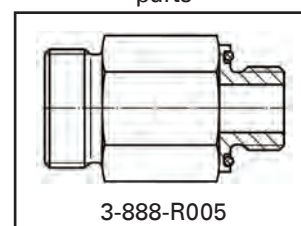
Material: AL



Suitable connecting parts



Suitable connecting parts

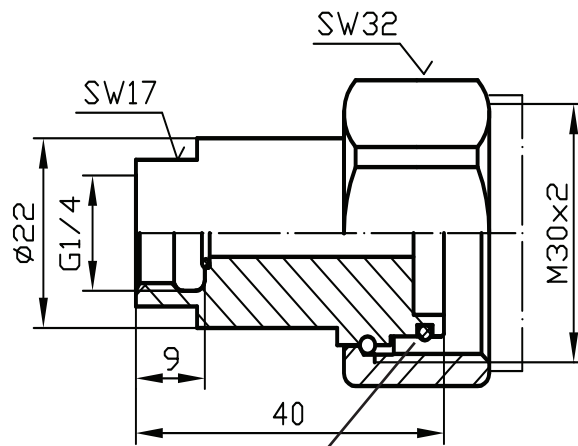
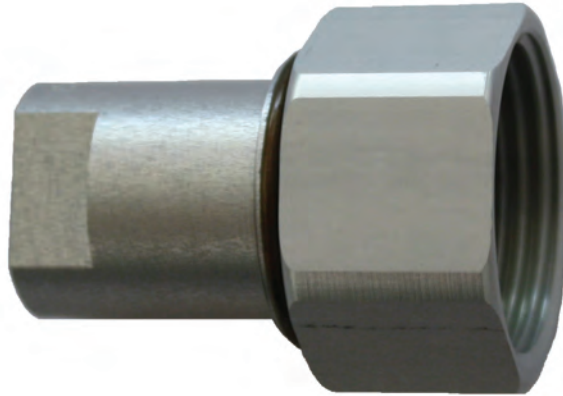


PN10 DN12

Gauge connecting coupling

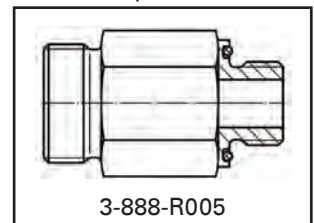
Order No.: 3-888-R031 T

Material: AL



Spare O-ring
Order No. 05-0057-R096

Suitable connecting parts



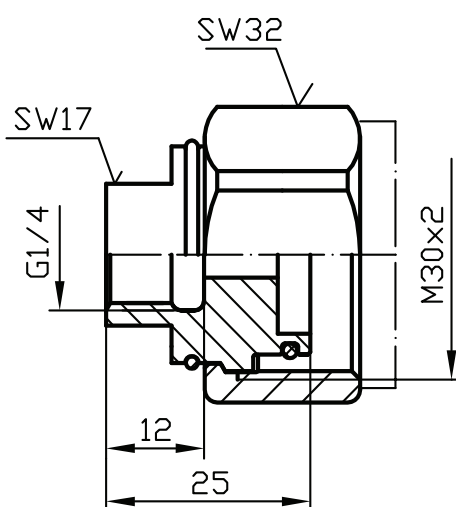
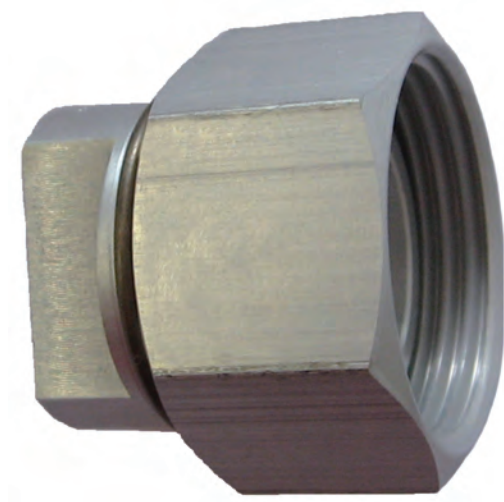
3-888-R005

PN10 DN12

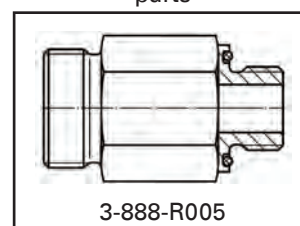
Gauge connecting coupling

Order No.: 3-888-R009 T

Material: AL



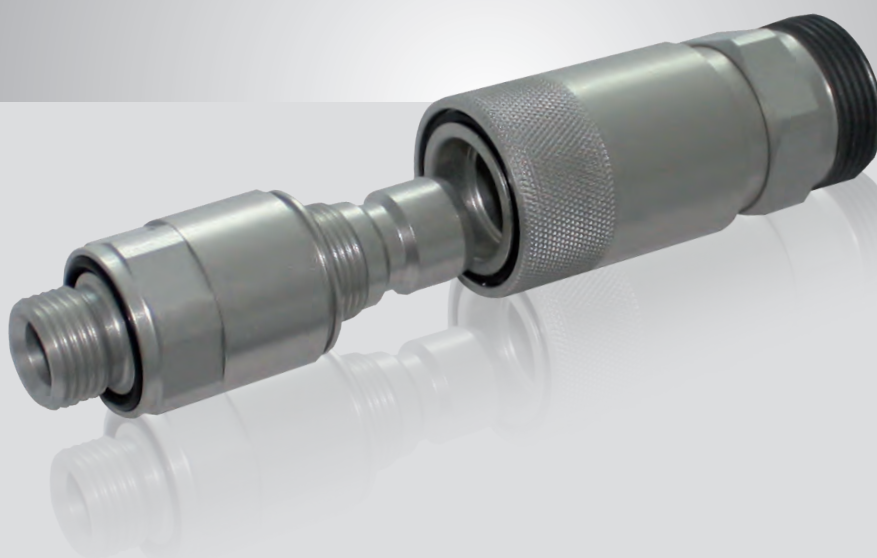
Suitable connecting parts



3-888-R005



DILO couplings DN12



The plug connection allows to establish a connection by simply fitting both coupling parts into each other. Before load relieving of the coupling seats the pressure- and vacuum tight coupling is sealed inside with an O-ring during the coupling process. The coupling is forced to be open in coupled position. If both coupling sides are separated again the sealing seats shut off automatically.

All couplings are temperature-resistant from -40 °C to +80 °C.

The suitable connecting parts for DILO couplings must be ordered separately.

■ DILO couplings DN12

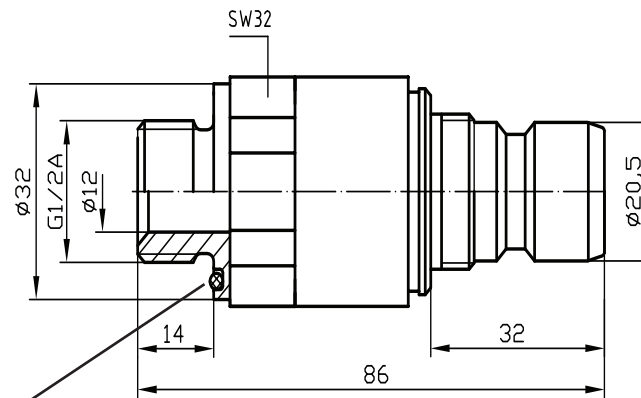
- 3-1095-R005 Plug connection groove part PN8 DN12 50
- 3-1095-R016 Covering cap für plug connection groove part PN8 DN12 51
- 3-1095-R001 Plug connection tongue part PN8 DN12 52
- 3-1095-R002 Plug connection tongue part PN8 DN12 53 with connecting coupling for measuring device
- 3-1095-R017 Density gauge connection PN8 DN12 54

PN8 DN12

Plug connection groove part

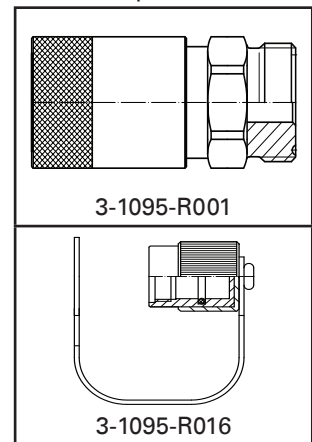
Order No.: 3-1095-R005 T

Material: AL



Spare O-ring
Order No. 05-0057-R087

Suitable connecting parts

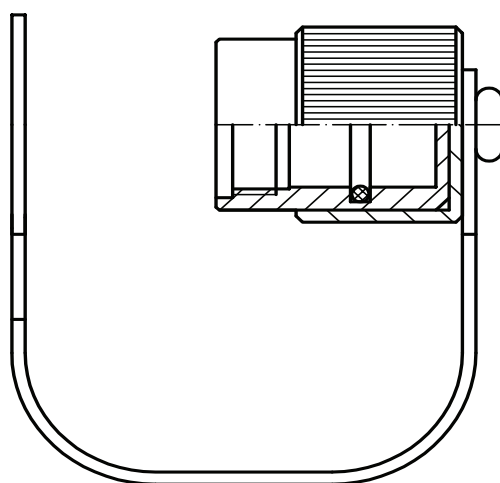


PN8 DN12

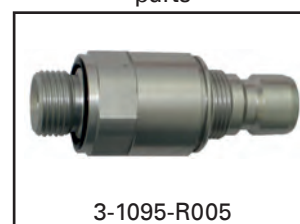
Covering cap for plug connection groove part

Order No.: 3-1095-R016 T

Material: AL



Suitable connecting parts



3-1095-R005

PN8 DN12

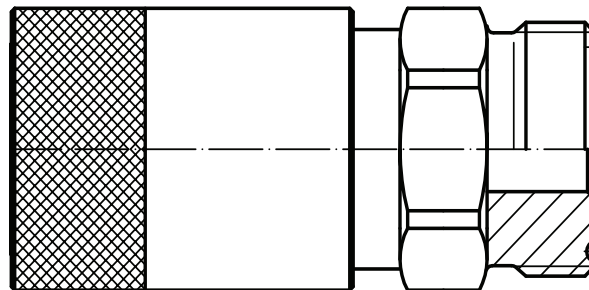
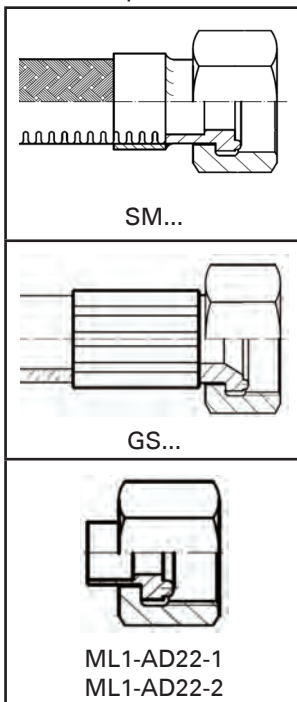
Plug connection tongue part

Order No.: 3-1095-R001 T

Material: AL



Suitable connecting parts



Suitable connecting parts

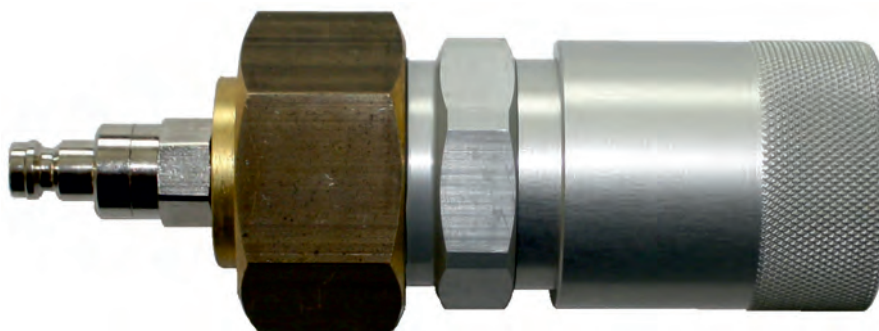


PN8 DN12

Plug connection tongue part with connecting coupling for measuring device

Order No.: 3-1095-R002 T

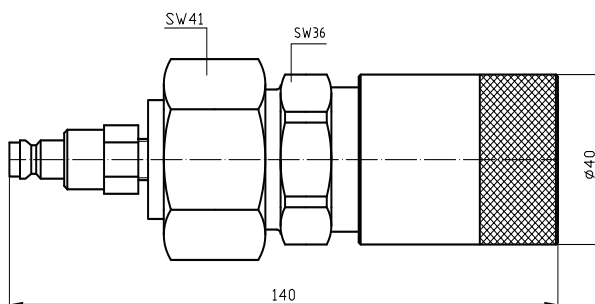
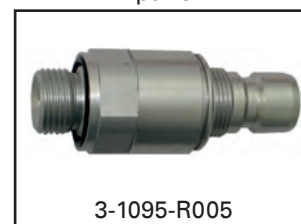
Material: AL



Suitable connecting parts



Suitable connecting parts

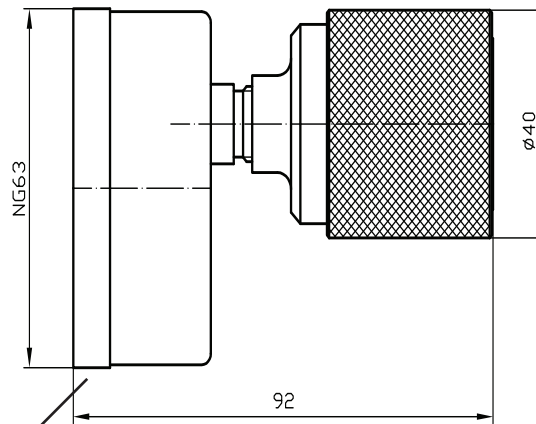
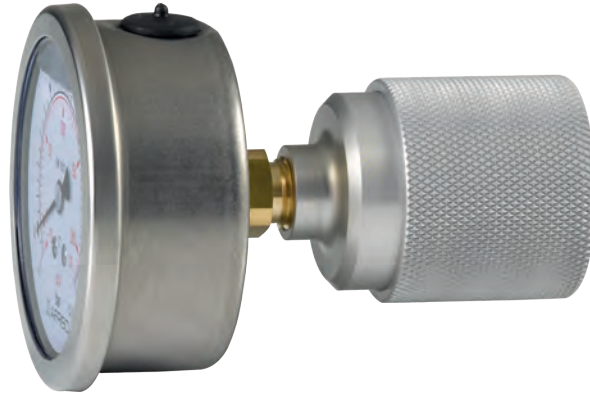


PN8 DN12

Density gauge connection

Order No.: 3-1095-R017 T

Material: AL

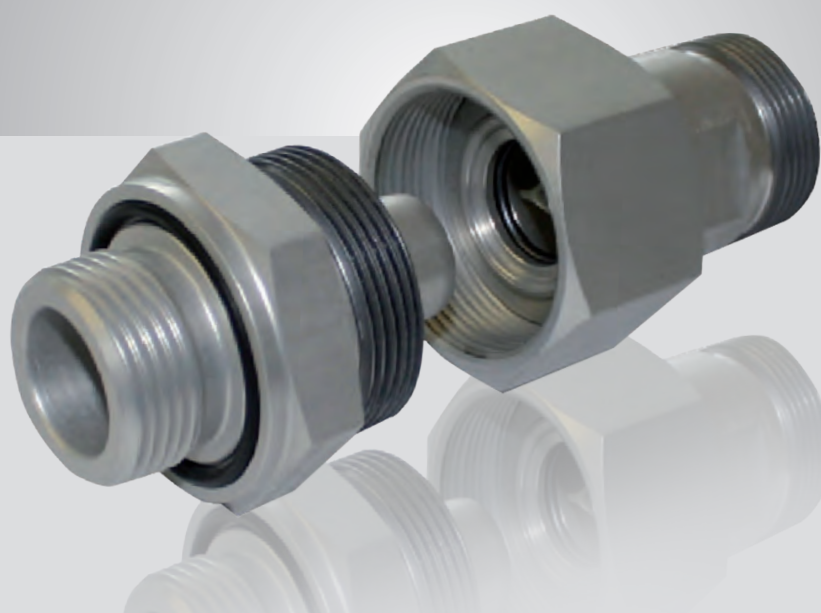


Indication range on customer request

Suitable connecting parts



DILO couplings DN20



The coupling allows to establish a connection by simply fitting both coupling parts into each other. Before load relieving of the coupling seats the pressure- and vacuum tight coupling is sealed inside with an O-ring during the coupling process. The coupling is forced to be open in coupled position. If both coupling sides are separated again the sealing seats shut off automatically.

All couplings are temperature-resistant from -40 °C to +80 °C.

In special version these couplings are also available for a temperature range of -60 °C to +80 °C.

The suitable connecting parts for DILO couplings must be ordered separately.

■ DILO couplings DN20

■ VK/A-02/20	Coupling groove part / A PN64 DN20	56
■ VK/B(G)-03/20	Coupling groove part PN64 DN20 with O-ring	57
■ VK/FL-01/20	Flange coupling PN64 DN20	58
■ 3-777-R001	Flange coupling PN64 DN20 with 2-hole flange	59
■ 3-685-R001	Flange coupling PN64 DN20	60
■ VK/KN-04/20	Covering cap for coupling groove part PN64 DN20	61
■ VK/F-02/20	Coupling tongue part PN64 DN20	62
■ 3-1121-R003	DN20 Quick coupling	63
■ 6-1161-R012	Coupling tongue part PN64 DN20 with connecting coupling for measuring device	64
■ 6-1206-R001	Coupling tongue part	65
■ 6-1092-R006	Coupling tongue part	66
■ 6-1281-R001	Coupling tongue part with air filter	67
■ SK-282-R020	Gauge connecting coupling PN64 DN20	68

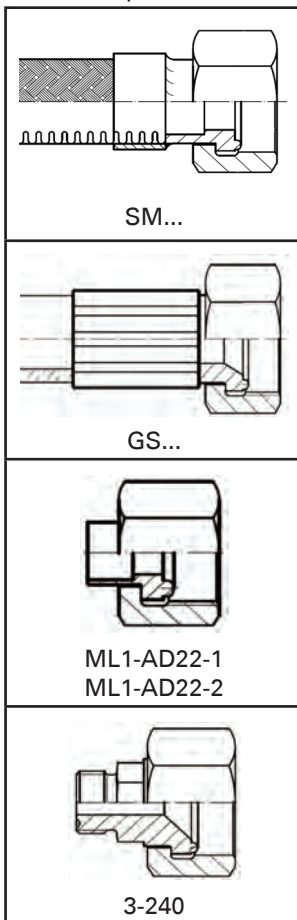
A PN64 DN20

Coupling groove part

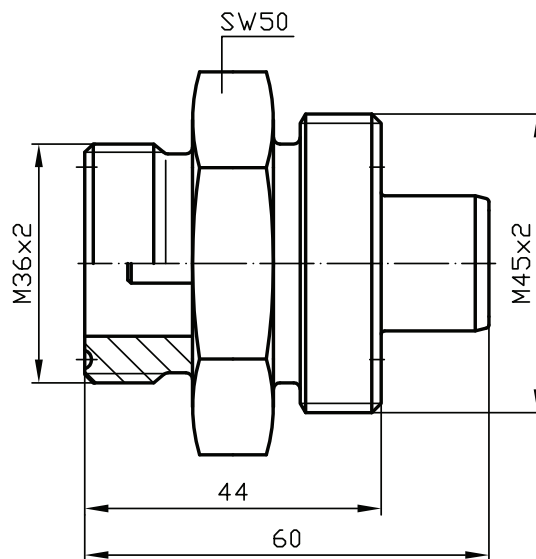
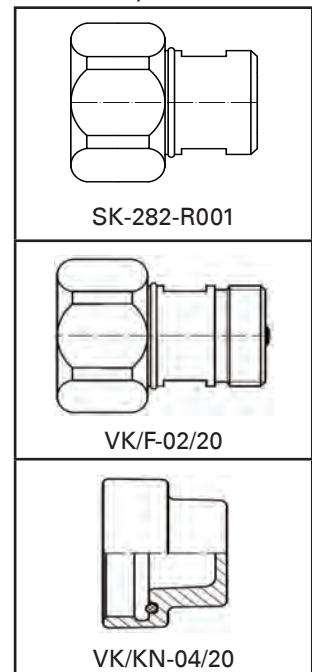


Order No.	Material
VK/A-02/20 T	AL
VK/A-02/20 P	Brass
VK/A-02/20 E	Stainless steel

Suitable connecting parts

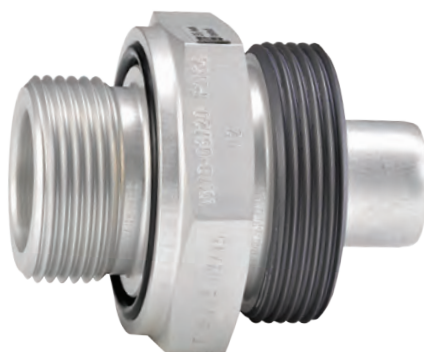


Suitable connecting parts

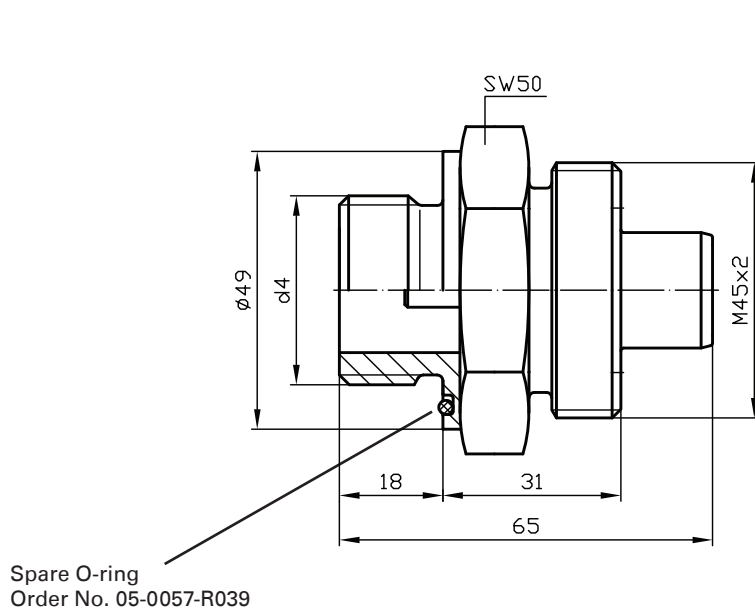


PN64 DN20

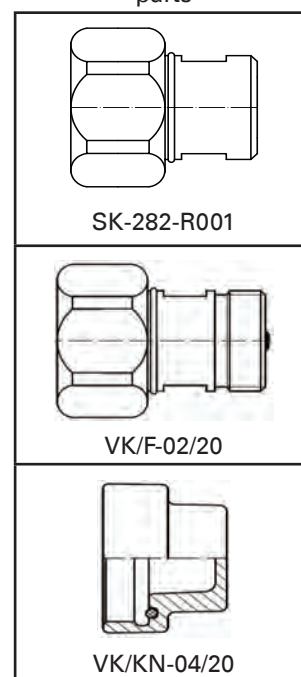
Coupling groove part with O-ring



d4	Order No.	Material
M33 x 2	VK/B-03/20 T	AL
M33 x 2	VK/B-03/20 P	Brass
M33 x 2	VK/B-03/20 E	Stainless steel
G 1 A	VK/BG-03/20 T	AL
G 1 A	VK/BG-03/20 P	Brass
G 1 A	VK/BG-03/20 E	Stainless steel



Suitable connecting parts



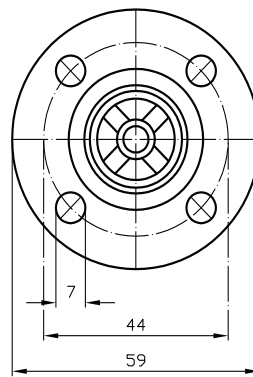
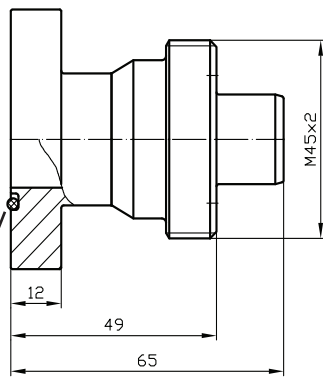
In special version the screw-in thread can also be supplied with sealing edge according to DIN 3852-1 and DIN EN ISO 1179.

PN64 DN20

Flange coupling

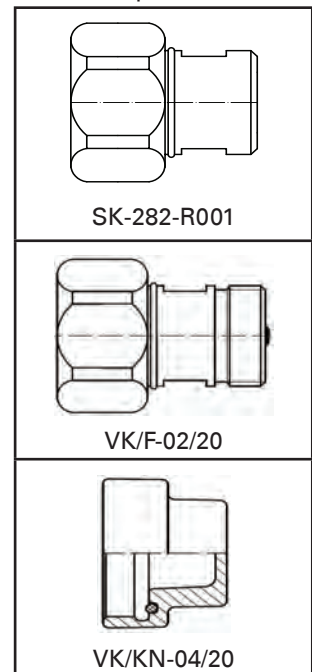


Order No.	Material
VK/FL-01/20 T	AL
VK/FL-01/20 E	Stainless steel



Spare O-ring
Order No. 05-0057-R030

Suitable connecting parts



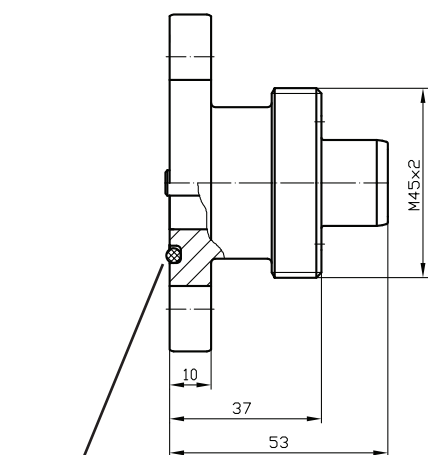
Other flanges are available on request.

PN64 DN20

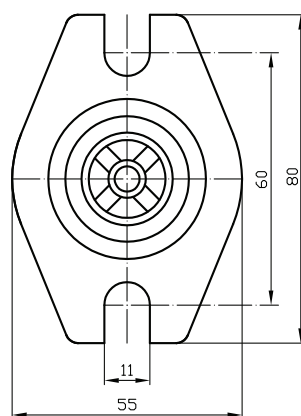
Flange coupling with 2-hole flange

Order No.: 3-777-R001 T

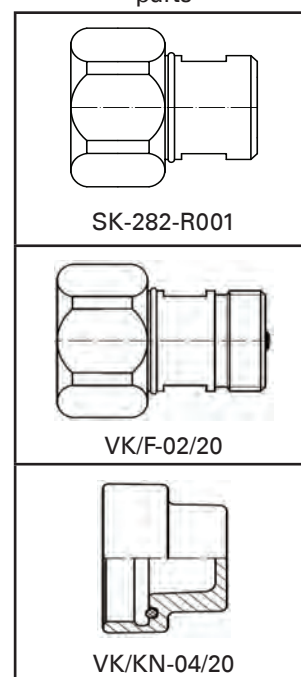
Material: AL



Spare O-ring
Order No. 05-0057-R098



Suitable connecting parts



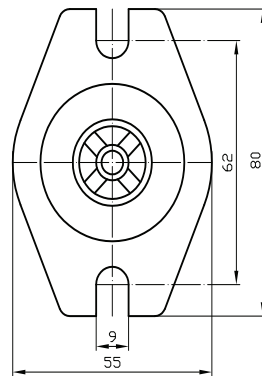
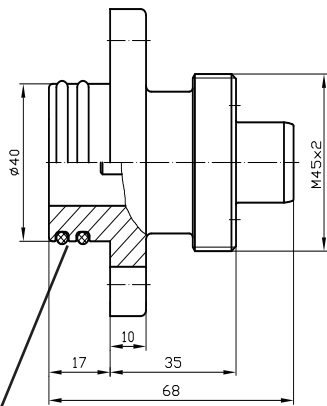
Other flanges are available on request.

PN64 DN20

Flange coupling

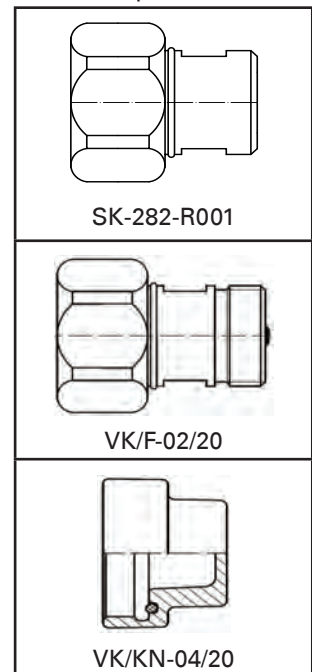
Order No.: 3-685-R001 T

Material: AL



Spare O-ring
Order No. 05-0057-R116

Suitable connecting parts



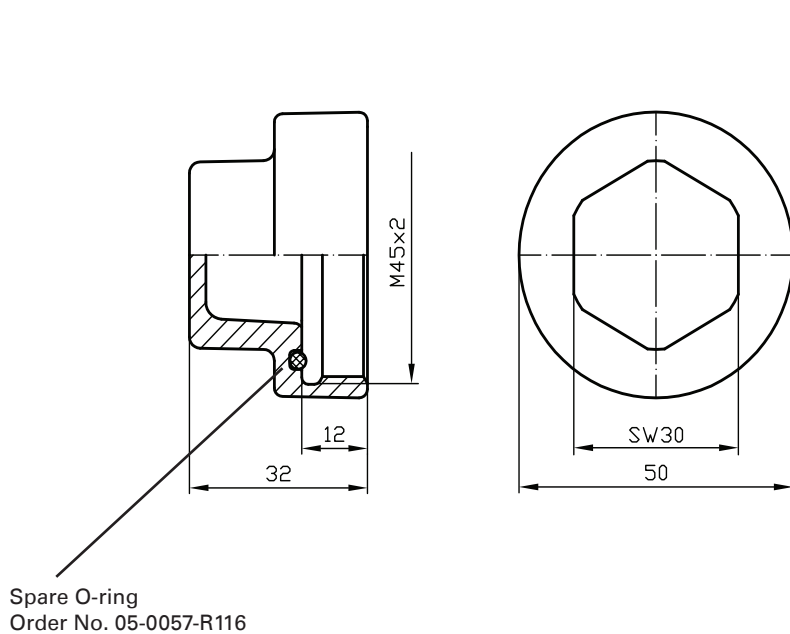
Other flanges are available on request.

PN64 DN20

Covering cap for coupling groove part



Order No.	Material
VK/KN-04/20 T	AL
VK/KN-04/20 E	Stainless steel



Suitable connecting parts

	3-777-R001
	VK/FL-01/20
	3-685-R001
	VK/A-02/20
	VK/B-03/20 VK/BG-03/20

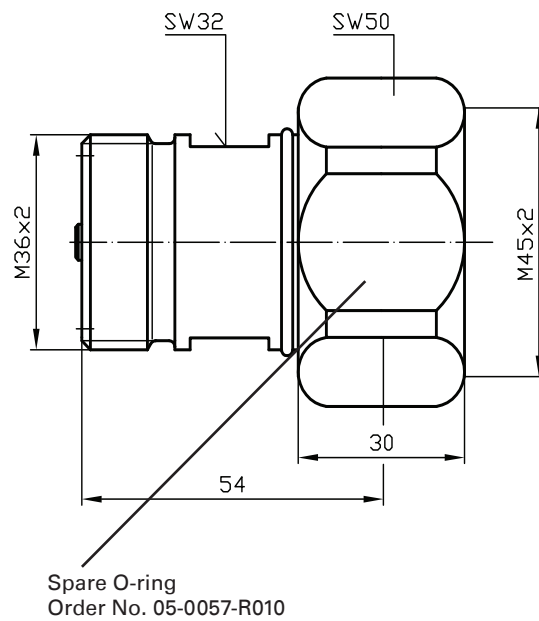
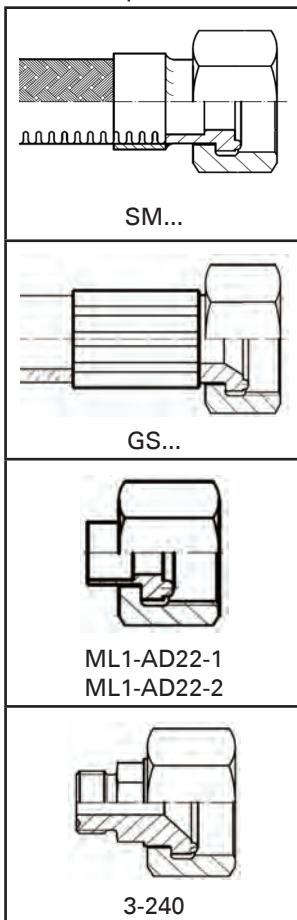
PN64 DN20

Coupling tongue part

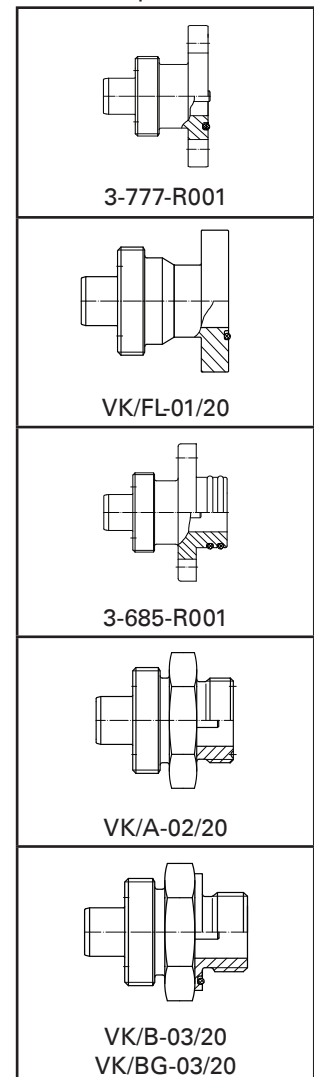


Order No.	Material
VK/F-02/20 T	AL
VK/F-02/20 E	Stainless steel
VK/F-02/20 P	Brass

Suitable connecting parts



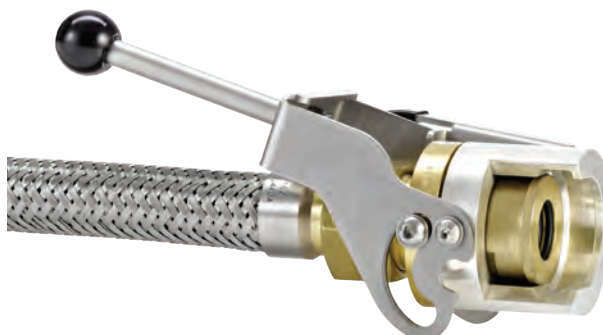
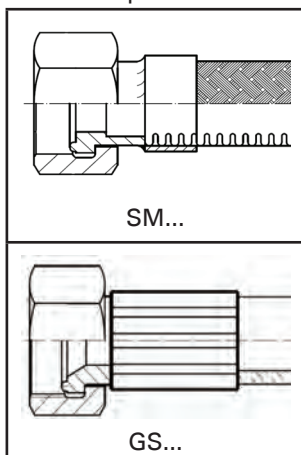
Suitable connecting parts



3-1121-R003

DN20 Quick coupling

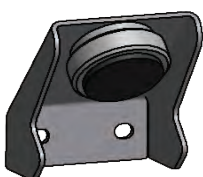
Suitable connecting parts



closed coupling

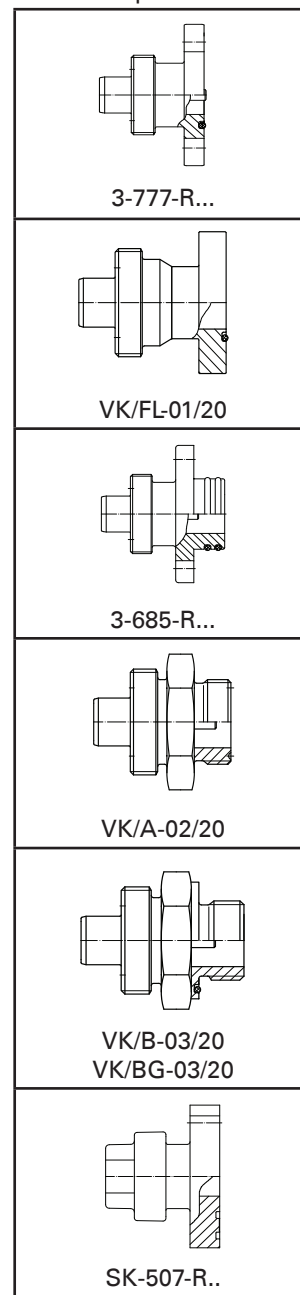


open coupling



Mount for safe fixation on the wall and as dust protection
Article-No. 3-1121-R093

Suitable connecting parts



For easy coupling and uncoupling of hoses

The quick coupling is very useful in all fields of application where hoses have to be frequently loosened and reconnected e. g. during final tests of completely mounted GIS fields. Thanks to the clamp lock the DN20 hoses can easily be connected without any loss of SF₆ gas. Thus the handling times in GIS production are shortened and productivity is increased considerably.

Important note:

The quick coupling is only compatible with DILO coupling groove parts of version 2 (additional "V2" stamp on the flange or wrench size).

Please see our product video!

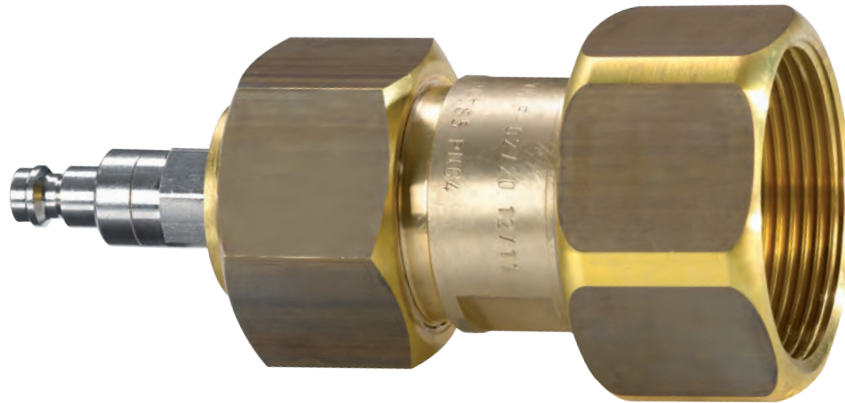


PN64 DN20

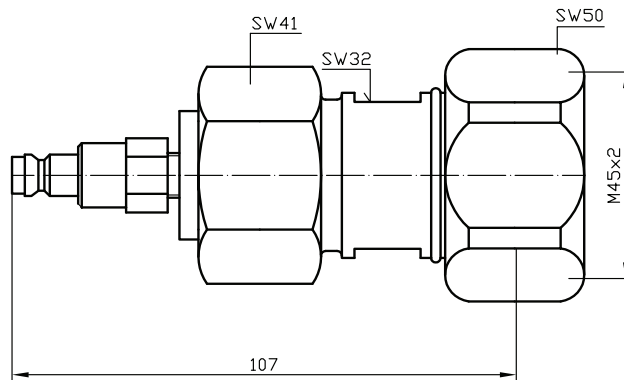
**Coupling tongue part
with connecting coupling for measuring device**

Order No.: 6-1161-R012

Material: Brass



Suitable connecting parts



Suitable connecting parts

3-777-R001
VK/FL-01/20
3-685-R001
VK/A-02/20
VK/B-03/20 VK/BG-03/20

PN64 DN20

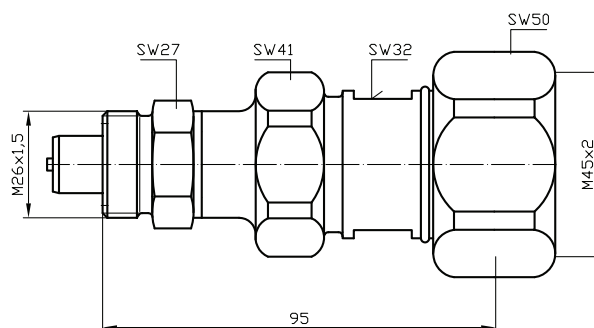
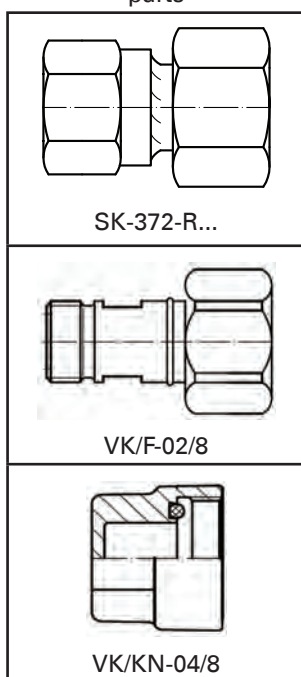
Coupling tongue part

Order No.: 6-1206-R001

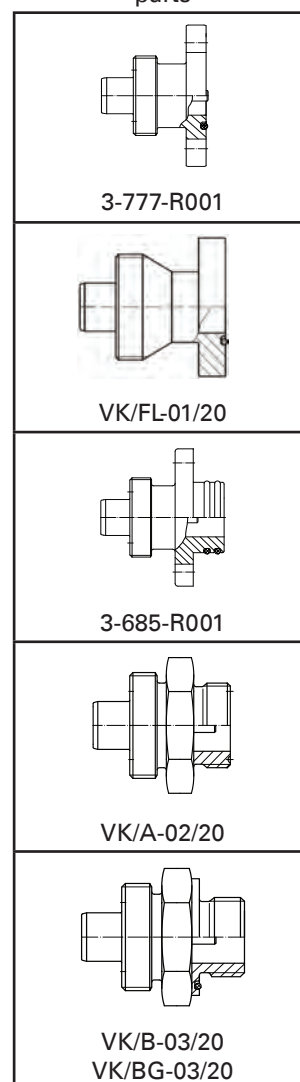
Material: Brass



Suitable connecting parts



Suitable connecting parts

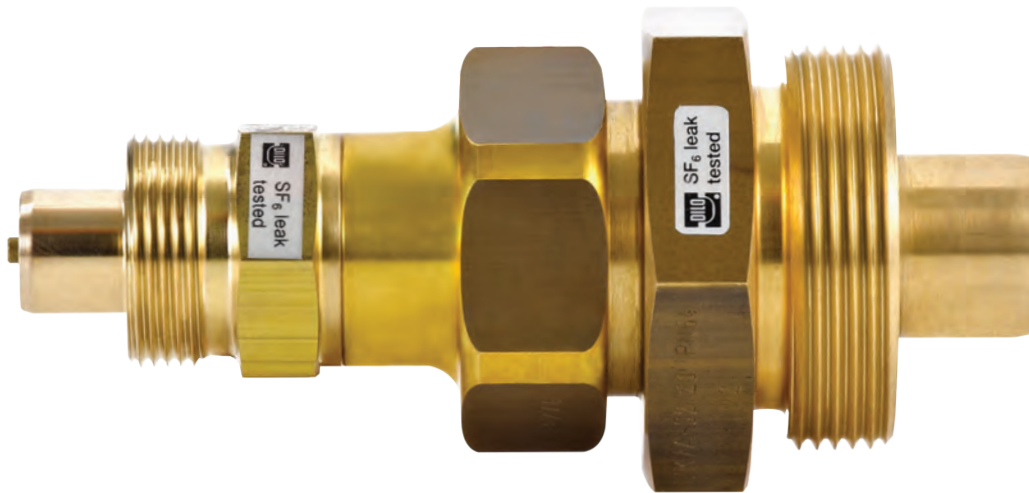


PN64 DN20

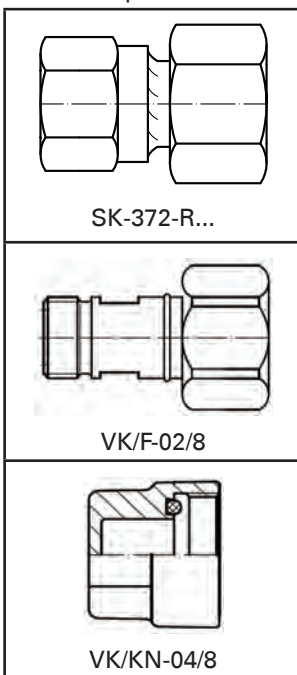
**Coupling tongue part
with connecting coupling for measuring device**

Order No.: 6-1092-R006

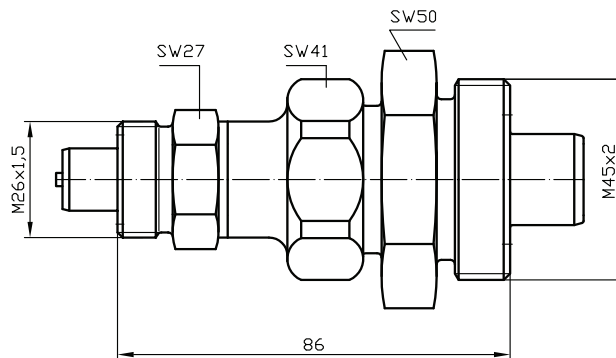
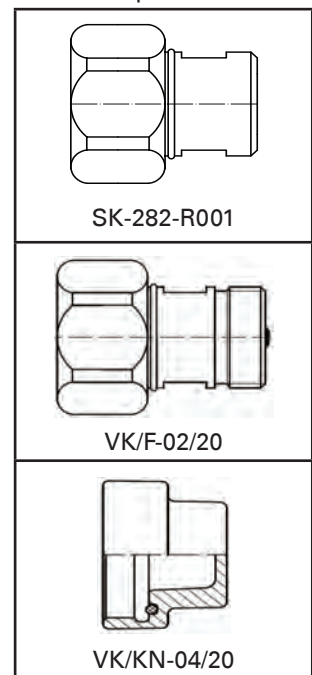
Material: Brass



Suitable connecting parts



Suitable connecting parts

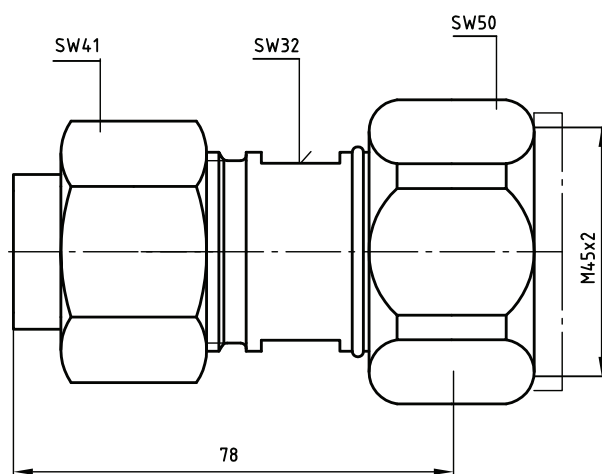
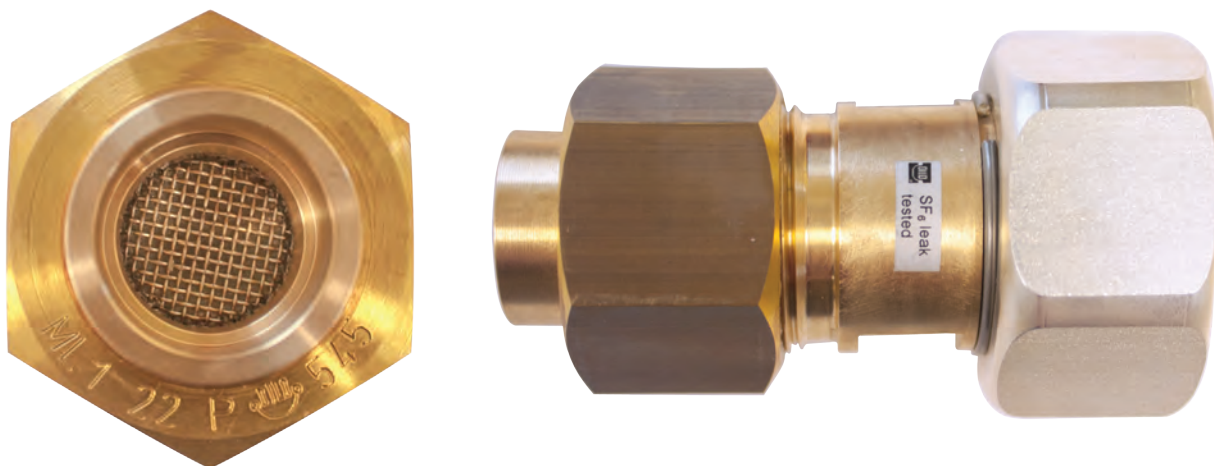


PN64 DN20

Coupling tongue part with air filter

Order No.: 6-1281-R001

Material: Brass



Suitable connecting parts

3-777-R001
VK/FL-01/20
3-685-R001
VK/A-02/20
VK/B-03/20 VK/BG-03/20

Description

This coupling tongue part allows gas compartments which are under vacuum to be flooded with air after the SF₆ gas recovery and it is not necessary to use any service cart.

The integrated 100-µm filter sieve prevents dirt particles from ambient air penetrating the gas compartment during the flooding process.

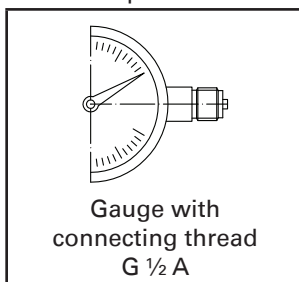
PN64 DN20

Gauge connecting coupling

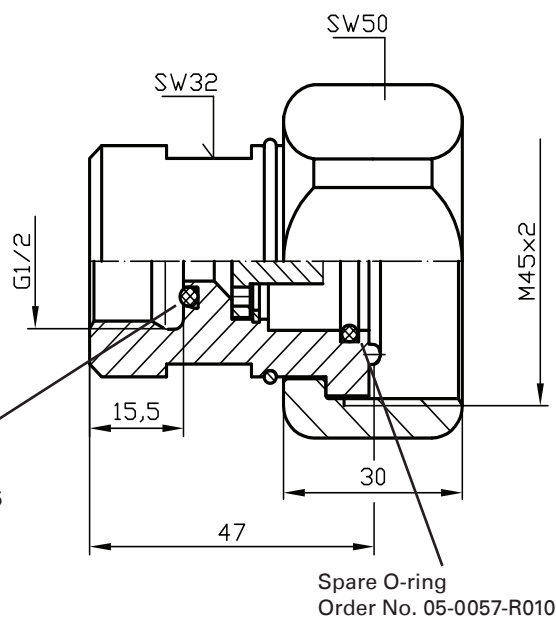


Order No.	Material
SK-282-R020 T	AL
SK-282-R020 P	Brass

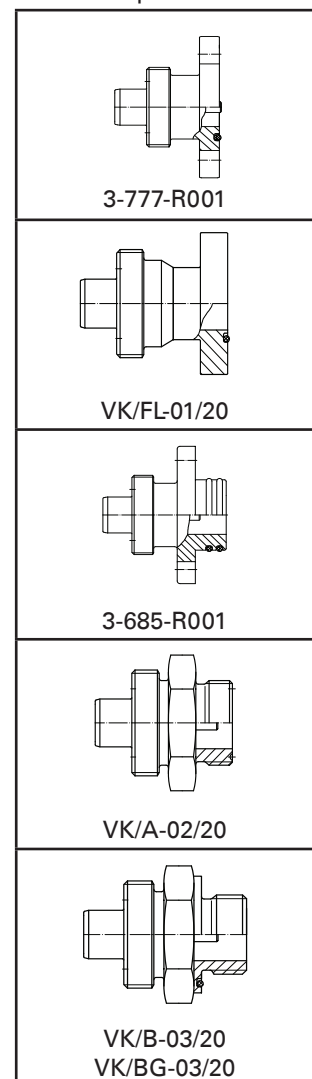
Suitable connecting parts



Spare O-ring
Order No. 05-0057-R225



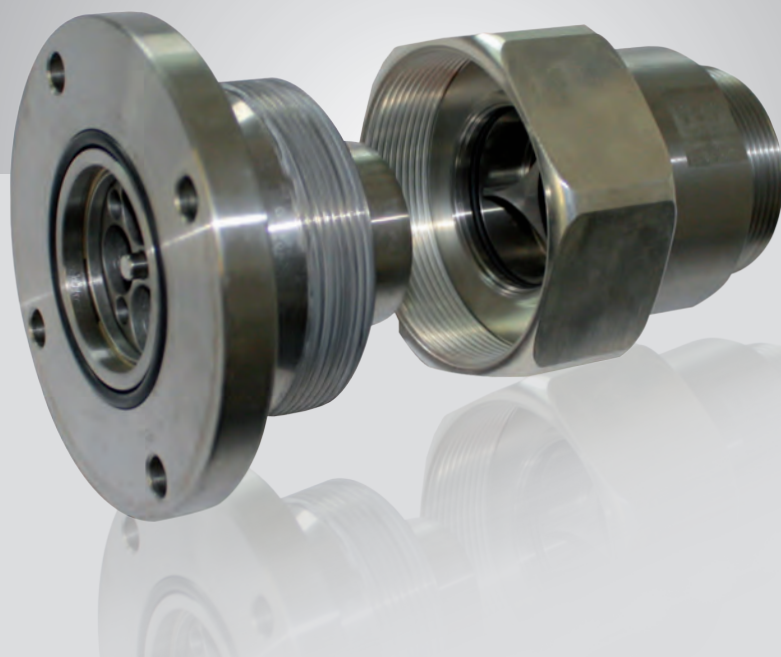
Suitable connecting parts



Description

The gauge connecting coupling serves as connecting piece to a coupling groove part DN20. When coupling, a pin in the gauge connecting coupling opens the flow of the opposite coupling groove part (forced opening). This allows to read the present operating pressure on the screwed-in gauge. When disconnecting, the conical nipple of the groove part is closed by spring load (pressure and vacuum tight). If the gauge connecting coupling is not connected the gauge shows „zero pressure“. The connecting coupling allows to install the gauge in any required position (rotatable 360°).

DILO couplings DN40



The coupling allows to establish a connection by simply fitting both coupling parts into each other. Before load relieving of the coupling seats the pressure- and vacuum tight coupling is sealed inside with an O-ring during the coupling process. The coupling is forced to be open in coupled position. If both coupling sides are separated again the sealing seats shut off automatically.

All couplings are temperature-resistant from -40 °C to +80 °C.

The suitable connecting parts for DILO couplings must be ordered separately.

■ DILO couplings DN40

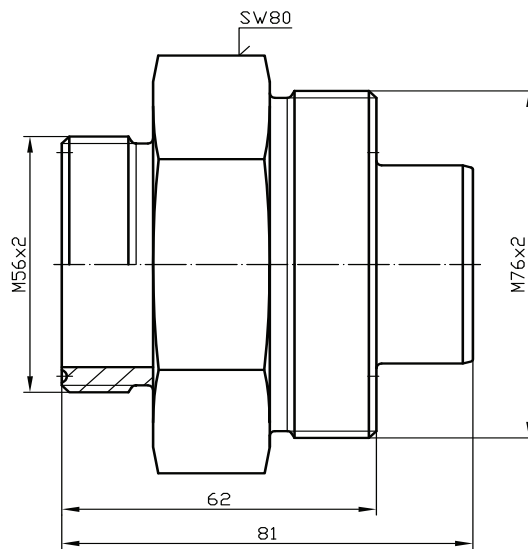
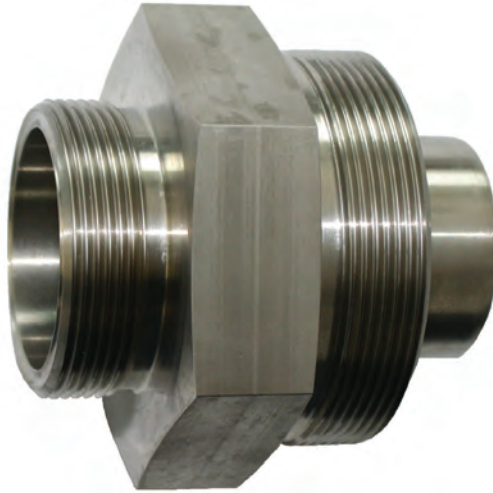
■ VK/A-02/40	Coupling groove part / A PN16 DN40	70
■ VK/FL-01/40	Flange coupling PN16 DN40	71
■ VK/KN-01/40	Covering cap PN16 DN40	72
■ VK/F-01/40	Coupling tongue part PN16 DN40	73
■ 6-1092-R001	Coupling tongue part PN16 DN40	74

A PN16 DN40

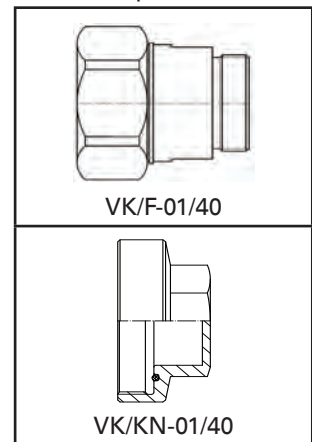
Coupling groove part

Order No.: VK/A-02/40 E

Material: Stainless steel

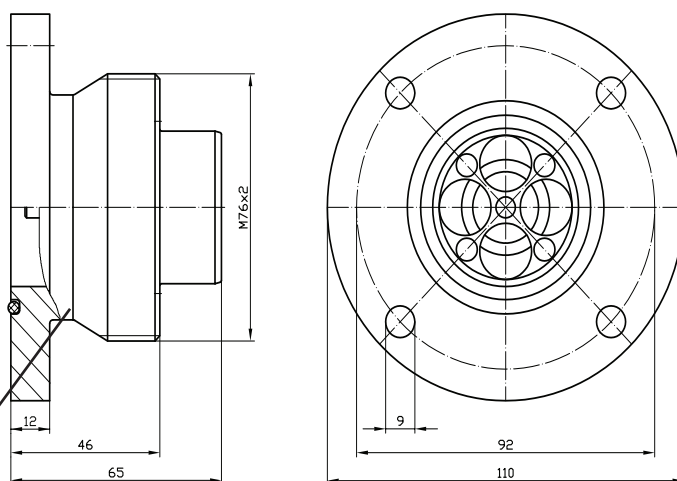
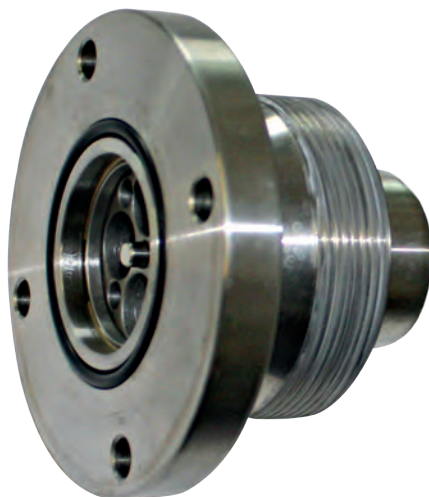


Suitable connecting parts



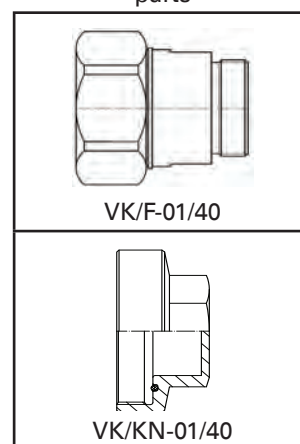
PN16 DN40
Flange coupling

Order No.: VK/FL-01/40 E
Material: Stainless steel



Spare O-ring
 Order No. 05-0057-R126

Suitable connecting parts

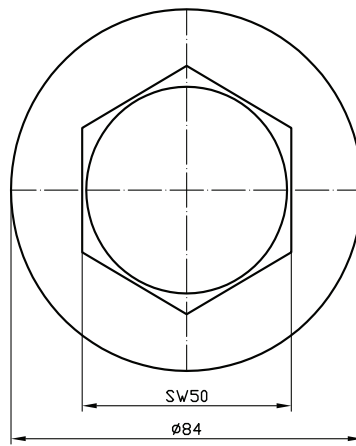
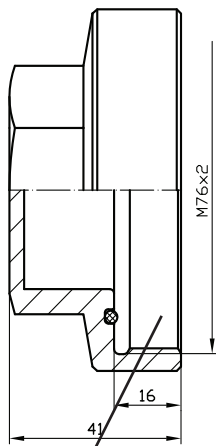


Other flanges are available on request.

PN16 DN40 Covering cap

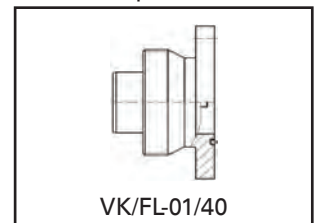
Order No.: VK/KN-01/40 T

Material: AL



Spare O-ring
Order No. 05-0057-R126

Suitable connecting
parts



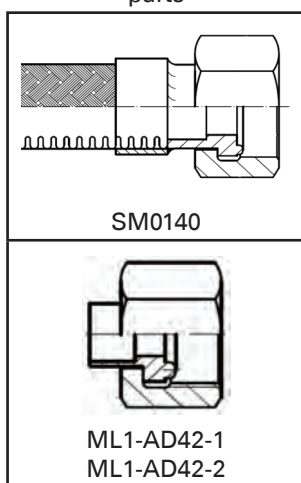
VK/FL-01/40

PN16 DN40
Coupling tongue part

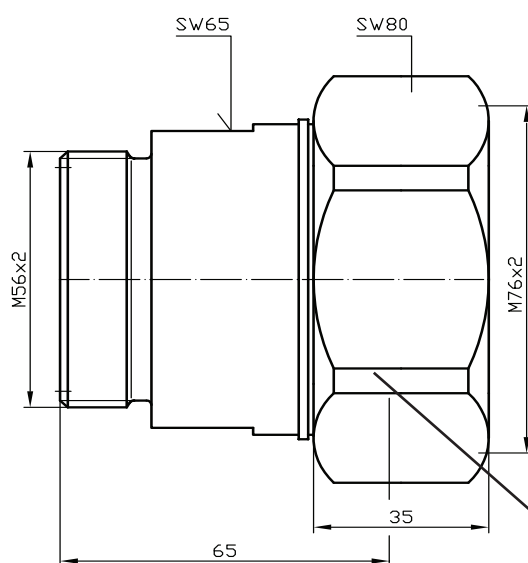
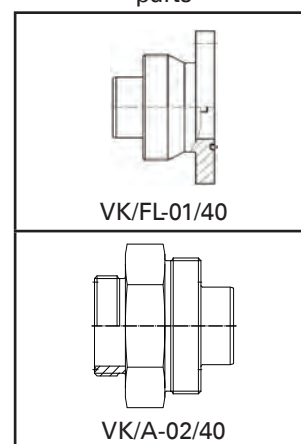
Order No.: VK/F-01/40 E
Material: Stainless steel



Suitable connecting parts



Suitable connecting parts



Spare O-ring
 Order No. 05-0057-R141

PN16 DN40

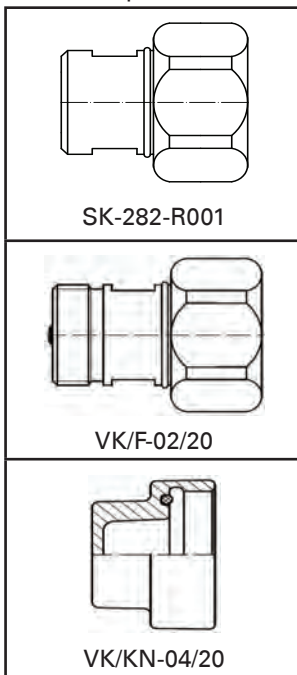
Coupling tongue part

Order No: 6-1092-R001

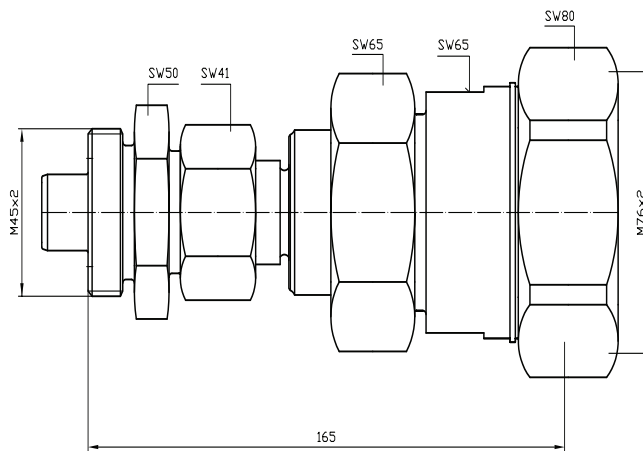
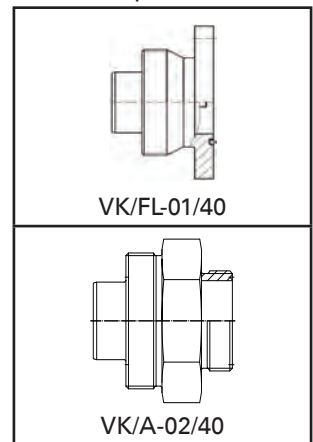
Material: Brass/ Stainless steel



Suitable connecting parts



Suitable connecting parts



DILO soldering unions



DILO soldering unions are particularly used in factory fabrication area piping. DILO offers a very wide variety of unions. Soldering unions are available either with soldering connections on both ends where the highest vibration resistance is required or with a soldering connection on one end and a screw in thread on the other.

DILO soldering unions withstand pressures up to 64 bar.

Different materials are available for all applications.

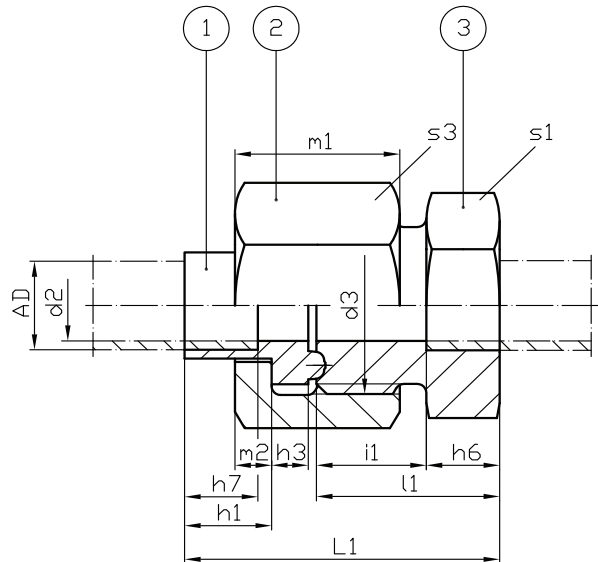
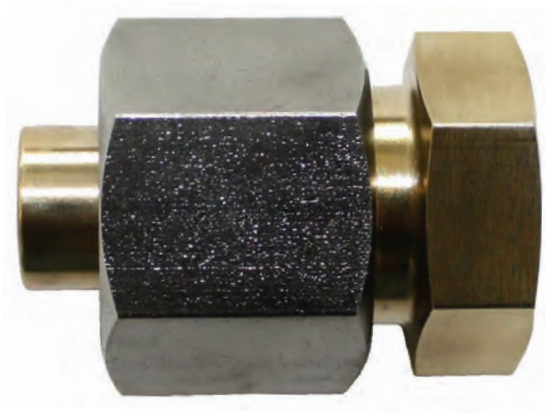
The suitable connecting parts for DILO couplings must be ordered separately.

■ DILO soldering unions of the ML1 series for pressures up to PN64

■ ML1A-AD	Soldering stub-soldering union PN64	76
■ ML1BO-AD	Screw-in stub-soldering union PN64 with O-ring	77
■ ML1M-AD10	Gauge union PN64 DN8	78
■ 3-328-R020	Gauge union PN64 DN8	79
■ ML1-..8	Blanking disk PN64	80
■ VST03	Plug PN64	81
■ 05-1545-R...	Tee piece	82
■ 05-1545-R...	Angle piece	83
■ 05-1545-R...	Plug-in angle piece	84

PN64

Soldering stub-soldering union



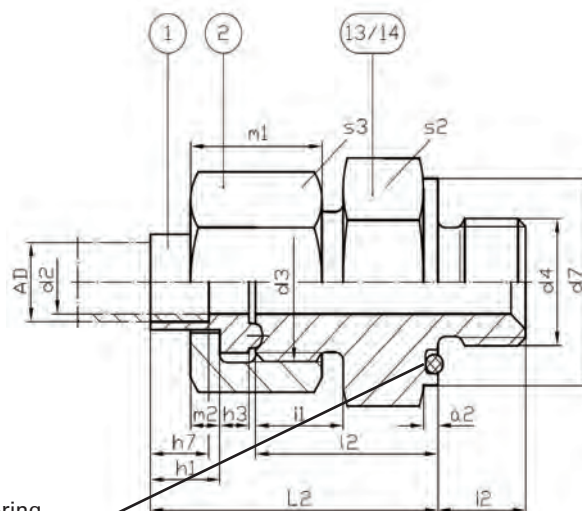
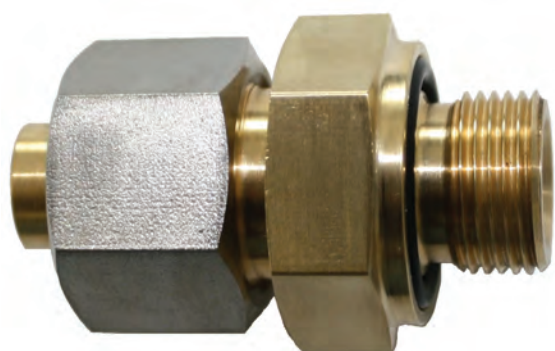
Tube outside diameter Ø AD	d2	d3	L1	l1	h1	h3	h6	h7	m1	m2	i1	s1	s3	Order No.
10	8	M20x1,5	35	20	9,5	4	8	8	18	4	12	22	24	ML1A-AD10 P
10	8	M20x1,5	35	20	9,5	4	8	8	18	4	12	22	24	ML1A-AD10 C
15	12	M26x1,5	52	22	13,5	5	10	10	20	5	12	27	32	ML1A-AD15 P
22	19	M36x2	54	31	15,5	6	12	12	26	7	16	41	41	ML1A-AD22 P
22	19	M36x2	54	31	15,5	6	12	12	26	7	16	41	41	ML1A-AD22 C
42	35	M56x2	65	37	19,5	7	20	20	29	7	18	60	65	ML1A-AD42 P
42	35	M56x2	65	37	19,5	7	20	20	29	7	18	60	65	ML1A-AD42 C

Piece	Designation	Order No.	Material
1	Soldering shoulder-tongue part	ML1-AD_____-1	P = Brass / C = Stainless steel
2	Clamping nut	ML1-AD_____-2	P = Brass / C = Stainless steel
3	Soldering stub-groove part	ML1-AD_____-3	P = Brass / C = Stainless steel

Note: For the nominal width (outside diameter 10) the clamping nut is made of stainless steel.

PN64

Screw-in stub-soldering union with O-ring



Spare O-ring
 Order No. AD10: 05-0057-R016
 AD15: 05-0057-R087
 AD22: 05-0057-R039
 AD42: 05-0057-R126

Tube outside diameter Ø AD	d2	d3	d4	d7	L2	l2	h1	h3	h7	m1	m2	i1	i2	a2	s2	s3	Order No.
10	8	M20x1,5	M16x1,5	26	40	25	9,5	4	8	18	4	12	12	2	27	24	ML1BO-AD10 P
10	8	M20x1,5	M16x1,5	26	40	25	9,5	4	8	18	4	12	12	2	27	24	ML1BO-AD10T
10	8	M20x1,5	G 3/8 A	26	40	25	9,5	4	8	18	4	12	12	2	27	24	ML1BO-AD10G P
10	8	M20x1,5	G 3/8 A	26	40	25	9,5	4	8	18	4	12	12	2	27	24	ML1BO-AD10GT
15	12	M26x1,5	G 1/2 A	32	47	27	13,5	5	10	20	5	12	14	3	32	32	ML1BO-AD15G P
22	19	M36x2	M33x2	49	59	36	15,5	6	12	26	7	16	18	3	50	41	ML1BO-AD22 P
22	19	M36x2	M33x2	49	59	36	15,5	6	12	26	7	16	18	3	50	41	ML1BO-AD22T
22	19	M36x2	G 1 A	49	59	36	15,5	6	12	26	7	16	18	3	50	41	ML1BO-AD22G P
22	19	M36x2	G 1 A	49	59	36	15,5	6	12	26	7	16	18	3	50	41	ML1BO-AD22GT
42	35	M56x2	G 1 1/2 A	65	69	41	19,5	7	20	29	7	18	22	3	65	65	ML1BO-AD42G P

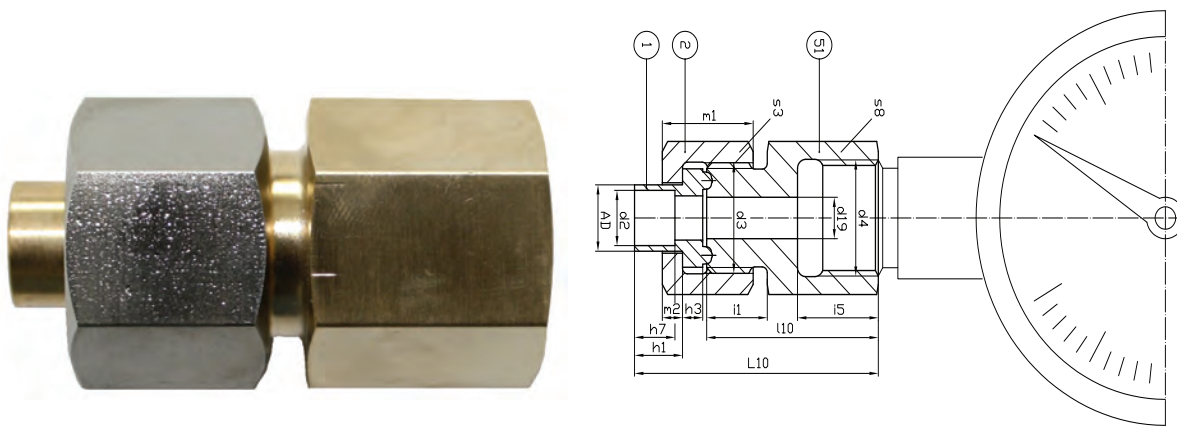
Piece	Designation	Order No.	Material
1	Soldering shoulder-tongue part	ML1-AD_____-1	P = Brass / C = Stainless steel
2	Clamping nut	ML1-AD_____-2	P = Brass / C = Stainless steel
13	Screw-in stub (M16x1,5 / M33x2)	ML1-AD_____-13	P = Brass / T = AL
14	Screw-in stub (G 3/8 A / G 1/2 A / G 1 A / G 1 1/2 A)	ML1-AD_____-14	P = Brass / T = AL

Note: For the nominal width (outside diameter 10) the clamping nut is made of stainless steel. Regarding material AL only part 13 or 14 is made of AL, part 1 and 2 are made of stainless steel.

In special version the screw-in thread can also be supplied with sealing edge according to DIN 3852-1 and DIN EN ISO 1179.

PN64 DN8

Gauge union



Tube outside diameter Ø AD	d2	d3	d4	d19	L10	l10	h1	h3	h7	m1	m2	i1	i5	s3	s8	Order No.
10	8	M20x1,5	G 1/2	7,5	49	34	9,5	4	8	18	4	12	16	24	24	ML1M-AD10/51
10	8	M20x1,5	G 1/4	5,5	44	29	9,5	4	8	18	4	12	13	24	22	ML1M-AD10/59

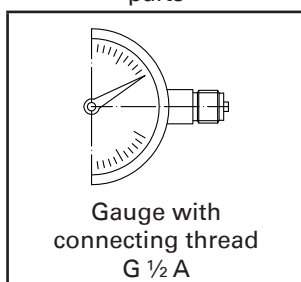
Piece	Designation	Order No.	Material
1	Soldering shoulder-tongue part	ML1-AD10-1 P	Brass
2	Clamping nut	ML1-AD10-2 C	Stainless steel
3	Gauge connecting piece	M1-10-51 P	Brass
3	Gauge connecting piece	M1-10-59 P	Brass

PN64 DN8
Gauge union

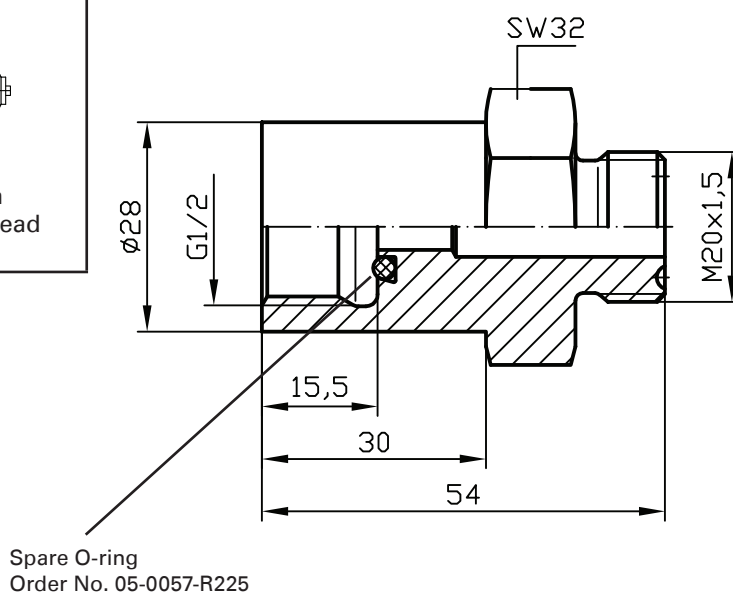
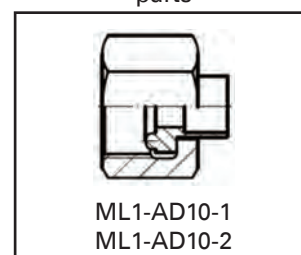
Order No.: 3-328-R020 P
Material: Brass



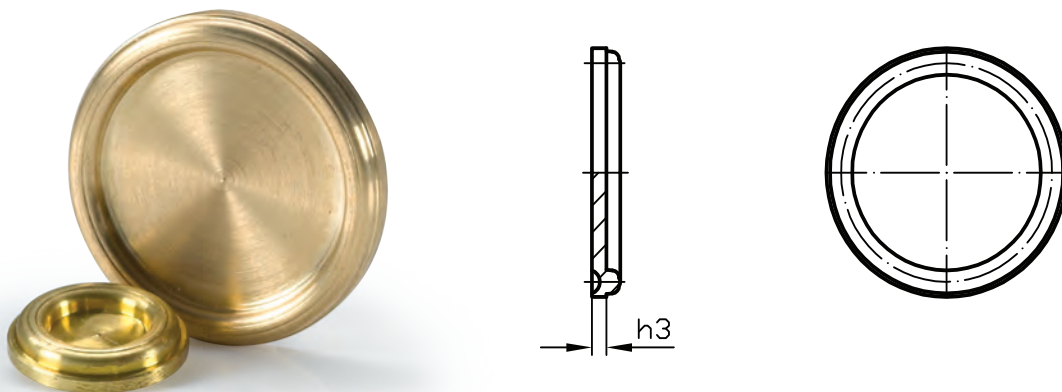
Suitable connecting parts



Suitable connecting parts

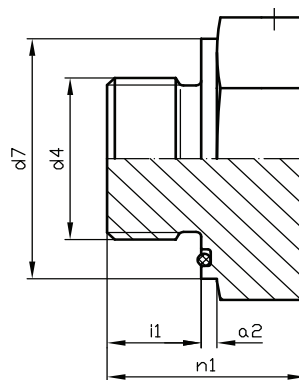


PN64
Blanking disk



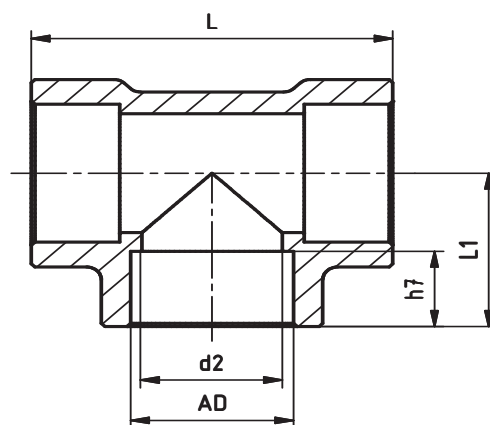
Tube outside diameter \varnothing AD	h3	Order No.	Material
10	1,5	ML1-10-8 P	Brass
22	2	ML1-22-8 P	Brass
42	3	ML1-42-8 P	Brass

PN64
Plug



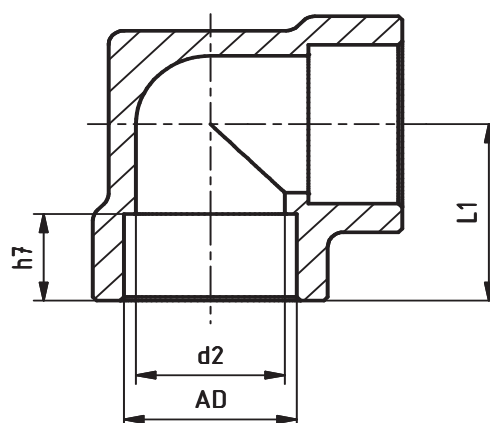
Metric fine thread ISO							Whitworth pipe thread			Spare O-ring	
d4	d7	n1	i1	a2	s2	Order No.	Material	d4	Order No.	Material	Order No.
	23	23	12	2	24			G 1/4 A	VST03 / G 1/4 AT	AL	05-0057-R088
M16x1,5	26	24	12	2	27	VST03 / M16x1,5	AL	G 3/8 A	VST03 / G 3/8 AT	AL	05-0057-R016
	36	32	15	3	36			G 1/2 A	VST03 / G 1/2 AT	AL	05-0057-R033
M33x2	49	38	18	3	50	VST03 / M33x2T	AL	G 1 A	VST03 / G 1 AT	AL	05-0057-R039
	65	45	22	3	65			G 1 1/2 A	VST03 / G 1 1/2 AT	AL	05-0057-R126

Tee piece



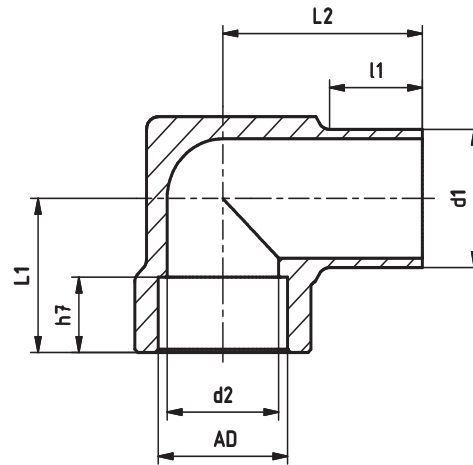
Tube outside diameter \varnothing AD	PN	d2	L	L1	h7	Order No.	Material
10	64	8	29	14,5	8	05-1545-R001	Brass
15	64	12	38	19	10	05-1545-R004	Brass
22	64	19	49	24,5	12	05-1545-R002	Brass
42	25	39	90	45	20	05-1545-R003	Brass

Angle piece



Tube outside diameter \varnothing AD	PN	d2	L1	h7	Order No.	Material
10	64	8	14,5	8	05-1545-R005	Brass
15	64	12	19	10	05-1545-R008	Brass
22	64	19	24,5	12	05-1545-R006	Brass
42	25	39	45	20	05-1545-R007	Brass

Plug-in angle piece



Tube outside diameter Ø AD	PN	d2	L1	h7	L2	d1	l1	Order No.	Material
10	64	8	14,5	8	21,5	10	10	05-1545-R010	Brass
15	64	12	19	10	26	15	13	05-1545-R011	Brass
22	64	19	24,5	12	34	22	16	05-1545-R012	Brass
42	25	39	45	20	56,4	42	24	05-1545-R013	Brass

DILO ball valves



The ball valve has a compact design and is maintenance-free. The notch on the spindle head and the position of the handle show the flow rate (closed or opened). The flow rate is controlled by a ball which is stored in a sealing. Each ball valve is tested for tightness in our works.

All ball valves are temperature-resistant from -40 °C to +80 °C.

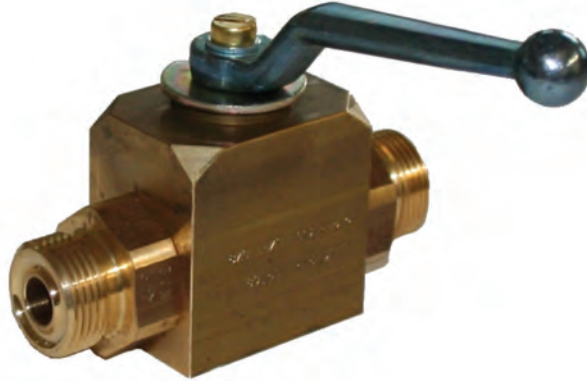
The suitable connecting parts must be ordered separately.

■ DILO ball valves for pressures up to PN64

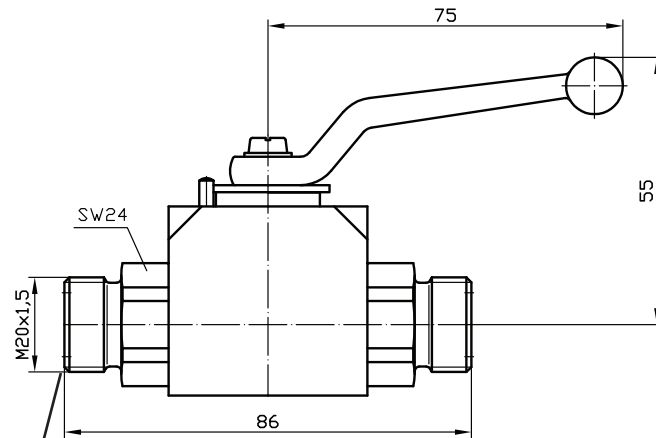
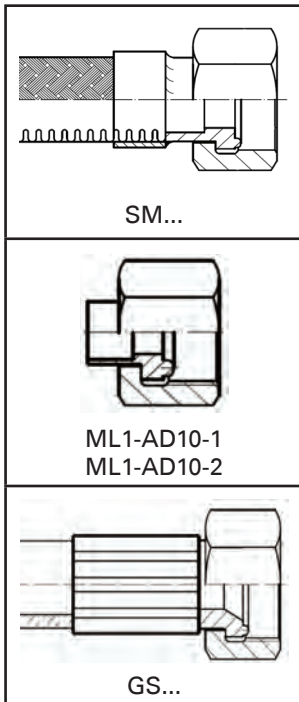
■ 3-365-R001	Ball valve PN64 DN8	84
■ 3-365-R008	Ball valve with handwheel PN64 DN8	85
■ 3-383-R001	Ball valve PN64 DN20	86
■ 3-679-R001	Ball valve PN25 DN40	87

PN64 DN8 Ball valve

Order No.: 3-365-R001 P
Material: Brass



Suitable connecting
parts on both ends



other connections are available

PN64 DN8

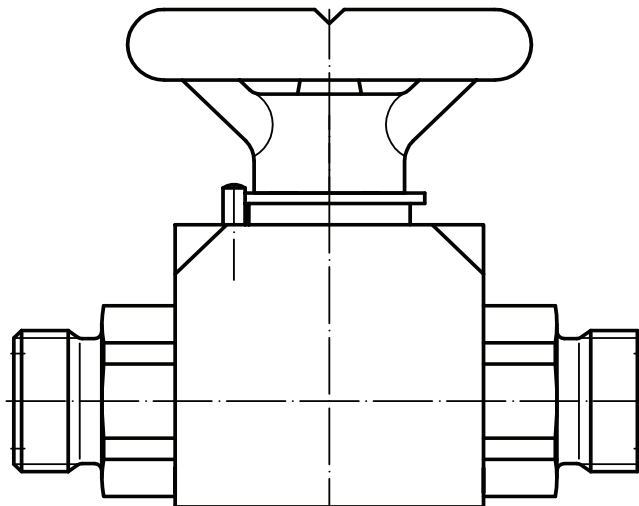
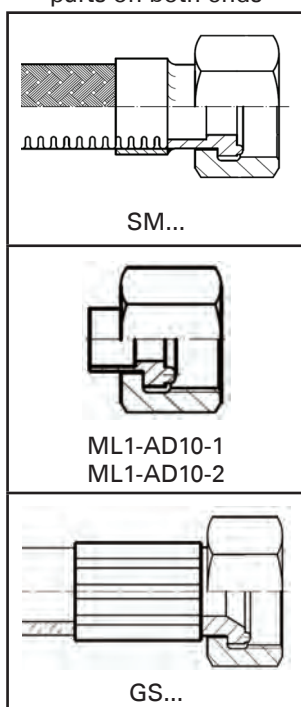
Ball valve with handwheel

Order No.: 3-365-R008 P

Material: Brass

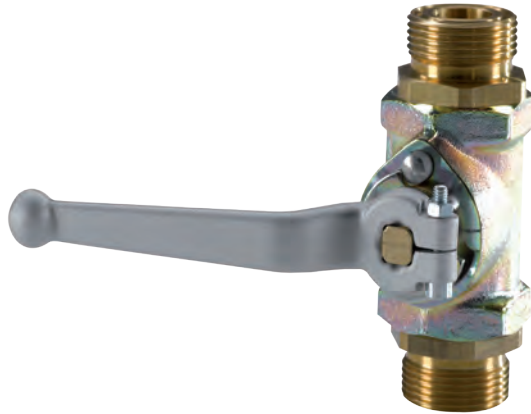


Suitable connecting parts on both ends

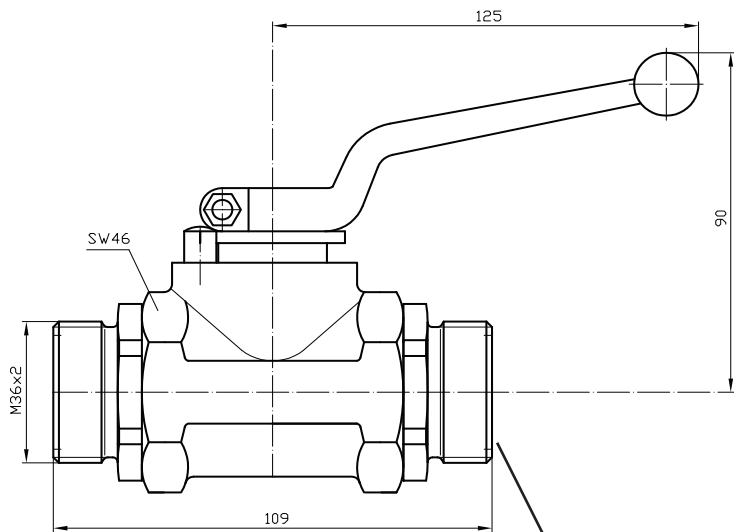
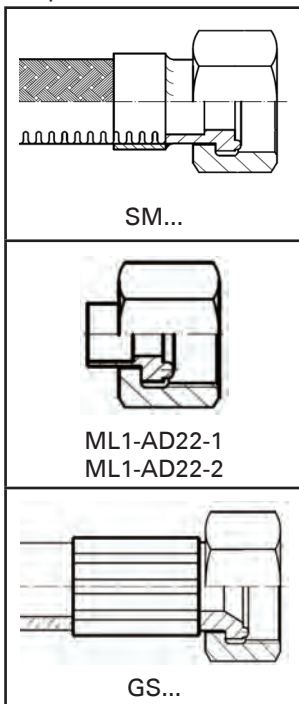


PN64 DN20
Ball valve

Order No.: 3-383-R001 P
Material: Brass



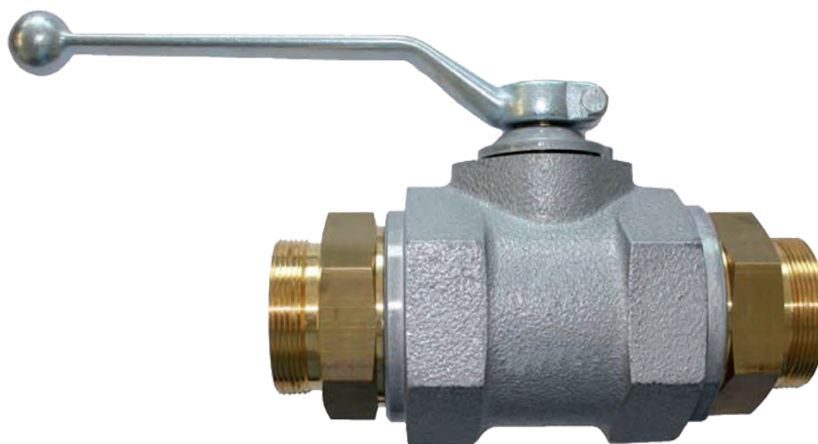
Suitable connecting
parts on both ends



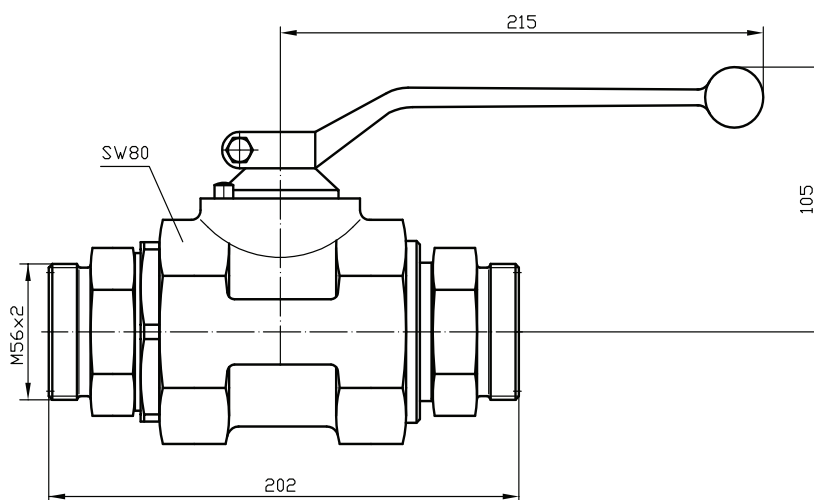
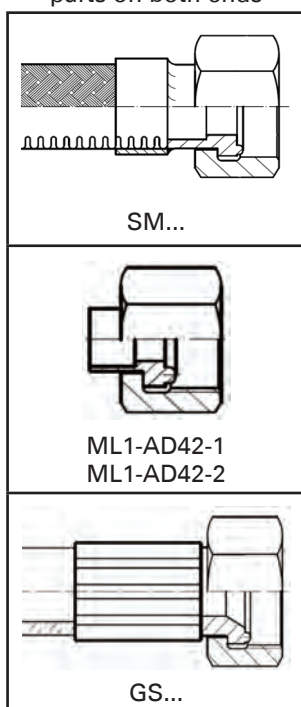
other connections are available

PN25 DN40
Ball valve

Order No.: 3-679-R001 P
Material: Brass



Suitable connecting parts on both ends







We also offer wire braided stainless steel hoses as well as rubber hoses. Both hose types can be used up to 64 bar. They are pressure and vacuum tight and are available with different coupling connections. No matter whether you need a hose for connection to SF₆ maintenance devices, gas insulated fabrication plants or other devices, we can offer the appropriate hose connection.

The suitable connecting parts must be ordered separately.

■ DILO hoses for pressures up to PN64

■ SM01	Wire braided hose DN8 / DN20 / DN40	90
■ SM03	Wire braided hose with elbow connection DN8 / DN20 / DN40	91
■ SM07	Wire braided hose with elbow connections DN8 / DN20	92
■ SM10	Wire braided hose with protective hose DN8 / DN20 / DN40	93
■ GS01	Rubber hose DN8 / DN20 / DN40	94
■ GS03	Rubber hose with elbow connection DN8 / DN20	95
■	Ordering examples	96

DN8 / DN20 / DN40


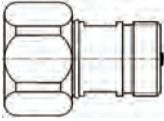
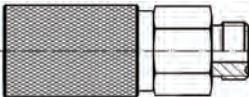

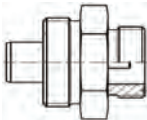
Wire braided hose

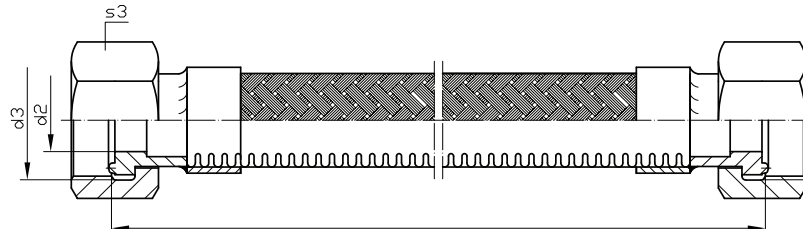


admissible static operating pressure at 20°C SF 3	nominal pressure level DIN EN ISO 10380 SF 4	AD	DN	d2	d3	s3	minimum bending radius / onetime bending	nominal bending radius / frequent movements	Order No.*	NL in mm
64	64	10	8	8	M20x1,5	24	38	130	SM018L	_____
55	40	22	20	19	M36x2	41	70	170	SM0120L	_____
25	25	42	40	35	M56x2	65	130	300	SM0140L	_____

Suitable connecting parts

*Ordering example see page 94

 <p>ML1-AD10-3 ML1-AD22-3 ML1-AD42-3</p>
 <p>VK/F-02/8 VK/F-02/20 VK/F-01/40</p>
 <p>3-308-R002</p>
 <p>3-888-R001</p>
 <p>VK/A-02/20 VK/A-01/40</p>



Structure of the rust- and acid resistant wire braided hose:

Full metal wall made of 1.4404 with outside wire sheathing made of stainless steel, both ends completely equipped with DILO-connections made of brass.

(For nominal diameter AD10 the clamping nut is made of stainless steel).

Supply length: max. 25 m

DN8 / DN20 / DN40


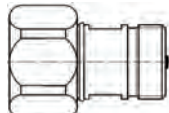
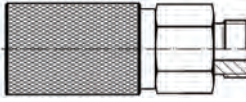

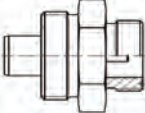
Wire braided hose with elbow connection

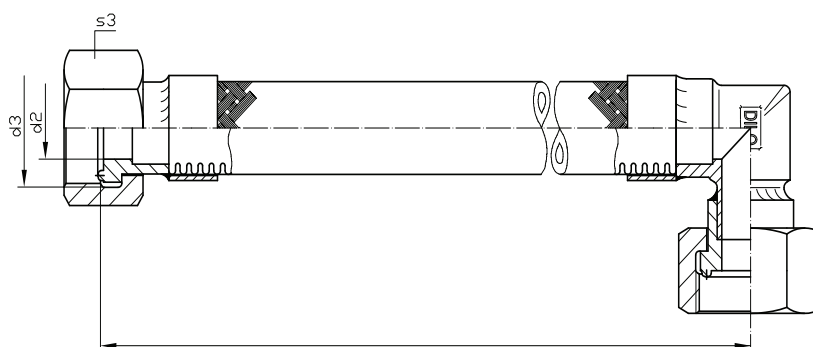


admissible static operating pressure at 20°C SF 3	nominal pressure level DIN EN ISO 10380 SF 4	AD	DN	d2	d3	s3	minimum bending radius / onetime bending	nominal bending radius / frequent movements	Order No.*	NL in mm
64	64	10	8	8	M20x1,5	24	38	130	SM038L	_____
55	40	22	20	19	M36x2	41	70	170	SM0320L	_____
25	25	42	40	35	M56x2	65	130	300	SM0340L	_____

Suitable connecting parts

*Ordering examples see page 94

 <p>ML1-AD10-3 ML1-AD22-3 ML1-AD42-3</p>
 <p>VK/F-02/8 VK/F-02/20 VK/F-01/40</p>
 <p>3-308-R002</p>
 <p>3-888-R001</p>
 <p>VK/A-02/20 VK/A-01/40</p>



Structure of the rust- and acid resistant wire braided hose:

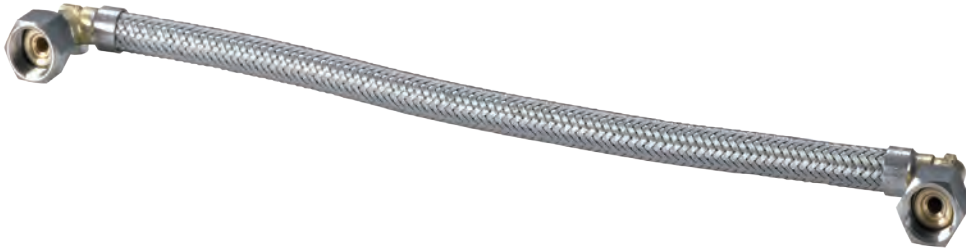
Full metal wall made of 1.4404 with outside wire sheathing made of stainless steel, both ends completely equipped with DILO-connections made of brass.

(For nominal diameter AD10 the clamping nut is made of stainless steel).

Supply length: max. 25 m

DN8 / DN20


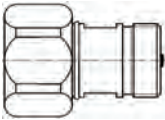
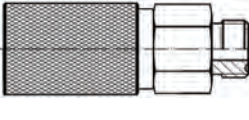

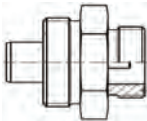
Wire braided hose with elbow connections

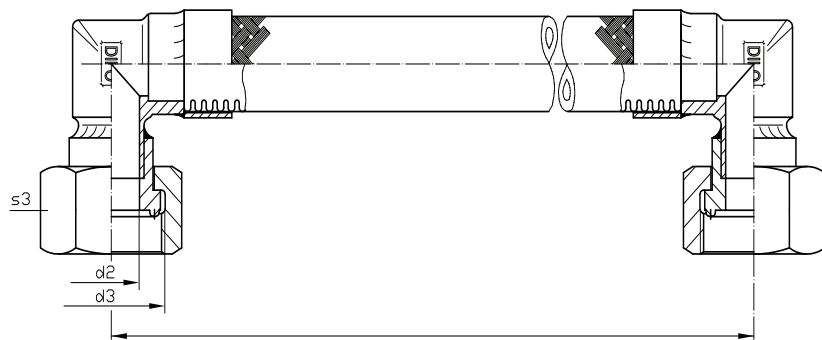


admissible static operating pressure at 20°C SF 3	nominal pressure level DIN EN ISO 10380 SF 4	AD	DN	d2	d3	s3	minimum bending radius / onetime bending	nominal bending radius / frequent movements	Order No.* NL in mm
64	64	10	8	8	M20x1,5	24	38	130	SM078L _____
55	40	22	20	19	M36x2	41	70	170	SM0720L _____

*Ordering example see page 94

Suitable connecting parts

 <p>ML1-AD10-3 ML1-AD22-3</p>
 <p>VK/F-02/8 VK/F-02/20</p>
 <p>3-308-R002</p>
 <p>3-888-R001</p>
 <p>VK/A-02/20</p>



Structure of the rust- and acid resistant wire braided hose:

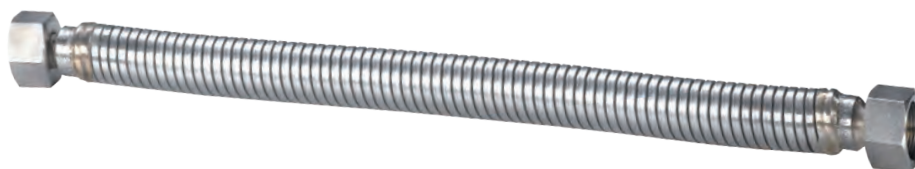
Full metal wall made of 1.4404 with outside wire sheathing made of stainless steel, both ends completely equipped with DILO-connections made of brass.

(For nominal diameter AD10 the clamping nut is made of stainless steel).

Supply length: max. 25 m

DN8 / DN20 / DN40

Wire braided hose with protective hose

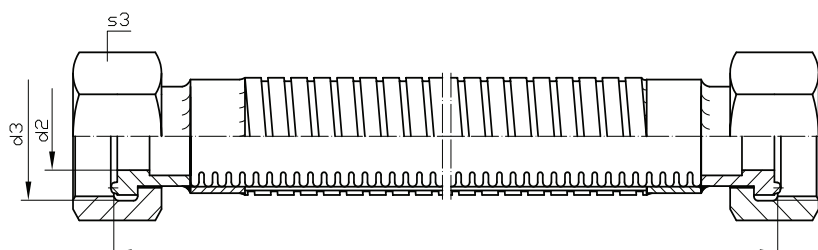


admissible static operating pressure at 20°C SF 3	nominal pressure level DIN EN ISO 10380 SF 4	AD	DN	d2	d3	s3	minimum bending radius / onetime bending	nominal bending radius / frequent movements	Order No.* NL in mm
64	64	10	8	8	M20x1,5	24	38	130	SM108L _____
55	40	22	20	19	M36x2	41	70	170	SM1020L _____
25	25	42	40	35	M56x2	65	130	300	SM1040L _____

Suitable connecting parts

*Ordering example see page 94

<p>ML1-AD10-3 ML1-AD22-3 ML1-AD42-3</p>
<p>VK/F-02/8 VK/F-02/20 VK/F-01/40</p>
<p>3-308-R002</p>
<p>3-888-R001</p>
<p>VK/A-02/20 VK/A-02/40</p>



Structure of the rust- and acid resistant wire braided hose:

Full metal wall made of 1.4404 with outside wire sheathing made of stainless steel, both ends completely equipped with DILO-connections made of brass.

(For nominal diameter AD10 the clamping nut is made of stainless steel).

Protective hose, resistant to twisting, flexible, high tensile with high mechanical strength in accordance with DIN EN ISO 15465. Supply length: max. 25 m

DN8 / DN20 / DN40


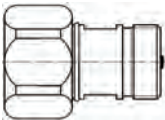
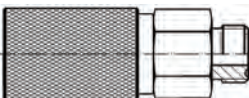

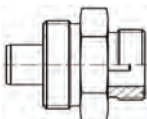
Rubber hose

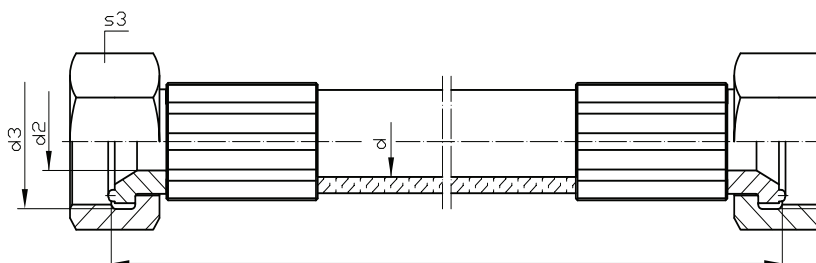


Pressure stage bar	Fitting AD	Hose DN	Hose d	Fitting d2	Fitting d3	Fitting s3	Bending radius	Order No.*	NL in mm
64	10	8	7,9	5,5	M20x1,5	24	50	GS0108L	_____
50	22	20	19	15,5	M36x2	41	240	GS0120L	_____
64	42	40	38	33	M56x2	65	500	GS0140L	_____

Suitable connecting parts

*Ordering example see page 94

 <p>ML1-AD10-3 ML1-AD22-3 ML1-AD42-3</p>
 <p>VK/F-02/8 VK/F-02/20 VK/F-01/40</p>
 <p>3-308-R002</p>
 <p>3-888-R001</p>
 <p>VK/A-02/20 VK/A-01/40</p>



Range of application and temperature:

From -40 °C up to +100 °C according to the medium used (see DIN EN 853/854)

Materials and composition:

The hoses consist of an internal layer made of synthetic rubber which is oil- and waterproof and of external rubber layer which is oil- and weatherproof.

Fitting material: Brass

(For nominal diameter AD10 the clamping nut is made of stainless steel)

The hose fitting is made in pressnipple form.

DN8 / DN20

Rubber hose with elbow connection

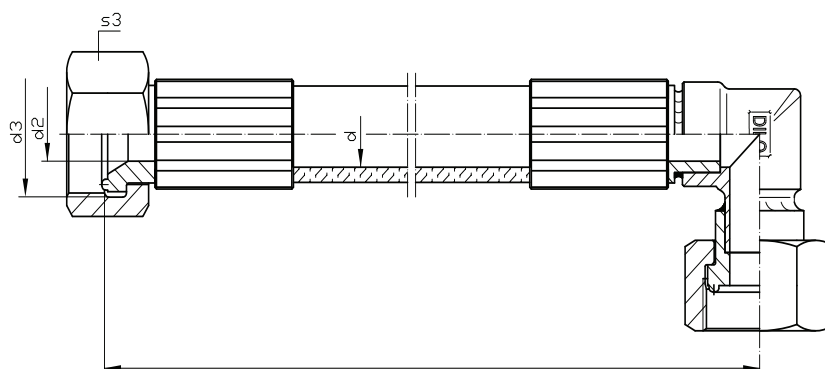


Pressure stage bar	Fitting AD	Hose DN	Hose d	Fitting d2	Fitting d3	Fitting s3	Bending radius	Order No.*	NL in mm
64	10	8	7,9	5,5	M20x1,5	24	50	GS0308L	_____
50	22	20	19	15,5	M36x2	41	240	GS0320L	_____

*Ordering example see page 94

Suitable connecting parts

<p>ML1-AD10-3 ML1-AD22-3 ML1-AD42-3</p>
<p>VK/F-02/8 VK/F-02/20</p>
<p>3-308-R002</p>
<p>3-888-R001</p>
<p>VK/A-02/20</p>



Range of application and temperature:

From -40 °C up to +100 °C according to the medium used (see DIN EN 853/854)

Materials and composition:

The hoses consist of an internal layer made of synthetic rubber which is oil- and waterproof and of external rubber layer which is oil- and weatherproof.

Fitting material: Brass

(For nominal diameter AD10 the clamping nut is made of stainless steel)

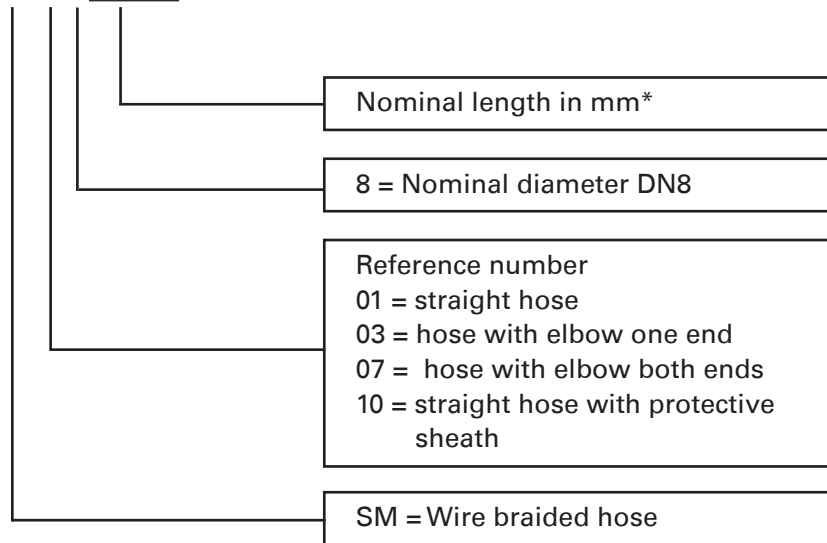
The hose fitting is made in pressnipple form.

Ordering examples

Wire braided hoses and rubber hoses

Wire braided hoses

Ordering example: SM 01 8 L00450

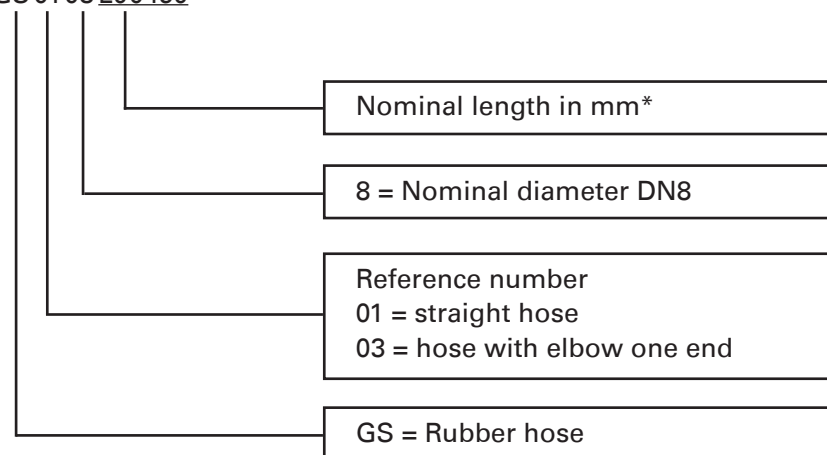


*Wire braided hoses are available in the following length increments:

Length	Length increment
< 1 m	50 mm
1 m bis < 5 m	100 mm
5 m bis < 10 m	500 mm
10 m bis < 20 m	1 m

Rubber hoses

Ordering example: GS 01 08 L00450



*Rubber hoses are available in the following length increments:

Length	Length increment
< 1 m	50 mm
1 m bis < 5 m	100 mm
5 m bis < 10 m	500 mm
10 m bis < 20 m	1 m

DILO transition pieces and adapters



Our product range comprises a large variety of transition pieces and adapters to establish connections between components with different nominal lengths. Thus DILO connecting couplings and hoses allow the comfortable adaption to other coupling systems on switchgear.

The suitable connecting parts must be ordered separately.

■ DILO transition pieces and adapters for pressures up to PN64

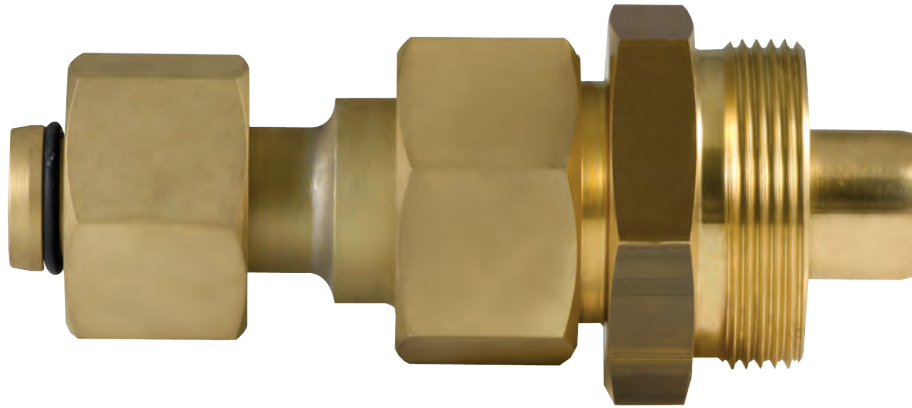
■ 6-1033-R001/ 6-1058-R.../ SK-279-R... / 6-1027-R...	Adapter DILO couplings DN20 ASEA / Magrini / Siemens/ Westinghouse	98 - 101
■ 3-920-R002/R001	Adapter - Hansen connection	102 - 103
■ 3-353-R005/R006	Adapter DILO DN8 - Michelin valve	104 - 105
■ 6-1059-R.../6-1203-R...	Adapter with flange coupling on both ends	106
■ K022R02	Tee piece with DILO couplings	107
■ 3-351-R001 P	Screw-in stub	108
■ SK-386 T/3-240-R.../ 3-251-R001/3-314-R001	Transition pieces	109 - 112
■ 3-227-R001/3-311-R001/ 3-984-R001	Intermediate pieces	113
■ 3-816-R001/R002/ R003/R005	Transition pieces	114 - 117
■ K018R02/R06/ 3-717-R.../K018R07/ K018R..	Angle pieces	118 - 122
■ K020R..	Tee pieces	123 - 124
■ 3-718-R006/R036	Distributor	125 - 126
■ 3-1026-R002	Tubings	127

PN64 DN20

Adapter DN20 DILO coupling - ASEA connection

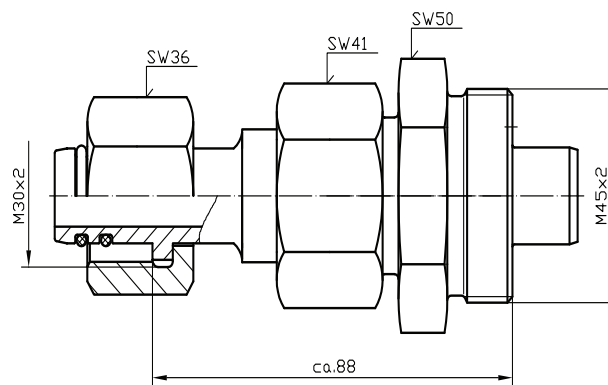
Order No.: 6-1033-R001

Material: Brass

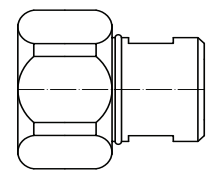


Suitable connecting
parts

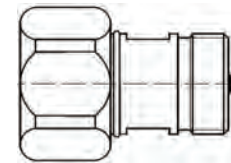
ASEA connection



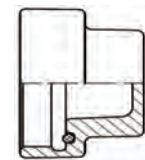
Suitable connecting
parts



SK-282-R001



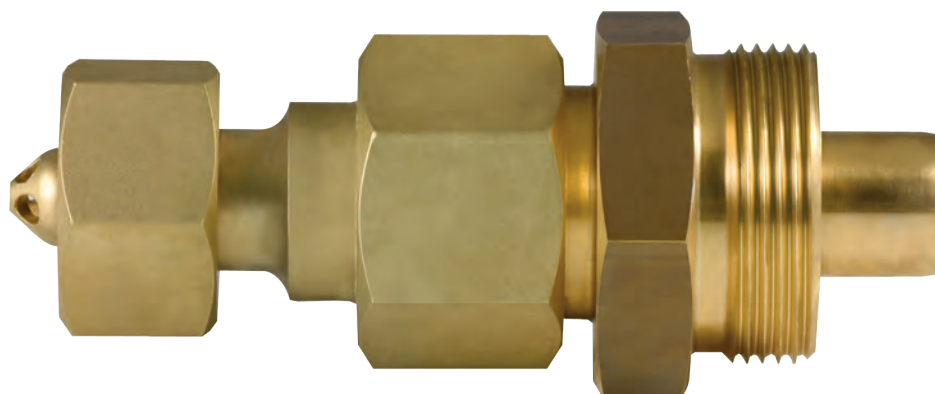
VK/F-02/20



VK/KN-04/20

PN64 DN20

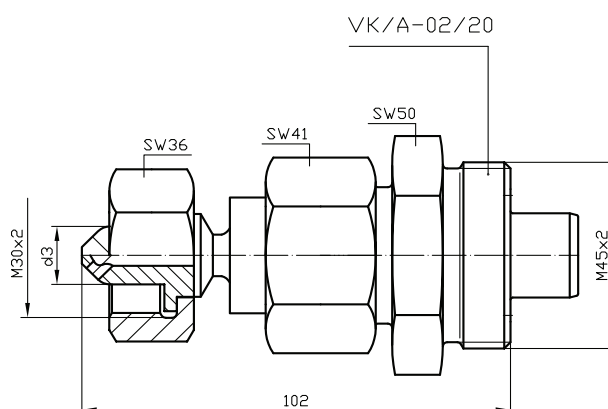
Adapter DN20 DILO coupling - Magrini connection



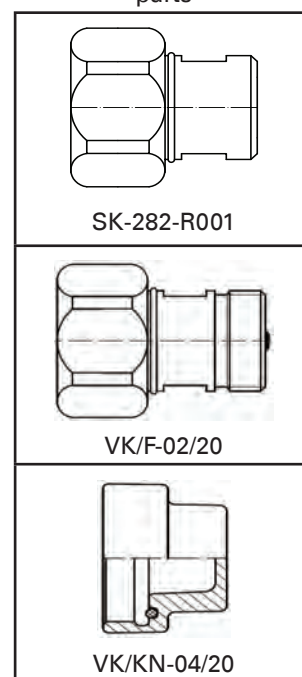
d3	Order No.	Material
Ø 14	6-1058-R001	Brass
Ø 16	6-1058-R002	Brass

Suitable connecting parts

Magrini connection

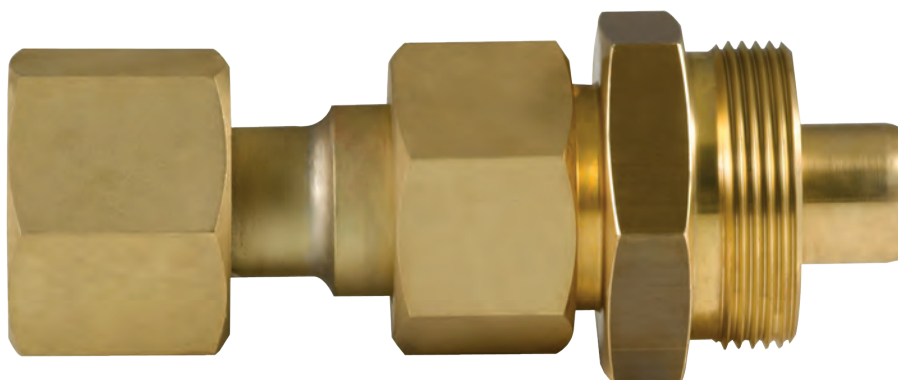


Suitable connecting parts



PN64 DN20

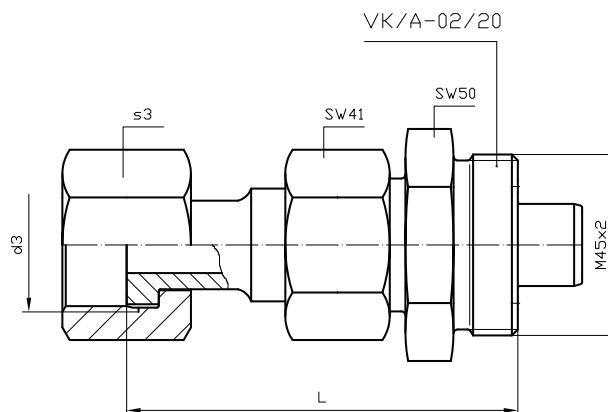
**Adapter DN20 DILO coupling -
Siemens connection**



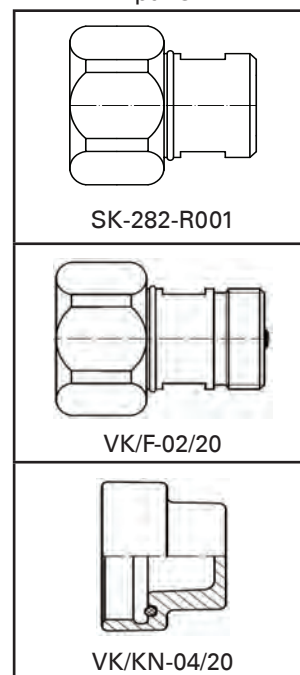
d3	L	S3	Order No.	Material
G 3/4	97	32	SK-279-R001 P	Brass
G 1	98	41	SK-279-R002 P	Brass
G 1 1/4	93	50	SK-279-R003 P	Brass

Suitable connecting parts

Siemens connection

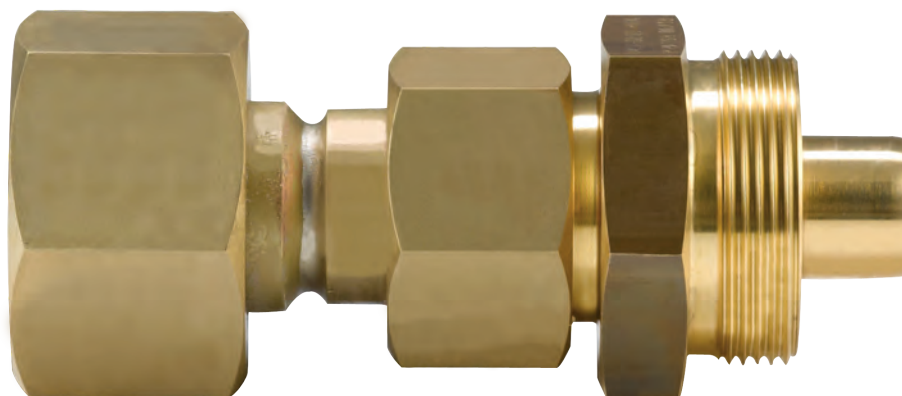


Suitable connecting parts



PN64 DN20

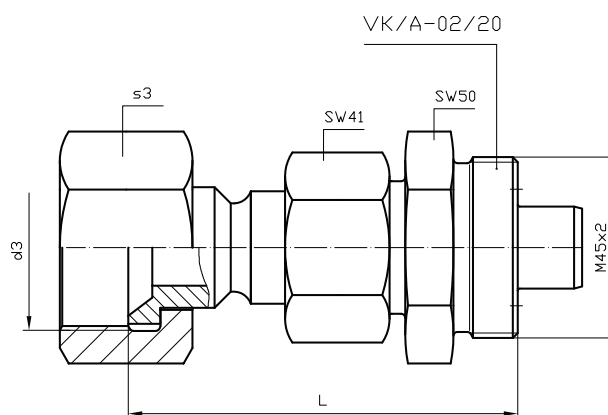
Adapter DN20 DILO coupling - Westinghouse connection



d3	L	S3	Order No.	Material
1 5/8 - 12UN	97	50	6-1027-R001	Brass
1 5/16 - 12UN	95	41	6-1027-R002	Brass
1 1/16 - 12UN	90	32	6-1027-R003	Brass

Suitable connecting parts

Westinghouse connection



Suitable connecting parts

SK-282-R020

VK/F-02/20

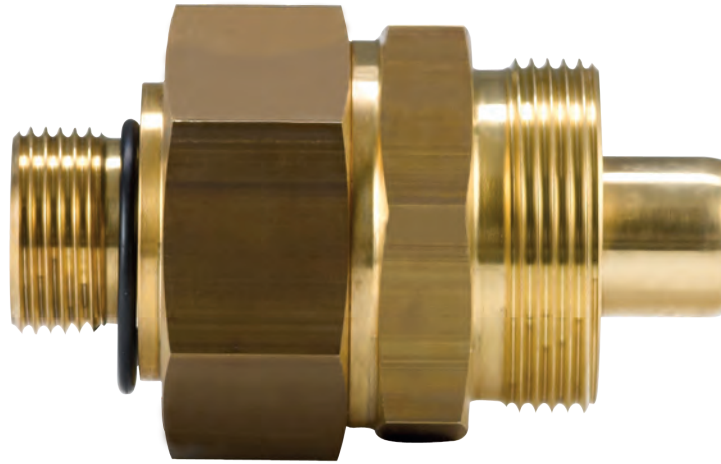
VK/KN-04/20

PN64 DN20

Adapter DN20 DILO coupling - Hansen connection

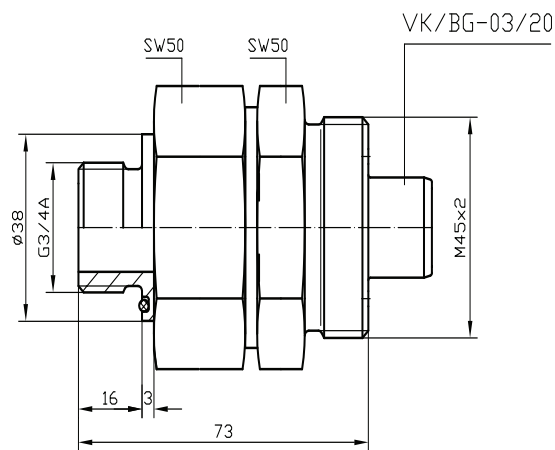
Order No.: 3-920-R002 P

Material: Brass

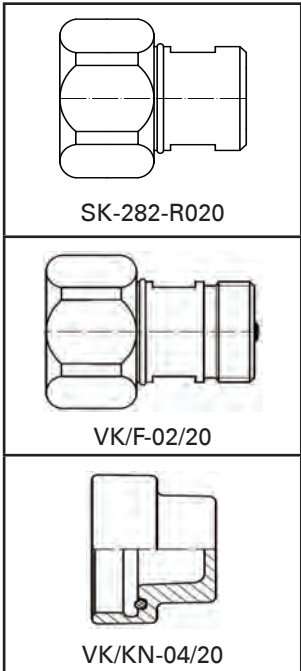


Suitable connecting parts

Hansen connection
G 3/4 A



Suitable connecting parts

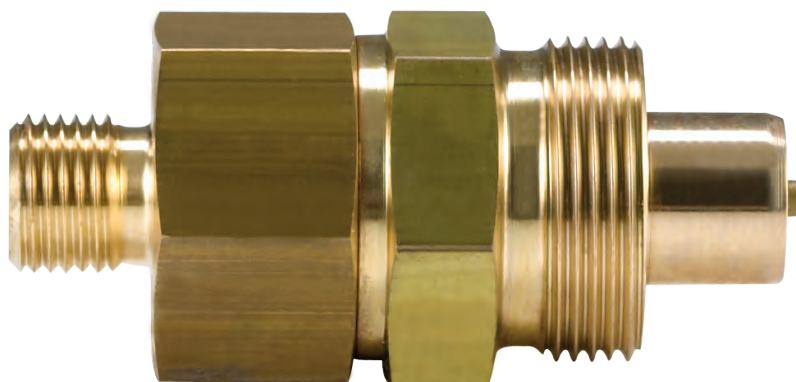


PN64 DN8

Adapter DN8 DILO coupling - Hansen connection

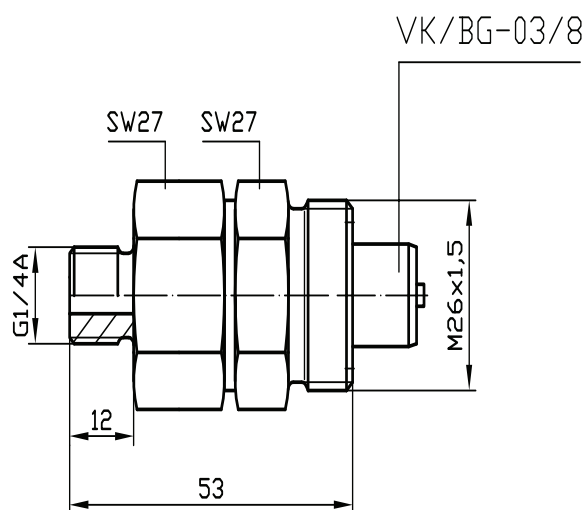
Order No.: 3-920-R001 P

Material: Brass

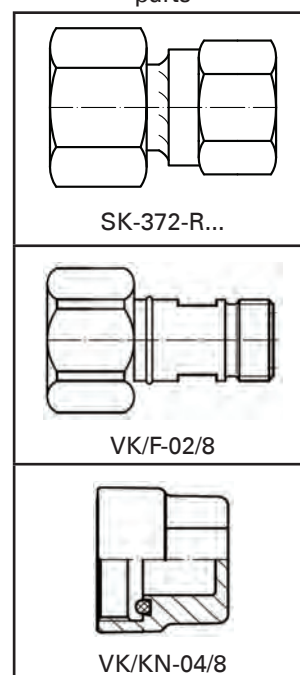


Suitable connecting parts

Hansen connection
G 1/4 A



Suitable connecting parts

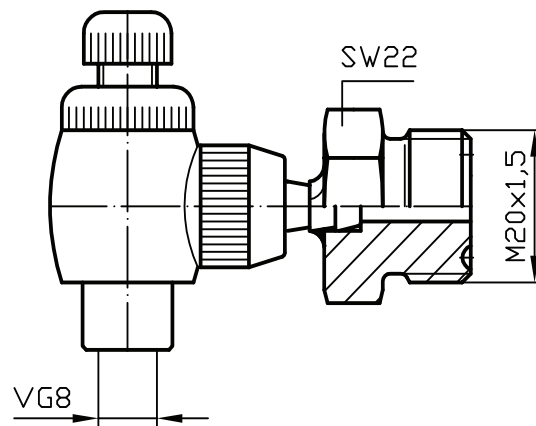
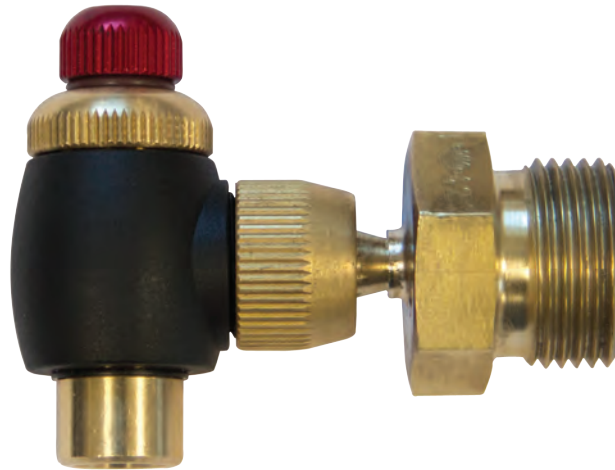


PN2 DN8

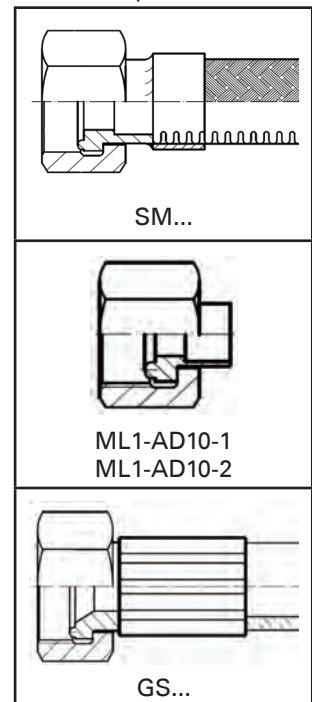
DILO DN8 adapter – Michelin valve

Order No.: 3-353-R005 P

Material: Brass



Suitable connecting parts

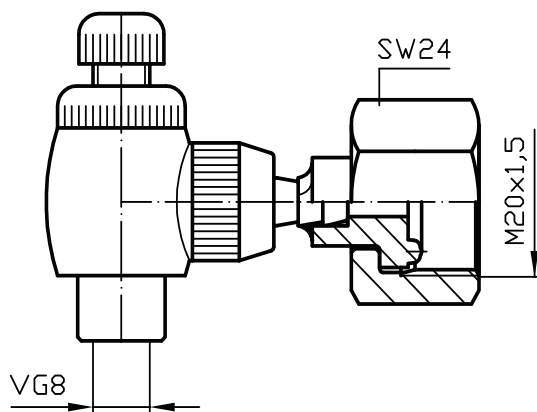
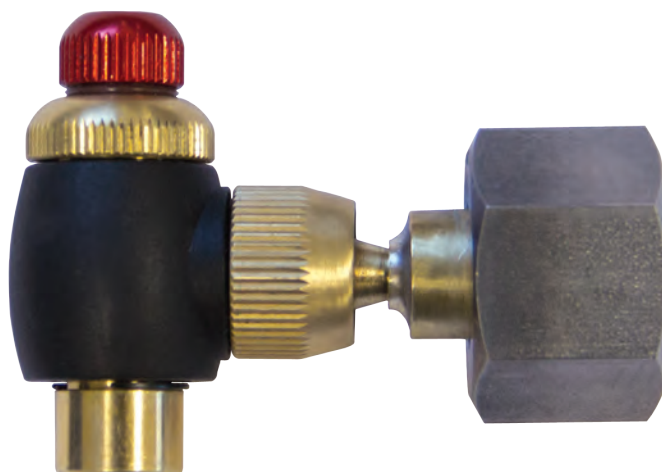


PN2 DN8

DILO DN8 adapter – Michelin valve

Order No.: 3-353-R006 P

Material: Brass



Suitable connecting parts

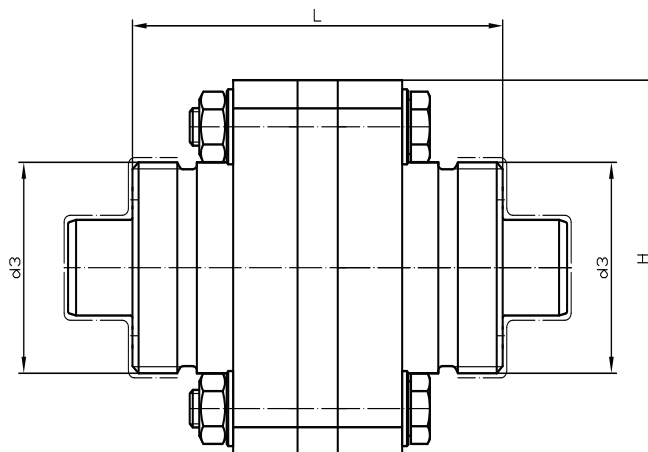
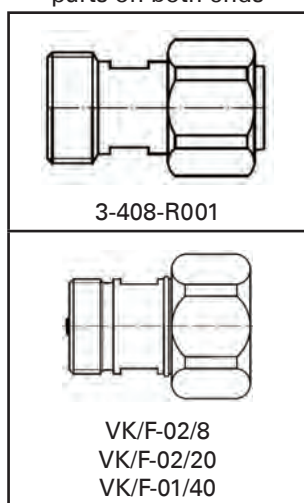
ML1-AD10-3
VK/F-02/8
VK/A-02/8
3-308-R002

Adapter with flange coupling on both ends



DN	for coupling tongue part	d3	L	H	PN	Order No.	Material
6	3-408-R001	M24x1,5	92	Ø 40	10	6-1059-R004	AL
8	VK/F-02/8	M26x1,5	74	Ø 40	64	6-1059-R012	AL
20	VK/F-02/20	M45x2	92	Ø 80	64	6-1059-R011	AL
40	VK/F-01/40	M76x2	102	Ø 110	16	6-1203-R001	Stainless steel

Suitable connecting parts on both ends



PN64 DN8 / DN20

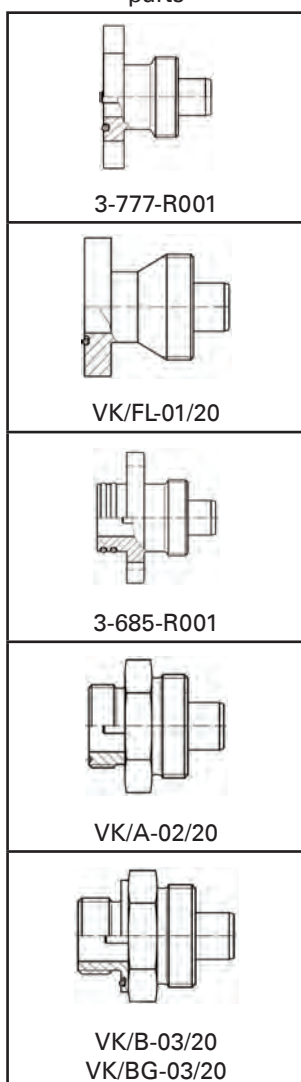
Tee piece with DILOR couplings

Order No.: K022R02

Material: AL

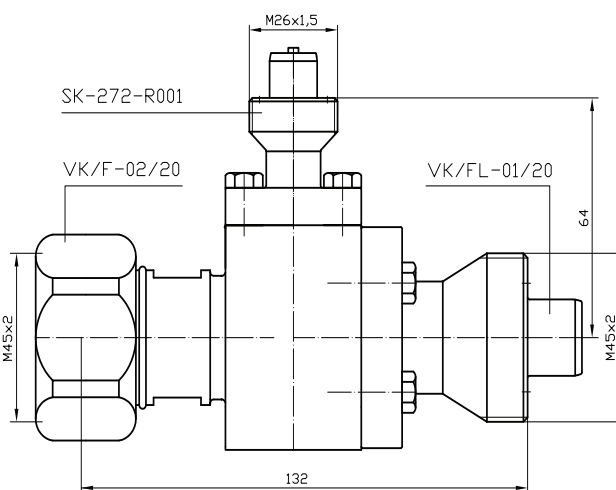


Suitable connecting parts

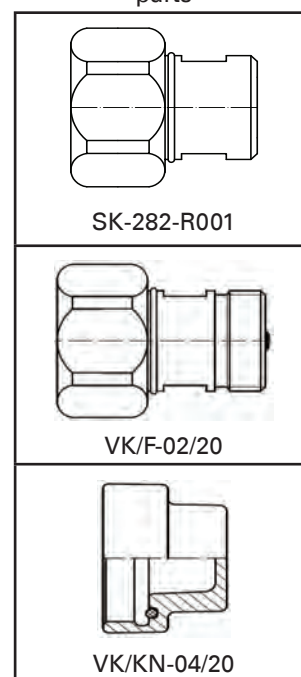


Suitable connecting parts

SK-372-R...	VK/F-02/8	VK/KN-04/8
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Suitable connecting parts



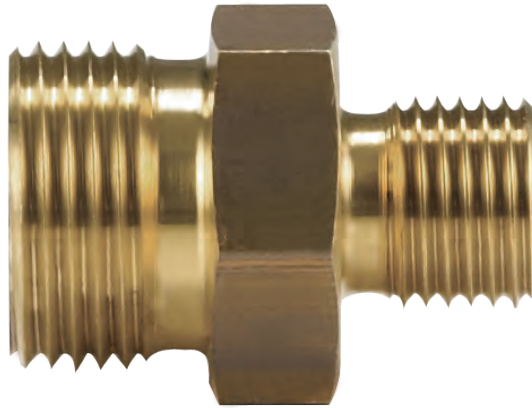
Other versions are available.

PN64 DN8

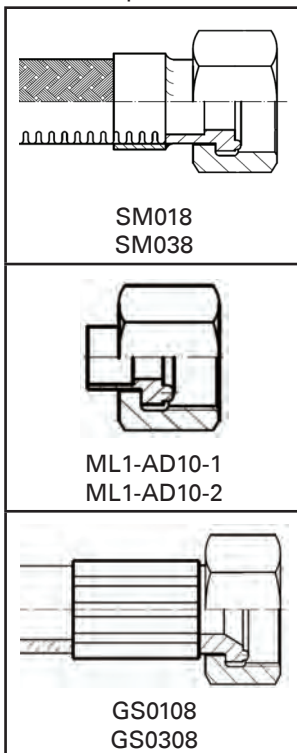
Screw-in stub

Order No.: 3-351-R001 P

Material: Brass

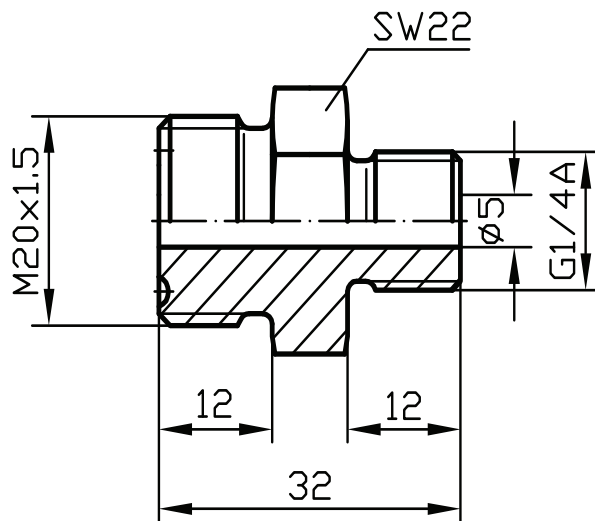


Suitable connecting parts



Suitable connecting parts

G 1/4 internal thread

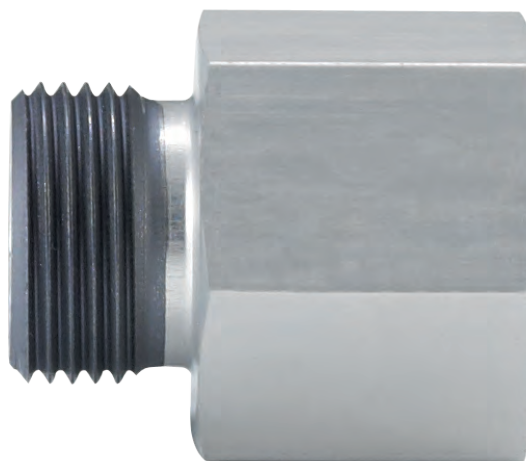


PN64 DN8

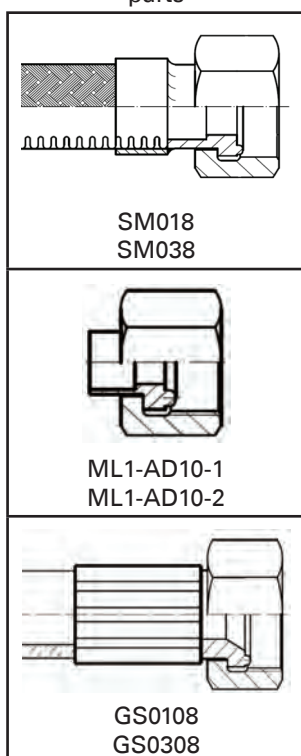
Transition piece DN8

Order No.: SK-386 T

Material: AL

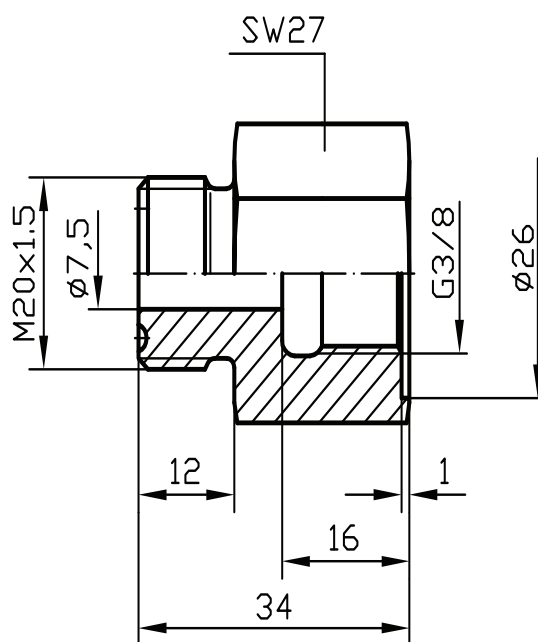


Suitable connecting parts



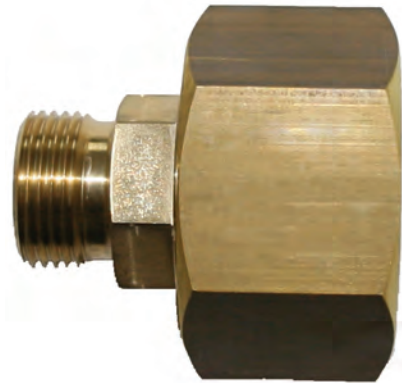
Suitable connecting parts

G 3/8 external thread



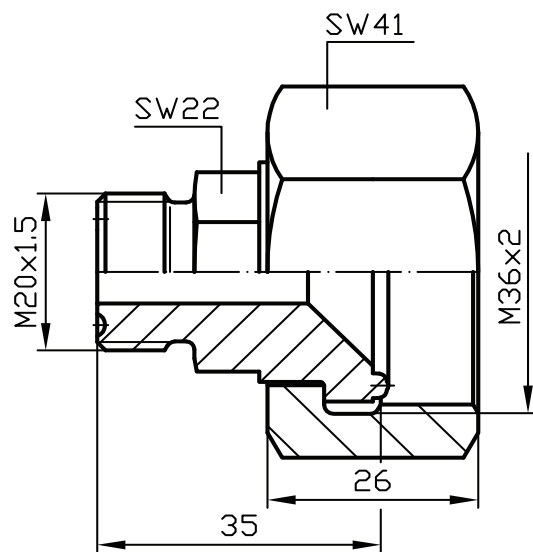
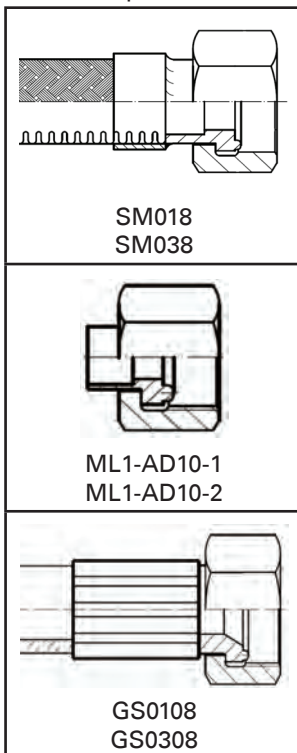
PN64 DN8 / DN20

Transition piece

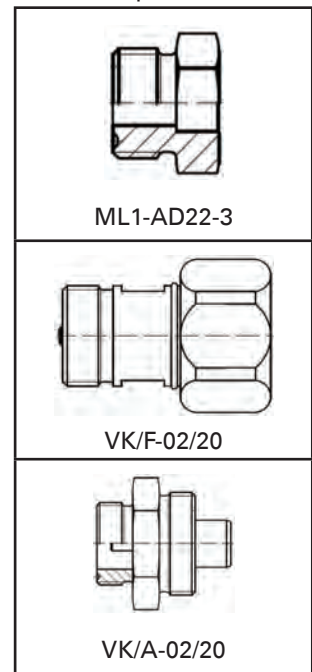


Order No.	Material
3-240-R001 P	Brass
3-240-R002 C	Stainless steel

Suitable connecting parts



Suitable connecting parts

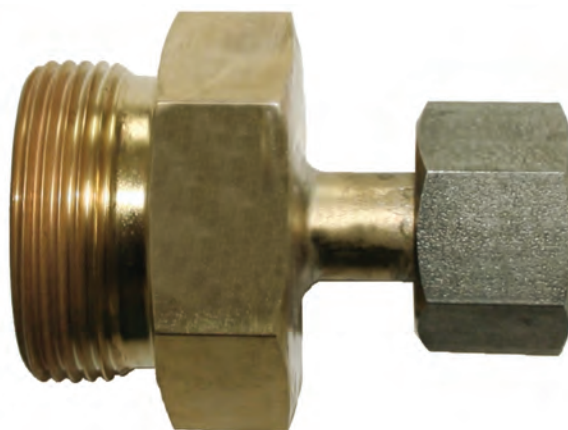


PN64 DN20 / DN8

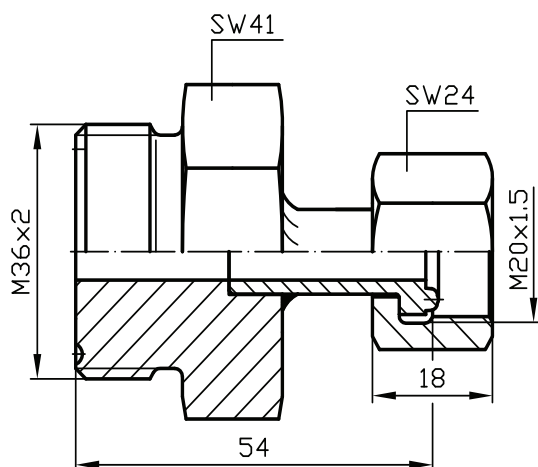
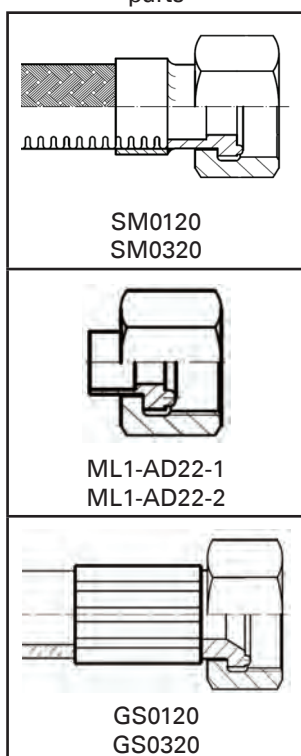
Transition piece

Order No.: 3-251-R001 P

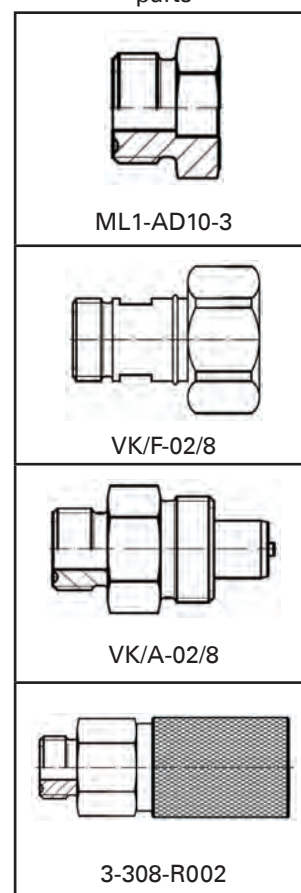
Material: Brass



Suitable connecting parts



Suitable connecting parts

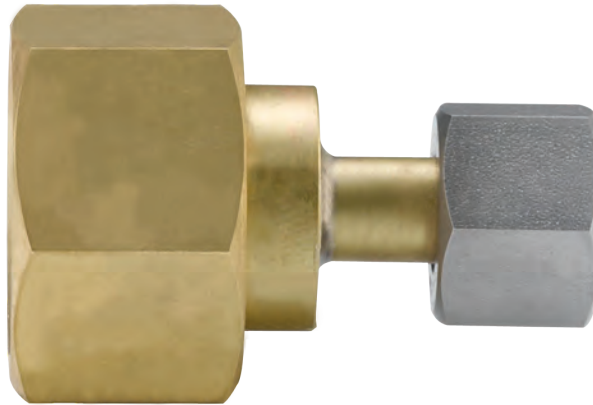


PN64 DN20 / DN8

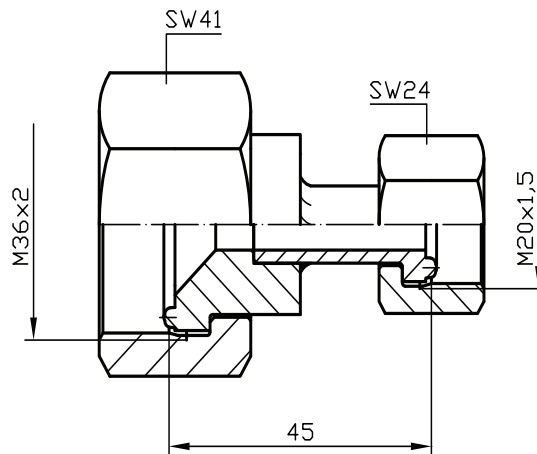
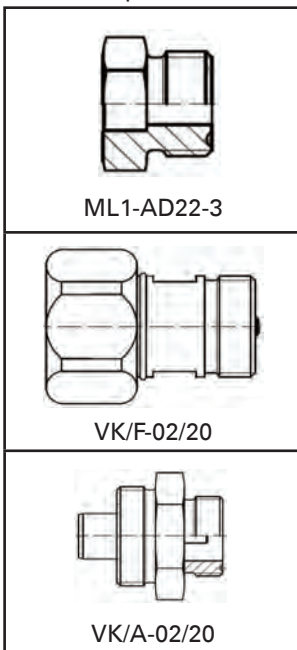
Transition piece

Order No.: 3-314-R001 P

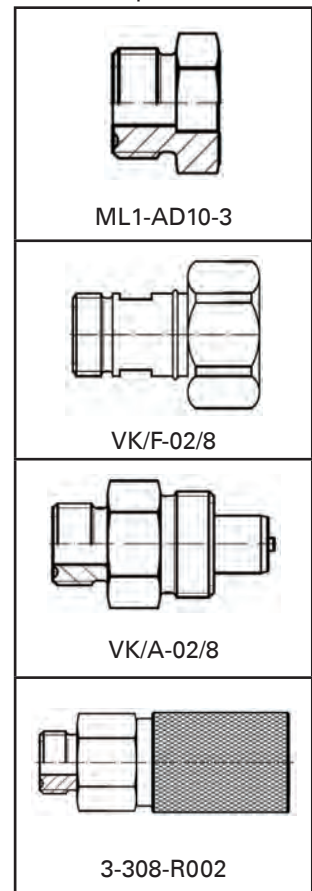
Material: Brass



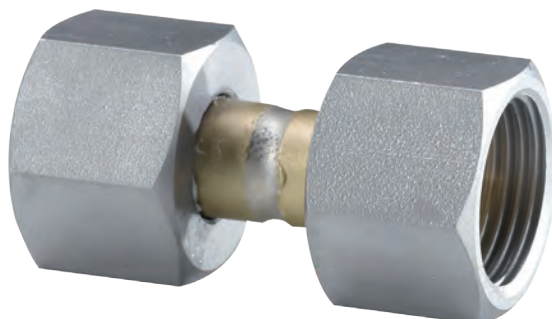
Suitable connecting parts



Suitable connecting parts


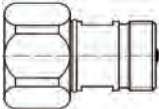
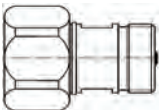



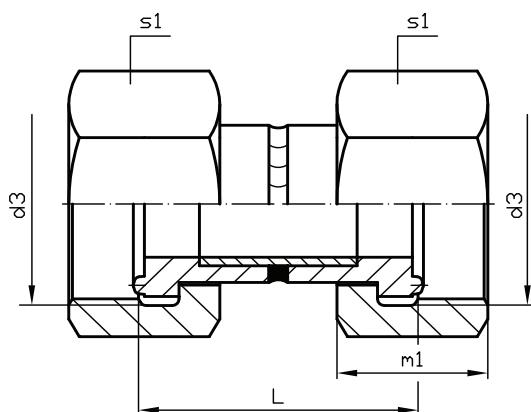
PN64 DN8 / DN20 / DN40
Intermediate piece



AD	d3	L	m1	s1	Order No.	Material
10	M20x1,5	32	18	24	3-227-R001 P	Brass
22	M36x2	48	26	41	3-311-R001 P	Brass
42	M56x2	58	29	65	3-984-R001 P	Brass

Suitable connecting parts

 <p>ML1-AD10-3 ML1-AD22-3 ML1-AD42-3</p>
 <p>VK/F-02/8 VK/F-02/20 VK/F-01/40</p>
 <p>VK/A-02/8 VK/A-02/20 VK/A-01/40</p>
 <p>3-308-R002 (only for 3-227-R001 P)</p>
 <p>3-888-R001 (only for 3-311-R001 P)</p>

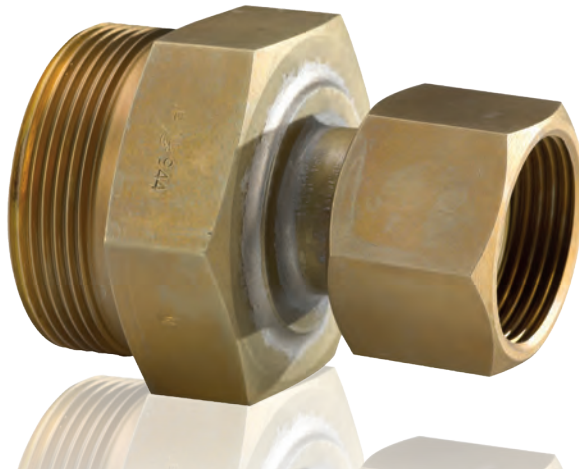


PN64 DN40 / DN20

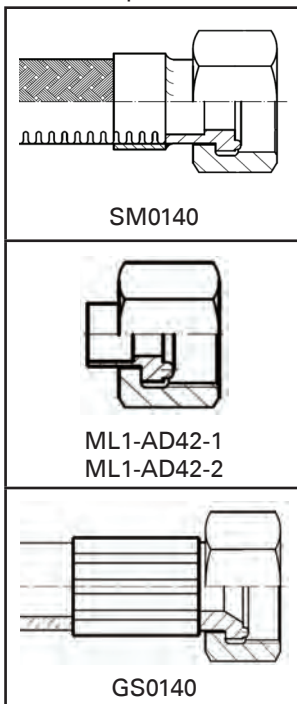
Transition piece

Order No.: 3-816-R001 P

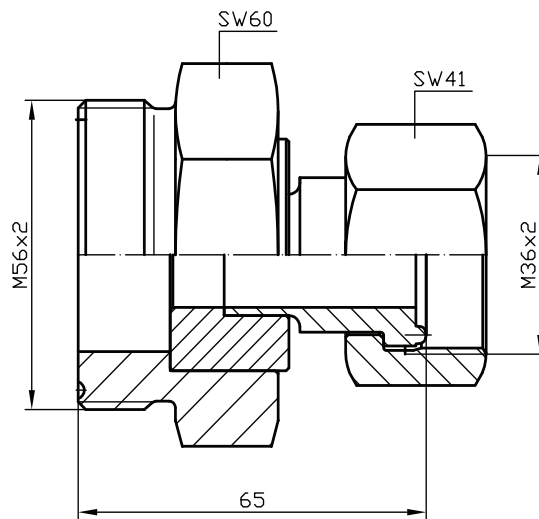
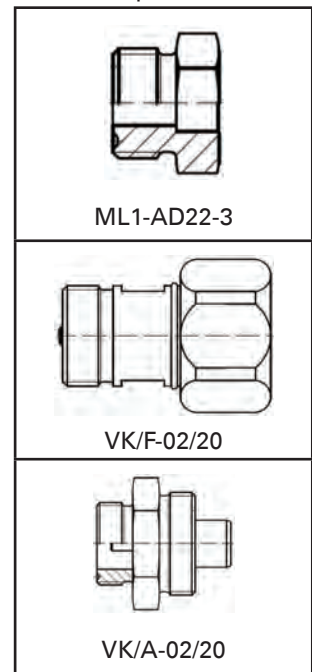
Material: Brass



Suitable connecting parts



Suitable connecting parts

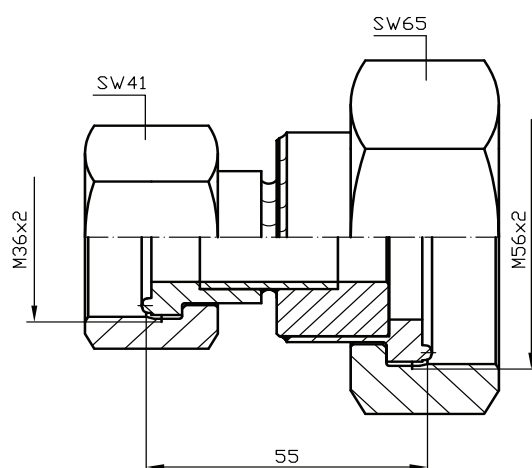
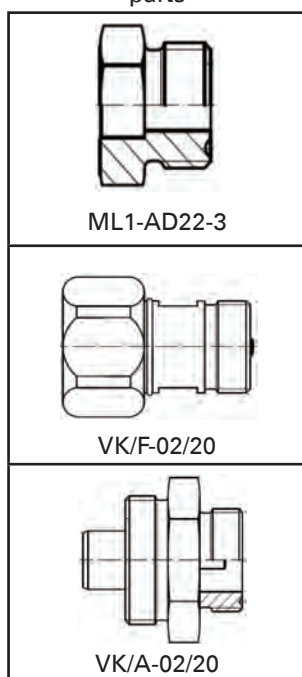


PN64 DN40 / DN20
Transition piece

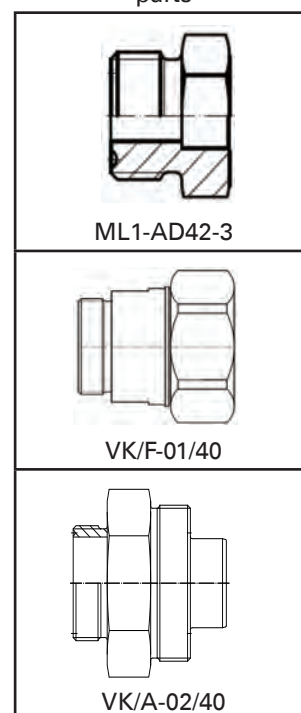
Order No.: 3-816-R002
Material: Brass



Suitable connecting parts



Suitable connecting parts

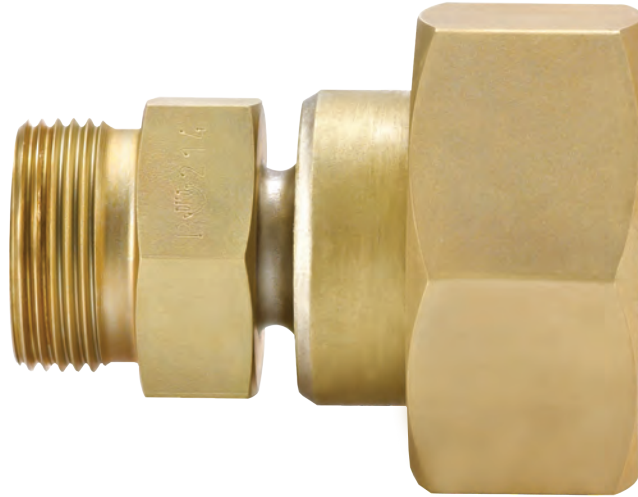


PN64 DN40 / DN20

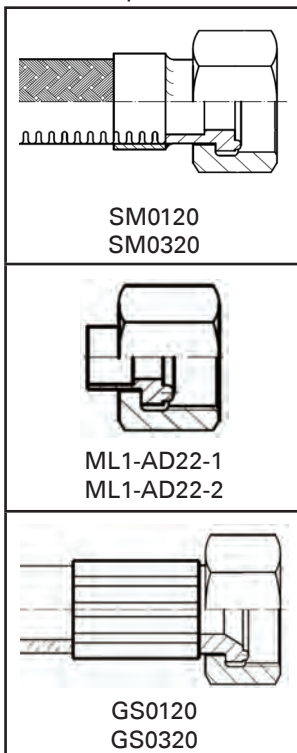
Transition piece

Order No.: 3-816-R003

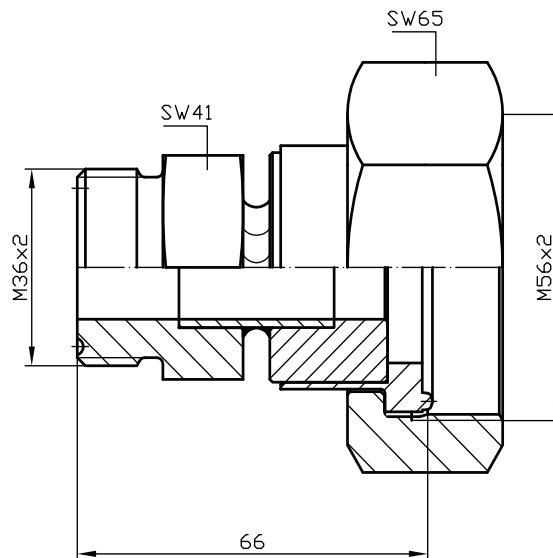
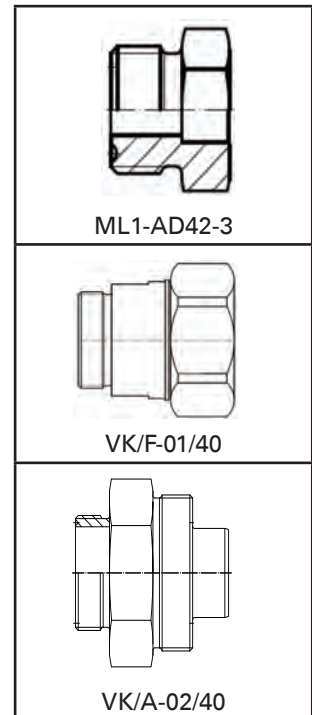
Material: Brass



Suitable connecting parts

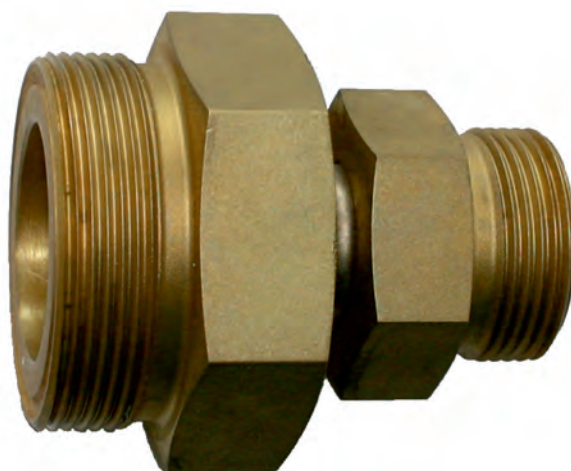


Suitable connecting parts

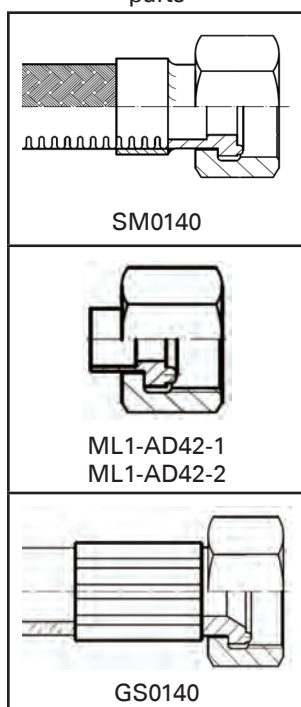


PN64 DN40 / DN20
Transition piece

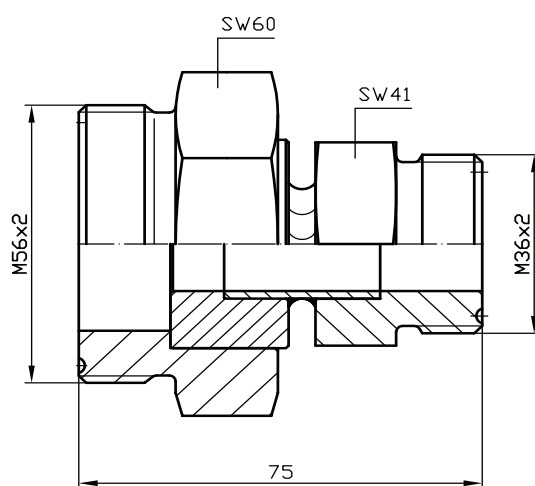
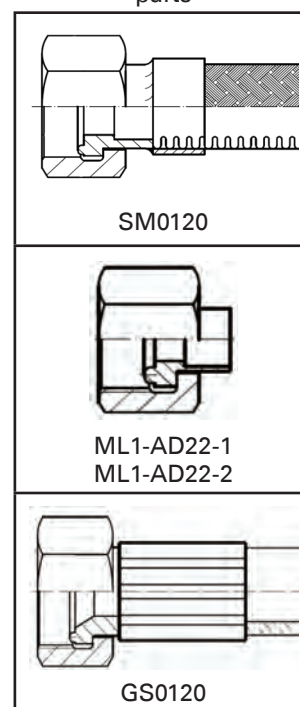
Order No.: 3-816-R005 P
Material: Brass



Suitable connecting parts



Suitable connecting parts



PN64 DN8 / DN20 / DN40

Angle piece



AD	d3	d4	L	H	s1	s2	Bestellnummer	Werkstoff
10/22	M36x2	M20x1,5	45	51	41	22	K018R02	Brass
22/42	M56x2	M36x2	64	81	65	41	K018R06	Brass

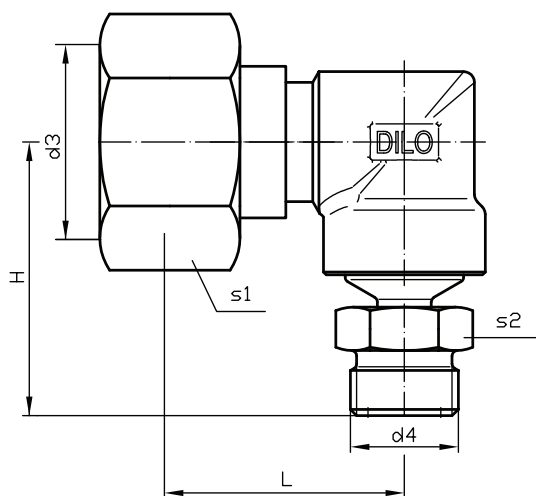
Suitable connecting parts

ML1-AD22-3
ML1-AD42-3

VK/F-02/20
VK/F-01/40

VK/A-02/20
VK/A-02/40

3-888-R001



Suitable connecting parts

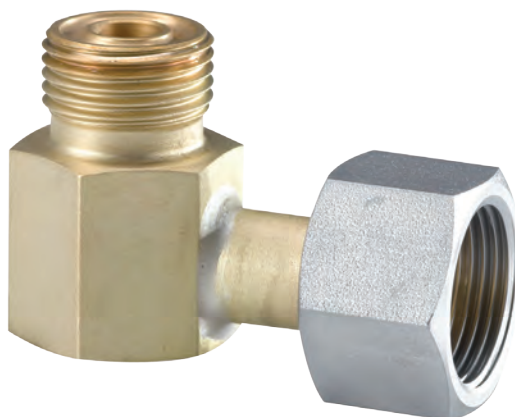
SM...

ML1-AD..-1
ML1-AD..-2

GS...

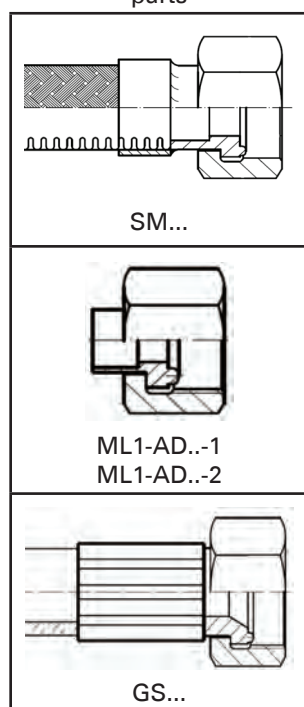
PN64 DN8 / DN20 / DN40

Angle piece

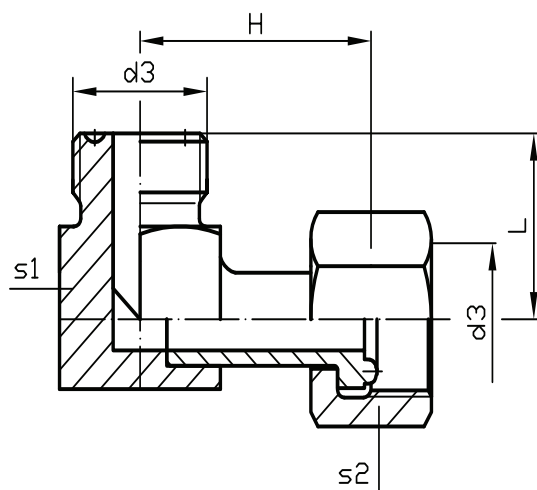
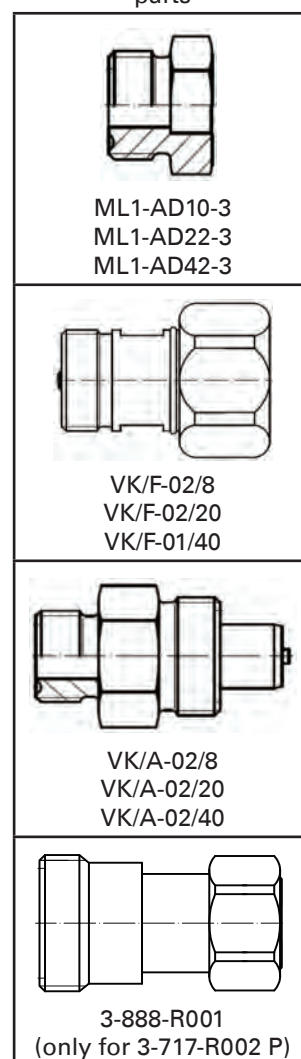


AD	d3	L	H	s1	s2	Order No.	Material
10	M20x1,5	32	31	22	24	3-717-R001 P	Brass
22	M36x2	48	46	36	41	3-717-R002 P	Brass
42	M56x2	58	65	60	65	K018R07	Brass

Suitable connecting parts



Suitable connecting parts

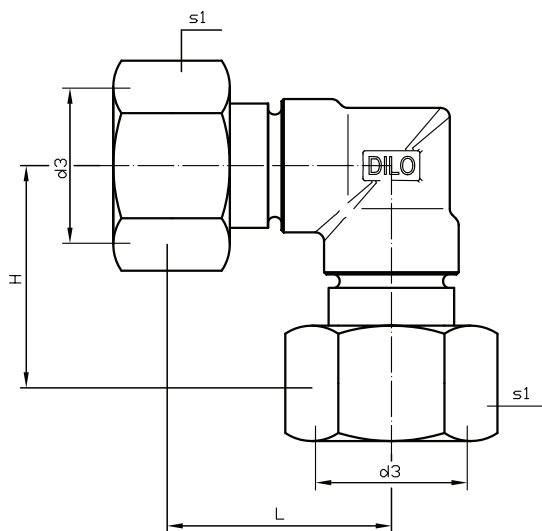


PN64 DN8 / DN20 / DN40


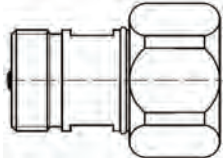
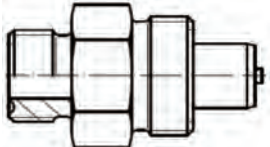
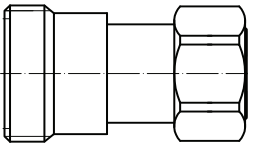
Angle piece



AD	d3	L	H	s1	Order No.	Material
10	M20x1,5	32	32	24	K018R10	Brass
22	M36x2	50	50	41	K018R20	Brass
42	M56x2	65	80	65	K018R32	Brass



Suitable connecting parts

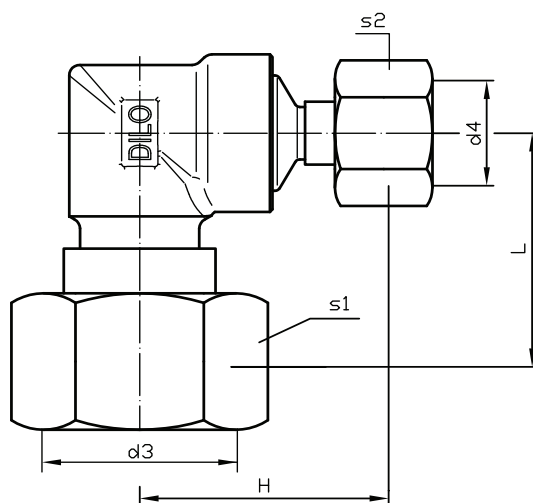
 <p>ML1-AD10-3 ML1-AD22-3 ML1-AD42-3</p>
 <p>VK/F-02/8 VK/F-02/20 VK/F-01/40</p>
 <p>VK/A-02/8 VK/A-02/20 VK/A-02/40</p>
 <p>3-888-R001 (only for K018R20)</p>

PN64 DN8 / DN20 / DN40

Angle piece



AD	d3	d4	L	H	s1	s2	Order No.	Material
10/22	M36x2	M20x1,5	45	46	41	24	K018R27	Brass
22/42	M56x2	M36x2	64	72	65	41	K018R31	Brass



Suitable connecting parts

<p>ML1-AD10-3 ML1-AD22-3 ML1-AD42-3</p>
<p>VK/F-02/8 VK/F-02/20 VK/F-01/40</p>
<p>VK/A-02/8 VK/A-02/20 VK/A-02/40</p>
<p>3-888-R001</p>

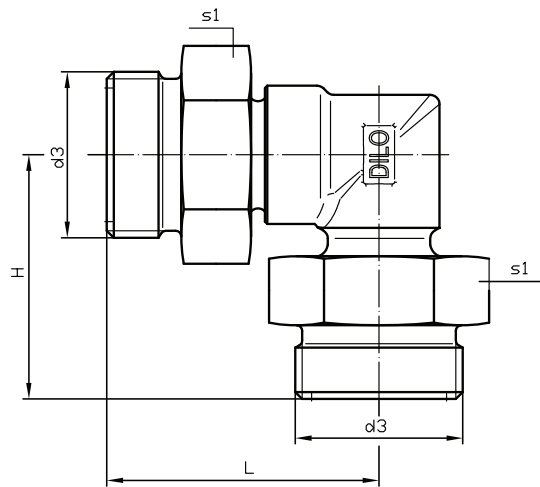
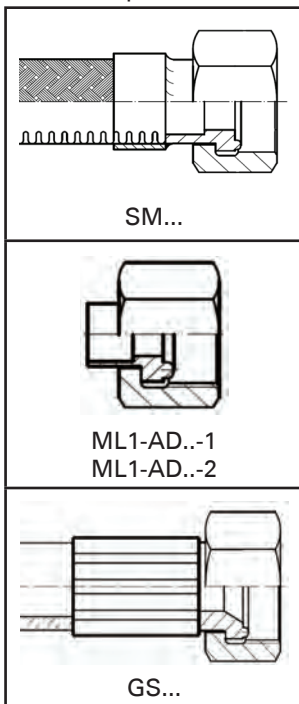
PN64 DN8 / DN20

Angle piece



AD	d3	L	H	s1	Order No.	Material
10	M20x1,5	38	34	22	K018R41	Brass
22	M36x2	59	53	41	K018R40	Brass
42	M56x2	85	73	60	K018R29	Brass

Suitable connecting parts

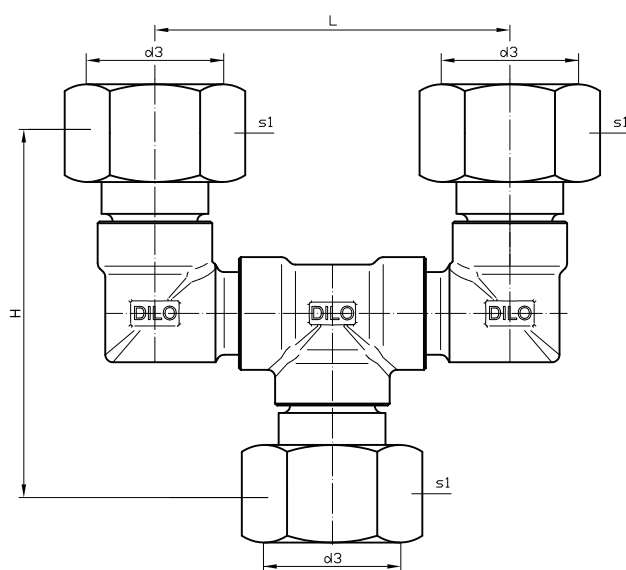


PN64 DN8 / DN20

Tee piece



AD	d3	L	H	s1	Order No.	Material
10	M20x1,5	56	64	24	K020R66	Brass
22	M36x2	93	98	41	K020R14	Brass



Suitable connecting parts

<p>ML1-AD10-3 ML1-AD22-3</p>
<p>VK/F-02/8 VK/F-02/20</p>
<p>VK/A-02/8 VK/A-02/20</p>
<p>3-308-R002 (only for K020R66)</p>
<p>3-888-R001 (only for K020R14)</p>

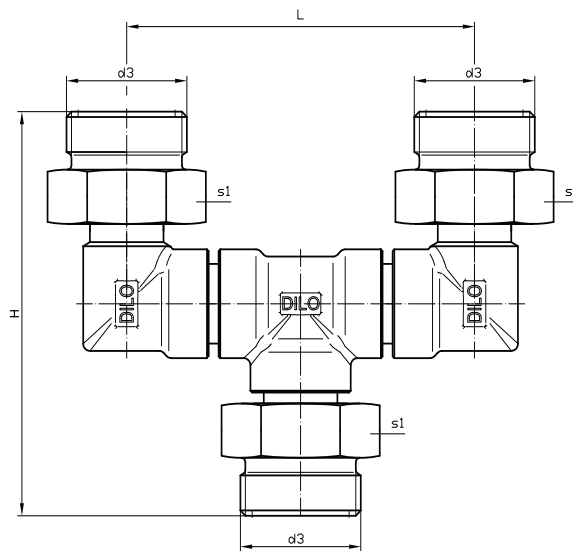
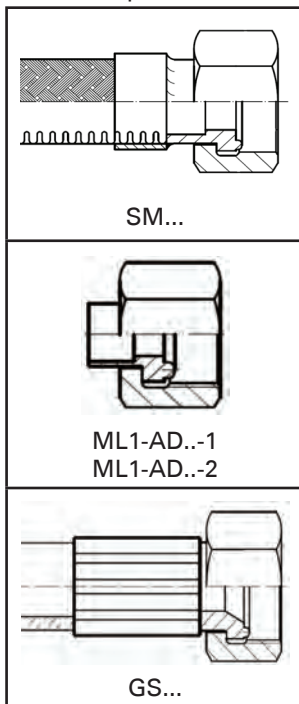
PN64 DN8 / DN20

Tee piece



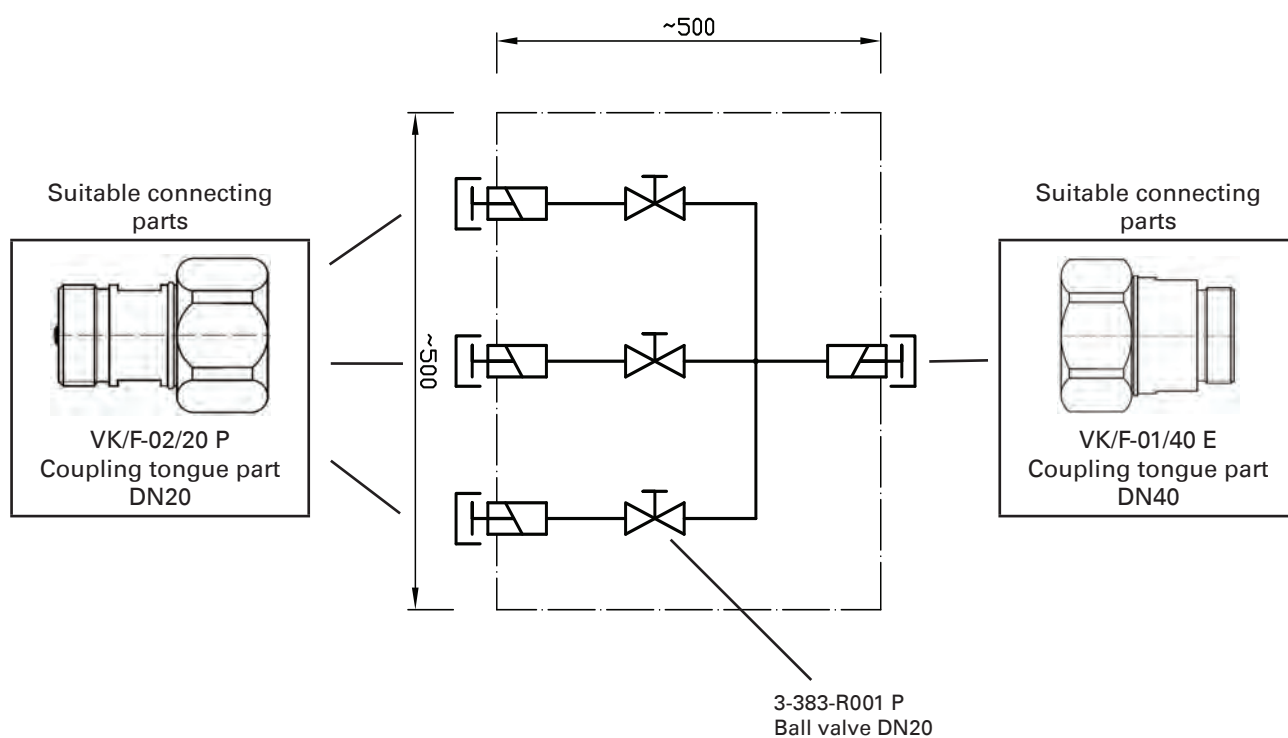
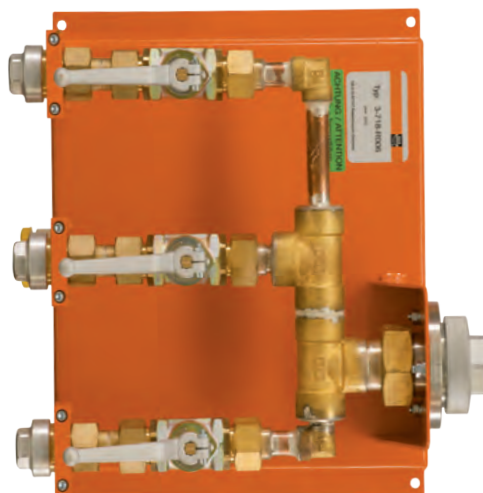
AD	d3	L	H	s1	Order No.	Material
10	M20x1,5	56	75	22	K020R26	Brass
22	M36x2	104	112	41	K020R59	Brass

Suitable connecting parts



3 x DN20 / 1 x DN40 Distributor

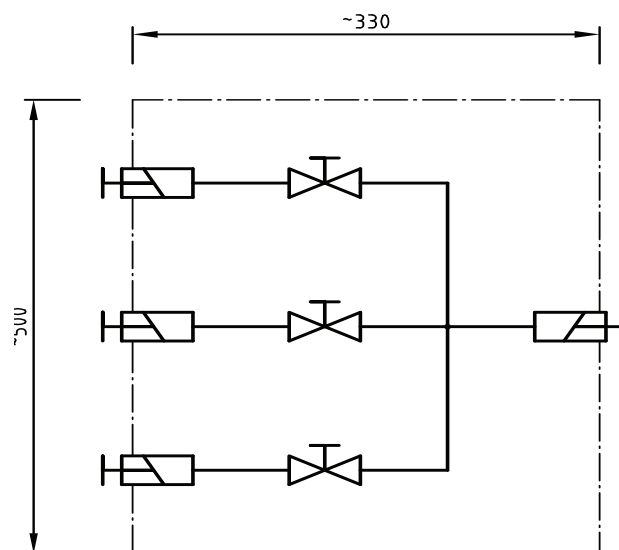
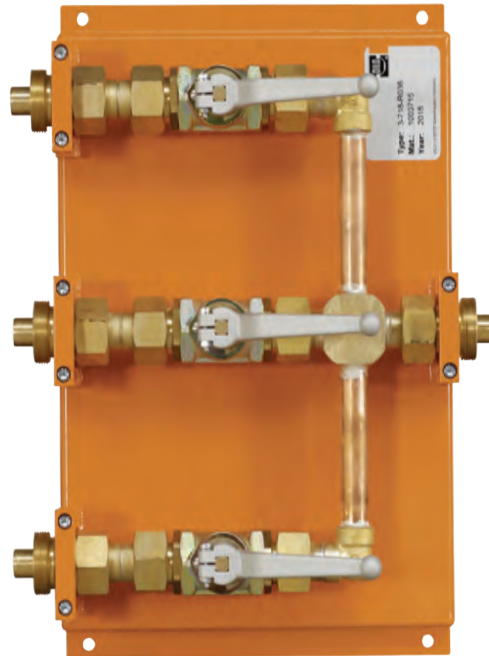
Order No.: 3-718-R006



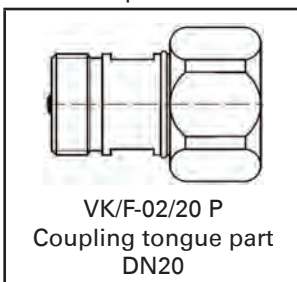
Other versions are available.

4 x DN20 Distributor

Order No.: 3-718-R036

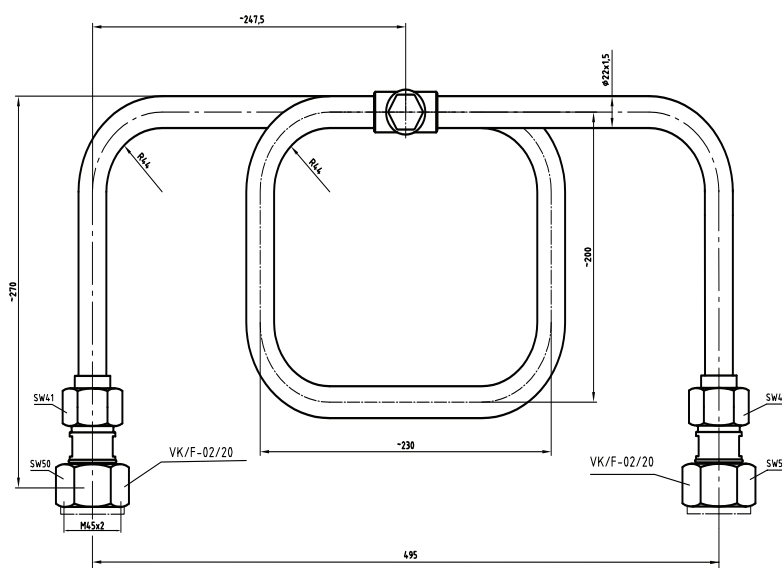


Suitable connecting parts

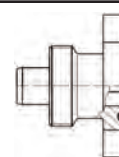


Tubings

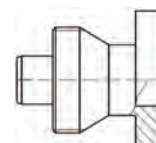
Order No.: 3-1026-R002



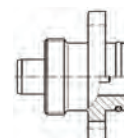
Suitable connecting parts



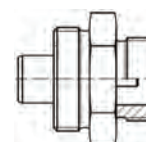
3-777-R001



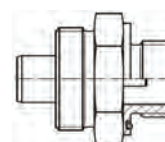
VK/FL-01/20



3-685-R001



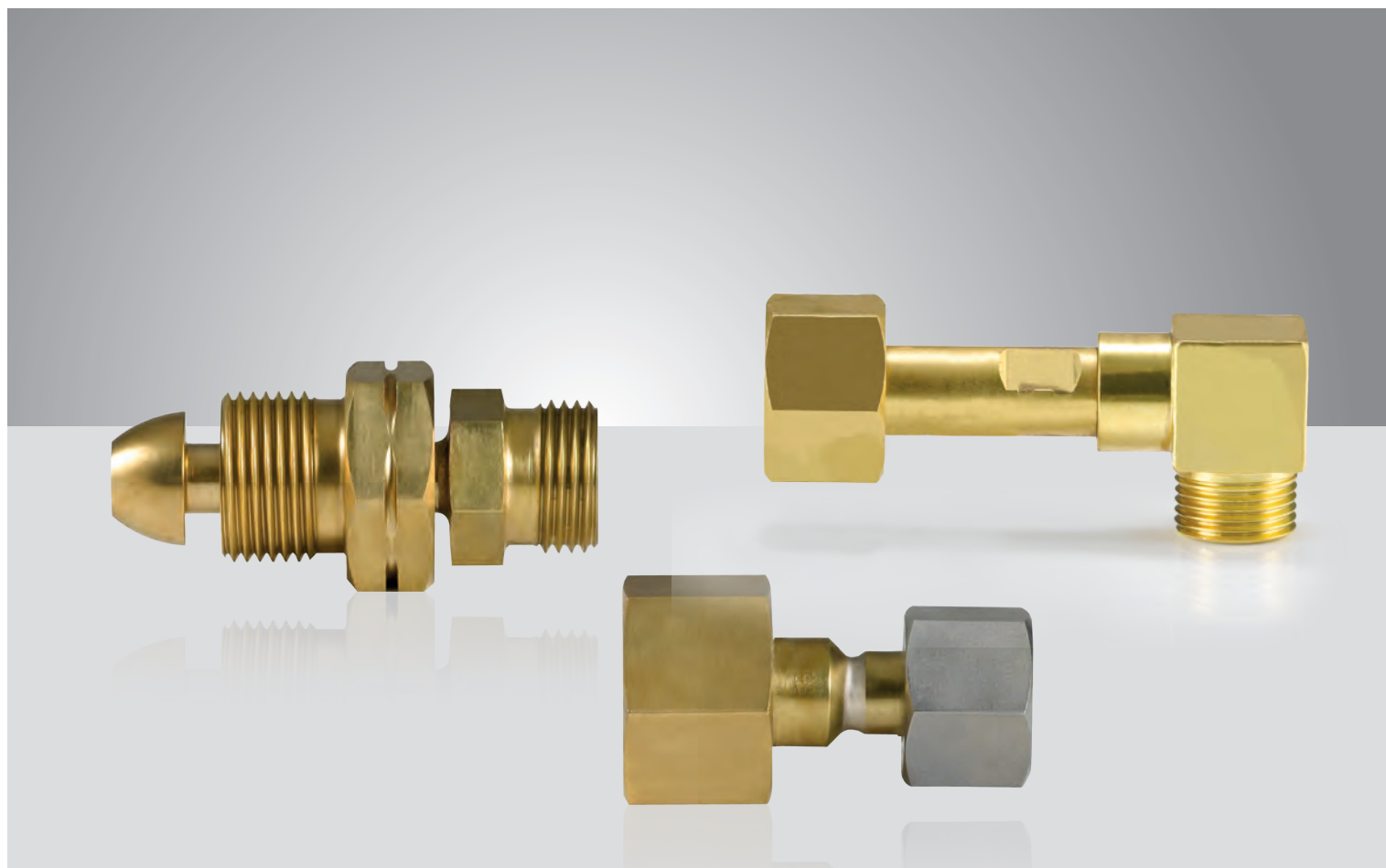
VK/A-02/20



VK/B-03/20
VK/BG-03/20

Other versions are available.

DILO SF₆ bottle connections



DILO offers a wide range of connections suitable for all commercial SF₆ bottles. Thus safe and quick connection of hoses of DILO service carts or SF₆ gas refilling devices to the SF₆ gas bottles is guaranteed. This refers to bottle connections for new gas as well as for reuse gas.

The suitable connecting parts must be ordered separately.

■ DILO SF₆ bottle connections

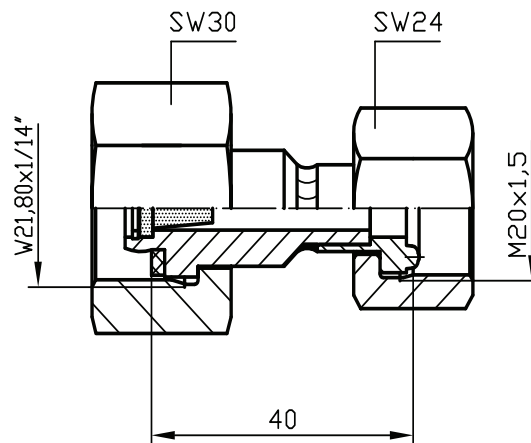
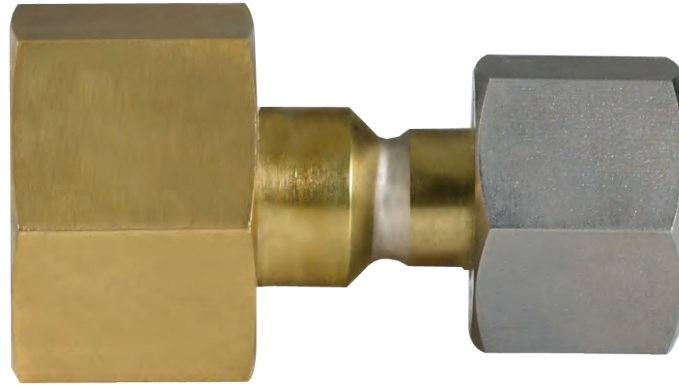
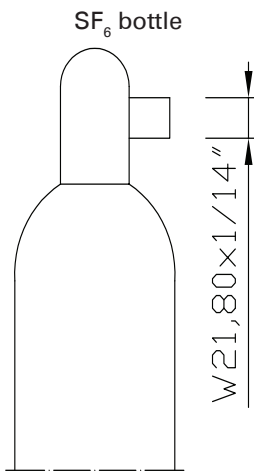
■ 3-316-R001	SF ₆ bottle connection	130
■ 3-858-R001	Angle SF ₆ bottle connection	131
■ 3-643-R001	Chinese SF ₆ bottle connection	132
■ 3-643-R002	Chinese SF ₆ bottle connection	133
■ 3-245-R001	American SF ₆ bottle connection	134
■ 3-334-R002	American SF ₆ bottle connection	135
■ 3-245-R002	English SF ₆ bottle connection	136
■ 3-245-R004	English SF ₆ bottle connection	137
■ 3-851-R002	Connection for reuse gas bottle	138
■ 3-851-R003	Connection for reuse gas bottle	139
■ 3-858-R002	Angle for connection of reuse gas bottle	140
■ 6-1037-R050	Storage connecting hose DN20	141
■ 6-1041-R050	Storage connecting hose DN8	142

PN64 DN8

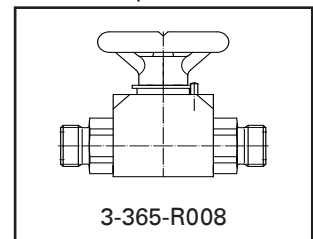
**SF₆ bottle connection W21.80x1/14" -
DIN 477 No. 6**

Order No.: 3-316-R001 P

Material: Stainless steel / Brass



Suitable connecting
parts



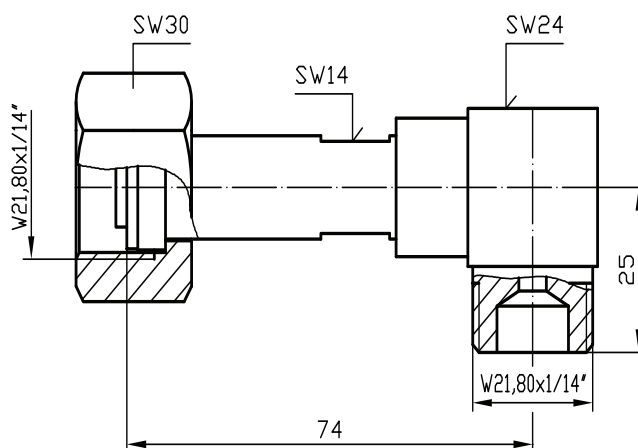
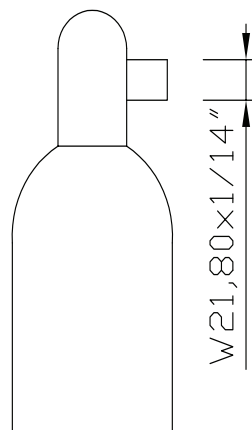
PN64 DN8

Angle SF₆ bottle connection W21.80x1/14" - DIN 477 No. 6

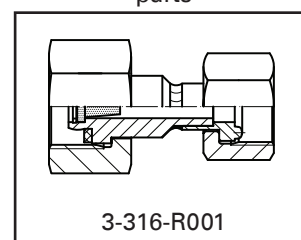
Order No.: 3-858-R001 P

Material: Brass

600 l SF₆ container



Suitable connecting parts



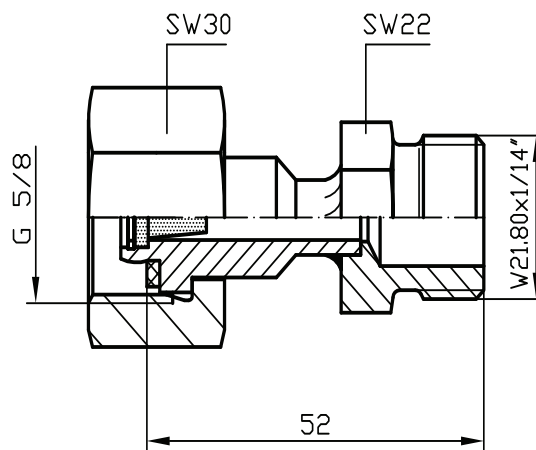
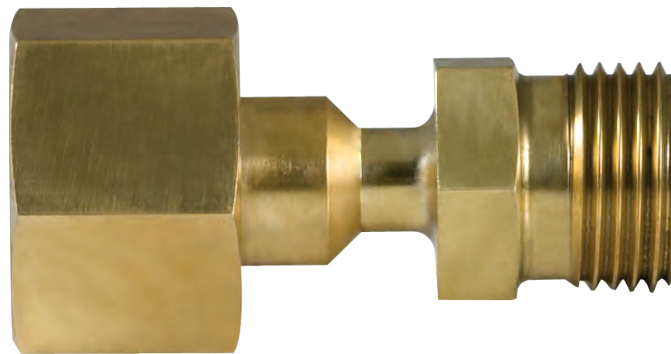
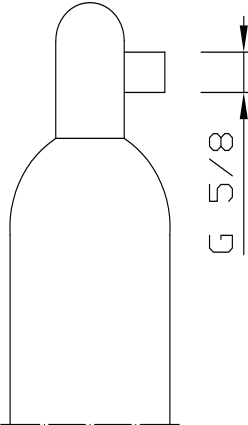
PN64 DN8

**Chinese SF₆ bottle connection G 5/8 -
DIN 477 No. 7**

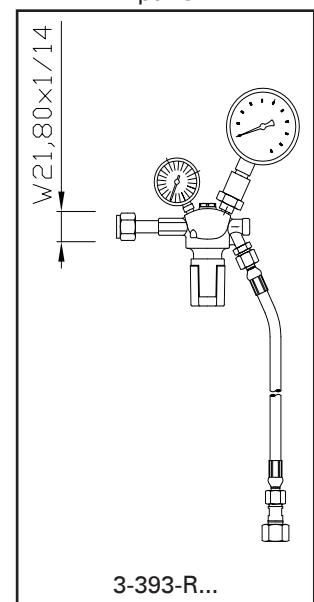
Order No.: 3-643-R001 P

Material: Brass

Chinese SF₆ bottle



Suitable connecting parts

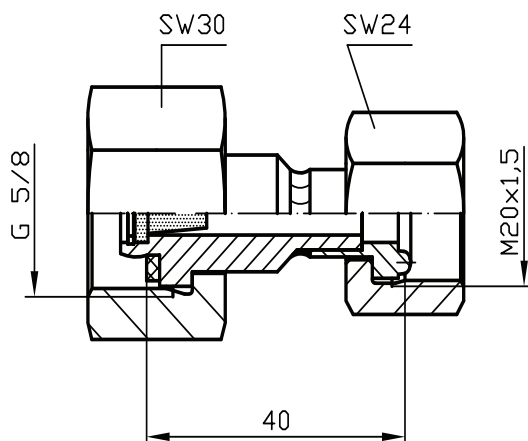
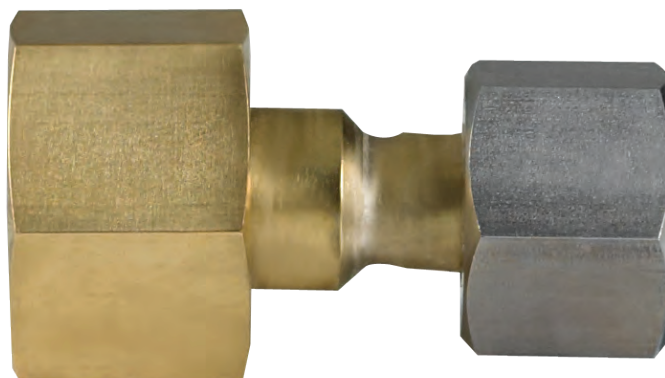
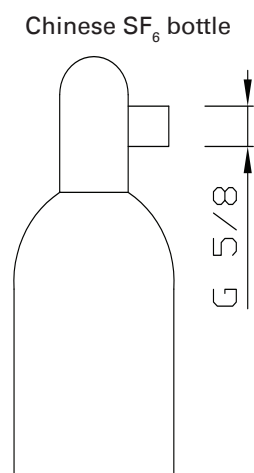


PN64 DN8

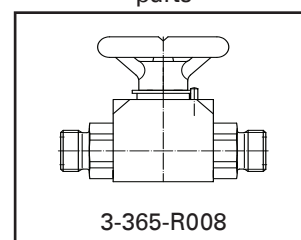
Chinese SF₆ bottle connection G 5/8 - DIN 477 No. 7

Order No.: 3-643-R002 P

Material: Stainless steel / Brass



Suitable connecting parts



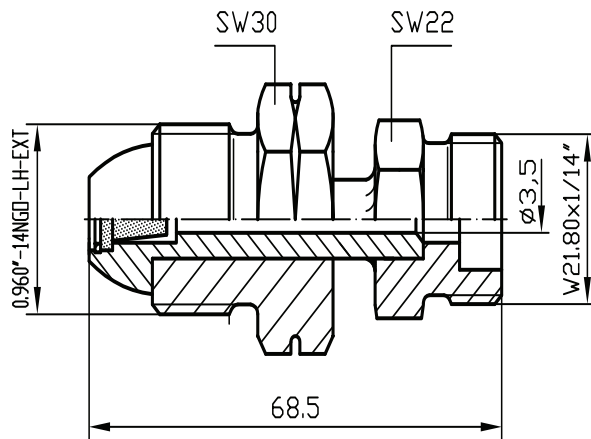
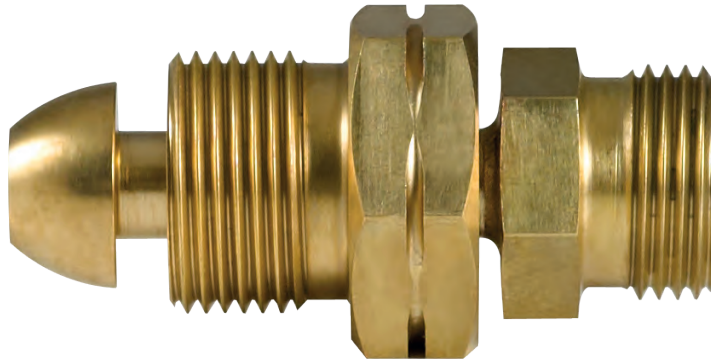
PN64 DN8

American SF₆ bottle connection
0.960"-14NGO-LH-EXT - CGA 590

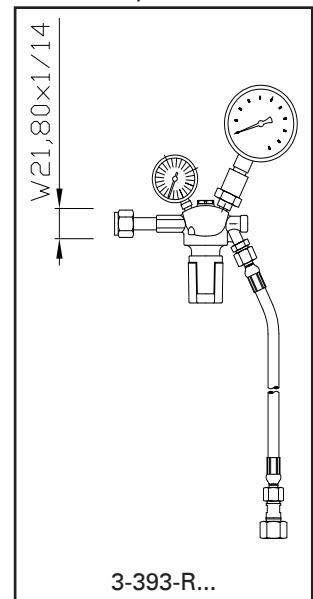
Order No.: 3-245-R001 P

Material: Brass

American SF₆ bottle



Suitable connecting parts



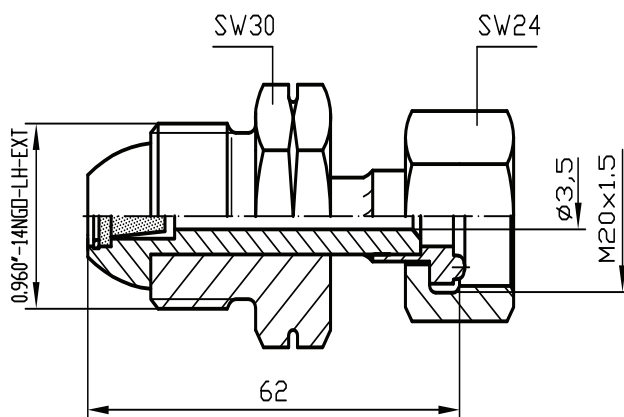
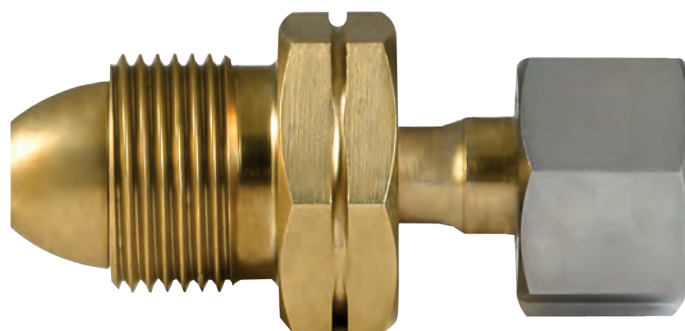
PN64 DN8

American SF₆ bottle connection 0.960"-14NGO-LH-EXT - CGA 590

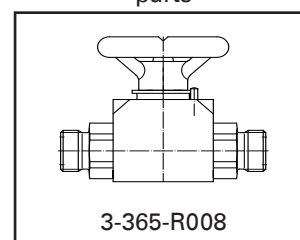
Order No.: 3-334-R002 P

Material: Stainless steel / Brass

American SF₆ bottle



Suitable connecting parts

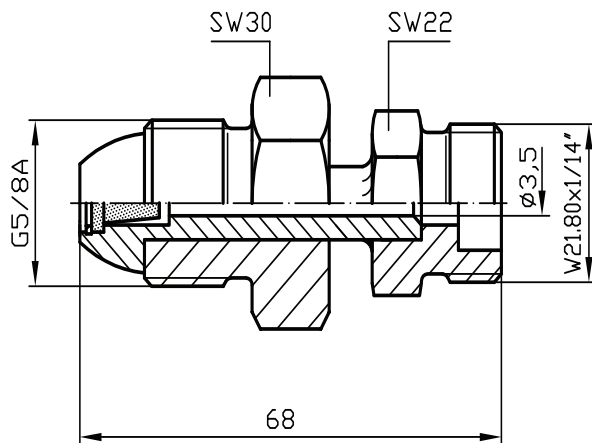
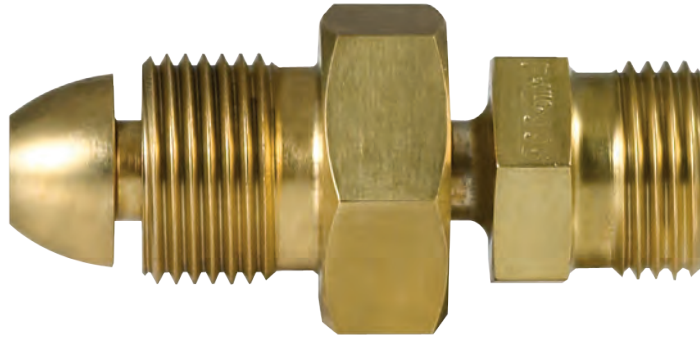
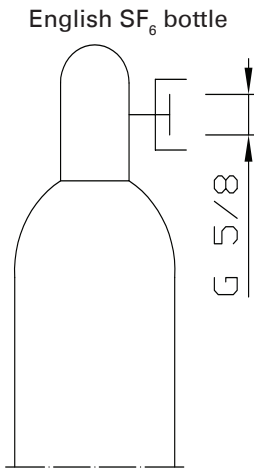


PN64 DN8

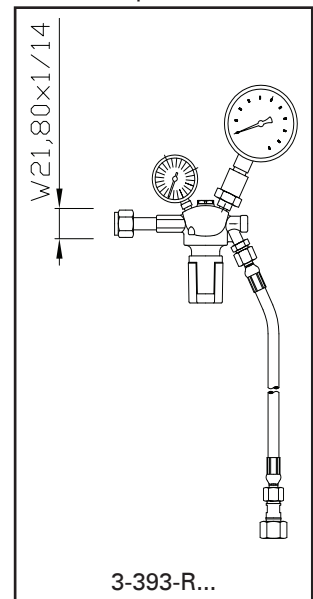
**English SF₆ bottle connection G 5/8 -
BS No. 3**

Order No.: 3-245-R002 P

Material: Brass



Suitable connecting parts

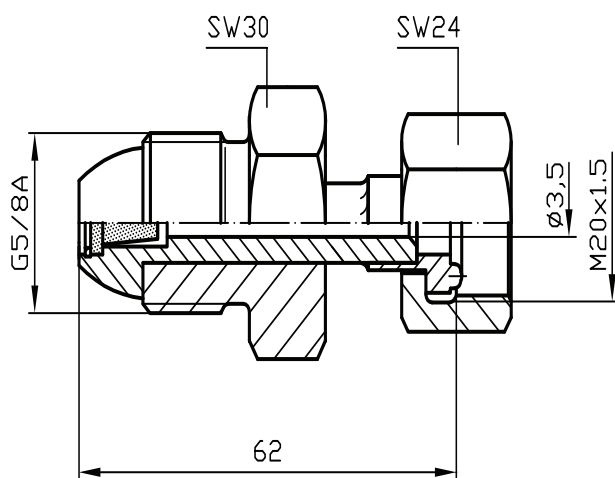
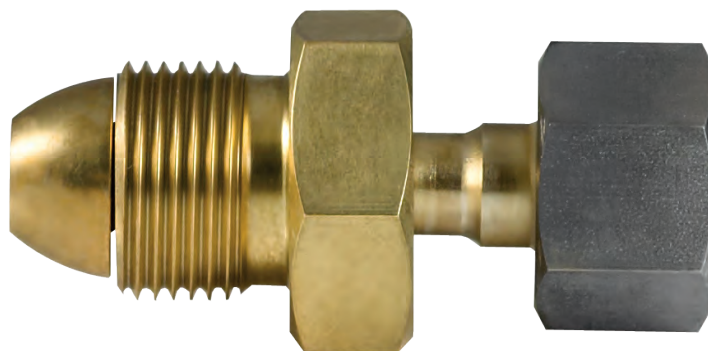
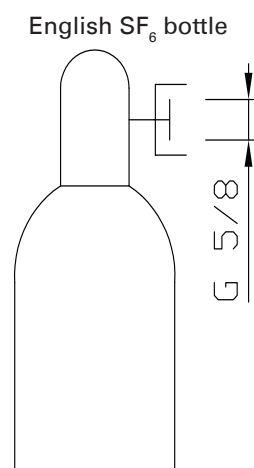


PN64 DN8

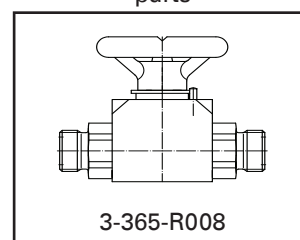
**English SF₆ bottle connection G 5/8 -
BS No. 3**

Order No.: 3-245-R004 P

Material: Stainless steel / Brass



Suitable connecting parts

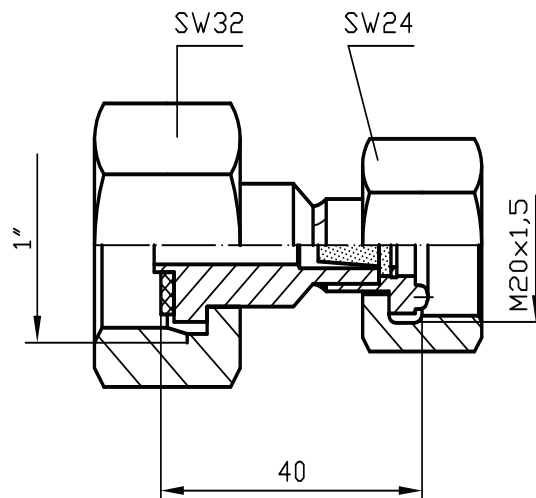
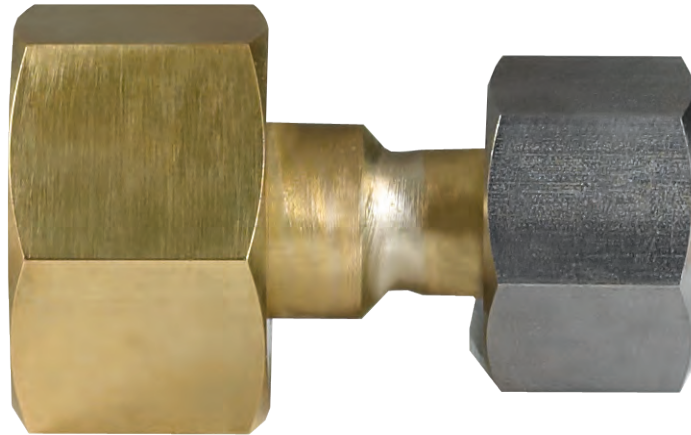
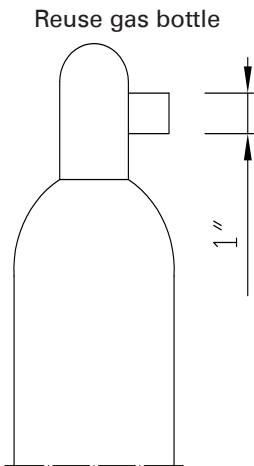


PN64 DN8

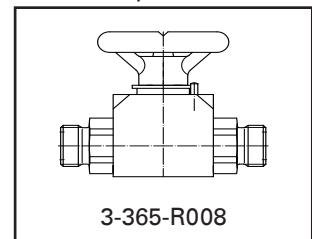
**Connection for reuse gas bottle 1" -
DIN 477 No. 8**

Order No.: 3-851-R002 P

Material: Stainless steel / Brass



Suitable connecting
parts

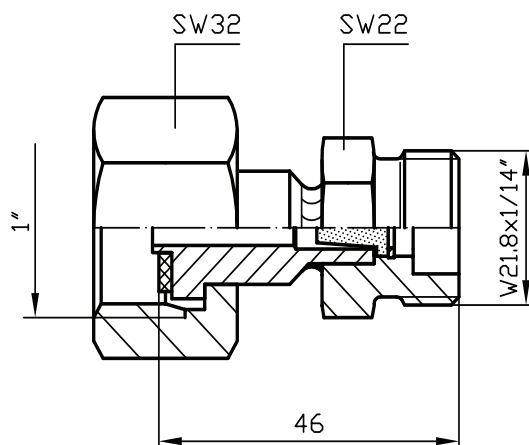
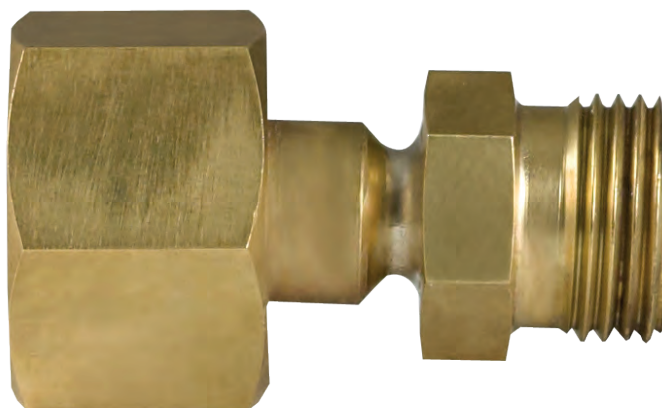
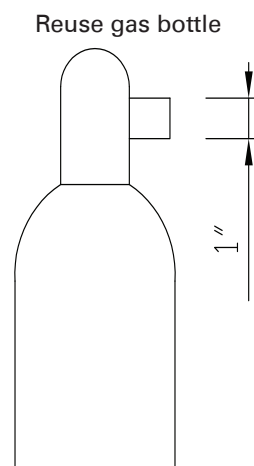


PN64 DN8

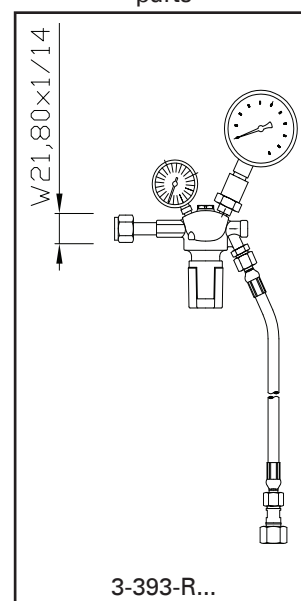
Connection for reuse gas bottle 1" - DIN 477 No. 8

Order No.: 3-851-R003 P

Material: Brass



Suitable connecting parts



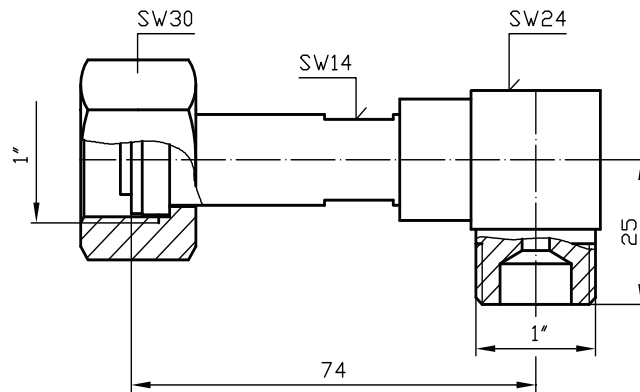
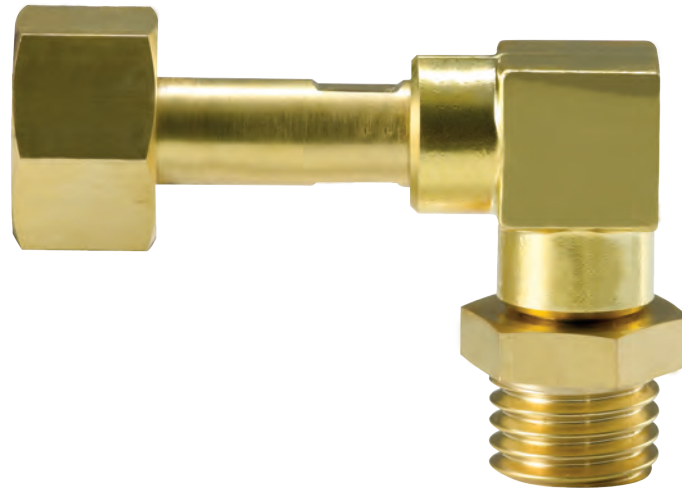
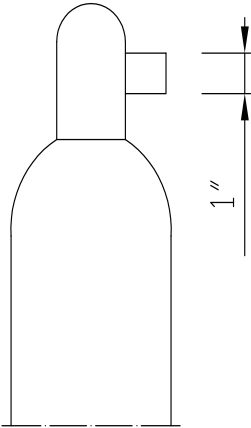
PN64 DN8

**Angle for connection of reuse gas bottle 1" -
DIN 477 No. 8**

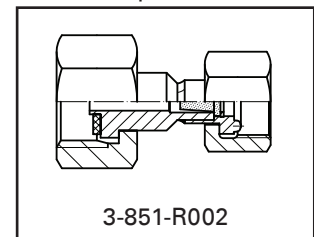
Order No.: 3-858-R002 P

Material: Brass

600 l Reuse container



Suitable connecting parts



PN64 DN20

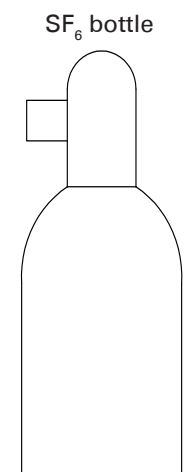
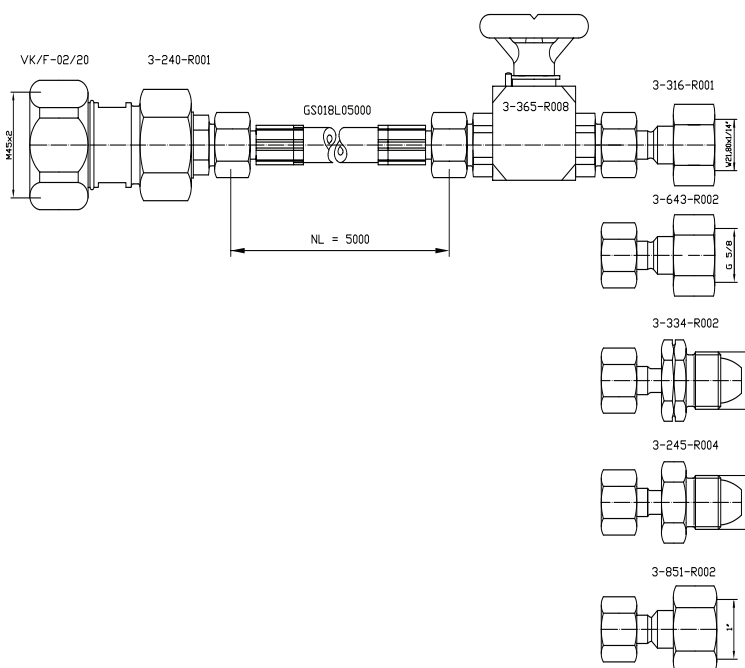
Storage connecting hose DN20

Order No.: 6-1037-R050



Suitable connecting parts

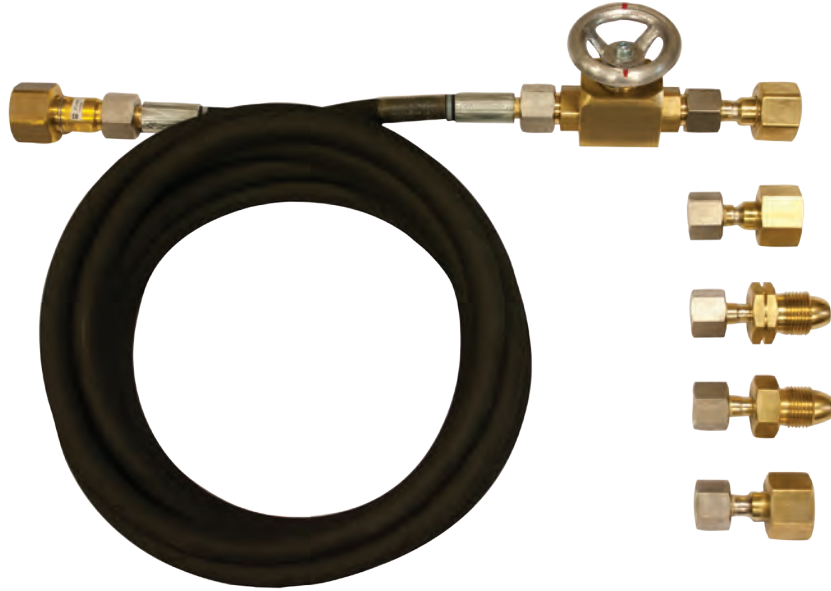
3-777-R001
VK/FL-01/20
3-685-R001
VK/A-02/20
VK/B-03/20 VK/BG-03/20



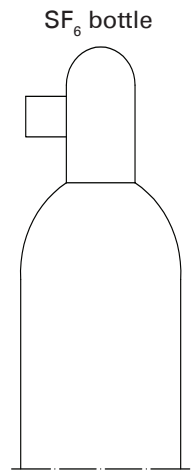
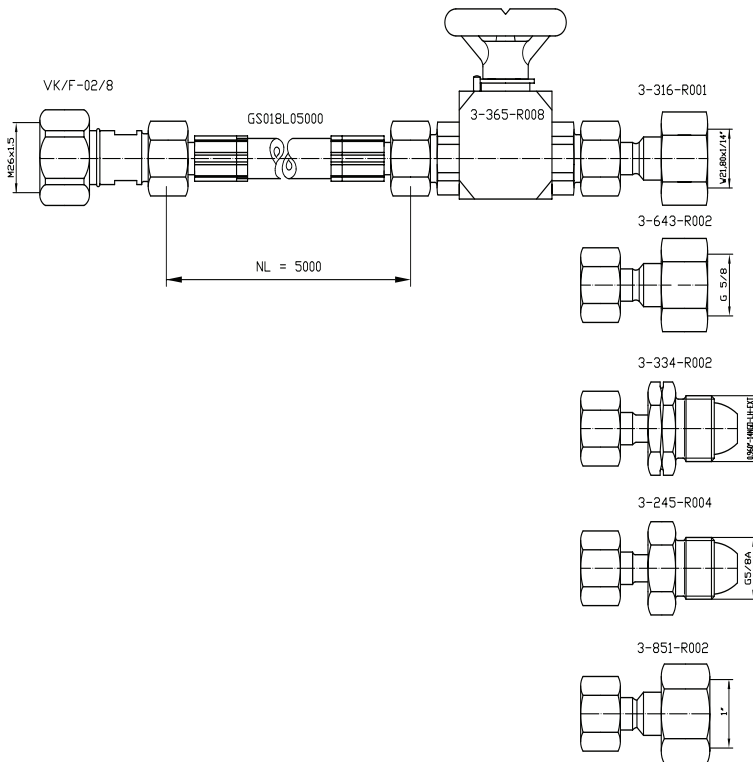
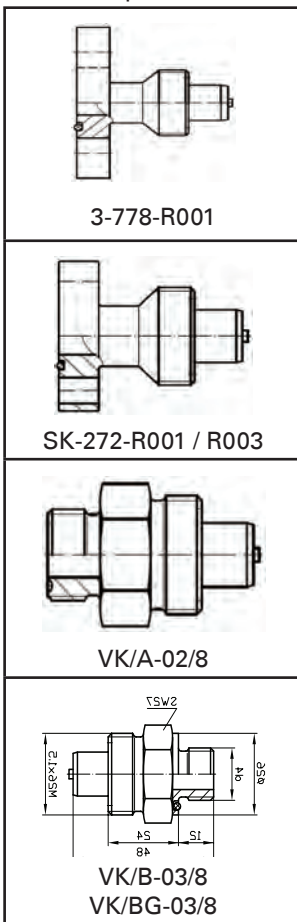
PN64 DN8

Storage connecting hose DN8

Order No.: 6-1041-R050



Suitable connecting parts





For your notes



SF₆ gas handling

Besides SF₆ couplings and valves DILO supplies a wide range of devices for SF₆ gas handling.

For further information please ask for our special leaflet.



High pressure tube unions

High pressure tube unions are DILO's second core competence. For further information please ask for our special leaflet.

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Fax: + 49 (0) 83 33 - 302-52
E-Mail: info@dilo-gmbh.com