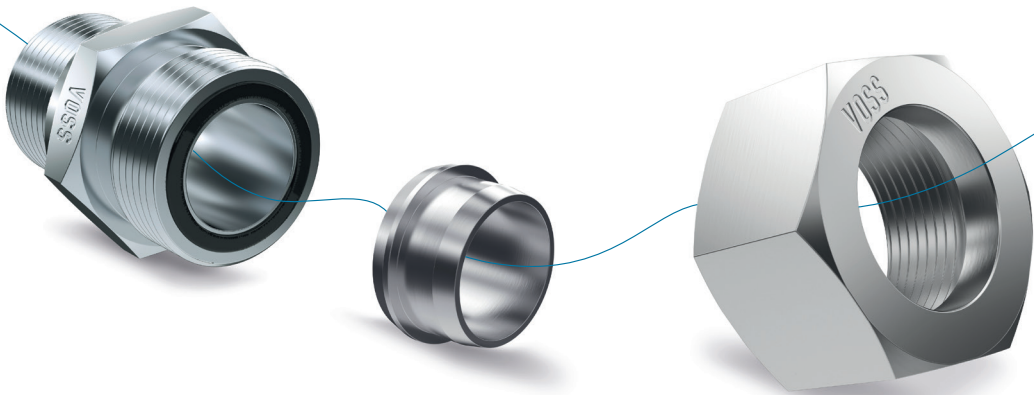


VOSS

Catalog *VOSS Flare^{ORFS}*
tube coupling technology



www.voss-fluid.net

VOSS Fluid GmbH sales organisation

Germany

VOSS Fluid GmbH
P.O. Box 15 40
51679 Wipperfürth
Lüdenscheider Straße 52–54
51688 Wipperfürth
Tel. +49 2267 63-0
Fax +49 2267 63-5621
+49 2267 63-5622
+49 2267 63-5623
fluid@voss.net
www.voss.net

Brazil

VOSS Automotive Ltda.
Av. Alvares Cabral, 1087
CEP 09980-160
Diadema – São Paulo
Tel. +55 11 40539500
Fax +55 11 40539524
info@br.voss.net
www.voss.com.br

China

Tel. +86 510 66902370
fluidchina@voss.net

France

VOSS Distribution S.a.r.l.
57 Route de Crécy
28500 Vernouillet
Tel. +33 237 380190
Fax +33 237 468914
info@fr.voss.net

Italy

VOSS Fluid S.r.l.
Via A. Stoppani, 13
23875, Osnago (LC)
Tel. +39 039 58445
Fax +39 039 9520010
info@it.voss.net

Poland

Tel. +48 515 312750
fluid.pl@voss.net

Spain

VOSS S.A.
Paseo del Comercio, 90
Apartado Correos, 1014
08203 Sabadell
Tel. +34 93 7106262
Fax +34 93 7116357
info@es.voss.net

USA

VOSS Automotive, Inc.
4640 Hillegas Road
Fort Wayne, IN 46818
Tel. +1 260 3732277
Fax +1 260 3732299
info@us.voss.net
www.vossusa.com

Dealers world-wide

Please request the latest
list of dealers from our
Wipperfürth sales office.

To ensure that VOSS products perform reliably, it is essential to follow the relevant operating and assembly instructions and to adhere to the latest standards and regulations for general mechanical engineering. Make sure to use up-to-date versions at all times.

Subject to errors, including printing errors, and technical modifications.

This catalog edition supersedes all previously published technical documents, catalogs, assembly instructions etc. All preceding documents therefore become invalid with immediate effect.

© Copyright 2018, VOSS Fluid GmbH

Content

Chapter

Tube connecting parts, 90° connecting pieces and single parts / accessories

1

Hydraulic valves

2

Hydraulic coupling technology
Designation directory

3

Tube connecting parts, 90° connecting pieces
and single parts / accessories



Content

Type/Page

Sleeves / Braze sleeves

SL

BRSL



P.8

P.10

Braze-on adapters

BROS

BROE



P.16

P.19

Weld connectors

WDNPS

WDE



P.22

P.24

Union nuts / Brazing nuts

N

BRN



P.26

P.27

Male stud connectors

SDS

SDSL

SWSDS

BHSDSLN

SDE



P.30

P.43

P.45

P.50

P.54

Unions

S

E

T

K



P.56

P.58

P.60

P.62

Reducing adapters / Expanders

SWS/SWSX

SWS

















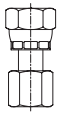



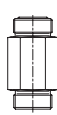








P.64

P.65

Content

Type/Page

Bulkhead unions	BHSLN  P.68	BHELN  P.70	BHE45LN  P.72	BHLLN  P.73	BHTLN  P.74
Swivel connectors	SW2S  P.76	SWE  P.77	SWE45  P.79	SWL  P.80	SWT  P.82
Adjustable stud connectors with locknut	SDAE  P.86	SWSDAE  P.92	SDAE45  P.94	SDAL  P.98	SDAT  P.107
Adapters for test points	S  P.116				
Test point connectors	SWS  P.120				
System adapters ORFS / JIC / DIN	S  P.126	SWS  P.130	SWOS  P.131	S  P.132	SWL  P.133
Accessories	PLC  P.136	TBS  P.137	LN  P.138	SDS  P.139	PLIH / PLEH  P.141

Content

Type/Page

Sealing rings

OR

PEFLEX

RR

RR



P.146



P.148



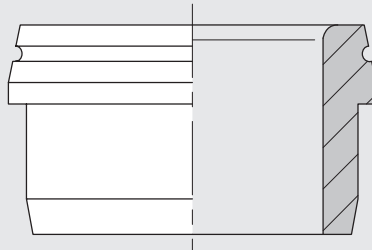
P.154



P.155

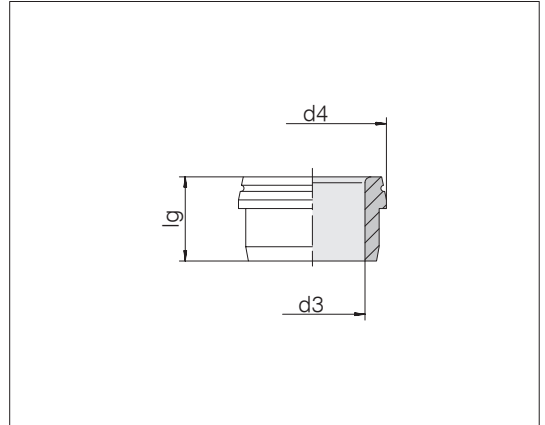
Sleeves / Braze sleeves

1



Sleeves

for metric tubes



Tube OD d_3 mm	Pressure	d_4	lg	kg/100 ca.	Order-No.	Designation
5	PN 630	12.8	7	0.4	2066282000	90-SL-6-5
6	PN 630	12.8	7	0.4	2066002000	90-SL-6
8	PN 630	12.8	7.5	0.3	7001130400	90-SL-6-8
8	PN 630	15.8	8.5	0.7	2066012000	90-SL-8
10	PN 630	15.8	8.5	0.5	2066022000	90-SL-10
10	PN 630	18.9	10.5	0.6	2066032000	90-SL-12-10
12	PN 630	18.9	10.5	0.9	2066042000	90-SL-12
14	PN 420	23.5	10.5	1.7	2066052000	90-SL-14
15	PN 420	23.5	10.5	1.5	2066062000	90-SL-15
16	PN 420	23.5	10.5	1.3	2066072000	90-SL-16
18	PN 420	27.9	12	2.2	2066082000	90-SL-18
20	PN 420	27.9	12	1.6	2066092000	90-SL-20
22	PN 420	34.2	13.5	3.6	2066102000	90-SL-22
25	PN 420	34.2	13.5	2.4	2066112000	90-SL-25
28	PN 280	40.6	13	4.5	2066122000	90-SL-28
30	PN 280	40.6	13	3.6	2066132000	90-SL-30
32	PN 280	40.6	13	2.6	2066142000	90-SL-32
35	PN 280	48.5	12	5.7	2066152000	90-SL-35
38	PN 280	48.5	12.5	4.2	2066162000	90-SL-38
50	PN 280	60.7	14	6.3	2066172000	90-SL-50

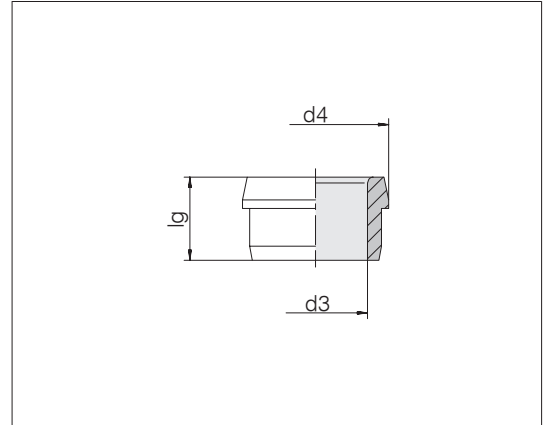
2)

²⁾ Special sizes only on request

Example for comparison:
TPLS6

Sleeves

for imperial tubes



Tube OD d3 Inch	Pressure	d4	lg	kg/100 ca.	Order-No.	Designation
1/4	PN 630	12.8	7	0.4	2066182000	90-SL-1/4
3/8	PN 630	15.8	8.5	0.5	2066192000	90-SL-3/8
1/2	PN 630	18.9	10.5	0.8	2066202000	90-SL-1/2
5/8	PN 420	23.5	10.5	1.3	2066212000	90-SL-5/8
3/4	PN 420	27.9	12	1.9	2066222000	90-SL-3/4
7/8	PN 420	34.2	13.5	3.5	2066232000	90-SL-7/8
1	PN 420	34.2	13.5	2.2	2066242000	90-SL-1
1 1/4	PN 280	40.6	13	2.2	2066252000	90-SL-1 1/4
1 1/2	PN 280	48.5	12.5	4.2	2066262000	90-SL-1 1/2
2	PN 280	60.7	14	5.8	2066272000	90-SL-2

²⁾ Special sizes only on request

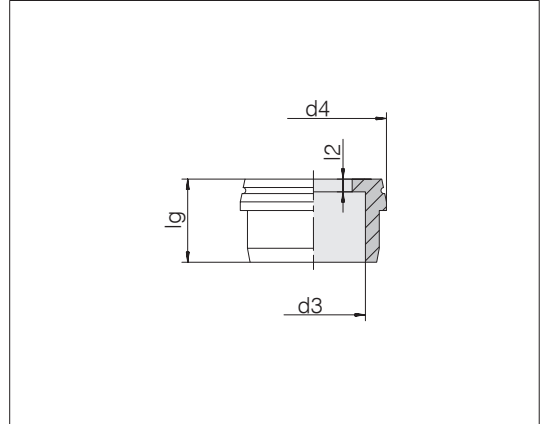
Example for comparison:
4 TPL-S

Braze sleeves

for metric tubes

Tolerances and dimensions according to ISO 8434-3

Delivery condition blank and oiled



Tube OD $d3$ mm	Pressure	$d4$	lg	$l2$	kg/100 ca.	Order-No.	Designation
6	PN 630	12.8	9.5	1.0	0.5	2050500000	90-BRSL-6-C00
8	PN 630	15.8	9.5	1.0	0.8	2050510000	90-BRSL-8-C00
10	PN 630	15.8	9.5	1.0	0.6	2050520000	90-BRSL-10-C00
12	PN 630	18.9	9.5	1.0	1.0	2050530000	90-BRSL-12-C00
14	PN 420	23.5	10.5	1.5	1.8	2050540000	90-BRSL-14-C00
15	PN 420	23.5	10.5	1.5	1.7	2050550000	90-BRSL-15-C00
16	PN 420	23.5	10.5	1.5	1.5	2050560000	90-BRSL-16-C00
18	PN 420	27.9	14	1.5	2.8	2050570000	90-BRSL-18-C00
20	PN 420	27.9	14	1.5	2.2	2050580000	90-BRSL-20-C00
22	PN 420	34.2	15.5	1.5	4.6	2050590000	90-BRSL-22-C00
25	PN 420	34.2	15.5	1.5	3.4	2050600000	90-BRSL-25-C00
28	PN 280	40.6	15.5	1.5	6.0	2050610000	90-BRSL-28-C00
30	PN 280	40.6	15.5	1.5	5.0	2050620000	90-BRSL-30-C00
32	PN 280	40.6	15.5	1.5	3.9	2050630000	90-BRSL-32-C00
35	PN 280	48.5	15.5	1.5	8.2	2050640000	90-BRSL-35-C00
38	PN 280	48.5	15.5	1.5	6.3	2050650000	90-BRSL-38-C00
50	PN 200	61.1	16.5	1.5	8.4	7004706200	90-BRSL-50-C00

Example for comparison:
TLS6



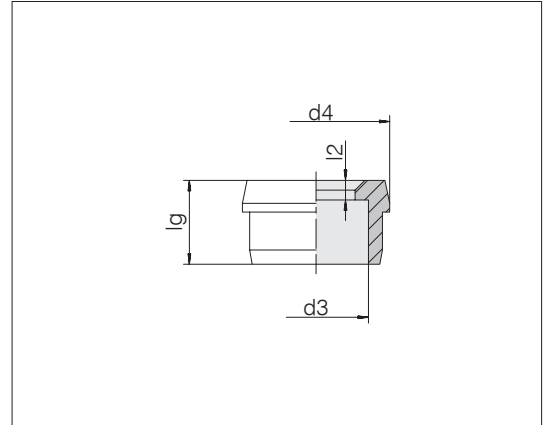
Braze sleeves

for metric tubes

Tolerances and dimensions according to ISO 8434-3

Delivery condition blank and oiled

Reducers



Body size	Tube OD d3 mm	Pressure	d4	lg	l2	kg/100 ca.	Order-No.	Designation
6	8	PN 630	12.8	9.5	1.0	0.5	2050400000	90-BRSL-6-8-C00
8; 10	6	PN 630	15.8	10.5	2.0	1.2	2050420000	90-BRSL-10-6-C00
8; 10	8	PN 630	15.8	10.5	2.0	1.1	2050430000	90-BRSL-10-8-C00
12	8	PN 630	18.9	12	3.5	1.2	2050440000	90-BRSL-12-8-C00
12	10	PN 630	18.9	12	3.5	1.5	2050450000	90-BRSL-12-10-C00
14; 15; 16	12	PN 420	23.5	13.5	5.0	2.8	2050460000	90-BRSL-16-12-C00
18; 20	16	PN 420	27.9	14.5	6.5	4.0	2050470000	90-BRSL-20-16-C00
22; 25	20	PN 420	34.2	17	7.0	6.2	2050480000	90-BRSL-25-20-C00

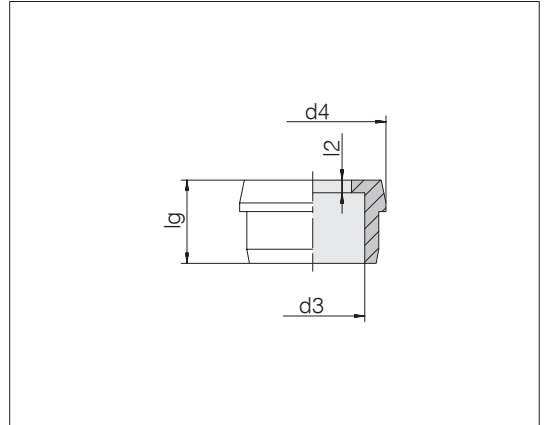
Example for comparison:
TL6-8

Braze sleeves

for imperial tubes

Tolerances and dimensions according to ISO 8434-3

Delivery condition blank and oiled



Body size	Tube OD d3 Inch	Pressure	d4	lg	l2	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	12.8	9.5	1.0	0.5	2050660000	90-BRSL-1/4-C00
8; 10	3/8	PN 630	15.8	9.5	1.0	0.7	2050670000	90-BRSL-3/8-C00
12	1/2	PN 630	18.9	9.5	1.0	0.9	2050680000	90-BRSL-1/2-C00
14; 15; 16	5/8	PN 420	23.5	10.5	1.5	1.6	2050690000	90-BRSL-5/8-C00
18; 20	3/4	PN 420	27.9	14	1.5	2.5	2050700000	90-BRSL-3/4-C00
22; 25	7/8	PN 420	31	15.5	1.5	4.5	2050710000	90-BRSL-7/8-C00
22; 25	1	PN 420	34.2	15.5	1.5	3.2	2050720000	90-BRSL-1-C00
28; 30; 32	1 1/4	PN 280	40.6	15.5	1.5	4.1	2050730000	90-BRSL-1 1/4-C00
35; 38	1 1/2	PN 280	48.5	15.5	1.5	6.3	2050740000	90-BRSL-1 1/2-C00
50	2	PN 200	61	17	1.5	20.9	2050750000	90-BRSL-2-C00 ²⁾

²⁾ Special sizes only on request

Example for comparison:
4 TL-S



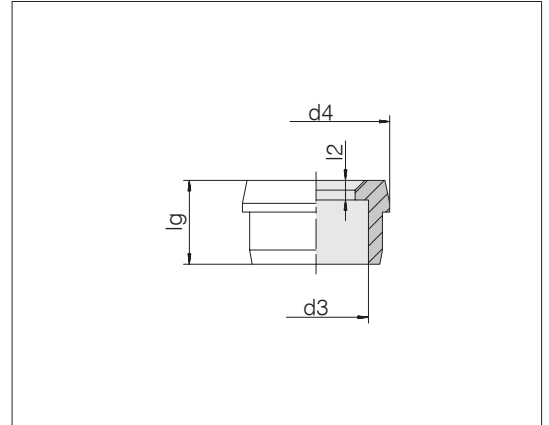
Braze sleeves

for imperial tubes

Tolerances and dimensions according to ISO 8434-3

Delivery condition blank and oiled

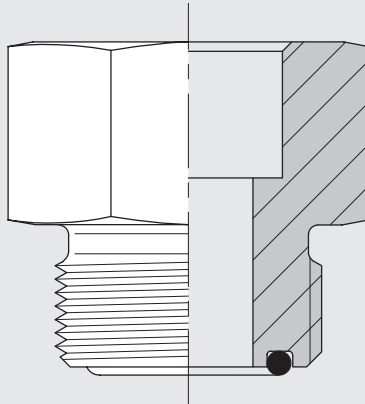
Reducers



Body size	Tube OD d3 Inch	Pressure	d4	lg	l2	kg/100 ca.	Order-No.	Designation
8; 10	1/4	PN 630	15.8	10.5	2.0	1.0	2050800000	90-BRSL-10-1/4-C00
12	1/4	PN 630	18.9	12	3.5	1.7	2050810000	90-BRSL-12-1/4-C00
12	3/8	PN 630	18.9	12	3.5	1.7	2050820000	90-BRSL-12-3/8-C00
14; 15; 16	1/4	PN 420	23.5	13.5	5.0	3.7	2050830000	90-BRSL-16-1/4-C00
14; 15; 16	3/8	PN 420	23.5	13.5	5.0	3.2	2050840000	90-BRSL-16-3/8-C00
14; 15; 16	1/2	PN 420	23.5	13.5	5.0	2.8	2050850000	90-BRSL-16-1/2-C00
18; 20	1/4	PN 420	27.9	14.5	6.0	5.4	2050860000	90-BRSL-20-1/4-C00
18; 20	3/8	PN 420	27.9	14.5	6.0	4.9	2050870000	90-BRSL-20-3/8-C00
18; 20	1/2	PN 420	27.9	14.5	6.0	4.4	2050880000	90-BRSL-20-1/2-C00
18; 20	5/8	PN 420	27.9	14.5	6.5	3.9	2050890000	90-BRSL-20-5/8-C00
18; 20	7/8	PN 420	27.9	17	2.0	2.5	2050900000	90-BRSL-20-7/8-C00
22; 25	1/2	PN 420	34.2	15.5	7.0	7.6	2050910000	90-BRSL-25-1/2-C00
22; 25	5/8	PN 420	34.2	15.5	6.5	7.1	2050920000	90-BRSL-25-5/8-C00
22; 25	3/4	PN 420	34.2	17	4.5	6.6	2050930000	90-BRSL-25-3/4-C00
22; 25	7/8	PN 420	34.2	17	4.5	5.0	2050940000	90-BRSL-25-7/8-C00
28; 30; 32	3/4	PN 280	40.6	18.5	6.0	10.2	2050950000	90-BRSL-30-3/4-C00
28; 30; 32	1	PN 280	40.6	21	7.0	7.9	2050960000	90-BRSL-30-1-C00
35; 38	1	PN 280	48.5	21	7.0	14.1	2050970000	90-BRSL-38-1-C00
35; 38	1 1/4	PN 280	48.5	21	7.0	10.7	2050980000	90-BRSL-38-11/4-C00

Example for comparison:
6-4 TL-S

Braze-on adapters



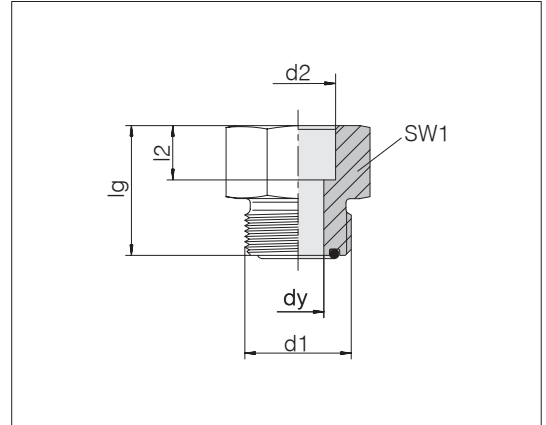
Braze-on adapters

for metric tubes

Tube connection according to ISO 8434-3/SAE J 1453

Delivery condition blank and oiled

Standard O-ring material is NBR



Tube OD d1 mm	Inch	Pressure	Tube OD d2 mm	d1 UN/UNF	dy	lg	l2	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	6	9/16-18	4.5	22	8.5	17	2.3	2060700052	90-BROS-6-C00
8; 10	5/16; 3/8	PN 420	10	11/16-16	6.5	23	8.5	19	3.6	2060730052	90-BROS-10-C00
12	1/2	PN 420	12	13/16-16	9.5	24.5	8.5	22	4.2	2060770052	90-BROS-12-C00
14; 15; 16	5/8	PN 420	16	1-14	12.5	28	9.0	27	10.1	2060830052	90-BROS-16-C00
18; 20	3/4	PN 420	20	1 3/16-12	15.5	33.5	12.5	32	14.4	2060880052	90-BROS-20-C00
22; 25	1	PN 420	25	1 7/16-12	20.5	38.5	14.0	41	21.8	2060930052	90-BROS-25-C00
28; 30; 32	1 1/4	PN 280	32	1 11/16-12	26	38.5	14.0	46	26.9	2060980052	90-BROS-30-C00
35; 38	1 1/2	PN 280	38	2-12	32	38.5	14.0	55	37.4	2061020052	90-BROS-38-C00

O-rings have to be ordered
seperately.

Example for comparison:
4-6MMLOHB3S

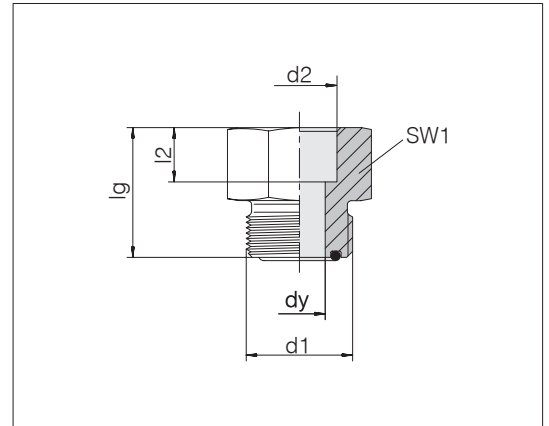
Braze-on adapters

for imperial tubes

Tube connection according to ISO 8434-3/SAE J 1453

Delivery condition blank and oiled

Standard O-ring material is NBR



Tube OD d1 mm	Inch	Pressure	Tube OD d2 Zoll	d1 UN/UNF	dy	lg	l2	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	1/4	9/16-18	4.5	22	8.5	17	2.4	2060710052	90-BROS-6-1/4-C00
6	1/4	PN 420	3/8	9/16-18	4.5	22	8.5	17	2.3	2060720052	90-BROS-6-3/8-C00
8; 10	5/16; 3/8	PN 420	1/4	11/16-16	6.5	23	8.5	19	4.2	2060740052	90-BROS-10-1/4-C00
8; 10	5/16; 3/8	PN 420	1/2	11/16-16	6.5	23	8.5	19	3.6	2060750052	90-BROS-10-1/2-C00
8; 10	5/16; 3/8	PN 420	5/8	11/16-16	6.5	23.5	9.0	22	3.0	2060760052	90-BROS-10-5/8-C00
12	1/2	PN 420	1/4	13/16-16	9.5	24.5	8.5	22	5.8	2060790052	90-BROS-12-1/4-C00
12	1/2	PN 420	3/8	13/16-16	9.5	24.5	8.5	22	4.3	2060800052	90-BROS-12-3/8-C00
12	1/2	PN 420	1/2	13/16-16	9.5	24.5	8.5	22	4.4	2060780052	90-BROS-12-1/2-C00
12	1/2	PN 420	5/8	13/16-16	9.5	25	9.0	22	4.2	2060810052	90-BROS-12-5/8-C00
12	1/2	PN 420	3/4	13/16-16	9.5	29.5	12.5	27	7.4	2060820052	90-BROS-12-3/4-C00
14; 15; 16	5/8	PN 420	3/8	1-14	12.5	27.5	8.5	27	9.9	2060850052	90-BROS-16-3/8-C00
14; 15; 16	5/8	PN 420	1/2	1-14	12.5	27.5	8.5	27	9.6	2060860052	90-BROS-16-1/2-C00
14; 15; 16	5/8	PN 420	5/8	1-14	12.5	28	9.0	27	10.4	2060840052	90-BROS-16-5/8-C00
14; 15; 16	5/8	PN 420	3/4	1-14	12.5	31.5	12.5	27	9.7	2060870052	90-BROS-16-3/4-C00
18; 20	3/4	PN 420	1/2	1 3/16-12	15.5	29.5	8.5	32	17.4	2060900052	90-BROS-20-1/2-C00
18; 20	3/4	PN 420	5/8	1 3/16-12	15.5	30	9.0	32	17.1	2060910052	90-BROS-20-5/8-C00
18; 20	3/4	PN 420	3/4	1 3/16-12	15.5	33.5	12.5	32	14.9	2060890052	90-BROS-20-3/4-C00
18; 20	3/4	PN 420	1	1 3/16-12	15.5	35	14.0	32	22.0	2060920052	90-BROS-20-1-C00
22; 25	1	PN 420	1/2	1 7/16-12	20.5	33	8.5	41	23.7	2060950052	90-BROS-25-1/2-C00
22; 25	1	PN 420	3/4	1 7/16-12	20.5	37	12.5	41	22.8	2060960052	90-BROS-25-3/4-C00
22; 25	1	PN 420	1	1 7/16-12	20.5	38.5	14.0	41	22.5	2060940052	90-BROS-25-1-C00
22; 25	1	PN 420	1 1/4	1 7/16-12	20.5	38.5	14.0	41	27.6	2060970052	90-BROS-25-1 1/4-C00
28; 30; 32	1 1/4	PN 280	1	1 11/16-12	26	38.5	14.0	46	27.8	2061000052	90-BROS-30-1-C00
28; 30; 32	1 1/4	PN 280	1 1/4	1 11/16-12	26	38.5	14.0	46	27.8	2060990052	90-BROS-30-1 1/4-C00
28; 30; 32	1 1/4	PN 280	1 1/2	1 11/16-12	26	38.5	14.0	46	37.1	2061010052	90-BROS-30-1 1/2-C00
35; 38	1 1/2	PN 280	1 1/4	2-12	32	38.5	14.0	55	44.2	2061040052	90-BROS-38-1 1/4-C00
35; 38	1 1/2	PN 280	1 1/2	2-12	32	38.5	14.0	55	38.4	2061030052	90-BROS-38-1 1/2-C00

O-rings have to be ordered separately.

Example for comparison:
6-4 LOHB3-S

Braze-on adapters

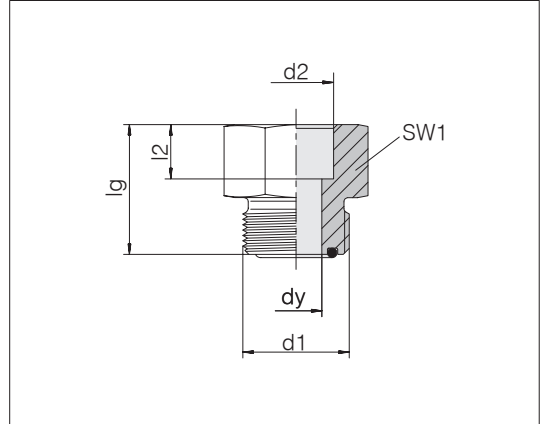
for metric tubes

Tube connection according ISO 8434-3/SAE J 1453

Delivery condition blank and oiled

Standard O-ring material is NBR

Reducers



Tube OD d1 mm	Inch	Pressure	Tube OD d2 mm	d1 UN/UNF	dy	lg	l2	SW1	Order-No.	Designation
6	1/4	PN 420	10	9/16-18	4.5	22	8.5	17	2088480052	90-BROS-6-10-C00
8; 10	5/16; 3/8	PN 420	12	11/16-16	6.5	23	8.5	19	2088490052	90-BROS-10-12-C00
12	1/2	PN 420	16	13/16-16	9.5	25	9.0	22	2088500052	90-BROS-12-16-C00
12	1/2	PN 420	22	13/16-16	9.5	29	14.0	30	2088510052	90-BROS-12-22-C00
14; 15; 16	5/8	PN 420	18	1-14	12.5	32	12.5	27	2088520052	90-BROS-16-18-C00
14; 15; 16	5/8	PN 420	20	1-14	12.5	31	12.5	27	2088530052	90-BROS-16-20-C00
14; 15; 16	5/8	PN 420	22	1-14	12.5	34	14.0	30	2088540052	90-BROS-16-22-C00
18; 20	3/4	PN 420	18	1 3/16-12	15.5	34	12.5	32	2088550052	90-BROS-20-18-C00
18; 20	3/4	PN 420	25	1 3/16-12	15.5	35	14.0	38	2088560052	90-BROS-20-25-C00
18; 20	3/4	PN 280	27	1 3/16-12	15.5	35	14.0	38	2088570052	90-BROS-20-27-C00
18; 20	3/4	PN 280	30	1 3/16-12	15.5	35	14.0	41	2088580052	90-BROS-20-30-C00
18; 20	3/4	PN 280	34	1 3/16-12	15.5	35	14.0	46	2088590052	90-BROS-20-34-C00
18; 20	3/4	PN 280	35	1 3/16-12	15.5	35	14.0	46	2088600052	90-BROS-20-35-C00
22; 25	1	PN 280	27	1 7/16-12	20.5	38.5	14.0	42	2088610052	90-BROS-25-27-C00
22; 25	1	PN 280	28	1 7/16-12	20.5	38.5	14.0	42	2088620052	90-BROS-25-28-C00
22; 25	1	PN 280	30	1 7/16-12	20.5	38.5	14.0	42	2088630052	90-BROS-25-30-C00
22; 25	1	PN 280	32	1 7/16-12	20.5	38.5	14.0	42	2088640052	90-BROS-25-32-C00
22; 25	1	PN 280	34	1 7/16-12	20.5	38.5	14.0	42	2088650052	90-BROS-25-34-C00
22; 25	1	PN 280	35	1 7/16-12	20.5	38.5	14.0	46	2088660052	90-BROS-25-35-C00
22; 25	1	PN 280	38	1 7/16-12	20.5	38.5	14.0	46	2088670052	90-BROS-25-38-C00
28; 30; 32	1 1/4	PN 280	28	1 11/16-12	26	38.5	14.0	46	2088680052	90-BROS-30-28-C00
28; 30; 32	1 1/4	PN 280	35	1 11/16-12	26	38.5	14.0	46	2088690052	90-BROS-30-35-C00
28; 30; 32	1 1/4	PN 280	38	1 11/16-12	26	38.5	14.0	46	2088700052	90-BROS-30-38-C00

O-rings have to be ordered separately.

Example for comparison:
A502070/0610

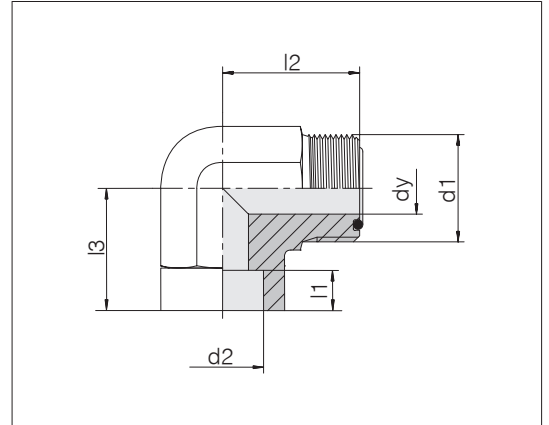


Elbow braze-on adapters

Delivery condition blank and oiled

Tube coupling: VOSS Flare ^{ORFS} in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR

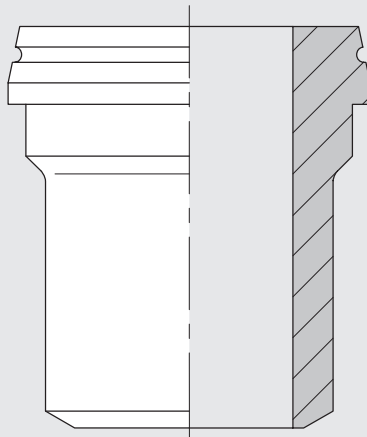


Tube OD mm	Inch	Pressure	d1 UN/UNF	d2	dy	l1	l2	l3	Order-No.	Designation
6	1/4	PN 420	9/16-18	6	4.5	8.5	21.5	20	2073010000	90-BROE-6-C00
6	1/4	PN 420	9/16-18	12	4.5	8.5	23.0	25	2073020000	90-BROE-6-12-C00
8; 10	5/16; 3/8	PN 420	11/16-16	10	6.5	8.5	25.0	23	2073030000	90-BROE-10-C00
8; 10	5/16; 3/8	PN 420	11/16-16	12	6.5	8.5	25.0	23	2073040000	90-BROE-10-12-C00
8; 10	5/16; 3/8	PN 420	11/16-16	15	6.5	8.5	25.0	23	2073050000	90-BROE-10-15-C00
8; 10	5/16; 3/8	PN 420	11/16-16	16	6.5	8.5	25.0	23	2073060000	90-BROE-10-16-C00
12	1/2	PN 420	13/16-16	12	9.5	8.5	28.0	25	2073070000	90-BROE-12-C00
12	1/2	PN 420	13/16-16	22	9.5	8.5	30.5	35	2073080000	90-BROE-12-22-C00
14; 15; 16	5/8	PN 420	1-14	16	12.5	9.0	33.5	30	2073090000	90-BROE-16-C00
14; 15; 16	5/8	PN 420	1-14	20	12.5	9.0	33.5	30	2073100000	90-BROE-16-20-C00
14; 15; 16	5/8	PN 420	1-14	22	12.5	9.0	33.5	35	2073110000	90-BROE-16-22-C00
18; 20	3/4	PN 420	1 3/16-12	18	15.5	12.5	37.5	32	2073130000	90-BROE-20-18-C00
18; 20	3/4	PN 420	1 3/16-12	20	15.5	12.5	37.5	32	2073120000	90-BROE-20-C00
18; 20	3/4	PN 420	1 3/16-12	25	15.5	12.5	37.5	35	2073140000	90-BROE-20-25-C00
18; 20	3/4	PN 280	1 3/16-12	27	15.5	12.5	42.0	36	2073150000	90-BROE-20-27-C00
18; 20	3/4	PN 280	1 3/16-12	30	15.5	12.5	42.0	36	2073160000	90-BROE-20-30-C00
18; 20	3/4	PN 280	1 3/16-12	34	15.5	12.5	42.0	36	2073170000	90-BROE-20-34-C00
22; 25	1	PN 420	1 7/16-12	25	20.5	14.0	42.0	36	2073180000	90-BROE-25-C00
22; 25	1	PN 280	1 7/16-12	32	20.5	14.0	42.0	36	2073190000	90-BROE-25-32-C00
22; 25	1	PN 280	1 7/16-12	34	20.5	14.0	42.0	44	2073200000	90-BROE-25-34-C00
28; 30; 32	1 1/4	PN 280	1 11/16-12	32	26	14.0	45.0	42	2073210000	90-BROE-30-32-C00
28; 30; 32	1 1/4	PN 280	1 11/16-12	42	26	14.0	45.0	50	2073220000	90-BROE-30-42-C00
35; 38	1 1/2	PN 280	2-12	38	32	14.0	49.0	44	2073230000	90-BROE-38-C00

O-rings have to be ordered separately.

Example for comparison:
A507076/0606

Weld connectors

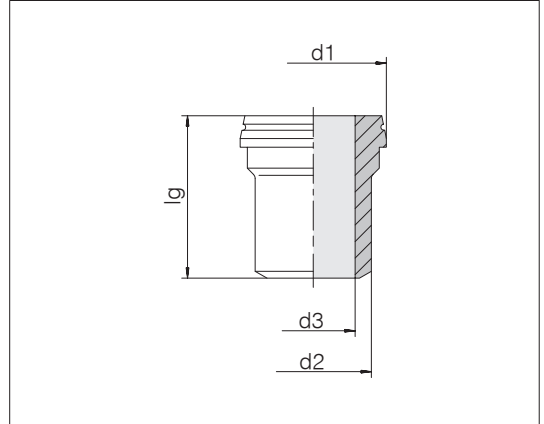


Weld-on nipples

for metric tubes

Tube connection according ISO 8434-3/SAE J 1453

Delivery condition blank and oiled



Tube OD mm	Inch	Pressure	d1	d2	d3	lg	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	12.8	6	2	25	0.9	2061100000	90-WDNPS-6-C00
8	5/16	PN 630	12.8	8	3	25	1.2	2061110000	90-WDNPS-8-C00
10	3/8	PN 630	15.8	10	4	26	1.9	2061120000	90-WDNPS-10-C00
12	1/2	PN 630	18.9	12	5	26	2.9	2061130000	90-WDNPS-12-C00
14; 15; 16	5/8	PN 420	23.5	16	10	32	4.6	2061140000	90-WDNPS-16-C00
20	3/4	PN 420	27.9	20	13	37	7.2	2061150000	90-WDNPS-20-C00
25	1	PN 420	34.2	25	16	42	12.4	2061160000	90-WDNPS-25-C00
28; 30; 32	1 1/4	PN 280	40.6	30	22	44	15.7	2061170000	90-WDNPS-30-C00
35; 38	1 1/2	PN 280	48.5	38	28	49	25.3	2061180000	90-WDNPS-38-C00

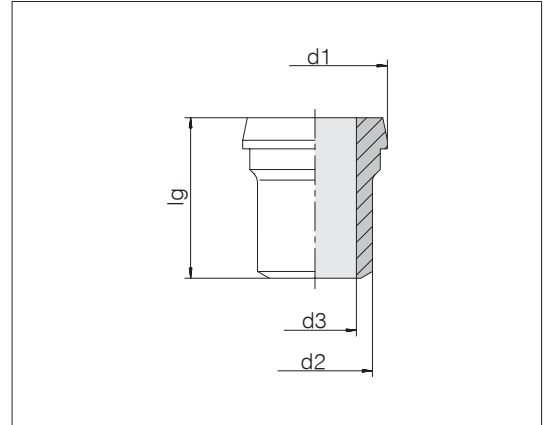
Example for comparison:
TW3LS6

Weld-on nipples

for imperial tubes

Tube connection according to ISO 8434-3/SAE J 1453

Delivery condition blank and oiled



Tube OD mm	Inch	Pressure	d1	d2	d3	lg	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	12.8	6.4	2	25	1.0	2061190000	90-WDNPS-1/4-C00
8	5/16	PN 630	12.8	7.9	3	25	2.0	2061210000	90-WDNPS-5/16-C00
10	3/8	PN 630	15.8	9.5	4	26	1.8	2061200000	90-WDNPS-3/8-C00
12	1/2	PN 630	18.9	12.7	5	26	3.1	2061220000	90-WDNPS-1/2-C00
14; 15; 16	5/8	PN 420	23.5	15.9	10	32	4.6	2061230000	90-WDNPS-5/8-C00
20	3/4	PN 420	27.9	19	11.5	37	7.5	2061240000	90-WDNPS-3/4-C00
25	1	PN 420	34.2	25.4	16	42	12.8	2061250000	90-WDNPS-1-C00
28; 30; 32	1 1/4	PN 280	40.6	31.8	22.2	44	17.5	2061260000	90-WDNPS-1 1/4-C00
35; 38	1 1/2	PN 280	48.5	38.1	27	49	27.1	2061270000	90-WDNPS-1 1/2-C00

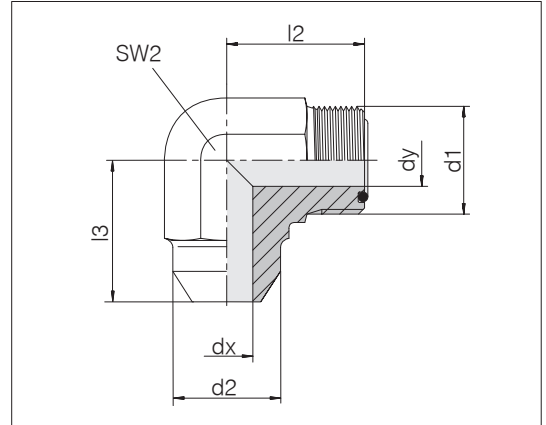
Example for comparison:
4TW3LS

Elbow weld-on adapters

Delivery condition blank and oiled

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR

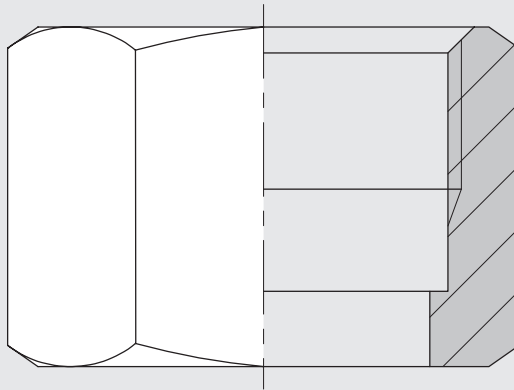


Tube OD mm	Inch	Pressure	d1 UN/UNF	d2	dx	dy	l2	SW2	l3	Order-No.	Designation
6	1/4	PN 630	9/16-18	6	3	4.5	21.5	14	25	2061750000	90-WDE-6-C00
8; 10	5/16; 3/8	PN 630	11/16-16	10	7	6.5	25.0	19	27	2061760000	90-WDE-10-C00
12	1/2	PN 630	13/16-16	12	8	9.5	28.0	19	25	2061770000	90-WDE-12-C00
14; 15; 16	5/8	PN 420	1-14	16	11	12.5	33.5	27	33.5	2061780000	90-WDE-16-C00
18; 20	3/4	PN 420	1 3/16-12	20	14	15.5	37.5	30	37.5	2061790000	90-WDE-20-C00
22; 25	1	PN 420	1 7/16-12	25	17	20.5	42.0	36	42	2061800000	90-WDE-25-C00
28; 30; 32	1 1/4	PN 280	1 11/16-12	32	24	26	45.0	41	45	2061810000	90-WDE-30-C00
35; 38	1 1/2	PN 280	2-12	38	30	32	49.0	50	49	2061820000	90-WDE-38-C00

O-rings have to be ordered separately.

Example for comparison:
X507087/0615

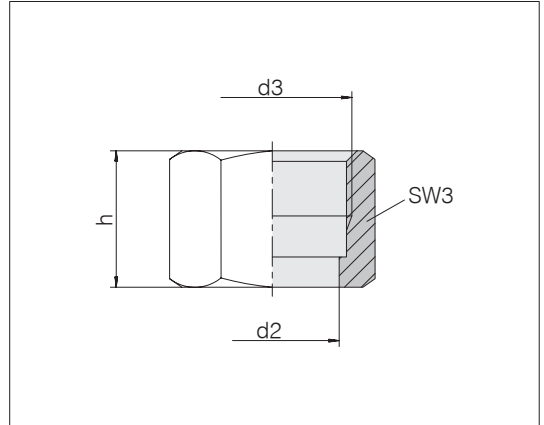
Union nuts / Brazing nuts



Union nuts

Tolerances and dimensions according to ISO 8434-3

Style NA



Tube OD mm	Inch	Pressure	d2	d3 UN/UNF	SW3	h	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	10.5	9/16-18	17	15.0	1.4	2050002100	90-N-6
8; 10	5/16; 3/8	PN 630	13.6	11/16-16	22	17.0	2.9	2050012100	90-N-10
12	1/2	PN 630	16.6	13/16-16	24	20.0	3.3	2050022100	90-N-12
14; 15; 16	5/8	PN 420	21.1	1-14	30	24.0	6.2	2050032100	90-N-16
18; 20	3/4	PN 420	24.2	1 3/16-12	36	26.5	10.3	2050042100	90-N-20
22; 25	1	PN 420	29.1	1 7/16-12	41	27.5	11.6	2050052100	90-N-25
28; 30; 32	1 1/4	PN 280	36.0	1 11/16-12	50	27.5	18.5	2050062100	90-N-30
35; 38	1 1/2	PN 280	44.0	2-12	60	27.5	28.4	2050072100	90-N-38
50	2	PN 200	56.0	2 1/2-12	75	33.0	80.2	2050082100	90-N-50 ²⁾

²⁾ Special sizes only on request

Example for comparison:
4BMLS

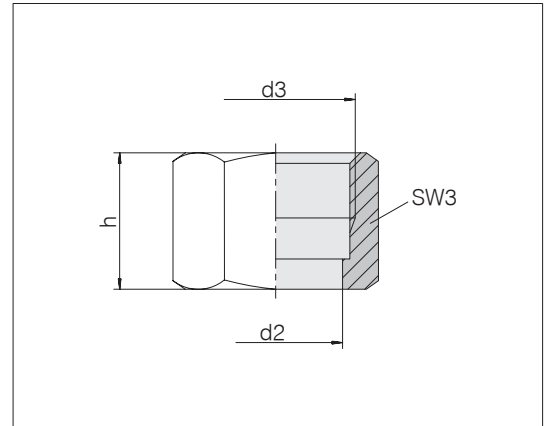


Brazing nuts

Tolerances and dimensions according to ISO 8434-3

Style NA

Delivery condition blank and oiled



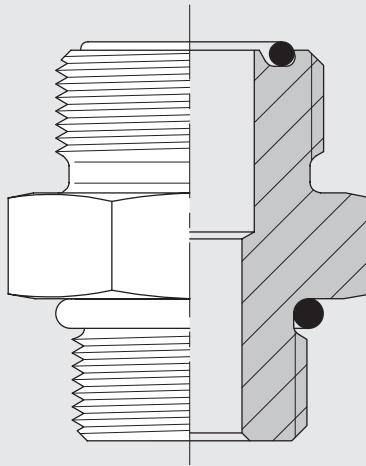
Tube OD mm	Inch	Pressure	d2	d3 UN/UNF	SW3	h	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	10.5	9/16-18	17	15.0	1.4	7001212300	90-BRN-6-C00
8; 10	5/16; 3/8	PN 630	13.6	11/16-16	22	17.0	2.9	7001212400	90-BRN-10-C00
12	1/2	PN 630	16.6	13/16-16	24	20.0	3.3	7001212500	90-BRN-12-C00
14; 15; 16	5/8	PN 420	21.1	1-14	30	24.0	6.2	7001212600	90-BRN-16-C00
18; 20	3/4	PN 420	24.2	1 3/16-12	36	26.5	10.3	7001212700	90-BRN-20-C00
22; 25	1	PN 420	29.1	1 7/16-12	41	27.5	11.6	7001212800	90-BRN-25-C00
28; 30; 32	1 1/4	PN 280	36.0	1 11/16-12	50	27.5	18.5	7001212900	90-BRN-30-C00
35; 38	1 1/2	PN 280	44.0	2-12	60	27.5	28.4	7001213000	90-BRN-38-C00
50	2	PN 200	56.0	2 1/2-12	75	33.0	80.2	7001213100	90-BRN-50-C00 ²⁾

²⁾ Special sizes only on request

Brazing nuts are suitable for induction brazing process.

Example for comparison:
4BMLS

Male stud connectors

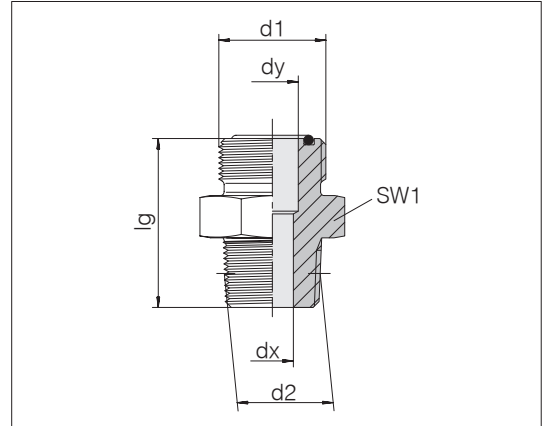


Male stud connectors

Male thread: NPTF thread, tapered
 Threaded stud: SAE J476/ASME B1.20.3
 Sealing type: Tapered thread

Tube coupling: VOSS *Flare* ^{ORFS} in acc. with
 ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



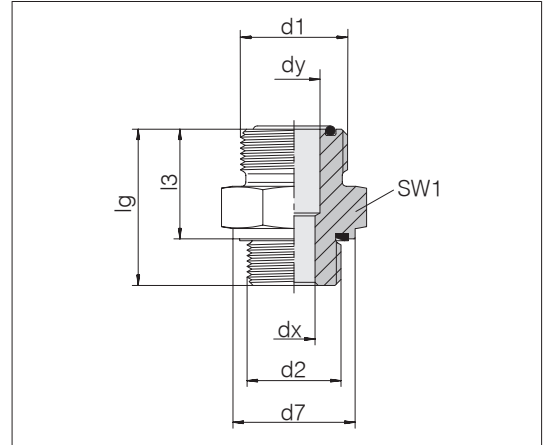
Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 NPTF	dx	dy	lg	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	1/8-27	4.5	4.5	27	17	2.6	2055152052	90-SDS-6-NF1/8T
6	1/4	PN 420	9/16-18	1/4-18	4.5	4.5	32	17	3.4	2055162052	90-SDS-6-NF1/4T
6	1/4	PN 420	9/16-18	3/8-18	10.5	4.5	33.5	19	4.7	2055172052	90-SDS-6-NF3/8T
8; 10	5/16; 3/8	PN 420	11/16-16	1/8-27	4.5	6.5	29	19	3.7	2055332052	90-SDS-10-NF1/8T
8; 10	5/16; 3/8	PN 420	11/16-16	1/4-16	6.5	6.5	32	19	3.9	2055182052	90-SDS-10-NF1/4T
8; 10	5/16; 3/8	PN 420	11/16-16	3/8-18	10.5	6.5	34	19	5.2	2055192052	90-SDS-10-NF3/8T
8; 10	5/16; 3/8	PN 420	11/16-16	1/2-14	13.5	6.5	39.5	22	8.2	2055202052	90-SDS-10-NF1/2T
12	1/2	PN 420	13/16-16	3/8-18	9.5	9.5	37.5	22	8.3	2055212052	90-SDS-12-NF3/8T
12	1/2	PN 420	13/16-16	1/2-14	13.5	9.5	41.5	22	8.4	2055222052	90-SDS-12-NF1/2T
12	1/2	PN 350	13/16-16	3/4-14	18	9.5	43	27	16.6	2055232052	90-SDS-12-NF3/4T
14; 15; 16	5/8	PN 420	1-14	3/8-18	10.5	12.5	40	27	10.6	2055342052	90-SDS-16-NF3/8T
14; 15; 16	5/8	PN 420	1-14	1/2-14	12.5	12.5	46	27	11.5	2055242052	90-SDS-16-NF1/2T
14; 15; 16	5/8	PN 350	1-14	3/4-14	18	12.5	46.5	27	13.8	2055252052	90-SDS-16-NF3/4T
18; 20	3/4	PN 420	1 3/16-12	1/2-14	13.5	13.5	49	32	16.5	2055272052	90-SDS-20-NF1/2T
18; 20	3/4	PN 350	1 3/16-12	3/4-14	15.5	15.5	49	32	17.9	2055262052	90-SDS-20-NF3/4T
18; 20	3/4	PN 210	1 3/16-12	1-11-1/2	23	15.5	54	36	22.5	2055282052	90-SDS-20-NF1T
22; 25	1	PN 350	1 7/16-12	3/4-14	18	20.5	51	41	23.8	2055302052	90-SDS-25-NF3/4T
22; 25	1	PN 210	1 7/16-12	1-11-1/2	20.5	20.5	55.5	41	27.1	2055292052	90-SDS-25-NF1T
22; 25	1	PN 210	1 7/16-12	1 1/4-11-1/2	32	20.5	58	46	35.1	2055352052	90-SDS-25-NF11/4T
28; 30; 32	1 1/4	PN 210	1 11/16-12	1-11-1/2	20.5	26	57.5	46	39.7	2055362052	90-SDS-30-NF1T
28; 30; 32	1 1/4	PN 210	1 11/16-12	1 1/4-11-1/2	32	26	58.5	46	42.4	2055312052	90-SDS-30-NF11/4T
28; 30; 32	1 1/4	PN 175	1 11/16-12	2-11-1/2	49.3	26	62	65	48.2	2055372052	90-SDS-30-NF2T
35; 38	1 1/2	PN 175	2-12	1 1/2-11-1/2	37.5	32	61	55	53.4	2055322052	90-SDS-38-NF11/2T
35; 38	1 1/2	PN 175	2-12	2-11-1/2	49.3	32	62	65	60.8	2055382052	90-SDS-38-NF2T

Example for comparison:
 4FLO-S

Male stud connectors

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974 Form E
 Sealing type: Profile sealing ring PEFLEX
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



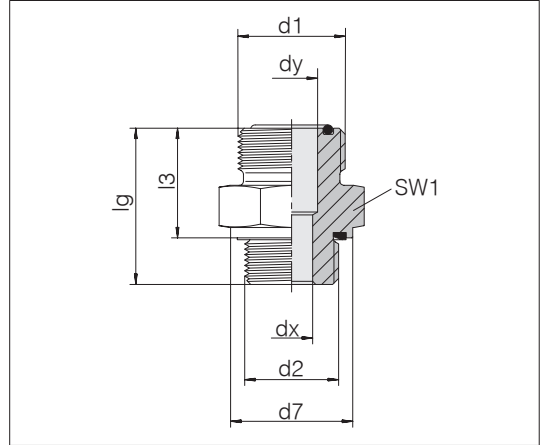
Tube OD mm	Inch	Pressure	d1 UN/UNF	d2	d7	dx	dy	lg	l3	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	M 10 x 1	13.9	4	4	26	18	17	2.0	2055492052	90-SDS-6-M10E
6	1/4	PN 630	9/16-18	M 12 x 1,5	16.9	4	4	29.5	17.5	17	2.9	2055002052	90-SDS-6-M12E
6	1/4	PN 630	9/16-18	M 14 x 1,5	18.9	4.5	4.5	31	19	19	2.9	2055502052	90-SDS-6-M14E
6	1/4	PN 630	9/16-18	M 16 x 1,5	21.9	7	4.5	31	19	22	3.3	2055512052	90-SDS-6-M16E
8; 10	5/16; 3/8	PN 630	11/16-16	M 12 x 1,5	16.9	4	6.5	32	20	19	3.9	2055102052	90-SDS-10-M12E
8; 10	5/16; 3/8	PN 630	11/16-16	M 14 x 1,5	18.9	5	5	32	20	19	4.5	2055012052	90-SDS-10-M14E
8; 10	5/16; 3/8	PN 630	11/16-16	M 16 x 1,5	21.9	6.5	6.5	32	20	22	5.3	2055022052	90-SDS-10-M16E
8; 10	5/16; 3/8	PN 630	11/16-16	M 18 x 1,5	18.9	6.5	6.5	33	21	24	7.0	2055522052	90-SDS-10-M18E
8; 10	5/16; 3/8	PN 630	11/16-16	M 22 x 1,5	26.9	12	6.5	36.5	22.5	27	8.9	2055142052	90-SDS-10-M22E
12	1/2	PN 630	13/16-16	M 14 x 1,5	18.9	5	9.5	35	23	22	5.7	2055532052	90-SDS-12-M14E
12	1/2	PN 630	13/16-16	M 16 x 1,5	21.9	7	9.5	34	22	22	6.1	2055812052	90-SDS-12-M16E
12	1/2	PN 630	13/16-16	M 18 x 1,5	23.9	8	8	34.5	22.5	24	7.2	2055032052	90-SDS-12-M18E
12	1/2	PN 630	13/16-16	M 22 x 1,5	26.9	12	9.5	38.5	24.5	27	9.4	2055822052	90-SDS-12-M22E
14; 15; 16	5/8	PN 420	1-14	M 16 x 1,5	21.9	7	12.5	42	30	27	7.0	2055832052	90-SDS-16-M16E
14; 15; 16	5/8	PN 420	1-14	M 18 x 1,5	23.9	8	12	39	27	27	10.2	2055092052	90-SDS-16-M18E
14; 15; 16	5/8	PN 420	1-14	M 22 x 1,5	26.9	12	12	41	27	27	10.8	2055042052	90-SDS-16-M22E
14; 15; 16	5/8	PN 420	1-14	M 27 x 2	31.9	15.5	12.5	44.5	28.5	32	14.9	2055842052	90-SDS-16-M27E
18; 20	3/4	PN 420	1 3/16-12	M 18 x 1,5	23.9	8	15.5	47	35	32	18.4	2055852052	90-SDS-20-M18E
18; 20	3/4	PN 420	1 3/16-12	M 22 x 1,5	26.9	12	15.5	44	30	32	15.7	2055862052	90-SDS-20-M22E
18; 20	3/4	PN 420	1 3/16-12	M 27 x 2	31.9	15.5	15.5	46	30	32	16.0	2055052052	90-SDS-20-M27E
18; 20	3/4	PN 420	1 3/16-12	M 33 x 2	39.9	20	15.5	48	30	41	23.1	2055132052	90-SDS-20-M33E
22; 25	1	PN 420	1 7/16-12	M 27 x 2	31.9	15.5	20.5	48	32	41	23.2	2055882052	90-SDS-25-M27E
22; 25	1	PN 420	1 7/16-12	M 33 x 2	39.9	20	20	50	32	41	27.1	2055062052	90-SDS-25-M33E
22; 25	1	PN 420	1 7/16-12	M 42 x 2	49.9	25	20.5	53.5	33.5	50	36.2	2055892052	90-SDS-25-M42E
28; 30; 32	1 1/4	PN 420	1 11/16-12	M 33 x 2	39.9	20	26	52	34	46	40.0	2055982052	90-SDS-30-M33E
28; 30; 32	1 1/4	PN 420	1 11/16-12	M 42 x 2	49.9	25	25	54	34	50	42.2	2055072052	90-SDS-30-M42E
28; 30; 32	1 1/4	PN 420	1 11/16-12	M 48 x 2	54.9	32	26	57.5	35.5	55	48.7	2055992052	90-SDS-30-M48E
35; 38	1 1/2	PN 350	2-12	M 48 x 2	54.9	32	32	57.5	35.5	55	59.2	2055082052	90-SDS-38-M48E

Example for comparison:
 4M12F82EDMLOS

Male stud connectors

Male thread : BSPP thread, cylindrical
 Threaded stud: ISO 1179 Form E
 Sealing type: Profile sealing ring PEFLEX
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 BSPP	d7	dx	dy	lg	l3	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	1/8-28	13.9	4	4	25.5	17.5	17	2.4	2054652052	90-SDS-6-G1/8E
6	1/4	PN 630	9/16-18	1/4-19	18.9	4.5	4.5	30.5	18.5	19	3.6	2054662052	90-SDS-6-G1/4E
6	1/4	PN 630	9/16-18	3/8-19	21.9	4.5	4.5	31.5	19.5	22	5.3	2054672052	90-SDS-6-G3/8E
6	1/4	PN 630	9/16-18	1/2-14	26.9	4.5	4.5	35.5	21.5	27	9.2	2054682052	90-SDS-6-G1/2E
8; 10	5/16; 3/8	PN 630	11/16-16	1/8-28	13.9	4	6.5	29	21	19	4.0	2054692052	90-SDS-10-G1/8E
8; 10	5/16; 3/8	PN 630	11/16-16	1/4-19	18.9	5	5	32	20	19	4.4	2054702052	90-SDS-10-G1/4E
8; 10	5/16; 3/8	PN 630	11/16-16	3/8-19	21.9	6.5	6.5	33	21	22	5.7	2054712052	90-SDS-10-G3/8E
8; 10	5/16; 3/8	PN 630	11/16-16	1/2-14	26.9	6.5	6.5	35.5	21.5	27	9.0	2054722052	90-SDS-10-G1/2E
8; 10	5/16; 3/8	PN 420	11/16-16	3/4-14	31.9	6.5	6.5	39.5	23.5	32	15.0	2054732052	90-SDS-10-G3/4E
12	1/2	PN 630	13/16-16	1/4-19	18.9	5	9.5	37.5	25.5	22	6.4	2054742052	90-SDS-12-G1/4E
12	1/2	PN 630	13/16-16	3/8-19	21.9	8	8	34.5	22.5	22	6.2	2054752052	90-SDS-12-G3/8E
12	1/2	PN 630	13/16-16	1/2-14	26.9	9.5	9.5	38.5	24.5	27	9.5	2054762052	90-SDS-12-G1/2E
12	1/2	PN 420	13/16-16	3/4-14	31.9	9.5	9.5	42	26	32	15.1	2054772052	90-SDS-12-G3/4E
14; 15; 16	5/8	PN 420	1-14	3/8-19	21.9	8	12.5	40	28	27	10.2	2054782052	90-SDS-16-G3/8E
14; 15; 16	5/8	PN 420	1-14	1/2-14	26.9	12	12	41	27	27	10.3	2054792052	90-SDS-16-G1/2E
14; 15; 16	5/8	PN 420	1-14	3/4-14	31.9	12.5	12.5	44.5	28.5	32	15.4	2054802052	90-SDS-16-G3/4E
14; 15; 16	5/8	PN 420	1-14	1-11	39.9	12.5	12.5	48	30	41	27.0	2054812052	90-SDS-16-G1E
18; 20	3/4	PN 420	1 3/16-12	1/2-14	26.9	12	15.5	44	30	32	14.7	2054832052	90-SDS-20-G1/2E
18; 20	3/4	PN 420	1 3/16-12	3/4-14	31.9	15.5	15.5	46	30	32	16.4	2054822052	90-SDS-20-G3/4E
18; 20	3/4	PN 420	1 3/16-12	1-11	39.9	15.5	15.5	49.5	31.5	41	27.1	2054842052	90-SDS-20-G1E
18; 20	3/4	PN 420	1 3/16-12	1 1/4-11	49.9	15.5	15.5	53.5	33.5	50	46.3	2054852052	90-SDS-20-G11/4E
18; 20	3/4	PN 280	1 3/16-12	1 1/2-11	54.9	26	15.5	57	35	55	52.6	2054942052	90-SDS-20-G11/2E
22; 25	1	PN 420	1 7/16-12	1/2-14	26.9	12	20.5	50	36	41	38.0	2054952052	90-SDS-25-G1/2E
22; 25	1	PN 420	1 7/16-12	3/4-14	31.9	16	20.5	48	32	41	23.4	2054872052	90-SDS-25-G3/4E
22; 25	1	PN 420	1 7/16-12	1-11	39.9	20	20	50	32	41	26.3	2054862052	90-SDS-25-G1E
22; 25	1	PN 420	1 7/16-12	1 1/4-11	49.9	20.5	20.5	53.5	33.5	50	48.7	2054882052	90-SDS-25-G11/4E
22; 25	1	PN 350	1 7/16-12	1 1/2-11	54.9	20.5	20.5	57.5	35.5	55	71.5	2054892052	90-SDS-25-G11/2E
28; 30; 32	1 1/4	PN 420	1 11/16-12	3/4-14	31.9	16	26	53	37	46	36.2	2054962052	90-SDS-30-G3/4E
28; 30; 32	1 1/4	PN 420	1 11/16-12	1-11	39.9	20	26	53.5	35.5	46	41.2	2054912052	90-SDS-30-G1E
28; 30; 32	1 1/4	PN 420	1 11/16-12	1 1/4-11	49.9	25	25	54	34	50	41.2	2054902052	90-SDS-30-G11/4E
28; 30; 32	1 1/4	PN 350	1 11/16-12	1 1/2-11	54.9	26	26	57.5	35.5	55	56.8	2054922052	90-SDS-30-G11/2E

Example for comparison:
 4F42EDMLOS

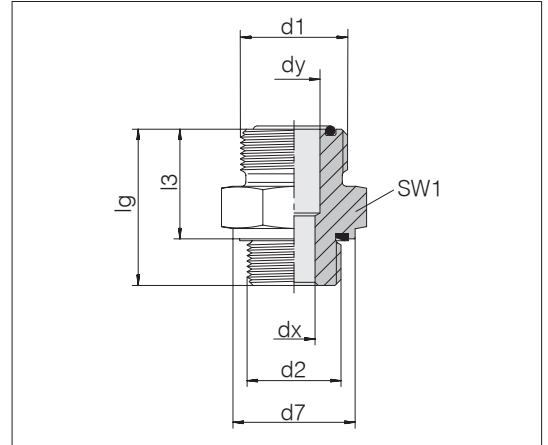
Continued on following page



Male stud connectors

Male thread : BSPP thread, cylindrical
 Threaded stud: ISO 1179 Form E
 Sealing type: Profile sealing ring PEFLEX
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 BSPP	d7	dx	dy	lg	l3	SW1	kg/100 ca.	Order-No.	Designation
35; 38	1 1/2	PN 350	2-12	1 1/4-11	49.9	25	32	61	41	55	54.0	2054972052	90-SDS-38-G11/4E
35; 38	1 1/2	PN 350	2-12	1 1/2-11	54.9	32	32	57.5	35.5	55	52.1	2054932052	90-SDS-38-G11/2E
50	2	PN 200	2 1/2-12	2-11	74.9	40	40	65	41	75	90.0	2054982052	90-SDS-50-G2E ²⁾

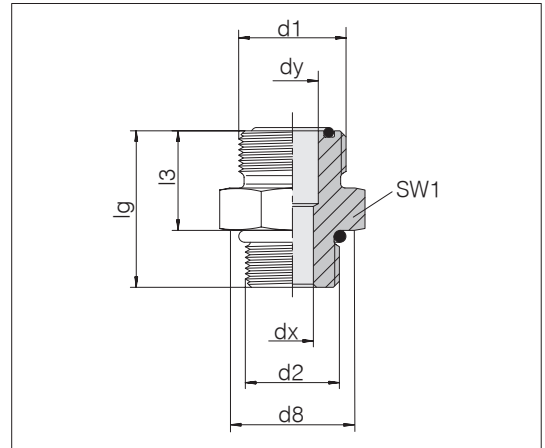
²⁾ Special sizes only on request

Example for comparison:
4F42EDMLOS

Male stud connectors

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	d8	dx	dy	lg	l3	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	3/8-24	17	3.2	3.2	27	17.5	17	2.7	2063152052	90-SDS-6-U3/8-24F
6	1/4	PN 630	9/16-18	7/16-20	17	4.5	4.5	29	18	17	3.0	2054002052	90-SDS-6-U7/16-20F
6	1/4	PN 630	9/16-18	1/2-20	17	6	4.5	29	18	17	3.0	2054272052	90-SDS-6-U1/2-20F
6	1/4	PN 630	9/16-18	9/16-18	19	4.5	4.5	30.5	18.5	19	4.0	2054012052	90-SDS-6-U9/16-18F
6	1/4	PN 630	9/16-18	3/4-16	22	10	4.5	33.5	19.5	22	6.5	2054022052	90-SDS-6-U3/4-16F
6	1/4	PN 630	9/16-18	1 1/16-12	32	15.5	4.5	41.5	23	32	9.3	2063162052	90-SDS-6-U11/16-12F
6	1/4	PN 630	9/16-18	1 5/8-12	50	27.5	4.5	44.6	26.1	50	12.3	2063172052	90-SDS-6-U15/8-12F
8; 10	5/16; 3/8	PN 630	11/16-16	7/16-20	16	4.5	4.5	34	23	19	4.7	2054042052	90-SDS-10-U7/16-20F
8; 10	5/16; 3/8	PN 630	11/16-16	1/2-20	19	6	6	31	20	19	5.0	2063182052	90-SDS-10-U1/2-20F
8; 10	5/16; 3/8	PN 630	11/16-16	9/16-18	19	6.5	6.5	32	20	19	4.5	2054302052	90-SDS-10-U9/16-18F
8; 10	5/16; 3/8	PN 630	11/16-16	3/4-16	22	10	6.5	35	21	22	6.0	2054052052	90-SDS-10-U3/4-16F
8; 10	5/16; 3/8	PN 420	11/16-16	7/8-14	27	12.5	6.5	39	23	27	9.4	2054062052	90-SDS-10-U7/8-14F
8; 10	5/16; 3/8	PN 420	11/16-16	1 1/16-12	32	15.5	6.5	42.2	23.7	32	11.0	2063192052	90-SDS-10-U11/16-12F
12	1/2	PN 630	13/16-16	7/16-20	22	4.5	9.5	36	25	22	6.3	2063202052	90-SDS-12-U7/16-20F
12	1/2	PN 630	13/16-16	9/16-18	19	7.5	7.5	37.5	25.5	22	6.5	2054082052	90-SDS-12-U9/16-18F
12	1/2	PN 630	13/16-16	3/4-16	22	9.5	9.5	36.5	22.5	22	6.7	2054072052	90-SDS-12-U3/4-16F
12	1/2	PN 420	13/16-16	7/8-14	27	12.5	9.5	40.5	24.5	27	9.6	2054092052	90-SDS-12-U7/8-14F
12	1/2	PN 420	13/16-16	1 1/16-12	32	15.5	9.5	44.5	26	32	14.6	2054102052	90-SDS-12-U11/16-12F
12	1/2	PN 420	13/16-16	1 3/16-12	35	18	9.5	40	24.5	35	18.4	2063212052	90-SDS-12-U13/16-12F
12	1/2	PN 420	13/16-16	1 5/16-12	41	21.5	9.5	45.5	27	41	22.7	2054112052	90-SDS-12-U15/16-12F
14; 15; 16	5/8	PN 420	1-14	9/16-18	27	7.5	12.5	42	30	27	11.0	2063222052	90-SDS-16-U9/16-18F
14; 15; 16	5/8	PN 420	1-14	3/4-16	23.8	10	10	45	31	27	12.7	2054132052	90-SDS-16-U3/4-16F
14; 15; 16	5/8	PN 420	1-14	7/8-14	27	12.5	12.5	43	27	27	10.9	2054122052	90-SDS-16-U7/8-14F
14; 15; 16	5/8	PN 420	1-14	1 1/16-12	32	15.5	12.5	47	28.5	32	17.0	2054142052	90-SDS-16-U11/16-12F
14; 15; 16	5/8	PN 420	1-14	1 5/16-12	38	21.5	12.5	48	29.5	38	24.0	2063232052	90-SDS-16-U15/16-12F
18; 20	3/4	PN 420	1 3/16-12	9/16-18	23.8	4.5	15.5	45	33	32	12.5	2063242052	90-SDS-20-U9/16-18F
18; 20	3/4	PN 420	1 3/16-12	3/4-16	23.8	10	15.5	48.5	34.5	32	16.7	2054162052	90-SDS-20-U3/4-16F
18; 20	3/4	PN 420	1 3/16-12	7/8-14	26.8	12.5	15.5	50.5	34.5	32	17.7	2054172052	90-SDS-20-U7/8-14F
18; 20	3/4	PN 420	1 3/16-12	1 1/16-12	32	15.5	15.5	48.5	30	32	17.3	2054152052	90-SDS-20-U11/16-12F
18; 20	3/4	PN 420	1 3/16-12	1 5/16-12	41	21.5	15.5	50	31.5	41	25.4	2054182052	90-SDS-20-U15/16-12F
18; 20	3/4	PN 420	1 3/16-12	1 5/8-12	46	27.5	15.5	51	32	46	35.0	2063482052	90-SDS-20-U15/8-12F

Example for comparison:
 4F50MLOS

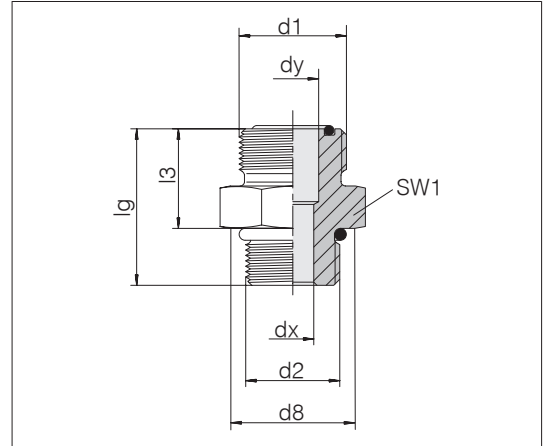
Continued on following page



Male stud connectors

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	d8	dx	dy	lg	l3	SW1	kg/100 ca.	Order-No.	Designation
22; 25	1	PN 420	1 7/16-12	3/4-16	19	10	20.5	49.8	35.8	41	19.4	2063492052	90-SDS-25-U3/4-16F
22; 25	1	PN 420	1 7/16-12	7/8-14	32.8	12.5	20.5	51.8	35.8	41	21.3	2063532052	90-SDS-25-U7/8-14F
22; 25	1	PN 420	1 7/16-12	1 1/16-12	33.3	15.5	20.5	54.5	36	41	28.7	2054202052	90-SDS-25-U11/16-12F
22; 25	1	PN 280	1 7/16-12	1 3/16-12	33.3	18	20.5	51	32	41	27.9	2063562052	90-SDS-25-U13/16-12F
22; 25	1	PN 420	1 7/16-12	1 5/16-12	41	20.5	20.5	50.5	32	41	29.1	2054192052	90-SDS-25-U15/16-12F
22; 25	1	PN 280	1 7/16-12	1 5/8-12	50	27.5	20.5	52.5	34	50	42.8	2054212052	90-SDS-25-U15/8-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	3/4-16	23.8	10	26	51.8	37.8	46	25.6	2063572052	90-SDS-30-U3/4-16F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 1/16-12	33.3	15.5	26	56	37.5	46	32.5	2063582052	90-SDS-30-U11/16-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/16-12	39.6	21.5	26	52.5	34	46	33.6	2054232052	90-SDS-30-U15/16-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/8-12	50	26	26	52.5	34	50	41.6	2054222052	90-SDS-30-U15/8-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 7/8-12	55	33.5	26	54	35.5	55	55.7	2054242052	90-SDS-30-U17/8-12F
35; 38	1 1/2	PN 280	2-12	1 1/16-12	33.3	15.5	32	56.3	37.8	55	52.4	2063592052	90-SDS-38-U11/16-12F
35; 38	1 1/2	PN 280	2-12	1 5/8-12	47.8	27.5	32	54	35.5	55	58.1	2054262052	90-SDS-38-U15/8-12F
35; 38	1 1/2	PN 280	2-12	1 7/8-12	55	32	32	54	35.5	55	61.2	2054252052	90-SDS-38-U17/8-12F
35; 38	1 1/2	PN 280	2-12	2 1/2-12	70	40	32	54	35.5	70	69.8	2063752052	90-SDS-38-U21/2-12F ²⁾
50	2	PN 200	2 1/2-12	2 1/2-12	70	40	45	59	40	70	90.0	2063762052	90-SDS-50-U21/2-12F ²⁾

²⁾ Special sizes only on request

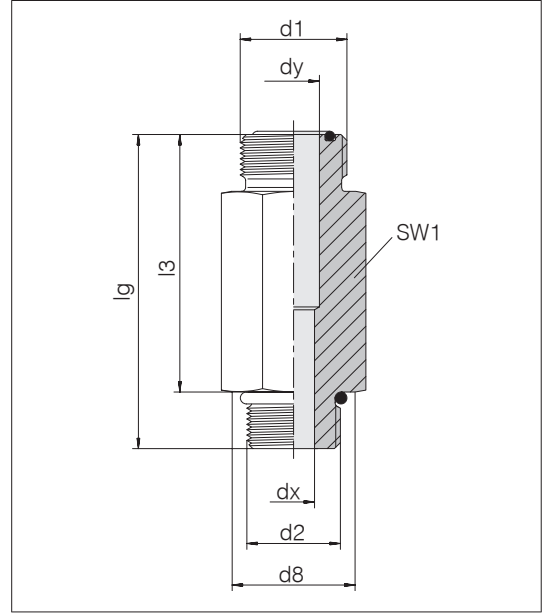
Example for comparison:
4F50MLOS

Male stud connectors

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-ring: Standard NBR

Special length: Model with extended hexagon

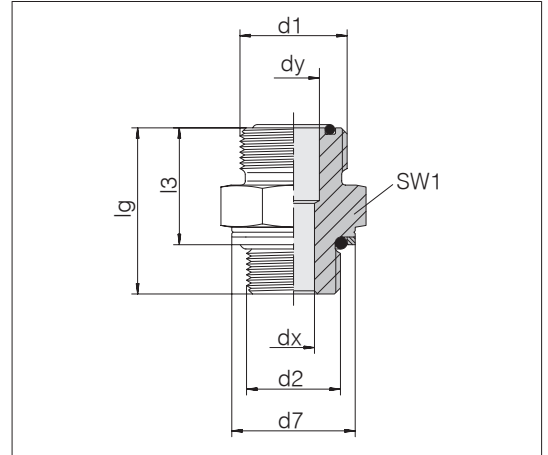


Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	d8	dx	dy	lg	l3	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	7/16-20	17	4.5	4.5	71	60	17	10.9	7000232800	90-SDS-6-U7/16-20F-LG71
6	1/4	PN 630	9/16-18	7/16-20	19	4.5	4.5	100	88	19	21.0	2063622052	90-SDS-6-U7/16-20F-LG100
6	1/4	PN 630	9/16-18	9/16-18	19	4.5	4.5	40	28	19	6.5	2063602052	90-SDS-6-U9/16-18F-LG40
6	1/4	PN 630	9/16-18	9/16-18	19	4.5	4.5	55.5	43.5	19	10.2	2063612052	90-SDS-6-U9/16-18F-LG55,5
6	1/4	PN 630	9/16-18	9/16-18	19	4.5	4.5	115	103	19	24.5	2063632052	90-SDS-6-U9/16-18F-LG115
8; 10	5/16; 3/8	PN 630	11/16-16	9/16-18	19	6.5	6.5	42	30	19	39.3	2063642052	90-SDS-10-U9/16-18F-LG42
8; 10	5/16; 3/8	PN 630	11/16-16	9/16-18	19	6.5	6.5	62	50	19	11.5	2063652052	90-SDS-10-U9/16-18F-LG62
12	1/2	PN 630	13/16-16	3/4-16	22	9.5	9.5	47	33	22	10.1	2063662052	90-SDS-12-U3/4-16F-LG47
12	1/2	PN 420	13/16-16	7/8-14	27	9.5	9.5	50.5	34.5	27	16.0	2063672052	90-SDS-12-U7/8-14F-LG50,5
12	1/2	PN 420	13/16-16	1 1/16-12	32	9.5	9.5	110	91.5	32	60.0	2063682052	90-SDS-12-U11/16-12F-LG110
18; 20	3/4	PN 420	1 3/16-12	1 5/16-12	41	15.5	15.5	65	46.5	41	45.3	2054282052	90-SDS-20-U15/16-12F-LG65
18; 20	3/4	PN 420	1 3/16-12	1 5/16-12	41	15.5	15.5	80	61.5	41	60.0	2063692052	90-SDS-20-U15/16-12F-LG80
18; 20	3/4	PN 420	1 3/16-12	1 5/16-12	41	15.5	15.5	100	81.5	41	80.0	2063702052	90-SDS-20-U15/16-12F-LG100
18; 20	3/4	PN 420	1 3/16-12	1 5/16-12	41	15.5	15.5	120	101.5	41	10.0	2063712052	90-SDS-20-U15/16-12F-LG120
18; 20	3/4	PN 420	1 3/16-12	1 5/16-12	41	21.5	15.5	56	37.5	41	33.0	2054292052	90-SDS-20-U15/16-12F-LG56
22; 25	1	PN 420	1 7/16-12	1 1/16-12	33.3	15.5	20.5	56	37.5	41	30.7	2054312052	90-SDS-25-U11/16-12F-LG56
22; 25	1	PN 420	1 7/16-12	1 5/16-12	41	20.5	20.5	68	49.5	41	45.0	2063722052	90-SDS-25-U15/16-12F-LG68
22; 25	1	PN 420	1 7/16-12	1 5/16-12	41	20.5	20.5	98.5	80	41	73.0	2063732052	90-SDS-25-U15/16-12F-LG98,5
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/16-12	39.6	21.5	26	58	39.5	46	40.0	2063742052	90-SDS-30-U15/16-12F-LG58

Male stud connectors

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare* ^{ORFS} in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	d1 UN/UNF	d2	d7	dx	dy	lg	l3	SW1	Order-No.	Designation
6	1/4	9/16-18	M 10 x 1	14.9	3	4.5	27	18.5	17	2075792052	90-SDS-6-M10FR
6	1/4	9/16-18	M 12 x 1,5	17.9	4	4	28.5	19	17	2075802052	90-SDS-6-M12FR
6	1/4	9/16-18	M 14 x 1,5	19.9	6	4.5	29.5	20	19	2075812052	90-SDS-6-M14FR
6	1/4	9/16-18	M 16 x 1,5	22.9	7	4.5	32.5	21.5	22	2075822052	90-SDS-6-M16FR
6	1/4	9/16-18	M 18 x 1,5	24.9	9	4.5	35	22.5	24	2075832052	90-SDS-6-M18FR
8; 10	5/16; 3/8	11/16-16	M 10 x 1	14.9	3	6.5	29	20.5	19	2075842052	90-SDS-10-M10FR
8; 10	5/16; 3/8	11/16-16	M 12 x 1,5	17.9	4	6.5	32	22.5	19	2075852052	90-SDS-10-M12FR
8; 10	5/16; 3/8	11/16-16	M 14 x 1,5	19.9	6	6	32	22.5	19	2075862052	90-SDS-10-M14FR
8; 10	5/16; 3/8	11/16-16	M 16 x 1,5	22.9	6.5	6.5	33.5	22.5	22	2075872052	90-SDS-10-M16FR
8; 10	5/16; 3/8	11/16-16	M 18 x 1,5	24.9	9	6.5	36	23.5	24	2075882052	90-SDS-10-M18FR
8; 10	5/16; 3/8	11/16-16	M 22 x 1,5	27.9	12	6.5	37.5	24	27	2075892052	90-SDS-10-M22FR
8; 10	5/16; 3/8	11/16-16	M 27 x 2	32.9	15	6.5	42.5	26	32	2075902052	90-SDS-10-M27FR
12	1/2	13/16-16	M 10 x 1	14.9	3	9.5	33.5	25	22	2075912052	90-SDS-12-M10FR
12	1/2	13/16-16	M 14 x 1,5	19.9	6	9.5	35	25.5	22	2075922052	90-SDS-12-M14FR
12	1/2	13/16-16	M 16 x 1,5	22.9	7	9.5	36.5	25.5	22	2075932052	90-SDS-12-M16FR
12	1/2	13/16-16	M 18 x 1,5	24.9	9	9	38	25.5	24	2075942052	90-SDS-12-M18FR
12	1/2	13/16-16	M 22 x 1,5	27.9	12	9.5	39.5	26	27	2075962052	90-SDS-12-M22FR
12	1/2	13/16-16	M 27 x 2	32.9	15	9.5	44.5	28	32	2075982052	90-SDS-12-M27FR
14; 15; 16	5/8	1-14	M 14 x 1,5	19.9	6	12.5	38	28.5	27	2075992052	90-SDS-16-M14FR
14; 15; 16	5/8	1-14	M 16 x 1,5	22.9	7	12.5	38.5	27.5	27	2076002052	90-SDS-16-M16FR
14; 15; 16	5/8	1-14	M 18 x 1,5	24.9	9	12.5	41	28.5	27	2076012052	90-SDS-16-M18FR
14; 15; 16	5/8	1-14	M 22 x 1,5	27.9	12	12	42	28.5	27	2076022052	90-SDS-16-M22FR
14; 15; 16	5/8	1-14	M 27 x 2	32.9	15	12.5	47	30.5	32	2076042052	90-SDS-16-M27FR
18; 20	3/4	1 3/16-12	M 18 x 1,5	24.9	9	15.5	44	31.5	32	2076062052	90-SDS-20-M18FR
18; 20	3/4	1 3/16-12	M 22 x 1,5	27.9	12	15.5	45	31.5	32	2076072052	90-SDS-20-M22FR
18; 20	3/4	1 3/16-12	M 27 x 2	32.9	15	15	48.5	32	32	2076092052	90-SDS-20-M27FR
18; 20	3/4	1 3/16-12	M 33 x 2	40.9	20	15.5	51.5	35	41	2076112052	90-SDS-20-M33FR
18; 20	3/4	1 3/16-12	M 42 x 2	50.9	26	15.5	54	37	50	2076122052	90-SDS-20-M42FR
22; 25	1	1 7/16-12	M 18 x 1,5	24.9	9	20.5	48.5	36	41	2076132052	90-SDS-25-M18FR
22; 25	1	1 7/16-12	M 22 x 1,5	27.9	12	20.5	48.5	35	41	2076142052	90-SDS-25-M22FR
22; 25	1	1 7/16-12	M 27 x 2	27.9	15	20.5	52	35.5	41	2076162052	90-SDS-25-M27FR
22; 25	1	1 7/16-12	M 33 x 2	40.9	20	20	52	35.5	41	2076182052	90-SDS-25-M33FR

This is a special edition
and only available on
request.

Example for comparison:
A502036/0610

Continued on following page

Male stud connectors

Male thread: Metric fine thread, cylindrical

Threaded stud: ISO 9974

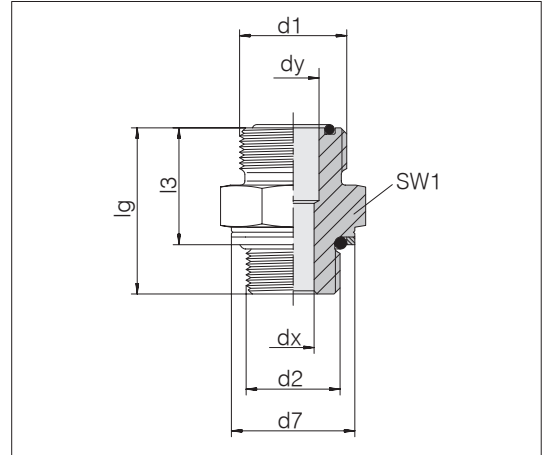
Sealing type: O-ring and chamber ring

Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J

1453

Sealing material O-Ring: Standard NBR

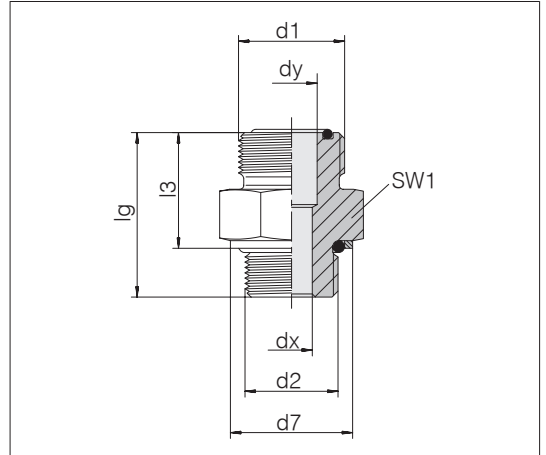


Tube OD mm	Inch	d1 UN/UNF	d2	d7	dx	dy	lg	l3	SW1	Order-No.	Designation
22; 25	1	1 7/16-12	M 42 x 2	50.9	26	20.5	54.5	37.5	50	2076192052	90-SDS-25-M42FR
28; 30; 32	1 1/4	1 11/16-12	M 27 x 2	27.9	15	26	54	37.5	46	2076202052	90-SDS-30-M27FR
28; 30; 32	1 1/4	1 11/16-12	M 33 x 2	40.9	20	26	54	37.5	46	2076212052	90-SDS-30-M33FR
28; 30; 32	1 1/4	1 11/16-12	M 42 x 2	50.9	26	26	54.5	37	50	2076222052	90-SDS-30-M42FR
28; 30; 32	1 1/4	1 11/16-12	M 48 x 2	55.9	32	26	57	37.5	55	2076232052	90-SDS-30-M48FR
35; 38	1 1/2	2-12	M 42 x 2	50.9	26	32	54.5	37.5	55	2076242052	90-SDS-38-M42FR
35; 38	1 1/2	2-12	M 48 x 2	55.9	32	32	57	37.5	55	2076252052	90-SDS-38-M48FR

Male stud connectors

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR

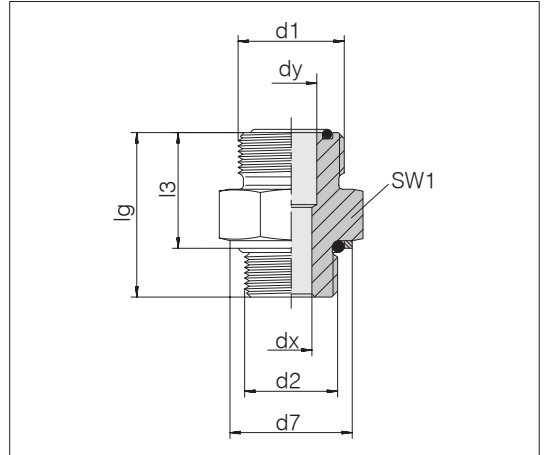


Tube OD mm	Inch	d1 UN/UNF	d2 BSPP	d7	dx	dy	lg	l3	SW1	Order-No.	Designation
6	1/4	9/16-18	1/8-28	15	4.4	4	25	18	17	2075002052	90-SDS-6-G1/8FR
6	1/4	9/16-18	1/4-19	19.5	7.5	4.5	30	20	19	2075012052	90-SDS-6-G1/4FR
6	1/4	9/16-18	3/8-19	23.5	9.9	4.5	31	21	24	2075022052	90-SDS-6-G3/8FR
6	1/4	9/16-18	1/2-14	28.5	12.3	4.5	34.5	22.5	27	2075032052	90-SDS-6-G1/2FR
6	1/4	9/16-18	3/4-14	34.5	15.5	4.5	38	24	36	2075042052	90-SDS-6-G3/4FR
8; 10	5/16; 3/8	11/16-16	1/8-28	15	4.4	6.5	27.5	20.5	19	2075052052	90-SDS-10-G1/8FR
8; 10	5/16; 3/8	11/16-16	1/4-19	19.5	7.5	6	31.5	21.5	19	2075062052	90-SDS-10-G1/4FR
8; 10	5/16; 3/8	11/16-16	3/8-19	23.5	9.9	6.5	32.5	22.5	24	2075072052	90-SDS-10-G3/8FR
8; 10	5/16; 3/8	11/16-16	1/2-14	28.5	12.3	6.5	36	24	27	2075082052	90-SDS-10-G1/2FR
8; 10	5/16; 3/8	11/16-16	3/4-14	34.5	15.5	6.5	39	25	36	2075092052	90-SDS-10-G3/4FR
8; 10	5/16; 3/8	11/16-16	1-11	43.5	21.5	6.5	42	26.5	41	2075102052	90-SDS-10-G1FR
12	1/2	13/16-16	1/4-19	19.5	7.5	9.5	38	28	22	2075112052	90-SDS-12-G1/4FR
12	1/2	13/16-16	3/8-19	23.5	9.9	9	33.5	23.5	24	2075122052	90-SDS-12-G3/8FR
12	1/2	13/16-16	1/2-14	28.5	12.3	9.5	37	25	27	2075132052	90-SDS-12-G1/2FR
12	1/2	13/16-16	3/4-14	34.5	15.5	9.5	41	27	36	2075142052	90-SDS-12-G3/4FR
12	1/2	13/16-16	1-11	43.5	21.5	9.5	43.5	28	41	2075152052	90-SDS-12-G1FR
14; 15; 16	5/8	1-14	1/4-19	19.5	7.5	12.5	37	27	27	2075162052	90-SDS-16-G1/4FR
14; 15; 16	5/8	1-14	3/8-19	23.5	9.9	12.5	36.5	26.5	27	2075172052	90-SDS-16-G3/8FR
14; 15; 16	5/8	1-14	1/2-14	28.5	12.3	12.5	39.5	27.5	27	2075182052	90-SDS-16-G1/2FR
14; 15; 16	5/8	1-14	3/4-14	34.5	15.5	12.5	43.5	29.5	36	2075202052	90-SDS-16-G3/4FR
14; 15; 16	5/8	1-14	1-11	43.5	21.5	12.5	46	30.5	41	2075212052	90-SDS-16-G1FR
14; 15; 16	5/8	1-14	1 1/4-11	52.5	27.5	12.5	49	31.5	50	2075222052	90-SDS-16-G11/4FR
18; 20	3/4	1 3/16-12	1/2-14	28.5	12.3	15.5	43	31	32	2075232052	90-SDS-20-G1/2FR
18; 20	3/4	1 3/16-12	3/4-14	34.5	15.5	15.5	45	31	36	2075242052	90-SDS-20-G3/4FR
18; 20	3/4	1 3/16-12	1-11	43.5	21.5	15.5	47.5	32	41	2075252052	90-SDS-20-G1FR
18; 20	3/4	1 3/16-12	1 1/4-11	52.5	27.5	15.5	51	33.5	50	2075262052	90-SDS-20-G11/4FR
22; 25	1	1 7/16-12	1/2-14	28.5	12.3	20.5	45	33	38	2075272052	90-SDS-25-G1/2FR
22; 25	1	1 7/16-12	3/4-14	34.5	15.5	20.5	46	32	38	2075282052	90-SDS-25-G3/4FR
22; 25	1	1 7/16-12	1-11	43.5	21.5	20.5	48	32.5	41	2075292052	90-SDS-25-G1FR
22; 25	1	1 7/16-12	1 1/4-11	52.5	27.5	20.5	51.5	34	50	2075302052	90-SDS-25-G11/4FR
22; 25	1	1 7/16-12	1 1/2-11	60	33	20.5	55.5	36	60	2075312052	90-SDS-25-G11/2FR
28; 30; 32	1 1/4	1 11/16-12	1/2-14	28.5	12.3	26	48	36	46	2075322052	90-SDS-30-G1/2FR

Male stud connectors

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



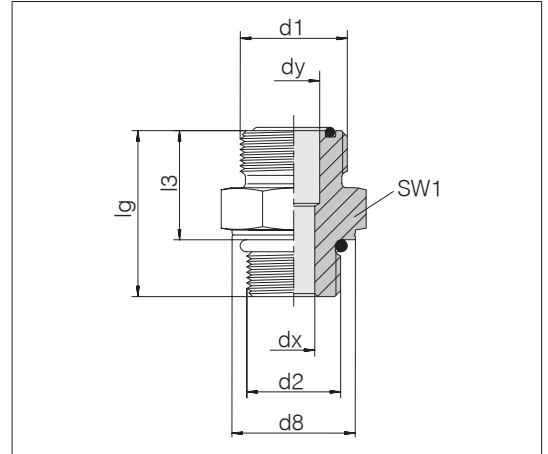
Tube OD mm	Inch	d1 UN/UNF	d2 BSPP	d7	dx	dy	lg	l3	SW1	Order-No.	Designation
28; 30; 32	1 1/4	1 11/16-12	3/4-14	34.5	15.5	26	49.5	35.5	46	2075332052	90-SDS-30-G3/4FR
28; 30; 32	1 1/4	1 11/16-12	1-11	43.5	21.5	26	49.5	34	46	2075342052	90-SDS-30-G1FR
28; 30; 32	1 1/4	1 11/16-12	1 1/4-11	52.5	27.5	26	51.5	34	50	2075352052	90-SDS-30-G11/4FR
28; 30; 32	1 1/4	1 11/16-12	1 1/2-11	60	33	26	55.5	36	60	2075362052	90-SDS-30-G11/2FR
35; 38	1 1/2	2-12	1/2-14	28.5	12.3	32	50	38	55	2075372052	90-SDS-38-G1/2FR
35; 38	1 1/2	2-12	1-11	43.5	21.5	32	53	37.5	55	2075382052	90-SDS-38-G1FR
35; 38	1 1/2	2-12	1 1/4-11	52.5	27.5	32	53	37.5	55	2075392052	90-SDS-38-G11/4FR
35; 38	1 1/2	2-12	1 1/2-11	60	33	32	55.5	36	60	2075402052	90-SDS-38-G11/2FR



Male stud connectors

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 6149
 Sealing type: O-Ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR

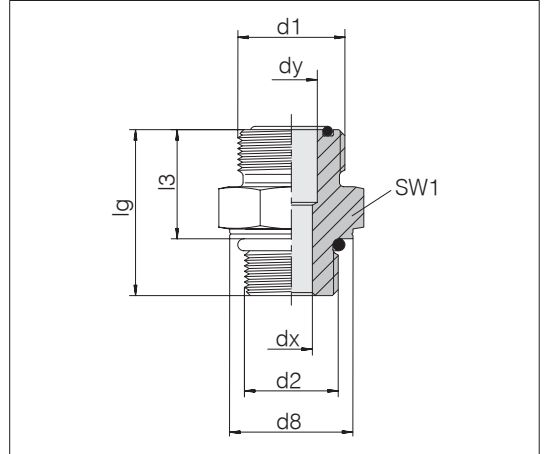


Tube OD mm	Inch	Pressure	d1 UN/UNF	d2	d8	dx	dy	lg	l3	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	M 10 x 1	13.8	3	4.5	27	18	17	2.0	2053042052	90-SDS-6-M10F
6	1/4	PN 630	9/16-18	M 12 x 1,5	16.8	4	4	28.5	17.5	17	2.4	2053702052	90-SDS-6-M12F
6	1/4	PN 630	9/16-18	M 14 x 1,5	18.8	4.5	4.5	29.5	18.5	19	3.8	2053712052	90-SDS-6-M14F
6	1/4	PN 630	9/16-18	M 16 x 1,5	21.8	7	4.5	33	20	22	3.5	2053052052	90-SDS-6-M16F
6	1/4	PN 630	9/16-18	M 18 x 1,5	23.8	9	4.5	35	21	24	4.3	2053062052	90-SDS-6-M18F
8; 10	5/16; 3/8	PN 630	11/16-16	M 10 x 1	13.8	3	6.5	30.5	21	19	3.9	2053072052	90-SDS-10-M10F
8; 10	5/16; 3/8	PN 630	11/16-16	M 12 x 1,5	16.8	4	6.5	32	21	19	4.2	2053722052	90-SDS-10-M12F
8; 10	5/16; 3/8	PN 630	11/16-16	M 14 x 1,5	18.8	6	6	32.5	21.5	19	4.6	2053732052	90-SDS-10-M14F
8; 10	5/16; 3/8	PN 630	11/16-16	M 16 x 1,5	21.8	6.5	6.5	33.5	21	22	5.2	2053742052	90-SDS-10-M16F
8; 10	5/16; 3/8	PN 630	11/16-16	M 18 x 1,5	23.8	9	6.5	36	22	24	4.5	2053752052	90-SDS-10-M18F
8; 10	5/16; 3/8	PN 420	11/16-16	M 22 x 1,5	26.8	6.5	6.5	38	23	27	5.2	2053082052	90-SDS-10-M22F
8; 10	5/16; 3/8	PN 420	11/16-16	M 27 x 2	31.8	15	6.5	42.5	24	32	6.3	2053092052	90-SDS-10-M27F
12	1/2	PN 630	13/16-16	M 10 x 1	13.8	3	9.5	33.5	24	22	4.1	2053182052	90-SDS-12-M10F
12	1/2	PN 630	13/16-16	M 14 x 1,5	18.8	6	9.5	35	24	22	4.0	2053762052	90-SDS-12-M14F
12	1/2	PN 630	13/16-16	M 16 x 1,5	21.8	7	9.5	37	24	22	5.8	2053192052	90-SDS-12-M16F
12	1/2	PN 630	13/16-16	M 18 x 1,5	23.8	9	9	38	24	24	5.5	2053772052	90-SDS-12-M18F
12	1/2	PN 420	13/16-16	M 22 x 1,5	26.8	9.5	9.5	39.5	24.5	27	10.3	2053782052	90-SDS-12-M22F
12	1/2	PN 420	13/16-16	M 27 x 2	31.8	9.5	9.5	44	26	32	7.0	2053202052	90-SDS-12-M27F
14; 15; 16	5/8	PN 420	1-14	M 14 x 1,5	18.8	6	12.5	38	27	27	10.1	2053212052	90-SDS-16-M14F
14; 15; 16	5/8	PN 420	1-14	M 16 x 1,5	21.8	7	12.5	39.5	27	27	10.5	2053222052	90-SDS-16-M16F
14; 15; 16	5/8	PN 420	1-14	M 18 x 1,5	23.8	9	12.5	41	27	27	12.0	2053792052	90-SDS-16-M18F
14; 15; 16	5/8	PN 420	1-14	M 22 x 1,5	26.8	12	12	42	27	27	11.1	2053802052	90-SDS-16-M22F
14; 15; 16	5/8	PN 420	1-14	M 27 x 2	31.8	12.5	12.5	47	29	32	17.7	2053232052	90-SDS-16-M27F
18; 20	3/4	PN 420	1 3/16-12	M 18 x 1,5	23.8	9	15.5	44	30	32	16.3	2053902052	90-SDS-20-M18F
18; 20	3/4	PN 420	1 3/16-12	M 22 x 1,5	26.8	12	15.5	45	30	32	17.0	2053812052	90-SDS-20-M22F
18; 20	3/4	PN 420	1 3/16-12	M 27 x 2	31.8	15	15	48.5	30	32	18.7	2053822052	90-SDS-20-M27F
18; 20	3/4	PN 420	1 3/16-12	M 33 x 2	40.8	20	15.5	51.5	33	41	20.0	2053832052	90-SDS-20-M33F
18; 20	3/4	PN 280	1 3/16-12	M 42 x 2	49.8	26	15.5	54	35	50	25.7	2053912052	90-SDS-20-M42F

Male stud connectors

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 6149
 Sealing type: O-Ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2	d8	dx	dy	lg	l3	SW1	kg/100 ca.	Order-No.	Designation
22; 25	1	PN 420	1 7/16-12	M 18 x 1,5	23.8	9	20.5	47.5	33.5	41	19.6	2053922052	90-SDS-25-M18F
22; 25	1	PN 420	1 7/16-12	M 22 x 1,5	26.8	12	20.5	48.5	33.5	41	21.4	2053932052	90-SDS-25-M22F
22; 25	1	PN 420	1 7/16-12	M 27 x 2	31.8	15	20.5	52	34	41	23.0	2053942052	90-SDS-25-M27F
22; 25	1	PN 420	1 7/16-12	M 33 x 2	40.8	20	20	52	33.5	41	27.0	2053842052	90-SDS-25-M33F
22; 25	1	PN 280	1 7/16-12	M 42 x 2	49.8	26	20.5	54.5	35.5	50	32.5	2053952052	90-SDS-25-M42F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 27 x 2	31.8	15	26	54	35.5	46	31.6	2053962052	90-SDS-30-M27F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 33 x 2	40.8	20	26	54	35.5	46	37.0	2053852052	90-SDS-30-M33F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 42 x 2	49.8	26	26	54.5	35.5	50	39.0	2053862052	90-SDS-30-M42F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 48 x 2	54.8	32	26	57	35.5	55	43.1	2053972052	90-SDS-30-M48F
35; 38	1 1/2; 1 1/4	PN 280	2-12	M 42 x 2	49.8	26	32	55	36	55	40.0	2053982052	90-SDS-38-M42F
35; 38	1 1/2	PN 280	2-12	M 48 x 2	54.8	32	32	57	35.5	55	41.2	2053872052	90-SDS-38-M48F
50	2	PN 200	2 1/2-12	M 60 x 2	64.8	40	40	65	41	65	80.1	2053992052	90-SDS-50-M60F

²⁾ Special sizes only on request

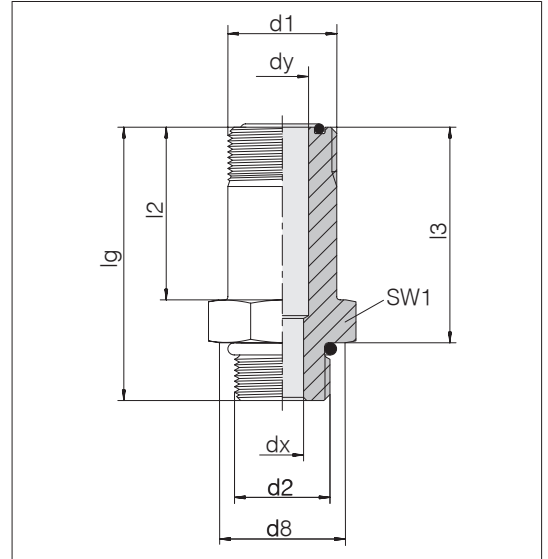
Example for comparison:
4M12F87OMLOS



Straight long stud connectors

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



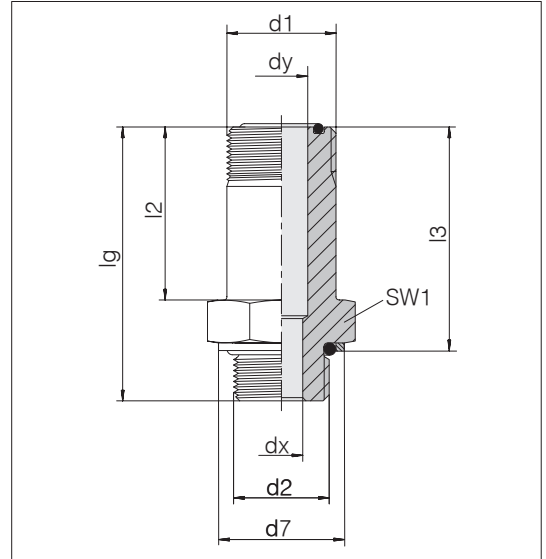
Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	d8	dx	dy	lg	l2	l3	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	7/16-20	17	4.5	4.5	52.5	33.8	41.5	17	5.4	2054352052	90-SDSL-6-U7/16-20F
6	1/4	PN 630	9/16-18	9/16-18	19	6.5	6.5	54.5	33.5	42.5	19	5.9	2054432052	90-SDSL-6-U9/16-18F
8; 10	5/16; 3/8	PN 630	11/16-16	9/16-18	19	6.5	6.5	57.5	37.0	45.5	19	7.9	2054362052	90-SDSL-10-U9/16-18F
12	1/2	PN 630	13/16-16	3/4-16	22	9.5	9.5	68	44.2	54	22	12.5	2054372052	90-SDSL-12-U3/4-16F
12	1/2	PN 420	13/16-16	7/8-14	27	12.5	12.5	71.5	44.0	55.5	27	14.0	2054442052	90-SDSL-12-U7/8-14F
14; 15; 16	5/8	PN 420	1-14	7/8-14	27	12.5	12.5	79.5	52.0	63.5	27	21.2	2054382052	90-SDSL-16-U7/8-14F
18; 20	3/4	PN 420	1 3/16-12	3/4-16	32	9.5	9.5	95.5	63.0	81.5	32	22.1	2054452052	90-SDSL-20-U3/4-16F
18; 20	3/4	PN 420	1 3/16-12	1 1/16-12	32	15.5	15.5	83.5	52.0	65	32	30.9	2054392052	90-SDSL-20-U11/16-12F
22; 25	1	PN 420	1 7/16-12	1 5/16-12	41	20.5	20.5	105	72.5	86.5	41	57.5	2054402052	90-SDSL-25-U15/16-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/8-12	50	26	26	121	86.0	102.5	50	90.7	2054412052	90-SDSL-30-U15/8-12F
35; 38	1 1/2	PN 280	2-12	1 7/8-12	55	32	32	133.5	97.0	115	55	143.0	2054422052	90-SDSL-38-U17/8-12F

Example for comparison:
 4FF5OLOS

Straight long stud connectors

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR

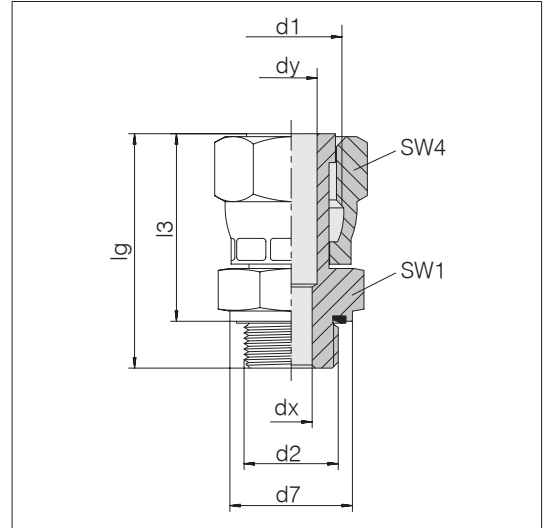


Tube OD mm	Inch	d1 UN/UNF	d2 BSPP	d7	d8	dx	dy	lg	l2	l3	SW1	Order-No.	Designation
6	1/4	9/16-18	1/8-28	15	o.D.	4.4	4	52	33.5	45	17	2076262052	90-SDSL-6-G1/8FR
8; 10	5/16; 3/8	11/16-16	1/4-19	19.5	o.D.	7.5	6	58	37.0	48	19	2076272052	90-SDSL-10-G1/4FR
12	1/2	13/16-16	3/8-19	23.5	o.D.	9.9	9	67	44.0	57	24	2076282052	90-SDSL-12-G3/8FR
14; 15; 16	5/8	1-14	1/2-14	28.5	o.D.	12.3	12.5	76	52.0	64	27	2076292052	90-SDSL-16-G1/2FR
18; 20	3/4	1 3/16-12	3/4-14	34.5	o.D.	15.5	15.5	94.5	63.0	79	41	2076302052	90-SDSL-20-G3/4FR
18; 20	3/4	1 3/16-12	1-11	43.5	o.D.	21.5	15.5	93	63.0	79	36	2076312052	90-SDSL-20-G1FR
22; 25	1	1 7/16-12	1-11	43.5	o.D.	21.5	20.5	105	72.5	89.5	41	2076322052	90-SDSL-25-G1FR
22; 25	1	1 7/16-12	1 1/4-11	52.5	o.D.	27.5	20.5	106	72.5	88.5	50	2076332052	90-SDSL-25-G11/4FR
28; 30; 32	1 1/4	1 11/16-12	1 1/4-11	52.5	o.D.	27.5	26	120	86.0	102.5	50	2076342052	90-SDSL-30-G11/4FR
35; 38	1 1/2	2-12	1 1/2-11	60	o.D.	33	30	137	97.0	117.5	60	2076352052	90-SDSL-38-G11/2FR

Straight swivel stud connector

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974 Form E
 Sealing type: Profile sealing ring PEFLEX
 Sealing material: Standard NBR

ORFS Swivel connection: ISO 8434-3/SAE J1453



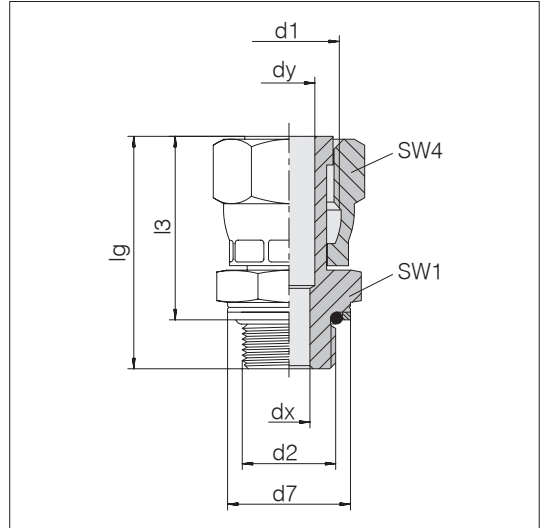
Tube OD		Pressure	d1	d2	d7	dx	lg	dy	l3	SW1	SW4	kg/100	Order-No.	Designation
d1			UN/JNF									ca.		
mm	Inch													
6	1/4	PN 420	9/16-18	M 10 x 1	13.9	4	34	4	26	17	17	3.9	2055622052	90-SWSDS-6-M10E
6	1/4	PN 420	9/16-18	M 12 x 1,5	16.9	4	38	4	26	17	17	4.3	2055902052	90-SWSDS-6-M12E
8; 10	5/16; 3/8	PN 420	11/16-16	M 14 x 1,5	18.9	5	40	6.5	28	19	22	7.2	2055912052	90-SWSDS-10-M14E
8; 10	5/16; 3/8	PN 420	11/16-16	M 16 x 1,5	21.9	7	40	6.5	28	22	22	8.0	2055632052	90-SWSDS-10-M16E
8; 10	5/16; 3/8	PN 420	11/16-16	M 18 x 1,5	23.9	8	40	6.5	28	24	22	9.2	2055642052	90-SWSDS-10-M18E
12	1/2	PN 420	13/16-16	M 16 x 1,5	21.9	7	47.5	9	35.5	22	24	10.4	2055922052	90-SWSDS-12-M16E
12	1/2	PN 420	13/16-16	M 18 x 1,5	23.9	8	47.5	8	35.5	24	24	12.1	2055652052	90-SWSDS-12-M18E
12	1/2	PN 420	13/16-16	M 22 x 1,5	26.9	11.5	49.5	9	35.5	27	24	14.0	2055662052	90-SWSDS-12-M22E
14; 15; 16	5/8	PN 420	1-14	M 22 x 1,5	26.9	11.5	52	11.5	38	27	30	16.5	2055932052	90-SWSDS-16-M22E
14; 15; 16	5/8	PN 420	1-14	M 27 x 2	31.9	14	54	11.5	38	32	30	23.7	2055672052	90-SWSDS-16-M27E
18; 20	3/4	PN 420	1 3/16-12	M 27 x 2	31.9	14	57	14	41	32	36	26.6	2055942052	90-SWSDS-20-M27E
18; 20	3/4	PN 420	1 3/16-12	M 33 x 2	39.9	20	59	14	41	41	36	31.4	2055682052	90-SWSDS-20-M33E
22; 25	1	PN 420	1 7/16-12	M 33 x 2	39.9	20	67	20	49	41	41	41.4	2055952052	90-SWSDS-25-M33E
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 42 x 2	49.9	26	69	26	49	50	50	62.3	2055962052	90-SWSDS-30-M42E
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 48 x 2	54.9	32	71	26	49	55	50	71.2	2055692052	90-SWSDS-30-M48E
35; 38	1 1/2	PN 280	2-12	M 48 x 2	54.9	32	71	32	49	55	60	88.5	2055972052	90-SWSDS-38-M48E

Example for comparison:
 4M12F682EDMLS

Straight swivel stud connector

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

ORFS Swivel connection: ISO 8434-3/SAE J1453

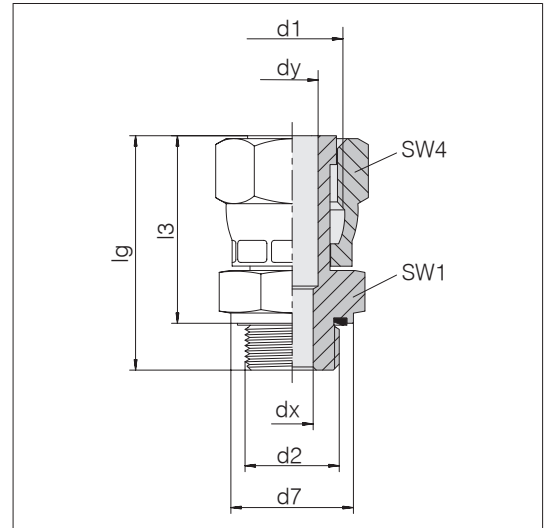


Tube OD	d1	d2	d7	dx	lg	dy	l3	SW1	SW4	Order-No.	Designation	
mm	Inch	UN/UNF										
6	1/4	9/16-18	M 10 x 1	14.9	3	35.5	3	27.1	17	17	2085002052	90-SWSDS-6-M10FR
6	1/4	9/16-18	M 12 x 1,5	17.9	4	37	4	27.6	17	17	2085012052	90-SWSDS-6-M12FR
8; 10	5/16; 3/8	11/16-16	M 14 x 1,5	19.9	6	39	6	29.7	19	22	2085022052	90-SWSDS-10-M14FR
8; 10	5/16; 3/8	11/16-16	M 16 x 1,5	22.9	6.5	40.5	6.5	29.6	22	22	2085032052	90-SWSDS-10-M16FR
12	1/2	13/16-16	M 18 x 1,5	24.9	9	49.5	9	37.1	24	24	2085042052	90-SWSDS-12-M18FR
12	1/2	13/16-16	M 22 x 1,5	27.9	12	50.5	9	37.2	27	24	2085052052	90-SWSDS-12-M22FR
14; 15; 16	5/8	1-14	M 22 x 1,5	27.9	11.5	53	11.5	39.7	27	30	2085062052	90-SWSDS-16-M22FR
14; 15; 16	5/8	1-14	M 27 x 2	32.9	15	56.5	11.5	40.3	32	30	2085072052	90-SWSDS-16-M27FR
18; 20	3/4	1 3/16-12	M 27 x 2	32.9	14	59.5	14	43.3	32	36	2085082052	90-SWSDS-20-M27FR
18; 20	3/4	1 3/16-12	M 33 x 2	40.9	20	59.5	14	43.3	41	36	2085092052	90-SWSDS-20-M33FR
22; 25	1	1 7/16-12	M 33 x 2	40.9	20	67.5	20	51.3	41	41	2085102052	90-SWSDS-25-M33FR
22; 25	1	1 7/16-12	M 42 x 2	50.9	26	68	20	50.9	50	41	2085112052	90-SWSDS-25-M42FR
28; 30; 32	1 1/4	1 11/16-12	M 42 x 2	50.9	26	68	26	50.9	50	50	2085122052	90-SWSDS-30-M42FR
28; 30; 32	1 1/4	1 11/16-12	M 48 x 2	55.9	32	70.5	26	50.9	55	50	2085132052	90-SWSDS-30-M48FR

Straight swivel stud connector

Male thread : BSPP thread, cylindrical
 Threaded stud: ISO 1179 Form E
 Sealing type: Profile sealing ring PEFLEX
 Sealing material: Standard NBR

ORFS Swivel connection: ISO 8434-3/SAE J1453



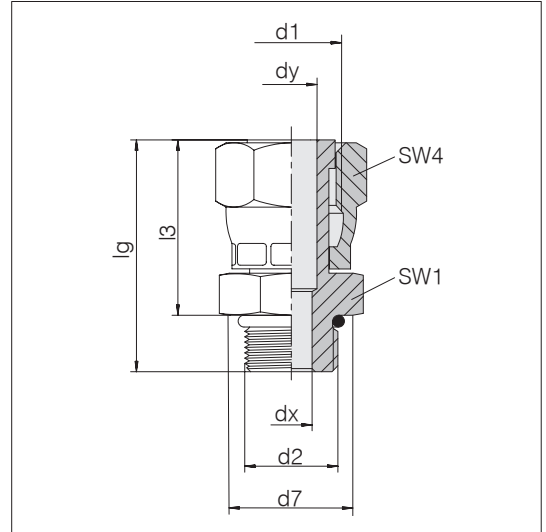
Tube OD		Pressure	d1	d2	d7	dx	lg	dy	l3	SW1	SW4	kg/100 ca.	Order-No.	Designation
d1	Inch		UN/UNF	BSPP										
6	1/4	PN 420	9/16-18	1/8-28	13.9	4	34	4	26	17	17	4.3	2055702052	90-SWSDS-6-G1/8E
6	1/4	PN 420	9/16-18	1/4-19	18.9	4	38	4	26	19	17	5.5	2055712052	90-SWSDS-6-G1/4E
6	1/4	PN 420	9/16-18	3/8-19	21.9	8	38	4	26	22	17	5.9	2085742052	90-SWSDS-6-G3/8E
8; 10	5/16; 3/8	PN 420	11/16-16	1/4-19	18.9	5	40	5	28	19	22	7.2	2055722052	90-SWSDS-10-G1/4E
8; 10	5/16; 3/8	PN 420	11/16-16	3/8-19	21.9	6.5	40	6.5	28	22	22	8.2	2055732052	90-SWSDS-10-G3/8E
8; 10	5/16; 3/8	PN 420	11/16-16	1/2-14	26.9	6.5	44	6.5	28	27	22	9.2	2085752052	90-SWSDS-10-G1/2E
12	1/2	PN 420	13/16-16	1/4-19	18.9	5	45.5	9	33.5	22	24	9.8	2085762052	90-SWSDS-12-G1/4E
12	1/2	PN 420	13/16-16	3/8-19	21.9	8	47.5	8	35.5	22	24	10.4	2055742052	90-SWSDS-12-G3/8E
12	1/2	PN 420	13/16-16	1/2-14	26.9	9	49.5	9	35.5	27	24	14.2	2055752052	90-SWSDS-12-G1/2E
14; 15; 16	5/8	PN 420	1-14	3/8-19	21.9	8	50	11.5	38	24	30	15.1	2085772052	90-SWSDS-16-G3/8E
14; 15; 16	5/8	PN 420	1-14	1/2-14	26.9	11.5	52	11.5	38	27	30	16.5	2055762052	90-SWSDS-16-G1/2E
14; 15; 16	5/8	PN 420	1-14	3/4-14	31.9	11.5	54	11.5	38	32	30	18.5	2085782052	90-SWSDS-16-G3/4E
18; 20	3/4	PN 420	1 3/16-12	1/2-14	26.9	12	55	14	41	30	36	24.0	2085792052	90-SWSDS-20-G1/2E
18; 20	3/4	PN 420	1 3/16-12	3/4-14	31.9	14	57	14	41	32	36	25.2	2055772052	90-SWSDS-20-G3/4E
18; 20	3/4	PN 420	1 3/16-12	1-11	39.9	20	59	14	41	41	36	26.0	2085802052	90-SWSDS-20-G1E
22; 25	1	PN 420	1 7/16-12	1/2-14	26.9	12	63	20	49	36	41	47.2	2085812052	90-SWSDS-25-G1/2E
22; 25	1	PN 420	1 7/16-12	3/4-14	31.9	16	65	20	49	36	41	48.7	2085822052	90-SWSDS-25-G3/4E
22; 25	1	PN 420	1 7/16-12	1-11	39.9	20	67	20	49	41	41	51.9	2055782052	90-SWSDS-25-G1E
22; 25	1	PN 420	1 7/16-12	1 1/4-11	49.9	25	69	20	49	50	41	52.3	2085832052	90-SWSDS-25-G11/4E
28; 30; 32	1 1/4	PN 280	1 11/16-12	1-11	39.9	20	67	26	49	41	50	60.9	2085842052	90-SWSDS-30-G1E
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 1/4-11	49.9	25	69	25	49	50	50	62.3	2055792052	90-SWSDS-30-G11/4E
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 1/2-11	54.9	32	71	26	49	55	50	65.1	2085852052	90-SWSDS-30-G11/2E
35; 38	1 1/2	PN 280	2-12	1 1/2-11	54.9	32	71	32	49	55	60	88.5	2055802052	90-SWSDS-38-G11/2E

Example for comparison:
 4F642EDMLS

Straight swivel stud connector

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

ORFS Swivel connection: ISO 8434-3/SAE J1453



Tube OD d1		Pressure	d1 UN/UNF	d2 UN/UNF	d7	dx	lg	dy	l3	SW1	SW4	kg/100 ca.	Order-No.	Designation
mm	Inch													
6	1/4	PN 420	9/16-18	7/16-20	17	4	37	4	26	17	17	5.3	2055552052	90-SWSDS-6-U7/16-20F
6	1/4	PN 420	9/16-18	9/16-18	16.8	7.5	38	4	26	19	17	5.8	2085622052	90-SWSDS-6-U9/16-18F
8; 10	5/16; 3/8	PN 420	11/16-16	7/16-20	13.8	4.5	39	6.5	28	17	22	6.9	2085632052	90-SWSDS-10-U7/16-20F
8; 10	5/16; 3/8	PN 420	11/16-16	9/16-18	16.8	6.5	40	6.5	28	19	22	7.2	2055562052	90-SWSDS-10-U9/16-18F
8; 10	5/16; 3/8	PN 420	11/16-16	3/4-16	21.8	10	42	6.5	28	22	22	7.8	2085642052	90-SWSDS-10-U3/4-16F
12	1/2	PN 420	13/16-16	9/16-18	16.8	7.5	48	9	36	22	24	10.2	2085652052	90-SWSDS-12-U9/16-18F
12	1/2	PN 420	13/16-16	3/4-16	21.8	9	50	9	36	22	24	11.0	2055572052	90-SWSDS-12-U3/4-16F
12	1/2	PN 420	13/16-16	7/8-14	26.8	12.5	52	9	36	27	24	12.4	2085662052	90-SWSDS-12-U7/8-14F
14; 15; 16	5/8	PN 420	1-14	3/4-16	21.8	10	52	11.5	38	24	30	15.9	2085672052	90-SWSDS-16-U3/4-16F
14; 15; 16	5/8	PN 420	1-14	7/8-14	26.8	11.5	54	11.5	38	27	30	17.3	2055582052	90-SWSDS-16-U7/8-14F
14; 15; 16	5/8	PN 420	1-14	1 1/16-12	31.8	15.5	56.5	11.5	38	32	30	18.1	2085682052	90-SWSDS-16-U11/16-12F
18; 20	3/4	PN 420	1 3/16-12	7/8-14	26.8	12.5	56.5	14	40.5	30	36	25.3	2085692052	90-SWSDS-20-U7/8-14F
18; 20	3/4	PN 420	1 3/16-12	1 1/16-12	31.8	14	59	14	40.5	32	36	27.5	2055592052	90-SWSDS-20-U11/16-12F
18; 20	3/4	PN 420	1 3/16-12	1 5/16-12	40.8	21.5	59	14	40.5	41	36	28.9	2085702052	90-SWSDS-20-U15/16-12F
22; 25	1	PN 420	1 7/16-12	1 1/16-12	31.8	15.5	68	20	49.5	36	41	43.7	2085712052	90-SWSDS-25-U11/16-12F
22; 25	1	PN 420	1 7/16-12	1 5/16-12	40.8	20	68	20	49.5	41	41	46.2	2055602052	90-SWSDS-25-U15/16-12F
22; 25	1	PN 280	1 7/16-12	1 5/8-12	49.8	27.5	68	20	49.5	50	41	48.3	2085722052	90-SWSDS-25-U15/8-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/8-12	50	26	68	26	49.5	50	50	62.3	2055612052	90-SWSDS-30-U15/8-12F
35; 38	1 1/2	PN 200	2-12	1 7/8-12	54.8	33.5	68	32	49.5	55	60	70.0	2085732052	90-SWSDS-38-U17/8-12F

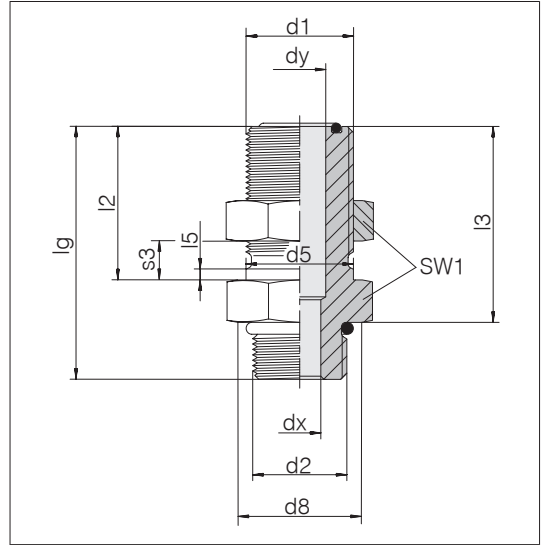
Example for comparison:
 4 F65OL-S



Male stud bulkhead unions

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pres- sure	d1 UN/UNF	d2 UN/UNF	d5	d8	dx	dy	lg	l2	l3	l5	SW1	kg/100 ca.	s3 max. min.	Order-No.	Designation	
6	1/4	PN 630	9/16-18	7/16-20	14	16	4.5	4.5	54	31.5	43	1.5	22	7.5	14	1.5	2054502049	90-BHSDSLN-6-U7/16-20F
6	1/4	PN 630	9/16-18	9/16-18	14	19	7.5	4.5	55	31.5	43	1.5	22	8.8	14	1.5	2054512049	90-BHSDSLN-6-U9/16-18F
8; 10	5/16; 3/8	PN 630	11/16-16	9/16-18	17.2	19	6.5	6.5	58	34.0	46	1.5	27	11.2	14	1.5	2054522049	90-BHSDSLN-10-U9/16-18F
12	1/2	PN 630	13/16-16	3/4-16	20.6	23.8	9.5	9.5	65	36.5	51	2.5	30	14.7	14	2.5	2054532049	90-BHSDSLN-12-U3/4-16F
14; 15; 16	5/8	PN 420	1-14	7/8-14	25.3	26.8	12.5	12.5	67	40.5	51	2.5	36	29.5	14	2.5	2054542049	90-BHSDSLN-16-U7/8-14F
18; 20	3/4	PN 420	1 3/16-12	1 1/16-12	30	33.3	15.5	15.5	71	41.5	52.5	3	41	33.0	14	3	2054552049	90-BHSDSLN-20-U11/16-12F

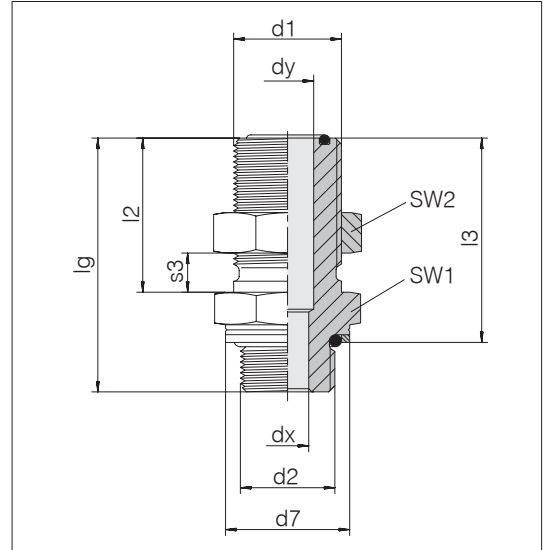
Example for comparison:
 4 WF5OLO-WLNL-S



Male stud bulkhead unions

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR

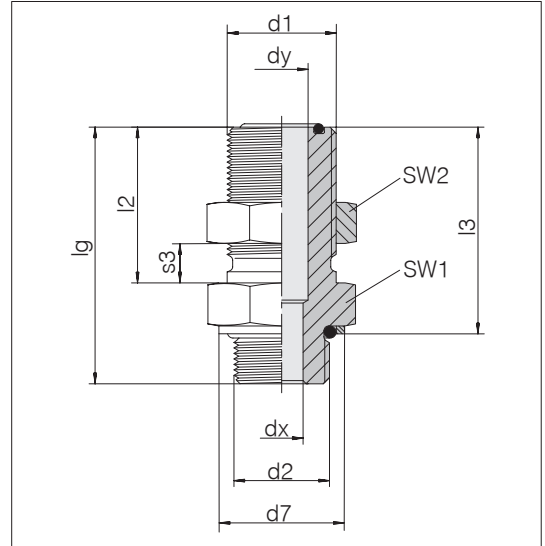


Tube OD mm	Inch	d1 UN/UNF	d2	d7	dx	dy	lg	l2	l3	SW1	SW2	s3 max.	min.	Order-No.	Designation
6	1/4	9/16-18	M 12 x 1,5	17.9	4	4	51	31.5	41.5	19	22	14	1.5	2077122049	90-BHSDSLN-6-M12FR
8; 10	5/16; 3/8	11/16-16	M 14 x 1,5	19.9	6	6	55	34.0	45.5	22	27	14	1.5	2077132049	90-BHSDSLN-10-M14FR
8; 10	5/16; 3/8	11/16-16	M 16 x 1,5	22.9	6.5	6.5	56	34.0	45	22	27	14	1.5	2077142049	90-BHSDSLN-10-M16FR
12	1/2	13/16-16	M 18 x 1,5	24.9	9	9	61	36.5	48.5	27	30	14	2.5	2077152049	90-BHSDSLN-12-M18FR
12	1/2	13/16-16	M 22 x 1,5	27.9	12	9.5	64	36.5	50.5	27	30	14	2.5	2077162049	90-BHSDSLN-12-M22FR
14; 15; 16	5/8	1-14	M 22 x 1,5	27.9	12	12	68	40.5	54.5	30	35	14	2.5	2077172049	90-BHSDSLN-16-M22FR
14; 15; 16	5/8	1-14	M 27 x 2	32.9	15	12.5	71	40.5	54.5	32	35	14	2.5	2077182049	90-BHSDSLN-16-M27FR
18; 20	3/4	1 3/16-12	M 27 x 2	32.9	15	15	72	41.5	55.5	36	41	14	3	2077192049	90-BHSDSLN-20-M27FR
18; 20	3/4	1 3/16-12	M 33 x 2	40.9	20	15.5	73	41.5	56.5	41	41	14	3	2077202049	90-BHSDSLN-20-M33FR
22; 25	1	1 7/16-12	M 33 x 2	40.9	20	20	74	42.0	57.5	41	46	14	3	2077212049	90-BHSDSLN-25-M33FR
28; 30; 32	1 1/4	1 11/16-12	M 42 x 2	50.9	26	26	75	42.0	58	50	50	14	3	2077222049	90-BHSDSLN-30-M42FR
35; 38	1 1/2	2-12	M 48 x 2	55.9	32	32	80	42.0	60.5	60	60	14	3	2077232049	90-BHSDSLN-38-M48FR

Male stud bulkhead unions

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



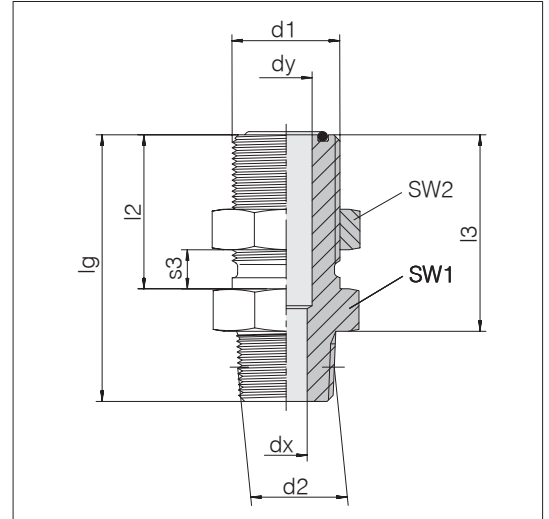
Tube OD mm	Inch	d1 UN/UNF	d2 BSPP	d7	dx	dy	lg	l2	l3	SW1	SW2	s3 max. min.	Order-No.	Designation	
6	1/4	9/16-18	1/4-19	19.5	7.5	4.5	51.5	31.5	41.5	19	22	14	1.5	2077002049	90-BHSDSLN-6-G1/4FR
8; 10	5/16; 3/8	11/16-16	1/4-19	19.5	7.5	6	55	34.0	45	22	27	14	1.5	2077012049	90-BHSDSLN-10-G1/4FR
8; 10	5/16; 3/8	11/16-16	3/8-19	23.5	9.9	6.5	55	34.0	45	24	27	14	1.5	2077022049	90-BHSDSLN-10-G3/8FR
12	1/2	13/16-16	1/2-14	28.5	12.3	9.5	61	36.5	49	27	30	14	2.5	2077032049	90-BHSDSLN-12-G1/2FR
14; 15; 16	5/8	1-14	1/2-14	28.5	12.3	12.5	66.5	40.5	54.5	30	35	14	2.5	2077042049	90-BHSDSLN-16-G1/2FR
14; 15; 16	5/8	1-14	3/4-14	34.5	15.5	12.5	70	40.5	56	36	35	14	2.5	2077052049	90-BHSDSLN-16-G3/4FR
18; 20	3/4	1 3/16-12	1/2-14	28.5	12.3	15.5	68.5	41.5	56.5	36	41	14	3	2077062049	90-BHSDSLN-20-G1/2FR
18; 20	3/4	1 3/16-12	3/4-14	34.5	15.5	15.5	71	41.5	57	38	41	14	3	2077072049	90-BHSDSLN-20-G3/4FR
18; 20	3/4	1 3/16-12	1-11	43.5	21.5	15.5	73.5	41.5	58	41	41	14	3	2077082049	90-BHSDSLN-20-G1FR
22; 25	1	1 7/16-12	1-11	43.5	21.5	20.5	73.5	42.0	58	41	46	14	3	2077092049	90-BHSDSLN-25-G1FR
28; 30; 32	1 1/4	1 11/16-12	1 1/4-11	52.5	27.5	26	76	42.0	58.5	50	50	14	3	2077102049	90-BHSDSLN-30-G11/4FR
35; 38	1 1/2	2-12	1 1/2-11	60	33	32	80	42.0	60.5	60	60	14	3	2077112049	90-BHSDSLN-38-G11/2FR

Male stud bulkhead unions

Male thread: NPTF thread, tapered
 Threaded stud: SAE J476/ASME B1.20.3
 Sealing type: Tapered thread

Tube coupling: VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



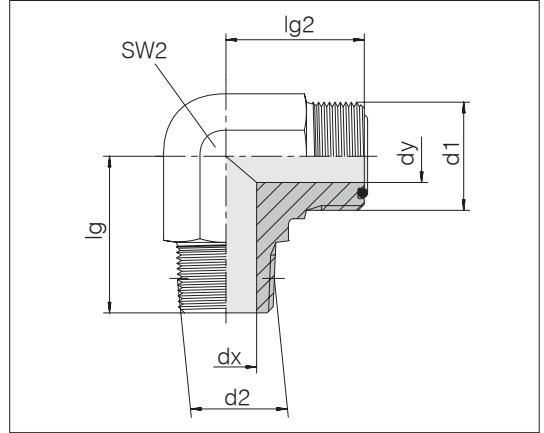
Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 NPTF	dx	dy	lg	l2	l3	SW1	SW2	s3 max.	min.	Order-No.	Designation
6	1/4	PN 420	9/16-18	1/8-27	5	4.5	50	31.5	40	22	19	14	1.5	2077242049	90-BHSDSLN-6-NF1/8T
6	1/4	PN 420	9/16-18	1/4-18	7	4.5	54	31.5	39.5	22	19	14	1.5	2077252049	90-BHSDSLN-6-NF1/4T
8; 10	5/16; 3/8	PN 420	11/16-16	1/4-18	6.5	6.5	58	34.0	43.5	27	22	14	1.5	2077262049	90-BHSDSLN-10-NF1/4T
8; 10	5/16; 3/8	PN 420	11/16-16	3/8-18	10.3	6.5	58	34.0	43.5	27	22	14	1.5	2077272049	90-BHSDSLN-10-NF3/8T
12	1/2	PN 420	13/16-16	3/8-18	9.5	9.5	60	36.5	45.5	30	24	14	2.5	2077282049	90-BHSDSLN-12-NF3/8T
12	1/2	PN 420	13/16-16	1/2-14	13.5	9.5	66	36.5	47	30	24	14	2.5	2077292049	90-BHSDSLN-12-NF1/2T
14; 15; 16	5/8	PN 420	1-14	1/2-14	13.5	12.5	69	40.5	50	36	30	14	2.5	2077302049	90-BHSDSLN-16-NF1/2T
14; 15; 16	5/8	PN 350	1-14	3/4-14	18	12.5	70	40.5	51	36	30	14	2.5	2077312049	90-BHSDSLN-16-NF3/4T
18; 20	3/4	PN 420	1 3/16-12	1/2-14	13.5	15.5	73	41.5	54	41	35	14	3	2077322049	90-BHSDSLN-20-NF1/2T
18; 20	3/4	PN 350	1 3/16-12	3/4-14	18	15.5	73	41.5	54	41	35	14	3	2077332049	90-BHSDSLN-20-NF3/4T
22; 25	1	PN 210	1 7/16-12	1-11-1/2	24	20.5	80	42.0	56	46	41	14	3	2077342049	90-BHSDSLN-25-NF1T
28; 30; 32	1 1/4	PN 210	1 11/16-12	1 1/4-11-1/2	32	26	82	42.0	57.5	46	46	14	3	2077352049	90-BHSDSLN-30-NF11/4T
35; 38	1 1/2	PN 175	2-12	1 1/2-11-1/2	38	32	83	42.0	57.5	60	50	14	3	2077362049	90-BHSDSLN-38-NF11/2T

Example for comparison:
 A503033/0610

Male stud elbows

Male thread: NPTF thread, tapered
 Threaded stud: SAE J476/ASME B1.20.3
 Sealing type: Tapered thread

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR

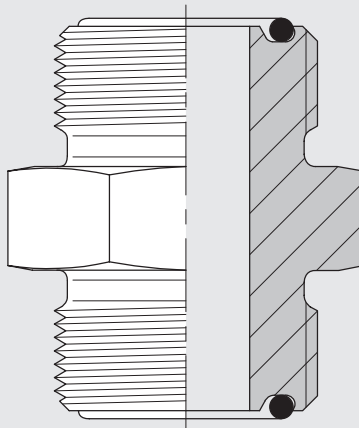


Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 NPTF	dx	dy	lg	lg2	SW2	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	1/8-27	5	4.5	20.5	21.5	14	3.9	2057102052	90-SDE-6-NF1/8T
6	1/4	PN 420	9/16-18	1/4-18	7	4.5	28.5	21.5	14	5.0	2057112052	90-SDE-6-NF1/4T
8; 10	5/16; 3/8	PN 420	11/16-16	1/4-18	7	6.5	27.5	25	19	7.5	2057122052	90-SDE-10-NF1/4T
8; 10	5/16; 3/8	PN 420	11/16-16	3/8-18	10.3	6.5	31	25	19	8.1	2057132052	90-SDE-10-NF3/8T
8; 10	5/16; 3/8	PN 420	11/16-16	1/2-14	13.5	6.5	34	29.5	22	8.4	2057142052	90-SDE-10-NF1/2T
12	1/2	PN 420	13/16-16	3/8-18	10.3	9.5	31	28	19	8.9	2057152052	90-SDE-12-NF3/8T
12	1/2	PN 420	13/16-16	1/2-14	13.5	9.5	37.5	28	22	12.5	2057162052	90-SDE-12-NF1/2T
12	1/2	PN 350	13/16-16	3/4-14	18	9.5	40.5	33.5	27	16.8	2057172052	90-SDE-12-NF3/4T
14; 15; 16	5/8	PN 420	1-14	1/2-14	13.5	12.5	37.5	33.5	27	15.4	2057182052	90-SDE-16-NF1/2T
14; 15; 16	5/8	PN 280	1-14	3/4-14	18	12.5	40.5	36	30	23.7	2057192052	90-SDE-16-NF3/4T
18; 20	3/4	PN 420	1 3/16-12	1/2-14	13.5	15.5	40.5	37.5	30	25.7	2057212052	90-SDE-20-NF1/2T
18; 20	3/4	PN 350	1 3/16-12	3/4-14	18	15.5	40.5	37.5	30	24.6	2057202052	90-SDE-20-NF3/4T
18; 20	3/4	PN 210	1 3/16-12	1-11-1/2	24	15.5	50	41	32	36.3	2057222052	90-SDE-20-NF1T
22; 25	1	PN 280	1 7/16-12	3/4-14	18	20.5	45.5	41.5	36	40.1	2057242052	90-SDE-25-NF3/4T
22; 25	1	PN 210	1 7/16-12	1-11-1/2	24	20.5	50	41.5	36	38.7	2057232052	90-SDE-25-NF1T
28; 30; 32	1 1/4	PN 175	1 11/16-12	1 1/4-11-1/2	32	26	60.5	44.5	41	46.9	2057252052	90-SDE-30-NF11/4T
35; 38	1 1/2	PN 175	2-12	1 1/2-11-1/2	38	32	67	49	50	60.3	2057262052	90-SDE-38-NF11/2T

Example for comparison:
 4 CLO-S



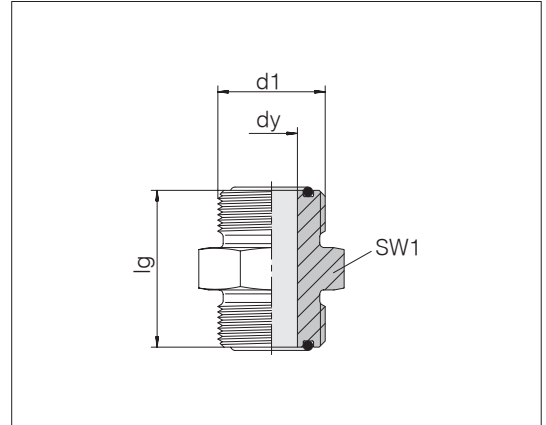
Unions



Unions

Tube coupling: tube-to-tube VOSS *Flare^{ORFS}* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	dy	lg	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	4.5	27.5	17	3.2	2051052052	90-S-6
8; 10	5/16; 3/8	PN 630	11/16-16	6.5	31	19	4.7	2051062052	90-S-10
12	1/2	PN 630	13/16-16	9.5	35.5	22	6.8	2051082052	90-S-12
14; 15; 16	5/8	PN 420	1-14	12.5	42.5	27	12.1	2051102052	90-S-16
18; 20	3/4	PN 420	1 3/16-12	15.5	47	32	18.6	2051122052	90-S-20
22; 25	1	PN 420	1 7/16-12	20.5	49.5	41	29.0	2051142052	90-S-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	26	51.5	46	37.8	2051162052	90-S-30
35; 38	1 1/2	PN 280	2-12	32	53	55	55.0	2051172052	90-S-38
50	2	PN 200	2 1/2-12	45	63	70	99.2	2051342052	90-S-50

²⁾ Special sizes only on request

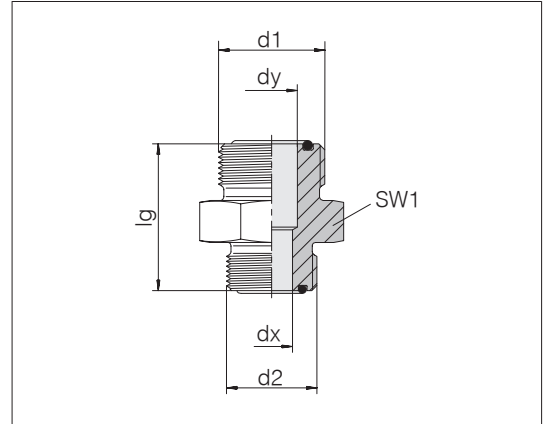
Example for comparison:
4 HLO-S



Unions

Tube coupling: tube-to-tube VOSS Flare *ORFS* nach
ISO 8434-3/SAE J 1453
Sealing material O-ring: Standard NBR

Reducers



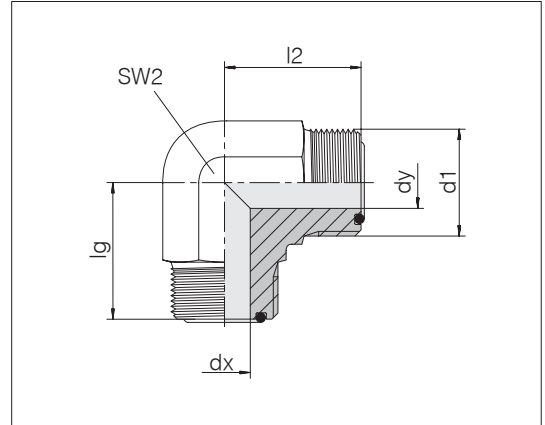
Tube OD d1		Pressure	Tube OD d2		d1	d2	dx	dy	lg	SW1	kg/100 ca.	Order-No.	Designation
mm	Inch		mm	Inch	UN/UNF	UN/UNF							
8; 10	5/16; 3/8	PN 630	6	1/4	11/16-16	9/16-18	4.5	6.5	29.5	19	4.1	2051072052	90-S-10-6
12	1/2	PN 630	8; 10	5/16; 3/8	13/16-16	11/16-16	6.5	9.5	34	22	6.4	2051092052	90-S-12-10
14; 15; 16	5/8	PN 420	8; 10	5/16; 3/8	1-14	11/16-16	6.5	12.5	38	27	11.3	2051032052	90-S-16-10
14; 15; 16	5/8	PN 420	12	1/2	1-14	13/16-16	9.5	12.5	40	27	10.6	2051112052	90-S-16-12
18; 20	3/4	PN 420	8; 10	5/16; 3/8	1 3/16-12	11/16-16	6.5	15.5	41.5	32	12.2	2051042052	90-S-20-10
18; 20	3/4	PN 420	12	1/2	1 3/16-12	13/16-16	9.5	15.5	43	32	16.0	2051182052	90-S-20-12
18; 20	3/4	PN 420	14; 15; 16	5/8	1 3/16-12	1-14	12.5	15.5	45.5	32	18.5	2051132052	90-S-20-16
22; 25	1	PN 420	14; 15; 16	5/8	1 7/16-12	1-14	12.5	20.5	47.5	41	23.2	2051192052	90-S-25-16
22; 25	1	PN 420	18; 20	3/4	1 7/16-12	1 3/16-12	15.5	20.5	49	41	27.6	2051152052	90-S-25-20
28; 30; 32	1 1/4	PN 280	14; 15; 16	5/8	1 11/16-12	1-14	12.5	26	49.5	46	24.7	2051202052	90-S-30-16
28; 30; 32	1 1/4	PN 280	22; 25	1	1 11/16-12	1 7/16-12	20.5	26	52	46	28.0	2051212052	90-S-30-25
35; 38	1 1/2	PN 280	14; 15; 16	5/8	2-12	1-14	12.5	32	51	55	39.2	2051222052	90-S-38-16
35; 38	1 1/2	PN 280	18; 20	3/4	2-12	1 3/16-12	15.5	32	52.5	55	46.9	2051232052	90-S-38-20
35; 38	1 1/2	PN 280	28; 30; 32	1 1/4	2-12	1 11/16-12	26	32	53	55	53.4	2051242052	90-S-38-30

Example for comparison:
6-4 HMLOS

Union elbows

Tube coupling: tube-to-tube VOSS Flare *ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



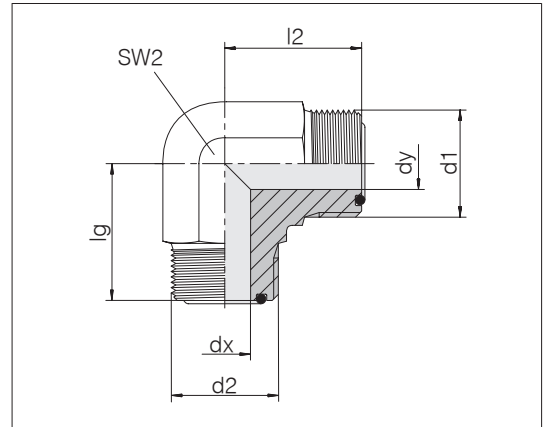
Tube OD mm	Inch	Pressure	d1 UN/UNF	dx	dy	lg	l2	SW2	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	4.5	4.5	21.5	21.5	14	4.5	2051252052	90-E-6
8; 10	5/16; 3/8	PN 630	11/16-16	6.5	6.5	25	25.0	19	8.3	2051262052	90-E-10
12	1/2	PN 630	13/16-16	9.5	9.5	28	28.0	19	9.6	2051272052	90-E-12
14; 15; 16	5/8	PN 420	1-14	12.5	12.5	33.5	33.5	27	20.5	2051282052	90-E-16
18; 20	3/4	PN 420	1 3/16-12	15.5	15.5	37.5	37.5	30	29.3	2051292052	90-E-20
22; 25	1	PN 420	1 7/16-12	20.5	20.5	41.5	41.5	36	45.7	2051302052	90-E-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	26	26	44.5	44.5	41	59.7	2051312052	90-E-30
35; 38	1 1/2	PN 280	2-12	32	32	49	49.0	50	85.4	2051322052	90-E-38

Example for comparison:
4 ELO-S

Union elbows

Tube coupling: tube-to-tube VOSS *Flare ORFS* nach
ISO 8434-3/SAE J 1453
Sealing material O-ring: Standard NBR

Reducers

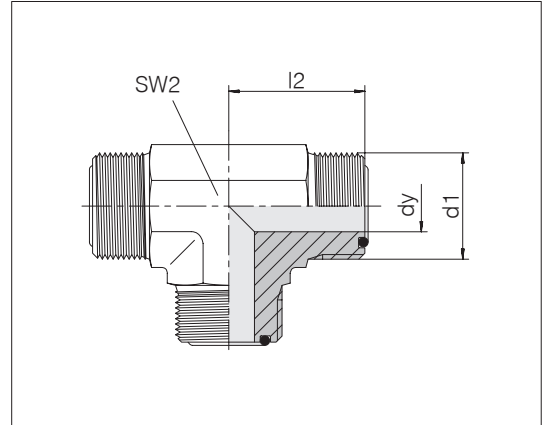


Tube OD d1 mm	Tube OD d2 mm	Pressure Inch	d1 UN/UNF	d2 UN/UNF	dx	dy	lg	l2	SW2	kg/100 ca.	Order-No.	Designation	
22; 25	18; 20	3/4	PN 420	1 7/16-12	1 3/16-12	15.5	20.5	41	42.0	36	40.0	2051332052	90-E-25-20

Union tees

Tube coupling: Three-sided VOSS Flare *ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	dx	dy	l2	SW2	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	o.D.	4.5	21.5	14	6.0	2051352052	90-T-6
8; 10	5/16; 3/8	PN 630	11/16-16	o.D.	6.5	25.0	19	11.2	2051362052	90-T-10
12	1/2	PN 630	13/16-16	o.D.	9.5	28.0	19	12.7	2051372052	90-T-12
14; 15; 16	5/8	PN 420	1-14	o.D.	12.5	33.5	27	27.1	2051382052	90-T-16
18; 20	3/4	PN 420	1 3/16-12	o.D.	15.5	37.5	30	37.3	2051392052	90-T-20
22; 25	1	PN 420	1 7/16-12	o.D.	20.5	41.5	36	57.7	2051402052	90-T-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	o.D.	26	44.5	41	77.8	2051412052	90-T-30
35; 38	1 1/2	PN 280	2-12	o.D.	32	49.0	50	107.6	2051422052	90-T-38

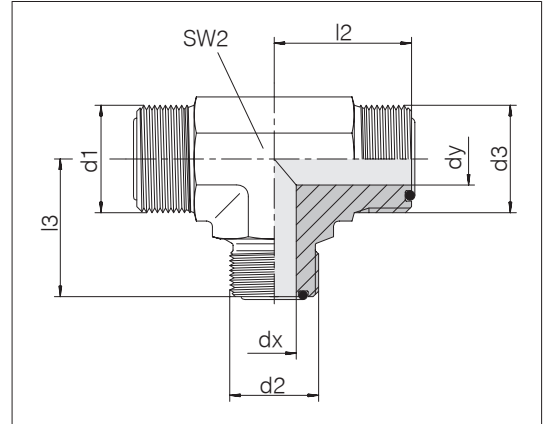
Example for comparison:
4JML0S

Union tees

Tube coupling: Three-sided VOSS *Flare ORFS* nach ISO 8434-3/
SAE J 1453

Sealing material O-ring: Standard NBR

Reducers



Tube OD d1; d3 mm	Inch	Pressure	Tube OD d2 mm	Inch	d1; d3 UN/UNF	d2 UN/UNF	dx	dy	l2	l3	SW2	Order-No.	Designation
8; 10	5/16; 3/8	PN 630	12	1/2	11/16-16	13/16-16	9.5	6.5	26.5	28	19	2051582052	90-T-10-12-10
8; 10	5/16; 3/8	PN 420	14; 15; 16	5/8	11/16-16	1-14	12.5	6.5	29.0	33.5	27	2051592052	90-T-10-16-10
12	1/2	PN 420	14; 15; 16	5/8	13/16-16	1-14	12.5	9.5	31.0	33.5	27	2051602052	90-T-12-16-12
14; 15; 16	5/8	PN 420	8; 10	5/16; 3/8	1-14	11/16-16	6.5	12.5	33.5	29.5	27	2051612052	90-T-16-10-16
14; 15; 16	5/8	PN 420	18; 20	3/4	1-14	1 3/16-12	15.5	12.5	36.0	37.5	30	2051622052	90-T-16-20-16
14; 15; 16	5/8	PN 420	22; 25	1	1-14	1 7/16-12	20.5	12.5	40.0	42	36	2051632052	90-T-16-25-16
18; 20	3/4	PN 420	8; 10	5/16; 3/8	1 3/16-12	11/16-16	6.5	15.5	37.5	32	30	2051642052	90-T-20-10-20
18; 20	3/4	PN 420	14; 15; 16	5/8	1 3/16-12	1-14	12.5	15.5	37.5	36	30	2051732052	90-T-20-16-20
18; 20	3/4	PN 420	22; 25	1	1 3/16-12	1 7/16-12	20.5	15.5	41.5	42	36	2051742052	90-T-20-25-20
22; 25	1	PN 420	14; 15; 16	5/8	1 7/16-12	1-14	12.5	20.5	42.0	40	36	2051752052	90-T-25-16-25
28; 30; 32	1 1/4	PN 280	35; 38	1 1/2	1 11/16-12	2-12	32	26	51.0	51	50	2051762052	90-T-30-38-30

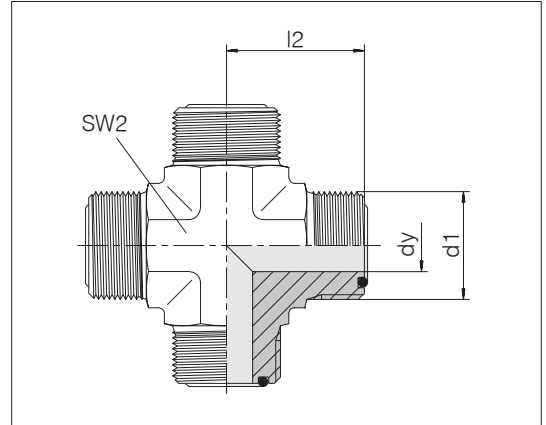
Example for comp. :
SA511004/101012

Union crosses

Four-sided tube ends as per ISO 8434-3 / SAE J 1453

Tube coupling: Four-sided VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453

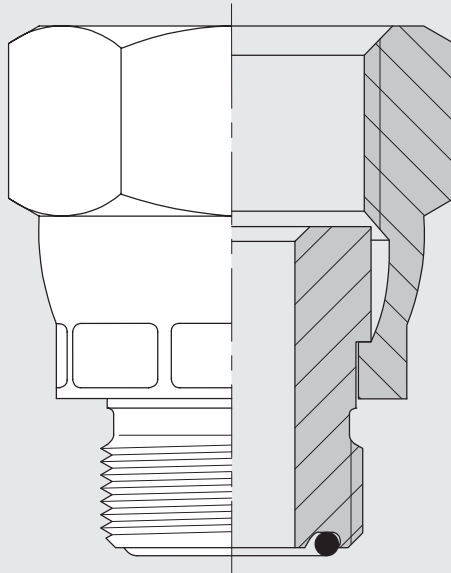
Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	dy	l2	SW2	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	4.5	21.5	14	7.4	2051502052	90-K-6
8; 10	5/16; 3/8	PN 630	11/16-16	6.5	25.0	19	14.2	2051512052	90-K-10
12	1/2	PN 630	13/16-16	9.5	28.0	19	16.3	2051522052	90-K-12
14; 15; 16	5/8	PN 420	1-14	12.5	33.5	27	29.2	2051532052	90-K-16
18; 20	3/4	PN 420	1 3/16-12	15.5	37.5	30	41.9	2051542052	90-K-20
22; 25	1	PN 420	1 7/16-12	20.5	41.5	36	97.2	2051552052	90-K-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	26	44.5	41	125.3	2051562052	90-K-30
35; 38	1 1/2	PN 280	2-12	32	49.0	50	159.8	2051572052	90-K-38

Example for comparison:
4 KLO-S

Reducing adapters / Expanders

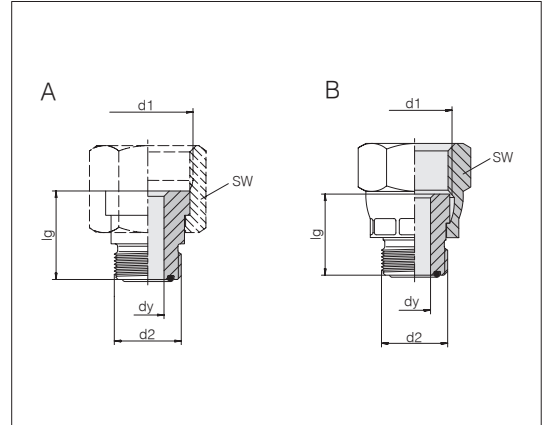


Reducing adapters / Expanders

Connection: 90° ORFS adjustable
according to ISO 8434-3/SAE J1453

Tube coupling: VOSS Flare ^{ORFS} in acc. with
ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD d1		Pressure	Tube OD d2		d1 UN/UNF	d2 UN/UNF	dy	lg	SW	kg/100 ca.	Style	Order-No.	Designation
mm	Inch		mm	Inch									
8; 10	5/16; 3/8	PN 420	6	1/4	11/16-16	9/16-18	4.5	19.5	22	4.6	B	2053252052	90-SWS-10-6
12	1/2	PN 420	6	1/4	13/16-16	9/16-18	4.5	22	24	3.1	A	2053262052	90-SWSX-12-6
12	1/2	PN 420	8; 10	5/16; 3/8	13/16-16	11/16-16	6.5	22.5	24	5.9	B	2053272052	90-SWS-12-10
14; 15; 16	5/8	PN 420	6	1/4	1-14	9/16-18	4.5	23	30	4.5	A	2053282052	90-SWSX-16-6
14; 15; 16	5/8	PN 420	8; 10	5/16; 3/8	1-14	11/16-16	6.5	24	30	5.1	A	2053292052	90-SWSX-16-10
14; 15; 16	5/8	PN 420	12	1/2	1-14	13/16-16	9.5	25.5	30	5.5	A	2053302052	90-SWSX-16-12
18; 20	3/4	PN 420	6	1/4	1 3/16-12	9/16-18	4.5	25	36	6.3	A	2053312052	90-SWSX-20-6
18; 20	3/4	PN 420	8; 10	5/16; 3/8	1 3/16-12	11/16-16	6.5	26	36	7.0	A	2053322052	90-SWSX-20-10
18; 20	3/4	PN 420	12	1/2	1 3/16-12	13/16-16	9.5	27.5	36	7.1	A	2053332052	90-SWSX-20-12
18; 20	3/4	PN 420	14; 15; 16	5/8	1 3/16-12	1-14	12.5	29.5	36	16.1	B	2053342052	90-SWS-20-16
18; 20	3/4	PN 280	18; 20	3/4	1 3/16-12	1 3/16-12	15.5	44	36	23.4	B	2087752049	90-SWS-20-20
22; 25	1	PN 280	6	1/4	1 7/16-12	9/16-18	4.5	27	41	7.2	A	2087772052	90-SWSX-25-6
22; 25	1	PN 280	8; 10	5/16; 3/8	1 7/16-12	11/16-16	6.5	28	41	9.7	A	2087762052	90-SWSX-25-10
22; 25	1	PN 420	12	1/2	1 7/16-12	13/16-16	9.5	29	41	10.3	A	2053352052	90-SWSX-25-12
22; 25	1	PN 420	14; 15; 16	5/8	1 7/16-12	1-14	12.5	32	41	11.8	A	2053362052	90-SWSX-25-16
22; 25	1	PN 420	18; 20	3/4	1 7/16-12	1 3/16-12	15.5	33	41	22.2	B	2053372052	90-SWS-25-20
28; 30; 32	1 1/4	PN 280	14; 15; 16	5/8	1 11/16-12	1-14	12.5	32	50	15.6	A	2087782052	90-SWSX-30-16
28; 30; 32	1 1/4	PN 280	18; 20	3/4	1 11/16-12	1 3/16-12	15.5	33.5	50	17.0	A	2053382052	90-SWSX-30-20
28; 30; 32	1 1/4	PN 280	22; 25	1	1 11/16-12	1 7/16-12	20.5	34	50	19.0	B	2053392052	90-SWS-30-25
35; 38	1 1/2	PN 280	12	1/2	2-12	13/16-16	9.5	29	60	15.7	A	2087792052	90-SWSX-38-12
35; 38	1 1/2	PN 280	14; 15; 16	5/8	2-12	1-14	12.5	32	60	16.7	A	2087802052	90-SWSX-38-16
35; 38	1 1/2	PN 280	18; 20	3/4	2-12	1 3/16-12	15.5	33	60	19.4	A	2087812052	90-SWSX-38-20
35; 38	1 1/2	PN 280	22; 25	1	2-12	1 7/16-12	20.5	34	60	20.5	A	2053402052	90-SWSX-38-25
35; 38	1 1/2	PN 280	28; 30; 32	1 1/4	2-12	1 11/16-12	26	34	60	25.9	A	2053412052	90-SWSX-38-30
50	2	PN 280	28; 30; 32	1 1/4	2 1/2-12	1 11/16-12	26	36	75	35.4	A	2087832052	90-SWSX-50-30 ²⁾
50	2	PN 280	35; 38	1 1/2	2 1/2-12	2-12	32	36	75	37.8	A	2087842052	90-SWSX-50-38 ²⁾

²⁾ Special sizes only on request

Style A: Please order union nuts separately.

Style B: This versions are supplied with crimped nut.

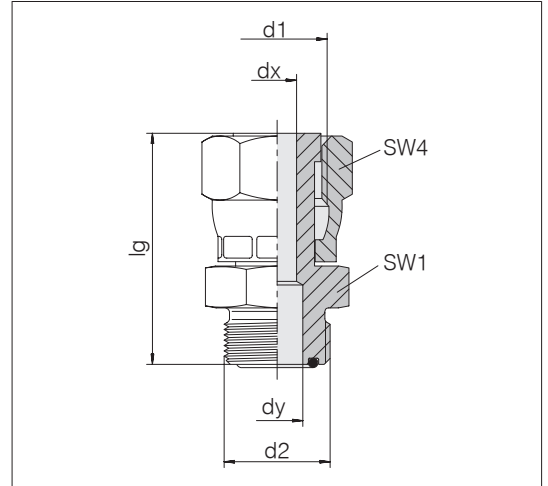
Example for comparison:
10-4TRLO-S



Distance expanders

90° ORFS external thread
 ISO 8434-3
 90° ORFS union nut
 ISO 8434-3

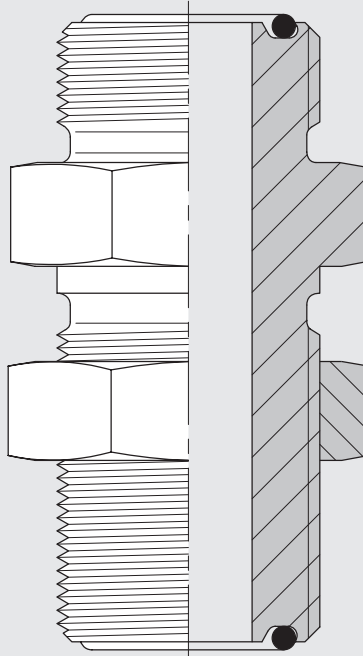
Tube coupling: VOSS *Flare^{ORFS}* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD d1 mm	Inch	Tube OD d2 mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	dx	dy	lg	SW1	SW4	kg/100 ca.	Order-No.	Designation
6	1/4	8; 10	5/16; 3/8	PN 630	9/16-18	11/16-16	4	4	35	19	17	5.8	2053452052	90-SWS-6-10-LG35
8; 10	5/16; 3/8	12	1/2	PN 630	11/16-16	13/16-16	6.5	9.5	39	22	22	8.5	2053462052	90-SWS-10-12-LG39
12	1/2	14; 15; 16	5/8	PN 420	13/16-16	1-14	9	12.5	46	27	24	9.3	2053472052	90-SWS-12-16-LG46
14; 15; 16	5/8	18; 20	3/4	PN 420	1-14	1 3/16-12	11.5	15.5	51	32	30	15.3	2053482052	90-SWS-16-20-LG51
18; 20	3/4	22; 25	1	PN 420	1 3/16-12	1 7/16-12	14	20.5	55	41	36	21.2	2053492052	90-SWS-20-25-LG55
22; 25	1	28; 30; 32	1 1/4	PN 280	1 7/16-12	1 11/16-12	20	26	58	46	41	25.2	2053502052	90-SWS-25-30-LG58
28; 30; 32	1 1/4	35; 38	1 1/2	PN 280	1 11/16-12	2-12	26	32	60	55	50	32.4	2053512052	90-SWS-30-38-LG60

Example for comparison:
 6-4LOHL6

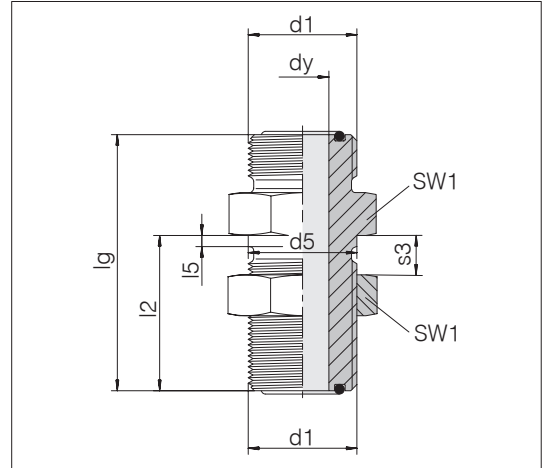
Bulkhead unions



Bulkhead unions

Tube coupling: tube-to-tube VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d5	dy	lg	l2	l5	SW1	kg/100 ca.	s3 max.	min.	Order-No.	Designation
6	1/4	PN 630	9/16-18	14	4.5	48	31.5	1.5	22	7.4	14	1.5	2051652049	90-BHSLN-6
8; 10	5/16; 3/8	PN 630	11/16-16	17.2	6.5	53	34.0	1.5	27	12.1	14	1.5	2051662049	90-BHSLN-10
12	1/2	PN 630	13/16-16	20.6	9.5	58.5	36.5	2.5	30	16.7	14	2.5	2051672049	90-BHSLN-12
14; 15; 16	5/8	PN 420	1-14	25.3	12.5	66.5	40.5	2.5	36	27.7	14	2.5	2051682049	90-BHSLN-16
18; 20	3/4	PN 420	1 3/16-12	30	15.5	69	41.5	3	41	36.9	14	3	2051692049	90-BHSLN-20
22; 25	1	PN 420	1 7/16-12	36.4	20.5	70	42.0	3	46	47.6	14	3	2051702049	90-BHSLN-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	42.8	26	70	42.0	3	50	51.0	14	3	2051712049	90-BHSLN-30
35; 38	1 1/2	PN 280	2-12	50.7	32	70	42.0	3	60	67.4	14	3	2051722049	90-BHSLN-38

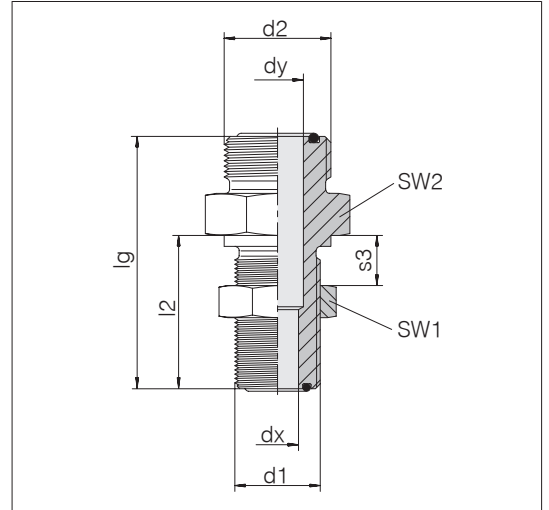
Example for comparison:
6WML0WLNMLS

Bulkhead unions

Tube coupling: tube-to-tube VOSS *Flare ORFS* nach ISO 8434-3/SAE J 1453

Sealing material O-ring: Standard NBR

Reducers

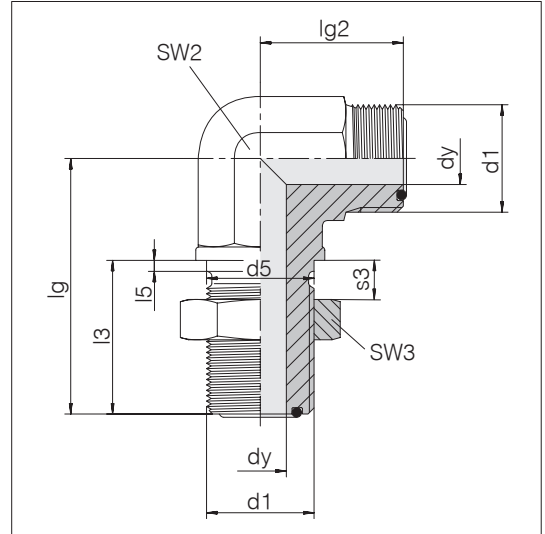


Tube OD d1 mm	Pressure Inch	Tube OD d2 mm	Inch	d1 UN/UNF	d2 UN/UNF	dx	dy	lg	l2	SW1	SW2	s3 max. min.	Order-No.	Designation		
14; 15; 16	5/8	PN 420	8; 10	5/16; 3/8	1-14	11/16-16	12.5	6.5	62.5	36.5	30	36	14	2.5	2051782049	90-BHSLN-16-10
18; 20	3/4	PN 420	22; 25	1	1 3/16-12	1 7/16-12	15.5	20.5	69.5	42.0	46	46	14	3	2051792049	90-BHSLN-20-25

Bulkhead elbows

Tube coupling: tube-to-tube VOSS Flare *ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d5	dy	lg	lg2	l3	l5	SW3	SW2	kg/100 ca.	s3 max.	min.	Order-No.	Designation
6	1/4	PN 630	9/16-18	14	4.5	47	22.5	31.5	1.5	22	14	7.8	14	1.5	2051802049	90-BHELN-6
8; 10	5/16; 3/8	PN 630	11/16-16	17.3	6.5	52	26	34	1.5	27	19	14.6	14	1.5	2051812049	90-BHELN-10
12	1/2	PN 630	13/16-16	20.6	9.5	55.5	29	36.5	2.5	30	19	18.7	14	2.5	2051822049	90-BHELN-12
14; 15; 16	5/8	PN 420	1-14	25.3	12.5	63	34.5	40.5	2.5	36	27	35.5	14	2.5	2051832049	90-BHELN-16
18; 20	3/4	PN 420	1 3/16-12	30	15.5	67	38.5	41.5	3	41	30	47.2	14	3	2051842049	90-BHELN-20
22; 25	1	PN 420	1 7/16-12	36.4	20.5	71	42.5	42	3	46	36	63.9	14	3	2051852049	90-BHELN-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	42.8	26	75.5	45.5	42	3	50	41	71.8	14	3	2051862049	90-BHELN-30
35; 38	1 1/2	PN 280	2-12	50.7	32	79.5	49.5	42	3	60	50	94.5	14	3	2051872049	90-BHELN-38

Example for comparison:
4WELO-WLNL-S

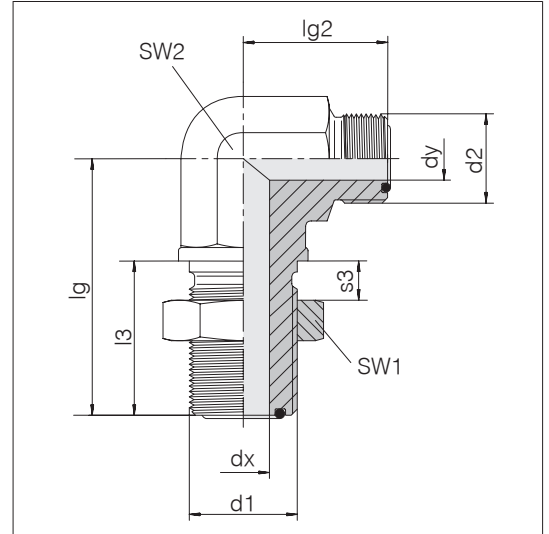


Bulkhead elbows

Tube coupling: tube-to-tube VOSS *Flare ORFS* nach ISO 8434-3/SAE J 1453

Sealing material O-ring: Standard NBR

Reducers

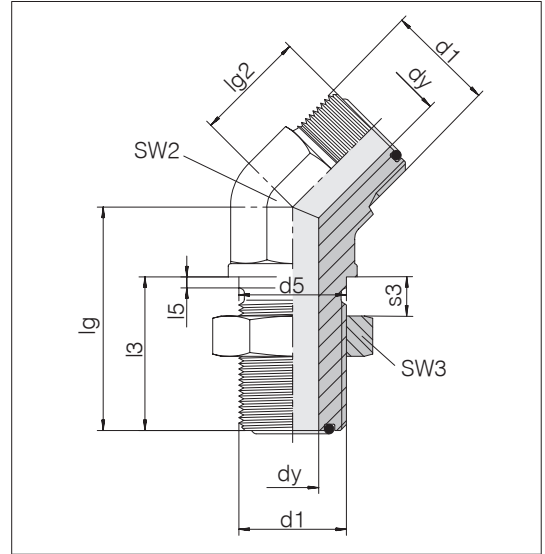


Tube OD d1 mm	Pressure Inch	Tube OD d2 Inch	d1 mm	d1 UN/UNF	d2 mm	d2 UN/UNF	dx	dy	lg	lg2	l3	SW1	SW2	s3 max.	s3 min.	Order-No.	Designation
14; 15; 16	5/8 PN 420	1/2	12	1-14	13/16-16	12.5	9.5	59	34.5	36.5	30	27	14	2.5		2051882049	90-BHELN-16-12
18; 20	3/4 PN 420	1/2	12	1 3/16-12	13/16-16	15.5	9.5	62	38.5	36.5	30	30	14	3		2051892049	90-BHELN-20-12
22; 25	1 PN 420	3/4	18; 20	1 7/16-12	1 3/16-12	20.5	15.5	71	42.5	41.5	41	36	14	3		2051902049	90-BHELN-25-20

45° elbow bulkhead connectors

Tube coupling: tube-to-tube VOSS Flare *ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



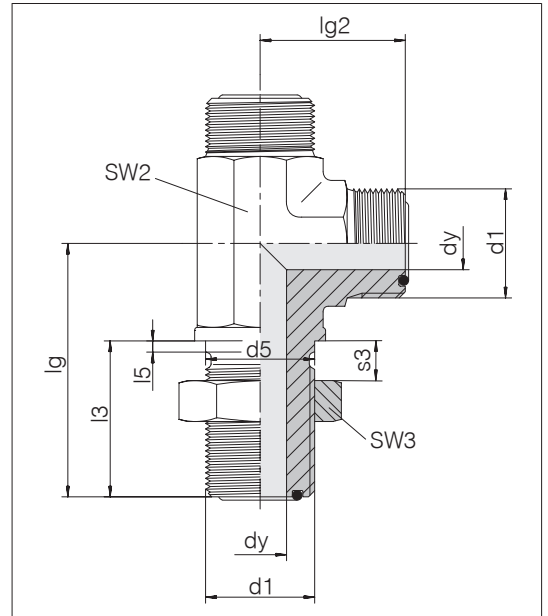
Tube OD mm	Inch	Pressure	d1 UN/UNF	d5	dy	lg	lg2	l3	l5	SW3	SW2	s3 max.	kg/100 ca.	Order-No. min.	Designation	
6	1/4	PN 630	9/16-18	14	4.5	44	16	31.5	1.5	22	14	14	6.5	1.5	2051952049	90-BHE45LN-6
8; 10	5/16; 3/8	PN 630	11/16-16	17.3	6.5	48.5	19	34	1.5	27	19	14	12.3	1.5	2051962049	90-BHE45LN-10
12	1/2	PN 630	13/16-16	20.6	9.5	51	20.5	36.5	2.5	30	19	14	16.3	2.5	2051972049	90-BHE45LN-12
14; 15; 16	5/8	PN 420	1-14	25.3	12.5	56.5	23.5	40.5	2.5	36	27	14	25.2	2.5	2051982049	90-BHE45LN-16
18; 20	3/4	PN 420	1 3/16-12	30	15.5	60.5	26	41.5	3	41	30	14	38.6	3	2051992049	90-BHE45LN-20
22; 25	1	PN 420	1 7/16-12	36.4	20.5	65	30	42	3	46	36	14	46.5	3	2052002049	90-BHE45LN-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	42.8	26	67	32	42	3	50	41	14	57.8	3	2052012049	90-BHE45LN-30
35; 38	1 1/2	PN 280	2-12	50.7	32	67	37	42	3	60	50	14	77.0	3	2052022049	90-BHE45LN-38

Example for comparison:
4 WNLO-WLNL-S

L-bulkhead connectors

Tube coupling: Three-sided VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d5	dy	lg	lg2	l3	l5	SW3	SW2	s3 max.	kg/100 ca.	Order-No. min.	Designation
6	1/4	PN 630	9/16-18	14	4.5	47	22.5	31.5	1.5	22	14	14	9.9	1.5	2052102049 90-BHLLN-6
8; 10	5/16; 3/8	PN 630	11/16-16	17.3	6.5	52	26	34	1.5	27	19	14	17.8	1.5	2052112049 90-BHLLN-10
12	1/2	PN 630	13/16-16	20.6	9.5	55.5	29	36.5	2.5	30	19	14	27.0	2.5	2052122049 90-BHLLN-12
14; 15; 16	5/8	PN 420	1-14	25.3	12.5	63	34.5	40.5	2.5	36	27	14	36.8	2.5	2052132049 90-BHLLN-16
18; 20	3/4	PN 420	1 3/16-12	30	15.5	68.3	38.5	41.5	3	41	30	14	51.6	3	2052142049 90-BHLLN-20
22; 25	1	PN 420	1 7/16-12	36.4	20.5	71	42.5	42	3	46	36	14	67.8	3	2052152049 90-BHLLN-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	42.8	26	75.5	45.5	42	3	50	41	14	98.0	3	2052162049 90-BHLLN-30
35; 38	1 1/2	PN 280	2-12	50.7	32	79.5	49.5	42	3	60	50	14	190.0	3	2052172049 90-BHLLN-38

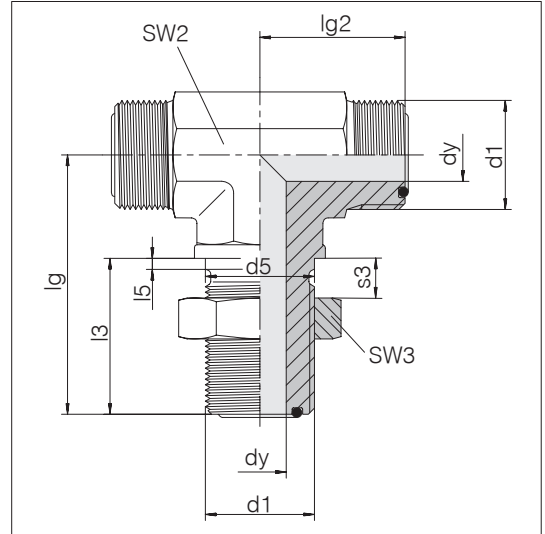
Example for comparison:
4 WJJO-WLNL-S

T-bulkhead connectors

Three-sided tube ends as per ISO 8434-3 / SAE J 1453

Tube coupling: Three-sided VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR

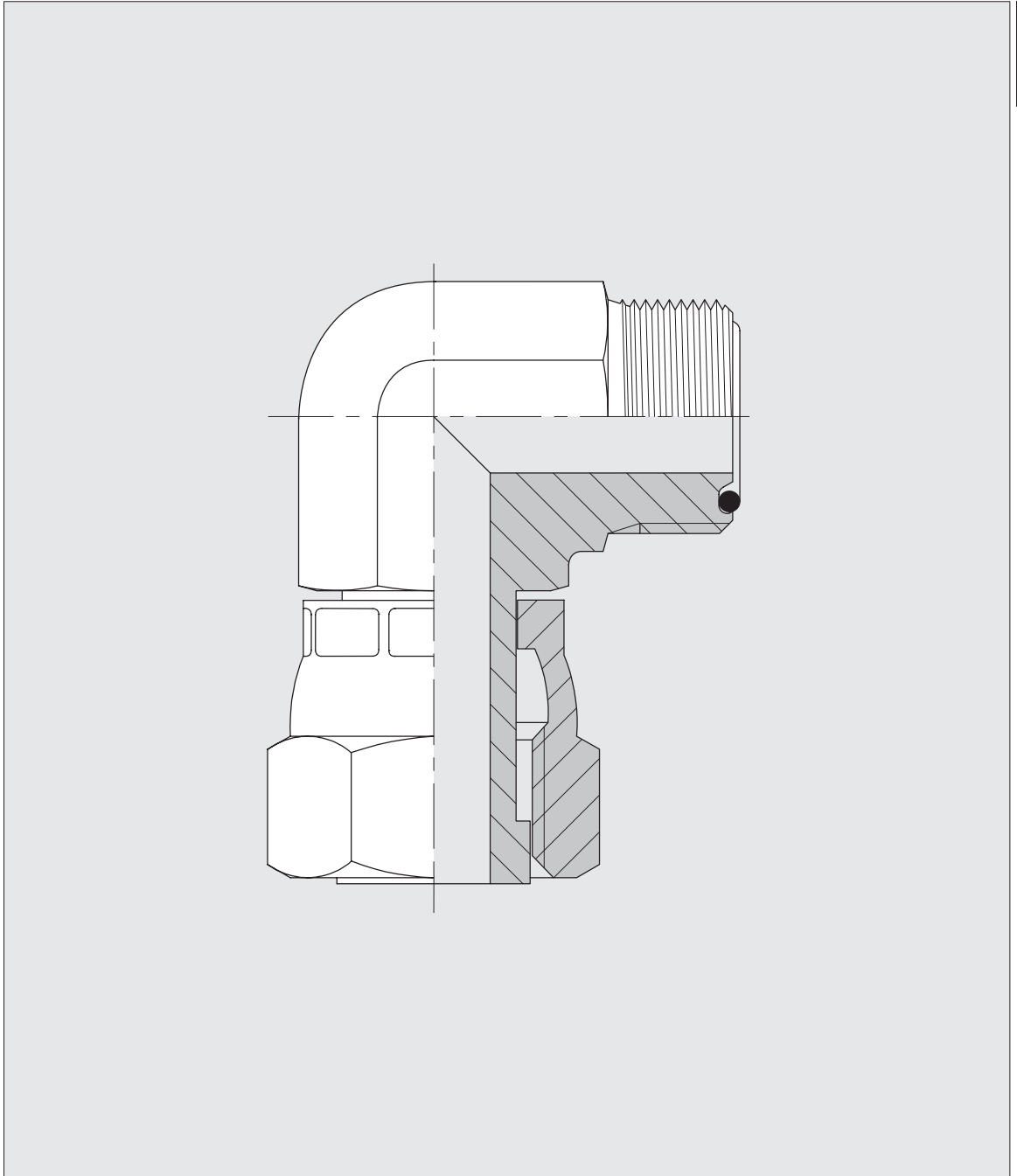


Tube OD mm	Inch	Pressure	d1 UN/UNF	d5	dy	lg	lg2	l3	l5	SW3	SW2	s3 max.	kg/100 ca.	Order-No. min.	Designation
6	1/4	PN 630	9/16-18	14	4.5	47	22.5	31.5	1.5	22	14	14	9.9	1.5	2052252049 90-BHTLN-6
8; 10	5/16; 3/8	PN 630	11/16-16	17.3	6.5	52	26	34	1.5	27	19	14	17.8	1.5	2052262049 90-BHTLN-10
12	1/2	PN 630	13/16-16	20.6	9.5	55.5	29	36.5	2.5	30	19	14	27.0	2.5	2052272049 90-BHTLN-12
14; 15; 16	5/8	PN 420	1-14	25.3	12.5	63	34.5	40.5	2.5	36	27	14	36.8	2.5	2052282049 90-BHTLN-16
18; 20	3/4	PN 420	1 3/16-12	30	15.5	67	38.5	41.5	3	41	30	14	54.7	3	2052292049 90-BHTLN-20
22; 25	1	PN 420	1 7/16-12	36.4	20.5	71	42.5	42	3	46	36	14	67.8	3	2052302049 90-BHTLN-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	42.8	26	75.5	45.5	42	3	50	41	14	98.0	3	2052312049 90-BHTLN-30
35; 38	1 1/2	PN 280	2-12	50.7	32	79.5	49.5	42	3	60	50	14	190.0	3	2052322049 90-BHTLN-38

Example for comparison:
6 WJLO-WLNL-S

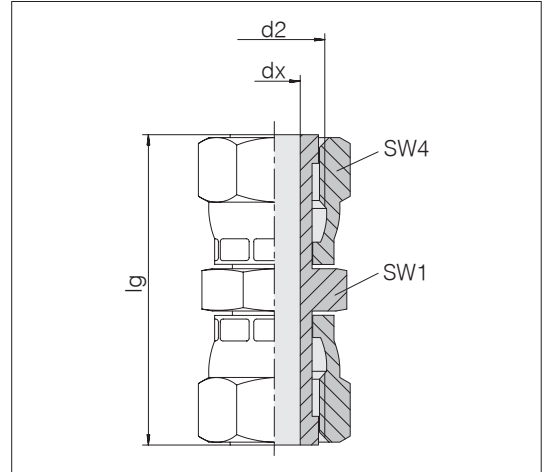


Swivel connectors



Straight swivel connectors

Double-sided ORFS swivel connection



Tube OD mm	Inch	Pressure	d2 UN/UNF	dx	lg	SW1	SW4	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	4	40.5	17	17	5.7	2053552049	90-SW2S-6
8; 10	5/16; 3/8	PN 420	11/16-16	6.5	45	19	22	9.9	2053562049	90-SW2S-10
12	1/2	PN 420	13/16-16	9	54	22	24	11.0	2053572049	90-SW2S-12
14; 15; 16	5/8	PN 420	1-14	11.5	61.5	27	30	23.0	2053582049	90-SW2S-16
18; 20	3/4	PN 420	1 3/16-12	14	69.5	32	36	29.0	2053592049	90-SW2S-20
22; 25	1	PN 420	1 7/16-12	20	75	36	41	48.5	2057762049	90-SW2S-25

Example for comparison:
4 HL6-S

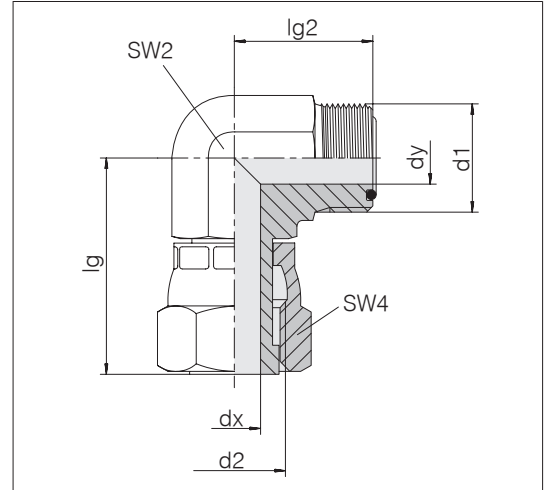


Swivel elbows

ORFS Swivel connection: ISO 8434-3/SAE J1453

Tube coupling: VOSS Flare ^{ORFS} in acc. with
ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	dx	dy	lg	lg2	SW2	SW4	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	9/16-18	4	4.5	26.5	21.5	14	17	5.9	2052652049	90-SWE-6
8; 10	5/16; 3/8	PN 420	11/16-16	11/16-16	6.5	6.5	29	25	19	22	10.5	2052662049	90-SWE-10
12	1/2	PN 420	13/16-16	13/16-16	9	9.5	38	28	19	24	13.3	2052672049	90-SWE-12
14; 15; 16	5/8	PN 420	1-14	1-14	11.5	12.5	41	33.5	27	30	26.3	2052682049	90-SWE-16
18; 20	3/4	PN 420	1 3/16-12	1 3/16-12	14	15.5	46.5	37.5	30	36	37.9	2052692049	90-SWE-20
22; 25	1	PN 420	1 7/16-12	1 7/16-12	20	20.5	53.5	41.5	36	41	55.8	2052702049	90-SWE-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 11/16-12	26	26	58	44.5	41	50	75.3	2052712049	90-SWE-30
35; 38	1 1/2	PN 280	2-12	2-12	32	32	61	49	50	60	108.0	2052722049	90-SWE-38

Example for comparison:
4C6MLOS

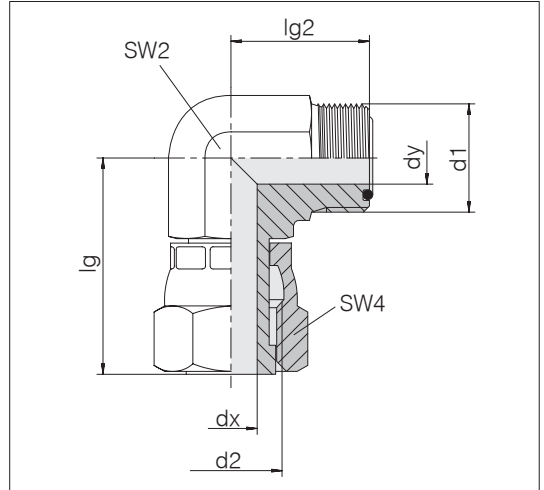
Swivel elbows

ORFS Swivel connection: ISO 8434-3/SAE J1453

Tube coupling: VOSS *Flare* ^{ORFS} nach ISO 8434-3/SAE J 1453

Sealing material O-ring: Standard NBR

Reducers



Tube OD d1		Pressure	Tube OD d2		d1	d2	dx	dy	lg	lg2	SW2	SW4	kg/100 ca.	Order-No.	Designation
mm	Inch		mm	Inch	UN/UNF	UN/UNF									
8; 10	5/16; 3/8	PN 420	6	1/4	11/16-16	9/16-18	4	6.5	29	25	22	17	7.4	2052732049	90-SWE-6-10
28; 30; 32	1 1/4	PN 280	22; 25	1	1 11/16-12	1 7/16-12	20	26	58	45	41	41	65.9	2052742049	90-SWE-25-30

Other sizes on request.

Example for comparison:
SA 507010/1006

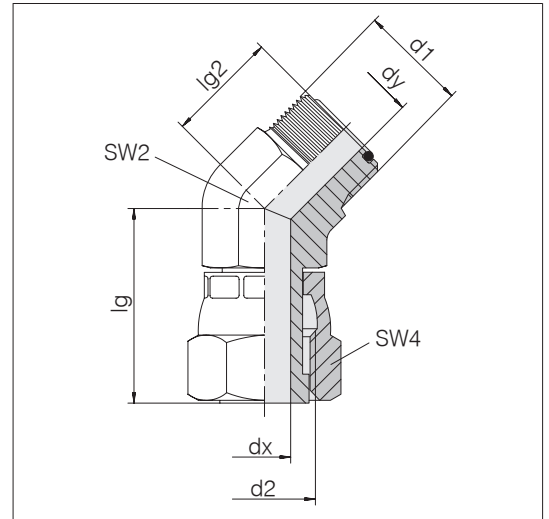


Swivel 45° elbows

ORFS Swivel connection: ISO 8434-3/SAE J1453

Tube coupling: VOSS Flare *ORFS* in acc. with
ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	dx	dy	lg	lg2	SW2	SW4	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	9/16-18	4	4.5	25	16	14	17	4.8	2052802049	90-SWE45-6
8; 10	5/16; 3/8	PN 420	11/16-16	11/16-16	6.5	6.5	29	19	19	22	9.2	2052812049	90-SWE45-10
12	1/2	PN 420	13/16-16	13/16-16	9	9.5	38	20.5	19	24	12.6	2052822049	90-SWE45-12
14; 15; 16	5/8	PN 420	1-14	1-14	11.5	12.5	39	23.5	27	30	21.9	2052832049	90-SWE45-16
18; 20	3/4	PN 420	1 3/16-12	1 3/16-12	14	15.5	44	26	30	36	32.6	2052842049	90-SWE45-20
22; 25	1	PN 420	1 7/16-12	1 7/16-12	20	20.5	48	30	36	41	51.8	2052852049	90-SWE45-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 11/16-12	26	26	50	32	41	50	46.0	2052862049	90-SWE45-30
35; 38	1 1/2	PN 280	2-12	2-12	32	32	52	37	50	60	58.3	2052872049	90-SWE45-38

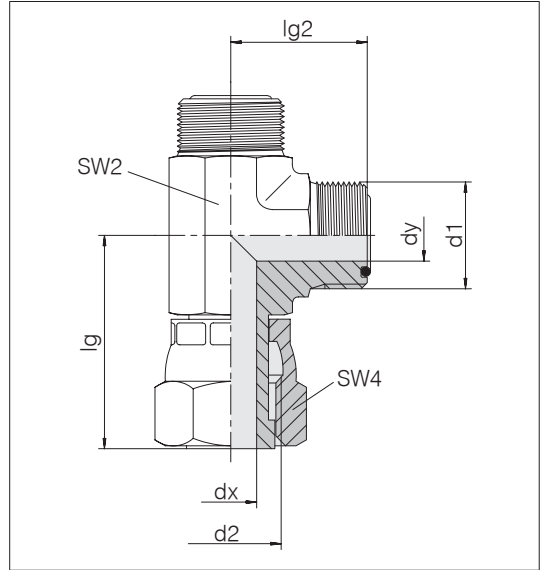
Example for comparison:
4 V6LO-S

Swivel run tees

ORFS Swivel connection: ISO 8434-3/SAE J1453

Tube coupling: tube-to-tube VOSS Flare *ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	dx	dy	lg	lg2	SW2	SW4	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	9/16-18	4.5	4.5	26.5	21.5	14	17	7.7	2052952049	90-SWL-6
8; 10	5/16; 3/8	PN 420	11/16-16	11/16-16	6.5	6.5	29	25	19	22	13.5	2052962049	90-SWL-10
12	1/2	PN 420	13/16-16	13/16-16	9	9.5	38	28	19	24	16.4	2052972049	90-SWL-12
14; 15; 16	5/8	PN 420	1-14	1-14	11.5	12.5	41	33.5	27	30	32.1	2052982049	90-SWL-16
18; 20	3/4	PN 420	1 3/16-12	1 3/16-12	14	15.5	46.5	37.5	30	36	44.5	2052992049	90-SWL-20
22; 25	1	PN 420	1 7/16-12	1 7/16-12	20	20.5	53.5	41.5	36	41	67.1	2053002049	90-SWL-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 11/16-12	26	26	58	44.5	41	50	92.1	2053012049	90-SWL-30
35; 38	1 1/2	PN 280	2-12	2-12	32	32	61	49	50	60	127.0	2053022049	90-SWL-38

Example for comparison:
4R6MLOS



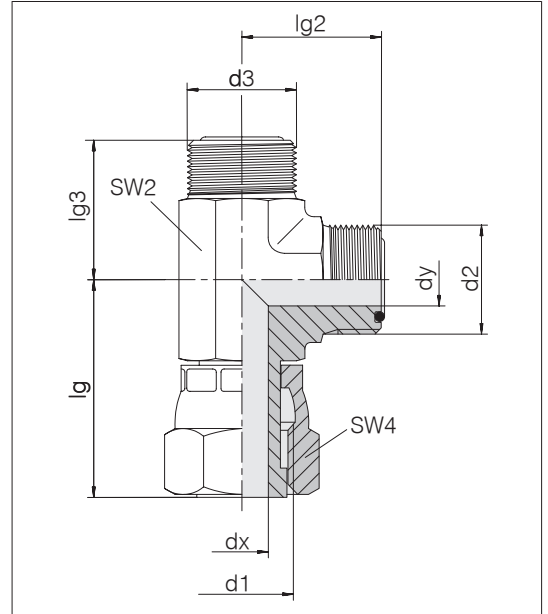
Swivel run tees

ORFS Swivel connection: ISO 8434-3/SAE J1453

Tube coupling: tube-to-tube VOSS *Flare ORFS* nach ISO 8434-3/SAE J 1453

Sealing material O-ring: Standard NBR

Reducers



Tube OD d1		Tube OD d2	Tube OD d3	Pressure	d1	d2	d3	dx	dy	lg	lg2	lg3	SW2	SW4	Order-No.	Designation
mm	Inch	mm	mm		UN/UNF	UN/UNF	UN/UNF									
6	1/4	8; 10	6	PN 420	9/16-18	11/16-16	9/16-18	4	6.5	29	25	25	19	17	2053032049	90-SWL-6-10-6
8; 10	5/16; 3/8	8; 10	6	PN 420	11/16-16	11/16-16	9/16-18	4	6.5	29	25	23.5	19	22	2087592049	90-SWL-10-10-6
12	1/2	6	12	PN 420	13/16-16	9/16-18	13/16-16	9	4.5	38	25	28	19	24	2087602049	90-SWL-12-6-12
12	1/2	8; 10	12	PN 420	13/16-16	11/16-16	13/16-16	9	6.5	38	27	28	19	24	2087612049	90-SWL-12-10-12
12	1/2	12	6	PN 420	13/16-16	13/16-16	9/16-18	4	9.5	38	28	25	19	24	2087622049	90-SWL-12-12-6
12	1/2	12	8; 10	PN 420	13/16-16	13/16-16	11/16-16	6.5	9.5	38	28	27	19	24	2087632049	90-SWL-12-12-10
14; 15; 16	5/8	6	14; 15; 16	PN 420	1-14	9/16-18	1-14	4	4	41	28	33.5	27	30	2087642049	90-SWL-16-6-16
14; 15; 16	5/8	8; 10	14; 15; 16	PN 420	1-14	11/16-16	1-14	6.5	6.5	41	29	33.5	27	30	2087652049	90-SWL-16-10-16
14; 15; 16	5/8	14; 15; 16	6	PN 420	1-14	1-14	9/16-18	4	12.5	41	33.5	28	27	30	2087662049	90-SWL-16-16-6
14; 15; 16	5/8	14; 15; 16	18; 20	PN 420	1-14	1-14	13/16-12	11.5	12.5	46.5	36	37.5	30	30	2087672049	90-SWL-16-16-20
14; 15; 16	5/8	18; 20	14; 15; 16	PN 420	1-14	13/16-12	1-14	11.5	15.5	46.5	37.5	36	30	30	2087682049	90-SWL-16-20-16
18; 20	3/4	12	18; 20	PN 420	13/16-12	13/16-16	13/16-12	14	9.5	46.5	33.5	37.5	30	36	2087692049	90-SWL-20-12-20
18; 15; 16	3/4	14; 15; 16	18; 20	PN 420	13/16-12	1-14	13/16-12	14	12.5	46.5	36	37.5	30	36	2087702049	90-SWL-20-16-20
18; 20	3/4	22; 25	18; 20	PN 420	13/16-12	17/16-12	13/16-12	14	20.5	52.5	42	41.5	36	36	2087712049	90-SWL-20-25-20
22; 25	1	8; 10	22; 25	PN 420	17/16-12	11/16-16	17/16-12	20	6.5	52.5	36	42	36	41	2087722049	90-SWL-25-10-25
22; 25	1	12	22; 25	PN 420	17/16-12	13/16-16	17/16-12	20	9.5	52.5	37.5	42	36	41	2087732049	90-SWL-25-12-25
22; 25	1	18; 20	22; 25	PN 420	17/16-12	13/16-12	17/16-12	20	15.5	52.5	41.5	42	36	41	2087742049	90-SWL-25-20-25

Other sizes on request.

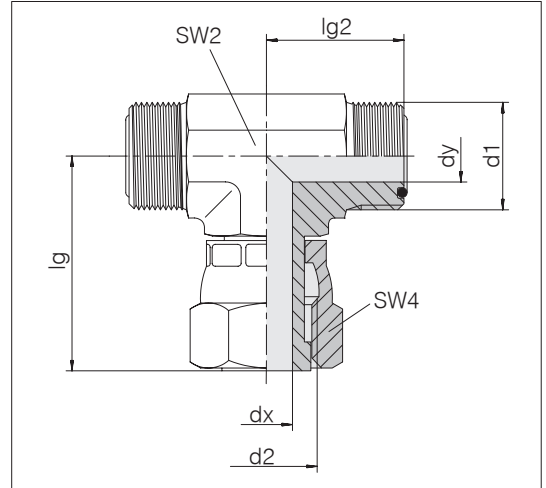
Example for comparison:
SA513001/252512

Swivel branch tees

ORFS Swivel connection: ISO 8434-3/SAE J1453

Tube coupling: tube-to-tube VOSS Flare *ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	dx	dy	lg	lg2	SW2	SW4	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	9/16-18	4	4.5	26.5	21.5	14	17	7.5	2053102049	90-SWT-6
8; 10	5/16; 3/8	PN 420	11/16-16	11/16-16	6.5	6.5	29	25	19	22	13.5	2053112049	90-SWT-10
12	1/2	PN 420	13/16-16	13/16-16	9	9.5	38	28	19	24	16.7	2053122049	90-SWT-12
14; 15; 16	5/8	PN 420	1-14	1-14	11.5	12.5	41	33.5	27	30	31.9	2053132049	90-SWT-16
18; 20	3/4	PN 420	1 3/16-12	1 3/16-12	14	15.5	46.5	37.5	30	36	44.3	2053142049	90-SWT-20
22; 25	1	PN 420	1 7/16-12	1 7/16-12	20	20.5	53.5	41.5	36	41	71.7	2053152049	90-SWT-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 11/16-12	26	26	58	44.5	41	50	89.4	2053162049	90-SWT-30
35; 38	1 1/2	PN 280	2-12	2-12	32	32	61	49	50	60	127.9	2053172049	90-SWT-38

Example for comparison:
4S6MLOS



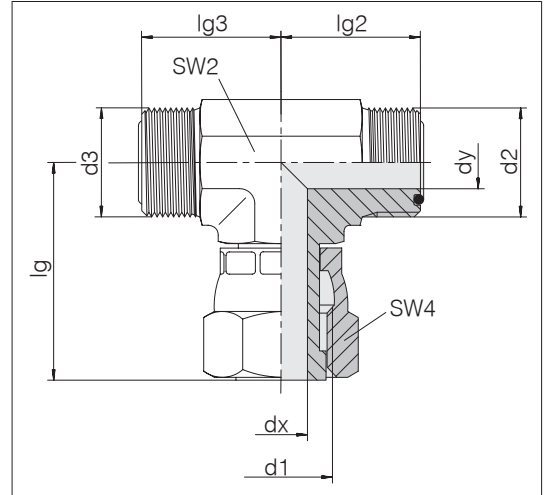
Swivel branch tees

ORFS Swivel connection: ISO 8434-3/SAE J1453

Tube coupling: tube-to-tube VOSS *Flare ORFS* nach ISO 8434-3/SAE J 1453

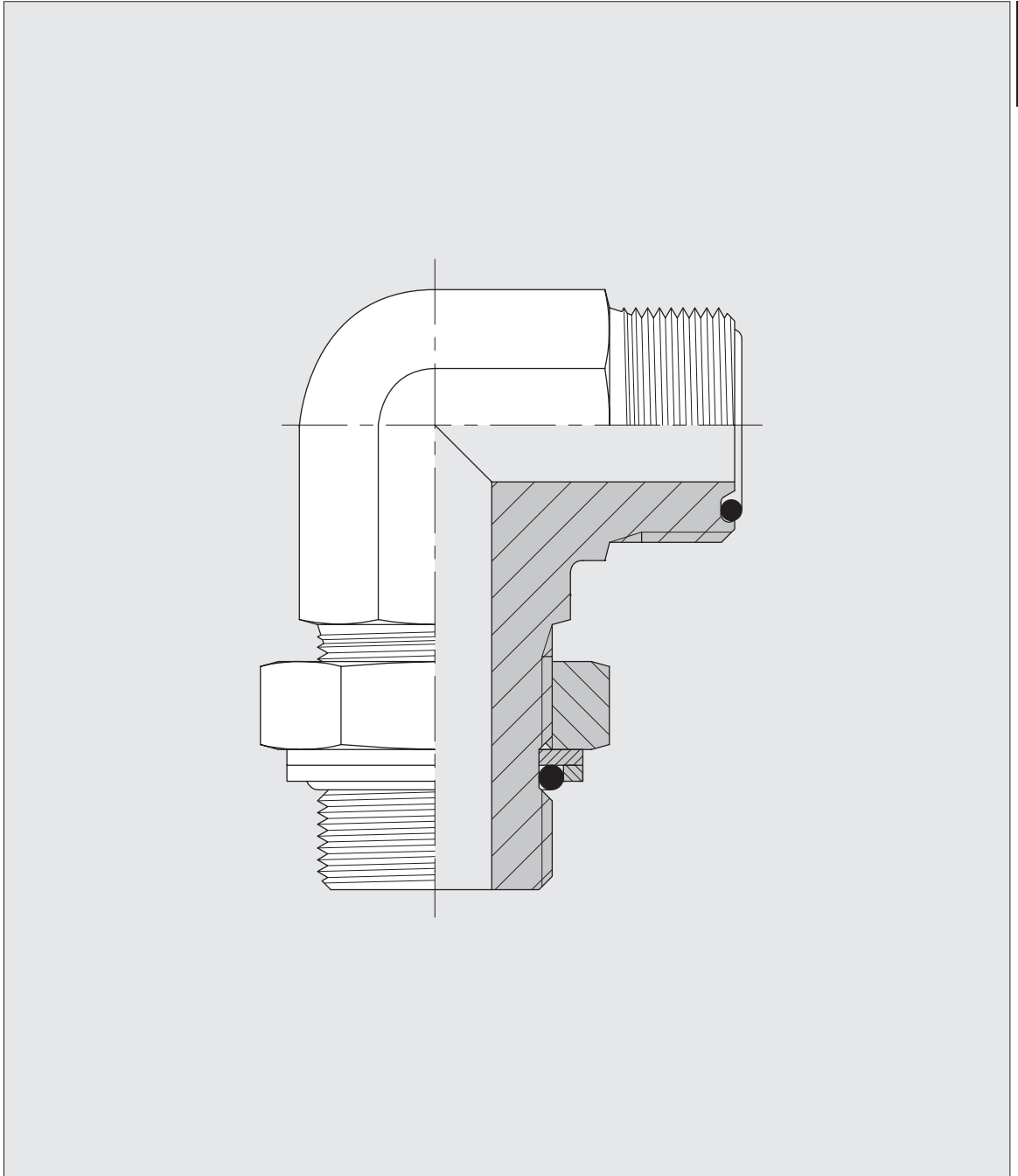
Sealing material O-ring: Standard NBR

Reducers



Tube OD d1 mm	Tube OD d2 Inch mm	Tube OD d3 mm	Pressure	d1 UN/UNF	d2 UN/UNF	d3 UN/UNF	dx	dy	lg	lg2	lg3	SW2	SW4	kg/100 ca.	Order-No.	Designation	
14; 15; 16	5/8	14; 15; 16	12	PN 420	1-14	1-14	13/16-16	11.5	9.5	41	33.5	31	27	30	27.2	2087552049	90-SWT-16-16-12
18; 20	3/4	12	18; 20	PN 420	1 3/16-12	13/16-16	1 3/16-12	14	9.5	46.5	32.5	37.5	30	36	39.7	2087562049	90-SWT-20-12-20
18; 20	3/4	18; 20	14; 15; 16	PN 420	1 3/16-12	1 3/16-12	1-14	14	12.5	46.5	37.5	36	30	36	40.1	2087572049	90-SWT-20-20-16
22; 25	1	18; 20	22; 25	PN 420	1 7/16-12	1 3/16-12	1 7/16-12	20	15.5	52.5	41.5	42	36	41	61.4	2087582049	90-SWT-25-20-25

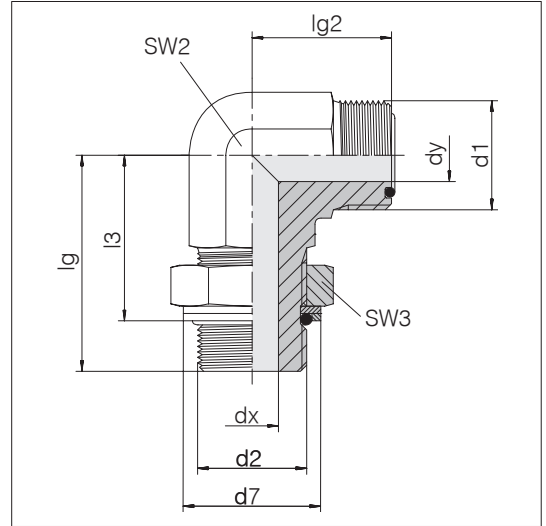
Adjustable stud connectors with locknut



Adjustable stud elbow with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD		Pressure	d1	d2	d7	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
d1			UN/UNF												
mm	Inch														
6	1/4	PN 250	9/16-18	M 10 x 1	14.9	3	4.5	33	21.5	23	14	14	5.0	2087002049	90-SDAE-6-M10FR
6	1/4	PN 250	9/16-18	M 12 x 1,5	17.9	4	4.5	33	21.5	23.5	14	17	5.9	2056952049	90-SDAE-6-M12FR
6	1/4	PN 250	9/16-18	M 14 x 1,5	19.9	6	4.5	35.5	24	26.1	14	17	5.8	2087012049	90-SDAE-6-M14FR
6	1/4	PN 250	9/16-18	M 18 x 1,5	24.9	9	4.5	41	24	28.5	19	24	6.2	2087022049	90-SDAE-6-M18FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 12 x 1,5	17.9	4	6.5	35.5	25	26	19	17	6.1	2087032049	90-SDAE-10-M12FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 14 x 1,5	19.9	6	6.5	35.5	25	26.1	19	19	6.3	2057032049	90-SDAE-10-M14FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 16 x 1,5	22.9	7	6.5	37.5	25	26.6	19	22	6.5	2056962049	90-SDAE-10-M16FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 18 x 1,5	24.9	9	6.5	41	25	28.5	19	24	7.0	2087042049	90-SDAE-10-M18FR
12	1/2	PN 250	13/16-16	M 14 x 1,5	19.9	6	9.5	36	28	26.6	19	19	7.9	2087052049	90-SDAE-12-M14FR
12	1/2	PN 250	13/16-16	M 18 x 1,5	22.9	7	9.5	38	28	27	19	19	8.2	2087062049	90-SDAE-12-M16FR
12	1/2	PN 250	13/16-16	M 18 x 1,5	24.9	9	9.5	41	28	28.6	19	24	12.5	2056972049	90-SDAE-12-M18FR
12	1/2	PN 250	13/16-16	M 22 x 1,5	27.9	12	9.5	49	31	36.1	27	27	13.0	2087072049	90-SDAE-12-M22FR
12	1/2	PN 250	13/16-16	M 27 x 2	32.9	15	9.5	55	33.5	38.4	27	32	14.3	2087092049	90-SDAE-12-M27FR
14; 15; 16	5/8	PN 250	1-14	M 16 x 1,5	22.9	7	12.5	43.5	33.5	32.5	27	22	17.9	2087102049	90-SDAE-16-M16FR
14; 15; 16	5/8	PN 250	1-14	M 18 x 1,5	24.9	9	12.5	47.5	33.5	35.1	27	22	18.5	2087112049	90-SDAE-16-M18FR
14; 15; 16	5/8	PN 250	1-14	M 22 x 1,5	27.9	12	12.5	49	33.5	36	27	27	25.9	2056982049	90-SDAE-16-M22FR
14; 15; 16	5/8	PN 250	1-14	M 27 x 2	32.9	15	12.5	51.5	36	35.5	27	32	26.2	2087132049	90-SDAE-16-M27FR
18; 20	3/4	PN 250	1 3/16-12	M 18 x 1,5	24.9	9	15.5	49.5	37.5	37	30	24	30.0	2087142049	90-SDAE-20-M18FR
18; 20	3/4	PN 250	1 3/16-12	M 22 x 1,5	27.9	12	15.5	49.5	37.5	36.5	30	27	32.2	2087152049	90-SDAE-20-M22FR
18; 20	3/4	PN 250	1 3/16-12	M 27 x 2	32.9	15	15.5	55.5	37.5	39.6	30	32	44.0	2056992049	90-SDAE-20-M27FR
18; 20	3/4	PN 140	1 3/16-12	M 33 x 2	40.9	20	15.5	60	41.5	38.3	36	41	46.1	2087182049	90-SDAE-20-M33FR
22; 25	1	PN 140	1 7/16-12	M 22 x 1,5	27.9	12	20.5	53.5	42	40.2	36	27	47.2	2087192049	90-SDAE-25-M22FR
22; 25	1	PN 140	1 7/16-12	M 27 x 2	32.9	15	20.5	59	42	43	36	32	49.9	2087212049	90-SDAE-25-M27FR
22; 25	1	PN 140	1 7/16-12	M 33 x 2	40.9	20	20.5	59.5	41.5	43.6	36	41	50.1	2057002049	90-SDAE-25-M33FR
22; 25	1	PN 140	1 7/16-12	M 42 x 2	50.9	26	20.5	62	45	45.6	41	50	52.6	2087222049	90-SDAE-25-M42FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	M 27 x 2	32.9	15	26	62	44.5	46	41	32	51.6	2087232049	90-SDAE-30-M27FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	M 33 x 2	40.9	20	26	62	44.5	46.1	41	50	52.4	2087242049	90-SDAE-30-M33FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	M 42 x 2	50.9	26	26	63	44.5	46.2	41	50	56.1	2057012049	90-SDAE-30-M42FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	M 48 x 2	55.9	32	26	66	49	46.6	50	55	57.1	2087252049	90-SDAE-30-M48FR

Example for comparison:
 4M12C8OMLOS

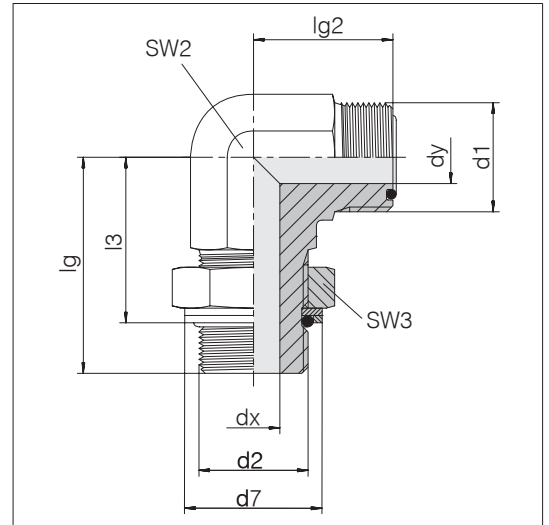
Continued on following page



Adjustable stud elbow with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



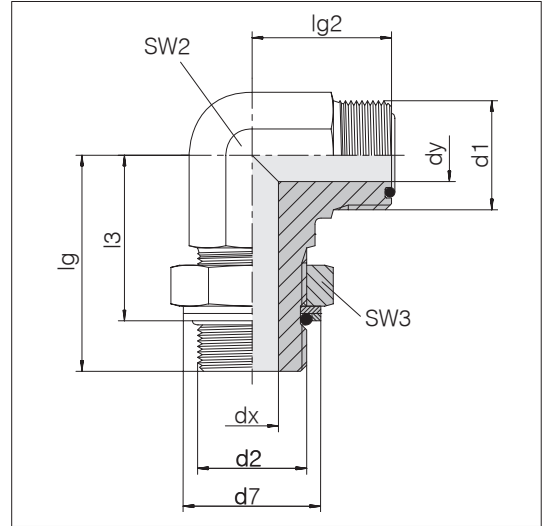
Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2	d7	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
35; 38	1 1/2	PN 140	2-12	M 48 x 2	55.9	32	32	71.5	49	52.2	50	55	68.4	2057022049	90-SDAE-38-M48FR

Example for comparison:
 4M12C8OMLOS

Adjustable stud elbow with lock nut

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD		Pressure	d1	d2	d7	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
d1			UN/UNF	BSPP											
mm	Inch														
6	1/4	PN 250	9/16-18	1/8-28	15	4.4	4.5	30	21.5	22.8	14	14	5.1	2056652049	90-SDAE-6-G1/8FR
6	1/4	PN 250	9/16-18	1/4-19	19.5	7.5	4.5	36	23.5	26.7	19	19	8.7	2056662049	90-SDAE-6-G1/4FR
6	1/4	PN 250	9/16-18	3/8-19	23.5	9.9	4.5	38	23.5	28.8	19	22	9.9	2056672049	90-SDAE-6-G3/8FR
6	1/4	PN 250	9/16-18	1/2-14	28.5	12.3	4.5	48.5	25	35.6	27	27	15.3	2057042049	90-SDAE-6-G1/2FR
8; 10	5/16; 3/8	PN 250	11/16-16	1/8-28	15	4.4	6.5	34	25	26.8	19	14	8.1	2057052049	90-SDAE-10-G1/8FR
8; 10	5/16; 3/8	PN 250	11/16-16	1/4-19	19.5	7.5	6.5	36	25	26.7	19	19	9.7	2056682049	90-SDAE-10-G1/4FR
8; 10	5/16; 3/8	PN 250	11/16-16	3/8-19	23.5	9.9	6.5	38	26.5	28.8	19	22	10.6	2056692049	90-SDAE-10-G3/8FR
8; 10	5/16; 3/8	PN 250	11/16-16	1/2-14	28.5	12.3	6.5	48.5	29	35.6	27	27	22.2	2056702049	90-SDAE-10-G1/2FR
12	1/2	PN 250	13/16-16	1/4-19	19.5	7.5	9.5	35.5	28	26.2	19	19	9.9	2056722049	90-SDAE-12-G1/4FR
12	1/2	PN 250	13/16-16	3/8-19	23.5	9.9	9.5	38	28	28.8	19	22	10.8	2056712049	90-SDAE-12-G3/8FR
12	1/2	PN 250	13/16-16	1/2-14	28.5	12.3	9.5	48.5	31	35.6	27	27	22.7	2056732049	90-SDAE-12-G1/2FR
12	1/2	PN 250	13/16-16	3/4-14	34.5	15.5	9.5	51.5	33.5	38.6	30	36	32.9	2056742049	90-SDAE-12-G3/4FR
12	1/2	PN 250	13/16-16	1-11	43.5	21.5	9.5	58.5	38	43.9	36	41	34.7	2057062049	90-SDAE-12-G1FR
14; 15; 16	5/8	PN 250	1-14	3/8-19	23.5	9.9	12.5	40.5	33.5	31.3	27	22	23.5	2056762049	90-SDAE-16-G3/8FR
14; 15; 16	5/8	PN 250	1-14	1/2-14	28.5	12.3	12.5	48.5	33.5	35.6	27	27	24.7	2056752049	90-SDAE-16-G1/2FR
14; 15; 16	5/8	PN 250	1-14	3/4-14	34.5	15.5	12.5	51.5	36	38.6	30	36	35.2	2056772049	90-SDAE-16-G3/4FR
14; 15; 16	5/8	PN 250	1-14	1-11	43.5	21.5	12.5	58.5	39.5	43.9	36	41	38.2	2056782049	90-SDAE-16-G1FR
18; 20	3/4	PN 250	1 3/16-12	1/2-14	28.5	12.3	15.5	49.5	37.5	36.6	30	27	29.7	2056802049	90-SDAE-20-G1/2FR
18; 20	3/4	PN 250	1 3/16-12	3/4-14	34.5	15.5	15.5	51.5	37.5	38.6	30	36	35.5	2056792049	90-SDAE-20-G3/4FR
18; 20	3/4	PN 250	1 3/16-12	1-11	43.5	21.5	15.5	58.5	41	43.9	36	41	51.3	2056812049	90-SDAE-20-G1FR
22; 25	1	PN 250	1 7/16-12	1/2-14	28.5	12.3	15.5	55	42	42.1	36	27	48.2	2057082049	90-SDAE-25-G1/2FR
22; 25	1	PN 250	1 7/16-12	3/4-14	34.5	15.5	20.5	56	41.5	43.1	36	36	50.6	205682049	90-SDAE-25-G3/4FR
22; 25	1	PN 250	1 7/16-12	1-11	43.5	21.5	20.5	58.5	41.5	43.9	36	41	55.1	2056822049	90-SDAE-25-G1FR
22; 25	1	PN 175	1 7/16-12	1 1/4-11	52.5	27.5	20.5	61	44.5	46.4	41	50	75.8	2056842049	90-SDAE-25-G11/4FR
28; 30; 32	1 1/4	PN 250	1 11/16-12	1-11	43.5	21.5	26	61	44.5	46.4	41	41	66.7	2056862049	90-SDAE-30-G1FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	1 1/4-11	52.5	27.5	26	61	44.5	46.4	41	50	71.2	2056852049	90-SDAE-30-G11/4FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	1 1/2-11	60	33	26	64.5	49	49.9	50	55	82.1	2056872049	90-SDAE-30-G11/2FR
35; 38	1 1/2	PN 140	2-12	1 1/4-11	52.5	27.5	20.5	63.5	49	49.1	50	50	90.0	2057092049	90-SDAE-38-G11/4FR
35; 38	1 1/2	PN 140	2-12	1 1/2-11	60	33	32	64.5	49	49.9	50	55	95.3	2056882049	90-SDAE-38-G11/2FR

Example for comparison:
 4C4OMLOS

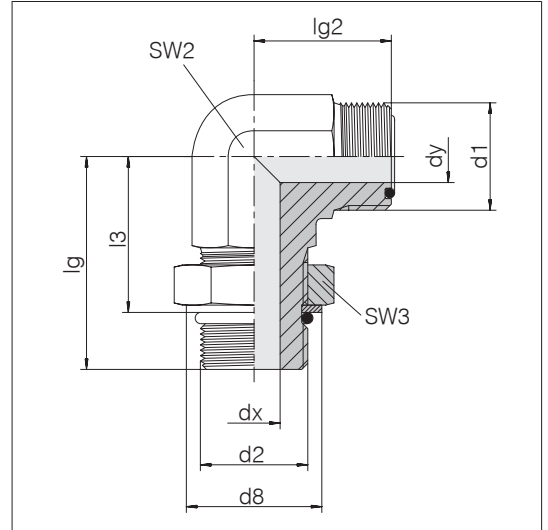
BSPP threaded ports
 as per ISO 1179-1
 Type W wide version.



Adjustable stud elbow with lock nut

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS Flare ^{ORFS} in acc. with ISO 8434-3/SAE J1453
 Sealing material O-Ring: Standard NBR



Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	d8	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	7/16-20	16.5	4.5	4.5	32.5	21.5	22	14	17	5.8	2056302049	90-SDAE-6-U7/16-20F
6	1/4	PN 420	9/16-18	9/16-18	20.2	7.5	4.5	37	23.5	24.8	19	19	9.0	2056312049	90-SDAE-6-U9/16-18F
6	1/4	PN 420	9/16-18	3/4-16	21.8	10	4.5	40.5	25	26.6	19	24	11.0	2056232049	90-SDAE-6-U3/4-16F
6	1/4	PN 420	9/16-18	7/8-14	26.8	12.5	4.5	50	28	33.8	27	27	22.1	2056242049	90-SDAE-6-U7/8-14F
8; 10	5/16; 3/8	PN 420	11/16-16	7/16-20	16.5	4.5	6.5	35	25	23.5	19	17	9.2	2056332049	90-SDAE-10-U7/16-20F
8; 10	5/16; 3/8	PN 420	11/16-16	1/2-20	16.8	6	6.5	35	25	23	19	19	9.4	2056252049	90-SDAE-10-U1/2-20F
8; 10	5/16; 3/8	PN 420	11/16-16	9/16-18	20.2	7.5	6.5	37	25	24.8	19	19	9.2	2056322049	90-SDAE-10-U9/16-18F
8; 10	5/16; 3/8	PN 420	11/16-16	3/4-16	25.7	10	6.5	40.5	26.5	26.6	19	24	12.3	2056342049	90-SDAE-10-U3/4-16F
8; 10	5/16; 3/8	PN 420	11/16-16	7/8-14	29.3	12.5	6.5	50	29	33.8	27	27	23.2	2056352049	90-SDAE-10-U7/8-14F
8; 10	5/16; 3/8	PN 420	11/16-16	1 1/16-12	31.8	15.5	6.5	55	33	36.5	27	36	25.0	2056262049	90-SDAE-10-U11/16-12F
12	1/2	PN 420	13/16-16	7/16-20	13.8	4.5	9.5	35	28	23.5	19	17	10.1	2056272049	90-SDAE-12-U7/16-20F
12	1/2	PN 420	13/16-16	9/16-18	20.2	7.5	9.5	38.5	28	26.3	19	19	9.7	2056372049	90-SDAE-12-U9/16-18F
12	1/2	PN 420	13/16-16	3/4-16	25.7	10	9.5	40.5	28	26.6	19	24	12.8	2056362049	90-SDAE-12-U3/4-16F
12	1/2	PN 420	13/16-16	7/8-14	29.3	12.5	9.5	50	31	33.8	27	27	23.7	2056382049	90-SDAE-12-U7/8-14F
12	1/2	PN 420	13/16-16	1 1/16-12	36.7	15.5	9.5	55	33.5	36.5	30	36	34.9	2056392049	90-SDAE-12-U11/16-12F
14; 15; 16	5/8	PN 420	1-14	9/16-18	16.8	7.5	12.5	41.5	33.5	29.3	27	19	20.0	2056282049	90-SDAE-16-U9/16-18F
14; 15; 16	5/8	PN 420	1-14	3/4-16	25.7	10	12.5	45.5	33.5	31.6	27	24	23.4	2056412049	90-SDAE-16-U3/4-16F
14; 15; 16	5/8	PN 420	1-14	7/8-14	29.3	12.5	12.5	50	33.5	33.8	27	27	25.7	2056402049	90-SDAE-16-U7/8-14F
14; 15; 16	5/8	PN 420	1-14	1 1/16-12	36.7	15.5	12.5	55	36	36.5	30	36	37.2	2056422049	90-SDAE-16-U11/16-12F
14; 15; 16	5/8	PN 380	1-14	1 5/16-12	40.8	21.5	12.5	61.5	40	43	36	41	41.2	2056292049	90-SDAE-16-U15/16-12F
18; 20	3/4	PN 420	1 3/16-12	3/4-16	25.7	10	15.5	46.5	37.5	32.6	30	24	30.0	2056442049	90-SDAE-20-U3/4-16F
18; 20	3/4	PN 420	1 3/16-12	7/8-14	29.3	12.5	15.5	51	37.5	34.8	30	27	29.6	2056452049	90-SDAE-20-U7/8-14F
18; 20	3/4	PN 420	1 3/16-12	1 1/16-12	36.7	15.5	15.5	55	37.5	36.5	30	36	38.3	2056432049	90-SDAE-20-U11/16-12F
18; 20	3/4	PN 380	1 3/16-12	1 5/16-12	44	21.5	15.5	59.5	41	41	36	41	51.4	2056462049	90-SDAE-20-U15/16-12F
22; 25	1	PN 420	1 7/16-12	1 1/16-12	36.7	15.5	20.5	59	41.5	40.5	36	36	50.7	2056482049	90-SDAE-25-U11/16-12F
22; 25	1	PN 380	1 7/16-12	1 5/16-12	44	21.5	20.5	59	41.5	41	36	41	53.6	2056472049	90-SDAE-25-U15/16-12F
22; 25	1	PN 280	1 7/16-12	1 5/8-12	55	27.5	20.5	62	44.5	43.5	41	50	58.0	2056492049	90-SDAE-25-U15/8-12F

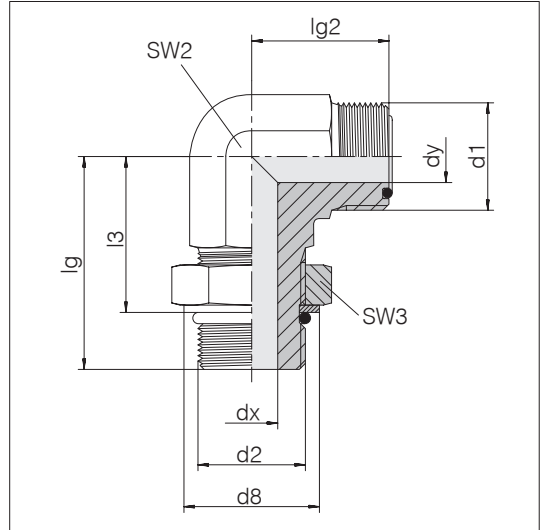
Example for comparison:
6-4 C5OLO-S

Continued on following page

Adjustable stud elbow with lock nut

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS Flare *ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD	Pressure	d1	d2	d8	dx	dy	lg	lg2	l3	SW2	SW3	kg/100	Order-No.	Designation
d1		UN/UNF	UN/UNF									ca.		
mm	Inch													
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/16-12	44	21.5	26	61.5	44.5	43	41	66.1	2056512049	90-SDAE-30-U15/16-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/8-12	55	27.5	26	62.5	44.5	44	41	56.3	2056502049	90-SDAE-30-U15/8-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 7/8-12	62.3	33.5	26	66	49	47.5	55	98.3	2056522049	90-SDAE-30-U17/8-12F
35; 38	1 1/2	PN 280	2-12	1 5/8-12	55	27.5	32	66	49	47.5	50	112.7	2056542049	90-SDAE-38-U15/8-12F
35; 38	1 1/2	PN 280	2-12	1 7/8-12	62.3	33.5	32	66	49	47.5	50	111.9	2056532049	90-SDAE-38-U17/8-12F

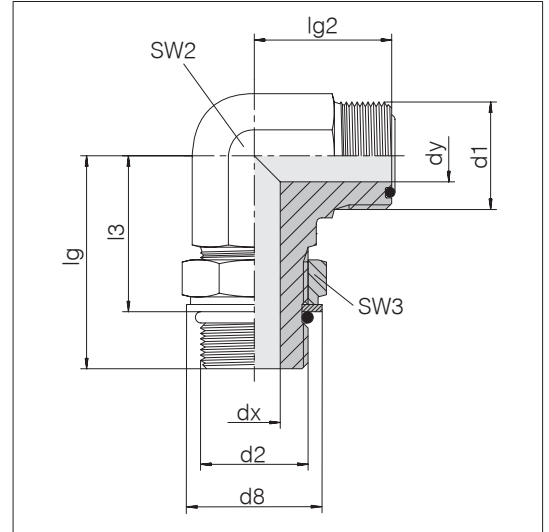
Example for comparison:
 6-4 C5OLO-S



Adjustable stud elbow with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 6149
 Sealing type: O-Ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



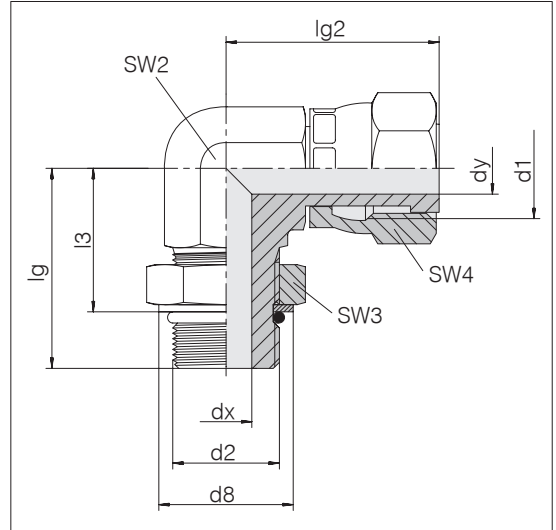
Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2	d8	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	M 10 x 1	14.5	3	4.5	33	21.5	21.9	14	14	4.3	2056552049	90-SDAE-6-M10F
6	1/4	PN 420	9/16-18	M 12 x 1,5	17.5	4	4.5	33	21.5	21.9	14	17	5.8	2056052049	90-SDAE-6-M12F
6	1/4	PN 420	9/16-18	M 14 x 1,5	19.5	6	4.5	35.5	24	24.4	19	19	5.5	2056062049	90-SDAE-6-M14F
8; 10	5/16; 3/8	PN 420	11/16-16	M 12 x 1,5	17.5	4	6.5	35.5	25	24.4	19	17	6.0	2056072049	90-SDAE-10-M12F
8; 10	5/16; 3/8	PN 420	11/16-16	M 14 x 1,5	19.5	6	6.5	35.5	25	24.4	19	19	9.6	2056082049	90-SDAE-10-M14F
8; 10	5/16; 3/8	PN 420	11/16-16	M 16 x 1,5	22.5	7	6.5	37.5	25	25	19	22	11.0	2056092049	90-SDAE-10-M16F
12	1/2	PN 420	13/16-16	M 14 x 1,5	19.5	6	9.5	36	28	24.9	19	19	15.0	2056102049	90-SDAE-12-M14F
12	1/2	PN 420	13/16-16	M 16 x 1,5	22.5	7	9.5	38	28	25.4	19	22	15.4	2056562049	90-SDAE-12-M16F
12	1/2	PN 420	13/16-16	M 18 x 1,5	24.5	9	9.5	41	28	27	19	24	16.1	2056112049	90-SDAE-12-M18F
12	1/2	PN 420	13/16-16	M 22 x 1,5	27.5	12	9.5	49	31	34.3	27	27	24.6	2056122049	90-SDAE-12-M22F
12	1/2	PN 420	13/16-16	M 27 x 2	32.5	15	9.5	55	33.5	36.7	30	32	25.6	2056572049	90-SDAE-12-M27F
14; 15; 16	5/8	PN 420	1-14	M 16 x 1,5	22.5	7	12.5	43.5	33.5	30.9	27	22	18.5	2056582049	90-SDAE-16-M16F
14; 15; 16	5/8	PN 420	1-14	M 18 x 1,5	24.5	9	12.5	47.5	33.5	33.5	27	24	19.0	2056132049	90-SDAE-16-M18F
14; 15; 16	5/8	PN 420	1-14	M 22 x 1,5	27.5	12	12.5	49	33.5	34.3	27	27	25.8	2056142049	90-SDAE-16-M22F
14; 15; 16	5/8	PN 420	1-14	M 27 x 2	32.5	15	12.5	51.5	36	33.2	30	32	27.0	2056592049	90-SDAE-16-M27F
18; 20	3/4	PN 420	1 3/16-12	M 22 x 1,5	27.5	12	15.5	49.5	37.5	34.8	30	27	39.0	2056152049	90-SDAE-20-M22F
18; 20	3/4	PN 420	1 3/16-12	M 27 x 2	32.5	15	15.5	55.5	37.5	37.3	30	32	36.5	2056162049	90-SDAE-20-M27F
18; 20	3/4	PN 420	1 3/16-12	M 33 x 2	41.5	20	15.5	60	41.5	41.7	36	41	37.1	2056602049	90-SDAE-20-M33F
22; 25	1	PN 420	1 7/16-12	M 22 x 1,5	27.5	12	20.5	53.5	42	38.5	36	27	53.9	2056612049	90-SDAE-25-M22F
22; 25	1	PN 420	1 7/16-12	M 27 x 2	32.5	15	20.5	59	42	40.7	36	32	55.2	2056622049	90-SDAE-25-M27F
22; 25	1	PN 420	1 7/16-12	M 33 x 2	41.5	20	20.5	59.5	41.5	41.3	36	41	56.8	2056172049	90-SDAE-25-M33F
22; 25	1	PN 280	1 7/16-12	M 42 x 2	50.5	26	20.5	62	45	43.7	41	50	58.1	2056632049	90-SDAE-25-M42F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 33 x 2	41.5	20	26	62	44.5	43.8	41	41	53.0	2056182049	90-SDAE-30-M33F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 42 x 2	50.5	26	26	63	44.5	44.3	41	50	72.9	2056192049	90-SDAE-30-M42F
35; 38	1 1/2	PN 280	2-12	M 48 x 2	55.5	32	32	71.5	49	50.3	50	55	68.4	2056202049	90-SDAE-38-M48F

Example for comparison:
 4M12C87OMLOS

Adjustable locknut elbows

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

ORFS Swivel connection: ISO 8434-3/SAE J1453



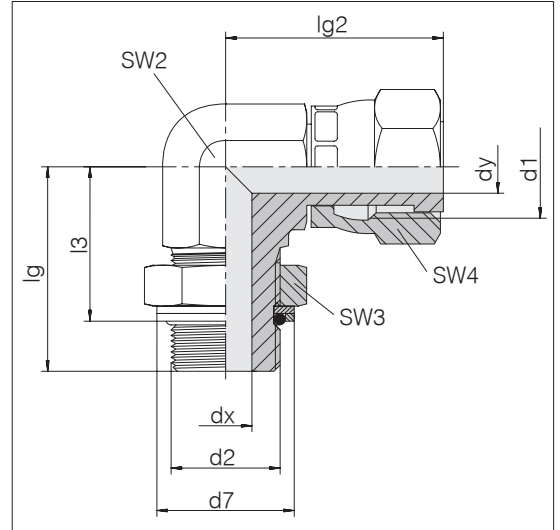
Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	d8	dx	dy	lg	lg2	l3	SW2	SW3	SW4	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	7/16-20	16.5	4.5	4	33	26.5	21.5	14	17	17	4.8	2052502049	90-SWSDAE-6-U7/16-20F
8; 10	5/16; 3/8	PN 420	11/16-16	9/16-18	20.2	7.5	6.5	37	30	24.8	19	19	22	10.0	2052512049	90-SWSDAE-10-U9/16-18F
12	1/2	PN 420	13/16-16	9/16-18	20.2	7.5	9	37	38	26.3	19	19	24	9.2	2052582049	90-SWSDAE-12-U9/16-18F
12	1/2	PN 420	13/16-16	3/4-16	25.7	10	9	40.5	38	26.6	19	24	24	10.4	2052522049	90-SWSDAE-12-U3/4-16F
14; 15; 16	5/8	PN 420	1-14	3/4-16	25.7	10	11.5	45.5	41	31.6	27	24	30	19.3	2052592049	90-SWSDAE-16-U3/4-16F
14; 15; 16	5/8	PN 420	1-14	7/8-14	29.3	12.5	11.5	50	41	33.7	27	27	30	21.0	2052532049	90-SWSDAE-16-U7/8-14F
18; 20	3/4	PN 420	1 3/16-12	1 1/16-12	36.7	15.5	14	55	46.5	36.5	30	36	36	26.5	2052542049	90-SWSDAE-20-U11/16-12F
22; 25	1	PN 380	1 7/16-12	1 5/16-12	44	21.5	20	59.5	53.5	41	36	41	41	38.7	2052552049	90-SWSDAE-25-U15/16-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/8-12	55	27.5	26	62	58	43.5	41	50	50	51.5	2052562049	90-SWSDAE-30-U15/8-12F
35; 38	1 1/2	PN 280	2-12	1 7/8-12	62.3	33.5	32	66	61	47.5	50	55	60	96.0	2052572049	90-SWSDAE-38-U17/8-12F

Example for comparison:
 4 AOEL6-S

Adjustable locknut elbows

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

ORFS Swivel connection: ISO 8434-3/SAE J1453



Tube OD		Pressure	d1	d2	d7	dx	dy	lg	lg2	l3	SW2	SW3	SW4	Order-No.	Designation
d1			UN/UNF	BSPP											
mm	Inch														
6	1/4	PN 250	9/16-18	1/8-28	15	4.4	4	30	26.5	22.8	14	14	17	2052602049	90-SWSDAE-6-G1/8FR
6	1/4	PN 250	9/16-18	1/4-19	19.5	7.5	4	36	26.5	26.7	14	19	17	2052612049	90-SWSDAE-6-G1/4FR
8; 10	5/16; 3/8	PN 250	11/16-16	1/4-19	19.5	7.5	6.5	36	30	26.7	19	19	22	2052622049	90-SWSDAE-10-G1/4FR
8; 10	5/16; 3/8	PN 250	11/16-16	3/8-19	23.5	9.9	6.5	38	30	28.8	19	22	22	2052632049	90-SWSDAE-10-G3/8FR
12	1/2	PN 250	13/16-16	3/8-19	23.5	9.9	9	38	38	28.8	19	22	24	2052642049	90-SWSDAE-12-G3/8FR
12	1/2	PN 250	13/16-16	1/2-14	28.5	12.3	9	48.5	38	35.6	19	27	24	2052752049	90-SWSDAE-12-G1/2FR
14; 15; 16	5/8	PN 250	1-14	1/2-14	28.5	12.3	11.5	48.5	41	35.6	27	27	30	2052762049	90-SWSDAE-16-G1/2FR
14; 15; 16	5/8	PN 250	1-14	3/4-14	34.5	15.5	11.5	51.5	41	38.6	27	36	30	2052772049	90-SWSDAE-16-G3/4FR
18; 20	3/4	PN 250	1 3/16-12	3/4-14	34.5	15.5	14	51.5	46.5	38.6	30	36	36	2052782049	90-SWSDAE-20-G3/4FR
18; 20	3/4	PN 250	1 3/16-12	1-11	43.5	21.5	14	58.5	46.5	43.9	30	41	36	2052792049	90-SWSDAE-20-G1FR
22; 25	1	PN 250	1 7/16-12	1-11	43.5	21.5	20	58.5	53.5	43.9	36	41	41	2052882049	90-SWSDAE-25-G1FR
22; 25	1	PN 175	1 7/16-12	1 1/4-11	52.5	27.5	20	61	53.5	46.4	36	50	41	2052892049	90-SWSDAE-25-G11/4FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	1 1/4-11	52.5	27.5	26	61	58	46.4	41	50	50	2052902049	90-SWSDAE-30-G11/4FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	1 1/2-11	60	33	26	64.5	58	49.9	41	60	50	2052912049	90-SWSDAE-30-G11-2FR
35; 38	1 1/2	PN 140	2-12	1 1/2-11	60	33	32	64.5	61	49.9	50	60	55	2052922049	90-SWSDAE-38-G11-2FR

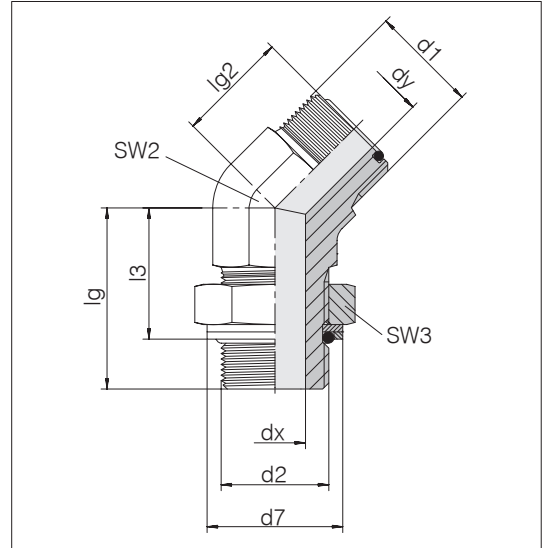
Example for comparison:
 A507142/1217

BSPP threaded ports
 as per ISO 1179-1
 Type W wide version.

45° Adjustable stud elbow with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare* ^{ORFS} in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



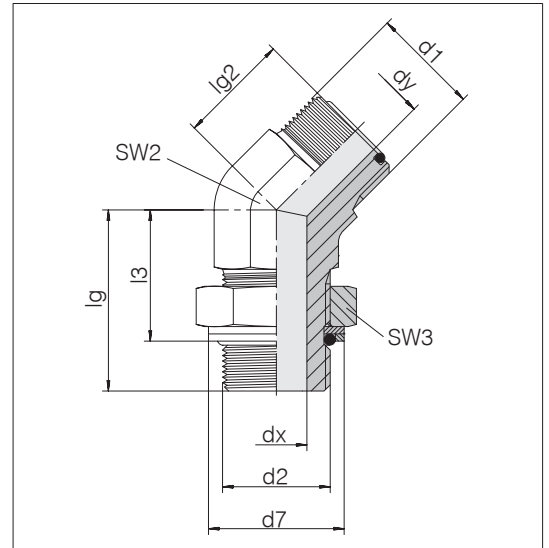
Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2	d7	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
6	1/4	PN 250	9/16-18	M 10 x 1	14.9	3	4.5	30	16	21.5	14	14	4.0	2086112049	90-SDAE45-6-M10FR
6	1/4	PN 250	9/16-18	M 12 x 1,5	17.9	4	4.5	30	16	20.5	14	17	4.4	2058002049	90-SDAE45-6-M12FR
6	1/4	PN 250	9/16-18	M 14 x 1,5	19.9	6	4.5	31.5	18	22.1	19	19	4.9	2086122049	90-SDAE45-6-M14FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 14 x 1,5	19.9	6	6.5	33	19	23.6	19	19	7.2	2086132049	90-SDAE45-10-M14FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 16 x 1,5	22.9	7	6.5	33.5	19	22.6	19	22	8.2	2058012049	90-SDAE45-10-M16FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 18 x 1,5	24.9	9	6.5	37	20.5	24.5	19	24	9.0	2086142049	90-SDAE45-10-M18FR
12	1/2	PN 250	13/16-16	M 14 x 1,5	19.9	6	9.5	33	20.5	23.6	19	19	9.8	2086152049	90-SDAE45-12-M14FR
12	1/2	PN 250	13/16-16	M 18 x 1,5	24.9	9	9.5	37	20.5	24.6	19	24	11.0	2058022049	90-SDAE45-12-M18FR
12	1/2	PN 250	13/16-16	M 22 x 1,5	27.9	12	9.5	44	22	30.9	27	27	12.6	2086162049	90-SDAE45-12-M22FR
12	1/2	PN 250	13/16-16	M 27 x 2	32.9	15	9.5	50.5	24	34.5	30	32	13.1	2086172049	90-SDAE45-12-M27FR
14; 15; 16	5/8	PN 250	1-14	M 18 x 1,5	24.9	9	12.5	41.5	23.5	29	27	24	17.7	2086182049	90-SDAE45-16-M18FR
14; 15; 16	5/8	PN 250	1-14	M 22 x 1,5	27.9	12	12.5	44	23.5	31	27	27	19.0	2058032049	90-SDAE45-16-M22FR
14; 15; 16	5/8	PN 250	1-14	M 27 x 2	32.9	15	12.5	50.5	28	34.5	30	32	20.5	2086192049	90-SDAE45-16-M27FR
18; 20	3/4	PN 250	1 3/16-12	M 22 x 1,5	27.9	12	15.5	44	30	30.9	30	27	25.9	2086202049	90-SDAE45-20-M22FR
18; 20	3/4	PN 250	1 3/16-12	M 27 x 2	32.9	15	15.5	50.5	26	34.6	30	32	28.8	2058042049	90-SDAE45-20-M27FR
22; 25	1	PN 250	1 7/16-12	M 27 x 2	32.9	15	20.5	50.5	30	34.5	36	32	28.7	2086232049	90-SDAE45-25-M27FR
22; 25	1	PN 250	1 7/16-12	M 33 x 2	40.9	20	20.5	52.5	30	36.6	36	41	30.0	2058052049	90-SDAE45-25-M33FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	M 42 x 2	50.9	26	26	54	32	37.2	41	50	44.4	2058062049	90-SDAE45-30-M42FR
35; 38	1 1/2	PN 140	2-12	M 48 x 2	55.9	32	32	56.5	37	37.2	50	55	56.8	2058072049	90-SDAE45-38-M48FR

Example for comparison:
 4M12V8OMLOS

45° Adjustable stud elbow with lock nut

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2 BSPP	d7	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
6	1/4	PN 250	9/16-18	1/8-28	15	4.4	4.5	27.5	16	20.3	14	14	3.8	2057802049	90-SDAE45-6-G1/8FR
6	1/4	PN 250	9/16-18	1/4-19	19.5	7.5	4.5	32	17.5	22.7	19	19	4.3	2057812049	90-SDAE45-6-G1/4FR
6	1/4	PN 250	9/16-18	3/8-19	23.5	9.9	4.5	33.5	18.5	24.3	19	24	4.7	2086242049	90-SDAE45-6-G3/8FR
8; 10	5/16; 3/8	PN 250	11/16-16	1/4-19	19.5	7.5	6.5	32	19	22.7	19	19	8.3	2057822049	90-SDAE45-10-G1/4FR
8; 10	5/16; 3/8	PN 250	11/16-16	3/8-19	23.5	9.9	6.5	33.5	19	24.3	19	22	9.5	2057832049	90-SDAE45-10-G3/8FR
8; 10	5/16; 3/8	PN 250	11/16-16	1/2-14	28.5	12.3	6.5	43.5	19.5	30.5	27	27	10.7	2057842049	90-SDAE45-10-G1/2FR
12	1/2	PN 250	13/16-16	3/8-19	23.5	9.9	9.5	33.5	20.5	24.3	19	22	11.7	2057852049	90-SDAE45-12-G3/8FR
12	1/2	PN 250	13/16-16	1/2-14	28.5	12.3	9.5	43.5	22	30.5	27	27	12.1	2086252049	90-SDAE45-12-G1/2FR
12	1/2	PN 250	13/16-16	3/4-14	34.5	15.5	9.5	46.5	22	33.5	30	36	14.0	2086262049	90-SDAE45-12-G3/4FR
14; 15; 16	5/8	PN 250	1-14	1/2-14	28.5	12.3	12.5	43.5	23.5	30.6	27	27	19.1	2057862049	90-SDAE45-16-G1/2FR
14; 15; 16	5/8	PN 250	1-14	3/4-14	34.5	15.5	12.5	46.5	24.5	33.6	30	36	22.7	2057872049	90-SDAE45-16-G3/4FR
14; 15; 16	5/8	PN 250	1-14	1-11	43.5	21.5	12.5	51	28	36.3	36	41	24.7	2086272049	90-SDAE45-16-G1FR
14; 15; 16	5/8	PN 140	1-14	1 1/4-11	52.5	27.5	12.5	52.5	31.5	37.8	41	50	25.2	2086282049	90-SDAE45-16-G11/4FR
18; 20	3/4	PN 250	1 3/16-12	1/2-14	28.5	12.3	15.5	46.5	29	33.5	30	27	28.4	2086292049	90-SDAE45-20-G1/2FR
18; 20	3/4	PN 250	1 3/16-12	3/4-14	34.5	15.5	15.5	46.5	26	33.6	30	36	29.4	2057882049	90-SDAE45-20-G3/4FR
18; 20	3/4	PN 250	1 3/16-12	1-11	43.5	21.5	15.5	51	29.5	36.4	36	41	32.5	2057892049	90-SDAE45-20-G1FR
22; 25	1	PN 250	1 7/16-12	3/4-14	34.5	15.5	20.5	51	30	38	36	36	38.1	2086302049	90-SDAE45-25-G3/4FR
22; 25	1	PN 250	1 7/16-12	1-11	43.5	21.5	20.5	51	30	36.4	36	41	39.4	2057902049	90-SDAE45-25-G1FR
22; 25	1	PN 140	1 7/16-12	1 1/4-11	52.5	27.5	20.5	52.5	33.5	37.8	41	50	40.6	2086312049	90-SDAE45-25-G11/4FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	1-11	43.5	21.5	26	51	32	36.3	41	41	41.0	2086322049	90-SDAE45-30-G1FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	1 1/4-11	52.5	27.5	26	52.5	32	37.9	41	50	43.0	2057912049	90-SDAE45-30-G11/4FR
35; 38	1 1/2	PN 140	2-12	1 1/2-11	60	33	32	52.5	37	37.9	50	55	55.1	2057922049	90-SDAE45-38-G11/2FR

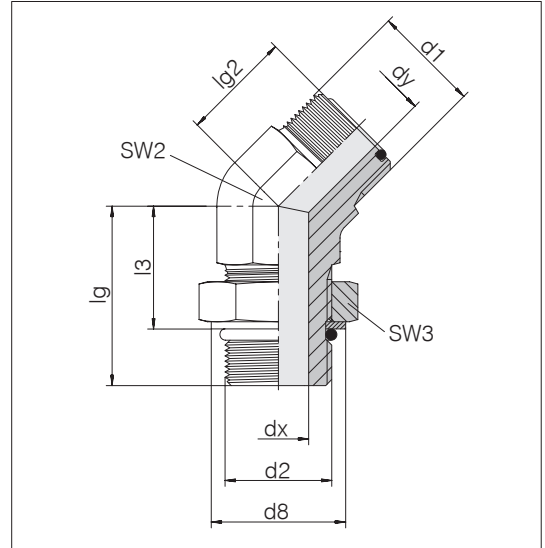
Example for comparison:
 4V4OMLOS

BSPP threaded ports
 as per ISO 1179-1
 Type W wide version.

45° Adjustable stud elbow with lock nut

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



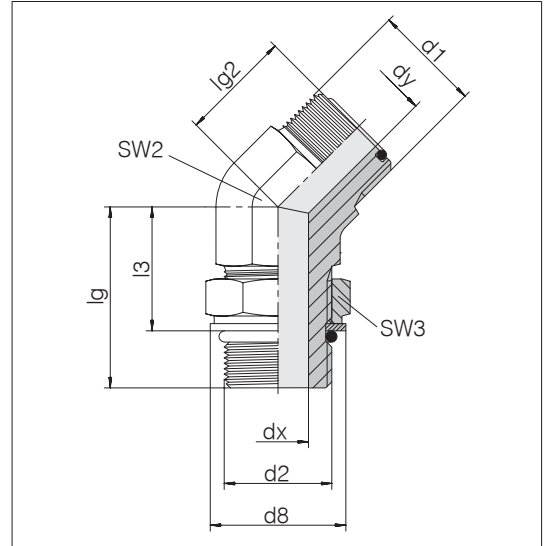
Tube OD d1		Pressure	d1 UN/UNF	d2 UN/UNF	d8	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
mm	Inch														
6	1/4	PN 420	9/16-18	7/16-20	16.5	4.5	4.5	30	16	18.5	14	17	4.2	2057502049	90-SDAE45-6-U7/16-20F
6	1/4	PN 420	9/16-18	9/16-18	20.2	7.5	4.5	33	17.5	20.8	19	19	7.1	2057512049	90-SDAE45-6-U9/16-18F
6	1/4	PN 420	9/16-18	3/4-16	25.7	10	4.5	36.5	18	22.6	19	24	9.0	2057932049	90-SDAE45-6-U3/4-16F
8; 10	5/16; 3/8	PN 420	11/16-16	7/16-20	16.5	4.5	6.5	31	19	19.5	19	17	6.4	2057532049	90-SDAE45-10-U7/16-20F
8; 10	5/16; 3/8	PN 420	11/16-16	9/16-18	20.2	7.5	6.5	33	19	20.8	19	19	7.3	2057522049	90-SDAE45-10-U9/16-18F
8; 10	5/16; 3/8	PN 420	11/16-16	3/4-16	25.7	10	6.5	36.5	19	22.6	19	24	10.1	2057542049	90-SDAE45-10-U3/4-16F
12	1/2	PN 420	13/16-16	1/2-20	18.3	6	9.5	30	20.5	19	19	17	9.8	2057942049	90-SDAE45-12-U1/2-20F
12	1/2	PN 420	13/16-16	9/16-18	20.2	7.5	9.5	32	20.5	19.8	19	19	7.6	2057562049	90-SDAE45-12-U9/16-18F
12	1/2	PN 420	13/16-16	3/4-16	25.7	10	9.5	36.5	20.5	22.6	19	24	10.2	2057552049	90-SDAE45-12-U3/4-16F
12	1/2	PN 420	13/16-16	7/8-14	29.3	12.5	9.5	44.5	21	28.3	27	27	17.3	2057572049	90-SDAE45-12-U7/8-14F
14; 15; 16	5/8	PN 420	1-14	3/4-16	25.7	10	12.5	40.5	23.5	26.6	27	24	17.8	2057592049	90-SDAE45-16-U3/4-16F
14; 15; 16	5/8	PN 420	1-14	7/8-14	29.3	12.5	12.5	44.5	23.5	28.3	27	27	19.4	2057582049	90-SDAE45-16-U7/8-14F
14; 15; 16	5/8	PN 420	1-14	1 1/16-12	36.7	15.5	12.5	50	24.5	31.5	30	36	26.6	2057602049	90-SDAE45-16-U11/16-12F
18; 20	3/4	PN 420	1 3/16-12	3/4-16	25.7	10	15.5	41.5	27	27.6	30	24	22.1	2057952049	90-SDAE45-20-U3/4-16F
18; 20	3/4	PN 420	1 3/16-12	7/8-14	29.3	12.5	15.5	46	26	29.8	30	27	24.3	2057622049	90-SDAE45-20-U7/8-14F
18; 20	3/4	PN 420	1 3/16-12	1 1/16-12	36.7	15.5	15.5	50	26	31.5	30	36	29.4	2057612049	90-SDAE45-20-U11/16-12F
18; 20	3/4	PN 380	1 3/16-12	1 5/16-12	44	21.5	15.5	52.5	29.5	34	36	41	42.8	2057632049	90-SDAE45-20-U15/16-12F
22; 25	1	PN 420	1 7/16-12	1 1/16-12	36.7	15.5	20.5	51.5	30	33	36	36	38.9	2057652049	90-SDAE45-25-U11/16-12F
22; 25	1	PN 380	1 7/16-12	1 5/16-12	44	21.5	20.5	52.5	30	34	36	41	42.8	2057642049	90-SDAE45-25-U15/16-12F
22; 25	1	PN 280	1 7/16-12	1 5/8-12	55	27.5	20.5	53.5	32	35	41	50	61.1	2057662049	90-SDAE45-25-U15/8-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/8-12	55	27.5	26	53.5	32	35	41	50	44.7	2057672049	90-SDAE45-30-U15/8-12F
35; 38	1 1/2	PN 280	2-12	1 7/8-12	62.3	33.5	32	53.5	37	35	50	55	57.1	2057682049	90-SDAE45-38-U17/8-12F

Example for comparison:
 4V5OMLOS

45° Adjustable stud elbow with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 6149
 Sealing type: O-Ring (Form F)
 Sealing material: Standard NBR

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



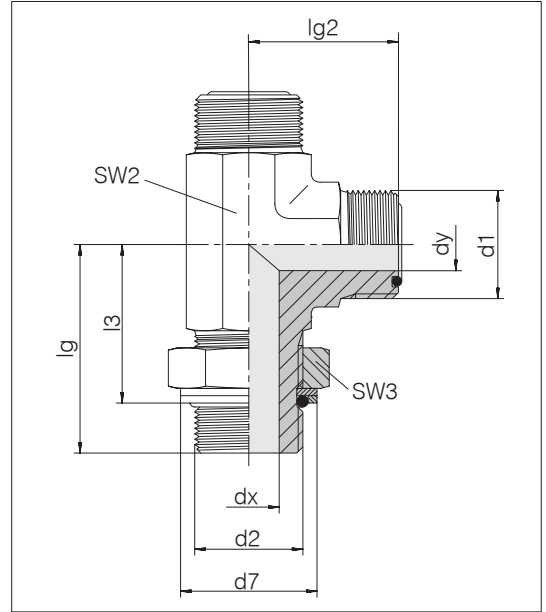
Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2	d8	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	M 10 x 1	14.5	3	4.5	30	16	20.4	14	14	4.0	2057692049	90-SDAE45-6-M10F
6	1/4	PN 420	9/16-18	M 12 x 1,5	17.5	4	4.5	30	16	18.9	14	17	4.4	2057352049	90-SDAE45-6-M12F
6	1/4	PN 420	9/16-18	M 14 x 1,5	19.5	6	4.5	31.5	18	20.4	19	19	4.8	2057702049	90-SDAE45-6-M14F
8; 10	5/16; 3/8	PN 420	11/16-16	M 14 x 1,5	19.5	6	6	33	19	21.9	19	19	7.8	2057712049	90-SDAE45-10-M14F
8; 10	5/16; 3/8	PN 420	11/16-16	M 16 x 1,5	22.5	7	6.5	33.5	19	21	19	22	8.2	2057362049	90-SDAE45-10-M16F
8; 10	5/16; 3/8	PN 420	11/16-16	M 18 x 1,5	24.5	9	6.5	37	20	22.9	19	24	9.1	2057722049	90-SDAE45-10-M18F
12	1/2	PN 420	13/16-16	M 18 x 1,5	24.5	9	9.5	37	20.5	23	19	24	11.0	2057372049	90-SDAE45-12-M18F
12	1/2	PN 420	13/16-16	M 22 x 1,5	27.5	12	9.5	44	22	29.2	27	27	12.2	2057732049	90-SDAE45-12-M22F
14; 15; 16	5/8	PN 420	1-14	M 18 x 1,5	24.5	9	12.5	41.5	23.5	27.4	27	24	17.3	2057742049	90-SDAE45-16-M18F
14; 15; 16	5/8	PN 420	1-14	M 22 x 1,5	27.5	12	12.5	44	23.5	29.3	27	27	19.0	2057382049	90-SDAE45-16-M22F
18; 20	3/4	PN 420	1 3/16-12	M 22 x 1,5	27.5	12	15.5	44	30	29.2	30	27	25.1	2057752049	90-SDAE45-20-M22F
18; 20	3/4	PN 420	1 3/16-12	M 27 x 2	32.5	15	15.5	50.5	26	32.3	30	32	28.8	2057392049	90-SDAE45-20-M27F
22; 25	1	PN 420	1 7/16-12	M 27 x 2	32.5	15	20.5	50.5	30	32.2	36	32	29.5	205772049	90-SDAE45-25-M27F
22; 25	1	PN 420	1 7/16-12	M 33 x 2	41.5	20	20.5	52.5	30	34.3	36	41	30.0	2057402049	90-SDAE45-25-M33F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 42 x 2	50.5	26	26	54	32	35.3	41	50	44.4	2057412049	90-SDAE45-30-M42F
35; 38	1 1/2	PN 280	2-12	M 48 x 2	55.5	32	32	56.5	37	35.3	50	55	56.9	2057422049	90-SDAE45-38-M48F

Example for comparison:
 4M12V87OMLOS

Adjustable stud L-connector with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD		Pressure	d1	d2	d7	dx	dy	lg	lg2	l3	SW2	SW3	kg/100	Order-No.	Designation
d1			UN/UNF										ca.		
mm	Inch														
6	1/4	PN 250	9/16-18	M 12 x 1,5	17.9	4	4.5	33	21.5	23.5	14	17	6.6	2059052049	90-SDAL-6-M12FR
6	1/4	PN 250	9/16-18	M 14 x 1,5	19.9	6	4.5	35.5	24	26.1	19	19	7.8	2059002049	90-SDAL-6-M14FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 14 x 1,5	19.9	6	6.5	35.5	25	26.1	19	19	12.6	2059012049	90-SDAL-10-M14FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 16 x 1,5	22.9	6.5	6.5	37.5	25	26.6	19	22	13.1	2059062049	90-SDAL-10-M16FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 18 x 1,5	24.9	9	6.5	41	26.5	28.5	19	24	15.4	2059022049	90-SDAL-10-M18FR
12	1/2	PN 250	13/16-16	M 16 x 1,5	22.9	7	9.5	37.5	28	26.5	19	22	15.3	2059042049	90-SDAL-12-M16FR
12	1/2	PN 250	13/16-16	M 18 x 1,5	24.9	9	9.5	41	28	28.6	19	24	16.5	2059072049	90-SDAL-12-M18FR
12	1/2	PN 250	13/16-16	M 22 x 1,5	27.9	12	9.5	49	31	35.9	27	27	19.4	2059132049	90-SDAL-12-M22FR
14; 15; 16	5/8	PN 250	1-14	M 18 x 1,5	24.9	9	12.5	47.5	33.5	35	27	24	24.7	2059162049	90-SDAL-16-M18FR
14; 15; 16	5/8	PN 250	1-14	M 22 x 1,5	27.9	12	12.5	49	33.5	36	27	27	28.3	2059082049	90-SDAL-16-M22FR
18; 20	3/4	PN 250	1 3/16-12	M 22 x 1,5	27.9	12	15.5	49	37.5	35.9	30	27	49.4	2059182049	90-SDAL-20-M22FR
18; 20	3/4	PN 250	1 3/16-12	M 27 x 2	32.9	15	15.5	55.5	37.5	36	30	32	55.0	2059092049	90-SDAL-20-M27FR
22; 25	1	PN 250	1 7/16-12	M 33 x 2	40.9	20	20.5	59.5	41.5	43.6	36	41	56.6	2059102049	90-SDAL-25-M33FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	M 33 x 2	40.9	20	26	62	44.5	46	41	41	74.2	2059192049	90-SDAL-30-M33FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	M 42 x 2	50.9	26	26	63	44.5	46.2	41	50	82.4	2059112049	90-SDAL-30-M42FR
35; 38	1 1/2	PN 140	2-12	M 48 x 2	55.9	32	32	71.5	49	52.2	50	55	94.0	2059122049	90-SDAL-38-M48FR

Example for comparison:
 4M12R8OMLOS

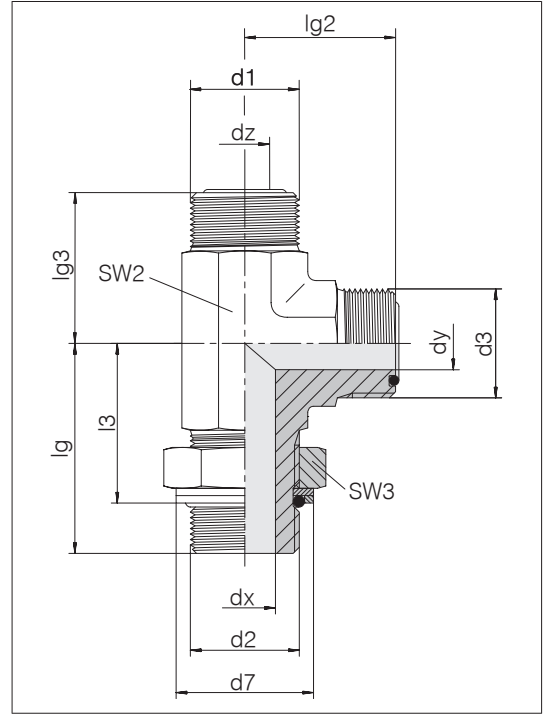


Adjustable stud L-connector with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* nach
 ISO 8434-3/SAE J 1453
 Sealing material O-ring: Standard NBR

Reducers

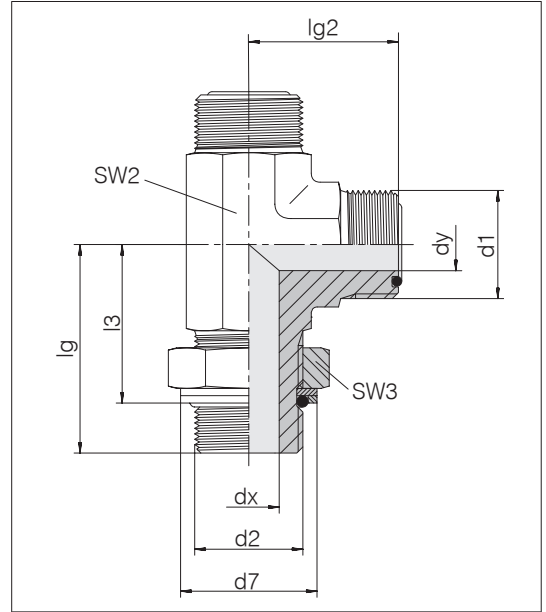


Tube OD d1 mm	Tube OD d3 mm	d1 UN/UNF	d2 M 22 x 1,5	d3 UN/UNF	d7	dx	dy	dz	lg	lg2	lg3	l3	SW2	SW3	Order-No.	Designation	
8; 10	5/16; 3/8	14; 15; 16	11/16-16	M 22 x 1,5	1-14	27.9	12	12.5	6.5	49	30	33.5	35.9	27	27	2059032049	90-SDAL-10-M22FR-16
12	1/2	14; 15; 16	13/16-16	M 22 x 1,5	1-14	27.9	12	12.5	9.5	49	31	33.5	35.9	27	27	2059142049	90-SDAL-12-M22FR-16
14; 15; 16	5/8	8; 10	1-14	M 18 x 1,5	11/16-16	24.9	9	6.5	12.5	47.5	33.5	29	35	24	2059152049	90-SDAL-16-M18FR-10	

Adjustable stud L-connector with lock nut

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD	d1	Pressure	d1	d2	d7	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
mm	Inch		UN/UNF	BSPP											
6	1/4	PN 250	9/16-18	1/8-28	15	4.4	4.5	30	21.5	22.8	14	14	6.4	2058752049	90-SDAL-6-G1/8FR
6	1/4	PN 250	9/16-18	1/4-19	19.5	7.5	4.5	36	23.5	26.7	19	19	12.1	2058762049	90-SDAL-6-G1/4FR
6	1/4	PN 250	9/16-18	3/8-19	23.5	9.9	4.5	38	23.5	28.8	19	22	12.9	2058772049	90-SDAL-6-G3/8FR
8; 10	5/16; 3/8	PN 250	11/16-16	1/4-19	19.5	7.5	6.5	36	25	26.7	19	19	11.6	2058782049	90-SDAL-10-G1/4FR
8; 10	5/16; 3/8	PN 250	11/16-16	3/8-19	23.5	9.9	6.5	38	26.5	28.8	19	22	14.1	2058792049	90-SDAL-10-G3/8FR
8; 10	5/16; 3/8	PN 250	11/16-16	1/2-14	28.5	12.3	6.5	48.5	29	35.6	27	27	15.6	2058802049	90-SDAL-10-G1/2FR
8; 10	5/16; 3/8	PN 250	11/16-16	1-11	43.5	21.5	6.5	58.5	36	43.9	36	41	19.8	2058652049	90-SDAL-10-G1FR
12	1/2	PN 250	13/16-16	1/4-19	19.5	7.5	9.5	35.5	28	26.2	19	19	12.9	2058822049	90-SDAL-12-G1/4FR
12	1/2	PN 250	13/16-16	3/8-19	23.5	9.5	9.5	38	28	28.8	19	22	14.0	2058812049	90-SDAL-12-G3/8FR
12	1/2	PN 250	13/16-16	1/2-14	28.5	12.3	9.5	48.5	31	35.6	27	27	26.7	2058832049	90-SDAL-12-G1/2FR
12	1/2	PN 250	13/16-16	3/4-14	34.5	15.5	9.5	51.5	33.5	38.6	30	36	33.6	2058842049	90-SDAL-12-G3/4FR
12	1/2	PN 250	13/16-16	1-11	43.5	21.5	9.5	58.5	37	43.9	36	41	41.6	2058662049	90-SDAL-12-G1FR
14; 15; 16	5/8	PN 250	1-14	3/8-19	23.5	9.9	12.5	40.5	33.5	31.3	27	22	30.6	2058862049	90-SDAL-16-G3/8FR
14; 15; 16	5/8	PN 250	1-14	1/2-14	28.5	12.3	12.3	48.5	33.5	35.6	27	27	35.7	2058852049	90-SDAL-16-G1/2FR
14; 15; 16	5/8	PN 250	1-14	3/4-14	34.5	15.5	12.5	51.5	36	38.6	30	36	45.8	2058872049	90-SDAL-16-G3/4FR
14; 15; 16	5/8	PN 250	1-14	1-11	43.5	21.5	12.5	58.5	39.5	43.9	36	41	49.7	2058882049	90-SDAL-16-G1FR
18; 20	3/4	PN 250	1 3/16-12	1/2-14	28.5	12.3	15.5	49.5	37.5	36.6	30	27	38.6	2058902049	90-SDAL-20-G1/2FR
18; 20	3/4	PN 250	1 3/16-12	3/4-14	34.5	15.5	15.5	51.5	37.5	38.6	30	36	43.5	2058892049	90-SDAL-20-G3/4FR
18; 20	3/4	PN 250	1 3/16-12	1-11	43.5	21.5	15.5	58.5	41	43.9	36	41	62.9	2058912049	90-SDAL-20-G1FR
22; 25	1	PN 250	1 7/16-12	3/4-14	34.5	15.5	20.5	56	41.5	43.1	36	36	69.3	2058932049	90-SDAL-25-G3/4FR
22; 25	1	PN 250	1 7/16-12	1-11	43.5	21.5	20.5	58.5	41.5	43.9	36	41	65.8	2058922049	90-SDAL-25-G1FR
22; 25	1	PN 140	1 7/16-12	1 1/4-11	52.5	27.5	20.5	61	44.5	46.4	41	50	98.6	2058942049	90-SDAL-25-G11/4FR
28; 30; 32	1 1/4	PN 250	1 11/16-12	1-11	43.5	21.5	26	61	44.5	46.4	41	41	92.6	2058962049	90-SDAL-30-G1FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	1 1/4-11	52.5	27.5	26	61	44.5	46.4	41	50	88.3	2058952049	90-SDAL-30-G11/4FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	1 1/2-11	60	33	26	64.5	49	49.9	50	55	106.7	2058972049	90-SDAL-30-G11/2FR

Example for comparison:
4R4OMLOS

BSPP threaded ports
as per ISO 1179-1
Type W wide version.

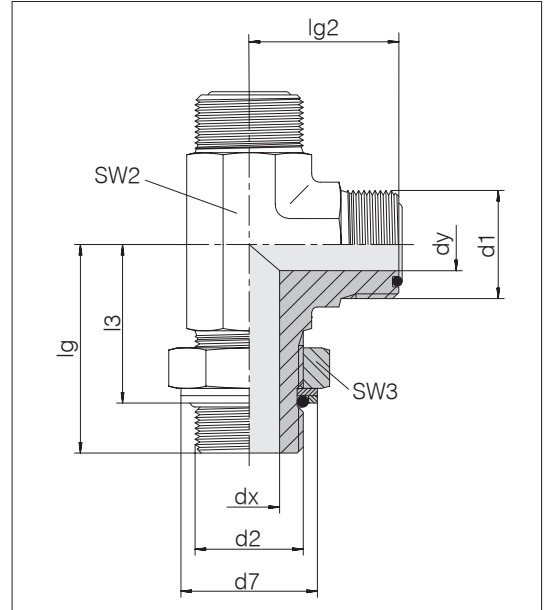
Continued on following page



Adjustable stud L-connector with lock nut

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD	Pressure	d1	d2	d7	dx	dy	lg	lg2	l3	SW2	SW3	kg/100	Order-No.	Designation	
d1		UN/UNF	BSPP									ca.			
mm	Inch														
35; 38	1 1/2	PN 140	2-12	1 1/2-11	60	33	32	64.5	49	49.9	50	55	124.0	2058982049	90-SDAL-38-G11/2FR

Example for comparison:
 4R4OMLOS

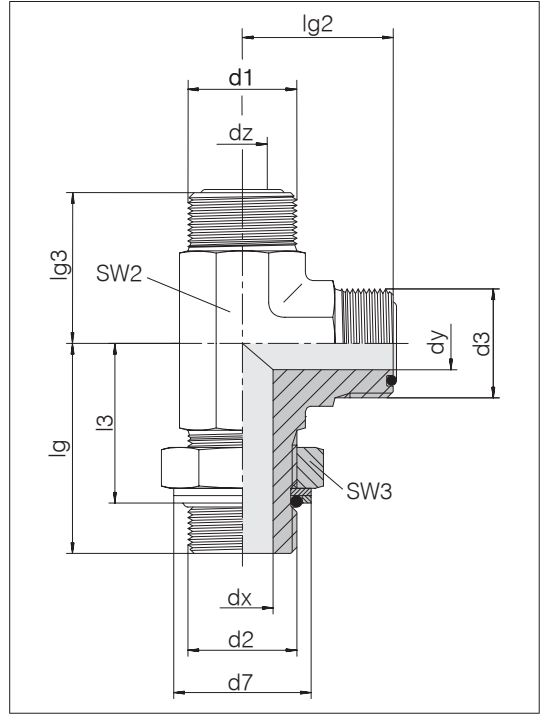
BSPP threaded ports
 as per ISO 1179-1
 Type W wide version.

Adjustable stud L-connector with lock nut

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare* ^{ORFS} nach
 ISO 8434-3/SAE J 1453
 Sealing material O-ring: Standard NBR

Reducers



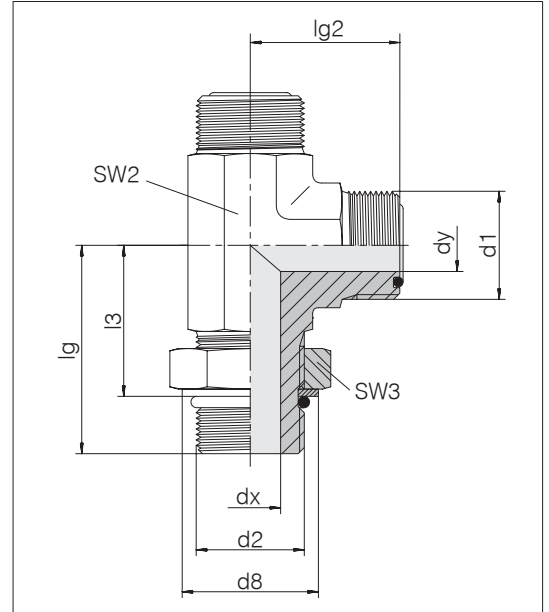
Tube OD d1 mm	Tube OD d3 mm	d1 UN/UNF	d2 BSPP	d3 UN/UNF	d7	dx	dy	dz	lg	lg2	lg3	l3	SW2	SW3	Order-No.	Designation	
12	1/2	8; 10	13/16-16	1/2-14	11/16-16	28.5	12.3	6.5	9.5	48.5	28.5	31	35.6	27	27	2058672049	90-SDAL-12-G1/2FR-10
14; 15; 16	5/8	18; 20	1-14	1-11	1 3/16-12	43.5	21.5	15.5	12.5	58.5	41.5	41	43.9	36	41	2058682049	90-SDAL-16-G1FR-20
22; 25	1	12	1 7/16-12	1-11	1 3/16-16	43.5	21.5	9.5	15.5	58.5	37	42	43.9	36	41	2058692049	90-SDAL-25-G1FR-12
22; 25	1	14; 15; 16	1 7/16-12	1-11	1-14	43.5	21.5	12.5	15.5	58.5	40	42	43.9	36	41	2058702049	90-SDAL-25-G1FR-16
28; 30; 32	1 1/4	18; 20	1 11/16-12	1-11	1 3/16-12	43.5	21.5	15.5	26	61	43	45	46.4	41	41	2058712049	90-SDAL-30-G1FR-20
28; 30; 32	1 1/4	22; 25	1 11/16-12	1-11	1 7/16-12	43.5	21.5	20.5	26	61	45	45	46.4	41	41	2058722049	90-SDAL-30-G1FR-25
28; 30; 32	1 1/4	22; 25	1 11/16-12	1 1/4-11	1 7/16-12	52.5	27.5	20.5	26	61	45	45	46.4	41	50	2058732049	90-SDAL-30-G11/4FR-25
35; 38	1 1/2	22; 25	2-12	1 1/2-11	1 7/16-12	60	32	20.5	32	64.5	49	49	49.9	50	55	2058742049	90-SDAL-38-G11/2FR-25



Adjustable stud L-connector with lock nut

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	d8	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	7/16-20	16.5	4.5	4.5	32.5	21.5	21	14	17	6.7	2058402049	90-SDAL-6-U7/16-20F
6	1/4	PN 420	9/16-18	9/16-18	20.2	7.5	4.5	37	23.5	24.8	19	19	10.8	2058412049	90-SDAL-6-U9/16-18F
8; 10	5/16; 3/8	PN 420	11/16-16	7/16-20	16.5	4.5	6.5	35	25	23.5	19	17	7.5	2058432049	90-SDAL-10-U7/16-20F
8; 10	5/16; 3/8	PN 420	11/16-16	9/16-18	20.2	7.5	6.5	37	25	24.8	19	19	11.7	2058422049	90-SDAL-10-U9/16-18F
8; 10	5/16; 3/8	PN 420	11/16-16	3/4-16	25.7	10	6.5	40.5	26.5	26.6	19	24	13.7	2058442049	90-SDAL-10-U3/4-16F
8; 10	5/16; 3/8	PN 420	11/16-16	7/8-14	29.3	12.5	6.5	50	29	33.8	27	27	25.5	2058452049	90-SDAL-10-U7/8-14F
12	1/2	PN 420	13/16-16	9/16-18	20.2	7.5	9.5	38.5	28	26.2	19	19	11.0	2058472049	90-SDAL-12-U9/16-18F
12	1/2	PN 420	13/16-16	3/4-16	25.7	10	9.5	40.5	28	26.6	19	24	15.4	2058462049	90-SDAL-12-U3/4-16F
12	1/2	PN 420	13/16-16	7/8-14	29.3	12.5	9.5	50	31	33.8	27	27	27.9	2058482049	90-SDAL-12-U7/8-14F
12	1/2	PN 420	13/16-16	1 1/16-12	36.7	15.5	9.5	55	33.5	36.5	30	36	26.1	2058492049	90-SDAL-12-U11/16-12F
14; 15; 16	5/8	PN 420	1-14	3/4-16	25.7	10	12.5	45.5	33.5	31.6	27	24	22.7	2058512049	90-SDAL-16-U3/4-16F
14; 15; 16	5/8	PN 420	1-14	7/8-14	29.3	12.5	12.5	50	33.5	33.8	27	27	31.1	2058502049	90-SDAL-16-U7/8-14F
14; 15; 16	5/8	PN 420	1-14	1 1/16-12	36.7	15.5	12.5	55	36	36.5	30	36	32.2	2058522049	90-SDAL-16-U11/16-12F
18; 20	3/4	PN 420	1 3/16-12	3/4-16	25.7	10	15.5	46.5	37.5	32.6	30	24	42.3	2058542049	90-SDAL-20-U3/4-16F
18; 20	3/4	PN 420	1 3/16-12	7/8-14	29.3	12.5	15.5	51	37.5	34.8	30	27	38.4	2058552049	90-SDAL-20-U7/8-14F
18; 20	3/4	PN 420	1 3/16-12	1 1/16-12	36.7	15.5	15.5	55	37.5	36.5	30	36	45.8	2058532049	90-SDAL-20-U11/16-12F
18; 20	3/4	PN 380	1 3/16-12	1 5/16-12	44	21.5	15.5	59.5	41	41	36	41	62.8	2058562049	90-SDAL-20-U15/16-12F
22; 25	1	PN 420	1 7/16-12	1 1/16-12	36.7	15.5	20.5	59	41.5	40.5	36	36	61.5	2058582049	90-SDAL-25-U11/16-12F
22; 25	1	PN 380	1 7/16-12	1 5/16-12	44	21.5	20.5	59.5	41.5	41	36	41	65.3	2058572049	90-SDAL-25-U15/16-12F
22; 25	1	PN 280	1 7/16-12	1 5/8-12	55	27.5	20.5	62	44.5	43.5	41	50	75.4	2058592049	90-SDAL-25-U15/8-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/16-12	44	21.5	26	61.5	44.5	43	41	41	73.2	2058612049	90-SDAL-30-U15/16-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/8-12	55	27.5	26	62.5	44.5	44	41	50	73.2	2058602049	90-SDAL-30-U15/8-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 7/8-12	62.3	33.5	26	66	49	47.5	50	55	99.3	2058622049	90-SDAL-30-U17/8-12F
35; 38	1 1/2	PN 280	2-12	1 5/8-12	55	27.5	32	65	49	46.5	50	50	83.8	2058642049	90-SDAL-38-U15/8-12F
35; 38	1 1/2	PN 280	2-12	1 7/8-12	62.3	33.5	32	66	49	47.5	50	55	89.6	2058632049	90-SDAL-38-U17/8-12F

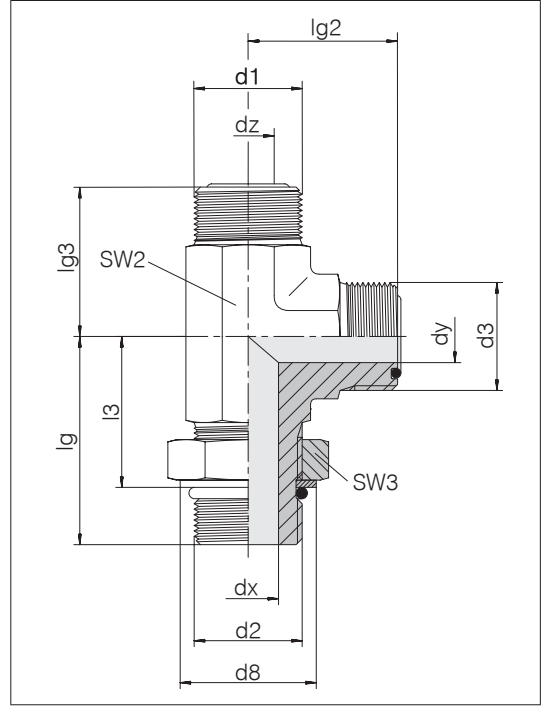
Example for comparison:
 4 R5OLO-S

Adjustable stud L-connector with lock nut

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare* ^{ORFS} nach
 ISO 8434-3/SAE J 1453
 Sealing material O-ring: Standard NBR

Reducers



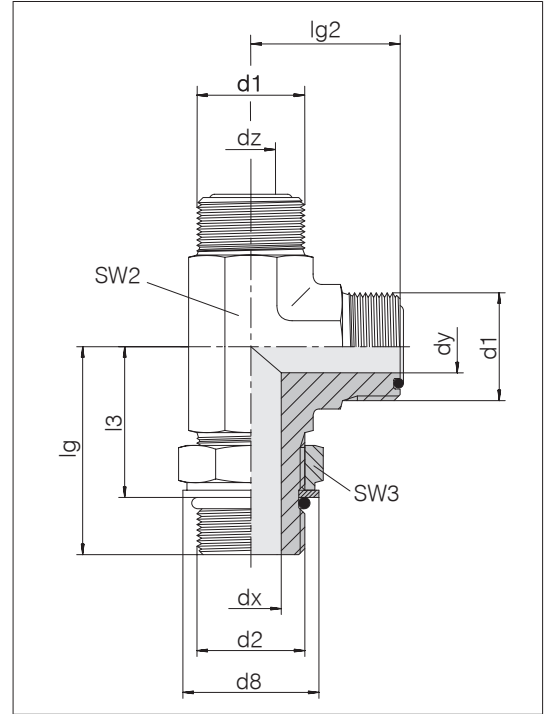
Tube OD d1 mm	Inch	Tube OD d3 mm	d1 UN/UNF	d2 UN/UNF	d3 UN/UNF	d8	dx	dy	dz	lg	lg2	lg3	l3	SW2	SW3	Order-No.	Designation
8; 10	5/16; 3/8	12	11/16-16	3/4-16	13/16-16	25.7	10	9.5	6.5	40.5	28	26.5	26.6	19	24	2086662049	90-SDAL-10-U3/4-16F-12
8; 10	5/16; 3/8	18; 20	11/16-16	1 1/16-12	1 3/16-12	36.7	15.5	15.5	6.5	55	37.5	32	36.4	30	36	2086672049	90-SDAL-10-U11/16-12F-20
12	1/2	6	13/16-16	7/8-14	9/16-18	29.3	12.5	4.5	9.5	50	28	31	33.7	27	27	2086682049	90-SDAL-12-U7/8-14F-6
18; 20	3/4	14; 15; 16	1 3/16-12	1 1/16-12	1-14	36.7	15.5	12.5	15.5	55	36	37.5	36.4	30	36	2086702049	90-SDAL-20-U11/16-12F-16
18; 20	3/4	22; 25	1 3/16-12	1 1/16-12	1 7/16-12	36.7	15.5	20.5	15.5	59	42	41	40.4	36	36	2086712049	90-SDAL-20-U11/16-12F-25
22; 25	1	6	1 7/16-12	1 3/16-12	9/16-18	40.4	18	4.5	20.5	55	35	42	36.4	36	36	2086742049	90-SDAL-25-U13/16-12F-6
22; 25	1	14; 15; 16	1 7/16-12	1 1/16-12	1-14	36.7	15.5	12.5	20.5	59	40	42	40.4	36	36	2086722049	90-SDAL-25-U11/16-12F-16
22; 25	1	18; 20	1 7/16-12	1 1/16-12	1 3/16-12	36.7	15.5	15.5	20.5	59	41.5	42	40.4	36	36	2086732049	90-SDAL-25-U11/16-12F-20
22; 25	1	18; 20	1 7/16-12	1 5/16-12	1 3/16-12	44	21.5	15.5	20.5	59.5	41.5	42	40.9	36	41	2086752049	90-SDAL-25-U15/16-12F-20
28; 30; 32	1 1/4	22; 25	1 11/16-12	1 5/16-12	1 7/16-12	44	21.5	20.5	26	62.5	45	45	43.9	41	41	2086762049	90-SDAL-30-U15/16-12F-25
28; 30; 32	1 1/4	22; 25	1 11/16-12	1 5/8-12	1 7/16-12	55	27.5	20.5	26	62.5	45	45	43.9	41	50	2086772049	90-SDAL-30-U15/8-12F-25



Adjustable stud L-connector with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 6149
 Sealing type: O-Ring (Form F)
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare* ^{ORFS} in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2	d8	dx	dy	dz	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	M 12 x 1,5	17.5	4	4.5	4	33	21.5	21.9	14	17	6.8	2058152049	90-SDAL-6-M12F
6	1/4	PN 420	9/16-18	M 14 x 1,5	19.5	6	4.5	4.5	35.5	24	24.4	19	19	7.2	2058162049	90-SDAL-6-M14F
8; 10	5/16; 3/8	PN 420	11/16-16	M 12 x 1,5	17.5	4	6.5	6.5	35.5	25	24.4	19	17	7.8	2058172049	90-SDAL-10-M12F
8; 10	5/16; 3/8	PN 420	11/16-16	M 14 x 1,5	19.5	6	6.5	6	35.5	25	24.4	19	19	7.8	2058182049	90-SDAL-10-M14F
8; 10	5/16; 3/8	PN 420	11/16-16	M 16 x 1,5	22.5	6.5	6.5	6.5	37.5	25	25	19	22	8.5	2058192049	90-SDAL-10-M16F
8; 10	5/16; 3/8	PN 420	11/16-16	M 22 x 1,5	27.5	12	12.5	6.5	50	33.5	35.2	27	27	26.4	2086792049	90-SDAL-10-M18F
12	1/2	PN 420	13/16-16	M 14 x 1,5	19.5	6	9.5	9.5	36	28	24.9	19	19	19.5	2058202049	90-SDAL-12-M14F
12	1/2	PN 420	13/16-16	M 16 x 1,5	22.5	7	9.5	9.5	38	28	25.4	22	19	20.5	2086802049	90-SDAL-12-M16F
12	1/2	PN 420	13/16-16	M 18 x 1,5	24.5	9	9.5	9	41	28	27	19	24	21.0	2058212049	90-SDAL-12-M18F
12	1/2	PN 420	13/16-16	M 22 x 1,5	27.5	12	9.5	9.5	49	31	34.3	27	27	26.0	2058222049	90-SDAL-12-M22F
14; 15; 16	5/8	PN 420	1-14	M 18 x 1,5	24.5	9	12.5	12.5	47.5	33.5	33.5	27	24	24.7	2058232049	90-SDAL-16-M18F
14; 15; 16	5/8	PN 420	1-14	M 22 x 1,5	27.5	12	12.5	12	49	33.5	34.3	27	27	28.0	2058242049	90-SDAL-16-M22F
18; 20	3/4	PN 420	1 3/16-12	M 22 x 1,5	27.5	12	15.5	15.5	49.5	37.5	34.8	30	27	50.7	2058252049	90-SDAL-20-M22F
18; 20	3/4	PN 420	1 3/16-12	M 27 x 2	32.5	15	15.5	15	55.5	37.5	37.3	30	32	57.2	2058262049	90-SDAL-20-M27F
22; 25	1	PN 420	1 7/16-12	M 33 x 2	41.5	20	20.5	20	59.5	41.5	41.3	36	41	65.2	2058272049	90-SDAL-25-M33F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 33 x 2	41.5	20	26	26	62	44.5	43.8	41	41	69.0	2058282049	90-SDAL-30-M33F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 42 x 2	50.5	26	26	26	63	44.5	44.3	41	50	73.0	2058292049	90-SDAL-30-M42F
35; 38	1 1/2	PN 280	2-12	M 48 x 2	55.5	32	32	32	71.5	49	50.3	50	55	89.0	2058302049	90-SDAL-38-M48F

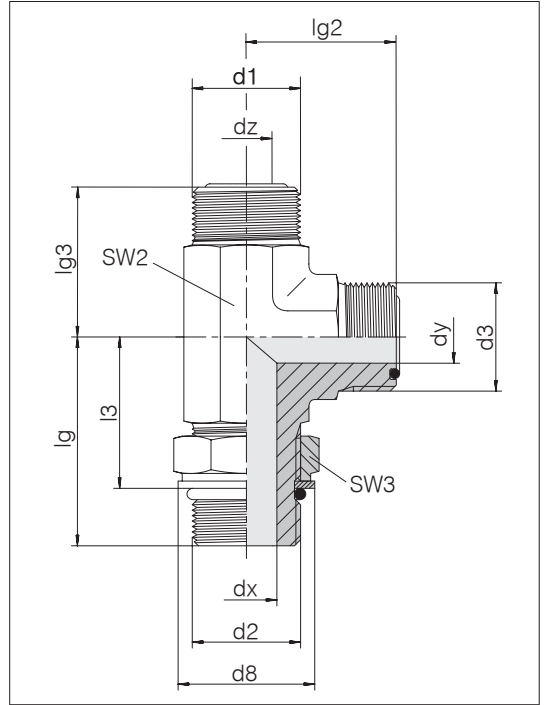
Example for comparison:
 4M12R87OMLOS

Adjustable stud L-connector with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 6149
 Sealing type: O-Ring (Form F)
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* nach ISO 8434-3/SAE J 1453
 Sealing material O-ring: Standard NBR

Reducers

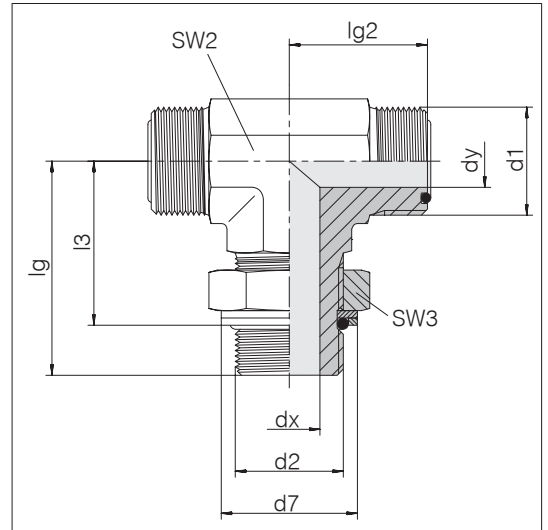


Tube OD d1	Tube OD d3	d1 UN/UNF	d2	d3 UN/UNF	d8	dx	dy	dz	lg	lg2	lg3	l3	SW2	SW3	Order-No.	Designation
mm	mm															
8; 10	14; 15; 16	11/16-16	M 22 x 1,5	1-14	27,5	12	12,5	6,5	50	33,5	31,5	35,2	27	27	2086792049	90-SDAL-10-M22F-16
14; 15; 16	8; 10	1-14	M 18 x 1,5	11/16-16	24,5	9	6,5	12,5	46,5	29	33,5	32,4	27	27	2086812049	90-SDAL-16-M18F-10

Adjustable stud T-connector with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2	d7	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
6	1/4	PN 250	9/16-18	M 12 x 1,5	17.9	4	4.5	33	21.5	23.5	14	17	6.6	2060102049	90-SDAT-6-M12FR
6	1/4	PN 250	9/16-18	M 14 x 1,5	19.9	5	4.5	37	23.5	25	19	19	7.9	2060042049	90-SDAT-6-M14FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 14 x 1,5	19.9	5	6.5	35	25	23	19	19	10.6	2060052049	90-SDAT-10-M14FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 16 x 1,5	22.9	7	6.5	37.5	25	26.6	19	22	13.1	2060112049	90-SDAT-10-M16FR
8; 10	5/16; 3/8	PN 250	11/16-16	M 18 x 1,5	24.9	8	6.5	40.5	26.5	28.5	19	24	16.1	2060062049	90-SDAT-10-M18FR
12	1/2	PN 250	13/16-16	M 16 x 1,5	22.9	7	9.5	40.5	28	28.5	19	22	17.5	2060082049	90-SDAT-12-M16FR
12	1/2	PN 250	13/16-16	M 18 x 1,5	24.9	9	9.5	41	28	28.6	19	24	18.7	2060122049	90-SDAT-12-M18FR
14; 15; 16	5/8	PN 250	1-14	M 16 x 1,5	22.9	7	12.5	43.5	33.5	31.5	27	22	19.0	2060192049	90-SDAT-16-M16FR
14; 15; 16	5/8	PN 250	1-14	M 18 x 1,5	24.9	8	12.5	46.5	33.5	34.5	27	24	23.7	2060202049	90-SDAT-16-M18FR
14; 15; 16	5/8	PN 250	1-14	M 22 x 1,5	27.9	12	12.5	49	33.5	36	27	27	28.3	2060132049	90-SDAT-16-M22FR
18; 20	3/4	PN 250	1 3/16-12	M 27 x 2	32.9	15	15.5	55.5	37.5	39.6	30	32	55.0	2060142049	90-SDAT-20-M27FR
22; 25	1	PN 250	1 7/16-12	M 33 x 2	40.9	20	20.5	59.5	41.5	43.6	36	41	56.6	2060152049	90-SDAT-25-M33FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	M 33 x 2	40.9	20	26	62	45	44	41	41	75.2	2060212049	90-SDAT-30-M33FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	M 42 x 2	50.9	26	26	63	44.5	46.2	41	50	82.4	2060162049	90-SDAT-30-M42FR
35; 38	1 1/2	PN 140	2-12	M 48 x 2	55.9	32	32	71.5	49	52.2	50	55	94.0	2060172049	90-SDAT-38-M48FR

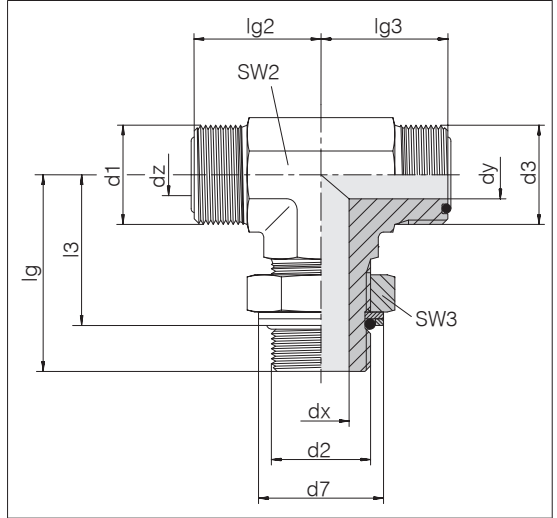
Example for comparison:
 4M12S8OMLOS

Adjustable stud T-connector with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* nach ISO 8434-3/SAE J 1453
 Sealing material O-ring: Standard NBR

Reducers

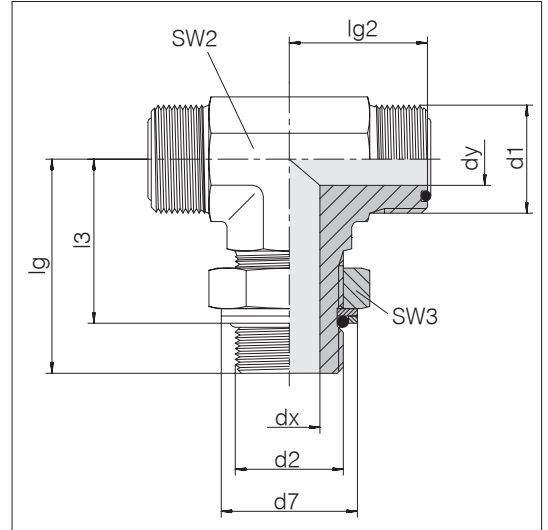


Tube OD		Tube OD	d1	d2	d3	d7	dx	dy	dz	lg	lg2	lg3	l3	SW2	SW3	Order-No.	Designation
d1	d3	d3	UN/UNF	UN/UNF	UN/UNF												
mm	Inch	mm															
8; 10	5/16; 3/8	14; 15; 16	11/16-16	M 18 x 1,5	1-14	24.9	8	12.5	6.5	48.5	33.5	29	36.5	27	24	2060072049	90-SDAT-10-M18FR-16
12	1/2	14; 15; 16	13/16-16	M 22 x 1,5	1-14	27.9	12	12.5	9.5	50	33.5	31.5	36	27	27	2060092049	90-SDAT-12-M22FR-16
14; 15; 16	5/8	12	1-14	M 16 x 1,5	13/16-16	22.9	7	9.5	12.5	47	30.5	33.5	35	27	22	2060182049	90-SDAT-16-M16FR-12

Adjustable stud T-connector with lock nut

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare* ^{ORFS} in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2 BSPP	d7	dx	dy	lg	lg2	l3	SW2	SW3	Order-No.	Designation
6	1/4	PN 250	9/16-18	1/8-28	15	4.4	4.5	30	21.5	22.8	14	14	2059802049	90-SDAT-6-G1/8FR
6	1/4	PN 250	9/16-18	1/4-19	19.5	7.5	4.5	36	23.5	26.7	19	19	2059812049	90-SDAT-6-G1/4FR
6	1/4	PN 250	9/16-18	3/8-19	23.5	9.9	4.5	38	23.5	28.8	19	22	2059822049	90-SDAT-6-G3/8FR
8; 10	5/16; 3/8	PN 250	11/16-16	1/4-19	19.5	7.5	6.5	36	25	26.7	19	19	2059832049	90-SDAT-10-G1/4FR
8; 10	5/16; 3/8	PN 250	11/16-16	3/8-19	23.5	9.9	6.5	38	26.5	28.8	19	22	2059842049	90-SDAT-10-G3/8FR
8; 10	5/16; 3/8	PN 250	11/16-16	1/2-14	28.5	12.3	6.5	48.5	29	35.6	27	27	2059852049	90-SDAT-10-G1/2FR
12	1/2	PN 250	13/16-16	1/4-19	19.5	7.5	9.5	35.5	28	26.2	19	19	2059872049	90-SDAT-12-G1/4FR
12	1/2	PN 250	13/16-16	3/8-19	23.5	9.9	9.5	38	28	28.8	19	22	2059862049	90-SDAT-12-G3/8FR
12	1/2	PN 250	13/16-16	1/2-14	28.5	12.3	9.5	48.5	31	35.6	27	27	2059882049	90-SDAT-12-G1/2FR
12	1/2	PN 250	13/16-16	3/4-14	34.5	15.5	9.5	51.5	33.5	38.6	30	36	2059892049	90-SDAT-12-G3/4FR
14; 15; 16	5/8	PN 250	1-14	3/8-19	23.5	9.9	12.5	40.5	33.5	29.3	27	22	2059912049	90-SDAT-16-G3/8FR
14; 15; 16	5/8	PN 250	1-14	1/2-14	28.5	12.3	12.5	48.5	33.5	35.6	27	27	2059902049	90-SDAT-16-G1/2FR
14; 15; 16	5/8	PN 250	1-14	3/4-14	34.5	15.5	12.5	51.5	36	38.6	30	36	2059922049	90-SDAT-16-G3/4FR
14; 15; 16	5/8	PN 250	1-14	1-11	43.5	21.5	12.5	58.5	39.5	43.9	36	41	2059932049	90-SDAT-16-G1FR
18; 20	3/4	PN 250	1 3/16-12	1/2-14	28.5	12.3	15.5	49.5	37.5	36.6	30	27	2059952049	90-SDAT-20-G1/2FR
18; 20	3/4	PN 250	1 3/16-12	3/4-14	34.5	15.5	15.5	51.5	37.5	38.6	30	36	2059942049	90-SDAT-20-G3/4FR
18; 20	3/4	PN 250	1 3/16-12	1-11	43.5	21.5	15.5	58.5	41	43.9	36	41	2059962049	90-SDAT-20-G1FR
22; 25	1	PN 250	1 7/16-12	3/4-14	34.5	15.5	20.5	56	41.5	43.1	36	36	2059982049	90-SDAT-25-G3/4FR
22; 25	1	PN 250	1 7/16-12	1-11	43.5	21.5	20.5	58.5	41.5	43.9	36	41	2059972049	90-SDAT-25-G1FR
22; 25	1	PN 140	1 7/16-12	1 1/4-11	52.5	27.5	20.5	61	44.5	46.4	41	50	2059992049	90-SDAT-25-G11/4FR
28; 30; 32	1 1/4	PN 250	1 11/16-12	1-11	43.5	21.5	26	61	44.5	46.4	41	41	2060012049	90-SDAT-30-G1FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	1 1/4-11	52.5	27.5	26	61	44.5	46.4	41	50	2060002049	90-SDAT-30-G11/4FR
28; 30; 32	1 1/4	PN 140	1 11/16-12	1 1/2-11	60	33	26	64.5	49	49.9	50	55	2060022049	90-SDAT-30-G11/2FR
35; 38	1 1/2	PN 140	2-12	1 1/2-11	60	33	32	64.5	49	49.9	50	55	2060032049	90-SDAT-38-G11/2FR

Example for comparison:
4S4OMLOS

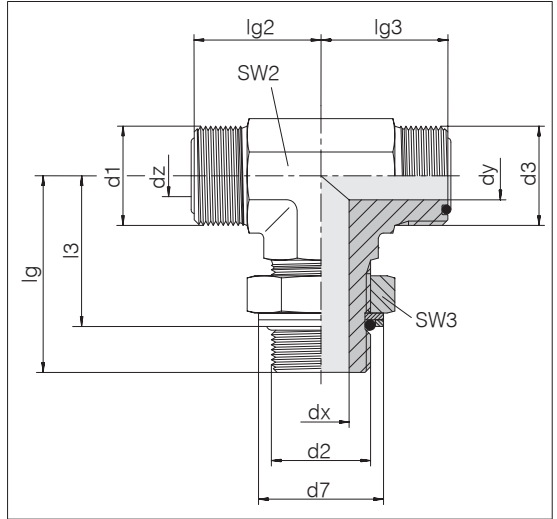
BSPP threaded ports
as per ISO 1179-1
Type W wide version.

Adjustable stud T-connector with lock nut

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-3
 Sealing type: O-ring and chamber ring
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* nach ISO 8434-3/SAE J 1453
 Sealing material O-ring: Standard NBR

Reducers



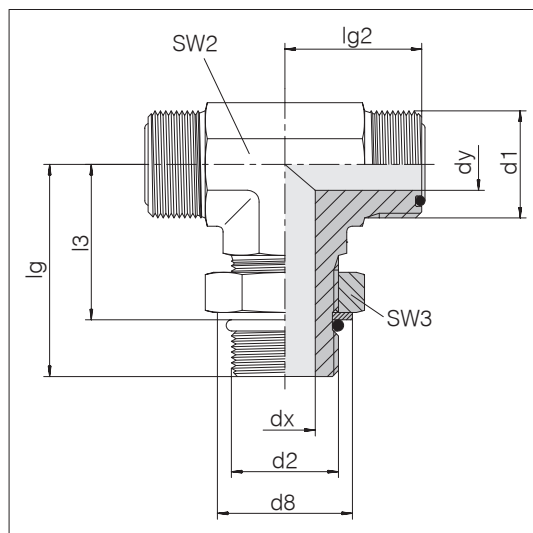
Tube OD d1 mm	Tube OD d3 Inch mm	d1 UN/UNF	d2 BSPP	d3 UN/UNF	d7	dx	dy	dz	lg	lg2	lg3	l3	SW2	SW3	Order-No.	Designation
14; 15; 16	5/8 8; 10	1-14	1/2-14	11/16-16	28.5	12.3	6.5	12.5	48	33.5	29	35	27	27	2060222049	90-SDAT-16-G1/2FR-10
18; 20	3/4 8; 10	1 3/16-12	1/4-19	11/16-16	19.5	7.5	6.5	15.5	41.5	37.5	31.5	32.2	30	19	2060232049	90-SDAT-20-G1/4FR-10
18; 20	3/4 28; 30; 32	1 3/16-12	1-11	1 11/16-12	43.5	21.5	26	15.5	60	43	45	45.5	41	41	2060242049	90-SDAT-20-G1FR-30



Adjustable stud T-connector with lock nut

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD d1 mm Inch	Pressure	d1 UN/UNF	d2 UN/UNF	d8	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation	
6	1/4	PN 420	9/16-18	7/16-20	16.5	4.5	4.5	32.5	21.5	21	14	17	6.7	2059452049	90-SDAT-6-U7/16-20F
6	1/4	PN 420	9/16-18	9/16-18	20.2	7.5	4.5	37	23.5	24.8	19	19	10.8	2059462049	90-SDAT-6-U9/16-18F
8; 10	5/16; 3/8	PN 420	11/16-16	7/16-20	16.5	4.5	6.5	35	25	24.5	19	17	7.5	2059482049	90-SDAT-10-U7/16-20F
8; 10	5/16; 3/8	PN 420	11/16-16	9/16-18	20.2	7.5	6.5	37	25	24.8	19	19	9.0	2059472049	90-SDAT-10-U9/16-18F
8; 10	5/16; 3/8	PN 420	11/16-16	3/4-16	25.7	10	6.5	40.5	26.5	26.6	19	24	13.7	2059492049	90-SDAT-10-U3/4-16F
8; 10	5/16; 3/8	PN 420	11/16-16	7/8-14	29.3	12.5	6.5	50	29	33.8	27	27	25.5	2059502049	90-SDAT-10-U7/8-14F
12	1/2	PN 420	13/16-16	9/16-18	20.2	7.5	9.5	38	28	25.8	19	19	11.0	2059522049	90-SDAT-12-U9/16-18F
12	1/2	PN 420	13/16-16	3/4-16	25.7	10	9.5	40.5	28	26.6	19	24	21.3	2059512049	90-SDAT-12-U3/4-16F
12	1/2	PN 420	13/16-16	7/8-14	29.3	12.5	9.5	50	31	33.8	27	27	24.4	2059532049	90-SDAT-12-U7/8-14F
12	1/2	PN 420	13/16-16	1 1/16-12	36.7	15.5	9.5	55	33.5	36.5	30	36	26.1	2059542049	90-SDAT-12-U11/16-12F
14; 15; 16	5/8	PN 420	1-14	3/4-16	25.7	10	12.5	45.5	33.5	31.6	27	24	22.7	2059562049	90-SDAT-16-U3/4-16F
14; 15; 16	5/8	PN 420	1-14	7/8-14	29.3	12.5	12.5	50	33.5	33.8	27	27	27.8	2059552049	90-SDAT-16-U7/8-14F
14; 15; 16	5/8	PN 420	1-14	1 1/16-12	36.7	15.5	12.5	55	36	36.5	30	36	32.2	2059572049	90-SDAT-16-U11/16-12F
18; 20	3/4	PN 420	1 3/16-12	3/4-16	25.7	10	15.5	48	37.5	34.1	30	24	42.3	2059592049	90-SDAT-20-U3/4-16F
18; 20	3/4	PN 420	1 3/16-12	7/8-14	29.3	12.5	15.5	52	37.5	35.8	30	27	38.4	2059602049	90-SDAT-20-U7/8-14F
18; 20	3/4	PN 420	1 3/16-12	1 1/16-12	36.7	15.5	15.5	55	37.5	36.5	30	36	45.1	2059582049	90-SDAT-20-U11/16-12F
18; 20	3/4	PN 380	1 3/16-12	1 5/16-12	44	21.5	15.5	59.5	41	41	36	41	64.7	2059612049	90-SDAT-20-U15/16-12F
22; 25	1	PN 420	1 7/16-12	1 1/16-12	36.7	15.5	20.5	59	41.5	40.5	36	36	61.5	2059632049	90-SDAT-25-U11/16-12F
22; 25	1	PN 380	1 7/16-12	1 5/16-12	44	21.5	20.5	59.5	41.5	41	36	41	65.3	2059622049	90-SDAT-25-U15/16-12F
22; 25	1	PN 280	1 7/16-12	1 5/8-12	55	27.5	20.5	62	44.5	43.5	41	50	75.4	2059642049	90-SDAT-25-U15/8-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/16-12	44	21.5	26	62	44.5	43.5	41	41	73.2	2059662049	90-SDAT-30-U15/16-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 5/8-12	55	27.5	26	62.5	44.5	44	41	50	73.2	2059652049	90-SDAT-30-U15/8-12F
28; 30; 32	1 1/4	PN 280	1 11/16-12	1 7/8-12	62.3	33.5	26	66	49	47.5	50	55	99.3	2059672049	90-SDAT-30-U17/8-12F
35; 38	1 1/2	PN 280	2-12	1 5/8-12	55	27.5	32	66	49	47.5	50	50	83.8	2059692049	90-SDAT-38-U15/8-12F
35; 38	1 1/2	PN 280	2-12	1 7/8-12	62.3	33.5	32	66	49	47.5	50	55	89.6	2059682049	90-SDAT-38-U17/8-12F

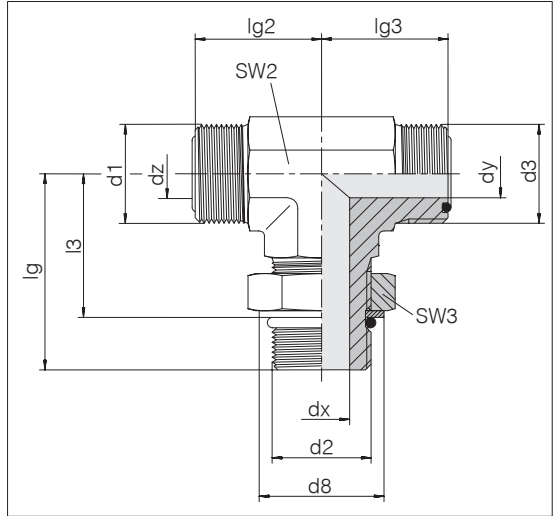
Example for comparison:
 4 S5OLO-S

Adjustable stud T-connector with lock nut

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS Flare *ORFS* nach
 ISO 8434-3/SAE J 1453
 Sealing material O-ring: Standard NBR

Reducers

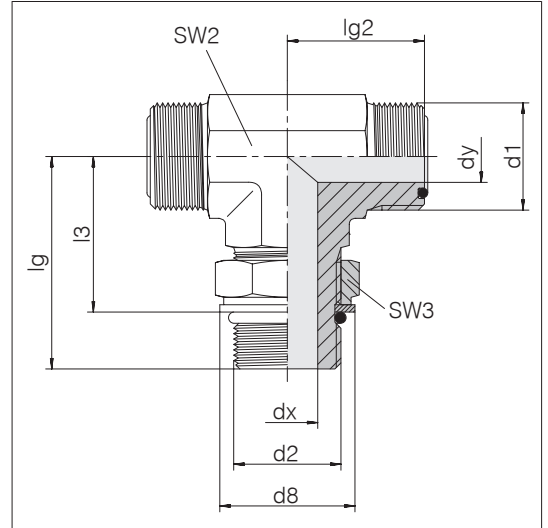


Tube OD d1 mm	Tube OD d3 Inch mm	d1 UN/UNF	d2 UN/UNF	d3 UN/UNF	d8	dx	dy	dz	lg	lg2	lg3	l3	SW2	SW3	Order-No.	Designation
6	1/4 12	9/16-18	7/8-14	13/16-16	29.3	12.5	9.5	4.5	50	28	31	33.7	27	27	2059362049	90-SDAT-6-U7/8-14F-12
12	1/2 8; 10	13/16-16	3/4-16	11/16-16	25.7	10	6.5	9.5	40.5	28	26.5	26.6	19	24	2059372049	90-SDAT-12-U3/4-16F-10

Adjustable stud T-connector with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 6149
 Sealing type: O-Ring (Form F)
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD d1 mm	Inch	Pressure	d1 UN/UNF	d2	d8	dx	dy	lg	lg2	l3	SW2	SW3	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	9/16-18	M 12 x 1,5	17.5	4	4.5	33	21.5	21.9	14	17	7.4	2059202049	90-SDAT-6-M12F
6	1/4	PN 420	9/16-18	M 14 x 1,5	19.5	6	4.5	35.5	23.5	24.4	19	19	7.6	2059212049	90-SDAT-6-M14F
8; 10	5/16; 3/8	PN 420	11/16-16	M 12 x 1,5	17.5	4	6.5	35.5	25	24.4	19	17	7.8	2059222049	90-SDAT-10-M12F
8; 10	5/16; 3/8	PN 420	11/16-16	M 14 x 1,5	19.5	6	6.5	35.5	25	24.4	19	19	8.0	2059232049	90-SDAT-10-M14F
8; 10	5/16; 3/8	PN 420	11/16-16	M 16 x 1,5	22.5	7	6.5	37.5	25	25	19	22	8.5	2059242049	90-SDAT-10-M16F
8; 10	5/16; 3/8	PN 420	11/16-16	M 18 x 1,5	24.5	9	6.5	40.5	26.5	26.4	19	24	12.3	2059382049	90-SDAT-10-M18F
12	1/2	PN 420	13/16-16	M 14 x 1,5	19.5	6	9.5	36	28	24.9	19	19	15.5	2059252049	90-SDAT-12-M14F
12	1/2	PN 420	13/16-16	M 16 x 1,5	22.5	7	9.5	40.5	28	27.9	19	22	15.8	2059402049	90-SDAT-12-M16F
12	1/2	PN 420	13/16-16	M 18 x 1,5	24.5	9	9.5	41	28	27	19	24	16.0	2059262049	90-SDAT-12-M18F
12	1/2	PN 420	13/16-16	M 22 x 1,5	27.5	12	9.5	49	31	34.3	27	27	26.0	2059272049	90-SDAT-12-M22F
14; 15; 16	5/8	PN 420	1-14	M 16 x 1,5	22.5	7	12.5	43.5	33.5	30.9	27	22	23.9	2059432049	90-SDAT-16-M16F
14; 15; 16	5/8	PN 420	1-14	M 18 x 1,5	24.5	9	12.5	47.5	33.5	33.5	27	24	24.7	2059282049	90-SDAT-16-M18F
14; 15; 16	5/8	PN 420	1-14	M 22 x 1,5	27.5	12	12.5	49	33.5	34.3	27	27	28.0	2059292049	90-SDAT-16-M22F
18; 20	3/4	PN 420	1 3/16-12	M 22 x 1,5	27.5	12	15.5	49.5	37.5	34.8	30	27	50.7	2059302049	90-SDAT-20-M22F
18; 20	3/4	PN 420	1 3/16-12	M 27 x 2	32.5	15	15.5	55.5	37.5	37.3	30	32	57.2	2059312049	90-SDAT-20-M27F
22; 25	1	PN 420	1 7/16-12	M 33 x 2	41.5	20	20.5	59.5	41.5	41.3	36	41	65.2	2059322049	90-SDAT-25-M33F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 33 x 2	41.5	20	26	62	44.5	43.8	41	41	69.0	2059332049	90-SDAT-30-M33F
28; 30; 32	1 1/4	PN 280	1 11/16-12	M 42 x 2	50.5	26	26	63	44.5	44.3	41	50	73.0	2059342049	90-SDAT-30-M42F
35; 38	1 1/2	PN 280	2-12	M 48 x 2	55.5	32	32	71.5	49	50.3	50	55	89.0	2059352049	90-SDAT-38-M48F

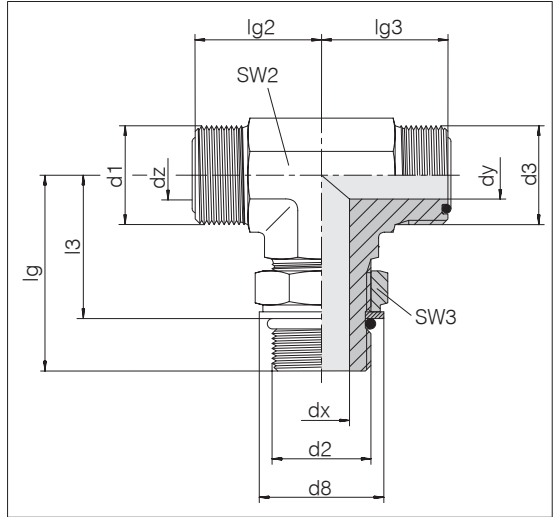
Example for comparison:
 4M12S87OMLOS

Adjustable stud T-connector with lock nut

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 6149
 Sealing type: O-Ring (Form F)
 Sealing material: Standard NBR

Tube coupling: tube-to-tube VOSS *Flare ORFS* nach
 ISO 8434-3/SAE J 1453
 Sealing material O-ring: Standard NBR

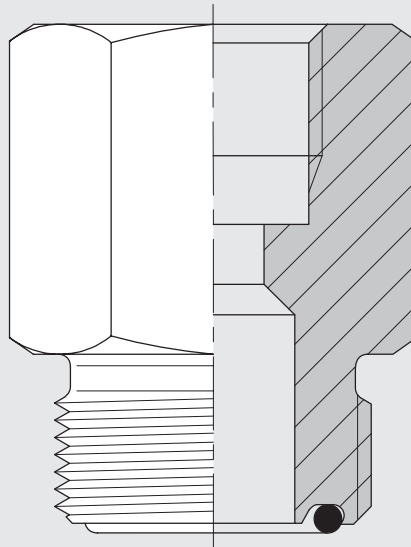
Reducers



Tube OD d1 mm	Tube OD d3 mm	d1 UN/UNF	d2 UN/UNF	d3 UN/UNF	d8	dx	dy	dz	lg	lg2	lg3	l3	SW2	SW3	Order-No.	Designation	
8; 10	5/16; 3/8	14; 15; 16	11/16-16	M 18 x 1,5	1-14	24.5	9	12.5	6.5	48.5	29	33.5	34.4	27	24	2059392049	90-SDAT-10-M18F-16
12	1/2	14; 15; 16	13/16-16	M 18 x 1,5	1-14	24.5	9	12.5	9.5	47.5	30	33.5	33.4	27	24	2059412049	90-SDAT-12-M18F-16
12	1/2	14; 15; 16	13/16-16	M 22 x 1,5	1-14	27.5	12	12.5	9.5	50	31.5	33.5	35.2	27	27	2059422049	90-SDAT-12-M22F-16
14; 15; 16	5/8	12	1-14	M 16 x 1,5	13/16-16	22.5	7	9.5	12.5	47	33.5	30.5	34.4	27	22	2059442049	90-SDAT-16-M16F-12



Adapters for test points

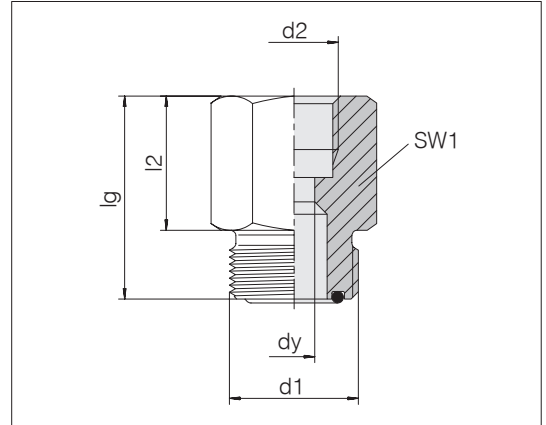


Adapters for test points

Female thread: BSPP thread, cylindrical
Threaded hole: ISO 1179-1

Tube coupling: VOSS *Flare ORFS* in acc. with
ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 BSPP	dy	lg	l2	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 400	9/16-18	1/4-19	4.5	27	17.0	17	3.2	2060252049	90-S-6-IG1/4
6	1/4	PN 400	9/16-18	1/2-14	4.5	37	27.0	30	12.4	2060262049	90-S-6-IG1/2
8; 10	5/16; 3/8	PN 400	11/16-16	1/4-19	6.5	28	17.0	19	4.9	2060272049	90-S-10-IG1/4
8; 10	5/16; 3/8	PN 400	11/16-16	1/2-14	6.5	38	27.0	30	10.7	2060282049	90-S-10-IG1/2
12	1/2	PN 280	13/16-16	1/4-19	5.5	30	17.0	22	6.5	2060292049	90-S-12-IG1/4
12	1/2	PN 280	13/16-16	1/2-14	6.5	40	27.0	30	13.7	2060302049	90-S-12-IG1/2

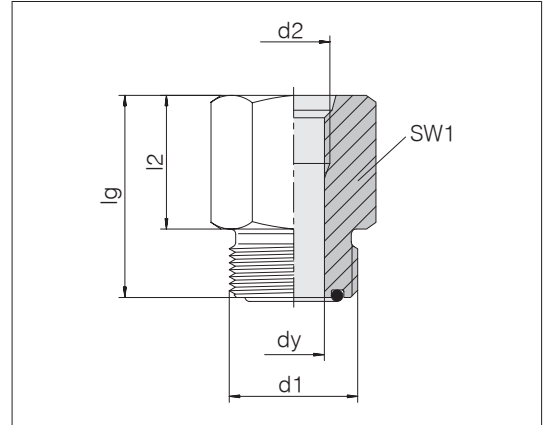
Example for comparison:
4-4G4MLOSMO

Adapters for test points

Female thread: Metric fine thread, cylindrical
Threaded hole: ISO 6149-1

Tube coupling: VOSS *Flare ORFS* in acc. with
ISO 8434-3/SAE J 1453

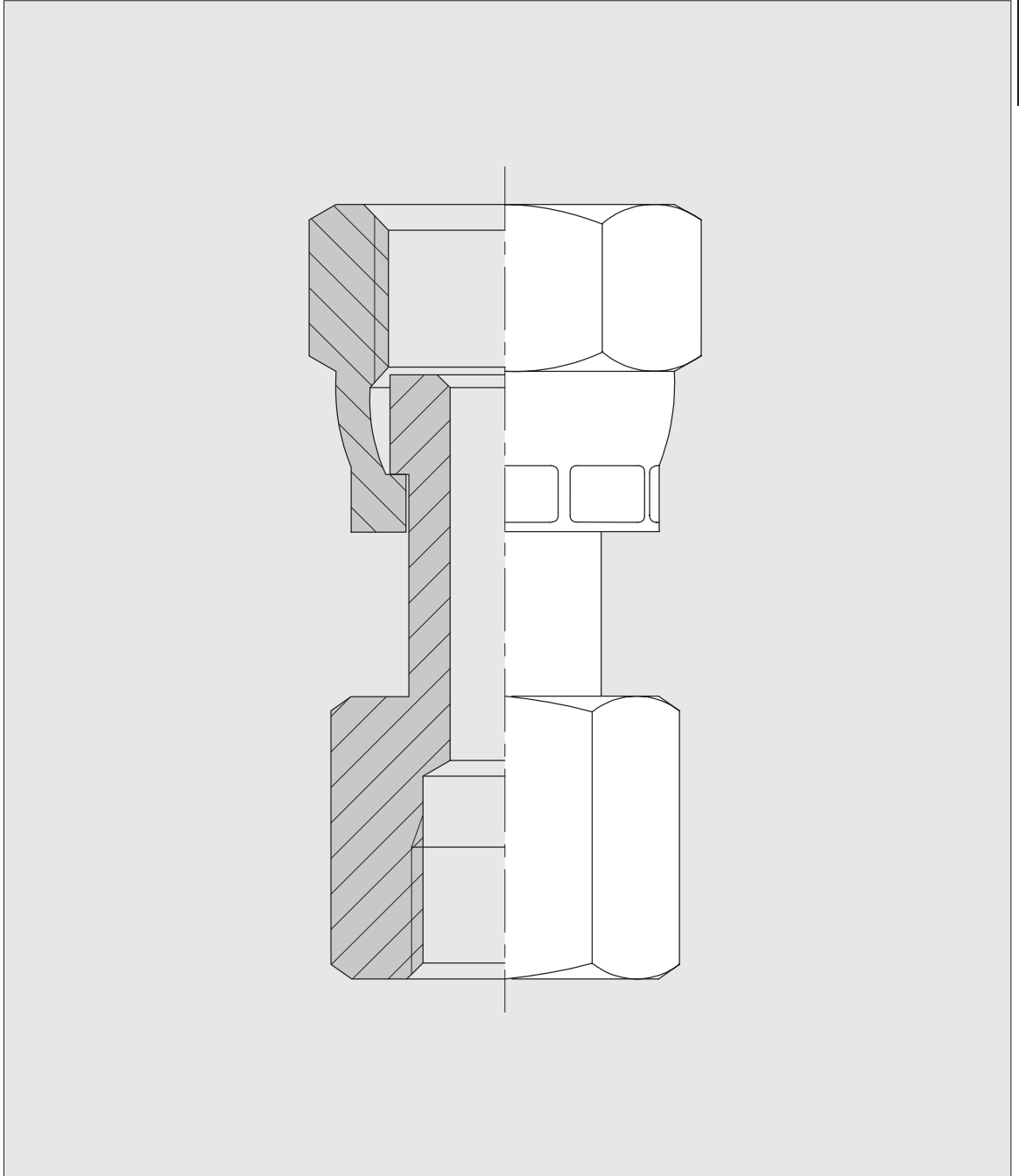
Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2	dy	lg	l2	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	M 14 x 1,5	4.5	28.8	18.8	19	2.0	2060312049	90-S-6-IM14F
8; 10	5/16; 3/8	PN 630	11/16-16	M 14 x 1,5	6.5	30.2	19.2	19	4.4	2060322049	90-S-10-IM14F
12	1/2	PN 630	13/16-16	M 14 x 1,5	9.5	31.8	18.8	22	6.6	2060332049	90-S-12-IM14F
14; 15; 16	5/8	PN 420	1-14	M 14 x 1,5	12.5	34.5	19.0	27	8.2	2060342049	90-S-16-IM14F
18; 20	3/4	PN 420	1 3/16-12	M 14 x 1,5	15.5	36	19.0	32	10.4	2060352049	90-S-20-IM14F

Example for comparison:
4M14G87MLOS

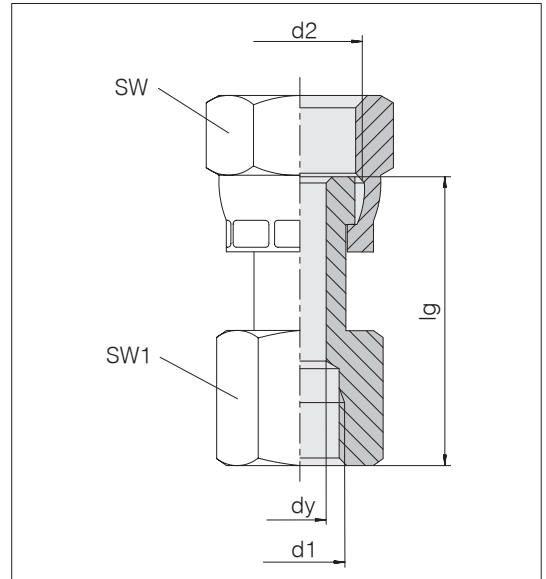
Test point connectors



Test point connectors

Female thread: BSPP thread, cylindrical
Threaded hole: ISO 1179-1

ORFS Swivel connection: ISO 8434-3/SAE J1453

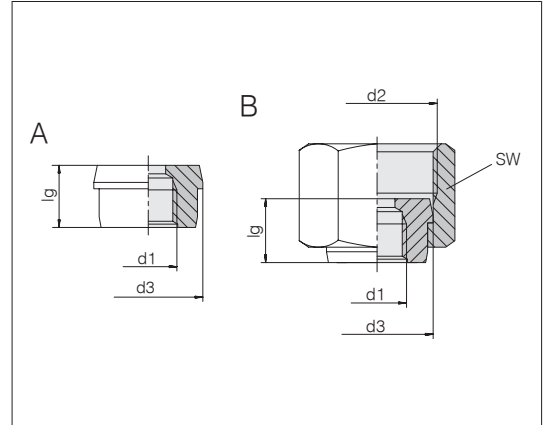


Tube OD mm	Inch	Pressure	d1 BSPP	d2 UN/UNF	dy	lg	SW	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	1/4-19	9/16-18	4	38	17	19	6.1	2060452000	90-SWS-6-IG1/4
8; 10	5/16; 3/8	PN 420	1/4-19	11/16-16	6.5	41	22	19	8.0	2060462000	90-SWS-10-IG1/4
12	1/2	PN 420	1/4-19	13/16-16	9	43	24	19	8.8	2060472000	90-SWS-12-IG1/4

Example for comparison:
4TT4MLS

Test point connectors

Female thread: BSPP thread, cylindrical
Threaded hole: ISO 1179-1



Tube OD mm	Inch	Pressure	d1 BSPP	d2 UN/UNF	d3	lg	SW	Style	kg/100 ca.	Order-No.	Designation
14; 15; 16	5/8	PN 420	1/4-19	1-14	23.4	18	30	B	9.2	2060482049	90-SWS-16-IG1/4
14; 15; 16	5/8	PN 420	1/4-19	1-14	23.4	18		A	3.0	2060482000	90-SWSX-16-IG1/4
18; 20	3/4	PN 420	1/4-19	1 3/16-12	27.8	18	36	B	15.6	2060492049	90-SWS-20-IG1/4
18; 20	3/4	PN 420	1/4-19	1 3/16-12	27.8	18		A	5.3	2060492000	90-SWSX-20-IG1/4
22; 25	1	PN 420	1/4-19	1 7/16-12	34.2	18	41	B	21.1	2060502049	90-SWS-25-IG1/4
22; 25	1	PN 420	1/4-19	1 7/16-12	34.2	18		A	9.5	2060502000	90-SWSX-25-IG1/4
28; 30; 32	1 1/4	PN 280	1/4-19	1 11/16-12	40.5	18	50	B	31.5	2060512049	90-SWS-30-IG1/4
28; 30; 32	1 1/4	PN 280	1/4-19	1 11/16-12	40.5	18		A	13.0	2060512000	90-SWSX-30-IG1/4
35; 38	1 1/2	PN 280	1/4-19	2-12	48.5	18	60	B	47.3	2060522049	90-SWS-38-IG1/4
35; 38	1 1/2	PN 280	1/4-19	2-12	48.5	18		A	18.9	2060522000	90-SWSX-38-IG1/4

Style A: Union nuts have to be ordered seperately.

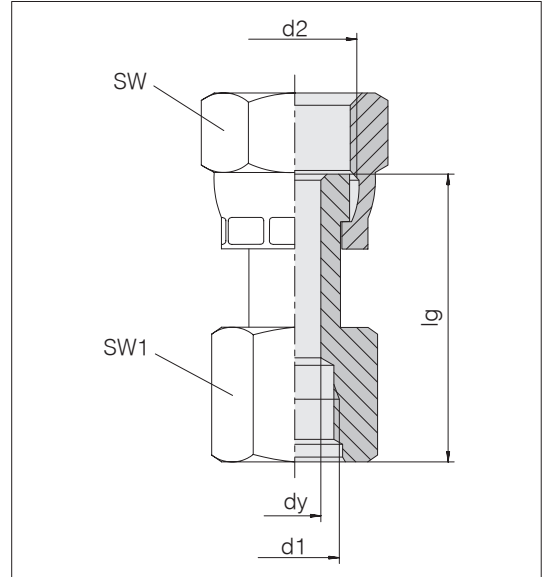
Style B: Union nuts are included.

Example for comparison:
10TT4LS

Test point connectors

Female thread: metric fine thread, parallel

With form drilling CS



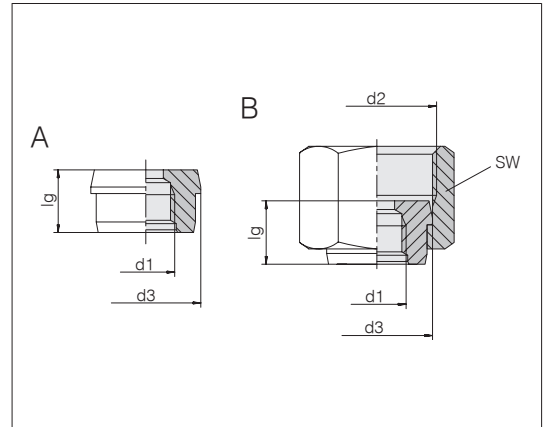
Tube OD mm	Inch	Pressure	d1	d2 UN/UNF	dy	lg	SW	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 420	M 10 x 1	9/16-18	4	37	17	19	6.8	2060532000	90-SWS-6-IM10CS
8; 10	5/16; 3/8	PN 420	M 10 x 1	11/16-16	6.5	39	22	19	8.6	2060542000	90-SWS-10-IM10CS
12	1/2	PN 420	M 10 x 1	13/16-16	9	43	24	19	9.6	2060552000	90-SWS-12-IM10CS

Example for comparison:
4TT8MLS

Test point connectors

Female thread: metric fine thread, parallel

With form drilling CS



Tube OD mm	Inch	Pressure	d1	d2 UN/UNF	d3	lg	SW	Style	kg/100 ca.	Order-No.	Designation
14; 15; 16	5/8	PN 420	M 10 x 1	1-14	23.5	16	30	B	10.2	2060562049	90-SWS-16-IM10CS
14; 15; 16	5/8	PN 420	M 10 x 1	1-14	23.5	16		A	4.0	2060562000	90-SWSX-16-IM10CS
18; 20	3/4	PN 420	M 10 x 1	1 3/16-12	27.9	16	36	B	16.3	2060572049	90-SWS-20-IM10CS
18; 20	3/4	PN 420	M 10 x 1	1 3/16-12	27.9	16		A	6.0	2060572000	90-SWSX-20-IM10CS
22; 25	1	PN 420	M 10 x 1	1 7/16-12	34.2	16	41	B	20.1	2060582049	90-SWS-25-IM10CS
22; 25	1	PN 420	M 10 x 1	1 7/16-12	34.2	16		A	8.5	2060582000	90-SWSX-25-IM10CS
28; 30; 32	1 1/4	PN 280	M 10 x 1	1 11/16-12	40.6	16	50	B	31.9	2060592049	90-SWS-30-IM10CS
28; 30; 32	1 1/4	PN 280	M 10 x 1	1 11/16-12	40.6	16		A	13.4	2060592000	90-SWSX-30-IM10CS
35; 38	1 1/2	PN 280	M 10 x 1	2-12	48.5	16	60	B	47.8	2060602049	90-SWS-38-IM10CS
35; 38	1 1/2	PN 280	M 10 x 1	2-12	48.5	16		A	19.4	2060602000	90-SWSX-38-IM10CS

Style A: Union nuts have to be ordered seperately.

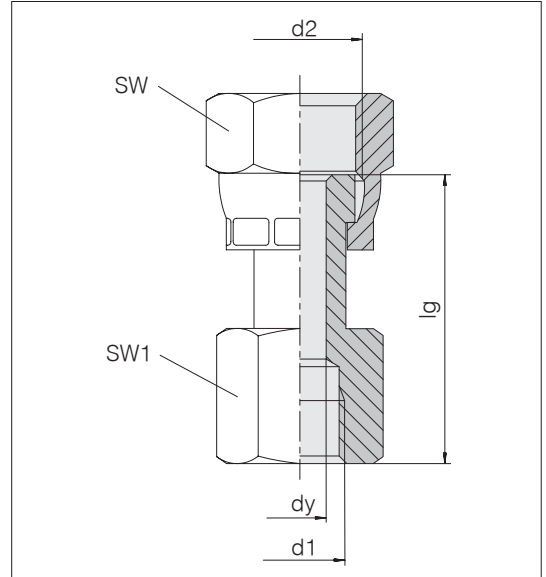
Style B: Union nuts are included.

Example for comparison: 10TT8LS

Test point connectors

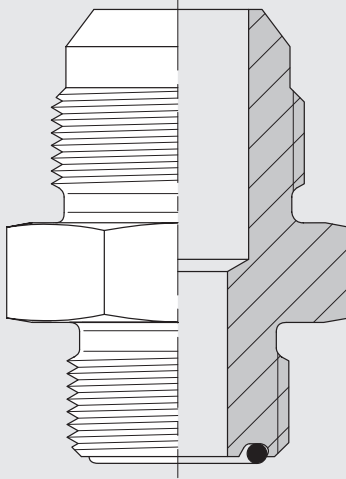
Female thread: UN/UNF
Threaded hole: ISO 11926

ORFS Swivel connection: ISO 8434-3/SAE J1453



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	lg	SW	SW1	kg/100 ca.	Order-No.	Designation
8; 10	5/16; 3/8	PN 420	9/16-18	11/16-16	41	22	22	10.0	2060612000	90-SWS-10-IU9/16-18F
12	1/2	PN 420	9/16-18	13/16-16	43	24	22	10.3	2060622000	90-SWS-12-IU9/16-18F

System adapters ORFS / JIC / DIN



System adapter ORFS / JIC

90° ORFS external thread

ISO 8434-3

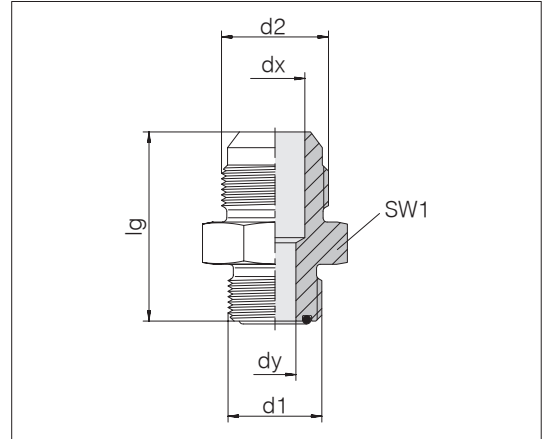
37° JIC external thread

ISO 8434-2

Tube coupling: VOSS *Flare^{ORFS}* in acc. with

ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	dx	dy	lg	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 350	9/16-18	7/16-20	4.4	4.4	32	17	3.1	2015152052	AP-90/37-S-6-6
8; 10	5/16; 3/8	PN 350	11/16-16	9/16-18	6.5	6.5	34	19	4.5	2015172052	AP-90/37-S-10-10
12	1/2	PN 350	13/16-16	3/4-16	9.5	9.5	39.5	22	7.0	2015182052	AP-90/37-S-12-12
14; 15; 16	5/8	PN 350	1-14	7/8-14	12.3	12.3	46.5	27	13.0	2015192052	AP-90/37-S-16-16
18; 20	3/4	PN 350	1 3/16-12	1 1/16-12	15.5	15.5	52	32	17.2	2015202052	AP-90/37-S-20-20
22; 25	1	PN 280	1 7/16-12	1 5/16-12	20.5	20.5	55	41	28.5	2015212052	AP-90/37-S-25-25
28; 30; 32	1 1/4	PN 210	1 11/16-12	1 5/8-12	26	26	58	46	39.7	2015222052	AP-90/37-S-30-32
35; 38	1 1/2	PN 140	2-12	1 7/8-12	32	32	63	55	57.5	2015232052	AP-90/37-S-38-38

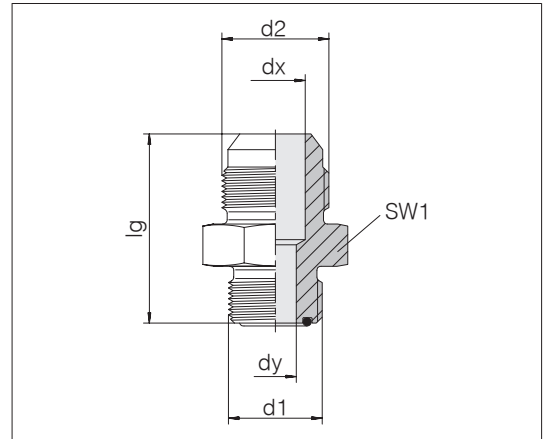
Example for comparison:
4 XHLO-S

System adapter ORFS / JIC

90° ORFS external thread
 ISO 8434-3
 37° JIC external thread
 ISO 8434-2

Standard O-ring material is NBR

Reducers



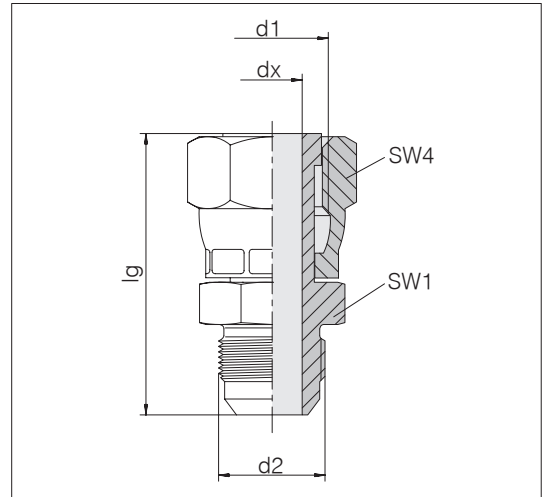
Tube OD d1		Tube OD d2		Pressure	d1 UN/UNF	d2 UN/UNF	dx	dy	lg	SW1	kg/100 ca.	Order-No.	Designation
mm	Inch	mm	Inch										
8; 10	5/16; 3/8	12	1/2	PN 350	11/16-16	3/4-16	9.9	6.5	38	22	5.8	2015092052	AP-90/37-S-10-12
12	1/2	10	3/8	PN 350	13/16-16	9/16-18	7.5	9.5	37	22	5.7	2015102052	AP-90/37-S-12-10
12	1/2	14; 15; 16	5/8	PN 350	13/16-16	7/8-14	12.3	9.5	42.5	24	10.0	2015112052	AP-90/37-S-12-16
14; 15; 16	5/8	10	3/8	PN 350	1-14	9/16-18	7.5	12.5	40	27	11.4	2015122052	AP-90/37-S-16-10
14; 15; 16	5/8	12	1/2	PN 350	1-14	3/4-16	9.9	12.5	43.5	27	12.3	2015132052	AP-90/37-S-16-12
18; 20	3/4	14; 15; 16	5/8	PN 350	1 3/16-12	7/8-14	12.3	15.5	49.5	32	16.1	2015142052	AP-90/37-S-20-16
18; 20	3/4	22; 25	1	PN 280	1 3/16-12	1 5/16-12	21.5	15.5	64	38	26.0	2015242052	AP-90/37-S-20-25
22; 25	1	14; 15; 16	5/8	PN 280	1 7/16-12	7/8-14	12.3	20.5	51	38	23.4	2015252052	AP-90/37-S-25-16
22; 25	1	18; 20	3/4	PN 280	1 7/16-12	1 1/16-12	15.5	20.5	63	38	25.9	2015262052	AP-90/37-S-25-20

Example for comparison:
 4-6 XHLO-S

System adapter ORFS / JIC

90° ORFS swivel nut
 ISO 8434-3
 37° JIC external thread
 ISO 8434-2

ORFS Swivel connection: ISO 8434-3/SAE J1453



Tube OD mm	Inch	Pressure	d1 UN/UNF	d2 UN/UNF	dx	lg	SW1	SW4	kg/100 ca.	Order-No.	Designation
6	1/4	PN 350	9/16-18	7/16-20	4	39.5	17	17	3.8	2015302000	AP-90/37-SWS-6-6
8; 10	5/16; 3/8	PN 350	11/16-16	9/16-18	6.5	42.5	19	22	6.9	2015322000	AP-90/37-SWS-10-10
12	1/2	PN 350	13/16-16	3/4-16	9	49	22	24	7.3	2015332000	AP-90/37-SWS-12-12
14; 15; 16	5/8	PN 350	1-14	7/8-14	11.5	57.5	27	30	14.5	2015342000	AP-90/37-SWS-16-16
18; 20	3/4	PN 350	1 3/16-12	1 1/16-12	14	63.5	32	36	21.8	2015352000	AP-90/37-SWS-20-20
22; 25	1	PN 280	1 7/16-12	1 5/16-12	20	67.3	41	41	30.5	2015362000	AP-90/37-SWS-25-25
28; 30; 32	1 1/4	PN 210	1 11/16-12	1 5/8-12	26	69.5	46	50	37.4	2015392000	AP-90/37-SWS-30-32
35; 38	1 1/2	PN 140	2-12	1 7/8-12	32	74	55	57	45.6	2015412000	AP-90/37-SWS-38-38

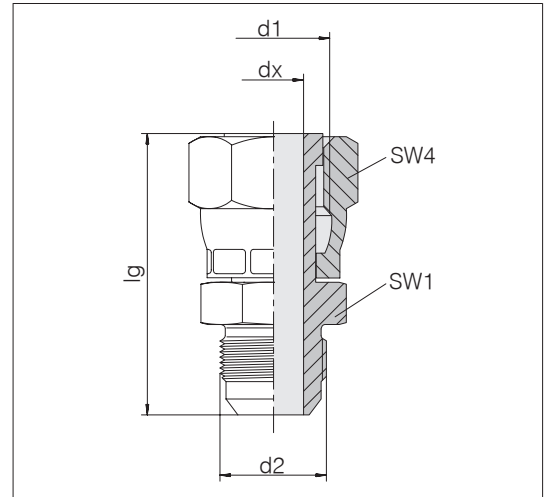
Example for comparison:
 4 XHL6-S

System adapter ORFS / JIC

90° ORFS swivel nut
 ISO 8434-3
 37° JIC external thread
 ISO 8434-2

ORFS swivel coupling: ISO 8434-3/SAE J 1453

Reducers



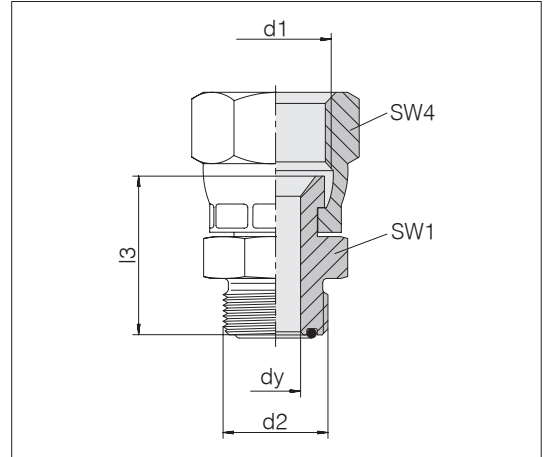
Tube OD d1 mm	Tube OD d2 mm	Pressure Inch	Pressure PN	d1 UN/UNF	d2 UN/UNF	dx	lg	SW1	SW4	kg/100 ca.	Order-No.	Designation
6	10	3/8	PN 350	9/16-18	9/16-18	4	41	17	17	6.0	2015312000	AP-90/37-SWS-6-10
12	8	5/16	PN 350	13/16-16	1/2-20	6	46	22	14	7.0	2015372000	AP-90/37-SWS-12-8
12	14; 15; 16	5/8	PN 350	13/16-16	7/8-14	9	54	24	14	13.2	2015382000	AP-90/37-SWS-12-16

Example for comparison:
 4-6 XHL6-S

System adapter JIC / ORFS

37° JIC swivel nut
 ISO 8434-2
 90° ORFS external thread
 ISO 8434-3

Tube coupling: VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



Tube OD d1		Tube OD d2		Pressure	d1 UN/UNF	d2 UN/UNF	dy	I3	SW1	SW4	kg/100 ca.	Order-No.	Designation
mm	Inch	mm	Inch										
6	1/4	6	1/4	PN 350	7/16-20	9/16-18	4.4	27.2	17	14	3.5	2015402052	AP-37/90-SWS-6-6
8; 10	5/16; 3/8	8; 10	5/16; 3/8	PN 350	9/16-18	11/16-16	6.5	31.2	19	19	5.8	2015422052	AP-37/90-SWS-10-10
12	1/2	8; 10	5/16; 3/8	PN 350	3/4-16	11/16-16	6.5	32.3	19	22	6.0	2015472052	AP-37/90-SWS-12-10
12	1/2	12	1/2	PN 350	3/4-16	13/16-16	9.5	35.3	22	22	6.3	2015432052	AP-37/90-SWS-12-12
14; 15; 16	5/8	12	1/2	PN 350	7/8-14	13/16-16	9.5	36.8	22	27	9.2	2015482052	AP-37/90-SWS-16-12
14; 15; 16	5/8	14; 15; 16	5/8	PN 350	7/8-14	1-14	12.3	39.3	27	27	12.2	2015442052	AP-37/90-SWS-16-16
14; 15; 16	5/8	18; 20	3/4	PN 350	7/8-14	1 3/16-12	12.3	40.8	32	27	15.9	2015502052	AP-37/90-SWS-16-20
18; 20	3/4	14; 15; 16	5/8	PN 350	1 1/16-12	1-14	12.5	41.7	27	32	16.2	2015492052	AP-37/90-SWS-20-16
18; 20	3/4	18; 20	3/4	PN 350	1 1/16-12	1 3/16-12	15.5	43.2	32	32	21.2	2015452052	AP-37/90-SWS-20-20
22; 25	1	22; 25	1	PN 280	1 5/16-12	1 7/16-12	20.5	45.5	41	41	24.9	2015462052	AP-37/90-SWS-25-25

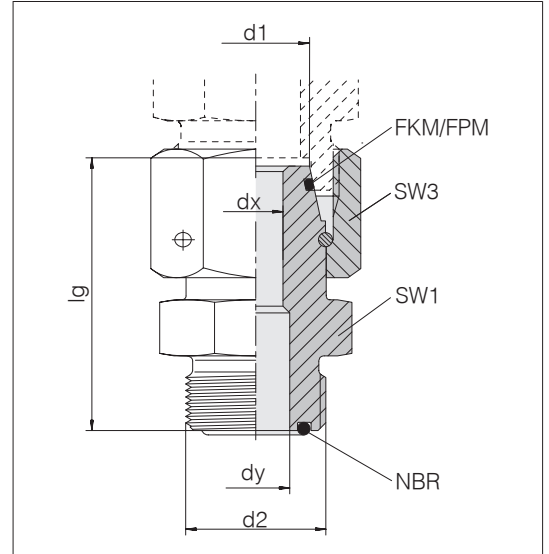
Example for comparison:
 4 LOHX6-S

System adapter DIN / ORFS

24° DIN tapered coupling with O-ring (DKO)
 ISO 8434-1
 90° ORFS external thread
 ISO 8434-3

Standard O-ring material for ORFS is NBR

Standard O-ring material for DKO is FKM



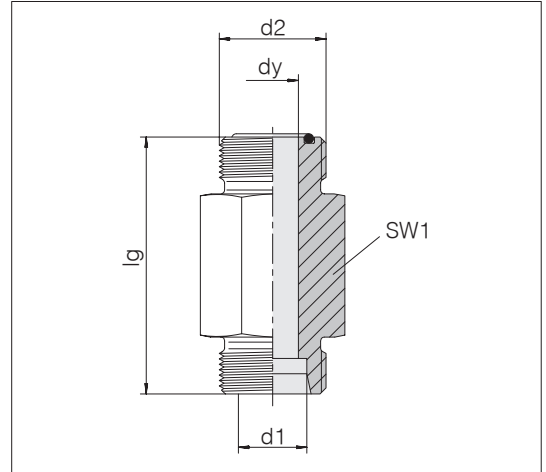
Series	Tube OD		Pressure	d1	d2	dx	dy	lg	SW1	SW3	kg/100	Order-No.	Designation
Tube OD	d2	Inch			UN/UNF						ca.		
L 6	6	1/4	PN 500	M 12 x 1,5	9/16-18	2.5	4.5	34	17	14	3.7	2061602049	AP-24/90-SWOS-L6-6
L 8	6	1/4	PN 500	M 14 x 1,5	9/16-18	4.5	4.5	34	17	17	5.0	2061612049	AP-24/90-SWOS-L8-6
L 10	8; 10	5/16; 3/8	PN 500	M 16 x 1,5	11/16-16	6	6	35.5	19	19	5.9	2061622049	AP-24/90-SWOS-L10-10
L 12	12	1/2	PN 400	M 18 x 1,5	13/16-16	8	8	38.5	22	22	8.6	2061632049	AP-24/90-SWOS-L12-12
L 15	14; 15; 16	5/8	PN 400	M 22 x 1,5	1-14	10	10	46.5	27	27	16.2	2061642049	AP-24/90-SWOS-L15-16
L 18	18; 20	3/4	PN 400	M 26 x 1,5	1 3/16-12	13	13	48	32	32	21.9	2061652049	AP-24/90-SWOS-L18-20
L 22	22; 25	1	PN 250	M 30 x 2	1 7/16-12	17	20.5	52	41	36	30.8	2061662049	AP-24/90-SWOS-L22-25
L 28	22; 25	1	PN 250	M 36 x 2	1 7/16-12	22	20.5	53.5	41	41	30.2	2087202049	AP-24/90-SWOS-L28-25
L 35	28; 30; 32	1 1/4	PN 250	M 45 x 2	1 11/16-12	28	26	56.5	46	50	36.1	2087172049	AP-24/90-SWOS-L35-30
L 42	35; 38	1 1/2	PN 250	M 52 x 2	2-12	34	32	64	55	60	56.3	2087082049	AP-24/90-SWOS-L42-38
S 6	6	1/4	PN 630	M 14 x 1,5	9/16-18	2.5	4.5	34	17	17	3.0	2061672049	AP-24/90-SWOS-S6-6
S 8	6	1/4	PN 630	M 16 x 1,5	9/16-18	4	4	35	17	19	5.0	2061682049	AP-24/90-SWOS-S8-6
S 10	8; 10	5/16; 3/8	PN 630	M 18 x 1,5	11/16-16	6	6	37.5	19	22	7.5	2061692049	AP-24/90-SWOS-S10-10
S 12	12	1/2	PN 630	M 20 x 1,5	13/16-16	8	8	41	22	24	14.5	2061702049	AP-24/90-SWOS-S12-12
S 14	14; 15; 16	5/8	PN 420	M 22 x 1,5	1-14	9	12.5	46.5	27	27	18.0	2061712049	AP-24/90-SWOS-S14-16
S 16	14; 15; 16	5/8	PN 420	M 24 x 1,5	1-14	11	11	48	27	30	18.5	2061722049	AP-24/90-SWOS-S16-16
S 20	14; 15; 16	5/8	PN 420	M 30 x 2	1-14	14	12.5	52	27	30	24.5	2087162049	AP-24/90-SWOS-S20-16
S 20	18; 20	3/4	PN 420	M 30 x 2	1 3/16-12	14	14	53.5	32	36	26.0	2061732049	AP-24/90-SWOS-S20-20
S 25	22; 25	1	PN 420	M 36 x 2	1 7/16-12	18	18	57	41	46	30.8	2061742049	AP-24/90-SWOS-S25-25
S 38	8; 10	5/16; 3/8	PN 420	M 52 x 2	11/16-16	30	6.5	62.5	50	60	75.5	2087122049	AP-24/90-SWOS-S38-10

Example for comparison:
 4-6L LOHU86-S

System adapter DIN / ORFS

24° DIN
 ISO 8434-1
 90° ORFS
 ISO 8434-3

Tube coupling: VOSS *Flare^{ORFS}* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR



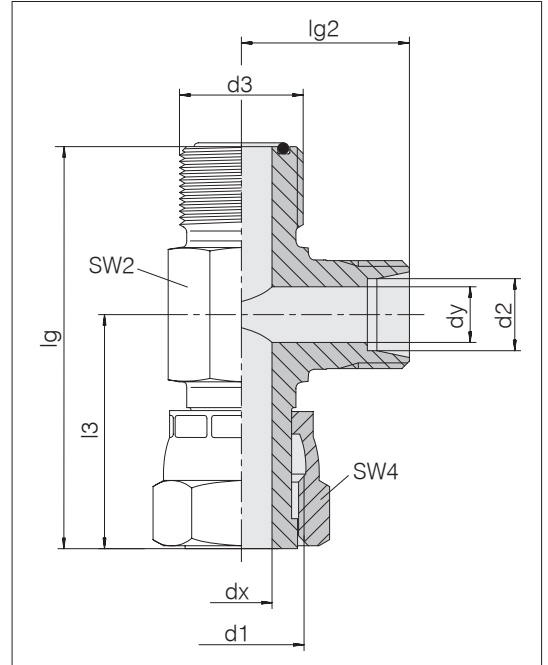
Series	Tube OD	Pressure	d1	d2	dy	lg	SW1	kg/100	Order-No.	Designation	
Tube OD	d2			UN/UNF				ca.			
d1	mm	Inch									
S 25	22; 25	1	PN 420	M 12 x 1,5	1 7/16-12	20	85.5	41	58.9	1790572000	AP-24/90-S-S25-25-LG85,5

Other sizes on request.

System adapter ORFS / DIN

90° ORFS
 ISO 8434-3
 24° DIN
 ISO 8434-1

Tube coupling: VOSS *Flare ORFS* in acc. with
 ISO 8434-3/SAE J 1453
 Sealing material O-Ring: Standard NBR

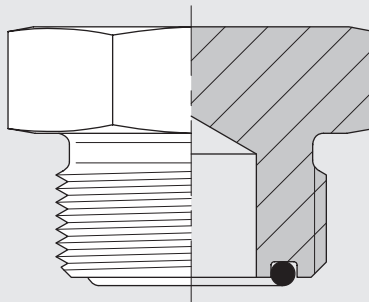


Series	Tube OD d1	Tube OD d3	Tube OD d3	Pressure	d1; d3 UN/UNF	dx	dy	lg	l3	SW2	SW4	kg/100 ca.	Order-No.	Designation	
Tube OD d2	mm	Inch	mm	Inch											
L 12	12	1/2	12	1/2	PN 420	13/16-16	9	10	66	38	19	24	15.6	2064832049	AP-90/24-SWL-12-L12-12

Other sizes on
 request.

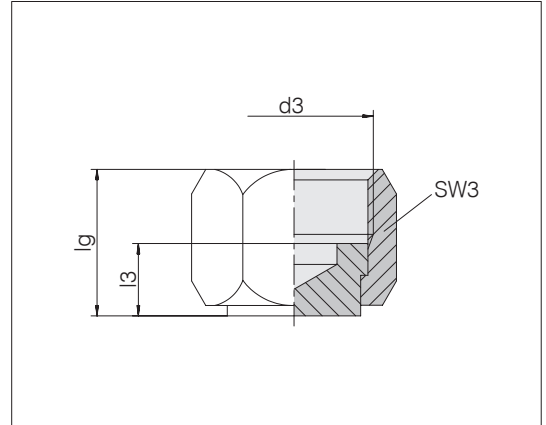
Accessories

1



Caps

Tube connection according to ISO 8434-3/SAE J 1453



Tube OD mm	Inch	Pressure	d3 UN/UNF	lg	l3	SW3	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	17	9	17	2.1	2061432000	90-PLC-6
8; 10	5/16; 3/8	PN 630	11/16-16	19	10.5	22	4.3	2061442000	90-PLC-10
12	1/2	PN 630	13/16-16	22	12	24	5.5	2061452000	90-PLC-12
14; 15; 16	5/8	PN 420	1-14	26	13.5	30	10.3	2061462000	90-PLC-16
18; 20	3/4	PN 420	1 3/16-12	28.5	15	36	16.3	2061472000	90-PLC-20
22; 25	1	PN 420	1 7/16-12	29.5	16	41	21.5	2061482000	90-PLC-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	29.5	16	50	32.6	2061492000	90-PLC-30
35; 38	1 1/2	PN 280	2-12	29.5	16	60	45.7	2061502000	90-PLC-38
50	2	PN 200	2 1/2-12	37	20	75	119.0	2061512000	90-PLC-50 ²⁾

²⁾ Special sizes only on request

The stud is fixed with the union nut.

Example for comparison:
4FNL-S

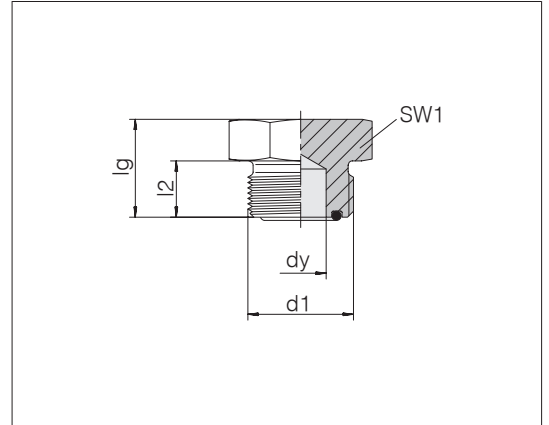


Plugs

Tube connection according to ISO 8434-3/SAE J 1453

Tube coupling: VOSS *Flare ORFS* in acc. with ISO 8434-3/SAE J 1453

Sealing material O-Ring: Standard NBR

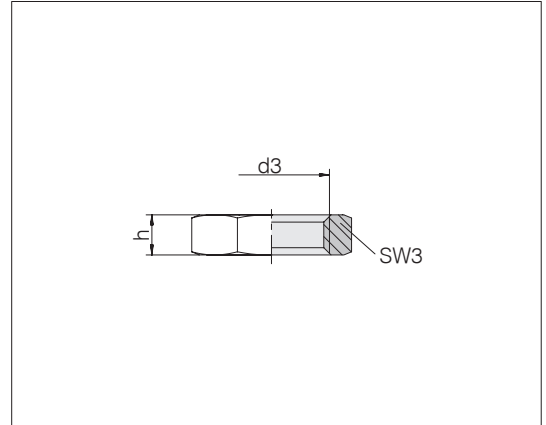


Tube OD mm	Inch	Pressure	d1 UN/UNF	dy	lg	l2	SW1	kg/100 ca.	Order-No.	Designation
6	1/4	PN 630	9/16-18	4.5	16.5	10.0	17	2.3	2061352052	90-TBS-6
8; 10	5/16; 3/8	PN 630	11/16-16	6.5	19	11.0	19	3.6	2061362052	90-TBS-10
12	1/2	PN 630	13/16-16	9.5	22	13.0	22	5.1	2061372052	90-TBS-12
14; 15; 16	5/8	PN 420	1-14	12.5	26	15.5	27	9.1	2061382052	90-TBS-16
18; 20	3/4	PN 420	1 3/16-12	15.5	27.5	17.0	32	13.0	2061392052	90-TBS-20
22; 25	1	PN 420	1 7/16-12	20.5	28	17.5	41	20.3	2061402052	90-TBS-25
28; 30; 32	1 1/4	PN 280	1 11/16-12	26	28	17.5	46	26.6	2061412052	90-TBS-30
35; 38	1 1/2	PN 280	2-12	32	28	17.5	55	36.9	2061422052	90-TBS-38
50	2	PN 200	2 1/2-12	45	36	23.0	70	58.1	2061342052	90-TBS-50 ²⁾

²⁾ Special sizes only on request

Example for comparison:
4 PNLO-S

Lock nuts for bulkhead connectors

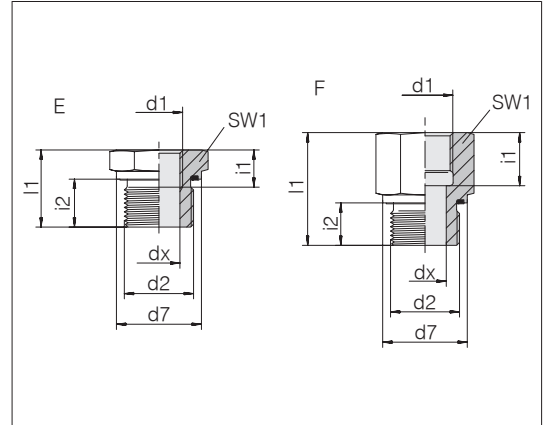


d3 UN/UNF	SW3	h	kg/100 ca.	Order-No.	Designation
9/16-18	22	7.0	1.5	2052402100	GP-LN-IU9/16-18-C21
11/16-16	27	8.0	2.5	2052412100	GP-LN-IU11/16-16-C21
13/16-16	30	9.0	3.2	2052422100	GP-LN-IU13/16-16-C21
1-14	36	10.5	5.2	2052432100	GP-LN-IU1-14-C21
1 3/16-12	41	10.5	6.4	2052442100	GP-LN-IU13/16-12-C21
1 7/16-12	46	10.5	6.8	2052452100	GP-LN-IU17/16-12-C21
1 11/16-12	50	10.5	7.0	2052462100	GP-LN-IU111/16-12-C21
2-12	60	10.5	10.0	2052472100	GP-LN-IU2-12-C21

Example for comparison:
4WLNMLS

Thread reducing couplings

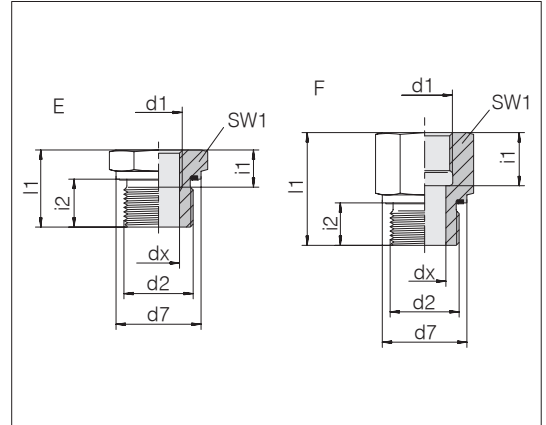
Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-2 Form E
 Sealing type: Profile sealing ring PEFLEX
 Sealing material: Standard NBR



Male thread d2	Female thread d1	Pressure	d7	dx	l1	SW1	i1	i2	Style	Nm -10 %	kg/100 ca.	Order-No.	Designation
G 1/8 A	G 1/4	PN 630	13.9	4	32.5	19	17	8	F	20	4.2	1149012000	GP-SDS-G1/8E-IG1/4
G 1/8 A	G 3/8	PN 630	13.9	4	33.5	24	17	8	F	20	6.8	1149002000	GP-SDS-G1/8E-IG3/8
G 1/4 A	G 1/8	PN 630	18.9	5	31.5	19	12	12	F	60	4.6	1149052000	GP-SDS-G1/4E-IG1/8
G 1/4 A	G 3/8	PN 630	18.9	5	37.5	24	17	12	F	60	7.3	1149042000	GP-SDS-G1/4E-IG3/8
G 1/4 A	G 1/2	PN 630	18.9	5	41.5	30	20	12	F	60	12.4	1149032000	GP-SDS-G1/4E-IG1/2
G 1/4 A	G 3/4	PN 630	18.9	5	44.5	36	22	12	F	60	18.5	1149022000	GP-SDS-G1/4E-IG3/4
G 3/8 A	G 1/8	PN 630	21.9	8.5	22.5	22	8	12	E	90	3.8	1149092000	GP-SDS-G3/8E-IG1/8
G 3/8 A	G 1/4	PN 630	21.9	8	37.5	22	17	12	F	90	7.2	1149082000	GP-SDS-G3/8E-IG1/4
G 3/8 A	G 1/2	PN 630	21.9	8	42.5	30	20	12	F	90	13.2	1149072000	GP-SDS-G3/8E-IG1/2
G 3/8 A	G 3/4	PN 400	21.9	8	45.5	36	22	12	F	90	19.1	1149062000	GP-SDS-G3/8E-IG3/4
G 1/2 A	G 1/8	PN 630	26.9	8.5	24	27	8	14	E	150	6.5	1149152000	GP-SDS-G1/2E-IG1/8
G 1/2 A	G 1/4	PN 630	26.9	11.5	24	27	12	14	E	150	5.6	1149142000	GP-SDS-G1/2E-IG1/4
G 1/2 A	G 3/8	PN 630	26.9	12	37.5	27	17	14	F	150	9.7	1149132000	GP-SDS-G1/2E-IG3/8
G 1/2 A	G 1/2	PN 630	26.9	12	42	30	20	14	F	150	12.3	1149402000	GP-SDS-G1/2E-IG1/2
G 1/2 A	G 3/4	PN 400	26.9	12	47.5	36	22	14	F	150	19.4	1149122000	GP-SDS-G1/2E-IG3/4
G 1/2 A	G 1	PN 400	26.9	12	50.5	41	24.5	14	F	150	23.7	1149112000	GP-SDS-G1/2E-IG1
G 1/2 A	G 1 1/4	PN 400	26.9	12	54.5	55	26.5	14	F	150	50.3	1149102000	GP-SDS-G1/2E-IG1 1/4
G 3/4 A	G 1/4	PN 400	31.9	11.5	26	32	12	16	E	200	10.1	1149212000	GP-SDS-G3/4E-IG1/4
G 3/4 A	G 3/8	PN 400	31.9	15	26	32	12	16	E	200	8.5	1149202000	GP-SDS-G3/4E-IG3/8
G 3/4 A	G 1/2	PN 400	31.9	16	42.5	32	20	16	F	200	15.0	1149192000	GP-SDS-G3/4E-IG1/2
G 3/4 A	G 1	PN 400	31.9	16	52.5	41	24.5	16	F	200	24.7	1149182000	GP-SDS-G3/4E-IG1
G 3/4 A	G 1 1/4	PN 400	31.9	16	56.5	55	26.5	16	F	200	51.4	1149172000	GP-SDS-G3/4E-IG1 1/4
G 3/4 A	G 1 1/2	PN 315	31.9	16	58.5	60	28.5	16	F	200	59.6	1149162000	GP-SDS-G3/4E-IG1 1/2

Thread reducing couplings

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-2 Form E
 Sealing type: Profile sealing ring PEFLEX
 Sealing material: Standard NBR



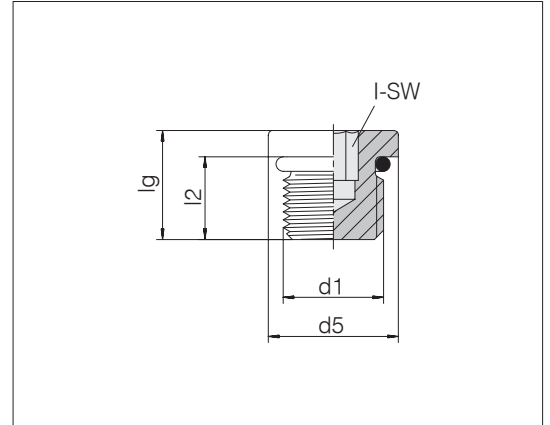
Male thread d2	Female thread d1	Pressure	d7	dx	l1	SW1	i1	i2	Style	Nm -10 %	kg/100 ca.	Order-No.	Designation
G 1 A	G 1/4	PN 400	39.9	11.5	29	41	12	18	E	250	19.3	1149272000	GP-SDS-G1E-IG1/4
G 1 A	G 3/8	PN 400	39.9	15	29	41	12	18	E	250	17.8	1149262000	GP-SDS-G1E-IG3/8
G 1 A	G 1/2	PN 400	39.9	19	29	41	14	18	E	250	15.2	1149252000	GP-SDS-G1E-IG1/2
G 1 A	G 3/4	PN 400	39.9	20	49	41	22	18	F	250	28.6	1149242000	GP-SDS-G1E-IG3/4
G 1 A	G 1 1/4	PN 400	39.9	20	59	55	26.5	18	F	250	54.9	1149232000	GP-SDS-G1E-IG11/4
G 1 A	G 1 1/2	PN 315	39.9	20	61	60	28.5	18	F	250	62.6	1149222000	GP-SDS-G1E-IG11/2
G 1 1/4 A	G 1/2	PN 400	49.9	19	32	50	14	20	E	500	30.9	1149312000	GP-SDS-G11/4E-IG1/2
G 1 1/4 A	G 3/4	PN 400	49.9	24	32	50	16	20	E	500	26.0	1149302000	GP-SDS-G11/4E-IG3/4
G 1 1/4 A	G 1	PN 400	49.9	25	54	50	24.5	20	F	500	48.2	1149292000	GP-SDS-G11/4E-IG1
G 1 1/4 A	G 1 1/2	PN 315	49.9	25	62	60	28.5	20	F	500	65.9	1149282000	GP-SDS-G11/4E-IG11/2
G 1 1/2 A	G 1/2	PN 315	54.9	19	36	55	14	22	E	600	46.7	1149352000	GP-SDS-G11/2E-IG1/2
G 1 1/2 A	G 3/4	PN 315	54.9	24	36	55	16	22	E	600	41.6	1149342000	GP-SDS-G11/2E-IG3/4
G 1 1/2 A	G 1	PN 315	54.9	30.5	36	55	18	22	E	600	33.6	1149332000	GP-SDS-G11/2E-IG1
G 1 1/2 A	G 1 1/4	PN 315	54.9	32	60	55	26.5	22	F	600	55.3	1149322000	GP-SDS-G11/2E-IG11/4
G 2 A	G 1/2	PN 160	74.9	19	45	75	14	24	E	700	117.1	1149682000	GP-SDS-G2E-IG1/2
G 2 A	G 1	PN 160	74.9	30.5	45	75	18	24	E	700	101.9	1149692000	GP-SDS-G2E-IG1
G 2 A	G 1 1/4	PN 160	74.9	39	45	75	26.5	24	E	700	85.2	1149702000	GP-SDS-G2E-IG11/4
G 2 A	G 1 1/2	PN 160	74.9	40	65	75	28.5	24	F	700	131.0	1149672000	GP-SDS-G2E-IG11/2

Other sizes on
request.



Blanking plugs for ports

Male thread: UN/UNF, cylindrical
 Threaded stud: ISO 11926-2/SAE J1926-2
 Sealing type: O-ring (Form F)
 Sealing material: Standard NBR

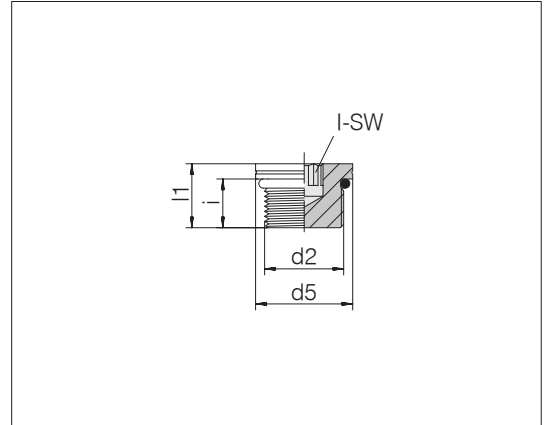


d1 UN/UNF	Pressure	d5	lg	l2	I-SW	kg/100 ca.	Order-No.	Designation
5/16-24 UNF-2A	PN 420	11.1	10.3	7.5	1/8	0.6	7001446100	GP-PLIH-U5/16-24F-IH1/8-C21
3/8-24 UNF-2A	PN 420	12.7	10.3	7.5	5/32	0.7	7001446200	GP-PLIH-U3/8-24F-IH5/32-C21
7/16-20 UNF-2A	PN 420	14.3	12	9.1	3/16	0.9	7001223100	GP-PLIH-U7/16-20F-IH3/16-C21
1/2-20 UNF-2A	PN 420	15.9	12	9.1	7/32	1.2	7001446300	GP-PLIH-U1/2-20F-IH7/32-C21
9/16-18 UNF-2A	PN 420	17.5	12.9	10.0	1/4	1.4	0189642100	GP-PLIH-U9/16-18F-IH1/4-C21
3/4-16 UNF-2A	PN 420	22.2	14.9	11.1	5/16	2.8	0189632100	GP-PLIH-U3/4-16F-IH5/16-C21
7/8-14 UNF-2A	PN 420	25.4	16.7	12.7	3/8	4.3	7001446400	GP-PLIH-U7/8-14F-IH3/8-C21
1 1/16-12 UN-2A	PN 420	31.8	19.7	15.1	9/16	7.5	7001222800	GP-PLIH-U11/16-12F-IH9/16-C21
1 3/16-12 UN-2A	PN 380	34.9	19.7	15.1	9/16	8.6	7001446500	GP-PLIH-U13/16-12F-IH9/16-C21
1 5/16-12 UN-2A	PN 380	38.1	19.7	15.1	5/8	10.6	0189772100	GP-PLIH-U15/16-12F-IH5/8-C21
1 5/8-12 UN-2A	PN 280	47.6	19.7	15.1	3/4	17.0	0189652100	GP-PLIH-U15/8-12F-IH3/4-C21
1 7/8-12 UN-2A	PN 210	54	19.7	15.1	3/4	25.8	0189662100	GP-PLIH-U17/8-12F-IH3/4-C21

Example for comparison:
 4 HP50N-S

Blanking plugs for ports

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 6149-2/3
 Sealing type: O-Ring (Form F)
 Sealing material: Standard NBR



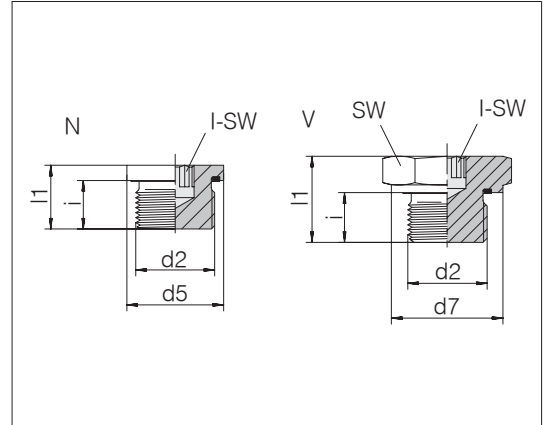
d2	Pressure	d5	l1	I-SW	i	Nm -10 %	kg/100 ca.	Order-No.	Designation
M 10 x 1	PN 630	14	13	5	9.5	18	0.8	0190012100	GP-PLIH-M10F-C21
M 12 x 1.5	PN 630	17	15.5	6	11	40	1.4	0190022100	GP-PLIH-M12F-C21
M 14 x 1.5	PN 630	19	16	6	11	55	2.0	0190032100	GP-PLIH-M14F-C21
M 16 x 1.5	PN 630	22	17.5	8	12.5	70	2.8	0190042100	GP-PLIH-M16F-C21
M 18 x 1.5	PN 630	24	19	8	14	90	3.9	0190052100	GP-PLIH-M18F-C21
M 22 x 1.5	PN 630	27	20	10	15	130	5.7	0190072100	GP-PLIH-M22F-C21
M 26 x 1.5	PN 400	31	21	12	16	150	8.0	0190102100	GP-PLIH-M26F-C21
M 27 x 2	PN 400	32	23.5	12	18.5	180	9.6	0190202100	GP-PLIH-M27F-C21
M 33 x 2	PN 400	41	24.5	17	18.5	310	15.1	0190182100	GP-PLIH-M33F-C21
M 42 x 2	PN 400	50	25	17	19	400	26.2	0190132100	GP-PLIH-M42F-C21
M 48 x 2	PN 400	55	27.5	17	21.5	500	37.9	0190142100	GP-PLIH-M48F-C21

Other sizes on
request.

Example for comp. :
VST110X10R

Blanking plugs for ports

Male thread: Metric fine thread, cylindrical
 Threaded stud: ISO 9974-2 Form E
 Sealing type: Profile sealing ring PEFLEX
 Sealing material: Standard NBR



d2	Pressure	d5	d7	l1	SW	I-SW	i	Style	Nm -10 %	kg/100 ca.	Order-No.	Designation
M 8 x 1	PN 400	12		12.3		4	8	N	10	0.5	0189142100	GP-PLIH-M8E-C21
M 10 x 1	PN 400	14		12.3		5	8	N	12	0.7	0189202100	GP-PLIH-M10E-C21
M 10 x 1	PN 400		13.9	18	14		8	V	12	1.6	1189202100	GP-PLEH-M10E-C21
M 12 x 1.5	PN 400	17		17.3		6	12	N	23	1.4	0189212100	GP-PLIH-M12E-C21
M 14 x 1.5	PN 400	19		17.3		6	12	N	30	1.9	0189222100	GP-PLIH-M14E-C21
M 14 x 1.5	PN 400		18.9	22	19		12	V	30	3.4	1189222100	GP-PLEH-M14E-C21
M 16 x 1.5	PN 400	21.9		17.3		8	12	N	50	2.4	0189232100	GP-PLIH-M16E-C21
M 18 x 1.5	PN 400	23.9		17.3		8	12	N	65	3.2	0189242100	GP-PLIH-M18E-C21
M 18 x 1.5	PN 400		23.9	22	24		12	V	65	5.6	1189242100	GP-PLEH-M18E-C21
M 20 x 1.5	PN 400	25.9		19.3		10	14	N	75	4.0	0189252100	GP-PLIH-M20E-C21
M 22 x 1.5	PN 400	27		19.3		10	14	N	90	5.0	0189262100	GP-PLIH-M22E-C21
M 24 x 1.5	PN 400	29.9		19.3		12	14	N	90	5.8	0189272100	GP-PLIH-M24E-C21
M 26 x 1.5	PN 400	31.9		21.3		12	16	N	110	7.4	0189282100	GP-PLIH-M26E-C21
M 27 x 2	PN 400	32		21.3		12	16	N	130	7.7	0189292100	GP-PLIH-M27E-C21
M 33 x 2	PN 400	39.9		22.8		17	16	N	225	12.4	0189302100	GP-PLIH-M33E-C21
M 33 x 2	PN 400		46	33	46	17	18	V	250	27.4	1189302100	GP-PLEH-M33E-C21
M 42 x 2	PN 315	49.9		22.8		22	16	N	310	18.6	0189312100	GP-PLIH-M42E-C21
M 42 x 2	PN 400		57	38	60	22	20	V	400	53.4	1189312100	GP-PLEH-M42E-C21
M 48 x 2	PN 315	55		22.8		24	16	N	380	24.4	0189322100	GP-PLIH-M48E-C21
M 48 x 2	PN 400		64	40	65	24	22	V	500	69.2	1189322100	GP-PLEH-M48E-C21

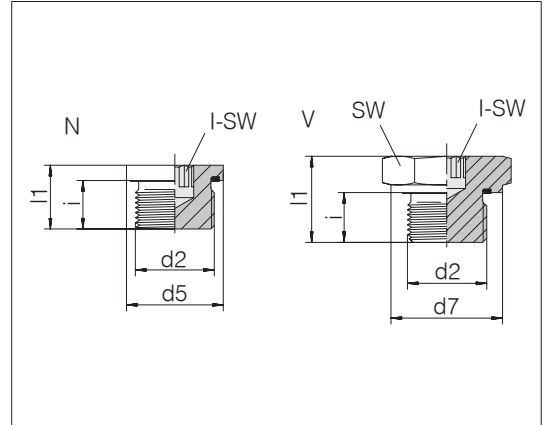
Other sizes on request.

Example for comp. : VSTI8X1ED

Threaded ports as per ISO 9974-1/
 DIN 3852, form X.
 d5 = d4 narrow

Blanking plugs for ports

Male thread: BSPP thread, cylindrical
 Threaded stud: ISO 1179-2 Form E
 Sealing type: Profile sealing ring PEFLEX
 Sealing material: Standard NBR



d2	Pressure	d5	d7	l1	SW	I-SW	i	Style	Nm -10 %	kg/100 ca.	Order-No.	Designation
G 1/8 A	PN 400	14		12.3		5	8	N	12	0.7	0189332100	GP-PLIH-G1/8E-C21
G 1/4 A	PN 400	18.9		17.3		6	12	N	25	1.8	0189342100	GP-PLIH-G1/4E-C21
G 3/8 A	PN 400	22		17.3		8	12	N	50	2.7	0189352100	GP-PLIH-G3/8E-C21
G 1/2 A	PN 400	26.9		19.3		10	14	N	70	4.4	0189362100	GP-PLIH-G1/2E-C21
G 3/4 A	PN 400	32		21.3		12	16	N	120	7.5	0189372100	GP-PLIH-G3/4E-C21
G 1 A	PN 400	39.9		22.8		17	16	N	200	12.3	0189382100	GP-PLIH-G1E-C21
G 1 A	PN 400		46	33	46	17	18	V	250	27.2	1189382100	GP-PLIH-G1E-C21
G 1 1/4 A	PN 315	49.9		22.8		22	16	N	320	19.4	0189392100	GP-PLIH-G11/4E-C21
G 1 1/4 A	PN 400	49.9		28		22	20	N	450	27.2	1189412100	GP-PLIH-G11/4E-PN400-C21
G 1 1/4 A	PN 400		57	38	60	22	20	V	400	54.3	1189392100	GP-PLIH-G11/4E-C21
G 1 1/2 A	PN 315	55		22.8		24	16	N	400	25.2	0189402100	GP-PLIH-G11/2E-C21
G 1 1/2 A	PN 400	55		30		24	22	N	600	37.5	1189422100	GP-PLIH-G11/2E-PN400-C21
G 1 1/2 A	PN 400		64	40	65	24	22	V	500	69.3	1189402100	GP-PLIH-G11/2E-C21
G 2 A	PN 250	75		34		32	24	N	650	68.7	1189572100	GP-PLIH-G2E-C21

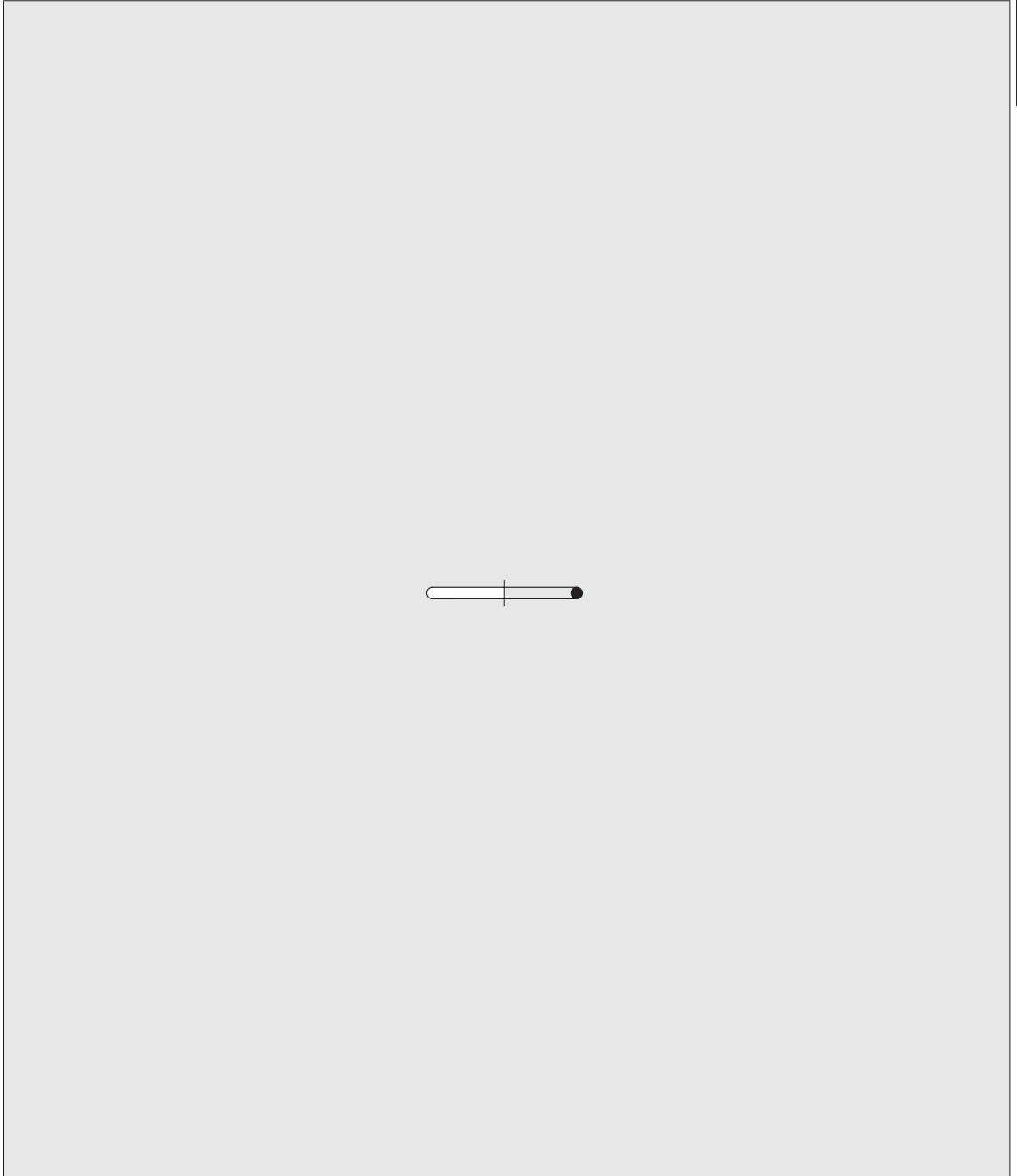
Other sizes on request.

Example for comp. : VST11/8ED

Threaded ports as per ISO 9974-1/
 DIN 3852, form X.
 d5 = d4 narrow



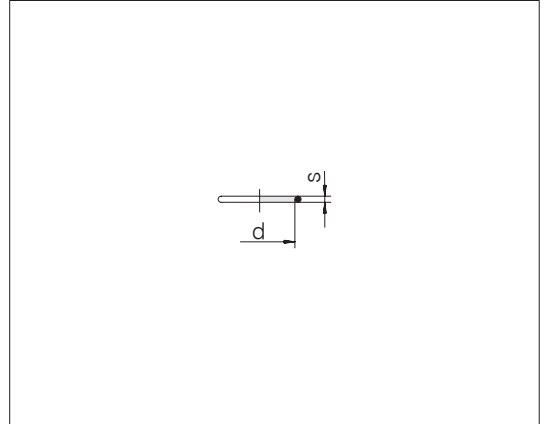
Sealing rings



O-rings for VOSSFlare^{ORFS} connectors

ISO 8434-3/SAE J 1453

Standard material of O-rings is NBR

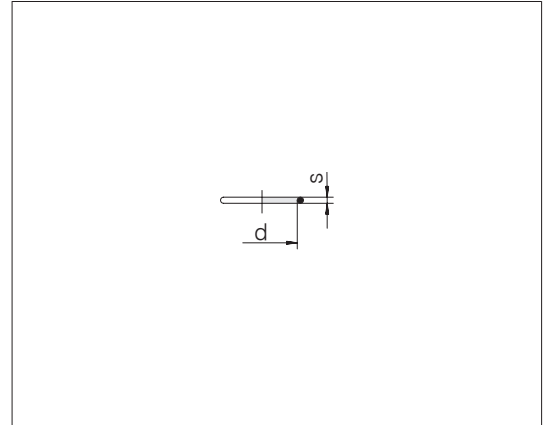


Tube OD mm	Inch	d1 UN/UNF	d x s	Order-No.	Designation
6	1/4	9/16-18	7.65 x 1.78	0907069990	GP-OR-7,65x1,78-NBR90
8; 10	5/16; 3/8	11/16-16	9.25 x 1.78	0900349990	GP-OR-9,25x1,78-NBR90
12	1/2	13/16-16	12.42 x 1.78	0907689990	GP-OR-12,42x1,78-NBR90
14; 15; 16	5/8	1-14	15.6 x 1.78	0901029990	GP-OR-15,6x1,78-NBR90
18; 20	3/4	1 3/16-12	18.77 x 1.78	0908469990	GP-OR-18,77x1,78-NBR90
22; 25	1	1 7/16-12	23.52 x 1.78	0908479990	GP-OR-23,52x1,78-NBR90
28; 30; 32	1 1/4	1 11/16-12	29.87 x 1.78	0908489990	GP-OR-29,87x1,78-NBR90
35; 38	1 1/2	2-12	37.82 x 1.78	0908499990	GP-OR-37,82x1,78-NBR90

O-rings for VOSSFlare^{ORFS} connectors

ISO 8434-3/SAE J 1453

Alternative O-ring material is FKM

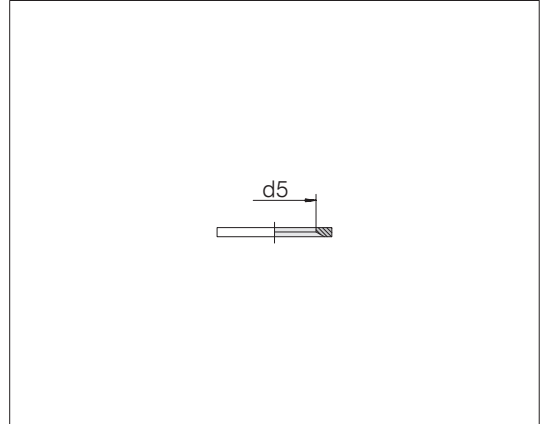


Tube OD mm	Inch	d1 UN/UNF	d x s	Order-No.	Designation
6	1/4	9/16-18	7.65 x 1.78	0907069790	GP-OR-7,65x1,78-FKM90
8; 10	5/16; 3/8	11/16-16	9.25 x 1.78	0900349790	GP-OR-9,25x1,78-FKM90
12	1/2	13/16-16	12.42 x 1.78	0907689790	GP-OR-12,42x1,78-FKM90
14; 15; 16	5/8	1-14	15.6 x 1.78	0901029790	GP-OR-15,6x1,78-FKM90
18; 20	3/4	1 3/16-12	18.77 x 1.78	0908469790	GP-OR-18,77x1,78-FKM90
22; 25	1	1 7/16-12	23.52 x 1.78	0908479790	GP-OR-23,52x1,78-FKM90
28; 30; 32	1 1/4	1 11/16-12	29.87 x 1.78	0908489790	GP-OR-29,87x1,78-FKM90
35; 38	1 1/2	2-12	37.82 x 1.78	9084999790	GP-OR-37,82x1,78-FKM90

Sealing rings for threaded studs

ISO 1179-2
ISO 9974-2

Standard PEFLEX profile seal ring material is NBR



Thread d2	PEFLEX d5	Order-No.	Designation
M 10 x 1	8.4	0905229900	GP-PEFLEX-M10-G1/8-NBR85
M 12 x 1.5	9.8	0905019900	GP-PEFLEX-M12-NBR85
M 14 x 1.5	11.6	0905029900	GP-PEFLEX-M14-G1/4-NBR85
M 16 x 1.5	13.8	0905039900	GP-PEFLEX-M16-NBR85
M 18 x 1.5	15.7	0905059900	GP-PEFLEX-M18-NBR85
M 20 x 1.5	17.8	0905069900	GP-PEFLEX-M20-NBR85
M 22 x 1.5	19.6	0905089900	GP-PEFLEX-M22-NBR85
M 26 x 1.5	23.9	0905109900	GP-PEFLEX-M26-M27-G3/4-NBR85
M 27 x 2	23.9	0905109900	GP-PEFLEX-M26-M27-G3/4-NBR85
M 33 x 2	29.7	0905119900	GP-PEFLEX-M33-G1-NBR85
M 42 x 2	38.8	0905129900	GP-PEFLEX-M42-G1 1/4-NBR85
M 48 x 2	44.7	0905139900	GP-PEFLEX-M48-G1 1/2-NBR85
G 1/8 A	8.4	0905229900	GP-PEFLEX-M10-G1/8-NBR85
G 1/4 A	11.6	0905029900	GP-PEFLEX-M14-G1/4-NBR85
G 3/8 A	14.7	0905049900	GP-PEFLEX-G3/8-NBR85
G 1/2 A	18.5	0905079900	GP-PEFLEX-G1/2-NBR85
G 3/4 A	23.9	0905109900	GP-PEFLEX-M26-M27-G3/4-NBR85
G 1 A	29.7	0905119900	GP-PEFLEX-M33-G1-NBR85
G 1 1/4 A	38.8	0905129900	GP-PEFLEX-M42-G1 1/4-NBR85
G 1 1/2 A	44.7	0905139900	GP-PEFLEX-M48-G1 1/2-NBR85
G 2 A	56.7	0905149900	GP-PEFLEX-M60-G2-NBR80

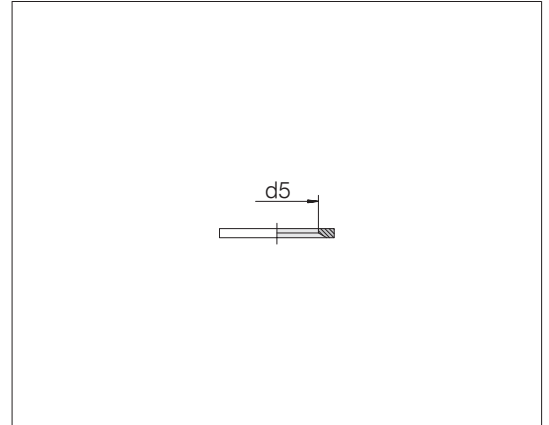
Example for comp. :
ED10X1X

Sealing rings for threaded studs

ISO 1179-2

ISO 9974-2

Alternative PEFLEX profile seal ring material is FKM



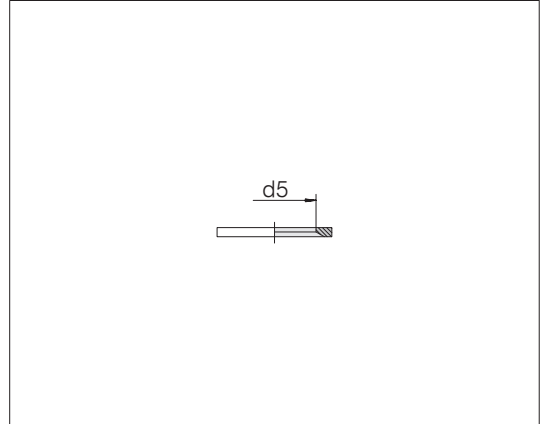
Thread d2	PEFLEX d5	Order-No.	Designation
M 10 x 1	8.4	0905229700	GP-PEFLEX-M10-G1/8-FKM80
M 12 x 1.5	9.8	0905019700	GP-PEFLEX-M12-FKM80
M 14 x 1.5	11.6	0905029700	GP-PEFLEX-M14-G1/4-FKM80
M 16 x 1.5	13.8	0905039700	GP-PEFLEX-M16-FKM80
M 18 x 1.5	15.7	0905059700	GP-PEFLEX-M18-FKM80
M 20 x 1.5	17.8	0905069700	GP-PEFLEX-M20-FKM80
M 22 x 1.5	19.6	0905089700	GP-PEFLEX-M22-FKM80
M 26 x 1.5	23.9	0905109700	GP-PEFLEX-M26-M27-G3/4-FKM80
M 27 x 2	23.9	0905109700	GP-PEFLEX-M26-M27-G3/4-FKM80
M 33 x 2	29.7	0905119700	GP-PEFLEX-M33-G1-FKM80
M 42 x 2	38.8	0905129700	GP-PEFLEX-M42-G11/4-FKM80
M 48 x 2	44.7	0905139700	GP-PEFLEX-M48-G11/2-FKM80
G 1/8 A	8.4	0905229700	GP-PEFLEX-M10-G1/8-FKM80
G 1/4 A	11.6	0905029700	GP-PEFLEX-M14-G1/4-FKM80
G 3/8 A	14.7	0905049700	GP-PEFLEX-G3/8-FKM80
G 1/2 A	18.5	0905079700	GP-PEFLEX-G1/2-FKM80
G 3/4 A	23.9	0905109700	GP-PEFLEX-M26-M27-G3/4-FKM80
G 1 A	29.7	0905119700	GP-PEFLEX-M33-G1-FKM80
G 1 1/4 A	38.8	0905129700	GP-PEFLEX-M42-G11/4-FKM80
G 1 1/2 A	44.7	0905139700	GP-PEFLEX-M48-G11/2-FKM80
G 2 A	56.7	0905149700	GP-PEFLEX-M60-G2-FKM80

Example for comp. :
ED10X1X

Sealing rings for threaded studs

ISO 1179-2
ISO 9974-2

Alternative PEFLEX profile seal ring material is EPDM



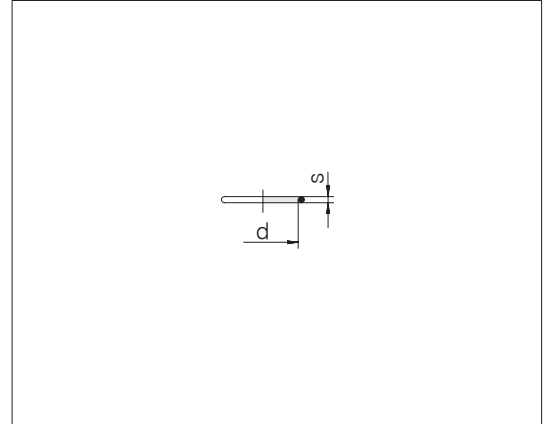
Thread d2	PEFLEX d5	Order-No.	Designation
M 10 x 1	8.4	0905229676	GP-PEFLEX-M10-G1/8-EPDM85
M 12 x 1.5	9.8	0905019676	GP-PEFLEX-M12-EPDM85
M 14 x 1.5	11.6	0905029676	GP-PEFLEX-M14-G1/4-EPDM85
M 16 x 1.5	13.8	0905039676	GP-PEFLEX-M16-EPDM85
M 18 x 1.5	15.7	0905059676	GP-PEFLEX-M18-EPDM85
M 20 x 1.5	17.8	0905069676	GP-PEFLEX-M20-EPDM85
M 22 x 1.5	19.6	0905089676	GP-PEFLEX-M22-EPDM85
M 26 x 1.5	23.9	0905109676	GP-PEFLEX-M26-M27-G3/4-EPDM85
M 27 x 2	23.9	0905109676	GP-PEFLEX-M26-M27-G3/4-EPDM85
M 33 x 2	29.7	0905119676	GP-PEFLEX-M33-G1-EPDM85
M 42 x 2	38.8	0905129676	GP-PEFLEX-M42-G11/4-EPDM85
M 48 x 2	44.7	0905139676	GP-PEFLEX-M48-G11/2-EPDM85
G 1/8 A	8.4	0905229676	GP-PEFLEX-M10-G1/8-EPDM85
G 1/4 A	11.6	0905029676	GP-PEFLEX-M14-G1/4-EPDM85
G 3/8 A	14.7	0905049676	GP-PEFLEX-G3/8-EPDM85
G 1/2 A	18.5	0905079676	GP-PEFLEX-G1/2-EPDM85
G 3/4 A	23.9	0905109676	GP-PEFLEX-M26-M27-G3/4-EPDM85
G 1 A	29.7	0905119676	GP-PEFLEX-M33-G1-EPDM85
G 1 1/4 A	38.8	0905129676	GP-PEFLEX-M42-G11/4-EPDM85
G 1 1/2 A	44.7	0905139676	GP-PEFLEX-M48-G11/2-EPDM85

Example for comp. :
ED10X1X

Sealing rings for threaded studs

ISO 6149-2 / -3
ISO 11926-2 / -3

Standard O-ring material is NBR

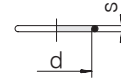


Thread d2	O-ring d x s	Order-No.	Designation
M 10 x 1	8.1 x 1.6	0908289990	GP-OR-8,1x1,6-NBR90
M 12 x 1.5	9.3 x 2.2	0908299990	GP-OR-9,3x2,2-NBR90
M 14 x 1.5	11.3 x 2.2	0908309990	GP-OR-11,3x2,2-NBR90
M 16 x 1.5	13.3 x 2.2	0908319990	GP-OR-13,3x2,2-NBR90
M 18 x 1.5	15.3 x 2.2	0908329990	GP-OR-15,3x2,2-NBR90
M 22 x 1.5	19.3 x 2.2	0908339990	GP-OR-19,3x2,2-NBR90
M 26 x 1.5	22.7 x 2.8	0907799990	GP-OR-22,7x2,8-NBR90
M 27 x 2	23.6 x 2.9	0908349990	GP-OR-23,6x2,9-NBR90
M 33 x 2	29.6 x 2.9	0908359990	GP-OR-29,6x2,9-NBR90
M 42 x 2	38.6 x 2.9	0908369990	GP-OR-38,6x2,9-NBR90
M 48 x 2	44.6 x 2.9	0908379990	GP-OR-44,6x2,9-NBR90
7/16-20 UNF-2A	9.17 x 1.83	0900239990	GP-OR-9,17x1,83-NBR90
1/2-20 UNF-2A	10.52 x 1.83	0900259990	GP-OR-10,52x1,83-NBR90
9/16-18 UNF-2A	11.89 x 1.98	0900269990	GP-OR-11,89x1,98-NBR90
3/4-16 UNF-2A	16.36 x 2.21	0900279990	GP-OR-16,36x2,21-NBR90
7/8-14 UNF-2A	19.18 x 2.46	0900289990	GP-OR-19,18x2,46-NBR90
1 1/16-12 UN-2A	23.47 x 2.95	0900299990	GP-OR-23,47x2,95-NBR90
1 3/16-12 UN-2A	26.62 x 2.95	0900309990	GP-OR-26,62x2,95-NBR90
1 5/16-12 UN-2A	29.74 x 2.95	0900319990	GP-OR-29,74x2,95-NBR90
1 5/8-12 UN-2A	37.47 x 3	0900329990	GP-OR-37,47x3-NBR90
1 7/8-12 UN-2A	43.69 x 3	0900339990	GP-OR-43,69x3-NBR90

Sealing rings for threaded studs

ISO 6149-2 / -3
ISO 11926-2 / -3

Alternative O-ring material is FKM

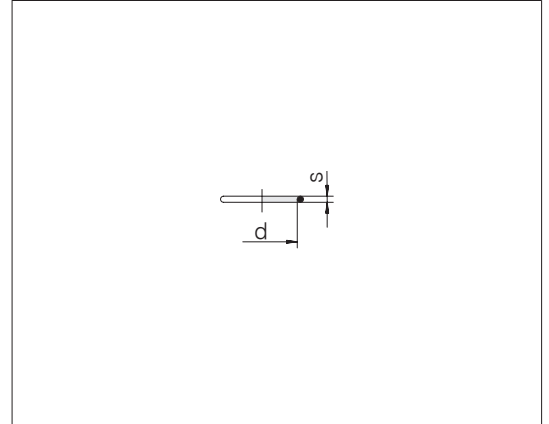


Thread d2	O-ring d x s	Order-No.	Designation
M 10 x 1	8.1 x 1.6	0908289780	GP-OR-8,1x1,6-FKM80
M 12 x 1.5	9.3 x 2.2	0908299780	GP-OR-9,3x2,2-FKM80
M 14 x 1.5	11.3 x 2.2	0908309780	GP-OR-11,3x2,2-FKM80
M 16 x 1.5	13.3 x 2.2	0908319780	GP-OR-13,3x2,2-FKM80
M 18 x 1.5	15.3 x 2.2	0908329780	GP-OR-15,3x2,2-FKM80
M 22 x 1.5	19.3 x 2.2	0908339780	GP-OR-19,3x2,2-FKM80
M 27 x 2	23.6 x 2.9	0908349780	GP-OR-23,6x2,9-FKM80
M 33 x 2	29.6 x 2.9	0908359780	GP-OR-29,6x2,9-FKM80
M 42 x 2	38.6 x 2.9	0908369780	GP-OR-38,6x2,9-FKM80
M 48 x 2	44.6 x 2.9	0908379780	GP-OR-44,6x2,9-FKM80
7/16-20 UNF-2A	9.17 x 1.83	0900239700	GP-OR-9,17x1,83-FKM80
1/2-20 UNF-2A	10.52 x 1.83	0900259700	GP-OR-10,52x1,83-FKM80
9/16-18 UNF-2A	11.89 x 1.98	0900269700	GP-OR-11,89x1,98-FKM80
3/4-16 UNF-2A	16.36 x 2.21	0900279700	GP-OR-16,36x2,21-FKM80
7/8-14 UNF-2A	19.18 x 2.46	0900289700	GP-OR-19,18x2,46-FKM80
1 1/16-12 UN-2A	23.47 x 2.95	0900299700	GP-OR-23,47x2,95-FKM80
1 3/16-12 UN-2A	26.62 x 2.95	0900309700	GP-OR-26,62x2,95-FKM80
1 5/16-12 UN-2A	29.74 x 2.95	0900319700	GP-OR-29,74x2,95-FKM80
1 5/8-12 UN-2A	37.47 x 3	0900329700	GP-OR-37,47x3-FKM80
1 7/8-12 UN-2A	43.69 x 3	0900339700	GP-OR-43,69x3-FKM80

Sealing rings for threaded studs

O-ring imperial or metric, only when using retaining rings
ISO 1179 resp. 9974

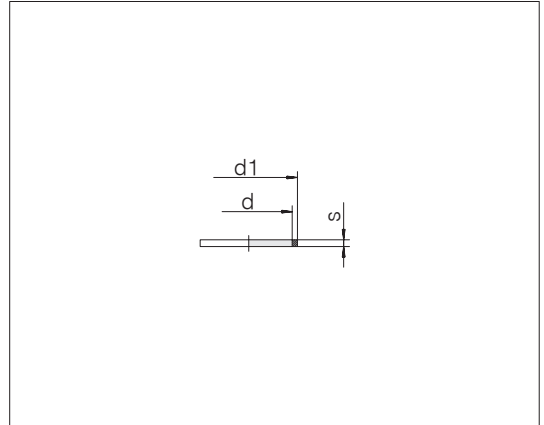
Standard material of O-rings is NBR



Thread d2	O-ring d x s	Order-No.	Designation
M 10 x 1	8.1 x 1.6	0908289990	GP-OR-8,1x1,6-NBR90
M 12 x 1.5	9.3 x 2.2	0908299990	GP-OR-9,3x2,2-NBR90
M 14 x 1.5	11.3 x 2.2	0908309990	GP-OR-11,3x2,2-NBR90
M 16 x 1.5	13.3 x 2.2	0908319990	GP-OR-13,3x2,2-NBR90
M 18 x 1.5	15.3 x 2.2	0908329990	GP-OR-15,3x2,2-NBR90
M 22 x 1.5	19.3 x 2.2	0908339990	GP-OR-19,3x2,2-NBR90
M 26 x 1.5	22.7 x 2.8	0907799990	GP-OR-22,7x2,8-NBR90
M 27 x 2	23.6 x 2.9	0908349990	GP-OR-23,6x2,9-NBR90
M 33 x 2	29.6 x 2.9	0908359990	GP-OR-29,6x2,9-NBR90
M 42 x 2	38.6 x 2.9	0908369990	GP-OR-38,6x2,9-NBR90
M 48 x 2	44.6 x 2.9	0908379990	GP-OR-44,6x2,9-NBR90
1/8	7.97 x 1.88	0908409990	GP-OR-7,97x1,88-NBR90
1/4	10.77 x 2.62	0907869990	GP-OR-10,77x2,62-NBR90
3/8	19.94 x 2.62	0900629990	GP-OR-19,94x2,62-NBR90
1/2	17.86 x 2.62	0908419990	GP-OR-17,86x2,62-NBR90
3/4	23.47 x 2.62	0908429990	GP-OR-23,47x2,62-NBR90
1	29.47 x 3.53	0908439990	GP-OR-29,47x3,53-NBR90
1 1/4	37.69 x 3.53	0906739990	GP-OR-37,69x3,53-NBR90
1 1/2	44.04 x 3.53	0906449990	GP-OR-44,04x3,53-NBR90

Retaining rings for metric male stud connectors

Threaded ports as per ISO 9974



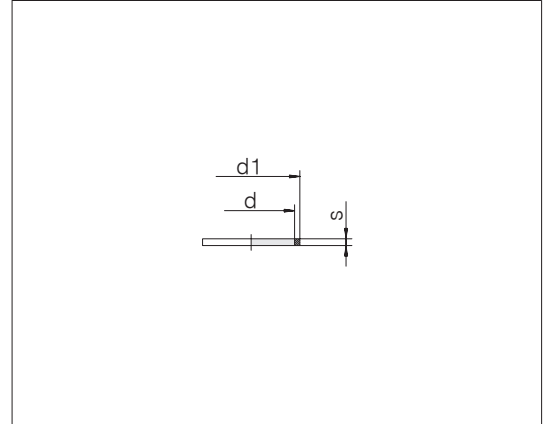
Male thread d2	d1 x s	d	Order-No.	Designation
M 10 x 1	14.9 x 1.1	11.25	0090172000	GP-RR-M10
M 12 x 1,5	17.9 x 1.6	13.7	0090182000	GP-RR-M12
M 14 x 1,5	19.9 x 1.7	15.7	0090192000	GP-RR-M14
M 16 x 1,5	22.9 x 1.6	17.7	0090362000	GP-RR-M16
M 18 x 1,5	24.9 x 1.6	19.7	0090372000	GP-RR-M18
M 22 x 1,5	27.9 x 1.7	23.7	0090152000	GP-RR-M22
M 27 x 2	32.9 x 2.3	29.4	0090162000	GP-RR-M27
M 33 x 2	40.9 x 2.3	35.4	0090382000	GP-RR-M33
M 42 x 2	50.9 x 1.9	44.4	0090392000	GP-RR-M42
M 48 x 2	55.9 x 1.9	50.4	0090402000	GP-RR-M48

Example for comparison:
M10RR



Retaining rings for imperial male stud connectors

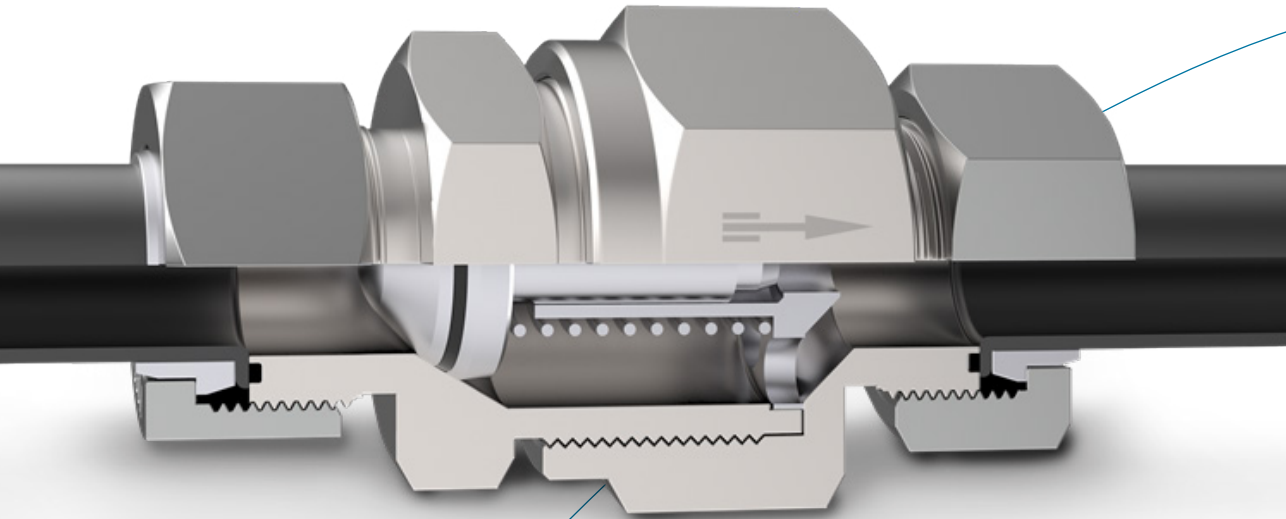
Threaded ports as per ISO 1179



Male thread d2	d1 x s	d	Order-No.	Designation
1/8	15 x 1.4	11.7	2005102000	GP-RR-G1/8
1/4	19.5 x 1.9	16	2005112000	GP-RR-G1/4
3/8	23.5 x 1.9	19.4	2005122000	GP-RR-G3/8
1/2	28.5 x 1.9	23.25	2005132000	GP-RR-G1/2
3/4	34.5 x 1.9	28.6	2005142000	GP-RR-G3/4
1	43.5 x 2.6	36.6	2005152000	GP-RR-G1
1 1/4	52.5 x 2.6	45.1	2005162000	GP-RR-G11/4
1 1/2	60 x 2.6	51.1	2005172000	GP-RR-G11/2

Example for comparison:
RRS1/8CF

Hydraulic valves



Content

Type/Page

Standard non-return valves

VNRO

VNROI



P.159

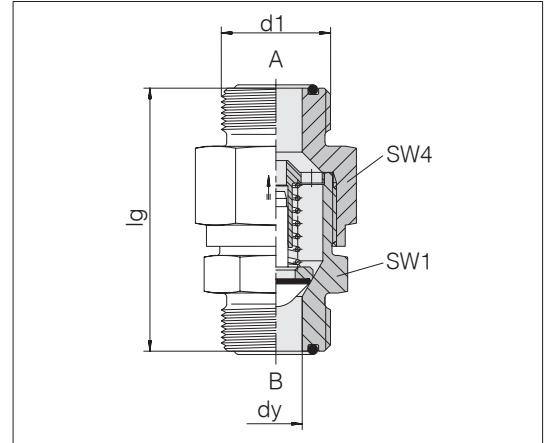
P.160

Standard non-return valves

Double-sided tube ends as per ISO 8434-3/SAE J 1453

Opening pressure 1 bar

Standard O-ring material is NBR



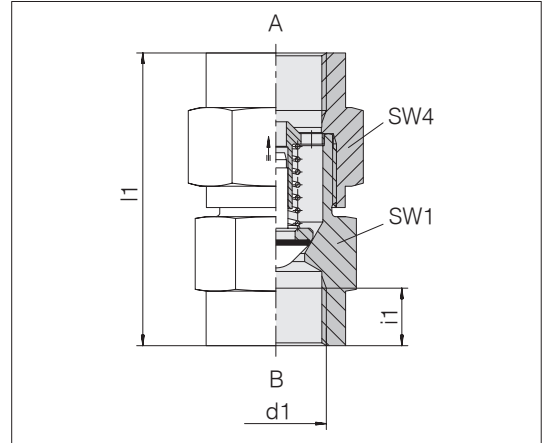
Tube OD mm	Inch	Pressure	d1 UN/UNF	dy	lg	SW1	SW4	Order-No.	Designation
6	1/4	PB 250	9/16-18	4.5	44.5	19	19	2062012000	90-VNRO-6
8; 10	5/16; 3/8	PB 250	11/16-16	6.5	53.5	22	24	2062022000	90-VNRO-10
12	1/2	PB 250	13/16-16	8	59.5	27	27	2062032000	90-VNRO-12
14; 15; 16	5/8	PB 250	1-14	12	70.5	32	36	2062042000	90-VNRO-16
18; 20	3/4	PB 160	1 3/16-12	15.5	77.5	41	46	2062052000	90-VNRO-20
22; 25	1	PB 160	1 7/16-12	20	81.5	46	50	2062062000	90-VNRO-25
28; 30; 32	1 1/4	PB 100	1 11/16-12	25	91	55	60	2062072000	90-VNRO-30
35; 38	1 1/2	PB 100	2-12	32	99	65	70	2062082000	90-VNRO-38

Non-return valves

Double-sided internal BSP thread, parallel
ISO 1179

Opening pressure 1 bar
(standard version)

Standard O-ring material is NBR



Series Tube OD	d1	Pressure	l1	SW1	SW4	i1	kg/100 ca.	Order-No.	Designation
L 6	G 1/8 A	PB 250	50.5	19	19	8	10.4	0670252000	GP-VNROI-IG1/8
L 6	G 1/4 A	PB 250	55	19	19	12	11.7	0670262000	GP-VNROI-IG1/4
L 10	G 3/8 A	PB 250	68.5	24	27	12	21.0	0670272000	GP-VNROI-IG3/8
L 15	G 1/2 A	PB 250	74	32	36	14	35.5	0670282000	GP-VNROI-IG1/2
L 18	G 3/4 A	PB 160	84	41	46	16	80.7	0670292000	GP-VNROI-IG3/4
L 22	G 1 A	PB 160	96.5	46	50	18	89.2	0670302000	GP-VNROI-IG1
L 28	G 1 1/4 A	PB 100	110	60	60	20	189.0	0670312000	GP-VNROI-IG11/4
L 35	G 1 1/2 A	PB 100	119	65	70	22	237.6	0670322000	GP-VNROI-IG11/2

Test pressure PP = 1.5-fold
value in table

Other sizes on
request.

Example for comparison:
RHD1/8

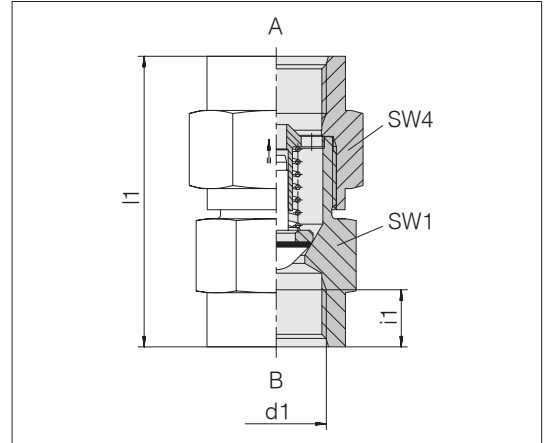


Non-return valves

Double-sided internal UN/UNF thread
ISO 11926-2/SAE J 1962-2

Opening pressure 1 bar
(standard version)

Standard O-ring material is NBR



Series	d1	Pressure	l1	SW1	SW4	i1	kg/100 ca.	Order-No.	Designation	
S	6	7/16-20 UNF	PB 630	57.5	19	19	11.5	11.5	0670352000	GP-VNROI-IU7/16-20F
S	8	1/2-20 UNF	PB 630	57.5	19	19	11.5	10.1	0670362000	GP-VNROI-IU1/2-20F
S	10	9/16-18 UNF	PB 630	68	22	24	12.7	17.4	0670372000	GP-VNROI-IU9/16-18F
S	12	3/4-16 UNF	PB 630	74.5	27	27	14.3	25.6	0670382000	GP-VNROI-IU3/4-16F
S	16	7/8-14 UNF	PB 400	80	32	36	16.7	44.0	0670392000	GP-VNROI-IU7/8-14F
S	20	1 1/16-12 UN	PB 400	91.5	41	46	19	79.8	0670402000	GP-VNROI-IU11/16-12F
S	25	1 5/16-12 UN	PB 400	98	46	50	19	93.0	0670412000	GP-VNROI-IU15/16-12F
S	30	1 5/8-12 UN	PB 250	104	55	60	19	153.8	0670422000	GP-VNROI-IU15/8-12F
S	38	1 7/8-12 UN	PB 250	117	65	70	19	221.4	0670442000	GP-VNROI-IU17/8-12F

Hydraulic coupling technology Designation directory

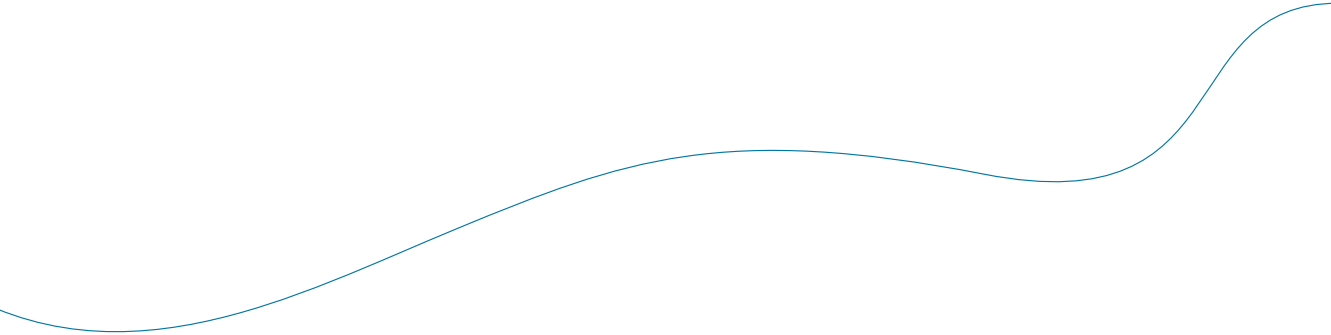
Designation	P.
90-BHE45LN...	72
90-BHELN...	70
90-BHLLN...	73
90-BHSDSLN...G...FR	52
90-BHSDSLN...M...FR	51
90-BHSDSLN...NF...T	53
90-BHSDSLN...U...F	50
90-BHSLN...	68
90-BHTLN...	74
90-BRN...	27
90-BROE...	19
90-BROS...	16–18
90-E...	58
90-K...	62
90-N...	26
90-PLC...	136
90-S...	56
90-S...IG...	116
90-S...IM...F	117
90-SDAE...G...FR	88
90-SDAE...M...FR	86
90-SDAE...U...F	89
90-SDAE45...G...FR	95
90-SDAE45...M...F	97
90-SDAE45...U...F	96
90-SDAE45-6-M10FR	94
90-SDAE-6-M10F	91
90-SDAL...G...FR	100
90-SDAL...G...FR...	102
90-SDAL...M...F	105
90-SDAL...M...F...	106
90-SDAL...M...FR	98
90-SDAL...M...FR...	99
90-SDAL...U...F	103
90-SDAL...U...F...	104
90-SDAT...G...FR	109
90-SDAT...G...FR...	110
90-SDAT...M...F	113
90-SDAT...M...F...	114
90-SDAT...M...FR	107
90-SDAT...M...FR...	108
90-SDAT...U...F	111
90-SDAT...U...F...	112
90-SDE...NF...T	54
90-SDS...G...E	32
90-SDS...G...FR	39
90-SDS...M...E	31
90-SDS...M...FR	37
90-SDS...NF...T	30
90-SDS...U...F	34, 36
90-SDSL...G...FR	44
90-SDSL...U...F	43
90-SDS-M...F	41
90-SL...	8
90-SW2S...	76
90-SWE...	77, 78

Designation**P.**

90-SWE45...	79
90-SWL...	80, 81
90-SWS...	64
90-SWS...IG...	120, 121
90-SWS...IM...CS	122, 123
90-SWS...IU...F	124
90-SWS...LG...	65
90-SWSDAE...U...F	92
90-SWSDAE-6-G1/8FR	93
90-SWSDS...G...E	47
90-SWSDS...M...E	45
90-SWSDS...M...F	49
90-SWSDS...M...FR	46
90-SWSDS...U...F	48
90-SWSX...	64
90-SWSX...IG...	121
90-SWSX...IM...CS	123
90-SWT...	82, 83
90-T...	60
90-TBS...	137
90-VNRO...	159
90-WDE...	24
90-WDNPS...	22, 23
AP-24/90-S...LG...	132
AP-24/90-SWOS...	131
AP-37/90-SWS...	130
AP-90/24-SWL...	133
AP-90/37-S...	126, 127
AP-90/37-SWS...	128, 129
GP-LN-IU...	138
GP-OR...FKM80	152
GP-OR...FKM90	147
GP-OR...NBR90	146, 151
GP-PEFLEX...EPDM	150
GP-PEFLEX...FKM	149
GP-PEFLEX...NBR	148
GP-PLIH-G...E	144
GP-PLIH-M...E	143
GP-PLIH-M...F	142
GP-PLIH-U...F-IH...	141
GP-RR-G...	155
GP-RR-M...	154
GP-SDS-G...E-IG...	139
GP-VNROI-IG...	160
GP-VNROI-IU...	161



VOSS



VOSS Fluid GmbH
P.O. Box 15 40
51679 Wipperfürth

Lüdenscheider Straße 52–54
51688 Wipperfürth
Germany

Tel.: +49 2267 63-0
Fax: +49 2267 63-5621
+49 2267 63-5622
+49 2267 63-5623

fluid@voss.net
www.voss.net