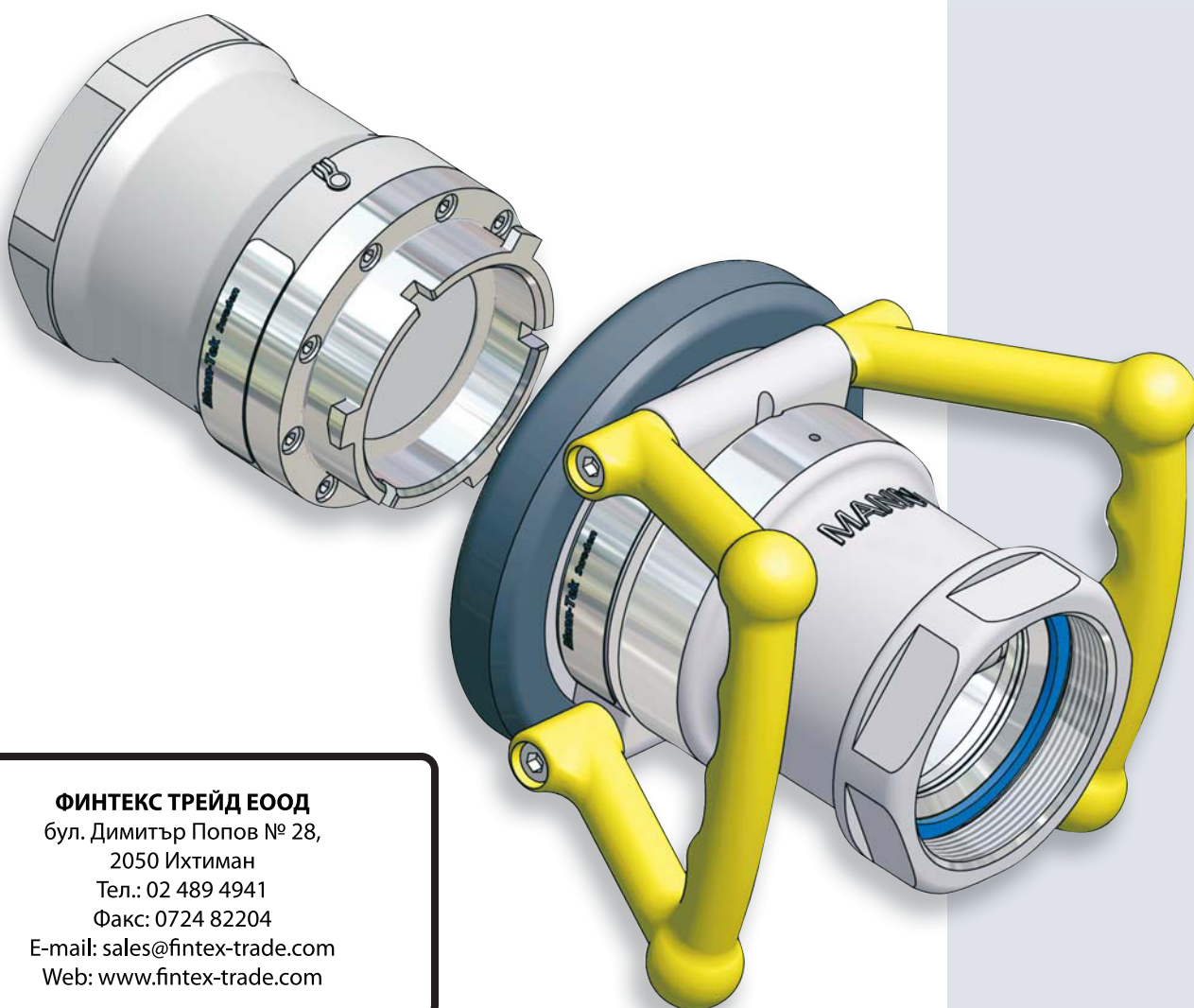




DACouplings®

Dry Aviation Couplings



ФИНТЕКС ТРЕЙД ЕООД

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Product Information

Art. nr: PR-010601-0112 Version: 111012





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Company information

Mann Teknik AB is a Swedish limited liability company located in Mariestad, Sweden.

Mann Teknik AB produces and markets products for safe and environmentally friendly handling of aggressive fluids for the chemical and petrochemical industries.

The main product is the Dry Disconnect Couplings, DDCouplings®, for spill free liquid handling. The products are marketed through independent representatives in more than 30 countries.

Mann Teknik AB have many years of experience in designing, producing and marketing of DD-Couplings® all since 1977.

Mann Teknik AB has shown a high rate of growth during the past years and is now a major player in its specialized field of operation. This is due to a determined expansion into growing

markets and recognition by customers of the robust design and reliable quality of the products.

Mann Teknik AB are certified to ISO9001:2000. The products are CE-labeled. The main products are certified to PED, the European Pressure Equipment Directive and ATEX, the European directive for Equipment intended for use in Potentially Explosive Atmospheres. The products are produced in accordance with several important standards, e.g. the NATO STANAG 3756.

Contact Mann-Tek

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Web site: www.mann-tek.com



The Dry Aviation Couplings are designed for use in aviation and military refuelling systems with a maximum working pressure of 10 bar (150 psi). Working temperature range lies within -38°C (-36°F) to +60°C (+140°F), observe that special low temperature seals are used in cold environments. This coupling is not configured for under wing refuelling.

All units can also be used as bottom loading or primary points refuelling vehicles. All units are manufactured to accept the international standard: 2½" the point bayonet, hose end refuelling nozzles, according to: ISO 45 / MS24484 / NATO STANAG 3105 / British Aerospace Specification 2C14.

The couplings consist of high strength aluminium body, coupling ring in gunmetal and bayonet flange and inner parts in stainless steel and aluminium.

All wetted parts in aluminium and stainless steel.

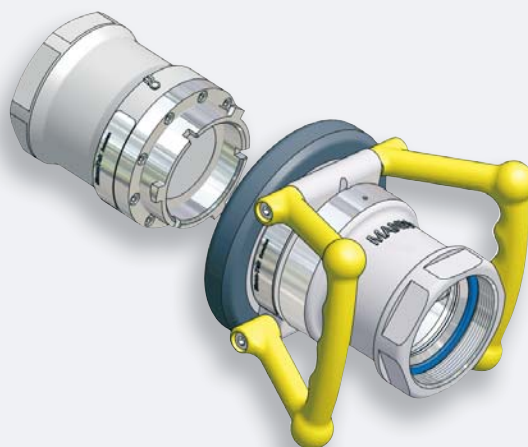


Compatibility

ISO 45, MS24484, NATO STANAG 3105, British Aerospace Specification 2C14

Operation

The DACouplings include a bayonet-type connector and are flanged or threaded to suit installation requirements. Each tank unit contains a "fail safe" springloaded valve seating on a tapered seat. The valve is controlled by the action of coupling and uncoupling the hose unit.



Why use the Mann-Tek Dry Aviation Coupling?

- Spillfree handling of hoses and loading arms for loading and unloading tank trucks, rail tankers and tank containers.
- Minimization of spillage and product loss keeps the environment free from Hazardous Vapors and Liquids.
- "Easy to Use" – design saves time
- Reliability and easy servicing saves your investment.
- ISO 45 2½" is compatible with existing aviation couplings according to STANAG 3105.
- Approvals according to the European Directives PED and ATEX and the international requirements ADR.

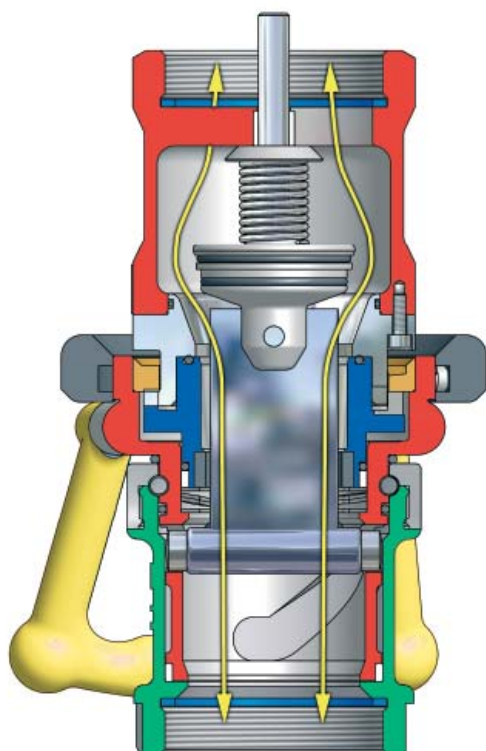
Selectivity

Selective units are fitted with setting rings. These have slots cut into them to match up with the corresponding pins on the selective sleeve on the hose unit.

Care must be taken when reassembling such units to ensure that the ring is returned to its original position.

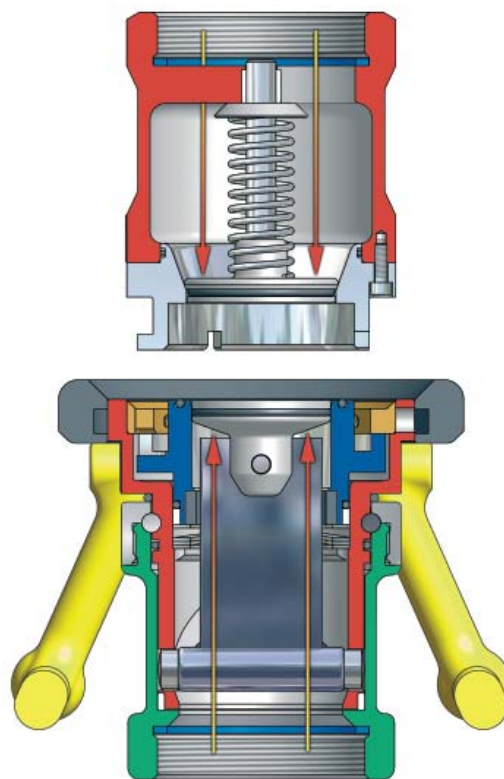
To connect

Push and turn - it's coupled
- full flow

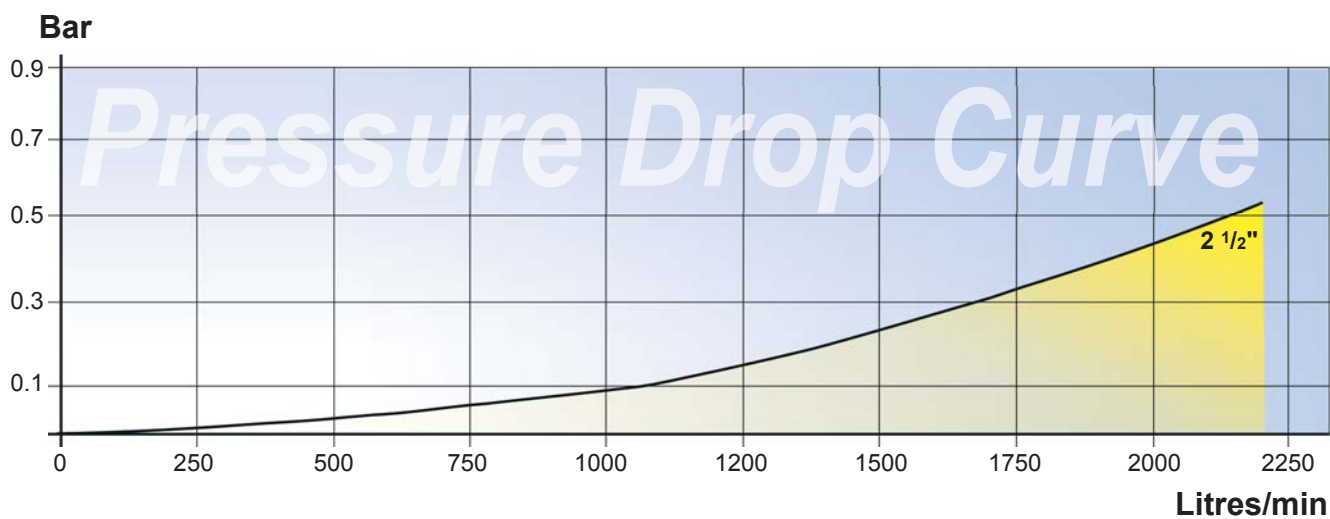


To disconnect

Turn and pull - it's released
- no spillage

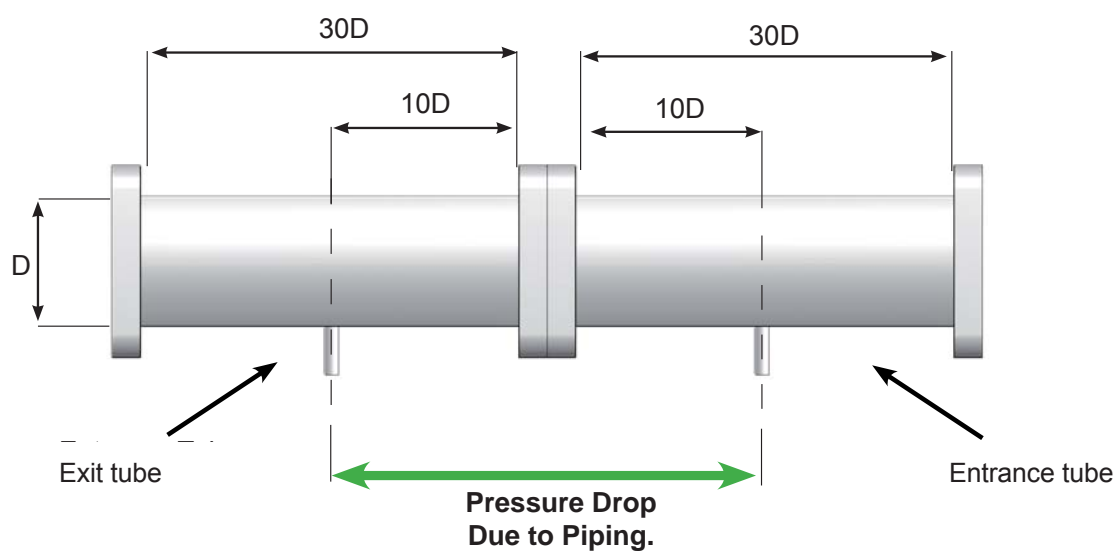
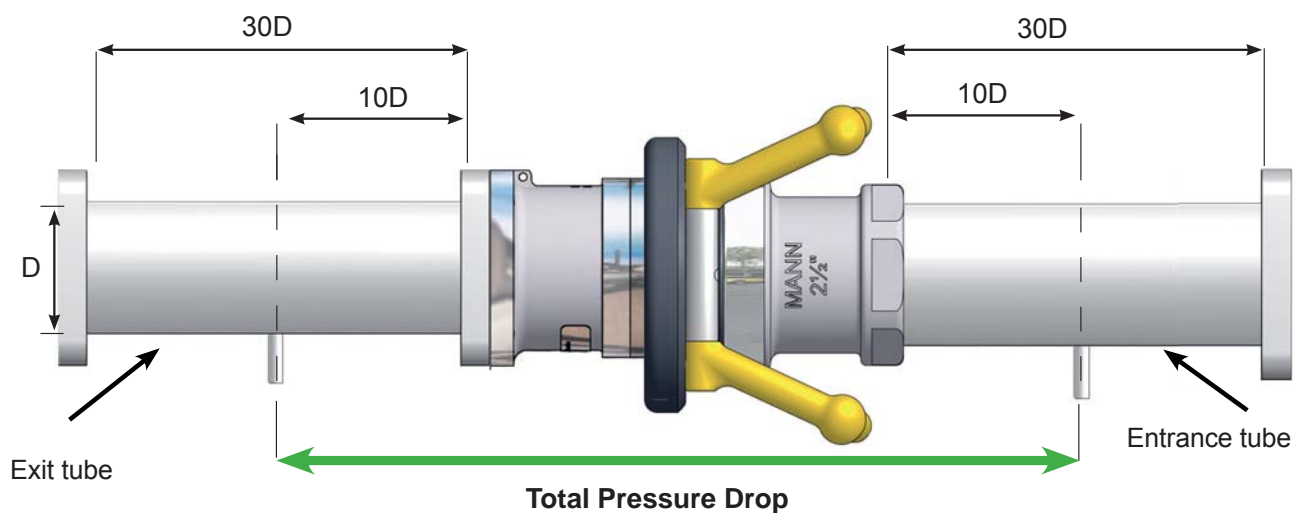


Pressure Drop Curve



Test Fluid: n-Paraffin, **Test Temperature:** 20° C, **Density:** 0,75 kg / dm³, **Viscosity:** 1,75 mm²/s

Illustration Pressure Drop Measurement According to NATO STANAG 3756, Annex E

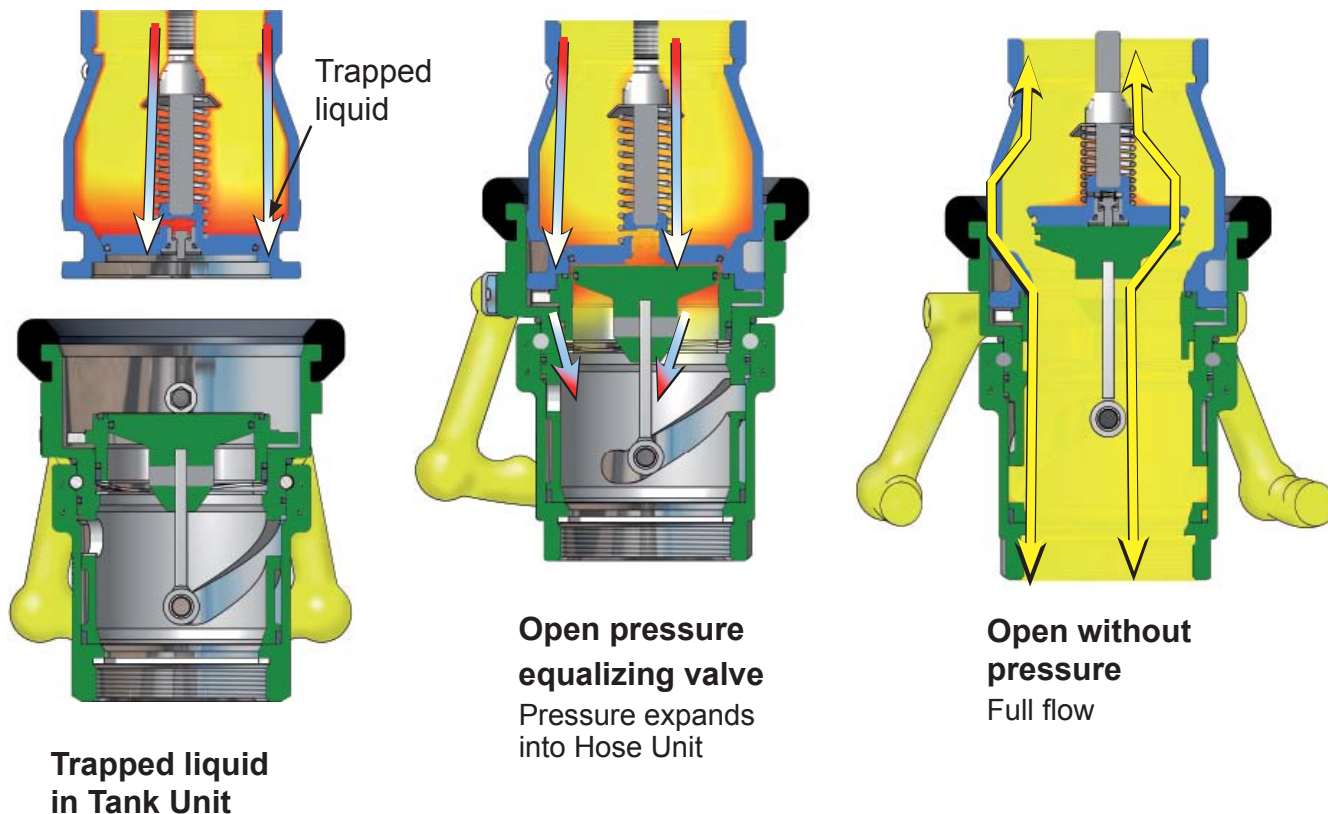


Pressure Drop DACoupling (ISO45) = Total Pressure Drop - Pressure Drop Due to Piping

$$\text{Pressure Drop DACoupling} = \Delta P$$

Pressure equalizing valve in ISO 45 Tank unit and STANAG 3756 Tank unit

This system dissipates trapped fluid pressure into hose coupler without spillage, to allow easy connection.



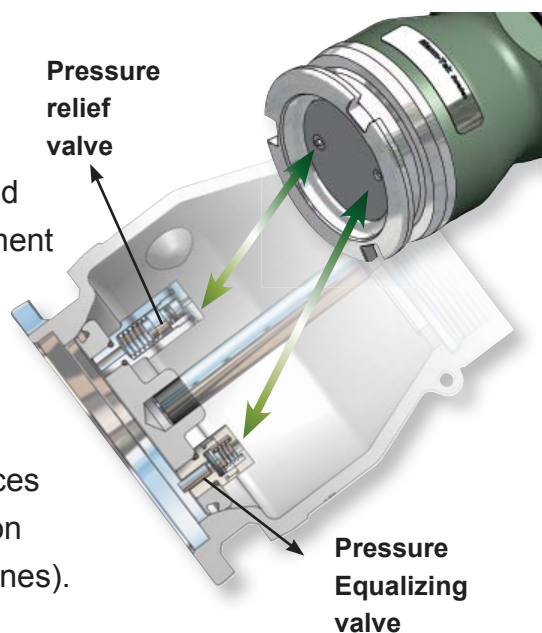
Pressure relief/equalizing valve in ISO 45 Tank unit and STANAG 3756 Tank unit

Pressure Relief Valve

(relieve valve, blow off valve)

Under thermal influence the liquid will be warmed up and the pressure increases extremely. To protect the equipment against excessive pressure the PEV opens at a predetermined pressure at an acceptable and riskless limit.

Other applications with the same effect are adapter pieces between different DDCs, hose lines with DACouplings on both sides e.g. for military applications (logistic supply lines).



Advantages - All wetted parts in Aluminium and Stainless steel

No yellow parts (Brass and Bronze) in contact with the fuel.

The Tank unit is supplied with parallel BSP threads and flat sealing surface. This allows the use of the full thread length for screwed-on parts. Also available with flange and tapered internal NPT threads.

PTFE (Teflon®) bearing between the piston shaft and the piston guide to eliminate the risk of seizure.

Conical valve seat to eliminate the risk for "piston blow out" when extreme pressure is used.

Coupling ring in brass to minimize the risk of seizure. All parts with media contact are Stainless steel or Aluminium.

PTFE (Teflon®) bearings between the driving plate and the piston guide to eliminate the risk of seizure.

Shaft journal in Stainless Steel embedded in PTFE (Teflon®) to eliminate seizure.

Inner parts in Stainless Steel AISI 316.

Protecting ring in weather resistant rubber. Electrically conductive.

Riveted piston pin to minimize the risk of failure under extreme pressure conditions.

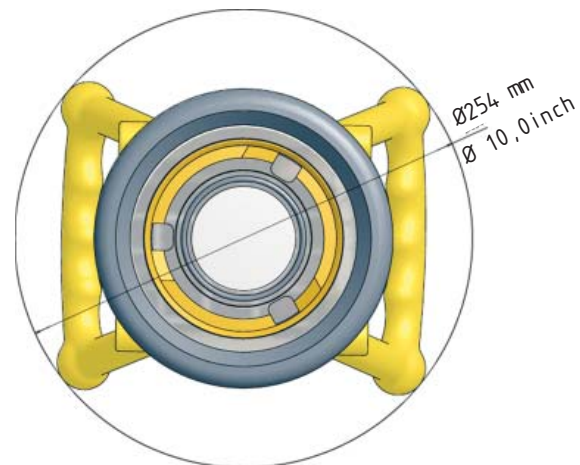
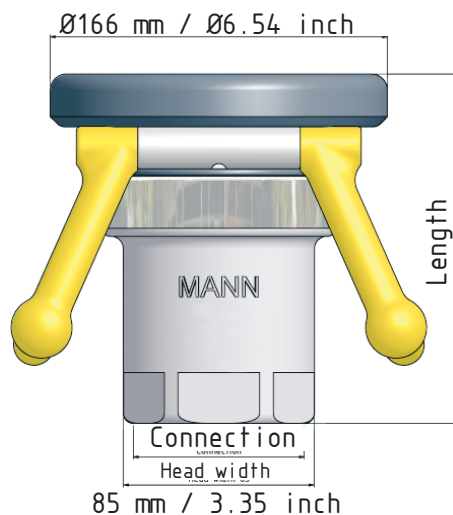
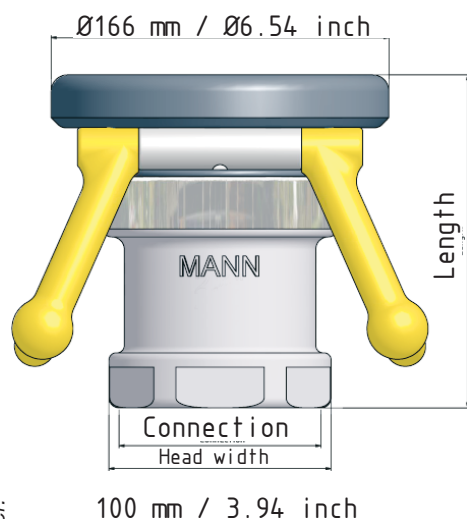
Ball bearings in Stainless Steel.

The Hose unit is supplied with parallel BSP threads and flat sealing surface. This allows the use of the full thread length for screwed-on parts. Also available with flange and tapered internal NPT threads.

Teflon® is a registered trademark of DuPont.

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Hose unit with female thread - Standard Handle



Threads:

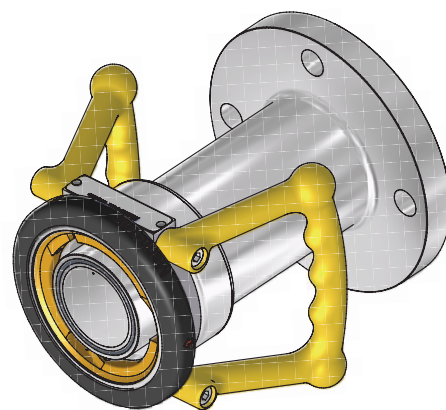
BSP = ISO 228

NPT = B1.20.1

Connection	Length	Head width	Weight	Code No
2½" BSP	64 mm/6.46 inch	85 mm / 3.35 inch	3.4 kg / 7.5 lbs	F312B1101B
3" BSP	164 mm/6.46 inch	100 mm / 3.94 inch	3.5 kg / 7.7 lbs	F314B1101B
2½" NPT	172 mm/6.77 inch	85 mm / 3.35 inch	3.4 kg / 7.5 lbs	F313B1101
3" NPT	174 mm/6.85 inch	100 mm / 3.94 inch	3.5 kg / 7.7 lbs	F315B1101

Hose Unit, flanged inlet

Flange1)	Material	Seal O-ring	Code No
undrilled Ø210 mm	Al	Standard FPM/KFM (Viton®)	F320B1101
DN 65 PN 10/16 Type A			F333B1101
DN 80 PN 10/16 Type A			F336B1101
2½" ASA 150 psi			F359B1101
3" ASA 150 psi			F361B1101
TW1 (DN80)			F365B1101
TW3 (DN100)			F366B1101
3" TTMA			F367B1101
4" TTMA			F368B1101



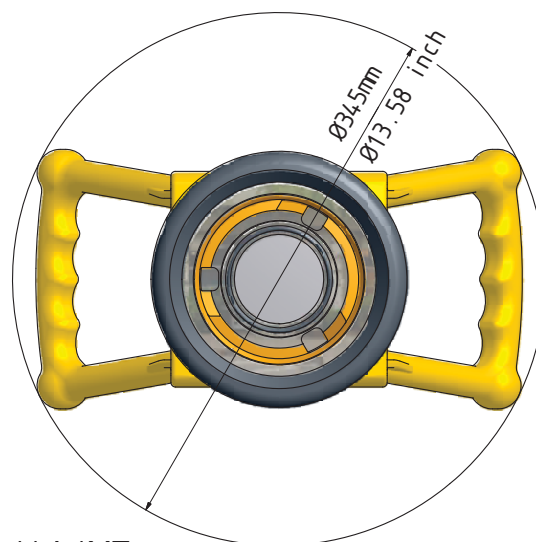
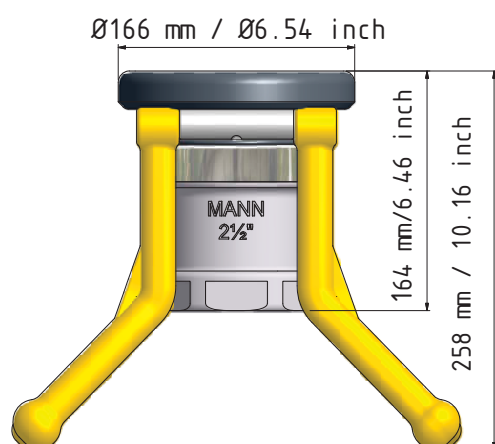
We make specials

Other materials, connection and sealings on request.

1) Flanges according to EN 1092 , ANSI B16.5 and DIN 28459.

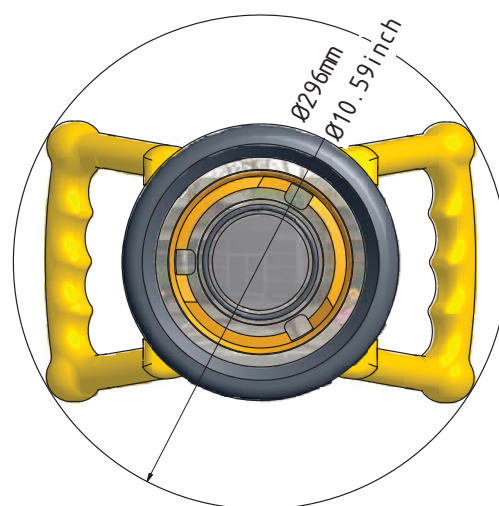
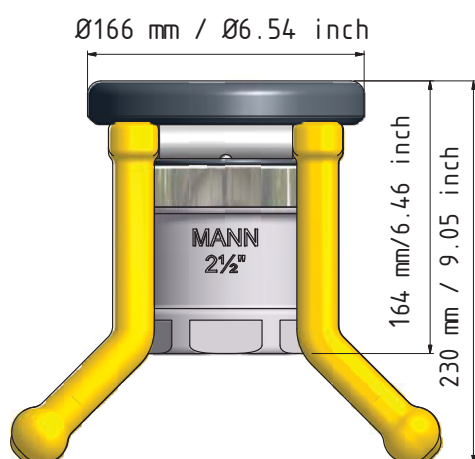
Viton® (FPM) and Teflon® (FPM/KPM) are registered trademarks of DuPont, DuPont Elastomers. Vulkollan® is registered trademark of Bayer AG

Hose Unit Option - Long Handle



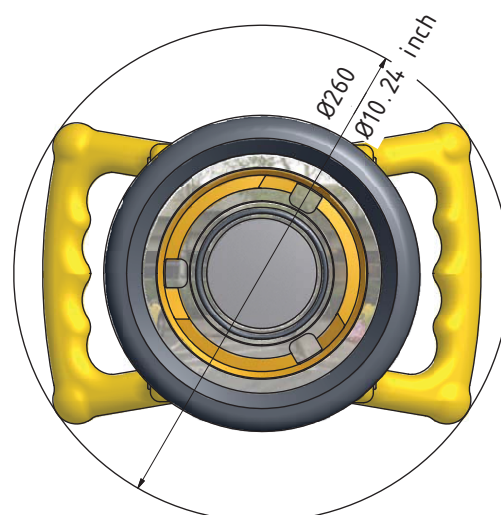
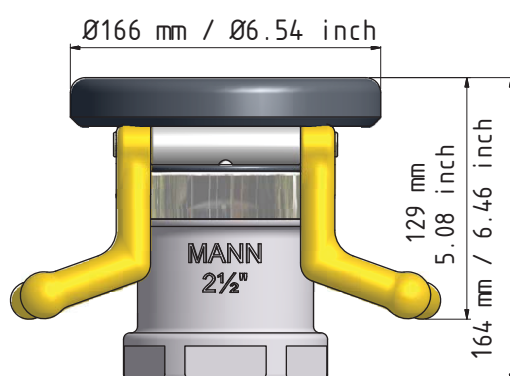
How to Order **Code nr:** Code nr. Hose Unit + H-F3-11-L1YE

Hose Unit Option - Half long Handle



How to Order **Code nr:** Code nr. Hose Unit + H-F3-11-L2YE

Hose Unit Option - Depot Handle



How to Order **Code nr:** Code nr. Hose Unit + H-F3-11-L3YE

Filter Strainer - Product information

The Filter Strainer is designed to adapt on the DACoupling according to the ISO45 standard. The integrated view glass makes it easy to check when the filter has to be cleaned. Easy servicing is guaranteed by a new bayonet connection.

The Filter Strainers are available with 2½" BSP/NPT and 3" BSP/NPT connections.



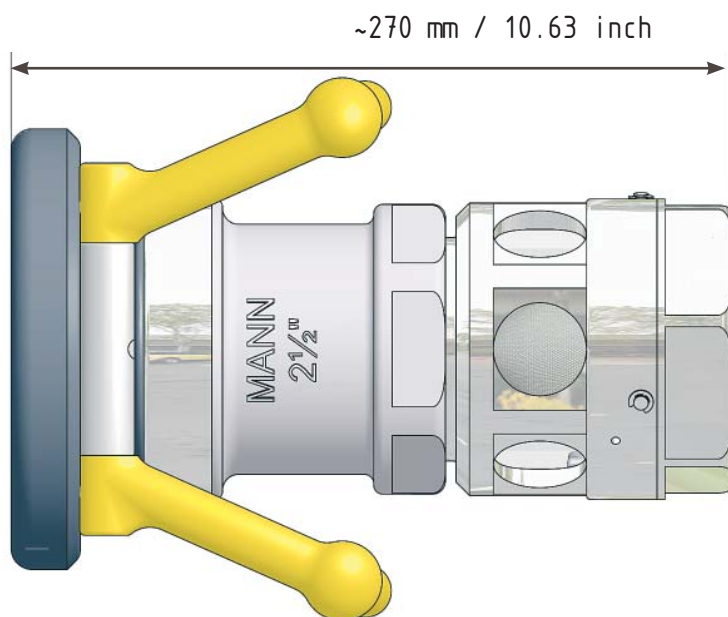
45 mesh



60 mesh



100 mesh



Sight flow indicator with male BSP thread screws into a ISO 45 Hose Unit / Coupler with female threads.

There are 3 different filter types, 45 mesh, 60 mesh and 100 mesh. When order replace XX with -45 for 45 mesh, -60 for 60 mesh and -10 for 100 mesh.

Standard connections:

Other combinations or connections on request.

Size	End connection (female)	HU connection (male)
U1280S1101-XX	2½" BSP	2½" BSP
U1281S1101-XX	2½" BSP	2½" NPT
U1380S1101-XX	2½" NPT	2½" BSP
U1381S1101-XX	2½" NPT	2½" NPT
U1482S1101-XX	3" BSP	3" BSP
U1483S1101-XX	3" BSP	3" NPT
U1582S1101-XX	3" NPT	3" BSP
U1583S1101-XX	3" NPT	3" NPT

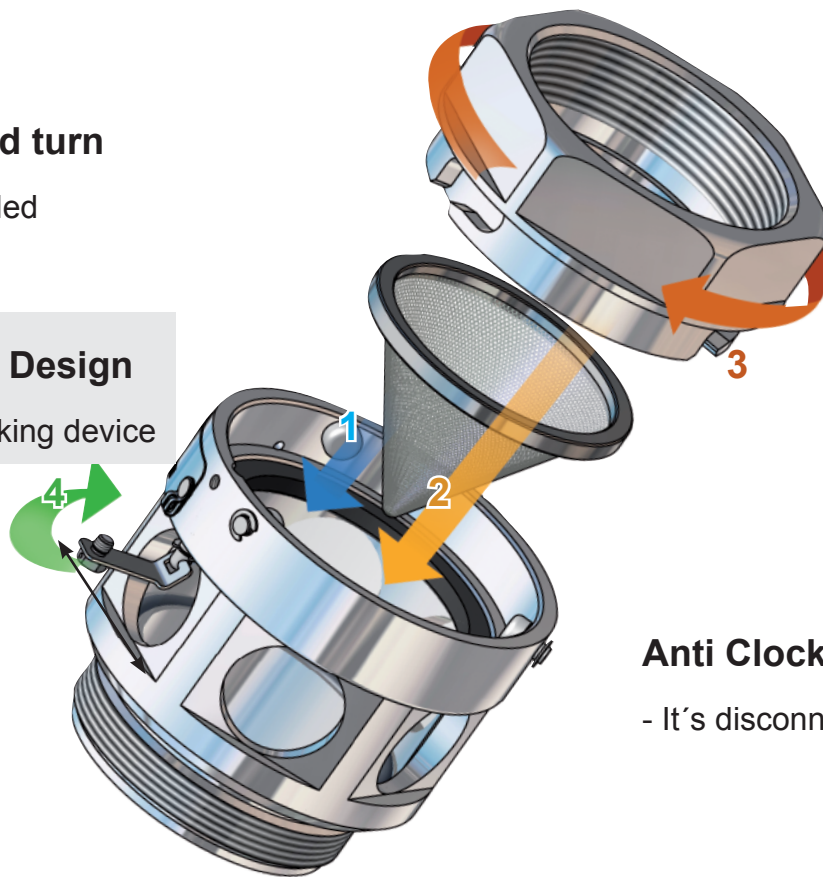
Filter Strainer - Exploded view

Push and turn

- It's coupled

Fail Safe Design

Double locking device



Anti Clock wise

- It's disconnected

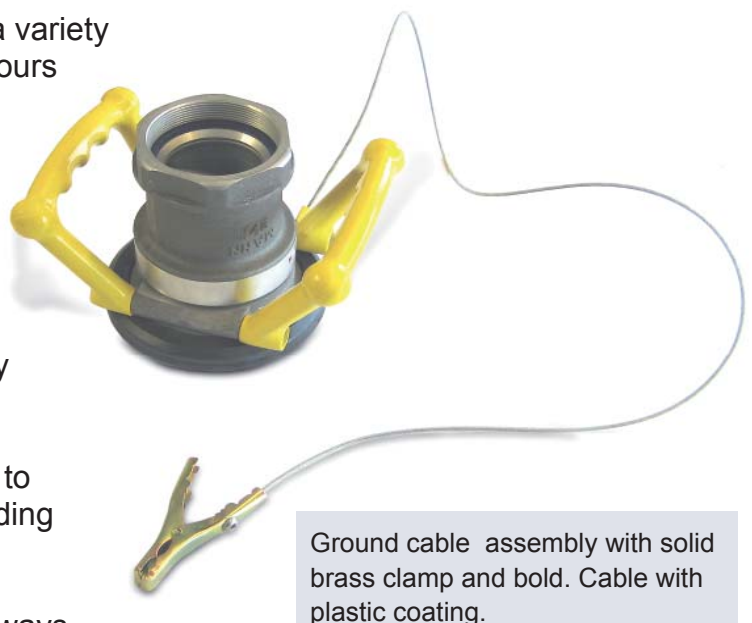
ISO 45 with Ground Connection

Electrostatic charges can be generated by a variety of circumstances. Ignition of flammable vapours is possible by discharge of static.

Electrical conductive hoses and anti-static additives reduces the risk but might not be sufficient. Than the aircraft, the fuelling vehicle, and all accessories including hose nozzle, filters and other equipment through which the fuel passes must all be electrically bonded.

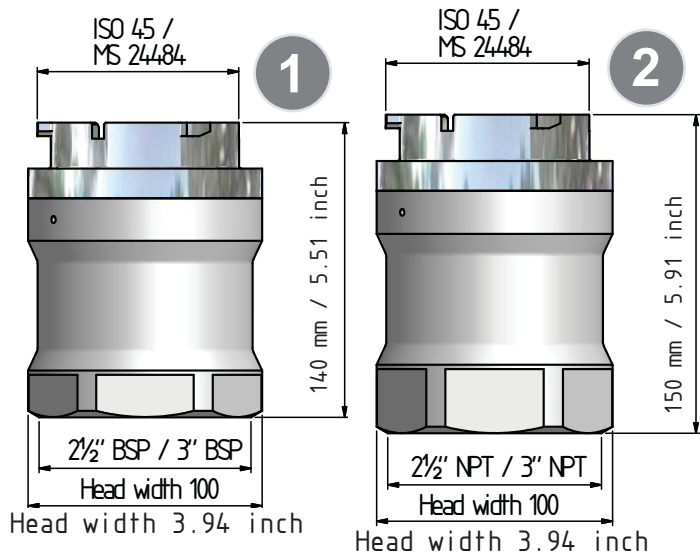
Such connections must always be attached to appropriate bonding connections thus providing a conductive path to equalize potential.

Removal of the bonding connection must always be the last operation.



Tank unit with female thread

Body material in aluminium and stainless steel.



Connection	Material	Weight	Code No
1 2½" BSP	AL	2.3 kg / 5.1 lbs	G312A1401B
1 3" BSP		2.3 kg / 5.1 lbs	G314A1401B
2 2½" NPT		2.3 kg / 5.1 lbs	G313A1401B
2 3" NPT		2.3 kg / 5.1 lbs	G315A1401B
2½" BSP	SS	-	G312A4401B
3" BSP		-	G314A4401B
2½" NPT		-	G313A4401B
3" NPT		-	G315A4401B

Working pressure:

10 bar / 150 psi

Test pressure:

15 bar / 225 psi

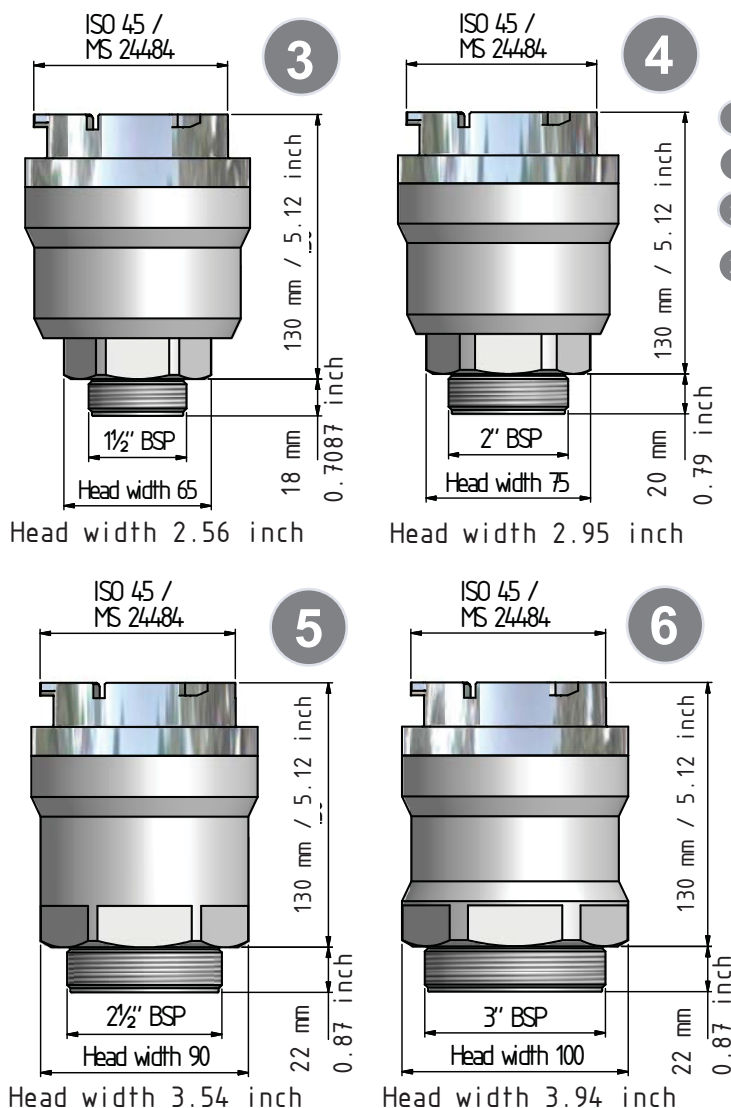
Threads:

BSP = ISO 228,

NPT = B1.20.1

Tank unit with male thread

Body material in aluminium and stainless steel.



Connection	Material	Weight	Code No
1 1½" BSP	AL	2.1 kg / 4.6 lbs	G375A1401B
1 2" BSP		2.2 kg / 4.8 lbs	G378A1401B
2 2½" BSP		2.2 kg / 4.8 lbs	G380A1401B
2 3" BSP		2.3 kg / 5.1 lbs	G382A1401B
1½" BSP	SS	-	G375A4401B
2" BSP		-	G378A4401B
2½" BSP		-	G380A4401B
3" BSP		-	G382A4401B

Working pressure:

10 bar / 150 psi

Test pressure:

15 bar / 225 psi

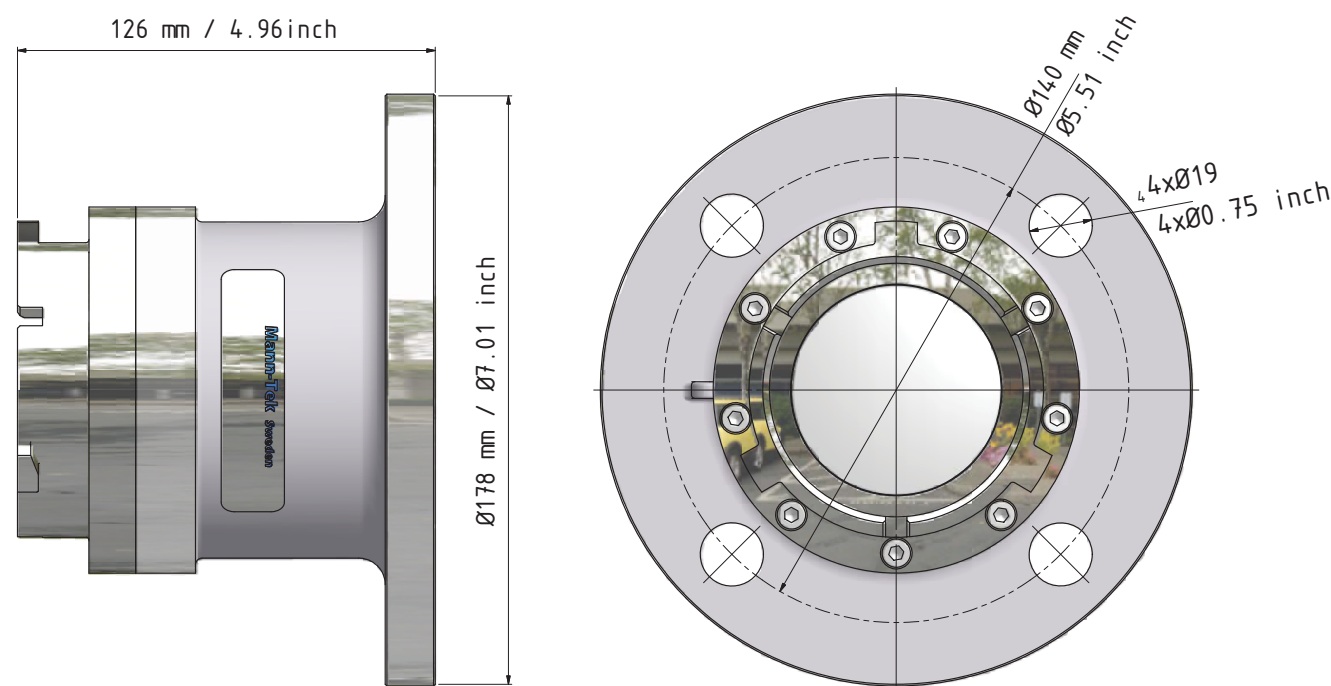
Threads:

BSP = ISO 228,

NPT = B1.20.1

Tank unit (Ground unit) with standard flange, 2½" ASA 150 psi

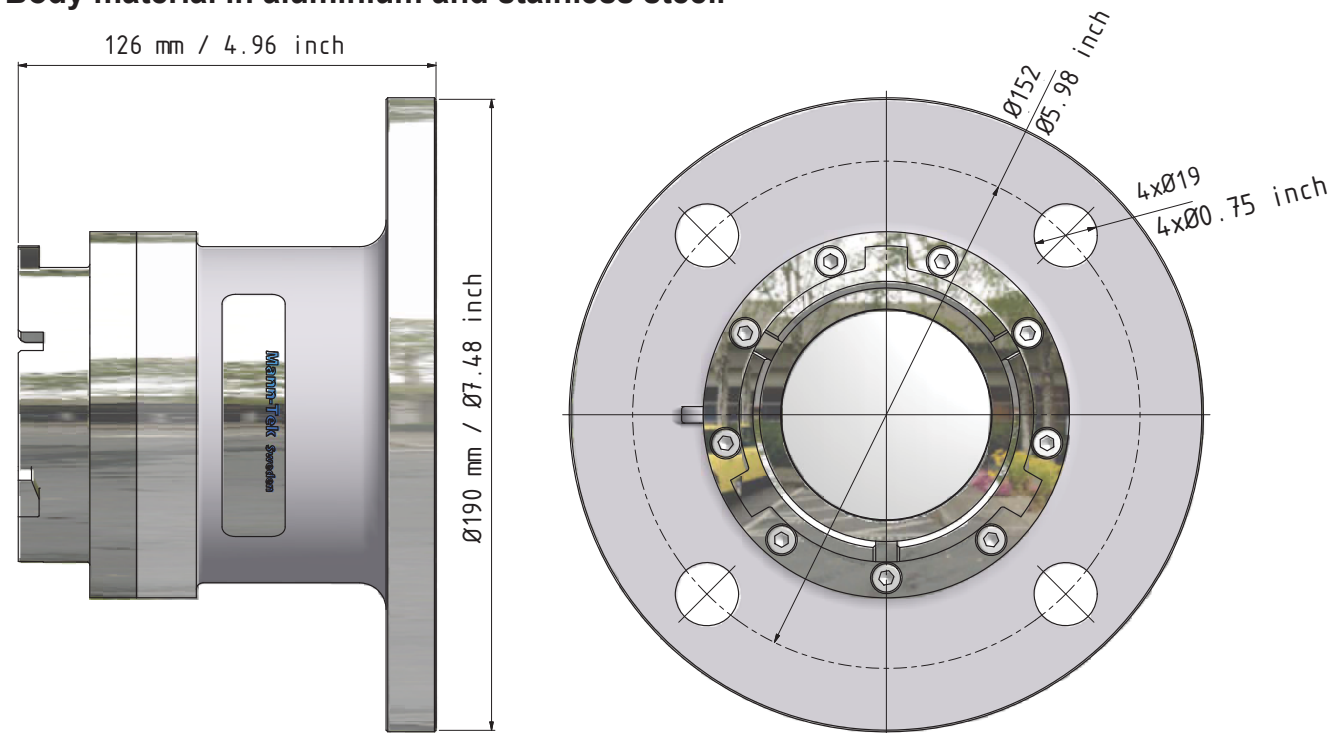
Body material in aluminium and stainless steel.



Flange	Material (Body)	Weight	Code No
2½" ASA 150 psi	AL	2.7 kg / 6.0 lbs	G359D1401
2½" ASA 150 psi	SS	-	G359B4401

Tank unit (Ground unit) with standard flange, 3" ASA 150 psi

Body material in aluminium and stainless steel.

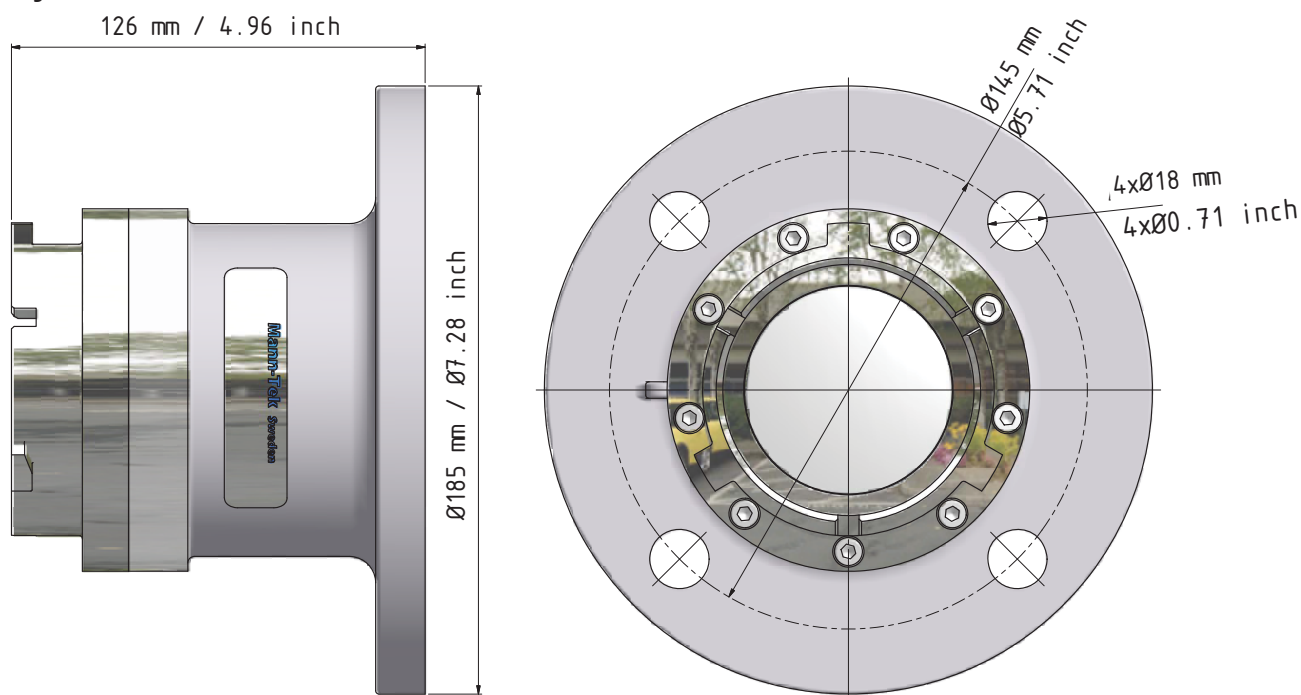


Flange	Material (Body)	Weight	Code No
3" ASA 150 psi	AL	2.9 kg / 6.4 lbs	G361D1401
3" ASA 150 psi	SS	-	G361B4401

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Tank unit (Ground unit) with standard flange, DIN DN 65 PN 10/16

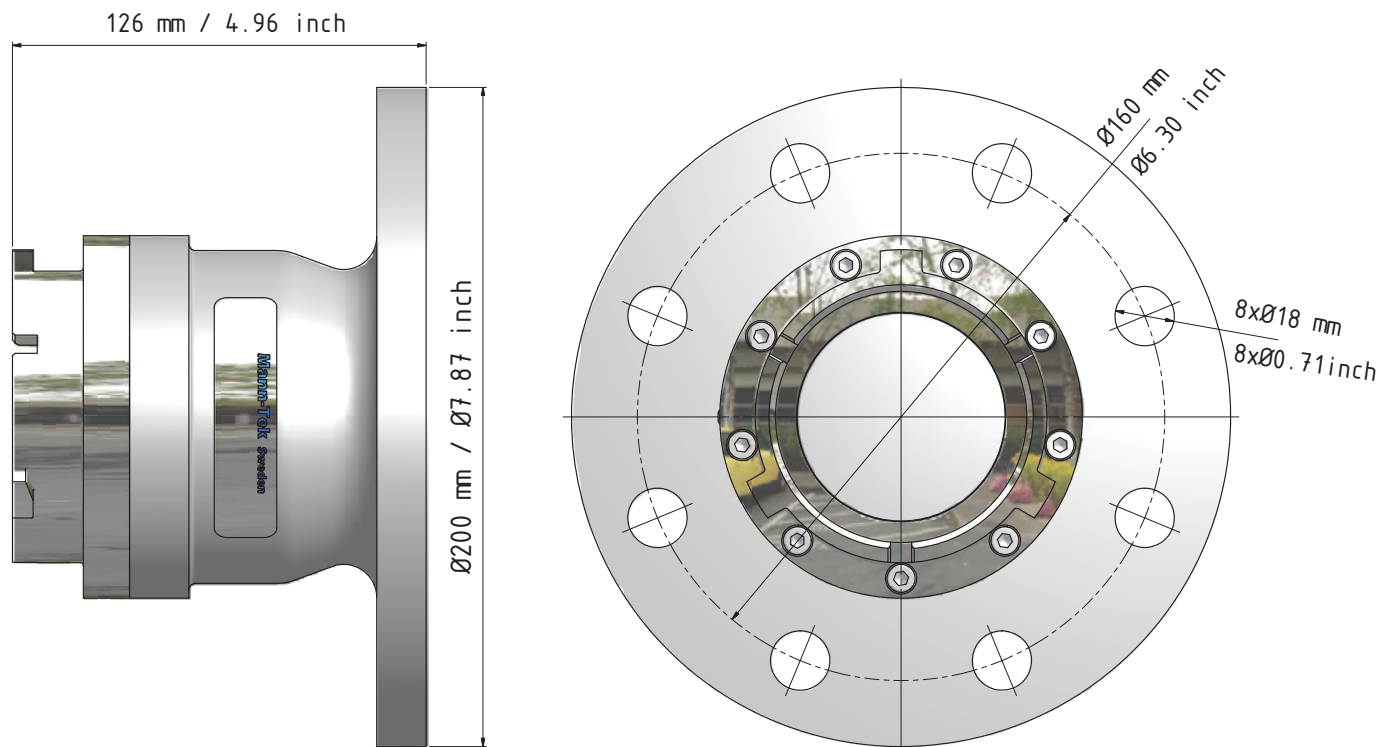
Body material in aluminium and stainless steel.



Flange	Material (Body)	Weight	Code No
DN 65 PN 10/16	AL	2.8 kg 6.2 lbs	G333D1401
DN 65 PN 10/16	SS	-	G333B4401

Tank unit (Ground unit) with standard flange, DIN DN 80 PN 10/16

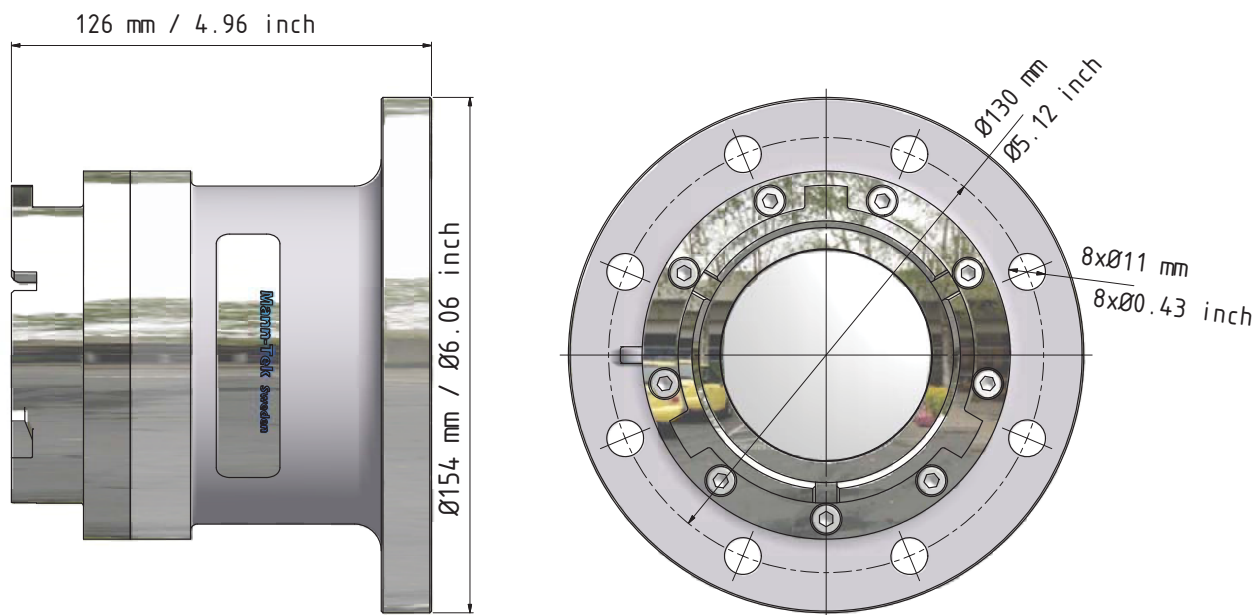
Body material in aluminium and stainless steel.



Flange	Material (Body)	Weight	Code No
DN 80 PN 10/16	AL	3.0 kg / 6.6 lbs	G336D1401
DN 80 PN 10/16	SS	-	G336B4401

Tank unit (Ground unit) with standard flange, TW1 (DIN 28459)

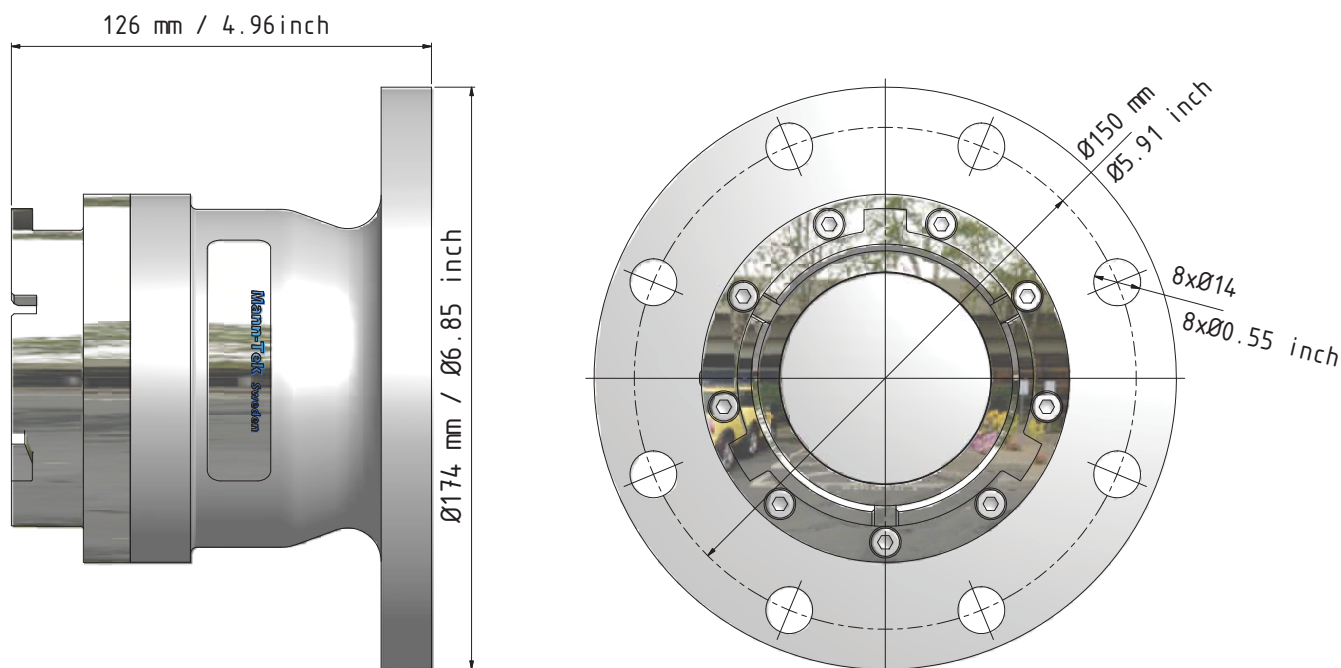
Body material in aluminium and stainless steel.



Flange	Material (Body)	Weight	Code No
TW1 (DIN 28459)	AL	2.5 kg / 5.5 lbs	G365D1401
TW1 (DIN 28459)	SS	-	G365B4401

Tank unit (Ground unit) with standard flange, TW3 (DIN 28459)

Body material in aluminium and stainless steel.

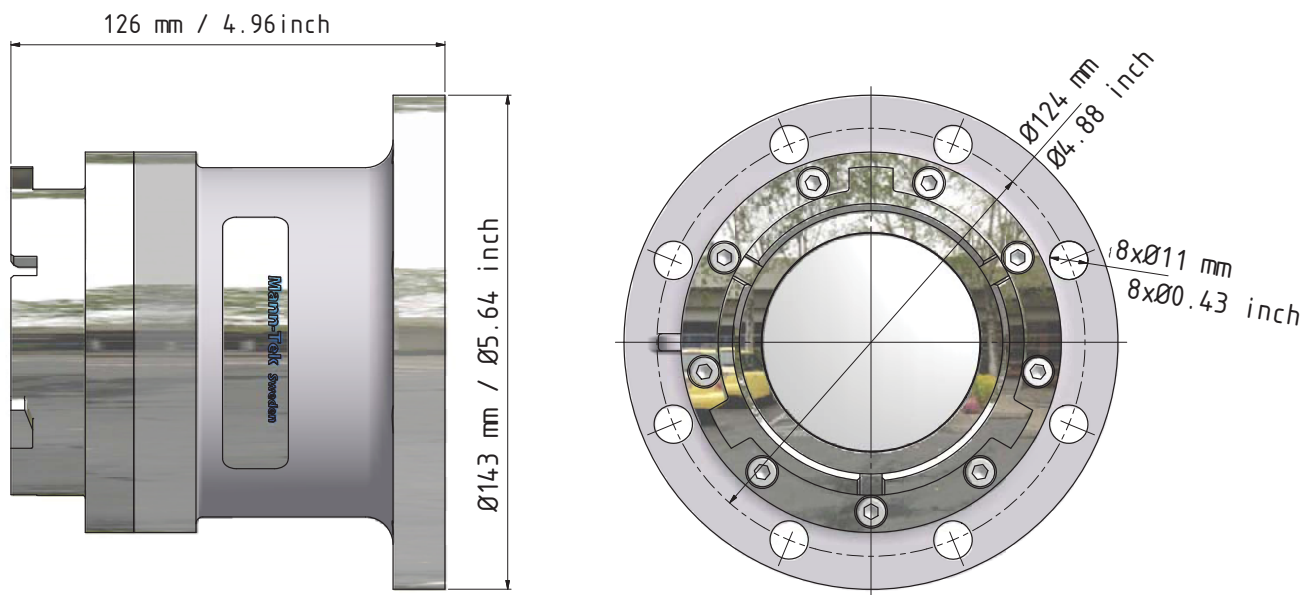


Flange	Material (Body)	Weight	Code No
TW3 (DIN 28459)	AL	2.9 kg / 6.4 lbs	G366D1401
TW3 (DIN 28459)	SS	-	G366B4401

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Tank unit (Ground unit) with standard flange, 3" TTMA

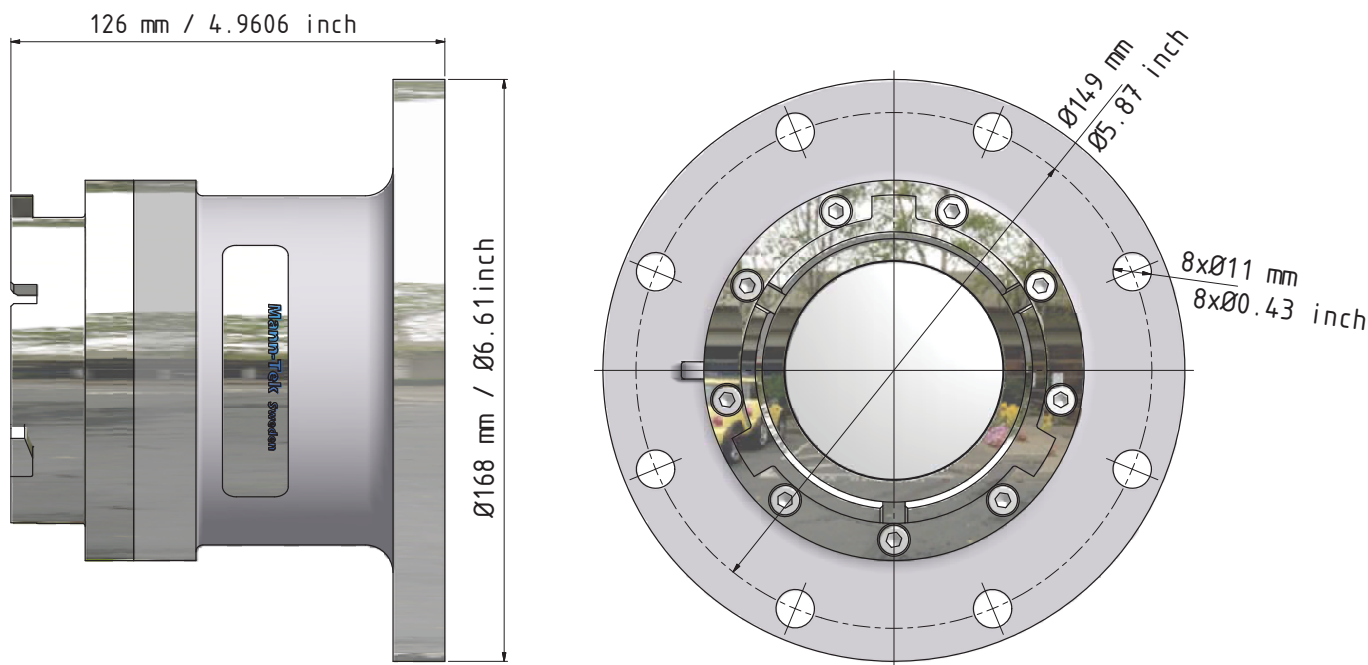
Body material in aluminium and stainless steel.



Flange	Material (Body)	Weight	Code No
3" TTMA	AL	2.4 kg / 5.3 lbs	G367D1401
3" TTMA	SS	-	G367B4401

Tank unit (Ground unit) with standard flange, 4" TTMA

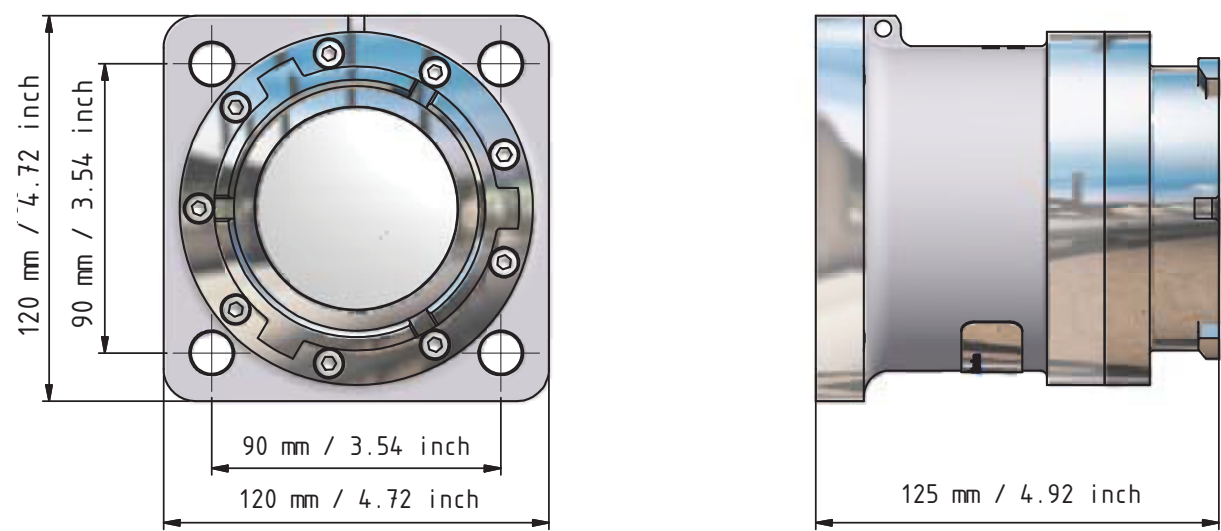
Body material in aluminium and stainless steel.



Flange	Material (Body)	Weight	Code No
4" TTMA	AL	2.6 kg / 5.7 lbs	G368D1401
4" TTMA	SS	-	G368B4401

Tank unit (Ground unit) wifth square flange 120 mm

Body material in aluminium and stainless steel.



Flange	Material (Body)	Weight	Code No
Square flange, 120 mm / 4.72 inch	AL	2.7 kg / 6.0 lbs	G3107D1401
Square flange, 120 mm / 4.72 inch	SS	-	G3107B4401

Drain Connection

Option Drain connection

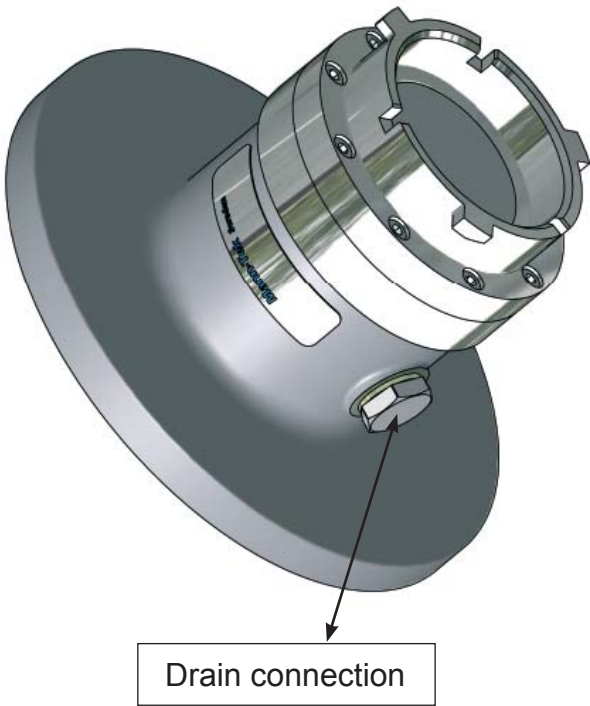
Use Mann-Tek ISO45 with Drain connection for easy draining and sampling of your system.

Available in all Tank units with flange

Drain connection: 3/8" (thread standard)

Other threads on request.

How to Order: Code nr. + D-G3-11-C1



Dust plug and cap



Dust Cap (for Tank Unit)



Dust Plug (for HoseUnit)

Code nr:	Material:	Weight:
K300A1101	Aluminium	0,5 kg / 1.10 lbs
K300A2201	Composite ¹⁾	0.2 kg / 0,44 lbs

Code nr:	Material:	Weight:
I300A1101	Aluminium	0,4 kg / 0.88 lbs
I300A2201	Composite ¹⁾	0.2 kg / 0.44 lbs

A dust cap should be used to prevent the ingress of dirt or water.

A dust cap should be used to prevent the ingress of dirt or water.

¹⁾ Lowest operation temperature is -20° C / -4° F

Technical Data

Size of ISO45 DACoupling: 2½" (DN 65)

Materials:

Aluminium

Seals:

FPM (Viton*) or NBR (Nitrile) , Low temperature NBR, FQM (Flourosilicon)

*) Viton is a registered trademark of DuPoint

Lowest Operation Temperature :

With Seals Material:	Lowest Temperature:
FPM (Standard Viton)	-20° C / -4° F
NBR	-25° C / -13° F
Low temperature NBR	-40° C / -40° F
FQM (Flourosilicon)	-55° C / -67° F

These materials must be tried individually and are subject to no obligation.
Always check with chemical compability chart before use.

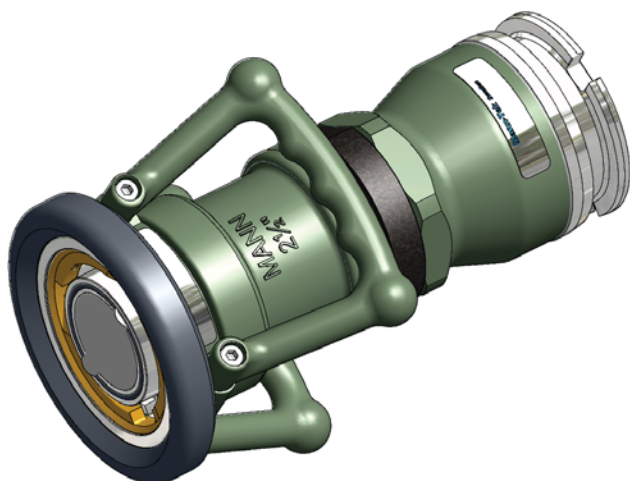
Max Working Pressure: 10 bar (150 psi)

Test Pressure: 15 bar (225 psi)

Min. Burst Pressure: 50 bar (750 psi)

Safety Factor: 5:1

End Connections: BSP- and NPT-threads, DIN- and ASA-flanges.
Other connections on request.



**2½" ISO45 Hose Unit to
Tank Unit 3" (119 mm)¹⁾ STANAG 3756**



**3" (119 mm)¹⁾ Tank Unit STANAG 3756
to 2½" (105 mm)¹⁾ Hose unit**



The ISO45 coupling, in green colour, are also used for Military purposes with different adaptor systems.

Connection adaptor:

- 2½" ISO45 to 3" (119 mm)¹⁾ Tank Unit STANAG 3756.
- 2½" ISO45 to 3" (119 mm)¹⁾ TW EN14420-5
- 3" (119 mm)¹⁾ Hose Unit / Tank Unit STANAG 3756 to 3" (119 mm)¹⁾ TW EN14420- 5 Hose Unit / Tank Unit
- 3" (119 mm)¹⁾ Tank Unit STANAG 3756 to 2½" (105 mm)¹⁾ Hose Unit

The ISO45 Tank Unit are also available with pressure equalizing valve and pressure relief valve.

¹⁾ Connection 119 mm = 4.68 inch and 105 mm = 4.13 inch

Examples of Military RAL colours



RAL 6014
Yellow Olive
- Dutch Army



RAL 6031
Bronze Green
-Dutch, Germany,
Denmark, Spain, Italy
and Sweden.



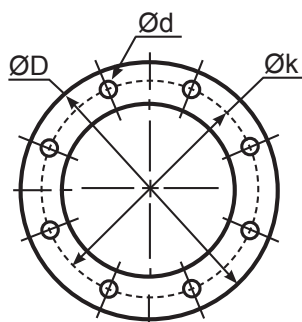
RAL 8027
Leather Brown
- Germany



RAL 9021
Tar Black
- Germany

Other colours on request

We can not guarantee that the colours above are correctly illustrated because print quality



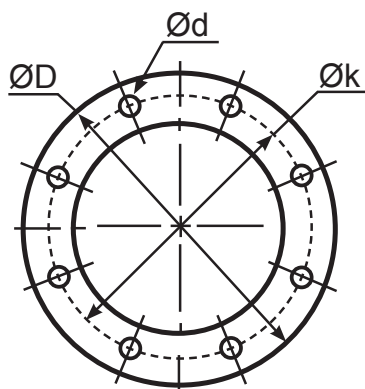
Ø D = Diameter
 Ø k = Centre diameter
 n = Numer of holes
 Ø d = Hole diameter

EN 1092-1

DN		PN 10				PN 16				PN 25				PN 40			
		ØD	Øk	n	Ød	ØD	Øk	n	Ød	ØD	Øk	n	Ød	ØD	Øk	n	Ød
20	mm	105	75	4	14	105	75	4	14	105	75	4	14	105	75	4	14
	inch	4.13	2.95		0.55	4.13	2.95		0.55	4.13	2.95		0.55	4.13	2.95		0.55
25	mm	115	85	4	14	115	85	4	14	115	85	4	14	115	85	4	14
	inch	4.53	3.35		0.55	4.53	3.35		0.55	4.53	3.35		0.55	4.53	3.35		0.55
32	mm	140	100	4	18	140	100	4	18	140	100	4	18	140	100	4	18
	inch	5.51	3.94		0.71	5.51	3.94		0.71	5.51	3.94		0.71	5.51	3.94		0.71
40	mm	150	110	4	18	150	110	4	18	150	110	4	18	150	110	4	18
	inch	5.91	4.33		0.71	5.91	4.33		0.71	5.91	4.33		0.71	5.91	4.33		0.71
50	mm	165	125	4	18	165	125	4	18	165	125	4	18	165	125	4	18
	inch	6.50	4.92		0.71	6.50	4.92		0.71	6.50	4.92		0.71	6.50	4.92		0.71
65	mm	185	145	4	18	185	145	4	18	185	145	8	18	185	145	8	18
	inch	7.28	5.71		0.71	7.28	5.71		0.71	7.28	5.71		0.71	7.28	5.71		0.71
80	mm	200	160	8	18	200	160	8	18	200	160	8	18	200	160	8	18
	inch	7.87	6.30		0.71	7.87	6.30		0.71	7.87	6.30		0.71	7.87	6.30		0.71
100	mm	220	180	8	18	220	180	8	18	235	190	8	22	235	190	8	22
	inch	8.66	7.09		0.71	8.66	7.09		0.71	9.25	7.48		0.87	9.25	7.48		0.87
125	mm	250	210	8	18	250	210	8	18	270	220	8	26	270	220	8	26
	inch	9.84	8.27		0.71	9.84	8.27		0.71	10.63	8.66		1.02	10.63	8.66		1.02
150	mm	285	240	8	22	285	240	8	22	300	250	8	26	300	250	8	26
	inch	11.22	9.45		0.87	11.22	9.45		0.87	11.81	9.84		1.02	11.81	9.84		1.02
200	mm	340	295	8	22	340	295	12	22	360	310	12	26	375	320	12	30
	inch	13.39	11.61		0.87	13.39	11.61		0.87	14.17	12.20		1.02	14.76	12.60		1.18
250	mm	395	355	12	22	405	355	12	26	425	370	12	30	450	385	12	33
	inch	15.55	13.98		0.87	15.94	13.98		1.02	16.73	14.57		1.18	17.72	15.16		1.30
300	mm	445	400	12	22	460	410	12	26	485	430	16	30	515	450	16	33
	inch	17.52	15.75		0.87	18.11	16.14		1.02	19.09	16.93		1.18	20.28	17.65		1.30

Flange translation EN 1092 ---- DIN

EN 1092-1	DIN
EN 1092-1 PN 6	DIN 2631
EN 1092-1 PN 10	DIN 2632
EN 1092-1 PN 16	DIN 2633
EN 1092-1 PN 25	DIN 2634
EN 1092-1 PN 40	DIN 2635
EN 1092-1 Type B Raised Face	DIN 2526 Form C
EN 1092-1 Type C Tongue	DIN 2512 Form F
EN 1092-1 Type D Groove	DIN 2512 Form N
EN 1092-1 Type E Spigot	DIN 2513 Form V
EN 1092-1 Type F Recess	DIN 2513 Form R



Ø D = Diameter
 Ø k = Centre diameter
 n = Numer of holes
 Ø d = Hole diameter

ANSI (ASA) B 16,5									
INCH		150 psi				300 psi			
		ØD	Øk	n	Ød	ØD	Øk	n	Ød
3/4"	mm	98,4	69,8	4	15,9	117,5	82,5	4	19
	inch	3 7/8	2 3/4		5/8	4 5/8	3 1/4		3/4
1"	mm	107,7	79,4	4	15,9	123,8	88,9	4	19
	inch	4 1/4	3 1/8		5/8	4 7/8	3 1/2		3/4
1 1/4"	mm	117,5	88,9	4	15,9	133,3	98,4	4	19
	inch	4 5/8	3 1/2		5/8	5 1/4	3 7/8		3/4
1 1/2"	mm	127	98,4	4	15,9	155,6	114,3	4	22,2
	inch	5	3 7/8		5/8	6 1/8	4 1/2		7/8
2"	mm	152,4	120,6	4	19	165,1	127	8	19
	inch	6	4 3/4		3/4	6 1/2	5		3/4
2 1/2"	mm	177,8	139,7	4	19	190,5	149,2	8	22,2
	inch	7	5 1/2		3/4	7 1/2	5 7/8		7/8
3"	mm	190,5	152,4	4	19	209,5	168,3	8	22,2
	inch	7 1/2	6		3/4	8 1/4	6 5/8		7/8
4"	mm	228,5	190,5	8	19	254	200	8	22,2
	inch	9	7 1/2		3/4	10	7 7/8		7/8
5"	mm	254	215,9	8	22,2	279,4	234,9	8	22,2
	inch	10	8 1/2		7/8	11	9 1/4		7/8
6"	mm	279,4	241,3	8	22,2	317,5	269,9	12	22,2
	inch	11	9 1/2		7/8	12 1/2	10 5/8		7/8
8"	mm	342,9	298,4	8	22,2	381	330,2	12	25,4
	inch	13 1/2	11 3/4		7/8	15	13		1
10"	mm	406,4	361,9	12	25,4	444,5	387,3	16	28,6
	inch	16	14 1/4		1	17 1/2	15 1/4		1 1/8
12"	mm	482,6	431,8	12	25,4	520,7	450,8	16	31,7
	inch	19	17		1	20 1/2	17 3/4		1 1/4

TW DIN 28459						
	DN		ØD	Øk	n	Ød
TW1	50	mm	154	130	8	11
		inch	6.06	5.12		0.43
TW1	80	mm	154	130	8	11
		inch	6.06	5.12		0.43
TW3	100	mm	174	150	8	14
		inch	6.85	5.91		0.55
TW5	125	mm	204	176	8	14
		inch	8.03	6.93		0.55
TW7	150	mm	240	210	12	14
		inch	9.45	8.27		0.55

T.T.M.A					
INCH		ØD	Øk	n	Ød
2"	mm	114,3	95,3	6	11,1
	inch	4.50	3.75		0.44
3"	mm	142,9	123,8	8	11,1
	inch	5.63	4.87		0.44
4"	mm	168,3	149,2	8	11,1
	inch	6.63	5.87		0.44
5"	mm	196,9	177,8	12	11,1
	inch	7.75	7.00		0.44
6"	mm	228,6	206,4	12	11,1
	inch	9.00	8.13		0.44
8"	mm	276,2	257,2	16	11,1
	inch	10.87	10.13		0.44

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Mounting instruction

When installing Mann Tek equipment to new pipe work, tanks, etc. ensure the system is free from debris that may be transferred through the coupling. Where the hose or loading arm assembly is the primary static dissipation or earth route, the electrical continuity value of the assembly shall be checked to ensure regulatory compliance. Special attention should be paid to the balancing of loading arms. The weight of the coupling plus transfer media should be taken into account at the specification stage. It is usual for loading arm balance settings to account of weight variations due to differences in the full / empty cycle.

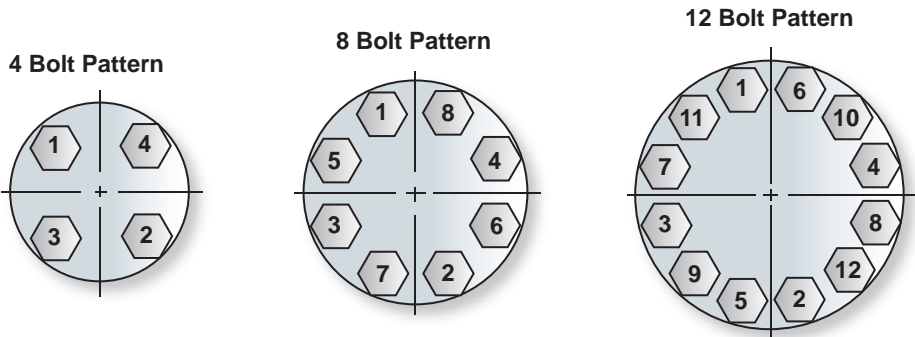
The loading arm should be set to balance in the condition present at the time of connection. For example, should the loading arm be empty at the time of connection then it should be balanced in the empty condition.

The Mann-Tek product can be installed directly in the product line and is ready for use after removing the transport protection. The installation is recommended as follows:

- a. Remove the packaging and the flange protection
- b. Check the coupling for damages before mounting.
- c. To prevent damages during mounting a suitable wrench should be used for the intended bolts and nuts.
- d. Ensure that the product line is empty and all valves are close before you connect the coupling into the line.
- e. Set in all bolts first and tighten them by hand. Then increase the tightening torque in 2 steps up to the recommended value in the following table. Proceed every time according to the sequence shown in g.
- f. Tightening torque¹⁾ for bolts:

Metric		Inch	
Size	8.8	Size	A193 B7
M8	24 Nm	5/16 -18 UNC	16 lbf-ft
M10	50 Nm	3/8 -16 UNC	29 lbf-ft
M12	85 Nm	1/2 -13 UNC	70 lbf-ft
M16	210 Nm	5/8 -11 UNC	139 lbf-ft
M20	410 Nm	3/4 -10 UNC	243 lbf-ft
M22	550 Nm	7/8 -9 UNC	389 lbf-ft
M24	700 Nm	1 -8 UNC	582 lbf-ft

- g. Bolt tightening sequence.



The start-up may take place only when the Mann-Tek product has been mounted as instructed and the necessary function tests and leak tests have been conducted by the approved authorities.

¹⁾ The torque forces recommended bases on a thread friction coefficient $\mu=0,14$ and a standard flat seal according to EN 1514-1

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NPT

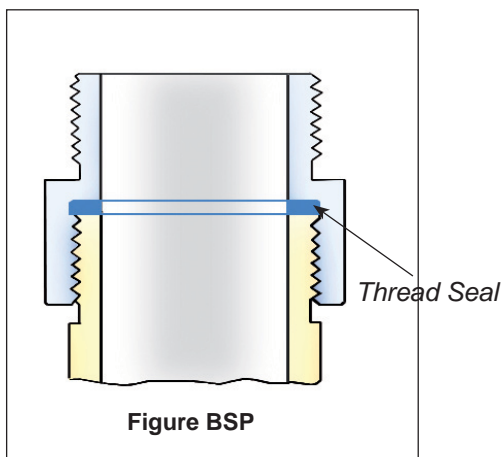
Sealing NPT threads can be an exasperating experience if certain techniques are not followed. The following tips will help alleviate many common problems in thread sealing:

1. Always use some type of sealant (tape or paste) and apply sealant to male thread only. If using a hydraulic sealant, allow sufficient curing time before system is pressurized.
2. When using tape sealant, wrap the threads in a clock-wise motion starting at the first thread and, as layers are applied, work towards the imperfect (vanishing) thread. If the system that the connection being made to cannot tolerate foreign matter (i.e. air systems), leave the first thread exposed and apply the tape sealant as outlined above.
3. When using paste sealant, apply to threads with a brush, using the brush to work the sealant into the threads. Apply enough sealant to fill in all the threads all the way around.
4. When connecting one stainless steel part to another stainless steel part that will require future disassembly, use a thread sealant that is designed for stainless steel. This stainless steel thread sealant is also useful when connecting aluminium to aluminium that needs to be disconnected in the future. These two materials gall easily, and if the correct sealant is not used, it can be next to impossible to disassemble.
5. When connecting parts made of dissimilar metals (i.e. steel and aluminium), standard tape or paste sealant performs satisfactory.
6. For sizes 2" and below, tape or paste performs satisfactory. When using thread tape, four wraps (covering all necessary threads) is usually sufficient.
7. For sizes 2½" and above, thread paste is recommended. If thread tape is used, eight wraps (covering all necessary threads) is usually sufficient. Apply more wraps if necessary.
8. For stubborn to seal threads, apply a normal coating of thread paste followed by a normal layer of thread tape.
9. For extremely stubborn to seal threads, apply a normal coating of thread paste followed by a single layer of gauze bandage followed by a normal layer of thread tape.

Caution!

When this procedure is done, the connection becomes permanent. Extreme measures will be necessary to disconnect these components. All other measures to seal the threads should be explored prior to use of this technique.

10. Over-tightening threads can be just as detrimental as insufficient tightening. For sizes 2" and below, hand tighten the components and, with a wrench, tighten 3 full turns. For sizes 2½" and above, hand tighten the components and, with a wrench, tighten 2 full turns.

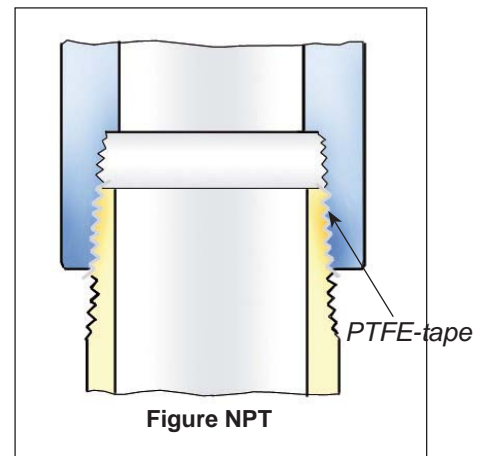


BSP

The threads are parallel with flat sealing surface. This allows to use the full thread length for screwed-on parts. The largest possible transfer of force is guaranteed for short length. The thread seal behind the relief groove of the thread cannot drop out.

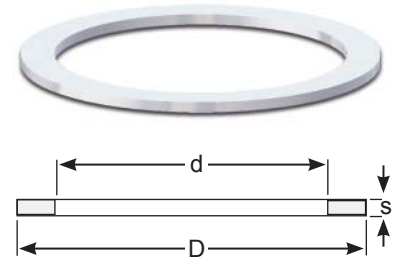
Simple screwing down, makes a safe connection. Subsequent tightening during operation is possible at any time. Change of seal and new assembly do not require any expert knowledge.

The European standardisations for hose assemblies require parallel threads with flat seals, because of the advantages.

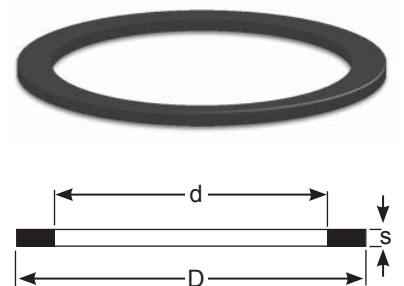
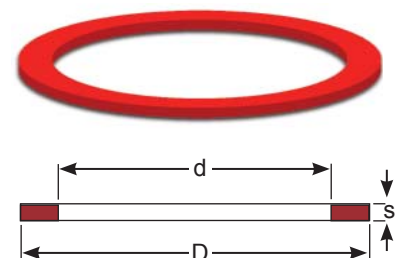


Flat Seals for thread - 1/2

weight ≈kg	Thread BSP	Materials Application	Dimensions ≈ mm			Product No
			D	d	s	
0,001	BSP 1/2"	PTFE (Teflon®) white , massive continuously hard, universally resistant Teflon® is a registered trademark of DuPont	20	13	2	On request
0,001	BSP 3/4"		26	19	2	1498-06
0,002	BSP 1"		33	24	2	1220-06
0,003	BSP 1 1/4"		42	34	2	1536-06
0,003	BSP 1 1/2"		48	39	2	1196-06
0,004	BSP 2"		60	49	2	1052-06
0,007	BSP 2 1/2"		76	63	2,5	1181-06
0,006	BSP 3"		88	77	3	1110-06
0,009	BSP 4"		114	100	3	1295-06
0,016	BSP 6"		164	150	3	1963-06
0,001	BSP 1/2"	Thermopac asbestos free, light hard. Especially for hot oils and hot bitumen up to 250° C and for hot water and saturated steam up to 25 bar.	20	13	2	On request
0,001	BSP 3/4"		26	19	2	1498-25
0,002	BSP 1"		33	24	2	1220-25
0,002	BSP 1 1/4"		42	34	2	1536-25
0,003	BSP 1 1/2"		48	39	2	1196-25
0,004	BSP 2"		60	49	2	1052-25
0,005	BSP 2 1/2"		76	63	3	1181-25
0,009	BSP 3"		88	77	3	1110-25
0,013	BSP 4"		114	100	3	1295-25
0,016	BSP 6"		164	150	3	1963-25
0,001	BSP 1/2"	FPM/FKM (Viton®) soft for aromatic hydrocarbons and hot oils. Viton® is a registered trademark of DuPont	20	13	2	On request
0,001	BSP 3/4"		26	19	2	1498-01
0,002	BSP 1"		33	24	2	1220-01
0,002	BSP 1 1/4"		42	34	2	1536-01
0,003	BSP 1 1/2"		48	39	2	1196-01
0,004	BSP 2"		60	49	2	1052-01
0,006	BSP 2 1/2"		76	63	3	1181-01
0,008	BSP 3"		88	77	3	1110-01
0,014	BSP 4"		114	100	3	1295-01
0,016	BSP 6"		164	150	3	1963-01



Bonded fibre material

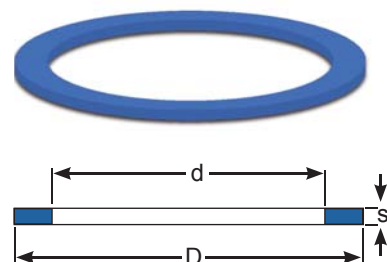


Notice! Seals are not included when you order flanges. You have to order Seals separately.

Flat Seals for thread - 2/2

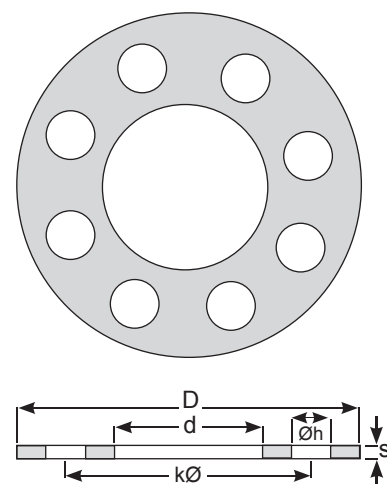
Standard sizes of PUR (VULKOLLAN® polyurethane elastomer), injection molded. Colour:blue.Other sizes of PUR (VULKOLLAN® Cast polyurethane). Colour: honey-coloured. **Vulkollan®** is a registered trademark of Bayer

Weight Appr. ≈ Kg	Suitable for	Dimensions ≈ mm			Product No
		D	d	s	
0,001	BSP 3/4"	26	19	2	1498-09
0,001	BSP 1"	33	24	2	1220-09
0,001	BSP 1 1/4" (DN 25 + DN 32)	42	34	2	1536-09
0,002	BSP 1 1/2" (DN 32 + DN 38)	48	39	2	1196-09
0,003	BSP 1 3/4"	54	44	2,5	On request
0,003	BSP 2"	60	49	2	1052-09
0,005	BSP 2 1/2"	76	63	2,5	1181-09
0,006	BSP 3"	88	77	3	1110-09
0,010	BSP 3 1/2"	100	80	3	On request
0,009	BSP 4"	114	100	3	1295-09
0,012	BSP 5" (No standard)	140	124	3	On request
0,016	BSP 6"	164	150	3	1963-09



ELAPAC Flange Seals FD, QFD

Flange Standard / Suitable for	Dimensions ≈ mm					Product No
	D	d	Øk	Øh	s	
DN 25 PN 10/16	108	78,5	91	4 x 6,5	2	-
DN 32 PN 10/16	140	43	100	4 x 18	2	-
DN 50 PN 6	140	61	110	4 x 15	2	-
DN 50 TW 1	154	50	130	8 x 12	2	-
DN 80 TW 1	154	90	130	8 x 12	2	-
DN 50 PN 10/16	165	61	125	4 x 18	2	-
DN 100 TW3	174	110	150	8 x 14	2	-
DN 65 PN 10/16	185	76	145	4 x 18	2	-
DN 80 PN 10/16	200	90	160	8 x 18	2	-
DN 125 TW5	204	135	176	8 x 14	2	-
DN 100 PN 10/16	220	115	180	8 x 18	2	-
DN 150 TW7	240	160	210	12 x 14	2	-
DN 125 PN 10/16	250	141	210	8 x 18	2	-
DN 150 PN 10/16	280	169	240	8 x 22	2	-
DN 200 PN 10	340	220	295	8 x 22	2	-
DN 200 PN 16	340	220	295	12 x 22	2	-



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Explanation of Designations - 1/2

B = Ball Valve
C = Dust Cap
CG = Dust Cap LPG
D = Swivel
E = Tank Unit with pressure valves
F = Hose Unit ISO 45
G = Tank Unit ISO 45
GS = Tank Unit ISO 45 with selectivity

I = Dust Plug ISO 45
K = Dust Cap ISO 45
L = Tank Unit LPG
M = Hose Unit LPG
N = Break Away Pin
O = Break Away Wire
P = Dust Plug

S = Hose Unit STANAG 3765
SN = Hose Unit int. Break Away Pin
SO = Hose Unit int. Break Away Wire
T = Tank Unit STANAG 3765
U = Filter
V = Dust Plug LPG
WA = Hose Fittings

Second sign (numeral): Indicates the socket diameter and/or the nominal diameter

0 = 50mm or 3/4"
1 = 56mm or 1", 1 1/4"
2 = 70mm or 1 1/2", 2"

3 = 105mm or 2 1/2"
4 = 119mm or 3"
5 = 164mm or 4"

V = 5"
6 = 238mm or 6"
8 = 272mm or 8"

Third and fourth sign (numeral): Indicates connection, (thread, flange etc.)

01 = 3/4" BSP (Female)
02 = 3/4" NPT (Female)
03 = 1" BSP (Female)
04 = 1" NPT (Female)
05 = 1 1/4" BSP (Female)
06 = 1 1/4" NPT (Female)
07 = 1 1/2" BSP (Female)
08 = 1 1/2" NPT (Female)
09 = 1 3/4" BSP (Female)
10 = 2" BSP (Female)
11 = 2" NPT (Female)
12 = 2 1/2" BSP (Female)
13 = 2 1/2" NPT (Female)
14 = 3" BSP (Female)
15 = 3" NPT (Female)
16 = 4" BSP (Female)
17 = 4" NPT (Female)
18 = Flange undrilled Ø156
19 = Flange undrilled Ø165
20 = Flange undrilled Ø210
21 = Flange undrilled Ø230
22 = Flange undrilled Ø254
23 = Flange DN 25 PN 10/16
24 = Flange DN 25 PN 25/40
25 = Flange DN 32 PN 10/16
26 = Flange DN 32 PN 25/40
27 = Flange DN 40 PN 10/16
28 = Flange DN 40 PN 25/40
29 = Flange DN 50 PN 25/40*
30 = Flange DN 50 PN 10/16
31 = Flange DN 50 PN 25/40
32 = Flange DN 65 PN 25/40*
33 = Flange DN 65 PN 10/16
34 = Flange DN 65 PN 25/40
35 = Flange DN 80 PN 25/40*
36 = Flange DN 80 PN 10/16
37 = Flange DN 80 PN 25/40
38 = Flange DN 100 PN 25/40*
39 = Flange DN 100 PN 10/16
40 = Flange DN 100 PN 25/40
41 = Flange DN 125 PN 6
42 = Flange DN 125 PN 10/16
43 = Flange DN 125 PN 25/40
44 = Flange DN 150 PN 6
45 = Flange DN 150 PN 10/16
46 = Flange DN 150 PN 25/40
47 = Flange DN 20 PN 10/16
48 = Flange DN 20 PN 25/40
49 = Flange 3/4" ANSI 150 PSI
50 = Flange 3/4" ANSI 300 PSI
51 = Flange 1" ANSI 150 PSI
52 = Flange 1" ANSI 300 PSI
53 = Flange 1 1/4" ANSI 150 PSI

54 = Flange 1 1/4" ANSI 300 PSI
55 = Flange 1 1/2" ANSI 150 PSI
56 = Flange 1 1/2" ANSI 300 PSI
57 = Flange 2" ANSI 150 PSI
58 = Flange 2" ANSI 300 PSI
59 = Flange 2 1/2" ANSI 150 PSI
60 = Flange 2 1/2" ANSI 300 PSI
61 = Flange 3" ANSI 150 PSI
62 = Flange 3" ANSI 300 PSI
63 = Flange 4" ANSI 150 PSI
64 = Flange 4" ANSI 300 PSI
65 = Flange TW 1 (3" - DN 80)
66 = Flange TW 3 (4" - DN 100)
67 = Flange 3" T.T.M.A.
68 = Flange 4" T.T.M.A.
69 = 3/4" BSP (Male)
70 = 3/4" NPT (Male)
71 = 1" BSP (Male)
72 = 1" NPT (Male)
73 = 1 1/4" BSP (Male)
74 = 1 1/4" NPT (Male)
75 = 1 1/2" BSP (Male)
76 = 1 1/2" NPT (Male)
77 = 1 3/4" BSP (Male)
78 = 2" BSP (Male)
79 = 2" NPT (Male)
80 = 2 1/2" BSP (Male)
81 = 2 1/2" NPT (Male)
82 = 3" BSP (Male)
83 = 3" NPT (Male)
84 = 4" BSP (Male)
85 = 4" NPT (Male)
86 = Weld.flange 2" Ø60,5 inner
87 = Flange TW 1 (2" DN50)
88 = Weld.flange 2" Ø50-Ø70 (flat)
89 = Weld.flang 2" Ø57 (int. chamfer)
90 = Weld.flang 2" Ø60 (outer chamfer)
91 = Weld.flang 3" Ø75-Ø90 (flat)
92 = Weld.flang 3" Ø76 (int. chamfer)
93 = Weld.flang 3" Ø89 (outer. chamfer)
94 = Weld.flang 4" Ø100-Ø120 (flat)
95 = Weld.flang 4" Ø102 (int. chamfer)
96 = Weld.flang 4" Ø108 (int. chamfer)
97 = Weld.flang 4" Ø114 (outer. chamfer)
98 = Flange TW 1 (2" - DN 50)
with drain connection
99 = Flange DN 150 PN 25
100 = Flange 6" ANSI 150 PSI
101 = Flange 6" ANSI 300 PSI
102 = Flange DN 200 PN 10
103 = Flange DN 200 PN 16
104 = Flange DN 200 PN 25
105 = Flange 8" ANSI 150 PSI

106 = Flange 8" ANSI 300 PSI
107 = Flange Square ISO 45
108 = S60x6 (Female)
109 = S60x6 (Male)
110 = 6" BSP (Female)
111 = 6" NPT (Female)
112 = W2" - 7 (Female)
113 = Weld.flange 3" Ø92 inner
114 = Square flange, 4 holes
115 = 6" BSP (Male)
116 = 6" NPT (Male)
117 = 8" NPT (Female)
118 = 4" Victaulic
119 = Flange DN 50 PN 25/40**
120 = Flange DN 65 PN 25/40**
121 = Flange DN 80 PN 25/40**
122 = Flange DN 100 PN 25/40**
123 = W2" - 7 (Male)
124 = 5" NPT (Female)
125 = 5" NPT (Male)
126 = Flange DN100 PN6
127 = Flange DN80 PN6
128 = Flange DN65 PN6
129 = Flange DN50 PN6
130 = Flange 8" ANSI 600 PSI
131 = W90x1/6" (Female)
132 = 1/2" NPT (Female)
133 = 1/2" BSP (Female)
134 = Flange ø184,2, 6 holes
135 = Flange TW 7 (6" - DN 150)
136 = 4" ASSPT (Female)
137 = Triclamp DN 25
138 = M54x 1,5 (Female)
139 = Triclamp DN50
140 = Weld.flange Ø73 (outer chamfer)
141 = 3" Victaulic
142 = Flange 5" ANSI 150 PSI
143 = 3" Ball valve
144 = 2" Victaulic
145 = 3" BSPT (Male)
146 = 5" Victaulic
147 = 2" BSPT (Female)
148 = 2" BSPT (Male)
149 = 1 1/2" Victaulic
150 = 2 1/2" Victaulic
151 = Flange 1" DIN 11864
152 = Flange 2" DIN 11864
153 = Flange ø135, 8xM6
154 = 4" BSPT (Female)
155 = 4" BSPT (Male)
156 = Weld flange 2" ø61,5 (inner)
157 = 3" BSPT (Female)
158 = Weld end 1 1/2" ø48 (outer)

* EN 1092-1:2001 Type E: Spigot

** EN 1092-1:2001 Type F

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NOTE! When swivels are chosen, the second and the third sign indicates one outlet, the fourth and the fifth sign the second outlet.

DRFAUTITEC®

Fifth sign (letter): Indicates version

A = Version No.1 (Machined from bar)	F = 6" Flange Hydrante	K = Short Tank Unit/Swivel
B = Version No.2 (Casted)	G = Drain connection	P = Pressure (Custom)
C = Version No.3 (Kokill casted)	H = Leaf spring lock	S = Sight Glass
D = Sep. piston guide	I = Bended Tank Unit Short	T = Transparent
E = Injection molded	J = Bended Tank Unit	

Sixth sign (numeral): Indicates material in the coupling body

1 = Aluminium	6 = Titan
2 = Brass	7 = Hastelloy
3 = Steel	8 = PVDF
4 = Stainless steel	9 = PEEK
5 = Inconel	

Seventn sign (numeral): Indicates material in the innerparts or other components

1 = Aluminium	6 = Titan
2 = Brass	7 = Hastelloy
3 = Steel	8 = PVDF
4 = Stainless steel	9 = PEEK
5 = Inconel	

Eight and Ninth sign (numeral): Indicates the O-ring material in the coupling

01 = Viton® (FPM/FKM)	16 = Hypalon® (CSM)	40 = FEP PTFE encapsulated Viton®
02 = Nitrile (NBR)	17 = Chemraz® 505 (FFKM)	50 = Kalrez® (PFPM) 1050LF
03 = EPDM	18 = Xyflour® 860 (AFKM)	51 = Nylon® (PA)
04 = Kalrez® (FFKM) 6375	19 = Zetpol® / Therban® (HNBR)	61 = Viton® (FPM), FDA, USP C6 & ADI
05 = NBR Low temp	20 = NBR 90 shore	62 = Nitrile (NBR), FDA, USP C6 & ADI
06 = Teflon® (PTFE)	21 = Viton®-GF (Special Viton quality)	63 = EPDM, FDA, USP C6 & ADI
07 = Neoprene® (CR)	22 = Composite	64 = Kalrez® (FFKM) 6230, FDA, USP C6 & ADI
08 = Silicone (Q)	23 = Viton® GFLT-S	66 = PTFE (Virgin), FDA
09 = Vulkollan® (PUR)	24 = Viton® GLT	71 = FPM/FKM Low Temp
10 = Butyl (IIR)	25 = Klingerit®	77 = Chemraz® SD517, FDA, USP C6 & ADI
11 = Nitrile (Gasol NBR 70 K-6)	26 = POM	
12 = Perfluorelastomer (FFPM)	27 = Epichlorhydrin (ECO)	
13 = PVC / NBR	33 = EPDM 291	
14 = Fluorsilicone rubber (MFQ)	34 = Kalrez® 0040	
15 = FEP encapsulated silicone	37 = Chemraz® 510 (90 Shore)	

Tenth sign (letter): Used for extra

A = Flat seal, Teflon®(PTFE)	L = Locked thread	W = Double ball race
B = Flat seal, Vulkollan®(PUR)	P = Pressure Equalizing Valve	X = Special surface treatment
C = 2-way Ball Valve	Q = Reduced bore diameter	Z = Excentric tank unit
D = Flat seal, Viton® (FPM)	(Argus,Hydrant)	-RA = Racing
E = None projecting piston spindle	R = Hose unit with int. Break Away	-LC = Locking Cap
F = Flange thickness acc. to standard	S = Single Argus valve (Hydrant)	-S = FEP O-ring in Hose Unit swivel
G = Hypalon	T = TW-Flange extended circles	-ST = Steam
H = Nitrile (NBR)	U = Pressure Bleeding Valve	-XL = Oversized swivel
I = Emco comp	U20 = Bleeding valve 20 bar	-45 = 45 Mesh
J = EPDM	V = Locking house unit	-60 = 60 Mesh
K = Locked piston guide		-10 = 100 Mesh



Date	Name
Title	Company
Department	Address
Country	Telephone
E-mail	Fax

Product data

Code No.	Quantity
Internal diameter:	Connection:
Product type/spec/options:	
Size <input type="text"/> Integrated Breakaway <input type="checkbox"/> Pressure releafe valve <input type="checkbox"/>	
Other options :	
Material	
Other remarks	
Pressure certificate <input type="checkbox"/> Material Certificate 3.1 <input type="checkbox"/>	

Flow data (Media Cast No)

Cleaning process

1	:		
2	:		
3	:		
4	:		
5	:		
Working Pressure	Temperature	Concentration	Vacuum

Customers note

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46-(0)501 39 32 00

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www.mann-tek.com
sales@mann-tek.se



Product Information



DDCouplings®

Dry Disconnect Coupling.
3/4" to 6", PN 16 - PN 25. Aluminium, Brass-Gunmetal, Stainless Steel and PEEK. Other materials on request. According to NATO standard STANAG 3756.



DGCouplings®

Dry Gas Coupling.
1" to 4", PN25. Stainless steel.
Other materials on request.



DACouplings,

Dry Aviation Coupling.
2 1/2", PN 10. Main body in Aluminium.
Standards: ISO 45, MS 24484, NATO STANAG 3105, British Aerospace Spec. 2C14.



Sampling, Vent or Drain unit

Stainless Steel SS-EN 10 088-1.4404+AT (AISI 316L). Ball Valve in 1.0619 and 1.4301



Full Flow - ballvalves

2" to 4", PN 10, Aluminium.
Ballvalve and 2-way Ballvalve.
Made for Petroleum Tank Trucks. Variations of flange connections.



Swivel joints

3/4" to 10", PN 10 - PN 25.
Aluminium, Brass-Gunmetal, Stainless Steel.
Other materials on request.
Connection: BSP, NPT. Flanged connection (DIN, ANSI/ASA e.t.c)



SBCouplings, bolt series

Industrial and Marine Safety Break-away, breaking bolts,
Aluminium, Brass, Stainless Steel, 1" to 12", female/male threads and with flanges, with breaking bolts.
Safety Break-away, cable release
Stainless Steel, PN10 / PN 25. 2" to 4", female threads. 6" to 12", flanged connection

Business Segment Information



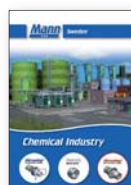
Offshore & Marine



Gas (LPG)



Rail tankers



Chemical industry



Tank trucks



Military



Container

Company Information



General Information about Mann Tek, products and Business Segments



Quality, Health, Safety and Environment Policy.
Quality Approvals, Product Approvals and Declaration of Conformity



Service instructions and operation manuals

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Mann-Tek is a certified ISO9001-company.