

Common Specifications (applies to all CPF fittings in this datasheet)

④ ④ DESCRIPTION

CPF♦ is an improved cone type fitting system that adds a unique o-ring sealing system which permits leak free connections without tools. CPF fittings can be directly connected to ¼" medium pressure cone type fittings from other manufacturers*, provided that wrenches are used to complete the connection. The fittings of the CPF system have been designed and tested to comply with ASME B31.3-2008, Chapter IX: High Pressure Piping.

④ ④ PERFORMANCE

Maximum Allowable
Working Pressure (MAWP): **10 000 psi / 700 bar / 70 MPa**
Finger-tight: **-20 to 50°C**
Wrench-tight: **-40 to 150°C**
Minimum Hose Bend Radius: **1.0" (25mm)**

Thread Lubricant: **Use a process compatible fluid**
Wrench Torque: **100–140 in-lbs (11.3–15.8 Nm)**

♦ U.S. Patent No. 8,794,677

* HiP: 1/4" Female and Male Medium Pressure (LF4 & LM4 series)

Autoclave Engineers: 1/4" Female and Male Medium Pressure (SF250CX series)

If a torque wrench isn't practical to use, hand tighten then tighten an additional 20 degrees using a wrench.

④ ④ CONSTRUCTION

Thread Type: **7/16-20 UNF 2B**
Cone Angle: **60°, nominal**
Fittings: **High Strength 316 Stainless Steel**

Hose: **Polyamide core with urethane jacket**

External Hose Diameter: **0.235" (6 mm)**

Internal Hose Diameter: **0.08" (2 mm)**

Hose Weight: **0.0179 lbs/ft (26.6 g/m)**

CPF Female O-rings: **AS568A-012, Viton® 80 or 90 #3981**

O-ring Lubricant: **Molykote® 55**

Most fittings throughout this document meet the MAWP specification of 10000 psi / 700 bar / 70 MPa. Exceptions are labeled with an icon (S or S) and a key to indicate the pressure rating.

Non-Crystal MP adapters require wrench tightening.

Hose is not compatible with dioctyl sebacate fluid.

④ ④ RECOMMENDATIONS

CAUTION: To achieve CPF maximum allowable working pressures no o-ring substitutions are allowed.


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CPF Fittings

4



CPF
INGS FOR LiFE™

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Note Regarding CPF Hose (MPH-X)

Due to the wide variety of operating conditions it may be subject to, Crystal Engineering, as well as Distributors and Representatives of Crystal products, do not warrant that this hose is suitable for any specific use. This hose is not for use with compressed natural gas (CNG).

When used with gases, fuels (liquid or gas) and refrigerants, permeation (i.e., seepage) will occur from inside the hose. In enclosed or unventilated spaces this permeation may result in high concentrations of vapors which are potentially flammable, explosive or toxic.

Care must be taken to protect hoses from snagging, kinking, bending smaller than the minimum bend radius, and cutting. Any hose that has been damaged in any way should be removed from service and discarded immediately.

Autoclave Engineers Fluid Components is a division of Snap-tite, Inc.

HiP is High Pressure Equipment Company.

Molykote is a registered trademark of Dow Corning Corporation.

Viton is a registered trademark of DuPont Performance Elastomers.

Swagelok is a registered trademark of Swagelok Company.

(A)

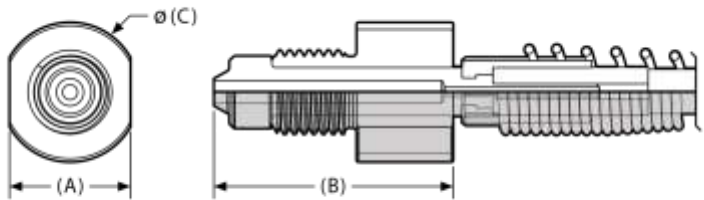
(B)

(C)

CPF Fittings

Part Number

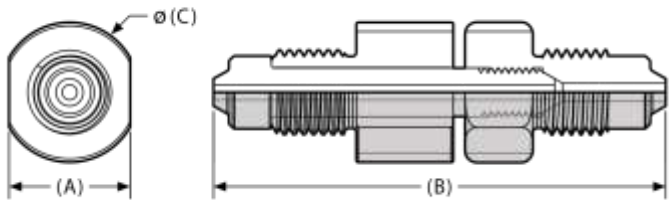
HOSES (10 000 PSI)



0.63" (16 mm)	1.29" (33 mm)	0.72" (18 mm)
---------------	---------------	---------------

Length	Part Number
1 m	MPH-1
1.5 m	MPH-1.5
2 m	MPH-2
3 m	MPH-3
5 m	MPH-5
10 m	MPH-10
25 m	MPH-25
50 m	MPH-50
100 m	MPH-100

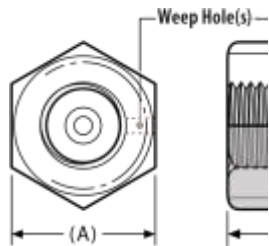
MALE CONNECTOR



(A)	(B)	(C)	Part Number
0.63" (16 mm)	2.33" (59 mm)	0.72" (18 mm)	MPM-MPM

CPF Fittings

4



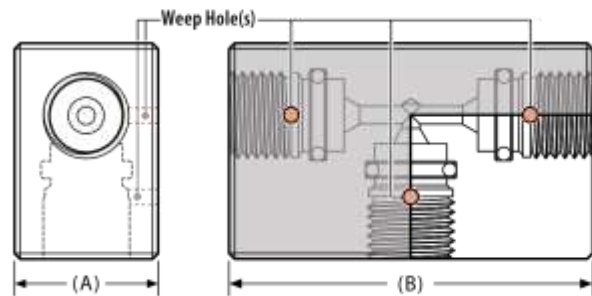
(A)	MPF-MPF
0.75" (19 mm)	1

CPF Fittings

Part Number

④ ④ UNION

UNION TEE

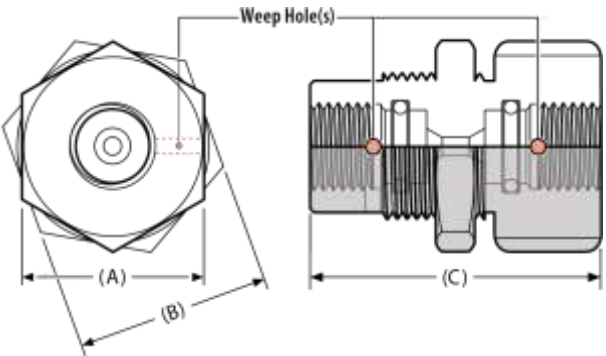


(A)	(B)	Part Number
0.75" (19 mm)	1.90" (48 mm)	MPF-MPFTU

CPF Fittings

④

Part Number



MPF-MPFBULK

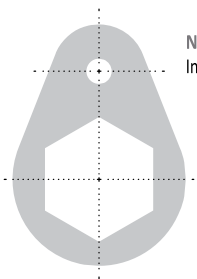
NPT Fittings

④ ④

Part Number



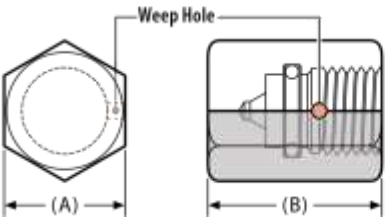
(A)	(B)	(C)
0.938" (24 mm)	1.00" (26 mm)	1.50" (38 mm)



Note:
Includes bulkhead retainer (Part #4417).

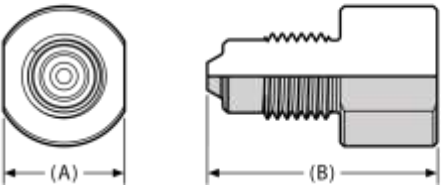
BULKHEAD MOUNT

CAP



(A)	(B)	Part Number
0.63" (16 mm)	0.90" (23 mm)	MPF-CAP

PLUG



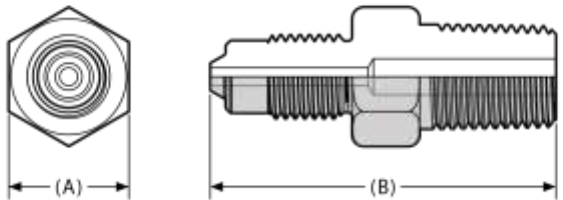
(A)	(B)	Part Number
0.63" (16 mm)	1.19" (30 mm)	MPM-PLUG

NPT Fittings

4

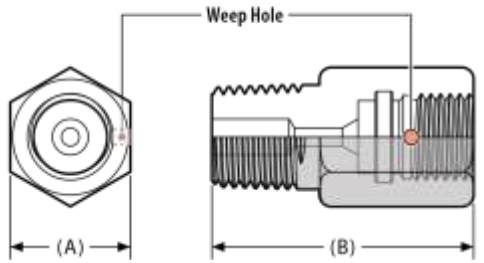
Part Number

CPF MALE TO NPT MALE



(A)	(B)	
0.63" (16 mm)	2.50" (64 mm)	MPM-1/8MPT
0.63" (16 mm)	1.80" (46 mm)	MPM-1/4MPT
0.87" (22 mm)	2.02" (51 mm)	MPM-1/2MPT

NPT MALE



(A)	(B)	Part Number
0.63" (16 mm)	1.12" (28 mm)	MPF-1/8MPT
0.63" (16 mm)	1.36" (35 mm)	MPF-1/4MPT

NPT Fittings

④ ④

Part Number

NPT FEMALE

(A)

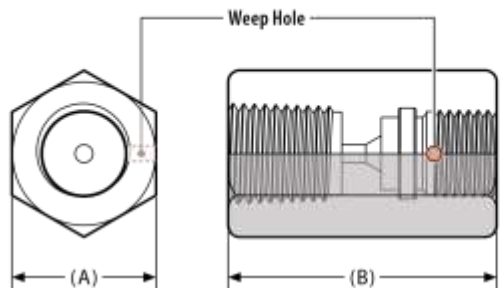
(B)

Part Number

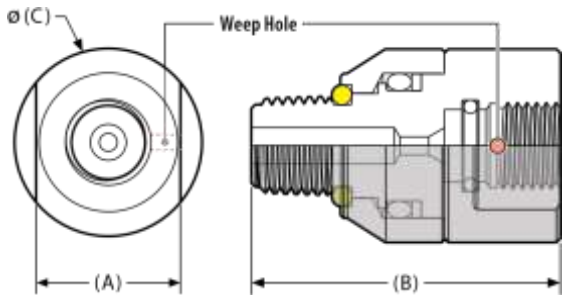
0.75" (19 mm)

1.40" (36 mm)

MPF-1/4FPT



NPT QUICK TEST MALE



Neoprene 70 Replacement O-ring



Swivels

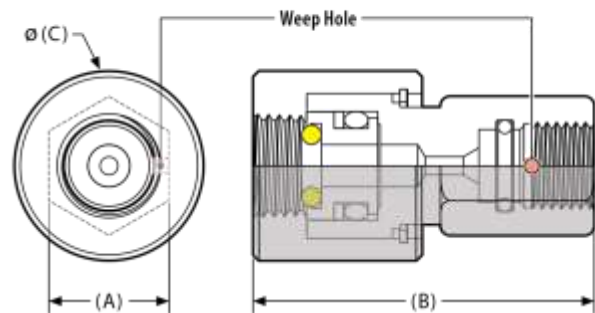
(A)	(B)	(C)	
0.63" (16 mm)	1.48" (38 mm)	1.00" (25 mm)	MPF-1/8QTM
			AS568A-109, #3998
			Neoprene 70 Replacement O-ring
			MPF-1/4QTM
			AS568A-111, #3996
0.75" (19 mm)	1.60" (41 mm)	0.82" (21 mm)	

NPT Fittings

4

Part Number

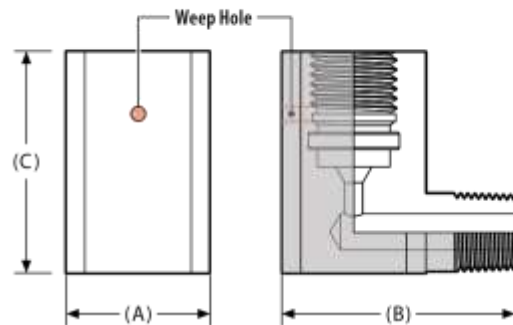
NPT QUICK TEST FEMALE



(A)	(B)	(C)	Part Number
0.63" (16 mm)	1.68" (38 mm)	0.85" (22 mm)	MPF-1/8QTF
Neoprene 70 Replacement O-ring			AS568A-105, #4038
0.63" (16 mm)	1.78" (45 mm)	1.00" (25 mm)	MPF-1/4QTF
Neoprene 70 Replacement O-ring			AS568A-108, #4007
0.63" (16 mm)	1.81" (46 mm)	1.37" (35 mm)	MPF-1/2QTF
Neoprene 70 Replacement O-ring			AS568A-112, #4042

Fitting rated to 5000 psi

90° NPT MALE



(A)	(B)	(C)	Part Number
0.75" (19 mm)	1.20" (31 mm)	1.15" (29 mm)	MPF-1/8MPT90

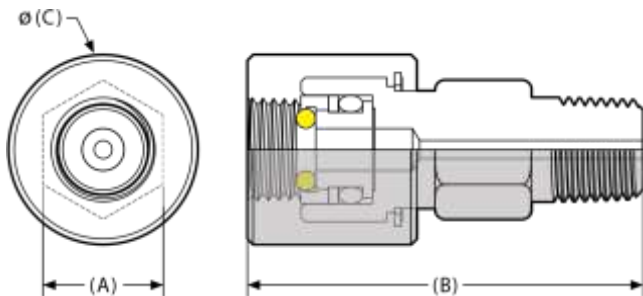
NPT MALE TO NPT QUICK TEST FEMALE

(A)	(B)	(C)	Part Number
0.63" (16 mm)	1.90" (48 mm)	1.00" (25 mm)	1/8MPT-1/4QTF
Neoprene 70 Replacement O-ring			AS568A-108, #4007

NPT Fittings

④ ④

Part Number



Neoprene 70 Replacement O-ring



0.63" (16 mm)	2.06" (52 mm)	1.00" (25 mm)
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1/4MPT-1/4QTF

AS568A-108, #4007

④ NPT FITTING KITS

Part Number



Complete NPT Hose and Fitting Kit

Includes: 1/8 NPT [Male (2), Male Quick Test, and Female Quick Test], 1/4 NPT [Male (2), Female, Male Quick Test, and Female Quick Test], 1/2 NPT [Female Quick Test], Tube [1/4 Male and 3/8 Male], Transmitter [5/16 Male], CPF Connectors [Male-Male, Plug, and Cap (2)], Hose [1 meter], and Custom Carrying Case.

4016

Quick Test NPT Kit

Includes: MPF-1/8QTF, MPF-1/4QTF, and MPF-1/2QTF.

4013

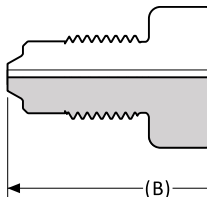
(A)

(B)

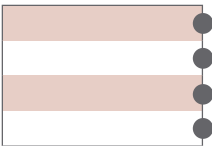
Part Number

BSP Fittings

④ ④ CPF
MALE TO BSP
MALE

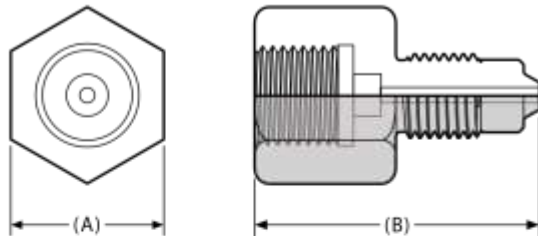


0.63" (16 mm)	1.57" (40 mm)
0.83" (21 mm)	1.72" (44 mm)
0.95" (24 mm)	1.96" (50 mm)
1.14" (29 mm)	2.16" (55 mm)



MPM-1/8BSPM
MPM-1/4BSPM
MPM-3/8BSPM
MPM-1/2BSPM

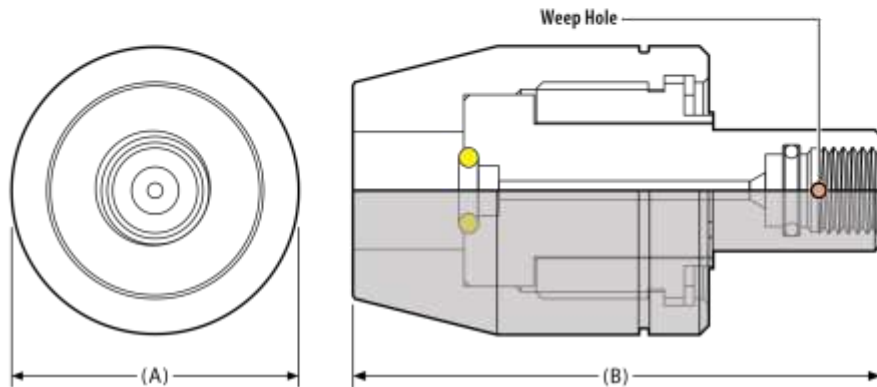
CPF MALE TO BSP FEMALE



(A)	(B)	Part Number
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(A)	(B)	Part Number
0.63" (16 mm)	1.28" (33 mm)	MPM-1/8BSPF
0.79" (20 mm)	1.47" (37 mm)	MPM-1/4BSPF
0.98" (25 mm)	1.61" (41 mm)	MPM-3/8BSPF
1.18" (30 mm)	1.74" (44 mm)	MPM-1/2BSPF

BSP QUICK TEST FEMALE



(A)	(B)	Part Number
1.50" (38 mm)	2.75" (70 mm)	MPF-1/8QTFB
VITON 90 Replacement O-ring		AS568-008, #5804
1.50" (38 mm)	2.75" (70 mm)	MPF-1/4QTFB
VITON 75 Replacement O-ring		AS568-009, #5786
1.50" (38 mm)	2.75" (70 mm)	MPF-3/8QTFB
VITON 75 Replacement O-ring		AS568-108, #5783
1.50" (38 mm)	2.75" (70 mm)	MPF-1/2QTFB
VITON 75 Replacement O-ring		AS568-109, #5784

Fittings rated to 15000 psi

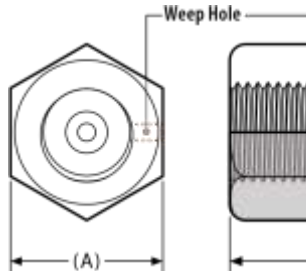
BSP Fittings

(A)

(B)

Part Number

④ ④ BSP FEMALE



0.79" (20 mm)	1.50" (38 mm)	MPF-1/4BSPF
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④ BSP FITTING KITS

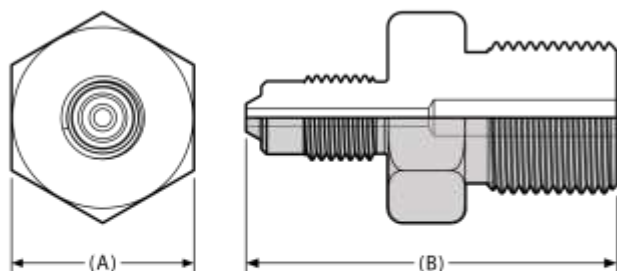
Part Number



Complete BSP Hose and Fitting Kit	Includes: BSP Female [1/8, 1/4 (2), 3/8, and 1/2], NPT [1/4 Quick Test Female and 1/8 Male (2)], Transmitter [1/4 Male and 5/16 Male], CPF Connectors [Male-Male, T-Union, Plug, and Cap (2)], Hose [1 meter], Custom Carrying Case.	4017
BSP Test Kit	Includes: MPF-1/8QTFB, MPF-1/4QTFB, MPF-3/8QTFB, and MPF-1/2QTFB	4015

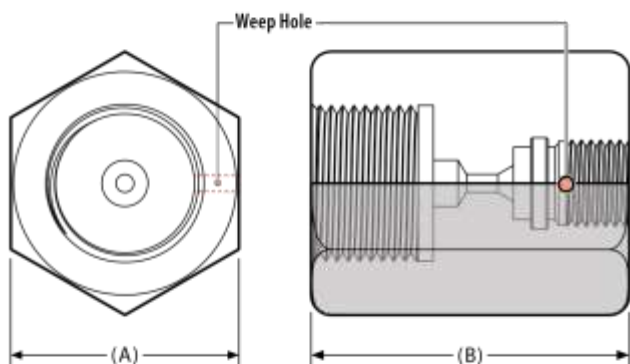
M20 Fittings

CPF MALE TO M20 MALE



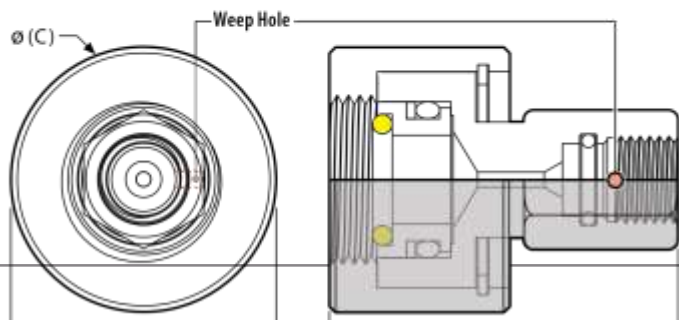
0.95" (24 mm)	1.93" (49 mm)	MPM-M20X1.5M
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M20 FEMALE



(A)	(B)	Part Number
1.18" (30 mm)	1.65" (42 mm)	MPF-M20X1.5F

M20 QUICK TEST FEMALE



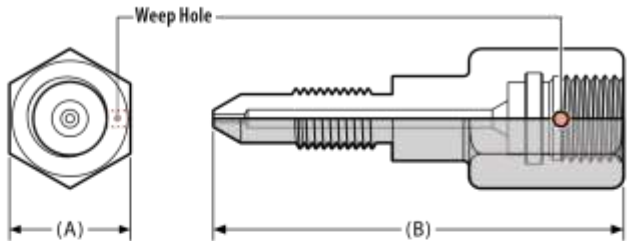
(A)	(B)	(C)	Part Number
0.63" (16 mm)	1.81" (46 mm)	1.375" (35 mm)	MPF-M20QTF
			Neoprene 70 Replacement O-ring AS568A-112, #4042

Fitting rated to 5000 psi

(A) (B) Part Number

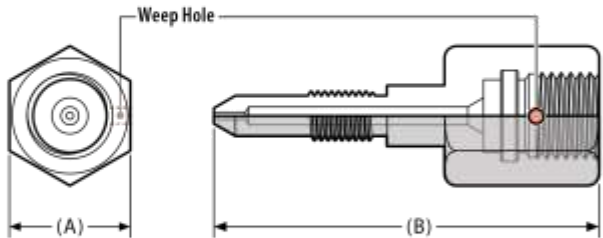
Transmitter Fittings

FOR FOXBORO, ROSEMOUNT, & YOKOGAWA



0.63" (16 mm) 2.13" (54 mm) MPF-5/16TRM

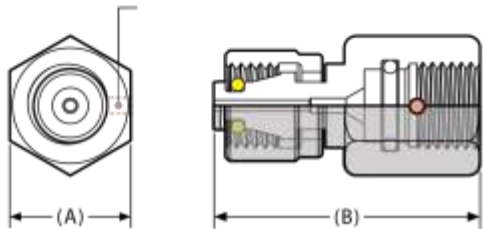
FOR HONEYWELL



1.18" (30 mm) 1.65" (42 mm) MPF-1/4TRM

Tube Fitting

TUBE MALE



(A) (B) Part Number

0.63" (16 mm) 1.38" (35 mm) MPF-1/4TBM

VITON 90 Replacement O-ring AS568A-007, #4104

0.63" (16 mm) 1.50" (38 mm) MPF-3/8TBM

VITON 90 Replacement O-ring AS568A-010, #4051

0.63" (16 mm) 1.74" (44 mm) MPF-1/2TBM

VITON 90 Replacement O-ring AS568A-012, #3981

4895.J Crystal Pressure Fittings Data Sheet

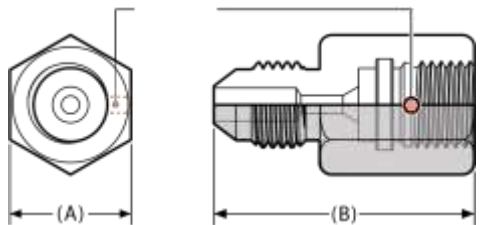
(A)

(B)

Part Number

AN4 Fittings

④ ④ AN4 MALE



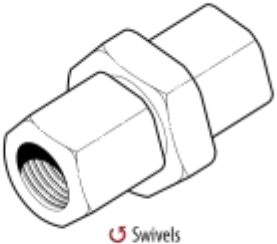
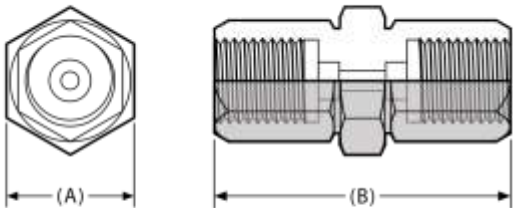
0.63" (16 mm)

1.35" (34 mm)

Hole

MPF-AN4M

AN4 UNION SWIVEL (NON CRYSTAL)



(A)

(B)

(C)

Part Number

0.56" (14 mm)

1.60" (41 mm)

0.69" (17 mm)

4377

Pump Adapter

(A)

(B)

Part Number

QUICK CONNECT NUT

(A)

(B)

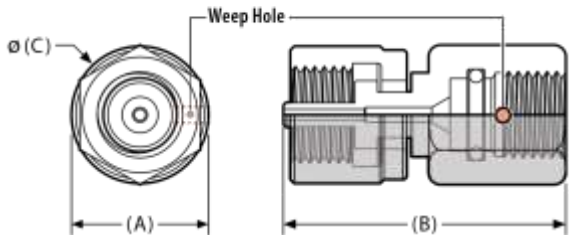
Part Number

0.63" (16 mm)

1.47" (37 mm)

MPF-QCN

Fittings rated to 5000 psi



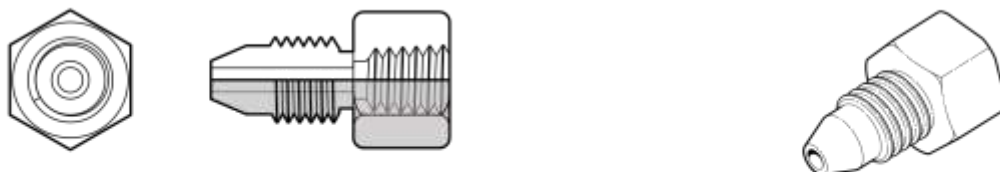
Swivels

Part Number

Non-Crystal MP Adapters

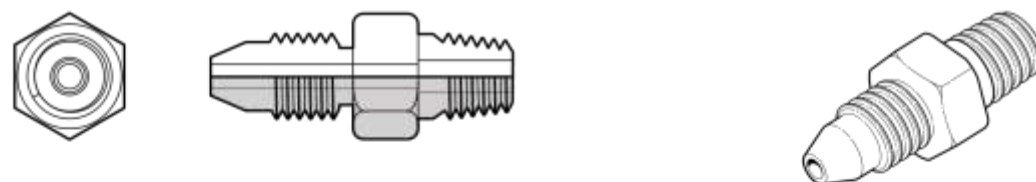
Part Number

MEDIUM PRESSURE MALE TO NPT FEMALE



Size	Product Marking	Part Number	
1/8 NPT	2NF04M15	4497	15
1/4 NPT	4NF04M15	4498	15
3/8 NPT	6NF04M15	4499	15
1/2 NPT	8NF04M15	4500	15

MEDIUM PRESSURE MALE TO NPT MALE



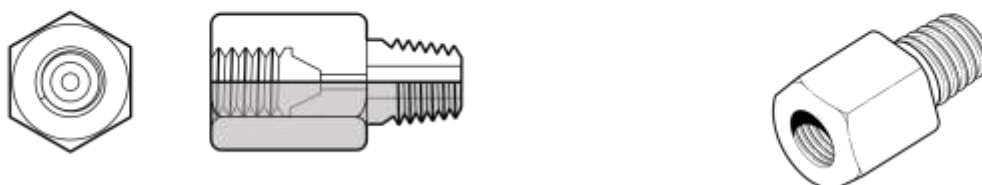
Size	Product Marking	Part Number	
1/4 NPT	4N04M15	4698	15
3/8 NPT	6N04M15	4492	15
1/2 NPT	8N04M15	4493	15

MEDIUM PRESSURE FEMALE TO NPT FEMALE



Size	Product Marking	Part Number	
1/8 NPT	2NF04MF15	4501	15
1/4 NPT	4NF04MF15	4715	15
3/8 NPT	6NF04MF15	4502	15
1/2 NPT	8NF04MF15	4503	15

MEDIUM PRESSURE FEMALE TO NPT MALE



Size	Product Marking	Part Number	
1/4 NPT	4N04MF15	4714	15
3/8 NPT	6N04MF15	4494	15
1/2 NPT	8N04MF15	4495	15
3/4 NPT	12N04MF10	4496	

Fittings rated to 15000 psi 15

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