

Bar Stock Needle Valves

NB Series: Working pressure up to 6000 psig

NBH Series: Working pressure up to 10000 psig

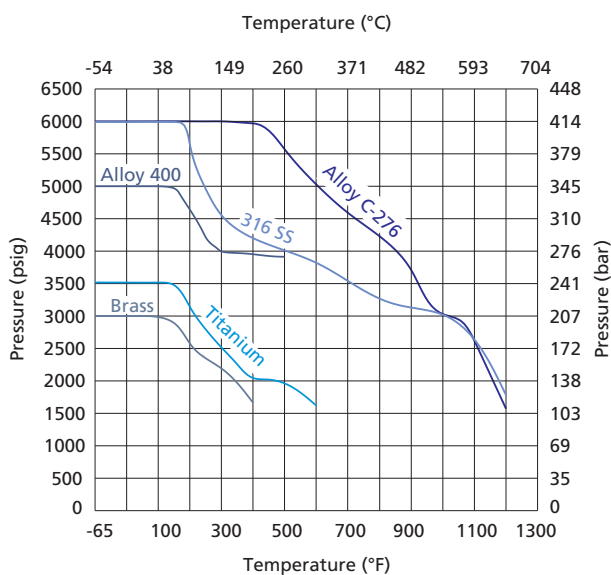


Features

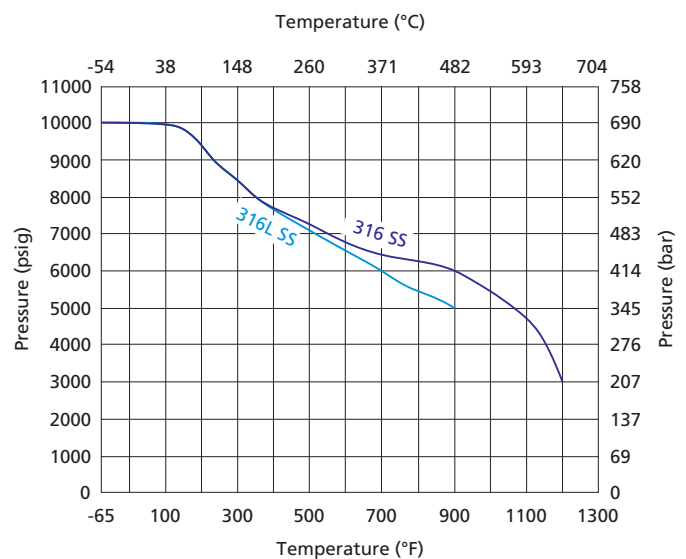
- ⦿ Cold drawn bar.
- ⦿ Two-stem design: thread hardened upper stem and smooth surface hardened lower stem.
- ⦿ Upper stem thread lubricant isolated from system media.
- ⦿ Linearly instead of helical movement of the nonrotating lower stem, avoiding galling damage to the seat and tip, as well as reducing the total friction area between the packing and the lower stem.
- ⦿ Safety back seating seal in fully open position.
- ⦿ Panel mounting available.
- ⦿ Steady and durable fastening of the handle by double lock-pins.
- ⦿ Handle color options are available.
- ⦿ Leak-tight performance testing for every valve with nitrogen/air at the maximum working pressure, but not higher than 6000 psig.
- ⦿ Working pressure up to:
 - NB Series—Stainless steel: 6000 psig (414 bar)
 - Alloy C-276: 6000 psig (414 bar)
 - Alloy 400: 5000 psig (345 bar)
 - Titanium: 3500 psig (241 bar)
 - Brass: 3000 psig (207 bar)
 - NBH Series—Stainless steel: 10000 psig (690 bar)
- ⦿ Working temperature:
 - PTFE: -65°F to 450°F (-54°C to 232°C)
 - PEEK: -65°F to 500°F (-54°C to 260°C)
 - Graphite: -65°F to 1200°F (-54°C to 649°C)

Pressure vs. Temperature

NB Series



NBH Series

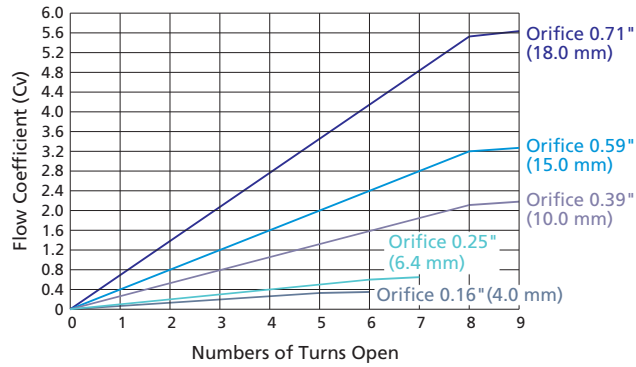


1. Graphs are based on graphite stem packing.
2. Soft suitable for NB series only, 200°F (93°C) max. with PCTFE stem tip (soft tip).
3. Contact the authorized representative or FITOK Group for curve graph of other materials.

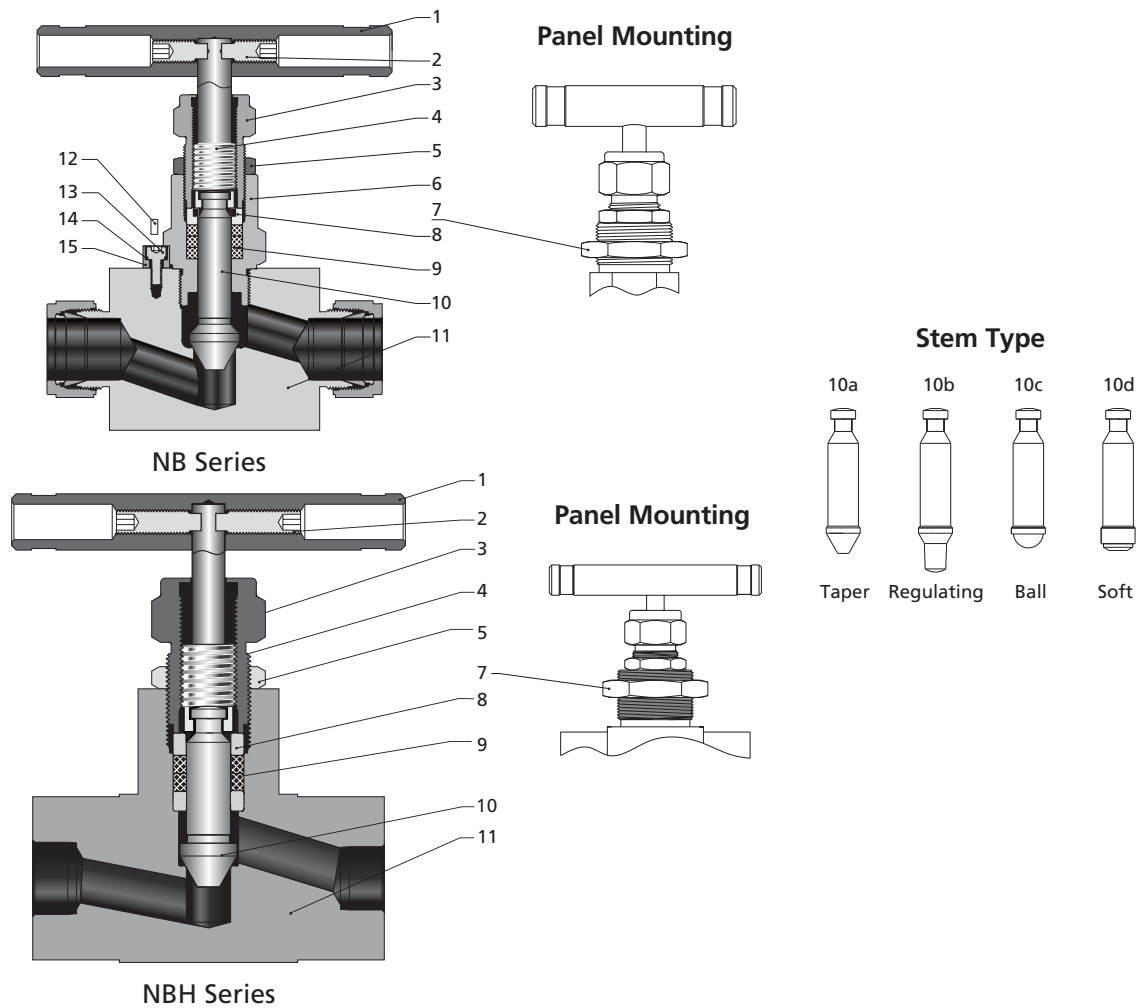
2 Needle Valves

Flow Data at 100°F (38°C)

Regulating Stem



Standard Materials of Construction

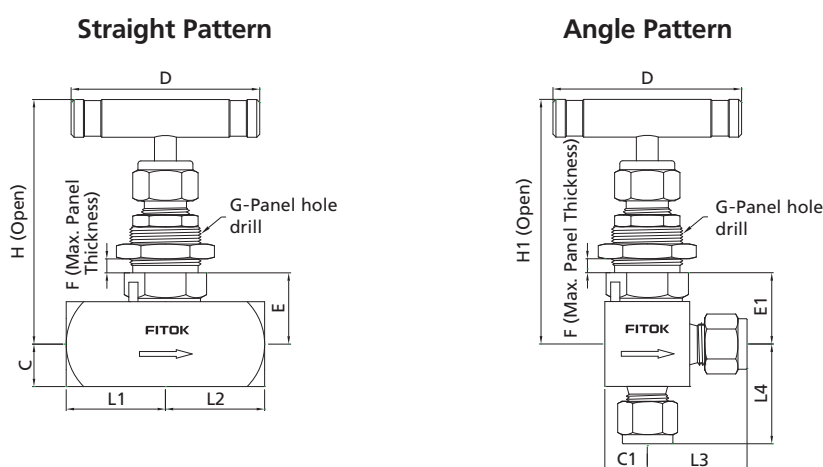


Item	Component	Valve Body Material				
		316 SS	Alloy 400	Titanium	Alloy C-276	Brass
1	Handle	Anodized aluminum or stainless steel or black knob				
2	Set Screw	Stainless steel				
3	Packing Bolt	304 SS/A276			Brass C36000/B16	
4	Upper Stem	316 SS/A276				
5	Lock Nut	Stainless steel				Brass C36000/B16
6	Bonnet	316 SS/A479	Alloy 400/B164	Titanium Gr 4/B348	Alloy C-276/B574	

Item	Component	Valve Body Material				
		316 SS	Alloy 400	Titanium	Alloy C-276	Brass
7	Panel Nut	Stainless steel				Brass C36000/B16
8	Gland	316 SS/A276				
9	Packing	PTFE or PEEK or graphite				
10a 10b 10c 10d	Lower Stem	Chrome-plated 316 SS/A276	Alloy 400/B164	Titanium Gr 4/B348	Alloy C-276/B574	Chrome-plated 316 SS/A276
11	Body	316 SS/A479	Alloy 400/B164	Titanium Gr 4/B348	Alloy C-276/B574	Brass C36000/B16
	Seat	Same as Body				
12	Lock Pin	Stainless steel				
13	Screw	Stainless steel				
14	Spring Washer	Stainless steel				
15	Bush	Stainless steel				
	Lubricant	Molybdenum disulfide-based				

- Item 12 is applied in valves with orifice size 4.0 & 6.0mm. For valves with orifice size 10.0, 15.0 & 18.0mm, item 13, 14 & 15 are used instead of item 12.
- Contact the authorized representative or FITOK Group for valves of other materials.

Dimensions



© NB series valves are standard without panel mounting. To order valves with panel mounting as illustrated, add -Y to the ordering number. Example: NBSS-FNS2-7-Y

Dimensions of NB Series

Basic Ordering Number	Connection Type and Size		Orifice in.(mm)	Cv	Dimension, in.(mm)												
	Inlet	Outlet			L1	L2	L3	L4	C	C1	D	E	E1	F	G	H	H1
NB□□-FNS2-7	1/8 Female NPT	1/8 Female NPT	0.16 (4.0)	0.35	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)	0.56 (14.3)	0.50 (12.7)	0.50 (12.7)	2.17 (55)	0.84 (21.4)	0.84 (21.4)	0.25 (6.4)	0.77 (19.6)	2.85 (72.4)	2.85 (72.4)
NB□□-FNS4-7	1/4 Female NPT	1/4 Female NPT			1.06 (26.9)	1.06 (26.9)											
NB□□-NS4-7	1/4 Male NPT	1/4 Male NPT			1.03 (26.2)	1.03 (26.2)	1.06 (26.9)	1.06 (26.9)									
NB□□-NS6-7	3/8 Male NPT	3/8 Male NPT			1.19 (30.2)	1.19 (30.2)											
NB□□-FL4-7	1/4" FITOK	1/4" FITOK			1.20 (30.5)	1.20 (30.5)	1.20 (30.5)	1.20 (30.5)									
NB□□-ML6-7	6 mm FITOK	6 mm FITOK															
NB□□-ML8-7	8 mm FITOK	8 mm FITOK															
NB□□-FNS4-8	1/4 Female NPT	1/4 Female NPT	0.25 (6.4)	0.85	1.12 (28.6)	1.12 (28.6)	1.12 (28.6)	0.63 (15.9)	0.56 (14.3)	0.56 (14.3)	2.50 (63.5)	1.00 (25.4)	0.88 (22.5)	0.38 (9.7)	0.96 (24.4)	3.50 (88.9)	3.50 (88.9)
NB□□-FNS6-8	3/8 Female NPT	3/8 Female NPT			1.41 (35.8)	1.41 (35.8)	1.32 (33.6)	1.32 (33.6)									
NB□□-NS6-8	3/8 Male NPT	3/8 Male NPT															
NB□□-FL6-8	3/8" FITOK	3/8" FITOK															
NB□□-FL8-8	1/2" FITOK	1/2" FITOK															

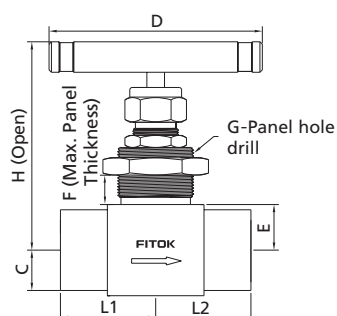
4 Needle Valves

Dimensions of NB Series

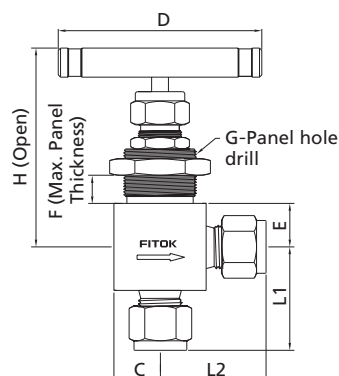
Basic Ordering Number	Connection Type and Size		Orifice in.(mm)	Cv	Dimension, in.(mm)												
	Inlet	Outlet			L1	L2	L3	L4	C	C1	D	E	E1	F	G	H	H1
NB□□-ML10-8	10 mm FITOK	10 mm FITOK	0.25 (6.4)	0.85	1.42 (36.1)	1.42 (36.1)	1.33 (33.8)	1.33 (33.8)	0.56 (14.3)	0.56 (14.3)	2.50 (63.5)	1.00 (25.4)	0.88 (22.5)	0.38 (9.7)	0.96 (24.4)	3.50 (88.9)	3.50 (88.9)
NB□□-ML12-8	12 mm FITOK	12 mm FITOK			1.52 (38.6)	1.52 (38.6)	1.42 (36.1)	1.42 (36.1)									
NB□□-ML14-8	14 mm FITOK	14 mm FITOK			1.56 (39.7)	1.56 (39.7)											
NB□□-TS6-8-G	3/8" TS	3/8" TS			1.13 (28.6)	1.13 (28.6)	1.13 (28.6)	1.13 (28.6)									
NB□□-TS8-8-G	1/2" TS	1/2" TS															
NB□□-MTS12-8-G	12 mm MTS	12 mm MTS			1.50 (38.1)	1.50 (38.1)	1.50 (38.1)	1.50 (38.1)									
NB□□-MTS14-8-G	14 mm MTS	14 mm MTS															
NB□□-MTS16-8-G	16 mm MTS	16 mm MTS			2.92 (74.1)	2.92 (74.1)											
NB□□-MTB14-8-G	14 mm MTB	14 mm MTB															
NB□□-MTB16-8-G	16 mm MTB	16 mm MTB			1.50 (38.1)	1.50 (38.1)											
NB□□-UMB14-8	14 mm UMB	14 mm UMB															
NB□□-UMB16-8	16 mm UMB	16 mm UMB			1.50 (38.1)	1.50 (38.1)											
NB□□-MS20-8	M20 x 1.5 Male Metric	M20 x 1.5 Male Metric															
NB□□-MS22-8	M22 x 1.5 Male Metric	M22 x 1.5 Male Metric			0.39 (10.0)	2.18	1.75 (44.5)	1.75 (44.5)									
NB□□-FNS8-9	1/2 Female NPT	1/2 Female NPT	1.50 (38.1)														
NB□□-FNS12-9	3/4 Female NPT	3/4 Female NPT															
NB□□-NS12-9	3/4 Male NPT	3/4 Male NPT	1.97 (50.0)	1.97 (50.0)			1.61 (41.0)	1.61 (41.0)									
NB□□-FL12-9	3/4" FITOK	3/4" FITOK															
NB□□-ML14-9	14 mm FITOK	14 mm FITOK	1.75 (44.5)	1.75 (44.5)													
NB□□-ML16-9	16 mm FITOK	16 mm FITOK															
NB□□-ML18-9	18 mm FITOK	18 mm FITOK	2.98 (75.7)	2.98 (75.7)													
NB□□-MTS14-9-G	14 mm MTS	14 mm MTS															
NB□□-MTS16-9-G	16 mm MTS	16 mm MTS	1.56 (39.7)	1.56 (39.7)													
NB□□-TS12-9-G	3/4" TS	3/4" TS															
NB□□-MTB14-9-G	14 mm MTB	14 mm MTB	1.75 (44.5)	1.75 (44.5)													
NB□□-MTB16-9-G	16 mm MTB	16 mm MTB															
NB□□-UMB14-9	14 mm UMB	14 mm UMB	1.75 (44.5)	1.75 (44.5)													
NB□□-MS27-9	M27 x 2 Male Metric	M27 x 2 Male Metric															
NB□□-FNS12-6	3/4 Female NPT	3/4 Female NPT	0.59 (15.0)	3.27	1.75 (44.5)	1.75 (44.5)	1.75 (44.5)	1.14 (29.0)	1.14 (29.0)	0.88 (22.2)	5.00 (127)	1.70 (43.2)	1.43 (36.4)	0.38 (9.7)	1.28 (32.5)	5.00 (127)	4.72 (120)
NB□□-TS16-6-G	1" TS	1" TS					2.35 (59.7)	2.35 (59.7)									
NB□□-MTS25-6-G	25 mm MTS	25 mm MTS															
NB□□-MTS28-6-G	28 mm MTS	28 mm MTS			1.97 (50.0)	1.97 (50.0)											
NB□□-PS12-6-G	3/4 PS	3/4 PS															
NB□□-ML22-6	22 mm FITOK	22 mm FITOK			0.71 (18.0)	5.65	1.97 (50.0)	1.97 (50.0)									
NB□□-FNS16-0	1 Female NPT	1 Female NPT															
NB□□-MTS25-0-G	25 mm MTS	25 mm MTS															
NB□□-TS16-0-G	1" TS	1" TS															
NB□□-MTS28-0-G	28 mm MTS	28 mm MTS															
NB□□-PS12-0-G	3/4 PS	3/4 PS															
NB□□-PS16-0-G	1 PS	1 PS															

- FITOK means FITOK double ferrule tube fittings, TS means fractional tube socket weld, MTS means metric tube socket weld, MTB means metric tube butt weld, UMB means nut + gasket + metric bulge nipple, PS means pipe socket weld.*
- For Butt or Socket end connections, please prior to choose graphite as packing material, avoiding damage non graphite packing material due to the high temperature when welding.*
- Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.*
- Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.*

Straight Pattern



Angle Pattern



© NBH series valves are standard without panel mounting. To order valves with panel mounting as illustrated, add -Y to the ordering number. Example: NBHSS-FNS2-7-Y

Dimensions of NBH Series

Basic Ordering Number	Connection Type and Size		Orifice in.(mm)	Cv	Dimension, in.(mm)							
	Inlet	Outlet			L1	L2	C	D	E	F	G	H
NBH□□-FNS2-7	1/8 Female NPT	1/8 Female NPT	0.157 (4.0)	0.35	1.13 (28.6)	1.13 (28.6)	0.53 (13.5)	2.17 (55)	0.53 (13.5)	0.25 (6.4)	0.96 (24.4)	2.85 (72.5)
NBH□□-FNS4-7	1/4 Female NPT	1/4 Female NPT										
NBH□□-NS4-7	1/4 Male NPT	1/4 Male NPT										
NBH□□-FNS4-NS4-7	1/4 Female NPT	1/4 Male NPT										
NBH□□-FL4-7	1/4" FITOK	1/4" FITOK										
NBH□□-TS4-7-G	1/4" TS	1/4" TS										
NBH□□-FNS4-8	1/4 Female NPT	1/4 Female NPT	0.236 (6.4)	0.85	1.31 (33.4)	1.31 (33.4)	0.625 (15.88)	2.50 (63.5)	0.625 (15.88)	0.38 (9.7)	1.09 (27.7)	3.50 (88.9)
NBH□□-FNS6-8	3/8 Female NPT	3/8 Female NPT										
NBH□□-NS6-8	3/8 Male NPT	3/8 Male NPT										
NBH□□-FNS8-9	1/2 Female NPT	1/2 Female NPT	0.39 (10.0)	2.18	1.56 (39.6)	1.56 (39.6)	0.875 (22.2)	3.50 (88.9)	0.875 (22.2)	0.38 (9.7)	1.28 (32.5)	4.17 (106)

1. FITOK means FITOK double ferrule tube fittings, TS means fractional tube socket weld.
2. For Butt or Socket end connections, please prior to choose graphite as packing material, avoiding damage non graphite packing material due to the high temperature when welding.
3. Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
4. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group

Part Number Description

NBSS - FL8 - ML12 - 8WB - GYM - ASF2

Series	Body Material	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Tip Material	Stem Type	Packing Material	Panel Mounting	Handle	Flow Pattern Application	Special Cleaning and Packaging
NB	316 SS	FNS	2 1/8"	Same as Inlet	7 0.16" (4.0 mm)	Same as Body	PTFE	No	Black Aluminum Bar	Straight	NO	FC-01	
NBH	316L SS	NS	4 1/4"	Specify in the same way as inlet Type and inlet Size	8 0.25" (6.4 mm)	Stellite	P PEEK	Y Yes	Red Aluminum Bar	A Angle	S NACE MR0175	FC-02	
S4	304 SS	FRT	6 3/8" or 6 mm		9 0.39" (10 mm)	Duplex 2205	G Graphite		Green Aluminum Bar		Classification for Nuclear Facility Application		
4L	304L SS	RT	8 1/2" or 8 mm		6 0.59" (15 mm)	Titanium			Blue Aluminum Bar		M2 Class 2		
S1	321 SS	FMS	10 10 mm		0 0.71" (18 mm)	Alloy 20	Taper		321 Stainless Steel Bar		N3 Class 3		
91	F91	MS	12 3/4" or 12 mm			Alloy 400	R Regulating						
92	F92	MS	14 14 mm or M14 x 1.5			Alloy 600	B Ball						
D5	Duplex 2205	FRP	16 1" or 16 mm			Alloy C-276	T Soft Tip-PTFE						
TI	Titanium	BP	18 18 mm				K Soft Tip-PCTFE						
A20	Alloy 20	TS	20 1 1/4" or 20 mm or M20 x 1.5										
M	Alloy 400	MTS	22 22 mm or M22 x 1.5										
INC	Alloy 600	TB	24 M24 x 1.5										
HC	Alloy C-276	MTB	25 25 mm										
B	Brass	PS	27 M27 x 2										
CS	Carbon Steel	PB	28 28 mm										
904L	904L SS	FL											
		ML											
		UFB											
		UMB											

Note: "Part Number Description" is used for composition rules of FITOK product model, Not suitable for specific product part number selection, not random combinations. if in doubt, please contact FITOK group or authorized agent.

1. Standard thread pitch for metric threads are as follows:

- M10 and below: 1 mm
- M12 to M24: 1.5 mm
- M27 and above: 2 mm

2. Cleaning and Packaging:

- FC-01: Standard cleaning and packaging for general industrial procedures.
- FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.