

Process to Instrument Valves: C13SF Monoflanges

For DPharp EJX & EJA-E Pressure Transmitters



Introduction

Introduction

The partnership of Yokogawa and AS-Schneider creates a real added value to our customers.

Yokogawa Electric Corporation with its headquarters in Japan is one of the World's Leading Manufacturers and Engineering Service Provider in the fields of Automation, Measurement, and Control.

The AS-Schneider Group with its headquarters in Germany is one of the World's Leading Manufacturers of Instrumentation Valves and Manifolds. AS-Schneider offers a large variety of Process to Instrument Valves such as Monoflanges and Accessories needed for the instrumentation installations globally.

In this catalogue you will find C13SF Monoflanges for Yokogawa's DPharp EJX Series and EJA Series Pressure Transmitters. The C13SF Monoflanges are designed to overcome the problems of traditional assemblies on primary isolation duties. By combining piping and instrument valves in a single assembly, they provide weight and space savings, along with other benefits including reduced potential leak points and safer hook-up. This more compact and efficient arrangement reduces not only pipework vibration and associated stress but also installation and maintenance costs.

Selection can be made from a comprehensive range of bodies with a variety of connections and material options, optimizing installation and access opportunities. The dimensions shown in this catalog apply to standard types. If you need the dimensions for your individual type please contact Yokogawa.

Continuous product development may from time to time necessitate changes in the details contained in this catalogue. AS-Schneider and Yokogawa reserve the right to make such changes at their discretion and without prior notice.

All dimensions shown in this catalog are approximate and subject to change.

Conventional Solution

Monoflange

Monoflanges

The C13SF Monoflanges are designed to replace conventional mutiple-valve installations currently in use for interface with pressure measuring systems. By combining customer specified valves into a single manifold, the number of leak paths is considerably reduced and the weight of the system is lowered reducing the stresses from loading and vibration. The C13SF Monoflange Series are available as Process Monoflanges and Intrument Monoflanges.

Process Monoflanges

Process Monoflanges are designed to replace the traditional primary isolation valve and are close coupled to the process piping flange, for connecting process to instruments. The primary isolation valve needs to be of process/piping design, therefore it's a valve with OS&Y Bolted Bonnet. The secondary isolation valve and the bleed valve are provided with screwed bonnets. The combining of piping and instrument valves into a single unit has benefitted various markets.

Instrument Monoflanges

Instrument Monoflanges are close coupled to a pre-installed primary isolation valve to provide a compact Instrument Double Block & Bleed Valve or are used when primary isolation valves with an OS&Y Bolted Bonnet are not required. The needle valves of the Instrument Monoflanges are provided with a screwed bonnet.

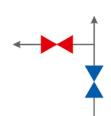
Block & Bleed

1st Isolate: OS&Y Vent: Needle

Block & Bleed

1st Isolate: Needle Vent: Needle







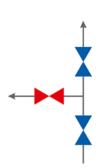
Double Block & Bleed

1st Isolate: OS&Y 2nd Isolate: Needle Vent: Needle

Double Block & Bleed

1st Isolate: Needle 2nd Isolate: Needle Vent: Needle







General Features

Body Material Options

Matarial Crave	AS Material Designation	Material No.	Short Name	Equivalent	Material Grade	
Material Group		Material No.	Short Name	UNS-No.	acc. to ASTM	acc. to JIS
Austenitic Stainless	316 quadruple	1.4401	X5CrNiMo17-12-2	S31600	316	SUS316
Steel	certified	1.4404	X2CrNiMo17-12-2	S31603	316L	SUS316L

Note: Quadruple certified means 316 / 316L / 1.4401 /1.4404 Please contact Yokogawa affiliate for other Body material.

Standard Features

- Bore Size 5 mm (0.197")
- ASME B16.5 Flange Connections
- Flange Size 1/2" to 3" (DN15 to DN80)
- Flange Class 150 to 2,500
- API Flange Connections (up to 689 bar [10,000 psi])
- Outlet Connection 1/2 NPT Female
- Vent Connection 1/4 NPT Female
- Anti-Tamper Head Unit Options see Page 8.
- Monoflanges with OS&Y Bolted Bonnet and Graphite Packing are Fire Safe Tested and Certified according to ISO 10497 / API 607. See also Page 7.

Needle Seal:

PTFE and Graphite Packings are available for all valve types.

Sour Gas Service:

Wetted parts according to a.m. material list are supplied as standard according to NACE MR0175/MR0103 and ISO 15156 (latest issue).

Pressure Test:

A shell test and a seat leakage test are performed at 1.5 times the max. allowable (Working) Pressure (PS) acc. to EN 12266-1 – P10, P11 and P12 respectively MSS-SP61 (and complies also with ASME B31.1 and B31.3) and also acc. to API 598 at every Standard Monoflange \rightarrow 100% Pressure Tested.

Certification:

Pressure Test Certificate and Certified Mill Test Report (CMTR) as inspection Certificate 3.1 acc. to EN 10 204 for valve body material available as standard.

The manifolds can be provided with a

- CRN Certificate
- EAC Certificate Monoflanges are marked with EAC

Optional Features

- Bore Size 10 mm (0.39") On request
- EN 1092-1 Flange Connections
- Swivel Gauge Connections Integral Type see Page 9
 (Option Code LGQ), 1/2NPT Swivel Gauge Adapters (supplied loose) Option Code LNQ and JNQ see Page 10 and Ordering Information Pages 13-14.

Fugitive Emission Application:

For Fugitive Emission Applications we are providing TA-Luft and ISO 15848 solutions. For more details see Page 7.

Oxygen Service:

An option with Reinforced PTFE Packing is offerd duly cleaned and lubricated for Oxygen Service:

Pressure-Temperature Rating:

Max. 420 bar (6,092 psi) @ 60°C (140°F)

Max. 200°C (392°F) @ 90 bar (1,305 psi)

Not every Valve Type is available for Oxygen Service.

If you don't find your options in this catalogue, please contact the factory.

Note:

Starting from 1 1/2" Class 900 / 1,500 the Valve Head Units are 45° angled for convenient operation.



Standard Valve Head Units

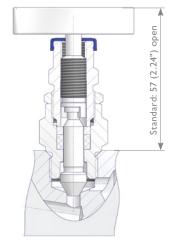
Standard Needle Valves

Screwed Bonnet - Needle Seal: Packing

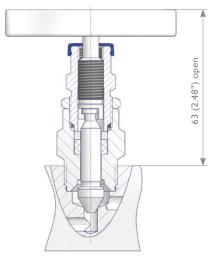
Features

- Integral Valve Seat Metal to metal seated
- Non-rotating Needle
- External Stem Thread Packing below stem threads.
 Stem threads are protected from process media (non-wetted).
- Stem with Cold Rolled Threads
- Blow-out Proof Needle
- Back Seat Metal to metal secondary needle seal
- Lock Pin Eliminates unauthorized removal of the bonnet
- Color Coded Dust Cap for operating thread protection
- Needle Seal:
- Standard Packing in PTFE and Graphite or Reinforced PTFE TA-Luft Option
- Max. allowable (Working) Pressure (PS): 420 bar (6,092 psi)
 689 bar (10,000 psi) (PTFE Packing only)
- Anti-Tamper Valve Head Options available
- All Non-wetted Parts in 316 Stainless Steel

Standard Design 420 bar (6,092 psi)



High Pressure Design 689 bar (10,000 psi) and



Body-to-Bonnet Seal is below the threads eliminating process fluid corrosion.

Color Coded Dust Cap

For stem thread protection:

- Isolate
- Vent/Test
- Equalize

RED GREEN

Color Coded Options

Following options are also color coded below dust cap:

- Oxygen Service
- · Graphite Packing
- TA-Luft Option

WHITE	
BLACK	
MACENITA	

For example						
	Oxygen Service					
	Graphite Packing					
	TA-Luft Option					

Components	Stainless Steel				
Components	Material / Material No.				
Body					
Bonnet	316 / 316L				
Needle					
Pipe Plug					
Valve Stem	316 / 316L				
Gland	316				
Packing	PTFE or Graphite				
Stem Nut/Yoke	316				
Lock Nut	316				
Set Screw	316				
T Handle	316				
Lock Pin	A4 (316)				

Wetted components listed in **bold**.

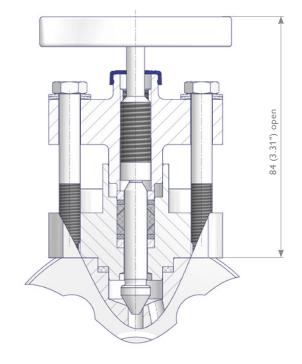
Standard Valve Head Units

Needle Valves with OS&Y Bolted Bonnet

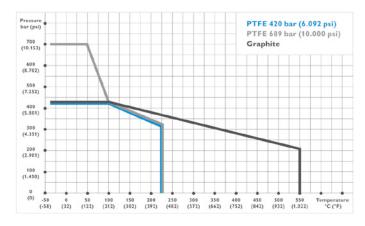
OS&Y Bolted Bonnet - Standard Packing

Features

- Integral Valve Seat Metal to metal seated
- Non-rotating Needle
- External Stem Thread Packing below stem threads. Stem threads are protected from process media (non-wetted).
- Stem with Cold Rolled Threads
- Blow-out Proof Needle
- Spring Washers for compensation of thermal expansion
- Back Seat Metal to metal secondary needle seal
- Color Coded Dust Cap for operating thread protection
- Needle Seal:
- Standard Packing in PTFE and Graphite or Reinforced PTFE - TA-Luft Option
- Bonnet Seal Ring: Graphite
- Fire Safe approved acc. to ISO 10497 and API 607
- Graphite Packing only
- Max. allowable (Working) Pressure (PS): 420 bar (6,092 psi)
- 689 bar (10,000 psi) (PTFE Packing only)
- Anti-Tamper Valve Head Options available
- All Non-wetted Parts in 316 Stainless Steel



Pressure-Temperature Rating





Packing adjustment may be required during the service life of the valves.



Valves that have not been cycled for a period of time may have a higher initial actuation torque.

Manufactured according to the following **Codes and Specifications**

• ASME B31.3	Process Piping Specification for Pipeline Valves
• ASME B16.34	Valves – Flanged, Threaded and Welding End
• ASME B16.5	Pipe Flanges and Flanged Fittings
• NACE MR0175/ ISO 15156	Petroleum and Natural Gas Industries - Materials for use in H2S-containing Environments in Oil and Gas Production
• API 598	Valve Inspection and Testing
• ISO 5208	Industrial Valves – Pressure Testing of Metallic Valves
• API 607/ ISO 10497	Fire Test for Soft-Seated Quarter Turn Valves Testing of Valves. Fire Type- testing Requirements
• MSS SP-25	Standard Marking System for Valves, Fittings, Flanges, and Unions
• MSS SP-61	Pressure Testing of Valves
• MSS SP-99	Instrument Valves



Valve Head Units for Fugitive Emission Applications

Needle Valves acc. to ISO 15848

Screwed Bonnet - Type 1 O-Ring Needle Seal + Graphite Packing
Type 3 PTFE Packing

Features

- Integral Valve Seat Metal to metal seated
- Non-rotating Needle
- External Stem Thread Packing below stem threads. Stem threads are protected from process media (non-wetted).
- Stem with Cold Rolled Threads
- Blow-out Proof Needle
- Back Seat Metal to metal secondary needle seal
- Lock Pin Eliminates unauthorized removal of the bonnet
- Color Coded Dust Cap for operating thread protection
- Needle Seal:
 Standard Packing in PTFE or Graphite plus FKM O-Ring Needle Seal RGD resistant (RGD = Rapid Gas Decompression)
- Max. allowable (Working) Pressure (PS): 420 bar (6,092 psi)
- Anti-Tamper Valve Head Options available
- All Non-wetted Parts in 316 Stainless Steel
- Types also comply with the requirements of TA-Luft 2002

ISO FE Performance Data

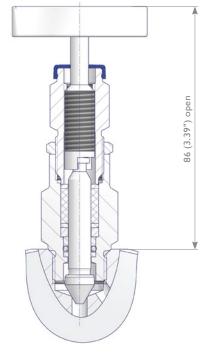
ISO FE Type 1:

Class A 1,500 cycles / -29°C to 40°C (-20°F to 104°F) Class A 500 cycles / -29°C to 200°C (-20°F to 392°F) Class B 1,500 cycles / -29°C to 200°C

 $(-20^{\circ}F \text{ to } 392^{\circ}F)$

ISO FE Type 3:

Class B 1,500 cycles / -29°C to 200°C (-20°F to 392°F)



Option Code D [] or E []

OS&Y Needle Valves acc. to ISO 15848

OS&Y Bolted Bonnet - Type 1 O-Ring Needle Seal + Graphite Packing
Type 3 PTFE Packing

Features

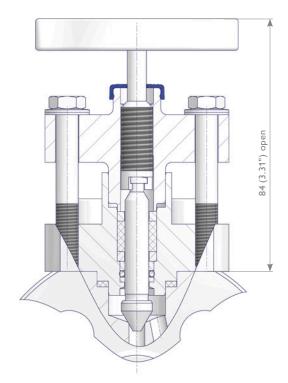
- Integral Valve Seat Metal to metal seated
- Non-rotating Needle
- External Stem Thread Packing below stem threads. Stem threads are protected from process media (non-wetted).
- Stem with Cold Rolled Threads
- Blow-out Proof Needle
- Spring Washers for compensation of thermal expansion
- Back Seat Metal to metal secondary stem seal
- Colour Coded Dust Cap for operating thread protection
- · Needle Seal:
- Standard Packing in PTFE or Graphite plus FKM O-Ring Needle Seal RGD resistant
- Bonnet Seal Ring: Graphite
- Fire Safe approved acc. to ISO 10497 and API 607 – Graphite Packing only
- Max. allowable (Working) Pressure (PS):
 420 bar (6,092 psi)
- Anti-Tamper Valve Head Options available
- All Non-wetted Parts in 316 Stainless Steel
- Types also comply with the requirements of TA-Luft 2002

ISO FE Performance Data

Class A 2,500 cycles / -29°C to 40°C (-20°F to 104°F) Class A 500 cycles / -29°C to 200°C (-20°F to 392°F) Class B 2,500 cycles / -29°C to 200°C (-20°F to 392°F)

ISO FE Type 3:

Class B 2,500 cycles / -29°C to 200°C (-20°F to 392°F)



Option Code D [] or E []

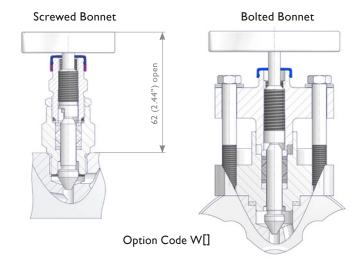
Valve Head Unit Options

Needle Valves according to TA-Luft

The German TA-Luft (Technical Guidelines for Air Pollution Control) gives guidelines for compliance with permissible leak rates. The TA-Luft requirement is considered to be complied with if bellows sealed head units with a safety packing or similar sealing systems are used; whereby the equivalence in the verification system must be confirmed in accordance with VDI 2440.

Special Features

- Max. allowable (Working) Pressure (PS):
 420 bar (6,092 psi)
- Cup & Cone Packing (Carbon filled PTFE) TA-Luft Option

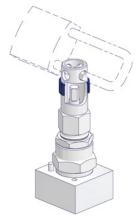


Anti-Tamper Valve Head Unit Options

Two types of Anti-Tamper Valve Head Units are offered, both types are lockable with a padlock (not supplied with monoflange). Please refer to Page 15 for detail of Ordering Information.

Standard Anti-Tamper Head Unit

The valves are operated with a special Anti-Tamper Key (AT-Key), which fits exactly in the key guide. The valve can therefore only be operated with the AT-Key. In addition to this safety function, installing a padlock prevents the AT-Key being inserted into the key guide. Operating the valve is therefore no longer possible which protects your equipment against unauthorized opening and closing of the valve head units. The valve can be locked reliably in every position required.



Option Code R[] (with key) or T[] (without key)



Part Number C13SA-ATKES

Stainless Steel Handwheel and 'Locking Plate' Design

The valves can be ordered with Stainless Steel Handwheel and Locking Plate Design, also including Padlock.

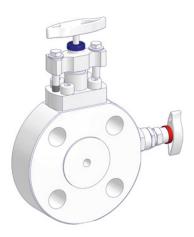
This Design allows Minimum handle movements and is ideal as protection against unauthorized closing of the valve.



Option Code L[]

Flanged Instrument Connections

Wafer Style Option Code NNN



Threaded Instrument Connections

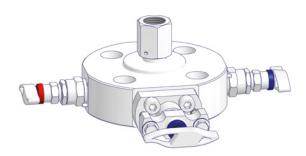
1/2 NPT Female Option Code LN4



1/2 NPT Male Option Code JN4



G1/2 Swivel NutOption Code LGQ
For Pressure Transmitters with Process Connections G1/2 Male acc. to EN837-1.



Connections

Threaded Instrument Connections (Continued)

Swivel Gauge Adapter 1/2 NPT Female

Option Code LNQ

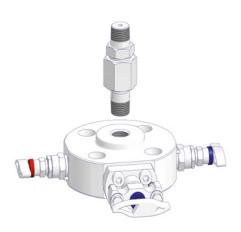
Monoflange with 1/2 NPT Female on Instrument Side with Swivel Gauge Adapter (supplied loose)



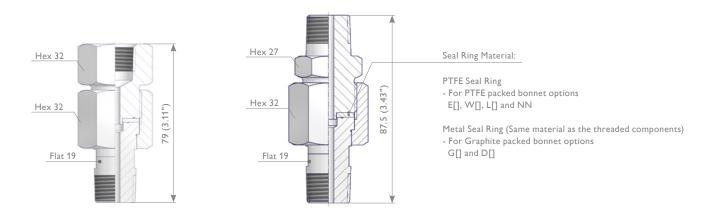
Swivel Gauge Adapter 1/2 NPT Male

Option Code JNQ

Monoflange with 1/2 NPT Female on Instrument Side with Swivel Gauge Adapter (supplied loose)



The Swivel Gauge Adapters enable the easy positioning of the pressure instrument in any direction through 360°.



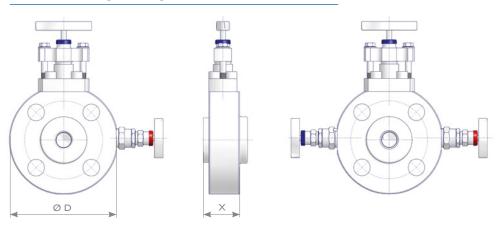
Pipe Plugs (see also Page 14 - Ordering Information: Vent Connection)



Plugs are supplied in same material as Monoflange body, when specified.

Process Monoflanges I Weights and Dimensions

Process Monoflanges – Weights and Dimensions

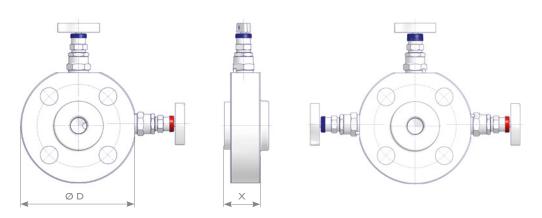


Flange x Thread

			Dimensions (n	Approx. Weight (kg)	
Flange Size (in)	Flange Class	X ØD Flange F RF			
1/2	150	98.6	36.6	-	2.5
1/2	300	98.6	36.6	40.6	2.6
1/2	600	98.6	41.4	40.6	2.6
1/2	900 / 1,500	120.7	41.4	41.4	3.5
1/2	2,500	133.4	41.4	41.4	4.3
3/4	150	98.6	36.6	-	2.6
3/4	300	117.3	36.6	41.4	3.5
3/4	600	117.3	41.4	41.4	3.5
3/4	900 / 1,500	130.0	41.4	41.4	4.1
3/4	2,500	139.7	41.4	41.4	4.8
1	150	108.0	36.6	41.4	3.0
1	300	124.0	36.6	41.4	3.9
1	600	124.0	41.4	41.4	3.9
1	900 / 1,500	149.3	41.4	41.4	5.1
1	2,500	158.8	42.4	42.4	6.1
1 1/2	150	127.0	36.6	41.4	4.1
1 1/2	300	155.4	36.6	41.4	6.0
1 1/2	600	155.4	41.4	41.4	6.0
1 1/2	900 / 1,500	177.8	41.4	41.4	7.4
1 1/2	2,500	203.2	51.4	52.9	11.4
2	150	152.4	36.6	41.4	5.4
2	300	165.1	36.6	42.9	6.4
2	600	165.1	41.4	42.9	6.9
2	900 / 1,500	215.9	45.4	46.9	12.0
2	2,500	235.0	58.4	59.9	17.5

Instrument Monoflanges I Weights and Dimensions

Instrument Monoflanges - Weights and Dimensions



Flange x Thread

			Dimensions (n		
Flange Size (in)	nge Size (in) Flange Class		Flange RF	-	Approx. Weight (kg)
1/2	300	95.3	33.6	37.6	2.0
1/2	600	95.3	38.4	37.6	2.0
1/2	900 / 1,500	120.7	38.4	38.4	2.9
1/2	2,500	133.4	38.4	38.4	3.7
3/4	150	98.6	33.6	-	2.0
3/4	300	117.3	33.6	38.4	2.9
3/4	600	117.3	38.4	38.4	2.9
3/4	900 / 1,500	130.0	38.4	38.4	3.5
3/4	2,500	139.7	39.4	39.4	4.2
1	150	108.0	33.6	38.4	2.6
1	300	124.0	33.6	38.4	3.3
1	600	124.0	38.4	38.4	3.3
1	900 / 1,500	149.3	38.4	38.4	6.8
1	2,500	158.8	42.4	42.4	5.7
1 1/2	150	127.0	33.6	38.4	3.8
1 1/2	300	155.4	33.6	38.4	5.3
1 1/2	600	155.4	38.4	38.4	5.3
1 1/2	900 / 1,500	177.8	39.4	39.4	6.8
1 1/2	2,500	203.2	51.4	52.9	11.5
2	150	152.4	33.6	38.4	5.1
2	300	165.1	33.6	39.9	5.7
2	600	165.1	38.4	39.9	6.2
2	900 / 1,500	215.9	45.4	46.9	11.6
2	2,500	235.0	58.4	59.9	17.0

Ordering Information

	Model	Suffix Codes	Description	
S	C13SF		Monoflange (AS-Schneider)	
Features	Body Material		SS316/316L	
_		-D	Block & Bleed (OS&Y / Needle)	
darc	Valve	-G	Double Block & Bleed (OS&Y / Needle / Needle)	
Standard	Туре	-N	Block & Bleed (Needle / Needle)	
O)		-R	Double Block & Bleed (Needle / Needle / Needle)	

	Model		Suffi	x Codes	Description
			NA		1/2" RF
			NC		1/2" RTJ
			ND		3/4" RF
			NF		3/4" RTJ
			NG		1" RF
		ASME Flange Size	NJ		1" RTJ
			NK		1 1/2" RF
			NM		1 1/2" RTJ
9	3		NN		2" RF
1	Standard Features Process Side	מבי מי	NQ		2" RTJ
T L	, ,		NU	•••••	3" RF
7	200		NW		3" RTJ
Stan	_	API Flange Size	SA		1 13/16"
			SB		2 1/16"
				Α	150
				В	300
		ASME Flange Class		C	600
				D	900*
				E	1,500
				F	2,500
		API Flange Rated		G	5,000 psi
		Working Pressure		Н	10,000 psi

^{*} Relevant for Flange Sizes ≥ 3" only. For Flange Sizes 1/2" to 2 1/2" Class 1,500 (Code E) to be used.

Ordering Information

	Мо	del	Suffix Co	odes	Description
res			-LN4		1/2 NPT Female
5		-LNQ		1/2 NPT Female (Swivel Gauge Adapter supplied loose)	
l Fe		Threaded Connections	-JN4		1/2 NPT Male
dard			-JNQ	•••••	1/2 NPT Male (Swivel Gauge Adapter supplied loose)
Stan Instri	Instr		-LGQ	•••••	G 1/2 Female (Integral Swivel Gauge Adapter)
O	_	Flanged Connection	- NNN		Wafer Style

	Model			Description
			•••••	1/4 NPT Female
	Vent Connections	- D	•••••	1/4 NPT Female plugged*
		- E	•••••	1/2 NPT Female
			•••••	1/2 NPT Female plugged*
	Bonnet Options			
es	Graphite Packing, MWP 420 bar		G2	For Block & Bleed Monoflange
atur			G3	For Double Block & Bleed Monoflange
Standard Features	ISO FE Type 1 - Graphite Packing + O-Ring Stem Seal, MWP 420 bar		D2	For Block & Bleed Monoflange
dard			D3	For Double Block & Bleed Monoflange
tan	ISO FE Type 3 - Reinforced PTFE Packing	;,	E2	For Block & Bleed Monoflange
V)	MWP 420 bar		E3	For Double Block & Bleed Monoflange
	TA-Luft - Reinforced PTFE Packing,		W2	For Block & Bleed Monoflange
	MWP 420 bar		W3	For Double Block & Bleed Monoflange
	Arctic Operations -55°C (-67°F) –		L2	For Block & Bleed Monoflange
	PTFE Packing		L3	For Double Block & Bleed Monoflange
	PTFE Packing		NN	Standard

 $[\]ensuremath{^{*}}$ Plug material is same as Monoflange Body material.

Ordering Information I Example

	Suffix Codes	Descr	ription	
	Cleaning for Oxygen Service – For Monoflanges with PTFE Packing only - Bonnet Option Code -NN or -L[], MWP 420 bar			For Block & Bleed Monoflange
			•••••	For Double Block & Bleed Monoflange
				None
	Valve Operator			
Features	Handwheel with Locking Plate Design		L2	For Block & Bleed Monoflange
eat	Handwheel with Locking Flate Design		L3	For Double Block & Bleed Monoflange
			T1	For Vent Valve Head Unit
Additoinal	Anti-Tamper without Key		T2	For Block & Bleed Monoflange
Add			T3	For Double Block & Bleed Monoflange
			R1	For Vent Valve Head Unit
	Anti-Tamper with Key		R2	For Block & Bleed Monoflange
			R3	For Double Block & Bleed Monoflange
	T Handle as Standard		NN	For all Valve Head Units

Wetted Parts according to above mentioned material list are supplied according to NACE MR0175/MR0103 and ISO 15156 (latest issue). Note: Not every configuration which can be created in the ordering information is feasible / available.

Example for building up the Part No. of a Double Block & Bleed Monoflange (OS&Y / Needle / Needle)	
C13SFS-G N F E - L N 4 - C G 3 - N N N N	
C13SF	Monoflange (AS-Schneider)
s	Material: SS316/316L
G	Valve Type: Double Block & Bleed (OS&Y / Needle / Needle)
NF	ASME Flange Size: 3/4" RTJ
Е	ASME Flange Class: 1,500
L N 4	Instrument Connection: 1/2 NPT Female
c	Vent Connection: 1/4 NPT Female
G 3	Bonnet Option: Graphite Packing, MWP 500 bar, for 3 Valve
N N N N	No additional feature



Products are designed and manufactured by Armaturenfabrik Franz Schneider (AS-Schneider) for Yokogawa Electric Corporation.

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