

®

Excelock

www.excelhydro.com



Excelock®

INSTRUMENT MANIFOLDS



The proven leader in fluid control technology



Excel Hydro-Pneumatics and Hydro-Pneumatic Accessories manufacture high technology products for petroleum and process industries applications. The company aims to be a leading partner to system builders and user of high pressure fittings, valves and components. The product range includes standardized high pressure ratings up to 30000 PSI, made of stainless steel AISI 316 or high graded alloys and special materials.



' National Award for Excellence 1995 '
At the hands of Shri S. Krishnakumar,
Minister for Non-conventional Energy sources
at New Delhi



'National Award for Export Excellence 1995'
At the hands of Shri Rajiv Pratap Rudy,
Minister of State for Commerce and Industry



Our Beginning

Excel - Hydro was established in 1986 in Mumbai , India and started with manufacturing of tube / pipe fittings and isolation valves. The experience gained in the metal processing sector proved an excellent basis for diversification into various high technology areas and led to the subsequent manufacturing of high quality manifold valves, multi port gauge valves, check valves, ball valves, precision double compression ferrule fittings, distribution manifolds, condensate pots, quick couplers, pipe clamps and instrument enclosures, canopy, etc.



Quality Standards

High quality and safety standards are maintained through a Total Quality Management System. **We are Accredited for ISO 9001-2000 by TÜV NORD, GERMANY as the " Design, Manufacture and Supply of Instrumentation Valves and Fittings"** Organization. Our effectively implemented control systems all through the organization ensures, that only the Quality products are delivered to all our customers.

The products are type tested for Helium leak test, Seismic test by ECIL (NPCL- DAE) and C_v test by Indian Institute of Technology, Powai, Mumbai . We have full fledged required in-house testing facilities.



Excelock

CONTENTS

Introduction

Page 1 - 4

2 Valve Manifold

Page 5 - 10

E367 BB

E368 AB

E369 DM

E370 DM

E377 CB



3 Valve Manifold

Page 11 - 18

E301 FF

E302 FF

E305 DM

E306 DM

E307 DM

E310 RM

E311 RM



5 Valve Manifold

Page 19 - 23

E501 FF

E505 DM

E507 DM

E510 RM



Monoflange Valve

Page 24 - 27

EH27M / EH27MK

EH36M / EH36MK

EH45M / EH45MK



Key Block Valves

Page 28 - 30

EH18

EH19





INTRODUCTION

Excellock offers over 400 products for the OIL & GAS, PETROCHEMICALS, POWER GENERATION, PULP & PAPER and other Industrial sectors.

Our manifolds are available in 2, 3 & 5 valve construction and primary Isolation valves of Mono-Flange and Key Block design.

SEPARATELY MOUNTED MANIFOLDS : Manifolds are mounted away from the instruments and are usually connected by means of tubes/tube fittings, pipes/pipe fittings.



TWO-VALVE MANIFOLDS are meant for use with Pressure Transmitters, Pressure Switches and Gauges.

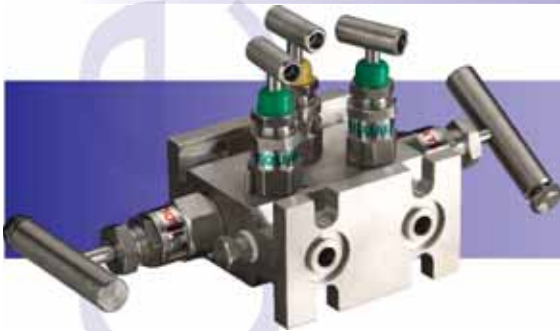
T-TYPE

Manifolds are meant for direct mounting on the instrument and screwed process connection. These can be provided with Test ports on the process sides and drain ports on the instrument side for draining of the process and instrument lines respectively.



H-TYPE

Manifolds are meant for direct mounting for stacking between the instrument and Flanged process connection.



5 VALVE

Manifolds are normally meant for use with Differential Pressure Instruments where drain valves are required on the instrument side. They are useful for flushing of the system.



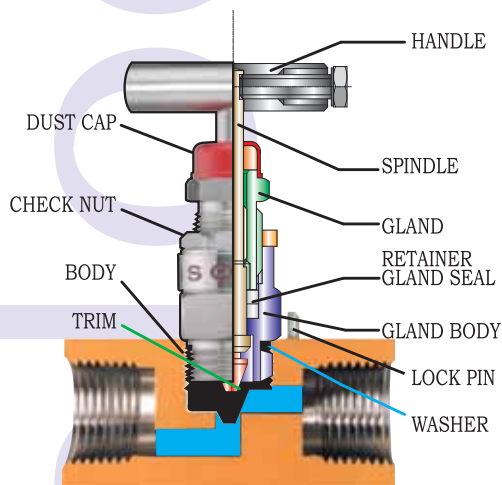
CO-PLANAR MANIFOLDS

are meant for direct mounting on to the instrument eliminating the adaptor flanges.



General Features

Excellock Forged Valve Manifolds, Barstock Needle Valves are specially designed Needle Valves for operation with most of the Fluids up to 6000 psig (414 barg) and on special request up to 30,000psig (2068 barg) ratings. These valves are complete with PTFE gland packing or with Graphoil gland packing (For high temperature applications). Placing the gland packing below the stem thread ensures that the process does not get in contact with the Stem threads. Tightening of the upper gland body ensures perfect sealing of the gland packing and arrests leakage.



The lock nut ensures that the upper gland body is locked to a particular setting. The lower gland body is directly screwed onto the main body and fixed with a pin to prevent accidental loosening of the gland body while in operation. For special applications soft seating is also available. A wide variety of end connections can be offered based on customer requirements. NACE Compliance and Oxygen(O₂) clean service valves are also available with wide varieties of materials of construction

Specifications

- Standard seat diameter 5mm
- CV: 0.4 Standard
- Maximum standard pressure up to 6,000 psig (414 barg)
- Optional Maximum pressures up to 30,000 psig (2068 barg)
- Temperature Rating - 54°C to + 640°C (-65°F To +1200°F)
- For Manifold sizes and combinations, refer to following pages

Features

- Stellite trim and seat can be provided as optional feature for high pressure and high temperature applications
- Soft seated seats, both renewable and non-renewable types can be supplied based on customer requirements. Renewable types provides straight through flow path with high flow capacity bi-directional flow, and rodding capabilities.
- All manifolds are 100% factory tested.
- NACE certified wetted parts are available
- Bonnet locking pin is fitted as standard. Manifolds are suitable for Gaseous and Aggressive fluid services
- Low Torque operating T bar Handle
- Valves can be supplied with variety of MOC for Body, Stem, Trim, Glands etc
- Externally adjustable gland
- Angled version available
- Fire safe option available to API607, BS 6755 Part 2 (on specific request)

Stem	: Rolled and burnished stems at the packing Area
Trim	: Non-rotating trim enabling self centering of the spindle with the orifice providing bubble tight shut off
Packing	: PTFE packing standard, optional Grafoil for high temperature applications.
Spindle	: Backseat stop spindle for blowout prevention
Dust Cap	: Protective dust caps provided in general to prevent ingress of contaminants.

Materials Standards

The Valve Body can be supplied in different materials as outlined below. The Code No customer has to specify is given in the ordering sheet.

Material	Bar Stock	Forging	UNS
316 St Steel	ASTM A-276 ASTM A-479	ASTM A-182 F-316	S31600
316L St Steel	ASTM A-276 ASTM A-479	ASTM A-182 F-316L	S31603
Carbon Steel	ASTM A-108	ASTM A-105	-
Alloy-20	ASTM B-473	ASTM B-462	No8020
Titanium	ASTM B-348	ASTM B-381	R50400
Hastelloy	ASTM B-574	ASTM B-564	N10276
Brass	ASTM B-16 IS-319	ASTM B-283	
Alloy-400	ASTM B-164	ASTM B-564	N04400
Alloy- 600	ASTM B-166	ASTM B-564	N06600
Duplex St Steel			S31803

Gland Packing Materials

PTFE (Poly Tetra Fluro Ethylene): is standard for all valves up to an operating temperature of 240°C Max. PTFE is in the form of Rings.

Graphoil is recommend for operating temperature above 240°C. Graphoil packing contains no resin binders, it is self lubricating at all temperatures.

Soft Seat Material

PTFE	:	69 barg	up to	60°C
		14 barg	up to	250°C
DELIN	:	414 barg	up to	90°C
PEEK	:	414 barg	up to	90°C
		138 barg	up to	200°C

Cleaning

Excelock valves are thoroughly cleaned, during the assembly stage, component wise and dried. After assembly and testing they are thoroughly cleaned and dried again

Special procedures for cleaning for Oxygen (O₂) service, Chlorine service and as per MSS standard requirements are also carried out on request.

Material of Construction - Valves Components

Valve Body	Stem / Trim Gland & Gland Washer	Retainer	Handle
316 St Steel	316 St Steel	304 St Steel	304 St Steel
316L St Steel	316L St Steel	304 St Steel	304 St Steel
Titanium	Titanium	304 St Steel	304 St Steel
Alloy - 400 / 600	Alloy - 400 / 600	304 St Steel	304 St Steel
Hastelloy C 276	Hastelloy C 276	304 St Steel	304 St Steel
Duplex St Steel	Duplex St Steel	304 St Steel	304 St Steel
Brass	316 St. Steel Brass Copper	Brass	CS
CS	316 St. Steel CS Copper	CS	CS

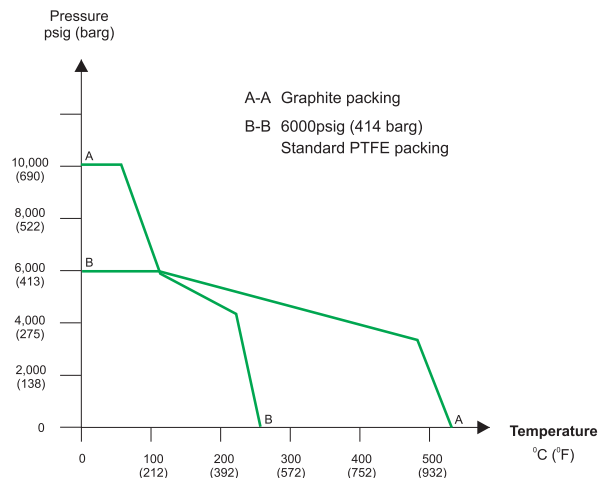
Note : All CS components are Zinc plated .

Any other combination - optional on request

Valves for Cryogenic Applications

Excelock offers valves for Cryogenic applications also. The material standard for all valves are 316L Stainless Steel as standard

Pressure Vs. Temperature





Thread Specifications

Thread Type	Ref.Specifications
NPT	ASME B1.20.1, SAE AS 71051
ISO/BSP(Parallel)	ISO 228 , BS 2779, JIS B 0202
ISO/BSP(Tapered)	ISO 7 , BS 21, JIS B 0203
ISO/BSP(Gauge) Unified(SAE)	ISO 228 , BS 2779 ASME B1.1

A thread sealant or Teflon tape should always be used when assembling tapered threads.

All Excelock Manifold components are cleaned to remove machine oil grease, and loose particles.

Recommended operating Pressures

SS-316/316L/CS/: 6,000 Psig (414 barg)
 Monel /Titanium / Optional
 Alloy-20, 400, 600 10,000 Psig (690 barg)
 Hastelloy-C/ Duplex

Test Pressures

Excelock Manifolds are tested as per the following standards

As per MSS-SP-90

Test pressure at 25°C Room Temperature

Hydrostatic : Body 414 Kg/cm²

Seat 150 Kg/cm²

Pneumatic : Seat 40 Kg/cm²

As per ANSI-B 16.5

Test pressure at 25°C Room Temperature

Hydrostatic : Body 630 Kg/cm²

Pneumatic : Seat 7 Kg/cm²

The above figures are for valves with 6,000 psig working pressure. For valves with 10,000 psig multiply the above figure 1.5 times. However pneumatic seat leakage test pressure is at the same values.

Note :

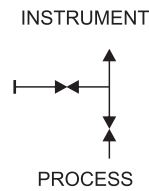
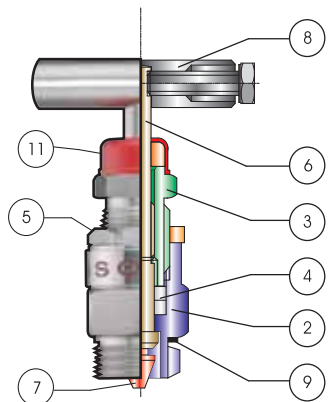
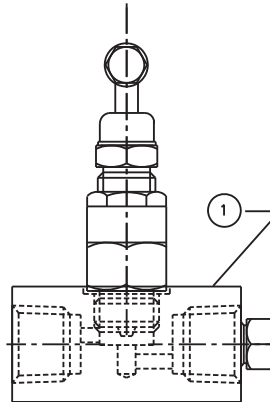
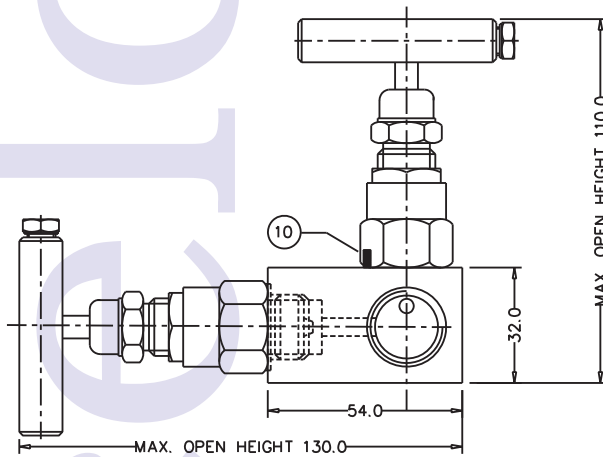
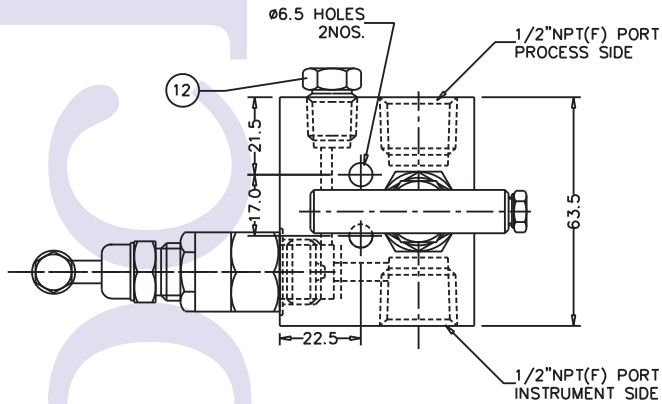
Excelock also manufactures 2" NB Pipe mounting brackets and U clamps and mounting bolts in SS 316, SS304 and Carbon Steel duly Zinc plated





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2 VALVE MANIFOLD SEPARATELY MOUNTED TYPE E367 BB



Bill of Material :

PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	2
3	GLAND RETAINER	SS 304	2
4	GLAND SEAL	P.T.F.E.	4
5	CHECK NUT	SS 304	2
6	SPINDLE	SS 316	2
7	TRIM	SS 316	2
8	HANDLE	SS 316	2
9	WASHER	SS 304	2
10	LOCK PIN	SS 304	2
11	DUST CAP	P.V.C.	2
12	DRAIN PLUG 1/4"NPT(M)	SS 316	1

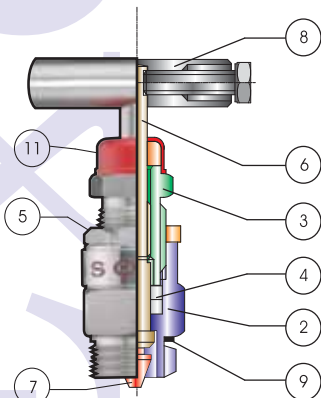
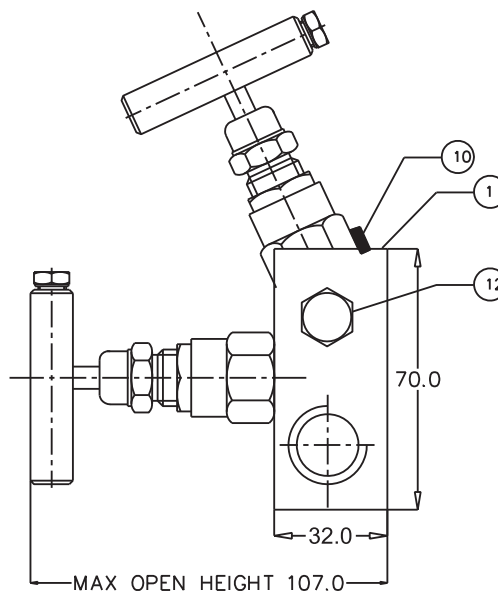
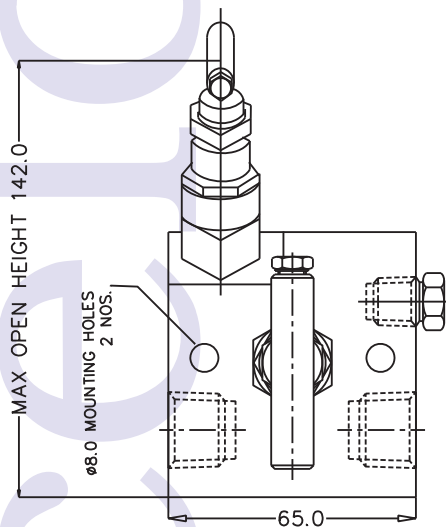
Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



2 VALVE MANIFOLD BAR TYPE

E368 AB

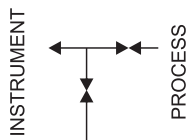


Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

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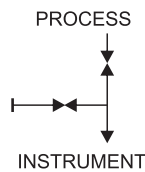
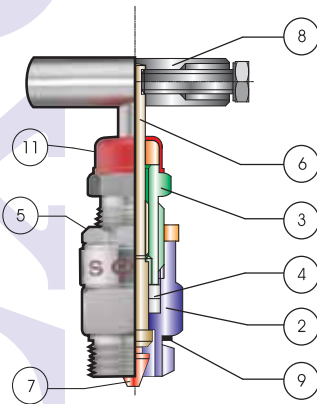
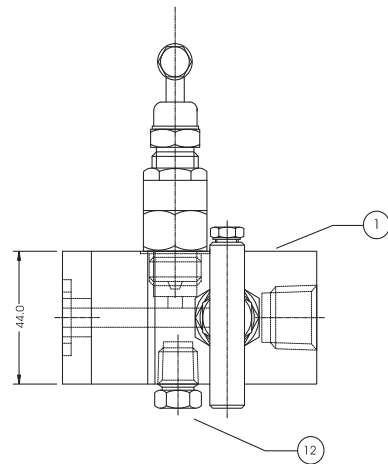
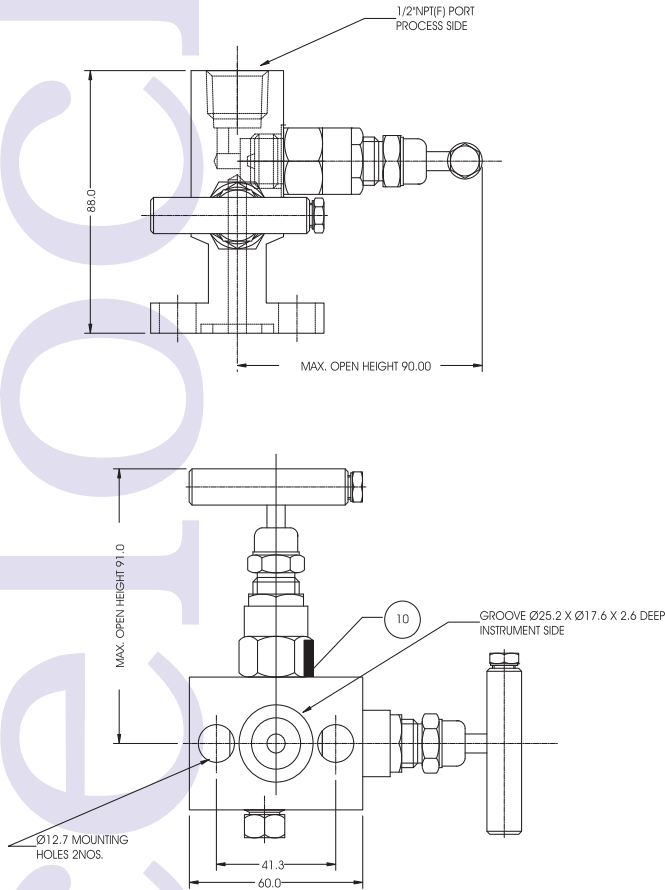
PART No	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	2
3	GLAND RETAINER	SS 304	2
4	GLAND SEAL	PTFE	4
5	CHECK NUT	SS 304	2
6	SPINDLE	SS 316	2
7	TRIM	SS 316	2
8	HANDLE	SS 304	2
9	WASHER	SS 316	2
10	LOCK PIN	SS 304	2
11	DUST CAP	P.V.C.	2
12	DRAIN PLUG 1/4" NPT	SS 316	1

Note : 1. Working Pressure 6000 psig at room temp.
 2. BOM applicable for SS316 body material
 3. All dimensions are in mm unless specified





2 VALVE MANIFOLD T TYPE E369 DM



Bill of Material :

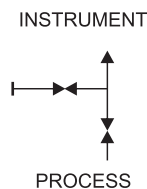
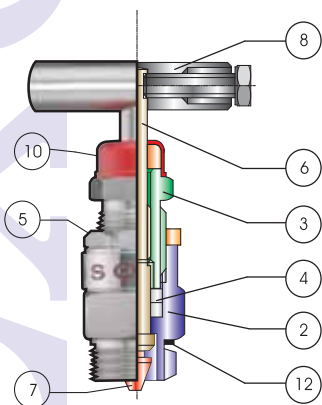
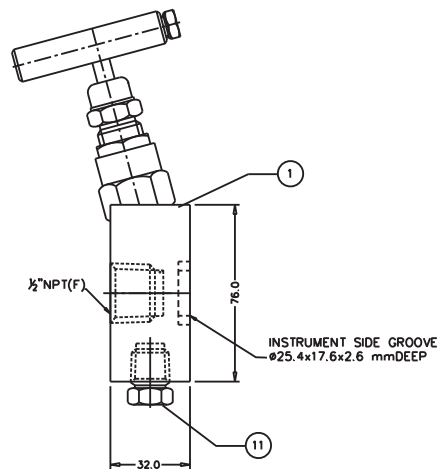
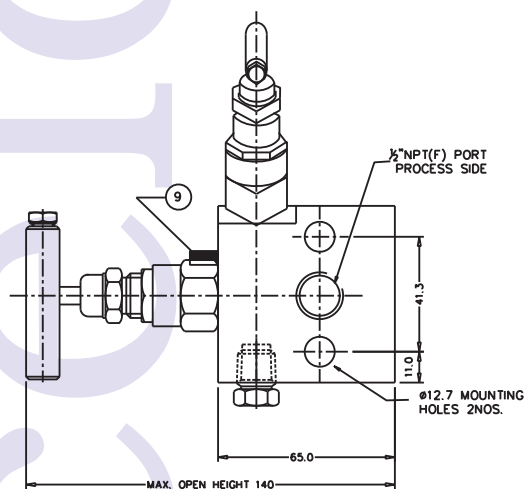
PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	2
3	GLAND RETAINER	SS 304	2
4	GLAND SEAL	P.T.F.E.	4
5	CHECK NUT	SS 304	2
6	SPINDLE	SS 316	2
7	TRIM	SS 316	2
8	HANDLE	SS 304	2
9	WASHER	SS 316	2
10	LOCK PIN	SS 304	2
11	DUST CAP	P.V.C.	2
12	DRAIN PLUG 1/4"NPT	SS 316	1

Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



2 VALVE MANIFOLD T TYPE E370 DM



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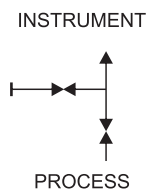
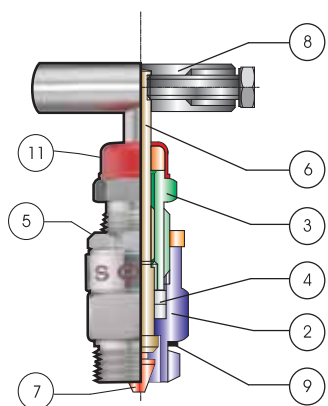
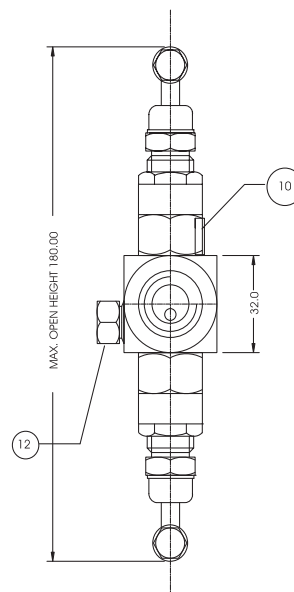
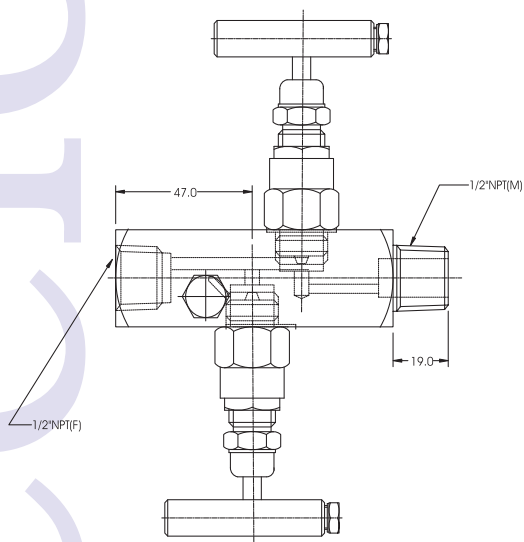
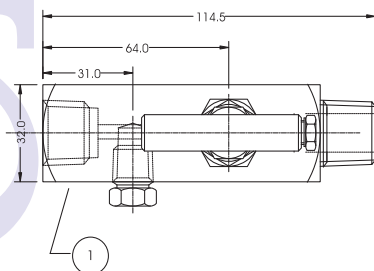
PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	2
3	GLAND RETAINER	SS 304	2
4	GLAND PACKING	P.T.F.E.	4
5	CHECK NUT	SS 304	2
6	SPINDLE	SS 316	2
7	TRIM	SS 316	2
8	HANDLE	SS 304	2
9	LOCK PIN	SS 304	2
10	DUST CAP	P.V.C.	2
11	1/4" NPT PLUG	SS 316	1
12	WASHER	SS 316	2

Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



2 WAY GAUGE VALVE E377 CB



Bill of Material :

PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	2
3	GLAND RETAINER	SS 304	2
4	GLAND SEAL	P.T.F.E.	4
5	CHECK NUT	SS 304	2
6	SPINDLE	SS 316	2
7	TRIM	SS 316	2
8	HANDLE	SS 304	2
9	WASHER	SS 316	2
10	LOCK PIN	SS 304	2
11	DUST CAP	P.V.C.	2
12	DRAIN PLUG 1/4\"/>		

Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

E377 CB



Ordering Information

2 VALVE MANIFOLD

Base Model	E367 BB , E368 AB, E369 DM, E370 DM, E377 CB									
Body Material	1	316 Stainless Steel								
	2	316L Stainless Steel								
	3	304 Stainless Steel								
	4	304L Stainless Steel								
	5	Hastelloy C-276								
	6	Carbon Steel								
	7	Alloy 20								
	8	Titanium								
	9	Alloy 400								
	10	Alloy 600								
	11	Duplex Stainless Steel								
Process Connection	4	1/4 "								
	8	1/2 "								
Inst. Connection	4	1/4 "								
	8	1/2 "								
	F	Flanged								
Thread Type	N	NPT Threads to ASME B1.20.1								
	B	BSPP Threads to ISO 228/1								
	BT	BSPT Threads to ISO 7/1								
Gland Packing	S	Standard PTFE								
	G	Graphoil								
	P	Peek								
Seat	I	Integral (Body Material)								
	T	Soft seat-PTFE								
	D	Soft seat-DELRIN								
	P	Soft seat-PEEK								
Options	A	Straight Mounting Bracket								
	B	Angular Mounting Bracket								
	C	Stelliting of Trims								
	D	Cleaned for O ₂ Service								
	E	NACE-MR-01-75								

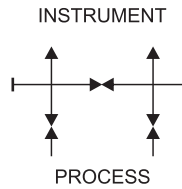
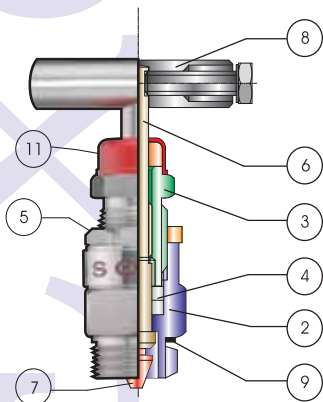
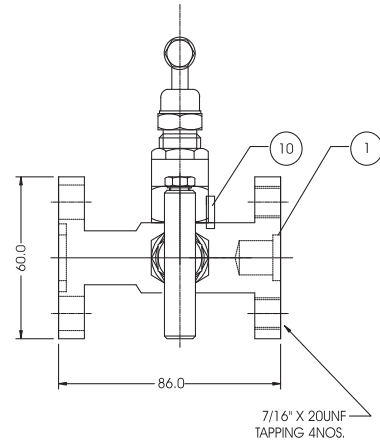
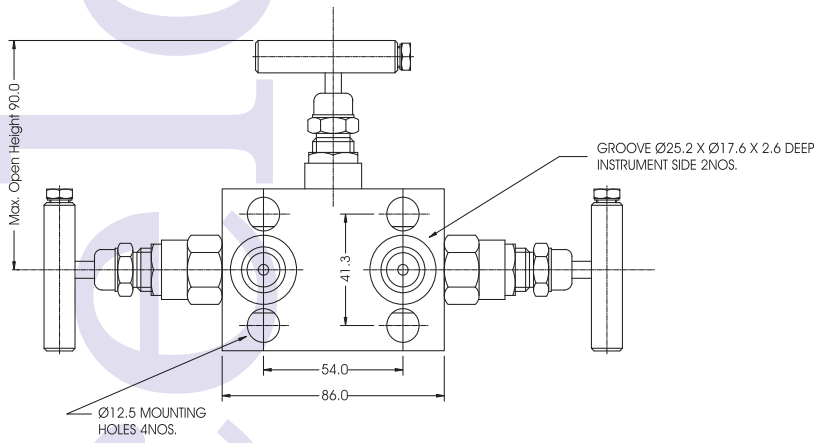
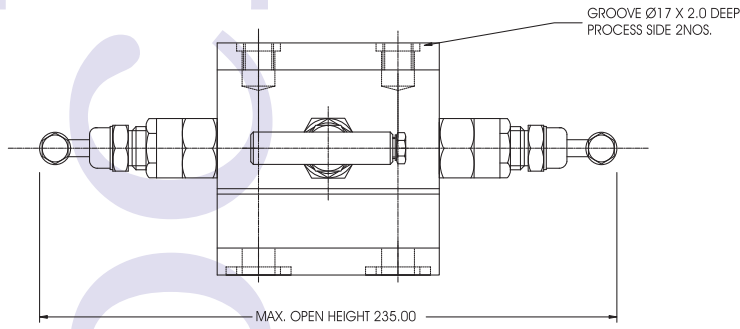
TYPICAL MODEL NO.: E367 BB - 1 - 4 - 4 - N - S - I

Safety Notes :

Customer to select suitable type and size of the valves based on their applications.
For Safe, easy installation & maintenance free operation ;
Material compatibility, temperature and pressure ratings must be considered during selection of valves.



3 VALVE MANIFOLD 'H' TYPE E301 FF



Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Bill of Material :

PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	3
3	GLAND RETAINER	SS 304	3
4	GLAND SEAL	P.T.F.E.	6
5	CHECK NUT	SS 304	3
6	SPINDLE	SS 316	3
7	TRIM	SS 316	3
8	HANDLE	SS 304	3
9	WASHER	SS 316	3
10	LOCK PIN	SS 304	3
11	DUST CAP	P.V.C.	3

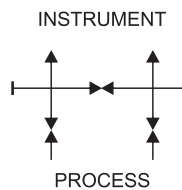
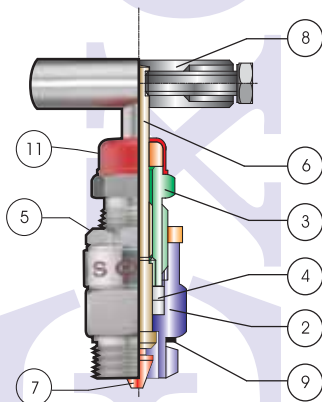
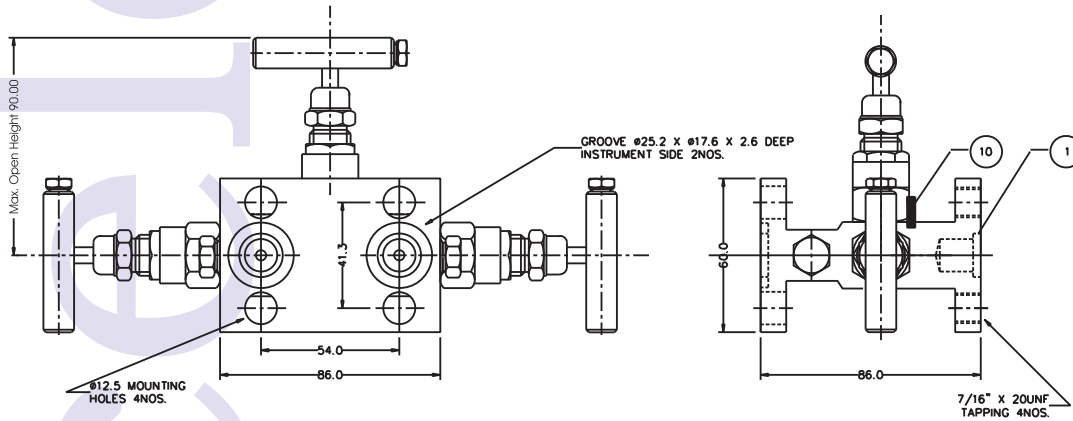
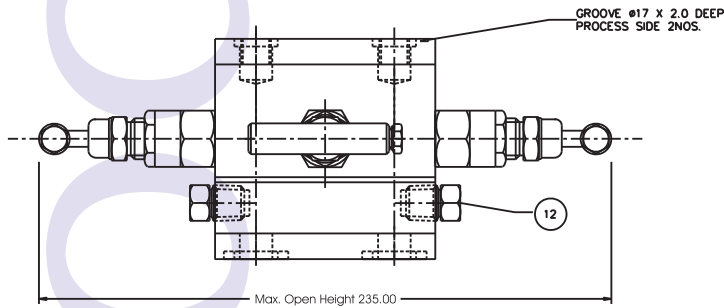
Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

E301 FF



3 VALVE MANIFOLD 'H' TYPE WITH DRAIN

E302 FF



Bill of Material :

PART No	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	3
3	GLAND RETAINER	SS 304	3
4	GLAND SEAL	P.T.F.E.	6
5	CHECK NUT	SS 304	3
6	SPINDLE	SS 316	3
7	TRIM	SS 316	3
8	HANDLE	SS 304	3
9	WASHER	SS 316	3
10	LOCK PIN	SS 304	3
11	DUST CAP	P.V.C.	3
12	DRAIN PLUG 1/4"NPT	SS 316	2

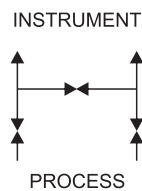
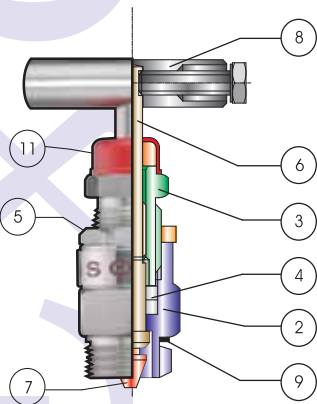
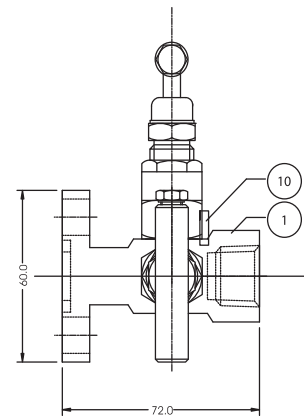
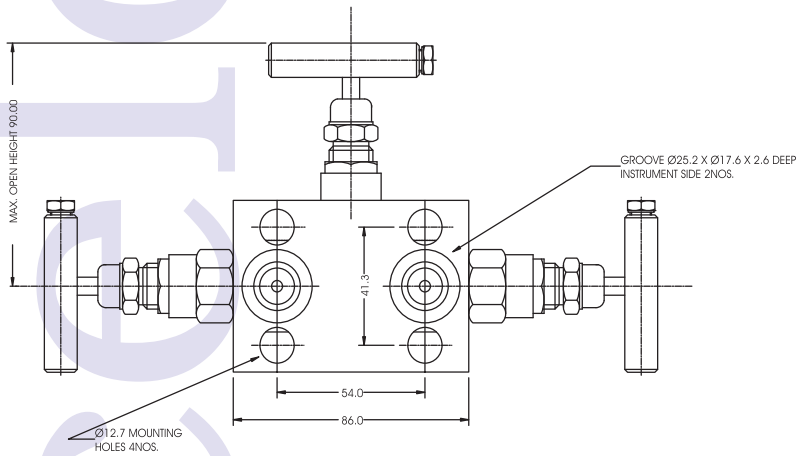
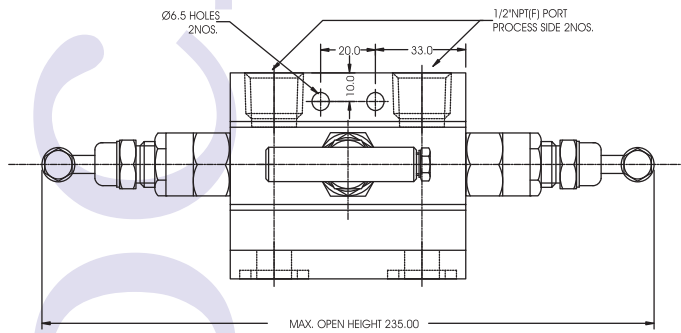
Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

E302 FF



3 VALVE MANIFOLD 'T' TYPE E305 DM



Bill of Material :

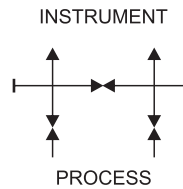
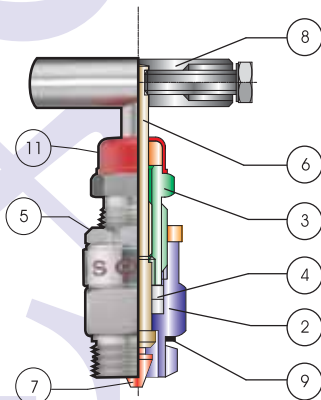
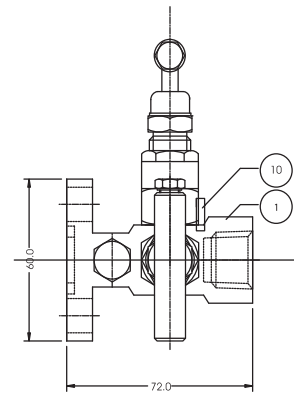
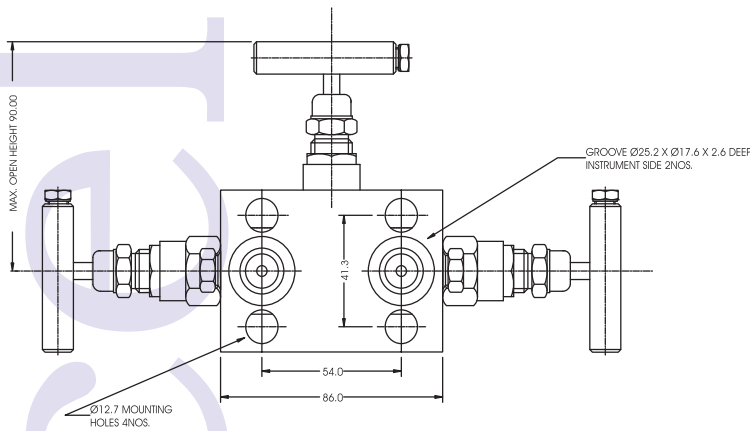
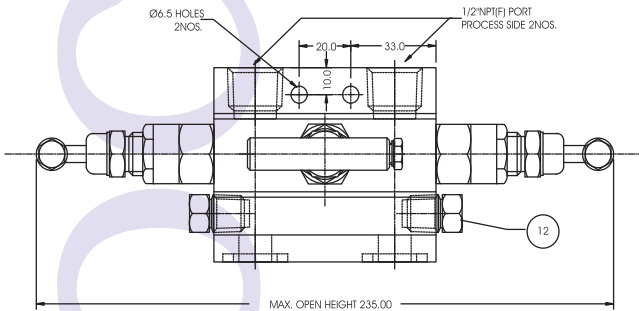
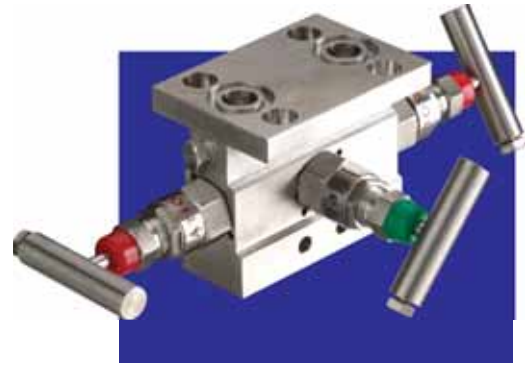
PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	3
3	GLAND RETAINER	SS 304	3
4	GLAND SEAL	P.T.F.E.	6
5	CHECK NUT	SS 304	3
6	SPINDLE	SS 316	3
7	TRIM	SS 316	3
8	HANDLE	SS 304	3
9	WASHER	SS 316	3
10	LOCK PIN	SS 304	3
11	DUST CAP	P.V.C.	3

Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



3 VALVE MANIFOLD 'T' TYPE WITH DRAIN E306 DM



Bill of Material :

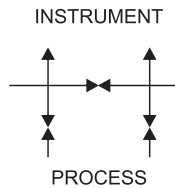
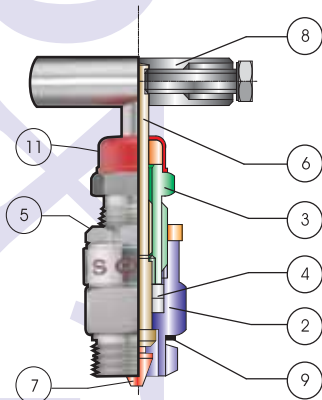
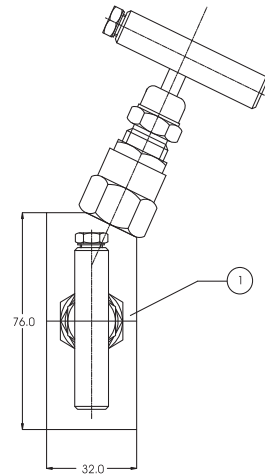
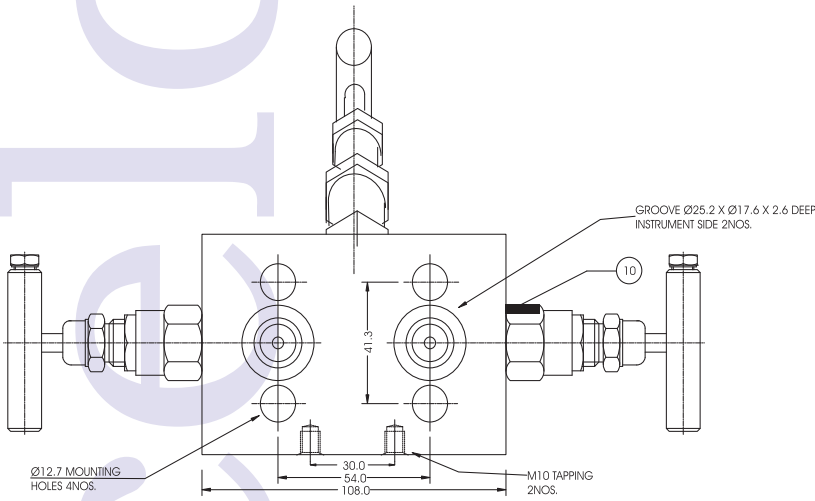
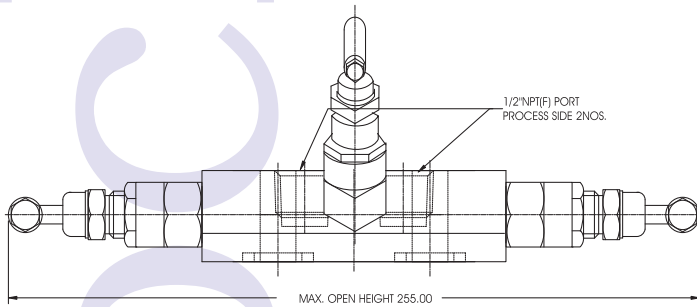
PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	3
3	GLAND RETAINER	SS 304	3
4	GLAND SEAL	P.T.F.E.	6
5	CHECK NUT	SS 304	3
6	SPINDLE	SS 316	3
7	TRIM	SS 316	3
8	HANDLE	SS 304	3
9	WASHER	SS 316	3
10	LOCK PIN	SS 304	3
11	DUST CAP	P.V.C.	3
12	DRAIN PLUG 1/4\"NPT	SS 316	2

Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



3 VALVE MANIFOLD BAR TYPE E307 DM



Bill of Material :

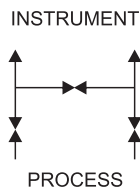
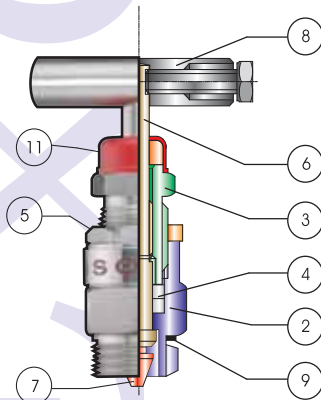
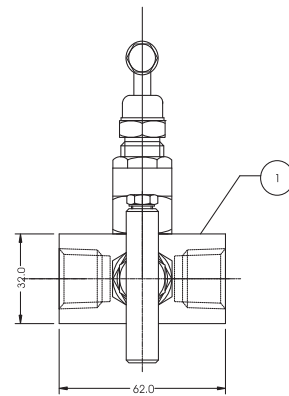
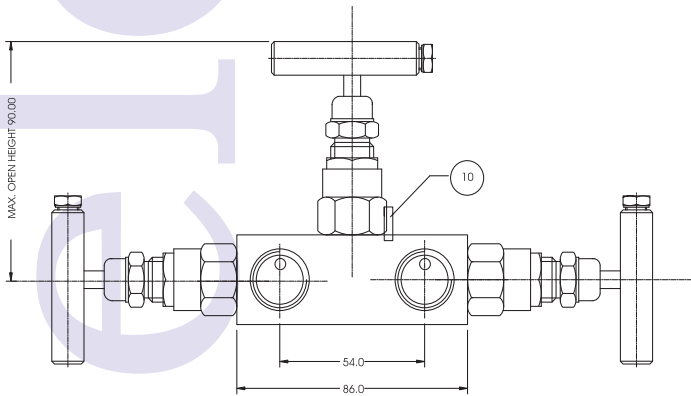
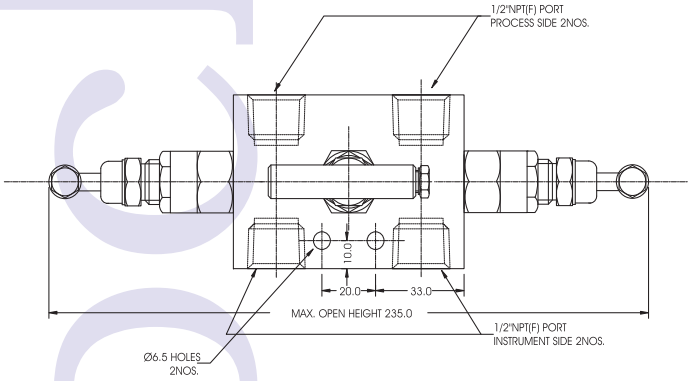
PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	3
3	GLAND RETAINER	SS 304	3
4	GLAND SEAL	P.T.F.E.	6
5	CHECK NUT	SS 304	3
6	SPINDLE	SS 316	3
7	TRIM	SS 316	3
8	HANDLE	SS 304	3
9	WASHER	SS 316	3
10	LOCK PIN	SS 304	3
11	DUST CAP	P.V.C.	3

Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



3 VALVE MANIFOLD SEPARATELY MOUNTED TYPE E310 RM



Bill of Material :

PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	3
3	GLAND RETAINER	SS 304	3
4	GLAND SEAL	P.T.F.E.	6
5	CHECK NUT	SS 304	3
6	SPINDLE	SS 316	3
7	TRIM	SS 316	3
8	HANDLE	SS 304	3
9	WASHER	SS 316	3
10	LOCK PIN	SS 304	3
11	DUST CAP	P.V.C.	3

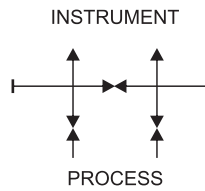
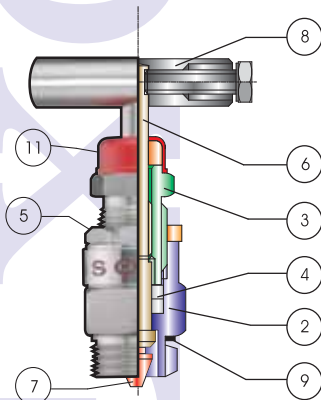
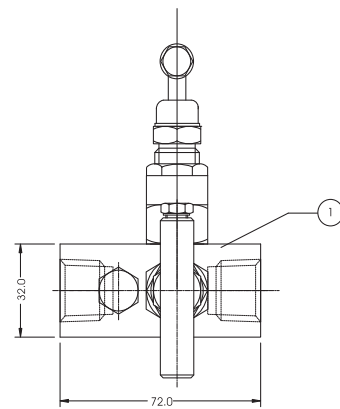
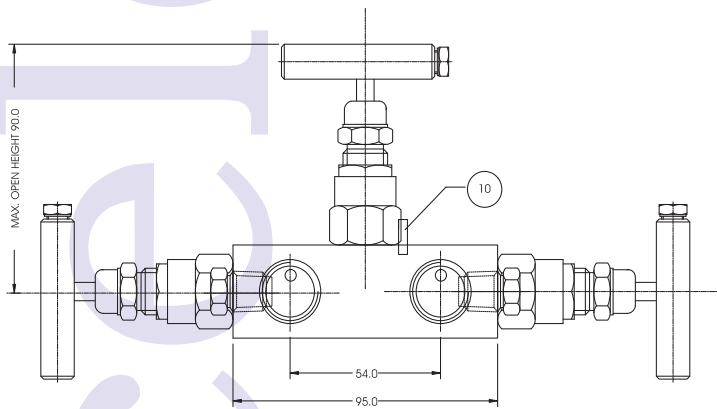
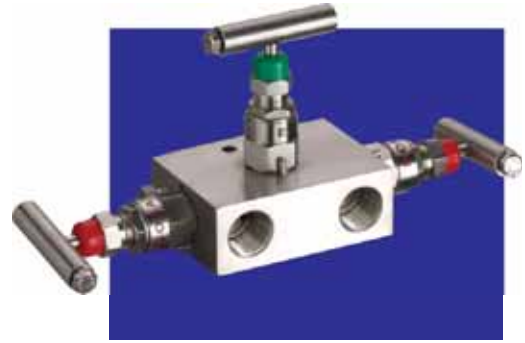
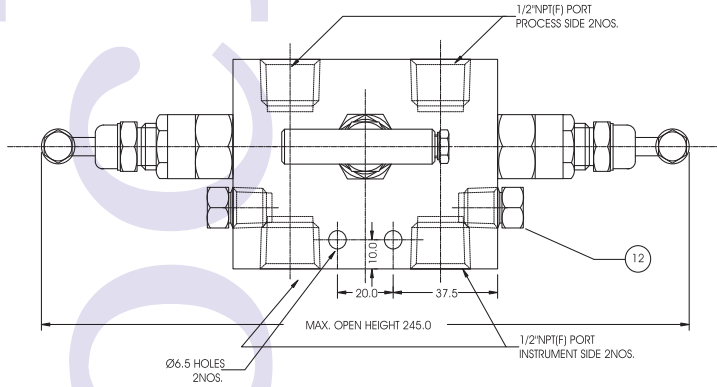
Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



Excelock®

3 VALVE MANIFOLD SEPARATELY MOUNTED TYPE WITH DRAIN E311 RM



Bill of Material :

PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	3
3	GLAND RETAINER	SS 304	3
4	GLAND SEAL	P.T.F.E.	6
5	CHECK NUT	SS 304	3
6	SPINDLE	SS 316	3
7	TRIM	SS 316	3
8	HANDLE	SS 304	3
9	WASHER	SS 316	3
10	LOCK PIN	SS 304	3
11	DUST CAP	P.V.C.	3
12	DRAIN PLUG 1/4"NPT	SS 316	2

Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



Ordering Information

3 VALVE MANIFOLD

Base Model	E301 FF, E302 FF, E305 DM, E306 DM, E307 DM, E310 RM, E311 RM									
Body Material	1	316 Stainless Steel								
	2	316L Stainless Steel								
	3	304 Stainless Steel								
	4	304L Stainless Steel								
	5	Hastelloy C-276								
	6	Carbon Steel								
	7	Alloy 20								
	8	Titanium								
	9	Alloy 400								
	10	Alloy 600								
	11	Duplex Stainless Steel								
Process Connection	4	1/4"								
	8	1/2"								
Inst. Connection	4	1/4"								
	8	1/2"								
	F	Flanged								
Thread Type	N	NPT Threads to ASME B1.20.1								
	B	BSPP Threads to ISO 228/1								
	BT	BSPT Threads to ISO 7/1								
Gland Packing	S	Standard PTFE								
	G	Graphoil								
	P	Peek								
Seat	I	Integral (Body Material)								
	T	Soft seat-PTFE								
	D	Soft seat-DELRIN								
	P	Soft seat-PEEK								
Options	A	Straight Mounting Bracket								
	B	Angular Mounting Bracket								
	C	Stelliting of Trims								
	D	Cleaned for O ₂ Service								
	E	NACE-MR-01-75								

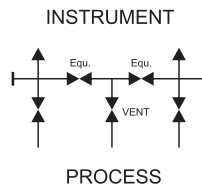
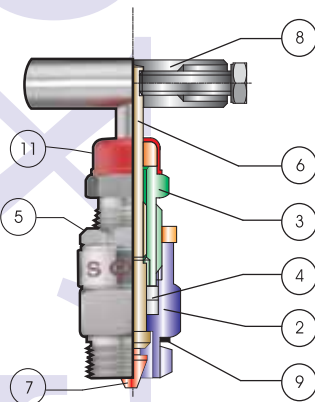
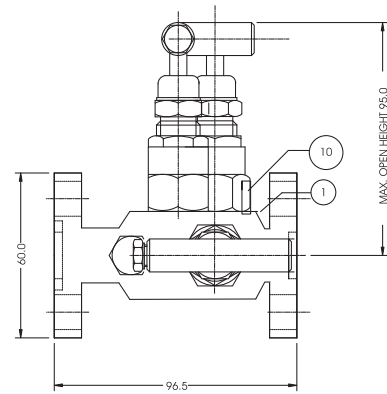
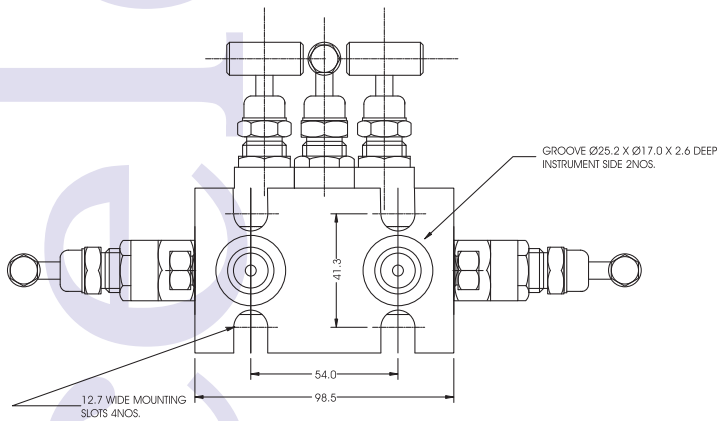
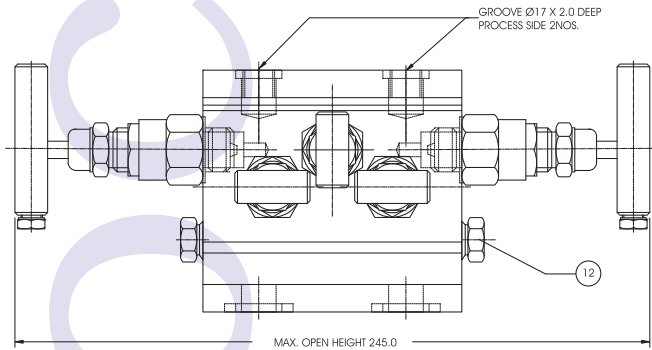
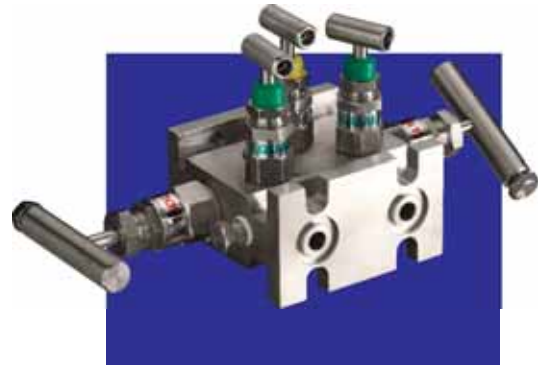
TYPICAL MODEL NO.: E301 FF - 2 - 4 - 8 - N - S - I

Safety Notes :

Customer to select suitable type and size of the valves based on their applications.
For Safe, easy installation & maintenance free operation ;
Material compatibility, temperature and pressure ratings must be considered during selection of valves.



5 VALVE MANIFOLD 'H' TYPE E501 FF



Bill of Material :

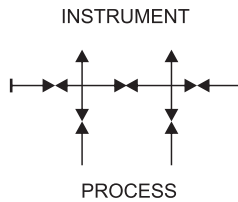
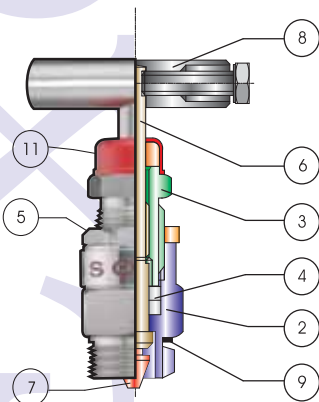
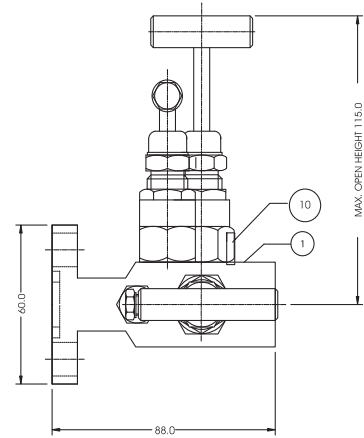
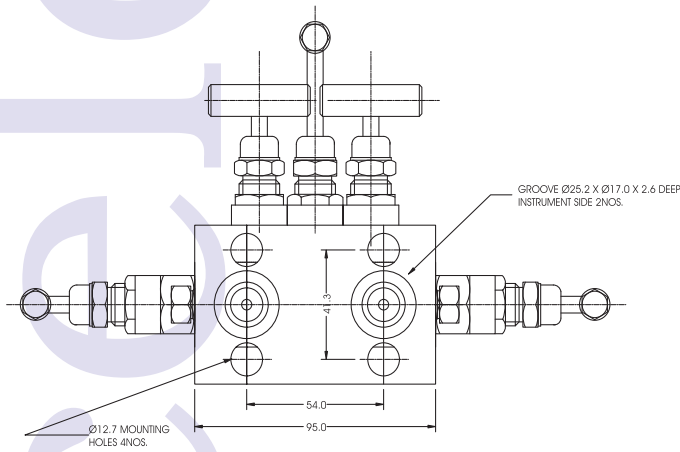
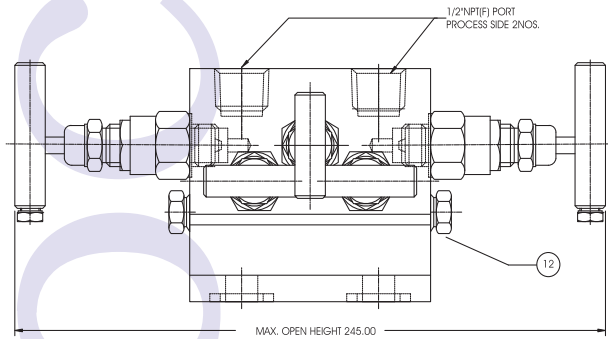
PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	5
3	GLAND RETAINER	SS 304	5
4	GLAND SEAL	P.T.F.E.	10
5	CHECK NUT	SS 304	5
6	SPINDLE	SS 316	5
7	TRIM	SS 316	5
8	HANDLE	SS 304	5
9	WASHER	SS 316	5
10	LOCK PIN	SS 304	5
11	DUST CAP	P.V.C.	5
12	DRAIN PLUG 1/4"NPT	SS 316	2

Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



5 VALVE MANIFOLD 'T' TYPE E505 DM



Bill of Material :

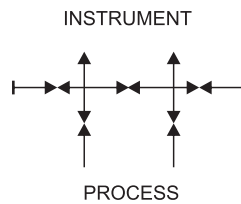
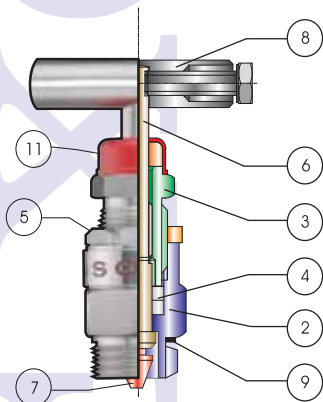
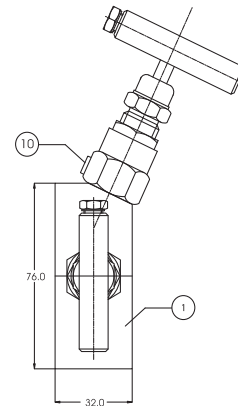
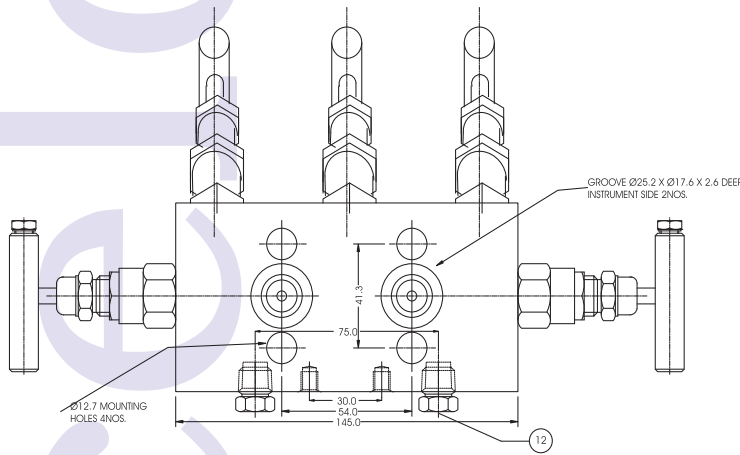
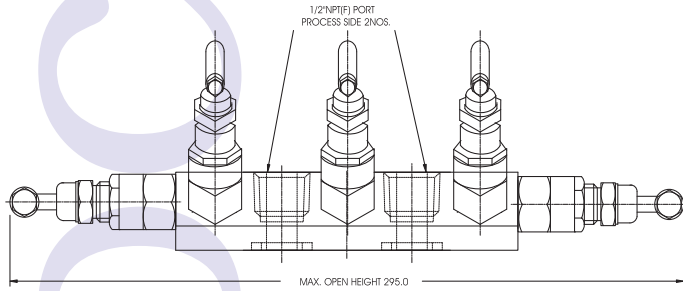
PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	5
3	GLAND RETAINER	SS 304	5
4	GLAND SEAL	P.T.F.E.	10
5	CHECK NUT	SS 304	5
6	SPINDLE	SS 316	5
7	TRIM	SS 316	5
8	HANDLE	SS 304	5
9	WASHER	SS 316	5
10	LOCK PIN	SS 304	5
11	DUST CAP	P.V.C.	5
12	DRAIN PLUG 1/4\"NPT	SS 316	2

Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



5 VALVE MANIFOLD BAR TYPE E507 DM



Bill of Material :

PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	5
3	GLAND RETAINER	SS 304	5
4	GLAND SEAL	P.T.F.E.	10
5	CHECK NUT	SS 304	5
6	SPINDLE	SS 316	5
7	TRIM	SS 316	5
8	HANDLE	SS 304	5
9	WASHER	SS 316	5
10	LOCK PIN	SS 304	5
11	DUST CAP	P.V.C.	5
12	DRAIN PLUG 1/4\"/>		

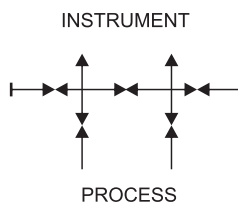
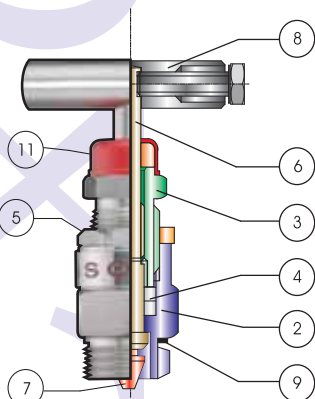
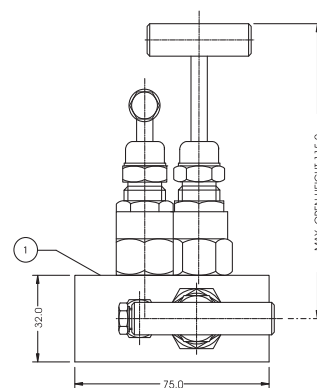
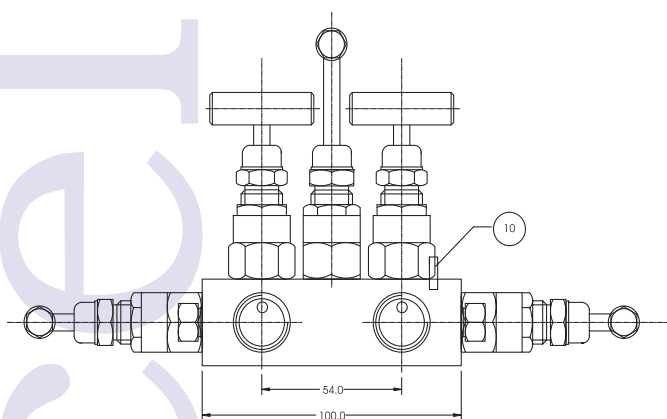
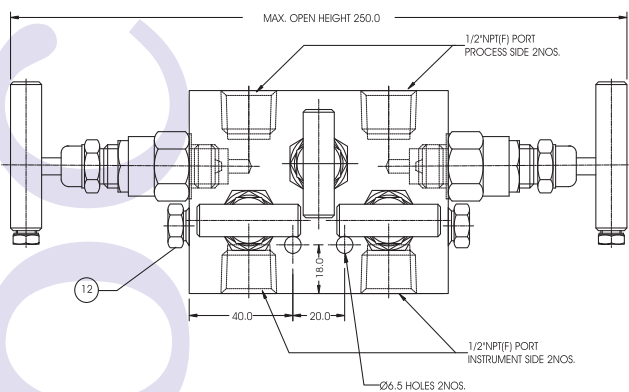
Note : 1. Working Pressure 6000 psig at room temp.
 2. BOM applicable for SS316 body material
 3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



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**5 VALVE MANIFOLD
SEPARATELY MOUNTED TYPE
E510 RM**



Bill of Material :

PART No.	PART DESCRIPTION	MATERIAL	QTY
1	BODY	SS 316	1
2	GLAND BODY	SS 316	5
3	GLAND RETAINER	SS 304	5
4	GLAND SEAL	P.T.F.E.	10
5	CHECK NUT	SS 304	5
6	SPINDLE	SS 316	5
7	TRIM	SS 316	5
8	HANDLE	SS 304	5
9	WASHER	SS 316	5
10	LOCK PIN	SS 304	5
11	DUST CAP	P.V.C.	5
12	DRAIN PLUG 1/4"NPT	SS 316	2

Note : 1. Working Pressure 6000 psig at room temp.
2. BOM applicable for SS316 body material
3. All dimensions are in mm unless specified

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



Ordering Information

5 VALVE MANIFOLD

Base Model	E501 FF, E505 DM, E507 DM, E510 RM										
Body Material	1	316 Stainless Steel									
	2	316L Stainless Steel									
	3	304 Stainless Steel									
	4	304L Stainless Steel									
	5	Hastelloy C-276									
	6	Carbon Steel									
	7	Alloy 20									
	8	Titanium									
	9	Alloy 400									
	10	Alloy 600									
	11	Duplex Stainless Steel									
Process Connection	4	1/4"									
	8	1/2 "									
Inst. Connection	4	1/4"									
	8	1/2 "									
	F	Flanged									
Thread Type	N	NPT Threads to ASME B1.20.1									
	B	BSPP Threads to ISO 228/1									
	BT	BSPT Threads to ISO 7/1									
Gland Packing	S	Standard PTFE									
	G	Graphoil									
	P	Peek									
Seat	I	Integral (Body Material)									
	T	Soft seat-PTFE									
	D	Soft seat-DELFIN									
	P	Soft seat-PEEK									
Options	A	Straight Mounting Bracket									
	B	Angular Mounting Bracket									
	C	Stelliting of Trims									
	D	Cleaned for O ₂ Service									
	E	NACE-MR-01-75									

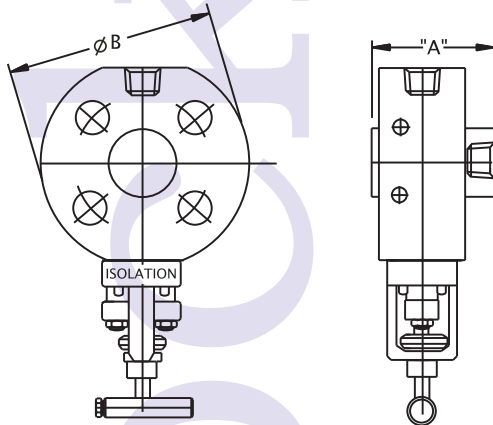
TYPICAL MODEL NO.: E501 FF - 2 - 4 - 8 - N - S - I

Safety Notes :

Customer to select suitable type and size of the valves based on their applications.
For Safe, easy installation & maintenance free operation ;
Material compatibility, temperature and pressure ratings must be considered during selection of valves.



MONOFLANGE SINGLE ISOLATION VALVE EH27M & EH27MK



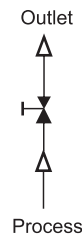
DIMENSIONS (in mm)

SIZE (inch.)	RATING (lb.)	A (mm)	ØB (mm.)
1/2"	150	57	89
1/2"	300	57	96
1/2"	600	61	96
1/2"	900	64	121
1/2"	1500	64	121
1/2"	2500	64	134
3/4"	150	57	99
3/4"	300	60	118
3/4"	600	64	118
3/4"	900	64	130
3/4"	1500	64	130
3/4"	2500	64	140
1"	150	57	108
1"	300	60	124
1"	600	64	124
1"	900	67	150
1"	1500	67	150
1"	2500	67	159
1 1/8"	150	60	127
1 1/8"	300	63	156
1 1/8"	600	67	156
1 1/8"	900	67	178
1 1/8"	1500	67	178
1 1/8"	2500	72	203
2"	150	63	153
2"	300	63	165
2"	600	67	165
2"	900	72	216
2"	1500	72	216
2"	2500	73	235

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

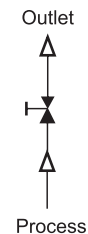
Monoflange EH27M Isolation Valve

The EH27M features a 5.0 mm bore globe style needle valves for isolation service.



Monoflange EH27MK Isolation Valve

The EH27MK features 5.0mm outside screw and yoke bolted bonnet (OS&Y) valves for isolation service.



The EH27M & EH27MK are integrally forged one piece isolation valve for primary take-offs, where the valve is directly mounted to the vessel or process pipe. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge line / impulse pipe work.

APPLICATIONS

- Isolation Service
- Pressure Measurement
- Chemical Injection
- Level Measurement
- Sampling

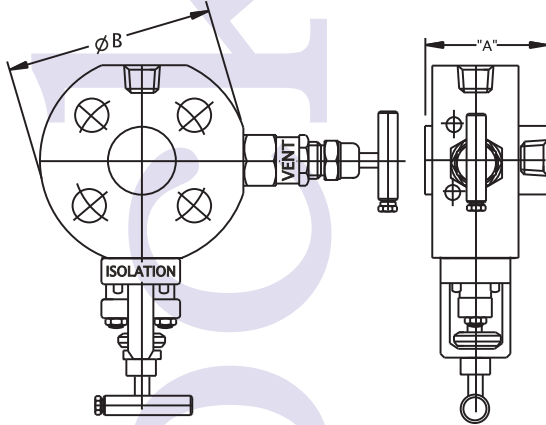
STANDARD FEATURES

- 1/2 - inch NPT threaded female outlet as standard to ANSI / ASME B1.20.1.
- Matl. thickness to ANSI B16.34.
- ANSI B16.5 flanged inlet connection, 1/2 to 2 inch sizes. 150 lbs rated to 2500 lbs rated.
- API flanged inlet connections Sizes to 2 1/16 inch. 3000psig, 5000psig & 10000psig rated.

OS&Y And Globe Style Needle Valve Gland Packing Materials Standard Valves are offered with Graphite. PTFE is also available as an option



MONOFLANGE BLOCK AND BLEED VALVE EH36M & EH36MK

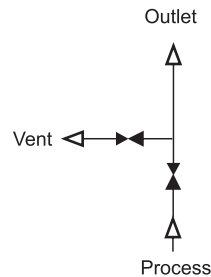


SIZE (inch.)	RATING (lb.)	A (mm)	ØB (mm.)
1/2"	150	57	89
1/2"	300	57	96
1/2"	600	61	96
1/2"	900	64	121
1/2"	1500	64	121
1/2"	2500	64	134
3/4"	150	57	99
3/4"	300	60	118
3/4"	600	64	118
3/4"	900	64	130
3/4"	1500	64	130
3/4"	2500	64	140
1"	150	57	108
1"	300	60	124
1"	600	64	124
1"	900	67	150
1"	1500	67	150
1"	2500	67	159
1 1/2"	150	60	127
1 1/2"	300	63	156
1 1/2"	600	67	156
1 1/2"	900	67	178
1 1/2"	1500	67	178
1 1/2"	2500	72	203
2"	150	63	153
2"	300	63	165
2"	600	67	165
2"	900	72	216
2"	1500	72	216
2"	2500	73	235

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Monoflange EH36M Block & Bleed Valve

The EH36M features 5.0mm bore globe style needle valves for both isolation & venting services



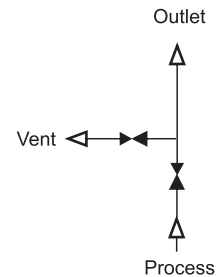
The EH36M & EH36MK are integrally forged one piece block & bleed assemblies for primary isolation of pressure take-offs, where the valve is directly mounted to the vessel or process pipe. Instruments may be directly mounted to the value outlet or alternatively remotely mounted with gauge line/impulse pipe line

APPLICATION S

- Block & Bleed
- Pressure Measurement
- Chemical Injection
- Sampling
- Flow Measurement

Monoflange EH36MK Block & Bleed Valve

The EH36MK features 5.0mm outside screw and yoke bolted bonnet (OS&Y) valves for isolation service and a globe style needle valve for venting service.



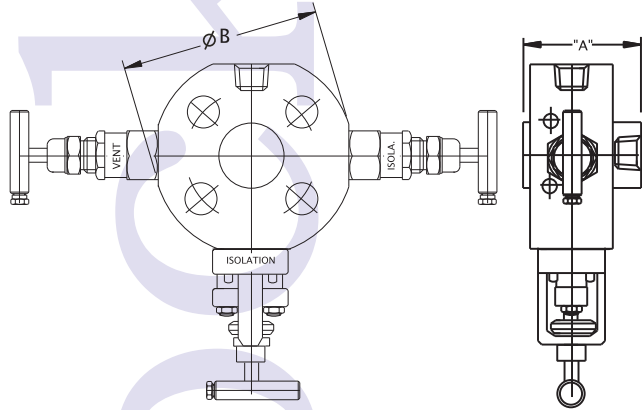
STANDARD FEATURES

- 1/2 - inch NPT threaded female outlet as standard to ANSI / ASME B1.20.1.
- Material thickness to ANSI B16.34. 1/2 - inch NPT threaded female vent connection to ANSI / ASME B1.20.1.
- ANSI B16.5 flanged inlet connection 1/2 inch to 2 inch sizes. 150 lbs rated to 2500 lbs rated
- API flanged inlet connections Size to 2 1/16 - inch. 3000psig, 5000psig & 10000psig rated.

OS& Y And Globe Style Needle Valve
Gland Packing Materials
Standard valves are offered with Graphite. PTFE is also available as an option



MONOFLANGE DBB VALVES EH45M & EH45MK



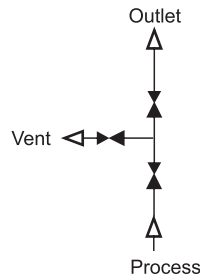
DIMENSIONS (in mm)

SIZE (inch.)	RATING (lb.)	A (mm)	ØB (mm.)
1/2"	150	57	89
1/2"	300	57	96
1/2"	600	61	96
1/2"	900	64	121
1/2"	1500	64	121
1/2"	2500	64	134
3/4"	150	57	99
3/4"	300	60	118
3/4"	600	64	118
3/4"	900	64	130
3/4"	1500	64	130
3/4"	2500	64	140
1"	150	57	108
1"	300	60	124
1"	600	64	124
1"	900	67	150
1"	1500	67	150
1"	2500	67	159
1 1/2"	150	60	127
1 1/2"	300	63	156
1 1/2"	600	67	156
1 1/2"	900	67	178
1 1/2"	1500	67	178
1 1/2"	2500	72	203
2"	150	63	153
2"	300	63	165
2"	600	67	165
2"	900	72	216
2"	1500	72	216
2"	2500	73	235

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Monoflange EH45M Double Block & Bleed Valve

The EH45M feature two 5.0mm bore independently operable globe style needle valves for isolation service with an intermediate globe style needle valve for venting service



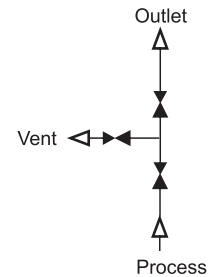
The EH45M & EH45MK are integrally forged one piece block & bleed assemblies for primary isolation of pressure take-off, where the valve is directly mounted to the vessel or process pipe. Instruments may be directly mounted to the valve outlet alternatively remotely mounted with gauge line / impulse pipe work

APPLICATIONS

- Double Block & Bleed
- Pressure Measurement
- Chemical Injection
- Sampling
- Flow Measurement

Monoflange EH45MK Double Block & Bleed Valve

The EH45MK features a 5.0mm bore outside screw and yoke bolted bonnet (OS & Y) valves for first isolation service with 5.0mm bore globe style needle valve for second isolation service and intermediate venting service



STANDARD FEATURES

- 1/2 - inch NPT threaded female outlet as standard to ANSI / ASME B1.20.1.
- 1/2" NPT threaded female vent connection to ANSI/ASME B1.20.1.
- ANSI B16.5 flanged inlet connection 1/2 to 2 inch sizes. 150 lbs rated to 2500 lbs rated
- API flanged inlet connections Sizes to 2 1/16 - inch. 3000psig, 5000psig & 10000psig rated.

OS&Y And Globe Style offered with Graphite. PTFE is also available as an option

EH45M & EH45MK



Ordering Information
MONOFLANGE VALVES

Base Model	EH27M, EH27MK, EH36M, EH36MK, EH45M, EH45MK										
	Body Material	1	316 Stainless Steel								
2		316L Stainless Steel									
3		304 Stainless Steel									
4		304L Stainless Steel									
5		Hastelloy C-276									
6		Carbon Steel									
7		Alloy 20									
8		Titanium									
9		Alloy 400									
10		Alloy 600									
11		Duplex Stainless Steel									
Process Connection	F1	Flange size (to be notified)									
	F2	Flange Rating (to be notified)									
Outlet Connection	4	1/4"									
	8	1/2"									
Thread Type	N	NPT Threads to ASME B1.20.1									
	B	BSPP Threads to ISO 228/1									
	BT	BSPT Threads to ISO 7/1									
Gland Packing	S	Standard PTFE									
	G	Graphoil									
	P	Peek									
Seat	I	Integral (Body Material)									
	T	Soft seat-PTFE									
	D	Soft seat-DELTRIN									
	P	Soft seat-PEEK									
Options	A	NACE-MR-01-75									
	B	Stelliting of Trims									

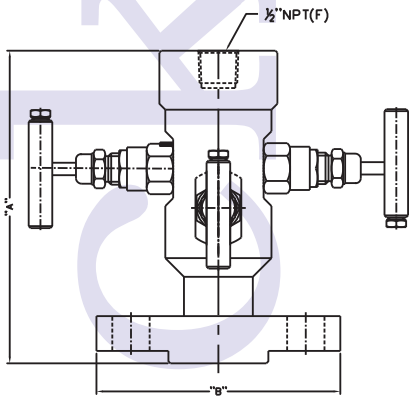
TYPICAL MODEL NO.: EH27M - 2 - F1 - 4 - N - S - I

Safety Notes :

Customer to select suitable type and size of the valves based on their applications.
For Safe, easy installation & maintenance free operation ;
Material compatibility, temperature and pressure ratings must be considered during selection of valves.



KEY BLOCK DBB VALVES
EH18



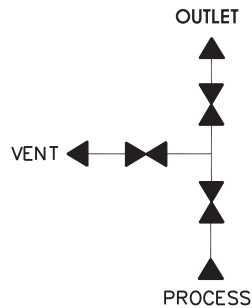
DIMENSIONS (in mm)

SIZE (inch.)	RATING (lb.)	A (mm)	ØB (mm.)
1/2"	150	57	89
1/2"	300	57	96
1/2"	600	61	96
1/2"	900	64	121
1/2"	1500	64	121
1/2"	2500	64	134
3/4"	150	57	99
3/4"	300	60	118
3/4"	600	64	118
3/4"	900	64	130
3/4"	1500	64	130
3/4"	2500	64	140
1"	150	57	108
1"	300	60	124
1"	600	64	124
1"	900	67	150
1"	1500	67	150
1"	2500	67	159
1 1/8"	150	60	127
1 1/8"	300	63	156
1 1/8"	600	67	156
1 1/8"	900	67	178
1 1/8"	1500	67	178
1 1/8"	2500	72	203
2"	150	63	153
2"	300	63	165
2"	600	67	165
2"	900	72	216
2"	1500	72	216
2"	2500	73	235

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Key Block EH18
Double Block & Bleed Valve

The EH18 features two independently operable 5.0mm bore globe style needle valves for isolation service with an intermediate 5.0mm bore globe style needle valve for venting service. Metal seating features as standard for all valves.



The EH18 is integrally forged one piece double block assemblies for primary isolation of pressure take offs, where the valve is directly mounted to the vessel or process pipe. Instruments may be directly mounted to the valves outlet or alternatively remotely mounted with gauge line / impulse pipe work

APPLICATIONS

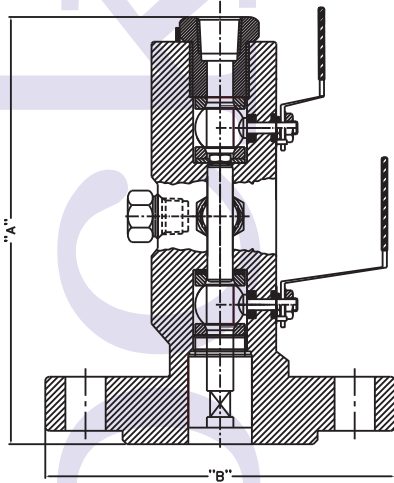
- Double Block & Bleed
- Level Measurement
- Pressure Measurement
- Chemical Injection
- Sampling
- Flow Measurement

STANDARD FEATURES

- 1/2 - inch NPT threaded female outlet as standard to ANSI/ASME B1.20.1.
 - 1/2 - inch NPT threaded female vent connection to ANSI / ASME B1.20.1.
 - Material thickness to ANSI B16.34
 - ANSI B16.5 flanged inlet connections. 1/2 " to 2 inch sizes 150 lbs rated to 2500 lbs rated.
 - API flanged inlet connections Sizes to 2 1/16 inch. 3000psig, 5000psig & 10000psig rated
 - Globe Style Needle Valve Gland Packing Material.
- Standard valves are offered with Graphite. PTFE is also available as an option



KEY BLOCK DBB VALVES EH19



DIMENSIONS (in mm)

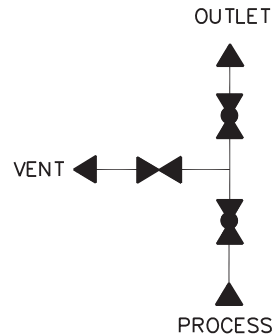
SIZE (inch.)	RATING (lb.)	A (mm)	B (mm.)
1/2"	150	190	89
1/2"	300	190	96
1/2"	600	190	96
1/2"	900/1500	206	121
1/2"	2500	206	134
3/4"	150	190	99
3/4"	300	190	118
3/4"	600	190	118
3/4"	900/1500	206	130
3/4"	2500	206	140
1"	150	180	108
1"	300	182	124
1"	600	182	124
1"	900/1500	192	150
1"	2500	206	159
1 1/2"	150	180	127
1 1/2"	300	189	156
1 1/2"	600	194	156
1 1/2"	900/1500	204	178
1 1/2"	2500	216	203
2"	150	184	153
2"	300	185	165
2"	600	196	165
2"	900/1500	226	216
2"	2500	222	235

Note : ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



Key Block EH19 Double Block & Bleed

The EH19 features two independently operable 10mm bore ball valves for isolation service with an intermediate 5.0mm bore globe style needle valve for venting service.



The EH19 is integrally forged one piece double block and bleed, assemblies for primary isolation of pressure take offs, where the valve is directly mounted to the vessel or process pipe. Instruments may be directly mounted to the valves outlet or alternatively remotely mounted with gauge line / impulse pipe work

APPLICATIONS

- Double Block & Bleed
- Level Measurement
- Pressure Measurement
- Chemical Injection
- Sampling
- Flow Measurement

STANDARD FEATURES

- 1/2 inch NPT threaded female outlet as standard to ANSI/ASME B1.20.1.
- Bolted outlet options.
- 1/2 - inch NPT threaded female vent connection to ANSI/ASME B1.20.1.
- Material thickness to ANSI B16.34.
- ANSI B16.5 flanged inlet connection 1/2" to 2 inch sizes 150 lbs rated to 2500 lbs rated.
- API Flanged inlet connections Sizes to 2 1/16 inch . 3000psig, 5000psig and 10000psig rated
- Ball Valve Seat Materials A choice of PTFE and PEEK are available.
- Vent Needle Valve Gland Packing Materials PTFE is offered as Standard. Graphite is also available as an option.



Ordering Information
KEY BLOCK DBB VALVES

Base Model	EH18, EH19										
Body Material	1	316 Stainless Steel									
	2	316L Stainless Steel									
	3	304 Stainless Steel									
	4	304L Stainless Steel									
	5	Hastelloy C-276									
	6	Carbon Steel									
	7	Alloy 20									
	8	Titanium									
	9	Alloy 400									
	10	Alloy 600									
	11	Duplex Stainless Steel									
Process Connection	F1	Flange size (to be notified)									
	F2	Flange Rating (to be notified)									
Outlet Connection	4	1/4"									
	8	1/2"									
Thread Type	N	NPT Threads to ASME B1.20.1									
	B	BSPP Threads to ISO 228/1									
	BT	BSPT Threads to ISO 7/1									
Gland Packing	S	Standard PTFE									
	G	Graphoil									
	P	Peek									
Seat	I	Integral (Body Material)									
	T	Soft seat-PTFE									
	D	Soft seat-DELTRIN									
	P	Soft seat-PEEK									
Options	A	NACE-MR-01-75									
	B	Stelliting of Trims									

TYPICAL MODEL NO.: EH18 - 2 - 25NB - 2500 - 8 - N - S - I

Safety Notes :

Customer to select suitable type and size of the valves based on their applications.
For Safe, easy installation & maintenance free operation ;
Material compatibility, temperature and pressure ratings must be considered during selection of valves.



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Audit Report No. 2.5-3508/2006

Valid until: 05.02.2010

S.K. Kulkarni
TUV CERT Certification Body
at TÜV NORD CERT GmbH

Mumbai, 06.02.2007

This certification was conducted in accordance with the TÜV CERT auditing and certification procedures and is subject to regular surveillance audits.
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