

## VALVES AND MANIFOLDS

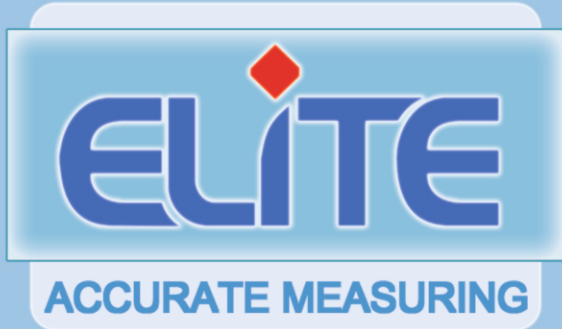


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# ULTRA HIGH PRESSURE GAUGES

WETTED PARTS -NACE MR0175  
AISI 316L SS , HASTELLOY-C276 , INCONEL 625 , MONEL 400



the pressure equipment safety authority



Ranges available up to 60,000 psi

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**\* FOR MANIFOLD CATALOGUE REFER PAGE NO.14**

## NV-01

Type angle pattern needle valve designed for use in on general applications requiring complete isolation or throttling of the media. Ideal for use on gas services and some liquid applications. Produce as standard angle body at 90 degrees. Angle body 45 degrees optional. Specially designed soft Delrin needle tip (type **DS**) rolled in to the stem assembly in perfect location for positive bubble tight shut-off. Available with end connections in sizes from 1/4" to 1/2" and a wide choice of female screwed, male to female screwed or socket weld.

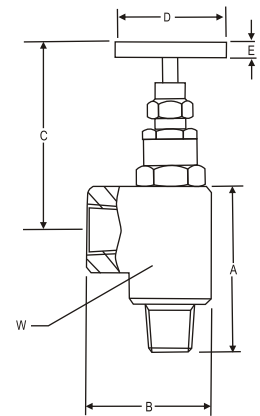
### Technical specifications

- Design Pressure : 6000 PSI / 400 bar
- Max temp. : 100°C
- Material : Stainless steel
- Stem : (Type DS) Delrin Soft Needle Tip rolled into the needle
- Gland Packing : PTFE
- Stem packing area : Burnished finish for smooth valve operation.
- Safety Feature : Back seating for Preventing stem blowout.



Size	Type	Body dimensions			Height (open)	Handle	Handle OD
		A	B	W	C	D	E
1/4"	FxF	32	32	28	63	40	10
	MxF	48	32	28	63	40	10
	MxM	48	48	28	63	40	10
3/8"	FxF	32	32	28	63	40	10
	MxF	48	32	28	63	40	10
	MxM	48	48	28	63	40	10
1/2"	FxF	50	50	32	95.5	50	12
	MxF	70	50	32	95.5	50	12
	MxM	70	70	32	95.5	50	12

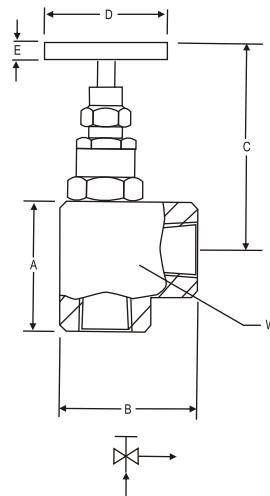
All dimensions are in mm



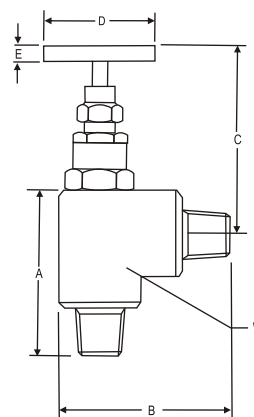
Type MF

### Applications

- Instrument line shut off.
- Instrument and gauge isolation.
- Drain valve.
- Specially designed for gas service.



Type FF



Type MM

## HOW TO ORDER: NV-01

Body Material	Stem Packing	Size = P x P1	Connections	Threads
C = Carbon Steel	P = PTFE	24 = 1/4" x 1/4"	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	G = Grafoil	33 = 3/8" x 3/8"	MF = Male x Female	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304		44 = 1/2" x 1/2"	MM = Male x Male	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L			SW = Socket Weld	
M4 = Monel 400				
M5 = Monel 500				
H = Hastelloy C				

### Options -

IE : Handle circular.

TF : Compliance to NACE standard MR-0175.

SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.

GH : Material test certificate

GO : Hydro test certificate

### Example

To place an order simply refer to the codes in the table.

Valve Type : Body Material + Stem Packing + Size + Connections + Threads + Options

NV-01 + S + P + 44 + MF + N = NV-01 - S - P - 44 - MF - N - Options

### Note -

The weld prepared types are available with a male-or-female plain end - suitable for socket weld, or male butt weld end.

Always specify pipe schedule and further requirements when ordering valves for welded or Flange connections. Panel mounting option for installation in racks and panels.

### Standard Valve Materials

Valve	Body	Bonnet	Stem	Tip
Carbon Steel	CS A105	CS A105	SS 304	SS 304
Stainless Steel	SS 316	SS 316	SS 316	SS 316
Monel	Monel	Monel	Monel	Monel

## NV-02

Needle Valves with compression ends for use in applications on fluids containing solid particles designed to give high capacity bi-directional flow with reliable bubble tight shut off. The flow path of the valve is easy to clean for viscous fluid application. Offered with Waaree designed twin ferrules and nuts available in imperial and metric sizes (See Tube Fitting catalogue No. FIT/04/06). Available with tube end connections in sizes from 6 mm to 12 mm and 1/4" to 1/2" tube or one end screwed to male or female.

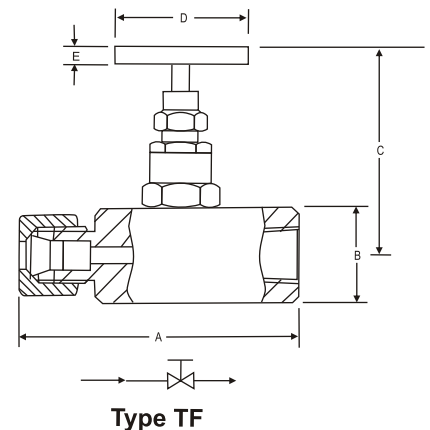
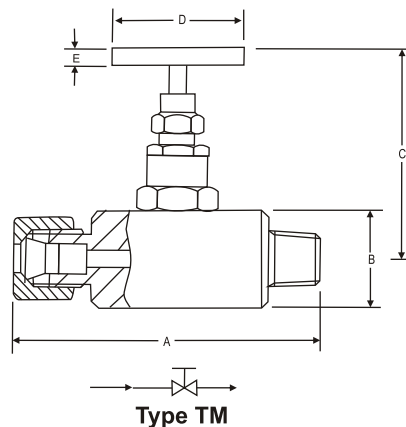
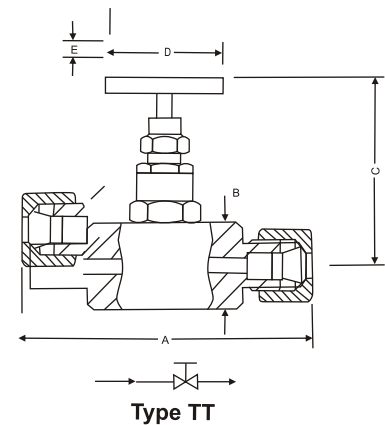
### Technical specifications

Design Pressure	:	6000 PSI /400 bar
Max temp.	:	240°C
Stem	:	Rising Plug(Type BD)
Stem packing area	:	Burnished finish for smooth valve operation.
Safety Feature	:	Back seating for preventing stem blowout.
Feature	:	Replaceable soft seat which absorbs contaminants and operates in dirty service, with easy Maintenance and straight through design for high



Type (TT)	Length A	Width B	Height (open) Max., C	Handle D	Handle OD E
6M x 6M	65	25	64.5	40	10
8M x 8M	65	25	64.5	40	10
10Mx 10M	65	25	64.5	40	10
12M x 12M	65	32	94	50	12
<b>Type (TF)</b>					
1/4" OD x 1/4" NPTF	65	25	64.5	40	10
3/8" OD x 3/8"NPTF	65	25	64.5	40	10
1/2" OD x 1/2"NPTF	65	32	94	50	12
<b>Type (TM)</b>					
1/4" OD or 6M x 1/4"NPTM	65	25	64.5	40	10
8M x 1/4"NPTM	65	25	64.5	40	10
3/8"OD or 10M x 3/8" NPTM	65	25	64.5	40	10
1/2" OD or 12M x 1/2" NPTM	72	32	94	50	12

All dimensions are in mm.



### Applications

- Instrument isolation
- Media throttling
- Liquid and vapor service.

## HOW TO ORDER: NV-02

Body Material	Stem Packing	Size = P x P1	Connections	Threads
C = Carbon Steel	P = PTFE	6M = 6 x 6mm OD	TT = Tube x Tube	N = NPT (ANSI B 1.20.1)
S = SS 316	G = Grafoil	8M = 8 x 8mm OD	TM = Tube x Male	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304		10M = 10 x 10mm OD	TF = Tube x Female	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L		12M = 12 x 12mm OD		
M4 = Monel 400		4T = 1/4" x 1/4" OD		
M5 = Monel 500		6T = 3/8" x 3/8" OD		
H = Hastelloy C		8T = 1/2" x 1/2" OD		
B = Brass		4 = 1/4"OD x 1/4" thread		
		6 = 3/8"OD x 3/8" thread		
		8 = 1/2"OD x 1/2" thread		

### Options -

IE : Handle circular.

TF : Compliance to NACE standard MR-0175.

SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.

GH : Material test certificate

GO : Hydro test certificate

### Example

To place an order simply refer to the codes in the table.

Valve Type : **Body Material** + **Stem Packing** + **Size** + **Connections** = Options

NV-02 + S + P + 8T + TT = NV-02-S-P-8T-TT-Options

### Note -

The weld prepared types are available with a male-or-female plain end - suitable for socket weld, or male butt weld end.

Always specify pipe schedule and further requirements when ordering valves for welded or Flange connections. Panel mounting option for installation in racks and panels.

### Standard Valve Materials

Valve	Body	Bonnet	Stem	Tip
Carbon Steel	CS A105	CS A105	SS 304	SS 304
Stainless Steel	SS 316	SS 316	SS 316	SS 316

## NV-03

Type miniature compact design needle valves are ideal for bubble tight shut-off in applications where space is at a premium. The mini series are available with metal to metal low torque seating (Stem Type YS). Available with end connections in sizes 1/8" to 1/4" and as pipe connections.

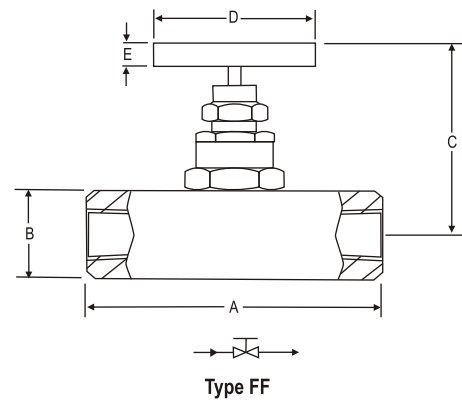
### Technical specifications

Design Pressure	:	3000 PSI / 200 bar
Max temp.	:	240°C
Gland Packing	:	PTFE
Stem packing area	:	Burnished finish for smooth valve operation.
Safety Feature	:	Back seating for preventing stem blowout.
Feature	:	Metal to metal seating Material Stainless Steel



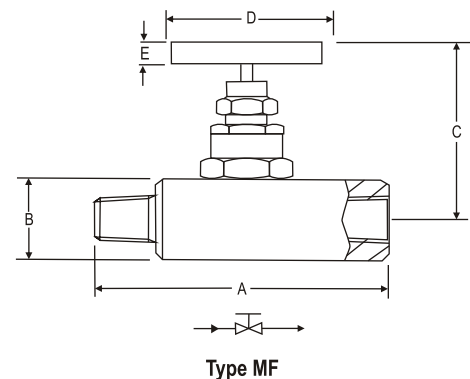
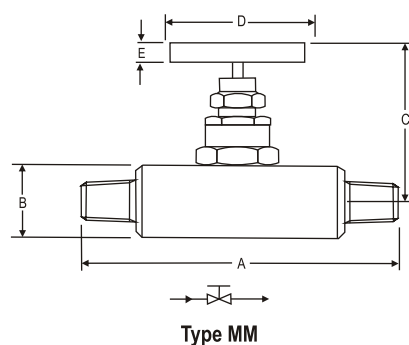
Size	Type	Length A	Width B	Height (open) C	Handle D	Handle OD E
1/8"	FxF	50	22	56	40	10
	MxF	56	22	56	40	10
	MxM	60	22	56	40	10
1/4"	FxF	55	22	56	40	10
	MxF	65	22	56	40	10
	MxM	60	22	56	40	10

All dimensions are in mm



### Applications

- Instrument air lines
- Control panels
- Air header assemblies
- Gas sampling
- Laboratory equipment
- Instrument isolation
- Control loops
- Gas and liquid service





## HOW TO ORDER: NV-03

Body Material	Stem Packing	Size = P x P1	Connections	Threads
S = SS 316	P = PTFE	22 = 1/8" x 1/8"	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S4 = SS 304		24 = 1/4" x 1/4"	MF = Male x Female	P = BSPP (BS 2779, ISO 228/1)
SL = SS 316L			MM = Male x Male	
B = Brass				

### Options -

IE : Handle circular.

TF : Compliance to NACE standard MR-0175.

SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.

GH : Material test certificate

GO : Hydro test certificate

### Example

To place an order simply refer to the codes in the table.

Valve Type : **Body Material** + **Stem Packing** + **Size** + **Connections** + **Threads** + Options

NV-03 + S + P + 24 + FF + N = NV-03-S-P-24-FF-N-Options

### Note -

The weld prepared types are available with a male-or-female plain end - suitable for socket weld, or male butt weld end. Always specify pipe schedule and further requirements when ordering valves for welded or Flange connections. Panel mounting option for installation in racks and panels.

### Standard Valve Materials

Valve	Body	Bonnet	Stem	Tip
Carbon Steel	CS A105	CS A105	SS 304	SS 304

## NV-04

Type needle valves with soft seat types are designed for use on applications requiring complete isolation or throttling of the media and for high pressure instrument lines. Ideal for use on gas services and some liquid applications. Specially designed Delrin needle tip (stem type DS) rolled into the needle in perfect location for positive bubble tight shut-off. Available with end connections in sizes from 1/8" to 1" and a wide choice of female screwed, male to female screwed or socket weld.

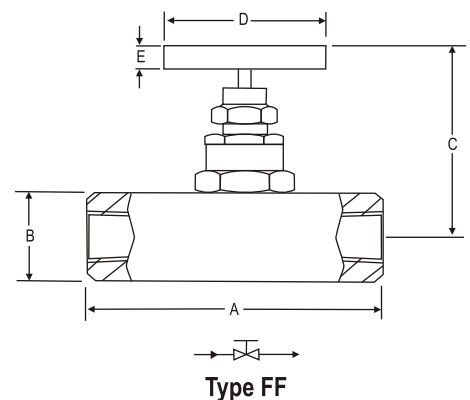
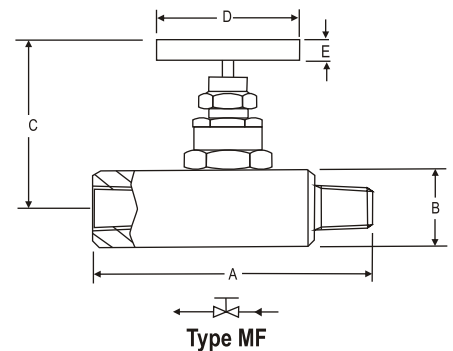
### Technical specifications

Design Pressure	:	6000 PSI / 400 bar
Max temp.	:	100°C
Material	:	Stainless steel
Stem	:	(DS)Delrin Soft Needle Tip rolled into the needle
Gland Packing	:	PTFE
Stem packing area	:	Burnished finish for smooth valve operation.
Safety Feature	:	Back seating for preventing stem blowout.



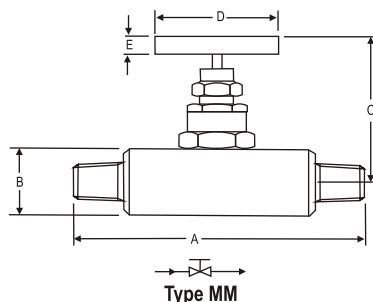
Size	Type	Length A	Width B	Height (open) Max., C	Handle D	Handle OD E
1/8"	FxF	50	25	63.5	40	10
	MxF	55	25	63.5	40	10
	MxM	60	25	63.5	40	10
1/4"	FxF	55	25	63.5	40	10
	MxF	65	25	63.5	40	10
	MxM	60	25	63.5	40	10
3/8"	FxF	55	25	63.5	40	10
	MxF	65	25	63.5	40	10
	MxM	65	25	63.5	40	10
1/2"	FxF	65	32	93.5	50	12
	MxF	75	32	93.5	50	12
	MxM	70	32	93.5	50	12
3/4"	FxF	70	38	96.5	50	12
	MxF	75	38	96.5	50	12
	MxM	80	38	96.5	50	12
1"	FxF	90	45	101	70	12
	MxF	105	45	101	70	12
	MxM	105	45	101	70	12

All dimensions are in mm



### Applications

- Instrument line shut off.
- Instrument isolation.
- Gauge isolation.
- Drain valve.
- Specially designed for gas service and liquid applications.



## HOW TO ORDER: NV-04

Body Material	Stem Packing	Size = P x P1	Connections	Threads
C = Carbon Steel	P = PTFE	22 = 1/8" x 1/8"	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	G = Grafoil	24 = 1/4" x 1/4"	MF = Male x Female	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304		33 = 3/8" x 3/8"	MM = Male x Male	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L		44 = 1/2" x 1/2"	SW = Socket Weld	
M4 = Monel 400		66 = 3/4" x 3/4"		
M5 = Monel 500		88 = 1" x 1"		
H = Hastelloy C				
B = Brass				

### Options -

IE : Handle circular.

TF : Compliance to NACE standard MR-0175.

SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.

GH : Material test certificate

GO : Hydro test certificate

### Example

To place an order simply refer to the codes in the table.

**Valve Type** : **Body Material** + **Stem Packing** + **Size** + **Connections** + **Threads** + Options  
 NV-04 + S + P + 44 + FF + N = NV-04-S-P-44-FF-N-Options

### Note -

The weld prepared types are available with a male-or-female plain end - suitable for socket weld, or male butt weld end. Always specify pipe schedule and further requirements when ordering valves for welded or Flange connections. Panel mounting option for installation in racks and panels.

### Standard Valve Materials

Valve	Body	Bonnet	Stem	Tip
Carbon Steel	CS A105	CS A105	SS 304	SS 304
Stainless Steel	SS 316	SS 316	SS 316	SS 316
Monel	Monel	Monel	Monel	Monel

## NV-05

type gauge valve is a block and bleed needle pattern gauge valve with specially designed integral bleed of M8. Ideal for use on applications requiring bleeding or venting of media. Self centering needle non-rotating, on the valve seat. The conical metal tip (stem type CT) press fitted ensures perfect alignment for positive bubble tight shut-off. Standard end connections are male inlet and female outlet or female inlet and female outlet from 1/4" to 3/4".

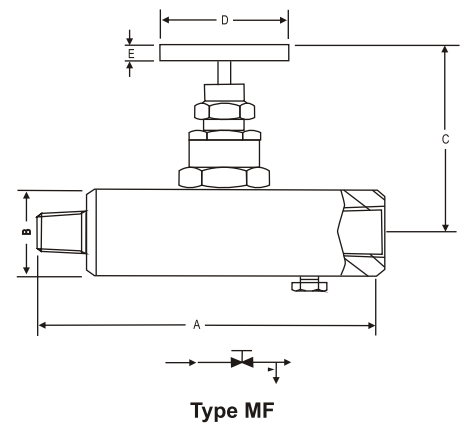
### Technical specifications

Design Pressure	6000 PSI / 400 bar
Max temp.	240°C
Material	Stainless Steel
Stem	(CT) Conical tip press fitted hard chrome plated.
Gland Packing	PTFE
Stem packing area	Burnished finish for smooth valve operation.
Safety Feature	Back seating for Preventing stem blowout.



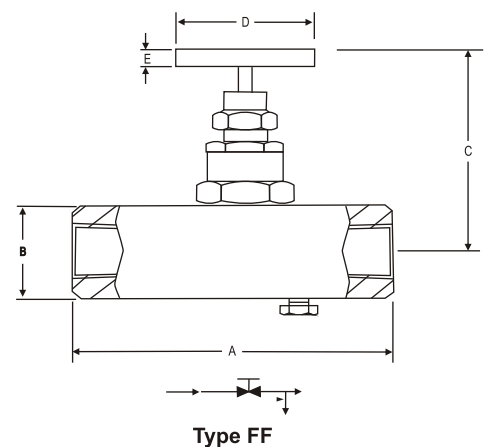
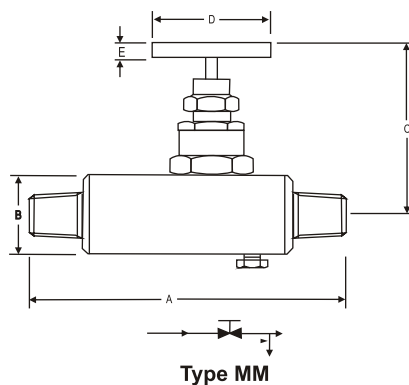
Size	Type	Length A	Width B	Height (open) Max., C	Handle D	Handle OD E
1/4"	FxF	70	25	63	40	10
	MxF	70	25	63	40	10
	MxM	75	25	63	40	10
3/8"	FxF	70	25	63	40	10
	MxF	70	25	63	40	10
	MxM	75	25	63	40	10
1/2"	FxF	75	32	83.6	50	12
	MxF	83	32	83.6	50	12
	MxM	88	32	83.6	50	12
3/4"	FxF	75	38	86.6	50	12
	MxF	83	38	86.6	50	12
	MxM	88	38	83.6	50	12

All dimensions are in mm.



### Applications

- Installation of instrument and gauge.
- isolation of Instrument.
- Venting of Instrument.



Optional : GV 10 - High pressure valves for 10,000 psi pressure  
 GV 20 - High pressure valves for 20,000 psi pressure

## HOW TO ORDER: NV-05

Body Material	Stem Packing	Size	Connections (inlet x outlet)	Threads
C = Carbon Steel	P = PTFE	24 = 1/4" x 1/4"	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	G = Grafoil	33 = 3/8" x 3/8"	MF = Male x Female	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304		44 = 1/2" x 1/2"	MM = Male x Male	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L		66 = 3/4" x 3/4"	SW = Socket Weld	
M4 = Monel 400				
M5 = Monel 500				
H = Hastelloy C				

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- D4 : 1/4" NPT (M) Drain Plug instead of M8 bleed
- BLD4 : Bleeder 1/4" NPT (Male)

### Example

To place an order simply refer to the codes in the table.

Valve Type : **Body Material** + **Stem Packing** + **Size** + **Connections** + **Threads** + Options  
 NV-05 + S + P + 44 + MF + N = NV-05-S-P-44-MF-N-Options

### Note -

The weld prepared types are available with a male-or-female plain end - suitable for socket weld, or male butt weld end. Always specify pipe schedule and further requirements when ordering valves for welded or Flange connections. Panel mounting option for installation in racks and panels.

### Standard Valve Materials

Valve	Body	Bonnet	Stem	Tip
Carbon Steel	CS A105	CS A105	SS 304	SS 304
Stainless Steel	SS 316	SS 316	SS 316	SS 316

## NV-06



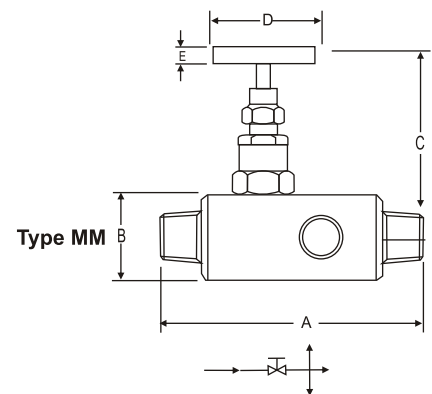
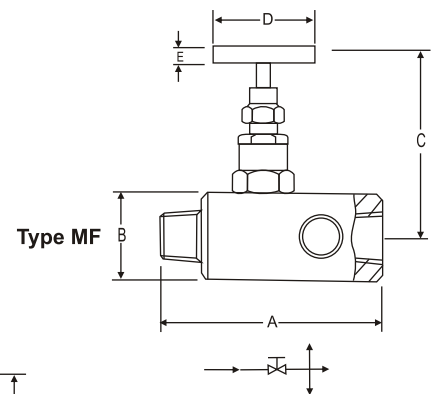
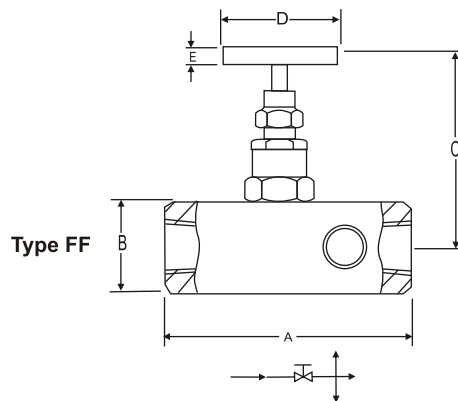
Type multiport gauge valves are ideal for use on gauge or instrument installations without further penetrations of the main piping. A gauge valve with multiple outlets and inlets with in various sizes and connections. The standard three 1/2" NPT female screwed outlet ports offer a flexibility of alternative applications. Available with a male inlet and three female outlet ports or female inlet and three female lets. Bleed valves and plugs to suit outlet ports supplied optional.

### Technical specifications

Design Pressure	6000 PSI / 400 bar
Max temp.	240°C
Stem	(Type CT) Conical tip press fitted hard chrome plated
Gland Packing	PTFE
Stem packing area	Burnished finish for smooth valve operation.
Safety Feature	Back seating for preventing stem blowout.
Feature	Multi outlet design extended valve inlet up to 4" max. for pipe insulation.

Size	Type	Length A	Width B	Height (open) Max., C	Handle D	Handle OD E
1/4"	FxF	74	25	63	40	10
	MxF	84	25	63	40	10
3/8"	FxF	74	25	63	40	10
	MxF	84	25	63	40	10
1/2"	FxF	102	32	83.6	50	12
	MxF	115	32	83.6	50	12
3/4"	FxF	102	38	86.8	50	12
	MxF	115	38	86.6	50	12

All dimensions are in mm



### Applications

- Mounting of instruments or multiple gauges
- Instrument isolation
- Instrument installation with separate vents  
And calibrate connections
- Liquid and vapor gas service

Optional : MGT 10 - High pressure valves for 10,000 psi pressure  
MGT 20 - High pressure valves for 20,000 psi pressure

## HOW TO ORDER: NV-06

Body Material	Stem Packing	Size = P x P1	Connections	Threads
C = Carbon Steel	P = PTFE	24 = 1/4" x 1/4"	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	G = Grafoil	44 = 1/2" x 1/2"	MF = Male x Female	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304		46 = 1/2" x 3/4"	SW = Socket Weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L		64 = 3/4" x 1/2"	FL = Female x extended long body end	
M4 = Monel 400		66 = 3/4" x 3/4"		
M5 = Monel 500				
H = Hastelloy C				

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- BLD8 : Bleeder 1/2" NPT (Male)
- D8 : Plug 1/2" NPT (Male)

### Example

To place an order simply refer to the codes in the table.

Valve Type : **Body Material** + **Stem Packing** + **Size** + **Connections** + **Threads** + Options  
 NV-06 + S + P + 44 + MF + N = NV-06-S-P-44-MF-N-Options

### Note -

The weld prepared types are available with a male-or-female plain end - suitable for socket weld, or male butt weld end. Always specify pipe schedule and further requirements when ordering valves for welded or Flange connections. Panel mounting option for installation in racks and panels.

### Standard Valve Materials

Valve	Body	Bonnet	Stem	Tip
Carbon Steel	CS A105	CS A105	SS 304	SS 304
Stainless Steel	SS 316	SS 316	SS 316	SS 316

**NVR** with threaded inlet and outlet port. One end of the valve is provided with a rotating nut.



**Rotating End**

**Applications**

- High pressure line shut off.
- Instrument isolation.
- Gauge isolation.
- Liquid and vapor service

**NV24** Needle valves are designed for use on application requiring complete isolating or throttling of the media. Available with and connection in size 1½" (NPT, BSP) and a wide choice in connection of female screwed, male screwed etc. Withstands pressure up to 6000 PSI / 400 bar.



**Size 1 1/2"**

**Applications**

- High pressure line shut off.
- Instrument isolation.
- Gauge isolation.
- Liquid and vapor service

**NV32** Needle valves are designed for use on application requiring complete isolating or throttling of the media. Available with and connection in size 2" (NPT, BSP) and a wide choice in connection of female screwed, male screwed etc. Withstands pressure up to 6000 PSI / 400 bar.



**Size 2"**

**Applications**

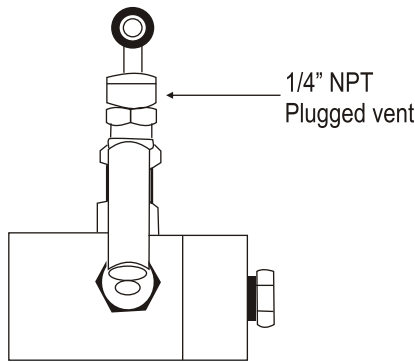
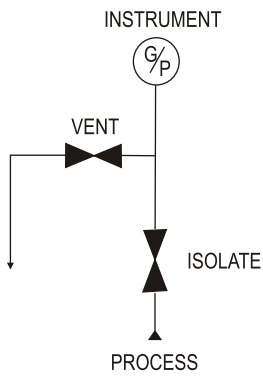
- High pressure line shut off.
- Instrument isolation.
- Gauge isolation.
- Liquid and vapor service



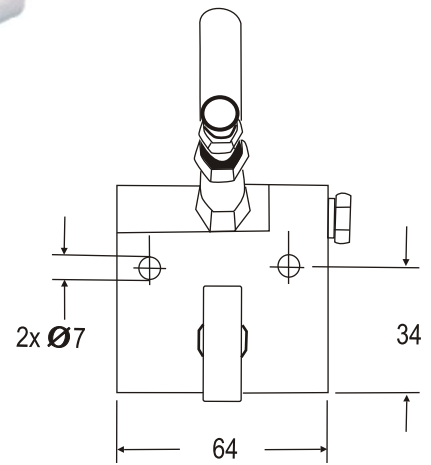
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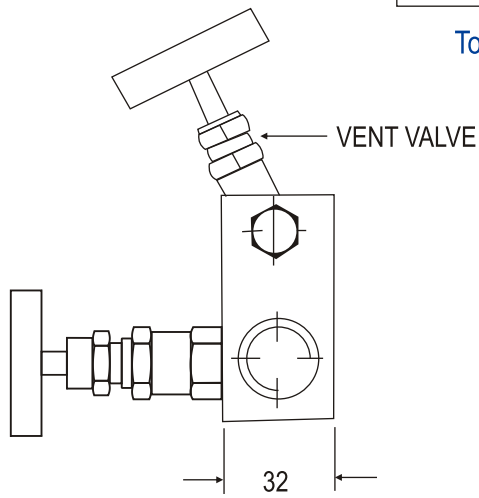
**M-01** With threaded horizontal port inlet and outlet and vent/test connection on the right hand side. The venting bonnet is positioned angular on the top and the isolating bonnet on the front.



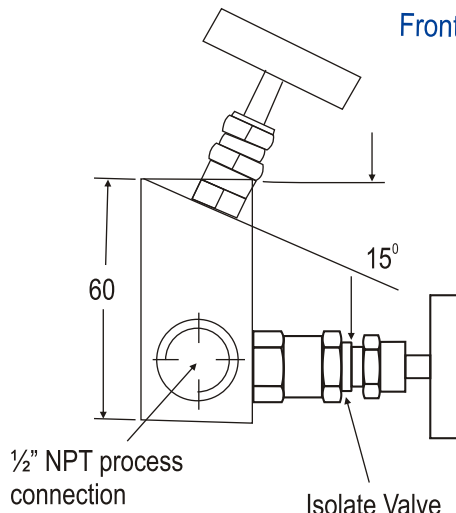
Top View



Front View



Side View



Side View

**Standard connection**

Product	Process side	Instrument side	Vent/Test
M 01	1/2" NPT female	1/2" NPT female	1/4" NPT female

### Standard version specifications

Body	: SS 316
Stem	: SS 316
Valve assembly	: SS 316
'T' bar handle	: SS 304
Maximum working pressure	: 6000 PSI / bar
Maximum working temperature	: 240°C
Packing	: PTFE
Type of stem	: Type CT; Stem with conical metal tip
Drain port	: 1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	: 2 Nos. (Not available in Series 2VT, 2VTF)
Hard Chrome plating	: Provided on stem tip and female threads of valve.

### How To Order: Valve Type-M-01

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	24 = 1/4" x 1/4"	MF = Male x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	33 = 3/8" x 3/8"	FF = Female x Female	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304			44 = 1/2" x 1/2"	SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L			66 = 3/4" x 1/2"	FM = Female x Male	
M4 = Monel 400			2F = 1/4"x Flange		
M5 = Monel 500			3F = 3/8"x Flange		
H = Hastelloy C			4F = 1/2"x Flange		

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket

### Example

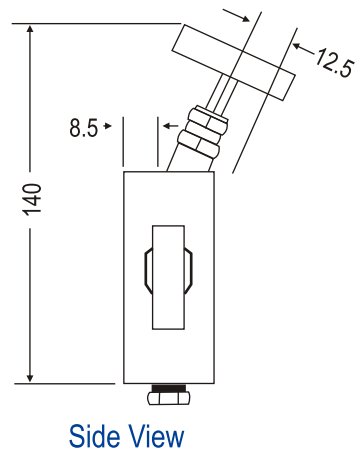
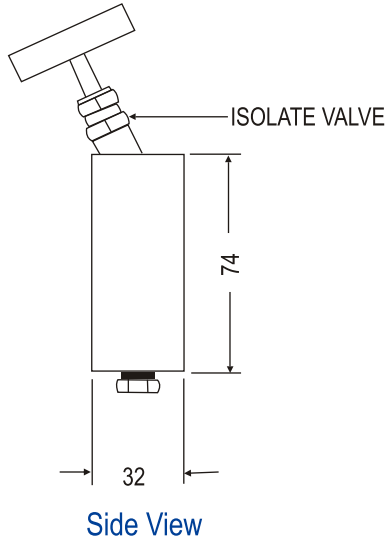
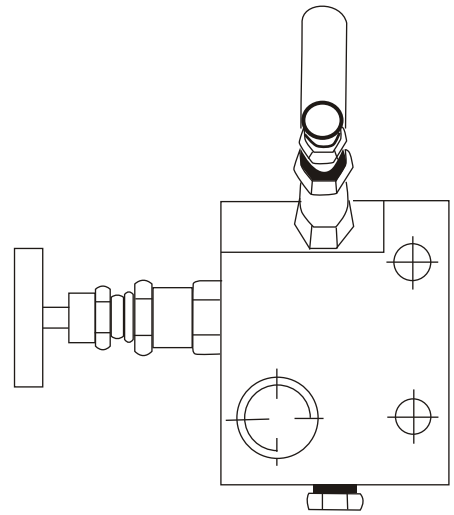
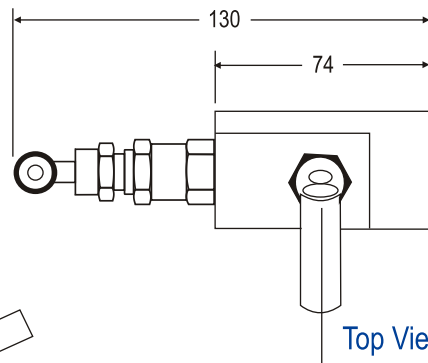
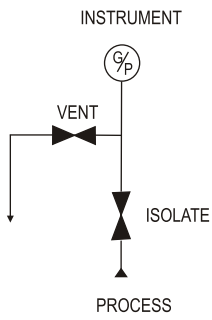
To place an order simply refer to the codes in the table.

<b>Valve Type</b>	:	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-01		S		CT		P		44		FF		N		= M-01-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-02** With threaded horizontal port inlet with a Flange outlet instrument connection. A vent/test port on base. The venting bonnet is positioned on the left hand side and the isolating bonnet angular on the top.



**Standard connection**

Product	Process Side	Instrument Side	Vent/Test
M 02	1/2" NPT female	Flanged	1/4" NPT female

## Standard version specifications

Body	: SS 316
Stem	: SS 316
Valve assembly	: SS 316
T' bar handle	: SS 304
Maximum working pressure	: 6000 PSI / 400 bar
Maximum working temperature	: 240°C
Packing	: PTFE
Type of stem	: Type CT; Stem with conical metal tip
Drain port	: 1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	: 2 Nos.
Hard Chrome plating	: Provided on stem tip.

## How To Order: Valve Type-M-02

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	24 = 1/4" x 1/4"	MF = Male x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	33 = 3/8" x 3/8"	FF = Female x Female	P = BSPP
S4 = SS 304			44 = 1/2" x 1/2"	SW = Socket weld	(BS 2779, ISO 228/1)
SL = SS 316L			66 = 3/4" x 1/2"	FM = Female x Male	B = BSPT (BS 21, ISO 7/1)
M4 = Monel 400			2F = 1/4"x Flange		
M5 = Monel 500			3F = 3/8"x Flange		
H = Hastelloy C			4F = 1/2"x Flange		

## Options -

IE	: Handle circular.
TF	: Compliance to NACE standard MR-0175.
SG	: For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
GH	: Material test certificate
GO	: Hydro test certificate
DS	: Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
MB	: Mounting Bracket
MBC	: Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
MBS	: Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
PRF	: PTFE Ring For Flange Seal
GRF	: Grafoil Ring For Flange Seal

## Example

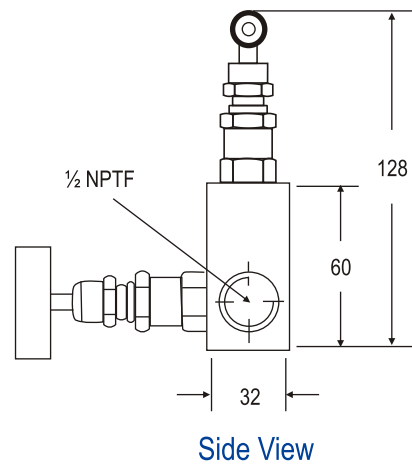
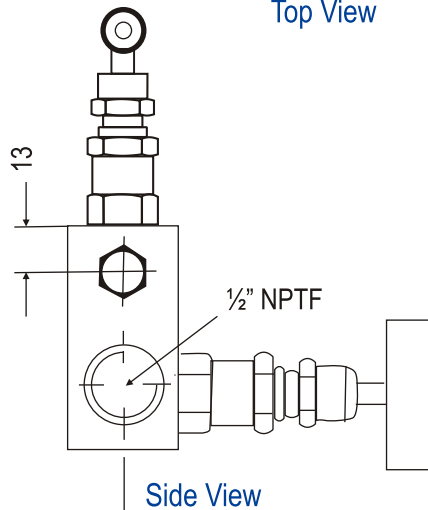
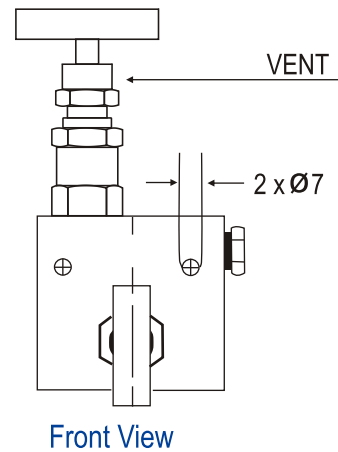
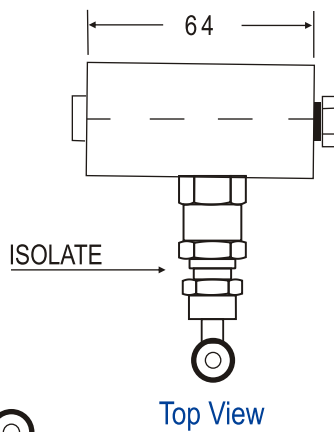
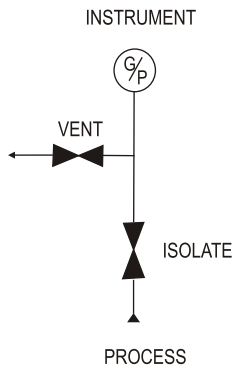
To place an order simply refer to the codes in the table.

Valve Type	:	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-02		S		CT		P		44		FF		N		= M-02-S-CT-P-44-FF-N-Options

## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-03** With threaded horizontal port inlet, outlet and vent/test connection on the left hand side. The venting bonnet is positioned on the top and the isolating bonnet on the front.



**Standard connection**

Product	Process side	Instrument side	Vent/Test
M 03	1/2" NPT female	1/2" NPT female	1/4" NPT female

### Standard version specifications

Body	: SS 316
Stem	: SS 316
Valve assembly	: SS 316
'T' bar handle	: SS 304
Maximum working pressure	: 6000 PSI / bar
Maximum working temperature	: 240°C
Packing	: PTFE
Type of stem	: Type CT; Stem with conical metal tip
Drain port	: 1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	: 2 Nos. (Not available in Series 2VT, 2VTF)
Hard Chrome plating	: Provided on stem tip and female threads of valve.

### How To Order: Valve Type-M-03

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	24 = 1/4" x 1/4"	MF = Male x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	33 = 3/8" x 3/8"	FF = Female x Female	P = BSPP
S4 = SS 304			44 = 1/2" x 1/2"	SW = Socket weld	(BS 2779, ISO 228/1)
SL = SS 316L			66 = 3/4" x 1/2"	FM = Female x Male	B = BSPT (BS 21, ISO 7/1)
M4 = Monel 400			2F = 1/4"x Flange		
M5 = Monel 500			3F = 3/8"x Flange		
H = Hastelloy C			4F = 1/2"x Flange		

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket

### Example

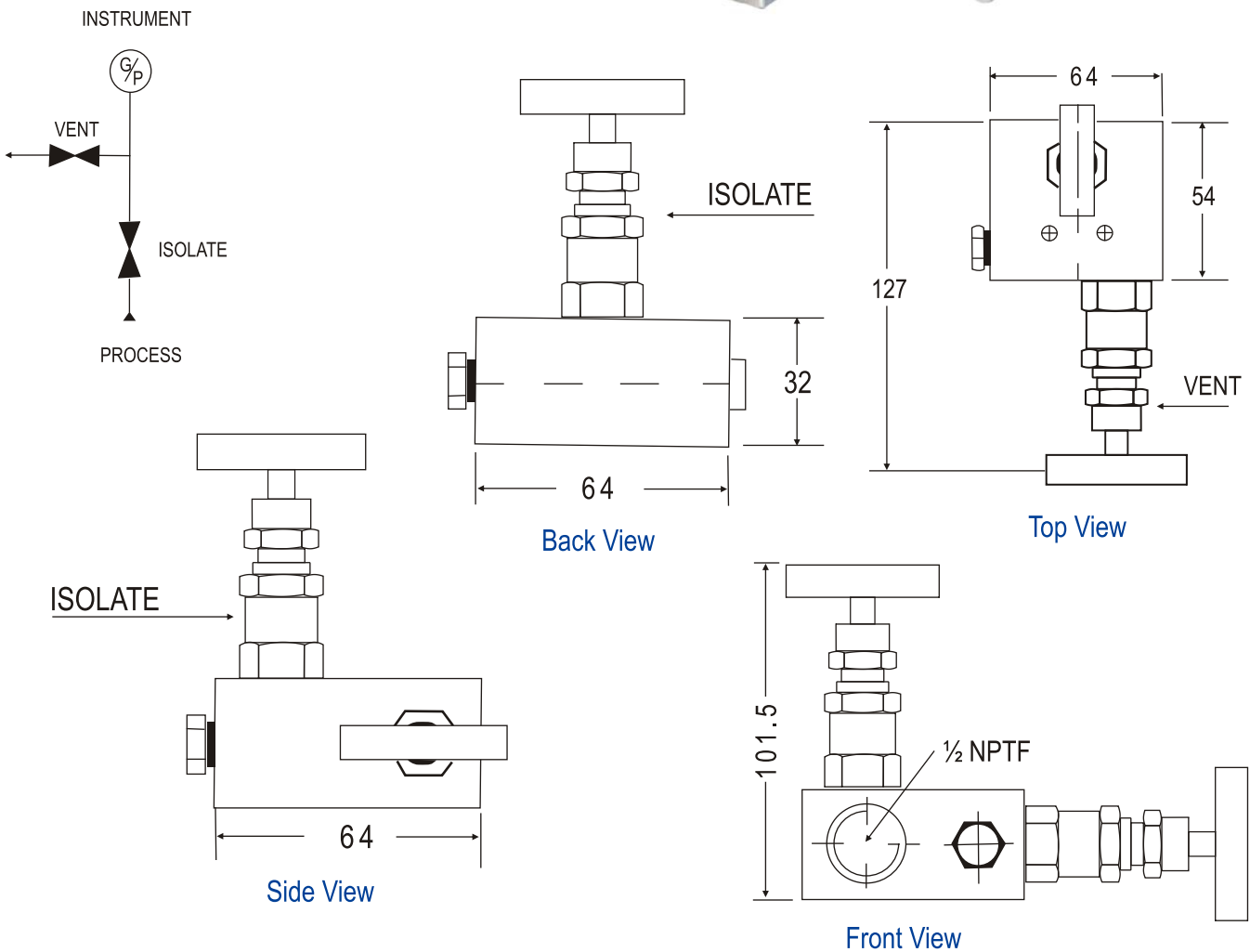
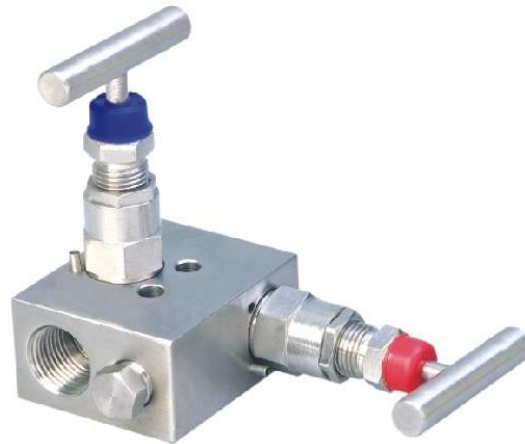
To place an order simply refer to the codes in the table.

<b>Valve Type</b>	:	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-03		S		CT		P		44		FF		N		= M-03-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-04** With threaded horizontal port inlet, outlet and vent/test connection on the left hand side. The venting bonnet is positioned on the top and the isolating bonnet on the front.



**Standard connection**

Product	Process side	Instrument side	Vent/Test
M 04	1/2" NPT female	1/2" NPT female	1/4" NPT female



### Standard version specifications

Body	: SS 316
Stem	: SS 316
Valve assembly	: SS 316
'T' bar handle	: SS 304
Maximum working pressure	: 6000 PSI / bar
Maximum working temperature	: 240°C
Packing	: PTFE
Type of stem	: Type CT; Stem with conical metal tip
Drain port	: 1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	: 2 Nos. (Not available in Series 2VT, 2VTF)
Hard Chrome plating	: Provided on stem tip and female threads of valve.

### How To Order: Valve Type-M-04

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	24 = 1/4" x 1/4"	MF = Male x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	33 = 3/8" x 3/8"	FF = Female x Female	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304			44 = 1/2" x 1/2"	SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L			66 = 3/4" x 1/2"	FM = Female x Male	
M4 = Monel 400			2F = 1/4"x Flange		
M5 = Monel 500			3F = 3/8"x Flange		
H = Hastelloy C			4F = 1/2"x Flange		

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket

### Example

To place an order simply refer to the codes in the table.

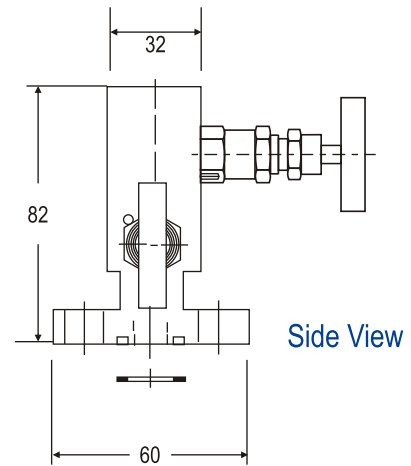
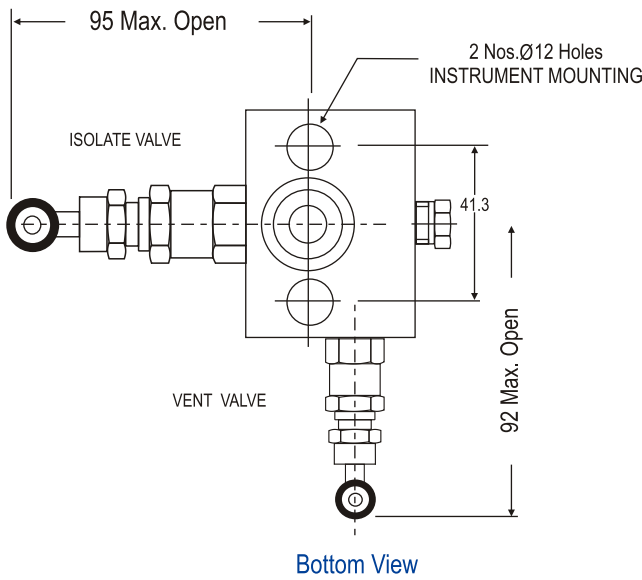
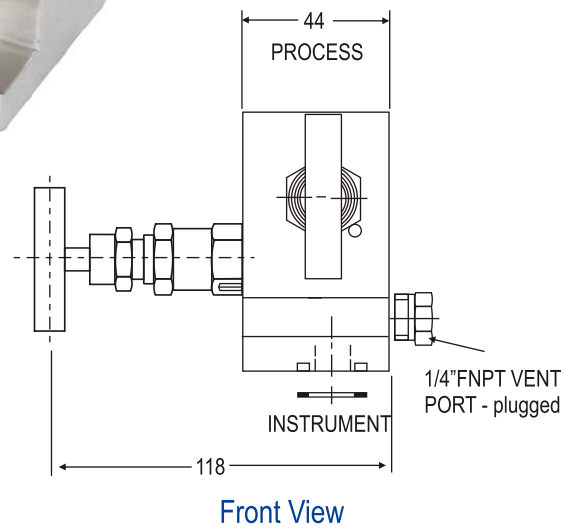
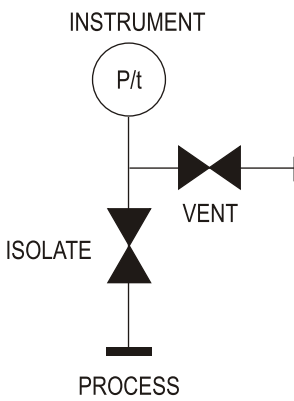
<b>Valve Type</b>	:	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-04		S		CT		P		44		FF		N		= M-04-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.  
Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-05

With threaded horizontal port inlet on the front side and Flange outlet on the back side, test connection on the body. The isolating bonnet are positioned on the left and right hand side and the Equalizing Bonnet is positioned on the top.



### Standard connection

Product	Process side	Instrument side	Vent/Test
M 05	1/2" NPT female	Flange	1/4" NPT female

## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	Provided on stem tip

## How To Order: Valve Type-M-05

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	2F = 1/4"x Flange	FD = Female x Flange	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	3F = 3/8"x Flange		P = BSPP
S4 = SS 304			4F = 1/2"x Flange (std)		(BS 2779, ISO 228/1)
SL = SS 316L					B = BSPT (BS 21, ISO 7/1)
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal

### Example

To place an order simply refer to the codes in the table.

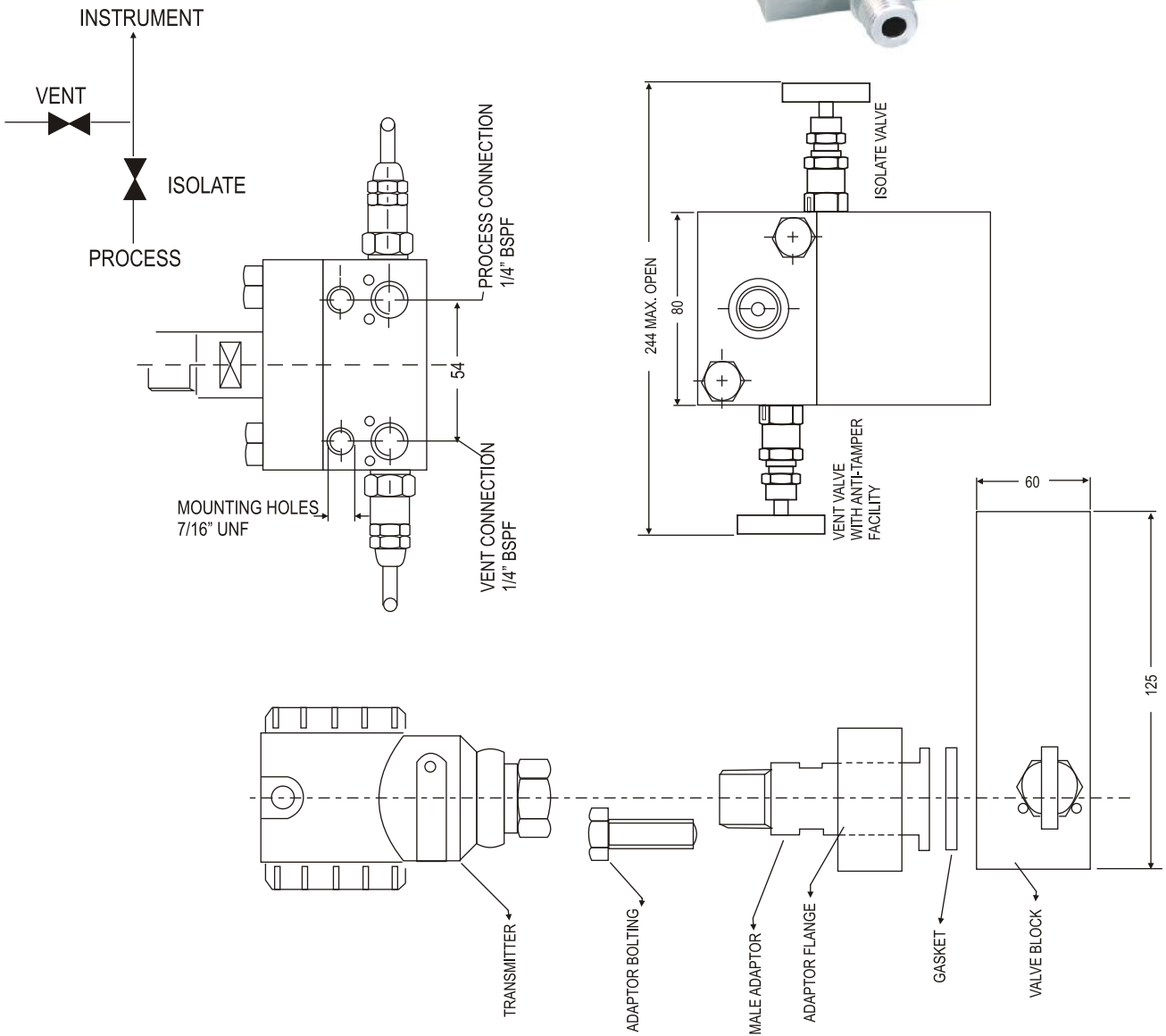
<b>Valve Type</b>	:	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-05		S		CT		P		4F		FD		N		= M-05-S-CT-P-4F-FD-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.  
Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-06

**Special** two valve manifold designed to accommodate threaded direct transmitters and pressure instruments with inlet at front and outlet on top, vent/test connection at front; venting bonnet at left side and isolating bonnet at right.



## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	Provided on stem tip

## How To Order: Valve Type-M-06

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	2F = 1/4"x Flange	FD = Female x Flange	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	3F = 3/8"x Flange		P = BSPP
S4 = SS 304			4F = 1/2"x Flange (std)		(BS 2779, ISO 228/1)
SL = SS 316L					B = BSPT (BS 21, ISO 7/1)
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal

## Example

To place an order simply refer to the codes in the table.

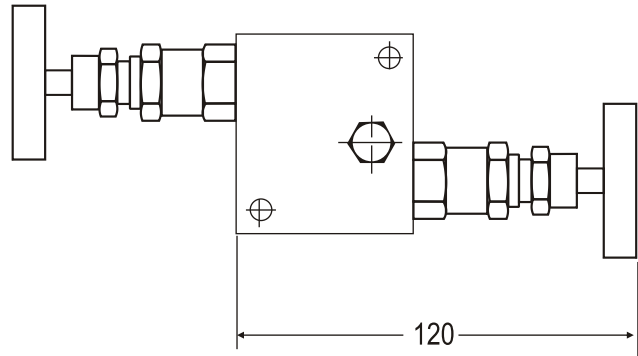
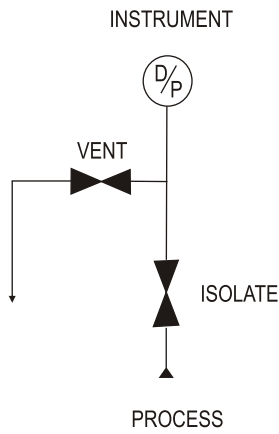
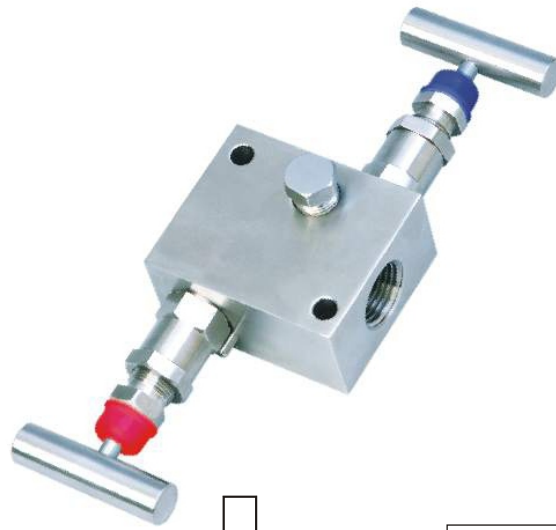
**Valve Type** : **Body Material** + **Stem Type** + **Stem Packing** + **Size** + **Connections** + **Threads** + Options  
 M-06 + S + CT + P + 4F + FD + N = M-06-S-CT-P-4F-FD-N-Options

## NOTE:

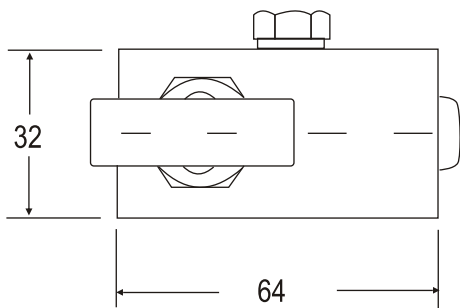
- The weld prepared types are available with female plain end - suitable for socket weld.  
Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-07

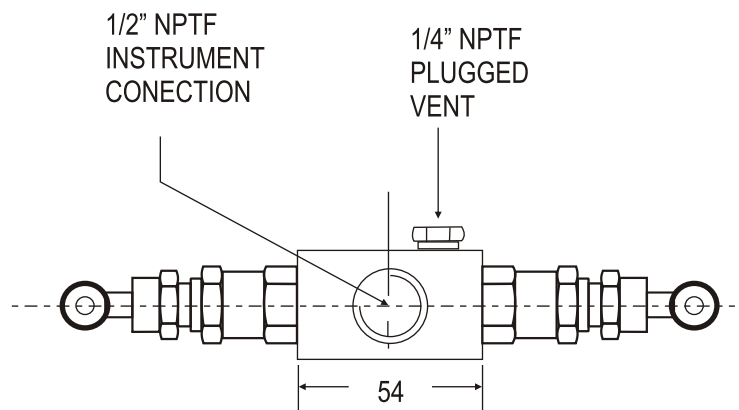
With threaded vertical port inlet and outlet. The vent/test connection is positioned on the front side. The drain bonnet is positioned on the right hand side and the isolating bonnet on the left hand side.



Top View



Side View



Front View

### Standard connection

Product	Process side	Instrument side	Vent/Test
M 07	1/2" NPT female	1/2" NPT female	1/4" NPT female

Remote or direct mounting by means of threaded connections.

### Standard version specifications

Body	: SS 316
Stem	: SS 316
Valve assembly	: SS 316
'T' bar handle	: SS 304
Maximum working pressure	: 6000 PSI / bar
Maximum working temperature	: 240°C
Packing	: PTFE
Type of stem	: Type CT; Stem with conical metal tip
Drain port	: 1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	: 2 Nos. (Not available in Series 2VT, 2VTF)
Hard Chrome plating	: Provided on stem tip and female threads of valve.

### How To Order: Valve Type-M-07

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	24 = 1/4" x 1/4"	MF = Male x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	33 = 3/8" x 3/8"	FF = Female x Female	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304			44 = 1/2" x 1/2"	SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L			66 = 3/4" x 1/2"	FM = Female x Male	
M4 = Monel 400			2F = 1/4"x Flange		
M5 = Monel 500			3F = 3/8"x Flange		
H = Hastelloy C			4F = 1/2"x Flange		

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket

### Example

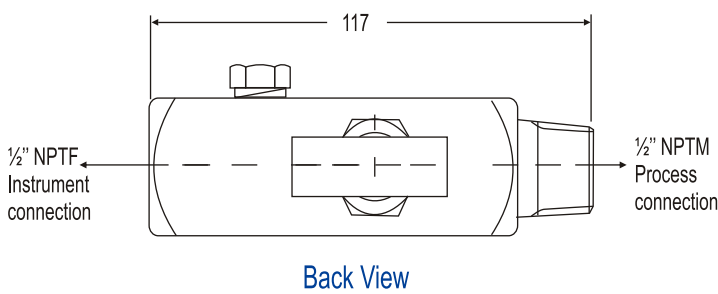
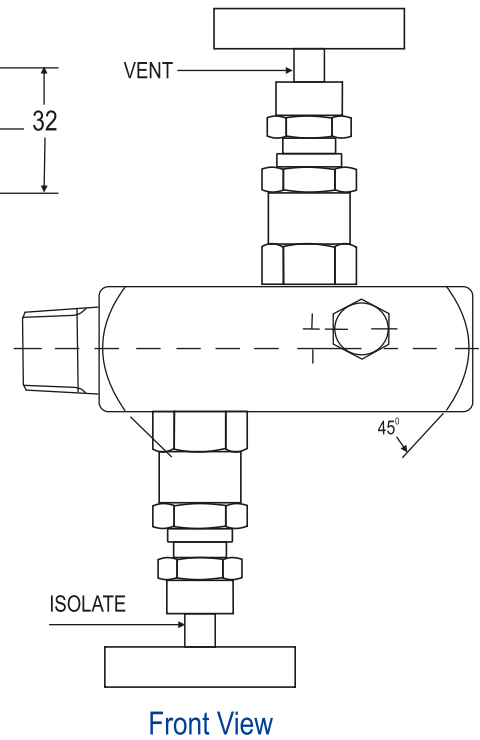
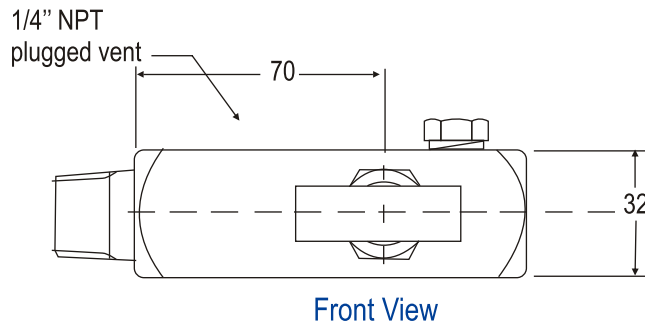
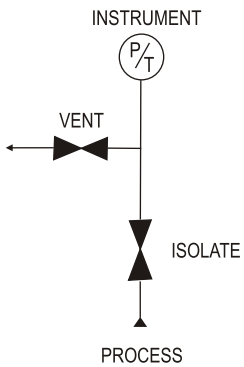
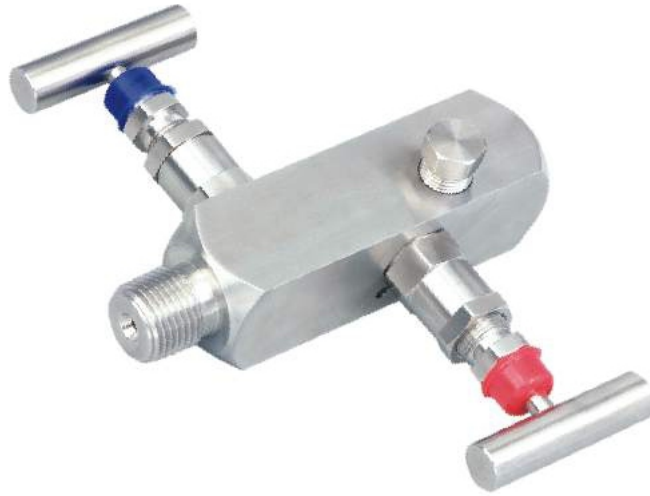
To place an order simply refer to the codes in the table.

<b>Valve Type</b>	:	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-07		S		CT		P		44		FF		N		= M-07-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-08** With threaded vertical port inlet and female outlet. The vent/test connection is positioned on the front side. The venting bonnet is positioned on the right hand side and the isolating bonnet on left hand side.



**Standard connection**

Product	Process side	Instrument side	Vent/Test
M 08	1/2" NPT male	1/2" NPT female	1/4" NPT female



### Standard version specifications

Body	: SS 316
Stem	: SS 316
Valve assembly	: SS 316
'T' bar handle	: SS 304
Maximum working pressure	: 6000 PSI / bar
Maximum working temperature	: 240°C
Packing	: PTFE
Type of stem	: Type CT; Stem with conical metal tip
Drain port	: 1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	: 2 Nos. (Not available in Series 2VT, 2VTF)
Hard Chrome plating	: Provided on stem tip and female threads of valve.

### How To Order: Valve Type-M-08

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	24 = 1/4" x 1/4"	MF = Male x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	33 = 3/8" x 3/8"	FF = Female x Female	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304			44 = 1/2" x 1/2"	SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L			66 = 3/4" x 1/2"	FM = Female x Male	
M4 = Monel 400			2F = 1/4" x Flange	MM = Male x Male	
M5 = Monel 500			3F = 3/8" x Flange		
H = Hastelloy C			4F = 1/2" x Flange		

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket

### Example

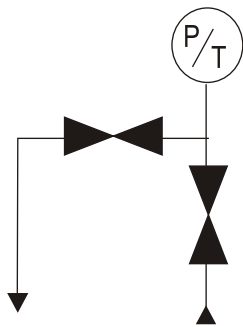
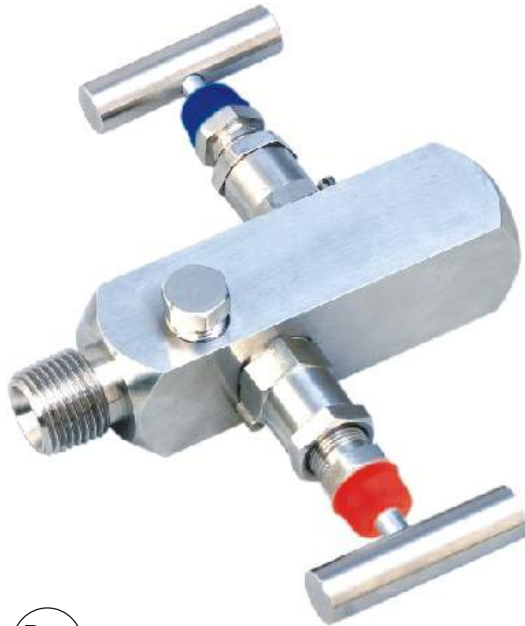
To place an order simply refer to the codes in the table.

<b>Valve Type</b>	:	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-08		S		CT		P		44		FF		N		= M-08-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-09** With the vent is positioned near the male instrument connection side.



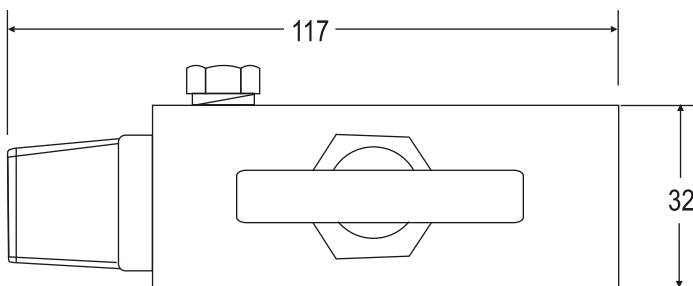
1/2" NPTM INSTRUMENT CONNECTION

1/2" NPTF PROCESS CONNECTION

1/4" NPTF VENT

167 MAX OPEN

Top View



Front View

**Standard connection**

Product	Process side	Instrument side	Vent/Test
M 09	1/2"NPT Female	1/2"NPT Male	1/4" NPT Female

### Standard version specifications

Body	: SS 316
Stem	: SS 316
Valve assembly	: SS 316
'T' bar handle	: SS 304
Maximum working pressure	: 6000 PSI / bar
Maximum working temperature	: 240°C
Packing	: PTFE
Type of stem	: Type CT; Stem with conical metal tip
Drain port	: 1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	: 2 Nos. (Not available in Series 2VT, 2VTF)
Hard Chrome plating	: Provided on stem tip and female threads of valve.

### How To Order: Valve Type-M-09

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	24 = 1/4" x 1/4"	MF = Male x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	33 = 3/8" x 3/8"	FF = Female x Female	P = BSPP
S4 = SS 304			44 = 1/2" x 1/2"	SW = Socket weld	(BS 2779, ISO 228/1)
SL = SS 316L			66 = 3/4" x 1/2"	FM = Female x Male	B = BSPT (BS 21, ISO 7/1)
M4 = Monel 400			2F = 1/4"x Flange		
M5 = Monel 500			3F = 3/8"x Flange		
H = Hastelloy C			4F = 1/2"x Flange		

### Options -

- IE Handle circular.
- TF Compliance to NACE standard MR-0175.
- SG For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH Material test certificate
- GO Hydro test certificate
- MBC Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- DS Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB Mounting Bracket

### Example

To place an order simply refer to the codes in the table.

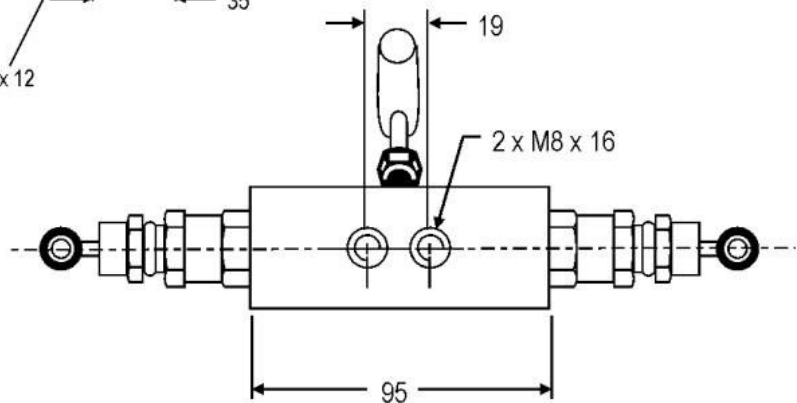
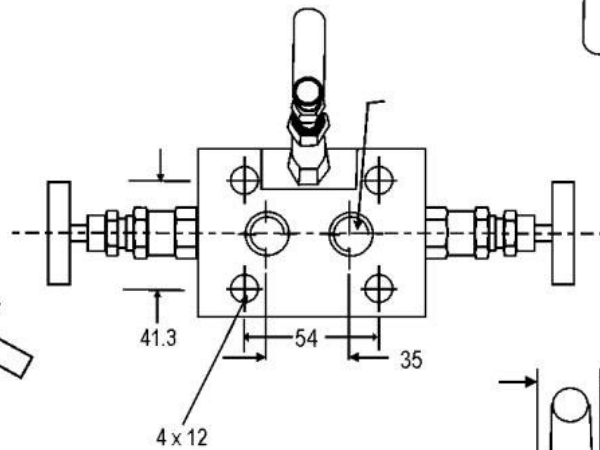
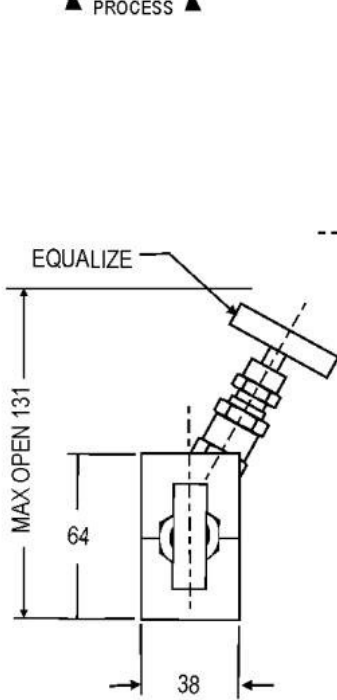
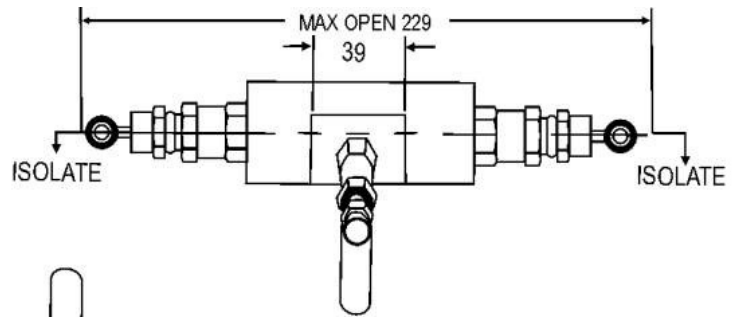
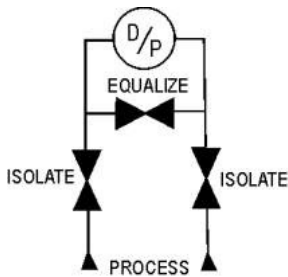
<b>Valve Type</b>	:	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-09		S		CT		P		44		FF		N		= M-09-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-10

With two threaded horizontal port inlets on the front side and two Flange outlets on the back side. The two isolating bonnets are positioned on the left and right hand side, the equalizing bonnet is of angular design positioned on the top for easy operation.



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M 10	1/2" NPT female	Flange
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## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [not available in Series 3VA]
Hard Chrome plating	Provided on stem tip.

## How To Order: Valve Type-M-10

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F = 1/2" x Flange	FD = Female x Flange(54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	2F = 1/4" x Flange	FR = Female X Female Rotating	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304					
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C				SW = Socket Weld	B = BSPT (BS 21, ISO 7/1)

## Options -

- IE Handle circular.
- TF Compliance to NACE standard MR-0175.
- SG For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH Material test certificate
- GO Hydro test certificate
- DS Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB Mounting Bracket
- MBC Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF PTFE Ring For Flange Seal
- GRF Grafoil Ring For Flange Seal

## Example

To place an order simply refer to the codes in the table.

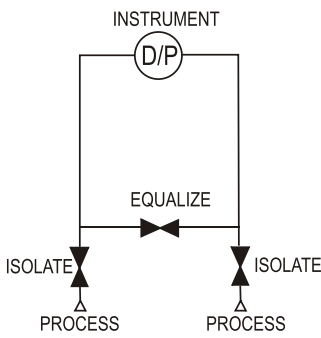
<b>Valve Type</b>	:	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-10		S		CT		P		4F		FD		N		= M-10-S-CT-P-4F-FD-N-Options

## NOTE:

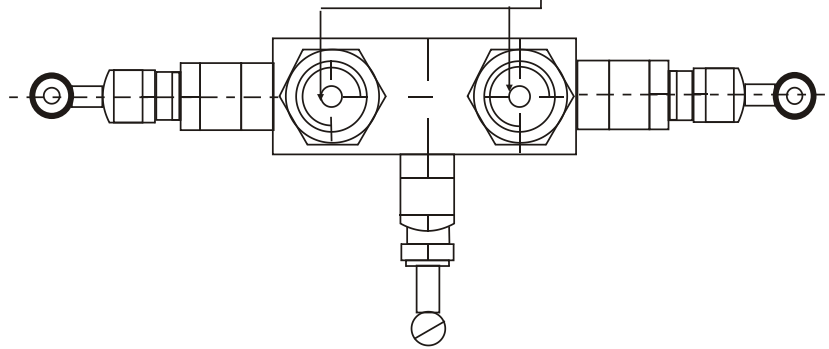
- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-11

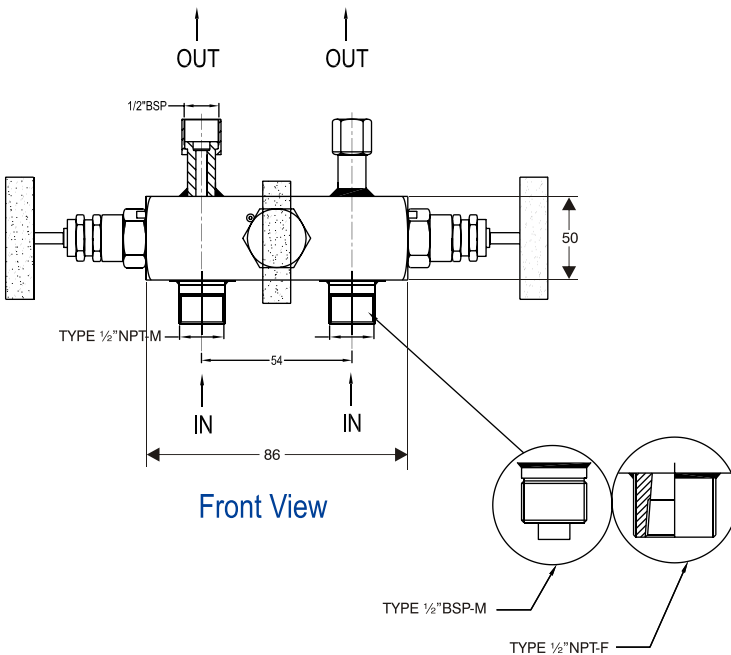
Three valve manifold or differential pressure gauges. Two horizontal inlets NPT male at bottom side. Two outlets with rotating for nuts 1/2" BSP F on top side. Equalizing bonnet at front, isolating bonnets at left and right hand side.



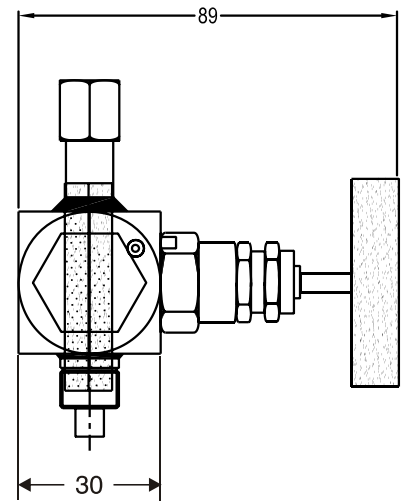
2 x 1/2" BSP INSTRUMENT CONNECTION (ROTATABLE NUTS)



Top View



Front View



Side View

### Standard connection

Product	Process side	Instrument side
M 11	1/2" NPT male	1/2" BSP Rotatable nuts

## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar [not available in Series 3VMN]
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [1/8" NPT (F) available in Series 3VMN]
Hard Chrome plating	Provided on stem tip
Bracket mounting holes	2 Nos. (Not available in Series 3VM )

## How To Order: Valve Type-M-11

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	24 = 1/4" x 1/4"	FF = Female x Female (Std)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	44 = 1/2" x 1/2" (std)	SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				MR = Male x Female Rotating	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L				FR = Female x Female	
M4 = Monel 400				Rotating	
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)

## Example

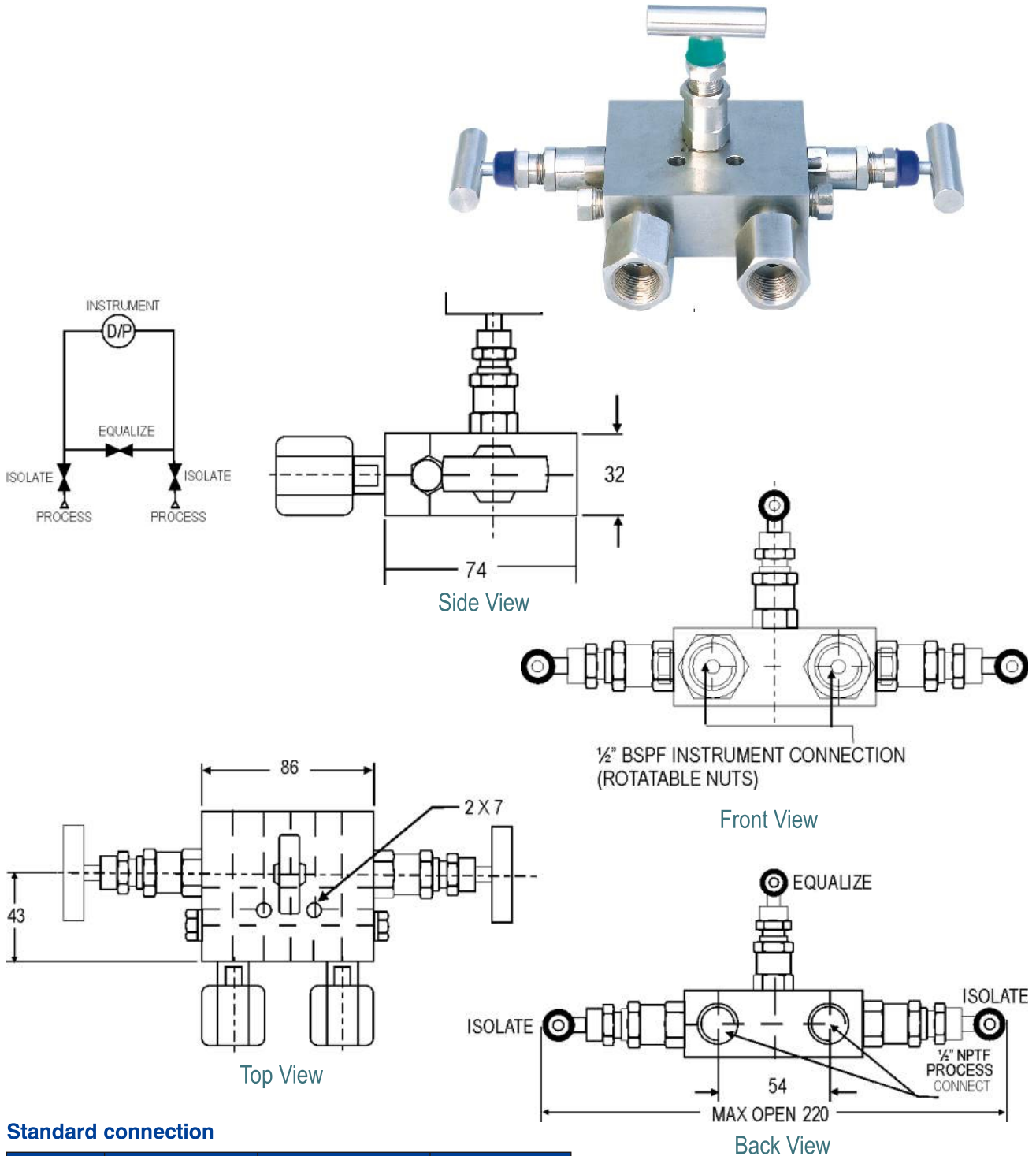
To place an order simply refer to the codes in the table.

Valve Type	:	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-11		C	+	CT	+	P	+	44	+	FF	+	N	+	= M-11-C-CT-P-44-FF-N-Options

## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-12** Three valve manifold or differential pressure gauges. Two horizontal inlets NPT female at bottom side. Two outlets with rotating for nuts on top side and vent/test connection on top. Equalizing bonnet at front, isolating bonnets at left and right hand side.



**Standard connection**

Product	Process side	Instrument side	Vent/Test
M 12	1/2"NPT Female	1/2"BSP Rotatable nuts	1/4" NPT Female



## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar [not available in Series 3VMN]
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [1/8" NPT (F) available in Series 3VMN]
Hard Chrome plating	Provided on stem tip
Bracket mounting holes	2 Nos. (Not available in Series 3VM )

## How To Order: Valve Type-M-12

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	24 = 1/4" x 1/4"	FF = Female x Female (Std)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	44 = 1/2" x 1/2" (std)	SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				MR = Male x Female Rotating	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L				FR = Female x Female Rotating	
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)

## Example

To place an order simply refer to the codes in the table.

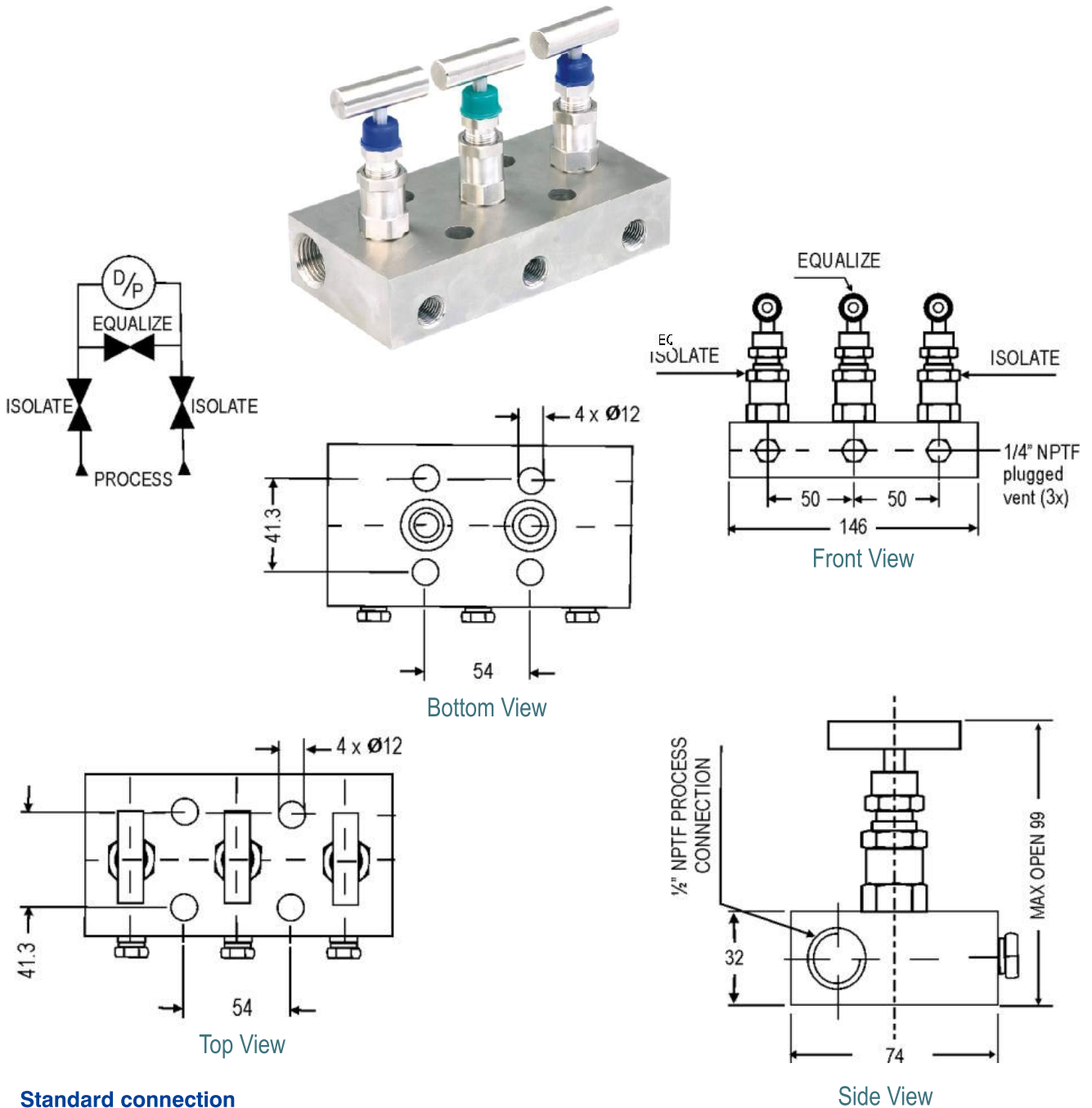
Valve Type	:	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-12		C	+	CT	+	P	+	44	+	FF	+	N	+	= M-12-C-CT-P-44-FF-N-Options

## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-13

With two threaded horizontal port inlets positioned on the left and right hand side and two Flange outlets on the back side. The two isolating bonnets and the equalizing bonnet are positioned on the front. Standard with three downstream test connections.



### Standard connection

Product	Process side	Instrument side	Vent/Test
M 13	1/2" NPT female	Flange	1/4" NPT female

### Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [not available in Series 3VA]
Hard Chrome plating	Provided on stem tip.

### How To Order: Valve Type-M-13

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F = 1/2" x Flange	FD = Female x Flange(54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	2F = 1/4" x Flange	FR = Female X Female Rotating SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304					B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal

### Example

To place an order simply refer to the codes in the table.

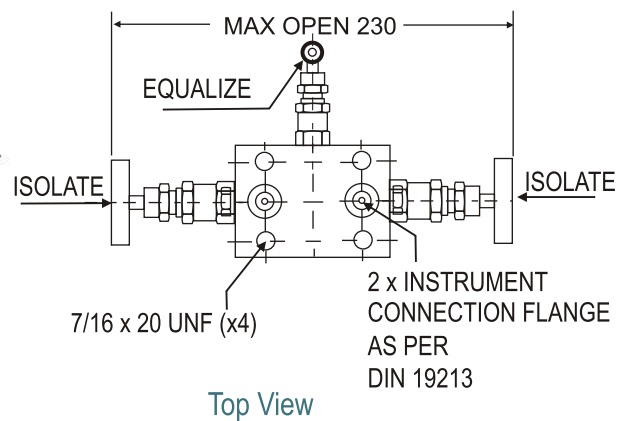
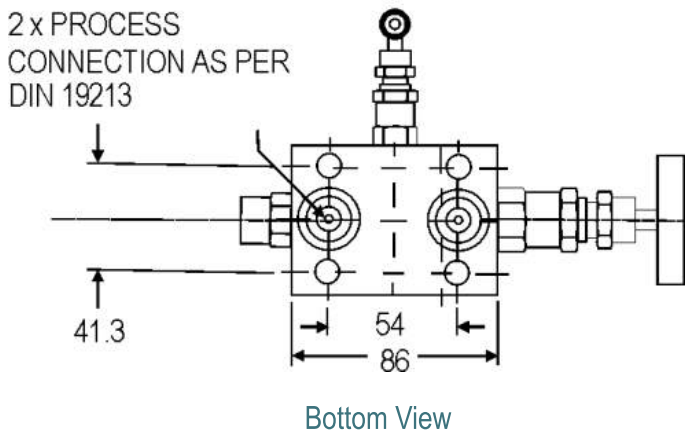
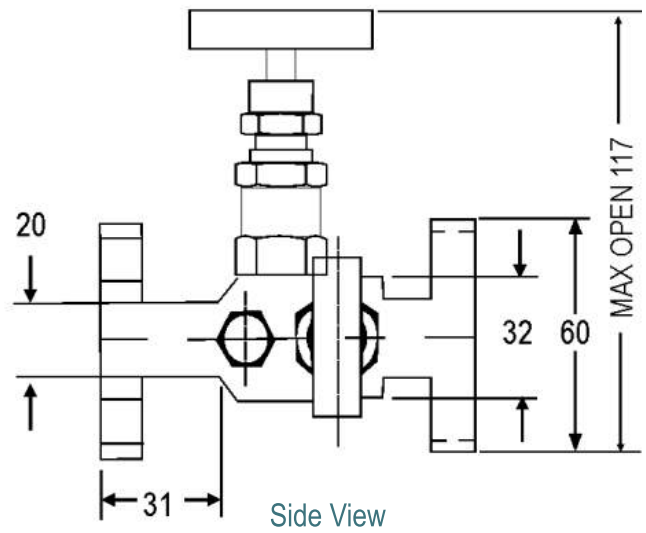
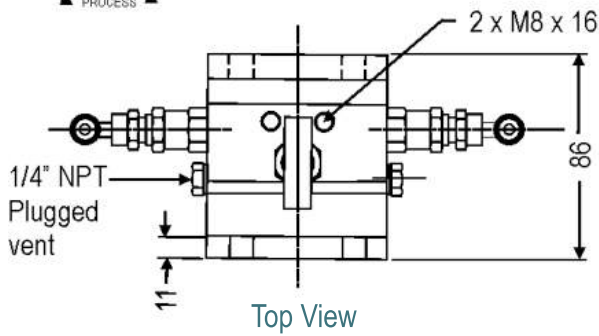
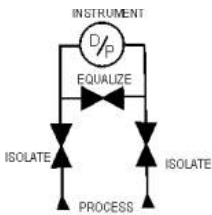
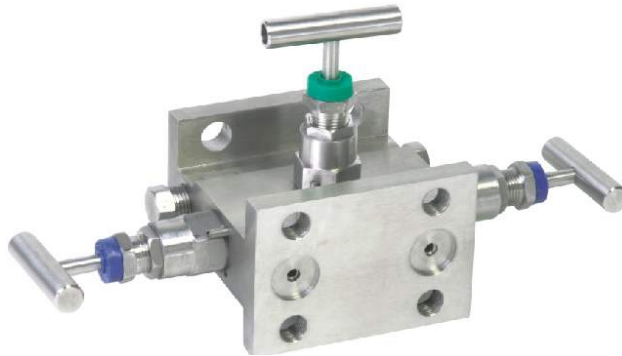
Valve Type : 
 Body Material + 
 Stem Type + 
 Stem Packing + 
 Size + 
 Connections + 
 Threads + Options  
 M-13 + S + CT + P + 4F + FD + N = M-13-S-CT-P-4F-FD-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-14

With Flange horizontal port inlets on the front side and Flange outlets on the back side. Two test connections positioned on the left and right hand side of the body. The isolating bonnets are positioned on the left and right hand side and the equalizing bonnet is positioned on the top.



### Standard connection

Product	Process side	Instrument side	Vent/Test
M 14	Flange	Flange	1/4" NPT female

## Standard version specifications

Body	: SS 316
Stem	: SS 316
Valve assembly	: SS 316
'T' bar handle	: SS 304
Maximum working pressure	: 6000 PSI / 400 bar
Maximum working temperature	: 240°C
Packing	: PTFE
Type of stem	: Type CT; Stem with conical metal tip
Drain port	: 1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	: Provided on stem tip.
Bracket mounting holes	: 4 Nos. With 12 mm ID.

## How To Order: Valve Type-M-14

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F = 1/2" x Flange	FD = Female x Flange (54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	2F = 1/4" x Flange	SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				DD = Flange x Flange (54mm)	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)D4 : 1/4" NPT (M) Drain Plug
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal
- BLD4 : Bleeder 1/4" NPT (Male)

## Example

To place an order simply refer to the codes in the table.

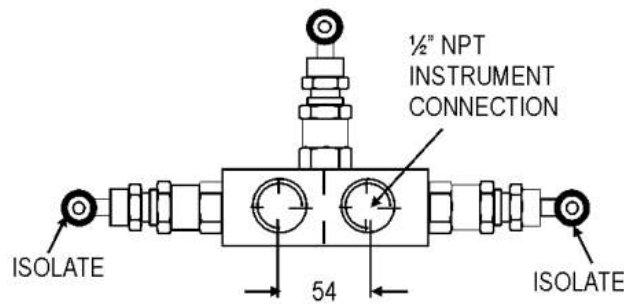
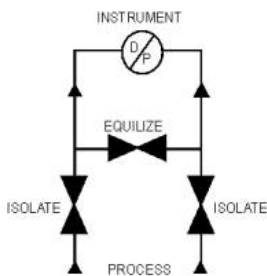
**Valve Type** + **Body Material** + **Stem Type** + **Stem Packing** + **Size** + **Connections** + **Threads** + Options  
 M-14 + S + CT + P + 4F + FD + N = M-14-S-CT-P-4F-FD-N-Options

## NOTE:

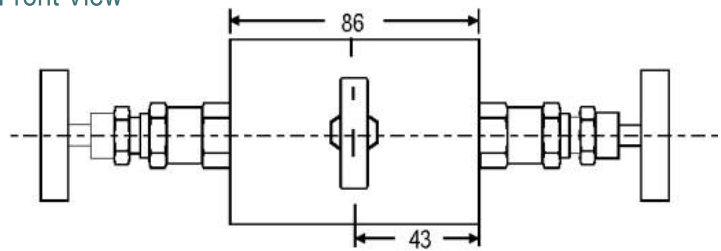
- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-15

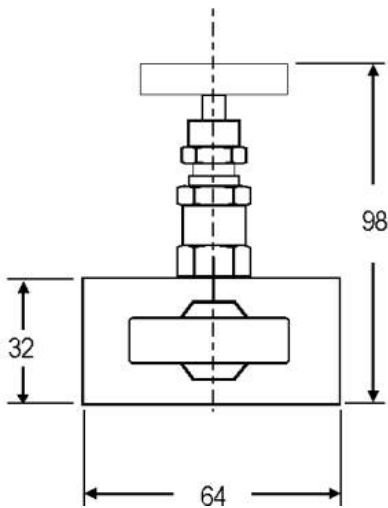
With threaded vertical port inlets and outlets. The isolating bonnets are positioned on the left and right hand side and the equalizing bonnet is positioned on the front. This manifold is specially designed as miniature valve to be remote mounted.



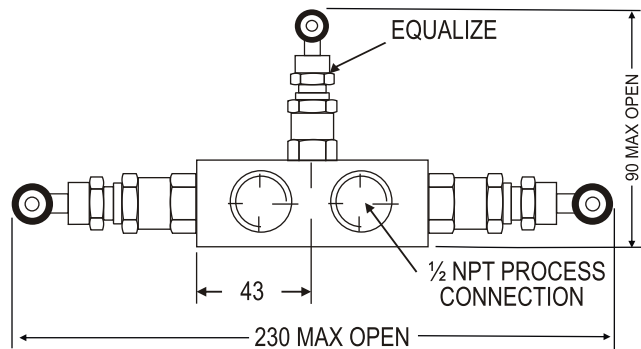
Front View



Top View



Side View



Back View

### Standard connection

Product	Process side	Instrument side
M 15	1/2" NPT female	1/2" NPT female

## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar [not available in Series 3VMN]
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [1/8" NPT (F) available in Series 3VMN]
Hard Chrome plating	Provided on stem tip
Bracket mounting holes	2 Nos. (Not available in Series 3VM )

## How To Order: Valve Type-M-15

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	24 = 1/4" x 1/4"	FF = Female x Female (Std)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	44 = 1/2" x 1/2" (std)	SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				MR = Male x Female Rotating	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L				FR = Female x Female	
M4 = Monel 400				Rotating	
M5 = Monel 500					
H = Hastelloy C					

## Options -

IE	Handle circular.
TF	Compliance to NACE standard MR-0175.
SG	For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
GH	Material test certificate
GO	Hydro test certificate
DS	Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
MB	Mounting Bracket
MBC	Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
MBS	Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)

## Example

To place an order simply refer to the codes in the table.

Valve Type	:	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-15		C		CT		P		44		FF		N		= M-15-C-CT-P-44-FF-N-Options

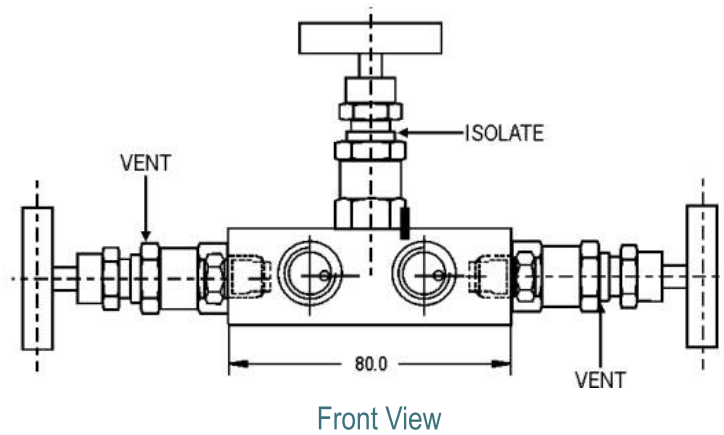
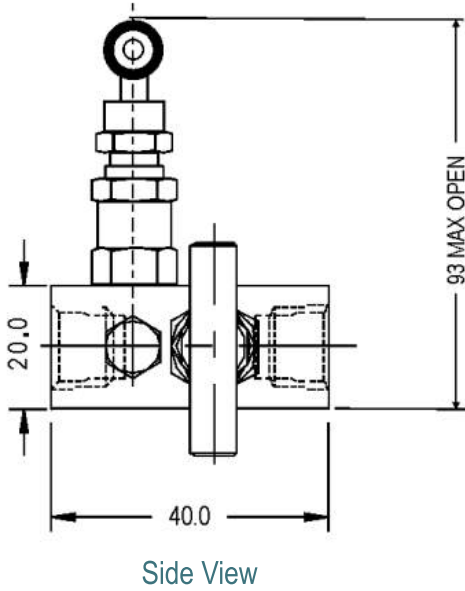
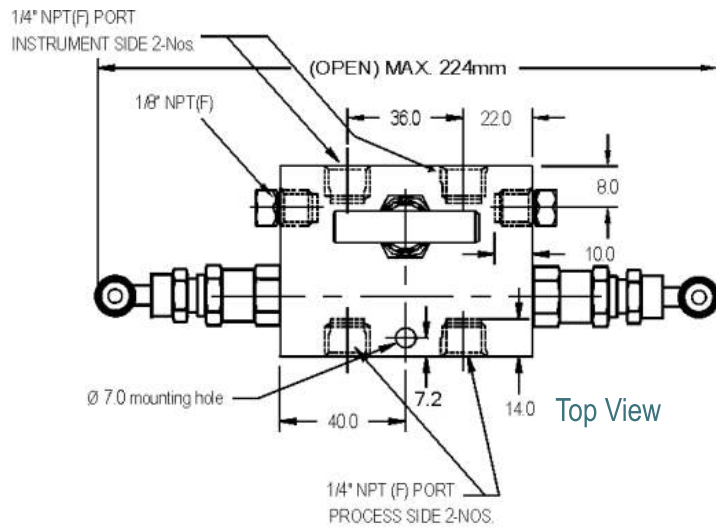
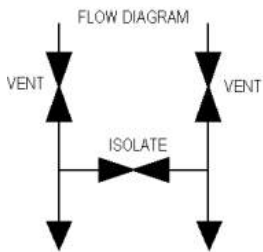
## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-16

Three valve **Miniature** manifold with compact design having threaded port for inlet and out let and finds application for isolating and venting the process media . This is used where space is a constraint. The isolating bonnets positioned on top and venting bonnets are positioned on right and left hand side.

Connection : 1/4" (F) For Instrument and process along with 1/8" (F) Drain  
Maximum Working Pressure 3000 PSI



### Standard connection

Product	Process side	Instrument side	Vent/Test
M 16	1/4"NPT Female	1/4"NPT Female	1/8" NPT Female



## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar [not available in Series 3VMN]
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [1/8" NPT (F) available in Series 3VMN]
Hard Chrome plating	Provided on stem tip
Bracket mounting holes	2 Nos. (Not available in Series 3VM )

## How To Order: Valve Type-M-16

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	24 = 1/4" x 1/4"	FF = Female x Female (Std)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	44 = 1/2" x 1/2" (std)	SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				MR = Male x Female Rotating	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L				FR = Female x Female Rotating	
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)

## Example

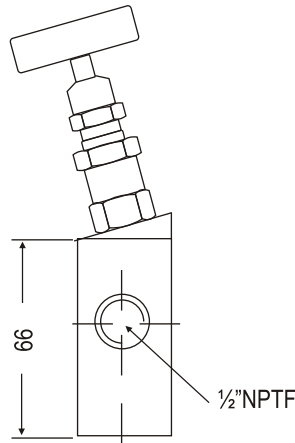
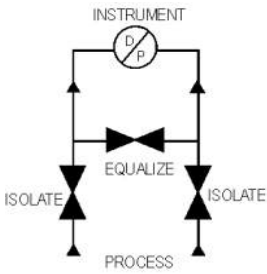
To place an order simply refer to the codes in the table.

Valve Type	:	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-16		C	+	CT	+	P	+	44	+	FF	+	N	+	= M-16-C-CT-P-44-FF-N-Options

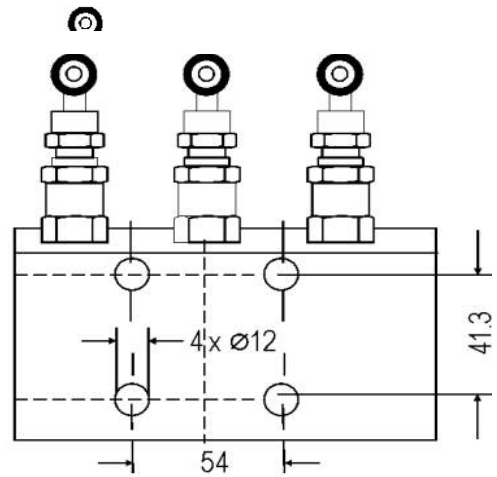
## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

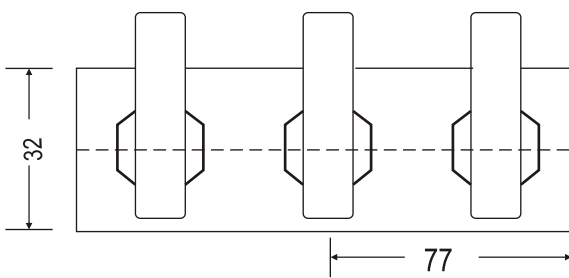
**M-17** With threaded horizontal port inlets on the left and right hand side and Flange outlets on the back side. The isolating bonnets and the equalizing bonnets are positioned angular on the top of the body.



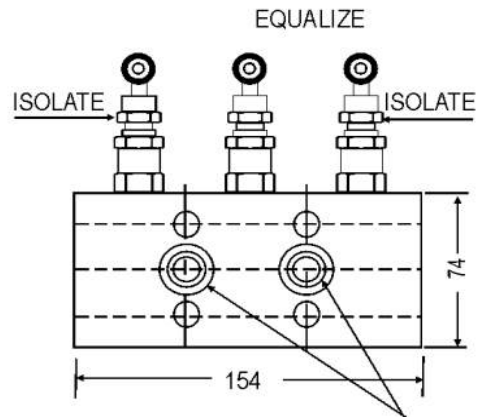
Side View



Back View



Top View



Front View

FLANGE PROCESS CONNECTION

**Standard connection**

Product	Process side	Instrument side
M 17	1/2" NPT female	Flange

## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [not available in Series 3VA]
Hard Chrome plating	Provided on stem tip.

## How To Order: Valve Type-M-17

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F = 1/2" x Flange	FD = Female x Flange(54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	2F = 1/4" x Flange	FR = Female X Female Rotating	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304					
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C				SW = Socket Weld	B = BSPT (BS 21, ISO 7/1)

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal

## Example

To place an order simply refer to the codes in the table.

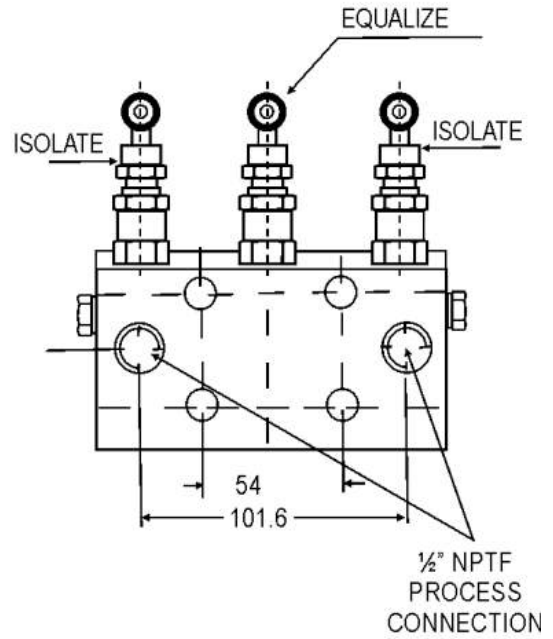
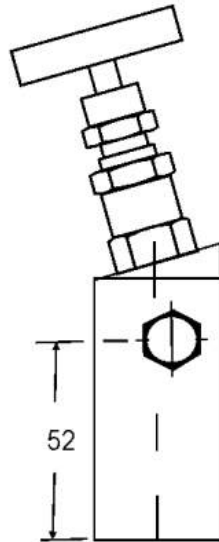
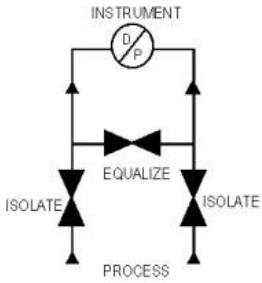
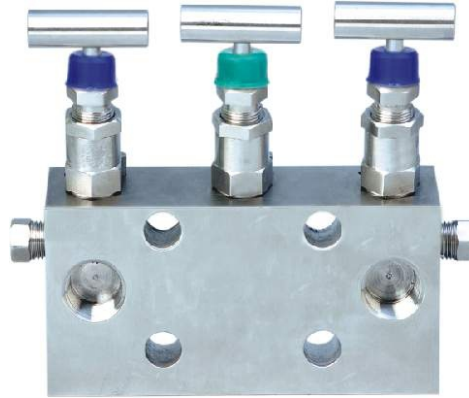
<b>Valve Type</b>	:	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-17		S		CT		P		4F		FD		N		= M-17-S-CT-P-4F-FD-N-Options

## NOTE:

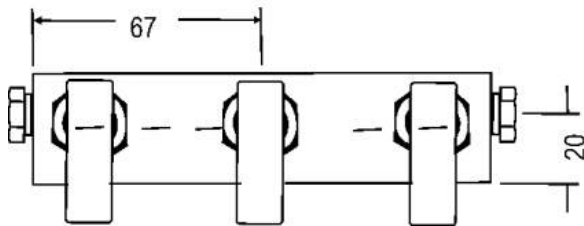
- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-18

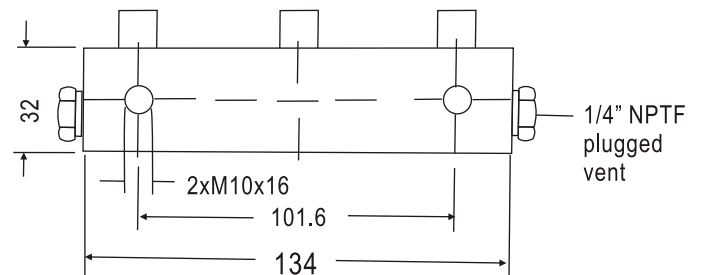
With threaded horizontal port inlets positioned on the front and Flange outlets on the back side. The test connections are positioned on the left and right hand side. The isolating bonnets and the equalizing bonnet are positioned angular on the top of the body.



Front View



Top View



Bottom View

### Standard connection

Product	Process side	Instrument side	Vent/Test
M 18	1/2" NPT female	Flange	1/4" NPT female

## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [not available in Series 3VA]
Hard Chrome plating	Provided on stem tip.

## How To Order: Valve Type-M-18

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F = 1/2" x Flange	FD = Female x Flange(54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	2F = 1/4" x Flange	FR = Female X Female Rotating	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304					
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C				SW = Socket Weld	B = BSPT (BS 21, ISO 7/1)

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal

## Example

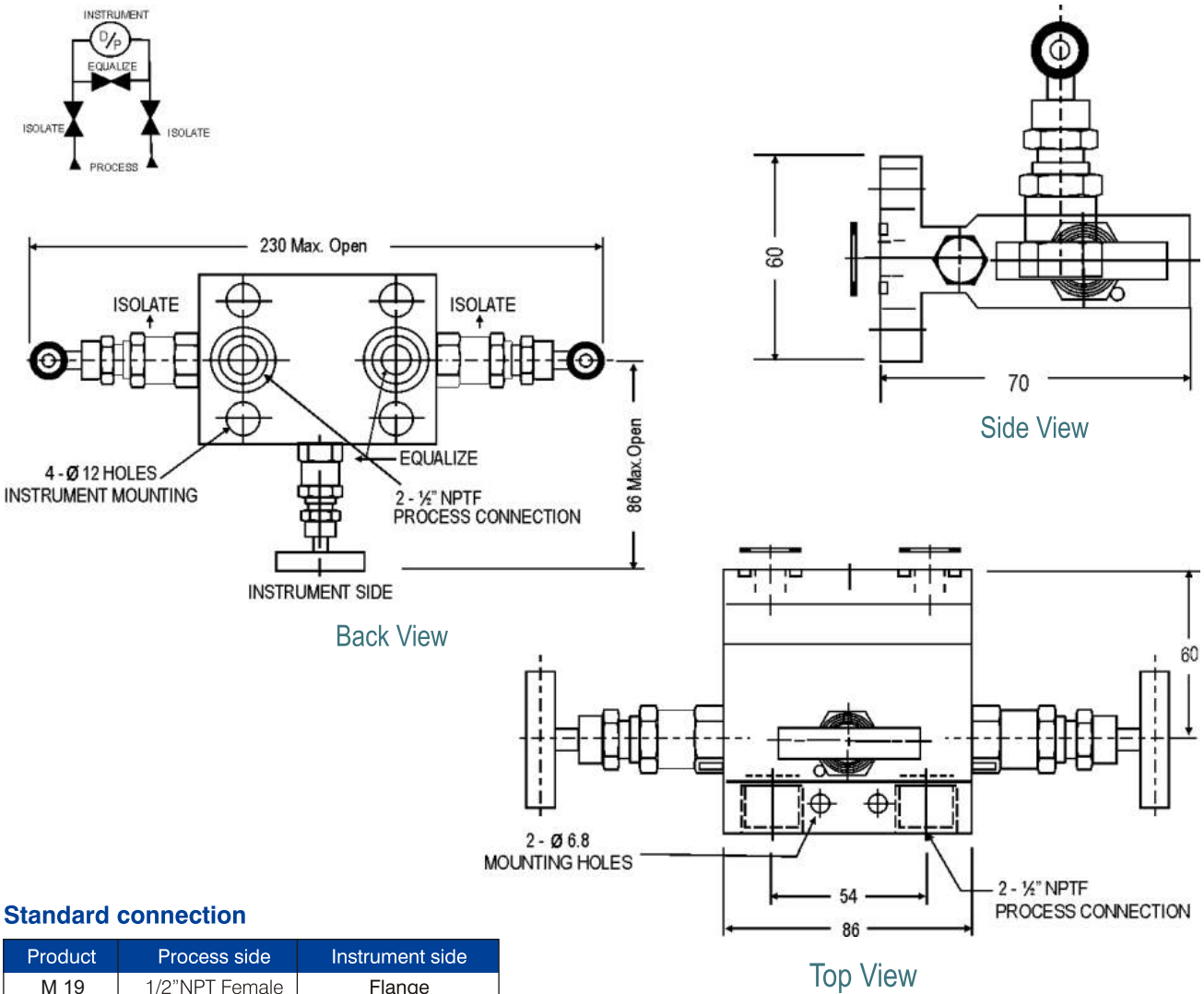
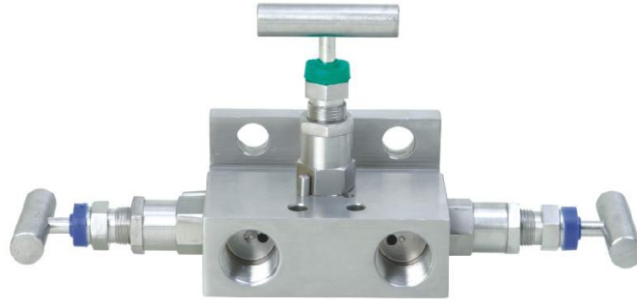
To place an order simply refer to the codes in the table.

<b>Valve Type</b>	:	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-18		S	+	CT	+	P	+	4F	+	FD	+	N	+	= M-18-S-CT-P-4F-FD-N-Options

## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-19** With threaded horizontal port inlet on the front side and Flange outlet on the back side without test/vent connection. The isolating bonnets are positioned on the left and right hand side and Equalizing bonnet is positioned on the top.



**Standard connection**

Product	Process side	Instrument side
M 19	1/2"NPT Female	Flange

Optional with 1/4" NPT Drain Plug & Drain Plug with bleed available on request

## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

## How To Order: Valve Type-M-19

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F = 1/2" x Flange	FD = Female x Flange (54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	2F = 1/4" x Flange	SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				DD = Flange x Flange (54mm)	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)D4 : 1/4" NPT (M) Drain Plug
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal
- BLD4 : Bleeder 1/4" NPT (Male)

### Example

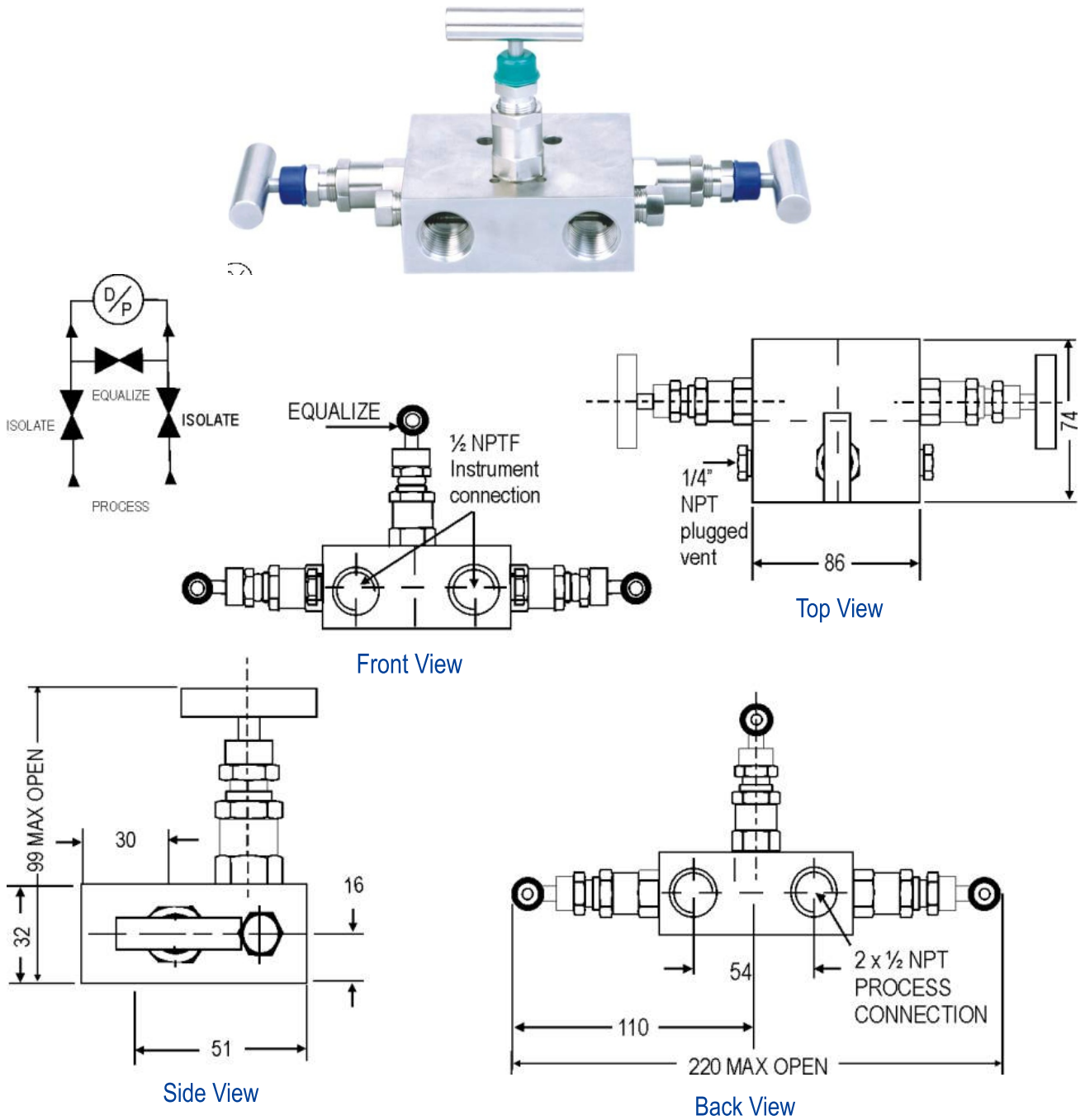
To place an order simply refer to the codes in the table.

Valve Type	+	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-19	+	S	+	CT	+	P	+	4F	+	FD	+	N	+	= M-19-S-CT-P-4F-FD-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-20** With two threaded vertical port inlets and outlets, both test connections are positioned on the left and right hand side. The two isolating bonnets are positioned on the left and right hand side and the equalizing bonnet is positioned on the front.



**Standard connection**

Product	Process side	Instrument side	Vent/Test
M 20	1/2" NPT female	1/2" NPT female	1/4" NPT female



## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar [not available in Series 3VMN]
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [1/8" NPT (F) available in Series 3VMN]
Hard Chrome plating	Provided on stem tip
Bracket mounting holes	2 Nos. (Not available in Series 3VM )

## How To Order: Valve Type-M-20

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	24 = 1/4" x 1/4"	FF = Female x Female (Std)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	44 = 1/2" x 1/2" (std)	SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				MR = Male x Female Rotating	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L				FR = Female x Female	
M4 = Monel 400				Rotating	
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)

## Example

To place an order simply refer to the codes in the table.

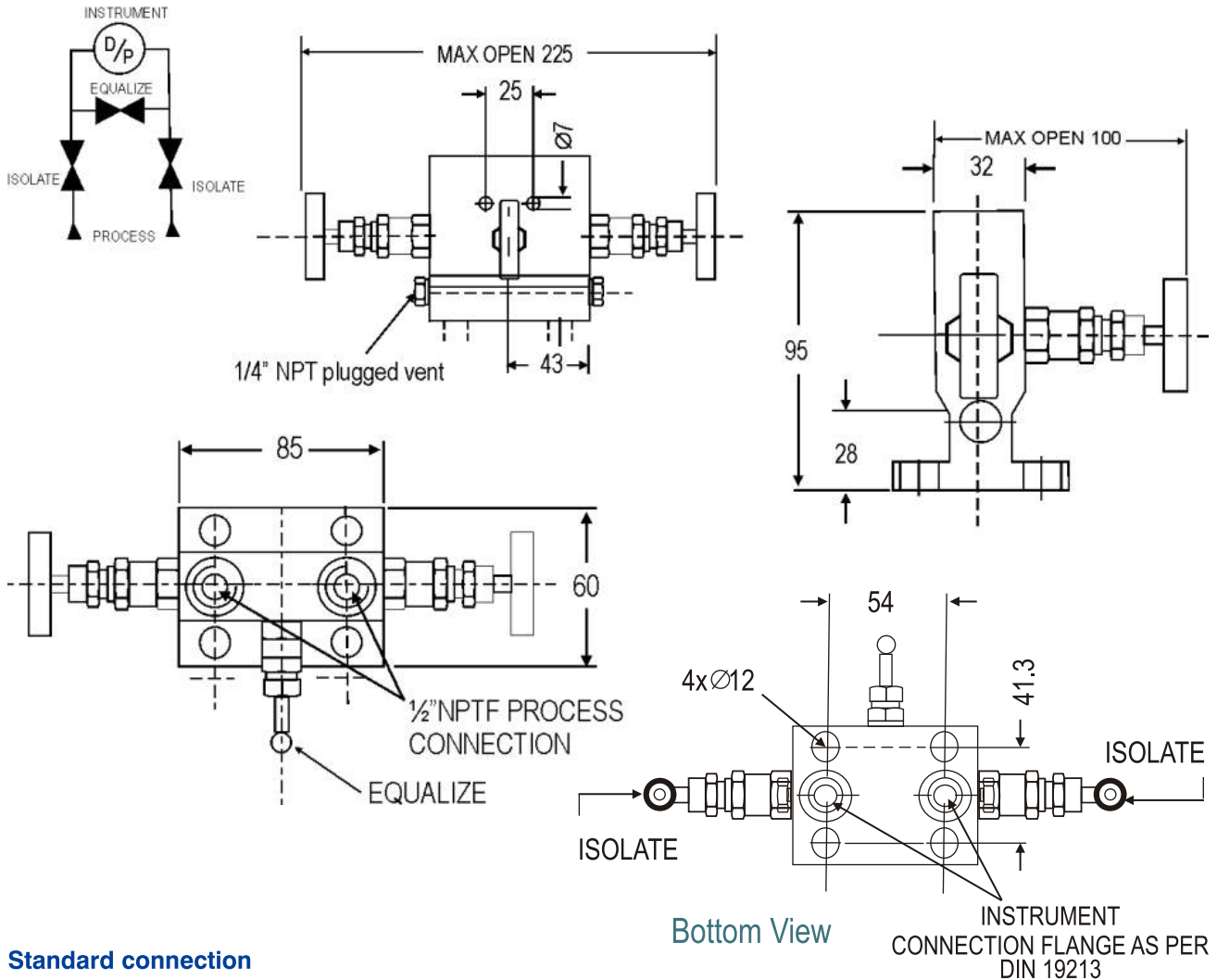
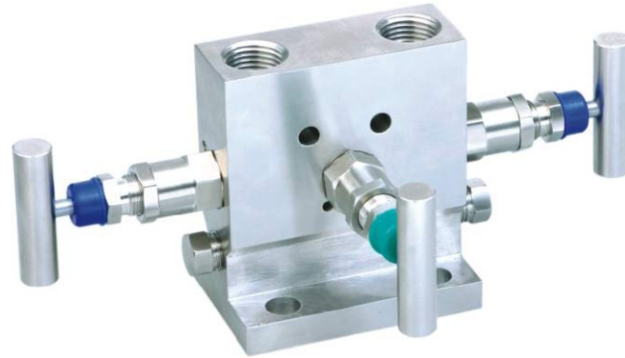
**Valve Type** : **Body Material** + **Stem Type** + **Stem Packing** + **Size** + **Connections** + **Threads** + Options  
 M-20 + C + CT + P + 44 + FF + N = M-20-C-CT-P-44-FF-N-Options

## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-21

With threaded horizontal port inlets on the front side and Flange outlets on the back side. Two test connections positioned on the left and right hand side of the body. The isolating bonnets are positioned on the left and right hand side and the equalizing bonnet is positioned on the top.



## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

## How To Order: Valve Type-M-21

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F = 1/2" x Flange	FD = Female x Flange (54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	2F = 1/4" x Flange	SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				DD = Flange x Flange (54mm)	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)D4 : 1/4" NPT (M) Drain Plug
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal
- BLD4 : Bleeder 1/4" NPT (Male)

## Example

To place an order simply refer to the codes in the table.

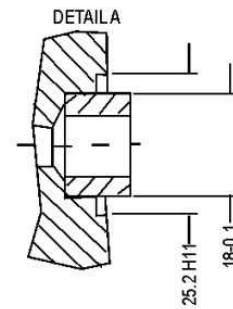
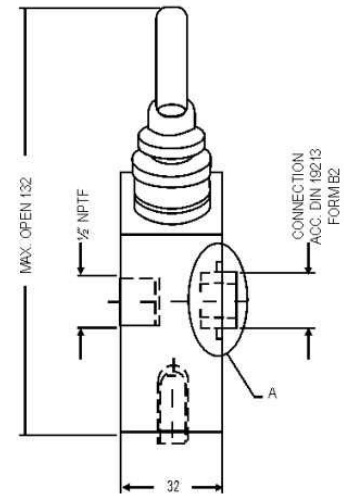
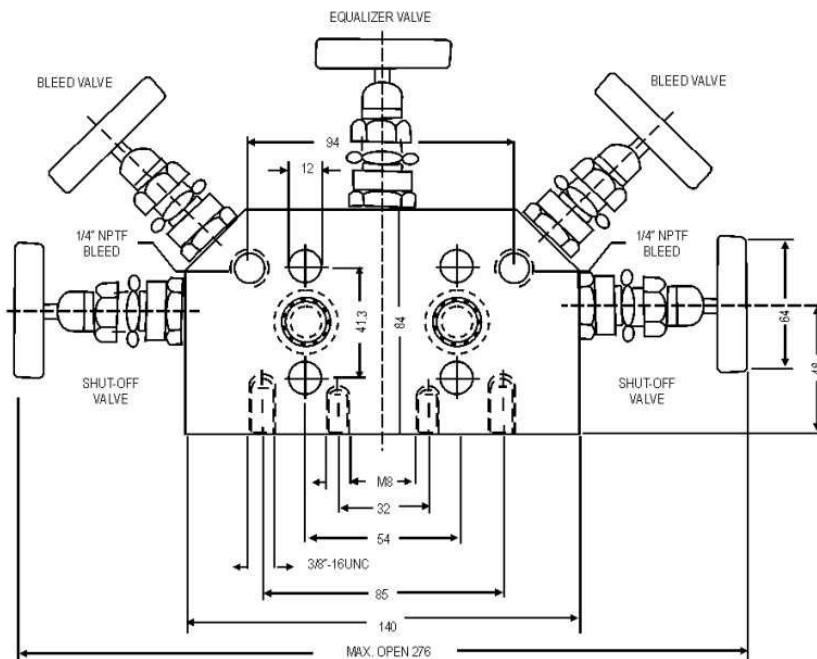
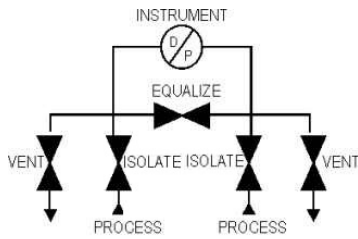
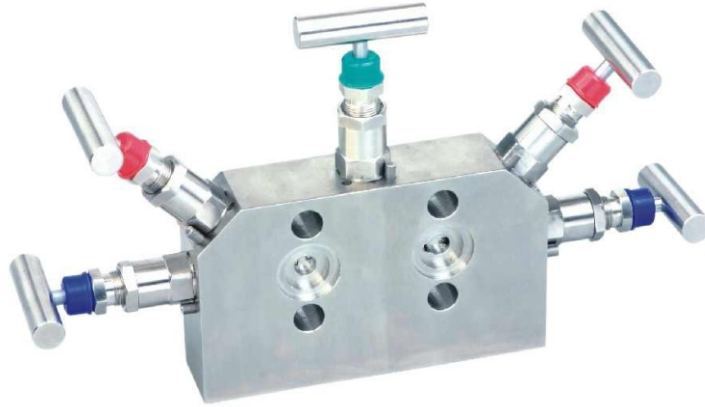
<b>Valve Type</b>	+	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-21	+	S	+	CT	+	P	+	4F	+	FD	+	N	+	= M-21-S-CT-P-4F-FD-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-22

**Special Five Valve Manifold** designed to suit FR 3051 transmitters - inlet NPT female at front - outlet Flange to DIN 19213 at back side - vent/test connection at back, equalizing bonnet on top; isolating bonnets at left and right hand side; venting bonnets angular at left and right side.



### Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	2 Nos.
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

### How To Order: Valve Type-M-22

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	44= 1/2" x 1/2" (std)	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	24= 1/4" x 1/4"	FR = Female x Female Rotating	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- BLD4 : Bleeder 1/4" NPT (Male)

### Example

To place an order simply refer to the codes in the table.

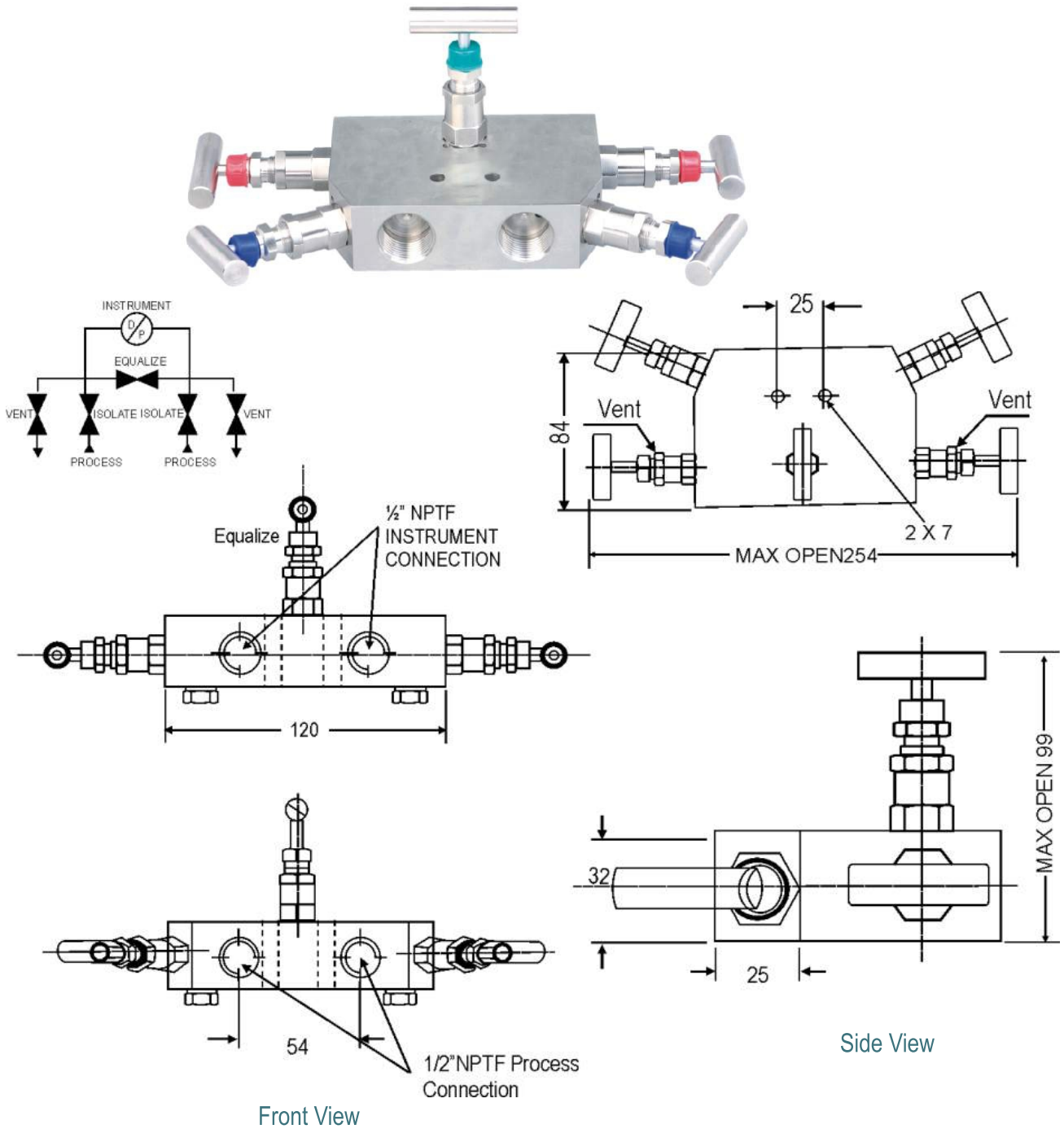
Valve Type	+	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-22	+	S	+	CT	+	P	+	44	+	FF	+	N	=	M-22-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-23

With threaded vertical port inlets and outlets. The isolating and venting bonnets are positioned on the left and right hand side and the equalizing bonnet is positioned on the front side. Designed for remote mounting.



### Standard connection

Product	Process side	Instrument side	Vent/Test
M 23	1/2" NPT female	1/2" NPT female	1/4" NPT female

### Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	2 Nos.
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

### How To Order: Valve Type-M-23

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	44= 1/2" x 1/2" (std)	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	24= 1/4" x 1/4"	FR = Female x Female Rotating	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- BLD4 : Bleeder 1/4" NPT (Male)

### Example

To place an order simply refer to the codes in the table.

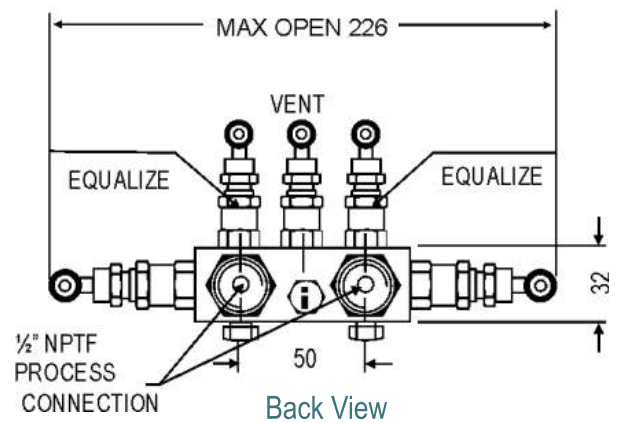
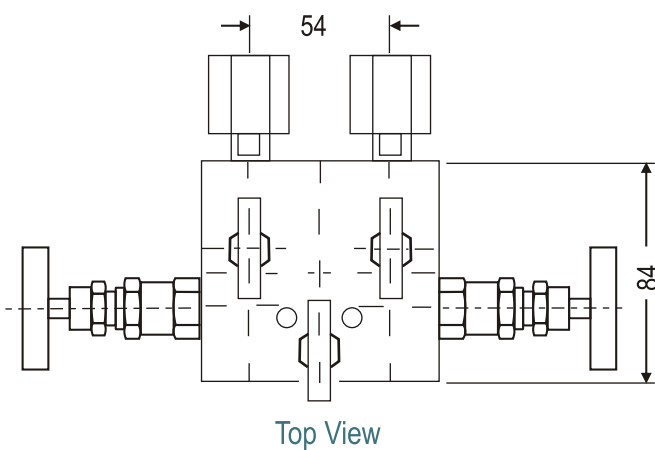
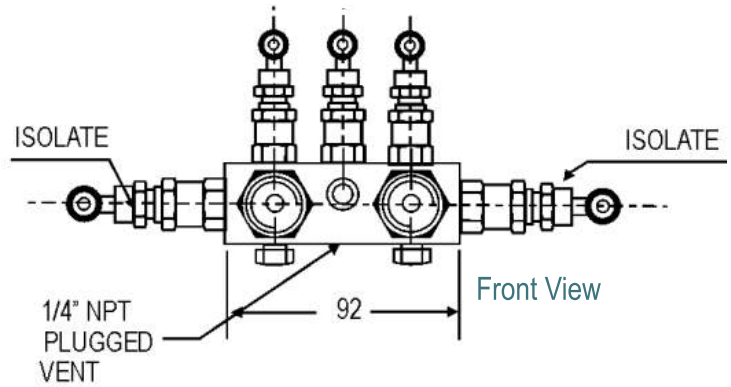
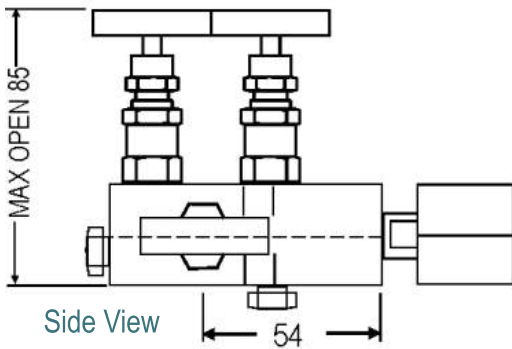
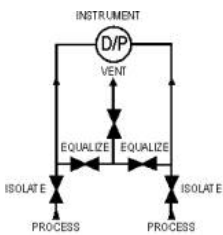
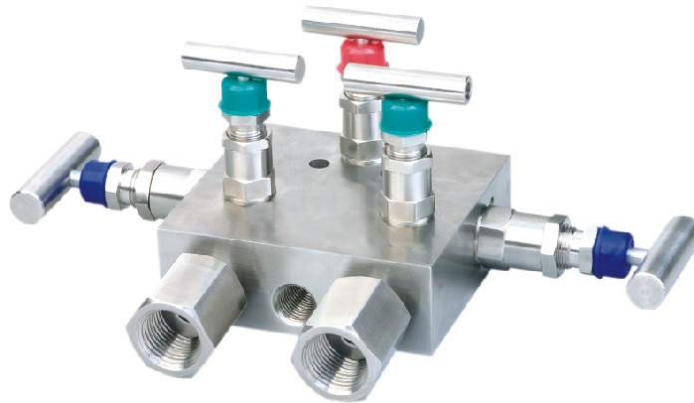
<b>Valve Type</b>	+	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-23	+	S	+	CT	+	P	+	44	+	FF	+	N	+	= M-23-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-24

Series for differential pressure gauges with 2 inlets NPT female at bottom and 2 outlets with rotating nuts on top side.



### Standard connection

Product	Process side	Instrument side	Vent/Test
M 24	1/2" NPT female	1/2" BSP Rotatable nuts	1/4" NPT female



### Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	2 Nos.
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

### How To Order: Valve Type-M-24

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	44= 1/2" x 1/2" (std)	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	24= 1/4" x 1/4"	FR = Female x Female Rotating	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- BLD4 : Bleeder 1/4" NPT (Male)

### Example

To place an order simply refer to the codes in the table.

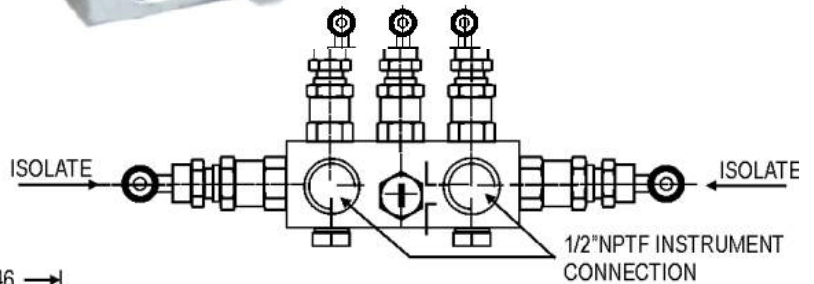
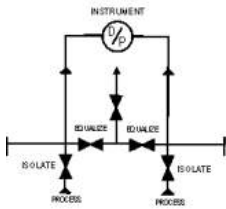
<b>Valve Type</b>	+	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-24	+	S	+	CT	+	P	+	44	+	FF	+	N	+	= M-24-S-CT-P-44-FF-N-Options

### NOTE:

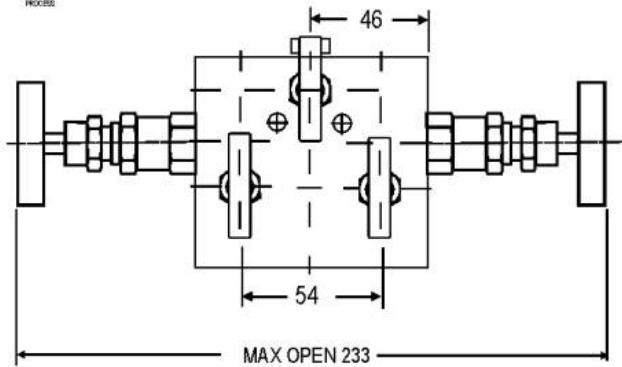
- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-25

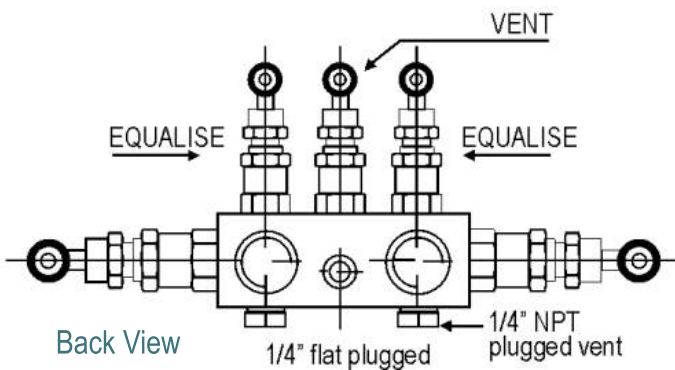
With threaded vertical port inlets and outlets. The vent/test ports are positioned on the bottom and top of the body. The isolating bonnets are positioned on the left and right hand side and the venting and equalizing bonnets are positioned on the front side. Specially designed for remote mounting to field meters, differential transmitters and chart recorders on gas service allowing fail safe configuration preventing pressure loss from the high to low pressure impulse lines.



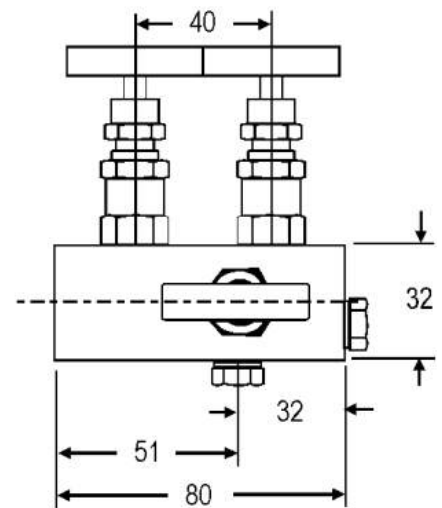
Front View



Top View



Back View



Side View

### Standard connection

Product	Process Side	Instrument Side	Vent/Test
M 25	1/2" NPT female	1/2" NPT female	1/4" NPT female

### Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	2 Nos.
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

### How To Order: Valve Type-M-25

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	44= 1/2" x 1/2" (std)	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	24= 1/4" x 1/4"	FR = Female x Female Rotating	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- BLD4 : Bleeder 1/4" NPT (Male)

### Example

To place an order simply refer to the codes in the table.

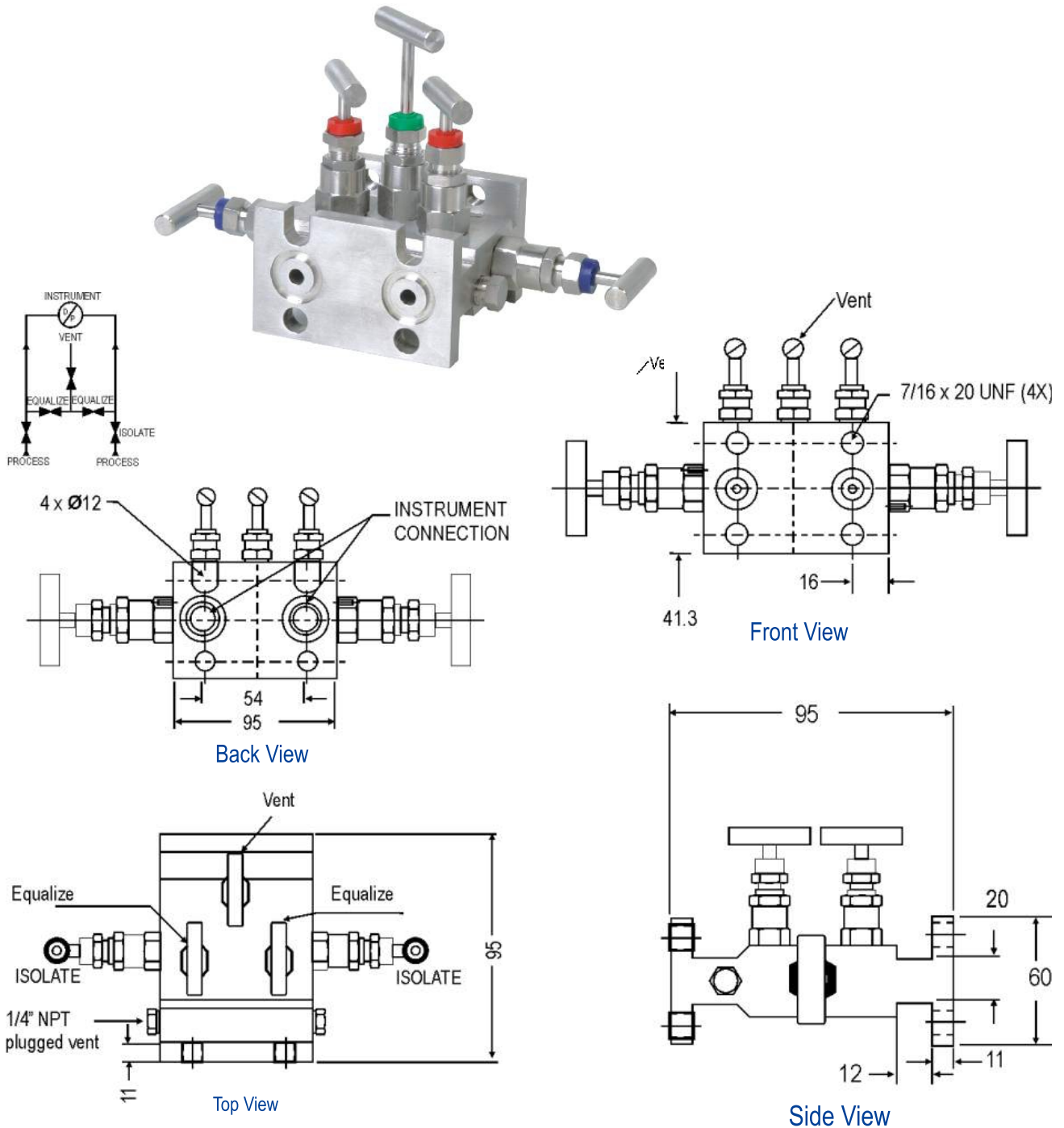
<b>Valve Type</b>	+	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-25	+	S	+	CT	+	P	+	44	+	FF	+	N	+	= M-25-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-26

With Flange horizontal port inlets and Flange port outlets. The vent/test ports are positioned on the bottom side. The isolating and venting bonnets are positioned on the left and right hand side and the equalizing bonnet is positioned on the top side. Designed for direct mounting.



### Standard connection

Product	Process Side	Instrument Side	Vent/Test
M 26	Flange	Flange	1/4" NPT female

## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

## How To Order: Valve Type-M-26

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F= 1/2" x Flange	FD = Female x Flange (54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	FF= Flange x Flange	DD = Flange x Flange	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304			2F = 1/4" x Flange	SW = Socket Weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal
- BLD4 : Bleeder 1/4" NPT (Male)

## Example

To place an order simply refer to the codes in the table.

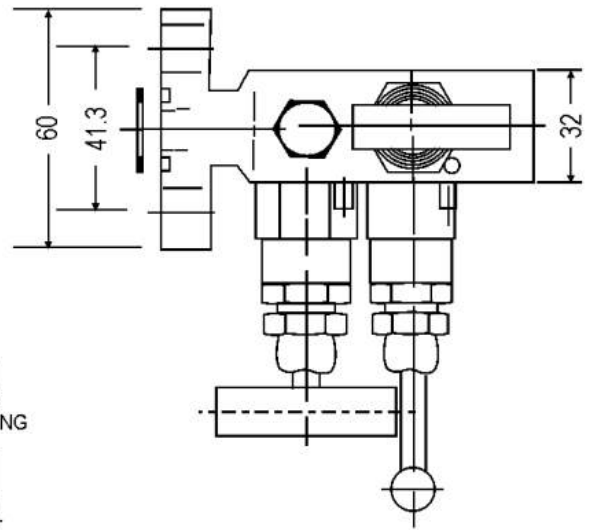
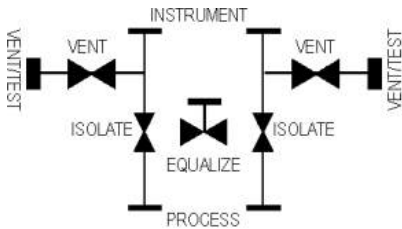
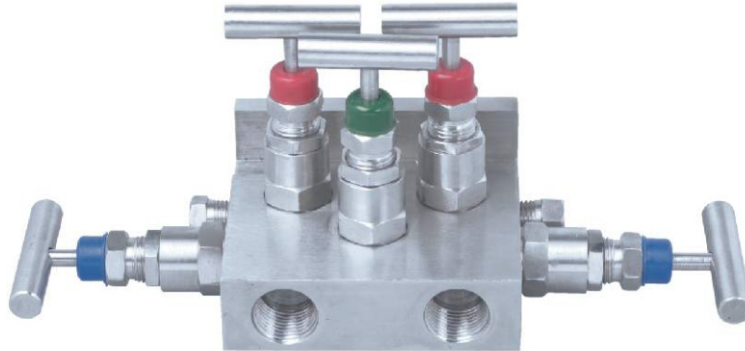
Valve Type + 
 Body Material + 
 Stem Type + 
 Stem Packing + 
 Size + 
 Connections + 
 Threads + Options  
 M-26 + S + CT + P + 4F + FD + N = M-26-S-CT-P-4F-FD-N-Options

## NOTE:

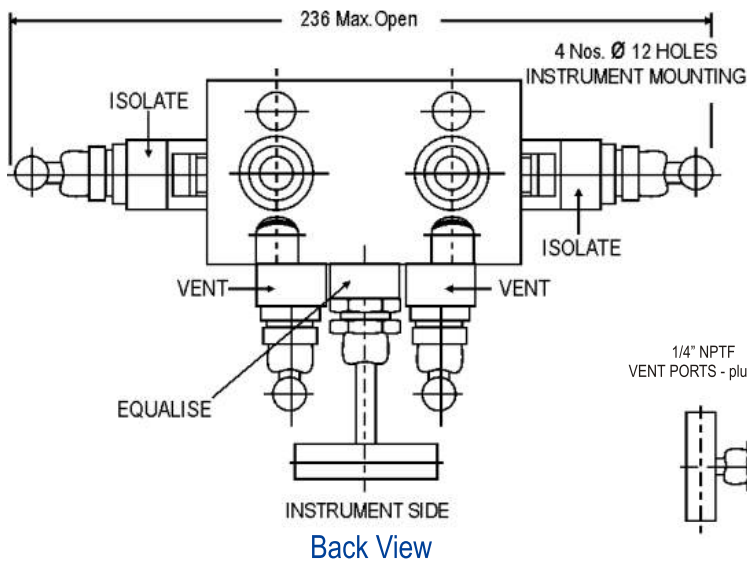
- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-27

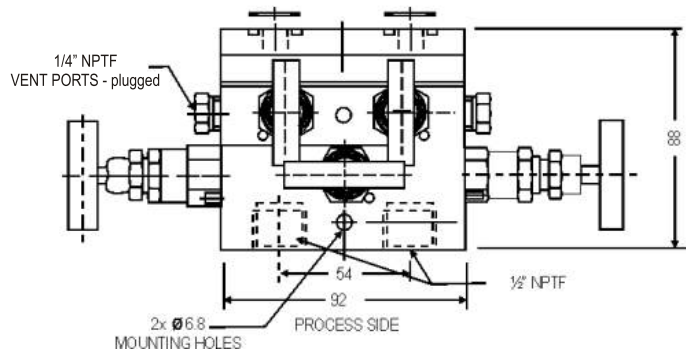
With threaded female ports on front side for instrument connection along with extended Flange for process connection. The two vent bonnets along with equalizing bonnet is positioned on the top side. The two isolation bonnets are positioned on left and right hand sides.



Side View



Back View



Top View

### Standard connection

Product	Process Side	Instrument Side	Vent/Test
M 27	1/2" NPT female	Flange	1/4" NPT female

## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

## How To Order: Valve Type-M-27

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F= 1/2" x Flange	FD = Female x Flange (54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	FF= Flange x Flange	DD = Flange x Flange	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304			2F = 1/4" x Flange	SW = Socket Weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal
- BLD4 : Bleeder 1/4" NPT (Male)

## Example

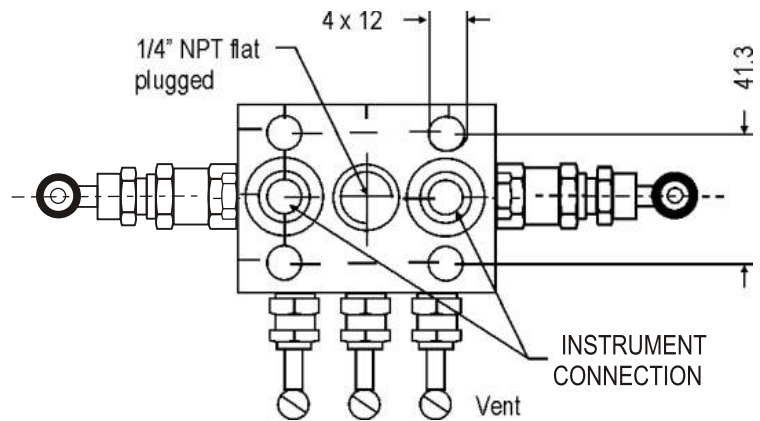
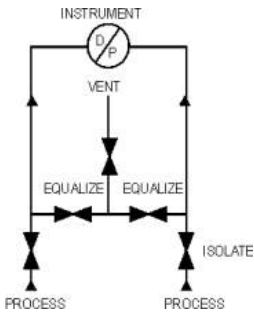
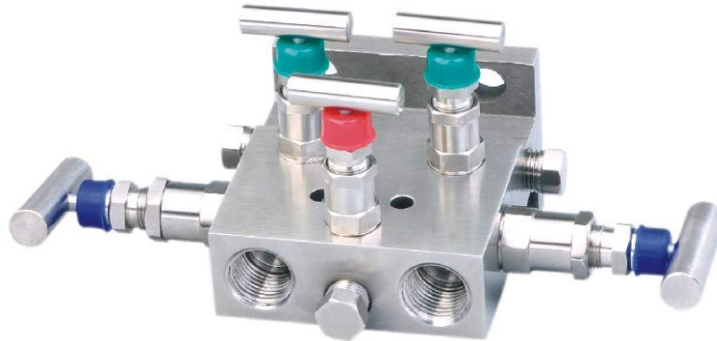
To place an order simply refer to the codes in the table.

Valve Type + 
 Body Material + 
 Stem Type + 
 Stem Packing + 
 Size + 
 Connections + 
 Threads + Options  
 M-27 + S + CT + P + 4F + FD + N = M-27-S-CT-P-4F-FD-N-Options

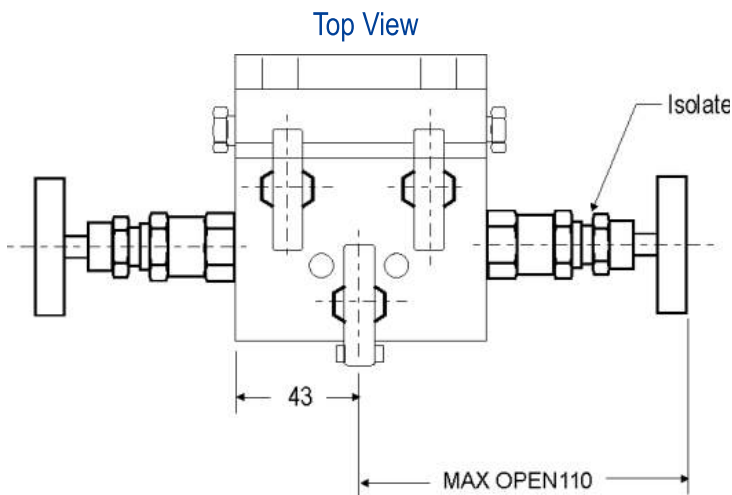
## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

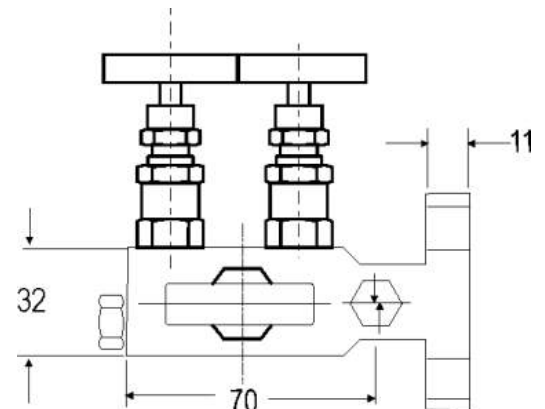
**M-28** **Five Valve Manifold Special Series** to accommodate any half DIN 19213 interface complaint pressure transmitter. 2 inlets NPT female at front and 2 outlets Flange at back side DIN 19213. Vent/test connection at front, equalizing bonnets at top side, isolating bonnets at left and right side-venting bonnet at top.



Back View



Top View



Side View

**Standard connection**

Product	Process Side	Instrument Side	Vent/Test
M 28	1/2" NPT female	flanged	1/4" NPT female



## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

## How To Order: Valve Type-M-28

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F= 1/2" x Flange	FD = Female x Flange (54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	FF= Flange x Flange	DD = Flange x Flange	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304			2F = 1/4" x Flange	SW = Socket Weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal
- BLD4 : Bleeder 1/4" NPT (Male)

## Example

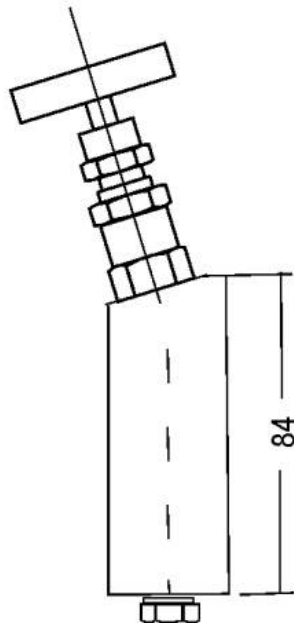
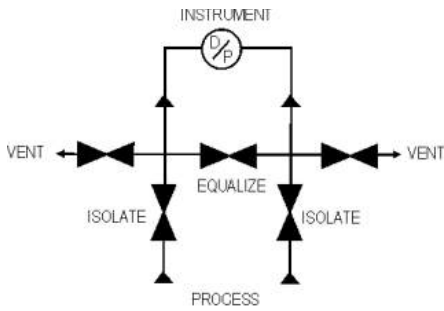
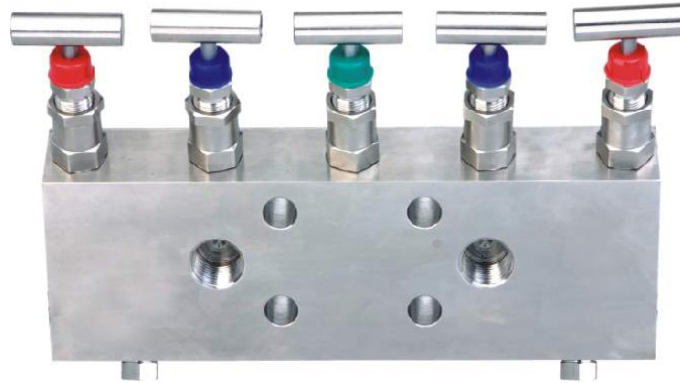
To place an order simply refer to the codes in the table.

Valve Type	+	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-28	+	S	+	CT	+	P	+	4F	+	FD	+	N	+	= M-28-S-CT-P-4F-FD-N-Options

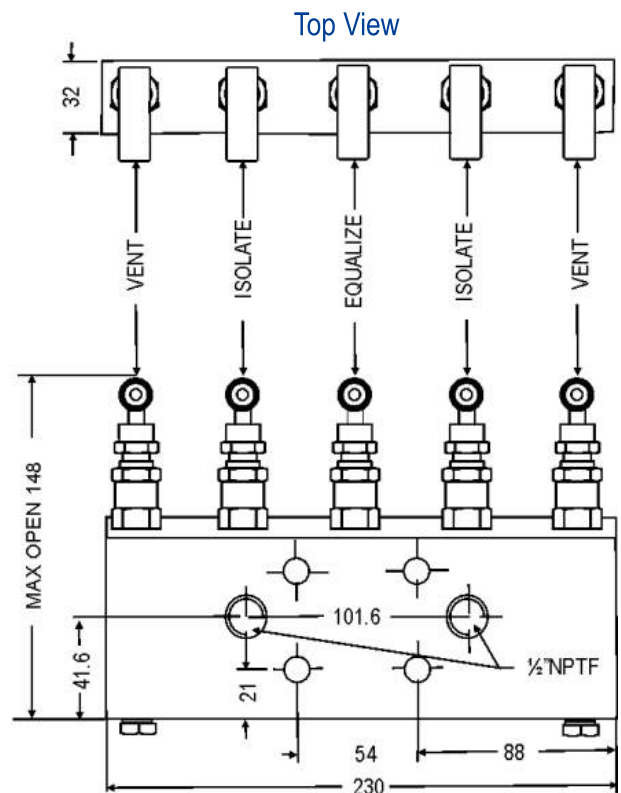
## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-29** With threaded horizontal port inlets and Flange port outlets. Three vent/test connections are positioned on the bottom of the body. The isolating, venting and equalizing bonnets are angular positioned on the top designed direct mounting.



Side View



Front View

Product	Process Side	Instrument Side	Vent/Test
M 29	1/2" NPT female	flange	1/4" NPT female

## Standard version specifications

Body	: SS 316
Stem	: SS 316
Valve assembly	: SS 316
T' bar handle	: SS 304
Maximum working pressure	: 6000 PSI / 400 bar
Maximum working temperature	: 240°C
Packing	: PTFE
Type of stem	: Type CT; Stem with conical metal tip
Drain port	: 1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	: Provided on stem tip.
Bracket mounting holes	: 4 Nos. With 12 mm ID.

## How To Order: Valve Type-M-29

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	2F = 1/4" x Flange	FD = Female x Flange (54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	4F = 1/2" x Flange	SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304					B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

## Options -

IE	: Handle circular.
TF	: Compliance to NACE standard MR-0175.
SG	: For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
GH	: Material test certificate
GO	: Hydro test certificate
DS	: Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
MB	: Mounting Bracket
MBC	: Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
MBS	: Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
PRF	: PTFE Ring For Flange Seal
GRF	: Grafoil Ring For Flange Seal
BLD4	: Bleeder 1/4" NPT (Male)

## Example

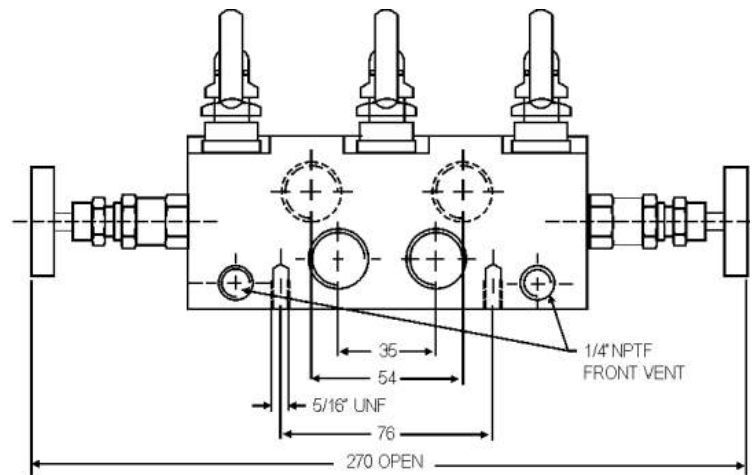
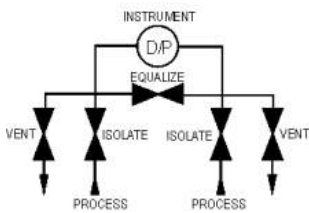
To place an order simply refer to the codes in the table.

Valve Type	+	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-29	+	S	+	CT	+	P	+	4F	+	FD	+	N	+	= M-29-S-CT-P-4F-FD-N-Options

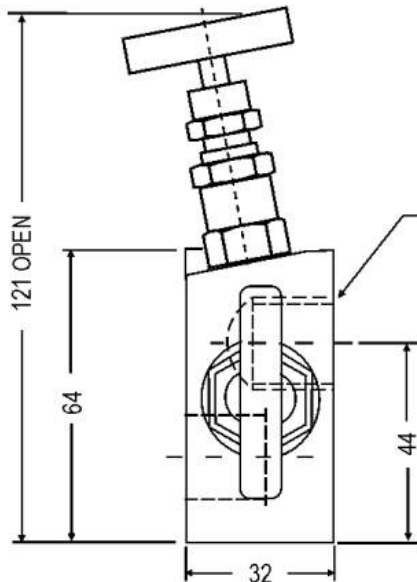
## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-30** Series designed for complete isolation of instruments-2 inlets NPT female at front, 2 outlets NPT female at back side. Vent/test connection at front, equalizing bonnets (2) angular top, isolating bonnets at left and right side, venting bonnet angular on top.



Front View



Side View

**Standard connection**

Product	Process Side	Instrument Side	Vent/Test
M 30	1/2" NPT female	1/2" NPT female	1/4" NPT female

### Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	2 Nos.
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

### How To Order: Valve Type-M-30

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	44= 1/2" x 1/2" (std)	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	24= 1/4" x 1/4"	FR = Female x Female Rotating	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- BLD4 : Bleeder 1/4" NPT (Male)

### Example

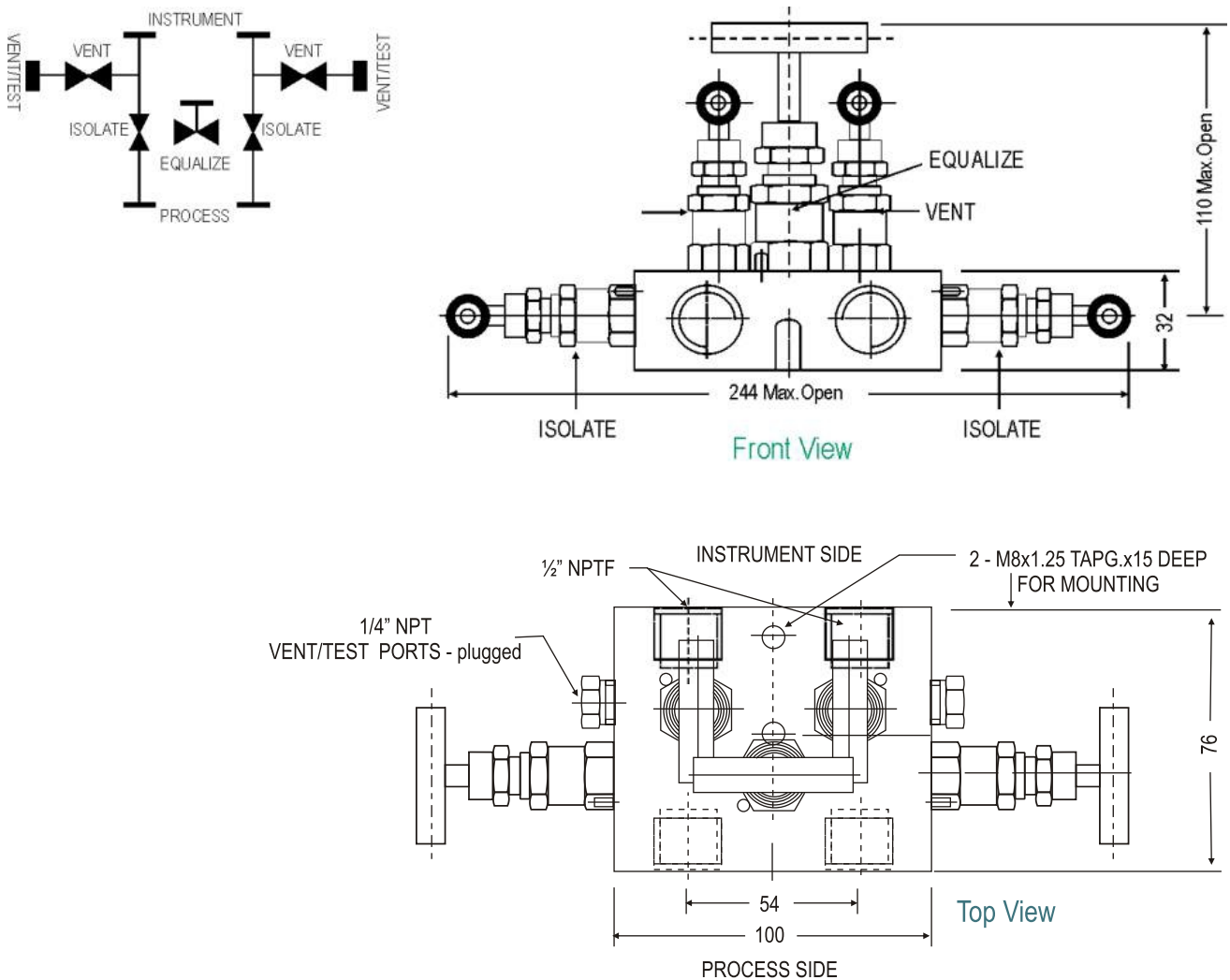
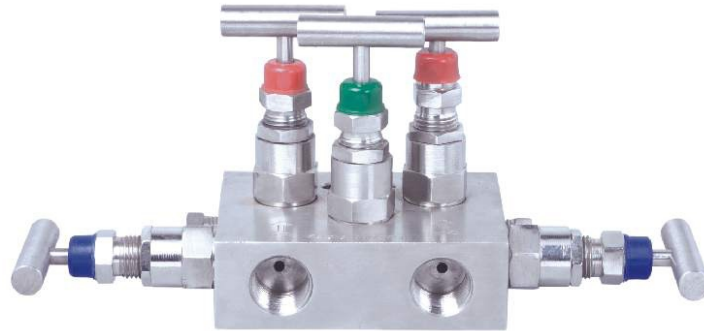
To place an order simply refer to the codes in the table.

Valve Type	+	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-30	+	S	+	CT	+	P	+	44	+	FF	+	N	=	M-30-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-31** With threaded female ports on front side and back side for instrument and process connections. The two vent bonnets along with equalizing bonnet are positioned on the top side. The two isolation bonnets are positioned on left and right hand sides.



**Standard connection**

Product	Process Side	Instrument Side	Vent/Test
M 31	1/2" NPT female	1/2" NPT female	1/4" NPT female

### Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	2 Nos.
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

### How To Order: Valve Type-M-31

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	44= 1/2" x 1/2" (std)	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	24= 1/4" x 1/4"	FR = Female x Female Rotating	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- BLD4 : Bleeder 1/4" NPT (Male)

### Example

To place an order simply refer to the codes in the table.

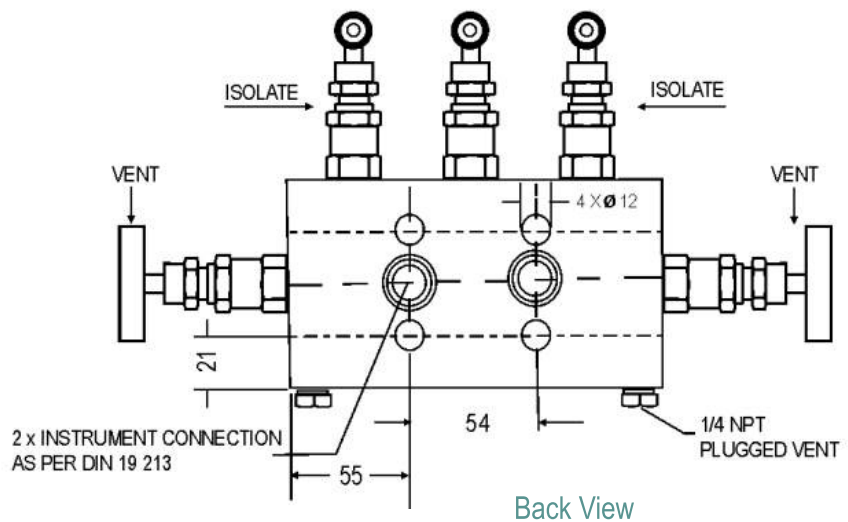
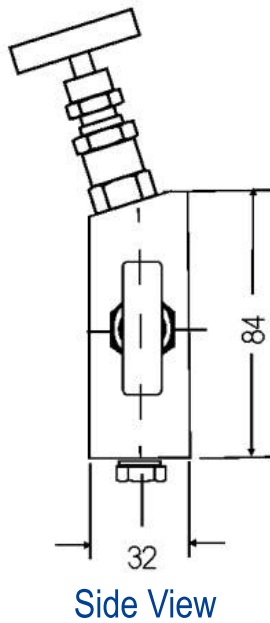
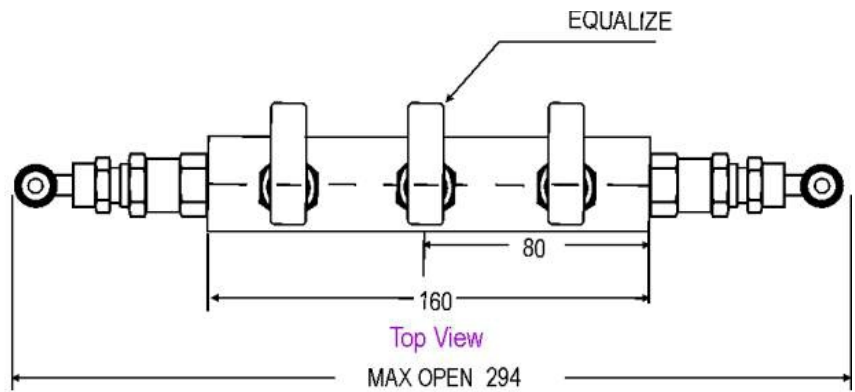
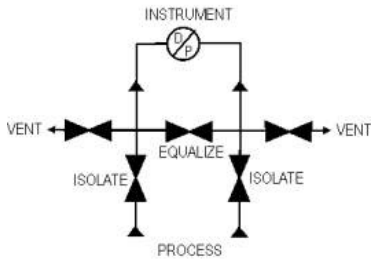
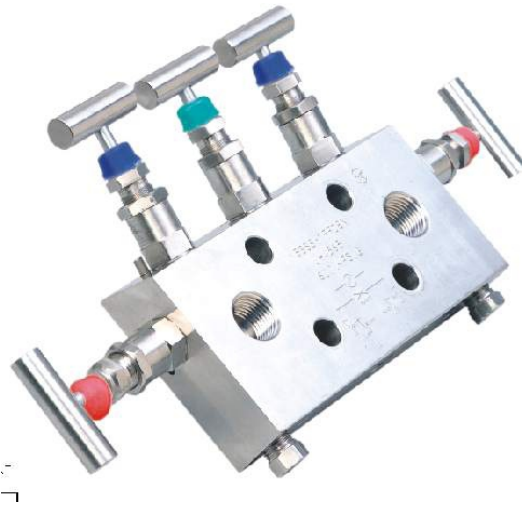
<b>Valve Type</b>	+	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-31	+	S	+	CT	+	P	+	44	+	FF	+	N	+	= M-31-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-32

With threaded horizontal port inlets and Flange outlets. Two vent/test connections are positioned on the bottom of the body. The isolating and equalizing bonnets are angular positioned on the top side. The venting bonnets are positioned on the left & right hand side. Designed for direct mounting.



### Standard connection

Product	Process side	Instrument side	Vent/Test
M 32	1/2" NPT female	flange	1/4" NPT female



## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

## How To Order: Valve Type-M-32

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	2F = 1/4" x Flange	FD = Female x Flange (54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	4F = 1/2" x Flange	SW = Socket Weld	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304					B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal
- BLD4 : Bleeder 1/4" NPT (Male)

## Example

To place an order simply refer to the codes in the table.

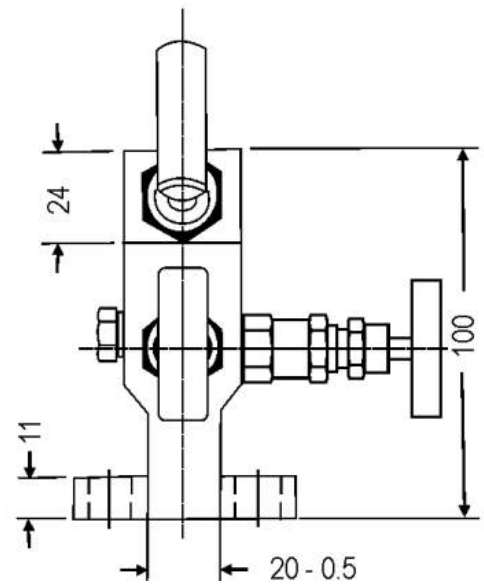
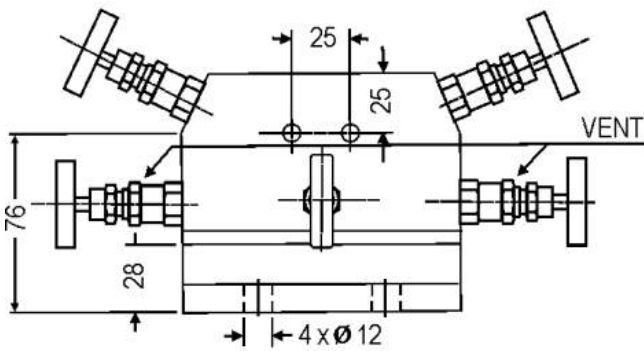
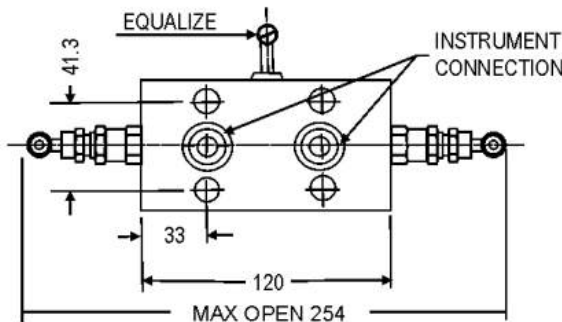
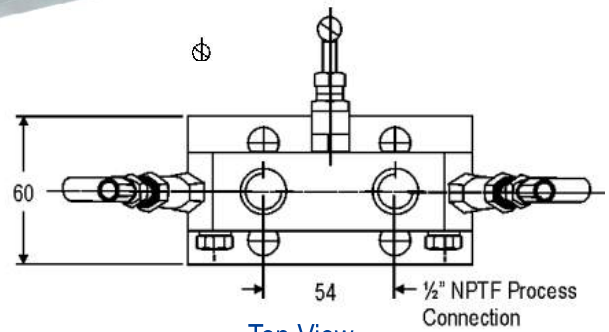
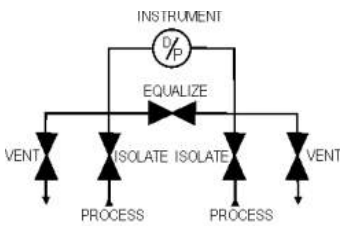
Valve Type	+	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-32	+	S	+	CT	+	P	+	4F	+	FD	+	N	+	= M-32-S-CT-P-4F-FD-N-Options

## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-33

With threaded horizontal port inlets and Flange port outlets. The vent/test ports are positioned on the bottom side. The isolating and venting bonnets are positioned on the left and right hand side and the equalizing bonnet is positioned on the top side. Designed for direct mounting.



### Standard connection

Product	Process Side	Instrument Side	Vent/Test
M 33	1/2" NPT female	flanged	1/4" NPT female

## Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

## How To Order: Valve Type-M-33

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	4F= 1/2" x Flange	FD = Female x Flange (54mm)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	FF= Flange x Flange	DD = Flange x Flange	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304			2F = 1/4" x Flange	SW = Socket Weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

## Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- PRF : PTFE Ring For Flange Seal
- GRF : Grafoil Ring For Flange Seal
- BLD4 : Bleeder 1/4" NPT (Male)

## Example

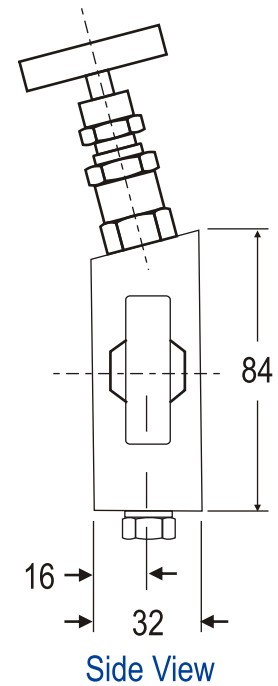
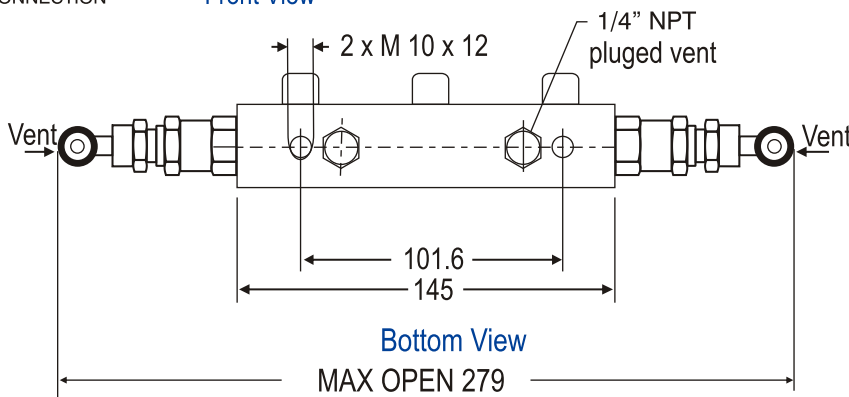
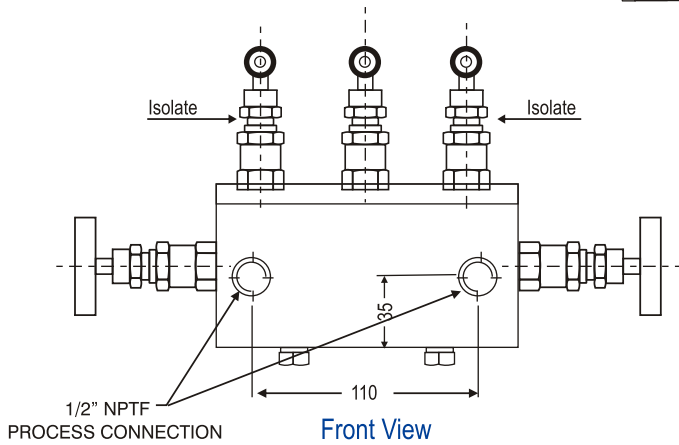
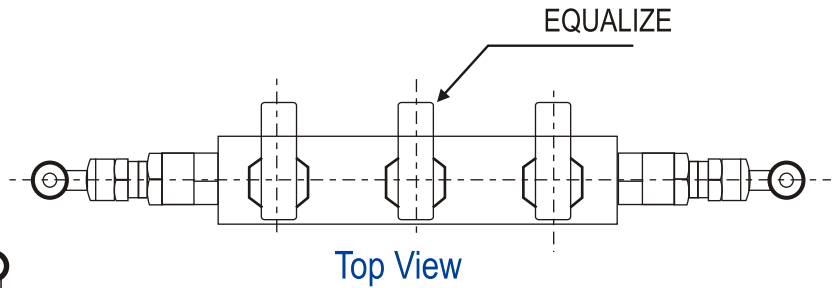
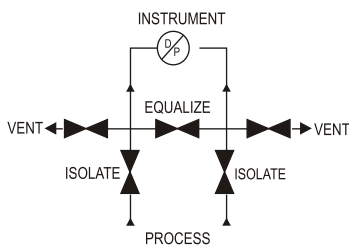
To place an order simply refer to the codes in the table.

Valve Type + 
 Body Material + 
 Stem Type + 
 Stem Packing + 
 Size + 
 Connections + 
 Threads + Options  
 M-33 + S + CT + P + 4F + FD + N = M-33-S-CT-P-4F-FD-N-Options

## NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

**M-34** Model designed for complete isolation of instruments with NPT female inlets /outlets. Vent/test connection at bottom; equalizing bonnet angular on top-isolating bonnets angular on top venting bonnets at left and right side.



**Standard connection**

Product	Process Side	Instrument Side	Vent/Test
M 34	1/2" NPT female	1/2" NPT female	1/4" NPT female

### Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI / 400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug
Bracket mounting holes	2 Nos.
Hard Chrome plating	Provided on stem tip.
Bracket mounting holes	4 Nos. With 12 mm ID.

### How To Order: Valve Type-M-34

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT	P = PTFE	44= 1/2" x 1/2" (std)	FF = Female x Female	N = NPT (ANSI B 1.20.1)
S = SS 316	DS	G = Grafoil	24= 1/4" x 1/4"	FR = Female x Female Rotating	P = BSPP (BS 2779, ISO 228/1)
S4 = SS 304				SW = Socket weld	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L					
M4 = Monel 400					
M5 = Monel 500					
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service
- MB : Mounting Bracket
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- BLD4 : Bleeder 1/4" NPT (Male)

### Example

To place an order simply refer to the codes in the table.

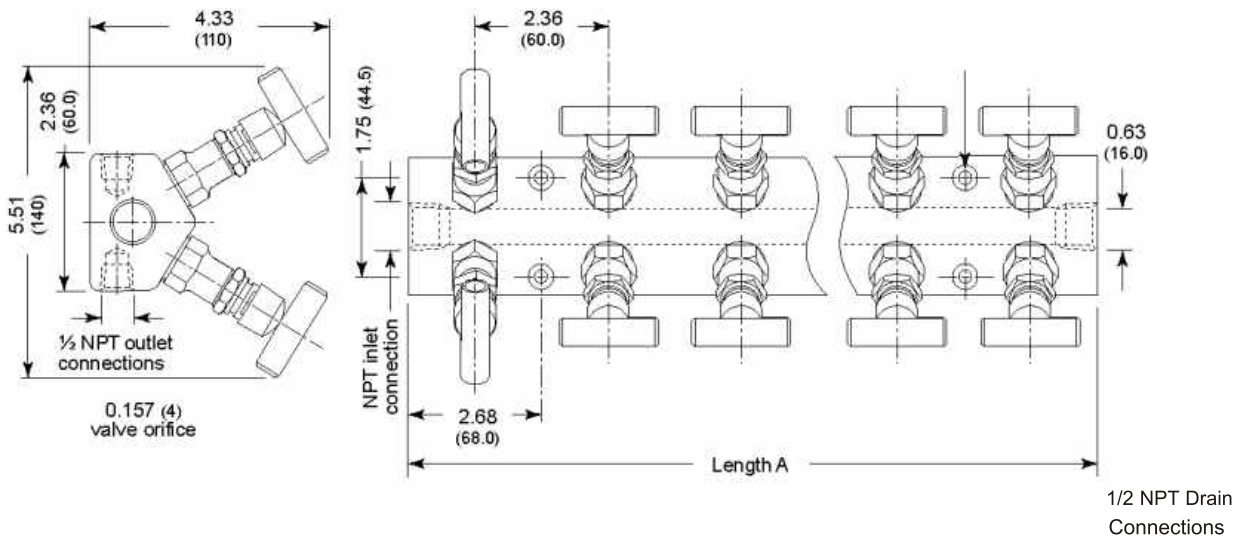
<b>Valve Type</b>	+	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-34	+	S	+	CT	+	P	+	44	+	FF	+	N	+	= M-34-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-35

This Distribution Manifold valves are made by extruded stainless steel body rated for 6 000 psig (414 bar) working pressure. Fewer potential leak points than conventional distribution manifolds. Compact, versatile manifold for gas and liquid applications. Mounting holes through the manifold to reduce stress on the piping system. Four to eighteen needle valves / outlet connections.



### Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.

### Standard connection

Product	Inlet Connection	Outlet Connection	Drain Connection
M 35	1/2" NPT female	1/2" NPT female	1/2" NPT female

Number of Outlet Connections	Length A in. (mm)
4	5.35 (136)
6	7.72 (196)
8	10.1 (256)
10	12.4 (316)
12	14.8 (376)
14	17.2 (436)
16	19.5 (496)
18	21.9 (556)

## Standard version specifications

Body	316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 psi
Maximum working temperature	240°C
Packing	PTFE (Grafoil for temperature above 240°C to 550°C)
Type of stem	Type CT; Stem with conical metal tip
Drain port	provided with plug
mounting holes	Available

## How To Order: Valve Type-M-35

Body Material	Inlet Connection	Outlet Connection (Valve outlet)	Packing	Handle	Number of Outlet (Connections Valve)
C = Carbon Steel	4N = 1/4"Female NPT	4N = 1/4"Female NPT	P = PTFE	T = Bar	4
S4 = SS 304	8N = 1/2"Female NPT	8N = 1/2"Female NPT	G = Grafoil		6
S = SS 316 (std)	12N = 3/4"Female NPT	12N = 3/4"Female NPT			8
SL = SS 316L	16N = 1"Female NPT	16N = 1"Female NPT			10
					12
					14
					16
					18

## Options

- GH : Material test certificate
- GO : Hydro test certificate
- TF : Sour gas service to NACE standard MR-01-75.
- FN : Flange inlet Connections available.
- D4 : 1/4" NPT (F) Drain point provided with plug.
- D8 : 1/2" NPT (F) Drain point provided with plug.

## Example

To place an order simply refer to the codes in the table.

<b>Valve Type</b>	+	<b>Body Material</b>	+	<b>Inlet Connection</b>	+	<b>Outlet Connection</b>	+	<b>Packing</b>	+	<b>Handle</b>	+	<b>Number of Outlet</b>	+	Options
M-35	+	S	+	8N	+	8N	+	P	+	T	+	10	+	[Total number of outlet connection(valves)]

## NOTE:

- Additional materials, options, and accessories are available.

= M-35-S-8N-8N-PT-10-Options

## TESTING:

- Every valve is hydrostatically tested at ambient temperature.

### Safe Product Selection

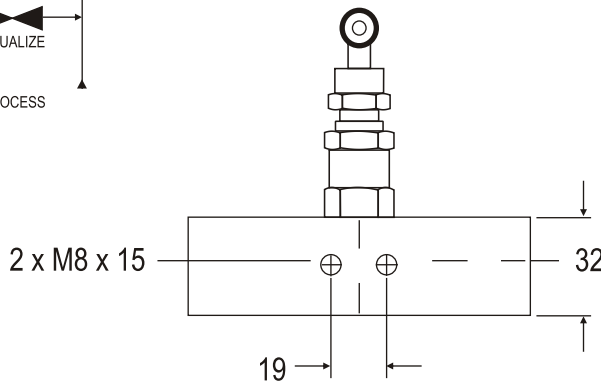
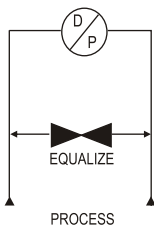
When selecting a product, the total system design must be considered to ensure safe, trouble-free performance.

Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

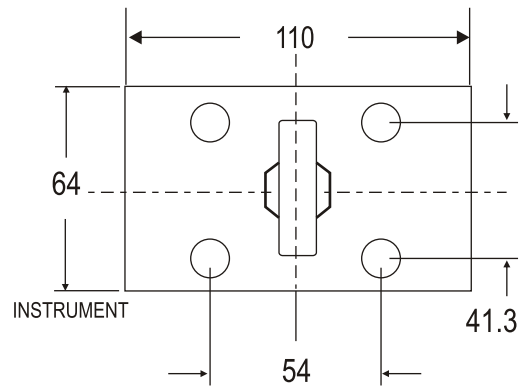
**Caution:** Do not mix or interchange parts with those of other manufacturers.

## M-36

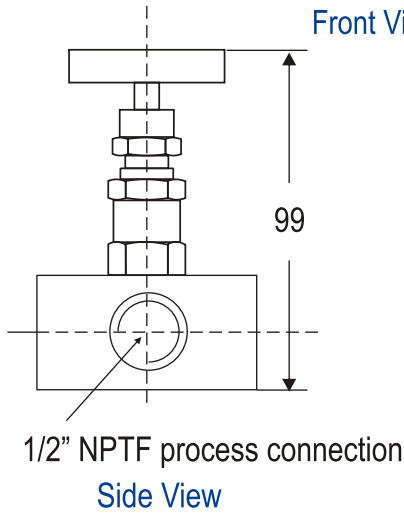
With threaded horizontal port inlet and outlet and Flange instrument connection with 54 mm centre bolting. The equalizing bonnet is positioned on the front side.



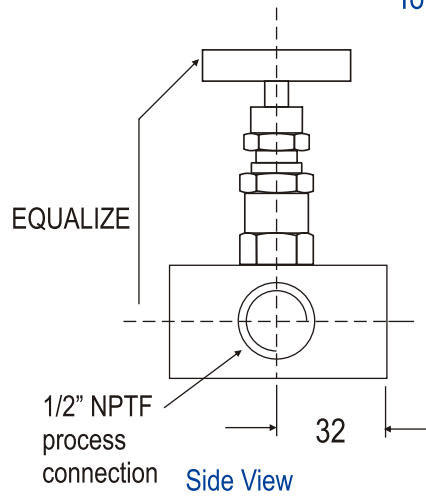
Front View



Top View



Side View



Side View

### Standard connection

Product	Process side	Instrument side
M 36	1/2" NPT female	Flange



### Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI /400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [not available in Series SVW]
Bracket mounting holes	2 Nos. of 7 mm diameter [not available in Series SVH]
Hard Chrome plating	Provided on stem tip

### How To Order: Valve Type-M-36

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	24 = 1/4" x 1/4"	FF = Female x Female (Std)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	33 = 3/8" x 3/8"	SW = Socket Weld	P = BSPP (BS 2779,ISO 228/1)
S4 = SS 304			44 = 1/2" x 1/2" (std)	FD = Female x Flange(54mm)	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L			2F = 1/4"x Flange		
M4 = Monel 400			3F = 3/8"x Flange		
M5 = Monel 500			4F = 1/2"x Flange		
H = Hastelloy C					

### Options -

- IE : Handle circular.
- TF : Compliance to NACE standard MR-0175.
- SG : For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH : Material test certificate
- GO : Hydro test certificate
- MBC : Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS : Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- DS : Valves with stem having soft conical and Delrin tip rolled into the needle for gas service

### Example

To place an order simply refer to the codes in the table.

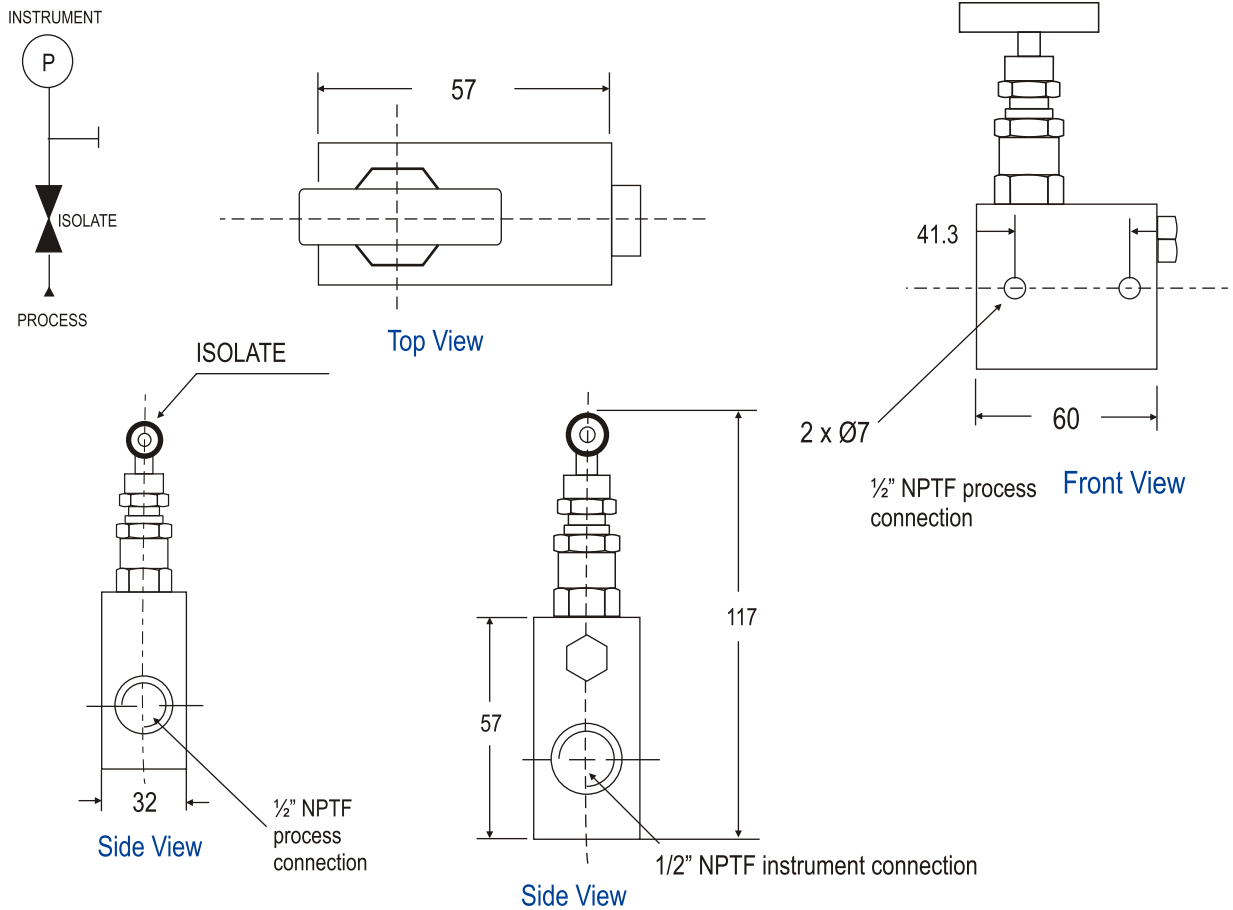
<b>Valve Type</b>	+	<b>Body Material</b>	+	<b>Stem Type</b>	+	<b>Stem Packing</b>	+	<b>Size</b>	+	<b>Connections</b>	+	<b>Threads</b>	+	Options
M-36	+	S	+	CT	+	P	+	44	+	FF	+	N	+	= M-36-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

## M-37

With threaded horizontal port inlet, outlet and vent/test connection located at the right hand side. The venting bonnet is positioned on the top.



### Standard connection

Product	Process side	Instrument side	Vent/Test
M 37	1/2" NPT female	1/2" NPT female	1/4" NPT female

### Standard version specifications

Body	SS 316
Stem	SS 316
Valve assembly	SS 316
'T' bar handle	SS 304
Maximum working pressure	6000 PSI /400 bar
Maximum working temperature	240°C
Packing	PTFE
Type of stem	Type CT; Stem with conical metal tip
Drain port	1/4" NPT [F]; provided with SS 316 plug [not available in Series SW]
Bracket mounting holes	2 Nos. of 7 mm diameter [not available in Series SVH]
Hard Chrome plating	Provided on stem tip

### How To Order: Valve Type-M-37

Body Material	Stem Type	Stem Packing	Size = Inlet x Outlet	Connections	Threads
C = Carbon Steel	CT (std)	P = PTFE (std)	24 = 1/4" x 1/4"	FF = Female x Female (Std)	N = NPT (ANSI B 1.20.1)
S = SS 316 (std)	DS	G = Grafoil	33 = 3/8" x 3/8"	SW = Socket Weld	P = BSPP (BS 2779,ISO 228/1)
S4 = SS 304			44 = 1/2" x 1/2" (std)	FD = Female x Flange(54mm)	B = BSPT (BS 21, ISO 7/1)
SL = SS 316L			2F = 1/4"x Flange		
M4 = Monel 400			3F = 3/8"x Flange		
M5 = Monel 500			4F = 1/2"x Flange		
H = Hastelloy C					

### Options -

- IE Handle circular.
- TF Compliance to NACE standard MR-0175.
- SG For Oxygen service, valves are supplied cleaned, degreased and suitably packed.
- GH Material test certificate
- GO Hydro test certificate
- MBC Mounting bolts (7/16" UNF) in carbon steel (Model : MBC - M45, MBC - M25)
- MBS Mounting bolts (7/16" UNF) in SS (Model : MBS - M45, MBS - M25)
- DS Valves with stem having soft conical and Delrin tip rolled into the needle for gas service

### Example

To place an order simply refer to the codes in the table.

Valve Type	+	Body Material	+	Stem Type	+	Stem Packing	+	Size	+	Connections	+	Threads	+	Options
M-37	+	S	+	CT	+	P	+	44	+	FF	+	N	+	= M-37-S-CT-P-44-FF-N-Options

### NOTE:

- The weld prepared types are available with female plain end - suitable for socket weld.
- Anti-tamper bonnet - special design on request with locking arrangement if desired.

# DIAPHRAGM SEALS

- All wetted parts SS 316L confirming to NACE MR 0175
- All diaphragm are laser welded with body
- All Sanitary seals are confirming to sanitary applications
- All the seals are helium leak tested
- Connected with gauges in MONEL ,HASTELLOY C 276,TITANIUM, TANTALUM,INCONEL 600,SILIVER
- We offer diaphragm seals till 400 bar



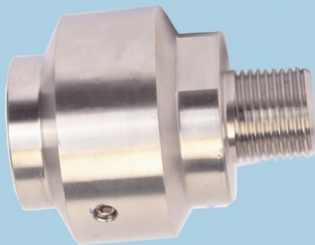
**D-02**  
**DIRECT COUPLE TYPE**  
 Min Pressure :-30inHg  
 Max.Pressure:6,000 psi



**D-04**  
**FLUSH DIAPHRAGM SANITARY TYPE**  
 Min Pressure :-30inHg  
 Max.Pressure:600 psi



**D-05**  
**SCREWED FLUSH TYPE**  
 Min Pressure :-30inHg  
 Max.Pressure: 900 psi



**D-06**  
**HEAVY DUTY MINI SEAL**  
 Min Pressure :-30inHg  
 Max.Pressure:9,000 psi



**D-07**  
**SANITARY SEAL,CLAMP TYPE**  
 Min Pressure :-30inHg  
 Max.Pressure:600 psi



**D-09**  
**DIRECT FLANGED FLUSHING TYPE**  
 Min Pressure :-30inHg  
 Max.Pressure:4,000 psi



**D-08**  
**FLANGE," I " SECTION TYPE**  
 Min Pressure :-30inHg  
 Max.Pressure:6,000 psi

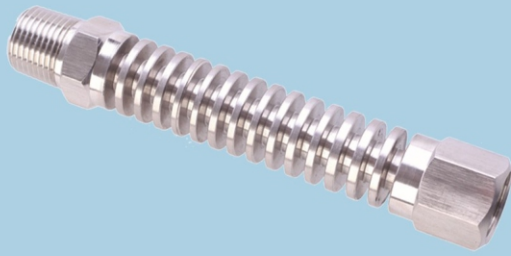


**D-11**  
**EXTENDED NECK TYPE**  
 Min Pressure :-30inHg  
 Max.Pressure:4,000 psi



**D-12**  
**PULP SEAL,FLOATING RING TYPE**  
 Min Pressure :-30inHg  
 Max.Pressure:600 psi

# ACCESSORIES



**AC-01  
COOLING TOWER**

Min. Pressure: -30inHg  
Max. Pressure : 6,000psi



**AC-02  
GAUGE COCK**

Min. Pressure: -30inHg  
Max. Pressure : 230 psi  
and 1,500 psi as option



**AC-03  
GAUGE SAVER**

Min. Pressure: -30inHg  
Max. Pressure :10,000 psi



**AC-04  
FLUSHING RING**

Min. Pressure: -30inHg  
Max. Pressure :6,000 psi



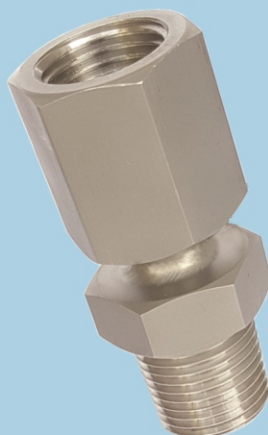
**AC-05  
PULSATION DAMPENER**

Min. Pressure: -30inHg  
Max. Pressure :6,000 psi



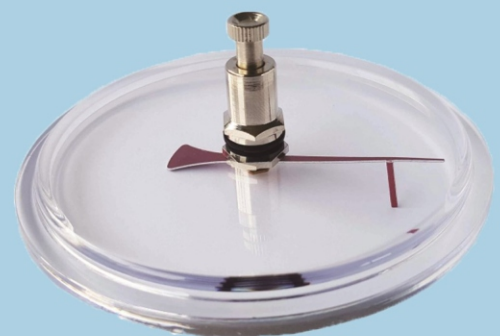
**AC-06  
SIPHON**

Min. Pressure: -30inHg  
Max. Pressure :1,500 psi



**AC-07  
SWIVEL ADAPTOR**

Min. Pressure: -30inHg  
Max. Pressure :6,000 psi

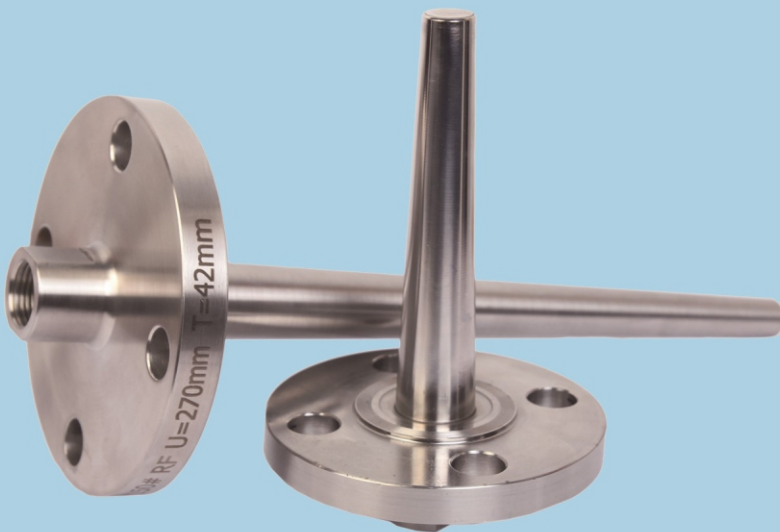


**AC-08  
CURVED PC LENS WITH  
RED DRAG POINTER**

Size: 2.5" & 4"

# THERMOWELLS

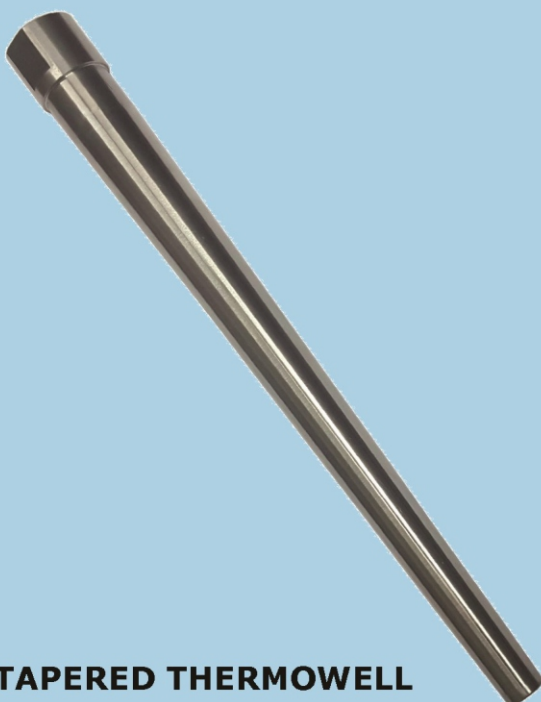
- Manufacture from BAR STOCK
- Design Standard : PTC 19.3
- Available material: SS316L ,HASTELLOY C,MONEL,TITANIUM,TANTALUM, INCONEL 600
- Protection Coating: Available with PTFE for acid applications.
- Leak Testing : Helium gas and Hydro static pressure internal and external



**FLANGE THERMOWELL**



**STRAIGHT THERMOWELL**



**TAPERED THERMOWELL**



**STEPPED THERMOWELL**



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Elite Instruments is a world class manufacturer of measuring instruments and accessories, including pressure gauges, thermometers, level gauges, pressure switches, RTD's, thermocouples and thermowells. We specialize in working together with our customers to develop comprehensive solutions in measurement technology and integrating those solutions into their processes.

Established in 2010, Elite Instruments delivers over 2 million quality products to over 50 countries every year. Worldwide, over 6 million ELITE measuring instruments are currently in use.

Headquartered in China, Kunshan Elite Instruments Company Ltd. also has locations in Singapore and India to better serve our customers,

Elite serves a wide variety of industries worldwide, including:

1. Oil and Gas
2. Chemical and Petrochemical
3. Food and Pharmaceutical
4. Water and Wastewater
5. Engineering and Process

Elite also specializes in developing custom built OEM products as per customer requirements. Our proficient team of engineers will work to bring your custom design to life, or work with you to create new products designed meet your exact needs.

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Elite Instruments is ISO 9001 :2008 certified with many products holding ATEX approval, per 2014/34/EU Our state of the art production, testing and warehouse facilities ensure Elite exceeds customer expectations for quality and delivery.

Elite's commitment to quality is demonstrated by our investment in world class production and testing equipment.

Our commitment to quality is also demonstrated in our procedures. All Elite products undergo rigorous quality inspection before, during and post-production to ensure 100% of products meet customer demands and specifications.

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