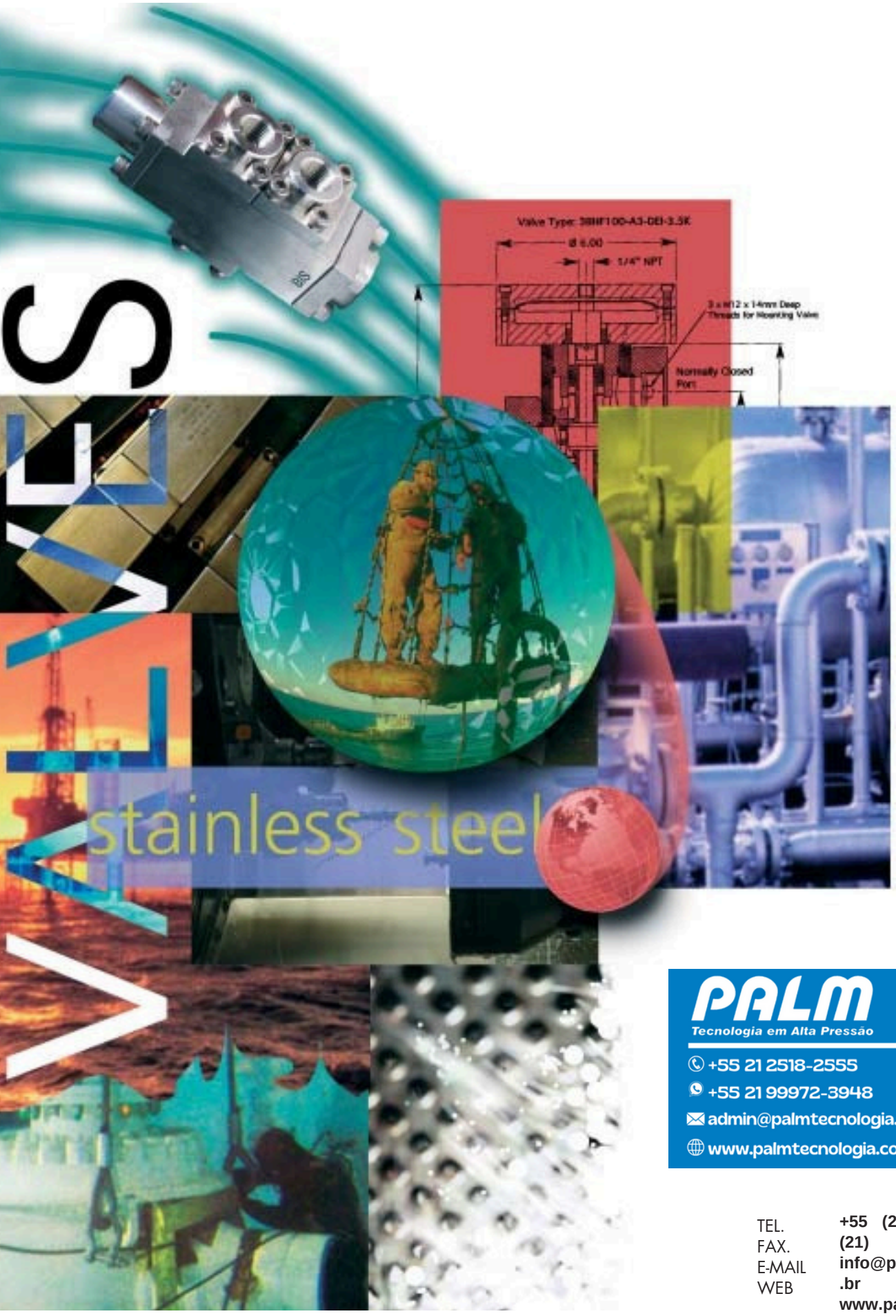
BS VALVES



PALM
Tecnologia em Alta Pressão

+55 21 2518-2555
+55 21 99972-3948
admin@palmtecnologia.com.br
www.palmtecnologia.com.br

TEL. +55 (21) 2518-2555
FAX. +55 (21) 2524-4562
E-MAIL info@palmtecnologia.com.br
WEB www.palmtecnologia.com.br

Baseefa BVAA BUREAU VERITAS BVQi ISO 9001 UKAS QUALITY MANAGEMENT

COMPANYPROFILE

- Established for over 30 years situated on the south coast of England in the United Kingdom.
- Suppliers of "Pressure Control Equipment" for liquids and gases.
- Full design and manufacturing facilities using modern CAD and CNC equipment.
- Qualification Testing to meet customer requirements.
- Full "prototype / design" support service available to meet specific customer requirements.
- Oversea's agency representation in many countries worldwide.
- Approved to the ISO9001:2000 Quality Management System.
- Approved to the European ATEX Directive 94/9/EC.
- Approved to the European Pressure Equipment Directive (PED) 97/23/EC.

PRODUCTINFORMATION

- Manufacturer's and suppliers of a wide range of standard and non-standard equipment, including Directional Control Valves, Safety & Relief Valves, Check Valves, Filters .....
- All equipment available with either NPT or BSP connections / porting.
  High Pressure Thread & Cone (Autoclave/Butech type) porting available on request.
  Certificate(s) of Conformity & Test Certificate(s) supplied as standard.
- Special 'O' ring seal compounds available by request.
- Special Products available by request.
-

CUSTOMERSUPPORT/ SERVICES

- Suppliers to the Oil and Gas Industry, Chemical & Process Industry & Commercial Industry.
- Extensive customer client base.
- Full "after-sales" technical support service.
- Reliable "spare parts service" and "in-house" repair facility.

Valves Ltd

CATALOGUE INTRODUCTION

This catalogue represents the full standard range ofBiS Valves products. Each page illustrates the equipmentcomplete withfull technical specification. Certain types ofvalves havethe optionofbeingfittedwithmorethanonetypeofactuator.Intheseinstancesthevalvebodyis specifiedononepageandtheactuatorillustratedseparatelyin *SECTION12ACTUATORS*. Illustrations with bothvalve bodyand actuatorassembledareavailableuponrequest. Shouldanyofourstandardproductsnotmatchyourspecificrequirements,BiSValvesisableto offer its full "Custom-Build" serviceincorporating bothdesign anddevelopment. Pleasecontactour TechnicalDepartment withyour details.
BiSValvesreserves the righttomodifyany part ofthedesignofits productswithoutprior notice. Dimensionsshownondrawingsinthiscatalogueareg ivenasguidanceonly.Forassembly/ installationdetailsofanypieceofequipmentwheredimensionsareconsideredcriticalitis recommended tocontactour TechnicalDepartment forthe latestdetails.

ORDERING PROCEDURE

BiS Valves manufactures the majority ofits products in AISI 316 /1.4404Stainless Steel. The standard product materialcan be foundunderthe general heading atthe topofeach page complete withoptionsavaialable.
WHENORDERING A CODE ISNOT REQUIREDFORSTANDARD MATERIAL.
Non-Standard materials aretreated asan optionwith itsownOrdering Code.

Orderinginformationrequiredfor *ALL*standardequipmentthroughoutthecatalogueisshownin the typicalexample below:-

TECHNICAL SPECIFICATION			Ordering Example
MaterialOption (non-std)		*A* = Alum.Body (HE30) *C*= En1A/220M07MildSteel(E.N.P.)	—
Valve Type:		*3B25*	*3B25*
Porting/ Connection Options:		*P*=BSP(Parallel) *N*=NPT(Taper) *M*= Manifold	*N*
Actuator Options	Low Press. Pilot:	Types: *H3*(44 to 300 psi)	*H3*
	High Press. Pilot:	Types: *H0*(400 to 3,500 psi), *H1*(1,400to 10,000 psi)	
	Mechanical:	Types: *C0, C1, L, DL*	
Max.WorkingPress: Liquid/Gas		*10,000 psi*	*10K*

Selecttherelevantorderingcodesshownin *"bold"*typefromwithinthetabletosuityour own TechnicalSpecification. This is illustratedinthe column marked "Ordering Example".

Example:Valve*MODELNUMBER*selectedis a *3B25N H3** 10K*

- Directional Control Valve (AISI 316) Type"3B25" (1/4"ports)
- NPTPorts
- PistonHydraulicActuatorType"H3"
- OrderingCodefor *"non-standard"*optionsenteredhere.
  (consult factory for relevant information if required)
- MaximumWorking Pressure of10,000psi

ForSparesKits add "RK"(Repair Kit)or "SK"(Seal Kit)after the Valve ModelNumber.

Additionaltechnicalinformationrelevanttotheequipmentbutnotcoveredbyorderingoptionsis tabulatedbelowthe *"bold"*outlinedareaoneachcataloguepage.

Valves Ltd

TECHNICAL DATA

- Dimensionsondrawings/diagramsarestatedin *INCHES*
- Pressuresarestatedin *psi.*(pounds/sq.in)
- Weightsarestatedin *kg.*(kilogrammes)
- All equipment is manufactured externally in *AISI316/1.4404StainlessSteel*unless otherwise stated.
- All seals used are *Fluorocarbon(Viton)* unless otherwise stated.
  (othermaterials availableuponrequest).
- All equipment is supplied with either *BSP(Parallel)* or *NPT(Taper)*threads.
- Proof Testing is carried out at *1.5 times* above the *MAXIMUMWORKINGPRESSURE.*
- WorkingTemperature Ranges arestated assuming optimumfluid compatibility tothe elastomer andseal back upmaterials. Workingtemperatureranges shouldbe confirmed forindividual applications.

TECHNICAL FORMULA

- *INCHES to MILLIMETRES* multiplyby.....25.4
- *KILOGRAMMES to POUNDS* multiplyby.....2.2
- *POUNDS/SQ.IN(psi) to BAR* divideby.....14.5
- *USgalls/min to IMPERIALgalls/min* multiplyby.....0.83
- *USgalls/min to Litres/min* multiplyby.....3.79
- *SCFH (Standard Cubic Ft/Hr) to Nm /Hr (Normal Cubic Metres/Hour)* multiply by..... 0.028
  CoefficentofFlow (CV) see belowfor details

FLOW FORMULA

ForLIQUID:
Flow, U.S.gal/min $V = CV \frac{\sqrt{P_1 - P_2}}{\sqrt{SGF}}$

Specific Gravity (SGF)
TypicalLiquids @ 68°Freferred towater.

HydraulicOil..... 0.875
HW540 *..... 1.055
Water 1.000

* Water Glycol

ForGAS:

$$Q = 42.2\,CV \frac{\sqrt{(P_1 - P2)(P_1 + P2)}}{\sqrt{G}}$$

Specific Gravity (SG)
TypicalGases@68°Freferredto air.
Acetylene..... 0.897
Air.....1.000
Hydrogen.....0.0695
Methane.....0.553
Oxygen..... 1.103

$$Q = 42.2\,CV \frac{0.87 \times P_1}{\sqrt{SG}}$$

for $P_2 \leq 0.5\,P_1$

FORMULA NOMENCLATURE

V =Flow,U.S.gallonsperminute(GPM)
Q =Flow,standardcu.ft.perhr.(SCFH)
P 1 = Inlet Pressure, psia (14.7 + psig)
P 2 = Outlet Pressure, psia (14.7 + psig)
SGF=LiquidSpecificGravity(water=1.0)
S.G ≡ GasSpecific Gravity(air = 1.0)
CV ≡ Valve Coefficient of Flow, full open.

*GasFlowCalculation:*Thismethodisonlyapproximateandshouldonlybeusedfor roughcalculations,the error increases the lower P2is relative toP1.
If accuratepressuredrop figures arerequiredconsult factory.

Valves Ltd

PRODUCT INDEX

SECTION 1: SOLENOID VALVES

SECTION 2: STOP & METERING VALVES

SECTION 3: 3 PORT DIRECTIONAL CONTROL VALVES

SECTION 4: 4 PORT DIRECTIONAL CONTROL VALVES

SECTION 5: CHECK VALVES

SECTION 6: PILOT OPERATED CHECK VALVES

SECTION 7: RELIEF VALVES

SECTION 8: EXCESS FLOW VALVES

SECTION 9: FILTERS

SECTION 10: PRESSURE SENSING VALVES

SECTION 11: PUMPS

SECTION 12: ACTUATOR & SOLENOID THRUSTERS

Valves Ltd

SECTION 1: SOLENOID VALVES

1/4" 316 St.St. 2/3, MWP: 6,000 psi Liquid / 3,500 psi Gas, soft seated Type: 2/3DS25 ..... *1:1*

3/8" 316 St.St. 2/3, MWP: 6,000 psi Liquid / 3,500 psi Gas, soft seated Type: 2/3DS37 ..... *1:2*

1/4" 316 St.St. 2/3, MWP: 10,000 psi Liquid, hard seated Type: 2/3DS20/25 ..... *1:3*

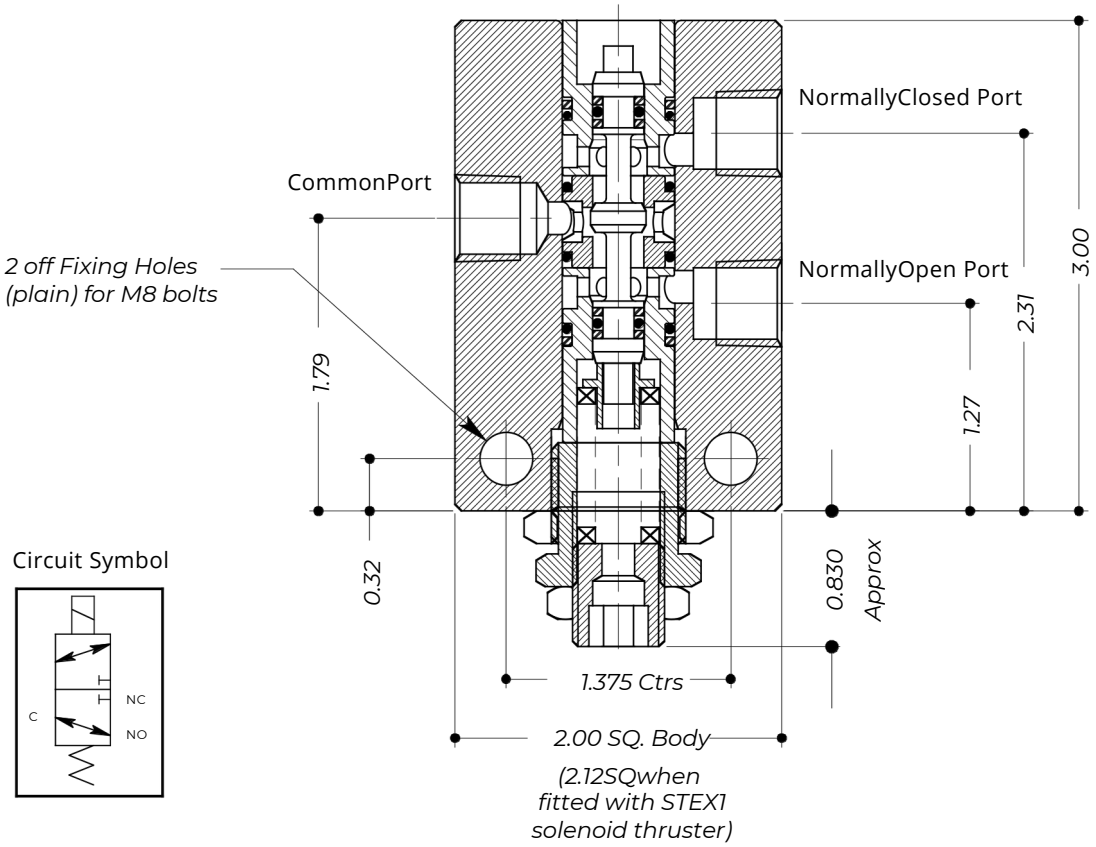
1/8" 316 St.St. 2/3, MWP: 10,000 psi Liquid, hard seated, sub-sea use Type: CS20 ..... *1:4*

INDIRECT SOLENOID VALVE Type: 2 Posn/3 Ported or 2 Posn/4 Ported ..... *Consult Factory*

DIRECT SOLENOID VALVE TYPE: 2/3DS25

Valves Ltd

- 2 POSN / 3 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH SOLENOID OPTIONS.
- SUITABLE FOR LIQUID OR GAS USE.
- FITTED WITH "SOFT" SEATS.
- SOLENOID ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



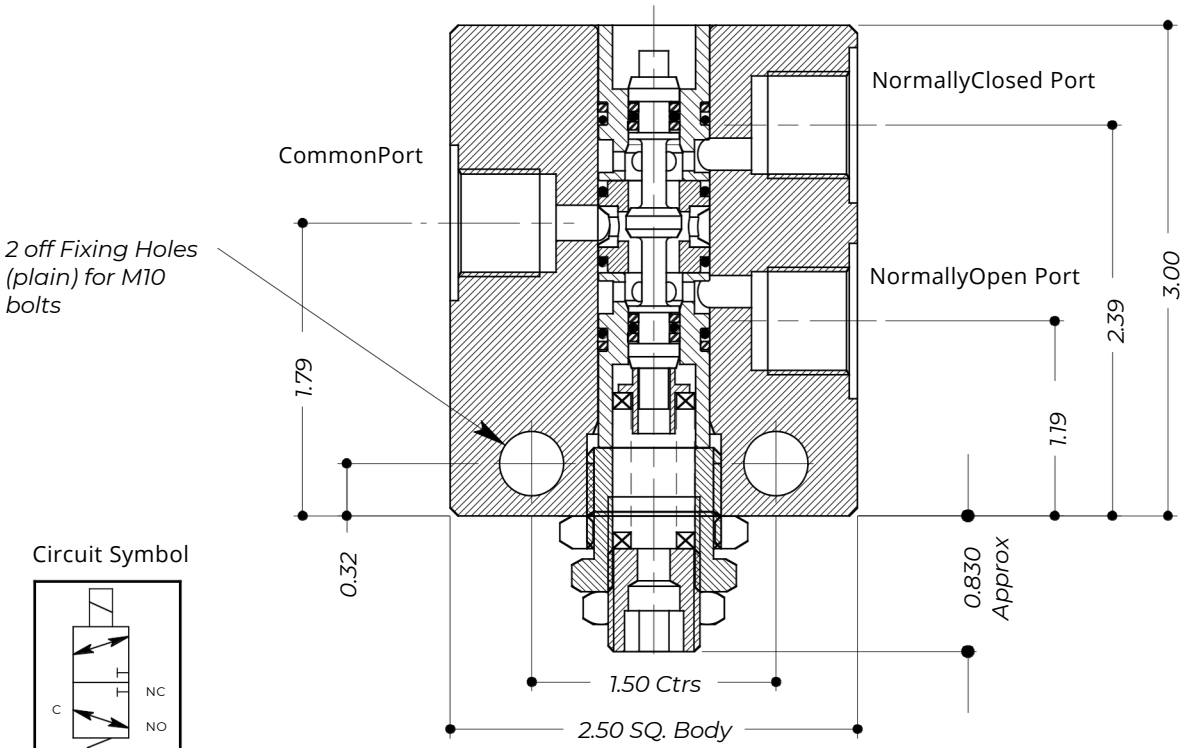
Circuit Symbol

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:		*2/3DS25*	*2/3DS25*
Porting/ Connection Options:		*P* = BSP (Parallel) *N* = NPT (Taper) *M* = Manifold	*N*
SoftSeated Valve:		*G*	*G*
Solenoid Thruster Options:		*HC*= (DIN connector) *KC*=(Kopexfitting) *STEX1*= (EExd)	*KC*
Max.WorkingPress: Liquid/Gas		*6Kpsi/ 3,5Kpsi*	*6K*
VoltageRating:		CheckVoltage RatingavailabilityinSection 12 (examplegiven *)	*24VD.C. **
Port Size:		1/4"	
ValveSeatMat'l: Liquid/Gas		Peek	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		0.26	
DryWeight: (kg)		1.75	
Working Temp Range:	fittedwith HC, KC	-10°Cto+80°C	
	fittedwith STEX1	T5 = -10°Cto+40°C T4 = -10°Cto+60°C	

DIRECT SOLENOID VALVE TYPE: 2/3DS37

Valves Ltd

- 2 POSN / 3 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH SOLENOID OPTIONS.
- SUITABLE FOR LIQUID OR GAS USE.
- FITTED WITH "SOFT" SEATS.
- SOLENOID ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



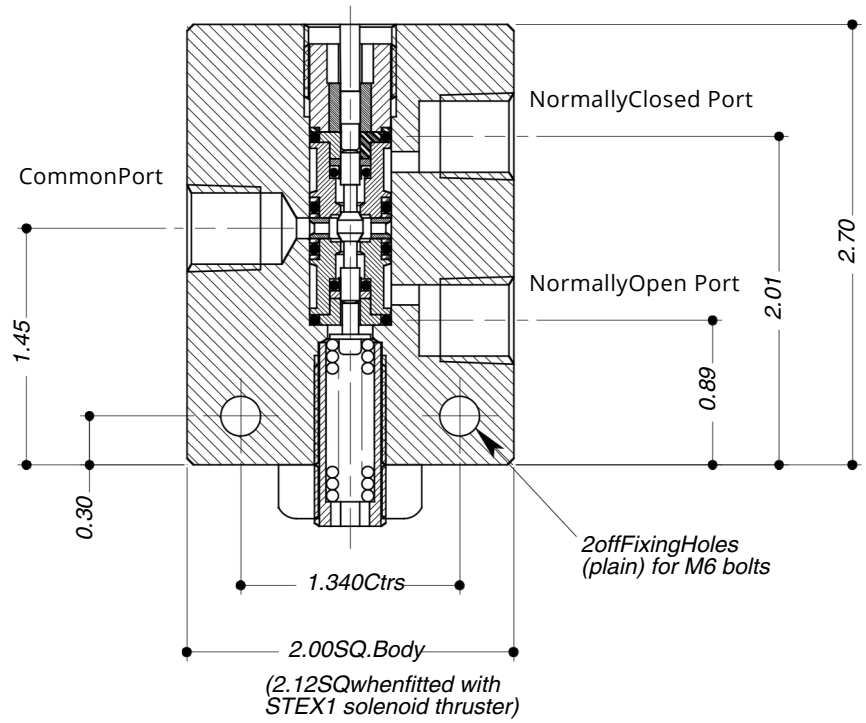
Circuit Symbol

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:		*2/3DS37*	*2/3DS37*
Porting/ Connection Options:		*P* = BSP (Parallel) *N* = NPT (Taper) *M* = Manifold	*P*
SoftSeated Valve:		*G*	*G*
Solenoid Thruster Options:		*HC*= (DIN connector) *KC*=(Kopexfitting) *STEX1*= (EExd)	*KC*
Max.WorkingPress: Liquid/Gas		*6K psi/ 3,5K psi*	*6K*
VoltageRating:		CheckVoltage RatingavailabilityinSection 12 (examplegiven *)	*24VD.C. **
Port Size:		3/8"	
ValveSeatMat'l: Liquid/Gas		Peek	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		0.26	
DryWeight: (kg)		2.00	
Working Temp Range:	fittedwith HC, KC	-10°Cto+80°C	
	fittedwith STEX1	T5 = -10°Cto+40°C T4 = -10°Cto+60°C	

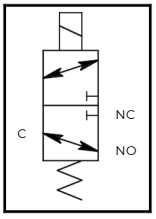
DIRECT SOLENOID VALVE TYPE: 2/3DS20/25

Valves Ltd

- 2 POSN / 3 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH SOLENOID OPTIONS.
- SUITABLE FOR LIQUID USE.
- FITTED WITH "HARD" SEATS.
- SOLENOID ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol

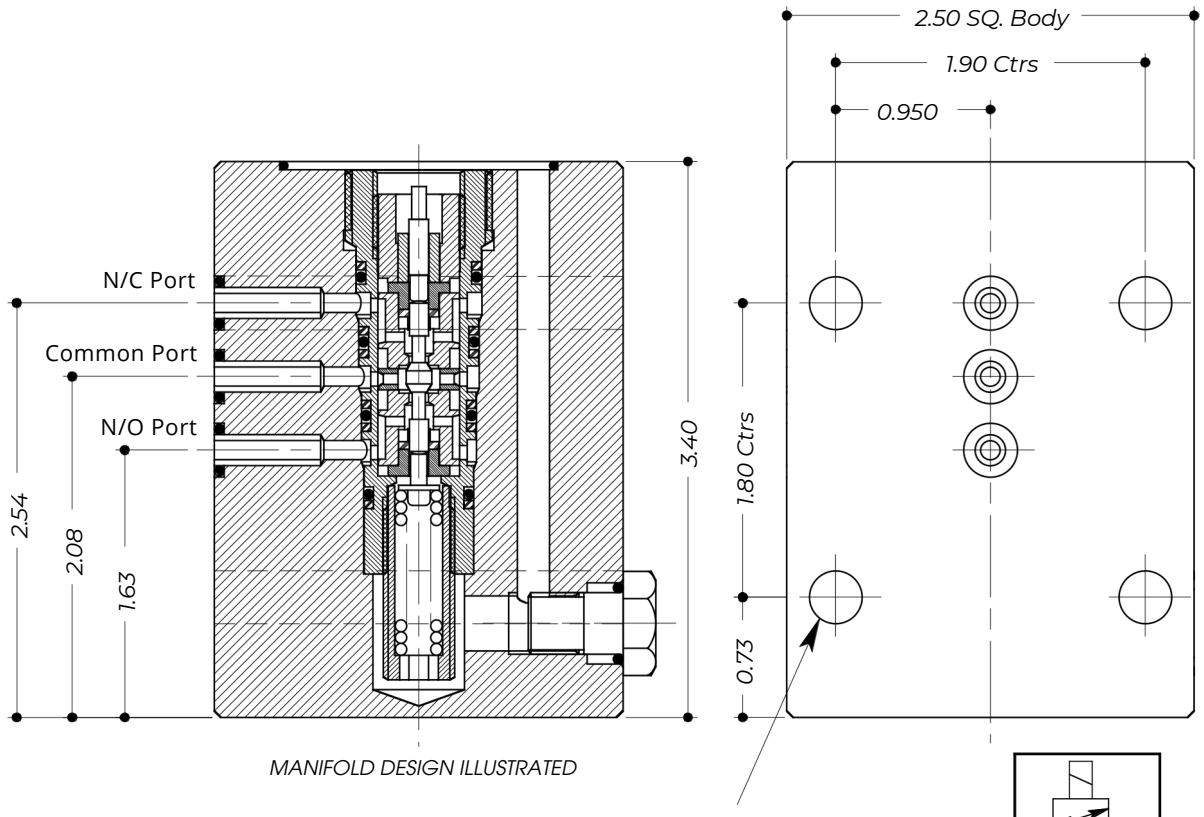


TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:		*2/3DS20/25*	*2/3DS20/25*
Porting/ Connection Options:		*P* = BSP (Parallel) *N* = NPT (Taper) *M* = Manifold	*N*
Solenoid Thruster Options:		*HC*= (DIN connector) *KC*=(Kopexfitting) *STEX1*= (EExd)	*KC*
Max.WorkingPress: Liquid		*10,000 psi*	*10K*
VoltageRating:		CheckVoltage RatingavailabilityinSection 12 (examplegiven *)	*24VD.C. **
Port Size:		1/4"	
ValveSeatMat'l: Liquid		StainlessSteel- 431/1.4057	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		0.1	
DryWeight: (kg)		1.75	
Working Temp Range:	fittedwith HC, KC	-10°Cto+80°C	
	fittedwith STEX1	T5 = -10°Cto+40°C T4 = -10°Cto+60°C	

CARTRIDGE SOLENOID VALVE TYPE: CS20

Valves Ltd

- 2 POSN / 3 PORTED STAINLESS STEEL (316 / 1.4404) VALVE FOR SUB-SEA APPLICATION.
- SUITABLE FOR LIQUID USE.
- FITTED WITH "HARD" SEATS.
- SOLENOID ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.

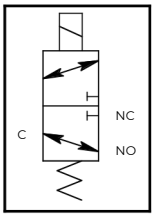


MANIFOLD DESIGN ILLUSTRATED

N/C = Normally Closed Port
N/O = Normally Open Port

4 off Fixing Holes (plain) for M8 bolts

Circuit Symbol



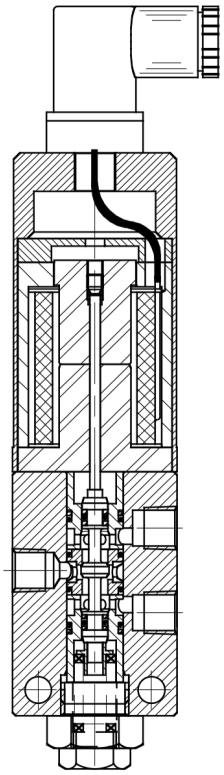
ThisModelcanbesuppliedasa"non-standard"fitted witheither1/4"or3/8"(BSPorNPTthreaded ports). Ask for ordering details.

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Valve Type:	*CS20*	*CS20*
Porting / Connection Options:	*M* = Manifold	*M*
Solenoid Thruster Options:	*SW* = Sub-Sea	*SW*
Max.Working Press: Liquid	*10,000psi*	*10K*
Valve Seat Mat'l: Liquid	Stainless Steel - 431/1.4057	
Seal Material:	Viton (other materials available by request)	
CV Value:	0.1	
Dry Weight: (kg)	2.0	
Working Temperature Range:	-10°C to +70°C	

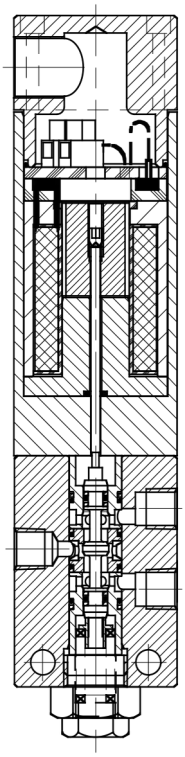
EXAMPLES OF SOLENOID ASSEMBLIES FITTEDWITHSOLENOID THRUSTERS

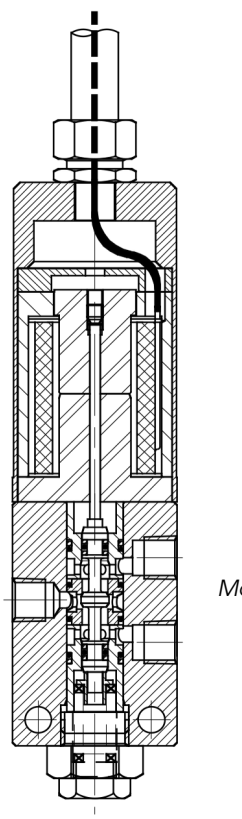
Valves Ltd

Model Type: 2/3DS25-HC(3.5K)



Model Type: 2/3DS25-STEX1A (6K)





Model Type: 2/3DS25-KC (3.5K)

BiS Valves Ltd., Units 17-22, Kingfisher Park, West Moors, Wimborne , Dorset, ENGLAND.
Tel:01202896322 Fax: 01202 896718 e-mail: info@bisvalves.co.uk. web site: www.bisvalves.co.uk

Valves Ltd

SECTION 2: STOP & METERING VALVES

1/4" / 3/8" 316 St.St. Stop Valve, MWP: 10,000 psi Liquid / 6,000 psi Gas Types: BNV25, BNV25/37 ..... 2:1

1/2" / 3/4" 316 St.St. Stop Valve, MWP: 10,000 psi Liquid / 6,000 psi Gas Types: BNV50, BNV50/75 ..... 2:2

1/4" / 3/8" 316 St.St. Fine Flow Metering Valve, MWP: 8,000 psi Liquid / 4,000 psi Gas Types: MF25, MF37 ..... 2:3

1/2" - 1" 316 St. St. Fine Flow Metering Valve, MWP: 8,000 psi Liquid / 4,000 psi Gas Types: MF50, MF75, MF100 ..... 2:4

1/4" / 3/8" 316 St.St. Reverse Check Metering Valve, MWP: 8,000 psi Liquid / 4,000 psi Gas Types: CMF25, CMF37 ..... 2:5

1/2" - 1" 316 St.St. Reverse Check Metering Valve, MWP: 6,000 psi Liquid / 4,000 psi Gas Types: CMF50, CMF75, CMF100 2:6

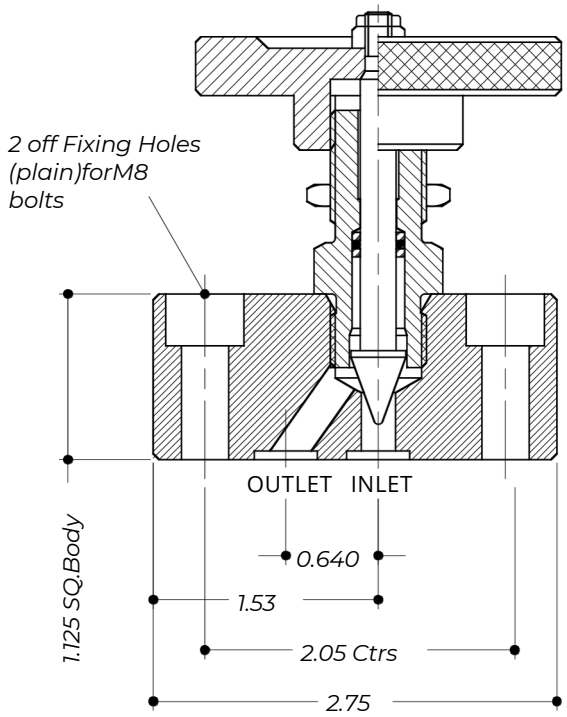
1/4" / 3/8" / 1/2" 316 St.St. Reverse Check Metering Valve, MWP: 8,000 psi Liquid Types: IMC25, IMC37, IMC50 ..... 2:7

1/2" / 3/8" 316 St.St. Pressure Compensated Flow Regulator, MWP: 10,000 psi Liquid Types: PCFR50/37, PCFR50 ..... 2:8

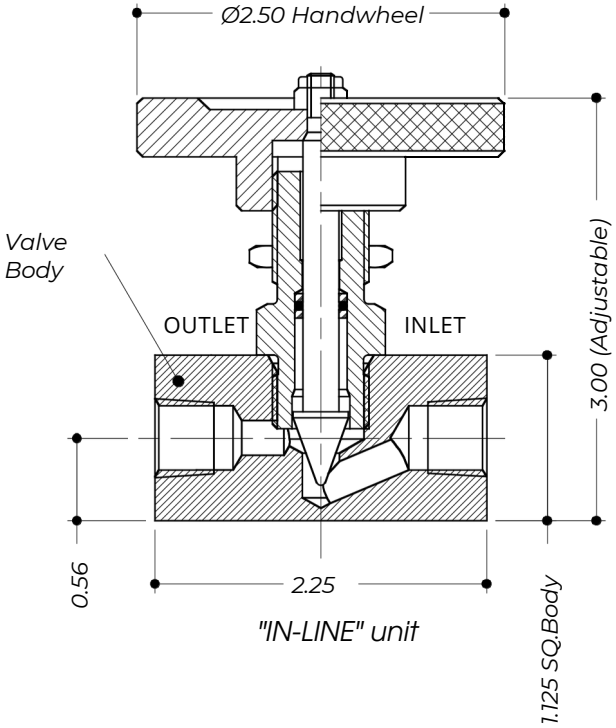
STOP & METERING VALVE TYPES: BNV25, BNV25/37

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLEFORLIQUIDORGAS USE.
- RECOMMENDED HOLE PANEL DIAMETER Ø0.70"
- ALL DIMENSIONS IN INCHES



"MANIFOLD" mounted



"IN-LINE" unit

"CartridgeUnit" WiththeBodyremovedthisunitcanbe assembled intocustomersownmanifold. OrderingExample: BNV25C

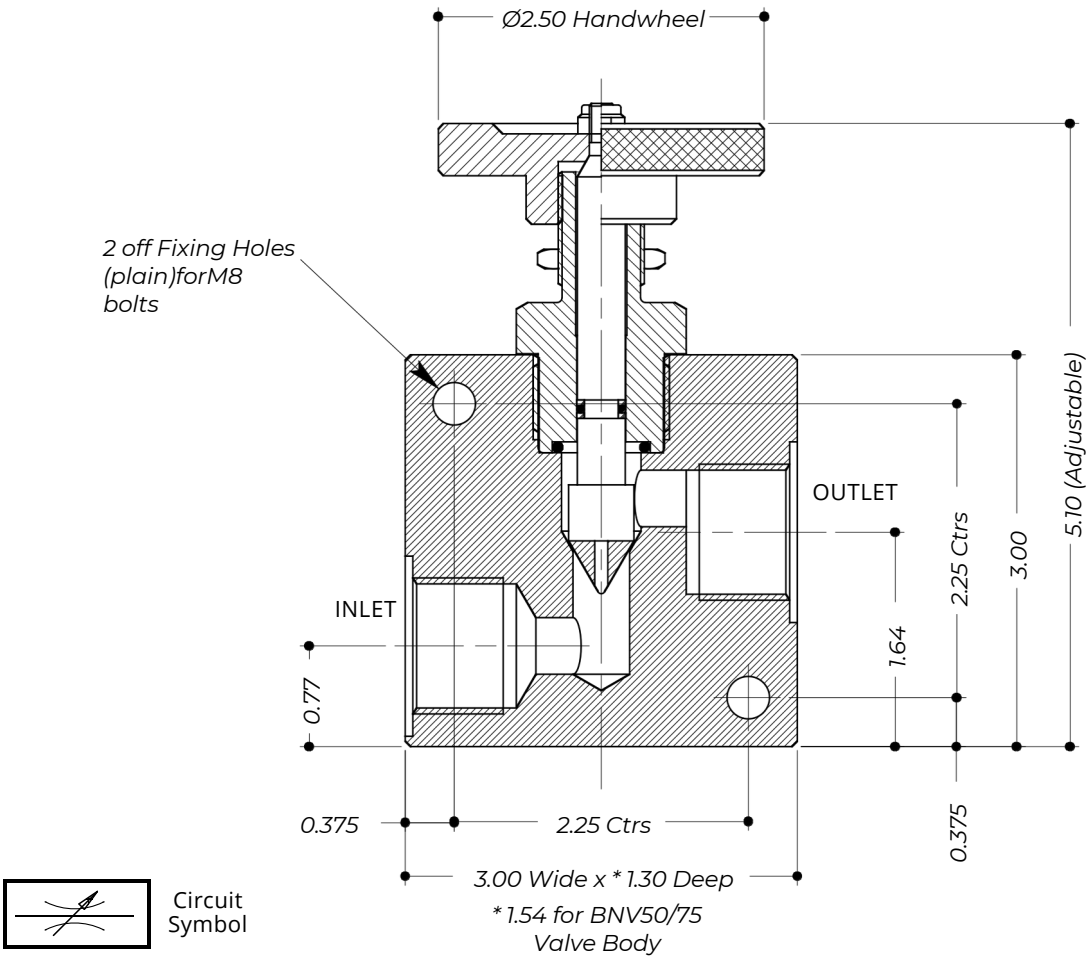
Circuit Symbol

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
Valve Type:	BNV25	BNV25/37	BNV25
Porting / Connection Options:	P = BSP (Parallel) N = NPT (Taper) M = Manifold C = Cartridge		N
Soft Seated Valve:	G		———
Max.Working.Press: Liquid	10,000 psi (HardSeat)		10K
Max.Working.Press: Liquid/Gas	6,000 psi (SoftSeat)		
Port Size:	1/4"	3/8"	
Valve Seat Mat'l: Hard Seat	Stainless Steel - 17-4/1.4542		
Valve Seat Mat'l: Soft Seat	Torlon		
Seal Material:	Viton (other materials available by request)		
CV Value:	0.52	0.52	
Dry Weight: (kg)	0.75	0.75	
Working Temperature Range:	-10°C to +120°C		

STOP & METERING VALVE TYPES: BNV50, BNV50/75

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES



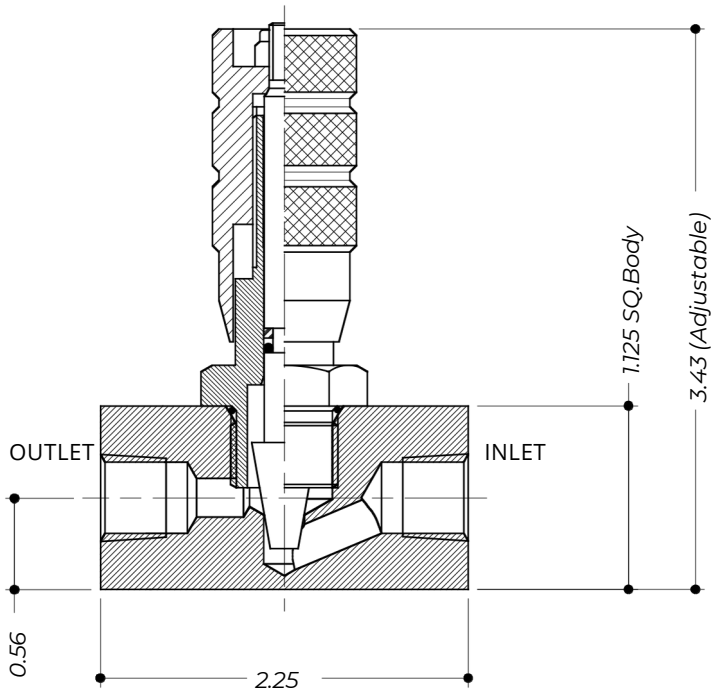
Circuit Symbol

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
Valve Type:	*BNV50*	*BNV50/75*	*BNV50*
Porting / Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper) *C* = Cartridge		*P*
Soft Seated Valve:	*G*		—
Max.Working.Press: Liquid	*10,000 psi* (HardSeat)		*6K*
Max.Working.Press: Liquid/Gas	*6,000 psi* (SoftSeat)		
Port Size:	1/2"	3/4"	
Valve Seat Mat'l: Hard Seat	Stainless Steel - 431/1.4057		
Valve Seat Mat'l: Soft Seat	Torlon		
Seal Material:	Viton (other materials available by request)		
CV Value:	2.1	2.1	
Dry Weight: (kg)	1.75	1.75	
Working Temperature Range:	-10°C to +120°C		

FINE FLOW METERING VALVE TYPES: MF25, MF37

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- THE "MF" SERIES IS NOT SUITABLE FOR "SCREW-DOWN" STOP VALVE USE WITH GAS.
- ALL DIMENSIONS IN INCHES.



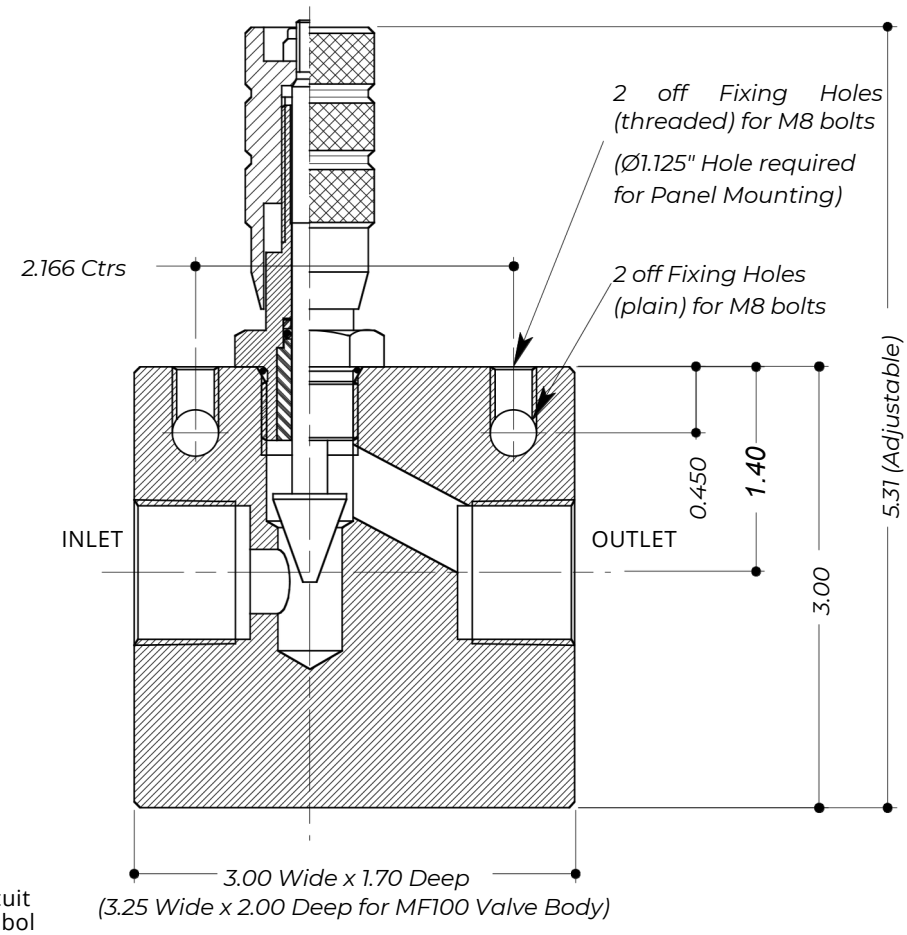
Circuit Symbol

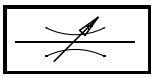
TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*MF25*	*MF37*	*MF25*
Porting/ Connection Options:	*P* = BSP (Parallel)	*N*= NPT (Taper)	*N*
Max.WorkingPressure- Liquid	*8,000psi*		*8K*
Max.WorkingPressure - Gas	*4,000psi*		
Port Size:	1/4"	3/8"	
ValveSeatMaterial:	StainlessSteel- 431/1.4057		
Seal Material:	Viton(othermaterials availableby request)		
CV Value:	0.64	0.70	
DryWeight: (kg)	1.0	1.0	
WorkingTemperature Range:	-10°Cto+120°C		

FINE FLOW METERING VALVE TYPES: MF50,MF75, MF100

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- THE "MF" SERIES IS NOT SUITABLE FOR "SCREW-DOWN" STOP VALVE USE WITH GAS.
- ALL DIMENSIONS IN INCHES.





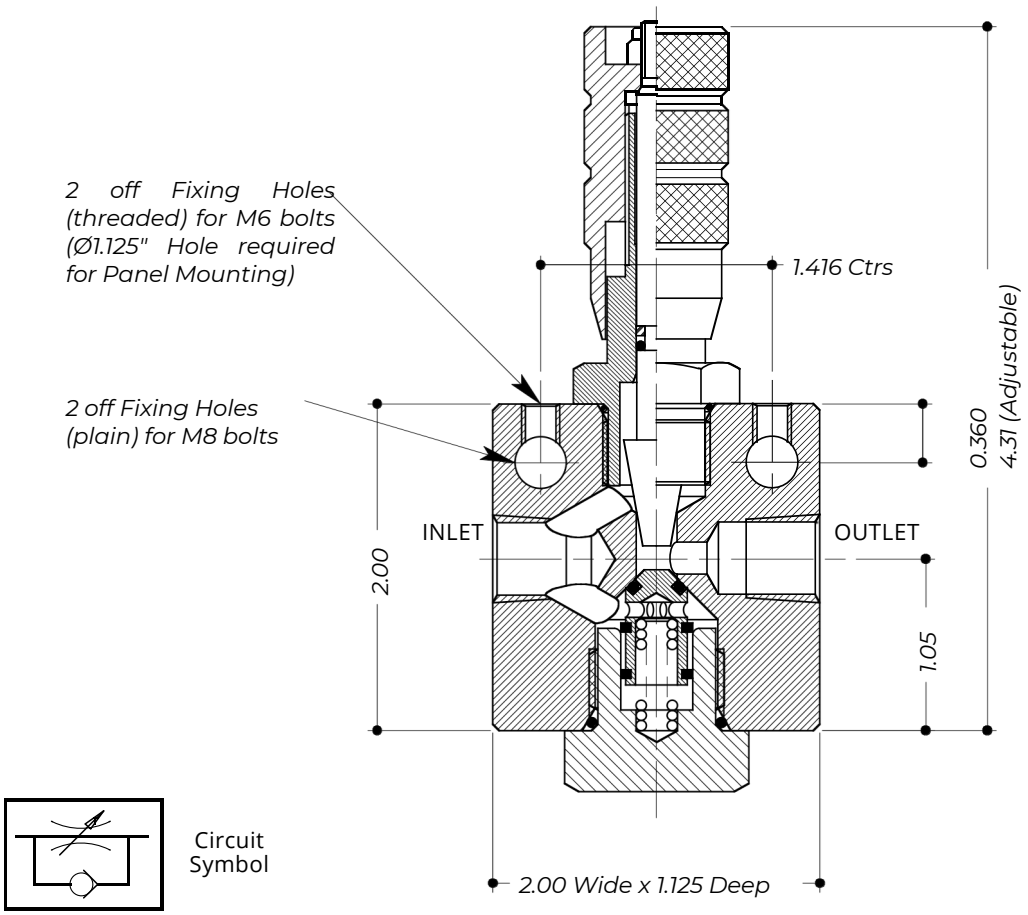
Circuit Symbol

TECHNICAL SPECIFICATION				ORDERING EXAMPLE
ValveType:	*MF50*	*MF75*	*MF100*	*MF50*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)			*N*
Max.WorkingPressure- Liquid	*8,000psi*			*8K*
Max.WorkingPressure - Gas	*4,000psi*			
Port Size:	1/2"	3/4"	1.00"	
ValveSeatMaterial:	StainlessSteel- 17-4/1.4542			
Seal Material:	Viton(othermaterials availableby request)			
CV Value:	1.4	2.5	2.5	
DryWeight: (kg)	1.8	1.8	1.8	
WorkingTemperature Range:	-10°Cto+120°C			

FINE FLOW METERING VALVE TYPES: CMF25, CMF37

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- THE "CMF" SERIES IS NOT SUITABLE FOR "SCREW-DOWN" STOP VALVE USE WITH GAS.
- ALL DIMENSIONS IN INCHES.



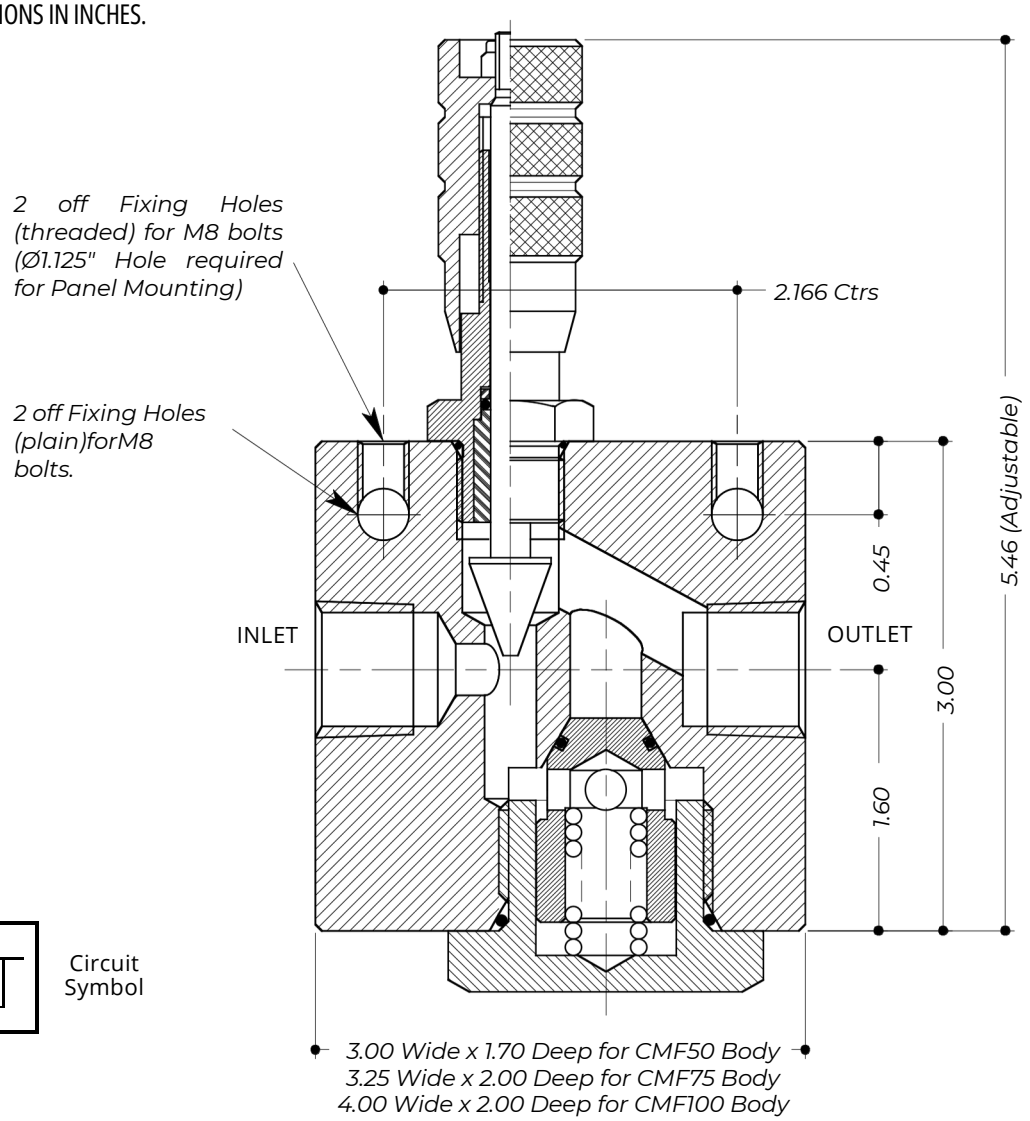
Circuit Symbol

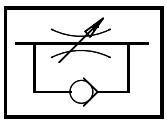
TECHNICAL SPECIFICATION			ORDERING EXAMPLE
Valve Type:	*CMF25*	*CMF37*	*CMF25*
Porting / Connection Options:	*P* = BSP (Parallel)	*N* = NPT (Taper)	*N*
Max.Working Pressure: Liquid	*8,000 psi*		*8K*
Max.Working Pressure: Gas	*4,000 psi*		
Port Size:	1/4"	3/8"	
Valve Seat Material:	Stainless Steel - 431/1.4057		
Seal Material:	Viton (other materials available by request)		
CV Value:	0.56	0.62	
Dry Weight: (kg)	1.0	1.0	
Working Temperature Range:	-10°C to +120°C		

FINE FLOW METERING VALVE TYPES: CMF50,CMF75, CMF100

Valves Ltd

- STAINLESS STEEL (17-4 / 1.4542)
- SUITABLE FOR LIQUID OR GAS USE.
- THE "CMF" SERIES IS NOT SUITABLE FOR "SCREW-DOWN" STOP VALVE USE WITH GAS.
- ALL DIMENSIONS IN INCHES.





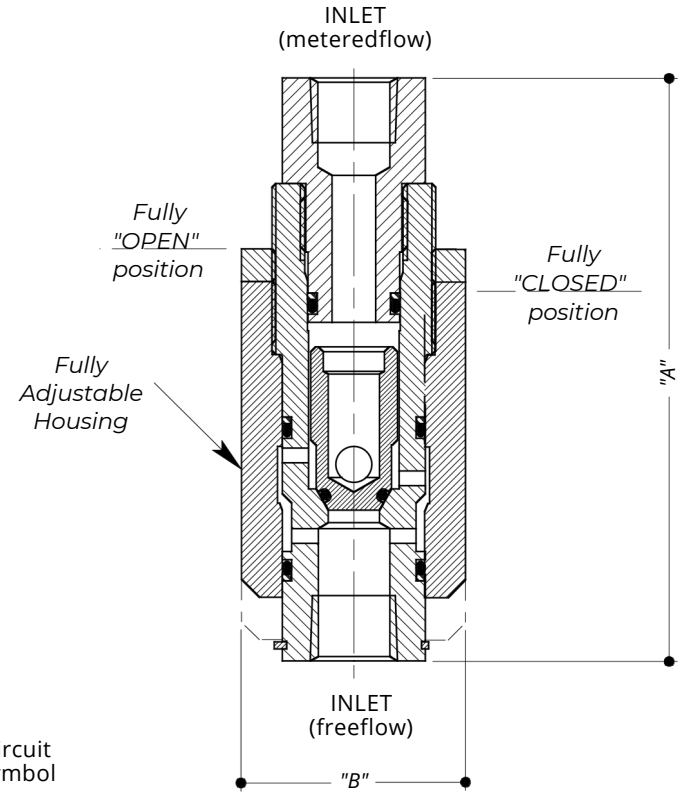
Circuit Symbol

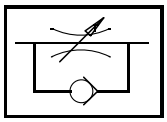
TECHNICAL SPECIFICATION				ORDERING EXAMPLE
Valve Type:	*CMF50*	*CMF75*	*CMF100*	*CMF50*
Porting / Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)			*N*
Max.Working Pressure: Liquid	*6,000 psi*			*6K*
Max.Working Pressure: Gas	*3,000 psi*			
Port Size:	1/2"	3/4"	1.0"	
Valve Seat Material:	Stainless Steel - 17-4/1.4542			
Seal Material:	Viton (other materials available by request)			
CV Value:	1.40	2.	2.	
Dry Weight: (kg)	2.0	5	5	
Working Temperature Range:	-10°C to +120°C		2.0	

METERING VALVE TYPES: IMC25, IMC37, IMC50

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- ALL DIMENSIONS IN INCHES.





Circuit Symbol

The valve can be suppliedtosuit many types offlow metering characteristics"tailor-made" tosuityour individual requirements. Contactour Technical Department for details.

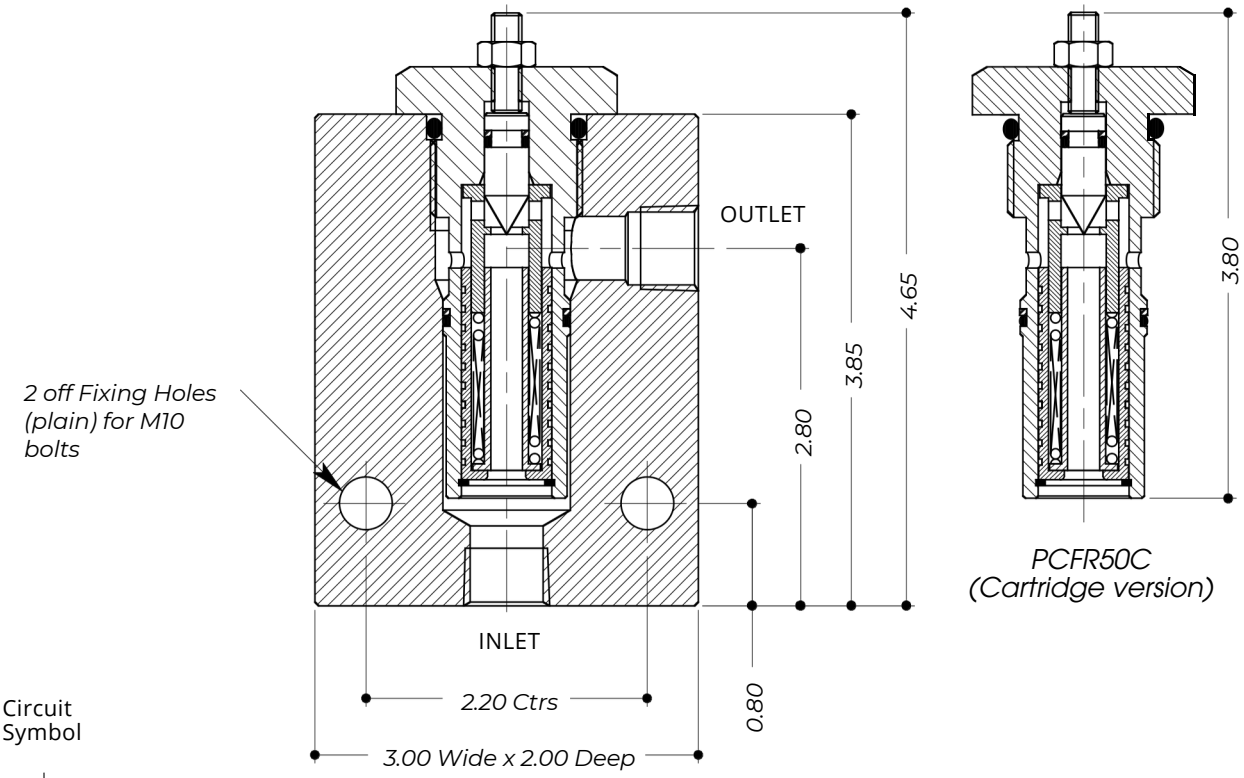
TECHNICAL SPECIFICATION				ORDERING EXAMPLE
ValveType:	*IMC25*	*IMC37*	*IMC50*	*IMC25*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)			*N*
Max.WorkingPressure: Liquid	*8,000psi*			*8K*
Port Size:	1/4"	3/8"	1/2"	
ValveSeatMaterial:	StainlessSteel- 316/1.4404			
Seal Material:	Viton(othermaterials availableby request)			
Dimension(ins) - Length "A"	3.57"	3.95"	5.30"	
Dimension(ins) - Diameter "B"	Ø1.37"	Ø1.73"	Ø2.25"	
CV Value:(MAX)	0.55	0.72	1.2	
DryWeight: (kg)	0.44	0.73	1.25	
WorkingTemperature Range:	-10°Cto+120°C			

PRESSURECOMPENSATED FLOW REGULATOR

TYPES: PCFR50/37,PCFR50

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- ALL DIMENSIONS IN INCHES



PCFR50 illustrated

PCFR50C (Cartridge version)

Circuit Symbol

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*PCFR50/37*	*PCFR50*	*PCFR50*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper) *C* = Cartridge		*P*
FlowMetering:	5-45L/Min *(Standard)* (*"LF"* LowFlow = 2- 15 L/Min)		———
Max.Working.Press: Liquid	*10,000psi*		*10K*
Port Size:	3/8"	1/2"	
Materials(Internal):	StainlessSteel- 316/1.4404 & 440C		
Seal Material:	Viton(othermaterials availableby request)		
Max Diff.Press (DP) psi	6,000psi		
DryWeight: (kg)	3.0		
WorkingTemperature Range:	-10°Cto+120°C		

Valves Ltd

SECTION 3: 3 PORTED DIRECTIONAL CONTROL VALVES

1/4"316St.St.2/3,MWP:10,000psiLiquid,hardseated,springreturn Type:3B25 ..... *3:1*

1/4"316St.St.2/3,MWP:6,000psiLiquid/3,500psiGas,softseated,springreturnType:3B25-G *3:2*

3/8" Mild or St.St. 2/3, MWP:10,000 psi Liquid, hard seated, spring return Type: 3B37 ..... *3:3*

3/8" Mild or St.St. 2/3, MWP: 6,000 psi Liquid / 3,500 psi Gas, soft seated, spring return. Type: 3B37-G .. *3:4*

1/2" 316 St.St. 2/3, MWP: 10,000 psi Liquid, hard seated, spring return Type: 3B50 ..... *3:5*

1/2"316St.St.2/3,MWP:6,000psiLiquid/3,500psiGas,softseated,springreturnType:3B50-G *3:6*

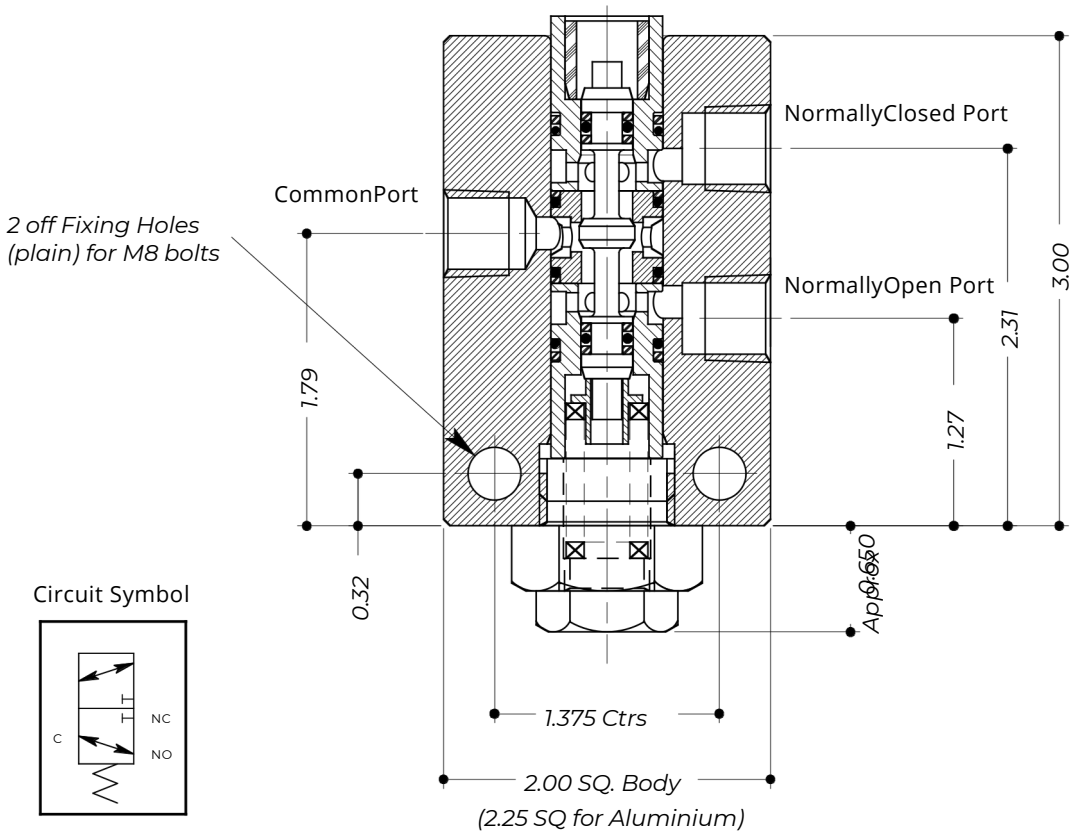
1" 316 St.St. 2/3, MWP: 3,500 psi Liquid/Gas Type: 3BHF100 ..... *3:7*

1" 316 St.St. 2/3, MWP: 10,000 psi Liquid Type: 3BLF100 ..... *Consult Factory*

DIRECTIONAL CONTROL VALVE TYPE: 3B25

Valves Ltd

- 2 POSN / 3 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH ACTUATOR OPTIONS.
- BODY MATERIAL OPTIONS: MILD STEEL - ENP (EN1A / 220M07), ALUM. ALLOY (HE30)
- SUITABLE FOR LIQUID USE.
- FITTED WITH "HARD" SEATS.
- ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



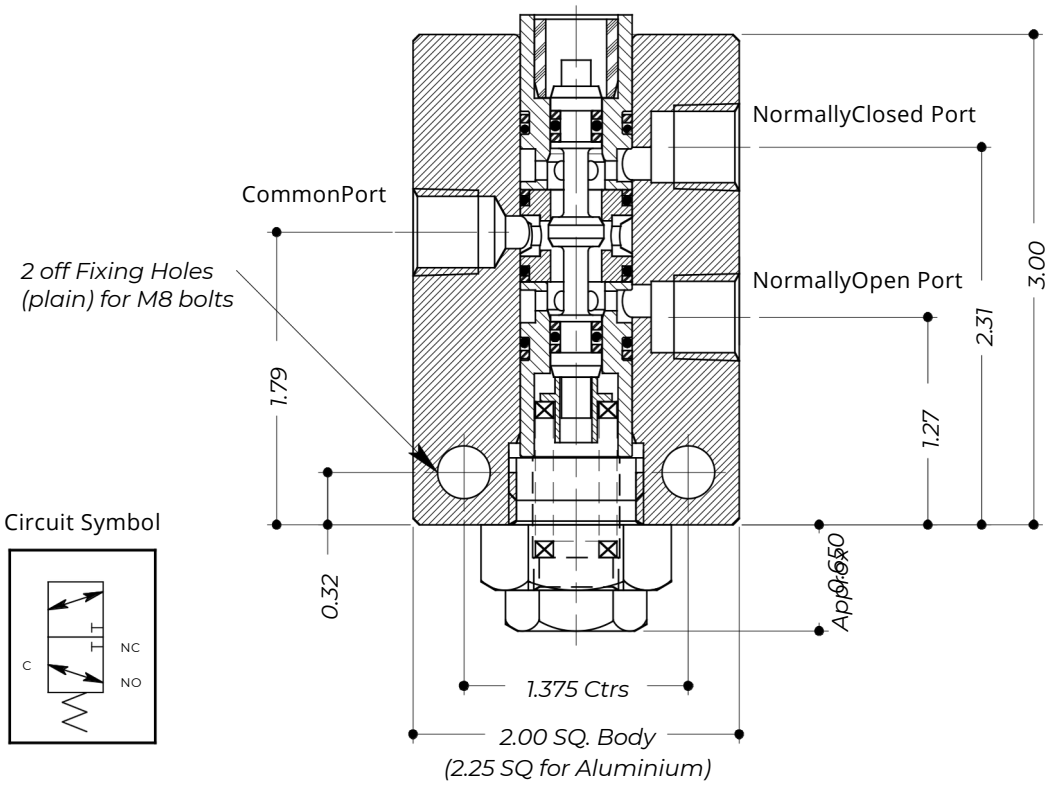
Circuit Symbol

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
MaterialOption (non-std)		*A* = Alum. Body (HE30) *C* = En1A/220M07 Mild Steel(E.N.P.)	—
ValveType:		*3B25*	*3B25*
Porting/ Connection Options:		*P*= BSP (Parallel) *N* = NPT (Taper) *M* = Manifold	*N*
Actuator Options	LowPress. Pilot:	Types *H3*(44to300psi)	*H3*
	HighPress. Pilot:	: *H0*(400to3,500psi), *H1*(1,400to10,000psi)	
	Mechanical:	Types: *C0,C1, L, DL*	
Max.WorkingPress: Liquid		: *10,000 psi*	*10K*
Port Size:		1/4"	
ValveSeatMat'l: Liquid		StainlessSteel- 431/1.4057	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		0.44	
DryWeight: (kg)		1.75	
WorkingTemperature Range:		-10°Cto+120°C	

DIRECTIONAL CONTROL VALVE TYPE: 3B25-G

Valves Ltd

- 2 POSN / 3 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH ACTUATOR OPTIONS.
- BODY MATERIAL OPTIONS: MILD STEEL - ENP (EN1A / 220M07), ALUM. ALLOY (HE30)
- SUITABLE FOR LIQUID OR GAS USE.
- FITTEDWITH "SOFT" SEATS.
- ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol

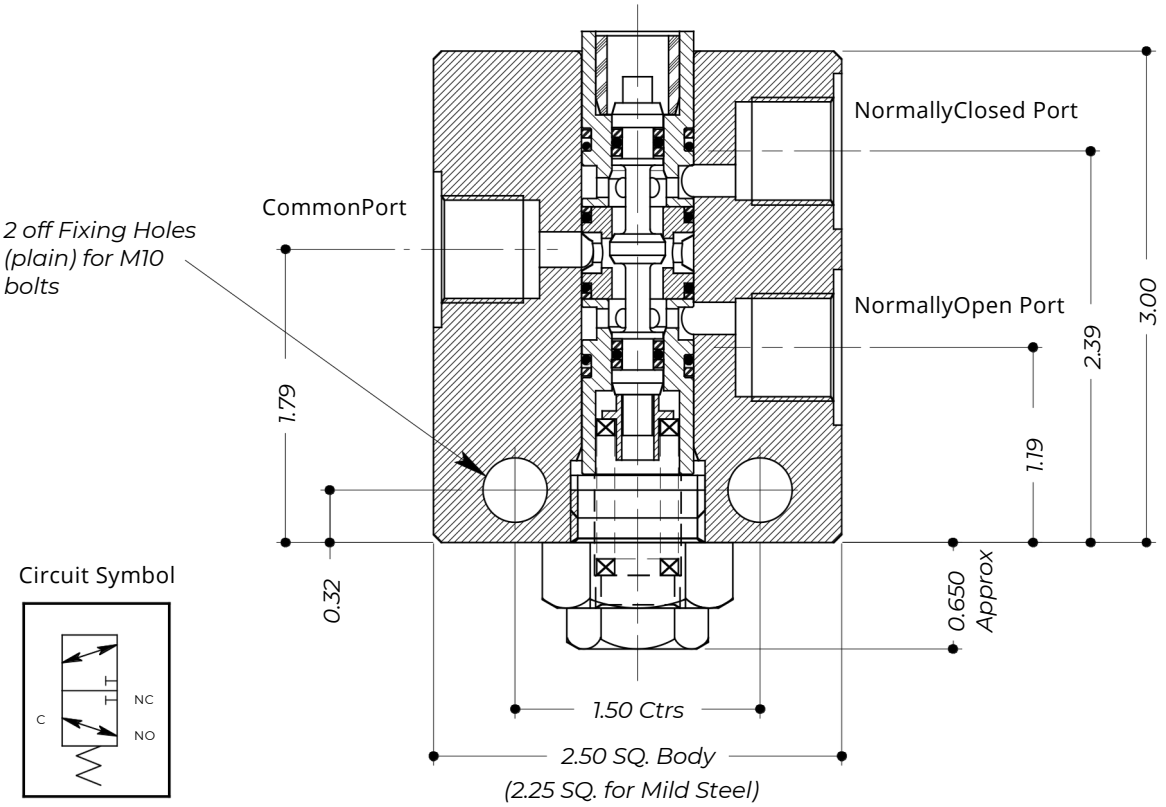
TECHNICAL SPECIFICATION			ORDERING EXAMPLE
MaterialOption (non-std)		*A* = Alum.Body(HE30) *C* = En1A/220M07 Mild Steel(E.N.P.)	—
ValveType:		*3B25*	*3B25*
Porting/ Connection Options:		*P*= BSP (Parallel) *N* = NPT (Taper) *M* = Manifold	*N*
Actuator Options	LowPress. Pilot:	Types *H3*(44to115psi)	*H3*
	HighPress. Pilot:	: *H0*(400to1,200psi), *H1*(1,400to4,000psi)	
	Mechanical:	Types: *C0, C1,L, DL*	
SoftSeated Valve:		: *G*	*G*
Max.WorkingPress: Liquid/Gas		*6,000 psi/3,500 psi*	*6K*

Port Size:	1/4"
ValveSeatMat'l: Liquid/Gas	Torlon
Seal Material:	Viton(othermaterials availableby request)
CV Value:	0.44
DryWeight: (kg)	1.75
WorkingTemperature Range:	-10°Cto+80°C

DIRECTIONAL CONTROL VALVE TYPE: 3B37

Valves Ltd

- 2POSN/ 3 PORTED MILD STEEL - ENP (EN1A / 220M07) VALVE WITH ACTUATOR OPTIONS.
- BODY MATERIAL OPTIONS: STAINLESS STEEL (316 / 1.4404), ALUM. ALLOY (HE30)
- SUITABLE FOR LIQUID USE.
- FITTED WITH "HARD" SEATS.
- ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



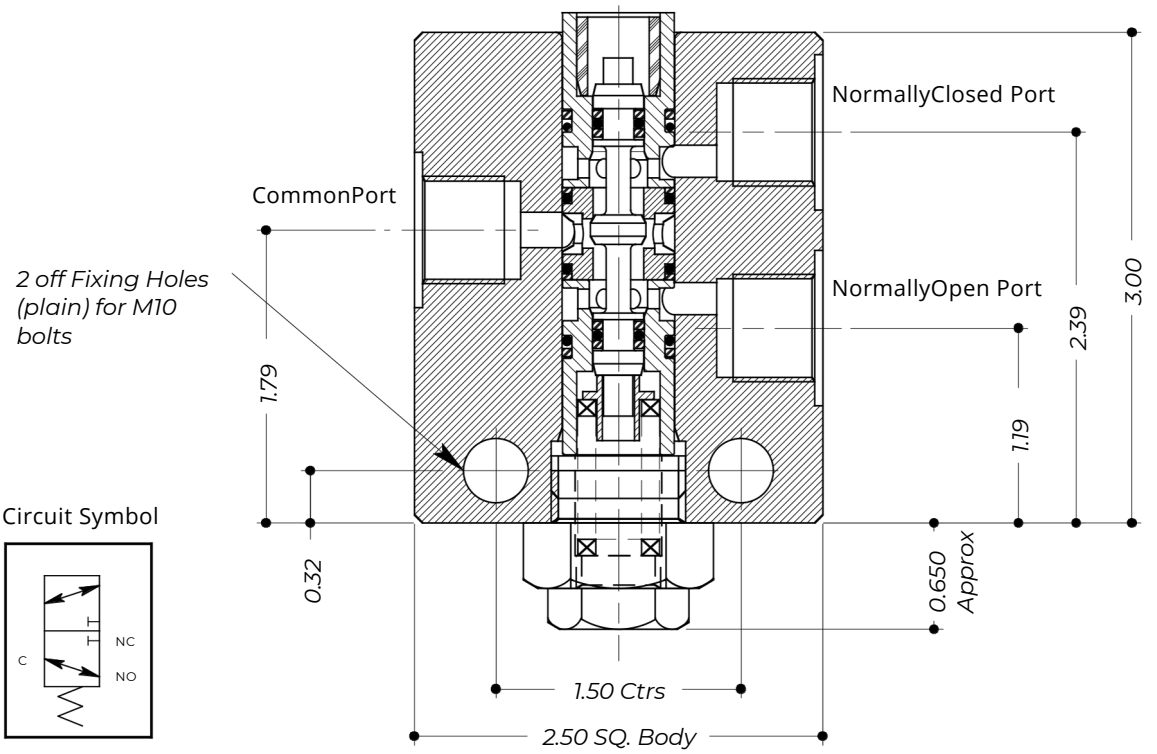
Circuit Symbol

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
MaterialOption (non-std)		*A* = Alum. Body (HE30) *S* = Stainless Steel(316/1.4404)	—
ValveType:		*3B37*	*3B37*
Porting/ Connection Options:		*P* = BSP (Parallel) *N* = NPT (Taper)	*P*
Actuator Options	LowPress. Pilot:	Types *H3* (44to300psi)	*H3*
	HighPress. Pilot:	: *H0* (400to3,500psi), *H1* (1,400to10,000psi)	
	Mechanical:	Types *C0,C1, L, DL*	
Max.WorkingPress: Liquid		: *10,000psi*	*10K*
Port Size:		Types 3/8"	
ValveSeatMat'l: Liquid		: StainlessSteel- 431/1.4057	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		0.44	
DryWeight: (kg)		2.0	
WorkingTemperature Range:		-10°Cto+120°C	

DIRECTIONAL CONTROL VALVE TYPE: 3B37-G

Valves Ltd

- 2POSN/ 3 PORTED MILD STEEL - ENP (EN1A / 220M07) VALVE WITH ACTUATOR OPTIONS.
- BODY MATERIAL OPTIONS: STAINLESS STEEL (316 / 1.4404), ALUM. ALLOY (HE30)
- SUITABLE FOR LIQUID OR GAS USE.
- FITTED WITH "SOFT" SEATS.
- ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



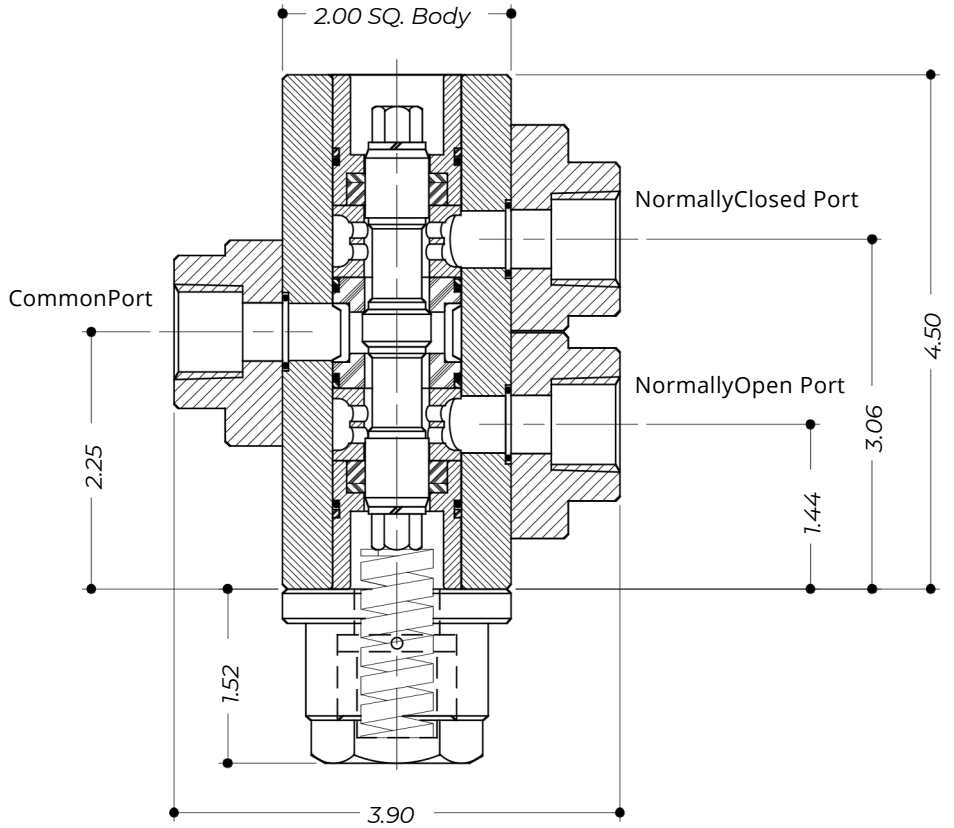
Circuit Symbol

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
MaterialOption (non-std)		*A* = Alum.Body(HE30) *S* = Stainless Steel(316/1.4404)	—
ValveType:		*3B37*	*3B37*
Porting/ Connection Options:		*P* = BSP (Parallel) *N* = NPT (Taper	*P*
Actuator Options	LowPress. Pilot:	Types *H3* (44to115psi)	*H3*
	HighPress. Pilot:	: *H0* (400 to1,200 psi), *H1* (1,400to4,000psi)	
	Mechanical:	Types *C0,C1, L, DL*	
SoftSeated Valve:		: *G*	*G*
Max.WorkingPress: Liquid/Gas		Types *6,000 psi/3,500 psi*	*6K*
Port Size:		: 3/8"	
ValveSeatMat'l: Liquid/Gas		Torlon	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		0.44	
DryWeight: (kg)		2.0	
WorkingTemperature Range:		-10°Cto+80°C	

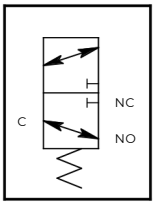
DIRECTIONAL CONTROL VALVE TYPE: 3B50

Valves Ltd

- 2 POSN / 3 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH ACTUATOR OPTIONS.
- BODY MATERIAL OPTIONS: MILD STEEL - ENP (EN1A / 220M07), ALUM. ALLOY (HE30)
- SUITABLE FOR LIQUID USE.
- FITTED WITH "HARD" SEATS.
- ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



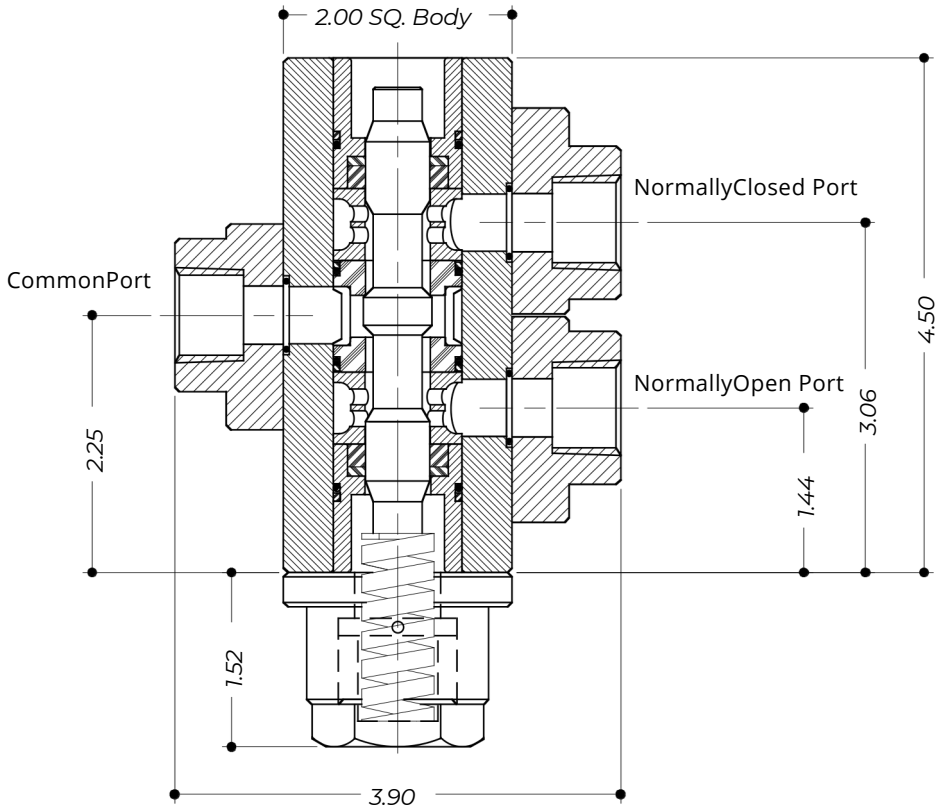
TECHNICAL SPECIFICATION			ORDERING EXAMPLE
MaterialOption (non-std)		*A* = Alum. Body (HE30) *C* = En1A/220M07 Mild Steel(E.N.P.)	——
ValveType:		*3B50*	*3B50*
Porting/ Connection Options:		*P*= BSP (Parallel) *N*= NPT (Taper) *M* = Manifold	*N*
Actuator Options	LowPress. Pilot:	Types: *A2*(60to125psi), *H3*(85to300psi)	*A2*
	HighPress. Pilot:	Types: *H0*(1,000to3,500psi), *H1*(3,000to10,000psi)	
	Mechanical:	Types: *C0, C1,L, DL*	
Max.WorkingPress: Liquid		*10,000psi*	*10K*
Port Size:		1/2"	
ValveSeatMat'l: Liquid		StainlessSteel- 316/1.4404	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		1.59	
DryWeight: (kg)		4.5	
WorkingTemperature Range:		-10°Cto+120°C	

NOTE:- The 3B50 valve isalso availablewith 3/4"ports (NPT & BSP) *OrderingExample: 3B50/75.*

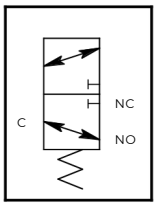
DIRECTIONAL CONTROL VALVE TYPE: 3B50-G

Valves Ltd

- 2 POSN / 3 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH ACTUATOR OPTIONS.
- BODY MATERIAL OPTIONS: MILD STEEL - ENP (EN1A / 220M07), ALUM. ALLOY (HE30)
- SUITABLE FOR LIQUID OR GAS USE.
- FITTED WITH "SOFT" SEATS.
- ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



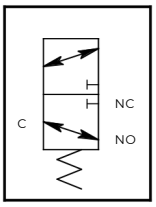
TECHNICAL SPECIFICATION			ORDERING EXAMPLE
MaterialOption (non-std)		*A* = Alum.Body(HE30) *C* = En1A/220M07 Mild Steel(E.N.P.)	—
ValveType:		*3B50*	*3B50*
Porting/ Connection Options:		*P*= BSP (Parallel) *N* = NPT (Taper) *M* = Manifold	*N*
Actuator Options	LowPress. Pilot:	Types: *A2*(50to116psi), *H3*(60to210psi)	*H3*
	HighPress. Pilot:	Types: *H0*(1,000to3,500psi), *H1*(3,000to7,500psi)	
	Mechanical:	Types: *C0, C1,L, DL*	
SoftSeated Valve:		*G*	*G*
Max.WorkingPress: Liquid/Gas		*6,000psi/ 3,500psi*	*6K*
Port Size:		1/2"	
ValveSeatMat'l: Liquid/Gas		Torlon	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		1.75	
DryWeight: (kg)		4.5	
WorkingTemperature Range:		-10°Cto+80°C	

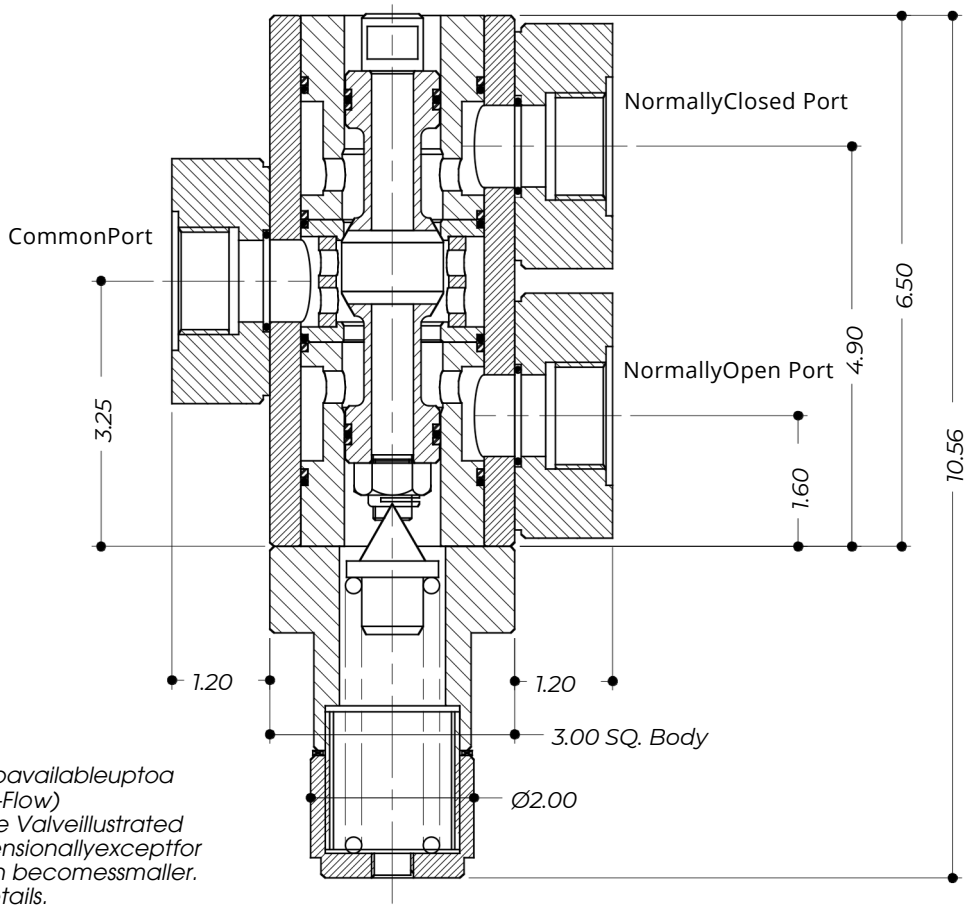
DIRECTIONAL CONTROL VALVE TYPE: 3BHF100 (HI-FLOW)

Valves Ltd

- 2 POSN / 3 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH ACTUATOR OPTIONS.
- BODY MATERIAL OPTION: MILD STEEL - ENP (EN1A / 220M07)
- SUITABLE FOR LIQUID OR GAS USE.
- FITTED WITH "SOFT" SEATS.
- ACTUATION TYPE - SEE SECTION 12.
- ALL DIMENSIONS IN INCHES.

Circuit Symbol



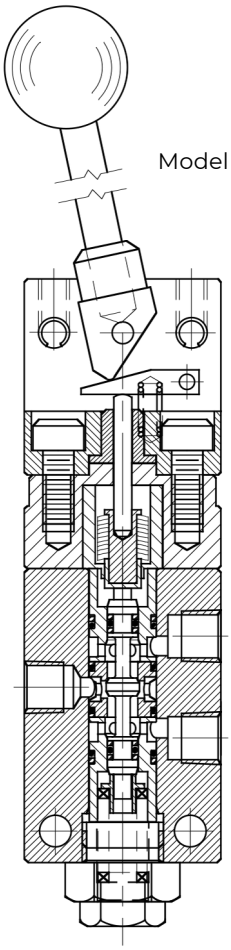


Note:- ThisValveisalsoavailableuptoa MaxW.P.of10K psi (Lo-Flow) Type:"3BLF100-A1". The Valveillustrated remainsthesamedimensionallyexceptfor theinternal borewhich becomessmaller. Contactfactory fordetails.

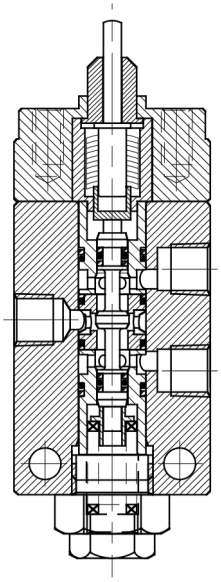
TECHNICAL SPECIFICATION			ORDERING EXAMPLE
MaterialOption (non-std)		C = En1A/220M07 Mild Steel(E.N.P.)	——
ValveType:		3BHF100	3BHF100
Porting/ Connection Options:		P = BSP (Parallel) N = NPT (Taper)	P
Actuator Options	LowPress. Pilot:	Types A2 (80to150psi)	A2
	HighPress. Pilot:	: H0 (800to1,600psi) H1 (1,700to3,000psi)	
	Mechanical:	Types L,DL	
Max.WorkingPress: Liquid/Gas		: 3,500psi	3.5K
Port Size:		Types 1.0"	
ValveSeatMat'l: Liquid/Gas		: Delrin	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		10	
DryWeight: (kg)		11.0	
WorkingTemperature Range:		-10°Cto+80°C	

Typical examples of 3 Ported Directional Control Valves fitted with Actuators.

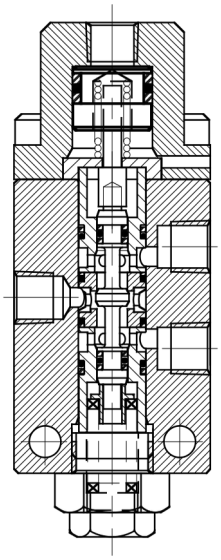
ValvesLtd



Model Type: 3B25-L (10K)



Model Type: 3B25-C1 (10K)



Model Type: 3B25-HO (10K)

BiSValves Ltd., Units 17-22, Kingfisher Park, West Moors, Wimborne , Dorset, ENGLAND.
Tel: 01202 896322 Fax: 01202 896718 e-mail: info@bisvalves.co.uk. web site: www.bisvalves.co.uk

Valves Ltd

SECTION 4: 4 PORTED CONTROL VALVES

1/4" 316 St.St. 3/4 Rotary Control Valve, Lever Operated, MWP: 10,000 psi Liquid Type: 4R25 ..... *4:1*

3/8" 316 St.St. 3/4 Rotary Control Valve, Lever Operated, MWP: 6,000 psi Liquid Type: 4R37 ..... *4:2*

3/8" 316 St.St. 2/4 Directional Control Valve, Air Operated, MWP: 10,000 psi Liquid Type: 6B37-A3 ..... *4:3*

3/8" 316 St.St. 2/4 Directional Control Valve, Air Operated, MWP: 6,000 psi Liquid / 3,500 psi Gas Type: 6B37-A3-G *4:4*

3/8" 316 St.St. 2/4 Directional Control Valve, Hydraulically Operated, MWP: 10,000 psi Liquid Type: 6B37-H *4:5*

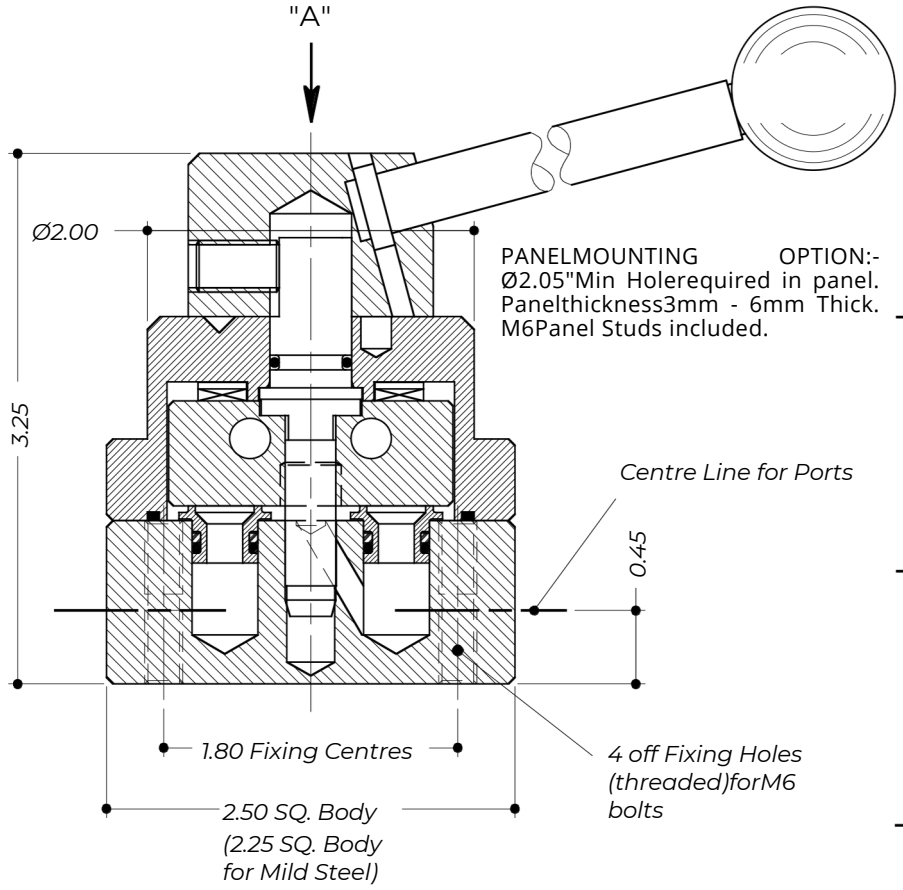
3/8" 316 St.St. 2/4 Directional Control Valve, Hydraulically Operated, MWP: 6,000 psi Liquid / 3,500 psi Gas Type: 6B37-H-G *4:6*

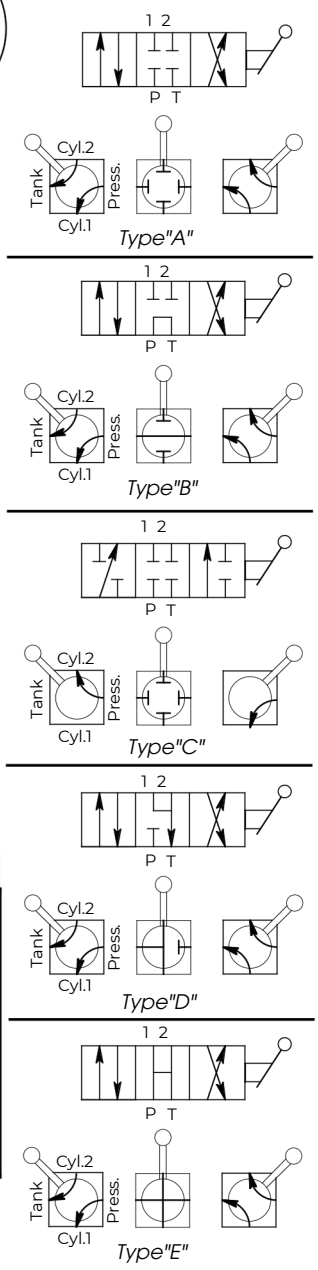
ROTARY CONTROL VALVE TYPE: 4R25

Valves Ltd

- 4 PORTED LEVER OPERATED STAINLESS STEEL (316 / 1.4404) VALVE. (SOME CARBON STEEL INTERNAL PARTS)
- BODY MATERIAL OPTION: MILD STEEL - ENP (EN1A / 220M07)
- SUITABLE FOR LIQUID USE.
- SPECIFY "FLOW PATTERN TYPE" WHEN ORDERING.
- ALL "FLOW DIAGRAMS" ARE VIEWED ON ARROW "A".
- ALL DIMENSIONS IN INCHES.

HandleLength5.0"Approx.
Handletravel:- 90°





TECHNICAL SPECIFICATION		ORDERING EXAMPLE
MaterialOption (non-std)	*C* =MildSteel(Electro-NickelPlated)	——
ValveType:	*4R25*	*4R25*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper) *M* = Manifold *	*N*
FlowPattern:	*A,B,C,D, E* (see flow diagrams)	*A*
ValveOptions:	*PM* = Panel Mounted	——
Max.WorkingPressure: Liquid	*10,000psi* (1,450 psi MAX on Tank Port)	*10K*
Port Size:	1/4"	
Seal Material:	Viton (other materialsavailable by request)	
CV Value:	0.67	
DryWeight: (kg)	1.75	
WorkingTemperature Range:	-10°Cto+100°C	

The "FlowPattern"diagrams areviewed onarrow "A"

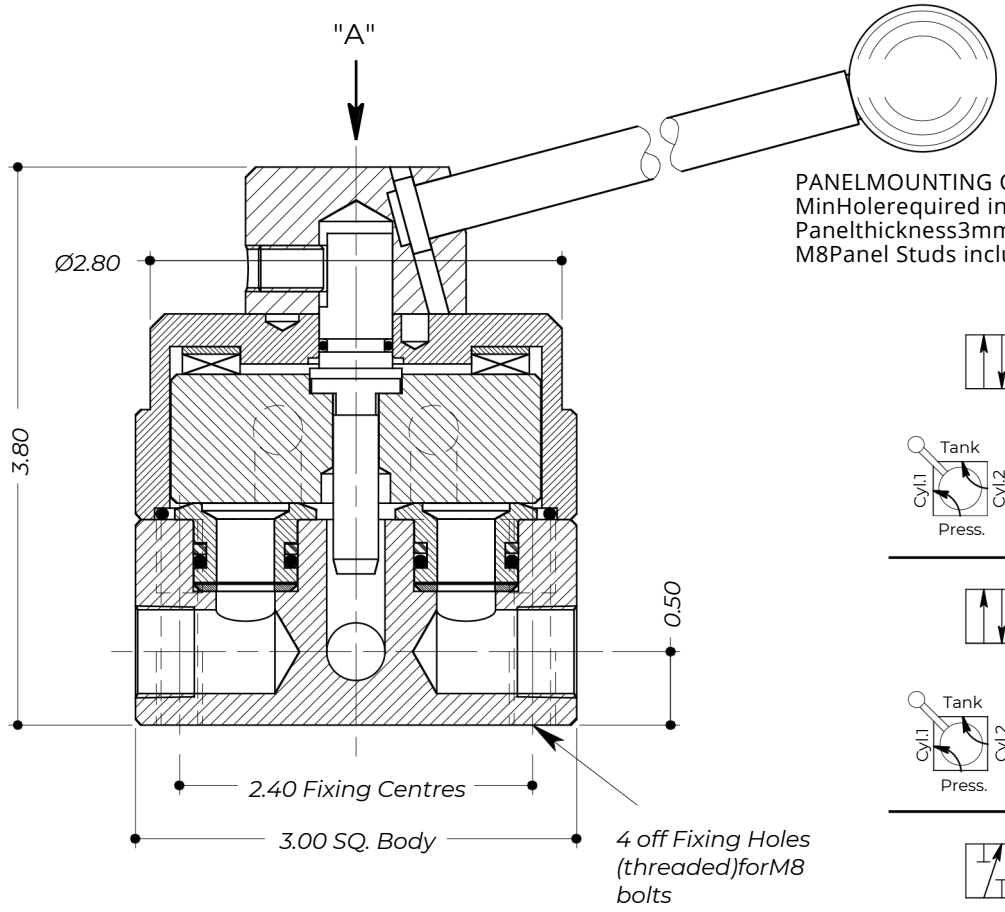
TechnicalSpecificationNotes:-
*Forthe *"MANIFOLD"* version,"FlowPattern"diagramsfor the4R37valvemodelapply.See*Page4 : 2*fordetails.

ROTARY CONTROL VALVE TYPE: 4R37

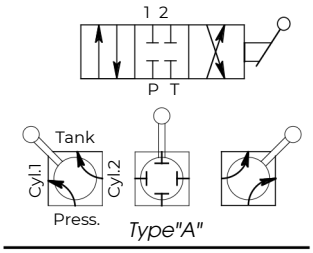
Valves Ltd

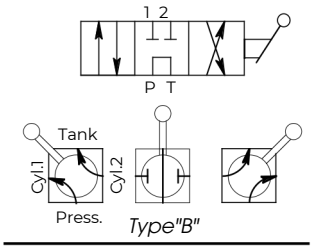
- 4 PORTED LEVER OPERATED STAINLESS STEEL (316 / 1.4404) VALVE. (SOME CARBON STEEL INTERNAL PARTS)
- SUITABLE FOR LIQUID USE.
- SPECIFY "FLOW PATTERN TYPE" WHEN ORDERING.
- ALL "FLOW DIAGRAMS" ARE VIEWED ON ARROW "A".
- ALL DIMENSIONS IN INCHES.

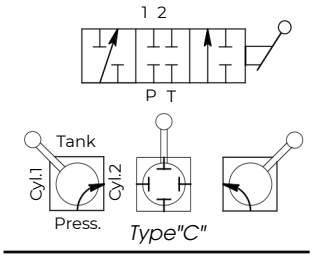
HandleLength 5.0" Approx.
Handletravel:-90°

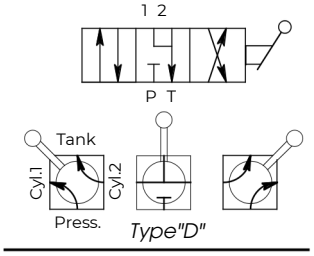


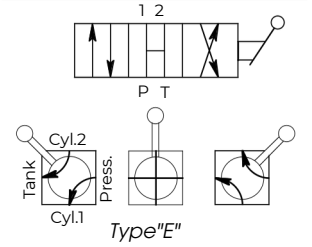
PANELMOUNTING OPTION:- Ø2.85"
MinHolerequired in panel.
Panelthickness3mm - 6mm Thick.
M8Panel Studs included.











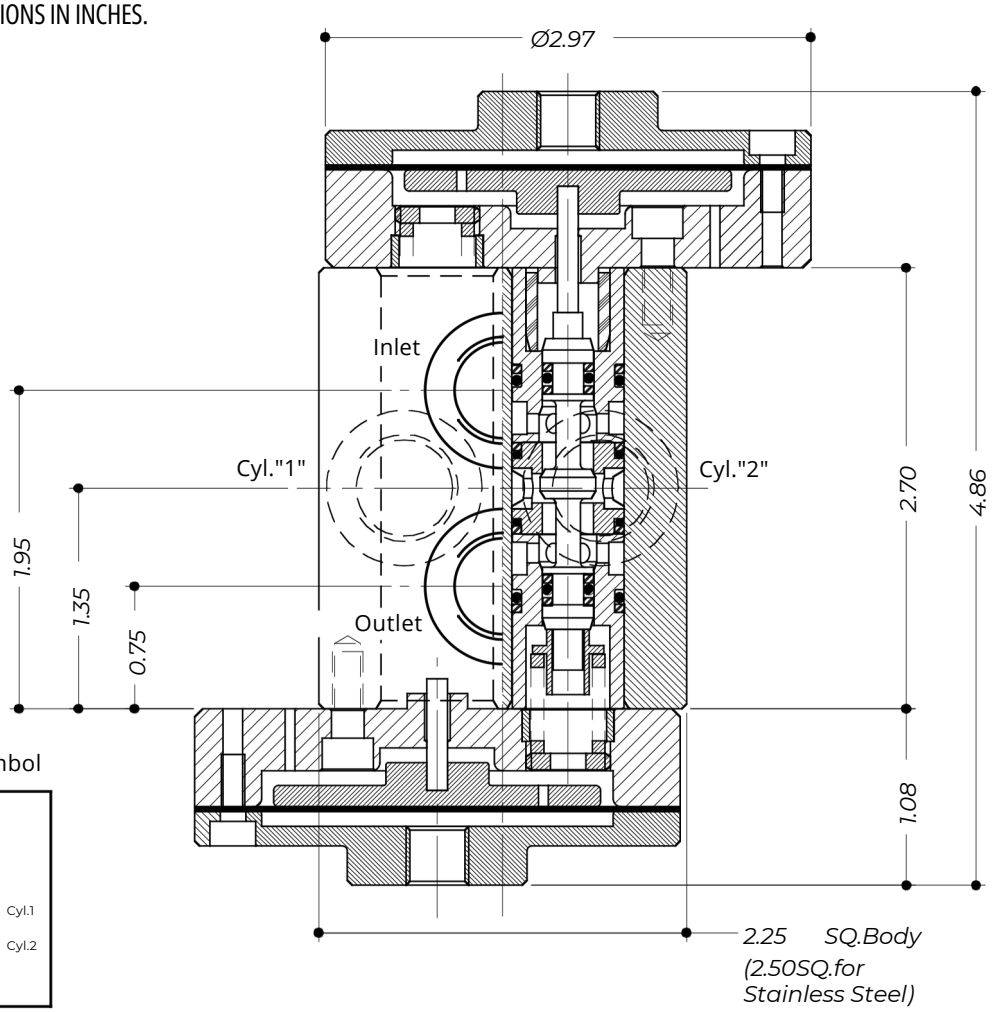
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*4R37*	*4R37*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper) *M* = Manifold	*N*
FlowPattern:	*A,B, C, D, E* (seeflowdiagrams)	*A*
ValveOptions:	*PM* = Panel Mounted	—
Max.WorkingPressure: Liquid	*6,000 psi* (1,450 psi MAX on Tank Port)	*6K*
Port Size:	3/8"	
Seal Material:	Viton (other materialsavailable by request)	
CV Value:	1.37	
DryWeight: (kg)	2.0	
WorkingTemperature Range:	-10°Cto+100°C	

The "FlowPattern"diagrams areviewed onarrow "A"

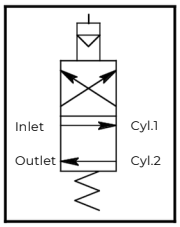
DIRECTIONAL CONTROL VALVE TYPE: 6B37-A3

Valves Ltd

- 2 POSN / 4 PORTED MILD STEEL - ENP (EN1A / 220M07) VALVE WITH ACTUATOR TYPE "A3" FITTED.
- BODY MATERIAL OPTION: STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- FITTED WITH "HARD" SEATS.
- SEE SECTION 12 FOR DETAILS OF TYPE "A3" ACTUATOR.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



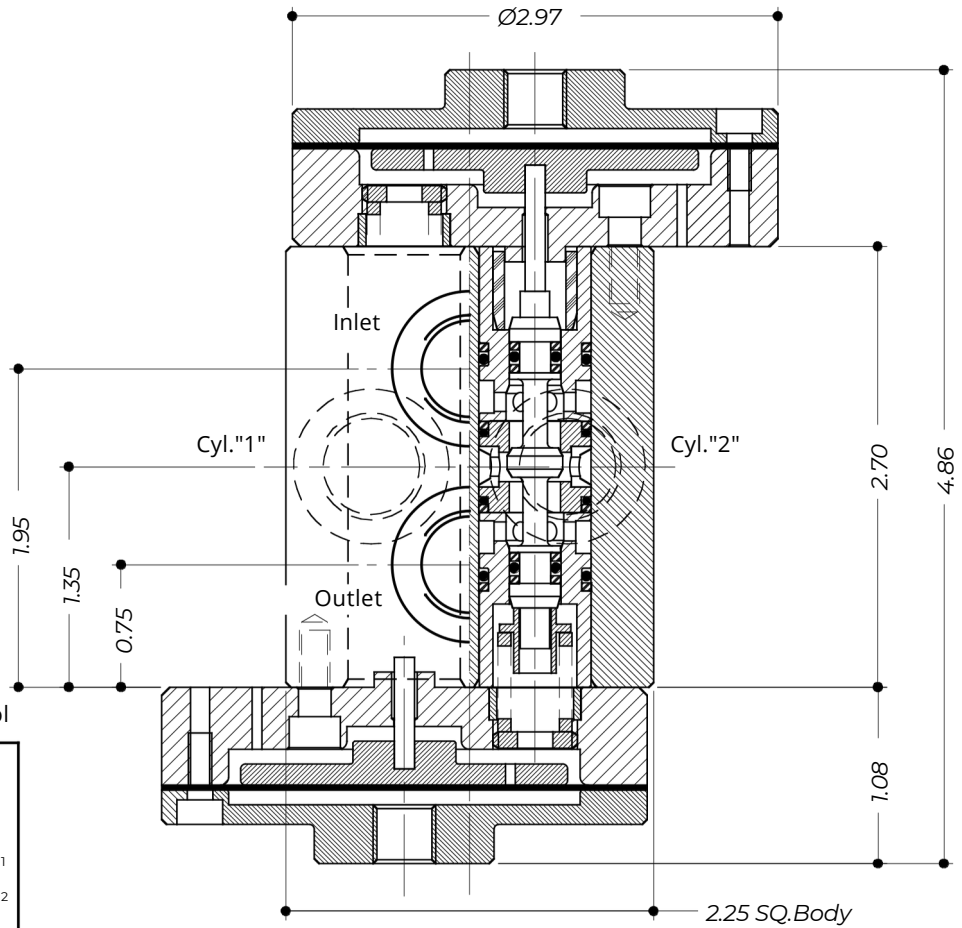
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
MaterialOption (non-std)	*S*= Stainless Steel(316/1.4404)	——
ValveType:	*6B37-A3*	*6B37-A3*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)	*N*
Max.WorkingPress: Liquid	*10,000 psi*	*10K*
Port Size:	3/8"	
Actuator:	Type: A3 (60 to150 psi)	
ValveSeatMat'l: Liquid	StainlessSteel- 431/1.4057	
Seal Material:	Viton(othermaterials availableby request)	
CV Value:	0.44	
DryWeight: (kg)	5.5	
WorkingTemperature Range:	-10°Cto+100°C	

*NOTE:*Both Actuatorsarepressurisedsimultaneously forvalve operation.

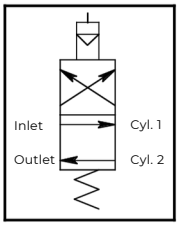
DIRECTIONALCONTROLVALVE TYPE: 6B37-A3-G

Valves Ltd

- 2 POSN / 4 PORTED MILD STEEL - ENP (EN1A / 1.4404) VALVE WITH ACTUATOR TYPE "A3" FITTED.
- BODY MATERIAL OPTION: STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- FITTED WITH "SOFT" SEATS.
- SEE SECTION 12 FOR DETAILS OF TYPE "A3" ACTUATOR.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



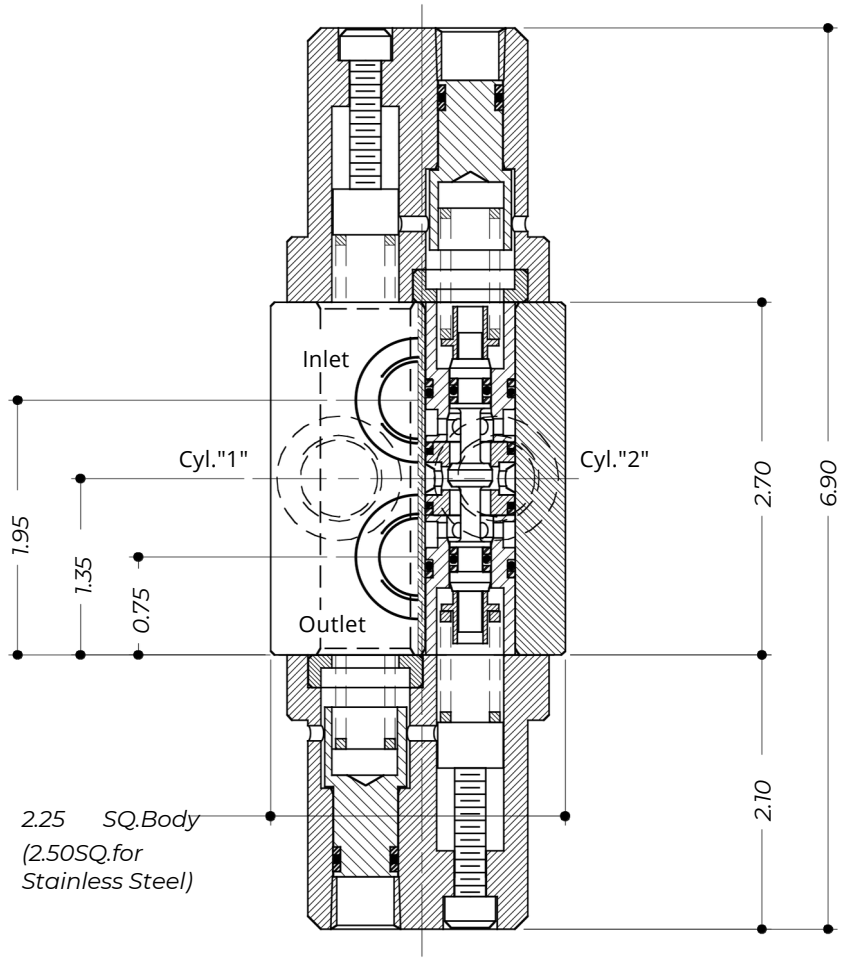
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
MaterialOption (non-std)	*S* = Stainless Steel(316/1.4404)	—
ValveType:	*6B37-A3-G*	*6B37-A3-G*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)	*N*
Max.WorkingPress: Liquid/Gas	*6,000psi/ 3,500psi*	*6K*
Port Size:	3/8"	
Actuator:	Type: A3 (60 to150 psi)	
SoftSeated Valve:	G	
ValveSeatMat'l: Liquid/Gas	Torlon	
Seal Material:	Viton(othermaterials availableby request)	
CV Value:	0.44	
DryWeight: (kg)	5.5	
WorkingTemperature Range:	-10°Cto+80°C	

*NOTE:*Both Actuatorsarepressurisedsimultaneously forvalve operation.

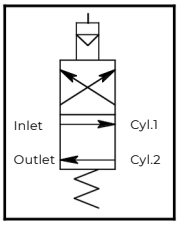
DIRECTIONAL CONTROL VALVE TYPE: 6B37-H

Valves Ltd

- 2 POSN / 4 PORTED MILD STEEL - ENP (EN1A / 220M07) VALVE WITH ACTUATOR TYPE "H" FITTED.
- BODY MATERIAL OPTION: STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- FITTED WITH "HARD" SEATS.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



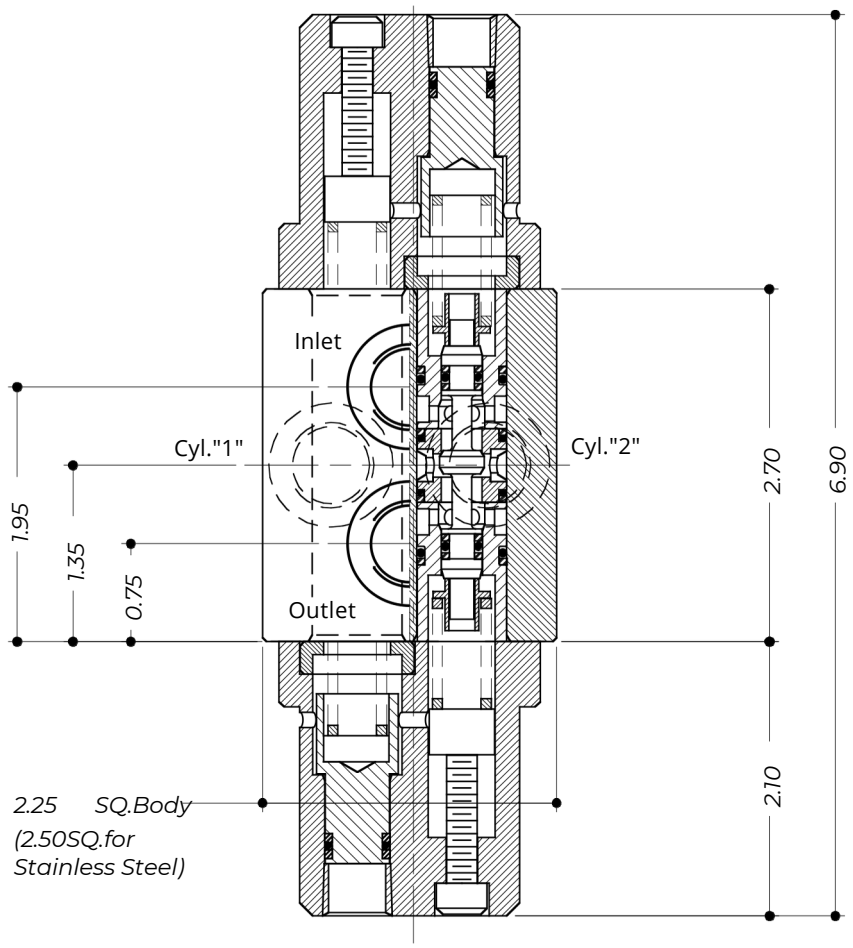
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
MaterialOption (non-std)	*S*= Stainless Steel(316/1.4404)	—
ValveType:	*6B37-H*	*6B37-H*
Porting/ Connection Options:	*P*= BSP (Parallel) *N*= NPT (Taper)	*N*
Max.WorkingPress: Liquid	*10,000psi*	*10K*
Port Size:	3/8"	
Actuator:	Type: H (1,000 to9,000psi)	
ValveSeatMat'l: Liquid	StainlessSteel- 431/1.4057	
Seal Material:	Viton(othermaterials availableby request)	
CV Value:	0.44	
DryWeight: (kg)	4.0	
WorkingTemperature Range:	-10°Cto+120°C	

*NOTE:*Both Actuatorsarepressurisedsimultaneously forvalve operation.

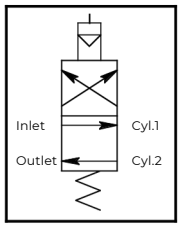
DIRECTIONALCONTROLVALVE TYPE: 6B37-H-G

Valves Ltd

- 2 POSN / 4 PORTED MILD STEEL - ENP (EN1A / 220M07) VALVE WITH ACTUATOR TYPE "H" FITTED.
- BODY MATERIAL OPTION: STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- FITTED WITH "SOFT" SEATS.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



TECHNICAL SPECIFICATION		ORDERING EXAMPLE
MaterialOption (non-std)	*S*= Stainless Steel(316/1.4404)	—
ValveType:	*6B37-H-G*	*6B37-H-G*
Porting/ Connection Options:	*P*= BSP (Parallel) *N* = NPT (Taper)	*N*
Max.WorkingPress: Liquid/Gas	*6,000psi/ 3,500psi*	*6K*
Port Size:	3/8"	
Actuator:	Type: H (1,000 to3,100 psi)	
SoftSeated Valve:	G	
ValveSeatMat'l: Liquid/Gas	Torlon	
Seal Material:	Viton(othermaterials availableby request)	
CV Value:	0.44	
DryWeight: (kg)	4.0	
WorkingTemperature Range:	-10°Cto+80°C	

*NOTE:*Both Actuatorsarepressurisedsimultaneously forvalve operation.

Valves Ltd

SECTION 5: CHECK VALVES

1/4" to 1-1/2" 316 St.St. Check Valve, MWP: Up to 9,000 psi Liquid / 3,500 psi Gas Types: C25, C37, C50, C75, C100, C125, C150 .. *5:1*

1/4" to 2" 316 St.St. Check Valve, MWP: Up to 12,000 psi Liquid / 6,000 psi Gas Types: NR25, NR37, NR50, NR75, NR100, NR200 ..... *5:2*

1/4" / 1/2" 316 St.St. Check Valve, MWP: 20,000 psi Liquid / 10,000 psi Gas, Autoclave Ports Types: NR25, NR50 ..... *5:3*

1/4" 316 St.St. Shuttle Valve, MWP: 10,000 psi Liquid Type: SV25 ..... *5:4*

1/4" to 1/2" 316 St.St. Shuttle Valve, MWP: 8,000 psi Liquid / 4,000 psi Gas Types: SV50/25, SV50/37, SV50/50 ..... *5:5*

1/4" to 1" 316 St.St. Cartridge Check Valve, MWP: 10,000 psi Liquid / 5,000 psi Gas Types: CC25, CC37, CC50, CC75, CC100 ..... *5:6*

1/4" 316 St.St. Venting Check Valve, MWP: 12 psi Liquid / Gas Type: CV25 ..... *5:7*

1/2" 316 St.St. Check Valve, Manifold Mounted, MWP: 6,000 psi Liquid / 4,000 psi Gas Type: NR50M *5:8*

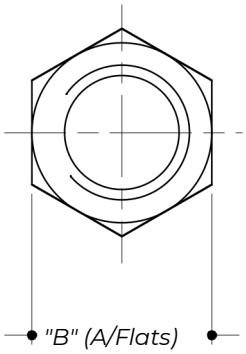
1/4" 316 St.St. Cartridge Shuttle Valve, MWP: 4,000 psi Liquid Type: SV25C *5:9*

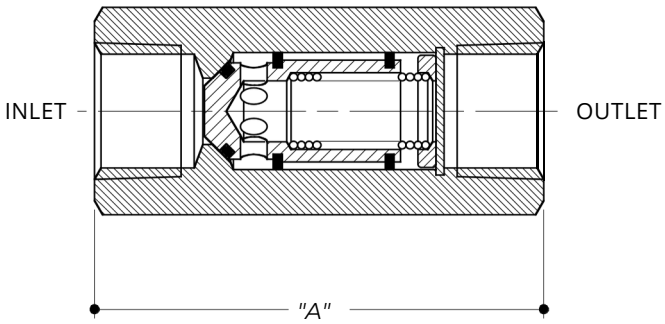
CHECK VALVE

TYPES: C25,C37,C50,C75,C100, C125, C150

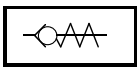
Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.





Circuit Symbol

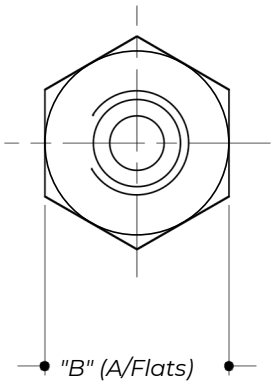


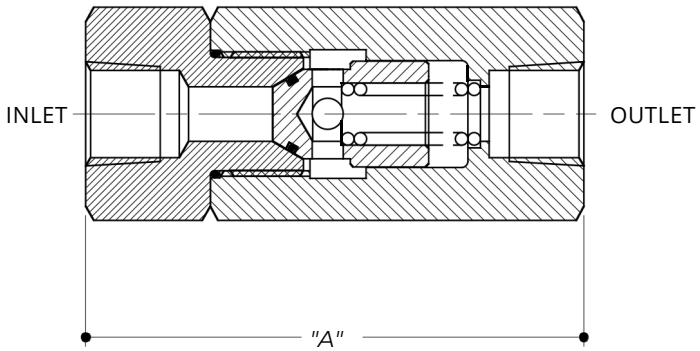
TECHNICAL SPECIFICATION								ORDERING EXAMPLE
ValveType:	*C25*	*C37*	*C50*	*C75*	*C100*	*C125*	*C150*	*C25*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)							*N*
Max.WorkingPressure- Liquid	*9K psi*					*7K psi*	*6K psi*	*9K*
Max.WorkingPressure - Gas	*3,5Kpsi*							
Port Size:	1/4"	3/8"	1/2"	3/4"	1.0"	1.1/4"	1.1/2"	
ValveSeatMaterial:	StainlessSteel- 316/1.4404							
Seal Material:	Viton(othermaterials availableby request)							
CV Value:	0.7	1.3	2.2	3.5	5.7	18.	25.0	
DryWeight(kg)	0.10	0.14	0.25	0.55	0.80	9	2.10	
WorkingTemperature Range:	-10°Cto+120°C					1.8		
Cracking Pressure:	2.0- 5.0 psi (0.75 psi withoutspring fitted)					0		
Dimension(ins) - Length "A"	2.14"	2.43"	2.89"	3.15"	3.60"	5.00"	5.10"	
Dimension(ins) - "B"(A/Flats)	0.75"	0.875"	1.10"	1.48"	1.75"	Ø2.50"	Ø2.50"	
ValveOrifice Size(sq.ins.)	0.03	0.078	0.13	0.25	0.44	N/A	N/A	

CHECK VALVE (12K SERIES)
TYPES:NR25,NR37,NR50, NR75, NR100, NR200

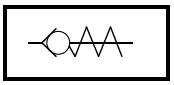
Valves Ltd

- STAINLESSSTEEL (316 / 1.4404)
- SUITABLEFORLIQUID OR GAS USE.
- MALE THREADED PORTING / CONNECTIONS ARE AVAILABLE UPON REQUEST.
- ALL DIMENSIONS IN INCHES.





Circuit Symbol



TECHNICAL SPECIFICATION							ORDERING EXAMPLE
ValveType:	*NR25*	*NR37*	*NR50*	*NR75*	*NR100*	*NR200**	*NR25*
Porting/ Connection Options:	*P*= BSP (Parallel) *N* = NPT (Taper)						*N*
Max.WorkingPressure- Liquid	*12Kpsi*				*9Kpsi*	*6Kpsi*	*12K*
Max.WorkingPressure - Gas	*6Kpsi*				*4K psi*	*3K psi*	
Port Size:	1/4"	3/8"	1/2"	3/4"	1.0"	2.0"	
ValveSeatMaterial:	StainlessSteel- 316/1.4404						
Seal Material:	Viton(othermaterials availableby request)						
CV Value:	1.00	1.30	3.1	4.6	7.7	25.0	
DryWeight(kg)	0.35	0.4	1.0	1.2	1.45	4.10	
WorkingTemperature Range:	-10°Cto+160°C						
CrackingPressure:**	2.0-5.0psi						
Dimension(ins) - Length "A"	3.20"	3.20"	4.00"	4.00"	5.50"	7.80"	
Dimension(ins) - "B"(A/Flats)	1.01"	1.01"	1.48"	1.48"	1.86"	Ø3.0"	

TechnicalSpecificationNotes: -

* NR200 Valves arealsoavailablewith 1.1/4" (125) & 1.1/2" (150) Port Sizes. *OrderingExample: NR200/125*.

* NR200 Valves canalso be suppliedwith "PipeFixing Flanges"toANSI 1500LB or ANSI 2500LB.
The Flanges arewelded toeachendofthe Valve. TechnicalData Sheets areavailablebyrequest.
OrderingExample: NR200F- ANSI 1500LB (F=PipeFixingFlange).

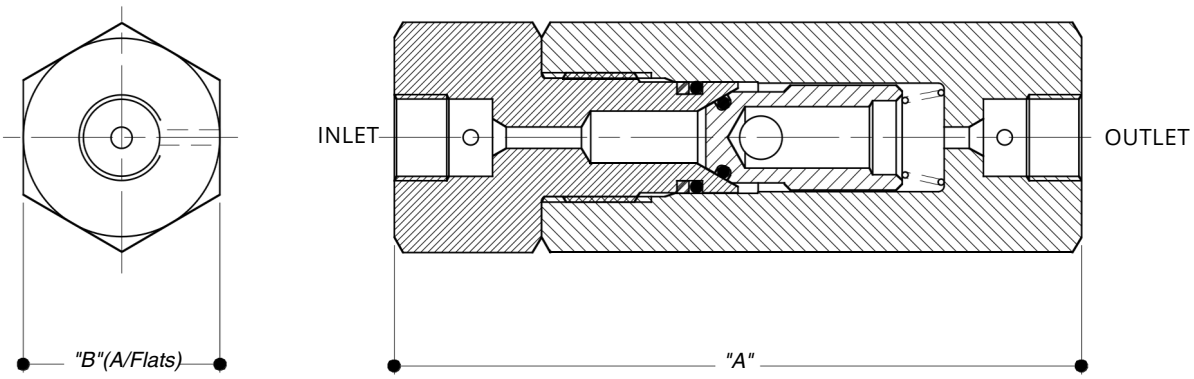
** All Check Valves can be suppliedwith variousHighCracking Pressures upto50 psi. (Details by request).
OrderingExample: NR25N-HC-12K

CHECK VALVE (20K SERIES)

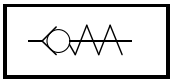
TYPES: NR25, NR50

Valves Ltd

- STAINLESSSTEEL(316 / 1.4404)
- SUITABLEFORLIQUID OR GAS USE.
- FITTED WITH AUTOCLAVE/BUTECH PORTED CONNECTIONS.
- NPT PORTS AVAILABLE UPON REQUEST.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol

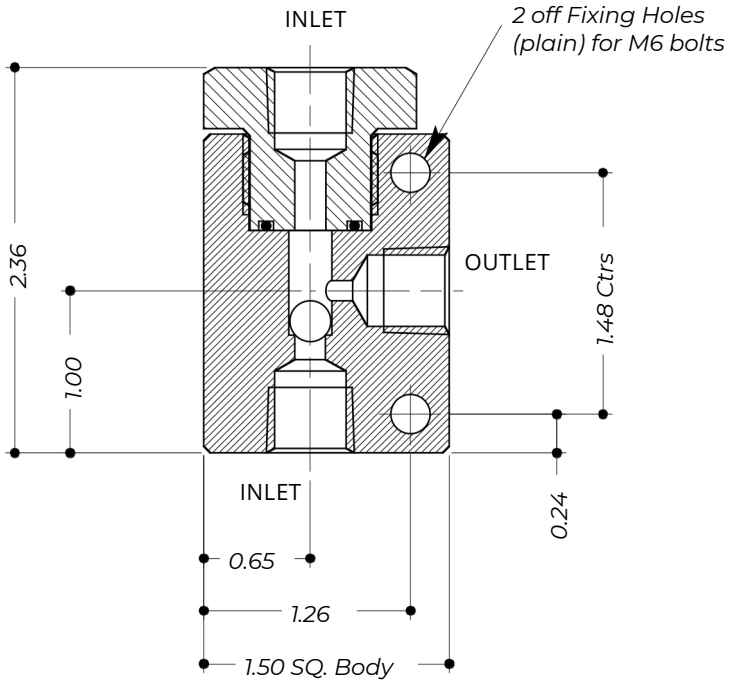


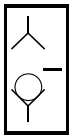
TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*NR25*	*NR50*	*NR25*
Porting/ Connection Options:	*44AE* (for1/4"O.D.Tube)	*56AE* (for3/8"O.D.Tube)	*44AE*
Max.WorkingPressure- Liquid	*20,000psi*		*20K*
Max.WorkingPressure - Gas	*10,000 psi*		
Pipe Size:	1/4" O.D. Tube	3/8" O.D. Tube	
ValveSeatMaterial:	StainlessSteel- 316/1.4404		
Seal Material:	Viton(othermaterials availableby request)		
CV Value:	0.20	0.7	
DryWeight: (kg)	0.35	0	
WorkingTemperature Range:	-10°Cto+120°C	1.0	
Cracking Pressure:	2.0- 5.0 psi	0	
Dimension(ins) - Length "A"	3.50"	4.50"	
Dimension(ins) - "B"(A/Flats)	1.01"	1.48"	

SHUTTLE VALVE TYPE: SV25

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- ALL DIMENSIONS IN INCHES.

Valves Ltd





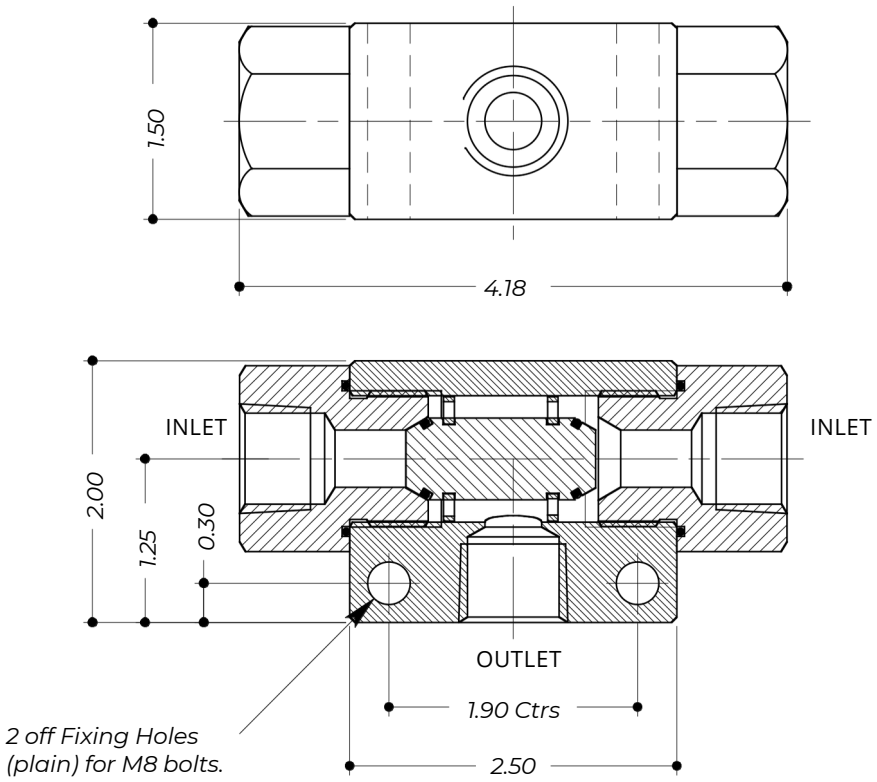
Circuit Symbol

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*SV25*	*SV25*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)	*N*
Max.WorkingPressure- Liquid	*10,000psi*	*10K*
Port Size:	1/4"	
ValveSeatMaterial:	StainlessSteel- 316/1.4404	
Seal Material:	Viton(othermaterials availableby request)	
CV Value:	0.33	
DryWeight: (kg)	0.75	
WorkingTemperature Range:	-10°Cto+160°C	

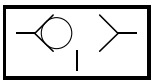
SHUTTLE VALVE TYPES: SV50/25, SV50/37, SV50/50

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



TECHNICAL SPECIFICATION				ORDERING EXAMPLE
ValveType:	*SV50/25*	*SV50/37*	*SV50/50*	*SV50/25*
Porting/ Connection Options:	*P* = BSP (Parallel)	*N* NPT (Taper)	*M* = Manifold	*N*
Max.WorkingPressure- Liquid	*8,000psi*			*8K*
Max.WorkingPressure - Gas	*4,000psi*			
Port Size:	1/4"	3/8"	1/2"	
ValveSeatMaterial:	StainlessSteel- 316/1.4404			
Seal Material:	Viton(othermaterials availableby request)			
CV Value:	1.26	2.52	3.11	
DryWeight: (kg)	1.2	1.2	1.2	
WorkingTemperature Range:	-10°Cto+120°C			

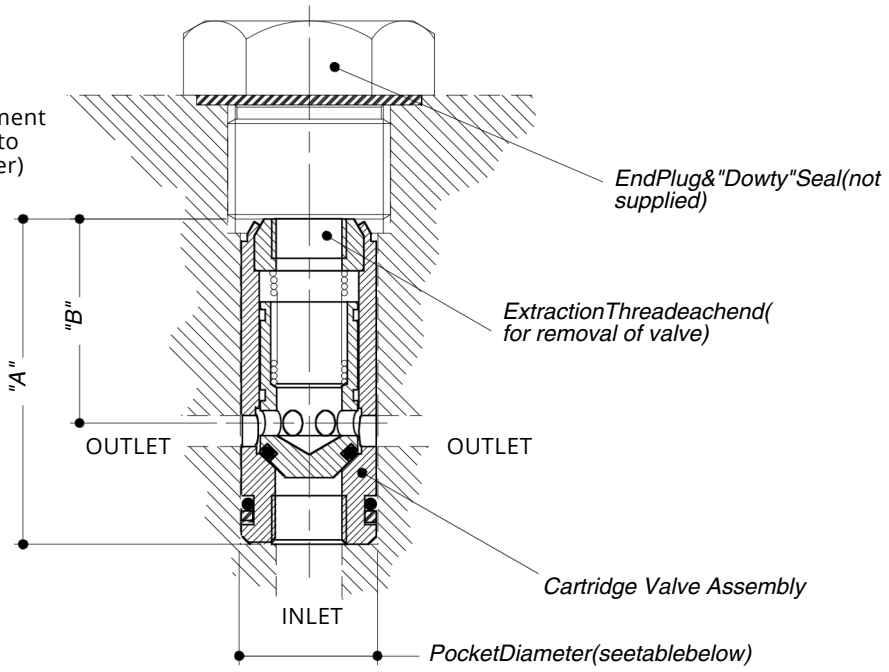
CARTRIDGE CHECK VALVE

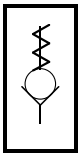
TYPES: CC25, CC37, CC50, CC75, CC100

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- POCKET DRILLING DETAILS AVAILABLE UPON REQUEST
- ALL DIMENSIONS IN INCHES
- THIS VALVE IS NON-SERVICEABLE

Typical assembly arrangement (diameterofflowpathholesto be determined by customer)





Circuit Symbol

TECHNICAL SPECIFICATION						ORDERING EXAMPLE
ValveType:	*CC25*	*CC37*	*CC50*	*CC75*	*CC100*	*CC25*
Max.WorkingPressure- Liquid	*10K psi**				*6K psi*	*10K*
Max.WorkingPressure - Gas	*5K psi**				*3.5Kpsi*	
ValveSeatMaterial:	StainlessSteel- 316/1.4404					
Seal Material:	Viton(othermaterials availableby request)					
CV Value:	0.7	1.3	2.2	3.5	5.	
DryWeight(kg)	0.03	0.05	0.07	1.0	7	
WorkingTemperature Range:	-10°Cto+120°C				1.	
Cracking Pressure:	3- 7 psi				5	
Dimension(ins) - Length "A"	1.30"	1.67"	2.00"	2.16"	2.50	
Dimension(ins) - Length "B"	0.835"	1.07"	1.40"	1.40"	"	
PocketDiameter (ins):	Ø0.565/0.562	Ø0.690/0.687	Ø0.878/0.875	Ø1.190/1.187	Ø1.627/1.0625	
Extraction Thread(each end):	M6	1/8"BSP	M12	3/8"BSP	3/4"UNF	
EndPlugPocketThread:	3/8"BSP	1/2"BSP	3/4"BSP	1"BSP	3/4"UNF	

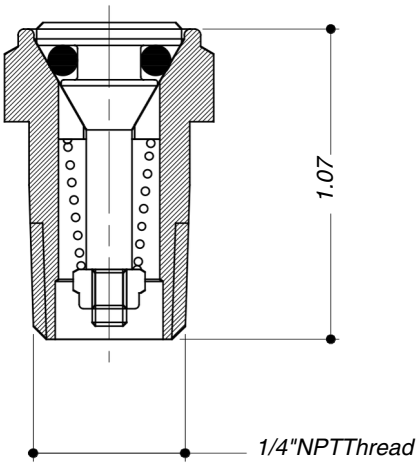
TechnicalSpecification Notes:

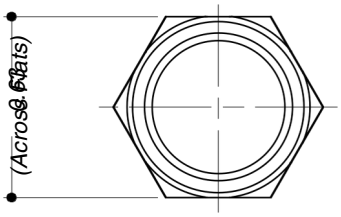
* Max W.P. dependant uponhousing design. Contact factory fordetails.

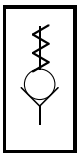
VENTING CHECK VALVE TYPE: CV25

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.





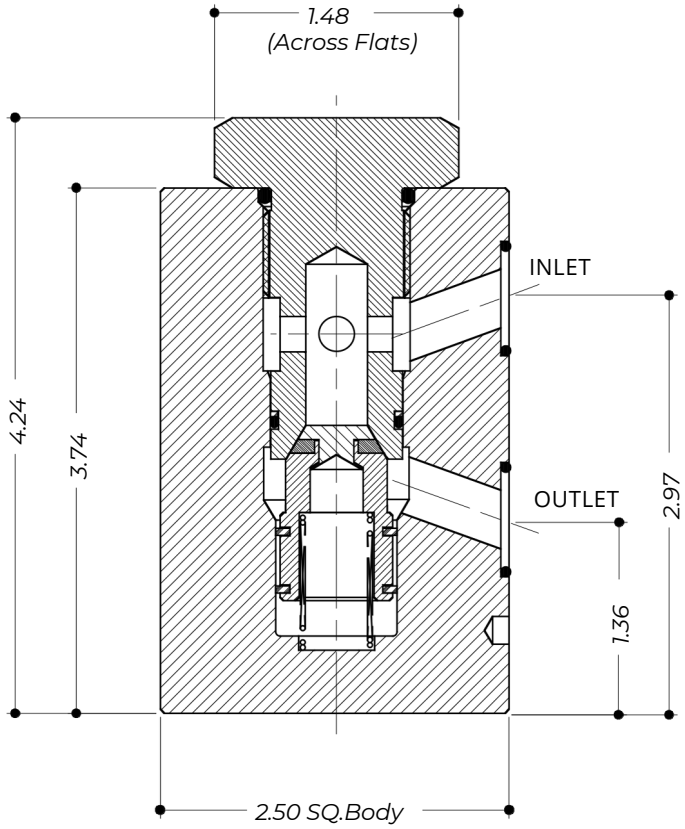


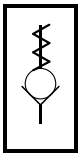
Circuit Symbol

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Valve Type:	*CV25*	*CV25*
Porting / Connection Options:	*N* = NPT (Taper)	*N*
Cracking Pressure:	*0.5B* (8psi) *0.8B*(12 psi)	*0.5B*
Port Size:	1/4"	
Valve Seat Material:	Stainless Steel - 316/1.4404	
Seal Material:	Viton (other materials available by request)	
Dry Weight: (kg)	0.1	
Working Temperature Range:	-10°C to +120°C	

CHECK VALVE NR50M

- STAINLESS STEEL (316 / 1.4404)
- SUITABLEFORLIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.





Circuit Symbol

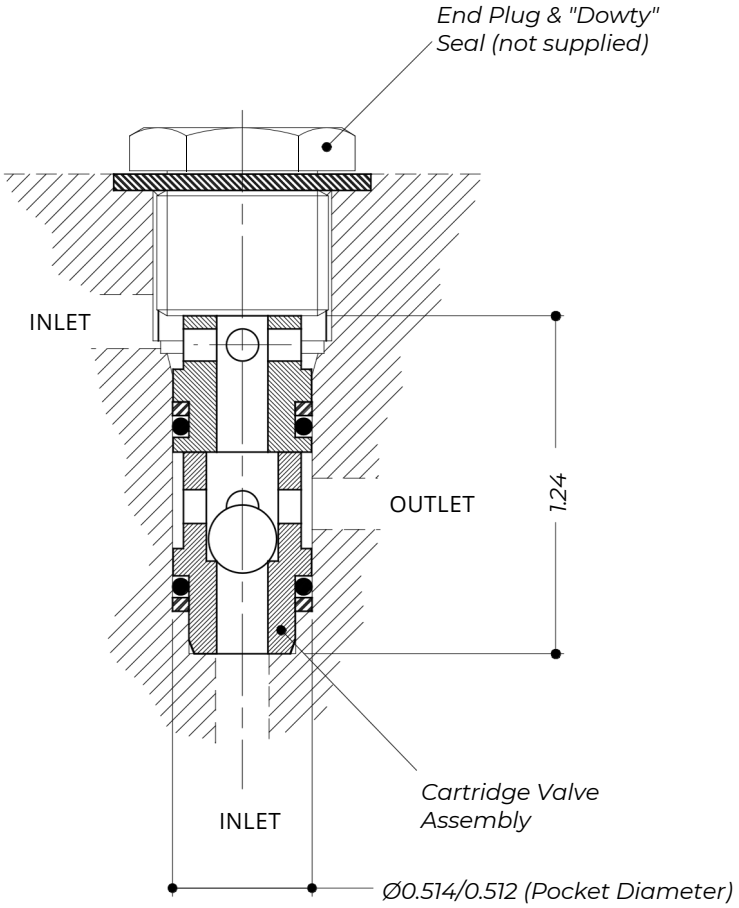
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*NR50*	*NR50*
Porting/ Connection Options:	*M* = Manifold	*M*
Max.WorkingPressure- Liquid	*6,000psi*	*6K*
Max.WorkingPressure - Gas	*4,000 psi*	
ValveSeatMaterial:	StainlessSteel- 316/1.4404	
Seal Material:	Viton(othermaterials availableby request)	
CV Value:	2.5	
DryWeight: (kg)	3.1	
WorkingTemperature Range:	-10°Cto+120°C	
Cracking Pressure:	2.0- 5.0 psi	

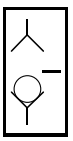
TechnicalSpecification Notes:-
Manifoldmountingdetailsavailableonrequest.

CARTRIDGE SHUTTLE VALVE TYPE: SV25C

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- POCKET DRILLING DETAILS AVAILABLE UPON REQUEST
- ALL DIMENSIONS IN INCHES.





Circuit Symbol

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*SV25C*	*SV25C*
Max.WorkingPressure- Liquid	*4,000psi*	*4K*
ValveSeatMaterial:	StainlessSteel- 316/1.4404	
Seal Material:	Viton(othermaterials availableby request)	
CV Value:	0.33	
DryWeight: (kg)	0.03	
WorkingTemperature Range:	-10°Cto+120°C	

Valves Ltd

SECTION 6: PILOT OPERATED CHECK VALVES

1/8" 316 St.St. Midget Pilot Operated Check Valve, MWP: 4,000 psi Liquid/Gas Type: SVA12 ..... 6:1

3/8" 316 St.St. Pilot Operated Check Valve, MWP: 20,000 psi Liquid / 5,000 psi Gas Type: V1-37 ..... 6:2

1/8" 316 St.St. Stop Valve, Air Operated, MWP: 20,000 psi Liquid Type: B1-12 ..... 6:3

1/2" 316 St.St. Stop Valve, MWP: 20,000 psi Liquid Type: M1-50 ..... 6:4

1/2" Mild Steel Unloader Valve, MWP: 3,000 psi Liquid Type: UL75/50 ..... 6:5

3/4" Mild Steel Unloader Valve, MWP: Up to 5,500 psi Liquid Type: UL75 ..... 6:6

1/2" / 3/4" 316 St.St. Pilot Operated Check Valve, MWP: 12,000 psi Liquid Types: MS75/50, MS75 ..... 6:7

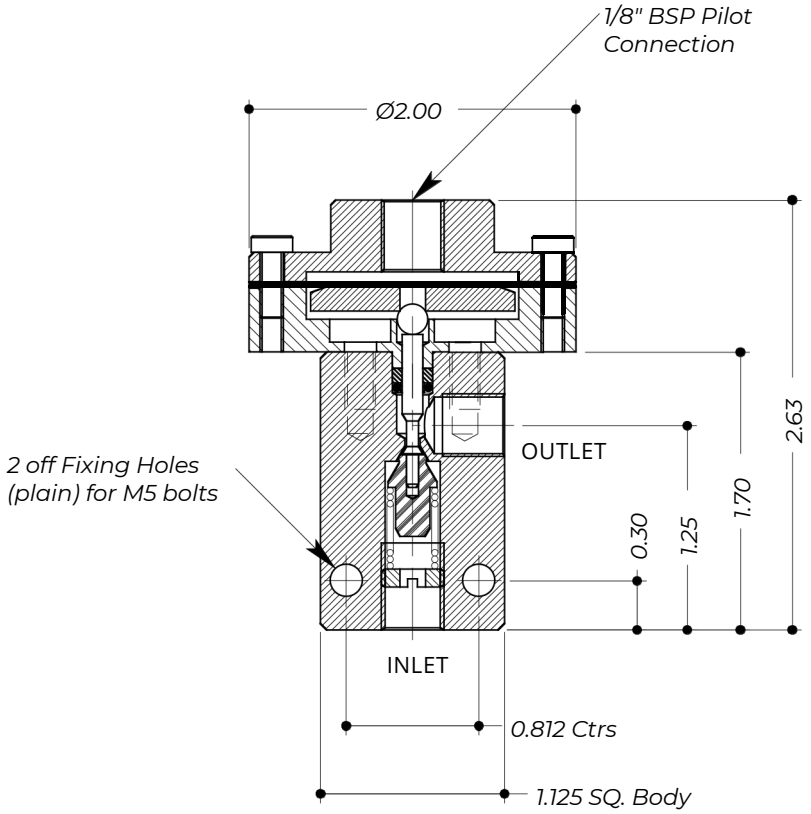
1/2" 316 St.St. Double Pilot Operated Check Valve, MWP: 6,000 psi Liquid Types: 2XPC50/37, 2XPC50 ..... 6:8

1/8" 316 St.St. Midget Lever Operated Check Valve, MWP: 2,000 psi Liquid/Gas Type: SVT12 ..... 6:9

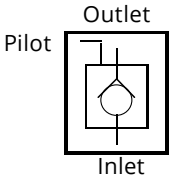
MIDGET PILOT OPERATED CHECK VALVE TYPE: SVA12

Valves Ltd

- VALVE BODY - STAINLESS STEEL (316 / 1.4404)
- ACTUATOR BODY - STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol

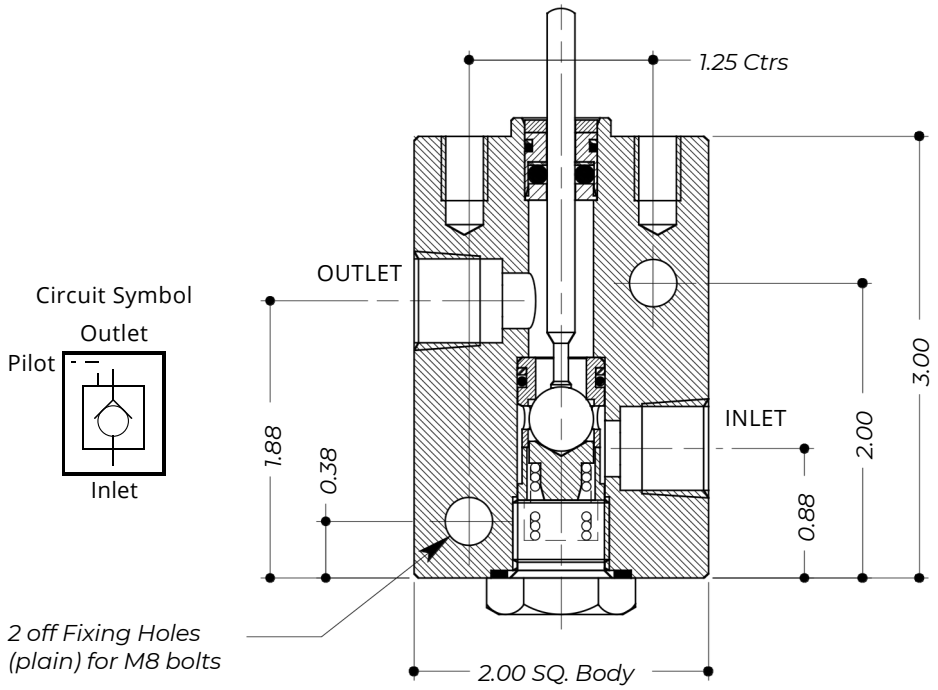


TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*SVA12*	*SVA12*
Porting/ Connection Options:	*P* = BSP (Parallel)	*P*
Max.WorkingPress: Liquid/Gas	*4,000psi*	*4K*
Pilot Ratio:	40: 1	
Diaphragm Material:	Neoprene	
MaximumPilot Pressure:	100 psi	
Port Size: (Valve Body)	1/8"	
ValveSeatMat'l: Liquid/Gas	StainlessSteel- 431/1.4057	
Seal Material:	Viton(othermaterials availableby request)	
CV Value:	0.15	
DryWeight: (kg)	1.2	
WorkingTemperature Range:	-10°Cto+120°C	

PILOT OPERATED CHECK VALVE TYPE: V1-37

Valves Ltd

- 2 POSN / 2 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH ACTUATOR OPTIONS.
- SUITABLE FOR LIQUID OR GAS USE.
- FITTED WITH "HARD" OR "SOFT" SEATS.
- ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.

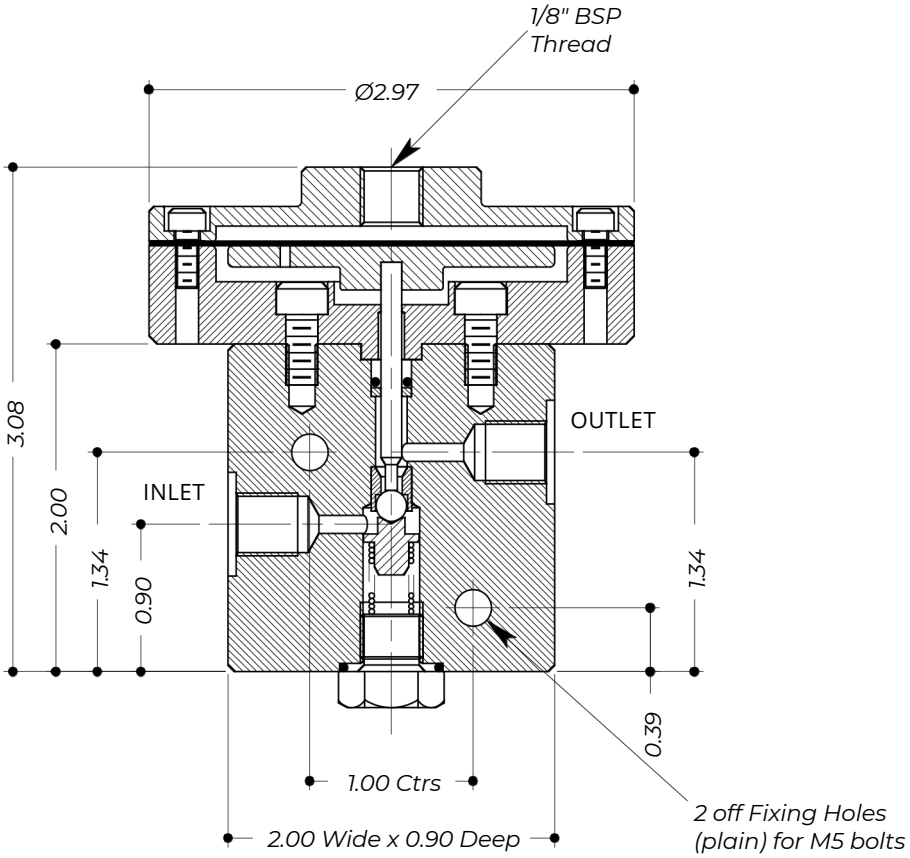


TECHNICAL SPECIFICATION						ORDERING EXAMPLE
ValveType:		V1-37				V1-37
Porting/ Connection Options:		P= BSP (Parallel) N = NPT (Taper) M = Manifold				N
Actuator Options	LowPress. Pilot:	Types: H3(500 psi Max)				H3
	HighPress. Pilot:	Types: H0(10Kpsi Max),H1(10Kpsi Max), H3 (500 psi Max)				
	Mechanical:	Types: L, DL				
SoftSeated Valve:Gas		Torlon- G				G
Hard SeatedValve: Liquid			StainlessSteel- 431/1.4057 (no orderingcoderequired)			
Max.WorkingPress: Gas		5,000 psi				5K
Max.WorkingPress: Liquid			5,000 psi	10,000psi	20,000 psi	
PilotRatio:	Act.Type: H0	10.6 : 1	4.7:1	10.6:1	18.8: 1	
	Act.Type: H1	3.1: 1	1.4:1	3.1:1	5.4: 1	
	Act.Type: H3	110 : 1	49:1	110:1	196: 1	
Port Size:		3/8"				
Seal Material:		Viton(othermaterials availableby request)				
CV Value:		0.75	0.99	0.75	0.28	
DryWeight: (kg)		1.75				
WorkingTemperature Range:		-10°Cto+120°C				

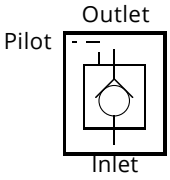
STOP VALVE TYPE: B1-12

Valves Ltd

- 2 POSN / 2 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH AIR ACTUATOR (TYPE "A4")
- SUITABLE FOR LIQUID USE.
- FITTED WITH "HARD" SEATS.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Valve Type:	*B1-12**	*B1-12*
Porting / Connection Options:	*P* = BSP (Parallel)	*P*
Max.Working Press: Liquid	*20,000psi*	*20K*
Actuator Specification:	A4 (150 psi Max)	
Pilot Ratio:	250:1	
Port Size:	1/8"	
Valve Seat Mat'l: Liquid	Stainless Steel - 431/1.4057	
Seal Material:	Viton (other materials available by request)	
CV Value:	0.15	
Dry Weight: (kg)	2.5	
Working Temperature Range:	-10°C to +120°C	

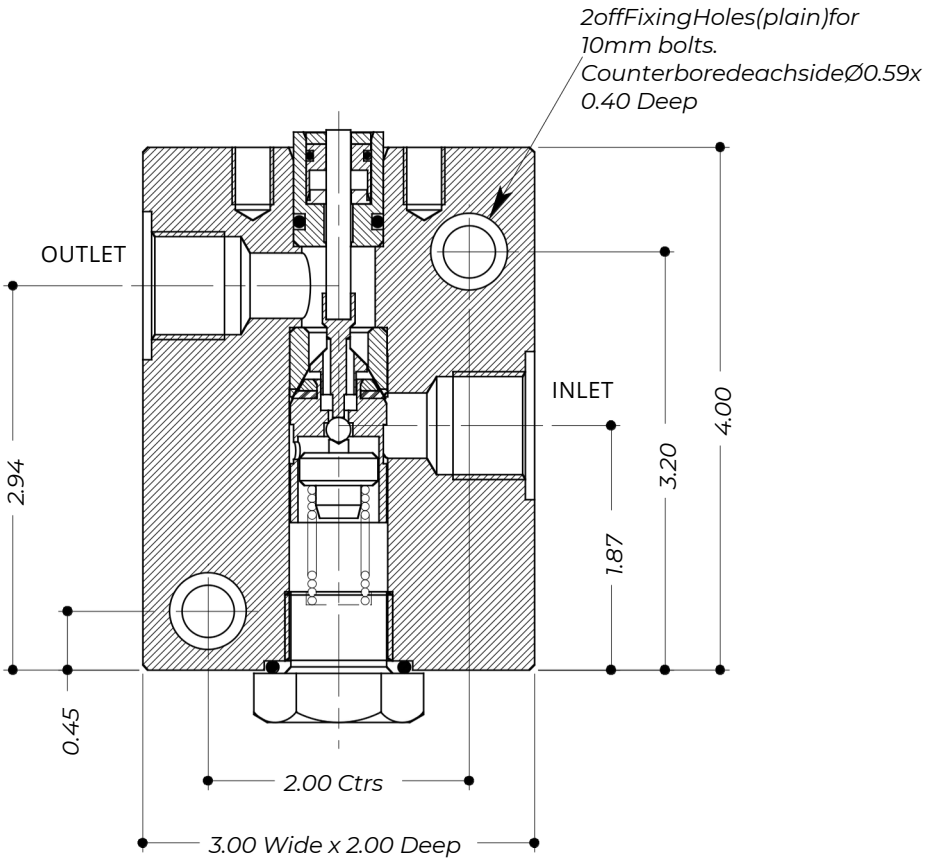
TechnicalSpecification Notes:-

* This valve can be supplied fitted with a Manual Lever (non-standard).
OrderingExample: B1-12L. (details by request)

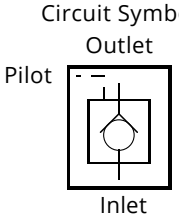
STOP VALVE TYPE: M1-50

Valves Ltd

- 2POSN / 2 PORTED MILD STEEL - ENP (EN1A / 220M07) VALVE WITH ACTUATOR OPTIONS.
- SUITABLE FOR LIQUID USE.
- ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol

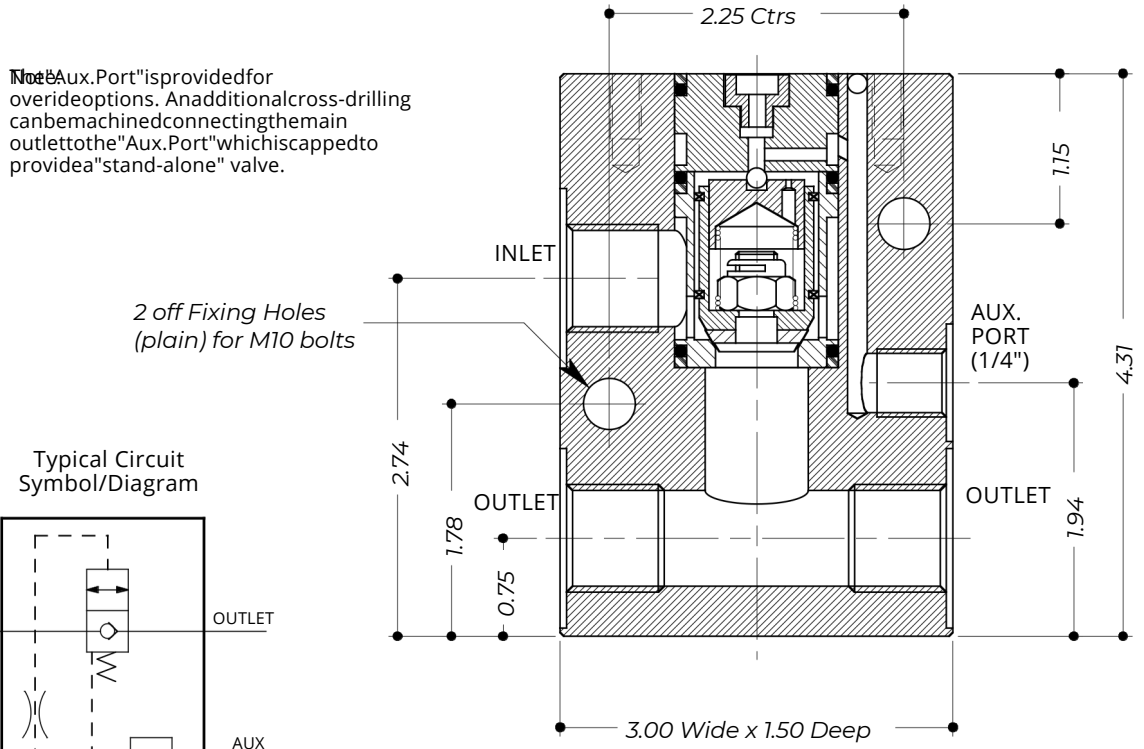


TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:		*M1-50*	*M1-50*
Porting/ Connection Options:		*P*= BSP (Parallel)	*P*
Actuator Options	LowPress. Pilot:	Types *H3* (125 psi MAX)	*H3*
	HighPress. Pilot:	: *H0* (10,000 psi MAX), *H1* (10,000 psi MAX)	
	Mechanical:	Types *L,DL*	
Max.WorkingPress: Liquid		: *20,000psi*	*20K*
PilotRatio:	Act.Type: H3	Types 420: 1	
	Act.Type: H0	: 42: 1	
	Act.Type: H1	12.3: 1	
Port Size:		1/2"	
ValveSeatMat'l: Liquid		StainlessSteel- 431/1.4057	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		1.72	
DryWeight: (kg)		2.5	
WorkingTemperature Range:		-10°Cto+80°C	

UNLOADER VALVE TYPE: UL75/50

Valves Ltd

- 2POSN / 3 PORTED MILD STEEL - ENP (EN1A / 220M07) VALVE WITH ACTUATOR OPTIONS.
- BODY MATERIAL OPTION: STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- ALL DIMENSIONS IN INCHES.



Typical Circuit Symbol/Diagram

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
MaterialOption (non-std)		*S*= Stainless Steel(AISI 316/1.4404)	*S*
ValveType:		*UL75/50*	*UL75/50*
Porting/ Connection Options:		*P* = BSP (Parallel) *N*= NPT (Taper)	*P*
Actuator Options	LowPress. Pilot:	Type: *A4* =(150psiMax) PilotRatio:270: 1	*L*
	Mechanical:*	Types: *L*= Lever, *PB*= PushButton, *R* Remote Operation	
Max.WorkingPress: Liquid		*3,000psi*	*3K*
Port Size:		1/2"	
ValveSeatMat'l: Liquid		StainlessSteel- 316/1.4404	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		1.98	
DryWeight: (kg)		2.5	
WorkingTemperature Range:		-10°Cto+80°C	

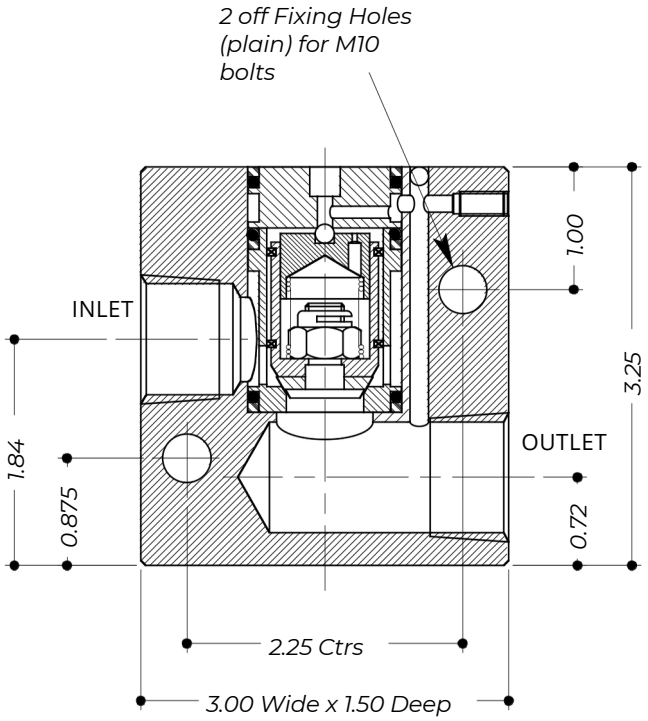
TechnicalSpecification Notes:-

*MechanicalActuatorsare"specials"onlyassociatedwiththe *UL75/50*valve.
TechnicalData Sheetsforindividual valve/actuator assemblies are availableupon request.

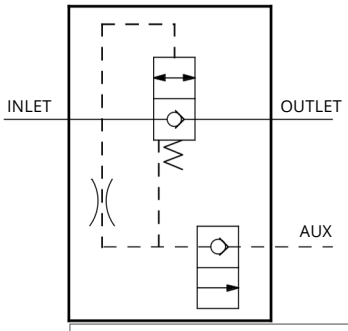
UNLOADER VALVE TYPE: UL75

Valves Ltd

- 2POSN / 2 PORTED MILD STEEL - ENP (EN1A / 220M07) VALVE WITH ACTUATOR OPTIONS.
- SUITABLE FOR LIQUID USE.
- ALL DIMENSIONS IN INCHES.



Typical Circuit Symbol/Diagram



TECHNICAL SPECIFICATION			ORDERING EXAMPLE
MaterialOption (non-std)		*A* = AluminiumAlloy (HE30) *S* = Stainless Steel(AISI 316/1.4404)	———
ValveType:		*UL75*	*UL75*
Porting/ Connection Options:		*P*= BSP (Parallel) *N* = NPT (Taper)	*N*
Actuator Options	LowPress.Pilot:	Type:*A4*(150psiMax) PilotRatio:270: 1	*L*
	Mechanical:*	Types: *L*= Lever, *PB*= PushButton,*R* = Remote Operation	
Max.WorkingPress: Liquid		*4,500 psi* (HE30 valve) *5,500 psi* (AISI 316 valve) *3,000psi* (EN1Avalve)	*4.5K*
Port Size:		3/4"	
ValveSeatMat'l: Liquid		StainlessSteel- 316/1.4404	
Seal Material:		Viton(othermaterials availableby request)	
CV Value:		1.98	
DryWeight: (kg)		1.0	
WorkingTemperature Range:		-10°Cto+80°C	

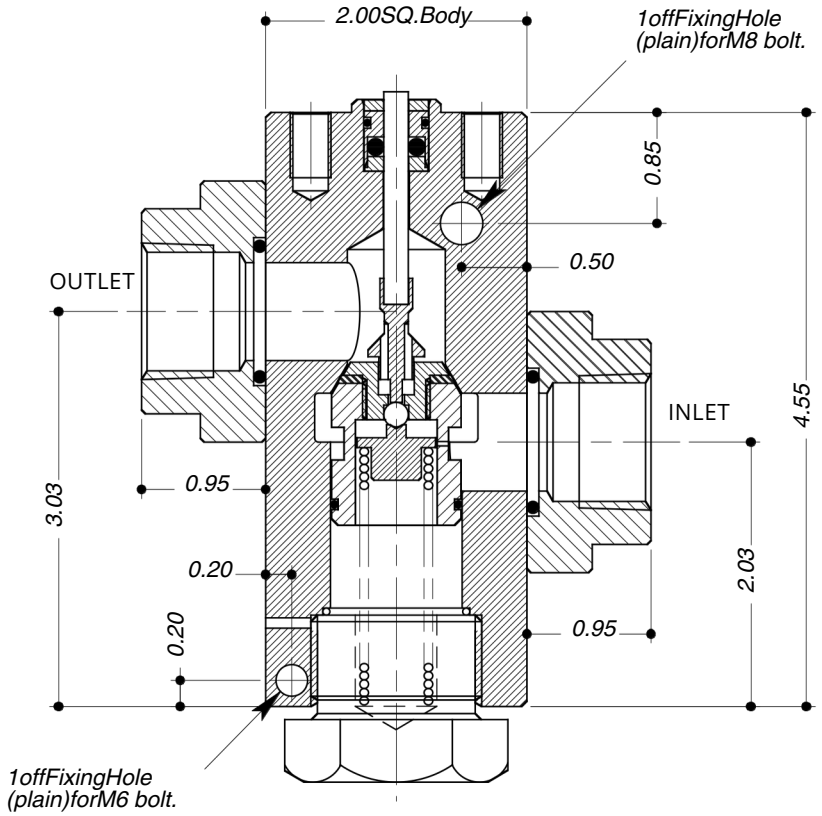
TechnicalSpecificationNotes:-

***** MechanicalActuatorsare"specials" only associatedwith the *UL75* valve.
TechnicalData Sheets for individual valve/actuator assembliesareavailableuponrequest.

PILOT OPERATED CHECK VALVE TYPES: MS75, MS75/50

Valves Ltd

- 2 POSN / 2 PORTED STAINLESS STEEL (316 / 1.4404) VALVE WITH ACTUATOR OPTIONS.
- SUITABLE FOR LIQUID USE.
- ACTUATION TYPE - SEE SECTION 12 FOR DETAILS.
- ALL DIMENSIONS IN INCHES.



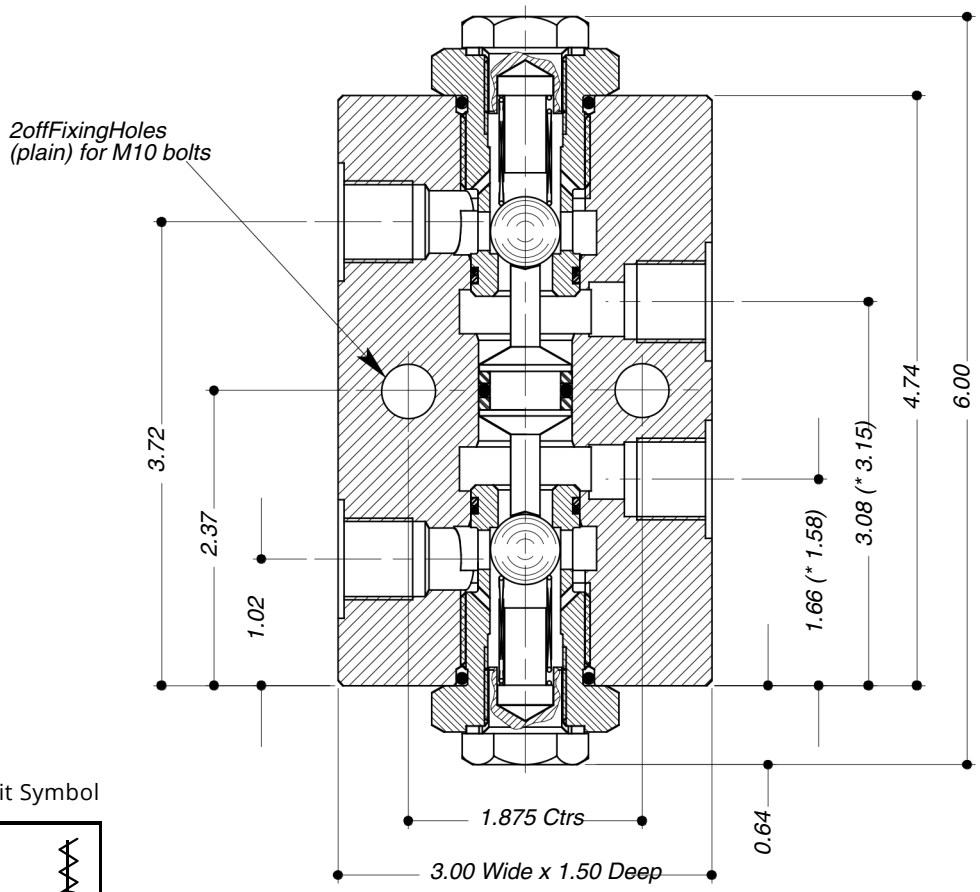
TECHNICAL SPECIFICATION				ORDERING EXAMPLE
ValveType:		*MS75/50*	*MS75*	*MS75*
Porting/ Connection Options:		*P* = BSP (Parallel)	*N* = NPT (Taper)	*N*
Actuator Options	LowPress. Pilot:	Types *H3* (60 - 150 psi Max)		*H0*
	HighPress. Pilot: Mechanical:	: *H0* (10,000psiMax), *H1* (10,000 psi Max)		
		Types *L,DL*		
Max.WorkingPress: Liquid		: *12,000 psi*		*12K*
PilotRatio:	Act.Type: H3	Types 400:1	400: 1	
	Act.Type: H0	: 33:1	33: 1	
	Act.Type: H1	9.6:1	9.6: 1	
Port Size:		1/2"	3/4"	
ValveSeatMat'l: Liquid		StainlessSteel- 316/1.4404		
Seal Material:		Viton(othermaterials availableby request)		
CV Value:		3.7	3.7	
DryWeight: (kg)		4.0		
WorkingTemperature Range:		-10°Cto+80°C		

DOUBLEPILOT OPERATED CHECK VALVE

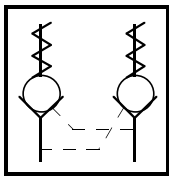
TYPES: 2XPC50/37, 2XPC50

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



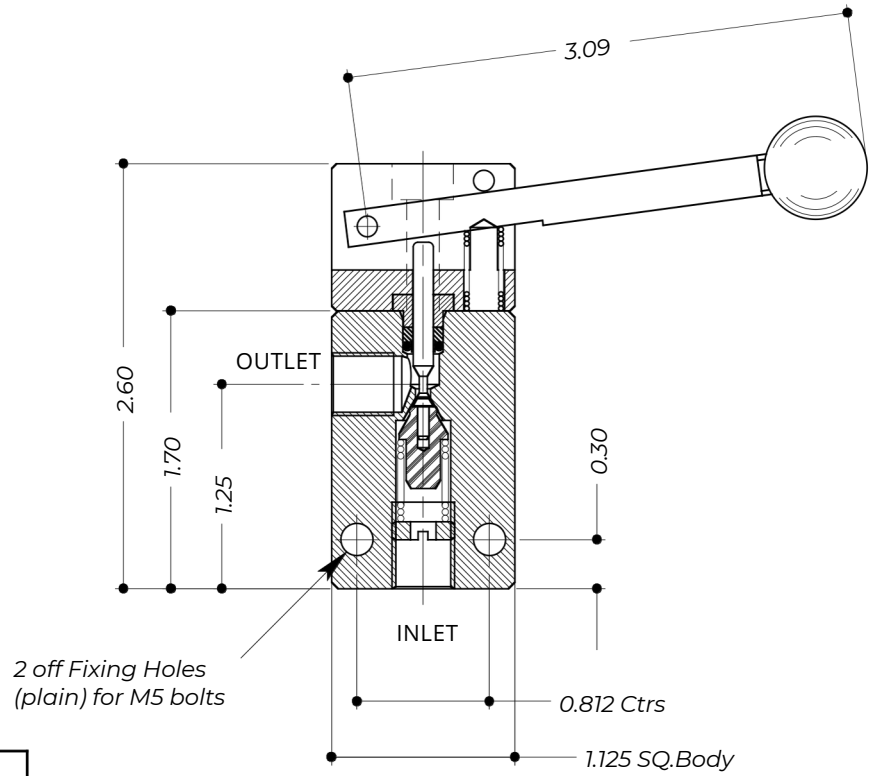
2XPC50/37illustrated above fitted with 3/8" ports.
Dimensions marked thus* arefor 1/2" porting

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*2XPC50/37*	*2XPC50*	*2XPC50*
Porting/ Connection Options:	*C5* = CETOP5 *P* = BSP (Parallel) *N* = NPT (Taper)		*P*
Max.WorkingPress: Liquid	*6,000psi*		*6K*
PilotRatio:	2.9: 1		
Port Size:	3/8"	1/2"	
ValveSeatMat'l: Liquid	StainlessSteel- 316/1.4404		
Seal Material:	Viton(othermaterials availableby request)		
CV Value:	1.9		
DryWeight: (kg)	2.77		
WorkingTemperature Range:	-10°Cto+120°C		

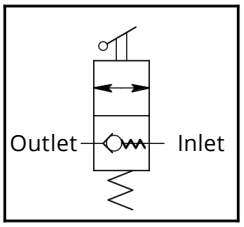
MIDGET LEVER OPERATED CHECK VALVE TYPE: SVT12

Valves Ltd

- VALVE BODY - STAINLESS STEEL (316 / 1.4404)
- LEVER ACTUATOR BODY - STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.



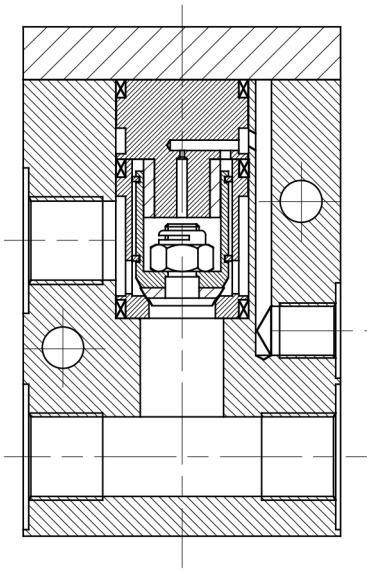
Circuit Symbol



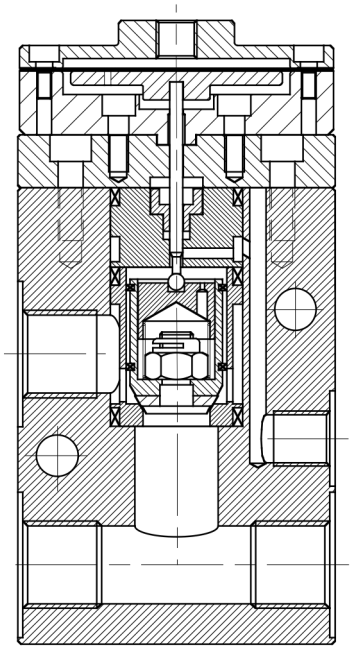
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Valve Type:	*SVT12*	*SVT12*
Porting / Connection Options:	*P* = BSP (Parallel)	*P*
Max.Working Press: Liquid/Gas	*2,000psi*	*2K*
Port Size: (Valve Body)	1/8"	
Valve Seat Mat'l: Liquid/Gas	Stainless Steel - 431/1.4057	
Seal Material:	Viton (other materials available by request)	
CV Value:	0.15	
Dry Weight: (kg)	1.2	
Working Temperature Range:	-10°C to +120°C	

TYPICAL EXAMPLES OF UNLOADER VALVES
TYPE "UL75/50" FITTED WITH ACTUATORS

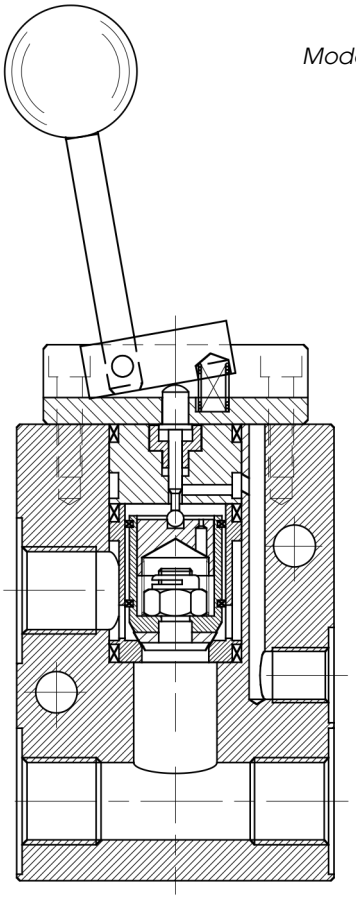
Valves Ltd



Model Type: UL75/50-R



Model Type: UL75/50-A4



Model Type: UL75/50-L

BiS Valves Ltd., Units 17-22, Kingfisher Park, West Moors, Wimborne , Dorset, ENGLAND.
Tel:01202896322 Fax: 01202 896718 e-mail: info@bisvalves.co.uk. web site: www.bisvalves.co.uk

Valves Ltd

SECTION 7: RELIEF VALVES

COMPLIANTWITHTHEPRESSUREEQUIPMENTDIRECTIVE (PED) 97/23/EC.

1/4" to 1" 316 St.St. Safety Relief Valve (L.P.), Setting Range: 10 to 600 psi Liquid/Gas Types: S25, S37, S50, S75, S100. ..... *7:1*

1/4" 316 St.St. Safety Relief Valve (L.P.), Setting Range: 10 to 280 psi Liquid/Gas Type: SM25UF-RG *7:2*

1/4" to 1" 316 St.St. Safety Relief Valve (L.P.), Setting Range: 10 to 600 psi Liquid/Gas Types: TS25, TS37, TS50, TS75, TS100 ..... *7:3*

1/4" 316 St.St. Cartridge Relief Valve (L.P.) Setting Range: 10 to145 psi Liquid/Gas Type: TS25C *7:4*

1/4" 316 St.St. Relief Valve (H.P.), Setting Range: 400 to 2,000 psi Liquid Type: HS25 ..... *7:5*

1/4" 316 St.St. Relief Valve (H.P.), Setting Range: 400 to 2,000 psi Liquid Type: HTS25 ..... *7:6*

1/4" / 3/8" 316 St.St. Relief Valve (H.P.), Setting Range: 400 to 15,000 psi Liquid Types: RL25, RL37 ..... *7:7*

1/4" / 3/8" 316 St.St. Relief Valve (H.P.), Setting Range: 1,000 to 6,000 psi Liquid/Gas Types: RL25-G, RL37-G *7:8*

1/4" 316 St.St. Cartridge Relief Valve (H.P.), Setting Range: 400 to 15,000 psi Liquid Type: RL25C *7:9*

1/4" 316 St.St. Relief Valve, Manifold Mounted (H.P.), Setting Range: 400 to 15,000 psi Liquid Type: RL25M *7:10*

1/2" 316 St.St. Relief Valve (H.P), Setting Range: 200 to 15,000 psi Liquid Type: RL50 ..... *7:11*

1/2" 316 St.St. Relief Valve (H.P.), Setting Range: 1,000 to 6,000 psi Liquid/Gas Type: RL50-G *7:12*

1/2" 316 St.St. Relief Valve, Manifold Mounted (H.P.), Setting Range: 400 to 15,000 psi Liquid Type: RL50M *7:13*

3/4" 316 St.St. Relief Valve (H.P.), Setting Range: 200 to 15,000 psi Liquid Type: RL75 ..... *7:14*

3/4" 316 St.St. Relief Valve (H.P.) Setting Range: 1,000 to 6,000 psi Liquid Type: RL75-G *7:15*

3/4" 316 St.St. Cartridge Relief Valve (H.P.), Setting Range: 200 to 15,000 psi Liquid Type: PRV75C *7:16*

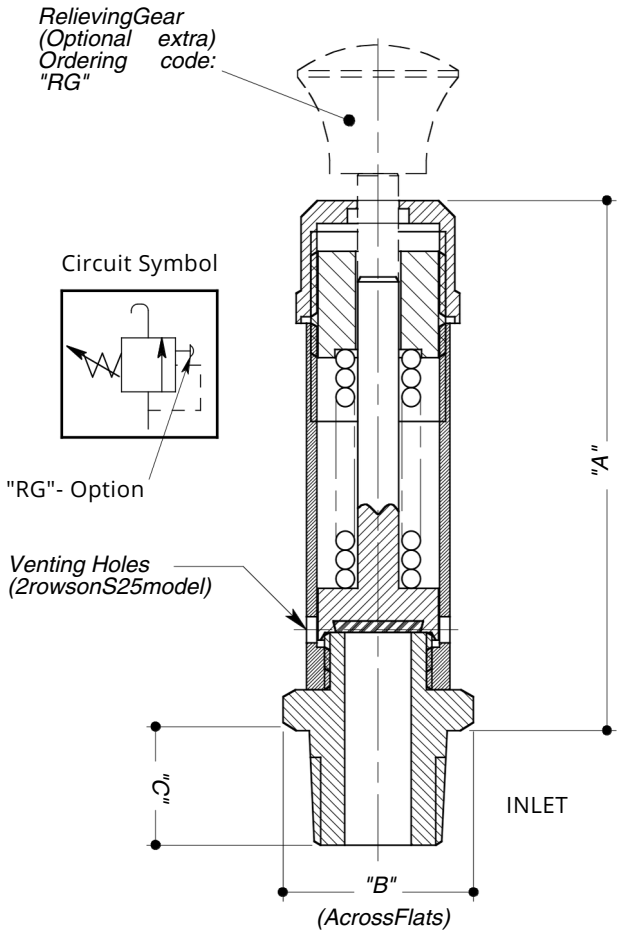
1" 316 St.St. Relief Valve (H.P.), Setting Range: 700 to 3,000 psi Liquid Type: RL100 ..... *7:17*

1" 316 St.St. Relief Valve (H.P.), Setting Range: 700 to 3,000 psi Liquid/Gas Type: RL100-G *7:18*

SAFETY RELIEF VALVE (L.P.)
TYPES:S25, S37, S50, S75, S100

Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- MATERIAL OPTION: BRASS.
- SUITABLE FOR LIQUID OR GAS USE.
- VENTING TO ATMOSPHERE.
- ALL DIMENSIONS IN INCHES.



- ItisNOT recommended tooperate thisvalve below 10 psi. (0.7Bar).
- Statedpressureismaximum setting. Lowersettingsareavailablebyusingarangeof different springs. Please confirmwhenordering.
- Leaktightwhen90%of"setpressure"isapplied.
- Repeatability±3% of"set pressure".
- Re-seatingwithin 7.5%of"cracking pressure". (Pre-setcracking pressureisoptional) Statedetailswhenordering.

SAFETY RELIEF VALVE SPRING RANGE TABLE
Valve Type: S25, BS25 0 - *2B*, 2 - *10B*,8 -*15B*,13- *26B*,23- *40B* (*B*=Bar)
Valve Type: S37, BS37 0.7 - *2B*, 2 - *7B*, 6 - *12B*,11- *25B*,20- *40B* (*B*=Bar)
Valve Type: S50, BS50 0.7 - *2B*, 2 - *7B*,6 -*12B*,11- *25B*,20- *40B* (*B*=Bar)
Valve Type: S75, BS75 0.7 - *2B*, 2 - *7B*,6 -*12B*,11- *25B*,20- *40B* (*B*=Bar)
Valve Type: S100 0.7 - *10B*, 8 - *18B* (*B*=Bar)

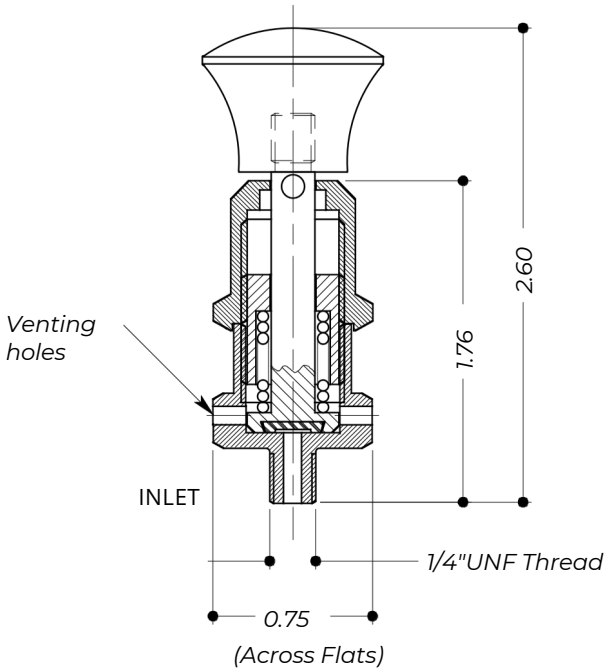
SelecttheSpringRangefromtheabovetableandaddthe numberin *'BOLD'*text(e.g. *12B*)totheendoftheModelCode.

TECHNICAL SPECIFICATION						ORDERING EXAMPLE
MaterialOption (non-std)	*B* = Brass				N/A	———
ValveType:	*S25*	*S37*	*S50*	*S75*	*S100*	*S25*
Porting/ Connection Options:	*P*= BSP (Parallel) *N* = NPT (Taper)					*N*
ValveOptions:	*RG*= Relieving Gear					*RG*
Pressure/Spring Options:	Seetable above					*10B*
Max.WorkingPress: Liquid/Gas	580psi				260psi	
OrificeSize:	Ø5mm	Ø9.8mm	Ø9.8mm	Ø9.8mm	Ø20.8mm	
Port Size:	1/4"	3/8"	1/2"	3/4"	1.0"	
ValveSeatMaterial:	StainlessSteel- 316/1.4404					
Seal Material:	Viton(othermaterials availableby request)					
DryWeight: (kg)	0.2	0.25	0.3	0.35	1.0	
WorkingTemperature Range:	-10°Cto+160°C					
Dimension (ins) Length "A"	2.50"	3.30"	3.30"	3.30"	4.95"	
"B" A/Flats	0.750"	1.01"	1.01"	1.30"	1.86"	
Length "C"	0.50"	0.60"	0.60"	0.75"	1.00"	

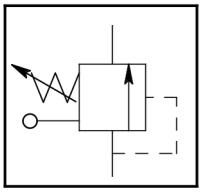
SAFETY RELIEF VALVE (L.P.) TYPE: SM25UF-RG

Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- VENTING TO ATMOSPHERE.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*SM25UF-RG*	*SM25UF-RG*
Porting/ Connection Options:	*UNF* = UnifiedFineThread (noordering code req'd)	———
Pressure/Spring Options:	0.7-*5B*, 5 -*19B* (*B*=Bar)	*19B*
Max.WorkingPress: Liquid/Gas	280 psi	
OrificeSize:	Ø2.5mm	
ConnectionSize:	1/4"	
ValveSeatMaterial:	StainlessSteel- 316/1.4404	
Seal Material:	Viton(othermaterials availableby request)	
DryWeight: (kg)	0.1	
WorkingTemperature Range:	-10°Cto+160°C	

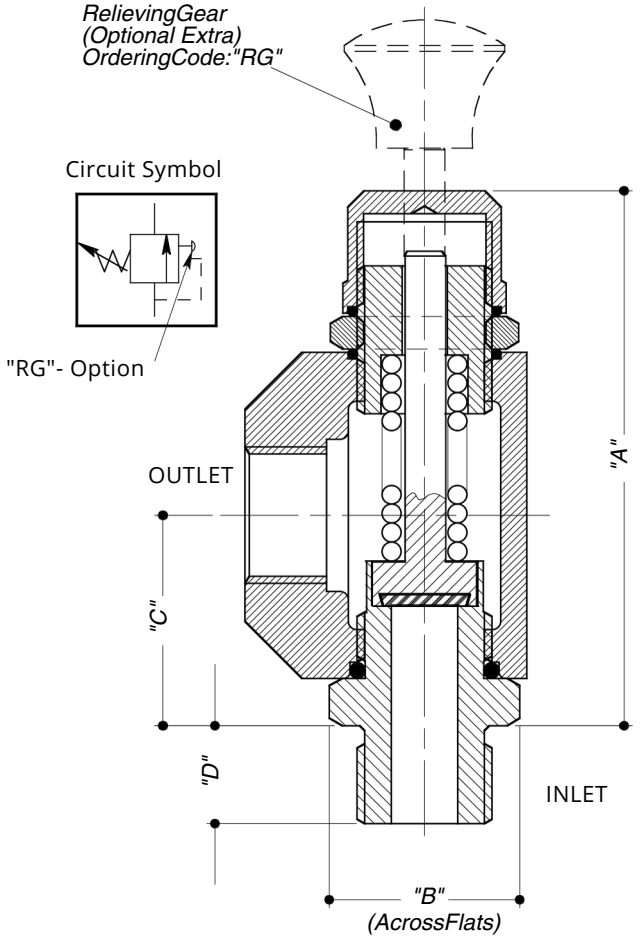
SAFETY RELIEF VALVE (L.P.)

TYPES: TS25, TS37, TS50, TS75, TS100

PRESSURE EQUIPMENT DIRECTIVE

Valves Ltd

- (PED)97/23/ECAPPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.
- ItisNOT recommended tooperate thisvalve below 10 psi. (0.7Bar).
- Statedpressureismaximum setting.
- Lowersettingsareavailablebyusingarangeof different springs. Please confirmwhenordering.
- Leaktightwhen90%of"setpressure"isapplied.
- Repeatability±3% of"set pressure".
- Re-seatingwithin 7.5%of"cracking pressure".
- (Pre-setcracking pressureisoptional) Statedetailswhenordering.
- RecommendedMAXIMUMback pressure145 psi. (10 Bar).



SAFETY RELIEF VALVE SPRING RANGE TABLE
Valve Type: TS25 0.7 - *2B*, 2 - *10B*,8 -*15B*,13- *26B*,23- *40B* (*B*=Bar)
Valve Type: TS37 0.7 - *2B*, 2 - *7B*, 6 - *12B*,11- *25B*,20- *40B* (*B*=Bar)
Valve Type: TS50 0.7 - *2B*, 2 - *7B*,6 -*12B*,11- *25B*,20- *40B* (*B*=Bar)
Valve Type: TS75 0.7 - *2B*, 2 - *7B*,6 -*12B*,11- *25B*,20- *40B* (*B*=Bar)
Valve Type: TS100 0.7 - *10B*, 8 - *18B*, 18- *28B* (*B*=Bar)

SelecttheSpringRangefromtheabovetableandaddthe numberin *'BOLD'*text(e.g. *12B*)totheendoftheModelCode.

TECHNICAL SPECIFICATION						ORDERING EXAMPLE
ValveType:	*TS25*	** TS37*	*TS50*	*TS75*	*TS100*	*TS25*
Porting/ Connection Options:	*P*= BSP (Parallel) *N* = NPT (Taper)					*N*
ValveOptions:	*RG*= Relieving Gear					———
Pressure/Spring Options:	Seetable above					*10B*
Max.WorkingPress:Liquid/Gas	580psi				400psi	
OrificeSize:	Ø5mm	Ø9.8mm	Ø9.8mm	Ø9.8mm	Ø20.8mm	
Port Size:	1/4"	3/8"	1/2"	3/4"	1.0"	
ValveSeatMaterial:	StainlessSteel- 316/1.4404					
Seal Material:	Viton(othermaterials availableby request)					
DryWeight: (kg)	0.2	0.25	0.3	0.35	2.0	
WorkingTemperature Range:	-10°Cto+120°C					
Length "A"	2.50"	3.30"	3.30"	3.30"	4.95	
"B" A/Flats	0.750"	1.01"	1.01"	1.30"	"	
Length "C"	0.730"	1.43"	1.39"	1.44"	1.86	
Length "D"	0.450"	0.60"	0.70"	0.75"	"	
					1.85	
					"	
					0.81	
					"	

Dimension (ins)

TechnicalSpecificationNotes:-

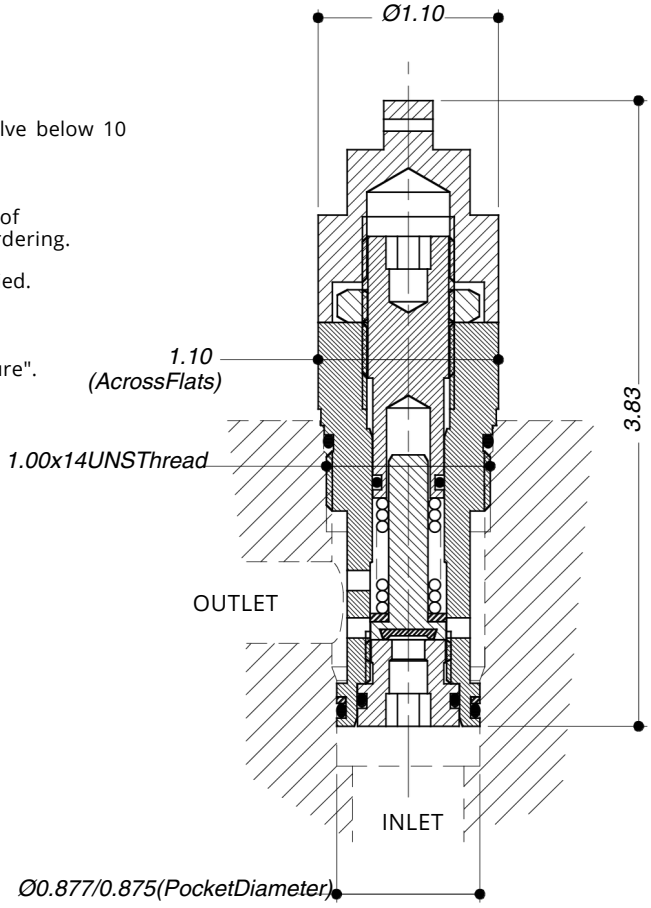
* The *TS37*valve isfitted with a1/2" FemaleOutlet and3/8" Male Inlet Port asstandard.

CARTRIDGE RELIEF VALVE (L.P.) TYPE: TS25C

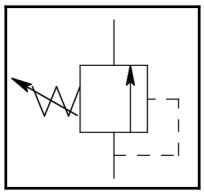
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- FOR USE IN SUITABLE CAVITY HOUSING. (details on request)
- ALL DIMENSIONS IN INCHES.

- ItisNOT recommended tooperate thisvalve below 10 psi. (0.7Bar).
- Statedpressureismaximum setting. Lowersettingsareavailablebyusingarangeof different springs. Please confirmwhenordering.
- Leaktightwhen90%of"setpressure"isapplied.
- Repeatability±3% of"set pressure".
- Re-seatingwithin 7.5%of"cracking pressure". (Pre-setcracking pressureisoptional) Statedetailswhenordering.
- RecommendedMAXIMUMback pressure145 psi. (10 Bar).



Circuit Symbol

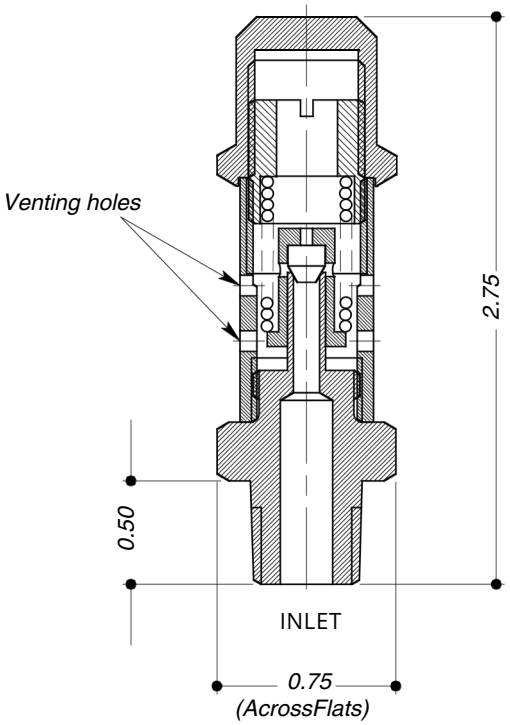


TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*TS25C*	*TS25C*
Pressure/Spring Options:	0.7-*2B*, 2 - *10B* (*B* =Bar)	*10B*
Max.WorkingPress: Liquid/Gas:	580 psi	
ValveSeatMaterial:	StainlessSteel- 316/1.4404	
Seal Material:	Viton(othermaterials availableby request)	
DryWeight(kg)	0.4	
WorkingTemperature Range:	-10°Cto+100°C	

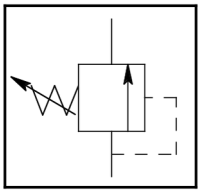
RELIEF VALVE (H.P.) TYPE: HS25

Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- VENTING TO ATMOSPHERE
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



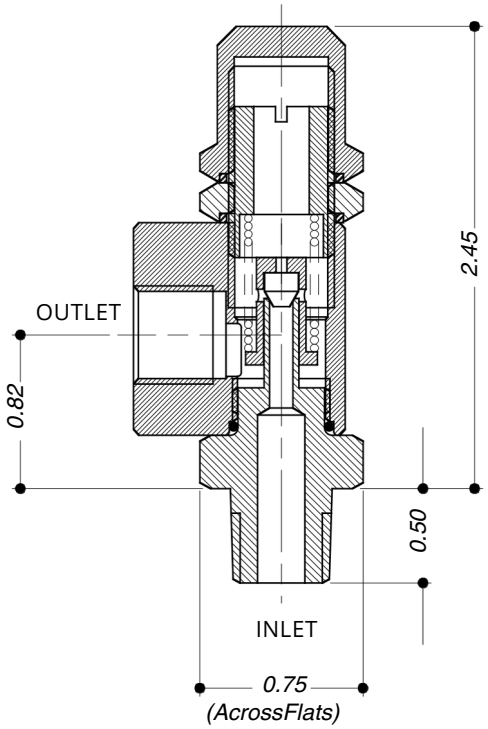
Spring range available: 400 - 2,000 psi

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Valve Type:	*HS25*	*HS25*
Porting / Connection Options:	*P*=BSP(Parallel) *N* =NPT(Taper)	*N*
Valve Options:	*PM*= PressureMaintaining(fittedwith ball seal)	———
Max.Working Press: Liquid	2,000 psi	
Orifice Size:	Ø3.2mm	
Port Size:	1/4"	
Valve Seat Mat'l: Liquid	Stainless Steel - 316/1.4404	
Seal Material:	Viton (other materials available by request)	
Dry Weight: (kg)	0.22	
Working Temperature Range:	-10°C to +120°C	

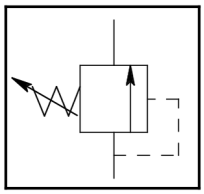
RELIEF VALVE (H.P.) TYPE: HTS25

Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLEFORLIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



Spring range available: 400 - 2,000 psi

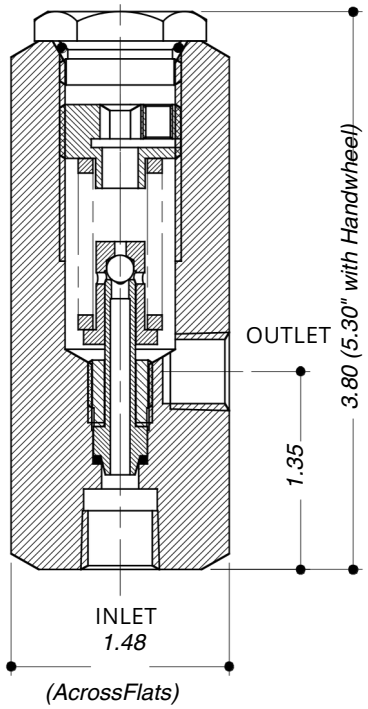
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Valve Type: Porting /	*HTS25*	*HTS25*
Connection Options: Valve	*P*=BSP(Parallel) *N* =NPT(Taper)	*N*
Option: Valve Option:	*PM*= PressureMaintaining(fittedwith ball seal)	———
Max.Working Press: Liquid	*EH* = ExternalAdjustment	———
Orifice Size: Port Size: Valve	2,000 psi	
Seat Mat'l: Liquid Seal	Ø3.2mm	
Material: Dry Weight: (kg)	1/4"	
Working Temperature Range:	Stainless Steel - 316/1.4404	
	Viton (other materials available by request)	
	0.22	
	-10°C to +120°C	

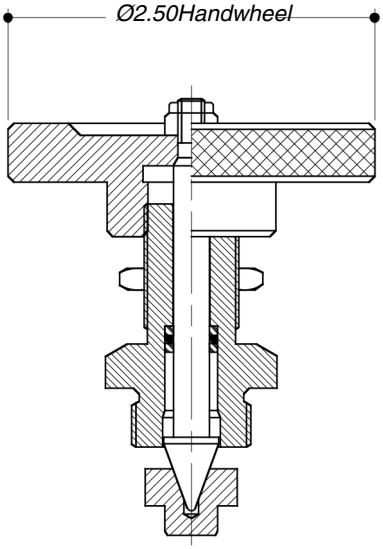
RELIEF VALVE (H.P.) TYPES: RL25, RL37

Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- ALL DIMENSIONS IN INCHES.

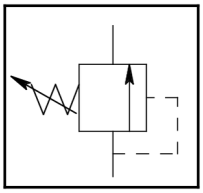
- Leaktightwhen90%of"setpressure"is applied.
- Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional) Statedetailswhenordering.
- RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).
- Mountingdetailsforthe *RL25-E*only. Holepanel dia: Ø0.75" Panel thickness: 0.125"to 0.250"





Handwheel (external)Adjustment assembly. (Optional extra) Ordering Code:*E*

Circuit Symbol



TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*RL25*	*RL37*	*RL25*
Porting/ Connection Options: ("AE" threads fitted only to the INLET port)	*P* = BSP (Parallel) *N* = NPT (Taper) *44AE* (1/4"O.D. Tube) *56AE* (3/8"O.D. Tube) *81AE* (9/16"O.D. Tube)		*N*
AutoclaveOutletPortOptions:	*25N* (1/4"NPT)	*37N* (3/8"NPT)	——
ValveOptions:	*E* = Handwheel(external) Adjustment		——
WorkingMedia:(std)	Oil /Water Glycol Duty (noordering code req'd)		——
WorkingMedia:(options)	*WD* = Water Duty *SWD* = Sea Water Duty		——
Press. Range:	*0.4K- 1.6Kpsi, 1K - 4K psi, 3K- 9K psi, 8K - 15K psiMaxW.P.*		*9K*
OrificeSize:	Ø0.125"		
Port Size:	1/4"	3/8"	
ValveSeatMat'l: (standard)	StainlessSteel- 440C (liquiduse)		
ValveSeatMat'l: (options)	1.4542St.Steel - Water Duty Inconel - Sea Water Duty		
Seal Material:	Viton(othermaterials availableby request)		
DryWeight: (kg)	1.2	1.2	
WorkingTemperature Range:	-10°Cto+120°C		
FlowRate:	Contactfactory for details		

TechnicalSpecificationNotes:-

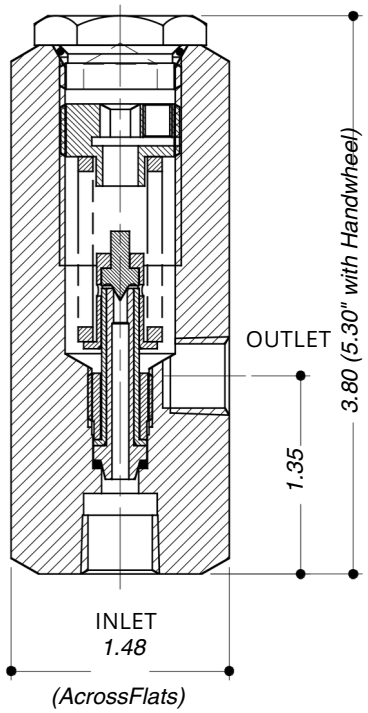
* Other materials available(Monel,Inconel,Hastelloy) subject toPEDapproval.

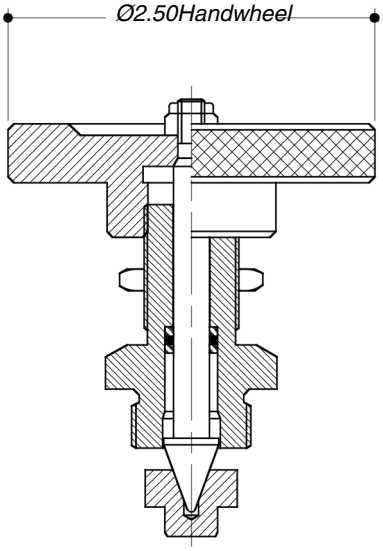
RELIEF VALVE (H.P.) TYPES: RL25-G, RL37-G

Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.

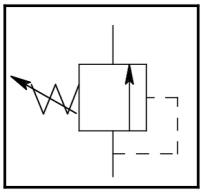
- Leaktightwhen90%of"setpressure"is applied. Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional)
- Statedetailswhenordering. RecommendedMAXIMUMback pressure1,000 psi. (70 Bar). Mountingdetailsforthe *RL25-E*only.
- Holepanel dia: Ø0.75" Panel thickness: 0.125"to 0.250"
-





Handwheel (external)Adjustment assembly. (Optional extra) Ordering Code:*E*

Circuit Symbol



TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*RL25*	*RL37*	*RL25*
Porting/ Connection Options: ("AE" threads fitted only to the INLET port)	*P* = BSP (Parallel) *N* = NPT (Taper) *44AE* (1/4"O.D.Tube) *56AE* (3/8"O.D.Tube) *81AE* (9/16"O.D.Tube)		*N*
AutoclaveOutletPortOptions:	*25N* (1/4"NPT)	*37N* (3/8"NPT)	——
ValveOptions:	*E* = Handwheel(external) Adjustment		——
SoftSeated Valve:	*G*		*G*
Press. Range:	*1K- 6K psiMaxW.P*		*6K*
OrificeSize:	Ø0.093"		
Port Size:	1/4"	3/8"	
ValveSeatMaterial:	Torlon		
Seal Material:	Viton(othermaterials availableby request)		
DryWeight: (kg)	1.2	1.2	
WorkingTemperature Range:	-10°Cto+80°C		
FlowRate:	Contactfactory for details		

TechnicalSpecificationNotes:-

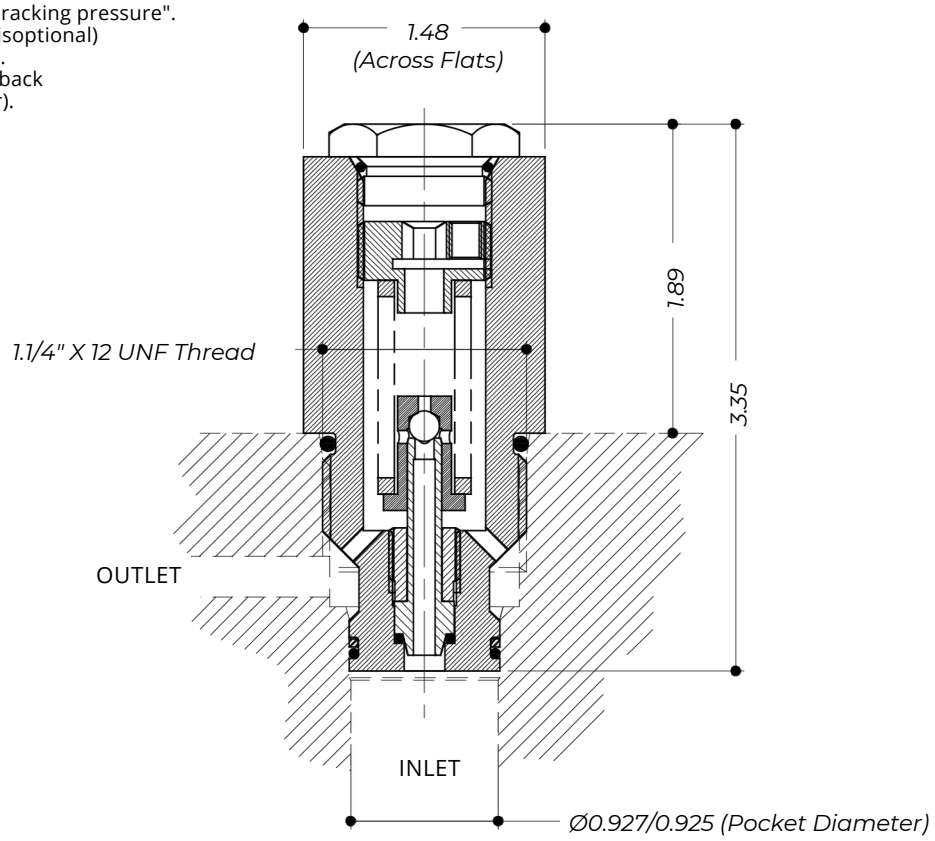
* Other materials available(Monel,Inconel,Hastelloy) subject toPEDapproval.

CARTRIDGE RELIEF VALVE (H.P.) TYPE: RL25C

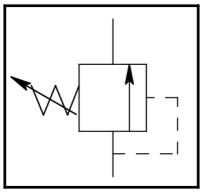
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- FOR USE IN SUITABLE CAVITY HOUSING. (details on request)
- ALL DIMENSIONS IN INCHES.

- Leaktightwhen90%of"setpressure"is applied. Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional)
- Statedetailswhenordering. RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).
-



Circuit Symbol



TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*RL25C*	*RL25C*
WorkingMedia:(standard)	Oil /Water Glycol Duty (noordering code req'd)	——
WorkingMedia:(options)	*WD* =WaterDuty *SWD* =SeaWaterDuty	——
Press. Range:	*0.4K- 1.6Kpsi, 1K - 4K psi, 3K- 9K psi, 8K - 15K psiMaxW.P.*	*9K*
OrificeSize:	Ø0.125"	
ValveSeatMat'l: (standard)	StainlessSteel- 440C (liquiduse)	
ValveSeatMat'l: (options)	1.4542St.Steel - Water Duty Inconel - Sea Water Duty	
Seal Material:	Viton(othermaterials availableby request)	
DryWeight: (kg)	0.7	
WorkingTemperature Range:	-10°Cto+80°C	
FlowRate:	Contactfactory for details	

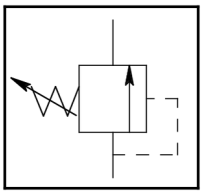
RELIEF VALVE (H.P.) TYPE: RL25M

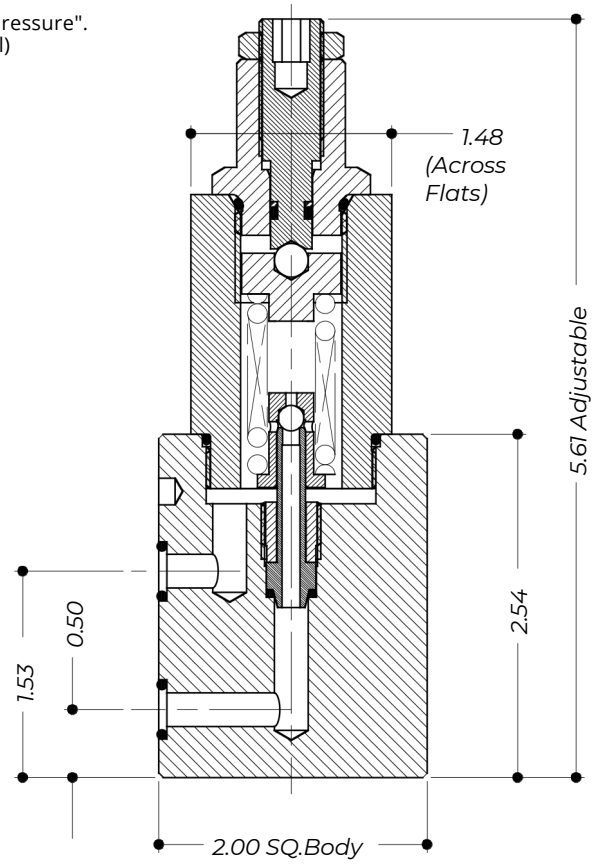
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- MANIFOLD MOUNTED.
- ALL DIMENSIONS IN INCHES.

- Leaktightwhen90%of"setpressure"is applied. Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional)
- Statedetailswhenordering. RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).
-

Circuit Symbol





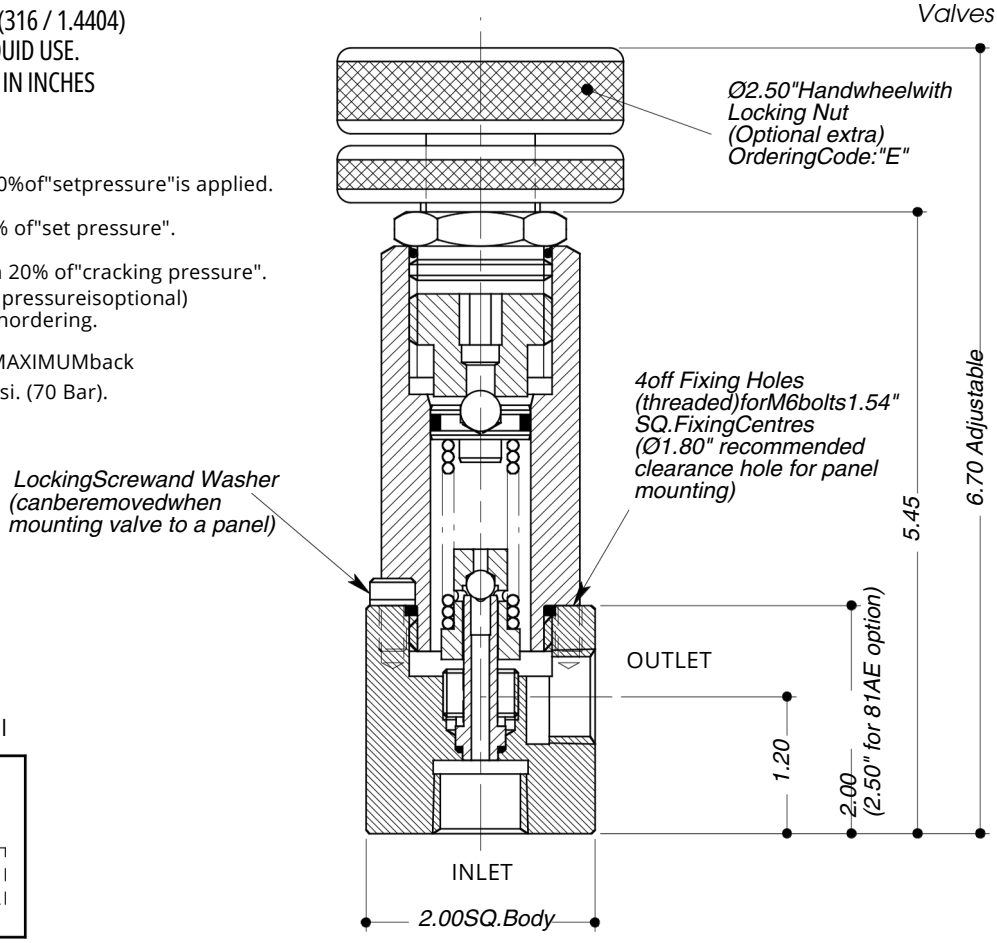
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*RL25M*	*RL25M*
WorkingMedia:(standard)	Oil /Water Glycol Duty (noordering code req'd)	——
WorkingMedia:(options)	*WD* =WaterDuty *SWD* =SeaWaterDuty	——
Press. Range:	*0.4K- 1.6Kpsi, 1K - 4K psi, 3K- 9K psi, 8K - 15K psiMaxW.P.*	*9K*
OrificeSize:	Ø0.125"	
Port Size:	Manifoldmounted	
ValveSeatMat'l: (standard)	StainlessSteel- 440C (liquiduse)	
ValveSeatMat'l: (options)	1.4542St.Steel - Water Duty Inconel - Sea Water Duty	
Seal Material:	Viton(othermaterials availableby request)	
DryWeight: (kg)	1.8	
WorkingTemperature Range:	-10°Cto+80°C	
FlowRate:	Contactfactory for details	

RELIEF VALVE (H.P.) TYPE: RL50

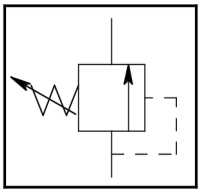
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- ALL DIMENSIONS IN INCHES

- Leaktightwhen90%of"setpressure"is applied.
- Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional) Statedetailswhenordering.
- RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).



Circuit Symbol



TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*RL50*		*RL50*
Porting/ Connection Options: ("AE" threads fitted only to the INLET port)	*P* = BSP (Parallel) *N* = NPT (Taper) *56AE* (3/8"O.D. Tube) *81AE* (9/16"O.D. Tube)		*N*
AutoclaveOutlet Port Options:	*50N* (1/2" NPT)		——
ValveOptions:	*E* = Handwheel(external) Adjustment		——
WorkingMedia:(standard)	Oil /Water Glycol Duty (noordering code req'd)		——
WorkingMedia:(options)	*WD* =WaterDuty	*SWD* =SeaWaterDuty	——
Press. Range:	*200- 1.6Kpsi, 1 -5K psi*	*4K - 15K psiMaxW.P.*	*5K*
OrificeSize:	Ø6.0mm	Ø4.1mm	
Port Size:	1/2"		
ValveSeatMat'l: (standard)	StainlessSteel- 440C (liquiduse)		
ValveSeatMat'l: (options)	1.4542St.Steel - Water Duty Inconel - Sea Water Duty		
Seal Material:	Viton(othermaterials availableby request)		
DryWeight: (kg)	1.75		
WorkingTemperature Range:	-10°Cto+120°C		
FlowRate:	Contactfactory for details		

TechnicalSpecificationNotes:-

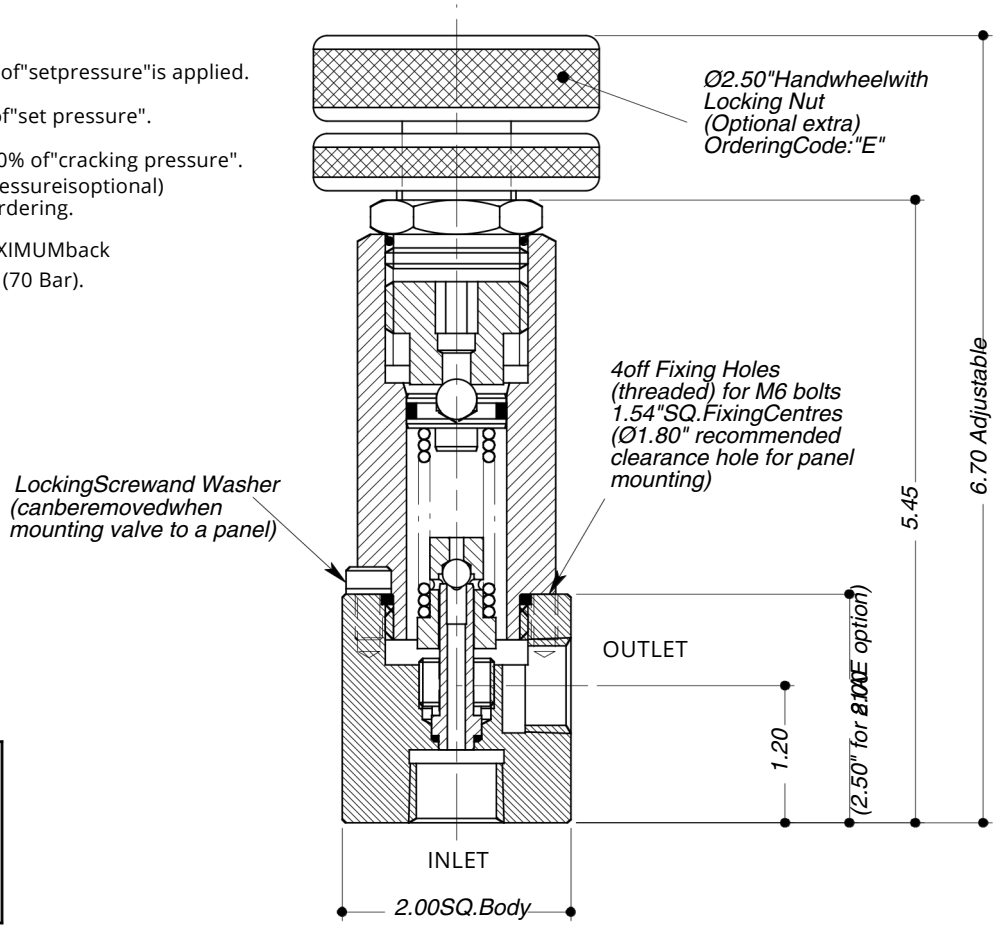
* Other materials available(Monel,Inconel,Hastelloy) subject toPEDapproval.

RELIEF VALVE (H.P.) TYPE: RL50-G

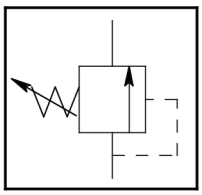
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID AND GAS USE.
- ALL DIMENSIONS IN INCHES

- Leaktightwhen90%of"setpressure"is applied.
- Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional) Statedetailswhenordering.
- RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).



Circuit Symbol



TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*RL50*	*RL50*
Porting/ Connection Options: ("AE" threads fitted only to the INLET port)	*P* = BSP (Parallel) *N* = NPT (Taper) *56AE* (3/8"O.D. Tube) *81AE* (9/16"O.D. Tube)	*N*
AutoclaveOutletPortOptions:	*50N* (1/2"NPT)	——
ValveOptions:	*E* = Handwheel(external) Adjustment	——
SoftSeated Valve:	*G*	*G*
Press.Range:	*200-1.6Kpsi* *1-6KpsiMaxW.P.*	*6K*
OrificeSize:	Ø3.8mm	
Port Size:	1/2"	
ValveSeatMaterial:	Torlon	
Seal Material:	Viton(othermaterials availableby request)	
DryWeight: (kg)	1.75	
WorkingTemperature Range:	-10°Cto+80°C	
FlowRate:	Contactfactory for details	

TechnicalSpecificationNotes:-

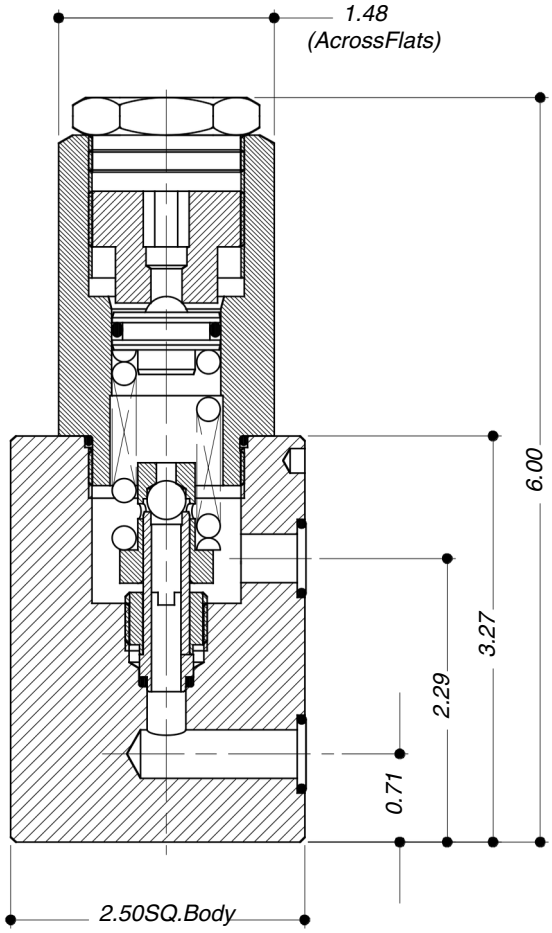
* Other materials available(Monel,Inconel,Hastelloy) subject toPEDapproval.

RELIEF VALVE (H.P.) TYPE: RL50M

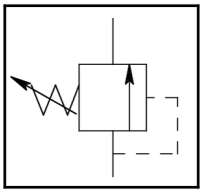
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- MANIFOLD MOUNTED.
- ALL DIMENSIONS IN INCHES.

- Leaktightwhen90%of"setpressure"is applied. Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional)
- Statedetailswhenordering. RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).
-



Circuit Symbol



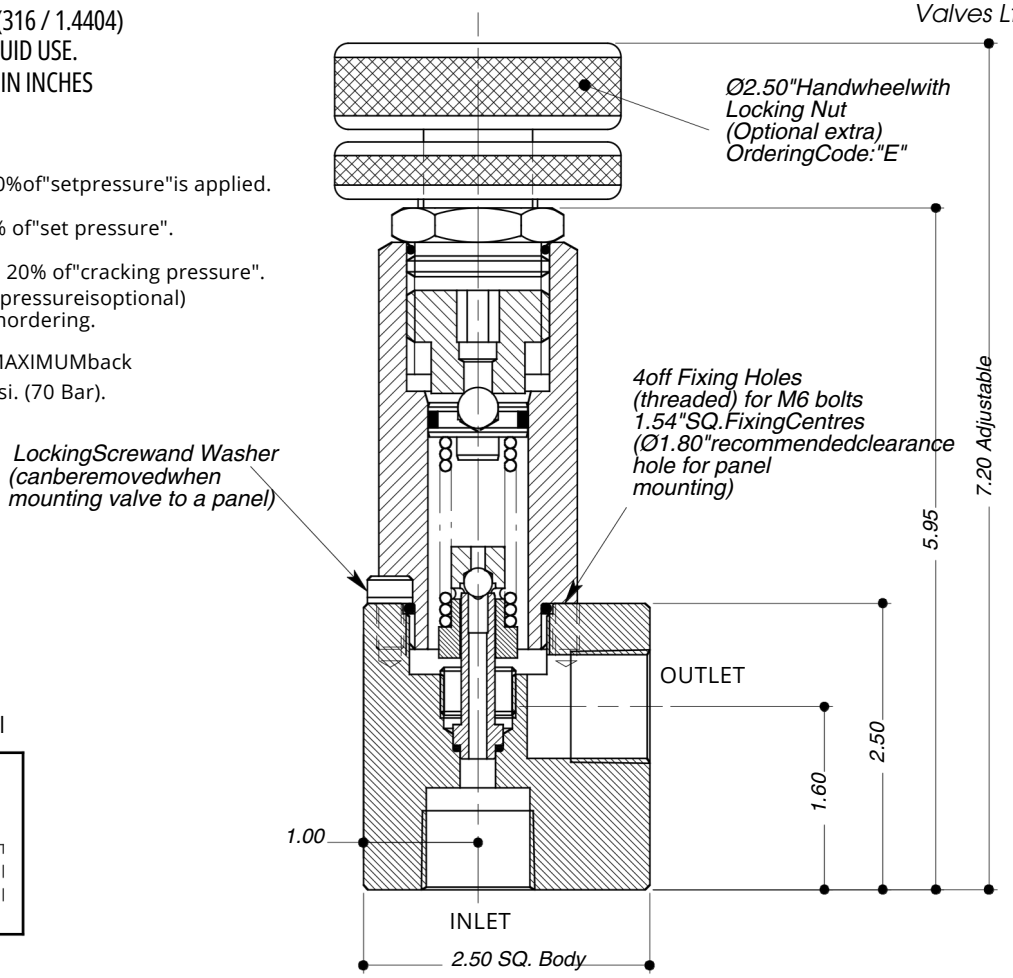
TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*RL50M*		*RL50M*
WorkingMedia:(standard)	Oil /Water Glycol Duty (noordering code req'd)		———
WorkingMedia:(options)	*WD* =WaterDuty	*SWD* =SeaWaterDuty	———
Press. Range:	*200- 1.6Kpsi, 1 -5K psi*	*4K - 15K psiMaxW.P.*	*5K*
OrificeSize:	Ø6.0mm	Ø4.1mm	
Port Size:	Manifoldmounted		
ValveSeatMat'l: (standard)	StainlessSteel- 440C (liquiduse)		
ValveSeatMat'l: (options)	1.4542St.Steel - Water Duty	Inconel - Sea Water Duty	
Seal Material:	Viton(othermaterials availableby request)		
DryWeight: (kg)	2.0		
WorkingTemperature Range:	-10°Cto+80°C		
FlowRate:	Contactfactory for details		

RELIEF VALVE (H.P.) TYPE: RL75

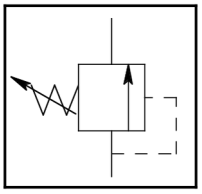
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- ALL DIMENSIONS IN INCHES

- Leaktightwhen90%of"setpressure"is applied.
- Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional) Statedetailswhenordering.
- RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).



Circuit Symbol



TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*RL75*		*RL75*
Porting/ Connection Options: ("AE" threads fitted only to the INLET port)	*P*=BSP(Parallel) *N*=NPT(Taper) *103AE* (3/4"O.D.Tube)		*N*
AutoclaveOutletPortOptions:	*75N* (3/4"NPT)		——
ValveOptions:	*E* = Handwheel(external) Adjustment		——
WorkingMedia:(standard)	Oil /Water Glycol Duty (noordering code req'd)		——
WorkingMedia:(options)	*WD* =WaterDuty *SWD* =SeaWaterDuty		——
Press. Range:	*200- 1.6Kpsi, 1 -5K psi*	*4K - 15K psiMaxW.P.*	*5K*
OrificeSize:	Ø6.0mm	Ø4.1mm	
Port Size:	3/4"		
ValveSeatMat'l: (standard)	StainlessSteel- 440C (liquiduse)		
ValveSeatMat'l: (options)	1.4542St.Steel - Water Duty Inconel - Sea Water Duty		
Seal Material:	Viton(othermaterials availableby request)		
DryWeight: (kg)	2.00		
WorkingTemperature Range:	-10°Cto+120°C		
FlowRate:	Contactfactory for details		

TechnicalSpecificationNotes:-

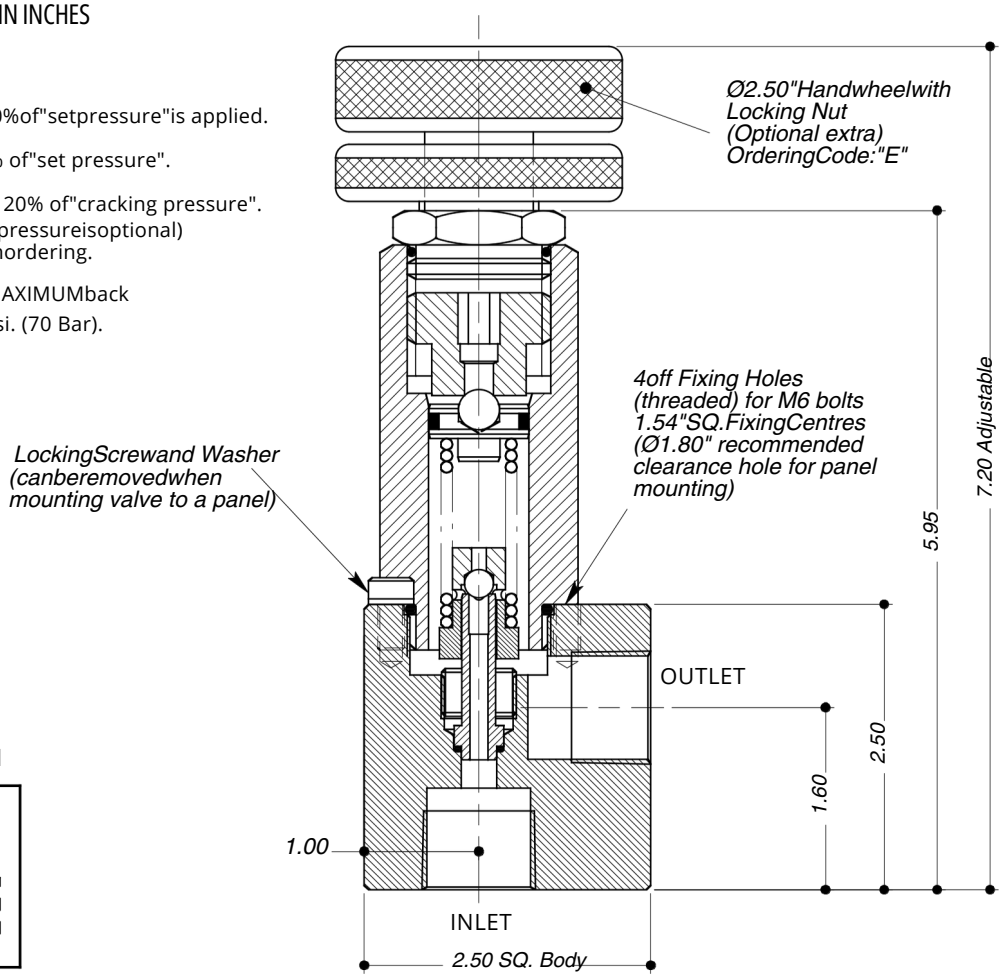
* Other materials available(Monel,Inconel,Hastelloy) subject toPEDapproval.

RELIEF VALVE (H.P.) TYPE: RL75-G

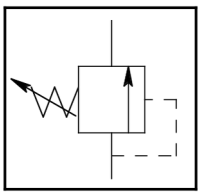
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID AND GAS USE.
- ALL DIMENSIONS IN INCHES

- Leaktightwhen90%of"setpressure"is applied.
- Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional) Statedetailswhenordering.
- RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).



Circuit Symbol



TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*RL75*	*RL75*
Porting/ Connection Options: ("AE" threads fitted only to the INLET port)	*P*= BSP (Parallel) *N* = NPT (Taper) *103AE* (3/4" O.D. Tube)	*N*
AutoclaveOutletPortOptions:	*75N* (3/4"NPT)	——
ValveOptions:	*E* = Handwheel(external) Adjustment	——
SoftSeated Valve:	*G*	*G*
Press.Range:	*1-6KpsiMaxW.P.*	*6K*
OrificeSize:	Ø3.8mm	
Port Size:	3/4"	
ValveSeatMaterial:	Torlon	
Seal Material:	Viton(othermaterials availableby request)	
DryWeight: (kg)	2.0	
WorkingTemperature Range:	-10°Cto+80°C	
FlowRate:	Contactfactory for details	

TechnicalSpecificationNotes:-

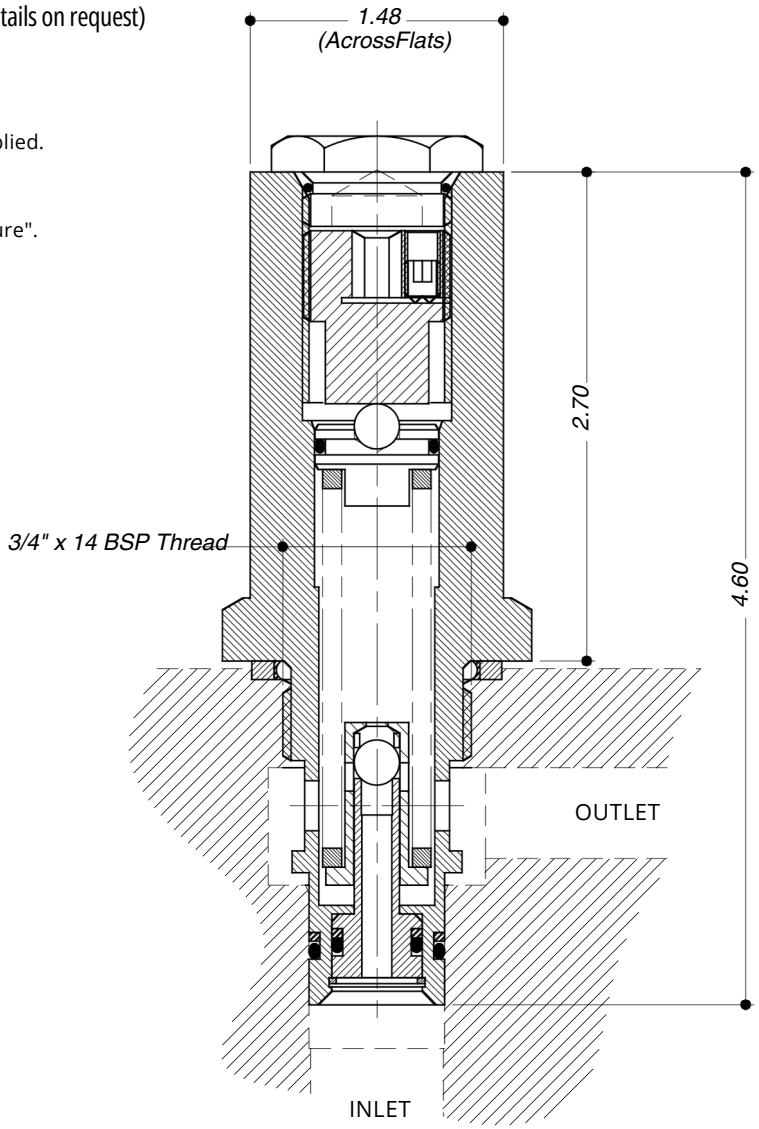
* Other materials available(Monel,Inconel,Hastelloy) subject toPEDapproval.

CARTRIDGE RELIEF VALVE (H.P.) TYPE: PRV75C

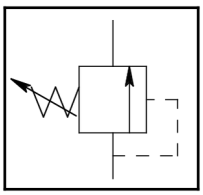
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- FOR USE IN SUITABLE CAVITY HOUSING. (details on request)
- ALL DIMENSIONS IN INCHES.

- Leaktightwhen90%of"setpressure"is applied.
- Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional) Statedetailswhenordering.
- RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).



Circuit Symbol



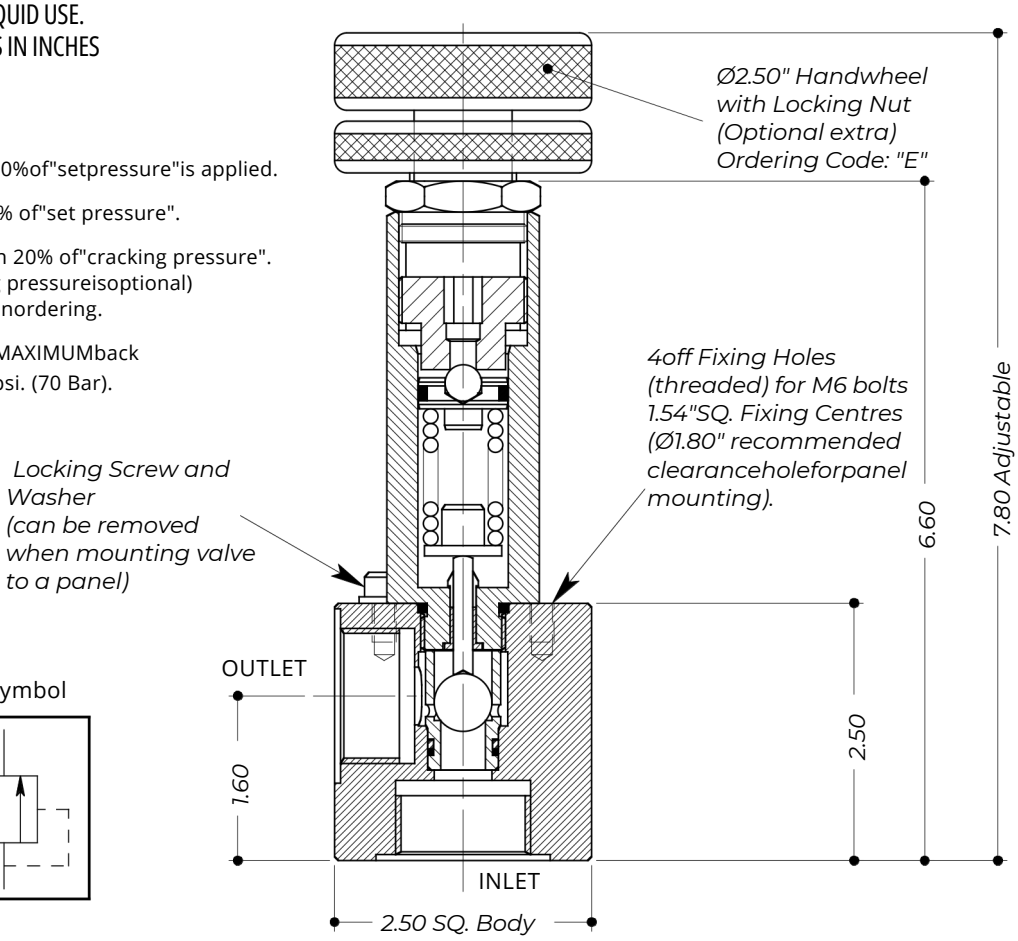
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*PRV75C*	*PRV75C*
WorkingMedia:(standard)	Oil /Water Glycol Duty (noordering code req'd)	——
Press. Range:	*1K- 3K psi* *2.5 - 6K MaxW.P.*	*3K*
OrificeSize:	Ø4.1mm	
ValveSeatMat'l: (standard)	SilverSteelKEA108 (liquiduse)	
Seal Material:	Nitrile(othermaterialsavailableby request)	
DryWeight: (kg)	0.6	
WorkingTemperature Range:	-30°Cto+105°C	
FlowRate:	Contactfactory for details	

RELIEF VALVE (H.P.) TYPE: RL100

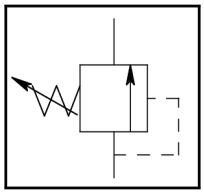
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- ALL DIMENSIONS IN INCHES

- Leaktightwhen90%of"setpressure"is applied.
- Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional) Statedetailswhenordering.
- RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).



Circuit Symbol



TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*RL100*	*RL100*
Porting/ Connection Options:	*P*= BSP (Parallel) *N* = NPT (Taper)	*N*
ValveOptions:	*E* = Handwheel(external) Adjustment	——
WorkingMedia:(standard)	Oil /Water Glycol Duty (noordering code req'd)	——
Press. Range:	*0.7K- 3K psiMaxW.P.*	*3K*
OrificeSize:	Ø0.437"	
Port Size:	1.0"	
ValveSeatMat'l: (standard)	StainlessSteel- 440C (liquiduse)	
Seal Material:	Viton(othermaterials availableby request)	
DryWeight: (kg)	2.75	
WorkingTemperature Range:	-10°Cto+120°C	
FlowRate:	Contactfactory for details	

TechnicalSpecificationNotes:-

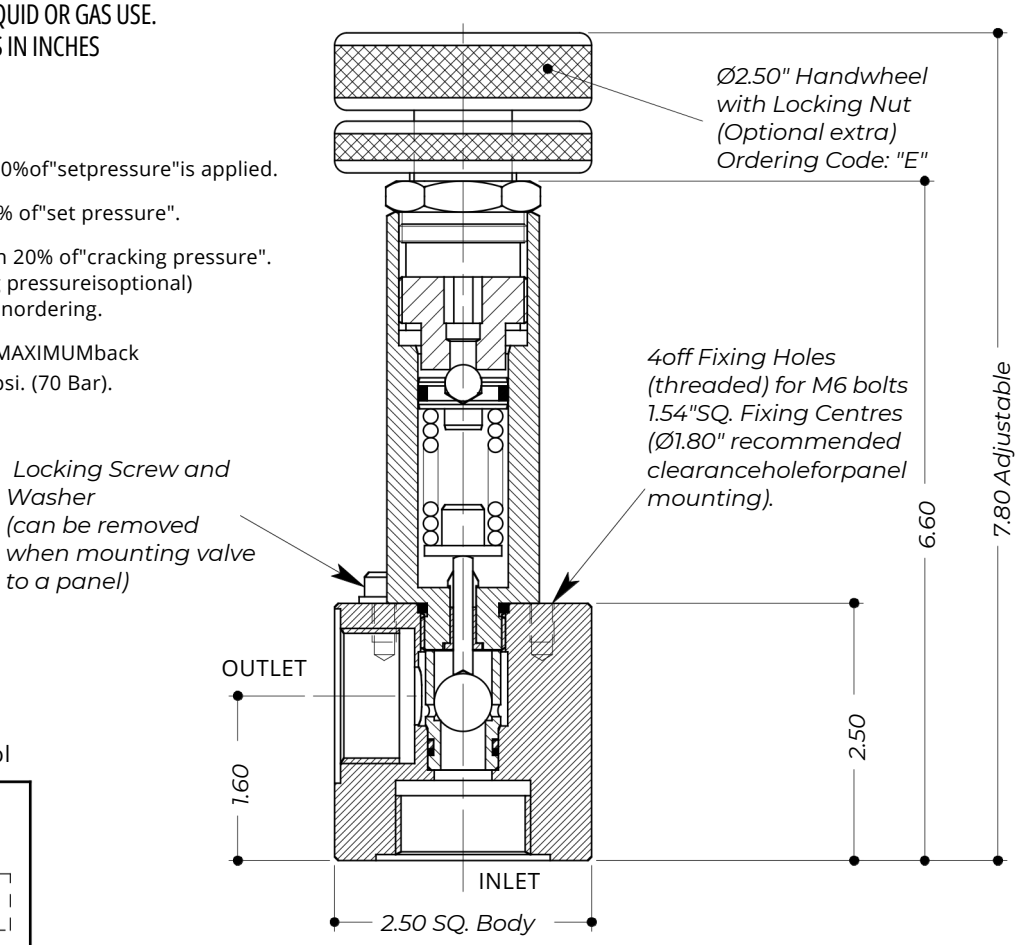
* Other materials available(Monel,Inconel,Hastelloy) subject toPEDapproval.

RELIEF VALVE (H.P.) TYPE: RL100-G

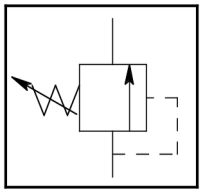
Valves Ltd

- PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC APPROVED.
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES

- Leaktightwhen90%of"setpressure"is applied.
- Repeatability±5% of"set pressure".
- Re-seatingwithin 20% of"cracking pressure". (Pre-setcracking pressureisoptional) Statedetailswhenordering.
- RecommendedMAXIMUMback pressure1,000 psi. (70 Bar).



Circuit Symbol



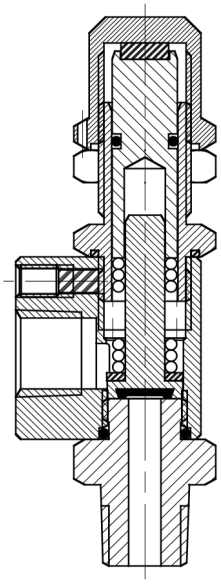
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ValveType:	*RL100*	*RL100*
Porting/ Connection Options:	*P*= BSP (Parallel) *N* = NPT (Taper)	*N*
ValveOptions:	*E* = Handwheel(external) Adjustment	———
SoftSeated Valve:	*G*	*G*
Press. Range:	*0.7 - 3K psiMaxW.P.*	*3K*
OrificeSize:	Ø0.437"	
Port Size:	1.0"	
ValveSeatMaterial:	Torlon	
Seal Material:	Viton(othermaterials availableby request)	
DryWeight: (kg)	2.75	
WorkingTemperature Range:	-10°Cto+80°C	
FlowRate:	Contactfactory for details	

TechnicalSpecificationNotes:-

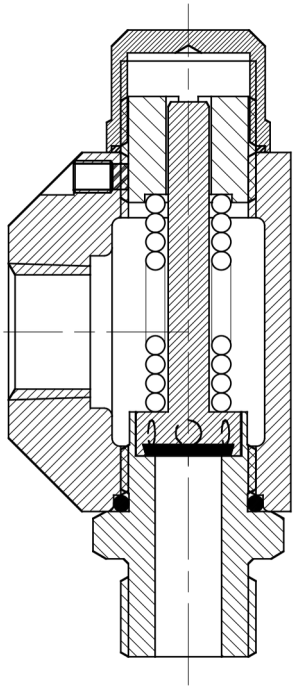
* Other materials available(Monel,Inconel,Hastelloy) subject toPEDapproval.

TYPICAL EXAMPLES OF LOW PRESSURE RELIEF VALVES

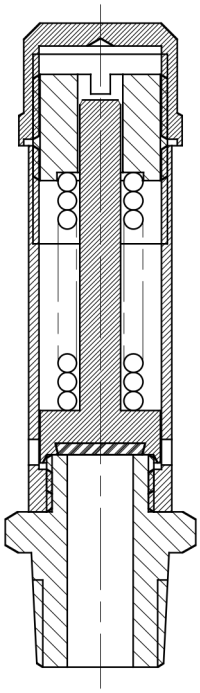
Valves Ltd



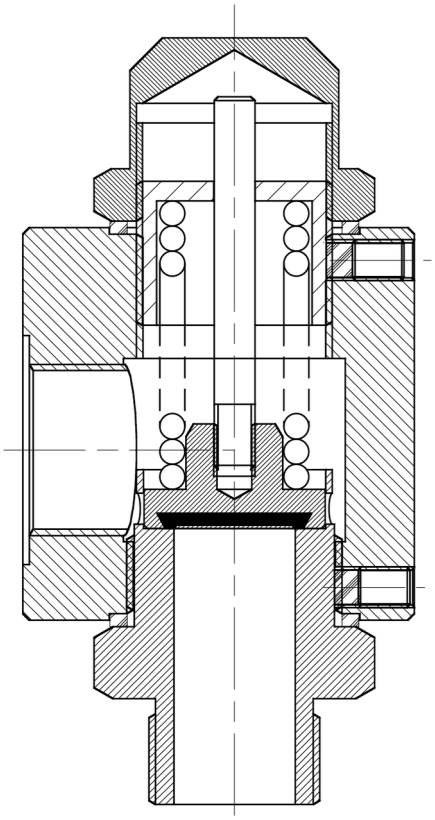
Model Type: TS25-EH(600psi)



Model Type: TS50 (600psi)



Model Type: S50 (600psi)

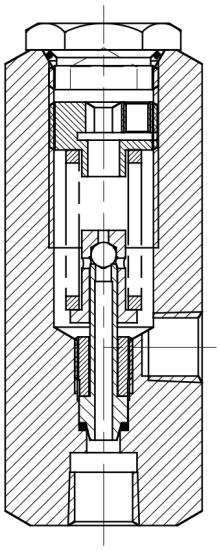


Model Type: TS100 (260psi)

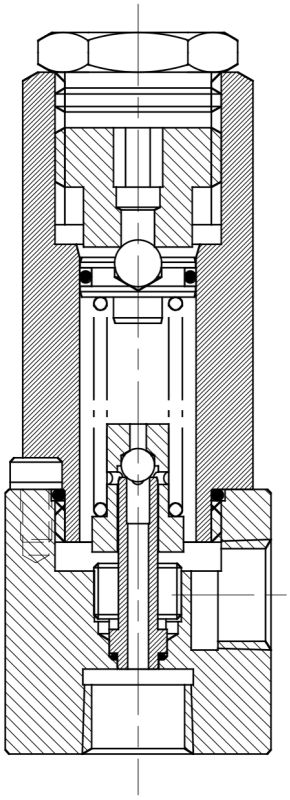
BiS Valves Ltd., Units 17-22, Kingfisher Park, West Moors, Wimborne , Dorset, ENGLAND.
Tel:01202896322 Fax: 01202 896718 e-mail: info@bisvalves.co.uk. web site: www.bisvalves.co.uk

TYPICAL EXAMPLES OF HIGH PRESSURE RELIEF VALVES

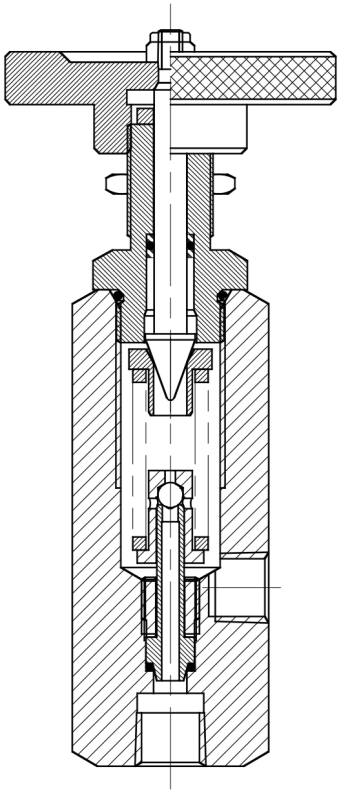
Valves Ltd



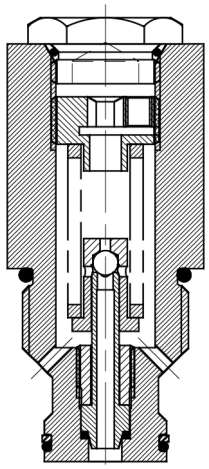
Model Type: RL25(15K)



Model Type: RL50(15K)



Model Type: RL25-E (15K)



Model Type: RL25C(15K)

BiS Valves Ltd., Units 17-22, Kingfisher Park, West Moors, Wimborne , Dorset, ENGLAND.
Tel:01202896322 Fax: 01202 896718 e-mail: info@bisvalves.co.uk. web site: www.bisvalves.co.uk

Valves Ltd

SECTION 8: EXCESS FLOW VALVES

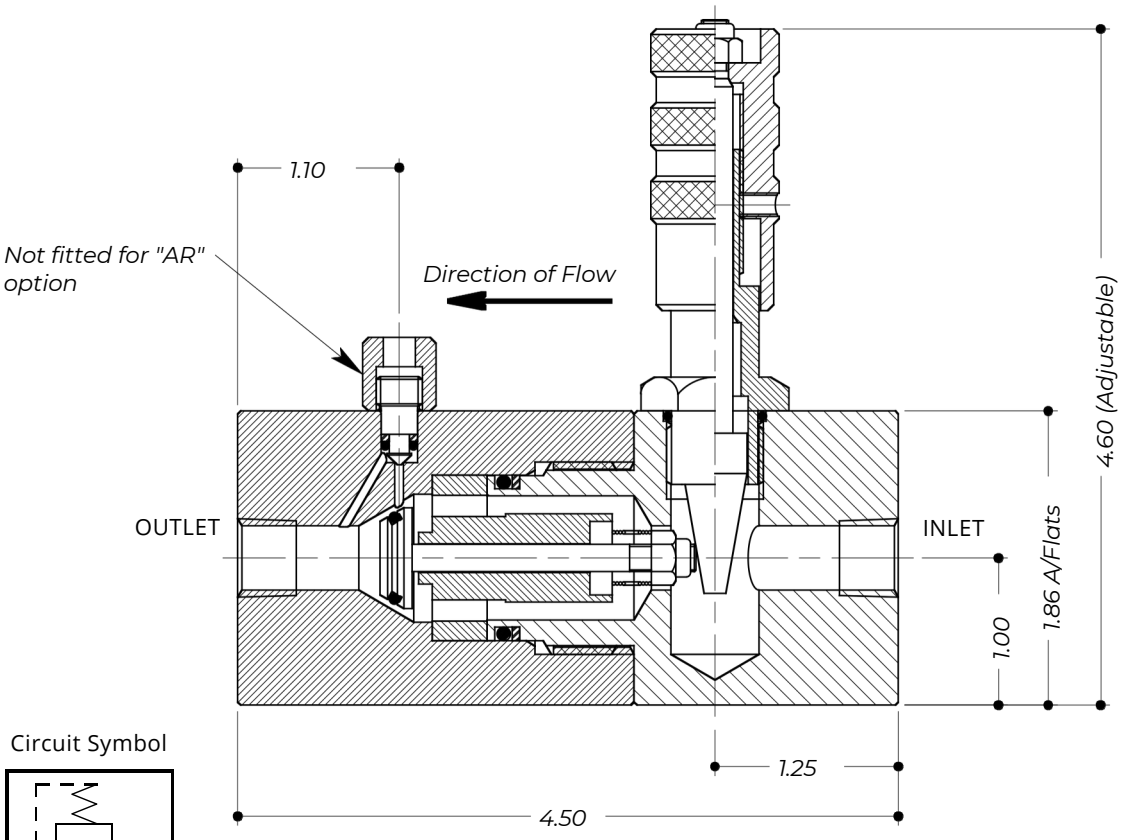
1/4" / 3/8" 316 St.St. Excess Flow Valve, MWP: 6,000 psi Liquid / 4,000 psi Gas Types: ER25, ER37 ..... 8:1

1/4" to 1-1/2" 316 St.St. Excess Flow Valve, MWP: 6,000 psi Liquid / 4,000 psi Gas Types: R25, R37, R50, R75, R100, R150.. 8:2

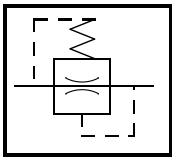
EXCESS FLOW VALVE TYPES: ER25, ER37

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES



Circuit Symbol



Option "MR"illustrated above

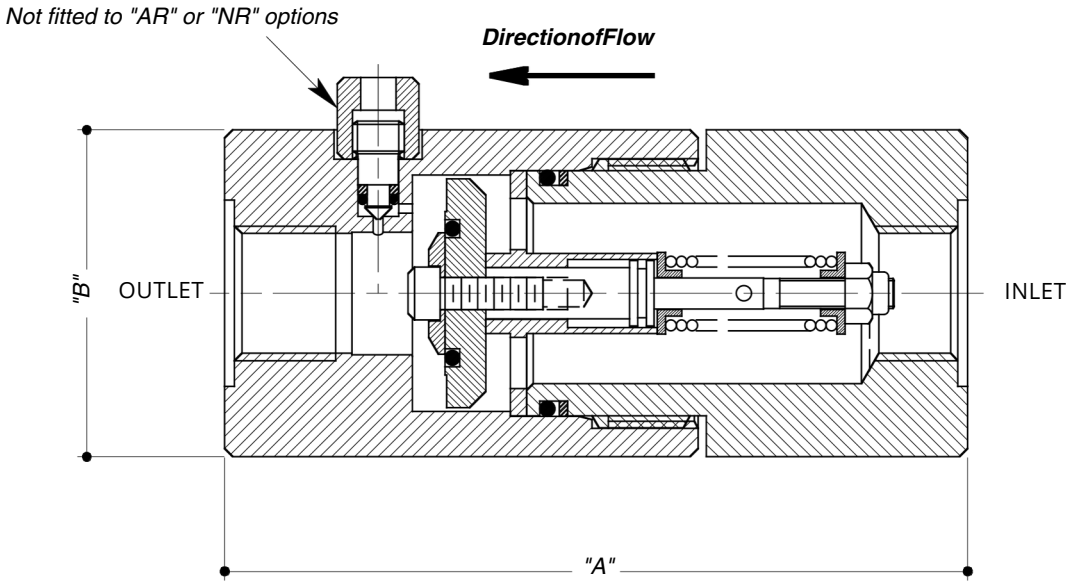
TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*ER25*	*ER37*	*ER25*
Porting/ Connection Options:	*P* = BSP (Parallel)	*N* = NPT (Taper)	*N*
ValveType Options:	*MR* = Manual Re-set *AR* = Auto Re-set *NR* = Non Re-set		*MR*
Max.WorkingPressure- Liquid	*6,000 psi*		*6K*
Max.WorkingPressure - Gas	*4,000 psi*		
Port Size:	1/4"	3/8"	
ValveSeatMat'l: Liquid/Gas	StainlessSteel- 316/1.4404		
Seal Material:	Viton (other materialsavailable by request)		
DryWeight: (kg)	1.75		
WorkingTemperature Range:	-10°Cto+110°C		
Closing DP: (Typically)	0.1 to 1Bar		
Leak Rate:	Zero		
FlowRate: Liquid	up to18 litres/min		
FlowRate: Gas	500 Nm3/hour @ 4,000 psi		

EXCESS FLOW VALVE

TYPES: R25,R37,R50,R75, R100, R150

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.



Option "MR"illustrated above

TECHNICAL SPECIFICATION							ORDERING EXAMPLE
ValveType:	*R25*	*R37*	*R50*	*R75*	*R100*	*R150*	*R25*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)						*P*
ValveType Options:	*MR* = Manual Re-set *AR* = Auto Re-set *NR* = Non Re-set						*MR*
FlowRate: Water(l/min)	2-10	2-10	5-40	5-40	10- 79	2- 190	*LF **
FlowRate: Air @ 276 Barg(Nm3/hr)	60- 280	60- 280	145 - 1140	145 - 1140	280 - 2260	280- 5420	
FlowRate: Water(l/min)	—	8-22	—	37- 90	25- 123	32- 316	*HF **
FlowRate: Air @ 276 Barg(Nm3/hr)	—	229 - 630	—	1058 - 2250	710 - 3450	914- 9000	
Max.WorkingPressure- Liquid	*6,000psi*						*6K*
Max.WorkingPressure - Gas	*4,000 psi*						
Port Size:	1/4"	3/8"	1/2"	3/4"	1.00"	1.50"	
ValveSeatMat'l: Liquid/Gas	StainlessSteel- 316/1.4404						
SealMaterial:	Viton (othermaterialsavailablebyrequest)						
DryWeight: (kg)	1.3	1.3	1.5	1.5	1.8	1.8	
WorkingTemperature Range:	-10°Cto+120°C						
Closing DP: (Typically)	0.5 to 1Bar						
Leak Rate:	Zero						
Dimension (ins) - Length "A"	3.50"	3.50"	4.60"	4.60"	7.82"	7.82"	
Dimension (ins) - Length "B"	1.50"A/F	1.50"A/F	Ø2.0"	Ø2.0"	Ø3.0"	Ø3.0"	

TechnicalSpecificationNotes:-

* Other materials available(Monel,Inconel,Hastelloy) subject toPEDapproval.

Valves Ltd

SECTION 9: FILTERS

1/4" to 2" 316 St.St. "In-Line" Filter, MWP: Up to 12,000 psi Liquid / 10,000 psi Gas Types: F25, F37, F50, F75, F100, F125, F150, F200 *9:1*

1/4" / 3/8" 316 St.St. Easy Replacement "In-Line" Filter, MWP: 8,000 psi Liquid / 4,000 psi Gas Types: EF25, EF37 ..... *9:2*

1/2" 316 St.St. Easy Replacement "In-Line" Filter, MWP: 8,000 psi Liquid / 4,000 psi Gas Type: EF50 ..... *9:3*

1/2" 316 St.St. Easy Replacement "In-Line" Filter with DP Indicator, MWP: 8,000 psi Liquid, 4,000 psi Gas Type: EF50-DP *9:4*

3/4" / 1" 316 St.St. Easy Replacement "In-Line" Filter, MWP: 8,000 psi Liquid / 4,000 psi Gas Types: EF100, EF100/75 ..... *9:5*

1/2" 316 St.St. Simplex Filter, MWP: 6,000 psi Liquid Type: SF50 ..... *9:6*

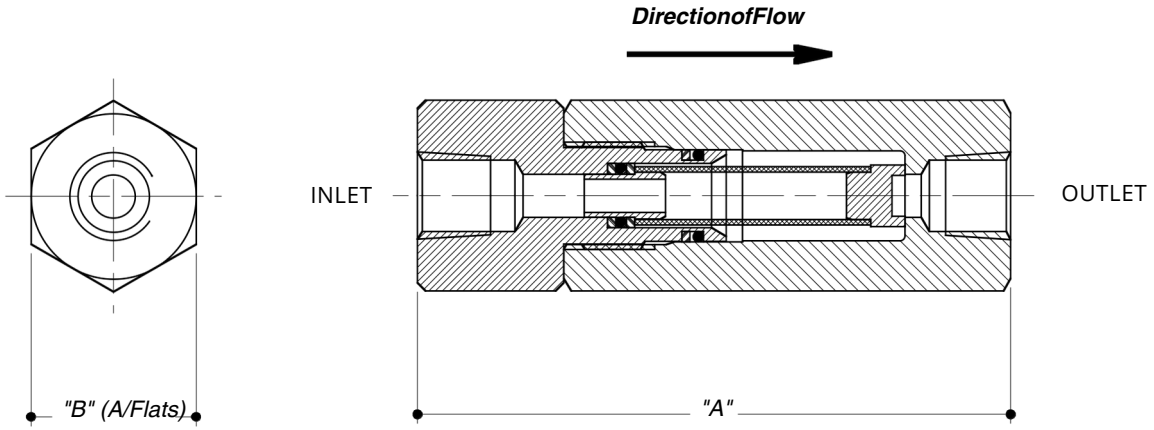
1/2" 316 St.St. Duplex Filter, MWP: 6,000 psi Liquid Type: DF50 ..... *9:7/9:8*

"IN-LINE"FILTER

TYPES: F25,F37,F50, F75, F100, F125, F150, F200

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLEFORLIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.

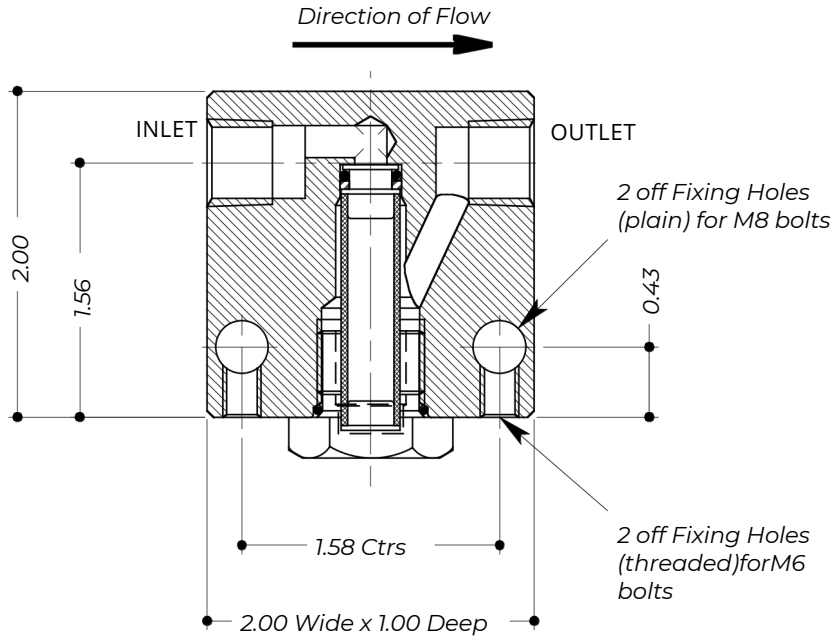


TECHNICAL SPECIFICATION									ORDERING EXAMPLE
FilterType:	*F25*	*F37*	*F50*	*F75*	*F100*	*F125*	*F150*	*F200*	*F25*
Porting/ Connection Options:	*P*= BSP (Parallel) *N* = NPT (Taper)								*N*
Micron Rating:	*2.5,5, 10, 20, 50, 100, 200M* (Microns)								*2.5M*
Max.WorkingPressure- Liquid	*12Kpsi*				*9Kpsi*	*6Kpsi*			*12K*
Max.WorkingPressure - Gas	*10Kpsi*	*6Kpsi*	*10Kpsi*	*6Kpsi*	*4Kpsi*	*3Kpsi*			
Port Size:	1/4"	3/8"	1/2"	3/4"	1.0"	1.1/4"	1.1/2"	2.0"	
Seal Material:	Viton(othermaterials availableby request)								
DryWeight(kg)	0.35	0.30	1.0	0.8	1.4	4.5	4.3	4.1	
WorkingTemperature Range:	-10°Cto+120°C								
FilterArea (sq.ins)	1.3	1.3	4.5	4.5	6.5	15.5	15.5	15.5	
FilterElement Material:	StainlessSteel(316/1.4404) RigidMesh								
MaxDiff.Press(DP)Bar (element)	20	20	10	10	10	10	10	10	
Dimension(ins) - Length "A"	3.50"	3.50"	4.50"	4.50"	5.50"	7.80"	7.80"	7.80"	
Dimension(ins) - "B"(A/Flats)	1.01"	1.01"	1.48"	1.48"	1.86"	Ø3.0"	Ø3.0"	Ø3.0"	

"IN-LINE" FILTER[TYPES:] EF25, EF37

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- EASY REPLACEMENT FILTERS.
- ALL DIMIENSIONS IN INCHES.

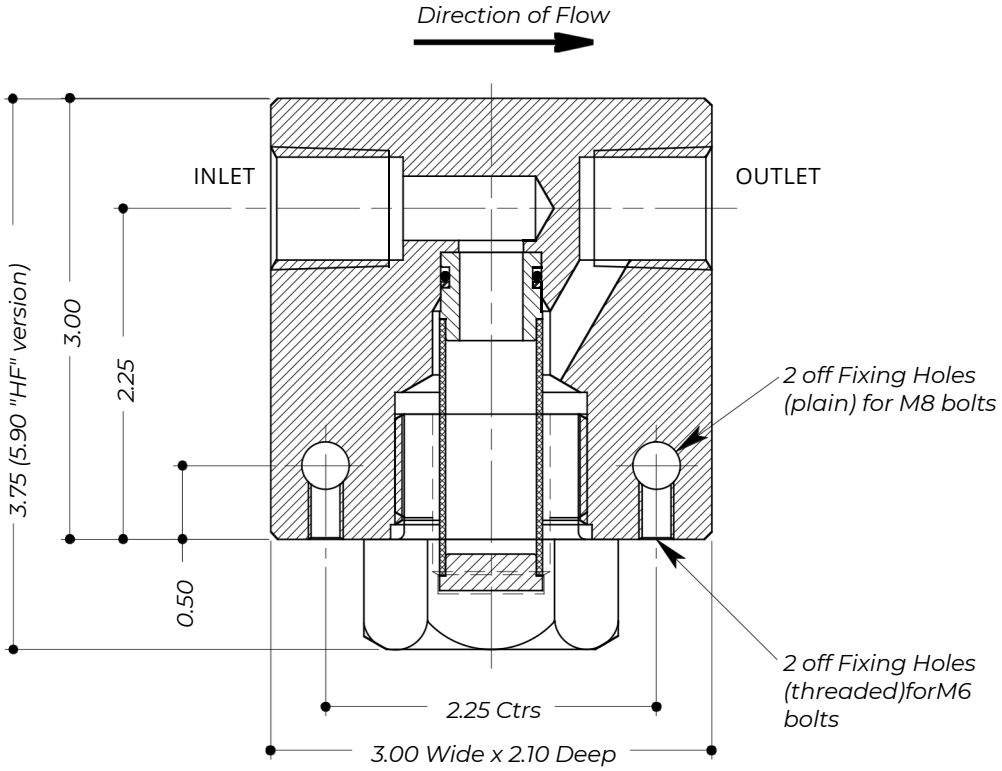


TECHNICAL SPECIFICATION			ORDERING EXAMPLE
FilterType:	*EF25*	*EF37*	*EF25*
Porting/ Connection Options:	*P*= BSP (Parallel)	*N* = NPT (Taper)	*N*
Micron Rating:	*2.5,5, 10, 20, 50, 100, 200 M* (Microns)		*2.5M*
Max.WorkingPressure- Liquid	*8,000psi*		*8K*
Max.WorkingPressure - Gas	*4,000psi*		
Port Size:	1/4"	3/8"	
Seal Material:	Viton(othermaterials availableby request)		
DryWeight(kg)	0.5		
WorkingTemperature Range:	-10°Cto+120°C		
FilterArea (sq.ins)	1.3		
FilterElement Material:	Stainless Steel(316/1.4404) RigidMesh		
MaxDiff.Press(DP)Bar (element)	20		

"IN-LINE" FILTER[TYPE:] EF50

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- EASY REPLACEMENT FILTER.
- ALL DIMENSIONS IN INCHES.

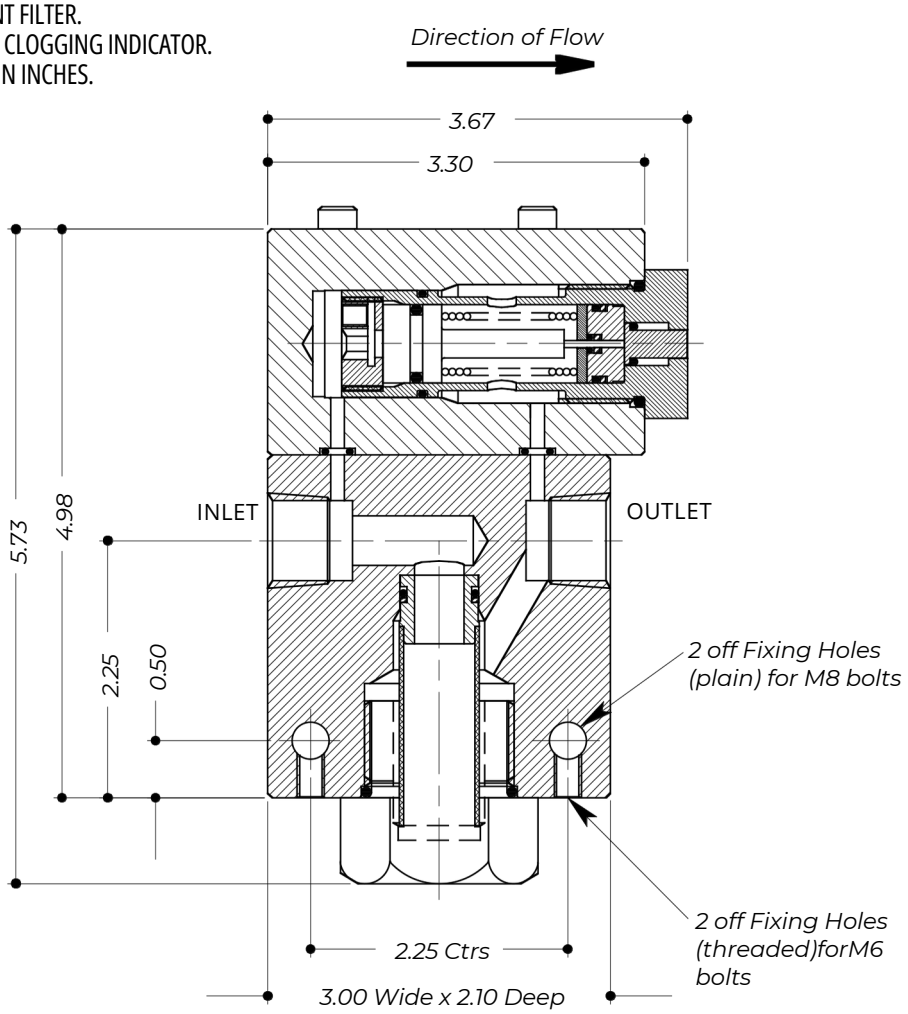


TECHNICAL SPECIFICATION		ORDERING EXAMPLE
FilterType:	*EF50*	*EF50*
Porting/ Connection Options:	*P*= BSP (Parallel) *N* = NPT (Taper)	*N*
Micron Rating:	*2.5,5, 10, 20, 50, 100, 200 M* (Microns)	*2.5M*
HighFlow (extended filter element)	*HF*	——
Max.WorkingPressure- Liquid	*8,000psi*	*8K*
Max.WorkingPressure - Gas	*4,000psi*	
Port Size:	1/2"	
Seal Material:	Viton(othermaterials availableby request)	
DryWeight(kg)	2.5	
WorkingTemperature Range:	-10°Cto+120°C	
FilterArea (sq.ins)	4.5	
FilterElement Material:	Stainless Steel(316/1.4404) RigidMesh	
MaxDiff.Press(DP)Bar (element)	10	

"IN-LINE" FILTER TYPE: EF50-DP WITH DIFFERENTIAL PRESSURE (DP) INDICATOR

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- EASY REPLACEMENT FILTER.
- "POP-OUT" FILTER CLOGGING INDICATOR.
- ALL DIMENSIONS IN INCHES.

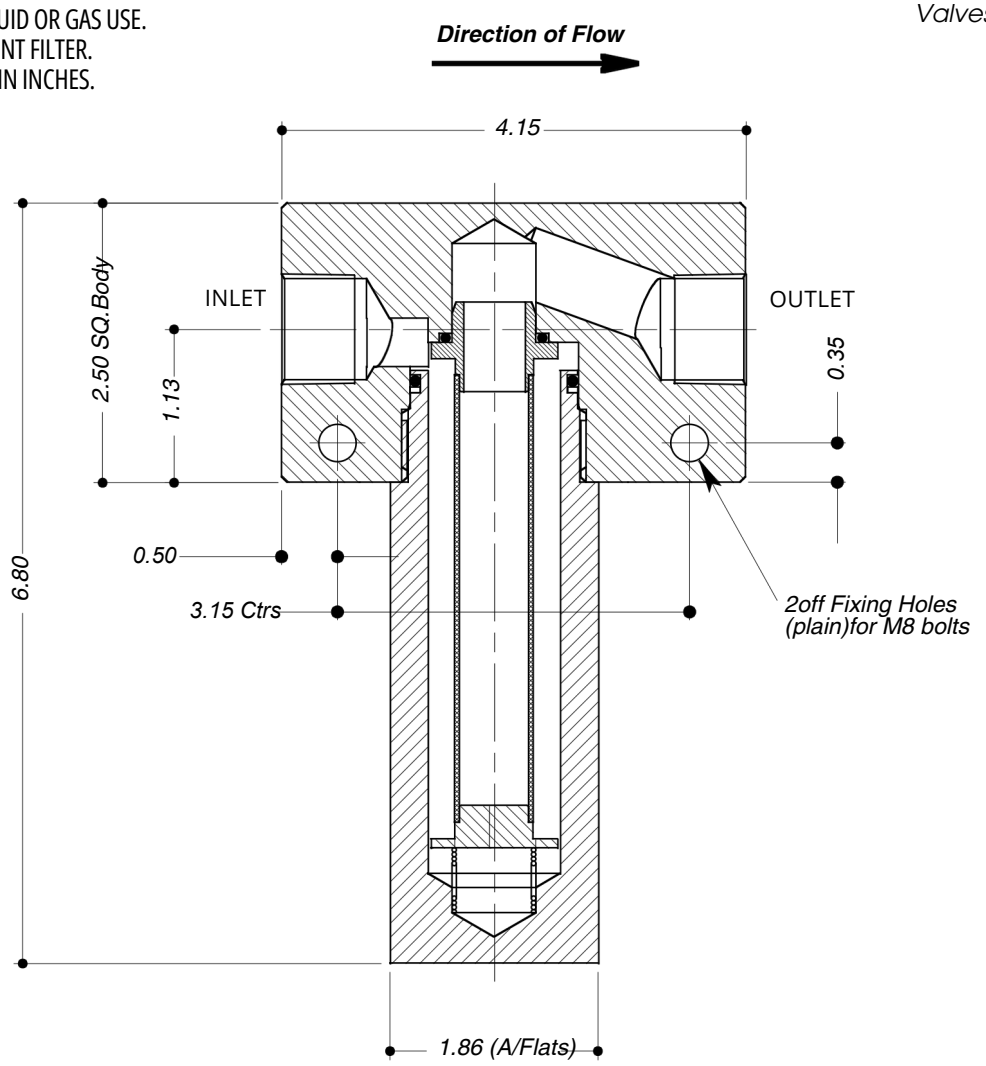


TECHNICAL SPECIFICATION		ORDERING EXAMPLE
FilterType:	*EF50*	*EF50*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)	*N*
Micron Rating:	*2.5,5, 10, 20, 50, 100, 200 M* (Microns)	*2.5M*
MaxDiff.Press(DP)Bar (element)	*7*	*DP7*
Max.WorkingPressure- Liquid	*8,000psi*	*8K*
Max.WorkingPressure - Gas	*4,000psi*	
Port Size:	1/2"	
Seal Material:	Viton(othermaterials availablebyrequest)	
DryWeight(kg)	2.5	
WorkingTemperature Range:	-10°Cto+120°C	
FilterArea (sq.ins)	4.5	
FilterElement Material:	Stainless Steel(316/1.4404) RigidMesh	

"IN-LINE" FILTER[TYPE:] EF100, EF100/75

Valves Ltd

- STAINLESSSTEEL (316 / 1.4404)
- SUITABLEFORLIQUID OR GAS USE.
- EASY REPLACEMENT FILTER.
- ALLDIMENSIONSIN INCHES.

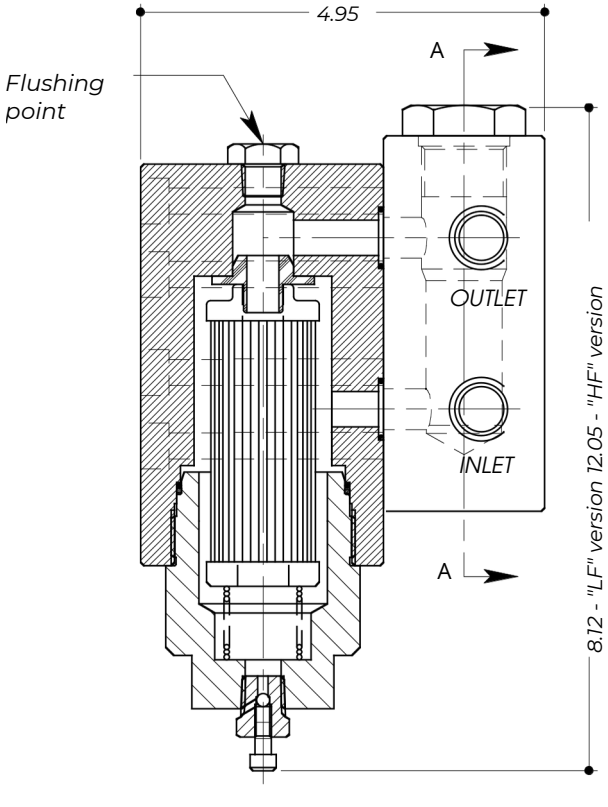


TECHNICAL SPECIFICATION			ORDERING EXAMPLE
FilterType:	*EF100*	*EF100/75*	*EF100*
Porting/Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)		*P*
MicronRating:	*2.5,5,10, 20, 50, 100,200M* (Microns)		*2.5 M*
Max.WorkingPressure- Liquid	*8,000 psi*		*8K*
Max.WorkingPressure- Gas	*4,000 psi*		
PortSize:	1.0"	3/4"	
Seal Material:	Viton(othermaterials availableby request)		
DryWeight (kg)	5.5		
WorkingTemperature Range:	-10°Cto+120°C		
FilterArea (sq.ins)	7.4		
FilterElement Material:	StainlessSteel(316/1.4404)Rigid Mesh		
MaxDiff.Press(DP)Bar (element)	10		

SIMPLEX FILTER TYPE: SF50

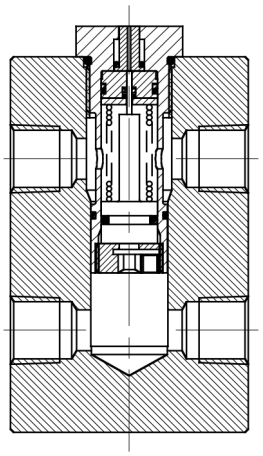
- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- "POP-OUT" FILTER CLOGGING INDICATOR.
- ALL DIMENSIONS IN INCHES.

Valves Ltd



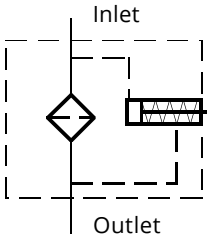
LowFlow *(LF)*illustrated.
HighFlow *(HF)*versionisfittedwithalongerfilter case and doubleelement arrangement.

Section 'A-A'



NotethealternateInletandExhaustPort options inboth faces ofIndicatorMounting Blockenabling several piping options.

Circuit Symbol



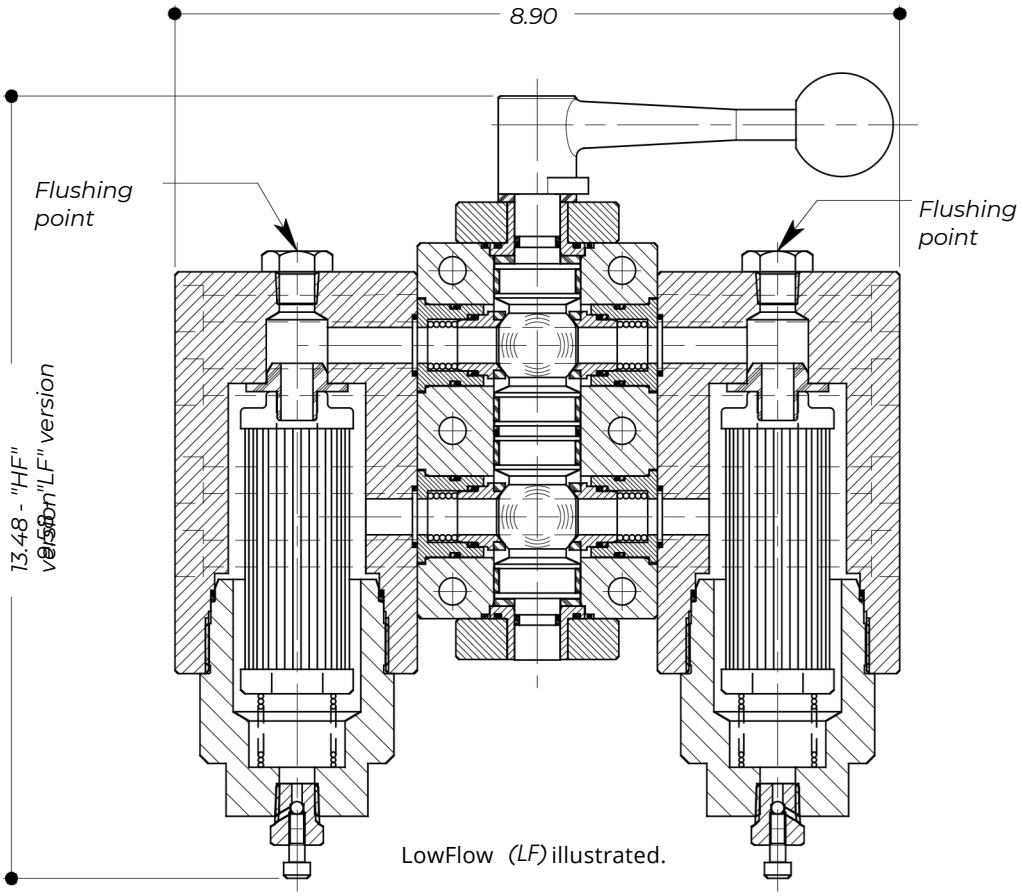
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
FilterType:	*SF50*	*SF50*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)	*N*
Micron Rating:	*3, 5, 10, 20, 50 M* (Micron)	*20M*
Indicator Type:	*"DP"* = Visual 'pop-out' *"BP"* = Visual 'pop-out' withby-pass	*DP*
DifferentialPress (DP) Bar:	*3, 5 or 7*	*7*
FlowRate:	30 L/Min(Standard) (*"HF"* HighFlow = 50 L/Min)	——
Max.WorkingPressure: (Liquid)	*6,000 psi*	*6K*
Port Size:	1/2"	
CvValue:(SeeNote)	3.02	
DryWeight: (kg)	8.6	
Seal Material:	Viton(othermaterials availableby request)	
WorkingTemperature Range:	-10°Cto+110°C	

*CvValue Note:*The figuresquotedare forthe basic assembly without elementsfitted. For totalloss including elementsforward details ofSpecificGravity, Viscosityand FlowRate to ourTechnicalDepartment.

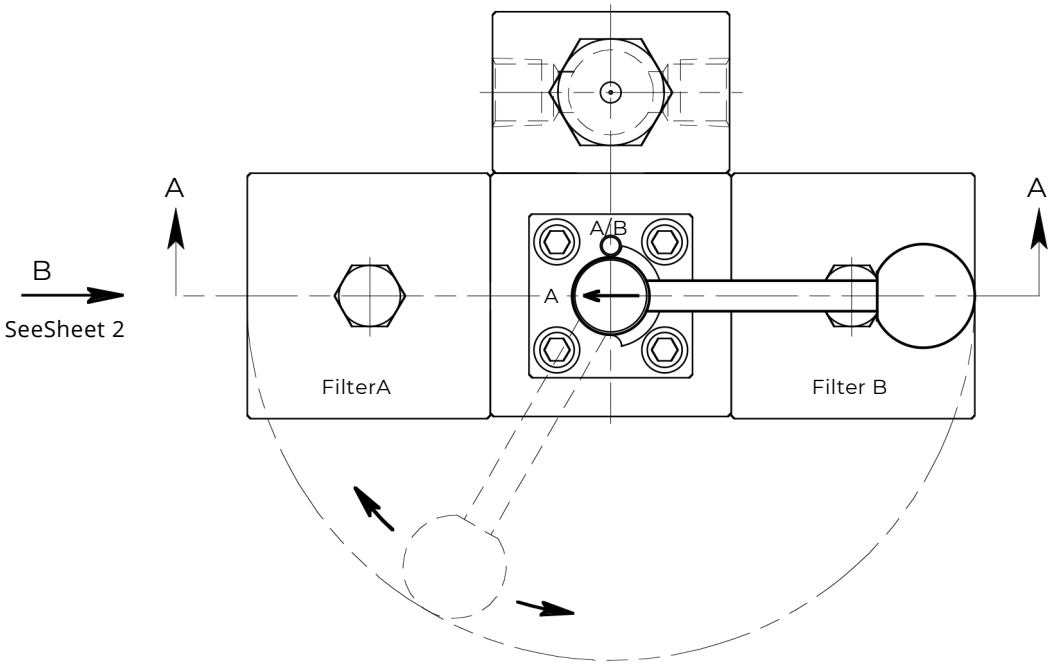
DUPLEX FILTER TYPE: DF50 Sheet1 of 2

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FORLIQUID USE.
- "POP-OUT" FILTER CLOGGING INDICATOR.
- ALL DIMENSIONS IN INCHES.

Valves Ltd



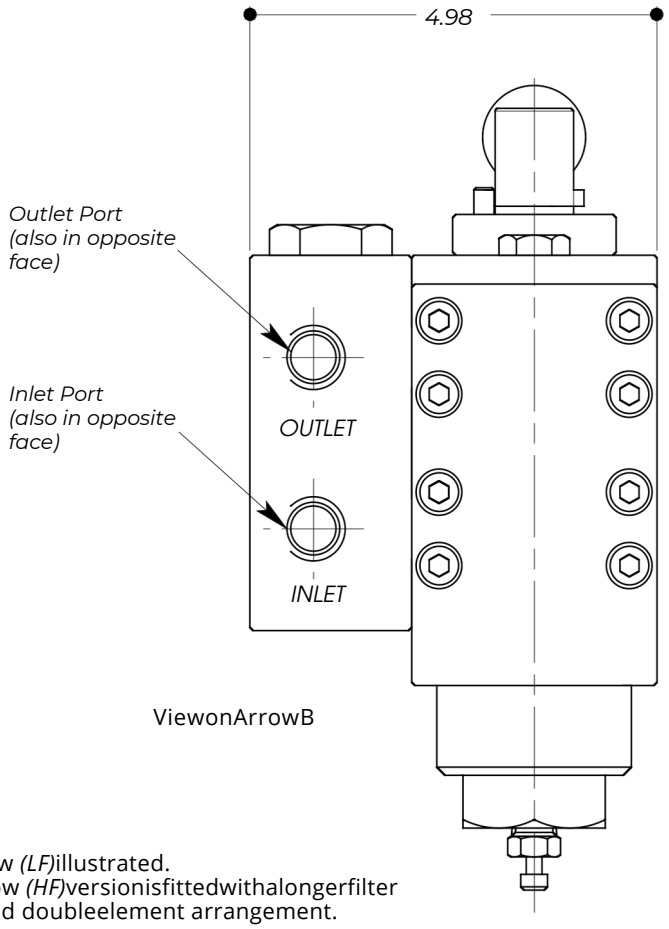
LowFlow *(LF)* illustrated.



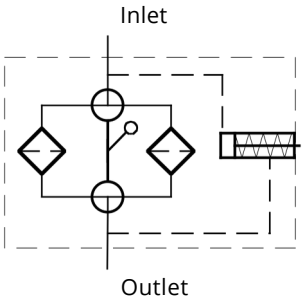
DUPLEXFILTER TYPE: DF50 Sheet2 of 2

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID USE.
- "POP-OUT" FILTER CLOGGING INDICATOR.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol



LowFlow *(LF)*illustrated.
HighFlow *(HF)*versionisfittedwithalongerfilter case and doubleelement arrangement.

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
FilterType:	*DF50*	*DF50*
Porting/ Connection Options:	*P* = BSP (Parallel) *N* = NPT (Taper)	*N*
Micron Rating:	*3, 5, 10, 20, 50M* (Microns)	*20M*
Indicator Type:	*"DP"* = Visual 'pop-out' *"BP"* = Visual 'pop-out' withby-pass	*DP*
DifferentialPress (DP) Bar:	*3, 5* or *7*	*7*
FlowRate:	30 L/Min *(Standard)* (*"HF"*HighFlow = 50 L/Min)	———
Max.WorkingPressure: (Liquid)	*6,000psi*	*6K*
Port Size:	1/2"	
CvValue:(SeeNote)	2.37/ 2.97	
DryWeight(kg)	20	
Seal Material:	Viton(othermaterials availableby request)	
WorkingTemperature Range:	-10°Cto+110°C	

*CvValueNote:*Thefiguresquotedareforthebasicassemblywithoutelementsfitted.Thefirstfigureforsingle filterselectedandsecondfigureforbothfiltersselected.Fortotallossincludingelementsforwarddetailsof SpecificGravity, Viscosityand FlowRate to ourTechnicalDepartment.

Valves Ltd

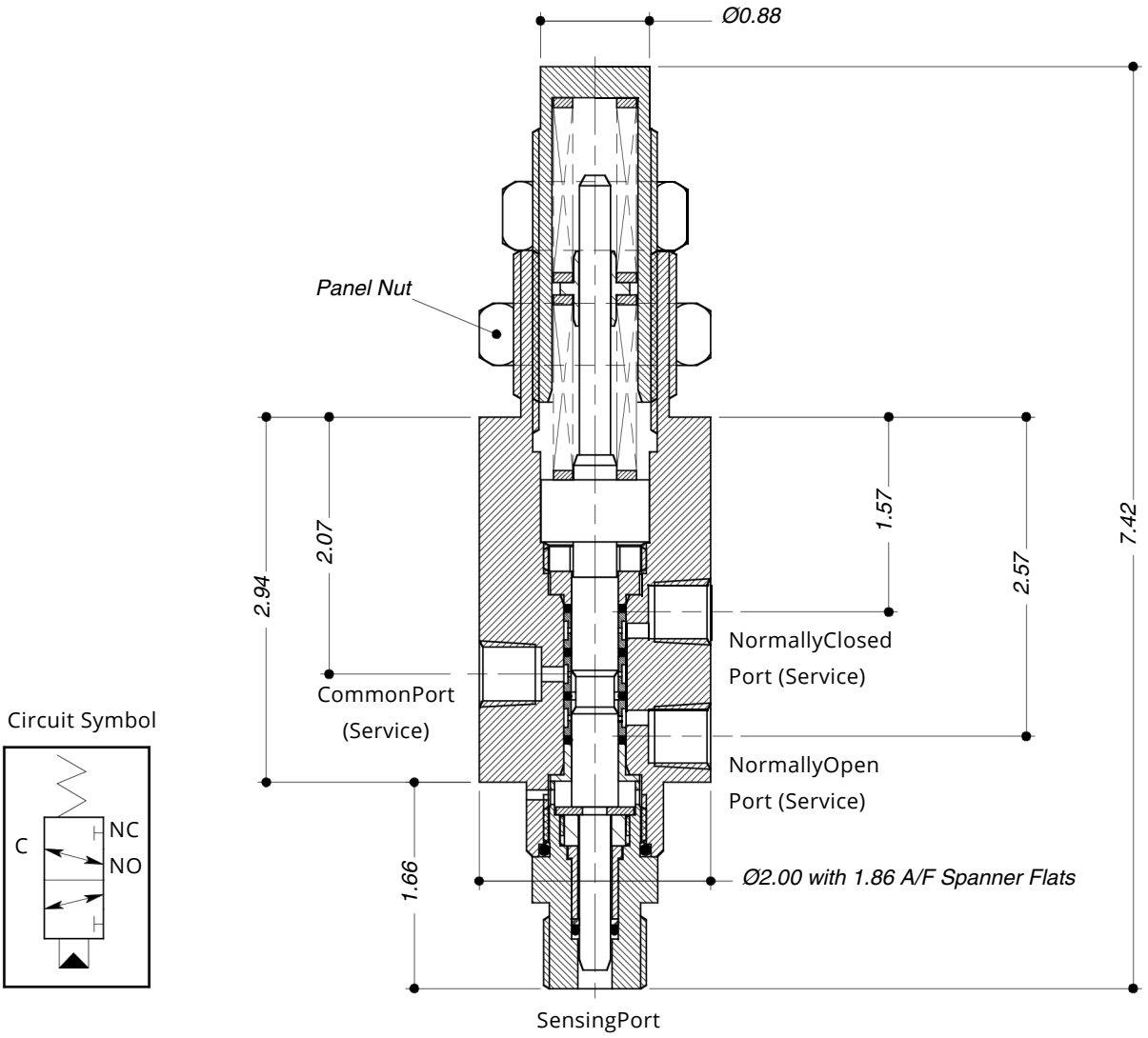
SECTION 10: PRESSURE SENSING VALVES

1/4" 316 St.St. Sensing Valve, MWP: 6,000 psi sensed, 225 psi control Types: 3SV25/37, 3SV25/50) *10:1*

SENSING VALVE TYPES: 3SV25/37, 3SV25/50

Valves Ltd

- STAINLESS STEEL (316 / 1.4404)
- SUITABLE FOR LIQUID OR GAS USE.
- ALL DIMENSIONS IN INCHES.



Circuit Symbol

TECHNICAL SPECIFICATION			ORDERING EXAMPLE
ValveType:	*3SV25/37*	*3SV25/50*	*3SV25/37*
Porting/ Connections Options:	*P* = BSP (Parallel)	*N* = NPT (Taper)	*N*
SensingPressureRange:	*0.1K- 1K psi,*	*0.9K - 3Kpsi, 2.8K-6Kpsi*	*3K*
Max.ControlPress: Liquid/Gas	*225psi*		
SensingPort Connections:	3/8"	1/2"	
ServicePorts: (3off)	1/4" NPT only		
Seal Material:	Viton(othermaterials availableby request)		
CV Value:	0.15(Max)		
DryWeight: (kg)	2.5		
WorkingTemperature Range:	-10°Cto+120°C		

*IMPORTANT:*Thisvalveis *NOT*tobeusedasa"safetydevice"(pressurelimiting)asdefinedinthePressure EquipmentDirective97/23/EC.Whenthecontrolfunctionofthisunitisbeingusedtolimitpressurewithina system, safety devices such as "safety relief" or "relief" valves must be fitted. *(SeeSection7fordetails).*

Valves Ltd

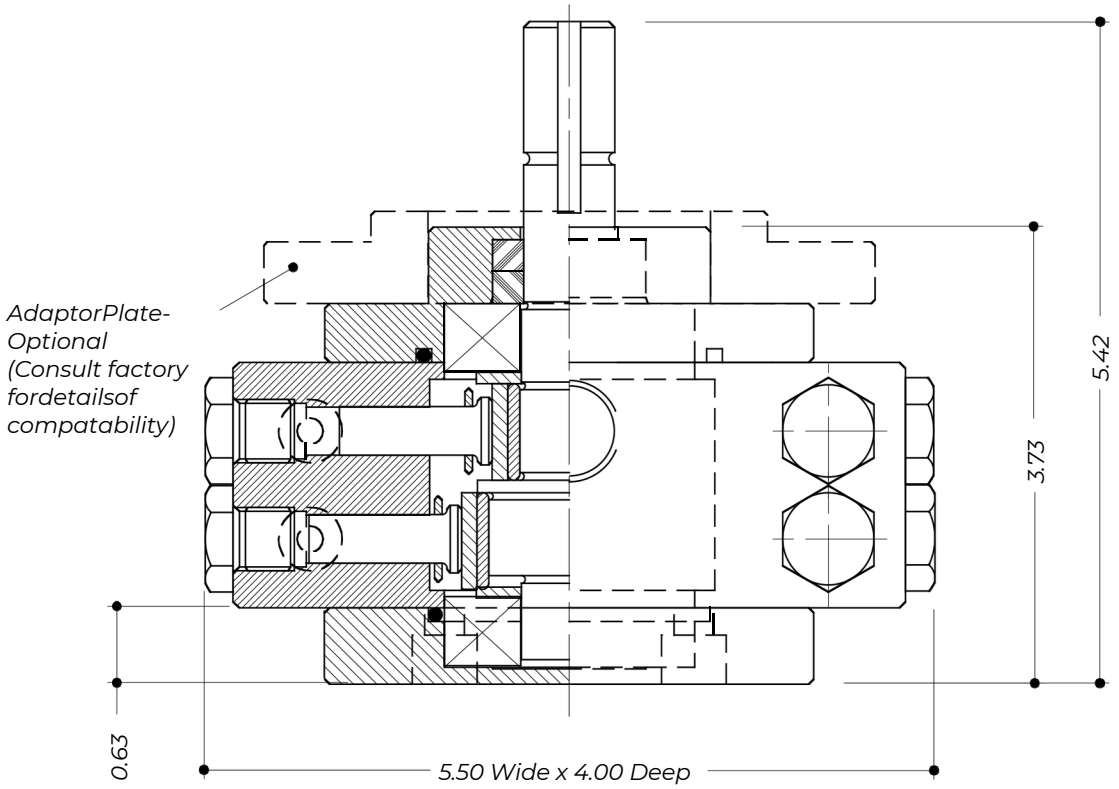
SECTION 11: PUMPS

1/4" Mild Steel H.P. Radial Piston Pump, MWP: 12,000 psi Types: 260PR, 520PR *11:1*

H.P.RADIALPISTON PUMP TYPES: 260PR & 520PR

Valves Ltd

- MILD STEEL (EN1A / 220M07)
- SUITABLE FOR MINERAL OIL USE.
- ALL DIMENSIONS IN INCHES.



Note: This unit can be used withcertain waterglycol fluids.
Consult factoryfor details.

TECHNICAL SPECIFICATION				ORDERING EXAMPLE
MaterialOption (non-std)		Not Applicable		——
PumpType:		*260PR*	*520PR*	*520PR*
Max.WorkingPressure:		*12,000psi*		*12K*
Connections:		Suction: 1/2" BSP	Discharge: 1/4" BSP	
Delivery Rate:	OffLoad	0.35Galls/min	0.68Galls/min	
	On Load	0.20Galls/min	0.48Galls/min	
Power Consumption:	OffLoad	0.90kW	1.00kW	
	On Load	2.90kW	5.20kW	
Pump- r.p.m.		1440		
WorkingFluid Viscocity Range:		10- 250 cSt.		
Suction:(Lift)		12"Water Gauge		
DryWeight: (kg)		9.0		
WorkingTemperature Range:		-10°Cto+60°C (Oil)	-10°Cto+40°C (otherfluids)	
ExternalConstruction:		Mild Steel(En1A /220M07)		

Note: Deliveryand Powerconsumption vary linearly with output pressure. Hence,Flow and Power consumption maybe determinedby linear interpolation between stated"off-load"and "on-load" (12,000 psi) figures.

Valves Ltd

SECTION 12: ACTUATORS & SOLENOID THRUSTERS

316 St.St. Diaphragm Type Air Actuator, MWP: 150 psi Type: A1 ..... *12:1*

316 St.St. Diaphragm Type Air Actuator, MWP: 150 psi Type: A2 ..... *12:2*

316 St.St. Diaphragm Type Air Actuator, MWP: 150 psi Type: A3 ..... *12:3*

316 St.St. Diaphragm Type Air Actuator, MWP: 150 psi Type: A4 ..... *12:4*

316 St.St. Piston Type Hydraulic Actuator, MWP: 10,000 psi Type: H0 ..... *12:5*

316 St.St. Piston Type Hydraulic Actuator, MWP: 10,000 psi Type: H1 ..... *12:6*

316 St.St. Piston Type Hydraulic or Air Actuator, MWP: 500 psi Type: H3 ..... *12:7*

316St.St.ManualLeverActuatorType:L&DL *12:8*

316St.St.CamRollerActuatorType:C0 ..... *12:9*

316St.St.CamPinActuator Type:C1 ..... *12:10*

HazardousArea(AtexApproved)SolenoidThruster Type:STEX1 ..... *12:11*

316St.St.SolenoidThrusterforSub-seaUse Type:SW *12:12*

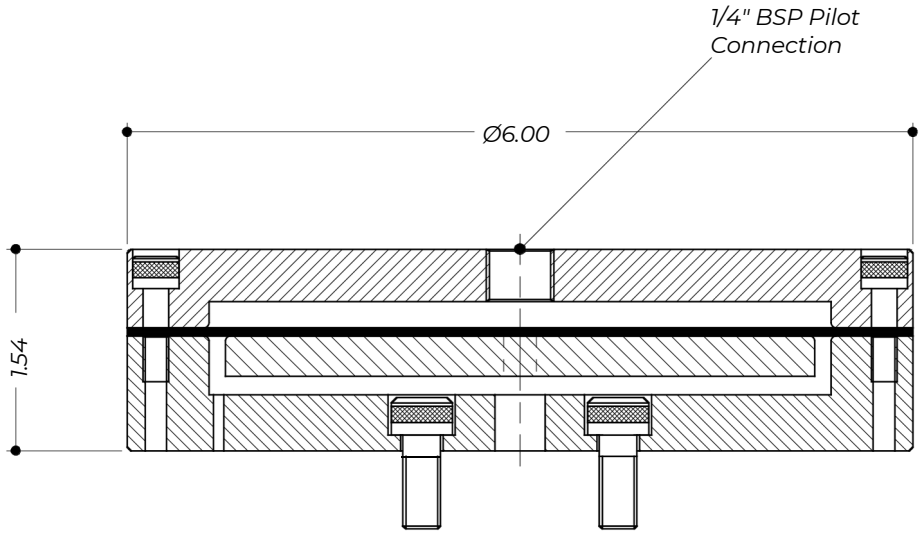
316St.St.SolenoidThruster Type:HC *12:13*

316St.St.SolenoidThruster Type:KC *12:14*

DIAPHRAGM AIR ACTUATOR TYPE: A1

- LOW PRESSURE OPERATION
- STAINLESS STEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.

Valves Ltd



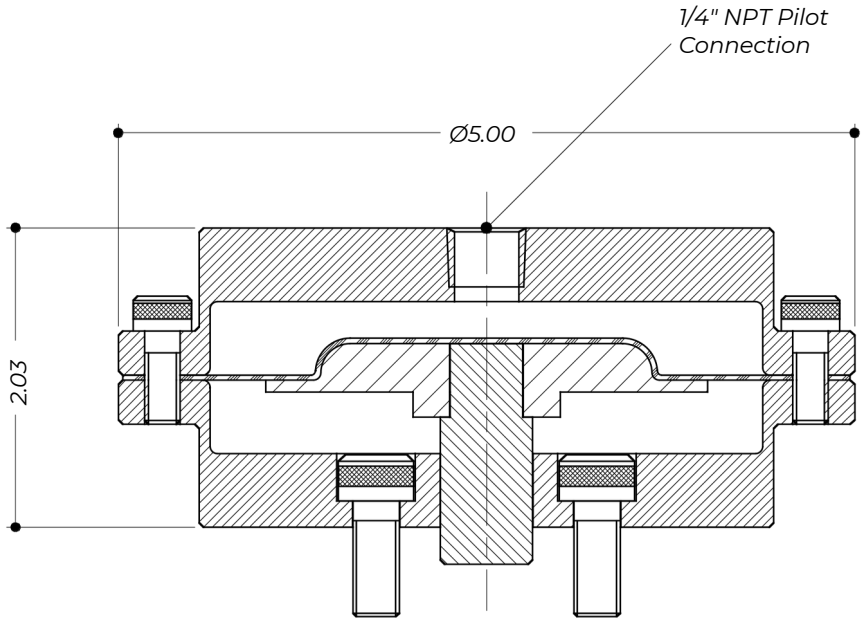
TechnicalSpecificationNote:-
* The Maximum Pilot Pressure is for the above Actuator design only.
Different applications may limit the Maximum Pilot Pressure due to the design of the Valve Body being used.
Check with the individual Valve Body technical specification sheets for details.

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Actuator Type:	*A1*	*A1*
Pilot Port Size:	1/4"	
Thread Form: (Pilot supply)	BSP (Parallel)	
MaximumPilot Pressure: *	150 psi	
Diaphragm Material:	Neoprene	
Dry Weight (kg)	1.3	
Working Temperature Range:	-10°C to +100°C	

DIAPHRAGM AIR ACTUATOR TYPE: A2

Valves Ltd

- LOW PRESSURE OPERATION.
- STAINLESS STEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.



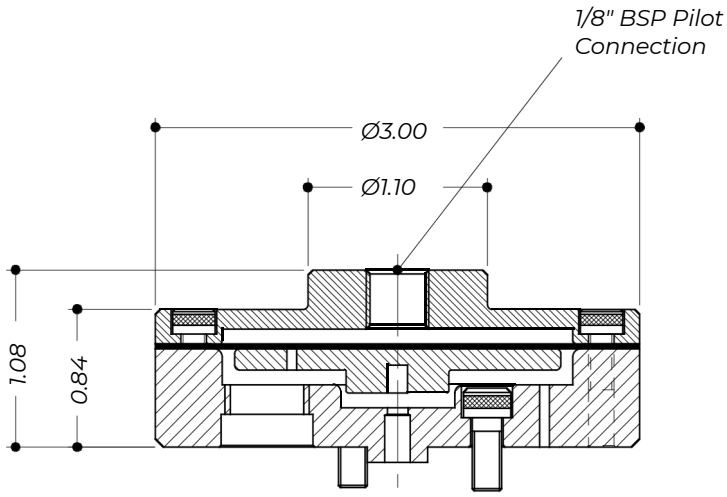
TechnicalSpecificationNote:-
* The Maximum Pilot Pressureis for the above Actuatordesignonly.
Differentapplications may limitthe Maximum PilotPressureduetothe design ofthe Valve Body being used.
Check with the individual Valve Body technical specificationsheets for details.

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ActuatorType:	*A2*	*A2*
PilotPort Size:	1/4"	
ThreadForm: (Pilot supply)	NPT (Taper)	
MaximumPilot Pressure: *	150 psi	
Diaphragm Material:	Nitrile*(with Nylon fabric reinforcement)*	
DryWeight(kg)	0.5	
WorkingTemperature Range:	-10°Cto+100°C	

DIAPHRAGM AIR ACTUATOR TYPE: A3

- LOW PRESSURE OPERATION
- STAINLESS STEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.

Valves Ltd



TechnicalSpecificationNote:-

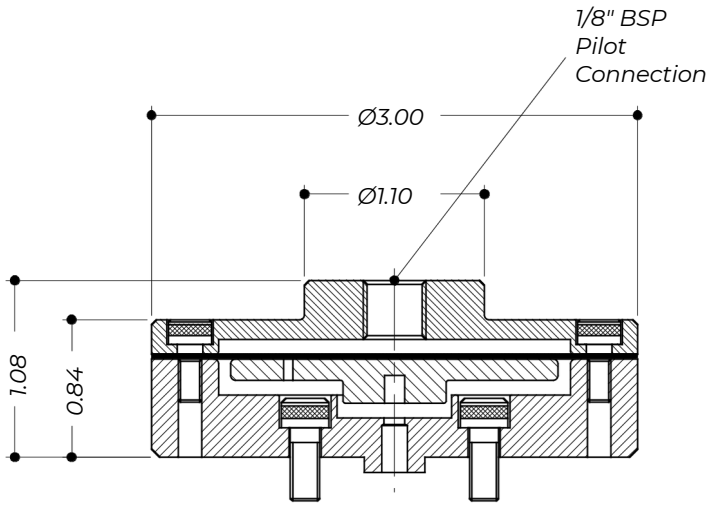
* The Maximum Pilot Pressureis for the above Actuatordesignonly.
Differentapplications may limitthe Maximum PilotPressureduetothe design ofthe Valve Body being used.
Check with the individual Valve Body technical specificationsheets for details.

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ActuatorType:	*A3*	*A3*
PilotPort Size:	1/8"	
ThreadForm: (Pilot supply)	BSP (Parallel)	
MaximumPilot Pressure: *	150 psi	
Diaphragm Material:	Nitrile*(with Nylon fabric reinforcement)*	
DryWeight(kg)	1.3	
WorkingTemperature Range:	-10°Cto+100°C	

DIAPHRAGM AIR ACTUATOR TYPE: A4

- LOW PRESSURE OPERATION
- STAINLESS STEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.

Valves Ltd



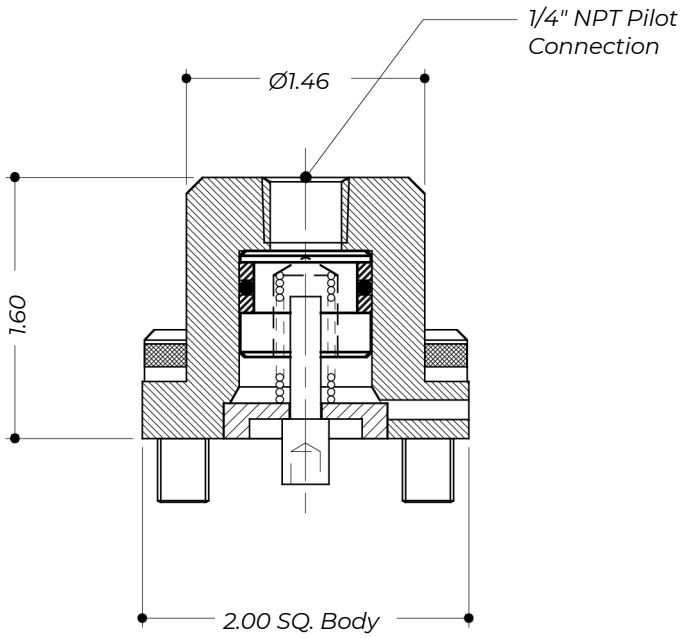
TechnicalSpecificationNote:-
* The Maximum Pilot Pressureis for the above Actuatordesignonly.
Differentapplications may limitthe Maximum PilotPressureduetothe design ofthe Valve Body being used.
Check with the individual Valve Body technical specificationsheets for details.

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
ActuatorType:	*A4*	*A4*
PilotPort Size:	1/8"	
ThreadForm: (Pilot supply)	BSP (Parallel)	
MaximumPilot Pressure: *	150 psi	
Diaphragm Material:	Nitrile*(with Nylon fabric reinforcement)*	
DryWeight(kg)	1.3	
WorkingTemperature Range:	-10°Cto+100°C	

PISTONHYDRAULIC ACTUATOR TYPE: H0

Valves Ltd

- HIGH PRESSURE OPERATION.
- STAINLESS STEEL (316 / 1.4404)
- ALL DIMENSIIONS IN INCHES.



TechnicalSpecificationNote:-

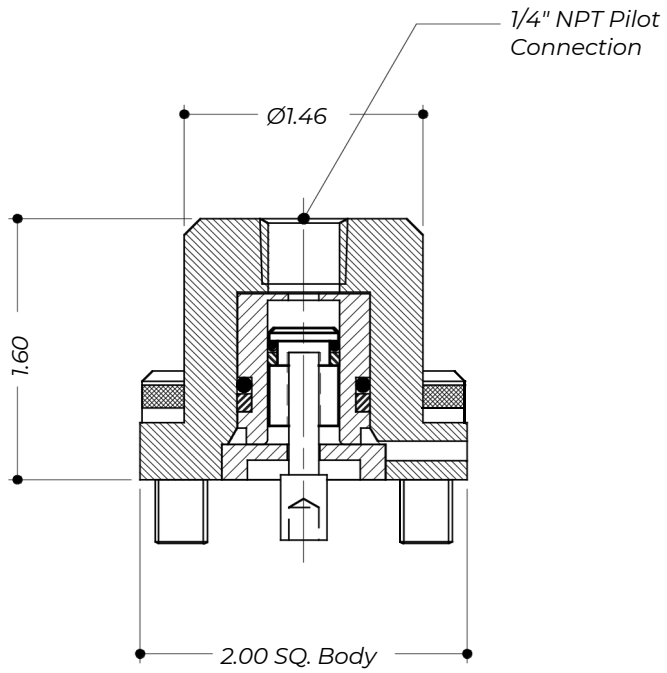
* The Maximum Pilot Pressure is for the above Actuator design only.
Different applications may limit the Maximum Pilot Pressure due to the design of the Valve Body being used.
Check with the individual Valve Body technical specification sheets for details.

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Actuator Type:	*H0*	*H0*
Pilot Port Size:	1/4"	
Thread Form: (Pilot supply)	NPT (Taper)	
Maximum Pilot Pressure: *	10,000 psi	
Seal Material:	Viton	
Dry Weight (kg)	0.5	
Working Temperature Range:	-10°C to +120°C	

PISTONHYDRAULIC ACTUATOR TYPE: H1

- HIGH PRESSURE OPERATION
- STAINLESS STEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.

Valves Ltd



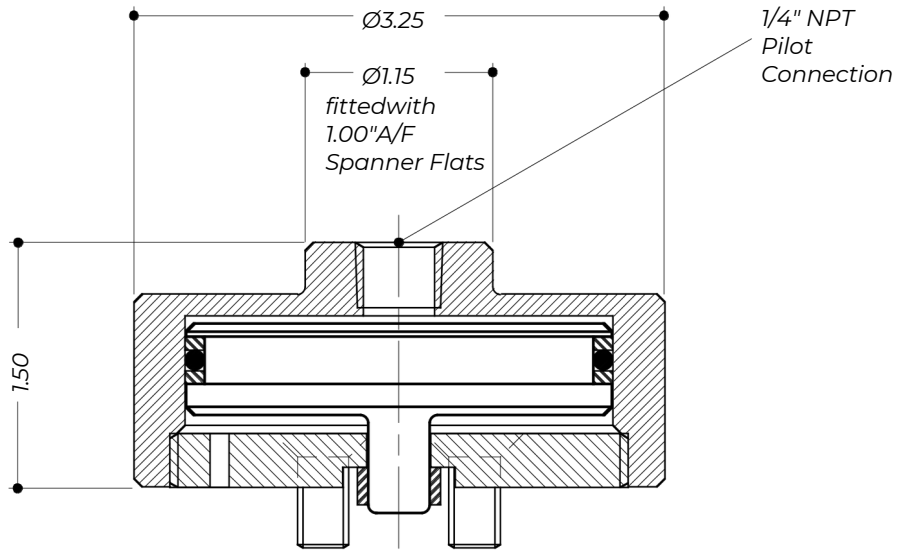
TechnicalSpecificationNote:-
* The Maximum Pilot Pressure is for the above Actuator design only.
Different applications may limit the Maximum Pilot Pressure due to the design of the Valve Body being used.
Check with the individual Valve Body technical specification sheets for details.

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Actuator Type:	*H1*	*H1*
Pilot Port Size:	1/4"	
Thread Form: (Pilot supply)	NPT (Taper)	
Maximum Pilot Pressure: *	10,000 psi	
Seal Material:	Viton	
Dry Weight (kg)	0.5	
Working Temperature Range:	-10°C to +120°C	

PISTONHYDRAULIC ACTUATOR TYPE: H3

Valves Ltd

- HIGH PRESSURE OPERATION.
- STAINLESS STEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.



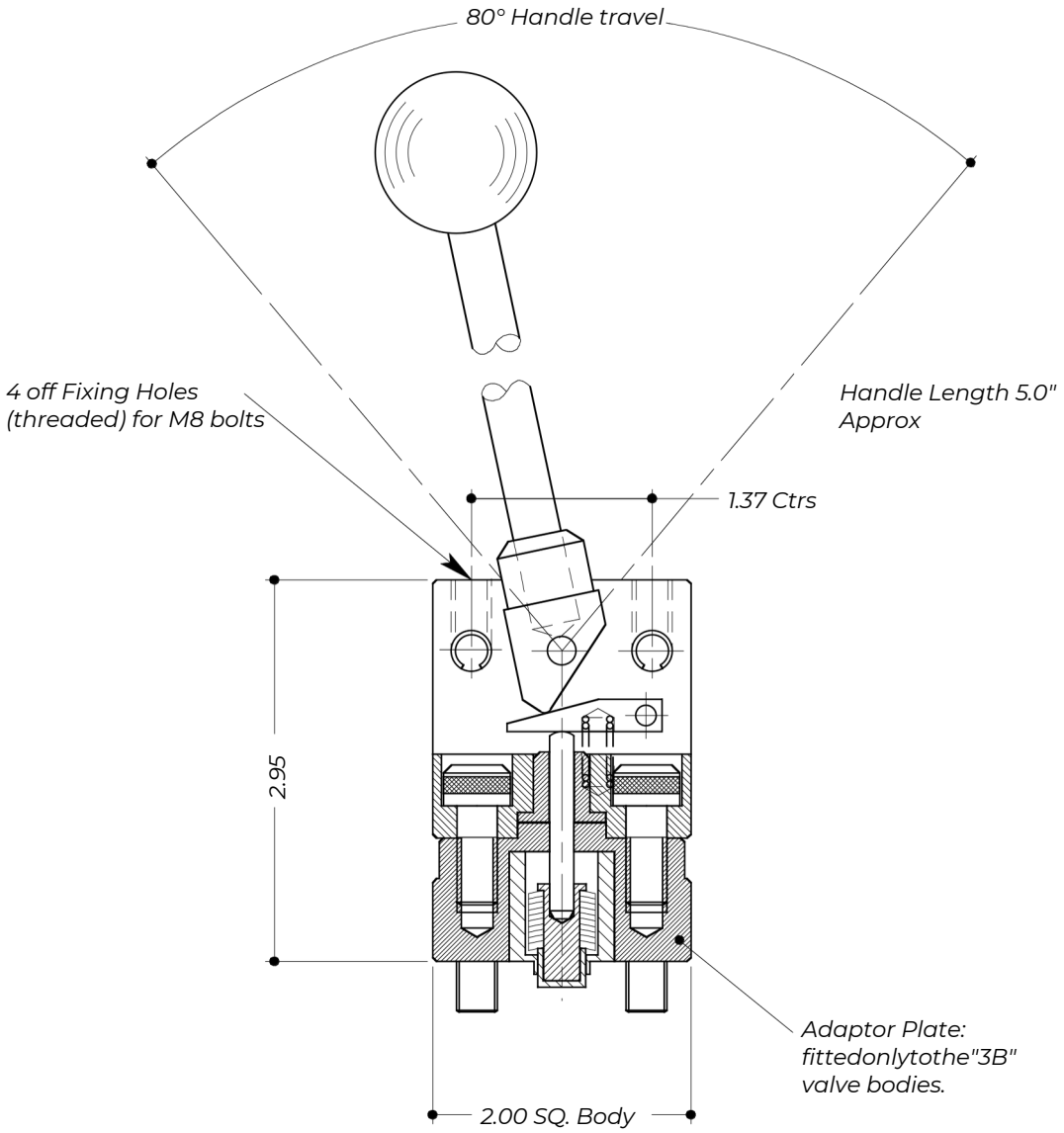
TechnicalSpecificationNote:-
* The Maximum Pilot Pressure is for the above Actuator design only.
Different applications may limit the Maximum Pilot Pressure due to the design of the Valve Body being used.
Check with the individual Valve Body technical specification sheets for details.

TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Actuator Type:	*H3*	*H3*
Pilot Port Size:	1/4"	
Thread Form: (Pilot supply)	NPT (Taper)	
Maximum Pilot Pressure: *	500 psi	
Seal Material:	Viton	
Dry Weight (kg)	1.0	
Working Temperature Range:	-10°C to +120°C	

MANUALLEVER ACTUATOR TYPES: L, DL

- STAINLESSSTEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.

Valves Ltd

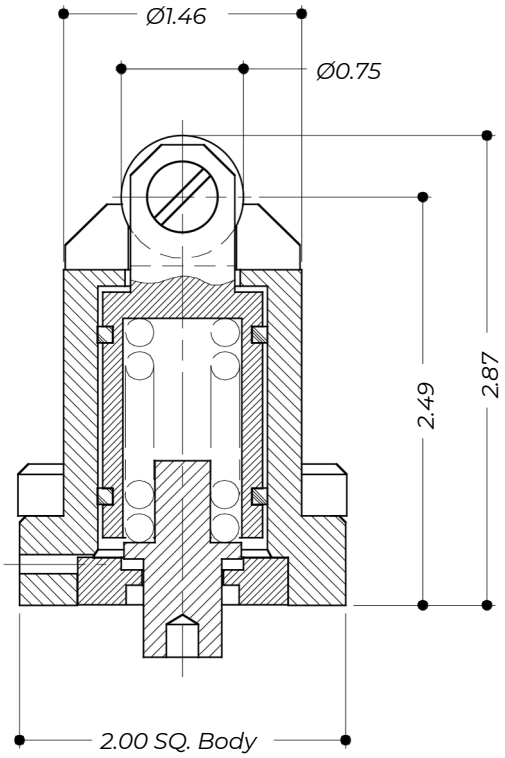


TECHNICAL SPECIFICATION			ORDERING EXAMPLE
Actuator Type:	*L*	*DL*	*L*
Type "L"	Lever remains at limit of travel after operating		
Type "DL"	Lever returns to centre position after operating		
Dry Weight (kg)	1.5		
Working Temperature Range:	-10°C to +120°C		

CAMROLLER ACTUATOR TYPE: C0

- STAINLESSSTEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.

Valves Ltd

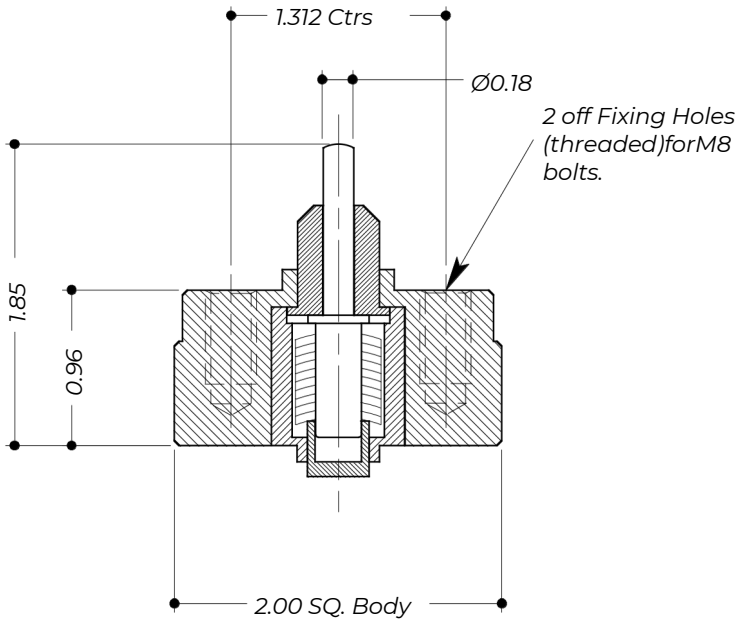


TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Actuator Type:	*C0*	*C0*
Dry Weight (kg)	0.6	
Working Temperature Range:	-10°C to +120°C	

CAMPIN ACTUATOR TYPE: C1

- STAINLESSSTEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.

Valves Ltd



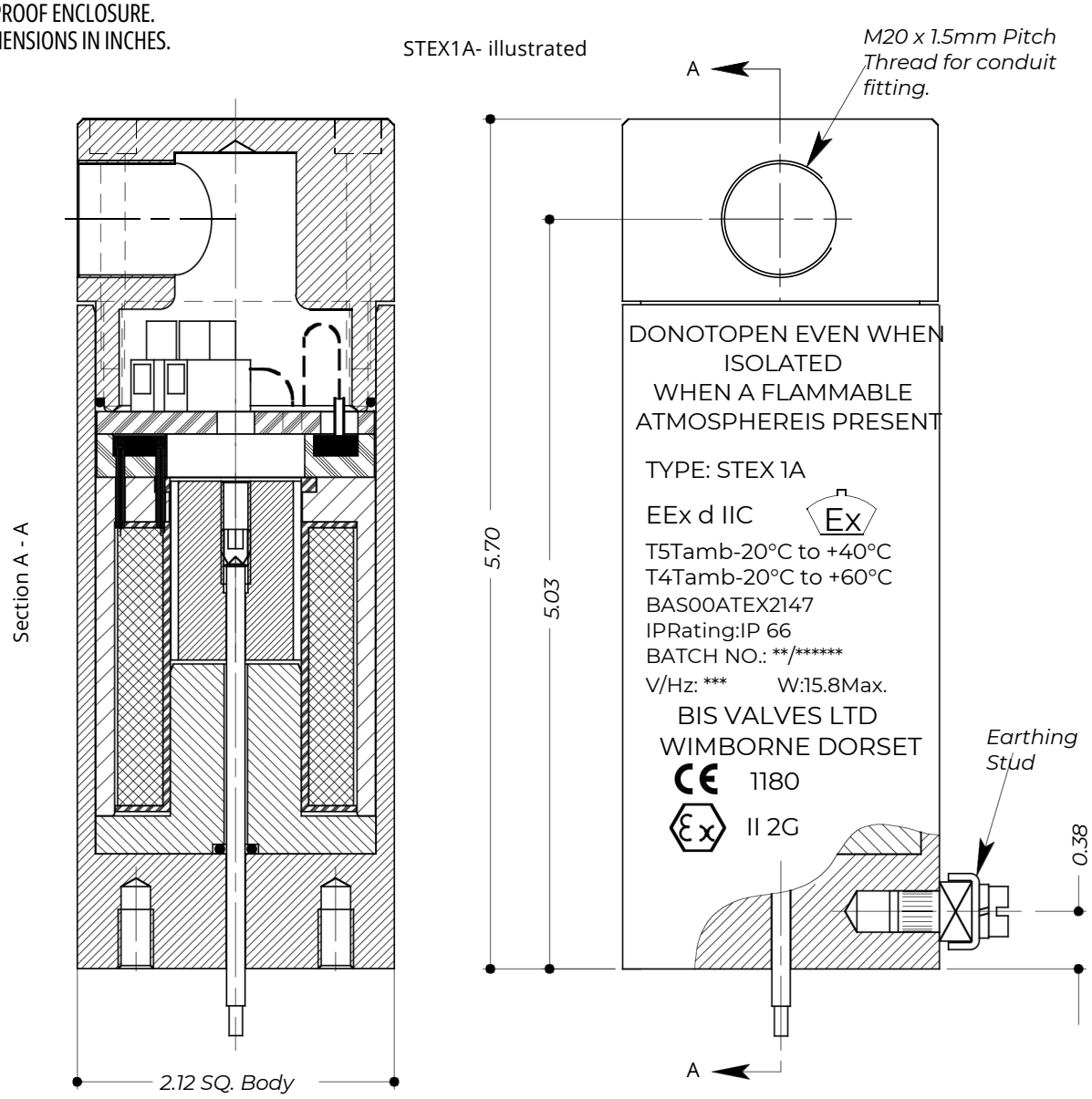
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Actuator Type:	C1	C1
Dry Weight (kg)	0.5	
Working Temperature Range:	-10°C to +120°C	

SOLENOID THRUSTER TYPE: STEX1

Valves Ltd

- ATEX DIRECTIVE 94/9/EC APPROVED - FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES.
- STAINLESSSTEEL HOUSING.
- TYPE: EEX'D' IIC.
- EXPLOSION PROOF.
- FLAMEPROOF ENCLOSURE.
- ALL DIMENSIONS IN INCHES.

STEX1A- illustrated



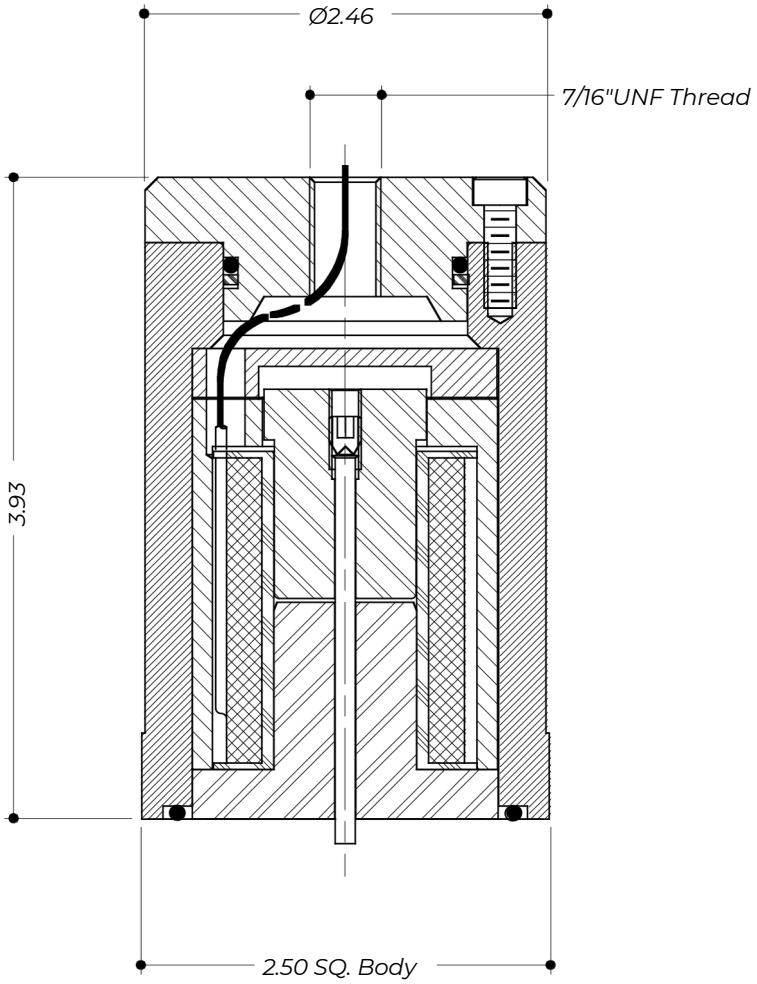
TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Solenoid Type:	*STEX 1*	*STEX 1A*
Conduit Connection:	*A* -RadialExitasshown	
	B -AxialExit	
VoltageRating:	24V (for other voltages contact our Technical Department)	
Power Rating:	15.8WattsMAX	
IPRating	IP66	
DryWeight: (kg)	2.8 kg	
TemperatureRating:	T5@ -10°Cto+40°C Ambients, T4 @ -10°Cto+60°C Ambients	

Power Consumption: Coilswith powerconsumption reduced downto8W canbeproduced as a "special"if required. Itshouldbenotedthatsolenoidperformancewillbeimpaired,hencethevalveoperatingpressuresmaydifferfroma standardbuilddesign.

SOLENOID THRUSTER (SUB-SEA) TYPE: SW

Valves Ltd

- STAINLESS STEEL(316 / 1.4404)
- SUB-SEA OPERATION (DEPTH OF 21,000 FT)
- A SUB-SEA CONNECTOR IS NOT SUPPLIED WITH THE SOLENOID THRUSTER.
- ALL DIMENSIONS IN INCHES.

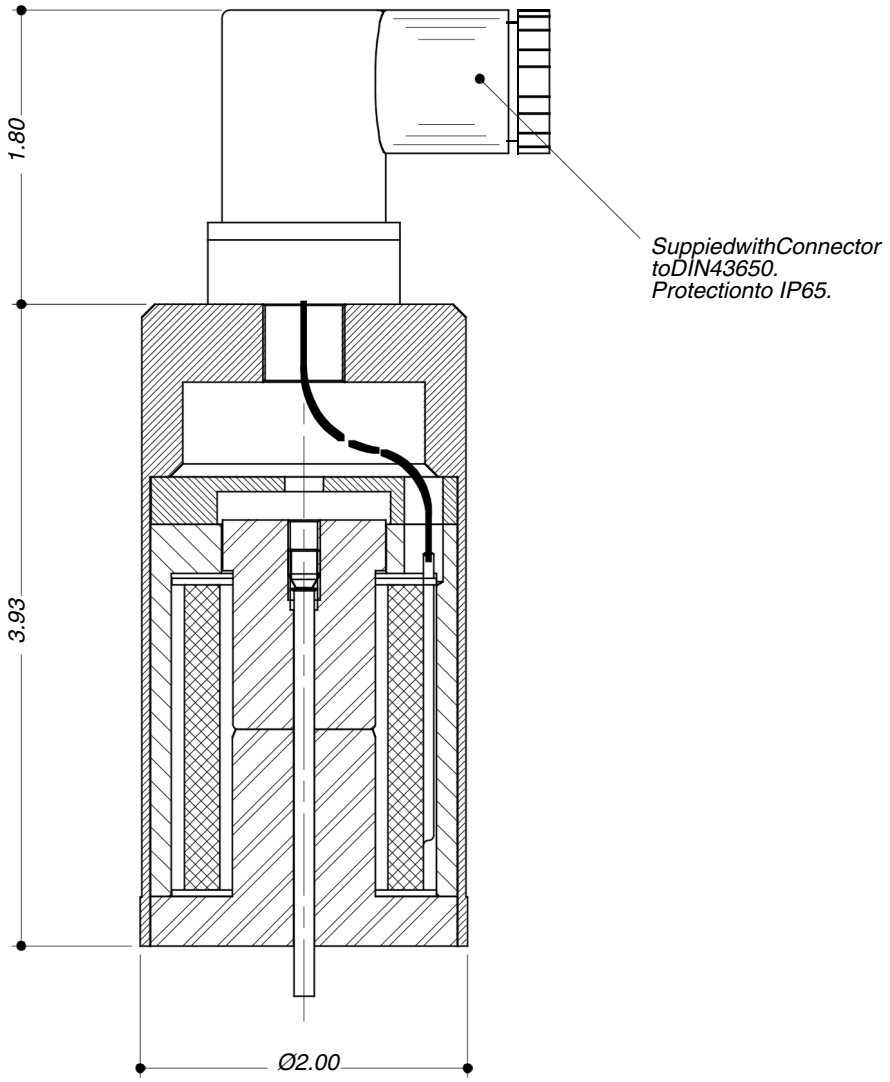


TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Solenoid Type:	*SW*	*SW*
Voltage Rating:	24 V D.C.	
Power Rating:	15.5 Watts	
Dry Weight: (kg)	1.0	
Working Temperature Range:	-10°C to +60°C (Ambient)	

SOLENOID THRUSTER TYPE: HC

- STAINLESSSTEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.

Valves Ltd

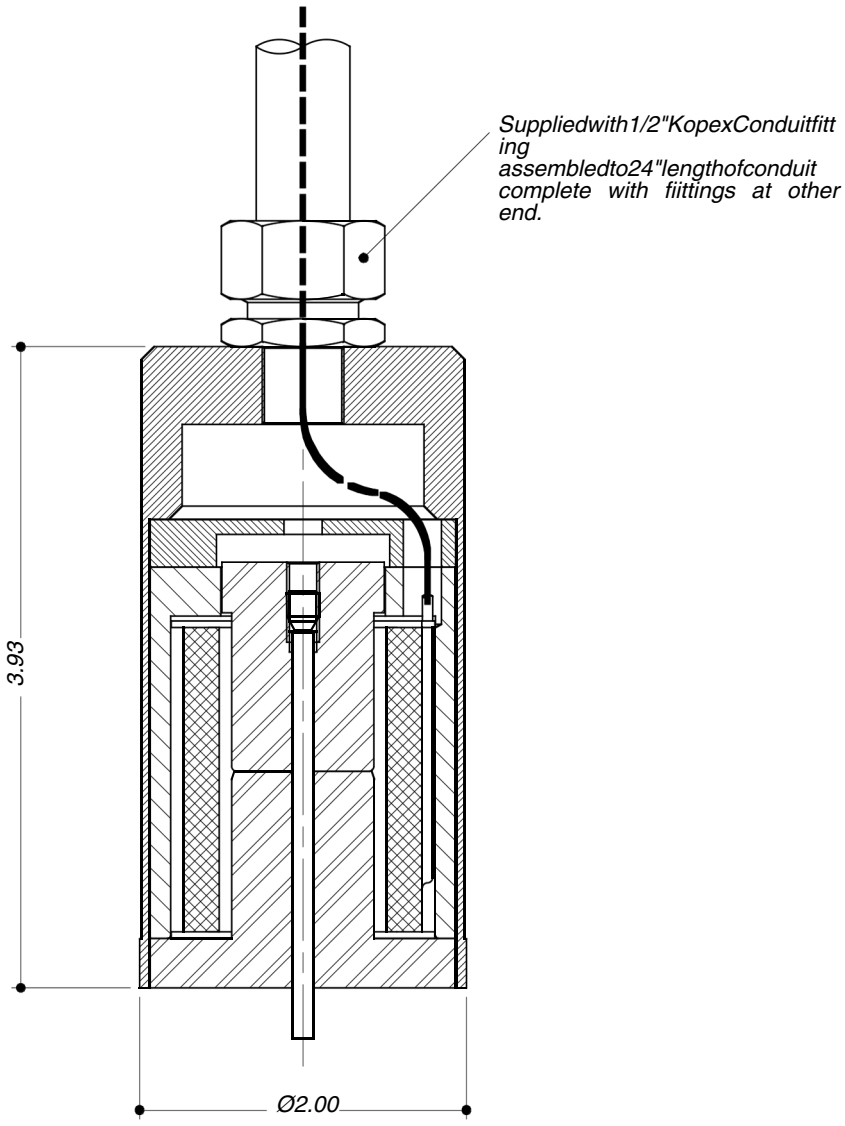


TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Solenoid Type:	*HC*	*HC*
Voltage Rating:	24 V D.C.	
Power Rating:	15.5 Watts	
Dry Weight: (kg)	1.0	
Working Temperature Range:	-10°C to +60°C (Ambient)	

SOLENOID THRUSTER[TYPE:] KC

- STAINLESSSTEEL (316 / 1.4404)
- ALL DIMENSIONS IN INCHES.

Valves Ltd



TECHNICAL SPECIFICATION		ORDERING EXAMPLE
Solenoid Type:	KC	KC
Voltage Rating:	24 V D.C.	
Power Rating:	15.5	
Dry Weight: (kg)	Watts 1.0	
Working Temperature Range:	-10°C to +60°C (Ambient)	

TERMS AND CONDITIONS Rev: 2

1 Interpretation

1.1 In these Conditions:

'Buyer' means the person who accepts a quotation of the Seller for the sale of the goods or whose order for the goods is accepted by the Seller

'Goods' means the goods (including any instalment of the goods or any parts for them) which the Seller is to supply in accordance with these Conditions

'Seller' means BiS Valves Limited (registered in England under No. 826821)

'Conditions' means the standard terms and conditions of sale set out in this document and (unless the context otherwise requires) includes any special terms and conditions agreed in writing between the Buyer and the Seller

'Contract' means the contract for the purchase and sale of the goods

'Writing' includes telex cable facsimile transmission and comparable means of communication

1.2 Any reference in these Conditions to any provision of a statute shall be construed as a reference to that provision amended re-enacted or extended at the relevant time

1.3 The headings in these Conditions are for convenience only and shall not affect their interpretation

2) Basis of the sale

2.1 The Seller shall sell and the Buyer shall purchase the Goods in accordance with any written quotation of the Seller which is accepted by the Buyer or any written order of the Buyer which is accepted by the Seller subject in either case to t Conditions which shall govern the Contract to the exclusion of any other terms and conditions subject to which any such quotation is accepted or purported to be accepted or any such order is made or purported to be made by the Buyer

2.2 No variation to these Conditions shall be binding unless agreed in writing between the authorised representatives the Buyer and the Seller

2.3 The Seller's employees or agents are not authorised to make any representations concerning the goods unless confirmed by the Seller in writing. In entering into this Contract the Buyer acknowledges that it does not rely on any such representations which are not so confirmed

2.4 Any advice or representation given by the Seller or its employees or agents to the Buyer or its employees or agents as to the storage application or use of the Goods which is not confirmed in writing by the Seller is followed or acted upon entirely at the Buyer's own risk and accordingly the Seller shall not be liable for any such advice or recommendation which is not so confirmed

2.5 Any typographical clerical or other error or omission in any sales literature quotation price list acceptance or offer invoice or other document or information issued by the Seller shall be subject to correction without liability on the part of th Seller

3)

3.1 **Orders and specifications**

No Order submitted by the Buyer shall be deemed to be accepted by the Seller unless and until confirmed in writi by the Seller's authorised representative.

3.2 The Buyer shall be responsible to the Seller for ensuring the accuracy of the terms of any Order (including any applicable specification) submitted by the Buyer and for giving the Seller any necessary information relating to the Goods within a sufficient time to enable the Seller to perform the Contract in accordance with its terms

3.3 The quantity quality and description of and any specification for the Goods shall be those set out in the Seller's quotation (if accepted by the Buyer) or the Buyer's order (if accepted by the Seller)

3.4 If the Goods are to be manufactured or any process is to be applied to the Goods by the Seller in accordance with the specification submitted by the Buyer the Buyer shall indemnify the Seller against all loss damages costs and expenses awarded against or incurred by the Seller in connection with or paid or agreed to be paid by the Seller in settlement of any claim for infringement of any patent copyright design trademark or other industrial or intellectual property rights of any other person which results from the Seller's use of the Buyer's specification

3.5 The Seller reserves the right to make any changes in the specification of the Goods which are required to conform with any applicable statutory or EC requirements or where the Goods are to be supplied to the Seller's specification which do not materially affect their quality of performance

3.6 No Order which has been accepted by the Seller may be cancelled by the Buyer except with the agreement in writing of the Seller and on terms that the Buyer shall indemnify the Seller in full against all loss (including loss of profit) costs (including the cost of all labour and materials used) damages charges and expenses incurred by the Seller as the result of cancellation

4) Price of the goods

4.1 The price of the goods shall be the Seller's quoted price or where no price has been quoted (or a quoted price is no longer valid) the price listed in the Seller's published price list current at the date of acceptance of the order. Where the Go are supplied for export from the United Kingdom the Seller's published export price list shall apply. All prices quoted are va for ninety days only or until earlier acceptance by the Buyer after which time they may be altered by the Seller without givi notice to the Buyer. **All orders are subject to a minimum order charge**.

4.2 The Seller reserves the right by giving notice to the Buyer at any time before delivery to increase the price of goods to reflect any increase in the cost to the Seller which is due to any factor beyond the control of the Seller (such as without limitation any foreign exchange fluctuation currency regulation alteration of duties significant increase in the cost of labour and/or materials and other costs of manufacture) any change in delivery dates quantities or specifications for the Goods which is requested by the Buyer or any delay caused by any instructions of the Buyer or failure of the Buyer to give the Seller adequate information or instructions

4.3 Except as otherwise stated under the terms of any quotation or in any price list of the Seller and unless otherwise agreed in writing between the Buyer and the Seller all prices are given by the Seller on an ex-works basis and exclusive of the cost of packaging carriage freight insurance and whether or not the Seller agrees to deliver the Goods otherwise than at the Seller's premises

4.4 The price is exclusive of any applicable value added tax which the Buyer shall be additionally liable to pay to the Seller

4.5 The cost of pallets and return of containers will be charged to the Buyer in addition to the price of the Goods but fu credit will be given to the Buyer provided they are returned undamaged to the Seller before the due payment date

5 Terms of payment

5.1 Subject to any special terms agreed in writing between the Buyer and the Seller the Seller shall be entitled to invoice the Buyer for the price of the goods on or at any time after delivery of the Goods unless the Goods are to be collected by t Buyer or the Buyer wrongfully fails to take delivery of the goods in which event the Seller shall be entitled to invoice the Bu for the price at any time after the Seller has notified the Buyer that the Goods are ready for collection or (as the case may the Seller has tendered delivery of the Goods

5.2 The Buyer shall pay the price of the Goods (less any discount to which the Buyer is entitled but without any other deduction) on or before the last working day of the month following the date of invoice. The Seller shall be entitled to recov the price notwithstanding that delivery may not have taken place and that the property and the Goods has not passed to th Buyer. The time for payment of the price shall be of the essence of the Contract. Receipts for payment will be issued only request.

5.3 If the Buyer fails to make any payment on the due date then without prejudice to any other right or remedy availab the Seller the Seller shall be entitled to:

5.3.1 cancel the Contract or suspend any further deliveries to the Buyer

5.3.2 appropriate any payment made by the Buyer to such of the Goods (or the Goods supplied under any other contract between the Buyer and the Seller) as the Seller may see fit (notwithstanding any purported appropriation the Buyer) and

5.3.3 charge the Buyer interest (both before and after any judgment) on the amount unpaid at the rate of three per centum per annum above The Royal Bank of Scotland PLC Bank base rate from time to time until payment in full is made (a part of a month being treated as a full month for the purpose of calculating interest)

6 Delivery

6.1 Delivery of the Goods shall be made by the Buyer collecting the Goods at the Seller's premises at any time after the Seller has notified the Buyer that the Goods are ready for collection or if some other place for delivery is agreed by the Se by the Seller delivering the Goods to that place

6.2 Any dates quoted for delivery of the Goods are approximate only and the Seller shall not be liable for any delay in delivery of the Goods howsoever caused. Time for delivery shall not be of the essence of the Contract unless previously agreed by the Seller in writing. The Goods may be delivered by the Seller in advance of the quoted delivery date upon giving reasonable notice to the Buyer

6.3 Where delivery of the Goods is to be made by the Seller in bulk the Seller reserves the right to deliver up to per cent more or per cent less than the quantity ordered without any adjustment in the price and the quantity so delivered sh be deemed to be the quantity ordered

6.4 Where the Goods are to be delivered in instalments each delivery shall constitute a separate Contract and failure by the Seller to deliver any one or more of the instalments in accordance with these Conditions or any claim by the Buyer in respect of any one or more instalments shall not entitle the Buyer to treat the Contract as a whole as repudiated

6.5 If the Seller fails to deliver the Goods (or any instalment) for any reason other than any cause beyond the Seller's reasonable control or the Buyer's fault and the Seller is accordingly liable to the Buyer the Seller's liability shall be limited to the excess (if any) of the cost to the Buyer (in the cheapest available market) of similar goods to replace those not delivered over the price of the Goods

6.6 If the Buyer fails to take delivery of the Goods or fails to give the Seller adequate delivery instructions at the time stated for delivery (otherwise than by reason of any cause beyond the Buyer's reasonable control or by reason of the Seller's fault) then without prejudice to any other right or remedy available to the Seller the Seller may:

6.6.1 store the Goods until actual delivery and charge the Buyer for the reasonable costs (including insurance) storage or

6.6.2 sell the goods at the best price readily obtainable and (after deducting all reasonable storage and selling expenses) account to the Buyer for the excess over the price under the Contract or charge the Buyer for any shortfall below the price under the Contract

7) **Risk and property**

7.1 Risk of damage to or loss of the Goods passes to the Buyer:

7.1.1 in the case of Goods to be delivered to the Seller's premises at the time when the Seller notifies the Buyer that the Goods are available for collection or

7.1.2 in the case of Goods to be delivered otherwise than at the Seller's premises at the time of delivery or if the Buyer wrongfully fails to take delivery of the Goods at the time when the Seller intended delivery of the Goods

7.2 Notwithstanding delivery and the passing of risk in the Goods or any other provisions of these Conditions the property in the Goods shall not pass to the Buyer until the Seller has received in cash or cleared funds payment in full of the price of the Goods and all other goods agreed to be sold by the Seller to the Buyer for which payment is then due

7.3 Until such time as the property in the Goods passes to the Buyer the Buyer shall hold the Goods as the Seller's fiduciary agent and bailee and shall keep the Goods separate from those of the Buyer and third parties and properly stored protected and insured and identified as the Seller's property but shall be entitled to re-sell or use the Goods in the ordinary course of its business

7.4 Until such time as the property in the Goods passes to the Buyer (and provided the Goods are still in existence and have not been resold) the Seller shall be entitled at any time to require the Buyer to deliver up the Goods to the Seller and if the Buyer fails to do so forthwith to enter upon any premises of the Buyer or any third party where the Goods are stored and repossess the Goods

7.5 The Buyer shall not be entitled to pledge or in any way charge by way of security for any indebtedness any of the Goods which remain the property of the Seller but if the Buyer does so all monies owing by the Buyer to the Seller shall (without prejudice to any other right or remedy of the Seller) forthwith become due and payable

8) **Warranties and liability**

8.1 Subject to the conditions set out below the Seller warrants that the Goods will correspond with their specification at the time of delivery and will be free from defects in materials and workmanship for the period of twelve months from the date of initial use or twenty four months from delivery whichever is the first to expire

8.2 The above warranty is given by the Seller subject to the following conditions:-

8.2.1 the Seller shall be under no liability in respect of any defect in the Goods arising from any drawing design or specification supplied by the Buyer

8.2.2 the Seller shall be under no liability in respect of any defect arising from fair wear and tear wilful damage negligence abnormal working conditions failure to follow the Seller's instructions (whether oral or in writing) misuse or alteration or repair of the Goods without the Seller's approval

8.2.3 the Seller shall be under no liability under the above warranty (or any other warranty condition or guarantee) if the total price of the Goods has not been paid by the due date for payment

8.2.4 the above warranty does not extend to parts materials or equipment not manufactured by the Seller in respect of which the Buyer shall only be entitled to the benefit of any such warranty or guarantee as is given by the manufacturer to the Seller

8.3 Subject as expressly provided in these Conditions and except where the Goods are sold to a person dealing as a consumer (within the meaning of the Unfair Contract Terms Act 1977) all warranties conditions or other terms implied by statute or common law are excluded to the fullest extent permitted by law

8.4 Where the Goods are sold under a consumer transaction (as defined by the Consumer Transaction (Restrictions on Statements) Order 1976) the statutory rights of the Buyer are not affected by these Conditions

8.5 Any claim by the Buyer which is based on any defect in the quality or condition of the Goods or their failure to correspond with specification shall (whether or not delivery is refused by the Buyer) be notified to the Seller within seven days from the date of delivery or (where the defect or failure was not apparent on reasonable inspection) within a reasonable time after discovery of the defect or failure and in any event within six months of the date of delivery of the Goods. If delivery is not refused and the Buyer does not notify the Seller accordingly the Buyer shall not be entitled to reject the Goods and the Seller shall have no liability for such defect or failure and the Buyer shall be bound to pay the price as if the Goods had been delivered in accordance with the Contract

8.6 Where any valid claim in respect of any of the Goods which is based on any defect in the quality or condition of the Goods or their failure to meet specification is notified to the Seller in accordance with these Conditions the Seller shall be entitled to replace the Goods (or the part in question) free of charge or at the Seller's sole discretion refund to the Buyer the price of the Goods (or a proportionate part of the price) but the Seller shall have no further liability to the Buyer

8.7 Except in respect of death or personal injury caused by the Seller's negligence the Seller shall not be liable to the Buyer by reason of any representation (unless fraudulent) or any implied warranty condition or other term or any duty at common law or under the express terms of the Contract for any indirect special or consequential loss or damage (whether for loss of profit or otherwise) costs expenses or other claims for compensation whatsoever (whether caused by the negligence of the Seller its employees or agents or otherwise) which arise out of or in connection with the supply of the Goods or their use or resale by the Buyer and the entire liability of the Seller under or in connection with the Contract shall not exceed the price of the Goods except as expressly provided in these Conditions

8.8 The Seller shall not be liable to the Buyer or be deemed to be in breach of the Contract by reason of any delay in performing or any failure to perform any of the Seller's obligations in relation to the Goods if the delay or failure was due to any cause beyond the Seller's reasonable control. Without prejudice to the generality of the foregoing the following shall be regarded as causes beyond the Seller's reasonable control:

8.8.1 act of God explosion flood tempest fire or accident

8.8.2 war or threat of war sabotage insurrection civil disturbance or requisition

8.8.3 acts restrictions regulations bye-laws prohibitions or measures of any kind on the part of any governmenta parliamentary or local authority

8.8.4 import or export regulations or embargoes

8.8.5 strike lock-outs or other industrial actions or trade disputes (whether involving employees or the Seller or other third party)

8.8.6 difficulties in obtaining raw materials labour fuel parts or machinery

8.8.7 power failure or breakdown in machinery

8.8

9) **Insolvency of buyer**

9.1 This clause applies if:

9.1.1 the Buyer makes any voluntary arrangement with its creditors or (being an individual or firm) becomes bankrupt or (being a company) becomes subject to an administration order or goes into liquidation (otherwise than for the purposes of amalgamation or reconstruction) or

9.1.2 an encumbrancer takes possession or a receiver is appointed of any property or assets of the Buyer or

9.1.3 the Buyer ceases or threatens to cease to carry on business or

9.1.4 the Seller reasonably apprehends that any of the events mentioned above is about to occur in relation to the Buyer and notifies the Buyer accordingly

9.2 If this clause applies then without prejudice to any other right or remedy available to the Seller the Seller shall be entitled to cancel the Contract or suspend any further deliveries under the Contract without any liability to the Buyer a Goods have been delivered but not paid for the price shall become immediately due and payable notwithstanding any previous agreement or arrangement to the contrary

10) **Test or inspection of goods**

Where the Contract provides for test and inspection before despatch and delivery by or on behalf of the Buyer at the premises the following conditions shall apply:

10.1 In the event of inspection by the Buyer and/or their servant or agent any complaint in relation to the Goods must be notified to the Seller in writing within seven days of that inspection and in the absence of such notice the Buyer shall be conclusively deemed to have accepted the Goods as being in conformity with the Contract and shall not thereafter be entitled to reject the Goods

10.2 Examination of Goods during construction by an external authority where required shall be payable by and at the of the Buyer in addition to the ordinary price of the Goods

10.3 The Seller reserves the right to charge the Buyer the cost of all test pieces which comply with specification

11) **Export terms**

11.1 In these Conditions 'Incoterms' mean the international rules for the interpretation of trade terms of the International Chamber of Commerce as in force at the date when the Contract is made. Unless the context otherwise requires any term expression which is defined in or given any particular meaning by the provisions of the Incoterms shall have the same mea in these Conditions but if there is any conflict between the provisions of Incoterms and these Conditions the latter shall pre

11.2 Where the Goods are supplied for export from the United Kingdom the provisions of this Clause 11 shall (subject to any special terms agreed in writing between the Buyer and the Seller) apply notwithstanding any other provision of these Conditions

11.3 The Buyer shall be responsible for complying with any legislation or regulation governing the importation of the Goods into the country of destination and for payment of any duties on them

11.4 Unless otherwise agreed in writing between the Buyer and the Seller the Goods shall be delivered fob the air or se port of shipment and the Seller shall be under no obligation to give notice under Section 32(3) of the Sale of Goods Act

11.5 The Buyer shall be responsible for arranging for testing and inspection of the Goods at the Seller's premises before shipment. The Seller shall have no liability for any claim in respect of any defect in the Goods which would be apparent on inspection and which is made after shipment or in respect of any damage during transit

11.6 Payment of all amounts due to the Seller shall be made by irrevocable letter of credit opened by the Buyer in favour of the Seller and confirmed by a bank in England acceptable to the Seller or if the Seller has agreed in writing on or before acceptance of the Buyer's order to waive this requirement by acceptance by the Buyer and delivery to the Seller of the bill of exchange drawn on the Buyer payable sixty days after sight to the order of the Seller at such branch of The Royal Bank of Scotland PLC in England as may be specified in the bill of exchange

12) **General**

12.1 Any notice required or permitted to be given by either party to the other under these Conditions shall be in Writing addressed to that other party at its registered office or principal place of business or such other address as may at the rele time have been notified pursuant to this provision to the party giving the notice

12.2 No waiver by the Seller of any breach of the Contract by the Buyer shall be considered as a waiver of any subseq breach of the same or any other provision

12.3 If any provision of these Conditions is held by any competent authority to be invalid or unenforceable in whole or i part the validity of the other provisions of these Conditions and the remainder of the provision in question shall not be a

12.4 The Contract shall be governed by the laws of England and the Buyer agrees to submit to the non-exclusive jurisdiction of the English courts