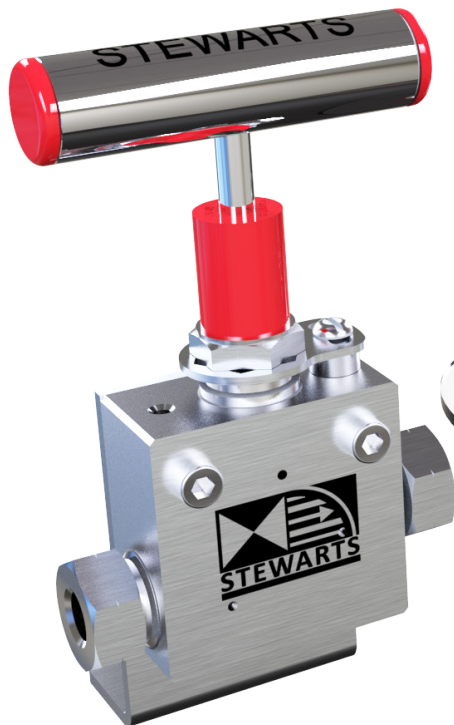


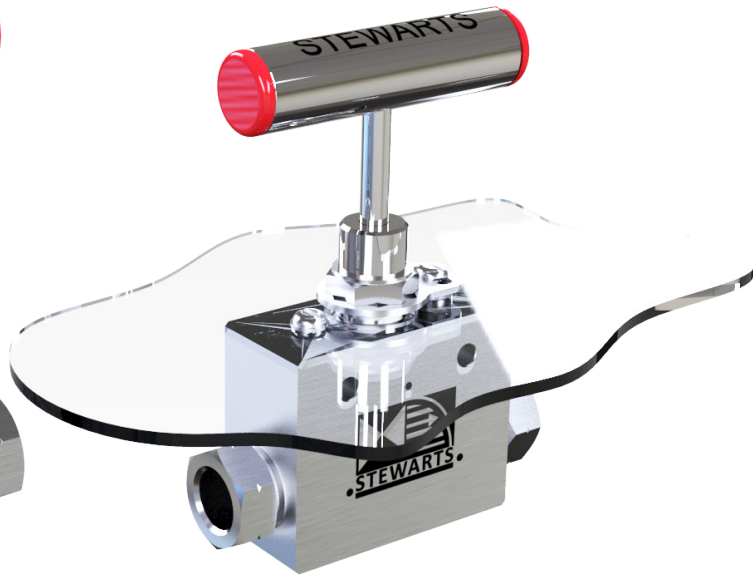
# MODEL - G1

## MEDIUM/HIGH PRESSURE NEEDLE VALVE

2000 bar (30000 psi)



Model Shown - G1H6MH6MSAI



Model Shown - G1H9MH9MSAI

## MEDIUM/HIGH PRESSURE NEEDLE VALVE

The Model- G1 needle valve from Stewarts Valves is produced for medium and high pressure applications in the oil and gas, petrochemical and other general industries.

The Model - G1 is suitable for both liquid and gaseous flow.

The standard base Model - G1 is an in line valve rated to 30,000 psi (2000 bar) with various customisation options available to suit the needs of your application and system design.

## STANDARD FEATURES

The following features come as standard on the Model – G1;

- Non-rotating stem – prevents galling and scoring on the sealing faces
- Stainless steel handle
- Bonnet locking device – reduced leak potential resulting from loosening of gland
- Weep holes - to protect valve head should over pressure occur
- Mounting holes – for panel or bracket mounting
- Material traceability on all wetted components
- Hardened Bonnet and Stem for increased service life
- PCTFE stem packing
- Blind thread and stepped back seat stem for added security
- Colour coded handle end caps
- Medium/high pressure connection fittings
- Laser etching – valve detail on body – customisable options available
- Removable stem dust cap (colour coded)

## STEWART-BUCHANAN GAUGES LTD

Sales Office & Manufacturing Facility - 7 Garrel Road, Burnside Industrial Estate, Kilsyth, Glasgow G65 9JX, SCOTLAND  
Tel: +44 (0)1236 821533 | Fax: +44 (0)1236 824090 | E-mail: sales@stewarts-group.com | Web: stewarts-group.com

DATA SHEET REF: G1-REV01-14

# NOTES



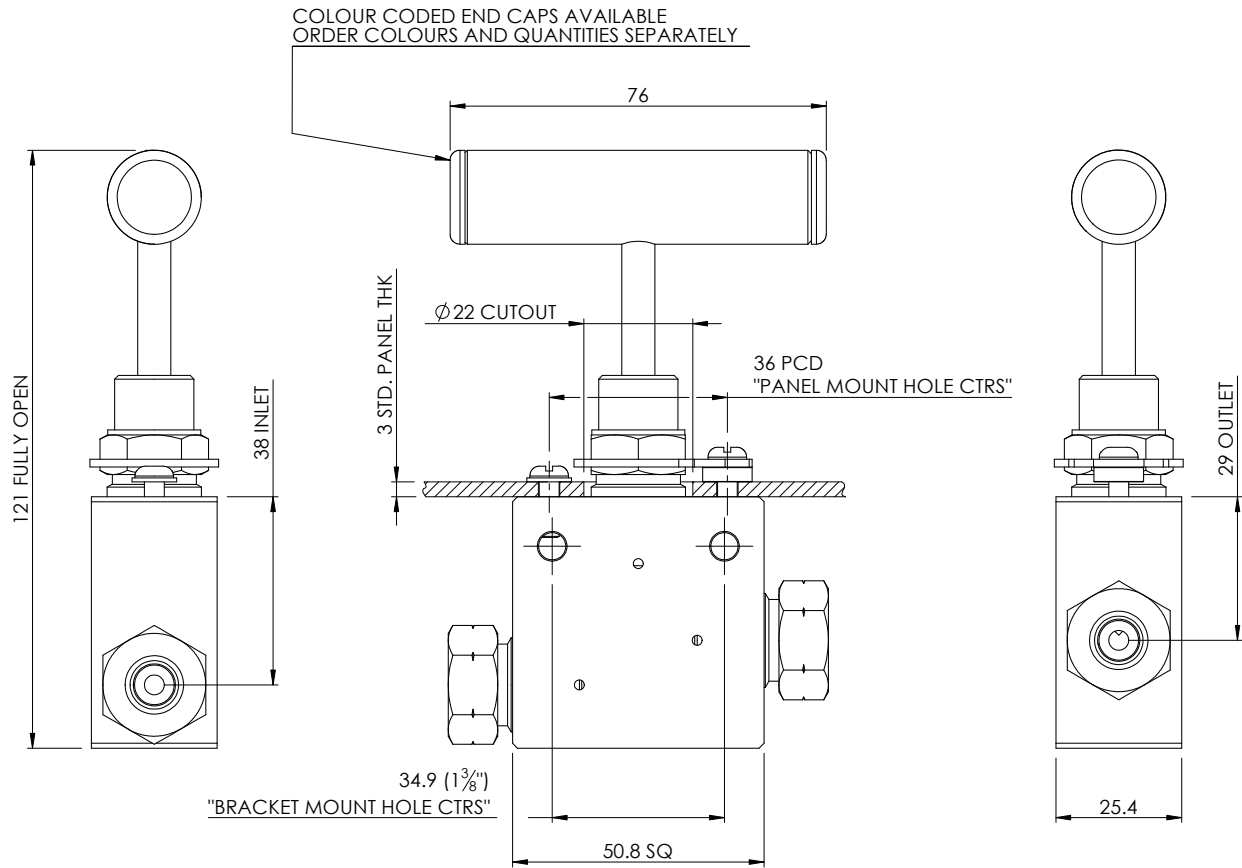
## STEWART-BUCHANAN GAUGES LTD

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DATA SHEET REF: NOTES SPACER-REV01-14



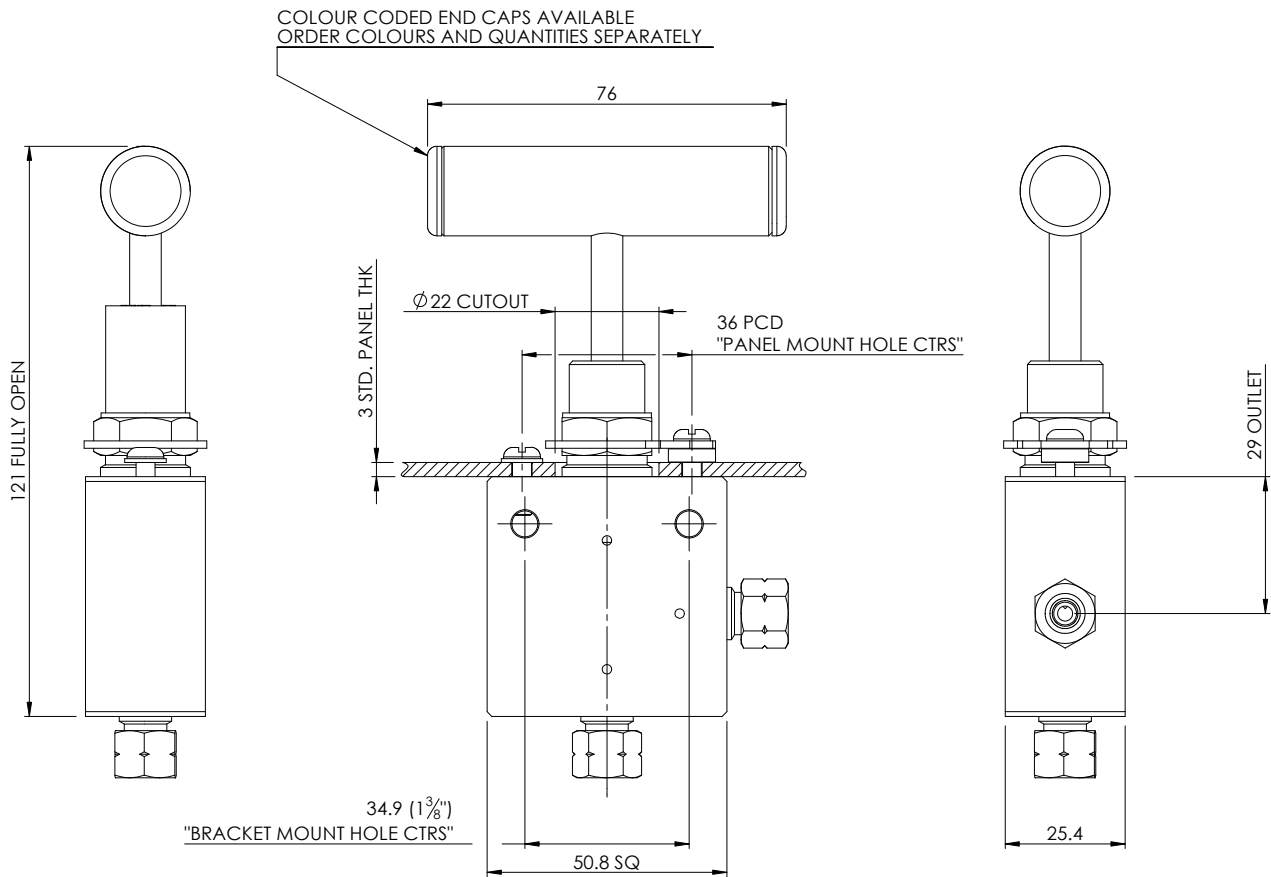
# STANDARD DIMENSIONS



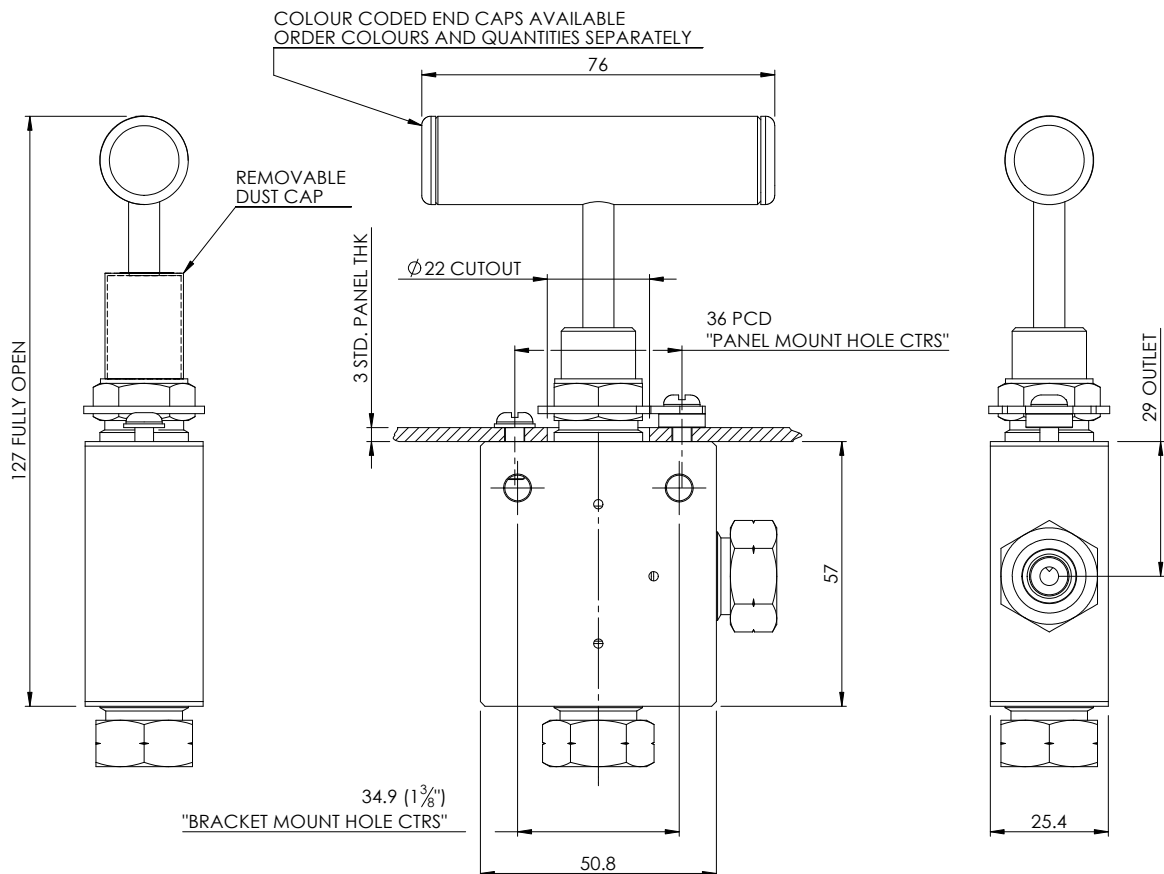
1/4" and 3/8" MP and HP Valve Geometry

Continued on Pages 4,5 & 6

# STANDARD DIMENSIONS

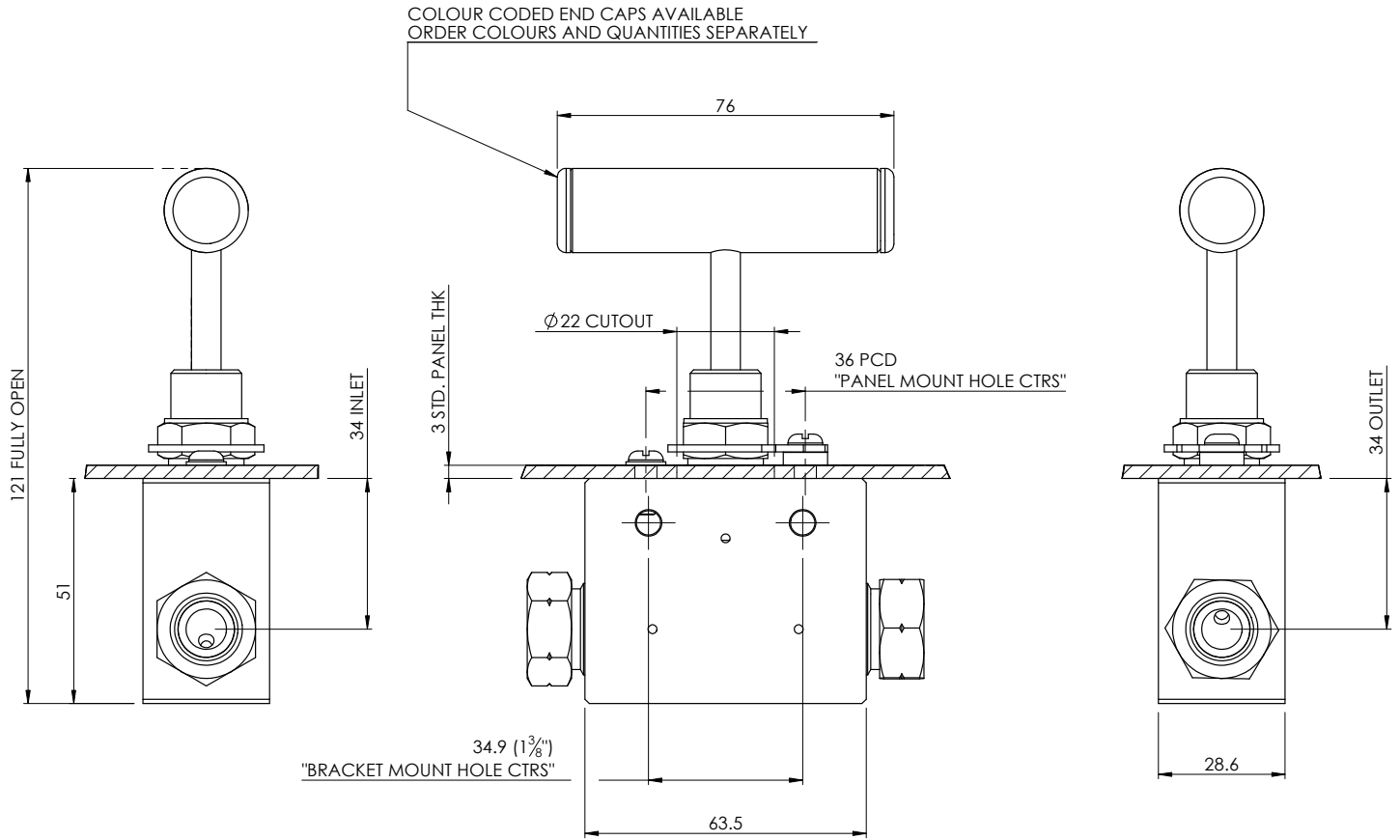


Right Angle 1/4" MP & HP Valve Geometry

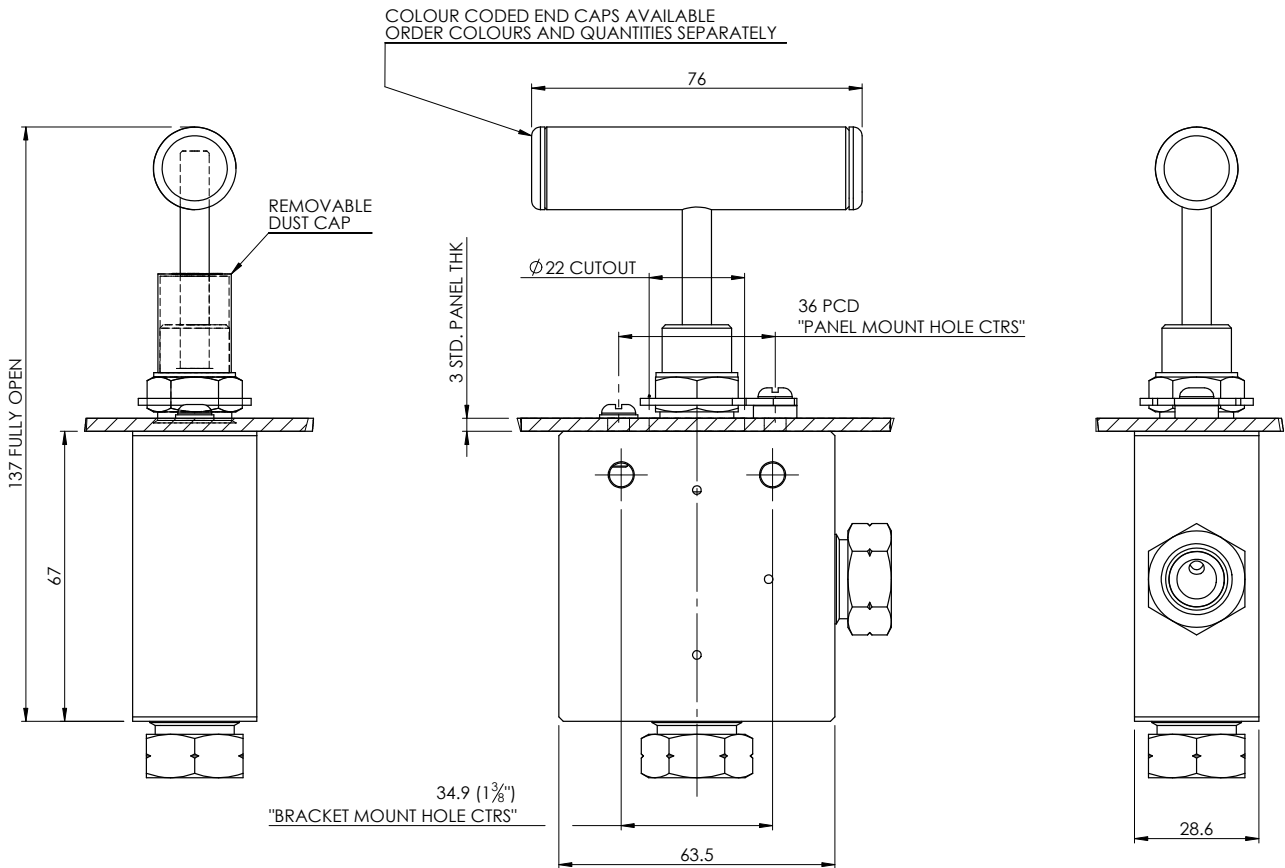


Right Angle 3/8" MP & HP Valve Geometry

# STANDARD DIMENSIONS

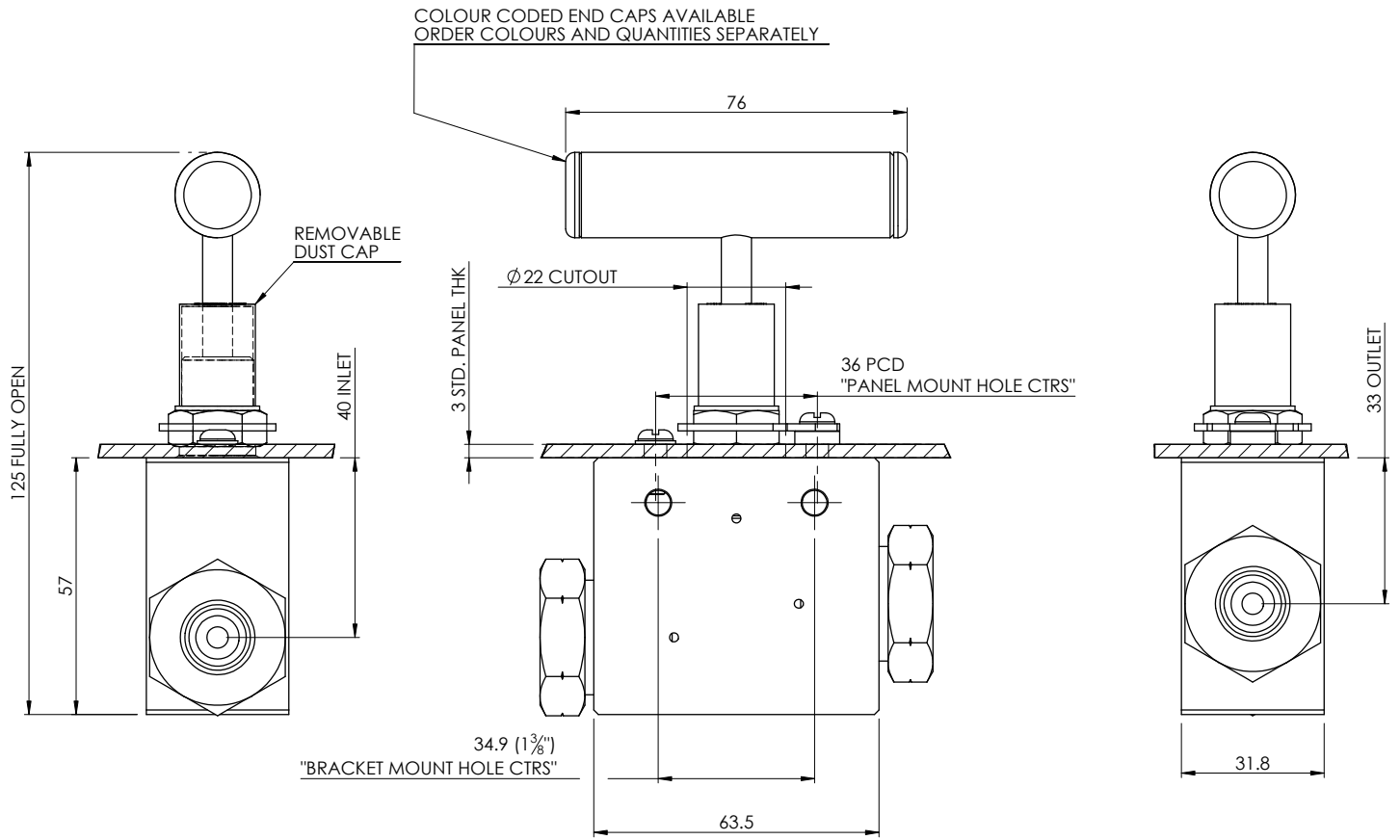


9/16" Medium Pressure Valve Geometry

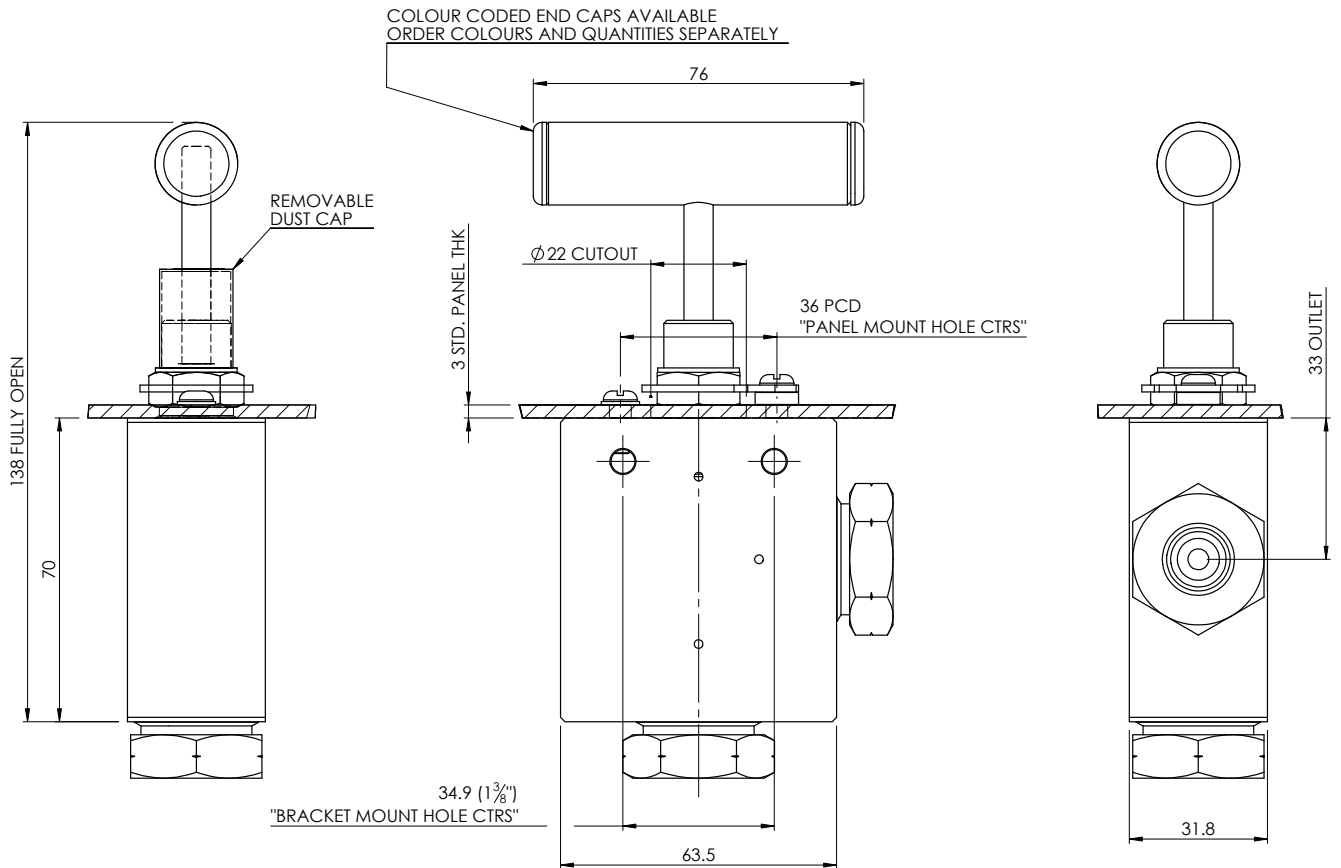


Right Angle 9/16" Medium Pressure Valve Geometry

# STANDARD DIMENSIONS



9/16" High Pressure Valve Geometry



Right Angle 9/16" High Pressure Valve Geometry

# SPECIFICATIONS

Varying specifications are available to suit your application and needs, the following is a guide please enquire for availability and options.

Maximum Working Pressures:- Medium Pressure to 20,000psi  
High Pressure to 30,000psi  
Temperature Rating:- PCTFE Packing @ 30,000psi -20°C to 100°C

## Constituent Materials

- Valve body (manifold) – 316 cold-worked stainless steel (not to NACE MR-01-75)
- Bonnet and Stem – 416 stainless steel
- Packing – PCTFE
- Packing Support – AMPCO M4

## Options – With Coding

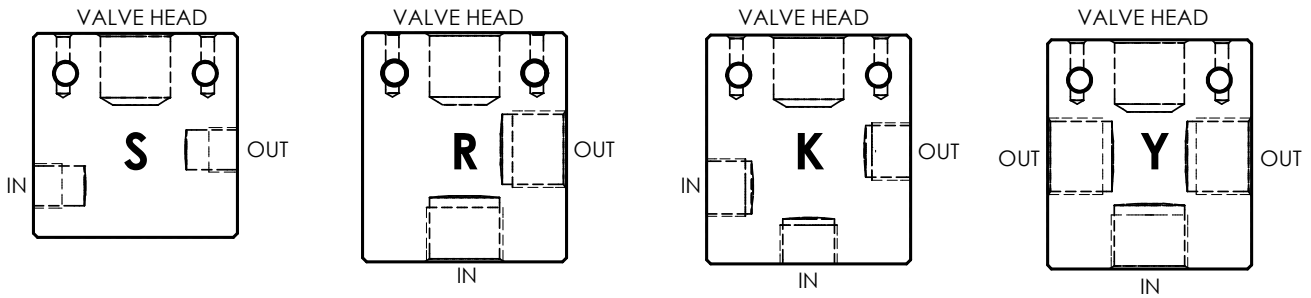
Pressure Connections – the G1 can be supplied with or without glands and collars – see connections section for part ordering details; the following relates to the connection type used with the valve body female thread.

MxM – Medium pressure male connection

HxM – High pressure male connection

**Note:** x = Tube OD code letter

Body Styles – various body styles available for routing and mounting variations. The image below shows the standard single valve body styles.



Other styles available to cover variations in routing are;

- S - 2 Way - Straight (in line)
- R - 2 Way - Right angle bottom entry
- K - 3 Way – twin input, side and bottom, side output
- Y - 3 Way – bottom entry input, twin output, opposing sides

Materials – some common machine-able exotic metals available;

HA = HASTELLOY® C-22 (UNS N06022)
IL = INCONEL® 625 (UNS N06625)
TI = TITANIUM Gr.2 (UNS R50400)
MO = MONEL® 400 (UNS N04400)
<b>Note: Other materials available on request.</b>

Other options;

- AC - Panel mount nut on bonnet
- AD - Lockable handle with padlock (round handwheel)
- AL - To NACE MR-01-75 (material and fluid dependant – contact SBG sales to discuss)
- AV - Degreased

The included options here are not necessarily an exhaustive list – contact SBG sales team to discuss your requirements and possible customisations to suit your system design.

# HOW TO ORDER

## Create your own G1 Needle Valve Number

Sample Part No					
Model	Inlet	Outlet	Body Style	Material	Options
G1	H6M	H6M	S	AI	AV
	Male pressure connections- Stewarts supplied			<b>Standard</b>	
	H4M = HP 1/4" Tube OD		S = Straight – 2 Way	AI – 316 Stainless Steel (cold drawn)	AA – Black hand wheel
	H6M = HP 3/8" Tube OD		R = Right Angle – 2 Way	<b>Exotic</b>	AC = Panel mount nut on bonnet
	H9M = HP 9/16" Tube OD		K = 3 Way – 2 Inputs	HA = HASTELLOY® C-276 (UNS N10276)	AD = Lockable handle with padlock
	M4M = MP 1/4" Tube OD		Y = 3 Way – 2 Outputs	IL = INCONEL® 625 (UNS N06625)	AL = To NACE MR-01-75 latest revision
	M6M = MP 3/8" Tube OD			TI = TITANIUM Gr.2 (UNS R50400)	AV = Degreased
	M9M = MP 9/16" Tube OD			MO = MONEL® 400 (UNS N04400)	
<b>Note: Other materials available on request</b>					
e.g. G1H6MH6MSPAIAV – Panel mounted, high pressure (to 30,000psi) stainless steel needle valve- degreased , with 3/8" Tube OD gland and collar for high pressure connection. Mounting screws and spacers are supplied for mounting through the panel.					



# PRESSURE CONNECTIONS How To Install

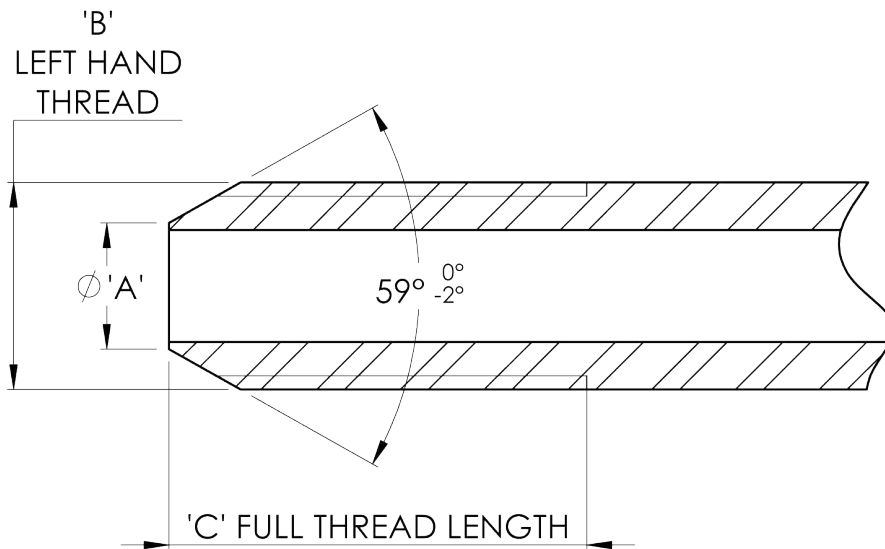
## Fittings Supplied By Stewarts:

If you are having the necessary connections supplied for your valve, it is recommended that the following instructions are followed for fitting and to ensure the required pressure seal is made. Stewarts Valves cannot guarantee the tube to body seal due to this being work carried out by others.

Ensure the tubing being used for installation is of a suitable wall thickness to withstand the pressure within the system; note that the connection type value refers to the OD of the tubing. Prepare cone and thread on the tube or nipple as per the detail below for the rating and connection being made.

## Fittings Not Supplied By Stewarts

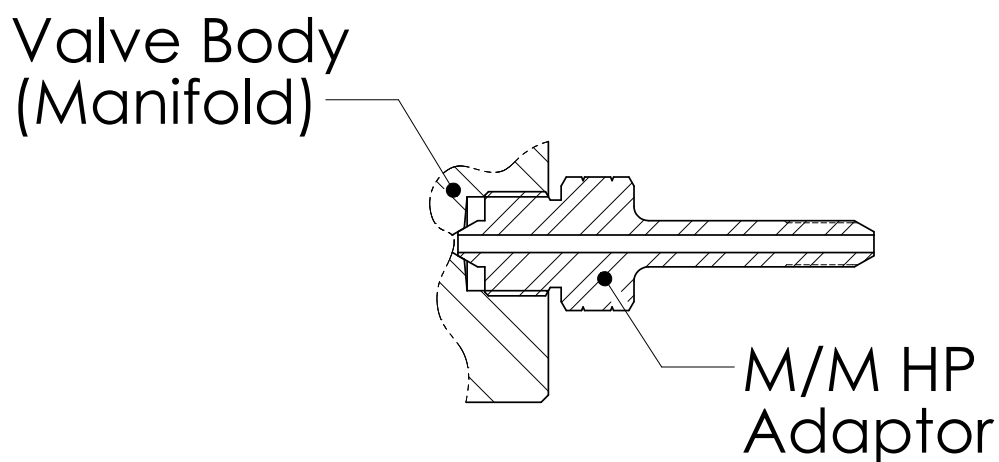
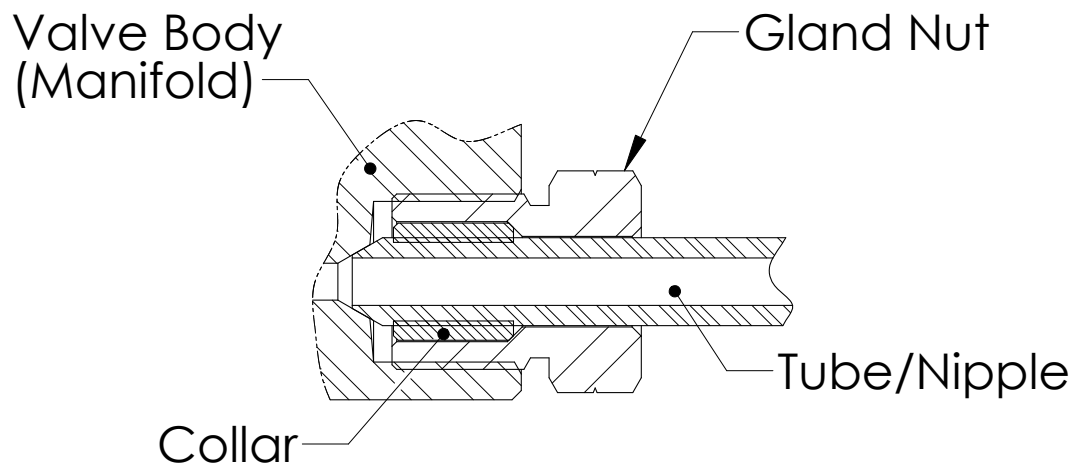
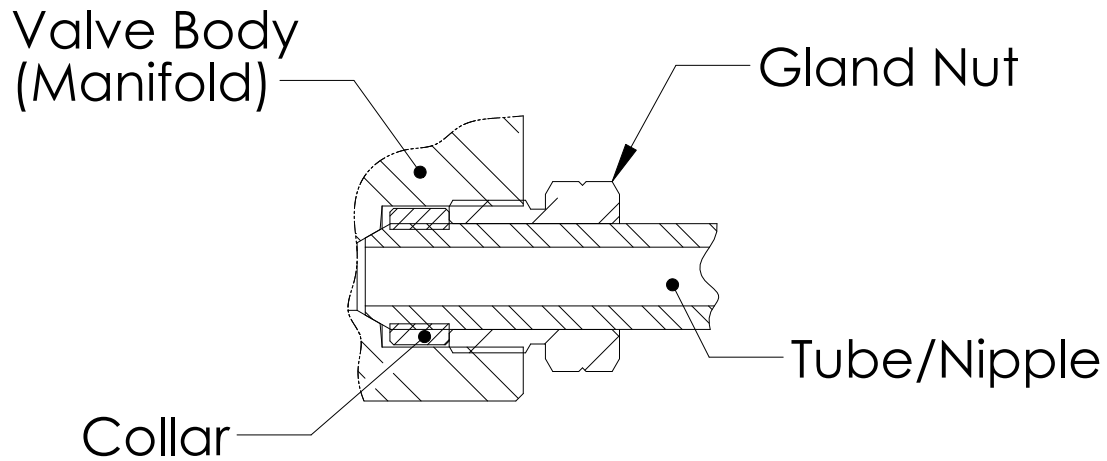
If you are sourcing other pressure connection fittings, or using those supplied by your installation contractor; simply screw into the inlet/outlet holes to the correct torque setting. This will be stated in the accompanying data sheet for the fittings and will differ whether the system is medium or high pressure. If using other sourced fittings, Stewarts Valves cannot guarantee the connection or work carried out by others.



Connection Fitting				
Connection Type	A	B	C	D
	mm	inch	mm	Nm (newton metre)
Medium Pressure				
1/4" MP	3.6	1/4" x 28 UNF	8.7	27
3/8" MP	6.5	3/8" x 24 UNF	11.4	41
9/16" MP	10.4	9/16" x 18 UNF	12.8	75
High Pressure				
1/4" HP	3.3	1/4" x 28 UNF	14.5	34
3/8" HP	5.6	3/8" x 24 UNF	19.2	68
9/16" HP	7.2	9/16" x 18 UNF	24.1	150

# MAKING CONNECTION

1. Slide gland nut over the end of the tube past the cone and thread.
2. Screw collar onto left hand thread on tube end – collar should be screwed to minimum one thread past end of cone face.
3. Apply suitable non-hardening lubricant to male thread of gland.
4. Screw assembled tube/gland end fitting into valve body female threaded hole until finger tight.
5. Using suitable mechanical aid; tighten to torque setting specified.



# PRESSURE CONNECTIONS

The following table details the part numbers of the pressure connection glands and collars. If connections are required with the valve, the part numbers and required quantities should be included when placing your order. If connection components are to be ordered a minimum 1 off. collar and 1 off. gland nut are required per inlet/outlet, i.e. a minimum of 2 off. each part per valve.

Pressure Connection Part No Ordering					
Connection Code	Valve Pressure Rating (psi)	Collar Part No	Gland Nut Part No	Tube OD	Max Pressure Rating (psi)
Medium Pressure					
M4M	20000	7313/SBMM1-4.20	7314/SBMM1-4.20	1/4"	20000
M6M	20000	7313/SBMM3-8.20	7314/SBMM3-8.20	3/8"	20000
M9M	20000	7313/SBMM9-16.20	7314/SBMM9-16.20	9/16	20000
High Pressure					
H4M	30000	7313/SBHM1-4.60	7314/SBHM1-4.60	1/4"	60000
H6M	30000	7313/SBHM3-8.60	7314/SBHM3-8.60	3/8"	60000
H9M	30000	7313/SBHM9-16.60	7314/SBHM9-16.60	9/16"	60000
Gender Changer Medium Pressure					
M4M	20000	7315/SBMM1-4.20		1/4"	20000
M4M	20000	7315/SBMM3-8.20		3/8"	20000
M4M	20000	7315/SBMM9-16.20		9/16	20000
Gender Changer High Pressure					
H9M	30000	7315/SHMM1-4.60		1/4"	60000
H9M	30000	7315/SHMM3-8.60		3/8"	60000
H9M	30000	7315/SHMM9-16.60		9/16	60000

Note: That within the Medium and High pressure ranges it is possible to mix the connector sizes, this may be useful when other components in your system do not have matching thread sizes and the valve is also used to convert the tubing size.

