

PHPK Technologies Cryogenic Valve Catalog



PHPK Technologies Cryogenic Valves

PHPK valves and equipment are installed and in use at all National Laboratories in the United States. Our equipment supports launch complexes, University laboratories, industrial applications, and many other cryogenic processes around the world. Valves designed and made by PHPK have proven to provide decades of reliable use in critical applications to demanding customers.

Materials of Construction

Body castings are lost wax investment cast stainless steel and are 100% radiographed and zygo inspected. All internal components and bonnet flanges are 300-series austenitic stainless steel. Seat seals are Neoflon PCTFE M-400H, (aka Kel-F). Bonnet O-ring seals are Viton. Bonnet seals are available in other materials for special applications and specifications.

All materials used in the manufacture of PHPK valves are supplied with material certification. Full traceability in valves is available upon request for special applications.

Engineered Design

- Designed for use in cryogenic application to minimize heat influx
- Operable in multiple orientations
- Easy to maintain, top entry without vacuum loss
- Custom plugs may be cut to exact process requirements, including turndown ratio
- Custom configurations of actuation packages are available
- Other materials of construction may be used

Quality Fabrication

- Welders certified to ASME Section IX
- Precision-machined for smooth operation
- Fabrication in a ASME Section VIII facility

Inspection, Testing, and Cleaning

- Pipe Size body castings 100% radiographed
- Pipe Size body castings 100% liquid penetrant (Zygo) inspected
- Pressure tested to Code requirements
- Leak tested across the seat to bubble tight
- Functional tested prior to shipment
- Mass spectrometer leak test to 1×10^{-9} scc/sec helium maximum
- Commercially cleaned to visually clean industry standards
- Specialty cleaning including oxygen service cleaning available on request

Recommended Usage

- Standard Length valves are typical for liquid hydrogen (-423°F) temperatures and above.
- Helium Length valves are typical for liquid helium (-454°F) temperatures and above.
- Ultra Low Heat Leak valves are typical for liquid helium (-454°F) temperatures at sub-atmospheric operating pressure.
- Certain valves can be used at pressures up to 500 PSIG. Consult factory for details.



PHPK Application Information and Model Support

3D models of PHPK products may be requested at www.phpk.com/3D-CAD-Request, and requests should start with the information listed below. Our engineering support group can provide a 3D model of the requested item to you, or help specify an appropriate valve for your application and send you the geometry information. If you would like to discuss a solution, call 614-486-4750 for assistance.

Pressure: _____

Temperature: _____

Process fluid: _____

Phase (Liquid, Gas): _____

Valve Function (Control or On/Off): _____

Actuator or Handwheel: _____

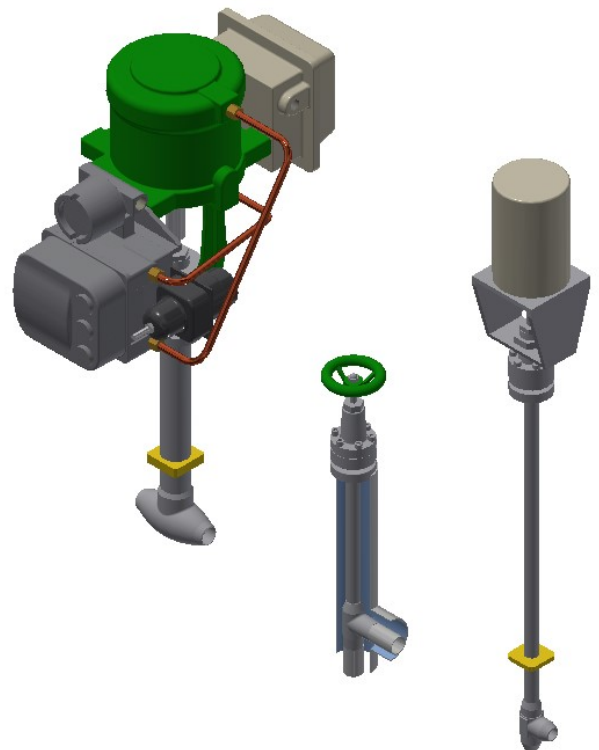
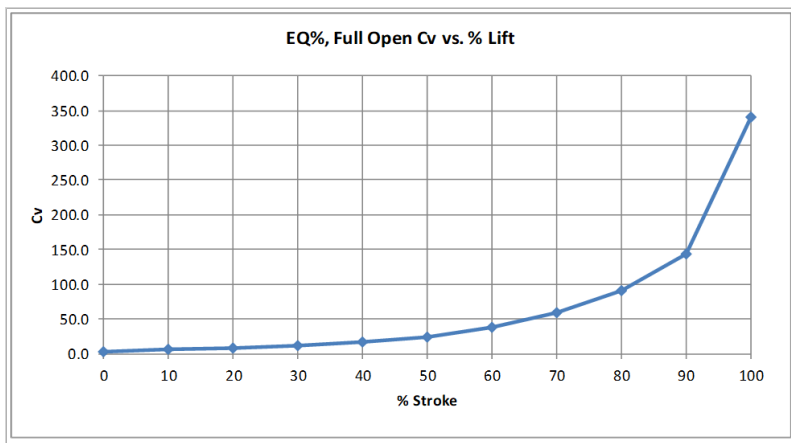
Required Flow Rate: _____

End Connections: _____

— OR —

Supply a part number created from the ordering sheet in this catalog directly to www.phpk.com/3D-CAD-Request for a model.

Flow and thermal performance for PHPK valves are shown in the following pages.



Pipe Size Valves - Ordering and Performance Information

Sample Order Code: **PV - 60 - O - 0100 - G - B - 010 - NON**

<u>PV</u>	<u>60</u>	<u>O</u>	<u>0100</u>	<u>G</u>	<u>B</u>	<u>010</u>	<u>NON</u>
Valve Style / Length	Valve Function	Plug Type	Line Size	Body Style	End Connection	End Prep	Jacket Options
<u>PV</u> Standard Length	<u>00</u> Check Valve	<u>C</u> Check	<u>0050</u> 1/2" NPS	<u>A</u> Angle	<u>B</u> Butt Weld	<u>000</u> Socket or Thread	<u>NON</u> Non Jacketed
<u>HPV</u> Helium Length	<u>60</u> Manual On/Off	<u>L</u> Linear	<u>0075</u> 3/4" NPS	<u>G</u> Globe	<u>S</u> Socket Weld	<u>005</u> NPS Schedule 5	<u>VJ</u> VJ Open
<u>LPV</u> Ultra Low Heat Leak	<u>70</u> Auto On/Off	<u>O</u> On/Off	<u>0100</u> 1" NPS		<u>T*</u> FNPT < 2"	<u>010</u> NPS Schedule 10	<u>VJC</u> VJ Closed
<u>CV</u> Standard Length Check	<u>80</u> Auto Flow Control	<u>E</u> Equal %	<u>0150</u> 1-1/2" NPS		<u>F</u> Flanged	<u>040</u> NPS Schedule 40	
<u>HCV</u> Helium Length Check	<u>90</u> Manual Flow Control	<u>X</u> Modeling Only	<u>0200</u> 2" NPS			<u>150</u> ANSI Class Flange	
			<u>0300</u> 3" NPS			<u>300</u> ANSI Class Flange	
			<u>0400</u> 4" NPS			<u>ST</u> Stub End Flange	
			<u>0600</u> 6" NPS				
			<u>0800</u> 8" NPS				
			<u>1000</u> 10" NPS				

Pipe Size Valves - Ordering and Performance Information

Pipe Size On/Off Valve Flow Data		
PV, HPV, and LPV		
Size NPS	Globe Valves Cv	Angle Valves Cv
1/2"	7.1	9.2
3/4"	9.4	12.2
1"	15.7	20.4
1-1/2"	35.7	46.4
2"	61.7	80.2
3"	144	187.2
4"	257.9	335.3

Pipe Size Control Valve Flow Data		
PV, HPV, and LPV Cv Values		
Size NPS	Globe Valves Cv	Angle Valves Cv
1/2"	5.8	7.5
3/4"	6	7.8
1"	9.2	12.0
1-1/2"	24.7	32.1
2"	37.6	48.9
3"	105.4	137.0
4"	150.4	195.5

Standard Length Valve Thermal Performance				
PV and CV Heat Leaks				
Valve Line Size NPS	Cooldown Loss		Steady State Heat Leak	
	80K	20K	80K	20K
	BTU (kJ)	BTU (kJ)	BTU/hr (W)	BTU/hr (W)
1/2"	81 (85.5)	86 (90.7)	10.5 (3.1)	11.6 (3.4)
3/4"	81 (85.5)	86 (90.7)	10.5 (3.1)	11.6 (3.4)
1"	99 (104.5)	105 (110.8)	10.5 (3.1)	11.6 (3.4)
1-1/2"	189 (199.4)	200 (119.4)	13.7 (4.0)	15.0 (4.4)
2"	324 (341.8)	342 (360.8)	18.1 (5.3)	20.0 (5.9)
3"	990 (1044.5)	1045 (1102.5)	39.7 (11.6)	44.1 (12.9)
4"	1260 (1329.4)	1330 (1403.2)	47.9 (14.0)	53.1 (15.6)

Helium Length Valve Thermal Performance	
HPV and HCV Heat Leaks	
Steady State Heat Leak	
Valve Line Size NPS	4.2K BTU/hr (W)
1/2"	4.5 (1.3)
3/4"	4.5 (1.3)
1"	4.5 (1.3)
1-1/2"	10.0 (2.9)
2"	13.2 (3.9)
3"	29.0 (8.5)
4"	35.0 (10.3)

Tube Size Valves - Ordering and Performance Information

Sample Order Code: **TV - 17 - L - 0067 - A - B - 010 - VJ**

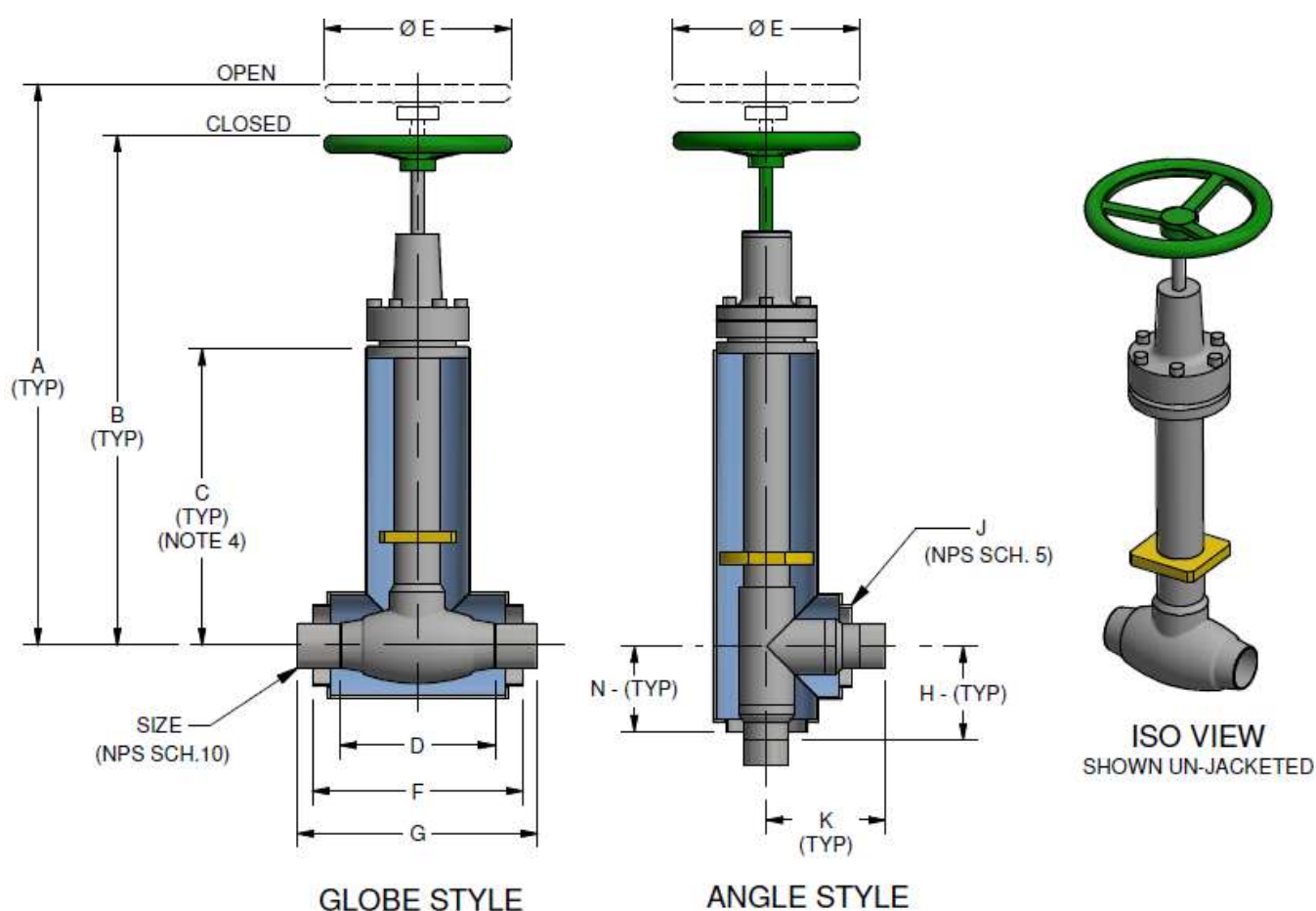
<u>TV</u>	<u>17</u>	<u>L</u>	<u>0067</u>	<u>A</u>	<u>B</u>	<u>010</u>	<u>VJ</u>
Valve Style / Length	Valve Function	Plug Type	Line Size	Body Style	End Connection	End Prep	Jacket Options
<u>TV</u> Standard Length	<u>11</u> Manual On/Off	<u>L</u> Linear	<u>0037</u> 3/8" Tube	<u>A</u> Angle	<u>B</u> Butt Weld	<u>000</u> Socket or Thread	<u>NON</u> Non Jacketed
<u>HTV</u> Helium Length	<u>13</u> Auto On/Off	<u>O</u> On/Off	<u>0050</u> 1/2" Tube	<u>G</u> Globe	<u>S</u> Socket Weld <3/4" Tube	<u>005</u> NPS Schedule 5	<u>VJ</u> VJ Open
<u>LTV</u> Ultra Low Heat Leak	<u>15</u> Auto Flow Control	<u>E</u> Equal %	<u>0067</u> 3/8" NPS		<u>I</u> FNPT < 1/2"	<u>010</u> NPS Schedule 10	<u>VJC</u> VJ Closed
	<u>17</u> Manual Flow Control	<u>X</u> Modeling Only	<u>0075</u> 3/4" Tube		<u>M</u> MNPST < 1/2"	<u>040</u> NPS Schedule 40	
			<u>0084</u> 1/2" NPS			<u>035</u> 0.035" Tube Wall	
			<u>0100</u> 1" Tube			<u>049</u> 0.049" Tube Wall	
			<u>0105</u> 3/4" NPS			<u>065</u> 0.065" Tube Wall	

Tube Size - On/Off and Control Valve Performance Data

TV-11, TV-13

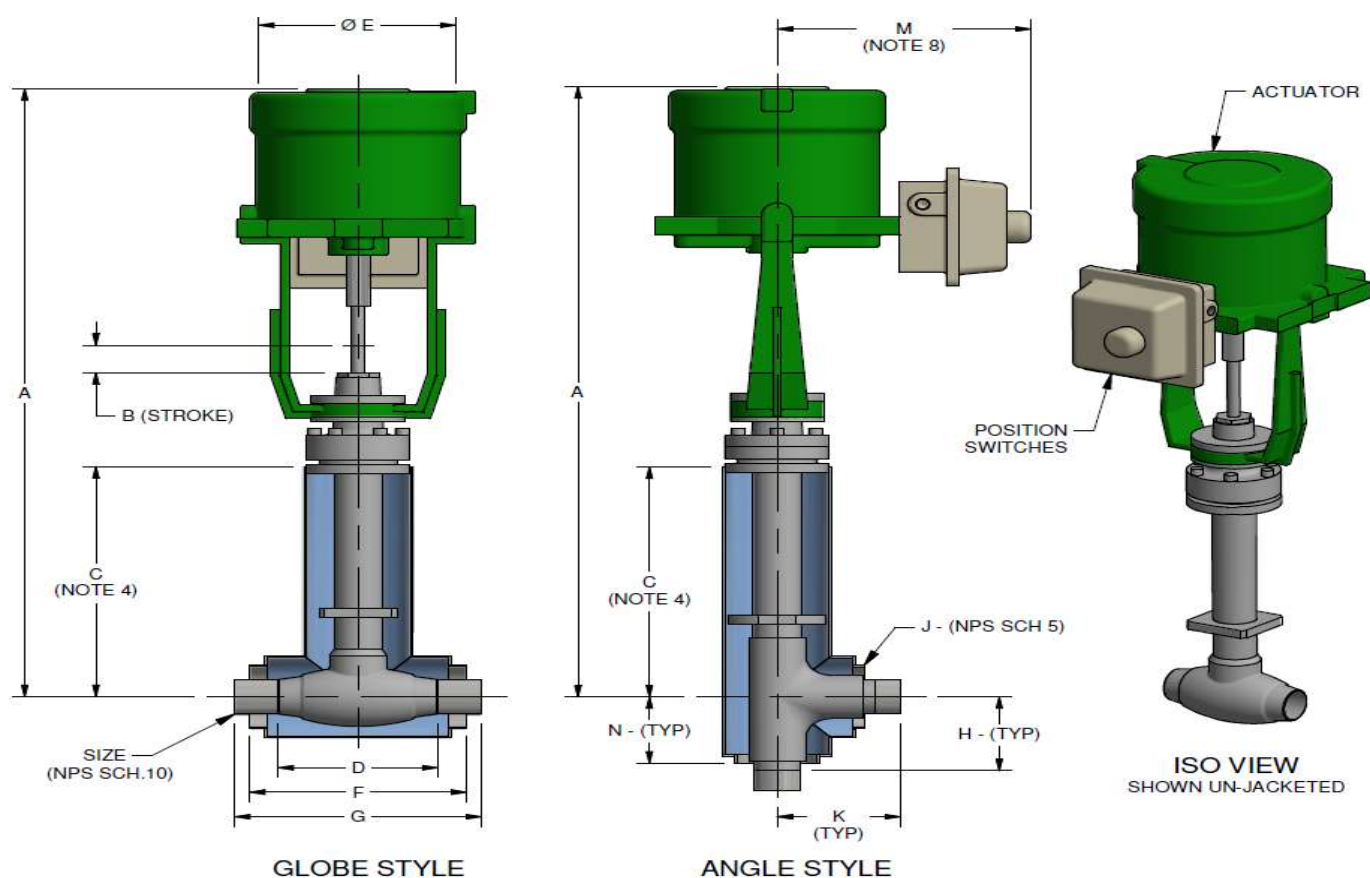
Steady State Heat Leak

Size	80K	20K
TV-11, TV-13	BTU/hr (W) 4.4 (1.3)	BTU/hr (W) 4.9 (1.4)
Tube size valve Cv	Globe Valves 2.5	Angle Valve 3.25



Valve Dimensions (in)												
Basic Model	Size (NPS)	A	B	C	D	E	F	G	H	J	K	N
PV-60-0050	1/2	18-5/8	17-7/8	11-1/4	4-1/2	6	6-3/4	8	2-1/4	2	4	3-3/8
PV-60-0075	3/4	18-5/8	17-7/8	11-1/4	4-1/2	6	6-3/4	8	2-1/4	2	4	3-3/8
PV-60-0100	1	18-5/8	17-7/8	11-1/4	5-3/8	6	7-1/2	8-3/4	3-1/2	2-1/2	4-3/8	3-3/4
PV-60-0150	1-1/2	21-3/4	20-1/4	12-5/8	6-5/8	8	9	10-1/4	4	3	5-1/8	3-5/8
PV-60-0200	2	21-3/4	20-1/4	12-5/8	7-5/8	8	10-1/2	11-3/4	4-1/2	4	5-7/8	4-3/8
PV-60-0300	3	29-7/8	27-3/8	17-3/8	11-1/8	12	13-1/4	15-1/2	5-5/8	5	9	7-1/2
PV-60-0400	4	29-7/8	27-3/8	17-3/8	13-1/8	12	13-1/4	15-1/2	6-1/4	6	10	8-1/2

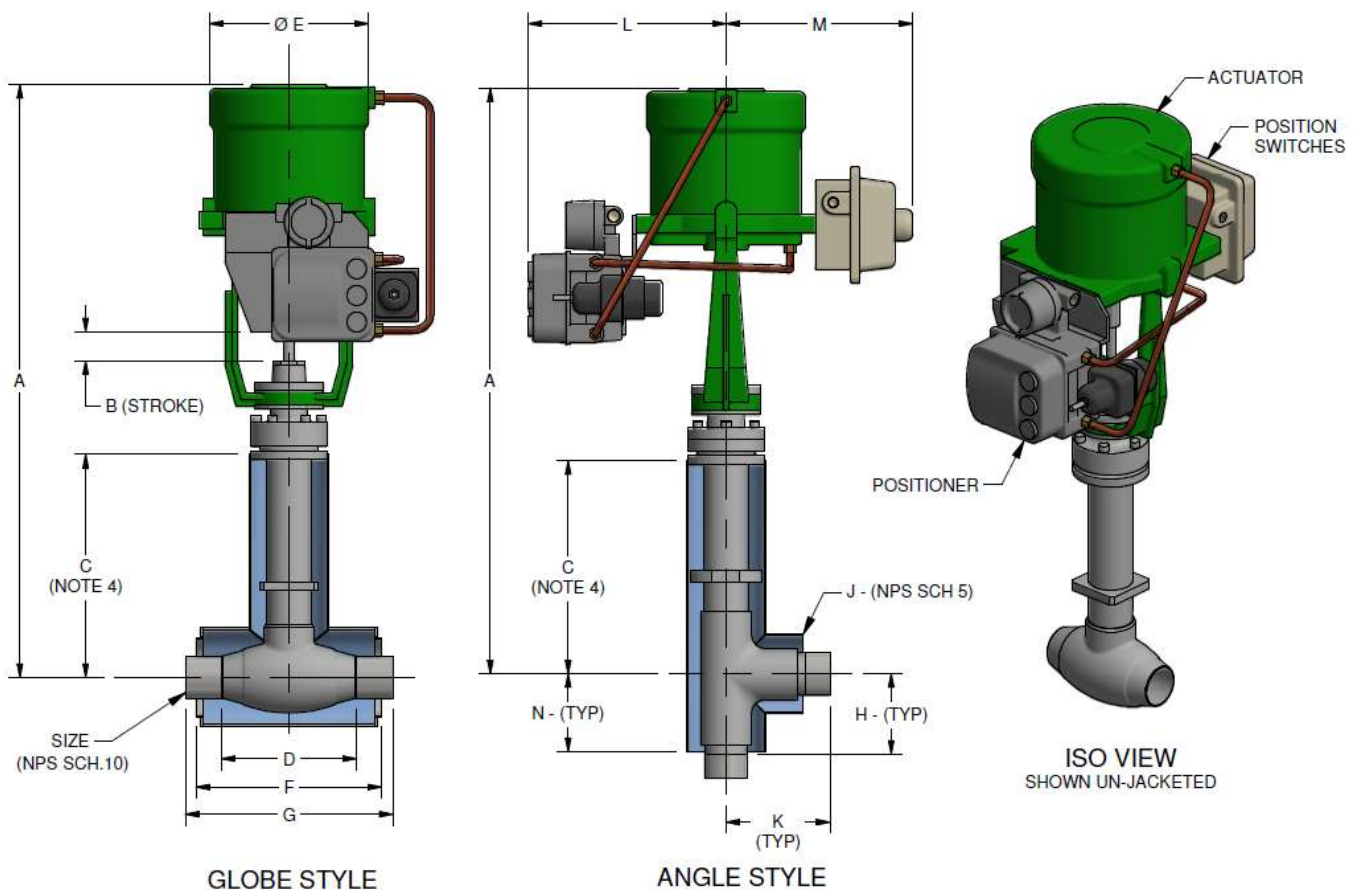
- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. PV-60 and PV-90 valves are dimensionally identical.
 6. PV-90 valves are supplied with equal % or linear flow control plugs. Custom designed plugs can be supplied upon request.
 7. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.



Valve Dimensions (in)

Basic Model	Size (NPS)	A	B	C	D	E	F	G	H	J	K	M	N
PV-70-0050	1/2	26-3/4	3/4	11-1/4	4-1/2	8	6-3/4	8	2-1/4	2	4	9-5/8	3-3/8
PV-70-0075	3/4	26-3/4	3/4	11-1/4	4-1/2	8	6-3/4	8	2-1/4	2	4	9-5/8	3-3/8
PV-70-0100	1	26-3/4	3/4	11-1/4	5-3/8	8	7-1/2	8-3/4	3-1/2	2-1/2	4-3/8	9-5/8	3-3/4
PV-70-0150	1-1/2	34-1/2	1-1/2	12-5/8	6-5/8	10	9	10-1/4	4	3	5-1/8	10-5/8	3-5/8
PV-70-0200	2	34-1/2	1-1/2	12-5/8	7-5/8	10	10-1/2	11-3/4	4-1/2	4	5-7/8	10-5/8	4-3/8
PV-70-0300	3	40-1/4	2	17-3/8	11-1/8	10	13-1/4	15-1/2	5-5/8	5	9	10-5/8	7-1/2
PV-70-0400	4	40-1/4	2	17-3/8	13-1/8	10	13-1/4	15-1/2	6-1/4	6	10	10-5/8	8-1/2

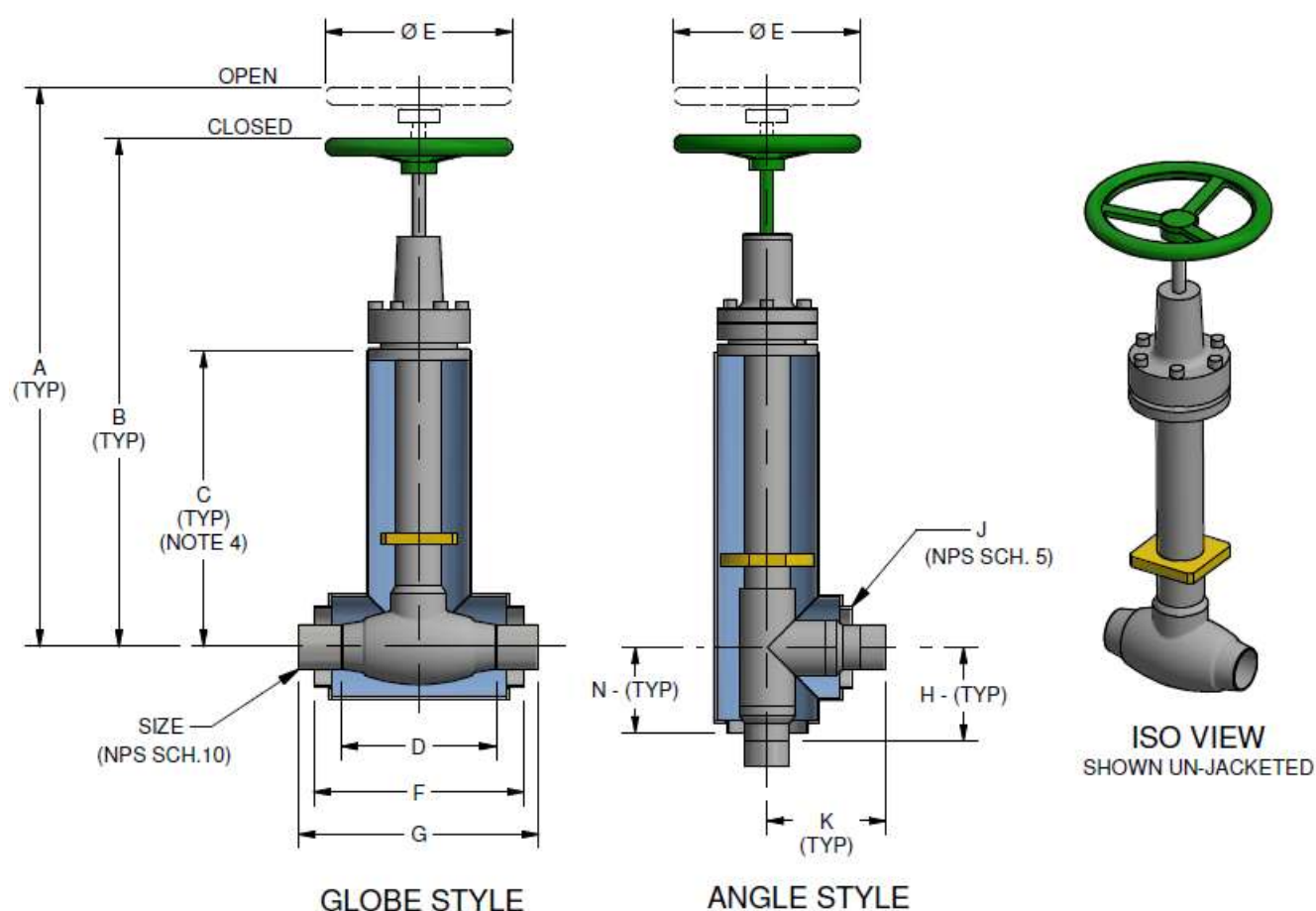
- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. Valve actuation packages are identical for both angle and globe style valves.
 6. Standard actuation packages are shown. Custom actuation packages are available upon request.
 7. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.
 8. Actuation package is shown with position switches. If switches are not required, disregard dimension M.



Valve Dimensions (in)

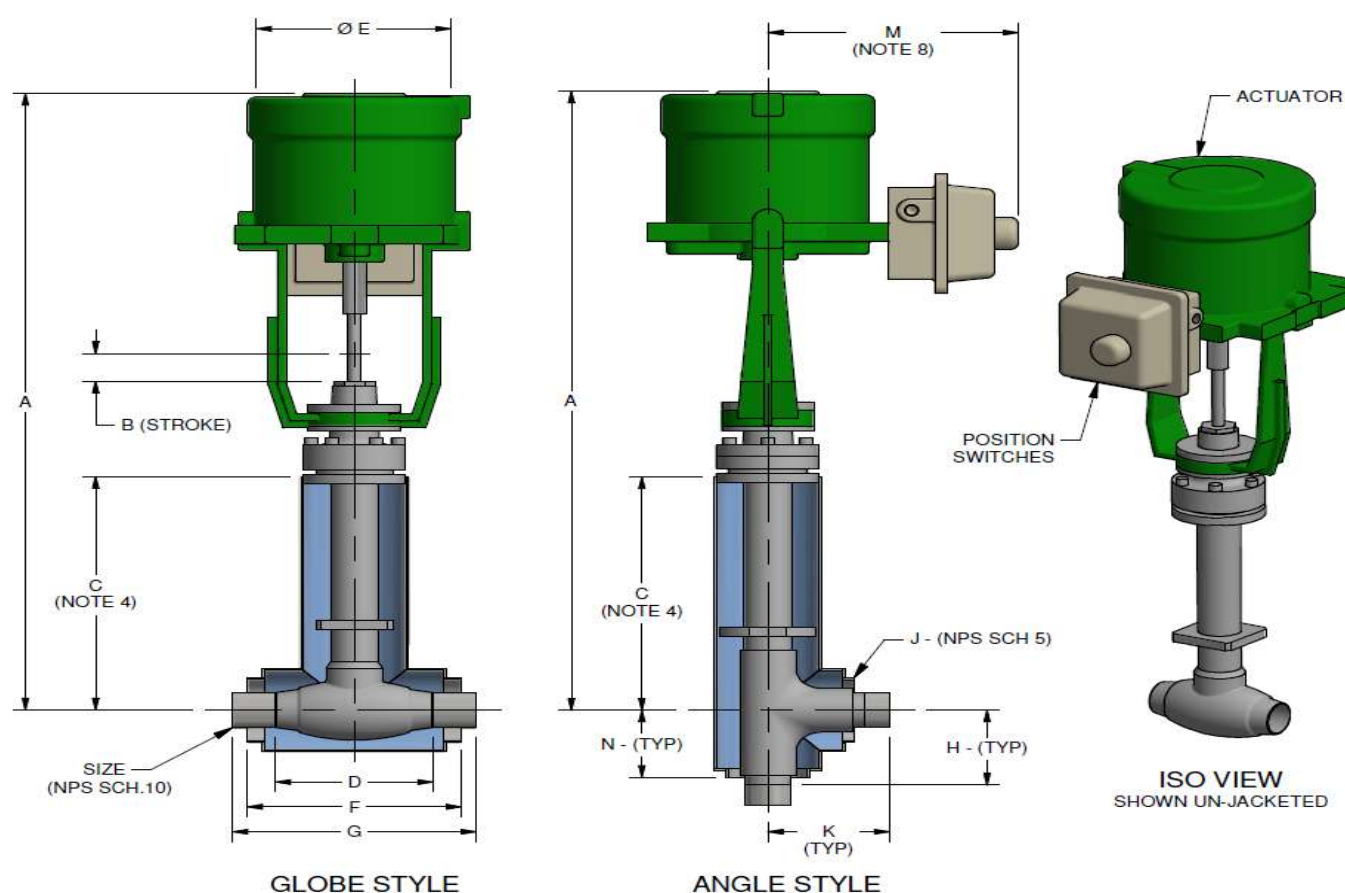
Basic Model	Size (NPS)	A	B	C	D	E	F	G	H	J	K	L	M	N
PV-80-0050	1/2	26-3/4	3/4	11-1/4	4-1/2	8	6-3/4	8	2-1/4	2	4	10-1/4	9-5/8	3-3/8
PV-80-0075	3/4	26-3/4	3/4	11-1/4	4-1/2	8	6-3/4	8	2-1/4	2	4	10-1/4	9-5/8	3-3/8
PV-80-0100	1	26-3/4	3/4	11-1/4	5-3/8	8	7-1/2	8-3/4	3-1/2	2-1/2	4-3/8	10-1/4	9-5/8	3-3/4
PV-80-0150	1-1/2	34-1/2	1-1/2	12-5/8	6-5/8	10	9	10-1/4	4	3	5-1/8	11-1/4	10-5/8	3-5/8
PV-80-0200	2	34-1/2	1-1/2	12-5/8	7-5/8	10	10-1/2	11-3/4	4-1/2	4	5-7/8	11-1/4	10-5/8	4-3/8
PV-80-0300	3	40-1/4	2	17-3/8	11-1/8	10	13-1/4	15-1/2	5-5/8	5	9	11-1/4	10-5/8	7-1/2
PV-80-0400	4	40-1/4	2	17-3/8	13-1/8	10	13-1/4	15-1/2	6-1/4	6	10	11-1/4	10-5/8	8-1/2

- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
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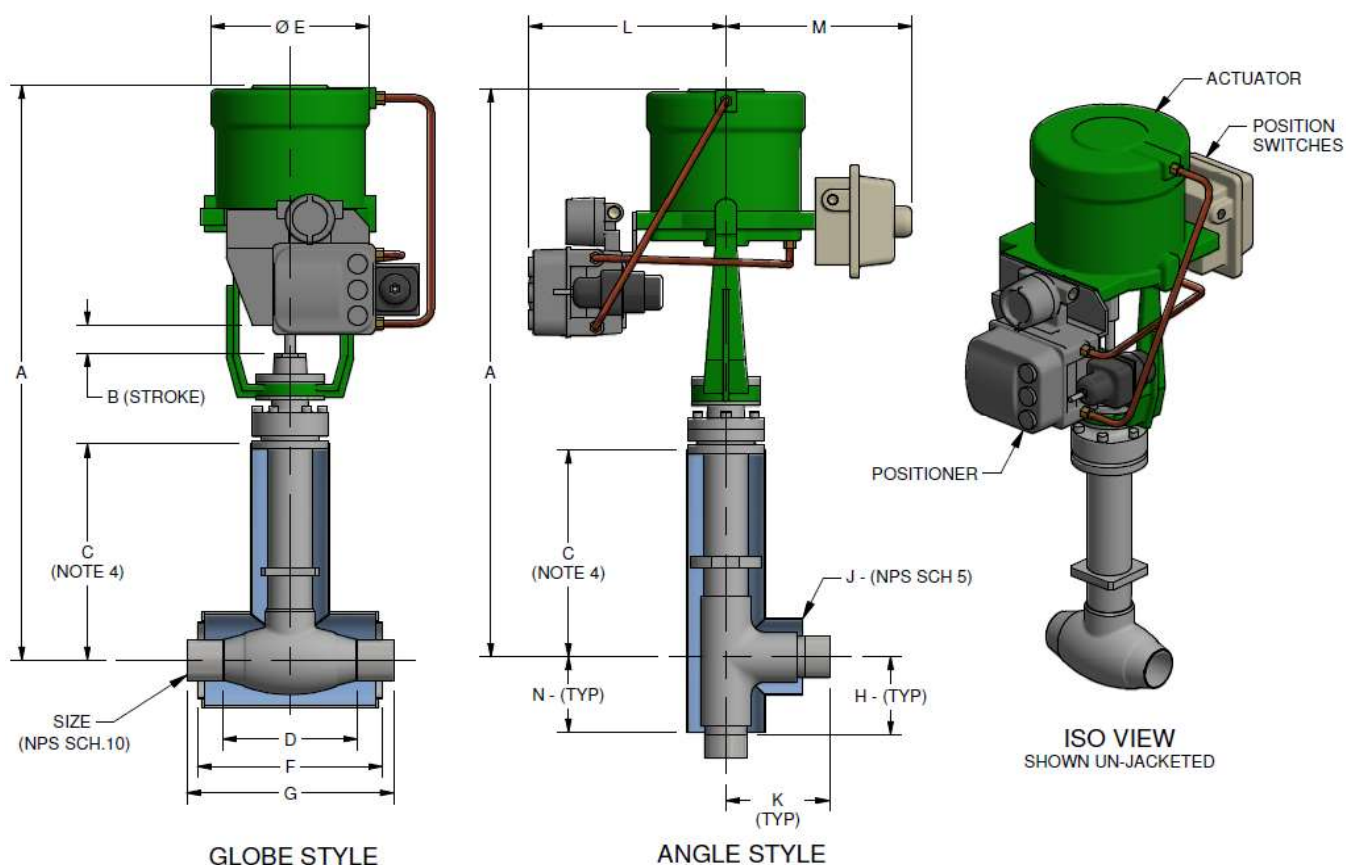
Valve Dimensions (in)												
Basic Model	Size (NPS)	A	B	C	D	E	F	G	H	J	K	N
HPV-60-0050	1/2	30-1/4	29-1/2	22-7/8	4-1/2	6	6-3/4	8	2-1/4	2	4	3-3/8
HPV-60-0075	3/4	30-1/4	29-1/2	22-7/8	4-1/2	6	6-3/4	8	2-1/4	2	4	3-3/8
HPV-60-0100	1	30-1/4	29-1/2	22-7/8	5-3/8	6	7-1/2	8-3/4	3-1/2	2-1/2	4-3/8	3-3/4
HPV-60-0150	1-1/2	32	30-1/2	22-7/8	6-5/8	8	9	10-1/4	4	3	5-1/8	3-5/8
HPV-60-0200	2	32	30-1/2	22-7/8	7-5/8	8	10-1/2	11-3/4	4-1/2	4	5-7/8	4-3/8
HPV-60-0300	3	41-1/8	29-1/2	28-5/8	11-1/8	12	13-1/4	15-1/2	5-5/8	5	9	7-1/2
HPV-60-0400	4	41-1/8	29-1/2	28-5/8	13-1/8	12	13-1/4	15-1/2	6-1/4	6	10	8-1/2

- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. HPV-60 and HPV-90 valves are dimensionally identical.
 6. HPV-90 valves are supplied with equal % or linear flow control plugs. Custom designed plugs can be supplied upon request.
 7. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.



Valve Dimensions (in)													
Basic Model	Size (NPS)	A	B	C	D	E	F	G	H	J	K	M	N
HPV-70-0050	1/2	38-3/4	3/4	22-7/8	4-1/2	8	6-3/4	8	2-1/4	2	4	9-5/8	3-3/8
HPV-70-0075	3/4	38-3/4	3/4	22-7/8	4-1/2	8	6-3/4	8	2-1/4	2	4	9-5/8	3-3/8
HPV-70-0100	1	38-3/4	3/4	22-7/8	5-3/8	8	7-1/2	8-3/4	3-1/2	2-1/2	4-3/8	9-5/8	3-3/4
HPV-70-0150	1-1/2	44-3/4	1-1/2	22-7/8	6-5/8	10	9	10-1/4	4	3	5-1/8	10-5/8	3-5/8
HPV-70-0200	2	44-3/4	1-1/2	22-7/8	7-5/8	10	10-1/2	11-3/4	4-1/2	4	5-7/8	10-5/8	4-3/8
HPV-70-0300	3	51-1/2	2	28-5/8	11-1/8	10	13-1/4	15-1/2	5-5/8	5	9	10-5/8	7-1/2
HPV-70-0400	4	51-1/2	2	28-5/8	13-1/8	10	13-1/4	15-1/2	6-1/4	6	10	10-5/8	8-1/2

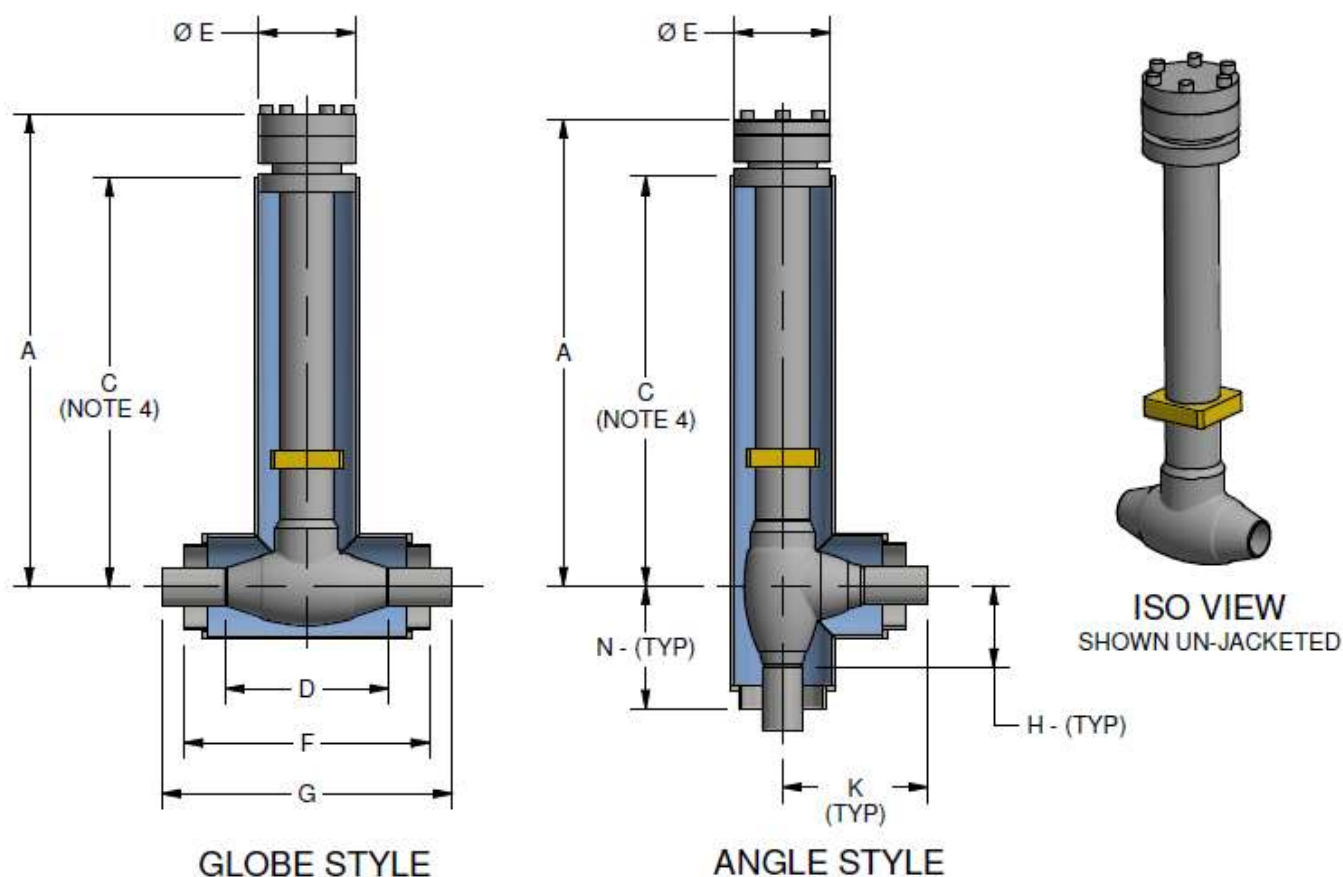
- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
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 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. Valve actuation packages are identical for both angle and globe style valves.
 6. Standard actuation packages are shown. Custom actuation packages are available upon request.
 7. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.
 8. Actuation package is shown with position switches. If switches are not required, disregard dimension M.



Valve Dimensions (in)

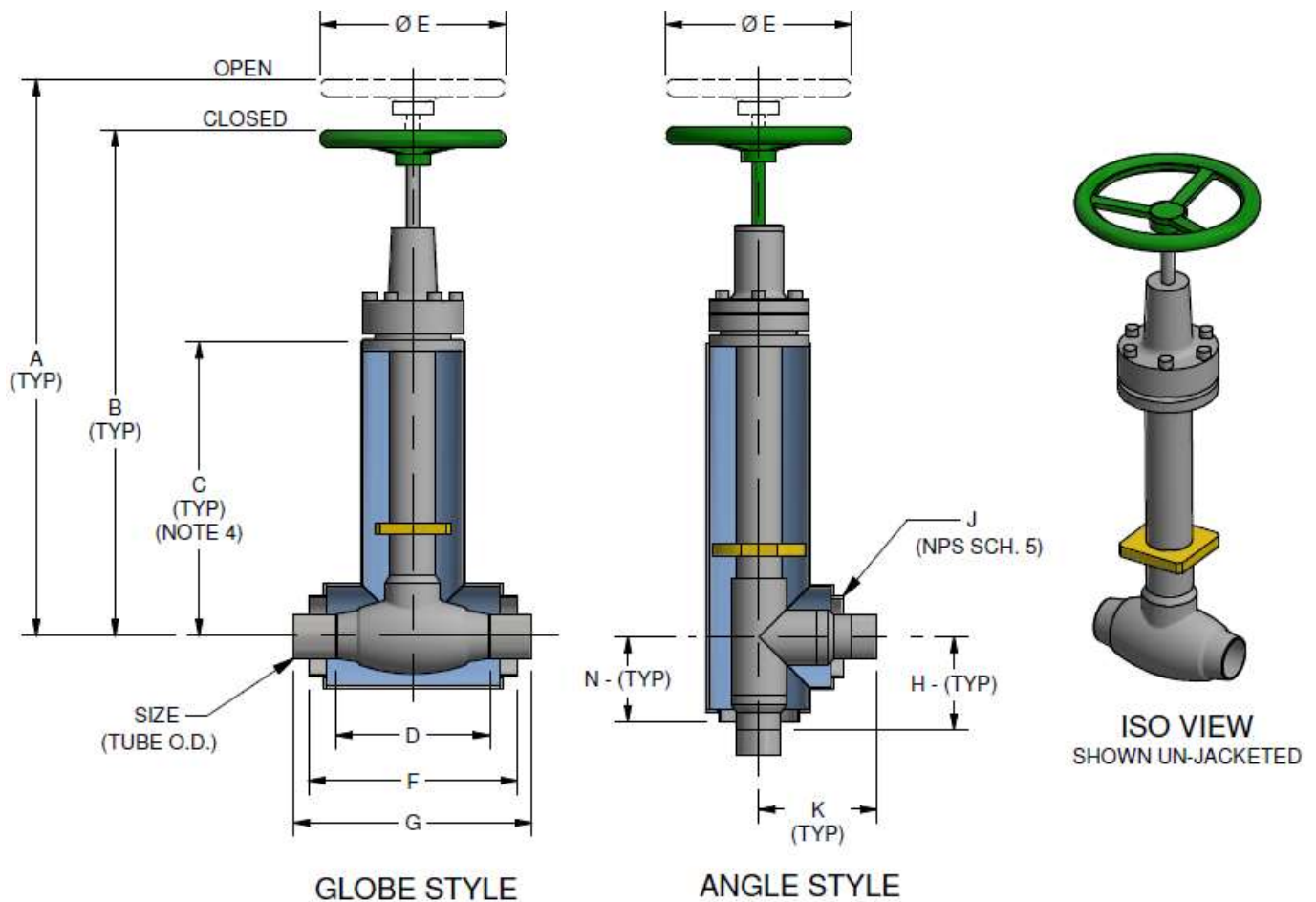
Basic Model	Size (NPS)	A	B	C	D	E	F	G	H	J	K	L	M	N
HPV-80-0500	1/2	38-3/4	3/4	22-7/8	4-1/2	8	6-3/4	8	2-1/4	2	4	10-1/4	9-5/8	3-3/8
HPV-80-0700	3/4	38-3/4	3/4	22-7/8	4-1/2	8	6-3/4	8	2-1/4	2	4	10-1/4	9-5/8	3-3/8
HPV-80-0100	1	38-3/4	3/4	22-7/8	5-3/8	8	7-1/2	8-3/4	3-1/2	2-1/2	4-3/8	10-1/4	9-5/8	3-3/4
HPV-80-0150	1-1/2	44-3/4	1-1/2	22-7/8	6-5/8	10	9	10-1/4	4	3	5-1/8	11-1/4	10-5/8	3-5/8
HPV-80-0200	2	44-3/4	1-1/2	22-7/8	7-5/8	10	10-1/2	11-3/4	4-1/2	4	5-7/8	11-1/4	10-5/8	4-3/8
HPV-80-0300	3	51-1/2	2	28-5/8	11-1/8	10	13-1/4	15-1/2	5-5/8	5	9	11-1/4	10-5/8	7-1/2
HPV-80-0400	4	51-1/2	2	28-5/8	13-1/8	10	13-1/4	15-1/2	6-1/4	6	10	11-1/4	10-5/8	8-1/2

- Notes:
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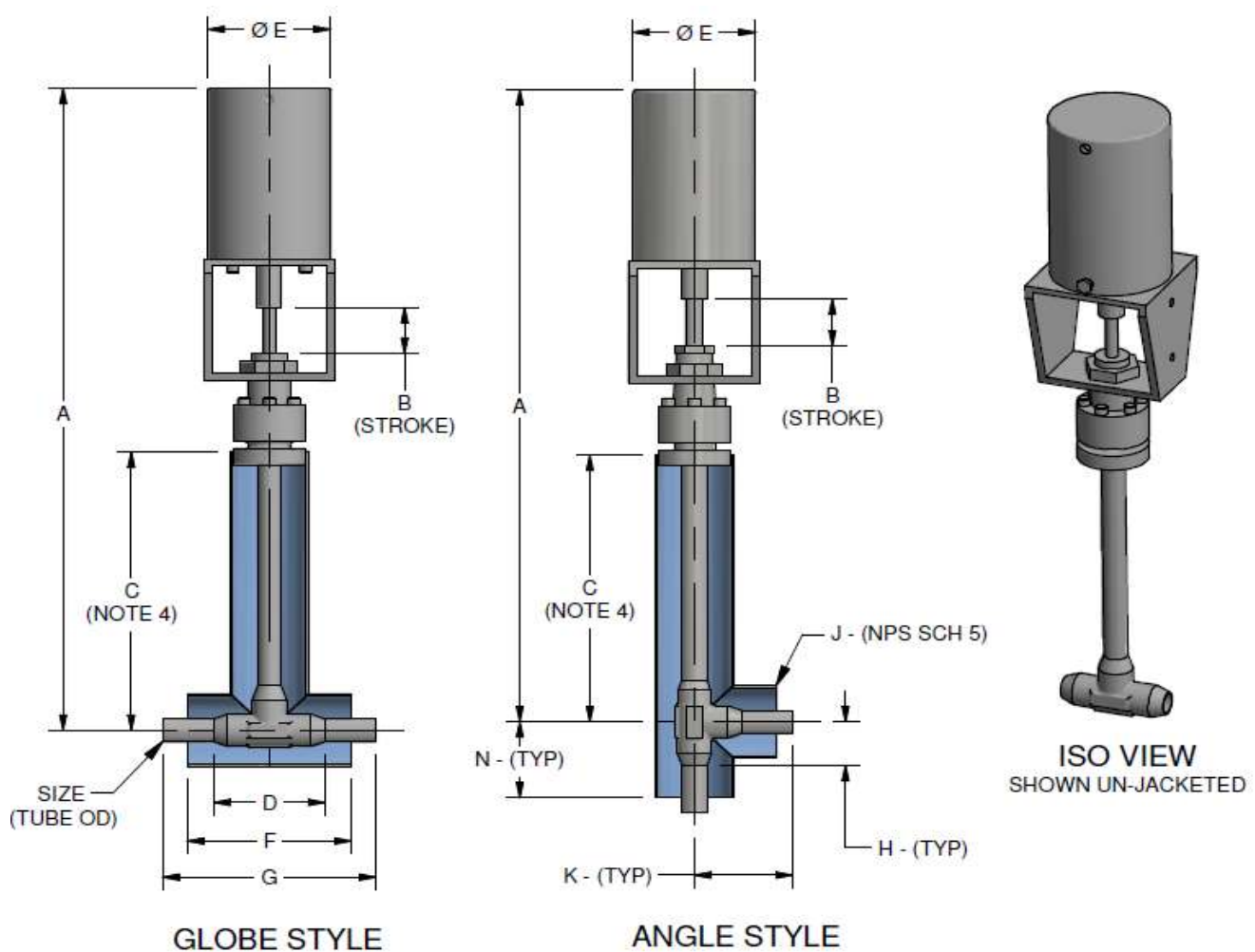
Valve Dimensions (in)												
Basic Model	Size (NPS)	A	B	C	D	E	F	G	H	J	K	N
CV-80-0050	1/2	13	17-7/8	11-1/4	4-1/2	6	6-3/4	8	2-1/4	2	4	3-3/8
CV-80-0075	3/4	13	17-7/8	11-1/4	4-1/2	6	6-3/4	8	2-1/4	2	4	3-3/8
CV-80-0100	1	13	17-7/8	11-1/4	5-3/8	6	7-1/2	8-3/4	3-1/2	2-1/2	4-3/8	3-3/4
CV-80-0150	1-1/2	14-3/8	20-1/4	12-5/8	6-5/8	8	9	10-1/4	4	3	5-1/8	3-5/8
CV-80-0200	2	14-3/8	20-1/4	12-5/8	7-5/8	8	10-1/2	11-3/4	4-1/2	4	5-7/8	4-3/8
CV-80-0300	3	19-5/8	27-3/8	17-3/8	11-1/8	12	13-1/4	15-1/2	5-5/8	5	9	7-1/2
CV-80-0400	4	19-5/8	27-3/8	17-3/8	13-1/8	12	13-1/4	15-1/2	6-1/4	6	10	8-1/2

- Notes:
1. PHPK check valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.



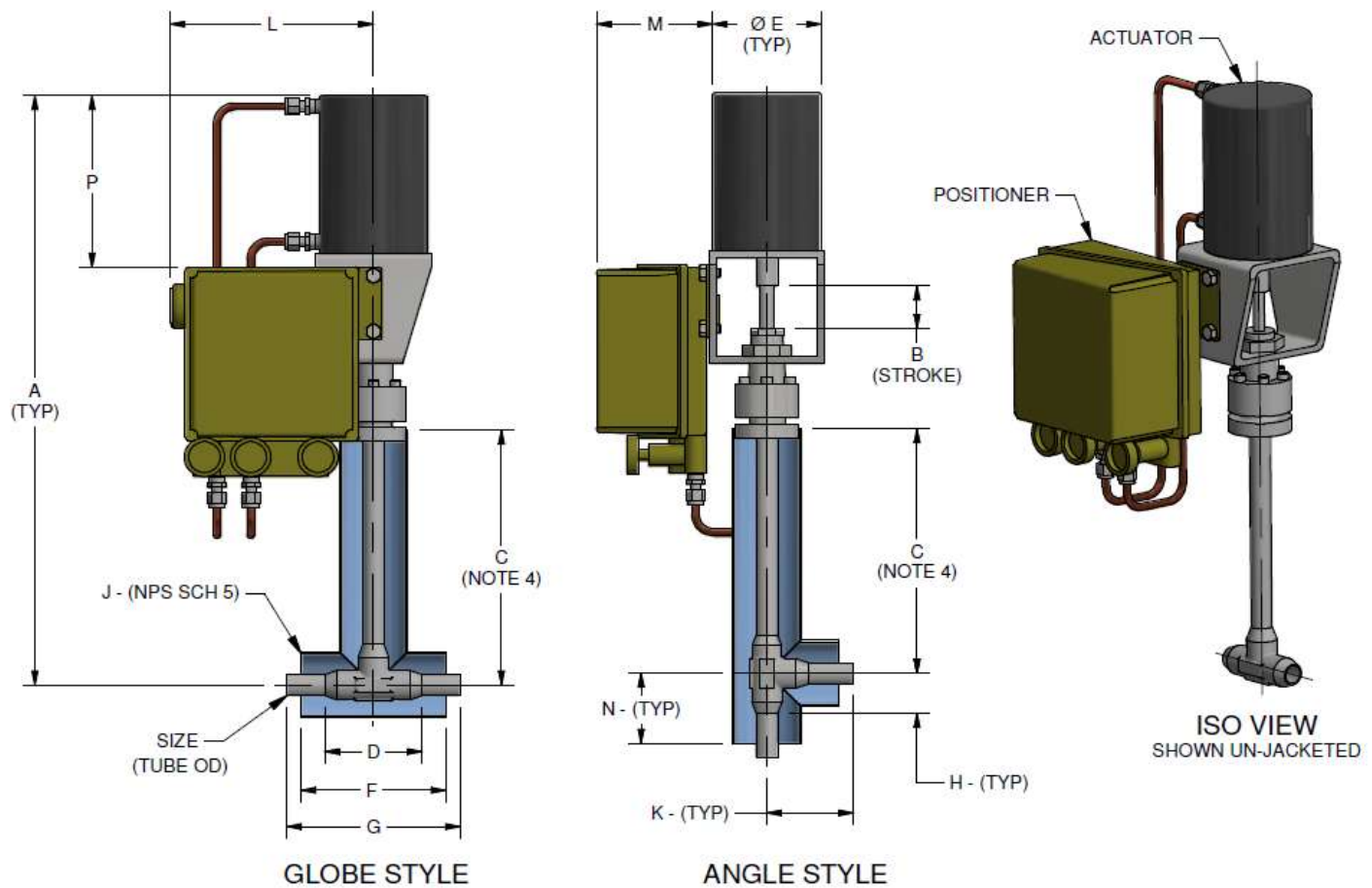
Valve Dimensions (in)												
Basic Model	Size (OD)	A	B	C	D	E	F	G	H	J	K	N
TV-11-0025	1/4	14-5/8	14-1/4	9	3-3/8	3	5	6	1-7/16	2	3	2-1/2
TV-11-0037	3/8	14-5/8	14-1/4	9	3-3/8	3	5	6	1-7/16	2	3	2-1/2
TV-11-0050	1/2	14-5/8	14-1/4	9	3-3/8	3	5	6	1-7/16	2	3	2-1/2
TV-11-0075	3/4	14-5/8	14-1/4	9	3-3/8	3	5	6	1-7/16	2	3	2-1/2
TV-11-0100	1	14-5/8	14-1/4	9	3-3/8	3	5	6	1-7/16	2	3	2-1/2

- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. TV-11 and TV-17 valves are dimensionally identical.
 6. TV-17 valves are supplied with equal % or linear flow control plugs. Custom designed plugs can be supplied upon request.
 7. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.



Valve Dimensions (in)												
Basic Model	Size (OD)	A	B	C	D	E	F	G	H	J	K	N
TV-13-0025	1/2	21	3/4	9	3-3/8	3-3/4	5	6	1-7/16	2	3	2-1/2
TV-13-0037	3/8	21	3/4	9	3-3/8	3-3/4	5	6	1-7/16	2	3	2-1/2
TV-13-0050	1/2	21	3/4	9	3-3/8	3-3/4	5	6	1-7/16	2	3	2-1/2
TV-13-0075	3/4	21	3/4	9	3-3/8	3-3/4	5	6	1-7/16	2	3	2-1/2
TV-13-0100	1	21	3/4	9	3-3/8	3-3/4	5	6	1-7/16	2	3	2-1/2

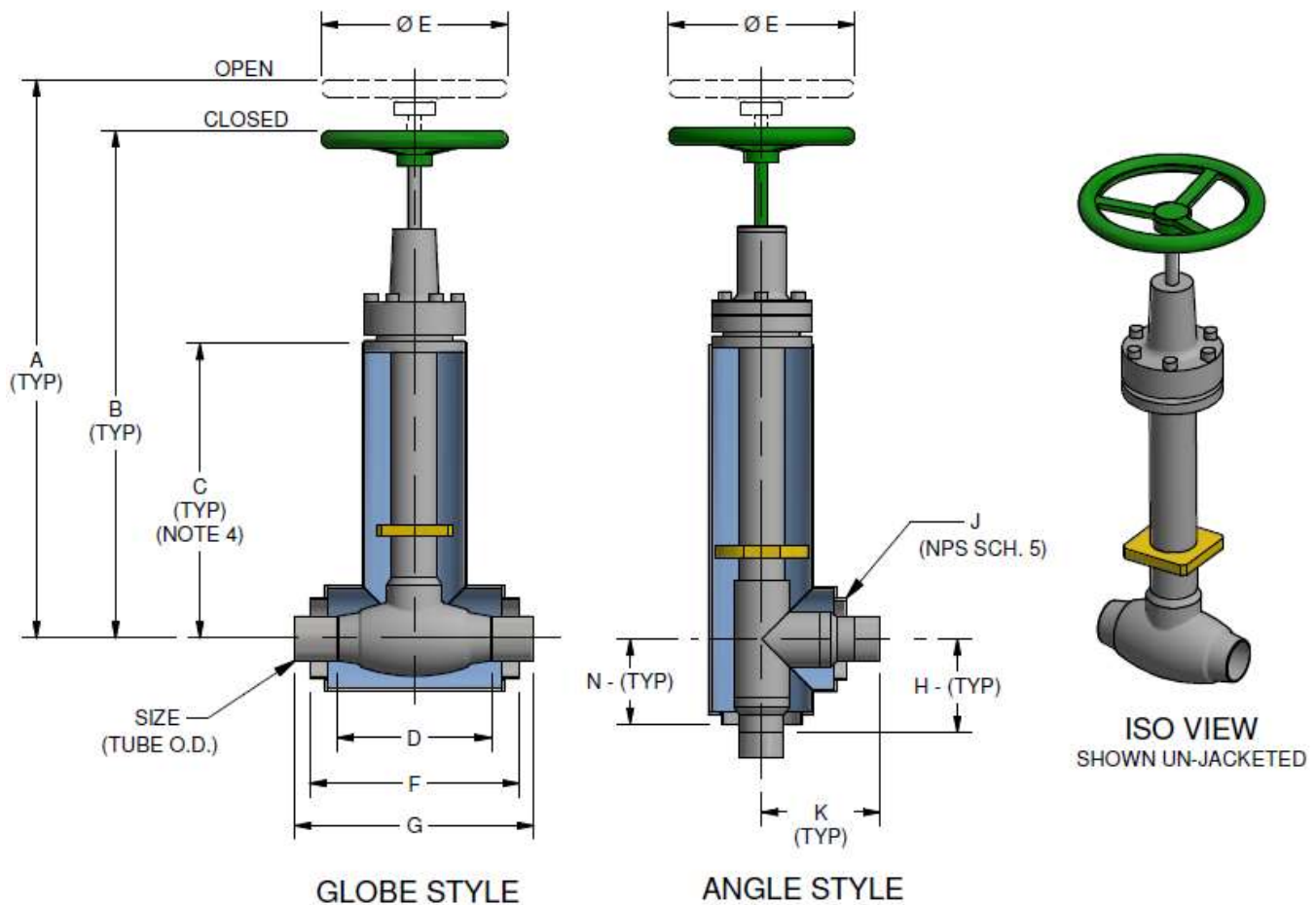
- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. Valve actuation packages are identical for both angle and globe style valves.
 6. Standard actuation packages are shown. Custom actuation packages are available upon request.
 7. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.



Valve Dimensions (in)

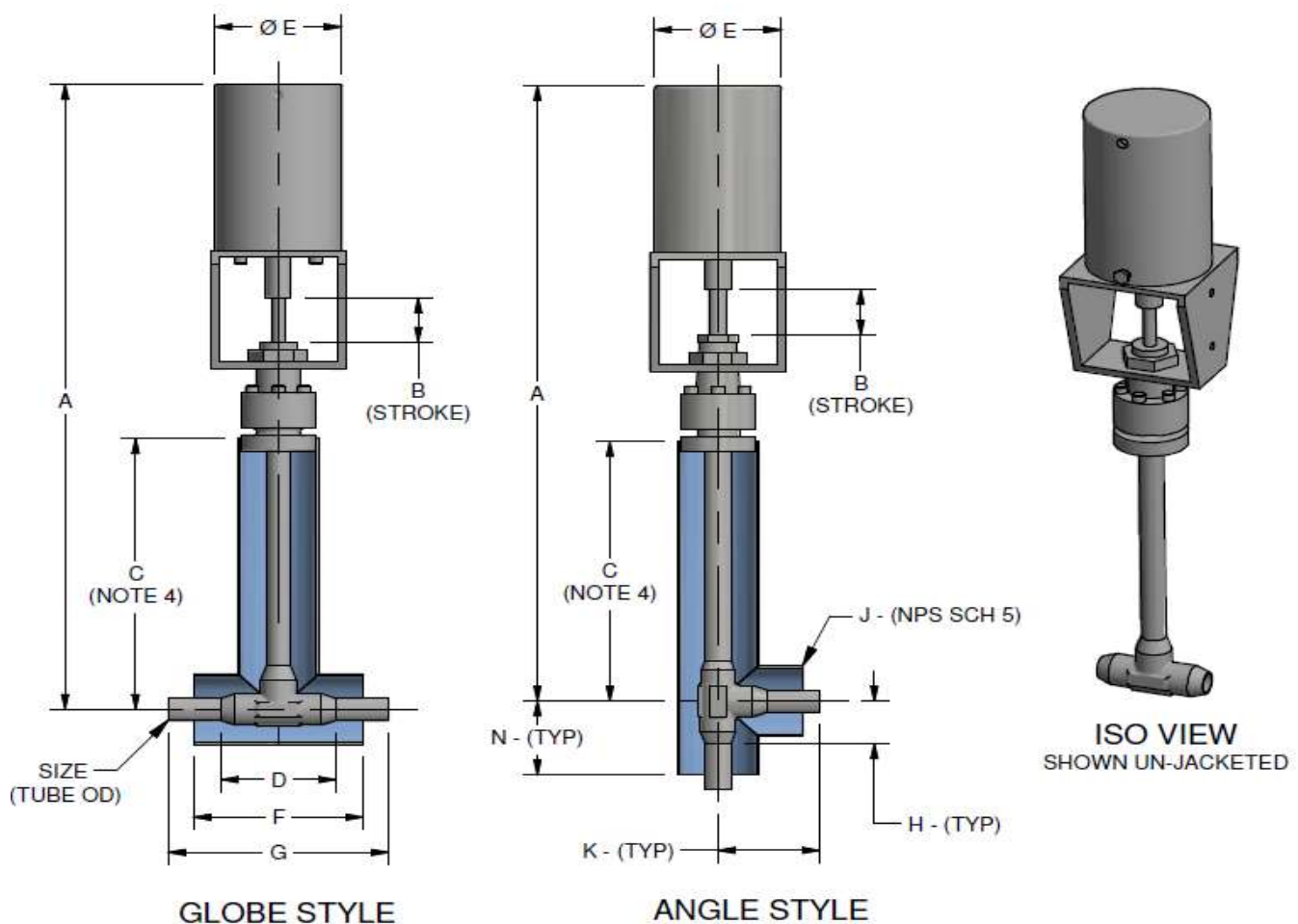
Basic Model	Size (OD)	A	B	C	D	E	F	G	H	J	K	L	M	N	P
TV-15-0025	1/2	21	3/4	9	3-3/8	3-3/4	5	6	1-7/16	2	3	7	4	2-1/2	6-1/8
TV-15-0037	3/8	21	3/4	9	3-3/8	3-3/4	5	6	1-7/16	2	3	7	4	2-1/2	6-1/8
TV-15-0050	1/2	21	3/4	9	3-3/8	3-3/4	5	6	1-7/16	2	3	7	4	2-1/2	6-1/8
TV-15-0075	3/4	21	3/4	9	3-3/8	3-3/4	5	6	1-7/16	2	3	7	4	2-1/2	6-1/8
TV-15-0100	1	21	3/4	9	3-3/8	3-3/4	5	6	1-7/16	2	3	7	4	2-1/2	6-1/8

- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. Valve actuation packages are identical for both angle and globe style valves.
 6. Standard actuation packages are shown. Custom actuation packages are available upon request.
 7. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.



Valve Dimensions (in)												
Basic Model	Size (OD)	A	B	C	D	E	F	G	H	J	K	N
HTV-11-0025	1/4	22-1/2	22-1/8	16-7/8	3-3/8	3	5	6	1-7/16	2	3	2-1/2
HTV-11-0037	3/8	22-1/2	22-1/8	16-7/8	3-3/8	3	5	6	1-7/16	2	3	2-1/2
HTV-11-0050	1/2	22-1/2	22-1/8	16-7/8	3-3/8	3	5	6	1-7/16	2	3	2-1/2
HTV-11-0075	3/4	22-1/2	22-1/8	16-7/8	3-3/8	3	5	6	1-7/16	2	3	2-1/2
HTV-11-0100	1	22-1/2	22-1/8	16-7/8	3-3/8	3	5	6	1-7/16	2	3	2-1/2

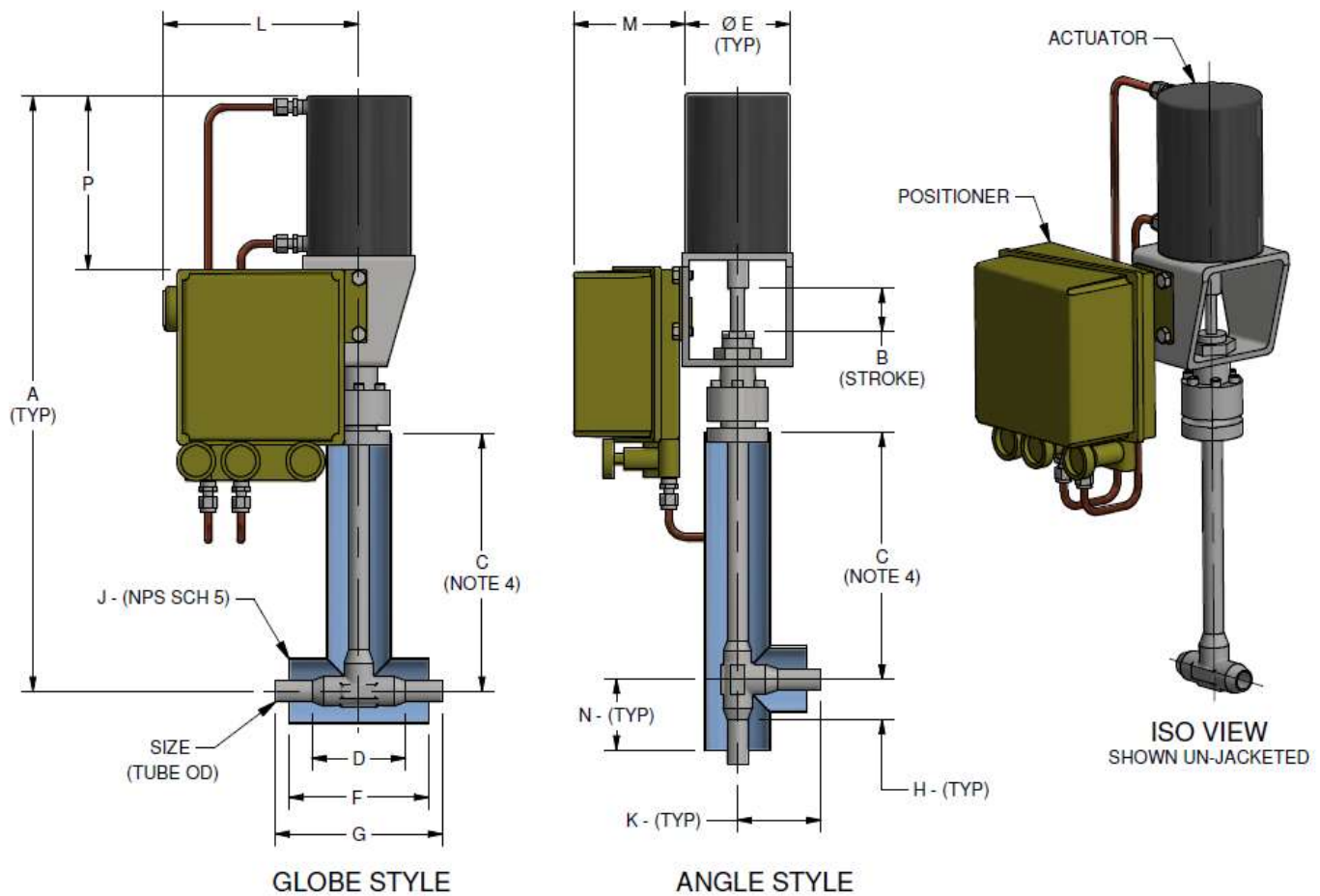
- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. HTV-11 and HTV-17 valves are dimensionally identical.
 6. HTV-17 valves are supplied with equal % or linear flow control plugs. Custom designed plugs can be supplied upon request.
 7. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.



Valve Dimensions (in)

Basic Model	Size (OD)	A	B	C	D	E	F	G	H	J	K	N
HTV-13-0025	1/2	28-7/8	3/4	16-7/8	3-3/8	3-3/4	5	6	1-7/16	2	3	2-1/2
HTV-13-0037	3/8	28-7/8	3/4	16-7/8	3-3/8	3-3/4	5	6	1-7/16	2	3	2-1/2
HTV-13-0050	1/2	28-7/8	3/4	16-7/8	3-3/8	3-3/4	5	6	1-7/16	2	3	2-1/2
HTV-13-0075	3/4	28-7/8	3/4	16-7/8	3-3/8	3-3/4	5	6	1-7/16	2	3	2-1/2
HTV-13-0100	1	28-7/8	3/4	16-7/8	3-3/8	3-3/4	5	6	1-7/16	2	3	2-1/2

- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. Valve actuation packages are identical for both angle and globe style valves.
 6. Standard actuation packages are shown. Custom actuation packages are available upon request.
 7. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.



Valve Dimensions (in)

Basic Model	Size (OD)	A	B	C	D	E	F	G	H	J	K	L	M	N	P
HTV-15-0025	1/2	28-7/8	3/4	16-7/8	3-3/8	3-3/4	5	6	1-7/16	2	3	7	4	2-1/2	6-1/8
HTV-15-0037	3/8	28-7/8	3/4	16-7/8	3-3/8	3-3/4	5	6	1-7/16	2	3	7	4	2-1/2	6-1/8
HTV-15-0050	1/2	28-7/8	3/4	16-7/8	3-3/8	3-3/4	5	6	1-7/16	2	3	7	4	2-1/2	6-1/8
HTV-15-0075	3/4	28-7/8	3/4	16-7/8	3-3/8	3-3/4	5	6	1-7/16	2	3	7	4	2-1/2	6-1/8
HTV-15-0100	1	28-7/8	3/4	16-7/8	3-3/8	3-3/4	5	6	1-7/16	2	3	7	4	2-1/2	6-1/8

- Notes:
1. PHPK valves are provided as a standard with butt weld ends for the process pipe and the jacket pipe.
 2. Flanged, socket weld and other special end connections are available upon request.
 3. Normal flow direction on all valves is under the seat.
 4. Distance from centerline of the valve body to the jacket weld on the bonnet flange.
 5. Valve actuation packages are identical for both angle and globe style valves.
 6. Standard actuation packages are shown. Custom actuation packages are available upon request.
 7. Dimensions F, G, N and K apply to jacketed valves only. For non jacketed valves use dimensions D and H.