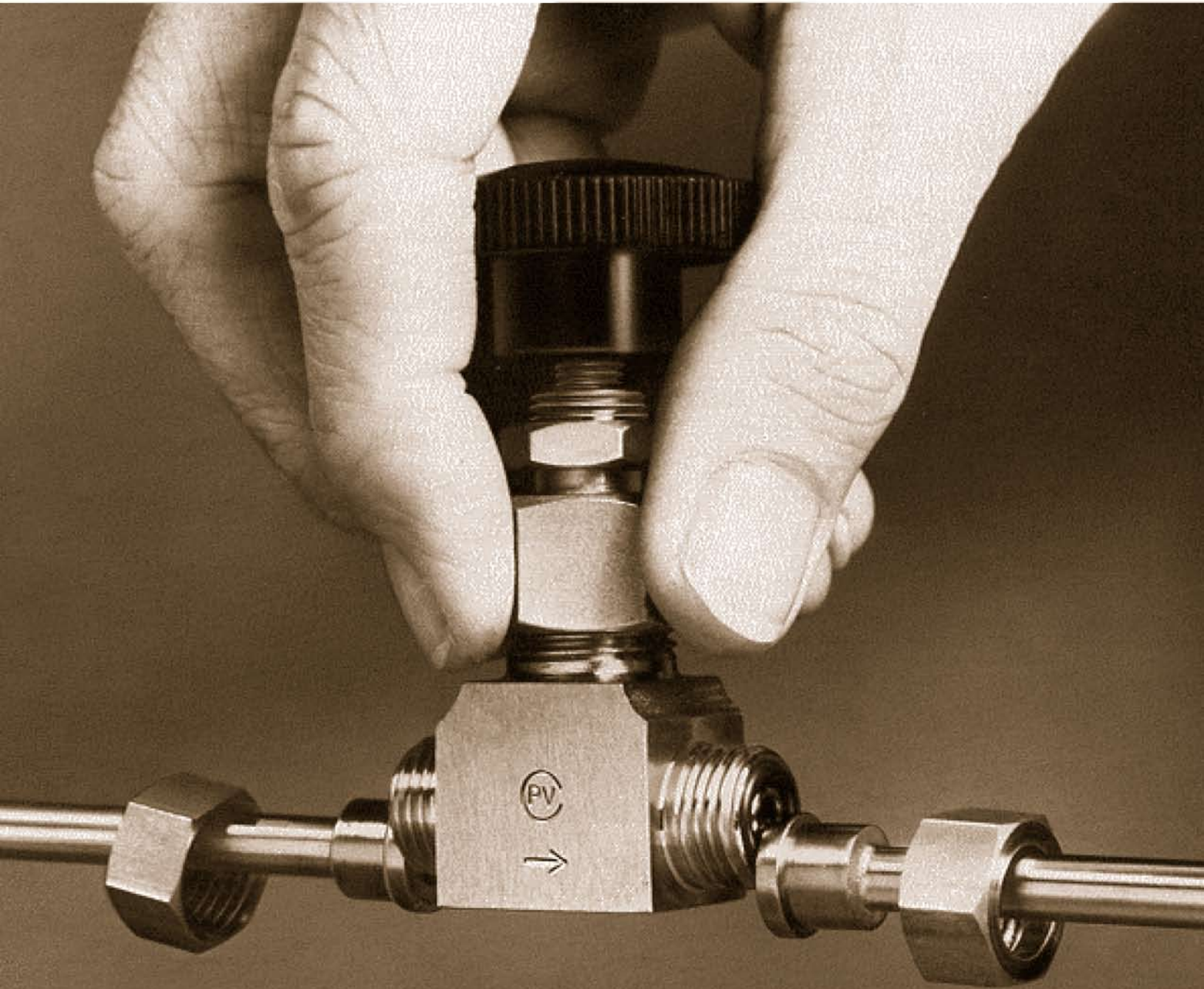


# MARK VIII

## Shutoff & Regulating Valves



*...for High Reliability Flow Control in  
Power, Process and Instrumentation Systems*

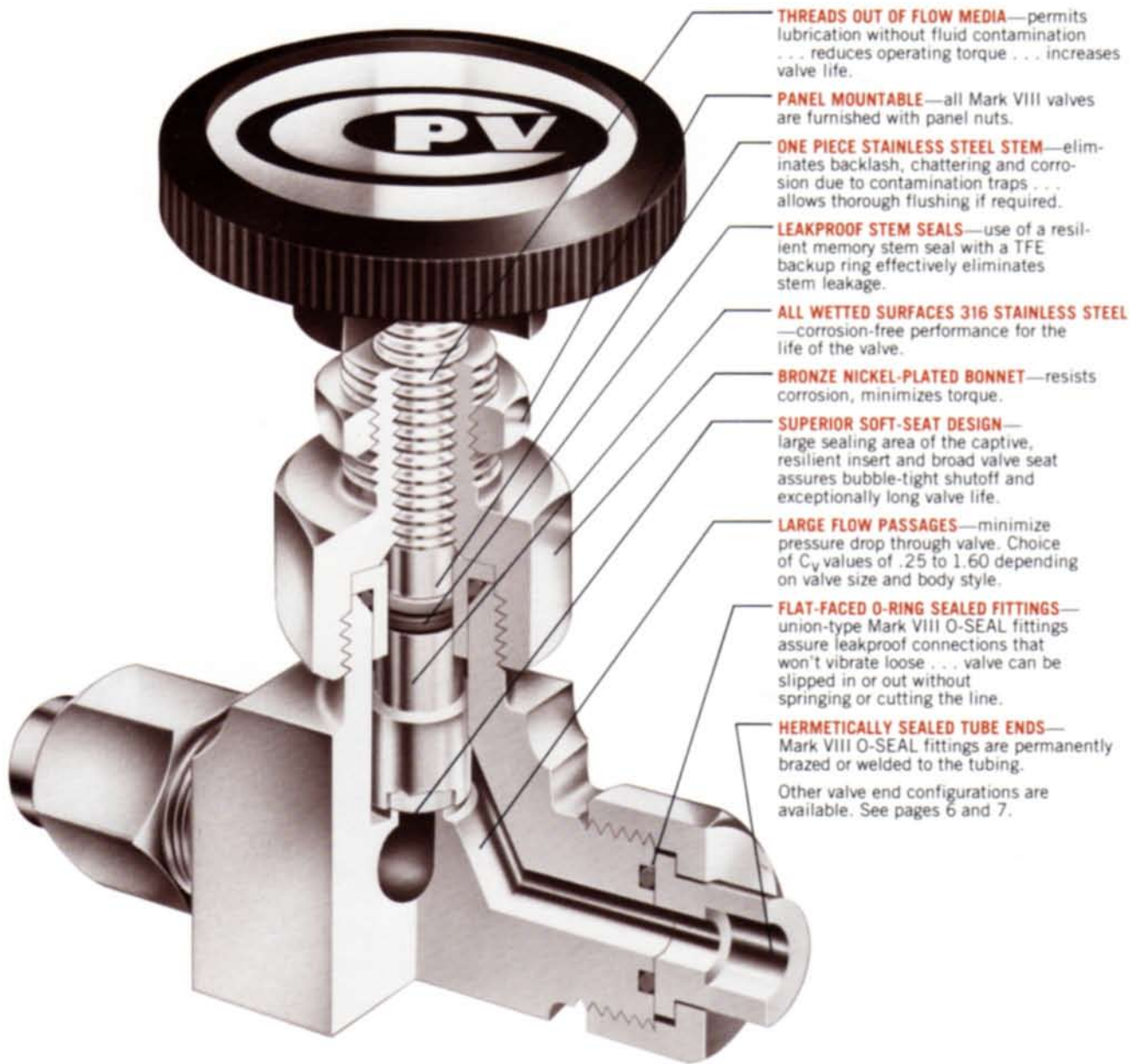




## The Ultimate in Positive Fluid Control

...a unique system of soft-seated valves that slip right in

Now you can combine the performance advantages of these low torque, soft-seated valves with the superior sealing and unlimited accessibility of Mark VIII O-SEAL fittings.



CPV Mark VIII Shutoff and Regulating valves employ a stem with a resilient insert that presses against a raised, flat metal seat to assure "bubble-tight" closure. This Kel-F insert is securely swaged in the valve stem, and the sealing force is distributed over a large circular sealing area to assure long valve life. Two valve configurations are available:



Figure A.  
Shutoff Valve



Figure B.  
Regulating (Needle) Valve

# CPV MARK VIII Shutoff and Regulating Valves Provide Slip-In Installation And Trouble-Free Operation.

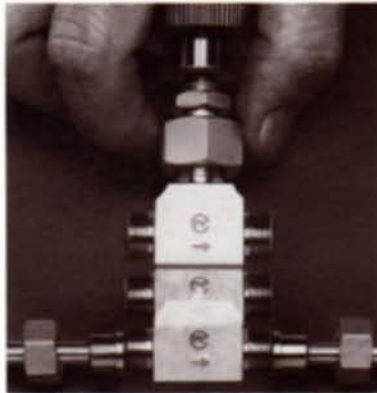
**A Proven Design Concept Pioneered by CPV.** Many of the key design elements of the Mark VIII valve are based upon CPV's early pioneering work in soft-seated valve design. CPV valves have proven themselves to be the ultimate in positive fluid control in over three decades of use aboard U.S. Navy nuclear submarines and in numerous industrial applications, including chemical process piping and mixed gas diving systems. This same high reliability is now available for your most demanding instrumentation and process piping needs.

**Valve slips right in, stays leaktight.** Only the Mark VIII system of valves and fittings gives you this instant, easy access plus high reliability sealing. The basic Mark VIII system comprises a soft-seated valve with union-type end connections. An O-ring recessed in a close tolerance groove in each valve end seals against a mating flat-faced fitting.

The result is a valve that you can slip straight in or out without springing or cutting lines—no axial clearance is required. So you can easily remove the valve at will without disturbing other components.

This slip-in feature permits the design of exceptionally compact systems without penalizing the installer. Accessibility to components is assured by the valve's flat-faced design.

And you'll never have to worry about fitting leakage—no matter how often these connections are broken and remade. Once the



union nuts are tightened, the sealing action of the resilient O-ring assures absolutely leaktight valve connections under all conditions.

**Positive Sealing of Liquids and Gases**—even elusive helium and hydrogen. All wetted surfaces are of 316 stainless steel to assure contaminant-free operation even after extended service in most aggressive environments. The valves also employ a captive soft seat design that provides absolutely leaktight sealing and exceptionally long valve life. To accommodate almost any fluid media, the valves can be furnished with Buna-N, Viton, Ethylene Propylene, or TFE seals. A TFE backup ring above the stem seal is standard.

**Keeps Ultra-Pure Systems Contaminant Free.** Valve threads are above the stem seal—completely isolated from the system fluid. This eliminates thread corrosion problems and permits stem thread lubrication without fear of fluid contamination.

**Galling-Free, Low Torque Valve Operation.** Mark VIII valves are easy to open and close. The stainless steel stem threads into a

bronze bonnet that is nickel-plated. These dissimilar materials plus external thread lubrication effectively eliminate galling, and subsequently reduce torque requirements.

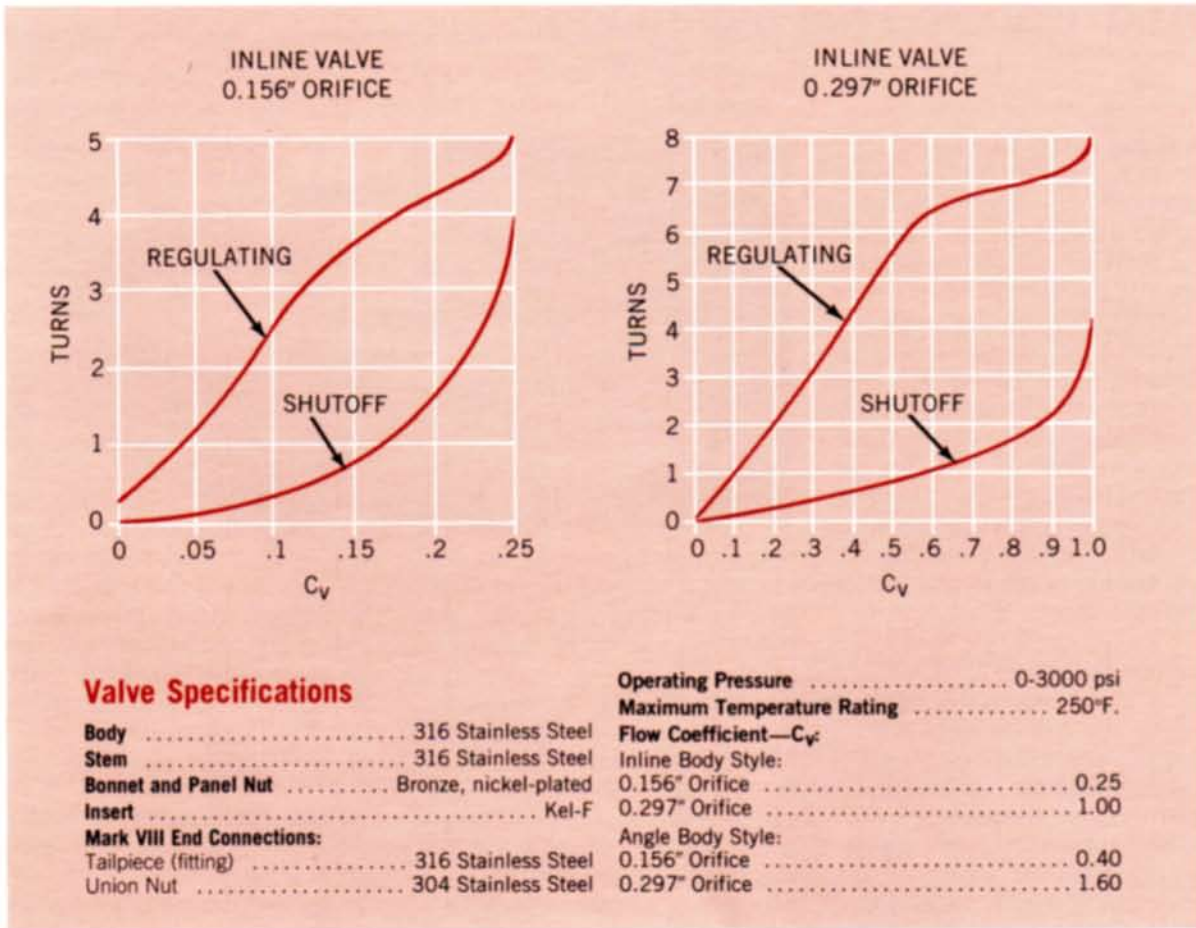
**Non-Clog Operation Even in Severe Service.** To ensure reliable performance even under the most demanding service conditions, the valves also feature a one piece stem design that eliminates clogging due to contamination trapping. Because this design has no cavities for corrosive materials to collect in, thorough flushing can be accomplished if desired. This one piece stem also ends backlash problems as well as chatter when used for metering.

**Ideal for Instrumentation or Process Systems.** These panel-mountable Mark VIII shutoff and regulating valves offer exceptional adaptability. They are available in angle or inline body styles with choice of flow coefficients, and with seals to suit specific requirements. They can be furnished with a variety of valve end configurations including Mark VIII unions, female pipe threads, male pipe threads, female straight threads, and direct weld/braze ends in sizes from  $\frac{1}{8}$ " to  $\frac{3}{8}$ ". Valve dimensions, ordering information and  $C_v$  charts are given on the following pages to allow you to select the Mark VIII valves best suited to your particular applications.





# Technical Data



## How to Order Mark VIII Valves\*

Select the part number for the valve desired. Add a suffix to the part number to indicate the seal material required. **Seal material you specify will be furnished for stem and bonnet seals as well as end seals where applicable.**

Typical part number shown broken down:

<div style="display: flex; justify-content: center; gap: 10px;"> <span style="border: 1px solid black; padding: 2px 5px;">8</span> <span style="border: 1px solid black; padding: 2px 5px;">04</span> <span style="border: 1px solid black; padding: 2px 5px;">S</span> <span style="border: 1px solid black; padding: 2px 5px;">G</span> <span style="border: 1px solid black; padding: 2px 5px;">U</span> <span style="border: 1px solid black; padding: 2px 5px;">-04</span> <span style="border: 1px solid black; padding: 2px 5px;">•</span> </div>						
Product Line	Orifice	Valve Type	Body Style	Body End Configuration	Tube O.D.	Seal Material*
8	04 0.156" 08 0.297"	S Shutoff N Regulating	G Inline A Angle	U Mark VIII union H Direct weld/braze T Straight thread M Male pipe NPT F Female pipe NPT	-02 1/8" -03 3/16" -04 1/4" -05 5/16" -06 3/8" -08 1/2" -10 5/8"	B Buna-N C Viton D Ethylene Propylene T TFE

\*When ordering, be sure to include the appropriate letter for the seal material desired: B-Buna-N; C-Viton; D-Ethylene Propylene; T-TFE (consult factory before ordering).

### Sil-Braze Rings for Valves with Brazed End Connections



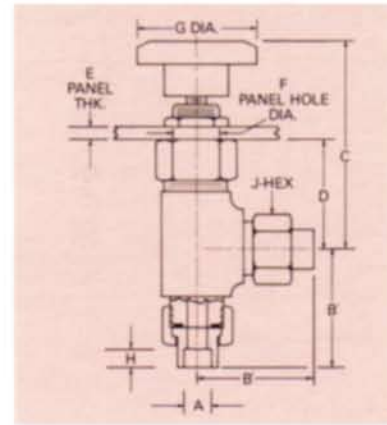
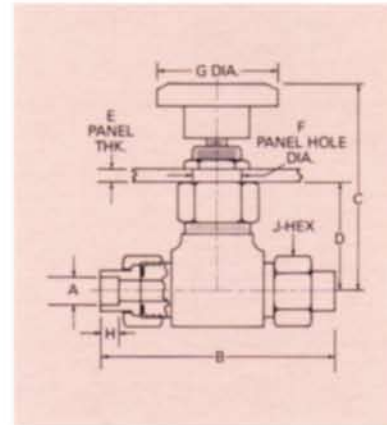
Part No.	Tube O.D.
H801-2	1/8
H801-3	3/16
H801-4	1/4
H801-5	5/16
H801-6	3/8
H801-8	1/2
H801-10	5/8

Grade VII Sil-Braze Alloy



# CPV Mark VIII Shutoff & Regulating Valves

## MARK VIII O-SEAL END CONNECTION (U)



PART NUMBER			DIMENSIONS (INCHES)												
INLINE	ANGLE	VALVE TYPE	ORIFICE	A TUBE O.D.	B	B'	C		D	E MAX.	F	G	H	J HEX.	
							OPEN	CLOSED							
804SGU-02 804NGU-02	804SAU-02 804NAU-02	Shutoff Regulating	0.156	1/8	2 3/8	1 3/16	2 19/32	2 7/16	1 7/32	3/4	1 7/32	1 3/8	3/16	3/8	
804SGU-03 804NGU-03	804SAU-03 804NAU-03	Shutoff Regulating		3/16											
804SGU-04 804NGU-04	804SAU-04 804NAU-04	Shutoff Regulating		1/4											
804SGU-06 804NGU-06	804SAU-06 804NAU-06	Shutoff Regulating		3/8	3	1 1/2									1/4
808SGU-05 808NGU-05	808SAU-05 808NAU-05	Shutoff Regulating	0.297	5/16	3 3/8	1 11/16	3 15/32	3 3/16	1 21/32	3/8	2 5/32	1 7/8	1/4	1 5/16	
808SGU-06 808NGU-06	808SAU-06 808NAU-06	Shutoff Regulating		3/8	3 1/4	1 3/8									5/16
808SGU-08 808NGU-08	808SAU-08 808NAU-08	Shutoff Regulating		1/2	3 3/8	1 11/16									5/16
808SGU-10 808NGU-10	808SAU-10 808NAU-10	Shutoff Regulating		3/4	4 1/8	2 1/16									3/8

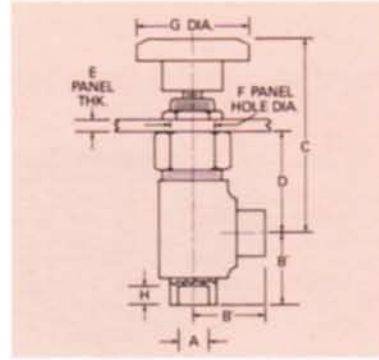
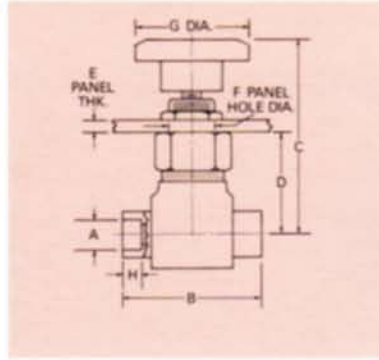
\* When ordering, be sure to include the appropriate letter for the seal material desired:  
B-Buna-N; C-Viton; D-Ethylene Propylene; T-TFE (consult factory before ordering).

NOTE: Order Sil-Braze rings (H801) separately. See page 4.



# CPV Mark VIII Shutoff & Regulating Valves

## BRAZE/WELD END CONNECTION (H)

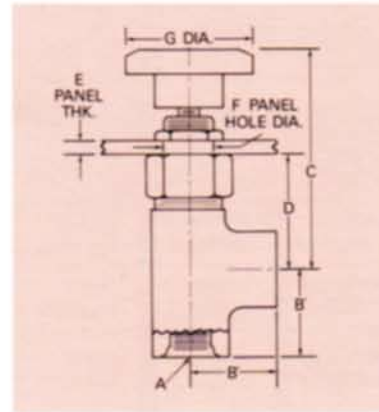
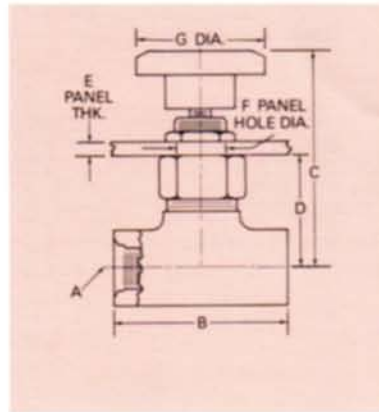


PART NUMBER		VALVE TYPE	DIMENSIONS (INCHES)										
INLINE	ANGLE		ORIFICE	A TUBE O.D.	B	B'	C		D	E MAX.	F	G	H
							OPEN	CLOSED					
804SGH-04 804NGH-04	804SAH-04 804NAH-04	Shutoff Regulating	0.156	1/4	1 3/8	1 1/16	2 19/32	2 7/16	1 7/32	3/4	1 7/32	1 3/8	3/16
804SGH-06 804NGH-06	804SAH-06 804NAH-06	Shutoff Regulating		3/8									1/4
808SGH-06 808NGH-06	808SAH-06 808NAH-06	Shutoff Regulating	0.297	3/8	2 3/8	1 3/16	3 15/32	3 3/16	1 21/32	3/8	2 5/32	1 7/8	1/4
808SGH-08 808NGH-08	808SAH-08 808NAH-08	Shutoff Regulating		1/2									5/16
808SGH-10 808NGH-10	808SAH-10 808NAH-10	Shutoff Regulating		5/8									3/8

\* When ordering, be sure to include the appropriate letter for the seal material desired:  
B-Buna-N; C-Viton; D-Ethylene Propylene; T-TFE (consult factory before ordering).

NOTE: Order Sil-Brze rings (H801) separately. See page 4.

## STRAIGHT THREAD END CONNECTION (T)



PART NUMBER		VALVE TYPE	DIMENSIONS (INCHES)									
INLINE	ANGLE		ORIFICE	A STR. THD.	B	B'	C		D	E MAX.	F	G
							OPEN	CLOSED				
804SGT-02 804NGT-02	804SAT-02 804NAT-02	Shutoff Regulating	0.156	5/16-24	2 3/8	1 1/16	2 19/32	2 7/16	1 7/32	3/4	1 7/32	1 3/8
804SGT-04 804NGT-04	804SAT-04 804NAT-04	Shutoff Regulating		7/16-20								
808SGT-06 808NGT-06	808SAT-06 808NAT-06	Shutoff Regulating	0.297	9/16-18	2 3/8	1 7/16	3 15/32	3 3/16	1 21/32	3/8	2 5/32	1 7/8
808SGT-08 808NGT-08	808SAT-08 808NAT-08	Shutoff Regulating		3/4-16								

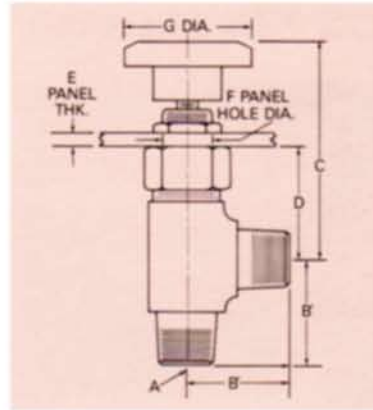
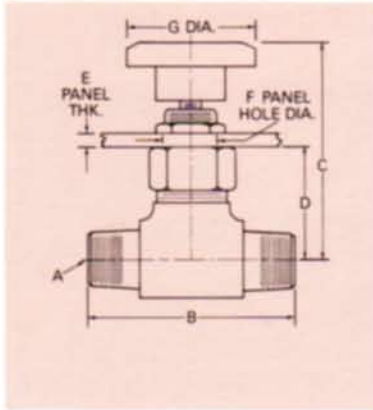
\* When ordering, be sure to include the appropriate letter for the seal material desired:  
B-Buna-N; C-Viton; D-Ethylene Propylene; T-TFE (consult factory before ordering).





# CPV Mark VIII Shutoff & Regulating Valves

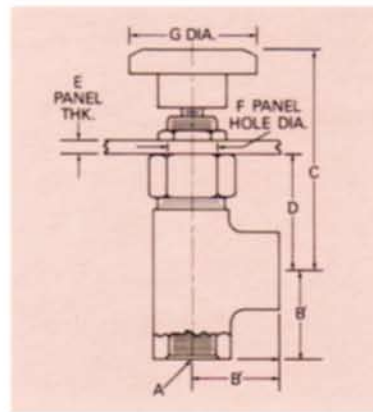
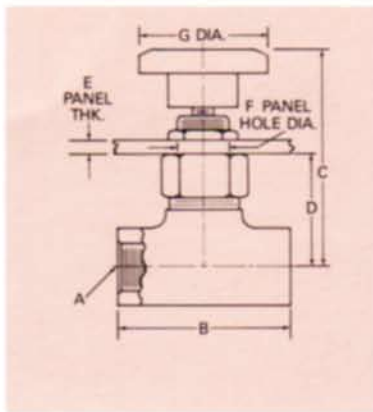
## MALE NPT END CONNECTION (M)



PART NUMBER		VALVE TYPE	DIMENSIONS (INCHES)									
INLINE	ANGLE		ORIFICE	A N.P.T.	B	B'	C		D	E MAX.	F	G
							OPEN	CLOSED				
804SGM-02 804NGM-02	804SAM-02 804NAM-02	Shutoff Regulating	0.156	1/8	2 1/8	1 1/16	2 19/32	2 7/16	1 7/32	1/4	1 7/32	1 3/8
804SGM-04 804NGM-04	804SAM-04 804NAM-04	Shutoff Regulating		1/4								
808SGM-06 808NGM-06	808SAM-06 808NAM-06	Shutoff Regulating	0.297	3/8	2 7/8	1 7/16	3 15/32	3 3/16	1 21/32	3/8	2 5/32	1 7/8
808SGM-08 808NGM-08	808SAM-08 808NAM-08	Shutoff Regulating		1/2								

\* When ordering, be sure to include the appropriate letter for the seal material desired:  
B-Buna-N; C-Viton; D-Ethylene Propylene; T-TFE (consult factory before ordering).

## FEMALE NPT END CONNECTION (F)



PART NUMBER		VALVE TYPE	DIMENSIONS (INCHES)									
INLINE	ANGLE		ORIFICE	A N.P.T.	B	B'	C		D	E MAX.	F	G
							OPEN	CLOSED				
804SGF-02 804NGF-02	804SAF-02 804NAF-02	Shutoff Regulating	0.156	1/8	2 1/8	1 1/16	2 19/32	2 7/16	1 7/32	1/4	1 7/32	1 3/8
804SGF-04 804NGF-04	804SAF-04 804NAF-04	Shutoff Regulating		1/4								
808SGF-06 808NGF-06	808SAF-06 808NAF-06	Shutoff Regulating	0.297	3/8	2 7/8	1 7/16	3 15/32	3 3/16	1 21/32	3/8	2 5/32	1 7/8
808SGF-08 808NGF-08	808SAF-08 808NAF-08	Shutoff Regulating		1/2								

\* When ordering, be sure to include the appropriate letter for the seal material desired:  
B-Buna-N; C-Viton; D-Ethylene Propylene; T-TFE (consult factory before ordering).

Dimensions and specifications in this catalog are subject to change.



# CPV... the single source for leakproof valves & fittings to 10,000 psi.

Since 1915 CPV has provided leadership in the development of leakproof valves and fittings. Our leading edge engineering, in-line testing, and rigorous quality control assures a level of performance that far exceeds rated specifications. The dependability of CPV valves and fittings in gas and liquid service around the world is helping companies solve problems and improve efficiency.

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installation  
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TUBE FITTINGS  
CATALOG 74

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