

# High Pressure Stop Valves

## Forged Design

Energy Conservation | Environment | Process Efficiency

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For over six decades, Forbes Marshall has been building steam engineering and control instrumentation solutions that work for process industry. Today we have evolved into a leader in process efficiency and energy conservation through technology tie-ups and focused investments in manufacturing and research. Our joint ventures with the world's leading names enable us to deliver quality solutions in 14 countries. Forbes Marshall is probably the only company in the world to have extensive expertise in both steam and control instrumentation. The dual expertise has allowed us to engineer industry specific systems that focus on energy efficiency and utilities management for sectors as diverse as textiles, food processing, paper, power and chemicals.

We have also been adjudged one of India's top "25 Best Places to work - 2008" by Economic Times and the Great Places to Work Institute. Our teams are peopled by some of the finest engineers in the land. These highly trained professionals have developed innovative solutions and saved millions of rupees in process costs for our clients. Our business practices and processes have combined into a singular philosophy of being trusted partners who provide innovative solutions. It's a philosophy we are proud to live up to.

For decades, we have partnered with some of the best names in the control instrumentation industry such as Arca, Codel, Krohne and Shinkawa, to develop, design and supply innovative solutions for measurement and monitoring of process parameters. With a combination of specialist knowledge and the latest technology, we provide products and solutions to achieve optimum efficiency. Our products are a unique combination of hardware and software that make them reliable and accurate.

The VKINx 11. High Pressure Stop Valve incorporates state-of-the-art technology in an easy to operate and maintain design that can be advantageously used for most high pressure and temperature applications. A choice of materials of construction cover a wide range for most application, from water to superheated steam and for most chemicals and gases. Choices are also offered in the block design for other materials and configurations.

The welded body/bonnet, is machined with high quality and accuracy. Design features such as the unique plug/seat geometry and stuffing box design allow these valves to operate for extended period of time without the commonly occurring problems like gland leakage and passing.

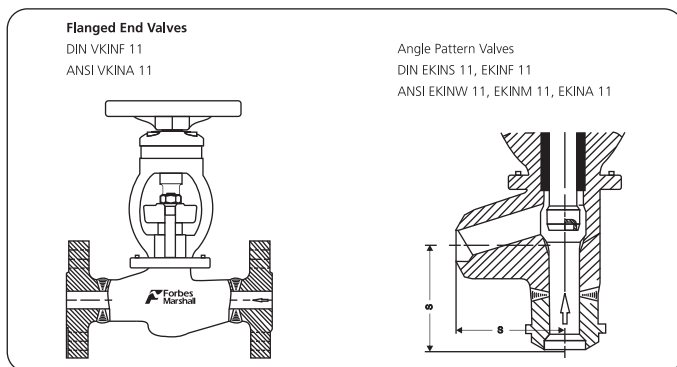
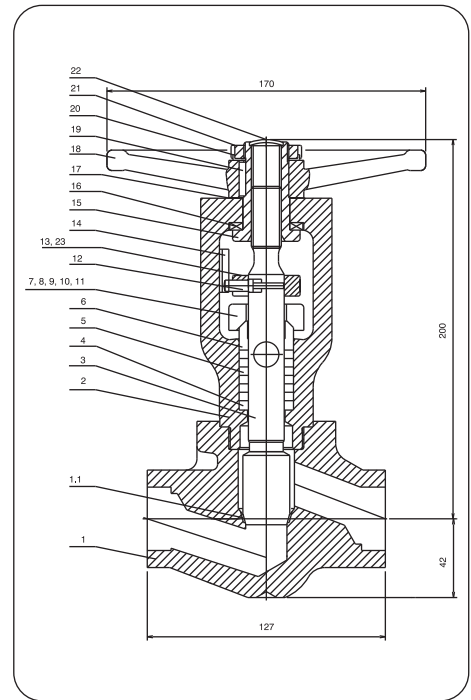
The sealed yoke and bearings ensure long service life with low and uniform operating forces that require smaller actuators. These actuators can be installed without any modification directly on the valve yoke.

Valves with flanged ends are made by pre-welding flanges by a unique procedure where root runs are eliminated and penetration is complete. These valves are also offered in the angle pattern for blowdown application.

Part	Part Name	Material
1.	Body	ASTM A 105 (Code 01) ASTM A 182 F22 (Code13) ASTM A 182 F316 (Code 17)
1.1	Body Seat	Stellite-6
2	Bonnet	ASTM A 105 (Code 1) ASTM A 182 F22 (Code 13) ASTM A 182 F316 (Code 17)
3	Spindle	SS 431
4	Bottom Ring	SS 410
5	Packing	Pure Graphite
6	Stuffing Box	SS 410
7	Gland Flange	ASTM A 105
8	Eye Bolt	ASTM A 193 Gr. B7
9	Nut	ASTM A 194 Gr. 2H
10	Washer	C 45
11	External Circlip (A-13)	SS
12	Pin	SS 431
13	Holder	SS 410
14	Guide Pad	ASTM A 105
15	Yoke Bush	Brass
16	Thrust Needle Bearing	ID 25 x OD 39 x 4TH.
17	Slide Ring	Spring Steel
18	Hand Wheel	S G Iron

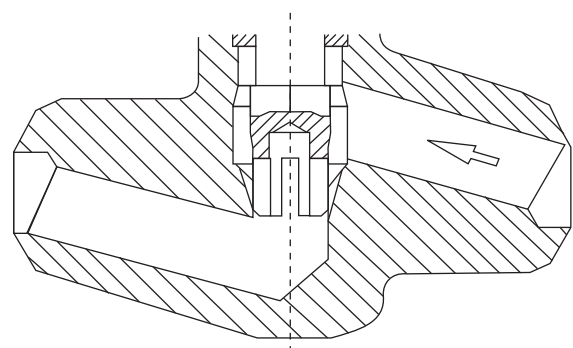
# Special Features

- Valves are designed for PN 500 (Class 2500), are offered for all ratings upto PN 500 and Class 2500.
- Body seat integral stellite is hard faced by a special Automatic welding process ( hardness 350 400 BHN ).
- Unique non-rotating single piece spindle plug design guarantees long seat life as grinding between plug and seat is eliminated.
- Hollow plug permits flexibility of sealing and line sealing ensures high leak tightness ( class VI).
- Flow is normally under the plug, which ensures that in the closed position, the stuffing box is not pressurized.
- A single piece spindle plug ensures stability of operation and eliminates problems of loose plug design such as high frequency vibration and grinding on seat. Special control cone ( SN 46 ) design allows the valve to be used for regulating and blow down applications.
- Preformed pure graphite packing rings and roller burnished surfaces on the spindle and stuffing box bore to mirror finish, ensure stuffing.

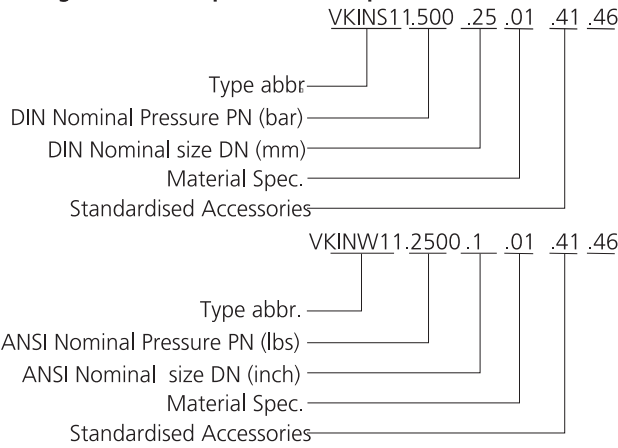


Range of Application		ADMISSIBLE OPERATING PRESSURE kg/cm <sup>2</sup>																
		ADMISSIBLE OPERATING TEMPERA TURE °C																
Matl. Spec.	Body Material	PR Class	up to 37	93	149	204	260	315	343	371	399	427	454	482	510	538	565	593
01	A 105 GrB	1500 2500	260 433	237 395	230 385	223 371	210 351	192 320	189 315	187 312	177 295	145 241	Not suitable above - 427°C					
13	A 182 F22	Not suitable below - 29°C				228 380	225 374	212 354	206 345	199 333	187 311	178 297	171 285	158 263	132 221	94 157	70 117	39 66
17	A 182 F316	1500 2500	211 352	178 297	160 266	145 242	134 224	126 211	123 205	120 201	118 197	116 193	113 188	Not suitable above - 450°C				
00	A 350 LF2	1500 2500	260 433	237 395	230 385	223 371	210 351	192 320	189 315	Not suitable above - 343°C & below - 40°C								

- **ACCESSORY SN - 46 PLUG WITH REGULATING CONE (ALSO USED FOR THROTTLE ON GATE VALVE SERVICE BYPASS LINES)**



**Designation of Stop Valves Examples :**

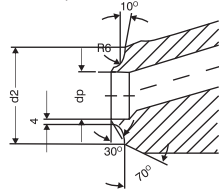


**Standard Accessories**

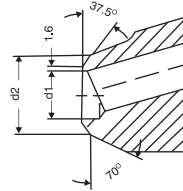
- SN 25 Copper free material
- SN 33 Valve Yoke for Electrical Actuator
- SN 34 Valve for Pneumatic Actuator
- SN 41 Stellite plug
- SN 46 Plug with regulating cone
- SN 43 Material Transition Ring

**End Connection Details**

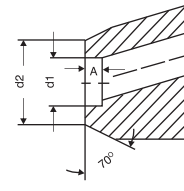
VKINS11, EKINS 11  
DIN Butt Welding Ends  
(on request)



VKINW 11, EKINW 11  
ANSI Butt Welding Ends



VKINM 11, EKINM 11  
ANSI Socket Welding Ends



ANSI	VKINW11		VKINM11				(Dimensions in mm)									
	Class	d1	d2	d1	d2	A	max D2	L	H	h	B	D	Stroke	S	Wt	
3/8	2500	10.0	17.2	17.5	32.0	9.5	40.0	127	215	30	80	170	8	80	5	
1/2	1500	12.5	22.0	21.7	38.1	9.5										
1/2	2500	12.5	22.0													
3/4	1500	15.6	27.0				49.0	127	255	45	100	170	13	80	8	
3/4	2500	15.6	27.0													
3/4	1500	18.0	27.0	21.7	38.1	9.5										
3/4	2500	15.6	27.0	21.7	38.1	9.5										
1	1500	24.0	35.0	27.1	44.4	12.7										
1	2500	21.0	35.0	27.1	44.4	12.7										
1-1/4	1500	29.0	44.0	—	—	—	86.0	217	350	70	130	250	22	175	27	
1-1/4	2500	29.0	44.0	—	—	—										
1-1/2	1500	34.0	49.0	48.6	73.0	30.0										
1-1/2	2500	34.0	49.0				86.0	217	350	70	130	250	22	175	27	
2	1500	43.0	61.0	61.1	87.7	15.9										
2	2500	38.0	61.0													
2-1/2	1500	54.0	73.0													



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