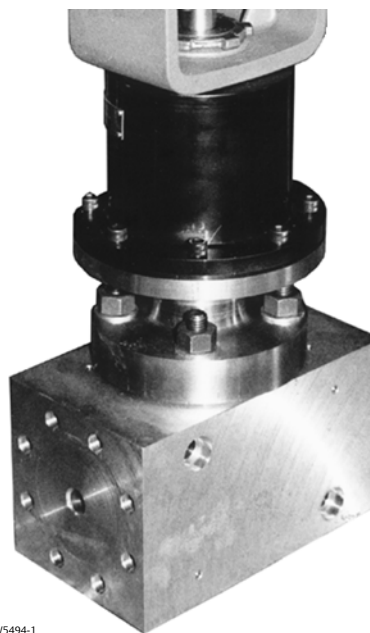


Fisher® HVP Series Control Valves

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Figure 1. Fisher HVP-TS Valve



W5494-1

Introduction

Scope of Manual

This instruction manual provides installation, maintenance, and parts information for the HVP Series control valve.

Do not install, operate, or maintain HVP control valves without being fully trained and qualified in valve, actuator, and accessory installation, operation, and maintenance. **To avoid personal injury or property damage, it is important to carefully read, understand, and follow all the contents of this manual, including all safety cautions and warnings.** If you have any questions about these instructions, contact your Emerson Process Management sales office before proceeding.

Description

The HVP (high viscous polymer) Series control valve is used extensively by the polymer industry. These processes generally require the valves to operate at and maintain high temperatures to assure that the polymer fluid flows freely. The HVP Series can provide integral valve body passages through which a heat-transfer fluid is pumped to keep the valve and process fluid heated.

Forged and fabricated valve body styles are engineered to meet your process and piping requirements. Standard valve body and trim designs can be adapted to exactly match specifications. Models include: HVP-TS (figure 1) for throttling service; HVP-DS (figure 2) for diverting service (three-way valve); and HVP-SS for stop service (on/off).



Table 1. Specifications

<p>Valve Body Sizes NPS 1 through 10, larger sizes on request</p> <p>Flow Coefficient C_v 0.1 to 200</p> <p>Inlet Pressure⁽¹⁾ Consistent with CL150 through 2500 ratings per ASME B16.34</p> <p>Temperatures⁽¹⁾ -18 to 427°C (0 to 800°F) as required by specific application</p> <p>End Connections <ul style="list-style-type: none"> ■ Butt weld ends (BWE) consistent with ASME B16.25 ■ Socket weld ends (SWE) consistent with ASME B16.11 ■ Flanged ends consistent with ASME B16.5 </p> <p>Transfer Fluid Connections NPS ■ 1/2, ■ 3/4, or ■ 1 with ■ Butt weld ends (BWE) consistent with ASME B16.25 ■ Socket weld</p>	<p>ends (SWE) consistent with ASME B16.11 ■ Flanged ends consistent with ASME B16.5</p> <p>Shutoff Classification per ANSI/FCI 70-2 and IEC 60534-4 To Class V as required</p> <p>Travel 25 through 102 mm (1 through 4-inch)</p> <p>Yoke Boss and Stem Diameter As required to mate with specified actuator</p> <p>Construction Materials Valve Body, Bonnet, and Flanges: S30400/S31600 stainless steel Packing: Graphite Valve Plug and Valve Stem: S30400/S31600 stainless steel (Alloy 6 overlays applied as required) </p> <p>Dimensions Depends on actuator requirements; contact your Emerson Process Management sales office</p>
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1. The pressure/temperature limits in this manual, and any applicable standard or code limitation, should not be exceeded.

Specifications

Table 1 lists specifications for the HVP control valve. Some of the specifications for a given control valve as it originally comes from the factory are stamped on a nameplate located on the actuator spring barrel.

Installation

⚠ WARNING

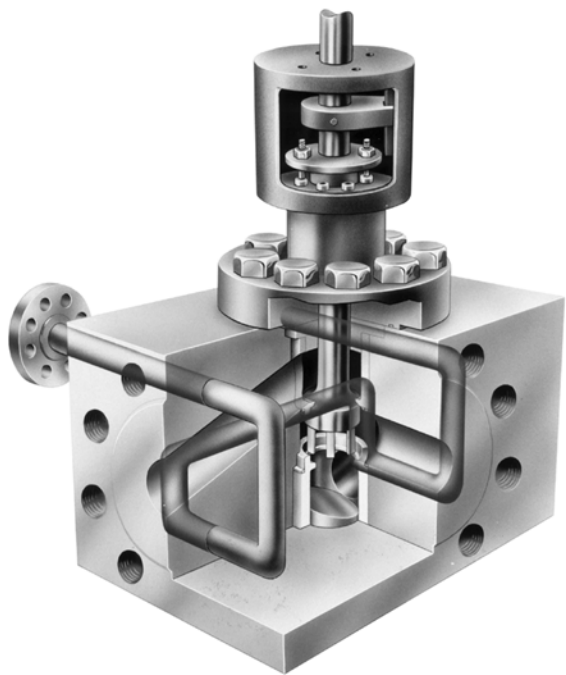
Always wear protective gloves, clothing, and eyewear when performing any installation operations to avoid personal injury.

Personal injury or system damage caused by sudden release of pressure may result if the valve assembly is installed where service conditions could exceed the limits given in table 1 and on the appropriate nameplates. To avoid such injury or damage, use pressure-relieving devices as required by applicable industry codes to prevent the service conditions from exceeding these limits.

Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

If installing into an existing application, also refer to the WARNING at the beginning of the Maintenance section in this instruction manual.

Figure 2. Fisher HVP-DS Valve



W5493

CAUTION

When ordered, the valve configuration and construction materials were selected to meet particular pressure, temperature, pressure drop, and controlled fluid conditions. Responsibility for the safety of process media and compatibility of valve materials with process media rests solely with the purchaser and end-user. Since some body/trim material combinations are limited in their pressure drop and temperature ranges, do not apply any other conditions to the valve without first contacting your Emerson Process Management sales office.

1. Use accepted piping and welding practices when installing the valve in the line. For welding end valve bodies, completely disassemble the valve removing all trim parts before welding the valve body in the line. For flanged valve bodies, use suitable gaskets between the valve body flanges and pipeline flanges.

Note

Depending on valve body materials used, post-weld heat treating might be needed. Post-weld heat treatment can damage internal elastomeric, plastic, and metal parts. Shrink-fit pieces and threaded connections might loosen. In general, if post-weld heat treating is needed, remove all trim parts. Contact your Emerson Process Management sales office for additional information.

2. If the actuator and valve body are shipped separately, refer to the actuator mounting procedure in the appropriate actuator instruction manual.
3. If the valve was shipped without packing installed in the packing box, install the packing before putting the valve into service.

Maintenance

Valve parts are subject to normal wear and must be inspected and replaced as necessary. The frequency of inspection and maintenance depends on the severity of the service conditions.

Table 2. Recommended Bonnet Bolt Torque

BOLT SIZE		THREADS PER INCH	RECOMMENDED BOLT TORQUE ⁽¹⁾
Inch			Lbf•ft
1/2		13	71
9/16		12	95
5/8		11	125
3/4		10	200
7/8		9	290
1		8	405
1-1/8		8	550
1-1/4		8	730
1-3/8		8	980
1-1/2		8	1290
1-5/8		8	1650
1-3/4		8	2070
1-7/8		8	2560
2		8	3130
2-1/4		8	4490
2-1/2		8	6200
3		8	10800

1. Torques for lubricated studs with heavy hex nuts.

⚠ WARNING

Avoid personal injury from sudden release of process pressure or bursting of parts. Before performing any maintenance operations:

- Do not remove the actuator from the valve while the valve is still pressurized.
- Always wear protective gloves, clothing, and eyewear when performing any maintenance operations to avoid personal injury.
- Disconnect any operating lines providing air pressure, electric power, or a control signal to the actuator. Be sure the actuator cannot suddenly open or close the valve.
- Use bypass valves or completely shut off the process to isolate the valve from process pressure. Relieve process pressure on both sides of the valve. Drain the process media from both sides of the valve.
- Vent the power actuator loading pressure and relieve any actuator spring precompression.
- Use lock-out procedures to be sure that the above measures stay in effect while you work on the equipment.
- The valve packing box may contain process fluids that are pressurized, *even when the valve has been removed from the pipeline*. Process fluids may spray out under pressure when removing the packing hardware or packing rings.
- Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

Table 3. Recommended Packing Nut Torque

STEM DIAMETER	PRESSURE CLASS	MAXIMUM TORQUE	MINIMUM TORQUE
Inch		Lbf•ft	Lbf•ft
1/2	CL150	6	4
	CL300	7	5
	CL600	10	7
	CL900	13	9
	CL1500	16	11
	CL2500	18	13
3/4	CL150	12	8
	CL300	15	10
	CL600	22	15
	CL900	30	20
	CL1500	37	25
	CL2500	45	30
1	CL300	27	18
	CL600	37	25
	CL900	46	31
	CL1500	57	38
	CL2500	67	45
1-1/4	CL300	36	24
	CL600	49	33
	CL900	61	41
	CL1500	75	50
	CL2500	90	60
2	CL300	48	43
	CL600	67	61
	CL900	88	80
	CL1500	108	98
	CL2500	125	115

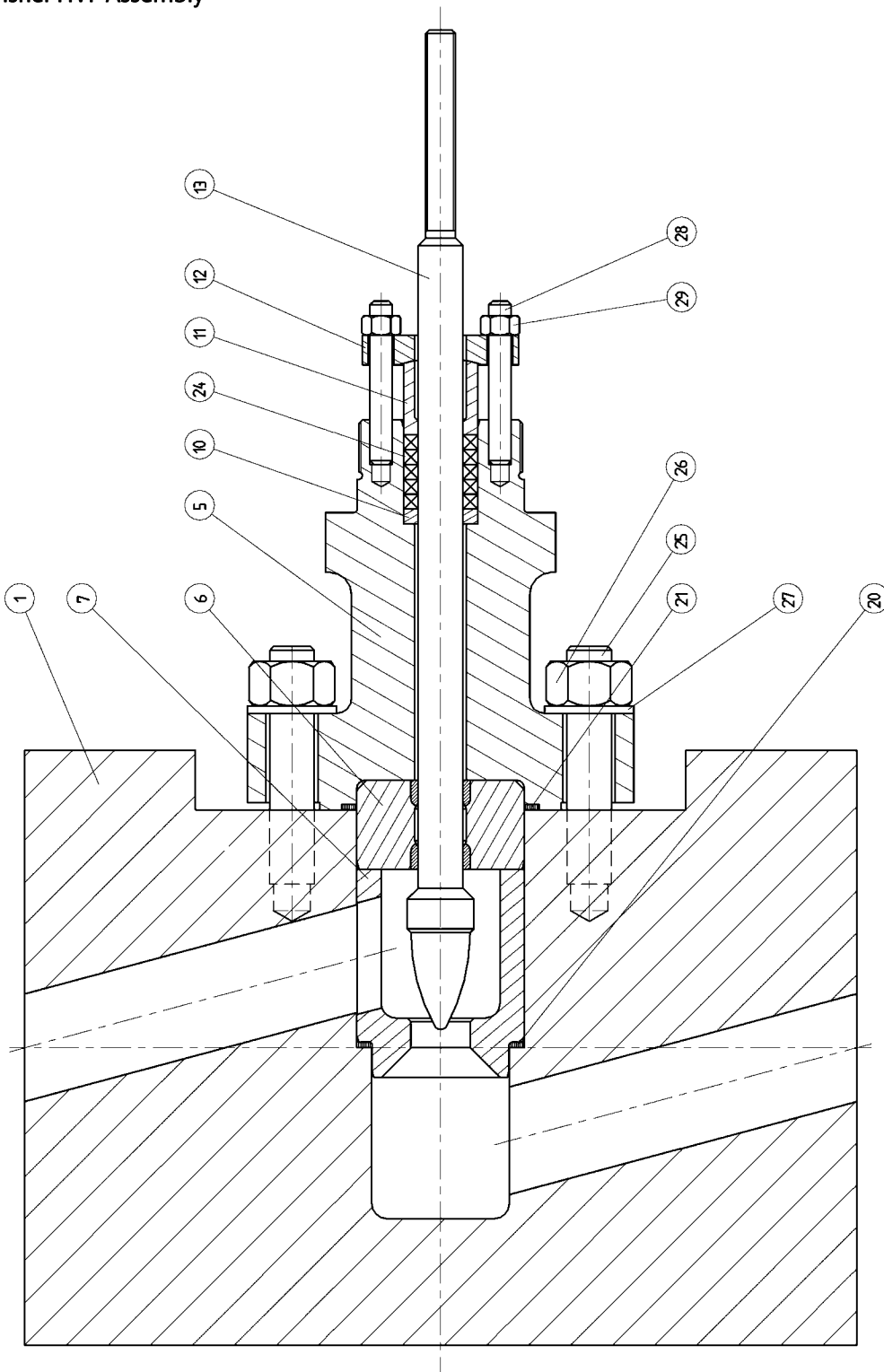
Note

Whenever a gasket seal is disturbed by removing or shifting gasketed parts, a new gasket should be installed upon reassembly. This is necessary to ensure a good gasket seal.

Note

If the valve has HIGH-SEAL heavy-duty live-loaded packing installed, see Fisher instruction manual entitled HIGH-SEAL ULF Live-Loaded Packing System (D101453X012) for packing instructions.

Figure 3. Fisher HVP Assembly



GA02384-A

Parts Ordering

Each HVP control valve is assigned a serial number, which can be found on the nameplate. Refer to the number when contacting your Emerson Process Management sales office for assistance or when ordering replacement parts.

▲ WARNING

Use only genuine Fisher replacement parts. Components that are not supplied by Emerson Process Management should not, under any circumstances, be used in any Fisher valve, because they may void your warranty, might adversely affect the performance of the valve, and could cause personal injury and property damage.

Note

For part numbers not shown, contact your Emerson Process Management sales office.

Parts List

Key	Description	Key	Description
1	Valve Body	20*	Seat Gasket
5	Bonnet	21*	Bonnet Gasket
6*	Plug Guide	24*	Packing
7*	Seat	25*	Bonnet Stud
10*	Packing Ring	26*	Bonnet Stud Nut
11*	Packing Follower	27*	Bonnet Stud Washer
12*	Packing Flange	28*	Packing Stud
13*	Plug	29*	Packing Stud Nut

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