

# Fisher® EZ-Overtravel (EZ-OVT) Valve Trim

Fisher EZ-OVT valve trim is a dual seat valve trim, designed to maintain long term tight shutoff in on-off services that contain particulates in the flow stream such as catalyst fines. An example of this type of service is the valves used to control and purge the hydrogen and nitrogen transfer gases used on the UOP continuous catalytic regeneration (CCR) refining process.

Control valves for this application must provide bubble tight shutoff to stop the transfer gas flow and be able to maintain this performance, even in the presence of catalyst and their fines.

## Trim Features

- **Dual seat design**—EZ-OVT trim features a dual seat design that includes a primary soft seat and a secondary metal seat. This dual seat design provides long term ANSI and IEC Class VI shutoff.
- **Off-the-seat deadband**—A double deadband area is built into the trim to inhibit erosive flow across the seating surfaces as the trim starts to open.
- **Flow deflector**—A special flow deflector directs the flow stream away from the seating surfaces once the valve has traveled off the seat.
- **Simple design**—Large flow passages and minimal moving parts reduce particulate buildup such as catalyst fines that could collect in these areas and cause failure.



## Product Bulletin

51.1:EZ-OVT  
June 2012

**EZ-OVT Trim**  
D103041X012

### Specifications

#### Valve Body Sizes

NPS ■ 1, ■ 1-1/2, and ■ 2

#### End Connection Styles

- CL150 RF and RTJ
- CL300 RF and RTJ
- CL600 RF and RTJ

#### Maximum Inlet Pressures and Temperatures<sup>(1)</sup>

Consistent with CL150, CL300, and CL600 per ASME B16.34

#### Shutoff Classifications Per ANSI/FCI 70-2 and IEC 60534-4

Class VI

#### Flow Direction

Flow up

#### Operating Temperature Capabilities

- **Standard:** Up to 93°C (199°F) with UHMWPE seat disk
- **Optional:** Up to 204°C (399°F) with PTFE seat disk

#### Yoke Boss and Stem Diameters

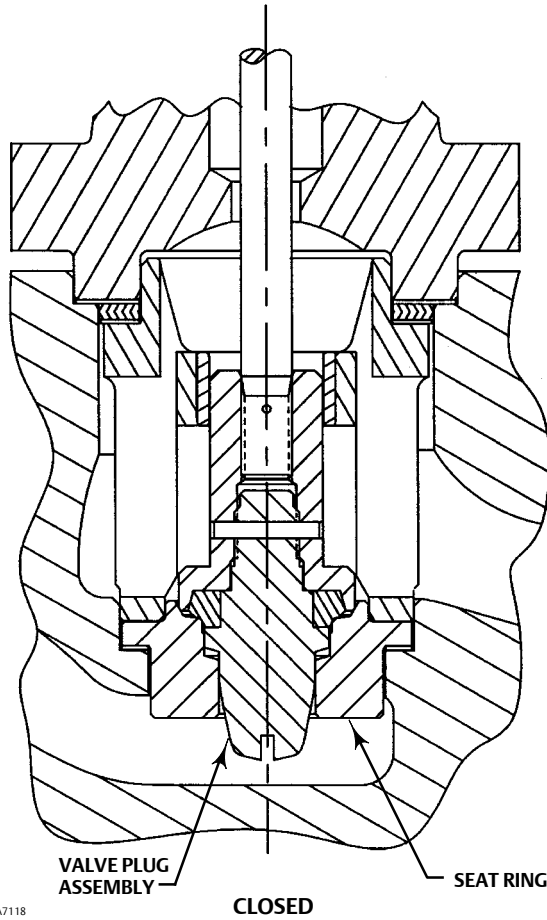
See Fisher EZ bulletin 51.1:EZ (D100025X012)

#### Construction Materials

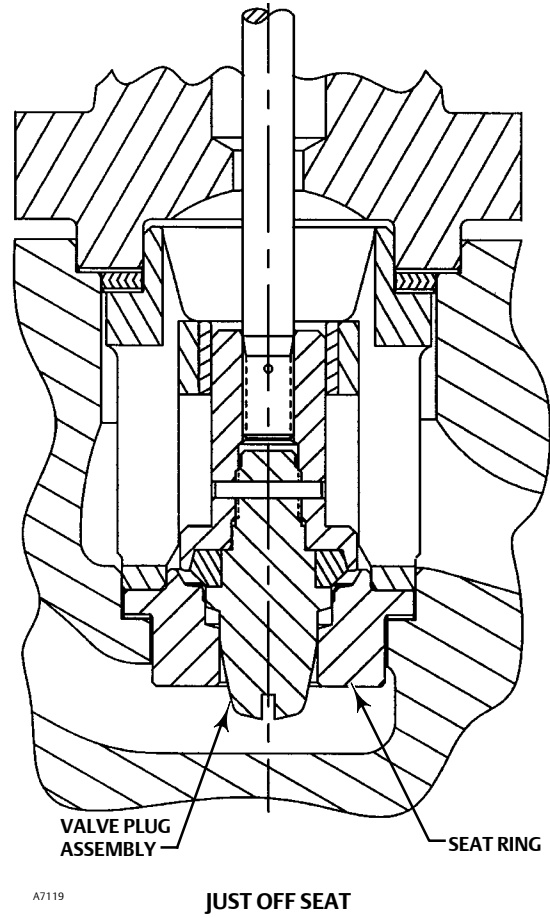
- Valve Body:** ■ A216 WCC
- Plug Guide Post:** ■ S31600 stainless steel with CoCr-A guiding surfaces
- Plug Tip:** ■ Alloy 6B
- Seat Ring:** ■ Alloy 6B
- Seat Ring Retainer:** ■ S31600 with CoCr-A bushing
- Seat Disk:** ■ UHMWPE or PTFE

1. The pressure/temperature limits in this bulletin and any applicable standard or code limitation should not be exceeded.

**Figure 1. Fisher EZ-OVT Trim Seated**



**Figure 2. Fisher EZ-OVT Trim Just Off the Seat**

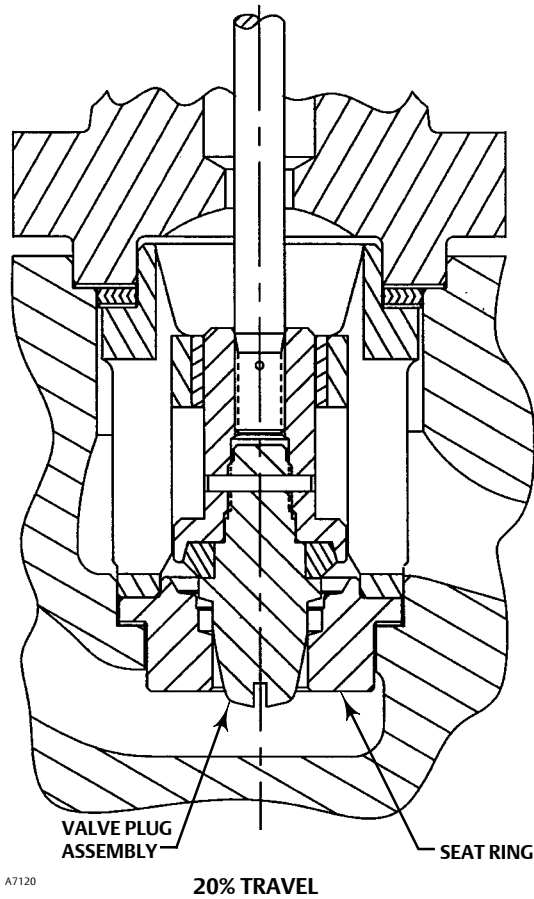


## Principle of Operation

The EZ-OVT valve trim is shown seated in figure 1. When on the seat, the primary shutoff is provided by the soft seat insert. The metal seat provides a secondary seat.

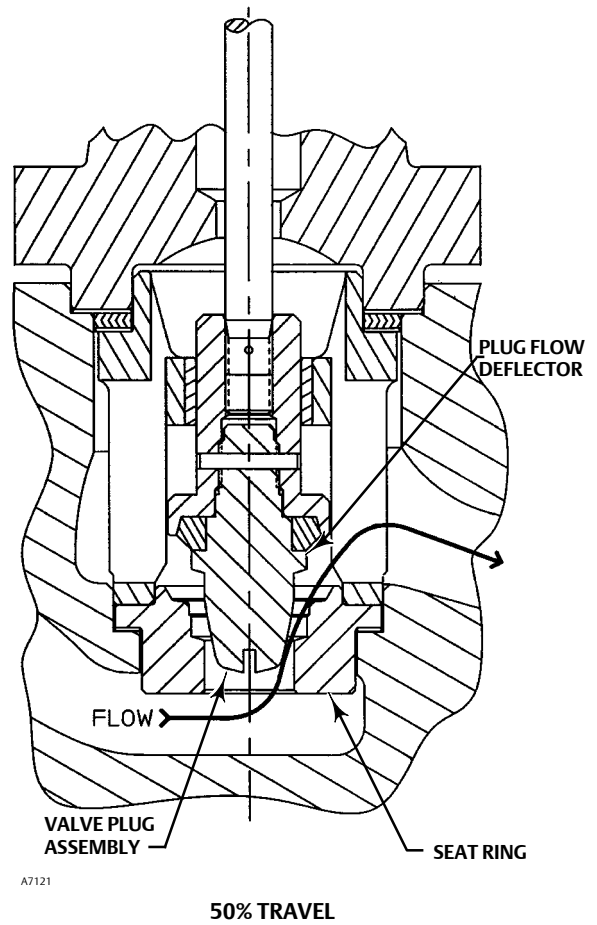
In figure 2 the trim is shown just off the seat. At this point in travel, the deadband areas are fully engaged to inhibit flow across the trim seating surfaces.

Figure 3. Fisher EZ-OVT Trim 20% Disengaged from the Seating Surface



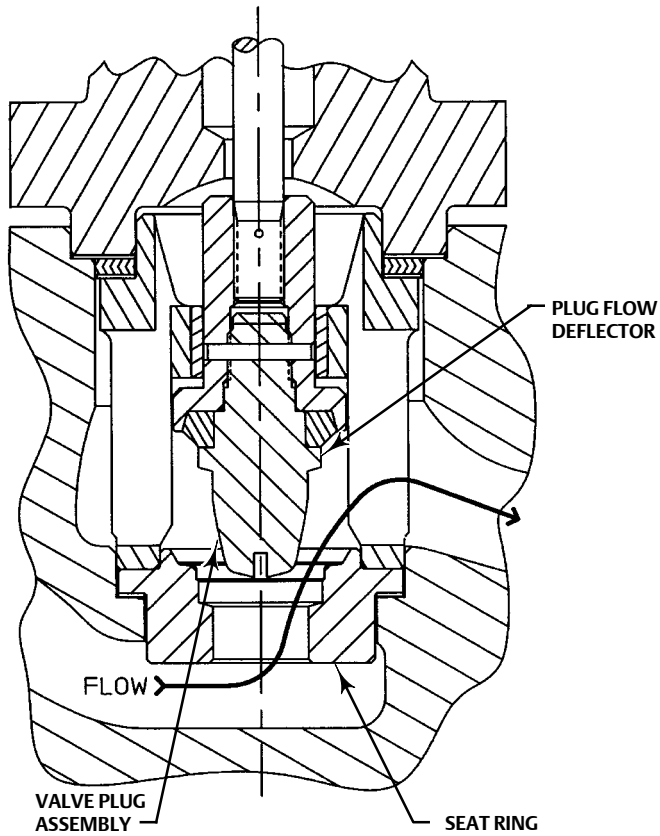
In figure 3, the trim is shown at 20% travel. At this travel the trim is just starting to move out of the deadband areas to allow for flow.

Figure 4. Fisher EZ-OVT Trim at 50% of Travel



With the seating surfaces significantly out of the flow path, the tight tolerances between the valve plug and the seat ring open enough to allow flow (see figure 4). The flow deflector directs the flow stream away from the valve plug seats.

Figure 5. Fisher EZ-OVT Trim at 100% of Travel



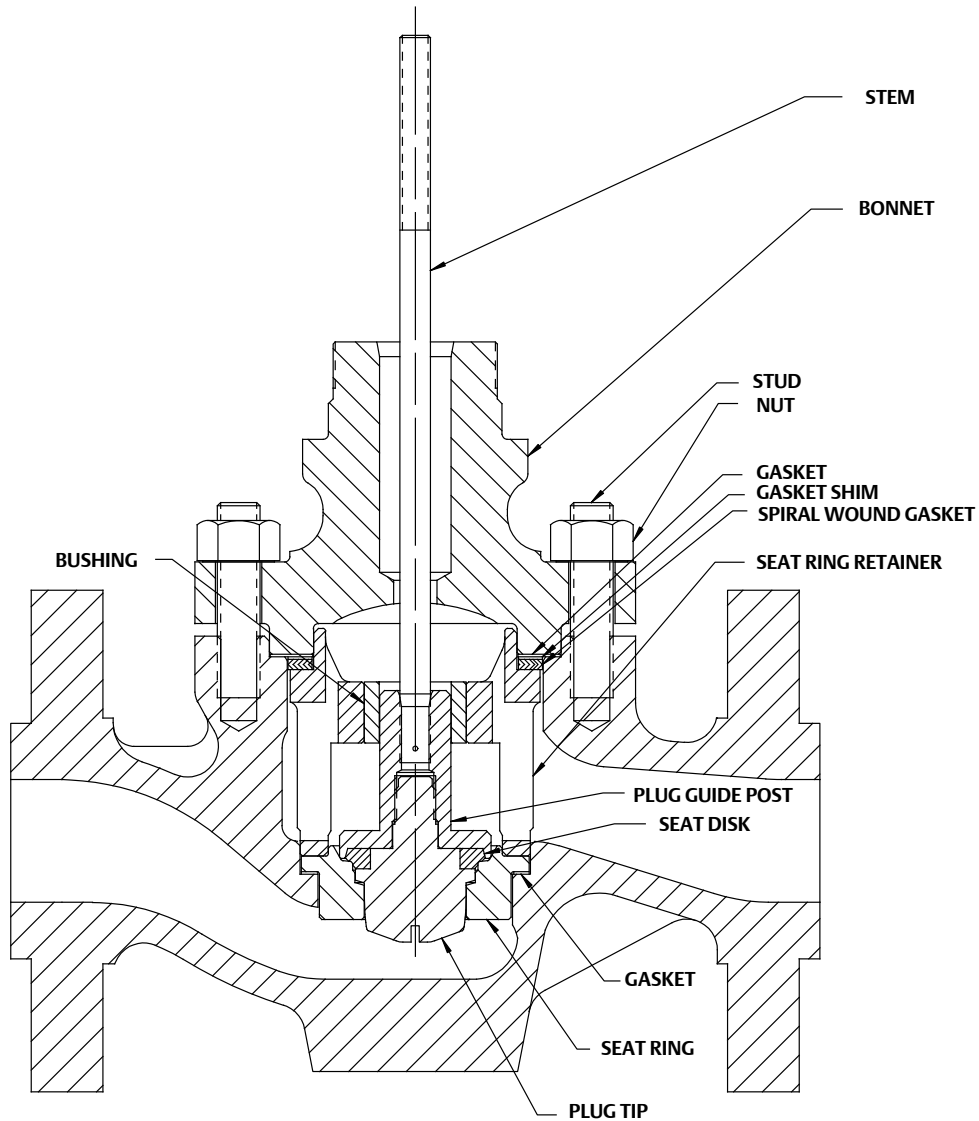
A7122

100% TRAVEL

The seating surface is completely removed from the flow path, enabling full flow through the trim (see

figure 5). The flow deflector is continually directing the flow stream away from the valve plug seats.

**Figure 6. Fisher EZ-OVT Valve Assembly**



30C1045-A

**Table 1. Available Constructions**

VALVE BODY SIZE		SHUTOFF PORT DIAMETER <sup>(1)</sup>		FLOWING PORT DIAMETER		TRAVEL		UNBALANCED AREA		MAX Cv
mm	NPS	mm	Inch	mm	Inch	mm	Inch	mm <sup>2</sup>	Inch <sup>2</sup>	
25	1	34.0	1.34	19.1	0.75	25.4	1	910	1.41	8.54
38.1	1-1/2	47.0	1.85	31.8	1.25	25.4	1	1736	2.69	25
50	2	53.3	2.10	38.1	1.5	25.4	1	2239	3.47	28

1. Actuator sizing should be performed using the Shutoff Port Diameter.



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