

Replacement of Fisher™ EHA with Fisher HPA Control Valves

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Management of Change

Management of Change (MOC) is a procedure used to proactively manage changes that have the potential to impact safety or the process within a plant. Evaluating new techniques for improving MOC approval procedures can have an impact on plant efficiency. Historically, upgrading obsolete products or replacing existing process control equipment had been delayed or abandoned due to the extensive paperwork involved in completing a complex MOC approval sheet.

Background

The Fisher HP Series control valve is found in every industry that requires ASME CL900/1500 rated control valves. The globe version is called HP and the angle version is called HPA. Historically, the Fisher HPA valve was available in NPS 1 and 2 CL900/1500 and CL2500 only, while sizes NPS 3–8 CL900/1500 were available only in the EHA valve. Emerson Process Management has expanded the HPA valve to include NPS 3–8 CL900/1500. This was done to simplify the angle valve offering and modernize the designs. The purpose of this guide is to simplify the transition from the Fisher EHA valve to the HPA valve.

This MOC guide contains two sections, the first contains frequently asked questions with answers to aid users in completing MOC approval documents when upgrading to the HPA valve. The second section provides a comparison of the HPA and EHA valve to help users better understand the differences and similarities between them.

Question & Answer Checklist

- 1** **Q:** Does the proposed modification cause any changes to the piping and instrumentation diagram (P&ID)?
A: No.

- 2** **Q:** Does the proposed modification change process chemistry, technology, or operating and control philosophies?
A: No.

- 3** **Q:** Does the proposed modification change how the existing plant is operated?
A: No.

- 4** **Q:** Does the proposed modification change process flow rates?
A: No.

- 5** **Q:** Does the proposed modification change existing pressure relief cases?
A: No.
- 6** **Q:** Does the proposed modification change the process description?
A: No.
- 7** **Q:** Have the codes and standards to which the new equipment was designed changed?
A: No.
- 8** **Q:** Will the operating and design conditions (flow, temperature, pressure) of my line change because of this change?
A: No.
- 9** **Q:** Does the proposed modification change the materials of construction such as a change in material form (cast, forged, or alloy)?
A: No, they are both available in the same materials.
- 10** **Q:** Does the proposed modification introduce new equipment items that require periodic predictive maintenance?
A: No. The new equipment items will require the same periodic maintenance as required by the old equipment items.
- 11** **Q:** Does the proposed modification change existing operator training requirements?
A: No, they would both require the same level of training.
- 12** **Q:** Does the proposed modification introduce new equipment items that require training, manuals, maintenance procedures, or training to teach maintenance department craftsmen how to maintain them?
A: Yes. The new equipment requires HPA valve specific instruction manuals, maintenance procedures, and training to maintenance department. However, if your people have been trained or are familiar with the HP or HPA valve, they won't require more training.

13 Q: Does the proposed modification introduce new equipment items that require spares or obsolete spares for existing equipment?

A: Yes. The spares of the existing equipment items have to be removed and the spares for the new equipment item are required. Many of the NPS 3–8 CL900/1500 HPA valve spare parts will be same as your existing HP spare parts.

14 Q: Does the proposed modification change the inspection scope or inspection interval?

A: No.

Comparison of Fisher EHA to HPA Control Valves

The Fisher HPA control valve is very similar to the EHA control valve, but there are a few construction differences. The EHA valve makes use of hung cage design and the seat ring is retained by the seat ring retainer, which is threaded to the valve body. The HPA valve trim has been modernized to be clamped into the body and is retained by the bonnet bolting force, just like in the HP globe valve. This small change is a great advancement as no more special maintenance tools are required to remove the seat ring retainer and thereby remove the seat ring. HPA seat rings can easily be accessed by simply removing the bonnet and then the cage.

Port and travel of the HPA valve remains the same as the EHA valve and the Cv of the HPA valve is slightly less than that of the EHA valve. In those cases where the Cv of NPS 3–8 CL900/1500 HPA is not adequate enough to replace EHA, the HPA valve shall not be used as the replacement valve [refer to Tables 1 and 2 on page five]. The face-to-face dimension of HPA valves is same as that of the EHA valves, and, hence, no piping change is required.

The EHA valve was available in three different constructions: unbalanced plug (EHAS), balanced low-temperature (600°F maximum) construction (EHAT), and balanced high-temperature construction (EHAD). Similarly, there are the Fisher HPAS, HPAT, and HPAD constructions to cater to the different application requirements. The HPA valve can be applied in almost all applications where the EHA valve was used. There are certain applications in which the EHA valve with intermediate rating was used. In those cases the HPA valve shall not be used as the replacement valve.

The HPA valve offers similar severe service trims and trim material options as provided by the EHA valve. Apart from the standard trim combinations, special trim combinations can be offered to meet customers' needs.

Valve Without Liner						
NPS Size	Linear Characteristics		Equal-Percentage Characteristics		Modified Equal-Percentage Characteristics	
	EHAD, EHAT	HPAD, HPAT	EHAD, EHAT	HPAD, HPAT	EHAD, EHAT	HPAD, HPAT
3	65.7	64.3	54.4	48.8	63	61.1
4	151	121	112	92.7	140	114
6	244	201	195	165	229	203
8	503	425	395	319	466	378

Table 1. Cv Comparison between CL1500 Rated EHA and HPA Valve Without Liner

Valve With Liner						
NPS Size	Linear Characteristics		Equal-Percentage Characteristics		Modified Equal-Percentage Characteristics	
	EHAD, EHAT	HPAD, HPAT	EHAD, EHAT	HPAD, HPAT	EHAD, EHAT	HPAD, HPAT
3	58.3	64.3	51.6	48.8	56.4	61.1
4	148	121	122	92.7	143	114
6	231	201	182	165	216	203
8	491	425	391	319	459	378

Table 2. Cv Comparison Between CL1500 Rated EHA and HPA Valve With Liner

Conclusion

The Fisher HPA valve is now extended from sizes NPS 1–2 to NPS 1–8. The Fisher EHA valve will no longer be available as a new assembly; however, spare parts will be supported until July 2022. The HPA valve should always replace the EHA valve unless the existing EHA valve utilized an intermediate rating or has higher capacity. As discussed in the previous sections, the HPA valve offers several advantages over the EHA valve and they are highlighted below.

- Clamped trim design
- Easy access to seat ring, no special tools required to remove the seat ring
- Same face-to-face dimensions
- Same port and travel

Additional Resources

Contact your local Emerson sales office or refer to the following resources for complete product features:

[HPA Instruction Manual \(D101634X012\)](#)

[HPA Bulletin \(D101635X012\)](#)



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