

Service Manual



Powering Business Worldwide

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Environmental Concerns

Protection of the natural fundamentals of life is one of our predominant tasks. We are continuously improving the protection of the environment as far as applications are concerned. We encourage you to contribute your share to comply with this demand. In connection with work to be performed, the environmental regulations of the machine manufacturer must be respected.

In general:

- Greases and oils which cannot be used any more have to be collected. They are normally a threat to water reserves and must be kept away from the environment.
- Adhere to national and local regulations for waste disposal.

Important

You have been provided information on the conversion of DuraForce products. Proper application of the information requires specific training and may require use of specialized tooling and equipment. All requests for training must be coordinated through your Eaton Account Manager. He can also provide you price and availability of any specialized tooling. If you choose to proceed with the conversion of the DuraForce products absent the necessary training and/or these specialized tools, you do so at your risk.

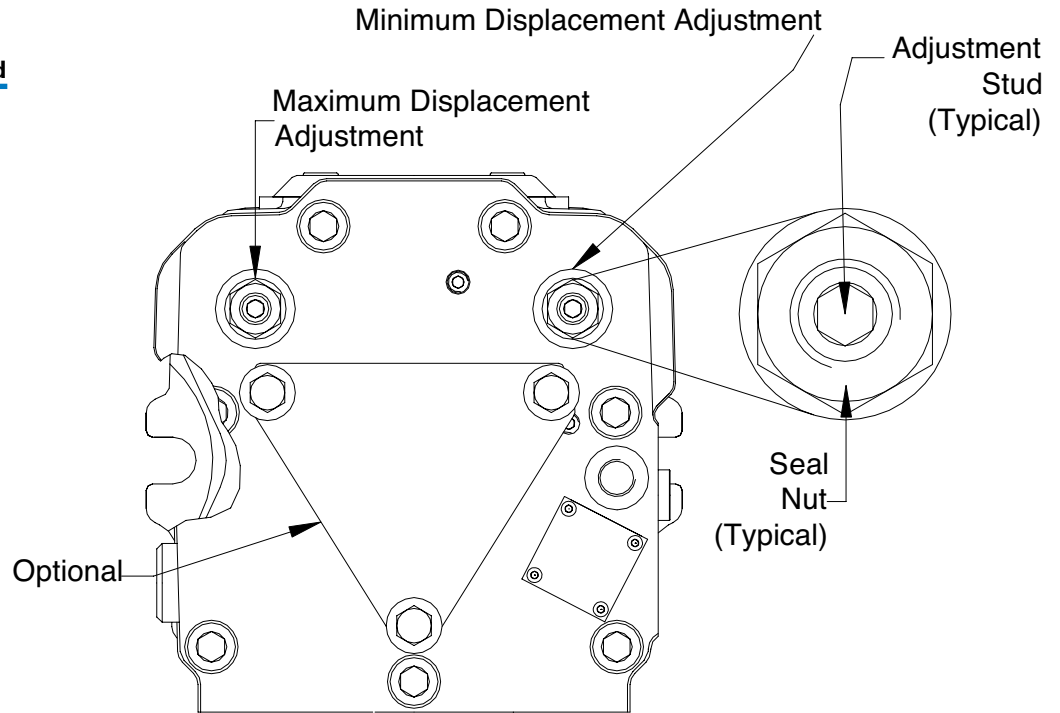
Eaton will accept no claim for warranty resulting from deficiencies in the conversion. Please refer to the Eaton literature web site for warranty information at www.eaton.com/hydraulics/warranty.

Maximum Displacement Adjustment For HMA Motor

Set Up

Tools / Equipment Required

- 27mm closed end wrench (HMA280)
- 13mm closed end wrench (HMA280)
- 19mm closed-end wrench (All other sizes)
- 6mm Allen wrench (All other sizes)



Note #1:

The following table illustrates the maximum displacements and allowable rotational speeds for those displacements for the HMA motors. The HMA motors should NOT be operated at higher speeds if these maximum displacement settings are used. If higher rotational speeds are required for your application, you must consult Eaton Engineering for the allowable maximum displacement setting.

Motor Size	Maximum Allowable Speed	Maximum Motor Displacement
55 cc/rev	4100 RPM	54.8cc/rev
75 cc/rev	3800 RPM	75.9 cc/rev
105 cc/rev	3500 RPM	105.0 cc/rev
135 cc/rev	3200 RPM	135.6 cc/rev
165 cc/rev	3100 RPM	165.0 cc/rev
210 cc/rev	2700 RPM	210.0 cc/rev
280 cc/rev	2400 RPM	280.0 cc/rev

Maximum Displacement Adjustment For HMA Motor

Procedure

Adjustment:

1. Turn the Minimum Displacement Adjustment out.
 - a. Hold the Adjustment stud stationary with a 6mm Allen Wrench (13mm wrench for HMA280).
 - b. Loosen the Seal Nut with a 19mm (27mm for HMA280) Wrench.
 - c. Turn the Adjustment Stud out (ccw) two turns.
 - d. While holding the Adjustment stud stationary secure the seal nut.
2. Supply flow to the HMA motor.
3. Adjust the Maximum Displacement Adjustment while monitoring the function speed until the required speed is achieved.
 - a. Hold the Adjustment stud stationary with a 6mm Allen Wrench (13mm wrench for HMA280).
 - b. Loosen the Seal Nut with a 19mm (27mm for HMA280) Wrench.
 - c. Turn the adjustment IN (cw) to decrease the Maximum Displacements setting or OUT to increase the setting.
 - d. If the desired speed requires the adjustment stud to be turned IN for more than two turns, then you must repeat step #1 again, then continue adjusting the Maximum displacement stud.
 - e. When desired speed is reached, secure the Seal Nut while holding the adjustment Stud Stationary.
4. Turn the Minimum Displacement adjustment in.
 - a. Hold the Adjustment stud stationary with a 6mm Allen Wrench (13mm wrench for HMA280).
 - b. Loosen the Seal Nut with a 19mm (27mm for HMA280) Wrench.
 - c. Turn the Adjustment Stud in until it can not move any more.
 - d. While holding the Adjustment stud stationary secure the seal nut.

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