

Information sheet

Standard flushing on MCR motors

RE 15225-01

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In all standard motors, there is an option to have flushing integrated into the motor. There are three main characteristics that determine the performance of the flushing.

- ▶ Springs used in the flushing spool sub assembly
- ▶ Size of orifice in the poppet
- ▶ Size of shim fitted to the poppet

Springs used in the flushing spool sub assembly

(Spool shift pressure)

There are at present two options that exist for the springs:

- ▶ Two springs the same
This set of springs require 4 bar Δp to shift the flushing spool.
- ▶ Two different springs
This set of springs requires a Δp of 10 bar to shift the flushing spool. The 10 bar Δp makes the spool less sensitive and hence prevents jerks or tracking issues when manoeuvring with a low Δp . However Δp 10 bar is not always present, i.e. if the motor can drive a vehicle with less than Δp 10 bar. The flushing would not operate when required in this condition. In this case the Δp 4 bar springs should be used.

MCR3 and MCR5 are fitted with Δp 4 bar as standard.

MCR10, MCR15 and MCR20 are fitted with Δp 10 bar as standard.

Size of orifice in poppet (Flow rate)

A range of flow rates exists for different applications. At present the options shown in the table below are available.

Size of shim fitted to the poppet (Cracking pressure)

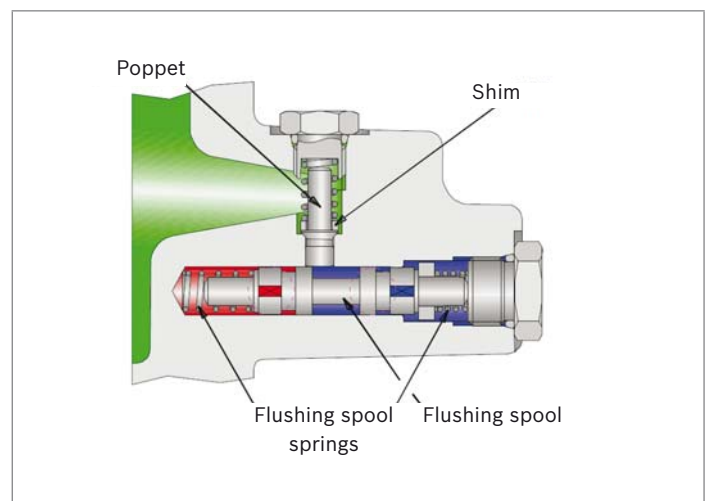
The flushing relief valve closes off the flushing flow if boost/charge pressure falls below the lift off pressure. This protects other functions i.e. park brake or pump charge.

Note

- ▶ The motor case pressure is applied to the relief outlet, the lift off pressure is therefore the sum of cracking pressure and motor case pressure.
- ▶ To prevent unwanted shift of two speed spool, flushing relief setting must be higher than two speed spool setting.

Due to variation in different types of applications a choice of different cracking pressures exist as shown in table below.

Selection should be made based on boost/charge pressure available and the minimum required for the other functions.



Flushing flow rates

Shim size (mm)	Flow (l/min) at 25 bar ³⁾										Cracking Pressure ²⁾
	F1 (ø1 mm) ¹⁾		F2 (ø1.5 mm) ¹⁾		F7 (ø1.7 mm) ¹⁾		F4 (ø2 mm) ¹⁾		F6 (ø2.3 mm) ¹⁾		
	min	max	min	max	min	max	min	max	min	max	
0	2.2	2.7	5.0	6.1	6.5	7.8	8.7	10.7	11.5	14.0	11.2
0.6	2.2	2.7	5.0	6.1	6.4	7.8	8.2	10.7	8.8	11.4	14.4
1.3	2.2	2.7	5.0	6.1	6.3	7.8	6.5	9.5	5.7	8.6	18.2
1.9	1.9	2.7	3.5	5.4	4.3	6.5	4.4	7.0	4.4	7.1	21.4
2.5	1.6	2.7	2.1	4.3	2.3	4.9	3.3	4.5	3.7	6.0	24.6

1) Code (orifice size)
2) Tolerance ±3
3) For other pressures please contact engineering at Glenrothes plant.

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