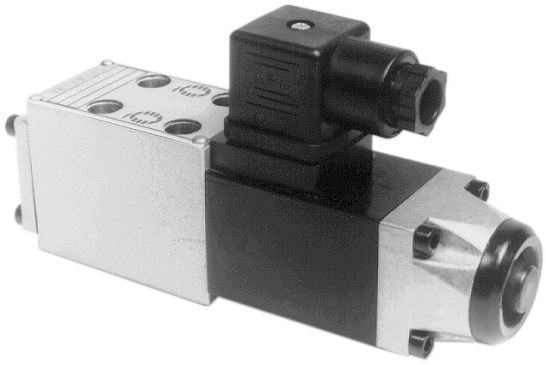
Directional spool valve type WE 5 electrically operated

Size 5 | **25 MPa** | **16 dm³/min**

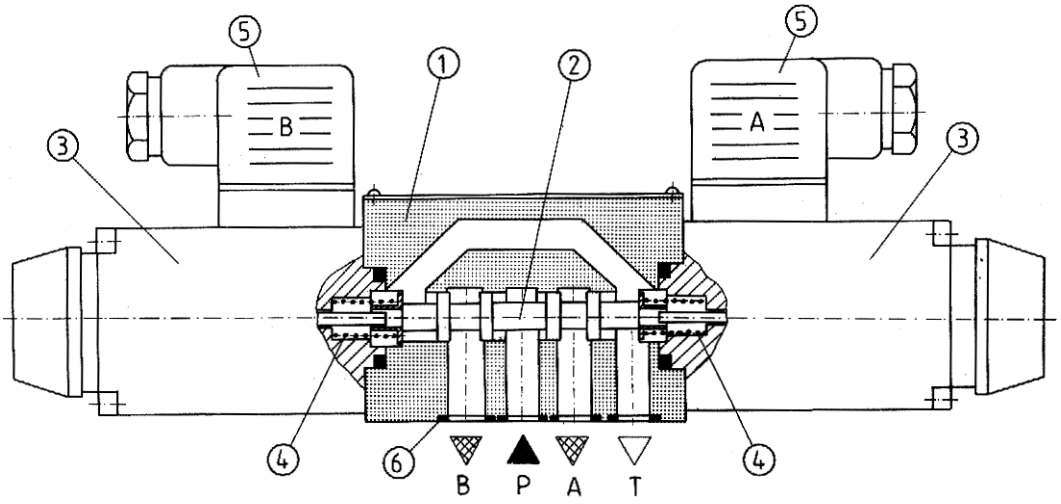
WK 450 187

04 1999

Directional spool valves are used to control the direction of fluid flow and thus the direction of movement or holding position of a user (cylinder or hydraulic motor).



DESCRIPTION OF OPERATION



Annular ports are made around the longitudinal bore in the housing 1. The annular ports cut through the longitudinal bore forming control lands in the housing. The moveable control spool 2 is placed in the main port. If the spool is shifted, it connects or separates the ports in the housing. Various control functions result directly from shape of the control spool.

The spool is shifted by the force of the solenoid 3. Return of the spool and centering are secured by the centering spring 4. The sealing rings are put between the valve and a subplate to prevent leakage. An electrical connection is made by the angled plug 3.

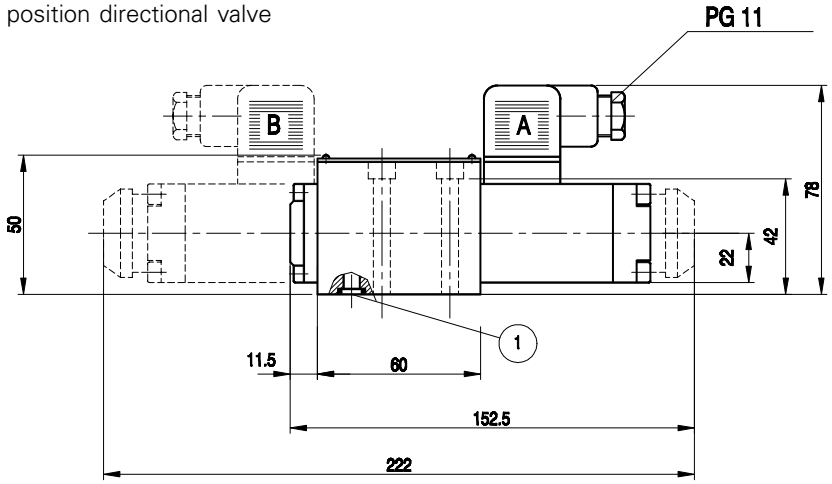
The directional valve is available in several versions : three-position, two-position, with return spring, two-position without centering springs or two-position with detent.

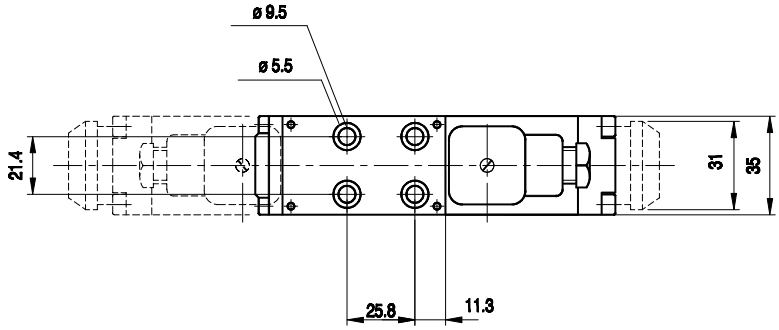
TECHNICAL DATA

Hydraulic fluid	Mineral oil, phosphate ester	
Required filtration	up to 25 µm	
Recommended filtration	up to 10 µm	
Nominal fluid viscosity	37 mm^2 at temp. of 328 K	
Viscosity range	2.8 to 380 mm^2/s	
Optimum working temperature (fluid in a tank)	313 - 328 K	
Fluid temperature range	243 - 343 K	
Maximum operating pressure	Port P, A, B	Port T
	25 MPa	6 MPa
Flow section in position ,,0''	Spool type W	Spool type Q
	3 % of nominal section	6 % of nominal section
Voltages for solenoids	DC	AC, 50 Hz
	12, 24, 110 V	110, 220 V
	DC	AC, 50 Hz
Power requirement Holding current In - rush current Duty cycle Switching time, on Switching time, off	26 W ---- ---- continues 40 ms 30 ms	---- 46 VA 130 VA continues 25 ms 20 ms
Maximum ambient temperature	323 K	
Maximum switching frequency	DC	AC, 50 Hz
	15 000 1/h	7 200 1/h
Insulation to DIN 40050	IP 65	
Weight	1.4 kg	

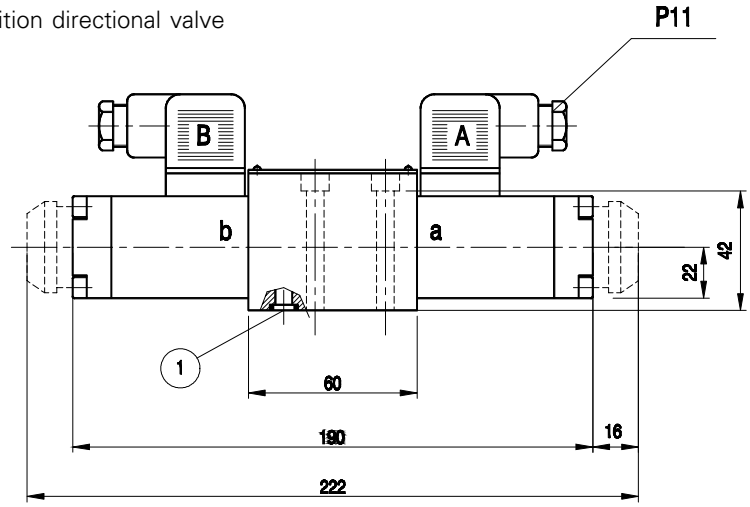
OVERALL AND MOUNTING DIMENSIONS

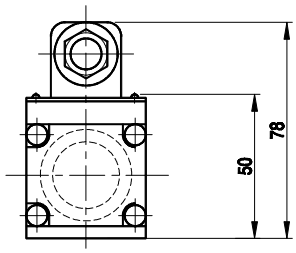
Two - position directional valve

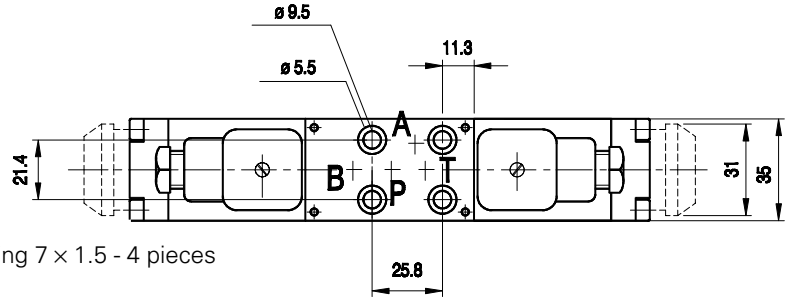




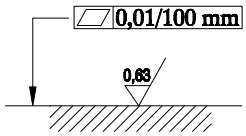
Three - position directional valve





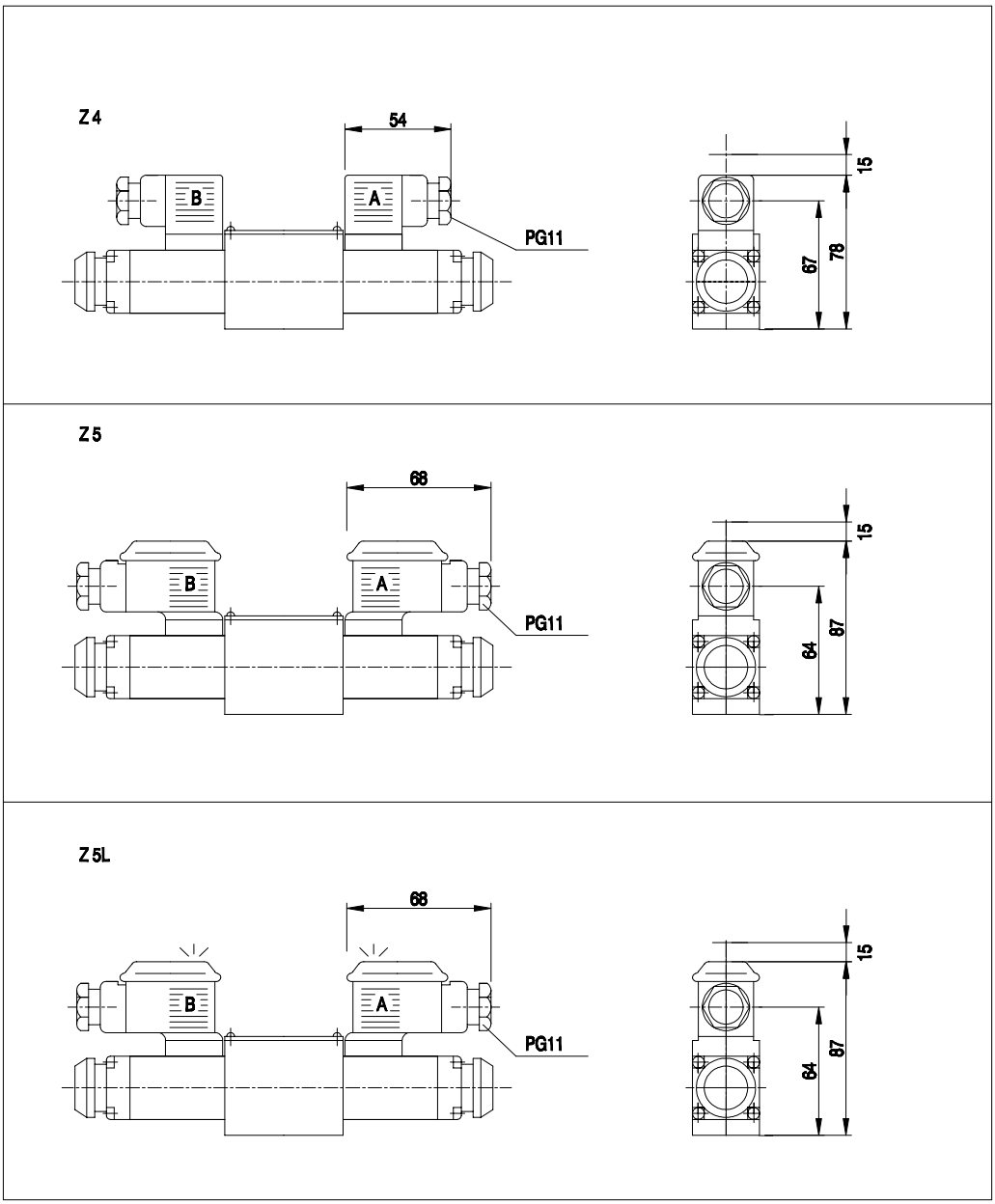


1 - O-ring 7 × 1.5 - 4 pieces



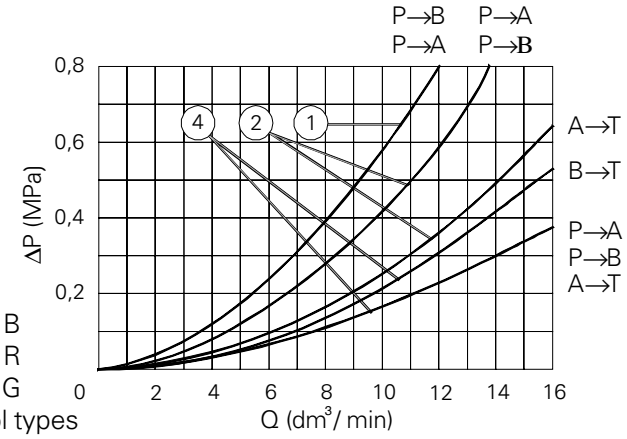
Admissible surface roughness and flatness deviation for a subplate face

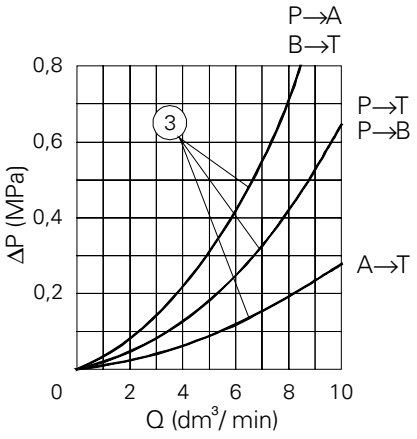
Electrical connection



PERFORMANCE CURVES : measured at ν = 41 mm²/s and T = 323 K

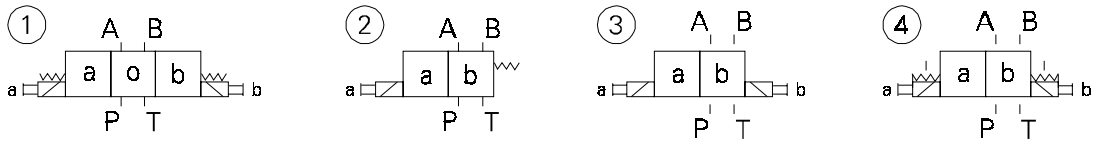
Pressure drop related to flow for various spool types





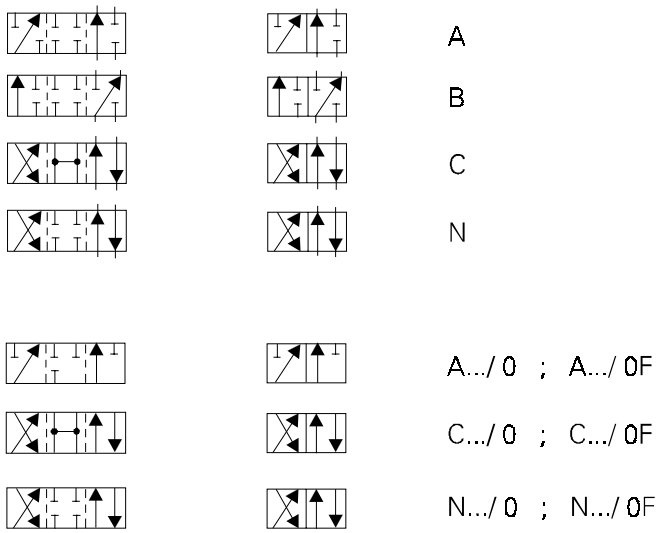
1 - Spool type B
2 - Spool type R
3 - Spool type G
4 - Other spool types

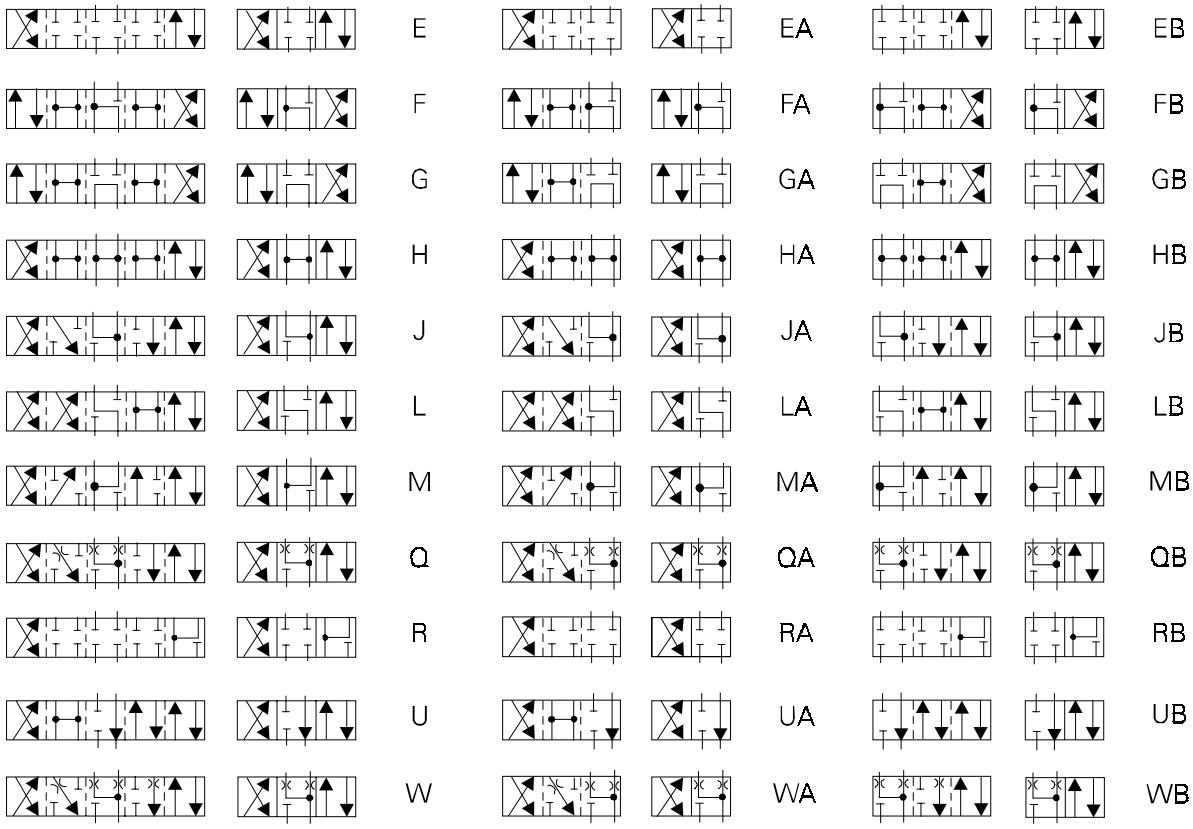
SCHEMES



1 - Scheme for three - position directional valve with spring centering
2 - Scheme for two - position directional valve with return spring
3 - Scheme for two - position directional valve without return springs
4 - Scheme for two - position directional valve with detent.

Schemes for control spools





HOW TO ORDER

Orders coded in the way showed below should be forwarded to the manufacturer.

	WE 5		/					*

Number of service ports

3	= 3
4	= 4

Control spool type

See schemes on page 5

Series number:

6.2	= 6.2

(6.0 - 6.9) - Installation and connection dimensions unchanged

Control spool positioning

Spring centering	= with no designation
Without spring return	= O
Without spring return, with detent	= OF

Voltage for solenoids

DC voltage	12 V	= G 12
DC voltage	24 V	= G 24
DC voltage	110 V	= G 110
AC voltage	110 V - 50 Hz	= W 110 - 50
AC voltage	220 V - 50 Hz	= W 220 - 50

Manual override

With manual override	= with no designation
Without manual override	= N

Electrical connections

Angled plug	= Z4
Angled plug with light	= Z4L

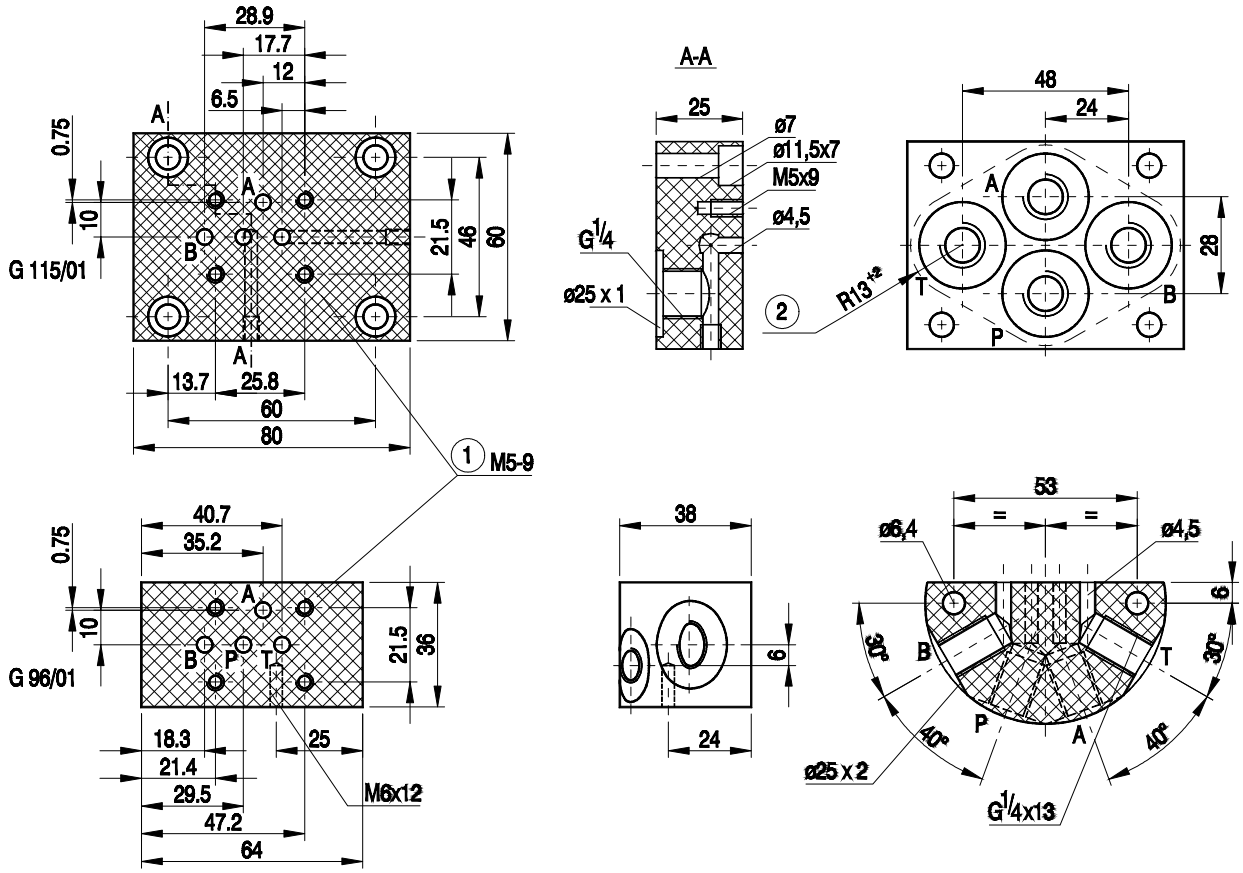
Sealing

For fluids on mineral oil base	= with no designation
For fluids on phosphate ester base	= V

Additional requirements in clear text (to be agreed with the manufacturer)

Coding example : 4 WE5E 6.2/G24 NZ 4

MOUNTING DIMENSIONS FOR SUBPLATE



Weight - approx. 0.7 kg

1 - Mounting face
2 - Recess in subplate face

Bolts mounting valve to subplate	Md
4 × M5 × 50 - 10.9 per PN - 74/M - 82302 (DIN 912)	9 Nm

Note : Subplate and mounting bolts must be ordered separately.

NOTES

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