

**MANNESMANN
REXROTH****Pilot Operated Pressure Relief Valves
Type DB/DBW (Series 3X)****RE
25 856/5.85**

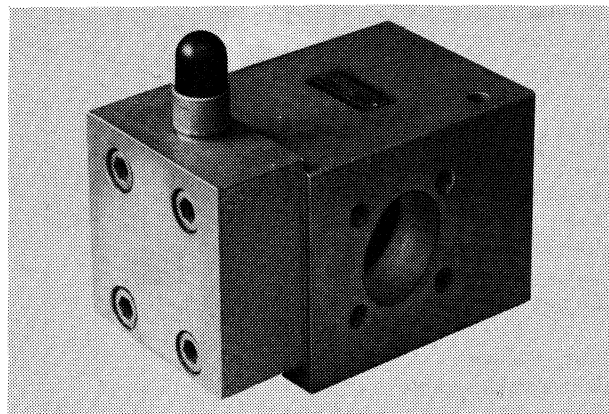
Replaces: RE 25855

Size 82

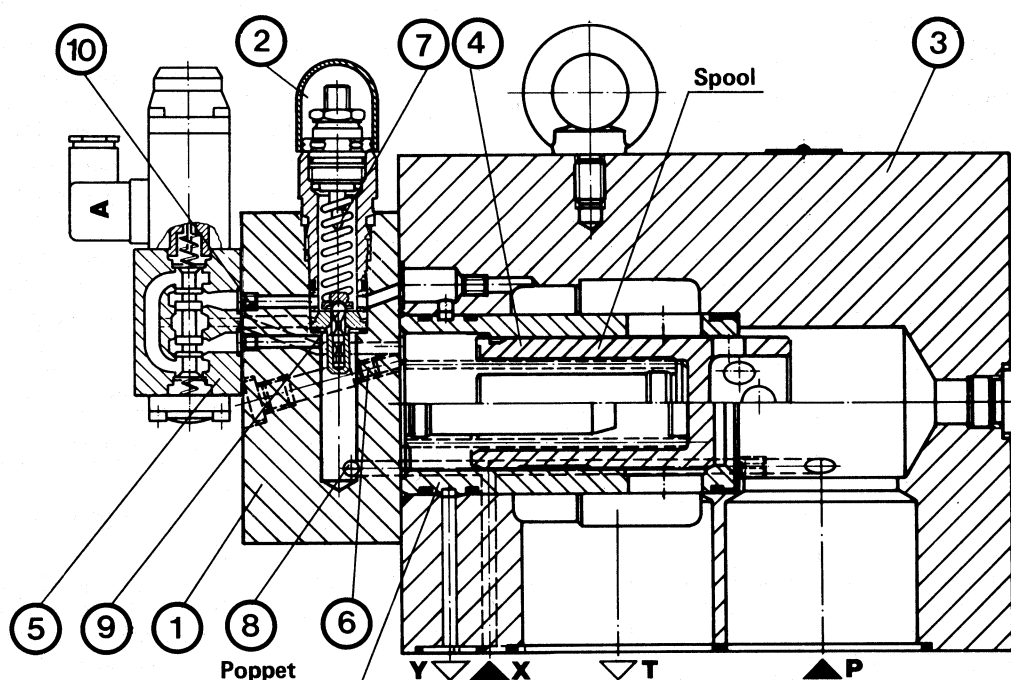
...315 bar

...3500 L/min

- for subplate mounting
- for flange connections
- 3 optional pressure setting elements:
set screw with protective cap
rotary knob
lockable rotary knob
- optional low pressure bypass by means
of built-on directional valve
- internal or external pilot oil return
- optional remote control connection
- main spool assembly optionally of poppet
or sliding spool design



DB 82 F2-3X/U..



DBW 82 AP2...3X/...XYU/6A G24 NZ4

Pressure valves Type DB/DBW are pilot operated pressure relief valves. They are used for limiting (DB) or for limiting and solenoid operated unloading (DBW) of a system pressure. These valves consist basically of the pilot control valve (1) with pressure setting element (2), main valve (3) with main spool assembly (4) and optional directional control valve (5).

Pressure Relief Valves Type DB

System pressure is applied to the end of the main spool (4) and also, via jets in pilot lines (6), to the spring-loaded side of the spool and to the pilot control valve (1). Should system pressure rise above the set value of the spring (7) poppet (9) of the pilot valve opens. Oil from the spring-loaded side of the main spool (4) flows to tank via the spring chamber of pilot control valve (1), either internally via port T or externally via port Y. Because of the jets in the pilot lines, a lower pressure now exists in the spring chamber of the main spool, causing it to open and connect ports P and T. Oil now flows from port P to port T at the set operating pressure.

Port X (8) can be used either for remote unloading of the main valve or for connecting a further pilot pressure valve.

Pressure Relief Valves Type DBW

The function of these valves is similar to that of valves type DB. In addition, however, the pressure drop across the main spool (4) can be achieved by operating the built-on directional valve (5). This causes the main valve to open at low pressure, allowing virtually pressure-free bypassing.

In order to reduce pressure peaks in the tank when switching to pressureless bypass by means of the directional valve, a sliding spool version of the main spool may be used.

Control of Switch-Off Time

The switch-off time may be influenced by means of jet (10). The standard jet has a dia. of 0.8mm. By changing jet (10), a longer or shorter switch-off time may be obtained. This does not affect the pressure relief function.

Ordering Code

Enter only for model with unloading valve (DBW..)

DB		82			3X		U					*
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Pressure relief valve

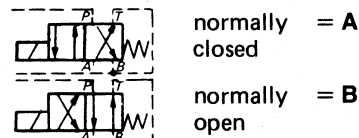
without = no code
directional valve
with = W
directional valve

complete = no code
valve

pilot valve without = F
main spool assembly
(do not insert size)

pilot valve with = F
main spool assembly
(insert valve type DBF 82)

Size 82 = 82



(DBW... only)

Subplate mounting = P
Flange connections = F

Rotary knob = 1

Set screw with protective cap = 2

Lockable rotary knob = 3

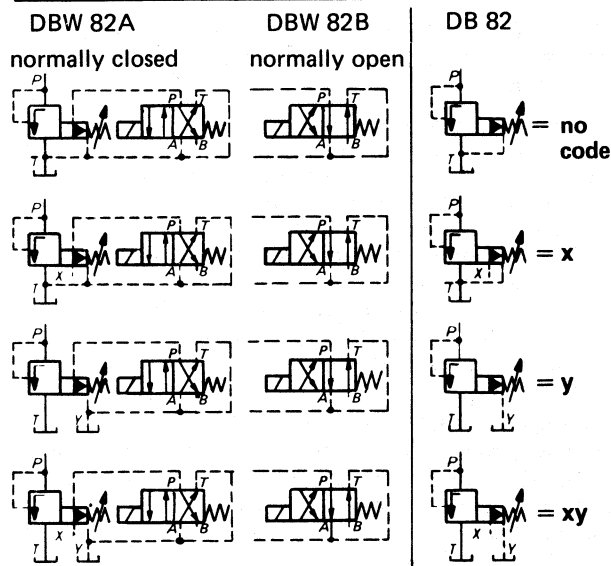
main spool of poppet design = --

sliding spool design = L

Series 3X = 3X
(30 to 39 ≅ installation and connection dimensions remain unchanged)

max. pressure setting up to 100 bar = 100

max. pressure setting up to 315 bar = 315



Further details in clear text

Suitable for:
no code = NBR seals, suitable for mineral oils to DIN 51524 (HL, HLP)
V = FPM (Viton) seals, suitable for phosphate ester (HFD-R)

for electrical connections see data sheet RE 08000

Individual Connections

Z4 = plug to DIN 43650

Z5 = large plug

Z5L = large plug with lamp

Central Connections

D = terminal box with cable inlet PG16

DL = terminal box with cable inlet PG16, with lamp(s)

DZ = terminal box with angled plug

DZL = terminal box with angled plug with lamp(s)

no code = without hand emergency operator
N = with hand emergency operator

G24 = 24 V DC

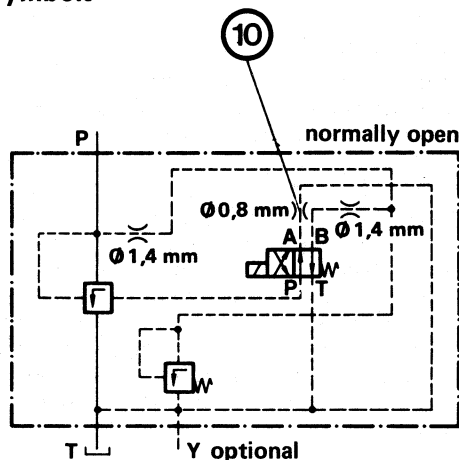
W220-50 = 220 V AC - 50Hz

W220 R = DC solenoid with built-in rectifier for 220 V AC operation (independent of frequency) (not possible for electrical connections types Z4 and Z5L)

6A = directional valve size 6 with oil immersed solenoids (A)

U = Min. cracking pressure 3 bar

Symbols



Technical Data (for applications outside these parameters, please consult us)

General

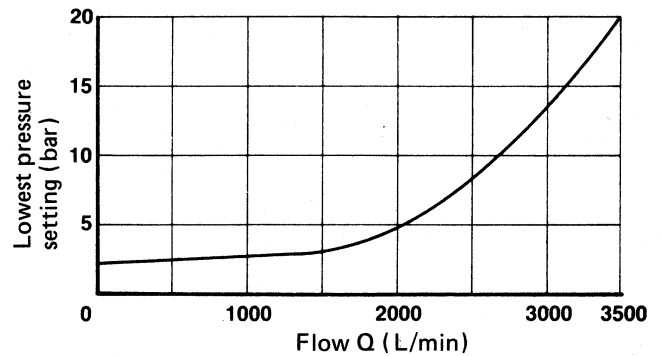
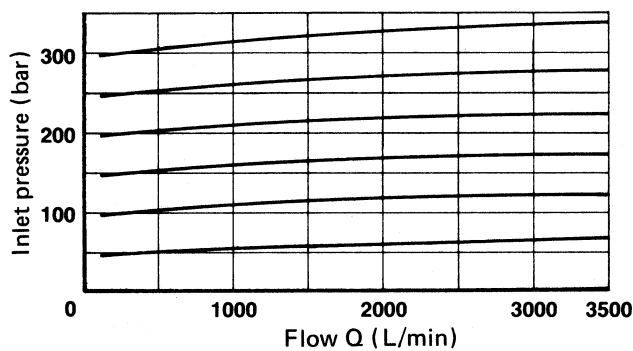
Mounting position		Optional
Weight, pressure relief valve	- DB 82 P (kg)	99
	- DB 82 F (kg)	80
	- DBW 82 P (kg)	100,5
	- DBW 82 F (kg)	81,5
Data for directional valve		see data sheet RE 23 177
Connection flanges		see data sheet RE 45 501

Hydraulic

Fluid		Mineral oils to DIN 51524 (HL, HLP) phosphate-ester (HFD-R)
Fluid temperature range	(°C)	-20 ... +70
Viscosity range	(mm ² /s)	2.8 ... 380
Operating pressure, ports P, T and X	(bar)	...315
, port Y - DB	(bar)	...315
- DBW../.6A	(bar)	...160 (DC); ...100 (AC)
Pressure setting, min.	(bar)	see operating curves
, max.	(bar)	315
Flow	(L/min)	... 3500

Operating Curves (measured at $\nu = 41 \text{ mm}^2/\text{s}$ and $t = 50^\circ\text{C}$)

These operating curves were measured with external pilot oil return at near zero pressure. For internal pilot oil return, the inlet pressure is increased by the pressure existing at tank port T.



Design-Tested Pressure Relief Valves, Type DB../.B

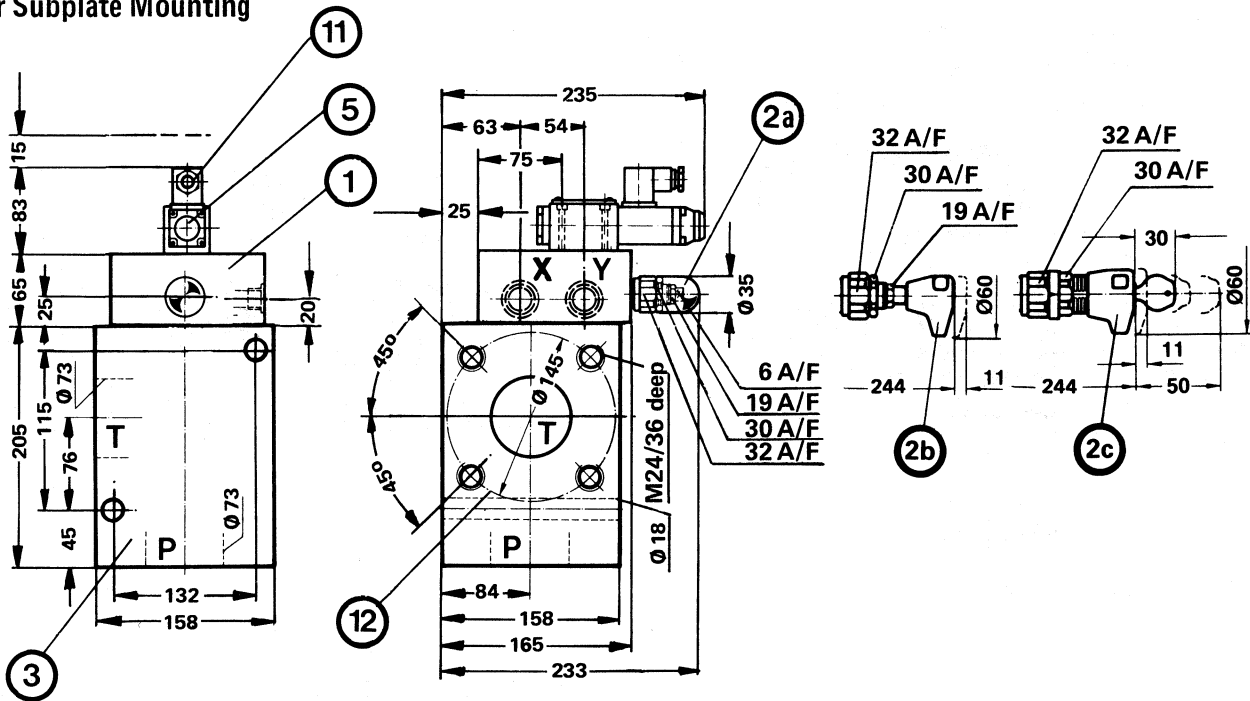
Ordering Code	Component Code	Flow G (L/min)	Set Pressure Range p (bar)
DB 82 F <input type="checkbox"/> -3X/ <input type="checkbox"/> UB	TÜV.SV. <input type="checkbox"/> -570.54.F.G.p inserted at factory	1000	50 - 110
DB 82 F <input type="checkbox"/> -3X/ <input type="checkbox"/> YUB			
DB 82 P <input type="checkbox"/> -3X/ <input type="checkbox"/> UB			
DB 82 P <input type="checkbox"/> -3X/ <input type="checkbox"/> YUB			
DBW 82 AF <input type="checkbox"/> -3X/ <input type="checkbox"/> UB		2000	211 - 315
DBW 82 BF <input type="checkbox"/> -3X/ <input type="checkbox"/> UB			
DBW 82 AP <input type="checkbox"/> -3X/ <input type="checkbox"/> UB			
DBW 82 BP <input type="checkbox"/> -3X/ <input type="checkbox"/> UB			
DBW 82 AF <input type="checkbox"/> -3X/ <input type="checkbox"/> YUB			
DBW 82 BF <input type="checkbox"/> -3X/ <input type="checkbox"/> YUB			
DBW 82 AP <input type="checkbox"/> -3X/ <input type="checkbox"/> YUB			
DBW 82 BP <input type="checkbox"/> -3X/ <input type="checkbox"/> YUB			

pressure to be inserted by customer
Setting elements 1 or 2 available, e.g. Type DB82F₂-3X/... UB (to be inserted by customer)

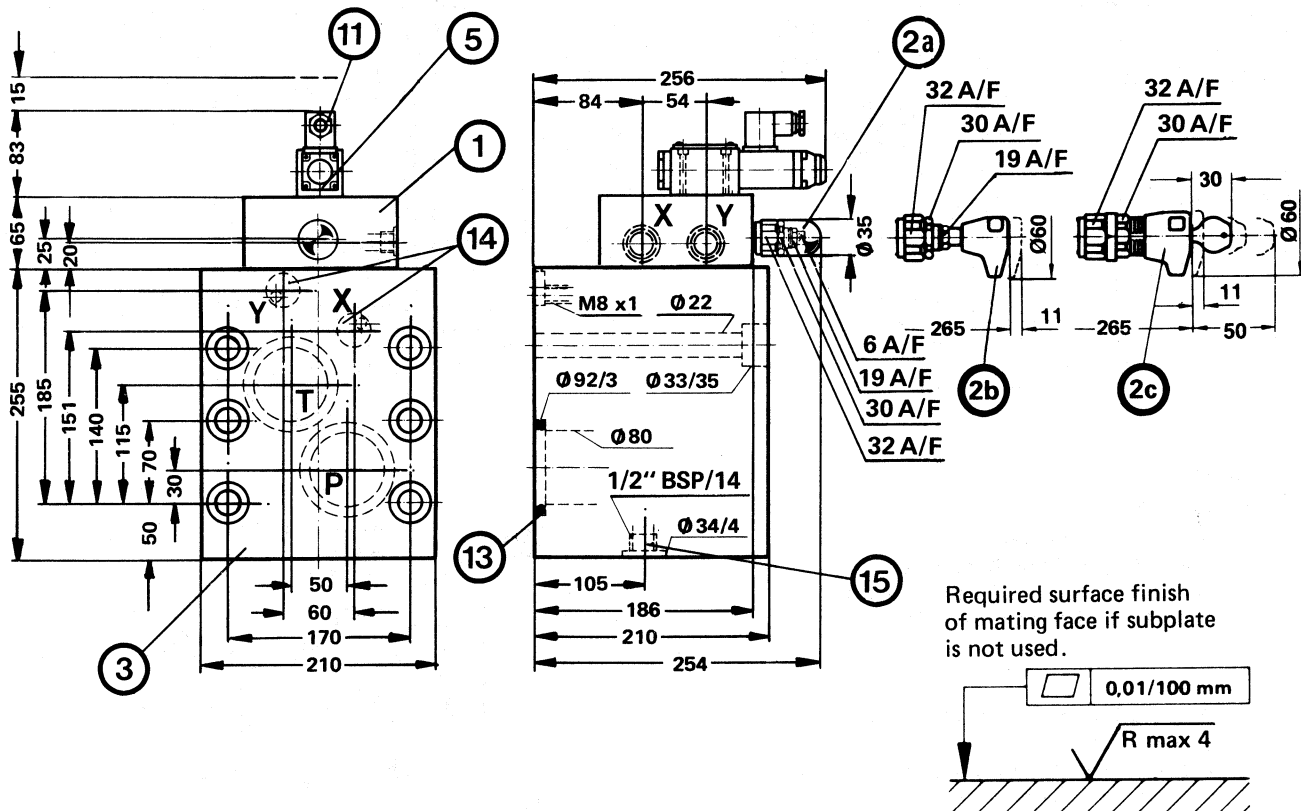
Unit Dimensions

(Dimensions in mm)

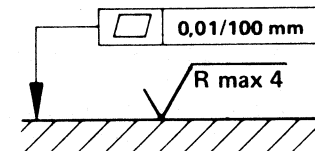
for Subplate Mounting



for Flange Connections

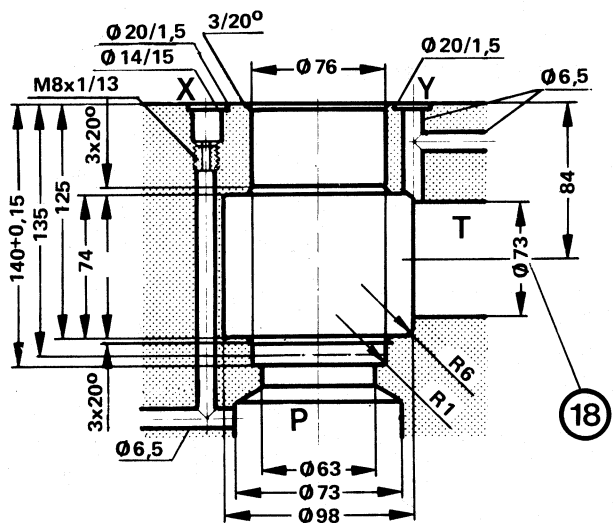
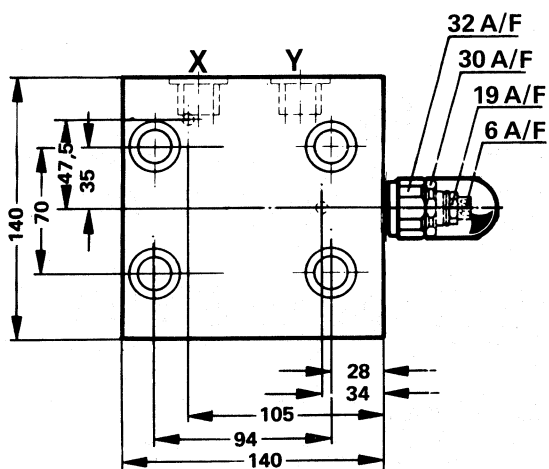
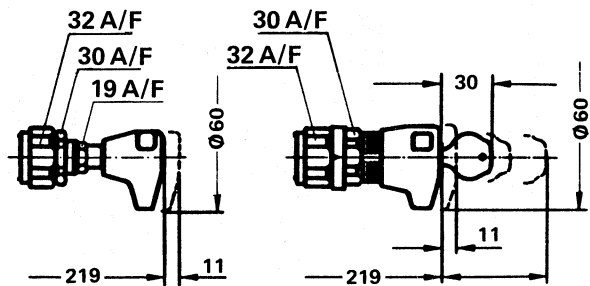
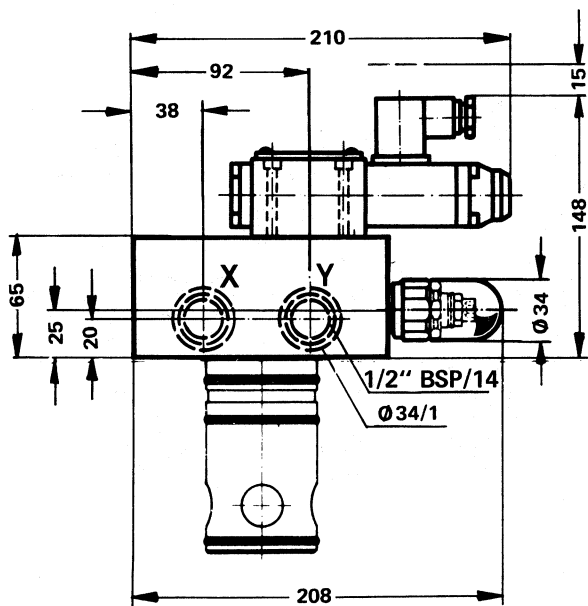


Required surface finish of mating face if subplate is not used.



- 1 pilot control valve
- 2a control type 1 set screw with protective cap
- 2b control type 1 rotary knob
- 2c control type 3 lockable rotary knob
- 3 main valve
- 5 directional valve size 6 with oil immersed solenoids, see RE 23 177
- 11 angled plug to DIN 43650 electrical connection type Z4; for alternative types of electrical connection see data sheet RE 08000
- 12 connection flanges (see RE 45501)
- 13 O-ring for ports P and T, 84 x 4
- 14 O-ring for ports X and Y, 24 x 3
- 15 Gauge connection

Unit Dimensions: Pilot valve with main spool assembly (in mm)

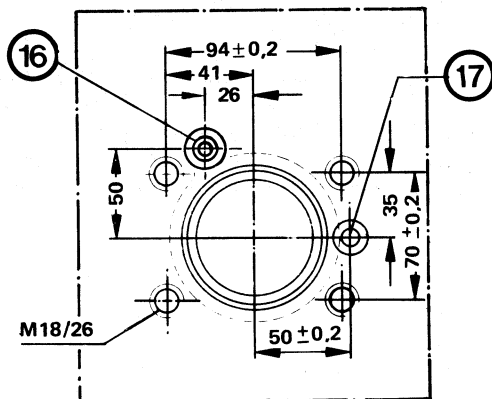


16 Port "X"

17 Port "Y"

Port "Y" may be connected directly to port "T" provided there is no back pressure at "T", in which case "Y" should be separately piped.

18 Hole "Ø73" may intersect "Ø98" at any point. Make sure, however, that port "X" and the valve fixing holes do not intersect.



External pilot oil feed and external pilot oil drain are possible via ports X and Y in the pilot valve or in the valve block as required.

Notes:

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