

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	<b>Double throttle/check valve, Type Z2FS 10 Series 20</b>			RE:27510/12.2004
	Size 10	up to 31.5MPa	up to 160L/min	Replaces; RE27510/5.2001

**Features:**

- Sandwich plate design
- Porting pattern to DIN 24 340, from A,ISO 4401 and CETOP-RP 121H
- Limiting of main or pilot flow of two service ports,
- Meter-in or meter-out control.



**Functional , section**

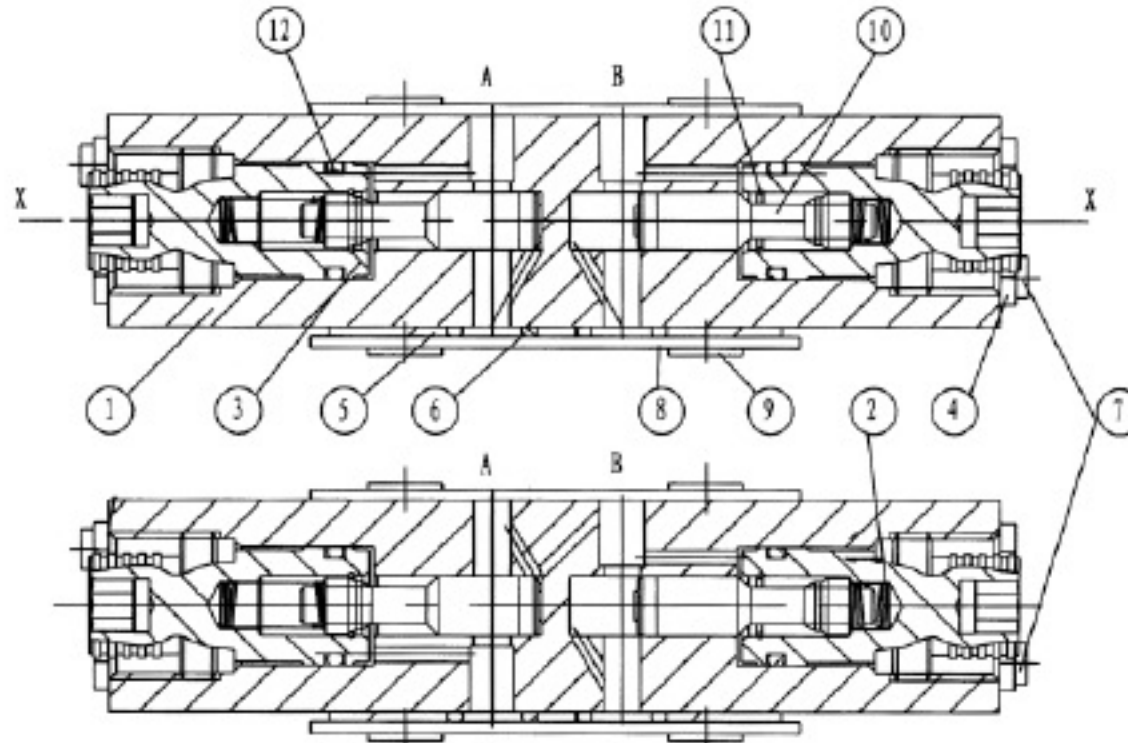
Valves type Z 2 FS10...20B/... are double throttle/check valves in sandwich plate design.They are used to limit main or pilot oil flow at one or two service ports.Two symmetrically arranged throttle/check valves limit flow (by means of adjustable throttle spools) in one direction and permit free return flow in the other direction.

**Main flow limiting**

The double throttle/check valve is fitted between the directional valve and the subplate to change the speed of an actuator (main flow limiting).

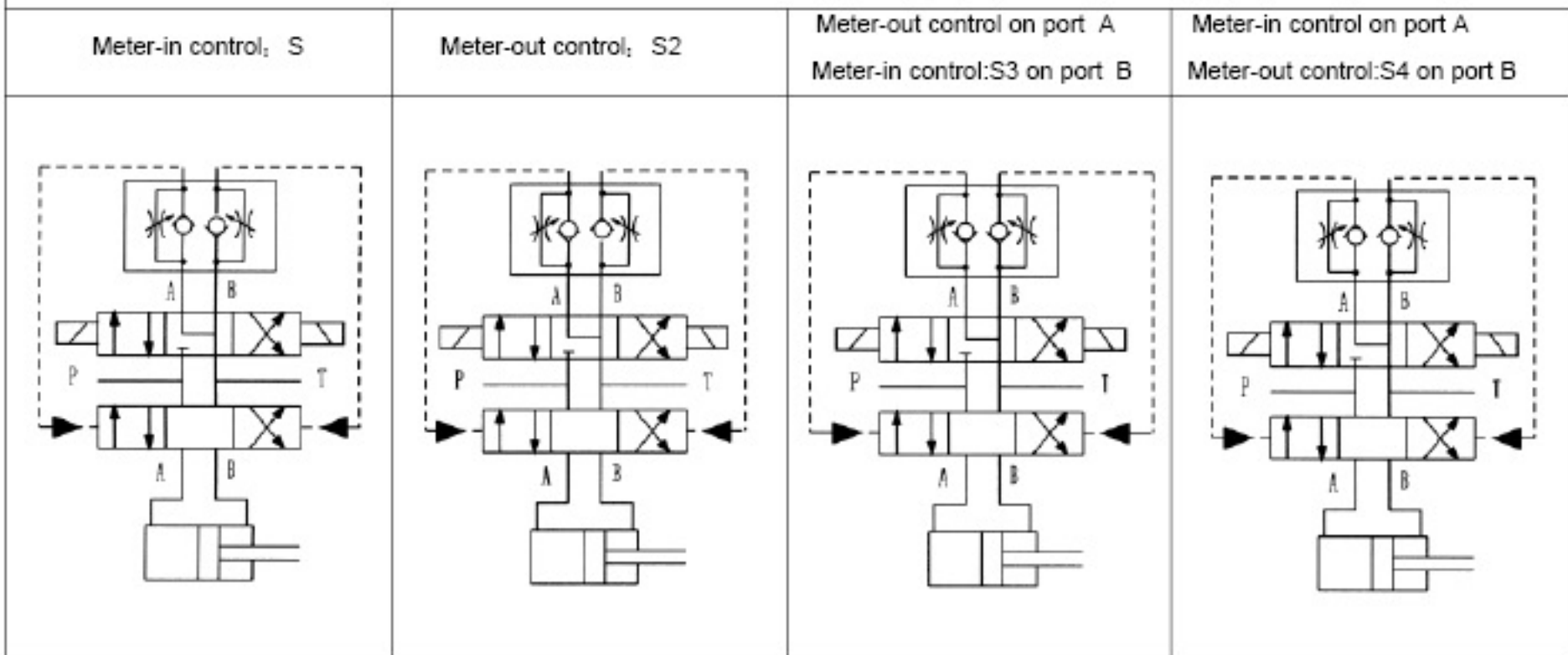
**Pilot flow limiting**

In the case of pilot operated directional valves, the double throttle/check valve may be used as a pilot choke adjustment (pilot flow limiting). In this case, it is fitted between the main valve and the pilot valve.



Meter-in control: S	Meter-out control: S2	A Meter-out control B Meter-in control:S3	A Meter-in control B Meter-out control:S4

## Principle of Hydraulic system



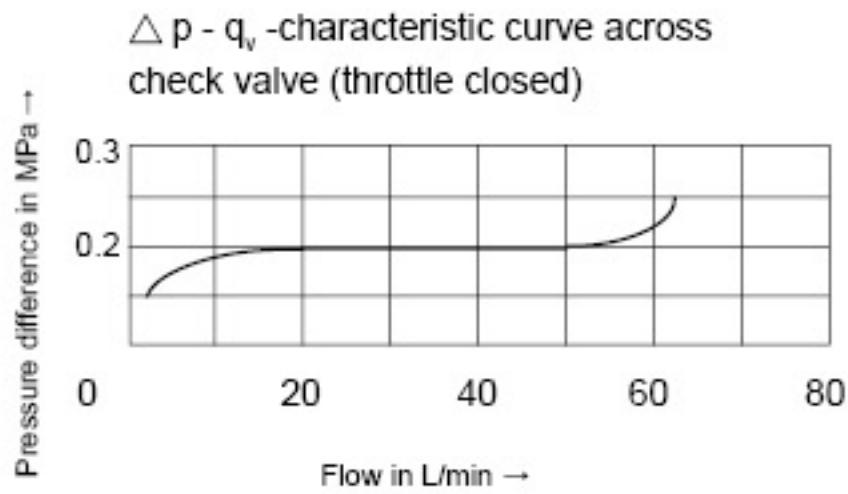
## Ordering details

Z2FS	-	20	B	/		*
Double throttle/ check valve						Further details in clear text
Nominal size 10		= 10				No code = Mineral oil V = Phosphate ester
Series 20 to 29 (20 to 29: unchanged installation and connection dimensions)		=20				No code = (With two throttle/check valves) Meter-in /meter-out throttling, (this valve can be turned)
Technology of Beijing Huade Hydraulic		=B				S = Meter-in S2 = Meter-out S3 = Meter-out on port A, meter-in on port B S4 = Meter-in on port A, meter-out on port B

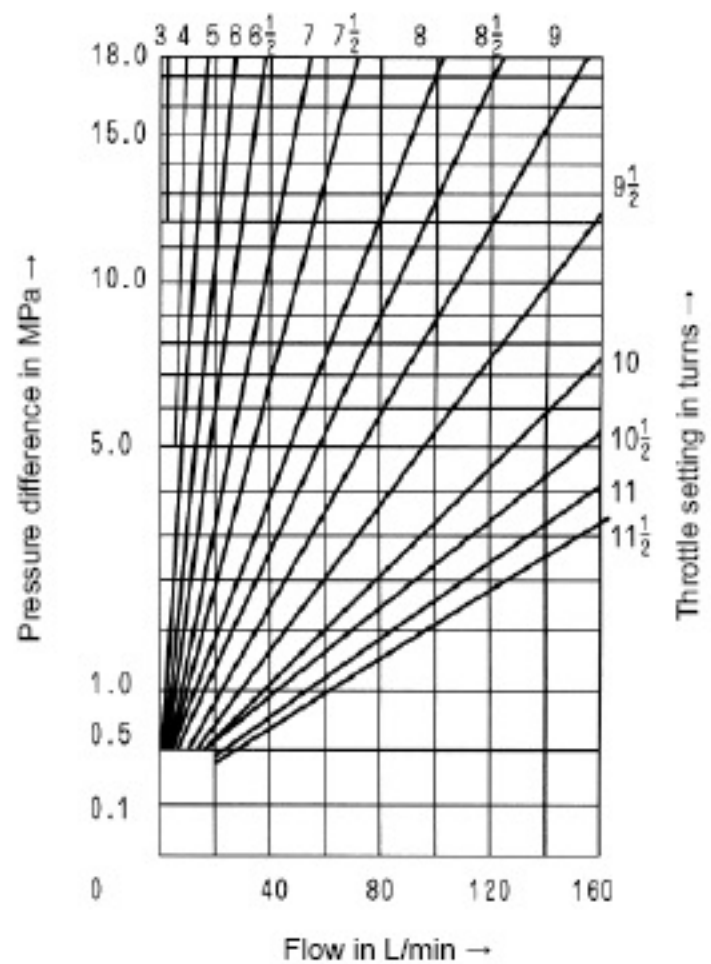
## Technical data (for applications outside these parameters, please consult us!)

Size	10
Maximum flow (L/min)	160
Maximum working pressure (MPa)	31.5
Pressure fluid	Mineral oil(for NBR seal) or Phosphate ester (for FPM seal)
Viscosity range (mm <sup>2</sup> /s)	10 to 800
Fluid temperature range (°C)	-30 to +80

**Characteristic curves** (measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $t = 50^\circ\text{C}$ )

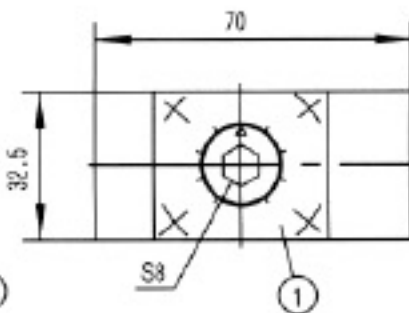
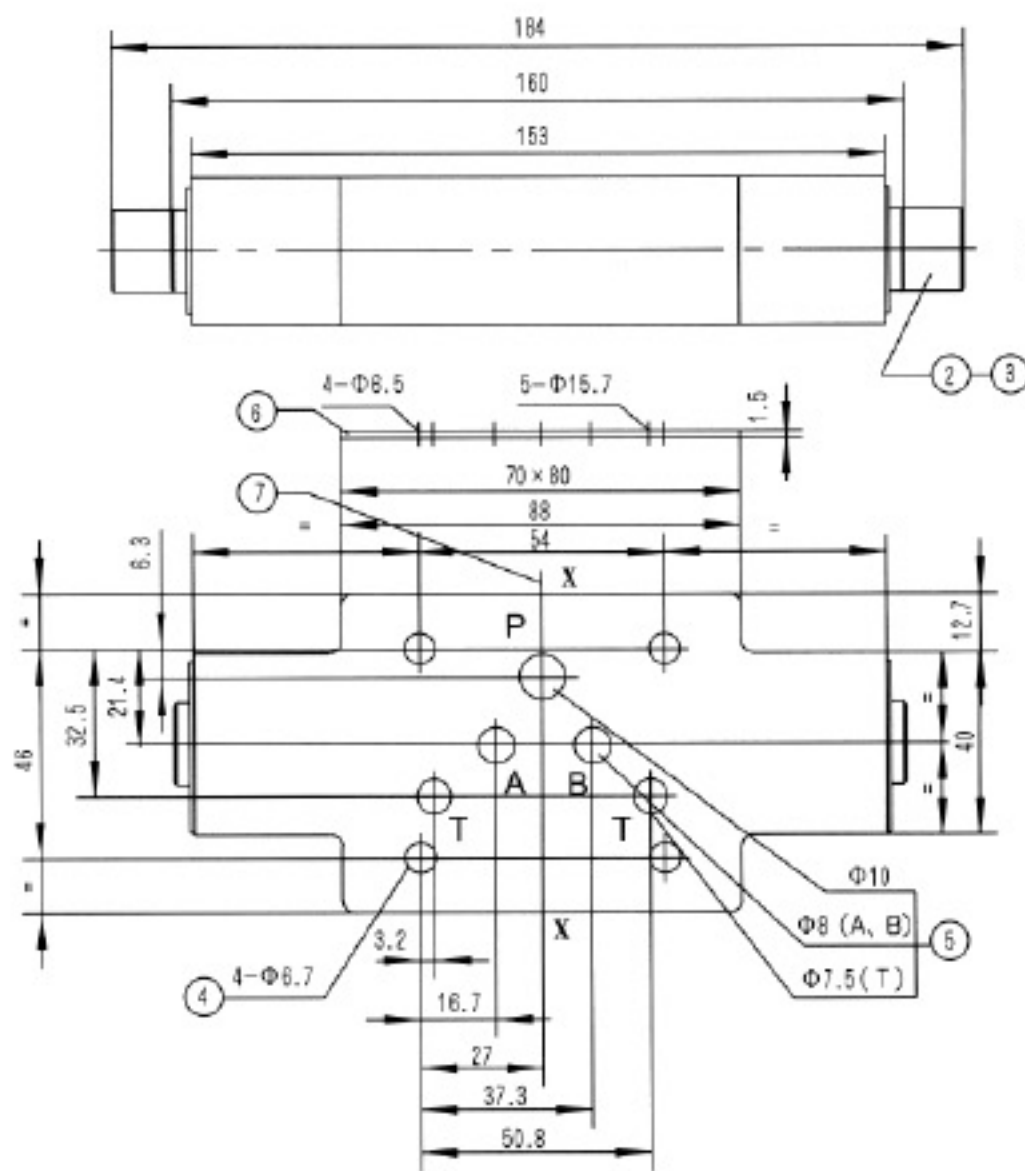


Pressure difference  $\Delta p$  in relation to the flow  $q_v$  at constant throttle setting



**Unit dimensions**

**(Dimensions in mm)**



- 1 Name plate
- 2 Setting screw for alteration of flow cross section
- 3 Turn anti-clockwise = increases flow  
turn clockwise = decreases flow
- 4 Valve fixing holes
- 5 Ports A, B, P, T
- 6 O-ring plate
- 7 To change from meter-in to meter-out, rotate the unit about the "X"- "X" axis

## Notice

1. The fluid must be filtered. Minimum filter fineness is 20  $\mu\text{m}$ .
2. The tank must be sealing up and an air filter must be installed on air entrance.
3. Products without subplate when leaving factory, if need them, please ordering specially.
4. Valve fixing screws must be high intensity level (class 10.9). Please select and use them according to the parameter listed in the sample book.
5. Roughness of surface linked with the valve is required to  $\frac{0.8}{\sqrt{\quad}}$ .
6. Surface finish of mating piece is required to 0.01/100mm.