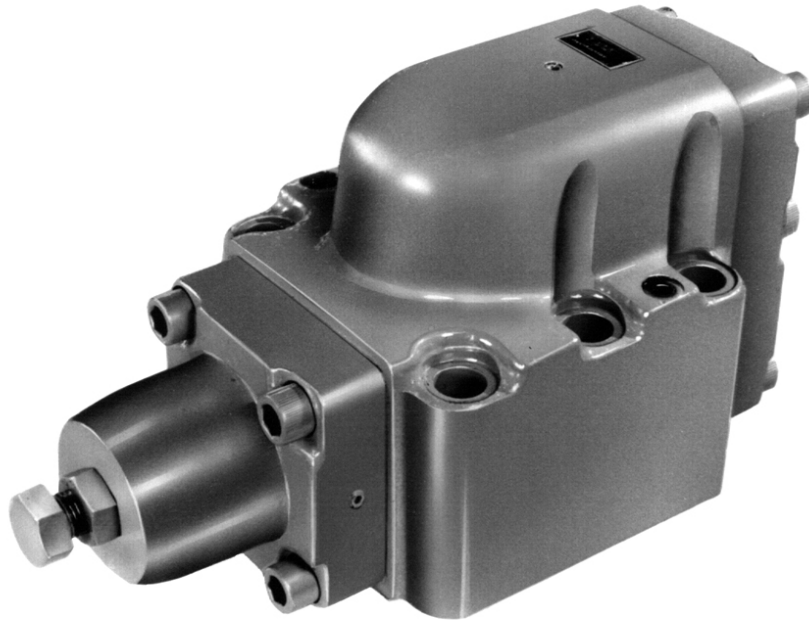


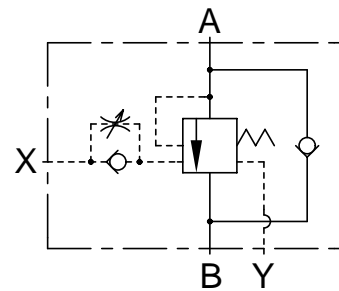
Size 15, 25, 40, 63 up to 250 bar up to 1200 L/min	Counterbalance Valve Type KDZ Series 3.2	Data Sheet R-1007 GB
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**Features**

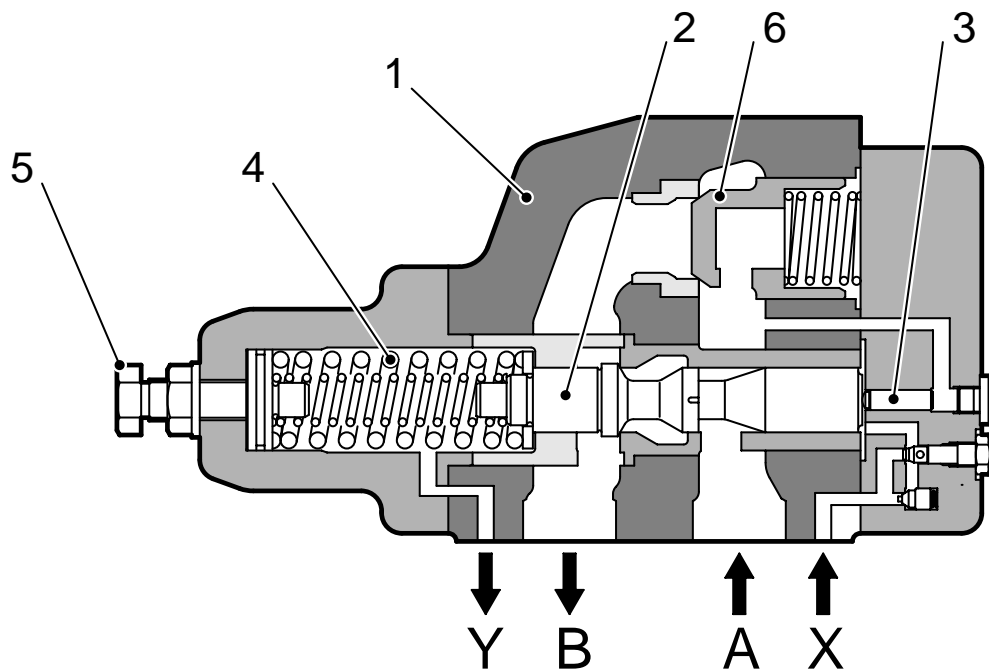
- ◇ Minimized internal leakage.
- ◇ Stable braking operation.
- ◇ Three braking pressure ratings.
- ◇ Two braking flow ratings.
- ◇ With unloading function
- ◇ Stroke-limiter available (option)

**Symbol**



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**Functional Description**

Type KDZ counterbalance valves primarily comprise:

- Housing (1)
- Spool (2)
- Piston (3)
- Springs (4)
- Adjusting screw (5)
- Check valve (6).

Flow from Port B to A is passed freely through a check valve (6).

When the pressure at Port A rises above the pressure value set at the springs (4), the piston (3) pushes the spool (2) to the left against the springs (4).

The passage from Port A to B opens and the braking flow passes from Port A to B. The braking pressure is set by the adjusting screw (5). If the pilot pressure is applied to Port X, it acts on the right side of the spool (2) and fully opens the passage From Port A to B.

The stroke limiter, which can adjust the maximum area of the passage from Port A to B, is available as an option.

Since the spool (2) has both control edge and seat, minimized internal leakage and stable braking operation can be obtained.



**Ordering Code**

**KDZ** | **15** | **P** | **3.2** / **25** | **100** | **V**

**Counterbalance Valve**

**Size**  
15, 25, 40, 63,

**Type of Connection**  
P: Sub-plate mounting

**Series Number**  
3.2

**Suitable Oil**  
No Code: Mineral Oil  
V: Phosphate Ester  
W: Water Glycol

**Braking Pressure**  
100: 0 - 100 bar  
150: 80 - 150 bar  
210: 150 - 210 bar

**Spool Type**

Code	Braking flow
25	Less than 120 L/min.
100	Over 120 L/min.



**Technical Data**

For applications outside the following parameters, please consult Kawasaki Precision Machinery (UK) Ltd.

Maximum Operating Pressure 250 bar at Ports A, B and X  
10 bar at Port Y

Pressure Fluid Mineral oil, phosphate ester, fatty acid ester and water glycol.  
Phosphate ester is only suitable for use with FPM seals.

Pressure Fluid Temperature Range -20°C to +70°C

Viscosity Range 2.8 to 380 cSt

Cracking Pressure of Check Valve 3.5 bar

Degree of Contamination Maximum permissible degree of contamination of the fluid is to NAS 1638 class 9. Kawasaki recommend that a filter with a minimum retention rate of  $\beta_{10} \geq 75$  is used.

	Size 15	Size 25	Size 40	Size 63
Maximum Flow	120 L/min.	240 L/min.	500 L/min.	1200 L/min.
Weight	8 kg	13.5 kg	59 kg	109 kg
Stroke Volume of Spool (Required when pilot pressure is applied)	1.9cc	3.7cc	10.0cc	27.5cc

Minimum Pilot pressure:

	KDZ15P	KDZ25P	KDZ40P	KDZ63P
Braking pressure **100	Set value x $\frac{1}{8.2} + 11.3$	Set value x $\frac{1}{9.8} + 12.5$	Set value x $\frac{1}{9.8} + 11$	Set value x $\frac{1}{9.8} + 11$
Braking pressure **150	Set value x $\frac{1}{8.2} + 11.3$	Set value x $\frac{1}{9.8} + 12.5$	Set value x $\frac{1}{9.8} + 11$	Set value x $\frac{1}{9.8} + 11$
Braking pressure **210	Set value x $\frac{1}{8.2} + 11.3$	Set value x $\frac{1}{9.8} + 12.5$	Set value x $\frac{1}{9.8} + 11$	Set value x $\frac{1}{9.8} + 11$

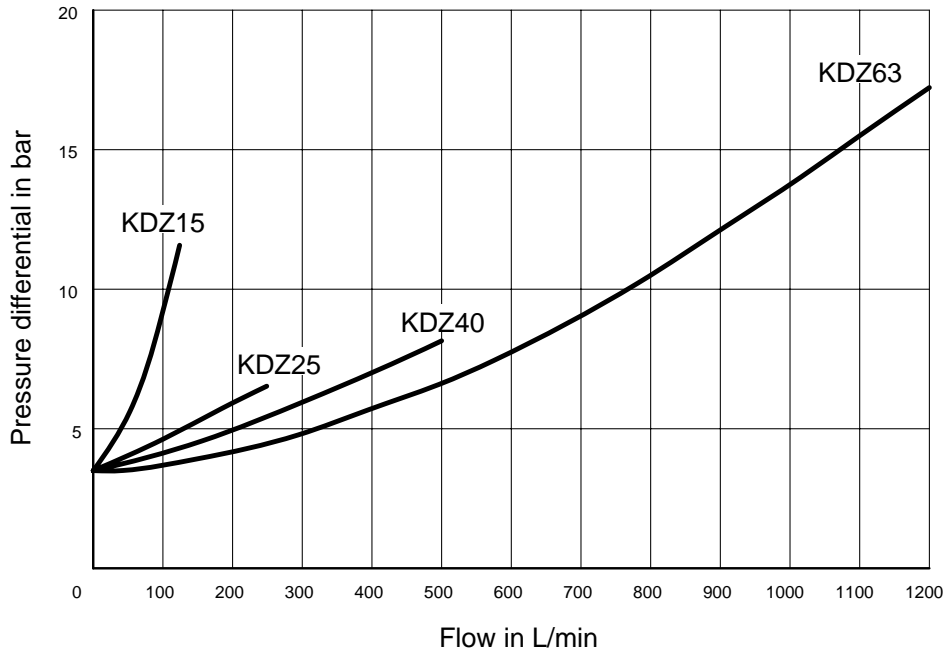
\*\* Refer to model code



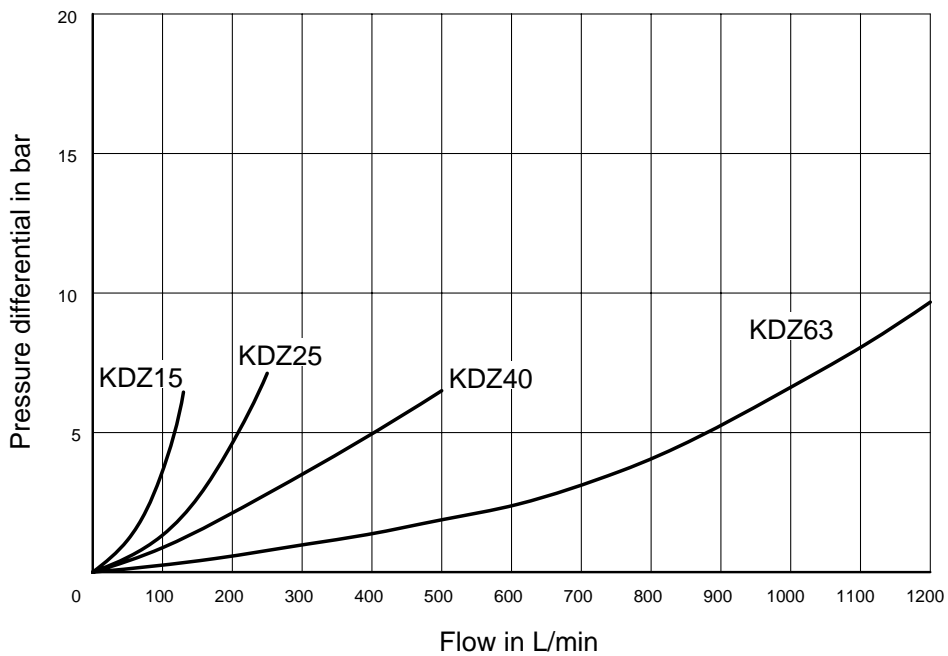
**Characteristic Curves**

Measured at  $\nu = 36\text{cSt}$  and  $t = 50^\circ\text{C}$

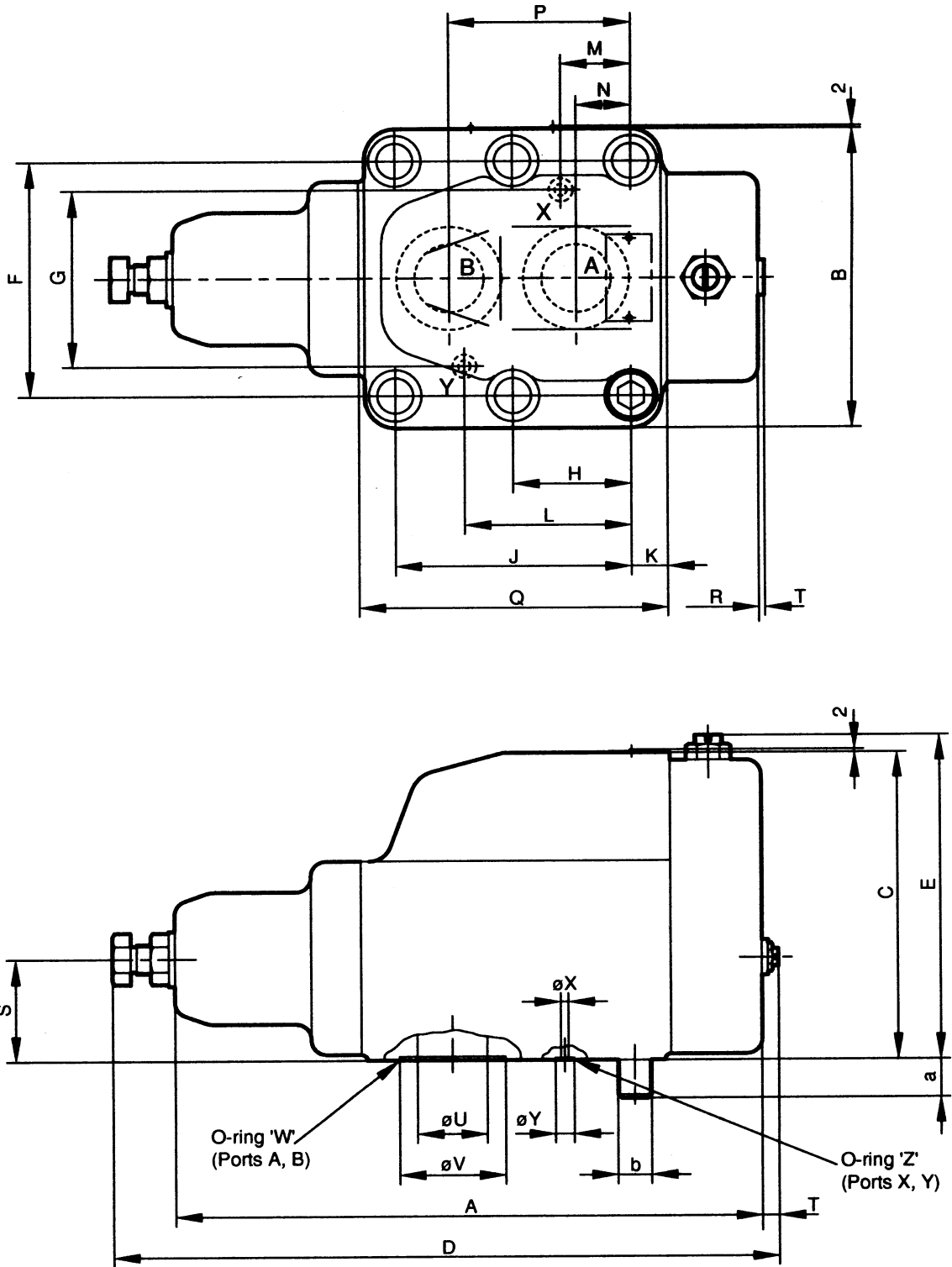
**Free flow (Port B to A)**



**At 215 bar Pilot Pressure**



Unit Dimensions (dimensions in mm)



## Unit Dimensions (dimensions in mm) (continued)

**VALVE FIXING SCREWS**

Valve Type	Screw type	Quantity	DIN	MA
KDZ15P	M10 x 80	4	912 - 10.9	57 Nm
KDZ25P	M10 x 85	6	912 - 10.9	57 Nm
KDZ40P	M22 x 140	6	912 - 10.9	617 Nm
KDZ63P	M27 x 190	6	912 - 10.9	1146 Nm

Valve size	Dimension																			
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V
15	221	102	104	260	114	80	66	-	60	14	39	21	11	49	88	28	38	0	15	30
25	273	120	128	312	141	97	90	42	84	13	60	24	17	67	110	40	43	4	22	35
40	387	204	210	450	-	160	120	78	156	24	120	36	36	120	204	60	70	12	46	70
63	500	250	265	560	-	195	140	925	185	37.5	145.5	37.5	32.5	152.5	260	60	85	12	63	90

Valve size	O-ring 'W'	X	Y	O-ring 'X'	a	b
15	2 – JIS B2401 G25 H <sub>s</sub> 90	6	12	2 – JIS B2401 P9 H <sub>s</sub> 90	16	4 – M10
25	2 – JIS B2401 G30 H <sub>s</sub> 90	6	12	2 – JIS B2401 P9 H <sub>s</sub> 90	12	6 – M10
40	2 – JIS B2401 G65 H <sub>s</sub> 90	8	16	2 – JIS B2401 P12 H <sub>s</sub> 90	26	6 – M22
63	2 – JIS B2401 G85 H <sub>s</sub> 90	8	22	2 – JIS B2401 P18 H <sub>s</sub> 90	40	6 – M27

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