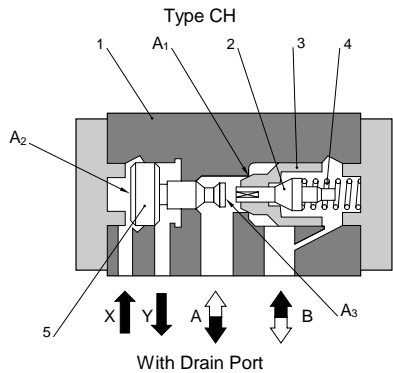
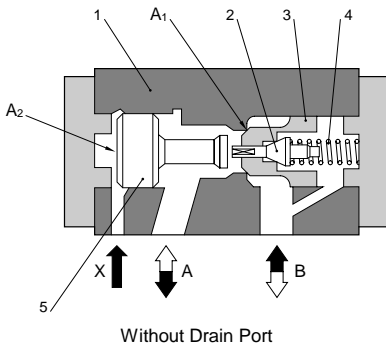


<p>Size 6 to 30 up to 315 bar up to 300 L/min</p>	<p>Check Valve Pilot Operated Type CH, Series 10</p>	<p>Data Sheet C-1002/10.98 GB</p>
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**Features**

- ◇ Sub-plate mounting and threaded connection.
- ◇ Shock-free directional control with pre-opening.
- ◇ With or without drain port.
- ◇ Porting pattern to DIN 24 340 Form D, ISO 5781 and CETOP-RP 121 H.



**Functional Description**

Type CH Series 10 Check Valves are pilot operated valves that may be hydraulic operated to permit reverse flow. Valves may be supplied with or without drain ports.

These valves are used to isolate a hydraulic circuit under pressure to prevent a load from falling.

The valves comprise a housing (1), a pilot poppet (2), main poppet (3), a spring (4) and a pilot piston (5).

**Without Drain Port**

Pressure from A to B opens the main poppet (3) with the pilot poppet (2) against the spring (4) enabling the the fluid to flow from A to B. Pressure from B to A pushes the main poppet (3) and pilot poppet (2) closed stopping flow from B to A.

Applying pressure to the pilot connection X, moves the pilot piston (5) to the right lifting the pilot poppet (2) first and then the main poppet (3) allowing the fluid to flow from B to A.


To ensure that the valve opens due to pressure applied to the pilot piston, a minimum pilot pressure is required (see precautions in use). Drain port Y is plugged.

**With Drain Port**

The valve is the same as the description above with the addition of a drain port.

The drain port Y is connected to the valve and annular area of the pilot piston (4) is separated from Port A.

The pressure from port A will now only act on area A<sub>3</sub> of the pilot piston.

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**Ordering Code**

CH Y 10 R 10 / 14 V

**Check Valve**

**Drain Line**

No code: Without drain port  
Y: With drain port

**Size**

6, 8, 10, 15, 20, 25, 30  
(Sub-plate mounting type 10, 20 and 30 only)

**Type of Connection/Mounting**

G: Threaded Connection (BSP)  
P: Sub-plate Mounting

**Suitable Oil**

No Code: Mineral Oil  
V: Phosphate Ester  
W: Fatty Acid ester, Water Glycol

**Cracking Pressure**

Code	Cracking Pressure	Valve Size
10	1.0 bar	15, 20, 25, 30
14	1.4 bar	6, 10

**Series Number**

10

**Technical Data**

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

Maximum Operating Pressure 315 bar

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°

Viscosity Range 2.8 to 380cSt

Maximum Flow	Type/Size	6	8	10	15	20	25	30
	Without Drain Port	80 L/min			170 L/min		300 L/min	
	With Drain Port	80 L/min			300 (170 L/min for size 20 sub-plate mounting) L/Min			

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.

Cracking Pressure 1.0 bar - size 15, 20, 25, 30  
1.4 bar - size 6, 10



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**Technical Data (continued)**

Weight	Type/Size	6	8	10	15	20	25	30
	Without Drain Port	2.5 kg			4kg		8kg	
	With Drain Port	2.5 kg			8 kg (6.5 kg for size 20 sub-plate mounting).			

Installed Position

Optional

Direction of Flow

From A to B, from B to A when pilot operated

Pilot Pressure

Up to 315 bar

Pilot Flow:

Figures below, figures in brackets ( ) are for valve CHY20P.

	Port	Size 6	Size 8	Size 10	Size 15	Size 20	Size 25	Size 30
CH	X	2.2 cm <sup>3</sup>	2.2 cm <sup>3</sup>	2.2 cm <sup>3</sup>	8.7 cm <sup>3</sup>	8.7 cm <sup>3</sup>	17.5 cm <sup>3</sup>	17.5 cm <sup>3</sup>
	Y	-	-	-	-	-	-	-
CHY	X	2.2 cm <sup>3</sup>	2.2 cm <sup>3</sup>	2.2 cm <sup>3</sup>	17.5 cm <sup>3</sup>	17.5 cm <sup>3</sup> (8.7 cm <sup>3</sup> )	17.5 cm <sup>3</sup>	17.5 cm <sup>3</sup>
	Y	1.9 cm <sup>3</sup>	1.9 cm <sup>3</sup>	1.9 cm <sup>3</sup>	15.8 cm <sup>3</sup>	15.8 cm <sup>3</sup> (7.6 cm <sup>3</sup> )	15.8 cm <sup>3</sup>	15.8 cm <sup>3</sup>

Control Areas

Size & Type	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>
CH & CHY 6, 8, 10	1.13 cm <sup>2</sup>	3.14 cm <sup>2</sup>	0.5 cm <sup>2</sup>
CH 15 & 20	3.14 cm <sup>2</sup>	9.64 cm <sup>2</sup>	-
CHY 20P	3.14 cm <sup>2</sup>	9.64 cm <sup>2</sup>	1.13 cm <sup>2</sup>
CHY 15 & 20G, CH/CHY 25 & 30	5.30 cm <sup>2</sup>	15.90 cm <sup>2</sup>	1.54 cm <sup>2</sup>

Precautions in use

Required pilot pressure for the CH valve:

$$P_{ST} = P_1 \frac{A_1}{A_2} + 5\text{bar} \quad (P_2 = 0)$$

Required pilot pressure for the CHY valve:

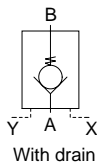
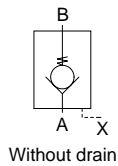
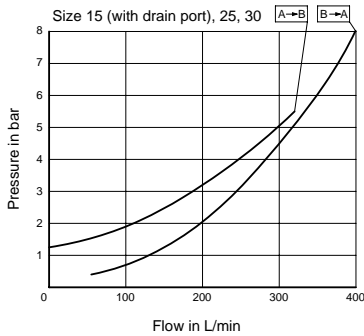
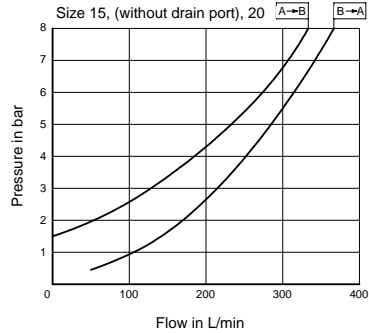
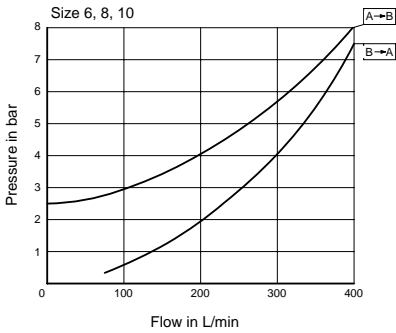
$$P_{ST} = \frac{P_1 \times A_1 - P_2 \times (A_1 - A_3)}{A_2} + 5\text{bar}$$



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**Characteristic Curves**

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



**Symbols**

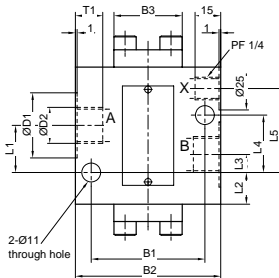
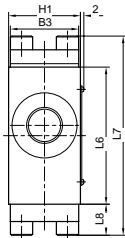


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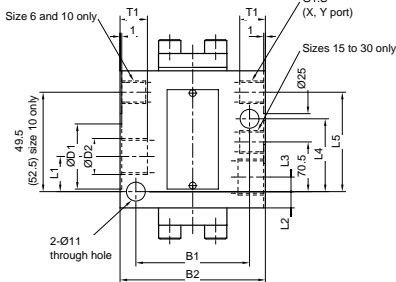
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**Unit Dimensions (dimensions in mm)**



CH\*G



CHY\*G

Type	Size	L1	L2	L3	L4	L5	L6	L7	L8	ØD1	ØD2	B1	B2	B3	H1	T1
Without drain port	6									25	G ¼					15
	8	27.5	18.5	10.5	33.5	49	80	116	18	32	G ⅜	66.5	85	40	42	16
	10									38	G ½					17
	15									45	G ¾					18
	20	36.5	17.5	13	50.5	65.5	95	135	20	52	G 1	79.5	100	58	60	
	25										63	G 1 ¼				
With drain port	6	23.5								25	G ¼					15
	8	19	16.5	12.5	35.5	51	80	116	18	32	G ⅜	66.5	85	40	42	16
	10	19.5	13.5	15.5		54				38	G ½					17
	15			20.5						45	G ¾					18
	20	54.5	15.5		84	97.5	125	183	29	52	G 1	74	120	73	75	24
	25			18						63	G 1 ¼					
	30									65	G 1 ½					24

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