

# Hydraulic Equipment Guide

Hydraulic Cylinders/CH: P.211

**Nominal pressure  
3.5/10/16 MPa**  
**Compact Hydraulic Cylinders**  
CHQ :  $\phi 20$  to  $\phi 100$   
CHKD :  $\phi 20$  to  $\phi 100$   
CHKG :  $\phi 20$  to  $\phi 100$



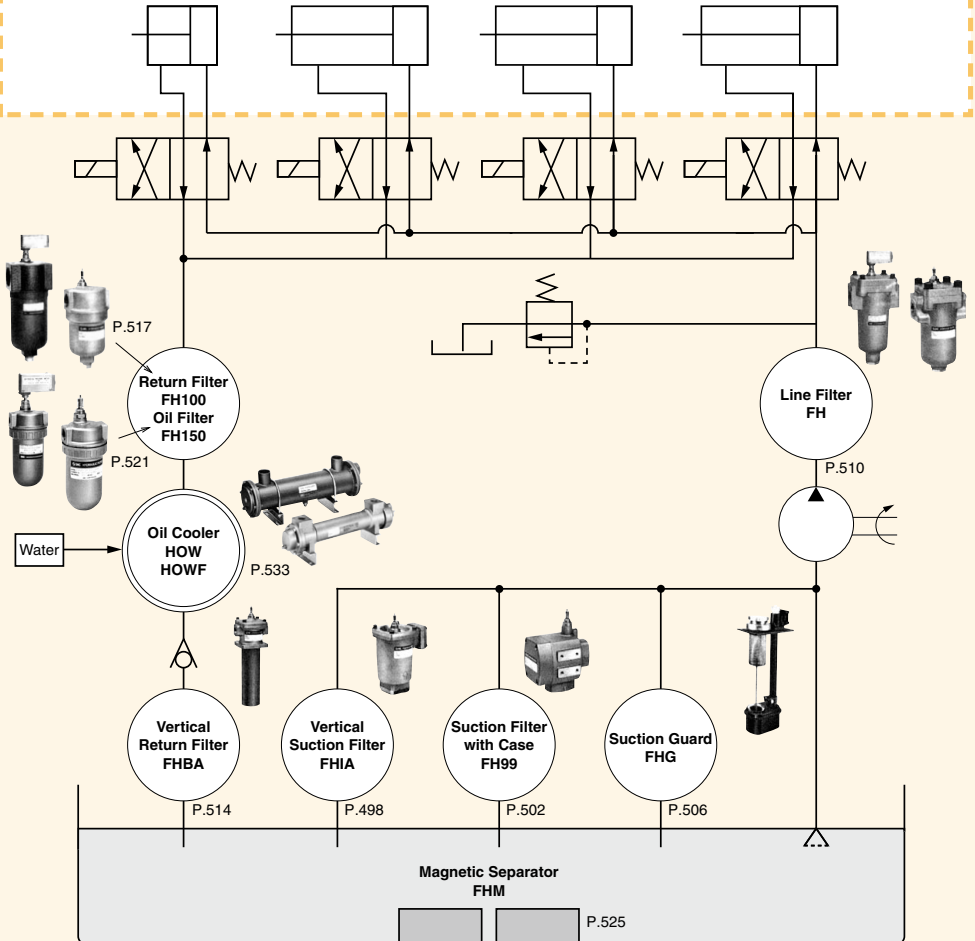
**Nominal pressure  
3.5/7 MPa**  
**Hydraulic Cylinders**  
CHM :  $\phi 20$  to  $\phi 100$   
CHA :  $\phi 40$  to  $\phi 160$   
CHN :  $\phi 20$  to  $\phi 40$



**Nominal pressure  
3.5/7/14 MPa**  
**JIS Standard Hydraulic Cylinders**  
CH2E :  $\phi 32$  to  $\phi 100$   
CH2F :  $\phi 32$  to  $\phi 100$   
CH2H :  $\phi 32$  to  $\phi 100$   
CH2G :  $\phi 32$  to  $\phi 100$



**Nominal pressure  
10/16 MPa**  
**ISO Standard Hydraulic Cylinders**  
CHSD :  $\phi 40$  to  $\phi 100$   
CHSG :  $\phi 32$  to  $\phi 100$



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## Hydraulic Filters



Series	Operating pressure	Port size	Element (μm) (Nominal filtration)	Accessory (Option)	Page
<b>Vertical Suction Filter FHIA Series</b>	Negative pressure	1/2, 3/4, 1, 1 1/4, 1 1/2 2, 2 1/2, 3, 3 1/2, 4	Micromesh 74, 105, 149	Differential pressure indicator Differential pressure indication switch Blanking cap	<b>498</b>
<b>Suction Filter with Case FH99 Series</b>	Negative pressure	1/2, 3/4, 1, 1 1/4, 1 1/2 2, 2 1/2, 3, 3 1/2, 4	Micromesh 74, 105, 149	Differential pressure indicator Differential pressure indication switch Blanking cap	<b>502</b>
<b>Suction Guard FHG Series</b>	Negative pressure	1/2, 3/4, 1, 1 1/4, 1 1/2 2, 2 1/2, 3	Micromesh 74, 105, 149	Differential pressure indicator Differential pressure indication switch Air breeder Cap	<b>506</b>
<b>Line Filter FH34/44/54/64 Series</b>	3.5, 7, 14, 21 MPa	3/8, 1/2, 3/4, 1, 1 1/4 1 1/2, 2, 2 1/2 <sup>Note 1)</sup> , 3 <sup>Note 1)</sup>	Paper 5, 10, 20 (Micromesh) <sup>Note 2)</sup>	Differential pressure indicator Differential pressure indication switch Blanking cap	<b>510</b>
<b>Vertical Return Filter FHBA Series</b>	1.6 MPa	3/4, 1 1/4, 1 1/2	Paper 5, 10, 20 Micromesh 5, 10, 20	Differential pressure indicator Differential pressure indication switch Blanking cap	<b>514</b>
<b>Return Filter FH100 Series</b>	1 MPa	3/4, 1, 1 1/4, 1 1/2, 2 2 1/2, 3	Paper 5, 10, 20 Micromesh 74, 105	Differential pressure indicator Differential pressure indication switch Blanking cap	<b>517</b>
<b>Oil Filter FH150 Series</b>	1 MPa	1/4, 3/8, 1/2	Paper 5, 10, 20 (Micromesh) <sup>Note 2)</sup>	Differential pressure indicator Differential pressure indication switch Blanking cap Bracket	<b>521</b>
<b>Magnetic Separator FHM Series</b>	—	—	—	—	<b>525</b>

Note 1) Possible with 7 MPa type (FH44) only.

Note 2) Available by special order.

FH □

HOW □

## Oil Coolers



Series	Heat transfer area (inside pipe) (m <sup>2</sup> )	Heat exchange volume (Kcal/h)	Flow rate (L/min)		Page
			Oil side	Cooling water side	
<b>Oil Cooler: Iron particle type (Fixed pipe type) HOWF Series</b>	0.077, 0.13, 0.21, 0.34 0.56, 0.83, 1.28	4,500 to 63,000	20 to 800	40 to 125	<b>534</b>
<b>Oil Cooler: Copper particle type (Floating pipe type) HOW Series</b>	0.084, 0.13, 0.21, 0.32 0.50, 0.75	5,200 to 45,000	20 to 400	25 to 100	<b>539</b>