

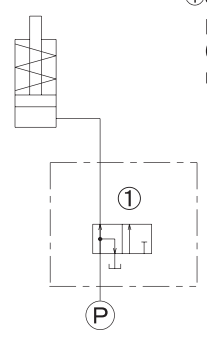
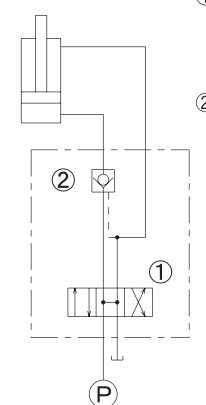
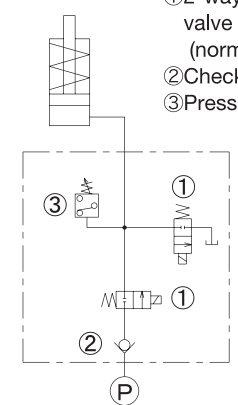
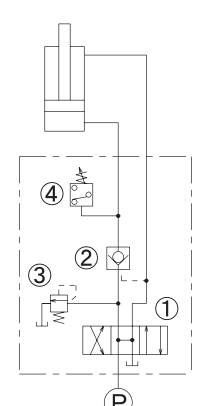
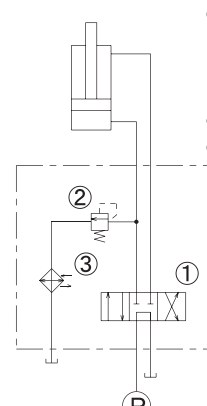
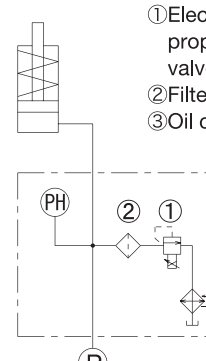
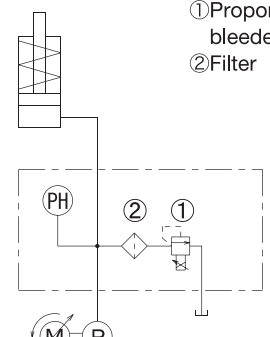
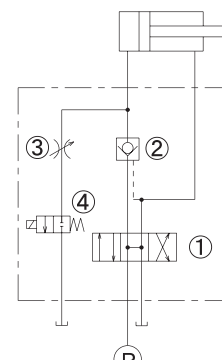
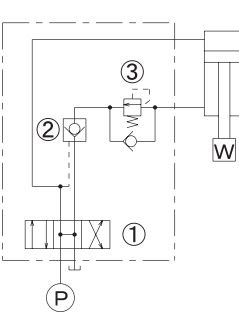
Hydraulic Valves



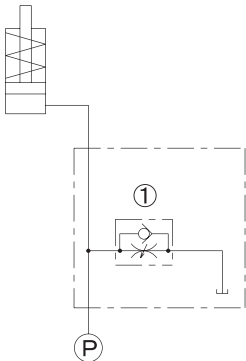
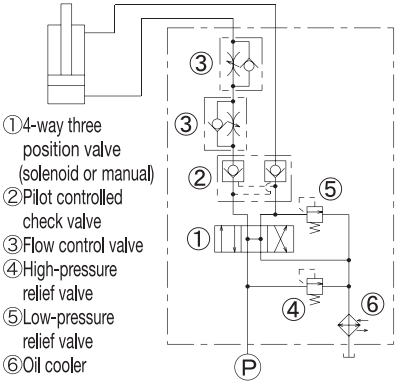
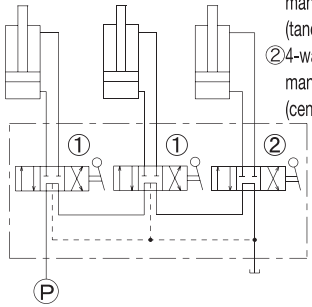
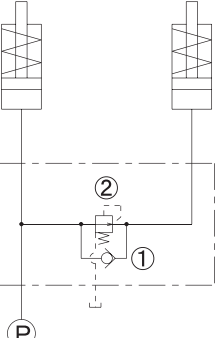
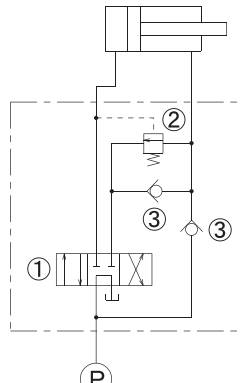
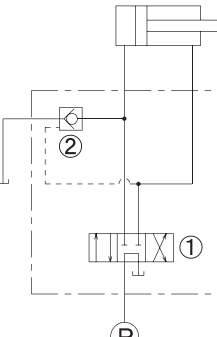
Hydraulic Valves

Examples of valve applications shown in the circuit

Hydraulic Valves

Pressure-retaining circuit (general circuit)	Pressure-retaining circuit	Pressure-retaining circuit (overrun protecting circuit)
 <p>① 3-way two position valve (solenoid or manual/foot)</p> <p>This is the most basic circuit and the cylinder overruns because the motor does not stop immediately when the motor power is turned off.</p>	 <p>① 4-way three position valve (solenoid or manual) ② Pilot controlled check valve</p> <p>The cylinder side pressure is retained by introducing the pilot controlled check valve.</p>	 <p>① 2-way solenoid valve (normally closed) ② Check valve ③ Pressure switch</p> <p>The cylinder overrun is prevented by using two solenoid valves.</p>
Pressure-retaining circuit (overrun protecting circuit)	Pressure control circuit	Pressure control circuit (constant pressure retaining circuit)
 <p>① 4-way three position valve (solenoid or manual) ② Pilot controlled check valve ③ Relief valve ④ Pressure switch</p> <p>The cylinder overrun is prevented by reducing the differential pressure between the pressure switch and the relief valve.</p>	 <p>① 4-way three position valve (solenoid or manual) ② Relief valve ③ Oil cooler</p> <p>The maximum pressure is controlled by the relief valve.</p>	 <p>① Electromagnetic proportional relief valve ② Filter ③ Oil cooler</p> <p>The pressure can be adjusted precisely and remotely because the relief valve is fed back. A quick motion of the cylinder is followed up properly.</p>
Pressure control circuit (constant pressure retaining / proportional pressure reducing circuit)	Bleeder circuit	Falling-under-self-weight prevention circuit
 <p>① Proportional bleeder valve ② Filter</p> <p>The line can be operated continuously while precisely keeping the pressure constant by using the inverter motor and the proportional bleeder valve together. No oil cooler is necessary. Proportional pressure reduction is also possible by program control.</p>	 <p>① 4-way three position valve (solenoid or manual) ② Pilot controlled check valve ③ Needle valve ④ 2-way solenoid valve (for depressure)</p> <p>When a large cylinder is used, a shock occurs when the circuit is switched by the change valve. To prevent this, the circuit is depressurized before switching.</p>	 <p>① 4-way three position valve (solenoid or manual) ② Pilot controlled check valve ③ Counter balance valve</p> <p>When a heavy load is attached to the cylinder piston for pressing, etc., sometimes the piston falls faster than the speed generated by the pump's discharge volume (falling under self weight). The circuit adjusts the counter balance valve to a pressure appropriate for the heavy load to ensure smooth operation.</p>

Examples of valve applications shown in the circuit

Flow control circuit (bleed-off circuit)	Flow control circuit	Tandem center applied circuit
<p data-bbox="357 297 552 322">① Flow control valve</p>  <p data-bbox="145 734 552 808">The relief amount is adjusted to control the flow rate by being bypassed from the main circuit.</p>	 <p data-bbox="580 412 735 674">① 4-way three position valve (solenoid or manual) ② Pilot controlled check valve ③ Flow control valve ④ High-pressure relief valve ⑤ Low-pressure relief valve ⑥ Oil cooler</p> <p data-bbox="580 707 987 808">The push/pull speed of the cylinder can be adjusted individually. By operating more than one cylinder simultaneously by one pump, it can be used as a tuning circuit.</p>	 <p data-bbox="1278 297 1442 450">① 4-way three position manual valve (tandem center) ② 4-way three position manual valve (center bypass)</p> <p data-bbox="1018 656 1430 808">Used for operating more than one cylinder individually. One advantage is that no load is applied to the pump while the valve is in the neutral state. Simultaneous operation is impossible based on the condition that one valve is neutral while the other is operated.</p>
Pressure reducing circuit	Rapid traverse circuit	Rapid reverse circuit
 <p data-bbox="427 943 552 1043">① Inline check valve ② Pressure reducing valve</p> <p data-bbox="145 1352 552 1453">Different pressures can be obtained from the same hydraulic power source. In addition, a reverse current can be made by introducing a check valve.</p>	 <p data-bbox="836 943 991 1095">① 4-way three position valve (solenoid or manual) ② Counter balance valve ③ Check valve</p> <p data-bbox="580 1406 987 1453">A circuit to perform rapid advance and apply pressure.</p>	 <p data-bbox="1257 943 1430 1066">① 4-way three position valve (solenoid or manual) ② Pilot controlled check valve</p> <p data-bbox="1018 1328 1430 1453">When the push/pull area ratio of the cylinder is large, the pull side speed could greatly differ from the calculated value due to various resistances inside the pipes. The circuit is bypassed where possible from the root of the cylinder and returned directly to the tank.</p>