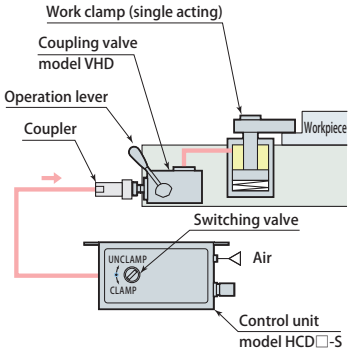
Single acting clamp is controlled and operated with control unit model **HCD□-S** and coupling valve model **VHD**.

Control unit model **HCD$^{4}_{5}$-S**
page →218

Coupling valve model **VHD**
pages →205 and 206

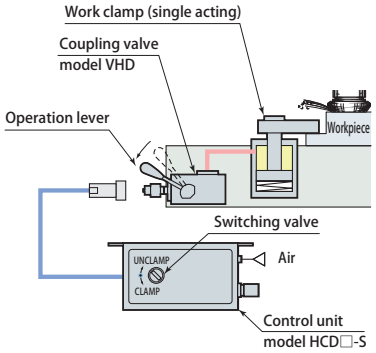
Control unit (HCD4-S) converts air pressure (about 0.3MPa) to hydraulic pressure (6MPa) by actuation of air driven Pascal pump. Once circuit pressure is attained to the set pressure, it stops pumping then keeps the hydraulic pressure.
Coupling valve (VHD) is placed between a control unit and single acting clamps, and it allows to disconnect the control unit from the valve by means of hydraulic coupler. Built-in check valve in coupling valve can positively seal the pressure.

Clamping operation



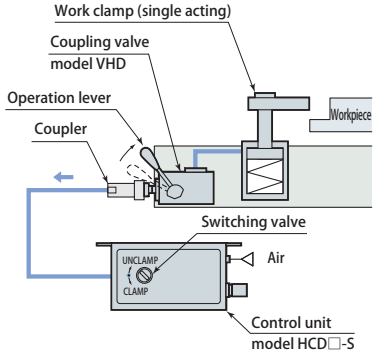
After coupler is connected, workpiece is clamped by aligning switching valve of control unit to clamping circuit.

Hydraulic pressure source disengagement (during processing)

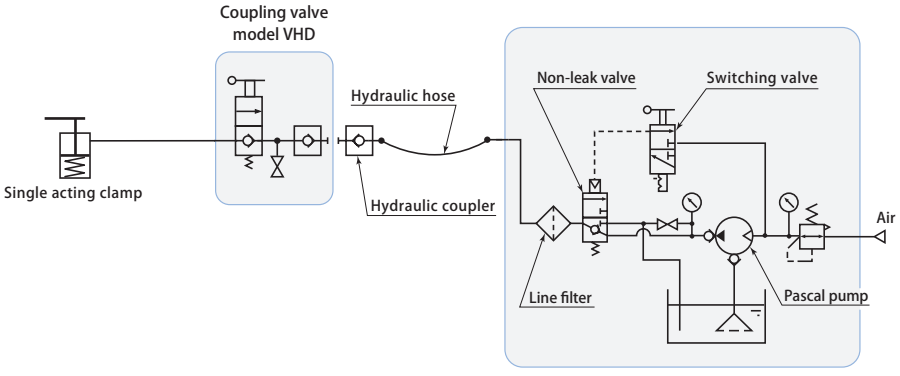


Coupler is released by positioning operation lever of coupling valve to clamping side and aligning switching valve of control unit with unclamping.

Unclamping operation



Workpiece is taken out after coupler is connected, by positioning operation lever of coupling valve to unclamping side, to unclamp.

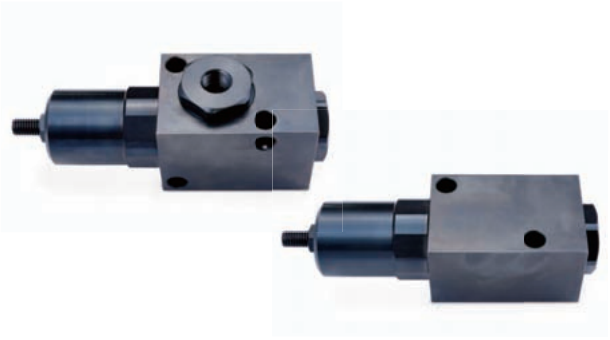


Control unit model HCD□-S

* Since Pascal pump does not raise oil temperature like electrical pumps, it does not trigger pressure drop (reduction in clamping force) after clamping due to difference between ambient temperature and oil temperature. Fluctuation of pressure due to changes in ambient temperature, however, does occur. (This fluctuation presents minimal problems with ordinary cutting processes. Inquire for details.)

Control unit model **HCT**
page →219

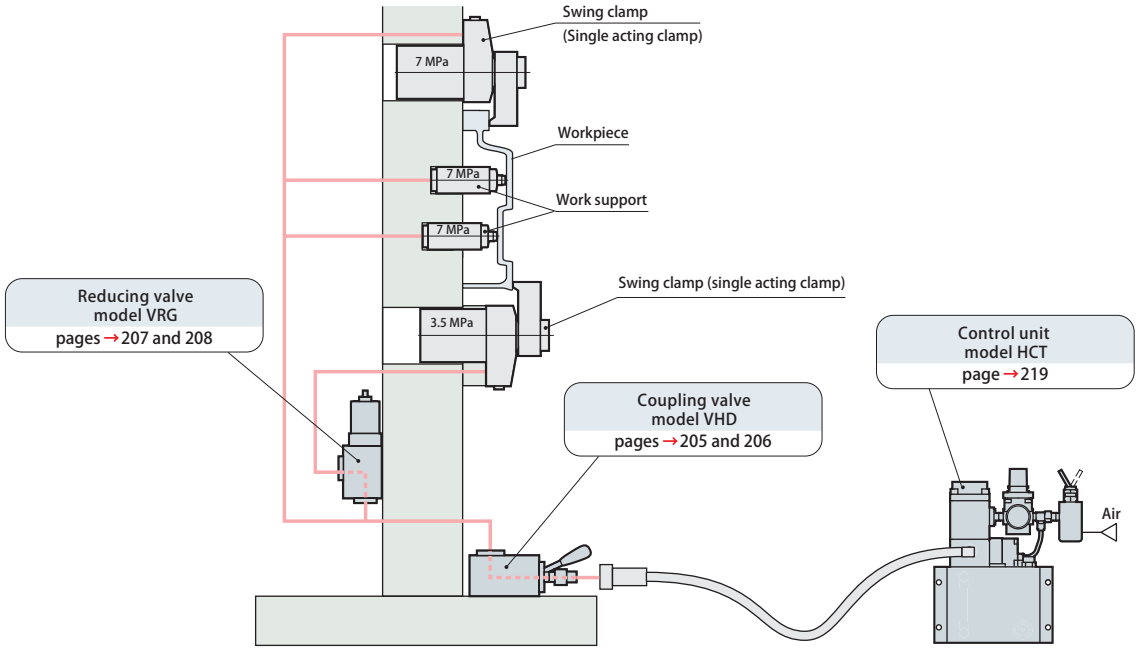
Compact hydraulic control unit for air drive and manual operations. Control unit (HCT-4) converts air pressure (about 0.3MPa) to hydraulic pressure (6MPa) by actuation of air driven Pascal pump. Once circuit pressure is attained to the set pressure, it stops pumping then keeps the hydraulic pressure.

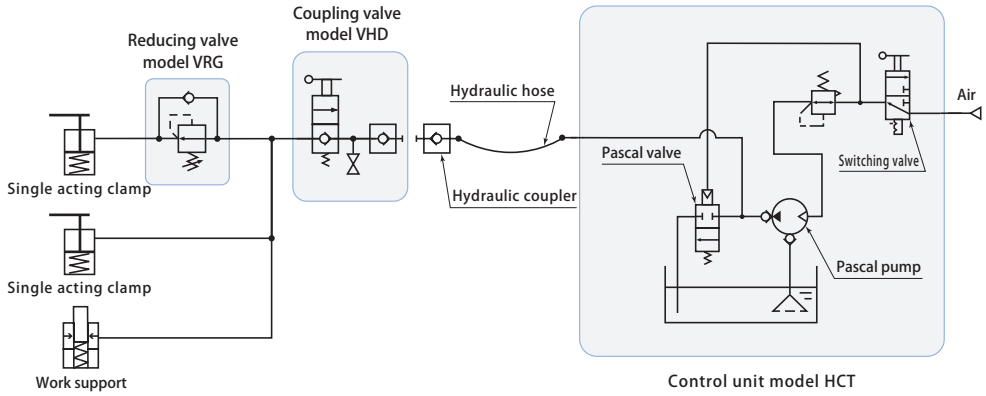


Patented

Reducing valve model **VRG**
pages →207 and 208

Internal hydraulic pressure of circuit can be partially reduced.
(Example) For work support 7 MPa (primary pressure)
pressure of work clamp is reduced to 3.5 MPa.

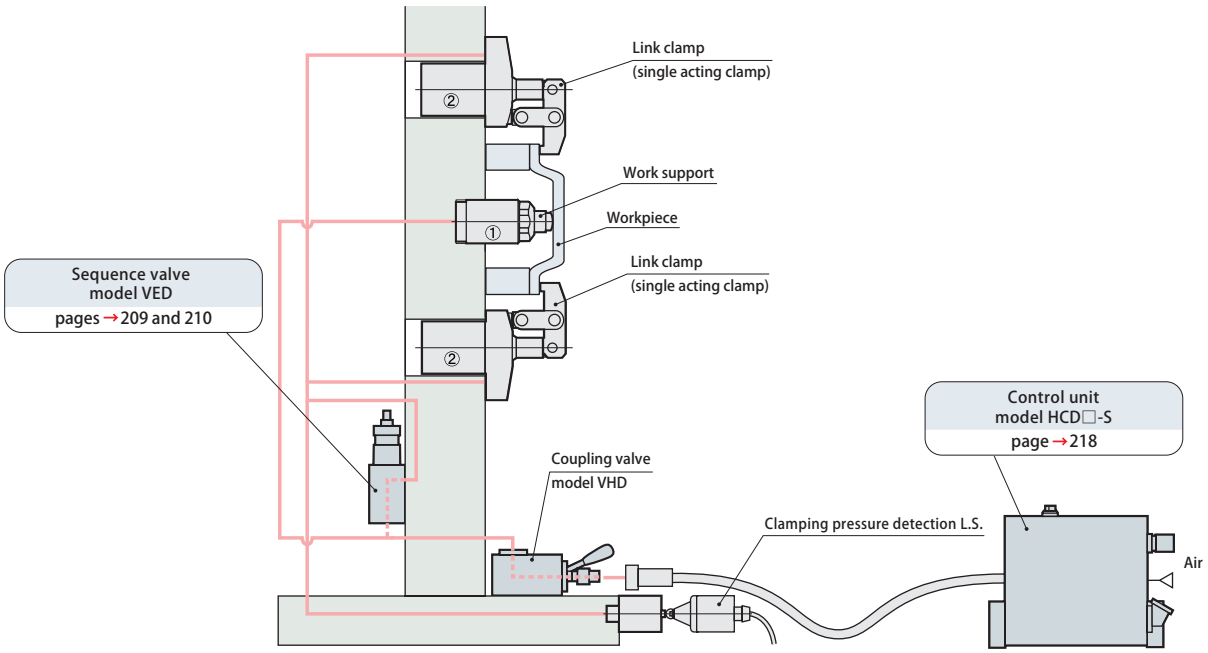


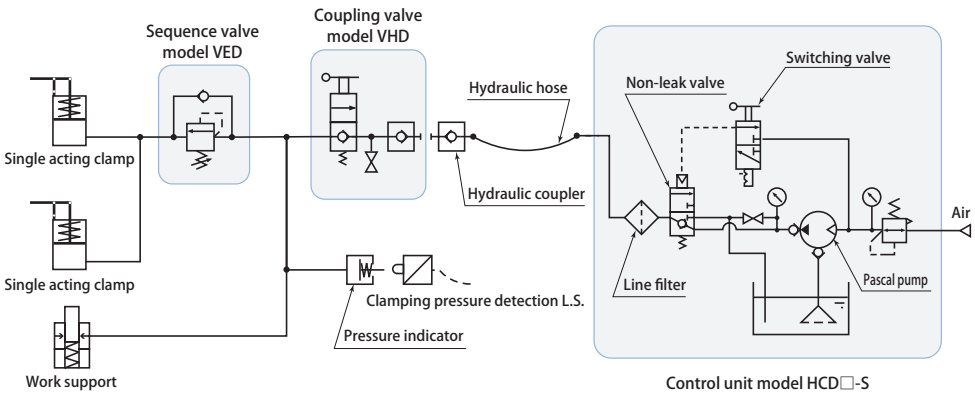


Control unit model HCT

Sequence valve model **VED**
pages →209 and 210

Work clamp and work support are sequentially operated through same circuit.
(Example) ① After operating work support lock
② Work clamp operation performed.

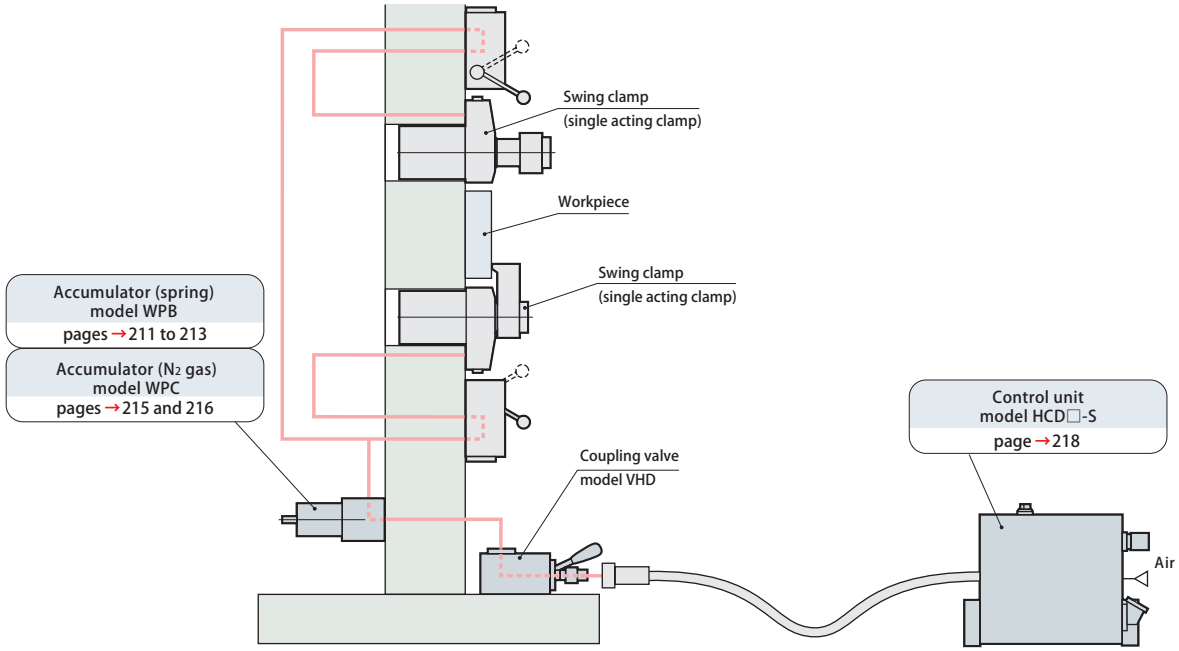


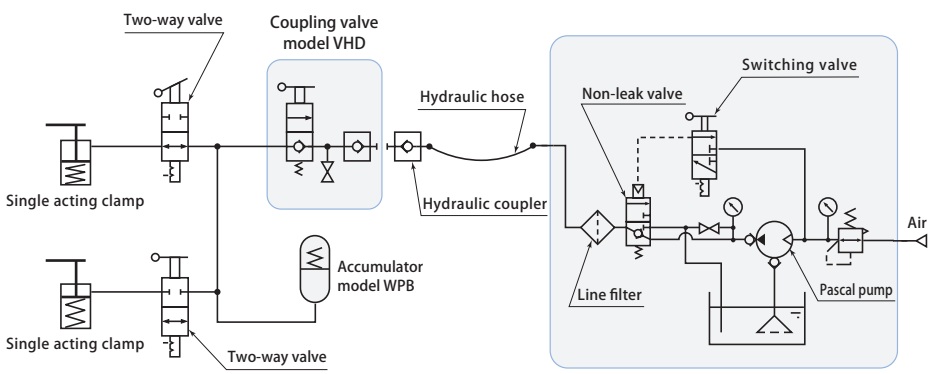


Accumulator model **WPB • WPC**

pages →211 to 216

After hydraulic pressure source has been disengaged, circuit pressure fluctuation due to temperature changes is suppressed.





Control unit model HCD□-S