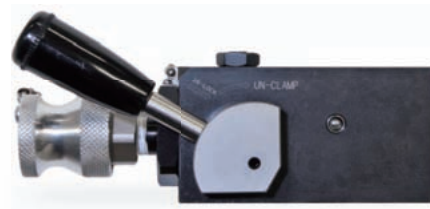


Single acting clamp is controlled and operated with control unit model HCD□-S and coupling valve model VHD.



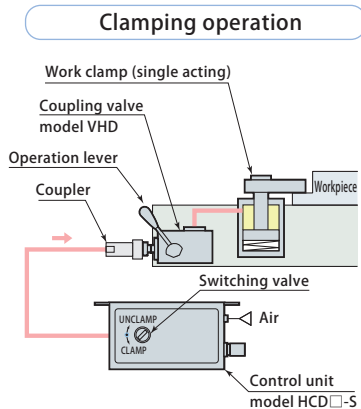
Control unit model **HCD<sub>3</sub>-S**  
page → 458



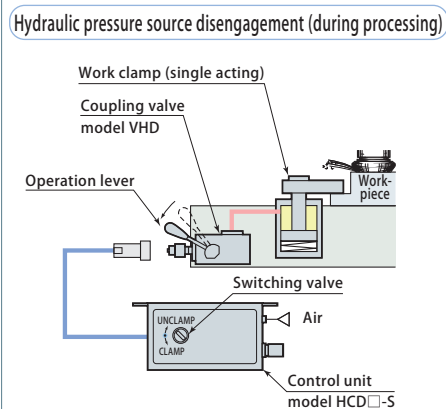
Reducing valve model **VHD**  
pages → 449 and 450

Control unit (HCD2-S) converts air pressure (about 0.5 MPa) to hydraulic pressure (25 MPa) by actuation of air driven Pascal pump. Once circuit pressure is attained to the set pressure, it stops pumping then keeps the hydraulic pressure.

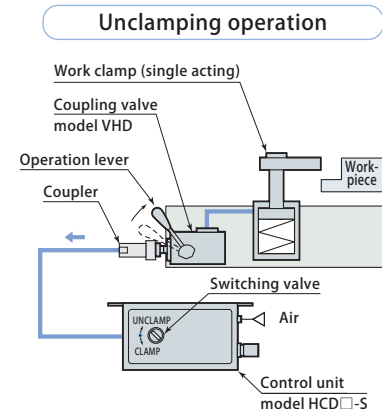
Coupling valve (VHD) is placed between a control unit and single acting clamps, and it allows to disconnect the control unit from the valve by means of hydraulic coupler. Built-in check valve in coupling valve can positively seal the pressure.



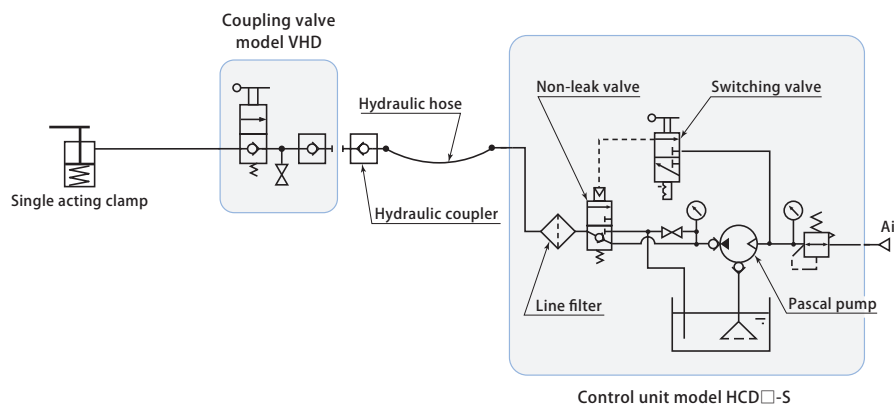
After coupler is connected, workpiece is clamped by aligning switching valve of control unit, to clamp.



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



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



\* 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 → 459

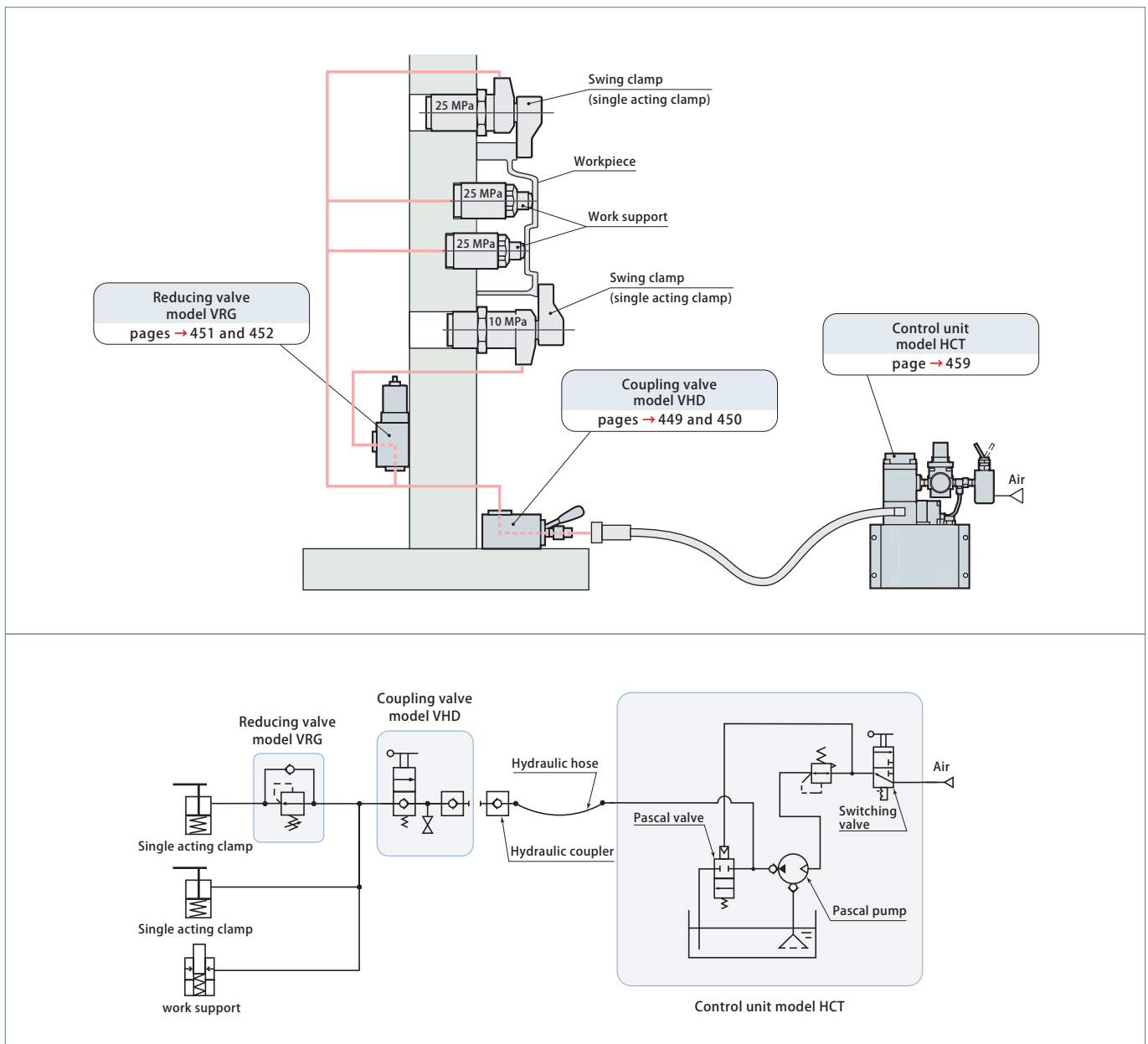


Reducing valve model **VRG**  
pages → 451 and 452

Patented

Compact hydraulic control unit for air drive and manual operations. Control unit (HCT-2) converts air pressure (about 0.5 MPa) to hydraulic pressure (25 MPa) by actuation of air driven Pascal pump. Once circuit pressure is attained to the set pressure, it stops pumping then keeps the hydraulic pressure.

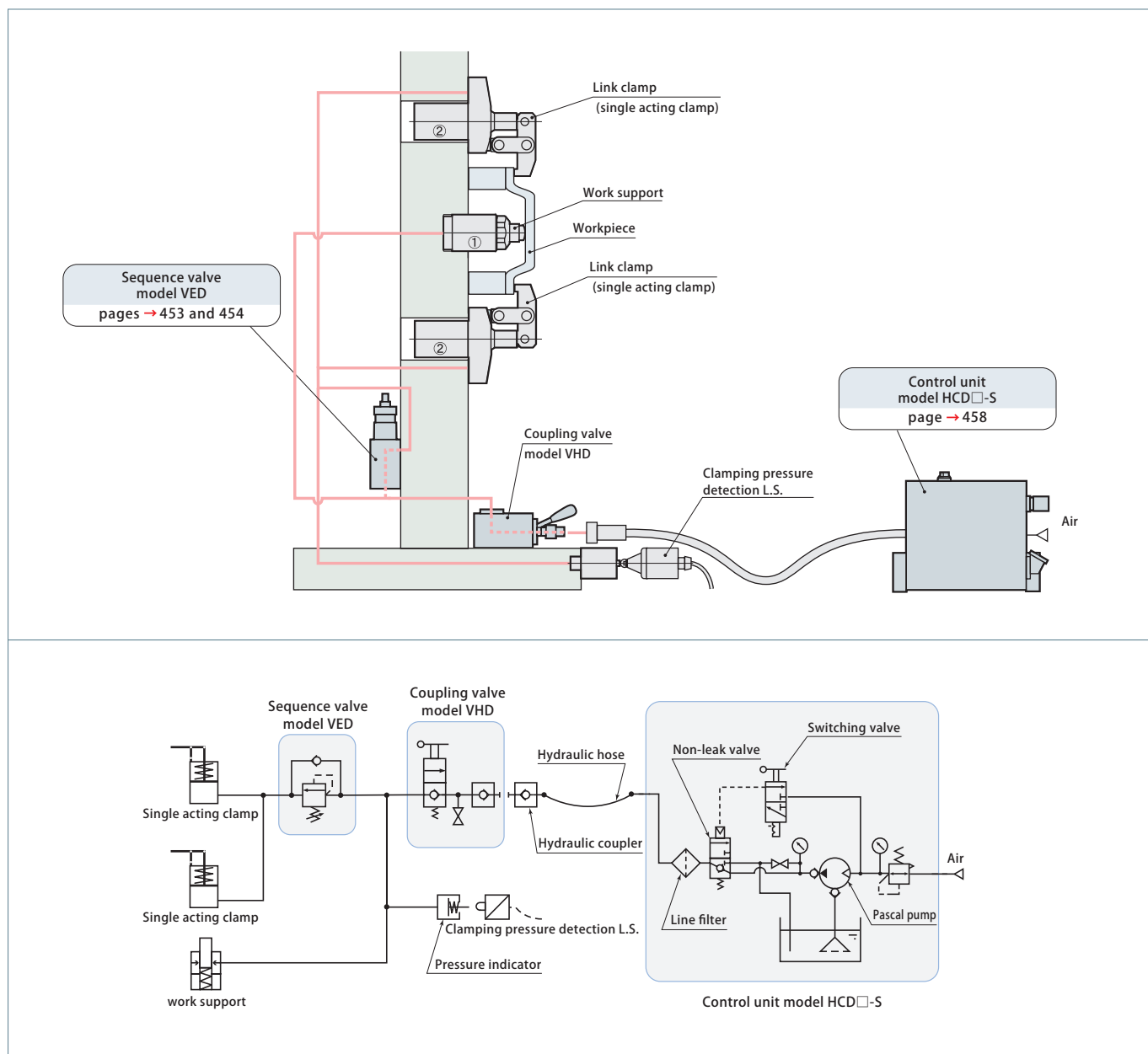
Internal hydraulic pressure of circuit can be partially reduced. (Example) For work support 25 MPa (primary pressure) pressure of work clamp is reduced to 10 MPa.





Sequence valve model **VED**  
pages → 453 and 454

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 **WPC**  
pages → 455 and 456

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

