Double acting clamp is controlled and operated with control unit model HCD H-W and coupling valve model VCB.



Control unit model HCD ☐ H-W
Page →230



Coupling valve model VCB Pages →214, 215

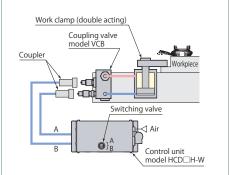
Control unit (HCD \square H-W) converts air pressure to hydraulic pressure by actuation of air driven Pascal pump. Once circuit pressure is attained to the set pressure, it stops pumping then keeps the hydraulic pressure.

Coupling valve (VCB) is placed between a control unit and double 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 Work clamp (double acting) Coupling valve model VCB Switching valve A Air B Control unit model HCD□H-W

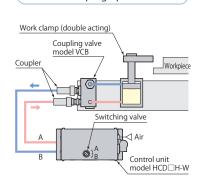
After coupler is connected, workpiece is clamped by aligning switching valve of control unit to B hydraulic port (clamping circuit).

Hydraulic pressure source disengagement (during processing)

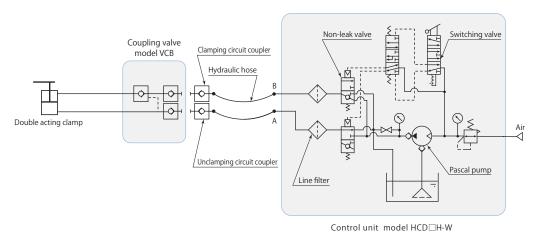


Coupler is released by aligning switching valve of control unit to center position after workpiece clamping is completed.

Unclamping operation



After coupler is connected, workpiece is taken out by unclamping, which is made possible by aligning switching valve of control unit to A hydraulic port (unclamping circuit).



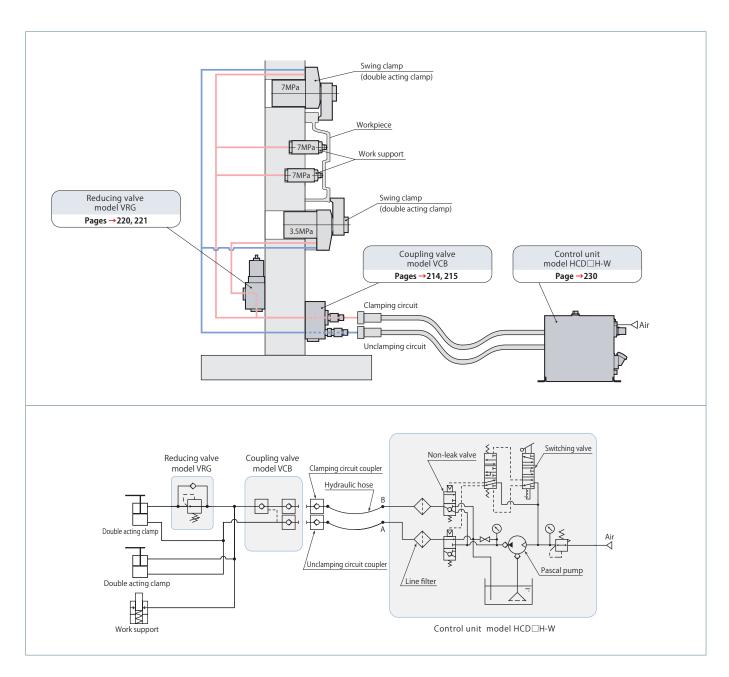
Since Pascal pump does not raise oil temperature like electrical pumps, it does not trigger pressure drop (reduction in clamping force) after clamping due to difference between ambient temperature and oil temperature. Fluctuation of pressure due to changes in ambient temperature, however, does occur.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



Control system

Reducing valve $\mbox{model}\mbox{ }\mbox{VRG}$ Pages →220, 221

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.



7MPa

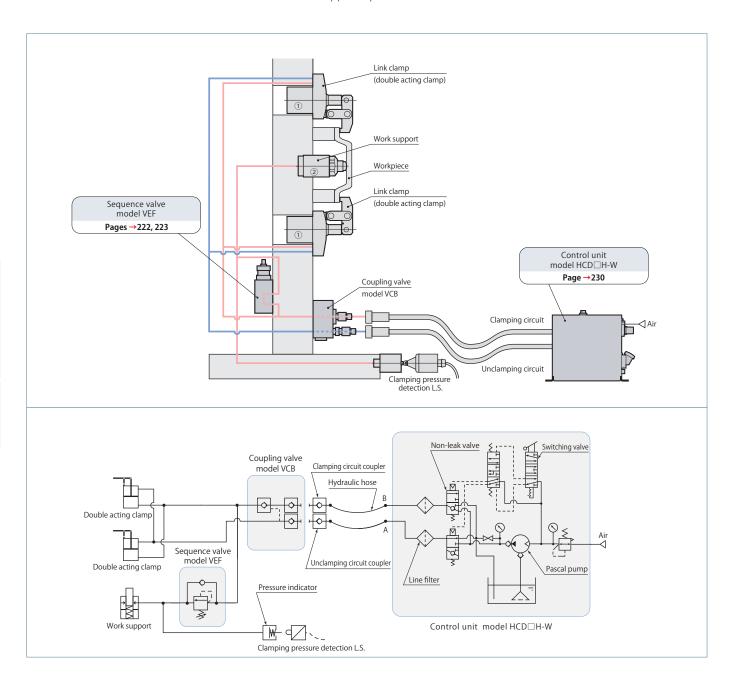


Sequence valve model VEF Pages \rightarrow 222, 223

Clamps are sequentially operated through same circuit.

(Example) 1 After clamping operation of work clamp

② Work support operation locked.





Pilot check valve model VCP
Page →216

It ensures the clamp circuit pressure positively retained even when hydraulic unit provides zero pressure or pressure line is cut off, which can prevent the workpiece



Accumulator model WPB, WPC
Pages →224–229

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

