



ROEMHELD
 HILMA ■ STARK

Issue 4-17 E

F 9.425

Coupling Units

for manual operation, for single and double acting cylinders
 max. operating pressure 400/500 bar



Coupling unit
 for single-acting cylinders, size 1



Coupling unit
 for double-acting cylinders, size 2



Multi-coupler
 Aluminium version

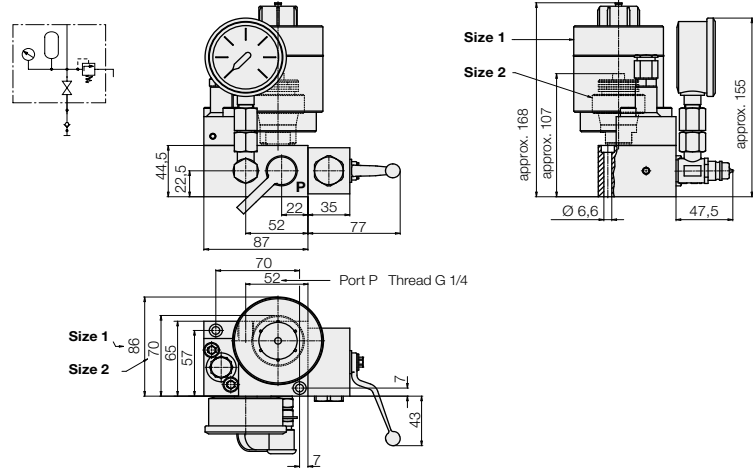
Application

This coupling unit is used if the clamping fixture is manually separated from the pressure generator, e.g. in flexible manufacturing systems or when using one pressure generator only for several clamping fixtures. It can be supplied with two different accumulators:

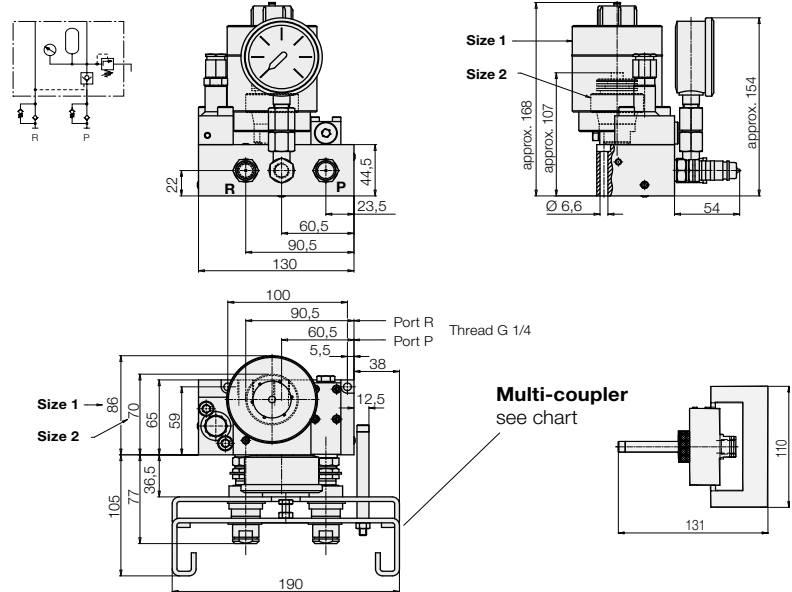
Size 1 for clamping fixtures with a big oil volume. Size 2 for clamping fixtures with a small oil volume.

Important notes see page 2.

Single-acting version



Double-acting version



Accumulator as per data sheet F 9.601

Nominal volume	[cm ³]	75	13	13
Gas-preload pressure	[bar]	100	100	160
Range of operating pressure	[bar]	110...500	110...400	175...500
Stored oil volume at max. operating pressure	[cm ³]	59	9.75	8.8

Coupling unit for single-acting cylinders

	Part no.	Part no.	Part no.
Coupler "Push-Pull" see F 9.381	9425011	9425012	9425016
Dust cap for coupler	9384106	9384106	9384106
Safety support for coupler (page 2)	9384300	9384300	9384300
Coupling nipple (spare part)	0942001	0942001	0942001
Dust cap for nipple (spare part)	9384206	9384206	9384206
	9384400	9384400	9384400

for double-acting cylinders

	Part no.	Part no.	Part no.
Multi-coupler (aluminium)	9425021	9425022	9425026
Dust cap for coupler	9425102	9425102	9425102
Safety support for multi-coupler (page 2)	9384300	9384300	9384300
Coupling nipple with VSV 6 bar (spare part)	0942002	0942002	0942002
Coupler for multi-coupler (spare part)	9384624	9384624	9384624
	9384100	9384100	9384100

Power units Important notes • Accessory

Power Unit

Oil supply can be made by means of a power unit as per data sheet D 8.0115. However, the versions for double-acting cylinders require another switch, which has to be connected instead of the normal hand switch according to the electric circuit diagram shown below.

Control panel

for double-acting cylinders, with green signal lamp for "Clamped" and selector switch with 3 positions "unclamp-clamp-couple".



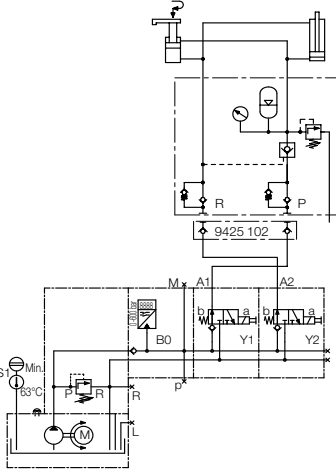
Part no. 0840006

Power unit as per data sheet D 8.0115 including manual switch 0840006

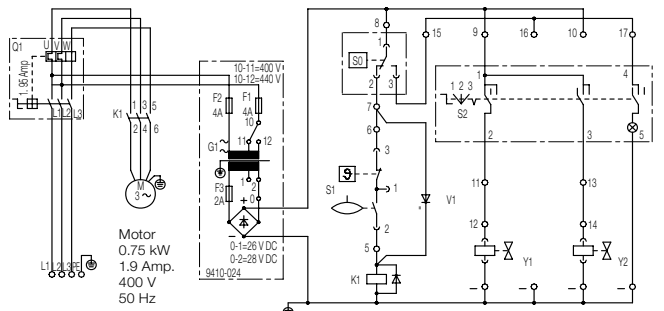
	Part no.
500 bar	6810540
250 bar	6812410
160 bar	6818140

Power units with two-hand safety control are available on request (see also data sheet D 8.013).

Hydraulic circuit diagram for double-acting cylinders



Electric circuit diagram with manual switch for double-acting cylinders



3/PE - 50 Hz 400 V
 Safety fuse max. 6A slow

S0 = Pressure switch
 S1/V1 = Oil control
 S2 = Manual switch
 Y1 + Y2 = 3/2 solenoid valve

Operating sequence for unclamping/clamping

a) Single-acting cylinders

Operating sequence for **unclamping** with coupling unit for single-acting cylinders:

- 1) Remove dust cap and clean coupling parts, if necessary.
- 2) Connect coupler of quick-disconnect coupling in depressurised mode.
- 3) Open high-pressure shut-off valve

Operating sequence for **clamping** with coupling unit for double-acting cylinders.

- 1) Coupler of quick-disconnect coupling is coupled and high-pressure shut-off valve is opened.
- 2) Actuate power unit until pressure gauge shows required clamping pressure.
- 3) Shut high-pressure shut-off valve.
- 4) Set pressure generator to unclamping position.
- 5) Disconnect coupler of quick-disconnect coupling and put it into a safety support, if necessary.
- 6) Attach dust cap to coupling nipple and coupler.

b) Double-acting cylinders

Operating sequence for **unclamping** with coupling unit for double-acting cylinders:

- 1) Remove dust cap and clean coupling parts, if necessary.
- 2) Connect multi-coupler in depressurised mode: For this purpose switch selector switch to "couple".
- 3) Switch selector switch to "unclamp".

Operating sequence for **clamping** with coupling unit for double-acting cylinders.

- 1) Multi-coupler is coupled.
- 2) Switch selector switch to "clamp". After pressure build up the green lamp is signalled.
- 3) Set multi-coupler to depressurised mode: For this purpose switch selector switch to "couple".
- 4) Disconnect multi-coupler and put it into a safety support, if necessary.
- 5) Attach dust cap to coupling nipple and coupler.

Important notes!

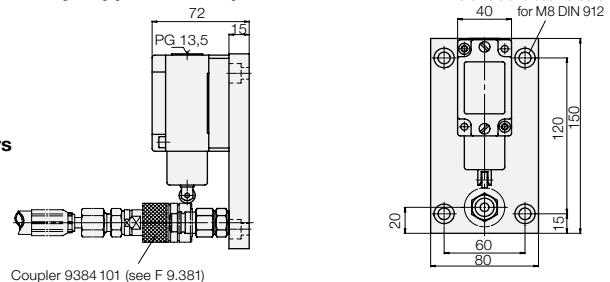
The coupling units with the accumulator for a max. of 500 bar and an oil volume of 13 cm³ should only be used for small clamping fixtures having a total oil volume of 100 cm³. The operating pressure should not exceed 400 bar so that, in case of a rise in temperature, the maximum operating pressure of 500 bar will not be exceeded and no oil can be lost through the pressure relief valve.

By means of the pressure gauge attached, a visual pressure control should be effected. Constant pressure drop after uncoupling indicates a leakage which of course must be repaired immediately.

Safety elements

- 1) The coupling units are equipped with a firmly adjusted pressure relief valve. This pressure relief valve is adjusted as a safety valve against overload of the pressure accumulator to an opening pressure of 500 bar.
- 2) All coupling nipples are provided with a pre-loaded valve, which limits a pressure increase in the nipple in uncoupled mode to a possible leakage of approx. 5 bar.
- 3) The coupling units for double-acting cylinders are provided with a pilot-controlled check valve. Thereby a higher operating safety is achieved. These coupling units can also be used for single-acting cylinders, however a power unit for double-acting cylinders has to be used as pressure generator.
- 4) With coupling units for double-acting cylinders a multi-coupler can be used
 - a) to simplify the coupling motion
 - b) to prevent the exchange of the clamping and unclamping line.
- 5) The safety support is used as holder for coupler or multi-coupler after uncoupling has been made. The release signal of the integrated switch makes sure that the clamping fixture can only be moved, if the coupler or multi-coupler has been correctly removed from the clamping fixture.

Safety support for coupler



Safety support for multi-coupler

