

## **Power Unit**

## - Basic version -



#### General characteristics

Design:	81XX-gear pump 82XX-radial piston pump 8223-323 two-stage hydraulic	Nomi Powe Code Rel. d	
Mounting: Porting:	pump foot mounting G 1/4	(ED):	
Direction of rotation:	radial piston pump, any gear pump, clockwise two-stage hydraulic pump, counterclockwise (viewed from above onto drive shaft)	The c based e.g. th not ex the m nomin	
Mounting position: Reservoir volume: Usable oil volume:	upright V = 11 I V <sub>n</sub> = 6 I	Differe Other	

#### Hydraulic characteristics

Vol. efficiency:

$\eta$ vol = 85-95% with
gear pumps
$\eta$ vol = 92-96% with
radial piston pumps

#### Accessories

The power units can be supplied, on request, with solenoid operated directional control valves as per data sheet C 2.360 ND4 und C 2.530 ND6, which are fixed to the power unit on a mounting plate.

#### The valves have to be ordered separately. On request mounting plate for pressure switch as per data sheet F 9.730. Filter control see page 4.



#### **Electrical characteristics**

nal voltage: er system: class: duty cycle

230/400 V 3-phase AC, 50 Hz IP 54 Depends on operating pressure For details of 100% and 40% ED see table.

#### Note on figure and hydraulic circuit diagram

The pressure switch, oil level and temperature control and filter control shown in the above figure are not supplied with power unit, see accessory page 4. Oil level and temperature control Part-no. 3822-008

alculation of the relative duty cycle is d on a cycle of 10 min. With 40% ED, **Hydraulic** he maximum load within the cycle should xceed 4 min. During the remaining time notor can carry a load of up to 50% of the nal output and should run continuously. ent types on request.

details see table and data sheet A 0.100.



Flow r	rate	Operating pr	ressure at	Nomina	l L2)	Weight	Part-no.	Part-no.
ccm/s	l/min	bar	40% ED bar	rating kW	mm	kg	version	control <sup>3</sup> )
15	0.9	350	500	0.75	489	27	8223-310	8223-910
25	1.5	150	200	0.75	489	27	8122-300	8122-900
25	1.5	360	500	1.1	504	30	8223-308	8223-908
86/12	5.2+0.7	100/500	100/500	0.75	489	29	8223-323	8223-923
41	2.5	220	300	1.1	504	30	8223-311	8223-911
70	4.5	64	85	0.75	489	27	8142-300	8142-900
70	4.5	104	142	1.1	504	30	8143-300	8143-900
70	4.5	142	180	1.5	531	34	8144-300	8144-900
102	6.2	50	65	0.75	489	27	8152-300	8152-900
102	6.2	73	100	1.1	504	30	8153-300	8153-900
102	6.2	100	125	1.5	531	34	8154-300	8154-900

1) Applies to electric motor only. Running time of pump at max. pressure depends on unit power losses. It should be noted that the oil temperature should not exceed 70°C.

2) The mounting height (dimension L) of the power units depends on the type of motors used.

3) Explanations of filter control see page 4.

Actual issue see www.roemheld.com



# Single acting without and with machine tool interlock



Single acting with one 3/2, directional control valve, clamped in de-energised mode



Single acting with one 3/2, directional control valve and machine tool interlock, clamped in de-energised mode



Single acting with 2 pcs 2/2, directional control valve, safe in de-energised mode



Single acting with 2 pcs 2/2, directional control valve and machine tool interlock, safe in de-energised mode

Double acting without and with machine tool interlock



Double acting with 2 identical 3/2 directional control valves which are alternately pressurised



Double acting with 2 identical 3/2 directional control valves which are alternately pressurised and machine tool interlock

Double acting with 2 different valve positions without and with machine tool interlock



Double acting with 2 inverse 3/2 directional control valves which are simultaneously pressurised



Double acting with 2 inverse 3/2 directional control valves which are simultaneously pressurised and machine tool interlock



Double acting with 4 pcs 2/2 directional control valves, safe in de-energised mode





#### With double acting 4/3 directional control valve, max. 350 bar



2360-194 double acting with 4/3 directional control valve, safe in de-energised mode



4/3 directional control valve and machine tool interlock, safe in de-energised mode

## Accessory





2360-161 pressure switch plate with check valve for series mounting plate e.g. preset pressure, 2 pressure ranges





2360-110 series mounting plate with pressure switch for machine tool interlock and pressure relief valve to limit the pressure in the case of temperature increase (e.g. wedge clamping elements).



2360-172 series mounting plate for 1 valve. 1 sequence valve 2954-428 or 2954-442 for sequence control and pressure switch for machine tool interlock.



Power unit with pressure switch for unpressurised cycle in connection with 2/2 directional control valves

## Switching examples



Y5





Power unit Valve switchings with spool valve as per data sheet C 2.530 up to max. 315 bar

#### 1. Mounting plates

No. 2450-111 No. 2450-100

No. 2450-500

Adaptor plate Mounting plate for single valves G 1/4 Mounting plate for unpressurised cycle with 4/2 directional control



#### 2. Valves

4/2 and 4/3 directional control valves ND 6 with 24 V DC. Solenoids as per data sheet C 2.530.



# **Explanations of high-pressure filter**

#### Application

The reliability of a hydraulic system depends for the most part on the cleanness of hydraulic liquids. It is the task of a high-pressure filter to clean the returning oil from fixtures, etc. which is contaminated (from piping, assembly dirt, etc.) before it will flow again through the hydraulic components of the installation (valves, etc.). Thereby the contamination rate is reduced to a minimum and the individual components are protected against premature wear.

#### Description

The high-pressure filter is installed directly behind the pump in the pressure line of the power unit (see hydraulic circuit diagram). The filter is equipped with a bypass valve to avoid malfunctions in the case of plugged filter pores, however, the hydraulic liquid can enter unfiltered into the system. To prevent this, it is advisable to provide a filter control (see accessory). Change of the filter cartridge can be made efficiently, being located in the connecting block of the power unit.

#### Technical data

Spare filter cartridge	0007 017
Max. operating pressure Differential pressure constancy Filtration level	500 bar up to 30 bar 10 μm
Any an avating property	E00 I

# **Explanations of filter control**

#### Application

Electrical signal for filter contamination in the high-pressure filter of the power unit.

#### Description

Due to the contamination of the high-pressure filter the cross section for the oil flow becomes always smaller. Thereby a pressure increase is produced in front of the filter element. The pressure is measured before and behind the filter element in order to monitor the pressure increase. Due to the rising differential pressure, a spring-loaded piston in the interior of the element will be displaced and operates a limit switch, which can trigger switching processes. On static conditions (no oil flow) of the system, the piston and the switch return to its initial position.

### Electric circuit diagram



#### Retrofitting

Existing power units can be retrofitted by a filter control on demand. Please contact us!

#### Remark on switch adjustment

Screw the limit switch into the housing until the contact between the brown and black conductor is closed and turn it further 360°. Tighten and lock the nuts.

#### Technical data

Max. operating pressure	500 bar
Reaction differential pressure	10 bar ±10%
Type of indication	electrical
Type of contact	change-over
	relay
Type of connection	plug
Code class	IP 67
Switching potential 250 V AC	
40-60 Hz	0.2 A
Switching potential 24 V DC	0.05 A
Switching voltage	min. 12 V DC
Switching current at 12 V DC	min. 10 mA
Line cross section	4 x 0.5 mm <sup>2</sup>
Line length	2 m
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