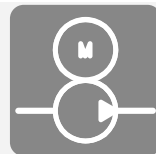


Mini hydraulic power pack type HR 050

Product documentation

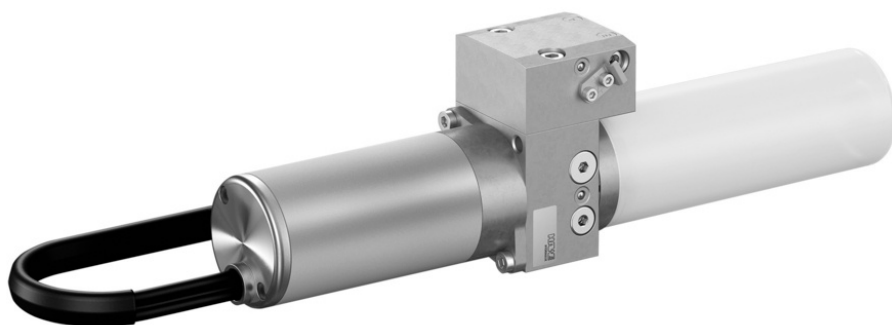


Operating pressure $p_{\max}$:

200 bar

Usable volume (tank):

0.11 l



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1**Overview of the mini hydraulic power pack type HR 050**

Compact hydraulic power packs are a type of hydraulic power pack. They are characterised by a highly compact design, since the motor shaft of the electric motor also acts as the pump shaft. Compact hydraulic power packs are used to supply hydraulic oil in hydraulic systems.

The mini hydraulic power pack HR 050 is particularly compact by pressurising the radial piston pump internally. The reversing function is activated by reversing the motor's direction of rotation. No directional valve is required. The motor is protected from overloads by a built-in temperature switch.

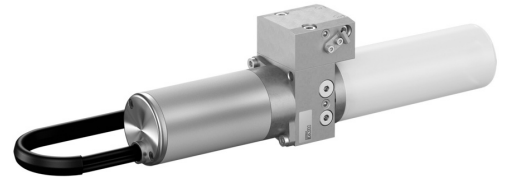
- Radial piston pump integrated directly into pump frame
- round, transparent tank with M8x1 filling screw

Features and advantages

- Suitable for intermittent operation
- 12 V and 24 V DC
- Suitable for various different installation positions
- Protection class IP 67

Applications

- Automotive technology
- Speedboats, jet skis
- Agricultural equipment, construction machines, commercial vehicle equipment
- Industry
- not suitable for ATEX applications, not suitable for exposure to direct sunlight



Mini hydraulic power pack type HR 050

2 Available versions

Ordering example

HR 050	-R	1	02	-D	3	1	N	K	7	W	W	- ... /	...	
													Pressure setting B-side (can only be set at factory)	20 to 200 bar pump side (minimum value specified in 10 bar increments; tolerance +10 bar)
													Pressure setting A-side (can only be set at factory)	20 to 200 bar consumer side (minimum value specified in 10 bar increments; tolerance +10 bar)
											electrical connection	W	free cable end (ferrules) with 0.7 m cable	
										coating	W	without		
										ingress protection class	7	IP 67		
								tank	K	plastic tank				
								2.3 "Installation position"						
								2.2 "Tank size"						
								motor power supply	3	12 V DC				
									4	24 V DC				
								motor type	D	brush-type DC motor				
								2.4 "Pump"						
			design		1	BASIC: - reverse mode - double pilot operated check valve (GRV)								
					2	COMFORT: - reverse mode - double pilot operated check valve (GRV) - manual release override - overpressure protection in case of temperature increase								
			flow direction		reversible									

2.1 "Basic type and size"

2.1 Basic type and size

Type	Motor version	Pressure p_{max} (bar)
HR 050	Brushed DC motor	200

2.2 Tank size

Coding	Fill volume (l)	Optimal fill quantity (l)	Maximum removable quantity (usable volume) (l)
N (horizontal installation position)			
1	0.1	0.046	0.034
2	0.2	0.082	0.063
3	0.3	0.128	0.098
V (vertical installation position)			
1	0.1	0.042	0.037
2	0.2	0.075	0.070
3	0.3	0.116	0.111

2.3 Installation position

Coding	Description
N	horizontal, (R1 - ports on top) (R2 - connection block on top)
V	vertical, tank on top

2.4 Pump

Coding	Flow rate when idling Q _{max} (l/min)		maximum output P _{max} (W)
	12 V	24 V	
02	0.52	0.54	372
03	0.70	0.73	460
04	0.90	0.96	540



NOTICE

Connecting a synchronizing cylinder raises the delivery volume by about 10%.

3 Parameters

3.1 General data

Weight	1.5 kg without hydraulic fluid (depends on version)
Installation position	- horizontal (R1 - ports on top) (R2 - connection block on top) - vertical (tank on top)
Attachment	two fastening holes M6 (G 1/8") with 10 mm thread depth and 36 mm spacing
Hydraulic connection	2x G 1/8" internal thread for banjo bolts
Ambient temperature	-25 to +80°C
Running noise	64 dB(A)

3.2 Hydraulic data

Hydraulic fluid: mineral oil according to DIN 51524, other media on request

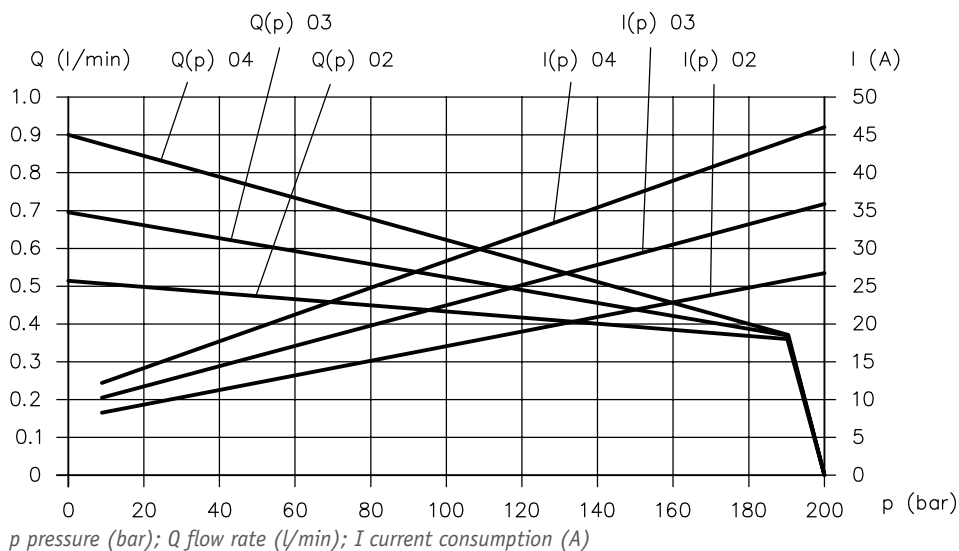
Operating pressure	200 bar
Pump design	Radial piston pump with variable displacement
Reversible	Flow selectable through A or B; for oil return, hydraulic power pack must be running so that check valve allows passage.
Temperature Hydraulic fluid	-40 to +70°C depending on hydraulic fluid - Operating temperature depends on oil (note viscosity)
Tank pressure	-0.5 to 2 bar
Bursting pressure	500 bar
Viscosity	10 - 500 mm ² /s
Cleanliness level	ISO 4406 21/18/15
Holding function	The unlockable check valves allow for a holding function that maintains the built-up pressure in the system. To unlock the check valves, the hydraulic power pack must produce around 1/4 of the pressure contained in the system when running in reverse.

3.3 Characteristic lines

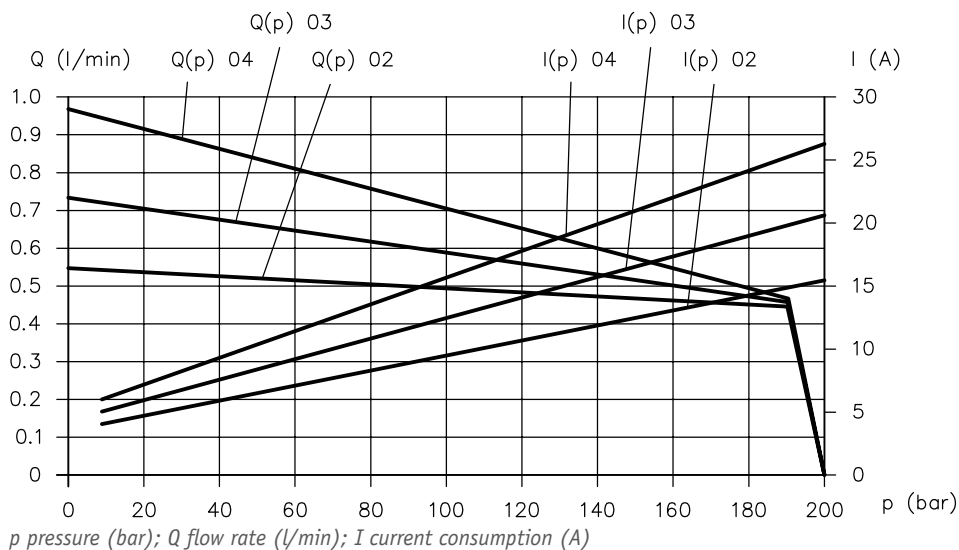
Viscosity of the hydraulic fluid approx. 46 mm²/s

At room temperature, tolerance $\pm 10\%$

12 V DC



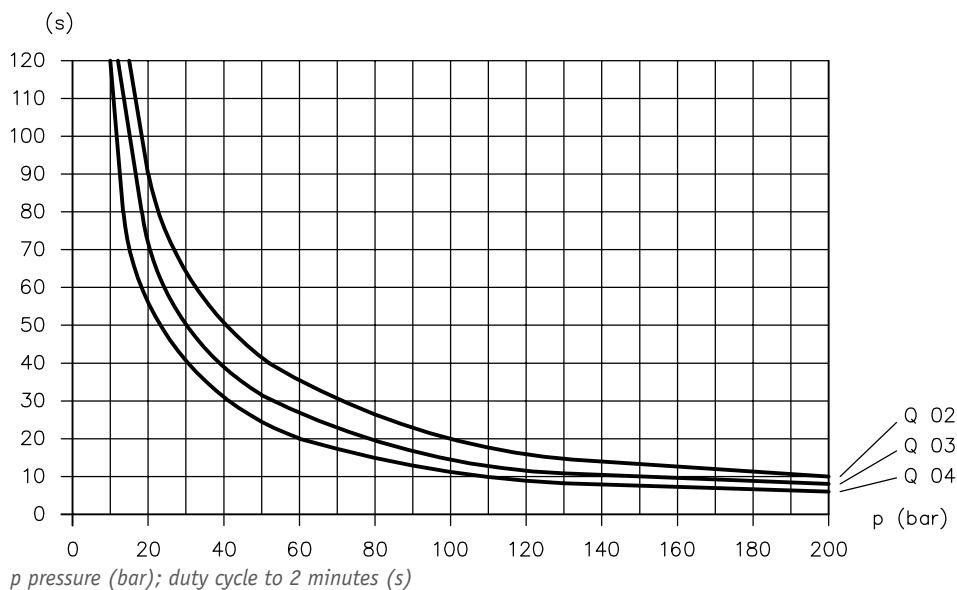
24 V DC



Duty cycle

In operating mode: Periodic intermittent operation (S3)

Duty cycle can be extended by reducing pressure (bar).



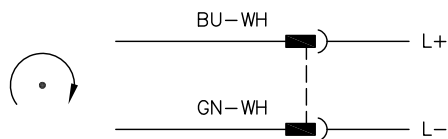
3.4 Electrical data

Motor 12 V DC or 24 V DC

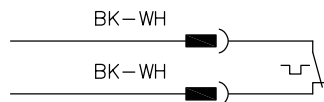
Voltage	12 V or 24 V DC
Current consumption	See characteristic lines. 12 V DC - max. 26 A 24 V DC - max. 45 A Startup current max. 12 V DC - max. 40 A 24 V DC - max. 80 A
Overload protection	Temperature switch, see "Connection example"
Power	see Chapter 2.4, "Pump"
Duty cycle	Periodic intermittent operation: S3-10% 2 min
Electrical connection	Free cable end (ferrules) with 0.7 m cable
Protection class	IP 67 according to DIN EN 60529

Terminal assignment 12 V DC/24 V DC

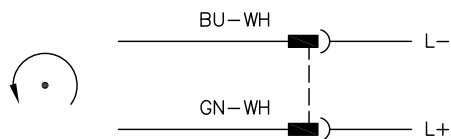
Flow at A and reflux at B



Temperature switch



Flow at B and reflux at A

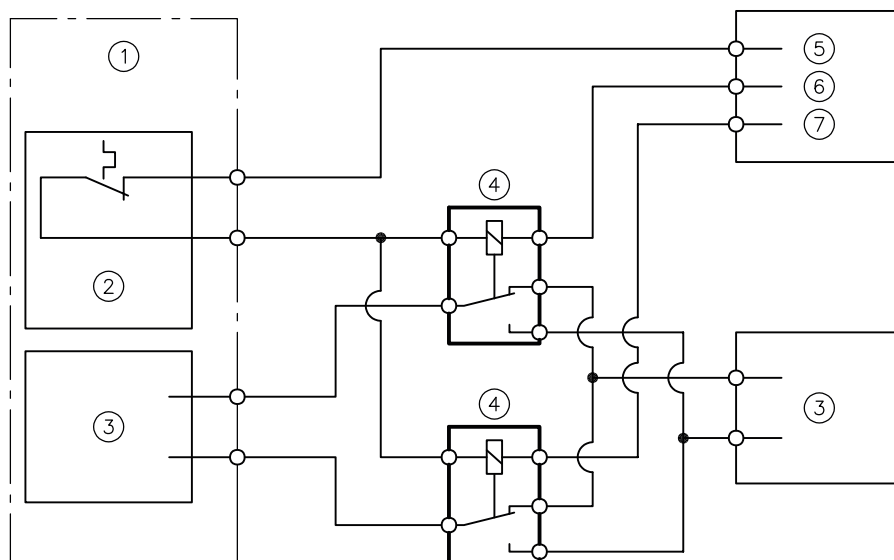


Temperature switch



Connection example

Example shows connection of electric motor in reverse mode including integration of temperature switch

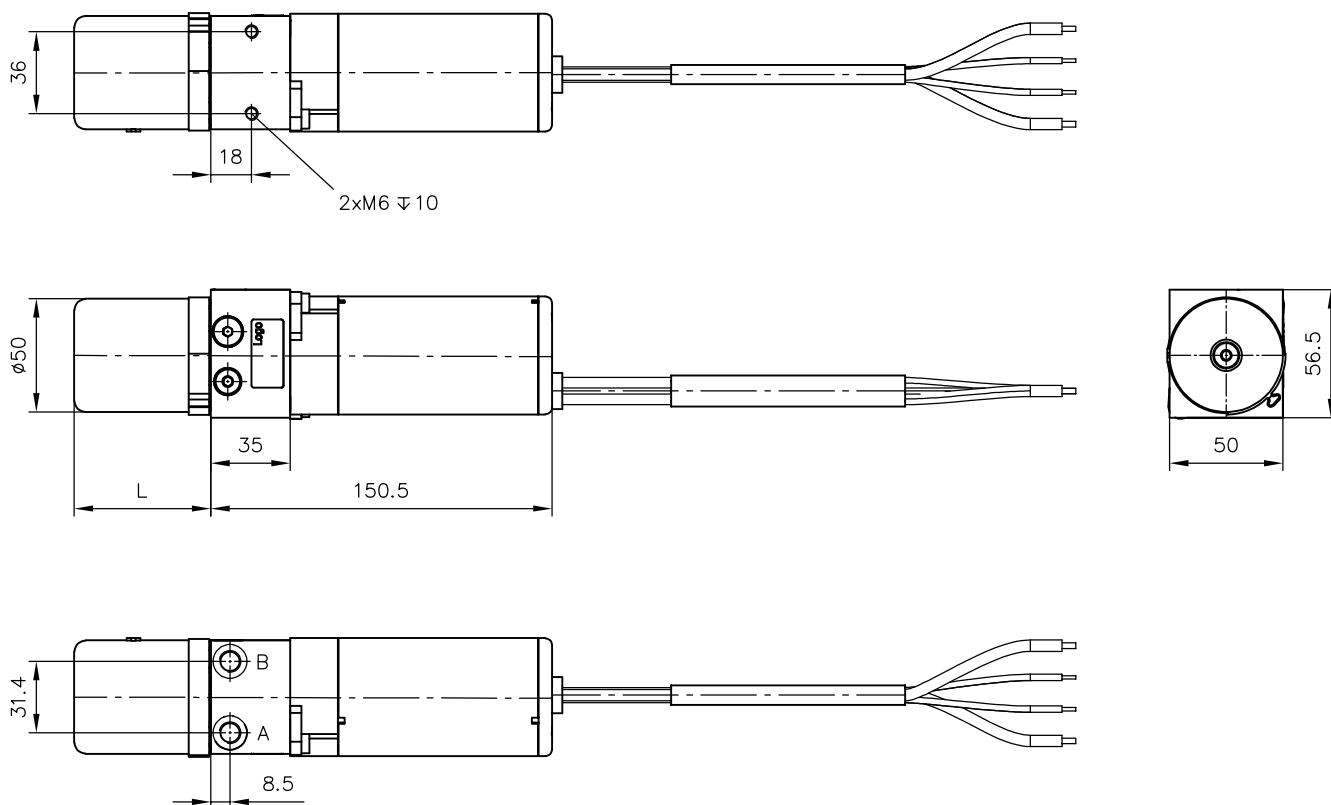


- 1 Motor
- 2 Temperature switch
- 3 Power cable
- 4 Relay
- 5 Signal earth line
- 6 Signal 1 line
- 7 Signal 2 line

4 Dimensions

All dimensions in mm, subject to change.

4.1 BASIC

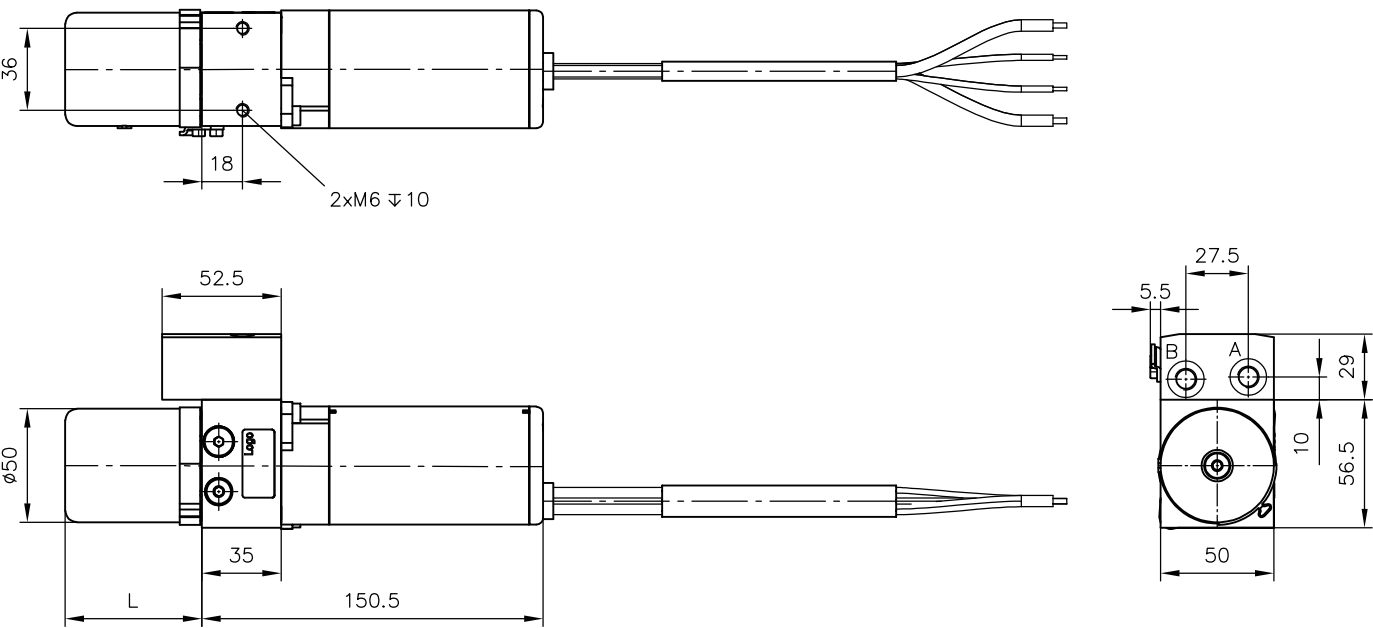


L see "Tank size", page 6

Coding Tank	L
1	60
2	100
3	150

Ports (ISO 228-1)
A, B G 1/8

4.2 COMFORT



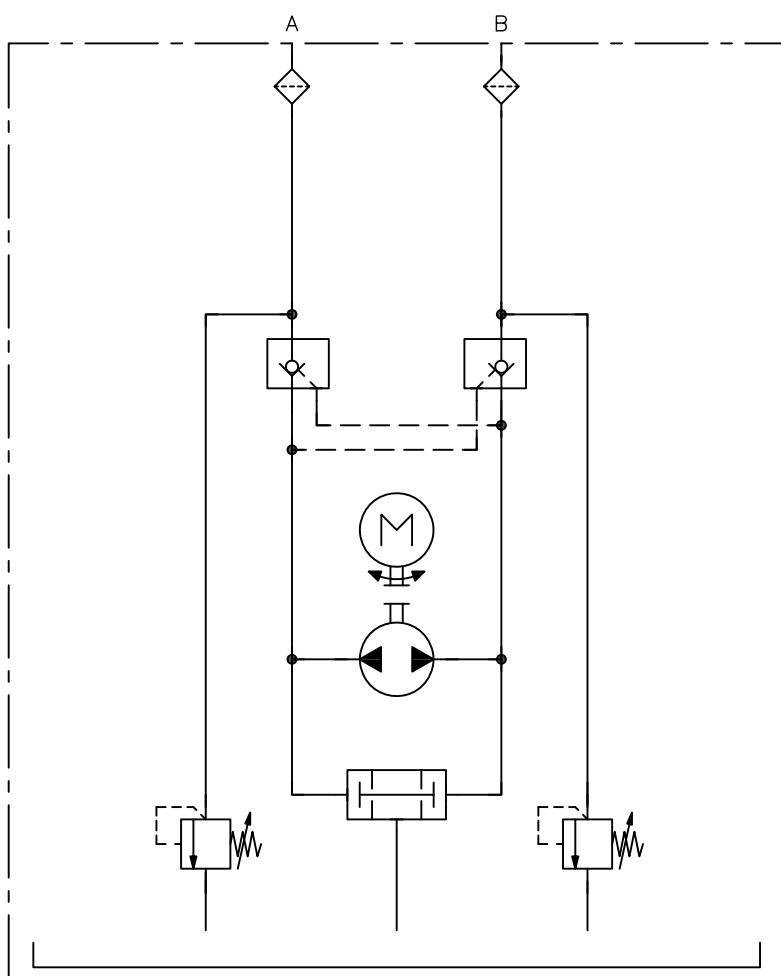
L see "Tank size", page 6

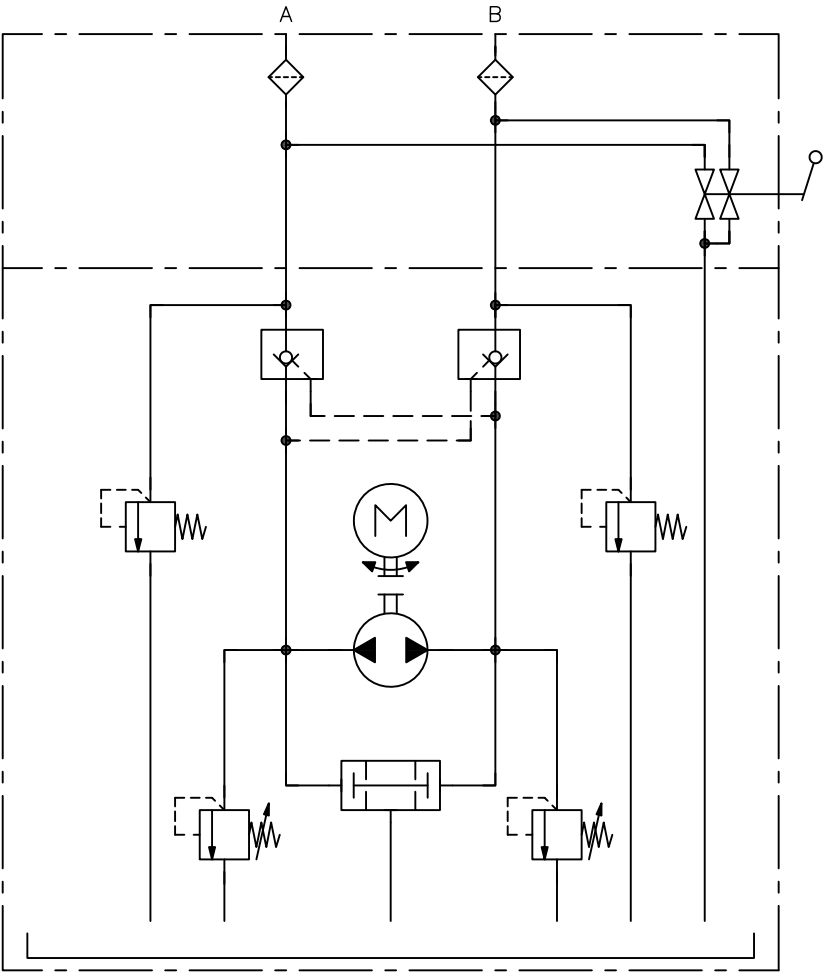
Coding Tank	L
1	60
2	100
3	150

	Ports (ISO 228-1)
A, B	G 1/8

5 Other information

BASIC





References

Additional versions

- Mini hydraulic power pack type HR 080: D 6342
- Mini hydraulic power pack type HR 120: D 6343

Application

- Oil recommendations: D 5488/1

Assembly instructions

- Assembly instructions: Mini hydraulic power pack type HR 050: B 6014

