

# Direct current compact hydraulic power pack type NPC

## Product documentation

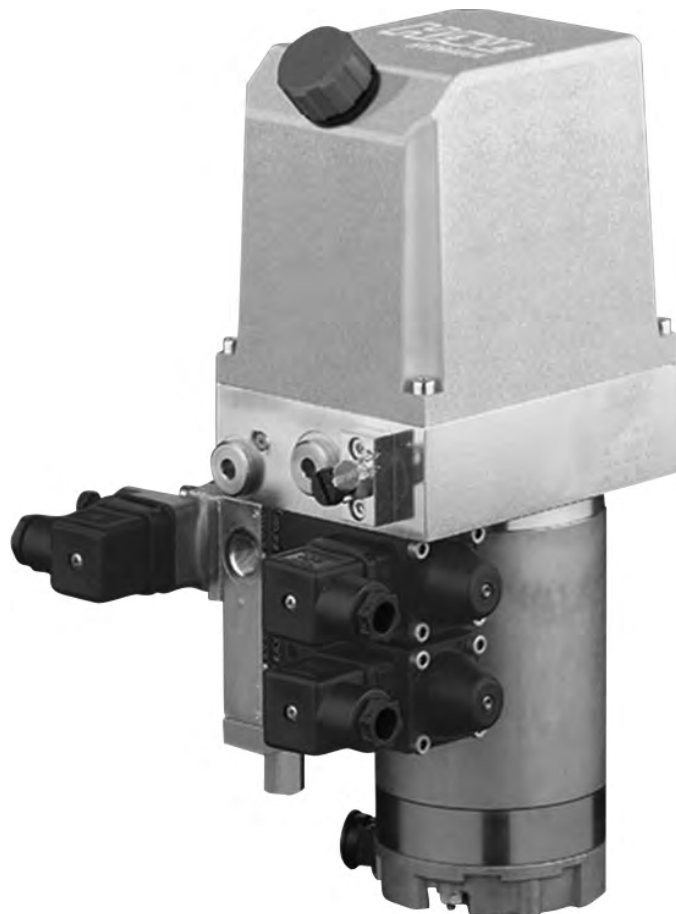


For short-term and standby mode

Operating pressure  $p_{\max}$ : 750 bar

Geometric displacement  $V_{\max}$ : 0.46 cm<sup>3</sup>/rev

Usable volume  $V_{\text{use}}$ : 0.65 l



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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.

The ready-for-connection compact hydraulic power pack type NPC is suitable for hydraulic systems with operating mode S2. Type NPC includes a DC motor. The power pack is available in a horizontal or vertical version. Either single-circuit systems or dual-circuit systems can be selected. A radial piston pump or an external gear pump can be used as a hydraulic pump.

The compact hydraulic power pack type NPC is suitable for use as a highly compact control system, since the pressure-limiting valve is integrated and valve banks can be directly mounted.

**Features and benefits:**

- Very low space requirements and easy to transport
- Supplied with direct current at 12V DC or 24V DC
- Particularly suited to mobile applications and construction site operation
- Long service life and excellent reliability achieved by using radial piston pumps
- Environmentally sound thanks to low oil fill volumes and minimum amount of oil to be disposed of
- Low costs for hydraulic fluid
- Co-ordinated range of valves and accessories from the modular system

**Intended applications:**

- Riveting
- Brakes for wind power plants
- Hydraulic jigs
- Crimping
- Embossing

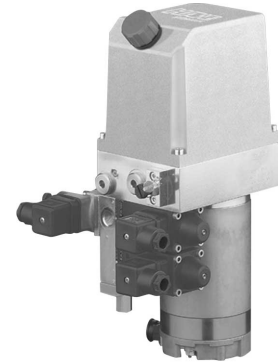
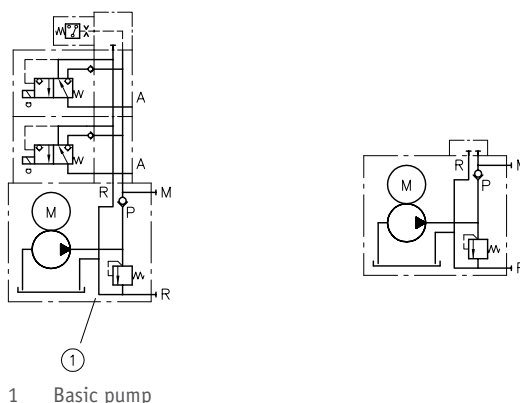


Figure 1: Compact hydraulic power pack type NPC

## 2 Available versions, main data

Circuit symbol:



Order coding example:

NPC 11	/0,31	- 1/320	- R	- 24	- BWH 1 - NN - 33 - G 24
NPC 12	/0,4	- 2/750	- R	- 12	- BWH 1 - 1

**Attachments** Table 6 Attachments

**Motor voltage** Table 5 Motor voltage

**Check valve** Table 4 Check valve

**Pressure-limiting valve with pressure setting** Table 3 Pressure-limiting valve with pressure setting

**Delivery flow coding** Table 2 Delivery flow coding

**Basic type and size** Table 1 Basic type and size

**Table 1 Basic type and size**

Coding	Description	Nominal power Approx. (kW)
NPC 11	Vertical version	0.3
NPC 12		0.6
NPC 11 L	Horizontal version	0.3
NPC 12 L		0.6

**Table 2 Delivery flow coding**
**Version with radial piston pump**

Coding		Output volume $V_g$ (cm <sup>3</sup> /rev)	No-load flow $Q_0$ (lpm)	Operating pressure $p_{max}$ (bar)
NPC 11	0,2	0.09	0.27	750
	0,31	0.14	0.42	640
	0,44	0.20	0.59	450
	0,61	0.28	0.83	320
	0,87	0.36	1.07	250
	1.05	0.46	1.36	190

**Version with gear pump**

Coding		Output volume $V_g$ (cm <sup>3</sup> /rev)	No-load flow $Q_0$ (lpm)	Operating pressure $p_{max}$ (bar)
NPC 11	Z 0,5	0.18	0.5	180
	Z 0,7	0.25	0.7	200
	Z 0,9	0.32	0.9	200
	Z 1,1	0.4	1.1	200
	Z 1,4	0.5	1.4	200
	Z 1,7	0.63	1.7	180
	Z 1,9	0.7	1.9	160
	Z 2,2	0.8	2.2	140
	Z 2,8	1.0	2.8	110

### Version with radial piston pump

Coding		Output volume $V_g$ (cm <sup>3</sup> /rev)	No-load flow $Q_0$ (lpm)	Operating pressure $p_{max}$ (bar)
NPC 12	0,4	0.15	0.45	750
	0,65	0.24	0.71	660
	0,94	0.34	1.02	470
	1,28	0.46	1.39	350
	1,71	0.6	1.81	270
	2,14	0.76	2.29	210

### Version with gear pump

Coding		Output volume $V_g$ (cm <sup>3</sup> /rev)	No-load flow $Q_0$ (lpm)	Operating pressure $p_{max}$ (bar)
NPC 12	Z 0,5	0.18	0.65	180
	Z 0,7	0.25	0.9	200
	Z 0,9	0.32	1.2	200
	Z 1,1	0.4	1.5	200
	Z 1,4	0.5	1.8	200
	Z 1,7	0.63	2.2	200
	Z 1,9	0.7	2.5	200
	Z 2,2	0.8	2.9	200
	Z 2,8	1.0	3.5	180

**Table 3 Pressure-limiting valve with pressure setting**

Coding	Note
1/...	Fixed setting
2/...	Adjustable

**Table 4 Check valve**

Coding	Description
No designation	Without check valve
R	With check valve in P

**Table 5 Motor voltage**

Coding	Description
G 12	Nominal voltage 12V DC
G 24	Nominal voltage 24V DC

**Table 6 Attachments (direct attachment of valve banks)**

Coding	Note
Type BWN 1, BWH 1	See documentation <a href="#">D 7470 B/1</a>
Type VB01	See documentation <a href="#">D 7302</a>



## 3 Parameters

### 3.1 General, hydraulic and electrical

#### General information

<b>Description</b>	Constant pump for short period operation with DC motor
<b>Design</b>	Valve-controlled 3-cylinder radial piston pump or gear pump
<b>Installation position</b>	Vertical, horizontal
<b>Ports</b>	In accordance with mounting units
<b>Temperatures</b>	Ambient: approx. -40 to +60°C, oil: -25 to +80°C, pay attention to the viscosity range! Start temperature: down to -40°C is permissible (observe start-viscosity!), as long as the steady-state temperature is at least 20K higher for subsequent operation. Biologically degradable pressure fluids: note manufacturer specifications. With consideration for the seal compatibility, not above +70°C.
<b>Oil filling</b>	Fill volume 1.0 l; usable volume 0.65 l

#### Pressure and volumetric flow

<b>Operating pressure</b>	Max. 750 bar
<b>Volumetric flow (no load)</b>	See load-dependent characteristic curve below

**Electrical**

**NPC 11**

Nominal voltage	$U_N$	24V	12V
Nominal power	$P_N$	0.1 / 0.3 kW	0.1 / 0.25 kW
Nominal current	$I_N$	5.6 / 22 A DC	10.5 / 35 A DC

**NPC 12**

Nominal voltage	$U_N$	24V	12V
Nominal power	$P_N$	0.6 kW	0.6 kW
Nominal current	$I_N$	35 A DC	70 A DC
Rated rotation speed	$n_N$	3000 / 2000 rpm	
Protection class		IP 44	
Insulation material class		F	
Electrical connection		2x flat plug 6.3x0.8	
Permissible load duration		1 $p_{max}$	Duty cycle $\leq$ 10%
		0.5 $p_{max}$	Duty cycle $\leq$ 20%
		0.3 $p_{max}$	Duty cycle $\leq$ 30%
Recommended line cross section		2x 4 mm <sup>2</sup>	( $\leq$ 35 A)
		2x 6 mm <sup>2</sup>	(< 35 A)

**Actual current consumption and delivery flow characteristic**

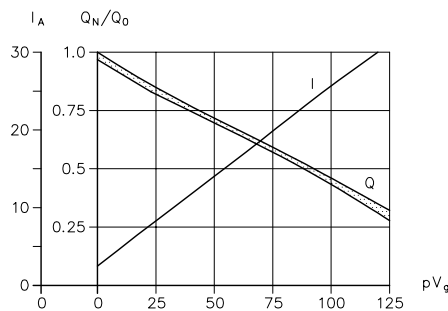


Figure 2:  $pV_g$  hydraulic work (bar/cm<sup>3</sup>);  $I_A$  motor voltage (A)

**Weight**

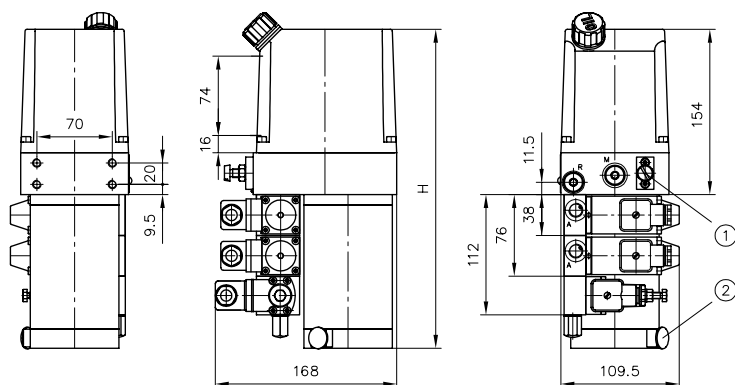
Type NPC 11	= 6.0 kg
Type NPC 12	= 8.0 kg

## 4 Dimensions

All dimensions in mm, subject to change!

### Vertical version

Example with valve bank type BWN 1 or BWH 1



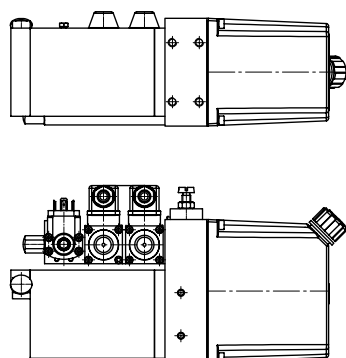
	H
NPC 11	297
NPC 12	357

- 1 pressure-limiting valve
- 2 Electrical connection

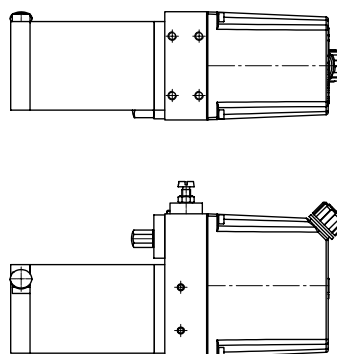
### Horizontal version H

For dimension see vertical version)

Example with valve bank type BWN 1 or BWH 1.

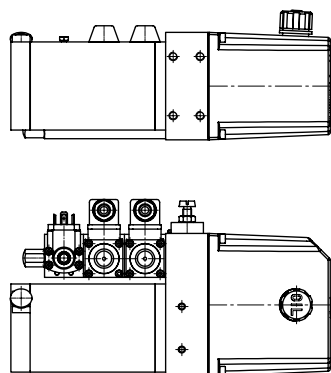


Without valve bank



### Horizontal version Z

(Dimensions, see vertical version)



### 5.1 Designated use

This fluid-power product has been designed, manufactured and tested acc. to standards and regulations generally applicable in the European Union and left the plant in a safe and fault-free condition.

To maintain this condition and ensure safe operation, operators must observe the information and warnings in this documentation.

This fluid-power product must be installed and integrated in a hydraulic system by a qualified staff who is familiar with and observes the general engineering principles and relevant applicable regulations and standards.

In addition, application-specific features of the system or installation location must be taken into account if relevant.

This product may only be used as a pump within oil-hydraulic systems.

The product must be operated within the specified data. This documentation contains the technical parameters for various product versions.

**Note**

Non-compliance will void any warranty claims made against HAWE Hydraulik.

### 5.2 Assembly information

The hydraulic accumulator must be integrated in the system via state of the art connection components (screw fittings, hoses, pipes, etc.). The hydraulic system must be shut down as a precautionary measure prior to dismantling; this applies in particular to systems with hydraulic accumulators.

## 5.3 Operating instructions

### Product, pressure and/or flow settings

All statements in this documentation must be observed for all product, pressure and/or flow settings on or in the hydraulic system.



#### Caution

**Risk of injury on overloading components due to incorrect pressure settings!**

- Always monitor the pressure gauge when setting or changing the pressure.

### Filtering and purity of the hydraulic fluid

Soiling in the fine range, e.g. abraded material and dust, or in the macro range, e.g. chips, rubber particles from hoses and seals, can cause significant malfunctions in a hydraulic system. It is also to be noted that new hydraulic fluid "from the drum" does not necessarily meet the highest purity requirements.

For trouble-free operation pay attention to the purity of the hydraulic fluid (see also purity class in [Chapter 3, "Parameters"](#)).

## 5.4 Maintenance information

This product is largely maintenance-free.

Conduct a visual inspection to check the hydraulic connections for damage at regular intervals, but at least once per year. If external leaks are found, shut down and remedy.

Check the device surfaces for dust deposits at regular intervals (but at least annually) and clean the device if required.

## Additional versions

- Valve bank (directional seated valve) type BWN and BWH: D 7470 B/1
- Valve bank (directional seated valve) type VB: D 7302