

Compact hydraulic power pack type HK, HKF and HKL

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 HK, HKF, HKL and HKLW includes an electric drive which runs in oil. The stator is securely attached to the housing (tank). The compact hydraulic power pack is suitable for hydraulic systems with operating mode S2, S3 or S6.

A fan, which effectively dissipates the heat from the hydraulic system, is mounted on the housing. In the case of type HKF, the fan is powered by a separate motor independently of the pump motor. In the case of type HK, the fan is securely attached to the motor shaft. An external cooler is not generally required. The type HK, HKF and HKL contains a 3-phase motor, the type HKLW contains a single-phase-motor. The compact hydraulic power pack type HK and HKF has a vertical housing, while type HKL and HKLW has a horizontal housing. Single-circuit, dual-circuit or triple-circuit systems can be selected. A radial piston pump, an external gear pump or internal gear pump can be used as a hydraulic pump.

The compact hydraulic power pack type HK, HKF, HKL and HKLW is suitable as a highly compact control system, since connection blocks and valve banks can be directly mounted.

Features and benefits:

- Suitable for continuous operation with intermittent load S6 and continuous operation S1
- Additional external fan for optimum use of power
- Wide range of applications, with three sizes available
- Long lifetime and excellent reliability thanks to use of radial piston pumps
- Environmentally friendly thanks to low oil filling volume; low cost of disposal and low hydraulic fluid costs
- Tailored range of valves and accessories from modular system
- One-circuit to three-circuit pumps available

Intended applications:

- Clamping systems on machine tools and turning centres
- Handling and clamping systems on machine tools and fixtures
- Welding machines, robots
- Endurance test bench construction
- Hydraulic torque wrenches



Nomenclature:	Radial piston pump and/or gear pump with integrated motor (version for 3-phase mains)
Design:	Oil immersed compact hydraulic power pack for permanent and intermittent operation (S1/S6 service)
p_{max}:	Radial piston pump 700 bar (high pressure) Gear pump 180 bar (low pressure)
Q_{max}:	Radial piston pump (high pressure) 13.0 lpm ($V_g = 9.17 \text{ cm}^3/\text{rev}$) Gear pump (low pressure) 24 lpm ($V_g = 17.0 \text{ cm}^3/\text{rev}$)
V_{usable max}:	11.1 l

Design and order coding example

HK 34 8 LST - H 3,6 3 x 400V 50Hz

Motor voltage 3 ~ 230/400V Δ y 50 Hz, 3 ~ 265/460V Δ y 60 Hz
1 ~ 230V 50 Hz, 1 ~ 115V 60 Hz (1~phase motor)

Pump version **Single circuit pump**

- Radial piston pump H, gear pump Z, internal gear pump IZ

Dual circuit pump with joint connection pedestal for pressure ports P1 and P3

- Combinations:
 - Radial piston pump - radial piston pump (HH)
 - Radial piston pump - gear pump (HZ)

Dual circuit pump with separate connection pedestals

- Radial piston pump H or gear pump Z

Additional functions

- Temperature and level switch, single or double version
- Additional leakage port (Type HK 4.L)

Tank size Type HK: Usable volume V_{usable} 0.85 l to 15.4 l, Type HKL: Usable volume V_{usable} 1.7 l to 9.1 l

- Various filler neck designs

Basic type, size

Type HK, size 2 to 4, type HKF (with auxiliary blower for increased cooling), size 4
Type HKL (3~phase motor) and HKLW (1~phase motor), size 3

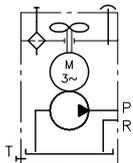
Additional versions:

- With molded motor
- With frequency-controlled drive

Function

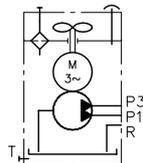
Single stage pump

(radial piston pump, or gear pump)

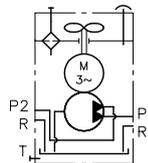


Dual stage pump

(radial piston/radial piston pump, or gear pump/gear pump, or radial piston pump/gear pump)



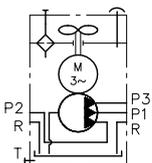
Joint pump pedestal



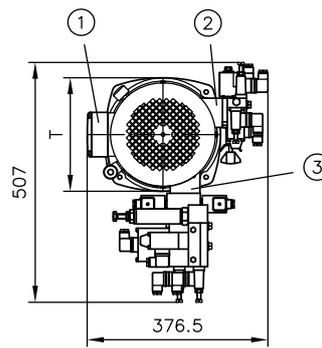
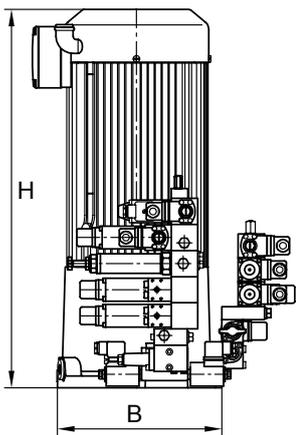
Separate pump pedestals

Triple-circuit pump

(only radial piston pump)



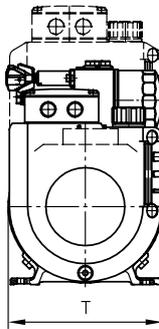
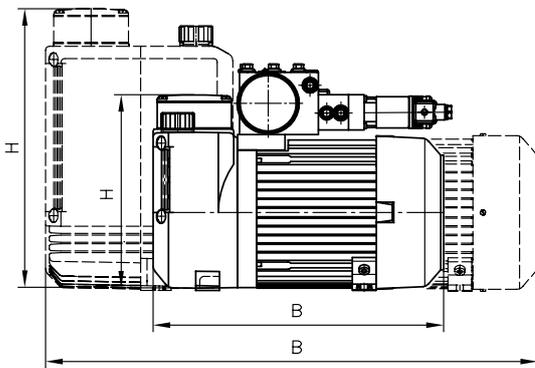
Separate pump pedestals

General parameters and dimensions
HK..


- 1 Terminal box
- 2 Pump pedestal 2 (only for type HK 4.)
- 3 Pump pedestal 1

H Height

B Width

HKL..


	Radial piston pump			Gear pump			Dimensions [mm]				
	Max. pressure	Delivery flow		Max. pressure	Delivery flow						
	p_{max} [bar]	Q_{pu} [lpm] 50 Hz	Q_{pu} [lpm] 60 Hz	p_{max} [bar]	Q_{pu} [lpm] 50 Hz	Q_{pu} [lpm] 60 Hz	P_N [kW] ¹⁾	H_{max}	B	T	m [kg]
HK 24	700 - 220	0.46 - 1.77	0.55 - 2.12	-	-	-	0.55	340	196	196	13
HK 33	560 - 100	1.25 - 6.5	1.5 - 7.8	170 - 100	2.7 - 6.9	3.24 - 8.28	0.8	405	212	212	20.5
HK 34	700 - 170	1.25 - 6.5	1.5 - 7.8	170 - 160	2.7 - 6.9	3.24 - 8.28	1.1	405	212	212	20.5
HK(F) 43	610 - 90	2.08 - 13.1	3.36 - 15.72	170 - 80	4.5 - 16	3.29 - 19.2	1.5	460	240	240	29
HK(F) 44	700 - 130	2.08 - 13.1	2.5 - 15.72	170 - 110	4.5 - 24	3.29 - 28.8	2.2	460	240	240	29
HK(F) 48							3	833	240	240	40
HKL(W) 32	700 - 220	1.65 - 8.7	1.98 - 10.44	170 - 130	2.7 - 11.3	3.24 - 13.56	1.8	358	617	196	19.2
HKL(W) 34											
HKL 38	700 - 220	1.65 - 8.7	1.98 - 10.44	170 - 130	2.7 - 11.3	3.24 - 13.56	2.2	358	617	196	22.2

 1) The actual power consumption is dependent on the respective operation pressure and can be up to $1.5 \times P_N$

Circuit examples:

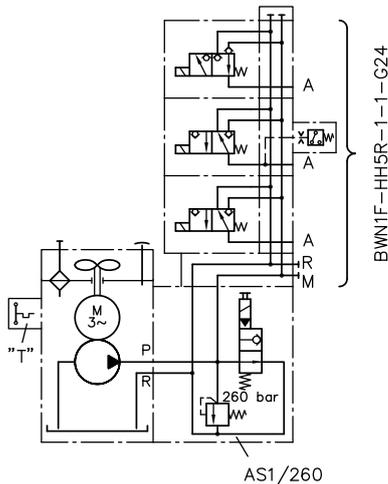
HKF 489 D-DT/1P1M-H2.6

-AS1/260

-BWN1F-HH5R-1-G24

-3x400/230V50Hz

Compact hydraulic power pack HKF 489 with level switch with two switch points (coding D-D); temperature switch (coding T) with Harting plug coding P1 and oil filler (coding M)



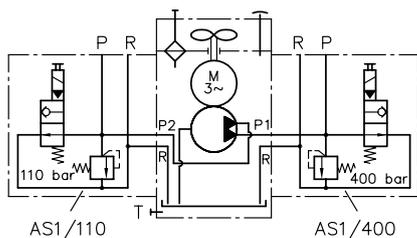
HK449/1P1-H 2.5-Z6.9

-AS1/400-G24

-AS1/110-G24

-3x400/230V50Hz

Compact hydraulic power pack HK 44 with radial piston pump H 2.5 and gear pump Z 6.9 on separate pump pedestals, two connection blocks (type AS1/..) with pressure limiting valve (400 bar and 110 bar) and idle circulation valve (mounting of valve banks possible)



Associated technical data sheets:

- [Compact hydraulic power pack type HK 4: D 7600-4](#)
- [Compact hydraulic power pack type HK 3: D 7600-3](#)
- [Compact hydraulic power pack type HK 2: D 7600-2](#)
- [Compact hydraulic power pack type HKL and HKLW: D 7600-3L](#)

Connection blocks:

- Type A, B and C: [D 6905 A/1](#), [D 6905 B](#), [D 6905 C](#)

Directly mountable valve banks:

- [Valve bank \(directional seated valve\) type VB: D 7302](#)
- [Valve bank \(directional seated valve\) type BWN and BWH: D 7470 B/1](#)
- [Valve bank \(nominal size 6\) type BA: D 7788](#)
- [Valve bank \(directional seated valve\) type BVH: D 7788 BV](#)