PRODUCT DATASHEET

CBK & CBKQ GEAR PUMPS

Compact power pack gear pumps from 0.63 to 8.08 cm³/rev — straight-cut CBK and quiet-running helical CBKQ.

The CBK and CBKQ are small external gear pumps for DC and AC hydraulic power packs. They share the same compact body, Ø32 spigot mounting and Ø10 drive shaft, so they fit directly to the motor and end head of a standard power pack. Choose the straight-cut CBK range for general duty, or the helical CBKQ range where lower noise, smoother flow and higher pressure are needed — for example on tail-lifts, cab tilts, tippers and auto sheeting packs.

CBK SERIES POWER PACK GEAR PUMP



0.63–8.08 cm³	300 bar	6000 rpm	18 models
Displacement per revolution	Max. pressure (CBKQ helical)	Max. speed (CBKQ small sizes)	10 CBK straight-cut, 8 CBKQ helical

KEY FEATURES

- Compact body with Ø32 spigot and 2 × Ø9 mounting holes
- 3/8" BSP inlet and Ø9.5 outlet into the power pack end head
- CBKQ helical: quieter, smoother flow and up to 300 bar
- Ø10 drive shaft for direct coupling to the power pack motor
- CBK straight-cut: 0.63 to 8.08 cm³/rev, up to 280 bar peak
- Selection guide and worked example on page 5

Need help choosing a pump?

Talk to us about sizing, PTO fitment, lead times and pricing.

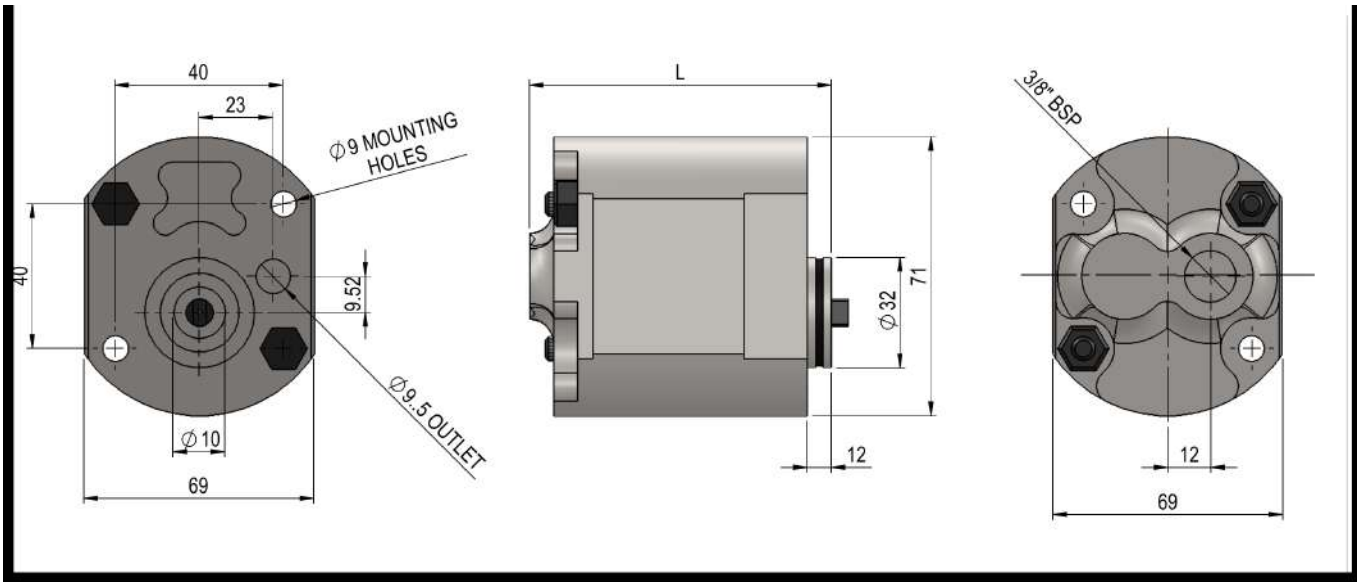
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Installation Dimensions

Common mounting and port dimensions for the CBK and CBKQ ranges — length L varies by size.
All dimensions in millimetres.

GENERAL ARRANGEMENT — CBK / CBKQ



Reference	Dimension	Notes
Mounting holes	**2 × Ø9**	23 mm from centre, 40 mm pitch
Spigot	**Ø32**	Locates in the power pack end head
Drive shaft	**Ø10**	Projects 12 mm from the mounting face
Inlet (suction)	**3/8" BSP**	On the rear face
Outlet (pressure)	**Ø9.5**	Into the end head, 9.52 mm off shaft centre
Body	**69 × 71 mm**	Width × height
Overall length L	**83.7 – 113.5 mm**	See range tables, pages 3 and 4

FITTING

Fit an O-ring on the spigot and outlet, and tighten the two mounting screws evenly so the pump seats squarely on the end head.

DRIVE

Driven directly from the motor through the Ø10 shaft. Check the motor speed is within the pump's rated and maximum speeds.

PRODUCT DATASHEET

CBK Straight-Cut Range

Standard straight-cut gear pumps for general power pack duty — 0.63 to 8.08 cm³/rev.

CBK SERIES — 3D VIEW



PRESSURE RATINGS

P1 — rated (continuous) pressure.
P2 — maximum (intermittent) pressure.
P3 — peak pressure.

Larger sizes have lower pressure ratings: check P1 against your working pressure.

RANGE DATA

Part No	Displacement cm³/rev	P1 bar	P2 bar	P3 bar	Rated speed rpm	Max speed rpm	Flow at rated L/min	Flow at 1500 L/min	L mm
CBK-F0.63	0.63	200	250	280	2000	4000	1.3	0.9	84.5
CBK-F0.8	0.89	200	250	280	2000	4000	1.8	1.3	85.5
CBK-F1.2 *	1.20	200	250	280	2000	4000	2.4	1.8	TBC
CBK-F1.6	1.66	200	250	280	2000	4000	3.3	2.5	87
CBK-F2.1	2.17	200	250	280	2000	4000	4.3	3.3	90.5
CBK-F2.7	2.80	200	250	280	2000	4000	5.6	4.2	93
CBK-F3.2	3.32	200	250	280	2000	4000	6.6	5.0	95
CBK-F4.2	4.30	180	230	260	2000	3600	8.6	6.5	99
CBK-F5	5.10	140	180	260	1500	3000	7.6	7.6	102
CBK-F8	8.08	100	140	180	1500	3000	12.1	12.1	113.5

Flows are theoretical (displacement × speed); allow approx. 10% for volumetric efficiency. 1500 rpm is shown as a typical AC motor speed. * CBK-F1.2 (supplied as Bucher CBKA-F1.2): nominal 1.2 cm³/rev; ratings shown as for the neighbouring sizes and length L to be confirmed.

TYPICAL USES

General-purpose DC and AC power packs: tail-lifts, cab tilts, small tippers, ramps and covers.

PRODUCT DATASHEET

CBKQ Helical Range

Helical gear pumps for quieter running, smoother flow and higher pressure — 1.6 to 5 cm³/rev.

HELICAL GEAR PUMP



WHY HELICAL?

Helical gears mesh gradually rather than all at once, giving two main advantages over straight-cut pumps: a **significant reduction in noise**, and a **smoother delivery of flow** through the system, which increases component life. They also run faster and at higher pressure.

RANGE DATA

Part No	Displacement cm³/rev	P1 bar	P2 bar	Rated speed rpm	Max speed rpm	Flow at rated L/min	Flow at max L/min	L mm
CBKQ-F1.6	1.6	280	300	2000	6000	3.2	9.6	83.7
CBKQ-F2.1	2.1	280	300	2000	6000	4.2	12.6	86
CBKQ-F2.5	2.5	280	300	2000	6000	5.0	15.0	88.1
CBKQ-F2.7	2.7	280	300	2000	5500	5.4	14.9	89.2
CBKQ-F3.2	3.2	280	300	2000	4500	6.4	14.4	91.4
CBKQ-F3.7	3.7	270	300	2000	4000	7.4	14.8	94.5
CBKQ-F4.2	4.2	270	300	2000	3500	8.4	14.7	96.2
CBKQ-F5	5.0	270	300	1500	3000	7.5	15.0	100

P1 rated (continuous) pressure, P2 maximum pressure. Flows are theoretical; allow approx. 10% for volumetric efficiency.

TYPICAL USES

Packs where noise matters or pressures are higher: auto sheeting, cab tilts, tail-lifts working near the top of their pressure range, and packs running at high motor speeds.

C & C HYDRAULICS LTD

Chassis Conversion Specialists

PRODUCT DATASHEET

Choosing a Pump

How to size a gear pump for a power pack, with a worked example.

SELECTION STEPS

1. **Work out the flow you need** (L/min) from the cylinder size and the speed you want it to move.
2. **Check the motor speed.** DC motors typically run at 2000 – 3000 rpm under load; 4-pole AC motors at about 1450 rpm. Make sure it is within the pump's rated and maximum speeds.
3. **Calculate the displacement** needed: $V_g = Q \times 1000 \div (n \times 0.9)$. Pick the next size up.
4. **Check the pressure.** The working pressure should be at or below P1. If it is higher, or noise matters, choose a CBKQ helical pump.
5. **Check the motor power**: $P\ (kW) = Q \times p \div (600 \times 0.85)$. On DC packs, more flow at the same pressure means more current.

QUICK FORMULAE

Quantity	Formula	Unit
Pump flow	$Q = V_g \times n \times \eta_v \div 1000$	L/min
Displacement needed	$V_g = Q \times 1000 \div (n \times \eta_v)$	cm^3/rev
Input power	$P = Q \times p \div (600 \times \eta_t)$	kW
Cylinder speed	$v = Q \div (6 \times A)$	m/s (A in cm^2)

V_g displacement (cm^3/rev) · n speed (rpm) · p pressure (bar) · η_v volumetric efficiency, approx. 0.9 · η_t overall efficiency, approx. 0.85.

WORKED EXAMPLE

A tail-lift needs 5 L/min at 180 bar from a 24 V DC pack running at about 2000 rpm. Displacement = 5 × 1000 ÷ (2000 × 0.9) = **2.78 cm^3/rev**, so choose the **CBK-F2.7** (2.8 cm^3/rev, approx. 5 L/min). 180 bar is within its 200 bar P1 rating. Motor power 5 × 180 ÷ (600 × 0.85) **1.8 kW**. If a quieter pack is wanted, the **CBKQ-F2.7** is the helical equivalent.

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