

SK-400 Drive Unit

Technical datasheet · Motor-to-gearbox drive assembly · Kaarlimoisa Metall

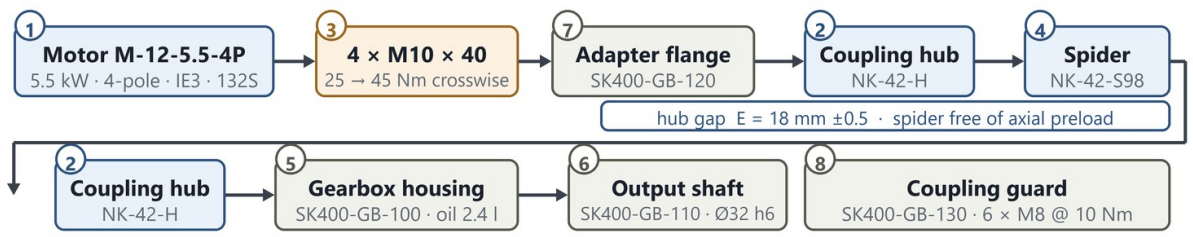
Assembly	SK-400 drive unit, motor to gearbox	Source A	SK400-GB-012 assembly drawing, Rev D (2026-09-08), sheet 1/1, A3
Overall length	606 mm · general tolerances ISO 2768-mK	Source B	SK400-GB-000 parts list (BOM), Rev D (ERP export 2026-09-10)
Drawn / checked	T. Kask / M. Lepp (SolidWorks PDM)	Source C	NK-DS-42 jaw coupling datasheet, Nordkupp AB, Ed. 2025-11

M-12 5.5 kW motor to SK400 gearbox via adapter flange and flexible NK-42 jaw coupling (PU spider), enclosed by a perforated sheet guard.

1 Drive train arrangement

SK-400 drive train — component sequence

balloons per drawing SK400-GB-012 Rev D



 Bought-in In-house Fastener Overall length 606 mm · alignment: radial ≤ 0.2 mm, angular ≤ 0.9° · ISO 2768-mK

Balloons are the item positions of drawing SK400-GB-012 Rev D. Component sequence, not to scale.

2 Main components

Balloon	Item no.	Description	Qty	Material / grade	Supplier
(1)	M-12-5.5-4P	Motor M-12, 5.5 kW, 4-pole, IE3, frame 132S	1	—	Motorwerk Tallinn OÜ
(2)	NK-42-H	Coupling hub Ø42, bore 38H7, keyway	2	EN-GJS-400	Nordkupp AB
(3)	ISO4017-M10x40-8.8	Hex bolt M10 × 40, 8.8, zinc	4	8.8	Fastco
(4)	NK-42-S98	Spider, 98 Shore A	1	PU	Nordkupp AB
(5)	SK400-GB-100	Gearbox housing	1	EN-GJL-250	in-house
(6)	SK400-GB-110	Output shaft Ø32 h6	1	42CrMo4 QT	in-house
(7)	SK400-GB-120	Adapter flange	1	S355J2	in-house
(8)	SK400-GB-130	Coupling guard	1	S235 perforated	in-house
(9)	ISO4762-M8x20-8.8	Socket head cap screw M8 × 20, 8.8, zinc (guard)	6	8.8	Fastco
—	ISO4032-M10-8	Hex nut M10, property class 8	4	8	Fastco
—	ISO7089-10-200HV	Washer 10, 200 HV	8	200HV	Fastco
—	SK400-GB-140	Gearbox oil seal 35 × 52 × 7	1	NBR	Sealtek
—	6207-2RS	Deep groove ball bearing 35 × 72 × 17	2	—	Bearing supplier
—	SK400-GB-150	Breather plug M16 × 1.5	1	—	in-house
—	SK400-GB-160	Drain plug M16 × 1.5, magnetic	1	—	in-house
—	CLP-220	Gear oil ISO VG 220 CLP	2.4 l	—	Lubricant supplier

3 Motor rating

Parameter	Value	Src
Item no.	M-12-5.5-4P	B
Rated power	5.5 kW	A, B
Poles	4	B
Efficiency class	IE3	B
Frame size	132S	B
Manufacturer	Motorwerk Tallinn OÜ	B
Voltage, frequency, rated current, rated speed, IM code, IP rating	Not stated in the supplied documents	—

4 Coupling data — NK-42 / 98 Shore A

Parameter	Value
Nominal torque T_{KN}	265 Nm
Maximum torque $T_{K max}$	530 Nm
Maximum speed	7000 rpm
Maximum bore	45 mm (fitted here: 38H7)
Hub outer diameter	85 mm
Hub length	56 mm
Distance between hubs E	18 mm (drawing tol. ±0.5 mm)
Spider material / hardness	PU, 98 Shore A (red)
Temperature range	−30 °C to +90 °C
Weight per hub	0.95 kg

5 Tightening torques

Joint	Fastener	Qty	Torque	Method
Motor to adapter flange	ISO4017-M10x40-8.8	4	45 Nm final	Crosswise, two passes: 25 Nm, then 45 Nm. Lightly oiled thread.
Coupling guard	ISO4762-M8x20-8.8	6	10 Nm	—
Coupling hub on shaft	M8 set screw, supplied with NK-42-H	2	10 Nm	Hub fitted flush with the shaft end (NK-DS-42 §3).

Sources: A notes 1 and 2; C §3. No tightening torque is specified for the breather plug SK400-GB-150 or the magnetic drain plug SK400-GB-160.

6 Oil grade and quantity

Parameter	Value
Oil grade	ISO VG 220, type CLP (parts list item CLP-220)
Fill quantity	2.4 l
Fill / vent point	Breather plug M16 × 1.5 (SK400-GB-150)
Drain point	Magnetic drain plug M16 × 1.5 (SK400-GB-160)
Oil change interval	10 000 operating hours or 2 years, whichever comes first
Coupling lubrication	None required
First (run-in) change, oil temperature limits, level mark	<i>Not stated in the supplied documents</i>

7 Alignment limits

Parameter	Drawing A (binding)	Coupling C
Radial misalignment	0.2 mm	0.22 mm
Angular misalignment	0.9°	0.9°
Axial misalignment	<i>Not specified</i>	+1.4 / -0.7 mm
Distance between hubs E	18 mm ±0.5	18 mm (nom.)
Spider axial preload	None — spider must sit free of preload	—

Apply the drawing values. Where drawing A and supplier datasheet C differ, SK400-GB-012 Rev D is the acceptance criterion for this assembly: radial 0.2 mm, not the supplier component capability of 0.22 mm. Check alignment with a straight edge at four points 90° apart (NK-DS-42 §3).

8 Service intervals

Interval	Task	Acceptance / action	Source
4000 operating hours, or at least annually	Inspect coupling spider NK-42-S98	Replace if torsional backlash exceeds 5 mm measured at the hub circumference, or if cracks or permanent deformation are visible. Genuine NK-42-S98 spider only.	C §4
4000 operating hours, or at least annually	Re-check alignment and hub distance E while the guard is removed for spider inspection	Radial ≤ 0.2 mm, angular ≤ 0.9°, E = 18 mm ±0.5	A notes 3, 4; C §4
10 000 operating hours, or 2 years	Gear oil change, ISO VG 220 CLP	Refill 2.4 l. Clean the magnetic drain plug SK400-GB-160 when draining.	A note 5
Every restart after work on the drive train	Refit coupling guard SK400-GB-130	Guard must be fitted before restart; guard screws tightened to 10 Nm.	A notes 2, 6
Bearings 6207-2RS and oil seal SK400-GB-140	<i>Replacement interval not stated in the supplied documents</i>	<i>No interval given in A, B or C — confirm requirement with engineering.</i>	—

9 Assembly and safety notes

- Clean the bores and shafts, fit the hubs flush with the shaft ends (set screws 10 Nm), insert the spider and push the second hub on until E = 18 mm ±0.5 is reached, with no axial preload on the spider. (A note 3; C §3)
- Tighten the motor-to-flange bolts crosswise, 25 Nm then 45 Nm, on lightly oiled threads; verify alignment against section 7 with a straight edge at four points 90° apart, then fill 2.4 l of ISO VG 220 CLP gear oil before commissioning. (A notes 1, 5; C §3)
- Refit the coupling guard before restart — rotating couplings must be enclosed by a fixed guard, and power must be disconnected and locked out before any work on the coupling. The coupling is a component, not a machine; the machine builder remains responsible for the risk assessment. (A note 6; C §5)