

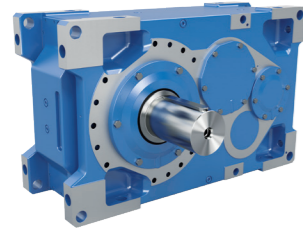
MAXXDRIVE[®] XD

Parallel industrial gear units
With extended center distance

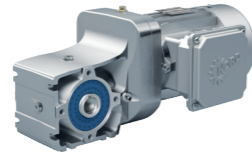


DRIVESYSTEMS

Our Solution. Your Success.



Industrial gear units



Geared motors



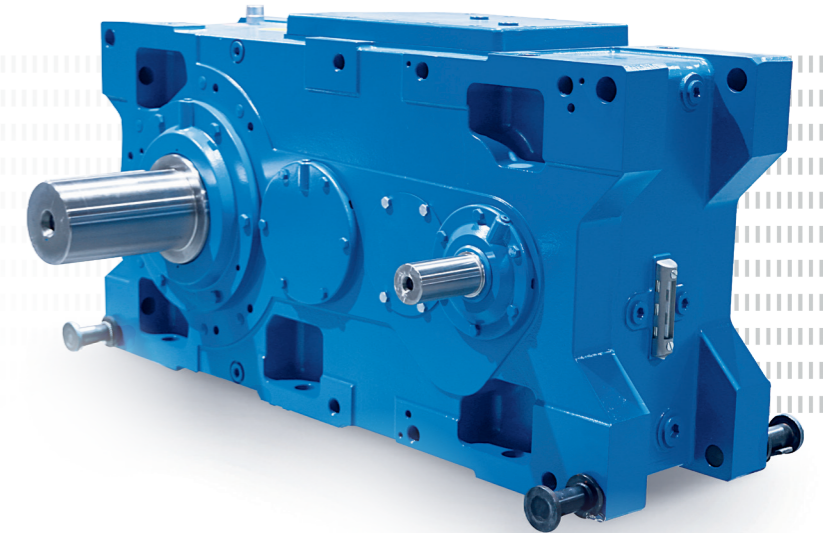
Frequency inverters and motor starters

- ▶ Headquarters and technology centre in Bargteheide near Hamburg.
- ▶ Innovative drive solutions for more than 100 branches of industry.
- ▶ 7 production locations with cutting edge technology produce gear units, motors and drive electronics for complete drive systems from a single source.
- ▶ NORD has 48 subsidiaries in 36 countries and further sales partners in more than 50 countries, providing local stocks, assembly centres, technical support and customer service.
- ▶ With more than 4,900 employees throughout the world create customised solutions.



The development of the new "MAXXDRIVE XD" series rounds off NORD's well-proven MAXXDRIVE® Industrial Gear Units range specifically for hoist applications.

MAXXDRIVE XD:
XD – Extended center distance



Currently these versions are available

Gear unit	Nominal ratio	M2,max [Nm]	M2,max [lb-in]
SK 2221 / SK 2321 / SK 2421	5.6 – 355	6,800	60,200
SK 5321 / SK 5421	28 – 355	15,000	132,800
SK 6321 / SK 6421	31.5 – 400	20,000	177,100
SK 7321 / SK 7421	28 – 355	25,000	221,300
SK 8321 / SK 8421	31.5 – 400	30,000	265,600
SK 9321 / SK 9421	28 – 355	43,000	380,600
SK 10321 / SK 10421	31.5 – 400	50,000	442,600
SK 11321 / SK 11421	22.4 – 355	77,300	684,200
SK 12321 / SK 12421	22.4 – 355	112,000	991,300
SK 15321 / SK 15421	22.4 – 355	282,000	2,496,000

Options

- ▶ Foot and shaft mounting (with torque support) possible
- ▶ Input shaft: solid input shaft with keyway (single or double extended)
- ▶ NEMA/IEC motor adapters and elastic input couplings available
- ▶ Thruster brakes (with brake console) and input flange for flange-mounted brakes available
- ▶ Output shafts: solid shaft with keyway(s), double solid shaft with keyway(s), splined solid shaft DIN5480, keyed hollow shaft, splined hollow shaft DIN5480, hollow shaft with shrink disc
- ▶ Output coupling optionally available: e.g. barrel type (for direct connection to the rope drum)
- ▶ Ductile iron housing optionally available
- ▶ Additional options from our standardized modular system: oil heater, PT100, Taconite sealings, monitoring devices and sensors

Design features:

- ▶ Rigid one-piece UNICASE™ housing (GJL)
- ▶ Inspection cover on top of the reducer
- ▶ Housings FEA-optimized for overhang load (especially downwards forces)
- ▶ Calculation & design of all components in accordance with the latest international standards
- ▶ Stable nominal torque ratings within the complete ratio range

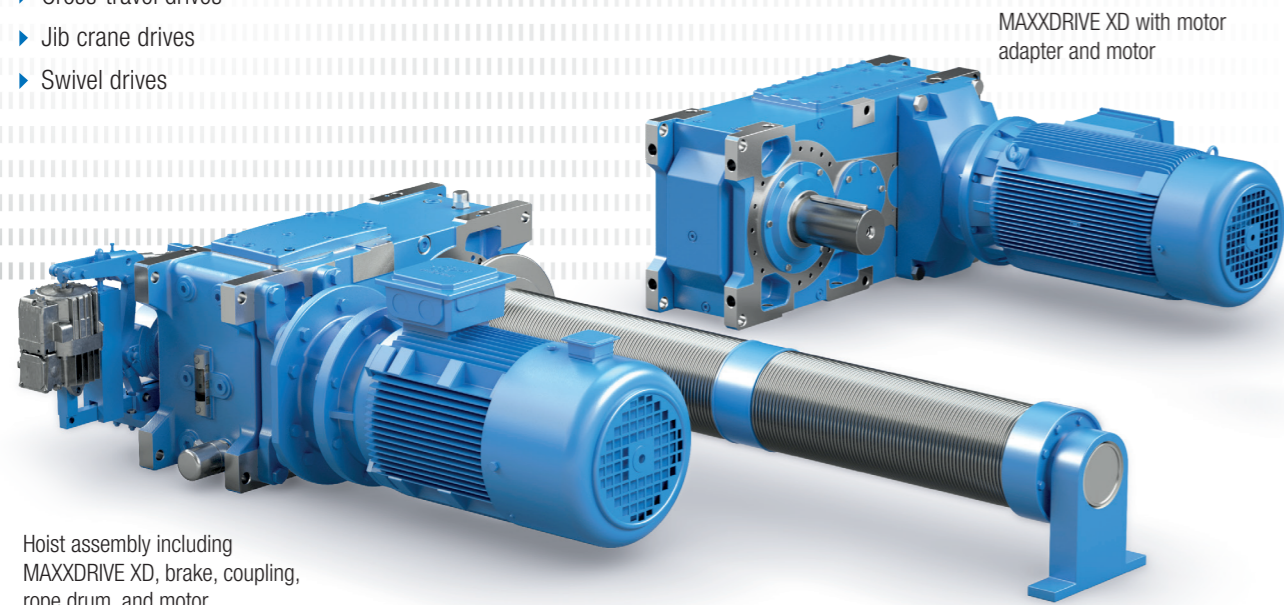
Advantages

- ▶ Center distance has been increased by +35% compared to our compact G1050 series
 - ▶ Maximum space for the U-shape arrangement of motor and rope drum on the same side of the gearbox
- ▶ Oversized gearboxes due to geometric constraints are a thing of the past:
 - ▶ The new MAXXDRIVE XD series allows reduction of the drive weight up to 60%
- ▶ Precise drive dimensioning is a prerequisite for cost-optimized crane design:
 - ▶ Reduction of moving masses (lower energy consumption)
 - ▶ Material savings in the steel construction of the hoist trolley
- ▶ Selection based on FEM / DIN EN 13001
- ▶ Same housing dimensions and center distance for 3-stage and 4-stage reduction
 - ▶ Standardization and variant reduction of the hoist design
- ▶ Drive solutions tailored to the customer's needs with short delivery times
- ▶ Long life service life, low maintenance
- ▶ NORD can supply all drives - such as travel drives - from a single source

Engineered for versatility

MAXXDRIVE XD industrial gear units are highly adaptable to a wide range of heavy industrial applications, including:

- ▶ Lifting gear drives
- ▶ Travel drives
- ▶ Cross-travel drives
- ▶ Jib crane drives
- ▶ Swivel drives

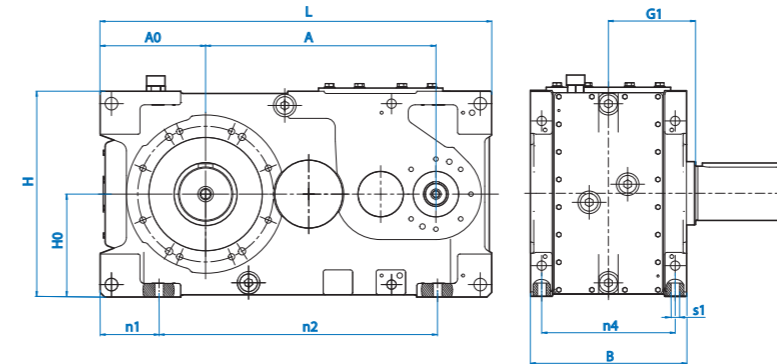


Hoist assembly including MAXXDRIVE XD, brake, coupling, rope drum, and motor

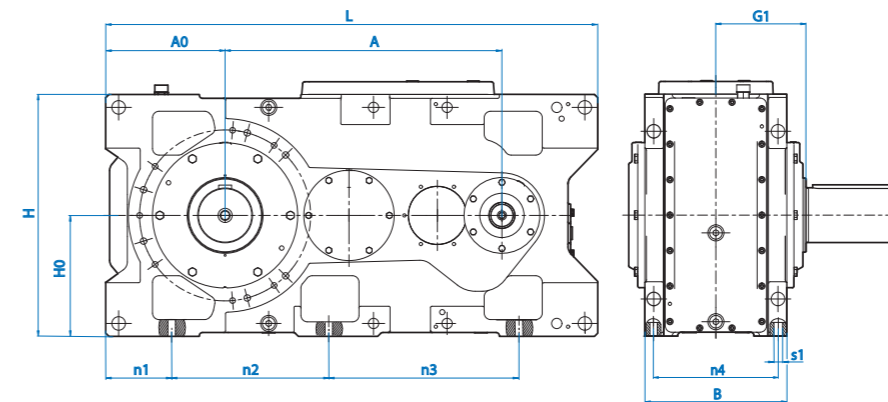
MAXXDRIVE XD with motor adapter and motor

Overall dimensions

SK 2.21



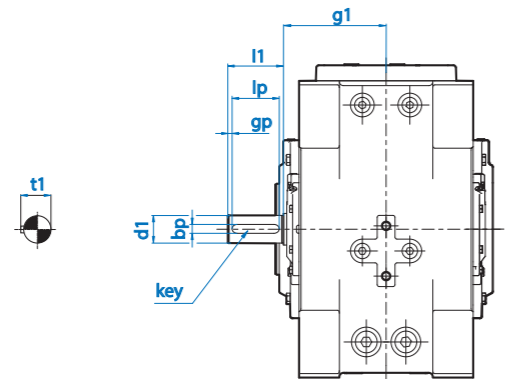
SK 5.21/6.21/7.21/8.21/9.21/10.21/11.21/12.21/15.21



Gear unit	H0 [mm]	H [mm]	A [mm]	A0 [mm]	L [mm]	B [mm]	G1 [mm]	n1 [mm]	n2 [mm]	n3 [mm]	n4 [mm]	øS1 [mm]
SK 2221	185	370	310	180	665	285	162.5*	100	400	-	240	24
SK 2321 / SK 2421	185	370	398	180	665	285	162.5*	100	400	-	240	24
SK 5321 / SK 5421	227.5	455	509	245	949	345	192.5	140*	285*	355*	295	28
SK 6321 / SK 6421	247.5	495	533	270*	998	345	192.5	145*	305*	380*	295	28
SK 7321 / SK 7421	265	530	592	295	1090	350	197	160	382.5	372.5	305	28
SK 8321 / SK 8421	295	590	616	325*	1144	350	197	160*	412.5*	396.5*	305	28
SK 9321 / SK 9421	325	650	718	330	1315	415	253	175	427.5	492.5	352	35
SK 10321 / SK 10421	360	720	751	365	1383	415	253	170	467.5	532.5	352	35
SK 11321 / SK 11421	375	750	858	370	1525	440	280	217.5	477.5	585.5	370	42
SK 12321 / SK 12421	425	850	963	405	1720	510	315	257.5	482.5	697.5	430	48
SK 15321 / SK 15421	550	1100	1281	545	2146	650	395	345	630	945	550	65

* Preliminary design

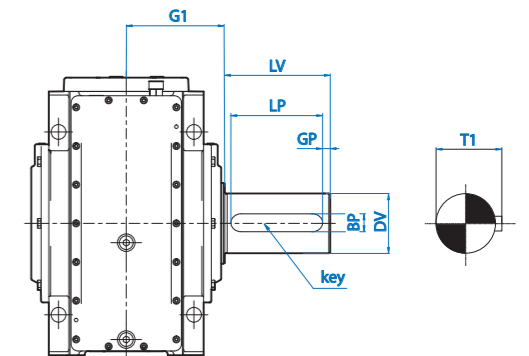
Solid input shaft



Gear unit	$\varnothing d1$ [mm]	$l1$ [mm]	$g1$ [mm]	lp [mm]	bp [mm]	gp [mm]	$t1$ [mm]	Key
SK 2221	38	80	155	70	10	5	41	10 x 8 x 70
SK 2321 / SK 2421	32	70	155	60	10	5	35	10 x 8 x 60
SK 5.21	48	110	192.5	100	14	5	51.5	14 x 9 x 100
SK 6.21	48	110	192.5	100	14	5	51.5	14 x 9 x 100
SK 7.21	48	110	194	100	14	5	51.5	14 x 9 x 100
SK 8.21	48	110	194	100	14	5	51.5	14 x 9 x 100
SK 9.21	55	110	227.5	90	16	10	59	16 x 10 x 90
SK 10.21	55	110	227.5	90	16	10	59	16 x 10 x 90
SK 11321	70	140	260	125	20	7.5	74.5	20 x 12 x 125
SK 11421	55	110	260	90	16	10	59	16 x 10 x 90
SK 12321	80	170	294	140	22	15	85	22 x 14 x 140
SK 12421	70	140	294	125	20	7.5	74.5	20 x 12 x 125
SK 15321 [i=22.4 – 45]	100	210	371	180	28	15	106	28 x 16 x 180
SK 15321 [i=50 – 112]	80	170	371	140	22	15	85	22 x 14 x 140
SK 15421	80	170	371	140	22	15	85	22 x 14 x 140

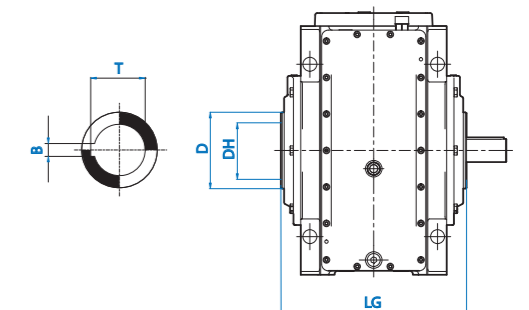
Solid output shaft

Gear unit	$\varnothing D1$ [mm]	LV [mm]	LP [mm]	BP [mm]	GP [mm]	T1 [mm]	Key
SK 2.21	85	170	150	22	10	90	22 x 14 x 150
SK 5.21	120	210	180	32	15	127	32 x 18 x 180
SK 6.21	120	210	180	32	15	127	32 x 18 x 180
SK 7.21	140	250	200	36	25	148	36 x 20 x 200
SK 8.21	140	250	200	36	25	148	36 x 20 x 200
SK 9.21	160	300	260	40	20	169	40 x 22 x 260
SK 10.21	160	300	260	40	20	169	40 x 22 x 260
SK 11.21	170	300	260	40	20	179	40 x 22 x 260
SK 12.21	200	350	300	45	25	210	45 x 25 x 300
SK 15.21	250	410	360	56	25	262	56 x 32 x 360



Hollow output shaft

Gear unit	$\varnothing DH^{H7}$ [mm]	$\varnothing D$ [mm]	LG [mm]	B [mm]	T [mm]
SK 2.21	85	120	325	22	90.4
SK 5.21	105	140	385	28	111.4
SK 6.21	105	140	385	28	111.4
SK 7.21	125	160	394	32	132.4
SK 8.21	125	160	394	32	132.4
SK 9.21	160	220	506	40	169.4
SK 10.21	160	220	506	40	169.4
SK 11.21	170	240	560	40	179.4
SK 12.21	190	250	630	45	200.4
SK 15.21	250	320	790	56	262.4



In order for cranes to pick up loads and set them down gently at a precise location, they require special drives with integrated brakes and variable frequency drive technology for soft starts, and generator braking via defined adjustable ramps. Smooth motion with high positioning accuracy is essential and is often necessary for the simultaneous movement of the crane and the trolley as well as the control and synchronous operation for traveling drives.

Efficient - NORD drive solutions are environmentally friendly and help to minimise CO₂ emissions.

- ▶ NORD motors with low mass inertia are designed for inverter operation and comply with the latest international energy requirements.
- ▶ Variable frequency drives ensure efficient operation, improved process control, and optimised motor performance
- ▶ Easy to service and maintain, NORD drives reduce standstill times and thus contribute to an increased efficiency and availability of the entire system

Reliable - It is vital to prevent breakdowns in crane systems. For this reason, reliability is our main focus when developing drive solutions. All of our system components are precisely matched to each other and ensure smooth operation.

- ▶ UNICASE gear units ensure precise positioning of bearings and shafts
- ▶ Precisely machined gear wheels with minimum wear are used
- ▶ Gear units that are extraordinarily robust, run quietly, and have a particularly long service life
- ▶ VFDs electronically protect the drive system and can visualize the operating data

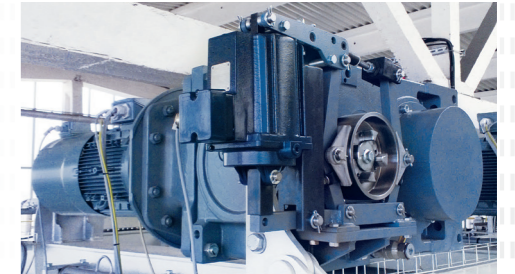
Tried-and-tested - NORD special solutions for crane systems have proven themselves throughout the world. The reasons for this include:

- ▶ Gear units withstand a wide range of ambient conditions. They function both in dusty environments as well as in environments with high humidity, heat, and large temperature differences
- ▶ We provide our customers with individual solutions which are tailored to their requirements, so that functionality in all situations is ensured



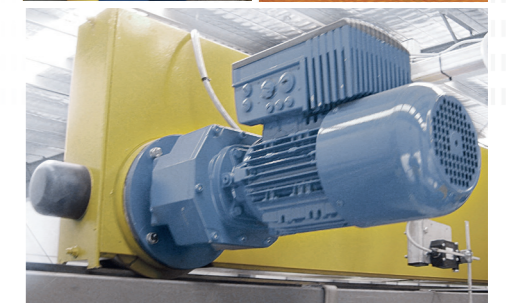
Lifting gear drives

- ▶ Industrial gear units for large hoists with heavy loads
- ▶ MAXXDRIVE® XD series and MAXXDRIVE® G1050 series with output torque ratings up to 282.000Nm / 2,500,000 lb-in
- ▶ Housings available with extended center distance and compact designs – depending on your needs
- ▶ Wide option range including input and output couplings, NEMA/IEC adapters, and thruster brakes (with console)
- ▶ Modular, flexible design for optimum adaptation to your hoist configuration
- ▶ Various solid and hollow output shaft designs with different shaft configurations available
- ▶ For smaller hoists NORD's extensive gearmotor portfolio offers the perfect product for any requirement:
 - ▶ Parallel shaft gear units
 - ▶ Helical bevel gear units
 - ▶ Helical in-line gear units



Travel drives (long travel & cross travel)

- ▶ Comprehensive portfolio of NORD gear units for all installation and torque requirements
 - ▶ Parallel shaft gear units
 - ▶ Helical bevel gear units
 - ▶ Helical in-line gear units
- ▶ Reliable, service-friendly UNICASE housing
- ▶ Premium-efficient motors according to international standards
- ▶ Motor options
 - ▶ Encoder
 - ▶ Forced ventilation (IC416)
 - ▶ Brake
- ▶ Paint and sealing systems to withstand harsh environmental conditions
- ▶ Variable frequency drives for cabinet installation and decentralized motor-integration
 - ▶ Precise vector control with high overload capacity
 - ▶ Closed-loop performance and master-follower synchronization
 - ▶ S-ramp acceleration and deceleration for smooth move performance



Gearbox Type SK 2221

i, nom	i	M2, max [Nm]	M2, max [lb-in]
5.6	5.6	6,800	60,200
6.3	6.3	6,800	60,200
7.1	7.1	6,800	60,200
8	8	6,800	60,200
9	9	6,800	60,200
10	10	6,800	60,200
11.2	11.2	6,800	60,200
12.5	12.5	6,800	60,200
14	14	6,800	60,200
16	16	6,800	60,200
18	18	6,800	60,200
20	20	6,800	60,200
22.4	22.4	6,800	60,200
25	25	6,800	60,200

Gearbox Type SK 2321

i, nom	i	M2, max [Nm]	M2, max [lb-in]
28	28	6,800	60,200
31.5	31.5	6,800	60,200
35.5	35.5	6,800	60,200
40	40	6,800	60,200
45	45	6,800	60,200
50	50	6,800	60,200
56	56	6,800	60,200
63	63	6,800	60,200
71	71	6,800	60,200
80	80	6,800	60,200
90	90	6,800	60,200
100	100	6,800	60,200
112	112	6,800	60,200

Gearbox Type SK 2421

i, nom	i	M2, max [Nm]	M2, max [lb-in]
125	125	6,800	60,200
140	140	6,800	60,200
160	160	6,800	60,200
180	180	6,800	60,200
200	200	6,800	60,200
224	224	6,800	60,200
250	250	6,800	60,200
280	280	6,800	60,200
315	315	6,800	60,200
355	355	6,800	60,200

Gearbox Type SK 5321

i, nom	i	M2, max [Nm]	M2, max [lb-in]
28	28.65	15,000	132,800
31.5	31.30	15,000	132,800
35.5	36.27	15,000	132,800
40	39.63	15,000	132,800
45	45.45	15,000	132,800
50	49.67	15,000	132,800
56	56.12	15,000	132,800
63	61.32	15,000	132,800
71	71.05	15,000	132,800
80	77.63	15,000	132,800
90	89.03	15,000	132,800
100	97.29	15,000	132,800
112	113.87	15,000	132,800
125	124.43	15,000	132,800
140	142.70	15,000	132,800
160	155.93	15,000	132,800

Gearbox Type SK 5421

i, nom	i	M2, max [Nm]	M2, max [lb-in]
100	100	15,000	132,800
112	112	15,000	132,800
125	125	15,000	132,800
140	140	15,000	132,800
160	160	15,000	132,800
180	180	15,000	132,800
200	200	15,000	132,800
224	224	15,000	132,800
250	250	15,000	132,800
280	280	15,000	132,800
315	315	15,000	132,800
355	355	15,000	132,800

Gearbox Type SK 6321

i, nom	i	M2, max [Nm]	M2, max [lb-in]
31.5	31.79	20,000	177,100
35.5	35.03	20,000	177,100
40	40.25	20,000	177,100
45	44.35	20,000	177,100
50	50.44	20,000	177,100
56	55.58	20,000	177,100
63	62.28	20,000	177,100
71	68.62	20,000	177,100
80	78.85	20,000	177,100
90	86.87	20,000	177,100
100	98.81	20,000	177,100
112	108.87	20,000	177,100
125	126.37	20,000	177,100
140	139.24	20,000	177,100
160	158.36	20,000	177,100
180	174.49	20,000	177,100

Gearbox Type SK 6421

i, nom	i	M2, max [Nm]	M2, max [lb-in]
112	112	20,000	177,100
125	125	20,000	177,100
140	140	20,000	177,100
160	160	20,000	177,100
180	180	20,000	177,100
200	200	20,000	177,100
224	224	20,000	177,100
250	250	20,000	177,100
280	280	20,000	177,100
315	315	20,000	177,100
355	355	20,000	177,100
400	400	20,000	177,100

Gearbox Type SK 7321

i, nom	i	M2, max [Nm]	M2, max [lb-in]
28	27.89	25,000	221,300
31.5	30.67	25,000	221,300
35.5	36.21	25,000	221,300
40	39.81	25,000	221,300
45	44.60	23,600	208,900
50	49.04	25,000	221,300
56	55.39	25,000	221,300
63	60.91	25,000	221,300
71	71.91	25,000	221,300
80	79.07	25,000	221,300
90	88.56	23,600	208,900
100	97.38	25,000	221,300
112	113.97	25,000	221,300
125	125.31	25,000	221,300
140	140.37	22,280	197,200
160	154.34	25,000	221,300

Gearbox Type SK 7421

i, nom	i	M2, max [Nm]	M2, max [lb-in]
100	102.86	25,000	221,300
112	113.10	25,000	221,300
125	133.52	25,000	221,300
140	146.81	25,000	221,300
160	164.45	22,280	197,200
180	180.82	25,000	221,300
200	204.27	25,000	221,300
224	224.60	25,000	221,300
250	265.15	25,000	221,300
280	291.55	25,000	221,300
315	326.58	25,000	221,300
355	359.09	25,000	221,300

Gearbox Type SK 8421

i, nom	i	M2, max [Nm]	M2, max [lb-in]
112	112	30,000	265,600
125	125	30,000	265,600
140	140	30,000	265,600
160	160	30,000	265,600
180	180	30,000	265,600
200	200	30,000	265,600
224	224	30,000	265,600
250	250	30,000	265,600
280	280	30,000	265,600
315	315	30,000	265,600
355	355	30,000	265,600
400	400	30,000	265,600

Gearbox Type SK 9421

i, nom	i	M2, max [Nm]	M2, max [lb-in]
100	104.72	45,000	398,300
112	115.10	45,000	398,300
125	136.17	45,000	398,300
140	149.67	45,000	398,300
160	164.58	45,000	398,300
180	180.89	45,000	398,300
200	204.57	45,000	398,300
224	224.85	45,000	398,300
250	266.01	45,000	398,300
280	292.38	45,000	398,300
315	321.50	45,000	398,300
355	353.37	45,000	398,300

Gearbox Type SK 10421

i, nom	i	M2, max [Nm]	M2, max [lb-in]
112	112	50,000	442,600
125	125	50,000	442,600
140	140	50,000	442,600
160	160	50,000	442,600
180	180	50,000	442,600
200	200	50,000	442,600
224	224	50,000	442,600
250	250	50,000	442,600
280	280	50,000	442,600
315	315	50,000	442,600
355	355	50,000	442,600
400	400	50,000	442,600

Gearbox Type SK 8321

i, nom	i	M2, max [Nm]	M2, max [lb-in]
31.5	31.79	28,500	252,300
35.5	33.77	29,000	256,700
40	41.26	29,000	256,700
45	43.84	29,000	256,700
50	50.82	27,500	243,400
56	53.99	29,000	256,700
63	63.12	29,000	256,700
71	67.07	29,000	256,700
80	81.94	29,000	256,700
90	87.06	29,000	256,700
100	100.92	27,800	246,100
112	107.23	29,000	256,700
125	129.87	29,000	256,700
140	137.98	29,000	256,700
160	159.95	29,000	256,700
180	169.95	29,000	256,700

Gearbox Type SK 9321

i, nom	i	M2, max [Nm]	M2, max [lb-in]
28	28.44	40,600	359,400
31.5	31.26	40,750	360,700
35.5	36.98	40,900	362,000
40	40.65	41,050	363,400
45	44.70	41,200	364,700
50	49.13	41,350	366,000
56	55.56	41,500	367,400
63	61.07	41,650	368,700
71	72.25	41,800	370,000
80	79.41	41,950	371,300
90	87.32	42,100	372,700
100	95.98	42,250	374,000
112	111.90	42,400	375,300
125	123.04	42,550	376,600
140	135.24	42,700	378,000
160	157.18	42,850	379,300
180	172.76	43,000	380,600

Gearbox Type SK 10321

i, nom	i	M2, max [Nm]	M2, max [lb-in]
31.5	32.04	47,800	423,100
35.5	35.08	47,600	421,300
40	41.66	47,700	422,200
45	45.62	47,800	423,100
50	50.35	48,000	424,900
56	55.14	48,500	429,300
63	62.59	49,000	433,700
71	68.54	49,100	434,600
80	81.38	49,200	435,500
90	89.12	49,300	436,400
100	98.36	49,400	437,300
112	107.71	49,500	438,200
125	125.57	49,600	439,000
140	138.60	49,700	439,900
160	151.77	49,800	440,800
180	177.05	49,900	441,700
200	193.87	50,000	442,600

Gearbox Type SK 11321

i, nom	i	M2, max [Nm]	M2, max [lb-in]
22.4	22.32	73,500	650,600
25	26.09	76,000	672,700
28	28.56	76,100	673,600
31.5	31.90	76,200	674,500
35.5	34.93	76,300	675,400
40	40.83	76,400	676,200
45	44.70	76,500	677,100
50	50.25	76,600	678,000
56	55.01	76,700	678,900
63	64.31	76,800	679,800
71	70.40	76,900	680,700
80	81.58	77,000	681,600
90	89.30	77,100	682,400
100	104.39	77,200	683,300
112	114.28	77,300	684,200
125	131.97	70,800	626,700
140	144.47	70,800	626,700
160	161.57	59,570	527,300
180	176.87	63,100	558,500

Gearbox Type SK 11421

i, nom	i	M2, max [Nm]	M2, max [lb-in]
80	85.84	56,240	497,800
90	93.97	59,570	527,300
100	109.85	70,800	626,700
112	120.26	75,000	663,900
125	134.33	75,000	663,900
140	147.06	75,000	663,900
160	171.91	75,000	663,900
180	188.19	75,000	663,900
200	211.59	75,000	663,900
224	231.64	75,000	663,900
250	253.62	63,100	558,500
280	277.65	70,800	626,700
315	324.56	75,000	663,900
355	355.31	75,000	663,900

Gearbox Type SK 12321

i, nom	i	M2, max [Nm]	M2, max [lb-in]
22.4	22.13	110,000	973,600
25	25.87	103,800	918,800
28	28.22	110,000	973,600
31.5	31.82	103,800	918,800
35.5	34.71	110,000	973,600
40	40.58	103,800	918,800
45	44.26	110,000	973,600
50	50.01	103,800	918,800
56	54.56	110,000	973,600
63	63.77	110,000	973,600
71	69.56	110,000	973,600
80	81.18	103,800	918,800
90	88.55	110,000	973,600
100	103.51	110,000	973,600
112	112.91	110,000	973,600
125	126.57	87,300	772,700
140	138.06	103,800	918,800
160	153.56	87,300	772,700

Gearbox Type SK 15321

i, nom	i	M2, max [Nm]	M2, max [lb-in]
22.4	21.84	270,000	2,389,700
25	25.54	273,500	2,420,700
28	27.86	276,000	2,442,900
31.5	31.49	276,500	2,447,300
35.5	34.35	277,000	2,451,700
40	40.18	277,500	2,456,100
45	43.83	278,000	2,460,600
50	50.02	278,500	2,465,000
56	54.56	279,000	2,469,400
63	63.82	279,500	2,473,800
71	69.82	280,000	2,478,300
80	80.10	280,500	2,482,700
90	87.37	281,000	2,487,100
100	102.20	281,500	2,491,500
112	111.48	282,000	2,496,000

Gearbox Type SK 12421

i, nom	i	M2, max [Nm]	M2, max [lb-in]
90	88.52	110,000	973,600
100	103.48	110,000	973,600
112	112.88	110,000	973,600
125	127.30	110,000	973,600
140	138.86	110,000	973,600
160	162.31	110,000	973,600
180	177.06	110,000	973,600
200	200.04	110,000	973,600
224	218.21	110,000	973,600
250	255.06	110,000	973,600
280	278.23	110,000	973,600
315	324.54	110,000	973,600
355	354.02	110,000	973,600

Gearbox Type SK 15421

i, nom	i	M2, max [Nm]	M2, max [lb-in]
125	125.46	282,000	2,496,000
140	143.15	282,000	2,496,000
160	156.16	282,000	2,496,000
180	182.66	282,000	2,496,000
200	199.25	282,000	2,496,000
224	229.24	282,000	2,496,000
250	250.06	282,000	2,496,000
280	292.50	282,000	2,496,000
315	319.07	282,000	2,496,000
355	351.84	282,000	2,496,000

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