Worm Gear Reducers

Housing Aluminum

SPECIFICATION

Types
- Type **A**: One-side drive
- Type **B**: Continuous drive

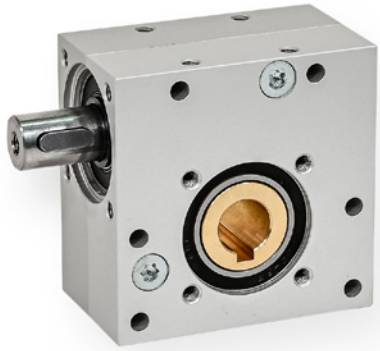
Housing
Aluminum
- Sealed to prevent dust entry
- Anodized, natural color **AN**

Worm screw
Steel

Worm wheel
- Brass
- Steel for m1=20 and i=5

Ball bearing
Steel
Sealed (sealing disks 2RS)

Operating temperature -20 °C to +60 °C

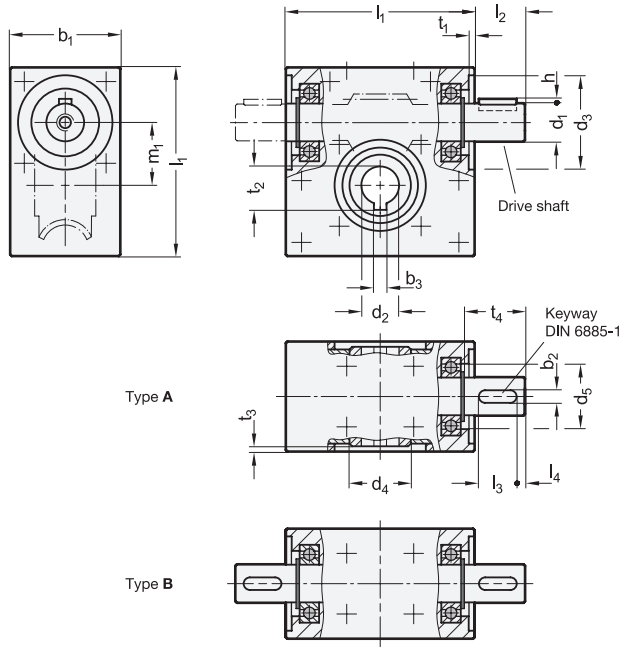


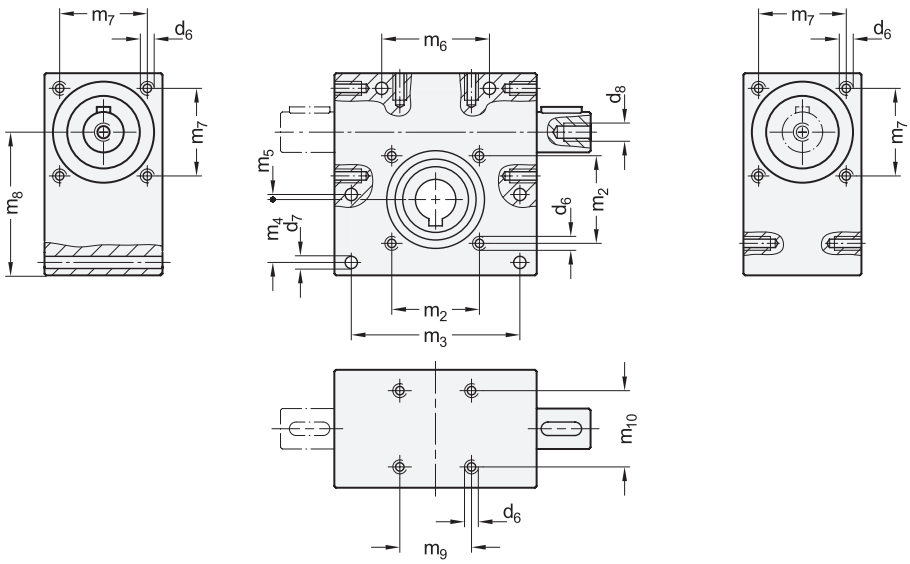
INFORMATION

Worm gear reducers GN 3975 can transmit high torque despite their very compact dimensions. They can readily be used for a multitude of applications, such as incline adjustments or to change the direction of shaft rotation.
The numerous fastening holes allow for simple mounting in any orientation or position. The parallel keys can take any angular positions.
Depending on the gear ratio, there may be no static self-braking between the worm screw and worm wheel, meaning that the worm wheel can be turned out of a resting state by a torque coming from the output end.

TECHNICAL INFORMATION

- Application example (see page)
- Keyways DIN 6885-1 (see page A16)
- ISO-Fundamental Tolerances (see page A21)





GN 3975-A

Description	m1	d1 j6	Gear ratio i	b1	b2	b3 JS9	d2 H7	d3	d4	d5	d6*	d7	d8*	h	l1	l2	l3	l4	m2	m3	m4	m5	m6	m7	m8	m9	m10	t1	t2	t3	t4	⚖
GN 3975-20-A-12-5-AN	20	12	5	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	434
GN 3975-20-A-12-13-AN	20	12	13	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	422
GN 3975-20-A-12-15-AN	20	12	15	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	425
GN 3975-20-A-12-18-AN	20	12	18	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	426
GN 3975-20-A-12-23-AN	20	12	23	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	428
GN 3975-20-A-12-30-AN	20	12	30	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	438
GN 3975-20-A-12-40-AN	20	12	40	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	426
GN 3975-20-A-12-65-AN	20	12	65	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	432
GN 3975-30-A-12-5-AN	30	12	5	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	867
GN 3975-30-A-12-10-AN	30	12	10	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	882
GN 3975-30-A-12-17-AN	30	12	17	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	863
GN 3975-30-A-12-20-AN	30	12	20	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	861
GN 3975-30-A-12-25-AN	30	12	25	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	869
GN 3975-30-A-12-34-AN	30	12	34	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	865
GN 3975-30-A-12-45-AN	30	12	45	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	870
GN 3975-30-A-12-64-AN	30	12	64	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	881

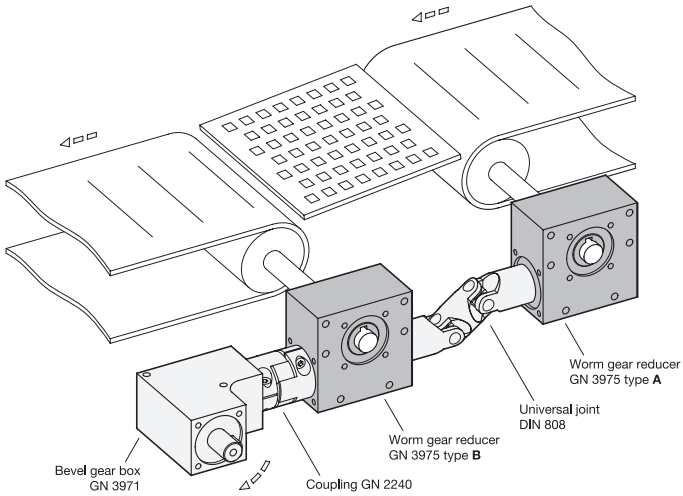
GN 3975-B

Description	m1	d1 j6	Gear ratio i	b1	b2	b3 JS9	d2 H7	d3	d4	d5	d6*	d7	d8*	h	l1	l2	l3	l4	m2	m3	m4	m5	m6	m7	m8	m9	m10	t1	t2	t3	t4	⚖
GN 3975-20-B-12-5-AN	20	12	5	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	434
GN 3975-20-B-12-13-AN	20	12	13	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	432
GN 3975-20-B-12-15-AN	20	12	15	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	440
GN 3975-20-B-12-18-AN	20	12	18	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	411
GN 3975-20-B-12-23-AN	20	12	23	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	414
GN 3975-20-B-12-30-AN	20	12	30	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	452
GN 3975-20-B-12-40-AN	20	12	40	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	440
GN 3975-20-B-12-65-AN	20	12	65	35	4	4	12	30	20	27.4	M 4	4.2	M 5	1.5	60	16	12	3	26	50	17.5	1.5	31	26	42.5	22.5	26	2	13.8	1.6	18.3	447
GN 3975-30-B-12-5-AN	30	12	5	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	883
GN 3975-30-B-12-10-AN	30	12	10	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	903
GN 3975-30-B-12-17-AN	30	12	17	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	880
GN 3975-30-B-12-20-AN	30	12	20	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	877
GN 3975-30-B-12-25-AN	30	12	25	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	885
GN 3975-30-B-12-34-AN	30	12	34	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	881
GN 3975-30-B-12-45-AN	30	12	45	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	885
GN 3975-30-B-12-64-AN	30	12	64	40	4	5	14	30	25	27.4	M 5	5.5	M 5	1.5	80	16	12	3	40	60	20	10	15	26	57.5	30	30	4	16.3	2	20.5	897

* Usable thread depth: min. 1.6 x d_6 / d_8

GN 3975 | Worm Gear Reducers

Application example



Mechanical Features

Circumferential backlash at the drive shaft	1° ± 0.5°
Shaft direction of rotation	Any
Worm screw direction	Left
Life expectancy	1.000 hours under full load at a rotational speed of 500 rpm, assuming the gear box is operating for 20% of every 5 minutes (guide value) (1 minute of operation + 4 minutes break) at an ambient temperature of 20 °C
Maintenance	Permanent lubrication with grease, maintenance-free

m1	Gear ratio	Max. input torque in Nm*			Max. output torque in Nm*			Input side		Output side		Efficiency in %	Self-braking
		at 100 min^{-1}	at 500 min^{-1}	at 1000 min^{-1}	at 100 min^{-1}	at 500 min^{-1}	at 1000 min^{-1}	Max. radial force in N**	Max. axial force in N***	Max. radial force in N**	Max. axial force in N***		
20	5	2.9	2.3	1.7	10	8	6	200	200	500	500	70	-
20	13	2.1	1.8	1.5	15	13	11	200	200	500	500	56	-
20	15	1.5	1.3	1	12	10	8	250	250	500	500	52	-
20	18	1.1	0.9	0.7	11	9	7	250	250	500	500	55	-
20	23	0.9	0.7	0.5	10	8	6	250	250	500	500	50	-
20	30	0.6	0.5	0.4	8.5	7	5.5	350	350	500	500	45	-
20	40	0.35	0.31	0.31	5.5	4.8	4	400	400	500	500	39	x
20	65	0.24	0.2	0.2	4.5	3.8	3	500	500	500	500	29	x
30	5	5.4	4.9	4.3	19	17	15	400	300	800	800	70	-
30	10	3.4	3.1	2.8	20	18	16	400	300	800	800	58	-
30	17	2.2	1.9	1.8	17	15	14	400	400	800	800	46	-
30	20	1.7	1.6	1.4	15	13.5	12	800	400	800	800	43	-
30	25	1.3	1.2	1.1	13.5	12	11	800	800	800	800	41	-
30	34	1.2	1.1	1	12	11	10	600	800	800	800	29	-
30	45	0.9	0.8	0.8	10.5	9.5	9	700	600	800	800	25	-
30	64	0.5	0.4	0.3	8.5	7.5	6	700	600	800	800	27	x

* Input side speed
** At axial force = 0
*** At radial force = 0

Assembly Instructions

Do not exert any forces onto the housing or into the bearings during assembly. Use of the threaded holes d_8 in the shaft is recommended. The use of a corresponding coupling is recommended to compensate for manufacturing-related shaft offsets and runout tolerances as well as for damping vibrations and shocks.