

GROUP SIX



High performance gearboxes

- Low Backlash, Quiet operation
- High Stiffness
- Ratios from 3:1 through 100:1

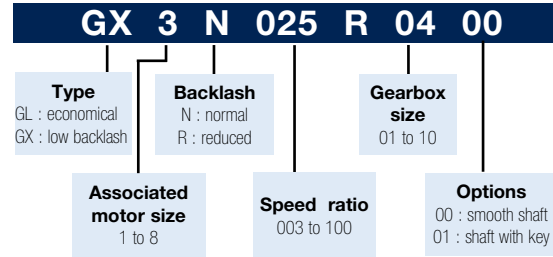
Contact Us! 800-433-3434 USA
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Gearboxes

GX series



GX Gearbox



Example : GX3N025R0300

GX gearbox, size 3 , ratio 25 , normal backlash, smooth shaft, NX310 associated motor

Description

Characterized by a low backlash, GX gearboxes are ideal for applications needing high torque and optimum motion quality.

In combination with NX servo motors, they offer a compact geared servo motor solution optimised to provide the best dynamic performances.

GX gearboxes are also available for explosive atmospheres in compliance with ATEX directive (please contact us).

Advantages

High performance geared servo motors

Large choice of speed ratio

Helical gearing : low backlash, smooth and quiet functioning

High stiffness

Life lubricated

Top quality finishing

Up to IP65 protection

Geared servo motor selection example	
Targeted output speed (Ns)	115 rpm
Targeted output torque (Cs)	445 N.m
Load inertia (Jch)	3 kgm ²
Calculation of the gearbox ratio r	Motor maximum speed NmaxM : 4000 rpm $r = N_{maxM} / N_s$ $\Rightarrow 4000 / 115 = 34,78$ By choosing the existing ratio immediately above : R=35
Calculation of the motor torque	Torque at low speed = $C_s / r / 0.85^*$ $\Rightarrow 445 / 35 / 0.85 = 14.9$ N.m
Geared servo motor selection	Motor: NX820 (Torque : 16 N.m, inertia (Jmot) : 320 kgm ² .10 ⁻⁵) Gearbox: GX8N035R0900 (size 9 ; speed ratio 35)
Calculation of the inertia ratio	Inertia ratio = $J_{ch} / (J_{mot} \times r^2)$ $\Rightarrow 3 / (320.10^{-5} \times 35^2) = 0.77$

IMPORTANT : please confirm the operating limit of the association selected above with our technical service centre.

1 Gearboxes



GX series

Mechanical associations

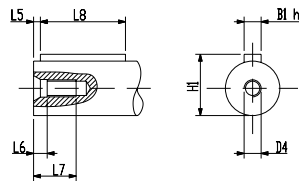
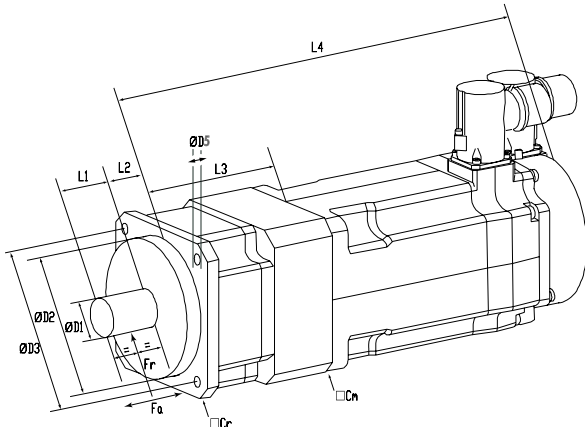
NX motor & GX gearbox selection table

		RATIO																			
		003	005	006	007	008	009	010	015	020	025	030	035	040	050	060	070	080	090	100	
NX MOTOR FRAME SIZE	NX110	GX1N__R0100											GX1N__R0200								
	NX2xx	GX2N__R0100							GX2N__R0200					GX2N__R0400							
	NX310	GX3N__R0200									GX3N__R0400										
	NX420	GX4N__R0400						GX4N__R0600									GX4N__R0700				
	NX430	GX4N__R0400						GX4N__R0600						GX4N__R0700							
	NX620	GX6N__R0600						GX6N__R0700													
	NX630	GX6N__R0600						GX6N__R0700													
	NX820	GX8N__R0600						GX8N__R0700					GX8N__R0900				GX8N__R1000				
	NX840	GX8N__R0600					GX8N__R0700			GX8N__R0900				GX8N__R1000							
	NX860	GX8N__R0600				GX8N__R0700				GX8N__R0900				GX8N__R1000							
	NX860V	GX8N__R0600		GX8N__R0700			GX8N__R0900				GX8N__R1000										

Gearboxes

GX series

1 stage



Shaft with key option

$L4 = L3 + L$ (associated NX length, NX drawings)
 Example :GX1....R01 - Motor NX1 : L = 133 mm
 $L4 = 60.5 + 133 = 193.5$ mm

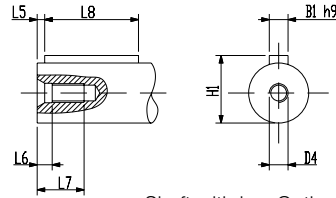
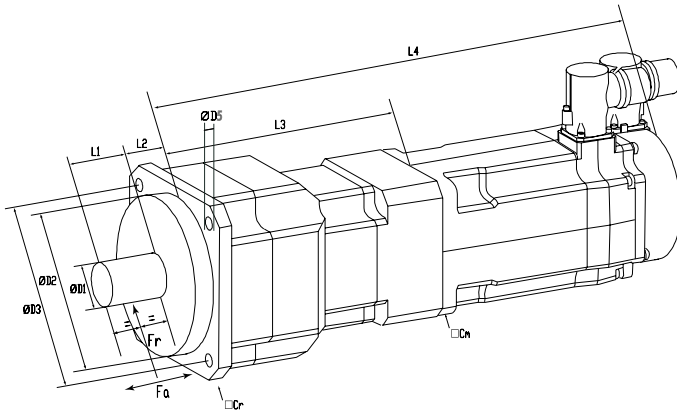
Geared servo motor characteristics and dimensions - 1 stage GX Ratio 3, 4, 5, 6, 7, 8, 9 and 10

Type	Backlash* (min)	Stiffness (N.m/rad)	Fr** (daN)	Fa** (daN)	L1 (mm)	L2 (mm)	L3 (mm)	D1 (mm)	D2 (mm)	D3 (mm)	Cr (mm)	Cm (mm)	L5 (mm)	L6 (mm)	L7 (mm)	L8 (mm)	B1 (mm)	H1 (mm)	D4 (mm)
GX1....R01	5	10000	78	39	20.5	5.5	60.5	13j6	35g6	46	42	42	2	3.2	10	16	5	15	M4x0.7
GX2....R01	5	10000	78	39	20.5	5.5	60.5	13j6	35g6	46	42	56	2	3.2	10	16	5	15	M4x0.7
GX3....R01	5	10000	78	39	20.5	5.5	60.5	13j6	35g6	46	42	71	2	3.2	10	16	5	15	M4x0.7
GX3....R02	5 or 3	24000	153	76	30	7	76.5	16j6	50g6	70	60	71	2	4	12.5	25	5	18	M5x0.8
GX4....R04	5 or 3	48000	325	162	38	10	96	22j6	80g6	100	90	91.5	3	6	19	32	6	24.5	M8x1.25
GX4....R06	5 or 3	80000	670	335	53	12	122	32j6	110g6	130	115	91.5	5	9.5	28	40	10	35	M12x1.75
GX6....R06	5 or 3	80000	670	335	53	12	122	32j6	110g6	130	115	121	5	9.5	28	40	10	35	M12x1.75
GX8....R06	5 or 3	80000	670	335	53	12	122	32j6	110g6	130	115	155	5	9.5	28	40	10	35	M12x1.75
GX8....R07	5 or 3	170000	940	470	82	15	142.5	40j6	130g6	165	142	155	5	12	36	63	12	43	M16x2
GX8....R09	5 or 3	500000	1450	725	85	20	180.5	55j6	160g6	215	180	155	6	15	42	70	16	59	M20x2.5

* Low backlash option : 3 min; ** at 100 rpm
 Cr : Gearbox square - Cm : Motor square

1 Gearboxes

GX series
 2 stages



Shaft with key Option

$L4 = L3 + L$ (associated NX length, NX drawings)

Geared servo motor characteristics and dimensions - 2 stages GX Ratio 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90 and 100

Type	Backlash* (min)	Stiffness (N.m/rad)	Fr** (daN)	Fa** (daN)	L1 (mm)	L2 (mm)	L3 (mm)	D1 (mm)	D2 (mm)	D3 (mm)	Cr (mm)	Cm (mm)	L5 (mm)	L6 (mm)	L7 (mm)	L8 (mm)	B1 (mm)	H1 (mm)	D4 (mm)
GX1....R01	8	10000	78	39	20.5	5.5	88	13j6	35g6	46	42	42	2	3.2	10	16	5	15	M4x0.7
GX1....R02	8 or 6	24000	153	76	30	7	101.5	16j6	50g6	70	60	42	2	4	12.5	25	5	18	M5x0.8
GX2....R01	8 or 6	10000	78	39	20.5	5.5	88	13j6	35g6	46	42	56	2	3.2	10	16	5	15	M4x0.7
GX2....R02	8	24000	153	76	30	7	101.5	16j6	50g6	70	60	56	2	4	12.5	25	5	18	M5x0.8
GX2....R04	8 or 6	48000	325	162	38	10	127	22j6	80g6	100	90	56	3	6	19	32	6	24.5	M8x1.25
GX3....R02	8 or 6	24000	153	76	30	7	101.5	16j6	50g6	70	60	71	2	4	12.5	25	5	18	M5x0.8
GX3....R04	8 or 6	48000	325	162	38	10	127	22j6	80g6	100	90	71	3	6	19	32	6	24.5	M8x1.25
GX4....R06	8 or 6	80000	670	335	53	12	161	32j6	110g6	130	115	91.5	5	9.5	28	40	10	35	M12x1.75
GX4....R07	8 or 6	170000	940	470	82	15	196	40j6	130g6	165	142	91.5	5	12	36	63	12	43	M16x2
GX6....R07	8 or 6	170000	940	470	82	15	196	40j6	130g6	165	142	121	5	12	36	63	12	43	M16x2
GX8....R07	8 or 6	170000	940	470	82	15	196	40j6	130g6	165	142	155	5	12	36	63	12	43	M16x2
GX8....R09	8 or 6	500000	1450	725	85	20	232.5	55j6	160g6	215	180	155	6	15	42	70	16	59	M20x2.5
GX8....R10	8 or 6	770000	5000	2500	108	30	274.5	75j6	180g6	235	220	155	7	15	42	90	20	79.5	M20x2.5

* Low backlash option : 6 min; ** at 100 rpm
 Cr : Gearbox square - Cm : Motor square