





GA series
TORSIONALLY FLEXIBLE COUPLINGS

GC series
CROWN CURVED-TOOTH COUPLINGS

# GA Series Torsionally flexible couplings

Torque range: 10-2400 N.m

## **Features**

- » The structure of small size, light weight, high torque transmission, can effectively improve the operation quality and stability of machinery;
- » Can make the transmission of vibration to be buffered, and absorption caused by uneven running power impact;
- » Elastomer wear-resistant, oil resistance, ozone resistance, aging resistance, elastic body only by the pressure, can withstand greater load; maximum torsion angle can reach 5°:
- » Can be installed in horizontal or vertical position.



# GC Series Crown curved-tooth couplings

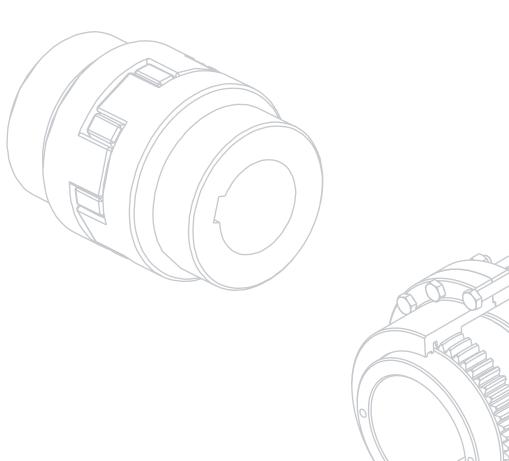
Torque range: 1300-244000 N.m.

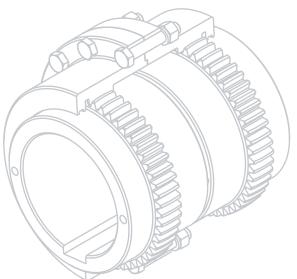
- » Finest curved teeth and superior quality material ensures remarkably reliable operation;
- » High output torque, automatic rectifying strength;
- » Stable operation; no vibration while fast running;
- » Max. permissible angle deviation 1.5°;
- » High corrosion resistance;
- » Canbeinstalledinhorizontalorvertical position.



# **Application industries**

- » Modular, high standardization, components of few specifications and models.
- » Wide power, torque, speed ratio covering range.
- » The products are widely applied in electricity, coal, cement, metallurgy, harbor, agriculture, shipping, lifting, environment protection, stage, logistic, weaving, paper making, light industry, plastics and others.







## Note:

# you must conform to the following instructions!

- » The structure scheme, appearance diagram and other attached diagrams in sample are examples, there is no strict proportion requirement (The unmarked dimension units are mm)
- » The marked weight is average value, it has no constraint force
- » To prevent accidents, all the rotation parts are added with protective covers according to the safety regulations of the nation and region
- » Before debugging, you shoutd carefully read instruction book
- » Gear unit is on running-permission status when delivered, you should add lubrication oil before putting it into running
- » The marked oil quantity in sample is only reference value, actual oil filling quantity should be the same with the mark on oil dipstick
- » Lubrication oil viscosity should be selected according to working situation and application environment temperature of gear units
- » You can only apply lubrication oil of internationally famous brand

## **Product function mark**



Oil dipstick



Breather



Oil filler



Oil drain









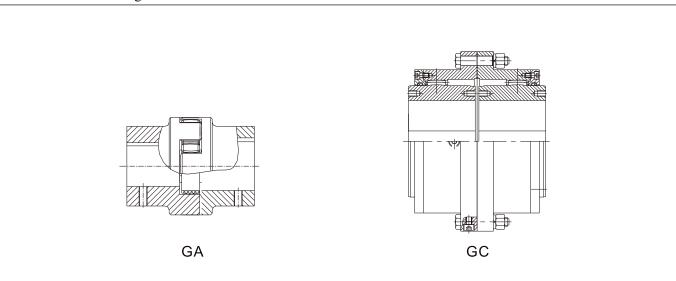


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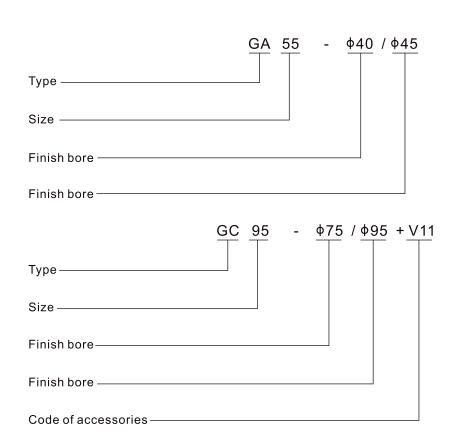
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## 1 Sectional Drawings:



## 2 Type Designation:





## 3 GA Torsionally flexible jaw-type couplings:

## 3.1 Coupling selection and example:

Steps	Specification	Symbol		Calculate	parameter		
			Load characteristic		Operating	g time(h/d)	
			Load characteristic	€2	2-	-10	10-24
1	Driven machine factor	f1	Uniform	1.00	1.	25	1.50
			Moderate	1.25	1.	50	2.00
			Heavy	1.50	1.	75	2.25
2	Starting frequency factor	fz	Starting frequency(T/h)	0 – 1	1 – 30	30 – 60	60 –200
	Starting frequency factor	12	fz	1.0	1.2	1.3	1.5
3	Ambient temperature factor	ft	Ambient temperature	-10°C~+30°C	+30 ℃~+40℃	+40℃~+60℃	+60℃~+80℃
3	Amorent temperature factor	It	ft	1	1.2	1.4	1.8
4	Permissible input speed	n1	n1≤n1max See the tab	le of technical o	lata		
5	Calculation of rated driving torque	Tn	Tn=9550 • P1/n or other t	orque data of di	iving side		
6	Size confirmation	T2N	T2N≥Tn • fl • fz • ft Select the type of the coup which calculated torque m				
7	Special ambient conditions	/	For applications in extrem dusty place, Chemical reac Please consult Boneng for	tion (acid, alka	li etc), open fie		

## Selection example

#### **Known Criteria:**

- 1. Input power P1=30kW, input speed n1=1470rpm
- 2. Load characteristic is moderate, working for 8h/day, starting frequency 10 times/hour, ambient temperature <60°C
- 3. Finish bore  $\Phi 55/\Phi 60$

#### **Selection steps:**

 $1. \, According \, to \, load \, characteristic \, and \, starting \, frequency, \\$ 

we can arrive at: f1=1.5, fz=1.2, ft=1.4

2. Calculate rated torque of driving side:  $Tn{=}9550 \bullet P1/n{=}9550 \bullet 30/1470{=}195N \bullet m$ 

3. Check norminal torque of coupling:

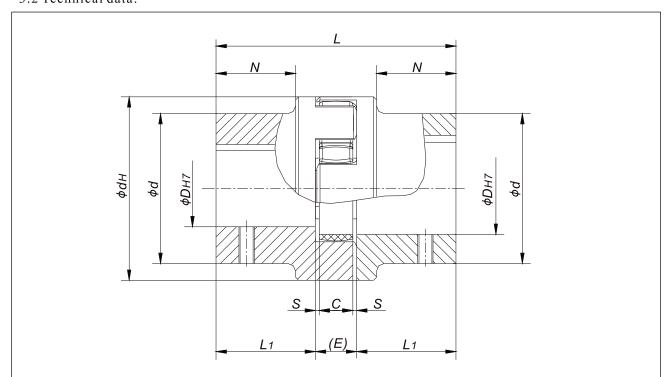
 $T_{2N} \geqslant T_{n} \cdot f_{1} \cdot f_{2} \cdot f_{1} = 195 \cdot 1.5 \cdot 1.2 \cdot 1.4 = 491.4 \text{ N} \cdot m$ , check up the technical data table,  $T_{2N} = 625 \geqslant 491.4 \text{ N} \cdot m$  select GA65.

4. Check finish bore D: Ok (Acceptable)

**Choose: GA65-**⊕**55**/⊕**60** 



## 3.2 Technical data:



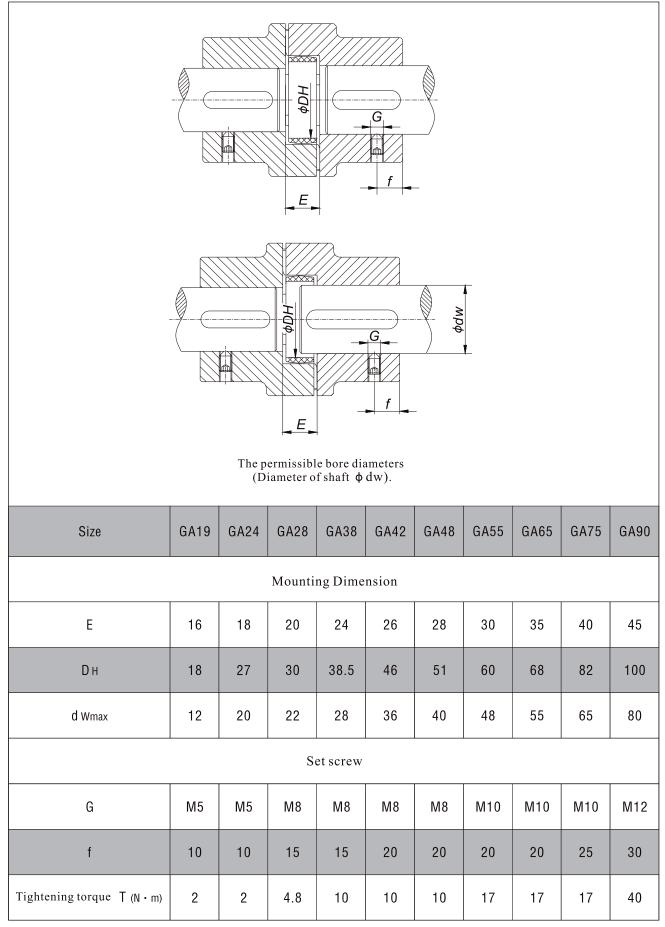
Size	T2N (N·m)	N1max (rpm)	<b>D</b> Finish bore	d	dн	L	Ν	L1	Е	С	s	Moment of inertia (kgm²)	Weight (kg)
GA19	10	14000	9\11\14\19	32	41	66	20	25	16	12	2	0.00007	0.4
GA24	35	10600	11\14\16\19\24	40	56	78	24	30	18	14	2	0.00025	0.8
GA28	95	8500	14\19\24\25\28	48	67	90	28	35	20	15	2.5	0.00059	1.3
GA38	190	7100	20\25\28\30 32\35\38	66	80	114	37	45	24	18	3	0.0019	2.7
GA42	265	6000	25\28\30\32 35\38\40\42	75	95	126	40	50	26	20	3	0.0039	3.9
GA48	310	5600	25\30\32\35 38\40\42\45\48	85	105	140	45	56	28	21	3.5	0.0067	5.4
GA55	410	4750	30\32\35\38\40 42\45\48\50\55	98	120	160	52	65	30	22	4	0.0134	8.4
GA65	625	4250	35\38\40\42\45 48\50\55\60\65	115	135	185	47	75	35	26	4.5	0.03	13.8
GA75	1280	3550	40\42\45\48\50 55\60\65\70\75	135	160	210	53	85	40	30	5	0.066	21.6
GA90	2400	2800	50\55\60\65 70\75\80\85\90	160	200	245	62	100	45	34	5.5	0.174	37.5

- 1. Coupling is made of nodular cast iron, The material of spider is pouring polyurethane with shore hardness HA92 $^{\circ}$ . 2. Momentary overload torque of coupling TA $\leq$ 2 $\times$ T2N.
- 3. Weight and mass moment of inertia each refer to the minimum pilot bore.



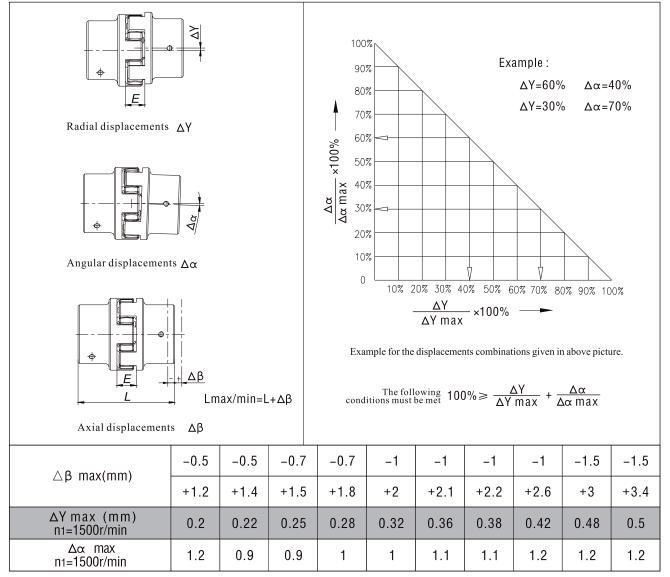
## 3.3 Installation and displacements:

#### 1) Installation:



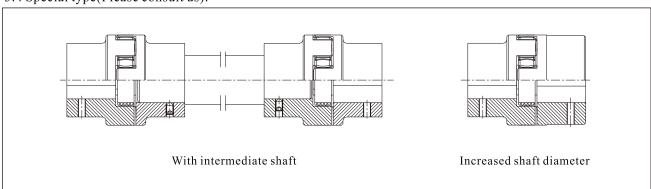


#### 2) Displacements:



The above-mentioned figures of displacement of flexible couplings are standard values taking into account the load of the coupling up to the norminal torque T2N and an operating speed n=1500rpm, along with an ambient temperature of  $+30^{\circ}$ C; The displacement figures may only be used one by one if they appear simultaneously. They must be limited in proportion. Care should be taken to maintain the distance dimension E accurately in order to allow for axial clearance of the coupling while in operation. In case of an axial shifting, the dimension "L"has to be considered as a minimum dimension in order to keep the spider free from pressure on its faces.

#### 3.4 Special type(Please consult us):





## 4 GC Curved-tooth gear couplings:

## 4.1 Coupling selection and example:

Steps	Specification	Symbol		Calculate 1	parameter		
					Operating tin	ne(hours/day)	)
			Load characteristic	≤2	2-	-10	10-24
1	Driven machine factor	fı	Uniform	1.25	1.:	50	1.75
			Moderate	1.50	1.	75	2.00
			Heavy	2.00	2.:	25	2.50
0	Sharking for	C	Starting frequency (Times/H)	0 – 1	1 – 30	30 – 60	60 –200
2	Starting frequency factor	fz	f z	1.0	1.2	1.3	1.5
3	Permissible input speed	n1	n1≤n1max See the te	echnical data			<u> </u>
4	Calculate rated driving torque	Tn	Tn=9550 • P1/n or other	torque of drivin	g side		
5	Size confirmation	T2N	T2N≥Tn•fl•fz  Select the type of the cou which calculated torque r	pling and check nust be less than	the finish hole the permissib	e according to ble rated torqu	the principle le.
6	Normal ambient conditions	/	Ambient temperature -	10~+40℃。			
7	Special ambient conditions	/	For applications in high open field (sunshine,ice,			nical reaction	(acid, alkali),

#### Selection example

#### Known Criteria:

- 1. Input power P=90kW, input speed n=200rpm,
- 2. Load characteristic is moderate, work for 8h/day, start-up frequency fz=10, horizontal mount,
- 3. Finish bore  $\Phi75/\Phi90$

## Selection steps:

 $1.\,According\ to\ load\ characteristic\ and$ 

Starting frequency, we can arrive at

driven machine factor f1=1.75, fz=1.2

2. Calculate norminal torque of driving side:

Tn=9550 • P1/n=9550 • 90/200=4298N • m;

3. Check torque of coupling:

 $T2N \geqslant Tn \cdot f1 \cdot fz = 4298 \cdot 1.75 \cdot 1.2 = 9026N \cdot m$ 

check up the technical data table,

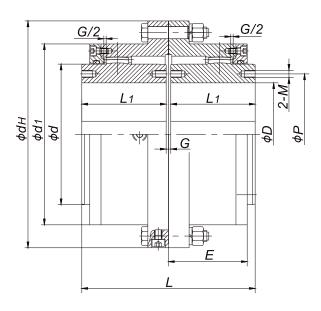
 $T2N=10000 \ge 9026 \text{ (N} \cdot \text{m)}$  select type GC95,

4. Check finish bore D: Acceptable

**Choose: GA95-⊕75/⊕90** 



## 4.2 Technical data:

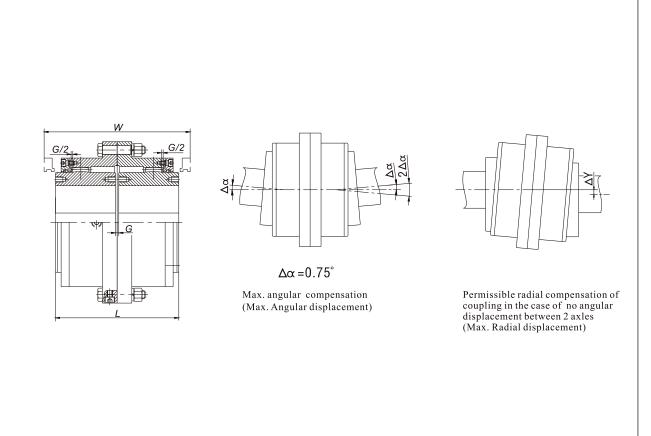


Size	T2N (kN·m)	n <sub>1max</sub> (rpm)	<b>D</b> H7	L	dH	d1	d	L1	E	G	Р	M	Moment of inertia (kgm²)	Grease (L)	Weight (kg)
GC50	1.3	3000	35\38\40\42 45\48\50	89	119	94	65	43	42	3	/	/	0.006	0.05	4.6
GC60	2.8	3000	40\42\45\48 50\55\60	103	144	112	80	50	48	3	/	/	0.018	0.07	8.1
GC75	5	3000	55\60\65 70\75	127	175	141.5	103	62	58.5	3	/	/	0.05	0.13	14.5
GC95	10	3000	70\75\80 85\90\95	157	214	168	125	76	72	5	/	/	0.125	0.21	24.7
GC110	16	3000	90\95\100 110	185	242	193	148	90	84	5	/	/	0.23	0.36	35.3
GC150	32	2800	100\110\120 130\140\150	246	335	265	200	120	109	6	175	M12×15	1.13	0.8	96.6
GC190	62	2550	140\150\160 170\180\190	308	395	325	248	150	132	8	220	M16×20	2.88	1.51	165
GC240	115	2300	170\180\190 200\220\240	388	470	387	307	190	165	8	276	M16×20	6.41	2.43	271
GC280	244	1900	200\240\250 260\280	570	605	486	386	280	225	10	335	M20×24	24.2	6.44	609

- 1. The weight, oil feeding and mass moment of inertia is refer to the minimum pilot bore.
- 2. The max permissible angular displacement of coupling selected must not exceed  $1.5^{\circ}$ .
- $3. \ The \ standard \ line \ is \ only \ for \ the \ horizontal \ assembly, for \ vertical \ mounting, \ pls \ select \ accessory \ V11, see \ 10/G \ page.$
- 4. Out-factory without lubrication grease, when ambient temperature is between  $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ , 000 multi purpose extreme pressure semi-fluid lithium grease should be used for the coupling, accessory code is V00.



## 4.3 Installation and displacements:

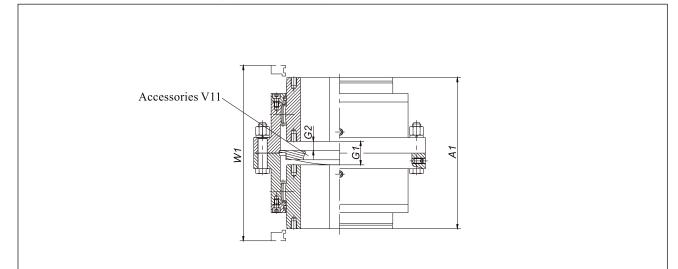


Size	GC50	GC60	GC75	GC95	GC110	GC150	GC190	GC240	GC280
G	3	3	3	5	5	6	8	8	10
L	89	103	127	157	185	246	308	388	570
W	108	122	153	184	216	272	342	426	632
ΔΥ	0.32	0.4	0.5	0.6	0.7	1	1.2	1.5	2
$\Delta lpha$ max	0.75°	0.75°	0.75°	0.75°	0.75°	0.75°	0.75°	0.75°	0.75°

Note: W dimension is for replacing seals.



## 4.4 Accessories for vertical mounting (Accessories V11):

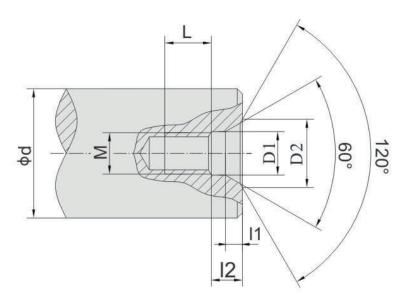


Size	GC50	GC60	GC75	GC95	GC110	GC150	GC190	GC240	GC280
A1	97	115	141	181	213	282	356	464	610
G1	11	15	17	29	34	30	56	84	50
G2	2	4	5	11	13	17.5	23	36	17
W1	116	134	167	208	244	296	390	502	672



# 13 Shaft end central hole

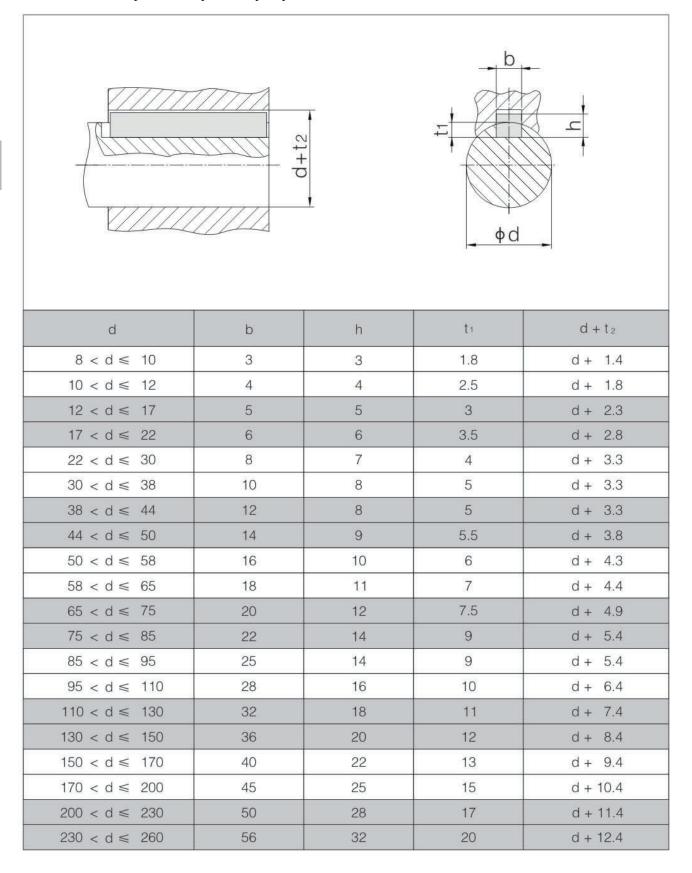
# Shaft end C Type screw central hole



d	М	L	12	I1	D1	D2
7 < d ≤ 10	МЗ	10	2.6	1.8	3.2	5.8
10 < d ≤ 13	M4	10	3.2	2.1	4.3	7.4
13 < d ≤ 16	M5	10	4	2.4	5.3	8.8
16 < d ≤ 21	M6	12	5	2.8	6.4	10.5
21 < d ≤ 24	M8	12	6	3.3	8.4	13.2
24 < d ≤ 30	M10	15	7.5	3.8	10.5	16.3
30 < d ≤ 38	M12	20	9.5	4.4	13	19.8
38 < d ≤ 50	M16	25	12	5.2	17	25.3
50 < d ≤ 85	M20	30	15	6.4	21	31.3
85 < d ≤ 130	M24	35	18	8	25	38
130 < d ≤ 225	M30	45	18	11	31	48



## 14 Dimension of parallel key and keyway



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## **TGE Transmission s.r.o.**

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