Crossgard Overload Couplings

The Crossgard series of overload protection clutches all use sprung loaded balls locked in detents to provide drive and overload control. The balls are random positioned in the clutch so drive can only be engaged in one relative angular position between driver and driven shafts, so ensuring full synchronisation of the drive at all times. In the event of an overload the balls are driven out of their detents to release the torque, and cause axial movement of the pressure plate which can be used to actuate a limit switch or proximity sensor to isolate the drive. All units are fitted with a torque indicator to enable simple setting of the desired torque rating. There are three basic types of Crossgard Clutches all of which are available as flexible shaft couplings, types CG, CGX and CGZ.

Crossgard Principles of Operation

During normal operation torque is transmitted between hub and driving flange by a number of balls located in the flange engaged in detents in the hub under load applied by disc springs. The balls are arranged in irregular angular positions to ensure re-engagement can only occur at one angular position between hub and flange. When an overload occurs the balls are driven out of their detents and then roll between the hub and pressure plate. The pressure plate moves axially a sensor plate which can be used to activate a proximity or limit switch. Torque is varied by adjusting the spring load on the pressure plate by tightening or loosening adjusting nuts.

Design Features

Crossgard clutches have been designed to provide the customer with a reliable, simple to operate clutch, all three types incorporating the following design features.

Drive Synchronisation
Non symmetrical arrangement of the drive balls and pockets allows only one angular position of engagement of drive, ensuring input and output are always synchronised.

Bi-directional drive
The clutches function equally in either direction of rotation, and are suitable for reversing drives.

Visual Torque Meter
All units have a scale on the adjusting nut to enable the set torque to be determined by reference to torque charts. Setting can also be verified at any time by visual check.

Simple Torque setting and adjustment
Required torque is set by turning the adjusting nut, and setting off torque scale.

Overload Monitoring
All units incorporate a sensor plate which moves axially when overload occurs to trigger a proximity or limit switch to isolate power to motor and activate failure indicators.

Stock availability
All standard Crossgard clutches are carried in stock with pilot bore. Units can be supplied with finished bore, keyseat and setscrews, fitted with platewheels; or complete with flexible coupling on 72 hours lead time.

Type CG Crossgard Clutch Pages 15-17

CG Crossgard Clutches are a low cost, simple design suitable for general purpose applications. The clutches provide full overload protection of drives which require synchronisation to be maintained at all times. Following overload the clutches are automatically reset by slow rotation of input drive once the overload cause is cleared. Seven sizes of clutch provide a torque range 10Nm to 7150Nm with operating speeds to 700rpm. Torque settings are accurate to ±10% even after repeated tripping. Also can be supplied with roller chain or elastomeric coupling.

Use CG Clutch:

- For general purpose applications.
- Where drives are inaccessible.
- For chain and low speed belt drives.
- In wrapping and packaging machines.
- On bakery and bottling machines.
- For conveyors and on sliding door drives.

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Crossgard Overload Clutches and Selection Procedure

Type CGX Crossgard Clutch Pages 18/19

High technology and precision is demanded in indexing and the position of equipment in modern machinery. The CCX Crossgard satisfies the demands for precision and performance and provides overload protection for modern machinery. CGX Clutches through their unique design provide backlash free, fail-safe, overload protection. High precision of trip torque is obtained with settings within ±3% accuracy, and very little motion is lost during tripping. An innovative ball and wedge mechanism is used to prevent backlash, and this is further employed in the coupling version to compensate for angular or parallel error or axial displacement with no loss in torsional rigidity. Five sizes of clutches and couplings have range 1.7 Nm to 785 Nm with maximum shaft speeds of 1400rpm. Units automatically reset after overload by slow shaft rotation.

Use CGX Clutch:

- For precision positioning indexing drives.
- For accurate mechanical overload protection.
- For zero backlash drives.
- On output shafts on cam boxes and Geneva mechanisms.
- On servo motor drives and robotics.
- In printing machinery.
- On N.C. machine tools and machining centres.

Type CGZ Crossgard Clutch Pages 20/21

The CGX Clutches incorporate a locking mechanism which restrains spring pressure being applied to the driving balls following an overload. Following an overload the input drive can continue to rotate freely enabling the clutch to be used for shaft speeds up to 1800 rpm. After the machine has been stopped following an overload the CGZ can only be reset by applying an axial load on the pressure plate. The clutch can also be used as an on-off clutch. Four sizes have torque range 2.4 Nm to 450 Nm, with accuracy ±10%. An elastomeric coupling is also available.

Use CGZ Clutch:

- For high speed drives - direct motor shaft.
- Where manual re-engagement preferred.
- As ON-OFF clutch.
- For machine tool drives.
- On textile and paper making machinery.

Crossgard Selection

Like other overload devices,it is best to position the Crossgard nearest the driven equipment where the overload is most likely to occur. Tripping torque should be at least 25% greater than the operating torque to compensate for motor starting torque and intermittent, shock and reversing loads.

Selection Method

1. Selecting the trip torque.
Trip torque should be set equal to the maximum amount of torque which can be applied based on such conditions as the strength of the machine and load. When it is not clear what the maximum amount of torque is, calculate the rated torque from the rated output and the rpm of the shaft onto which the Crossgard is to installed, and multiply this figure by the service factor. The result may be taken as the trip torque.

Tripping Torque = Operating x SF

$$\text{Torque Nm} = \frac{\text{Power kW} \times 9550}{\text{RPM}}$$

2. Select Clutch or Coupling where torque is mid range of rating to allow maximum on-site adjustment.

3. Check shaft diameters can be accommodated, if not a larger unit will be required.

4. Ensure shaft speeds are within limits of unit selected.

5. For coupling check alignment requirements.

6. Select proximity sensor switch, see page 29.

Determination of Service Factor

SF	Operating Conditions
1.25	Normal starting and stopping, intermittent motion
1.50	Load with light shocks, forward and reverse motion
1.70	Load with heavy shocks,frequent torque reversals

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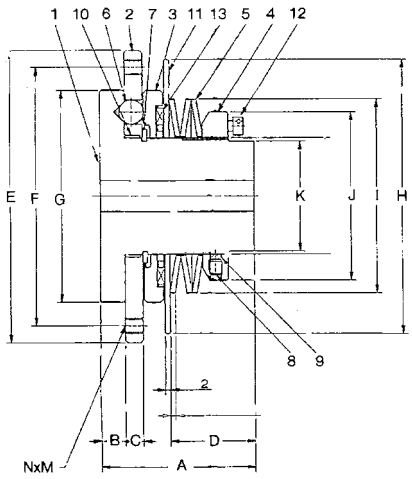
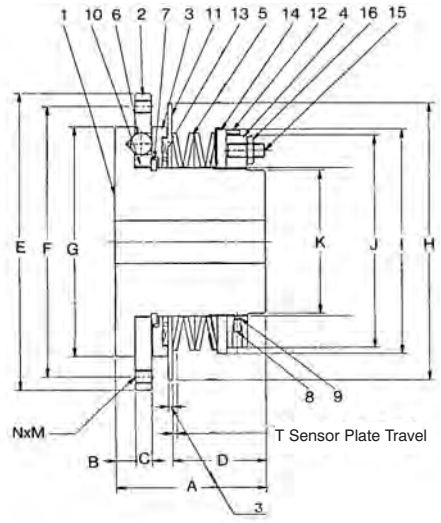
Type CG Crossgard Clutch

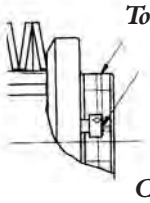
Provides low cost overload protection with simple setting and operation, whilst maintaining synchronisation of driving elements



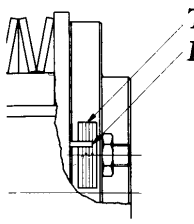


1 Hub
2 Centre Flange
3 Plate
4 Adjusting Nut
5 Disc Spring
6 Steel Ball
7 Snap Ring
8 Set Screw
9 Lock Plug
10 Skid Bearing
11 Sensor Plate
12 Indicator
13 Bearing
14 Pressure Plate
15 Adjusting Bolt
16 Adjusting Nut

Torque Meter



CG20-CG50



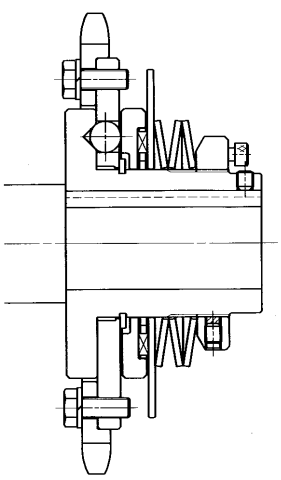
Torque Meter Indicator

CG70

Model	Torque Nm		Max. Speed	Disc Spring	Bore Size		Weight	Inertia
	Min	Max	RPM	Colour	Min	Max	kg.	kgfm² x 10⁻²
CG20	10	44	700	Orange	8	20	0.9	0.23
CG30L CG30H	20 54	54 167	500	Yellow Orange	12	30	2.0	0.79
CG50L CG50M CG50H	69 137 196	147 412 539	300	Yellow Blue Orange	22	50	5.9	4.84
CG70	294	1080	160	Orange	32	70	17.0	25.2
CG90L CG90H	441 931	1323 3136	120	Yellow Orange	42	90	37.5	135
CG110L CG110H	686 1568	1960 5096	100	Yellow Orange	52	110	69.6	364
CG130L CG130H	1176 2646	3038 7154	80	Yellow Orange	60	130	102.0	688

Dimensions in mm

Model	A	B	C	D	Eh⁷	F	G	H	I	J	K	M	N (No.)	R	S	T
CG20	47	7.5	5.7	25	90	78	62	82	54	48	30	M5	4	5.5	65	1.8
CG30	60	9.5	7	33	113	100	82	106	75	65	42.5	M6	6	6.5	85	2.0
CG50	81	14.5	8.5	44.8	160	142	122	150	117	98	70	M8	6	9.0	125	2.7
CG70	110	14.5	12	68.5	220	200	170	205	166	157	106	M10	6	11.0	175	3.3
CG90	157	25.0	22	88.6	295	265	236	290	213	203	124	M12	8	13.0	242	5.4
CG110	195	30.0	25	105	355	325	287	345	278	266	155	M16	6	17.0	295	6.0
CG130	230	35.0	27	130	400	360	319	390	316	304	184	M16	8	17.0	330	6.6



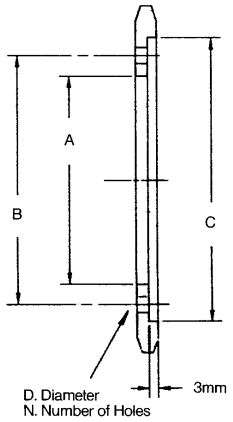
Typical Sprocket Assembly

Dimensions for Mounting Drive Sprockets

Model	A mm	B mm	C mm	D mm	N
CG20	65	78	90.06/ 90.02	5.5	4
CG30	85	100	113.08/113.02	6.5	6
CG50	125	142	160.10/160.02	9.0	6
CG70	175	200	220.10/220.02	11.0	6
CG90	241	265	295.10/295.02	13.0	8
CG110	292	325	355.12/355.02	17.0	6
CG130	324	360	400.12/400.02	17.0	8

Driving members can be Timing Belt Pulleys, Vee-Belt Pulleys, Spur Gears or most common, Roller Chain Sprockets. For roller chain the minimum number of teeth sprocket which can be used is shown in the table below:

Model	CHAIN PITCH (INCHES)								
	¼	8mm	⅜	½	⅝	¾	1	1 ½	2
CG20	48	40	34	26	22				
CG30	60	48	41	32	26	22			
CG50			57	43	35	30	24		
CG70				58	47	40	31		
CG90						47	36	25	
CG110							44	30	26
CG130								33	29



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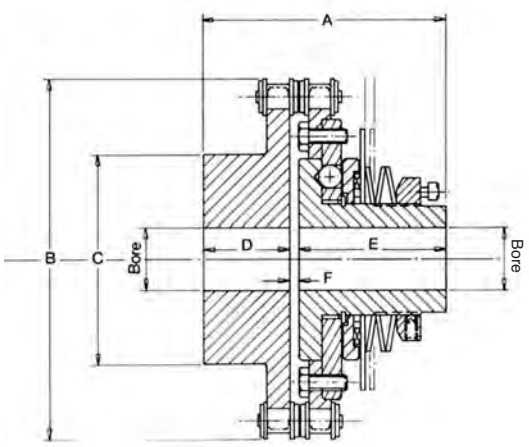
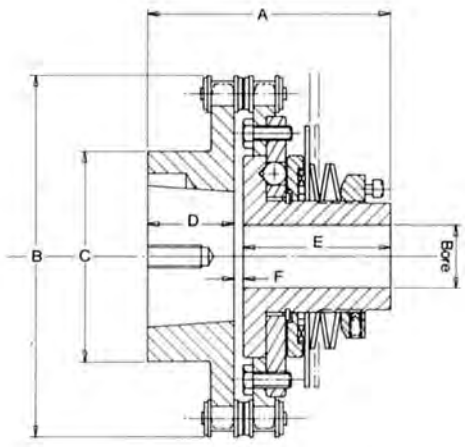
Type CG Crossgard Flexible Couplings

Two basic types of couplings are being offered, Type ES Rubber Elastic Coupling, and Type CC Roller Chain Coupling. Both combine the full overload protection capabilities of the CG Crossgard with facility of shaft to shaft connection.

Crossgard CG-CC Couplings

A standard roller chain sprocket is connected by a duplex roller chain to a platewheel mounted on the CG Clutch. This construction provides a simple, reliable, low cost means of transmitting drive with minimum backlash, and accommodating reasonable shaft misalignment. Both Taper-bored and pilot bore sprockets are available.





CG-CC Crossgard Chain Coupling

Model	Torque NM		Max. Speed	Misalignment		Clutch Bore Size		Coupling Bore Size		Dimensions						Weight	Inertia
	Min	Max	RPM	Parallel	Angular	Min	Max	Min	Max	A	B	C	D	E	F	kg.	kgfm² x10⁻²
CG20-CC	10	44	700	0.25	½°	8	20	16	53	81	118	70	30	47	3.5	2.6	1.43
CG30L-CC CG30H-CC	20 54	54 167	500	0.31	½°	12	30	20	60	99	147	85	35	60	4	4.8	3.7
CG50L-CC CG50M-CC CG50H-CC	69 137 196	147 412 539	300	0.38	½°	22	50	20	63	123.5	199	95	40	81	2.5	12.3	16.9
CG70-CC	294	1080	160	0.51	½°	32	70	25	80	174.5	265	120	50	110	14.5	29.2	81.7
CG90L-CC CG90H-CC	441 931	1323 3136	120	0.76	½°	42	90	30	107	257	374	160	80	157	20	79.5	491
CG110L-CC CG110H-CC	686 1568	1960 5096	100	0.76	½°	52	110	40	107	310	446	160	100	195	15	125.5	1063
CG130L-CC CG130H-CC	1176 2646	3038 7154	80	1.00	½°	60	130	60	150	368	495	225	120	230	18	188.5	2002

Dimensions in mm.

CG-CC Crossgard Taper Bored Chain Coupling

Model	Torque NM		Max. Speed	Misalignment		Clutch Bore Size		Coupling Bore Size		Dimensions						Weight	Inertia
	Min	Max	RPM	Parallel	Angular	Min	Max	Min	Max	A	B	C	D	E	F	kg.	kgfm² x10⁻²
CG20-CC	10	44	700	0.25	½°	8	20	16	53	76	118	76	25	47	3.5	2.4	1.43
CG30L-CCTB CG30H-CCTB	20 54	54 167	500	0.31	½°	12	30	20	60	95	147	90	31	60	4	4.2	3.7
CG50L-CCTB CG50M-CCTB CG50H-CCTB	69 137 196	147 412 539	300	0.38	½°	22	50	20	63	128	199	108	44	81	2.5	11.5	16.9
CG70-CCTB	294	1080	160	0.51	½°	32	70	25	80	175	265	159	51	110	14.5	29	85

For further dimensions of Crossgard Clutch refer to page 15.

Dimensions in mm.

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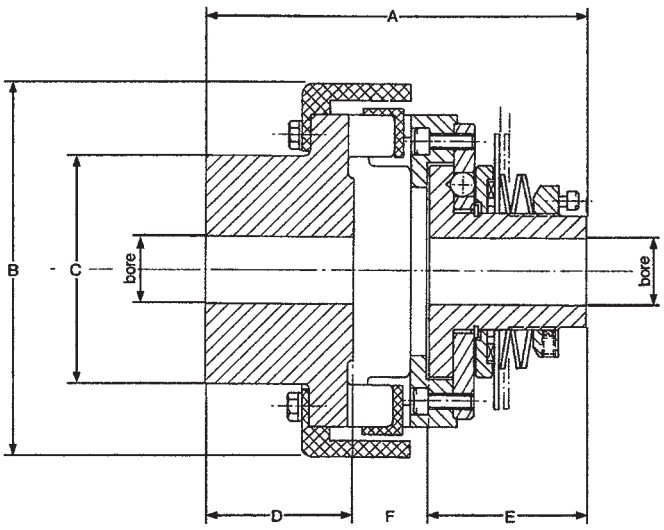
Crossgard Overload Couplings

Crossgard CG-ES Couplings

The ES Couplings consist of two close grained cast iron jaws with hard rubber drive elements interposed. It is a low inertia coupling combining quiet operation with torsional elasticity to absorb shock loads and damp vibration.



CG-ES Crossgard Coupling

Model	Setting Torque Nm	Max Speed RPM	Misalignment		Clutch		Coupling		A	B	C	D	E	F	Weight kg	Inertia kg m² x10⁻²
			Parallel	Angular	Pilot Bore	Max Bore	Pilot Bore	Max Bore								
CG20-ES	9.6 - 45	700	0.5	0.7°	8	20	-	40	118	92	65	45	47	26	2.7	0.38
CG30L-ES CG30H-ES	19.8 - 54 53.6 - 167	500	0.7	0.7°	12	30	-	55	146	143	88	57	60	29	6.3	1.49
CG50L-ES CG50M-ES CG50H-ES	68 - 147 136 - 407 196 - 540	300	0.9	0.6°	22	50	-	75	199	202	120	75	81	43	16.6	9.2
CG70-ES	294 -1080	160	1.2	0.5°	32	70	-	90	261	257	145	89	110	62	37.6	30.3

Dimensions in mm.

For further dimensions of Crossgard Clutch refer to page 15.

Crossgard Couplings can be supplied with both clutch and coupling hub finish bored, keyseated, with setscrew to customers' requirements on 48-hour re-work service.

Installation of Crossgard CG Clutches

For optimum performance of CG Clutches and couplings it is necessary to have a good fit(transition) between shafts and hubs. Drives should be via a parallel key with interference fit with ideally two set screws to maintain axial position on shaft.

The chain/belt drive should be accurately aligned to avoid axial loading of the clutch; and coupling assemblies should be carefully aligned at installation to minimise operating loads.

All units should be installed with a limit switch or proximity switch to shut down the drive in the event of an overload, refer to page 29 for details standard units available.

Installation of Crossgard Couplings

Prior to installation it is necessary to separate the Crossgard and Coupling half by either removing the duplex chain, or for the ES Coupling removing the outer cover and the rubber element. Fit Crossgard and Coupling half to shafts, for ES Coupling ensure cover is fitted to hub prior to installation. Adjust distance between Crossgard and Coupling according to catalogue dimensions, and align shafts as accurately as possible. Refit duplex chain or rubber element and cover, ensure chain is free to move, and shafts rotate freely.

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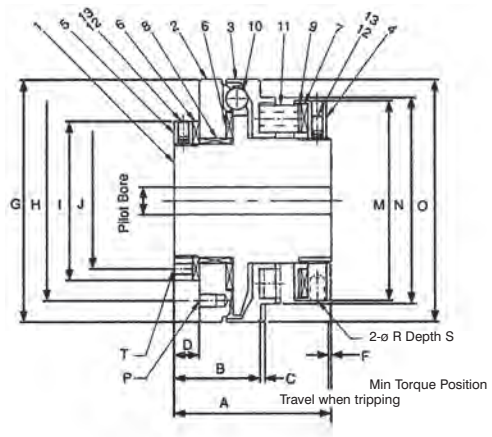
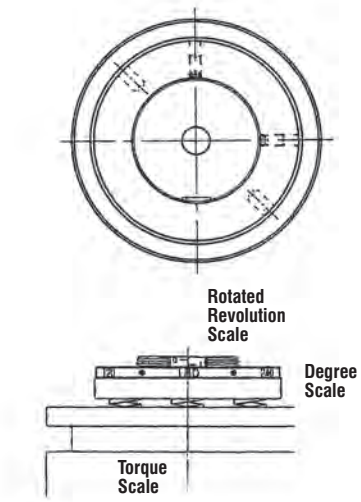
Type CGX Crossgard Clutch

Provides complete overload protection of drives with accurate positioning and zero backlash. Suitable for gears, cams and index table drives.

These clutches can be supplied with pilot bore, finish bore and keyseat, or fitted with clamping elements to clamp directly to keyless shafts. The use of clamping elements ensures total elimination of backlash in the complete assembly within the operating torque range, but does require an increase to the overall length of clutch in order to accommodate. Clutch and clamping element assemblies are supplied from stock to suit specific metric shaft sizes as indicated in the table, using clamping elements types ACE81 & RCK80.



1 Hub
2 Driven Flange
3 Plate
4 Adjusting Nut
5 Fixed Nut
6 Bearing
7 Bearing
8 Bearing
9 Side Plate
10 Steel Ball
11 Coil Spring
12 Set Screw
13 Lock Plug



For Selection of Crossgard CGX Clutches refer to page 14, always use with proximity sensor switch, refer to page 29

Model	Setting Torque Range Nm	Max Running Speed RPM	Colour of Spring x Number	Pilot Bore mm	Max Bore mm	Shaft Clamping Element † Std. Bore Sizes (mm)	*Weight kg	Inertia kgfm² (x10⁻²)
CGX10 L	1.7 - 6.5	1400	Yellow x 3	7	15	8, 9, 10, 11, 12	0.75	0.177
CGX10 M	5.5 - 15		Red x 3					
CGX10 H	11 - 30		Red x 6					
CGX20 L	6.5 - 24	1100	Yellow x 6	8.5	25	11, 12,14, 15, 16, 18, 19, 20	1.67	0.535
CGX20 M	13 - 35		Red x 3					
CGX20 H	26 - 68		Red x 6					
CGX35 L	23 - 68	800	Red x 5	12	35	19, 20, 22, 24, 25, 28, 30	2.51	1.33
CGX35 M	44 - 100		Green x 5					
CGX35 H	89 - 200		Green x 10					
CGX50 L	46 - 120	600	Red x 5	18	55	24, 25, 28, 30, 32, 35, 38, 40, 42	7.03	7.32
CGX50 M	92 - 200		Green x 5					
CGX50 H	180 - 400		Green x 10					
CGX70 L	130 - 370	480	Red x 8	23	70	28, 30, 32, 35, 38, 40, 42, 45 48, 50, 55, 60	11.4	19.5
CGX70 M	270 - 520		Green x 8					
CGX70 H	400 - 785		Green x 12					

Dimensions in mm. *Weight and inertia values for clutches with max. bore.
† Clamping elements protrude from end of clutch 17.5mm (CG X 10 & 20), 25.0mm (CGX 35 & 50), 31mm(CGX 70)

Models	A	B	C	D	F	G h7	H PCD	I	J PCD	M	N	O	P Screws No.	P Screws Size	R	S	P Screws No.	P Screws Size
CGX10	53	22	1.4	7.5	+0.3	62	54	42	34	56	56	61.8	4	M4x6	5	10	4	M4x7
CGX20	64	35	1.6	10	+0.7	86	74	60	50	70	73	86	6	M5x8	5	10	6	M4x7
CGX35	68	37.5	2.0	11	-0.5	107	88	70	60	88	91	107	6	M6x7	6	10	6	M5x8
CGX50	92	54.8	2.6	15	+0.3	148	130	105	-	123	129	148	6	M8x13	9	17	-	-
CGX70	98	61	3.5	15	+1.0	185	164	135	-	148	153	185	6	M10x13	10	18	-	-

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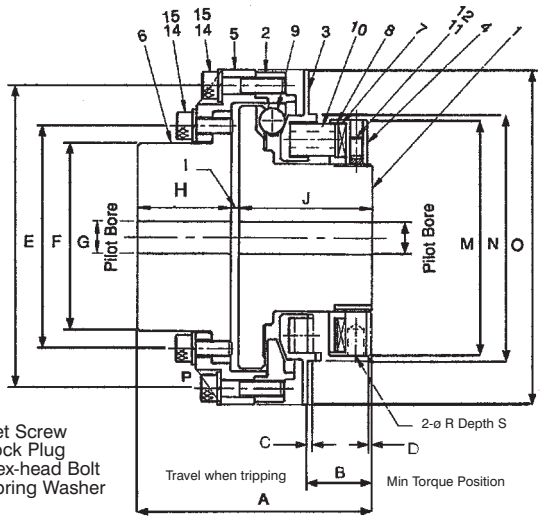
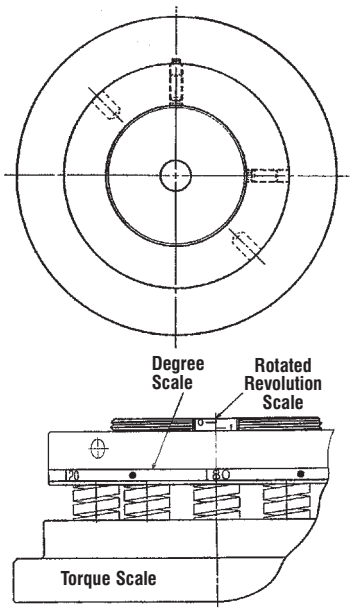
Type CGX-C Crossgard Couplings

Provides complete overload protection of drives with accurate positioning and zero backlash. For shaft to shaft connection.

These couplings can be supplied with pilot bore, finish bore and keyseat and setscrews, or fitted with clamping elements to clamp directly to keyless shafts. The use of clamping elements eliminates all backlash in the drive line within the operating torque range, but does require an increase to the overall length of coupling in order to accommodate. Coupling and clamping element assembly are supplied to suit specific metric shaft sizes as indicated in the table. Clutch and Coupling half can have different bush sizes.





1 Hub
2 Centre Flange
3 Plate
4 Adjusting Nut
5 Flange
6 Boss
7 Bearing
8 Side Plate
9 Steel Ball
10 Coil Spring
11 Set Screw
12 Lock Plug
14 Hex-head Bolt
15 Spring Washer

For Selection of Crossgard CGX-C Clutches refer to page 14, always use with proximity sensor switch, refer to page 29

Model	Setting Torque Range Nm	Max Running Speed RPM	Colour of Spring x Number	Clutch Half		Coupling Half		Shaft Clamping Element † Std. Bore Sizes (mm) () Sizes fit Cplg half only	*Weight kg	Inertia kg m² (x10⁻²)	Maximum Angular Error Deg.	Maximum Parallel Error Deg.	Maximum Axial Movement mm
				Pilot Bore mm	Max Bore mm	Pilot Bore mm	Max Bore mm						
CGX10 LC	1.5 - 5.4	700	Yellow x 3	7	15	7	19	8, 9, 10, 11, 12	1.07	0.222	0.6	0.1	±0.5
CGX10 MC	4.6 - 12.7		Red x 3										
CGX10 HC	9.3 - 25.5		Red x 6										
CGX20 LC	5.2 - 18.6	550	Yellow x 6	8.5	25	8.5	35	11, 12, 14, 15, 16, 18, 19, 20 (22, 24, 25, 28, 30)	2.38	0.924	0.6	0.1	±0.5
CGX20 MC	9.8 - 27.5		Red x 3										
CGX20 HC	20.6 - 55		Red x 6										
CGX35 LC	19 - 57	400	Red x 5	12	35	12	50	15, 16, 18, 19, 20, 22, 24, 25, 28, 30 (32, 35, 38, 40, 42)	3.92	2.65	0.6	0.1	±0.5
CGX35 MC	36 - 84		Green x 5										
CGX35 HC	74 - 166		Green x 10										
CGX50 LC	40 - 98	350	Red x 5	18	55	18	60	24, 25, 28, 30, 32, 35, 38, 40, 42 (45, 48, 50)	10.9	13.34	0.6	0.1	±0.5
CGX50MC	80 - 176		Green x 5										
CGX50HC	160 - 343		Green x 10										
CGX70 LC	120 - 325	240	Red x 8	23	70	23	80	28, 30, 32, 35, 38, 40, 42, 45, 48, 50, 55, 60 (65)	16.3	35.7	0.6	0.1	±0.5°
CGX70 MC	235 - 460		Green x 8										
CGX70 HC	353 - 696		Green x 12										

*Weight and inertia values for couplings with max. bore.
† Clamping elements protrude from end of clutch/coupling 17.5mm to 34.0mm dependant on size.

Models	A	B	C	D Min. Pointed Position	E PCD	F PCD	G	H	I	J	M	N	O	P Screws x Length	Q Screw x Length	R	S
CGX10-C	69	24	1.3	+0.3	62	42	33	25	2	42	56	–	74	M4x18	M4x10	5	10
CGX20-C	84	24	1.6	+0.3	89	66	55	35	3	46	70	–	98	M5x20	M5x12	5	10
CGX35-C	88	24	1.9	- 0.5	113	83	70	35	3	50	88	–	125	M6x25	M6x15	6	10
CGX50-C	114	34	2.4	+0.9	158	112	92	45	4	65	123	128	174	M8x32	M8x20	9	17
CGX70-C	124	36	3.3	+0.6	200	145	116	50	4	70	148	152	218	M10x22	M10x38	10	18

Dimensions in mm.

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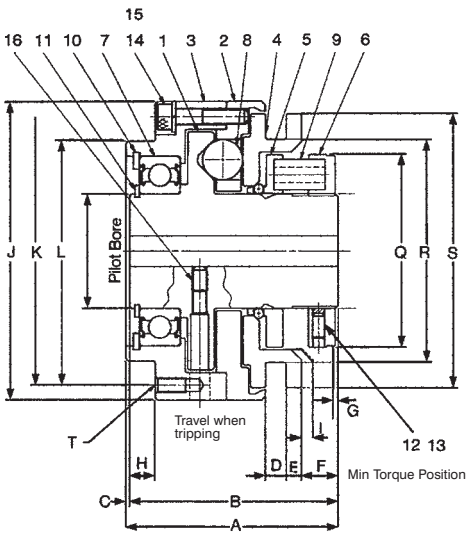
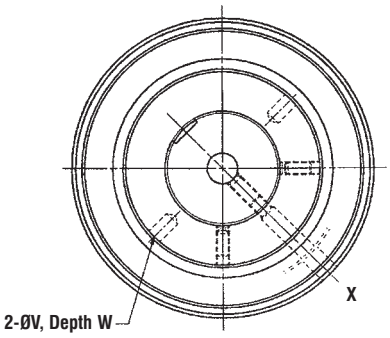
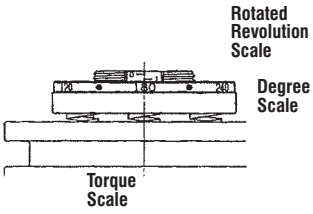
Type CGZ Crossgard Clutch

Provides total disengagement in event of overload.
Suitable for mounting gears, cams sprockets and timing belt pulleys







1 Hub
2 Centre Flange
3 Driven Flange Plate
4 Plate
5 Ball Cage
6 Adjustable Nut
7 Bearing (Z Type)
8 Steel Ball
9 Coil Spring
10 Snap Ring
11 Snap Ring
12 Set Screw
13 Lock Plug
14 Hex-Head Bolt
15 Spring Washer
16 Set Screw

For Selection of Crossgard CGZ Clutches refer to page 14.

Model	Setting Torque Range Nm	Max Running Speed RPM	Colour of Spring x Number	Pilot Bore mm	Max Bore mm	*Weight kg	Inertia kgfm² (x10⁻²)
CGZ20 L	2.4 - 8.3	1800	Yellow x 3	8	20	2.57	1.09
CGZ20 M	4.1 - 15.7		Blue x 3				
CGZ20 H	8.2 - 31.4		Blue x 6				
CGZ30 L	6 - 20	1800	Yellow x 4	12	30	4.17	2.78
CGZ30 M	20 - 52		Red x 4				
CGZ30 H	39 - 108		Red x 8				
CGZ40 L	26 - 93	1800	Blue x 5	17	40	8.71	9.60
CGZ40 M	44 - 127		Red x 5				
CGZ40 H	88 - 245		Red x 10				
CGZ50 L	63 - 157	1800	Red x 5	22	50	13.7	21.2
CGZ50 M	128 - 304		Red x 10				
CGZ50 H	245 - 450		Green x 10				

*Weight and inertia values for clutches with max. bore.

Dimensions in mm.

Model	A	B	C	D	E	F	G	H	I Travel when tripping	J	K PCD	L h7	N	Q	R	S	T Screw No.	T Screw Size x length	V	W	SIZE
CGZ20	74	73	1	8	6	13.5	0.8	11	4.1	96	86	72	24.5	58	70	88	4	M5x10	5	10	M5x10
CGZ30	83.5	82	1.5	8	6	14.5	1.1	11.5	4.7	118	106	87	27.5	76	88	108	4	M6x12	6	10	M6x10
CGZ40	101	100	1	9	8	20	1.1	14	5.9	152	139	114	32.5	104	119	141	6	M6x12	8	14	M8x10
CGZ50	114.5	112	2.5	10	9	20.2	1.2	16	7	178	162	133	37	114	138	166	6	M8x16	9	14	M8x10

Type CGZ clutches totally disengage on overload, and will not re-engage drive without external axial force being applied to the pressure plate when the clutch is correctly aligned. The clutch must be stationary when re-engaged, otherwise the clutch may be damaged.
The CGZ clutch can be used as a mechanical engage/disengage clutch, but whilst the clutch can be dis-engaged at full speed by applying an axial force to the pressure plate, it can only be engaged whilst stationary. These clutches are designed for use on horizontal shafts, but may be applied to vertical shaft applications providing the driven flange plate is uppermost.

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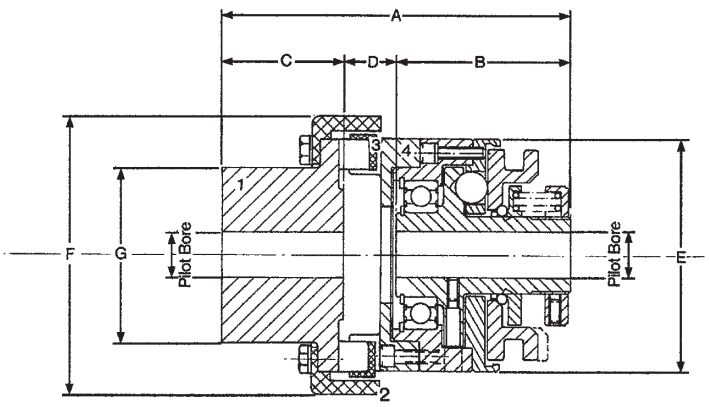
Type CGZ Crossgard Flexible Couplings

For shaft to shaft connection the CGZ Couplings provides total disengagement in the event of overload. Suitable for mounting on high speed shafts. The coupling consists of two close grain cast iron jaws with hard rubber drive elements interposed. A low inertia coupling which combines quiet operation with torsional elasticity to absorb shock loads and damp vibrations.



1 Coupling Hub
2 Cover
3 Rubber Element
4 Connecting Flange

For Selection of Crossgard CGZ Clutch Couplings refer to page 14.

Model	Setting Torque Range Nm	Max Running Speed x RPM	Colours of Spring x Number	Coupling Model	Max Allowable Misalignment			Weight kg	Inertia kgfm² (x10⁻²)
					Parallel mm	Angular	Axial mm		
CGZ20 L-ES	2.4 - 8.3	1800	Yellow x 3	10SF	0.6	0.7°	±1.0	4.87	1.29
CGZ20 M-ES	4.1 - 15.7		Blue x 3						
CGZ20 H-ES	8.2 - 31.4		Blue x 6						
CGZ30 L-ES	6 - 20	1800	Yellow x 4	25SF	0.7	0.7°	±1.0	8.5	3.5
CGZ30 M-ES	20 - 52		Red x 4						
CGZ30 H-ES	39 - 108		Red x 8						
CGZ40 L-ES	26 - 93	1800	Blue x 5	63SF	0.8	0.6°	±1.2	17.5	11.5
CGZ40 M-ES	44 - 127		Red x 5						
CGZ40 H-ES	88 - 245		Red x 10						
CGZ50 L-ES	63 - 157	1800	Red x 5	100SF	0.9	0.6°	±1.2	25.7	26.6
CGZ50 M-ES	128 - 304		Red x 10						
CGZ50 H-ES	245 - 450		Green x 10						

*Weight and inertia values for couplings with max. bore.

Dimensions in mm

Model	Crossgard		*Coupling	A	B	C	D	E	F	G
	Pilot Bore	Max Bore	Max Bore							
CGZ20-ES	8	20	45	142	73	48	21	96	114	72
CGZ30-ES	12	30	55	167	82	57	28	118	143	88
CGZ40-ES	17	40	70	202	100	67	35	152	181	110
CGZ50-ES	22	50	75	229	112	75	42	178	202	120

For detail dimensions of CGZ Clutch refer to page 20.
*Couplings halves are stocked unbored and centred.

Stock Couplings can be reworked to customers' bore and keyway requirements on short delivery lead time.

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