



ISO 9001-2008



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ISO-9001:2000인증



제품신뢰성 인증



독일(TUV)

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프랑스(BV)

ISO 9001



EAGLE INDUSTRY
NIIGATA Co.,LTD.
NIIGATA PLANT

REVOL
Couplings®

Full line of couplings



Taper Bush



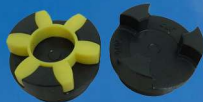
RCH/Revol Chain Coupling



RBF/Revol Bush Flex



RGC/Revol Gear Coupling
(SSM&SSMH Type)



RJF/Revol Jaw Flex



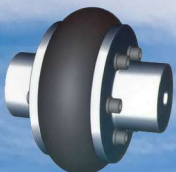
RGC/Revol Gear Coupling
(CCM&CCMH Type)



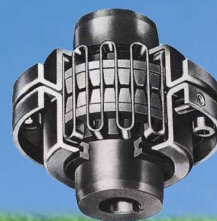
RRF/Revol Rubber Flex



RSG/Revol Steel Grid
Coupling (Horizontal Type)



RTF/Revol Tire Flex



RDC/Revol Steel Grid
Coupling (Vertical Type)



RCP/Revol Crown Pin
Coupling



RDC/Revol Disc Coupling



RFC/Revol Fluid
Coupling



EKK/Eagle
Diaphragm Coupling

Best of Best Coupling

*We Challenge for the best quality
will be continued forever !*



บริษัท ริวอลูชั่น พีทีซี จำกัด

REVOLUTION PTC CO.,LTD

ISO 9001:2008



มุ่งมั่นพัฒนาสินค้าและบริการ
ถูกต้อง ทันการณ์ ทำงานเป็นทีม

❖ Be Concentrated in Development of Products
and Services.

❖ Be Corrective , Right Timing , Willing
Teamwork.





Full Line of Couplings

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Service Factor

Alphabetical listing of applications

AERATOR	2.5	Bending Roll, Notching prss.		Cable Reel	2.25	Chiller	2.75
AGITATORS		Punch Press, Planer, Pite		Conveyors	1.5	Oilwell Pumping	
Vertical and Horizontal		Reversing	2.5	Cutter Head, Jig Drive	3.0	(Not over 15% peak torque)	3.0
screw, propeller, Paddle	1.5	Main Drive	2.0	Maneuvering Winch	2.5	Raraffin filter Press	2.0
BARGE HAUL PULLER		MAN LITS (Not Approved)		Pumps (uniform load)	2.0	Rotary Kiln	3.0
BLOWERS		METAL FORMING		Screen Drive Stacker	2.5	PAPER MILLS	
Centrifugal	1.5	MACHINES		Utility Winch	2.5	Barker Auxiliary, Hydraulic	3.0
Lobe or Vane	1.75	Dra Bench Carriage and Main Drive	3.0	FOOD INDUSTRY		Barker, Mechanical	3.0
CAR DUMPERS	4.0	Extruder	3.0	BEET SLICER	2.5	Barking Drum	
CAR PULLERS	2.5	Forming Machine and Forming		Bottling, Can Filling Machine		L.S. Shaft of reducer with	
CLARIFIER OR CLASSIFIER		Mills	3.0	Cereal Cooker	1.75	Final drive-Helical	
.....	1.5	Slitters	1.5	Dough Mixer, Meat Grinder	2.5	or Herringbone Gear	3.0
COMPRESSORS		Wire Drawing or Flattening	2.5	LUMBER		Machined Spur Gear	3.5
Centrifugal	1.1	Wire Winder	2.25	Beet Slicer	2.5	Cast Tooth Spur Gear	4.0
Rotary, Lobe or Vane	2.0	Coilers and Uncoilers	2.25	Bottling, Can Filling Machine		Bleater & Pulper	2.5
Rotary, Screw	2.0	MIXERS (see Agitators)		Cereal Cooker	1.75	Bleachers, Coaters	1.75
Reciprocation		Concrete	2.5	Dough Mixer, Meat Grinder	2.5	Calender & Super Calender	2.5
Direct Connected★		Muller	2.5	LUMBER		Chipper	4.0
With out Flywheels★		PRESS, PRINTING	2.25	Band Resaw	2.0	Converting Machine	1.75
#With flywheel and Gear		PUG MILL	2.5	Circular Resaw, Cut-off	2.5	Couch	2.25
between Compressor		PULVERIZERS		Edger, Head Rig, Hog	3.0	Cutter, Felt Whipper	3.0
and Prime Mover		Hammermill and Hog	2.5	Gang Saw		Cylinder, Dryer	2.25
1 cylinder, single acting	5.0	Roller	2.0	(Reciprocating)	3.0	Felt Strecher	2.0
1 cylinder, double acting	5.0	PUMPS		Log Haul	3.0	Fourdrinier	2.25
2 cylinders, single acting	5.0	Centrifugal		Planer	2.5	Jordon	3.0
2 cylinders, double acting	5.0	Constant Speed 1.1		Rolls, Non-Reversing	2.0	Log Haul	3.0
3 cylinder, single acting	5.0	Frequent Speed Changes		Rolls, Reversing	3.0	Line Shaft	2.0
3 cylinder, double acting	3.0	under Load	2.0	Sawdust Conveyor	1.75	Press	2.25
4 or more cyl., single act	3.5	Descaking, with accumulators	2.0	Slab Conveyor	2.5	Pulp Grinder	2.25
4 or more cyl., double act	3.5	Gear, Rotary, or Vane	1.75	Sorting Table	2.0	Reel, Rewinder, Winder	2.0
CONVEYOR		Reciprocating		Trimmer	2.25	Stock Chest, Washer	
Apron, Assembly, Belt, Chain		1 cyl., single or double act.	3.0	★METAL ROLLING MILLS		Thickener	2.0
Flight, Screw	1.5	2 cyl., single acting	3.0	Coilers (Up or Down) Cold		Stock Pumps, Centrifugal	
Bucket	2.0	2 cyl., double acting	2.5	Mills only	2.25	Constant Speed	1.5
Live Roll, Shake and		3 or more cylinders	2.0	Coilers (Up or Down) Hot	2.5	Frequent Speed Changes	
Reciprocation	3.5	SCREENS		Coke Plants		Under Load	1.75
▲★CRANES AND HOIST		Air Washing	1.5	Pusher Ram Drive	3.5	Suction Roll	2.5
Main Hoist	5.0	Grizzly	3.0	Door Opener	3.0	RUBBER INDUSTRY	
Skip Hoist	2.5	Rotary Coal or Sand	2.0	Pusher or Larry Car		CALENDER	3.0
Slope	2.25	Vibrating	3.5	Traction Drive	4.0	Cracker Plasticator	3.5
Bridge, Travel or Trolley	5.0	Water	1.5	Cold Mills-		Extuder	2.25
DYNAMOMETER	1.5	SKI TOW & LIFTS (Not Approved)		Strip Mills		Intensive or Banbury Mixer	3.5
ELEVATORS		STEERING GEAR	1.5	Temper Mills★		Mixing Mill, Refiner or sheeter	
Bucket, Centrifugal		STOKER	1.5	Cooling Beds	2.0	One or two in line	3.5
Discharge	2.0	TUMBLING BARREL	1.5	Drawbench	3.0	Three or four in line	3.0
Freight or Passenger		WINCH, MANEUVERING		Feed Rolls-Blooming Mills		Five or more in line	2.25
(Not Approved)		Dredge, Marine	2.5	Furnace Pushers	4.0	Tire Building Machine	3.5
Gravity discharge	2.0	WINDLASS	2.0	Hot and Cold Saws	3.0	Trie & Tube Press Opener	
ESCALATORS (Not Approved)		WOODWORKING	2.0	Hot Mills-		(peak Torque)	1.5
EXCITER GENERATOR	1.75	MACHINERY	1.5	Strp or Sheet Mills		Tuber Strainer, Pelletizer	2.25
EXTRUDER, PLASTIC	2.25	WORK LIFT PLATFORMS		Reversing Blooming or Slabbing Mills		Warming Mill	
FANS		(Not approved)		Edger Drives		One or two Mills in line	3.0
Centrifugal	1.1	Alphabetical listing of industries		Inger Cars		Three or more Mills in line	2.25
Cooling Tower	3.0	AGGREGATE PROCEEDING, CEMENT,		Manipulators	4.0	Washer	3.5
Forced Draft-Across the		MINING KILNS; TUBE, ROD AND BALL		Merchant Mills		SEWAGE DISPOSAL	
Line start	2.0	MILLS		Mill Tables		EQUIPMENT	
Forced Draft Motor		Direct or on L.S. shaft of Reducer, with		Roughing Breakdown		Bar Screen, Chemical Feeders	
Driven thru fluid or		final drive Machined Spur Gears	3.0	Mills	4.0	Collectors, Dewatering	
electric slip clutch	1.5	Single Helical or		Hot Bed or Transfer		Screen, Grit Collector	1.5
Gas Recirculating	2.5	Herringbone Gears	2.25	non-reversing	2.25	SUGAR INDUSTRY	
Induced Draft with damper		Conveyors, Feeders, Screens,		Runout, reversing	4.0	Cane Carrier & Leveler	2.5
control or blade cleaner	2.0	Elevators, See General Listing		Reel Drives	2.25	Cane Knife & Crusher	3.0
Induced Draft without		Crushers, Ore or Stone	3.5	Rod Mills		Mill Stands, Turbine Driven	
controls	3.0	Dryer, Rotary	2.0	Screwdown	3.0	with all helical or	
FEEDERS	3.0	Grizzly	3.0	Seamless Tube Mills		herringbone gear	2.0
Apron, Belt, Disc, Screw	2.0	Hammermill or Hog	2.5	Piercer	4.0	Electric Drive or Steam Engine	
Reciprocation	3.5	Tumbling Mill or Barrel	2.5	Thrust Block	3.0	Drive with Helical,	
GENERATORS		BREWING AND DISTILLING		Tube Conveyor Rolls	3.0	Herringbone, or Spur Gears	
Even Load	1.1	Bottle and Can		Reeler	3.0	with any Prime Mover	2.25
Hoist or Railway Service	2.0	Filling Machines	1.5	Kick Out	3.0	TEXTILE INDUSTRY	
Welder Load	3.0	Brew Kettle	1.5	Sideguards	4.0	BATCHER	1.75
HAMMERMILL	2.5	Cookers, Continuous Dty	1.75	Skelp Mills		Calender, Caed Machine	2.0
LAUNDRY WASHER OR		Lauter Tub	2.25	Slitters, Steel Mill only	2.25	Cloth Finishing Machine	2.25
TUMBLER	3.0	Mash Tub	1.75	Soaking Pit Cover Drives		Dry Can Loom	2.0
LINE SHAFTS		Scale Hopper, Frequent Peaks	2.25	Lift	1.75	Dyeing Machinery	1.75
Any processing Machinery	2.0	CLAY WORKING INDUSTRY		Travel	2.5	Knitting Machine	2.2
MACHINE TOOLS		Brick Press, Brequette Machine,		Straighteners	2.5	Mangle, Napper Soaper	1.75
Auxiliary and Traverse Drive	1.5	Clay Working Machine, Plug Mill	2.25	Unscramblers (Billet Bundle Busters)	3.0	Spinner, Tenter Frame,	
		DREDGES		Wire Drawing Machinery	2.25	Winder	2.0
				OIL INDUSTRY		Reducer	2.0



Features & Benefits:

- No re boring or milling a keyway.
- Easy assembly & disassembly.
- Taper bored components can be mounted on different shafts by changing different bore bushes
- Interchangeable to others brand.

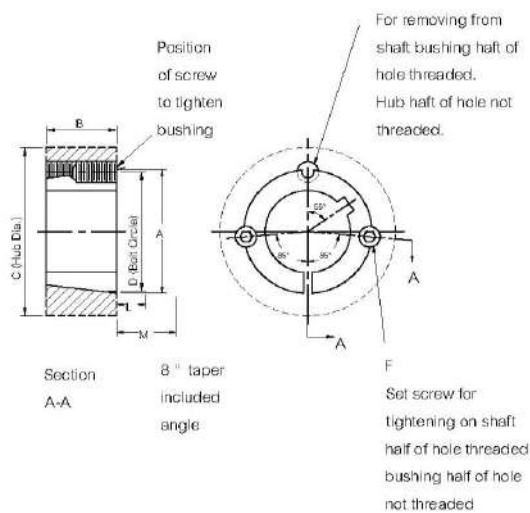
- ไม่ต้องเสียค่าใช้จ่ายในการคว้านรูหรือเจาะร่องลิ้ม
- ถอดง่ายประกอบง่าย
- บุชแต่ละเบอร์ สามารถเลือกได้หลายขนาดรู(bore) เพื่อเลือกใช้ได้กับเพลาดังขนาดได้
- ใช้แทนกันได้กับยี่ห้ออื่นได้

Applications

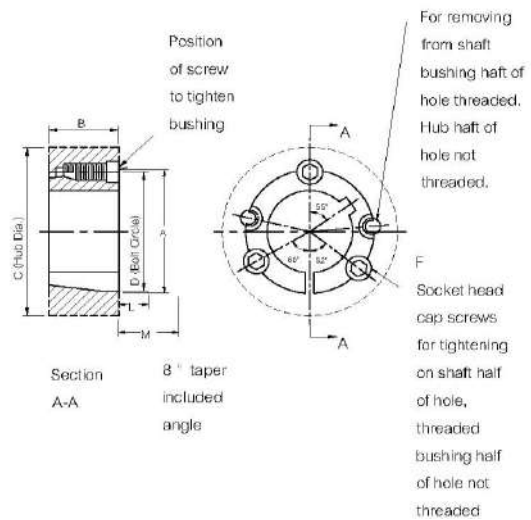
It can apply to use with many type of transmission equipment such as Pulley, Coupling, Sprocket and etc...

Specifications

Taper Bush No.1008 ~ 3030



Taper Bush No.3535 ~ 5050



Bush NO.	A mm	B Length mm	C GG20 mm	D Bolt Circle mm	F Cap Screw	L*	M**	Bore		Wrench Torque Nm	Torque Capacity Nm	Weight Approx Kg
								Min	Max			
1008	35.32	22	60	33.73	1/4 x 1/2	29	32	9	25	10	140	0.12
1108	38.38	22	64	36.91	1/4 x 1/2	29	32	9	28	10	150	0.15
1210	47.63	25	92	44.45	3/8 x 5/8	35	41	11	32	20	410	0.28
1215	47.63	38	99	44.45	3/8 x 5/8	35	41	11	32	20	410	0.36
1610	57.15	25	102	53.98	3/8 x 5/8	35	41	14	42	20	500	0.41
1615	57.15	38	109	53.98	3/8 x 5/8	35	41	14	42	20	500	0.54
2012	69.85	32	121	66.68	7/16 x 7/8	40	51	14	50	30	820	0.77
2517	85.73	44	140	82.55	1/2 x 1	41	57	16	60	50	1,340	1.59
2525	85.73	64	141	82.55	1/2 x 1	41	57	16	60	50	1,300	2.22
3020	107.95	51	178	101.60	5/8 x 1 1/4	46	68	25	75	90	2,770	2.95
3030	107.95	76	159	101.60	5/8 x 1 1/4	46	68	25	75	90	2,770	4.17
3525	127.00	64	197	122.68	1/2 x 1 1/2	51	86	35	100	120	5,160	5.44
3535	127.00	89	197	122.68	1/2 x 1 1/2	51	86	35	100	120	5,160	6.35
4030	146.05	76	241	140.72	5/8 x 1 3/4	60	105	40	115	200	8,910	8.17
4040	146.05	102	241	140.72	5/8 x 1 3/4	60	105	40	115	200	8,910	9.98
4535	161.93	89	267	155.70	3/4 x 2	67	121	55	125	280	12,680	11.34
4545	161.93	114	267	155.70	3/4 x 2	67	121	55	125	280	12,680	13.61
5040	177.80	102	292	170.69	7/8 x 2 1/2	71	133	70	125	360	14,520	15.43
5050	177.80	127	292	170.69	7/8 x 2 1/2	71	133	70	125	360	14,520	17.24

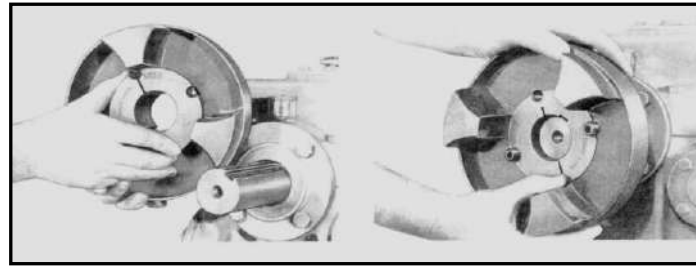
Bore	Key Way		Shallow Keyway Depth	TAPER BUSH NO.								
Dia. (mm.)	Width	Depth		1008	1108	1210	1215	1610	1615	2012	2517	2525
9	3	1.4		O	O							
10	3	1.4		O	O							
11	4	1.8		O	O	O	O					
12	4	1.8		O	O	O	O					
14	5	2.3		O	O	O	O	O	O	O		
16	5	2.3		O	O	O	O	O	O	O	O	O
18	6	2.8		O	O	O	O	O	O	O	O	O
19	6	2.8		O	O	O	O	O	O	O	O	O
20	6	2.8		O	O	O	O	O	O	O	O	O
22	6	2.8		O	O	O	O	O	O	O	O	O
24	8	3.3	1.3	SL	O	O	O	O	O	O	O	O
25	8	3.3	1.3	SL	O	O	O	O	O	O	O	O
28	8	3.3	1.3		SL	O	O	O	O	O	O	O
30	8	3.3				O	O	O	O	O	O	O
32	10	3.3				O	O	O	O	O	O	O
35	10	3.3						O	O	O	O	O
38	10	3.3						SM	SM	O	O	O
40	12	3.3						SM	SM	O	O	O
42	12	3.3						SM	SM	O	O	O
45	14	3.8								O	O	O
48	14	3.8								SM	O	O
50	14	3.8								SM	O	O
55	16	4.3									O	O
60	18	4.4									O	O

Bore	Key Way		Shallow Keyway Depth	TAPER BUSH NO.								
Dia. (mm.)	Width	Depth		3020	3030	3525	3535	4030	4040	4535	4545	5050
25	8	3.3		O	O							
28	8	3.3		O	O							
30	8	3.3		O	O							
32	10	3.3		O	O							
35	10	3.3		O	O	O	O					
38	10	3.3		O	O	O	O					
40	12	3.3		O	O	O	O	O	O			
42	12	3.3		O	O	O	O	O	O			
45	14	3.8		O	O	O	O	O	O			
48	14	3.8		O	O	O	O	O	O			
50	14	3.8		O	O	O	O	O	O			
55	16	4.3		O	O	O	O	O	O	O	O	
60	18	4.4		O	O	O	O	O	O	O	O	
65	18	4.4		O	O	O	O	O	O	O	O	
70	20	4.9		O	O	O	O	O	O	O	O	O
75	20	4.9		O	O	O	O	O	O	O	O	O
80	22	5.4				O	O	O	O	O	O	O
85	22	5.4				O	O	O	O	O	O	O
90	25	5.4				O	O	O	O	O	O	O
95	25	5.4				SM	SM	O	O	O	O	O
100	28	6.4				SMSL	SMSL	O	O	O	O	O
105	28	6.4						SM	SM	O	O	O
110	28	6.4						SM	SM	SM	SM	O
115	32	7.4						SMSL	SMSL	SM	SM	O
120	32	7.4								SM	SM	O
125	32	7.4								SM	SM	O

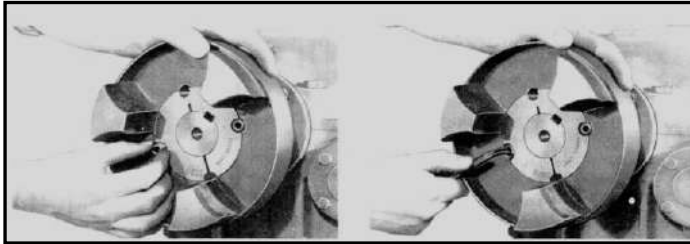
O : Standard bush with standard keyway
SL : Standard bush with shallow keyway

SM : Special material bush with standard keyway
SMSL : Special material bush with shallow keyway

1. Insert bush to hub



3. Tighten screws finger tight.



2. Insert screws and Locate bush to shaft

4. Tighten screws alternately

To Install

1. Clean shaft, bore and outside of bush, and bore of hub. Remove any oil, lacquer or dirt. Place bush in hub and match half holes to make complete holes.
2. Sparingly oil thread and point of set screw, or thread and under head of cap screws. Place screws loosely in holes for mounting show in diagram.
3. Make sure bush is free in hub. Slip assembly onto shaft and locate in position desired.
4. Using a hexagon wrench tighten screws gradually and alternatively to torque shown in table 1.
5. Hammer against large end of bush using hammer and block or sleeve to avoid damage. Screw can now be turned a little more using the specified wrench torque. Repeat this alternate hammering and screw re-tightening until the specified wrench torque turns the screws after hammering.
6. If a key is to be fitted place it in the shaft keyway before fitting the bush. It is essential that it is a parallel key and side fitting only and has top clearance.
7. After drive has been running for a short time, stop and check tightness of screws.
8. Fill empty holes with grease to exclude dirt.

วิธีติดตั้ง

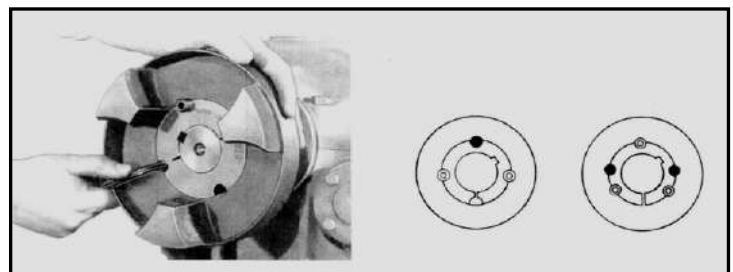
1. ทำความสะอาดเพลารูและด้านนอกของ bush และรูของคตมอย่าให้น้ำมัน , แลคเกอร์ หรือสิ่งสกปรกติดอยู่ แล้วสวม bush เข้าไปในคตม และจัดให้ครึ่งรูของสกรู ประกบเข้าตรงกัน
2. ทาน้ำมันบางๆ ที่เกลียวและปลายของ set screw หรือเกลียว และใต้หัวของ cap screw สอดสกรูเข้าไปในรูสำหรับการติดตั้ง ซึ่งแสดงดังภาพประกอบ
3. ให้แน่ใจว่า bush อยู่ในคตมแบบหลวมๆ สวมอุปกรณ์ทั้งชุดเข้ากับเพลานในตำแหน่งที่ต้องการ
4. ใช้ไขควงหกเหลี่ยมไขสกรูทีละนิด และสลับไปสลับมาระหว่างสองสกรู จนได้แรงบิดตามตารางที่ 1
5. ใช้ค้อนเคาะด้านที่ใหญ่กว่าของ bush โดยมีแท่งวัสดุอ่อนกว่าหรือ sleeve รอง เพื่อป้องกันความเสียหาย สกรูจะขันได้ อีกล็กน้อยโดยใช้แรงบิดที่ระบุ เคาะและขันอีกจนไม่สามารถขันสกรูได้ด้วยแรงบิดนั้น
6. หากต้องใช้ลิ้ม จะต้องใส่ลิ้มก่อนที่จะติดตั้ง bush และจะต้องใช้ลิ้มแบบขนาน, ติดด้านข้าง, และส่วนหัวเกลียวเท่านั้น
7. หลังจากเดินเครื่องชุดขับไปสักระยะ หยุด และตรวจสอบสกรูว่าแน่นหรือไม่
8. อุดรูที่ว่างเปล่าด้วยจาระบีเพื่อไม่ให้สิ่งสกปรกอุดตัน

To Remove

1. Slacken all screws by several turns. Remove one (Type A bush) or two (type B bush) screws, Oil thread and point of set screws, or thread and under head of cap screws.
2. Insert screws in holes for dismounting. In size where washers are found under screw heads, be sure to use these washers. Tighten screws alternately until bush is loosened and assembly is free on shaft. that one screw in each hub is left over and is not used in this loosen operation.
3. Remove assembly



วิธีถอด



1. ขันสกรูให้พอสบายๆ ขันสกรูออกหนึ่ง (บุช Type A) หรือสอง (บุช Type B) ตัว ทาน้ำมันที่เกลียวและปลายของ set screw หรือเกลียวและใต้หัวของ cap screw
2. ใส่สกรูในรูสำหรับการถอด ถ้า bush ที่ใช้มี washers ใต้หัวสกรูให้ใช้ washers นั้นด้วย ขันสกรูสลับตำแหน่งไปมาจน bush และชุดอุปกรณ์หลวม โปรดสังเกตว่าจะมีสกรูค้างอยู่หนึ่งตัว และไม่ได้ใช้สำหรับการทำให้ bush หลวม
3. ถอดชุดอุปกรณ์ออก

Features & Benefit

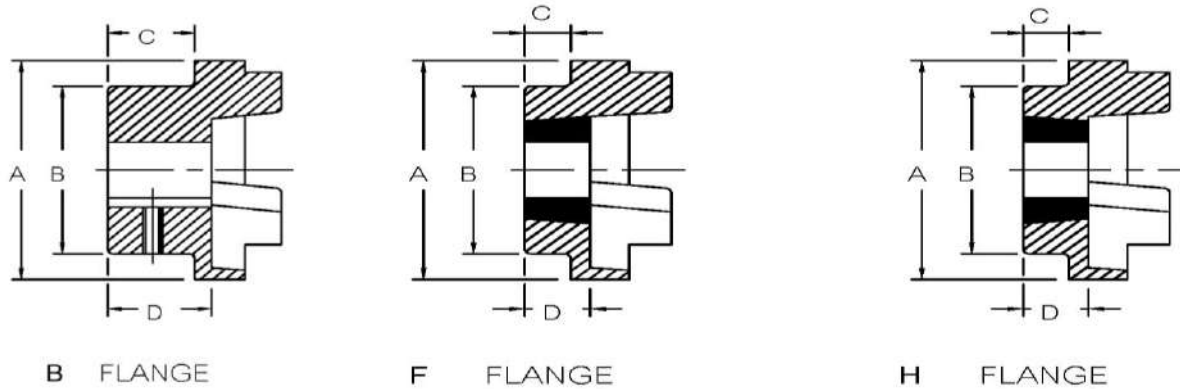
- Power capacity are designed to balance with the shaft diameters.
- Incidental parallel , angular and axial misalignment.
- Simple & Easy Installation due to with Taper Bush ,only a hexagon wrench is required during installation.
- Economic cost compare to other type of coupling.
- The flexible element made from **CR -Neoprene** which is good for;-
 - Fail-safe , reduce of shock damping due to good of shock absorbtion.
 - Oil and Chemical(Acid &Alkali) resistant better than Natural Rubber (NR)
 - Withstand for the ambient temperature from -30 to 80 °C



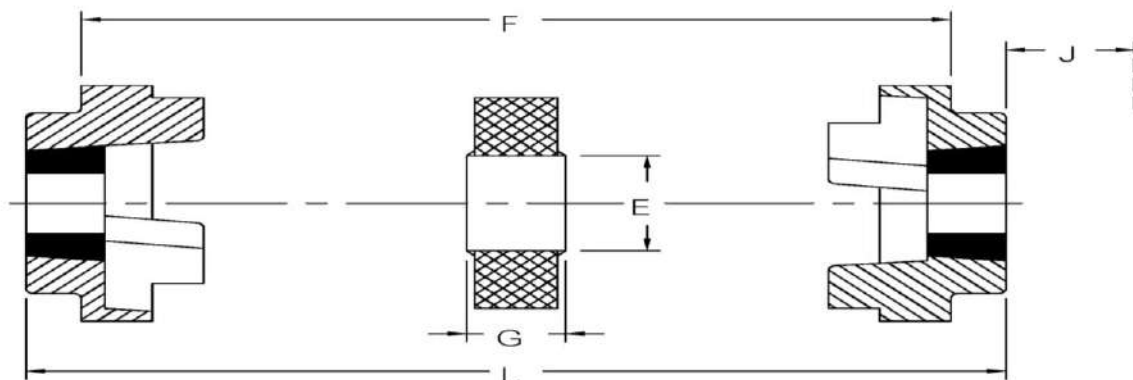
POWER RATING (kW)

Speed(rpm)	Coupling Size							
	70	90	110	130	150	180	230	280
100	0.35	0.89	1.78	3.46	6.60	10.47	21.99	34.55
200	0.69	1.78	3.56	6.91	13.19	20.94	43.98	69.11
400	1.38	3.56	7.12	13.82	26.39	41.88	87.96	138.22
600	2.07	5.34	10.68	20.73	39.58	62.83	131.94	207.33
720	2.49	6.41	12.82	24.88	47.50	75.39	158.32	248.80
800	2.76	7.12	14.24	27.64	52.77	83.77	175.92	276.44
960	3.32	8.54	17.09	33.17	63.33	100.52	211.10	331.73
1200	4.15	10.68	21.36	41.47	79.16	125.65	263.87	414.66
1440	4.98	12.82	25.63	49.76	94.99	150.79	316.65	497.59
1600	5.53	14.24	28.48	55.29	105.55	167.54	351.83	552.88
1800	6.22	16.02	32.04	62.20	118.74	188.48	395.81	621.99
2000	6.91	17.80	35.60	69.11	131.94	209.42	439.79	691.10
2200	7.6	19.58	39.16	76.02	145.13	230.37	483.77	760.21
2400	8.29	21.36	42.72	82.93	158.32	251.31	527.75	
2600	8.98	23.14	46.28	89.84	171.52	272.25	571.73	
2880	9.95	25.63	51.27	99.52	189.99	301.57		
3000	10.37	26.70	53.40	103.66	197.91	314.14		
3600	12.44	32.04	64.08	124.6	237.49			
Basic Torque (Nm)	33	85	170	330	630	1000	2100	3300
Maximum Torque (Nm)	73	185	370	730	1490	2300	4800	7000

Dimension For Hub "B" , "F" ,and "H" Flange.



Size	Common Dimensions					B - FLANGE					F - FLANGE AND H - FLANGE					
						Bore(mm)		Screw	C	D	Taper Bush	Max. Bore		C	D	J
	A	B	E	F	G	Max.	Min.					mm.	Inch.			
70	69	60	31	25	18	32	-	M6	20	23.5	1008	25	1	20.6	23.5	29
90	85	70	32	30.5	22.5	42	-	M6	26	30	1108	28	1 1/8	19.5	23.5	29
110	112	100	45	45	29	55	-	M10	37	45	1610	42	1 5/8	18.5	26.5	38
130	139	105	50	53	36	60	-	M10	47	55.5	1610	42	1 5/8	18	26.5	38
150	150	115	62	60	40	70	-	M10	50	60	2012	50	2	23.5	33.5	42
180	180	125	77	73	49	80	-	M10	58	70	2517	60	2 1/2	34.5	46.5	48
230	225	155	99	85.5	59.5	100	48	M12	77	90	3020	75	3	39.5	52.5	55
280	275	206	119	105.5	74.5	115	60	M16	90	106	3525	100	4	51	66.5	67



ASSEMBLED LENGTH

Size	L			Mass Kg	Inertia Mr ² Kgm ²	Dynamic Stiffness Nm/ °	Max. Misalignment		Normal Torque Nm
	BB	BF/BH	FF/HH/FH				Parallel	Axial	
70	65	65	65	1.00	0.00085	-	0.3	+0.2	33
90	82.5	76	69.5	1.17	0.00115	-	0.3	+0.5	85
110	119	100.5	82	5.00	0.00400	65	0.3	+0.6	170
130	147	118	89	5.46	0.00780	130	0.4	+0.8	330
150	160	133.5	107	7.11	0.01810	175	0.4	+0.9	630
180	189	165.5	142	16.60	0.04340	229	0.4	+1.1	1000
230	239.5	202	164.5	26.00	0.12068	587	0.5	+1.3	2100
280	285.5	246.5	207.5	50.00	0.44653	1025	0.5	+1.7	3300

Features & Benefit

- Power capacity are designed to balance with the shaft diameters.
- Incidental parallel , angular and axial misalignment.
- The flexible element made from **Urethane** which is good for;-
 - Higher Torque capacity, High abrasion resistant, longer life time.
 - Good resistance to compression
 - Oil and Chemical resistant (except Acetone)
 - With stand for the ambient temperature from -30 to 70 °C



1. Torsionally flexible and designed for positive torque transmission.
They are puncture - proof. Operational vibrations and shock are efficiently attenuated and reduced.
2. Owing to their linear design, the maximum twisting angle with RJF couplings of any size amounts to 5° . Fig.1 shows the capacity of the elastomeric, which is related to its attenuating effect.
3. Setting and repairing is easy.

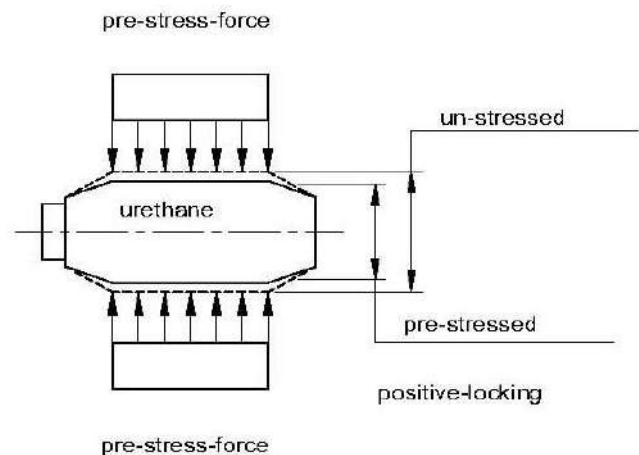
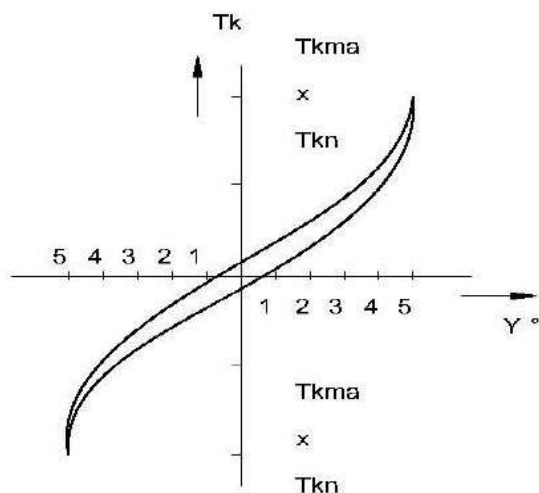
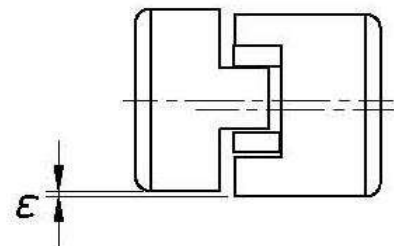
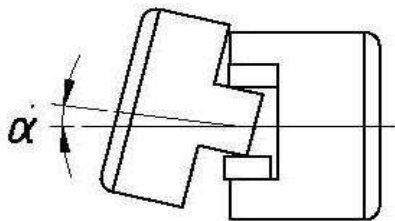
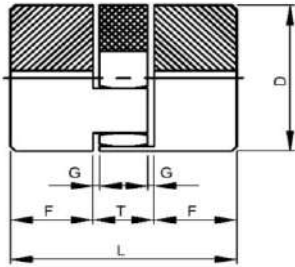


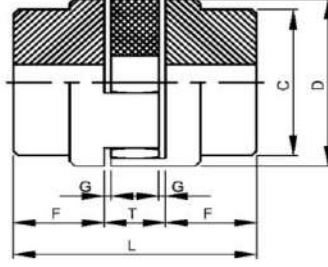
Fig. 1



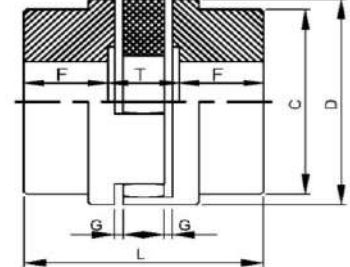
Size No.	050	070	0010	0020	2035-A	2035	3545	4560	6070	7080	8090	90100
Angular misalignment(α°)	0.15	0.2	0.4	0.8	1.0	1.4	1.8	2.2	2.6	3.0	3.4	3.8
Parallel misalignment(ϵ m m)	0.05	0.07	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55



Only CR050, CR070



Only CR0010 ~ CR2035



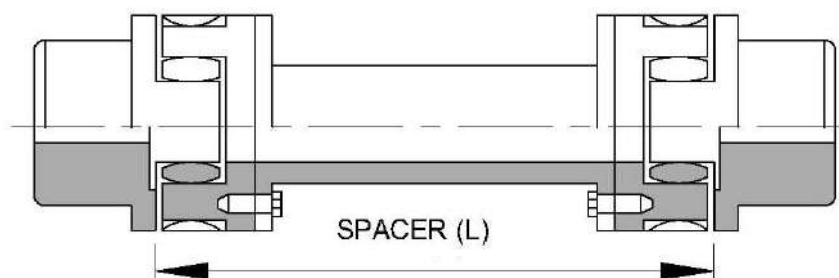
Only CR3545 ~ CR90100

Dimension & Technical Data

SIZE	BORE DIA (mm.)		BASIC TORQUE (Nm)	TORSION ANGLE	DIMENSIONS (mm.)						
	MIN.	MAX.			C	D	F	T	L	G	Kg.
CR-050	5	11	4	3.2	-	25	12	11	35	1	0.08
CR-070	7	14	10	3.2	-	35	18.5	13	50	1.5	0.3
CR-0010	11	19	25	3.2	42	48	24	17	65	1.5	0.5
CR-0020	14	24	34	3.2	50	58	27	18	72	1.5	0.9
CR-2035-A	19	28	118	3.2	58	68	35	20	90	1.5	1.3
CR-2035	19	38	314	3.2	68	78	35	22	92	1.5	2.5
CR-3545	28	45	638	3.2	88	98	38.5	29	106	4	4.4
CR-4560	38	60	883	3.2	98	118	45	30	120	3	7.8
CR-6070	42	75	1227	3.2	115	135	46	33	125	3.5	10
CR-7080	65	100	2875	3.2	130	160	66	45	177	5	19.5
CR-8090	65	110	5102	3.2	150	200	105	45	255	5	36
CR-90100	65	110	7750	3.2	180	230	110	50	270	6	39

Spacer Type

The Spacer Type designed for long distance between shaft end.
When require, please consult us for more detail.



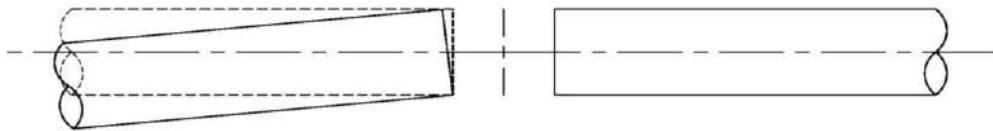


Features & Benefit

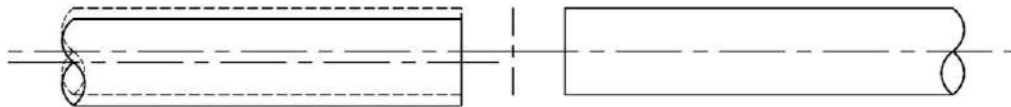
1) Rubber flex couplings are easy to install and fit. Eliminating most vibration , noise ,improving working conditions and extended machine service life. Even under severe conditions and the require absolutely no lubrication.

2) Misalignment allowable.

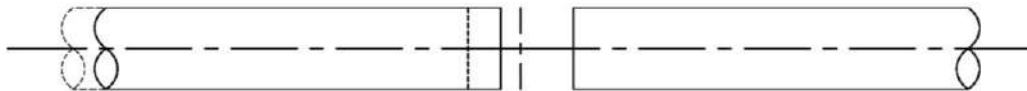
a) Allowable declination of both shaft is 6 degree for any shaft diameter.



b) Allowable eccentricity of both shaft is 1% of outside diameter for any size of shaft.



c) Allowable clearance error of both shaft is 2% of outside diameter of any coupling size.



3) Since RRF coupling are highly elastic , they have improved shock damping to absorb vibration better.

4) As a result, shaft rotation is quieter and vibration almost totally eliminated and shaft rotational torque and torsion angle of coupling become almost completely proportional.

5) They simplifies design especially in case where shaft vibration could pose particular problems.

Application

1) The place where shock and vibration are serious.

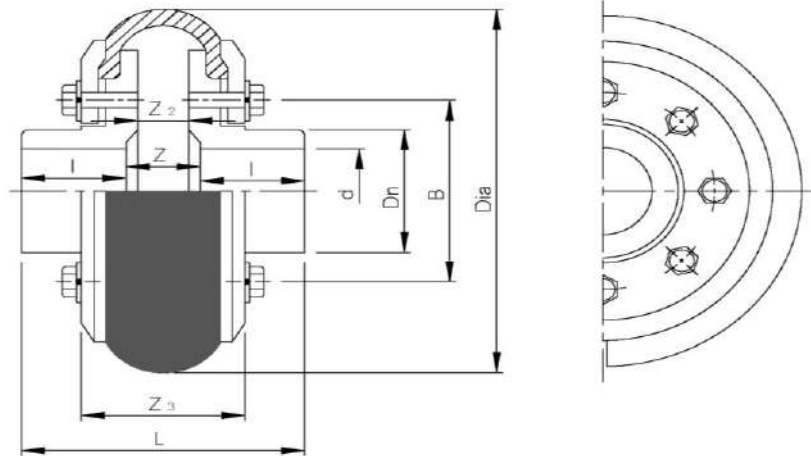
4) The place where you have difficulty in supplying lubricant.

2) The place where angular misalignment is serious.

5) The place where you have difficulty in checking and repairing.

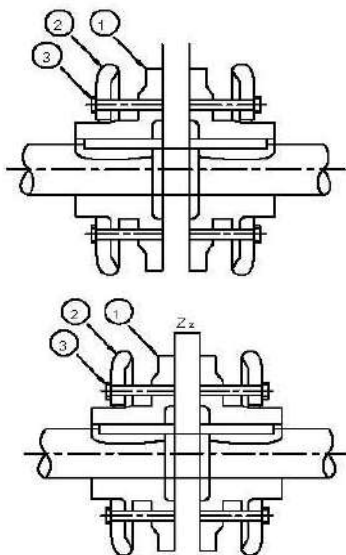
3) The place where you need electric insulation.

6) When you want to protect the important related parts.

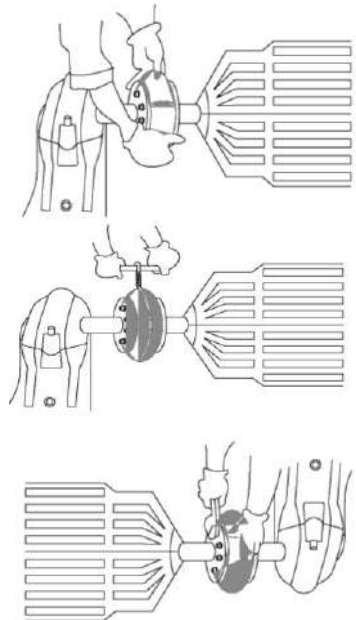


SIZE	Torque Rating (Nm)	Max. Speed (rpm)	BORE (mm)		Dimension								Weight
Dia(mm)			Max.	Min.	Dn	L	I	Z ₁	Z ₂	Z ₃	B	N - d ₁	kg.
100	30	4,000	22	10	36	66	26	14	10	40	54	2x6-M6	1.21
135	79	4,000	30	16	48	90	35	20	14	53	70	2x6-M8	2.87
180	148	3,000	35	23	64	120	46	28	20	70	95	2x6-M10	6.38
210	295	3,000	50	28	76	143	54	35	27	83	110	2x8-M10	9.40
265	736	2,000	60	33	95	178	67	44	32	105	140	2x8-M12	19
310	1,227	2,000	70	36	112	208	75	58	36	121	165	2x8-M12	31
400	2,698	1,600	85	40	145	270	100	70	44	153	210	2x8-M16	70
450	4,905	1,250	100	55	165	300	110	80	50	171	240	2x8-M20	101
550	9,810	1,000	130	90	200	365	130	105	53	196	280	2x8-M24	170
700	19,620	800	160	100	255	460	165	130	70	256	364	2x8-M30	358

How to Connect

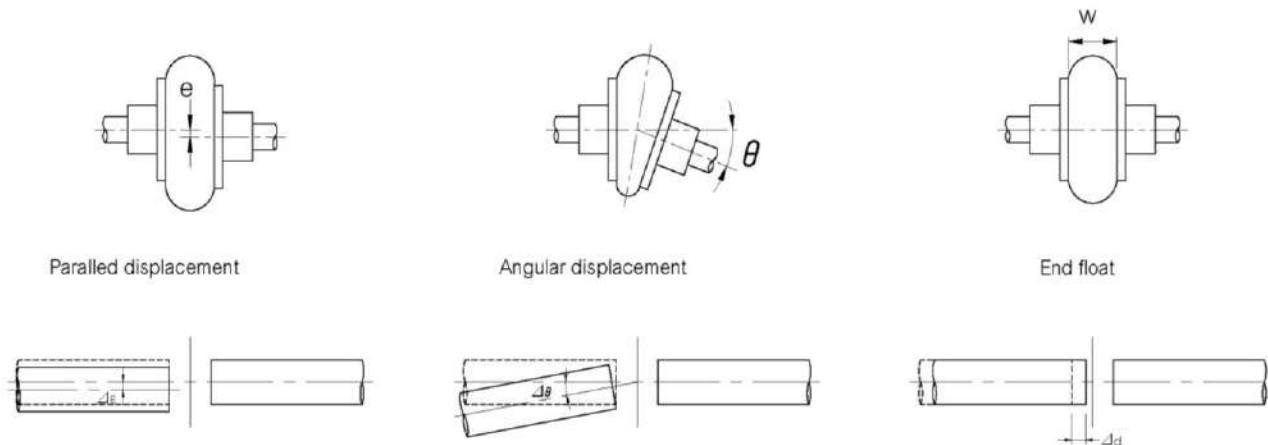


- 1) Install flanges over the ends of both shafts, making sure they lock tightly with the key. To make later installation steps easier, do not tighten bolts securing pressure ring more than three turns.
- 2) Adjust coupling clearance to the specified tolerance. Setting is determined by referring to Z values shown in Tables 1. For long service life, it is important that the Z value is maintained as uniformly as possible around the entire circumference.
- 3) The rubber is cut at one point on its circumference and a gap should be left when installing as shown in Fig 3 and as determined in table 1 according to size.

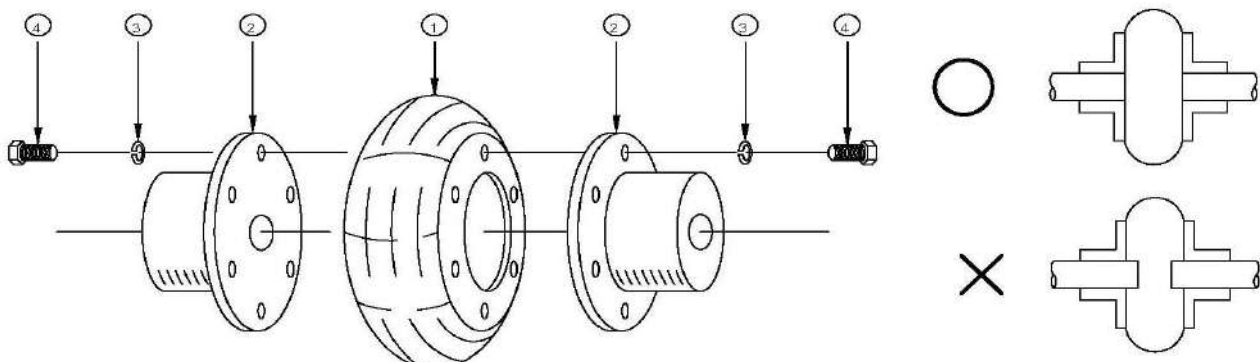


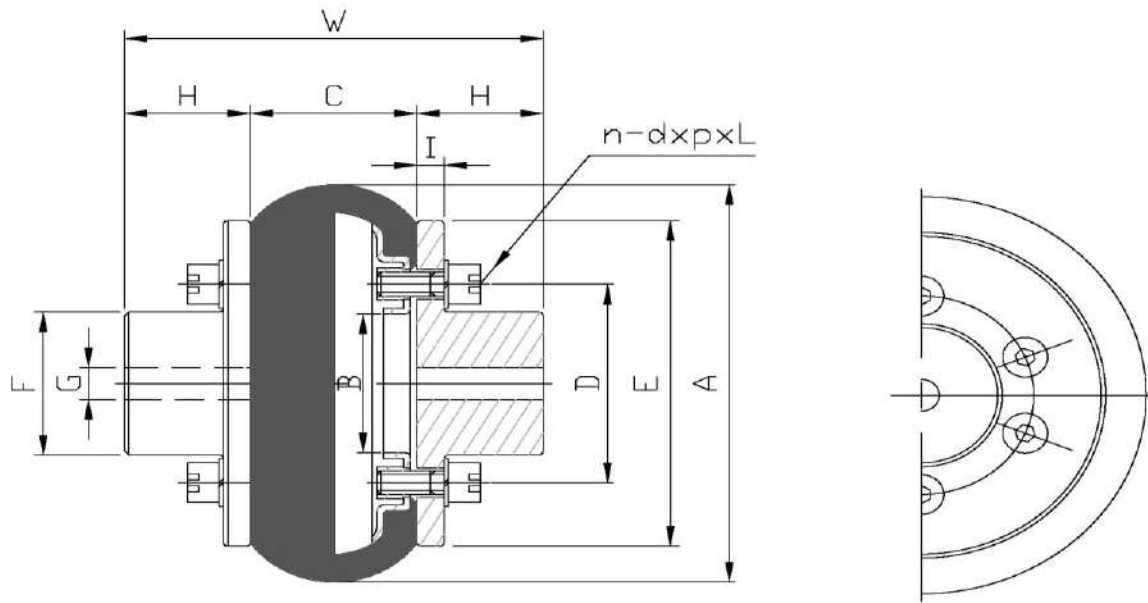
- 4) Prior to tightening the rubber should be secured by wrapping a fiber rope or cloth around its circumference to hold it in place as shown in Fig. Rubber and flanges should contact each other as uniformly as possible around the entire circumference. To align, tap the rubber with a plastic hammer or other instrument which will not cause abrasions or damage.
- 5) Tighten pressure ring with bolts. Tighten bolts in a crisscross pattern for uniform compression of the rubber.

- 1) The RTF tire coupling using natural compounds makes couplings suitable for use in most conditions.
- 2) Handle combinations of parallel, angular and axial displacements.
 - * Parallel displacement (ΔE) : 1% of out dia.
 - * Angular displacement ($\Delta \theta$) : within 2°
 - * End float (Δd) : within -10% and + 3% the width of the coupling.
- 3) Mounting-Demounting is quick and easy ,no special tools needed.
- 4) Reduce Torsional Vibrations. Absorb shock Load.
- 5) Eliminates the need for lubrication. No need to dismounting to inspection the components.
- 6) Damping, Reduce vibrations and torsional oscillations.



With tire, connect coupling flanges to driving and driven shaft. Mount the tire and tighten the clamping screws gradually, until the specified tightening torque is reached.





SIZE	Rating Torque (Nm)	Max. (rpm)	Tire				Flange				G (Bore)		W	Bolt 2 x n-dxpxL	GD ² (kg.cm ²)	Weight Kg.
			A	B	C	D	E	F	H	I	Min.	Max.				
CA-100	50	5000	100	35	37	50	82	36	28	6	8	22	93	2x6-M6x1.0x20	34.9	1.1
CA-120	99	4500	120	45	39	65	106	48	35	6	10	28	109	2x6-M8x1.25x20	78.4	2.0
CA-140	148	4200	140	52	45	75	118	55	44	7	24	35	133	2x6-M10x1.5x25	164.6	3.0
CA-160	216	4000	160	62	51	85	132	65	53	8	24	42	157	2x6-M10x1.5x25	301.8	4.5
CA-185	295	3600	185	74	58	100	154	77	60	10	34	48	178	2x6-M12x1.75x25	568.4	6.6
CA-220	491	3200	220	84	67	112	180	89	69	12	34	55	205	2x6-M12x1.75x30	1293.6	11.8
CA-265	981	2600	265	112	82	140	214	117	94	14	40	75	270	2x6-M12x1.75x35	3802.4	21.7
CA-340	1,619	2100	340	142	106	180	272	150	120	18	44	95	346	2x6-M16x2.0x45	12544	46.5
CA-445	4,905	1600	455	190	139	236	344	202	160	25	54	128	459	2x6-M18x2.5x55	44688	110
CA-550	9,810	1200	550	230	173	290	430	246	170	25	64	170	513	2x6-M24x3.0x70	125440	187
CA-700	19,620	1000	700	310	220	370	544	326	220	26	84	220	660	2x12-M24x3.0x70	356720	394

Crown Pin Flexible Couplings, This is widely used for its compact designing. Easy installation for Taper Bushs type. The Rubber Bush made from **NBR** with special chemical composition for High wear resistant, Oil corrosion resistant, Chemecal resistant and withstand for high temperature up to 105 °C. As long as relative displacement between shafts is kept with in the specified the toterance.

The coupling will operate the best funtionand a long working life. Thus it is greatly demanded in medium and minor Power Transmission Systems Drive by motor. Such as Speed reducer, Hoists, Compressor, Pump, Spining & Weaving Machines and Ball Mills.

Recommended to use Radial displacement 0.2-0.6 mm. and Angle displacement 0.3-1.3 degree.

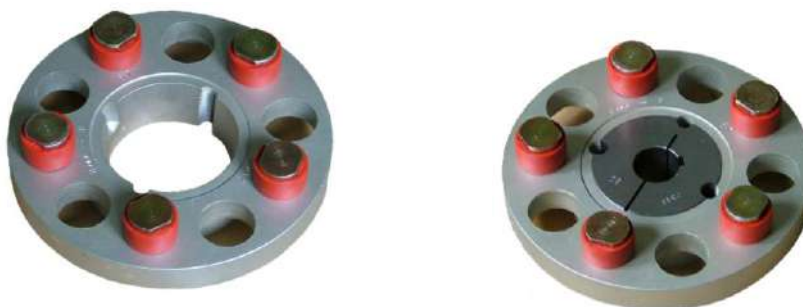
คัปปลิงสลัก หรือ คัปปลิงน็อตร้อย ผลิตจากวัสดุที่ผ่านการคัดเลือกอย่างดี ชิ้นส่วนที่เป็นหน้าแปลนหรือดุมผลิตจากเหล็กหล่อ FC 25, ลูกยาง NBR ที่มีส่วนผสมทางเคมีพิเศษ เพื่อให้มีคุณสมบัติต้านทานน้ำมันได้ดี ทนต่อสารเคมี ทนต่อความร้อน 105 °C และทนต่อแรงเสียดสีได้ดี ซึ่งเหมาะกับการใช้งานเกือบทุกสภาวะแวดล้อม ส่วนมากมักใช้ในงานอุตสาหกรรมต่างๆ เช่น ปั๊มน้ำ, เกียร์ทดรอบต่างๆ เป็นต้น



TAPER BUSH TYPE

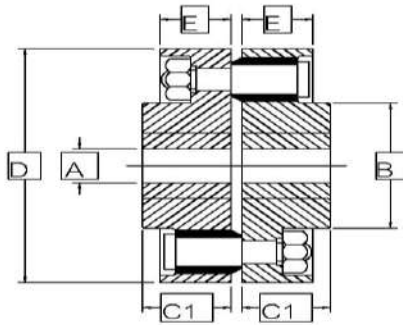
Easy installation for assembly and disassembly, available for FF type and HH type. Please see the drawing at next page.

สำหรับรุ่น TAPER BUSH นั้น ง่ายต่อการติดตั้งและถอดประกอบ ง่ายต่อการบำรุงรักษา ลดปัญหาเรื่องเพลาและลิ้มเสียหายตลอดอายุการใช้งาน มีให้เลือกใช้ทั้งแบบ FF และ HH กรุณาดูในแบบหน้าถัดไป

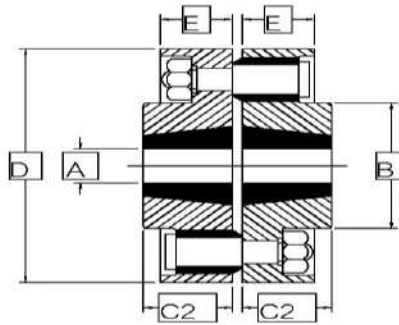


SPACER TYPE also available, Please specify the spacer length when require.

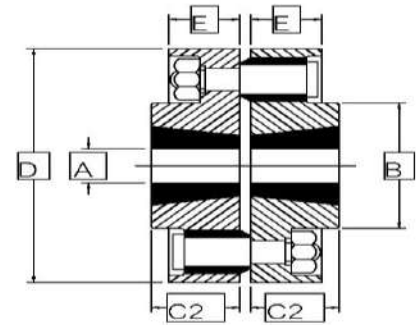
SPACER TYPE สามารถสั่งทำตามแบบได้ โดยระบุความยาวของ SPACER ที่ต้องการได้



Type BB.



Type FF.



Type HH.

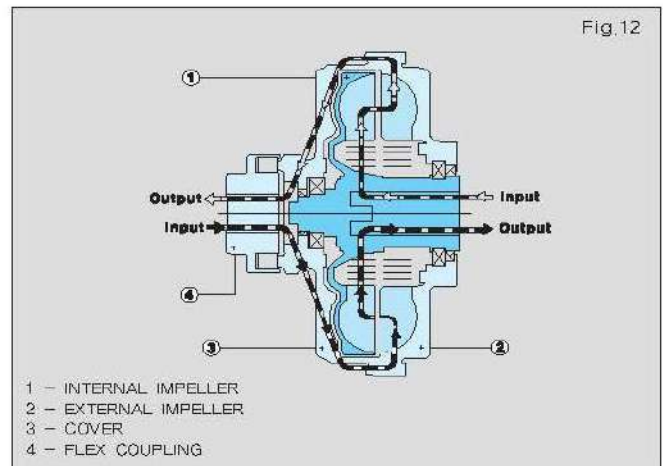
Coupling Size Inch. (D-mm.)	Dimensions							Type BB				Type F & H			
	Torque (Nm.)	Max (rpm)	Rubber No.	Pin No.	B (mm.)	E (mm.)	Pin (pcs.)	A (mm.)	C1 (mm.)	Max bore (mm.)	Wgt. (kg.)	C2 (mm.)	Bush No.	Max bore (mm.)	Wgt. (kg.)
4" (102)	70	6,000	24	10	44	22	4	12	43	28	3.5	25	1008	25	3.2
5" (127)	160	5,000	24	10	65	22	6	12	45	45	4.5	28	1210	32	4.1
6" (153)	365	4,500	24	10	87	22	8	12	55	55	7.5	28	1610	42	7.1
7" (178)	625	4,000	34	14	94	26	8	16	65	65	10.5	32	2012	50	9.4
8" (204)	900	3,500	34	14	114	26	10	16	70	75	15.1	45	2517	60	14
9" (229)	1,750	3,000	42	20	121	30	10	20	75	80	24	45	2517	60	23
10" (254)	2,650	2,500	42	20	144	30	12	20	80	100	31	51	3020	75	28
12" (305)	3,500	2,000	51	24	175	40	10	50	95	120	60	65	3525	90	58
14" (356)	4,500	1,800	51	24	226	40	12	50	105	150	90	76	4030	100	85
16" (407)	9,000	1,600	60	25.4	259	50	12	60	115	190	128	90/ 102	4535/ 5040	115/ 125	120
18" (457)	12,000	1,500	60	25.4	305	50	16	60	150	200	150	127	5050	125	145
20" (508)	17,000	1,300	80	32	320	65	12	70	170	220	280	127	6050	150	240
22" (558)	22,500	1,200	80	32	330	65	16	70	190	225	310	127	6050	150	290
25" (635)	32,000	1,050	95	38	370	80	12	80	260	235	410	127	6050	150	390
28" (710)	45,000	940	95	38	390	80	18	80	270	250	560	-	-	-	-
31" (785)	60,000	850	115	48	435	95	12	90	280	260	740	-	-	-	-
35" (885)	79,000	750	115	48	480	95	18	90	300	290	980	-	-	-	-

PRINCIPLE OF FLUID COUPLING

The FLUID coupling (K series) is a constant filling type comprising three main elements:

1-driving impeller (pump) mounted on the input shaft.
 2-driven impeller (turbine) mounted on the output shaft.
 3-cover, flanged to the output impeller, with an oil-tight seal.
 The FLUID coupling is a hydrokinetic transmission. The impellers performs like a centrifugal pump and a hydraulic turbine. With an input drive to the pump(e.g.electric motor or Diesel engine) kinetic energy is imparted to the oil in the coupling. The oil moves by centrifugal force across the blades of the turbine towards the outside of the coupling. The efficiency is influenced only by the speed difference (slip) between pump and turbine.
 In normal conditions (standard duty) , slip can vary from 1.5% (large power) to 6% (small power).

$$\text{slip}(\%) = \frac{\text{input speed} - \text{output speed}}{\text{input speed}} \times 100$$



Very smooth start-ups

Reduction of current absorptions during the starting phase : the motor starts with very low load.

Protection of the motor and the driven machine from jams and overloads.

Utilization of asynchronous squirrel cage motors instead of special motors with soft starter devices.

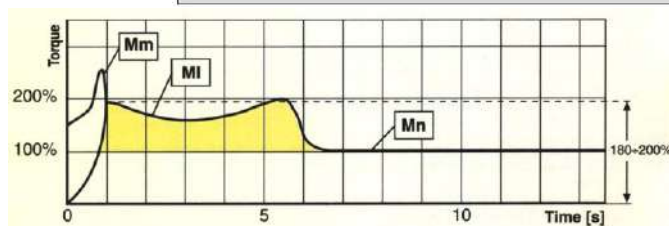
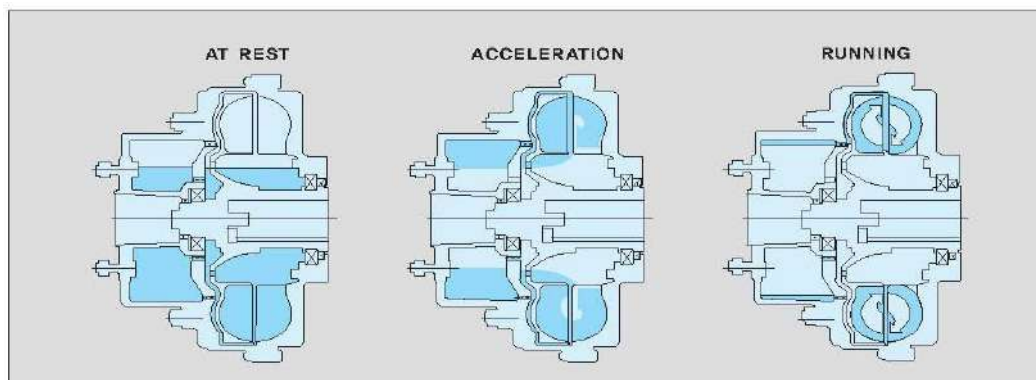
Possibility to achieve a high number of start-ups, also with an inversion of the rotation sense.

Load balancing in case of a double motor drive : fluid couplings automatically adjust load speed to the motors speed.

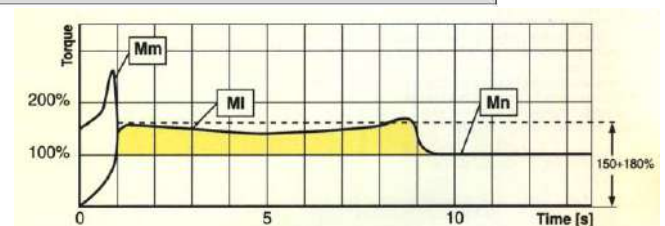
With a delayed fill chamber

This is very smooth start-ups with low torque absorptions as typically required for machine with large inertia values such as belt or chain conveyors.

HOW IT WORKS



K-Type(Standard Circuit)



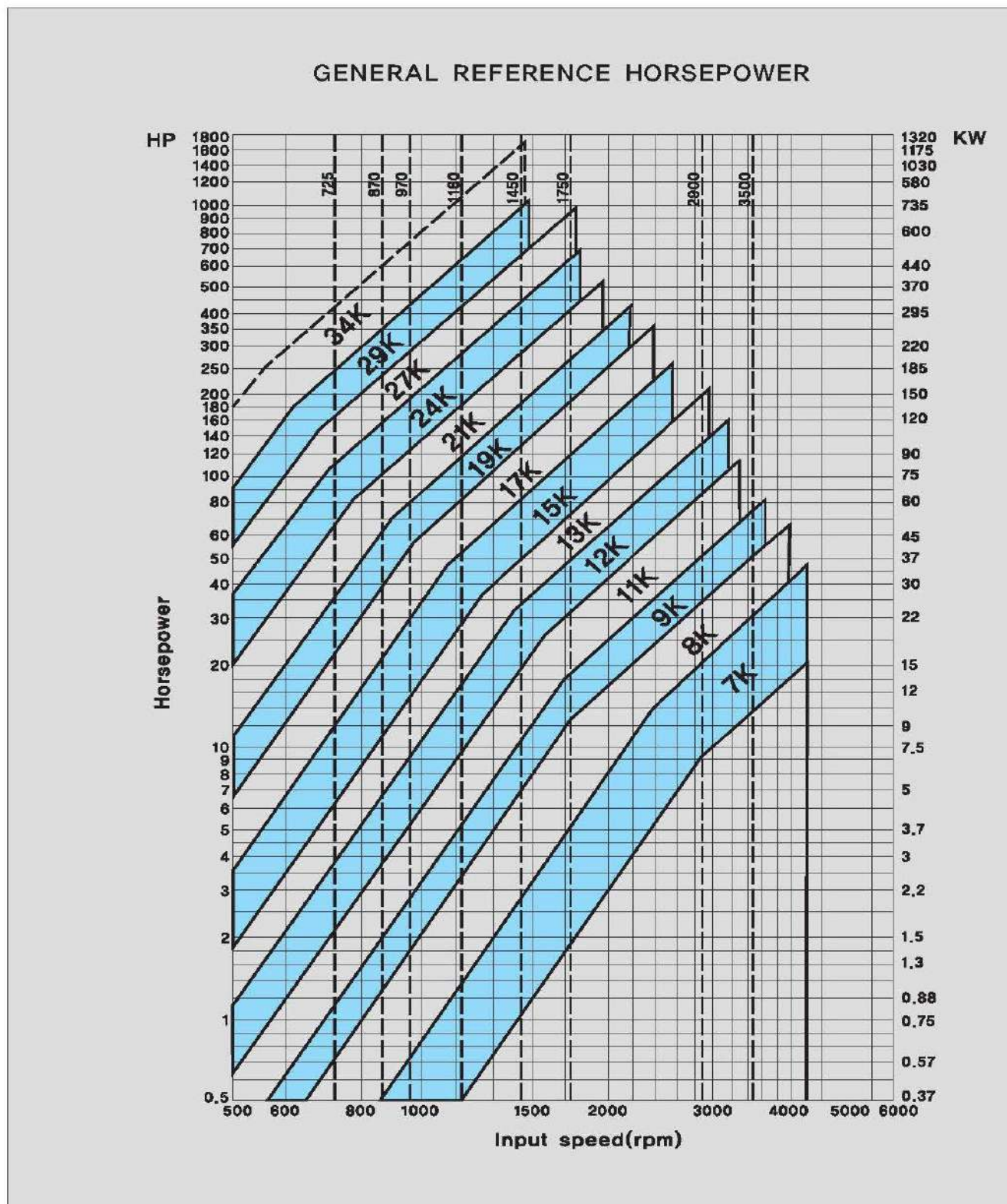
CK-Type(Circuit with a delayed fill chamber)

BENEFITS

Reduce starting torque lower than 200% and down to 150% , when select to use delayed fill chamber

SELECTION CHART

The chart below be used to select a unit size from the horse-power and input speed. If the selection point falls on a size limit line dividing one size from the other, it is advisable to select the larger size with a proportionally reduced oil fill.



SELECTION TABLE

Fluid couplings for Standard Electric Motors

MOTOR		3000 rpm			(o) 1800 rpm			1500 rpm			(o) 1200 rpm			1000 rpm		
TYPE	SHAFT DIA.	kW	HP	COUPLING	kW	HP	COUPLING	kW	HP	COUPLING	kW	HP	COUPLING	kW	HP	COUPLING
71	14	0.37	0.5	—	0.25	0.35	—	0.25	0.35	6 K	0.25	0.33	—	0.25	0.33	—
		0.55	0.75		0.37	0.5		0.37	0.5		0.37	0.5		0.37	0.5	
80	19	0.75	1		0.55	0.75		0.55	0.75		0.55	0.75		0.55	0.75	
		1.1	1.5	6 K	0.75	1	6 K	0.75	1	7 K	0.75	1	7 K	0.75	1	7 K
90S	24	1.5	2		1.1	1.5		1.1	1.5		1.1	1.5		1.1	1.5	
		2.2	3		1.5	2		1.5	2		1.5	2		1.5	2	
90L	24	2.2	3	7 K	2.2	3	7 K	2.2	3	8 K	2.2	3	8 K	2.2	3	8 K
		3	4		3	4		3	4		3	4		3	4	
100L	28	3	4		4	5.5		4	5.5		4	5.5		4	5.5	
112M	28	4	5.5	7 K (1)	5.5	7.5	8 K	5.5	7.5	9 K	5.5	7.5	9 K	5.5	7.5	9 K
		5.5	7.5		7.5	10		7.5	10		7.5	10		7.5	10	
132	38	7.5	10		11	15	9 K	11	15	11 K	11	15	11 K	11	15	11 K
132M	38	11	15	9 K (1)	15	20		15	20		15	20		15	20	
		15	20		18.5	25	12 K (11 K)	18.5	25	12 K	18.5	25	12 K	18.5	25	12 K
160M	42	18.5	25		22	30		22	30		22	30		22	30	
160L	42	22	30	11 K (1)	30	40	13 K (12 K)	30	40	13 K	30	40	13 K	30	40	13 K
180M	48	30	40		37	50		37	50		37	50		37	50	
		37	50		45	60	13 K	45	60	15 K	45	60	15 K	45	60	15 K
200L	55	45	60	11 K (1)	55	75		55	75		55	75		55	75	
225S	60	55	75		75	100		75	100		75	100		75	100	
		75	100		90	125	17 K (15 K)	90	125	17 K	90	125	17 K	90	125	17 K
225M	55 (3000) 60	90	125	13 K (2)	110	150		110	150		110	150		110	150	
		132	180		132	180	19 K	132	180	19 K	132	180	19 K	132	180	19 K
250M	60 (3000) 65	160	220		160	220		160	220		160	220		160	220	
280S	65 (3000) 75	200	270	21 K	200	270	21 K	200	270	21 K	200	270	21 K	200	270	21 K
		250	340		250	340		250	340		250	340		250	340	
280M	65 (3000) 75	315	430		315	430		315	430		315	430		315	430	
315S	65 (3000) 80			24 K			24 K			24 K			24 K			24 K
315M	65 (3000) 80															
355S	80 (3000) 100			27 K			27 K			27 K			27 K			27 K
355M	80 (3000) 100															

NO - STANDARD MOTORS	max	700	952	27 K	max	510	700	27 K	max	440	598	29 K	370	500	29 K
		1000	1360	29 K		810	1100	29 K		800	1088	34 K	600	800	34 K
						1300	1740	34 K		1350	1836	D 34 K	950	1300	D 34 K
						2300	3100	D 34 K							

(-) POWERS REFER TO MOTORS CONNECTED AT 380 V - 60 HZ

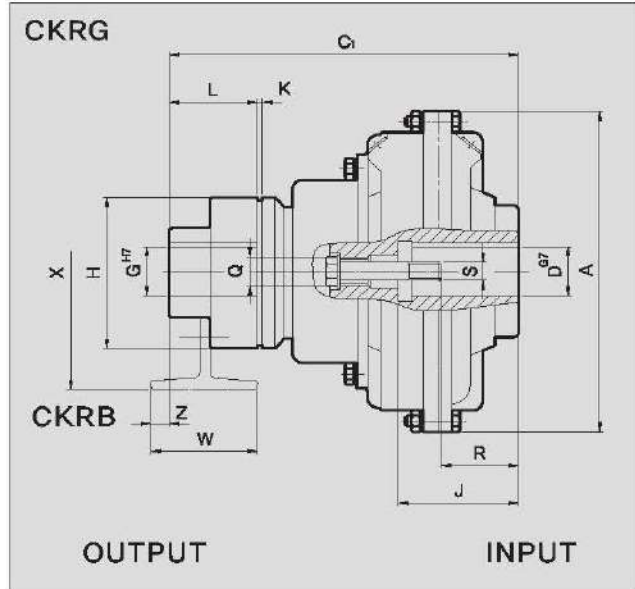
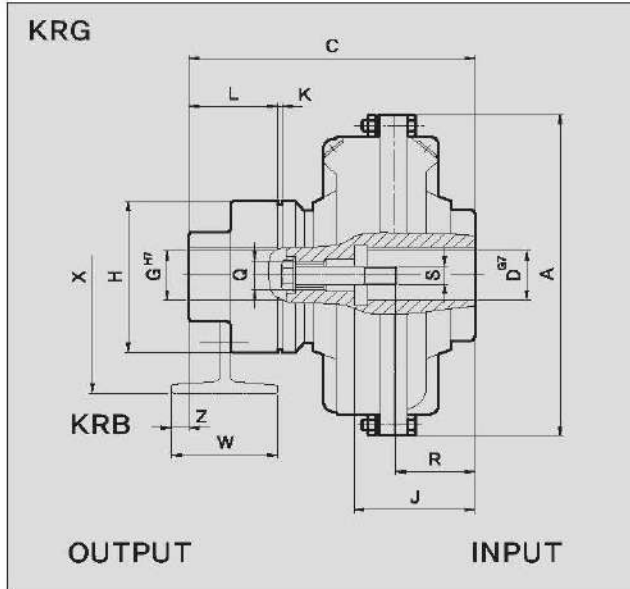
(1) SPECIAL VERSION, 24 HOURS SERVICE

(2) ONLY FOR KR

NB: THE FLUID COUPLING SIZE IS TIED TO THE MOTOR SHAFT DIMENSIONS.

SERIES: **KRG - CKRG, SIZE : 7 - 34**
 KRB - CKRB, SIZE : 7 - 34

DIMENSIONS



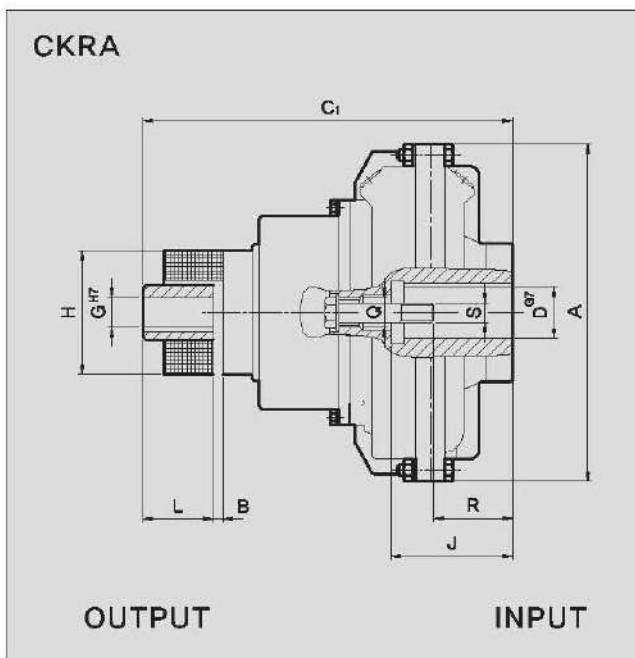
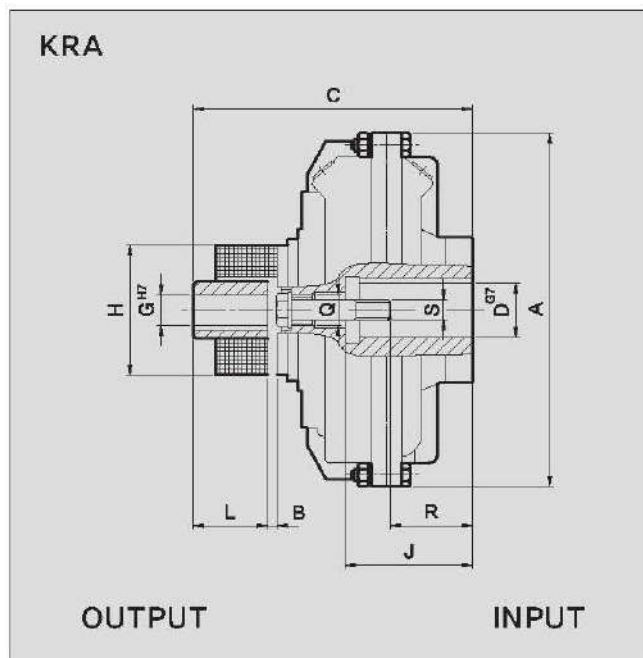
Size	Dimensions(mm)															Flex. Coupling	Weight(kgf)– without oil		
	D		J		A	G _{max}	C	C ₁	H	K	L	Q	R		S		KRG	CKRG	
7	19	24	40	50	228	42	189	–	110	2	60	M12	27	35	M6	M8	SF10	8,3	–
	28	38	60	80								M14	40	56	M10	M12			
8	24	28	50	60	256	42	194	–	110	2	60	M14	40	45	M8	M10	SF10	8,7	–
	38	80											61	M12					
9	28	38	60	80	295	55	246	–	132	2	80	M16	43	54	M10	M12	SF20	16	–
	42	48	110										M20	74	M16				
11	28	38	60	80	325	55	255	–	132	2	80	M16	42	63	M10	M12	SF20	18	–
	42	48	110										M20	83	M16				
12	38		80		370	70	255	322	132	2	80	M16	63		M12		SF20	21,5	24,5
	42	48	110										M20	83	M16				
13	42	48	110		398	70	285	345	170	3	80		84		M16		SF30	34	37
	55	60	110	140									84	104	M20				
15	48	55	110		460	80	343	411	170	3	110		81		M16	M20	SF40	50,3	54,3
	60	65	140										111	M20					
17	60	65	140		520	90	362	442	250	3	110		104		M20		SF50	77	83
	75	80	140	170									104	134					
19	60	65	140		565	90	362	442	250	3	110		104		M20		SF50	84	90
	75	80	140	170									104	134					
21	75		140		620	110	433	533	290	4	140	M36	100		M20		SF60	129	139
	80	90	170											130	M20	M24			
24	80	90	170		710	120	433	533	290	4	140	M36	130		M20	M24	SF60	147	157
	100	210												165	M24				
27	120max		*210	780	120	155	504	622	350	4	150	M45	*167		*M24	SF80	228	246	
29	135max		*240	860			533	651					*167	281	299				
34	150max		*265	1000	155	615	746	425	5	180			*200		*M36	SF90	449	464	

1. Refer to page #5 for oil quantity.

2. *X, W & Z* Dimensions depend on back drum size.

3. * – * Reduced depth keyway as per DIC6885/2

4. Marked * – * of dimensions h,r,s are applied to the Max. bore.

SERIES: KRA - CKRA, SIZE: 7 - 24
DIMENSIONS


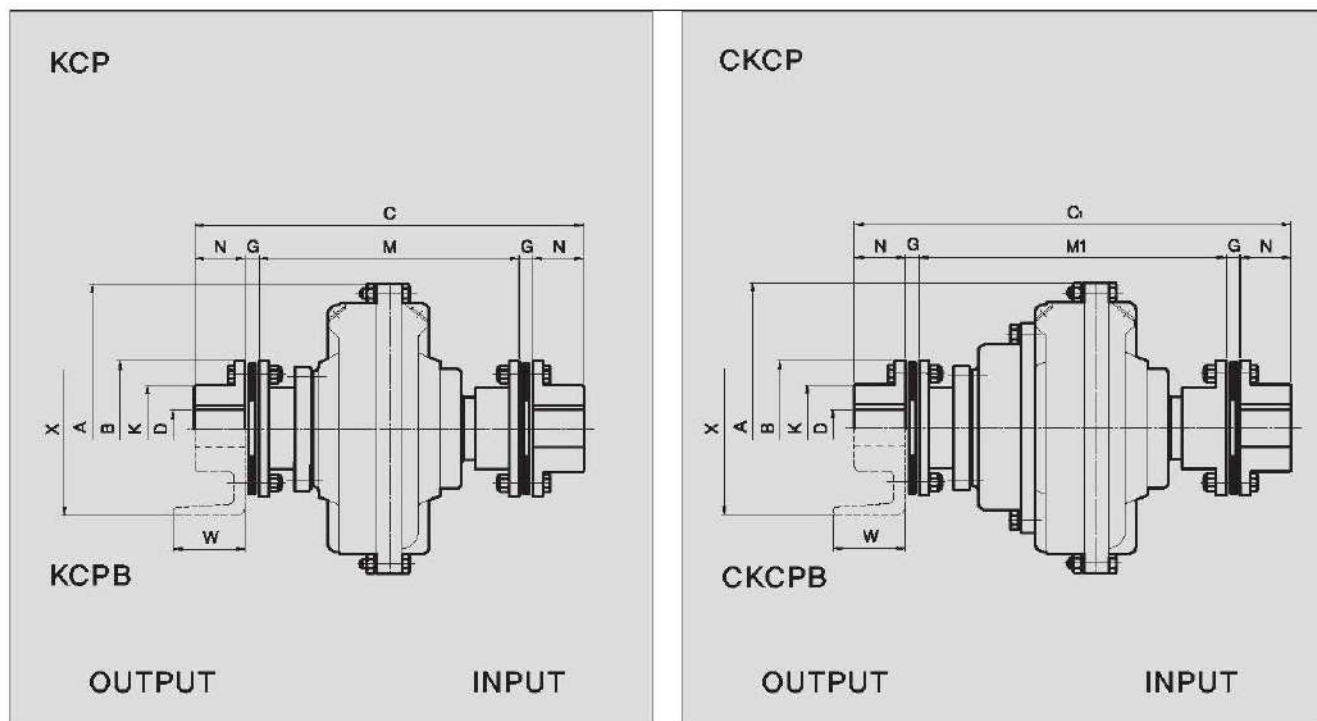
Size	Dimensions(mm)															Flex, Coupling	Weight(kgf) —without oil		
	D		J		A	B	C	C1	Gmax	H	L	Q	R		S		KRA	CKRA	
7	19	24	40	50	228	4	174	—	38	120	42	M12	27	35	M6	M8	RG060	7,5	—
	28	38	60	80								M14	40	56	M10	M12			
8	24	28	50	60	256	4	179	—	38	120	42	M14	40	45	M8	M10	RG060	8,3	—
	38	80	61	M12															
9	28	38	60	80	295	6	217	—	48	150	50	M16	43	54	M10	M12	RG070	14	—
	42	48	110	M20								74	M16						
11	28	38	69	80	325	6	226	—	48	150	50	M16	42	63	M10	M12	RG070	16	—
	42	48	110	M20								83	M16						
12	38	80			370	6	231	298	55	170	55	M16	63		M12		RG085	21,5	25
	42	48	110	M20								83	M16						
13	42	48	110		398	8	273	333	65	200	66	M27	84		M16		RG100	33,5	36,5
	55	60	110	140									84	104	M20				
15	48	55	110		460	8	300	368	65	200	66	M27	81		M16	M20	RG100	46,5	50,5
	60	65	140	111															
17	60	65	140		520	8	333	413	85	260	80	M27	104		M20		RG125	69,5	75,5
	75	80	140	170									104	134					
19	60	65	140		565	8	333	413	85	260	80	M27	104		M20		RG125	76,5	82,5
	75	80	140	170									104	134					
21	75	140			620	8	400	500	115	340	100	M36	100		M20	M24	RG160	118	128
	80	90	170	130															
24	80	90	170		710	8	435	535	115	340	100	M36	165		M24		RG160	136	146
	100	210																	

1. Refer to page #5 for oil quantity.

2. " " Reduced depth keyway as per DIN688412

SERIES: KCP - CKCP , SIZE : 7 - 34
KCPB - CKCPB, SIZE : 7 - 34

DIMENSIONS



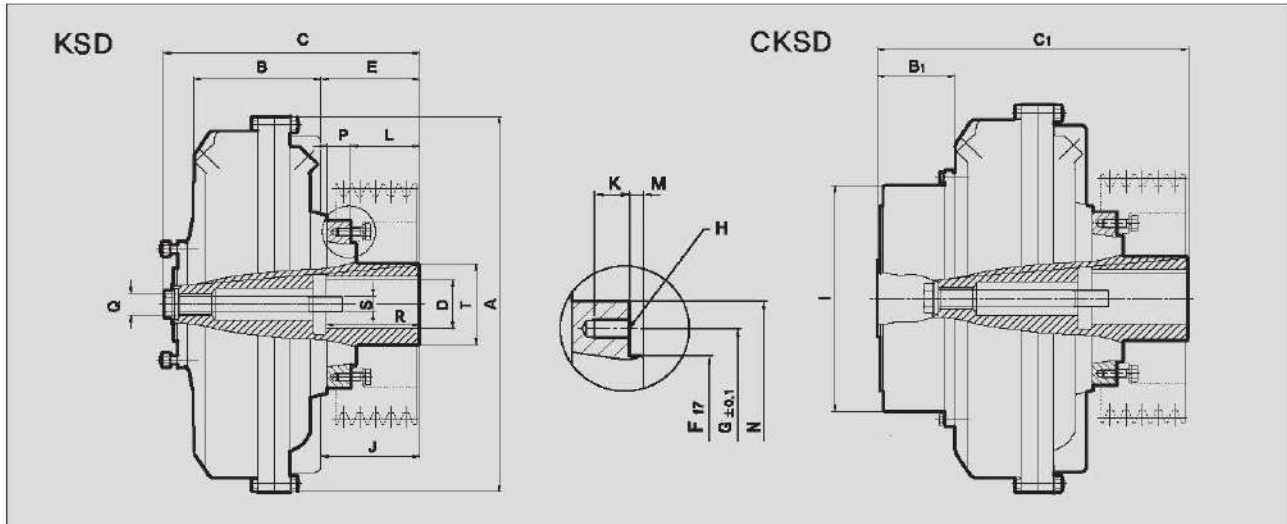
Size	Dimensions(mm)										Weight(kgf) -without oil	
	A	B	C	C ₁	D _{max}	G	K	M	M ₁	N	KCP	CKCP
7	228	104	285,4	—	42	11,2	61	196	—	33,5	11	—
8	256	104	290,4	—	42	11,2	61	201	—	33,5	11,9	—
9	295	143	377,3	—	58	11,7	84	258,3	—	47,8	24,4	—
11	325	143	386,3	—	58	11,7	84	267,3	—	47,8	26,4	—
12	370	143	398,3	465,3	58	11,7	84	279,3	346,3	47,8	31,4	34,4
13	398	168	446,2	521,7	74	16,8	106	298,2	373,7	57,2	45	48
15	460	194	513	592	83	17,0	119	352	431	63,5	64,2	68
17	520	214	588,3	670,3	95	21,6	137	392,7	474,7	76,2	100	106
19	565	214	588,3	670,3	95	21,6	137	392,7	474,7	76,2	109	115
21	620	276	733,6	835,7	118	27,2	170	476,1	578,1	101,6	187	197
24	710	276	738,2	840,2	118	27,2	170	480,6	582,6	101,6	209	219
27	780	308	869	1,028	133	19	198	563	722	134	368	391
29	860	346	972,5	1,131,5	152	21,5	218	623,5	782,5	153	503	526
34	1,000	346	1,169,5	1,296,5	152	21,5	218	760,5	887,5	183	697	712

1. Refer to page #5 for oil quantity.

2. "X" & "W" Dimensions depend on brake drum size.

SERIES: KSD - CKSD, SIZE: 7 - 34

DIMENSIONS

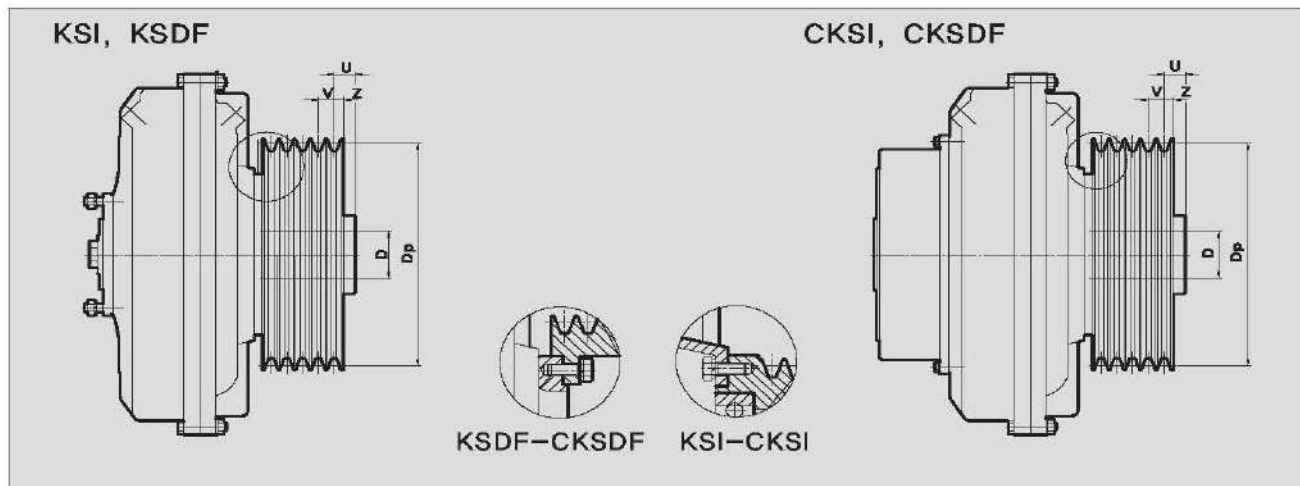


Size	Dimensions(mm)																					Weight(kg) -without oil					
	D		J		A	B	B ₁	C _{max}	C ₁	E	F	G	H	I	K	L	M	N	P	Q	R		S		T _{max}	KSD	CKSD
7	19	24	40	50	228	77	-	159	-	55	75	90	4xM6	-	8	35	3	114	14	M12	29	38	M6	M8	42	5.9	-
	28	-38	60	80				174	-	70						M14				43	54	M10	M12	50			
8	24	28	50	60	256	91	-	194	-	81	75	90	4xM6	-	8	65	3	114	14	M14	33	43	M8	M10	50	6.5	-
	-38		80					M14	54							M12											
9	28	38	60	80	295	96	-	250	-	116	96	114	8xM8	-	13	85	5	128	20	M16	39	45	M10	M12	69	13	-
	42	48	110					M20	78											M16							
11	28	38	60	80	325	107	-	259	-	113	96	114	8xM8	-	13	85	5	128	20	M16	38	63	M10	M12	15	-	
	42	-48	110					M20	78											M16							
12	38		80		370	122	83	274	330	125	112	130	12xM8	220	13	98	7	145	22	M16	54		M12		80	19	22
	42	48	110					M20	83		M16																
13	42	48	110		398	137		359	410	190	135	155	12xM8	220	13	158	6	179	29	M16	76		M16		88	31	34
	55	60	110	140				M20	76	106	M20																
15	55	60	110	140	460	151	92	384	438	195	150	178	12xM10	255	17	159	7	206	28	M27	71	101	M20	132	100	46	50
	65	-75	140					101	101																		
17	60	65	140		520	170	101	455	516	245	180	200	12xM10	330	17	180	7	225	60	M27	102		M20	132	74	80	
	75	80	140	170						102											142						
19	60	65	140		565	190		455	516	225	180	200	12xM10	330	17	180	7	225	45	M27	102		M20	132	82	88	
	75	80	140	170						102											142						
21	80	90	170		620	205	115	505	580	260	200	228	8xM14	400	20	190	7	250	57	M38	135	125	M20	M24	145	110	120
	100		210					545	620	300						165					M24						
24	80	90	170		710	229		505	580	236	200	228	8xM14	400	20	190	7	250	46	M38	135	125	M20	M24	145	125	137
	100		210					545	620	276						165					M24						
27	120max		*210		780	278	138	NARA																			

1. Refer to page #5 for oil quantity.

2. * . . Reduced depth keyway as per Din 6885/2.

3. Marked * . . of dimensions J are applied to the Max. bore.

SERIES: KSI, KSDF and CKSI, CKSDF, SIZE: 6 - 24
DIMENSIONS


Groove	V	Z
M	—	9,5
A	15	10
B	19	12,5
C	25,5	17
D	37	24
3V	10,3	8,7
5V	17,5	12,7
8V	28,6	19

Size	Dimensions(mm)				Type
	D	U	Pulley Groove		
			Dp	#-Type	
6	14	14	63	2-A	KSI
			80		
			100		
6	19 24	24	63	2-A	
			80		
			100		
7	19 24	11.5	80	2-A	
			90		
			100		
			125		
7	28 38	26.5	80	2-A	
			90		
			100		
			125		
8	24 28 38	26.5	90	3-A	
			100		
			112		
		41.5	125	2-A	
9 11	28 38 42 48	10	112	5-A	
		34	125	4-B	
		15	160		
		58	200	3-B	

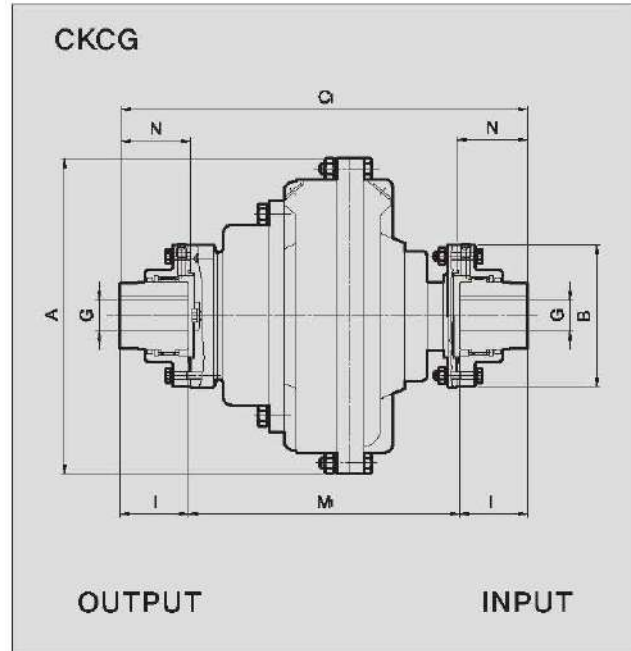
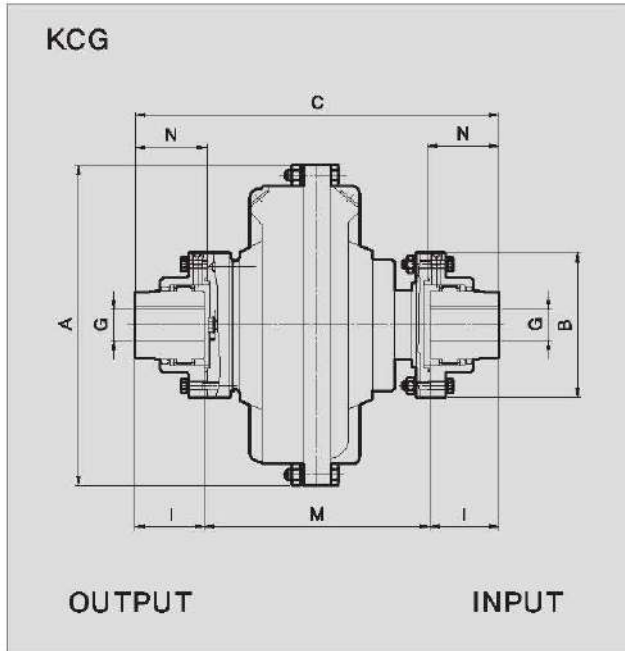
Size	Dimensions(mm)				Type
	D	U	Pulley Groove		
			Dp	#-Type	
12	38 42 48	12	140	5-B	KSI CKSI
		50	180	4-B	
		51	200	3-C	
		26	200	4-C	
13	48 55 60	50	180	6-B	KSDF CKSDF KSI, CKSI
			250		
		49	250	5-C	
15	60 65	50	200	6-B	
		17	250	5-C	
			280		
17	65 75	12	265	7-B	
		72	315	6-B	
		35	355	6-C	
19	75 80	72	315	6-B	
		35	355	6-C	
21	80 90	20	355	8-C	
			400		
21	100	60	355	8-C	
			400		
24	80 90	20	355	8-C	
			400		
24	100	60	355	8-C	
			400		

1. Refer to page #5 for oil quantity.

2. Dimensions except V-belt pulley are same as type KSD, CKSD.

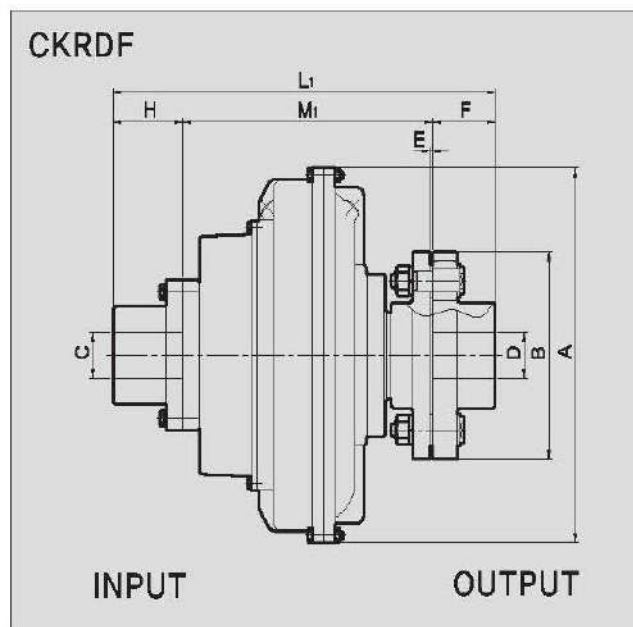
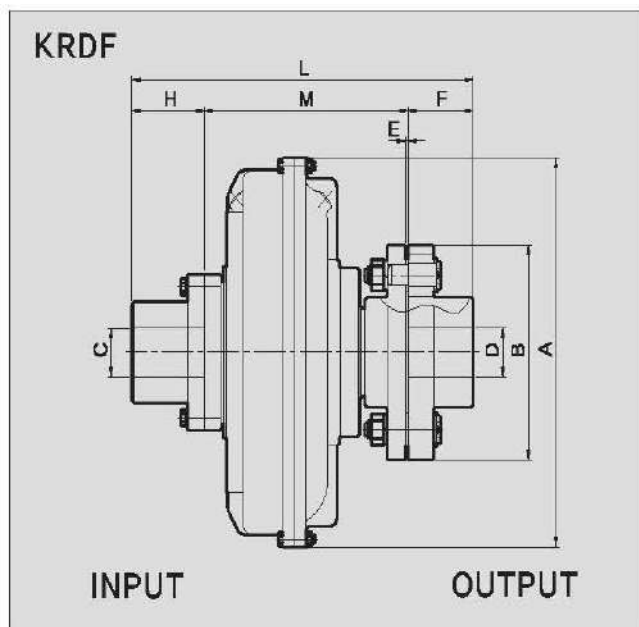
SERIES: KCG, CKCG, SIZE : 7 - 34

DIMENSIONS



Size	Dimensions(mm)								Weight(kgf) —without oil		Gear Coupling Per Set		
	A	C	C ₁	Gmax	I	M	M ₁	N	KCG	CKCG	Size (B)	Weight (kgf)	Grease (gf)
7	228	238	—	40	45	148	—	49	7,3	—	112	4,1	50
8	256	243	—			153	—		8,1	—			
9	295	347	—	65	80	187	—	85	14	—	160	14	130
11	325	356	—			196	—		16	—			
12	370	368	435			208	275		21	24			
13	398	378	453,5			218	293,5		28	31			
15	460	458	537	85	100	258	337	105	47,2	51	200	26	220
17	520	485	567			285	367		66,2	72			
19	565								75	81			
21	620	551	653	100	112	327	429	118	109	119	224	40	320
24	710								129	139			
27	780	661	820	135	140	381	540	147	206	229	280	79	620
29	860	690	849			410	569		255	278			
34	1000	805	968	160	160	485	648	167	436	444	315	122	1,000

1. Refer to page 45 for oil quantity.
2. Grease Gear Couplings.

SERIES: KRDF, CKRDF, SIZE : 12 - 27
DIMENSIONS


Size	Dimensions(mm)											Weight(kgf) -without oil	
	A	B	C (max)	D (max)	E	F	H	M	M ₁	L	L ₁	KRDF	CKRDF
12	370	180	68	50	3	63	63	259	326	385	452	32,6	35,6
13	398	200	68	56	4	71	80	269	344,5	420	495,5	46	49
15	460	250	90	71	4	90	90	330	410	510	590	81,7	88,5
17	520	250	90	71	4	90	90	350	441	530	621	100,7	106,5
19	565	280	90	80	4	100	90	350	441	540	631	123,6	129,6
21	620	280	107	80	4	100	100	400	510	600	710	157,6	167,6
24	710	315	107	90	4	112	100	400	510	612	722	191,3	201,3
27	780	400	125	110	5	125	125	504	642	754	892	280	298

1. Refer to p.34 of Tab 22, 23 for oil quantity.

If the revolution is required over 1,500 rpm, consult to NARA, (27 K Model only)

INSTALLATION

■ KRG, CKRG

Fit fluid coupling on motor shaft, by using a threaded bar as shown on fig. 13, and using two wrenches (hold wrench 'a' and turn wrench 'b' to draw the coupling on to the motor shaft.). Position motor to driven machine until gap K (between half-couplings) Fig. 14 reaches the indicated value on Tab. 18. Check angular alignment by using filter in the gap at four point 90° apart. The errors should not exceed those indicated on Tab. 18.

Tab. 18

Size	SF Coupling	ε (mm)	α (°)	Gap (K) ^{+1/-0.5}
7-8	10	0.15	0.2	2
9-11-12	20	0.15	0.2	2
13	30	0.20	0.2	3
15	40	0.20	0.2	3
17-19	50	0.25	0.15	3
21-24	60	0.30	0.15	3
27-29	80	0.30	0.13	4
34	90	0.30	0.10	5

※ For speeds over 1500 RPM, reduce values ε & α by 50 percent.

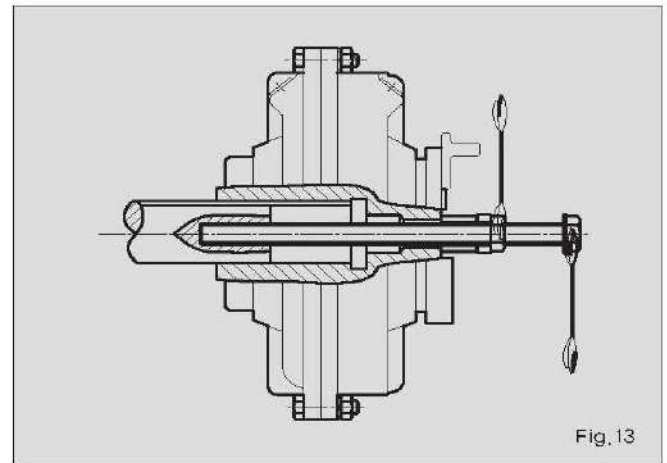


Fig. 13

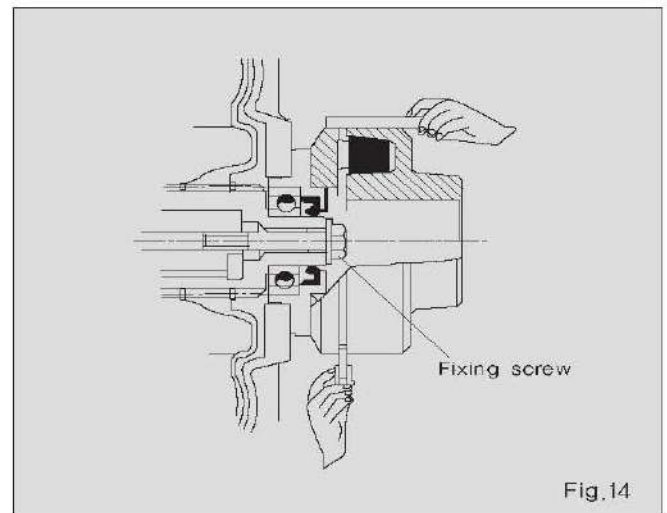
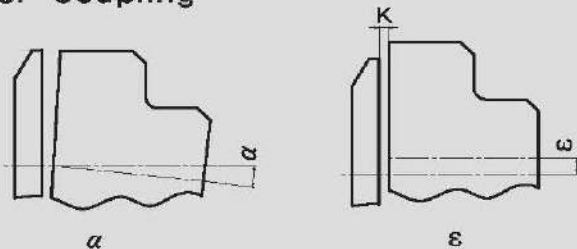


Fig. 14

SF Coupling



■ KRA, CKRA

- ① Assemble fluid coupling as reported in above KRG
- ② Fit the hub on the driven shaft, lock and ped the driven machine.
- ③ Fit the elastic element on hub (item 29b). Lock screws according to the locking torque reported in Tab. 19.
- ④ Set motor as far as surface Z touches surface Y (axial displacement S reported in Tab. 19.)

- ⑤ Check dimensions α and ε by rotating fluid coupling at 4 points 90° apart the errors detected should not exceed those listed in Tab. 19.
- ⑥ Fit half coupling to fluid coupling with threaded pins.
- ⑦ Radial screws and axial threaded pins must be locked at the prescribed torque reported in Tab. 19 by using a torque wrench.

Tab. 19

Size	ε (mm)	α (°)	S (mm)	Tightening Torque (kgf·m)
7,8	0.25	0.5	4±1	4.9~5.4
9,11	0.35	0.5	6±1.2	8.5~9.4
12	0.35	0.5	6±1.2	13~15
13, 15	0.35	0.5	8±1.2	21~23
17, 19	0.35	0.5	8±1.2	44~49
21, 24				

※ For speeds over 1500 RPM, reduce values ε & α by 50 percent.

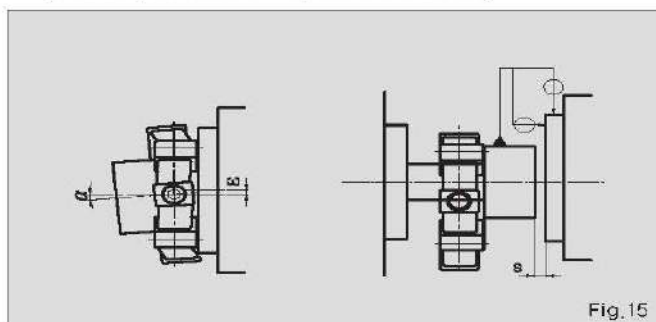


Fig. 15

INSTALLATION

■ KCP, CKCP, KCG, CKCG

When hub has been fabricated by interference fit, heat in a 90~120°C oil bath and fit it to the shaft. Never apply heat locally: it may cause distortion. Shaft equipment units to permit coupling in the correct position.

Fix dial gauges as shown on Fig.16, 17 and adjust the alignment of shafts.

The values on Tab.20 are recommended for long life time.

Tab.20

Size	KCP, CKCP			KCG, CKCG		
	ε_1 (mm)	α_1 ($^{\circ}$)	S_1 (mm)	ε_2 (mm)	α_2 ($^{\circ}$)	S_2 (mm)
7,8	0.1	0.1	± 0.25	0.1	0.1	-0.5~2
9,11,12	0.12	0.1	± 0.35	0.15	0.1	-0.5~3
13	0.15	0.1	± 0.40	0.15	0.1	-0.5~3
15	0.15	0.1	± 0.40	0.15	0.1	-0.5~3
17,19	0.15	0.1	± 0.40	0.15	0.1	-0.5~3
21,24	0.2	0.1	± 0.50	0.20	0.1	-0.5~4
27	0.2	0.1	± 0.50	0.25	0.1	-0.5~4.5
29,34	0.2	0.1	± 0.50	0.30	0.1	-0.5~4.5

■ KSI, KSDF, CKSI, CKSDF

Fit fluid coupling on motor shaft, by using a threaded bar as shown on Fig13, and using two wrenches (hold wrench 'a' and turn wrench 'b' to draw the coupling on to the motor shaft).

■ KRDF, CKRDF

- ① If the revolution is required over 1,500 rpm, consult to NARA.
(27K model only)

Speed(rpm)	Over 2000		2000~500		500~50		up to 50	
Allowable Error	α_1	ε_1	α_1	ε_1	α_1	ε_1	α_1	ε_1
	0.05	0.1	0.1	0.2	0.15	0.3	0.2	0.4

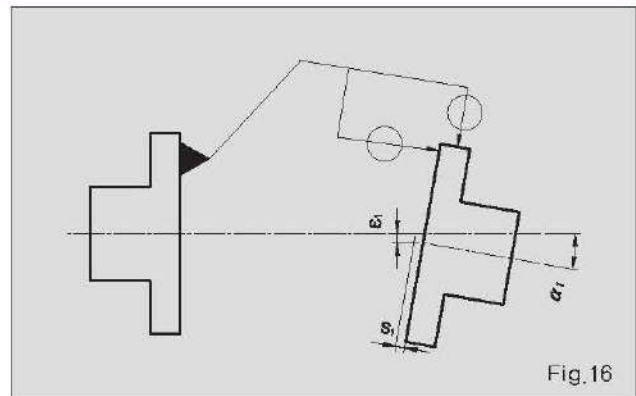


Fig.16

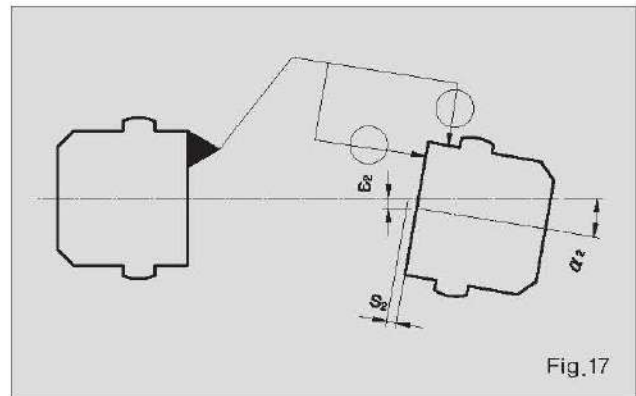


Fig.17

OIL FILLING INSTRUCTION

It is necessary to follow the procedure reported here below to achieve the standard fill X for K series, fill 2 for CK series :

- ① Position the fluid coupling axis horizontally, turn it until the X mark (respectively 2 or 3 according to the fluid coupling type) cast into the housing gets at the top vertical (maximum oil fill), so that the oil plug is inclined as shown in Fig.19
- ② Fill with oil until it overflows out of the filler hole.
While filling, gently rock the coupling on its axis to make sure all air excess is vented out of the circuit.
The quantities to be introduced are those reported in Tab.22
- ③ Screw the cap and make sure no leakages occur : otherwise use thread sealant on filler plug threads.
- ④ The fillings marked X-1-2-3-4 may be chosen by the operators to meet the best performance in terms of start-up and steady running condition.
- ⑤ For normal operating conditions, use only ISO HM 32(or equivalent SAE 10W). At low ambient temperatures(near 0°C), it is recommended to use ISO FD 10(or equivalent SAE 5W) oil. For temperatures below - 10°C, ask NARA.
- ⑥ For vertical mounted applications, the couplings recommended oil fills are reported in Tab.23.

Tab.24

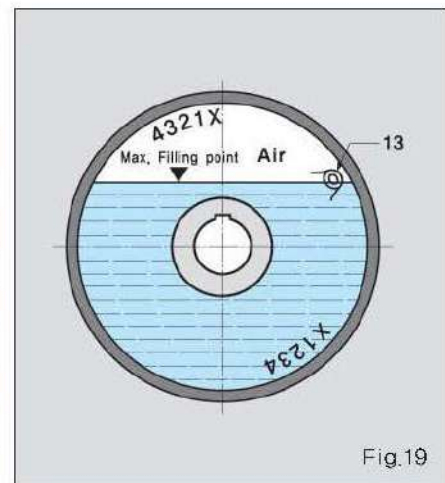
RECOMMENDED OIL	ISO 32 HM
Agip	OSO 32
Castrol	HYSPIN AWS 32
Esso	NUTO H 32
Mobil	DTE 24(OIL LIGHT)
Shell	TELLUS 32
Texaco	RANDO HD 32

Tab.22

K...	OIL QUANTITY(lt.)				
	X	1	2	3	4
7	0.92	0.86	0.8	0.73	0.65
8	1.28	1.19	1.1	1	0.9
9	1.95	1.82	1.69	1.55	1.4
11	2.75	2.55	2.35	2.1	1.85
12	4.1	3.875	3.575	3.25	2.9
13	5.2	4.85	4.45	4.05	3.6
15	7.65	7.15	6.6	6	5.4
17	11.7	10.9	10	9.1	8.2
19	14.2	13.3	12.3	11.2	10
21	19	17.8	16.4	15	13.5
24	28.4	26.5	24.6	22.6	20.5
27	42	39	36	33.5	31.5
29	55	51	47	44	41.5
34	82.5	76.6	70.6	66.2	62.5

Tab.23

CK...	OIL QUANTITY(lt.)		
	2	3	4
12	4.8	4.2	3.6
13	5.8	5.2	4.7
15	8.6	7.7	6.4
17	13.6	12.8	11.7
19	16.3	15.2	14
21	23	21.3	19.3
24	31.2	28.6	26
27	50	46.5	43
29	63	59	54
34	92.5	88.5	83.5



OPERATION AND MAINTENANCE

- ① Start motor several times to check the coupling performance. Maximum temperature should not exceed 90°C. For higher temperatures, use special seals : contact your NARA distributor. High oil operating temperatures can be caused by:
 - Ⓐ Insufficient oil filling.
 - Ⓑ Absorbed power is higher than the motor rated power.
 - Ⓒ High ambient temperature.
 - Ⓓ Too frequent starts.
 - Ⓔ Long starting time.
- ② After the first 20 days operation check the filling (this operation must be carried out with cold oil) Also check the motor and driven machine fixing screw. **STANDARD**
- ③ Repeat these checks every 6 months.
- ④ Coupling is supplied with fusible plug at 145°C, 120°C or 175°C upon request.
It is suggested that these alternative fusible plugs should be considered for belt conveyors, crushers, mills, mixers, etc., where continual overload conditions can occur.
- ⑤ Oil should be replaced after 4,000 hours operation.

Revol Roller chain couplings are capable of transmitting relatively high torques in a minimum space.

Revol Roller chain coupling are used to connect two shafts, a reducer or a motor directly to a machine for efficient power transmissions.

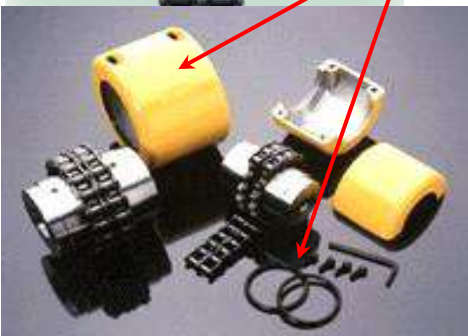
Revol Roller chain coupling construction is simple, it consists of a combination of only three basic parts:-



* 2 halves of Solid Steel Sprockets with Hardened Teeth.

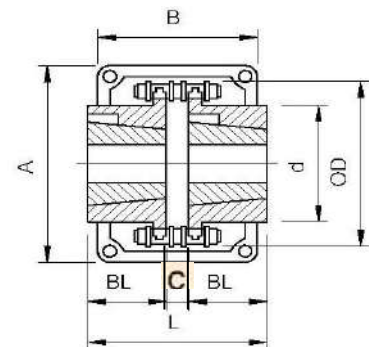
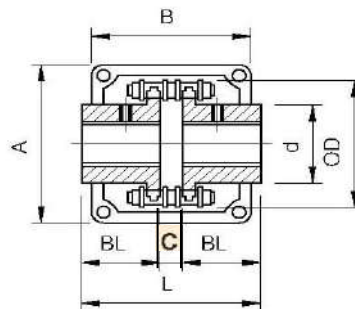
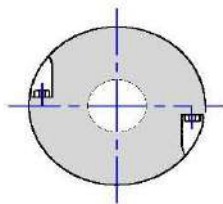
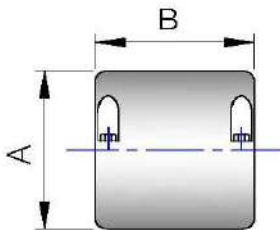
* Double strand roller chains.

* 2 halves of Casings are made of die cast aluminum with Oil seals and socket screw set.



They are also available for Taper Bush Type if required.

- Finished bore and keyway on request.
- Easy to install.
- Only hexagon wrench required for assembly & disassembly.
- Safety damage on shaft of motor or machine.
- Interchange flexibility to other type of coupling.



Specification Table

Type B & B

Type H & F

Coupling No.	Chain Pitch	Type B Max Bore	Type H & F		OD	d	L	BL	C	A	B	Grease Filling (kg)	Approx. Weight (kg)
			Bush No	Max Bore									
3012	9.25	16	-	-	45	27.2	65	29.5	6	69	63	0.08	0.22
4012	12.7	22	-	-	62	36	79	36	7.4	77	72	0.12	0.3
4014		28	-	-	69	45	79	36		84	72	0.16	0.31
4013		32	-	-	77	51.5	87	40		92	72	0.17	0.35
5014	15.88	35	1008	25	86	56	99	45	9.7	101	85	0.24	0.47
5016		40	1108	28	96	64	99	45		110	85	0.25	0.5
5018		45	1215	32	106	73.5	99	45		122	85	0.26	0.6
6018	19.05	56	1615	42	127	89.5	123	56	11.5	147	105	0.42	1.2
6020		60	-	-	139	102.5	123	56		158	105	0.44	1.2
6022		71	2525	60	151	116	123	56		168	117	0.48	1.2
8018	25.4	80	2525	60	169	115	141	63	15.2	190	129	0.79	1.9
8020		90	-	-	185	125	145	65		210	137	0.86	2.5
8022		100	3030	75	202	142	157	71		226	137	1.0	2.7
10020	31.75	110	3030	75	233	162	179	80	18.8	281	153	1.7	4.1
12018	38.1	125	3535	90	256	173	203	90	22.7	307	181	3.5	5.2
12022		140	4040	100	304	213	222	100		357	181	4.5	6.7

Remark:

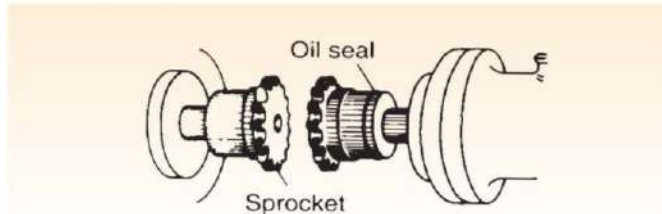
The first two or three digits of Coupling No. imply Chain No., the last two digits imply the number of teeth.

SERVICE FACTORS

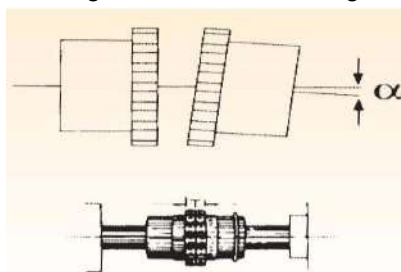
Type of load	Operating hours/day			
	8 hrs.	8 ~ 16 hrs.	8 hrs.	8 ~ 16 hrs.
Uniform , small vibration,light and no reversing load.	1.0	1.5	2.0	2.5
Moderate shock,medium vibration and no reversing load.	1.5	2.0	2.5	3.0
Heavy shock, large vibration and reversing load.	2.0	2.5	3.0	3.5
Type of prime mover	Motor, Turbine		Combustion Engine	

INSTALLATION

1. Place the oil seals for the cover on the sprocket haves.

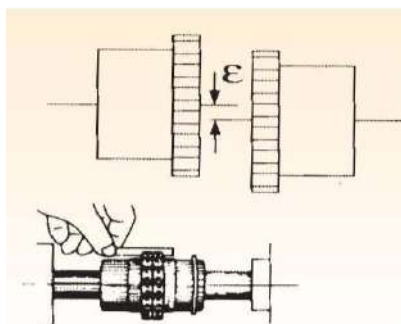


2.Bring the sprocket faces close together and correct the angular and offset misalignment.



Adjust the angular misalignment (alpha symbol) so that the width of the tooth surface T is the same around the circumference of the sprockets. The allowed angular misalignment

$$\alpha \leq 1^\circ$$

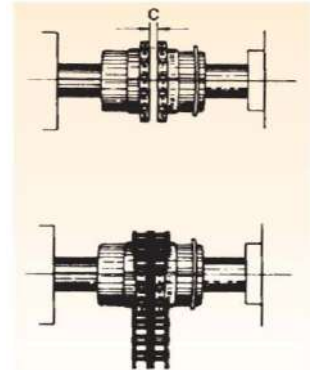


Place a straight sdge at the bottom of coresponding teeth of two sprockets and adjust, so that the offset misalignment ϵ is 2% of the chain pitch.

When the sprocket speed is 1/3 or more of the max.speed (i.e. It lies on the right side of

the dot line in the kW rating , the allowable angular and offset are 0.5 and 1% of the pitch.)

3. Measure the distance "C" between the sprocket faces and firmly fasten the set bolt(refer to specifications table).



4.Lubricate the chain with grease then wrap the chain around both sprockets and fix with the connecting pin.

5.Fill the required qauntity of grease into both sides of case and fasten them firmly. Do not forget to use gaskets.

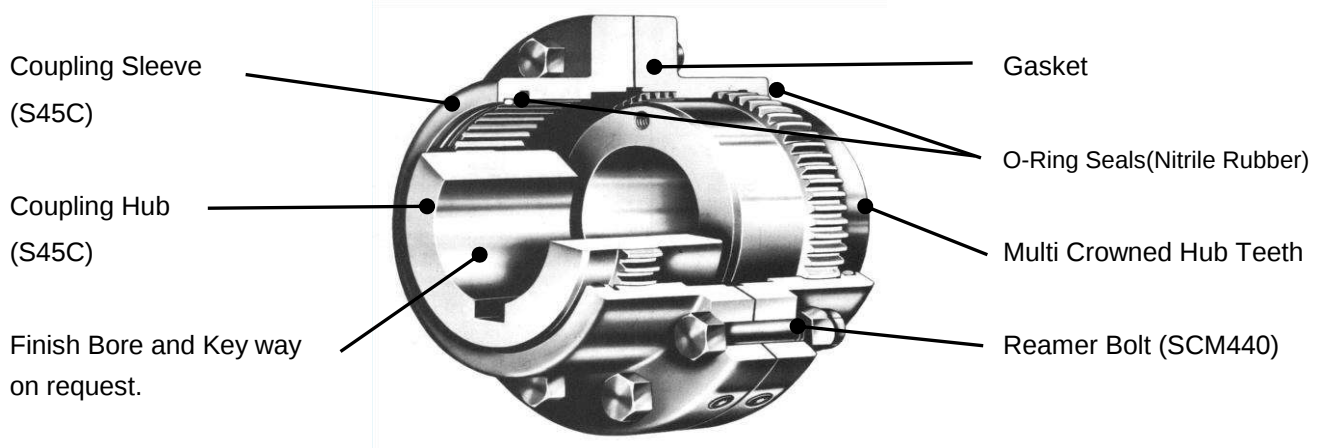
Notes:

- 1.During high-speed operations or conditions of large vibration, please use locking cement when fastening the bolts.
- 2.Install a cover when there is a risk of chain breakage.
- 3.Ambient temperature range is -10 °C to 60 °C. If outside the above range, Please consult us.

Coupling No	Max Bore Dia (mm)	Allowable Drive Torque at less than 50rpm(kg · m)	Revolution per minute																											
			1	5	10	25	50	100	200	300	400	500	600	800	1000	1200	1500	1800	2000	2500	3000	3600	4000	4800	5200	6000				
3812	16	10.2	0.01	0.05	0.11	0.26	0.52	0.79	1.21	1.58	1.89	2.26	2.58	3.19	3.88	4.41	5.35	6.25	6.73	8.12	9.44	11.0	12.0	14.0	14.8	16.7				
4012	22	22.2	0.02	0.11	0.22	0.58	1.15	1.73	2.63	3.46	4.15	4.96	5.67	7.01	8.53	9.68	11.6	13.7	14.8	17.9	20.7	24.1	26.3	30.8						
4014	28	30.2	0.03	0.16	0.32	0.79	1.58	2.36	3.59	4.72	5.66	6.77	7.72	9.56	11.64	13.21	15.8	18.7	20.2	24.4	23.3	32.9	35.9	42.1						
4016	32	39.4	0.04	0.21	0.41	1.03	2.06	3.09	4.69	6.17	7.41	8.85	10.1	12.5	15.3	17.3	21.0	24.4	26.3	31.9	37.0	43.0	46.9	54.9						
5014	35	57.4	0.06	0.30	0.60	1.50	3.00	4.48	6.80	8.95	10.7	12.8	14.7	18.1	22.1	25.1	30.0	35.4	39.3	46.2	53.6	62.4								
5016	40	75.0	0.08	0.39	0.78	1.95	3.91	5.86	8.92	11.7	14.1	16.8	19.2	23.8	28.9	32.9	39.9	46.4	50.0	60.6	70.4	81.6								
5018	45	95.0	0.10	0.50	0.99	2.48	4.95	7.43	11.3	14.9	17.8	21.3	24.4	30.1	36.6	41.8	50.5	58.8	63.4	76.8	89.2									
6018	56	179	0.18	0.93	1.87	4.67	9.33	14.0	21.3	28.0	33.6	40.1	45.9	56.8	69.1	78.4	96.2	111	120	145										
6022	71	242	0.25	1.25	2.51	6.31	12.5	18.8	28.6	37.7	45.3	54.1	61.9	76.5	93.1	105	128	149	161	195										
8018	80	396	0.41	2.07	4.14	10.3	20.7	31.0	47.2	62.1	74.5	89.0	101	112.6	153	174	211	246	265											
8022	100	570	0.59	2.96	5.93	14.8	29.6	44.5	67.2	89.0	106	127	146	130	219	249	302	352	379											
10020	110	896	0.93	4.66	9.33	23.3	46.6	70.0	106	140	168	200	229	283	345	392	476	554												
12018	125	1,350	1.40	7.02	14.0	35.1	70.2	105	160	210	252	302	345	426	519	590	716													
12022	140	1,750	1.81	9.07	18.1	45.3	90.7	136	206	272	326	390	446	551	671	762														
Changing the grease			A					B					C																	
			once a month					once a week					Filling grease in the casing attached.																	

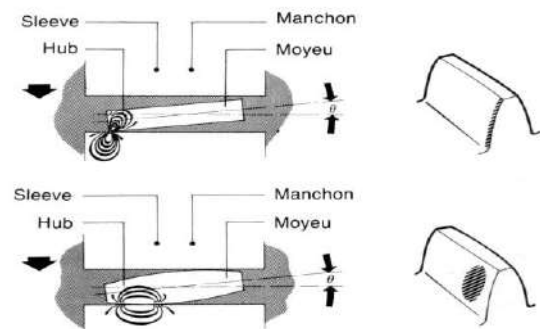
RGC - SERIES

WITH MULTI CROWNED TOOTH FORM FOR LONG LIFE

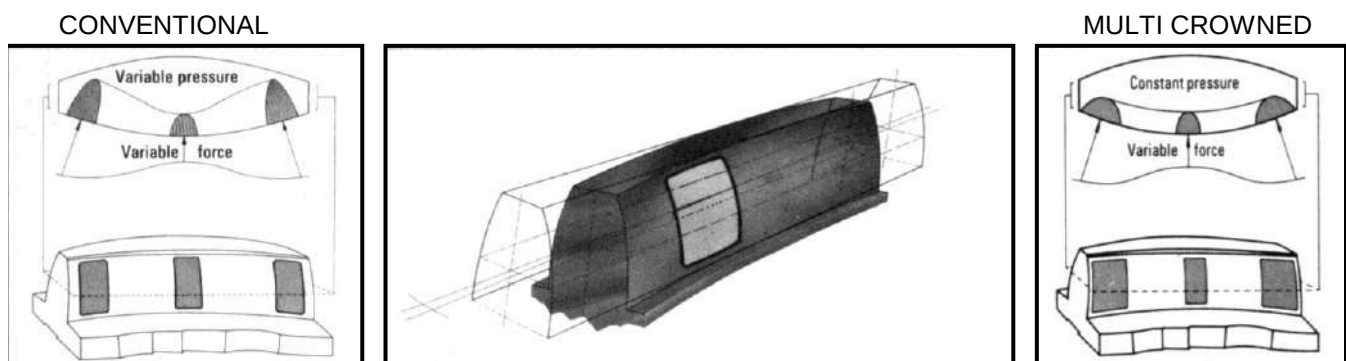


The conventional crowned tooth form with a small surface contact thus high stress concentrated and limit of misalignment.

This special tooth call Multi Crowned form ensures a much larger surface contact than the conventional crowned form. As a result, the contact pressure on the tooth flanks is reduced, favourably influencing the life of the coupling and allowing greater misalignment.



STRESS PATTERN CONTACT AREA COMPARISONS

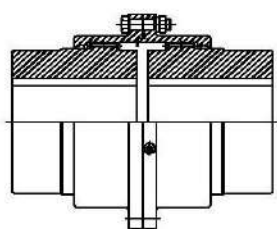


★ **LOWER STRESS :** The RGC® JAC-REVOL MULTI CROWNED tooth form is a curve with constantly changing radius of curvature. The tooth contact area under misaligned conditions has a much larger radius of conventional. The contact area therefore is larger thus reducing the surface stresses.

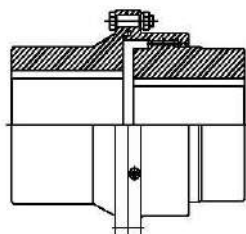
★ **CONSTANT VELOCITY POWER TRANSMISSION :** The RGC® JAC-REVOL MULTI CROWNED, tooth in such a way that the necessary characteristics for hamocinetic conjugate tooth action are perfectly achieved.

★ **LESS BACKLASH :** The RGC® JAC-REVOL MULTI CROWNED tooth design require less backlash for given angle of misalignment than conventional crowning, thus reducing shocks in reversing application.

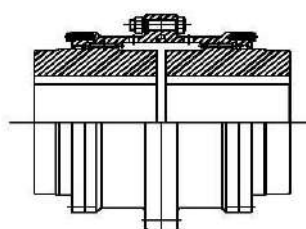
Types of RGC - Coupling



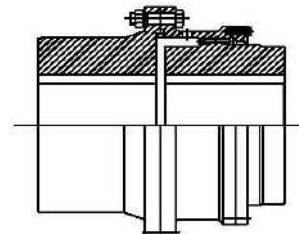
RGC-SSM
RGC-SSMH



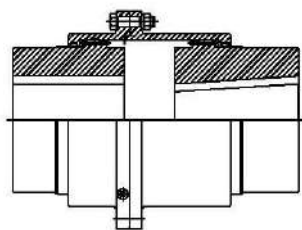
RGC-SEM
RGC-SEMH



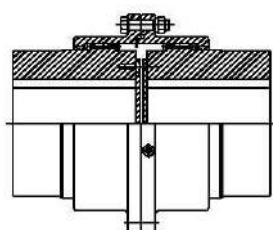
RGC-CCM
RGC-CCMH



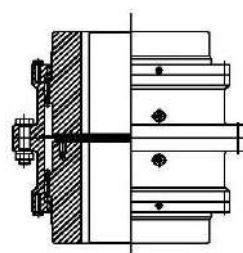
RGC-CEM
RGC-CEMH



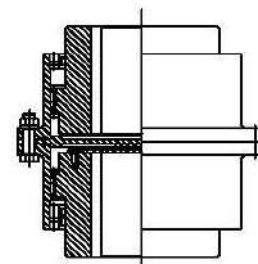
RGC-SMM



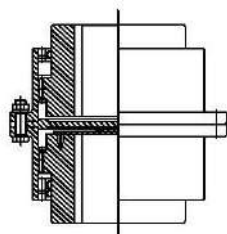
Equipped with
Oil Seal Cover



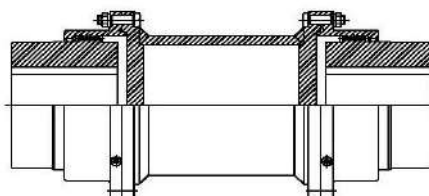
RGC-CMV
RGC-CMVH



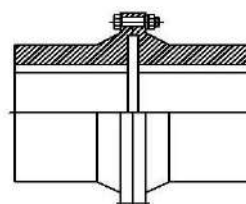
RGC-SMV
RGC-SMVH



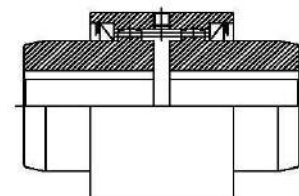
RGC-SV



RGC-SAM
RGC-CAM



RGC-EEM



RGC-GL

Installation and Maintenance

When installing RGC Coupling, carefully follow the instructions below for optimum performance.

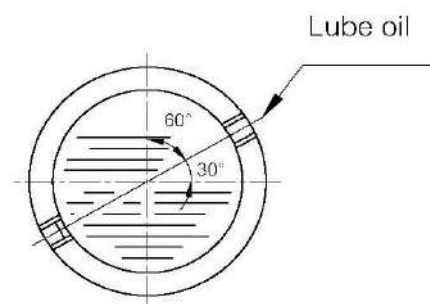
- 1) Boring instructions: Chuck Coupling Hub, and to avoid damage to coupling center, use brass sheet between chuck jaws and coupling center. Boring then Clean all parts of coupling.
- 2) Mount the Coupling Hub on the shaft avoiding the damage to it. Place Coupling Sleeve, Side Covers and O-Rings on the shaft before mounting the Coupling Hub. Seal keyways to prevent leakage with sealing agent, such as Supper Threebond, Sony Bond, Cemedine Bathcaulk or Hermeseal.
- 3) Perform the centering on the datum surfaces, using Feeler Gauge and Dial Gauge. Measuring misalignment less than 1/10 of the recommended in the table given.
- 4) Make sure there is no dust inside of coupling case. Tighten the reamer bolts on the mating face evenly while taking care not to damage O-Rings.

Lubrication and Handling

A) Gear Oil

The sleeve is provide with 2 oil holes, turn hole inclined at about 30 degree upwards.

Supply the recommended oil to this hole, then apply sealing agent (same as used on keyway) or sealing tape to the plugs and tighten the plugs completely.

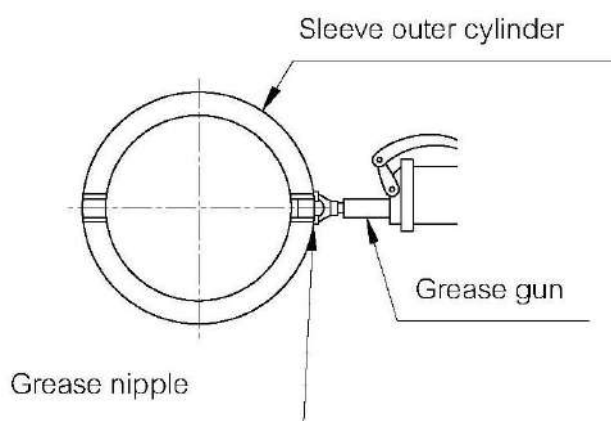


B) Grease

Supply the recommend grease and quantity enough to cover the teeth on the Sleeve and Hub.

Install the coupling and tighten the reamer bolts. Then fill the teeth on the Sleeve and Hub.

Install the coupling and tighten the reamer bolts. Then fill the additional grease from the plug using grease gun.



Replacement of Lubricant

BRAND	GEAR OIL	GREASE
SHELL	OMARA OIL 680	ALVANIA EP # 1
ESSO	SPATAN EP 680	PEN-O-LED EP # 1
MOBIL	MOBIL GEAR 636	MOBIL PLEX 46
CALTEX	MALTIFAK EP #1	MEROPA 680

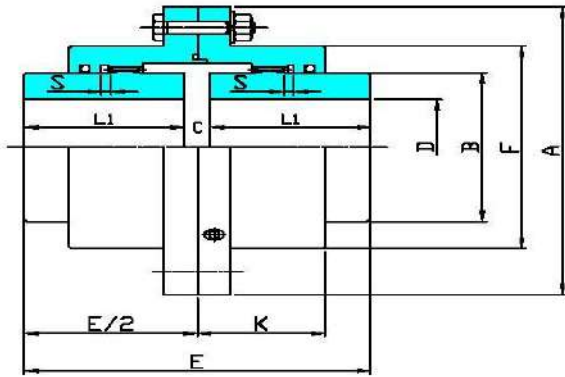
The initial oil and grease replacement should be done approx. 3 months after start of use. Disassemble the unit, drain the old oil or grease, fully remove the abrasible particles and replenish add or change the oil or grease every 6 months.

GEAR COUPLING /RGC - SERIES

SSM & SSMH - Type

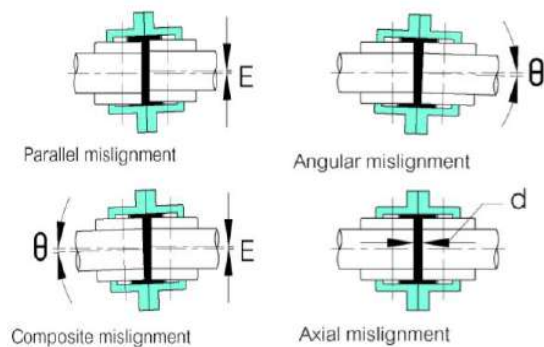
Alphabet "H" is represent : High torque transmitted type (Increased by heat treatment)

A) Torque Rating & Dimensions



Size (A)	Bore (mm.)		Max. Speed rpm.	Torque Rating (KNm)		Dimension (mm)							WT (kg)	GD ² (kgf-m ²)
	Min	Max		SSM Type	SSMH Type	E	L1	C	B	F	K	S		
112	17	40	4,000	0.788	1.42	108	50	8	58	79	40	2.0	4.3	0.0198
125	22	50	4,000	1.4	2.41	134	63	8	70	92	43	2.5	6.6	0.0353
140	22	56	4,000	2.01	3.54	150	71	8	80	107	47	2.5	9.3	0.0612
160	22	65	4,000	3.08	5.09	170	80	10	95	120	52	3.0	14	0.1130
180	32	75	4,000	4.73	7.73	190	90	10	105	134	56	3.0	19	0.191
200	32	85	3,810	6.75	12.7	210	100	10	120	149	61	3.0	26	0.315
224	42	100	3,410	9.81	17.8	236	112	12	145	174	65	4.0	39	0.599
250	42	115	3,050	14.4	24.2	262	125	12	165	200	74	4.0	55	1.08
280	42	135	2,720	22.9	32.3	294	140	14	190	224	82	4.5	80	2.06
315	100	160	2,420	36.1	49.7	356	170	16	225	260	98	5.5	129	4.24
355	125	180	2,150	54.4	65.8	396	190	16	250	288	108	5.5	177	7.13
400	140	200	1,900	76.4	92.4	418	200	18	285	329	114	6.5	242	12.5

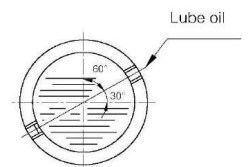
B) Allowable Misalignment



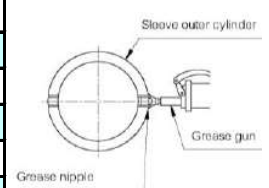
C) Lubricant Quantity

Size	E(mm)	Ø(°)	d(mm)	Oil (L)	Grease(g)
112	1.00	3	2.0	0.055	50
125	1.00	3	2.5	0.072	65
140	1.25	3	2.5	0.11	100
160	1.25	3	3.0	0.14	130
180	1.50	3	3.0	0.18	160
200	1.50	3	3.0	0.24	220
224	1.50	3	4.0	0.36	320
250	2.00	3	4.0	0.53	480
280	2.00	3	4.5	0.69	620
315	2.50	3	5.5	1.1	1,000
355	3.00	3	5.5	1.3	1,200
400	3.00	3	6.5	2.0	1,800

How to fill lube Oil



How to apply grease

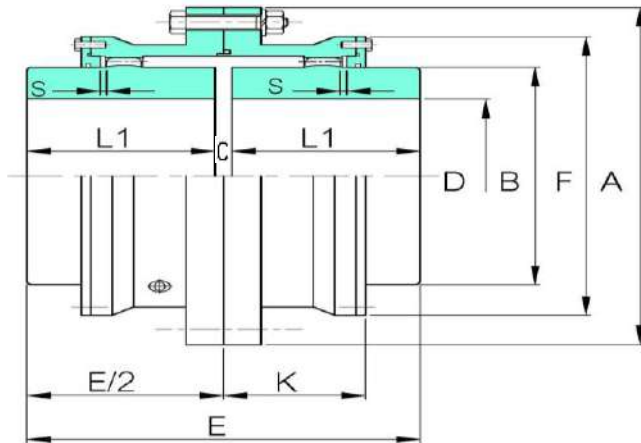


RGC - SERIES

CCM & CCMH - Type

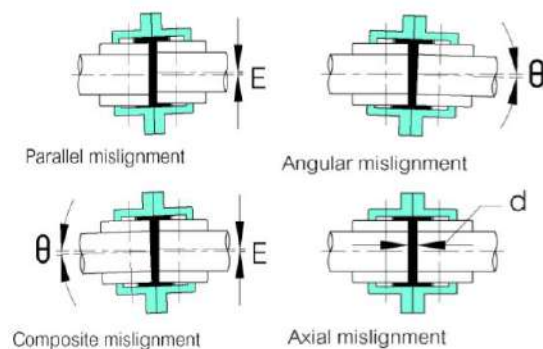
Alphabet "H" is represent : High torque transmitted type (Increased by heat treatment)

A) Torque Rating & Dimensions



Size (A)	Bore (mm.)		Max. Speed rpm.	Torque Rating (KNm)		Dimension (mm)							WT	GD ²
	Min	Max		CCM Type	CCMH Type	E	L1	C	B	F	K	S	(kg)	(kgf-m ²)
450	140	205	1,690	108	174	418	200	18	290	372	151	5.0	298	16.6
500	170	236	1,520	163	261	494	236	22	335	424	168	6.0	446	36.9
560	190	275	1,360	250	408	552	265	22	385	472	187	6.5	642	67.6
630	224	325	1,210	412	581	658	315	28	455	544	213	8.0	1,010	137
710	250	360	1,070	600	789	738	355	28	510	622	242	8.5	1,440	250
800	280	405	950	858	1,110	832	400	32	570	690	267	9.5	2,030	441
900	315	475	840	1,220	1,510	932	450	32	670	792	295	10.5	3,030	860
1000	355	510	760	1,680	1,970	1040	500	40	720	858	322	12.0	4,120	1380
1120	400	600	682	2,360	2,450	1160	560	40	840	990	360	13.0	5,920	2650
1250	500	710	610	3,250	3,250	1460	710	40	960	1126	399	14.0	9,410	5290

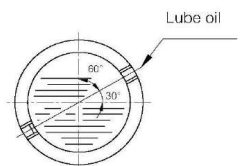
B) Allowable Misalignment



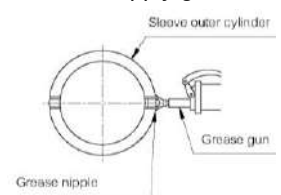
C) Lubricant Quantity

Size	E(mm)	Ø(°)	d(mm)	Oil (L)	Grease(g)
450	3.00	2	5.0	2.6	2,300
500	3.50	2	6.0	3.8	3,400
560	4.00	2	6.5	4.6	4,100
630	4.50	2	8.0	6.7	6,000
710	5.00	2	8.5	9.4	8,400
800	5.50	2	9.5	13	11,500
900	6.50	2	10.5	17	15,000
1000	7.00	2	12.0	23	20,000
1120	8.00	2	13.0	31	27,000
1250	9.00	2	14.0	45	40,000

How to fill lube Oil



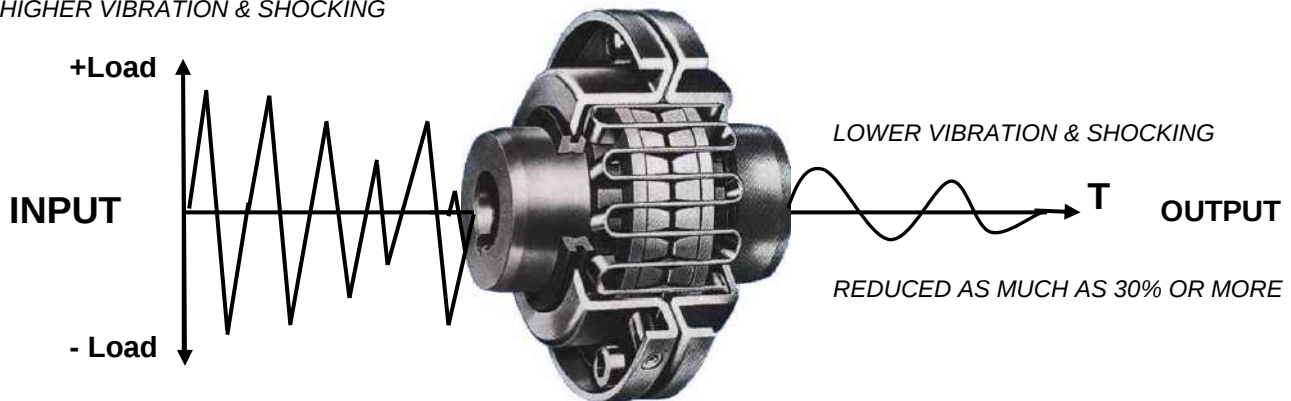
How to apply grease



Features & Benefit

The RSG- Steel Grid Coupling is designed to reduce vibration and shock load together with QUICK and EASY installation. The taper grids, made of high strength alloy steel, are quenched and tempered to spring hardness. The grid surface is then precision shot peened to compress the surface molecules.

HIGHER VIBRATION & SHOCKING

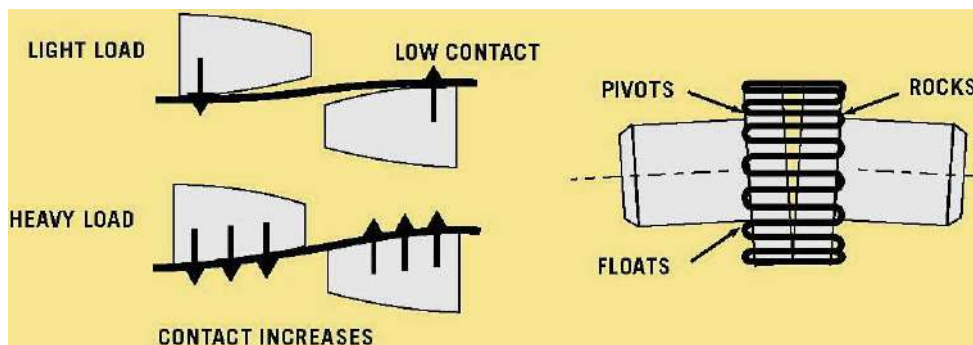


QUICK & EASY INSTALLATION

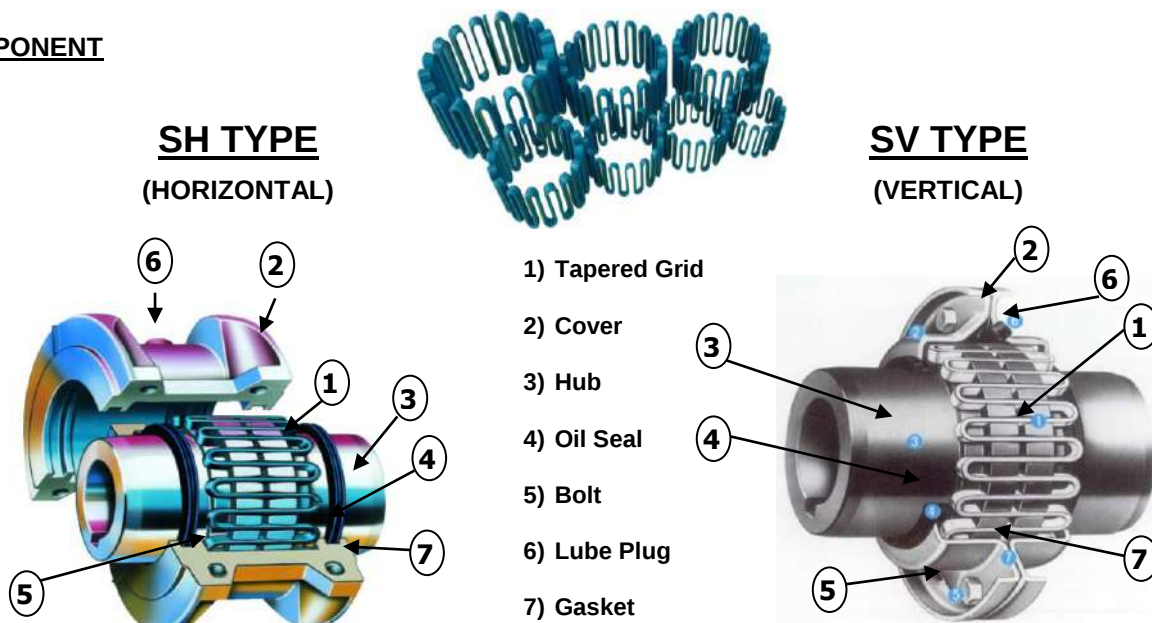
Tapered grids are accessible through the quickly removable cover. The replace-in-place design of the replacement grids allows them to be dropped in without the need to remove or reposition hubs or realign shafts.

EQUIPMENT PROTECTION AGAINST SHAFT MISALIGNMENT

The grid is free to rock, pivot and float within the hub teeth. Generous misalignment capacity is provided without producing detrimental bearing side loads created by other couplings.



COMPONENT



TYPE OF LOAD AND SERVICE FACTOR RECOMMENDATION

Table 1.

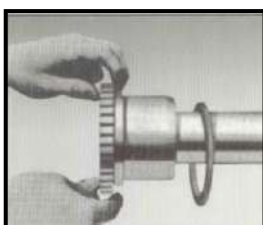
Torque Demands Driven Machine	Typical applications for electric motor or turbine driven equipment	Typical Service Factor
	Constant Torque such as Centrifugal Pumps, Blowers, and Compressors.	1.0
	Continuous duty with some torque variations including Plastic Extruders, Forced Draft Fans.	1.5
	Light shock loads from Metal Extruders, Cooling Towers, Cane Knife, Log Haul.	2.0
	Moderate shock loading as expected from a Car Dumper, Stone Crusher, Vibrating Screen.	2.5
	Heavy shock load with some negative torques from Roughing Mills, Reciprocating Pumps, Compressors, Reversing Runout Tables,	3.0
	Applications like Reciprocating Compressors with frequent torque reversals, which do not necessarily cause reverse rotations.	Please consult us.

ALIGNMENT INSTRUCTIONS

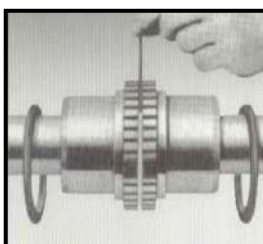
Table 2.

Type of Misalignment						
	Parallel Offset P(mm)	Angular X - Y (mm)	GAP(mm)		Min	Max
SIZE						
20S	0.15	0.08	2.90	3.50		
30S	0.15	0.08	2.90	3.50		
40S	0.15	0.08	2.90	3.50		
50S	0.20	0.10	2.90	3.50		
60S	0.20	0.13	2.90	3.50		
70S	0.20	0.13	2.90	3.50		
80S	0.20	0.15	2.90	3.50		
90S	0.20	0.18	2.90	3.50		
100S	0.25	0.20	4.30	5.30		
110S	0.25	0.23	4.30	5.30		
120S	0.28	0.25	5.70	7.00		
130S	0.28	0.30	5.70	7.00		
140S	0.28	0.33	5.70	7.00		
150S	0.30	0.41	5.70	7.00		
160S	0.30	0.46	5.70	7.00		
170S	0.30	0.51	5.70	7.00		
180S	0.38	0.56	5.70	7.00		
190S	0.38	0.61	5.70	7.00		
200S	0.38	0.69	5.70	7.00		

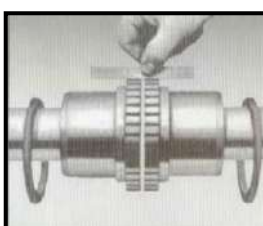
INSTALLATION



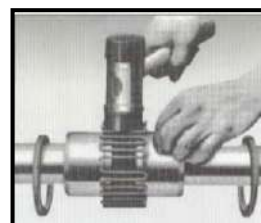
1) HUB INSTALLATION
Check hub bores are correct tolerance , then clean all parts using nonflammable solvent. Lightly apply grease on seals and place them on shaft,before installing the hubs.



2) GAP AND ANGULAR ALIGNMENT.
Use a feeler gauge to set the GAP between hub faces at 4 points 90° apart. The GAP should not exceed the value given in Table 2. The maximum(X) minus minimum(Y) should not exceed the angular limit in Table 2.



3) OFFSET ALIGNMENT
Use a straight edge to align shafts at 4 points 90° apart. The offset P should not exceed value in Table 2.



4) Fill the hub gap and grid teeth with the grease then lightly open the grid to engage with the grooves on hub. Use soft mallet to seat the grids in tapered teeth grooves. Make sure all segment's open ends are on the same side.



5) Pack the grid with additional grease and wipe off the exceed flush with the top of the grid. Slide seals over the hub and line up with the cover seal grooves. Place

gaskets on flange of lower cover and install top cover.



6) Align cover match marks on the same side.For vertical shaft,makes sure the match marks are UP. Tighten the covers bolts. For grease remove,unscrew the two lube plugs and fill the

grease until it start seeping out from other lube plug

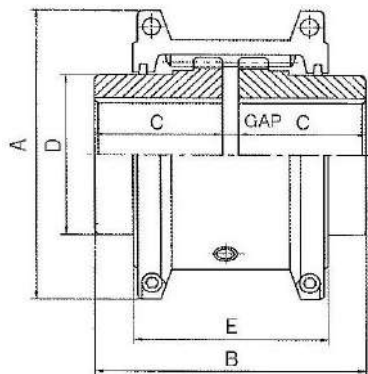
GREASES RECOMMENDED

SHELL	Alvania EP 2	BP	LS2 , LS-EP2
ESSO	Beacon EP 2	TEXACO	Multifax EP2
MOBIL	Mobilux EP 2	Castrol	LMX , EPL2

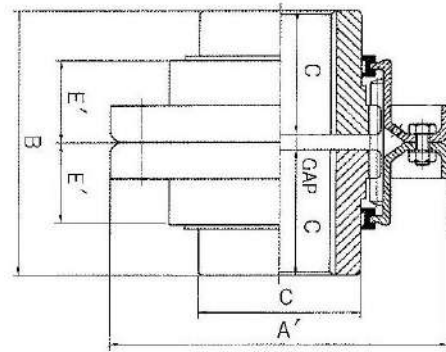
GREASES SPECIFICATION

Base Oil Viscosity : 150 cst @ 40 deg C

Grade :NLGI#2 ,Dropping point 150C,minumum.


SH

(HORIZONTAL SPLIT ALUMINUM COVER TYPE)


SV

(VERTICAL SPLIT STEEL COVER TYPE)

SIZE (A)	BASIC TORQUE	MAX. SPEED	BORE(mm.)		DIMENSIONS (mm)							GAP(mm)			Couplg.	Lube
	(Nm.)	(rpm.)	MIN.	MAX.	A	A'	B	C	D	E	E'	Min.	Normal	Max.	kg	kg
20S	48	4,500	12.7	30	101.6	111.1	98.0	47.5	39.7	66.5	24.2	2.9	3.2	3.5	1.9	0.03
30S	136	4,500	12.7	36	111.0	120.7	98.0	47.5	49.2	68.3	25.0	2.9	3.2	3.5	2.6	0.03
40S	227	4,500	12.7	44	117.5	128.5	104.6	50.8	57.1	70.0	25.7	2.9	3.2	3.5	3.4	0.05
50S	396	4,500	12.7	50	138.0	147.6	123.6	60.3	66.7	79.5	31.2	2.9	3.2	3.5	5.4	0.05
60S	622	4,350	19.1	57	150.5	162.0	130.0	63.5	76.2	92.0	32.2	2.9	3.2	3.5	7.3	0.09
70S	905	4,125	19.1	68	161.9	173.0	155.4	76.2	87.3	95.0	33.7	2.9	3.2	3.5	10	0.11
80S	1,865	3,600	27.0	82	194.0	200.0	180.8	88.9	104.8	116.0	44.2	2.9	3.2	3.5	18	0.17
90S	3,391	3,600	27.0	95	213.0	232.8	199.8	98.4	123.8	122.0	47.7	2.9	3.2	3.5	25	0.25
100S	5,708	2,440	41.3	107	250.0	266.7	245.7	120.6	142.0	155.5	60.0	4.3	4.8	5.3	42	0.43
110S	8,477	2,250	41.3	117	270.0	285.8	258.5	127.0	160.3	161.5	64.2	4.3	4.8	5.3	54	0.51
120S	12,433	2,025	60.3	136	308.0	319.0	304.4	149.2	179.4	191.5	73.4	5.7	6.3	7.0	81	0.73
130S	18,085	1,800	66.7	165	346.0	377.8	329.8	161.9	217.5	195.0	75.1	5.7	6.3	7.0	121	0.91
140S	26,094	1,650	66.7	184	384.0	416.0	371.6	182.8	254.0	201.0	78.2	5.7	6.3	7.0	178	1.13
150S	36,169	1,500	100	203	453.1	476.3	371.8	182.9	269.2	271.3	106.9	5.7	6.3	7.0	234	1.95
160S	50,862	1,350	120.7	228	501.4	533.4	403.3	198.1	304.8	278.9	114.3	5.7	6.3	7.0	317	2.81
170S	67,816	1,225	133.4	279	566.4	584.2	437.8	215.9	355.6	304.3	119.4	5.7	6.3	7.0	448	3.49
180S	94,038	1,100	152.4	311	629.9	630.0	483.6	238.8	393.7	321.1	130.0	5.7	6.3	7.0	619	3.76
190S	124,328	1,050	152.4	339	675.5	685.0	524.2	259.1	436.9	325.1	135.0	5.7	6.3	7.0	776	4.4
200S	169,538	900	177.8	361	756.9	737.0	564.8	279.4	497.8	355.6	145.0	5.7	6.3	7.0	1057	5.62



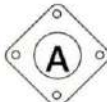
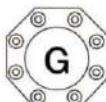
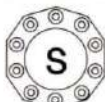
Benefits

- 1) No Lubrication require because the RDC-Disc Coupling has no sliding, frictional or moving parts. Therefore, there is no friction or noise, and energy loss is low, with no dirty oil to cope with.
- 2) High torsional stiffness and free from clearance (No Backlash). For the equipment such as Machine Tools with numerical controllers, Indexing Machine and Printing Machine requiring accurate shaft rotation and phase control. RDC-Disc Coupling is the best suited by their high torsional stiffness.
- 3) High torques and high bore capacity.
When compare with other type coupling, the RDC-Disc Coupling always giving higher torque and high bore capacity.
- 4) Perfect installation and initial conditions remain unchanged, RDC-Disc Coupling has an unlimited service life. Required maintenance by visual inspection the condition of flex disc element, bolts & nuts when operation stopped.
- 5) Fail Safe
Should the flex disc element be damaged due to overload or accident, a fail-safe mechanism transmitting rotation via washers becomes operational.

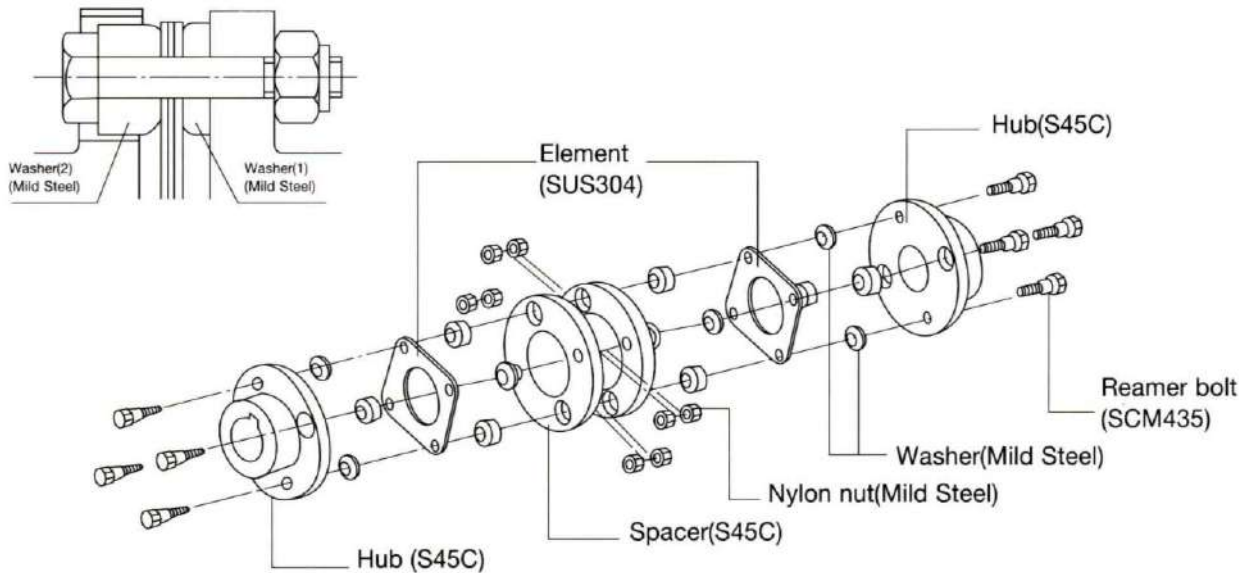
Features

The RDC-Disc Coupling comprises two hub and single pack of Stainless Disc Flexible Element for Single A3 and E3 type or Double Disc Flex for various spacer type as shown in below table.

Type of Flexible Elements

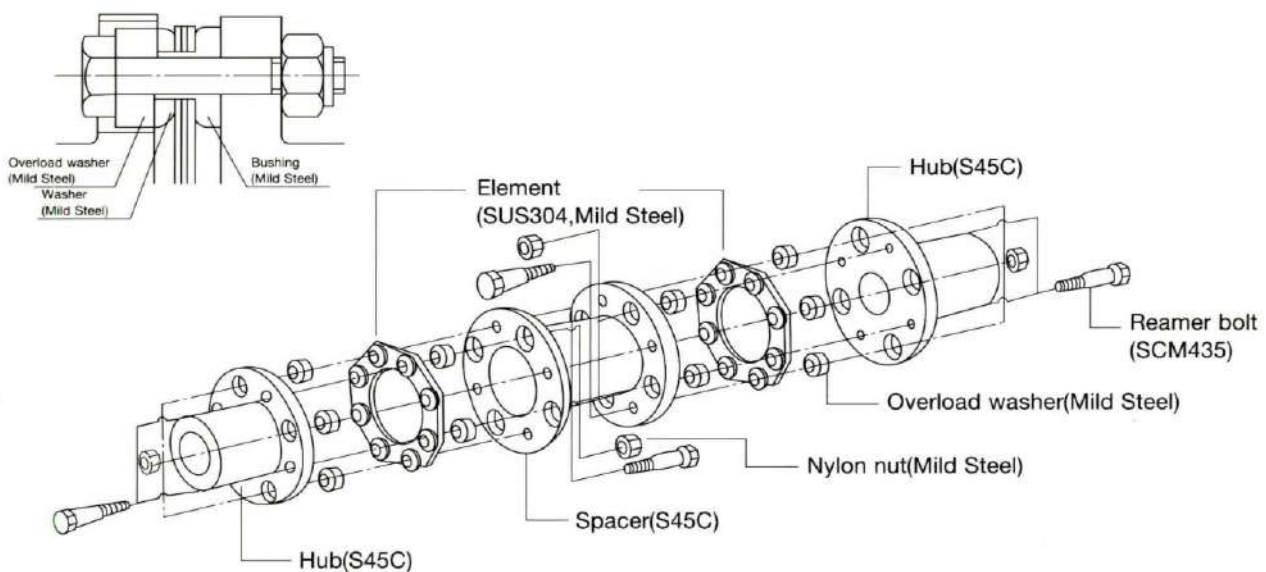
Type of disc-plate Usage							
		Max.angular misalignment:1° Allowable torque: 3,4-650kg · m	Max.angular misalignment:0,7° Allowable torque: 58-13,070kg · m	Max.angular misalignment:0,5° Allowable torque: 392-18,150kg · m	Max.angular misalignment:0,35° Allowable torque: 1,379-26,130kg · m	Max.angular misalignment:0,25° Allowable torque: 1,669-31,936kg · m	Number of bolts:10-20.Number is determined based on service conditions.Consult us for further information., Max.torque:230 x 10/kg · m
single		A3	E3	-	-	-	-
double disc-flex	short space	AX	-	-	-	-	-
	standard space	A4	E4	G4	S4	U4	W4
	custom space	AB	EB	GB	SB	UB	WB
floating disc-flex	horizontal	A5	E5	G5	S5	U5	W5
	vertical	A7	E7	G7	S7	U7	W7

Design features of 4-Bolts Disc Coupling.



Standard materials are shown in parentheses.

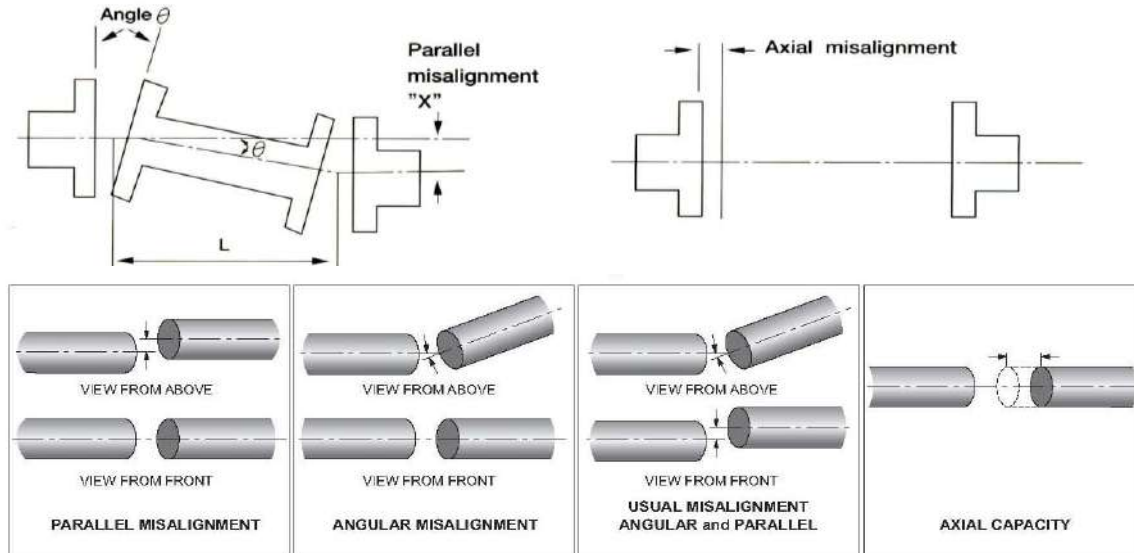
Design features of 6 - 12 bolts Disc Coupling.



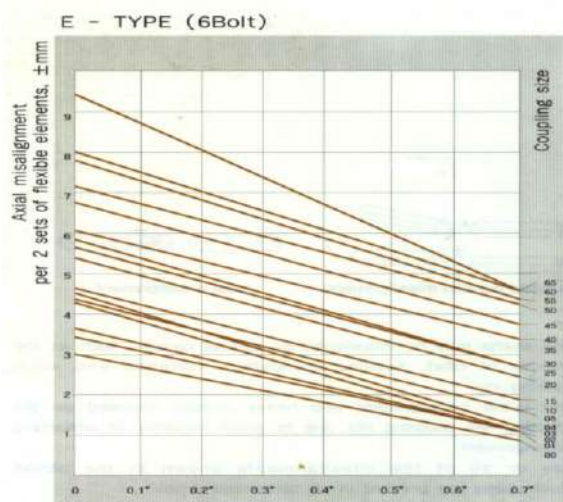
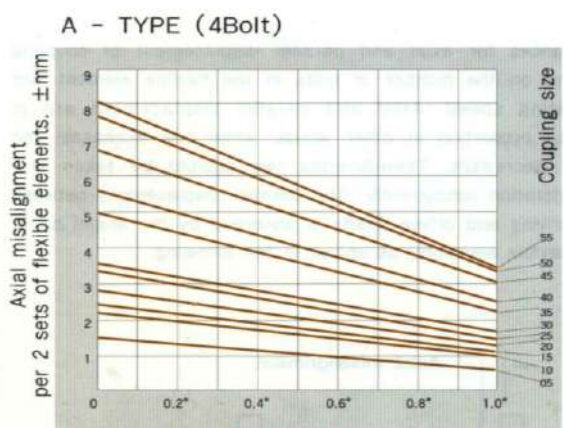
Standard materials are shown in parentheses.

Misalignment

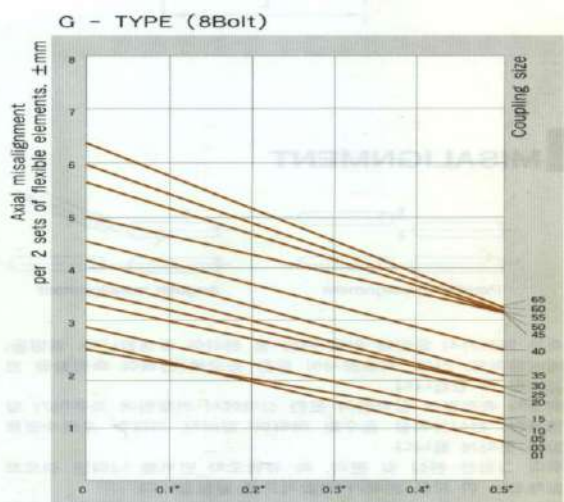
The allowances for axial and parallel misalignment of RDC-Disc Coupling depend on the number of bolt and operating speed. Axial and Parallel misalignment are in inverse proportion. The parallel misalignment between driving & driven shaft is absorb by the angle θ as shown below.



End Float



- Most driving equipment requires the absorption of axial misalignment (end float). RDC-Disc Coupling permit great axial misalignment with minimum end thrust. The graph shows the maximum allowable axial misalignment relate to various degree of angular misalignment. Good durability is secured by working within the allowable value given.
- The arrangement pack of Disc Flex Element is provides RDC-Disc Coupling with very high degree of torsional stiffness and ensures torque transmission without any backlash even it can allowed to have some parallel, angle or axial misalignment.





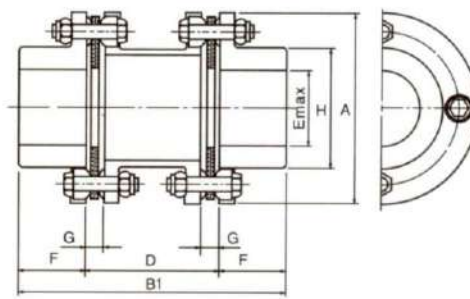
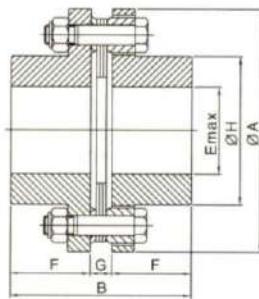
A3- TYPE



AX, A4 - TYPE



A5 - TYPE



(A3 - TYPE) 4-Bolt

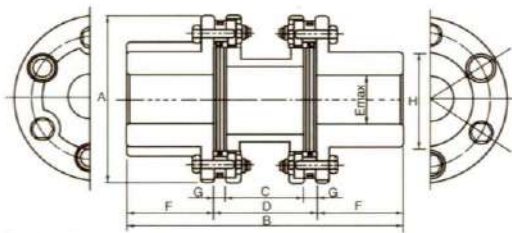
Size No.	Basic torque (Kg.m)	Max radial load (kg)	Max. rpm	표준허브(N-Hub)						특정허브(K-Hub)			Weight (kg)	GD ² (kg·cm ²)
				A	B	Emax	F	G	H	P-Hub	Z-Hub			
										F	H	Emax		
05	3.4	15	47,000	67.4	56.9	22	25.4	6.1	33.1	40	47	32	0.6	8
10	9.2	25	39,000	81.1	57.4	32	25.4	6.6	45.8	40	58	40	1.1	24
15	18	56	34,000	92.8	65.8	35	28.7	8.4	50.8	45	66	42	1.7	48
20	25	83	30,000	103.7	78.2	42	33.5	11.2	61.0	50	77	48	2.4	80
25	43	120	25,000	125.8	93.9	50	41.1	11.7	71.2	60	92	60	4.3	224
30	79	180	22,000	143.0	107.3	60	47.8	11.7	83.9	70	104	70	6.9	440
35	130	270	19,000	168.0	131.2	72	57.2	16.8	105.5	85	129	85	11.5	1080
40	210	380	16,000	194.1	144	82	63.5	17.0	118.2	100	147	95	16.4	2080
45	340	450	15,000	214.2	174.0	95	76.2	21.6	137.2	115	166	110	28.0	3520
50	500	610	13,000	246.2	201.7	108	88.9	23.9	156.3	135	191	120	37.0	7200
55	650	770	11,000	275.6	230.4	118	101.6	27.2	169.0	150	209	130	51.0	12800

(Ax, A4 - TYPE) 4-Bolt Spacer Type

Size No.	Basic torque (kg · m)	Max. Speed rpm	A4(Standard)			AX(Short)			AB(Custom)		
			D	Weight (kg)	GD ² (kg · cm ²)	D	Weight	GD ²	Ba	D	D Max
05	3.4	47,000	88.9	1.2	18	36	1.1	17.8	2F + D	고객주문 사양	300
10	9.2	39,000	88.9	1.9	44	39	1.7	41			200
15	18	34,000	101.6	2.9	84	47	2.7	79			250
20	25	30,000	127.0	7.1	396	53	6.6	136			250
25	43	25,000	127.0	7.1	386	62	6.6	337			350
30	79	22,000	127.0	10.8	386	69	6.6	775			350
35	130	19,000	127.0	16.3	1680	78	15.6	1628			300
40	210	6,000	139.7	24.7	3400	89	24.0	3317			350
45	340	15,000	152.4	32.5	5600	97	31.5	5428			350
50	500	13,000	177.8	50.0	11200	109	48.4	10865			350
55	650	11,000	177.8	75.0	20400	134	73.9	20127	400		



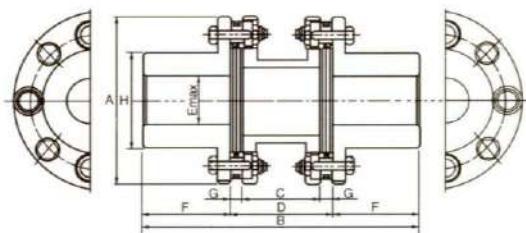
E4-TYPE



(E4 TYPE) 6-Bolt



G4-TYPE



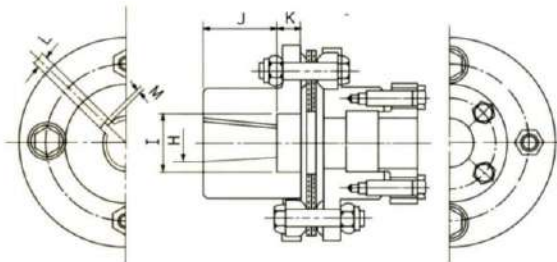
Size No.	Torque	A	B	C	(1) D	E Max	F	G	H	Max	Weight W	Inertial Effect GD ²	Torsional stiffness	(2) Allowable End Float (± mm)	(3) Axial Spring Constant (kg/mm)
	(kg · m)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(rpm)	(Kg)	(Kg · m ²)	(Kg · m/rad)		
00	58	119	168	39.4	60	51	54	10.3	74	26,000	6.0	0.03	0.45 × 10 ⁵	3.0	16.5
01	94	137	198	50.0	72	55	63	11.0	81	23,000	9.1	0.06	0.69 × 10 ⁵	3.4	21.1
02	174	161	238	67.2	90	67	74	11.4	97	19,000	16.9	0.14	0.94 × 10 ⁵	3.6	28.0
03	341	180	269	82.4	109	72	80	13.3	104	17,000	21.6	0.26	1.61 × 10 ⁵	4.2	45.7
04	500	212	308	87.6	118	85	95	15.2	124	15,000	35.1	0.59	3.14 × 10 ⁵	4.5	60.6
05	620	276	377	118	153	111	112	17.5	161	11,600	65.1	1.8	3.98 × 10 ⁵	3.9	42.2
10	840	276	377	115	153	111	112	19.0	161	11,600	66.1	1.9	4.95 × 10 ⁵	3.9	59.5
15	1,090	308	440	134	172	133	134	19.0	193	10,300	107.8	3.7	7.34 × 10 ⁵	4.2	57.0
20	1,820	346	497	148	191	152	153	21.5	218	9,200	156.1	6.7	1.22 × 10 ⁶	4.9	76.2
25	2,690	375	553	175	223	165	165	24.0	240	8,500	211.8	10.6	1.70 × 10 ⁶	5.2	85.7
30	3,410	410	610	195	254	178	178	29.5	258	7,800	274.5	16.5	2.17 × 10 ⁶	5.4	99.2
35	4,070	445	646	211	270	187	188	29.5	272	7,200	333.3	23.9	2.44 × 10 ⁶	5.6	103.4
40	4,720	470	686	212	274	205	206	31.0	297	6,800	399.2	30.7	2.99 × 10 ⁶	6.3	102.0
45	6,100	511	749	223	287	231	231	32.0	334	6,200	525.3	48.0	3.86 × 10 ⁶	6.7	100.5
50	7,620	556	800	227	292	254	254	32.5	364	5,700	676.3	72.9	4.80 × 10 ⁶	7.3	113.3
55	9,440	587	839	243	311	263	264	34.0	382	5,400	803.4	100.6	6.09 × 10 ⁶	7.8	123.2
60	10,890	629	895	274	343	275	276	34.5	399	5,000	954.1	137.4	6.60 × 10 ⁶	8.7	131.0
65	13,070	654	934	285	356	289	289	35.5	419	4,800	1,095.3	176.9	7.98 × 10 ⁶	8.9	138.3

(G4 TYPE) 8-Bolt

Size No.	Torque (kg · m)	A (mm)	B (mm)	C (mm)	D (mm)	E _{max} (mm)	F (mm)	G (mm)	H (mm)	Max (rpm)	Weight (kg)	GD ² (kg · m ²)	Allowable Endfloat (±mm)	Torsional Stiffness (kg · m)
01	392	214	333	92.6	117	95	108	12.2	137	15,000	38.0	0.65	2.1	7.3
03	726	246	369	99.6	127	108	121	13.7	156	13,000	55.5	1.24	2.1	15.9
05	915	276	421	118	153	111	134	17.5	161	11,600	72.2	1.8	2.1	22.1
10	1,100	276	421	115	153	111	134	19.0	161	11,600	73.3	1.8	2.1	22.1
15	1,570	308	492	134	172	133	160	19.0	193	10,300	119.7	3.7	2.4	45
20	2,610	346	557	146	191	152	183	22.5	218	9,200	174.3	6.8	2.9	58
25	3,850	375	619	167	223	165	198	28.0	240	8,500	233.8	10.8	3.1	110
30	4,810	410	682	192	254	178	214	31.0	258	7,800	305.3	16.7	3.3	150
35	5,820	445	720	208	270	187	225	31.0	272	7,200	367.4	25.0	3.6	170
40	6,570	470	768	206	274	205	247	34.0	297	6,800	447.5	31.1	4.0	170
45	8,530	511	843	221	287	231	278	35.0	334	6,200	591.6	48.0	4.5	170
50	10,530	556	902	218	292	254	305	37.0	364	5,700	761.4	74.7	5.0	310
55	13,070	587	945	236	311	263	317	37.5	382	5,400	901.9	101.6	5.2	360

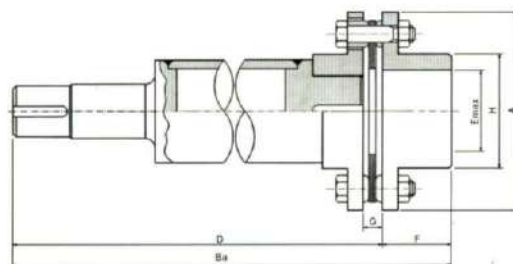
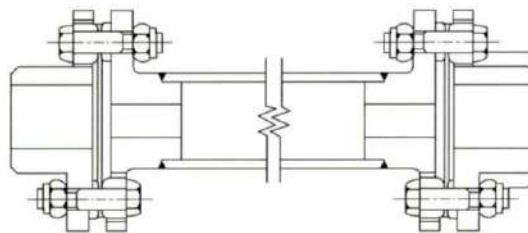
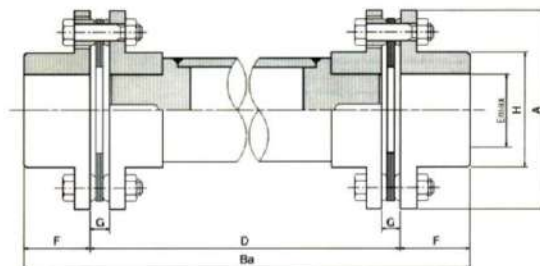
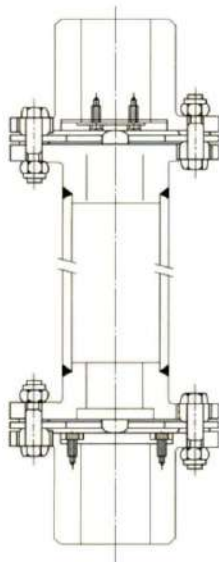
The Tapered shaft bores and Floating shaft type also available, Please consult us for more detail.

Design standards for tapered-shaft bores



COUPLING SIZE	ø H	ø I	J	K	L	M	TAPER
A3-05-11T	11	21	16	9.4	4H7	1.2	1 10
A3-10-11T	11						
A3-05-16T	16	25	29.5	10.5	5F7	1.5	
A3-10-16T	16			4.6			
A3-15-16T	15.46			4			
A3-20-16T	16			11.6			
A3-25-16T	16						

Floating shaft type coupling



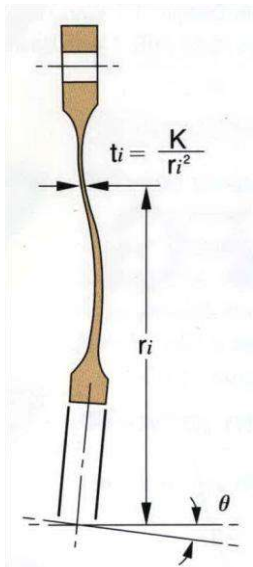
* "D"는 축간 거리를 말하며 주문시 정확히 알려 주셔야 하며 치수 기호는 표준형 규격과 동일합니다.

* "D" is the distance between shaft ends. Please give us the further information on "D" when you order.

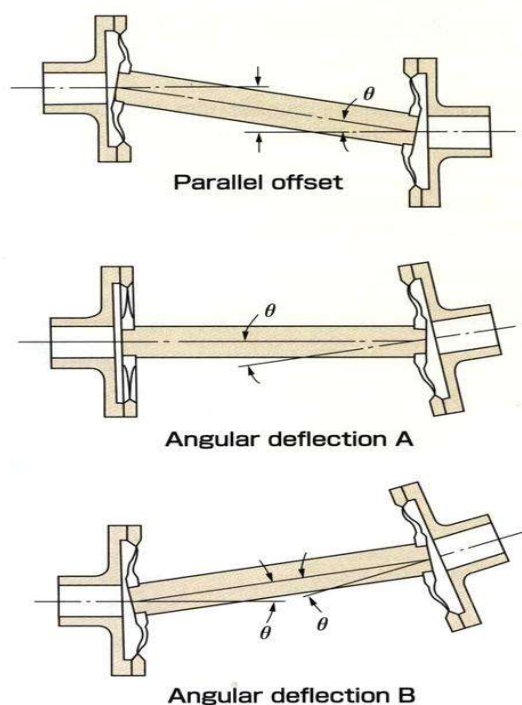
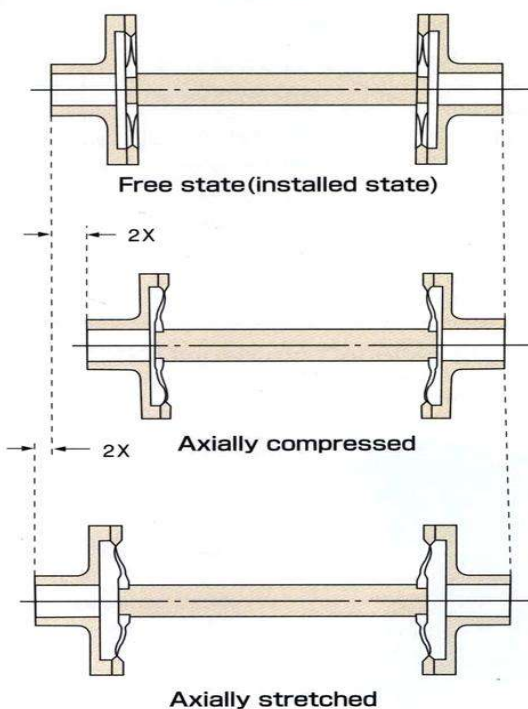


The EKK diaphragm couplings are designed for all misalignment of rotating shaft can be accommodated by elastic flexure of very thin web of the diaphragm. Flexibility in bending, stretch and compression. Achieved high torque transmissions by elastic deflection and torsional rigidity of the specially contoured diaphragms.

Features & Benefits



- Special diaphragm profile
 - High torque transmission
 - Low bearing load
 - Simple construction
 - Easily remove "spacer" flex unit
 - Light weight
 - Permanent balance
 - No relative or rubbing movement of any parts
 - No lubrication
 - No vibration or noise generations
 - Zero backlash
- Most adequate for high speed application (up to 100,000rpm)
Wider range of temperature condition
Standard material -100°C~+320°C

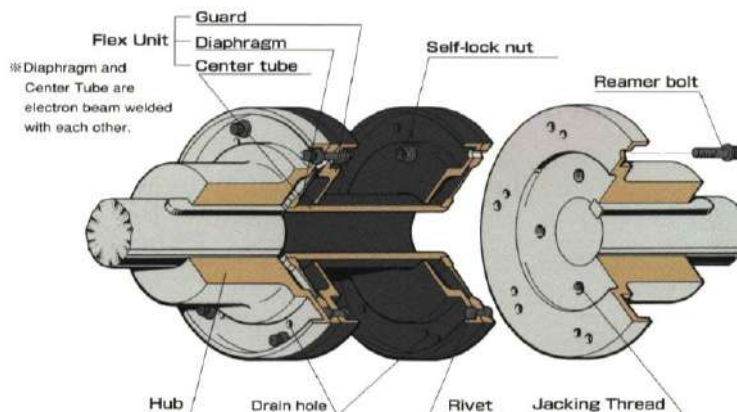


Construction

Only Flex Unit



Reamer Bolts &
Self Locking Nuts



Standard Materials

PART NAME	MODEL 66	MODEL 67/99	MODEL 74/100
HUB	SCM435	SCM 435 *1	SCM 435 * 1
	S45C (4 inch only)	SNCM 439 *1	SNCM 439 * 1
DIAPHRAGM	Special Alloy Steel	Model 67 : Special Alloy Material	Model 67 : Special Alloy Material
		Model 99 : Special Stainless Steel	Model 99 : Special Stainless Steel
GUARD	SS 400	SS400	SCM440
	SPCC (Size 04 Only)		
CENTER TUBE	SNCM 439	SNCM 439	SNCM 439
SHIM	No Standard	SUS304/SCM440	SUS304/SCM440
REAMER BOLT	AISI 8740	AISI 8740	AISI 8740
	SCM435(4 inch only)	AISI 8740	AISI 8740
Self LOCK NUT	AISI 8740	AISI 8740	AISI 8740
	SCM435 (4 inch only)		

* 1 :Hubs for Model 67/74/99/100 are manufactured to order, Standard hub for Model66 may be utilized.

Dynamic Balancing

Dynamic balancing will be as per our standard specification shown in below table unless otherwise specification required.

DESCRIPTION	MODEL						
	66L	66I	66H	67	74	99	100
FLEX UNIT ONLY	X	O	O	As per standard or specification required by a customer. *2			
DRIVER SIDE HUB	X	X	*1				
DRIVEN SIDE HUB	X	X	*1				
FINAL ASSEMBLY	X	X	*1				

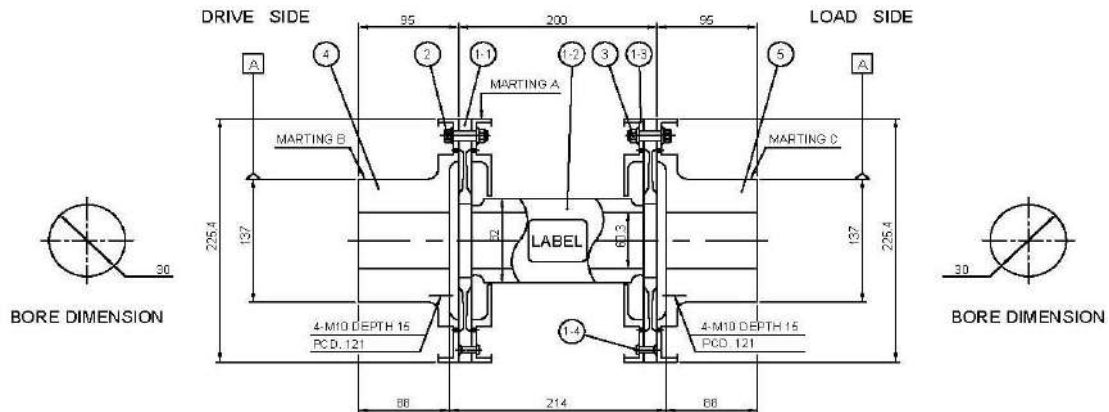
1* : If balancing of the final assembly is required, it will be done on each hub only and the assembly.

2* : If API 671 compliance is required with no other specific requirement, balancing will be on each hub only.

Note) Unless otherwise requested, balancing tolerance for 66I/66H is as per JIS G2.5(ISO G2.5). Balancing tolerance for model 67/74/99/100 is subject to applicable standard or customer's requirement.

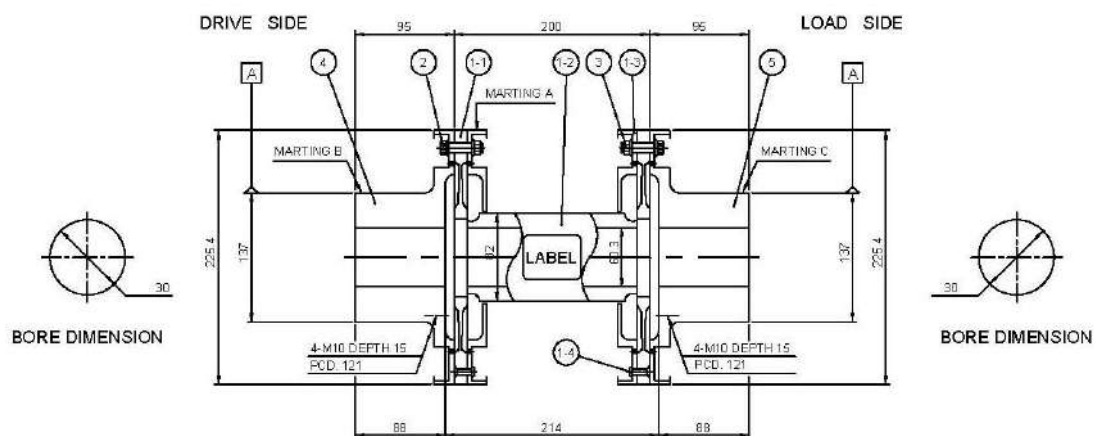
Reference Drawings & Specification

67E 308 - 200 - FF



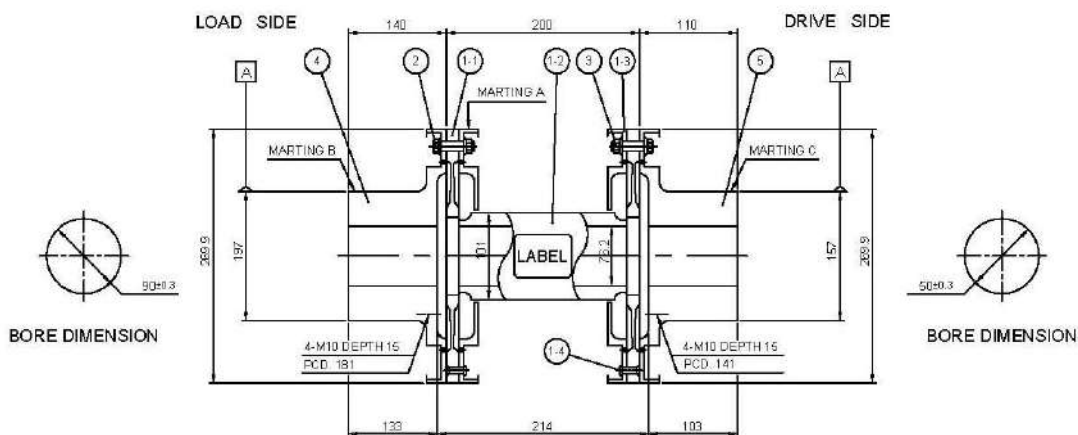
Length between shaft ends.(L)	Rated Torque (Nm)	Peak Torque (Nm)	Anlular def (rad)	Parall Offset	Axial def(±mm)	Speed Max(rpm)
100 ~ 1,250 mm.	6,610	15,000	4.36×10^{-3}	$L \times \tan(\text{rad})$	2.54	24,000

67E 408 - 200 - FF



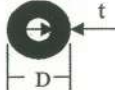
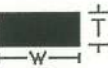
Length between shaft ends.(L)	Rated Torque (Nm)	Peak Torque (Nm)	Anlular def (rad)	Parall Offset	Axial def(±mm)	Speed Max(rpm)
100 ~ 1,250 mm.	8,810	19,900	3.49×10^{-3}	$L \times \tan(\text{rad})$	1.99	28000

67E 410- 200 - GI



Length between shaft ends.(L)	Rated Torque (Nm)	Peak Torque (Nm)	Anlular def (rad)	Parall Offset	Axial def(±mm)	Speed Max(rpm)
150 ~ 1,250 mm.	16,600	37,300	3.49×10^{-3}	$L \times \tan(\text{rad})$	2.35	24,000

Calculation of Theoretical Weights For Commonly Used Metals (In Kg/Meter)

ROUND BARS		$\frac{0.785 \times D \times D \times \rho}{1000}$
HOLLOW BARS		$\frac{3.142 \times (D-t) \times t \times \rho}{1000}$
FLAT BARS		$\frac{W \times T \times \rho}{1000}$
HEXAGON BARS		$\frac{0.866 \times A/F \times A/F \times \rho}{1000}$

Used Abbreviation:

D = Diameter (mm)	A/F = Across Flat (mm)
T = Thickness (mm)	ρ = Density
W = Width (mm)	

DENSITIES OF COMMONLY USED METALS (ρ)

Metal	Density (ρ) (10 ⁻⁶ kg/mm ³)
Carbon & low alloy steel	7.85
Tool steel	7.70 ~7.90
Mo High Speed steel	8.15
Stainless steel	7.80

Metal	Density (ρ) (10 ⁻⁶ kg/mm ³)
Copper	8.94
Brass	8.5
Bronze	8.82

Metal	Density (ρ) (10 ⁻⁶ kg/mm ³)
Aluminum	2.7
Zinc	7.15
Tin	7.32
Lead	11.34
Silver	10.48
Tungsten	19.35

Weight Conversion Table

Round and Square Steel Kg/m. Spec. gravity 7.85								
Dim mm			Dim mm			Dim mm		
1	0.006	0.008	55	18.65	23.75	305	573.5	730.3
2	0.025	0.031	60	22.20	28.26	310	592.5	754.4
3	0.056	0.071	65	26.05	33.17	315	611.8	778.9
4	0.099	0.126	70	30.21	38.47	320	631.3	803.8
5	0.154	0.196	75	34.68	44.16	325	651.2	829.2
6	0.222	0.283	80	39.46	50.24	330	671.4	854.9
7	0.302	0.385	85	44.55	56.72	335	691.9	881.0
8	0.395	0.502	90	49.94	63.59	340	712.7	907.5
9	0.499	0.636	95	55.64	70.85	345	733.8	934.4
10	0.617	0.785	100	61.65	78.50	350	755.3	961.6
11	0.746	0.950	105	67.97	86.55	355	777.0	989.3
12	0.888	1.130	110	74.60	94.99	360	799.0	1017.4
13	1.042	1.327	115	81.54	103.80	365	821.4	1045.8
14	1.208	1.539	120	88.78	113.04	370	844.0	1074.7
15	1.387	1.766	125	96.33	122.70	375	867.0	1103.9
16	1.578	2.010	130	104.2	132.7	380	890.3	1133.5
17	1.782	2.269	135	112.4	143.1	385	913.9	1163.6
18	1.998	2.543	140	120.8	153.9	390	937.8	1194.0
19	2.226	2.834	145	129.6	165.1	395	962.0	1224.8
20	2.466	3.140	150	138.7	176.6	400	986.5	1256.0
21	2.719	3.462	155	148.1	188.6	405	1011.3	1287.6
22	2.984	3.799	160	157.8	201.0	410	1036.4	1319.6
23	3.262	4.153	165	167.9	213.7	415	1061.8	1352.0
24	3.551	4.522	170	178.2	226.9	420	1087.6	1384.7
25	3.853	4.906	175	188.8	240.4	425	1113.6	1417.9
26	4.168	5.307	180	199.8	254.3	430	1140.0	1451.5
27	4.495	5.723	185	211.0	268.7	435	1166.7	1485.4
28	4.834	6.154	190	222.6	283.4	440	1193.6	1519.8
29	5.185	6.602	195	234.4	298.5	445	1220.9	1554.5
30	5.549	7.065	200	246.6	314.0	450	1248.5	1589.6
31	5.925	7.544	205	259.1	329.9	460	1304.6	1661.1
32	6.313	8.038	210	271.9	346.2	470	1362.0	1734.1
33	6.714	8.549	215	285.0	362.9	480	1420.5	1808.6
34	7.127	9.075	220	298.4	379.9	490	1480.3	1884.8
35	7.553	9.616	225	312.1	397.4	500	1541.4	1962.5
36	7.990	10.17	230	326.5	415.3	510	1603.6	2041.8
37	8.440	10.75	235	340.5	433.5	520	1667.1	2122.6
38	8.903	11.34	240	355.1	452.2	530	1731.9	2205.1
39	9.378	11.94	245	370.1	471.2	540	1797.8	2289.1
40	9.865	12.56	250	385.3	490.6	550	1865.0	2374.6
41	10.36	13.20	255	400.9	510.5	560	1933.50	2461.8
42	10.88	13.85	260	416.8	530.7	570	2003.10	2550.5
43	11.40	14.52	265	433.0	551.3	580	2074.0	2640.7
44	11.94	15.20	270	449.5	572.3	590	2146.2	2732.6
45	12.49	15.90	275	466.3	593.7	600	2219.5	2826.0
46	13.05	16.61	280	483.4	615.4	650	2604.9	3316.6
47	13.62	17.34	285	500.8	637.6	700	3021.0	3846.5
48	14.21	18.09	290	518.5	660.2	800	3945.9	5042.0
49	14.80	18.85	295	536.5	683.2	900	4994.0	6358.5
50	15.41	19.63	300	554.9	706.5	1000	6165.4	7850.0

Hardness Comparison Table for Steel

ROCKWELL 'C'	VICKERS	BRINELL STANDARD BALL 3000 KG	ROCKWELL			ROCKWELL SUPERFICIAL			SHORE	TENSILE STRENGTH	ROCKWELL 'C'
			A	B	D	15-N	30-N	45-N			
			60 KG	100 KG	100 KG	15 KG	30 KG	45 KG			
HRC	HV	HBW	HRA	HRB	HRD	HR15N	HR30N	HR45N		KG/MM ²	HRC
68	940	-	85.6	-	76.9	93.2	84.4	75.4	-	-	68
67	900	-	85.0	-	76.1	92.9	83.6	74.2	95.2	-	67
66	865	-	84.5	-	75.4	92.5	82.8	73.3	93.1	-	66
65	832	-	83.9	-	74.5	92.2	81.9	72.0	91.0	-	65
64	800	-	83.4	-	73.8	91.8	81.1	71.0	88.9	-	64
63	772	-	82.8	-	73.0	91.4	80.1	69.9	87.0	-	63
62	746	-	82.3	-	72.2	91.1	79.3	68.8	85.2	-	62
61	720	-	81.8	-	71.5	90.7	78.4	67.7	83.3	-	61
60	697	-	81.2	-	70.7	90.2	77.5	66.6	81.6	-	60
59	674	-	80.7	-	69.9	89.8	76.6	65.5	79.9	229	59
58	653	-	80.1	-	69.2	89.3	75.7	64.3	78.2	221	58
57	633	-	79.6	-	68.5	88.9	74.8	63.2	76.6	214	57
56	613	-	79.0	-	67.7	88.3	73.9	62.0	75.0	207	56
55	595	-	78.5	-	66.9	87.9	73.0	60.9	73.5	202	55
54	577	-	78.0	-	66.1	87.4	72.0	59.8	71.9	195	54
53	560	-	77.4	-	65.4	86.9	71.2	58.6	70.4	189	53
52	544	500	76.8	-	64.6	86.4	70.2	57.4	69.0	184	52
51	528	487	76.3	-	63.8	85.9	69.4	56.1	67.6	178	51
50	513	475	75.9	-	63.1	85.5	68.5	55.0	66.2	172	50
49	498	464	75.2	-	62.1	85.0	67.6	53.8	64.7	168	49
48	484	451	74.7	-	61.4	84.5	66.7	52.5	63.4	163	48
47	471	442	74.1	-	60.8	83.9	65.8	51.4	62.1	158	47
46	458	432	73.6	-	60.0	83.5	64.8	50.3	60.8	154	46
45	446	421	73.1	-	59.2	83.0	64.0	49.0	59.6	149	45
44	434	409	72.5	-	58.5	82.5	63.1	47.8	58.4	145	44
43	423	400	72.0	-	57.7	82.0	62.2	46.7	57.2	141	43
42	412	390	71.5	-	56.9	81.5	61.3	45.5	56.1	138	42
41	402	381	70.9	-	56.2	80.9	60.4	44.3	55.0	134	41
40	392	371	70.4	-	55.4	80.4	59.5	43.1	54.0	131	40
39	382	362	69.9	-	54.6	79.9	58.6	41.9	52.8	127	39
38	372	353	69.4	-	53.8	79.4	57.7	40.8	51.7	124	38
37	363	344	68.9	-	53.1	78.8	56.8	39.6	50.7	121	37
36	354	336	68.4	(109.0)	52.3	78.3	55.9	38.4	49.7	118	36
35	345	327	67.9	(108.5)	51.5	77.7	55.0	37.2	48.9	115	35
34	336	319	67.4	(108.0)	50.8	77.2	54.2	36.1	47.7	112	34
33	327	311	66.8	(107.5)	50.0	76.6	53.3	34.9	46.6	108	33
32	318	301	66.3	(107.0)	49.2	76.1	52.1	33.7	45.6	105	32
31	310	294	65.8	(106.0)	48.4	75.6	51.3	32.5	44.6	103	31
30	302	286	65.3	(105.5)	47.7	75.0	50.4	31.3	43.6	100	30
29	294	279	64.7	(104.5)	47.0	74.5	49.5	30.1	42.7	97	29
28	286	271	64.3	(104.0)	46.1	73.9	48.6	28.9	41.7	94	28
27	279	264	63.8	(103.0)	45.2	73.3	47.7	27.8	40.8	92	27
26	272	258	63.3	(102.5)	44.6	72.8	46.8	26.7	40.0	89	26
25	266	253	62.8	(101.5)	43.8	72.2	45.9	25.5	39.2	87	25
24	260	247	62.4	(101.0)	43.1	71.6	45.0	24.3	38.4	85	24
23	254	243	62.0	(100.0)	42.1	71.0	44.0	23.1	37.7	83	23
22	248	237	61.5	99.0	41.6	70.5	43.2	22.0	36.9	81	22
21	243	231	61.0	98.5	40.9	69.9	42.3	20.7	36.3	79	21
20	238	226	60.5	97.8	40.1	69.4	41.5	19.6	35.6	77	20
(18)	230	219	-	96.7	-	-	-	-	34.6	75	(18)
(16)	222	212	-	95.5	-	-	-	-	33.5	72	(16)
(14)	213	203	-	93.9	-	-	-	-	32.3	69	(14)
(12)	204	194	-	92.3	-	-	-	-	31.1	66	(12)
(10)	196	187	-	90.7	-	-	-	-	30.0	63	(10)
(8)	188	179	-	89.5	-	-	-	-	-	61	(8)
(6)	180	171	-	87.1	-	-	-	-	-	59	(6)
(4)	173	165	-	85.5	-	-	-	-	-	56	(4)
(2)	166	158	-	83.5	-	-	-	-	-	54	(2)
(0)	160	152	-	81.7	-	-	-	-	-	52	(0)

งานด้านระบบงาน OSI-Model

ตาม DIN ISO 286-2 (1990-11)

ระบบจุด

ค่าขีดจำกัด เป็น มม สำหรับชิ้นพิกัด 1)

ช่วงขนาด ทั่วไป จนถึง มม.	ตัวรับรู		ตัวรับรูตาม เมื่อสามกับรู -H6 จะเป็นการสาม					ตัวรับรู		ตัวรับรูตาม เมื่อสามกับรู -H6 จะเป็นการสาม					ตัวรับรู		ตัวรับรูตาม เมื่อสามกับรู -H7 จะเกิน					ตัวรับรู		ตัวรับรูตาม เมื่อสามกับรู -H7 จะเกิน							
	H6	H7	ช่อง		พอดี		ช่อง		H7	ช่อง		พอดี		ช่อง		H7	ช่อง		พอดี		ช่อง		H7	ช่อง		พอดี		ช่อง			
			h5	j6	k6	n5	p5	s6		h5	j6	k6	n6	m6	n6		r6	s6	f7	g6	h6	j6	k6	m6	n6	r6	s6	f7	g6	h6	j6
1... 3	+6 0		0 -4	+4 -2	+6 0	+8 +4	+10 +6		+10 0	+6 -2	+8 -4	+10 +6				+10 0	-6 -16	-2 -8	0 -6	+4 -2	+6 0	+8 +2	+10 +4	+16 +10	+20 +14						
3... 6	+8 0		0 -5	+6 -2	+9 +1	+13 +8	+17 +12		+12 0	0 -22	+9 -12	+13 +8	+17 +12			+12 0	-4 -20	-4 -12	0 -8	+6 +2	+9 +1	+12 +8	+16 +10	+23 +17							
6... 10	+9 0		0 -6	+7 -2	+10 +1	+16 +10	+21 +15		+15 0	0 -28	+7 -2	+10 +6	+15 +10			+15 0	-5 -28	-5 -14	0 -9	+7 +2	+10 +6	+15 +10	+19 +13	+32 +23							
10... 14	+11 0		0 -8	+8 -3	+12 +1	+20 +12	+26 +18		+18 0	0 -34	+8 -3	+12 +1	+26 +18			+18 0	-6 -34	-6 -17	0 -11	+8 +3	+12 +1	+18 +7	+23 +12	+39 +28							
14... 18																															
18... 24	+13 0		0 -9	+9 -4	+15 +2	+24 +15	+31 +22		+21 0	0 -41	+9 -4	+15 +2	+24 +15			+21 0	-7 -41	-7 -20	0 -13	+9 +2	+15 +8	+21 +15	+28 +23	+48 +35							
24... 30																															
30... 40	+16 0		0 -11	+11 -5	+18 +2	+28 +17	+37 +26		+25 0	0 -50	+11 -5	+18 +2	+28 +17			+25 0	-9 -50	-9 -25	0 -16	+11 +2	+18 +9	+25 +17	+33 +23	+59 +43							
40... 50																															
50... 65	+19 0		0 -13	+12 -7	+21 +2	+33 +20	+45 +32		+30 0	0 -60	+12 -7	+21 +2	+30 +11			+30 0	-10 -60	-10 -29	0 -19	+12 +2	+21 +11	+30 +20	+39 +20	+53 +43							
65... 80																															
80... 100	+22 0		0 -15	+13 -9	+25 +3	+38 +23	+52 +37		+35 0	0 -71	+13 -9	+25 +3	+35 +13			+35 0	-12 -71	-12 -34	0 -22	+13 +2	+25 +3	+35 +23	+45 +31	+71 +54							
100... 120																															
120... 140	+25 0		0 -18	+14 -11	+28 +3	+45 +27	+61 +43		+40 0	0 -83	+14 -11	+28 +3	+40 +15			+40 0	-14 -83	-14 -39	0 -25	+14 +3	+28 +15	+30 +27	+52 +40	+79 +68							
140... 160																															
160... 180																															
180... 200	+29 0		0 -20	+16 -13	+33 +4	+51 +31	+70 +50		+46 0	0 -96	+16 -13	+33 +4	+46 +17			+46 0	-15 -96	-15 -44	0 -29	+16 +3	+33 +4	+46 +31	+60 +40	+158 +140							
200... 225																															
225... 250																															
250... 280	+32 0		0 -23	+16 -16	+36 +4	+57 +34	+79 +56		+52 0	0 -108	+16 -16	+36 +4	+52 +20			+52 0	-17 -108	-17 -49	0 -32	+16 +4	+36 +4	+52 +34	+66 +40	+158 +140							
280... 315																															
315... 355	+36 0		0 -25	+18 -18	+40 +4	+62 +37	+87 +62		+57 0	0 -119	+18 -18	+40 +4	+57 +21			+57 0	-18 -119	-18 -54	0 -36	+18 +4	+40 +4	+57 +37	+73 +40	+190 +170							
355... 400																															
400... 450	+40 0		0 -27	+20 -20	+45 +5	+67 +40	+95 +67		+63 0	0 -131	+20 -20	+45 +5	+63 +23			+63 0	-20 -131	-20 -60	0 -40	+20 +5	+45 +5	+63 +40	+80 +40	+232 +212							
450... 500																															

1) ขั้วไฟฟ้าที่พัฒนาขึ้นมีลักษณะเป็นของอนุกรม I ใน DIN 7157 : แนะนำให้เลือกใช้ตาม

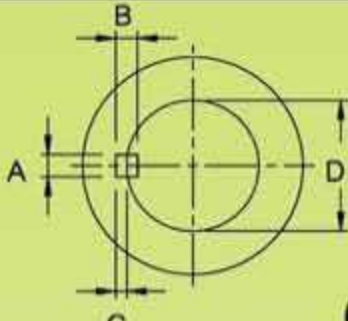
OS-ПРЕДУПРЕЖДЕНИЕ

[illegible]

- 1) ชนิดของพืชมหาาณูเป็นของมุกรม 1 ใน DIN 7157; และน้ำให้ดักกรอง
- 2) DIN 7157; และน้ำให้: ขนาดก้านดกนสูง 24 มม.; H8x8 ขนาดก้านดก 24 มม.; H8x8

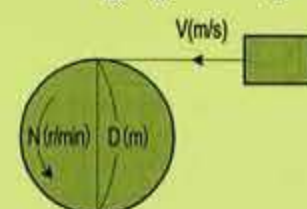
ช่วงขนาด		ระยะเผื่อของเพลลา																																						
ความโต (มม.)	a11	c11	d6	d9	e6	e8	f5	f7	g5	g6	h5	h6	h7	h8	h9	h10	h11	h12	js5	js6	js8	js9	j5	j6	j7	k5	k6	k7	m5	m6	n5	n6	p5	p6	r6	r7	s6	u8	x8	
1--3	-270	-60		-20		-14		-6			0	0	0	0	0	0	0	0	0		± 3	± 7	± 12.5		+4			+6			+8	+10	+10		+16	+16	+20	-	+34	
	-330	-120		-45		-28		-16			-4	-6	-10	-14	-25	-40	-60	-100		± 3	± 7	± 12.5		-2			0			+2	+4	+4		+10	+10	+14	-	+20		
3--6	-270	-70	-30	-30	-20	-20	-10	-10	-4	-4	0	0	0	0	0	0	0	0	0	± 2.5	± 4	± 9	± 15	+3	+6	+8	+6	+9	+13	+9	+12	+13	+16	+17	+20	+23	+27	+27	-	+46
	-345	-145	-38	-60	-28	-38	-18	-22	-9	-12	-5	-8	-12	-18	-30	-48	-75	-120			± 9	± 15	-2	-2	-4	+1	+1	+1	+4	+4	+8	+8	+12	+12	+15	+15	+19	-	+28	
6--10	-280	-80	-40	-40	-25	-25	-13	-13	-5	-5	0	0	0	0	0	0	0	0	0	± 3	± 4.5	± 11	± 18	+4	+7	+10	+7	+10	+16	+12	+15	+16	+19	+21	+24	+28	+34	+32	-	+56
	-370	-170	-49	-76	-34	-47	-22	-28	-11	-14	-6	-9	-15	-22	-36	-58	-90	-150			± 11	± 18	-2	-2	-5	+1	+1	1	+6	+6	+10	+10	+15	+15	+19	+19	+23	-	+34	
10--14	-290	-95	-50	-50	-32	-32	-16	-16	-6	-6	0	0	0	0	0	0	0	0	0	± 4	± 5.5	± 13.5	± 21.5	+5	+8	+12	+9	+12	+19	+15	+18	+20	+23	+26	+29	+34	+41	+39	-	+67
	-400	-205	-61	-93	-43	-59	-27	-34	-14	-17	-8	-11	-18	-27	-43	-70	-110	-180			± 13.5	± 21.5	-3	-3	-6	1	+1	+1	+7	+7	+12	+12	+18	+18	+23	+23	+28	-	+40	
14--18	-300	-110	-65	-65	-40	-40	-20	-20	-7	-7	0	0	0	0	0	0	0	0	0	± 4.5	± 6.5	± 16.5	± 26	+5	+9	-13	+11	+15	+23	+17	+21	+24	+28	+31	+35	+41	+49	+48	-	+87
	-430	-240	-78	-117	-53	-73	-33	-41	-16	-20	-9	-13	-21	-33	-52	-84	-130	-210			± 16.5	± 26	-4	-4	-8	+2	+2	+2	+8	+8	+15	+15	+22	+22	+28	+23	+35	+81	+97	
24--30																																								
30--40	-310	-120	-80	-80	-50	-50	-25	-25	-9	-9	0	0	0	0	0	0	0	0	0	± 5.5	± 8	± 19.5	± 31	+6	+11	+15	+13	+18	+27	+20	+25	+28	+33	+37	+42	+50	+59	+59	+99	+119
	-470	-280	-96	-142	-66	-89	-41	-50	-20	-25	-11	-16	-25	-39	-62	-100	-160	-250			± 19.5	± 31	-5	-5	-10	+2	+2	+2	+9	+9	+17	+17	+26	+34	+34	+43	+43	+48	+48	+64
40--50	-320	-130	-80	-80	-50	-50	-25	-25	-9	-9	0	0	0	0	0	0	0	0	0	± 5.5	± 8	± 19.5	± 31	+6	+11	+15	+13	+18	+27	+20	+25	+28	+33	+37	+42	+50	+59	+59	+99	+119
	-480	-290	-96	-142	-66	-89	-41	-50	-20	-25	-11	-16	-25	-39	-62	-100	-160	-250			± 19.5	± 31	-5	-5	-10	+2	+2	+2	+9	+9	+17	+17	+26	+34	+34	+43	+43	+48	+48	+64
50--65	-340	-140	-100	-100	-60	-60	-30	-30	-10	-10	0	0	0	0	0	0	0	0	0	± 6.5	± 9.5	± 23	± 37	+6	+12	+18	+15	+21	+32	+24	+30	+33	+39	+45	+51	+60	+60	+99	+119	
	-530	-330	-119	-174	-79	-106	-49	-60	-23	-29	-13	-19	-30	-46	-74	-120	-190	-300			± 23	± 37	-7	-7	-12	+2	+2	+2	+11	+11	+20	+20	+32	+32	+62	+73	+73	+87	+87	+122
65--80	-360	-150	-119	-174	-79	-106	-49	-60	-23	-29	-13	-19	-30	-46	-74	-120	-190	-300			± 23	± 37	-7	-7	-12	+2	+2	+2	+11	+11	+20	+20	+32	+32	+62	+73	+73	+87	+87	+122
	-550	-340	-120	-207	-94	-126	-58	-71	-27	-34	-15	-22	-35	-54	-87	-140	-220	-350			± 27	± 43.5	+6	+13	+20	+18	+25	+38	+28	+35	+38	+45	+52	+59	+76	+89	+101	+198	+264	
80--100	-380	-170	-120	-120	-72	-72	-36	-36	-12	-12	0	0	0	0	0	0	0	0	0	± 7.5	± 11	± 27	± 43.5	+6	+13	+20	+18	+25	+38	+28	+35	+38	+45	+52	+59	+76	+89	+101	+198	+264
	-600	-390	-142	-207	-94	-126	-58	-71	-27	-34	-15	-22	-35	-54	-87	-140	-220	-350			± 27	± 43.5	-9	-9	-15	+3	+3	+3	+13	+13	+23	+23	+37	+37	+54	+54	+79	+144	+210	
100--120	-410	-180	-142	-207	-94	-126	-58	-71	-27	-34	-15	-22	-35	-54	-87	-140	-220	-350			± 27	± 43.5	-9	-9	-15	+3	+3	+3	+13	+13	+23	+23	+37	+37	+54	+54	+79	+144	+210	
	-630	-400	-142	-207	-94	-126	-58	-71	-27	-34	-15	-22	-35	-54	-87	-140	-220	-350			± 27	± 43.5	-9	-9	-15	+3	+3	+3	+13	+13	+23	+23	+37	+37	+54	+54	+79	+144	+210	
120--140	-460	-200	-145	-2																																				

ตัวอย่างงานสวม	
สัญลักษณ์	ข้อสังเกตและตัวอย่างการใช้งาน
H8 - d9 D10 - h9 สวมหลวม	เพลาลมอยู่ในรูคว้าน โดยมีช่องว่าง clearance มาก (ระบบขนส่ง , เครื่องมือก่อสร้าง , เครื่องกลการเกษตร)
H8 - e8 E9 - h9 สวมคลอนมากๆ	เพลาลมในรูคว้านมี clearance พอประมาณ (แบริ่งปลอกแกนเพลาลม)
H7 - f7 F7 - h6	เพลาลมในรูคว้านมี clearance น้อย (แท่นเลื่อนวิ่งอยู่ในร่องนำ)
H7 - g6 G7 - h6 สวมคลอนน้อยๆ	เพลาลมในรูคว้าน โดยมี clearance น้อย (แท่นเลื่อนวิ่งอยู่ในร่องนำ) เพลาลมในรูคว้าน โดยแท่นไม่มีช่องว่างเลย (เพลาลมเจียรระยัย เพื่อเปลี่ยนความเร็ว เพื่อที่ถอดเปลี่ยนได้ เพลาลมแบ่ง)
H7 - h6 H7 - h6 สวมนำเลื่อน	ชิ้นส่วนที่สวมกันอยู่ และยังสามารถเลื่อนได้ ด้วยมือได้พอดี (แท่งยืนศูนย์ในแท่น เสาเลื่อนแหวนต้นระบบบนแกนมีดกัด (cutter)
H7 - j6 J7 - h6 สวมเลื่อนด้วยแรงเบาๆ	ชิ้นส่วนที่สวมกันอยู่เลื่อนได้โดยเมื่อออกแรงแรงผลัก หรือกระแทกด้วยมือ(มีเลื่อยพาน เพื่อคุม และเพลาลม เมื่อใส่ลิ้ม ซึ่งสามารถถอดออก และประกอบเข้าใหม่ได้อีก
H7 - k6 K7 - h6 สวมยึด	ชิ้นส่วนสวมติดแน่นอยู่ด้วยกัน แต่ยังสามารถถอดออกได้ด้วยแรงไม่มากนัก (ล้อเหวี่ยง Fly Wheel) งานเบรคชิ้นงานประกอบด้วยลิ้มที่ไม่ต้องการเอาเข้าเอาออกบ่อย
H7 - m6 M7 - h6 สวมยึดแน่น	ชิ้นส่วนที่สวมแน่นอยู่ด้วยกัน จะถอดออกได้โดยต้องออกแรงตอกออกมาก (แบริ่งปลอกสลัก ก้านสูบ เสาเลื่อนติดอยู่กับฐาน)
H7 - n6 N7 - h6 สวมอัด	ชิ้นส่วนติดกันแน่น แต่ต้องมีชิ้นส่วนป้องกันแรงบิดประกอบด้วย และต้องออกแรงมาก จึงจะถอดออกได้ (ปลอกนำเจาะ)
H7 - s6 S7 - h6	ชิ้นส่วนอัดอยู่ด้วยกันแน่นไม่จำเป็นต้องใช้ชิ้นส่วนป้องกันแรงบิด (การตีปลอก สวมวงฟันเพื่อติดกันกรอบ)

Standard Keyways			
Bore Diameter. D (mm.)	A	B	C
6 - 8	2	2	1
9 - 10	3	3	1.4
11 - 12	4	4	1.8
13 - 17	5	5	2.3
18 - 22	6	6	2.8
23 - 30	8	7	3.3
31 - 38	10	8	3.3
39 - 44	12	8	3.3
45 - 50	14	9	3.8
51 - 58	16	10	4.3
59 - 65	18	11	4.4
66 - 75	20	12	4.9
76 - 85	22	14	5.4
86 - 95	25	14	5.4
96 - 110	28	16	6.4
111 - 130	32	18	7.4
130 - 150	36	20	8.4
151 - 170	40	22	9.4
175 - 200	45	25	10.4
210 - 220	50	28	11.4

Formular of Drive System

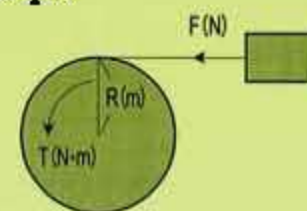
1) Revolving Speed N(r/min), V(m/s)



$$V = \pi \cdot D \cdot \frac{N}{60} \text{ (m/s)}$$

D : wheel Diameter (m)
($\pi = 3.14$)

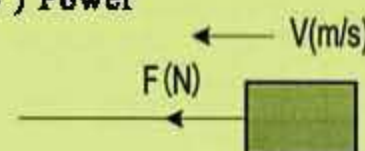
2) Torque



$$T = F \cdot R \text{ (kgf} \cdot \text{m)}$$

F : Load (kgf)
R : Wheel Radius (m)

3) Power



$$P = \frac{F \cdot V}{102} \text{ (kW)}$$

F : Load (kgf)
V : Velocity (m/s)

4) Power P(kW), Torque T(Nm), Revolving Speed N(rpm)

$$T = \frac{9550 \cdot P}{N}$$

5)

$$HP_{\text{single}} = \frac{\text{volts} \times \text{Amps} \times Pf \times \eta}{746}$$

$$Hp_{\text{dc motor}} = \frac{\text{Volts} \times \text{Amps} \times Pf \times \eta}{746}$$

$$Hp_{3\phi} = \frac{\text{Volts} \times \text{Amps} \times 1.73 \times Pf \times \eta}{746}$$



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