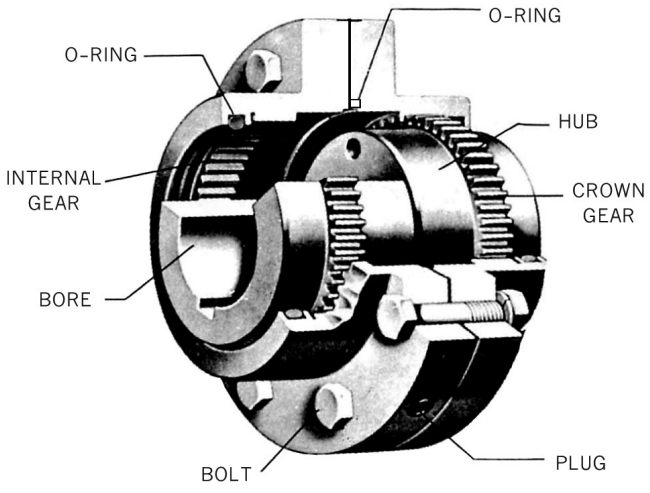
GEAR Coupling

Distinctive Feature

1. With the capacity of handling heavy loads, gear couplings are much smaller and lighter than any other couplings. Noise or vibration is hardly produced even in high speed operation.

2. The tooth outer gear is manufactured in crown shape. So, even when the axial misalignment occurs it provides good operation.

3. The coupling made of SM45C has a good endurance to high speed and peak load. Jac is manufacturing high quality couplings with new design and high quality control according to standard conformable to KS and JS.

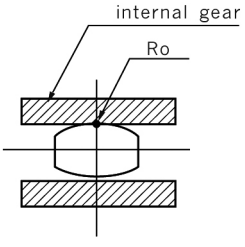


GEAR Coupling

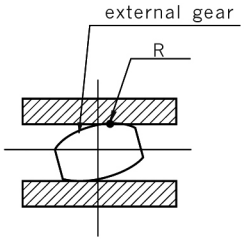
Structure

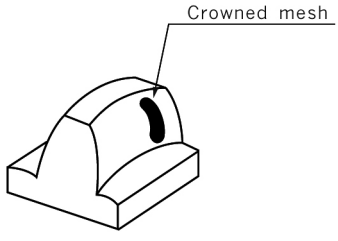
1. Jac Gear coupling consists of the internal spur gears in its sleeves and the external spur gears with crowned teeth on its hubs, both of which are in mesh when assembled. At the tooth section of the hub, the tooth surface is crowned and the tooth top is rounded in the axial direction in order to prevent interference at the tooth section when they are operated in eccentric condition.

2. If it is properly mounted without any displacement the external tooth comes is contract with the mating internal tooth at the middle of the crowned portion (Ro) and if it is mounted with offset and angular displacement, the former will with the latter at a point distant from the middle of the crowned portion.



Accurate alignment





Stress pattern and contact area comparisions

3. Misalignment

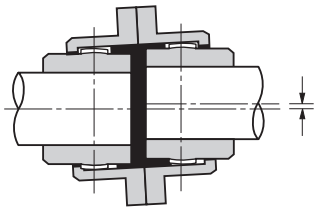
① Parallel Misalignment : The driving shaft and driven shaft are parallel to each other but not on the same straight line.

② Angular Misalignment : The driving shaft and driven shaft cross to each other but not on the same straight line.

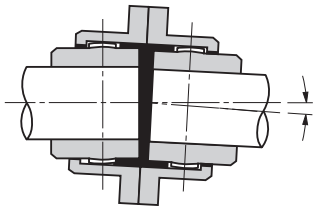
③ Composite Misalignment : The driving shaft and driven shaft do not cross to each other nor are they parallel to each other.

④ Axial Misalignment : The driving shaft and driven shaft are on the same line but the distance between the two shaft varies (The permissible axial Misalignment is ±25% of C)

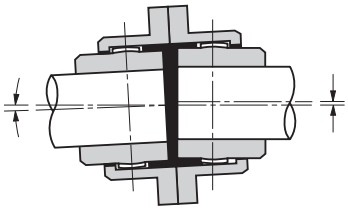
①Parallel Misalignment



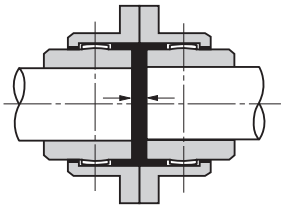
②Angular Misalignment



③ Composite Misalignment



④ Axial Misalignment



4. Allowable amounts of misalignments of SSM, CCM-type°

The following tables show the allowable amounts of displacement determined by a structual consideration. If is, therefore, practically recommended that the alignment should be made accurately as possible as according to the service conditions such as the place of application, type of machine, service rpm, etc.

Allowable amounts of misalignments of SSM, CCM-type

Coupling Size	Parallel Misalign-ment(mm)	Axial Misalign-ment(mm)	Angular Misalign-ment(°)	Coupling Size	Parallel Misalign-ment(mm)	Axial Misalign-ment(mm)	Angular Misalign-ment(°)	Coupling Size	Parallel Misalign-ment(mm)	Axial Misalign-ment(mm)	Angular Misalign-ment(°)
112	1	2	3°	250	2	4	3°	560	4	6.5	2°
125	1	2.5	3°	280	2	4.5	3°	630	4.5	8	2°
140	1.25	2.5	3°	315	2.5	5.5	3°	710	5	8.5	2°
160	1.25	3	3°	355	3	5.5	3°	800	5.5	9.5	2°
180	1.5	3	3°	400	3	6.5	3°	900	6.5	10.5	2°
200	1.5	3	3°	450	3	5	2°	1000	7	12	2°
224	1.5	4	3°	500	3.5	6	2°	1120	8	13	2°

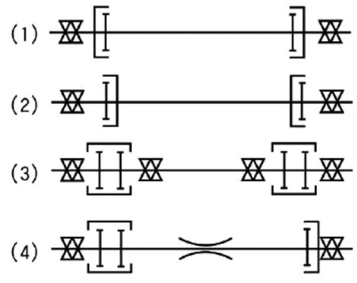
Allowable amounts of misalignments of GD, GDL type

Coupling Size	Parallel Misalign-ment(mm)	Axial Misalign-ment(mm)	Angular Misalign-ment(°)	Coupling Size	Parallel Misalign-ment(mm)	Axial Misalign-ment(mm)	Angular Misalign-ment(°)	Coupling Size	Parallel Misalign-ment(mm)	Axial Misalign-ment(mm)	Angular Misalign-ment(°)
10	1	1.5	3°	40	3.4	3.5	3°	80	6.6	5	2°
15	1.3	1.5	3°	45	3.7	4	3°	90	7.5	5	2°
20	1.6	2	3°	50	4	4	3°	100	8.4	6	2°
25	2	3	3°	55	4.5	5	3°	110	12.3	6	2°
30	2.5	3	3°	60	5	5	3°	120	12.7	8	2°
35	3	3	3°	70	6	5	2°				

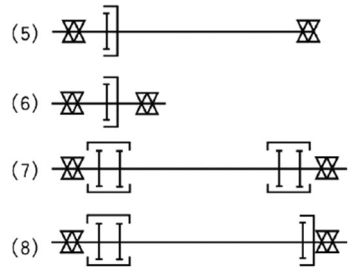
Application

1. In case of JAC-SEM it will be used like (1)or(2). The case such as (5) must be basically avoided except for when shafts are in complex alignment.
2. When JAC-SSM are coupled with an intermediate shaft, which requires fixed supports as(3)
3. When JAC-SSM is used together with JAC-SEM, an inclinable bearing supporting the intermediate shaft must be set up.
4. If the intermediate shaft is inclining state, it causes vibration.
5. For use in high speed revolution, the allowable max. rpm of the coupling can be increased by adjusting the alignment and improving the balance of the coupling sleeves.

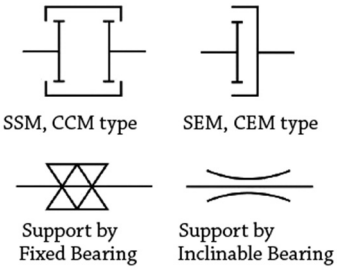
Recommendable



Not Recommendable



Symbol



Lubrication and Handling

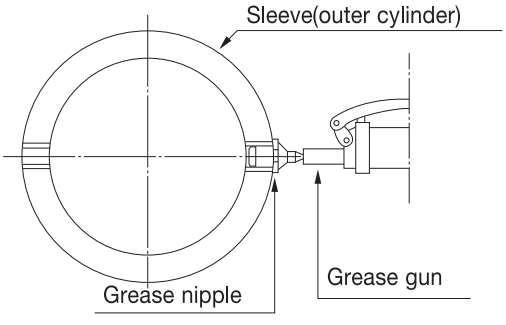
1. Grease Lubricant

① When assembling, pack the coupling and the coupling hub with the recommended grease until their teeth become invisible, and then tightening the reamer bolts, add the grease through the oil plug hole using a grease gun, etc.

② Every month, or 240 ~ 250 hours after operation, you should supply grease, Every 3 months or 4,000 hours after operation, you should replace grease after you get rid of the deteriorated.

③ The handling range of temperature for grease is from -17°C to 70°C. You choose grease according to the rpm and circumstance.

Maker	Grease
GULF	Gulf Crown EP#1
SHELL	Alvania EP#1
TEXACO	Multfak EP-1
MOBIL	Mobilux EP-1



Selection Method of Size

1. From the following formula, obtain torque required for selection.

$$Ta = 974\times \frac{KW}{N} \times SF \text{ 또는 } Ta = 716\times \frac{HP}{N} \times SF$$

Ta = Selected torque (kg.m)
KW = Transmitted load (kw)
Hp = Transmitted load (HP)
N = Working revolution (rpm)
S.F = Recommended Service Factor

2. First select the same or greater size by comparing with basic torque of each size and calculated torque and then examine the suitability of max bore and shaft.

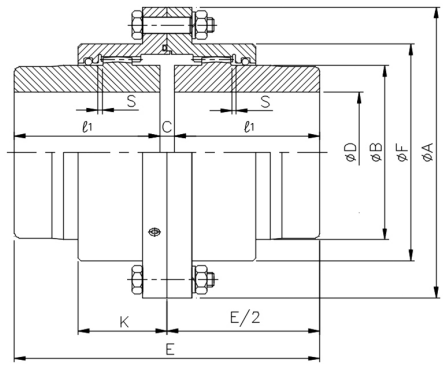
Recommended Service Factor(S.F)

Driving machines			Load	Examples of machines
Electric motor or Turbine	Hydraulic Power	Reciprocation motion		
1	1.25	1.5	Smooth	Pumps, Blowers, Generators and Exciters
1.5	1.8	2	Light shock	Compressors, Mixers, Grinders, Machine Tools, Wood Working Machines and Textile Machines
2	2.3	2.5	Medium shock	Ball and Roll Mills, Reciprocasting Compressors, Elevators, Paper Machines, Punch Presses
2.5	2.8	3	Heavy shock	Steel & Iron Manufacturing Machines, Mining Machines, Roll Mills and Rubber Mixers
3	3.5	4	Extremly heavy shock	Ore Crushers, Vibration Conveyors and Cutters

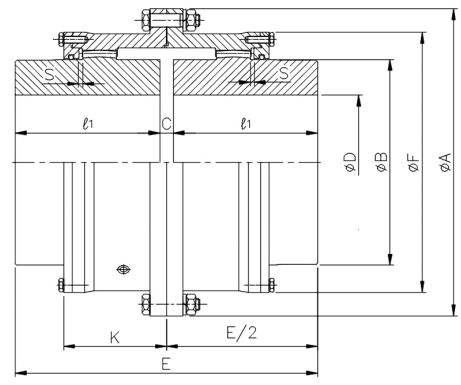
GEAR Coupling

Dimensions

SSM



CCM



SSM (KS Standard)

Size Out side A	Torque Rating		Max. Speed (rpm)	Dimensions									Grease Q`ty (ℓ)	Weight (kg)	GD² (kgf-m²)
				Bore D		E	ℓ	C	B	F	K	S			
	kgf-m	Nm		Min	Max.										
SSM112	80.3	788	4000	17	40	108	50	8	58	79	40	2	0.055	4.3	0.0198
SSM125	142	1400	4000	22	50	134	63	8	70	92	43	2.5	0.072	6.6	0.0353
SSM140	205	2010	4000	22	56	150	71	8	80	107	47	2.5	0.11	9.3	0.0612
SSM160	314	3080	4000	22	65	170	80	10	95	120	52	3	0.14	14	0.113
SSM180	482	4730	4000	32	75	190	90	10	105	134	56	3	0.18	19	0.191
SSM200	689	6750	3810	32	85	210	100	10	120	149	61	3	0.24	26	0.315
SSM224	1000	9810	3410	42	100	236	112	12	145	174	65	4	0.36	39	0.599
SSM250	1470	14400	3050	42	115	262	125	12	165	200	74	4	0.53	55	1.08
SSM280	2340	22900	2720	42	135	294	140	14	190	224	82	4.5	0.69	81	2.06
SSM315	3680	36100	2420	100	160	356	170	16	225	260	98	5.5	1.1	129	4.24
SSM355	5550	54400	2150	125	180	396	190	16	250	288	108	5.5	1.3	177	7.13
SSM400	7790	76400	1900	140	200	418	200	18	285	329	114	6.5	2	242	12.5

Note) Coupling weight and GD² , without Bore machining

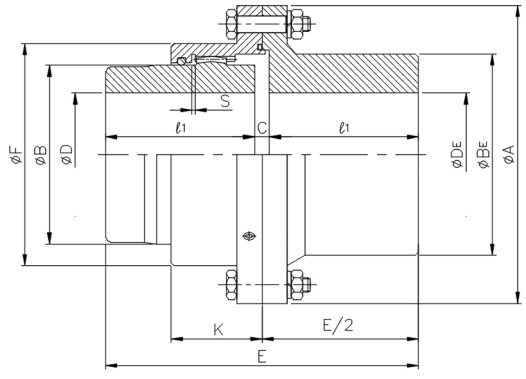
CCM (KS Standard)

Size Out side A	Torque Rating		Max. Torque (rpm)	Dimensions									Grease Q`ty (ℓ)	Weight (kg)	GD² (kgf-m²)
				Bore D		E	ℓ	C	B	F	K	S			
	Tonf-m	kNm		Min	Max.										
CCM450	11	108	1690	140	205	418	200	18	290	372	151	5	2.6	298	16.6
CCM500	16.6	163	1520	170	250	494	236	22	335	424	168	6	3.8	446	36.9
CCM560	26.5	250	1360	190	280	552	265	22	385	472	187	6.5	4.6	642	67.6
CCM630	42	412	1210	224	325	658	315	28	455	544	213	8	6.7	1010	137
CCM710	61.2	600	1070	250	360	738	355	28	510	622	242	8.5	9.4	1440	250
CCM800	87.5	858	950	280	405	832	400	32	570	690	267	9.5	13	2030	441
CCM900	125	1220	840	315	475	932	450	32	670	792	295	10.5	17	3030	860
CCM1000	171	1680	760	355	510	1040	500	40	720	858	322	12	23	4120	1380
CCM1120	240	2360	682	400	600	1160	560	40	840	990	360	13	31	5920	2650
CCM1250	331	3250	610	500	710	1460	710	40	960	1126	399	14	45	9410	5290

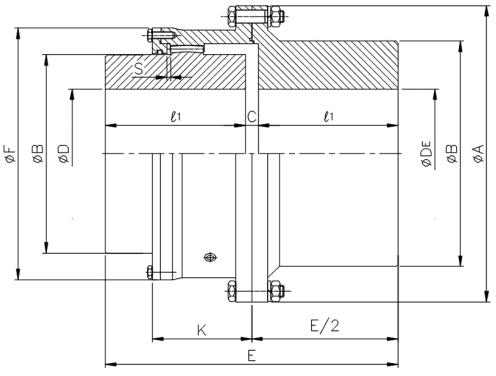
Note) Coupling weight and GD² , without Bore machining

Dimensions

SEM



CEM



CEM (KS Standard)

Size Out side A	Torque Rating		Max. Speed (rpm)	Dimension												Grease Q`ty (ℓ)	Weight (kg)	GD² (kgf-m²)
				Bore D			E	ℓ	C	B	BE	F	K	S				
	kgf-m	Nm		Min	Max.(D)	Max.(DE)												
SEM112	80.3	788	4000	17	40	50	108	50	8	58	70	79	40	2		0.042	4.6	0.0197
SEM125	142	1400	4000	22	50	56	134	63	8	70	80	92	43	2.5		0.056	6.7	0.0348
SEM140	205	2010	4000	22	56	63	150	71	8	80	90	107	47	2.5		0.085	9.3	0.0591
SEM160	314	3080	4000	22	65	75	170	80	10	95	105	120	52	3		0.11	14	0.111
SEM180	482	4730	4000	32	75	80	190	90	10	105	115	134	56	3		0.14	19	0.183
SEM200	689	6750	3810	32	85	95	210	100	10	120	135	149	61	3		0.18	26	0.317
SEM224	1000	9810	3410	42	100	105	236	112	12	145	150	174	65	4		0.29	38	0.579
SEM250	1470	14400	3050	42	115	125	262	125	12	165	180	200	74	4		0.41	56	1.08
SEM280	2340	22900	2720	42	135	150	294	140	14	190	210	224	82	4.5		0.56	83	2.14
SEM315	3680	36100	2420	100	160	180	356	170	16	225	250	260	98	5.5		0.9	135	4.55
SEM355	5550	54400	2150	125	180	200	396	190	16	250	275	288	108	5.5		1.1	184	7.5
SEM400	7790	76400	1900	140	200	236	418	200	18	285	325	329	114	6.5		1.6	261	14.1

Note) Coupling weight and GD² , without Bore machining

CEM (KS Standard)

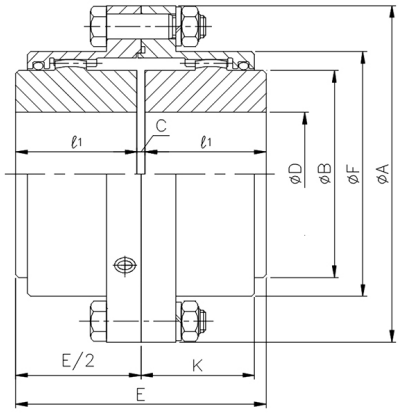
Size Out side A	Torque Rating		Max. Speed (rpm)	Dimension												Grease Q`ty (ℓ)	Weight (kg)	GD² (kgf-m²)
				Bore D			E	ℓ	C	B	BE	F	K	S				
	kgf-m	kNm		Min	Max.	Max.(DE)												
CEM450	11	108	1690	140	205	225	418	200	18	290	320	372	151	5		2.1	304	18.2
CEM500	16.6	163	1520	170	250	270	494	236	22	335	380	424	168	6		3.1	453	37
CEM560	26.5	250	1360	190	280	305	552	265	22	385	430	472	187	6.5		3.8	664	70
CEM630	42	412	1210	224	325	355	658	315	28	455	500	544	213	8		5.8	1020	139
CEM710	61.2	600	1070	250	360	400	738	355	28	510	565	622	242	8.5		7.8	1460	252
CEM800	87.5	858	950	280	405	450	832	400	32	570	635	690	267	9.5		11	2090	451
CEM900	125	1220	840	315	475	510	932	450	32	670	715	792	295	10.5		14	3020	743
CEM1000	171	1680	760	355	510	570	1040	500	40	720	800	858	322	12		20	4130	1440
CEM1120	240	2360	682	400	600	640	1160	560	40	840	900	990	360	13		26	5970	2810
CEM1250	331	3250	610	500	710	800	1460	710	40	960	1060	1126	399	14		37	9820	5630

Note) Coupling weight and GD² , without Bore machining

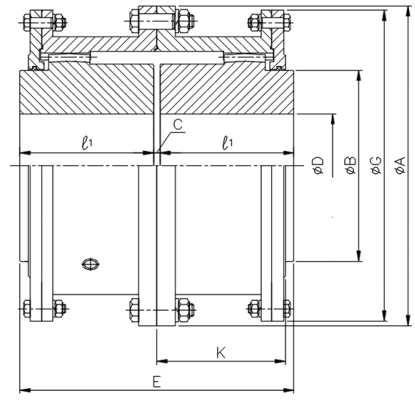
GEAR Coupling

Dimensions

GD



GDL



GD (AGMA Standard)

Size Out side A	Torque Rating		Max. Speed (rpm)	Dimensions									Grease Weight (Kg)	Weight (kg)
				Bore D		A	E	ℓ	C	B	F	K		
	kgf-m	Nm		Min	Max.									
GD10	116.3	1140	8000	13	50	116	89	43	3	69	84	39	0.04	4.5
GD15	239.8	2350	6500	20	65	152	101	49	3	86	105	48	0.07	9.1
GD20	435.7	4270	5600	26	78	178	127	62	3	105	126	59	0.11	15.9
GD25	762.2	7470	5000	32	98	213	159	77	5	131	155	72	0.21	29.5
GD30	1234.7	12100	4400	39	111	240	187	91	5	152	180	64	0.36	43.1
GD35	1887.8	18500	3900	51	134	279	218	106	6	178	211	98	0.54	68
GD40	3122.4	30600	3600	64	160	318	248	121	6	210	245	111	0.91	97.5
GD45	4285.7	42000	3200	77	183	346	278	135	8	235	274	123	1.04	136
GD50	5714.8	56000	2900	89	200	389	314	153	8	254	306	141	1.77	191
GD55	7551	74000	2650	102	220	425	344	168	8	279	334	158	2.22	219
GD60	9224.5	90400	2450	115	244	457	384	188	8	305	366	169	3.18	306
GD70	13776	135000	2150	127	289	527	452	221	10	343	425	196	4.35	485

Note) Coupling weight and GD² , without Bore machining

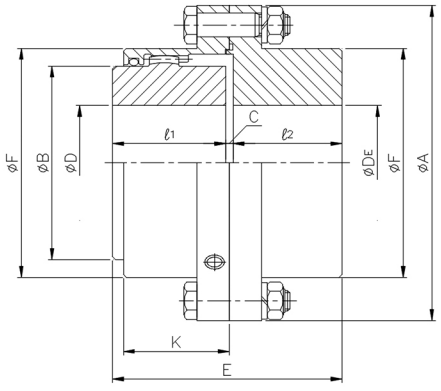
GDL (AGMA Standard)

Size Out side A	Torque Rating		Max. Speed (rpm)	Dimensions									Grease Weight (Kg)	Weight (kg)
				Bore D		A	E	ℓ	C	B	F	K		
	Tonf-m	kNm		Min	Max.									
GDL80	17.3	170	1750	101	266	591	508	249	10	356	572	243	9.5	703
GDL90	23	226	1550	114	290	660	565	276	13	394	641	265	12.3	984
GDL100	31.6	310	1450	127	320	711	623	305	13	445	699	294	15	1302
GDL110	42.1	413	1330	140	373	775	679	333	13	495	749	322	17.7	1678
GDL120	56.6	555	1200	152	400	838	719	353	13	546	826	341	20.9	2114
GDL130	73.3	719	1075	165	440	911	761	371	19	635	886	362	32.7	2595
GDL140	92.1	911	920	178	460	965	805	393	19	686	940	378	33.1	3107

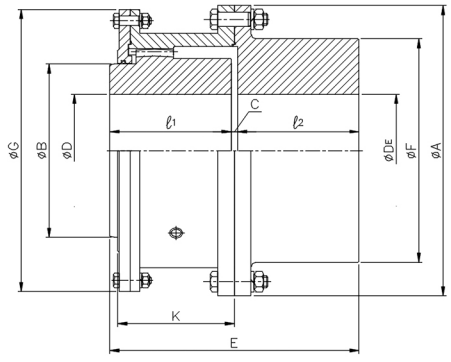
Note) Coupling weight and GD² , without Bore machining

Dimensions

GS



GSL



GS (AGMA Standard)

Size Out side A	Torque Rating		Max. Speed (rpm)	Dimensions											Grease Weight (Kg)	Weight (kg)
				Bore D			A	E	ℓ1	ℓ2	C	B	F	K		
	kgf-m	Nm		Min	Max. (D)	Max. (DE)										
GS10	116.3	1140	8000	13	50	60	116	87	43	40	4	69	84	39	0.04	4.5
GS15	239.8	2350	6500	20	65	75	152	99	49	46	4	86	105	48	0.07	9.1
GS20	435.7	4270	5600	26	78	92	178	125	62	58	4	105	126	59	0.11	15.9
GS25	762.2	7470	5000	32	98	111	213	156	77	74	5	131	155	72	0.21	29.5
GS30	1234.7	12100	4400	39	111	130	240	184	91	88	5	152	180	64	0.36	43.1
GS35	1887.8	18500	3900	51	134	149	279	214	106	102	6	178	211	98	0.54	68
GS40	3122.4	30600	3600	64	160	171	318	243	121	115	7	210	245	111	0.91	97.5
GS45	4285.7	42000	3200	77	183	194	346	274	135	131	8	235	274	123	1.04	136
GS50	5714.8	56000	2900	89	200	222	389	309	153	147	9	254	306	141	1.77	191
GS55	7551	74000	2650	102	220	248	425	350	168	173	9	279	334	158	2.22	219
GS60	9224.5	90400	2450	115	244	267	457	384	188	186	10	305	366	169	3.18	306
GS70	13776	135000	2150	127	289	305	527	454	221	220	13	343	425	196	4.35	485

Note) Coupling weight and GD² , without Bore machining

GSL (AGMA Standard)

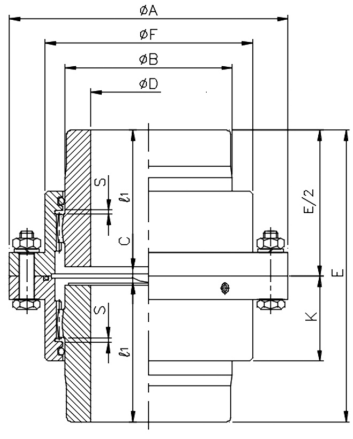
Size Out side A	Torque Rating		Max. Speed (rpm)	Dimensions											Grease Weight (Kg)	Weight (kg)
				Bore D			A	E	ℓ1	ℓ2	C	B	F	K		
	Tonf-m	kNm		Min	Max.(D	Max.(DE)										
GSL80	17.3	170	1750	101	266	340	591	511	249	249	13	356	572	243	5	699
GSL90	23	226	1550	114	290	380	660	566	276	276	14	394	641	265	6	984
GSL100	31.6	310	1450	127	320	400	711	626	305	305	16	445	699	294	8	1252
GSL110	42.1	413	1330	140	373	440	775	682	333	333	16	495	749	322	9	1637
GSL120	56.6	555	1200	152	400	483	838	722	353	353	16	546	826	341	11	2077
GSL130	73.3	719	1075	165	440	500	911	761	371	371	19	635	886	362	17	2572
GSL140	92.1	911	920	178	460	535	965	805	393	393	19	686	940	378	17	3602

Note) Coupling weight and GD² , without Bore machining

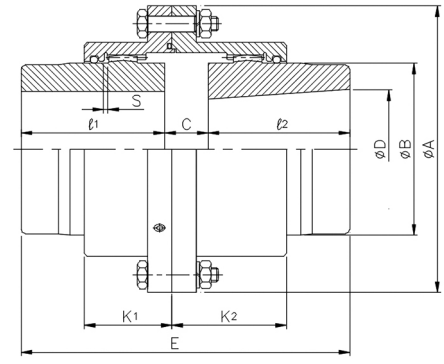
GEAR Coupling

Dimensions

SVM



SMM



Marking and dimensions of SSM type are the same

SVM

Size Out side A	Torque Rating kgf-m	Dimensions			Weight (kg)	GD² (kg-m²)
		E	ℓ	C		
SVM112	80.3	98	40	18	4.2	0.020
SVM125	142	108	45	18	6	0.035
SVM140	205	134	58	18	9	0.064
SVM160	314	170	76	18	14	0.120
SVM180	482	190	86	18	19	0.203
SVM200	689	210	96	18	26	0.334
SVM224	1000	236	108	20	40	0.660
SVM250	1470	262	121	20	57	1.160
SVM280	2340	294	136	22	81	2.050
SVM315	3680	334	156	22	124	4.110
SVM355	5550	376	177	22	174	7.20
SVM400	7790	416	197	22	249	13.2

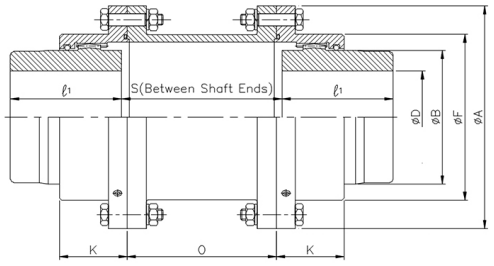
Note) Coupling weight and GD² , without Bore machining

SMM

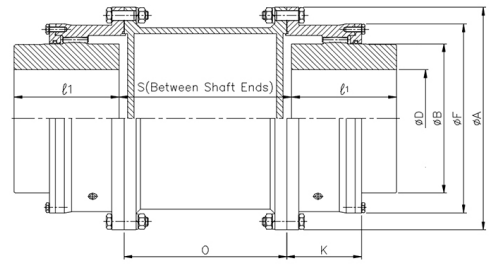
Size Out side A	적용 Motor 프레임	Dimensions						Weight (kg	GD² (kgf-m²)
		E	ℓ 1	ℓ 2	C	k1	k2		
SMM125(a)	802	157	50	75	32	43	66	6.6	0.038
SMM125(b)	803	172	50	90	32	43	66	6.6	0.039
SMM140	804	185	63	90	32	47	72	9.3	0.066
SMM160	805	220	80	100	40	52	82	14	0.123
SMM180	808	246	90	115	41	56	87	19	0.208
SMM200	810	260	100	115	45	61	93	26	0.336
SMM224	812	289	112	125	52	65	102	39	0.637
SMM250	814	305	125	125	55	74	105	55	1.09
SMM280(a)	816	339	140	140	59	82	115	81	2.09
SMM280(b)	818	339	140	150	49	82	115	81	2.13
SMM315(a)	620	386	160	170	56	98	128	129	4.27
SMM315(b)	622	421	160	185	76	98	143	129	4.42
SMM335	624	421	180	235	76	108	155	177	7.79

Note) Coupling weight and GD² , without Bore machining

SAM(Space Type)



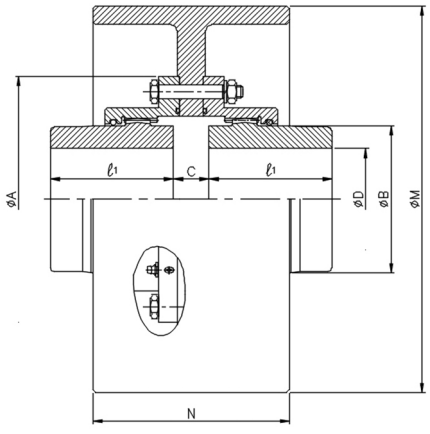
CAM(Space Type)



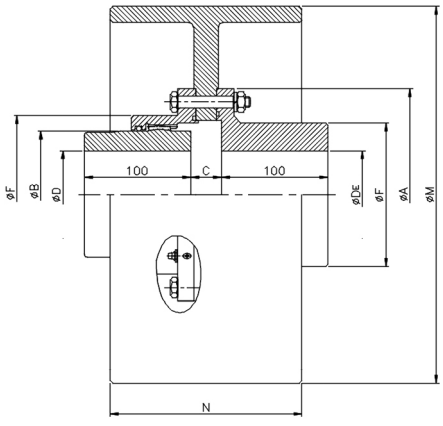
Marking and dimensions of SSM and CCM type are the same

BRAKE DRUM Type

SSMB(Brake Drum type)



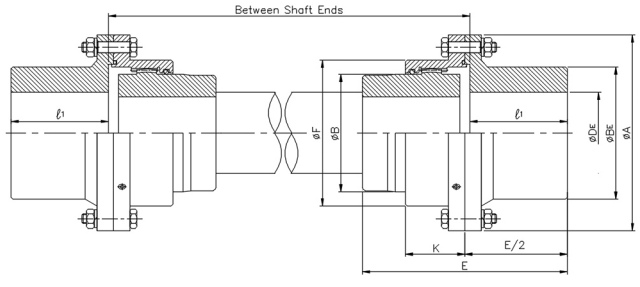
SEMB(Brake Drum type)



(Marking and dimensions of SSM and SEM type are the same)

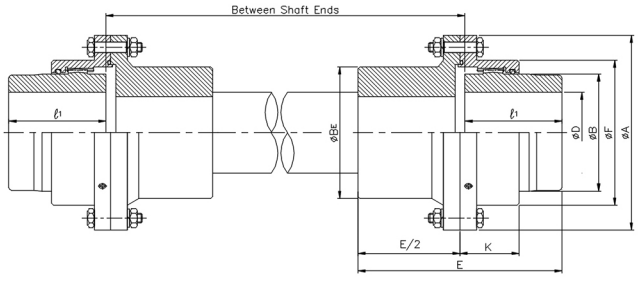
Floating Shaft Type

SHM(With Flex Hub on Floating type)



(Marking and dimensions of SSM and SEM type are the same)

SFM(With Flange on Floating type)

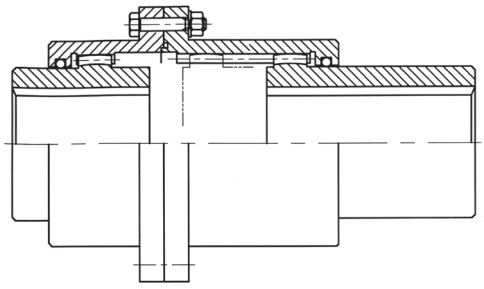


(Marking and dimensions of SSM and SEM type are the same)

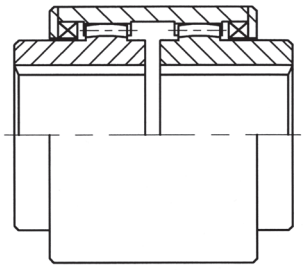
JAC coupling

GEAR Coupling

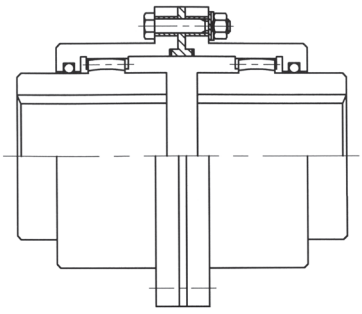
Special Applications



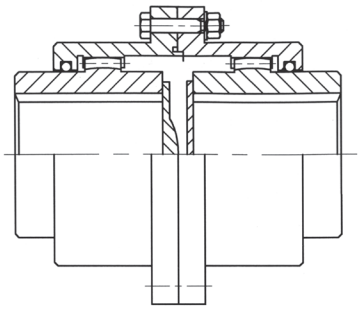
SLIDE TYPE



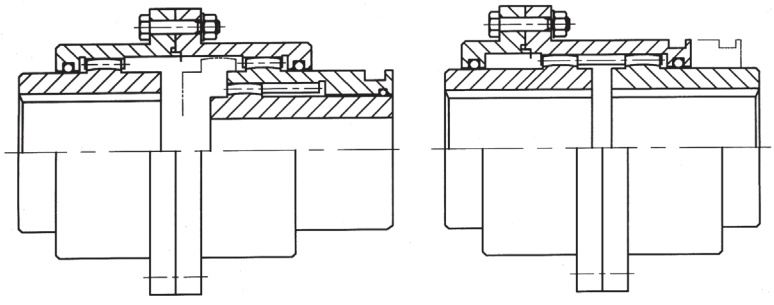
SLEEVE TYPE



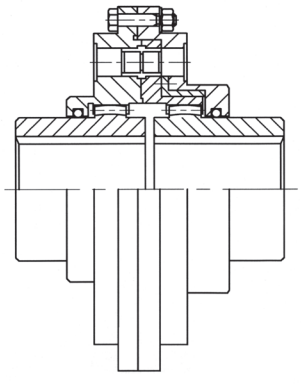
INSULATION TYPE



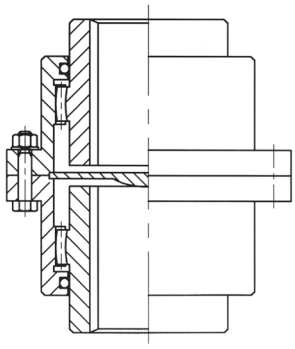
LIMITED-END PLAY TYPE



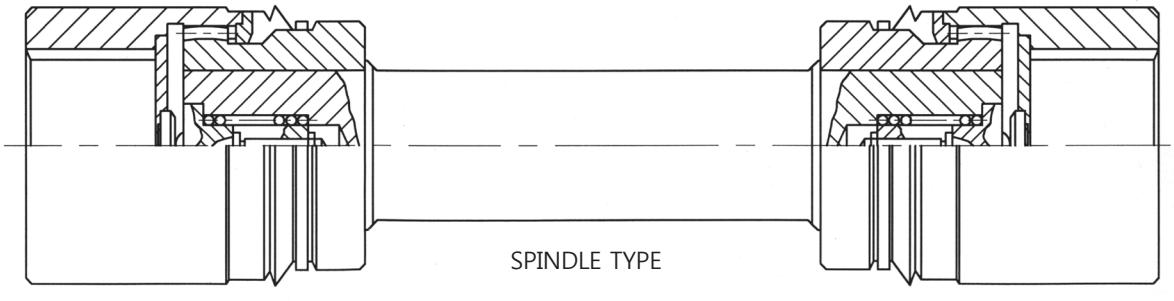
DETACHABLE CLUTCH TYPE



SHEAR PIN TYPE



VERTICAL TYPE



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