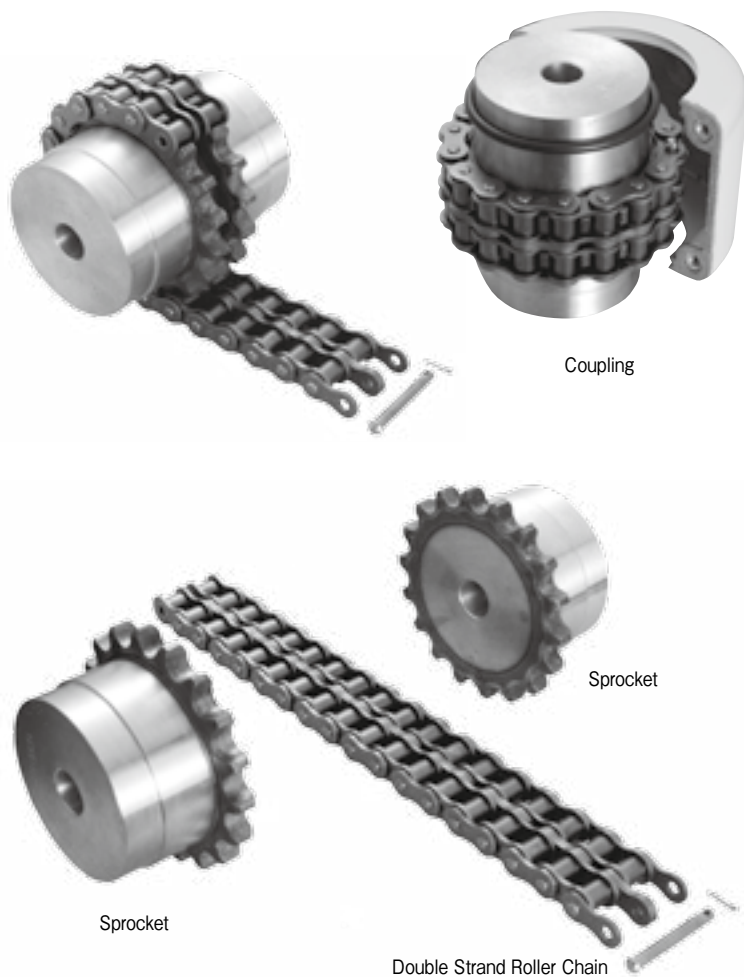


# CHAIN COUPLINGS



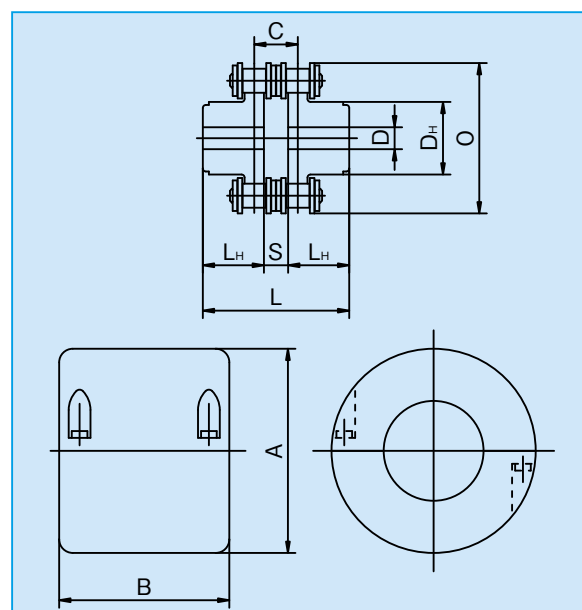
The KCM chain coupling, composed of two-strand roller chains and two sprocket wheels, features simple and compact structure, and high flexibility, power transmission capability and durability.

What's more, the chain coupling allows simple connection/disconnection of shafts each other, and the use of the housing enhances safety and durability.



Casing

Make sure to use the housing for high-speed operation, and for use in dusty or corrosive environment.



○ Dimensions

[Unit: mm]

KCM Coupling No.	Chain pitch	Coupling										Casing		
		Drill Hole D	Shaft diam.		O	L	D <sub>H</sub>	L <sub>H</sub>	S	C	Approx. Weight (kg)	A	B	Approx. Weight (kg)
			Min.	Max.										
<b>3012</b>	9.525	12	13.5	16	45	65	27.2	29.5	6.0	10.2	0.31	69	63	0.22
<b>4012</b>	12.70	12	14	22	62	79.4	36	36	7.4	14.4	0.73	77	72	0.30
<b>4014</b>		12	14	28	69	79.4	45	36			1.12	84	75	0.31
<b>4016</b>		14.5	16	32	77	87.4	55	40			1.50	92	75	0.35
<b>5014</b>	15.875	14.0	17	35	86	99.7	56	45	9.7	18.1	2.15	101	85	0.47
<b>5016</b>		16.0	18	40	96	99.7	63	45			2.75	111	85	0.50
<b>5018</b>		16.0	18	45	106	99.7	73	45			3.60	122	85	0.60
<b>6018</b>	19.05	20	22	56	127	123.5	88	56	11.5	22.8	6.55	142	106	1.2
<b>6020</b>		20	24	60	139	123.5	102.5	56			8.38	158	105	1.2
<b>6022</b>		20	28	71	151	123.5	115	56			10.4	168	117	1.2
<b>8018</b>	25.40	20	32	80	169	141.2	115	63	15.2	29.3	13.2	190	129	1.9
<b>8020</b>		20	36	90	185	149.2	125	67			16.2	210	137	2.5
<b>8022</b>		20	40	100	202	157.2	142	71			21.8	226	137	2.7
<b>10020</b>	31.75	25	45	110	233	178.8	162	80	18.8	35.8	32.4	281	153	4.1
<b>12018</b>	38.10	35	50	125	256	202.7	173	90	22.7	45.4	43.2	307	181	5.2
<b>12022</b>		35	56	140	304	222.7	213	100			69.1	357	181	6.7

NOTE: The left two or three digits of the KCM Coupling No. imply Chain No. and the two succeeded digits imply the number of teeth.

## Selection

### 1. Operating Conditions

- A) Operating hours/day
- B) Types of load and prime mover
- C) Transmission power (kW) and speed (rpm) of coupling
- D) Diameters of both shafts

### 2. Selection Method

- A) Find service factor from the Service Factor Table according to operating conditions a) and b).
- B) Determine the compensated chain drive power (kW) by multiplying the transmission power kW by the service factor above.
- C) Find a proper coupling, which meets the compensated chain drive power, from the Chain Power Transmission Table below according to the operating speed of the coupling.
- D) If the maximum allowable shaft diameter specified for the selected coupling is smaller than the actual shaft diameter, reselect the larger coupling with proper allowable shaft diameter.
- E) When using standard key at a low speed, the pressure acting on the key surface will be increased excessively in some cases. Therefore, it is required to calculate the pressure acting on the key surface to find whether the use of special key or spline is necessary.

#### • Service Factors

Operating Conditions	Operating Hours/Day			
	8 h	8 to 16 h	8 h	8 to 16 h
Small load variation, small impact, light load, no reversing operation	1.0	1.5	2.0	2.5
Medium load variation, medium impact, no reversing operation (in general case)	1.5	2.0	2.5	3.0
Large load variation, large impact, reversing operation while loaded	2.0	2.5	3.0	3.5
Type of prime mover	Motor, turbine		Combustion engine	

NOTE: In case of 16 operating hours/day or larger, add 1.0 to the service factor of the relevant 8 operating hours/day, except that the service factor for the relevant 8 operating hours/day is applied for operating at 50 rpm or less.

#### • Chain Power Transmission Table

KCM Coupling No.	Max. Shaft Dia. (mm)	Allowable Transmission Torque at 50r/min or less (kgf·m)	Coupling Speed (r/min)																							
			1	5	10	25	50	100	200	300	400	500	600	800	1000	1200	1500	1800	2000	2500	3000	3600	4000	4800	5200	6000
3012	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	28.3	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	38.3	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	41.6	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	95.2	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	126	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	180	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										
Lubrication Type			A						B						C											

NOTE: Be sure to use the casing with the coupling in the case of Lubrication Type C. For details on Lubrication Type A and B, refer to "Lubrication" section.

## Lubrication

There are three methods to lubricate chain couplings, according to operating speed (see Chain Power Transmission Table).

Lubrication Type A: Greasing monthly

Lubrication Type B: Greasing weekly or filling grease in the casing attached.

Lubrication Type C: Filling grease in the casing attached.

NOTE: When attaching the casing, use high-quality grease because the grease is pressed to the inside wall of the casing due to centrifugal force, deteriorating lubricating ability of the grease. It is recommended to change the grease periodically to maintain high performance and durability of the coupling.

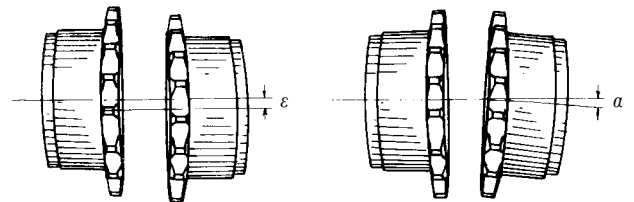
#### • Grease Change Intervals (with casing attached)

Operating conditions	Grease change intervals	
	First change	Second and later changes
Operation at 1/2 max. speed or higher	1000 hours	2000 hours
Operation at 1/2 max. speed or lower	2000 hours	4000 hours

#### • Grease Filling Quantity

KCM Coupling No.	Filling Quantity (kg)	KCM Coupling No.	Filling Quantity (kg)
3012	0.08	6020	0.44
4012	0.12	6022	0.48
4014	0.16	8018	0.79
4016	0.17	8020	0.86
5014	0.24	8022	1.0
5016	0.25	10020	1.7
5018	0.26	12018	3.5
6018	0.42	12022	4.5

#### Coupling allowance (Shaft deviation and misalignment)



Allowable errors:  $\left\{ \begin{array}{l} \varepsilon = 2\% \text{ or less of pitch of roller chain used} \\ \alpha = 1^\circ \text{ or less} \end{array} \right.$

In case of high-speed operation, shaft deviation and misalignment must be up to 1/2 allowable errors.