

### Selection

- Operating Conditions
  - Operating hours/day
  - Types of load and prime mover
  - Transmission power (kw) and speed (rpm) of coupling
  - Diameters of both shafts
- Selection Methods
  - Find service factor from the service factor table according to operating conditions a) and b).
  - Determine the compensated power (kw) by multiplying the transmission power kw by the service factor above.
  - Find a proper coupling, which meets the compensated power, from the power transmission capacity table below according to the operating speed of the coupling.
  - If 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.
  - 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.

Table of Service Factors

Load Characteristics	Operation Hours per Day	Kind of power Source		
		Moto, Turbine	Steam Engine, Gasoline Engine (4-cylinder up)	Diesel Engine, Gas Engine
Load fluctuation small, Impact small, starting torque small, Non-reversible	8 hours max.	1.0	1.5	2.0
	8-16 hours.	1.5	2.0	2.5
	16 hours min.	2.0	2.5	3.0
Load fluctuation normal, Impact normal, Non-reversible	8 hours max.	1.5	2.0	2.5
	8-16 hours.	2.0	2.5	3.0
	16 hours min.	2.5	3.0	3.5
Load fluctuation large, Impact large, Starting torque large, Reversible	8 hours max.	2.0	2.5	3.0
	8-16 hours.	2.5	3.0	3.5
	16 hours min.	3.0	3.5	4.0

NOTE: In case of 16 operating hours day or longer, add 1.0 to service factor in the case of 8 operating hours day, provided that service factor for 8 operating hours day is applicable when speed is 50 rpm or less.

### Power Transmission Capacity

Coupling No.	Max Shaft diam. (mm)	Allowable transmission torque at 50 rpm or less (kgf·m)	Coupling speed (rpm)																							
			10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100					
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	3.83	4.41	5.35	6.25	6.73	8.12	9.44	11.0	12.0	14.0	14.8	14.8
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	140						
6022	71	242	0.25	1.25	2.51	6.31	12.50	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	10.30	20.70	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	14.80	29.60	44.5	67.2	89.0	106	127	146	180	219	249	302	352	379							
10020	110	896	0.93	4.66	9.33	23.30	46.60	70.0	106	140	168	200	229	283	345	392	476	554								
12012	125	1,350	1.40	7.02	14.00	35.10	70.20	105	160	210	252	302	345	426	519	590	716									
12022	140	1,750	1.81	9.07	18.10	45.30	90.70	136	206	272	326	390	446	551	671	762										
Lubrication method			A					B					C													

(KW)

### Lubrication

There are three methods to lubricate chain couplings, according to operating speed (see Power Transmission Capacity table):

- Lubrication method A: Greasing monthly.
- Lubrication method B: Greasing weekly or filling grease in the casing attached.
- Lubrication method 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.

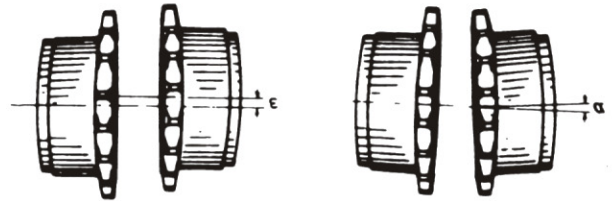
#### Grease change intervals (with casing attached)

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

#### Grease filling quantity

Coupling No.	Filling quantity (kg)	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:  
 ε = 2% or less of pitch of roller chain used  
 α = 1° or less  
 In case of high-speed operation, shaft deviation and misalignment must be 1/2 allowable errors.

NOTE: Be sure to use the casing with the coupling in the case of lubrication type C. or details of lubrication types A and B, refer to "lubrication" selection.