

Chain Couplings

The chain coupling is composed of double-strand roller chain and two sprockets, featuring a simple and compact structure that offers a high flexibility and greater transmission capacity compared to similar sized coupling. The chain coupling allows simple connection and disconnection, and use of the housing enhances safety and durability.

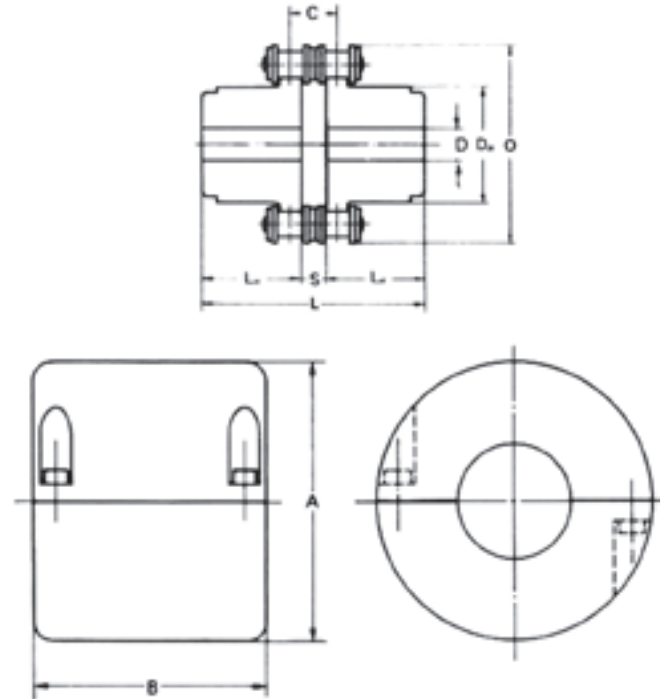


TABLE 1: DIMENSIONAL DATA

| Chain Coupling Number | Chain Pitch | Coupling | | | | | | | | | | Casing | | |
|-----------------------|-------------|------------|-------------|------|-----|-------|----------------|----------------|------|------|-----------------------|--------|-----|-----------------------|
| | | Drill hole | Shaft diam. | | O | L | D _H | L _H | S | C | Approx. weight (kg/m) | A | B | Approx. weight (kg/m) |
| | | | Min. | Max. | | | | | | | | | | |
| 3012 | 9.525 | 12 | 13.5 | 16 | 45 | 65 | 27.2 | 29.5 | 6 | 10.1 | 0.31 | 69 | 63 | 0.22 |
| 4012 | 12.70 | 12 | 14 | 22 | 62 | 79.4 | 36 | 36 | 7.4 | 14.4 | 0.73 | 77 | 72 | 0.30 |
| 4014 | | 12 | 14 | 28 | 69 | 79.4 | 45 | 36 | | | 1.12 | 84 | 75 | 0.31 |
| 4016 | | 13.5 | 16 | 32 | 77 | 87.4 | 51.5 | 40 | | | 1.50 | 92 | 72 | 0.35 |
| 5014 | 15.875 | 14.5 | 17 | 35 | 86 | 99.7 | 56 | 45 | 9.7 | 18.1 | 2.15 | 101 | 85 | 0.47 |
| 5016 | | 14.5 | 18 | 40 | 96 | 99.7 | 64 | 45 | | | 2.75 | 110 | 87 | 0.50 |
| 5018 | | 16 | 18 | 45 | 106 | 99.7 | 73.5 | 45 | | | 3.60 | 122 | 85 | 0.60 |
| 6018 | 19.05 | 20 | 22 | 56 | 127 | 123.5 | 89.5 | 56 | 11.5 | 22.8 | 6.55 | 147 | 105 | 1.2 |
| 6020 | | 20 | 24 | 60 | 139 | 123.5 | 102.5 | 56 | | | 8.38 | 158 | 105 | 1.2 |
| 6022 | | 20 | 28 | 71 | 151 | 123.5 | 115 | 56 | | | 10.4 | 168 | 117 | 1.2 |
| 8018 | 20.40 | 20 | 32 | 80 | 169 | 141.2 | 115 | 63 | 15.2 | 29.3 | 13.2 | 190 | 129 | 1.9 |
| 8020 | | 20 | 36 | 90 | 185 | 145.2 | 125 | 65 | | | 16.2 | 210 | 137 | 2.5 |
| 8022 | | 20 | 40 | 100 | 202 | 157.2 | 142 | 71 | | | 21.8 | 226 | 137 | 2.7 |
| 10020 | 31.75 | 25 | 45 | 110 | 233 | 178.8 | 162 | 80 | 18.8 | 35.8 | 32.4 | 281 | 153 | 4.1 |
| 12018 | 38.10 | 35 | 50 | 125 | 256 | 202.7 | 173 | 90 | 22.7 | 45.4 | 43.2 | 307 | 181 | 5.2 |
| 12022 | | 35 | 56 | 140 | 304 | 222.7 | 213 | 100 | | | 69.1 | 357 | 181 | 6.7 |

NOTE: The first two or three digits of the chain coupling No. imply chain No. and the two succeeding digits imply the No. of teeth



Quality Guaranteed

Chain Couplings



Quality Guaranteed

Selection

1. Operating conditions

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

2. Selection Method

- 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 across 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.

Service Factors

| Operating Conditions | Operating hours/day | | | |
|--|---------------------|-------|-------------------|-------|
| | 8h | 8-16h | 8h | 8-16h |
| Small load variations, small impact, light road, no reversing | 1.0 | 1.5 | 2 | 2.5 |
| Medium load variations, medium impact, no reversing (normally) | 1.5 | 2 | 2.5 | 3 |
| Large load variations, large impact, reversing while loaded | 2.0 | 2.5 | 3 | 3.5 |
| Type of prime mover | Motor, turbine | | Combustion engine | |

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 50rpm or less.

Power Transmission Capacity

| Chain coupling No. | Max shaft diam. (mm) | Allowable transmission torque at 50rpm or less (kgf . m) | Coupling speed (rpm) | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|----------------------|--|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | | | 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 | 11.6 | 13.2 | 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 | 1.81 | 45.3 | 90.7 | 136 | 206 | 272 | 326 | 390 | 446 | 551 | 671 | 762 | | | | | | | | | | |
| Lubricated method | | | A | | | | | B | | | | | C | | | | | | | | | | | | | |

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

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 fill grease in the attached casing.

Lubrication Method C:Fill grease in the attached casing.

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.

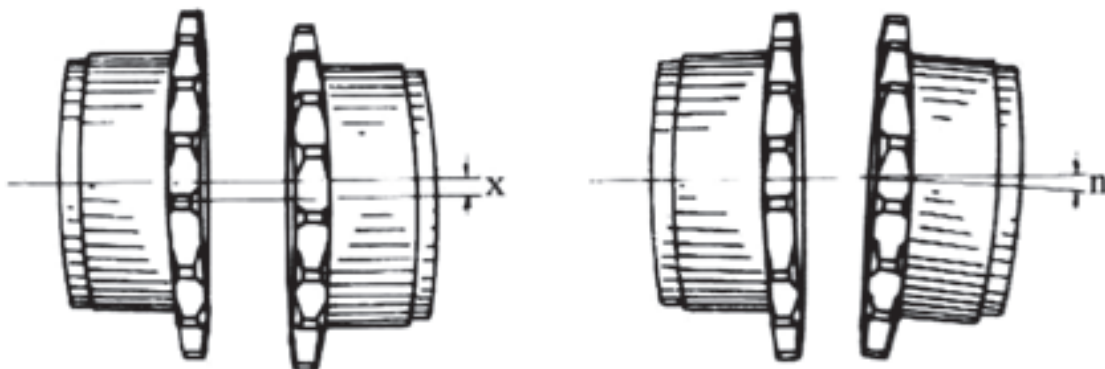
Grease change intervals (with casing attached)

| Operating conditions | Grease change intervals | |
|---------------------------------------|-------------------------|-----------------------|
| | First change | 2nd and later changes |
| Operating at 1/2 max, speed or higher | 1000 hours | 2000 hours |
| Operation at 1/2 max, speed or lower | 2000 hours | 4000 hours |

Grease filling quantity

| Chain coupling No. | Filling quantity (kg) | Chain 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 | 1.00 |
| 5016 | 0.25 | 10020 | 1.70 |
| 5018 | 0.26 | 12018 | 3.50 |
| 6018 | 0.42 | 12022 | 4.50 |

Coupling allowance (shaft deviation and misalignment)



Allowable errors

x = 2% or less of pitch of roller chain used

n = 1 or less

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