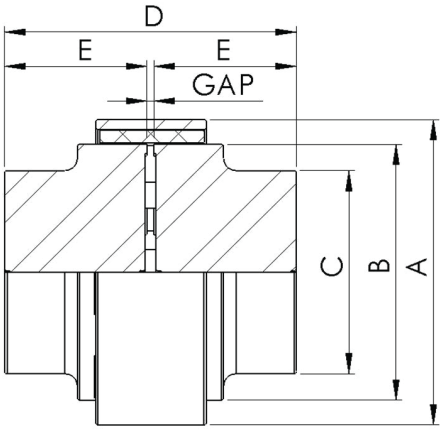
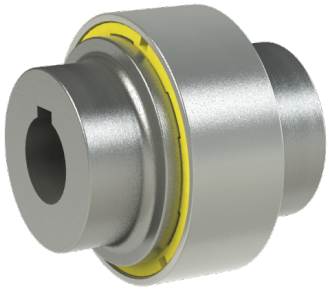
# F-FLEX COUPLING



| Size | Torque (Kg·m) | | RPM (max.) | HP / 100RPM | | Bore(mm) | | Dimensions(mm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Con. | Int. | | Con. | Int. | Max. | Min. | A | B | C | D | E | GAP |
| F00 | 2 | 3.45 | 12,000 | 0.29 | 0.48 | 25.0 | 6.0 | 55.1 | 43.2 | 40.6 | 52.0 | 25.4 | 3.0 |
| F0 | 6.9 | 11.5 | 8,100 | 0.95 | 1.59 | 34.5 | 7.6 | 72.1 | 61.0 | 55.9 | 71.8 | 34.9 | 4.4 |
| F1 | 14.5 | 24.1 | 7,280 | 2.00 | 3.33 | 44.0 | 10.4 | 98.0 | 80.0 | 73.0 | 90.8 | 44.5 | 4.4 |
| F1H | 27.5 | 46 | 6,500 | 3.81 | 6.35 | 49.0 | 15.5 | 110.4 | 88.1 | 78.7 | 100.3 | 49.2 | 4.4 |
| F2 | 34.5 | 57.6 | 5,800 | 4.76 | 7.93 | 57.0 | 15.5 | 122.4 | 99.1 | 88.9 | 116.2 | 57.2 | 4.4 |
| F3 | 66 | 110.5 | 4,700 | 9.14 | 15.23 | 63.5 | 19.1 | 146.1 | 124.5 | 101.6 | 128.9 | 63.5 | 4.4 |
| F4 | 145 | 241.9 | 3,600 | 20.00 | 33.00 | 85.5 | 23.9 | 193.0 | 162.6 | 139.7 | 170.2 | 82.6 | 7.6 |
| F5 | 330 | 553 | 2,800 | 46.00 | 76.00 | 114.0 | 25.4 | 246.4 | 207.8 | 165.1 | 233.7 | 114.3 | 8.1 |
| F6 | 553 | 921.5 | 2,300 | 76.00 | 127.00 | 139.5 | 38.1 | 299.7 | 252.2 | 203.2 | 284.5 | 139.7 | 8.1 |
| F7 | 1,278 | 2,131 | 2,000 | 176.00 | 294.00 | 152.0 | 44.5 | 345.4 | 299.7 | 228.6 | 309.9 | 152.4 | 8.1 |
| F8 | 2,149 | 3,583 | 1,700 | 296.00 | 493.00 | 184.0 | 62.2 | 402.6 | 354.1 | 266.7 | 373.4 | 184.2 | 8.1 |
| F9 | 3,145 | 5,242 | 1,450 | 433.00 | 722.00 | 228.5 | 73.7 | 453.6 | 403.9 | 304.8 | 462.3 | 228.6 | 8.1 |
| F10 | 4,838 | 8,064 | 1,300 | 666.00 | 1,111.00 | 254.0 | 95.3 | 504.8 | 453.9 | 355.6 | 513.1 | 254.0 | 8.1 |
| F11 | 7,903 | 13,249 | 1,165 | 1,088.00 | 1,825.00 | 279.0 | 101.6 | 585.0 | 499.1 | 381.0 | 565.2 | 279.4 | 9.4 |
| F12 | 11,060 | 18,433 | 960 | 1,523.00 | 2,539.00 | 336.5 | 101.6 | 694.7 | 605.8 | 469.9 | 590.6 | 292.1 | 9.4 |
| F13 | 21,890 | 36,867 | 700 | 3,015.00 | 5,077.00 | 406.0 | 177.8 8 | 879.3 | 762.0 | 609.6 | 566.4 | 279.4 | 12.7 |

※ Con.=Continuous / Int.=Intermittent
DBSE=Distance Between Shaft Ends

# Service Factor and Reference

## Service Factor

The service factors listed are the typical values used for normal operation of drive systems.
If the applications use repetitive high peak loads, choose a factor by using the provided instructions or formulas.

### Table 1

Aiphabetical listing of applications
AERATOR ····· 2.5
AGITATORS
Vertical and Horizontal screw,propeller,Paddle ····· 1.5
BARGE HAUL PULLER ····· 3.0
BLOWERS
Centrifugal ····· 1.5
Lobe or Vane ····· 1.75
CAR DUMPERS ····· 4.0
CAR PULLERS ····· 2.5
CLARIFIER OR CLASSIFIER ····· 1.5
COMPRESSORS
Centrifugal ····· 1.1
Rotary,Lobe or Vane ····· 2.0
Rotary,Screw ····· 2.0
Reciprocation
Direct Connected ★
With out Flywheels ★
*With flywheel and Gear between Compressor and Prime Mover
1 cylinder,single acting ····· 5.0
1 cylinder,double acting ····· 5.0
2 cylinders,single acting ····· 5.0
2 cylinders,double acting ····· 5.0
3 cylinder,single acting ····· 5.0
3 cylinder,double acting ····· 3.0
4 or more cyl.. single act ····· 3.5
4 or more cyl.. double act ····· 3.5
CONVEYORS
Apron,Assembly,Belt,Chain Flight,Screw ····· 1.5
Bucket ····· 2.0
Live Roll,Shaker and Reciprocatio ····· 3.5
▲★CRANES AND HOIST
Main Hoist ····· .5
Skip Hoist ····· 2.5
Slope ····· 2.25
Bridge,Travel or Trolley ····· .5
DYNAMOMETER ····· 1.5
ELEVATORS
Bucket,Centrifugal Discharge ····· 2.0
Freight or Passenger(Not Approved)
Gravity discharge ····· 2.0
ESCALATORS(Not Approved)
EXCITER GENERATOR ····· 1.75
EXTRUDER, PLASTICI ····· 2.25
FANS
Centrifugal ····· 1.1
Cooling Tower ····· 3.0
Forced Draft-Across the Line start ····· 2.0
Forced Draft Motro Driven thru fluid or electric slip clutch ····· 1.5
Gas Recirculating ····· 2.5
Induced Draft with damper control or blade cleaner ····· 2.0
Induced Draft without controls ····· 3.0
FEEDERS ····· 3.0
Apron,Belt,Disc,Screw ····· 2.0
Reciprocation ····· 3.5
GENERATORS
Even Load ····· 1.1
Hoist or Railway Service ····· 2.0
Welder Load ····· 3.0
HAMMERMUILL ····· 2.5
LAUNDRY WASHER OR TUMBLER ····· 3.0
LINE SHAFTS
Any processing Machinery ····· 2.0
MACHINE TOOLS
Auxiliary and Traverse Drive ····· 1.5
Bending Roll,Notching press.
Punch Press, Planer, Plate Reversing ····· 2.5
Main Drive ····· 2.0
MAN LIFTS(Not Approved)
METAL FORMING MACHINES
Draw Bench Carriage and Main Drive ····· 3.0
Extrude ····· 3.0
Forming Machine and Forming Mills ····· 3.0
Slitters ····· 1.5
Wire Drawing or Flattening ····· 2.5
Wire Winder ····· 2.25
Coilers and Uncoilers ····· 2.25
MIXERS(see Agitators)
Concrete ····· 2.5
Muller ····· 2.5
PRESS,PRINTING ····· 2.25
PUG MILL ····· 2.5
PULVERIZERS
Hammermill and Hog ····· 2.5
Roller ····· 2.0
PUMPS
Centrifugal
Constant Speend 1.1
Frequent Speed Changes under Load ····· 2.0
Descakling,with accumlators ····· 2.0
Gear,Rotary, or Vane ····· 1.75
Reciprocating
1 cyl..single or double act. ····· 3.0
2 cyl..single acting ····· 3.0
2 cyl..double acting ····· 2.5
3 or more cyliders ····· 2.0
SCREENS
Air Washing ····· 1.5
Grizzly ····· 3.0
Rotary Coal or Sand ····· 2.0
Vibrating ····· 3.5
Water ····· 1.5
SKI TOWS & LIFTS(Not Approved)
STEERING GEAR ····· 1.5
STOKER ····· 1.5
TUMBLING BARREL ····· 1.5
WINCH,MANEUVERING
Dredge,Marine ····· 2.5
WINDLASS ····· 2.0
WOODWDORKING ····· 2.0
MACHINERY ····· 1.5
WORK LIFT PLATFORMS(Not approved)

Aiphabetical listing of industries
AGGREGATE PROCESSING, CEMENT, MINING KILNS; TUBE,ROD AND BALL MILLS
Direct or on L.S. shaft of Reducer, with final drive Machined Spur Gears ····· 3.0
Single Helical or Herringbone Gears ····· 2.25
Conveyors,Feeders,Screens, Elevators,See General Listing
Crushers,Ore or Stone ····· 3.5
Dryer, Rotary ····· 2.0
Grizzly ····· 3.0
Hammermill or Hog ····· 2.5
Tumbling Mill or Barrel ····· 2.5
BREWING AND DISTILLING
Bottle and Can Filling Machines ····· 1.5
Brew Kettle ····· 1.5
Cookers,Continuous Duty ····· 1.75
Lauter Tub ····· 2.25
Mash Tub ····· 1.75
Scale Hopper,Frequent Peaks ····· 2.25
CLAY WORKING INDUSTRY
Brick Press, Briquette Machine, Clay Working Machine, Plug Mill ····· .25

a. In case of a slide coupling that axial movement occurs more than five times per hour, add 0.5 to the service factor. When electric motors, generators, engines, compressors and other machines are assembled with sleeves or straight roller bearings, axial end float couplings should be used to protect the bearings. When ordering, also order limited end float discs with the coupling.
b. *Contact us for a balanced opposed design.
c. ▲When using in a place with risk to human safety, for safety reasons, consult us before using.
d. ★ Contact us for high peak load applications (such as Metal Rolling Mills)
e. Non-reversing safety factor: The required coupling torque is the same as the peak torque.
f. Reversing safety factor: The required coupling torque is twice the peak torque.

## Engine Drive Service Factors

It is necessary to use a service factor for engine drives when the application involves good flywheel regulation to prevent torque fluctuations that are greater than ± 20%. If the torque fluctuation is greater, or if operation is close to serious critical or torsional vibration, a mass elastic study will be required.
To use Table 2, begin by selecting an application service factor from Table 1. Use that service factor to choose the appropriate engine service factor from Table 2. If the service factor from Table 1 is more than 2.5, please submit the complete application details to the factory for an engineering review.

### Table 2. Engine Drive Service Factors

| Number of cylinders | 4 or 5 | | | | | 6 or more | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Service Factor | 1.5 | 1.75 | 2.0 | 2.25 | 2.5 | 1.5 | 1.75 | 2.0 | 2.25 | 2.5 |
| Engine Service Factor | 2.5 | 2.75 | 3.0 | 3.25 | 3.5 | 2.5 | 2.75 | 3.0 | 3.25 | 3.5 |

For best results, measure the system characteristics with a torque meter. The service factors provided here are only a guide based on the usual ratio between the coupling catalogue rating and general system characteristics.

| Torque Demands Driven Machine | Typical applications for 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 Talbes. | 3.0 |
|  | Applications like Reciprocating Compressors with frequent torque reversals, which do not necessarily cause reverse rotations. | Refer to WCC |

## Shrink Heating

### 1. Introduction

Heat shrinking is necessary and practical in industries that require more power and precision than is possible with other fitting methods.

### 2. Interference

1/1,000 to 15/10,000 (mm) of the shaft diameter d

### 3. Methods and Procedures for Fitting

A) If you use a key, put the key on the shaft first and lubricate it. If there is no key, do not apply lubricant.
B) Before fitting the hub on to the shaft, with the steel flexible coupling insert the tv cover and oil seal first. In case of the gear coupling, insert the sleeve, side cover first.
C) To heat, choose one of the following methods and heat to 135˚C:

① Oxy-acetylene or blow-torch heating — Mark near the surface of the hub with a crayon that melts at 135˚C. Then pass the flame through the inner diameter to heat it. Do not put heat directly on the tooth surface during heating, or heat only one side.

② Heating in a furnace — Set the thermometer to 135˚C and heat for at least three minutes per 1mm thickness. Avoid direct contact with heat sources during heating.

③ Oil bath heating — Put the hub in oil with a boiling point of 177℃ or higher and heat it for six minutes per 1mm thickness. Do not let the surface of the hub touch the bottom of the container during heating.

### 4. Mount the hub as soon as possible to prevent heat loss.