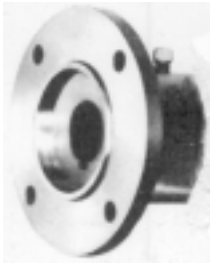
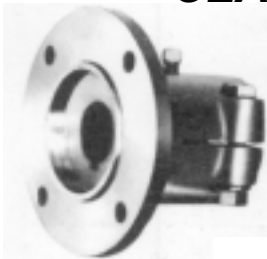


## STANDARD PROPELLER SHAFT COUPLINGS



A propeller shaft coupling to match the transmission output flange is normally provided with each complete transmission assembly or complete marine engine. Such couplings are a standard "flange" type, held to engine drive flange by a series of bolts and centralized by a center pilot. These couplings are designed to be a "press fit" to propeller shaft, drive through use of a shaft "key" and are held in place on shaft by set screws. Although quite adequate for pleasure boat or standard duty applications, these flange flange couplings do not have the ruggedness of the clamp-fit type described below. They are referenced on the accompanying chart by the word "flange".

## CLAMP-FIT PROPELLER SHAFT COUPLINGS



If a really rugged coupling is required, the "clamp-fit" type as pictured herewith is recommended. This is the type used in heavy duty commercial installations, Coast Guard, etc. The hi-strength, ductile iron coupling is bored, slitted (horizontally) and fitted with heat-treated clamping bolts. Propeller shaft is driven by the entire clamped-on coupling rather than key and set-screws only as with couplings described above. Further, should shaft be slightly undersized, this coupling will adapt because of the clamping action. Model numbers are shown in the accompanying chart, referenced by word "clampfit".

## FEDERAL FLEXIBLE PROPELLER SHAFT COUPLINGS

A Federal Flexible Coupling should be used between the propeller shaft and the engine of your boat to absorb the misalignment caused by structural distortion of the hull in a seaway. Changes in the hull from water absorption and shifting of ballast also tend to cause misalignment between the propeller and motor. Even a small degree of misalignment with rigid couplings will cause shaft whip, excessive vibration, and impose extreme stress on the reverse gear and stuffing box. It is particularly important that flexible couplings be used with any motor that has rubber engine mountings to allow the engine to float freely and to prevent distortion of the shaft. Propeller vibration is substantially dampened by the use of the Federal Flexible Coupling. There is no metal to metal contact. This helps to reduce electrolysis by isolating the iron parts of the engine from the bronze shafting and propeller. Grounding straps are available for boats with bonded electrolytic systems.

The Federal Flexible Coupling consists of a metal hub and flange. The metal hub is accurately bored to receive the rubber bushings, and the face of the flange is machined to match the engine coupling. The neoprene rubber bushings have a bonded inner brass sleeve and the entire bushing is pressed into the flange at the proper compression. Alloy steel spider pins screw through the bushing into the hub and are locked into position. The rubber bushings are ample to absorb propeller vibration and to allow slight angular misalignment. Replacing the propeller half of the engine coupling, the Federal Coupling requires but a fraction of an inch additional space for installation. The Flexible Coupling is not designed to do the work of a universal joint. The engine should be aligned properly before installation in order that the flexibility of the coupling may be used entirely to compensate for misalignments caused by hull distortion and motor movement.

The Federal coupling may be easily installed at any time; no alterations are necessary to either the engine or the propeller shaft. Simply line up the engine, using the existing rigid couplings, then remove the rigid coupling from the propeller shaft and put the Federal flexible coupling on in its place. There need be no change in the position of the propeller.

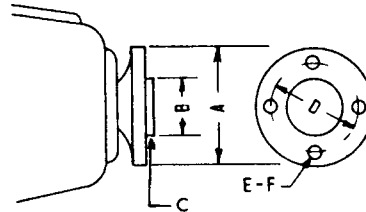
The Federal Flexible Coupling will absorb both thrust and torsional loads. The pins and rubber bushings are replaceable in case of damage. Couplings with standard bore and keyways are available for most gasoline engines with ratings not exceeding 500 Horsepower, diesel engines to 900 foot pounds torque. All necessary bolts, nuts, and set screws are furnished. They are referenced on the accompanying chart by the word "flexible".



# PROPELLER SHAFT COUPLINGS

In the chart below, locate the listing of your particular transmission in the column on the left. Dimensions shown in the second section of the chart refer to the diagram at the right. If not certain of which coupling is required, these measurements may be used for checking purposes.

Select the preferred type of coupling from the information shown on the preceding page.



- A- FLANGE DIAMETER \_\_\_\_\_
- B- PILOT DIAMETER \_\_\_\_\_
- C- MALE OR FEMALE PILOT\* \_\_\_\_\_
- D- BOLT CIRCLE DIAMETER \_\_\_\_\_
- E- HOLES: QUAN \_\_\_\_\_ DIA \_\_\_\_\_
- PROPELLER SHAFT DIA. \_\_\_\_\_

\*SHAFT COUPLING

## BORE SIZE AND MODEL NUMBERS

TRANSMISSIONS MODELS AND MANUFACTURERS	DIMENSIONS						COUPLING TYPE	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"	1 3/4"
	A	B	C	D	E	F									
BORG-WARNER "VELVET DRIVE" * WITH 4" FLANGE. 70 & 71 SERIES HURTH WITH 4" FLANGE HBW 50, 100, 150, 150V, 250	4	2 1/2	F	3 1/4	4	3/8	FLANGE CLAMP-FIT FLEXIBLE DRIVESAVER	ED300 EDX404A	ED301 EDX404A	ED4865BB 2L702 ED302 EDX404A	ED4865CC 2L703 ED303 EDX404A	ED4865DD 2L704 ED304 EDX404A	ED4865EE 2L705 ED305 EDX404A	ED4865FF 2L706 EDX404A	EDX404A
BORG-WARNER "VELVET DRIVE" WITH 5" FLANGE. 71 & 72 SERIES HURTH WITH 5" FLANGE HBW 360 & 450	5	2 1/2	F	4 1/4	4	7/16	FLANGE CLAMP-FIT FLEXIBLE DRIVESAVER			ED4886B 2L712 ED312 EDX504	ED4886C 2L713 ED313 EDX504	ED4886D 2L714 ED314 EDX504	ED4886E 2L715 ED315 EDX504	ED4886F 2L716 ED316 EDX504	2L717 ED317 EDX504
PARAGON SERIES G31, G33, PARAGON SERIES P31, P32, P33, PV300 AND PMV V-DRIVES WITH 4" FLANGE	4	2 5/8	F	3 1/4	4	3/8	FLANGE CLAMP-FIT FLEXIBLE DRIVESAVER		ED391 EDX404AC	ED12081B 2L722 ED392 EDX404AC	ED12081C 2L723 ED393 EDX404AC	ED12081D 2L724 ED394 EDX404AC	ED12081E 2L725 ED395 EDX404AC	ED12081F 2L726 EDX404AC	EDX404AC
PARAGON SERIES P34, P35 P41 THRU P45, G33, P32, P33 WITH 5" FLANGE (PARAGON SERIES PM, PL, PLV NOTE)	5	2 3/4	F	4 1/4	4	3/8	FLANGE CLAMP-FIT FLEXIBLE DRIVESAVER			ED12082B 2L732 ED1312 EDX504A	ED12082C 2L733 ED1313 EDX504A	ED12082D 2L734 ED1314 EDX504A	ED12082E 2L735 ED1315 EDX504A	ED12082F 2L736 ED1316 EDX504A	2L737 ED1317 EDX504A
S.A.E. No. 3. 5 3/4" FLANGE BORG-WARNER "VELVET DRIVE" 73 SERIES TWIN DISC, CAPITOL, ALLISON (SPECIFY MAKE & MODEL)	5 3/4	3	F	4 3/4	6	1/2	FLANGE CLAMP-FIT FLEXIBLE DRIVESAVER	2L742 EDX5756	ED4904D 2L744 EDX5756	ED4904E 2L745 ED1305 EDX5756	ED4904F 2L746 ED1306 EDX5756	ED4904H 2L747 ED1307 EDX5756	2L748 ED1308 EDX5756	2L749 EDX5756	2L750 EDX5756
S.A.E. No. 4. 7 1/4" FLANGE TWIN DISC, CAPITOL, ALLISON (SPECIFY MAKE, MODEL & SHAFT DIA.)	7 1/4	3 3/4	F	6	6	5/8	CLAMP-FIT FLEXIBLE DRIVESAVER	1 1/4" 2L800 EDX7256B	1 1/2" 2L801 EDX7256B	1 3/4" 2L802 EDX7256B	2" 2L803 EDX7256B	2 1/4" 2L804 EDX7256B	2 1/2" 2L805 EDX7256B	2 3/4" 2L806 EDX7256B	3" 2L807 EDX7256B
9" FLANGE TWIN DISC, CAPITOL, ALLISON (SPECIFY MAKE, MODEL & SHAFT DIA.)	9	4 3/4	F	7 1/2	8	3/4	CLAMP-FIT DRIVESAVER	STANDARD BORE SIZES 1 1/2" TO 4" MODELS QUOTED UPON REQUEST							
10 1/2" FLANGE TWIN DISC MODELS (SPECIFY MODEL & SHAFT DIA.)	10 1/2	5	F	8 3/4	8	1	CLAMP-FIT DRIVESAVER	STANDARD BORE SIZES 2" TO 4" MODELS QUOTED UPON REQUEST							