

## Model 70

### Description

A fluid rotary union (FRU) functions as a rotary interface for fluid carrying conduit between stationary and rotating equipment. The fluid being conveyed can be liquid, gas, or vacuum. A fluid rotary union is also called a rotary union, fluid swivel, utility swivel, hydraulic swivel, hydraulic utility swivel, or rotary joint. Unlike flexible conduit, a fluid rotary union allows continuous unrestrained rotation of movable joints in machinery.

The Model 70 is a multi pass fluid rotary union with over 30 years service as the diving industry standard fluid joint. It is available as a stand alone FRU or combined with electric slip ring and fiber optic rotary unions. Typically configured with up to 12 passes, inter-port mixing is prevented through the use of double seals and an intermediate vent between passes. It has also proven itself in non diving applications such as centrifuge, indexing tables, and floating oil production swivels where product quality is paramount. The Model 70 is available in several standard port configurations or types as illustrated below.

The Model 70 is available with the standard seal technology or with a new low leakage seal option. In its standard configuration, it is rated for 1000 psi [68 bar] at 10 rpm continuous service and up to 30 rpm intermittent service.

### Features

- Configurable with up to 12 ports as standard
- 1/4, 1/2, 5/8 and 1 inch SAE straight thread o-ring ports standard
- Corrosion resistant materials suitable for hot sea water and other harsh chemicals
- Rated to 1000 psi [68 bar] at 10 rpm continuous service
- Maximum speed 30 rpm intermittent
- Polymer bearings eliminate the need for periodic service
- Optional rolling element bearing design available
- Available with hollow bore for ESR / FORJ pigtails

### Benefits

- Continuous 360° rotation
- Proven reliability
- Maintenance free service
- Configurable



### Typical Applications

- Industrial – machining centers, rotary index tables, heavy equipment turrets, cable reels, packaging machines, palletizing machines, labeling machines, remote sensing
- Marine – diving umbilical winches, seismic survey winches, hydraulic control winches
- Scientific – centrifuges
- Military – radar turrets

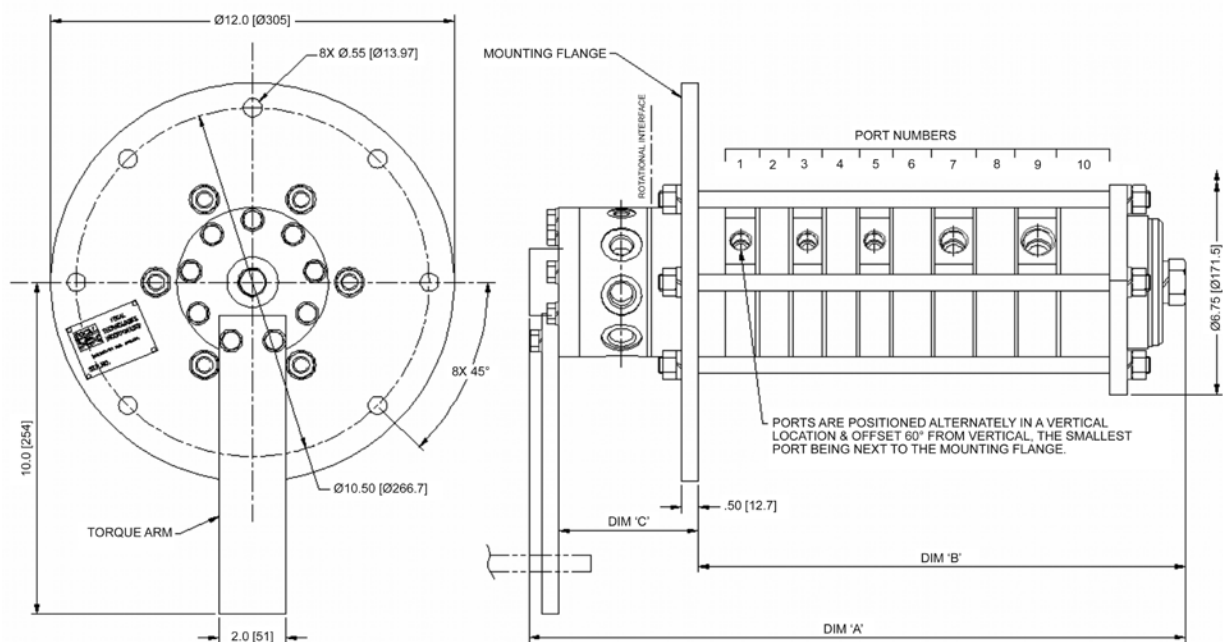
# Fluid Rotary Unions (FRU)

## Model 70 Specifications

Ambient Temperature	-40° to 60° C
Gases	-40° to 100° C
Liquids	0° to 60° C
Pressure	1000 psi
Rotational Speed	10 rpm continuous 30 rpm intermittent
Torque	Approx. 80 lb-ft [110 N-m]
Shock / Vibration	Mil-Std-167 (ships)
Weight	Dependent on configuration
Environmental	Marine, open deck
Leakage Std. Seal	167 std. mL / min N <sub>2</sub> gas per seal rotating @ 1000 psi max Typically less than 30 std. mL / min N <sub>2</sub> gas per seal rotating @ 1000 psi
Low Leak Seal	2 std. mL / min N <sub>2</sub> gas per seal rotating @ 1000 psi max Typically less than 0.05 std. mL / min N <sub>2</sub> gas per seal rotating @ 1000 psi
Nominal Port Size	SAE straight thread O-ring thread size
1/4 inch	7/16-20 UNF
1/2 inch	3/4-16 UNF
5/8 inch	7/8-14 UNF (passage size suitable for 3/4" nominal, 1-1/16-12 UN adapter)
1 inch	1-5/16-12 UN

Please note that operational life of the unit is dependent upon rotational speed, environment and temperature. Flexible conduit should be used to couple to the rotating component. The torque arm must be loose coupled.

## Model 70 Dimensions



Dimensions in inches [millimeters]

Sample Configurations*				
Type	0-1-4-5	0-3-1-6	1-1-4-5	0-5-0-5
Port Size	Number of Ports			
1"	0	0	1	0
5/8"	1	3	1	5
1/2"	4	1	4	0
1/4"	5	6	5	5
DIM 'A'	19.47 [494]	20.41 [518]	22.03 [559]	21.26 [540]
DIM 'B'	14.50 [368]	14.88 [378]	16.50 [419]	15.77 [400]
DIM 'C'	4.14 [105]	4.03 [102]	4.53 [115]	4.15 [105]

\*Note: There are other configurations available, please contact factory for more information.