Fluid Rotary Union

ROTOPACK for the Marine and Energy Markets

Focal Technologies Corporation, a Moog Inc. company, has over 30 years of expertise in supplying standard and custom marine products for harsh environments and is a leading manufacturer of high performance and high quality fluid rotary unions. Contact Focal for any assistance in selecting the best solution for your requirements.

The Rotopack Fluid Rotary Union (FRU) is designed for marine and energy applications where multiple fluid passes need to be transferred across a rotational interface. There are various standard designs, depending on the application.

For marine applications, the Rotopack is available in hybrid and fully stainless steel versions for added corrosion protection. More variations of port size and channel count available. Please contact factory for further details.

Features

- Ball bearings
- Special sizes upon request
- Higher pressure upon request
- NPT, BSPT Threads
- Optional Center bore available to pass electrical cables, etc.

Benefits

- Can be easily combined with Moog electrical or optical slip rings and fiber optic rotary joints (FORJs)
- Pass isolation and cross channel flow prevention

Applications

- Winches and cable reels
- Coil Tubing
- Underwater Intervention (IWOCS)
- Deck Equipment
- Marine Cranes
- Rotary index tables
- Heavy equipment turrets
- Automated handling
- Remote sensing

FOCAL™

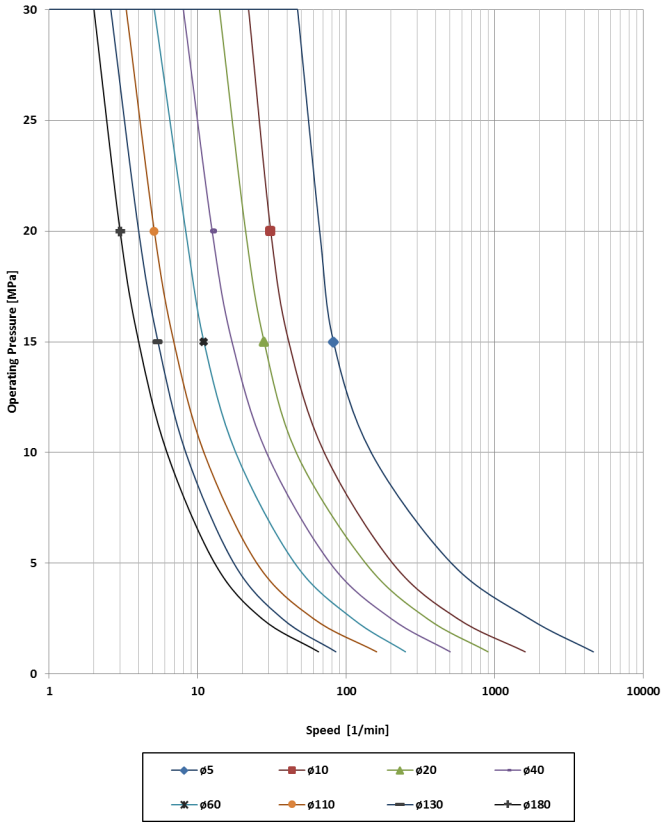
Specifications

Rotopack Specifications	
Pressure	**415 bar (41.5 MPa)**
Speed	**Maximum 100 RPM**
Medium	**Air, Gas, Oil, Water, Glycol, Chemical Products**
Channels	**2-10**
Nominal Port Diameter	**6-25mm**
Material	**Carbon Steel, Stainless Steel**
Sealing	**PTFE Composite ring**
Operating Temperature	**Max. 80/120^0 C**
Connection	**Radial**
Thread	**NPT, BSPT**
pv-value	**See pv diagram to the right**
Bore	**See ØT**

Operational life is dependent on pressure, temperature, rotational speed and duty cycle. Maximum values do not apply concurrently. Please consult the factory.

See Dimensional Table on Page 4

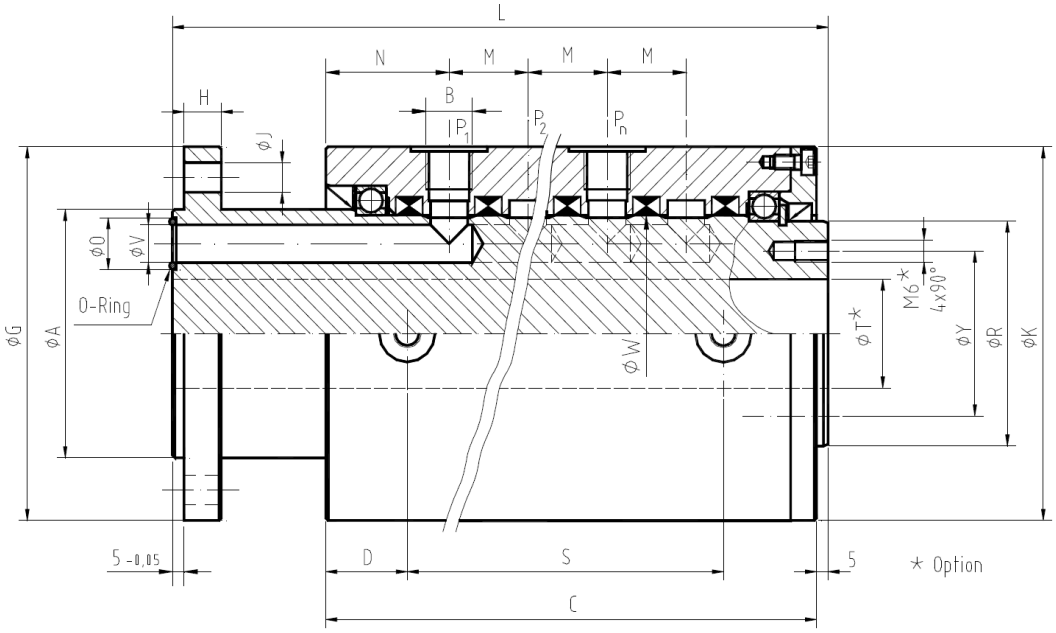
PV diagram

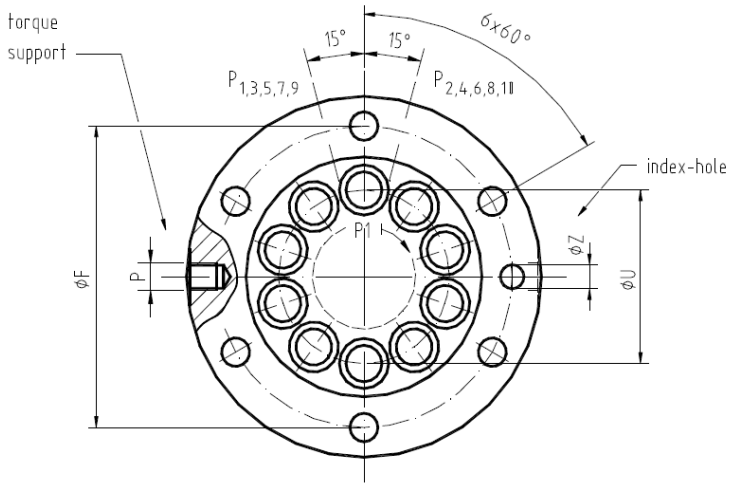


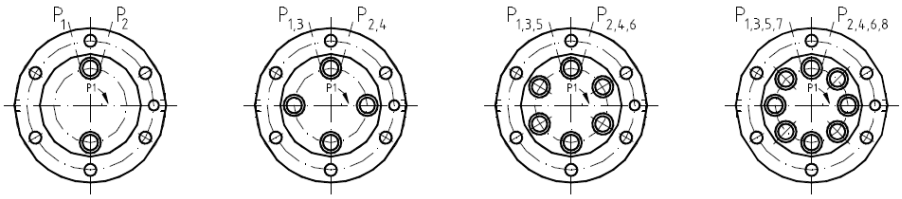
Ordering Code			
V **Number of Channels**	**W** **Port Size**	**X** **Material**	**Z** **Central Bore**
2 = 2 channels	06 = 1/4”	S = Steel	0 = without
4 = 4 channels	08 = 3/8”	I = Stainless steel	1 = with
6 = 6 channels	10 = 1/2”		
8 = 8 channels	16 = 3/4”		
10 = 10 channels	20 = 1”		
	25 = 1 1/4”		

Replace V-X with the required value. Order example: MCR 4-16-S-210-0

Dimensions in inches [mm]







Dimensional Table

Ø A Provides the measurement for reading the pv value

Order No. Ø V MM	Ø A Inch [mm]	Ø B Inch [mm]	C Inch [mm]	D Inch [mm]	Ø F Inch [mm]	Ø G Inch [mm]	H Inch [mm]	Ø J Inch [mm]	Ø K Inch [mm]	L Inch [mm]
MCR 2 - 06	1.77 [45]	0.25 [6.4]	3.86 [98]	0.59 [15]	2.44 [62]	3.07 [78]	0.31 [8]	0.26 [6.5]	3.46 [88]	5.55 [141]
MCR 4 - 06	1.77 [45]	0.25 [6.4]	5.35 [136]	0.59 [15]	2.44 [62]	3.07 [78]	0.31 [8]	0.26 [6.5]	3.46 [88]	7.05 [179]
MCR 6 - 06	1.77 [45]	0.25 [6.4]	6.85 [174]	0.59 [15]	2.44 [62]	3.07 [78]	0.31 [8]	0.26 [6.5]	3.46 [88]	8.54 [217]
MCR 8 - 06	2.36 [60]	0.25 [6.4]	8.98 [228]	1.18 [30]	3.15 [80]	3.86 [98]	0.39 [10]	0.26 [6.5]	3.86 [98]	10.75 [273]
MCR 10 - 06	2.36 [60]	0.25 [6.4]	10.55 [268]	1.18 [30]	3.15 [80]	3.86 [98]	0.39 [10]	0.26 [6.5]	3.86 [98]	12.32 [313]
MCR 2 - 10	2.56 [65]	0.5 [12.7]	4.09 [104]	1.54 [39]	3.23 [82]	3.86 [98]	0.39 [10]	0.33 [8.5]	4.65 [118]	5.98 [152]
MCR 4 - 10	2.56 [65]	0.5 [12.7]	5.91 [150]	1.54 [39]	3.23 [82]	3.86 [98]	0.39 [10]	0.33 [8.5]	4.65 [118]	7.8 [198]
MCR 6 - 10	2.56 [65]	0.5 [12.7]	7.72 [196]	1.54 [39]	3.23 [82]	3.86 [98]	0.39 [10]	0.33 [8.5]	4.65 [118]	9.61 [244]
MCR 8 - 10	2.95 [75]	0.5 [12.7]	9.61 [244]	0.59 [15]	3.74 [95]	4.53 [115]	0.47 [12]	0.33 [8.5]	5.04 [128]	11.77 [299]
MCR 10 - 10	3.35 [85]	0.5 [12.7]	11.54 [293]	0.59 [15]	4.13 [105]	4.92 [125]	0.47 [12]	0.33 [8.5]	5.43 [138]	13.7 [348]
MCR 2 - 16	2.95 [75]	0.75 [19.1]	5.24 [133]	0.79 [20]	3.94 [100]	4.92 [125]	0.55 [14]	0.49 [12.5]	5.04 [128]	7.76 [197]
MCR 4 - 16	2.95 [75]	0.75 [19.1]	7.91 [201]	0.79 [20]	3.94 [100]	4.92 [125]	0.55 [14]	0.49 [12.5]	5.04 [128]	10.43 [265]
MCR 6 - 16	2.95 [75]	0.75 [19.1]	10.59 [269]	0.79 [20]	3.94 [100]	4.92 [125]	0.55 [14]	0.49 [12.5]	5.04 [128]	13.11 [333]
MCR 8 - 16	3.74 [95]	0.75 [19.1]	13.78 [350]	0.79 [20]	4.8 [122]	5.83 [148]	0.63 [16]	0.49 [12.5]	6.22 [158]	16.57 [421]
MCR 10 - 16	4.13 [105]	0.75 [19.1]	16.34 [415]	1.38 [35]	5.2 [132]	6.22 [158]	0.63 [16]	0.49 [12.5]	6.22 [158]	19.13 [486]
MCR 2 - 20	3.35 [85]	1 [25.4]	5.67 [144]	0.79 [20]	4.37 [111]	5.43 [138]	0.63 [16]	0.49 [12.5]	5.91 [150]	8.46 [215]
MCR 4 - 20	3.35 [85]	1 [25.4]	8.66 [220]	0.79 [20]	4.37 [111]	5.43 [138]	0.63 [16]	0.49 [12.5]	5.91 [150]	11.46 [291]
MCR 6 - 20	3.74 [95]	1 [25.4]	12.13 [308]	0.79 [20]	4.76 [121]	5.83 [148]	0.63 [16]	0.49 [12.5]	6.61 [168]	14.92 [379]
MCR 8 - 20	4.53 [115]	1 [25.4]	15.31 [389]	0.79 [20]	5.55 [141]	6.61 [168]	0.63 [16]	0.49 [12.5]	7.4 [188]	18.11 [460]
MCR 10 - 20	5.31 [135]	1 [25.4]	18.31 [465]	0.79 [20]	6.34 [161]	7.4 [188]	0.63 [16]	0.49 [12.5]	7.8 [198]	21.1 [536]
MCR 2 - 25	4.13 [105]	1.25 [31.8]	6.81 [173]	0.79 [20]	5.43 [138]	6.61 [168]	0.79 [20]	0.67 [17]	7.4 [188]	10.16 [258]
MCR 4 - 25	4.13 [105]	1.25 [31.8]	10.43 [265]	0.79 [20]	0.71 [18]	6.61 [168]	0.79 [20]	0.67 [17]	7.4 [188]	13.78 [350]
MCR 6 - 25	4.53 [115]	1.25 [31.8]	14.29 [363]	0.79 [20]	5.91 [150]	7.01 [178]	0.79 [20]	0.67 [17]	7.8 [198]	17.64 [448]
MCR 8 - 25	5.31 [135]	1.25 [31.8]	18.03 [458]	0.79 [20]	6.69 [170]	7.8 [198]	0.79 [20]	0.67 [17]	8.35 [212]	20.98 [533]
MCR 10 - 25	Dimensions on request									

Order No. Ø V MM	M Inch [mm]	N Inch [mm]	Ø O Inch [mm]	Ø P Inch [mm]	R Inch [mm]	S Inch [mm]	Ø T Inch [mm]	Ø U Inch [mm]	Ø W Inch [mm]	Y Inch [mm]	Ø Z Inch [mm]	O-Ring Inch [mm]
MCR 2 - 06	0.75 [19]	1.42 [36]	0.43 [11]	5/16-18 [M 8]	1.38 [35]	- [-]	0.47 [12]	1.02 [26]	1.57 [40]	0.94 [24]	0.18 [4.5]	7 x 2
MCR 4 - 06	0.75 [19]	1.42 [36]	0.43 [11]	5/16-18 [M 8]	1.38 [35]	- [-]	0.47 [12]	1.02 [26]	1.57 [40]	0.94 [24]	0.18 [4.5]	7 x 2
MCR 6 - 06	0.75 [19]	1.42 [36]	0.43 [11]	5/16-18 [M 8]	1.38 [35]	- [-]	0.47 [12]	1.02 [26]	1.57 [40]	0.94 [24]	0.18 [4.5]	7 x 2
MCR 8 - 06	0.79 [20]	1.54 [39]	0.43 [11]	5/16-18 [M 8]	1.97 [50]	6.3 [160]	1.02 [26]	1.65 [42]	2.17 [55]	1.57 [40]	0.18 [4.5]	7 x 2
MCR 10 - 06	0.79 [20]	1.54 [39]	0.43 [11]	5/16-18 [M 8]	1.97 [50]	7.87 [200]	1.02 [26]	1.65 [42]	2.17 [55]	1.57 [40]	0.18 [4.5]	7 x 2
MCR 2 - 10	0.91 [23]	1.54 [39]	0.63 [16]	3/8-16 [M 10]	2.17 [55]	- [-]	0.79 [20]	1.57 [40]	2.36 [60]	1.57 [40]	0.26 [6.5]	12 x 2
MCR 4 - 10	0.91 [23]	1.54 [39]	0.63 [16]	3/8-16 [M 10]	2.17 [55]	- [-]	0.79 [20]	1.57 [40]	2.36 [60]	1.57 [40]	0.26 [6.5]	12 x 2
MCR 6 - 10	0.91 [23]	1.54 [39]	0.63 [16]	3/8-16 [M 10]	2.17 [55]	- [-]	0.79 [20]	1.57 [40]	2.36 [60]	1.57 [40]	0.26 [6.5]	12 x 2
MCR 8 - 10	0.91 [23]	1.46 [37]	0.63 [16]	3/8-16 [M 10]	2.56 [65]	7.68 [195]	1.26 [32]	2.09 [53]	2.76 [70]	1.97 [50]	0.26 [6.5]	12 x 2
MCR 10 - 10	0.91 [23]	1.5 [38]	0.63 [16]	3/8-16 [M 10]	2.95 [75]	9.49 [241]	1.57 [40]	2.48 [63]	3.15 [80]	2.36 [60]	0.26 [6.5]	12 x 2
MCR 2 - 16	1.34 [34]	1.77 [45]	0.87 [22]	1/2-13 [M 12]	2.56 [65]	- [-]	0.87 [22]	1.89 [48]	2.76 [70]	1.97 [50]	0.41 [10.5]	18 x 2
MCR 4 - 16	1.34 [34]	1.77 [45]	0.87 [22]	1/2-13 [M 12]	2.56 [65]	- [-]	0.87 [22]	1.89 [48]	2.76 [70]	1.97 [50]	0.41 [10.5]	18 x 2
MCR 6 - 16	1.34 [34]	1.77 [45]	0.87 [22]	1/2-13 [M 12]	2.56 [65]	8.39 [213]	0.87 [22]	1.89 [48]	2.76 [70]	1.97 [50]	0.41 [10.5]	18 x 2
MCR 8 - 16	1.34 [34]	2.09 [53]	0.87 [22]	1/2-13 [M 12]	3.35 [85]	10.63 [270]	1.57 [40]	2.6 [66]	3.54 [90]	2.76 [70]	0.41 [10.5]	18 x 2
MCR 10 - 16	1.34 [34]	2.09 [53]	0.87 [22]	1/2-13 [M 12]	3.74 [95]	13.39 [340]	1.97 [50]	2.99 [76]	3.94 [100]	2.76 [70]	0.41 [10.5]	18 x 2
MCR 2 - 20	1.5 [38]	1.89 [48]	1.1 [28]	1/2-13 [M 12]	2.95 [75]	- [-]	0.79 [20]	2.05 [52]	3.15 [80]	2.36 [60]	0.41 [10.5]	23 x 2.5
MCR 4 - 20	1.5 [38]	1.89 [48]	1.1 [28]	1/2-13 [M 12]	2.95 [75]	- [-]	0.79 [20]	2.05 [52]	3.15 [80]	2.36 [60]	0.41 [10.5]	23 x 2.5
MCR 6 - 20	1.5 [38]	2.17 [55]	1.1 [28]	1/2-13 [M 12]	3.35 [85]	8.86 [225]	1.1 [28]	2.36 [60]	3.54 [90]	2.76 [70]	0.41 [10.5]	23 x 2.5
MCR 8 - 20	1.5 [38]	2.24 [57]	1.1 [28]	1/2-13 [M 12]	4.13 [105]	12.64 [321]	1.77 [45]	3.15 [80]	4.33 [110]	3.54 [90]	0.41 [10.5]	23 x 2.5
MCR 10 - 20	1.5 [38]	2.32 [59]	1.1 [28]	1/2-13 [M 12]	4.33 [110]	15.75 [400]	2.56 [65]	3.62 [92]	4.92 [125]	3.74 [95]	0.41 [10.5]	23 x 2.5
MCR 2 - 20	1.5 [38]	1.89 [48]	1.1 [28]	1/2-13 [M 12]	2.95 [75]	- [-]	0.79 [20]	2.05 [52]	3.15 [80]	2.36 [60]	0.41 [10.5]	23 x 2.5
MCR 4 - 20	1.5 [38]	1.89 [48]	1.1 [28]	1/2-13 [M 12]	2.95 [75]	- [-]	0.79 [20]	2.05 [52]	3.15 [80]	2.36 [60]	0.41 [10.5]	23 x 2.5
MCR 6 - 20	1.5 [38]	2.17 [55]	1.1 [28]	1/2-13 [M 12]	3.35 [85]	8.86 [225]	1.1 [28]	2.36 [60]	3.54 [90]	2.76 [70]	0.41 [10.5]	23 x 2.5
MCR 8 - 20	1.5 [38]	2.24 [57]	1.1 [28]	1/2-13 [M 12]	4.13 [105]	12.64 [321]	1.77 [45]	3.15 [80]	4.33 [110]	3.54 [90]	0.41 [10.5]	23 x 2.5
MCR 10 - 20	1.5 [38]	2.32 [59]	1.1 [28]	1/2-13 [M 12]	4.33 [110]	15.75 [400]	2.56 [65]	3.62 [92]	4.92 [125]	3.74 [95]	0.41 [10.5]	23 x 2.5
MCR 2 - 25	1.81 [46]	2.36 [60]	1.3 [33]	5/8-11 [M 16]	3.74 [95]	- [-]	1.1 [28]	2.6 [66]	3.94 [100]	3.15 [80]	0.33 [8.5]	28 x 2.5
MCR 4 - 25	1.81 [46]	2.36 [60]	1.3 [33]	5/8-11 [M 16]	3.74 [95]	- [-]	1.1 [28]	2.6 [66]	3.94 [100]	3.15 [80]	0.33 [8.5]	28 x 2.5
MCR 6 - 25	1.81 [46]	2.44 [62]	1.3 [33]	5/8-11 [M 16]	4.13 [105]	11.61 [295]	1.38 [35]	2.99 [76]	4.33 [110]	3.54 [90]	0.33 [8.5]	28 x 2.5
MCR 8 - 25	1.81 [46]	2.52 [64]	1.3 [33]	5/8-11 [M 16]	4.33 [110]	15.75 [400]	1.97 [50]	3.62 [92]	4.92 [125]	3.74 [95]	0.41 [10.5]	28 x 2.5
MCR 10 - 25	Dimensions on request											