

# RULAND

Carefully Made Products Since 1937



**FLEXBEAM™ COUPLINGS**

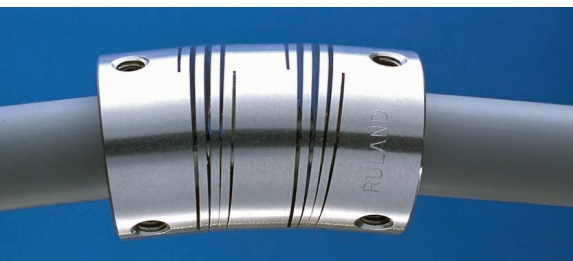
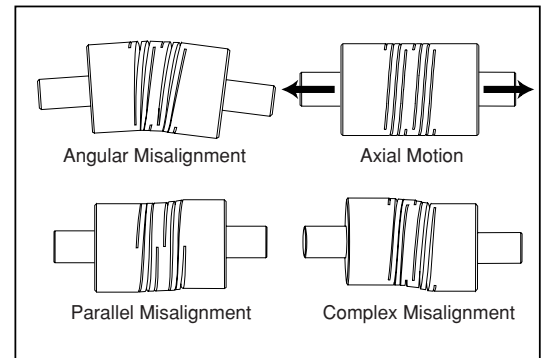
# Flexbeam™ Flexible Beam Couplings from RULAND



Ruland Manufacturing Co., Inc. has been supplying carefully made products since 1937. We have manufactured everything from bicycle pumps to high pressure valves, including the valve that pressurized the spacesuit of the first American to walk in space. In recent years, all of our expertise has been devoted to making the best shaft collars and couplings available.

Three series of Flexbeam™ zero backlash flexible shaft couplings are available with inch and metric bores and outside diameters ranging from 3/8" (6mm) to 1-1/2" (38mm). Couplings in all three series are machined from a single piece of aluminum or stainless steel and feature multiple spiral cuts. The multiple cut design provides higher torque capabilities and greatly reduced wind-up compared to commodity-type single beam couplings.

The Flexbeam-2™ (P, I, and MW Series) and Flexbeam-3™ (F and MF Series) each have two sets of spiral slots, a feature that provides superior parallel misalignment capabilities compared to single beam couplings. Angular misalignment, axial motion and any combination of all three types of misalignment are also easily accommodated by Flexbeam™ couplings. Ruland clamp style flexible couplings have the additional benefit of dynamic balancing, due to the unique configuration of the socket head cap screws.



Flexible shaft couplings should be used in applications in which misalignment exists between the two shafts being coupled. Flexbeam-3™ couplings are ideal for light duty power transmission applications such as coupling a servo motor to a lead screw in a motion control system. The couplings feature larger body sizes and stronger beams to provide high torque capacity and very low windup, without sacrificing misalignment capabilities.

The demanding nature of reversing servo applications make the performance benefits delivered by the Flexbeam-3™ vital to maintaining the accuracy, repeatability and reliability of the system.

The Flexbeam-2™ couplings are designed specifically for precision applications, especially those that use delicate components such as encoders and tachometers. The small bearings on these components make low radial forces essential to longevity and continued high performance. The Flexbeam-2™ provides extra flexibility to yield reduced bearing loads, and shorter, industry standard lengths to fit in confined spaces and allow for easy retrofits in existing equipment. At the same time, the multiple cut pattern continues to provide excellent torque capabilities and low windup.

## In This Catalog

### Inch Dimension Series

FLEXBEAM-3™ FLEXIBLE BEAM COUPLINGS 4-5  
**FCR / FSR**

FLEXBEAM-2™ FLEXIBLE BEAM COUPLINGS 6-7  
**PCR / PSR / ISR**

### Metric Dimension Series

FLEXBEAM-3™ & FLEXBEAM-2™ COUPLINGS 8-9  
**MFC / MFS / MWC / MWS**

FLEXBEAM-2™ FLEXIBLE BEAM COUPLINGS 10-11  
**PCMR / PSMR / ISMR**

## Installation Instructions

1. Assure that the misalignment between shafts is within the coupling's ratings.
2. Align both hubs of the coupling on the shafts that are to be joined.
3. Fully tighten the screw(s) on one hub to their recommended seating torque using an unplated wrench. (See charts below.)
4. Before tightening the screw(s) on the second hub, rotate the coupling by hand to allow it to reach its free length.
5. Tighten the hub on the second shaft such that the misalignment angle remains centered along the length of the coupling and the coupling remains axially relaxed.
6. On relief bore couplings, the shafts may be extended into the relieved area of the coupling without affecting coupling performance.

## Hardware Torque Charts

### TORQUE RATINGS—CLAMP SCREW

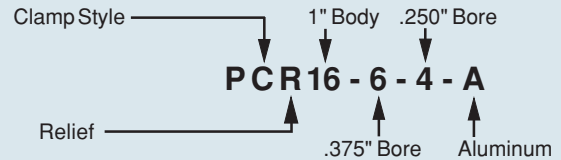
INCH Clamp Screw	Seating Torque (lb-in)		METRIC Clamp Screw	Seating Torque (Nm)	
	ALLOY	STAINLESS STEEL		ALLOY	STAINLESS STEEL
#0-80	2	1.3	M1.6	0.29	0.17
#1-72	4	2.3	M2	0.60	0.36
#2-56	6	3.8	M2.5	1.21	0.73
#4-40	15	8.0	M3	2.10	1.10
#6-32	28	15.0	M4	4.60	2.50
#8-32	49	28.0	M5	9.50	5.40
#10-32	76	45.0	M6	16.00	9.60

### TORQUE RATINGS—SET SCREW

INCH Set Screw	Seating Torque (lb-in)		METRIC Set Screw	Seating Torque (Nm)	
	ALLOY	STAINLESS STEEL		ALLOY	STAINLESS STEEL
#1-72	0.8	0.48	M2	0.21	0.13
#2-56	1.8	1.08	M2.5	0.57	0.44
#4-40	5.0	3.00	M3	0.92	0.73
#6-32	10.0	6.00	M4	2.20	1.76
#8-32	15.0	12.00	M5	4.00	3.20
#10-32	25.0	18.00	M6	7.20	5.76
1/4-20	87.0	70.00			

## HOW TO ORDER

Choose any bore **b1** and any bore **b2** available in a body size. Part numbers are in the following format with numbers representing sixteenths of an inch:



## Materials

Aluminum Products: 7075-T651 Extruded and Drawn Aluminum Bar.

Stainless Steel Products: 17-4 ph

## Finishes

Aluminum Products: Bright Finish.

Stainless Steel Products: Bright Finish.

## Hardware

**Inch Couplings in Aluminum and Stainless Steel:** Alloy Steel Socket Cap Screws, heat treated. ASA specification B18.3

**Metric Couplings in Aluminum and Stainless Steel:** Alloy Steel Socket Cap Screws, heat treated, meet or exceed ASA specification B18.3.1M and ASTM A574M property class 12.9

## Temperature Range

Aluminum: -40° F to 225° F

Stainless Steel: -40° F to 350° F

## Maximum Speed

6,000 rpm

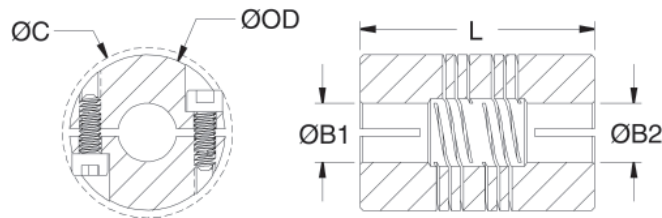
## WARRANTY / DISCLAIMER OF UNSTATED WARRANTIES / LIMITATION OF LIABILITY

**Warranty.** Ruland warrants that the products sold hereunder meet Ruland's size and materials specifications as set forth in this catalog. Products not meeting Ruland's size and material specifications will, at Ruland's option, be replaced or the purchase price refunded.

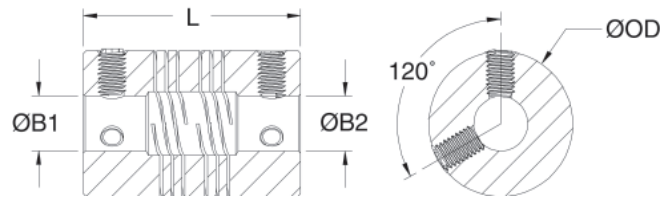
**Disclaimer of unstated warranties.** THE WARRANTY PRINTED ABOVE IS THE ONLY WARRANTY APPLICABLE TO THESE PRODUCTS. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. It is the responsibility of the user to determine the suitability of Ruland products for a specific application. No person, including employees of Ruland or agents in the company's channels of distribution is authorized to represent on Ruland's behalf, the suitability of Ruland products for a specific purpose.

**Limitation of Liability.** IT IS UNDERSTOOD AND AGREED THAT SELLER'S LIABILITY SHALL NOT EXCEED THE AMOUNT OF THE PURCHASE PRICE. SELLER SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES. THE PRICE STATED FOR THE PRODUCT IS A CONSIDERATION IN LIMITING RULAND'S LIABILITY.

FCR



FSR



PART NUMBER	SPECIFICATIONS							PERFORMANCE				
	CLAMP STYLE	SET SCREW STYLE	STANDARD BORES B1, B2 (in)	OUTER DIAM. OD (in)	CLEARANCE DIAM C (in) (FCR) MAX	LENGTH L (in)	CAP SCREW (FCR)	SET SCREW (FSR)	STATIC TORQUE (lb-in)	TORSIONAL STIFFNESS (Deg/lb-in)	MISALIGNMENT PARALLEL (in)	AXIAL MOTION (in)
FCR10	FSR10	3 (.1875)	0.625	0.796	1.000	#4-40	#8-32	13	0.360	0.008	0.005	0.0013
		4 (.2500)						13	0.360			
FCR12	FSR12	3 (.1875)	0.750	0.879	1.250	#4-40	#8-32	26	0.152	0.008	0.005	0.0036
		4 (.2500)						26	0.152			
		5 (.3125)						20	0.229			
		4 (.2500)						35	0.064			
FCR16	FSR16	5 (.3125)	1.000	1.117	1.500	#6-32	#10-32	33	0.093	0.015	0.010	0.0139
		6 (.3750)						33	0.093			
		5 (.3125)						70	0.038			
FCR20	FSR20	6 (.3750)	1.250	1.459	1.750	#10-32	1/4-20	61	0.048	0.015	0.010	0.0401
		8 (.5000)						50	0.072			
		6 (.3750)						120	0.022			
		8 (.5000)						110	0.029			
FCR24	FSR24	10 (.6250)	1.500	1.642	2.250	#10-32	1/4-20	95	0.043	0.030	0.015	0.1023
		12 (.7500)						80	0.063			
		12 (.7500)						80	0.063			

- Note 1** Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.
- Note 2** Hardware is alloy steel with black oxide finish. Stainless steel hardware is available upon request. FCR series parts have two socket head Nypatch® cap screws on each end.
- Note 3** Performance ratings are for guidance only. The user must determine suitability for a particular application.
- Note 4** Coupling torque and wind-up are determined by the largest bore selected.
- Note 5** Angular misalignment on all couplings is 3°.
- Note 6** Shafts may penetrate up to 0.5 x L. Be certain shafts do not touch.

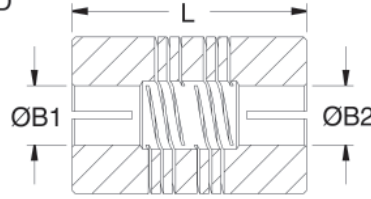
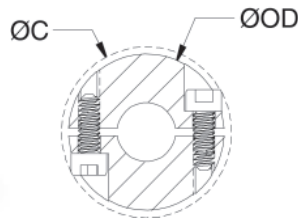
For engineering and warranty/disclaimer information, see p. 3 or [www.ruland.com](http://www.ruland.com)

# FLEXBEAM-3™ FLEXIBLE BEAM COUPLING

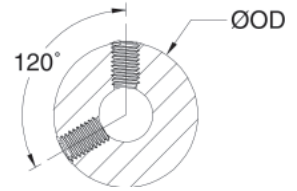
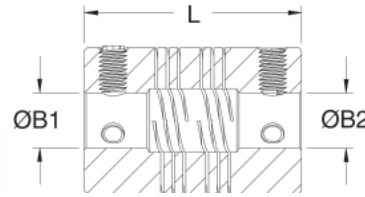
## INCH DIMENSION SERIES • STAINLESS STEEL

**FCR**  
**FSR**

FCR



FSR



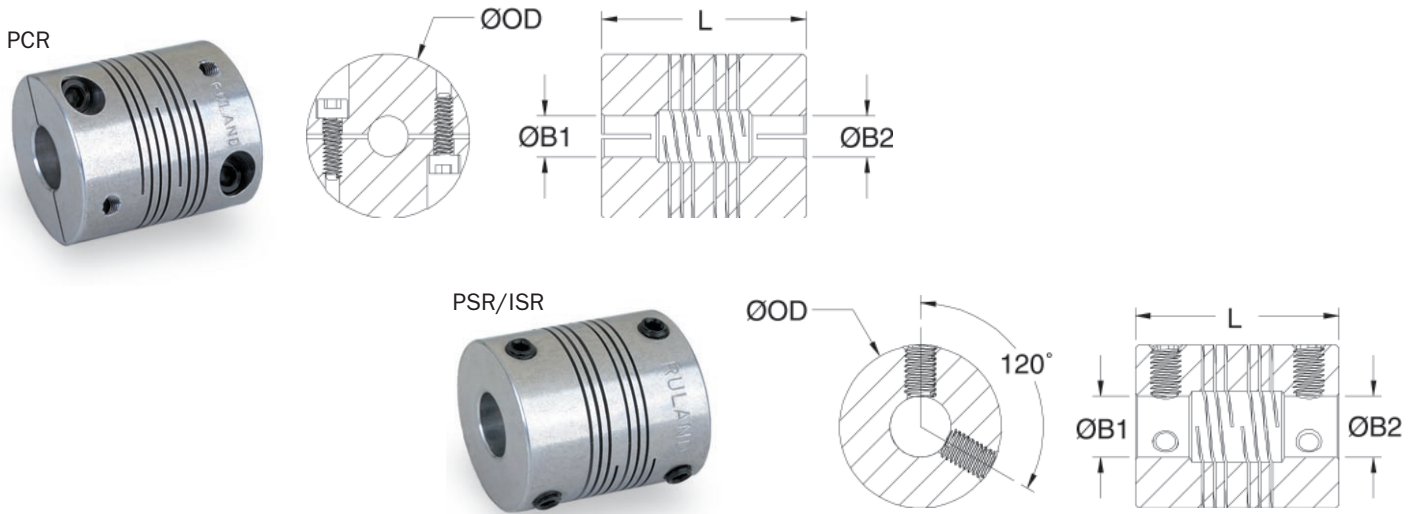
PART NUMBER	SET SCREW STYLE	SPECIFICATIONS						PERFORMANCE				
		STANDARD BORES B1, B2 (in)	OUTER DIAM. OD (in)	CLEARANCE DIAM C (in) (FCR) MAX	LENGTH L (in)	CAP SCREW (FCR)	SET SCREW (FSR)	STATIC TORQUE (lb-in)	TORSIONAL STIFFNESS (Deg/lb-in)	MISALIGNMENT PARALLEL (in)	AXIAL MOTION (in)	MOMENT OF INERTIA (lb-in <sup>2</sup> )
FCR10	FSR10	3 (.1875)	0.625	0.796	1.000	#4-40	#8-32	18	0.088	0.008	0.005	0.0037
		4 (.2500)						18	0.088			
FCR12	FSR12	3 (.1875)	0.750	0.879	1.250	#4-40	#8-32	41	0.079	0.008	0.005	0.0100
		4 (.2500)						41	0.079			
		5 (.3125)						31	0.096			
		4 (.2500)						53	0.034			
FCR16	FSR16	5 (.3125)	1.000	1.117	1.500	#6-32	#10-32	50	0.046	0.015	0.010	0.0381
		6 (.3750)						50	0.046			
FCR20	FSR20	5 (.3125)	1.250	1.459	1.750	#10-32	1/4-20	142	0.017	0.015	0.010	0.1094
		6 (.3750)						129	0.023			
		8 (.5000)						107	0.037			
		6 (.3750)						208	0.016			
FCR24	FSR24	8 (.5000)	1.500	1.642	2.250	#10-32	1/4-20	190	0.021	0.030	0.015	0.2814
		10 (.6250)						175	0.031			
		12 (.7500)						145	0.045			

- Note 1** Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.
- Note 2** Hardware is alloy steel with black oxide finish. Stainless steel hardware is available upon request. FCR series parts have two socket head Nypatch® cap screws on each end.
- Note 3** Performance ratings are for guidance only. The user must determine suitability for a particular application.
- Note 4** Coupling torque and wind-up are determined by the largest bore selected.
- Note 5** Angular misalignment on all couplings is 3°.
- Note 6** Shafts may penetrate up to 0.5 x L. Be certain shafts do not touch.

For engineering and warranty/disclaimer information, see p. 3 or [www.ruland.com](http://www.ruland.com)

# PCR/PSR/ISR FLEXBEAM-2™ FLEXIBLE BEAM COUPLINGS

## INCH DIMENSION SERIES • ALUMINUM



PART NUMBER			SPECIFICATIONS						PERFORMANCE				
CLAMP STYLE	SET SCREW STYLE	SET SCREW STYLE	BORE SIZE (in)	OUTER DIAM. OD (in)	LENGTH L (in) (PCR/PSR)	LENGTH L (in) (ISR)	CAP SCREW (PCR)	SET SCREW (PSR/ISR)	STATIC TORQUE (lb-in)	TORSIONAL STIFFNESS (Deg/lb-in)	PARALLEL MISALIGNMENT (in)	AXIAL MOTION (in)	MOMENT OF INERTIA (lb-in <sup>2</sup> )
PCR6	PSR6	ISR6	1.5 (.0938)	0.375	0.563	0.375	#0-80	#1-72	5.5	1.34	0.008	0.005	0.0001
PCR8	PSR8	ISR8	1.5 (.0938)	0.500	0.750	0.500	#1-72	#2-56	8	0.75	0.008	0.005	0.0004
			2 (.1250)						8				
PCR10	PSR10	ISR10	2 (.1250)	0.625	0.800	0.625	#2-56	#4-40	15	0.36	0.008	0.005	0.0011
			3 (.1875)						12				
PCR12	PSR12	ISR12	2 (.1250)	0.750	0.900	0.750	#4-40	#6-32	12	0.54	0.008	0.005	0.0011
			2.5 (.1563)						26				
			3 (.1875)						17				
			4 (.2500)						17				
PCR14	PSR14	ISR14	3 (.1875)	0.875	1.063	0.875	#6-32	#6-32	14	0.26	0.008	0.005	0.0025
			4 (.2500)						20				
			5 (.3125)						18				
PCR16	PSR16	ISR16	4 (.2500)	1.000	1.250	1.000	#6-32	#10-32	16	0.21	0.008	0.005	0.0056
			5 (.3125)						36				
			6 (.3750)						16				
PCR18	PSR18	ISR18	4 (.2500)	1.125	1.500	1.125	#6-32	#10-32	30	0.18	0.015	0.010	0.0116
			5 (.3125)						47				
			6 (.3750)						44				
			8 (.5000)						40				
PCR20	PSR20	ISR20	8 (.5000)	1.250	1.500	1.250	#6-32	1/4-20	34	0.11	0.015	0.010	0.0217
			4 (.2500)						68				
			5 (.3125)						64				
			6 (.3750)						60				
			8 (.5000)						52	0.12			0.0340

**Note 1** Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.

**Note 2** Hardware is alloy steel with black oxide finish. PCR series parts have socket head cap screws on each end. PSR and ISR series parts: sizes 6 through 12 have one set screw on each end; sizes 14 through 20 have two set screws on each end 120° apart.

**Note 3** ISR6, ISR8, ISR10, ISR12 have one set of two spiral cuts.

**Note 4** Performance ratings are for guidance only. The user must determine suitability for a particular application.

**Note 5** Angular misalignment on all couplings is 3°.

**Note 6** Shafts may penetrate up to 0.5 x L. Be certain shafts do not touch.

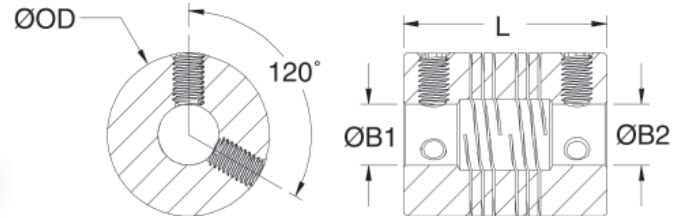
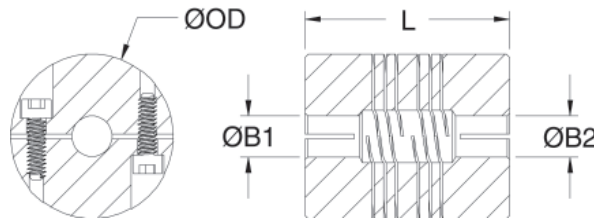
**Note 7** Coupling torque and wind-up are determined by the largest bore selected.

For engineering and warranty/disclaimer information, see p. 3 or [www.ruland.com](http://www.ruland.com)

# FLEXBEAM-2™ FLEXIBLE BEAM COUPLINGS

## INCH DIMENSION SERIES • STAINLESS STEEL

# PCR/PSR/ISR



PART NUMBER			SPECIFICATIONS						PERFORMANCE				
CLAMP STYLE	SET SCREW STYLE	SET SCREW STYLE	BORE SIZE (in)	OUTER DIAM. OD (in)	L (in) (PCR/PSR)	L (in) (ISR)	CAP SCREW (PCR)	SET SCREW (PSR/ISR)	STATIC TORQUE (lb-in)	TORSIONAL STIFFNESS (Deg/lb-in)	PARALLEL MISALIGNMENT (in)	AXIAL MOTION (in)	MOMENT OF INERTIA (lb-in <sup>2</sup> )
PCR6	PSR6	ISR6	1.5 (.0938)	0.375	0.563	0.375	#0-80	#1-72	7.5	0.751	0.008	0.005	0.0003
PCR8	PSR8	ISR8	1.5 (.0938)	0.500	0.750	0.500	#1-72	#2-56	11	0.368	0.008	0.005	0.0012
			2 (.1250)						11	0.368			
PCR10	PSR10	ISR10	2 (.1250)	0.625	0.800	0.625	#2-56	#4-40	20	0.184	0.008	0.005	0.0030
			2.5 (.1563)						16	0.286			
			3 (.1875)						16	0.286			
PCR12	PSR12	ISR12	2 (.1250)	0.750	0.900	0.750	#4-40	#6-32	35	0.085	0.008	0.005	0.0070
			2.5 (.1563)						23	0.151			
			3 (.1875)						23	0.151			
			4 (.2500)						19	0.179			
PCR14	PSR14	ISR14	3 (.1875)	0.875	1.063	0.875	#6-32	#6-32	27	0.091	0.008	0.005	0.0157
			4 (.2500)						24	0.107			
			5 (.3125)						22	0.135			
PCR16	PSR16	ISR16	4 (.2500)	1.000	1.250	1.000	#6-32	#10-32	49	0.079	0.015	0.010	0.0317
			5 (.3125)						44	0.094			
			6 (.3750)						41	0.103			
			4 (.2500)						63	0.053			
PCR18	PSR18	ISR18	5 (.3125)	1.125	1.500	1.125	#6-32	#10-32	60	0.056	0.015	0.010	0.0603
			6 (.3750)						54	0.071			
			8 (.5000)						46	0.111			
			4 (.2500)						92	0.031			
PCR20	PSR20	ISR20	5 (.3125)	1.250	1.500	1.250	#6-32	1/4-20	86	0.037	0.015	0.010	0.0922
			6 (.3750)						81	0.044			
			8 (.5000)						70	0.064			
			4 (.2500)						92	0.031			

**Note 1** Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.

**Note 2** Hardware is alloy steel with black oxide finish. PCR series parts have socket head cap screws on each end. PSR and ISR series parts: sizes 6 through 12 have one set screw on each end; sizes 14 through 20 have two set screws on each end 120° apart.

**Note 3** ISR6, ISR8, ISR10, ISR12 have one set of two spiral cuts.

**Note 4** Performance ratings are for guidance only. The user must determine suitability for a particular application.

**Note 5** Angular misalignment on all couplings is 3°.

**Note 6** Shafts may penetrate up to 0.5 x L. Be certain shafts do not touch.

**Note 7** Coupling torque and wind-up are determined by the largest bore selected.

For engineering and warranty/disclaimer information, see p. 3 or [www.ruland.com](http://www.ruland.com)

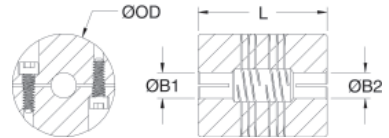
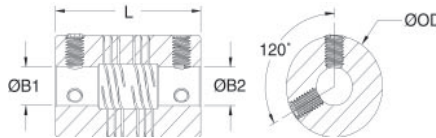
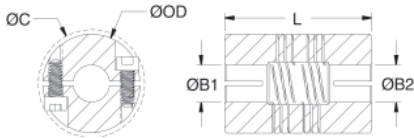
MFC



MFS/MWS



MWC



PART NUMBER		SPECIFICATIONS							PERFORMANCE					
CLAMP STYLE	SET SCREW STYLE	BORE SIZE (mm)	OUTER DIAM OD (mm)	LENGTH L (mm) (MFC/MWC)	LENGTH L (mm) (MFS/MWS)	CLEARANCE DIAM C (mm) MAX (MFC)	CAP SCREW (MFC/MWC)	SET SCREW (MFS/MWS)	STATIC TORQUE (Nm)	WIND-UP (Deg/Nm)	PARALLEL MISALIGNMENT (mm)	AXIAL MOTION (mm)	MOMENT OF INERTIA (x10 <sup>6</sup> kg-m <sup>2</sup> )	
MFC20	MFS20	5	6	20	30	30	22.8	M3	M4	2.90	1.33	0.20	0.12	1.141
		8	8	8	2.90	1.33								
		8	2.30	2.04										
MFC25	MFS25	6	6	6	4.00	0.55	30.2	M4	M5	4.00	0.55	0.38	0.25	4.038
		8	8	8	3.70	0.86								
		10	10	10	3.70	0.86								
		12	12	12	2.80	1.57								
MFC30	MFS30	8	8	8	7.30	0.34	34.9	M5	M6	7.30	0.34	0.38	0.25	9.034
		10	10	10	6.30	0.43								
		12	12	12	5.10	0.69								
		14	14	14	4.70	0.77								
MFC40	MFS40	10	10	10	12.40	0.24	45.6	M6	M6	12.40	0.24	0.76	0.38	35.316
		12	12	12	12.40	0.24								
		14	14	14	10.70	0.39								
		16	16	16	10.70	0.39								
		3	3	3	0.85	4.44								
MWC15	MWS15	4	4	4	0.85	4.44	M2	M3	0.85	4.44	0.20	0.12	0.293	
		5	5	5	0.81	5.21								
		4	4	4	1.30	2.01								
MWC20	MWS20	5	5	5	1.30	2.01	M3	M3	1.30	2.01	0.20	0.12	1.053	
		6	6	6	1.15	2.48								
		6	6	6	3.42	1.22								
MWC25	MWS25	8	8	8	3.42	1.22	M3	M4	3.42	1.22	0.38	0.25	2.955	
		10	10	10	3.10	1.75								
		8	8	8	6.90	0.71								
MWC30	MWS30	10	10	10	6.90	0.71	M4	M5	6.90	0.71	0.38	0.25	7.958	
		12	12	12	6.60	0.93								
		12	12	12	6.60	0.93								

- Note 1** Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.
- Note 2** Hardware is alloy steel with black oxide finish. Stainless steel hardware is available upon request. MFC and MWC series parts have two socket head Nypatch® cap screws on each end. MFS and MWS parts have two set screws on each end 120° apart.
- Note 3** Performance ratings are for guidance only. The user must determine suitability for a particular application.
- Note 4** Coupling torque and wind-up are determined by the largest bore selected.
- Note 5** Angular misalignment on all couplings is 3°.
- Note 6** Shafts may penetrate up to 0.5 x L. Be certain shafts do not touch.

For engineering and warranty/disclaimer information, see p. 3 or [www.ruland.com](http://www.ruland.com)



# FLEXBEAM-3™ AND FLEXBEAM-2™ COUPLINGS

## METRIC DIMENSION SERIES · STAINLESS STEEL

# MFC/MFS MWC/MWS

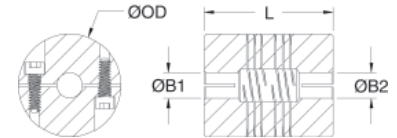
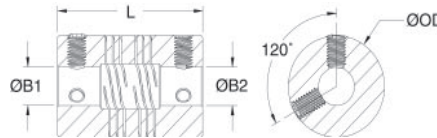
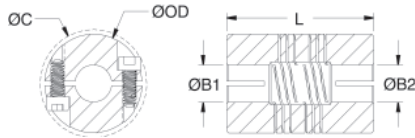
MFC



MFS/MWS



MWC

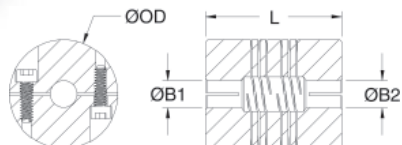


PART NUMBER		SPECIFICATIONS							PERFORMANCE				
CLAMP STYLE	SET SCREW STYLE	BORE SIZE (mm)	OUTER DIAM OD (mm)	LENGTH L (mm) (MFC/MWC)	LENGTH L (mm) (MFS/MWS)	CLEARANCE DIAM C (mm) MAX (MFC)	CAP SCREW (MFC/MWC)	SET SCREW (MFS/MWS)	STATIC TORQUE (Nm)	WIND-UP (Deg/Nm)	PARALLEL MISALIGNMENT (mm)	AXIAL MOTION (mm)	MOMENT OF INERTIA (x10 <sup>6</sup> kg·m <sup>2</sup> )
MFC20	MFS20	5	6	20	30	22.8	M3	M4	4.60	0.69	0.20	0.12	3.306
		8	6						3.60	0.70			
		6	8						6.10	0.29			
MFC25	MFS25	8	8	25	40	30.2	M4	M5	5.60	0.42	0.38	0.25	11.060
		10	10						5.60	0.42			
		12	12						3.90	0.86			
		8	10						15.50	0.20			
MFC30	MFS30	10	10	30	45	34.9	M5	M6	15.50	0.20	0.38	0.25	25.455
		12	12						13.50	0.26			
		14	14						10.90	0.44			
		10	12						23.56	0.17			
MFC40	MFS40	12	12	40	55	45.6	M6	M6	23.56	0.17	0.76	0.38	97.667
		14	14						23.00	0.27			
		16	16						23.00	0.27			
		3	3						1.30	2.23			
MWC15	MWS15	4	4	15	22		M2	M3	1.30	2.23	0.20	0.12	0.731
		5	5						1.20	2.52			
		4	4						2.00	0.98			
MWC20	MWS20	5	5	20	28		M3	M3	2.00	0.98	0.20	0.12	2.984
		6	6						1.70	1.29			
		6	6						5.10	0.58			
MWC25	MWS25	8	8	25	30		M3	M4	5.10	0.58	0.38	0.25	7.871
		10	10						4.60	0.83			
		8	8						10.40	0.33			
MWC30	MWS30	10	10	30	38		M4	M5	10.40	0.33	0.38	0.25	20.920
		12	12						10.00	0.46			

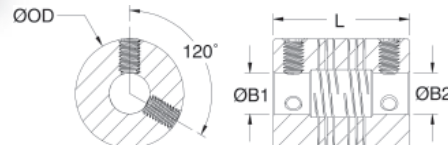
- Note 1** Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.
- Note 2** Hardware is alloy steel with black oxide finish. Stainless steel hardware is available upon request. MFC and MWC series parts have two socket head Nyatch® cap screws on each end. MFS and MWS parts have two set screws on each end 120° apart.
- Note 3** Performance ratings are for guidance only. The user must determine suitability for a particular application.
- Note 4** Coupling torque and wind-up are determined by the largest bore selected.
- Note 5** Angular misalignment on all couplings is 3°.
- Note 6** Shafts may penetrate up to 0.5 x L. Be certain shafts do not touch.

For engineering and warranty/disclaimer information, see p. 3 or [www.ruland.com](http://www.ruland.com)

PCMR



PSMR/ISMR



PART NUMBER			SPECIFICATIONS						PERFORMANCE				
CLAMP STYLE	SET SCREW STYLE	SET SCREW STYLE	STANDARD BORES B1, B2 (mm)	OUTER DIAM OD (mm)	LENGTH L (mm) (PCMR/PSMR)	LENGTH L (mm) (ISMR)	CAP SCREW (PCMR)	SET SCREW (PSMR/ISMR)	STATIC TORQUE (Nm)	TORSIONAL STIFFNESS (Deg/Nm)	MISALIGNMENT PARALLEL (mm)	AXIAL MOTION (mm)	MOMENT OF INERTIA (x10 <sup>6</sup> kg-m <sup>2</sup> )
PCMR10	PSMR10	ISMR10	3	9.5	14.3	9.5	M1.6	M2	0.62	11.83	0.203	0.127	0.029
PCMR13	PSMR13	ISMR13	3	12.7	19.1	12.7	M2	M2	0.90	6.66	0.203	0.127	0.117
PCMR16	PSMR16	ISMR16	3	15.9	20.3	15.9	M2	M3	1.70	3.21	0.203	0.127	0.322
			4						1.36	4.78			
PCMR19	PSMR19	ISMR19	5	19.1	22.9	19.1	M2.5	M4	1.36	4.78	0.203	0.127	0.731
			6						2.94	1.57			
			4						1.92	2.27			
			5						1.92	2.27			
PCMR22	PSMR22	ISMR22	6	22.2	27.0	22.2	M3	M4	1.58	2.90	0.203	0.127	1.639
			5						2.26	1.49			
			7						2.03	1.88			
PCMR25	PSMR25	ISMR25	8	25.4	31.8	25.4	M4	M4	1.81	2.43	0.381	0.254	3.394
			6						4.07	1.41			
			7						4.07	1.41			
			8						3.73	1.57			
			9						3.39	1.80			
PCMR29	PSMR29	ISMR29	6	28.6	38.1	28.6	M4	M5	5.31	0.86	0.381	0.254	6.349
			7						5.31	0.86			
			8						4.97	0.94			
			9						4.52	1.25			
			10						4.52	1.25			
			11						3.84	1.96			
PCMR32	PSMR32	ISMR32	12	31.8	38.1	31.8	M4	M6	3.84	1.96	0.381	0.254	9.948
			6						7.68	0.53			
			7						7.68	0.53			
			8						7.23	0.53			
			9						6.78	0.53			
			10						6.78	0.62			
11	5.88	1.10											
12	5.88	1.10											

- Note 1** Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.
- Note 2** Hardware is alloy steel with black oxide finish. PCMR series parts have socket head cap screws on each end. Parts PSMR10 through PSMR19 and ISMR10 through ISMR19 have one set screw on each end. PSMR22 through PSMR32 and ISMR22 through ISMR32 have two set screws 120° apart.
- Note 3** Performance ratings are for guidance only. The user must determine suitability for a particular application.
- Note 4** Coupling torque and wind-up are determined by the largest bore selected.
- Note 5** Angular misalignment on all couplings is 3°.
- Note 6** Shafts may penetrate up to 0.5 x L. Be certain shafts do not touch.

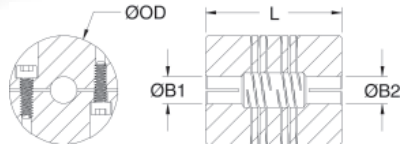
For engineering and warranty/disclaimer information, see p. 3 or [www.ruland.com](http://www.ruland.com)

# FLEXBEAM-2™ FLEXIBLE BEAM COUPLINGS

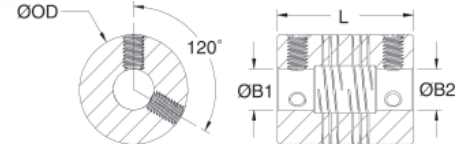
## METRIC DIMENSION SERIES • STAINLESS STEEL

# PCMR/ PSMR/ISMR

PCMR



PSMR/ISMR



PART NUMBER			SPECIFICATIONS						PERFORMANCE				
CLAMP STYLE	SET SCREW STYLE	SET SCREW STYLE	STANDARD BORES B1, B2 (mm)	OD (mm)	LENGTH (mm) (PCMR/PSMR) (ISMR)		SCREW CAP SET (PCMR/ISMR)		STATIC TORQUE (Nm)	TORSIONAL STIFFNESS (Deg/Nm)	MISALIGNMENT PARALLEL (mm)	AXIAL MOTION (mm)	MOMENT OF INERTIA (x10 <sup>6</sup> kg-m <sup>2</sup> )
PCMR10	PSMR10	ISMR10	3	9.5	14.3	9.5	M1.6	M2	0.85	6.65	0.203	0.127	0.088
PCMR13	PSMR13	ISMR13	3	12.7	19.1	12.7	M2	M2	1.24	3.26	0.203	0.127	0.351
			3						2.26	1.63			
PCMR16	PSMR16	ISMR16	4	15.9	20.3	15.9	M2	M3	1.81	2.53	0.203	0.127	0.878
			5						1.81	2.53			
PCMR19	PSMR19	ISMR19	3						3.95	0.75			
			4	19.1	22.9	19.1	M2.5	M4	2.60	1.34	0.203	0.127	2.048
			5						2.60	1.34			
			6						2.15	1.58			
			5						3.05	0.81			
PCMR22	PSMR22	ISMR22	6	22.2	27.0	22.2	M3	M4	2.71	0.95	0.203	0.127	4.594
			7						2.49	1.19			
			8						2.49	1.19			
PCMR25	PSMR25	ISMR25	6	25.4	31.8	25.4	M4	M4	5.54	0.70			
			7						4.97	0.83	0.381	0.254	9.275
			8						4.97	0.83			
			9						4.63	0.91			
			6						7.12	0.47			
			7						6.78	0.50			
			8						6.78	0.50			
PCMR29	PSMR29	ISMR29	9	28.6	38.1	28.6	M4	M5	6.10	0.63	0.381	0.254	17.643
			10						6.10	0.63			
			11						5.20	0.98			
			12						5.20	0.98			
PCMR32	PSMR32	ISMR32	6	31.8	38.1	31.8	M4	M6	10.40	0.27			
			7						9.72	0.33	0.381	0.254	26.977
			8						9.72	0.33			
			9						9.15	0.39			
			10						9.15	0.39			
			11						7.91	0.57			
			12						7.91	0.57			

- Note 1** Static torque ratings are at maximum misalignment. To obtain dynamic rating, static ratings should be divided by 2 for non-reversing applications and by 4 for reversing applications.
- Note 2** Hardware is alloy steel with black oxide finish. PCMR series parts have socket head cap screws on each end. Parts PSMR10 through PSMR19 and ISMR10 through ISMR19 have one set screw on each end. PSMR22 through PSMR32 and ISMR22 through ISMR32 have two set screws 120° apart.
- Note 3** Performance ratings are for guidance only. The user must determine suitability for a particular application.
- Note 4** Coupling torque and wind-up are determined by the largest bore selected.
- Note 5** Angular misalignment on all couplings is 3°.
- Note 6** Shafts may penetrate up to 0.5 x L. Be certain shafts do not touch.

For engineering and warranty/disclaimer information, see p. 3 or [www.ruland.com](http://www.ruland.com)

# Available from **RULAND**

We are committed to have the largest variety of sizes and styles in the industry. In addition to the items listed below, we can manufacture an extensive variety of special designs. Please contact us with your custom needs.

## OLDHAM COUPLINGS

Paradrive™  
oldham  
coupling.  
Clamp and  
set screw  
styles.



## BELLOWS COUPLINGS

Belflex™  
bellows  
coupling.  
Clamp and  
set screw  
styles.



## BEAM COUPLINGS

Flexbeam™  
flexible  
coupling.  
Clamp and  
set screw  
styles.



## JAW COUPLINGS

Jawflex™  
jaw coupling.  
Clamp and  
set screw  
styles.



## CLAMPING DEVICES

Hublok™  
clamping  
device.  
Single and  
dual taper  
styles.



## SHAFT COLLARS

Nomar®  
shaft collar.  
One- and  
two-piece  
styles.



## DISC COUPLINGS

Discflex™  
disc coupling.  
Clamp and  
set screw  
styles.



## RIGID COUPLINGS

Nomar®  
rigid  
coupling.  
One- and  
two-piece  
styles.



**RULAND** Manufacturing Co., Inc.

6 Hayes Memorial Drive • Marlborough, MA 01752  
(508) 485-1000 • fax (508) 485-9000  
www.ruland.com • sales@ruland.com