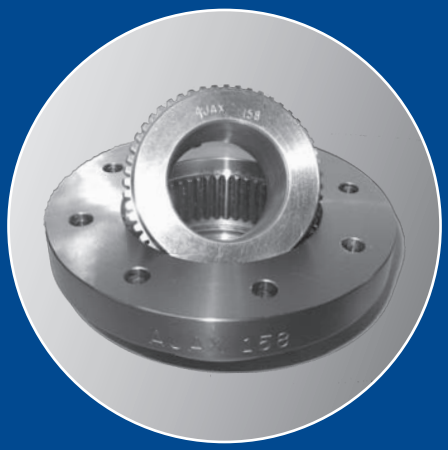
AJAX Flexible Couplings



- Standard and High Misalignment Designs
- Interchangeable to North American Industry Standards
- Crowned and Barreled Teeth with Tooth Tip Piloting
- Forged AISI 1045 Steel Components
- High Power Density
- Available in Both O-Ring and Metal Seal Designs
- Heat Treating and Custom Designs Available

RENOLD

Superior Technology

Contents

Facility

Renold Ajax manufacturing plant in Westfield, New York

Renold Ajax... Leaders In Innovation

For more than 60 years, Renold Ajax has been an industry leader in designing and manufacturing custom gear spindles, gear couplings and special gearing. Its Westfield, New York plant is just one of a world-wide operation that includes sales and manufacturing subsidiaries in sixteen countries and sales agents in more than seventy countries, all specializing in power transmission products.

Renold Ajax's success in the primary metals industry can be attributed to design innovations like continuous circulating oil lubrication, roll end piloting, and compound tooth curvature. The company has invested heavily in the Westfield plant with state-of-the-art CNC machinery, and has also incorporated manufacturing cell technology. This combination allows Renold to offer a high quality product at an extremely competitive price.

Continuing research and development, including Finite Element Analysis and solid modeling design methods assure our customers that their equipment will be optimized for their application.

Coupling Interchange Chart

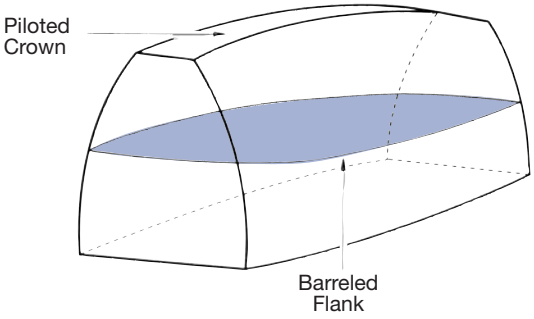
American Gear Coupling Manufacturer's Interchange Chart														
RENOLD AJAX			AMERIDRIVES			FALK			KOPFLEX			LOVEJOY/SIER BATH		
MODEL/ SIZE	TORQUE CAPACITY Lb-In x 1000	MAX BORE	MODEL/ SIZE	TORQUE CAPACITY Lb-In x 1000	MAX BORE	MODEL/ SIZE	TORQUE CAPACITY Lb-In x 1000	MAX BORE	MODEL/ SIZE	TORQUE CAPACITY Lb-In x 1000	MAX BORE	MODEL/ SIZE	TORQUE CAPACITY Lb-In x 1000	MAX BORE
1	12.7	1.63"	F-201	3.2	1.25"	1010G	10.08	1.875"	1	7.5	1.625"	F-1	7.6	1.625"
1-1/2	23.8	2.13"	F-201-1/2	17.0	2.25"	1015G	20.79	2.375"	1-1/2	17.0	2.25"	F-1-1/2	18.9	2.125"
2	40.6	2.75"	F-202	31.5	2.75"	1020G	37.8	2.875"	2	31.5	2.75"	F-2	31.5	2.75"
2-1/2	65.7	3.25"	F-202-1/2	53.6	3.50"	1025G	66.15	3.625"	2-1/2	56.7	3.50"	F-2-1/2	56.7	3.25"
3	108	4.00"	F-203	94.5	4.00"	1030G	107.1	4.125"	3	101.0	4.00"	F-3	94.5	4.00"
3-1/2	166	4.50"	F-203-1/2	142.0	4.50"	1035G	163.8	4.875"	3-1/2	148.0	4.50"	F-3-1/2	151.2	4.625"
4	264	5.38"	F-204	214.0	5.50"	1040G	270.9	5.75"	4	236.0	5.50"	F-4	220.5	5.375"
4-1/2	365	6.00"	F-204-1/2	324.0	6.25"	1045G	371.7	6.75"	4-1/2	318.0	6.00"	F-4-1/2	302.4	6.00"
5	489	6.63"	F-205	416.0	6.62"	1050G	500.9	7.375"	5	441.0	6.875"	F-5	434.7	6.50"
5-1/2	725	7.50"	F-205-1/2	551.0	7.50"	1055G	655.2	8.25"	5-1/2	580.0	7.75"	F-5-1/2	573.3	7.375"
6	925	8.13"	F-206	750.0	8.25"	1060G	800.1	9.125"	6	759.0	8.625"	F-6	749.7	8.00"
7	1,390	9.63"	F-207	1,033	9.62"	1070G	1,197	10.875"	7	1,160	10.375"	F-7	1,008	9.00"

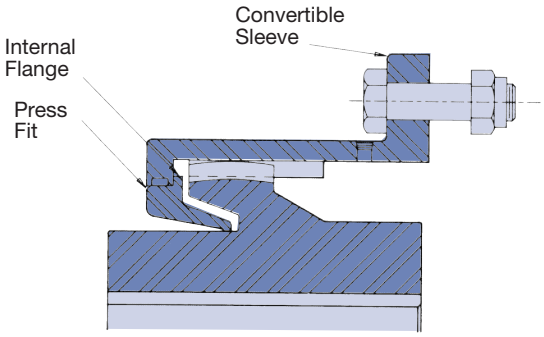
NOTES:

1) All couplings listed above are half for half interchangeable except for the Ameridrives F201 which has a different bolt circle than the other coupling brands.
2) Renold Ajax coupling ratings are based 1-½° full load misalignment. Competitor couplings misalignment capacities may vary.

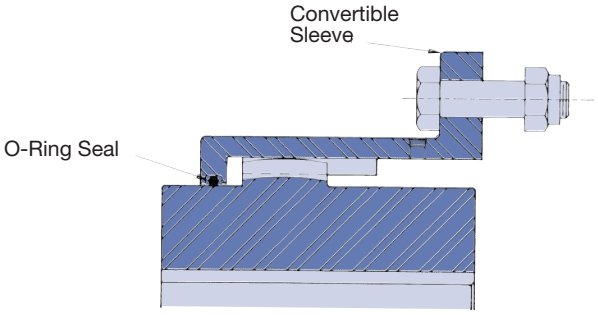
Why Renold Ajax?

The Renold Ajax Coupling features a higher capacity tooth through optimized tooth design. This, in combination with the improved properties of forged alloy material, provides a maximized power density in terms of both weight and diameter. Call Renold today for more information on how we can deliver cost effective gear coupling technology to your application.





Metal Seal

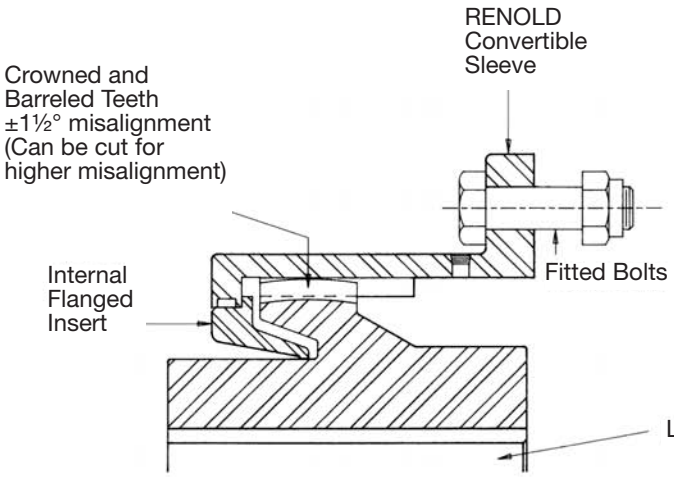


O-Ring Seal

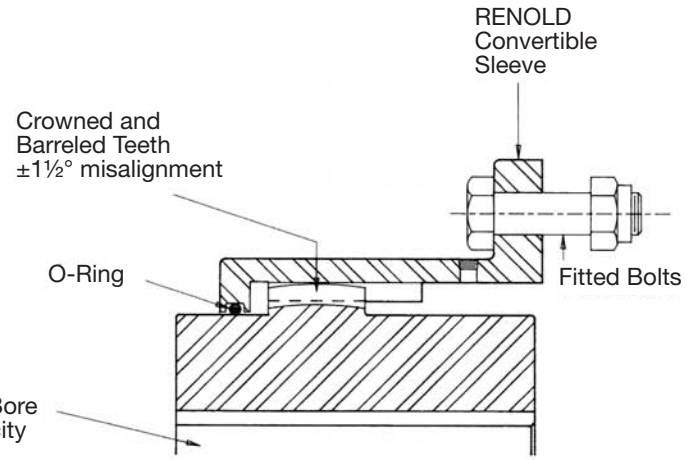
Features

Look to Renold Ajax for flexible couplings that offer the following features:

- Renold Ajax convertible sleeve
- Barreled and piloted crown gear teeth
- Complete line of: Metal Seal Couplings; O-Ring Seal Couplings
- ± 1½° misalignment per gear mesh
- Heavy duty couplings
- High misalignment couplings
- Medium carbon steel
- Half-coupling interchangeability with North American industry standards
- Grade 5 tight fitting bolts with locknuts
- Large bore capacity
- Specialty designs for all applications
- Recognized and accepted as the world leader in innovation and quality

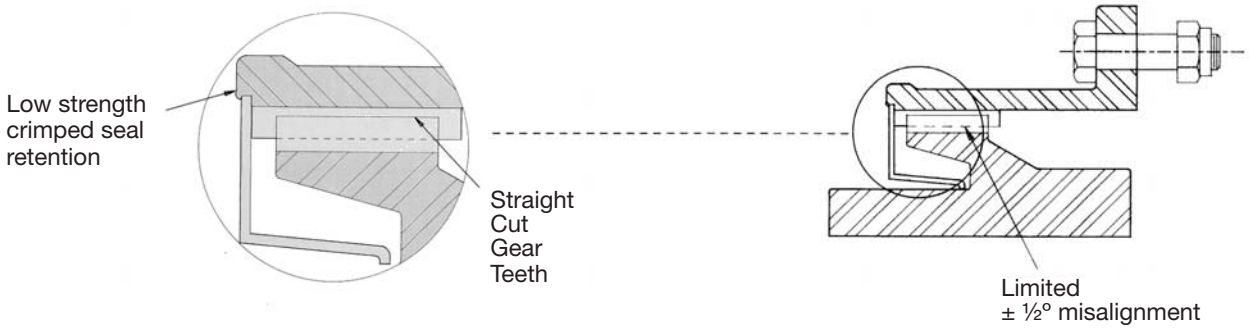


Metal Seal Design

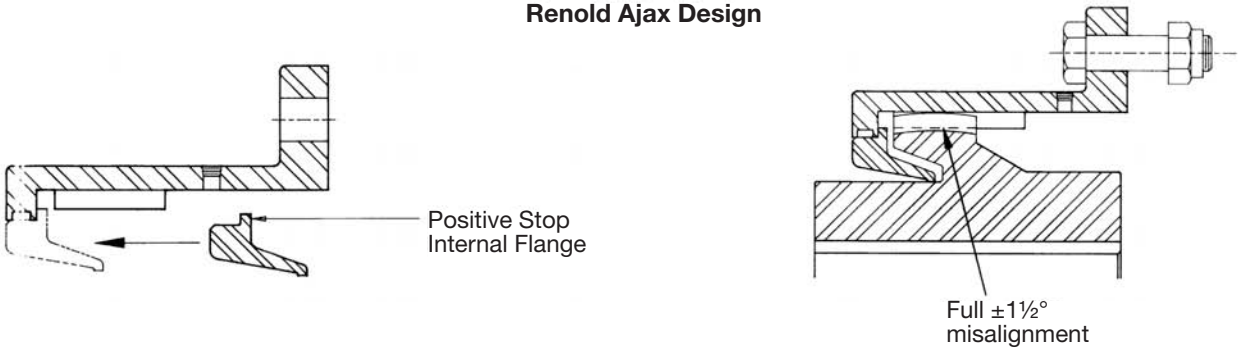


O-Ring Seal Design

Kop-Flex
"Fast" Design

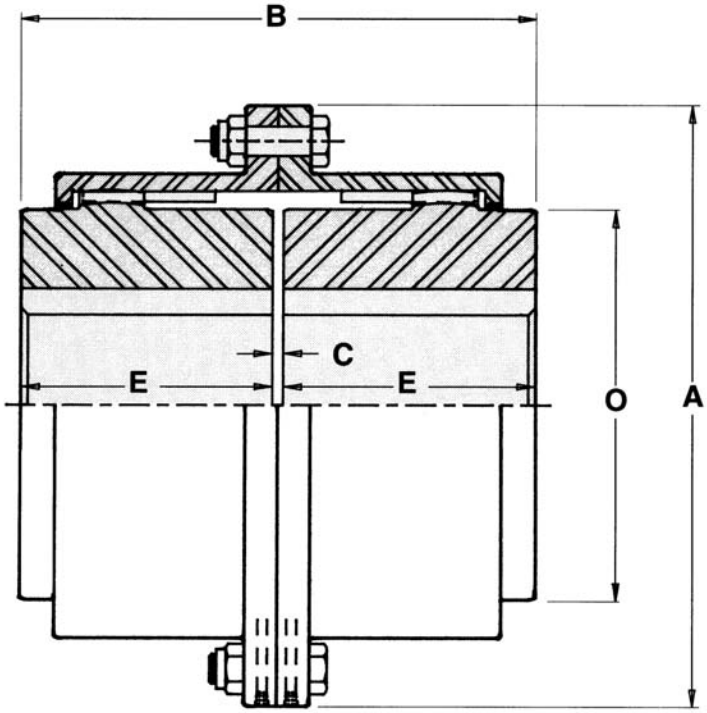


Renold Ajax Design



Full-Flex O-Ring Seal Couplings

- Forged medium carbon steel
- Crowned and barreled teeth
- Tight-fitting high strength bolts
- Large lube reservoir
- ± 1½° misalignment per gear mesh
- Half-coupling interchangeability with North American industry standards
- Accepted worldwide



Specifications/Dimensions

Coupling Size		1	1 ½	2	2 ½	3	3 ½	4	4 ½	5	5 ½	6	7
Catalog No. 6901-		108-1	158-1	208-1	258-1	308-1	358-1	408-1	458-1	508-1	558-1	608-1	708-1
Maximum Bore	Square Keyway	1.63	2.13	2.75	3.25	4.00	4.50	5.38	6.00	6.63	7.50	8.13	9.63
		3/8 x 3/16	1/2 x 1/4	5/8 x 5/16	3/4 x 3/8	1 x 1/2	1 x 1/2	1 1/4 x 5/8	1 1/2 x 3/4	1 3/4 x 7/8	1 3/4 x 7/8	2 x 1	2 x 1
	Reduced Keyway	1.88	2.25	3.13	3.63	4.38	5.13	5.75	6.50	7.50	8.13	9.00	10.13
		1/2 x 3/16	5/8 x 7/32	3/4 x 1/4	7/8 x 5/16	1 x 3/8	1 1/4 x 7/16	1 1/2 x 1/2	1 3/4 x 3/4	1 3/4 x 3/4	1 3/4 x 3/4	2 x 3/4	2 1/2 x 7/8
Offset Misalignment		.049	.059	.079	.092	.118	.137	.157	.177	.209	.236	.255	.301
Design Rating	HP/100 RPM	20.0	37.8	64.4	104	172	263	419	578	776	1150	1470	2200
	Lb.-In. x 10^3	12.7	23.8	40.6	65.7	108	166	264	365	489	725	925	1390
	Max. RPM	3600	3600	3600	3600	3600	3600	3290	2920	2630	2320	2120	1830
Weight-Lbs. Solid Hubs		9.2	16.9	33	56	81	134	200	269	392	519	616	977
WR^2-Lb.-$In.^2$		18.9	67.7	151	359	643	1480	2800	4450	8700	12900	16600	35300
Dimensions Inches	A	4.56	6.00	7.00	8.38	9.44	11.00	12.50	13.63	15.31	16.75	18.00	20.75
	B	3.50	4.00	5.00	6.25	7.38	8.63	9.75	10.94	12.38	14.13	15.13	17.75
	C	.125	.125	.125	.188	.188	.250	.250	.313	.313	.313	.313	.375
	E	1.66	1.94	2.44	3.03	3.60	4.19	4.75	5.31	6.03	6.91	7.41	8.69
	O	2.38	3.00	4.00	4.63	5.63	6.50	7.50	8.50	9.50	10.50	11.50	13.50

1. Exposed bolt flanges furnished as standard.
2. Shrouded bolt flanges furnished when specified:
   Use -002 suffix; e.g.: 6901-0208-002. Unavailable for sizes 6 & 7.
3. Design rating based on ± 1½° misalignment per gear mesh.

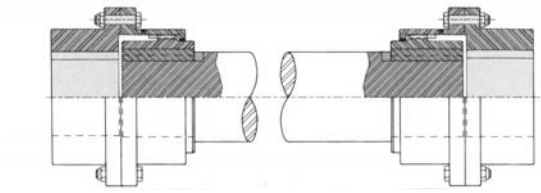
NOTE: Consult Renold for certified dimensions.

WARNING

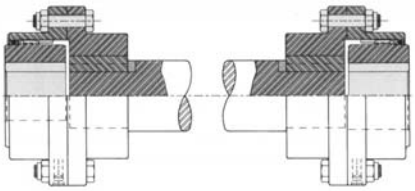
Rotating equipment must be provided with a suitable guard before operating or injury may result. Check applicable code.

Flex-Rigid O-Ring Seal Couplings

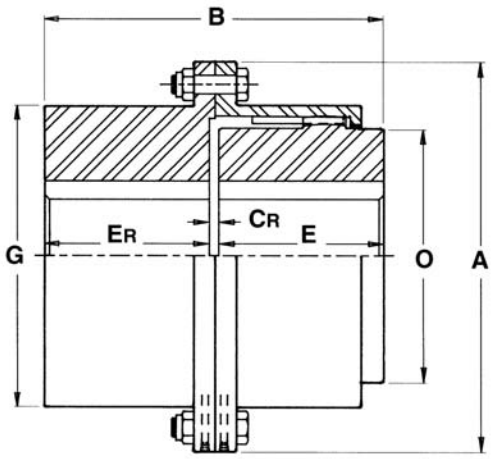
Used in pairs with a shaft to connect widely separated equipment.



Tandem — Flexible halves on floating shaft
Maximized bore capacity



Tandem — Rigid halves on floating shaft
Maximized offset capacity



Specifications/Dimensions

Coupling Size		1	1 ½	2	2 ½	3	3 ½	4	4 ½	5	5 ½	6	7
Catalog No. 6908-		108-1	158-1	208-1	258-1	308-1	358-1	408-1	458-1	508-1	558-1	608-1	708-1
Square Key *RIGID HUB– MAX BORE* Reduced Key	Bore	2.25	2.75	3.50	4.38	5.00	5.75	6.50	7.38	8.25	9.25	10.00	11.25
	Keyway	½ x ¼	⅝ x ⅝16	⅞ x ⅞16	1 x ½	1 ¼ x ⅝	1 ½ x ¾	1 ¾ x ⅞	1 ¾ x ⅞	2 x1	2 x 1	2 x 1	3 x 1 ½
	Bore	2.44	2.88	3.75	4.50	5.19	6.00	7.00	7.88	8.75	9.50	10.25	12.25
	Keyway	⅝ x ⅞16	¾ x ¼	⅞ x ⅝16	1 x ⅜	1 ¼ x ⅞16	1 ½ x ½	1 ¾ x ¾	2 x ¾	2 x ¾	2 x ¾	2½ x ⅞	3 x 1
Square Key *FLEX HUB– MAX BORE* Reduced Key	Bore	1.63	2.13	2.75	3.25	4.00	4.50	5.38	6.00	6.63	7.50	8.13	9.63
	Keyway	⅜ x ⅜16	½ x ¼	⅝ x ⅝16	⅞ x ⅞16	1 x ½	1 x ½	1 ¼ x ⅝	1 ½ x ⅝	1 ¾ x ⅞	1 ¾ x ⅞	2 x 1	2 x 1
	Bore	1.88	2.25	3.13	3.63	4.38	5.13	5.75	6.50	7.50	8.13	9.00	11.13
	Keyway	½ x ⅜16	⅝ x ⅞32	¾ x ¼	⅞ x ⅝16	1 x ⅜	1 ¼ x ⅞16	1 ½ x ½	1¾ x ¾	1¾ x ¾	2 x ¾	2 x ¾	2½ x ⅞
Design Rating	HP/100 RPM	20.0	37.8	64.4	104	172	263	419	578	776	1150	1470	2200
	Lb.-In. x 10^3	12.7	23.8	40.6	65.7	108	166	264	365	489	725	925	1390
	Max. RPM	3600	3600	3600	3600	3600	3600	3290	2920	2630	2320	2120	1830
Weight–Lbs. Solid Hubs		10.5	18.5	38	64	86	140	207	280	409	539	659	1040
WR²-Lb.-In.²		18.6	65	152	366	675	1530	2880	4600	8870	13500	17500	37700
Dimensions Inches	A	4.56	6.00	7.00	8.38	9.44	11.00	12.50	13.63	15.31	16.75	18.00	20.75
	B	3.41	3.94	4.94	6.16	7.28	8.50	9.63	10.78	12.22	13.69	14.97	17.88
	CR	.156	.156	.156	.188	.188	.219	.313	.348	.359	.359	.406	.500
	E	1.69	1.94	2.44	3.03	3.59	4.19	4.75	5.31	6.03	6.91	7.41	8.69
	ER	1.56	1.84	2.35	2.94	3.50	4.09	4.56	5.13	5.84	6.44	7.16	8.69
	O	2.38	3.00	4.00	4.63	5.63	6.50	7.50	8.50	9.50	10.50	11.50	13.50
	G	3.00	3.88	4.88	5.81	6.81	7.91	9.19	10.31	11.56	12.75	13.75	16.00

1. Exposed bolt flanges furnished as standard.
2. Shrouded bolt flanges furnished when specified:
   Use -002 suffix; e.g.: 6908-0158-002
3. Design rating based on ± 1½° misalignment per gear mesh
4. Offset capacity is dependent upon shaft length.

IMPORTANT - Check critical speed when used as a Floating Shaft.

NOTE: Consult Renold with application data for review.

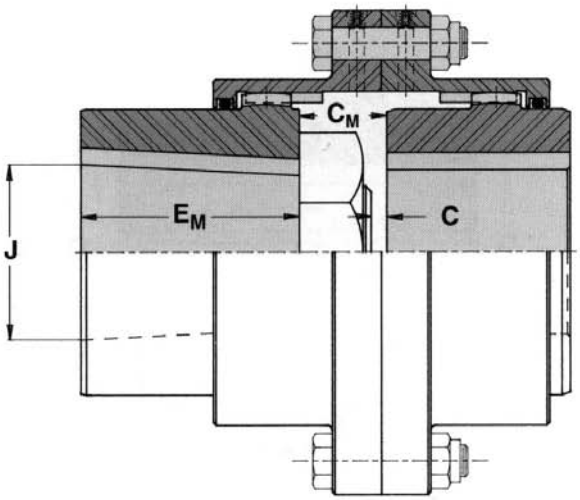
SOLID SHAFT

N_1 (1st Critical) = $\frac{4.7 \times 10^6 \times D}{L^2}$ > 1.5 x max. operating speed.

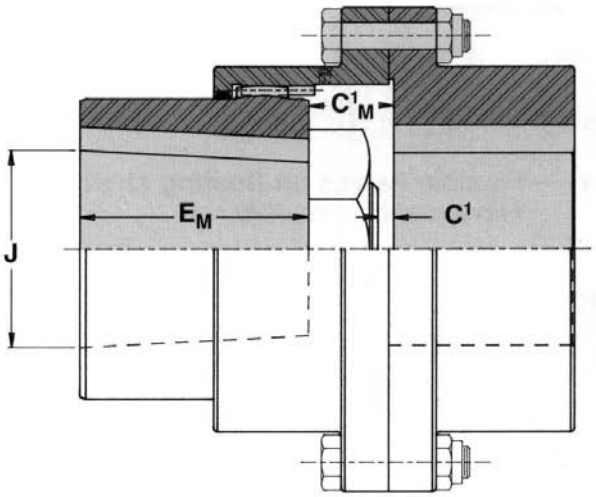
RENOLD | AJAX

Mill Motor O-Ring Seal Couplings

Standard mill motor couplings for A.I.S.E. tapered shaft mill motors.
Used predominantly in the metal industry.



FULL-FLEX



FLEX-RIGID

Specifications/Dimensions

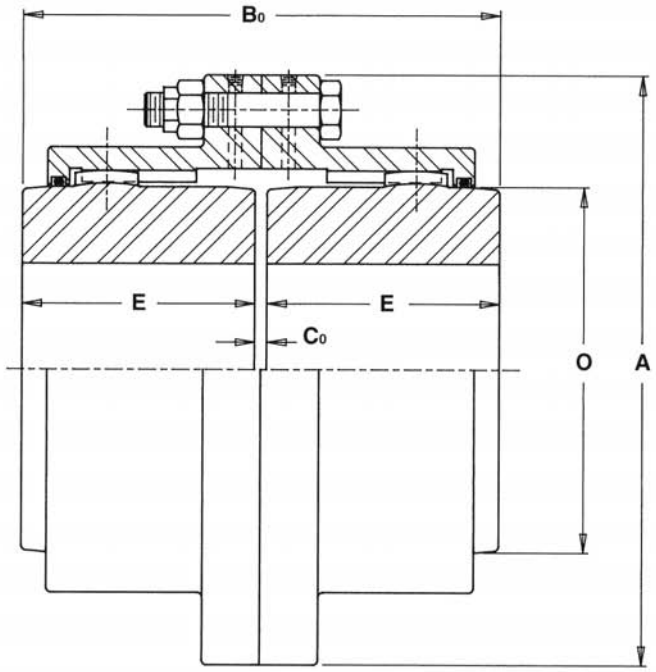
Coupling Size	A.I.S.E. Frame No.	Full-Flex					Flex-Rigid		
		E_M	C	C_M	J	Cat. No. 6906-	C^1	C^1_M	Cat. No. 6905-
1 ½	602 603, 604	3.00 3.50	.125 .125	1.06 1.13	1.749 1.999	0158-Fr. No.	.156	1.09 1.16	0158-Fr. No.
2	603/604 606	3.50 4.00	.125 .125	1.13 1.25	1.999 2.499	0208-Fr. No.	.156	1.16 1.28	0208-Fr. No.
2 ½	606 608	4.00 4.50	.188 .188	1.31 1.44	2.499 2.999	0258-Fr. No.	.188	1.31 1.44	0258-Fr. No.
3	608 610 612	4.50 4.50 5.00	.188 .188 .188	1.31 1.56 1.69	2.999 3.249 3.624	0308-Fr. No.	.188	1.31 1.56 1.69	0308-Fr. No.
3 ½	612 614	5.00 5.00	.250 .250	1.75 1.88	3.624 4.248	0358-Fr. No.	.219	1.72 1.84	0358-Fr. No.
4	614 616 618	5.00 5.50 6.00	.250 .250 .250	1.88 2.00 1.56	4.248 4.623 4.998	0408-Fr. No.	.313	1.94 2.06 1.63	0408-Fr. No.
4 ½	614 616 618	5.00 5.50 6.00	.313 .313 .313	1.94 2.06 1.63	4.248 4.623 4.998	0458-Fr. No.	.348	1.97 1.65 2.08	0458-Fr. No.
5	616 618 620	5.50 6.00 6.75	.313 .313 .313	2.06 1.63 2.06	4.623 4.998 5.873	0508-Fr. No.	.359	2.09 1.66 2.09	0508-Fr. No.
5 ½	618 620 622	6.00 6.75 7.25	.313 .313 .313	1.63 2.06 2.69	4.998 5.873 6.248	0558-Fr. No.	.406	1.66 2.09 2.09	0558-Fr. No.
6	620 622 624	6.75 7.25 9.25	.313 .313 .313	2.06 2.69 2.69	5.873 6.248 6.996	0608-Fr. No.	.406	2.16 1.78 2.78	0608-Fr. No.

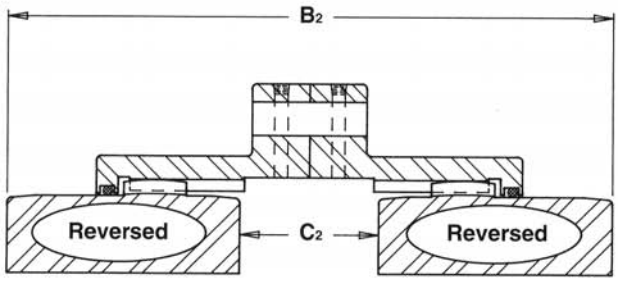
1. Furnished with exposed bolts only.
2. For standard bore sizes, refer to Full-Flex or Flex-Rigid (Pages 6 and 7).
3. When ordering, specify Full-Flex or Flex-Rigid with proper A.I.S.E. Frame No.
   Full-Flex: 6906-0258 - Frame No._____
   Flex-Rigid: 6905-0258 - Frame No. _____
4. Design rating based on ± 1½° misalignment per gear mesh.

WARNING

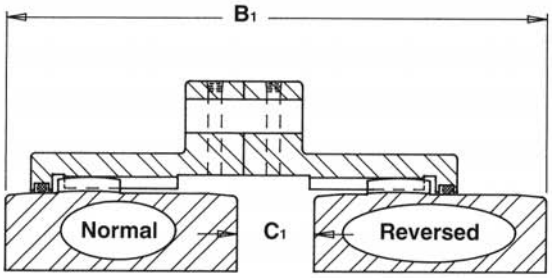
Rotating equipment must be provided with a suitable guard before operating or injury may result. Check applicable code.

Standard Extended Shaft Gaps





Both Hubs Reversed



One Hub Reversed

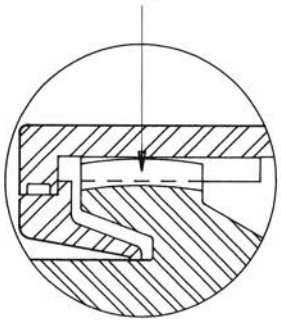
Specifications/Dimensions

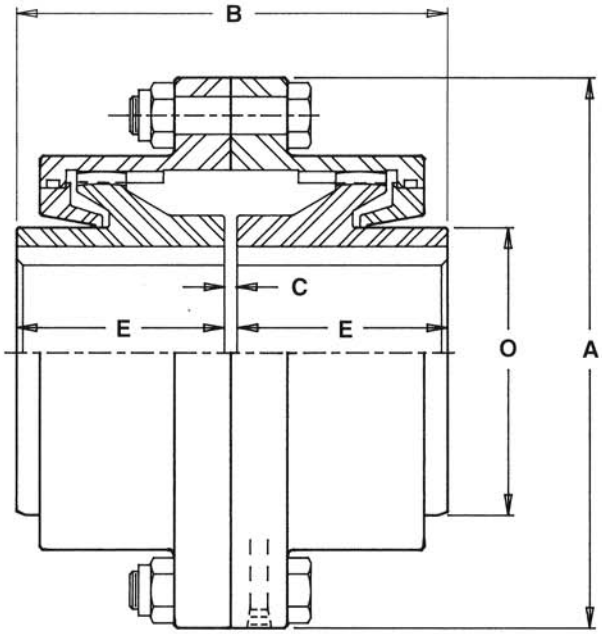
Coupling Size	1	1 ½	2	2 ½	3	3 ½	4	4 ½	5	5 ½	6	7
Catalog No. 6908-	108-1	158-1	208-1	258-1	308-1	358-1	408-1	458-1	508-1	558-1	608-1	708-1
A	4.56	6.00	7.00	8.38	9.44	11.00	12.50	13.63	15.31	16.75	18.00	20.75
B_0	3.50	4.00	5.00	6.25	7.38	8.63	9.75	10.94	12.38	14.13	15.13	17.75
B_1	3.56	4.19	5.44	6.75	8.09	9.44	10.75	12.06	14.03	15.91	17.16	20.19
B_2	3.63	4.38	5.88	6.81	8.81	10.25	11.75	13.19	15.69	17.69	19.19	22.63
C_0	.13	.13	.13	.19	.19	.25	.25	.31	.31	.31	.31	.38
C_1	.19	.31	.56	.47	.91	1.06	1.25	1.44	1.97	2.09	2.34	2.81
C_2	.25	.50	1.00	.75	1.63	1.88	2.25	2.56	3.63	3.88	4.38	5.25
E	1.69	1.94	2.44	3.03	3.59	4.19	4.75	5.31	6.03	6.91	7.41	8.69
O	2.38	3.00	4.00	4.63	5.63	6.50	7.50	8.50	9.50	10.50	11.50	13.50

Full-Flex Metal Seal Couplings

- Forged medium carbon steel
- Crowned and barreled teeth
- Tight-fitting high strength bolts
- Large lube reservoir
- ± 1½° misalignment per gear mesh
- Half-coupling interchangeability with North American industry standards
- Accepted worldwide

- Standard capacity is ± 1½° misalignment per gear mesh.
- Specials can be cut for up to ± 4° misalignment





Specifications/Dimensions

Coupling Size		1 ½	2	2 ½	3	3 ½	4	4 ½	5	5 ½	6	7
Catalog No. 6901-		156-1	206-1	256-1	306-1	356-1	406-1	456-1	506-1	556-1	606-1	706 -1
Maximum Bore	Square Keyway	1.75	2.25	2.75	3.25	3.75	4.25	4.75	5.50	6.25	7.00	8.25
		3/8 x 3/16	1/2 x 1/4	5/8 x 5/16	3/4 x 3/8	7/8 x 7/16	1 x 1/2	1 1/4 x 5/8	1 1/4 x 5/8	1 1/2 x 3/4	1 3/4 x 7/8	2 x 1
	Reduced Keyway	1.88	2.38	3.00	3.50	4.00	4.50	5.13	5.88	6.75	7.38	8.75
		1/2 x 3/16	5/8 x 7/32	3/4 x 1/4	7/8 x 5/16	1 x 3/8	1 x 3/8	1 1/4 x 7/16	1 1/2 x 1/2	1 3/4 x 3/4	1 3/4 x 3/4	2 x 3/4
Offset Misalignment		.059	.075	.090	.114	.136	.157	.175	.204	.234	.244	.291
Design Rating	HP/100 RPM	37.8	64.4	104	172	263	419	578	776	1150	1470	2200
	Lb.-In. x 10^3	23.8	40.6	65.7	108	166	264	365	489	725	925	1390
	Max. RPM	3600	3600	3600	3600	3600	3290	2920	2630	2320	2120	1830
Weight-Lbs. Solid Hubs		22	34	57	90	134	200	257	281	463	649	902
WR^2-Lb.-$In.^2$		67	140	345	669	1330	2530	4100	7990	12300	15400	29000
Dimensions Inches	A	6.00	7.00	8.38	9.44	11	12.50	13.63	15.31	16.75	18	20.75
	B	4.00	5.00	6.25	7.38	8.63	9.75	10.94	12.38	14.13	15.13	17.75
	C	.125	.125	.188	.188	.250	.250	.313	.313	.313	.313	.375
	E	1.94	2.44	3.03	3.60	4.19	4.75	5.31	6.03	6.91	7.41	8.69
	O	2.38	3.13	3.63	4.50	5.00	5.75	6.50	7.50	8.50	9.50	10.50

1. Exposed bolt flanges furnished as standard.
2. Shrouded bolt flanges furnished when specified: Use -002 suffix; e.g.: 6901-0206-002. Unavailable for sizes 6 & 7.
3. Design rating based on ± 1½° misalignment per gear mesh.

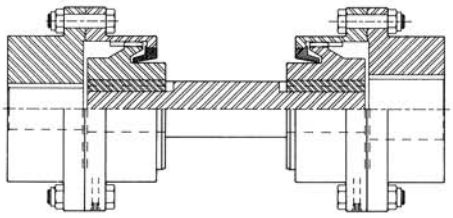
NOTE: Consult Renold for certified dimensions.

WARNING

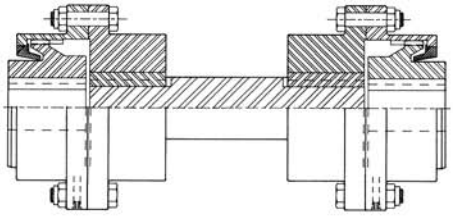
Rotating equipment must be provided with a suitable guard before operating or injury may result. Check applicable code.

Flex-Rigid Metal Seal Couplings

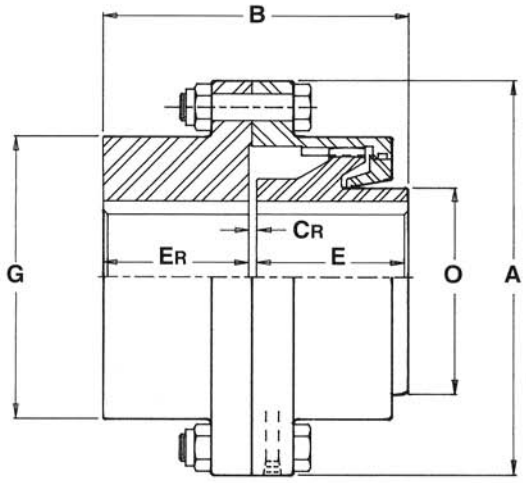
Used in pairs with a shaft to connect widely separated equipment.



Tandem - Flexible halves on floating shaft
Maximized bore capacity



Tandem - Rigid halves on floating shaft
Maximized offset capacity



Specifications/Dimensions

Coupling Size		1 ½	2	2 ½	3	3 ½	4	4 ½	5	5 ½	6	7
Catalog No. 6908-		156-1	206-1	256-1	306-1	356-1	406-1	456-1	506-1	556-1	606-1	706-1
Square Key *RIGID HUB– MAX BORE* Reduced Key	Bore	2.75	3.50	4.38	5	5.75	6.50	7.38	8.25	9.25	10	11.25
	Keyway	5/8 x 5/16	7/8 x 7/16	1 x 1/2	1 1/4 x 5/8	1 1/2 x 3/4	1 3/4 x 7/8	1 3/4 x 7/8	2 x1	2 x 1	2 x 1	3 x 1 1/2
	Bore	2.88	3.75	4.50	5.19	6.00	7.00	7.88	8.75	9.50	10.25	12.25
	Keyway	3/4 x 1/4	7/8 x 5/16	1 x 3/8	1 1/4 x 7/16	1 1/2 x 1/2	1 3/4 x 3/4	2 x 3/4	2 x 3/4	2 x 3/4	2 1/2 x 7/8	3 x 1
Square Key *FLEX HUB– MAX BORE* Reduced Key	Bore	1.75	2.25	2.75	3.25	3.75	4.25	4.75	5.50	6.25	7.00	8.25
	Keyway	3/8 x 3/16	1/2 x 1/4	5/8 x 5/16	3/4 x 3/8	7/8 x 7/16	1 x 1/2	1 1/4 x 5/8	1 1/4 x 5/8	1 1/2 x 3/4	1 3/4 x 7/8	2 x 1
	Bore	1.88	2.38	3.00	3.50	4.00	4.50	5.13	5.88	6.75	7.38	8.75
	Keyway	1/2 x 3/16	5/8 x 7/32	3/4 x 1/4	7/8 x 5/16	1 x 3/8	1 x 3/8	1 1/4 x 7/16	1 1/2 x 1/2	1 3/4 x 3/4	1 3/4 x 3/4	2 x 3/4
Design Rating	HP/100 RPM	37.8	64.4	104	172	263	419	578	776	1150	1470	2200
	Lb.-In. x 10^3	23.8	40.6	65.7	108	166	264	365	489	725	925	1390
	Max. RPM	3600	3600	3600	3600	3600	3290	2920	2630	2320	2120	1830
Weight – Lbs. Solid Hubs		24	36	59	91	140	200	300	400	500	650	1000
WR²-Lb.-In.²		68	146	360	687	1450	2700	4400	8500	13100	17000	34500
Dimensions Inches	A	6.00	7.00	8.38	9.44	11.00	12.50	13.63	15.31	16.75	18.00	20.75
	B	3.94	4.94	6.16	7.28	8.50	9.63	10.78	12.22	13.75	14.97	17.88
	CR	.156	.156	.188	.188	.219	.313	.359	.359	.359	.406	.500
	E	1.94	2.44	3.03	3.59	4.19	4.75	5.31	6.03	6.91	7.41	8.69
	ER	1.84	2.35	2.94	3.50	4.09	4.56	5.13	5.84	6.44	7.16	8.69
	O	2.38	3.13	3.63	4.50	5.00	5.75	6.50	7.50	8.50	9.50	10.50
	G	3.88	4.88	5.84	6.81	7.91	9.19	10.31	11.56	12.75	13.75	16.00

1. Exposed bolt flanges furnished as standard.
2. Shrouded bolt flanges furnished when specified:
   Use -002 suffix; e.g.: 6908-0156-002. Unavailable for sizes 6 & 7.
3. Design rating based on ± 1½° misalignment per gear mesh.
4. Offset capacity is dependent upon shaft length.

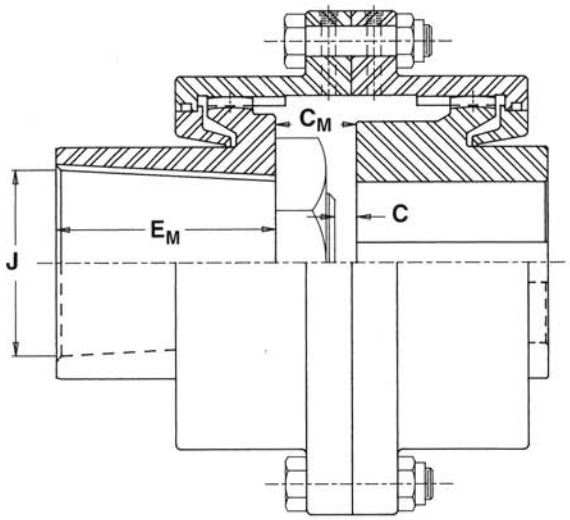
NOTE: Consult Renold with application data for review.

IMPORTANT — Check critical speed when used as a Floating Shaft.

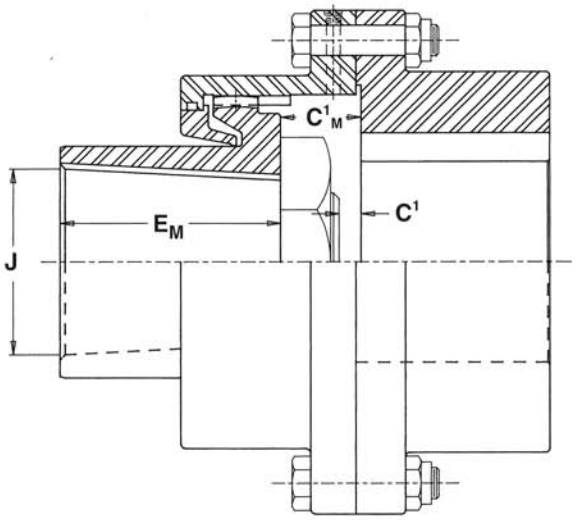
SOLID SHAFT

N_1 (1st Critical) = $\frac{4.7 \times 10^6}{L^2}$ x D > 1.5 x max. operating speed.

Mill Motor Metal Seal Couplings



Full-Flex



Flex-Rigid

Specifications/Dimensions

Coupling Size	A.I.S.E. Frame No.	Full-Flex					Flex-Rigid		
		E_M	C	C_M	J	Cat. No. 6906-	C^1	C^1_M	Cat. No. 6905-
1 ½	602	3.00	.125	1.06	1.749	0156-Fr. No.	.156	1.09	0156-Fr. No.
2	603 604	3.50	.125	1.13	1.999	0206-Fr. No.	.156	1.16	0206-Fr. No.
2 ½	606	4.00	.188	1.31	2.499	0256-Fr. No.	.188	1.31	0256-Fr. No.
3	608 610	4.50 4.50	.188 .188	1.44 1.56	2.999 3.249	0306-Fr. No.	.188 .188	1.44 1.56	0306-Fr. No.
3 ½	612	5.00	.250	1.75	3.624	0356-Fr. No.	.219	1.72	0356-Fr. No.
4	614 616	5.00 5.50	.250 .250	1.88 2.00	4.248 4.623	0406-Fr. No.	.313 .313	1.94 2.06	0406-Fr. No.
4 ½	618	6.00	.250	1.56	4.998	0456-Fr. No.	.313	1.63	0456-Fr. No.
5	620	6.75	.313	2.06	5.873	0506-Fr. No.	.348	2.09	0506-Fr. No.
5 ½	622	7.25	.313	2.69	6.248	0556-Fr. No.	.406	2.09	0556-Fr. No.
6	624	9.25	.313	2.69	6.996	0606-Fr. No.	.406	2.78	0606-Fr. No.

1. Furnished with exposed bolts only.
2. For standard bore sizes, refer to Full-Flex or Flex-Rigid (Pages 10 and 11).
3. When ordering, specify Full-Flex or Flex-Rigid with proper A.I.S.E. Frame No.
   Full-Flex: 6906-0256 - Frame No._____
   Flex-Rigid: 6905-0256 - Frame No. _____
4. Design rating based on ± 1½° misalignment per gear mesh.

WARNING

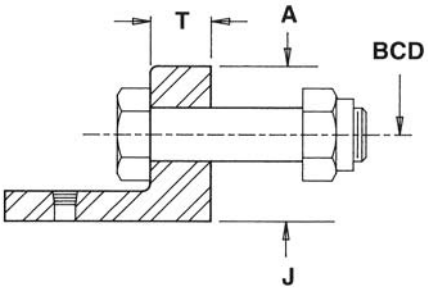
Rotating equipment must be provided with a suitable guard before operating or injury may result. Check applicable code.

Flange and Bore Specifications for Metal and O-Ring Seal Couplings

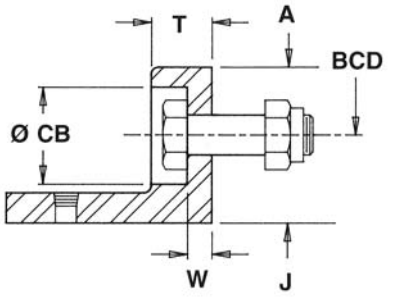
Flange Details – Common Dimensions

Exposed Bolt						
Size	A	B.C.D.	Bolts		T	J
			No.	Size		
1	4.56	3.75	6	1/4	.56	2.75
1 1/2	6.00	4.81	8	3/8	.75	3.44
2	7.00	5.88	6	1/2	.75	4.44
2 1/2	8.38	7.13	6	5/8	.88	5.25
3	9.44	8.13	8	5/8	.88	6.25
3 1/2	11.00	9.50	8	3/4	1.13	7.31
4	12.50	11.00	8	3/4	1.13	8.31
4 1/2	13.63	12.00	10	3/4	1.13	9.44
5	15.31	13.50	8	7/8	1.50	10.44
5 1/2	16.75	14.50	14	7/8	1.50	11.75
6	18.00	15.75	14	7/8	1.00	12.88
7	20.75	18.25	16	1	1.13	14.88

Shrouded Bolt						
B.C.D.	Bolts		T	J	W	C-B
	No.	Size				
3.75	6	1/4	.56	3.75	.25	.66
4.81	8	3/8	.75	3.44	.25	.81
5.81	10	3/8	.75	4.44	.25	.81
7.00	10	1/2	.88	5.25	.31	1.06
8.00	12	1/2	.88	6.25	.31	1.06
9.28	12	5/8	1.13	7.31	.38	1.31
10.63	14	5/8	1.13	8.31	.38	1.31
11.75	14	5/8	1.13	9.44	.38	1.31
13.19	14	3/4	1.50	10.44	.56	1.56
14.44	16	3/4	1.50	11.75	.56	1.56
NOT AVAILABLE						



Exposed Bolt



Shrouded Bolt

AGMA Standard Bore and Keyway Sizes for Interference Fits

Nominal Bore Dia.	Bore Dimensions	Nominal Keyway Size	
		Width	Depth
7/8	.874/.8745	3/16	3/32
1	.999/.9995	1/4	1/8
1 1/8	1.124/1.1245	1/4	1/8
1 1/4	1.249/1.2495	1/4	1/8
1 3/8	1.374/1.3745	5/16	5/32
1 1/2	1.499/1.4995	3/8	3/16
1 5/8	1.623/1.624	3/8	3/16
1 3/4	1.748/1.749	3/8	3/16
1 7/8	1.873/1.874	1/2	1/4
2	1.998/1.999	1/2	1/4
2 1/8	2.123/2.124	1/2	1/4
2 1/4	2.248/2.249	1/2	1/4
2 3/8	2.373/2.374	5/8	5/16
2 1/2	2.498/2.499	5/8	5/16
2 5/8	2.623/2.624	5/8	5/16
2 3/4	2.748/2.749	5/8	5/16
2 7/8	2.873/2.874	3/4	3/8
3	2.998/2.999	3/4	3/8
3 1/4	3.247/3.2485	3/4	3/8
3 1/2	3.497/3.4985	7/8	7/16
3 5/8	3.622/3.6235	7/8	7/16
3 3/4	3.747/3.7485	7/8	7/16
4	3.997/3.9985	1	1/2
4 1/2	4.4965/4.498	1 1/4	5/8
5	4.996/4.9975	1 1/4	5/8
5 1/2	5.496/5.4975	1 1/2	3/4
6	5.996/5.9975	1 1/2	3/4
6 1/2	6.496/6.4975	1 3/4	7/8
7	6.995/6.997	1 3/4	7/8
7 1/2	7.495/7.497	2	1
8	7.9945/7.9965	2	1

SERVICE FACTORS
Apply to Gear Tooth Design Rating

Type of Service	Non-Reversing	Reversing
Steady	1.0	1.5
Moderate Shock	1.5	2.5
Heavy Shock	2.0	3.0

Unless specified, couplings are furnished with an average interference fit of .0005 per inch of shaft diameter.

WARNING

Rotating equipment must be provided with a suitable guard, per the Occupational Safety and Health Act, before operating, or injury may result.

NOTE: Consult Renold for certified dimensions.

Capabilities

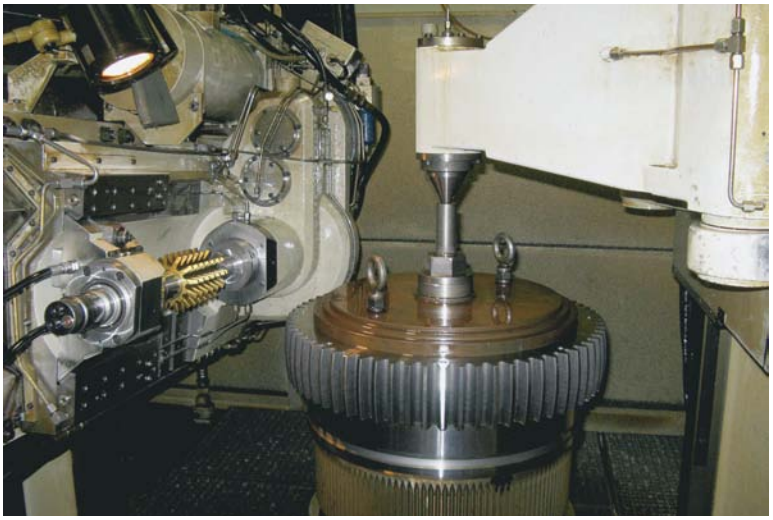
New CNC machinery

Gear shaping machine

New electro discharge wire machine

New CNC machinery

Cell manufacturing approach



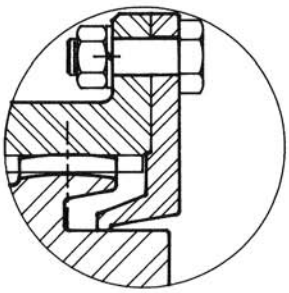
CNC hobbing machine

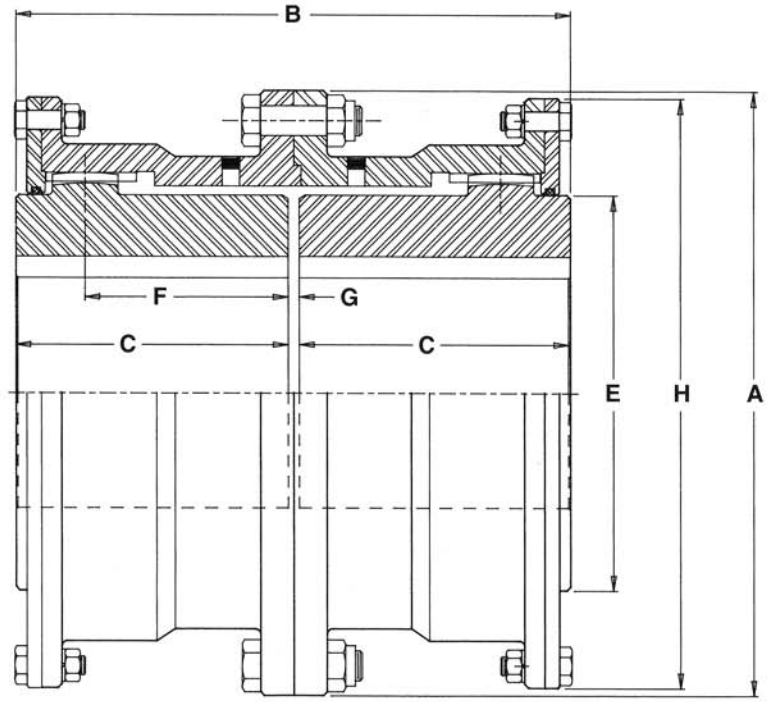
Heavy Duty Couplings

- Forged steel.
- Heat treated alloy components available for hydraulic removal interference fits.
- Interchangeable with existing installations.
- High ± 3/4° misalignment per gear mesh.
- Specialty types available such as:
  - Shear bolt
  - Shear spacers
  - Minimum backlash
  - Limited end float
  - Flangeless - sleeve type
  - Tangential keyways
- Rebuild of existing heavy duty couplings for economical replacement.

Full-Flex Heavy Duty O-Ring Seal Couplings

Metal seal "Fast" style heavy duty couplings are also available.





Specifications/Dimensions

Coupling Size		8	9	10	11	12	13	14	15	16	18	20	22	24	26	28	30
O-Ring Catalog No. 6901-		808-1	908-1	1008-1	1108-1	1208-1	1308-1	1408-1	1508-1	1608-1	1808-1	2008-1	2208-1	2408-1	2608-1	2808-1	3008-1
Design Rating	HP/100 RPM	2750	4000	4900	6500	8500	9700	14300	17500	21400	23800	35000	44500	55500	63500	70000	81000
	Lb.-In. x 10 [6]	1.73	2.52	3.08	4.10	5.36	6.11	9.00	11.0	13.5	15.0	22.1	28.0	35.0	40.0	44.1	51.0
	Max. RPM	1750	1625	1500	1330	1230	1080	950	790	660	460	360	300	250	225	200	200
Offset Misalignment		.193	.212	.225	.265	.275	.281	.307	.331	.344	.355	.411	.497	.537	.576	.586	.592
1.6 Hub/Bore Ratio		9.06	10.31	11.56	12.81	14.06	15.31	16.56	18.13	19.38	21.88	24.38	26.25	28.44	30.31	32.50	35.00
Max. Bore		11.00	12.50	14.50	15.50	17.50	18.50	20.50	22.00	24.00	26.00	27.00	30.00	33.00	35.50	38.00	41.00
Weight-Lbs. Solid Bore		1660	2330	2970	4000	4870	5990	7210	8980	10900	13700	18300	25400	32900	37600	47100	54000
WR [2]-Lb.-In.[2] x 10 [3]		68	156	245	397	592	796	1050	1490	2010	3080	5400	7440	10600	16600	22800	30800
Dimensions Inches	A	23.25	26.00	28.00	30.50	33.00	35.00	38.00	40.50	43.75	47.00	53.50	59.00	64.25	68.50	73.75	78.00
	B	20.00	22.25	24.50	26.75	28.25	30.00	31.75	33.75	35.75	37.00	43.25	47.00	50.50	54.00	56.50	57.00
	C	9.81	10.88	12.00	13.13	13.88	14.63	15.50	16.50	17.38	18.00	21.13	23.00	24.75	26.50	27.25	28.00
	E	14.50	16.50	18.50	20.50	22.50	24.50	26.50	29.00	31.00	34.00	38.00	42.00	45.50	48.50	52.00	56.00
	F	7.19	7.88	8.38	9.99	10.25	10.38	11.38	12.25	12.63	13.06	15.19	18.50	20.00	21.50	21.88	22.13
	G	.38	.50	.50	.50	.50	.75	.75	.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	H	22.50	25.25	27.50	29.50	32.50	34.88	37.00	39.50	42.75	47.00	51.50	52.88	57.38	61.63	66.19	70.69

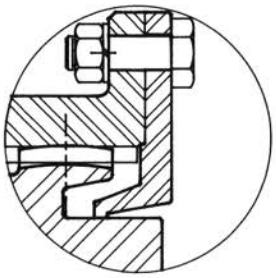
1. Design rating based on ± ¾° misalignment per gear mesh.
2. Material: forged medium carbon steel; heat treated alloy steel available as an option.
3. All sizes can be manufactured to interchange with industry standards…consult Renold.

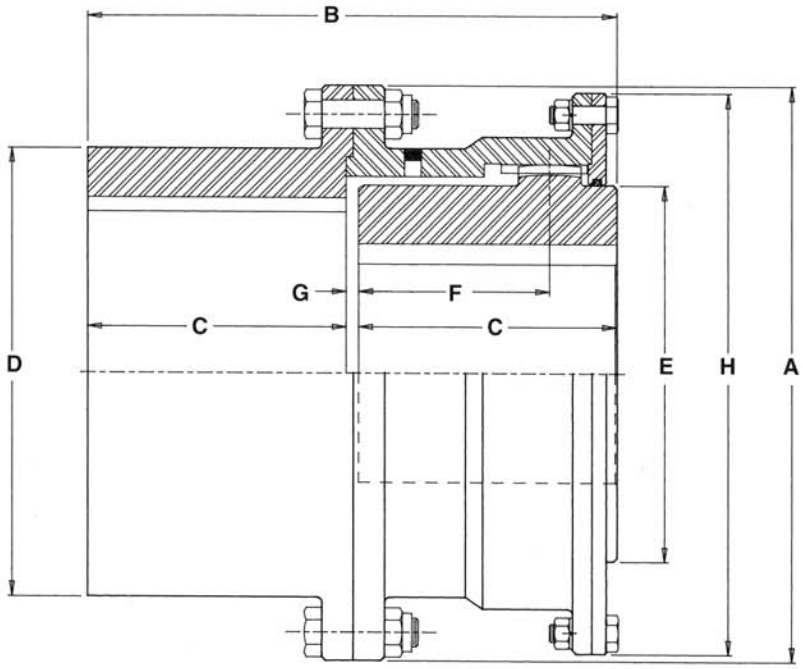
WARNING

Rotating equipment must be provided with a suitable guard before operating or injury may result. Check applicable code.

Flex-Rigid Heavy Duty O-Ring Seal Couplings

Metal seal "Fast" style heavy duty couplings are also available.



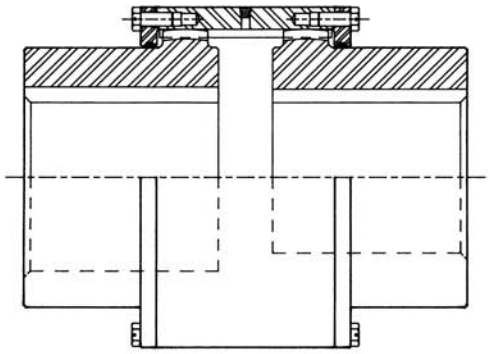


Specifications/Dimensions

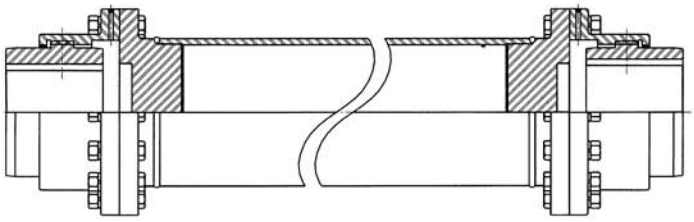
Coupling Size		8	9	10	11	12	13	14	15	16	18	20	22	24	26	28	30
O-Ring Catalog No. 6908-		808-1	908-1	1008-1	1108-1	1208-1	1308-1	1408-1	1508-1	1608-1	1808-1	2008-1	2208-1	2408-1	2608-1	2808-1	3008-1
Design Rating	HP/100 RPM	2750	4000	4900	6500	8500	9700	14300	17500	21400	23800	35000	44500	55500	63500	70000	81000
	Lb.-In. x 10^6	1.73	2.52	3.08	4.10	5.36	6.11	9.00	11.0	13.5	15.0	22.1	28.0	35.0	40.0	44.1	51.0
	Max. RPM	1750	1625	1500	1330	1230	1080	950	790	660	460	360	300	250	225	200	200
Rigid Bore	1.6 Hub/Bore Ratio	11.25	12.50	13.75	14.88	16.38	17.88	18.88	20.25	21.75	22.50	25.00	27.50	30.00	32.50	35.00	37.50
	Max. Bore	13.75	15.50	17.00	18.25	20.25	22.00	23.25	25.00	26.75	27.50	30.75	33.75	36.88	40.00	43.00	46.00
Flex Bore	1.6 Hub/Bore Ratio	9.06	10.31	11.56	12.81	14.06	15.31	16.56	18.13	19.375	21.88	24.38	26.25	28.44	30.31	32.50	35.00
	Max. Bore	11.00	12.50	14.50	15.50	17.50	18.50	20.50	22.00	24.00	26.00	27.00	30.00	33.00	35.50	38.00	41.00
Weight-Lbs. Solid Bore		1600	2250	2950	3830	4770	5900	7020	8650	10500	12500	17300	23400	29900	36700	44100	50900
WR^2-Lb.-In.^{2} x 10^3		69	141	220	348	525	736	962	1350	1860	2620	4600	6720	9980	15000	20700	27600
Dimensions Inches	A	23.25	26.00	28.00	30.50	33.00	35.00	38.00	40.50	43.75	47.00	53.50	59.00	64.25	68.50	73.75	78.00
	B	20.12	22.31	24.63	26.88	28.38	30.00	31.75	33.75	35.76	37.00	43.26	47.13	50.63	54.13	55.63	57.13
	C	9.81	10.88	12.00	13.13	13.88	14.63	15.50	16.50	17.38	18.00	21.13	23.00	24.75	26.50	27.25	28.00
	D	18.00	20.19	22.19	23.88	26.38	28.75	30.25	32.50	34.81	36.00	40.00	44.00	48.00	52.00	56.00	60.00
	E	14.50	16.50	18.50	20.50	22.50	24.50	26.50	29.00	31.00	34.00	38.00	42.00	45.50	48.50	52.00	56.00
	F	7.19	7.88	8.38	9.88	10.25	10.38	11.38	12.25	12.63	13.06	15.19	18.50	20.00	21.50	21.88	22.13
	G	.50	.56	.63	.63	.63	.75	.75	.75	1.00	1.00	1.00	1.13	1.13	1.13	1.13	1.13
	H	22.50	25.25	27.50	29.50	32.50	34.88	37.00	39.50	42.75	47.00	51.50	52.88	57.38	61.63	66.19	70.69

1. Design rating based on ± ¾° misalignment per gear mesh.
2. Material: forged medium carbon steel; heat treated alloy steel available as an option.
3. All sizes can be manufactured to interchange with industry standards…consult Renold.

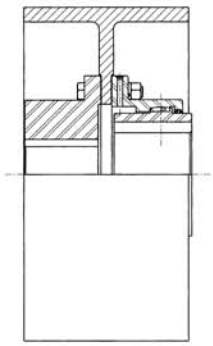
Typical Custom Designed Couplings



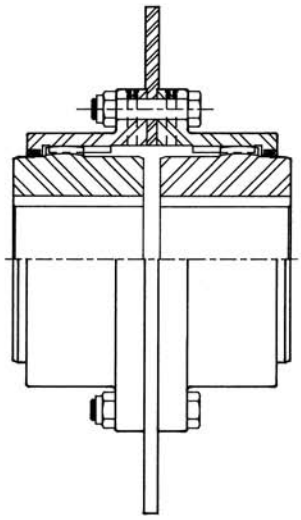
Continuous Sleeve



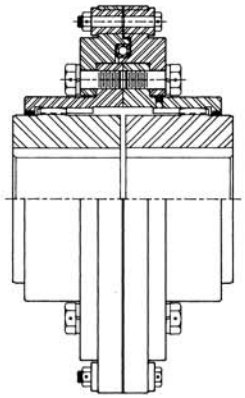
Flanged Spacer Coupling



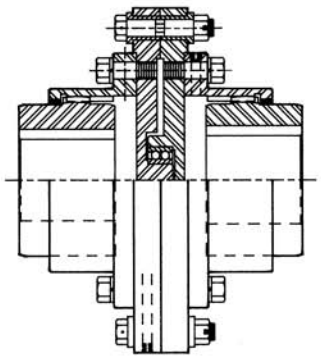
Full-Flex with Brake Drum



Full-Flex with Brake Disc

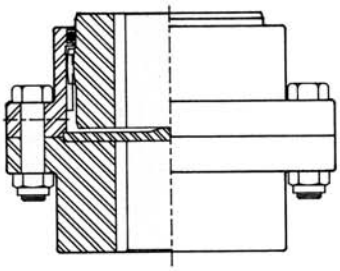


Full-Flex with Overload Release
Standard Shaft Gap

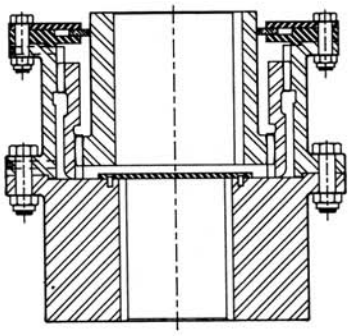


Full-Flex with Overload Release
Extended Shaft Gap

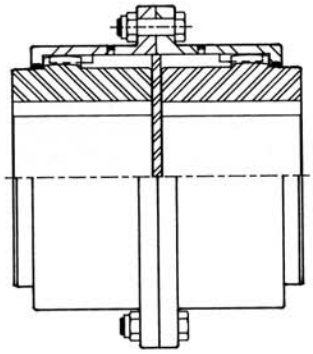
Typical Custom Designed Couplings



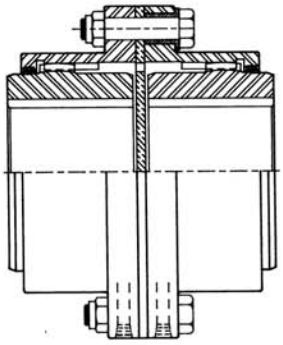
Vertical Flex-Rigid



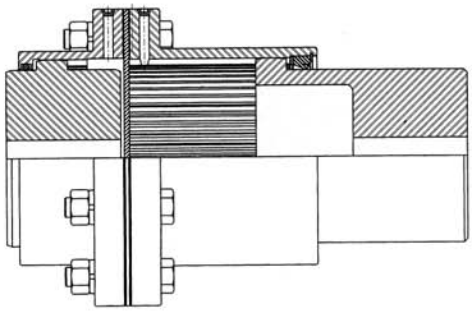
Heavy Duty Vertical Full-Flex



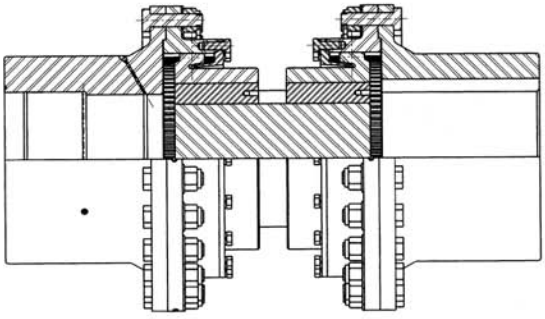
Limited End Float Full-Flex



Insulated Full-Flex



Telescopic Full-Flex



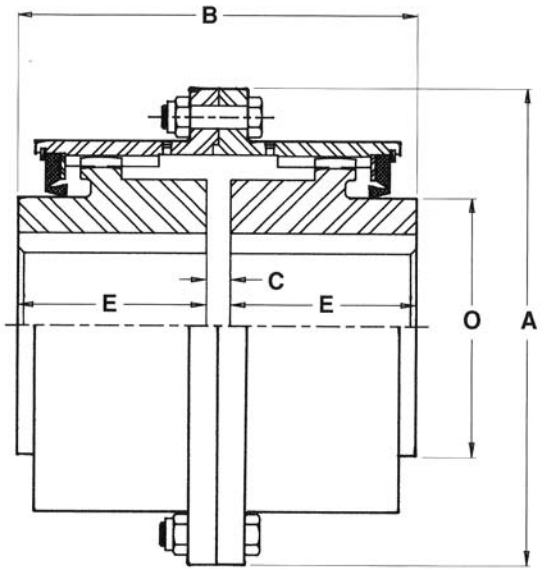
Floating Shaft Assembly With Hydraulic Removal Bore

D Series Couplings – High Misalignment, Full-Flex

D Series Full-Flex couplings accommodate offset, angular or combined misalignment.

Universally used for connecting industrial applications that are subject to higher than standard misalignment, such as oil field equipment and rolling mill drives.

Induction hardened gear teeth and lip type seals handle up to 6° misalignment.



Specifications/Dimensions

Coupling Size		100	150	200	250	300	350	400	450	500	550	600	700
Catalog No. 4901-		100-1	150-1	200-1	250-1	300-1	350-1	400-1	450-1	500-1	550-1	600-1	700-1
Design Rating		See table page 23											
Offset Misalignment	@ 3 ½ °	.092	.160	.202	.228	.274	.308	.339	.374	.411	.488	.549	.614
	@ 6 °	–	.263	.328	.374	.449	.500	.551	.604	.669	.781	.892	.991
Maximum Bore-With	1.6 Hub/Bore Ratio	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.50	7.50
	Square Key	1.13	1.63	2.13	2.63	3.13	3.63	4.13	4.63	5.25	6.00	6.75	7.75
	Reduced Key	1.19	1.75	2.25	2.75	3.38	3.88	4.38	5.00	5.75	6.50	7.25	8.25
Weight – Lbs. Solid Hubs		4.2	18	29	50	67	104	143	193	295	407	548	822
WR²-Lb.-In.²		6	60	128	253	490	1110	1720	2760	7550	9910	14400	29200
Dimensions Inches	A	3.50	6.0	6.94	8.00	9.00	10.69	11.63	12.75	14.75	16.38	18.00	20.38
	B @ 3 ½ °	3.00	4.63	5.81	6.50	7.75	8.31	9.44	10.25	11.25	12.81	14.88	17.06
	B @ 6 °	–	4.51	5.81	6.31	7.54	8.09	9.18	9.94	10.94	12.50	14.50	16.63
	C @ 3 ½ °	.188	.250	.313	.375	.438	.500	.563	.625	.625	.813	.875	1.06
	C @ 6 °	–	.375	.50	.563	.656	.719	.813	.94	.938	1.12	1.25	1.38
	E @ 3 ½ °	1.41	2.19	2.75	3.06	3.66	3.91	4.44	4.81	5.31	6.00	7.00	8.00
	E @ 6 °	–	2.06	2.56	2.88	3.44	3.69	4.19	4.50	5.00	5.69	6.62	7.63
	O @ 3 ½ °	1.75	2.28	2.88	3.69	4.38	5.00	5.63	6.44	7.44	8.63	9.25	11.00
	O @ 6 °	–	2.28	2.88	3.62	4.31	4.91	5.50	6.37	7.31	8.44	9.12	10.75

1. Exposed bolt flanges furnished as standard, sizes 600/700 furnished exposed bolt only.
2. Shrouded bolt flanges furnished when specified: Use -002 suffix; e.g.: 4901-0200-002
3. Specify misalignment angle ± 3½° or ± 6°.
4. Gear teeth are induction hardened.

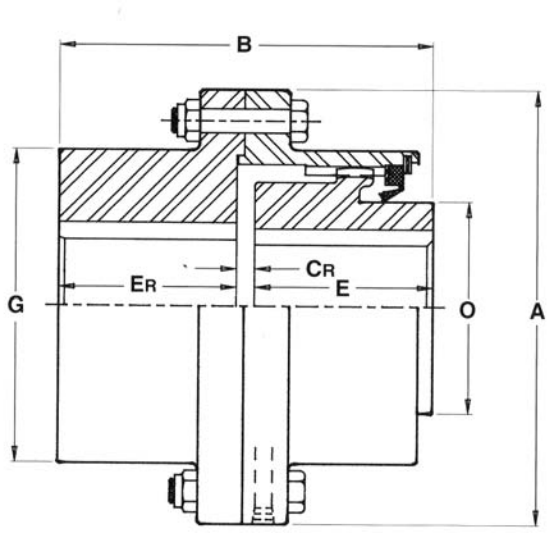
WARNING

Rotating equipment must be provided with a suitable guard before operating or injury may result. Check applicable code.

D Series Couplings – High Misalignment, Flex-Rigid

D Series Flex-Rigid couplings are commonly used in pairs with a floating shaft to connect widely separated equipment, accommodating offset, angular or combined misalignment.

Universally used for pinch roll, shear drives and tension bridles on auxiliary rolling mill equipment.



Specifications/Dimensions

Coupling Size		100	150	200	250	300	350	400	450	500	550	600	700
Catalog No. 4908-		100-1	150-1	200-1	250-1	300-1	350-1	400-1	450-1	500-1	550-1	600-1	700-1
Design Rating		See table page 23											
Flex-Hub Maximum Bore-With	1.6 Hub/Bore Ratio	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.50	7.50
	Square Key	1.13	1.63	2.13	2.63	3.13	3.63	4.13	4.63	5.25	6.00	6.75	7.75
	Reduced Key	1.19	1.75	2.25	2.75	3.38	3.88	4.38	5.00	5.75	6.50	7.25	8.25
Rigid-Hub Maximum Bore-With	1.6 Hub/Bore Ratio	1.50	2.50	3.00	3.50	4.25	4.75	5.25	6.00	6.50	7.75	9.00	10.00
	Square Key	1.75	2.75	3.25	3.75	4.50	5.25	6.00	6.50	7.50	8.50	9.50	11.25
	Reduced Key	1.81	2.94	3.38	3.88	4.69	5.50	6.50	7.00	7.75	9.00	10.00	12.00
Weight – Lbs. Solid Hubs		5	20	32	53	77	118	160	213	322	455	604	930
WR^2-Lb.-In.^{2}		6	64	200	335	553	1200	1980	3000	7240	11100	16700	33200
Dimensions Inches	A	3.50	6.0	6.94	8.00	9.00	10.69	11.63	12.75	14.75	16.38	18.00	20.38
	B @ 3 ½°	3.00	4.56	5.75	6.38	7.59	8.22	9.28	10.03	11.03	12.63	14.63	16.88
	B @ 6 °	–	4.50	5.75	6.25	7.59	8.38	9.31	10.12	11.12	12.78	14.50	16.56
	CR @ 3 ½°	.219	.188	.188	.219	.219	.250	.281	.313	.313	.313	.375	.375
	CR @ 6 °	–	.318	.378	.399	.439	.470	.531	.623	.623	.623	.755	.745
	E @ 3 ½°	1.81	2.19	2.75	3.06	3.66	3.91	4.44	4.81	5.31	6.00	7.00	8.00
	E @ 6 °	–	2.06	2.56	2.88	3.44	3.69	4.19	4.50	5.00	5.69	6.62	7.63
	ER	1.38	2.19	2.81	3.09	3.72	4.06	4.53	4.91	5.41	6.31	7.25	8.50
	O @ 3 ½°	1.75	2.28	2.88	3.69	4.38	5.00	5.63	6.44	7.44	8.63	9.25	11.00
	O @ 6 °	–	2.28	2.88	3.62	4.31	4.91	5.50	6.37	7.31	8.44	9.12	10.75
	G	2.50	3.94	4.75	5.50	6.50	7.63	8.69	9.75	10.88	12.38	13.75	15.88

1. Exposed bolt flanges furnished as standard, sizes 600/700 furnished exposed bolt only.
2. Shrouded bolt flanges furnished when specified: Use -002 suffix; e.g.: 4908-0200-002
3. Specify misalignment angle ± 3½° or ± 6°.
4. Gear teeth are induction hardened.
5. Offset capacity is dependent upon shaft length.

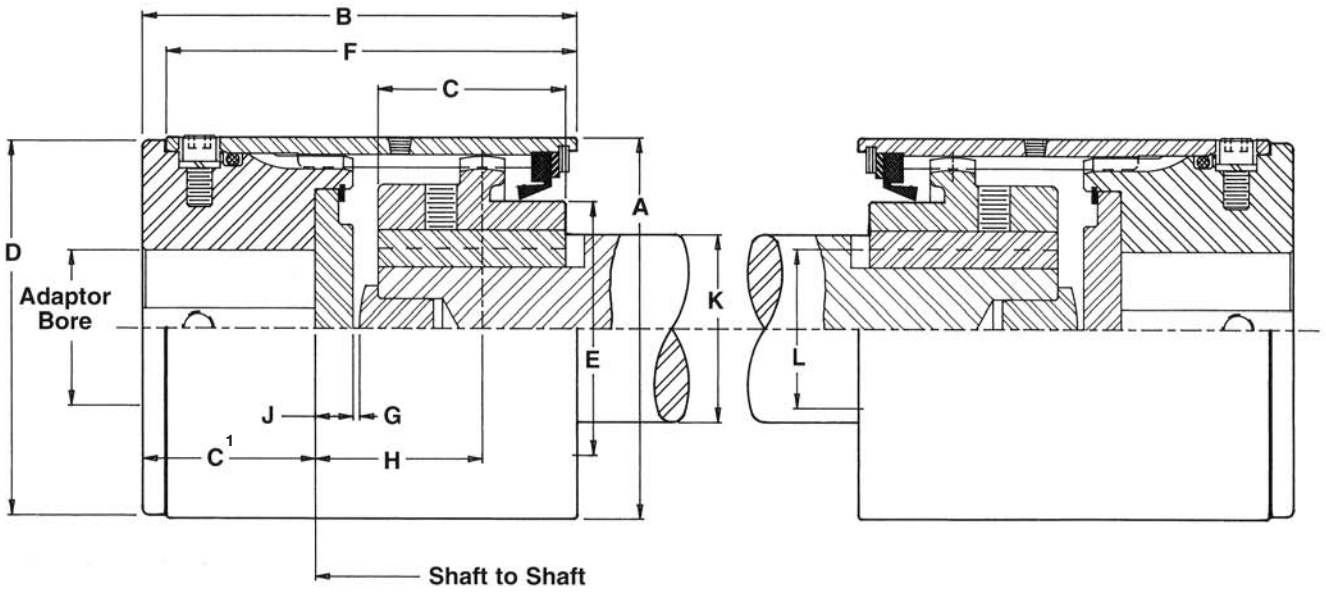
NOTE: Consult Renold with application data for review.

IMPORTANT - when used as a floating shaft arrangement, check critical speed vs. operating speed.
SOLID SHAFT

$$N_1 \text{ (1st Critical)} = \frac{4.7 \times 10^6 \times D}{L^2} > 1.5 \times \text{max. operating speed.}$$

DS Series Spindle Couplings

DS Series Spindle couplings are used where frequent vertical roll removal is required. They are also suitable for clustered applications such as levelers, tube mills, etc.



Specifications/Dimensions

Size	Max. Adaptor Bore (inches)	A	B	C 3.5°	C 6.0°	C1	D	E 3.5°	E 6.0°	F	G	H	J	K	L	Wgt. Lbs. Less Shaft
150	2.56	4.00	5.44	2.19	2.06	2.75	3.75	2.28	2.28	5.34	0.13	1.75	0.38	1.63	1.38	32
200	3.00	5.00	6.38	2.75	2.56	3.22	4.44	2.88	2.88	6.25	0.09	1.94	0.31	2.00	1.75	60
250	3.06	5.75	7.16	3.06	2.88	3.38	4.38	3.69	3.63	6.31	0.09	2.50	0.63	2.50	2.25	86
300	3.81	6.75	8.63	3.66	3.44	4.31	5.50	4.38	4.31	7.25	0.13	2.88	0.63	3.00	2.75	136
400	5.25	9.00	11.47	4.44	4.19	6.06	7.50	5.63	5.50	9.41	0.09	3.50	0.75	4.00	3.75	316

1. DS Series spindles are designed to operate at normal mill speeds. Consult Renold for operation at high torque, angle and speed.
2. Specify misalignment angle (load and no load) and shaft-to-shaft spacing when ordered.
3. Gear teeth are induction hardened.
4. Offset capacity is dependent on shaft length.

IMPORTANT — Check critical speed when used as a Floating Shaft.

SOLID SHAFT

N_1 (1st Critical) = $\frac{4.7 \times 10^6}{L^2}$ x D > 1.5 x max. operating speed.

Parallel offset capacity

Offset = [(shaft to shaft) - 2H] (Sine of the angle)

Sine 3½° = .061

Sine 6° = .104

WARNING

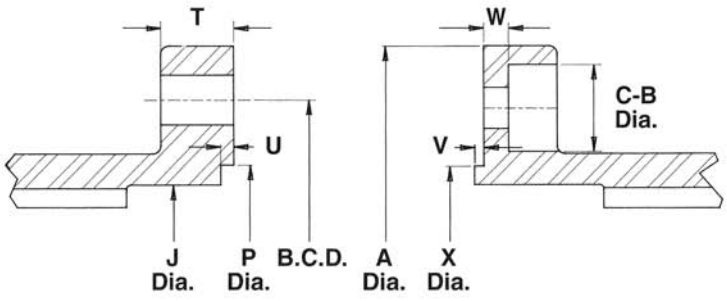
Rotating equipment must be provided with a suitable guard before operating or injury may result. Check applicable code.

D Series and DS Gear Tooth Design Ratings and Engineering Layout Details

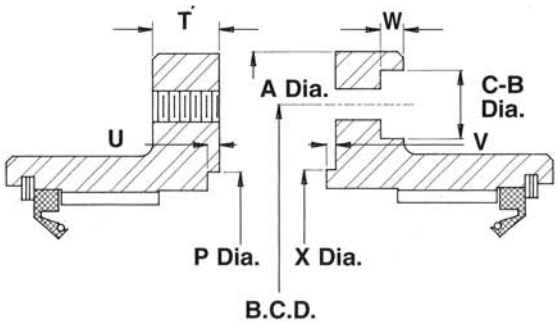
D Series High Misalignment and DS Spindle Couplings
Gear Tooth Design Rating; in-lb X 10^3 *

MAXIMUM MISALIGNMENT		± 3 ½° PER GEAR MESH			± 6 ° PER GEAR MESH					
OPERATING ANGLE		1°	2°	3°	1°	2°	3°	4°	5°	6°
COUPLING SPINDLE SIZE	100	7.5	5.3	3.8	–	–	–	–	–	–
	150	23.0	16.4	11.5	14.9	10.6	7.5	5.3	3.9	2.6
	200	36.3	25.9	18.2	23.6	16.8	11.8	8.4	6.3	4.2
	250	85.0	60.7	42.6	48.2	34.4	24.1	17.2	12.8	8.6
	300	126.0	90.0	63.2	71.3	51.0	35.8	25.5	19.0	12.7
	350	214.5	153.3	107.6	121.9	87.2	61.2	43.5	32.6	21.8
	400	286.5	204.7	143.7	162.8	116.3	81.7	58.2	43.5	29.1
	450	517.3	369.6	259.5	313.1	223.7	157.1	111.8	83.6	55.9
	500	647.8	462.8	325.0	392.1	280.1	196.7	140.0	104.7	70.0
	550	855.2	611.0	429.0	517.6	296.3	259.6	184.8	138.2	92.4
	600	1371.5	980.0	688.1	833.4	595.5	418.1	297.6	222.6	148.8
	700	1866.8	1333.8	936.6	1134.4	810.6	569.1	405.1	303.0	202.6

*Be sure to apply appropriate service factors.



Size 150 through 700



Size 100

Flange Details – Shrouded and Exposed Bolts

Size	A	B.C.D.	Flange Bolts Number –Size	T	W	C – B	J	U	V	P	X
100	3.50	3.00	(6)-#10-32	.59	.23	.34	2.34	.13	.09	2.628	2.625
150	6.00	4.94	(8) - 5/16	.69	.31	.94	3.25	.13	.09	3.626	3.624
200	6.94	5.81	(8) - 3/8	.75	.28	1.00	4.06	.13	.09	4.376	4.374
250	8.00	6.69	(10)-1/2	.94	.31	1.13	4.88	.16	.13	5.251	5.249
300	9.00	7.69	(12)-1/2	.94	.31	1.13	5.88	.16	.13	6.251	6.249
350	10.69	9.06	(12)-5/8	1.13	.38	1.38	6.75	.19	.16	7.251	7.249
400	11.63	10.13	(14)-5/8	1.13	.38	1.38	7.78	.22	.19	8.251	8.249
450	12.75	11.19	(14)-5/8	1.13	.38	1.38	8.88	.22	.19	9.501	9.499
500	14.75	12.75	(14)-3/4	1.50	.56	1.75	9.88	.22	.19	10.501	10.499
550	16.38	14.25	(16)-3/4	1.50	.56	1.75	11.31	.22	.19	11.8135	11.8115
600	18.00	15.75	(14)-7/8	1.19	1.19	–	12.63	.25	.22	13.501	13.499
700	20.38	17.88	(16)-1.00	1.25	1.25	–	14.63	.25	.22	15.501	15.499

NOTE: Consult Renold for certified dimensions.

Lubrication is essential

If you are getting short life from your couplings, the first thing to check is your lubricant. Proper lubrication is essential to minimize heat generation and assist in heat dissipation when operating in a misaligned condition. Application experience shows that couplings almost always fail from overheating. Most commercial lubricants are developed for high-volume applications such as bearings and do not possess sufficient performance characteristics for coupling applications. Gear type couplings require specially compounded lubricants formulated with highly refined base oils that have naturally high viscosity indexes, excellent extreme pressure qualities, water resistance and adhesiveness. To select an appropriate lubricant, check the technical data specifications for the following:

- The grease should be compounded with a minimum soap base made of select high-quality thickeners, such as aluminum complex for best performance.
- The grease should, at a minimum, include additives for extreme pressure, rust prevention, adhesiveness, high load carrying capability, boundary lubrication and water resistance.
- Base oils should possess natural viscosity indexes above 90. The viscosity of the base oils should be no less than 80 SUS at 100°C. The minimum flash point of the base oil should be 475°F. Products containing synthetic base oils should be of the Polyalphaolefin (PAO) synthetic base oil family.
- The grease should have good low temperature pumping characteristics and should require no more than 1,500 psi applied pressure @ 0°F on the Lincoln ventometer test. The grease should not require heating.
- Molybdenum disulfide, graphite, PTFE and antimony are excellent additives for extreme pressure and boundary lubrication but will separate out at high rpm. For shaft speeds over 1,500 rpm, a lubricant void of solids should be used, with the exception of Molybdenum Dibutyldithiocarbamate. This is a synthetic form of Molybdenum that is solubilized and will not separate or centrifuge out of lubricants.

If the lubricant you are using does not appear on the spindle manufacturer's recommended list, refer to the previous information for minimum grease performance specifications or call Renold Ajax.

RENOLD AJAX recommends use of the following types of lubricants:

High Speed – above 1,500 RPM

AMOCO	Coupling Grease
ANDEROL	Anderol 786
MOBIL	Mobilgrease XTC
SCHAEFFER	248R Moly Syngard 2000 EP2
SHELL	Alvania Grease CG
TEXACO	Coupling Grease 1912

Medium Speed – between 800 and 1,500 RPM

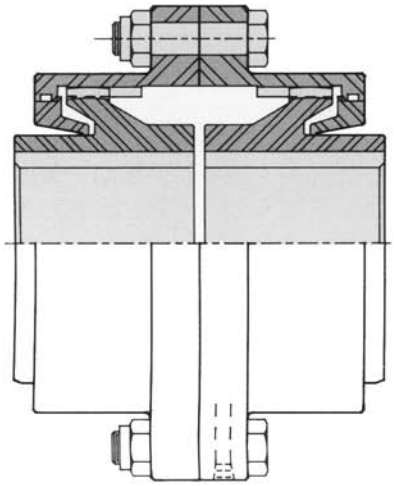
AMOCO	Coupling Grease
MOBIL	Mobilgrease XTC
MOBIL	Mobilux EP111
SCHAEFFER	279R Spindle Compound
SHELL	Alvania Grease CG
TEXACO	Coupling Grease 1912

Low Speed–Below 800 RPM

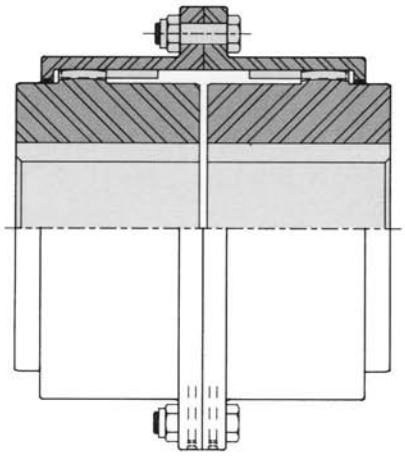
AMOCO	Coupling Grease
MOBIL	Mobilux EP111
SCHAEFFER	279R Spindle Compound
SCHAEFFER	200SR Silver Streak
SHELL	Alvania Grease CG
TEXACO	Coupling Grease

Frequency

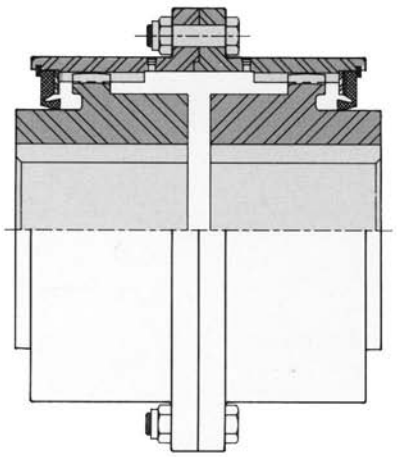
Gear couplings should be lubricated a minimum of every six months or sooner if the application requires. When installing a coupling, be sure to also hand-pack the teeth with grease prior to greasing by normal methods to ensure the teeth will not run dry for the first few minutes of operation until the lubricant works its way to the gear mesh. If operating temperatures of coupling sleeves exceed 130°F/55°C, check the lube level, misalignment and operating torque. When possible, add lubricant until fresh lubricant appears at the discharge. This purge method keeps lubricant properties at their best and contaminants to a minimum.



Metal Seal



O-Ring Seal



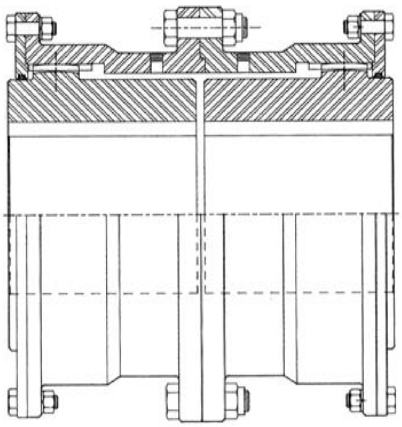
High Misalignment

1. Inspect and clean all parts.
2. Apply a light coat of selected lubricant to gear teeth (if O-Ring style, coat O-Ring and seal hub diameter).
3. Place sleeve ring gear over shaft.
4. Coat shaft with anti-galling compound. Insert key in keyway and check to assure a snug side-to-side fit.
5. Heat hubs in oil or oven to approximately 300°F (148°C); do not exceed 350°F (176°C). Slip hubs onto shaft to correct position and allow to cool. (Clearance fits are only used for light duty applications and have set screws. Tighten firmly.)
6. Align equipment, using straight-edge and feeler gauge or dial indicator. Alignment and shaft gap must be within design limits of coupling and should be best economically possible.
7. Coat coupling gear teeth with selected lubricant.
8. Pull sleeve ring gear over hub, engaging gear teeth.
9. Inspect flange gasket for damage. Clean flanges and insert gasket between flanges. (If gasket is damaged, use Permatex or equal.)
10. Draw flanges together, aligning bolt holes. Insert bolts and tighten with lockwasher and nut.
11. Position coupling so two (2) lube holes, 180° apart, are horizontal. Remove these lube plugs. Pump lubricant into one hole until discharged from hole at 180°. Replace and tighten plugs.
    Note: In case of floating shaft, spacer or similar type design, each end must be lubricated.
12. Recheck all mechanical connections to make certain they are tight.

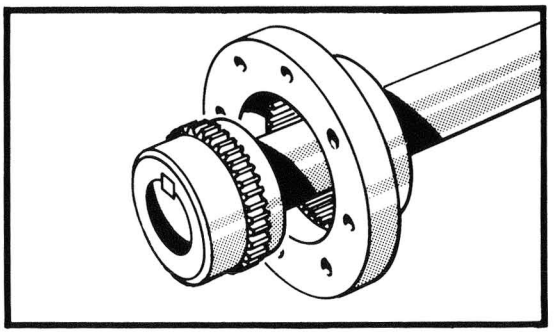
INSTALL COUPLING GUARD.

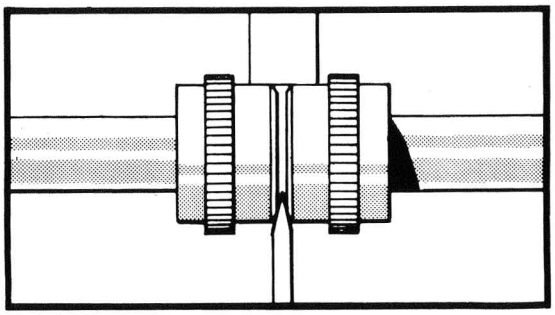
WARNING

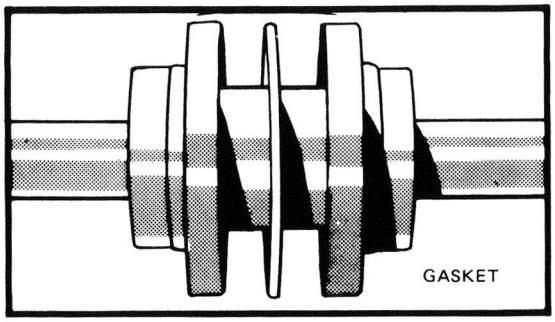
Rotating equipment must be provided with a suitable guard before operating or injury may result. Check applicable code.

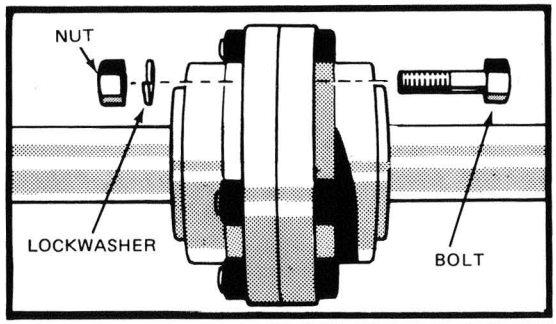


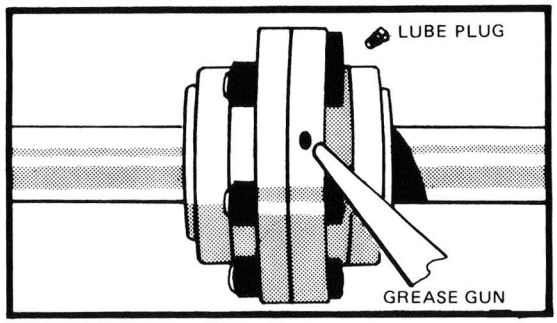
Heavy Duty











STANDARD SIZES
Metal Seal – O-Ring Seal

Coupling Size		1	1½	2	2½	3	3½	4	4½	5	5½	6	7
Hub Separation	Full-Flex	.13	.13	.13	.19	.19	.25	.25	.31	.31	.31	.31	.38
	Flex-Rigid	.16	.16	.16	.19	.19	.22	.31	.34	.34	.34	.41	.50
Alignment	Offset	.005	.005	.010	.010	.012	.012	.012	.012	.012	.012	.012	.012
	Angular	.005	.005	.010	.010	.015	.015	.020	.020	.020	.030	.030	.030
Grease Lb.-Oz.	Full-Flex	0-2	0-3	0-5	0-8	1-0	1-7	2-0	3-3	5-0	6-2	8-0	13-0
	Flex-Rigid	0-1	0-2	0-3	0-4	0-8	0-12	1-0	1-10	2-8	3-1	4-0	6-8
Bolt Torque Ft.-Lbs.	Exposed	10	30	70	130	130	220	220	220	310	310	310	450
	Shrouded	10	30	30	70	70	130	130	130	220	220	–	–
RPM Maximum		3600	3600	3600	3600	3600	3600	3290	2930	2630	2320	2120	1930

HEAVY DUTY SIZES
Metal Seal – O-Ring Seal

Coupling Size			8	9	10	11	12	13	14	15
Hub Separation		Full-Flex	.38	.50	.50	.50	.50	.75	.75	.75
		Flex-Rigid	.50	.56	.63	.63	.63	.75	.75	.75
Alignment – Full Flex		Offset	.015	.015	.015	.015	.015	.020	.020	.020
		Angular	.030	.030	.030	.030	.030	.030	.040	.040
Alignment – Flex-Rigid		Angular	.030	.030	.030	.030	.030	.030	.040	.040
Lubricant Full-Flex	O-Ring Seal	Grease–Lb.	17	21	25	32	36	40	52	57
		Oil–U.S. Gal.	2.3	2.8	3.3	4.2	4.8	5.3	6.2	6.9
	Metal Seal	Grease–Lb.	14	24	28	38	42	48	56	62
		Oil–U.S. Gal.	.75	1.2	1.5	2	2.2	2.7	3.2	4.5
Lubricant Flex-Rigid	O-Ring Seal	Grease–Lb.	9	11	13	16	18	20	23	26
		Oil–U.S. Gal.	1.2	1.4	1.7	2.1	2.4	2.7	3.1	3.5
	Metal Seal	Grease–Lb.	7	12	14	19	21	24	28	31
		Oil–U.S. Gal.	.38	.6	.75	1	1.1	1.4	1.6	2.3
Bolt Torque – Ft.-Lbs.		Cntr. Flange	530	750	750	1200	1200	1200	2250	2250
		End Flange	160	245	245	245	245	545	545	545
Maximum RPM			1750	1625	1500	1330	1230	1080	950	790

Coupling Size			16	18	20	22	24	26	28	30
Hub Separation		Full-Flex	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		Flex-Rigid	1.00	1.00	1.00	1.13	1.13	1.13	1.13	1.13
Alignment – Full Flex		Offset	.020	.020	.020	.020	.030	.030	.040	.040
		Angular	.040	.040	.040	.040	.060	.060	.080	.080
Alignment – Flex-Rigid		Angular	.040	.040	.040	.040	.060	.060	.080	.080
Lubricant Full-Flex	O-Ring Seal	Grease–Lb.	57	66	85	116	144	160	176	208
		Oil–U.S. Gal.	7.6	8.8	11.3	14.5	18	20	22	26
	Metal Seal	Grease–Lb.	75	88	120	150	175	195	200	220
		Oil–U.S. Gal.	5.5	6	9.5	11.2	13.5	15	16.5	19.5
Lubricant Flex-Rigid	O-Ring Seal	Grease–Lb.	29	33	43	58.4	72	80	88	104
		Oil–U.S. Gal.	3.8	4.4	5.6	7.3	9	10	11	13
	Metal Seal	Grease–Lb.	38	44	60	75	88	98	100	110
		Oil–U.S. Gal.	2.2	3	4.8	5.6	7	7.5	8.2	9.8
Bolt Torque – Ft.-Lbs.		Cntr. Flange	3300	3300	4400	5700	7000	7000	8400	8400
		End Flange	545	545	875	875	875	875	875	875
Maximum RPM			660	460	360	300	250	225	200	200

Ajax Pin and Bush Couplings

The Pin and Bush coupling complements Ajax's line of standard gear type couplings. Hundreds of thousands have been applied on all types of direct connected industrial equipment resulting in long life with minimum maintenance.

Ajax Pin and Bush Flexible Couplings are usually applied on equipment when misalignment does not exceed ± ½°.

Application and selection of these couplings will be simplified when using this catalog. Modified and special couplings are also available for unusual applications and can be designed to your details.

Whether you need couplings for replacement, new installation or as OEM components, Ajax Sales Engineers are ready to work with you on all applications, large or small.

General Information

- Fail safe design.
- Misalignment capacity ± ½° angular.
- Protects against unavoidable misalignment.
- Cushions vibration and shock.
- No lubrication required.
- Operates horizontally or vertically.
- Permits free end float.
- Furnished with Urethane or Neoprene 60/65 Bronze bushings.
- Simple to install, align and maintain.
- All surfaces accurately machined.
- Available in many sizes, types and designs, including specials.
- All couplings bored and keywayed to your exact requirements.
- And most important — ***SERVICE***... when you want it, when you need it.

Typical Applications

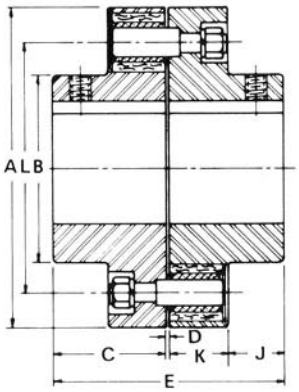
- Agitators
- Air Pumps
- Compressors
- Chemical Equipment
- Cold Forming Machines
- Conveyors
- Plastic Molding Machinery
- Pumps, Hydraulic
- Shavers
- Woodworking Machinery
- Cranes
- Drills
- Dynamometers
- Elevators
- Fans
- Fire Pumps
- Food Processing Equipment
- Furnaces
- Hoists
- Motors
- Oil Field Equipment
- Packaging Machinery

Cast Iron Couplings – Forged Steel Couplings

Type PB
Cast Iron Couplings

Provide more shaft capacity per dollar and a little less torque capacity than heavy duty Type S couplings. Suitable for all medium duty applications. Normally supplied with Urethane bushings unless Neoprene bushings are specified.

Size	H.P. @ 100 R.P.M.	Torque Lb.–In. X10³	Max. Bore	Max R.P.M.	A	B	C	D	E	J	K	L	Studs and Bushings		Approx Weight Lbs.
													No. Req.	Size No.	
1PB	2.5	1.6	1.12	3600	4.68	1.88	1.44	.09	2.97	.62	.81	3.12	6	4	7
1½PB	7.1	4.5	1.88	3600	6.56	2.81	2.19	.12	4.50	1.00	1.19	4.50	6	5	23
2PB	17.5	11.0	2.56	3200	8.38	3.88	2.69	.12	5.50	1.25	1.44	5.94	8	6	46
2½PB	28.6	18.0	3.25	2700	10.00	5.00	3.38	.12	6.88	1.69	1.69	7.38	8	7	80
3PB	39.7	25.0	4.00	2400	11.00	6.12	3.15	.12	7.62	2.06	1.69	8.38	10	7	110
3½PB	46.0	29.0	4.88	2200	12.00	7.00	4.25	.12	8.62	2.56	1.69	9.38	10	7	148
4PB	61.9	39.0	5.25	2000	13.25	7.62	4.75	.12	9.62	2.81	1.94	10.25	10	8	202



Type S
Forged Steel Couplings

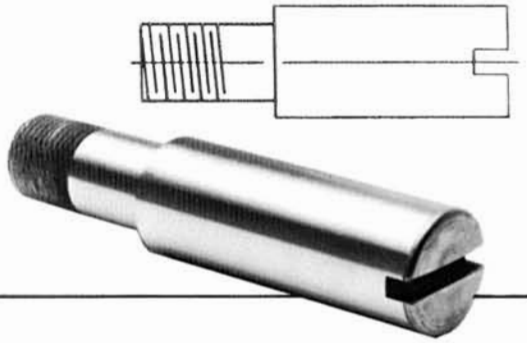
Heavy duty Type S couplings are recommended for high torque and where operating conditions are severe. Drive studs and bushings are located closely on their bolt circles to gain maximum torque capacity. Normally supplied with Urethane bushings unless Neoprene bronze bushings are specified.

Size	H.P. @ 100 R.P.M.	Torque Lb.–In. X10³	Max. Bore	Max R.P.M.	A	B	C	D	E	J	K	L	Studs and Bushings		Approx Weight Lbs.
													No. Req.	Size No.	
1S	3.2	2.0	1.12	3600	4.38	1.88	1.75	.09	3.59	.88	.88	3.00	8	4	7
1½S	6.4	4.0	1.62	3600	5.50	2.50	2.25	.09	4.59	1.12	1.12	3.88	8	4½	16
2S	12.5	7.9	2.00	3600	6.12	3.25	2.25	.12	4.62	1.12	1.12	4.50	12	4½	19
2½S	17.5	11.0	2.50	3600	7.25	4.06	2.50	.12	5.12	1.25	1.25	5.12	12	5	33
3S	29	18.4	3.00	3600	8.62	4.94	3.00	.12	6.12	1.50	1.50	6.62	12	6	58
3½S	53	33.6	3.50	3600	10.12	5.94	3.50	.12	7.12	1.75	1.75	7.88	14	7	92
4S	74	46.7	4.00	3600	11.00	6.56	4.00	.12	8.12	2.00	2.00	8.62	14	8	127

NOTES:

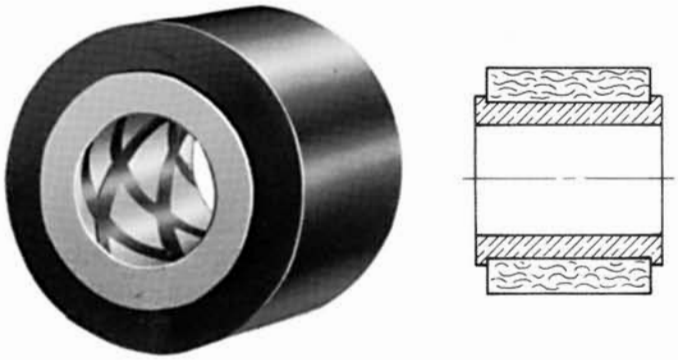
1. Maximum bores can be slightly increased by using flat keys or relocating set screws.
2. Hubs can be modified to your specifications.
3. Larger sizes are available upon request.
4. When ordering, please specify bore size for each flange, tolerances, keyway size or sketch of your requirements.

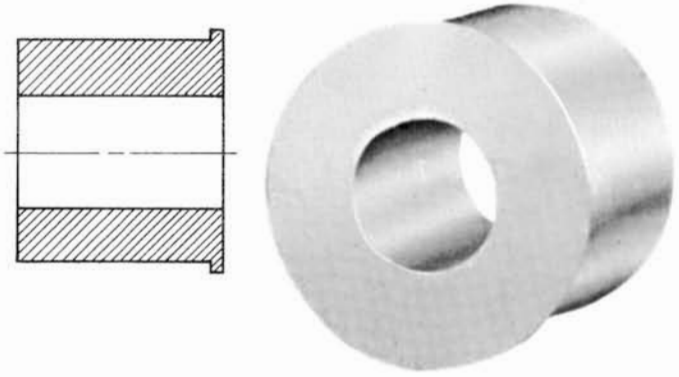
Service Parts for Ajax Pin and Bush Couplings



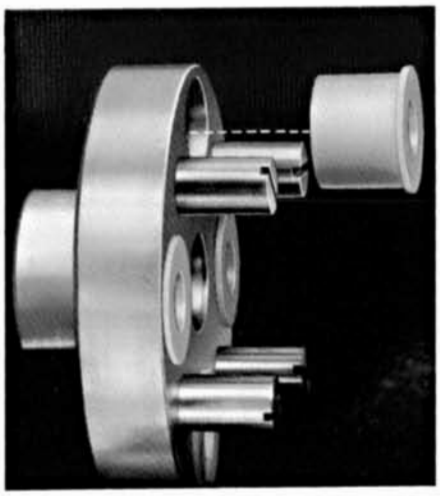
Pins/Studs
High tensile alloy steel pins for high torque applications and extra long life.

Neoprene/Bronze Bushings
Simple to install and replace. No lubrication required. Withstands temperatures of -65° to 285°F. Resistant to damage by moisture and most chemicals. Electrically insulating, vibration dampening, performance proven.



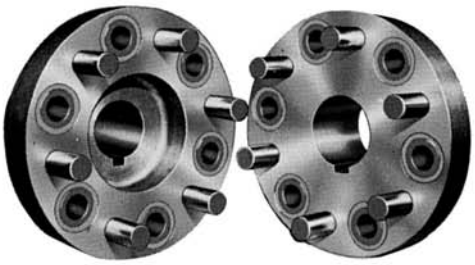


Urethane Bushings
Simple to install and replace. No lubrication required. Withstands temperatures of -65° to 200°F. Resistant to damage by moisture and most chemicals. Electrically insulating, vibration dampening, performance proven. Because the bushing is of a flange design, cementing or bonding is not required

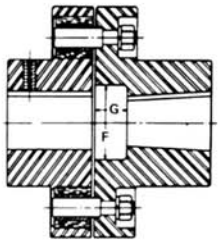


Stud & Bushing Sizes:	Fit Coupling PB Series, Sizes:	Fit Coupling S Series, Sizes:	Fit Obsolete Coupling Sizes:
3	—	—	3/4A, 412, 423
4	1	1	1A, 1-1/4A, 417
4-1/2	—	1-1/2, 2	422
5	1-1/2	2-1/2	1-3/8A, 1-1/2A, 1-3/4A, 427
6	2	3	2A, 2-3/8A
7	2-1/2, 3, 3-1/2	3-1/2	2-3/4A, 3-1/8A
8	4	4	3-5/8A, 4A, 4-1/2A, 5A, 5-1/2A
9	—	4-1/2	6A
10	—	5, 6	6-1/2A

Special Pin and Bush Couplings

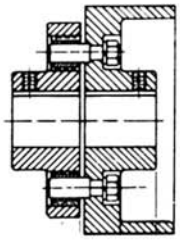


Mill Motor



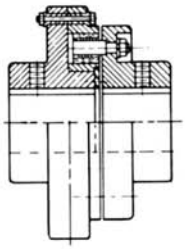
Basic design is established from Type S couplings. Halves are interchangeable so that spare motors with half coupling mounted can be quickly installed. Usually one half (long hub flange) is taperbored and counter-bored to fit tapered shafts having shaft end nut.

Brake Drum



For use on hoists, winches, cranes, elevators and other applications requiring a brake. Since lubrication is not required, there is no danger of lubricant contaminating brake surfaces.

Shear Pin



Positive overload protection for all direct connected industrial equipment. Hard steel shear bushing cleanly cuts pin at predetermined overload point. Such Ajax couplings are commonly used on pulverizers, mixers and conveyors.

How to Select the Proper Pin and Bush Coupling

Horsepower and Torque Ratings:

Ratings for various sizes of Ajax couplings are shown in horsepower at 100 RPM, and lb.-in. of torque as well.

Catalog load ratings of Ajax couplings represent the maximum even torques which can be transmitted continuously under ordinary operating conditions. Excessive misalignment, pulsating load, shock, vibration and other factors may, and often do, dictate the size coupling required for any specific application, regardless of theoretical torque load to be transmitted.

Reasonable care should always be used in installing equipment and in securing good initial alignment of shafts.

$$\text{Torque Lbs./Inches} = \frac{63025 \times \text{Horsepower}}{\text{Revolutions per Minute}}$$

$$\text{H.P. @ 100 RPM} = \frac{100 \times \text{Horsepower}}{\text{Revolutions per Minute}}$$

Service Factors:

Load ratings of various makes of couplings, as listed by manufacturers, are of little value on a comparative basis. Service or load factors, as recommended by one manufacturer, may be misleading if applied to couplings of different designs.

The service factor to be used in any given instance is based on experience rather than theory. Specific conditions, as well as general classification of the drive, should be taken into consideration. A table of service factors setting forth a list of common applications cannot possibly be complete, and therefore, would be of doubtful value.

However, there are a few general applications where our experience has dictated the use of the following service factors.

A service factor of 3 should be applied for those applications for compressors, internal combustion engines, dredge pumps, pulverizers (non-reversing loads) and other driving mechanisms subject to pulsating loads or heavy vibrations.

Occasionally on some diesel engine drives there is a reverse torque, in such cases a service factor of 5 is not too much.

On most applications, the engineer will find that when he has selected an Ajax coupling of sufficient shaft capacity, torque capacity will be ample.

How to Select the Correct Size:

1. Choose the size of coupling that is large enough to accommodate the larger of the two shafts to be connected.
2. Check the horsepower rating or torque capacity to see if the coupling selected will carry the load with ample service factor to guarantee long life.
3. If the coupling tentatively selected apparently lacks sufficient torque capacity, use a larger size.

In order to furnish a coupling that can be correctly mounted, we must know the exact bore and keyway for each half of the coupling. Bore and keyway dimensions should be furnished with tolerances to insure the required fit on the shafts.

The above applies to the standard type of coupling. When ordering shear pin, mill motor, bolt-on, brake drum and other types involving individual specifications, complete information should be furnished in accordance with the requirements of the installation.

Full cooperation of the Ajax Engineering Department and Sales Representatives is available to aid you in the most economical selection.

Stud and Neoprene Bronze Bushing Assembly

PARTS LIST FOR AJAX FLEXIBLE COUPLINGS

Stud & Neoprene Bronze Bushing Replacement Instructions

Stud Removal and Replacement

A. Loosen and remove nuts and lockwashers. If badly corroded, apply penetrating oil to aid in removing "frozen" nut.

B. Drive stud assembly out of coupling flange.

C. Clean stud holes with solvent and airblast them to remove foreign matter. Check and make sure no burrs exist.

D. Coat shank of new stud assembly with white lead.

E. Press stud assembly into coupling until it "bottoms" in the stud counter-bore.

F. Replace lockwashers and nuts and tighten securely.

NOTE: A slightly worn stud can be rotated to present a new wearing surface to the bearing assembly, thus doubling the life of the existing stud assembly.

Bushing Removal and Replacement

A. Whenever possible, remove coupling from driving and driven shafts and use a press to remove old bushings. Installation of new parts can thus be made more quickly.

B. After bushings have been removed, clean all bushing holes to bare metal with solvent and airblast. No residue or oil should remain.

C. Coat each bushing hole with two coats of cement, allowing drying time between each coat. Use Pliobond Bushing Cement.

D. Dip one bushing at a time in acetone, or any alkali degreaser. This softens the cement-coated bushings and allows them to slide into the bushing hole without setting up. Work quickly, but do only one at a time. Do not soak other bushings until needed.

E. After all bushings are replaced, do not operate equipment for at least one hour.

NOTE: Heat or vapor degreasing unit can be used to soften the bond on old bushing assemblies, making it easier to press them out.

Stud and Bushing Size Chart

Part Size	Fits Coupling Size
3	3/4A, 412, 423
4	1PB, 1A, 1-1/4A, 1S, 417, 523
4-1/2	1-1/2S, 2S, 422
5	1-1/2PB, 1-1/2A, 1-3/4A, 2-1/2S, 427
6	2PB, 2A, 2-3/8A, 3S
7	2-1/2PB, 3PB, 3-1/2PB, 2-3/4A, 3-1/8A, 3-1/2S
8	4PB, 3-5/8A, 4A, 4-1/2A, 5A, 5-1/2A, 4S
9	6A, 4-1/2S
10	6-1/2A, 5S, 6S

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