ASC Engineered Solutions

Reducing Coupling
Fig. RC-2

LPS 1219: Issue 3.1
Cert/LPCB ref. 519a/24

c UL us LISTED · FM APPROVED · VdS

The RC-2 Reducing Coupling makes it possible to directly connect two different pipe sizes, eliminating the need for two couplings and a reducing fitting. The specially designed reducing coupling gasket with a center rib assures proper positioning of the gasket and prevents the smaller pipe from telescoping into the larger during assembly.

Working pressure ratings shown are for reference only and are based on schedule 40 pipe. For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, see www.asc-es.com or contact your local ASC Engineered Solutions™ Representative.

For Listings/Approval Details and Limitations, visit our website at www.asc-es.com or contact an ASC Engineered Solutions™ Sales Representative.

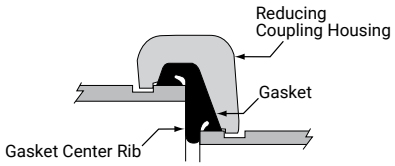


Fig. RC-2 Coupling complete with Grade "E" EPDM Gasket

Material Specifications

Housing
Ductile Iron conforming to ASTM A536, Grade 65-45-12

Bolts
☐ SAE J429, Grade 5, Zinc Electroplated
☐ ISO 898-1, Class 8.8, Zinc Electroplated followed by a Yellow Chromate Dip

Heavy Hex Nuts
☐ ASTM A563, Grade A, Zinc Electroplated
☐ ISO 898-2, Class 8.8, Zinc Electroplated followed by a Yellow Chromate Dip

Coatings
☐ Rust inhibiting paint
Color: Orange (Standard)
☐ Hot Dipped Zinc Galvanized (Optional)
☐ Other available options
(Example: RAL3000 or RAL9000 Series)

For other coating requirements contact an ASC Engineered Solutions Representative.

Lubrication
☐ Standard Gruvlok
☐ Gruvlok Xtreme recommended for freezer applications

Gasket Materials
Properties as designated in accordance with ASTM D2000

☐ **Grade "E" EPDM** (Green color code)

-40°F to 230°F (Service Temperature Range)
(-40°C to 110°C)

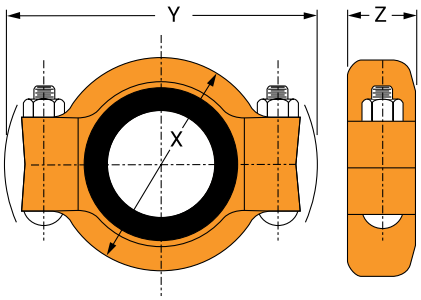
Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.

NOT FOR USE IN PETROLEUM APPLICATIONS.

S/A SPF ANVIL
An ASC Engineered Solution

PROJECT INFORMATION	APPROVAL STAMP
Project:	☐ Approved
Address:	☐ Approved as noted
Contractor:	☐ Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

Reducing Coupling
Fig. RC-2



Nominal Size	Larger O.D.	Smaller O.D.	Max. Working Pressure ▲	Max. End Load	Range of Pipe End Separation	Deflection from ℄		Coupling Dimensions			Coupling Bolts		Specified Torque §		Approx. Wt. Ea.
						Per Coupling	Pipe	X	Y	Z	Qty.	Size	Min.	Max.	
In./DN(mm)	In./mm	In./mm	PSI/bar	Lbs./kN	In./mm	Degrees	In./Ft.-mm/m	In./mm	In./mm	In./mm		In./mm	Ft.-Lbs./N-m	Ft.-Lbs./N-m	Lbs./kg
2 x 1½	2.375	1.900	300	1,329	0-1/32	0° 45'	0.16	3⅝	5⅞	1⅞	2	½ x 2¾	80	110	2.0
50 x 40	60.3	48.3	20.7	5.19	0-0.79		13.1	92	149	48		M12 x 76	110	150	0.9
2½ x 2	2.875	2.375	300	1,948	0-1/32	0° 37'	0.13	4¼	6⅜	1⅞	2	½ x 2¾	80	110	3.5
65 x 50	73.0	60.3	20.7	8.67	0-0.79		10.9	108	162	48		M12 x 76	110	150	1.6
3 O.D. x 2	2.996	2.375	300	2,115	0-⅛	0° 36'	0.12	4¼	6⅜	1⅞	2	½ x 2¾	80	110	3.3
76 x 60	76.1	60.3	20.7	9.41	0-3.2		9.9	108	162	48		M12 x 76	110	150	1.5
3 x 2	3.500	2.375	300	2,886	0-1/32	0° 31'	0.11	4⅞	7⅛	1⅞	2	½ x 2¾	80	110	4.4
80 x 50	88.9	60.3	20.7	12.84	0-0.79		8.9	124	181	48		M12 x 76	110	150	2.0
3 x 2½	3.500	2.875	300	2,886	0-1/32	0° 31'	0.11	4⅞	7⅛	1⅞	2	½ x 2¾	80	110	4.1
80 x 65	88.9	73.0	20.7	12.84	0-0.79		8.9	124	181	48		M12 x 76	110	150	1.9
3 x 3 O.D.	3.500	2.996	300	2,886	0-⅛	0° 31'	0.11	4⅞	7⅛	1⅞	2	½ x 2¾	80	110	4.0
88 X 76	88.9	76.1	20.7	12.84	0-3.2		8.9	124	181	48		M12 x 76	110	150	1.8
4 x 2	4.500	2.375	300	4,771	0-3/32	1° 12'	0.25	6¼	8⅞	2	2	⅝ x 3½	100	130	8.9
100 x 50	114.3	60.3	20.7	21.22	0-2.38		20.8	159	225	51		M16 x 95	135	175	4.0
4 x 2½	4.500	2.875	300	4,771	0-3/32	1° 12'	0.25	6¼	8⅞	2	2	⅝ x 3½	100	130	7.9
100 x 65	114.3	73.0	20.7	21.22	0-2.38		20.8	159	225	51		M16 x 95	135	175	3.6
4 x 3	4.500	3.500	300	4,771	0-3/32	1° 12'	0.25	6¼	8⅞	2	2	⅝ x 3½	100	130	6.7
100 x 80	114.3	88.9	20.7	21.22	0-2.38		20.8	159	225	51		M16 x 95	135	175	3.0
4 x 3 O.D.	4.500	2.996	300	4,771	0-3/16	1° 12'	0.25	6¼	8⅞	2	2	⅝ x 3½	100	130	7.6
114 X 76	114.3	76.1	20.7	21.22	0-4.8		20.8	159	225	51		M16 x 95	135	175	3.5

Note:

Not for use in copper systems.

Range of Pipe End Separation and Angular Deflection values are for roll grooved pipe and may be doubled for cut groove pipe.

See technical data section for coupling data chart notes.

▲ – Working Pressure Ratings are for reference only and based on Sch. 10 and Sch. 40 pipe. For the latest UL/ULC, FM, VdS and LPCB pressure ratings versus pipe schedule, please visit asc-es.com or contact your local ASC Engineered Solutions™ Representative.

§ – For additional Bolt Torque information see Technical Data Section.

Other sizes available, contact an ASC Engineered Solutions Representative.

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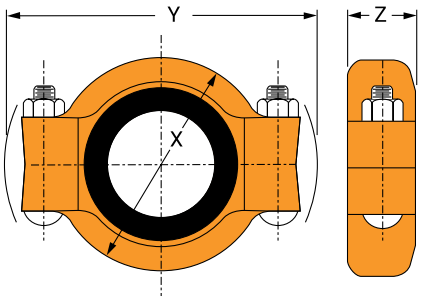
Reducing Coupling
Fig. RC-2

(continued)



Nominal Size	Larger O.D.	Smaller O.D.	Max. Working Pressure ▲	Max. End Load	Range of Pipe End Separation	Deflection from ℄		Coupling Dimensions			Coupling Bolts		Specified Torque §		Approx. Wt. Ea.
						Per Coupling	Pipe	X	Y	Z	Qty.	Size	Min.	Max.	
In./DN(mm)	In./mm	In./mm	PSI/bar	Lbs./kN	In./mm	Degrees	In./Ft.-mm/m	In./mm	In./mm	In./mm		In./mm	Ft.-Lbs./N-m	Ft.-Lbs./N-m	Lbs./kg
5½ O.D. x 4	5.500	4.500	300	7,128	0-3/16	1° 58'	0.20	7¼	10⅝	2⅛	2	¾ x 4½	100	130	11.4
139 X 114	139.7	114.3	20.7	31.71	0-4.8		10.8	184	270	54		M20 x 115	135	175	5.2
5 x 3	5.563	3.500	300	7,292	0-¼	1° 58'	0.20	7¼	10⅝	2⅛	2	¾ x 4½	130	180	10.4
125 x 80	141.3	88.9	20.7	32.44	0-6.4		16.8	184	270	54		M20 x 115	175	245	4.7
5 x 4	5.563	4.500	300	7,292	0-3/32	1° 58'	0.20	7¼	10⅝	2⅛	2	¾ x 4½	130	180	11.4
125 x 100	141.3	114.3	20.7	32.44	0-2.38		16.8	184	270	54		M20 x 115	175	245	5.2
6½ O.D. x 3	6.500	3.500	300	9,955	0-¼	1° 20'	0.26	8¼	11⅝	2⅛	2	¾ x 4½	130	180	15.0
165 X 88	165.1	88.9	20.7	44.28	0-6.4		18.2	210	295	54		M20 x 115	175	245	6.8
6½ O.D. x 4	6.500	4.500	300	9,955	0-¼	1° 20'	0.26	8¼	11⅝	2⅛	2	¾ x 4½	130	180	13.6
165 X 114	165.1	114.3	20.7	44.28	0-6.4		18.2	210	295	54		M20 x 115	175	245	6.2
6 x 4	6.625	4.500	300	10,341	0-3/32	0° 49'	0.17	8¼	11⅝	2⅛	2	¾ x 4½	130	180	13.4
150 x 100	168.3	114.3	20.7	46.00	0-2.38		14.1	210	295	54		M20 x 115	175	245	6.1
6 x 5	6.625	5.562	300	10,341	0-3/32	0° 49'	0.17	8½	11⅝	2⅛	2	¾ x 4½	130	180	13.5
150 x 125	168.3	141.3	20.7	46.00	0-2.38		14.1	216	295	54		M20 x 115	175	245	6.1
8 x 6	8.625	6.625	300	17,528	0-3/32	0° 37'	0.13	10½	14	2¼	2	¾ x 4½	130	180	17.7
200 x 150	219.1	168.3	20.7	77.97	0-2.38		10.9	267	365	57		M20 x 115	175	245	8.0
8 x 6½ O.D.	8.625	6.500	300	17,528	0-¼	0° 37'	0.13	10½	14	2¼	2	¾ x 4½	130	180	18.3
219 X 165	219.1	165.1	20.7	77.97	0-6.4		10.9	267	365	57		M20 x 115	175	245	8.3

Note:

Not for use in copper systems.

Range of Pipe End Separation and Angular Deflection values are for roll grooved pipe and may be doubled for cut groove pipe.

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§ – For additional Bolt Torque information see Technical Data Section.

Other sizes available, contact an ASC Engineered Solutions Representative.

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Fig. RC–2 Reducing Coupling

The instructions are based on pipe grooved in accordance with SPF® grooving specifications. Check pipe ends for proper groove dimensions and to assure that the pipe ends are free of indentations and projections which would prevent proper sealing.

ALWAYS USE A GRUVLOK® SPF/ANVIL® LUBRICANT FOR PROPER COUPLING ASSEMBLY. Thorough lubrication of the external surface of the gasket is essential to prevent pinching and possible damage to the gasket. For temperatures above 150°F (65˚C) and below 32°F (0˚C) use Gruvlok SPF/Anvil Xtreme Lubricant and lubricate all gasket surfaces, internal and external. See Gruvlok SPF/Anvil Lubricants in the Technical Data section of the Anvil SPF catalog for additional important information.

1 Check and lubricate gasket

Check gasket to be sure it is compatible for the intended service. Apply a thin coating of Gruvlok SPF/Anvil Xtreme Lubricant to the outside and sealing lips of the gasket. Be careful that foreign particles do not adhere to lubricated surfaces.

2 Gasket installation

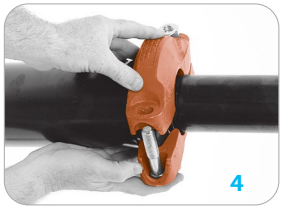
Place the smaller opening of the gasket over the smaller pipe. Angle the gasket over the pipe end and pull the gasket lip open around the circumference of the pipe. The center leg of the gasket should make flush contact with the pipe end and will prevent telescoping of the smaller pipe inside the larger.

3 Alignment

Align the adjoining pipe center lines, and insert the larger pipe end into the gasket. Angle the pipe end slightly to the face of the gasket and tilt the pipe into the gasket to ease assembly.

4 Housings

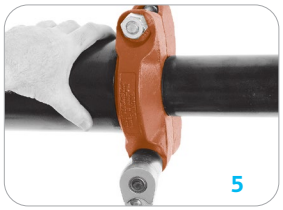
Place the coupling housing halves over the gasket, making sure the housing keys engage the grooves. Insert bolts and turn nuts finger tight.



5 Tighten nuts

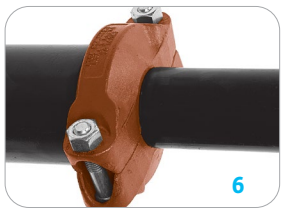
Tighten the nuts alternately and equally to the specified bolt torque. The housing bolt pads must make metal-to-metal contact.

Caution: Uneven tightening may cause the gasket to pinch.



6 Assembly complete

Visually inspect the pipe joint to assure the coupling keys are fully engaged in the pipe grooves and the bolt pads are in firm even metal-to-metal contact on both sides of the coupling.



Note: Fig. A illustrates the correct position of the Reducing Coupling gasket and housing properly assembled onto adjacent pipe ends.

Caution: In vertical installations the pipes must be supported to prevent telescoping during installation.

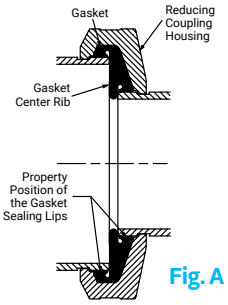


Fig. A

Specified Bolt Torque

Specified bolt torque is for the oval neck track bolts used on SPF couplings. The nuts must be tightened alternately and evenly until fully tightened.

Caution: Proper torquing of coupling bolts is required to obtain specified performance. **Over torquing the bolts may result in damage to the bolt and/or casting which could result in pipe joint separation.** Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

ANSI/Metric Specified Bolt Torque

Bolt Size	Wrench Size	Specified Bolt Torque*
In./mm	In./mm	Ft.-Lbs/N-m
½ M12	⅞ 22	80-100 110-150
⅝ M16	1 1/16 24	100-130 135-175
¾ M20	1 ¼ 30	130-180 175-245

* Non-lubricated bolt torque

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