

*GROOVED PRODUCT
INSTALLATION
INSTRUCTION MANUAL*

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Repipe Connection Group | www.repipe.com.au

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Instructions for Pipe Roll Grooving

“A” Dimension -The “A” dimension, or the distance from the pipe end to the groove, identifies the gasket seating area. This area must be free from indentations, projections (including weld seams), and roll marks from the pipe end to the groove to ensure a leak tight seal for the gasket. All foreign material, such as loose paint, scale, oil, grease, chips, rust, and dirt must be removed.

“B” Dimension - The “B” dimension, or groove width, controls expansion, contraction, and angular deflection of flexible couplings by the distance it is located from the pipe and its width in relation to the coupling housings’ “key” width. The bottom of the groove must be free of all foreign material, such as dirt, chips, rust, and scale that may interfere with proper coupling assembly.

“C” Dimension - The “C” dimension is the proper diameter at the base of the groove. This dimension must be within the diameter’s tolerance and concentric with the OD for proper coupling fit. The groove must be of uniform depth for the entire pipe circumference.

“D” Dimension - The “D” dimension is the normal depth of the groove and is a reference for a “trial groove” only. Variations in pipe O. D. affect this dimension and must be altered, if necessary, to keep the “C” dimension within tolerance. This groove must conform to the “C” dimension described above.

“T” Dimension - The “T” dimension is the lightest grade (minimum, nominal wall thickness) of pipe that is suitable for cut or roll grooving.

“F” Standard Roll Groove Only - Maximum allowable pipe-end flare diameter is measured at the extreme pipe-end diameter.

For roll groove specification, please refer [Table 1A](#).

Instructions for Pipe Cut Grooving

“A” dimension -The “A” dimension, or the distance from the pipe end to the groove, identifies the gasket seating area. This area must be free from indentations, projections (including weld seams), and roll marks from the pipe end to the groove to ensure a leak tight seal for the gasket. All foreign material, such as loose paint, scale, oil, grease, chips, rust, and dirt must be removed.

“B” Dimension - The “B” dimension, or groove width, controls expansion, contraction, and angular deflection of flexible couplings by the distance it is located from the pipe and its width in relation to the coupling housings’ “key” width. The bottom of the groove must be free of all foreign material, such as dirt, chips, rust, and scale that may interfere with proper coupling assembly.

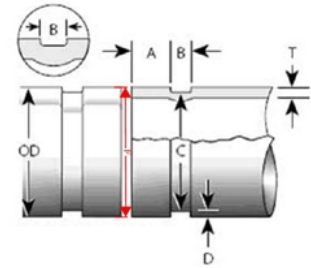
“C” Dimension - The “C” dimension is the proper diameter at the base of the groove. This dimension must be within the diameter’s tolerance and concentric with the OD for proper coupling fit. The groove must be of uniform depth for the entire pipe circumference.

“D” Dimension - The “D” dimension is the normal depth of the groove and is a reference for a “trial groove” only. Variations in pipe O. D .affect this dimension and must be altered, if necessary, to keep the “C” dimension within tolerance. This groove must conform to the “C” dimension described above.

“T” Dimension - The “T” dimension is the lightest grade (minimum, nominal wall thickness) of pipe that is suitable for cut or roll grooving.

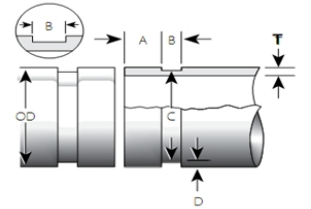
For cut groove specification, please refer [Table 1B](#).

Table 1A: Roll Groove Specification



DN Size	Pipe OD	A	B	C		D	T	Max. Flare Dia.
		Gasket Seat	Groove Width	Grooved Diameter		Grooved Depth	Min. Pipe Wall Thickness	Ref.
		Tol (± 0.76)	Tol (± 0.76)	Basic Size	Tol ($+0.00$)	Ref.		
25	33.7	15.88	7.14	30.23	-0.38	1.60	1.8	34.50
32	42.4	15.88	7.14	38.99	-0.38	1.60	1.8	43.30
40	48.3	15.88	7.14	45.09	-0.38	1.60	1.8	49.40
50	60.3	15.88	8.74	57.15	-0.38	1.60	1.8	62.20
65	73.0	15.88	8.74	69.09	-0.46	1.98	2.3	75.20
65	76.1	15.88	8.74	72.26	-0.46	1.98	2.3	77.70
80	88.9	15.88	8.74	84.94	-0.46	1.98	2.3	89.39
100	108.0	15.88	8.74	103.73	-0.51	2.11	2.3	109.70
100	114.0	15.88	8.74	109.20	-0.51	2.11	2.3	114.00
125	133.0	15.88	8.74	129.13	-0.51	2.11	2.9	134.90
125	140.0	15.88	8.74	135.48	-0.51	2.11	2.9	141.40
125	141.3	15.88	8.74	137.03	-0.51	2.13	2.9	143.50
150	159.0	15.88	8.74	153.21	-0.56	2.16	2.9	161.00
150	165.0	15.88	8.74	160.90	-0.56	2.16	2.9	166.65
150	168.3	15.88	8.74	163.96	-0.56	2.16	2.9	170.70
200	219.1	19.05	11.91	214.40	-0.64	2.34	2.9	221.50
250	273.0	19.05	11.91	268.28	-0.69	2.39	3.6	275.40
300	323.9	19.05	11.91	318.29	-0.76	2.77	4.0	326.20

Table 1B: Cut Groove Specification



DN Size	Pipe OD	A	B	C		D	T
		Gasket Seat	Groove Width	Grooved Diameter		Grooved Depth	Min. Pipe Wall Thickness
		Tol (± 0.76)		Basic Size	Tol (± 0.76)	Ref.	
25	33.7	15.88	7.93	30.23	-0.38	1.70	3.3
32	42.4	15.88	7.93	38.99	-0.38	1.70	3.5
40	48.3	15.88	7.93	45.09	-0.38	1.58	3.6
50	60.3	15.88	7.93	57.15	-0.38	1.58	3.6
65	73.0	15.88	7.93	69.09	-0.46	1.98	4.0
65	76.1	15.88	7.93	72.26	-0.46	1.98	4.0
80	88.9	15.88	7.93	84.94	-0.46	1.98	4.5
100	108.0	15.88	9.53	103.73	-0.51	2.11	5.0
100	114.0	15.88	9.53	110.08	-0.51	2.11	5.0
125	133.0	15.88	9.53	129.13	-0.51	2.11	5.0
125	140.0	15.88	9.53	135.48	-0.51	2.11	5.0
125	141.3	15.88	9.53	137.03	-0.51	2.13	5.0
150	159.0	15.88	9.53	153.21	-0.56	2.16	5.4
150	165.0	15.88	9.53	160.90	-0.56	2.16	5.4
150	168.3	15.88	9.53	163.96	-0.56	2.16	5.4
200	219.1	19.05	11.10	214.40	-0.64	2.34	5.4
250	273.0	19.05	12.70	268.28	-0.69	2.39	6.3
300	323.9	19.05	12.70	318.29	-0.76	2.77	7.1

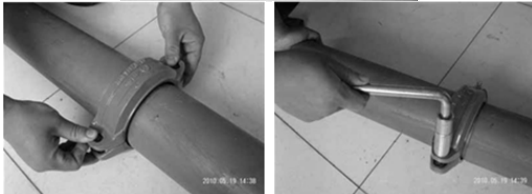
Please Note: All measurements are in mm.

Installation Instruction for Couplings

(Including Model RC1, RC2, FC1 and RF1)

Rigid Couplings cannot enable the connection system to be flexible, and the couplings are integrated with steel pipes after they are fastened. If the sling has a bigger span, the pipes will support the connection depending on their own rigidity.

Flexible Couplings can enable the connection system to be flexible, it allows the steel pipe has a certain angle deviation and relative deviation. There are some clearance between the ends of two steel pipes in order to suit the expansion and shrinkage of the pipelines. The pipe couplings should maintain the normal working condition under the maximum allowable deflection and dislocation. Flexible Couplings can endure a certain terminal load, which refers to the load along the pipe axis to be borne by coupling grooves.



1. Before installation, whether the groove meet the standard should be checked and then wipe away the pickles, iron rust, greasy dirt on gasket ring and pipe.
2. Spread lubricant on the pipe end and gasket ring.
3. Cover the compacting gasket ring at the sealing of a steel pipe.
4. Secure another grooved steel pipe to this one and cover the gasket ring on pipe end, making sure the gasket ring at the sealing position of both pipes.
5. Make sure coupling has fixed the pipes.
6. Gradually tighten nuts to torque listed in Table 5.

The bolt torque for reducing coupling – Please see Table 4 for details.

For the deflection (degree/ length) of flexible coupling, please refer to Table 3.

Installation Instruction for Mechanical Tees/ Crosses, Side Outlets

(Outlets: Rolled and Threaded Type, including Model MT1, MT2, MT3 and UM1)

Side outlet (mechanical cross) can be directly used to connect the ranch pipes with the main steel pipe. Firstly, to open the hole with hole-cutting machine on steel pipes ,and clip the side outlet (mechanical cross) into the hole, around which are sealed by the gasket rings .Side outlet mechanical cross)are categorized as threaded style and Grooved style. When be connected ,the threaded mechanical tee or mechanical cross should be applied with some compacting paint on its outer crew thread, and then roll thread around it to ensure the sealing performance of threaded joint.



1. Check the hole pickles.
2. Spread lubricant on the gasket ring.
3. Put gasket seal in the mechanical tee.
4. Install the mechanical tee in the hole.
5. Install the bottom piece on the upper one of the mechanical tees.
6. Secure the nuts and bolts of side outlet from both sides. Please refer to Table 5 for bolt-torque.

Table 3: Maximum Allowable Deflection of Flexible Fittings

Allowed pipe-end separation and deflection values are the maximum nominal range of movement available at each joint for standard roll grooved pipe. Values for roll-grooved pipe maybe doubled.

Model Name FC1

DN Size	Pipe OD	Max. Working Pressure (psi)	Max. Allowable Axial Movement (mm)	Max. Allowable Deflection Degree
25	33.7	400	1.422	1.18°
32	42.4	400	1.447	1.79°
40	48.3	400	0.635	1.43°
50	60.3	400	1.422	3.10°
65	73.0	400	1.422	3.94°
65	76.1	400	2.489	3.94°
80	88.9	400	3.251	2.20°
100	108.0	400	3.251	2.20°
100	114.0	400	0.508	1.07°
125	139.7	300	3.302	1.99°
125	141.3	300	3.302	1.99°
150	165.0	300	4.368	1.97°
150	168.3	300	4.368	1.97°
200	219.1	300	5.283	1.46°
250	273.0	300	5.400	1.50°
300	323.9	300	5.500	1.50°

Model Name RF1

DN Size	Pipe OD	Max. Working Pressure (psi)	Max. Allowable Axial Movement (mm)	Max. Allowable Deflection Degree
50x40	60.3 x 48.3	300	1.200	3.00°
65x40	73.0 x 48.3	300	1.400	3.04°
65x50	73.0 x 60.3	300	1.500	3.08°
65x40	76.1 x 48.3	300	1.500	3.20°
65x50	76.1 x 60.3	300	1.400	3.30°
80x40	88.9 x 48.3	300	1.300	3.20°
80x50	88.9 x 60.3	300	1.295	3.08°
80x65	88.9 x 73.0	300	1.346	2.09°
80x65	88.9 x 76.0	300	1.346	2.09°
100x40	114.3 x 48.3	300	1.700	2.30°
100x50	114.3 x 60.3	300	1.700	2.32°
100x65	114.3 x 73.0	300	1.955	2.31°
100x65	114.3 x 76.1	300	1.920	2.30°
100x80	114.3 x 88.9	300	1.980	2.40°
150x80	168.3 x 88.9	300	1.990	2.20°
150x100	168.3 x 114.3	300	1.960	2.10°
200x150	219.1 x 168.3	300	1.890	2.20°

Table 4: Bolt Torque

Rigid & Flexible Couplings, Side Outlets

DN Size	Pipe OD	Rigid Couplings (RC1, RC2)		Flexible Couplings (FC1)		Side Outlet (MT1, MT2, MT3)	
		Bolts & Nuts	Torque Valve (ft-lbs)	Bolts & Nuts	Torque Valve (ft-lbs)	Bolts & Nuts	Torque Valve (ft-lbs)
25	33.7	M10 X 42	90±10	M10 X 55	90±10		
32	42.4	M10 X 42	90±10	M10 X 55	90±10		
40	48.3	M10 X 42	90±10	M10 X 55	90±10		
50	60.3	M10 X 55	90±10	M10 X 55	90±10	M10 X 55	90±10
65	73.0	M10 X 55	90±10	M10 X 55	90±10		
65	76.1	M10 X 55	90±10	M10 X 55	90±10	M12 X 65	100±10
80	88.9	M12 X 60	110±10	M10 X 65	100±10	M12 X 65	150±10
100	108.0	M12 X 65	150±10	M12 X 65	150±10		
100	114.0	M12 X 65	150±10	M12 X 65	150±10	M12 X 65	150±10
125	133.0	M12 X 75	180±10	M12 X 75	180±10		
125	139.7	M12 X 75	180±10	M12 X 75	180±10	M16 X 75	190±10
125	141.3	M12 X 75	180±10	M12 X 75	180±10		
150	159.0	M12 X 75	180±10	M12 X 75	180±10		
150	165.0	M12 X 75	180±10	M12 X 75	180±10	M16 X 85	190±10
150	168.3	M12 X 75	180±10	M12 X 75	180±10	M16 X 85	190±10
200	219.1	M16 X 10	180±10	M16 X 100	180±10	M16 X 100	190±10
250	273.0	M16 X 10	180±10	M11 X 130	180±10	M22 X 130	190±10
300	323.9	M22 X 13	180±10	M22 X 130	180±10	M22 X 130	190±10

Reducing Couplings (RF1)

DN Size	Pipe OD	Bolts & Nuts	Torque Valve (ft-lbs)
50 x 40	60.3 x 48.3	M12 X 55	90±10
65 x 40	73.0 x 48.3	M12 X 55	90±10
65 x 50	73.0 x 60.3	M12 X 55	90±10
65 x 40	76.1 x 48.3	M12 X 55	90±10
65 x 50	76.1 x 60.3	M12 X 55	90±10
80 x 40	88.9 x 48.3	M12 X 60	110±10
80 x 50	88.9 x 60.3	M12 X 60	110±10
80 x 65	88.9 x 73.0	M12 X 60	110±10
80 x 65	88.9 x 76.1	M12 X 60	110±10
100 x 40	114.3 x 48.3	M12 X 65	150±10
100 x 50	114.3 x 60.3	M12 X 65	150±10
100 x 65	114.3 x 73.0	M12 X 65	150±10
100 x 65	114.3 x 76.1	M12 X 65	150±10
100 x 80	114.3 x 88.9	M12 X 65	150±10
150 x 80	168.3 x 88.9	M16 X 85	150±10
150 x 100	168.3 x 114.3	M16 X 85	150±10
200 x 150	219.1 x 168.3	M16 X 100	190±10

U-Bolted Mech Tee (UM1)

DN Size	Pipe OD	Bolts & Nuts	Torque Valve (ft-lbs)
25	33.7	M10 X 25	40±6
32	42.4	M10 X 25	40±6
40	48.3	M10 X 30	43±5
50	60.3	M10 X 35	50±5
65	73.0	M10 X 35	50±5
65	76.1	M10 X 40	55±5