

## MODEL 7706 REDUCING COUPLING

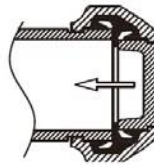
The Model 7706 Reducing Coupling allows direct reduction on a piping run and eliminates the need for a concentric reducer and couplings. The specially designed rubber gasket prevents the smaller pipe from telescoping into the larger pipe during vertical installation. All 7706 couplings are comprised of two identical housing segments, EPDM rubber gasket and plated track bolts and nuts. Housing segments are supplied with our standard painted finishes, i.e. orange or RAL3000 red. Optional finishes such as hot dipped zinc galvanized and custom epoxy coatings are available.



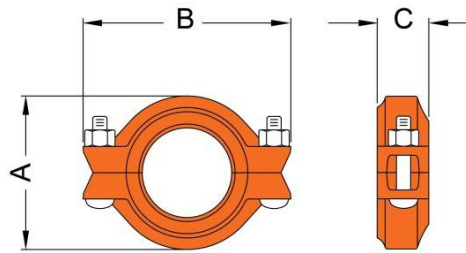
7706 couplings should always be installed so that the coupling bolt pads make metal to metal contact.



The Model 7706 couplings must not be used with an end cap, as the end cap could be sucked into the pipe by the vacuum created when a system is being drained.



For Fire Protection pressure rating, listing, and approval information, refer to Data Sheet B-42 or visit **SHURJOINT** website, [www.shurjoint.com](http://www.shurjoint.com) for details or contact your **SHURJOINT** Representative.



Full warranty terms can be found on [www.shurjoint.com](http://www.shurjoint.com)

Model 7706 Reducing Coupling											
Nominal Size	Pipe O.D.	Max. Working Pressure (CWP)*	Max. End Load (CWP)	Angular Movement **†			Dimensions			Bolt Size	Weight
				Axial Displacement †	Deg. Per Coupling	Per Pipe	A	B	C		
in	in	PSI	Lbs	in	(°)	in/ft	in	in	in	in	Lbs
mm	mm	Bar	kN	mm		mm/m	mm	mm	mm	mm	Kgs
1½ x 1¼	1.900 x 1.660	500	1410	0 ~ 0.065	1° - 54'	0.20	2.83	4.65	1.81	¾ x 2½	1.8
40 x 32	48.3 x 42.2	35	6.23	0 ~ 1.6		17	72	118	46	M10 x 55	0.8
2 x 1½	2.375 x 1.900	500	2210	0 ~ 0.065	1° - 31'	0.16	3.35	4.80	1.89	¾ x 2½	2.0
50 x 40	60.3 x 48.3	35	9.70	0 ~ 1.6		13	85	122	48	M10 x 55	0.9
2½ x 2	2.875 x 2.375	500	3240	0 ~ 0.065	1° - 15'	0.13	3.78	5.67	1.89	¾ x 2½	2.6
65 x 50	73.0 x 60.3	35	14.22	0 ~ 1.6		11	96	144	48	M10 x 55	1.2
76.1 mm x 50	3.000 x 2.375	500	3530	0 ~ 0.065	1° - 12'	0.13	4.02	5.67	1.89	¾ x 2½	2.6
	76.1 x 60.3	35	15.46	0 ~ 1.6		11	102	144	48	M10 x 55	1.2
3 x 2	3.500 x 2.375	500	4800	0 ~ 0.065	1° - 02'	0.11	4.57	6.61	1.89	½ x 3	3.3
80 x 50	88.9 x 60.3	35	21.09	0 ~ 1.6		9	116	168	48	M12 x 75	1.5
3 x 2½	3.500 x 2.875	500	4800	0 ~ 0.065	1° - 02'	0.11	4.57	6.61	1.89	½ x 3	3.7
80 x 65	88.9 x 73.0	35	21.09	0 ~ 1.6		9	116	168	48	M12 x 75	1.7
80 x 76.1 mm	3.500 x 3.000	500	4800	0 ~ 0.065	1° - 02'	0.11	4.57	6.61	1.89	½ x 3	3.7
	88.9 x 76.1	35	21.09	0 ~ 1.6		9	116	168	48	M12 x 75	1.7
4 x 2	4.500 x 2.375	500	7940	0 ~ 0.095	1° - 12'	0.13	5.75	7.80	1.93	½ x 3	5.3
100 x 50	114.3 x 60.3	35	34.87	0 ~ 2.4		11	146	198	49	M12 x 75	2.4
4 x 2½	4.500 x 2.875	500	7940	0 ~ 0.095	1° - 12'	0.13	5.75	7.80	1.93	½ x 3	5.7
100 x 65	114.3 x 73.0	35	34.87	0 ~ 2.4		11	146	198	49	M12 x 75	2.6
100 x 76.1 mm	4.500 x 3.000	500	7940	0 ~ 0.095	1° - 12'	0.13	5.75	7.80	1.93	½ x 3	5.7
	114.3 x 76.1	35	34.87	0 ~ 2.4		11	146	198	49	M12 x 75	2.6
4 x 3	4.500 x 3.500	500	7940	0 ~ 0.095	1° - 12'	0.13	5.75	7.80	2.01	½ x 3	5.3
100 x 80	114.3 x 88.9	35	34.87	0 ~ 2.4		11	146	198	51	M12 x 75	2.4
139.7 mm x 100	5.500 x 4.500	400	9490	0 ~ 0.125	1° - 18'	0.14	6.30	9.45	2.01	¾ x 3½	8.4
	139.7 x 114.3	28	42.90	0 ~ 3.2		12	160	240	51	M16 x 90	3.8
5 x 4	5.563 x 4.500	400	9710	0 ~ 0.125	1° - 18'	0.14	6.30	9.84	2.01	¾ x 3½	7.9
125 x 100	141.3 x 114.3	28	43.88	0 ~ 3.2		12	160	242	51	M16 x 90	3.6

**Model 7706 Reducing Coupling**

Nominal Size	Pipe O.D.	Max. Working Pressure (CWP)*	Max. End Load (CWP)	Axial Displacement †	Angular Movement **†		Dimensions			Bolt Size	Weight
					Deg. Per Coupling	Per Pipe	A	B	C		
in mm	in mm	PSI Bar	Lbs kN	in mm	(°)	in/ft mm/m	in mm	in mm	in mm	in mm	Lbs Kgs
165.1 mm x 80	6.500 x 3.500 165.1 x 88.9	400 28	13260 59.91	0 ~ 0.125 0 ~ 3.2	1° - 07'	0.12 10	7.95 202	10.63 270	2.05 52	5/8 x 3 1/2 M16 x 90	10.1 4.6
6 x 3 150 x 80	6.625 x 3.500 168.3 x 88.9	400 28	13780 62.26	0 ~ 0.125 0 ~ 3.2	1° - 06'	0.12 10	8.19 208	10.63 270	2.05 52	5/8 x 3 1/2 M16 x 90	10.1 4.6
165.1 mm x 100	6.500 x 4.500 165.1 x 114.3	400 28	13260 59.91	0 ~ 0.125 0 ~ 3.2	1° - 07'	0.12 10	7.95 202	10.67 271	2.05 52	5/8 x 3 1/2 M16 x 90	9.9 4.5
6 x 4 150 x 100	6.625 x 4.500 168.3 x 114.3	400 28	13780 62.26	0 ~ 0.125 0 ~ 3.2	1° - 06'	0.12 10	8.19 208	10.63 270	2.05 52	5/8 x 3 1/2 M16 x 90	9.9 4.5
8 x 6 200 x 150	8.625 x 6.625 219.1 x 168.3	400 28	23350 105.51	0 ~ 0.125 0 ~ 3.2	0° - 50'	0.09 8	10.24 260	13.11 333	2.09 53	3/4 x 4 3/4 M20 x 120	14.3 6.5
200 x 165.1 mm	8.625 x 6.500 219.1 x 165.1	400 28	23350 105.51	0 ~ 0.125 0 ~ 3.2	0° - 50'	0.09 8	10.24 260	13.11 333	2.20 56	3/4 x 4 3/4 M20 x 120	14.3 6.5

\* Working Pressure is based on roll- or cut-grooved standard wall carbon steel pipe.

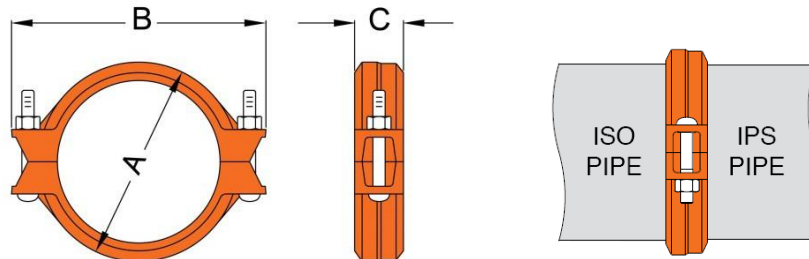
† Allowable Axial Displacement and Angular Movement (deflection) figures are for roll grooved standard steel pipe. Values for cut grooved pipe will be double that of roll grooved. These values are maximums; for design and installation purposes these figures should be reduced by: 50% for 3/4" – 3 1/2"; 25% for 4" and larger to compensate for jobsite conditions.

\*\* Deflection or angular movement given is the maximum value that a coupling allows. When using the given maximum angles for a curved layout, proper bracing should be used to counter pressure thrust that will occur when the system is pressurized.

Flexible couplings can be used for angular movement and or thermal expansion, though please note individual coupling(s) cannot be used to their maximums for both types of movement within a system at the same time.

**MODEL 7706-T TRANSITION COUPLING**

The Model 7706-T Transition Coupling allows for a direction transition from IPS pipe sizes to ISO pipe sizes.


**Model 7706-T Transition Coupling**

Nominal Size	Pipe O.D.	Max. Working Pressure (CWP)*	Max. End Load	Axial Displacement †	Angular Movement**†		Dimensions			Bolt Size	Weight
					Deg. Per Coupling	Per Pipe	A	B	C		
in mm	in mm	PSI Bar	Lbs kN	in mm	(°)	in/ft mm/m	in mm	in mm	in mm	in mm	Lbs Kgs
2 1/2 x 76.1mm	2.875 x 3.000 73.0 x 76.1	500 35	2110 9.09	0 ~ 0.065 0 ~ 1.6	1° - 12'	0.13 11	4.02 102	5.43 138	1.89 48	3/8 x 2 1/2 M10 x 55	2.6 1.2
6 x 165.1mm	6.625 x 6.500 168.3 x 165.1	400 28	9940 42.80	0 ~ 0.125 0 ~ 3.2	0° - 33'	0.12 10	7.87 200	10.63 270	2.09 53	5/8 x 3 1/2 M16 x 90	7.7 3.5

\* Working Pressure is based on roll grooved standard wall carbon steel pipe.

† Allowable Axial Displacement and Angular Movement (deflection) figures are for roll grooved standard steel pipe. Values for cut grooved pipe will be double that of roll grooved. These values are maximums; for design and installation purposes these figures should be reduced by: 50% for 3/4" – 3 1/2"; 25% for 4" and larger to compensate for jobsite conditions.

\*\* Deflection or angular movement given is the maximum value that a coupling allows. When using the given maximum angles for a curved layout, proper bracing should be used to counter pressure thrust that will occur when the system is pressurized.

Flexible couplings can be used for angular movement and or thermal expansion, though please note individual coupling(s) cannot be used to their maximums for both types of movement within a system at the same time.

## Performance Data

The following tables show the maximum working pressures (CWP) of **Shurjoint** Model 7706 Reducing Coupling used on both carbon steel and stainless steel pipes. **Shurjoint** ductile iron couplings can be used in conjunction with stainless steel pipe in non-corrosive environment as the flow media does not come in direct contact with the coupling housings but rather only the gasket.

Unit: psi / Bar

Unit: psi / Bar

Model 7706 on Carbon Steel Pipe					
Nom. Size	Cut-Grooved		Roll-Grooved		
	XS	STD	STD	Sch. 10	Sch. 7
1½ x 1¼	500	500	500	350	300
40 x 32	35	35	35	24	20
2 x 1½	500	500	500	350	300
50 x 40	35	35	35	24	20
2½ x 2	500	500	500	350	300
65 x 50	35	35	35	24	20
3 x 2	500	500	500	350	300
80 x 50	35	35	35	24	20
3 x 2½	500	500	500	350	300
80 x 65	35	35	35	24	20
4 x 2	500	500	500	350	300
100 x 50	35	35	35	24	20
4 x 2 ½	500	500	500	350	300
100 x 65	35	35	35	24	20
4 x 3	500	500	500	300	250
100 x 80	35	35	35	20	17
5 x 4	400	400	400	300	250
125 x 100	28	28	28	20	17
6 x 3	400	400	400	300	200
150 x 80	28	28	28	20	14
6 x 4	400	400	400	300	175
150 x 100	28	28	28	20	12
8 x 6	400	400	400	300	175
200 x 150	28	28	28	20	12

Model 7706 on Stainless Steel Pipe					
Nom. Size	Cut-Grooved		Roll-Grooved		
	Sch. 80S	Sch. 40S	Sch. 40S	Sch. 10S	Sch. 5S
1½ x 1¼	500	500	350	300	250
40 x 32	35	35	24	20	17
2 x 1½	500	500	350	300	250
50 x 40	35	35	24	20	17
2½ x 2	500	500	350	300	250
65 x 50	35	35	24	20	17
3 x 2	500	500	350	300	250
80 x 50	35	35	24	20	17
3 x 2½	500	500	350	300	250
80 x 65	35	35	24	20	17
4 x 2	500	500	350	300	250
100 x 50	35	35	24	20	17
4 x 2 ½	500	500	350	300	200
100 x 65	35	35	24	20	14
4 x 3	500	500	300	250	200
100 x 80	35	35	20	17	14
5 x 4	400	400	300	250	NR
125 x 100	28	28	20	17	NR
6 x 3	400	400	300	200	NR
150 x 80	28	28	20	14	NR
6 x 4	400	400	300	175	NR
150 x 100	28	28	20	12	NR
8 x 6	400	400	300	175	NR
200 x 150	28	28	20	12	NR

## Flow Data

The pressure drop or head loss across Model 7706 Reducing Coupling is small and less than that of the same size of concentric reducer. Equivalent lengths of sch. 40 steel pipe (new pipe) for water 60°F (16°C) are shown in the table.

Equivalent Length of Sch. 40 steel pipe for water at 60°F (16°C)

Model 7706 Reducing Coupling			
Size	Equivalent Length	Size	Equivalent Length
in	feet	in	feet
mm	m	mm	m
1½ x 1¼	1.6	4 x 2½	4.9
40 x 32	0.5	100 x 65	1.5
2 x 1	3.9	4 x 3	3.6
50 x 25	1.2	100 x 80	1.1
2 x 1½	2.0	5 x 4	3.0
50 x 40	0.6	125 x 100	0.9
2½ x 2	2.0	6 x 3	7.9
65 x 50	0.6	150 x 80	2.4
3 x 2	3.9	6 x 4	5.9
80 x 50	1.2	150 x 100	1.8
3 x 2½	2.3	6 x 5	4.5
80 x 65	0.7	150 x 125	1.37
4 x 2	6.2	8 x 6	7.2
100 x 50	1.9	200 x 150	2.2

## MATERIAL SPECIFICATIONS

### • Housing:

Ductile Iron to ASTM A536, Gr. 65-45-12 and or ASTM A395, Gr. 65-45-15, min. tensile strength 65,000 psi (448 MPa).

### • Surface Finish:

Standard painted finishes in orange or RAL3000 red.

- Hotdip zinc galvanized (Option)
- Epoxy Coatings in RAL3000 red or other colors (Option)

### • Rubber Gasket:

**Grade E-pw EPDM** (Color code: Double Green stripe) approved under NSF/ANSI 61 and NSF/ANSI 372 for potable water service to +180°F (+82°C). Also good for services for water with acid, water with chlorine or chloramines, deionized water, seawater and waste water, dilute acids, oil-free air and many chemicals.

**Not recommended for petroleum oils, minerals oils, solvents and aromatic hydrocarbons.**

Maximum Temperature Range: -30°F (-34°C) to +230°F (+110°C)\*.

\*EPDM seat for water services are not recommended for steam services unless valves or components are accessible for frequent replacement.

- (Option) **Grade "E" EPDM** (Color code: Green stripe) Good for cold & hot water up to +230°F (+110°C). Also good for services for water with acid, water with

chlorine or chloramines, deionized water, seawater and waste water, dilute acids, oil-free air and many chemicals.

**Not recommended for petroleum oils, minerals oils, solvents and aromatic hydrocarbons.**

Maximum Temperature Range: -30°F (-34°C) to +230°F (+110°C)\*.

\*EPDM seat for water services are not recommended for steam services unless valves or components are accessible for frequent replacement

- (Option) **Grade "T" Nitrile** (Color code: Orange stripe) Recommended for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. Also good for water services under +150°F (+66°C).  
Temperature range: -20°F to +180°F (-29°C to +82°C).  
**Do not use for HOT WATER above +150°F (+66°C) or HOT DRY AIR above +140°F (+60°C)**
- Other options: Grade "O" - Fluoroelastomer.  
Grade "L" - Silicone.  
For additional details contact **Shurjoint**.

### • Bolts & Nuts:

Heat treated carbon manganese steel track bolts to ASTM A449-83a (or A183 Gr. 2), minimum tensile strength 110,000 psi (758 MPa), Zinc electroplated, with heavy-duty hexagonal nuts to ASTM A563.

### LISTINGS/APPROVALS

The information provided below is based on the latest listing and approval data at the time of publication. Listings/Approvals are subject to change and/or additions by the approvals agencies. Contact **Shurjoint** for the performance on other pipes and the latest listings and approvals

Standard Pipe				Specialty Pipe		
Nom. Size	cULus / FM		VdS	LPCB	cULus	FM
in mm	Sch. 10 PSI/Bar	Sch. 40 PSI/Bar	Bar	PSI/Bar	BS1387(M) PSI/Bar	
2x1½ 50 x 40	300 20	300 20	16	300 20	N/A	300 20
2½x2 65 x 50	300 20	300 20	N/A	N/A	N/A	300 20
76.1 mmx2 65 x 50	300 20	300 20	16	300 20	300 20	300 20
76.1 mmx3 65 x 80	N/A	N/A	N/A	N/A	300 20	N/A
3x2 80 x 50	300 20	300 20	16	300 20	300 20	300 20
3x2½ 80 x 65	300 20	300 20	N/A	N/A	300 20	300 20
3x76.1 mm 80 x 65	N/A	300 20	16	300 20	N/A	300 20
4x2 100 x 50	300 20	300 20	16	300 20	N/A	300 20
4x2½ 100 x 65	300 20	300 20	N/A	N/A	300 20	300 20
4x76.1 mm 100 x 65	300 20	300 20	16	300 20	N/A	300 20
4x3 100 x 80	300 20	300 20	16	300 20	300 20	300 20
5x4 125 x 100	N/A	300 20	N/A	N/A	N/A	300 20
139.7 mmx4 125 x 100	N/A	300 20	N/A	N/A	N/A	300 20
165.1 mmx3 150 x 80	N/A	300 20	N/A	N/A	N/A	300 20
6x3 150 x 80	300 20	300 20	N/A	N/A	N/A	300 20
165.1 mmx4 150 x 100	300 20	300 20	N/A	300 20	300 20	300 20
6x4 150 x 100	300 20	300 20	N/A	N/A	N/A	300 20
8x165.1 mm 200 x 150	N/A	300 20	N/A	300 20	N/A	300 20
8x6 200 x 150	300 20	300 20	N/A	N/A	N/A	300 20

## General Notes:

- **Maximum Working Pressure (CWP)** listed is the maximum cold water pressure for general piping services tested to ASTM F1476 and or AWWA C606 methods. Figures listed are based on roll- or cut-grooved standard wall carbon steel pipe. For other pipe schedules or pipe materials, contact **Shurjoint** for additional information.
- **Max. End Load** is calculated based on the maximum working pressure (CWP).
- **Listed and or Approved Pressures** are pressure ratings for fire protection systems, tested and approved by various approval bodies. Please always refer to the latest approval data posted on the **Shurjoint** website.
- **Field Joint Test:** For one time only the system may be tested hydrostatically at 1½ times the maximum working pressure listed (AWWA C606 5.2.3).
- **Warning:** Piping systems must always be depressurized and drained before attempting disassembly and or removal of any components.
- **The 10 Year Limited Warranty** applies to manufacturing defects only and does not cover severe service/temperature applications or wear parts.
- **Shurjoint** reserves the right to change specifications, designs and or standard without notice and without incurring any obligations.

*Shurjoint product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact **Shurjoint** Technical Service. **Shurjoint** reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligations to make such changes and modifications on **Shurjoint** products previously subsequently sold.*