

DI GROOVED STANDARD REDUCING FLEXIBLE COUPLING

Type: 1N

Doc No: DS-400-1NY-02-E

1.0 PRODUCT OVERVIEW

Reducing flexible couplings are mainly used for grooved pipe connections with different dimensions where adjacent pipe ends allow a certain amount of relative angular displacement and corresponding axial rotation.



Dimensions:

2"(DN50)– 8"(DN200)

Design Standard:

ISO6182, AWWA C606, GB 5135.11

Connection Standard:

ASME B36.10, ASTM A53-A53M, ISO 4200

Working Pressure:

175PSI-300PSI

Application:

Reducing flexible couplings are suitable for medium and low pressure pipeline systems with nominal pressure 175-300 PSI, nominal size DN50-DN200, temperature range of - 20 °C-+180°C, which are widely applied in water supply and drainage, fire-fighting, air conditioning, etc.

Pipe Material:

Welded and seamless rolled steel pipes according to ASME B36.10, ASTM A53-A53M, ISO 4200, GB/T 21835

Indian Pipes Standard IS1239 up to 150mm (6") and IS3589 for larger

Surface Treatment:

- Electrophoretic painting
- Epoxy power painting (color code like RAL3000, etc)
- Hot-dip galvanizing
- Black

Others would be available upon clients' detailed request

2.0 APPROVALS



3.0 SPECIFICATIONS

Housing:

ASTM A536, Ductile iron according to 65-45-12. The nodularity is more than 90%, ensuring excellent physical and mechanical properties.

Gasket:

1、EPDM Gasket, code E:

Temperature: $-34^{\circ}\text{C} \sim +110^{\circ}\text{C}$ ($-30 \sim +230^{\circ}\text{F}$) ;

Applicable media: water, gas, diluted acid (base), and other chemicals (excluding hydrocarbons)

Note: Strictly prohibit the use of oil and hydrocarbons.

2、NBR, code D:

Temperature: $-29^{\circ}\text{C} \sim +82^{\circ}\text{C}$ ($-20 \sim +180^{\circ}\text{F}$) ;

Applicable media: Petroleum products, vegetable oils, mineral oils, etc.

Note: strictly prohibit use with high temperature substances.

3、Silicone Rubber, code S:

Temperature: $-40^{\circ}\text{C} \sim +177^{\circ}\text{C}$ ($-40 \sim +350^{\circ}\text{F}$)

Applicable media: High temperature and dry air and some high temperature chemicals, drinking water and so on.

4、Chloroprene Rubber, code LD:

Temperature: $-32^{\circ}\text{C} \sim +82^{\circ}\text{C}$ ($-26 \sim +180^{\circ}\text{F}$)

Applicable media: sea water

5、Fluororubber, code F:

Temperature: $-20^{\circ}\text{C} \sim +180^{\circ}\text{C}$

Applicable media: Hot oil, some chemical products, good oxidation resistance.

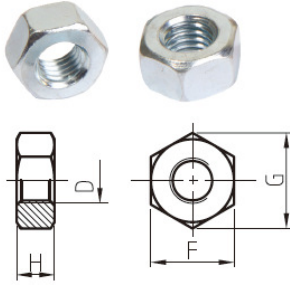
Bolts/Nuts:

ANSI Heavy Hex Nut

1. Material: SAE J995 2.

2. Thread: ANSI B 1.1-1982, class 2B.

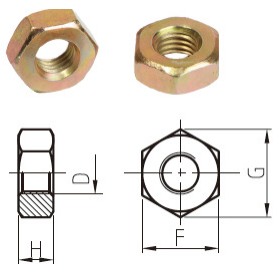
3. Surface Treatment: Zinc electroplated per ASTM B633 CLASS FE/ZN5 TYPE III, thickness $\geq 5\mu\text{m}$ per class SC1.



d	F		G		H	
	Min	Max	Min	Max	Min	Max
3/8-16UNC	16.99	17.47	19.38	20.17	8.66	9.57
1/2-13UNC	21.59	22.22	24.61	25.65	11.78	12.80
5/8-11UNC	26.19	26.97	29.85	31.16	14.90	16.02
3/4-10UNC	30.78	31.75	35.10	36.65	18.03	19.25
7/8-9UNC	35.41	36.53	40.36	42.16	21.16	22.48

Metric Heavy Hex Nut

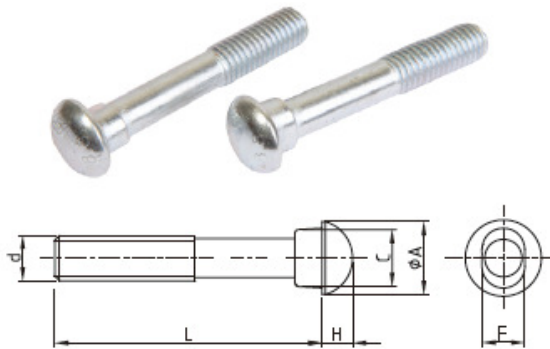
1. Material: ISO 898-2:1992 \ GB/T3098.2-2000 Class 8.
2. Thread: ISO 261, tolerance 6h for M10& M12, 7h for M16 and above.
3. Surface Treatment: Zinc Electroplated followed by a yellow chromate dip per ISO 2081 FE/ZN5, ISO4520 CLASS 1A.



d	F		G	H	
	Min	Max	Min	Min	Max
M10	15.73	16.0	17.7	8.0	8.4
M12	21.16	22.0	23.9	9.34	10.0
M16	23.16	24.0	26.17	14.1	15.9
M20	29.16	30.0	32.95	16.9	19.0
M22	33.0	34.0	37.29	18.1	20.2

ANSI Oval Neck Track Bolt

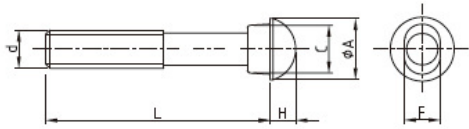
1. Material: SAE J429 5.
2. Thread: UNC thread per ANSI B 1.1 Class 2A.
3. Surface Treatment: Silver chromate electroplated per ASTM B633 CLASS FE/ZN5 TYPE III, thickness $\geq 5\mu\text{m}$ per class SC1.



d	A	C	F	H	L
3/8-16UNC	19	13.9	9.50	6.0	55/70
1/2-13UNC	22.5	16	12.70	8.0	70/75
5/8-11UNC	27.4	19.8	15.90	10.0	80/85/105
3/4-10UNC	32.5	26.2	19.05	12.0	115/120
7/8-9UNC	37.7	28.8	22.20	14.0	125/140

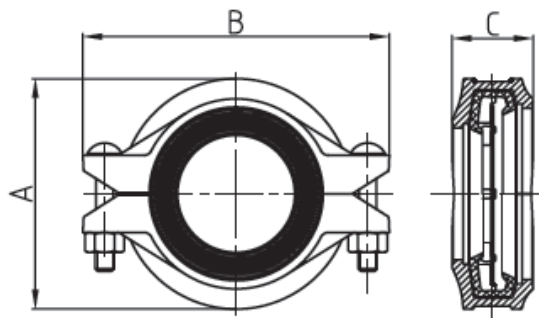
Metric Oval Neck Track Bolt

1. Material: ISO 898-1: 1992 \ GB/T3098.1-2000 Class 8.8.
2. Thread: ISO metric thread per ISO 261, tolerance 6h.
3. Surface Treatment: Yellow chromate electroplated per ISO 2081 FE/ZN5 ISO4520 CLASS 1A.



d	A	C	F	H	L
M10	18.5	13.5	9.5	5	50/57/63/70/89
M12	23.5	17.5	12.3	8	70/76/82/89/108
M16	29.5	20.5	15.7	10	85/89/95/108
M20	38	27	18.3	12.5	110/115
M22	42.2	31	21.4	14	125/140/150

4.0 DIMENSIONS AND PERFORMANCE



Nominal Size	Pipe O.D	Working Pressure	Dimensions			Bolt Size
			A mm/in	B mm/in	C mm/in	
50X40 2X1½	60.3X48.3 2.375X1.900	300 2.07	86 3.39	125 4.93	44 1.74	2-3/8X55 2-M10X57
65x25 2½X1	73.0X33.7 2.875x1.327	300 2.07	100 3.94	138 5.44	45 1.78	2-3/8X55 2-M10X57
65x50 2½X2	73.0X60.3 2.875x2.375	300 2.07	100 3.94	138 5.43	45 1.78	2-3/8X55 2-M10X57
65x25 2½X1	76.1X33.7 3.000x1.327	300 2.07	102 4.02	140 5.51	45 1.78	2-3/8X55 2-M10X57
65x40	76.1X48.3	300	102	140	45	2-3/8X55

2½×1½	3.000×1.900	2.07	4.02	5.51	1.78	2-M10X57
65×50	76.1X60.3	300	102	144	45	2-3/8X55
2½×2	3.000×2.375	2.07	4.02	5.67	1.78	2-M10X57
80×25	88.9X33.7	300	115	168	46	2-1/2X70
3×1	3.500×1.327	2.07	4.53	6.61	1.81	2-M12X70
80×50	88.9X60.3	300	115	168	46	2-1/2X70
3×2	3.500×2.375	2.07	4.53	6.61	1.81	2-M12X70
80×65	88.9X73.0	300	115	168	46	2-1/2X70
3×2½	3.500×2.875	2.07	4.53	6.61	1.81	2-M12X70
80×65	88.9X76.1	300	115	172	46	2-1/2X70
3×2½	3.500×3.000	2.07	4.53	6.77	1.81	2-M12X70
100×25	114.3×33.7	300	144	198	50	2-1/2X70
4×1	4.500×1.327	2.07	5.67	7.8	1.97	2-M12X70
100×50	114.3×60.3	300	144	198	50	2-1/2X70
4×2	4.500×2.375	2.07	5.67	7.8	1.97	2-M12X70
100×65	114.3×73.0	300	144	198	50	2-1/2X70
4×2½	4.500×2.875	2.07	5.67	7.8	1.97	2-M12X70
100×65	114.3×76.1	300	144	202	50	2-1/2X70
4×2½	4.500×3.000	2.07	5.67	7.95	1.97	2-M12X70
100×80	114.3×88.9	300	148	198	50	2-1/2X70
4×3	4.500×3.500	2.07	5.83	7.8	1.97	2-M12X70
150 X 80	165.1 X 88.9	300	200	260	51	2-3/4X115
6X3	6.500×3.500	2.07	7.87	10.24	2.01	2-M20X115
150×100	165.1×114.3	300	197	260	51	2-5/8X85
6×4	6.500×4.500	2.07	7.75	10.24	2.01	2-M16X85
150×80	168.3×88.9	300	200	268	51	2-5/8X85
6×3	6.625×3.500	2.07	7.87	10.55	2.01	2-M16X85

Nominal Size	Pipe O.D	Working Pressure	Dimensions			Bolt Size
			A	B	C	
DN/in	mm/in	PSI/MPa	mm/in	mm/in	mm/in	No.-Size mm
150×100 6×4	165.1×114.3	300	197	260	51	2-5/8X85
	6.500×4.500	2.07	7.75	10.24	2.01	2-M16X85
150×80 6×3	168.3×88.9	300	200	268	51	2-5/8X85
	6.625×3.500	2.07	7.87	10.55	2.01	2-M16X85
150×100 6×4	168.3×114.3	300	202.5	268	52.5	2-5/8X85
	6.625×4.500	2.07	7.97	10.55	2.07	2-M16X85
150×150 6×6	168.3×165.1	300	204	268	52.5	2-5/8X85
	6.625×6.500	2.07	8.031	10.551	2.066	2-M16X85
200×150 8×6	219.1×165.1	300	257	335	60	2-3/4X115
	8.625×6.500	2.07	10.12	13.19	2.36	2-M20X115
200×150 8×6	219.1×168.3	300	260	338	60	2-3/4X115
	8.625×6.625	2.07	10.24	13.31	2.36	2-M20X115

Working pressure and end loads for carbon steel pipes.

Nom. Size	Pipe O.D	1N Reducing Coupling					Max. End Load	Pipe End Separation
		Cut Grooved		Roll Grooved				
		Max. Working Pressure		Max. Working Pressure				
		Sch.30	Sch.40	Sch.10	Sch.30	Sch.40		
DN/in	mm/in	Bar/Psi	Bar/Psi	Bar/Psi	Bar/Psi	Bar/Psi	KN/Lbs	mm/in
50X40 2X1½	60.3X48.3 2.375X1.900	20/300	20/300	20/300	20/300	20/300	5.9/1330	0-3.2 0-0.13
65×25 2½×1	73.0X33.7 2.875×1.327	20/300	20/300	20/300	20/300	20/300	8.7/1950	0-3.2 0-0.13
65×50 2½×2	73.0X60.3 2.875×2.375	20/300	20/300	20/300	20/300	20/300	8.7/1950	0-3.2 0-0.13
65×25 2½×1	76.1X33.7 3.000×1.327	20/300	20/300	20/300	20/300	20/300	9.4/2120	0-3.2 0-0.13
65×40 2½×1½	76.1X48.3 3.000×1.900	20/300	20/300	20/300	20/300	20/300	9.4/2120	0-3.2 0-0.13
65×50 2½×2	76.1X60.3 3.000×2.375	20/300	20/300	20/300	20/300	20/300	9.4/2120	0-3.2 0-0.13
80×25 3×1	88.9X33.7 3.500×1.327	20/300	20/300	20/300	20/300	20/300	12.8/2885	0-3.2 0-0.13
80×50 3×2	88.9X60.3 3.500×2.375	20/300	20/300	20/300	20/300	20/300	12.8/2885	0-3.2 0-0.13
80×65 3×2½	88.9X73.0 3.500×2.875	20/300	20/300	20/300	20/300	20/300	12.8/2885	0-3.2 0-0.13

Nom. Size	Pipe O.D	1N Reducing Coupling					Max. End Load	Pipe End Separation
		Cut Grooved		Roll Grooved				
		Max. Working Pressure		Max. Working Pressure				
		Sch.30	Sch.40	Sch.10	Sch.30	Sch.40		
DN/in	mm/in	Bar/Psi	Bar/Psi	Bar/Psi	Bar/Psi	Bar/Psi	KN/Lbs	mm/in
80×65 3×2½	88.9X76.1 3.500×3.000	20/300	20/300	20/300	20/300	20/300	12.8/2885	0-3.2 0-0.13
100×25 4×1	114.3×33.7 4.500×1.327	20/300	20/300	20/300	20/300	20/300	21.2/4770	0-3.2 0-0.13
100×50 4×2	114.3×60.3 4.500×2.375	20/300	20/300	20/300	20/300	20/300	21.2/4770	0-3.2 0-0.13
100×65 4×2½	114.3×73.0 4.500×2.875	20/300	20/300	20/300	20/300	20/300	21.2/4770	0-3.2 0-0.13
100×65 4×2½	114.3×76.1 4.500×3.000	20/300	20/300	20/300	20/300	20/300	21.2/4770	0-3.2 0-0.13
100×80 4×3	114.3×88.9 4.500×3.500	20/300	20/300	20/300	20/300	20/300	21.2/4770	0-3.2 0-0.13
150 X 80 6X3	165.1 X 88.9 6.500×3.500	20/300	20/300	20/300	20/300	20/300	44.3/9960	0-3.2 0-0.13

150×100 6×4	165.1×114.3 6.500×4.500	20/300	20/300	20/300	20/300	20/300	44.3/9960	0-3.2 0-0.13
150×80 6×3	168.3×88.9 6.625×3.500	20/300	20/300	20/300	20/300	20/300	46.0/10340	0-3.2 0-0.13
150×100 6×4	168.3×114.3 6.625×4.500	20/300	20/300	20/300	20/300	20/300	46.0/10340	0-3.2 0-0.13
150×150 6×6	168.3×165.1 6.625×6.500	20/300	20/300	20/300	20/300	20/300	46.0/10340	0-3.2 0-0.13
200×150 8×6	219.1×165.1 8.625×6.500	20/300	20/300	20/300	20/300	20/300	77.8/17500	0-3.2 0-0.13
200×150 8×6	219.1×168.3 8.625×6.625	20/300	20/300	20/300	20/300	20/300	77.8/17500	0-3.2 0-0.13

5.0 REFERENCE MATERIALS

Approved certification for Grooved Fittings and Couplings

I-JM-Grooved fitting: Installation Instructions for grooved fittings and couplings