

## 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:

Epoxy power painting

## 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.

### Bolts/Nuts:

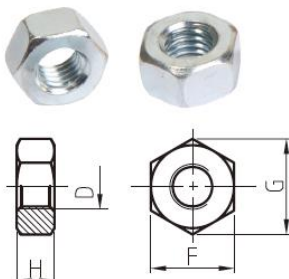
#### ANSI Heavy Hex Nut

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.



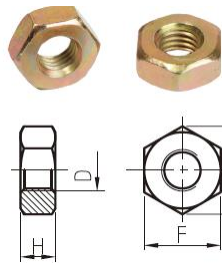
d	F		G		H	
	Min	Max	Min	Max	Min	Max
3/8-16UNC	16.99	17.47	19.38	20.17	8.66	9.57
1/2-13UNC	21.59	22.22	24.61	25.65	11.78	12.80
5/8-11UNC	26.19	26.97	29.85	31.16	14.90	16.02
3/4-10UNC	30.78	31.75	35.10	36.65	18.03	19.25
7/8-9UNC	35.41	36.53	40.36	42.16	21.16	22.48

#### 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.

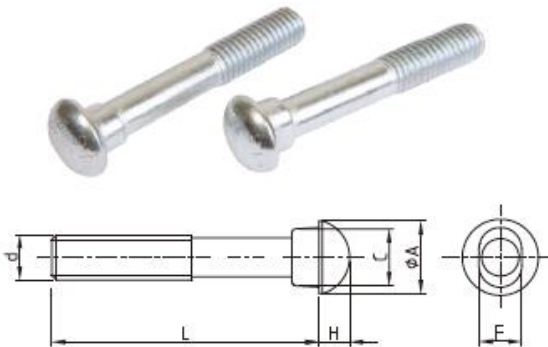
3. Surface Treatment: Zinc Electroplated followed by a yellow chromate dip per ISO 2081 FE/ZN5, ISO4520 CLASS 1A.



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

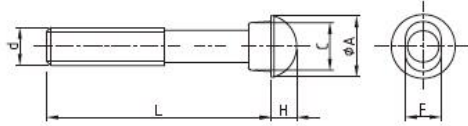
1. Material: SAE J429 5.
2. Thread: UNC thread per ANSI B 1.1 Class 2A.
3. Surface Treatment: Silver chromate electroplated per ASTM B633 CLASS FE/ZN5 TYPE III, thickness  $\geq 5\mu\text{m}$  per class SC1.



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

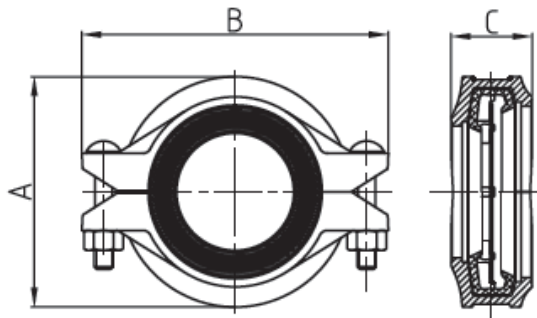
## Metric Oval Neck Track Bolt

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	B	C	
DN/in	mm/in	PSI/MPa	mm/in	mm/in	mm/in	No.-Size mm
50X40	60.3X48.3	300	86	125	44	2-3/8X55
2X1½	2.375X1.900	2.07	3.39	4.93	1.74	2-M10X57
65x25	73.0X33.7	300	100	138	45	2-3/8X55
2½×1	2.875×1.327	2.07	3.94	5.44	1.78	2-M10X57
65x50	73.0X60.3	300	100	138	45	2-3/8X55
2½×2	2.875×2.375	2.07	3.94	5.43	1.78	2-M10X57
65x25	76.1X33.7	300	102	140	45	2-3/8X55
2½×1	3.000×1.327	2.07	4.02	5.51	1.78	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

65x50 2½×2	76.1X60.3 3.000×2.375	300 2.07	102 4.02	144 5.67	45 1.78	2-3/8X55 2-M10X57
80x25 3x1	88.9X33.7 3.500×1.327	300 2.07	115 4.53	168 6.61	46 1.81	2-1/2X70 2-M12X70
80x50 3x2	88.9X60.3 3.500×2.375	300 2.07	115 4.53	168 6.61	46 1.81	2-1/2X70 2-M12X70
80x65 3x2½	88.9X73.0 3.500×2.875	300 2.07	115 4.53	168 6.61	46 1.81	2-1/2X70 2-M12X70
80x65 3x2½	88.9X76.1 3.500×3.000	300 2.07	115 4.53	172 6.77	46 1.81	2-1/2X70 2-M12X70
100x25 4x1	114.3x33.7 4.500×1.327	300 2.07	144 5.67	198 7.8	50 1.97	2-1/2X70 2-M12X70
100x50 4x2	114.3x60.3 4.500×2.375	300 2.07	144 5.67	198 7.8	50 1.97	2-1/2X70 2-M12X70
100x65 4x2½	114.3x73.0 4.500×2.875	300 2.07	144 5.67	198 7.8	50 1.97	2-1/2X70 2-M12X70
100x65 4x2½	114.3x76.1 4.500×3.000	300 2.07	144 5.67	202 7.95	50 1.97	2-1/2X70 2-M12X70
100x80 4x3	114.3x88.9 4.500×3.500	300 2.07	148 5.83	198 7.8	50 1.97	2-1/2X70 2-M12X70
150 X 80 6X3	165.1 X 88.9 6.500×3.500	300 2.07	200 7.87	260 10.24	51 2.01	2-3/4X115 2-M20X115
150x100 6x4	165.1x114.3 6.500×4.500	300 2.07	197 7.75	260 10.24	51 2.01	2-5/8X85 2-M16X85
150x80 6x3	168.3x88.9 6.625×3.500	300 2.07	200 7.87	268 10.55	51 2.01	2-5/8X85 2-M16X85

Nominal Size	Pipe O.D	Working Pressure	Dimensions			Bolt Size
			DN/in	A mm/in	B mm/in	
150x100 6x4	165.1x114.3 6.500×4.500	300 2.07	197 7.75	260 10.24	51 2.01	2-5/8X85 2-M16X85
150x80 6x3	168.3x88.9 6.625×3.500	300 2.07	200 7.87	268 10.55	51 2.01	2-5/8X85 2-M16X85
150x100 6x4	168.3x114.3 6.625×4.500	300 2.07	202.5 7.97	268 10.55	52.5 2.07	2-5/8X85 2-M16X85
150x150 6x6	168.3x165.1 6.625×6.500	300 2.07	204 8.031	268 10.551	52.5 2.066	2-5/8X85 2-M16X85
200x150 8x6	219.1x165.1 8.625×6.500	300 2.07	257 10.12	335 13.19	60 2.36	2-3/4X115 2-M20X115
200x150	219.1x168.3	300	260	338	60	2-3/4X115

8x6	8.625x6.625	2.07	10.24	13.31	2.36	2-M20X115
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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
65x25 2½x1	73.0X33.7 2.875x1.327	20/300	20/300	20/300	20/300	20/300	8.7/1950	0-3.2 0-0.13
65x50 2½x2	73.0X60.3 2.875x2.375	20/300	20/300	20/300	20/300	20/300	8.7/1950	0-3.2 0-0.13
65x25 2½x1	76.1X33.7 3.000x1.327	20/300	20/300	20/300	20/300	20/300	9.4/2120	0-3.2 0-0.13
65x40 2½x1½	76.1X48.3 3.000x1.900	20/300	20/300	20/300	20/300	20/300	9.4/2120	0-3.2 0-0.13
65x50 2½x2	76.1X60.3 3.000x2.375	20/300	20/300	20/300	20/300	20/300	9.4/2120	0-3.2 0-0.13
80x25 3x1	88.9X33.7 3.500x1.327	20/300	20/300	20/300	20/300	20/300	12.8/2885	0-3.2 0-0.13
80x50 3x2	88.9X60.3 3.500x2.375	20/300	20/300	20/300	20/300	20/300	12.8/2885	0-3.2 0-0.13
80x65 3x2½	88.9X73.0 3.500x2.875	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
80x65 3x2½	88.9X76.1 3.500x3.000	20/300	20/300	20/300	20/300	20/300	12.8/2885	0-3.2 0-0.13
100x25 4x1	114.3x33.7 4.500x1.327	20/300	20/300	20/300	20/300	20/300	21.2/4770	0-3.2 0-0.13
100x50 4x2	114.3x60.3 4.500x2.375	20/300	20/300	20/300	20/300	20/300	21.2/4770	0-3.2 0-0.13
100x65 4x2½	114.3x73.0 4.500x2.875	20/300	20/300	20/300	20/300	20/300	21.2/4770	0-3.2 0-0.13
100x65	114.3x76.1	20/300	20/300	20/300	20/300	20/300	21.2/4770	0-3.2

4x2½	4.500x3.000							0-0.13
100x80 4x3	114.3x88.9 4.500x3.500	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 6.500x3.500	20/300	20/300	20/300	20/300	20/300	44.3/9960	0-3.2 0-0.13
150x100 6x4	165.1x114.3 6.500x4.500	20/300	20/300	20/300	20/300	20/300	44.3/9960	0-3.2 0-0.13
150x80 6x3	168.3x88.9 6.625x3.500	20/300	20/300	20/300	20/300	20/300	46.0/10340	0-3.2 0-0.13
150x100 6x4	168.3x114.3 6.625x4.500	20/300	20/300	20/300	20/300	20/300	46.0/10340	0-3.2 0-0.13
150x150 6x6	168.3x165.1 6.625x6.500	20/300	20/300	20/300	20/300	20/300	46.0/10340	0-3.2 0-0.13
200x150 8x6	219.1x165.1 8.625x6.500	20/300	20/300	20/300	20/300	20/300	77.8/17500	0-3.2 0-0.13
200x150 8x6	219.1x168.3 8.625x6.625	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