

**1. PURPOSE**

This standard consists of pipe spacers which shall be square cut and made from standard weight and extra strong common black pipe, and tubing which shall be made from commercial grade, mechanical steel tubing.

**2. GENERAL**

To be classified as a spacer, a length of pipe or tubing must be more than .328 in (8.33 mm) but less than 6 in (152.4 mm). Spacers must not have specific surface finishes or coatings, nor must they have special restrictive tolerances other than that which is indicated in the tolerance section below.

Since there are no National or International standards on this product, the specifications are based on present user requirements. All dimensions are shown in inch and in direct metric conversions.

**3. RELATED DOCUMENTS****3.1 REFERENCE STANDARDS**

CNH STPA020—Fastener Finishes and Material Specifications  
 CNH MAT0310—Zinc Plating  
 FIAT 10178—Spacers

**3.2 REPLACED STANDARDS**

Case FM-030—Spacers – General Specification  
 Case FM-031—Spacers

**4. PREFERRED PARTS POLICY**

Because of the differentiation of even modules in the inch and the metric systems of measurement, it is not feasible to offer a stringent preferred dimensional policy, instead, the dimensions are shown in order of design requirement and in numerical progression.

**5. CROSS REFERENCE**

For cross-reference listing of company part numbers, go to [CNH Catalogue](#).

**6. TOLERANCES**

Spacers shall conform to the tolerances in Table 1.

AUTHOR	APPROVED BY	ECO	PART NUMBER
A KHAN	29JUL24	A KHAN	29JUL24
		35392803	<b>87307111</b>

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**7. METHOD OF MANUFACTURE**

Spacers shall be square cut with parallel ends within .016 in (0.41 mm). Spacers must be free from loose scale, sharp edges, and all other defects which might affect their serviceability.

**8. MATERIAL**

8.1 Pipe: Welded or seamless steel pipe per Case Material Specification MS-415.

8.2 Tube: 1010 through 1020 steel (STL). Spacers shall be square cut from one of the following grades of mechanical steel tubing as shown in CNH Material Specifications:

CNH MAT1005, Grade MD – Cold Drawn Butt Welded Tubing (CDBW)

CNH MAT1006, Grade A – Electric Resistance Welded Tubing (ERW)

CNH MAT1007, Grade A – Drawn Over Mandrel Tubing (DOM)

8.3 Cold Drawn Bar per CNH MAT1030 GRADE A or GRADE B

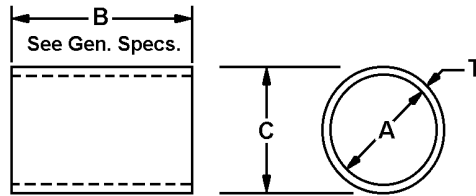
**9. FINISH**

9.1 Plain (PLN)

9.2 The preferred plating is Yellow Zinc with Chromate (ZND) per MAT0310 ZN YCR 5.

**10. DIMENSIONS**

For pipe and tubing dimensions, refer to Tables 3 and 4.

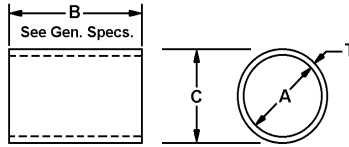


**Table 1: Spacer Tolerances**

Nominal Size	Pipe		Tube		Pipe	Tube	Pipe	Tube	Tube	
	Outside Diameter (C)				Thickness (T)		Length (B)		Max. ID Weld Flash	
	in	mm	in	mm	in	mm	in	mm	in	mm
Up to 1-½ in (38.1 mm)	+0.015 - .031	+0.38 - 0.79	±.005	±0.13	-12%	±12%	± .016 in ±0.41 mm	.010	.025	
Over 1-½ in (38.1 mm)	±1%		+0.010 - .005	+0.25 - 0.13						

**Table 2: Mechanical Properties**

	Pipe	Tube
Min. Yield	35,000 psi (241 MPa)	32,000 psi (221 MPa)
Min. Tensile	58,000 psi (400 MPa)	45,000 psi (310 MPa)



**Figure 1: Pipe/Tube Dimensions**  
**Table 3: Pipe and Tubing Dimensions (Inch Pipe and Tube)**

Nominal Size	Inside Dia. (A)		Outside Dia. (C)		Length (B)		Matl.	Finish	Part Number
	inch	mm	inch	mm	inch	mm			
1/8 PIPE	0.269	6.83	0.405	10.29	0.157	4	STL	ZND	84543947
	0.269	6.83	0.405	10.29	0.252	6.4	STL	ZND	87605321
	0.269	6.83	0.405	10.29	0.354	9	STL	ZND	87682401
	0.269	6.83	0.405	10.29	0.512	13.00	STL	ZND	87377305
	0.269	6.83	0.405	10.29	0.591	15.00	STL	ZND	87301392
	0.269	6.83	0.405	10.29	0.669	17.00	STL	ZND	47591131
	0.269	6.83	0.405	10.29	0.748	19.00	STL	ZND	87574372
1/4 XPIPE	0.302	7.67	0.540	13.72	0.252	6.4	STL	ZND	87610699
	0.302	7.67	0.540	13.72	2.362	60.00	STL	PLN	87034882
	0.302	7.67	0.540	13.72	2.952	75.00	STL	PLN	47643532
1/2 TUBE	0.334	8.48	0.500	12.70	0.138	3.50	STL	ZND	87360034
	0.334	8.48	0.500	12.70	0.314	8	STL	ZND	84379531
	0.334	8.48	0.500	12.70	0.375	9.53	STL	ZND	87026609
	0.334	8.48	0.500	12.70	0.500	12.70	STL	PLN	86632693
	0.334	8.48	0.500	12.70	0.500	12.70	STL	ZND	87035448
	0.334	8.48	0.500	12.70	0.660	16.80	STL	ZND	87392240
	0.334	8.48	0.500	12.70	0.660	16.80	STL	DOR	84600277
	0.334	8.48	0.500	12.70	1.437	36.5	STL	ZND	87698776
	0.334	8.48	0.500	12.70	1.437	36.5	STL	DOR	48193053
1/4 PIPE	0.364	9.25	0.540	13.72	0.375	9.53	STL	ZND	87342191
	0.364	9.25	0.540	13.72	0.750	19.05	STL	ZND	87036415
	0.364	9.25	0.540	13.72	0.94	23.81	STL	ZND	47513565
	0.364	9.25	0.540	13.72	1.12	28.58	STL	ZND	47513620
	0.364	9.25	0.540	13.72	1.31	33.37	STL	ZND	47699795
	0.364	9.25	0.540	13.72	1.51	38.37	STL	ZND	47699796
	0.364	9.25	0.540	13.72	2.000	50.80	STL	ZND	87302564
	0.364	9.25	0.540	13.72	5.812	147.62	STL	ZND	87302565
5/8 TUBE	0.407	10.34	0.625	15.88	0.250	6.30	STL	ZND	87342153
	0.407	10.34	0.625	15.88	0.3125	7.94	STL	ZND	47528906
	0.407	10.34	0.625	15.88	0.375	9.5	STL	ZND	626698
	0.407	10.34	0.625	15.88	0.472	12	STL	ZND	84238738
	0.407	10.34	0.625	15.88	0.625	15.88	STL	ZND	87340800
	0.407	10.34	0.625	15.88	0.937	23.80	STL	ZND	87036413
	0.407	10.34	0.625	15.88	1.250	31.75	STL	ZND	47803084
	0.407	10.34	0.625	15.88	1.438	36.5	STL	ZND	84265307
	0.407	10.34	0.625	15.88	1.77	45	STL	ZND	84603134
	0.435	11.05	0.625	15.88	0.944	24	STL	ZND	47564256
	0.444	11.30	0.625	15.88	0.767	19.50	STL	ZND	87439665

**Table 3: Pipe and Tubing Dimensions (Inch Pipe and Tube) (Continued)**

Nominal Size	Inside Dia. (A)		Outside Dia. (C)		Length (B)		Matl.	Finish	Part Number
	inch	mm	inch	mm	inch	mm			
3/8 XPIPE	0.423	10.74	0.675	17.15	0.5	12.70	STL	ZND	48053290
	0.423	10.74	0.675	17.15	0.562	14.27	STL	ZND	87311354
	0.423	10.74	0.675	17.15	0.591	15.01	STL	PLN	47946450
	0.423	10.74	0.675	17.15	0.591	15.01	STL	ZND	87303203
	0.423	10.74	0.675	17.15	0.625	15.90	STL	ZND	48053291
	0.423	10.74	0.675	17.15	0.688	17.47	STL	ZND	48072126
	0.423	10.74	0.675	17.15	0.75	19.05	STL	PLN	71029
	0.423	10.74	0.675	17.15	0.812	20.64	STL	ZND	48070350
	0.423	10.74	0.675	17.15	1.062	26.97	STL	DAC	90470510
	0.423	10.74	0.675	17.15	2.0	50.8	STL	PLN	84156989
3/8 PIPE	0.493	12.52	0.675	17.15	0.472	12	STL	ZND	51521899
	0.493	12.52	0.675	17.15	0.735	18.66	STL	ZND	47931897
	0.493	12.52	0.675	17.15	2.875	73.03	STL	PLN	51200905
	0.493	12.52	0.675	17.15	3.000	76.20	STL	ZND	87302566
	0.493	12.52	0.675	17.15	4.375	111.13	STL	PLN	12781
3/4 TUBE	0.532	13.51	0.750	19.05	0.688	17.50	STL	ZND	87305403
	0.532	13.51	0.750	19.05	0.787	20	STL	DAC	90467413
	0.532	13.51	0.750	19.05	0.787	20	STL	ZND	84420571
	0.532	13.51	0.750	19.05	1.062	26.97	STL	ZND	87036416
	0.532	13.51	0.750	19.05	1.062	26.97	STL	DOR	48193055
	0.532	13.51	0.750	19.05	1.188	30.18	STL	ZND	87302880
	0.532	13.51	0.750	19.05	2.062	52.4	STL	PLN	87698774
	0.532	13.51	0.750	19.05	2.250	57.2	STL	DAC	90430261
	0.532	13.51	0.750	19.05	2.250	57.2	STL	ZND	87629530
	0.5335	13.55	0.7485	19.01	0.425	10.79	STL	PLN	14357
	0.5335	13.55	0.7485	19.01	0.425	10.79	STL	ZND	86622548
1/2 XPIPE	0.546	13.87	0.840	21.34	0.406	10.31	STL	PLN	87030560
	0.546	13.87	0.840	21.34	0.406	10.31	STL	ZND	87302487
	0.546	13.87	0.840	21.34	0.625	15.90	STL	ZND	47513658
	0.546	13.87	0.840	21.34	1.08	26.5	STL	ZND	47699797
	0.546	13.87	0.840	21.34	3.625	92.08	STL	ZND	47908968
1/2 PIPE	0.546	13.87	0.840	21.34	0.875	22.23	STL	ZND	87342195
	0.546	13.87	0.840	21.34	2.000	50.80	STL	ZND	87733372
	0.622	15.80	0.840	21.34	1.000	25.40	STL	ZND	87013910
	0.622	15.80	0.840	21.34	1.812	46.02	STL	PLN	86982778
7/8 TUBE	0.657	16.69	0.875	22.23	0.406	10.31	STL	ZND	87305411
	0.657	16.69	0.875	22.23	0.625	15.90	STL	PLN	47745723
	0.657	16.69	0.875	22.23	0.625	15.90	STL	ZND	84576087
	0.657	16.69	0.875	22.23	0.688	17.50	STL	PLN	47745733
	0.657	16.69	0.875	22.23	0.875	22.20	STL	PLN	47745749

**Table 3: Pipe and Tubing Dimensions (Inch Pipe and Tube) (Continued)**

Nominal Size	Inside Dia. (A)		Outside Dia. (C)		Length (B)		Matl.	Finish	Part Number
	inch	mm	inch	mm	inch	mm			
7/8 TUBE	0.657	16.69	0.875	22.23	1.000	25.40	STL	ZND	87013871
	0.657	16.69	0.875	22.23	1.812	46.02	STL	ZND	87036417
3/4 XPIPE	0.742	18.85	1.050	26.67	0.625	15.90	STL	ZND	87015590
	0.791	20.09	1.182	30.02	0.67	17.0	STL	ZND	83935737
1 XPIPE	0.957	24.3	1.315	33.40	0.750	19	STL	PLN	84233544
1 TUBE	0.532	13.51	1	25.40	1.500	38.10	STL	ZND	91770138
	0.354	9.0	1	25.40	0.354	9.0	STL	DOR	51433884
	0.782	19.9	1	25.40	0.812	20.60	STL	ZND	87578956
1 PIPE	1.049	26.64	1.315	33.40	0.750	19.05	STL	ZND	87036419
	1.049	26.64	1.315	33.40	1.181	30.00	STL	ZND	87034740
	1.049	26.64	1.315	33.40	1.562	39.67	STL	ZND	87036418
1.25 TUBE	0.670	17	1.250	31.75	0.5	12.7	STL	ZND	86532860
	1.032	26.21	1.250	31.75	0.625	15.90	STL	ZND	87036414
	1.032	26.21	1.250	31.75	0.945	24	STL	ZND	84333573
1.50 TUBE	1.000	25.40	1.500	38.10	2.375	60.32	STL	PLN	47646115



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**Table 4: Pipe and Tubing Dimensions (Metric Tube Fiat 10178)**

Nominal Size	Inside Dia. (A)		Outside Dia. (C)		Length (B)		Matl.	Finish	Part Number
	inch	mm	inch	mm	inch	mm			
10 TUBE		6.5		10		10	STL	ZND	13609811
15 TUBE		6.5		15		5	STL	ZND	13604011
		6.5		15		5	STL	ZND	13604015
		6.5		15		10	STL	ZND	13604111
		6.5		15		10	STL	ZND	13604115
		6.5		15		15	STL	ZND	13604211
		6.5		15		20	STL	ZND	13604311
		6.5		15		25	STL	PLN	48142123
		6.5		15		25	STL	ZND	13604411
		6.5		15		30	STL	ZND	13604511
		6.5		15		37.5	STL	ZND	87681215
		6.5		15		45	STL	ZND	92302328
		8.5		15		8	STL	ZND	13611411
		8.5		15		23	STL	ZND	13611211
		8.5		15		10	PLASTIC	BLACK	13611087
		11.0		15		14	STL	ZND	47934382
	11.0		15.82		15	STL	ZND	47509074	
16 TUBE		10		16		11.5	STL	ZND	87610565
		10		16		13.5	STL	ZND	85802902
		10		16		15.5	STL	ZND	87615734
		10		16		16	STL	ZND	87357881
		10		16		17.5	STL	ZND	85802901
		10		16		19	STL	ZND	48043868
		10		16		25.5	STL	ZND	85802893
		10.5		16		20	STL	ZND	87311442
		10.5		16		86	STL	ZND	51412523
18 TUBE		8.5		18		5	STL	PLN	13605710
		8.5		18		5	STL	ZND	13605715
		8.5		18		10	STL	PLN	13605810
		8.5		18		10	STL	ZND	13605811
		8.5		18		10	STL	ZND	13605815
		8.5		18		15	STL	PLN	13605910
		8.5		18		15	STL	ZND	13605915
		8.5		18		25	STL	PLN	47855103
		8.5		18		25	STL	ZND	13606111
		8.5		18		30	STL	ZND	13606211
		9		18		40	STL	PLN	84361749
		8.5		18		40	STL	ZND	13606411

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Nominal Size	Inside Dia. (A)		Outside Dia. (C)		Length (B)		Matl.	Finish	Part Number
	inch	mm	inch	mm	inch	mm			
		8.5		18		45	STL	ZND	51652712

**Table 4: Pipe and Tubing Dimensions (Metric Tube Fiat 10178) (Continued)**

Nominal Size	Inside Dia. (A)		Outside Dia. (C)		Length (B)		Matl.	Finish	Part Number
	inch	mm	inch	mm	inch	mm			
18 TUBE		8.5		18		50	STL	ZND	13606611
		9		18		75	STL	ZND	84476721
19 TUBE		10		19		14	STL	PLN	698872
		10		19		14	STL	ZND	86610677
		12.7		19		9	STL	ZND	87311572
		13.5		19		68.3	STL	PLN	86837467
		13.5		19		68.3	STL	ZND	86837468
		9.5		19.1		10	STL	ZND	47597579
22 TUBE		11		22		22	STL	ZND	87585960
		11		22		30	STL	ZND	87417599
25 TUBE		11		25		20	STL	ZND	90404697
26 TUBE		12.5		26		16	STL	ZND	84348221
27 TUBE		12.7		27		10	STL	ZND	87475733
30 TUBE		11		30		11	STL	ZND	85818943
		17		30		12	STL	ZND	87747362