SS304 SS321 SS316 Stainless Steel Cross Fitting With SCH40S SCH10s

Our Product Introduction

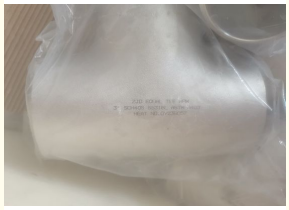
Basic Information

- Place of Origin: CHINA
- Brand Name: DEYE
- Certification: ISO9001:2015 PED
- Model Number: PF-CTEE-SS-01
- Minimum Order Quantity: 10PCS
- Price: USD2-10 for small sizes
- Packaging Details: plastic bag+cartons+ply wooden cases
- Delivery Time: 5-8 days for stock items
- Supply Ability: 100000 pcs month

Product Specification

- Material: SS316L, SS316, SS304L, SS304, SS321,DUPLEX SS2205, 2507
- Connection: Butt Welded BW
- Thickness: Sch5s, Sch10s, Sch40s, Sch80s, Sch160, Xs,xxs
- Surface: Pickling, Polish
- Highlight: **SS316 stainless steel cross fitting**, **SS321 stainless steel cross fitting**, **SS304 socket weld cross**

More Images



Product Description

SS316 304 321 201 Stainless Steel Pipe Fittings Cross Tee With SCH40S SCH10s

Brief Introduction

Stainless Steel Pipefittings: The ASME/ANSI B16.9 specification covers the dimensions and the tolerances of carbon and alloy butt weld fittings. The MSS-SP 43 specification integrates ASME B16.9 to cover stainless steel and nickel alloy pipe fittings. In this article, we show the dimensions and weights of buttweld elbows, tees, and reducers. Tolerances of butt weld fittings (in inches) according to ASME/ANSI B16.9. for all carbon alloy fittings except short radius elbows and returns (ASME/ANSI B16.28).

The details Specification as below:

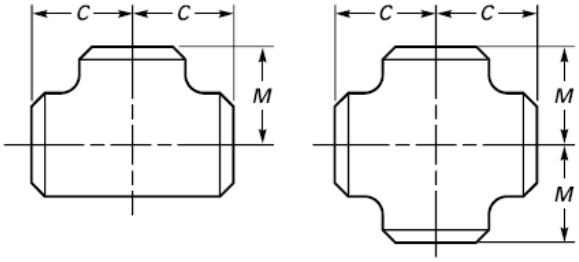
Products Name	ANSI B16.9 BW SS Smsl seamless and welded Pipe Fitting
Types	Traight Tee, Equal Tee, Long Raduis Elbows, Short Raduis Elbow, 180deg bends, Returns, Reducing Eblows,Concentric. Reducers, Eccentric. redcuers, Y tees, caps, Stub Ends,
Size	1/2"-72" DN15-DN1800
Wall Thickness	SCH5S,SCH10s,SCH20S,SCH30,STD,SCH40S,SCH60,XS,SCH80S,SCH100, SCH120,SCH160S,XXS, DIN, SGP JIS thickness
Design Standard	ASTMA312, ASTM A403WP, A234WPB A420, ANSI B16.9/B16.28/B16.25
	JIS B2311-1997/2312, JIS B2311/B2312, DIN 2605-1/2617/2615,
	GB 12459-99,EN Standard etc.
Material List	Stainless Steel304, 304L, 304H, 316, 316L, 316H, 310, SS321, SS321H, 347, 347H, 904L
	Duplex SS 2507, DSS2205, UNS31803 UNS32750, UNS32760
	1.4301,1.4306, 1.4401, 1.4435, 1.4406, 1.4404, 1.4462, 1.4410, 1.4501
	Carbon Steel A234 WPB, WP5, WP9,WP11, WP22, A420WPL6, A420WPL8
	ST37.0,ST35.8,ST37.2,ST35.4/8,ST42,ST45,ST52,ST52.4
	STP G38,STP G42,STPT42,STB42,STS42,STPT49,STS49
Surface	Acid pickling, Polished
Application/ Usage	Low and middle pressure fluid pipeline,boiler, petroleum and natural gas industry, drilling,chemical industry, electric industry,shipbuilding,fertilizer equipment and pipeline, structure,petrochemical,pharmaceutical industry,etc.

Thickness List as per ANSI B16.9, MSS SP-44

Nominal Pipe Size DN (in)	Outside Dimeter D	Norminal Wall Thickness (MM)									
		Sch5s	Sch10S	Sch10	Sch40s	Sch40	Sch80s	Sch80	Schl20	Sch160	XXS
1/8	10. 3	——	1. 24	——	1. 73	1. 73	2. 41	2. 41	——	——	——
1/4	13. 7	—	1. 65	—	2. 24	2. 24	3. 02	3. 02	—	—	—
3/8	17. 1	—	1. 65	—	2. 31	2. 31	3. 20	3. 20	—	—	—
1/2	21. 3	1.65	2. 11	——	2. 77	2. 77	3. 73	3. 73	——	4. 78	7. 47
3/4	26. 7	1.65	2. 11	——	2. 87	2. 87	3. 91	3. 91	——	5. 56	7. 82
1	33.4	1. 65	2. 77	—	3. 38	3. 38	4. 55	4. 55	—	6. 35	9. 09
1 1/4	42. 2	1.65	2. 77	—	3. 56	3. 56	4. 85	4. 85	—	6. 35	9. 70
1 1/2	48. 3	1.65	2. 77	——	3. 68	3. 68	5. 08	5. 08	——	7. 14	10. 15
2	60. 3	1. 65	2. 77	——	3. 91	3. 91	5. 54	5. 54	——	8. 74	11. 07
2 1/2	73. 0	2. 11	3. 05	—	5. 16	5. 16	7. 01	7.01	—	9. 53	14. 02
3	88. 9	2. 11	3. 05	—	5. 49	5. 49	7. 62	7. 62	—	11. 13	15. 24
3 1/2	101. 6	2. 11	3. 05	——	5. 74	5. 74	8. 08	8. 08	——	——	——
4	114. 3	2. 11	3. 05	——	6. 02	6. 02	8. 56	8. 56	11. 13	13. 49	17. 12
5	141. 3	2. 77	3. 40	—	6. 55	6. 55	9. 53	9. 53	12. 70	15. 88	19. 05
6	168. 3	2. 77	3. 40	—	7. 11	7. 11	10. 97	10. 97	14. 27	18. 26	21.95
8	219. 1	2. 77	3. 76	——	8. 18	8. 18	12. 70	12. 70	18. 26	23. 01	22.23
10	273. 1	3. 40	4. 19	——	9. 27	9.27	12. 70	15. 09	21. 44	28. 58	25. 40
12	323.9	3. 96	4. 57	—	9. 53	10. 31	12. 70	17. 48	25. 40	33. 32	25. 40
14	355. 6	3. 96	4. 78	6. 35	—	11. 13	—	19. 05	27. 79	35. 71	—
16	406. 4	4. 19	4. 78	6. 35	——	12. 70	——	21. 44	30. 96	40. 49	——

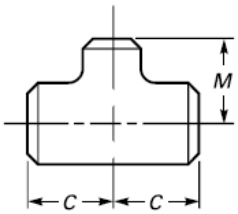
18	457. 2	4. 19	4. 78	6. 35	——	14. 27	——	23. 83	34. 96	45. 24	——
20	508. 0	4. 78	5. 54	6. 35	—	15. 09	—	26. 19	38. 10	50. 01	—
22	558. 8	4. 78	5. 54	6. 35	—	—	—	28. 58	41. 28	53. 98	—
24	609. 6	5. 54	6. 35	6. 35	——	17. 48	——	30. 96	46. 02	59. 54	——
26	660.4	——	——	7. 92	——	——	——	——	——	——	——
28	711.2	—	—	7. 92	—	—	—	—	—	—	—
30	762. 0	6. 35	7. 92	7. 92	—	—	—	—	—	—	—
32	812. 8	——	——	7. 92	——	17. 48	——	——	——	——	——
34	863. 6	——	——	7. 92	——	17. 48	——	——	——	——	——
36	914. 4	—	—	7. 92	—	17. 48	—	—	—	—	—
38	965.2	—	—	—	—	—	—	—	—	—	—
40	1016. 0	——	——	——	——	——	——	——	——	——	——
42	1066. 8	——	——	——	——	——	——	——	——	——	——
44	1117. 6	—	—	—	—	—	—	—	—	—	—
46	1168.4	—	—	—	—	—	—	—	—	—	—
48	1219. 2	—	—	—	—	—	—	—	—	—	—

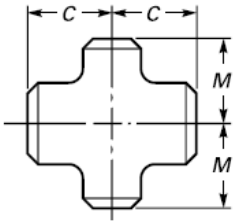
Dimensions of Straight Tees and Crosses



Nominal Pipe Size (NPS)	Outside Diameter at Bevel	Center-to-End	
		Run, C	Outlet, M [Notes (1) and (2)]
72	21.3	25	25
%	26.7	29	29
1	33.4	38	38
174	42.2	48	48
i72	48.3	57	57
2	60.3	64	64
272	73.0	76	76
3	88.9	86	86
372	101.6	95	95
4	114.3	105	105
5	141.3	124	124
6	168.3	143	143
8	219.1	178	178
10	273.0	216	216
12	323.8	254	254
14	355.6	279	279
16	406.4	305	305
18	457.0	343	343
20	508.0	381	381
22	559.0	419	419
24	610.0	432	432
26	660.0	495	495
28	711.0	521	521
30	762.0	559	559
32	813.0	597	597
34	864.0	635	635
36	914.0	673	673
38	965.0	711	711
40	1 016.0	749	749
42	1 067.0	762	711
44	1 118.0	813	762
46	1 168.0	851	800
48	1 219.0	889	838

Dimensions of Reducing Outlet Tees and Reducing Outlet Crosses





Nominal Pipe Size (NPS)	Outside Diameter at Bevel		Center-to-End		Nominal Pipe Size (NPS)	Outside Diameter at Bevel		Center-to-End	
	Run	Outlet	Run, C	Outlet, M [Note (1)]		Run	Outlet	Run, C	Outlet, M [Note (1)]
1/2 x1/2 x3/8	21.3	17.3	25	25	4 x 4 x 3-1/2	114.3	101.6	105	102
1/2 x1/2 x1/4	21.3	13.7	25	25	4x4x3	114.3	88.9	105	98
3/4 x 3/4 x1/2	26.7	21.3	29	29	4 X 4 X 2-1/2	114.3	73.0	105	95
3/4 x 3/4 x3/8	26.7	17.3	29	29	4x4x2	114.3	60.3	105	89
1 X 1 X 3/4	33.4	26.7	38	38	4 x 4 x 1-1/2	114.3	48.3	105	86
1 x 1 x 1/2	33.4	21.3	38	38					
					5X5X4	141.3	114.3	124	117
1-1/4 x 1-1/4 x 1	42.2	33.4	48	48	5 X 5 X 3-1/2	141.3	101.6	124	114
1-1/4 x 1-1/4 x3/4	42.2	26.7	48	48	5X5X3	141.3	88.9	124	111
1-1/4 x 1-1/4 x1/2	42.2	21.3	48	48	5 X 5 X 2-1/2	141.3	73.0	124	108
					5X5X2	141.3	60.3	124	105
1-1/2 x1-1/2 x 1-1/4	48.3	42.2	57	57	6X6X5	168.3	141.3	143	137
1-1/2 x1-1/2 x 1	48.3	33.4	57	57	6x6x4	168.3	114.3	143	130
1-1/2 x1-1/2 x3/4	48.3	26.7	57	57	6 x 6 x 3-1/2	168.3	101.6	143	127
1-1/2 x1-1/2 x 1/2	48.3	21.3	57	57	6x6x3	168.3	88.9	143	124
					6 x 6 x 2-1/2	168.3	73.0	143	121
2 x 2 x 1-1/2	60.3	48.3	64	60					
2 x 2 x 1-1/4	60.3	42.2	64	57	8x8x6	219.1	168.3	178	168
2 X 2 X 1	60.3	33.4	64	51	8x8x5	219.1	141.3	178	162
2 x 2 x 3/4	60.3	26.7	64	44	8X8X4	219.1	114.3	178	156
					8 x 8 x 3-1/2	219.1	101.6	178	152
2-1/2 X 2-1/2 X 2	73.0	60.3	76	70					
2-1/2 X 2-1/2 X 1-1/2	73.0	48.3	76	67	10 x 10 x 8	273.0	219.1	216	203
2-1/2 X 2-1/2 X 1-1/4	73.0	42.2	76	64	10 x 10 x 6	273.0	168.3	216	194
2-1/2 X 2-1/2 X 1	73.0	33.4	76	57	10 x 10 x 5	273.0	141.3	216	191
					10 x 10 x 4	273.0	114.3	216	184
3 X 3 X 2-1/2	88.9	73.0	86	83	12 x 12 x 10	323.8	273.0	254	241
3x3x2	88.9	60.3	86	76	12 x 12 x 8	323.8	219.1	254	229
3 x 3 x 1-1/2	88.9	48.3	86	73	12 X 12 X 6	323.8	168.3	254	219
3 x 3 x 1-1/4	88.9	42.2	86	70	12 x 12 x 5	323.8	141.3	254	216
3-1/2 x 3-1/2 x 3	101.6	88.9	95	92	14 X 14 X 12	355.6	323.8	279	270
3-1/2 x 3-1/2 x 2-1/2	101.6	73.0	95	89	14 X 14 X 10	355.6	273.0	279	257
3-1/2 x 3-1/2 x 2	101.6	60.3	95	83	14 X 14 X 8	355.6	219.1	279	248
3-1/2 x 3-1/2 x 1-1/2	101.6	48.3	95	79	14 x 14 x 6	355.6	168.3	279	238

Size (NPS)	Outside Diameter at Bevel		Center to Ends		Nominal Pipe Size (NPS)	Outside Diameter at Bevel		Center to Ends	
	Run	Outlet	Run, C	Outlet, M [Note (1)]		Run	Outlet	Run, C	Outlet, M [Note (1)]
16 x 14	406.4	355.6	305	305	28 X 28 X 26	711	660.0	521	521
16 x 12	406.4	323.8	305	295	28 X 28 X 24	711	610.0	521	508
16 x 10	406.4	273.0	305	283	28 x 28 x 22	711	559.0	521	495
16 x 8	406.4	219.1	305	273	28 x 28 x 20	711	508.0	521	483
16 x 6	406.4	168.3	305	264					
					28 X 28 X 18	711	457.0	521	470
18 x 16	457.0	406.4	343	330	28 X 28 X 16	711	406.4	521	457

18 x 14	457.0	355.6	343	330	28 x 28 x 14	711	355.6	521	457
18 X 12	457.0	323.8	343	321	28 X 28 X 12	711	323.8	521	448
18 x 10	457.0	273.0	343	308					
18 X 8	457.0	219.1	343	298	30 X 30 X 28	762	711.0	559	546
					30 x 30 x 26	762	660.0	559	546
20 X 18	508.0	457.0	381	368	30 x 30 x 24	762	610.0	559	533
20 x 16	508.0	406.4	381	356	30 x 30 x 22	762	559.0	559	521
20 x 14	508.0	355.6	381	356	30 x 30 x 20	762	508.0	559	508
20 X 12	508.0	323.8	381	346					
20 X 10	508.0	273.0	381	333	30 x 30 x 18	762	457.0	559	495
20 X 8	508.0	219.1	381	324	30 x 30 x 16	762	406.4	559	483
					30 x 30 x 14	762	355.6	559	483
22 X 20	559.0	508.0	419	406	30 x 30 x 12	762	323.8	559	473
22 x 18	559.0	457.0	419	394	30 x 30 x 10	762	273.0	559	460
22 x 16	559.0	406.4	419	381					
22 X 14	559.0	355.6	419	381	32 x 32 x 30	813	762.0	597	584
22 X 12	559.0	323.8	419	371	32 X 32 X 28	813	711.0	597	572
22 X 10	559.0	273.0	419	359	32 X 32 X 26	813	660.0	597	572
					32 x 32 x 24	813	610.0	597	559
24 X 22	610.0	559.0	432	432					
24 X 20	610.0	508.0	432	432	32 X 32 X 22	813	559.0	597	546
24 X 18	610.0	457.0	432	419	32 X 32 X 20	813	508.0	597	533
					32 X 32 X 18	813	457.0	597	521
24 X 16	610.0	406.4	432	406	32 x 32 x 16	813	406.4	597	508
24 X 14	610.0	355.6	432	406	32 X 32 X 14	813	355.6	597	508
24 X 12	610.0	323.8	432	397					
24 x 10	610.0	273.0	432	384	34 x 34 x 32	864	813.0	635	622
					34 x 34 x 30	864	762.0	635	610
26 X 24	660.0	610.0	495	483	34 x 34 x 28	864	711.0	635	597
26 x 22	660.0	559.0	495	470	34 x 34 x 26	864	660.0	635	597
26 X 20	660.0	508.0	495	457					
					34 x 34 x 24	864	610.0	635	584
26 x 18	660.0	457.0	495	444	34 x 34 x 22	864	559.0	635	572
26 X 16	660.0	406.4	495	432	34 x 34 x 20	864	508.0	635	559
26 x 14	660.0	355.6	495	432	34 x 34 x 18	864	457.0	635	546
26 X 12	660.0	323.8	495	422	34 x 34 x 16	864	406.4	635	533

The most common used material for ss butt welded pipefittings is SS304/304L, SS316/316L, DUPLEX SAF2507, SAF2205,
Detail's specification of the material as below.

Material Analysis

304/304L (UNS S30400/S30403)
Chemical Composition%

C	Cr	Mn	Ni	P	S	Si
≤	--	≤	--	≤	≤	≤
0.035	18.0-20.0	2.00	8.0-13.0	0.045	0.03	1.00

Tensile Strength: ≥ 485 Mpa (70KSI)
Yield Strength: ≥170Mpa (25KSPI)
Elongation ≥ 40%

316/316L (UNS S31600/S31603)
Chemical Composition%

C	Cr	Mn	Mo	Ni	P	S	Si
≤	--	≤		--	≤	≤	≤
0.035	16.0-18.0	2.00	2.0-3.0	10.0-14.0	0.045	0.03	1.00

Tensile Strength: ≥ 485 Mpa (70KSI)
Yield Strength: ≥170Mpa (25KSPI)
Elongation ≥ 40%

SAF2205 (UNS31803)

C≤	Si ≤	Mn≤	P ≤	S ≤	Cr	Ni	Mo	Cu	N
0.03	1.0	2.0	0.03	0.02	22-23	4.5-6.5	3.0-3.50	/	0.14-0.2

SAF2205 Material Mechnical Performance

Test Items	Test Temp.	Performance	Standard Data
Tensile Strength	Room Temp.	Yield Strength s≥	450 Mpa
		Tensile Strength h ≥	620 Mpa
		Elongation % >	25
		Reduction of Area=>	/
Impact Value KV(J)	Room Temp.	**Lateral**	/
Brinell hardness	Room Temp.	≤	290
Rockwell hardness	Room Temp.	≥	/

Duplex SS SAF2507(UNS32750)

c ≤	Si≤	Mn≤	P≤	S≤	Cr	Ni	Mo	Cu≤	N
0.03	0.8	1.2	0.03	0.015	24-26	6.0-8.0	3.0-5.0	0.5	0.24-0.32

Mechanical Peformance

Test Items	Test Temp.	Performance		Standard Data
Tensile	Room Temp.	Yield Strength	Ø≤55 Rm≥	550 Mpa
			Ø >55 Rm≥	515 Mpa
		Tensile Strength	Ø≤55 R0.002 ≥	800 Mpa
			Ø >55 R0.002≥	760 Mpa
		Elongation A% (4D) >	Ø≤55 ≥	15
			Ø >55 ≥	15
Brinell hardness HB	Room Temp.	Ø≤5 ≤		310
		Ø >55 ≤		310

Designation: A 403/A 403M – 06 Standard Specification for Wrought Austenitic Stainless-Steel Piping Fittings

Other Referenced Documents
ASTM Standards:
A 351/A 351M Specification for Castings, Austenitic, for Pressure-Containing Parts
A 370 Test Methods and Definitions for Mechanical Testing of Steel Products
A 480/A 480M Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
A 743/A 743M Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application
A 744/A 744M Specification for Castings, Iron-Chromium Nickel, Corrosion Resistant, for Severe Service
A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products
A 960/A 960M Specification for Common Requirements for Wrought Steel Piping Fittings
E 112 Test Methods for Determining Average Grain Size
E 165 Test Method for Liquid Penetrant Examination

ASME Standards:
ASME B16.9 Factory-Made Wrought Steel Butt-Welding Fittings
ASME B16.11 Forged Steel Fittings, Socket-Welding and Threaded ends

MSS Standards: MSS SP-25 Standard Marking System for Valves, Fittings,
Flanges, and Unions

MSS SP-43 Standard Practice for Light Weight Stainless Steel Butt-Welding Fittings
MSS SP-79 Socket-Welding Reducer Inserts

Production Process

1. Raw material Receiving and Cutting

2. Material Identification

3. Elbows, Tees ,reducers, Caps, stub ends, kinds of pipefittings shape forming

4. Material wedling process (welded elbows)

5. Heat Treatment for SS pipefittings

6. Shot Blast and cleaning

7. Surface checking

8. After Polished

9. stainless steel Pipefittings Material In Stock

FAQ

Q:Customer asked for butt weld fittings in A105:
A: Most common carbon steel buttweld fitting material is A234WPB. It is equivalent to A105 flanges, however there is no such thing as an A105 or A106 butt weld fitting.
A106 Gr.B is for pipe grade. The A234WPB fittings are made from A106GR.B pipes. A105 is a material from Bar forged to be High pressure Fittings or Flange

Q: Customer requests “Normalized” butt weld fittings:
A: This is also a misconception since flanges are available in A105 and A105 N, where N stands for normalized.
However, there is no such thing as A234WPBN. Manufactures normalize their butt weld fittings was considered that normalized heat treating process was done, Espeically for the elbows and Tees
Customer needing “normalized” butt weld fittings should request WPL6 fittings which are high yield and are normalized as a standard procedure.

Q: Customer forgets to mention pipe schedule:
A: Buttweld fittings are sold as per pipe size but pipe schedule must be specified to match the ID of the fitting to the ID of the pipe. If no schedule is mentioned, we will assume a standard wall is requested.

Q; Customer forgets to mention welded or seamless butt weld fitting:
Butt weld fittings are available in both welded and seamless configuration. A seamless butt weld carbon steel or stainless steel fitting is made of seamless pipe and is generally more expensive.
Seamless pipe fittings are NOT common in sizes bigger than 12”. Welded pipe fittings are made of ERW welded carbon steel or stainless steel pipe. They are available in sizes ½” to 72” and are more affordable than seamless fittings.

Q: What does Short Radius (SR) or Long Radius (LR) means?

A: You will often hear SR45 elbow or LR45 elbow. The 45 or 90 refers to the angle of the bend for buttweld fitting to change the direction of flow.
A long radius elbow (LR 90 Elbow or LR 45 elbow) will have a pipe bend that will be 1.5 times the size of the pipe. So, a 6 inch LR 90 has bending radius that is 1.5 x nominal pipe size.
A short radius elbow (SR45 or SR90) has a pipe bend that is equal to the size of the fitting, so a 6" SR 45 has a bending radius that is 6" nominal pipe size.
Q: What is a 3R or 3D elbow pipe fitting?
A: First, the terms 3R or 3D are used synonymously. A 3R butt weld elbow has a bending radius that is 3 times the nominal pipe size. A 3R elbow is equal to 3D Elbows

Our Service

1. Technical support
2. Raw Material Quality control.
3. Inspection during the production time.
4. Final Test includes Surface, Dimension, PT Test, RT test, ultrasonic Test
5. Test Report each shipment
4. Flexible Delivery terms. EXW FOB CIF CFR DDP DDU
5. Flexible payment Ways: LC. TT. DP
6. Customized Package includes Logo. Cases Dimension.
7. 18 months quality Guarantee time.
9. Free replacement by air if any error founded
10. 24 hours to Feedback your questions

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