

	SPECIFICATIE TEHNICA	COD: ST Nr ...
	Fitinguri din fonta, canelate, pentru instalatii PSI	Inlocuieste
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STRUCTURA SPECIFICATIEI TEHNICE

1. GENERALITATI

- 1.1. Obiect: Fitinguri din fonta ductila, canelate, pentru instalatii PSI
- 1.2. Domeniul de aplicare: Instalatii PSI, interior, subteran
- 1.3. Abreviere: nu este cazul
- 1.4. Tipuri, sortimente: coturi, teu-ri, racorduri, adaptor flansat, reductii, racord filetat si canelat, DN50,DN65, DN80,DN100
- 1.5. Notare/simbolizare: vezi 4.2
- 1.6. Clasa de risc conform OMT nr. 290/2000: clasa de risc 3
- 1.7. Documente de referinta: specificatie tehnica producator, Certificare VDS , VDS 2100-24, VDS 2100-06
- 1.8. Durata de functionare normala >20 de ani, durata de viata estimata: 50 ani

2. CONDITII DE MEDIU

2.1. Conditii de mediu ambiant:

Factor meteo	UM	Valoare
Temperatura maxima	°C	+40
Temperatura medie maxima	°C	+35
Rata maxima de variatie	°C/ora	10
Temperatura minima	°C	+5
Umiditatea relativa a aerului	%	80 la 35 °C

2.2. Conditii de mediu de functionare:

In regim normal de functionare:

+5°Cv+40°C;

Rata maxima de variatie:

10°C/h;

2.3. Conditii de mediu la transport: transportul se va face cu mijloace feroviare si rutiere in conditiile mediului ambiant.

2.4. Conditii de depozitare: loc uscat, ferit de actiunea agentilor corozivi sau de impact mecanic, conditii de temperatura identice cu regimul de functionare.

3. CARACTERISTICI TEHNICE

3.1 Caracteristici constructive: fittinguri din fonta ductila, canelate, etansare cu garnitura de cauciuc, PN 10

3.2 Caracteristici functionale: *NP 071-02 - Normativ pentru proiectarea constructiilor si instalatiilor specifice metroului privind prevenirea si stingerea incendiilor - Ordinul MLPTL 1065/2002;*

3.3 Consumuri specifice si energetice in exploatare: nu este cazul, este element static

3.4 Caracteristici ergonomice: modul de constructie, canelat, permite o cuplare rapida a tevilor si celorlalte elemente constructive ale instalatiei, cea ce duce la reducerea timpului de montaj si implicit la scaderea costurilor.

3.5 Caracteristici privind mentenanta: sunt protejate la coroziune, prin vopsire epoxidica,nu necesita mentenanta suplimentara.

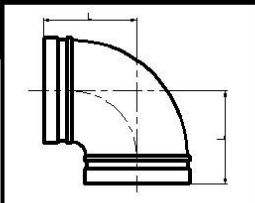

4. CONDITII TEHNICE DE CALITATE

4.1 Material: fonta ductila ASTM A-536, GR 65-45-12


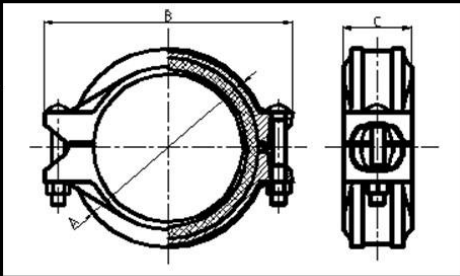
4.2 Forme si dimensiuni:

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90S

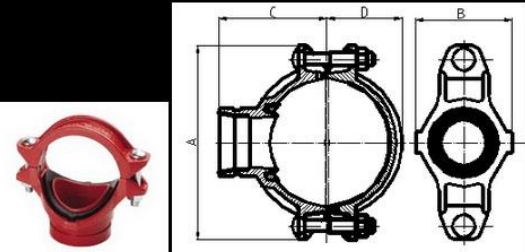


Nominal Size mm/in size	Pipe O.D. mm/in	Working Pressure Psi/Mpa	90S	Light-duty	130S	Light-duty Tee.
			L	L		
50	60.3	300	69.85		69.85	
2	2.375	2.07	2.75		2.75	
65	73.0	300	76.2		76.2	
2½	2.875	2.07	3.00		3.00	
65	76.1	300	76.2		76.2	
2½	3.000	2.07	3.00		3.00	
80	88.9	300	85.85		85.85	
3	3.500	2.07	3.38		3.38	
100	108.0	300	101.6		101.6	
4	4.250	2.07	4.00		4.00	
100	114.3	300	101.6		101.6	
4	4.500	2.07	4.00		4.00	
125	139.7	300	123.95		123.95	
5	5.500	2.07	4.88		4.88	
150	159.0	300	139.7		139.7	
6	6.250	2.07	5.50		5.50	
150	165.1	300	139.7		139.7	
6	6.500	2.07	5.50		5.50	
150	168.3	300	139.7		139.7	
6	6.625	2.07	5.50		5.50	
200	216.3	300	174.5		174.5	
8	8.516	2.07	6.87		6.87	
200	219.1	300	174.5		174.5	
8	8.625	2.07	6.87		6.87	

Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure Psi/Mpa	Dimensions			Bolt Size No.-Size mm
			A mm/in	B mm/in	C mm/in	
65	76.1	300	101.0	142.0	44.5	2-3/8X55
2 1/2	3.000	2.07	3.98	5.59	1.75	
80	88.9	300	114.0	157	44.5	2-3/8X70
3	3.500	2.07	4.50	6.18	1.75	
100	108.0	300	135	185	48.5	2-1/2X70
4	4.250	2.07	5.30	7.28	1.91	
125	114.3	300	142.0	195	49.0	2-1/2X70
5	4.500	2.07	5.60	7.68	1.93	
150	139.7	300	168.5	225	50.5	2-1/2X75
6	5.500	2.07	6.63	8.86	1.99	
175	141.3	300	171	225	50.5	2-1/2X75
7	5.563	2.07	6.73	8.86	1.99	
200	159.0	300	190.0	252.5	50.5	2-5/8X80
8	6.250	2.07	7.48	9.94	1.99	
225	165.1	300	196.0	252	50.5	2-1/2X75
9	6.500	2.07	7.72	9.92	1.99	
250	168.3	300	203	260	50.8	2-1/2X75
10	6.625	2.07	8.00	10.24	2.00	
275	216.3	300	260	322	58.5	2-5/8X85
11	8.516	2.07	10.24	12.68	2.30	
300	219.1	300	255	325	58.5	2-5/8X85
12	8.625	2.07	10.05	12.80	2.30	

3G



Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure Psi/Mpa	Hole Dia mm/in +1.6,0/+0.063,0	Dimensions mm/in				Bolt Size
				A	B	C	D	
50	60.3	300	45	116	76	69.5	39	3/8
2 1/4	2.375	2.07	1.75	4.57	2.99	2.74	1.54	
65	73.0	300	45	116	76	69.5	39	3/8
2 1/2	2.875	2.07	1.75	4.57	2.99	2.74	1.54	
80	88.9	300	51	144	84.5	75	49	1/2
3	3.500	2.07	2.00	5.67	3.33	2.95	1.93	
100	108.0	300	38	137	71	78	49.5	1/2
4	4.250	2.07	1.50	5.39	2.80	3.07	1.95	
125	114.3	300	51	137	84.5	78	49.5	1/2
5	4.500	2.07	2.00	5.39	3.33	3.07	1.95	
150	139.7	300	51	137	84.5	78	49.5	1/2
6	5.500	2.07	2.00	5.39	3.33	3.07	1.95	
175	159.0	300	38	152	72.5	84.5	56.5	1/2
7	6.250	2.07	1.50	5.98	2.85	3.33	2.22	
200	165.1	300	51	152	85.5	84.5	56.5	1/2
8	6.500	2.07	2.00	5.98	3.37	3.33	2.22	
225	168.3	300	51	152	85.5	84.5	56.5	1/2
9	6.625	2.07	2.00	5.98	3.37	3.33	2.22	
250	216.3	300	64	152	98	84.5	56.5	1/2
10	8.516	2.07	2.50	5.98	3.86	3.33	2.22	
275	219.1	300	38	188	78.4	102	70	1/2
11	8.625	2.07	1.50	7.40	3.09	4.02	2.76	
300	219.1	300	51	188	89	102	70	1/2
12	8.625	2.07	2.00	7.40	3.50	4.02	2.76	
325	219.1	300	64	188	104.5	102	70	1/2
13	8.625	2.07	2.50	7.40	4.11	4.02	2.76	
350	219.1	300	70	188	104.5	102	70	1/2
14	8.625	2.07	2.75	7.40	4.11	4.02	2.76	
375	219.1	300	70	188	104.5	102	70	1/2
15	8.625	2.07	2.75	7.40	4.11	4.02	2.76	
400	219.1	300	89	188	124	102	70	1/2
16	8.625	2.07	3.50	7.40	4.88	4.02	2.76	

Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure Psi/Mpa	Hole Dia mm/in +1.6,0/+0.063,0	Dimensions mm/in				Bolt Size
size				A	B	C	D	size
125IA80	133.0IA88.9	300	89	209	132	109.5	77	5/8IA85
133.0IA3	5.250IA3.500	2.07	3.50	8.23	5.20	4.31	3.03	
125IA50	139.7IA60.3	300	64	221.5	112.5	118	84	5/8IA85
139.7IA2	5.500IA2.375	2.07	2.50	8.72	4.43	4.65	3.31	
125IA65	139.7IA76.1	300	70	221.5	112.5	118	84	5/8IA85
139.7IA76.1	5.500IA3.000	2.07	2.75	8.72	4.43	4.65	3.31	
125IA80	139.7IA88.9	300	89	221.5	136	122	84	5/8IA85
139.7IA3	5.500IA3.500	2.07	3.50	8.720	5.35	4.80	3.31	
125IA100	139.7IA114.3	300	114	221.5	160	125	84	5/8IA85
139.7IA4	5.500IA4.500	2.07	4.50	8.720	6.30	4.92	3.31	
150IA100	159.1IA108.0	300	114	244	154	133	94	5/8IA110
159.0IA108.0	6.250IA4.250	2.07	4.50	9.60	6.06	5.24	3.70	
150IA100	159.1IA114.3	300	114	244	159	125	94	5/8IA110
159.0IA4	6.250IA4.500	2.07	4.50	9.60	6.26	4.92	3.70	
150IA50	165.1IA60.3	300	64	244	112.5	127	97.5	5/8IA110
165.1IA2	6.500IA2.375	2.07	2.50	9.60	4.43	5.00	3.84	
150IA65	165.1IA76.1	300	70	244	112.5	127	97.5	5/8IA110
165.1IA76.1	6.500IA3.000	2.07	2.75	9.60	4.43	5.00	3.84	
150IA80	165.1IA88.9	300	89	244	132	141	97.5	5/8IA110
6 1/2 O.DIA3	6.500IA3.500	2.07	3.50	9.60	5.20	5.55	3.84	
150IA100	165.1IA114.3	300	114	244	154	135	97.5	5/8IA110
6 1/2 O.DIA4	6.500IA4.500	2.07	4.50	9.60	6.06	5.32	3.84	
150IA40	168.3IA48.3	300	51	247	95	128	98.5	5/8IA110
6IA1 1/2	6.500IA1.900	2.07	2.00	9.72	3.74	5.04	3.88	
150IA50	168.3IA60.3	300	64	247	114	134	98.5	5/8IA110
6IA2	6.625IA2.375	2.07	2.50	9.72	4.49	5.28	3.88	
150IA65	168.3IA73.0	300	70	247	115	134	98.5	5/8IA110
6IA2 1/2	6.625IA2.875	2.07	2.75	9.72	4.53	5.28	3.88	
150IA80	168.3IA88.9	300	89	247	132	141	98.5	5/8IA110
6IA3	6.625IA3.500	2.07	3.50	9.72	5.20	5.55	3.88	
150IA100	168.3IA114.3	300	114	247	156.5	138	98.5	5/8IA110
6IA4	6.625IA4.500	2.07	4.50	9.72	6.16	5.43	3.88	
200IA50	219.1IA60.3	300	64	322	118	158	125	3/4IA115
8IA2	8.625IA2.375	2.07	2.50	12.68	4.65	6.22	4.92	
200IA65	219.1IA76.1	300	70	322	118	158	125	3/4IA115
8IA7 1/2	8.625IA3.000	2.07	2.75	12.68	4.65	6.22	4.92	
200IA80	219.1IA88.9	300	89	322	136.5	161	125	3/4IA115
8IA3	8.625IA3.500	2.07	3.50	12.68	5.37	6.34	4.92	
200IA100	219.1IA114.3	300	114	322	164	161	125	3/4IA115
8IA4	8.625IA4.500	2.07	4.50	12.68	6.46	6.34	4.92	
250IA100	273.0IA114.3	300	114	376	164	189	1.55	
10IA4	10.750IA4.500	2.07	4.50	14.80	6.46	7.44	6.10	

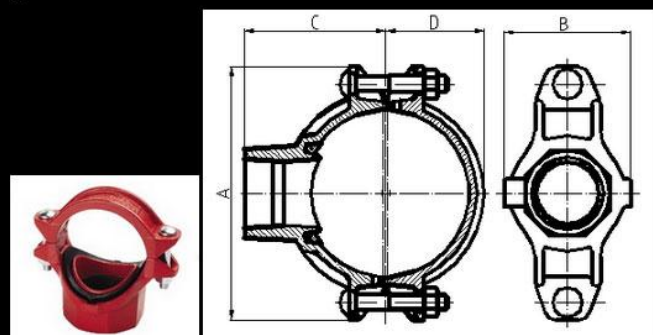
SPECIFICATIE TEHNICA
Fitinguri din fonta, canelate, pentru instalatii PSI

COD: ST Nr ...

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Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in	Dimensions mm/in				Bolt Size
size			+1.6, 0/+0.063, 0	A	B	C	D	size
50iA15 2iA1 1/2	60.3iA21.3 2.375iA0.825	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8iA55
50iA20 2iA 3/4	60.3iA26.9 2.375iA1.050	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8iA55
50iA25 2iA1	60.3iA33.7 2.375iA1.315	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8iA55
50iA32 2iA1 1/4	60.3iA42.4 2.375iA1.660	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	39 1.54	3/8iA55
50iA40 2iA1 1/2	60.3iA48.3 2.375iA1.900	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	39 1.54	3/8iA55
65iA20 2 1/2iA 3/4	73.0iA26.9 2.875iA1.050	300 2.07	38 1.50	144 5.67	71 2.76	75 2.72	49 1.93	1/2iA60
65iA25 2 1/2iA1	73.0iA33.7 2.875iA1.315	300 2.07	38 1.50	144 5.67	71 2.76	75 2.72	49 1.93	1/2iA60
65iA32 2 1/2iA1 1/4	73.0iA42.4 2.875iA1.660	300 2.07	51 2.00	144 5.67	84.5 3.33	73 2.87	49 1.93	1/2iA60
65iA40 2 1/2iA1 1/2	73.0iA48.3 2.875iA1.900	300 2.07	51 2.00	144 5.67	84.5 3.33	73 2.87	49 1.93	1/2iA60
65iA15 2iA 1/2	76.1iA21.3 3.000iA0.825	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2iA75
65iA20 2iA 3/4	76.1iA26.9 3.000iA1.050	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2iA75
65iA25 2iA1	76.1iA33.7 3.000iA1.315	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2iA75
65iA32 2iA1 1/4	76.1iA42.4 3.000iA1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	49.5 1.95	1/2iA75
65iA40 2iA1 1/2	76.1iA48.3 3.000iA1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	49.5 1.95	1/2iA75
80iA25 3iA 1/2	88.9iA21.3 3.500iA0.825	300 2.07	38 1.50	152 5.98	72.5 2.85	80 3.15	56.5 2.22	1/2iA75
80iA32 3iA 3/4	88.9iA26.9 3.500iA1.050	300 2.07	38 1.50	152 5.98	72.5 2.85	80 3.15	56.5 2.22	1/2iA75

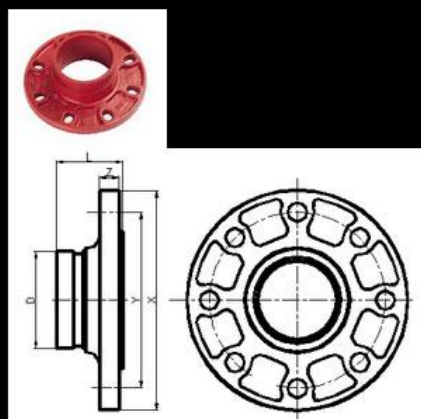
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in	Dimensions mm/in				Bolt Size
size			+1.6, 0/+0.063, 0	A	B	C	D	size
80iA25 3iA1	88.9iA33.7 3.500iA1.315	300 2.07	38 1.50	152 5.98	72.5 2.85	80 3.15	56.5 2.22	1/2iA75
80iA32 3iA1 1/4	88.9iA42.4 3.500iA1.660	300 2.07	51 2.00	152 5.98	85.5 3.37	80 3.15	56.5 2.22	1/2iA75
80iA40 3iA1 1/2	88.9iA48.3 3.500iA1.900	300 2.07	51 2.00	152 5.98	85.5 3.37	80 3.15	56.5 2.22	1/2iA75
80iA50 3iA2	88.9iA60.3 3.500iA2.375	300 2.07	64 2.50	152 5.98	98 3.86	80 3.15	56.5 2.22	1/2iA75
100iA25 108.0iA1	108.1iA33.7 4.250iA1.315	300 2.07	38 1.50	172 6.77	78.5 3.09	87 3.43	64.5 2.54	1/2iA75
100iA32 108.0iA1 1/4	108.1iA42.4 4.250iA1.660	300 2.07	51 2.00	172 6.77	89 3.50	87 3.43	64.5 2.54	1/2iA75
100iA40 108.0iA1 1/2	108.1iA48.3 4.250iA1.900	300 2.07	51 2.00	172 6.77	89 3.50	87 3.43	64.5 2.54	1/2iA75
100iA50 108.0iA2	108.1iA60.3 4.250iA2.375	300 2.07	64 2.50	172 6.77	106.5 4.19	92 3.62	64.5 2.54	1/2iA75
100iA65 108.0iA76.1	108.1iA76.1 4.250iA3.000	300 2.07	70 2.75	172 6.77	106.5 4.19	100 3.94	64.5 2.54	1/2iA75
100iA15 4iA 1/2	114.3iA21.3 4.500iA0.825	300 2.07	38 1.50	188 7.40	78.5 3.09	90 3.54	70 2.76	1/2iA75
100iA20 4iA 3/4	114.3iA26.9 4.500iA1.050	300 2.07	38 1.50	188 7.40	78.5 3.09	90 3.54	70 2.76	1/2iA75
100iA25 4iA1	114.3iA33.7 4.500iA1.315	300 2.07	38 1.50	188 7.40	78.5 3.09	93 3.66	70 2.76	1/2iA75
100iA32 4iA1 1/4	114.3iA42.4 4.500iA1.660	300 2.07	51 2.00	188 7.40	89 3.50	95 3.74	70 2.76	1/2iA75
100iA40 4iA1 1/2	114.3iA48.3 4.500iA1.900	300 2.07	51 2.00	188 7.40	89 3.50	97 3.82	70 2.76	1/2iA75
100iA50 4iA2	114.3iA60.3 4.500iA2.375	300 2.07	64 2.50	188 7.40	104.5 4.11	100 3.94	70 2.76	1/2iA75
100iA65 4iA2 1/2	114.3iA73.0 4.500iA2.875	300 2.07	70 2.75	188 7.40	104.5 4.11	102 4.02	70 2.76	1/2iA75
100iA65 4iA76.1	114.3iA76.1 4.500iA3.000	300 2.07	70 2.75	188 7.40	104.5 4.11	102 4.02	70 2.76	1/2iA75
100iA80 4iA3	114.3iA88.9 4.500iA3.500	300 2.07	89 3.50	188 7.40	124 4.88	102 4.02	70 2.76	1/2iA75
125iA25 133.0iA1	133.0iA33.7 5.250iA1.315	300 2.07	38 1.50	209 8.23	78 3.07	105 4.13	77 3.03	5/8iA85
125iA32 133.0iA1 1/4	133.0iA42.4 5.250iA1.660	300 2.07	51 2.00	209 8.23	93 3.66	105 4.13	77 3.03	5/8iA85
125iA40 133.0iA1 1/2	133.0iA48.3 5.250iA1.900	300 2.07	51 2.00	209 8.23	93 3.66	105 4.13	77 3.03	5/8iA85
125iA50 133.0iA2	133.0iA60.3 5.250iA2.375	300 2.07	64 2.50	209 8.23	112.5 4.43	110 4.33	77 3.03	5/8iA85
125iA65 133.0iA76.1	133.0iA76.1 5.250iA3.000	300 2.07	70 2.75	209 8.23	112.5 4.43	115 4.53	77 3.03	5/8iA85
125iA80 133.0iA3	133.0iA88.9 5.250iA3.500	300 2.07	89 3.50	209 8.23	132 5.20	118 4.65	77 3.03	5/8iA85

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in	Dimensions mm/in				Bolt Size
size			+1.6, 0/+0.063, 0	A	B	C	D	size
125iA25 139.7iA1	139.7iA33.7 5.500iA1.315	300 2.07	38 1.50	221.5 8.72	78 3.07	110 4.33	84 3.31	5/8iA85
125iA32 139.7iA1 1/4	139.7iA42.4 5.500iA1.660	300 2.07	51 2.00	221.5 8.72	93 3.66	112 4.41	84 3.31	5/8iA85
125iA40 139.7iA1 1/2	139.7iA48.3 5.500iA1.900	300 2.07	51 2.00	221.5 8.72	93 3.66	112 4.41	84 3.31	5/8iA85
125iA50 139.7iA2	139.7iA60.3 5.500iA2.375	300 2.07	64 2.50	221.5 8.72	112.5 4.43	115 4.53	84 3.31	5/8iA85
125iA65 139.7iA76.1	139.7iA76.1 5.500iA3.000	300 2.07	70 2.75	221.5 8.72	112.5 4.43	115 4.53	84 3.31	5/8iA85
125iA80 139.7iA3	139.7iA88.9 5.500iA3.500	300 2.07	89 3.50	221.5 8.72	132 5.20	120 4.72	84 3.31	5/8iA85
125iA100 139.7iA4	139.7iA114.3 5.500iA4.500	300 2.07	114 4.50	221.5 8.72	156 6.30	125 4.92	84 3.31	5/8iA85
150iA25 159.0iA1	159.0iA33.7 6.250iA1.315	300 2.07	38 1.50	244 9.60	78 3.07	116 4.57	94 3.70	5/8iA110
150iA32 159.0iA1 1/4	159.0iA42.4 6.250iA1.660	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	94 3.70	5/8iA110
150iA40 159.0iA1 1/2	159.0iA48.3 6.250iA1.900	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	94 3.70	5/8iA110
150iA50 159.0iA2	159.0iA60.3 6.250iA2.375	300 2.07	64 2.50	244 9.60	112.5 4.43	115 4.92	94 3.70	5/8iA110
150iA65 159.0iA76.1	159.0iA76.1 6.250iA3.000	300 2.07	70 2.75	244 9.60	112.5 4.43	125 4.92	94 3.70	5/8iA110
150iA80 159.0iA3	159.0iA88.9 6.250iA3.500	300 2.07	89 3.50	244 9.60	133 5.20	125 4.92	94 3.70	5/8iA110
150iA100 159.0iA4	159.1iA114.3 6.250iA4.500	300 2.07	114 4.50	244 9.60	156.5 6.16	130 5.12	94 3.70	5/8iA110
150iA15 165.1iA1 1/2	165.1iA21.3 6.500iA0.825	300 2.07	38 1.50	244 9.60	78 3.07	115 4.53	97.5 3.84	5/8iA110
150iA20 165.1iA 3/4	165.1iA26.9 6.500iA1.050	300 2.07	38 1.50	244 9.60	78 3.07	115 4.53	97.5 3.84	5/8iA110
150iA25 165.1iA1	165.1iA33.7 6.500iA1.315	300 2.07	38 1.50	244 9.60	78 3.07	118 4.65	97.5 3.84	5/8iA110
150iA32 165.1iA1 1/4	165.1iA42.4 6.500iA1.660	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	97.5 3.84	5/8iA110
150iA40 165.1iA1 1/2	165.1iA48.3 6.500iA1.900	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	97.5 3.84	5/8iA110
150iA50 165.1iA2	165.1iA60.3 6.500iA2.375	300 2.07	64 2.50	244 9.60	112.5 4.43	128.5 5.43	97.5 3.84	5/8iA110
150iA65 165.1iA76.1	165.1iA76.1 6.500iA3.000	300 2.07	70 2.75	244 9.60	112.5 4.43	128.5 5.43	97.5 3.84	5/8iA110

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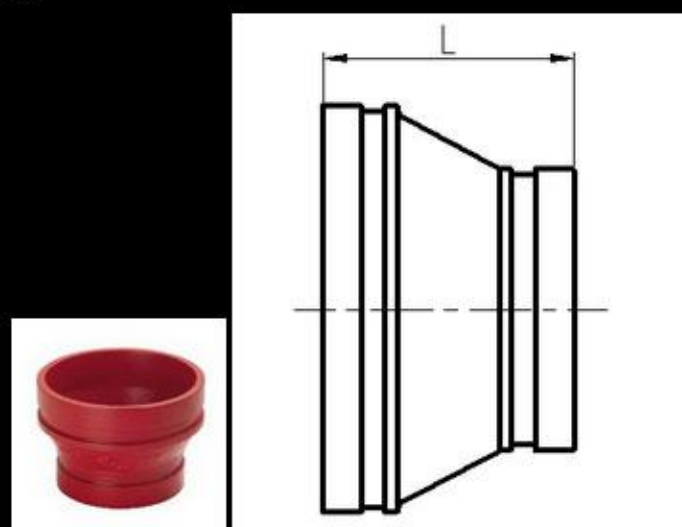


321G-PN16

Adaptor Flange

Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Dimensions				Bolt/Nut No.-Size mm
			L mm/in	X mm	Y mm	Z mm	
40	48.3	225	60.3	150	110	16	4-M16
1 1/2	1.900	1.6	2.375	5.90	4.33	0.63	
50	60.3	225	60.3	152.5	125	18	4-M16
2	2.375	1.6	2.375	6.00	4.92	0.71	
65	73.0	225	70	185	145	16	4-M16
2 1/2	2.875	1.6	2.756	7.28	5.70	0.63	
65	76.1	225	70	185	145	16	4-M16
3	3.000	1.6	2.756	7.28	5.70	0.63	
80	88.9	225	70	200	160	16	8-M16
3	3.500	1.6	2.756	7.87	6.30	0.63	
100	108.0	225	60.3	220	180	18	8-M16
4	4.250	1.6	2.375	8.66	7.09	0.71	
100	114.3	225	76	220	180	16	8-M16
4	4.500	1.6	2.992	9.00	7.09	0.63	
125	133	225	60.3	250	210	18	8-M16
5	5.250	1.6	2.375	9.84	8.27	0.71	
125	139.7	225	89	252	210	21	8-M16
5	5.500	1.6	3.500	9.921	8.27	0.83	
125	141.3	225	89	252	210	21	8-M16
5	5.563	1.6	3.500	9.921	8.27	0.83	
150	159.0	225	65.1	280	240	20	8-M20
6	6.250	1.6	2.563	11.00	9.45	0.78	
150	165.1	225	89	280	240	24	8-M20
6	6.500	1.6	3.500	11.00	9.45	0.94	
150	168.3	225	89	280	240	24	8-M20
6	6.625	1.6	3.500	11.00	9.45	0.94	
200	219.1	225	102	343	295	25	12-M20
8	8.625	1.6	4.016	13.50	11.61	0.98	
250	273.0	225	85	406	355	24	12-M24
10	10.750	1.6	3.346	16.00	13.98	0.94	
300	323.9	225	90	483	410	32	12-M24
12	12.750	1.6	3.543	19.00	16.14	1.26	

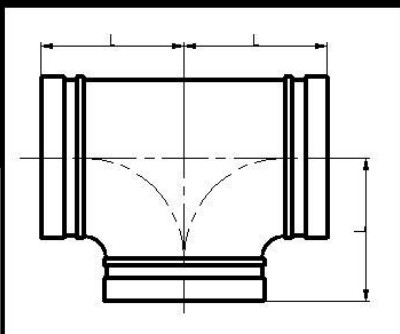
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Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Dimensions L mm/in
size	$\frac{1}{4} \times \frac{1}{2} \times \frac{3}{4} \times 1 \times 1 \frac{1}{2} \times 2 \times 2 \frac{1}{2} \times 3 \times 4 \times 5 \times 6 \times 8 \times 10 \times 12 \times 15 \times 20 \times 25 \times 30 \times 40 \times 50 \times 60 \times 75 \times 80 \times 100 \times 125 \times 150 \times 200 \times 250 \times 300 \times 350 \times 400 \times 450 \times 500 \times 600 \times 700 \times 800 \times 900 \times 1000$	$\frac{1}{4} \times \frac{1}{2} \times \frac{3}{4} \times 1 \times 1 \frac{1}{2} \times 2 \times 2 \frac{1}{2} \times 3 \times 4 \times 5 \times 6 \times 8 \times 10 \times 12 \times 15 \times 20 \times 25 \times 30 \times 40 \times 50 \times 60 \times 75 \times 80 \times 100 \times 125 \times 150 \times 200 \times 250 \times 300 \times 350 \times 400 \times 450 \times 500 \times 600 \times 700 \times 800 \times 900 \times 1000$	$\frac{1}{4} \times \frac{1}{2} \times \frac{3}{4} \times 1 \times 1 \frac{1}{2} \times 2 \times 2 \frac{1}{2} \times 3 \times 4 \times 5 \times 6 \times 8 \times 10 \times 12 \times 15 \times 20 \times 25 \times 30 \times 40 \times 50 \times 60 \times 75 \times 80 \times 100 \times 125 \times 150 \times 200 \times 250 \times 300 \times 350 \times 400 \times 450 \times 500 \times 600 \times 700 \times 800 \times 900 \times 1000$
32X25	42.4X33.7	500	64
1 1/4X1	1.660X1.315	3.45	2.50
40X32	48.3X42.4	500	64
1 1/2X1 1/4	1.900X1.660	3.45	2.50
50X32	60.3X42.4	500	64
2X1 1/4	2.375X1.660	3.45	2.50
50X40	60.3X48.3	500	64
2X1 1/2	2.375X1.900	3.45	2.50
65X50	73.0X60.3	500	64
2 1/2X2	2.875X2.375	3.45	2.50
65X40	76.1X48.3	500	64
2 1/2X1 1/2	3.000X1.900	3.45	2.50
65X50	76.1X60.3	500	64
2 1/2X2	3.000X2.375	3.45	2.50
80X25	88.9X33.7	500	64
3X1	3.500X1.315	3.45	2.50
80X40	88.9X48.3	500	64
3X1 1/2	3.500X1.900	3.45	2.50
80X50	88.9X60.3	500	64
3X2	3.500X2.375	3.45	2.50
80X65	88.9X73.0	500	64
3X2 1/2	3.500X2.875	3.45	2.50
80X65	88.9X76.1	500	64
3X2 1/2	3.500X3.000	3.45	2.50
100X32	114.3X42.4	500	76
4X1 1/4	4.500X1.660	3.45	3.00
100X40	114.3X48.3	500	76
4X1 1/2	4.500X1.900	3.45	3.00
100X50	114.3X60.3	500	76
4X2	4.500X2.375	3.45	3.00
100X65	114.3X73.0	500	76
4X2 1/2	4.500X2.875	3.45	3.00
100X65	114.3X76.1	500	76
4X2 1/2	4.500X3.000	3.45	3.00
100X80	114.3X88.9	500	76
4X3	4.500X3.500	3.45	3.00
100X50	108.0X60.3	500	76
4X2	4.250X2.375	3.45	3.00
100X65	108.0X73.0	500	76
4X2 1/2	4.250X2.875	3.45	3.00
100X65	108.0X76.1	500	76
4X2 1/2	4.250X3.000	3.45	3.00
100X80	108.0X88.9	500	76
4X3	4.250X3.500	3.45	3.00

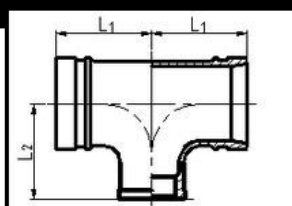
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Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure Psi/Mpa	90S Light-duty L	130S Light-duty Tee. L
50 2	60.3 2.375	300 2.07	69.85 2.75	69.85 2.75
65 2½	73.0 2.875	300 2.07	76.2 3.00	76.2 3.00
80 3	88.9 3.500	300 2.07	85.85 3.38	85.85 3.38
100 4	108.0 4.250	300 2.07	101.6 4.00	101.6 4.00
125 5	139.7 5.500	300 2.07	123.95 4.88	123.95 4.88
150 6	159.0 6.250	300 2.07	139.7 5.50	139.7 5.50
200 8	219.1 8.625	300 2.07	174.5 6.87	174.5 6.87

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Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure Psi/Mpa	Dimensions mm/in L1 L2	
50iA25 2iA1	60.3iA33.7 2.375iA1.315	300 2.07	82.5 3.25	82.5 3.25
50iA32 2iA1½	60.3iA42.4 2.375iA1.660	300 2.07	82.5 3.25	82.5 3.25
50iA40 2iA1½	60.3iA48.3 2.375iA1.900	300 2.07	82.5 3.25	82.5 3.25
65iA25 2½iA1	73.0iA33.7 2.875iA1.315	300 2.07	76 2.99	76 2.99
65iA32 2½iA1½	73.0iA42.4 2.875iA1.660	300 2.07	76 2.99	76 2.99
65iA25 2½iA1	76.1iA33.7 3.000iA1.315	300 2.07	76 2.99	76 2.99
65iA32 2½iA1½	76.1iA42.4 3.000iA1.660	300 2.07	95 3.75	95 3.75
65iA40 2½iA1½	76.1iA48.3 3.000iA1.900	300 2.07	95 3.75	95 3.75
80iA25 3iA1	88.9iA33.7 3.500iA1.315	300 2.07	86 3.39	86 3.39
80iA32 3iA1½	88.9iA42.4 3.500iA1.660	300 2.07	86 3.39	86 3.39
80iA40 3iA1½	88.9iA48.3 3.500iA1.900	300 2.07	108 4.25	108 4.25
80iA50 3iA2	88.9iA60.3 3.500iA2.375	300 2.07	108 4.25	108 4.25
80iA65 3iA2½	88.9iA76.1 3.500iA3.000	300 2.07	108 4.25	108 4.25
100iA50 4iA2	108.0iA60.3 4.250iA2.375	300 2.07	104 4.09	104 4.09
100iA65 4iA2½	108.0iA76.1 4.250iA3.000	300 2.07	104 4.09	104 4.09
100iA80 4iA3	108.0iA88.9 4.250iA3.500	300 2.07	104 4.09	104 4.09

4.3 Caracteristici fizice, chimice, mecanice: conform ASTM A-356, GR 65-45-12

Caracteristici mecanice:

- Rezistenta la tractiune: 448 MPa
- Limita de curgere: 310 MPa
- Alungire: 12%

Caracteristici chimice:

Carbon	3.5-3.65%
Siliciu	2.25-3.00%
Mangan	0.50-0.80
Fosfor	0.08-0.25
Sulf	>0.03
Crom	0.05-0.25
Cupru	0.05-0.80
Nichel	0.05-0.80

4.4 Conditii privind executia: se executa in regim de management al calitatii conform ISO 9001:2008

4.5 Conditii privind aptitudinile de functionare: testare si certificare VDS

4.6 Conditii privind securitatea la utilizare: fittingurile din fonta canelate testate de o entitate notificata european, VDS, sunt considerate sigure la exploatare

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4.7 Conditii privind comportarea la actiunea factorilor de mediu inconjurator: in conditiile de mediu declarat deutilizare, interior, subteran, se considera ca nu exista factori de mediu care sa influenteze negativ functionarea fittingurilor din fonta canelate.

4.8 Conditii privind protectia impotriva coroziunii: fittingurile din fonta sunt protejate impotriva coroziunii prin vopsire din fabricatie, nu necesita masuri de protectie deosebite in conditiile normale de exploatare.

4.9 Conditii privind securitatea omului: daca la manipulare, transport si montaj se respecta normele de securitate a muncii prevazute de legea in vigoare, produsele, in sine, nu reprezinta un risc pentru securitatea omului.

4.10 Conditii privind actiunea produsului asupra mediului: nu au impact negativ asupra mediului.

4.11 Conditii privind dependabilitatea:

Indicatori de fiabilitate:

- media timpului de functionare in bune conditii: >20 ani, comportamentul lor a fost testat si certificat de un institut notificat european, VDS.

- intensitatea de defectare: in conditiile normale de exploatare nu se prevad defectari ale fittingurilor pe o perioada mai mica de 20 de ani de la darea in exploatare;

- probabilitatea de buna functionare: >95% in primii 20 de ani de functionare;

- coeficient de disponibilitate: permanent pe stoc la furnizor;

- durata estimata de viata: 50 de ani;

- tipuri de revizii si reparatii preventive: verificare vizuala o data pe an.

4.12 Conditii speciale de PSM sau PSI: nu este cazul

5. CONDITII GENERALE DE ASIGURARE A CALITATII

5.1 Documentatia de executie: fisa tehnica a producatorului.

5.2 Lista materialelor critice: fonta maleabila.

5.3 Receptia materialelor si produselor de la furnizori: se face pe baza documentelor de calitate ce insotesc materialele si pe baza testelor de calitate a materiei prime efectuate de producatorul fittingurilor in laboratorul propriu.

5.4 Conditii tehnice implicite: nu difera de standardul de executie.

6. REGULI PENTRU VERIFICAREA CALITATII

6.1 Categorii de incercari:

- incercari de tip:

- a. determinarea limitei de curgere a materialului;

- incercari de lot:

- a. determinarea compozitiei fontei;

- b. determinarea coeficientului de alungire;

- c.determinarea rezistentei la tractiune;

- d. vizual si dimensiuni;

- incercari periodice:

- a. energie de impact

- incercari de fiabilitate:

- a. test hidrostatic

7. Metode de incercare si control

7.1 Metode de incercare:

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- determinarea compozitiei materialului: EN1562

Valori limita:

Carbon	3.5-3.65%
Siliciu	2.25-3.00%
Mangan	0.50-0.80
Fosfor	0.08-0.25
Sulf	>0.03
Crom	0.05-0.25
Cupru	0.05-0.80
Nichel	0.05-0.80

- forme si dimensiuni : vezi 4.2

- caracteristici fizice:

a. rezistenta la tractiune, EN 10002-1: >430 Mpa

b. alungire longitudinala EN 10002-1: min. 10%

- conditiile privind aptitudinile functionale: proba la presiune - 16 bar, presiune de lucru - 10 bar.

7.2 Rezultatelor incercarilor sunt prezentate in buletinele de testare emise de producator si anexate specificatiei tehnice.