

Reinforced Branch Fittings

General

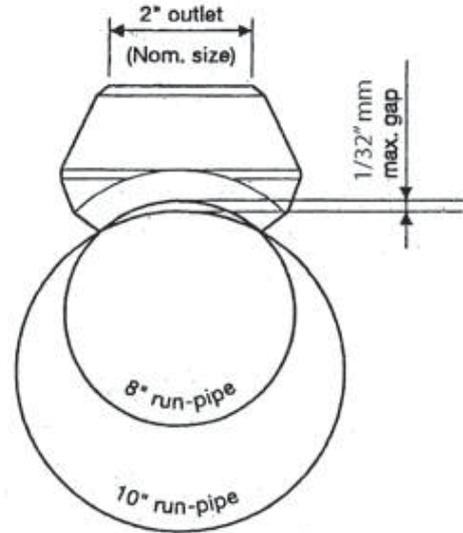
Material manufactured by forging

Materials frequently used

• ASTM A 105 - A 350 - A 182 - A694. These fittings are not standardised and are manufactured in accordance with the recommendations of the ASME B 31.3. code

Description

This type of fittings is installed either straight or at an angle to the main pipe. As the bearing surface fits the shape of the pipe exactly, the outside diameter of the pipe must be known. Range: NPS 3-8" to 60". The main pipe and the fittings are connected by means of a fillet weld. The fitting and the branch pipe can be connected in several different ways. Outlet radius of branch fittings have been unified in order to allow, generally speaking up to size 4", the use of same fitting on different run pipe sizes, with a maximum gap of 1-32" (0,8 mm) between the top of the run pipe and the base of the fitting. For outlet sizes over 4", usually a specific radius is required for each run size. Each fitting is marked with its nominal size (outlet diameter) and the range of run sizes on which it can be welded.



	Outlet size - Diamètre sortie												
	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1" 1/4	1" 1/2	2"	2" 1/2	3"	4"	6"
Run sizes Dimensions collecteurs	3/8"	3/8"	3/8"	1/2"	3/4"	1"	1" 1/4	1" 1/2	2"	2" 1/2	3"	4"	6"
	1/2"	1/2"	1/2"	3/4"	1"	1" 1/4	1" 1/2	2"	2" 1/2	3"	3" 1/2	5"	8"
	1"-3/4"	1"-3/4"	1" - 3/4"	1"	1" 1/2 -	1" 1/2	2"	2" 1/2	3"	3" 1/2	4"	6"	10"
	2" 1/2-	2" 1/2-	2" 1/2 -	1" 1/2	1" 1/4	2"	2" 1/2	3"	4"	4"	5"	8"	14" - 12"
	1" n * 1/4	1" 1/4	1" 1/4	-1" 1/4	2" 1/2 - 2"	2" 1/2	3" 1/2 - 3"	4" - 3" 1/2	5"	5"	6"	10"	16"
	36" - 3"	36"-3"	36" - 3"	2" 1/2-2"	5" - 3"	3" 1/2 - 3"	5" - 4"	6" - 5"	6"	6"	8"	14" - 12"	18"
	-	-	-	8"-3"	12"-6"	5" - 4"	8"- 6"	12" - 8"	10" - 8"	8"	10"	20" - 16"	22" - 20"
	-	-	-	36"-10"	36" - 14"	10" - 6"	18" - 10"	24"-14"	18" - 12"	12" - 10"	14" - 12"	36" - 24"	28" - 24"
	-	-	-	-	-	36" - 12"	36" - 20"	36" - 26"	36" - 20"	18" - 14"	20" - 16"	-	36" - 30"
	-	-	-	-	-	-	-	-	-	36" - 20"	36" - 24"	-	-

SCH 160 - XXS

	Outlet size - Diamètre sortie					
	1/2"	1/2"	1"	1" 1/4	1" 1/2	2"
Run sizes Dimensions collecteurs	1/2"	1" - 3/4"	1"	1" 1/2 - 1" 1/4	1" 1/2	2"
	1" 1/4 - 3/4"	2" - 1" 1/4	2" - 1" 1/4	2" 1/2 - 2"	2" 1/2 - 2"	2" 1/2
	1" 1/4 - 3/4"	6" - 2" 1/2	10" - 3"	10" - 3"	3" 1/2 - 3"	3" 1/2 - 3"
	-	36" - 8"	36" - 12"	36" - 12"	8" - 4"	5" - 4"
	-	-	-	-	20" - 10"	8" - 6"
	-	-	-	-	36" - 24"	18" - 10"
	-	-	-	-	-	36" - 20"
	-	-	-	-	-	-

Weld-Outlet Standard (Std)

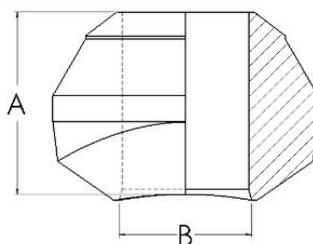
BW end per ANSI B16.25

Sch: STD / XS / 160 & XXS

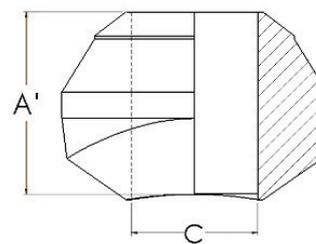
Size: 1/4" to 60"

Dimensions according to MSS-SP97

Reducing size



Full size



Nom. size dimension	Type I					Type 2				
	A(1)		B		Weight / pounds	A' (1)		C		Weight / pounds
	Inches	mm	Inches	mm		Inches	mm	Inches	mm	
1/8"	0.62	15,7	0.62	16,0	0.04	-	-	-	-	-
1/4"	0.62	15,7	0.62	16,0	0.04	-	-	-	-	-
3/8"	0.75	19,1	0.75	19,0	0.07	-	-	-	-	-
1/2"	0.75	19,1	0.94	23,8	0.08	0.75	0.62	0.75	15,76	0.07
3/4"	0.88	22,4	1.18	30,0	0.12	0.88	0.83	0.88	20,96	0.12
1	1.06	26,9	1.43	36,5	0.22	1.06	1.05	1.06	26,64	0.18
1 1/4	1.25	31,8	1.75	44,5	0.36	1.25	1.38	1.25	35,08	0.32
1 1/2	1.31	33,3	2.00	50,8	0.45	1.31	1.61	1.31	40,94	0.36
2	1.50	38,1	2.56	65,0	0.80	1.50	2.06	1.50	52,48	0.70
2 1/2	1.62	41,1	3.00	76,2	1.15	1.62	2.47	1.62	62,68	1.10
3"	1.75	44,4	3.68	93,7	1.80	1.75	3.07	1.75	77,92	1.70
3 1/2	1.88	47,8	4.00	101,6	2.50	2.00	3.55	2.00	90,12	2.25
4"	2.00	50,8	4.75	120,7	2.90	2.00	4.03	2.00	102,26	3.05
5"	2.25	57,2	5.56	141,0	4.60	2.25	5.05	2.25	128,20	4.85
6"	2.38	60,4	6.61	168,0	7.00	2.38	6.07	2.38	154,08	7.50
8"	2.75	69,8	8.58	218,0	12.00	2.75	7.98	2.75	202,74	12.70
10"	3.06	77,7	10.71	272,0	19.50	3.06	10.02	3.06	254,46	20.00
12"	3.38	85,9	12.72	323,0	26.70	3.38	12.00	3.38	304,84	29.40
14"	3.50	88,9	14.06	357,0	29.90	3.50	13.25	3.50	336,54	31.80
16"	3.69	93,7	16.06	408,0	34.00	3.69	15.25	3.69	387,34	41.70
18"	3.81	96,8	17.91	455,0	44.00	4.06	17.25	4.06	438,14	56.70
20"	4.00	101,6	20.06	510,0	53.50	4.62	19.25	4.62	488,94	79.30
24"	4.56	115,8	24.01	610,0	99.70	5.38	23.25	5.38	590,54	127.00

Up to and including 10", dimensions are the same for SCHED STD & 40 outlets. For 12" and over : on request

(1) A Tolerances : 1/8" - 3/4" : -0.8mm max - 1" - 4" : -1.6mm max / 5" - 12" : -3.2mm max / 14" - 24" : -4.8mm max

Type I and Type II at manufacturer option. If specific B and C dimension request, please contact us.

Weld-Outlet Extra Strong (Xs)

Nom. size dimension	Reducing size - pièces réduites					Full size - Pièces égales				
	A(1)		B		Weight / poids	A' (1)		C		Weight / poids
	Inches	mm	Inches	mm	Kg	Inches	mm	Inches	mm	Kg
1/8"	0.62	15,7	0.63	16,0	0.04	-	-	-	-	-
1/4"	0.62	15,7	0.63	16,0	0.04	-	-	-	-	-
3/8"	0.75	19,1	0.75	19,0	0.07	-	-	-	-	-
1/2"	0.75	19,1	0.94	23,8	0.09	0.75	19,1	0.54	13,84	0.07
3/4"	0.88	22,4	1.18	30,0	0.14	0.88	22,4	0.74	18,88	0.12
1"	1.06	26,9	1.44	36,5	0.21	1.06	26,9	0.96	24,30	0.18
1 1/4"	1.25	31,8	1.75	44,5	0.40	1.25	31,8	1.28	32,50	0.32
1 1/2"	1.31	33,3	2.00	50,8	0.50	1.31	33,3	1.50	38,14	0.40
2"	1.50	38,1	2.56	65,0	0.79	1.50	38,1	1.94	49,20	0.72
2 1/2"	1.62	41,1	3.00	76,2	1.18	1.62	41,1	2.32	58,98	1.13
3"	1.75	44,4	3.69	93,7	1.85	1.75	44,4	2.90	73,70	1.85
3 1/2"	1.88	47,8	4.00	101,6	2.54	2.00	50,8	3.36	85,40	2.30
4"	2.00	50,8	4.75	120,7	2.90	2.00	50,8	3.83	97,18	3.40
5"	2.25	57,2	5.55	141,0	4.70	2.25	57,2	4.81	122,24	5.00
6"	2.38	77,7	6.61	168,0	10.40	3.06	77,7	5.76	146,36	10.40
8"	2.75	98,6	8.68	220,5	20.40	3.88	98,6	7.63	193,70	21.00
10"	3.06	93,7	10.43	265,0	24.80	3.50	88,9	9.75	247,60	25.40
12"	3.38	103,1	12.44	316,0	35.00	3.94	100,1	11.75	298,50	35.00
14"	3.50	100,1	13.81	351,0	37.00	4.12	104,6	13.00	330,20	39.00
16"	3.69	106,2	15.86	403,0	46.20	4.44	112,8	15.00	381,00	52.00
18"	3.81	111,2	17.91	455,0	58.90	4.69	119,1	17.00	431,80	59.00
20"	4.00	119,1	20.08	510,0	71.50	5.00	127,0	19.00	482,60	84.70
24"	4.56	139,7	24.02	610,0	141.00	5.50	139,7	23.00	584,20t	146.00

Up to and including 8", dimensions are the same for SCHED XS & 80 outlets. For 10" and over : on request

⁽¹⁾ A Tolérances : 1-8"- 3/4" : -0.8mm max - 1"- 4" : -1.6mm max - 5"- 12" : -3.2mm max - 14"- 24" : -4.8mm max

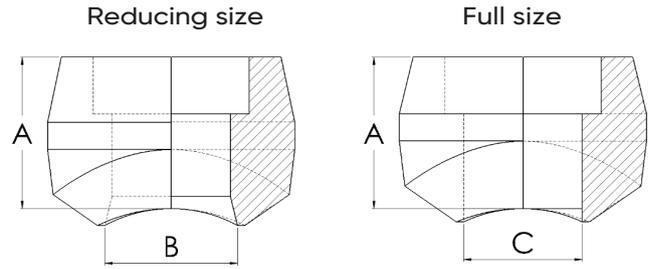
Weld-outlet Sh 160 / Xxs

Nom. size dimension	Reducing size - pièces réduites					Full size - Pièces égales				
	A(1)		B		Weight / poids	A' (1)		C		Weight / poids
	Inches	mm	Inches	mm	Kg	Inches	mm	Inches	mm	Kg
1/2"	1.12	28,4	0.55	14,0	0.15	1.12	28,4	0.46	11,74	0.15
3/4"	1.25	31,8	0.75	19,0	0.32	1.25	31,8	0.61	15,58	0.32
1"	1.50	38,1	1.00	25,4	0.38	1.50	38,1	0.81	20,70	0.38
1 1/4"	1.75	44,4	1.31	33,3	0.55	1.75	44,4	1.16	29,50	0.60
1 1/2"	2.00	50,8	1.50	38,0	0.80	2.00	50,8	1.34	34,02	0.85
2"	2.18	55,4	1.68	42,8	0.97	2.18	55,4	1.69	42,82	1.00
2 1/2"	2.44	62,0	2.12	54,0	1.55	2.44	62,0	2.12	53,94	1.70
3"	2.88	73,2	2.87	73,0	2.85	2.88	73,2	2.62	66,64	2.95
4"	3.31	84,1	3.87	98,5	4.75	3.31	84,1	3.44	87,32	4.95
5"	3.69	93,7	4.81	122,0	6.50	3.69	93,7	4.31	109,54	6.80
6"	4.12	104,6	5.67	144,0	12.7	4.12	104,6	5.18	131,78	13.70

Outlets sizes listed in the chart are suitable for Sch.160 and XXS. For 8" outlet and over, always specify run pipe thickness
 Suitable for Sch 160 run pipe

(2) For Sch.160 We reserve the right to supply as per manufacturer standard

Sock-outlet



Class 3000

Nom. size dimension	Reducing size - pièces réduites					Full size - Pièces égales		
	A		B		Weight - poids	C		Weight - poids
	Inches	mm	Inches	mm	Kg	Inches	mm	Inches
1/8	0.75	19,0	0.63	16,0	0,06			
1/4	0.75	19,0	0.61	15,6	0,06			
3/8	0.81	20,6	0.75	19,0	0,09			
1/2	1.00	25,4	0.94	23,8	0,11	0.55	14,0	0,12
3/4	1.06	27,0	1.18	30,0	0,17	0.75	19,0	0,19
α	1.31	33,3	1.44	36,5	0,29	0.94	24,0	0,31
1 1/4	1.31	33,3	1.75	44,5	0,41	1.26	32,0	0,45
1 1/2	1.38	35,0	2.00	50,8	0,46	1.50	38,0	0,50
2	1.50	38,0	2.56	65,0	0,80	1.93	49,0	0,87
2 1/2	1.81	46,0	3.00	76,0	1,40	2.32	59,0	1,50
3	2.00	50,8	3.69	93,7	2,00	2.89	73,5	2,15
3 1/2	2.13	54,0	4.00	101,5	2,60	3.35	85,0	2,80
4	2.25	57,2	4.75	120,7	3,30	3.82	97,0	3,50

⁽¹⁾ Suitable for STD & XS run pipe WT

Class 6000

Nom. size dimension	Reducing size - pièces réduites				
	Inches	mm	Inches	mm	Kg
1/4	1.12	28,5	0.55	14,0	0,20
3/8	1.12	28,5	0.55	14,0	0,20
1/2	1.26	32,0	0.75	19,0	0,30
1	1.44	36,5	1.00	25,4	0,50
3/4	1.56	39,5	1.31	33,4	0,90
1 1/4	1.62	41,1	1.50	38,0	0,85
1 1/2	1.69	43,0	1.87	47,5	1,45
2	2.07	52,5	2.32	59,0	2,75

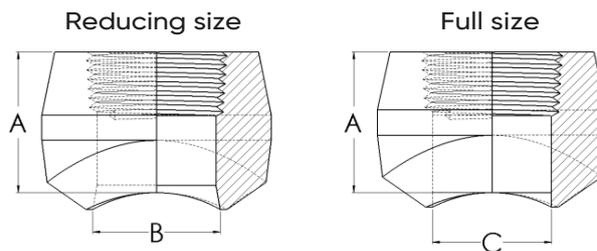
Suitable for 160 run pipe WT

Class 9000

Nom. size dimension	Reducing size - pièces réduites				
	Inches	mm	Inches	mm	Kg
1/2	1.26	32,0	0.75	19,0	0,32
3/4"	1.44	36,5	1.00	25,4	0,55
1	1.56	39,5	1.31	33,4	0,95
1 1/2	1.69	43,0	1.87	47,5	1,50
2"	2.07	52,5	2.32	59,0	2,90

Suitable for XXS run pipe WT

Thread Outlet



Class 3000

Nom. size dimension	Reducing size - pièces réduites					Full size - Pièces égales		
	A		B		Weight - poids	C		Weight - poids
	Inches	mm	Inches	mm	Kg	Inches	mm	Inches
1/8"	0.75	19,0	0.63	16,0	0,06	-	-	-
1/4"	0.75	19,0	0.61	15,6	0,06	-	-	-
3/8"	0.81	20,6	0.75	19,0	0,09	-	-	-
1/2"	1.00	25,4	0.94	23,8	0,11	0.71	18,0	0,12
3/4"	1.06	26,9	1.18	30,0	0,17	0.91	23,0	0,19
1"	1.31	33,3	1.44	36,5	0,29	1.10	28,0	0,31
1" 1/4"	1.31	33,3	1.75	44,5	0,41	1.50	38,0	0,45
1 1/2"	1.38	35,0	2.00	50,8	0,46	1.69	43,0	0,50
2"	1.50	38,1	2.56	65,0	0,80	2.16	55,0	0,87
2 1/2"	1.81	46,0	2.99	76,0	1,74	2.59	65,7	1,50
3"	2.00	50,8	3.69	93,7	2,00	3.19	81,1	2,15
4"	2.25	57,2	4.75	120,7	3,35	4.20	106,8	3,60

Class 3000

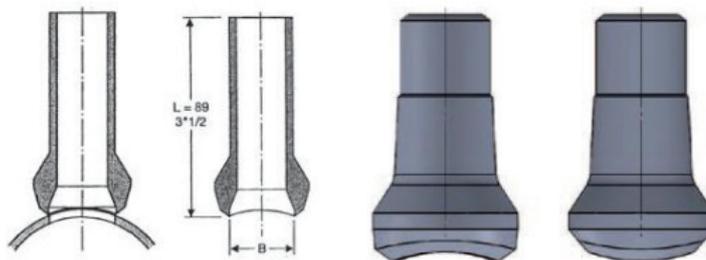
	Reducing size - pièces réduites				
	A(1)		B		Weight - poids
	Inches	mm	Inches	mm	Kg
1/2"	1.25	31,8	0.71	18,0	0,30
3/4"	1.44	36,6	0.91	23,0	0,50
1"	1.56	39,6	1.10	28,0	0,90
1" 1/4"	1.62	41,1	1.50	38,0	0,85
1" 1/2"	1.69	42,3	1.69	43,0	1,45
2"	2.06	52,3	2.16	55,0	2,75

⁽¹⁾ Dimensions not listed in MSS SP 97 -

⁽²⁾ Suitable for STD and XS run pipe sizes -

Nip-outlet

BW / SW / NPT / PE end per B16.25 / B16.11 / B1.20.1
 Rating: 3000 / 6000 / 9000
 BW Sch: STD / XS / 80 / 160 & XXS
 Size: from 1/2" to 2"
 Other sizes on request



Class 3000 - Standard - XS

	Outlet size / Diamètre sortie				
	1/2"	3/4"	1"	1 1/2"	2"
Run sizes	3" - 1 1/2"	3" - 1 1/2"	1 1/2"	2"	3"
Dimensions	36" - 4"	36" - 4"	2 1/2" - 2"	3 1/2" - 3"	4" - 3 1/2"
collecteurs	-	-	5" - 3"	5" - 4"	6" - 5"
	-	-	36" - 6"	12" - 6"	12" - 8"
	-	-	-	36" - 14"	36" - 14"

Class 6000 - sch 160 - XXS

	Outlet size - Diamètre sortie				
	1/2"	3/4"	1"	1 1/2"	2"
Run sizes	36" - 1 1/2"	36" - 1 1/2"	4" - 1 1/2"	4" - 2"	4" - 3"
Dimensions	-	-	36" - 6"	36" - 6"	8" - 5"
collecteurs	-	-	-	-	36" - 10"

Class 3000

Nom. size dimension Dim. Nom.	B		Weight - poids kg
	Inches	mm	
1/4"	0.63	16,0	0,62
3/8"	0.75	19,0	0,75
1/2"	0.94	23,8	0,25
3/4"	1.16	29,5	0,40
1"	1.44	36,5	0,65
1 1/4"	1.75	44,5	0,75
1 1/2"	2.00	50,8	0,95
2"	2.56	65,0	1,45

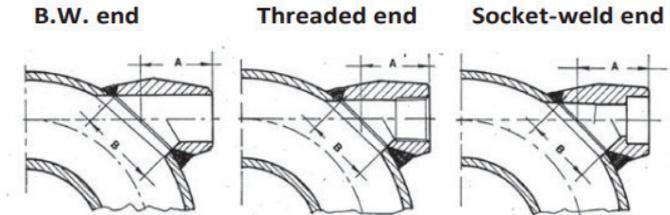
Class 6000

Nom. size dimension Dim. Nom.	B		Weight - poids kg
	Inches	mm	
1/4"	-	-	-
3/8"	-	-	-
1/2"	0.55	14,0	0,25
3/4"	0.75	19,0	0,50
1"	1.00	25,5	0,70
1 1/4"	1.50	38,0	0,88
1 1/2"	1.50	38,0	1,15
2"	1.68	42,8	1,50

- Same length for all sizes
- Class 3000 corresponds to Sch 80 and class 6000 corresponds to Sch 160 -
- XXS on request

ELB-OUTLET

BW / SW / NPT / PE end per B16.25 / B16.11 / B1.20.1
 Rating: 3000 / 6000 / 9000
 BW Sch: STD / XS / 80 / 160 & XXS
 Size: from 1/2" to 2"
 Other sizes on request



Nom. size dimension	3000 lbs - STD WT & XS(1)					6000 lbs - Sch 160 & XXS(1)				
	A		B		Weight / poids Kg	A' (1)		C		Weight / poids Kg
	Inches	mm	Inches	mm		Inches	mm	Inches	mm	
1/4"	1,61	41,0	1,50	38,0	0,23	1,61	41,0	1,50	38,0	0,35
3/8"	1,61	41,0	1,50	38,0	0,23	1,61	41,0	1,50	38,0	0,35
1/2"	1,61	41,0	1,50	38,0	0,30	1,87	47,5	1,69	43,0	0,40
3/4"	1,87	47,5	1,69	43,0	0,35	2,24	57,0	2,24	57,0	0,67
1"	2,24	57,0	2,24	57,0	0,53	2,50	63,5	2,87	73,0	1,00
1"1/4	2,50	63,5	2,87	73,0	0,86	2,68	68,0	3,13	79,5	1,32
1"1/2	2,75	70,0	3,13	79,5	1,20	3,25	82,5	4,19	106,5	2,80
2"	3,25	82,5	4,19	106,5	2,40	4,00	101,5	4,51	114,5	3,60
2"1/2 to 10"	Available, on request, as butt/welding ends									

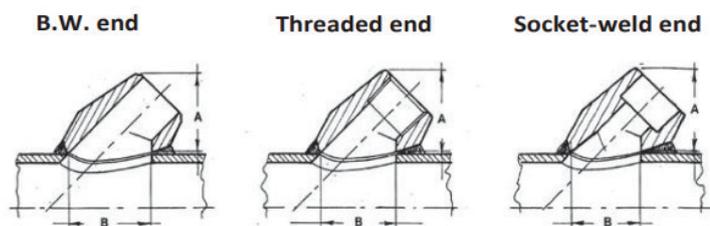
(1) Available only for reduction rate of 2-3 pipe size and over -

Run sizes Dimensions collecteurs	Class 3000 - Standard - XS / Outlet size - Diamètre sortie		
	1/4" - 3/4"	1" - 1"1/2	2"
	36" - 1"1/4	36" - 2"	36" - 3"

Dimensions collecteurs Run sizes	Class 6000 - sch 160 - XXS / Outlet size - Diamètre sortie		
	1/4" - 1/2"	3/4" - 1"1/4	1"1/2
	36" - 1"1/4	36" - 2"	36" - 3"

Lateral Outlet

BW / SW / NPT / PE acc. to B16.25
 B16.11/B1.20.1
 FROM 1/4" TO 60"
 SW & NPT: 3000 / 6000 / 9000
 BW: STD / XS / 80 / 160 & XXS



Nom. size dimension	3000 lbs - STD WT & XS(1)					6000 lbs - Sch 160 & XXS(1)				
	A		B		Weight / poids Kg	A' (1)		C		Weight / poids Kg
	Inches	mm	Inches	mm		Inches	mm	Inches	mm	
1/4"	1,50 -1,69	38,1-42,9	1,44	36,5	0,23	1,53-1,87	38,9-47,6	1,44	36,5	0,35
3/8"	1,50 -1,69	38,1-42,9	1,44	36,5	0,23	1,53-1,87	38,9-47,6	1,44	36,5	0,35
1/2"	1,50 -1,69	38,1 - 42,9	1,44	36,5	0,30	1,81-2,19	46,0-55,6	1,75	44,5	0,40
3/4"	1,75-2,00	44,5-50,8	1,61	41,0	0,35	2,13-2,50	54,0-63,5	2,13	54,0	0,67
1"	2,12-2,56	54,0-65,1	2,00	51,0	0,53	2,41-2,87	61,1-73,0	2,62	66,5	1,00
1"1/4	2,12-2,56	54,0-65,1	2,62	66,5	0,86	2,57-3,06	65,1-77,8	2,99	76,0	1,32
1"1/2	2,50-2,75	63,5-69,9	2,87	73,0	1,20	3,09-3,37	78,6-85,7	4,13	105,0	2,80
2"	2,87-3,50	73,0-88,9	3,78	96,0	2,40	3,09-4,13	78,6-104,8	4,37	111,0	3,60
2"1/2 to 10"	Available, on request, as butt/welding ends / Disponible, sur demande, en butt/welding									

Run sizes Dimensions collecteurs	Class 3000 - Standard - XS / Outlet size - Diamètre sortie			
	1/4" - 1/2"	3/4"	1" - 1"1/2	2"
	2"1/2 - 1"1/4	1"1/2 - 1"1/4	2"1/2 - 2"	5" - 4"
	12" - 3"	5" - 2"	5" - 3"	8" - 6"
		12" - 6"	12" - 6"	12" - 10"

Run sizes Dimensions collecteurs	Class 6000 - sch 160 - XXS / Outlet size - Diamètre sortie			
	1/4" - 3/8"	1/2"	3/4" - 1"1/4	1"1/2
	2"1/2 - 1"1/4	1"1/2 - 1"1/4	2"1/2 - 2"	5" - 4"
	12" - 3"	5" - 2"	5" - 3"	8" - 6"
		12" - 6"	12" - 6"	12" - 10"