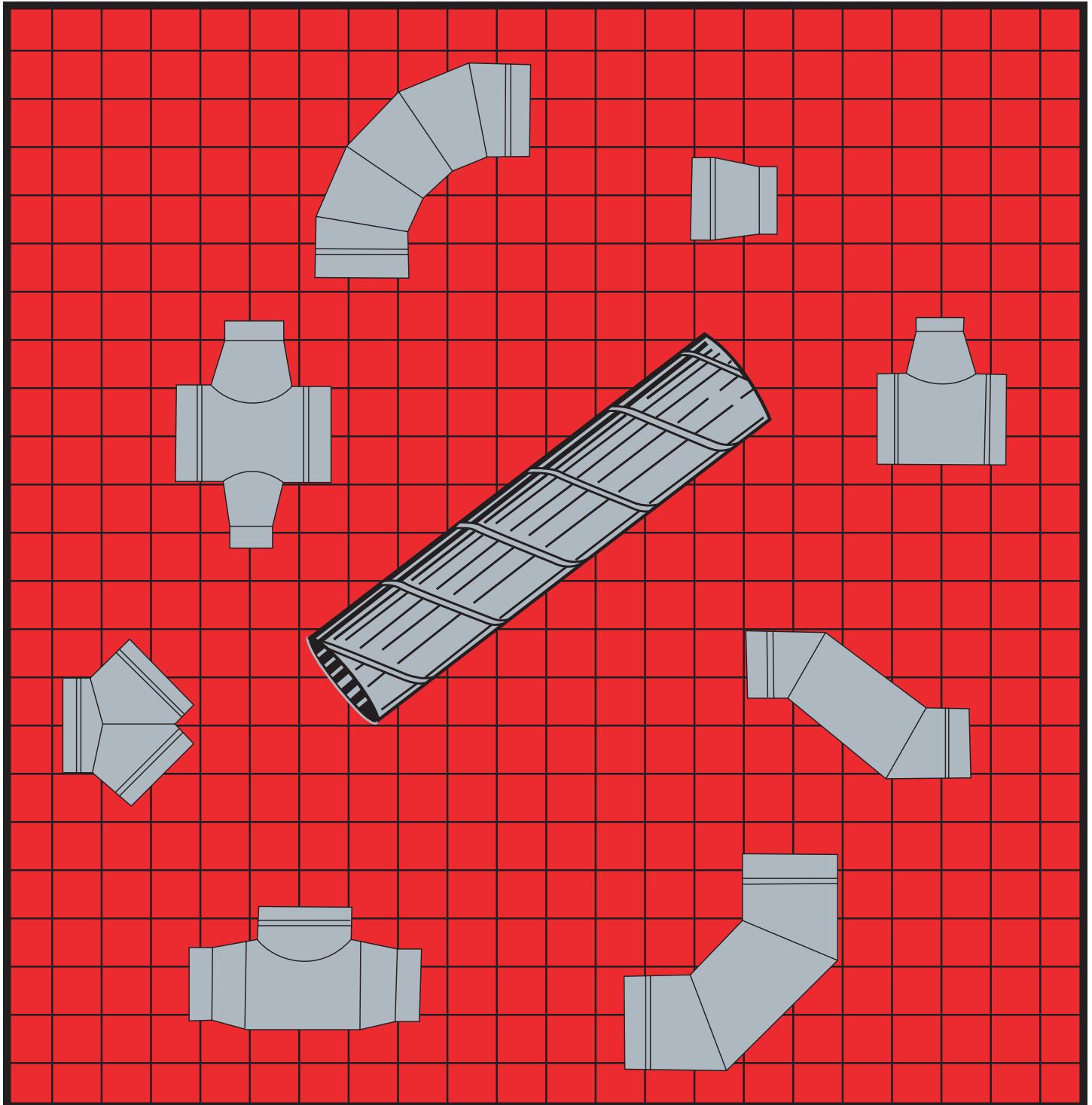




AIR SYSTEMS Manufacturing Inc.



SPECIFICATIONS FOR
GALVANIZED
SPIRAL PIPE & FITTINGS



AIR SYSTEMS Manufacturing Inc.

4280 West Tompkins Avenue / Las Vegas, Nevada 89103-5321

Phone (702) 362-5885, Toll Free Outside Nevada 1(888) 333-1334

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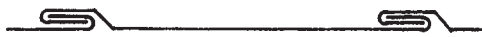
MATERIAL:

ASI Spiral Pipe & Fittings are manufactured from LFQ G90 galvanized steel meeting spec. ATSM A-527-71 (Lockforming quality).

FABRICATION:

AS1 SPIRAL PIPE is formed from a coil of metal into a rigid galvanized steel tube with a 4-ply spiral lockseam. It has a smooth interior for low friction loss with the grooved seam entirely on the outside. This form of pipe has a resistance to crushing approximately 2½ time that of longitudinal lockseam or welded pipe. Optional corrugations are available and increase the rigidity of the pipe by approximately 300%.

Pipe sections can be joined together by couplings, companion angles, fittings, or in special cases krimped ends (where moisture and product material passes through pipe).



Lateral section of 4-ply pressure proof spiral seam.



Lateral section of grooved seam with optional corrugating grooves.

ASI SPIRAL PIPE is available in 37 different diameters from 4" through 60". The wall thickness ranges in galvanized from 28ga. through 18ga. with lengths from 1 ft. through 20 feet.

ASI SPIRAL FITTINGS are manufactured with an elbow lock seam, lap seam (spot welded, solid welded or riveted) and a butt weld seam. These may be with or without Duct Sealant. All fittings have Collar ends (male) with raised bead or companion angle unless krimping is specified as an option.



Elbow Lock Seam



Lap Seam



Butt Weld

ASI manufactured High Pressure ROUND FITTINGS are available in many standard and optional configurations, sizes, wall thicknesses, and are manufactured to be leakproof.

ASI (unless specified otherwise) uses the latest SMACNA RECOMMENDED duct standards for gauges and configurations.

GAUGES FOR MAXIMUM 10" w.g. Static Positive:

SIZES	GAUGE	SEAM TYPE	CONNECTION
3" thru 14"	26	LAP & SPOT WELD (sealed) SOLID WELDED LAP & RIVETED (sealed)	COUPLING/FITTING KRIMP (optional)
15" thru 26"	24	LAP & SPOT WELD (sealed) SOLID WELDED LAP & RIVETED (sealed)	COUPLING/FITTING ANGLE RING
27" thru 36"	22	LAP & SPOT WELD (sealed) SOLID WELDED	COUPLING/FITTING ANGLE RING
37" thru 50"	20	BUTT WELD	
51" thru 84"	18	LAP & SPOT WELD (sealed) SOLID WELDED BUTT WELD	COUPLING/FITTING ANGLE RING

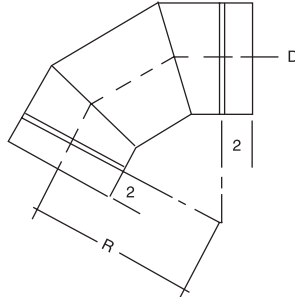
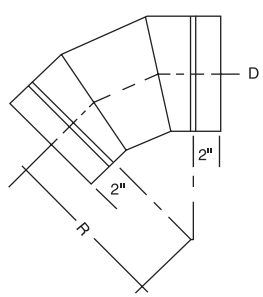
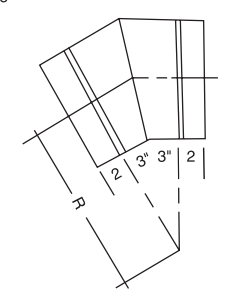
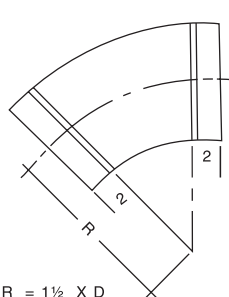
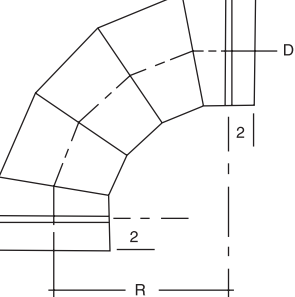
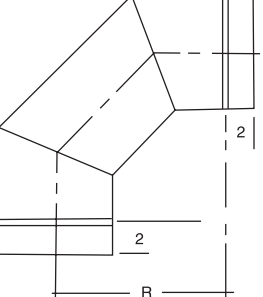
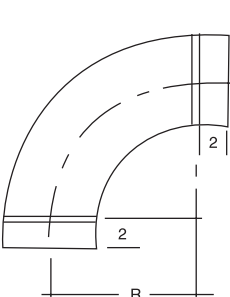
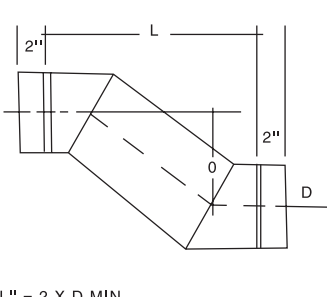
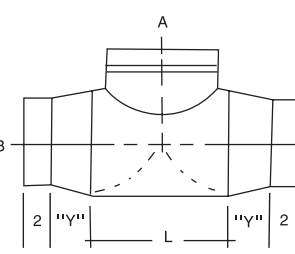
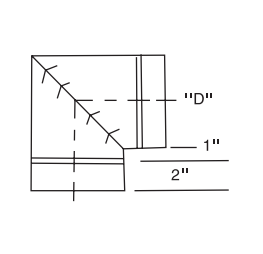
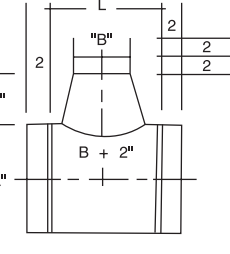
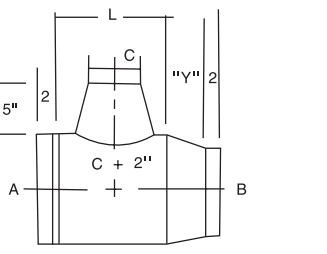
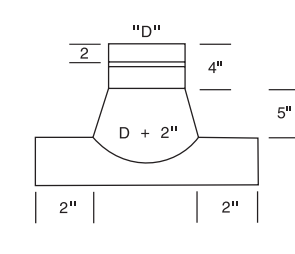
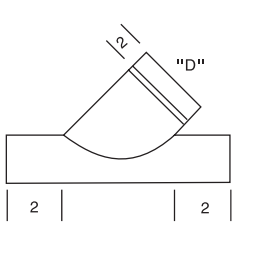
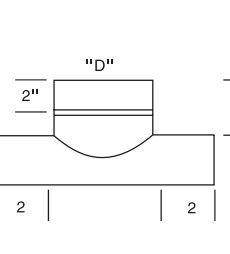
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HIGH PRESSURE ROUND FITTINGS

<p>E-60°</p>  <p>$R = 1\frac{1}{2} \times D$</p>	<p>E-45°</p>  <p>$R = 1\frac{1}{2} \times D$</p>	<p>E-30° E-45°</p> 	<p>E-45°</p>  <p>$R = 1\frac{1}{2} \times D$ DIE STAMPED 3" TO 10" DIA. ONLY</p>
<p>E-5-90°</p>  <p>$R = 1\frac{1}{2} \times D$</p>	<p>E-3-90°</p>  <p>$R = \text{VARIES}$</p>	<p>E-90°</p>  <p>$R = 1\frac{1}{2} \times "D"$ DIE STAMPED 3" TO 10" DIA. ONLY</p>	 <p>$L" = 2 \times D \text{ MIN.}$ REQ'D INFORMATION D, O & L DIMENSIONS OFFSET</p>
<p>BULL TEE</p>  <p>$L" = A + 2"$ "Y" = 1" TO 4" REDUCTION = 6" "Y" = 5" & UP REDUCTION = 8" + SPLITTER OPTIONAL</p>	<p>E-90°-2M</p>  <p>STREET ELL AVAILABLE</p>	<p>CON-T-1</p>  <p>$L" = B + 4"$ CONICAL TEE</p>	<p>CON-T-1R</p>  <p>$L" = C + 4"$ "Y" = 1" TO 4" REDUCTION = 6" Y = 5" & UP REDUCTION = 8" + CONICAL REDUCING TEE</p>
<p>CON-ST</p>  <p>CONICAL SADDLE TAP</p>	<p>45°-ST</p>  <p>45° SADDLE TAP</p>	<p>90°-SST</p>  <p>90° STR. SADDLE TAP</p>	<p>ASI CAN FABRICATE MANY DIFFERENT FITTINGS TO CUSTOMER SPECIFICATIONS IN ADDITION TO THE ONES SHOWN.</p>

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HIGH PRESSURE ROUND FITTINGS

<p>T-1</p> <p>$L = B + 2''$ TEE</p>	<p>R-1</p> <p>"Y" = 1" to 4" REDUCTION = 6" "Y" = 5" & UP REDUCTION = 8" + CONCENTRIC REDUCER</p>	<p>RE-1</p> <p>"Y" = VARIES ECCENTRIC REDUCER</p>	<p>C-2</p> <p>$L = B + 2''$ REGULAR CROSS TEE</p>
<p>Y-2</p> <p>"Y" = .207 X DIA. + 1" "X" = DIA. / 2" + 1" PANTS-WYE</p>	<p>L-1R</p> <p>$L = C \times 1.414 + 9\frac{1}{2}''$ "Y" = 1" to 4" REDUCTION = 4" "Y" = 5" & UP REDUCTION = A-B REDUCING LATERAL</p>	<p>C-2R</p> <p>$L = C + 3''$ "Y" = 1" to 4" REDUCTION = 6" "Y" = 5" & UP REDUCTION = 8" + REDUCING CROSS TEE</p>	<p>LC-2</p> <p>$L = \text{LARGER OF } B/C \times 1.414 + 2''$ LATERAL CROSS</p>
<p>T-1R</p> <p>$L = "C" + 9\frac{1}{2}''$ "Y" = 5" & UP REDUCTION = A-B REDUCING TEE</p>	<p>CON C-2</p> <p>$L" = B + 4''$ CONICAL CROSS TEE</p>	<p>MANAFOLD</p> <p>$L" = C + D + 8''$ $X = \frac{1}{2}C + \frac{1}{2}D + 4''$ "Y" = 1" to 4" REDUCTION 4" "Y" = 5" & UP REDUCTION A-B</p>	
<p>L-1</p> <p>$L" = B \times 1.414 + 2''$ LATERAL WYE</p>	<p>PLUG-PIPE CAP-FITTING</p> <p>M-PIPE F-FITTING COUPLING</p> <p>ANGLE RINGS</p>		

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PIPE SIZES AVAILABLE					
28 Ga.	26 Ga.	24 Ga.	22 Ga.	20 Ga.	18 Ga.
4	4	4	4	4	
5	5	5	5	5	
6	6	6	6	6	
7	7	7	7	7	
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	*11	11	11	11	11
12	12	12	12	12	12
13	*13	13	13	13	13
14	14	14	14	14	14
	15	15	15	15	15
	16	16	16	16	16
	*17	17	17	17	17
	18	18	18	18	18
	20	20	20	20	20
	22	22	22	22	22
	24	24	24	24	24
	26	26	26	26	26
		28	28	28	28
		30	30	30	30
		32	32	32	32
		34	34	34	34
		36	36	36	36
			38	38	38
			40	40	40
			42	42	42
			44	44	44
			46	46	46
			48	48	48
				50	50
				52	52
				60	*54
					*56
					*58
					60

* Special Order

Allowable Negative Pressures in Round Spiral Duct				
The following table lists the recommended metal gauge and reinforcing for various negative pressures in different diameters of round spiral duct. The negative pressures listed are working pressures with a safety factor of 3 included.				
Table 1 MAXIMUM NEGATIVE PRESSURE				
Diameter	0"-10"WG	10"-20"WG	20"-30"WG	30"-40"WG
3-7	26 Ga.	26 Ga.	26 Ga.	26 Ga.
8	26	26	26	24
9-12	24	24	22	22
13-15	24	22	22	20
16-18	22	20	20	18
19-22	22	18	18	18w/F1* or 16
24-26	20	18	18 w/F1* or 16	18 w/AR** 6' c/c pr 16 w/F1*
28-34	18	18 w/F1* or 16	18 w/AR** 6' c/c or 16 w/F1*	18 w/AR** 4' c/c or 16 w/F1*
36-42	18 w/F1* or 16	18 w/F1* 6' c/c	18 w/AR** 4' c/c	16 w/F1*
44-50	18 w/AR** 6' c/c or 16	18 w/AR** 4' c/c or 16 w/F1*	16 w/F1*	16 w/AR** 6' c/c
52-60	18 w/AR** 6' c/c or 16 w/F1*	18 w/AR** 4' c/c or 16 w/F1*	16 w/AR** 6' c/c	16 w/AR** 6' c/c

*Maximum length of Duct Section = 12'
(with angle Ring Flanges)

WEIGHT TABLE Galvanized Spiral Pipe Pounds Per Lineal Foot						
Dia.	28 Ga.	26 Ga.	24 Ga.	22 Ga.	20 Ga.	18 Ga.
4"	.9	1.02	1.35	1.64	1.94	
5"	1.1	1.28	1.69	2.06	2.42	
6"	1.4	1.54	2.03	2.47	2.91	3.88
7"	1.6	1.79	2.37	2.88	3.40	4.52
8"	1.8	2.05	2.71	3.29	3.86	5.17
9"	2.1	2.31	3.05	3.71	4.37	5.82
10"	2.3	2.57	3.39	4.12	4.86	6.47
11"	2.5	2.76	3.70	4.50	5.30	6.90
12"	2.8	3.08	4.07	4.95	5.83	7.75
13"	3.0	3.29	4.25	5.18	6.10	7.92
14"	3.2	3.59	4.74	5.77	6.81	8.55
15"		3.78	5.00	6.10	7.18	9.32
16"		4.11	5.42	6.60	7.78	10.34
18"		4.63	6.10	7.43	8.76	11.64
20"		5.15	6.78	8.25	9.73	12.93
22"		5.60	7.46	9.08	10.71	14.23
24"		6.00	8.14	9.91	11.68	15.52
26"		6.40	8.82	10.73	12.66	16.82
28"			9.50	11.56	13.63	18.11
30"			10.20	12.38	14.60	19.41
32"			10.80	13.21	15.58	20.71
36"			12.50	14.90	17.53	23.29
40"				16.50	19.48	25.88
44"				17.30	21.42	28.47
48"				18.90	23.36	31.06
50"					24.00	32.15
52"					25.60	34.40
54"						35.80
56"						37.10
58"						38.40
60"						39.70

HYDROSTATIC PRESSURE TESTS						
All tubing diameters in inches. All pressures in pounds per square inch.						
Hydrostatic Pressures to Seam Failure on various gauges of SPIRO tubing. Tests conducted by the Testing Institute of Oslo, Oslo, Norway.						
Dia.	28 Ga.	26 Ga.	24 Ga.	22 Ga.	20 Ga.	18 Ga.
3	363	420	535	650	765	995
4	266	308	392	475	560	728
5	206	238	303	369	435	566
6	172	199	252	308	363	473
7	146	169	216	262	309	403
8	125	145	186	224	264	344
9	110	127	161	196	230	299
10	98	113	144	177	208	271
12	80	93	118	145	171	223
14		76	100	120	142	185
16		68	86	103	122	162
18			75	91	104	136
20			66	81	96	125
22				72	85	111
24				66	78	101
26				61	72	94
28				66	65	85
30				51	60	78
32				47	56	73
34					52	68
36					48	65
38					45	59
40					42	55
42					39	51
44						47
46						44
48						41
50						39

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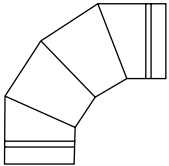
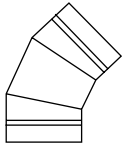
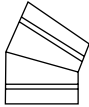
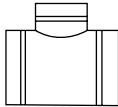
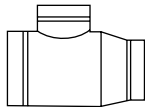
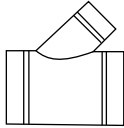
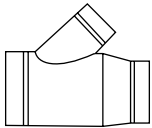

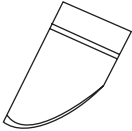


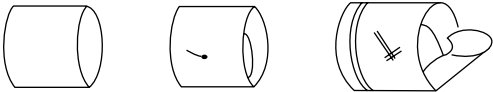




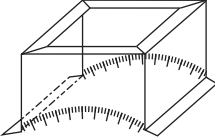
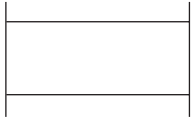
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ASI LOW PRESSURE SPIRAL PIPE AND FITTINGS:

ASI low pressure spiral pipe and fittings are made from a lighter gauge of LFQ G90 galvanized metal. The seams on fittings are either ELBOW LOCK, LAP & SPOT WELDED or RIVETED. These will/will not be sealed with a high grade duct sealer. All fittings have collar ends with raised beads or optional krimped ends. When krimped ends are used generally the spiral pipe is krimped one end also.

ASI FOLLOWS THE LATEST SMACNA RECOMMENDATIONS FOR GAUGES TO MAXIMUM 2" w.g. positive.

		SIZES	SPIRAL GAUGES		FITTING GAUGES	
		3" thru 14"	28ga.		26ga.	
		15" thru 26"	26ga.		24ga.	
		27" thru 36"	24ga.		22ga.	
		37" thru 50"	22ga.		20ga.	
		51" thru 60"	20ga.		18ga.	

						
90° ADJUST. ELL	45° ADJUST. ELL	2 PC. 45° ADJUST. ELL	90° TEE	90° RED TEE	45° WYE	45° RED WYE
						
90° SWEDGE SADDLE	45° SWEDGE SADDLE	90° SADDLE	45° SADDLE	SPIN-COLLARS		
						
VOLUME DAMPERS	END CAPS	START COLLARS	REDUCER	90° REST ON ROUND SADDLE TAP		FLEX COUPLER

OTHER ASI SPIRAL PRODUCTS AVAILABLE:

ASI INSULATED PIPE AND FITTINGS

- Type; A-1 Outer shell to be metal with inner liner to be rigid fiberglass or matt faced ductliner then pinned and glued.
- Type; A-2 Inner shell to be metal with required fiberglass wrap around that with outer shell out of metal.
- Type; A-3 Inner liner to be perforated then wrapped with required fiberglass and covered with solid outer shell.

ASI ALUMINUM SPIRAL PIPE AND FITTINGS:

Aluminum alloy 3003-H14- in thickness .025, .032, .040, & .050

ASI STAINLESS STEEL SPIRAL PIPE AND FITTINGS:

Type 304-2b or 316-2b, – in thickenss of .024, .030 & .036

ASI POLYVINYL COATED SPIRAL PIPE AND FITTINGS:

See ASI/Formost color brochure Form No. 102A.