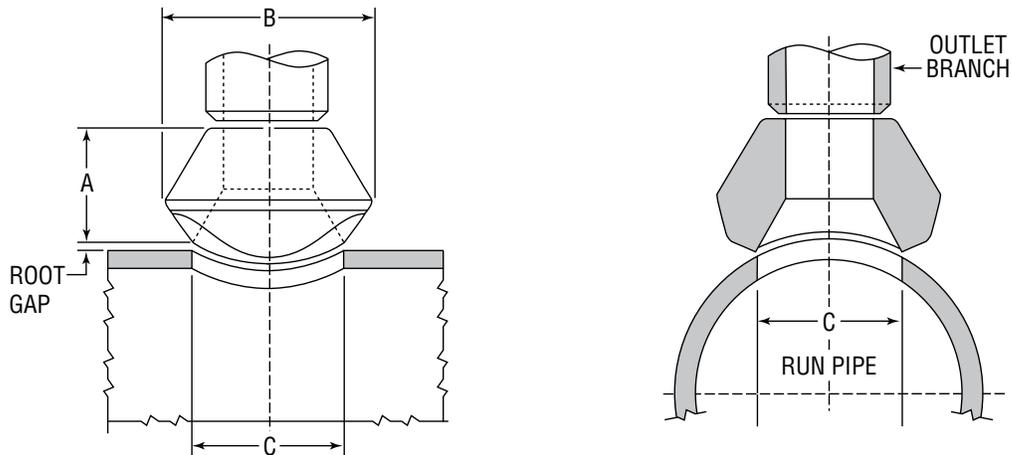


Standard Butt weld



BUTTWELD Standard



Outlet Size		Dimensions						Unit Weight	
		A		B		C			
NPS	DN	in	mm	in	mm	in	mm	lbs	kg
1/8	6	5/8	16	1	25	0.625	16	0.10	0.05
1/4	8	5/8	16	1	25	0.625	16	0.10	0.05
3/8	10	3/4	19	1	25	0.493	13	0.10	0.05
1/2	15	3/4	19	1 1/8	29	0.622	16	0.12	0.05
3/4	20	7/8	22	1 1/2	38	0.824	21	0.22	0.10
1	25	1 1/16	27	1 3/16	46	1.062	27	0.32	0.15
1 1/4	32	1 1/4	32	2 1/4	57	1.380	35	0.64	0.29
1 1/2	40	1 5/16	33	2 9/16	65	1.625	41	0.78	0.35
2	50	1 1/2	38	3 5/16	84	2.313	59	1.14	0.52
2 1/2	65	1 5/8	41	3 21/32	93	2.500	64	1.94	0.88
3	80	1 3/4	44	4 9/32	109	3.125	79	2.60	1.18

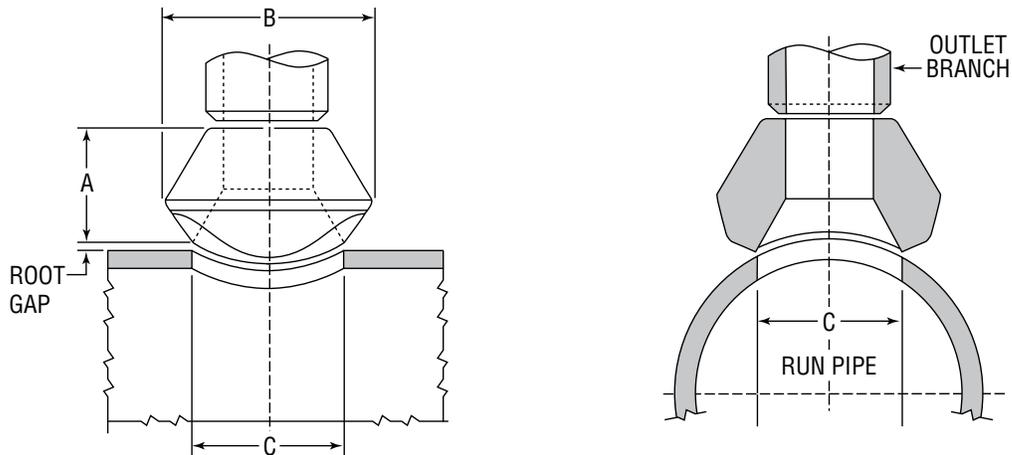
Outlet Size		Dimensions						Unit Weight	
		A		B		C			
NPS	DN	in	mm	in	mm	in	mm	lbs	kg
4	100	2	51	5 3/8	137	4.145	105	4.12	1.87
6	150	2 3/8	60	7 21/32	194	6.112	155	11.00	4.99
8	200	2 3/4	70	10 3/8	264	8.688	221	28.00	12.70
10	250	3 1/16	78	12 21/16	319	10.813	275	39.00	17.69
12*	300	3 3/8	86	14 7/8	378	12.813	325	65.00	29.48
14*	350	3 1/2	89	16 1/8	410	14.063	357	70.00	31.75
16*	400	3 11/16	94	18 1/4	464	16.063	408	92.00	41.73
18*	450	4 1/16	103	20 3/4	527	18.625	473	125.00	56.70
20*	500	4 5/8	117	23 1/16	586	20.063	510	175.00	79.38
24*	600	5 3/8	137	27 7/8	708	25.125	638	280.00	127.01

* Anvillet supplied in accordance with Full height specification of MSS SP-97. Reduced height Anvillets are available upon request, dimensions and prices on application.
Each outlet size listed is available to fit any run curvature. BW Ends per ASME B16.9 and ASME B16.25. Design per MSS-SP-97.
RUN PIPE SIZES Outlet sizes 6" and less fit a number of run pipe sizes, and the fittings are marked accordingly. See page 5 for run pipe size combination table(s).
SCHEDULES Standard Butt weld Anvillets are designed for use on Schedule 40 pipe in accordance with MSS SP-97. Extra Strong Butt weld Anvillets are designed for use on Schedule 80 pipe in accordance with MSS SP-97. Pipe schedule numbers and weight designations are in accordance with ASME B36.10
FLATS Flat butt-welded Universal Forged Steel Anvillet fittings for use on welding caps, elliptical heads and flat surfaces is available.

The A, B and C dimensions given for the Branch Connections in the above Table are for reference only and to be used as a guideline. Dimensions B and C are subject to change depending upon the manufacturing process utilized. Although every attempt has been made to insure that the information contained in this table is correct, Anvil reserves the right to change the C dimension as deemed necessary.

PROJECT INFORMATION		APPROVAL STAMP
Project:		<input type="checkbox"/> Approved
Address:		<input type="checkbox"/> Approved as noted
Contractor:		<input type="checkbox"/> Not approved
Engineer:		Remarks:
Submittal Date:		
Notes 1:		
Notes 2:		

Extra Strong Butt weld



BUTTWELD Extra Strong



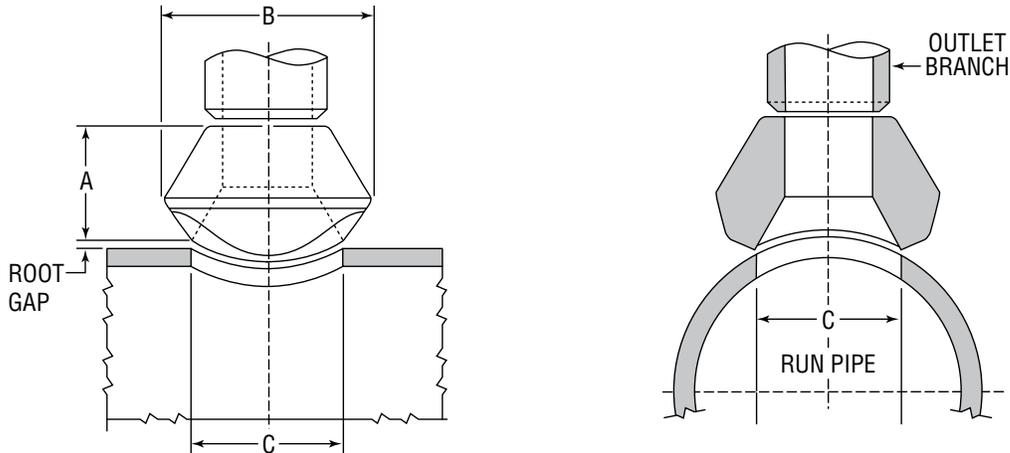
Outlet Size		Dimensions						Unit Weight	
		A		B		C			
NPS	DN	in	mm	in	mm	in	mm	lbs	kg
1/8	6	5/8	16	1	25	0.625	16	0.10	0.05
1/4	8	5/8	16	1	25	0.625	16	0.10	0.05
3/8	10	3/4	19	1	25	0.423	11	0.10	0.05
1/2	15	3/4	19	1 1/8	29	0.546	14	0.12	0.05
3/4	20	7/8	22	1 1/2	38	0.742	19	0.18	0.08
1	25	1 1/16	27	2 1/16	71	1.062	27	0.36	0.16
1 1/4	32	1 1/4	32	2 1/4	57	1.278	32	0.55	0.25
1 1/2	40	1 5/16	33	2 9/16	65	1.625	41	0.68	0.31
2	50	1 1/2	38	3 5/16	84	2.313	59	1.24	0.56
2 1/2	65	1 3/4	41	3 21/32	93	2.500	64	2.26	1.02
3	80	1 3/4	44	4 9/32	109	3.125	79	2.84	1.29

Outlet Size		Dimensions						Unit Weight	
		A		B		C			
NPS	DN	in	mm	in	mm	in	mm	lbs	kg
4	100	2	51	5 3/8	137	4.145	105	4.56	2.07
6	150	3 1/16	78	7 23/32	196	5.800	147	15.00	6.80
8	200	3 7/8	98	10 5/8	270	8.688	221	32.00	14.51
10*	250	3 1/2	89	12 7/8	327	10.738	273	46.00	20.87
12*	300	3 15/16	100	15 5/16	386	13.000	330	61.00	27.67
14*	350	4 7/8	105	16 11/16	424	14.313	364	75.00	34.02
16*	400	4 7/16	113	18 7/8	479	16.500	419	115.00	52.16
18*	450	4 11/16	119	21 1/8	537	18.625	473	130.00	58.97
20*	500	5	127	23 3/8	594	20.813	529	187.00	84.82
24*	600	5 1/2	140	27 7/8	708	25.125	638	316.00	143.34

* Anvillet supplied in accordance with Full height specification of MSS SP-97. Reduced height Anvillets are available upon request, dimensions and prices on application.
Each outlet size listed is available to fit any run curvature. BW Ends per ASME B16.9 and ASME B16.25. Design per MSS-SP-97.
RUN PIPE SIZES Outlet sizes 6" and less fit a number of run pipe sizes, and the fittings are marked accordingly. See page 5 for run pipe size combination table(s).
SCHEDULES Standard Butt weld Anvillets are designed for use on Schedule 40 pipe in accordance with MSS SP-97. Extra Strong Butt weld Anvillets are designed for use on Schedule 80 pipe in accordance with MSS SP-97. Pipe schedule numbers and weight designations are in accordance with ASME B36.10
FLATS Flat butt-welded Universal Forged Steel Anvillet fittings for use on welding caps, elliptical heads and flat surfaces is available.

The A, B and C dimensions given for the Branch Connections in the above Table are for reference only and to be used as a guideline. Dimensions B and C are subject to change depending upon the manufacturing process utilized. Although every attempt has been made to insure that the information contained in this table is correct, Anvil reserves the right to change the C dimension as deemed necessary.

XXS, Sch. 160 Butt weld



BUTT WELD XXS, Sch. 160	Outlet Size		Dimensions						Unit Weight	
			A		B		C			
	NPS	DN	in	mm	in	mm	in	mm	lbs	kg
	1/2	15	1 1/8	29	1 3/8	35	0.563	14	0.25	0.11
	3/4	20	1 1/4	32	1 3/4	44	0.750	19	0.70	0.32
	1	25	1 1/2	38	2	51	1.000	25	0.85	0.39
	1 1/4	32	1 3/4	44	2 1/16	62	1.313	33	1.25	0.57
	1 1/2	40	2	51	2 3/4	70	1.500	38	1.75	0.79
	2	50	2 3/16	56	3 3/16	81	1.688	43	2.15	0.98
	2 1/2	65	2 7/16	62	3 13/16	97	2.125	54	3.40	1.54
	3	80	2 7/8	73	4 3/4	121	2.875	73	6.30	2.86
	4	100	3 5/16	84	6	152	3.875	98	4.56	4.76

Each outlet size listed is available to fit any run curvature. BW Ends per B16.9 and B16.25. Design per MSS-SP-97.

RUN PIPE SIZES Outlet sizes 6" and less fit a number of run pipe sizes, and the fittings are marked accordingly. See page 5 for run pipe size combination table(s).

SCHEDULES Extra Extra Strong Butt-welded Anvilets are designed for use on Schedule 160 pipe in accordance with MSS SP-97. Pipe schedule numbers and weight designations are in accordance with ASME B36.10.

FLATS Flat butt-welded Universal Forged Steel Anvil fittings for use on welding caps, elliptical heads and flat surfaces is available.

The A, B and C dimensions given for the Branch Connections in the above Table are for reference only and to be used as a guideline. Dimensions B and C are subject to change depending upon the manufacturing process utilized. Although every attempt has been made to insure that the information contained in this table is correct, Anvil reserves the right to change the C dimension as deemed necessary.

Anvil **Anvilets** provide a strong branch pipe connection, considerably stronger than a welded pipe-to-pipe connection. Consequently, with good welding procedures, Anvil **Anvilets** offer greater resistance to distortion and bursting.

Anvil **Anvilets** readily and economically permit the adding of branch connectors to existing piping installations, eliminating the relatively higher cost of cutting or disassembly and re-assembly required for the installation of tees.

Anvil **Anvilets** of the same outlet size as a header or run pipe size (i.e. "Full Size" **Anvilets**) are so proportioned that the (ellipticallyshaped) hole in the header pipe has the minimum weakening or distortion effect, and yet provides good fluid flow characteristics.

Specifications

Chemical and physical properties are rigidly controlled to ensure consistently high quality. Physical and chemical test reports are available on request. Traceability of individual Anvilets can be established through the heat code of each fitting.

Anvil **Anvilets** meet the requirements of MSS standard SP-97. They are forged from steel which complies with ASTM A105.

Threaded Anvilets - conform with ASME B1.20.1.

Socket-Weld Anvilets - dimensions conform with ASME B16.11.

Buttweld Anvilets - ends conform with ASME B16.25.

Reinforcement Requirements

ASME B31.1 Power Piping Code

ASME B31.3 Refinery Code

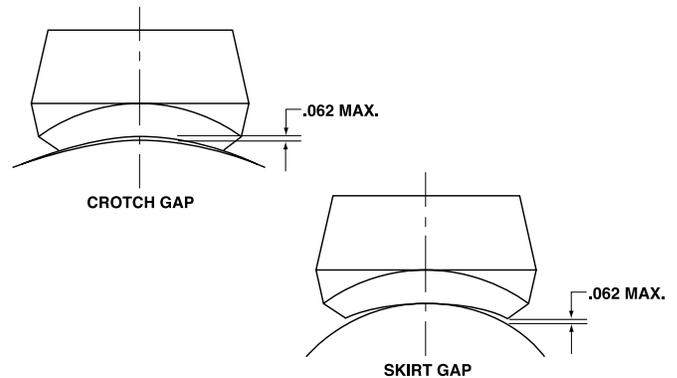
Forging Markings

Anvil **Anvilets** are clearly marked with the following:

- Outlet size
- Range of run pipe sizes that the **Anvilet** will fit
- The weight, schedule number, or pressure class
- The material specification
- Steel heat code identification

Installation Note

Anvil **Anvilets** are designed to have no more than a $\frac{1}{16}$ " gap (1.6mm) between the base or skirt of the **Anvilet** when it is seated directly upon the appropriate run pipe. However, it is recommended that the skirt of **Anvilets** be held slightly above the run pipe and tack welded to provide a small continuous root gap between the skirt and run pipe before completing the all-around welding beads or fillet.



Specials

Your local Anvil Branch will be more than happy to assist you with specially machined outlets and those made of alloy material.

Pressure Temperature Ratings

MSS standard Practice SP-97 gives the following correlation between fitting pressure class and pipe schedule number/wall thickness designation for calculation of pressure-temperature ratings:

Branch Connection Type	Pressure Class of Fitting	Branch Connection Size		Pipe Wall for Rating Basis
		NPS	DN	
Buttweld	STD	$\frac{1}{8}$ - 24	6 - 600	STD
	XS/XH	$\frac{1}{8}$ - 24	6 - 600	XS/XH
	SCH 160	$\frac{1}{2}$ - 6	15 - 150	SCH 160
Threaded	3,000	$\frac{1}{4}$ - 4	8 - 100	XS/XH
	6,000	$\frac{1}{2}$ - 2	15 - 50	SCH 160
Socket-Welding	3,000	$\frac{1}{2}$ - 2	15 - 50	XS/XH
	6,000	$\frac{1}{2}$ - 2	15 - 50	SCH 160

The maximum allowable pressure of a fitting is computed in accordance with the applicable piping code or regulation for straight seamless header (run) pipe or for material of equivalent composition and mechanical properties to the fitting. Any corrosion or mechanical allowances and any reduction in allowable stress due to temperature or other service conditions, must be applied to the pipe and fitting alike.

Engineering Specifications

Universal Forged Steel Anvilets Run Size Combinations

		Outlet Size (in)											
Buttweld Standard	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	
		1/4	1/2 - 3/8	1 - 1/2	2 - 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6
	36 - 3/8	36 - 3/4	36 - 1 1/4	36 - 2 1/2	1 1/2 - 1 1/4	2 - 1 1/2	3 1/2 - 2	3 - 2 1/2	4 - 3	4 - 3 1/2	6 - 5	8	
					36 - 2	6 - 2 1/2	36 - 4	6 - 3 1/2	10 - 5	6 - 5	10 - 8	10	
						36 - 8		36 - 8	36 - 12	14 - 8	20 - 12	14 - 12	
										36 - 16	36 - 22	18 - 16	
												24 - 20	
												34 - 26	
												42 - 36	
Buttweld Extra Strong	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	
	36 - 1/4	3/8	3/4 - 1/2	1 1/2 - 3/4	1	2 - 1 1/4	1 1/2	2	2 1/2	3	4	6	
		36 - 1/2	36 - 1	36 - 2	1 1/2 - 1 1/4	5 - 2 1/2	3 1/2 - 2	3 - 2 1/2	4 - 3	4 - 3 1/2	6 - 5	8	
					36 - 2	36 - 6	36 - 4	6 - 3 1/2	10 - 5	6 - 5	10 - 8	10	
								36 - 8	36 - 12	14 - 8	20 - 12	14 - 12	
										36 - 1	36 - 22	18 - 16	
												24 - 20	
												34 - 26	
												42 - 36	

		Outlet Size (in)											
Threaded Class 3000	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4		
		3/8 - 1/4	1 - 3/8	1/2	1 1/4 - 3/4	1	1 1/2 - 1 1/4	1 1/2	2	2 1/2	3	4	
	36 - 1/2	36 - 1 1/4	36 - 3/4	36 - 1 1/2	2 1/2 - 1 1/4	3 1/2 - 2	2 1/2 - 2	3 1/2 - 2 1/2	3 1/2 - 3	5 - 3 1/2	6 - 5		
					36 - 3	36 - 4	5 - 3	6 - 4	6 - 4	14 - 6	10 - 8		
							36 - 6	36 - 8	36 - 8	36 - 16	20 - 12		
											36 - 22		
Threaded Class 6000	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4		
	36 - 1/2	36 - 1 1/4	36 - 3/4	1 1/4 - 1	2 1/2 - 1 1/4	3 1/2 - 2	2 1/2 - 2	3 1/2 - 2 1/2	3 1/2 - 3	3 1/2	5		
			36 - 1 1/2	36 - 3	8 - 4	5 - 3	6 - 4	5 - 4	4	6	6		
					36 - 10	36 - 6	36 - 8	10 - 6	6 - 5	10 - 8	10 - 8		
								26 - 12	12 - 8	18 - 12	18 - 12		
								36 - 28	36 - 14	36 - 20	36 - 20		

		Outlet Size (in)											
Socket-Weld Class 3000	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4		
		1/4	1/2 - 3/8	1/2	1 1/4 - 3/4	1	1 1/2 - 1 1/4	1 1/2	2	2 1/2	3	4	
	36 - 3/8	36 - 3/4	36 - 3/4	36 - 1 1/2	2 1/2 - 1 1/4	3 1/2 - 2	2 1/2 - 2	3 1/2 - 2 1/2	3 1/2 - 3	5 - 3 1/2	6 - 5		
					36 - 3	36 - 4	5 - 3	6 - 4	6 - 4	14 - 6	10 - 8		
							36 - 6	36 - 8	36 - 8	36 - 16	20 - 12		
											36 - 22		
Socket-Weld Class 6000	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4		
	36 - 1/4	36 - 3/8	1/2	1 - 3/4	1	1 1/4	1 1/2	2	3 - 2 1/2	3 1/2 - 3	4		
		36 - 3/4	36 - 1 1/4	2 1/2 - 1 1/4	4 - 1 1/2	2 1/2 - 2	3 1/2 - 2 1/2	5 - 3 1/2	5 - 4	5	5		
				36 - 3	36 - 5	5 - 3	6 - 4	18 - 6	10 - 6	8 - 6	8 - 6		
						36 - 6	36 - 8	36 - 20	26 - 12	14 - 10	14 - 10		
									36 - 28	36 - 16	36 - 16		