



# American Welding Society Welding Symbol Chart

A2.1:1998  
Second Printing

Basic Welding Symbols and Their Location Significance								
Location Significance	Fillet	Plug or Slot	Spot or Projection	Stud	Seam	Back or Backing	Surfacing	Edge
Arrow Side								
Other Side				Not Used			Not Used	
Both Sides		Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	
No Arrow Side or Other Side Significance	Not Used	Not Used		Not Used		Not Used	Not Used	Not Used
Location Significance	Groove							Scarf for Brazed Joint
	Square	V	Bevel	U	J	Flare-V	Flare-Bevel	
Arrow Side								
Other Side								
Both Sides								
No Arrow Side or Other Side Significance		Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used

  

Supplementary Symbols				Location of Elements of a Welding Symbol			
Weld-All-Around	Field Weld	Melt-Thru	Consumable Insert	Finishing Symbol	Groove Angle; Included Angle of Countersink for Plug Welds	Root Opening; Depth of Filling for Plug and Slot Welds	Length of Weld Segment
				Contour Symbol	Root Opening; Depth of Filling for Plug and Slot Welds	Length of Weld Segment	Pitch (Center-to-Center Spacing) of Weld Segments
Backing/Spacer (Rectangular)	Contour			Groove Weld Size	Depth of Bevel; Size or Strength for Certain Welds	Specification, Process, or Other Reference	Field Weld Symbol
	Flush or Flat	Convex	Concave	Depth of Bevel; Size or Strength for Certain Welds	Specification, Process, or Other Reference	Field Weld Symbol	Weld-All-Around Symbol
				Specification, Process, or Other Reference	Field Weld Symbol	Weld-All-Around Symbol	Arrow Connecting Reference Line to Arrow Side Member of Joint or Arrow Side of Joint
Basic Joints				Identification of Arrow Side and Other Side Joint			
Butt Joint		Corner Joint		Tail (May Be Omitted When Reference is Not Used)			
				Tail (May Be Omitted When Reference is Not Used)			
T-Joint		Lap Joint		Weld Symbol			
				Weld Symbol			
Edge Joint		Letter Designations		Where letter designations are to be included in the tail of the welding symbol, reference is made to Table 1, Letter Designations of Welding and Allied Processes and Their Variations, of AWS A2.4-98.			
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Typical Welding Symbols		
<b>Double-Fillet Welding Symbol</b>  Fillet Weld Size: 1/4, 3/16, 6, 4 Length: 6 Omission of Length Indicates that Weld Extends Between Abrupt Changes in Direction or as Dimensioned	<b>Chain Intermittent Fillet Welding Symbol</b>  Pitch (Distance Between Centers) of Segments: 5/16, 2-5 Fillet Weld Size (Length of Leg): 7/16, 2-6 Length of Segments: 2-6	<b>Staggered Intermittent Fillet Welding Symbol</b>  Pitch (Distance Between Centers) of Segments: 1/2, 3-5 Fillet Weld Size (Length of Leg): 1/2, 3-5 Length of Segments: 3-5
<b>Plug Welding Symbol</b>  Included Angle of Countersink: 30° Plug Weld Size (Diameter of Hole at Root): φ 1, 3/4, 4 Pitch (Distance Between Centers) of Welds: 4 Depth of Filling (Omission Indicates Filling is Complete)	<b>Back Welding Symbol</b>  Back Weld 2nd Operation OR 1st Operation 1st Operation	<b>Backing Welding Symbol</b>  Backing Weld 2nd Operation OR 1st Operation 1st Operation
<b>Spot Welding Symbol</b>  Spot Weld Size: .025 Number of Welds: (5) Pitch: 4 Process: RSW	<b>Stud Welding Symbol</b>  Stud Size: 1/2 Number of Studs: (7) Pitch: 6	<b>Seam Welding Symbol</b>  Seam Weld Size: .030 Increment Length: 3-9 Pitch: 3-9 Process: RSEW
<b>Square-Groove Welding Symbol</b>  Groove Weld Size: (3/16) Root Opening: 1/8	<b>V-Groove Welding Symbol</b>  Depth of Bevel: 3/8 Groove Weld Size: (1/2) Groove Angle: 60° Root Opening: 1/8	<b>Double-Bevel-Groove Welding Symbol</b>  Groove Weld Size: (1) Groove Weld Size: (1-1/4) Arrow Points Toward Member to be Beveled
<b>Symbol with Backgouging</b>  Depth of Bevel: 1/4 Backing Weld Backgouge	<b>Flare-V-Groove Welding Symbol</b>  Groove Weld Size: (1/4)	<b>Flare-Bevel-Groove Welding Symbol</b>  Groove Weld Size: (1/4)
<b>Multiple Reference Lines</b>  1st Operation On Line Nearest Arrow 2nd Operation 3rd Operation	<b>Complete Joint Penetration</b>  Indicates Complete Joint Penetration Regardless of Type of Weld or Joint Geometry CJP	<b>Edge Welding Symbol</b>  Edge Weld Size: 1/8
<b>Flash or Upset Welding Symbol</b>  Process Reference: FW	<b>Melt-Thru Symbol</b>  Root Reinforcement: 1/32	<b>Joint with Backing</b>  'R' Indicates Backing Removed After Welding
<b>Joint with Spacer</b>  With Modified Groove Weld Symbol Double-Bevel Groove	<b>Flush Contour Symbol</b>  Back Weld	<b>Convex Contour Symbol</b>  G

It should be understood that these charts are intended only as shop aids. The only complete and official presentation of the standard welding symbols is in AWS A2.4, *Standard Symbols for Welding, Brazing, and Nondestructive Examination*.

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