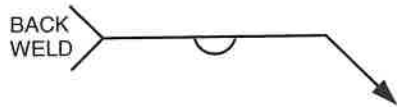


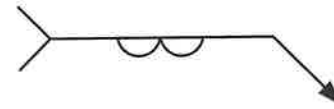
D. Melt-Through, Back or Backing Weld Symbols



Back or Backing Symbol*



Melt-Through Symbol

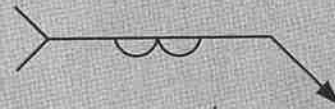
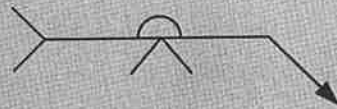
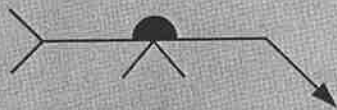


Surfacing Symbol

*A *backing weld* is deposited from the root side of the joint before the groove is filled. It is used to retain molten weld metal in the joint. A *back weld* is deposited from the root side of the joint after the groove is filled, and is used to insure complete penetration. Typically, before depositing a back weld, you would *back gouge* to insure that the weld is deposited in sound metal.

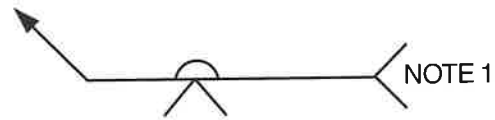
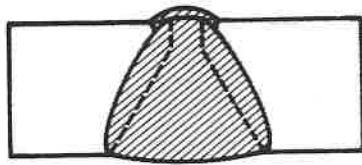
When a single reference line is used, you can distinguish between a back weld and a backing weld by adding the words BACK WELD or BACKING WELD to the tail bracket.

Name these symbols:

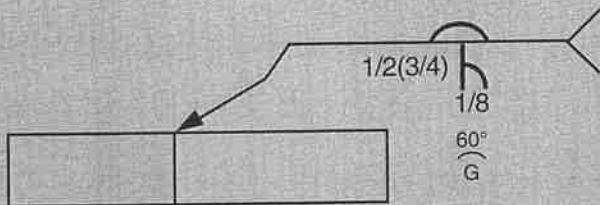


Which side (arrow side, other side or both sides) is to be welded?

The *back* or *backing* symbol is used in conjunction with a single-groove weld symbol.



Fill in the blanks using the information provided in the symbol below.



1. Contour of finish: _____
2. Groove Angle: _____
3. Finish Method: _____
4. Groove Depth: _____
5. Type of Weld: _____
6. Root Opening: _____
7. Type of Weld: _____
(other side)

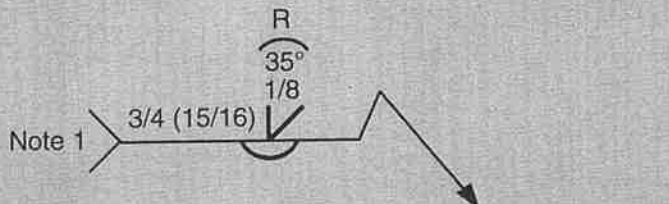
A *note* in the tail bracket may also be used to specify whether the weld is a *back* or *backing* weld. A *backing* weld is a small weld made on the back of the joint before the main weld is made. A *back* weld is a small weld made on the back of the joint after the main weld is made.



NOTE 1: Other side weld made before arrow side weld.

This weld symbol calls for a *single-J-groove* weld on the *other side* of the joint with a *back weld* on the *arrow side*. The note tells us that it is a back weld because it is made after the J-groove weld.

Fill in the blanks using the information provided in the symbol below.

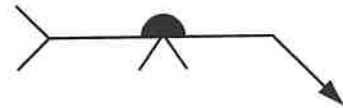


Note 1: Groove weld made after arrow side weld.

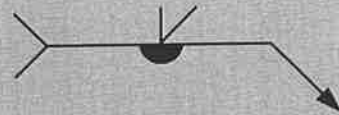
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- | | |
|--|--------------------------|
| 1. Type of Weld: _____
(other side) | 4. Bevel Depth: _____ |
| 2. Type of weld: _____
(arrow side) | 5. Finish Method: _____ |
| 3. Groove Angle: _____ | 6. Finish contour: _____ |

The melt-through symbol is solid black. It is used with *single-groove welds* to specify *complete penetration*. Melt-through does not increase the weld size.

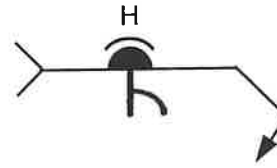
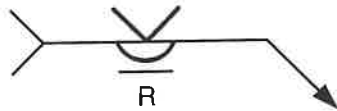


Groove weld size can be no larger than the thinnest member.

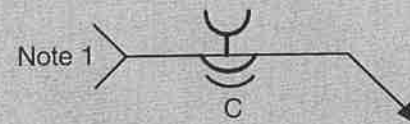
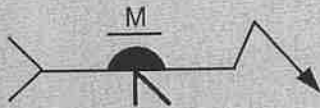


This single-bevel-groove symbol is used with a _____ symbol.

The finish *contour symbols* (flush, convex, concave) and the *method of mechanical finish symbols* (C, G, R, M, H) are used with the *back or backing weld symbol* and with the *melt-through weld symbol*.



Fill in the blanks using the information provided in the symbols, below.



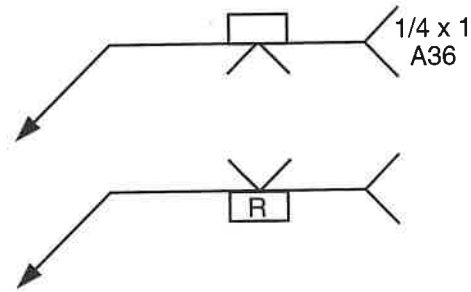
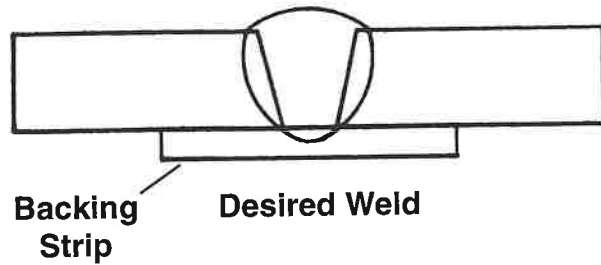
Note 1: Arrow side to be welded after other side.

This single-bevel-groove weld will have
 _____ on the other side, with
 a _____ contour finished by _____.

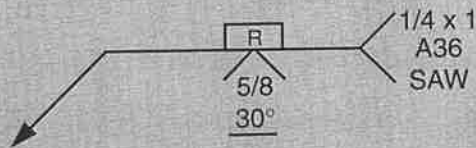
This single-U-groove weld will have a
 _____ weld on the arrow side with a
 _____ contour finished by _____.

E. Backing Strip and Spacer Symbols

Backing is a strip of material placed at the root of the joint to retain the molten filler metal.

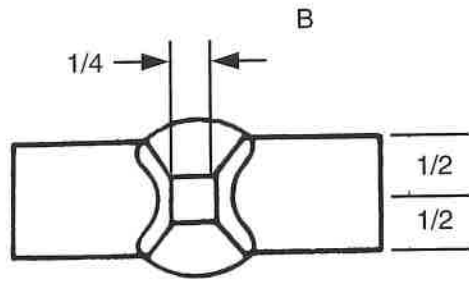


A joint with backing is specified by placing the backing symbol on the side of the reference line opposite the groove weld symbol. If the backing is to be removed after welding, an "R" shall be placed within the backing symbol. Material and dimensions of backing shall be specified in the tail of the symbol or on the drawing.

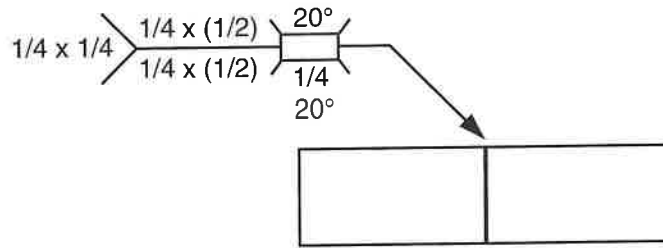


1. Type of weld: _____
2. Root opening: _____
3. Groove angle: _____
4. Type of contour: _____
5. Welding process: _____
6. Is the backing to be removed after welding? _____

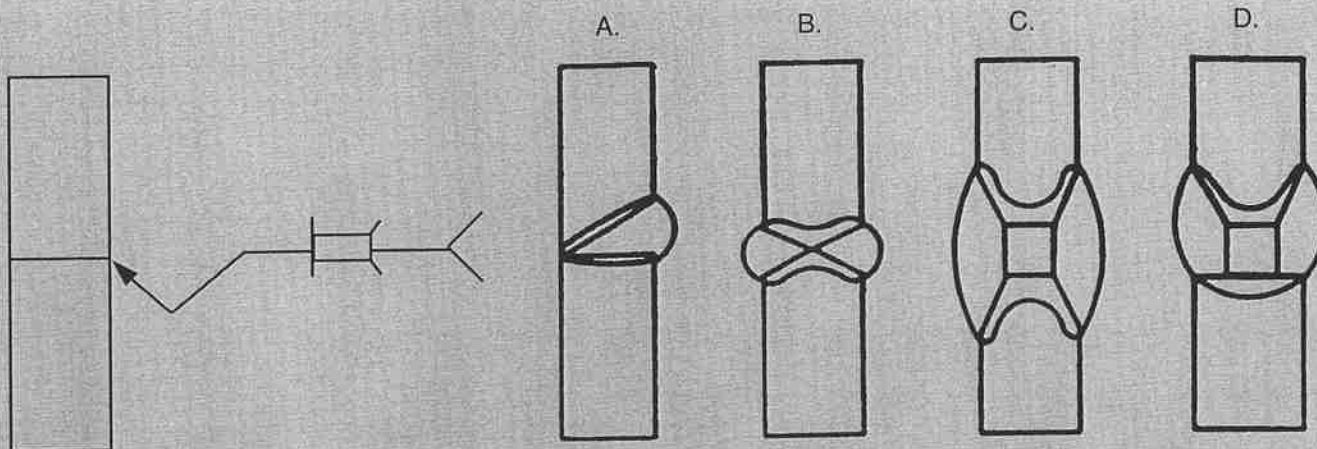
The spacer is used on double groove welds. The spacer symbol breaks the reference line.



Desired Weld



Note: Material dimensions of spacer as specified.



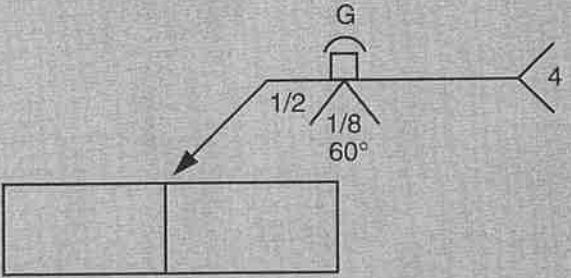
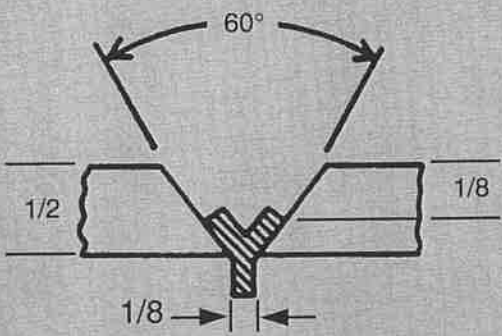
Which weld best describes this weld symbol? _____

F. Consumable Insert

Consumable inserts shall be specified by placing the *consumable* weld symbol on the side of the reference line opposite the groove weld symbol. The *AWS consumable insert class* shall be placed in the tail bracket of the symbol.



Fill in the blanks using the information provided in the symbol, below.



Symbol

1. Type of Weld: _____

with _____.

2. Root Opening: _____

3. Groove Angle: _____

4. Insert classification: _____

5. Type of contour: _____

6. Finishing Process: _____