Welding Joint Design and Welding Symbols

Chapter 20

1. List the five joint types used in welding.
2. What stresses must a welded joint withstand?
3. Sketch and label five edge preparations used for welding joints.
4. Sketch a V-grooved butt joint, and label all of the joint’s dimensions.
5. Sketch a weld on plates in the 1G and 1F positions.
6. Sketch a weld on plates in the 2G and 2F positions.
7. Sketch a weld on plates in the 3G and 3F positions.
8. Sketch a weld on plates in the 4G and 4F positions.
9. Sketch a weld on a pipe in the 1G position.
10. Sketch a weld on a pipe in the 5G position.
11. Sketch a weld on a pipe in the 2G position.
12. Sketch a weld on a pipe in the 6G position.
13. Sketch a weld on a pipe in the 6GR position.
14. Why are some joints back gouged?
15. Why is it usually better to make a weld in the flat position?
16. What is a prequalified joint?
17. Why is cost a consideration in joint design?
18. Why are welding symbols used?
19. What types of information can be included on a welding symbol?
20. Why is a tail added to the basic welding symbol?
21. What types of information may appear on the reference line of a welding symbol?
22. What are the different classifications of welds that a symbol can indicate?
23. How is the reference line always drawn?
24. What is meant if the weld symbol is placed below the reference line?
25. How are the dimensions for a fillet weld given?
26. What dimensions can be given for a plug weld?
27. What two units are used to show the minimum shear strength of a spot weld?
28. How is the strength of a seam weld specified?
29. How can the groove be cut on the edge of a plate?
30. Sketch and dimension a V-groove weld symbol for a weld on the arrow side, with 1/8-in. root opening, 3/4 in. in size, and having a groove angle of 45°.
31. How is the removal of the backing strip noted on a welding symbol?
32. How are flanged edges formed?
33. Sketch two NDT symbols illustrating different methods that can be used to indicate multiple test requirements for the same section of weld.