HOW-TO BOOKLET #3072
FLOWING GUTTERS

TOOL & MATERIAL CHECKLIST

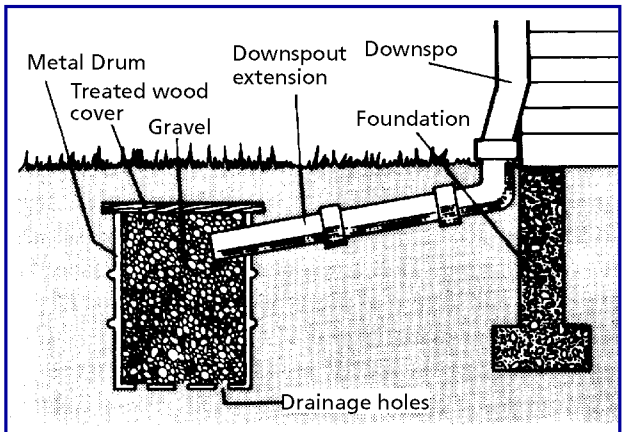
- ❑ Whiskbroom
- ❑ Garden Hose
- ❑ Gutter Patch
- ❑ Painting Tools
- ❑ Specific Gutter and/or Downspout Parts
- ❑ Extension Ladder
- ❑ Paint
- ❑ Pliers
- ❑ Asphalt Roofing Cement

Read This Entire How-To Booklet for Specific Tools and Materials Not Noted in The Basics Listed Above.

Spend just one Saturday morning twice a year—Fall and Spring—inspecting, cleaning, and repairing the gutters and downspouts on your home and chances are that you will never ever be troubled by gutter and downspout problems that can flood the basement, seriously damage the roof, and rot and ruin the siding on the house—not to mention the minor damage such as crumbling mortar joints, peeling and cracking paint, and gutter ice jams.

Gutters catch rain and snow melt flowing off the roof and carry it to the downspouts (leaders), which disperse it harmlessly away from the house through drain pipes or natural lawn grading. Pools of water that collect near the foundation, streaked house paint, damp or flooded basements, or ridges in the ground under the eaves are all signs that the gutters are not working properly.

Usually a fast inspection will show that leaves or a stray ball is causing a water-blocking problem; the solution can take a couple of minutes to a couple of hours of your time.



Drywell is a buried 55-gallon steel drum punched full of holes and filled with rocks, bricks, blocks, and concrete debris. Downspout is connected to tile or plastic drain pipe, which runs to well. Distance from top of drum to ground is 2-3 feet.

GENERAL MAINTENANCE

Inspection and maintenance each Spring and Fall can prevent most any serious gutter problem. At this time remove leaves and other debris with a whiskbroom that fits inside the gutter and a garden hose to wash away the small pieces. If downspouts need cleaning, use the garden hose as a hydro-ram, threading it down the spout with the water and nozzle turned on full blast. Or you can use a plumber's snake to clean the spout.

Strainers are wire or plastic "baskets" that fit into the openings of downspouts. Their only job is to catch leaves at the spout opening so the leaves do not inch down the pipe and clog it. Strainers are very inexpensive and easy to put in—easier and less costly than rodding the spout or replacing it with a new spout.

Surface Care. Gutter maintenance includes painting the gutters as needed on the outside and coating the insides with liquid asphalt roofing cement every 3 years or so. You can use regular housepaint on the outsides of gutters, provided that they have been first primed with a metal undercoater. If you are painting brand new gutters, degrease the metal with vinegar and water first. (Or let them weather 6 months.) Then apply a metal undercoater over which two coats of house structure or trim paint is applied.

If gutters develop pinhole leaks and leaks at connections, you usually can seal these breaks with silicone caulking compound.

Straps and Hangers. Check gutter straps and hangers, including gutter spikes, on an annual basis. If loose, renail. If broken, replace.

For proper drainage, gutters should be pitched about 1/16 inch per running foot. This is not an easy measurement to make. Instead, pour a bucket of water at the opposite end of the downspout and watch the water flow out. If it tends to puddle and pool in certain spots, adjust the gutter hanger up just a tad. Hangers can be renailed higher or lower on the roof with hot-dipped galvanized or aluminum nails. Or you can bend the straps with pliers for adjustment and pitch. If gutter spikes are used and can't be removed, cut through the nail at the end of the ferrule inside the gutter with a hacksaw. Then install new gutter spikes and adjust for pitch.

Leaks. You can buy gutter patch kits for large leaks. Or, you can cut a patch from 55-lb. roll roofing and embed the patch in asphalt cement over the hole in the gutter. If the hole is small, try pressing a piece of adhesive-backed aluminum tape over the hole. Keep in mind that patches are only temporary. You should replace the damaged gutter as soon as possible. Gutter replacement often is easier than gutter patching.

Splashblocks. Flooding problems start when the downspout doesn't empty into a storm sewer or other drainage system. Accumulated rainwater can form pools around shrubbery or even cause leaks into the basement.

A concrete splashblock, or a fiberglass one, will cure most problems of this type.

If drainage is severe, consider a dry well. How to assemble a dry well is illustrated in this Booklet.

NEW GUTTERS/REPLACEMENTS

When you are installing new gutters and downspouts or replacing sections or parts of an existing system, you'll find the project fairly easy to do with regular tools. Rain-carrying systems go together almost like an Erector set; modern adhesives and slip-joint connections eliminate hot soldering and all of its problems.

There are five different types of gutters and downspouts (often called leaders). They are: wooden, copper, galvanized steel, vinyl, and aluminum. Shapes generally are limited to rounds, half-rounds, and rectangles.

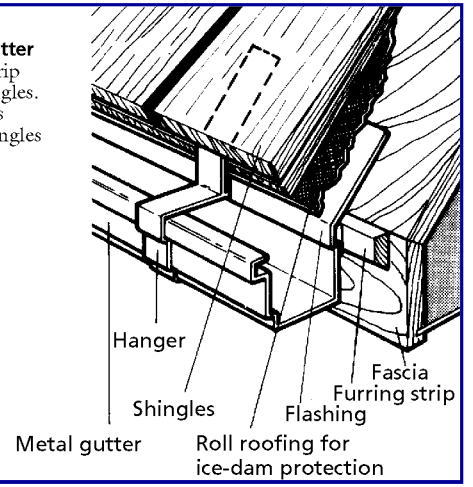
Galvanized steel gutters are popular since they are moderately priced. Aluminum gutters also are popular, although slightly more expensive, as are vinyl and copper gutters.

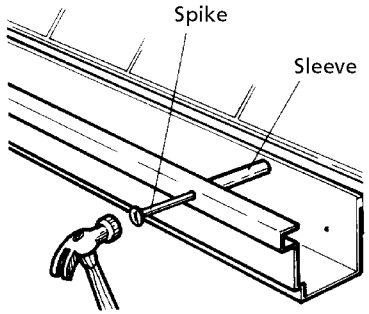
Lengths of most gutters are 10 and 21 foot (standard). Galvanized gutters may not be pre-painted; aluminum gutters almost always are pre-painted or pre-primed. This includes downspouts.

Gutter accessories include hangers, spikes and ferrules, inside and outside corners, end caps, slip joint connectors, drop outlets, right and left elbows, double elbows and concrete and plastic splashblocks. All products are usually sold by the piece, although some retailers may give you a price if you are remodeling the entire system.

Measurements. To figure how many lengths and accessories you need for a project, simply measure along the fascia of the house—from corner to corner. Note where the gutter makes inside and outside turns, where downspouts are located (and length), and how many end caps are needed for the project.

One end of gutter lies under the drip edge of the shingles. The hanger slips between the shingles of the doubled starter course.





Renail gutter spikes, adjusting them as needed. If the spike cannot be removed, cut it off with a hacksaw and drive in a new one. Then, with pliers, adjust the spike/ferrule for right pitch.

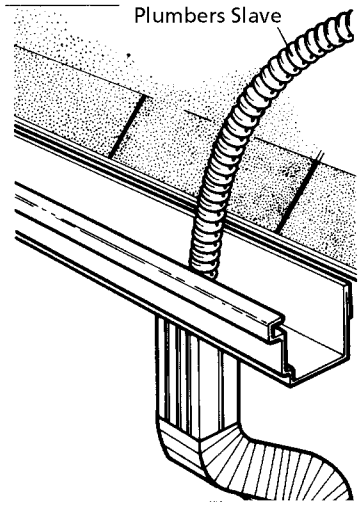
You can determine from these measurements and components how many hangers, connectors, downspouts, etc., you have to buy. It's a good idea to make a sketch of the system on paper, noting the distances, corners, leader locations, and so on. When you're finished you have an "automatic" shopping list.

General Installation Data. Metal gutters are hung either on hangers or on 7 inch spikes inside ferrules. Wood gutters are fastened directly to fascia boards with either galvanized screws or hot-dipped galvanized nails. All gutters must be located so that the drip edge of the bottom row of shingles flows into the center of the gutter. Use furring strips or wood blocks, with flashing, if necessary, to position the guttering.

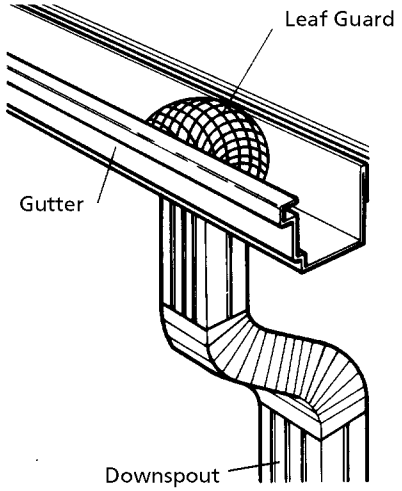
Fasteners should be on 30-inch centers. The general rule for gutter pitch is 1/16-inch per foot. toward the downspout, but you may have to adjust for less in long systems. When gutters are more than 35 feet long, it is best to have a downspout at each end, pitching the gutter from the center to each leader.

Fasten the downspout to the wall with straps at the top and bottom, and at 6-foot. intervals. Shim out with wood blocks or spacers if necessary. Use an elbow to connect the downspout to the gutter at the top. Put another elbow at the bottom to direct the water onto a splashblock. This will not be necessary, of course, if the downspout connects to a drainage system. Here, the leader empties directly into the system through a tile or plastic pipe system or line. Elbow connections are made with slip joints, pop rivets, or liquid solder as recommended by the manufacturer of the gutter.

Gutter may be cut and trimmed with tinsnips and/or a hacksaw. This includes vinyl as well as metal. If you pre-plan the job, you may not have to make any cuts at all.

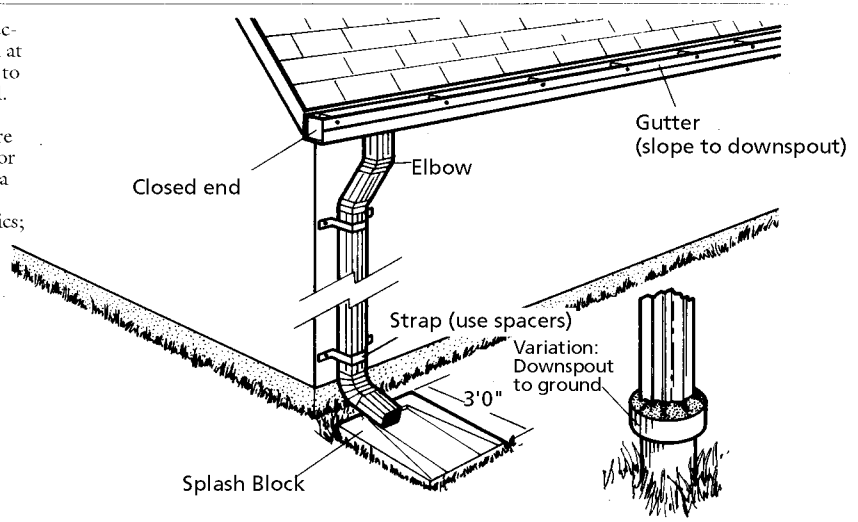


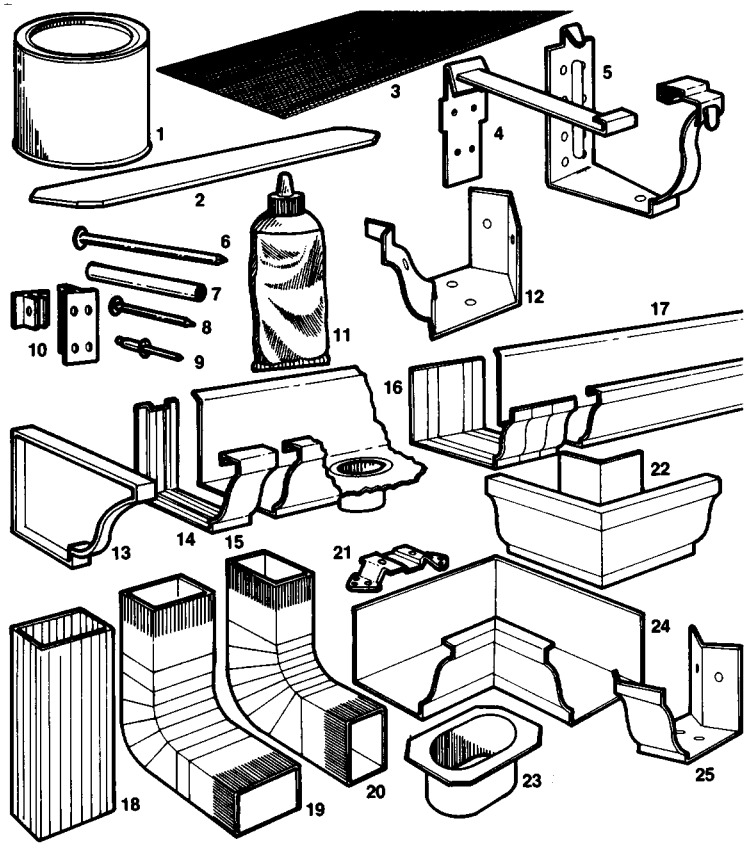
If you can't open the downspout, try rodding it with a plumber's snake or a garden hose.



To block debris, especially leaves, install a strainer or leaf guard at the top of the leader.

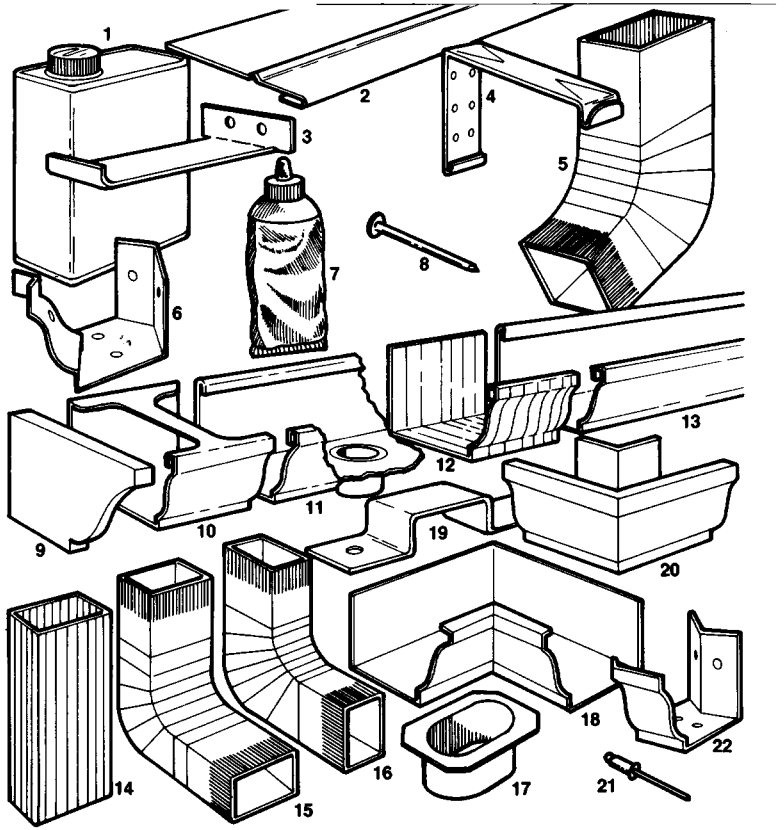
Typical gutter installation and connection to downspouts (leaders). Shown at right is how to attach the downspout to the drainage system such as a dry well. Ends for gutters are marked L for left and R for right. Aluminum gutters are popular because they are pre-primed or pre-painted. Copper gutters will last a lifetime—even more—but the cost is substantial. Wooden gutters are classics; steel gutters are inexpensive.





Aluminum gutter system

1 Touch up paint
2 Downspout pipe band
3 Gutter cover
4 Fascia bracket
5 Fascia bracket with clip
6 Spike
7 Ferrule
8 Aluminum nail
9 Pop rivet
10 Downspout pipe bracket
11 Joint sealer
12 Inside miter strip
13 End caps
14 Slip joint connector
15 Outlet tub section
16 Expansion joint
17 Gutter
18 Downspout
19 Square elbow
20 75% Elbow
21 Downspout pipe cleat
22 Outside miter section
23 Outlet tube
24 Inside miter section
25 Outside miter strip



Solid vinyl gutter system

1 PVC surface primer
2 Fascia apron hanger
3 Gutter spacer
4 Gutter hanger
5 Side elbow
6 Aluminum nail
7 PVC cement
8 Inside molded corner
9 End cap
10 Gutter connector
11 Collector outlet
12 Expansion joint
13 Gutter
14 Downspout
15 Square elbow
16 90-degree elbow
17 Outlet tube
18 Outside miter section
19 Downspout strap
20 Outside molded corner
21 Pop rivet
22 Outside miter strip