

How to extend hot water lines

Home repair questions answered by Popular Mechanics magazine.

Q. We live in a drought area and I'm concerned about the amount of water wasted while running the tap to get hot water in my bathroom. My water heater is at one end of my home and my bathroom is at the other end. In order to get hot water through the faucets at least 80 feet of cold water has to come out of the hot water line. Is it possible to continue the hot water line past the bathroom and then return it into the water heater? Will this save a lot of water?

A. The hot water system that you have, like those in most residential systems, is a non-circulating type. It is generally installed because it costs less for labor and materials than a circulating hot water system. Even though the noncirculating system is very common, it does have the disadvantage you describe.

You can convert your system to a circulating hot water system by installing a return loop on the distribution line which runs from the last faucet to the hot water heater. If the elevation difference between the hot water heater and the faucets is greater than 5 feet, then the hot water circulation can usually be achieved by gravity, the so-called thermo-siphon system. This works because hot water rises forcing the cooler water down.

If there is a long horizontal run in the pipes or if there is less than a 5-foot height difference between the boiler and the faucet, the thermo-siphon system won't work and you'll need a pump to circulate the hot water.

This system, often used in hospitals where instant hot water is required, has the advantage of making it available at all fixtures as soon as you turn on the tap. Continuous circulation between the hot water storage tank and the faucet does the job.

Q. We have a Hotpoint refrigerator with a top freezer. Whenever the compressor stops, we hear a sharp thudding noise. This noise first appeared about three months ago as a quiet thud which has gradually gotten louder. Now the refrigerator has started to rattle. We're afraid it might explode one of these days. Will it? And, what should we do to quiet it down?

A. There's no danger that your refrigerator might explode, but your thudding and rattling noises sound as if one of the internal suspension springs that mount the compressor may have broken.

What you are hearing is the motor and pump assembly on the side of the compressor that surrounds the entire compressor assembly. The only real cure is to have the compressor replaced.

Rejuvenate those hardwood floors

Restoring a worn hardwood floor has a clear finish takes about a week.

You will need a day to prepare the space and gather materials and tools, another to sand, and several more to apply the finish and allow drying time between coats. You can save time by asking someone to help you.

If an existing finish is severely damaged and the flooring is at least one-fourth inch thick, it should be stripped with a sander before refinishing.

You can rent equipment. A drum-type floor sander handles most of the floor refinishing. Use a hand-held disc sander, or edge, to sand stair treads and along baseboards, in corners, inside closets, and in other places that are inaccessible to the large drum sander.

Prepare for sanding by removing all rugs, furniture and other furnishings in the room. Carefully take off the quarter-round shoe moldings along the baseboards. (Number the moldings and their places on the wall so that you can put them back.) Cover all vents. Seal doorways and windows from the rest of the house with plastic sheeting.

Inspect the floor carefully. Pull out any staples left from carpeting. Drive any visible nail heads one-eighth inch below the surface using a nail set and fill the holes with wood putty. Repair cracks and secure loose floorboards. Vacuum and thoroughly inspect the floor once more.

Caution: For sanding, wear goggles, a dust mask and ear protection. To avoid marking the floor, don heavy socks or clean, white-soled sneakers. Remember that sanding dust, finishes and finish fumes are flammable. Don't smoke. Extinguish pilot lights on nearby appliances.

Sand the floor first with the drum sander and 36-grit paper. Raise the sander off the floor, turn on the power, then lower the drum carefully, keeping a firm grip on the handles. Work across the floor — always with the grain — then return to the beginning and strip the next section parallel to and slightly overlapping the first.

Using an industrial drum floor sander is like walking a head-stung dog. Your job is to let it pull you, but not as fast as it can. Always keep the machines mov-

ing or the sander will eat down into the floor and leave an uneven surface. Repeat the sanding process twice, using 80-grit sandpaper, then 100-grit paper.

Next sand along the walls with the edge. Hold both handles firmly and keep the disc flat on the floor to avoid gouging. Sand with the same succession of paper grades as you used on the main floor.

Use a block of wood wrapped with sandpaper or a paint scraper to clean even the tightest areas — in corners and under radiators — where neither power sander can reach. Finally, hand-sand, working with the grain, to remove swirls caused by the edge. Vacuum thoroughly between sanding stages.

After sanding, vacuum the floor and walls using the brush attachment. Wipe down moldings, window sills and door frames so that dust won't fall off later and mar the finish. Let dust settle overnight, then vacuum again. Wipe the floor thoroughly with a tack cloth, available in hardware stores.

If you want floors to be only slightly darker than the bare wood, apply sealant of any kind.

If you want the finish to have a darker tone, apply wood stain before the sealant.

Oil-base polyurethane is a popular floor finish because of its durability and ease of application. You need three coats when you use polyurethane as the final finish. Thin the first coat with one part mineral spirits to four parts polyurethane; this acts as a sealer.

Brush polyurethane across the grain and then along it. Use a long-handled roller to apply the finish on the main surface of the floor; use a small brush for the edges and corners. Work in small sections, overlapping the strokes before the previous section is dry. Inexpensive foam rollers are best.

Let each coat dry as directed before recoating; observe ventilation precautions on the container. In between coats, buff with a rented floor-polishing machine equipped with superfine steel wool. After each buffing, vacuum well and clean with a tack cloth.

Allow the finish to dry at least two days then buff with superfine steel wool again and vacuum. Apply two coats of paste wax, followed by a buffing with lamb's wool.

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