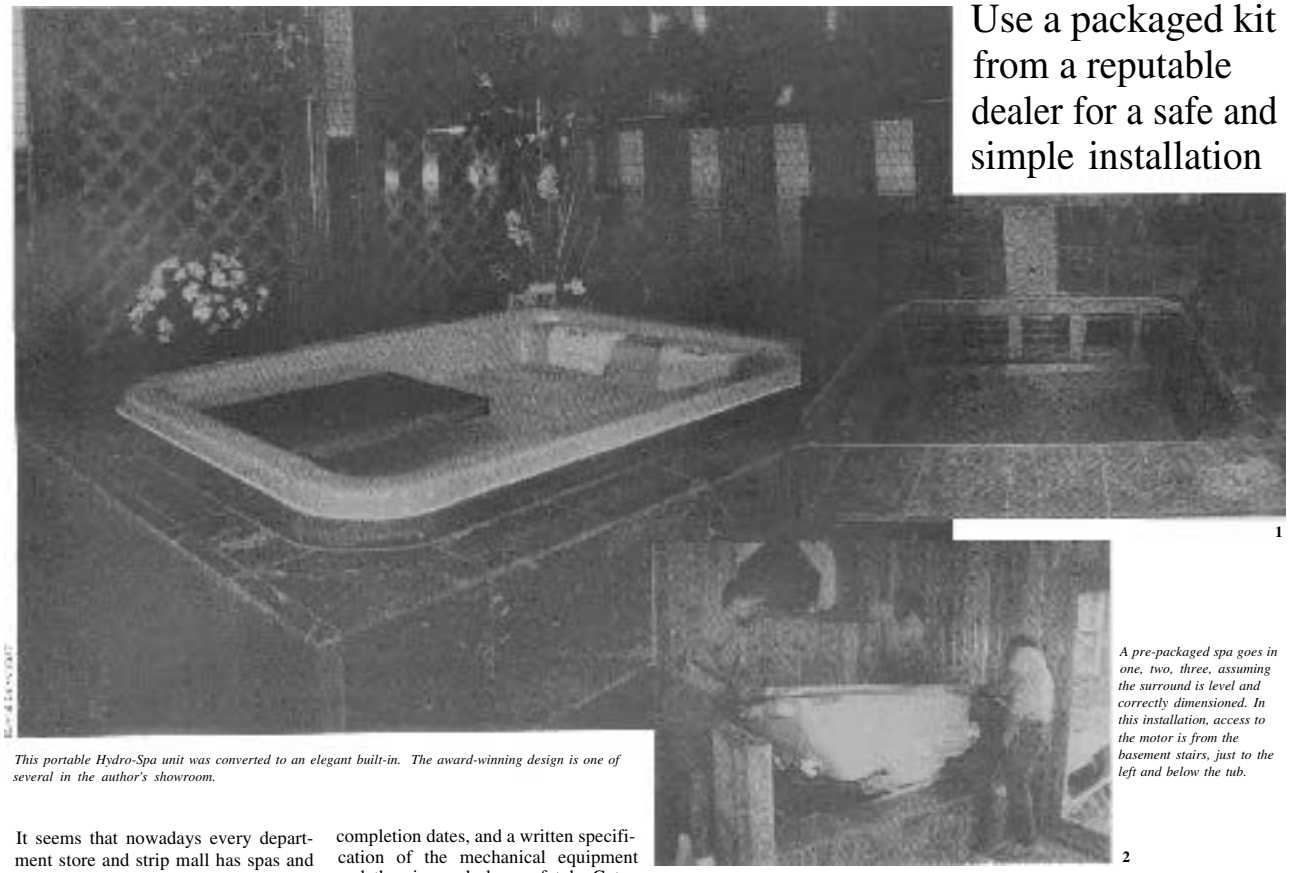
Installing Whirlpools & Spas

by Gail and Kirk Hermann

Use a packaged kit from a reputable dealer for a safe and simple installation



This portable Hydro-Spa unit was converted to an elegant built-in. The award-winning design is one of several in the author's showroom.

1

A pre-packaged spa goes in one, two, three, assuming the surround is level and correctly dimensioned. In this installation, access to the motor is from the basement stairs, just to the left and below the tub.

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It seems that nowadays every department store and strip mall has spas and jetted baths for sale. But because these are complex devices with both plumbing and electrical components, they should be purchased from a professional dealer—one who is knowledgeable and service-oriented. Choose a dealer who will stand behind the product and provide support if minor malfunctions crop up. One good indicator of professionalism is membership in the National Spa & Pool Institute (2111 Eisenhower Ave., Alexandria, VA 22314; 703/838-0083).

To protect yourself, find out where the parts are shipped from, and the date of delivery. Get in writing the length of the warranty, and what it covers. Also, find out who repairs the unit if it malfunctions.

If you are subcontracting the installation to the dealer, make sure your contract includes the installation and completion dates, and a written specification of the mechanical equipment and the size and shape of tub. Get a description of the service provided, and make clear who is responsible for the costs of any extra remodeling work that goes along with the installation.

Many Choices

First you must decide whether your customer wants a spa, hot tub, or jetted bath. The basic difference is this: Spas stay filled like a swimming pool and are only emptied two or three times a year. And like a pool, they need circulation and filtration systems. They can be built-in with hard plumbing and wiring connections, or portable with no plumbing hookups. The portable ones are filled with a garden hose, and can be moved outdoors for the summer (about 400 pounds for the average two- person model). All have heaters and thermostats.

Jetted tubs, on the other hand, are simply large bathtubs with a "jet system" to massage the user with water turbulence. These are often called whirlpool baths because some circulate the water in a cicular motion.

A hot tub is essentially a spa made of wood—with the jets in slightly different locations.

For whichever type you choose, there are many material choices: acrylic, fiberglass, enamelled cast-iron. Wood products can be redwood, oak, cypress, teak, or other rot-resistant species. It is really a matter of personal preference.

There are also numerous add-on options: hand-spray attachments, brass or aluminum grip-bars, and faucet styles. Some have adjustable jets that allow the user to change the direction and force of the water streams. Some have air systems, which force air through the water for added turbulence. The controls also vary from a simple on-off switch to fancy digital thermostats. The ultimate tub with every conceivable feature is Kohler's $20,000 Master Bath. The unit has microprocessor controls that allow the user to program the time, temperature, and water level to await him or her after a hard day at the office.

Pump and Controls

The main thing that distinguishes a spa or whirlpool from an ordinary tub is that it has a pump, and in the case of a spa, a heater and filter.

The mechanical components are best purchased packaged with the tub as a unit, or as a complete equipment assembly or "power pack." The equipment assembly is tied in with a few plumbing connections and a power connection. It's possible to buy components individually and build your own system, but this is best left to dealers and manufacturers. Many contractors like to use portable units, even if they are building the unit in, since they are completely pre-plumbed and wired.

The power pack for a spa includes water pump, filter, heater, and blower if air is included. This unit should be mounted near the tub in a place where it is accessible for maintenance. If it can't fit in with the tub area, put it in an adjoining room or nearby closet and plumb it.

Some spas have the pump and heater run constantly. This is simple and convenient for the user, but wastes a lot of energy. It's better to have the pump run only a few hours a day on a timer. Whatever the system, the water must periodically circulate through the filter, or bacteria and algae will have a heyday.

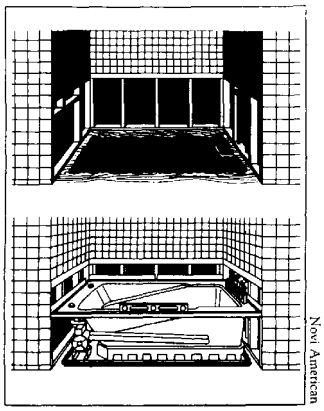
Whether you purchase a pre-plumbed unit or separate components, make sure the equipment is U.L. listed. Jetted tubs and portable spas should be listed as complete units (as a UL- listed "spa" or "hydromassage bath tub"). Power packs should be listed as a "spa equipment assembly." At a minimum, the pumps, heaters, and other electrical components should be individually listed.

If you choose to plumb the system yourself, size the pump correctly for the volume of the water and number of hydrojets. The type of pump chosen will also affect the operating costs and maintenance needs. If you buy from a reputable dealer, he will advise you on what to use. Avoid buying from dealers who buy tub or spa shells and outfit them with bargain components (see "Are Retrofit Tubs Safe?" page 21).

For both safety and equipment life, the system should have certain features. Self-draining pumps are important for jetted tubs, since they are drained after each use. This prevents stagnant water from collecting in the plumbing. Jetted tubs should also have automatic safety shut-offs to prevent the pump from running when dry. Spas should have a high-temperature safety switch or anti-dry fire system to keep the system from overheating. Another feature in many spas and jetted tubs is protection against hair entanglement or body entrapment at the suction ports. This is achieved by proper grille design and is governed by an ANSI standard.

Rarely are spas connected to household plumbing. Most users fill and empty them with a garden hose.

This 17 x 22-foot spa room features cedar walls and windows, non-skid tile floors, high ceilings with fans—and of course—good ventilation.



Novi American

Typical alcove installation: If the subfloor needs leveling, a bed of mortar or plaster can provide pod support. Access panel fits over front.

Above-ground installations can drain by gravity to a plumbing drain or backyard (the chemicals evaporate). In installations where the drainage is uphill, siphon or pump would be needed.

All spas use heaters. They are usually set at 102 to 104°F. Some large spas use natural gas, propane, and oil heaters, which are able to raise the water temperature quickly when the owners want to use the unit. Electric heaters take longer, but are adequate for smaller installations, portable spas, or highly insulated units.

Keep It Clean

Spas need filter systems to keep the water clear. They remove particles of dirt, debris, and algae. There are three types of filters available.

For large spas, the diatomaceous (D.E.) earth filters are recommended because they are efficient and carry a heavier dirt load. These need to be cleaned periodically through a backwash system or manually. A new coat of D.E. is then applied and it is ready for another cycle.

The sand filter operates basically the same way as the D.E. filter but offers slightly less efficient filtration.

The cartridge-type filter is constructed of a non-woven polyester, dacron, or treated papers. It traps dirt as the water flows through. Its life expectancy is one to two years before replacement but it does require regular cleaning.

Filters must be sized to be compatible with the pump, water volume, and level of use. A large spa at the YMCA will need more filtration than a two-person home model. The owners can help by taking showers before using the spa, since body oils can clog the filter.

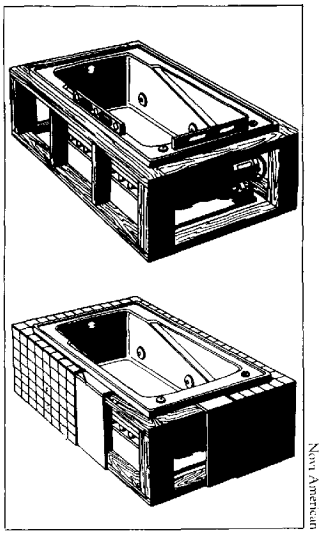
Electrical

Units come wired for either 110 or 220 vac. A 220-volt circuit will be more efficient for larger units. It's essential that the circuit be protected by a ground-fault circuit interrupter (GFCI) to protect users against electrical shock. It's also a good idea to mount electrical timers and switches so they can not be reached from inside the tub. We use a separate ground fault at the box and on the switch. In fact, we wire all electrical circuits in the room with ground-fault breakers at the panel.

Construction

A spa or tub area should be framed to support 60 pounds per square foot, which is more than adequate to support the weight. Other than the extra support, the installation is no different than with an ordinary tub. It can be built into a raised island, recessed in the floor, or installed in a conventional enclosure.

Just make sure the installation is de-



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Typical island or peninsula installation: Frame so that tub weight sits on floor, not on framing. Caulk where tub lip meets tile.

Spa Maintenance

Spas require a moderate level of normal maintenance in addition to keeping their filters clean. To protect the finish, the unit should be drained two or three times a year. At that time it should be washed, rinsed, and refilled.

The high temperature of a spa provides a good environment for algae and bacteria growth, so chemicals must be kept in the water. The amount of chemicals needed will depend on how many people use the spa and how often. Because of this, the spa should be checked (for PH and chlorine levels) on a daily basis Chlorine or bromine, and PH Up or PH Down should be added, as needed.

The PH (potential hydrogen) is the measure of acidity or alkalinity in the water. A spa should range between 7.2 and 7.6, Below this level, the water can corrode the finish on the spa and mechanical components. Above this, the PH level can produce scaling, cloudy water, or clogged filters and reduce the efficiency of the chlorine.

Another key maintenance chore is to keep the spa covered when not in use. Covers are made from fiberglass, canvas, plastic, or wood. Their purpose is to keep the hear in and objects and children out. They also reduce evaporation of water and chemicals. By reducing evaporation, a cover helps prevent mildew and other moisture problems in the room.

- Other steps the homeowner should take include:
- Check monthly for alkalinity and calcium levels.
- Clean the filters each month.
- Drain, clean, and fill the spa at three to six-month intervals.
- Check pipe joints and seals in the mechanical equipment for leaks.
- Periodically check the metal hose bands for rust or corrosion.
- Inspect the heater annually for scale, mineral deposits, and corrosion. If mineral deposits are a problem in well water, a filtration system should probably be installed at the home water pump.
- If fiberglass, wax the unit: when empty to restore its luster.

—*NEB*

Are Retrofit Tubs Safe?

by Allison Murray and Alan Sanderfoot

As the demand for whirlpools increases, installation of jet systems into tub shells rises. Estimates are that of the 400,000 total whirlpools to be installed in 1988, between 200,000 and 240,000 will be done by "jetters" who buy bath shells and jet the tubs for resale. This has prompted charges from major manufacturers that retrofitted tubs are unsafe.

They claim that retrofits don't drain sufficiently, and that the jetters use inadequate materials. They also claim that jetters don't follow industry standards and don't offer guarantees.

How accurate are these claims? Are all retrofits a problem?

Standards Not Being Met

Proper drainage is a must in any whirlpool as the dark, warm environment is ideal for bacteria to form. Improper drainage is a special problem in retrofits, according to Linda Mayer, senior product manager, Kohler Co.

"Many of these people (jetters) let the consumer specify the location of the jets and the pumps. The pump must be low enough to prime and high enough ro drain, and there's not a lot of leeway to do this," Mayer said.

Ray Bennett, engineer, Swirlway, emphasized the importance of proper drainage. "If water is allowed to sit in the piping, bacteria begins to grow and the smell is horrid. It only takes a little bit of water to do that. The system must drain completely," Bennett said. (The International Association of Plumbing and Mechanical Officials, IAMPO, sets the maximum amount of water permitted to remain safely in a system at 1½ ounces per fitting, which is usually composed of small drops of water.)

Manufacturers also said retrofitting can be dangerous if faulty materials, including IAMPO-banned flexible PVC material, are used. Flexible piping will sag from pressure and heat of the water, which could result in swings of high temperatures or leaks. If a complete job isn't inspected properly, unscrupulous jetters can get away with using less-than-adequate materials, the manufacturers complain.

Is There A Problem?

The question remains: Is there a serious problem or are major manufacturers of whirlpools overreacting to the additional competition of jetters?

Major manufacturers do admit that while they do not like the competititon of jetters, if a tub is retrofit correctly, there should be no problem with the unit.

But the potential risks of retrofitting are being taken seriously by professional organizations setting standards. IAPMO, according to its spokesperson, Bill Cavanaugh, may discontinue listing retrofit suppliers' products.

Cavanaugh said because of potential problems with retrofitting, IAMPO currently requires field assembled and retrofit piping systems to be labeled as such. The label should include the company name, name of installer, date of installation, and the appropriate IAMPO seal, he said. Recently, IAMPO and Underwriters Labs (UL) have taken steps to include specific standards for jetted tubs in their codes. IAMPO standards have been adopted by 39 states, and county and local jurisdictions,

En the city of Los Angeles, for example, Robert Martin, chief of plumbing inspection for the city, said the plumbing and electrical systems of every retrofit job must be inspected and issued a permit But manufacturers are not content. They complain that independent jetters, who don't have the funds to have each product tested, use a UL- or IAPMO-listed pump, for example, leading customers to believe the entire unit has been approved.

Roy Jacuzzi, president and CEO of Jacuzzi Inc, said, "Just because you have a pump that's approved doesn't mean the overall package is UL-approved. The jetter is short-changing the customer."

Jetters charge less than the major manufactures by excluding warranties and guaranties, according to Kevin Crane, national sales manager, Benjamin.

Some Jetters Are Responsible

In the face of such opposition, companies selling jets to retrofitters, are anxious to ensure safe jobs.

Some, including HydraBath and Vico Products, abide by UL and IAPMO standards, and local and state legislation.

Jordan Hubner, production supervisor, HydraBath, said the company will not install its RetroFit System if the customer's tub is made of roman tile or sunk in concrete casing, A roman-tile tub, Hubner said, will he destroyed by drilling, and concrete easings make it impossible for installers to get to the tub,

HydraBaths inspects the tub after jetting it and offers a five-year warranty, he said,

Vi Mathis, vice president, Vico Products, said Vico will not sell its hydrotherapy pumps and fittings to installers who haven't been trained by the firm. The company offers customers ten-year guaranties.

Mathis said she thinks the problem with retrofitting is the lack of code enforcement. However, she said, unscrupulous jetters will eventually weed themselves out of the industry.

The above was excerpted with permission from the April 1988 issue of Kitchen and Bath Business, *1501 Broadway, New York, N.Y. 10036.*

signed to keep the equipment easily accessible for repairs.

However the spa is enclosed, it should be well insulated to keep the heat in the water. Some shells are available with a layer of spray-foam insulation. In other cases, regular unfaced fiberglass insulation is usually adequate. When the spa is installed below-grade the foundation should be well insulated.

The floor surrounding the spa should be covered with pressure-treated ¾-inch plywood. The treatment protects against decay and insect damage. The finish floor should be a non-skid surface. Non-slip ceramic tile provides an excellent stain-resistant surface.

The walls surrounding the tub should be covered in a cementitious backerboard available at your local tile company. This product is durable, noncombustible, water-proof, highly bondable, and lightweight. It can be nailed and screwed, and cut by scoring with a knife and snapping. The walls may then be covered in tile, marble, or any material that resists moisture-absorption and mildew growth. Rot-resistant woods such as redwood and cedar also work well.

The ventilation system in this area should include ceiling fans to keep the air circulating in the room, skylights, and proper exhaust ventilation.

We install spas or tubs in new or remodeled bathrooms, master suites, sunrooms, basements, roof-tops, decks, and private and public gyms. Many of our customers are "empty nesters," who want a complete leisure room to house the spa. Typically, we install a "four-person" model, which is comfortable for two. Our average room is about 12x20 feet, has between 17 and 22 windows, including skylights, and costs approximately $50,000 including the spa.

Our methods cost more, and add to the cost of such a room, but we find that our clients are not willing to cut corners. And, we haven't had any problems. We found it's also important to instruct clients in the proper use and maintenance of the equipment (see "Spa Maintenance"). Careful installation and good maintenance add up to problem-free spas, whirlpools, and hot tubs—and satisfied customers. ■

Gail and Kirk Hermann are principals of Ultimate Living, Inc., a remodeling firm, which specializes in spas and leisure rooms.

Buyer's Guide

Below is a representative listing of reputable manufacturers of jetted tubs, spas, and hot tubs. Although each appears in only one category, some make more than one type of pool and spa product.

Jetted Bathtubs

American Standard
1 Centennial Plaza
Piscataway, NJ 08854
201/980-3000

Caldera Spas
1080 W. Bradley Avenue
El Cajon, CA 92020
619/449-4646

Galaxy Spas
2175 Agate Court
Simi Valley, CA 93065
805/581-5557

HydraBaths
2100 S. Fairview Street
Santa Ana, CA 92704
714/556-9133

Hydro Swirl
2150 Division Street
Bellingham, WA 98226
206/734-0616

Jacuzzi Whirlpool Bath
P.O. Drawer J
Walnut Creek, CA 94596
415/938-7070

Kohler Co.
Dept. PGI
444 Highland Drive
Kohler, WI 53044
414/457-4441

Novi American, Inc.
40200 Grand River
Novi, MI 48050
313/476-8100

Pearl Whirpool Baths
9224 73rd Avenue N.
Minneapolis, MN 55428
612/424-3335

Plastic Development Co.
P.O. Box 4007
Williamsport, PA 17701
717-323-3060

Southland Spa & Sauna
Ray Road
P.O. Box 638
Haleyville, AL 35565
205/486-7919

Spas

Advanced Spa Designs
1311 Blue Gum
Anaheim, CA 92806
714/630-1150

Baja Industries
4065 N. Romero Road
Tucson, AZ 85705
602/887-1154

Beachport
1177 N. Grove Street
Anaheim, CA 92806
714/666-1900

Cal Spas
1462 E 9th St
Pomona, CA 91766
714/623-8781

Continental Leisure Products
P.O. Box 919
Naugatuck, CT 06770
203/729-4525

Fort Wayne Pools
510 Sumpter Drive
Fort Wayne, IN 46804
219/432-8731

GPM Industries
428 W. 22nd St.
Holland, MI 49423
616/392-5947

Hydro-Spa
4655 118th Avenue N.
Clearwater, FL. 34622
813/573-5000

Stewart Plastics
1825 Potts Hill Road
Etters, PA 17319
717/938-9333

Sun Wave Manufacturing
P.O. Box 649
Leander, TX 78641
512/259-2026

Sundance Spas
13951 Monte Vista Avenue
Chino, CA 91710
714/627-7670

Superior Spas
833 W. Olympic Boulevard
Montebello, CA 90640
213/722-3468

Hot Tubs

Almost Heaven Hot Tubs
Route 5 S.W.
Renick, WV 24966
304/497-3163

Coleman Spas
P.O. Box 2920
Chandler, AZ 85244
602/895-0598

Franciscan Woodworks
25 Pelican Way
San Rafael, CA 94901
415/459-5421

Gordon & Grant Redwood Tanks & Spas
423 N. Quarantina Street
Santa Barbara, CA 93103
805/963-5353

Hingston Hot Tubs
110 Main Street
Topsfield, MA 01983
617/887-8824

Snorkel Stove Co.
108 Elliot Avenue W
Seattle, WA 98119
206/283-5701