



Whitehall Manufacturing
Manufacturer of Healthcare and Rehabilitation Products since 1946

User Manual

Whitehall **WHIRLPOOL** SINCE 1946

Full-Immersion Models

WHF-260-S, WHF-270-S, WHF-300-S, WHF-425-S



WHF-260-S



WHF-425-S

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WARNING

READ AND UNDERSTAND THIS ENTIRE MANUAL BEFORE OPERATING THE WHIRLPOOL
Failure to follow the instructions in this manual could result in Whirlpool damage and/or bodily injury

Symbols



Waste Electrical and Electronic Equipment (WEEE)

Indicates that the product must not be disposed of with regular waste. It is the user's responsibility to dispose of waste equipment according to local laws. For information about where to drop off the waste equipment for recycling, contact your local waste collection authority.



General Warning or Caution

Indicates personal injury or damage to the equipment is possible



Electric Shock

Indicates a hazard arising from dangerous voltage. Any mishandling could result in irreparable damage to the equipment and/or personal injury or death.



Warning; Crushing of hands

To warn of a closing motion of mechanical parts of equipment



Refer To Manual (Instructions for Use)

Indicates that user manual shall be referred to before performing any installation, operation or maintenance



Alternating Current

Indicates alternating current is present



Manufacturer

Indicates manufacturer of device



Manufacture Date

Indicates manufacture date of device



Warnings

Operation:

- Whirlpools are intended for use by a professional only, e.g., Athletic Trainer, Coach.
- During treatment, the professional must stay with user at all times.
- The maximum allowable user mass is 135 kg (298 lbs)
- Ensure water in tub is no greater than 43.3°C (110°F). Higher temperatures may result in injury to user.
- Usage should terminate if the user experiences dizziness, light-headedness, shortness of breath, or nausea
- To avoid user cross-infection, drain and clean equipment after each use, and disinfect equipment surfaces and components by using an EPA registered product in registered product in accordance with the manufacturer's instructions
- Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.
- Use of accessories and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation
- Use only Whitehall-approved items on the Whirlpool
- Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the Whirlpool, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.
- If there is visible damage to the Whirlpool or packaging upon receipt, report this damage to shipping company and Whitehall. Do not use the Whirlpool if damage to it is suspected.
- Operate with the bottom of the turbine submerged in at least 15.2 cm (6 inches) of water
- Keep hair and loose items (gown straps, gauze, etc.) out of the tub. These items can be pulled into the pump and cause injury or damage to the turbine.
- Use the Whirlpool only for the purpose described in this manual
- Position the Whirlpool so that the power cord is easily accessible.
- To avoid damage to the thermometer, do not drop the thermometer or expose it to temperatures above 60°C (140°F)



- No parts shall be serviced or maintained while in use with a user
- To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth
- Connect the power cord to a Ground Fault Circuit Interrupter (GFCI) medical grade receptacle
- No parts of the Whirlpool, including the power supply cord, are repairable or replaceable by service personnel
- No modification of the Whirlpool is allowed
- To protect stainless steel surfaces, use soft water (i.e., water with low concentrations of ions and in particular low in ions of calcium and magnesium) in the tub.

Incident Reporting

Any serious incident that has occurred in relation to the Whirlpool should be reported to Whitehall manufacturing.



User Skills

The professional using the Whirlpool must have the following skills:

- The ability to assist the user
- Knowledge of Whirlpool protocols
- To have read and understood this manual
- To have become familiar with the Whirlpool before using it with a user

Whirlpool Description

The Whirlpool consists of a welded stainless steel tub for holding water and one or two turbine assemblies. For the Whirlpool with one turbine (WHF-260-S), the turbine is mounted to the side of the tub. For Whirlpools with two turbines (WHF-270-S, WHF-300-S, WHF-425-S) turbines are mounted to a track, allowing each turbine to be moved independently around the tub. The interior of the tub and tub rim are considered Type B Applied Parts, since they are likely to be touched by the user.

The turbine assembly is a motor-operated centrifugal pump that circulates the water. The pump position can be adjusted up or down to change the position of the water outlet, then locked with a handle. The tub is supported by legs. Water is drained by opening the drain valve to a fixed drain.


Water temperature may be adjusted by the operator depending on the desired method. A thermometer mounted to the side of the tube is included with the Whirlpool. The Whirlpool does not control water temperature.

The user can enter the tub or be placed in the tub and is fully immersed in the water to the neck. A vinyl headrest is provided for the user.



Accessories

The following accessory is available:

#	Description	Instructions
HR 	Vinyl Headrest	Mount headrest tube in mount on tub and clamp in place with knob. For maintenance, see <i>Disinfecting and Cleaning Instructions</i> .

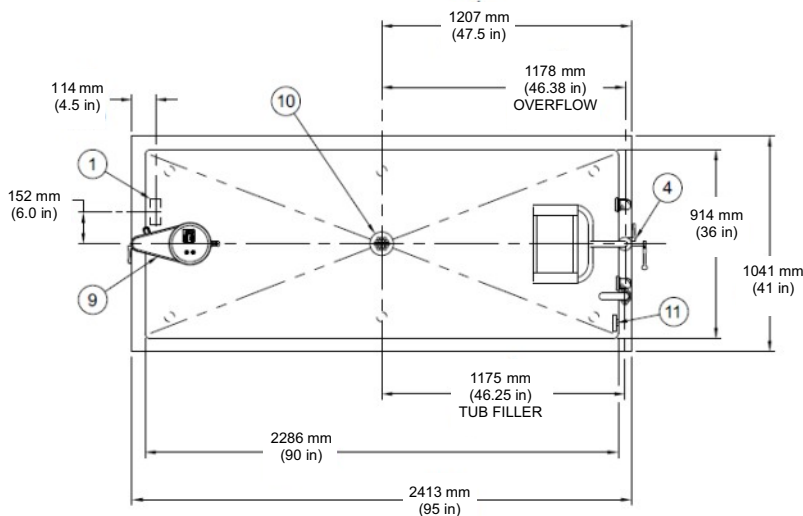


Facility Requirements

The following are needed prior to using your Whirlpool:

- Clean water source for filling tub. For burn users with open wounds, follow the physician's recommendation for water quality.
- Drain plumbed per Figure 1, Figure 2, Figure 3, or Figure 4, installed by licensed plumber
- Medical-grade GFCI receptacle(s) located per Figure 1, Figure 2, Figure 3, or Figure 4, installed by licensed electrician
- Environmental conditions within those specified in the Specification section of this manual

NOTE: The emissions characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.



Rough-In for WHF-260-S

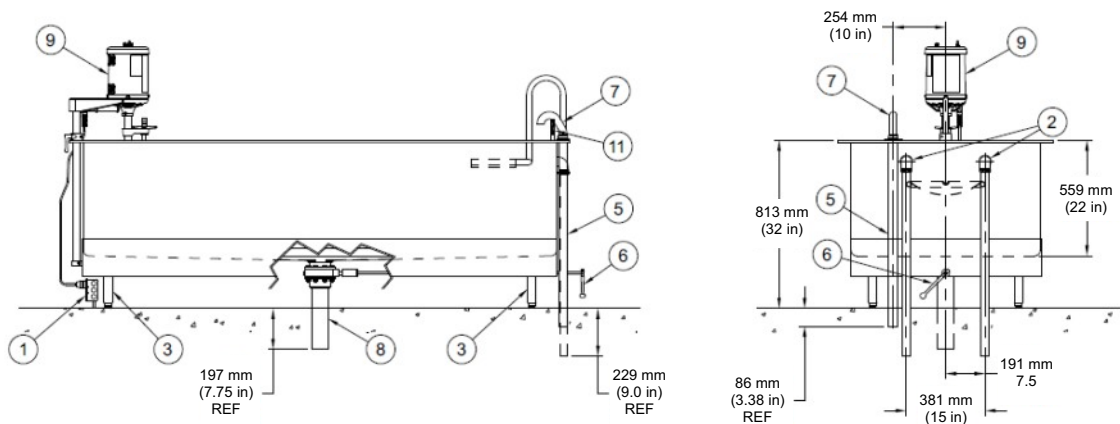
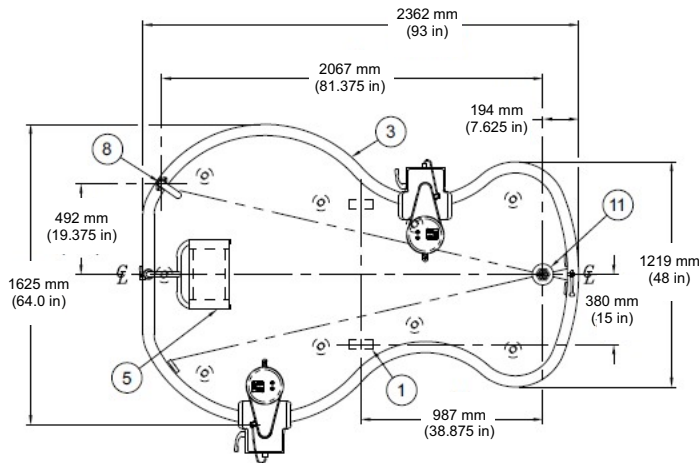


Figure 1: WHF-260-S Rough-In Diagram

- | | |
|---|---|
| ① Mains input (medical grade GFCI)* | ⑦ Filler spout |
| ② 31.8mm (1-¼ inch) outer diameter twin overflow assemblies | ⑧ 76.2mm (3 inch) butterfly valve, 76.2mm (3 inch) outer diameter tailpiece |
| ③ Height-adjustable tub supporting legs | ⑨ Turbine assembly |
| ④ Headrest raising and lowering assembly | ⑩ Removable grid strainer |
| ⑤ 31.8mm (1-¼ inch) NPT x plain end pipe tube filler connection | ⑪ Thermometer |
| ⑥ Drain valve lever handle | |

* Customer provided



Rough-In for WHF-270-S

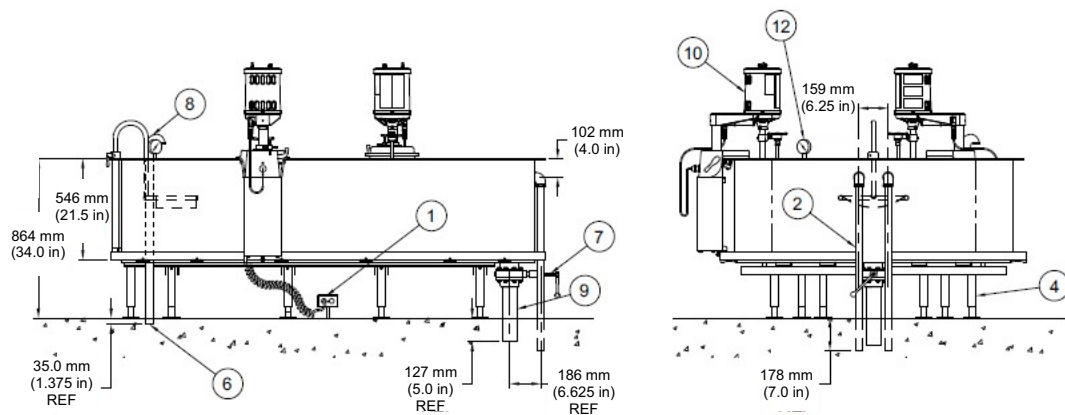


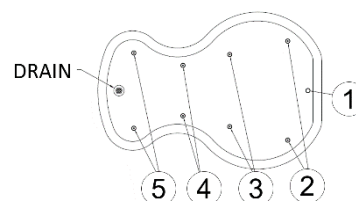
Figure 2: WHF-270-S Rough-In Diagram

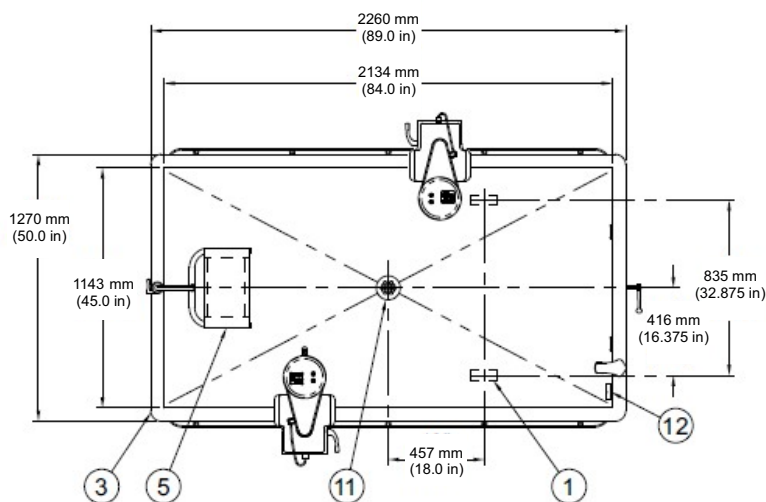
- ① Mains input (medical grade GFCI)*
- ② 31.8mm (1-¼ inch) outer diameter twin overflow assemblies
- ③ 63.5 mm (2-½ inch) rail, all around perimeter
- ④ Height-adjustable tub supporting legs
- ⑤ Headrest raising and lowering assembly
- ⑥ 31.8mm (1-¼ inch) NPT x plain end pipe tube filler connection
- ⑦ Drain valve lever handle
- ⑧ Filler spout
- ⑨ 76.2 mm (3 inch) butterfly valve, 76.2 mm (3 inch) outer diameter tailpiece
- ⑩ Turbine and carriage assembly
- ⑪ Removable grid strainer
- ⑫ Thermometer

* Customer provided

Adjust leg length as indicated below to allow for proper drainage (assumes level floor):

Leg Set	Leg Length, cm (inches)
5	25.4 (10.00)
4	28.0 (10.625)
3	28.6 (11.25)
2	30.2 (11.875)
1	31.1 (12.25)





Rough-In for WHF-300-S

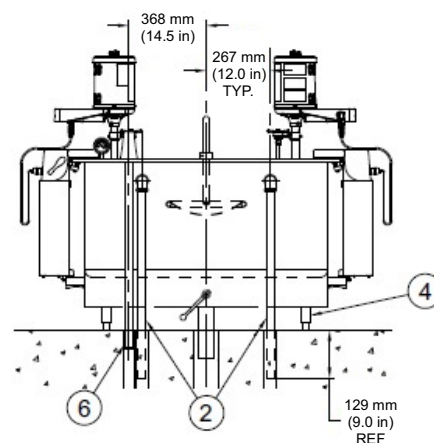
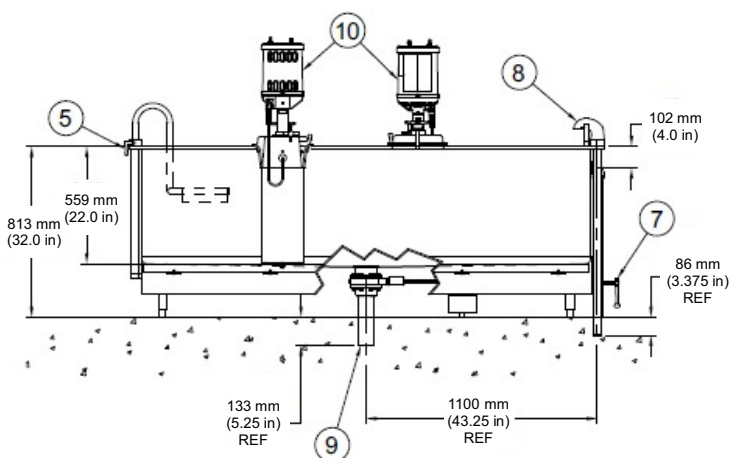


Figure 3: WHF-300-S Rough-In Diagram

- ① Mains input (medical grade GFCI)*
- ② 31.8 mm (1-¼ in) outer diameter twin overflow assemblies
- ③ 63.5 mm (2-½ in) rail, all around perimeter
- ④ Height-adjustable tub supporting legs
- ⑤ Headrest raising and lowering assembly
- ⑥ 31.8 mm (1-¼ in) NPT x plain end pipe tube filler connection
- ⑦ Drain valve lever handle
- ⑧ Filler spout
- ⑨ 76.2 mm (3 in) butterfly valve, 76.2 mm (3 in) outer diameter tailpiece
- ⑩ Turbine and carriage assembly
- ⑪ Removable grid strainer
- ⑫ Thermometer

* Customer provided



Rough-In for WHF-425-S

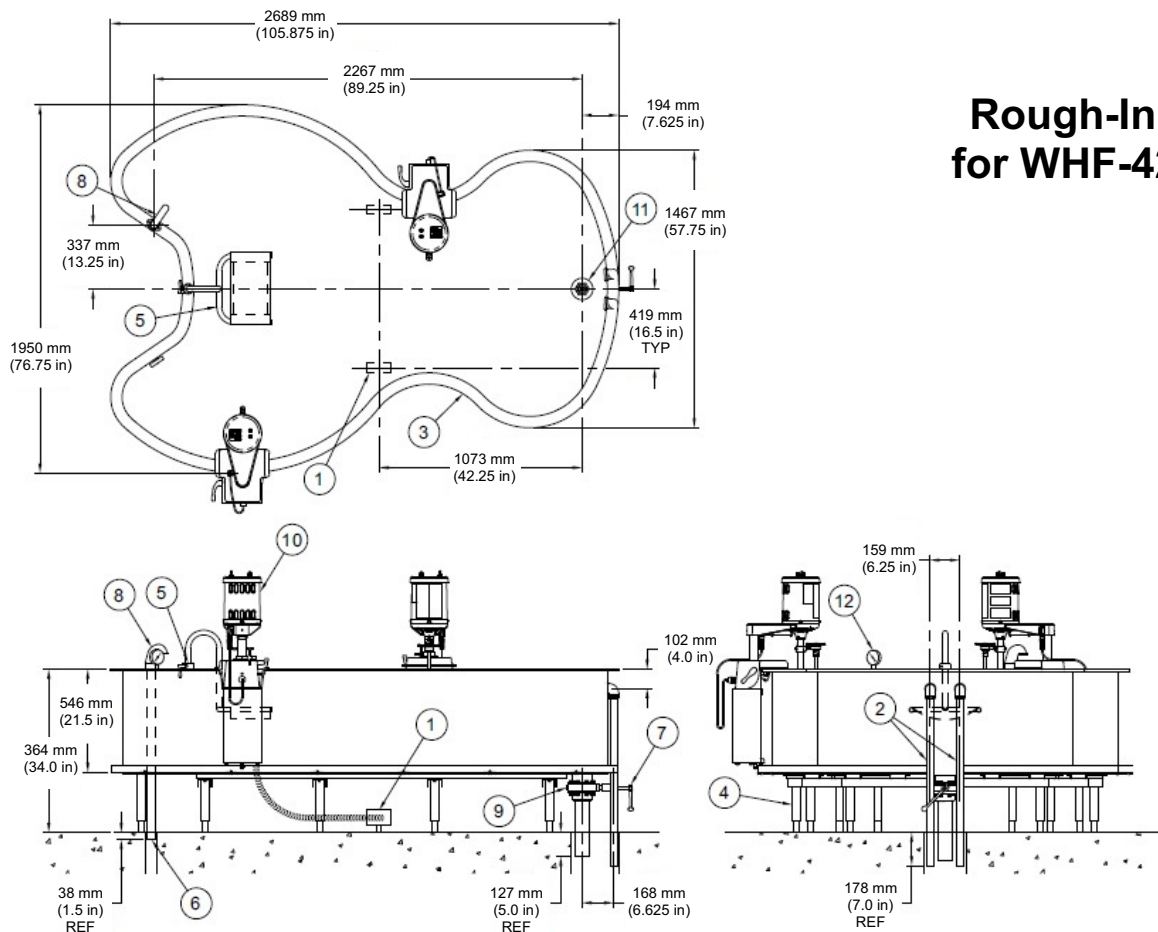


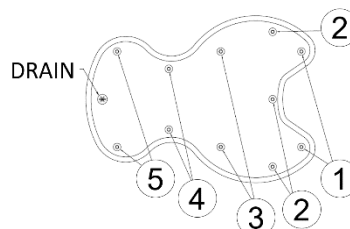
Figure 4: WHF-425-S Rough-In Diagram

- | | |
|--|---|
| ① Mains input (medical grade GFCI)* | ⑦ Drain valve lever handle |
| ② 31.8 mm (1-¼ in) outer dia. twin overflow assemblies | ⑧ Filler spout |
| ③ 63.5 mm (2-½ in) rail, all around perimeter | ⑨ 76.2 mm (3 in) butterfly valve, 76.2 mm (3 in) outer diameter tailpiece |
| ④ Height-adjustable tub supporting legs | ⑩ Turbine and carriage assembly |
| ⑤ Headrest raising and lowering assembly | ⑪ Removable grid strainer |
| ⑥ 31.8 mm (1-¼ in) NPT x plain end pipe tube filler connection | ⑫ Thermometer |

* Customer provided

Adjust leg length as indicated below to allow for proper drainage (assumes level floor):

Leg Set	Leg Length, cm (inches)
5	25.4 (10.00)
4	28.0 (10.625)
3	28.6 (11.25)
2	30.2 (11.875)
1	31.1 (12.25)





Instructions

Installing Carriage Assemblies

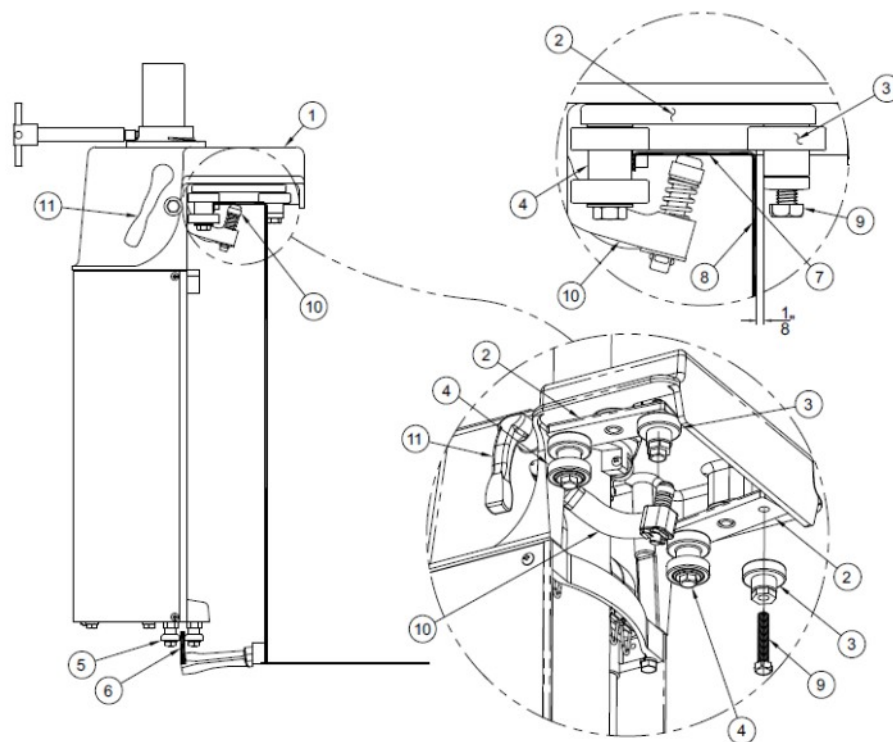


Figure 5: Installing Carriage Assemblies (WHF-270/300/425-S only)



NOTE: It is recommended that 2 people mount the carriage assemblies onto the tub.

The auto-counterbalancer and carriage assembly are designed for installation on the upper and lower tub rails. After installation, the assembly will move freely around the tub until locked in desired position.

1. At the top of the carriage assembly (1) there are two sets of upper guide rail bearing assemblies (2). Each consists of one single roller bearing with an eccentric shaft (3) and one double roller bearing (4). Remove both single roller bearings (3) before mounting carriage assembly (1) onto tub.
2. Place carriage assembly (1) on tub by positioning the lower guide rail bearing (5) onto the lower guide rail (6).
3. While holding carriage assembly (1) in place onto the upper guide rail (7), re-insert single roller bearings (2). Do not tighten completely as adjustments will be required.
4. With carriage assembly (1) resting on upper guide rail (7), adjust single roller bearings (2) to provide 1/8" (3.2mm) clearance between inner tub wall (8) and roller bearing (2). Secure into position by tightening bearing bolt (9). Move carriage assembly (1) around tub and readjust if necessary.
5. Engage friction lock (10) by rotating the lock handle (11) counterclockwise.



Installing Turbine(s)



NOTE: It is recommended that 2 people mount the turbine assembly(ies) onto the tub.

For WHF-260-S (Figure 6)

1. Loosen handle (8) then lower turbine support rod (4) into tube (3). Tighten handle (8) when turbine is at desired height.
2. Turn the pressure control valve handle (5) fully clockwise, then fully counterclockwise to completely lubricate the plunger assembly.
3. Turn the turbine power switch (6) off.
4. Plug in the turbine assembly into the medical grade GFCI outlet.

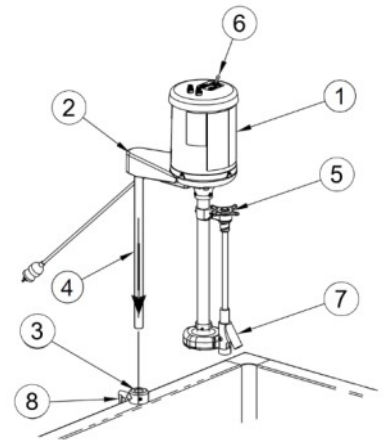


Figure 6: Installing turbine on WHF-260-S

For WHF-270/300/425-S (Figure 7)

1. Loosen set screw (3) and slide motor support casting (2) onto tube (4) then tighten set screw (3).
2. Plug turbine power cords into carriage assembly outlets.
3. Turn the pressure control valve handle (5) fully clockwise, then fully counterclockwise to completely lubricate the plunger assembly.
4. Turn the turbine power switch (6) off for each turbine.
5. Plug carriage assembly power cords into medical-grade GFCI outlet.

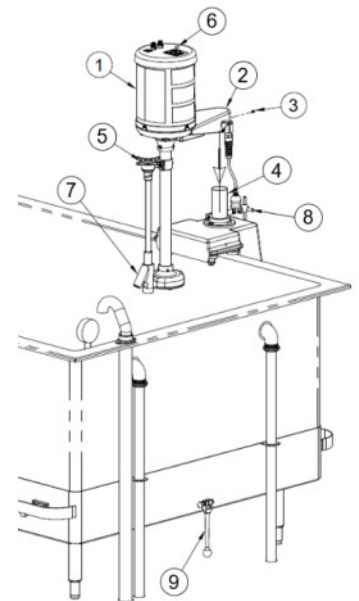
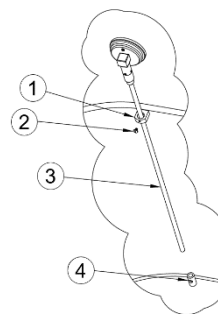


Figure: Installing turbine on WHF- 270/300/425-S

Installing Thermometer

(Figure 9) Insert sensing rod (3) through upper bracket (1) and into lower bracket (4), then tighten screw (2).



Installing Headrest

(Figure 8) Loosen handle (4), insert headrest rod (2) into raising and lower assembly (3) and tighten handle (4).

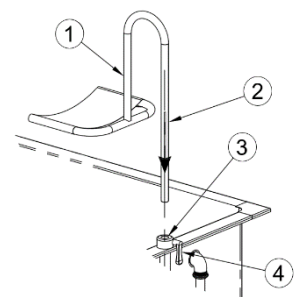


Figure 9: Installing thermometer

Figure 8: Installing headrest



Operating Instructions

Refer to warnings on page 5 before operating the Whirlpool.



1. Ensure power cord is plugged into medical-grade GFCI outlet.
2. Fill tub with water so that the bottom of turbine is at least 15.2 cm (6 inches) below surface of water.



3. WHF-270/300/425-S only (Figure 5): To change the lateral position of the turbine:
WARNING: Do not place your hands on the tub railing as they could be injured by the motion of the carriage assembly.

- a. With both hands on the carriage assembly, turn handle clockwise (11) to unlock carriage assembly from tub and slowly push the carriage assembly to the desired location.
- b. Lock the lateral position of the carriage assembly by turning handle counterclockwise (11).

4. To change the vertical position of the turbine:

- a. WHF-260-S (Figure 6):

- i. Loosen handle (8) to unlock turbine.
- ii. Slowly push down on the top of the motor support casting (2) until the bottom of the turbine is at the desired location.
- iii. Tighten handle (8) to lock in place.

- b. WHF-270/300/425-S (Figure 7):

WARNING: Keep your hands on the motor support casting (2) during this operation. Movement of the lifting mechanism in the carriage assembly (see Figure 5) could cause injury.

- i. Loosen handle (8) to unlock turbine.
- ii. Slowly push down on the top of the motor support casting (2) until the bottom of the turbine is at the desired location.
- iii. Tighten handle (8) to lock in place.



Refer to Figure 5 and Figure 6 for the remaining steps:

5. Turn the pressure control valve handle (5) fully clockwise. This will generate maximum water circulation.
6. Turn the turbine power switch (6) on.
7. Adjust pressure control valve handle (5) to change level of water circulation.
8. Turn the turbine power switch (6) off to stop water circulation.
9. To electrically isolate the Whirlpool from supply mains, simply unplug the Whirlpool at the wall outlet, if required.

Draining Instructions

Refer to Figure 6 and Figure 7.

1. Turn the turbine power switch (6) off.
2. Turn drain handle (1) to empty tub.



Thermometer Calibration Instructions

1. Fill the tub so that the bottom of the thermometer tip is immersed in at least 10.2 cm (4 inches) of water.
2. Place the stem tip of a calibrated thermometer next to the tip of the Whirlpool thermometer.
3. Turn on the turbine assembly.
4. If the reading on the Whirlpool thermometer is not the same as that of the calibrated thermometer, turn the external adjustment screw (a) so that the Whirlpool thermometer reading is identical to the calibrated thermometer.
5. Re-calibration shall be performed at least every 12 months or as needed.

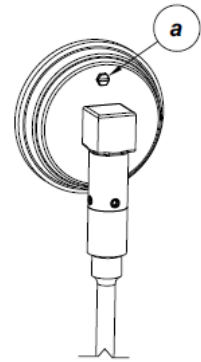


Figure 10: Calibrating the thermometer



Disinfecting and Cleaning Instructions



Important:

1. Do not use abrasive compounds or applicators such as metal brushes – they can damage the whirlpool's appearance. Do not allow steel wool to come in contact with stainless steel. Steel particles can embed into the stainless steel surface and create rust.
2. Avoid cleaning or disinfecting products that contain strong acids or contain chlorine, fluorine, bromine, or iodine, as these products can damage the protective chromium oxide layer, resulting in corrosion and leaks. If such products are used on stainless steel, keep the exposure brief (less than 15 minutes) and thoroughly rinse stainless steel surfaces of all residue.

Recommended cleaning materials:

- a. Sponge (natural or artificial)
- b. Soft-bristle brush
- c. Soft cloth (e.g. microfiber cloth)

The tub, thermometer, and turbine shall be disinfected and cleaned after each user.

Disinfecting and Cleaning Tub and Thermometer

1. Drain the tub following the draining instructions above.
2. Verify that the turbine is off.
3. Remove any loose objects or debris that may be present in the Whirlpool tub.

To disinfect, use a stainless steel hard surface disinfectant per the manufacturer's instructions with one of the recommended cleaning materials above.

To clean, use a mild soap solution with one of the recommended cleaning materials above.

Rinse thoroughly prior to use.

Disinfecting and Cleaning the Turbine

1. Drain the tub following the draining instructions above.
2. Raise turbine, place a large clean bucket in the tub and lower the bottom of the turbine into the empty bucket.
3. Fill the bucket with water so the bottom of the turbine is at least 15.2 cm (6 inches) below the surface of the water.
4. Add disinfectant solution to the water per manufacturer's instructions.
5. Ensure the pressure control valve is in the open position.
6. Turn on the turbine for 5 seconds and turn it off. Wait 10 minutes.



7. Spray or wipe all exposed surfaces with a mixture of suitable disinfectant solution per manufacturer's instructions. Exposed surfaces shall remain wet for at least 10 minutes.
8. Drain the turbine bucket into the tub and open drain.
9. Rinse all exposed surfaces with warm or hot water.
10. Fill the bucket with clean water and run turbine for five seconds to rinse impeller cavity.

Turbine Maintenance

Motors are equipped with sealed greased ball bearings that do not require lubrication so are maintenance-free. Clean vent holes in the motor cover shell periodically to allow free air flow and prevent overheating.

Troubleshooting

Symptom	Possible Cause	Remedy
Loss in pressure	Foreign material caught in pump inlet holes	1. Turn off and unplug turbine assembly 2. Remove foreign materials from bottom of pump
	Turbine pump is not submerged fully in water	Ensure that water level is at least 6" (152mm) above bottom of turbine assembly
Water does not circulate	No power to turbine	Check the power source Reset the GFCI(s) if tripped Replace the fuses (see instructions below) Contact Whitehall
	Shaft has seized	Contact Whitehall
Turbine stops operation	Motor is overloaded	Check for blocked motor ventilation holes Check for excessive current load NOTE: The motor is equipped with a thermal overload protector. In an overheated condition, the motor will automatically shut off until it has returned to a normal operating temperature, then resume operation.

Fuse Replacement Procedure:

1. Turn off and unplug the turbine



2. Push down and turn each of the round black fuse covers counter-clockwise on top of the turbine and set aside
3. Remove the fuses and discard
4. Replace the fuses with 6525-608-000 for the 125V~ turbine and 6525-612-000 for the 230V~ turbine (or equivalent)
5. Replace the fuse covers by pushing down and turning clockwise
6. Plug in the turbine



Classification

Electric Shock Protection	Class I
Applied Parts	None
Ingress Protection	IP24
Mode of Operation	Continuous

Specifications

Mechanical				
Water capacity Liters (US Gallons)	WHF-260 1173 (310)	WHF-270 1382 (365)	WHF-300 1367 (361)	WHF-425 1828 (483)
Water flow rate per turbine	0-56.8 L/min (0-15 US gallons/min)			
Electrical				
Input voltage	115/230 V~ 230 V~ models are for export only			
Line Frequency	50/60 Hz			
Rated Current	6.9/3.5 A			
Electromagnetic Compatibility	All Whirlpool models comply with the latest international electromagnetic compatibility standard (IEC 60601-1-2), as shown below:			
Description	Standard	Specifications		
Radiated Emissions	CISPR 11	30 MHz – 1 GHz, Class A		
Conducted Emissions, AC Mains	CISPR 11	150 kHz – 30 MHz, Class A		
Harmonic Emissions	IEC 61000-3-2	10 min, Class D (no limits for < 75W)		
Flicker	IEC 61000-3-3	120 min (no limits for < 75W)		
Electro-Static Discharge (ESD)	IEC 61000-4-2	Contact: ± 2kV, ± 4kV, ± 8kV; Air: ± 2kV, ± 4kV, ± 8kV ± 15kV		
Radiated RF EM fields	IEC 61000-4-3	3 V/m, 80% AM at 1 kHz 80MHz – 2.7GHz		
Electrical Fast Transient (EFT)	IEC 61000-4-4	Power Supply Lines, ± 2kV 100 kHz PRF		
Surge	IEC 61000-4-5	Line to line ± 0.5kV, ± 1kV		
RF Conducted Immunity	IEC 61000-4-6	Power Supply Lines: 3 Vrms, 0.15 - 80MHz; ISM Bands Input/Output Lines: 3 Vrms, 0.15 - 80 MHz; 6 Vrms, ISM bands, 80% AM at 1 kHz		
Magnetic Field	IEC 61000-4-8	30 A _{rms} /m, 50Hz or 60Hz		
Short Interruption	IEC 61000-4-11	0 % U _r : 250/300 cycles, 0°, 90°, 270°		
Environmental Conditions				
Operational	10 - 33°C (50 - 90°F)			
Transportation and Storage	0 - 60°C (32 - 140°F)			
Relative humidity	5 - 95%, non-condensing			
Atmospheric Pressure	70 – 106 kPa			
Thermometer				
Range	Dual scale: 5-60°C and 40-140°F			
Accuracy	± 1.1°C (2°F)			