

INSTRUCTIONS

SPIRAL MIXERS

MODELS

HF120	*ML-104378*		
HF190	*ML-104379*		
HR190	*ML-104380*	*Trolley*	*ML-104100*
HF250	*ML-104381*		
HR250	*ML-104382*	*Trolley*	*ML-104101*

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Installation, Operation, and Care of Models HF120, HF190, HR190, HF250 and HR250 SPIRAL MIXERS

SAVE THESE INSTRUCTIONS



Fig. 1

GENERAL

The spiral mixers (Fig. 1) are a series of high volume dough mixers. The spiral mixer's spiral arm rotates on a fixed vertical axis, and the bowl turns to provide the mixing action. The HF model designation indicates the bowl is Fixed (integral to the mixer), while HR indicates the bowl and its support are Removable.

The spiral mixer's spiral arm is powered with a heavy duty two-speed motor. The bowl is powered with a separate motor. The operator controls are conveniently located on the front of the machine and provide timed mixing in two speeds. Bowl size is suitable for mixing standard quantities of flour and ensures efficient operation.

INSTALLATION

UNPACKING

Immediately after unpacking mixer, check for possible shipping damage. If machine is found to be damaged after unpacking, save packaging material and contact carrier within 15 days of delivery. Prior to installation, verify that electrical service agrees with specifications on machine data plate located on rear of mixer head.

LOCATION

Place mixer in its operating location. Allow adequate space around mixer for operation of controls and to add ingredients to bowl. The area above and behind mixer should allow for bowl guard to be raised above machine and rear service door to be opened for servicing of machine. For mixers with removable bowls, allow adequate space to rotate agitator so that locking screw is towards front and to unlock and roll bowl away from machine to unload dough. Removable bowl models are equipped with anchor brackets which can be lowered and anchored to the floor (suitable hardware to be supplied by others).

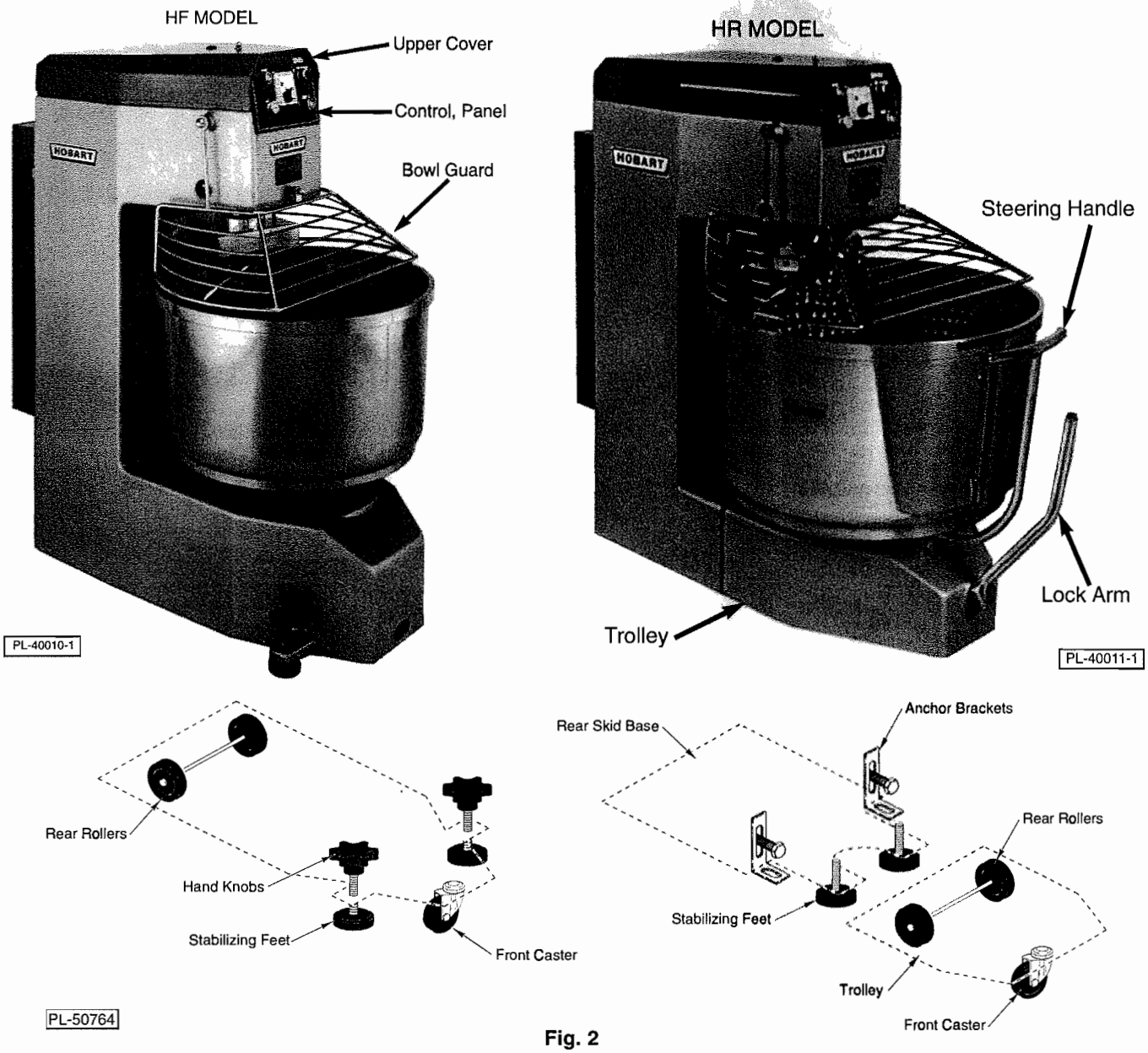


Fig. 2

LEVELING — HF MODELS

Fixed bowl machines should be reasonably level and may be stabilized by adjusting the stabilizing feet (Fig. 2) sufficient to lift the mixer to clear the casters.

LEVELING — HR MODELS

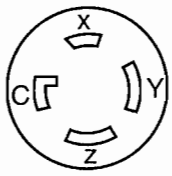
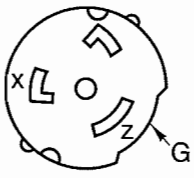
For removable bowl models, do not adjust the stabilizing feet too high or the trolley will not completely engage with the mixer. After locking bowl to mixer, the stabilizing feet will be lifted slightly off the floor (Fig. 2). Anchor brackets should be free to float in the up and down direction. The screw on the anchor bracket slot where it screws into the machine should be installed with Loctite (not supplied). The screw should be loose in the slot to permit the mixer to shift up or down by 1/4" to 3/8" when locking bowl to mixer.

ELECTRICAL CONNECTIONS

WARNING: ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL ELECTRICAL CODES.

The Spiral Mixer is shipped with a cord and plug and requires only that it be connected to an appropriately sized, grounding-type receptacle.

ELECTRICAL DATA

Model	Volts	Hz.	Ph.	Receptacle, Circuit and Plug Size*	Receptacle and Plug Type	Reference
HF120	220	60	3	30 Amps	 Receptacle Shown.	**NEMA** Receptacle: L15-30R Plug: L15-30P
HF190	220	60	3	50 Amps	 Receptacle shown.	**HUBBELL** Receptacle: CS8369 Plug: CS8365C
HR190	220	60	3	50 Amps		
HF250	220	60	3	50 Amps		
HR250	220	60	3	50 Amps		

* Receptacle, Circuit and Plug Size compiled in accordance with the National Electrical Code, 1993 Edition.

VERIFY CORRECT ROTATION

Check the rotation of the agitator to make sure it moves in a clockwise direction looking down into the bowl. If the rotation is incorrect, unplug the electrical cord and interchange any two of the three power supply leads (non-grounding wires). Then, verify that the rotation is correct.

OPERATION

WARNING: MOVING AGITATOR IN MOVING BOWL. KEEP HANDS, CLOTHING AND UTENSILS OUT WHILE IN OPERATION.

CONTROLS (Fig. 3)

START BUTTON — Push this button to start the mixer after the timer controller has been set. If using continuous mixing mode, press START without touching the timer controller keys or time knob. (See USING THE TIMER CONTROLLER.)

STOP BUTTON — Push this button to stop the mixer. If using continuous mixing mode, mixer will stop and return to idle mode; if using timed mixing or manual mixing modes, mixer will pause; to continue mixing press START. (See USING THE TIMER CONTROLLER.)

TIMER CONTROLLER — LOW-HIGH KEY - Press to start with low speed mixing, then switch to high speed automatically when mixing time for low speed expires. Uses times preset for low key and high key.

— LOW KEY - Press to set or edit preset low speed mixing time.

— HIGH KEY - Press to set or edit preset high speed mixing time.

— TIME KNOB - Turn to change preset low speed or high speed mixing time, or to set manual mixing time.

— DISPLAY - Shows preset time when Low, High, or Low-High key is pressed. Counts down during timed mixing, counts up during continuous mixing.

— SAVE KEY - Press to save new preset time in memory.

— CLEAR KEY - Press to exit and return to idle mode without changing the existing preset time.

(See USING THE TIMER CONTROLLER for more detailed instructions.)

BOWL ROTATION — Rotate the knob so the center arrow points to the clockwise arrow for most mixing operations. There is also a neutral (straight up) position and a counterclockwise rotation position.

BOWL JOG — Push and hold this button to rotate bowl without turning on agitator motor; the bowl can be rotated in this manner even if the bowl guard is raised.

The agitator motor will not operate with the bowl guard raised.

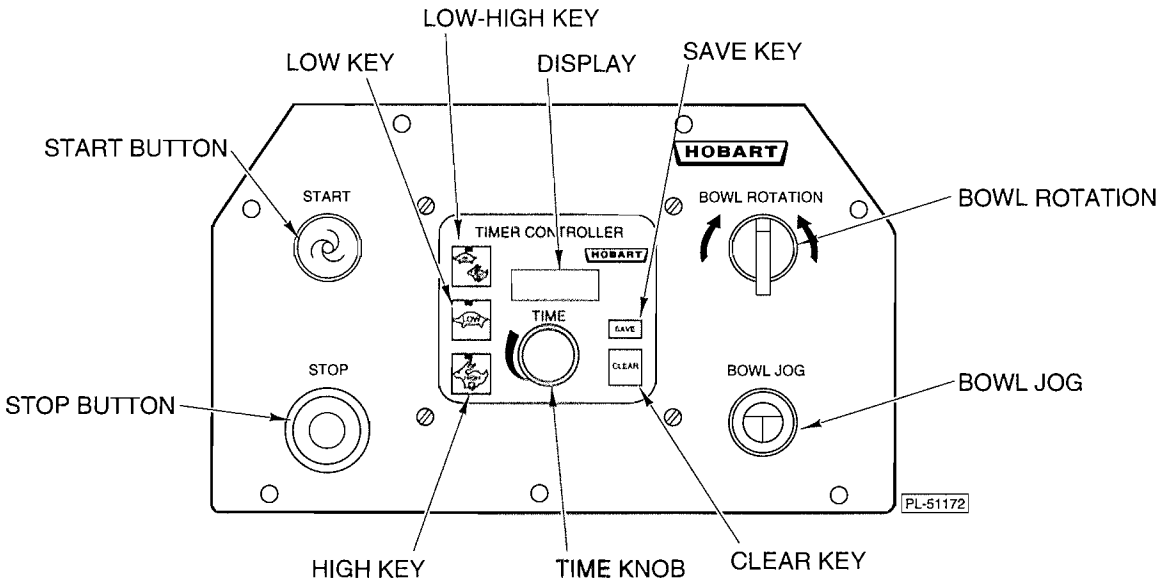


Fig. 3

USING THE TIMER CONTROLLER

FUNCTION DESIRED	DO THIS	RESULT
Set or Edit Preset Time for Low Speed	Press LOW key	Display shows the existing preset time.
	Turn TIME KNOB	Changes preset time. Display shows new time.
	Press SAVE	Saves new preset time in memory.
	- OR -	
	Press CLEAR	Exits time programming mode and returns to idle mode (--:--) without changing existing preset time.
Set or Edit Preset Time for High Speed	Press HIGH key	Display shows the existing preset time.
	Turn TIME KNOB	Changes preset time. Display shows new time.
	Press SAVE	Saves new preset time in memory.
	- OR -	
	Press CLEAR	Exits time programming mode and returns to idle mode (--:--) without changing existing preset time.

FUNCTION DESIRED	DO THIS	RESULT
Timed Mixing at Low Speed	Press LOW Key	Display shows existing preset time.
	Turn TIME KNOB if desired	Changes mixing time before pressing START to start mixing.
	Press START	Starts low speed mixing. Display counts down time and mixing continues until timer reaches 00:00. At end of preset time, long tone sounds and timer returns to idle mode (--:--).
	- OR - Press CLEAR	Exits program and returns to idle mode.
	Press STOP - OR - Press CLEAR	Mixing pauses. To continue mixing press START. Exits program and returns to idle mode when mixing is paused.
Timed Mixing at High Speed	Press HIGH Key	Display shows existing preset time.
	Turn TIME KNOB if desired	Changes mixing time before pressing START to start mixing.
	Press START	Starts high speed mixing. Display counts down time and mixing continues until timer reaches 00:00. At end of preset time, long tone sounds and timer returns to idle mode (--:--).
	- OR - Press CLEAR	Exits program and returns to idle mode.
	Press STOP - OR - Press CLEAR	Mixing pauses. To continue mixing press START. Exits program and returns to idle mode when mixing is paused.
Timed Mixing at Two Speeds	Press LOW-HIGH key	Display shows existing preset time for low speed.
	Press START	Starts low speed mixing. When mixing time for low speed expires, a short tone sounds and control then automatically switches to high speed. Display counts down time and mixing continues until timer reaches 00:00. At end of mixing cycle, long tone sounds and timer returns to idle mode (--:--).
	Press STOP - OR - Press CLEAR	Mixing pauses. To continue mixing press START. Exits program and returns to idle mode when mixing is paused.

FUNCTION DESIRED	DO THIS	RESULT
Manual Mixing (Low Speed Only)	Turn TIME KNOB to set time	Display shows time.
	Press START	Starts low speed mixing.
	Press STOP	Mixing pauses. To continue mixing press START. Wait until the timer counts down to 00:00 to return to the idle mode.
	- OR -	
	Press CLEAR	Exits and returns to idle mode.
Continuous Mixing (Starts in Low Speed)	Press START without touching the keys or time knob	Starts mixing at low speed. Display counts up starting from 00:00.
	Press STOP	Stops mixing and returns to idle mode anytime.
	- OR -	
	Press HIGH key	Switches to high speed and starts count-up over from zero.

MIXING

(Reference Fig. 2)

HF MODELS

HF models have a pair of rear wheels and a front caster for ease of moving the mixer. After positioning, screw down the Stabilizing Feet on the front corners using the Hand Knobs; then tighten the jam nuts before starting. Center post design (Fig. 4) is standard on all models.

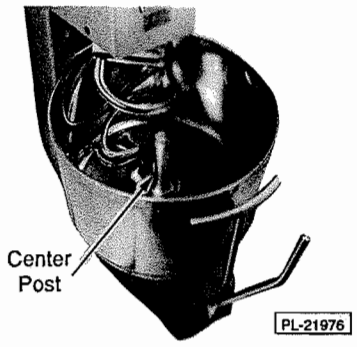


Fig. 4

HR MODELS

HR models have a removable bowl Trolley and a hinged agitator. The Mixer base rests directly on the floor with two Stabilizing Feet in front (accessible with bowl Trolley removed) which are set at the proper height to join the Trolley to the Mixer base. The Trolley has a pair of rear wheels, a front caster and steering handle to provide mobility. After rolling the Trolley close to the Mixer, rotate the Lock Arm to approximately 30° past vertical (1 o'clock) to engage the bowl gears and ensure that the Trolley is secured to the Mixer. The hinged agitator must be rotated so it is extended to the bottom of the bowl. Tighten the Locking Screw (Fig. 5) with the wrench that hangs on the control box; then tighten the jam nut. **CAUTION: To avoid damage to bowl, be sure agitator is properly tightened.** The flat beater for mixing batters (Fig. 6) is available on HR models only.

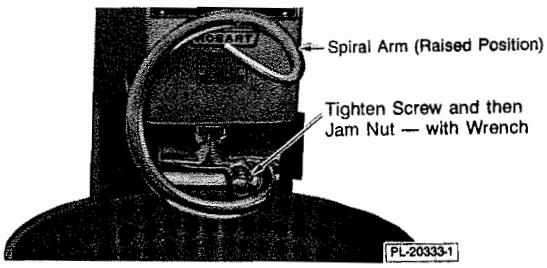


Fig. 5

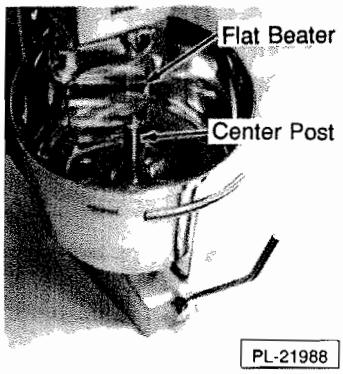


Fig. 6

BATCH MODE

Load the ingredients. Press Low-High key. Set Low speed for the amount of time it will take to blend the ingredients (approximately 3 minutes). Set High speed for the amount of time it will take to develop the dough (approximately 6 minutes). Press START. The mixer automatically changes speed at the preset time and shuts off when complete.

If you interrupt the mixing cycle, the timers do not reset. When the mixer is restarted, it will run for the remainder of the original cycle, or press CLEAR to exit the program and return to idle mode.

The Spiral Mixers are also capable of mixing very small batches: HF120, 5 pounds; HF/HR190, 8 pounds; HF/HR250, 10 pounds. When mixing small batches, counterclockwise bowl rotation can speed up blending of ingredients (low speed mixing) and neutral bowl rotation can speed up development of the dough (high speed mixing).

Adding a small amount of oil to the dough near the end of the cycle makes it easier to unload the bowl.

CAPACITY CHART — SPIRAL MIXERS

Recommended Maximum Capacities - Based on 12% flour moisture content and 70°F water temperature.

PRODUCT	MODELS					
	HF120		HF190 or HR190		HF250 or HR250	
	Flour (lb.)	Total Batch (lb.)	Flour (lb.)	Total Batch (lb.)	Flour (lb.)	Total Batch (lb.)
Bread 60% AR	100	180*	150	270*	200	350*
Whole Wheat	100	190*	150	285*	200	370*
Thin Pizza 40% AR	75	108*	100	144*	100	144*
Medium Pizza 50% AR	100	154*	125	193*	150	232*
Light Pizza 60% AR	100	165*	150	247*	200	329*
Pie Dough (slow speed)		50§		100§		150§
Bagel 50% AR	100	154*	125	193*	150	232*
Muffins		N/A		150‡		210‡
Cake Batters		N/A		215‡		275‡

NOTES:

AR stands for Absorption Ratio and is equal to the Water Weight divided by the Flour Weight expressed as percent.

* If water temperature is under 55°F or if 25% or more of the water is ice, reduce batch size by reducing flour by 25 pounds and other ingredients accordingly. Cold water and ice cause dough to be stiff and hard to mix, increasing load on mixer transmission and motor.

‡ Flat beater is available on HR models to mix batter-type product only.

§ Pie dough can be successfully mixed in slow speed with counterclockwise bowl rotation.

CLEANING

WARNING: UNPLUG MACHINE BEFORE CLEANING OR SERVICING.

After each day's use, wash the mixer bowl and agitator thoroughly with hot water and a mild soap solution and rinse with either a mild soda or vinegar solution. Rinse thoroughly with clear water and wipe dry with a soft clean cloth. Wipe exterior of machine with a clean damp cloth.

Clean under machine occasionally. To clean HF models, disconnect power cord, raise stabilizing feet and move machine.

Changing Spiral Mixing Arm / Flat Beater (Fig. 7)

Loosen large chrome Jam Nut and Locking Screw on hub of agitator shaft using wrench which hangs on control box. Raise agitator while rotating it to avoid collision with center post. Rest agitator on edge of bowl. Loosen locking nut and remove small screw and end plate from hub. Remove agitator from hub. Reinstall other agitator following instructions in reverse order.

CAUTION: Make sure all locking screws and lock nuts are secure and that agitator is fully extended to bottom of mixing bowl. Manually turn agitator 360° to make sure agitator does not collide with sides or center post of bowl.

Agitators used on spiral mixers without center post should not be used on spiral mixers with center post. Agitators used on spiral mixers with center post may be used on spiral mixers without center post.

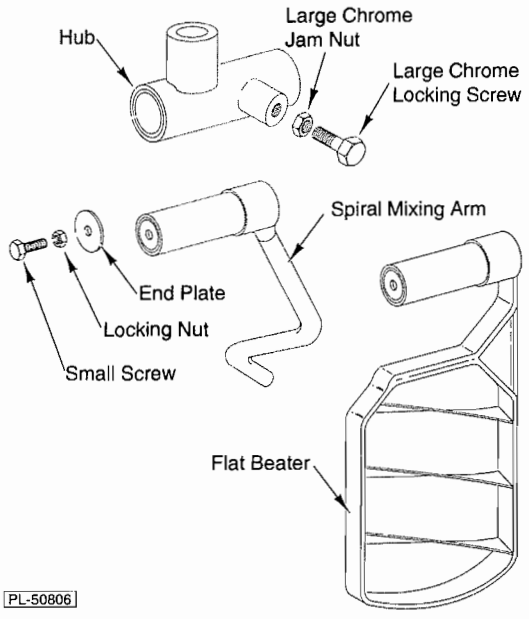


Fig. 7

MAINTENANCE

WARNING: UNPLUG MACHINE BEFORE CLEANING OR SERVICING.

LUBRICATION

The Spiral Mixers are shipped completely lubricated from the factory and require only periodic checking.

1. See that the transmission oil level is maintained by periodically checking the sight glass on the side of the mixer head while mixer is not running. Maintain oil level at indicating mark.

2. Periodically remove and fill the grease cup on the bowl drive gear to ensure that the gears which rotate the bowl are adequately lubricated. Use Texaco Marfak #0 available from Hobart.

3. Other lubrication service should be performed periodically by your Hobart Service Technician.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES
Mixer will not start	1. Check to see that bowl guard is in lowered position. 2. Check electric cord to see that it is plugged into receptacle. 3. Check electrical supply at breaker (fuse) box. HR Models Ensure that bowl Trolley is locked in position and Lock Arm is fully engaged.
Bowl drive making noise	Lubricate bowl drive gear. See MAINTENANCE section. HR Models 1. Ensure that Lock Arm is fully engaged. 2. Ensure that agitator is fully extended, Locking Screw is tightened with wrench, and then Jam Nut is tightened. Use wrench that hangs on control box.