HOBART

SERVICE

LARGE CAPACITY MIXERS

HL800 and HL1400 Series

CUSTOMER MAINTENANCE MANUAL

This manual is only intended for use by properly trained and qualified customer in-house maintenance for the limited procedures herein.

This manual is not intended to be all encompassing. You should read the maintenance or repair procedure you wish to perform, in its entirety, to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained Hobart Service technician.

Specification Sheets

Click on image below for most recent edition.

HL1400 Legacy PLUS Mixer


HOBART

HL1400 LEGACY+
140-Quart Maximum Heavy-Duty Mixer

MODEL
- HL1400 140-Quart Maximum Heavy Duty Mixer
- HL1400C 140-Quart Maximum Heavy-Duty Mixer with Maximum Security Correctional Package

STANDARD FEATURES
Features in bold are exclusive to Hobart
- PLUS System
  - VFDadvantage variable frequency drive
  - Maximum capacity overhaul protection
  - Reinforced planetary shaft system
- Triple interlock system with MagnaLock technology
- Heavy-duty 5 HP motor
- Gear transmission
- Four hand speeds, plus stir speed
- Shift-on-the-Fly™ controls
- Soft start agitation technology
- 20-minute SmartTimer™
- Automatic time recall
- Large, easy-to-reach controls
- Single point bowl installation
- Ergonomic swing-out bowl
- Power bowl lift
- Open base
- Metallic gray hybrid powder coat finish
- Stainless steel removable bowl guard
- FastStop

ACCESSORY PACKAGE
Featuring Hobart Quick Release™ Agitators
- HL1400-STD Standard Accessory Package Includes:
  - 140-quart stainless steel bowl
  - 140-quart "D" beater
  - 140-quart "ED" dough hook
  - 140-quart bowl truck

SPECIFIER STATEMENT
Specified mixer will be an NSF rated 140-quart maximum heavy-duty, all purpose mixer with Hobart PLUS System, four hand speeds plus a stir speed. Mixer has 5 HP output at the planetary shaft and gear transmission. Features include automatic time recall, swing-out bowl, Shift-on-the-Fly™ controls and power bowl lift. Mixer finished with a metallic gray hybrid powder coat and has a stainless steel bowl guard.

HL1400 LEGACY+ 140-QUART MAXIMUM HEAVY-DUTY MIXER

HL800 Legacy+ 80-Quart Maximum Heavy Duty Mixer


HOBART

HL800 LEGACY+
80-Quart Maximum Heavy-Duty Mixer

MODEL
- HL800 80-Quart Maximum Heavy-Duty Mixer
- HL800C 80-Quart Maximum Heavy-Duty Mixer with Maximum Security Correctional Package

STANDARD FEATURES
Features in bold are exclusive to Hobart
- PLUS System
  - VFDadvantage variable frequency drive
  - Maximum capacity overhaul protection
  - Reinforced planetary shaft system
- Triple interlock system with MagnaLock technology
- Heavy-duty 3 HP motor
- Gear transmission
- Four hand speeds, plus stir speed
- Shift-on-the-Fly™ controls
- Soft start agitation technology
- 20-minute SmartTimer™
- Automatic time recall
- Large, easy-to-reach controls
- Single point bowl installation
- Ergonomic swing-out bowl
- Power bowl lift
- Open base
- Metallic gray hybrid powder coat finish
- Stainless steel removable bowl guard
- FastStop

ACCESSORY PACKAGE
Featuring Hobart Quick Release™ Agitators
- HL800-STD Standard Accessory Package Includes:
  - 80-quart stainless steel bowl
  - 80-quart "D" beater
  - 80-quart "ED" dough hook
  - 80-quart bowl truck

SPECIFIER STATEMENT
Specified mixer will be an NSF rated 80-quart maximum heavy-duty, all purpose mixer with Hobart PLUS System, four hand speeds plus a stir speed. Mixer has 3 HP output at the planetary shaft and gear transmission. Features include automatic time recall, swing-out bowl, Shift-on-the-Fly™ controls and power bowl lift. Mixer finished with a metallic gray hybrid powder coat and has a stainless steel bowl guard.

HL800 LEGACY+ 80-QUART MAXIMUM HEAVY-DUTY MIXER

Tools

Standard

- Standard set of hand tools.
- Digital Multi-Meter (with sensitivity of at least 20K ohms per volt).
- Clamp-on-ammeter.

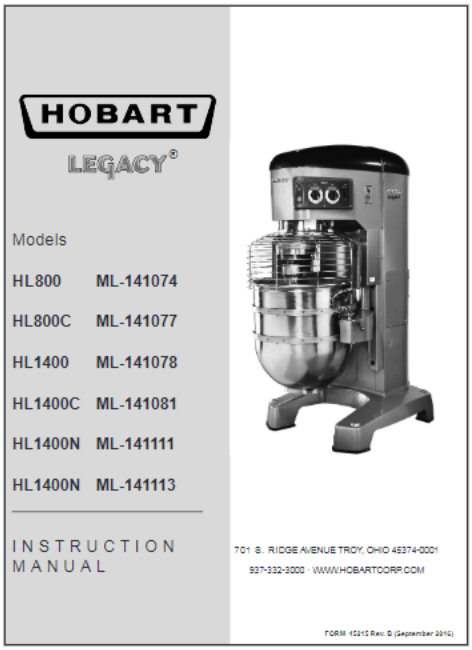
Special Tools

- Three foot straight edge.
- V-belt drive tension tester, Part No. 874356.Clamp-on ammeter.
- Torque wrenches
  - Capable of measuring up to 40 ft*lb.
  - Capable of measuring up to 115 in*lb.
- 4 each - 1/4-20 x 2" bolt - full thread.
  Transmission cover jack out screws.

Installation & Operation Manuals

Click on image below for most recent edition.

HL800 & HL400 Instruction Manual



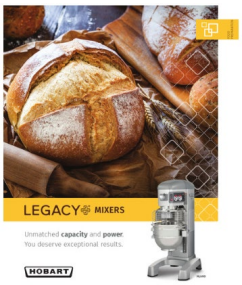
Marketing Materials

Click on image below for most recent edition.

Legacy+ Mixer Accessories & applications (F40936)

Mixer Use and Applications Handbook (F39401)

Legacy+ Mixers Brochure (F40494)



Legacy+ Mixers Four Factors Sell Sheet (F40491)

Legacy+ Mixers Four Factors Sell Sheet (F40493)

HL300 & HL400 Mixer Operator Video (F40579)

HL600 Mixer Operator Video (F40502)

Legacy+ Mixer Cleaning Video (F48697)

Click on image below for most recent edition.

[Legacy+ Mixer Troubleshooting & Maintenance Video (F48698)]

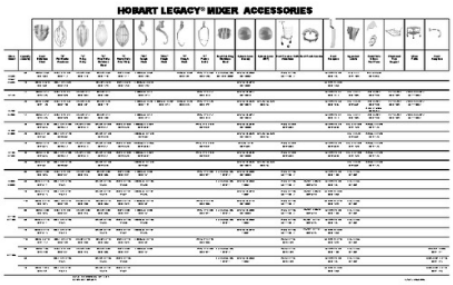
[Legacy+ Mixer Operation Video (F48695)]

[Legacy+ Mixer Operation & Safety Tips Video (F48696)]

[Machines – How They Work – HL Mixers S1 EP15 Broadcast Clip HB2300]

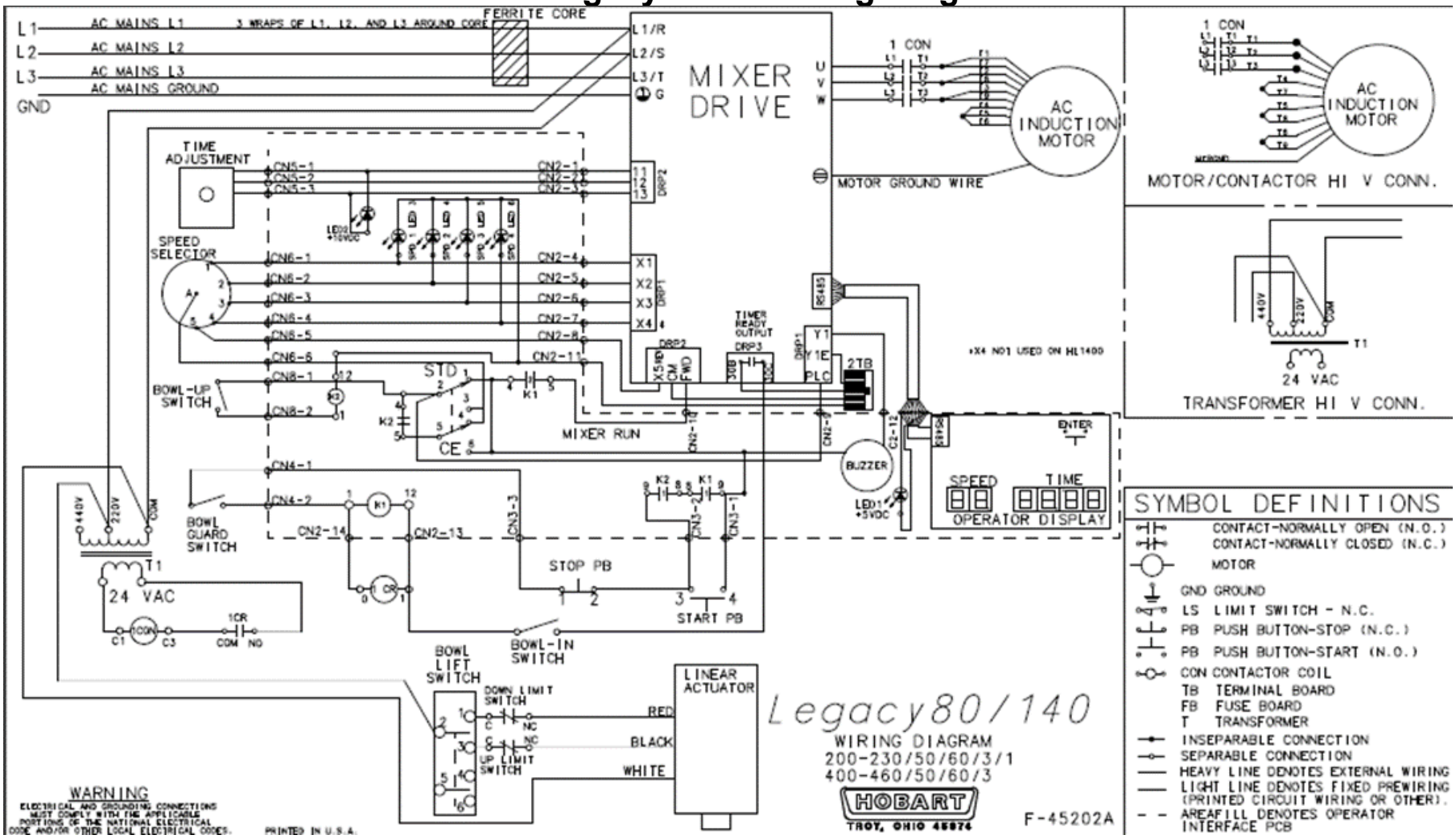
[VS9 Vegetable Slicer Mixer Attachment Operator Video (F40567)]

[Hobart Legacy Mixer Accessories Chart (F25074)]

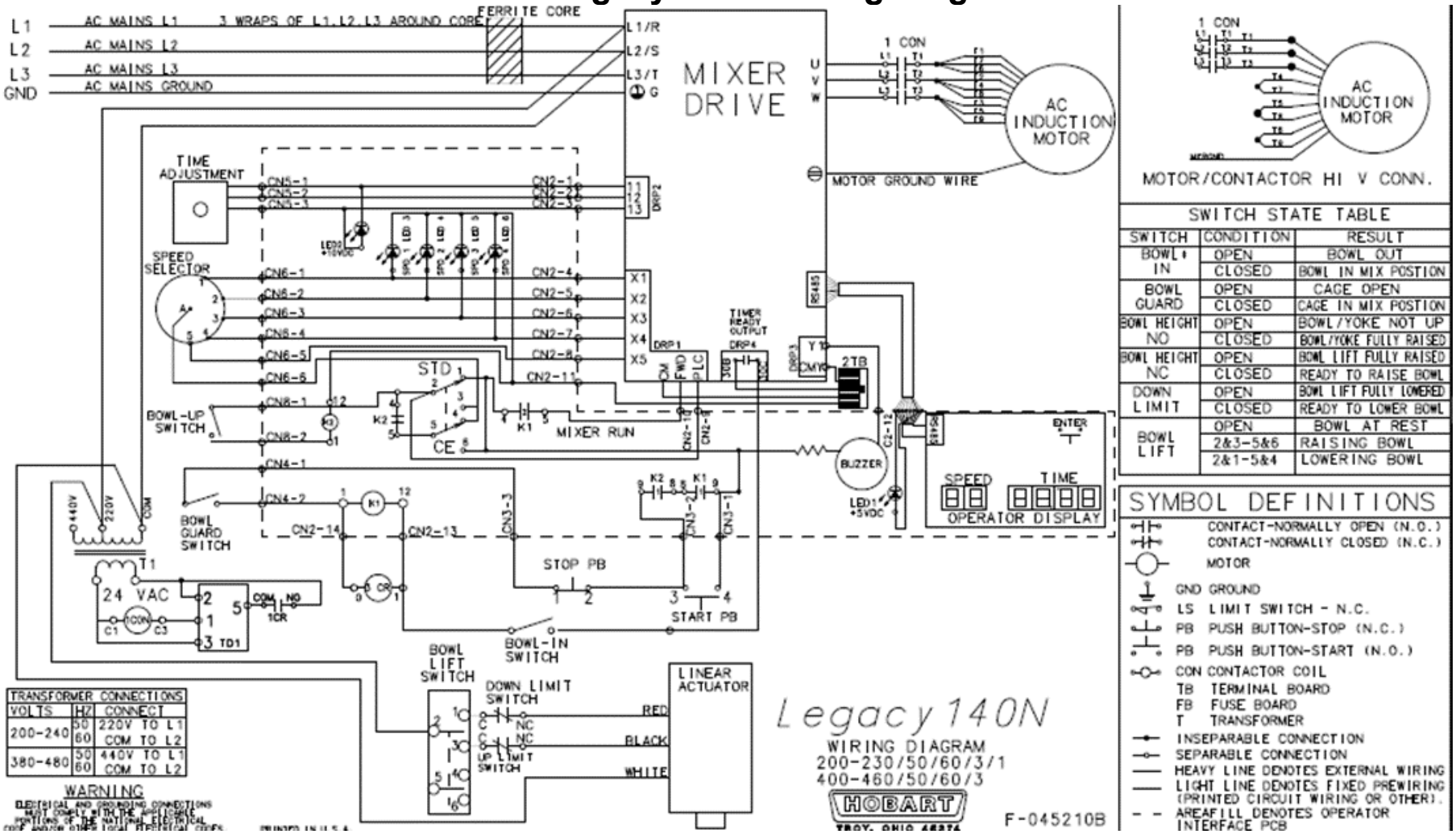


Wiring Diagrams

HL800 Legacy Mixer Wiring Diagram



HL1400 Legacy Mixer Wiring Diagram



TRANSFORMER CONNECTIONS		
VOLTS	HZ	CONNECT
200-240	50	220V TO L1
	60	COM TO L2
380-480	50	440V TO L1
	60	COM TO L2

WARNING

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

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SWITCH STATE TABLE

SWITCH	CONDITION	RESULT
BOWL IN	OPEN	BOWL OUT
	CLOSED	BOWL IN MIX POSTION
BOWL GUARD	OPEN	CAGE OPEN
	CLOSED	CAGE IN MIX POSTION
BOWL HEIGHT NO	OPEN	BOWL/YOKE NOT UP
	CLOSED	BOWL/YOKE FULLY RAISED
BOWL HEIGHT NC	OPEN	BOWL LIFT FULLY RAISED
	CLOSED	READY TO RAISE BOWL
DOWN LIMIT	OPEN	BOWL LIFT FULLY LOWERED
	CLOSED	READY TO LOWER BOWL
BOWL LIFT	OPEN	BOWL AT REST
	2&3-5&6	RAISING BOWL
	2&1-5&4	LOWERING BOWL

SYMBOL DEFINITIONS

- CONTACT-NORMALLY OPEN (N.O.)
- CONTACT-NORMALLY CLOSED (N.C.)
- MOTOR
- GND GROUND
- LS LIMIT SWITCH - N.C.
- PB PUSH BUTTON-STOP (N.C.)
- PB PUSH BUTTON-START (N.O.)
- CON CONTACTOR COIL
- TB TERMINAL BOARD
- FB FUSE BOARD
- T TRANSFORMER
- INSEPARABLE CONNECTION
- SEPARABLE CONNECTION
- HEAVY LINE DENOTES EXTERNAL WIRING
- LIGHT LINE DENOTES FIXED PREWIRING (PRINTED CIRCUIT WIRING OR OTHER).
- AREAFILL DENOTES OPERATOR INTERFACE PCB

Diagnostic Error Codes HL800 & HL1400

Note: The drive constantly monitors its operation while the mixer is running. If an error occurs, the timer control will display a error message (ER*) in the time speed display, where the ** will be the actual error number. The error codes are generated by and stored in the drive. The error message will continue until power to the mixer is cycled and the error conditions corrected. The mixer will not operate as long as an error code exists.

Error Code	Fault Description	Possible Causes	Suggested Actions
OC1 OC2 OC3	Over current (Protects motor drive)	1. Low supply voltage. 2. Momentary power interruption. 3. Batch size too large. 4. Motor drive terminals short-circuited or grounded.	1. Check supply voltage to mixer. 2. Cycle power to mixer. Wait till display goes out then reconnect power. 3. Reduce batch size. 4. Check motor lead wire connections. 5. Replace motor.
OU1 OU2 OU3	Over voltage	1. High supply voltage.	1. Check supply voltage to mixer. 2. Cycle power to mixer. Wait till display goes out then reconnect power.
LU	Under voltage	1. Low supply voltage. 2. Momentary power interruption. 3. Motor drive malfunction.	1. Check supply voltage to mixer. 2. Cycle power to mixer. Wait till display goes out then reconnect power.
OPL **or** OP1	Output phase loss to motor.	1. Lead wire or connection malfunction to motor. 2. Open circuit in motor windings. 3. Single phase motor installed; or motor not wired for 3 phase. 4. 1CR control relay malfunction. 5. Motor drive malfunction (no output voltage; or output voltage phase lost).	1. Check motor lead wire connections for tightness and continuity. If connections are loose then tighten. If a problem is found with the lead wires from motor drive to motor, replace the malfunctioning component (wiring harness; or motor). 2. Replace motor. 3. Motor drive requires a 3 phase AC motor. Verify this type of motor is installed and is wired for 3 phase. 4. Replace motor drive.

Error Code	Fault Description	Possible Causes	Suggested Actions
OH1	Over heating at heat sink. (Protects motor drive)	1. Motor drive heat sink temperature above 194°F. 2. Motor drive malfunction.	1. Disconnect power to mixer and allow motor drive to cool. 2. Check bottom cover vent for clogging. Check motor drive heat sink fins for clogging. Remove debris. 3. Reduce room ambient temperature; or move mixer to a cooler location (away from heat sources). 4. If over heating occurs repeatedly, replace motor drive.
OL1 OL2	Electronic thermal overload relay tripped. (Protects motor)	1. Mixing in Stir speed. 2. Batch size too large. 3. Low supply voltage causing low motor torque. 4. Motor malfunction. 5. Motor drive malfunction.	1. Select Speed 1 or Speed 2 for mixing. 2. Reduce batch size. 3. Check supply voltage to mixer. 4. Replace motor. 5. Replace motor drive.
OLU	Motor drive over loaded. (Protects motor drive)	1. Batch size too large. 2. Motor drive ambient temperature above 122°F.	1. Reduce batch size. 2. Check bottom vent cover for clogging. Check motor drive heat sink fins for clogging. Remove debris. 3. Reduce room ambient temperature; or move mixer to a cooler location (away from heat sources).
Er1	Memory error.	1. Momentary power interruption or power loss while motor drive was storing data.	1. Cycle power to mixer. Wait till display goes out then reconnect power. If this does not clear the alarm code, replace motor drive.

Error Code	Fault Description	Possible Causes	Suggested Actions
Er2	Timer board communication error.	1. RS485 wiring connections loose, disconnected or malfunctioning. 2. Timer board malfunction. 3. Motor drive malfunction.	1. Check plugs for proper insertion into sockets. 2. If no continuity, replace the malfunctioning harness. 3. Replace timer board (if harness OK). 4. Replace motor drive (if timer board and harness OK).
Er3	CPU error.	1. Motor drive malfunction.	1. Cycle power to mixer. Wait till display goes out then reconnect power. If this does not clear the alarm code, replace motor drive.
ErF	Data save error during under voltage.	1. Momentary power interruption or power loss while motor drive was storing data.	1. Cycle power to mixer. Wait till display goes out then reconnect power. If this does not clear the alarm code, replace motor drive.
Lin	Input phase loss.	1. Main circuit power input wires broken. 2. Terminal screws for the main circuit power input at the inverter are not tight enough. 3. Single-phase voltage applied to three phase input of inverter.	1. Measure input voltage. 2. Tighten terminal screws to the recommended torque. 3. Check the inverter type. Apply three phase power. Three phase inverter cannot be driven by single-phase power supply.

ERROR Code	Fault Description	Possible Causes	Suggested Actions
Er1	Memory error.	1. Momentary power interruption or power loss while motor drive was storing data.	1. Cycle power to mixer. Wait till display goes out then reconnect power. If this does not clear the alarm code, replace motor drive.
Er2	Timer board communication error.	1. RS485 wiring connections loose, disconnected or malfunctioning. 2. Timer board malfunction. 3. Motor drive malfunction.	1. Check plugs for proper insertion into sockets. 2. If no continuity, replace the malfunctioning harness. 3. Replace timer board (if harness OK). 4. Replace motor drive (if timer board and harness OK).
Er3	CPU error.	1. Motor drive malfunction.	1. Cycle power to mixer. Wait till display goes out then reconnect power. If this does not clear the alarm code, replace motor drive.
ErF	Data save error during under voltage.	1. Momentary power interruption or power loss while motor drive was storing data.	1.Cycle power to mixer. Wait till display goes out then reconnect power. If this does not clear the alarm code, replace motor drive.
Lin	Input phase loss.	1. Main circuit power input wires broken. 2. Terminal screws for the main circuit power input at the inverter are not tight enough. 3. Single-phase voltage applied to three phase input of inverter.	1. Measure input voltage. 2. Tighten terminal screws to the recommended torque. 3. Check the inverter type. Apply three phase power. Three phase inverter cannot be driven by single-phase power supply.

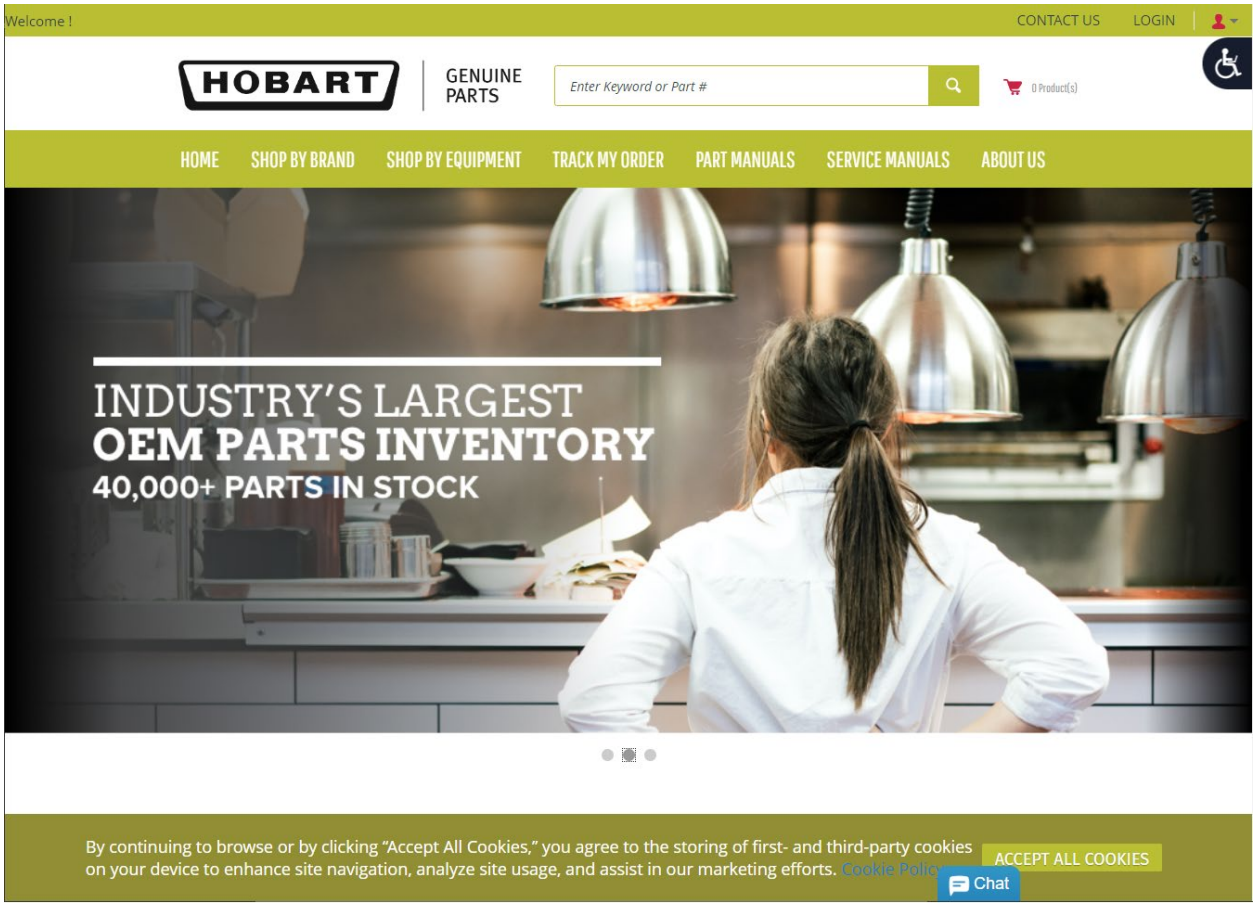
Troubleshooting (HL800 & HL1400)

Symptom	Possible Causes
Mixer will not run (no timer board display).	1. No voltage to machine. 2. Timer board malfunction. 3. Wiring harness connections loose or malfunction. 4. Multi drive malfunction.
Mixer will not run (display on).	1. 1LS bowl guard switch open or malfunction. 2. 3LS bowl in switch open or malfunction. 3. Timer board malfunction. 4. 1PB start switch inoperative. 5. 2PB stop switch malfunction. 6. 1CR control relay malfunction. 7. Multi drive malfunction. 8. Motor malfunction 9. Wiring harness connections loose or malfunction.
Mixer will not run, but timer board counts up/down when start button is pushed.	1. Timer board malfunction. 2. 1CON inoperative. 3. T1 malfunction. 4. Wiring harness connections loose or malfunction. 5. Multi drive malfunction. 6. Motor malfunction.
Mixer runs, but stops when 1PB start switch is released.	1. Bowl up switch open or inoperative. 2. Timer board malfunction.
Mixer runs continuously, but will stop when 2PB stop switch is held IN, bowl guard is opened, bowl is lowered or bowl in switch is opened. In count down mode, timer goes to zero, beeps andresets to default time. Cycle repeats continuously.	1. 1PB Start Switch malfunction. 2. Timer board malfunction.
Mixer motor hums and does not run.	1. Supply voltage out of tolerance. 2. Multi drive malfunction. 3. Motor malfunction. 4. Transmission malfunction. 5. Batch size too large. 6. Wiring incorrect from motor drive to motor.
Mixer shuts off during operation.	1. Supply voltage out of tolerance. 2. Batch size too large. 3. Wiring incorrect from multi drive to motor. 4. Motor overheated or malfunction. 5. Timer board malfunction. 6. 2LS bowl up switch open or malfunction. 7. 1LS bowl guard switch open or malfunction. 8. 3LS bowl in switch open or malfunction.

Symptom	Possible Causes
Mixer lacks power.	1. Supply voltage out of tolerance. 2. Batch size too large. 3. Wiring incorrect from motor drive to motor. 4. Multi drive malfunction. 5. Motor malfunction. 6. Transmission malfunction.
Mixer motor runs backwards.	1. Wiring incorrect from motor drive to motor. 2. Multi drive malfunction. 3. Output loss to motor.
Mixer noisy.	1. Worn or loose belt. 2. Transmission gears worn (improperly meshing), low on grease or damaged. 3. Planetary gears worn or low on lubricant. 4. Attachment hub bevel gear worn. 5. Worn bearings (agitator shaft, planetary shaft or input shaft). 6. Agitator shaft low on grease. 7. Slideways out of adjustment. 8. Driven pulley out of adjustment. 9. Motor malfunction. 10. Wiring incorrect from motor drive to motor. 11. Motor drive malfunction.
Mixer motor runs, but planetary does not rotate.	1. Belt loose or malfunctioning. 2. Transmission key or gear malfunction. 3. Planetary key or gear malfunction.
Mixer planetary operates, but attachment hub does not rotate.	1. Bevel gear or key malfunction. 2. Attachment bevel pinion malfunction. 3. Bevel gear and pinion out of adjustment.
Not mixing ingredients at bottom of bowl.	1. Bowl to beater clearance set incorrectly. 2. Bowl height switch actuator arm bent. 3. Batch recipe incorrect. 4. Incorrect agitator for recipe.
Mixer appears to run in wrong speed.	1. Incorrect speed selector switch or switch malfunction. 2. Mixer drive terminal connections loose, wired incorrectly or wiring harness malfunction. 3. Mixer drive incorrect or malfunctioning. 4. Motor malfunction.
Mixer runs in Stir only.	1. Bowl up reed switch not closed. 2. Check magnet position. 3. Check bowl up reed switch operation. 4. Magnet not strong enough.

Symptom	Possible Causes
Mixer will not stir with bowl down.	1. STD/CE switch improperly assigned to CE. Place switch in STD. 2. Timer board malfunction.
Timer board problems: Can not select Hold Mode (continuous mixing with count up timing). Timer display does not count up. Timer display does not count down. Timer display blank. Segment missing from timer display. Mixer will not shut off at end of timed cycle.	1. Timer board malfunction (time adjustment potentiometer; or other problems with the board). 2. Wiring harness connections from motor drive to timer board are disconnected or malfunctioning. 3. Motor drive malfunction.
Can not adjust time.	1. Time selector inoperative. 2. Timer board malfunction. 3. Wiring connections loose or malfunctioning.
Oil leak.	1. Transmission planetary seal inoperative. 2. Attachment hub not sealed properly to transmission case. 3. Drain plug not sealed or installed improperly.
Bowl lift will not raise or stalls on the way up with load.	1. Bowl is overloaded. 2. Bowl up limit switch malfunction. 3. Bowl lift switch inoperative. 4. Slideways are adjusted too tight or no lubricant. 5. Linear actuator malfunction.
Bowl lift will not lower or makes a banging sound when lowered.	1. Bowl down limit switch malfunction. 2. Bowl lift switch inoperative. 3. Slideways are adjusted too tight or no lubricant. 4. Linear actuator malfunction.
Bowl support drifts down after bowl lift switch is released.	1. Actuator brake circuit malfunction.
Bowl lock frozen.	1. Contaminates between pin or handle and bushing. 2. Mechanical malfunction.

Order parts by clicking on image below to reach our Hobart Service Parts Store.



Parts Catalogs

Click on image below for most recent edition.

HL800 and HL1400 Series Legacy Mixer Replacement Parts


HOBART

CATALOG OF
REPLACEMENT
PARTS

HL800 & HL1400 SERIES LEGACY MIXER

ML-134354	HL800
ML-134355	HL800C
ML-134334	HL1400
ML-134337	HL1400C
ML-134361	HL1400N

PRIOR MLS COVERED IN THIS MANUAL

ML-134300	HL1400
ML-134306	HL800
ML-134322	HL800C

A product of HOBART 701 S. RIDGE AVENUE TROY, OHIO 45374-0001
FORM 42119 Rev. R (January 2022)

HL800 HL1400 Series Legacy Mixer (Multi Drive) Parts Catalog


HOBART

CATALOG OF
REPLACEMENT
PARTS

HL800 & HL1400 SERIES LEGACY MIXER (Multi Drive)

ML-141074	HL800
ML-141077	HL800C
ML-141078	HL1400
ML-141081	HL1400C
ML-141111	HL1400N
ML-141113	HL1400N
ML-141114	HL1400N

PRIOR MLS COVERED IN THIS CATALOG

ML-141082	HL1400N
ML-141084	HL1400N
ML-141102	HL1400N

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FORM 42272 Rev. J (January 2022)

HL800 HL1400 (CE) (AUS) Series Mixer Parts Catalog


HOBART

CATALOG OF
REPLACEMENT
PARTS

HL800CE/AUS & HL1400CE/AUS SERIES LEGACY MIXER

ML-141043	HL800CE
ML-141045	HL800AUS
ML-141044	HL1400CE
ML-141050	HL1400AUS
ML-141051	HL1400N

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FORM 42253 Rev. C (May 2021)