

MAXXAIR™ MSX Series

AUTOMOTIVE REFRIGERANT MANAGEMENT CENTERS

Recover, Recycle & Recharge A/C Systems
In Passenger Vehicles, Light Trucks,
Large-Scale Vehicles and Heavy-Duty Equipment



Models MSX134, MSX1234, MSX3030 and MXHD
For use with R-134a and R-1234yf Refrigerants

OWNER'S MANUAL (English)

Latest updates: www.cpsproducts.com

TO BE OPERATED BY QUALIFIED PERSONNEL ONLY

Contents

General Safety Instructions	4	Operation	22
Product Registration	5	Refrigerant Recovery.....	22
Agency Approvals, Standards, Patents	5	A/C System Evacuation.....	23
Overview	5	Refrigerant Charging	24
Key Features/Benefits	6	Full Cycle	26
Optional Accessories.....	6	Refrigerant Tank Refill	27
Specifications	7	Tank-to-Tank Recycle (MXHD only)	28
MSX Series Machine	7	Maintenance	29
Vacuum Pump.....	7	Filter/Dryer	29
Refrigerant Scale	7	Vacuum Pump Oil Change Frequency	31
Refrigerant Tank	8	Oil Change Procedure	31
Machine Layout.....	9	Premium Vacuum Pump Oil	31
Quick Start Guide	10	Refrigerant Change	32
Overview, Primary Touch Screen Keys	11	Refrigerant Charging Scale	34
Home Screen	11	Pressure Transducer	35
Print Key.....	12	Tare (Zero).....	35
Help Menu	12	Calibrate.....	36
Machine Upkeep	13	Automatic Air Purge	37
Setup Function	13	Diagnostics.....	38
Maintenance	13	Field Software Upgrade	38
Hybrid Vehicles	14	Touch Screen Display Calibration.....	39
Setup	15	Car System Health Mode	40
Language.....	15	Corded Temperature Probe	40
Units of Measure.....	15	A/C Database for North American Vehicles	42
Tank and Refrigerant Weights	16	Flush Refrigerant Hoses.....	43
Job Tracker	17	Job Tracker	43
Set Date or Time	17	Appendix (Complete Icon Library)	44
Wireless Device Setup	18	Error Codes	46
Online Registration.....	20	Identifier Codes.....	46
SAE / Global Standards.....	21	Replacement Parts	47
		MAXXAIR™ Warranty	47
		A/C Database End-User License Agreement.....	48
		CPS Company Locations	49

General Safety Instructions

ONLY QUALIFIED SERVICE PERSONNEL SHOULD OPERATE THIS MACHINE.

Most states, countries, etc., may require the user to be licensed. Please check with your local government agency.

DANGER: This unit's recovery tank contains liquid refrigerant. Overfilling of a recovery tank may cause a violent explosion resulting in severe injury or even death. Do not disable the overfill safety features. Always make sure the correct tank is on the scale.

DANGER: Only use the specified recovery tanks provided with this unit. See your distributor for replacement tanks.

DANGER: Avoid breathing refrigerant vapors and lubricant vapor or mist. Breathing high concentration levels may cause heart arrhythmia, loss of consciousness, or even cause suffocation.

DANGER: Electrical shock hazard! Always disconnect power source when servicing this equipment.

DANGER: Do not use compressed air to pressure test or leak test the MSX unit or vehicle air conditioning system. Mixtures of air and refrigerant are combustible at elevated pressures. These mixtures are potentially dangerous and may result in fire or explosion causing personal injury or property damage.

CAUTION: All hoses may contain liquid refrigerant under pressure. Contact with refrigerant may cause frostbite or other related injuries. Wear proper personal protective equipment such as safety goggles and gloves. When disconnecting any hose, please use extreme caution.

CAUTION: Exposure to refrigerant vapors may irritate eyes, nose, throat, and skin. Please read the manufacturers Material Safety Data Sheet for further safety information on refrigerants and lubricants.

CAUTION: To reduce the risk of fire, avoid the use of extension cords thinner than NO. 16 awg. (1,5mm²). The following table references extension cord wire size vs. maximum length:

EXTENSION CORD			
(Imperial)		(Metric)	
Gauge (awg)	Length (Ft)	Gauge (mm ²)	Length (m)
16	10	1.5	3
14	20	2.5	6.1
12	25	4	7.6

CAUTION: Do not use this equipment in the vicinity of spilled or open containers of gasoline or other flammable substances. Make certain that all safety devices are functioning properly before operating the equipment.

CAUTION: This equipment should be used in locations with mechanical ventilation that provides as least 4 air changes per hour.

CAUTION: RISK OF INJURY, the equipment should only be operated by certified personnel.

CAUTION: Use only CPS certified hose assemblies on this unit. The hose assemblies are made to proper length, contain shut-offs where required and have direct affect on the proper operation of this equipment.

CAUTION: R-134a is an A1 non-flammable refrigerant. Use in well ventilated areas. Minimize leakage from the unit. Periodically check MSX machine for leaks.

CAUTION: R-1234yf is an A2L refrigerant which is mildly flammable refrigerant. Use in well ventilated areas. Minimize leakage from the unit. Periodically check MSX3030 machine for leaks.

General Safety Instructions (continued)



High Pressure Alert

The MSX will alert the user should a high pressure condition exist on the outlet side of the compressor. When such a condition is detected, the compressor will turn **off** and won't restart until the high pressure condition is remedied. If this occurs, check to ensure that tank valves and hose ball valves running to the tank and filters are **open**. If all valves are open, contact CPS Technical Support to determine the cause of the alarm.



Tank Overfill Limit

The MSX Series' 30 lb internal storage tank is designed to contain a maximum of 20.96 Lbs (9.52 Kg) of refrigerant. If this amount is exceeded, the user will be alerted and system operations will be halted. Before normal operation can continue, the overfill condition must be remedied by moving refrigerant from the tank to another storage tank or into a vehicle AC system. The charge function may be used to transfer internally stored refrigerant to an external storage facility.

Product Registration-Activation

Use the touch-screen display to step through the activation process to register the MSX Refrigerant Management Machine for the MAXXAIR™ two-year product warranty. Please contact us if have any technical issues regarding the registration process.

Agency Approvals, Standards, Patents

UL 1963 EEI Issued: 2013/10/11 Ed: 4 Refrigerant Recovery/Recycling Equipment

CSA C22.2 120 DEI Issued: 2013/03/01 Ed: 4 Refrigeration Equipment (R2018)

This machine is covered under US Patent 8,082,750.

Overview

The MSX Series Refrigerant Management Centers are for use with both R-134a and R-1234yf refrigerants and have been designed for automotive technicians to easily recover, recycle, evacuate and recharge air conditioning systems in passenger vehicles and light trucks.

- Integrated oil injection on Selected models
- Improved valve technology increase speed of service by x% compared to competitive units (validated by Engineering)
- Oilless compressor- decreases recovery time and enables more thorough internal flush
- Upgradable to 50lb tank
- Bluetooth and Wi-Fi on board
- 7" color Touch screen with enhanced navigation
- Wireless printing enabled
- Optimized for UView® A/C Oils

Key Features/Benefits

Features	Benefits
7" Color Display, With Touch-Screen Icon	User-friendly icons allow fast, easy selection of recovery, evacuation, charge, full cycle and tank refill functions, or setup and maintenance menus.
Vehicle A/C System Database	MSX Series machines include a database of refrigerants and refrigerant oil for most vehicles sold in North America since 1994.
Low and High Side "Barrier" Service Hoses & Couplings	The included barrier hoses and couplings minimize the loss of expensive refrigerant, which can also harm the atmosphere.
Filter/Dryer	The installed filter-dryer filters the R-1234yf refrigerant inside the vehicle's A/C system, and absorbs any system contaminants which can reduce compressor life.
Temperature Probe Accessory	MSX Machines include a corded probe (#TMX2P) for measuring temperature in AC vents.
1 Lb (454 Gm) Check Weight	For accurately calibrating the installed refrigerant charging scale.
30 Lb Refrigerant Tank	The DOT certified tank is designed to safely recover, charge and transport refrigerant used with MSX Series machines. Available in single cylinders or in pallet quantities.
Wi-Fi Capable	MSX Series machines can be connected to other Wi-Fi devices or printers and job reports can be e-mailed directly from the machine.
MAXXAIR™ Warranty	Two-Year Full Coverage Warranty

Optional Accessories



#MXXC Dust Cover
Fits any CPS MX series machine.



#CRX400T 50 Lb Refrigerant Tank
Available from CPS as individual tanks, or in pallet quantities



#CCXHB Heater Blanket
This accessory can be applied to the refrigerant tank to speed up charging during colder weather.

Not Included (Shop Must Purchase)

- Refrigerants (R-134a, R-1234yf)
- Refrigerant oil/dye injection system
- Optional Driverless Bluetooth Thermal Printer can be purchased online; Example: Model PT-210 or similar

Specifications

MSX Series Machine

Power	115V 60Hz	
Compressor	2/3 HP Twin Cylinder Oil-less	
Gauges	3.5" Low side, 30 in/Hg to 250 psi; High Side, 0 to 600 psi	
Hoses	10 Ft. (3.0 m), Barrier Type	
Refrigerant	For Use With R-1234yf Only	
ASHRAE Refrigerant Code	A1	
Maximum Recovery Rate	Up To 1 Lb (0.453 kg) per minute	
Storage Tank	MSX134, MSX1234, MSX3030	1 x 30 lb DOT tank (specifications on page 8)
	MXHD	1 x 50 lb DOT tank (specifications on page 8)
Display	7" Touch Screen with 256 color graphical display	
Construction	Sheet metal frame with molded plastic panels. 1 piece handlebar, 4" front casters and 10" foam-filled rear tires for exceptional maneuverability	
Operating Temperature Range	50°F to 122°F (10°C to 50°C)	
Operating Humidity Range	0% to 95% (Non-Condensing)	
Dimensions (H x W x D)	43.6" x 22.6" x 28.9" (1.1 x 0.57 x 0.28 m)	
Weight (Without Packaging)	Gross Weight: 208 Lbs (With Packaging)	
Warranty (Maxxair™ 1-2-3)	See Page 51	

Vacuum Pump

Stage	2
Maximum Free Air Displacement	2 CFM at 60 Hz / 48l/m @ 50 Hz
Motor Size (HP), RPM @ 50/60Hz	1/3 HP (@1440 RPM/50 Hz Or 1720 RPM/60 Hz)
Voltage, Watts, Amps	110~120VAC Or 220VAC @50/60 Hz
Ignition Proof Construction	Meets ANSI 12.12.1
Ultimate Vacuum	10 Microns
Refrigerant Class	A1, A2
Operating Temperature Range	32°F to 125°F (0°C to 52°C)
Storage Temperature Range	32 F to 104 F (0 C to 40 C)
Pro-Set® Vacuum Pump Oil Capacity	11 oz (330 ml)
Intake Fittings	1/4" & 3/8" SAE Male, ACME 1/2"
High Side Gauge (Analog)	0 ~ 550 psi, (38 bar ~ bar), 3792 ~ kPa
Low Side Gauge (Analog)	0 ~ 350 psi, (0 ~ 24 bar), 0 ~ 2400 kPa)
Motor Thermally Protected	Yes

Refrigerant Scale

Tare (Empty) Weight Mode	Yes
Units (Weight) Readout	lb & oz, or kg & gm
Weight Accuracy	0.015% of Reading [or ± 0.25 oz (10 g) whichever >]
Display Resolution (Increments)	0.25 Oz (10 g)
Platform Dimensions	8.75" x 8.75" (22.3 x 22.3 cm)
Overload Protection	Mechanical (Internal Overload Stop)
Calibrated To NIST Standards	Yes
Declaration Of Conformity	EN 61326-1:2013, CISPR 11:2009/A1:2010

Specifications (continued)

Refrigerant Tank

(Industry Standard Specifications)															
	Weight of Empty Tank		Tank Water Capacity		Max. Refrigerant Weight (80% Of Water Capacity)		Total Weight (Tank & Refrigerant)		Tank Foot Ring Diameter		Tank Outside Diameter		Tank Height		Max. Pressure Rating
	lb	kg	lb	kg	lb	kg	lb	kg	in	mm	in	mm	in	mm	psig (bar)
CRX430T 30 Lb (13.60 kg) Included	17.5	7.9	26.2*	11.9*	20.96*	9.52*	38.46	17.42	7.8	198.1	9.5	241.3	18.1	459.7	400 (27.57)
Optional Accessory: CRX400T 50 Lb (22.7 kg)	28.3	12.8	47.4	21.5	37.92*	17.2*	66.22	30.0	8	203.2	12.5	317.5	19.75	501.7	400 (27.57)

*Maximum weight of refrigerant that should be recovered

CPS® Refrigerant Recovery Tanks

CPS® Refrigerant Recovery Tanks are DOT certified for safe refrigerant storage, featuring a refrigerant-compatible sealant for secure, leak-resistant connections. They include an auxiliary port for an optional overfill sensor, and are both liquid and vapor UL listed for comprehensive safety. The powder-coated Y-valve ensures robust rust protection, and with 1/4" SAE Male fittings, these tanks meet high-quality standards in refrigerant handling and storage.

Availability

- CRX430T..... 30 lb tank..... (Factory installed)
- CRX400TB... 30 lb tank 40/Pallet (Optional)
- CRX400T..... 50 lb tank (Optional)
- CRX400TB... 50 lb tank 24/Pallet (Optional)



CRX430T (Factory installed)



CRX400T (Optional 50 lb Size Tank)

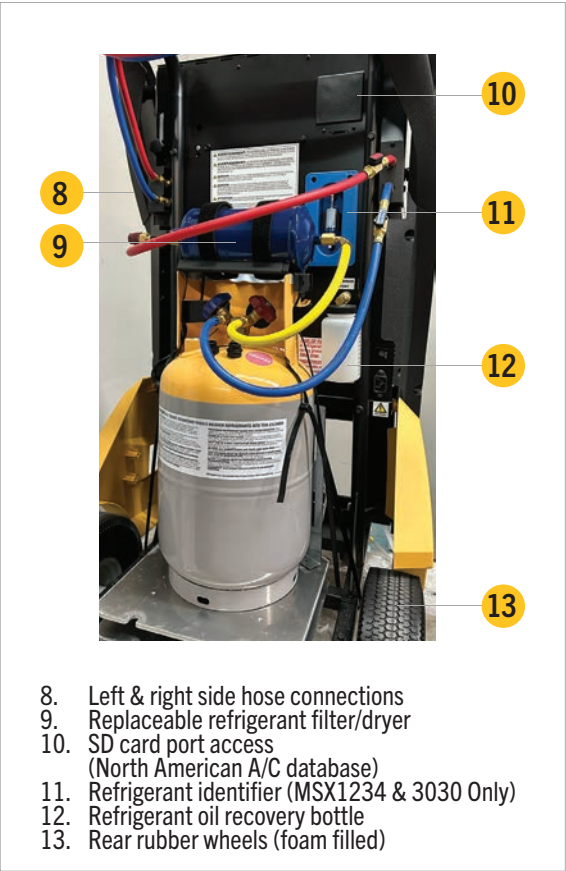
Refrigerant Cylinder Heater Blanket

Part number	AR27XHB115-1
Voltage (Hz)	120 VAC (50/60 Hz)
Watts	340 W
Amps	2.8
For Cylinder Sizes	From 8" (20 cm) to 14" (35 cm) Diameter Tanks
Control (Overheat Protection)	Automatic Thermal Cutoff (Encapsulated Thermostat)
Minimum Surface Temperature Of Tank	115°F (46°C)
Maximum Thermostat Temperature	130°F (55°C)
Power Cord Length	20" (0.50 m)
Adjustable Velcro Strap Max Length	19" (0.48 m)
Heater Blanket Width	3" (76 mm)
Heater Blanket Length	24" (.60 m)
Heater Blanket Color	Dark Orange
Electrical Connection Type	IEC320 C15 Female Connector



AR27XHB115-1 (Optional Refrigerant Cylinder Heater Blanket)

Machine Layout



Quick Start Guide

Note: Not all screens are shown.

1. Remove the protective packaging between the storage tank and the scale.

CAUTION: BEFORE TURNING THE MACHINE ON, ENSURE THERE ARE NO HOSES CONNECTED TO VEHICLE.

2. The vacuum pump on the MSX Series machine contains vacuum pump oil (factory filled). Check the sight glass on the vacuum pump to ensure oil level is between **MAX** and **MIN** lines.
3. Plug the MSX Series power cord into a proper power source.
4. On the front control panel, push the **POWER** button. A blue light will turn **ON**.
5. Machine will go through the following internal status check (not all screens are shown)



INITIAL START-UP SCREEN

Initial start-up screen (shows software version number)

Service hoses should not be connected to vehicle.



INITIAL START-UP SCREEN

Ensure service hoses are not connected to vehicle.



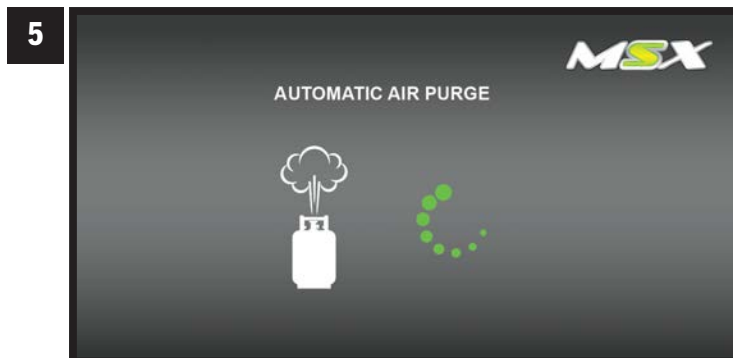
INITIAL START-UP SCREEN

Checking DOA chamber (for oil separation) pressure.



INITIAL START-UP SCREEN

Acceptable distillation chamber pressure.



INITIAL START-UP SCREEN

Automatic air purge (if needed).



INITIAL START-UP SCREEN

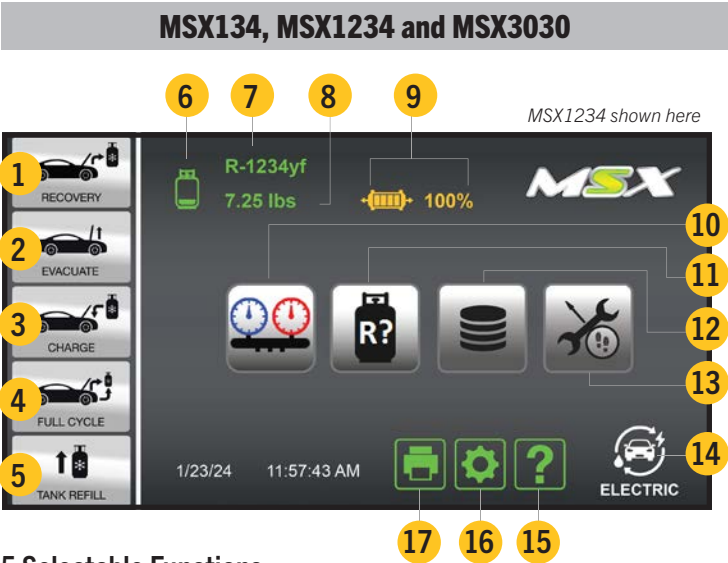
Once automatic air purge completes, **Home** screen will reappear. Connect service hoses to the machine and install the included oil recovery bottle. Machine can now be operated by using the color touch screen.

Overview, Primary Touch Screen Keys

Home Screen

MSX Series machines feature a 7” (17.8 cm), color, touch-screen LCD display from which all machine functions or settings can be accessed.

Note: All models in the MSX series share similar operation and functionality, with a few model-specific exceptions. Throughout this manual, visual examples and figures will primarily reference the MSX1234 model. Differences unique to other models, including the Tank-to-Tank Recycle function exclusive to the MXHD heavy-duty unit, will be clearly noted where applicable.

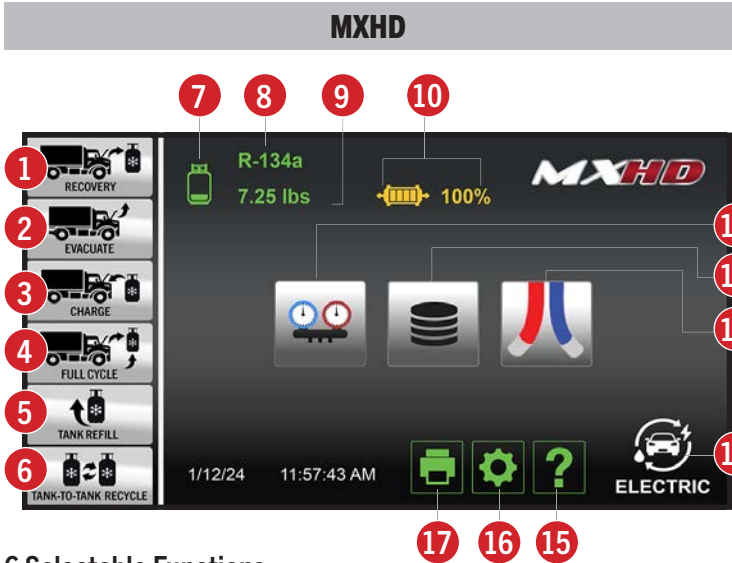


5 Selectable Functions

- 1. Refrigerant Recovery pg 21
- 2. A/C System Evacuation..... pg 22
- 3. Refrigerant Charge..... pg 23
- 4. Full Cycle (Recovery,Evacuate & Recharge)..... pg 25
- 5. Refrigerant Tank Refill..... pg 26

Touch Keys and Information Icons

- 6. Weight of Refrigerant In Tank (4 Segment Icon)
- 7. Refrigerant Type In Tank
- 8. Weight of Refrigerant In Tank
- 9. Filter Dryer Life (4 Segment Icon) pg 28
- 10. Car System Health Mode pg 39
- 11. Refrigerant Identification Key
- 12. A/C Data Base & End User License Agreement pg 48
- 13. Job Tracker..... pg 43
- 14. Hybrid Vehicle (select models only)..... pg 13
- 15. Help Menu..... pg 11
- 16. Machine Upkeep..... pg 12
- 17. Print..... pg 11



6 Selectable Functions

- 1. Refrigerant Recovery pg 21
- 2. A/C System Evacuation..... pg 22
- 3. Refrigerant Charge..... pg 23
- 4. Full Cycle (Recovery,Evacuate & Recharge)..... pg 25
- 5. Refrigerant Tank Refill..... pg 26
- 6. Tank-to-Tank Recycle pg 28

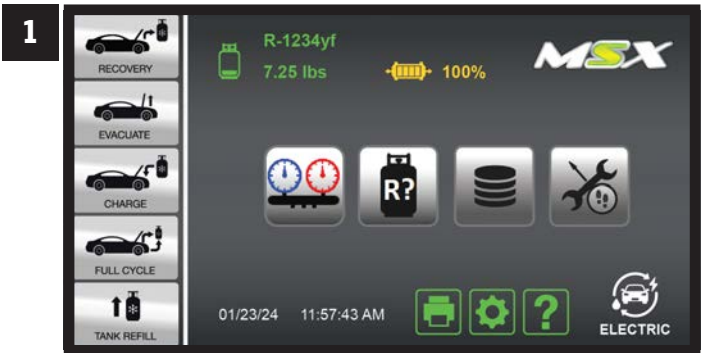
Touch Keys and Information Icons

- 7. Weight of Refrigerant In Tank (4 Segment Icon)
- 8. Refrigerant Type In Tank
- 9. Weight of Refrigerant In Tank
- 10. Filter Dryer Life (4 Segment Icon) pg 28
- 11. Car System Health Mode pg 39
- 12. A/C Data Base & End User License Agreement pg 48
- 13. Flush Refrigerant Hoses pg 43
- 14. Hybrid Vehicle..... pg 13
- 15. Help Menu..... pg 11
- 16. Machine Upkeep..... pg 12
- 17. Print..... pg 11


Overview, Primary Touch Screen Keys (continued)

Print Key

The **Print** function is accessed from the **Home** screen. Use the MSX Bluetooth low energy or Wi-Fi functions to connect to a wireless printer. Bluetooth range is generally up to 30 ft., while Wi-Fi is generally up to 150 ft (both direct line-of-sight).

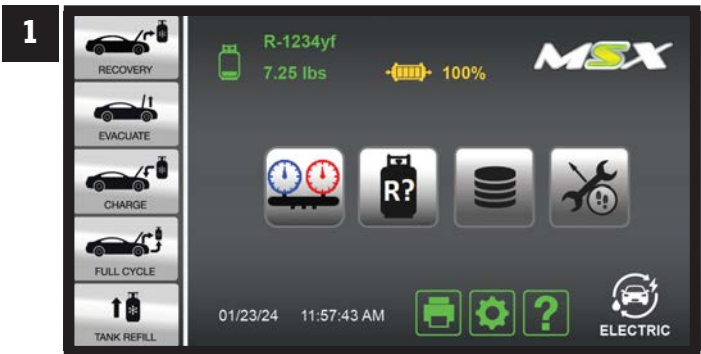


HOME

Touch  to receive a printed copy showing results of the **LAST function** performed

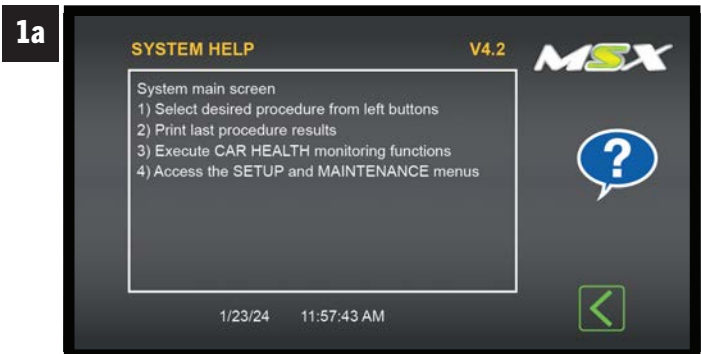
Help Menu

The **Help** menu is accessed from the **Home** screen.




HOME

Touch  to enter the **Help** Menu



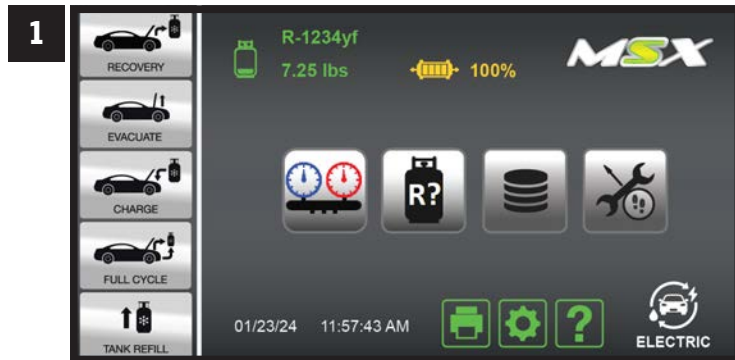
HOME ► HELP MENU

Firmware Version is shown at upper right. Touch  to return to the **Home** screen

Overview, Primary Touch Screen Keys (continued)

Machine Upkeep

The *Machine Upkeep* screen is accessed from the *Home* screen. It has two functions; *Setup Function* and *Maintenance*.



HOME

Touch  to access the *Machine Upkeep* screen.



HOME ► MACHINE UPKEEP

The serial number and firmware version are indicated.

Touch  to enter the *Setup Function*












Touch  to enter the *Maintenance Menu*

Touch  to return to the *Home* screen



HOME ► MACHINE UPKEEP ► SETUP FUNCTION











Setup Function

-  Language
-  Units of measure
-  Tank/refrigerant weight
-  Job tracker
-  Wireless setup
-  Set time or date
-  Shop information
-  SAE (or global standards)
-  Previous screen  Cancel  Next screen

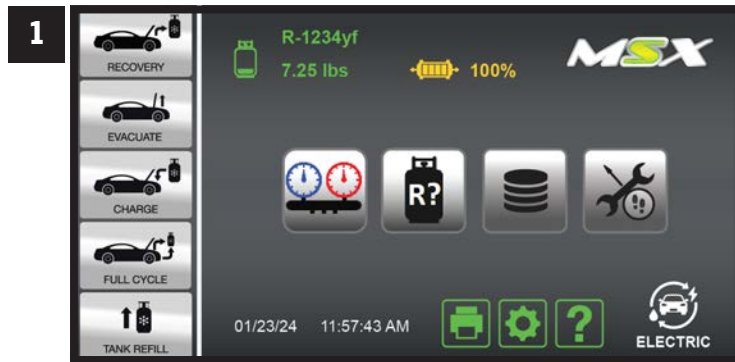


HOME ► MACHINE UPKEEP ► MAINTENANCE


Maintenance

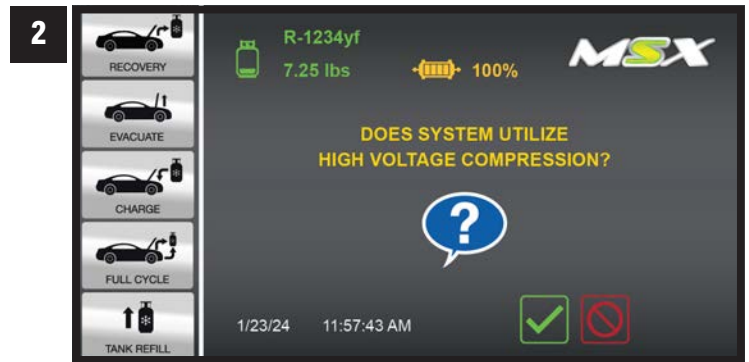
-  Filter change
-  Scale maintenance modes
-  Pressure transducer
-  Automatic air purge
-  Valves and controls
-  Software upgrade
-  Change tanks
-  Previous screen  Cancel  Next screen

Hybrid Vehicles (On Select models, not available on machines with oil injection)




HOME

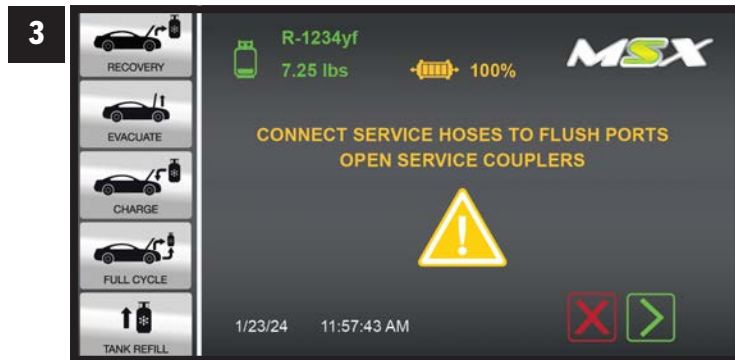
Touch  if the vehicle is hybrid to flush service hoses.



HOME ► HYBRID VEHICLE

Touch  if vehicle uses a high voltage compressor.

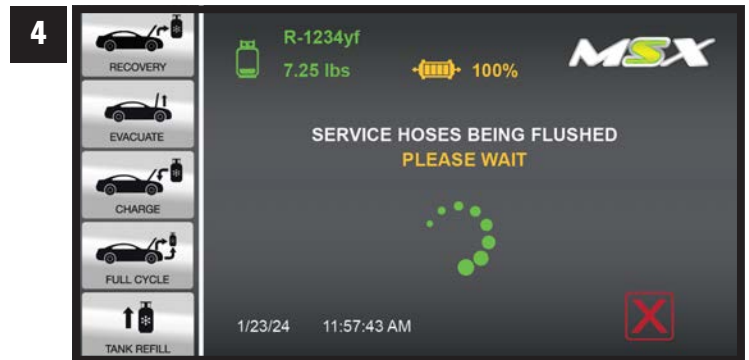
Touch  to return to *Home* screen.



HOME ► HYBRID VEHICLE

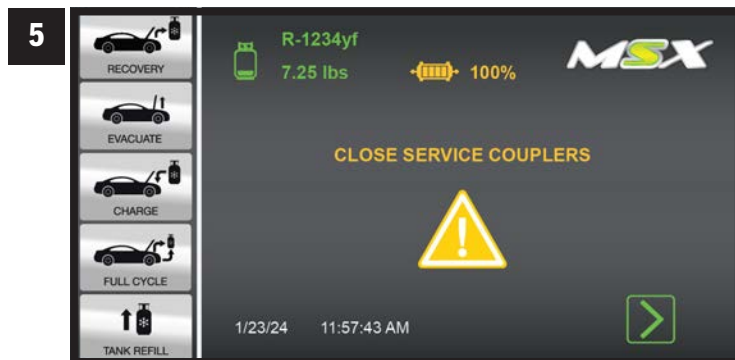
Connect service hoses to flush ports. Open service couplers.

 Cancel  Next screen



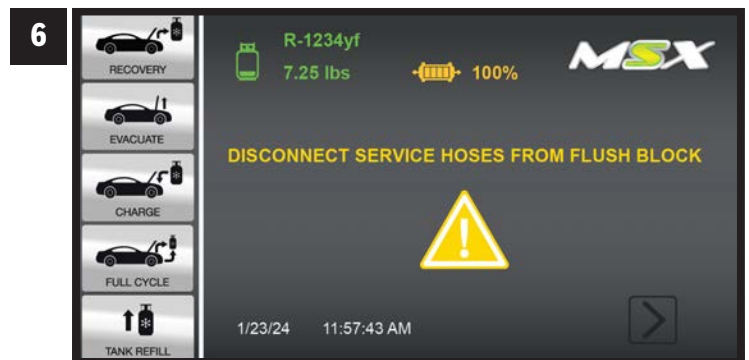
HOME ► HYBRID VEHICLE

Wait while the service hoses are flushed.



HOME ► HYBRID VEHICLE

Close service couplers.  Next screen



HOME ► HYBRID VEHICLE

Disconnect service hoses from flush block.


Touch  to move to *Home* screen.

Language

MSX Series machines have an English language default setting. To change the default from English to German, French or Spanish, follow the instructions.




HOME ► SETUP FUNCTION

Touch  to view *Languages*



HOME ► SETUP FUNCTION ► LANGUAGE

Touch a key that corresponds to the screen language you prefer: English, German, French or Spanish.

Touch  to confirm your preferred language.

Units of Measure

Note: Not all screens are shown.

Display pressure, temperature, weight and altitude in SAE or metric units of measure.




HOME ► SETUP FUNCTION


Touch  to select *Units Of Measure*



HOME ► SETUP FUNCTION ► UNITS OF MEASURE

Touch keys to select preferred *Units Of Measure*

 Pressure: PSIG, BAR, MPA, Kgcm², KPA

 Temperature: Fahrenheit, Celsius

 Weight: Lbs, Lbs/oz, Kgs, Kgs/g, Oz

 Altitude (enter value with keyboard)


Touch  to confirm and move to next screen.

Tank and Refrigerant Weights

Note: Not all screens are shown.



HOME ► SETUP FUNCTION

Touch  and to move to next screen.




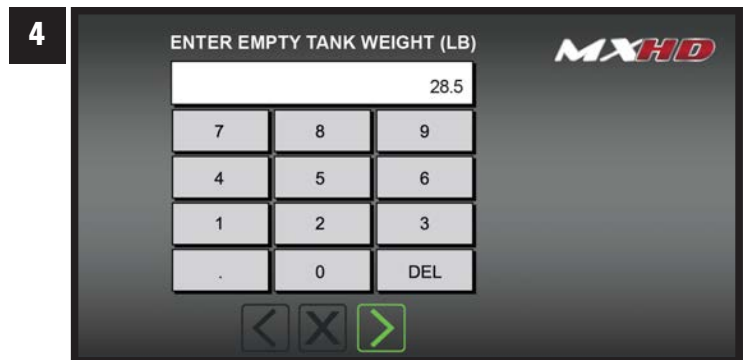
HOME ► SETUP FUNCTION ► TANK/REFRIGERANT WEIGHT


Touch  if weights shown are correct.

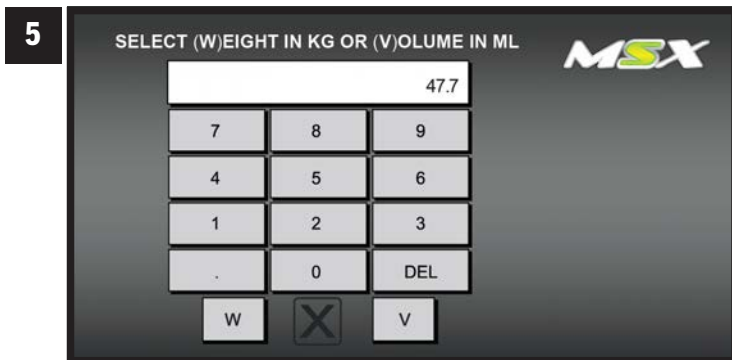
Touch  to change weights.



In order to change weight, you must enter your shop password using the onscreen keyboard. (example shown above). Touch  to continue to the next screen.



Enter **Empty Tank Weight**. (example shown above). Touch  to enter new tank weight and move to the next screen.



Enter **Tank Water Capacity**.
Touch "W" for **Weight**, or "V" for **Volume**.



Confirm or Change Refrigerant/Tank Weights.

Touch  if values are correct, and move to next screen.

Touch  if further changes are needed.

Job Tracker

Note: Not all screens are shown.



HOME ► SETUP FUNCTION

Touch  for the **Job Tracker** screen



HOME ► SETUP FUNCTION ► JOB TRACKER

Touch to check or uncheck items to appear on a report.

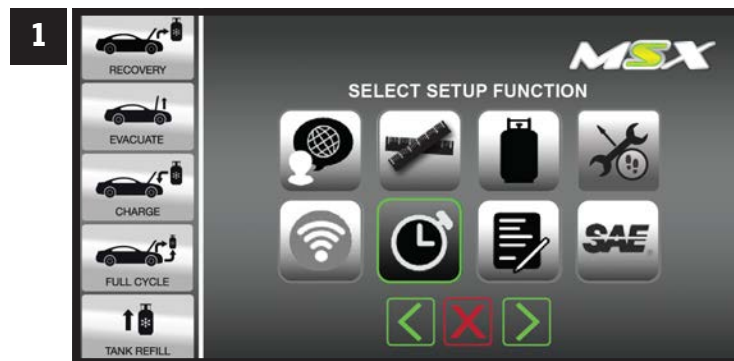
Generate Warranty Code: Touch white box to have MSX machine generate an encrypted warranty code for manufacturer's vehicle being serviced.

Track Jobs: Touch white box to have job data appear. Selections include; **Technician Identification Number**, **Vehicle Identification Number** and **Work Order Number**.

Touch  to enter selections and move to next screen.

Set Date or Time

Note: Not all screens are shown.




HOME ► SETUP FUNCTION

Touch  to set the Date and/or Time.



HOME ► SETUP FUNCTION ► SET DATE OR TIME

Touch keys to enter the current date (MM/DD/YYYY). In next screen, touch keys to enter the time of day (Hours, Minutes, Seconds). Touch  to enter data.

Wireless Device Setup

Note: Not all screens are shown.

The MSX Series features Bluetooth Low Energy and Wi-Fi capability for convenient wireless connection to other wireless devices.

Bluetooth LE

Bluetooth Low Energy (Bluetooth LE, colloquially BLE, formerly marketed as Bluetooth Smart) is a wireless personal area network technology designed and marketed by the Bluetooth Special Interest Group (Bluetooth SIG). BLE is independent of classic Bluetooth and has no compatibility. Mobile operating systems including iOS, Android, Windows Phone and BlackBerry, as well as macOS, Linux, Windows 8 and Windows 10, natively support Bluetooth Low Energy.



HOME ► MACHINE UPKEEP ► SETUP FUNCTION

Touch  to access wireless devices for set up.



HOME ► MACHINE UPKEEP ► SETUP FUNCTION ► BLE DEVICES

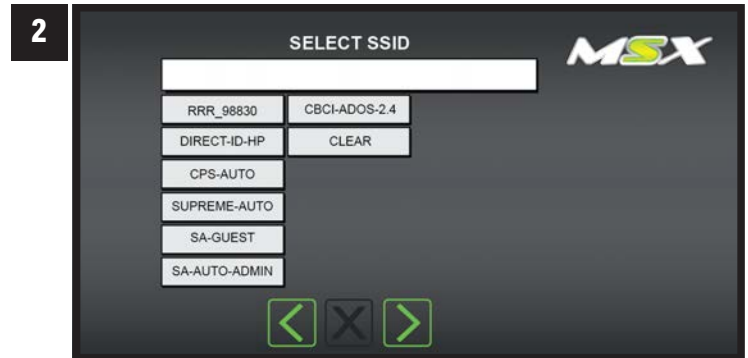
When a BLE device is enabled, the system will search and connect when found. When a BLE device has been connected, icons will appear on the LCD touch screen. These devices can be enabled/disabled by touching the white check box under device icon.

The MSX Series can be connected to several Wi-Fi devices including printers. The MSX Series also has the ability to email job reports by entering an email address in the MSX machine.




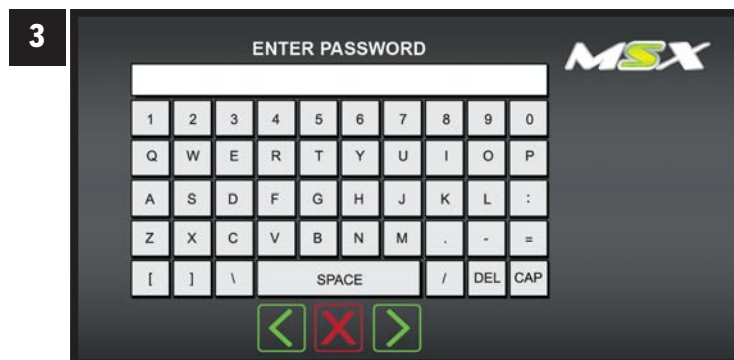
HOME ► MACHINE UPKEEP ► SETUP FUNCTION

Touch  to connect to a Wi-Fi network, then  to move to the next screen.



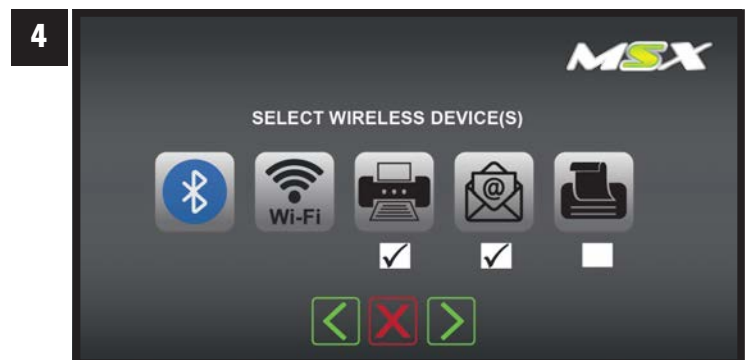
HOME ► MACHINE UPKEEP ► SETUP FUNCTION ► WI-FI

In the select SSID screen, select an available Wi-Fi network. Touch  to move to the next screen.




HOME ► MACHINE UPKEEP ► SETUP FUNCTION ► WI-FI

Enter the appropriate Wi-Fi network password. Touch  to move to the next screen.




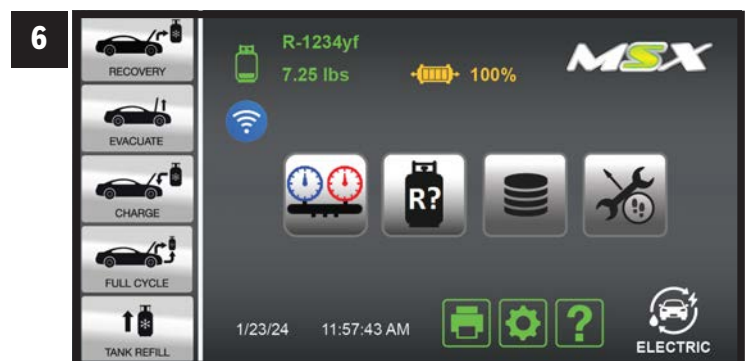
HOME ► MACHINE UPKEEP ► SETUP FUNCTION ► WI-FI

Select your wireless device(s), then touch  to move to the next screen. Devices are enabled/disabled by touching the “checkbox” below each device icon.



HOME ► MACHINE UPKEEP ► SETUP FUNCTION ► WI-FI

Touch  to exit the set-up function screen.



HOME ► MACHINE UPKEEP ► SETUP FUNCTION ► WI-FI

A Wi-Fi icon will be displayed on the screen if successful.

Online Registration / Activation

Note: Not all screens are shown.

ONLINE REGISTRATION IS REQUIRED TO ACTIVATE YOUR MSX UNIT FOR USE. Follow the onscreen instructions as outlined below to activate your MSX unit. Once you have submitted the online registration form a **5-digit Activation Code** [to verify serial number] will be displayed onscreen.

Online registration requires Smart Device with QR code reader to display MSX registration form in browser. If Smart Device is not available, step forward on MSX registration instruction screens to the screen displaying Serial Number and point your browser to the following URL to register; <https://www.cpsproducts.com/msx-product-registration/>.



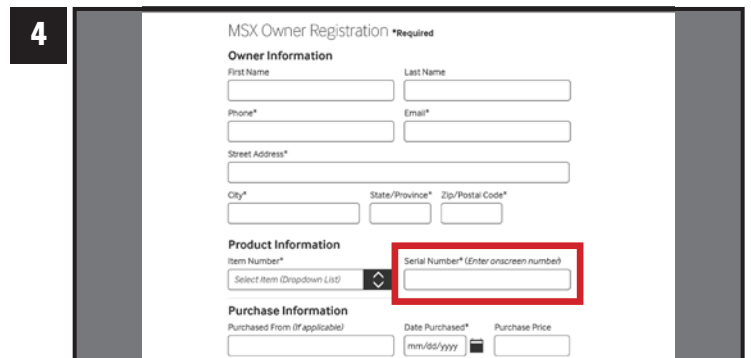
MSX Splash screen displays **model ID** as unit powers up. *MSX3030 model shown.*



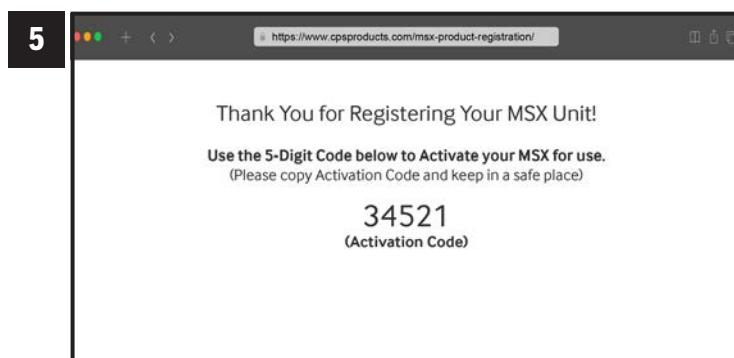
Registration prompt appears onscreen. Touch **TOUCH HERE** to begin the registration process. (requires Smart Device/browser)



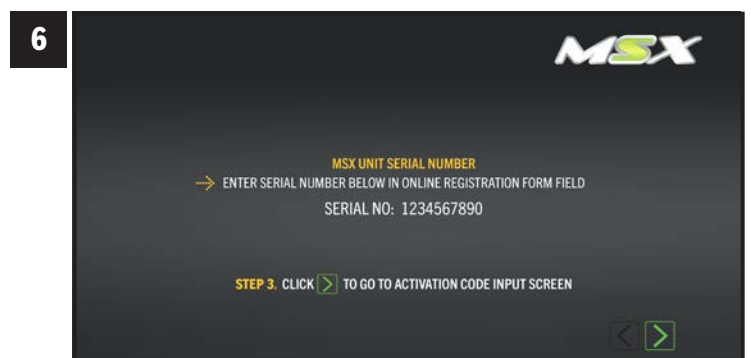
STEP 1: Point Smart Device camera/APP at QRC to launch browser displaying MSX online registration form. **STEP 2:** Touch to go display screen with MSX unit Serial Number.



Browser displays MSX Registration form URL. (<https://www.cpsproducts.com/msx-product-registration/>)

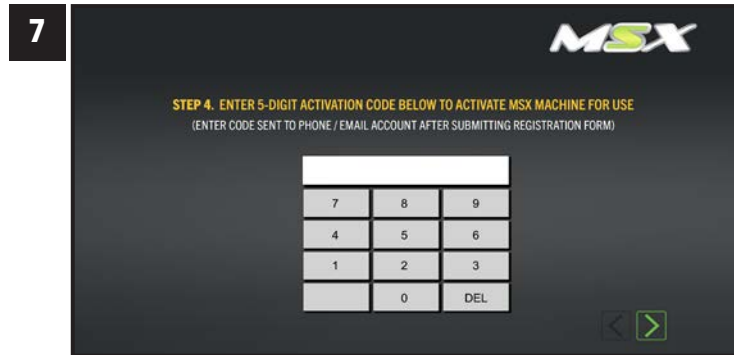


5-digit Activation Code displayed on successful submittal of Registration form, enter 5-digit code on MSX activation screen.

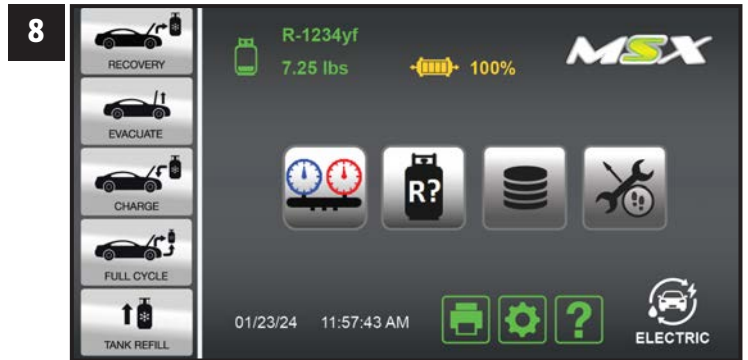


MSX unit Serial Number is displayed. Enter in Serial Number input field on form. **STEP 3:** Touch to go to Activation screen.

Online Registration / Activation (continued)



STEP 4: Enter 5-digit Activation code from browser window (submitted form); touch to activate unit.

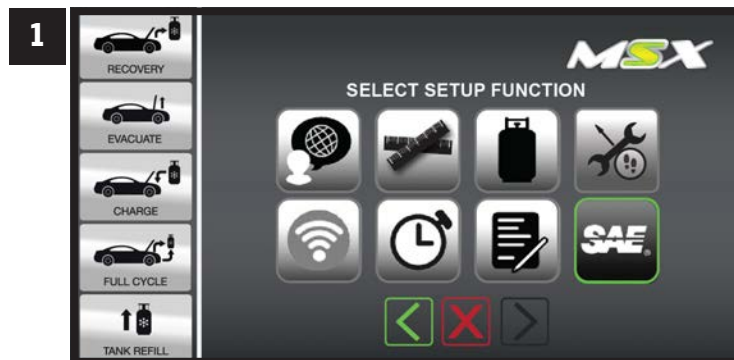


Upon successful Activation Code verification, the MSX unit **HOME** screen is displayed; all functions are operational

SAE / Global Standards

Note: Not all screens are shown.

MSX Series machines are shipped with a default SAE Mode setting (for the U.S. and most Canadian markets). Yet, some Canadian and many global markets use the International setting.



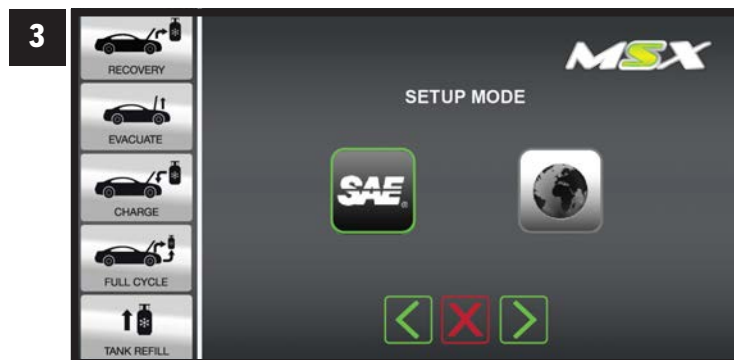
HOME ► SETUP FUNCTION

To switch between the factory default SAE Mode setting to International Mode, Touch .



HOME ► SETUP FUNCTION ► SAE MODE

Enter your password using the keyboard (example password shown). Contact CPS Technical Support for password to change to International Mode) that has been set up for this machine. Touch to enter password.



HOME ► SETUP FUNCTION ► SAE SETUP MODE

Touch so the MSX machine operation follows SAE J2788 standard, or touch for the MSX to follow international standards. Touch to enter your selection and move to next screen.

Operation

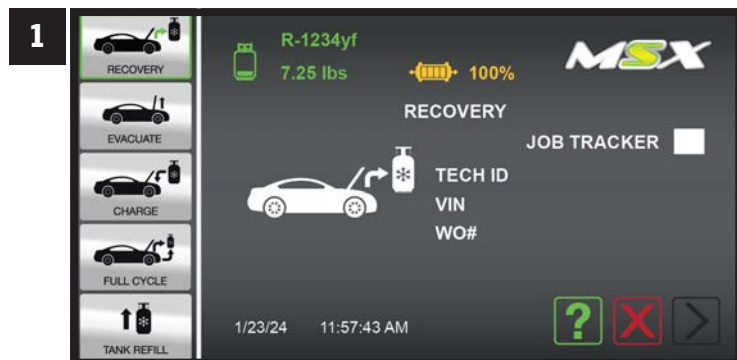
Refrigerant Recovery

Note: Not all screens are shown.



CAUTION: Do not connect service hoses to refrigerant source until instructed to do so.

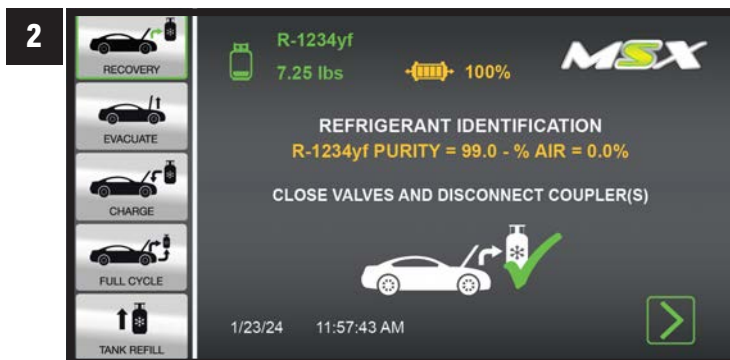
CAUTION: There is the possibility of refrigerant contamination in the mobile A/C system being serviced.

Equipment not having refrigerant identifiers (MSX134, MXHD) has the possibility of refrigerant contamination.



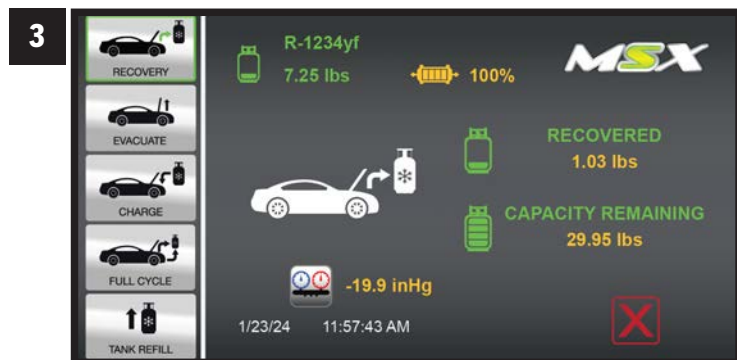
HOME

Before opening the A/C system for repair, first **Recover & Recycle** refrigerant from the A/C system. Touch  to begin recovery. Touch the white **Job Tracker** box for job info to appear on reports. Touch  to move to next screen.



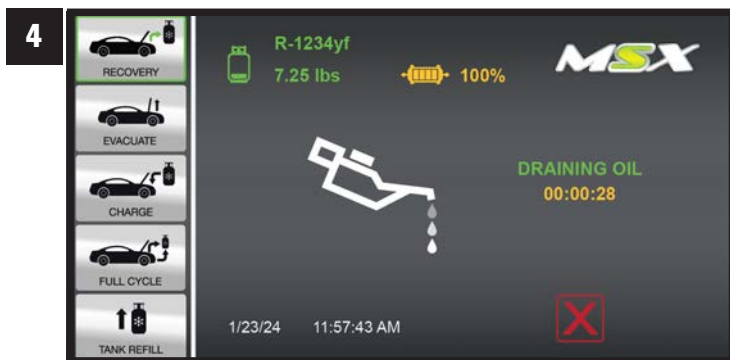
HOME ► RECOVERY

Once the refrigerant identification process is complete, follow onscreen instructions to begin the **Refrigerant Recovery** process. Touch  to move to next screen.



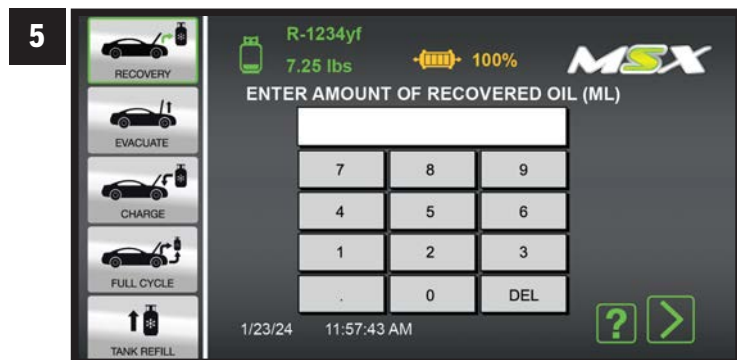
HOME ► RECOVERY

Screen displays weight of refrigerant recovered and remaining tank weight capacity.




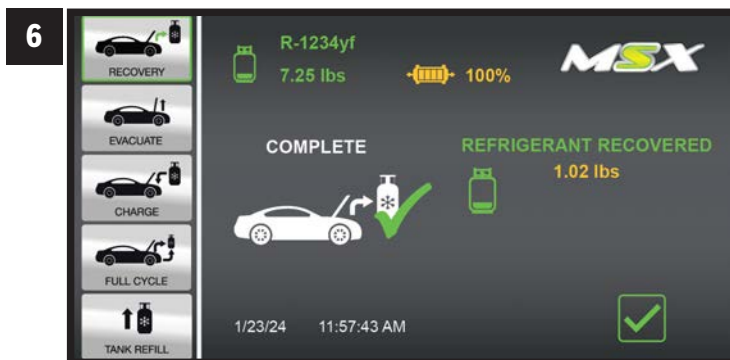
HOME ► RECOVERY

Refrigerant oil draining (into the MSX unit's included oil recovery bottle). Countdown timer shows remaining time.





HOME ► RECOVERY

Use keypad to enter amount of recovered oil. Touch  to enter data and move to next screen.



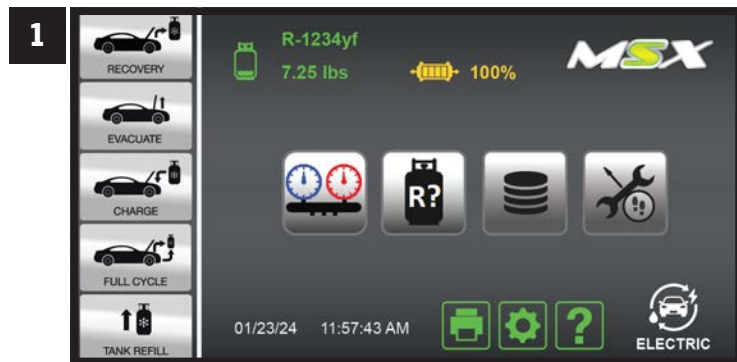
HOME ► RECOVERY

Touch  to return to **Home** screen. The color display will show the amount (weight) of refrigerant that has been recovered. This information may be printed by touching  on the **Home** screen.

A/C System Evacuation

Note: Not all screens are shown.

After all refrigerant has been recovered from the vehicle's A/C system and the system has been reassembled following repair, the A/C system must be evacuated. Any moisture that is present can mix with oil to form sludge, while moisture mixed with refrigerant forms hydrofluoric and hydrochloric acids all of which can permanently damage a system. The MSX Refrigerant Management Center will evacuate (degas and dehydrate) an A/C or refrigeration system prior to refrigerant charging. A system that has been properly evacuated assures that non-condensable and moisture won't later harm the refrigerant or refrigerant oil in the system.




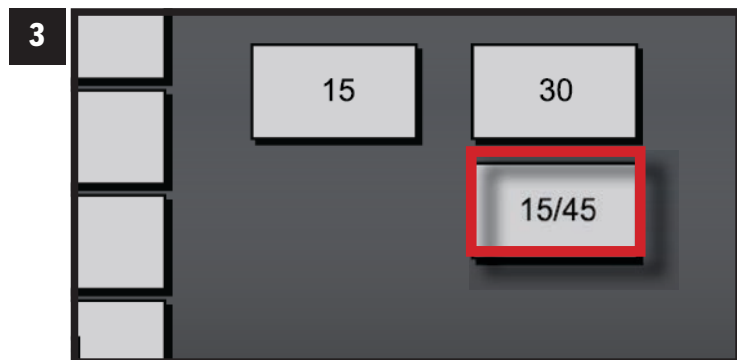
HOME

Touch  to evacuate the A/C system.



HOME ► EVACUATE ► SET VACUUM TIME

Enter vacuum time in minutes or select from one of the 3 presets. If vacuum time exceeds 10 minutes, evacuation will be followed by a 5-minute leak test (vacuum decay). Touch  to move to the next screen.



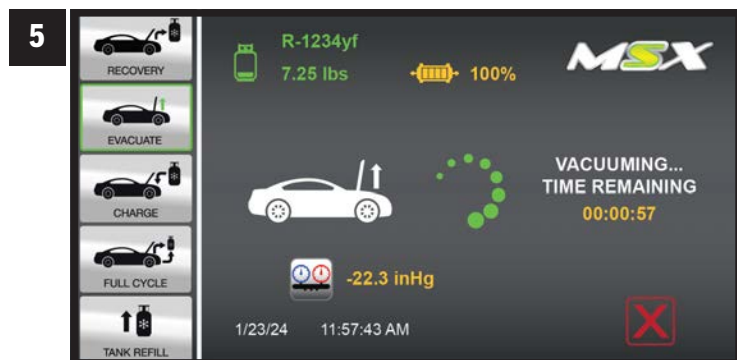
HOME ► EVACUATE ► SET VACUUM TIME (PRESETS)

Choosing the 15/45 preset, the machine will run 15 minutes of vacuum, perform a 5-minute leak test, and if it passes, proceed with 45 more minutes of vacuum.



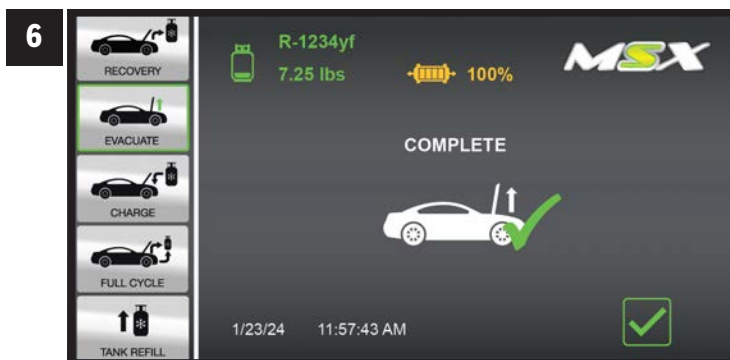
HOME ► EVACUATE ► SET VACUUM TIME (MANUAL OVERRIDE)

Operators can manually override the default. Examples: For a vacuum time of 10 minutes **enter 10**. For a vacuum time of 15 minutes and leak test time of 12 minutes, **enter 12/3**. For a vacuum time of 15 minutes, leak test time of 2 minutes and extra vacuum of 10 minutes, **enter 15/2/10**.




HOME ► EVACUATE ► VACUUMING

With evacuation in progress, **Vacuum Time Remaining** will appear on the display.



HOME ► EVACUATE ► VACUUM COMPLETE

When the specified vacuum time expires, **Complete** will appear. Touch  to return to the **Home** screen.

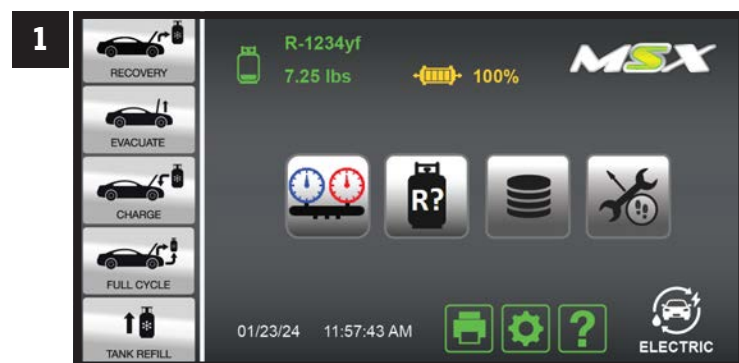
Refrigerant Charging

Note: Not all screens are shown.

The integrated **A/C Database** can be accessed by touching the  key. This database will specify the correct type and amount (weight) of refrigerant and refrigerant oil for vehicles sold in North America.

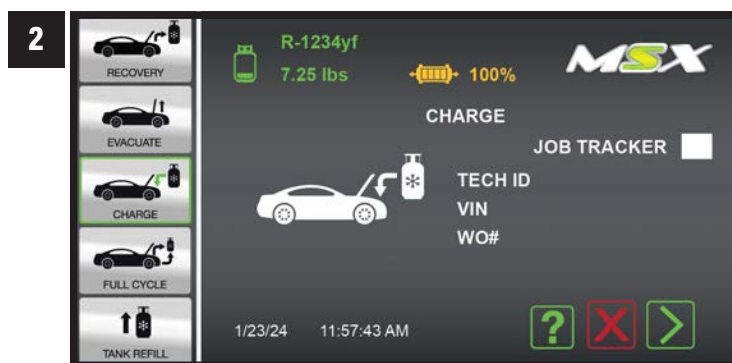
The charging sequence begins with a 10-minute vacuum leak test. This is an SAE requirement in SAE J2843 (R1234yf systems only). If the system passes the vacuum leak test, the machine will charge the system to 15% of the selected charge. Use an electronic leak detector meeting SAE J2913 for R-134a to leak test the evaporator(s). The MSX will complete the remaining 85% of the charge.

During cold conditions, a heater blanket (CPS optional accessory #CCXHB) may be wrapped around the recovery tank to assist with charging. If the MSX Series cannot complete a charge due to pressure equalization, it will notify the user to close the high side coupler and start the vehicle.




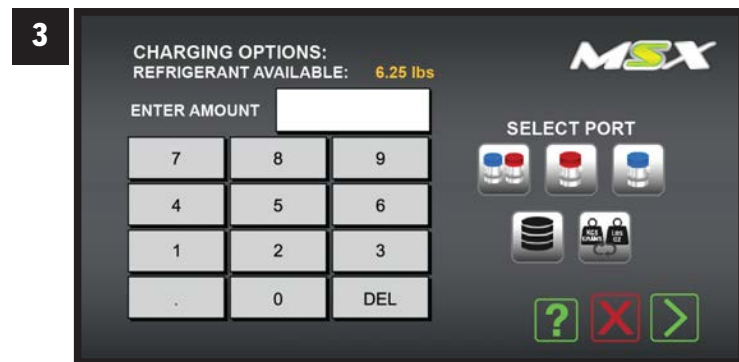
HOME

Touch  to begin the charging process.



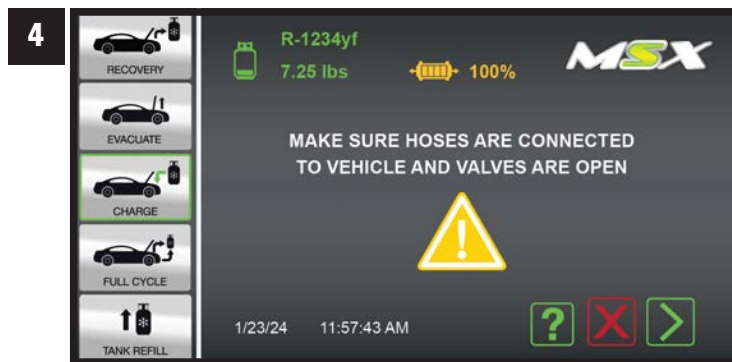
HOME ► CHARGE

Enter **Tech ID**, **VIN** and **Work Order** by touching the words. Touch the white **Job Tracker** box for job info to appear on reports. Touch  to move to next screen.




HOME ► CHARGE

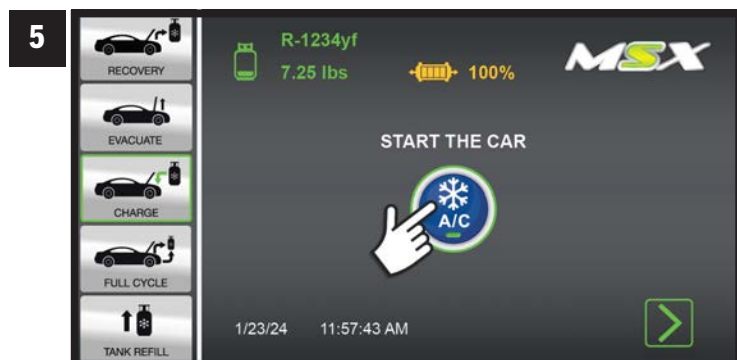
Using the keypad, enter the desired charge amount (refrigerant weight).



HOME ► CHARGE

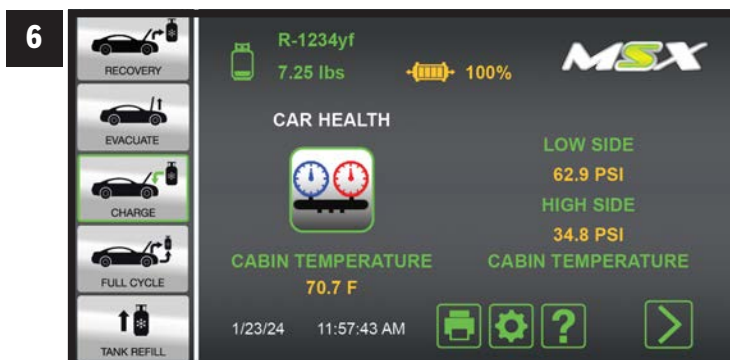
Make sure hoses are connected to vehicle and hose valves are open. Touch  to move to the next screen.

Refrigerant Charging (continued)

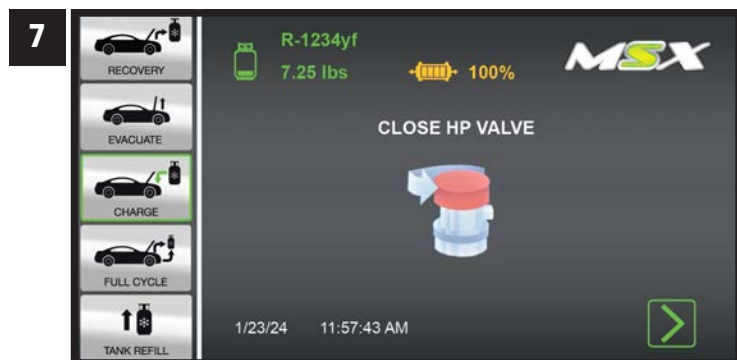


HOME ► CHARGE

Start the vehicle. Touch to move to the next screen.

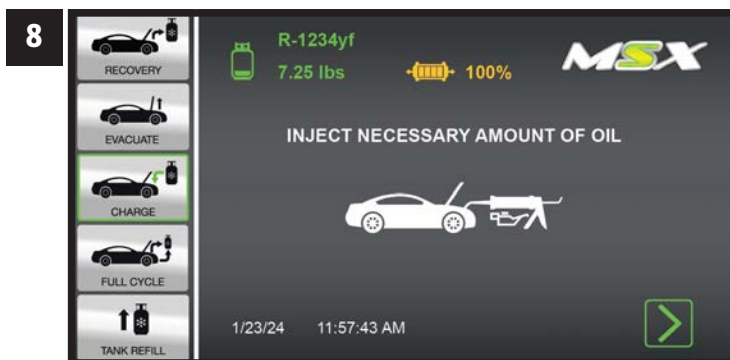


HOME ► CHARGE



HOME ► CHARGE

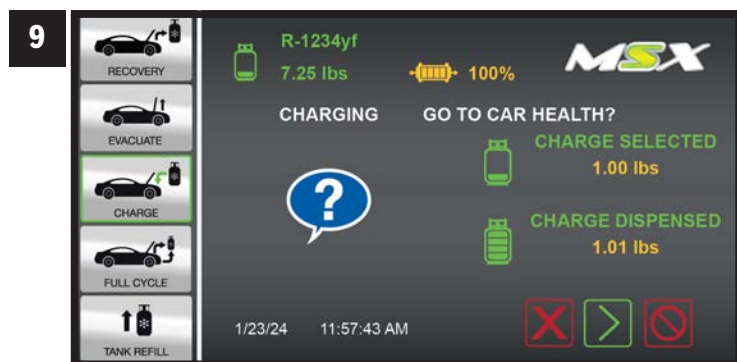
Follow the onscreen instructions to close valves and disconnect coupler(s). Touch to move to the next screen.



HOME ► CHARGE

Inject the necessary amount of oil into vehicle. Touch to move to the next screen.

CAUTION: Use only new lubricant to replace the amount removed during the recycling process.



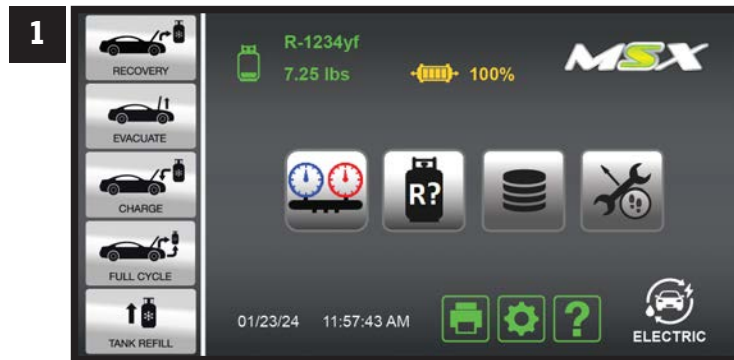
HOME ► CHARGE

Once complete, **Charge Selected** vs. **Charge Dispensed** amounts are shown at right. Touch for Car Health Mode or touch to go to the **Home** screen.

Full Cycle

Note: Not all screens are shown.

Select **Full Cycle** from the **Home** screen to Recover, Recycle, Vacuum, Leak Check (if desired) and Charge the vehicle's AC system.




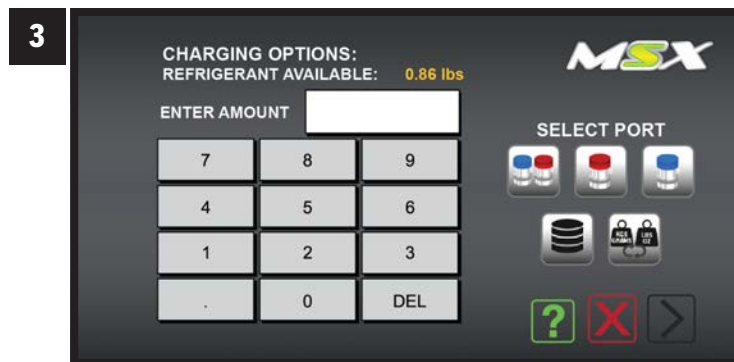
HOME

Touch  to access **Full Cycle** Function.




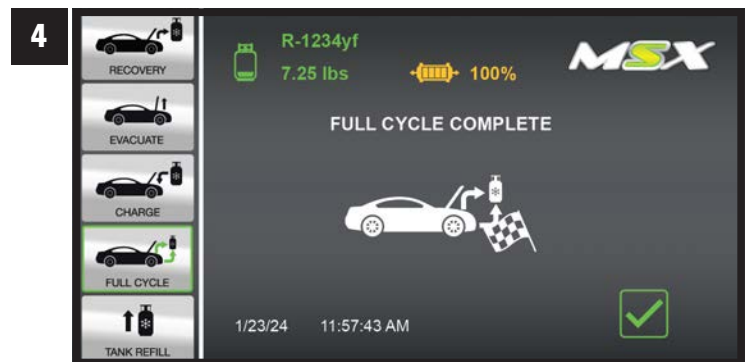
HOME ► FULL CYCLE

The display will prompt you to enter a vacuum time. Touch  to proceed to next screen.




HOME ► FULL CYCLE

The display will prompt you to enter a charge amount. Touch  to proceed to next screen.



HOME ► FULL CYCLE

Checkered flag icon displayed when **Full Cycle** process is complete.

1. The display will prompt you to enter a vacuum time and a vehicle charge amount.
2. Once **Full Cycle** has been selected and started, the machine will proceed with the recovery process described in a previous section.
3. At the end of **Recovery**, the MSX Series will automatically proceed to **Vacuum** and **Leak Test** (if the vacuum time selected was greater than 10 minutes)
4. Once **Vacuum** is complete, the desired charge amount will be installed in the vehicle.
5. The MSX Series will ask if you want to enter **Car Health Mode**. Select this mode to check/print system pressures and vent temperature.
6. If **Car Health Mode** is not selected, the MSX Series will instruct how to transfer refrigerant contained in the hoses into the vehicle's AC system.
7. Final results of the **Full Cycle** process can be printed by touching **Print**  found at the bottom of **Home** screen.

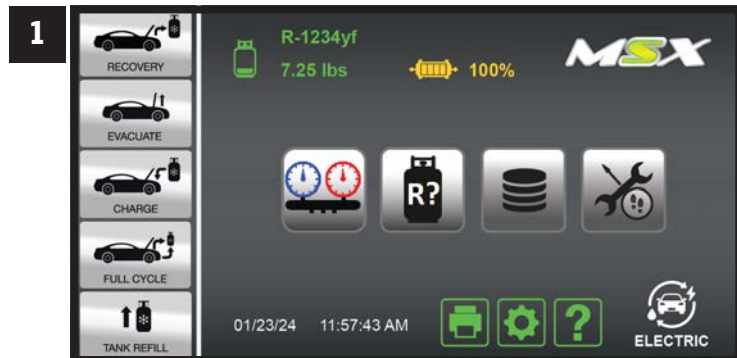
Refrigerant Tank Refill

Note: Not all screens are shown.

Follow directions on screen and do not open coupler or tank valve until screen shows to open both. If you fail to open tank, start over.

If hoses were connected before instructed, the machine will post a warning and instruct that the couplers be closed and the hoses removed. Not doing so will result in refrigerant loss (at the user's expense).

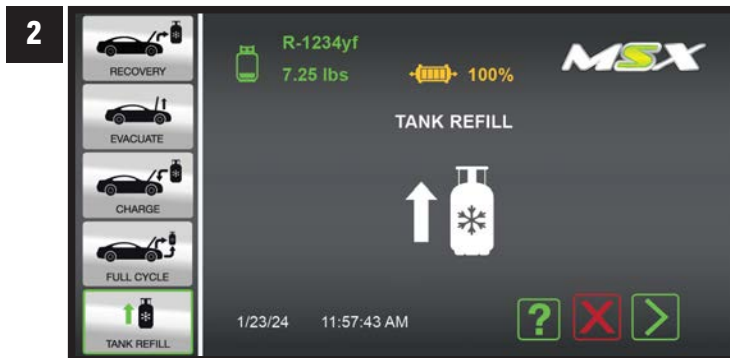
At least 4.5 lbs (2 kg) refrigerant be available in storage tank to begin operation. If less is observed, choose this operation to add refrigerant to internal tank. This operation transfers refrigerant in liquid state to internal storage tank. Refrigerant amount transferred in this mode is not counted toward filter life.



HOME

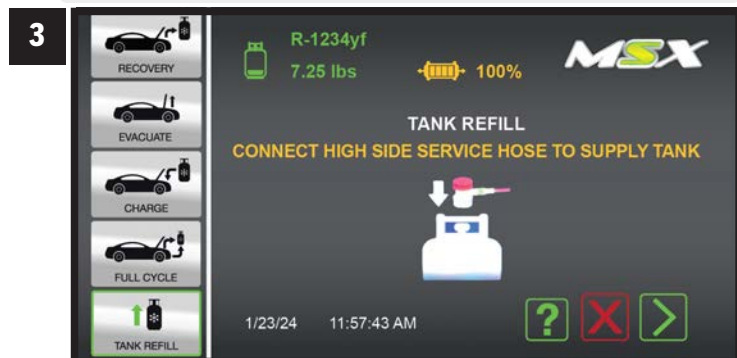
Touch to add refrigerant to the MSX Tank.

FAILURE TO OPEN TANK VALVES WHEN INSTRUCTED WILL RESULT IN HAVING TO START OVER.



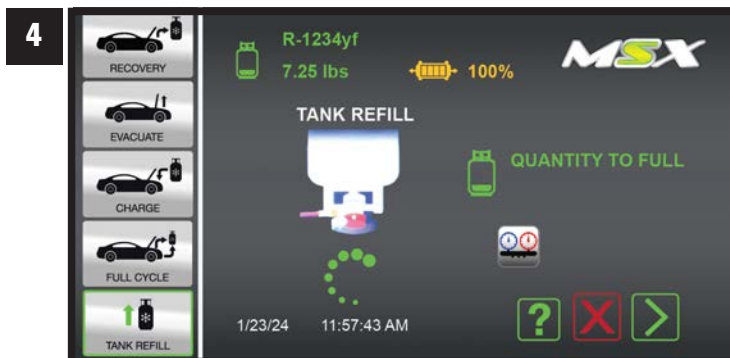
HOME ► TANK REFILL

Start with hoses disconnected and couplers closed. Touch and follow the on-screen instructions.



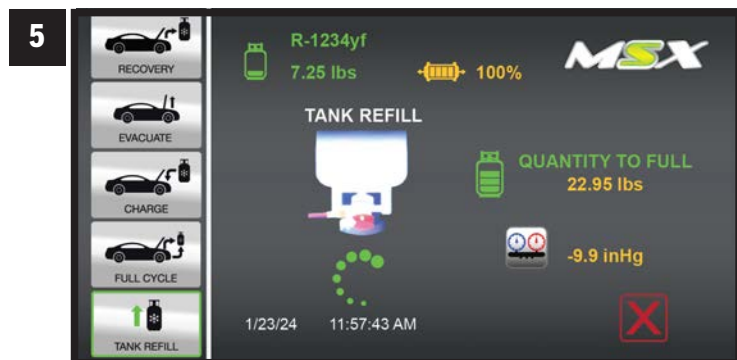
HOME ► TANK REFILL

Connect high side service hose to supply tank. Touch and follow the on-screen instructions.



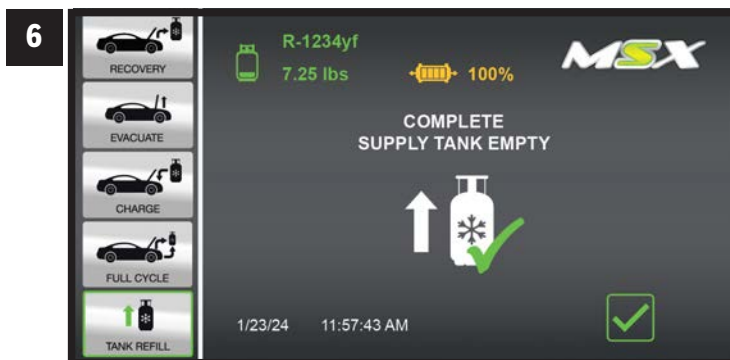
HOME ► TANK REFILL

Invert the supply tank (source of refrigerant) so that liquid transfer can occur. Touch to continue.



HOME ► TANK REFILL

Refrigerant transfer in process (screen shows weight of refrigerant that can still be transferred to MSX tank until it is full).



HOME ► TANK REFILL

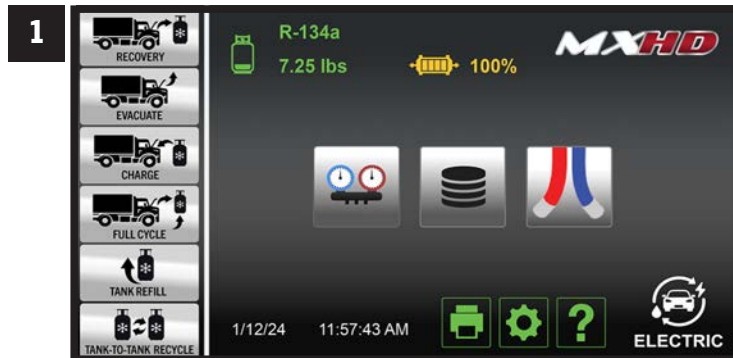
Refill has been completed (the MSX tank has been filled to capacity). Touch to return to the Home screen.

7. A **NO PRESSURE DETECTED IN THE TANK!** message will appear. Touch **Continue** to proceed.
8. A **STILL NO PRESSURE DETECTED!** message will appear. Touch **Continue** to proceed.
9. The main menu will appear. Touch and refer to **Refrigerant Tank Refill** for further instructions on how to fill the tank.

Tank-to-Tank Recycle Function (MXHD only)

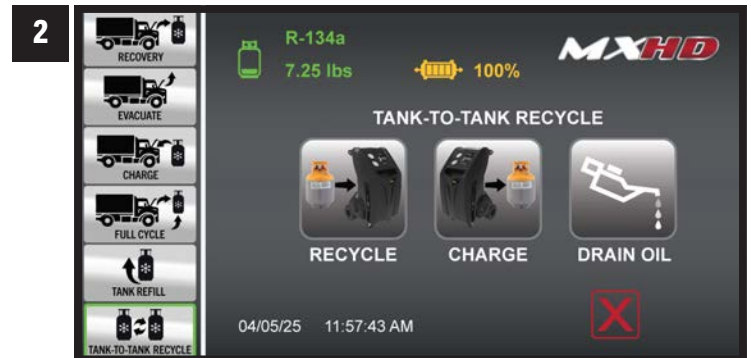
Note: Not all screens are shown.

Tank-to-Tank Recycle Function (MXHD model only) provides a fast and simple in-site process to quickly recycle recovered refrigerant and change back into source tank for in field recharges; suitable for 30, 50 and 90 Lb tank capacities.



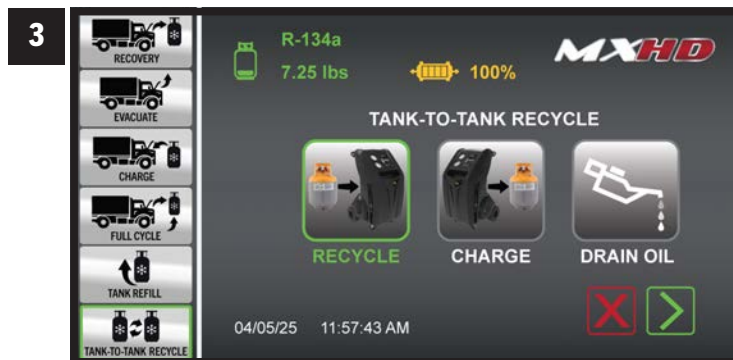
HOME

Home screen displays 6 Functions. Touch Tank-to-Tank key at bottom, left-side of screen.



HOME ▶ TANK-TO-TANK RECYCLE

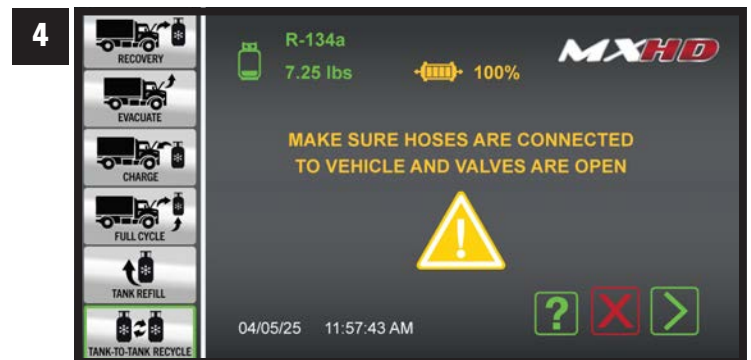
Tank-to-Tank Function keys are displayed. Touch key to begin desired function.



HOME ▶ TANK-TO-TANK RECYCLE ▶ RECYCLE

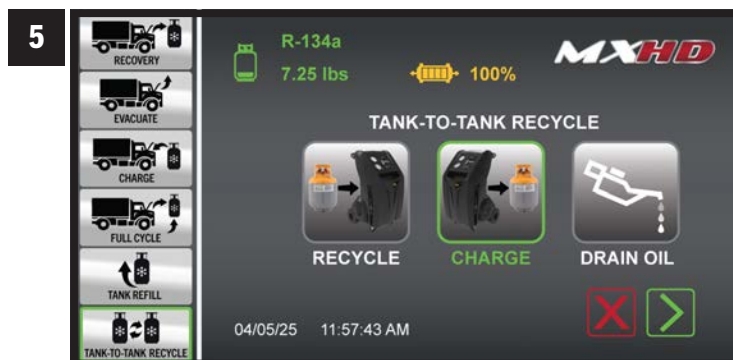
Recycle Function

Touch and follow the on-screen instructions.



HOME ▶ TANK-TO-TANK RECYCLE ▶ RECYCLE

Once hoses are connected and valves are open with couplers in place, press to begin Recovery process. When complete, press .



HOME ▶ TANK-TO-TANK RECYCLE ▶ CHARGE

Charge Function

Touch and follow the on-screen instructions.



HOME ▶ TANK-TO-TANK RECYCLE ▶ CHARGE

Select High & Low ports . Using the keypad, enter the desired charge amount (refrigerant weight). Touch to move to next screen.

Maintenance

Filter/Dryer

Note: Not all screens are shown.

The included filter/dryer has the capacity to dry 150 lbs of recovered refrigerant. The remaining filter life is graphically displayed on the top center of the **Home** screen. When all 4 segments are no longer visible, change the filter/dryer.

Note: Refrigerant recovery cannot be performed if filter/dryer life has been exceeded.

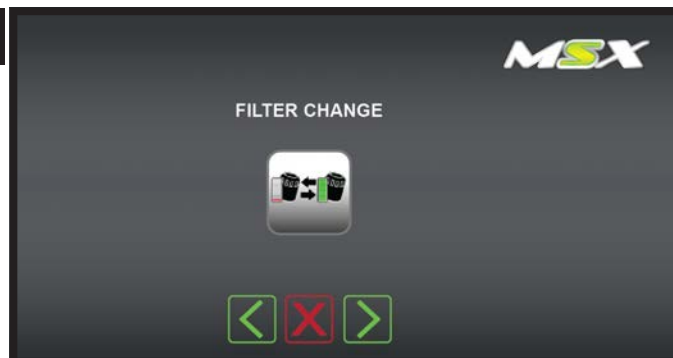
1



HOME ► MACHINE UPKEEP ► MAINTENANCE

Touch  to change the filter/dryer. Follow the on-screen directions and enter the *Filter Reset Code* found with the new filter/dryer.

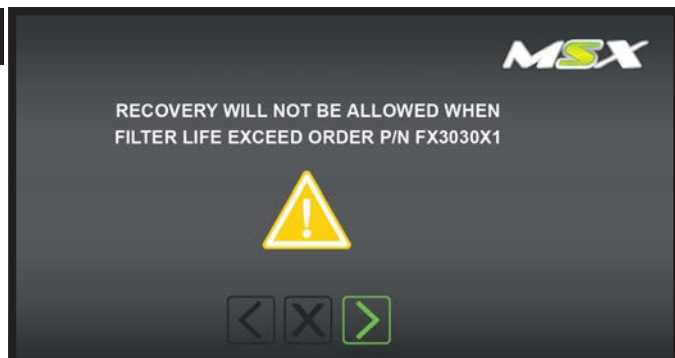
2




HOME ► MACHINE UPKEEP ► MAINTENANCE ► FILTER CHANGE

Touch  to change the filter/dryer.

3



HOME ► MACHINE UPKEEP ► MAINTENANCE ► FILTER CHANGE

Refrigerant recovery cannot be performed if filter/dryer life has been exceeded. Touch  and follow the on-screen instructions.

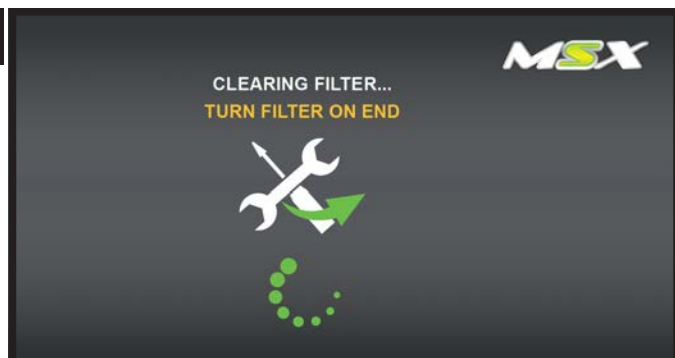
4



HOME ► MACHINE UPKEEP ► MAINTENANCE ► FILTER CHANGE

Close liquid valve on recovery tank ball valve. Touch  and follow the on-screen instructions.

3




HOME ► MACHINE UPKEEP ► MAINTENANCE ► FILTER CHANGE

Turn filter/dryer on end.

4

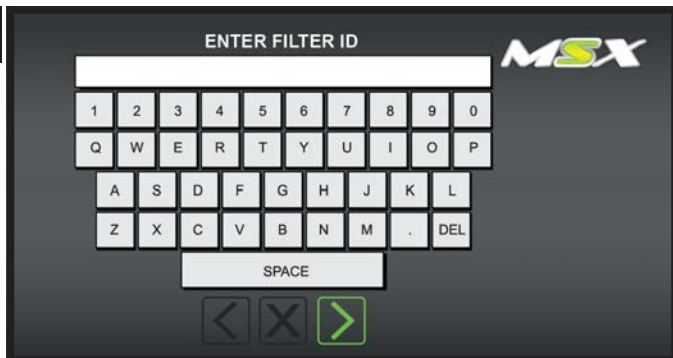


HOME ► MACHINE UPKEEP ► MAINTENANCE ► FILTER CHANGE

Replace the filter/dryer with CPS part #FX3030X1. Touch  and follow the on-screen instructions.

Filter/Dryer (continued)

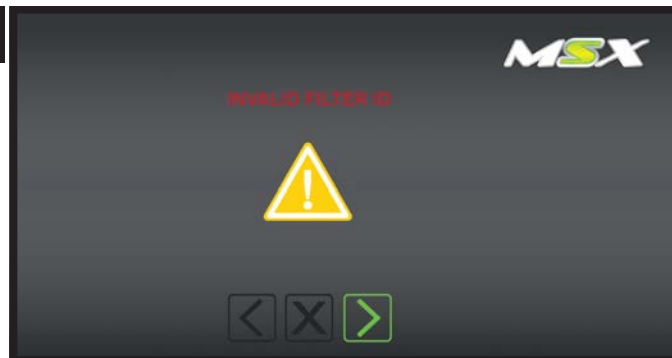
5



HOME ► MACHINE UPKEEP ► MAINTENANCE ► FILTER CHANGE

Using the keypad, enter the new filter/dryer ID number. Touch and follow the on-screen instructions.

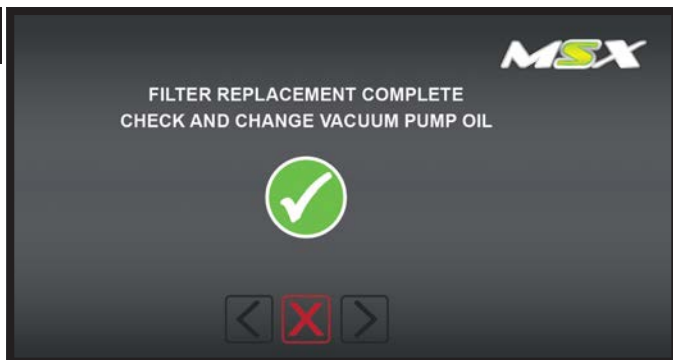
6



HOME ► MACHINE UPKEEP ► MAINTENANCE ► FILTER CHANGE

A notification will appear if an incorrect or invalid filter ID number has been entered. Touch to return to the previous screen and re-enter the correct filter/dryer ID.

5



HOME ► MACHINE UPKEEP ► MAINTENANCE ► FILTER CHANGE

Filter/dryer replacement completes. Check or change vacuum pump oil. Touch to return to *Home* screen.



Vacuum Pump Oil Change Frequency

CPS® recommends replacing the oil with fresh CPS® brand Premium Vacuum Pump Oil when:

- Oil becomes contaminated (condensation, particles) or is discolored.
- A 100 hour run time break-in period has been reached.
- Not running the pump for an extended time.
- Vacuum pump level is significantly higher than the rated blank-off vacuum.
- When pump no longer reaches a desired vacuum level (test with a vacuum gauge attached directly on the pump).

Depending on your oil type, application, and possible contaminants acquired when servicing A/C systems, oil change frequency may range from daily to monthly.

CAUTION: DO NOT RUN THIS MACHINE WITH LOW OR NO OIL. RUNNING THIS EQUIPMENT WITH NO OR IMPROPER OIL WILL CAUSE PREMATURE FAILURE.

Oil Change Procedure

1. Before draining the Vacuum Pump Oil from an MSX Series machine, ensure oil is warmed up. If not, run pump for 10 minutes. **Then, before draining oil, allow oil to reach room temperature.** If in doubt as to the temperature, use an infrared thermometer to check the housing temperature.
2. Turn MSX Machine OFF then **REMOVE POWER CORD FROM OUTLET.**
3. Place MSX Machine series pump over a suitable container for draining oil.
4. Remove oil drain cap, then remove oil drain plug from drain port. **AVOID CONTACT WITH HOT OIL. HOUSING COMPONENTS MAY BE HOT.** Let contaminated oil drain into suitable container. Reinstall oil drain plug.
5. Add fresh CPS® brand Premium Vacuum Pump Oil until level is between the MAX and MIN lines on the pump housing.

Premium Vacuum Pump Oil

Pro-Set® Premium Vacuum Pump Oil is an extremely high quality, severely hydro-treated vacuum pump oil and can be used in pumps made by most manufacturers. Vacuum pump oil should always be clean and free of contaminants such as moisture, acids, vapors, dirt etc., to extend the life of your pump. So, replace the oil at the appropriate interval with Pro-Set Premium Vacuum Pump oil (available in pints, quarts and gallons).



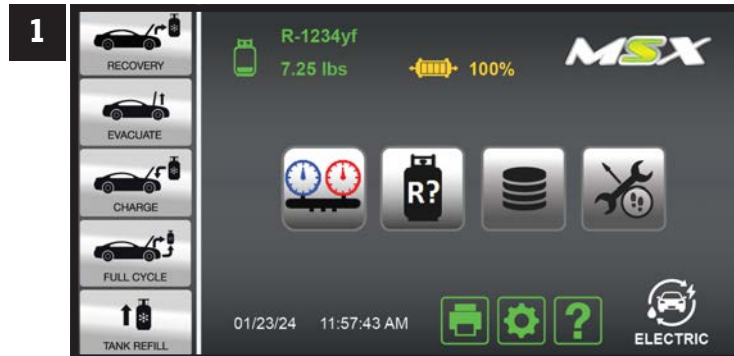
AVAILABILITY	
VPOG.....	(1 Gallon, 6/Case)
VPOQ12	(1 Quart, 12/Case)
VPOP12.....	(1 Pint, 12/Case)
VPOG.....	(1 Gallon)
VPOQ.....	(1 Quart)
VPOP.....	(1 Pint)

Maintenance (continued)

Refrigerant Change

Note: Not all screens are shown.

The **Refrigerant Change** function allows users to switch between R-134a and R-1234yf refrigerant types; specific to that used in the vehicle.



HOME

From the **Home** screen, touch  to access **Machine Upkeep**.



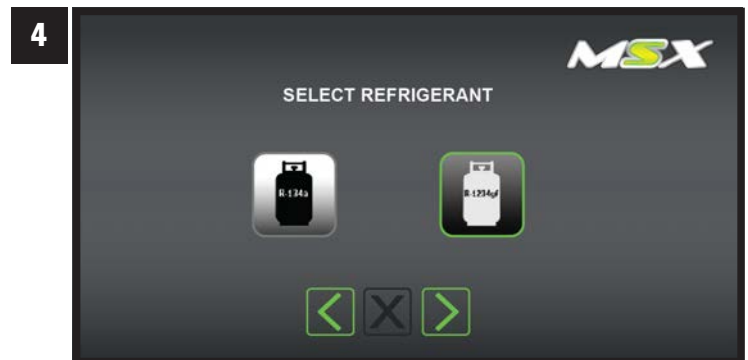
HOME ► MACHINE UPKEEP

Touch  **Maintenance**.



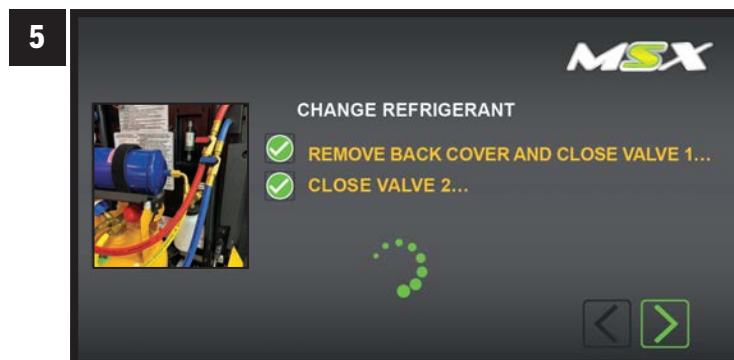
HOME ► MACHINE UPKEEP ► MAINTENANCE ► REFRIGERANT CHANGE

Touch  **Refrigerant Change**.



HOME ► MACHINE UPKEEP ► MAINTENANCE ► REFRIGERANT CHANGE

Touch to select refrigerant type: R-134a or R-1234yf



HOME ► MACHINE UPKEEP ► MAINTENANCE ► REFRIGERANT CHANGE

Follow the onscreen instructions to close both valves 1 and valves 2. The MSX will indicate when complete.

Touch  to move to next screen.

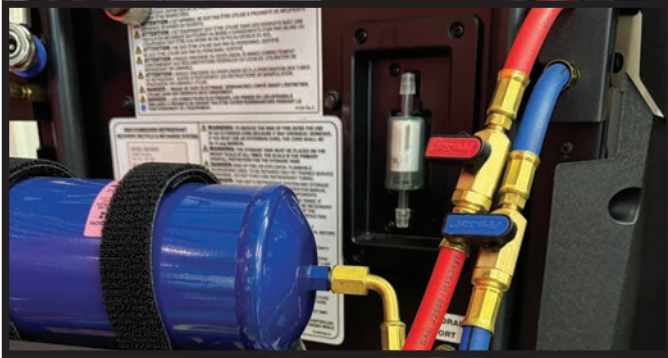


HOME ► MACHINE UPKEEP ► MAINTENANCE ► REFRIGERANT CHANGE

After a 3 – 5 minute purge/deep vacuum to remove any remaining trace of the refrigerant, you will be prompted to replace tank.

Refrigerant Change (continued)

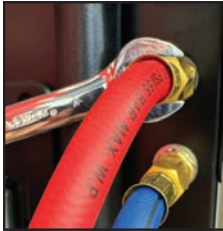
7



Disconnect Tank

Once the the refrigerant is purged, disconnect the tank from the MSX3030 unit. Using a Philips head screwdriver, remove the hose bracket cover located on the right-side of the back of the unit.

Using a $\frac{9}{16}$ " wrench, disconnect both the tank's liquid feed hose (red) and vapor return hose (blue) from the unit.



8



Connect New Hoses to Unit and Tank Filter Bracket

After the old tank has been removed, use a $\frac{9}{16}$ " wrench to connect the new hoses to the $\frac{1}{4}$ " SAE Male brass fittings located on the right side of the unit (red hose on top, blue hose on bottom).

Next, attach the red hose to the filter bracket and the blue hose to the new tank. Open all valves to check for leaks.

CPS is not responsible for lost refrigerant.

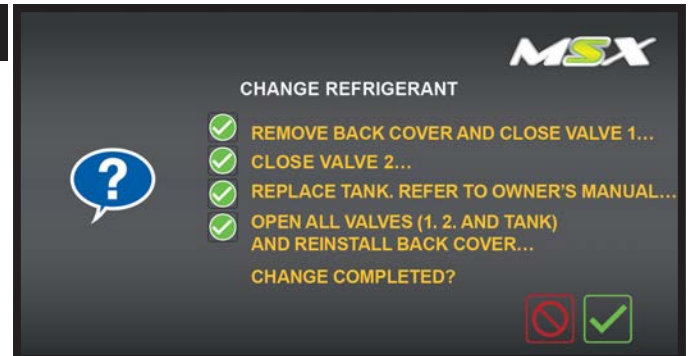
9




Replace the Service Hoses

Service hoses are located on the left-side of the back of the unit, again, red (top), blue (bottom). Using a Philips head screwdriver, remove the hose bracket cover. Disconnect the service hoses with a $\frac{9}{16}$ " wrench and attach the new service hoses. Once attached, re-install hose bracket cover.

10



Refer back to screen as the unit goes through the refrigerant identification process to ensure proper changeover. Touch  to confirm all steps have been completed so the unit can run through the refrigerant identification process.

Refrigerant Charging Scale

Note: Not all screens are shown.

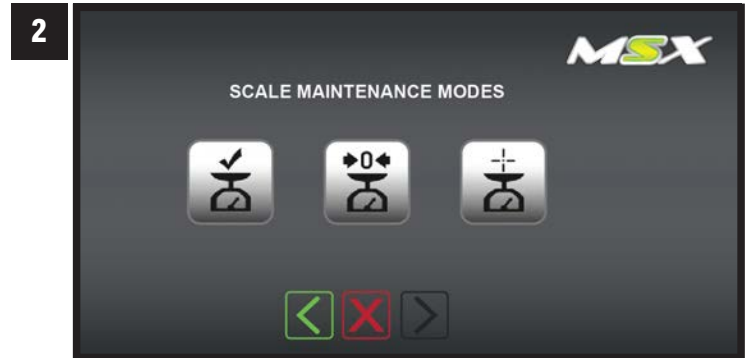
Note: The scale is powered by the MSX Series machine (no batteries to replace)

Scale calibration is suggested only if the calibration test was off by more than .02 lbs. Calibration may be performed by a CPS authorized service center. CPS Technical Support can also assist with the process. Scale calibration requires a certified 25 lb weight.



HOME ► MACHINE UPKEEP ► MAINTENANCE

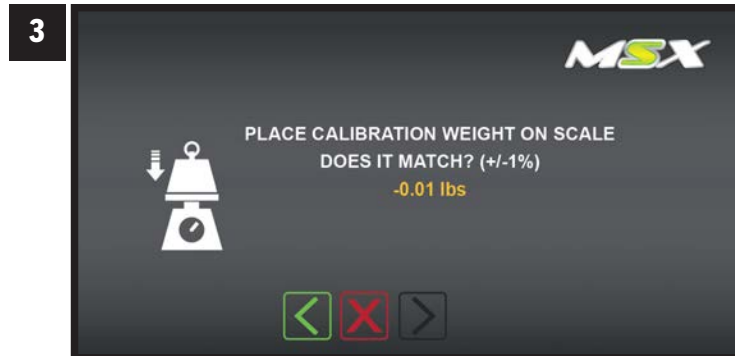
From the **Home** screen, touch  to access the **Machine Upkeep** screen. Touch **Maintenance**  and then . Touch  to continue to the next screen.




HOME ► MACHINE UPKEEP ► MAINTENANCE ► SCALE

There are three scale maintenance modes to choose from (icons pictured from left to right).

1. Check calibration
2. Tare (zero) the scale
3. Scale calibration (by CPS Products only)






HOME ► MACHINE UPKEEP ► MAINTENANCE ► SCALE ► CALIBRATION

To check calibration, set the included 1 lb weight on the scale to calibrate. If the scale's weight is within $\pm 1\%$ of 1 lb (0.99 – 1.01 lbs), touch .



HOME ► MACHINE UPKEEP ► MAINTENANCE ► SCALE ► TARE

To tare (zero) the scale, start by removing the refrigerant tank from the scale platform. Touch  to continue to the next screen. Touch  to reset the empty tank weight to zero. Touch  to move to next screen.

Pressure Transducer

Note: Not all screens are shown.

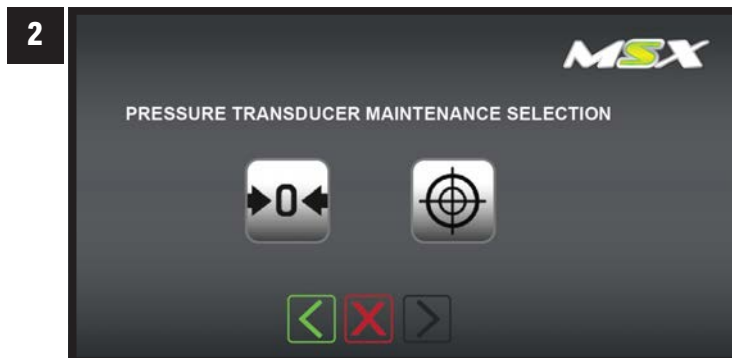
The internal pressure transducers are used during recovery, vacuum, air purge and in the manifold mode. Access this menu if you suspect the internal pressure transducer readings are inaccurate.

- Calibration will require a certified pressure source above 70 PSIG.
- Follow the displayed direction for the select transducer maintenance function.



HOME ► MACHINE UPKEEP ► MAINTENANCE

From the **Home** screen, touch to access the **Machine Upkeep** screen. Touch **Maintenance** and then on the **Maintenance** screen, touch for **Pressure Transducer**.

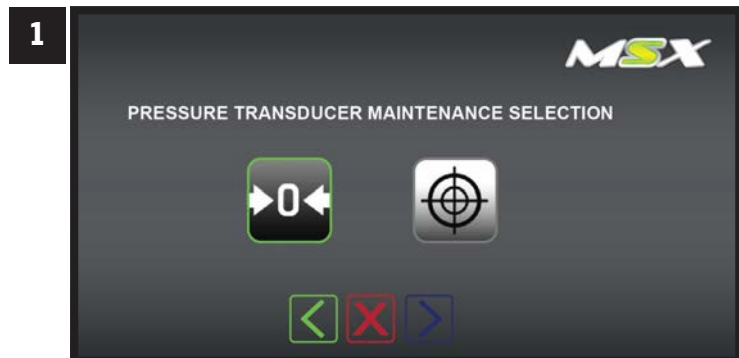


HOME ► MACHINE UPKEEP ► PRESSURE TRANSDUCER

Select **Tare** or **Calibrate** .

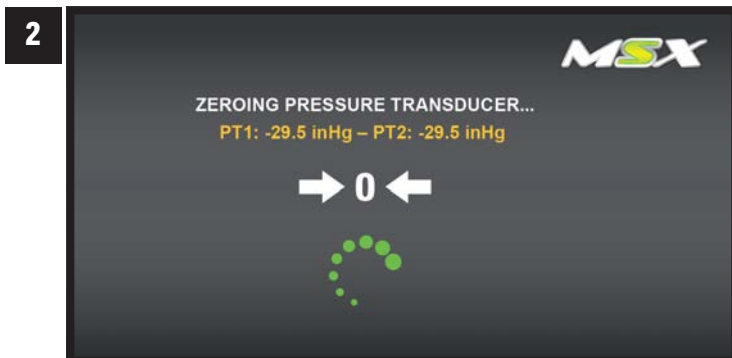
Tare (Zero)

Note: Not all screens are shown.



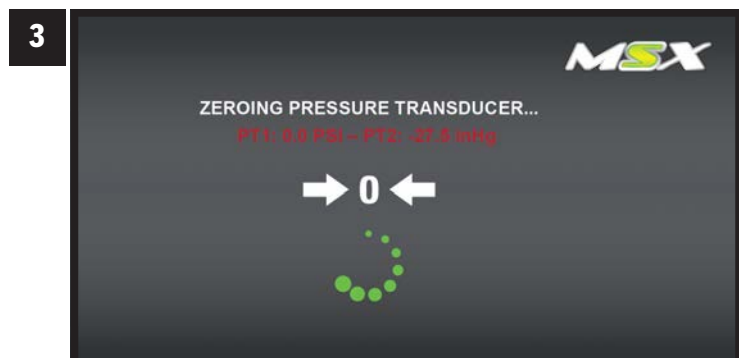
HOME ► MACHINE UPKEEP ► PRESSURE TRANSDUCER

Touch to tare (zero out) the pressure transducer.



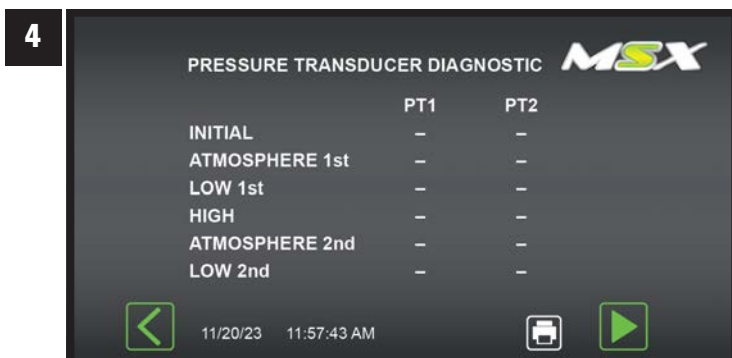
HOME ► MACHINE UPKEEP ► PRESSURE TRANSDUCER ► TARE

Wait while PT1 zeros out.



HOME ► MACHINE UPKEEP ► PRESSURE TRANSDUCER ► TARE

Wait while PT2 zeros out.



HOME ► MACHINE UPKEEP ► PRESSURE TRANSDUCER ► TARE

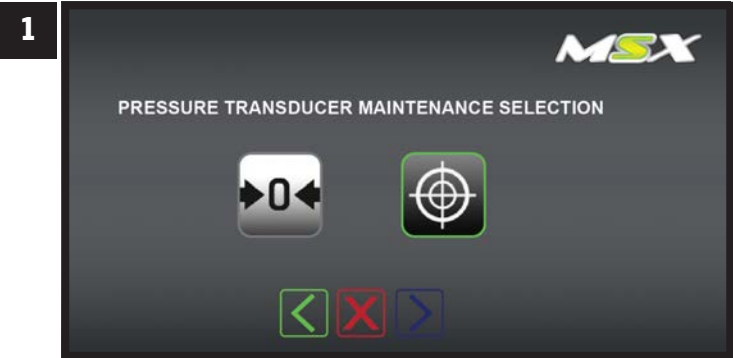
Chart will populate with pressure transducer diagnostics.

Maintenance (continued)

Pressure Transducer (continued)

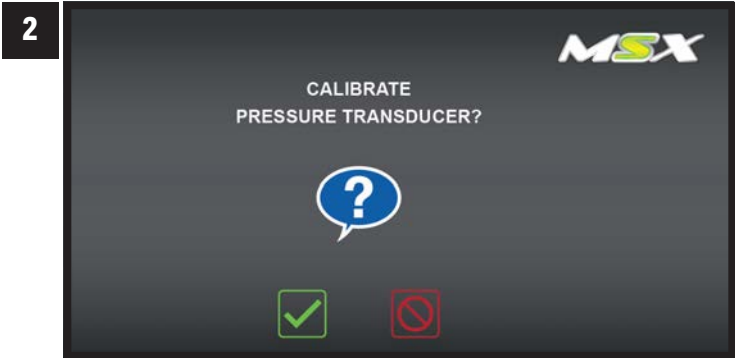
Calibrate

Note: Not all screens are shown.



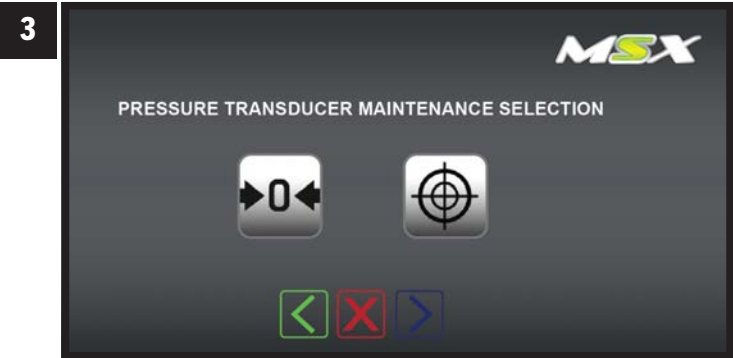
HOME ▶ MACHINE UPKEEP ▶ PRESSURE TRANSDUCER

Touch  to calibrate the pressure transducer.




HOME ▶ MACHINE UPKEEP ▶ PRESSURE TRANSDUCER ▶ CALIBRATE

Touch  for *Help* or  to proceed.



HOME ▶ MACHINE UPKEEP ▶ PRESSURE TRANSDUCER ▶ CALIBRATE

Touch  to proceed to the next Maintenance step.

Automatic Air Purge

Note: Not all screens are shown.

This mode should only be entered with direction by CPS Products Technical Support or by a CPS Authorized Service Center.




The MSX Series features automatic air purge at machine start up. Air purge may also be selected in the *Maintenance* mode. This mode enables the testing of each device controlled by the MSX Series computer.

These devices include the ball valves, vacuum pump, compressor and pressure transducers. Air Purge reduces “non-condensable gases” in the storage tank to an acceptable level and may take a few minutes to complete.

DO NOT TURN THE MACHINE OFF OR UNPLUG THE MACHINE DURING AN AIR PURGE CYCLE.



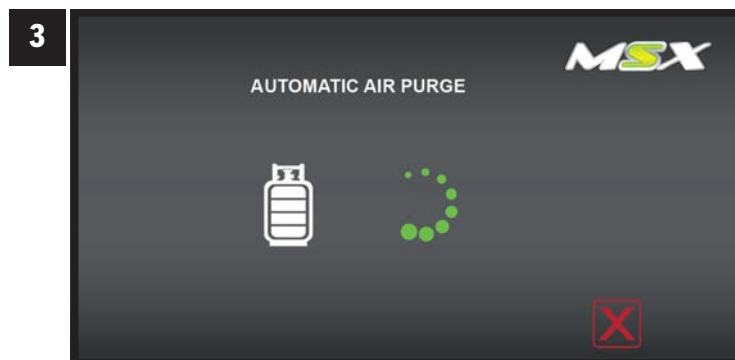
HOME ► MACHINE UPKEEP ► MAINTENANCE

From the *Home* screen, touch  to access *Machine Upkeep*. Touch *Maintenance*  then *Air Purge* .



HOME ► MACHINE UPKEEP ► AIR PURGE

The MSX will check the refrigerant tank pressure.



HOME ► MACHINE UPKEEP ► AIR PURGE

The machine will begin the automated air purge process. When complete, you will be returned to the main *Maintenance* screen.

Diagnostics

Note: Not all screens are shown.

This features allows the diagnostics of individual valves, controls, scale, tank, etc.



HOME ► MACHINE UPKEEP ► MAINTENANCE

From the **Home** screen, touch to access **Machine Upkeep**. Touch **Maintenance** then select .



HOME ► MACHINE UPKEEP ► VALVES & CONTROLS

Displayed are a list of valves, controls, PT, scale, etc., for diagnostics. Select desired valve(s) or control(s) for individual diagnostics.



HOME ► MACHINE UPKEEP ► VALVES & CONTROLS

Or, select PT1 or PT2 for diagnostics.



HOME ► MACHINE UPKEEP ► VALVES & CONTROLS

Zeroing PT1 & PT2.

Field Software Upgrade

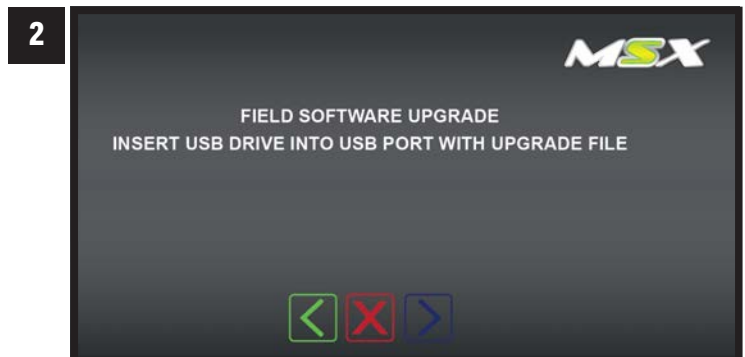
Note: Not all screens are shown.

Use this mode to update the MSX Series system software. The latest MSX Series firmware can be downloaded at: <https://www.cpsproducts.com/support/firmware-updates/>. Select the MSX Series model and follow the instructions:



HOME ► MACHINE UPKEEP ► MAINTENANCE

From the **Home** screen, touch to access **Machine Upkeep**. Touch **Maintenance** then **Software Upgrade** .



HOME ► MACHINE UPKEEP ► MAINTENANCE ► SOFTWARE UPGRADE

To upgrade software in the field, insert a USB drive with upgraded file into USB port located on the control panel. **Power must remain on during this operation.** After software is loaded, touch to move to the next screen.

Touch Screen Display Calibration

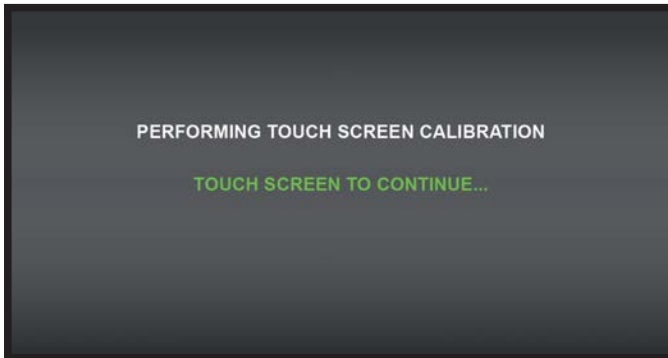
Note: Not all screens are shown.

Under certain conditions, the touch screen may lose its calibration (i.e. touches on the screen don't result in the desired result). When touching a screen function key, if it does not actuate the function, or engages an adjacent function, the screen needs to be calibrated.

- Turn the machine's power off.
- While pressing and holding any spot on the touch screen, turn the power back on.
- A screen **SETUP** menu will be displayed.
- Select **Screen Calibration** and follow the on-screen directions.
- Calibration is then complete.



1



SETUP ► SCREEN CALIBRATION

Touch screen to continue.

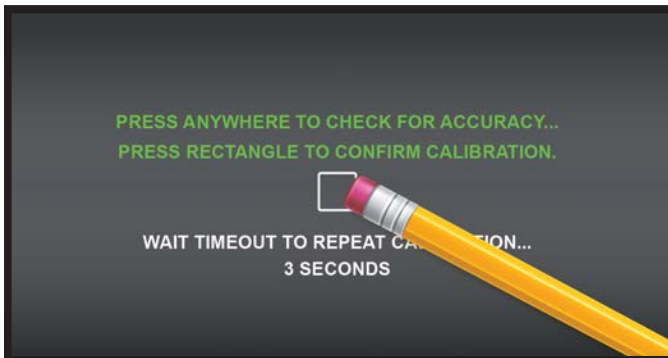
2



SETUP ► SCREEN CALIBRATION

The MSX will ask you to touch and release a series of filled circles (appearing in red) on the screen.

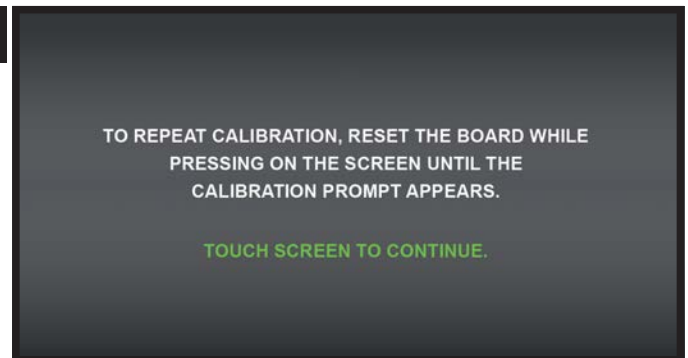
3



SETUP ► SCREEN CALIBRATION

Touch anywhere to check for accuracy. Touch rectangle to confirm accuracy. Wait time-out to repeat the calibration.

4





SETUP ► SCREEN CALIBRATION

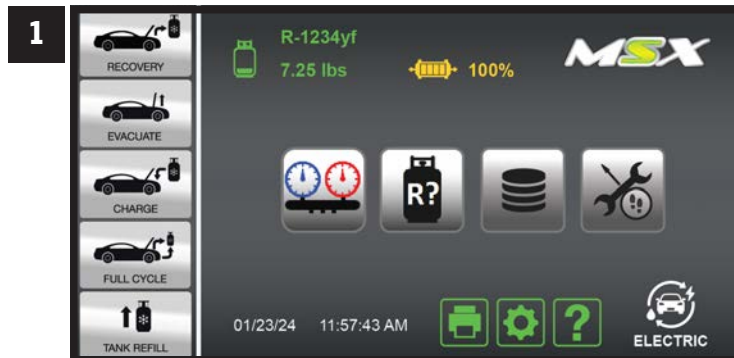
To repeat calibration, reset the board while touching the screen until calibration prompt appears.

Car System Health Mode


Note: Not all screens are shown.

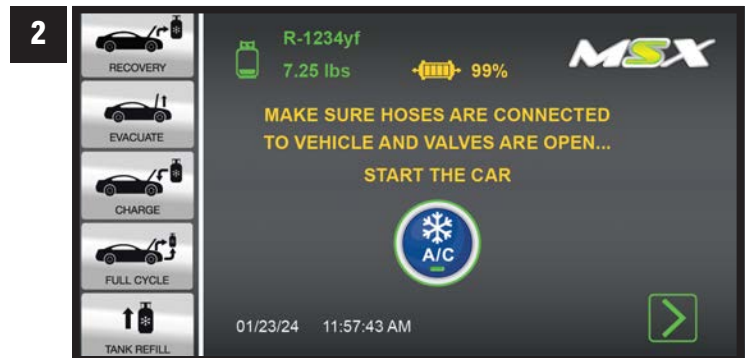
Use this mode for checking system pressures and vent temperature before and after servicing the AC system. System parameters can be printed while in this mode to provide a before and after comparison. When entering the Car Health mode, the machine will provide a prompt to start the vehicle's A/C system. Readings can then be collected and printed.

If Refrigerant Recovery is planned next, touch . This will return users to the **Home** screen. If all is well, touch  and the machine will guide users through clearing the hoses of refrigerant back into the AC system.



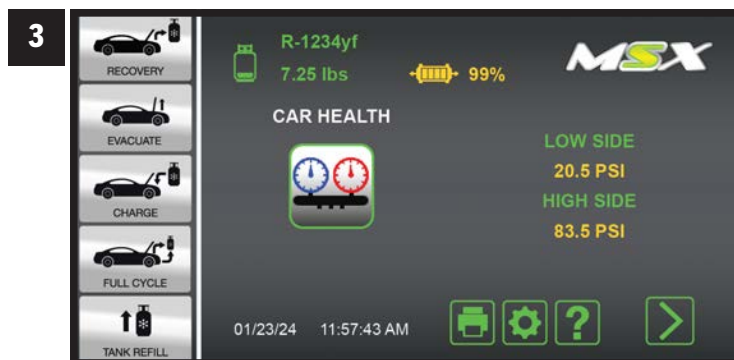
HOME

From the **Home** screen, touch  to view vehicle's A/C system low and high side pressures, and probe temperature (if used).




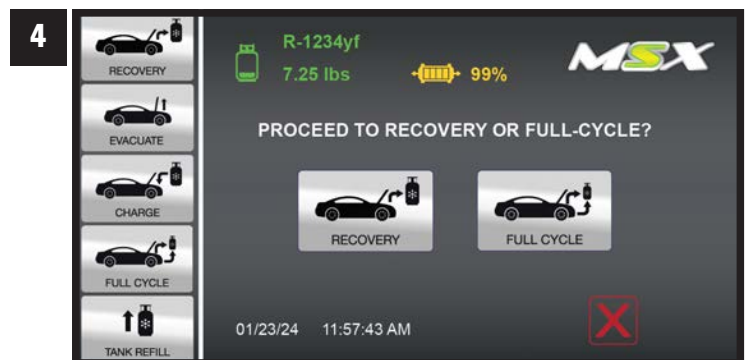
HOME ► CAR SYSTEM HEALTH

Make sure hoses are **connected** to vehicle and valves are **open**. Start the vehicle.



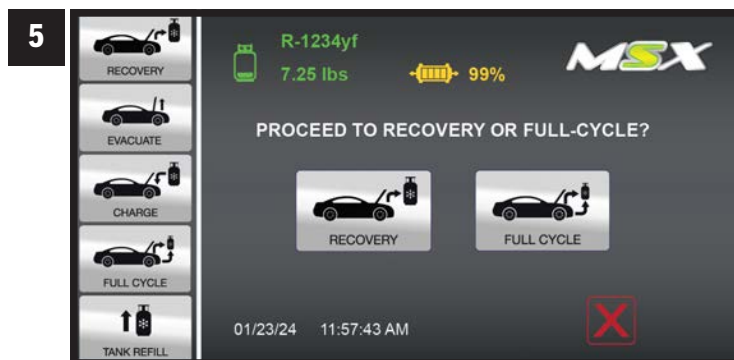
HOME ► CAR SYSTEM HEALTH

Ambient high side pressure and low side pressure shown. Touch  to proceed to next screen.



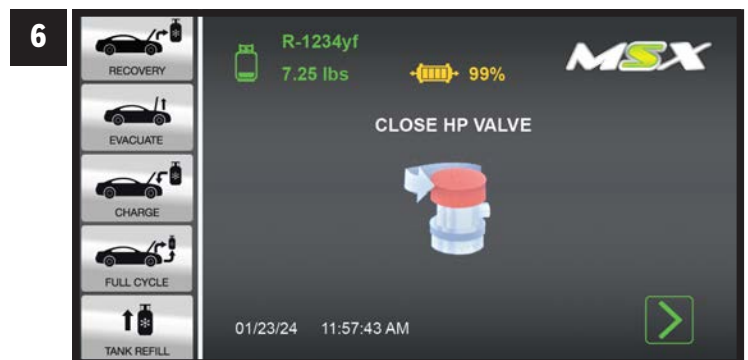
HOME ► CAR SYSTEM HEALTH

Select **Recovery** or **Full Cycle**.



HOME ► CAR SYSTEM HEALTH

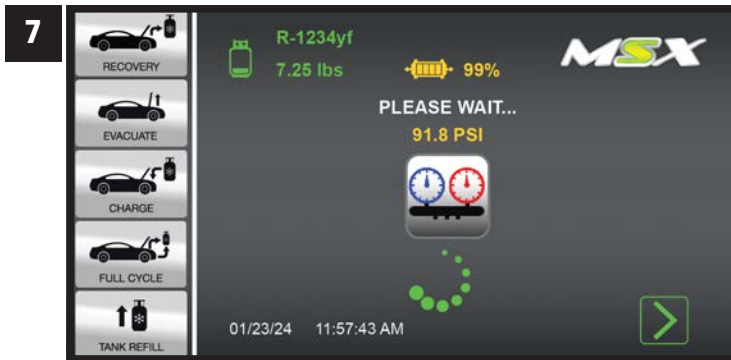
Touch  to proceed to **Recovery** or **Full Cycle**.



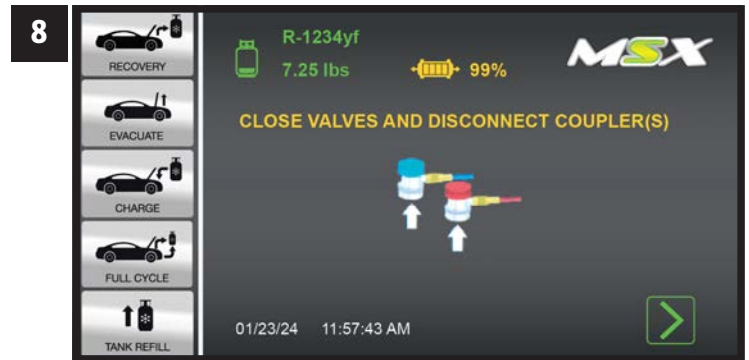
HOME ► CAR SYSTEM HEALTH

Close high pressure valve.

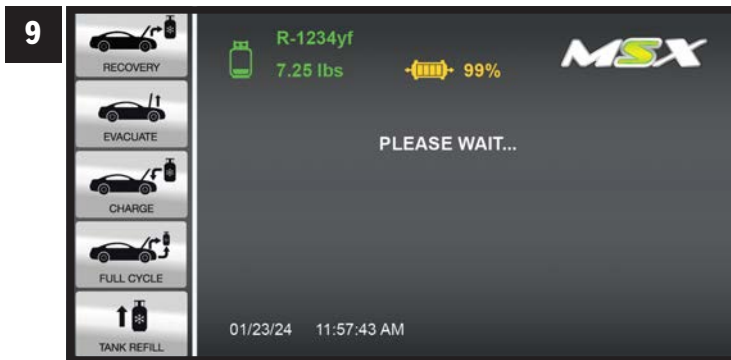
Car System Health Mode (continued)



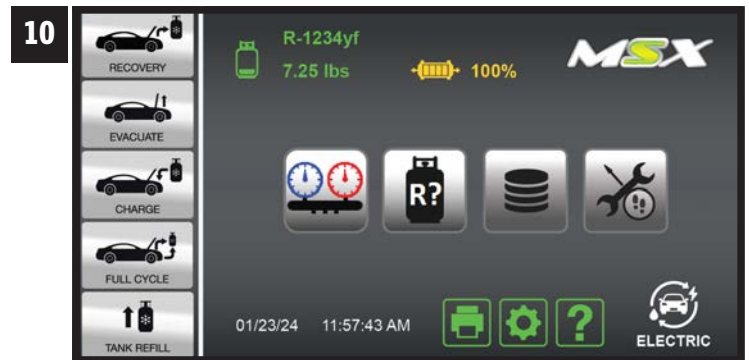
HOME ► CAR SYSTEM HEALTH
Wait.



HOME ► CAR SYSTEM HEALTH
Close valves and disconnect couplers.



HOME ► CAR SYSTEM HEALTH
Wait.



HOME ► CAR SYSTEM HEALTH
Return to *Home* screen

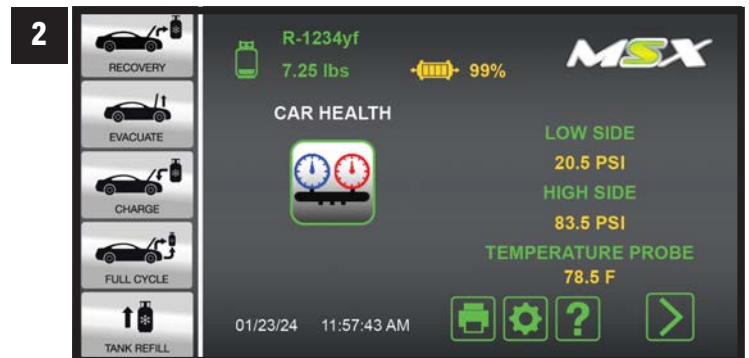
Corded Temperature Probe (Included)

The included corded temperature probe #TMX2P has a 15' (4.5m) reach and is commonly used to measure vent or liquid temperatures in vehicles. It has an operating temperature range of -40°F to 257°F / -40°C to +125°C.

CAUTION: Keep metal portion of probe away from any moving or electrical parts.



At any time, plug the end of the corded temperature probe into the RCA jack on the front of the MSX control panel. Insert the probe-end into a vehicle A/C vent or any other location where a temperature reading is needed.



HOME ► CAR SYSTEM HEALTH

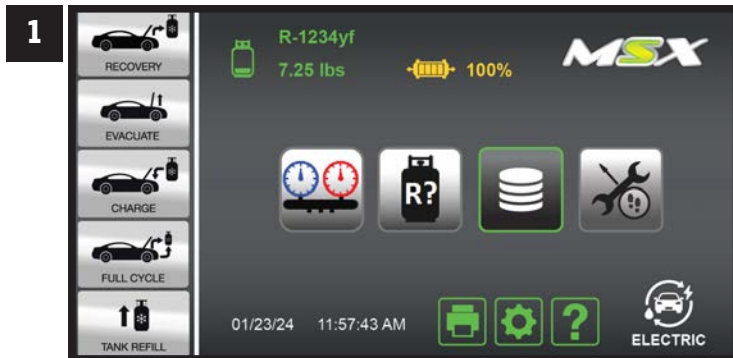
View the resulting temperature in *Car System Health* or *Valves & Controls*.

A/C Database for North American Vehicles

Note: Not all screens are shown.

The North American Vehicle A/C Database includes information such as type and weight of all refrigerants/oil used in vehicles sold in North America since 1994. To use, insert the included SD Card (Secure Digital Memory Card) into the back of the MSX Machine. An “End User License Agreement” (see APPENDIX in this manual) will appear on the MSX color screen.

By accessing this North American Vehicle A/C Data Base, you consent to all the terms and conditions of this agreement. If you do NOT agree to all terms and conditions, do NOT access or use the databases.




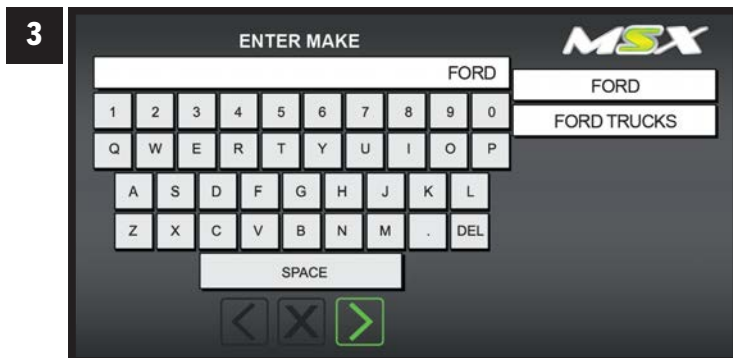
HOME

From the *Home* screen, touch .



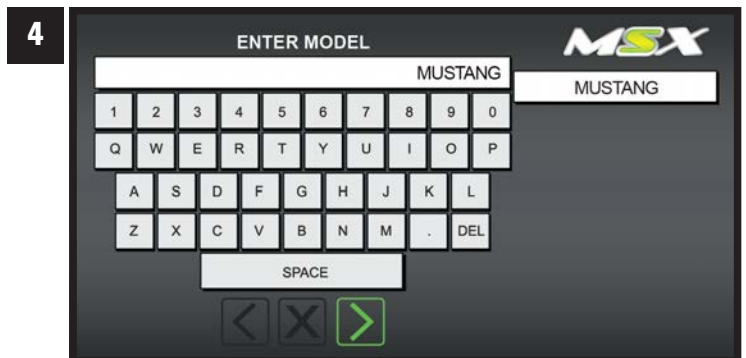
HOME ► A/C DATABASE

Use keypad to enter *Year* vehicle was made. Touch  to enter data and proceed to next screen.




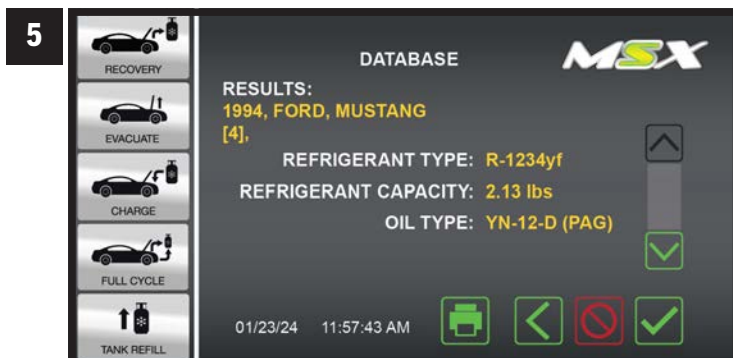
HOME ► A/C DATABASE

Enter vehicle *Make* (Brand). Touch  to enter data and move to next screen.




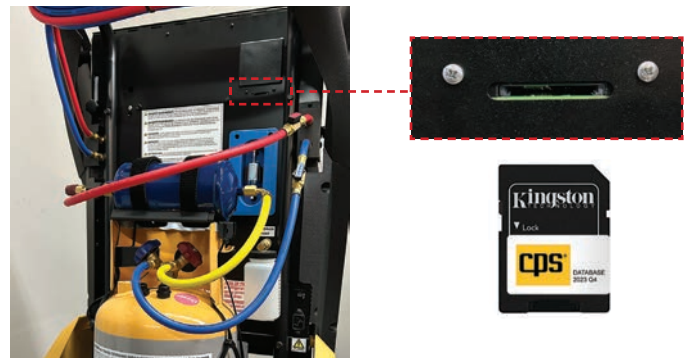
HOME ► A/C DATABASE

Enter vehicle *Model* name. Touch  to enter data and move to next screen.



HOME ► A/C DATABASE

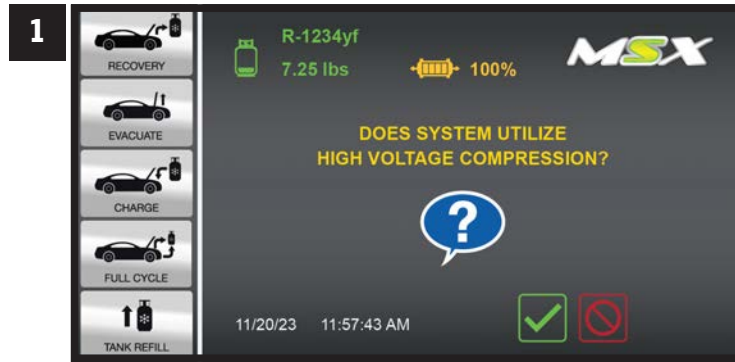
A/C Database will provide *Refrigerant Type*, *Refrigerant Capacity*, and *Refrigerant Oil Type*. If information shown is OK, touch  to enter data and move to next screen.






SD card slot is located on the back of the MSX machine.

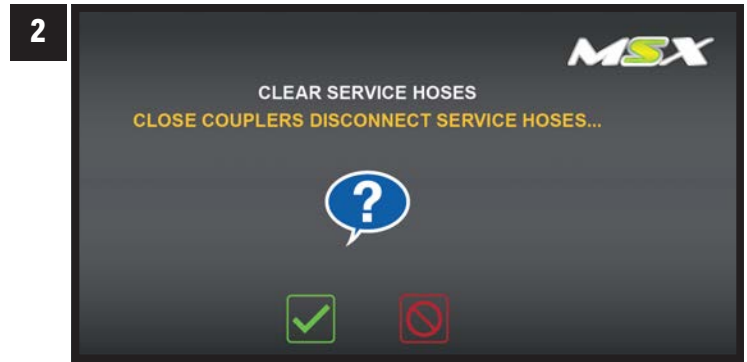
Flush Refrigerant Hoses

Note: Not all screens are shown.




HOME ► HYBRID

From the **Home** screen, touch  if the vehicle is Hybrid/Electric to flush service hoses. Touch  to continue. If machine is in Non-SAE mode, touch  to flush service hoses.

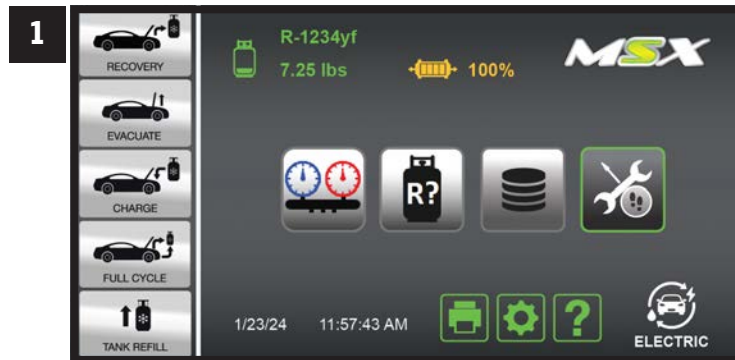


HOME ► HYBRID

To clear service hoses (of refrigerant), close couplers and disconnect service hoses, then touch  to continue. The **Home** screen will appear after the clearing process has been completed.

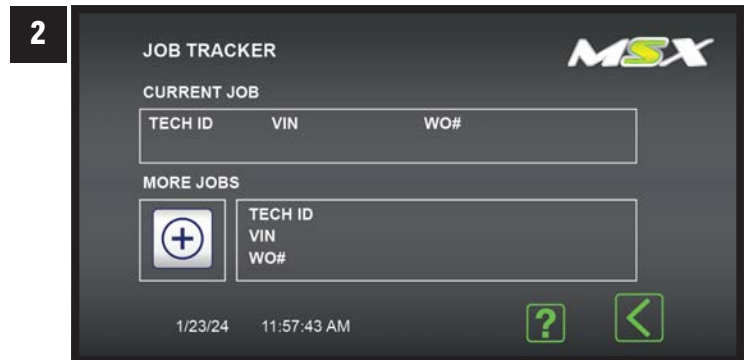
Job Tracker

Note: Not all screens are shown.



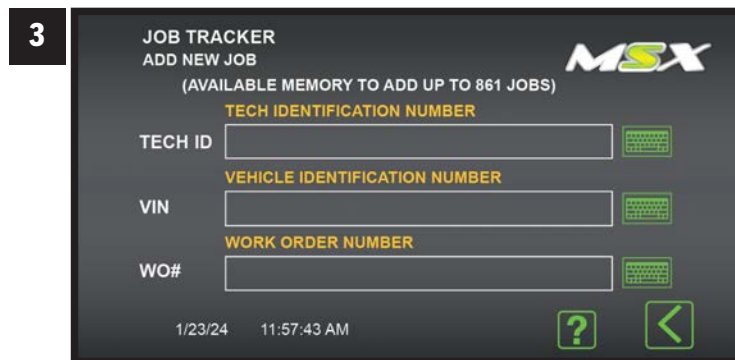
HOME

Touch  on the **Home** screen.





HOME ► JOB TRACKER








































If current job data was previously entered, it will appear in top portion of screen. Touching the "+" icon brings up the next screen. Enter your shop password.















































HOME ► JOB TRACKER











































Touch  to enter data for each field. Touch  to proceed to next screen.










































Appendix (Complete Icon Library)

Icon Name	Description	Off/On
AIR PURGE	Touch to select AIR PURGE	 
AMERICAN	Touch to select AMERICAN Units	 
BAR	Touch to select BAR	 
BOTH COUPLERS	Touch to select BOTH couplers	 
° C	Touch to select CELSIUS	 
CALIBRATION	Touch to select CALIBRATION	 
CAR SYSTEM HEALTH MODE	Touch to launch CAR SYSTEM HEALTH MODE	 
CHANGE TANK	The CHANGE TANK icon notifies the user to change the tank	
CHANGE UOM	Touch to change the unit of measurement	 
CHARGE	Touch to perform a CHARGE service	
CHARGE COMPLETE	Indicates that the CHARGE service is COMPLETE	
CHARGE LOW SIDE	Press to select Low Side Charging	 
CHECK SCALE COMPLETE	The SCALE CHECK COMPLETE notifies users that a scale check is complete	 
CLOSE BALL VALVE	Press to close ball valve	 
CLOSE COUPLER	The CLOSE COUPLER icon notifies the user to close the coupler during a recharge service	
CLOSE HP	Notifies the user to CLOSE HP valve during a CHARGE service	
CLOSE VALVE	Notifies user to CLOSE VALVE	
CONNECT HP	Notifies user to connect HP port during tank refill	
CPS FILTER	CPS FILTER	 
DISCONNECT COUPLERS	Notifies the user to DISCONNECT COUPLERS	
DRAIN OIL	The DRAIN OIL icon notifies the user that oil is draining from the vehicle	
END-USER AGREEMENT	Touch to access the End-User License Agreement	 
ERROR	Displays when there is an ERROR	 
° F	Touch to select FAHRENHEIT	 

Icon Name	Description	Off/On
FAILED	Indicates that a given operation FAILED	
FILTER	Displays the current status of the filter life.	
FILTER CHANGE	Displays when a filter change is required	
FILTER CHANGE	Touch to CHANGE FILTER	 
FILTER CHANGE	Touch to CHANGE FILTER	 
FULL CYCLE COMPLETE	Indicates that the FULL CYCLE service is COMPLETE	
GRAMS	Touch to select GRAMS as UOM	 
HELP	Touch to launch the HELP Menu	 
HELP	Provides Firmware version	
HIGH COUPLER	Touch to select the HIGH SIDE coupler only	 
HOME	Touch to launch the HOME screen	 
INJECTION	Notifies the user to INJECT oil and/or dye at this point in the service	
INTERNATIONAL	Touch to select INTERNATIONAL UOM	 
KGCM2	Touch to select KGCM2	 
KGS	Touch to select KGS as UOM	 
KPA	Touch to select KPA	 
LANGUAGE	Touch to select LANGUAGE	 
LBS	Touch to select LBS as UOM	 
LBS:OZ	Touch to select LBS:OZ as UOM	 
LOW COUPLER	Touch to select the LOW SIDE coupler only	 
MAINTENANCE	Touch to launch the MAINTENANCE menu	 
METRIC	Touch to select METRIC UOM's	 
MPA	Touch to select MPA	 
NOT NOW	Touch to postpone suggested operation	 
OPEN BALL VALVE	Press to Open Ball Valve	 

Appendix (Complete Icon Library) (continued)

Icon Name	Description	Off/On
OZ	Touch to select OZ as UOM	 
PLACE WEIGHT	Notifies user to PLACE WEIGHT on the scale	
PRINT	Touch to PRINT a report of the service	 
PSIG	Touch to select PSIG	 
PT	Touch to select PRESSURE TRANSDUCER	 
PURITY	PURITY	 
QUIT	Touch to quit the current function	 
R-1234yf	Touch to select R-1234yf Refrigerant	 
R-134a	Touch to select R-134a Refrigerant	 
R-22	Touch to select R22 Refrigerant	 
R-407	Touch to select R407 Refrigerant	 
RECOVERY	Touch to perform a RECOVERY service	
RECOVERY COMPLETE	Indicates that the RECOVERY service is COMPLETE	
REFRIGERANT	REFRIGERANT	
REFRIGERANT CHANGE	Touch to CHANGE REFRIGERANT	 
REGISTER	Touch to REGISTER unit	 
RELAY	Touch to select RELAY	 
REMOVE WEIGHT	Notifies user to REMOVE WEIGHT from scale	
SAE	Touch to select SAE	 
SAE CHARGE	Touch to perform an SAE CHARGE service	
SAE CHARGE COMPLETE	Indicates that the SAE CHARGE service is COMPLETE	
SCALE	Touch for SCALE functions	 
SCALE CHECK	Touch to perform SCALE CHECK	 
SCALE CHECK	The SCALE CHECK icon notifies users that a scale check is in progress	
FULL CALIBRATION	Touch to perform full calibration	 

Icon Name	Description	Off/On
SCALE ZERO	Touch to RE-ZERO the scale	 
SERVICE	Touch to select SERVICE	 
SERVICE HOSES BEING FLUSHED	Indicates that the SERVICES HOSES are BEING FLUSHED	 
SET TIME	Touch to SET TIME	 
SETTINGS	Touch to launch the SETTINGS screen	 
SETUP	Touch to launch the SEUP menu	 
SPEAKER	Touch to enable sound	 
START AC	Notifies user to start vehicle and turn on AC during service	
TANK	Indicates the level of refrigerant in the TANK	
TANK FULL	Notifies user that TANK is FULL	
TANK REFILL	Touch to perform a TANK REFILL	
TANK TARE SETUP	Press to change tank weight and WC	 
TANKS REFILL COMPLETE	Indicates that the TANK REFILL is COMPLETE	
TURN UPSIDE DOWN	Notifies user to TURN TANK UPSIDE DOWN during tank refill	
TANK-TO-TANK RECYCLE	Extract refrigerant off site from large-scale vehicles and heavy-duty equipment	 
TANK-TO-TANK CHARGE	Charge refrigerant from from large-scale vehicles and heavy-duty equipment	 
UNIT	Touch to select UOM	 
UPDATE	Touch to UPDATE	 
UPGRADE	Touch to select UPGRADE	 
UPKEEP	Touch to launch the UPKEEP menu	
VACUUM	Touch to perform a VACUUM service	
VACUUM COMPLETE	Indicates that the VACUUM service is COMPLETE	
WARNING	The WARNING icon appears to caution users of a potential hazard	
WEIGHT	Touch to Choose WEIGHT UOM	 
ZERO	Touch to RE-ZERO the pressure transducer	 
ZEROING	Indicates that the unit is ZEROING	

Error Codes

Error Code	Description
E1-BAD TXT EPROM	Scale is bad
E2-SCALE ADC	Connection to the scale electronics lost
E3-SCALE EPROM	Scale not calibrated
E4-CANNOT CAL	Scale cannot be calibrated or bad calibration
E5-MBV FAULT: X	Where X is a number from 1 to 5 indicating which MBV has failed
E6-AMB. THRM	Ambient thermistor in the “head” is bad
E7-TNK THRM	Thermistor attached to the oil separator is bad
E8-PT TRANS	Pressure transducer is bad
E9-WEAK BATT	Should never appear
E10-BAD FILTERTIME	Filter code problems
E11-DEFAULTS NOT SET	Defaults are not set
E12-BAD GRAPH MEM	Problems with graphics like Chinese and Russian
E13-BAD PTR. TO INFO MEM	Major software corruption, fatal error
E15 FLOW SWITCH ERROR	Air flow switch is open
UNKNOWN ERROR	Cause of problem cannot be identified

Identifier Codes

Identifier Code	Description	Solution
“00001” Error #1	The air or gas readings were unstable.	Move the unit away from sources of EMF or RFI such as radio transmitters and arc welders.
“00002” Error #2	The air or gas readings were excessively high.	
“00003” Error #3	The air calibration resulted in a low output.	Prevent refrigerant from flowing into the unit through the sample inlet during air calibration. Allow any refrigerant in the atmosphere to dissipate before performing air calibration. Verify that the air intake and the exhaust are not obstructed. Verify that the white filter is correctly plugged into the rubber grommets.
“00004” Error #4	The unit is beyond the operating temperature range.	Move the unit to an area where the ambient temperature is within the specified operating range.
“00005” Error #5	The refrigerant sampled has an excessively large amount of air or there was little or no sample flow due to a closed valve or plugged sample filter. This is the code to prompt the user to change the brass filter. This should be considered more as a prompt than an actual error.	Verify the coupler valve is open. Verify the sample filter is not plugged with debris or oil. Replace brass sample filter. Verify that the white filter is correctly plugged into the rubber grommets.
“00006” Error #6	The air sensor has expired and must be replaced before the analyzer can be used.	Replace air sensor.
“00007” Error #7	The pressure read by the sensor has been determined to be too high.	Verify the exhaust is not obstructed.

Replacement Parts

Part Number	Description	MSX Model Application			
		MSX134/ MSX134-H	MSX3030	MSX1234	MXHD
481500	Spotgun® Oil Injection Kit	●	●		●
481500yf	Spotgun® Oil Injection Kit		●	●	
54-157	Tank hook & loop Strap	●	●	●	●
ACDB25	Database Card	●	●	●	
AR2788SX11	Yellow Hose (tank liquid to filter IN)	●	●	●	●
AR2788X14A	R-134A Refill Adapter	●	●		●
AR2788X16	Low Side Gauge	●	●	●	●
AR2788X17	High Side Gauge	●	●	●	●
AR2788X64	Wheel, caster with brake	●	●	●	●
AR2788X65	10" wheel	●	●	●	●
AR2788XHB115	Heater blanket	●	●	●	●
ARXF5	Filter dryer only	●	●	●	●
CRX400T	50 lb 400psi Recovery Tank	●	●	●	●
CRX430T	30 lb 400psi Recovery Tank	●	●	●	
FA1234X13	Blue Hose - Tank Vapour Hose	●	●	●	●
FA1234X14	R134A - Red Hose Assembly – Filter out to upper bulkhead block port	●	●		●
FA1234X15	R1234YF - Red Hose Assembly – Filter out to upper bulkhead block port		●	●	
FA1234X36	1234YF Tank Refill Adapter		●	●	
FX3030X1	FX Series Maintenance Kit—Filter, Vacuum Pump oil and Coupler O-rings	●	●	●	●
FX3030X18	Low Side 1234yf Service Hose -12mm		●	●	
FX3030X19	High Side 1234yf Service Hose - 12mm		●	●	
FX3030X52	Low Side R134A service hose - 14mm	●	●		●
FX3030X53	High Side R134A service hose - 14mm	●	●		●
MXXC	Dust Cover	●	●	●	●
QC1234SET	R1234yf HIGH AND LOW COUPLER SET – 12 mm		●	●	
QC134SET	134 COUPLER SET-HIGH & LOW SIDE 14MM	●	●		●
QCH1234	High Side R1234YF coupler 12 mm		●	●	
QCH134	134A HIGH SIDE COUPLER	●	●		●
QCL1234	Low Side R1234YF coupler 12 mm		●	●	
QCL134	R-134A Low Side Coupler	●	●		●
RIXF	Identifier Filter		●	●	
RIXFR	Identifier Restrictor		●	●	
TMX2P	Temperature Probe	●	●	●	●

MAXXAIR™ Warranty

TWO-YEAR FULL COVERAGE WARRANTY

CPS Products Inc (herein CPS), warrants this MSX series machine to be free from defects in materials, workmanship, and components for 2 Years from the date of purchase. If equipment should fail during the warranty period, it will be repaired at no charge to the original owner. Any parts or labor required to repair a defective machine or components covered under the warranty will be covered at no charge to the original purchaser of the machine.

Two Year Parts Warranty: Through the end of Year 2, CPS will repair or replace (at our option) any parts that are found to be defective.

Restrictions that apply to this limited warranty:

- i. This machine must be used in normal use situations only (as described in this Owner's Manual).
- ii. This limited warranty does NOT apply if: This machine, or a product part is broken by accident; this machine is misused, tampered with or modified in any way; this machine is used for recovering or recycling any substance other than the specified refrigerant type.
- iii. This machine must be serviced and maintained as specified in this Owner's Manual.
- iv. All warranty service claims must be made within the specified warranty periods mentioned above. Proof-of-purchase date by the original owner must be supplied.
- v. Warranty or service claims are subject to authorized inspection for product defect(s).
- vi. At the discretion of CPS, any part that fails or must be repaired within the warranty period, may be a new or reconditioned part.
- vii. At the discretion of CPS, if this machine fails or must be repaired within the warranty period, will be repaired or replaced with a different reconditioned machine.
- viii. All repaired equipment will carry an independent 90 day warranty.
- ix. Transportation charges for warranty service will be reimbursed by CPS upon verification of the warranty claim and submission of a freight bill for normal ground service. Approval from CPS must be obtained prior to shipping to a CPS authorized service center.
- x. CPS shall not be responsible for any additional costs associated with a product failure including, but not limited to, loss of work time, loss of refrigerant, cross-contamination of refrigerant, and unauthorized shipping and/or labor charges.
- xi. Use of recovery/recycling equipment with unauthorized refrigerants or sealants voids this warranty.
- xii. Authorized refrigerants are listed on the equipment or are available through the CPS Technical Service Department.
- xiii. CPS is not responsible for lost refrigerant. Owners should leak test this machine regularly and store this machine with all valves closed.

This warranty does not apply to equipment that has been altered, misused or solely in need of field service maintenance. This repair policy does not include equipment that is determined to be beyond economical repair.

WARRANTY VOIDED IF MACHINE USED FOR ANY OTHER PURPOSE.

A/C Database End-User License Agreement

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1. **LICENSE GRANT.** MOTOR hereby grants to YOU a nontransferable, non-exclusive, limited license to access and use of the MOTOR Databases (“DATABASES”), including any updates provided by MOTOR on a vehicle-by-vehicle look-up basis, for vehicle specification reference only, in accordance with the terms and conditions of this Agreement.
2. **USER RESTRICTIONS.** The Databases may only be used on one physical service equipment unit, and may not be used at any other site nor made accessible from any other site via a computer network. You agree that You shall not, and shall not permit others, including but not limited to third parties, to directly or indirectly (i) alter or copy in any form or medium all or any part of the Databases (except for data located on an individual, vehicle by vehicle, lookup basis), nor make such data part of any electronic retrieval system; (ii) create any derivative work from, or adaptation of, the Databases; (iii) use the Databases to facilitate the generation of collision repair estimates; (iv) lease, license, sell, or otherwise publish, communicate, distribute or display to third parties in any form or medium all or any part of the Databases, (v) create any publications, in electronic, printed or other format, based in whole or in part on data from the Databases, alone or in combination with any other data; (vi) download the Databases (other than the data obtained on a vehicle-by-vehicle look-up basis) or transmit the Databases electronically by any means; (vii) use the Databases on multiple computers or at multiple locations unless such use is covered by an individual license for each computer or use; (viii) remove any product identification, copyright, trademark or other notice from the Databases or the Documentation; (ix) use any graphics contained in the Databases other than as specifically granted in Section 1 above; or (x) reverse engineer, reverse assemble, or reverse compile the Databases; (xi) MOTOR in its sole judgment shall be entitled to discontinue providing any OEM proprietary data from the Databases in the event it is, for any reason, not available or in the event any OEM imposes commercially unreasonable fees or restrictions on use of such data.
3. **OWNERSHIP; CONFIDENTIALITY.** You agree that the data contained in the Databases contain confidential information, and that MOTOR or its licensing OEMs owns all rights in the Databases and the data contained therein, including without limitation all copyright and other proprietary rights. You agree to keep confidential and use your best efforts to prevent and protect the Databases from unauthorized disclosure or use. You agree that the confidentiality obligations shall survive termination of this Agreement.
4. **DISCLAIMER OF WARRANTIES, LIABILITY.** MOTOR FURNISHES THE DATABASES ON AN “AS IS” BASIS AND WITHOUT ANY WARRANTY. MOTOR DOES NOT WARRANT THAT USE OF THE DATABASES WILL BE UNINTERRUPTED OR ERROR FREE, OR WILL MEET YOUR REQUIREMENTS. MOTOR SPECIFICALLY EXCLUDES AND DISCLAIMS ALL WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS AND ANY WARRANTY THAT MAY ARISE BY REASON OF TRADE USAGE, CUSTOM OR COURSE OF DEALING AND YOU HEREBY EXPRESSLY WAIVE ANY AND ALL SUCH WARRANTIES. YOU ASSUME THE ENTIRE RISK AS TO RESULTS AND PERFORMANCE OF THE DATABASES. UNDER NO CIRCUMSTANCES SHALL MOTOR BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, ARISING OUT OF OR IN ANY WAY RELATED TO THIS AGREEMENT OR THE DATABASES. SUCH LIMITATION ON DAMAGES INCLUDES, BUT IS NOT LIMITED TO, LOST GOODWILL, LOST PROFITS, LOSS OF DATA, WORK STOPPAGE OR IMPAIRMENT OF OTHER GOODS, REGARDLESS OF THE LEGAL THEORY ON WHICH THE CLAIM IS BROUGHT, EVEN IF MOTOR HAS BEEN ADVISED OF THE POSSIBILITY

A/C Database End-User License Agreement (continued)

OF SUCH DAMAGE OR IF SUCH DAMAGE COULD HAVE BEEN REASONABLY FORESEEN, AND NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY EXCLUSIVE REMEDY PROVIDED IN THIS AGREEMENT.

5. **TERM; TERMINATION.** This Agreement is effective for the period of time set forth in your Agreement with the web site owner hosting the DATABASES, but in no event longer than the term of the agreement between MOTOR and that web site Distributor. MOTOR may terminate this Agreement if You do not comply with any term or condition of this Agreement. Should this Agreement terminate, You agree to destroy any data previously obtained from the DATABASES.
6. **MISCELLANEOUS.**
- (a) This Agreement is the complete and exclusive statement between You and MOTOR relating to the subject matter hereof and supersedes all prior oral, written and/or contemporaneous negotiations, commitments and understandings of the parties.
- (b) This Agreement shall be governed by the laws of the State of New York without giving effect to any principles of conflicts of law. The United Nations Convention on Contracts for the International Sale of Goods shall not apply. You hereby irrevocably and unconditionally submit to the exclusive jurisdiction of any state or federal court sitting in New York, New York over any suit, action or proceeding arising out of or relating to this Agreement; provided that the foregoing shall not restrict Licensor or its agents from filing suits, actions or proceedings arising out of Host's failure to pay in any jurisdiction of Licensor or its agent's choice.
- (c) No delay or failure by MOTOR to exercise or enforce at any time any right or provision hereof shall be considered a waiver thereof or of MOTOR's right thereafter to exercise or enforce each and every right and provision of this Agreement.
- (d) If any provision hereof shall be held illegal, invalid or unenforceable, in whole or in part, such provision shall be modified to the minimum extent necessary to make it legal, valid and enforceable, and the legality, validity and enforceability of all other provisions of this Agreement shall not be affected thereby.
- (e) This Agreement may only be amended, modified, suspended or canceled by a writing signed by MOTOR.
- (f) This Agreement may be assigned by MOTOR, but may not be assigned by You.

CPS Company Locations

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