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Vehicle Technical Info

NOTE: The $\not\sim$ mark indicates an article is being repeated from a previous issue of Tech Talk due to the subject's importance.

GROUP 00 - General

DEALER LETTER: UPDATED ADVANCED ELECTRONIC SERVICE PROCEDURES –

All Models and Years.

A letter was recently sent to all U.S. Dealers from MMNA Aftersales and states:

"MMNA is committed to providing your dealership with Technical Training that will enhance your Technicians' ability to fix our customers' vehicles right the first time and on time.

Our technical training design team has recently completed an update to the Advanced Electronic Service Procedures (AESP) course. This course provides new information related to our latest scan tool -MUT-III SE, and updates other key processes necessary to properly diagnose and repair our newest technology. The new course is called ESP (Electrical Service Procedures).

As evidenced by the high frequency of calls to the MMNA Techline, many of these topics present a challenge to some of our technicians – completion of this course will help them overcome these challenges! The ESP series will be available on Mitsubishi Academy March 1, 2019. It will be divided into 5 modules that focus on 5 key service procedures:

- ESP1 > System Setup
- ESP2 > ECUs
- ESP3 > Key Programming
- ESP4 > Multi-Information Display (MID)
- ESP5 > TPMS Programming

Technicians that have already completed AESP will maintain their AESP credit until September 30, 2019. On October 1, 2019, ESP replace AESP as a core class will requirement. In the interest of providing efficient and effective Technical Training, Technicians with AESP credit will automatically receive credit for ESP1 and ESP2, but still must complete ESP3, ESP4, and ESP5 to complete ESP. Technicians that did not complete AESP must complete all 5 ESP modules for credit.

ESP is a 100% web-based course – please do not wait until the last minute to take full advantage of the knowledge gained from completing this course to improve your fixed right the first time scores, and maintain or increase your core course completion percentage.

Note: The new material will also be available on the MDL > Service > Technical Training > Electronic Service Procedures, empowering a technician to search and reference the information, on a smart phone, while repairing a customer's vehicle. The original AESP Self Study Guide will remain available for reference, and is located on the MDL > Service > Tech Training > Training Resource Library > Curriculum & New Model Courses > AESP Course Guide." **DEALER LETTER: MIDTRONICS BATTERY TESTER UPGRADE & BATTERY MANAGEMENT INFORMATION SYSTEM** – All Models and Years.

A letter was recently sent to all U.S. Dealers from MMNA Aftersales and states:

"MMNA will soon be launching a new battery and electrical diagnostic analyzer, Midtronics CPX-930, and cloud-based Battery Management Information System (BMIS). These are considered essential items for dealers.

The CPX-930 and BMIS offers several advanced features designed to make your shop more efficient and productive – please access <u>https://mmna.cpx900.com/</u> to see a video of these features and other useful information:

• VIN scanning

- Simply scan the VIN bar code to automatically record the VIN – keying in the VIN is no longer necessary
- Prepopulated MMNA battery specifications
 - OEM or Diamond Care battery information will be prepopulated based on VIN scan – eliminating the need to key in Battery Post, Type, Units and Rating
- Seamless integration of battery and system test results into CVIR (current) and MiCAR (to be developed)
 - Every test result will automatically transmit via your Wi-Fi connection to BMIS where it can be imported into your inspection report with a simple click – no more keying in or transferring from a SD card
- Warranty codes stored by VIN
 - Removes the need to document or attach print out to the repair order for warranty code retrieval
- Tester is always kept up to date
 - Over the air updates for new model year information or software upgrades
- Conductance profiling
 - Significant reduction in "charge and retest" decisions – less time spent on charging batteries to get a judgement
 - Identifies batteries with poor reserve capacity

Provides management the ability to quickly check all testing activity at your dealership

Most dealerships' existing EXP 830s are over 8-years old – resulting in the following drawbacks to further reliance on it as the sole battery and electrical diagnostic system solution:

- EXP-830 went out of production in 11/2018 there are zero replacements available
- Units require an internal battery that has an estimated 8-year life span – replacement cost is \$329

MMNA warranty will continue to accept warranty test codes from both the CPX-930 and EXP-830 – maximizing your previous investment and increasing technician efficiency by providing access to a secondary tester.

To absolutely minimize dealer cost, MMNA negotiated deep discounts and will be distributing the new tester beginning 3/25/2019 with a parts stock order – eliminating additional shipping costs. Dealer cost for the CPX-930 will be \$1,490.00 + tax. The CPX-930 kit will include as no cost options, a docking station and 3-meter cable. A monthly \$9.99 BMIS subscription fee will be assessed to your dealer statement.

The tester upgrade will provide your technicians the **Right Tool For The Job** of building a core of devoted customers – it can also be considered an investment in the future success of your business."

<u>MIDTRONICS CPX-930 FAQ</u> – All Models and Years.

The following FAQ was sent with the Dealer Letter detailed above, and states:

"Q. Why do I need to purchase another battery tester? My old one works fine.

A. More than likely, your current EXP-830 tester is over EIGHT years old. If it breaks in the near future, it probably cannot be fixed. Plus, there are absolutely zero replacement units available. You will have to purchase a new CPX-930 and the one-off price would be substantially more than what this tester is costing you. Also, the EXP-830 has an internal battery with an estimated eight-year life span. Chances are this battery will need to be replaced in the future, and it will cost \$329 to replace – 22% of the cost for a new CPX-930 – for an obsolete unit!

Q. \$1,490 seems like a high price to pay for this tester, why is it so costly?

A. MMNA has completed a thorough evaluation of testers and selected the CPX-930 as the best value for the functionality offered. Some other manufacturers are launching combined charging station/testers as essential tools. The average cost of these is substantially higher. Also, to absolutely minimize dealer cost of this unit, MMNA completed intense negotiations with the supplier and will be distributing the tester through our Parts systems. In addition to lowering the cost, this eliminates the need for your dealership to pay shipping charges. The CPX-930 also offers several enhancements over the EXP-830, including

- Built in wireless communications
- Color and common user interface screen
- Database driven testing
- Conductance profiling

Q. What do I do with my old tester?

A. You can continue to use the EXP-830 for warranty or customer pay. The warranty system will continue to accept warranty test codes from the EXP-830. Having two testers will make it easier to implement a 100% battery test process in your store – increasing your bottom line and customer satisfaction.

Q. What is my ROI?

A. The average dealer will fully recover the tester cost from the gross profit on 17 warranty battery replacements*. Your gross profit from every customer pay or warranty battery replaced after that will be your return.

*Based on warranty labor times, average warranty labor rate, 70% GP%, average Diamond Care battery cost, and average warranty parts markup"

TIN-19-00-001: CPX-930 BATTERY & SYSTEM ANALYZER AND BATTERY MANAGEMENT INFORMATION SYSTEM (BMIS) – All Models and Years.

TIN-19-00-001 was recently released and states:

"You will soon be receiving your new CPX-930 Midtronics Battery & System Analyzer. All dealers are required to have this new Essential Special Tool. Please DO NOT reject delivery or return it. Before using your CPX-930 it must first be connected to WiFi, registered to the Battery Management Information System (BMIS), and receive the latest updates. Follow the steps below to get started. These steps are also provided in the CPX-930 User Manual.

Power up the tester by placing the tester in the docking base or connect the test cables to a 12-volt power supply. The tester will take a few moments on initial startup out of the box. This is normal. Use the $\blacktriangle \quad \blacktriangleleft \quad \checkmark \quad \checkmark \quad \checkmark$ arrows to navigate from screen to screen, select different options and when necessary, \blacksquare to select or continue to the next step.

To connect to WiFi, follow these steps-

- From Main Menu screen select **Settings**
- From Settings screen select Network
- From Network Settings screen select WiFi
- From WiFi Settings screen select
 Automatic
- From WiFi Setup screen select the WiFi network of your choice and Enter
- From **Password** screen (input your WiFi password) and **Save**
- "Connected to:" screen appears when WiFi connection is successful press Next
- Press
 to return to the Network Settings screen
- Press ◀ to return to the Settings screen

To register to BMIS follow these steps-

- From Main Menu screen select **Settings**
- From Settings screen select BMIS
 Settings
- From BMIS Settings screen select User
 Credentials
- From User Credentials screen select **Username**
- Input Username (email address) and **Save**
- From User Credentials screen select
 Password
- Create and Input a Password, and **Save**
- Press ◀ to return to the BMIS Settings screen
- From BMIS Settings screen select Dealer
 Code
- Input Dealer Code and **Save**
- Press ◀ to return to the Settings screen

Refer to the User Manual to setup and adjust the tester display and time, shop and administrative settings.

IMPORTANT!

After completing the above steps follow the procedure below to ensure your new tester is updated with the latest operating software, currently version C.

NOTE: To perform updates, tester must be in docking base or connected to a 12-volt power supply.

Over The Air (OTA) Update

After the Tool establishes a WiFi connection, it will look for an update. If an update is found, an alert will show in the Messages icon.



Selecting the Messages icon will take the User through the update process.



The Tool will remain at 0% for up to 2-1/2 minutes. The Tool will then display the percentage of the update file downloaded. After approximately 40 minutes, the download will complete and the update will begin.



The OTA update will take approximately 50 minutes from start to finish. When the update finishes the unit resets and will return to the home screen.

To verify your tool is at the latest version of operating software, select "Version" on the home screen.



The version number should end with "C" as shown below.

1		Version
	Config:	192-111588C
	Firmware:	192-121590C
	Flash:	192-151592C
The second	EEPROM:	192-131591C
	Build Date:	Mar 14 2019
	Build Number:	01
i i i	Serial Number:	1010101010
	MACID:	30:ae:a4:7c:1c:78
	FCC ID:	2AC7Z-ESPWROOM32

To access your BMIS account from the MDL follow the path below.

 service -> service tech resources -> Battery Management Information System



Additional information on using the CPX-930 and BMIS is available at https://mmna.cpx900.com"

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GROUP 54 - Chassis Electrical

FRONT CHASSIS HARNESS SHEATH NOT CLIPPED TO A BRACKET – 2014-19 Outlander, 2.4L.

The clip on the wiring harness sheath (shown in the photo below) is used by the supplier for all markets, and does **NOT** attach to any brackets in the vehicle. This is by design – **no repairs are required**.



TAILLIGHTS "NOT WORKING" – 2011 and newer Outlander Sport.

MMNA has been collecting and investigating "inoperative" taillight assemblies and found that 100% of the tested parts were working normally.

To avoid unnecessary replacement of good-working taillight assemblies, please note the following; the marker light circuits (LH & RH) have a built-in protection logic inside the ETACS which temporarily shuts down the power to the marker lights (LH and/or RH) whenever a short circuit is detected. Also, a DTC will set in the ETACS – B16A7 for RH side, and B16A8 for LH side however there are no warning light(s) on the dashboard for these DTCs. To resume power to the marker light circuits, simply turn OFF and ON the lights from the column switch after resolving the short circuit.

Based on the above, when diagnosing an inoperative taillight:

1) Always check if the other lights on the same circuit are working properly:

- Front marker lights and Daytime Running Lights (if applicable);
- Glove box light (only for the RH side circuit);
- License plate lights (only for the LH side circuit).
- 2) Check ETACS for DTCs.

Example 1: A burnt front marker light bulb, if shorted to ground internally, would shut down the power to the same side taillight.

Example 2: A burnt glove box light bulb, if shorted to ground internally, would shut down the power to the RH front and rear marker lights (see related Tech Talk article TT-239-54-001).

Also, please keep in mind that aftermarket taillight assemblies cannot be replaced under warranty (see related Tech Talk article TT-224-54-001).

Always consider that incorrect repairs are subject to debit action.

FCM SENSOR CALIBRATION TARGET

POSITION ORIENTATION – All models w/FCM: 2017 and newer Outlander, 2018 and newer Eclipse Cross, Outlander PHEV, Outlander Sport

When calibrating the Forward Collision Mitigation (FCM) sensor, located at the top of the windshield, you must position the FCM targets correctly, as shown below.



If the targets are not positioned correctly, as shown in the following photo, calibration of the FCM sensor will be unsuccessful.



The FCM target and printing instructions (shown below) can be located on the MDL, under service -> service tech resources -> Worksheets, Questionnaires, Job Aids -> Job Aids.



For detailed instructions on calibratiing the FCM sensor, refer to Group 54A in the applicable vehicle Service Manual.

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GROUP 55 - Heater, A/C, & Ventilation

<u>REPLACEMENT OF A/C COMPRESSOR VS</u> <u>A/C COMPRESSOR AND CLUTCH ASSEMBLY</u> – All models.

Should an A/C compressor need to be replaced, dealers should utilize the most cost effective repair option. Most of the time, the A/C compressor is available without the clutch assembly and can be purchased for less expense than the A/C compressor and clutch assembly (Outlander Sport/RVR shown below for example).





O'Brien Mitsubishi, Normal, IL

A dealer who increased their service business using the Computerized Vehicle Inspection Report.





O'Brien Mitsubishi's CVIR Team (L-R): Matt Builta (Technician), Chris Gordon (Technician), Bill Condor (Technician), Bill Danosky (Service Advisor Assistant), John Horner (Technician), Rich Utter (Master Elite Technician), Janel DeBord (Assistant Service Manager)., **Brandon Kessinger (Service Manager).** Andrew Greene (Service Advisor).

O'Brien Mitsubishi in Normal, Illinois, has been doing business since 1987. They've been using the CVIR process since it began over 5 years ago. In the beginning, technicians would mark up a paper copy, then one person would enter it all on the PC. For the past year however, technicians have been filling it out directly on a PC tablet. This has proven to be a much more efficient practice. During a busy time of year, like Summer for instance, technicians may complete 30 or more CVIR reports a day.

According to Service Advisor assistant, Bill Danosky, it's easy to see the benefits of using the CVIR process when customers respond to the recommendations on the spot. About 70% of O'Brien's customers are waiting at the dealership for their car to be serviced. During this wait, the Service team emails the CVIR report to the customer, who often responds right away. If the customer doesn't respond, someone in the Service team will discuss the report with them in person. Customers may also call a day or 2 later to order work that was suggested in the emailed report.

Service Manager Brandon Kessinger has been with O'Brien for 16 years. A skilled technician himself, he is assisted by several long-term technicians with extensive experience: Rich Utter has been there 30 years, since the dealership opened, and has earned Master Elite Technician; Chris Gordon has devoted 25 years; and John Horner has 21 years with O'Brien. Adding to the team are technicians Bill Condor and Matt Builta. In fact, Chris Gordon believes their service department stands out from other dealers because the technicians here collectively have over 100 years experience. Assistant Service Manager Janel DeBord has an integral role on the team., stepping in as Service Manager when Brandon's away. A skilled Parts department and various porters round out the team and help get the job done right.

Over the past 30 years, O'Brien Mitsubishi has built up tons of good faith and good will with their large customer base. O'Brien's team has earned credibility with customers by demonstrating honest practices, consistency in their work, and always striving to do the right thing, giving customers the benefit of the doubt. The CVIR process has been a great tool helping O'Brien's service team deliver great customer service, and ultimately, great customer satisfaction. Keep up the great work O'Brien!



Technical Training Schedule

April - May 2019

Always check MDL for schedule updates. Since Mobile Training does not appear on the calendars below, contact your District Parts & Service Manager for information about Mobile Training in your area.

NORTHEAST REGION New Jersey Technical Training Center



<u>CENTRAL REGION</u> Bloomington/Normal, IL Technical Training Center

		Apr	il				Ma	у	
м	т	W	Th	F	M	т	W	Th	F
15	16	17	18	19	20	21	22	23	24
22	23	24	25	26	27	28	29	30	31
		ES3		1					

<u>WEST REGION</u> <u>California Technical Training Center</u>

		Apr	il				Ma	У	
М	т	W	Th	F	M	т	w	Th	F
15	16	17	18	19	20	21	22	23	24
		MTT2	2	ו					
22	23	24	25	26	27	28	29	30	31
					11			ER1	-

SOUTHEAST REGION Atlanta Technical Training Center



<u>CENTRAL REGION</u> Dallas Technical Training Center

		Apri	I		May				
M	Т	W	Th	F	M	Т	W	Th	F
1	2	3	4	5	29	30	1	2	3
	EECS					ER1			
8	9	10	11	12	6	7	8	9	10
	A CANCELLE		AT3			FECS		I	
STV4	MED4		ES2			<u> </u>			
15	16	17	18	19	13	14	15	16	17
					STV4	MED4		ES2	
22	23	24	25	26	20	21	22	23	24
	CANC	ELLED	тс	-SST	РН	EV	C	C1	
	PH	EV				ASCF2		MTT2	
29	30	1	2	3	27	28	29	30	31
		ER1							

Course Title	DAYS	CODE	PREREQUISITES	Course Title	DAYS	CODE	PREREOLUSITES		
Automatic Transaxles				Manual Transaxles					
40/50 Series Diagnosis & Repair	3	AT2T	ATFT1 or ATFWE or ATFB	Manual Transaxles & Transfer Cases	3	MTT2	MTFW, ES1W, ME3W, MED4, STV4		
50 Series 5-speed Diagnosis & Repair	1	AT3	AT2T	Twin Clutch Sportronic Shift Transmission	2	TC-SST	AESP, ES1W, ES2, STV4,		
CVT Diagnosis & Repair	2	CVTT	ATFT1 or ATFWE or ATFB		·		ME3W, MED4, ATFWE, MTT2		
Brakes	- 10 - 13 - 13 - 13 - 13 - 13 - 13 - 13	20. 5		Vehicle Specific					
Antilock Brakes	2	ABS2	ES1W	Eclipse Cross	1	181N	AESP, ES1W, ME3W, MED4, NMNS, STV4		
Electrical Systems			Plug-In Hybrid Electric Vehicle	2	PHEV	AESP, ES1W, ES2, STV4, ME3W, 120			
Electrical Systems 2	3	ES2	ES1W			0	MED4, PHEVW, R1234W		
Electrical Systems 3	2	ES3	ES1W						
Engine Performance			9	Vehicle Diagnostics					
Engine & Emission Control Systems	4	EECS	ES1W, STV4	Electronic Service Procedures (1-5)	-	ESP 1-5	No Prerequisites		
Engine Repair	3	ER1	ERFW, ES1W, ME3W, MED4, STV4	Advanced Safety & Convenience Features	1	ASCF	ES1W, ME3W, MED4, STV4		
				Advanced Safety & Convenience Features 2	1	ASCF2	ASCF, ES1W, ME3W, MED4, STV4		
Heating & A/C Systems				MEDIC4	1	MED4	ME3W		
Climate Control	2	CC1	MACW, ES1W, ME3W, MED4, STV4	Scan Tool Viewer 4	1	STV4	No Prerequisites		



The **first quarter technical quiz** (TQ0119) **will <u>end at midnight on 3/31/2019</u>**. Successful completion of the technical quizzes are <u>required</u> for Service Technicians who wish to obtain or maintain DiamondPro Certification.







HOURS OF OPERATION:

Monday — Friday 6:30 am - 3:30 pm Pacific Time

Techline is closed every **<u>other</u>** THURSDAY 9:30 - 10:30 A.M. (PST) for a staff meeting.







HOURS OF OPERATION:

Monday — Friday 7:00 am - 4:00 pm Pacific Time

MEDIC Hotline will assist with MEDIC & Scan Tool hardware or software issues.



Since Tech Talk 247 the following bulletins have been released.

2019 Technical Service Bulletins, Safety Recalls, & Service Campaigns						
Date Posted	Publication Number	Publication Title	Applicable Models			
2/27/2019	TSB-19-23-001	Correction to Automatic Transaxle Data List Reference Table for F6AJA & W6AJA - SMR	2007-16 Outlander			
2/27/2019	TSB-19-33-004	Updates to Front Wheel Alignment Check & Adjustment Procedure - SMR	2014-15, 2017 Mirage, 2017 Mirage G4			
2/27/2019	TSB-19-34-002	Updates to Rear Wheel Alignment Check & Adjustment Procedure - SMR	2014-15, 2017 Mirage, 2017 Mirage G4			
2/27/2019	TSB-19-52B-004	Correction to SRS-ECU Diagnostic Trouble Codes List - SMR	2014-15, 2017-18 Mirage, 2017-18 Mirage G4			
3/13/2019	TSB-19-23-002	Additional Service Parts for Transaxle Removal & Installation - SMR	2013-15 Outlander Sport/RVR			
3/13/2019	TSB-19-23-003	Transaxle Control: Addition of Shift Indicator Panel Removal & Installation - SMR	2011-17 Outlander Sport/RVR			
3/13/2019	TSB-19-23-004	Corrections to the Replacing CVT Assembly & Valve Body Assembly Procedures - SMR	2015 Outlander Sport/RVR			
3/13/2019	TSB-19-54-003	Addition of Main Drive Lithium-ion Battery Disassembly & Maintenance Procedure – SMR	2012 i-MiEV			
3/13/2019	TSB-19-54-004	Addition of Main Drive Lithium-ion Battery Disassembly & Maintenance Procedure – SMR	2013-14 i-MiEV			
3/13/2019	TSB-19-54-005	Addition of Main Drive Lithium-ion Battery Disassembly & Maintenance Procedure – SMR	2016 i-MiEV			
3/13/2019	TSB-19-54-006	Updated BSW-ECU Inspection Procedure – SMR	2017 Outlander			
3/13/2019	TSB-19-55-001	Updated Diagnostic Trouble Code Procedures for A/C Control Unit – SMR	2012 i-MiEV			
3/13/2019	TSB-19-55-002	Updated Diagnostic Trouble Code Procedures for A/C Control Unit – SMR	2013-14 i-MiEV			
3/13/2019	TSB-19-55-003	Updated Diagnostic Trouble Code Procedures for A/C Control Unit – SMR	2016 i-MiEV			
3/14/2019	TSB-19-31-001	Caution Added to Valve Installation of TPMS Transmitter - SMR	2014-15 Mirage			

2019 Technical Service Bulletins, Safety Recalls, & Service Campaigns (Continued)						
Date Posted	Publication Number	Publication Title	Applicable Models			
3/14/2019	TSB-19-36-001	Cautions Added to Parking Brake Lever Adjustment, Removal & Installation - SMR	2018 Eclipse Cross			
3/14/2019	TSB-19-42B-002	2016 Outlander Body Repair Manual Information Revised - SMR	2016 Outlander			
3/14/2019	TSB-19-52A-001	Cautions Added to Shift Lever Panel Removal & Installation Procedure - SMR	2018 Eclipse Cross			
3/21/2019	TSB-19-42A-001	Noise from Gas Springs When Opening & Closing Tailgate	2016-19 Outlander, 2018-19 Outlander PHEV			
3/21/2019	TSB-19-54-001REV	Quick Charging with ABB Quick Charger Stops Due to Isolation Error - Revised	2016-17 i-MiEV, 2018-19 Outlander PHEV			
3/21/2019	TSB-19-54-007	Updated FCM/LDW/AHB-ECU Sensor Calibration Procedure - SMR	2017 Outlander			





Since Tech Talk 247 the following TINs/ATINs have been released.

2019 Technical Information Notices, Advance Technical Information Notices						
Date Posted	Publication Number	Publication Title	Applicable Models			
3/25/2019	TIN-19-00-001	CPX-930 Battery & System Analyzer and Battery Management Information System (BMIS)	All models			

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The information contained in this bulletin is subject to change. For the latest version of this document, go to the Mitsubishi Dealer Link, MEDIC, or the Mitsubishi Service Information website (www.mitsubishitechinfo.com).