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UPCOMING HOLIDAYS:

- Memorial Day - May 26th
- Independence Day - July 4th



REMINDER:

TQ022025 2nd Quarter Technician Quiz for 2025 is available from April 1- June 30, 2025. **Dealer personnel must successfully complete this quiz no later than June 30, 2025.**



DEALER TECHNICIANS:

We'd like to hear from you!

Please submit tips and suggestions for future Tech Talk articles to: servicesupport@mmsa.com



TECH TALK - VOLUME 286
MAY/JUNE 2025

TECHNICAL INFORMATION: TESTING AN ECU SUPPLIED GROUND TO A COMPONENT

AFFECTED VEHICLES: ALL MODELS

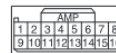
GROUP: 00

CONCERN:

When testing an electronic control unit (ECU) to see if it's providing ground to a component, you may observe up to 1 volt (as noted in the service manual) on the ground circuit due to reasons related to how electrical systems function.

No ground connection is a perfect zero ohms. Wiring, connectors, and even the ECU's internal switching components (like transistors or relays) have some resistance. When current flows through this resistance, a small voltage drop occurs. Small amounts of resistance can produce a measurable voltage, up to 1 volt, depending on the system. Many ECUs use solid-state switches (like MOSFETs) to control ground paths. These switches don't close with zero resistance and have a small "on-state" resistance, which can cause a slight voltage drop. In automotive applications, this drop is often acceptable up to 1 volt because it's still low enough to ensure the component functions properly. Up to 1 volt is often considered normal in automotive diagnostics because it's a threshold where most components (like solenoids, motors, or sensors) are grounded sufficiently to allow operation.

CHECK AT ECU TERMINALS



Terminal No.	Check item	Check condition	Normal condition
1	Output to immobilizer antenna (+)	When communicating with the ignition key	0 to 5 V (pulse signal)
2	CAN L	-	-
3	CAN H	-	-
4	Ground	Always	1 V or less
5, 6	-	-	-
7	Power supply (Ignition switch: IG1)	Ignition switch: ON	Battery voltage
8	Power supply (Battery)	Always	Battery voltage
9	Output to immobilizer antenna (-)	When communicating with the ignition key	0 to 5 V (pulse signal)
10 - 16	-	-	-



TECHNICAL INFORMATION: MIRROR REVERSE AUTO TILT FUNCTION (IF SO EQUIPPED)

AFFECTED VEHICLES: 2022-2025 OUTLANDER

GROUP: 51

CONCERN:

When backing up the vehicle, the right or left door mirrors will turn downward automatically to provide better rear visibility.

1. Place the ignition switch in the ON position.
2. Move the shift lever to the R (Reverse) position.
3. Choose the right or left door mirror by operating the door mirror control switch.
4. The door mirror surface moves downward. The door mirror surface can be adjusted and stored when the reverse auto tilt function is activated. See "Adjusting Door Mirrors", pages 3-40, of the owners manual.

When one of the following conditions has occurred, the door mirror surfaces will return to their original positions.

- Push the right or left door mirror control switch
- The shift lever is moved to any position other than R (reverse) and the vehicle speed exceeds 5 MPH.
- After 9 seconds have passed since the shift lever is moved to any position other than R (reverse)
- The ignition switch is placed in the OFF position



TECHNICAL INFORMATION: DIY FUEL ETHANOL TEST

AFFECTED VEHICLES: ALL MODELS

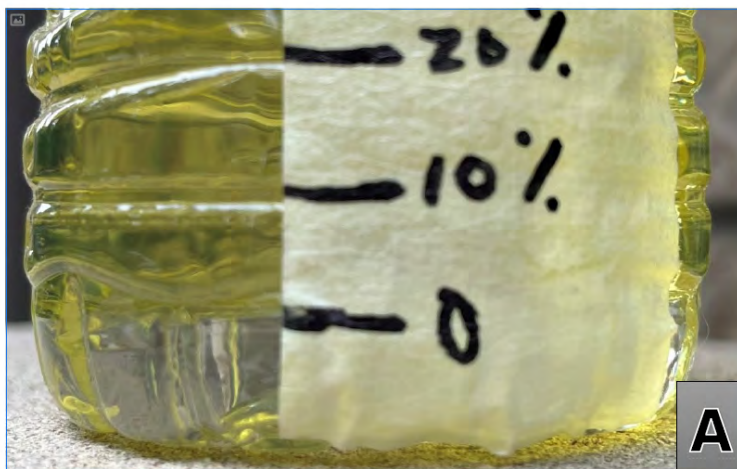
GROUP: 51

CONCERN:

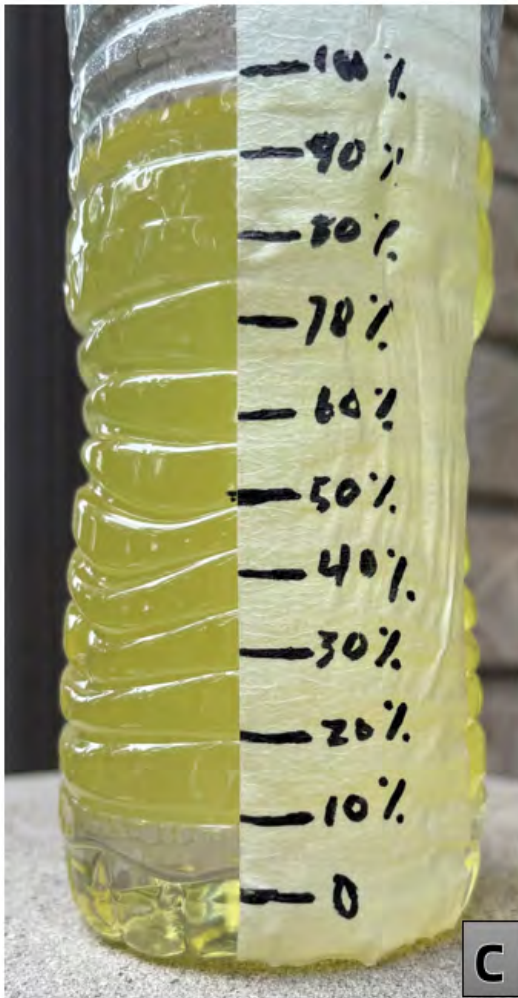
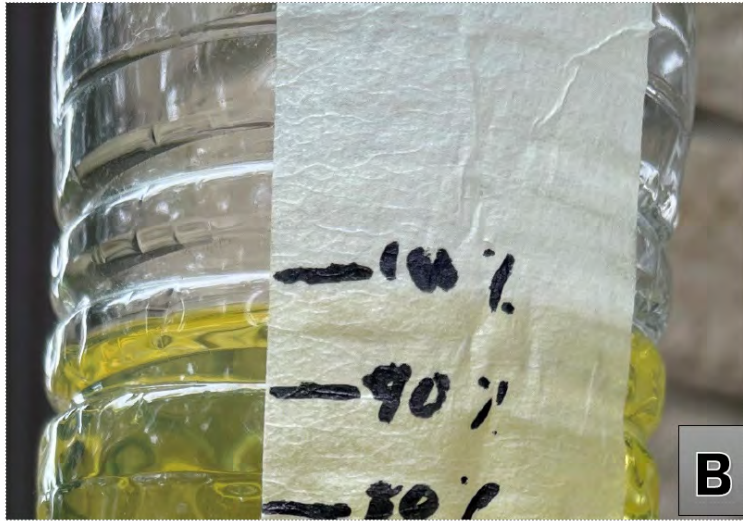
Testing the ethanol percentage of fuel

U.S. fuel regulations allow for there to be up to 10% ethanol in gasoline; E85 fuel contains 85% ethanol. Vehicles that are not designed to use high ethanol fuel E85 will exhibit a lean condition due to the stoichiometric ratio with ethanol being about 30% more than that of gasoline. About 30% fuel needs to be injected to ensure correct combustion with E85 versus gasoline to achieve a Lambda value of 1.0. Typically, this can lead to system lean DTCs, with fuel trims showing +30%.

1. Test should be performed in a well-ventilated area with no open flames.
2. The container walls should be as straight as possible and solvent resistant (i.e. mason jar).
3. Measure and mark 11 equal spaces from the bottom of the container.
4. Add water to the first marked line (picture A).
5. Add the fuel being tested to last marked line (picture B).
6. Cap the container and shake the two liquids for 30 seconds.
7. Place the test container on a level surface and allow the mixture to sit for 10 to 15 mins.
8. The water will bond to any ethanol in the fuel and separate from the gasoline, leaving a distinct separation line.
9. Start from the bottom, count how many spaces are water and subtract the amount by 1.
 - If there are 2 spaces of water ($2 - 1 = 1$), then the fuel has 10% ethanol. (Picture C)
 - If there are $9 \frac{1}{2}$ spaces of water ($9.5 - 1 = 8.5$), then the fuel has 85% ethanol. (Picture D)



PLEASE NOTE: Images A-D are examples only, using food coloring and not fuel; therefore they are not in the recommended containers.



PLEASE NOTE: Images A-D are examples only, using food coloring and not fuel; therefore they are not in the recommended containers.

TECHNICAL INFORMATION: APPLICATION TOOL FOR PAINT PROTECTION FILM

AFFECTED VEHICLES: 2022-2025 OUTLANDER

GROUP: 00

PART INFORMATION:

MZ321259 - Paint Protection Film (Hood)

MZ321260 - Paint Protection Film (Grill)

CONCERN:

During installation of the new Paint Protection Film, certain types of squeegees will scratch the redesigned grill and possibly the hood. To mitigate the chance of scratches, MMNA recommends the use of TPU Anti-Scratch Rubber Squeegees, such as Model 90A, shown below. These can be purchased from any on-line retailer.



ADDITIONAL INFORMATION:

The soap-to-water ratio should be adjusted based on the ambient temperature. The chart below is a standard guideline for the ratio but may need to be adjusted based on individual preferences.

Temp	Baby Shampoo / 1L of Water	32oz	24oz
65°F	1.5mL	1.4mL	1.1mL
70°F	1.5-2mL	1.4mL - 1.9mL	1.1mL-1.4mL
80°F	2-2.5mL	1.9mL - 2.4mL	1.4mL-1.8mL
90°F	3-3.5mL	2.8mL - 3.3mL	2.1mL - 2.5mL



TECHNICAL INFORMATION: A/C REFRIGERANT CALIBRATION CHECK

AFFECTED VEHICLES: ALL VEHICLES EQUIPPED WITH 1234YF REFRIGERANT

GROUP: 55

CONCERN:

Warmer weather means A/C repairs. Many of those repairs will involve evacuating refrigerant from the system using the MIT1234YF/AC1234-9 tool. Many technicians use the amount of refrigerant recovered as part of their overall diagnosis, as charge level can impact system pressures and A/C performance. Please calibrate the machine often to ensure that the recovered amount is recorded accurately. The calibration procedure is simple and quick to perform and could result in a more accurate repair.

Calibration Check

This function is used to ensure the machine's internal scale is always calibrated. During this test, use only the calibration weight that is provided with the machine.

1. Select **CALIBRATION CHECK** in the Unit Maintenance menu. The machine displays

ATTACH WEIGHT TO BOTTOM OF MACHINE
PRESS OK TO CONFIRM PRESS ESC TO QUIT

2. Refer to Figure 21, and verify the magnet on the bottom of the machine is clean.
3. Attach the calibration weight to the magnet on the bottom of the machine. Select **OK**.
 - If the display shows

PROCEDURE COMPLETED

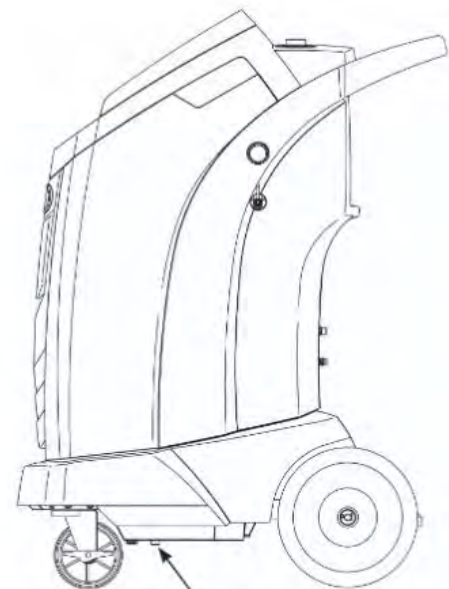
the scale is in calibration. Select **OK**.

- If the display shows

CALIBRATION REJECTED

the scale is out of calibration. Contact an authorized Robinair service center for assistance.

4. Remove the calibration weight from the scale.



Magnet

Figure 21

TECHNICAL INFORMATION: BRAKE FLUID REPLACEMENT/REFILLING

AFFECTED VEHICLES: ALL MODELS

GROUP: 35

CONCERN:

Regular inspection and maintenance are essential in preventing brake fluid deterioration due to prolonged use. To maintain brake performance, ensure the below instructions are followed during brake fluid inspection and maintenance.

Instructions for Brake Fluid Replacement/Refilling:

1. Use only the specified brake fluid as stated on the filler cap.



2. To prevent foreign objects or other oils from getting into the brake fluid, pay attention to the following points:

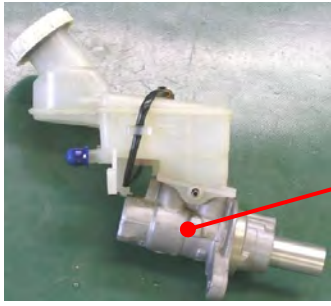
- ✓ Clean the filler cap before removing it.
- ✓ Refill the brake fluid without removing the reservoir filter. Ideally, brake fluid should be poured directly from the original container.
- ✓ When brake fluid is poured into another container for refilling, ensure that the container has never held any foreign objects or other oil.
- ✓ Avoid using any fluid from a fluid level adjustment syringe or drained fluid from the bleeder valve.

3. Avoid spilling brake fluid on painted surfaces during replacement or refill work. If brake fluid is spilled, wipe it off immediately and then rinse with water.

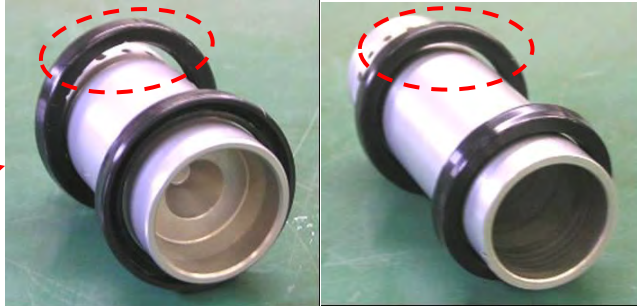
4. Replace the brake fluid according to the specified intervals.

Reference: Examples of Issues

- Using or mixing any brake fluid other than the specified type (including low-quality brake fluid, a different specification) accelerates the wear of the linear solenoid valve inside the brake actuator, potentially decreasing braking performance.
- Pouring brake fluid into the container that still contains engine oil allows residual mineral oil to enter the brake system. This may cause the rubber parts to swell, potentially decreasing braking performance.



Brake master cylinder



Swelling of the piston cup due to mineral oil



TECHNICAL INFORMATION: SUSPENSION PARTS DUST COVER

AFFECTED VEHICLES: ALL MODELS

GROUP: 34

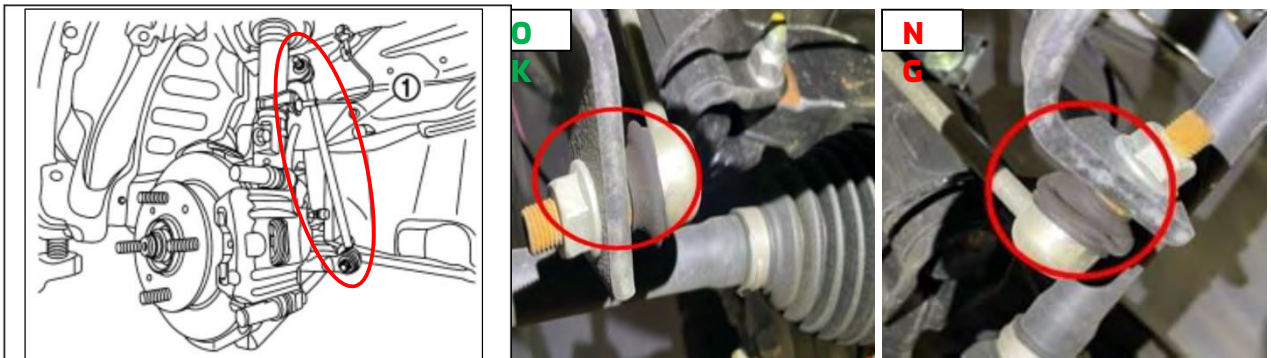
CONCERN:

The dust cover for suspension parts is a crucial component that prevents foreign objects from entering the ball joint. If a technician performs improper maintenance and/or neglects the final inspection, the dust cover may be installed in a twisted state. As a result, this can lead to early damage to the dust cover and potential damage to the suspension parts. To prevent unnecessary parts replacement, this article introduces precautions regarding the dust cover.

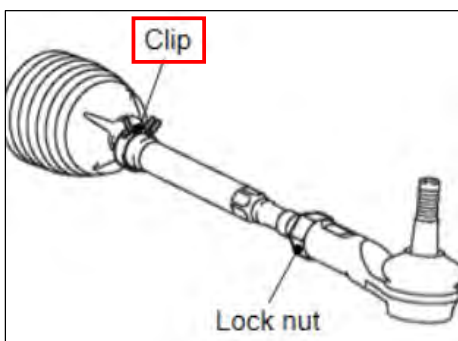
Precautions:

1. Please ensure that the dust cover is not twisted after replacing or removing suspension parts with the ball joint.

For example : Stabilizer link



2. When the toe is adjusted with the tie-rod, the steering gear bellows may be twisted which can result in damage to the bellows. Be sure to remove the clip on the steering gear bellows before starting toe adjustment.





TSB/TIN/ATIN/SC/SR REVIEW

Since Tech Talk 285, the following bulletins have been published:

PUBLISH DATE	TSB/ATIN/TIN #	SUBJECT	MODELS
3/12/2025	TIN-25-54-002	2025 OUTLANDER DISCHARGED BATTERY	2025 OUTLANDER
3/14/2025	TSB-25-54-004	2025 OUTLANDER DISCHARGED BATTERY	2025 OUTLANDER
3/19/2025	TIN-25-54-003	2025 OUTLANDER PORT REPAIRS	2025 OUTLANDER
3/27/2025	TSB-25-54-004REV	2025 OUTLANDER DISCHARGED BATTERY - REVISED	2025 OUTLANDER
	TIN-25-54-004	2025 OUTLANDER DISCHARGED BATTERY	2025 OUTLANDER
4/4/2025	TSB-25-54-003REV	ABNORMAL NOISE FROM DYNAMIC SOUND YAMAHA ULTIMATE 12 SPEAKERS - REVISED	2025 OUTLANDER
	TIN-25-00-003	EXTENDED TECHLINE HOURS OF OPERATION	NONE
	TSB-23-33-002REV3	STRUT BEARING NOISE - REVISED	2022-2024 OUTLANDER
4/11/2025	TIN-25-00-004	LOUISIANA MOTOR VEHICLE DIVISION (MVD) - TAKATA RECALLS	CERTAIN 2004-2007 LANCER, 2006-2009 RAIDER, AND 2012-2017 i-MIEV
	TIN-25-00-005	OHIO BUREAU OF MOTOR VEHICLES (BMV) - TAKATA RECALLS	CERTAIN 2004-2007 LANCER, 2006-2009 RAIDER, AND 2012-2017 i-MIEV
	TIN-25-00-006	MUT3-SE SYSTEM ENHANCEMENT	ALL MODELS
4/14/2025	TSB-25-42-002	DOOR AJAR WARNING LIGHT COMES ON WHEN REAR DOOR IS CLOSED	2022-2024 OUTLANDER AND 2022-2024 OUTLANDER PLUG-IN HYBRID
	TSB-25-51-001	ROOF RACK CENTER COVER MAY DETACH DURING USE	2018-2024 ECLIPSE CROSS
4/15/2025	TIN-25-00-007	MUT3-SE SYSTEM ENHANCEMENT REMINDER	ALL MODELS
4/23/2025	TIN-25-54-005	NAVIGATION MAP UPDATES	2022-2024 OUTLANDER AND 2023-2025 OUTLANDER PLUG-IN HYBRID
	TIN-25-66-001	STORING VERTICAL TOW BALL AND MOUNT	2025 OUTLANDER
4/29/2025	TIN-25-66-002	POTENTIAL TOW HITCH VIBRATION NOISE	2025 OUTLANDER
	TSB-25-17-001	IN-CABIN FUEL SMELL WHEN VEHICLE IS IDLING OR BEING DRIVEN	2022-2024 OUTLANDER
	TSB-25-51-002	LIFTING AROUND THE FRONT END ROOF MOLDING	2022-2025 OUTLANDER AND 2023-2025 OUTLANDER PLUG-IN HYBRID
	TSB-25-27-001	ABNORMAL NOISE/VIBRATION FROM THE REAR DIFFERENTIAL ASSEMBLY	2022-2024 OUTLANDER

IMPORTANT

Affected new or used vehicle inventory must be repaired before the vehicle is sold or delivered. Dealers must check their vehicle inventory VINs on the Warranty Superscreen to verify whether the vehicle is involved in a recall campaign.

It is a violation of Federal Law for a dealer to sell or deliver a new motor vehicle or any new / used motor vehicle equipment (including a tire) covered by the notification under a sale or lease until the defect or non-compliance is remedied.





TECHNICAL TRAINING COURSE SCHEDULE

Atlanta Technical Training Center - Southeast Region
 801 Interstate West Parkway, Lithia Spring, GA 30122
 (770) 732-3000 Airport: Atlanta (ATL)

May '25				
Monday	Tuesday	Wednesday	Thursday	Friday
28	29	30	1	2
	PHEVG2TT	PHEVG2TT	PHEVG2TT	PHEVG2TT
5	6	7	8	9
	EECS	EECS	EECS	EECS
12	13	14	15	16
			CC1	CC1
19	20	21	22	23
	MED4	STV4	EL1	EL1
26	27	28	29	30
		ER1	ER1	ER1

June '25				
Monday	Tuesday	Wednesday	Thursday	Friday
2	3	4	5	6
	ER1	ER1	ER1	CVT F2F
9	10	11	12	13
	EECS	EECS	EECS	EECS
16	17	18	19	20
23	24	25	26	27
	PHEVG2TT V-ILT	PHEVG2TT V-ILT	PHEVG2TT V-ILT	PHEVG2TT V-ILT
30	1	2	3	4

New Jersey Technical Training Center - Northeast Region
 516 Heron Drive, Swedesboro NJ 08085
 (856) 467-7100 Airport: Philadelphia (PHL)

May '25				
Monday	Tuesday	Wednesday	Thursday	Friday
28	29	30	1	2
	SMI V-ILT	CVT V-ILT		
5	6	7	8	9
12	13	14	15	16
19	20	21	22	23
	PHEVG2TT V-ILT	PHEVG2TT V-ILT	PHEVG2TT V-ILT	PHEVG2TT V-ILT
24	27	28	29	30
		ER1	ER1	ER1

June '25				
Monday	Tuesday	Wednesday	Thursday	Friday
2	3	4	5	6
	MED4 V-ILT	STV4 V-ILT	EL1 V-ILT	EL1 V-ILT
9	10	11	12	13
16	17	18	19	20
23	24	25	26	27
	EECS	EECS	EECS	EECS
30	1	2	3	4
	ER1	ER1	ER1	ER1

Franklin Technical Training Center
 1552 Columbia Avenue, Franklin TN 37064
 (657) 238-2891 Airport: Nashville (BNA)

May '25				
Monday	Tuesday	Wednesday	Thursday	Friday
28	29	30	1	2
5	6	7	8	9
	MED4	STV4	EL1	EL1
12	13	14	15	16
19	20	21	22	23
26	27	28	29	30

June '25				
Monday	Tuesday	Wednesday	Thursday	Friday
2	3	4	5	6
9	10	11	12	13
16	17	18	19	20
23	24	25	26	27
	MED4 V-ILT	STV4 V-ILT	EL1 V-ILT	EL1 V-ILT
30	1	2	3	4

Course Title	Days	Code	Prerequisites
Engine & Emission Control Systems	4	EECS	ES1W, EL1, STV4, MED4, ME3W
Engine Repair	3	ER1	ES1W, EL1, STV4, MED4, ME3W
Climate Control	2	CC1	ES1W, EL1, STV4, MED4, ME3W
Plug-In Hybrid Electric Vehicle (Virtual) or (F2F)	2	PHEVG2TT	EL1, STV4, MED4, DGPHEVWT
MED4 (Virtual) or (F2F)	1	MED4	ME3W
STV4 (Virtual) or (F2F)	1	STV4	No Prerequisites
Electrical Systems I (Virtual) or (F2F)	2	EL1	ES1W
Advanced Driver Assistance Systems	2	ADAS	ES1W, EL1, STV4, MED4, ME3W
Chassis Electrical Systems	2	CES	EL1, STV4, MED4, ME3W, ES1W
CVT/OVERHAUL PROCEDURES (Virtual) or (F2F)	1	CVT	STV4, MED4, EL1, ATFW
Brake Control System	2	BES	MED4, STV4, EL1
Service Manual Introduction (Virtual) or (F2F)	1	SMI	MED4, STV4, EL1

Classes shaded in Green are (V-ILT) Virtual Instructor Led Training

MMNA technical on site training is not shaded

Some classes will be offered in two training formats.

1. V-ILT Online instructor-led.
2. F2F in center training.



NEWS RELEASE

MITSUBISHI MOTORS NORTH AMERICA, INC.

Public Relations Department
4031 Aspen Grove Drive, Suite 650
Franklin, TN 37068

www.mitsubishicars.com

MITSUBISHI MOTORS REPORTS Q1 2025 SALES

- Total sales for the brand up 11% year-over-year
- Outlander continues as brand volume-leader
- Outlander Plug-in Hybrid records best-ever dealer-retail month in March

FRANKLIN, Tenn., Apr. 1, 2025 – [Mitsubishi Motors North America, Inc.](http://www.mitsubishicars.com) (MMNA) today reported total first-quarter 2025 sales of 31,637, an increase of 11% over Q1 of 2024. The brand's vehicles continue to draw customers to dealer-partner showrooms, as an enviable mix of quality, value and style are highlighted by attention gained as part of the February launch of the 2025 Outlander.



Late February Launch of 2025 Outlander Bolsters Mitsubishi Sales

Leading the volume charge for MMNA in the first quarter was the brand's perennial best-seller, Outlander, with 11,992 sales for Q1 2025.

Outlander Plug-in Hybrid had a strong quarter, with 1,703 sales representing an increase of 12%. Contributing to that quarterly performance, March was the nameplate's best-ever pure dealer-retail sales month.

Broad showroom attention driven by appropriate sales support and advertising through the quarter led to sales success across the brand, with Outlander Sport, Eclipse Cross and Mirage all showing well. Mirage has ceased

production, and dealer inventory continues to sell down.

For more information on the full lineup of Mitsubishi vehicles, visit MitsubishiCars.com.

