

SA-021/23 - Qi WIRELESS CHARGER SYMPTOM TROUBLESHOOTING

SI122335

SA NUMBER: SA-021/23

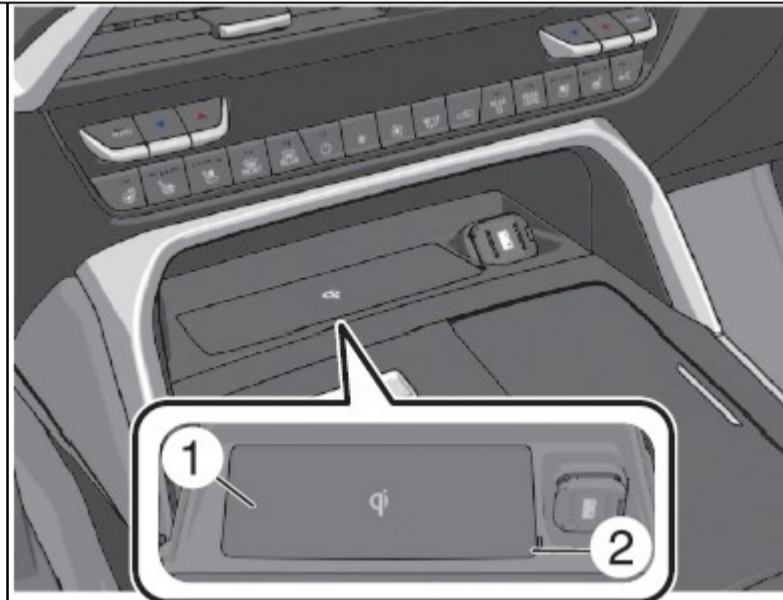
BULLETIN NOTES

This SA supersedes the previously issued SA(s) listed below. The changes are noted in Red.

Previous SAs:	Date(s) Issued:
SA-021/23	04/14/23
SA-028/22	05/02/22

APPLICABLE MODEL(S)/VINS

2024 CX-90 equipped with factory installed Qi Wireless Charger



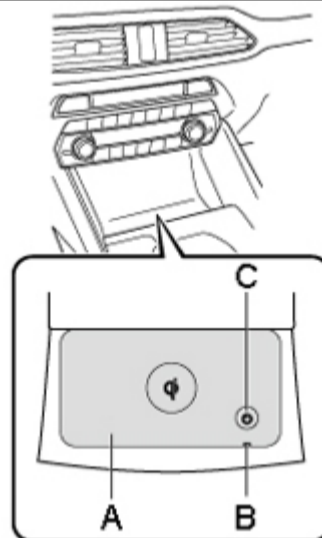
- 1. Charging area
- 2. LED indicator

2023-2024 CX-50 equipped with factory installed Qi Wireless Charger
2023-2024 CX-50 equipped with Mazda Genuine Accessory Qi Wireless Charger



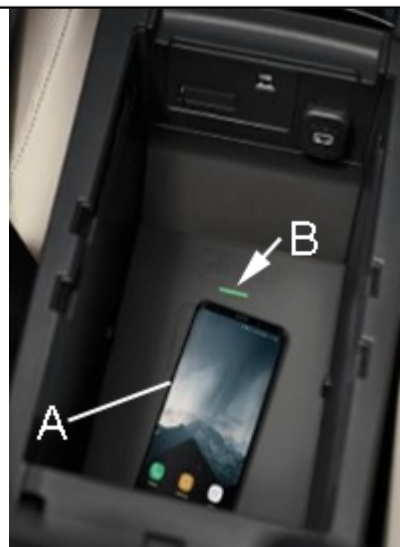
- 1. LED indicator
- 2. Charging area

2022-2024 CX-5 equipped with factory installed Qi Wireless Charger
2021-2023 CX-9 equipped with factory installed Qi Wireless Charger



- A - Charging Area
- B - Indicator
- C - Power Button

2019-2024 Mazda3 equipped with Mazda Genuine Accessory Qi Wireless Charger
2020-2024 CX-30 equipped with Mazda Genuine Accessory Qi Wireless Charger





- A - Charging Area
- B - Indicator

TI SUMMARY

Hotline Instructions

Use the following CVC: Body and Electrical (Interior) | Lighter/Power Outlet | Improper Operation | Does not Turn On | None

1. Link this TI to the Hotline file.
2. Document the following [information](#):
3. NR to GONZALE if [the information](#) was collected.

FQIR Needed	
FQIR Information Needed	<ul style="list-style-type: none"> • Date/time of occurrence • Weather conditions • Was sun hitting the phone/charging pad area when concern occurred • Customer Phone <ul style="list-style-type: none"> ○ Manufacture ○ Model ○ OS version ○ NFC setting • Customer Phone Case <ul style="list-style-type: none"> ○ Manufacture ○ Qi wireless compatible? ○ Phone case material (plastic, metal.....etc)? • Confirm before charging <ul style="list-style-type: none"> ○ Remaining phone battery before charging (ex. 23%)? ○ What is the orientation of the phone on Qi? • When the phone cannot charge <ul style="list-style-type: none"> ○ What color did the indicator show? ○ What message did the display show? ○ Is this issue in the first driving cycle in a day? <ul style="list-style-type: none"> ▪ If No, how many times/minute later? ○ Remaining phone battery when cannot charge? ○ How many minutes did the phone charge? ○ Is the phone hot? ○ Is the surface on Qi hot*? ○ Was Wireless CarPlay or Android Auto running when Qi stops charging? ○ What icon did the center display show on the lower right corner of the infotainment display? (Any Mazda Connect native menu except CarPlay/Android Auto) <div style="display: flex; align-items: center; justify-content: center; gap: 10px;">  or  </div> • Can customer duplicate for dealer? <ul style="list-style-type: none"> ○ If so, does dealer have another car (doesn't need to be a CX-50) with the wireless charging pad the customer could try to duplicate on.
<p>NOTE: If information above cannot be collected, no FQIR needed.</p>	

Countermeasure Status	
SA ID	SA1-5121215971
Status	5/15 MP CHANGED AFTER 4/17/2023 ASSEMBLY DATE. 5/4/2023 CX-50 PENDING DUE TO HIGH PDC PART INVENTORY. MC-QA IS CONSIDERING HOW TO REUSE PARTS INVENTORY FOR CX50 VA4066CHXA WITHOUT SCRAPPED. FOR EXAMPLE, SOFTWARE UPDATE USING DEDICATED TOOL. (KITAGAWA) 4/19/2023 IPO requested for CX-5 and CX-9 CX-50 pending due to high PDC inventory 3/8/2023 Preparing Improvement Software issue; however, MNAO cannot update software 2/23/2023 PREPARING IPO The symptom is two. 1. Does not start charging. 2. Stopping after starting a bit of time. The cause for this issue is two. 1. Some inappropriate software control resulted in a narrow charging range. 2. There was some over-activation in the controls that stopped charging when the Qi

	<p>became too hot. This countermeasure was the design specification changing for continued charging. The part for CX9 includes the countermeasure for the cause 1 and 2. Parts Number change from TC3M-66CHX-G to TC3M-66CHX-H. The part for CX5 includes the countermeasure for the only cause 1. Parts Number change from KSD4- 66CHX to KSD4-66CHX-A. The part for CX50 not yet. 1/26 MP COUNTERMEASURE WILL START END OF APR ON MTM .(KITAGAWA) 12/15 OVERHEAT PROTECTION MEASURES ARE SCHEDULED TO BE MP AROUND MARCH 2023. MARKET MEASURES IS TBD. (KITAGAWA) 12/01 NO UPDATE. (KITAGAWA) 10/13 MC WILL PLAN TO CHANGE MP C/M PRODUCT SINCE 12/26 IN HIROSHIMA-FACTORY, MTM IS UNKNOWN. (KITAGAWA) 9/1 MC HAS IMPROVED DESIGN CHANGES TO INCREASE THE TEMPERATURE THRESHOLD AT AUG. REPAIR IS PARTS REPLACEMENT AND WILL BE SWITCHED ON 9/26 AT THE SUPPLIER. WHEN IT WILL BE SWITCHED AT MTM IS UNKNOWN, DEPENDING ON MTM. (KITAGAWA) TSD CREATED SA-028/22 TO SUPPORT QI SYMPTOM TROUBLESHOOTING.</p>
Root Cause	THE NEAR FIELD COMMUNICATION (NFC) FUNCTION SETTING OF THE MOBILE DEVICE IS ON CHARGING PAD INTERNAL TEMPERATURE TOO HIGH, CAUSING THE CHARGER TO STOP CHARGING.
Mass Production Countermeasure	CHARGING PAD INTERNAL TEMPERATURE THRESHOLD INCREASE
Field Countermeasure	PARTS REPLACEMENT - TBD

Tech Tips

1. * When the charging pad internal temperature reaches peak threshold, charging stops.



- Then, when the charging pad temperature drops (cools) 9f, charging resumes.
- This process repeats when the internal charging pad reaches peak threshold again.

2. Some customers may experience an iPhone "Cash" Error Message when using the Qi wireless charger.





No vehicle repair is necessary. This is an iPhone OS software error.


DESCRIPTION

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- [Symptom Troubleshooting](#)
- [LED Indicator / Infotainment Display Icon](#)
- [Supplemental Information](#)

	CX-50 Factory Installed and Mazda Genuine Accessory CX-5, CX-9 and CX-90 Factory Installed	Mazda3 and CX-30 Mazda Genuine Accessory Qi Wireless Charger
Symptom	Possible Cause	
Phone will not charge	<ul style="list-style-type: none"> • Device is not compatible with Qi wireless charging standards (see trademark below) 	<ul style="list-style-type: none"> • Device is not compatible with Qi wireless charging standards (see trademark below)

	 <ul style="list-style-type: none"> • Phone case is not compatible with Qi wireless charging standards <ul style="list-style-type: none"> ◦ Most phone cases will list compatibility on the packaging ◦ None approved phone cases with magnets or metal plates • The engine is not running • Doors and/or liftgate is open • The mobile device is fully charged. • Foreign matter between the device and the charging area • The temperature of the mobile device is high • The mobile device is placed with the charging side facing upward • The mobile device is placed in a position extremely deviating from the centre of the charging area • The Near Field Communication (NFC) function setting of the mobile device is on (depends on the model of the mobile device) • Your vehicle is in an area where strong radio waves or electrical noise occur such as near a television tower, power plant, or airport. • Power Turned OFF <ul style="list-style-type: none"> ◦ Function can be switched on/off by pressing the power button on the Wireless Charger (Qi) for approx. 3 seconds • LED indicator error (see table below) • DTC is stored • Noise interference reduction function ON <ul style="list-style-type: none"> • Function can be switched on/off by pressing the power button on the Wireless Charger (Qi) for approx. 1 sec 	 <ul style="list-style-type: none"> • Phone case is not compatible with Qi wireless charging standards <ul style="list-style-type: none"> ◦ Most phone cases will list compatibility on the packaging ◦ None approved phone cases with magnets or metal plates • Ignition Off • The mobile device is placed in a position extremely deviating from the centre of the charging area • The temperature of the mobile device is high • LED indicator error (see table below)
Resources	Go to MGSS: <ul style="list-style-type: none"> • CX-50 WIRELESS CHARGER (Qi) INSPECTION • CX-9 WIRELESS CHARGER (Qi) INSPECTION • CX-5 WIRELESS CHARGER (Qi) INSPECTION 	

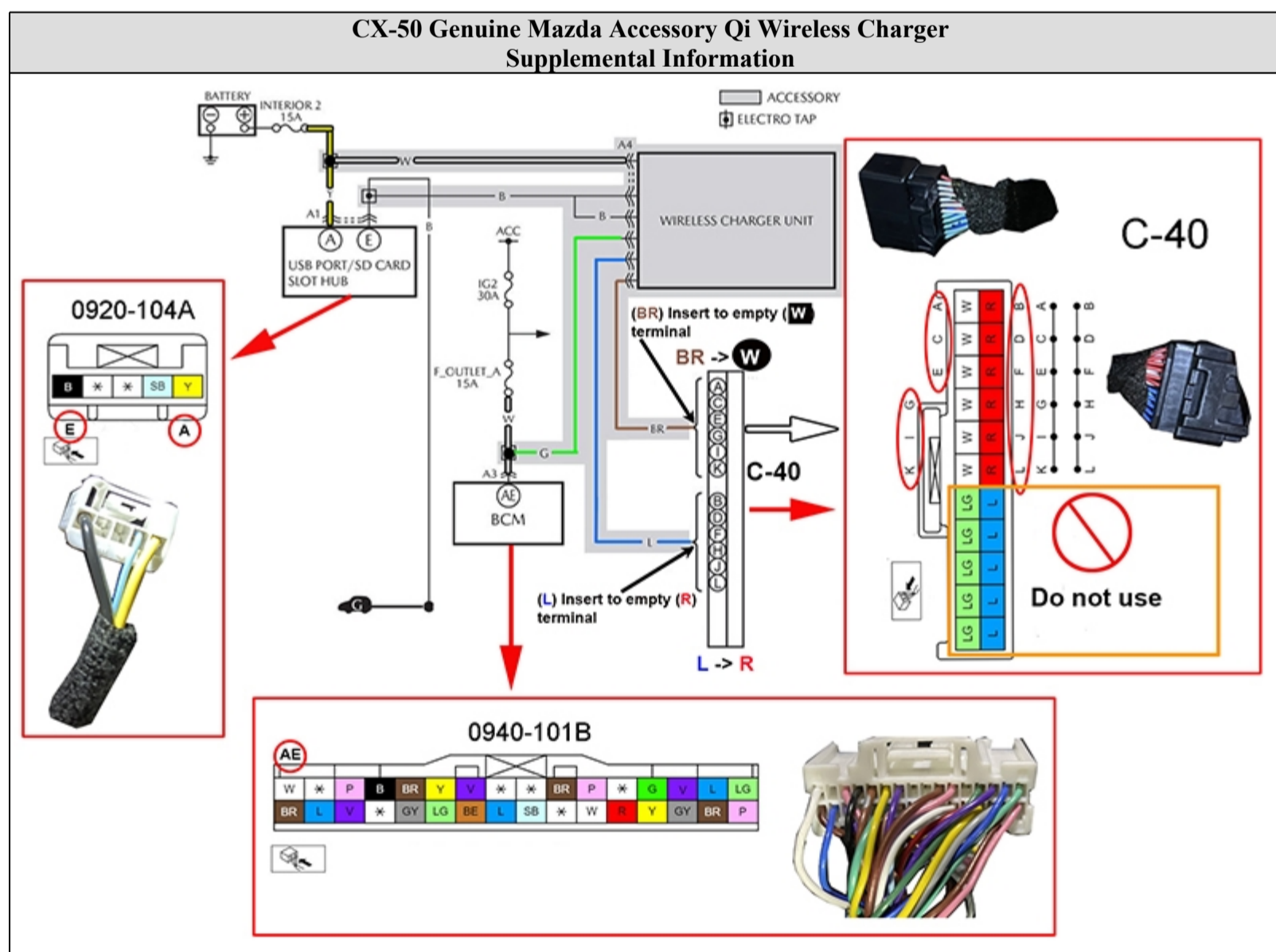
CX-50, CX-90 Factory Installed and Mazda Genuine Accessory		CX-5 and CX-9 Factory Installed	Mazda3 and CX-30 Mazda Genuine Accessory	Customer Device	
LED Indicator	Infotainment Display Icon	LED Indicator	LED Indicator	Device Display	Infotainment Display Icon
No light - System Off	---	• No light - System Off	• No light - System Off	• Customer device high temperature	

Example: iPhone

- | | |
|--|--|
| <ul style="list-style-type: none"> • White - Stand-by (charging is possible) • Amber - Normal charging • Green - Fast charging • Flashing Amber - Normal | <ul style="list-style-type: none"> • White - Stand-by (charging is possible) • Green - Charging • Flashing White - Charge Complete *2 • Orange (foreign matter detected or device high |
|--|--|

White - Charging is possible		charging (charging efficiency is low)	temp)	
Amber - Normal charging		<ul style="list-style-type: none"> Flashing Green - Fast charging (charging efficiency is low) 	<ul style="list-style-type: none"> Red (charger malfunction) 	
Green - Fast charging *1				
Flashing White - Charging conditions are not met *3		<ul style="list-style-type: none"> Flashing White - Standby (charging is not possible) 		
Flashing red - Charging is not possible because charging pad high temperature is detected (Charging will resume when charging pad cools)		<ul style="list-style-type: none"> Flashing red (charging pad high temperature is detected) 		
Flashing red - Charging is not possible because:		<ul style="list-style-type: none"> Customer device issue 		
<ul style="list-style-type: none"> Customer device high temperature Foreign matter is detected Phone case is not compatible with Qi wireless charger 				
Solid red - There is a problem with the Wireless Charger (Qi) and it needs to be repaired by an Authorized Mazda Dealer				

- *1: Some mobile devices can switch between normal charging and fast charging.
*2: *For some types of mobile device, the indicator may remain green even when charging is complete.
*3: Charging conditions:
a. Engine is running
b. Qi compatible device placed in centre of the charging area on the tray
c. Doors and liftgate are closed



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