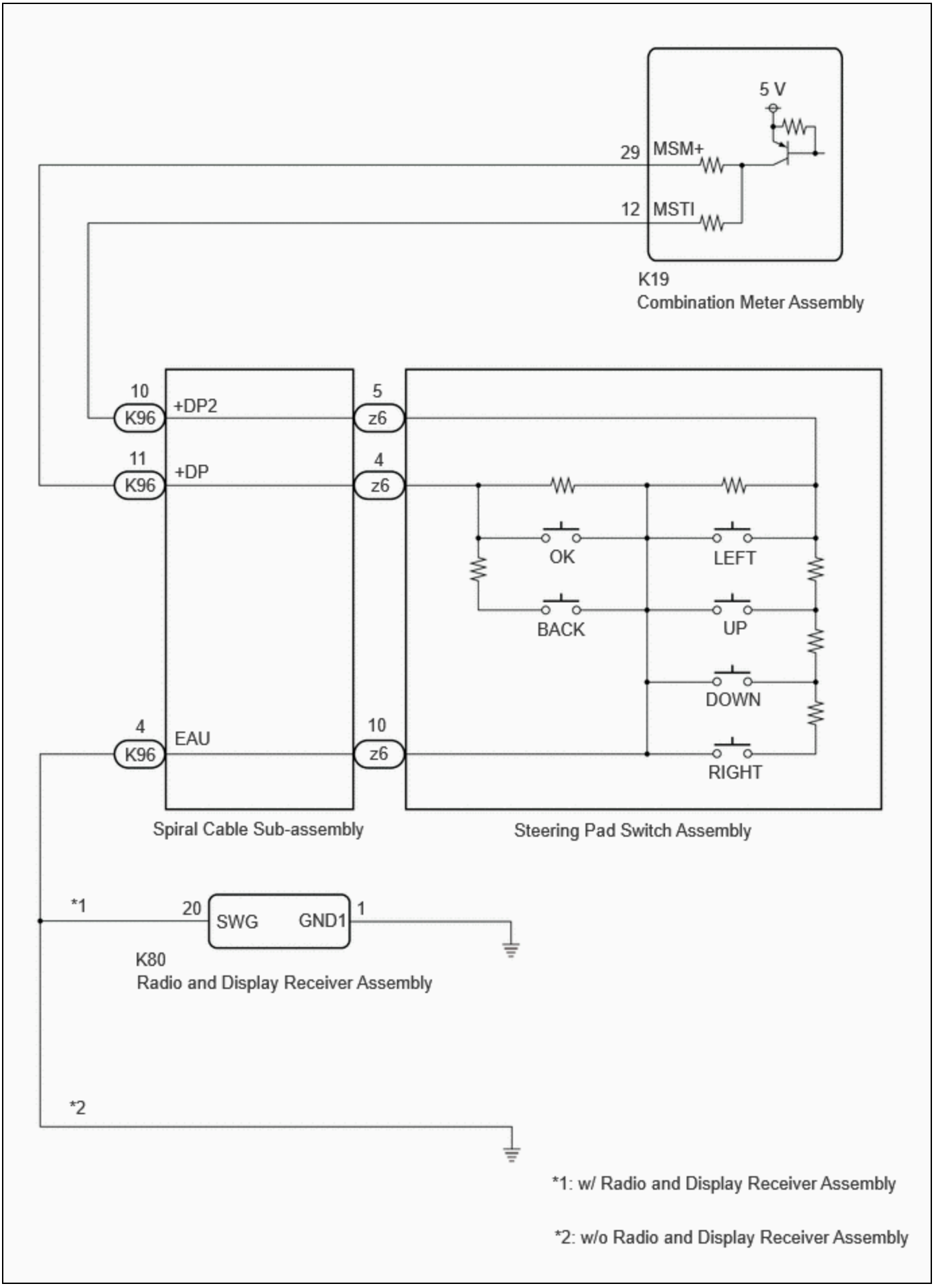
Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM1000000029H11
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: Steering Pad Switch Circuit; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DESCRIPTION

The combination meter assembly and steering pad switch assembly are connected via direct line. The multi-information display in the combination meter assembly is operated using the switches of the steering pad switch assembly.

WIRING DIAGRAM


5 V
29
MSM+
12
MSTI
K19
Combination Meter Assembly
10
K96
+DP2
5
z6
11
K96
+DP
4
z6
OK
LEFT
BACK
UP
DOWN
RIGHT
4
K96
EAU
10
z6
Spiral Cable Sub-assembly
Steering Pad Switch Assembly
*1
20
SWG
GND1
1
K80
Radio and Display Receiver Assembly
*2
*1: w/ Radio and Display Receiver Assembly
*2: w/o Radio and Display Receiver Assembly

CAUTION / NOTICE / HINT

NOTICE:

- When replacing the combination meter assembly, always replace it with a new one. If a combination meter assembly which was installed to another vehicle is used, the information stored in it will not match the information from the vehicle and a DTC may be stored.
- When replacing the combination meter assembly, update the ECU security key.

Click here INFO

PROCEDURE

1.	**PERFORM ACTIVE TEST USING GTS**

(a) Perform the Active Test according to the display on the GTS.

Body Electrical > Combination Meter > Active Test

TESTER DISPLAY	MEASUREMENT ITEM	CONTROL RANGE	DIAGNOSTIC NOTE
Multi Switch (Up)	Performs the same operation as pressing the up switch on steering pad switch	OFF or ON	-
Multi Switch (Down)	Performs the same operation as pressing the down switch on steering pad switch	OFF or ON	-
Multi Switch (Left)	Performs the same operation as pressing the left switch on steering pad switch	OFF or ON	-
Multi Switch (Right)	Performs the same operation as pressing the right switch on steering pad switch	OFF or ON	-
Multi Switch (Enter)	Performs the same operation as pressing the OK switch on steering pad switch	OFF or ON	-
Multi Switch (Back)	Performs the same operation as pressing the back switch on steering pad switch	OFF or ON	-

Body Electrical > Combination Meter > Active Test

TESTER DISPLAY
Multi Switch (Up)

Body Electrical > Combination Meter > Active Test

TESTER DISPLAY
Multi Switch (Down)

Body Electrical > Combination Meter > Active Test

TESTER DISPLAY
Multi Switch (Left)

Body Electrical > Combination Meter > Active Test

TESTER DISPLAY
Multi Switch (Right)

Body Electrical > Combination Meter > Active Test

TESTER DISPLAY
Multi Switch (Enter)

Body Electrical > Combination Meter > Active Test

TESTER DISPLAY
Multi Switch (Back)

RESULT	PROCEED TO
Active Test can be performed correctly	A
Active Test cannot be performed correctly	B

B ▶ **REPLACE COMBINATION METER ASSEMBLY**

A ▼

2.	**READ VALUE USING GTS**

(a) Read the Data List according to the display on the GTS.

Body Electrical > Combination Meter > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Multi Switch (Up)	Up switch on steering pad switch operation	OFF or ON	OFF: Switch released ON: Switch pushed	-
Multi Switch (Down)	Down switch on steering pad switch operation	OFF or ON	OFF: Switch released ON: Switch pushed	-
Multi Switch (Left)	Left switch on steering pad switch operation	OFF or ON	OFF: Switch released ON: Switch pushed	-
Multi Switch (Right)	Right switch on steering pad switch operation	OFF or ON	OFF: Switch released ON: Switch pushed	-
Multi Switch (Enter)	OK switch on steering pad switch operation	OFF or ON	OFF: Switch released ON: Switch pushed	-
Multi Switch (Back)	Back switch on steering pad switch operation	OFF or ON	OFF: Switch released ON: Switch pushed	-

Body Electrical > Combination Meter > Data List

TESTER DISPLAY
Multi Switch (Up)
Multi Switch (Down)
Multi Switch (Left)
Multi Switch (Right)
Multi Switch (Enter)
Multi Switch (Back)

RESULT	PROCEED TO
The value of the Data List item is correct, and the combination meter assembly operates correctly	A
The value of the Data List item is correct, but the combination meter assembly does not operate correctly	B
The Data List item changes correctly	C

A ▶ **USE SIMULATION METHOD TO CHECK**

B ▶ **REPLACE COMBINATION METER ASSEMBLY**

C
▼

3.	**INSPECT STEERING PAD SWITCH ASSEMBLY**

Click here INFO

NG ▶ **REPLACE STEERING PAD SWITCH ASSEMBLY** INFO

OK
▼

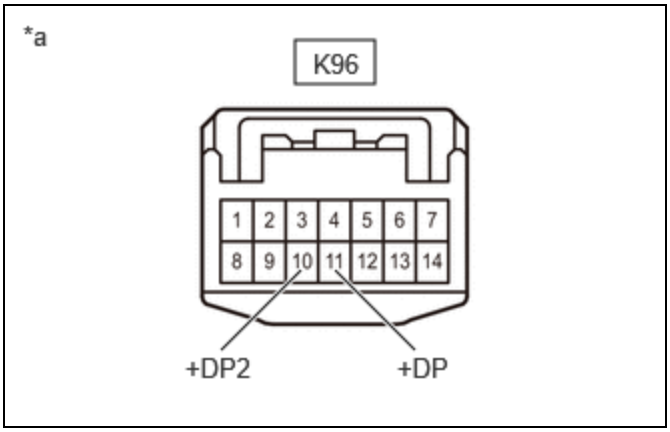
4.	**INSPECT SPIRAL CABLE SUB-ASSEMBLY**

Click here INFO

NG ▶ **REPLACE SPIRAL CABLE SUB-ASSEMBLY** INFO

OK
▼

5.	**CHECK COMBINATION METER ASSEMBLY (OUTPUT VOLTAGE)**



*a	Front view of wire harness connector (to Spiral Cable Sub-assembly)

(a) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

EWD INFO

Click Location & Routing(K96)
Click Connector(K96)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K96-11 (+DP) - Body ground	Ignition switch ON	4.8 to 5.2 V
K96-10 (+DP2) - Body ground	Ignition switch ON	4.8 to 5.2 V

NG ▶ **GO TO STEP 9**

OK ▼

6.	**CONFIRM MODEL**

(a) Choose the model to be inspected.

RESULT	PROCEED TO
w/ radio and display receiver assembly	A
w/o Radio and Display Receiver Assembly	B

B ▶ **GO TO STEP 8**

A

7.	**CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - SPIRAL CABLE SUB-ASSEMBLY AND BODY GROUND)**

(a) Disconnect the K80 radio and display receiver assembly connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

EWD INFO

Click Location & Routing(K80,K96)
Click Connector(K80)
Click Connector(K96)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K80-20 (SWG) - K96-4 (EAU)	Always	Below 1 Ω
K80-1 (GND1) - Body ground	Always	Below 1 Ω

OK ▶ **REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY**

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

8.	**CHECK HARNESS AND CONNECTOR (SPIRAL CABLE SUB-ASSEMBLY - BODY GROUND)**

(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

EWD INFO

Click Location & Routing(K96)
Click Connector(K96)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K96-4 (EAU) - Body ground	Always	Below 1 Ω

OK ▶ **REPLACE COMBINATION METER ASSEMBLY**

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

9.	**CHECK HARNESS AND CONNECTOR (SPIRAL CABLE SUB-ASSEMBLY - COMBINATION METER ASSEMBLY)**

(a) Disconnect the K19 combination meter assembly connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Click Location & Routing(K96,K19)
Click Connector(K96)
Click Connector(K19)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K96-11 (+DP) - K19-29 (MSM+)	Always	Below 1 Ω
K96-10 (+DP2) - K19-12 (MSTI)	Always	Below 1 Ω
K96-11 (+DP) or K19-29 (MSM+) - Body ground	Always	10 kΩ or higher
K96-10 (+DP2) or K19-12 (MSTI) - Body ground	Always	10 kΩ or higher

OK ▶ **REPLACE COMBINATION METER ASSEMBLY**

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**