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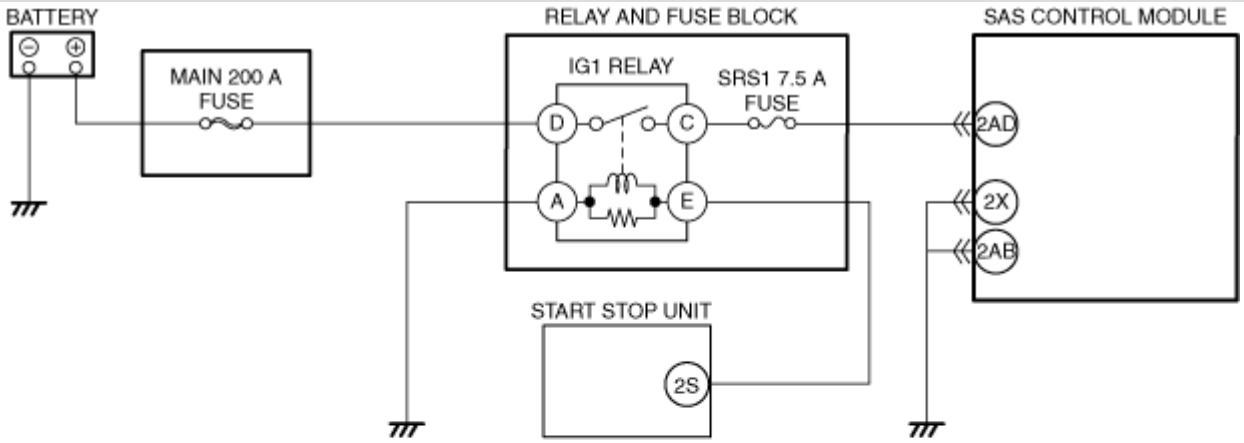
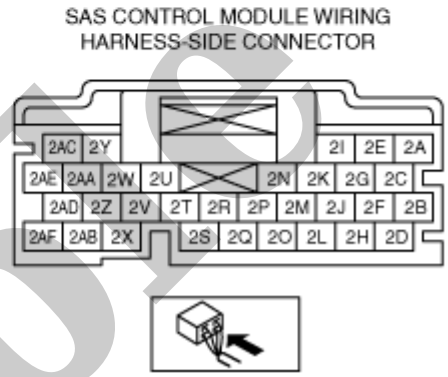
2015 Mazda 6 Service and Repair Manual

Go to manual page

Step	Inspection		Action
1	PERFORM MALFUNCTION DIAGNOSIS USING FLOWCHART • Is the malfunction diagnosis performed using the flowchart? (See FLOWCHART [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)].)	Yes	Go to the next step.
		No	Re-perform the malfunction diagnosis using the flowchart. (See FOREWORD [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)].)
2	INSPECT SAS CONTROL MODULE CONNECTORS CONNECTION CONDITION • Switch the ignition off. • Disconnect the negative battery terminal and wait for 1 min or more. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Verify that all SAS control module connectors are securely connected. (See SAS CONTROL MODULE REMOVAL/INSTALLATION [STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.].) • Are all SAS control module connectors securely connected?	Yes	Go to the next step.
		No	Reconnect the SAS control module connector properly, then go to Step 4.
3	VERIFY PARTIALLY DISCONNECTED DETECTION BAR OF SAS CONTROL MODULE CONNECTOR • Remove the column cover. (See COLUMN COVER REMOVAL/INSTALLATION.) • Disconnect the clock spring connector. (See CLOCK SPRING REMOVAL/INSTALLATION [STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.].) • Remove the glove compartment. (See GLOVE COMPARTMENT REMOVAL/INSTALLATION.) • Disconnect the passenger-side air bag module connector. (See PASSENGER-SIDE AIR BAG MODULE REMOVAL/INSTALLATION [STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.].) • Disconnect the driver and passenger-side front seat connectors. (See FRONT SEAT REMOVAL/INSTALLATION.) • Remove the B-pillar lower trim. (See B-PILLAR LOWER TRIM REMOVAL/INSTALLATION.) • Disconnect the driver and passenger-side pre-tensioner seat belt connectors. (See FRONT SEAT BELT REMOVAL/INSTALLATION.) • Remove the headliner. (See HEADLINER REMOVAL/INSTALLATION.) • Disconnect the driver and passenger-side curtain air bag module connectors. (See CURTAIN AIR BAG MODULE REMOVAL/INSTALLATION [STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.].) • Disconnect the all SAS control module connectors. (See SAS CONTROL MODULE REMOVAL/INSTALLATION [STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.].) • Verify the condition of the detector bars of the SAS control module connectors. (Corrosion, damage, and disconnected pins) • Are the detector bars of the SAS control module connectors normal?	Yes	Go to the next step.
		No	Replace the air bag harness.

System malfunction location	• U3003:16: SAS control module power supply voltage decreases (8 V or less) • U3003:17: SAS control module power supply voltage increases (16 V or more)





Diagnostic procedure

Warning

• Handling the component parts improperly can accidentally operate (deploy) the air bag modules and pre-tensioner seat belts, which may seriously injure you. Read the service warnings/cautions and the workshop manual before handling the air bag system components. (See AIR BAG SYSTEM SERVICE WARNINGS [STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.].) (See AIR BAG SYSTEM SERVICE CAUTIONS [STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.].)

Step	Inspection		Action
1	INSPECT IG1 RELAY • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Remove the IG1 relay. (See RELAY LOCATION.) • Inspect the IG1 relay. (See RELAY INSPECTION.) • Is the IG1 relay normal?	Yes	Go to the next step.
		No	Replace the IG1relay, then go to Step 8.
2	INSPECT PCM DTC • Perform the PCM DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5T)].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) (See DTC TABLE [PCM (SKYACTIV-G 2.5T)].)
		No	Go to the next step.

Step	Inspection		Action
		No	Inspect the SRS1 7.5 A fuse and MAIN 200 A fuse. • If the fuse is blown: — Refer to the wiring diagram and verify whether or not there is a common connector between MAIN 200 A fuse and SAS control module terminal 2AD. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to ground. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to ground. — Replace the fuse. • If the fuse is damaged: — Replace the fuse. • If the fuse is normal: — Refer to the wiring diagram and verify whether or not there is a common connector between battery positive terminal and SAS control module terminal 2AD. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for an open circuit. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has

DTC U0001:88/U0100:00/U0101:00/U0155:00 [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)]

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System malfunction location	• U0001:88: Unit communication error (HS-CAN) • U0100:00: Communication error with PCM • U0101:00: Communication error with TCM • U0155:00: Communication error with instrument cluster
Detection condition	U0001:88 • The SAS control module detects a CAN communication line (HS-CAN) error. U0100:00 • The SAS control module could not receive CAN signal from the PCM for 5 s or more. U0101:00 • The SAS control module could not receive CAN signal from the TCM for 5 s or more. U0155:00 • The SAS control module could not receive CAN signal from the instrument cluster for 5 s or more.
Fail-safe function	Not applicable
Possible cause	• Malfunction in CAN bus communication line • Malfunction in CAN line between the SAS control module and PCM • Malfunction in CAN line between the SAS control module and TCM • Malfunction in CAN line between the SAS control module and instrument cluster
System wiring diagram	Not applicable

Diagnostic procedure

• Perform the malfunction diagnosis according to the troubleshooting procedure for the multiplex communication system. (See FOREWORD [TYPE-A (SKYACTIV-G 2.5)].) (See FOREWORD [TYPE-A (SKYACTIV-G 2.5T, SKYACTIV-D 2.2)].)

DTC B00D2:29 [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)]

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System malfunction location	• Communication error with instrument cluster (air bag system warning light status mis-matched)
Detection condition	Warning • Detection conditions are for understanding the DTC outline before performing an inspection. Performing an inspection according to only the detection conditions may cause injury due to an operating error, or damage the system. When performing an inspection, always follow the inspection procedure. • Air bag system warning light illumination request sent from SAS control module does not correspond to air bag system warning light illumination status in instrument cluster
Fail-safe function	Not applicable
Possible cause	• Instrument cluster assembly incorrect • Instrument cluster malfunction • SAS control module malfunction
System wiring diagram	Not applicable

Diagnostic procedure

Step	Inspection		Action
1	INSPECT DTCs IN SAS CONTROL MODULE • Clear the DTC for the SAS control module using the M-MDS. (See CLEARING DTC [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)].) • Perform the DTC inspection for the SAS control module using the M-MDS. (See DTC INSPECTION [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)].) • Is DTC U0001:88 or U0155:00 displayed?	Yes	Perform the applicable DTC inspection
		No	Go to the next step.
2	INSPECT INSTRUMENT CLUSTER • Verify that the instrument cluster is correctly installed. • Is the instrument cluster correctly installed?	Yes	Go to the next step.
		No	Correctly install the instrument cluster. (See INSTRUMENT CLUSTER REMOVAL/INSTALLATION.) Then go to the next step.
3	INSPECT INSTRUMENT CLUSTER • Perform the active command mode inspection for the instrument cluster using the M-MDS. (See ACTIVE COMMAND MODES INSPECTION [INSTRUMENT CLUSTER].) — WL+IL (See ACTIVE COMMAND MODES TABLE [INSTRUMENT CLUSTER].) • Does the air bag system warning light illuminate?	Yes	Go to the next step.
		No	Replace the instrument cluster. (See INSTRUMENT CLUSTER REMOVAL/INSTALLATION.) Then go to the next step.

DTC B0094:55/B1417:55 [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)]

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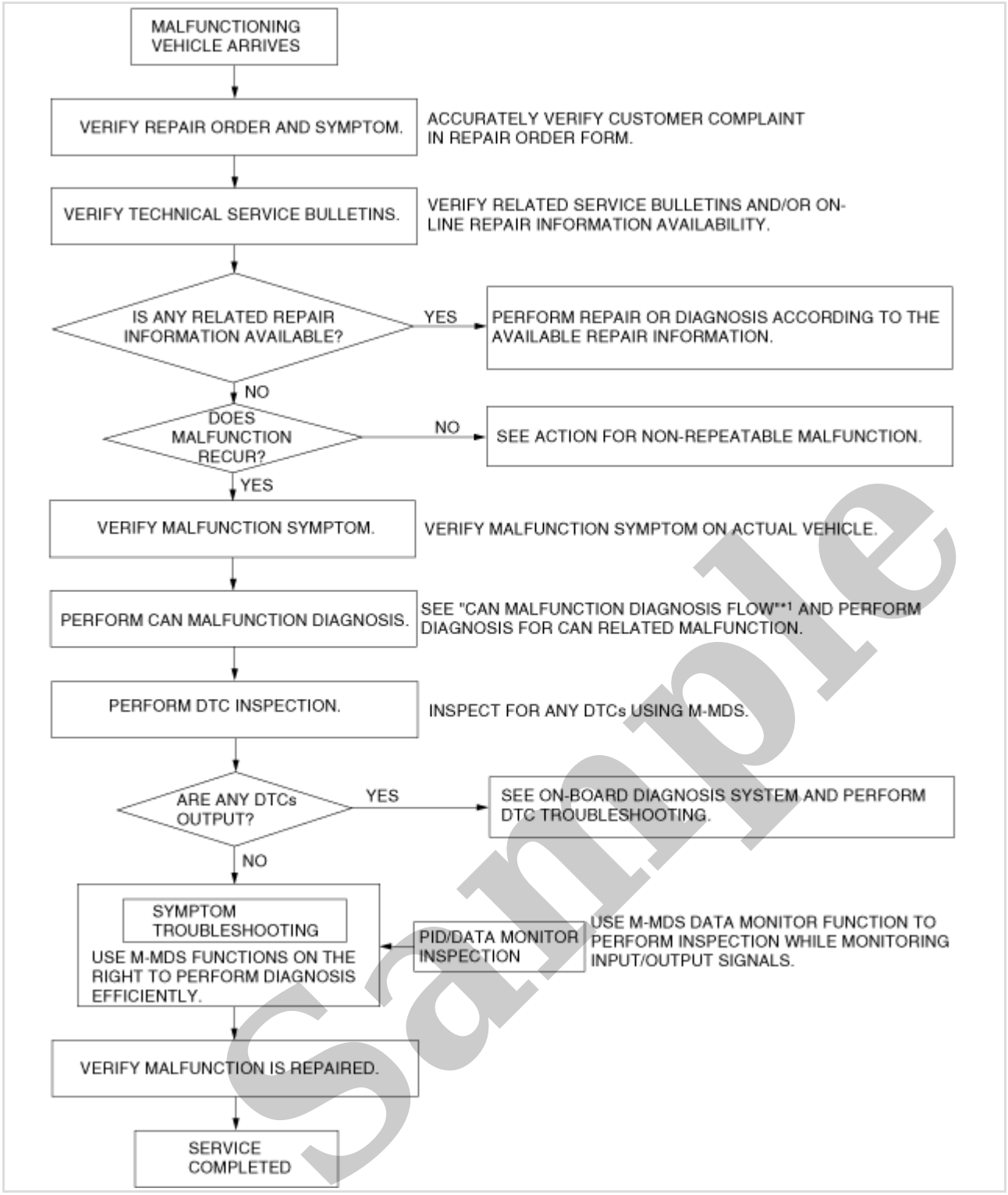
System malfunction location	• B0094:55: Configuration setting error (driver-side crash zone sensor structural malfunction) • B1417:55: Configuration setting error (passenger-side crash zone sensor structural malfunction)
Detection condition	Warning • Detection conditions are for understanding the DTC outline before performing an inspection. Performing an inspection according to only the detection conditions may cause injury due to an operating error, or damage the system. When performing an inspection, always follow the inspection procedure. • SAS control module configuration setting has not been done correctly • Parts which have not been set to SAS control module are assembled
Fail-safe function	–
Possible cause	• SAS control module configuration setting not implemented • SAS control module configuration setting invalid • Driver or passenger-side crash zone sensor assembly incorrect • SAS control module malfunction
System wiring diagram	–

Diagnostic procedure

Step	Inspection		Action
1	PERFORM SAS CONTROL MODULE CONFIGURATION (AS-BUILT DATA USE) • Perform the SAS control module configuration using the M-MDS. (See SAS CONTROL MODULE CONFIGURATION (USING AS-BUILT DATA) [STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.].) • Clear the DTC for the SAS control module using the M-MDS. (See CLEARING DTC [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)].) • Perform the DTC inspection for the SAS control module using the M-MDS. (See DTC INSPECTION [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)].) • Are the same DTCs present?	Yes	Go to the next step.
		No	DTC troubleshooting completed.
2	INSPECT CRASH ZONE SENSOR INSTALLATION CONDITION • Verify that the driver or passenger-side crash zone sensor is correctly installed. (See CRASH ZONE SENSOR REMOVAL/INSTALLATION [STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.].) • Is the driver or passenger-side crash zone sensor correctly installed?	Yes	Go to the next step.
		No	Correctly Install the driver or passenger-side crash zone sensor. (See CRASH ZONE SENSOR REMOVAL/INSTALLATION [STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.].) Then go to the next step.



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*1: CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-A (SKYACTIV-G 2.5)], CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-A (SKYACTIV-G 2.5T, SKYACTIV-D 2.2)].

Action for non-repeatable malfunction

- If the malfunction does not recur, verify the malfunction cause by performing the following actions:

  — Based on the repair order form, attempt to drive the vehicle or perform tests to replicate the malfunction, record the data at that time, and detect the malfunction cause.
  — Shake the wiring harness or connector of the electrical component which is suspected to be the cause of the malfunction, and inspect for occurrence of any malfunction or DTCs.

FLOWCHART [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)]

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• Use the following flowchart to verify the cause of the trouble.

Note

• When inspecting past malfunction codes, inspect only the DTCs that were indicated before beginning the inspection. A misdiagnosis could occur as a result of new DTCs being added while performing an inspection by disconnecting related parts or connectors.
• When DTCs of the present malfunction are no longer output after present or past malfunctions or both have been repaired, be sure to clear the past malfunction from memory to prevent repair of malfunctions that have already been repaired.

• If any DTCs are displayed, perform troubleshooting according to the corresponding DTC inspection. (See DTC TABLE [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)].)

4.After completion of repairs, clear all DTCs stored in the SAS control module. (See CLEARING DTC [SAS CONTROL MODULE (STANDARD DEPLOYMENT CONTROL SYSTEM - MEXICO SPEC.)].)

Snapshot Data Table

Note

• The SAS control module stores the following two types of information when a DTC is detected and displays snap shot data in the M-MDS.

— Vehicle information detected by SAS control module
— Vehicle information detected by instrument cluster and received by SAS control module via CAN signal

• The data for all DTCs currently detected is stored.

Snapshot data item	Unit		Definition	Data read/use method	Corresponding PID data monitor item
AAT	°C	°F	Ambient temperature	–	–
AB_WRNG_RCV_FAULT_CLEAR	–		Air bag system warning light status	–	–
AB_WRNG_RCV_FAULT_DETECT	–		Air bag system warning light status	–	–
AB_WRNG_REQ_FAULT_CLEAR	–		Air bag system warning light status (request signal)	–	–
AB_WRNG_REQ_FAULT_DETECT	–		Air bag system warning light status (request signal)	–	–
APP_STATUS	Accelerator Pedal Off/ Under20%/ Over20%/ FAIL		Accelerator pedal position status	–	–
CFG_STATUS	Config Complete/ Not Configured/ Config Error		Instrument cluster configuration status	–	–
CONN_A_RES_FAULT_CLEAR	ohm		Partially disconnected detection bar (A) resistance nominal	–	–
CONN_A_RES_FAULT_DETECT	ohm		Partially disconnected detection bar (A) resistance nominal	–	–
CONN_B_RES_FAULT_CLEAR	ohm		Partially disconnected detection bar (B) resistance nominal	–	–
CONN_B_RES_FAULT_DETECT	ohm		Partially disconnected detection bar (B) resistance nominal	–	–
CONN_C_RES_FAULT_CLEAR	ohm		Partially disconnected detection bar (C) resistance nominal	–	–
CONN_C_RES_FAULT_DETECT	ohm		Partially disconnected detection bar (C) resistance nominal	–	–