SR210B / SR240B / SV280B
Tier 4B (final) / Stage IV
B Series Skid Steer Loader

PIN NJM453496 and after

TR270B / TR310B / TV370B
Tier 4B (final) / Stage IV
B Series Compact Track Loader

PIN NJM453496 and after

SERVICE MANUAL

Part number 51522257
English
October 2020

CASE CONSTRUCTION

MidWestTech | Case SR210B, SR240B, SV280B, TR270B, TR310B, TV370B Tier 4B Stage IV Skid Steer Loader Service Manual | Publication 51522257

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Hydraulic systems - Hydraulic schema - Mechanical Two-Speed Track Drive Assembly

TR270B	(DC-Drive Control Type = Hand Controls) OR (DC-Drive Control Type = Hand and Foot Controls)
TR310B	(DC-Drive Control Type = Hand Controls) OR (DC-Drive Control Type = Hand and Foot Controls)

Item	Description
(1)	Right-Hand motor
(2)	Left-Hand motor
(3)	To Case Drain Tube
(4)	Charge Pressure to Port Lock
(5)	Crossover Pump Suction Line
(6)	Charge Pump Suction Line
(7)	Gear Pump Interface to Tandem Pump • Sauer M46 - Servo Displacement • Main Relief (all ports) - **362 bar** (**5250 psi**) • Charge Relief - **25 bar** (**360 psi**)
(8)	To Case Drain Tube
(9)	Brake/Shift Manifold
(10)	Hydraulic line types 1. Crossover lines 2. Connecting lines 3. Charge Pressure lines 4. Return/Suction lines 5. Case Drain lines 6. Direction of flow 7. Left Hand Forward lines 8. Right Hand Forward lines

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Wiring harnesses - Electrical schematic sheet 11 SH11 - ENGINE F5C T4

SR210B STAGE IV [NJM453496 -]	(BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand Controls) OR (BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand and Foot Controls)
SR210B TIER 4B (FINAL) [NJM453496 -]	(BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand Controls) OR (BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand and Foot Controls) — (BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand Controls) OR (BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand and Foot Controls)
TR270B STAGE IV [NJM453496 -]	(BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand Controls) OR (BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand and Foot Controls)
TR270B TIER 4B (FINAL) [NJM453496 -]	(BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand Controls) OR (BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand and Foot Controls)
TR310B STAGE IV [NJM453496 -]	(BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand Controls) OR (BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand and Foot Controls)
TR310B TIER 4B (FINAL) [NJM453496 -]	(BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand Controls) OR (BG-Base Groups = Instrument Cluster (IC)) AND (DC-Drive Control Type = Hand and Foot Controls)

Type	Component	Connector / Link
ECU	**A-005** - ENGINE CONTROLLER UNIT (ECU)	**X-012** - ECU [A-005] (84474047) **X-116** - ECU [A-005] (84474053)
Connector		**X-115** - ELECTRIC VALVE (87698252)
Connector		**X-116** - ECU [A-005] (84474053)
Connector		**X-217** - ENGINE INTERFACE (84154706)
Connector		**X-9138B** - ENGINE SENSOR HARNESS TO VEHICLE HARNESS CONNECTOR (Not Serviceable)
Connector		**X-9139B** - ENGINE INJECTORS HARNESS TO VEHICLE HARNESS CONNECTOR (Not Serviceable)

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5217 - Left Joystick F-B Axis - In Range Fault

SR210B STAGE IV [NJM453496 -]	(DC-Drive Control Type = EH Controls)
SR210B TIER 4B (FINAL) [NJM453496 -]	(DC-Drive Control Type = EH Controls) --- (DC-Drive Control Type = EH Controls)
SR240B STAGE IV [NJM453496 -]	(DC-Drive Control Type = EH Controls)
SR240B TIER 4B (FINAL) [NJM453496 -]	(DC-Drive Control Type = EH Controls)
SV280B STAGE IV [NJM453496 -]	(DC-Drive Control Type = EH Controls)
SV280B TIER 4B (FINAL) [NJM453496 -]	(DC-Drive Control Type = EH Controls) --- (DC-Drive Control Type = EH Controls)
TR270B STAGE IV [NJM453496 -]	(DC-Drive Control Type = EH Controls)
TR270B TIER 4B (FINAL) [NJM453496 -]	(DC-Drive Control Type = EH Controls)
TR310B STAGE IV [NJM453496 -]	(DC-Drive Control Type = EH Controls)
TR310B TIER 4B (FINAL) [NJM453496 -]	(DC-Drive Control Type = EH Controls)
TV370B STAGE IV [NJM453496 -]	(DC-Drive Control Type = EH Controls)
TV370B TIER 4B (FINAL) [NJM453496 -]	(DC-Drive Control Type = EH Controls)

Fault Description:
The UCM has sensed that the left joystick F-B signal has failed. Diagnostic Trouble Code **5217 – Left Joystick F-B Axis - In Range Fault** has an error priority of Red.
Ground drive is disabled while Diagnostic Trouble Code **5217 – Left Joystick F-B Axis - In Range Fault** is active.

Cause:
The UCM has sensed that the left joystick F-B signal has failed. The fault is active while voltage on **X-CN4A (Receptacle) pin 18** and **X-CN2B** pin 31 is less than **0.2 V** or greater than **4.8 V**.
The normal operating voltage of the sensor output is **0.5 V** to **4.5 V**. The output of the sensor in the neutral position is approximately **2.5 V**.

Possible failure modes:

1. An open circuit in the signal wire.
2. A short circuit in the signal wire.
3. Failure of the left control handle.
4. The UCM has an internal failure.

Solution:

1. Verify that the fault code is active.

   Connect the Electronic Service Tool to the service tool connector.

   To check for fault codes: Start and operate the machine.

   A. The fault code is not recorded again. OK to return the machine to service.

   B. Fault code **5217 – Left Joystick F-B Axis - In Range Fault** is recorded again. Go to step **2**.
2. Verify that the wiring and connectors are free of damage.

   Inspect the UCM and the left joystick connections. All connections should be secure, tight, free of corrosion, abrasion, and damage.

   Inspect the harness from the UCM to the left joystick. Verify that the harness is free of damage, corrosion, abrasion, and incorrect attachment.

   A. The connectors are secure and the harness is free of damage. Go to step **3**.

   B. The connectors or the harness has damage. Repair or replace the harness or the connectors as required. Return to step **1** to confirm elimination of fault.
3. Measure the voltage of the signal wire to chassis ground.

   Turn the ignition switch OFF.

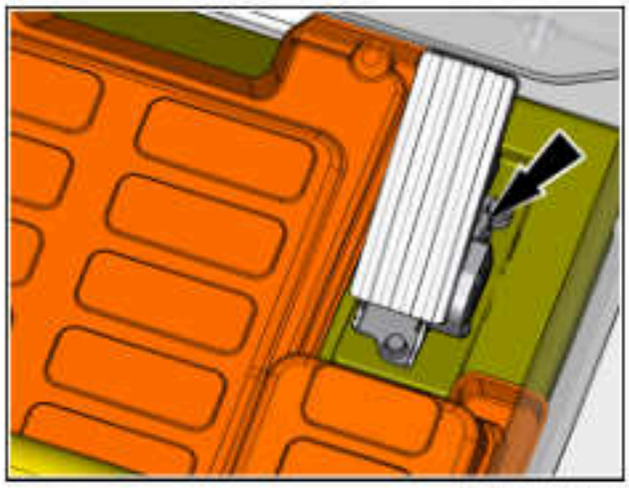
   Disconnect the UCM connectors **X-CN4A** and **X-CN2B**.

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Throttle pedal - Remove

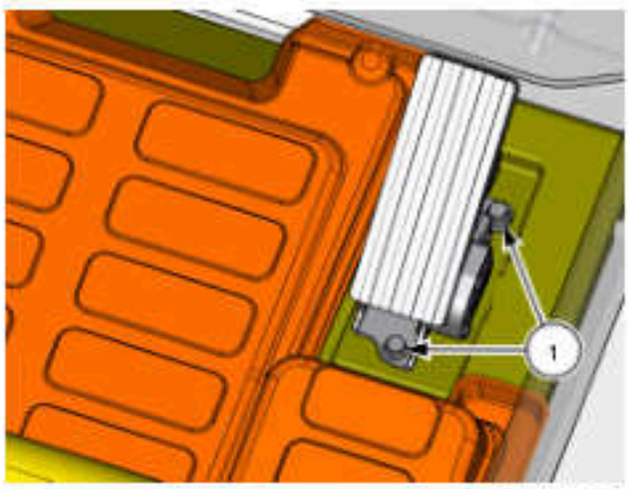
Prior operation:
Battery - Disconnect (55.302)

1. Disconnect the electrical harness from the foot pedal assembly.



RAPH175SLE176DA 1

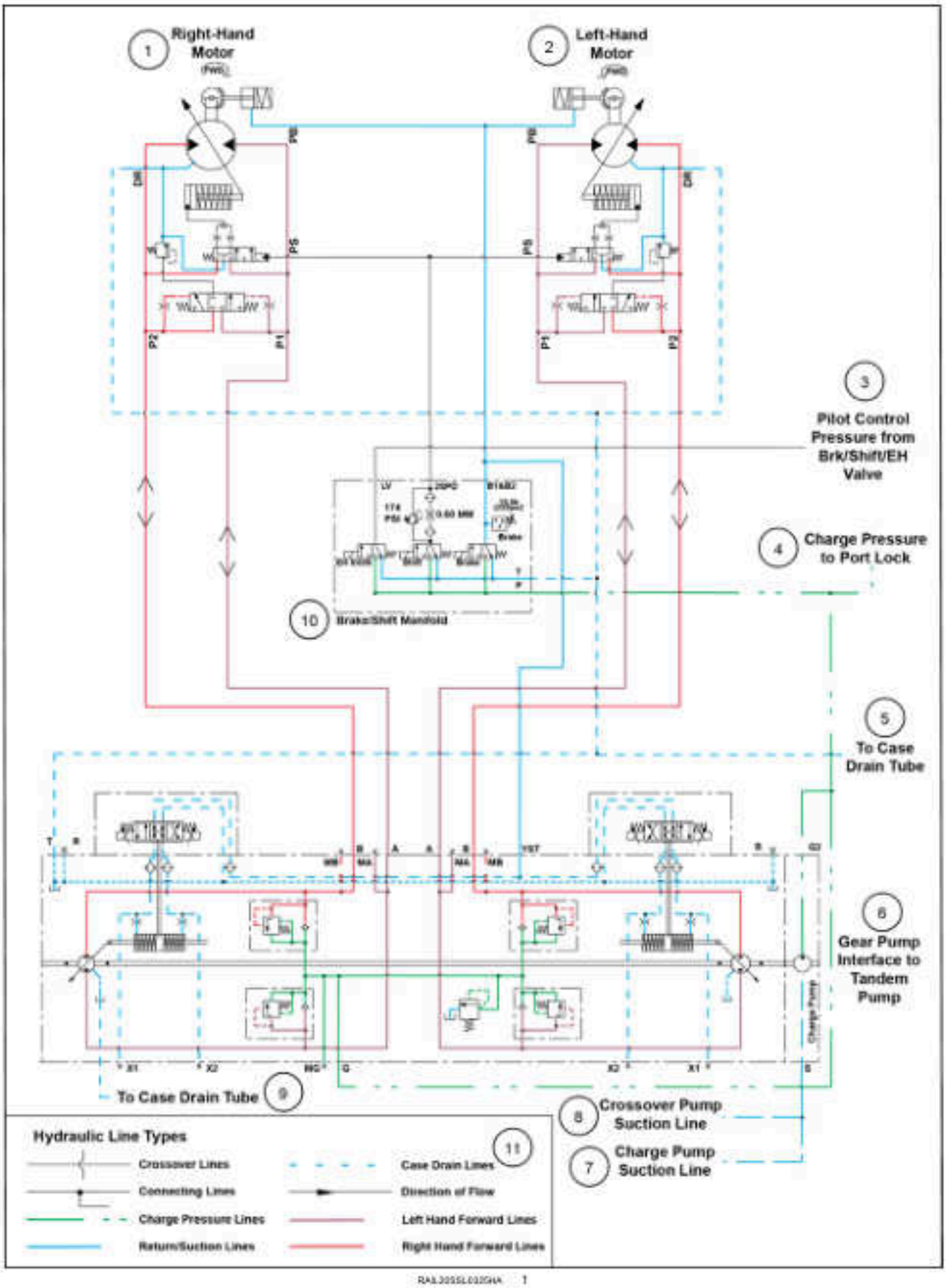
2. Remove the two bolts **(1)** that secure the foot pedal assembly to the floor plate.
3. Remove the foot pedal assembly from the machine.



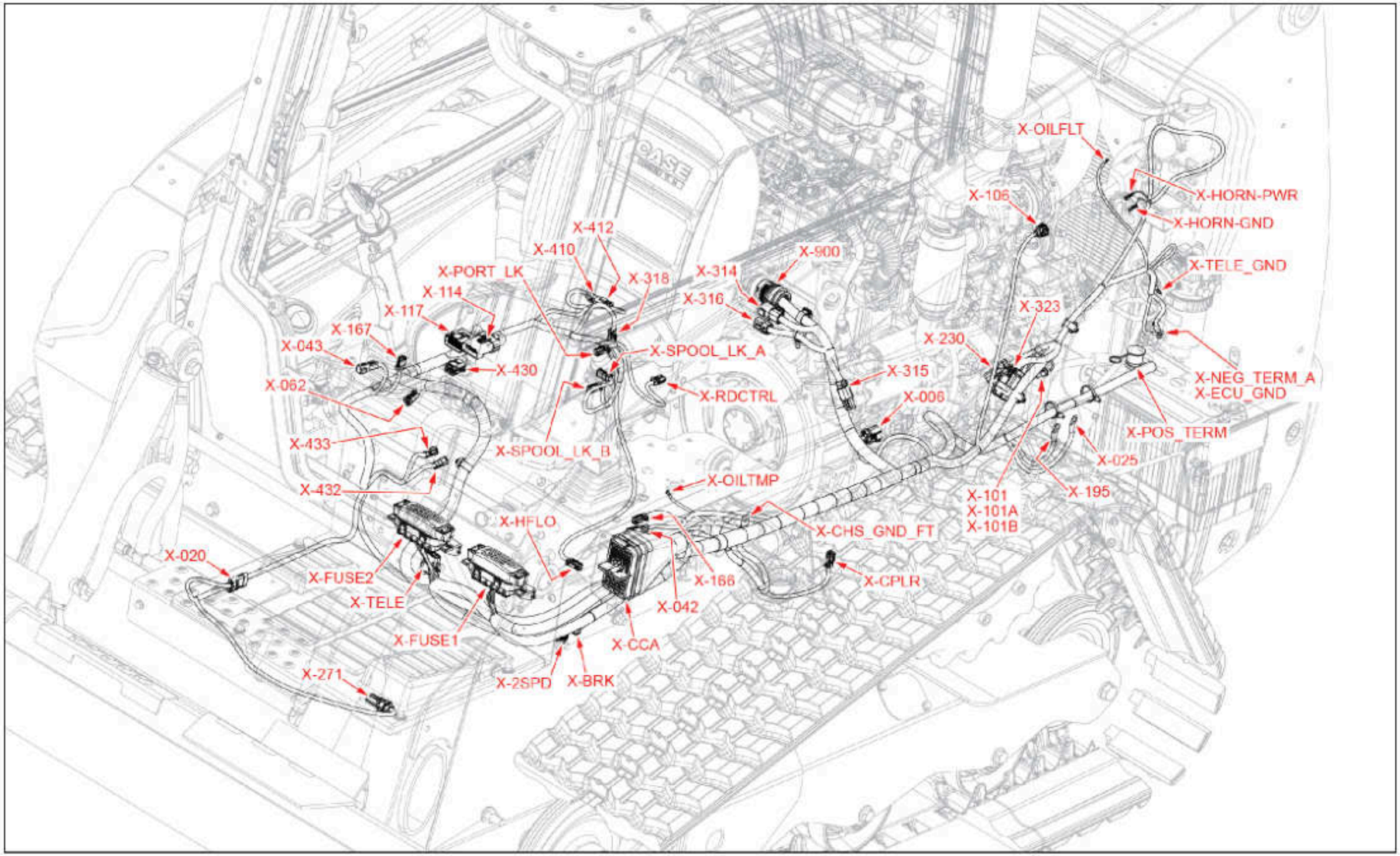
RAPH175SLE176DA 2

Next operation:
Throttle pedal - Install (55.525)

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