

SAKAI

SAKAI

MASTERS OF COMPACTION



SW504 Diagnostic Information

Please See Operators and Service Manual for additional information.

ALL Work Must be performed by a factory trained technician to prevent injury. This manual is not intended to replace the service manual but to assist with additional information.



WARNING

Unexpected machine movement may cause a serious accident. When inspecting the machine while the engine is running, always follow the instructions below.

- Park the machine on level, flat ground.
- Apply the parking brake.
- Set chocks in front and behind each drum or tire.
- Make sure that service personnel are given the appropriate information at the appropriate time.
- Make sure that no one can enter any hazardous area.

CAUTION

Do not work on the hydraulic system while the engine is running and the system is hot and under pressure. Do not disconnect hydraulic hoses or fittings until the system has cooled and pressure has been properly relieved.

Before removing any plugs from the pressure measurement ports, always release any residual pressure from the piping and open the cap of the fluid tank to release and pressure.

WARNING

Inadvertent starting the engine may cause a serious accident.

When inspecting the engine, make sure to exchange the appropriate cues and hand signal with the person at the operator station to avoid any accidents.

CAUTION

Before inspecting inside of the engine compartment, always stop the engine.

Contact with the fan, V-belt or exhaust system parts while the engine is running may cause serious injury.



SAKAI

SW504

504 Operators Manual
Scan QR Code to View



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Engine:	
Model	KUBOTA "D1803-CR-T-EF02" Diesel Engine
Total displacement	1.826 liters (111 cu.in)
Rated output	32.3 kW/2,400 min ⁻¹ (43.9 HP/2,400 rpm)
Max. torque	148.3 N·m/1,500 min ⁻¹ (109 ft-lb/1,500 rpm)

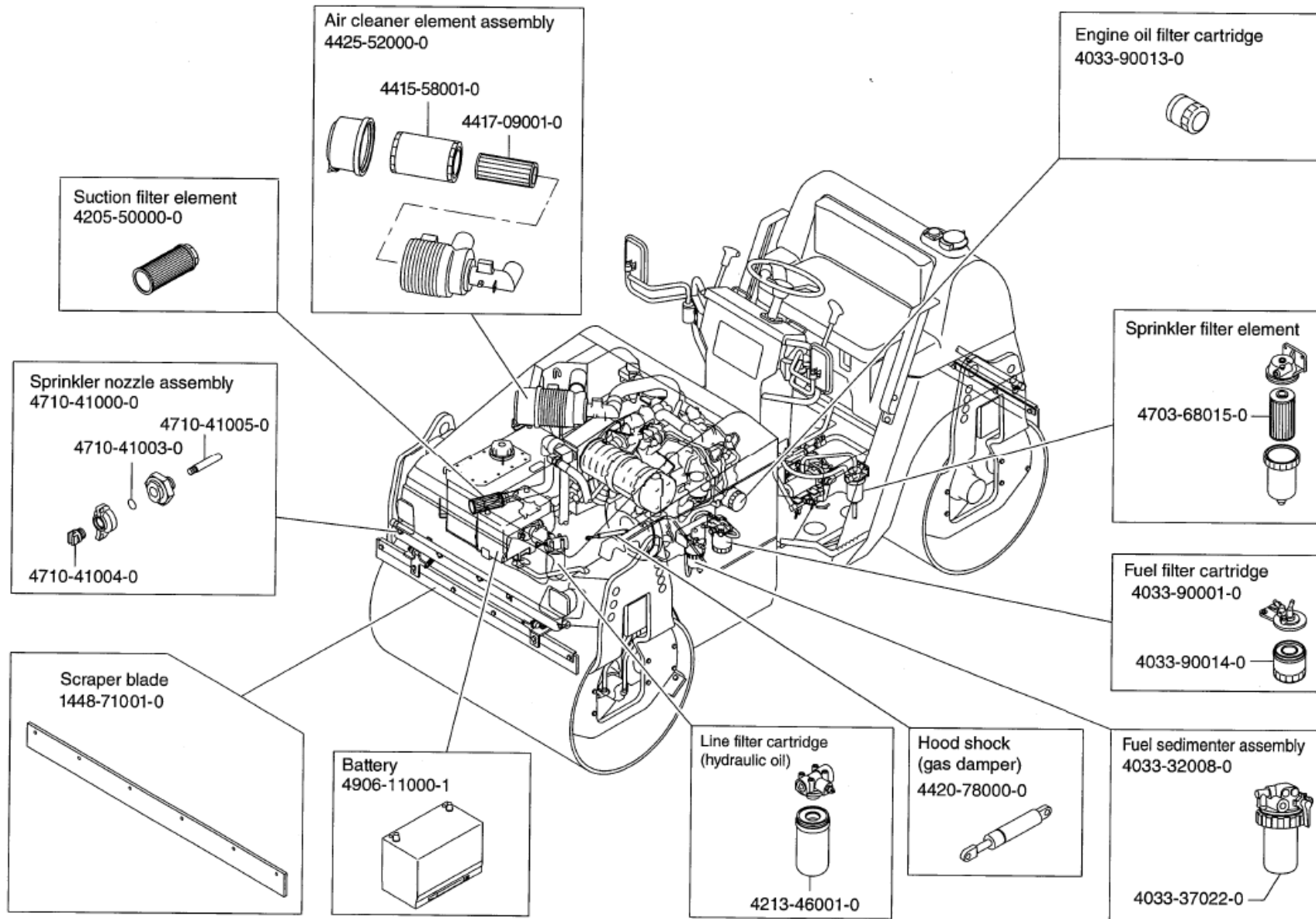
Kubota D1803 Engine Specifications

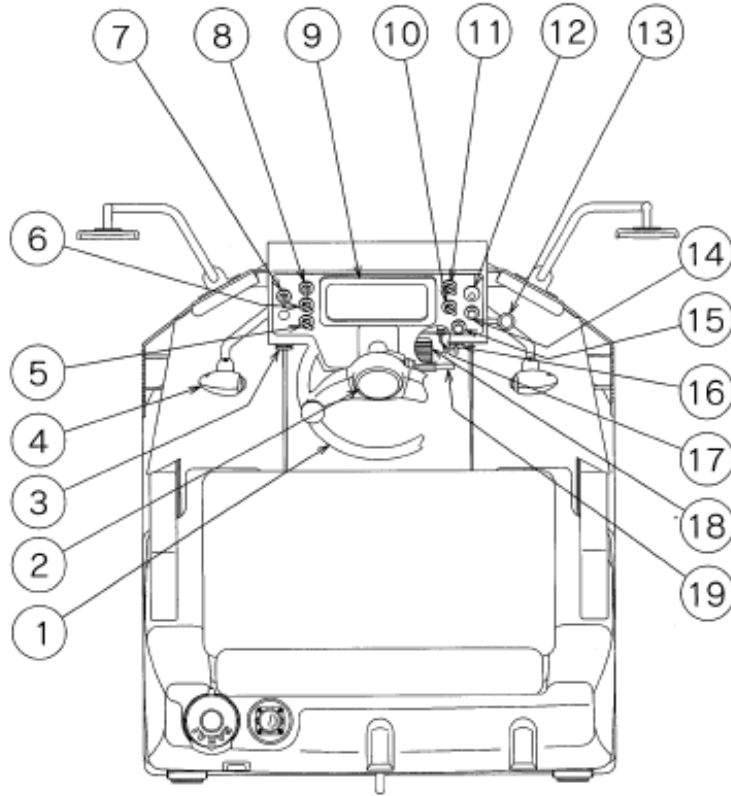
Engine model Kubota D1803
 Engine type Vertical, water-cooled, 4-cycle diesel
 Number of cylinders 3
 Bore and stroke, mm (in.) 87 x 102.4 (3.43 x 4.04)
 Total displacement, L (cu.in.) 1.83 (111.4)
 Combustion chamber Spherical Type (E-TVCS)
 Gross power, kw (hp) 26.9 (36.1)
 Net power, kw (hp) 23.3 (31.2)
 Maximum speed, rpm 2800
 idling speed, rpm 750-850
 Firing Order 1-2-3
 Direction of rotation Counter-clockwise (viewed from flywheel side)
 Compression ratio 23.8
 Compression Pressure 2.95-3.23 MPa (427-469 psi)

Lubricant	Service classification	Ambient temp. and applicable viscosity rating			Applicable standards
		-15 – 30°C (5 – 86°F) Cold	0 – 40°C (32 – 104°F) Moderate	15 – 55°C (59 – 131°F) Tropical	
Engine oil	API grade CF	SAE 10W-30	SAE 30	SAE 40	MIL-L-2104D
Gear oil	API grade GL 5	SAE 75W-90	SAE 75W-90	SAE 140	MIL-L-2105
Hydraulic oil	Wear resisting	ISO-VG32 over VI 140	ISO-VG46 over VI 140	ISO-VG68 over VI 110	ISO-3448
Grease	Lithium type extreme pressure grease				NLGI-2
Fuel	Ambient temp -15 – -10°C		Ambient temp -10 – 55°C		
	*1 Diesel fuel ASTM · D975 NO.1-D S15 or S500		*2 Diesel fuel ASTM · D975 NO.2-D S15 or S500		

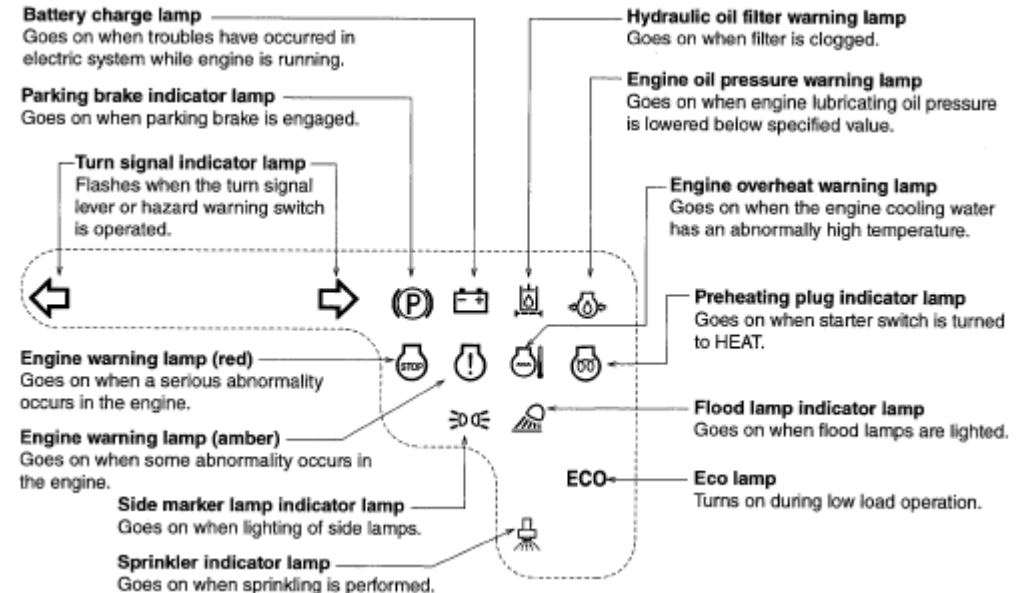
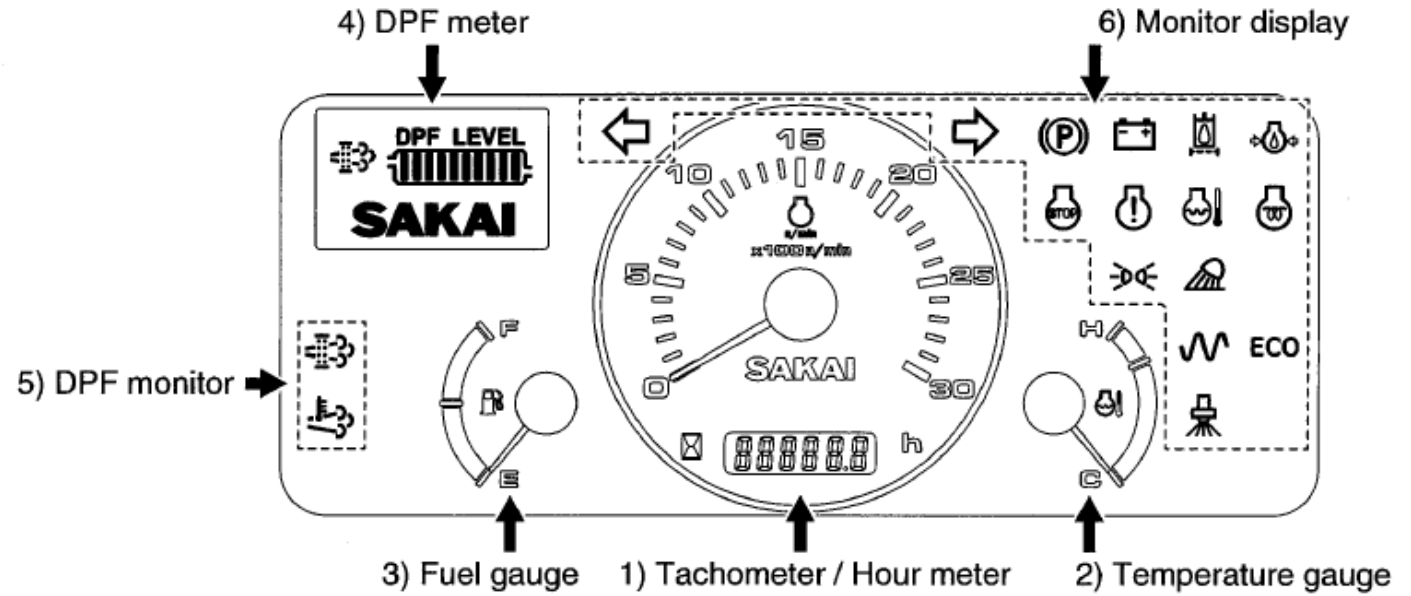
Compartment	Type of fluid	Capacity in liters (gal.)		
		SW354	TW354	TW504
Fuel tank	Diesel oil	40 (10.6)	←	50 (13.2)
Engine oil pan	Engine oil	7.0 (1.8)	←	←
Hydraulic tank	Hydraulic oil	43 (11.4)	←	←
Radiator	Coolant	5.8 (1.5)	←	6.6 (1.7)
Sprinkler tank	Water	200 (52.8)	←	310 (81.9)
Liquid tank	Liquid	—	10 (2.6)	←
Vibrator case	Gear oil	5.0 x 2 (1.3 x 2)	5.0 (1.3)	6.0 (1.6)

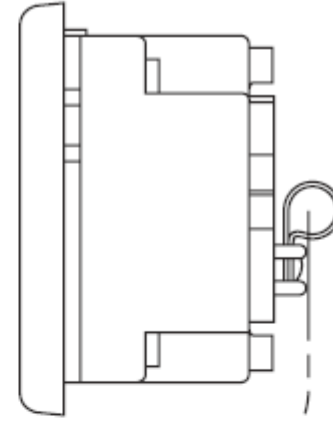
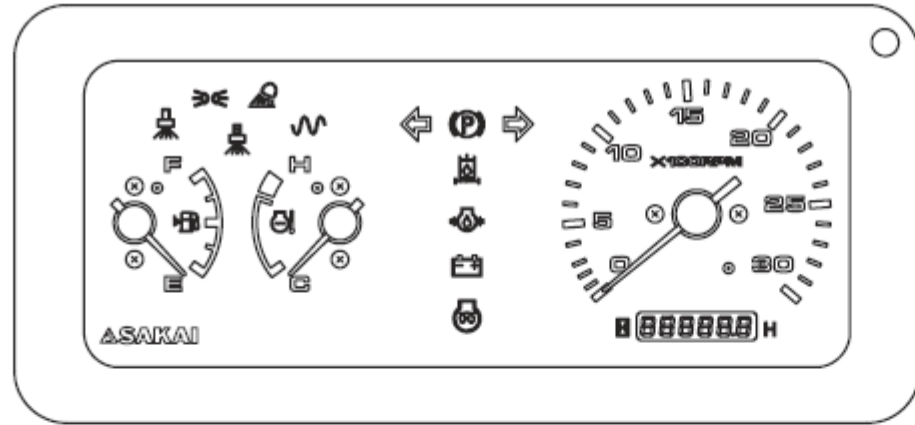
Item		Standard value			Remarks	
		SW354	TW354	TW504		
Propulsion	High pressure relief valve pressure setting		34.5 MPa (5,003 psi)			
	Charge relief valve pressure setting		1.9 ± 0.7 MPa (276 ± 100 psi)			
	Case pressure	Pump	0.25 MPa (36.3 psi) or less			
		Motor (F)	0.3 MPa (43.5 psi) or less			
		Motor (R)	0.3 MPa (43.5 psi) or less			
	Brake release pressure	Motor (F)	More than 1.5 MPa (218 psi)			
		Motor (R)	More than 1.5 MPa (218 psi)			
Drainage	Motor (F)	3.7 L/min (1.0 gal./min)	4.9 L/min (1.3 gal./min)			
	Motor (R)	3.7 L/min (1.0 gal./min)	1.8 L/min (0.5 gal./min)			
Vibration	High pressure relief valve pressure setting		12.7 MPa (1,842 psi)	14.0 MPa (2,030 psi)		
	Case pressure	Motor (F)	0.8 MPa (116 psi) or less			
		Motor (R)	0.8 MPa (116 psi) or less	N/A		
	Drainage	Motor (F)	3.4 L/min (0.9 gal./min)			
		Motor (R)	3.4 L/min (0.9 gal./min)	N/A		
Steering oil pressure		13.5 MPa (1,958 psi)				





- ① Steering wheel
- ② Horn switch button
- ③ Accessory socket
- ④ Forward-Neutral-Reverse lever (F-N-R lever) with vibrator switch
- ⑤ Back buzzer switch (Option)
- ⑥ Vibration selector switch
- ⑦ Sprinkler switch
- ⑧ Vibrator switch
- ⑨ Combination meter
- ⑩ Lamp switch
- ⑪ Speed shift switch
- ⑫ Parking brake switch
- ⑬ Throttle lever
- ⑭ Hazard switch
- ⑮ Parked regeneration switch
- ⑯ Starter switch
- ⑰ Engine trouble diagnosis switch
- ⑱ Brake pedal
- ⑲ Turn signal lever

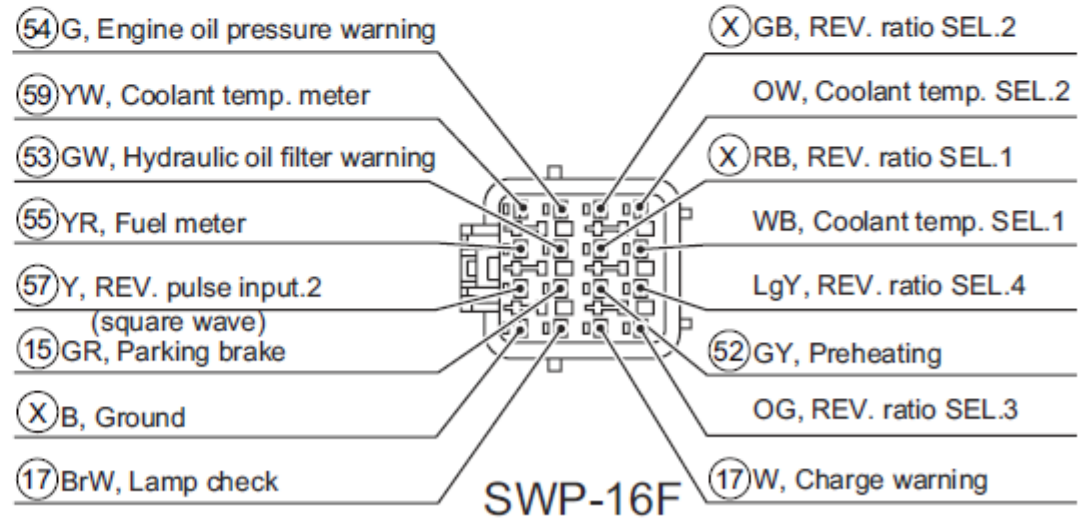
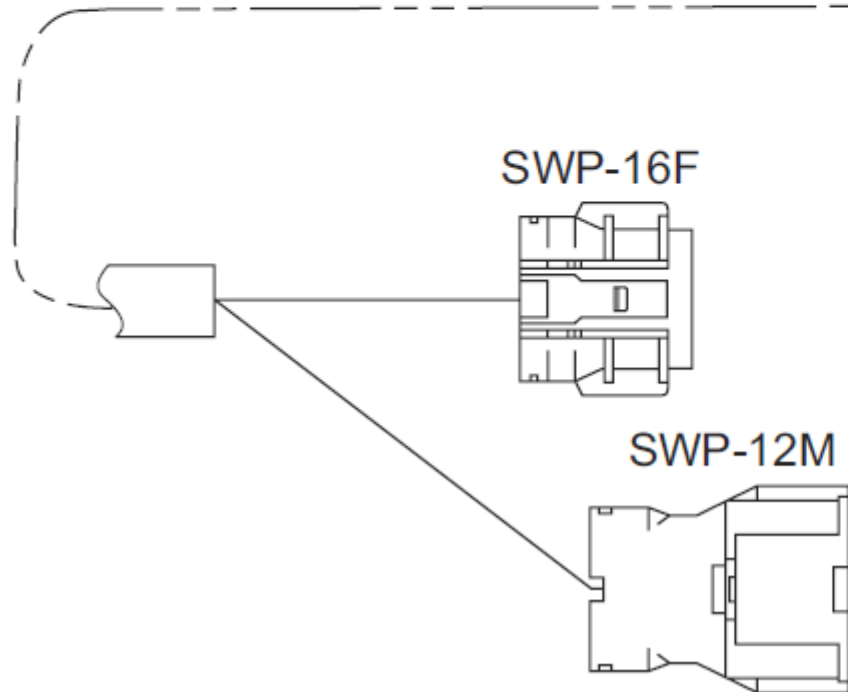


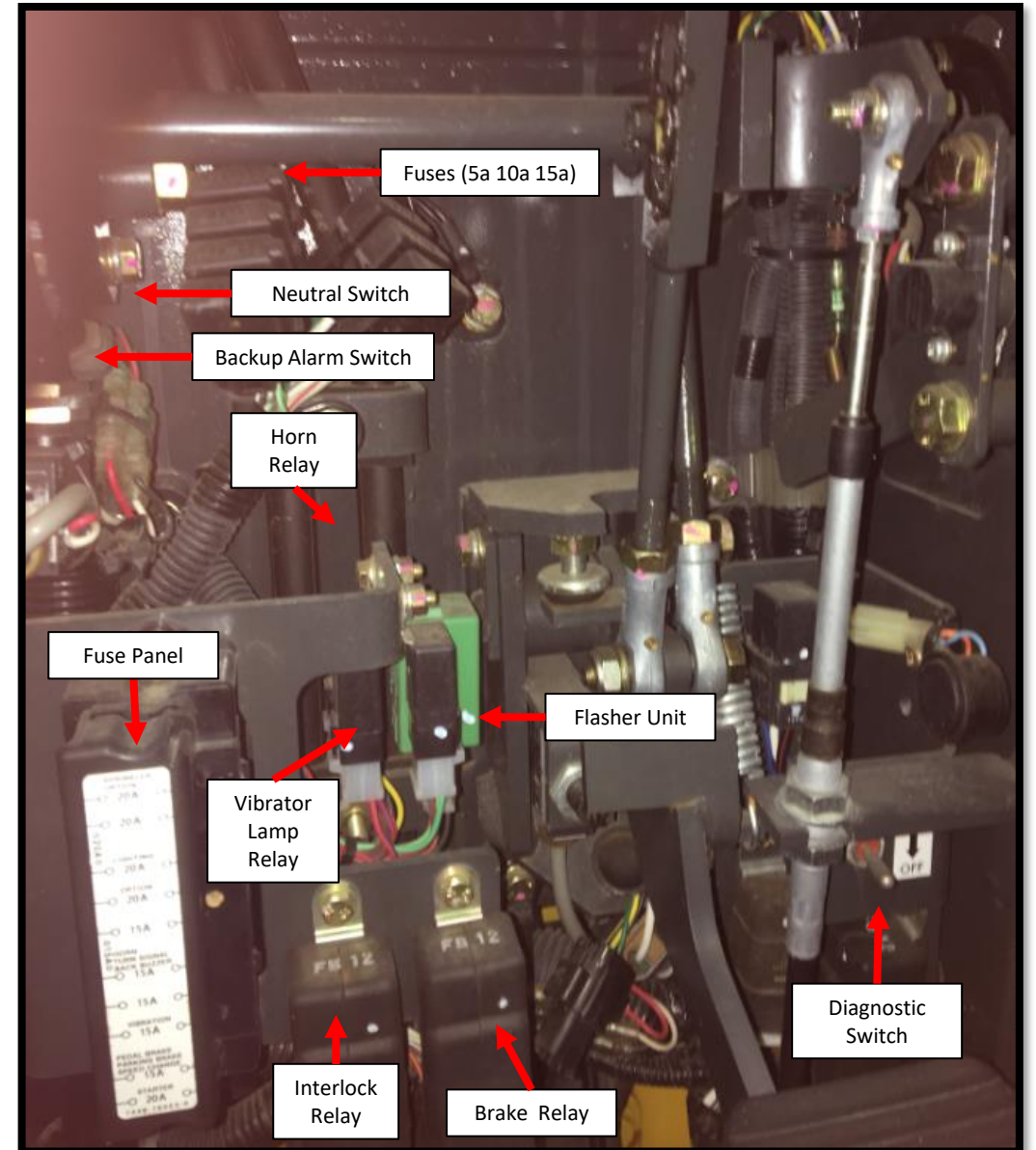
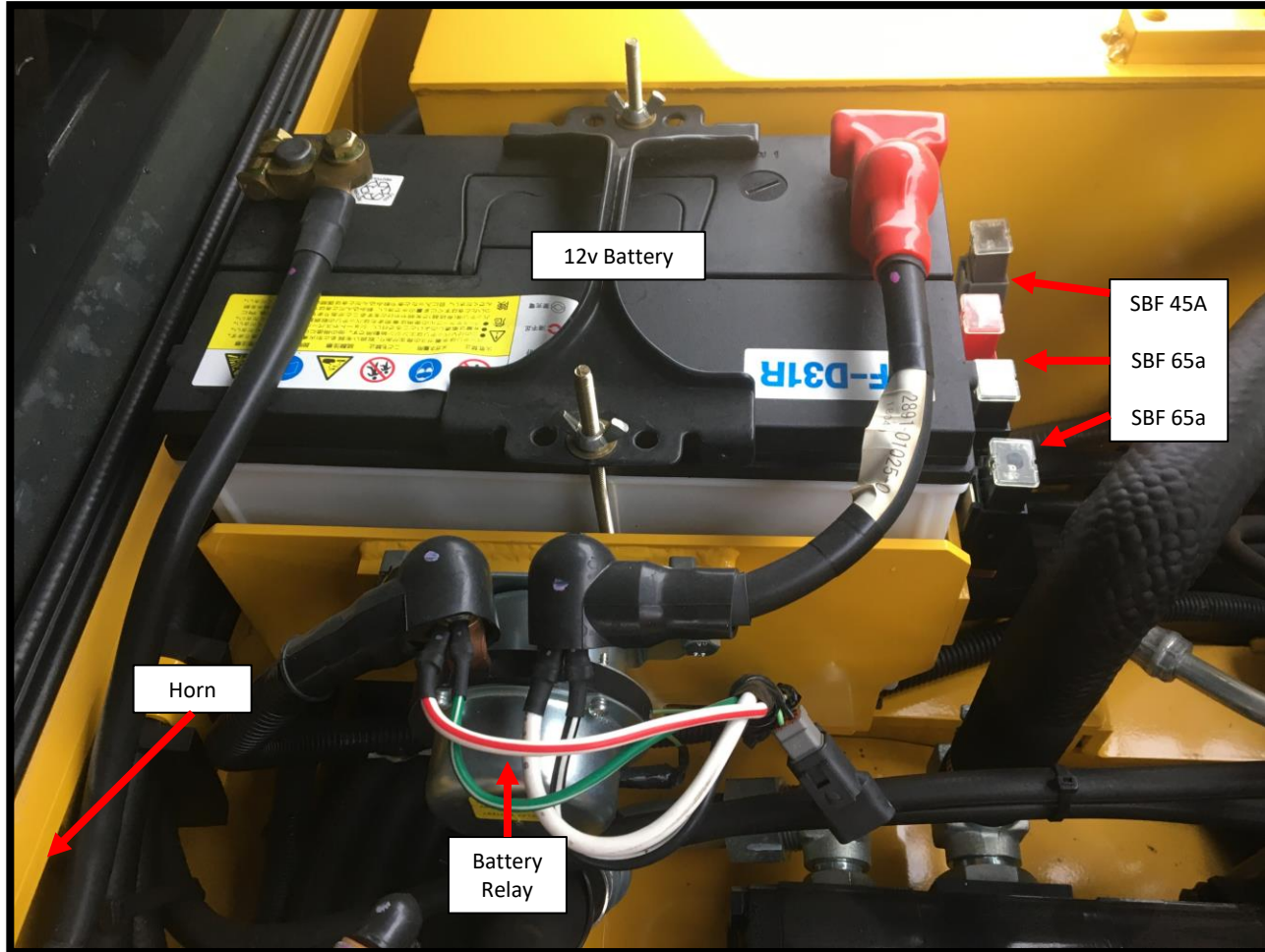


Harness side

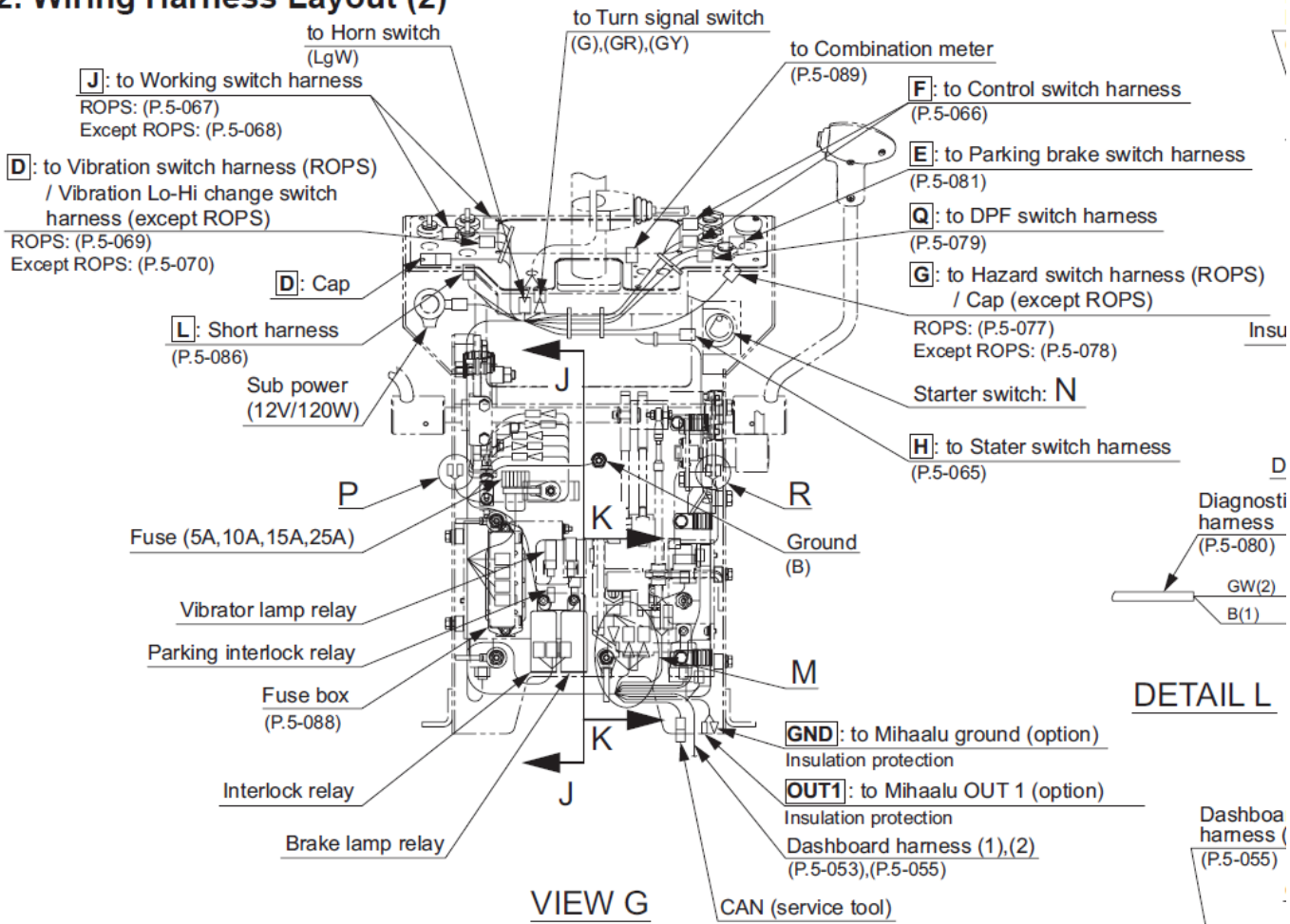
X	17	17	*
B	WR	WR	*
57	15	52	*
L	YL	YW	*
55	53	X	*
YG	LR	B	*
59	54	X	*
Sb	YB	B	*

SWP-16M

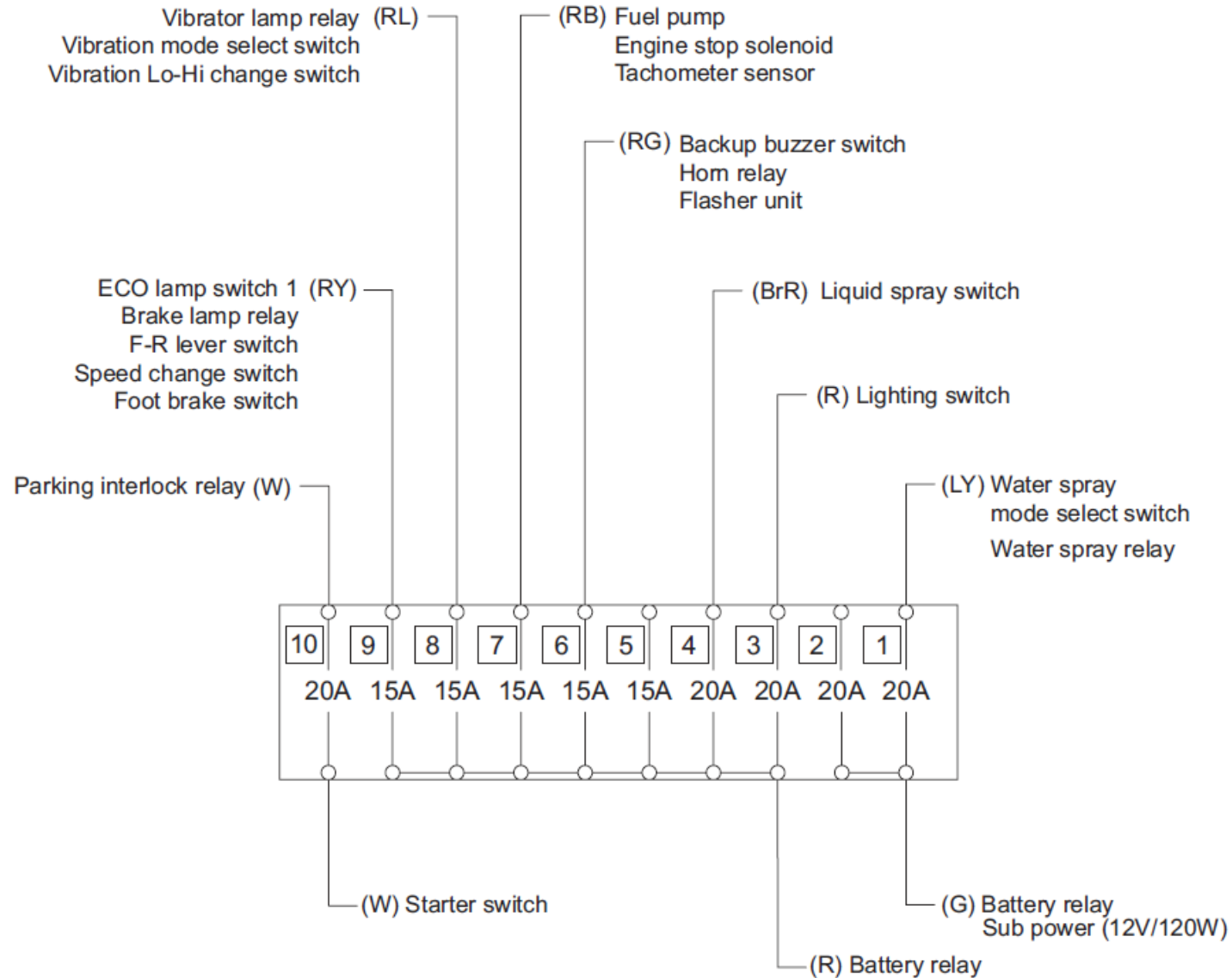


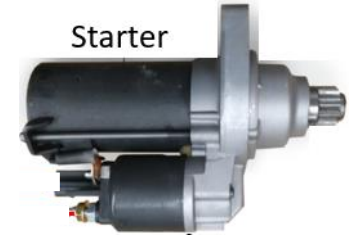


7-2. Wiring Harness Layout (2)









No Crank, No Start

Does the display come on when key is turned on?

Yes, Is machine in "Neutral" drive position

No, Test Battery, is there 12v present?

Yes, Is the park brake "ON"?

No, Shift drive lever to "Neutral". Does engine crank?

Yes, Does Battery Relay, engage when key switch is turned to "ON" position?

No, Replace or Charge Battery as needed.

Yes, Is there power at Terminal 50 Black/Red wire on the Starter when turned to "Crank" position?

No, Engage Park Brake. Does engine crank?

Yes, End diagnosis.

No, Is the park brake "ON"?

Yes, Check connections and replace Battery Relay as needed.

No, Is there 12V power from key switch (Light Green/White stripe) at Battery Relay?.

Yes, End diagnosis.

No, Engage Park Brake. Does engine crank?

Yes, End diagnosis.

Yes, Repair Connection or Replace Battery Relay as needed.

No, Repair Wiring from Key Switch.

No, Is there power at Terminal 50 Black/Red wire on the Starter when turned to "Crank" position?

Yes, Repair connections or replace starter as needed.

No, Is there power at Pin 5 (Black/Red Strips) of the Interlock Relay when key is turned to "Crank" position?

No, Inspect F10 20a and F9 15a fuse. Is the fuse good and is there power across the fuse?

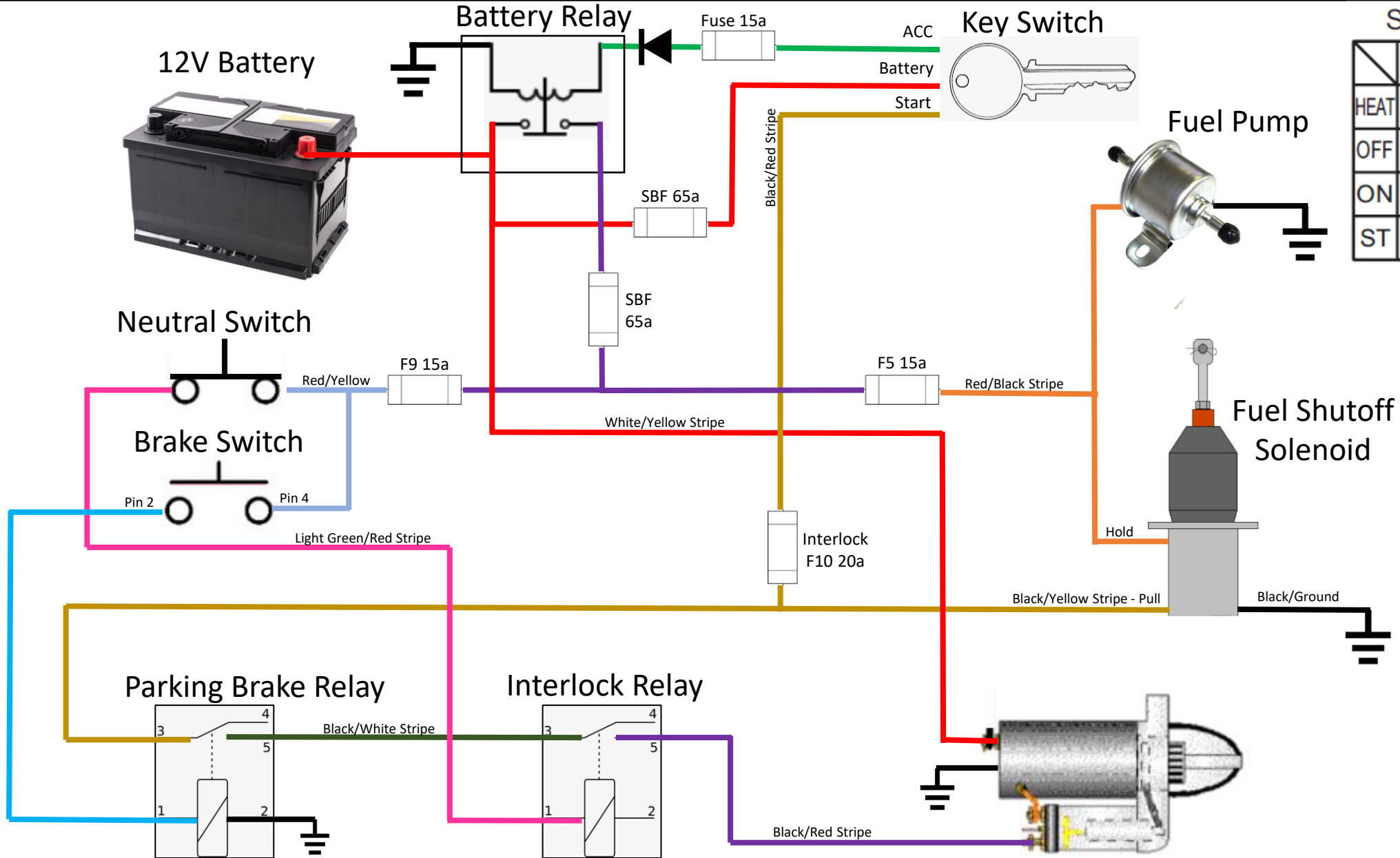
Yes, Repair Connection or Replace Red/Black wire for Interlock Relay to Starter.

Yes, Test Brake and Interlock relays and replace as needed.

Yes, Test Park Brake and Neutral Switch are working correctly?

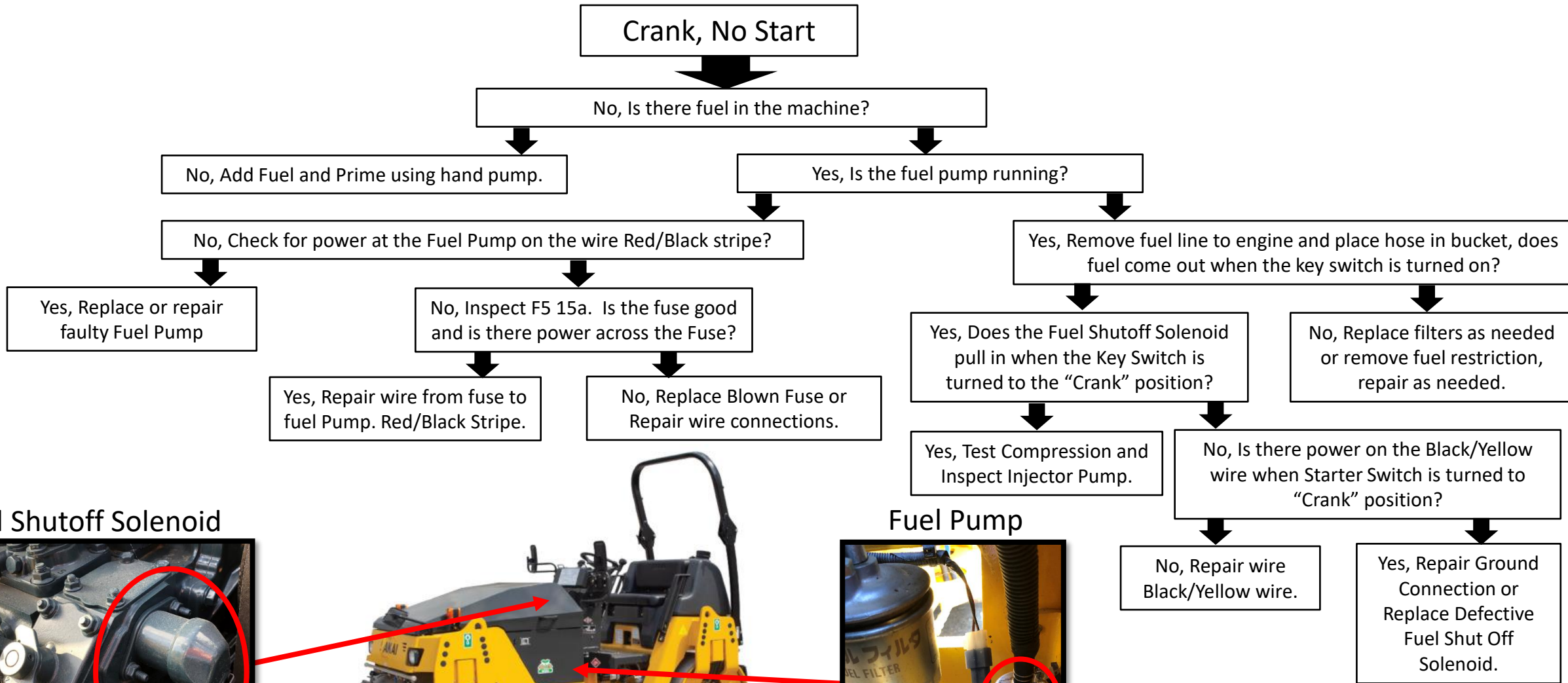
No, Repair or replace defective Switch as needed.

No, Repair connection or replace defective fuse as needed.

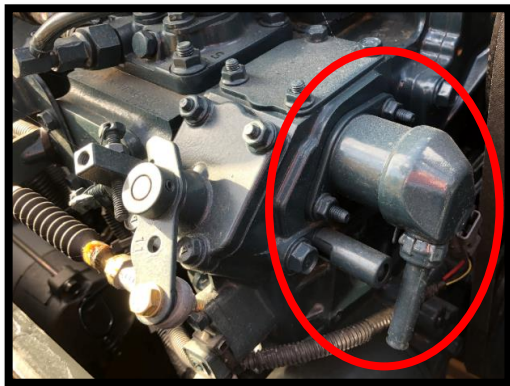


STARTER SWITCH

	B	R1	R2	Acc	BR	C
HEAT	○	○	○	○	○	
OFF						
ON	○	○	○	○	○	
ST	○	○	○	○	○	○

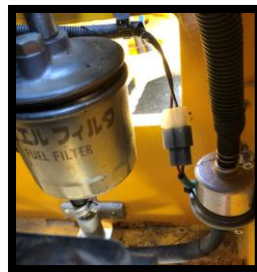
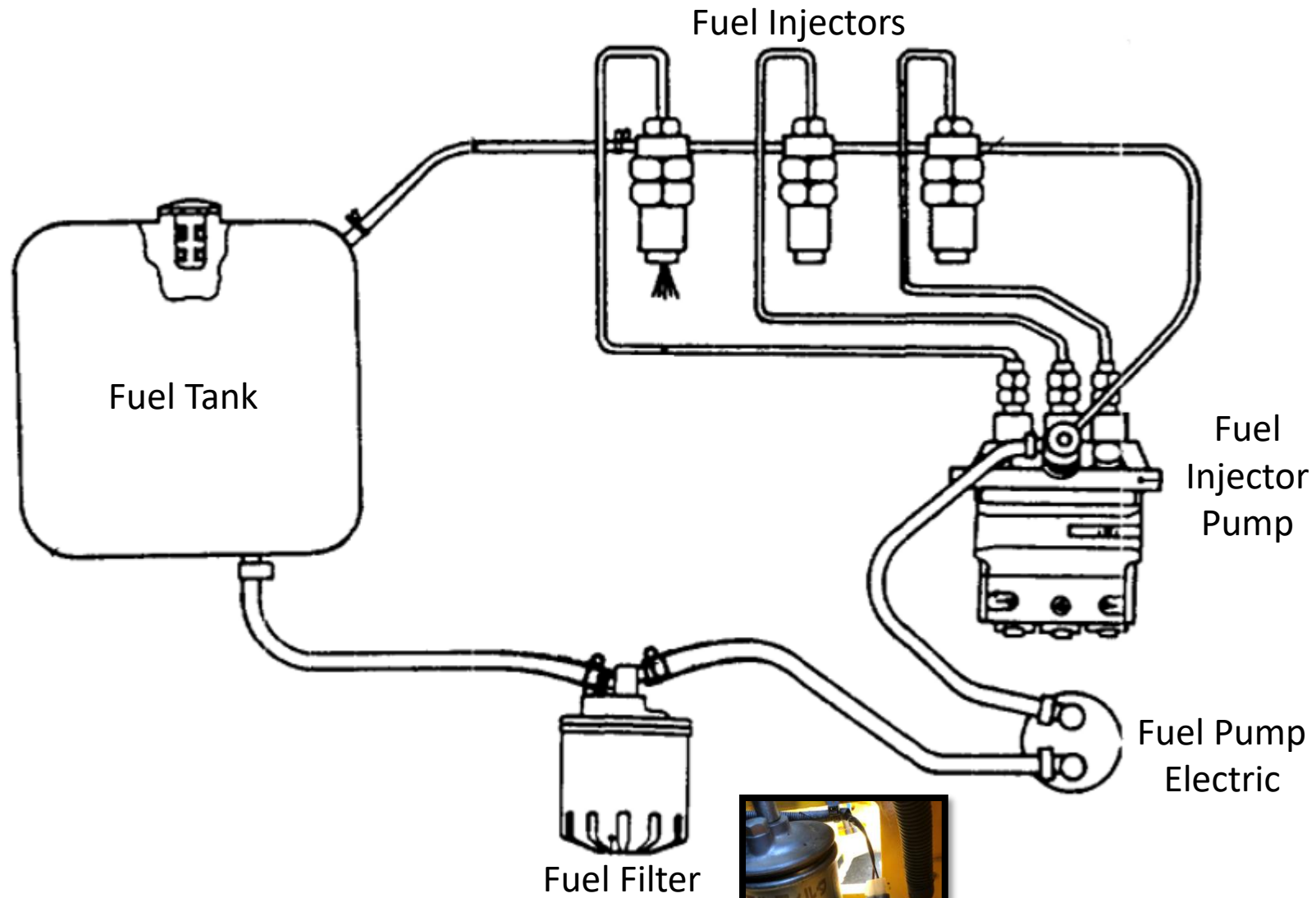


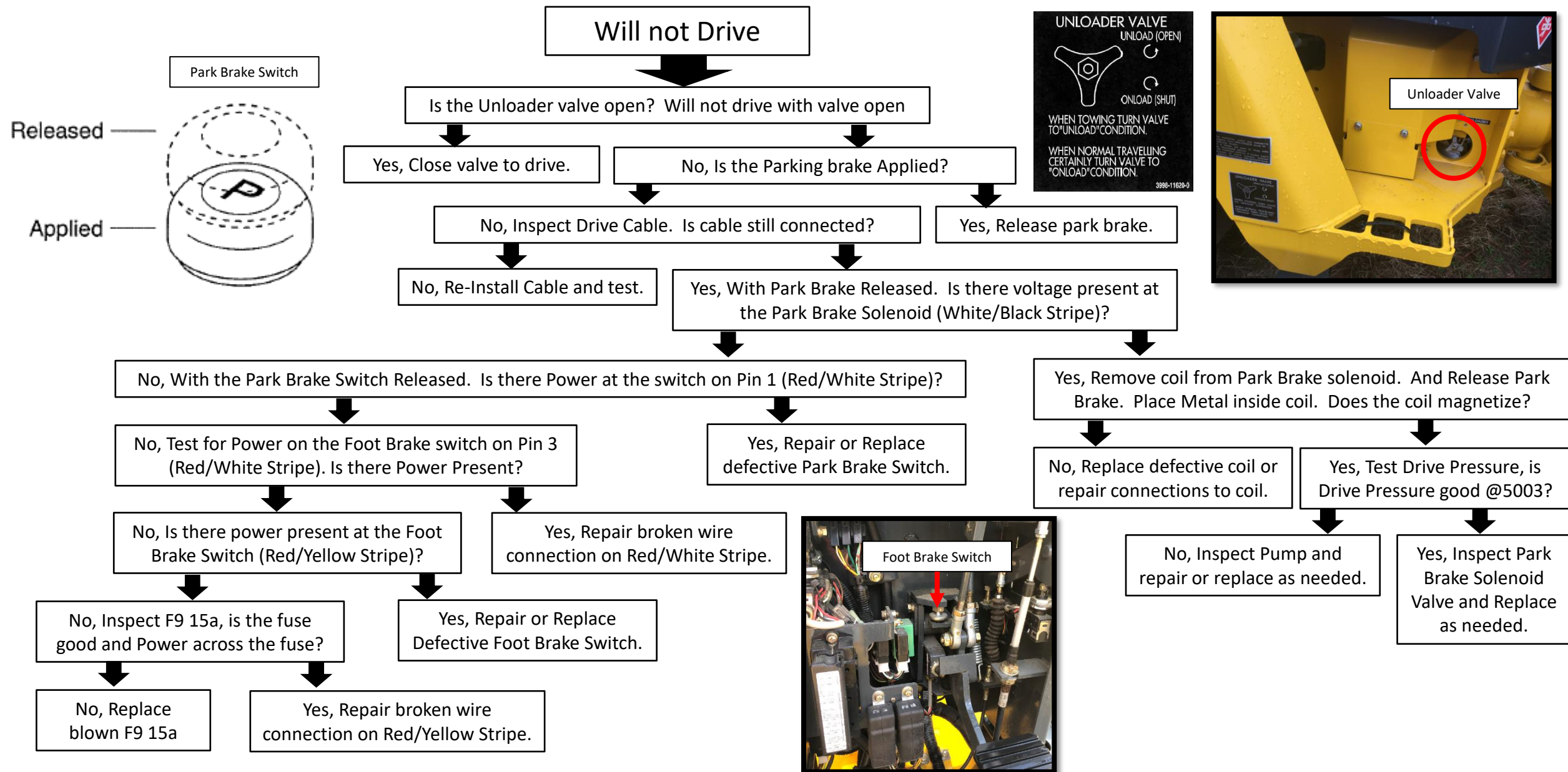
Fuel Shutoff Solenoid

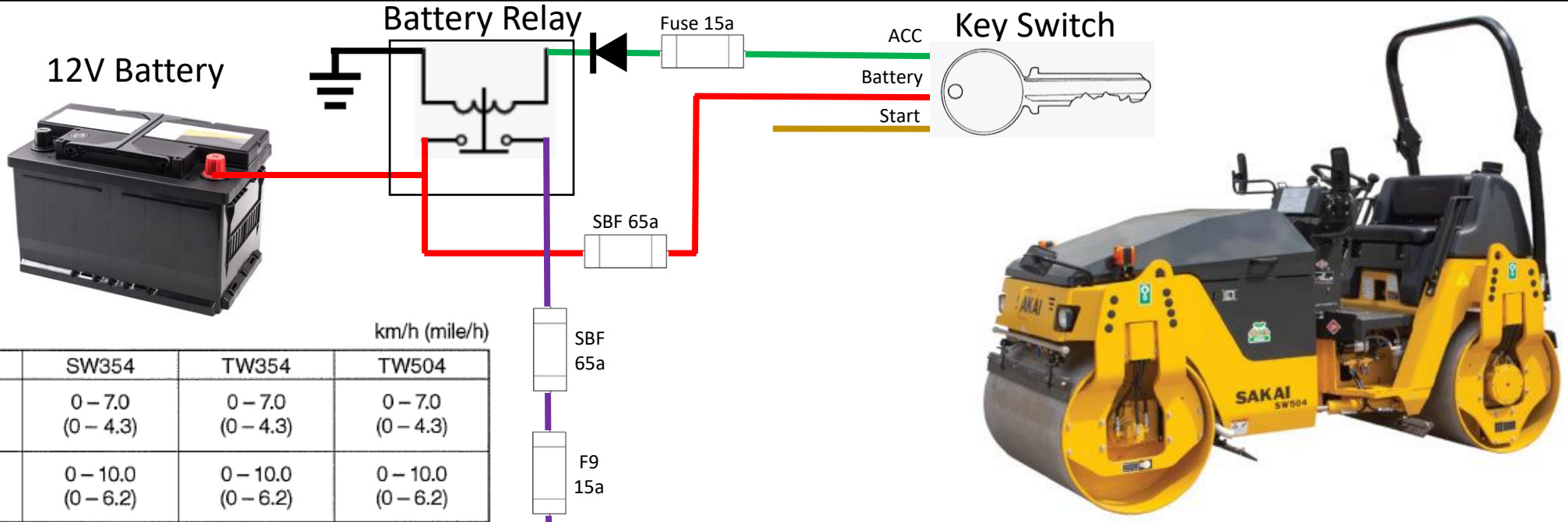


Fuel Pump











km/h (mile/h)

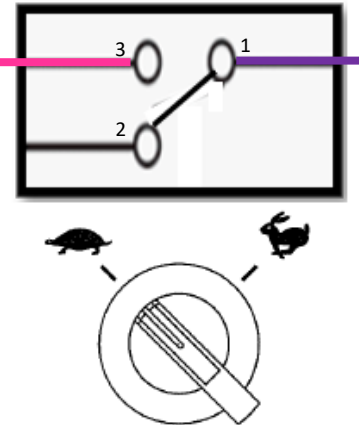
	SW354	TW354	TW504
LOW 	0 - 7.0 (0 - 4.3)	0 - 7.0 (0 - 4.3)	0 - 7.0 (0 - 4.3)
HIGH 	0 - 10.0 (0 - 6.2)	0 - 10.0 (0 - 6.2)	0 - 10.0 (0 - 6.2)



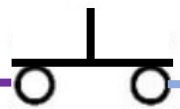
Speed Change Solenoid



Speed Change Switch



Foot Brake Switch

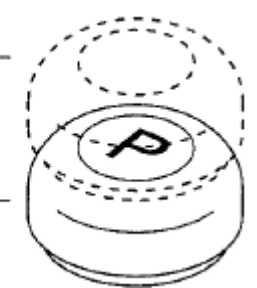


Park Brake Switch



Released

Applied



Park Brake Solenoid



Light Green/White Stripe

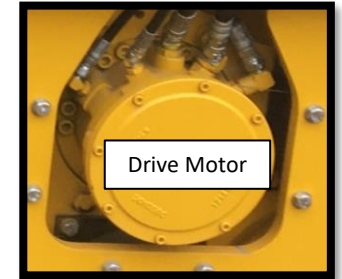
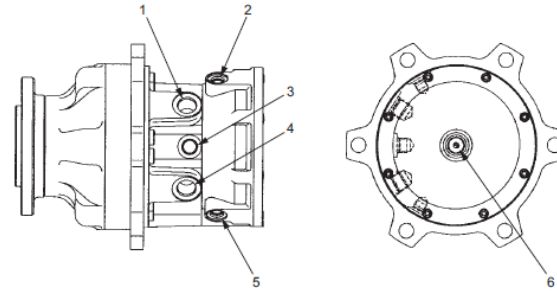
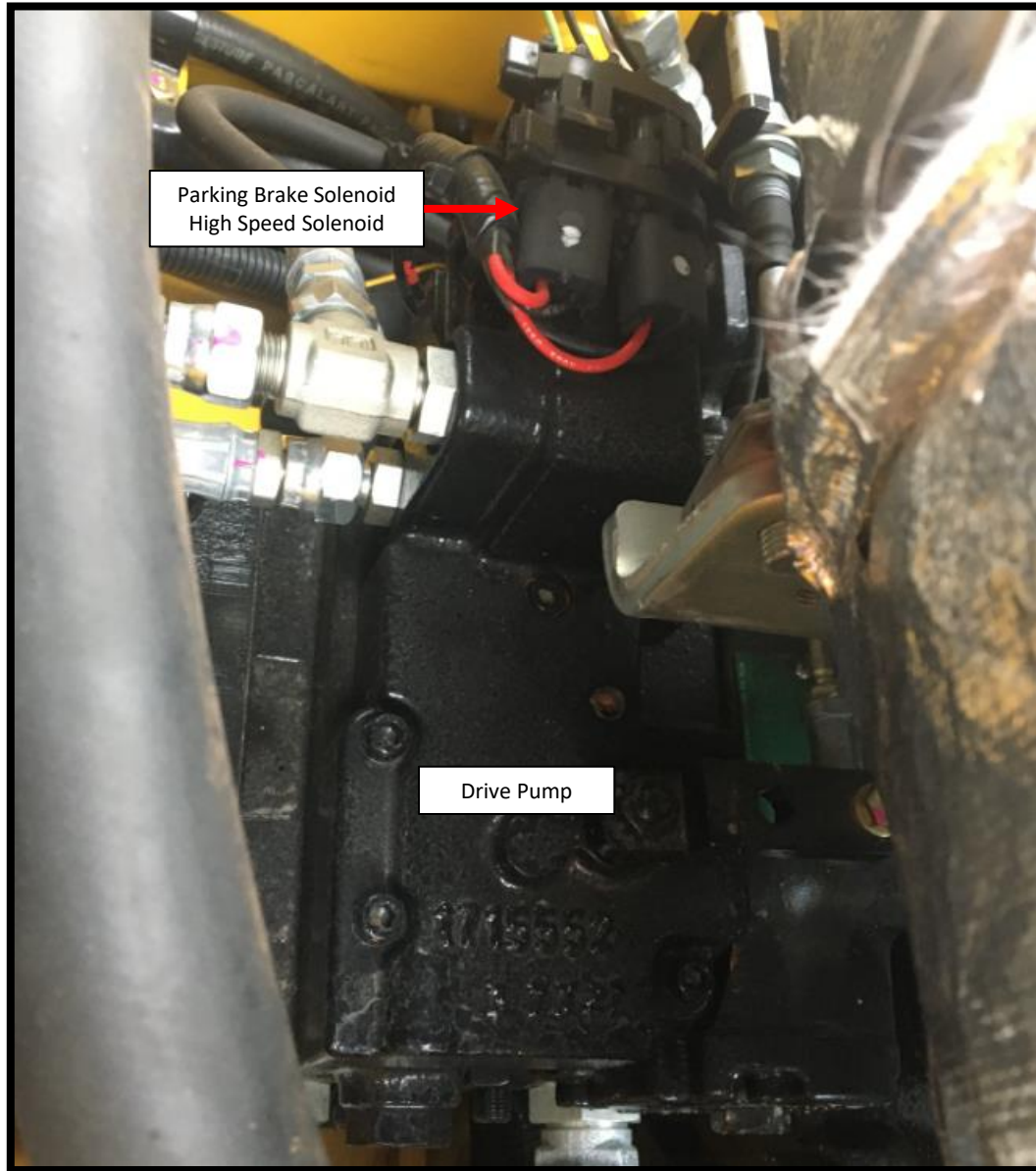
Red/Yellow Stripe

Red/White Stripe

Pin 1

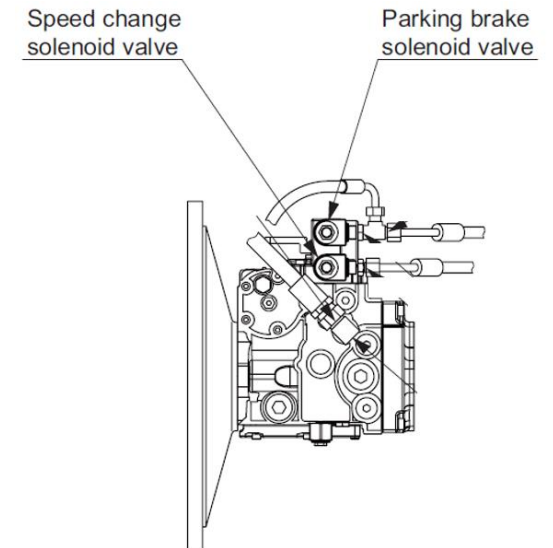
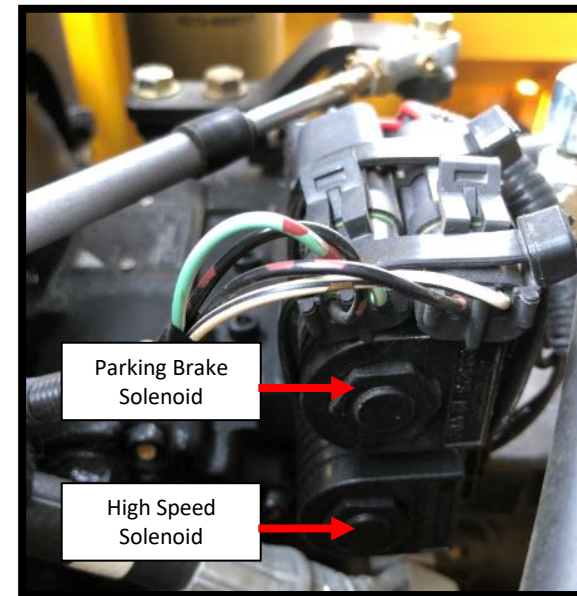
White/Black Stripe

Pin 3



- | | | | |
|------------------------------|--------------------|-------------------------------|--------------------|
| (1) Port B | [RLB] [RRB] : G1/2 | (4) Port A | [RLA] [RRA] : G1/2 |
| (2) Parking brake pilot port | [RLP] : G1/4 | (5) Parking brake pilot port | [RRP] : G1/4 |
| (3) Drain port | [RLD] [RRD] : G3/8 | (6) Manual brake release port | : M10 |

- Specifications**
- Displacement (TW354) : 224 cm³/rev (13.7 cu.in./rev)
 - (TW504) : 280 cm³/rev (17.0 cu.in./rev)
 - Maximum working pressure : 41.2 MPa (5,974 psi)
 - Allowable motor case pressure : 0.3 MPa (43.5 psi)
 - Brake release pressure : 1.5 MPa (218 psi)
 - Weight : 77 kg (170 lbs.)



MEASUREMENT AND INSPECTION OF PROPULSION CIRCUIT PRESSURE

• Oil temperature during measurement : $50 \pm 5^{\circ}\text{C}$ ($122 \pm 9^{\circ}\text{F}$)

① Remove plugs from high pressure gauge port (2) and (5) of propulsion pump. Attach pressure gauge with adapter (h).

- Adapter (h) : 9/16-18UNF
- High pressure gauge port (Reverse) : (2)
- High pressure gauge port (Forward) : (5)
- Pressure gauge : 0 to 50 MPa
(0 to 7,250 psi)

② Confirm that F-R lever is "N".

③ Apply parking brake by pressing parking brake switch button.

④ Set propulsion speed change switch to "Turtle".

⑤ Start the engine and set throttle lever to "Full".

⑥ Establish a condition in which machine propulsion load becomes maximum.

(Pressure does not build up unless propulsion load is applied.)

⑦ With propulsion load at maximum, slowly move F-R lever to the side to be measured.

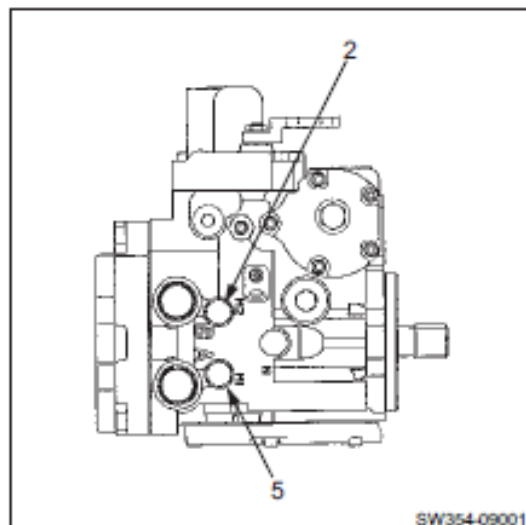
⑧ Read pressure indicated by pressure gauge.

⑨ After measuring, promptly return F-R lever to "N".

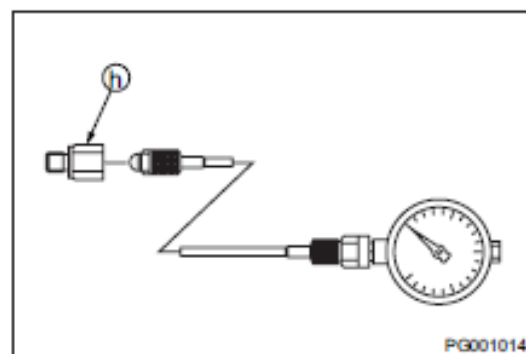
★ Maximum circuit pressure

(high pressure relief valve setting)

: 34.5 MPa (5,003 psi)



SW354-09001



PG001014

• If measurement results indicate the pressure deviating from maximum circuit pressure range, make an inspection in accordance with procedure described below.

① Remove plug and valve from high pressure check relief valve port (13) or (14) of propulsion pump.


- *High pressure relief valve (Reverse) : (13)
- *High pressure relief valve (Forward) : (14)

② Check removed high pressure relief valve for trapped dirt and other abnormalities.

③ If trapped dirt is present, disassemble and clean high pressure relief valve.

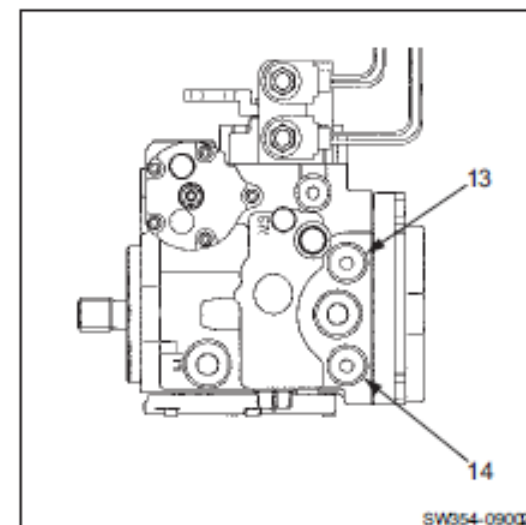
④ If pressure still deviates from maximum circuit pressure range after valve is disassembled and cleaned, replace high pressure relief valve.

⑤ After inspection, measure pressure again and check that pressure reaches maximum circuit pressure range.

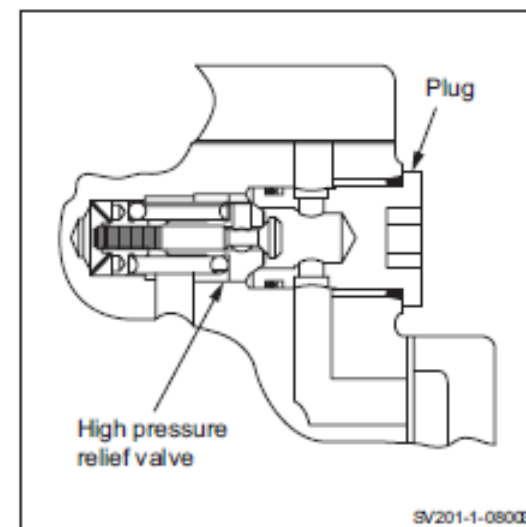
 Plug : 70 N·m (52 lbf·ft)

(NOTICE)

- Carefully disassemble and reassemble after taking steps to prevent foreign material from getting in.



SW354-09002



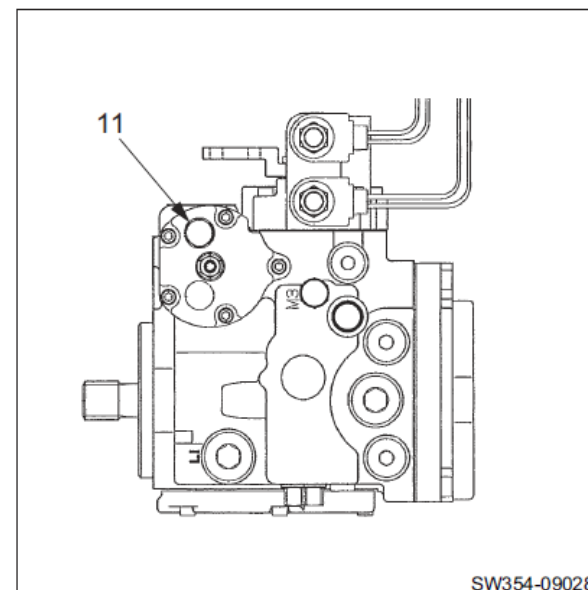
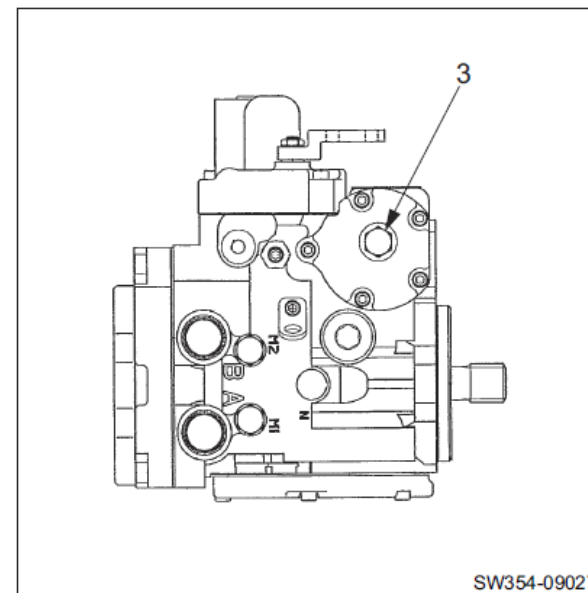
SV201-1-08003

MEASUREMENT AND ADJUSTMENT OF PROPULSION CHARGE CIRCUIT PRESSURE

- Oil temperature during measurement : $50 \pm 5^{\circ}\text{C}$ ($122 \pm 9^{\circ}\text{F}$)
 - ① Remove plugs from servo pressure gauge port (3) and (11) of propulsion pump. Attach pressure gauge with adapter (h) .
 - Adapter (h) : 9/16-18UNF
 - Pressure gauge : 0 to 50 MPa (0 to 7,250 psi)
 - ② Confirm that F-R lever is "N".
 - ③ Apply parking brake by pressing parking brake switch button.
 - ④ Start the engine and set throttle lever to "Full".
 - ⑤ Read pressure indicated by pressure gauge.

★ Standard charge relief valve setting

: 1.9 ± 0.7 MPa (276 ± 100 psi)



Will not go into High Speed Mode

Is there power at the High Speed Solenoid (Light Green/White Stripe)?

No, White Speed Change Switch in Rabbit position, is there power at Pin 3 (Light Green/White Stripe)?

Yes, Remove coil from High Speed solenoid. Place Switch in Rabbit Position. Place Metal inside coil. Does the coil magnetize?

No, Is there power on the Speed Change Switch on Pin 1 (Red/Yellow Stripe)?

Yes, Repair Broken wire Light Green/White Stripe.

No, Replace defective coil or repair connections to coil.

Yes, Test Speed Pressure, is it at @5003?

No, Inspect F9 15a. Is there Power across the fuse?

Yes, Repair or Replace defective Speed Change Switch.

No, Replace defective Pump.

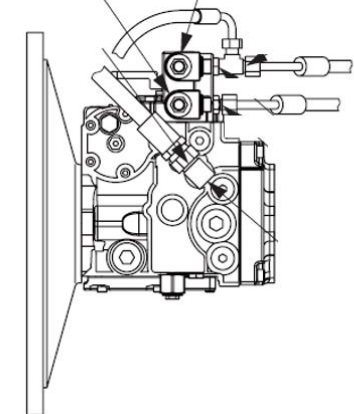
Yes, Inspect High Speed valve and replace as needed.

No, Replace blown fuse or repair connections.



Yes, Repair broken wire Red/Yellow Stripe.

Speed change solenoid valve

Parking brake solenoid valve



km/h (mile/h)

		SW354	TW354	TW504
LOW		0 – 7.0 (0 – 4.3)	0 – 7.0 (0 – 4.3)	0 – 7.0 (0 – 4.3)
HIGH		0 – 10.0 (0 – 6.2)	0 – 10.0 (0 – 6.2)	0 – 10.0 (0 – 6.2)





Front Drum Will not Vibrate High

Is there power at the Front Drum High Solenoid (Light Green/Red Stripe)?

Yes, At the Front Drum High Vibrate Solenoid. Is there a ground signal on the Brown/Red Stripe?

Yes, Remove coil from Front Drum High Vibrate solenoid. Place Switch in Front High Vibrate Position. Place Metal inside coil. Does the coil magnetize?

No, Replace defective coil or repair connections to coil.

Yes, Test Vibrate Pressure, is it at @3045?

No, Replace defective Pump.

Yes, Inspect Front Drum High Vibrate valve and replace as needed.

Yes, Repair or Replace Defective Selector Switch.

No, At the Vibrate Relay, is there power on the Brown/Red Stripe?

Yes, Repair broken wire Brown/Red Stripe.

No, With Mode Selector switch in Auto. Test Vibrator relay, is there power on Brown/Yellow Stripe?

Yes, Repair or Replace defective Vibrator Relay.

No, At mode selector switch. Is there Power at Pin 5 (Brown/Yellow Stripe)?

No, At the Vibrate Mode Switch. Is there power present on Pin 1-4 (Red/Blue Stripe)?

Yes, Repair broken wire Brown/Yellow Stripe.

No, Replace Blown F8 15a or repair brown wire from fuse (Red/Blue Stripe).

No, At the Vibrate Selector Switch F/R. Is there power present on Pin 2 (Light Green/Red Stripe)?

No, At the Vibrate Selector Switch F/R. Is there power present on Pin 1 (Red/Blue Stripe)?

Yes, Repair or Replace Defective Selector Switch.

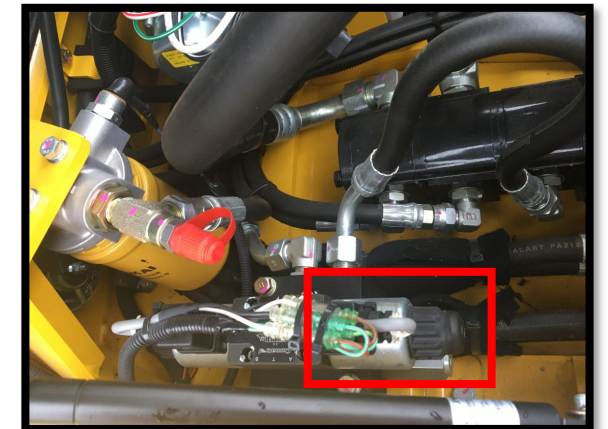
No, Inspect F8 15a. Is there Power across the fuse?

No, Replace blown fuse or repair connections.

Yes, Repair broken wire Light Green/Red Stripe.

Yes, Repair broken wire Red/Blue Stripe.

Front Drum Vibrate High Solenoid





Front Drum Will not Vibrate Low

Is there power at the Front Drum Low Solenoid (Light Green/Black Stripe)?

Yes, At the Front Drum Low Vibrate Solenoid. Is there a ground signal on the Brown/Red Stripe?

Yes, Remove coil from Front Drum Low Vibrate solenoid. Place Switch in Front Low Vibrate Position. Place Metal inside coil. Does the coil magnetize?

No, Replace defective coil or repair connections to coil.

Yes, Test Vibrate Pressure, is it at @3045?

No, Replace defective Pump.

Yes, Inspect Front Drum Low Vibrate valve and replace as needed.

Yes, Repair or Replace Defective Selector Switch.

No, At the Vibrate Relay, is there power on the Brown/Red Stripe?

Yes, Repair broken wire Brown/Red Stripe.

No, With Mode Selector switch in Auto. Test Vibrator relay, is there power on Brown/Yellow Stripe?

No, At mode selector switch. Is there Power at Pin 5 (Brown/Yellow Stripe)?

No, At the Vibrate Mode Switch. Is there power present on Pin 1-4 (Red/Blue Stripe)?

No, Replace Blown F8 15a or repair brown wire from fuse (Red/Blue Stripe).

Yes, Repair or Replace defective Vibrator Relay.

Yes, Repair broken wire Brown/Yellow Stripe.

No, At the Vibrate Selector Switch F/R. Is there power present on Pin 6 (Light Green/Black Stripe)?

No, At the Vibrate Selector Switch F/R. Is there power present on Pin 4 (Red/Blue) Stripe?

Yes, Repair or Replace Defective Selector Switch.

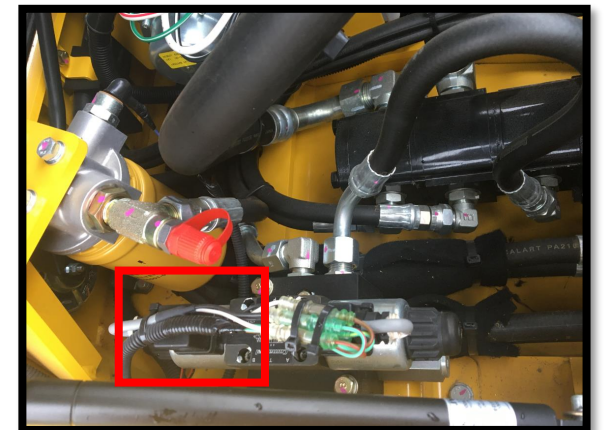
No, Inspect F8 15a. Is there Power across the fuse?

No, Replace blown fuse or repair connections.

Yes, Repair broken wire Light Green/Black Stripe.

Yes, Repair broken wire Red/Blue Stripe.

Front Drum Vibrate Low Solenoid





Rear Drum Will not Vibrate High

Is there power at the Rear Drum High Solenoid (Light Green/Red Stripe)?

Yes, At the Rear Drum Vibrate High Solenoid. Is there a ground signal on the Brown/Red Stripe?

Yes, Remove coil from Rear Drum High Vibrate solenoid. Place Switch in Rear Vibrate High Position. Place Metal inside coil. Does the coil magnetize?

No, Replace defective coil or repair connections to coil.

Yes, Test Vibrate Pressure, is it at @3045?

No, Replace defective Pump.

Yes, Inspect Rear Drum High Vibrate valve and replace as needed.

Yes, Repair or Replace Defective Selector Switch.

No, At the Vibrate Relay, is there power on the Brown/Red Stripe?

Yes, Repair broken wire Brown/Red Stripe.

No, With Mode Selector switch in Auto. Test Vibrator relay, is there power on Brown/Yellow Stripe?

Yes, Repair or Replace defective Vibrator Relay.

No, At mode selector switch. Is there Power at Pin 5 (Brown/Yellow Stripe)?

No, At the Vibrate Mode Switch. Is there power present on Pin 1-4 (Red/Blue Stripe)?

Yes, Repair broken wire Brown/Yellow Stripe.

No, Replace Blown F8 15a or repair brown wire from fuse (Red/Blue Stripe).

No, At the Vibrate Selector Switch F/R. Is there power present on Pin 2 (Light Green/Red Stripe)?

No, At the Vibrate Selector Switch F/R. Is there power present on Pin 1 (Red/Blue Stripe)?

Yes, Repair or Replace Defective Selector Switch.

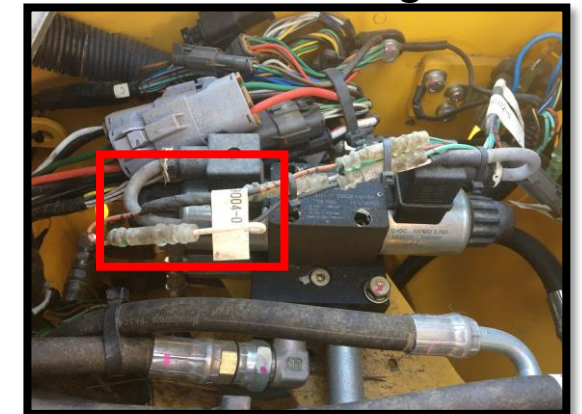
No, Inspect F8 15a. Is there Power across the fuse?

No, Replace blown fuse or repair connections.

Yes, Repair broken wire Light Green/Red Stripe.

Yes, Repair broken wire Red/Blue Stripe.

Rear Drum Vibrate High Solenoid





Rear Drum Will not Vibrate Low

Is there power at the Rear Drum Low Solenoid (Light Green/Black Stripe)?

Yes, At the Rear Drum Low Vibrate Solenoid. Is there a ground signal on the Brown/Red Stripe?

Yes, Remove coil from Rear Drum Low Vibrate solenoid. Place Switch in Rear Vibrate Low Position. Place Metal inside coil. Does the coil magnetize?

No, Replace defective coil or repair connections to coil.

Yes, Test Vibrate Pressure, is it at @3045?

No, Replace defective Pump.

Yes, Inspect Rear Drum Low Vibrate valve and replace as needed.

Yes, Repair or Replace Defective Selector Switch.

No, At the Vibrate Relay, is there power on the Brown/Red Stripe?

Yes, Repair broken wire Brown/Red Stripe.

No, With Mode Selector switch in Auto. Test Vibrator relay, is there power on Brown/Yellow Stripe?

Yes, Repair or Replace defective Vibrator Relay.

No, At mode selector switch. Is there Power at Pin 5 (Brown/Yellow Stripe)?

No, At the Vibrate Mode Switch. Is there power present on Pin 1-4 (Red/Blue Stripe)?

Yes, Repair broken wire Brown/Yellow Stripe.

No, Replace Blown F8 15a or repair brown wire from fuse (Red/Blue Stripe).

No, At the Vibrate Selector Switch F/R. Is there power present on Pin 6 (Light Green/Black Stripe)?

No, At the Vibrate Selector Switch F/R. Is there power present on Pin 4 (Red/Blue) Stripe?

Yes, Repair or Replace Defective Selector Switch.

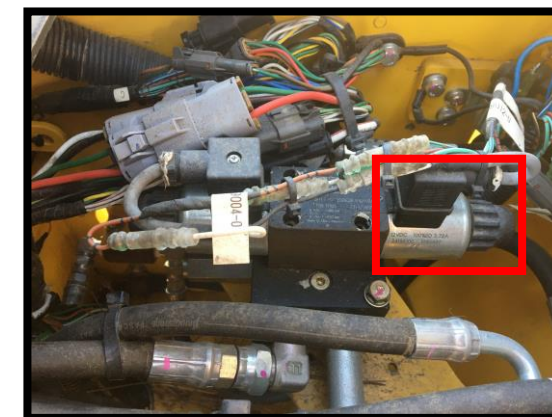
No, Inspect F8 15a. Is there Power across the fuse?

No, Replace blown fuse or repair connections.

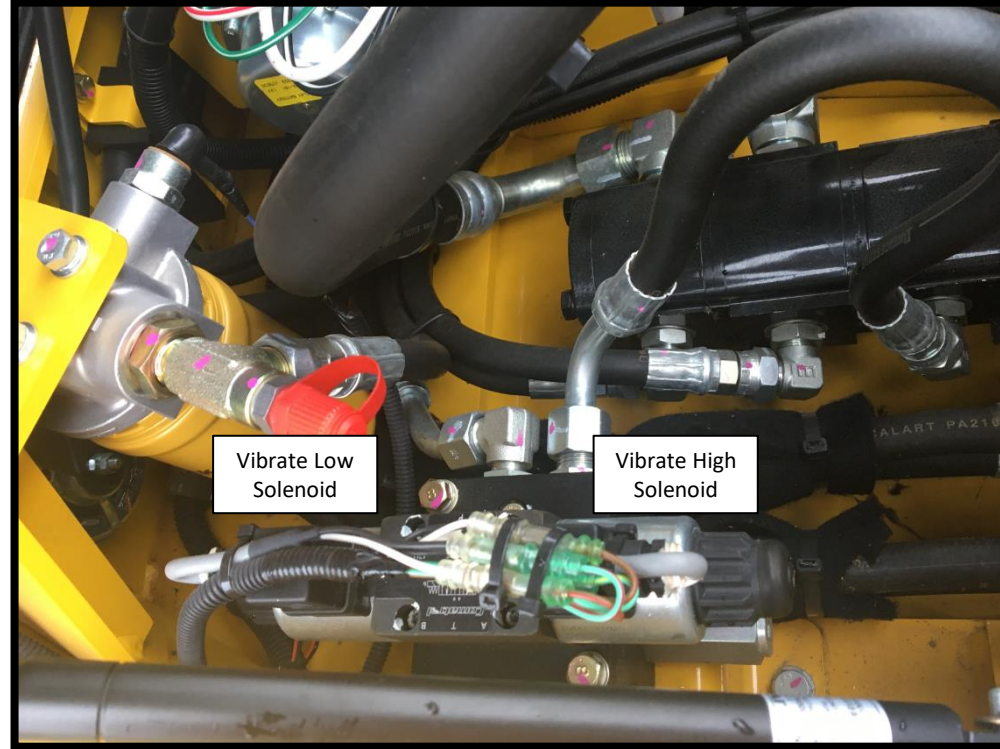
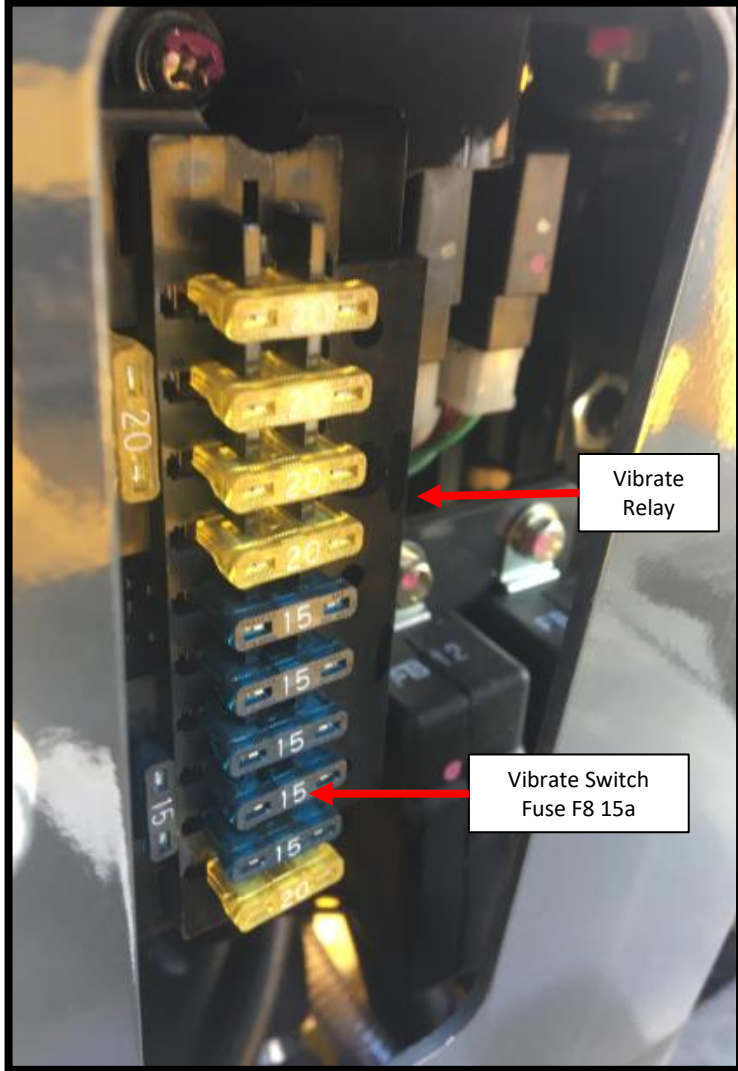
Yes, Repair broken wire Light Green/Black Stripe.

Yes, Repair broken wire Red/Blue Stripe.

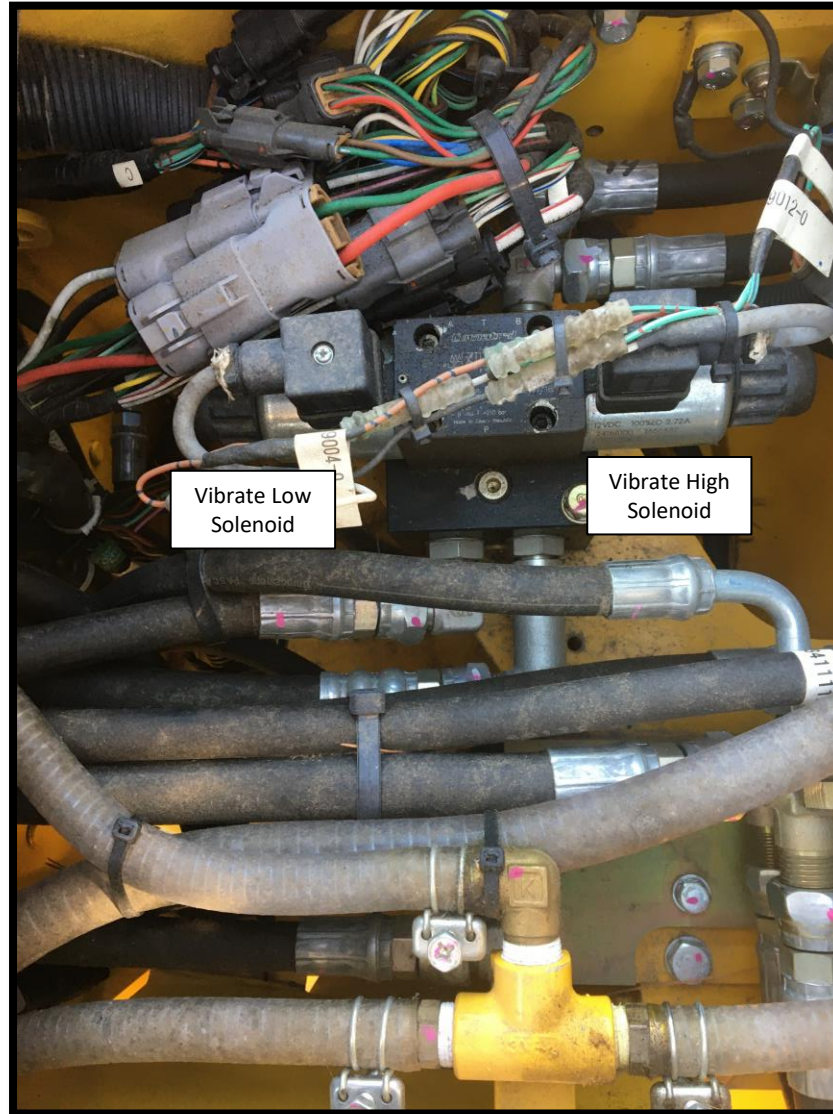
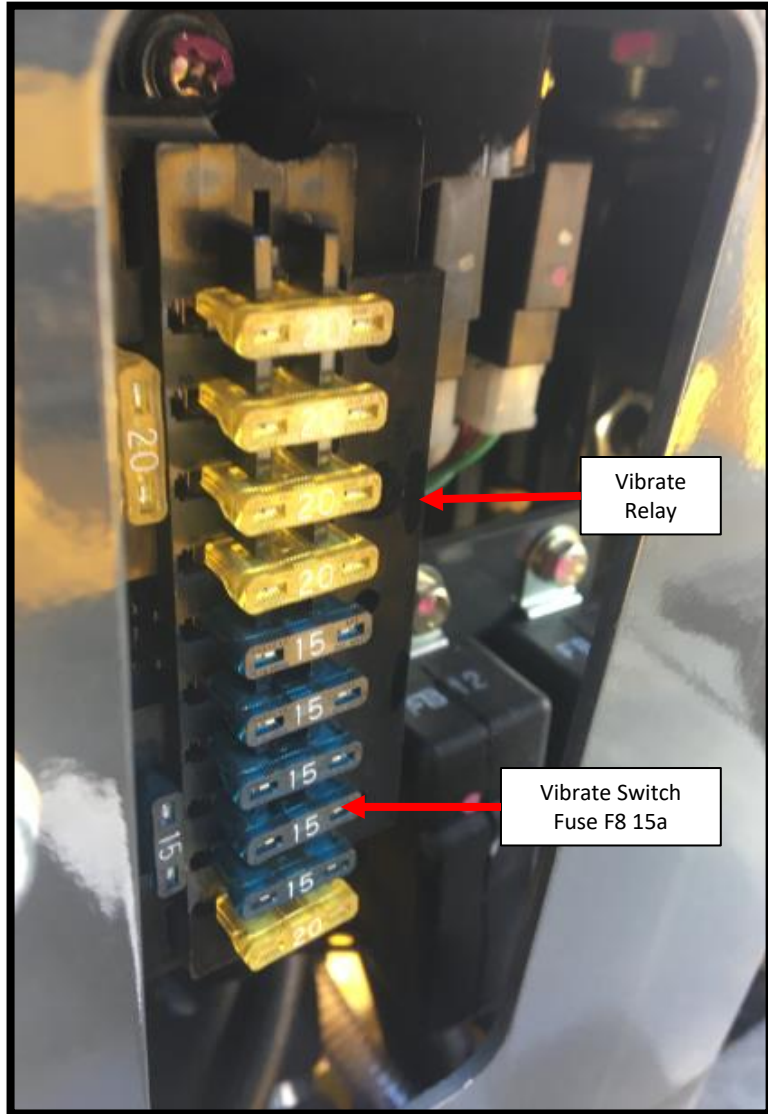
Rear Drum Vibrate Low Solenoid





Front Drum Vibrate Solenoid



Rear Drum Vibrate Solenoid



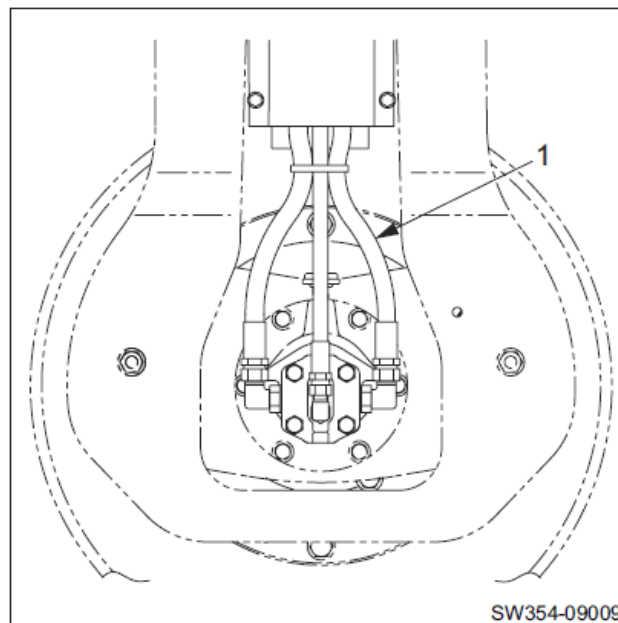
MEASUREMENT OF VIBRATOR CIRCUIT PRESSURE

- Oil temperature during measurement : $50 \pm 5^{\circ}\text{C}$ ($122 \pm 9^{\circ}\text{F}$)
- ① Disconnect hose (1) from vibrator motor. Attach pressure gauge through adapter (P) .
 - Adapter (P) : G1/2
 - Pressure gauge : 0 to 50 MPa (0 to 7,250 psi)
- ② Confirm that F-R lever is "N".
- ③ Apply parking brake by pressing parking brake switch button.
- ④ SW354 ROPS : Set vibratory drum select switch to "  ".
- ⑤ Set vibration mode change switch to "  ".
- ⑥ Start the engine and set throttle lever to "Full".
- ⑦ Press F-R lever vibration switch ON.
- ⑧ Slowly move F-R lever to forward or reverse side.
- ⑨ Read pressure gauge for maximum value of vibrator circuit pressure.
- ⑩ Turn F-R lever vibration switch OFF or move back F-R lever to "N" as soon as measurement is finished.

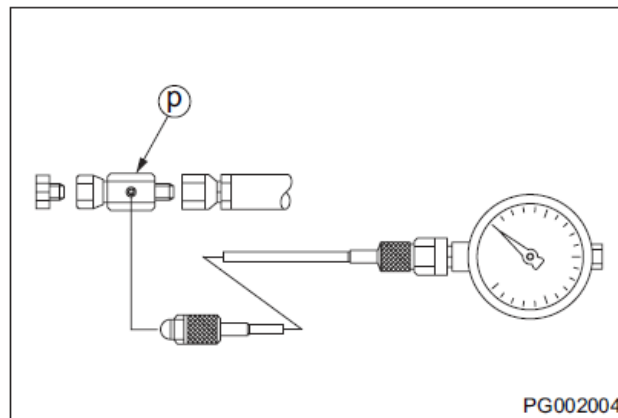
★ Maximum circuit pressure (relief valve setting)

SW/TW354 : 12.7 MPa (1,842 psi)

TW504 : 14.0 MPa (2,030 psi)



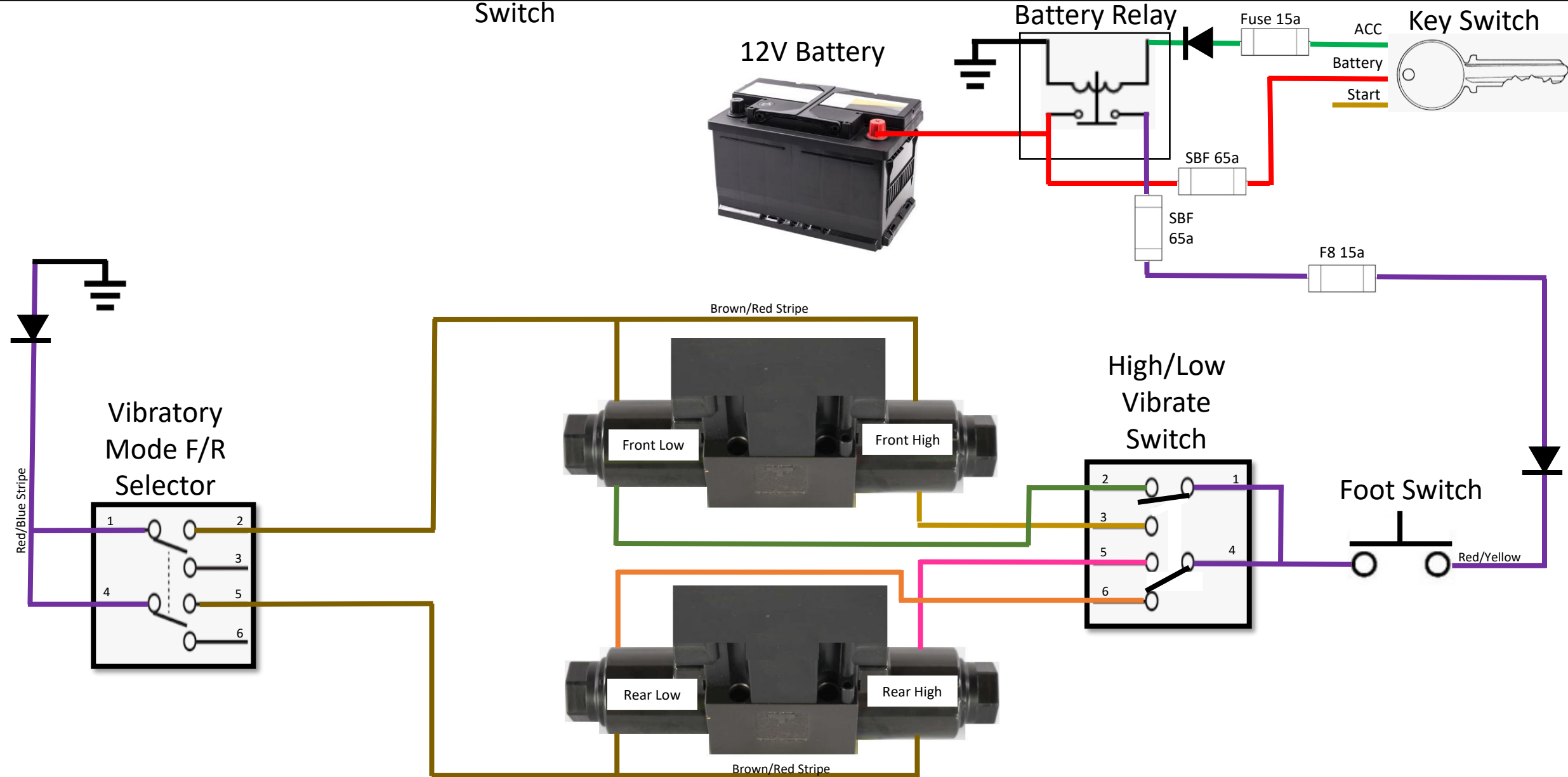
SW354-09009



PG002004

High/Low
Vibrate
Switch

SW504



Kubota D1803 Engine Specifications

Engine model Kubota D1803
Engine type Vertical, water-cooled, 4-cycle diesel
Number of cylinders 3
Bore and stroke, mm (in.) 87 x 102.4 (3.43 x 4.04)
Total displacement, L (cu.in.) 1.83 (111.4)
Combustion chamber Spherical Type (E-TVCS)
Gross power, kw (hp) 26.9 (36.1)
Net power, kw (hp) 23.3 (31.2)
Maximum speed, rpm 2800
idling speed, rpm 750-850
Firing Order 1-2-3
Direction of rotation Counter-clockwise (viewed from flywheel side)
Compression ratio 23.8
Compression Pressure 2.95-3.23 MPa (427-469 psi)



Compression Pressure

1. After warming up the engine, stop it and remove the air cleaner, the muffler and all nozzle holders.
2. Install a compression tester for diesel engines to nozzle holder hole.
3. After making sure that the speed control lever is set at the stop position (Non-injection), run the engine at 200 to 300 rpm with the starter.
4. Read the maximum pressure. Measure the pressure more than twice.
5. If the measurement is below the allowable limit, check the cylinder, piston ring, top clearance, valve and cylinder head.



- (1) Intake manifold
- (2) Speed control lever
- (3) Engine stop lever
- (4) Injection pump
- (5) Fuel feed pump
- (6) Cooling fan
- (7) Fan drive pulley
- (8) Oil filter cartridge
- (9) Water drain cock
- (10) Oil filler plug
- (11) Exhaust manifold
- (12) Alternator
- (13) Starter
- (14) Oil level gauge
- (15) Oil pressure switch
- (16) Flywheel
- (17) Oil drain plug
- (18) Oil pan
- (19) Engine hook

