

**SAKAI**

MASTERS OF COMPACTION



SV544  
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

# SV544

SV544 Operators Manual  
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**SAKAI**  
MASTERS OF COMPACTION

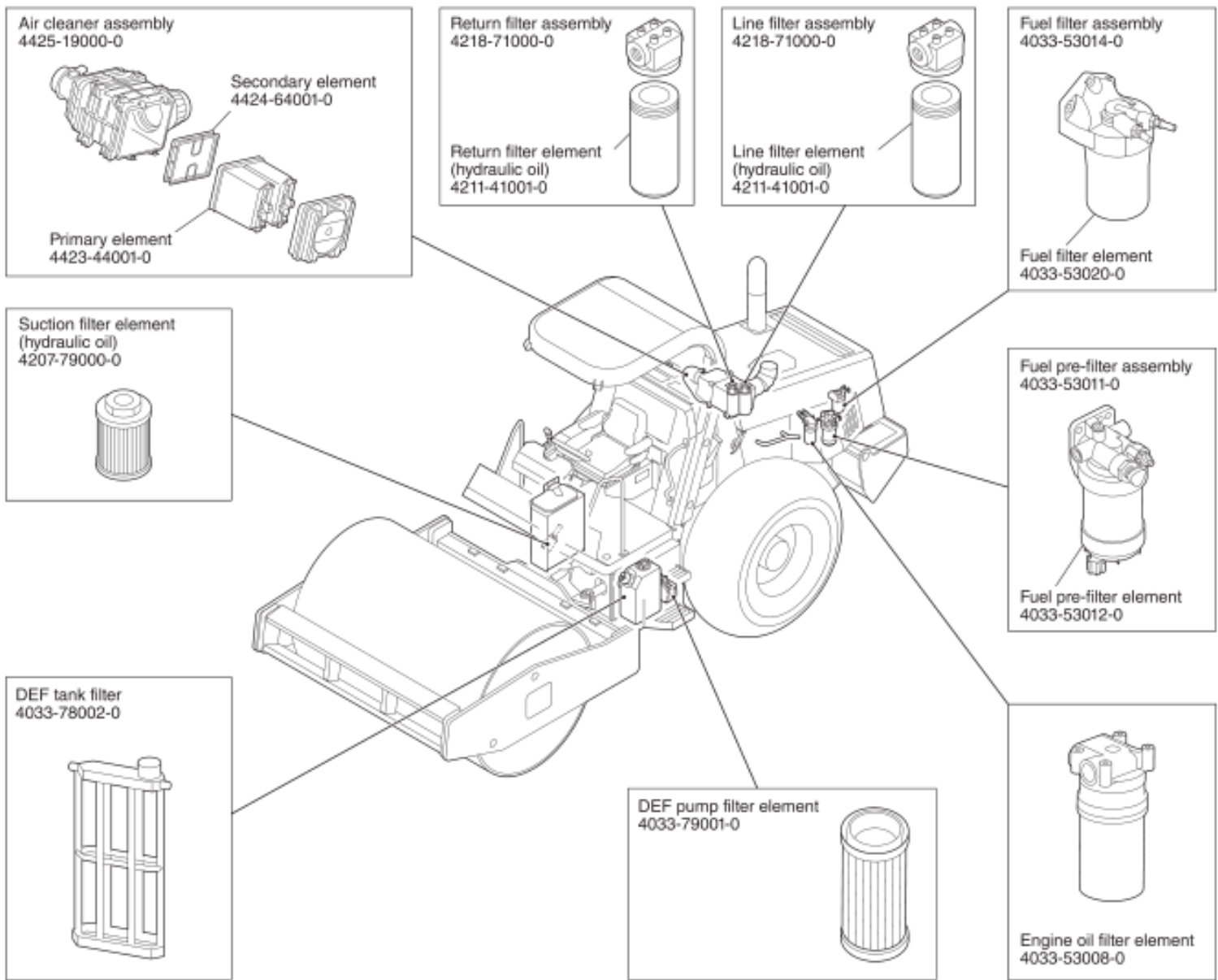
Engine	Model		CUMMINS QSF 3.8 (Diesel, EPA-Tier 4)	
	Type		4-cycle, water-cooled, 4-cylinder in-line, overhead valve, direct injection type, with turbo charger	
	Cylinders - Bore x Stroke		102 mm x 115 mm (4.02 in. x 4.53 in.)	
	Displacement		3.800L ( 229.0 cu.in. )	
	Performance	Rated speed	2,200 min <sup>-1</sup>	
		Rated output	97.0kW ( 130 HP )	
		Max. torque	488N·m ( 360 lbf·ft ) ----- at 1,600 min <sup>-1</sup>	
		Fuel consumption rate	234g/kW·h ( 0.385 lb/HP·h ) ----- at 2,200 min <sup>-1</sup>	
		Fuel consumption	13.7 L/h with full load ( 3.6 gal with full load )	
	Fuel system	Fuel	Diesel (ASTM D975-2D)	
		Fuel injection pump	Inline injection pump	
		Fuel injection time regulator	All speed governor	
	Lubrication system	Lubrication type	Full forced pressure feed	
		Oil filter type	Full flow	
		Oil cooler type	Integrated water cooled	
	Air intake system	Air cleaner type	Dry	
	Cooling system	Cooling type	Pressurized water forced circulation	
		Cooling fan type	Inhale	
	Electrical system	Alternator	24 V 90 A	
		Starter	24 V 4.8 kW	
Battery		12 V (CCA651) x 2 pcs. (24 V)		
Dry weight		348 kg (767 lbs.)		

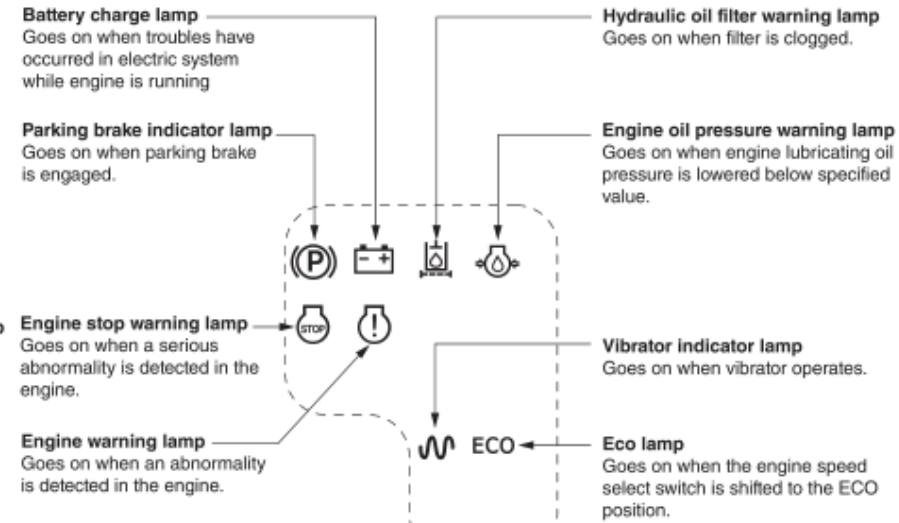
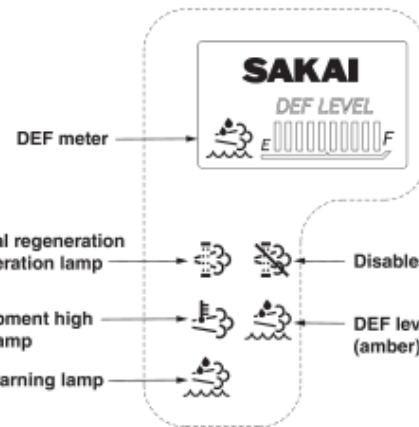
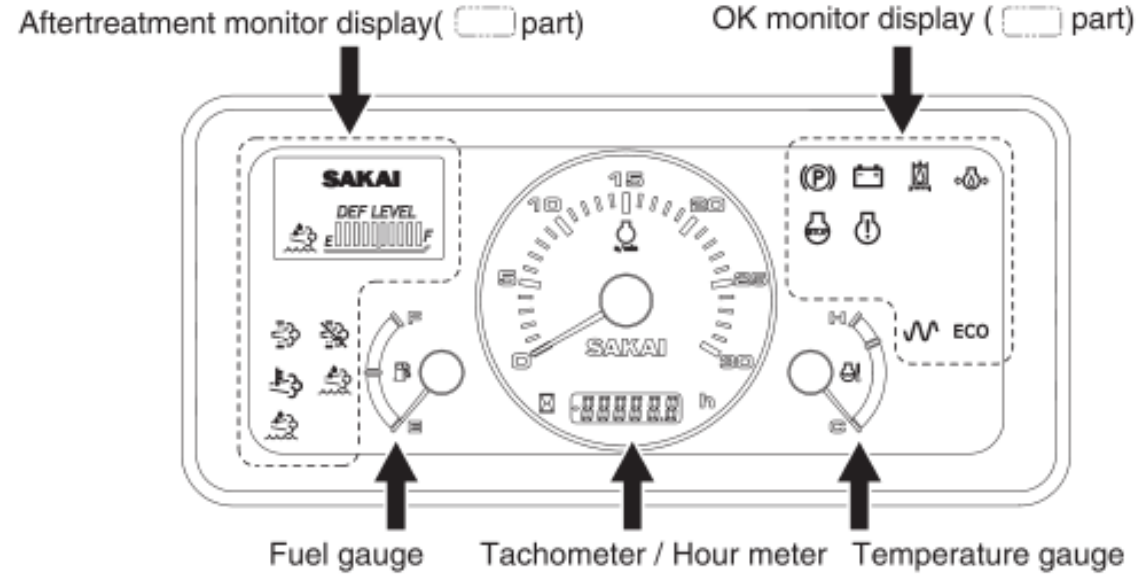
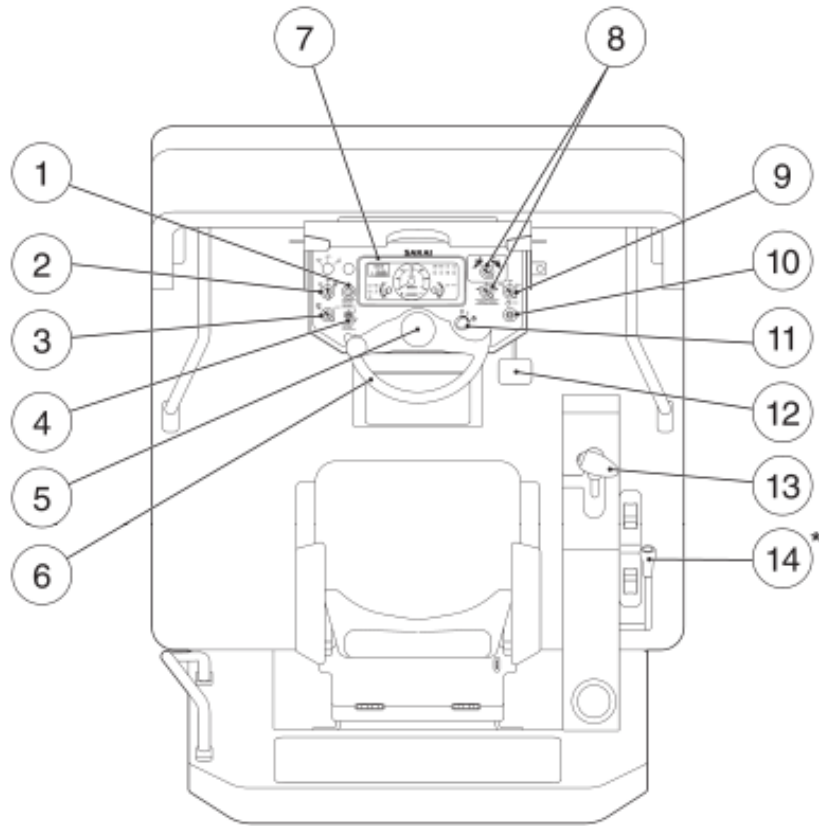
Lubricant	Service classification	Ambient temp. and applicable viscosity rating			Applicable Standards
		-15 to 30°C (5 to 86°F) Cold	0 to 40°C (32 to 104°F) Moderate	15 to 55°C (59 to 131°F) Tropical	
Engine oil	API grade CJ-4	SAE5W-40	SAE5W-40	SAE5W-40	MIL-L-2104B
Gear oil	API grade GL5	SAE80W-90	SAE90	SAE140	MIL-L-2105
Hydraulic oil	Anti wear	ISO-VG32 over VI 140	ISO-VG46 over VI 140	ISO-VG68 over VI 110	ISO-3448
Grease	Lithium type extreme pressure				NLGI-2
Fuel	Diesel oil				ASTM D975-2D
DEF	ISO 22241-1 and AUS32				

Item	Standard value
Engine oil pan	12 L ( 3.2 gal. )
Fuel tank	215 L ( 56.8 gal. )
Coolant	16 L ( 4.2 gal. )
Hydraulic oil tank	53 L ( 14.0 gal. )
Vibrator case	34 L ( 9.0 gal. )
Gear box (F)	3.0 L ( 0.8 gal. )
Gear box (rear axle)	1.2 L ( 0.3 gal. )
Center housing (rear axle)	11.0 L ( 2.9 gal. )
Hub reduction gear case (rear left and right)	2.0 L x 2 ( 0.5 gal. x 2 )
DEF tank	19 L ( 5.0 gal. )



Item		Standard value		Remarks
Propulsion	High pressure relief valve setting		42.0 ± 1.0 MPa ( 6,090 ± 145 psi )	at 1,800 min <sup>-1</sup>
	Charge relief valve setting		2.4 ± 0.2 MPa ( 348 ± 29 psi )	at 40 L/min
	Flushing valve setting	Motor (F)	1.6 MPa ( 232 psi )	at 10 L/min
		Motor (R)	2.67 MPa ( 387 psi )	at 19 L/min
	Case pressure	Pump	0.3 MPa ( 43.5 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	Gear box (F)	More than 1.8 MPa ( 261 psi )	
		Rear axle	1.5 to 3.0 MPa ( 218 to 435 psi )	
Motor drainage	Motor (F)	8.3 L/min ( 2.2 gal./min )	3rd	
	Motor (R)	6.1 L/min ( 1.6 gal./min )		
Vibration	High pressure relief valve setting		28.0 ± 1.0 MPa ( 4,060 ± 145 psi )	at 3.8 to 5.6 L/min
	Charge relief valve setting		2.4 ± 0.2 MPa ( 348 ± 29 psi )	at 18.9 L/min
	Case pressure	Pump	0.3 MPa ( 43.5 psi ) or less	
		Motor	0.2 MPa ( 29.0 psi ) or less	
	Motor drainage		7.7 L/min ( 2.0 gal./min )	
Steering oil pressure		16.4 ± 1.0 MPa ( 2,378 ± 145 psi )	(orbitroll relief pressure + charge relief pressure)	



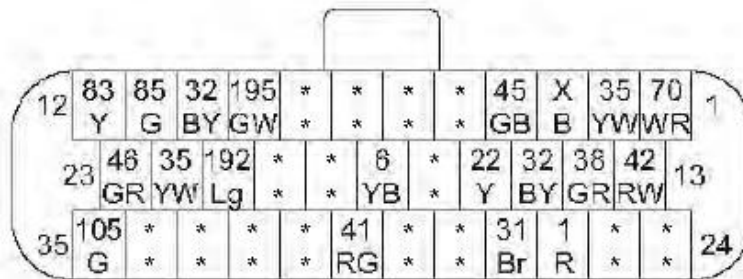
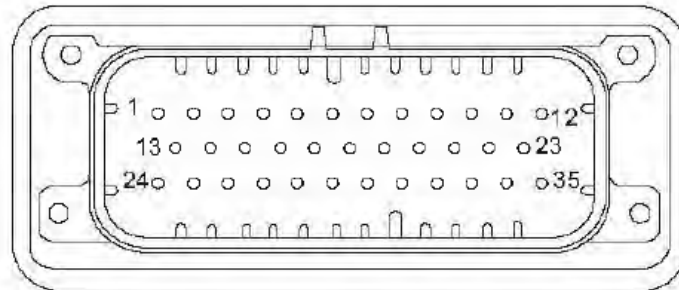
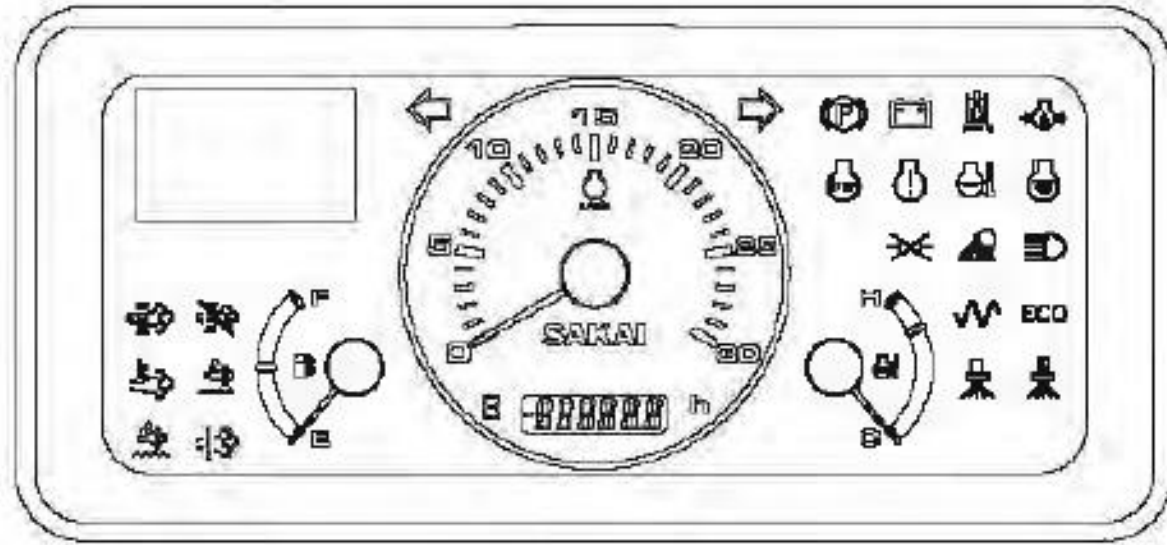


- ① Manual regeneration switch
- ② Vibrator switch
- ③ Vibration selector switch
- ④ Disable regeneration switch
- ⑤ Horn switch button
- ⑥ Steering wheel
- ⑦ Combination meter
- ⑧ Travel mode switch
- ⑨ Engine speed select switch
- ⑩ Parking brake switch
- ⑪ Starter switch
- ⑫ Brake pedal
- ⑬ Forward-Neutral-Reverse (F-N-R) lever with vibration switch
- ⑭ Leveling blade lift lever

- Parked manual regeneration lamp / Regeneration lamp
- Exhaust equipment high temperature lamp
- DEF quality warning lamp (red)
- Disable regeneration lamp
- DEF level warning lamp (amber)

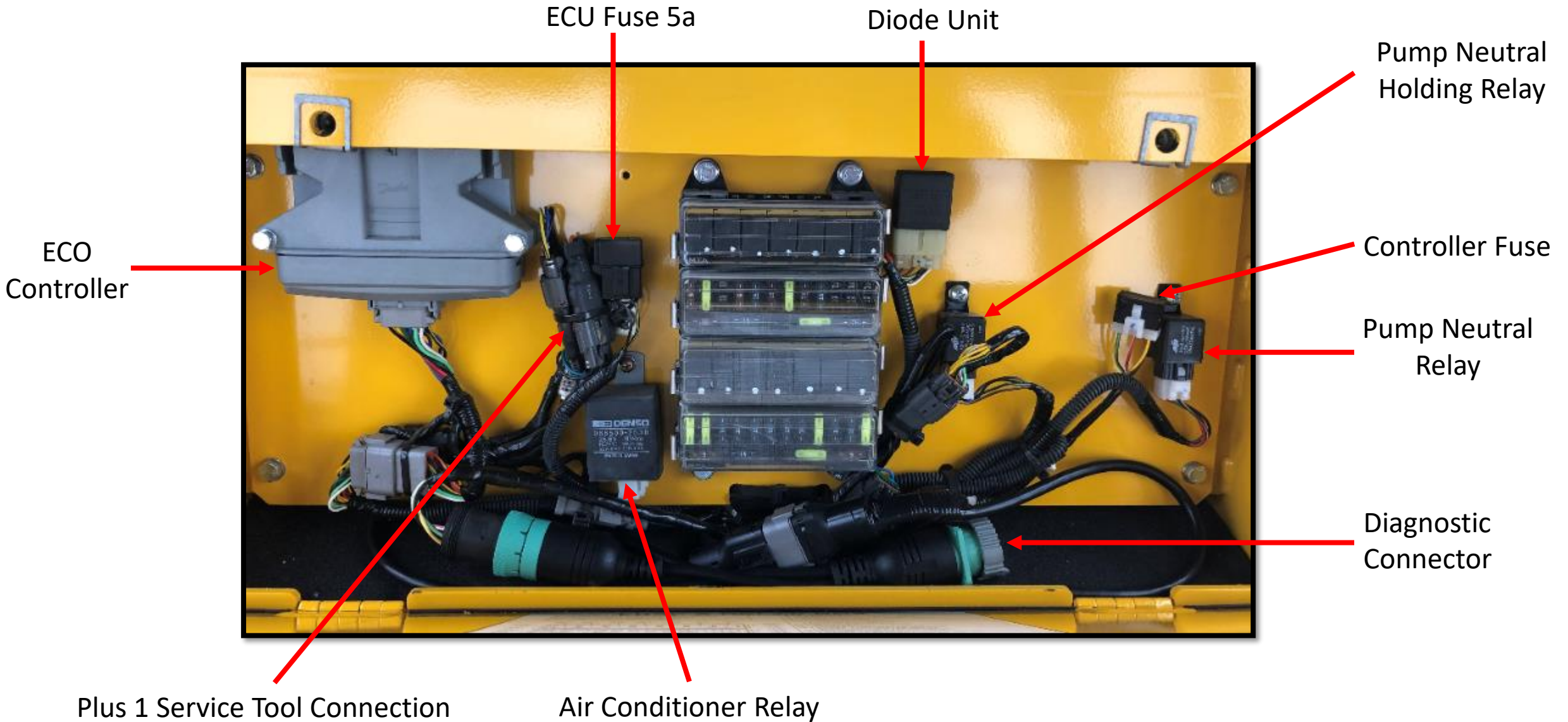
- Battery charge lamp  
Goes on when troubles have occurred in electric system while engine is running
- Parking brake indicator lamp  
Goes on when parking brake is engaged.
- Engine stop warning lamp  
Goes on when a serious abnormality is detected in the engine.
- Engine warning lamp  
Goes on when an abnormality is detected in the engine.
- Hydraulic oil filter warning lamp  
Goes on when filter is clogged.
- Engine oil pressure warning lamp  
Goes on when engine lubricating oil pressure is lowered below specified value.
- Vibrator indicator lamp  
Goes on when vibrator operates.
- Eco lamp  
Goes on when the engine speed select switch is shifted to the ECO position.





Harness side

PIN	DESCRIPTION	NO.			
1	Battery 24V (+)	(70)	18	Fuel meter	(6)
2	Starter switch (ACC)	(35)	19	REV. ratio SEL.2	
3	Ground	(X)	20	REV. ratio SEL.4	
4	Turn signal (R)	(45)	21	DTC display	(192)
5	Engine stop		22	Hour meter	(35)
6	Over heat		23	Turn signal (L)	(46)
7	REV. ratio SEL.1		24	Preheating	
8	REV. ratio SEL.3		25	Water spray	
9	Buzzer	(195)	26	Flood lamp	(1)
10	Lamp check	(32)	27	Vibrator	(31)
11	CAN(+)	(85)	28	Liquid spray	
12	CAN(-)	(83)	29	High beam	
13	Head lamp	(42)	30	COMBI. meter ILLUMI.	(41)
14	Parking brake	(38)	31	Exhaust system high temperature	
15	Charge warning	(32)	32	DEF low level	
16	HYD. oil filter warning	(22)	33	Manual regeneration	
17	Engine warning		34	LYS pin	
			35	ECO mode	(105)

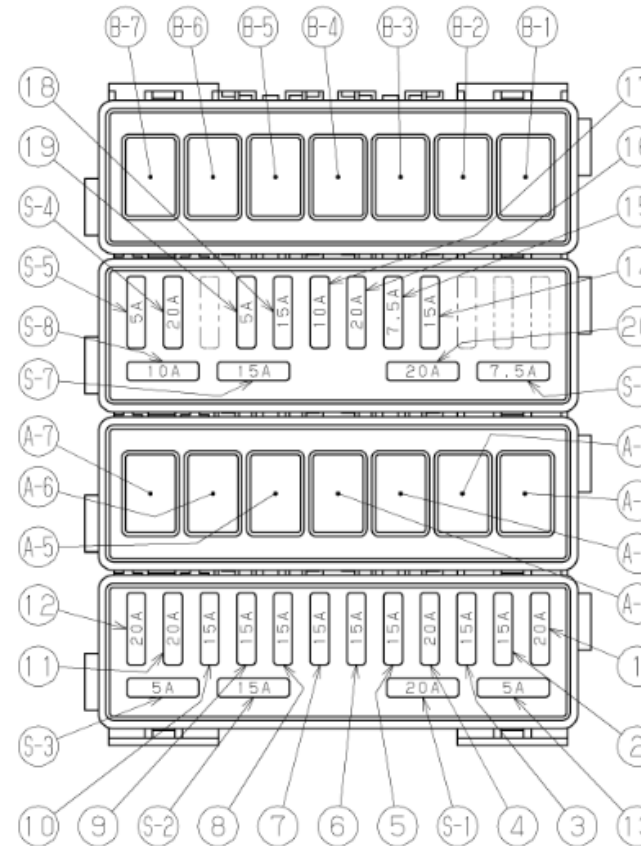


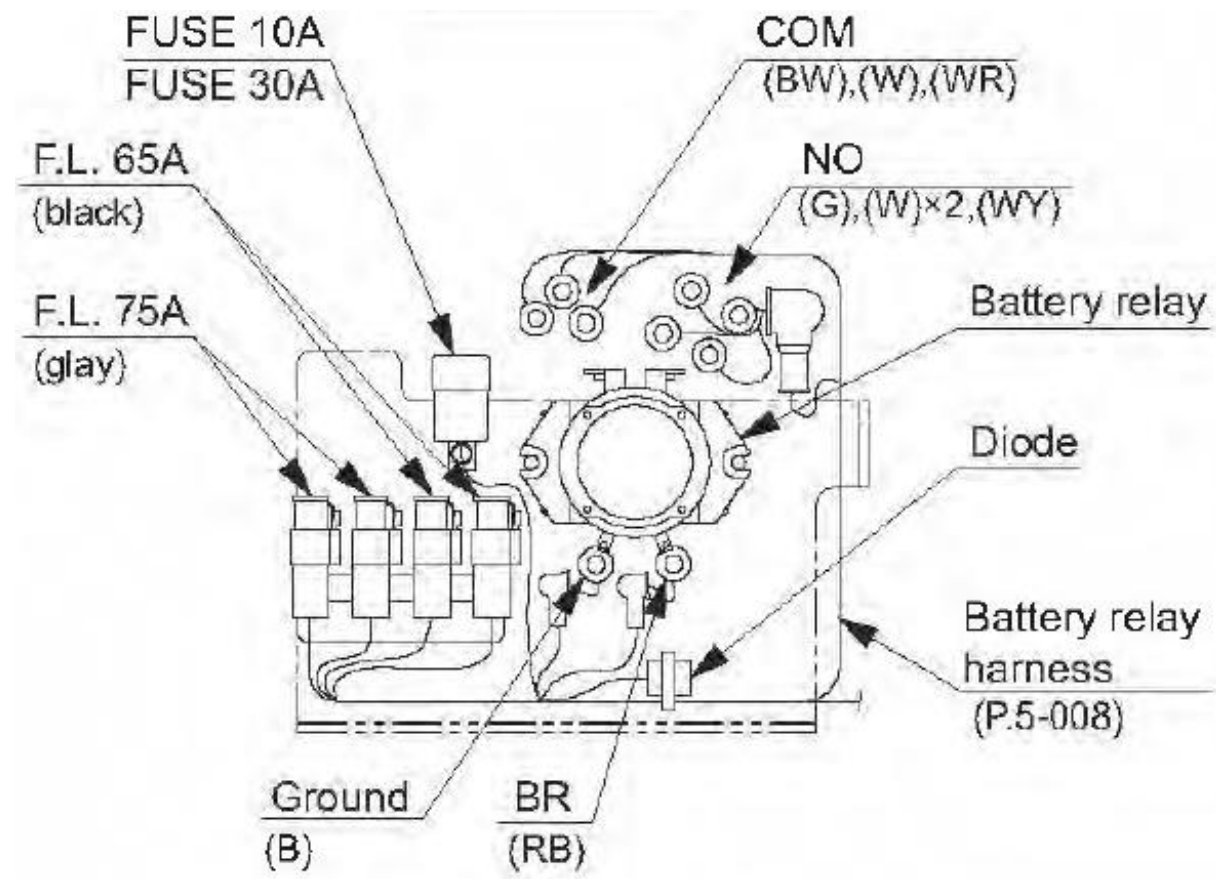
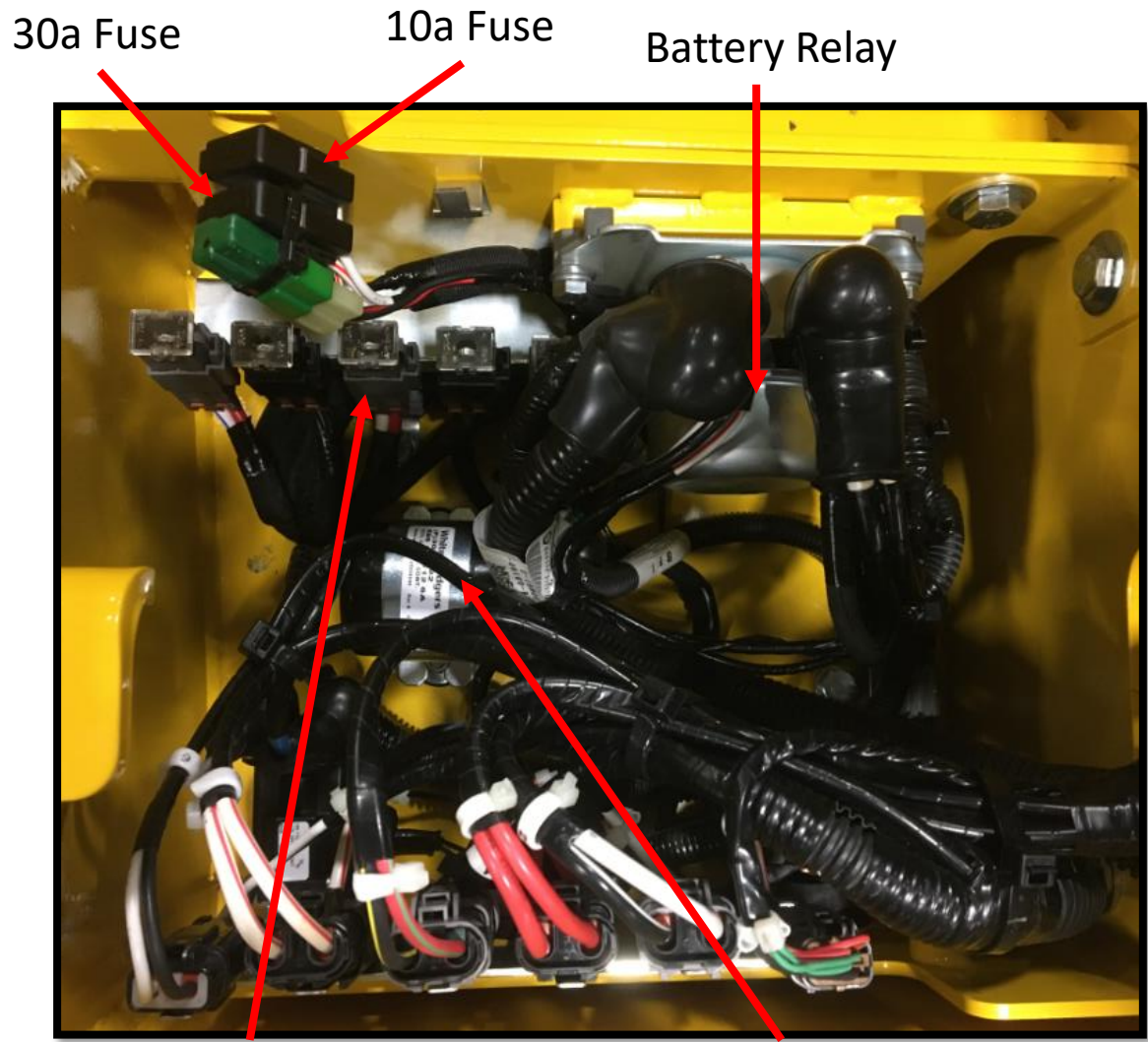




B-1	THROTTLE RELAY
B-2	ECO SPEED CONTROL RELAY
B-3	ECO/FULL SPEED CONTROL RELAY
B-4	DEF SUPPLY MODULE RELAY
B-5	LAMP CHECK RELAY
B-6	STARTER LOCKOUT RELAY
B-7	AFTER TREATMENT RELAY

1	OPTION (ROTATORY LAMP) OPTION (CABIN)
2	VIBRATION CONTROLLER (POWER)
3	OPTION (CIGAR)
4	COMBINATION METER (PANEL LIGHT)
5	OPTION (AIR CON.)
6	SPEED CHANGE SWITCH
7	OPTION (AIR CON.)
8	COMBINATION METER (POWER, HOUR METER)
9	F-R LEVER SWITCH FOOT BRAKE SWITCH BACKUP BUZZER SWITCH
10	HORN RELAY
11	OPTION (CCV)
12	STARTER LOCKOUT RELAY
13	COMBINATION METER (POWER)
14	PRESS. LINE HEATER RELAY BACKFLOW LINE HEATER RELAY SUCTION LINE HEATER RELAY
15	NO USE 7.5A
16	THROTTLE SWITCH ECO/FULL SPEED CONTROL RELAY
17	AFTER TREATMENT RELAY
18	DEF SUPPLY MODULE RELAY
19	AFTER TREATMENT RELAY
20	OPTION (PASS COUNTER)
S-1	SPARE 20A
S-2	SPARE 15A
S-3	SPARE 5A
S-4	SPARE 20A
S-5	SPARE 5A
S-6	NO USE 7.5A
S-7	SPARE 15A
S-8	SPARE 10A
A-1	L-INTERLOCK RELAY
A-2	P-INTERLOCK RELAY
A-3	TRAVEL MODE RELAY
A-4	PRESSURE LINE HEATER RELAY
A-5	BACKFLOW LINE HEATER RELAY
A-6	SUCTION LINE HEATER RELAY
A-7	HORN RELAY





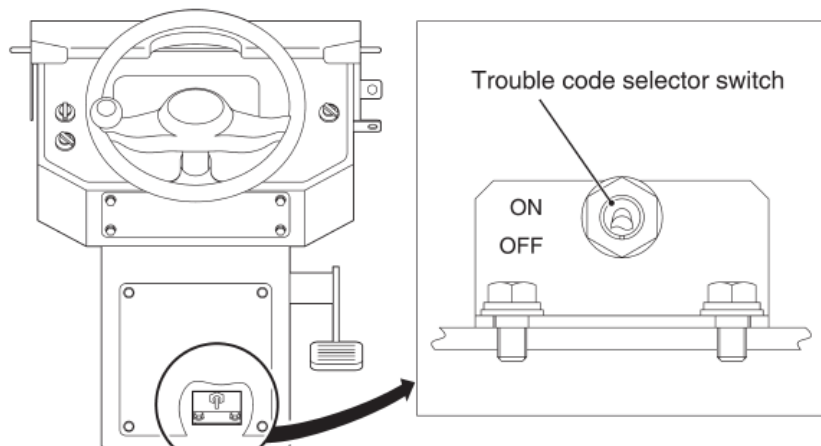
SBF 65a and 75a

Main Starter Relay



## NOTE:

For full description and additional troubleshooting, please see the engine Diagnostic Manual.



Self-diagnosis in progress.

Wait to start

No fault code.

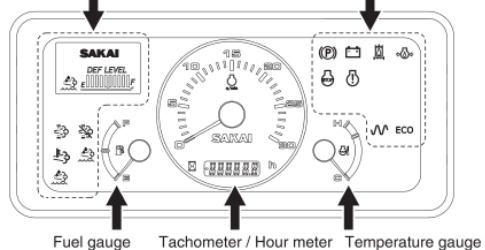
DTC MESSAGE : 0 OF 0  
SPN : \_\_\_\_\_  
FMI : \_\_\_\_  
SA : \_\_\_\_

Occurrence of fault code.

DTC MESSAGE : 4 OF 5  
SPN : 32  
FMI : 24  
SA : 1



Aftertreatment monitor display (part)      OK monitor display (part)

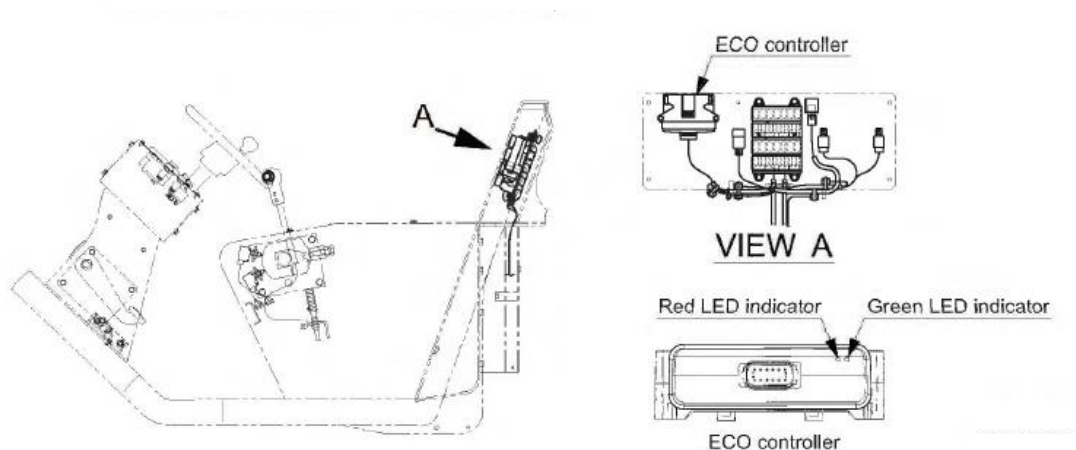




The ECO controller has safeguard features (error detection, error display and error bypass action) and displays each status with LED indicators.

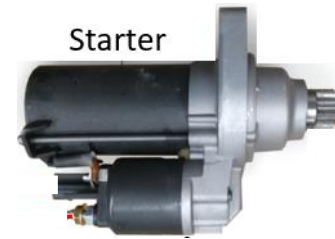
Normal : Red LED OFF, green LED ON

Abnormal : An error code depending on the error type is indicated by a combination of long and short red LED blinks.



Number of red LED blinks	Error occurred at	Description	Error code	Error bypass action
1 long, 1 short	Speed change solenoid (F)	Signal wire short-circuited	1	Speed is changed to 1st immediately.
1 long, 2 short		Signal wire open-circuited	2	
1 long, 3 short	Speed change solenoid (R)	Signal wire short-circuited	1	
1 long, 4 short		Signal wire open-circuited	2	
1 long, 7 short	ECU tachometer sensor	Engine rotation speed is lowered	-	
2 long, 1 short	Vibrator proportional solenoid 1 for low amplitude	Signal wire short-circuited	1	Both solenoids 1 and 2 stop the current output immediately.
2 long, 2 short		Signal wire open-circuited	2	
2 long, 3 short		Signal wire short-circuited	1	
2 long, 4 short		Signal wire open-circuited	2	

ECM Fuse 5A



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 24v 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/White 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 24V power from key switch (Black/Red 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/White wire on the Starter when turned to "Crank" position?

Yes, Repair connections or replace starter as needed.

No, Check continuity across the Park Brake switch and Neutral Switch? Does the switches test good?

Yes, Test for power across relays for Starter, Starter Interlock, park brake switch and Neutral Switch? Do the switches test good?

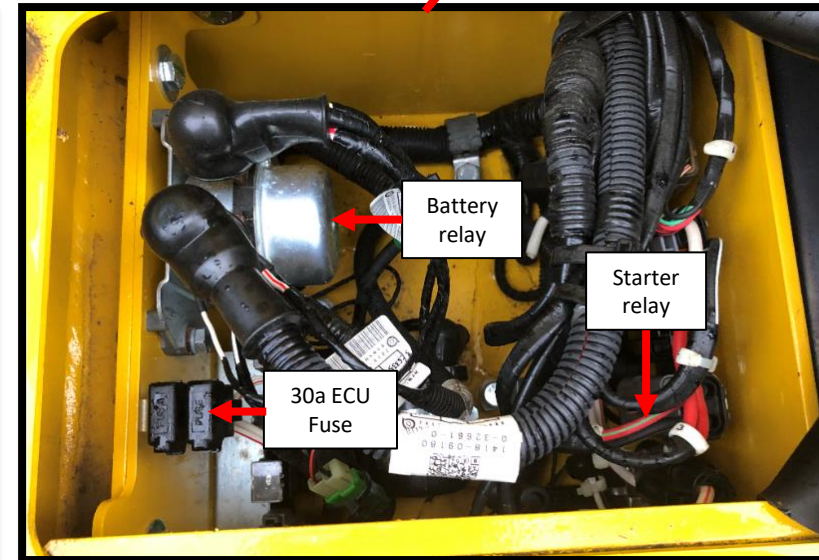
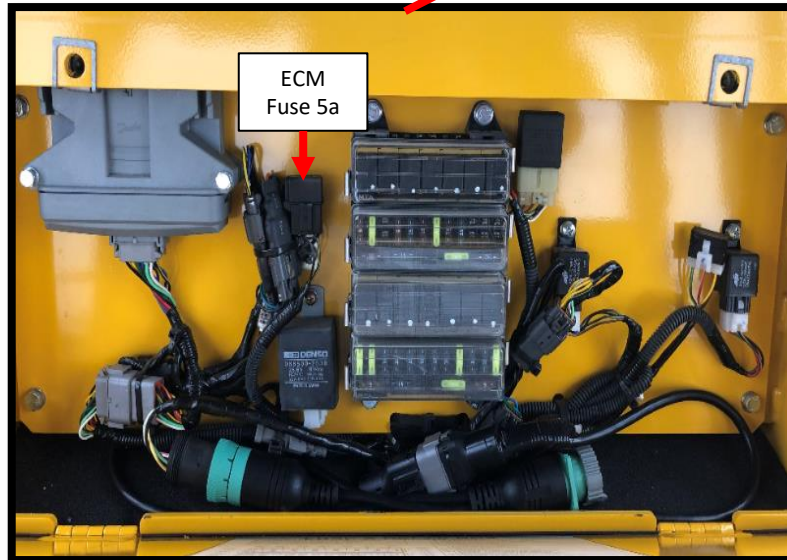
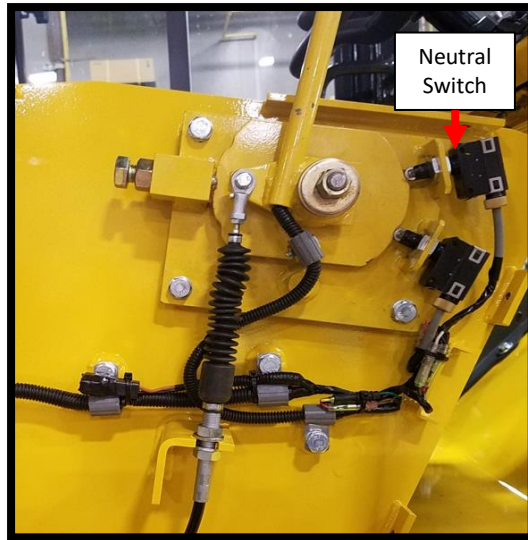
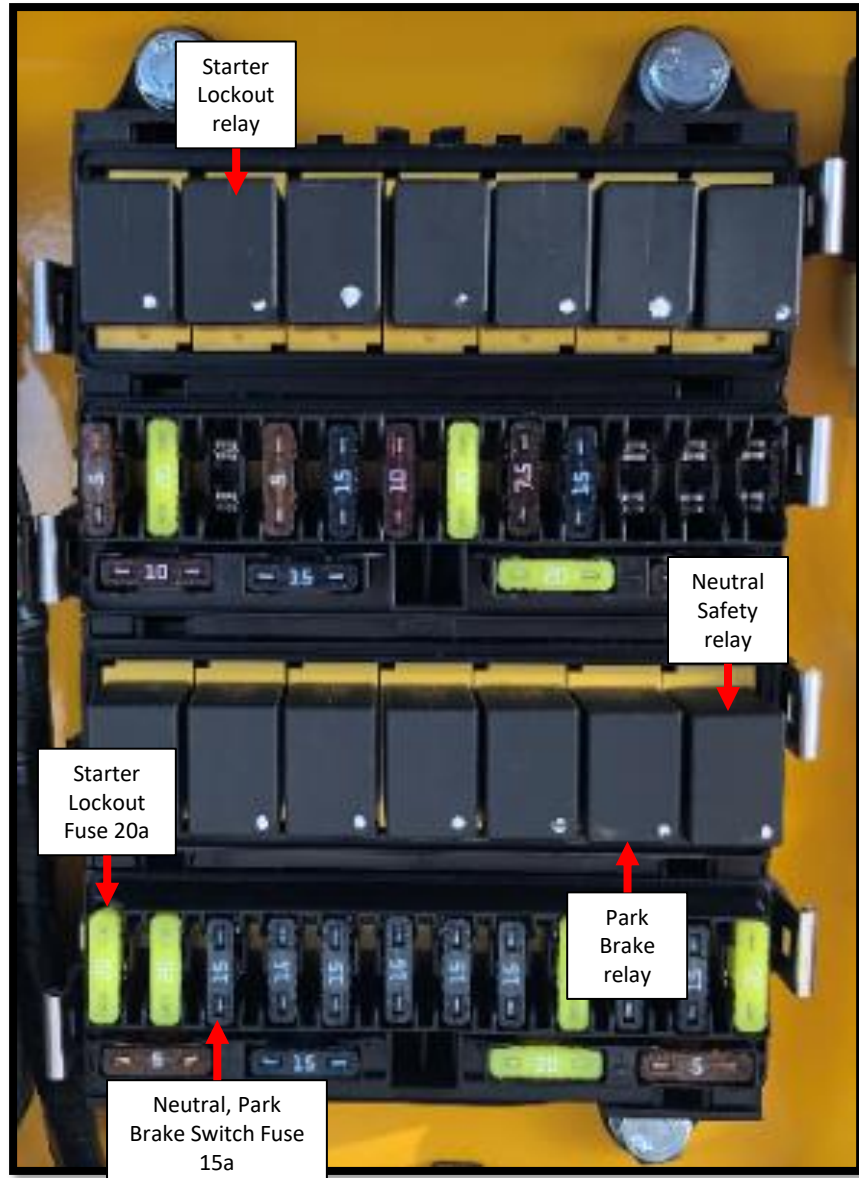
No, Repair or replace as needed.

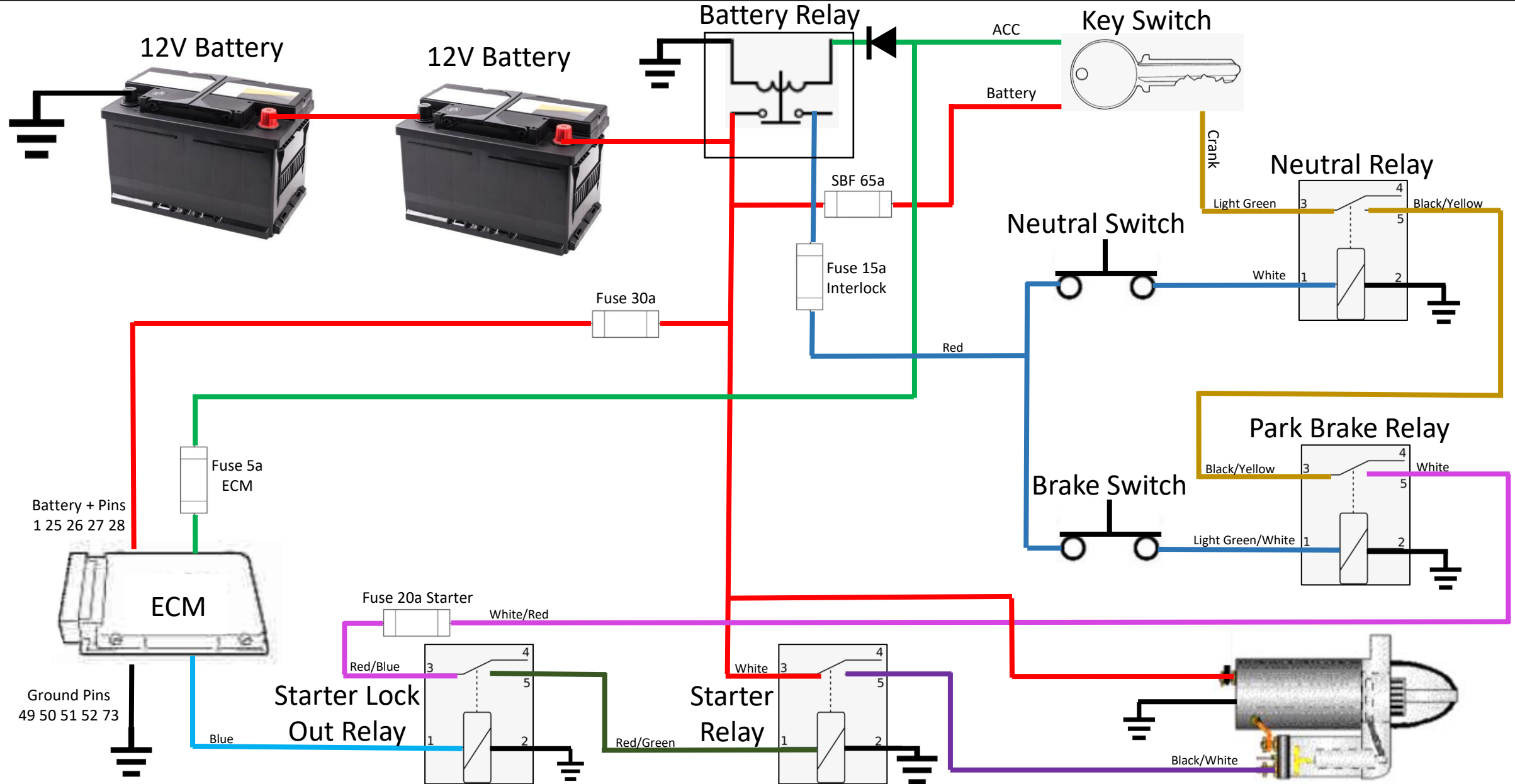
Yes, Check fuse for ECM 5a, Interlock 15a, and Starter Relay 20a.

No, Replace fuses as needed or ECM needs to be tested.

No, Repair or replace as needed.











Crank, No Start

Are there any Engine Codes present?

No, Is there fuel in the machine?

Yes, Please consult local Cummins Dealer

No, Add Fuel and Prime using hand pump.

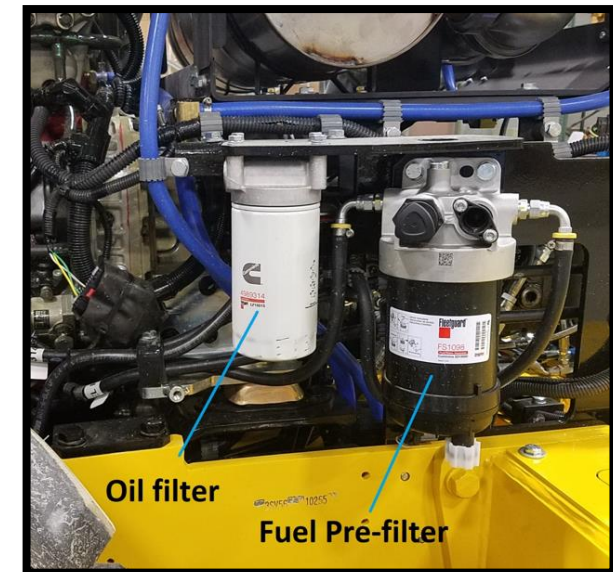
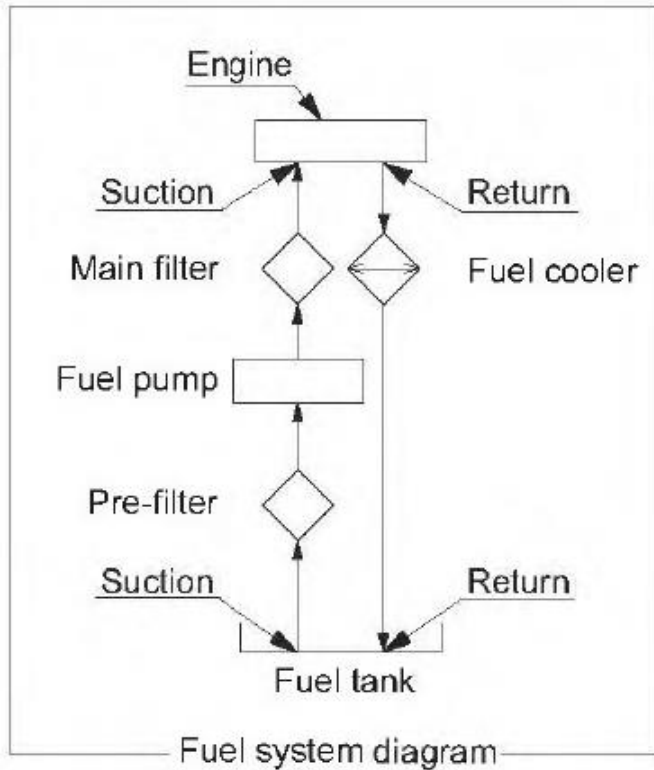
Yes, Is there fuel present at filters?

No, Replace filters as needed or remove fuel restriction, repair as needed.

Yes, There fuel present at Fuel Pump ?

No, Replace filters as needed or remove fuel restriction, repair as needed.

Yes, Please consult your local Cummins Dealer.

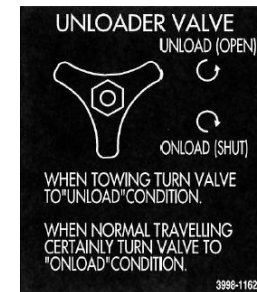




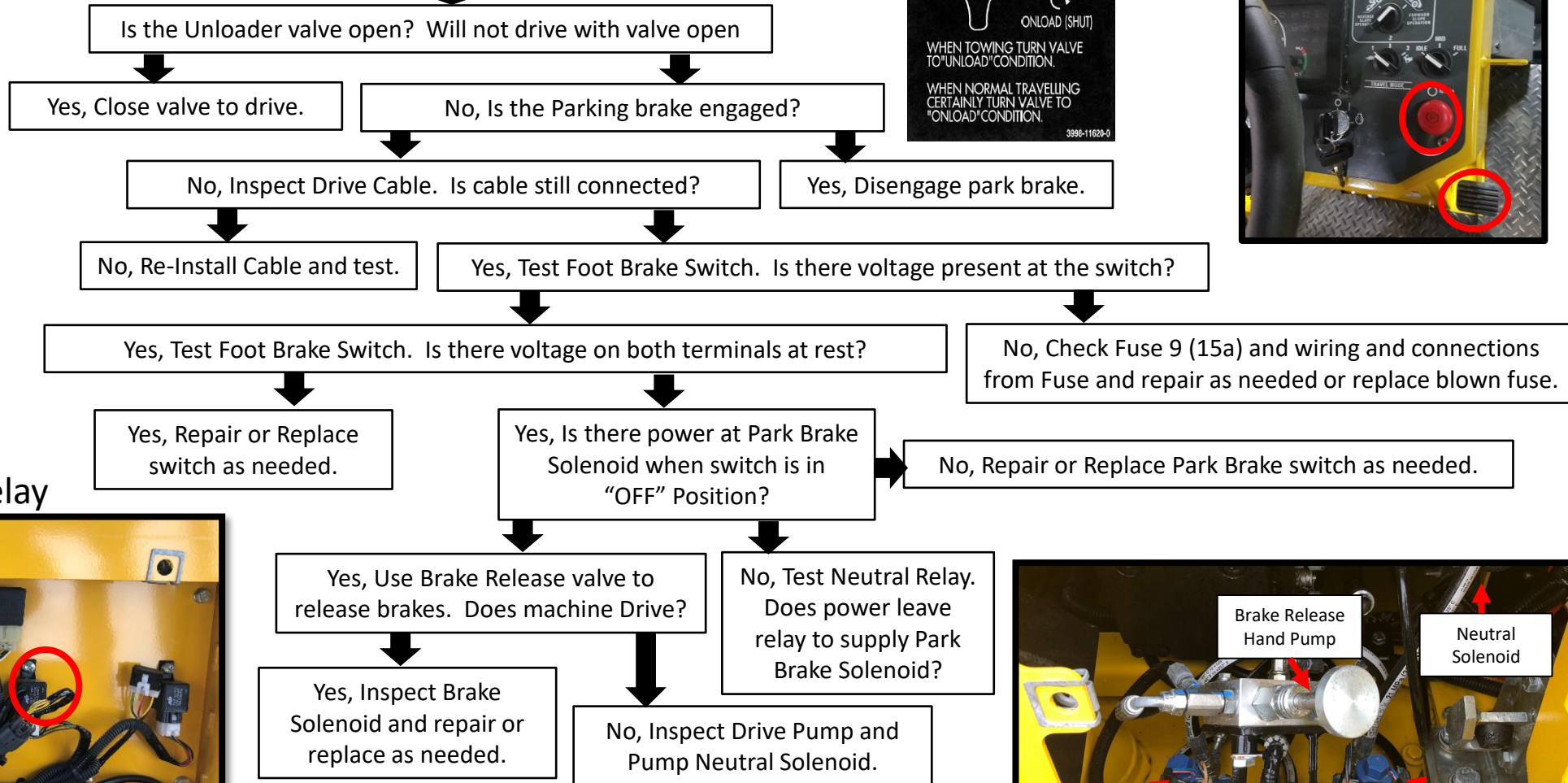
### Drive Cable



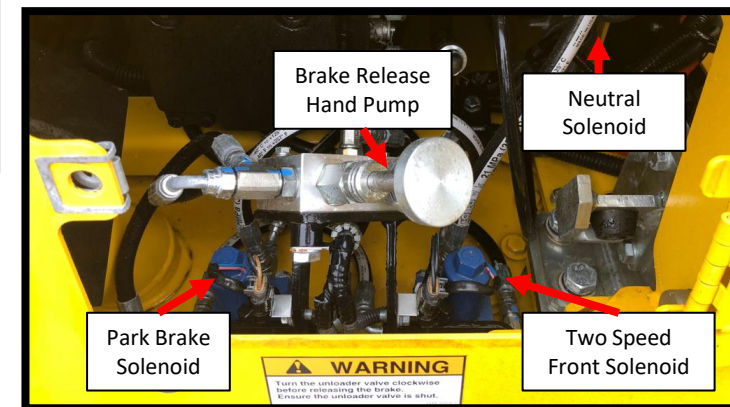
### Brake Switch and Pedal

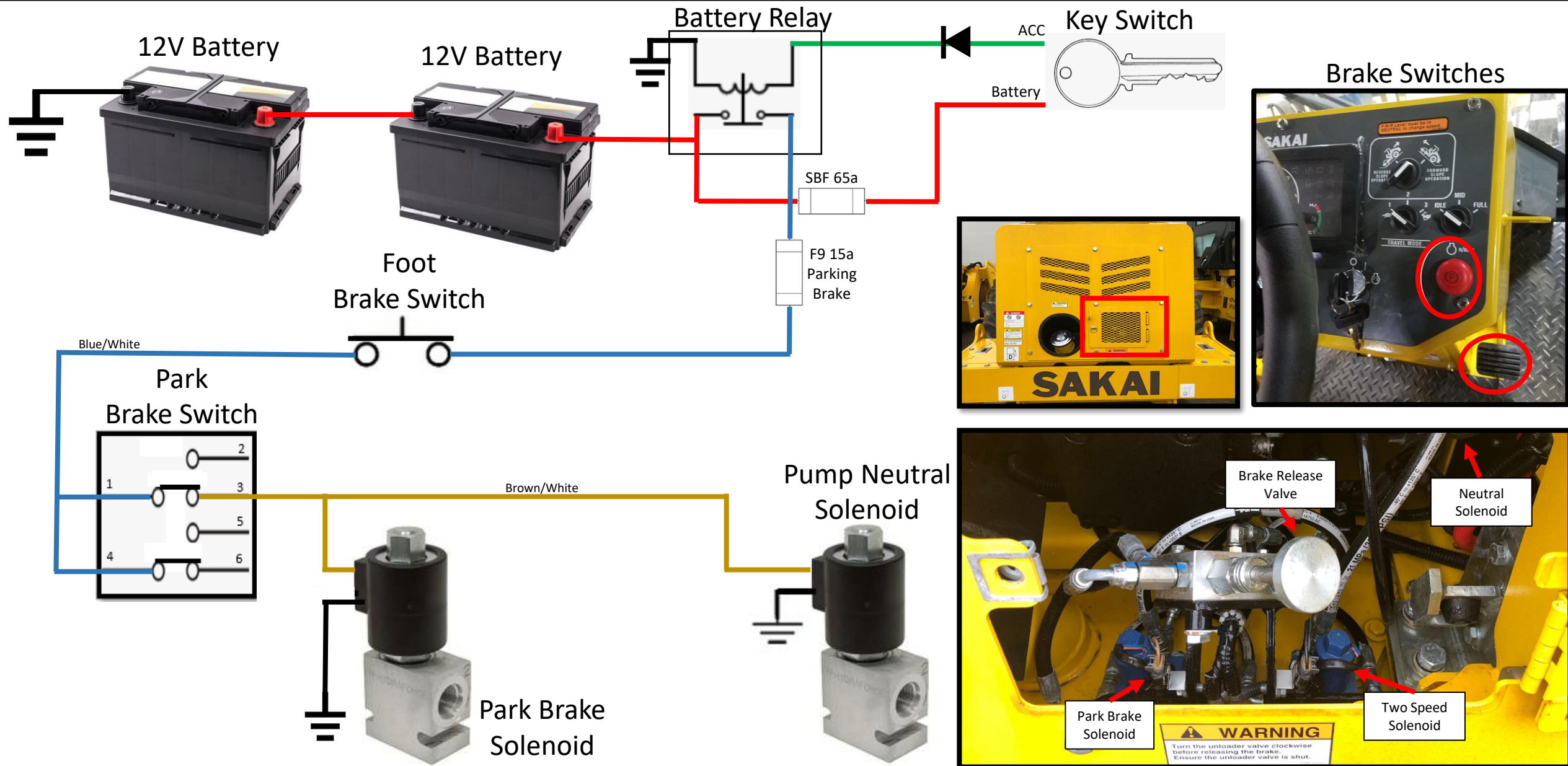


Will not Drive



### Pump Neutral Relay







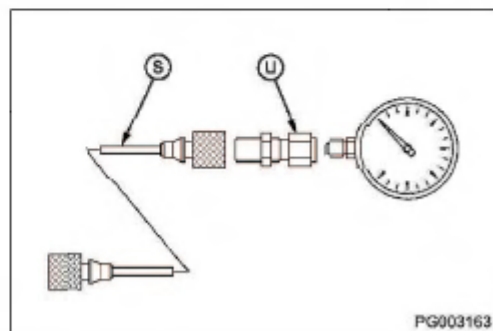
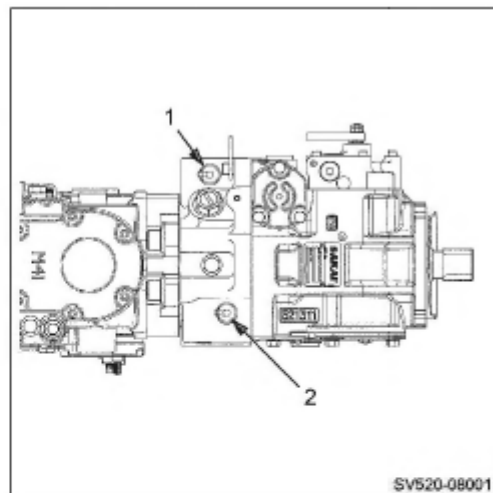
## MEASUREMENT AND ADJUSTMENT OF PROPULSION CIRCUIT PRESSURE

- Oil temperature during measurement :  $50 \pm 5^{\circ}\text{C}$  ( $122 \pm 9^{\circ}\text{F}$ )
- ① Remove plugs from couplings (1) and (2) of propulsion pump. Attach pressure gauge with hose (S) and connector (U).
  - Coupling : 9/16-18UNF×M16
  - Adapter for hose (S) : M16 P=2.0
  - Pressure gauge connector (U) : M16×G3/8
  - High pressure gauge port (Forward) : (2)
  - High pressure gauge port (Reverse) : (1)
  - 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 speed select switch to "1".
- ⑤ Start the engine and set throttle switch 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)

:  $42.0 \pm 1.0$  MPa ( $6,090 \pm 145$  psi)



## Adjustment

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

- ① Check nut (2) of multifunction valve (1-10) or (1-11) for evidence of having loosened.
  - Multifunction valve (Forward) : (1-11)
  - Multifunction valve (Reverse) : (1-10)
- ② If there is evidence of nut having loosened, adjust multifunction valve so that pressure becomes within maximum circuit pressure range while watching pressure gauge.
  - To adjust pressure, loosen nut and turn adjustment screw (3).

Adjustment screw turned clockwise

: Pressure rise

Adjustment screw turned counterclockwise

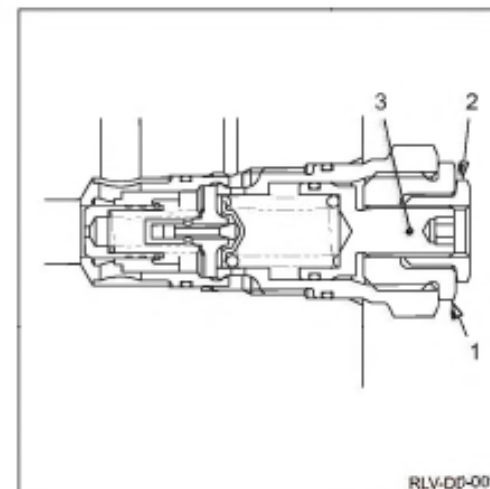
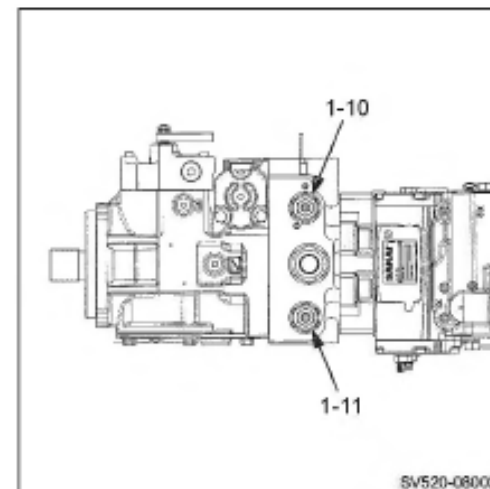
: Pressure drop

Pressure change rate : 9 MPa/tum (1,305 psi/tum)

- ③ If there is no evidence of nut having loosened, remove multifunction valve.
- ④ Check removed multifunction valve for trapped dirt and scratches on its seat.
- ⑤ If trapped dirt is present, disassemble and clean multifunction valve.
- ⑥ If a scratch is found on seat, replace multifunction valve.
- ⑦ After adjustment, measure pressure again and check that pressure reaches maximum circuit pressure range.



(1)	Nut	: 41 N·m (30 lbf·ft)
(2)	Nut	: 20 N·m (16 lbf·ft)
(1-10)	Multifunction valve	: 89 N·m (66 lbf·ft)
(1-11)	Multifunction valve	: 89 N·m (66 lbf·ft)

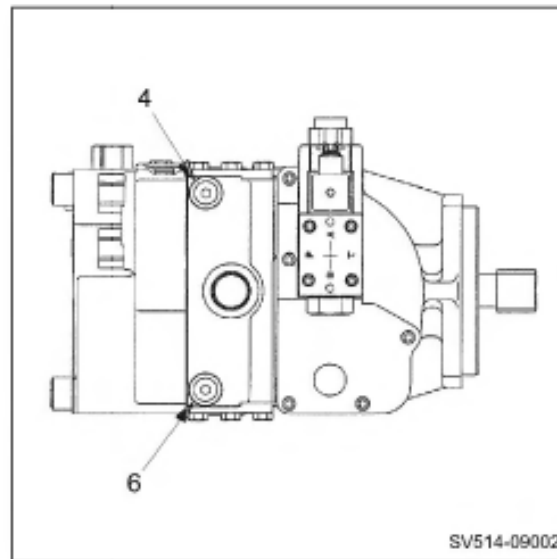


## Measurement of Propulsion Motor (R)

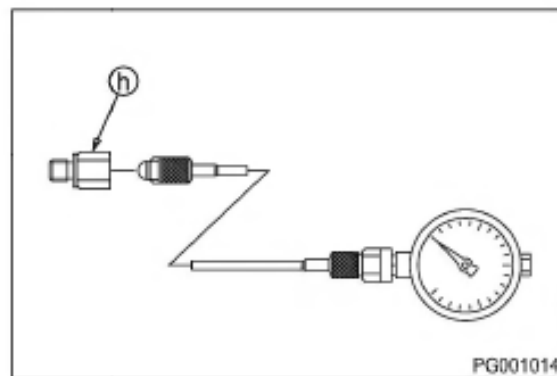
- Oil temperature during measurement :  $50 \pm 5^{\circ}\text{C}$  ( $122 \pm 9^{\circ}\text{F}$ )
- ① Remove plugs from propulsion motor (R) gauge ports (4) and (6). Attach pressure gauge with the adapter (h) .
  - Adapter (h) : 9/16-18UNF
  - Servo pressure gauge port (Low) : (4)
  - Servo pressure gauge port (High) : (6)
  - Pressure gauge : 0 to 5 MPa (0 to 725 psi)
- ② Confirm that F-R lever is "N".
- ③ Apply parking brake by pressing parking brake switch button.
- ④ Set speed select switch to " 1 ", " 2 " or " 3 ".
- ⑤ Start the engine and set throttle switch to "FULL".
- ⑥ Read pressure indicated by pressure gauge.

### ★ Standard flushing relief valve setting

:  $2.67 \pm 0.2 \text{ MPa}$  ( $387 \pm 29 \text{ psi}$ )

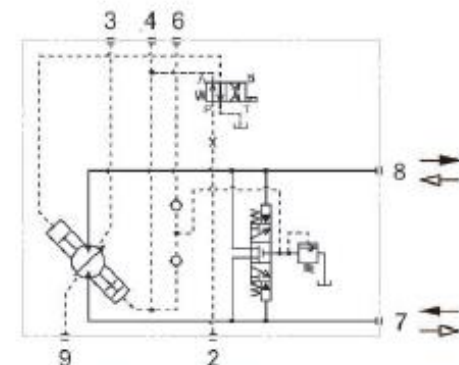
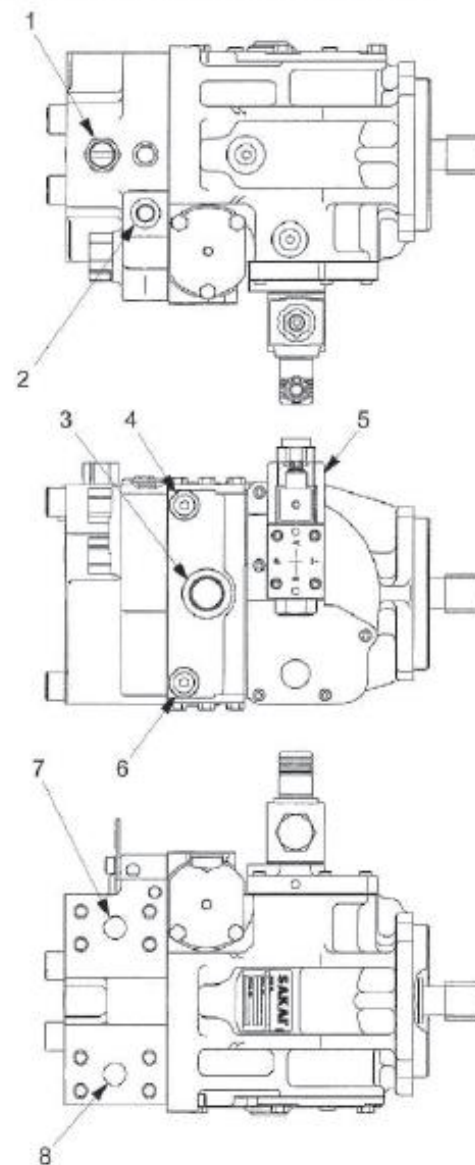


SV514-09002



PG001014

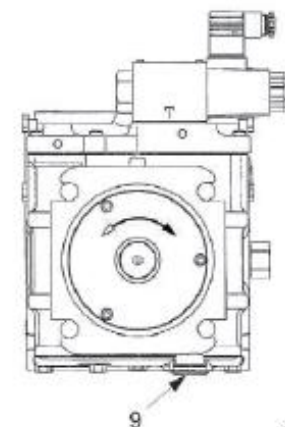
## Propulsion hydraulic motor (R)



Motor circuit diagram

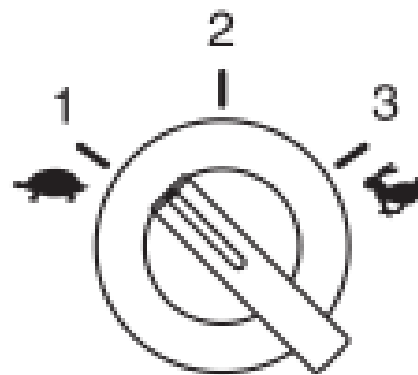
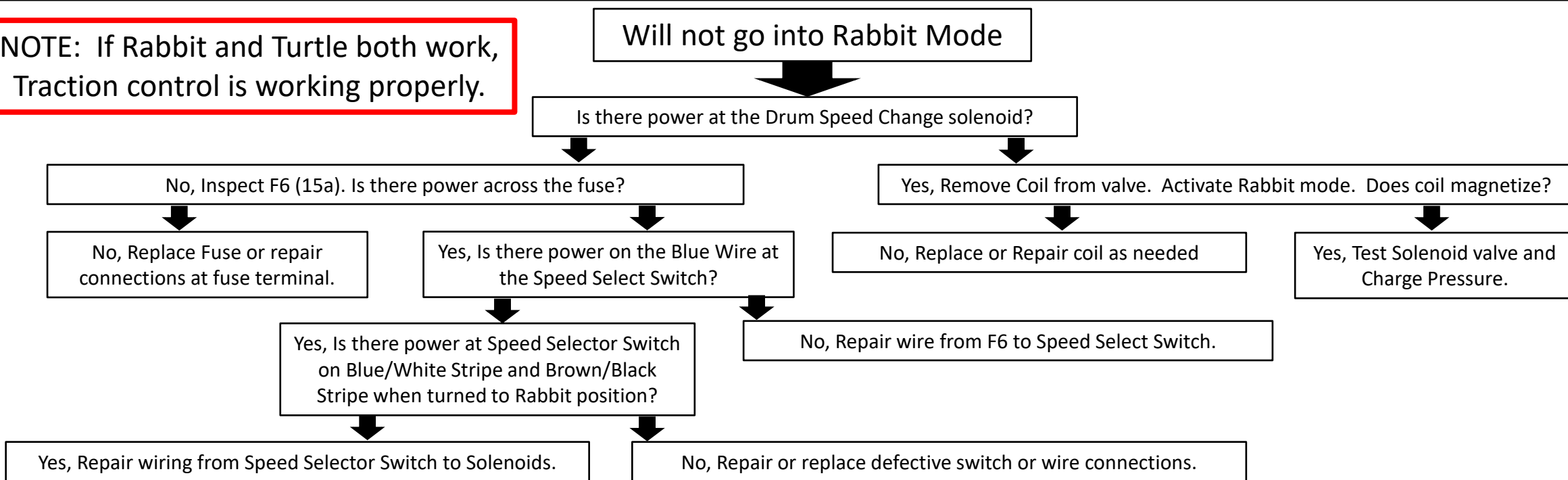
Flow of oil

- 7 → 8 Clockwise rotation
- 8 → 7 Counterclockwise rotation



SV544-04002

**NOTE: If Rabbit and Turtle both work, Traction control is working properly.**



Speed change switch

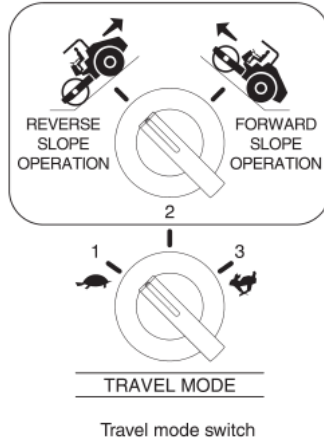
	km / h (mile / h)		
	1st	2nd	3rd
Speed	0-4 (0-2.5)	0-6 (0-3.7)	0-10 (0-6.2)



### Travel mode switch

Selects three machine speed ranges.

	km / h (mile / h)		
	1st	2nd	3rd
Speed	0-4 (0-2.5)	0-6 (0-3.7)	0-10 (0-6.2)

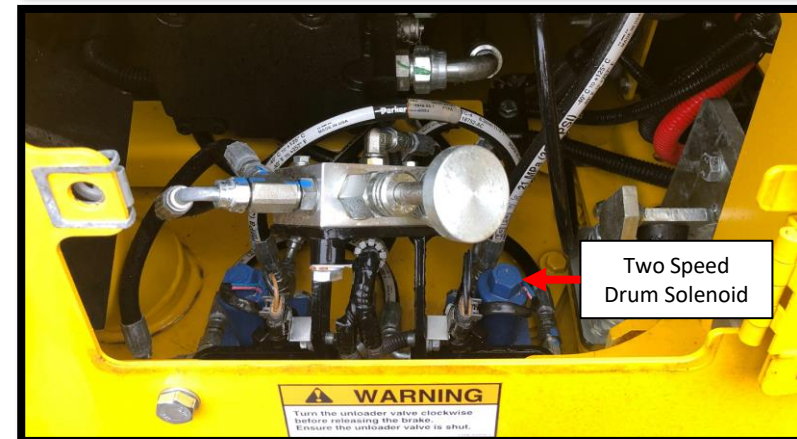
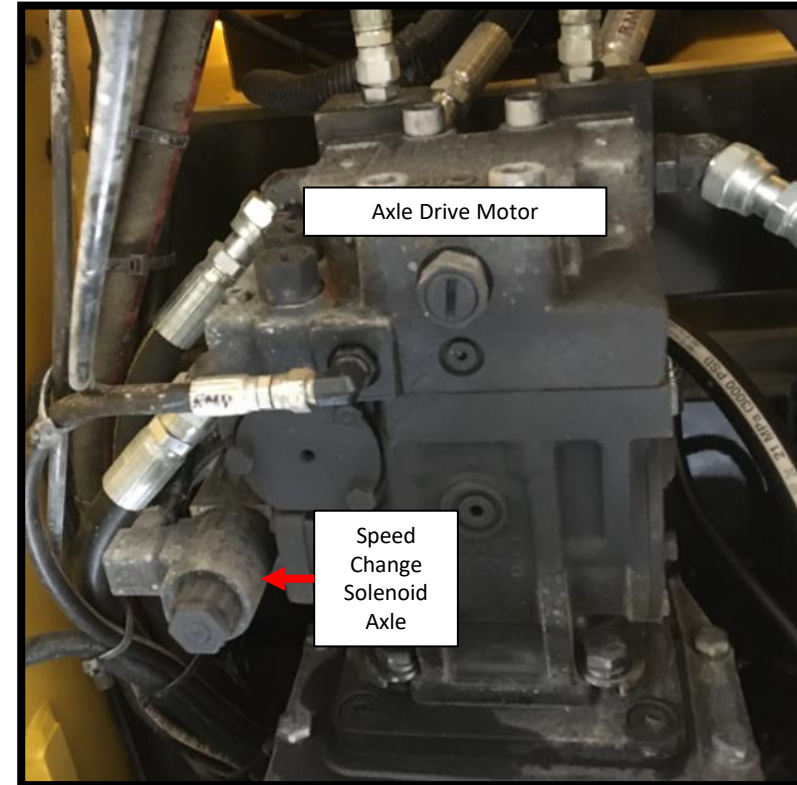


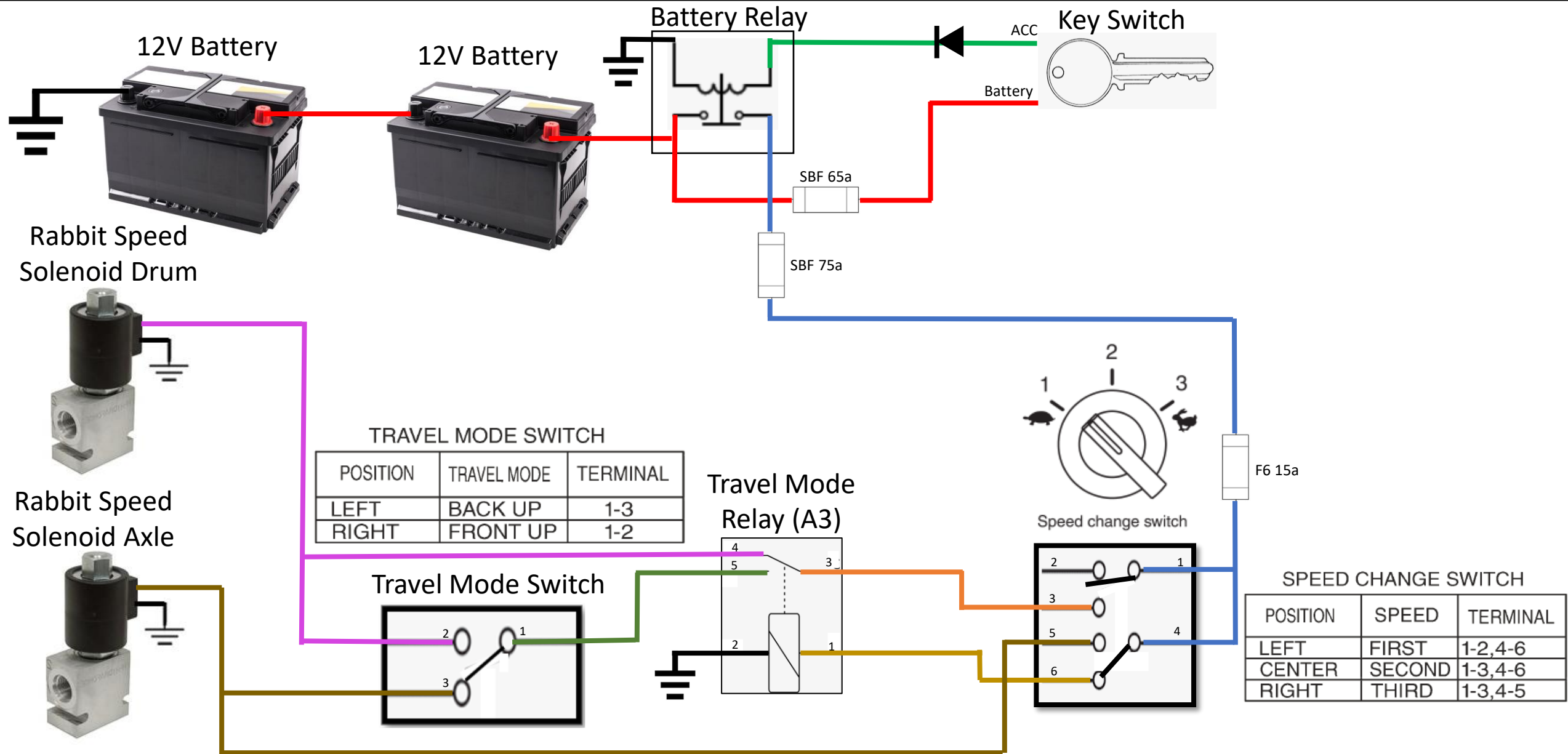
FORWARD SLOPE OPERATION and REVERSE SLOPE OPERATION can be selected in 2nd of Travel mode switch. It can not be selected with (1st) and (3rd).

FORWARD SLOPE OPERATION is suitable for climbing uphill in forward.

REVERSE SLOPE OPERATION is suitable for climbing uphill in reverse.

Please choose according to the situation of the work site.





Rabbit Speed Solenoid Drum

Rabbit Speed Solenoid Axle

TRAVEL MODE SWITCH

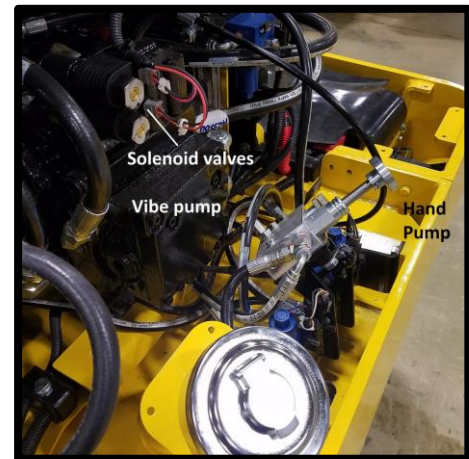
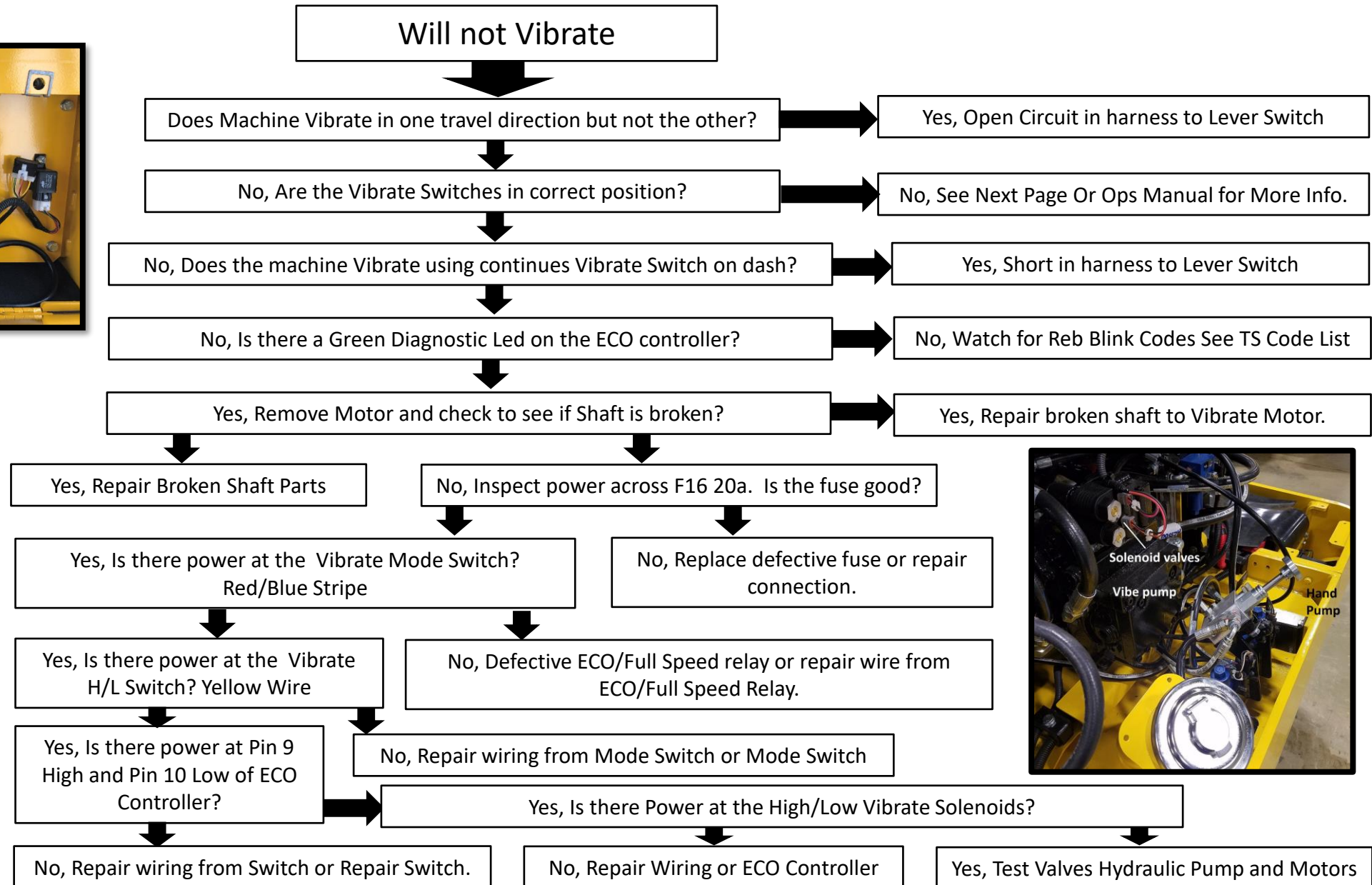
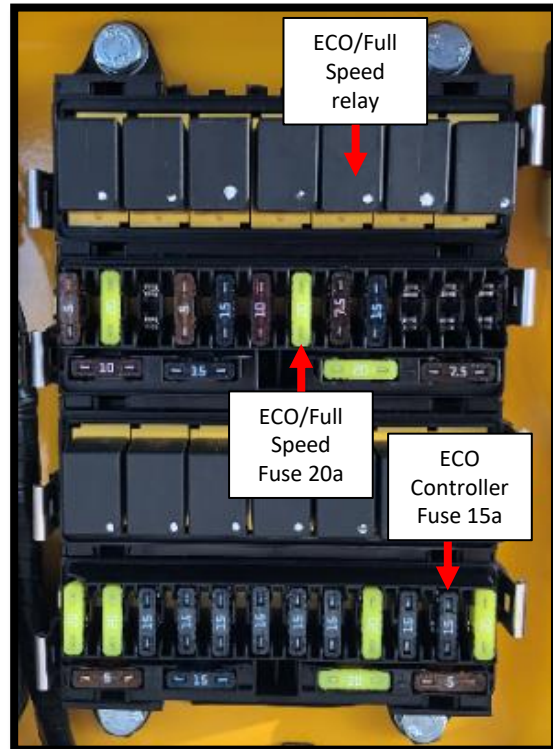
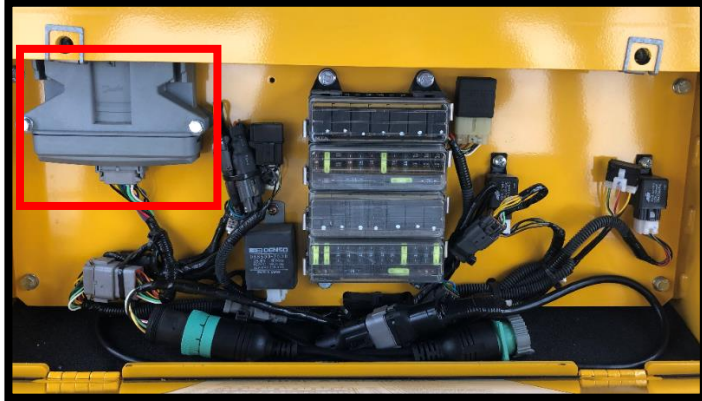
POSITION	TRAVEL MODE	TERMINAL
LEFT	BACK UP	1-3
RIGHT	FRONT UP	1-2

SPEED CHANGE SWITCH

POSITION	SPEED	TERMINAL
LEFT	FIRST	1-2,4-6
CENTER	SECOND	1-3,4-6
RIGHT	THIRD	1-3,4-5



## ECO Controller







### Vibrator switch

By means of vibrator switch located on the panel, selection of vibration amplitude and On-Off is mode.

- ⚡ position : Turning the vibrator switch clockwise causes the vibration to start with high amplitude.
- position : Vibration is shut down.
- ⚡ position : Turning the vibrator switch counter clockwise causes vibration to start with low amplitude.

**NOTE :** For Vibratory rolling, run the engine at FULL and ECO.

### Vibration selector switch

Selection can be mode between the vibrator switch installed to the Foward - Neutral - Reverse (F-N-R) lever and the other one located on the panel.

- 🔌 position : Vibration can be turned ON or OFF with the switch located on the Foward - Neutral - Reverse (F-N-R) lever. Pressing this switch causes the vibration to start and pressing it again to stop. This vibration switch on the lever should be used with the vibrator switch on the panel placed at ⚡ or ⚡ position.

CONT position : When the vibrator switch is set to the ⚡ or ⚡ position, you can perform vibration work without turning the vibration switch ON and OFF.

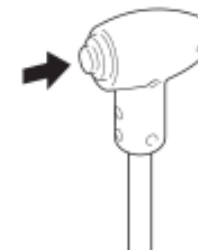
**NOTE :** For vibratory rolling, run the engine at FULL and ECO.



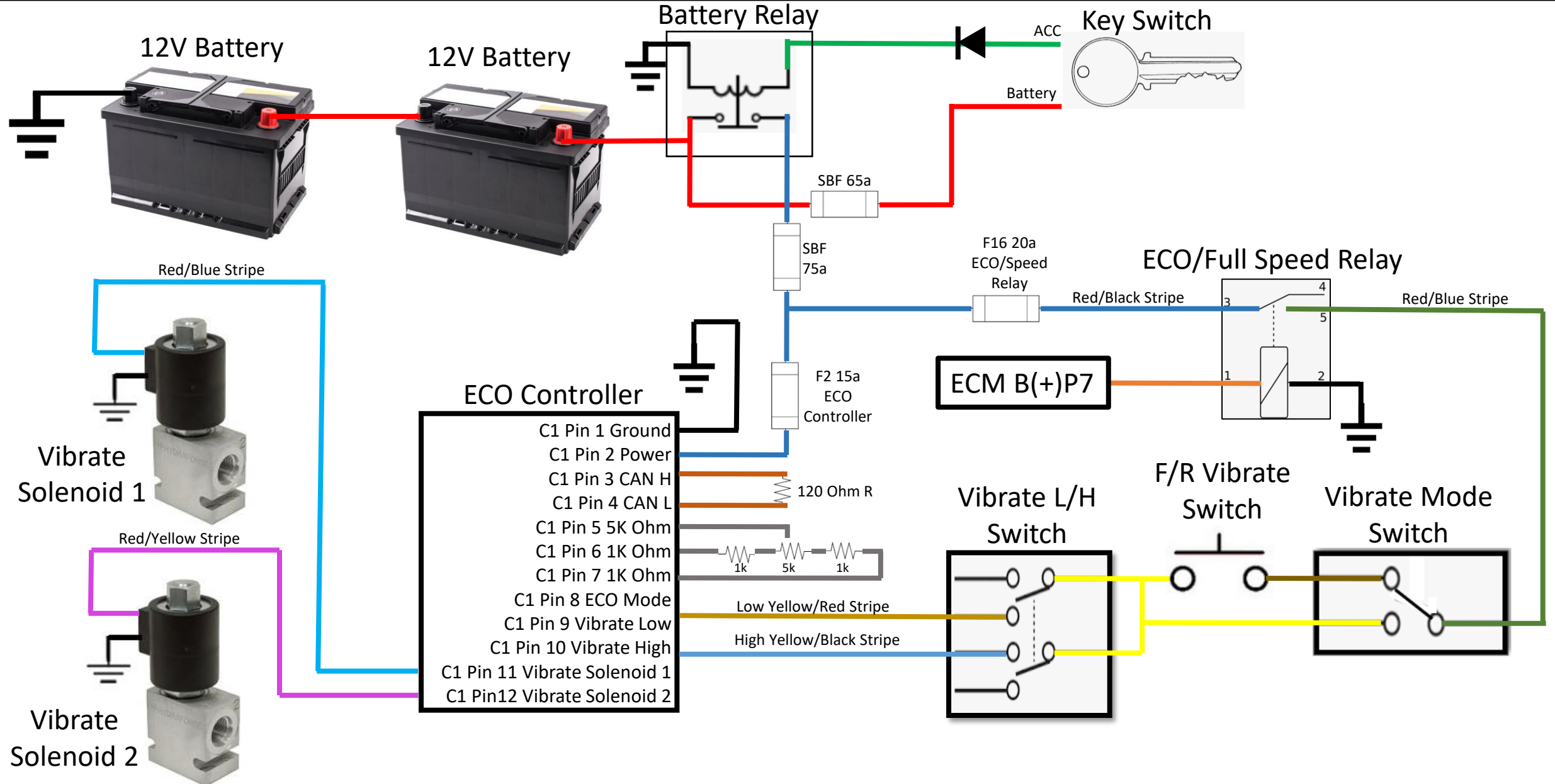
Vibrator switch



Vibration selector switch



Vibration switch



## MEASUREMENT AND INSPECTION OF VIBRATOR CIRCUIT PRESSURE

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

① Remove plugs from couplings (1) and (2) of vibrator pump. Attach pressure gauge with hose (S) and connector (U).

- Coupling : 9/16-18UNF×M16
- Adapter for hose (S) : M16 P=2.0
- Pressure gauge connector (U) : M16×G3/8
- High pressure gauge port : (2)  
(Low amplitude)
- High pressure gauge port : (1)  
(High amplitude)
- 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 vibration mode change switch to " ".

⑤ Start the engine and set throttle switch to "FULL".

⑥ Press F-R lever vibration switch ON.

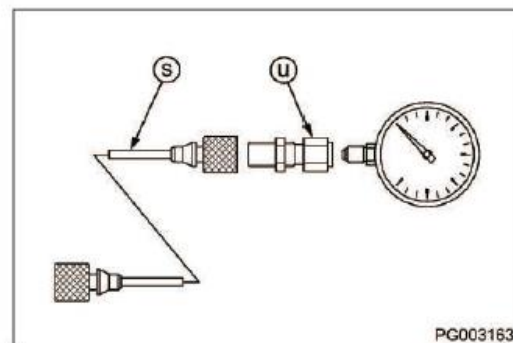
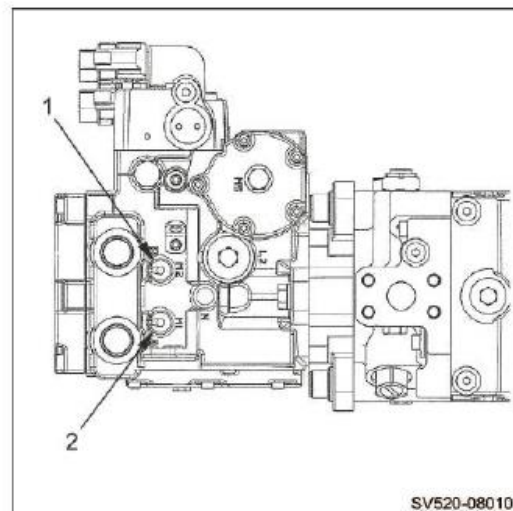
⑦ Read pressure gauge for maximum value of vibrator circuit pressure.

⑧ Turn F-R lever vibration switch OFF as soon as measurement is finished.

★ Maximum circuit pressure

(high pressure relief valve setting)

:  $28.0 \pm 1.0$  MPa ( $4,060 \pm 145$  psi)



① Remove plug (3) and valve from high pressure relief valve port (2-9) or (2-17) of vibrator pump.

- High pressure relief valve port : (2-9)  
(Low amplitude)
- High pressure relief valve port : (2-17)  
(High amplitude)

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.

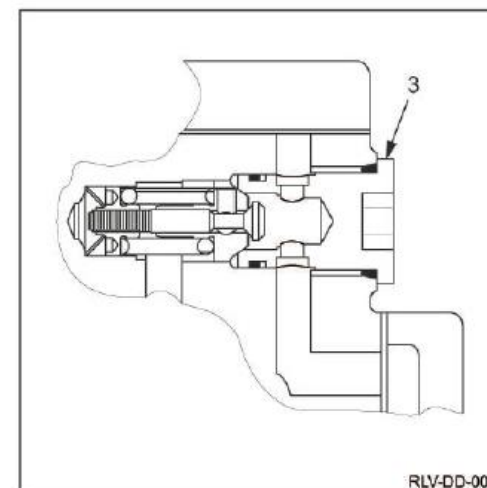
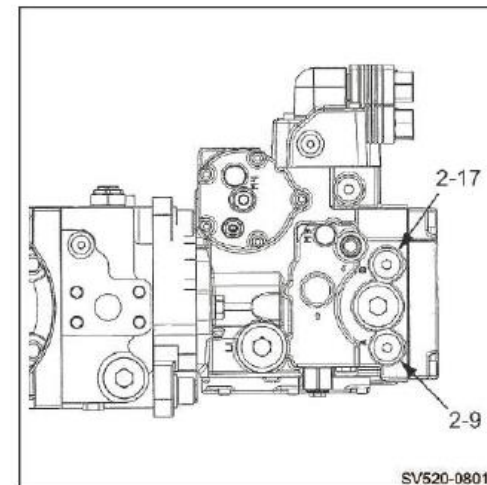
⑤ After inspection, measure pressure again and check that pressure reaches maximum circuit pressure range.



(3) Plug : 70 N·m (52 lbf·ft)

(NOTICE)

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

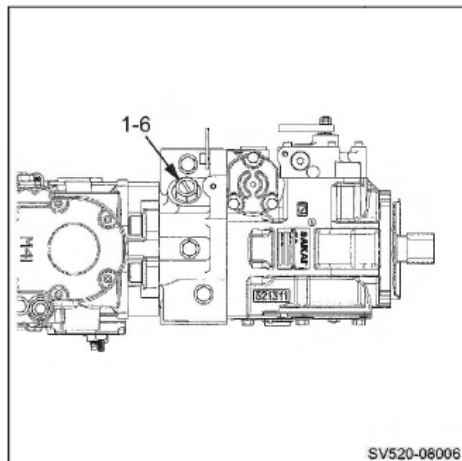




## MEASUREMENT AND ADJUSTMENT OF VIBRATOR CHARGE CIRCUIT PRESSURE

- Since oil in charge circuit is supplied from steering circuit, confirm that steering operation is normal before measurement.
- Propulsion charge circuits and vibration charge circuits consist of parallel circuits. Thus, in order to measure whether vibrator charge circuit pressure is within standard value, use following operation to ensure that oil does not escape to the charge relief valve on propulsion pump side.

- ① Loosen nut (3) from charge relief valve (1-6) on propulsion pump side.
- ② Tighten adjustment screw (4) by two complete turns.
  - Adjustment screw turned clockwise : Pressure rise
  - Adjustment screw turned counterclockwise : Pressure drop
 Pressure change rate : 0.39 MPa/tum (57 psi/tum)

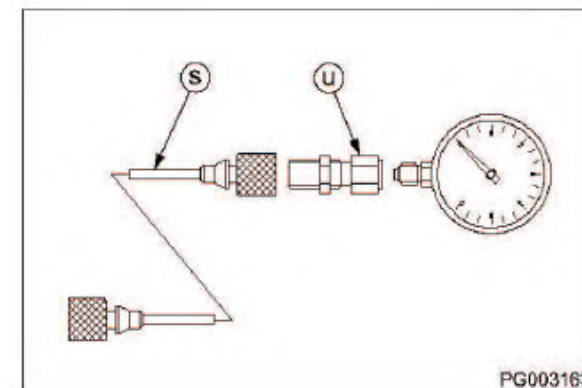
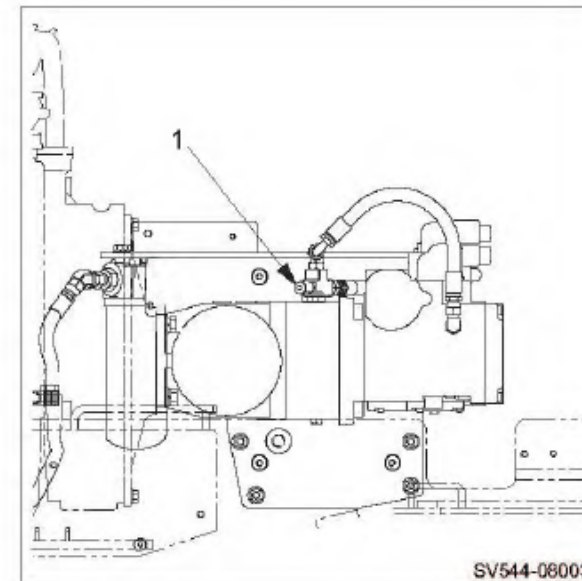


## Measurement

- Oil temperature during measurement :  $50 \pm 5^{\circ}\text{C}$  ( $122 \pm 9^{\circ}\text{F}$ )
- ① Remove plug from coupling (1) of propulsion pump. Attach pressure gauge with hose (S) and connector (U).
    - Coupling : 9/16-18UNF×M16
    - Adapter for hose (S) : M16 P=2.0
    - Pressure gauge connector (U) : M16×G3/8
    - Pressure gauge : 0 to 5 MPa (0 to 725 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 switch to "FULL".
  - ⑤ Read pressure indicated by pressure gauge.

### ★ Standard charge relief valve setting

:  $2.4 \pm 0.2$  MPa ( $348 \pm 29$  psi)



AC Capacity  
1.75 lbs. of R134A  
2 oz of Pag Oil

AC Control Panel



Use care so as not to release any R-134a refrigerant into the atmosphere. A/C systems operate under high pressure. At 77°F the R-134a container will be pressurized to approximately 80 psi. Use caution when working with these materials. Goggles are recommended. To function properly the A/C system must be clean and dry. Keep caps or protective covers on all refrigerant hoses and fittings until final assembly.

