2. SAFETY DECALS

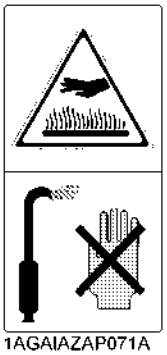
The following safety decals (pictorial safety labels) are installed on the machine. If a decal becomes damaged, illegible or is not on the machine, replace it. The decal part number is listed in the parts list.

WSM000001INI0014US0

(1) Part No. TA040-4957-1
Do not open or remove safety shields while engine is running.

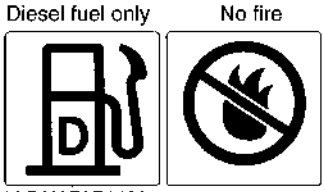
1AGAIAZAP110A

(2) Part No. 3N300-4958-1
Do not touch hot surfaces.



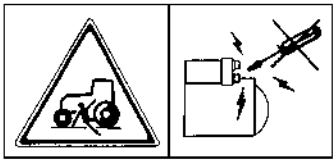
1AGAIAZAP071A

(3) Part No. TA040-4956-2



1AGAIAZAP118A

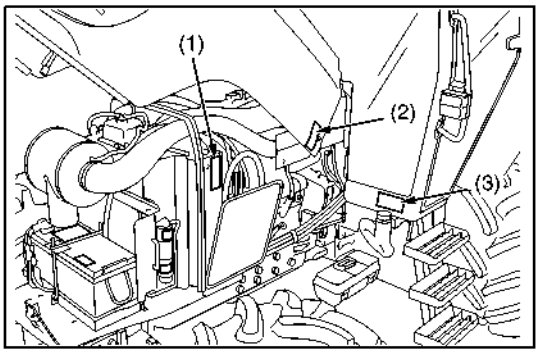
(4) Part No. K3512-4718-1
Start engine from operator's seat only.

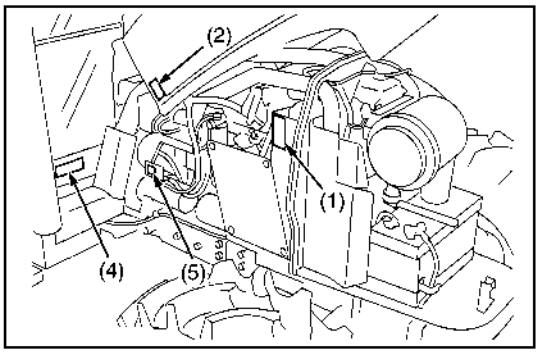


1BDABANAP083B

(5) Part No. 3N600-4958-1
Do not touch hot surface like supply pump, etc..

1AGAIDXAP073A





9Y1210447ICI001US

9Y1210447INI0001US0

4. TRAVELING SPEEDS

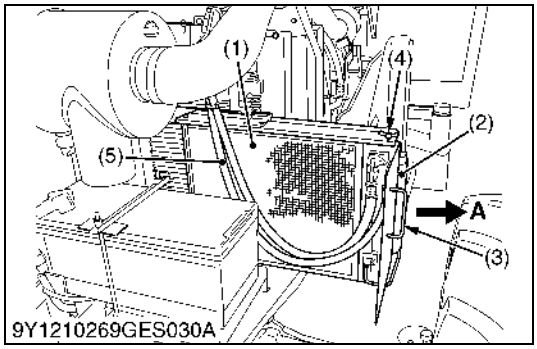
Forward and Reverse

Model	M130X	
Tire size (Rear)	520/70R38	
Range	km/h	mph
C1	0.37	0.23
C2	0.47	0.29
C3	0.59	0.37
C4	0.79	0.49
C5	0.91	0.57
C6	1.15	0.715
C7	1.44	0.895
C8	1.94	1.21
1	2.07	1.29
2	2.62	1.63
3	3.29	2.0
4	4.41	2.74
5	5.07	3.15
6	6.42	3.99
7	8.06	5.01
8	10.80	6.711
9	7.24	4.50
10	9.16	5.69
11	11.50	7.146
12	15.43	9.588
13	17.71	11.00
14	22.42	13.93
15	28.15	17.49
16*	39.64	24.32

(At rated engine rpm)

The company reserves the right to change the specifications without notice.
*At maximum engine rpm

9Y1210447INI0008US0



Checking Air Conditioner Condenser

Check air conditioner condenser to be sure it is clean of debris.

CAUTION

- **Be sure to stop the engine before removing the screen.**
- **The condenser and receiver become hot while the air conditioner is running. Before checking or cleaning them, wait long enough until they cool down.**

1. Loosen the wing bolt.
2. Hold the handle, slide the air conditioner condenser assembly toward yourself.

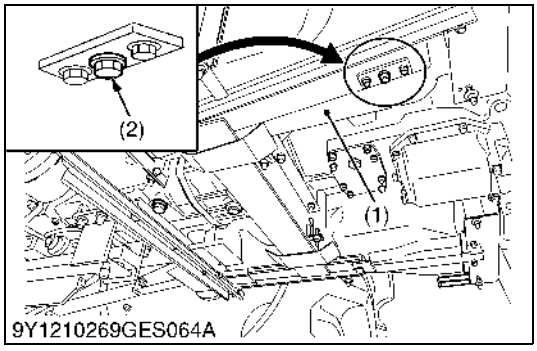
IMPORTANT

- **Do not hold the air conditioner receiver or the air conditioner pipes when sliding out the condenser for cleaning.**

(1) Air Conditioner Condenser
(2) Receiver
(3) Handle
(4) Wing Bolt
(5) Air Conditioner Hose

A: Pull

9Y1210447GEG0085US0



Draining Fuel Tank Water

1. Loosen the drain plug (2) to let sediments, impurities and water out of the fuel tank.
2. Tighten up the drain plug (2).

IMPORTANT

- **If the fuel contains poor qualities with much water in it, drain the fuel tank at shorter intervals.**
- **Drain the fuel tank before operating the tractor after a long period of storage.**
- **The fuel tank is made of plastic. Be careful not to overtighten the bolts.**

(1) Fuel Tank, R.H.
(2) Drain Plug

9Y1210447GEG0086US0

[6] CHECK POINTS OF EVERY 300 HOURS

Replacing Hydraulic Oil Filter (Suction Side)

- See page G-19

9Y1210447GEG0018US0

Replacing Hydraulic Oil Filter (Return Side)

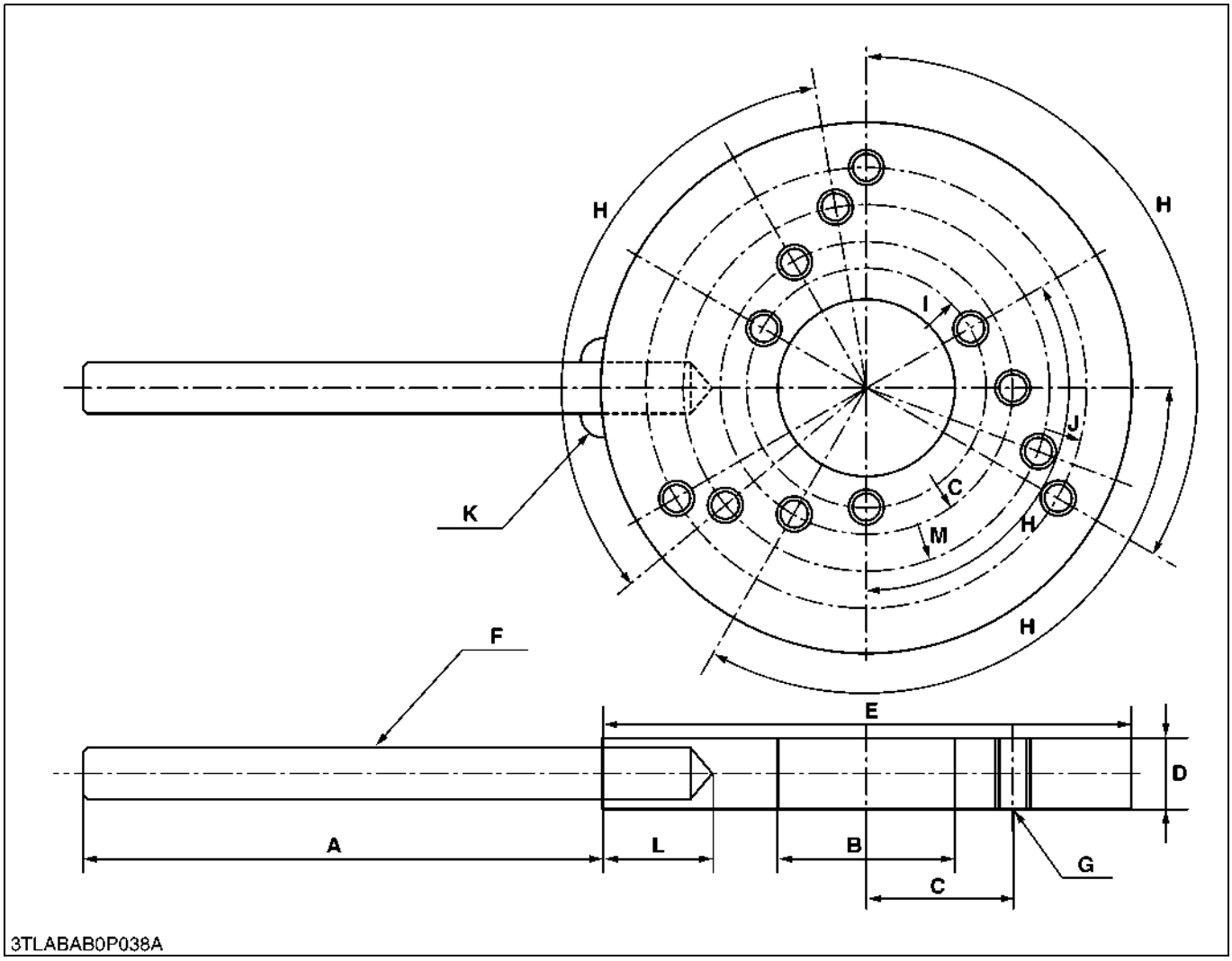
- See page G-19

9Y1210447GEG0019US0

Stopper Magnet Clutch (For A/C Compressor)

Application

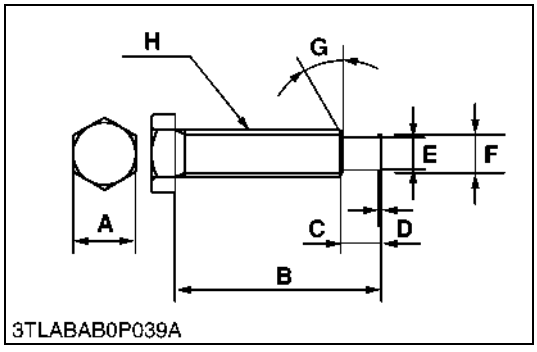
- Use for loosening and tightening the magnet clutch mounting nut.



3TLABAB0P038A

A	125 mm (4.92 in.)	**H**	4.52 rad (120 °)
B	40 mm dia. (1.57 in. dia.)	**I**	Radius 27 mm (Radius 1.06 in.)
C	Radius 33 mm (Radius 1.30 in.)	**J**	Radius 50 mm (Radius 1.97 in.)
D	16 mm (0.63 in.)	**K**	Weld all around
E	120 mm dia. (4.72 in. dia.)	**L**	20 mm (0.78 in.)
F	12 mm dia. (0.47 in. dia.)	**M**	Radius 41 mm (Radius 1.61 in.)
G	3 × M8 × 1.25 All screws		

9Y1210269GEG0092US0



3TLABAB0P039A

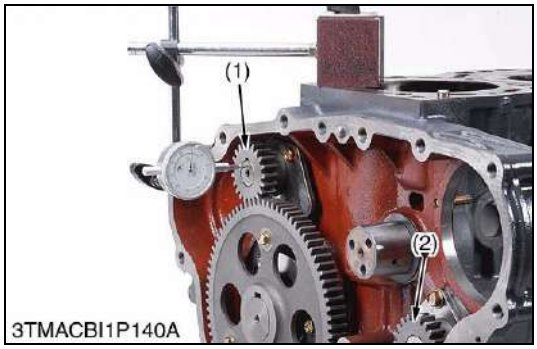
Stopper Bolt (For A/C Compressor)

Application

- Use with the stopper magnet clutch.

A	12 mm (0.47 in.)	**E**	5.5 mm dia. (0.22 in. dia.)
B	35 mm (1.38 in.)	**F**	6.5 mm dia. (0.26 in. dia.)
C	7 mm (0.28 in.)	**G**	0.52 rad (30 °)
D	0.4 mm (0.016 in.)	**H**	M8 × P1.25

9Y1210269GEG0093US0



Balancer Shaft Side Clearance

1. Set a dial indicator with tip on the balancer shaft.
2. Measure the side clearance by moving the balancer shaft to the front and rear.
3. If the measurement exceeds the allowable limit, replace the balancer shaft.

Side clearance of balancer shaft 1, 2	Factory specification	0.070 to 0.215 mm 0.00276 to 0.00846 in.
	Allowable limit	0.3 mm 0.0118 in.

(1) Balancer Shaft 1 (2) Balancer Shaft 2

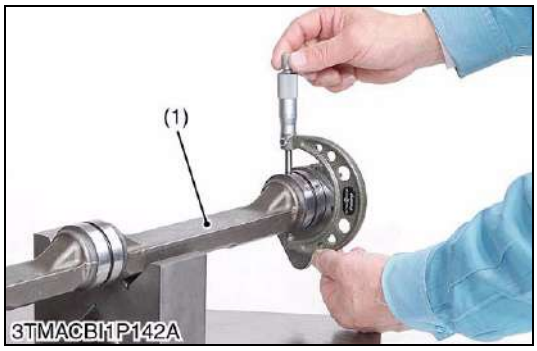
9Y1210269ENS0084US0

Balancer Shaft Alignment

1. Support the balancer shaft with V blocks on the surface plate and set a dial indicator with its tip on the intermediate journal at high angle.
2. Rotate the balancer shaft on the V block and get the misalignment (half of the measurement value).
3. If the misalignment exceeds the allowable limit, replace the balancer shaft.

Balancer shaft 1, 2 alignment	Allowable limit	0.02 mm 0.0008 in.

9Y1210269ENS0085US0

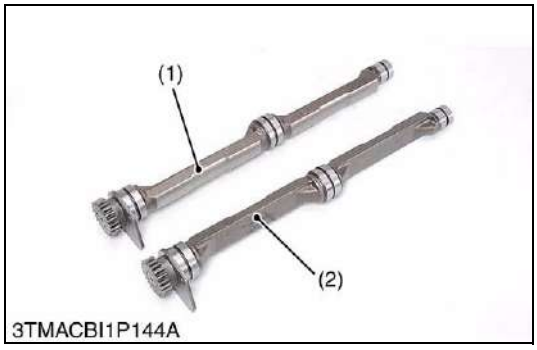


Oil Clearance of Balancer Shaft Journal

1. Measure the balancer shaft journal O.D. with an outside micrometer.
2. Measure the cylinder block bore I.D. for balancer shaft with an inside micrometer.
3. If the clearance exceeds the allowable limit, replace the balancer shaft bearing. If it still exceeds the allowable limit, replace also the balancer shaft.

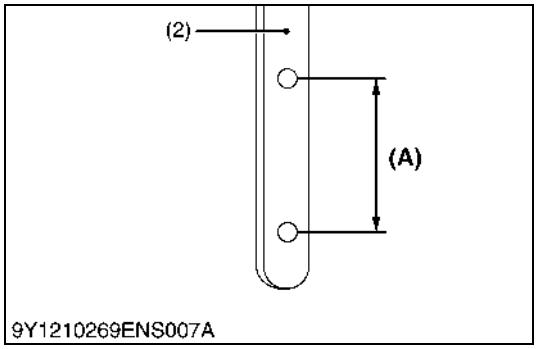
Oil clearance of balancer shaft 1 and 2 journal	Factory specification	0.070 to 0.159 mm 0.00276 to 0.00625 in.
	Allowable limit	0.2 mm 0.0079 in.

Balancer shaft 1 and 2 journal O.D.	Factory specification	54.921 to 54.940 mm 2.1623 to 2.1629 in.
Balancer shaft 1 and 2 bearing I.D.	Factory specification	55.010 to 55.080 mm 2.1658 to 2.1685 in.



(1) Balancer Shaft 1 (2) Balancer Shaft 2

9Y1210447ENS0062US0



Draining Transmission Fluid

1. Place an oil pan underneath the transmission case.
2. Remove the drain plugs (1).
3. Drain the transmission fluid.
4. Reinstall the drain plugs (1).

(When reassembling)

- Fill the transmission fluid up to the proper oil level after removing the filling plug (3).
- After running the engine for few minutes, stop it and check the fluid level again, add the fluid to prescribed level if it is not correct level.

■ **IMPORTANT**

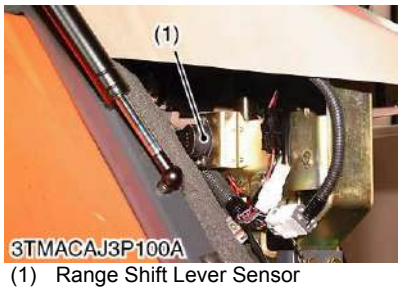
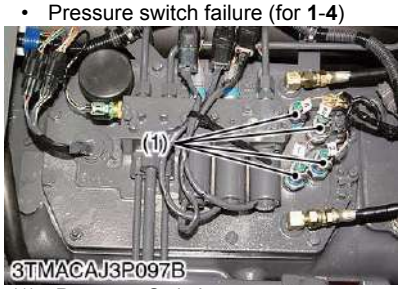
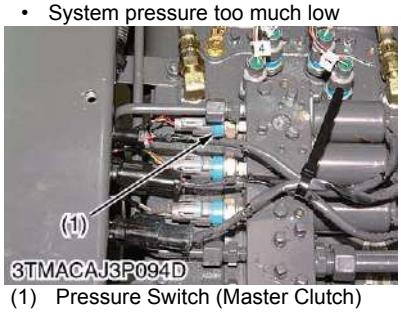
- **Use KUBOTA UDT or KUBOTA SUPER UDT fluid. Use of other fluids may damage the transmission or hydraulic system.**
- **Refer to "4. LUBRICANTS, FUEL AND COOLANT" at "G. GENERAL" section.**
- **Do not mix different brands oil together.**

Transmission fluid	Capacity	60.0 L 63.4 U.S.qts 52.8 Imp.qts

(1) Drain Plug
(2) Dipstick
(3) Filling Plug

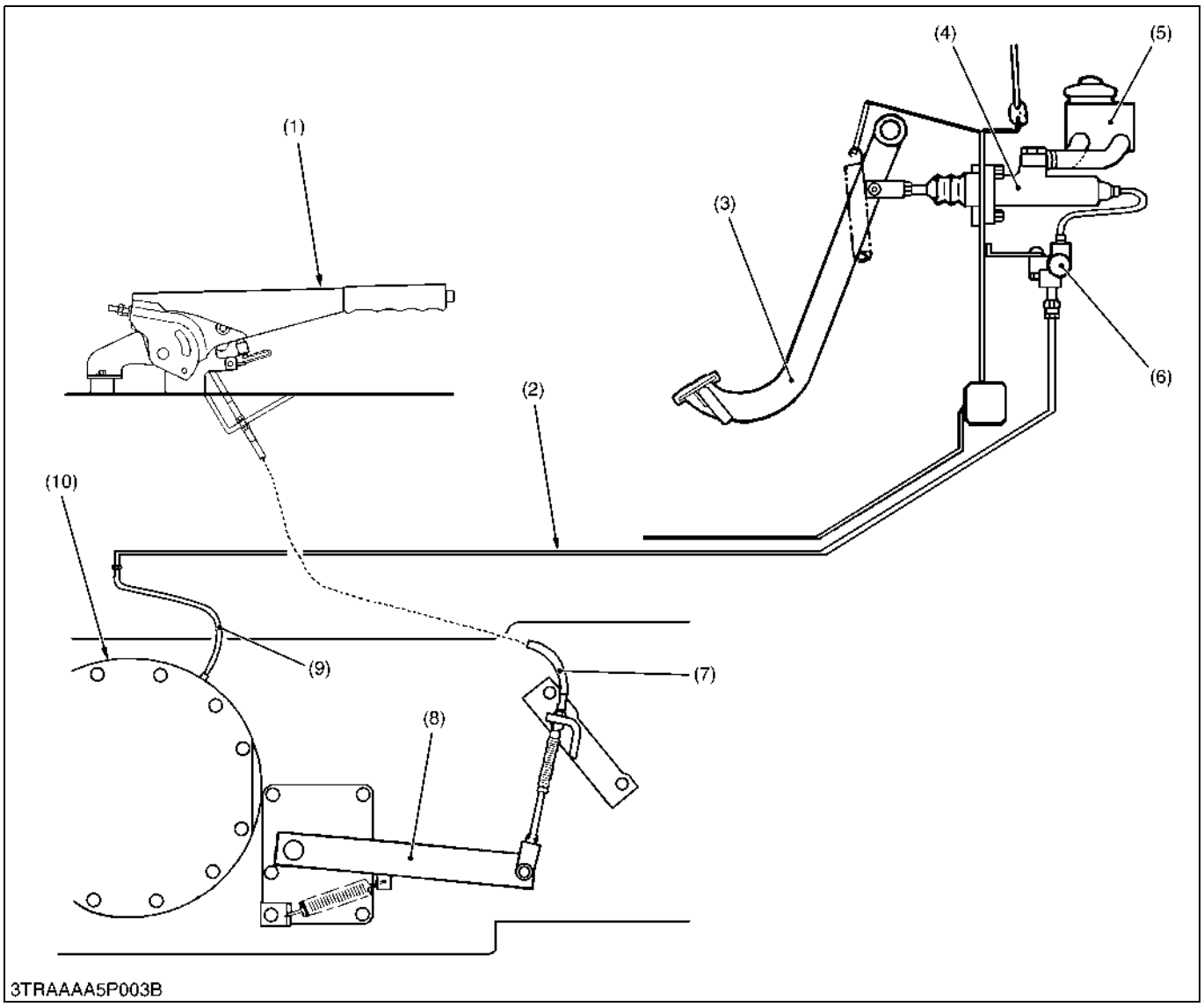
(A) Oil level is acceptable within this range.

9Y1210447CLS0006US0

Indication			Cause	Remarks (Emergency Solution etc.)	Reference page
Shift Indication	**Neutral Lamp**	**Alarm Buzzer**			
	Blinking		Range shift lever sensor (**L**-**H**-**N**) is failed  (1) Range Shift Lever Sensor	This problem occurs when shifting power shift lever.	9-S51
Blinking **P**		Three times continuous alarm sound	Related solenoid valves do not operate. • Related pressure switch is not turned on. • Pressure switch failure (for **1**-**4**)  (1) Pressure Switch	This problem occurs when operating shift button. For example, it will become possible to move the tractor by returning the power shift lever to neutral position and setting it at other position.	9-S38 9-S55
Blinking **n**		Three times continuous alarm sound	Pressure switch for master clutch does not turn **ON**. • Pressure switch failure. • System pressure too much low  (1) Pressure Switch (Master Clutch)	This problem occurs when moving the tractor by operating clutch pedal, shuttle lever or main shift button. In this case tractor can not be operated.	8-S8 9-S38 9-S55
Blinking **n**			Engine stalls. It is normal for blinking **n** to come on when the engine stalls.	Turn the main key switch **OFF** and restart the engine.	–

9Y1210447TRS0001US0

1. STRUCTURE



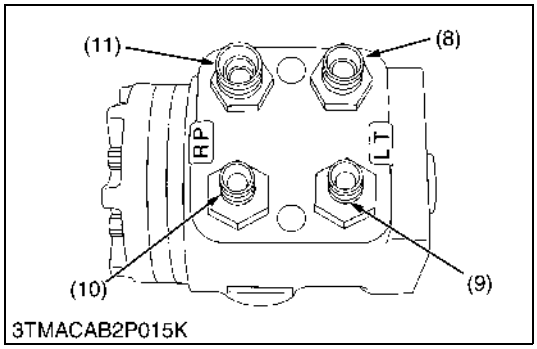
(1) Parking Brake Lever
(2) Brake Pipe
(3) Brake Pedal
(4) Master Cylinder
(5) Brake Oil Reservoir
(6) Equalizer
(7) Parking Brake Wire
(8) Parking Brake Camshaft
(9) Brake Hose
(10) Brake Case

The traveling brake is a hydraulic wet disc type, which consists of the master cylinder (4), equalizer (6), brake pipe (2), brake oil reservoir (5) and others. This type provides high and stable braking effect and requires almost no adjustment.

■ **NOTE**

- **Refer to "5. BRAKES" section in the workshop manual of tractor mechanism (Code No. 9Y021-18200).**

9Y1210269BRM0001US0



Piping and Power Steering Controller

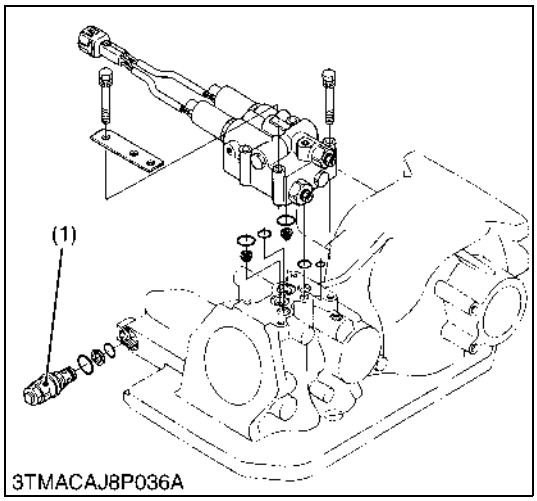
1. Remove the steering joint shaft mounting screw (6).
2. Disconnect the joint shaft (7) from steering controller (5).
3. Remove the turning delivery hoses (1), (2).
4. Remove the main delivery pipe (4) and return pipe (3).
5. Remove the steering controller mounting screws.
6. Remove the steering controller (5).

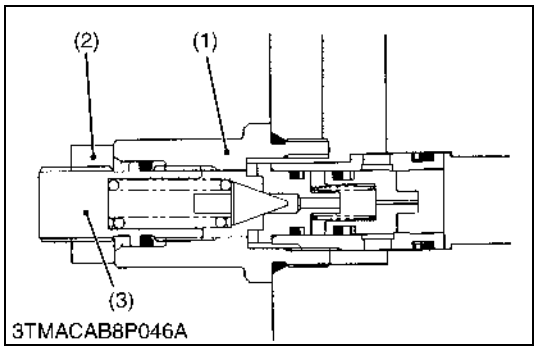
Tightening torque	Main delivery pipe and return pipe retaining nut	49.0 to 68.6 N·m 5.0 to 7.0 kgf·m 36.2 to 50.5 lbf·ft
	Turning delivery hose retaining nut	22.6 to 27.5 N·m 2.3 to 2.8 kgf·m 16.7 to 20.2 lbf·ft
	Steering controller mounting screw	48.1 to 55.9 N·m 4.9 to 5.7 kgf·m 35.4 to 41.2 lbf·ft
	Steering joint shaft mounting nut	17.0 to 24.0 N·m 1.8 to 2.4 kgf·m 12.6 to 17.7 lbf·ft

(1) Turning Delivery Hose (L)
(2) Turning Delivery Hose (R)
(3) Return Pipe
(4) Main Delivery Pipe
(5) Steering Controller
(6) Screw
(7) Steering Joint Shaft
(8) Return Port
(9) Left Turning Port
(10) Right Turning Port
(11) Pump Port

9Y1210447STS0003US0

(7) 3-Point Hitch System





Relief Valve Setting Pressure

1. Set the relief valve set pressure adaptor **G** (Code No.: 07916-52751) to the half male of the quick coupler and then set a pressure gauge (Code No.: 07916-50321), cable (Code No.: 07916-50331).
2. Start the engine, set a maximum speed.
3. Set the auxiliary control valve operation lever to the **DN** position and read the pressure gauge when the relief valve is actuated.
4. If the pressure is not within the factory specification, adjust the relief valve adjustor (3).

Condition

- Engine speed:
  Idling speed
- Oil temperature:
  45 to 55 °C (113 to 131 °F)

Relief valve setting pressure	Factory specification	19.1 to 19.6 MPa 195 to 200 kgf/cm^2 2773 to 2845 psi

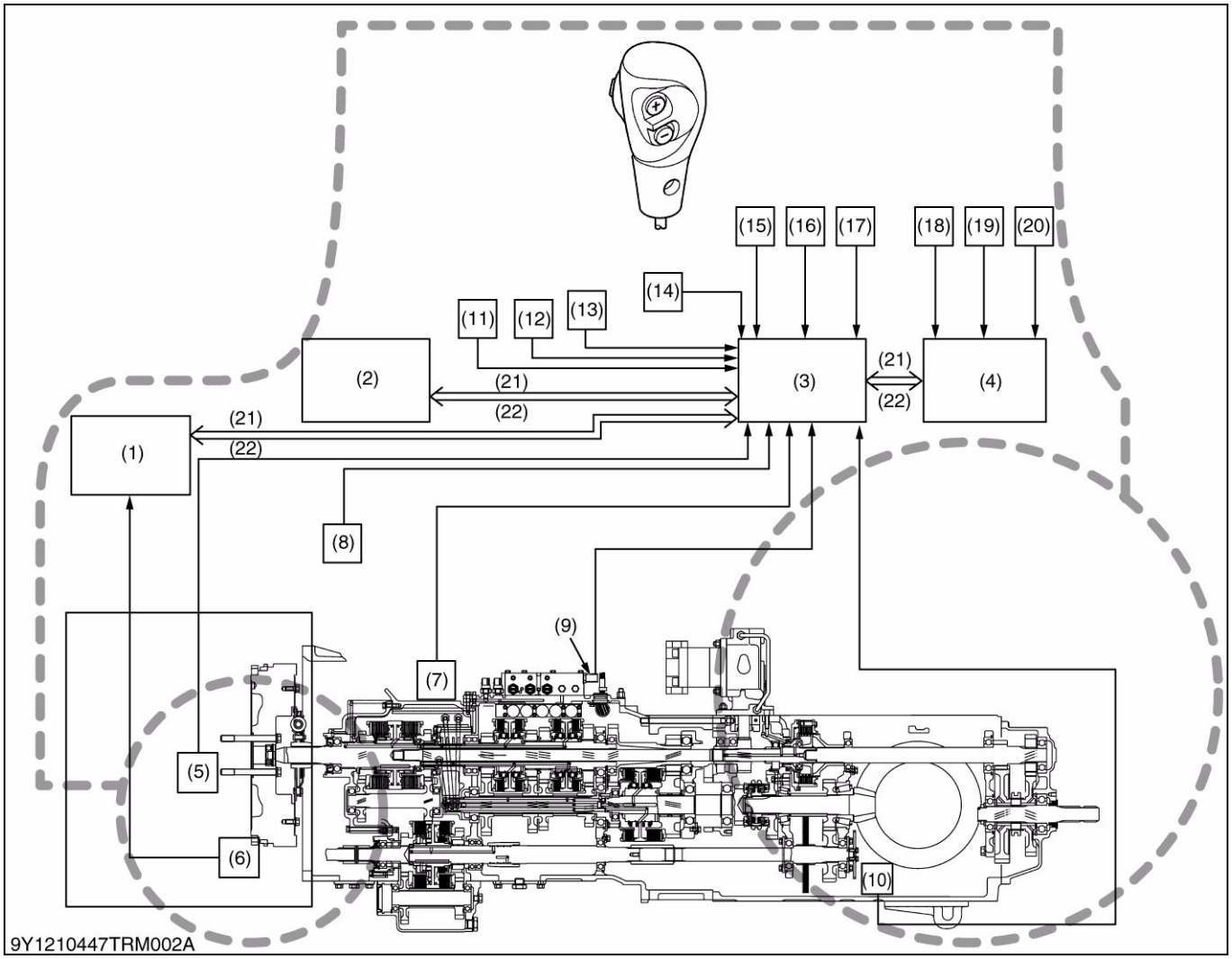
(1) Relief Valve
(2) Lock Nut
(3) Adjustor

9Y1210447HYS0007US0

2. POWER SHIFT CONTROL

[1] SYSTEM OUTLINE

(1) Control System



(1) ECU (CRS)
(2) INSTRUMENT PANEL ECU
(3) ECU (MAIN)
(4) ECU (SUB)
(5) Turning Angle Switch
(6) Crankshaft Position Sensor
(7) Shuttle Rotation Sensor
(8) Clutch Pedal Sensor
(9) Oil Temperature Sensor
(10) Traveling Speed Sensor
(11) Shuttle Switch
(12) Foot Throttle Sensor
(13) Hand Throttle Sensor
(14) Power Shift / Range Shift Lever Sensor
(15) Rev-limiter Control Dial
(16) RPM Dual Memory Switch
(17) Constant RPM Management Switch
(18) Auto Mode Switch
(19) Auto Mode Sensitivity Adjustment Dial
(20) Down Hill Control Switch
(21) CAN (Hi Side)
(22) CAN (Lo Side)

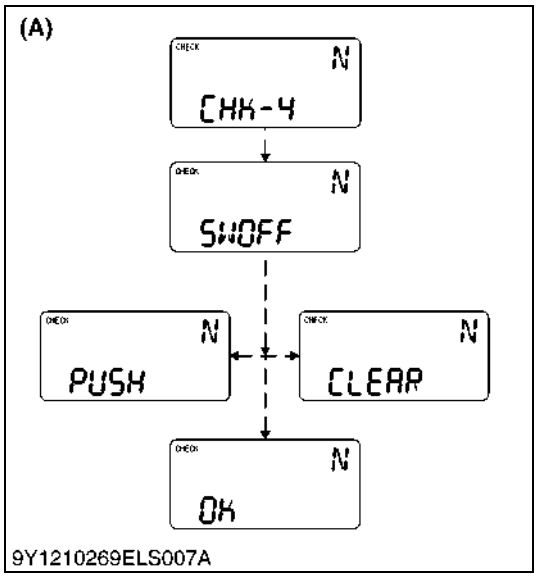
(To be continued)

(4) Clearing the Diagnostic Trouble Code (DTC) History

Procedure 1: Setting Menu and Mode

1. Set the menu item **"CHK"**.
   Refer to the "(2) Information for Setting Menu and Mode at [1] OUTLINE FOR METHOD OF SELF DIAGNOSIS, FINE-ADJUSTING AND EASY CHECKING ".
2. Set the mode item **"CHK-4"**.
   Refer to the "(2) Information for Setting Menu and Mode at [1] OUTLINE FOR METHOD OF SELF DIAGNOSIS, FINE-ADJUSTING AND EASY CHECKING ".

9Y1210269ELS0175US0



9Y1210269ELS007A

9Y1210269ELS001C

Procedure 2: Clearing the DTC History

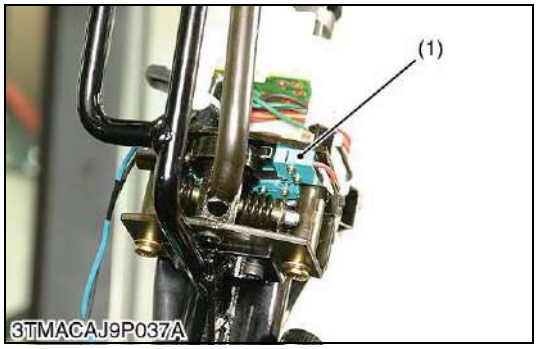
1. Make sure that **"PUSH"** and **"CLEAR"** blinks alternately.
2. Push and hold the engine RPM dual memory A/B indicator switch (1) more than 3 seconds until **"OK"** appears on the display.
3. After confirming **"OK"**, turn the main key switch **OFF**.

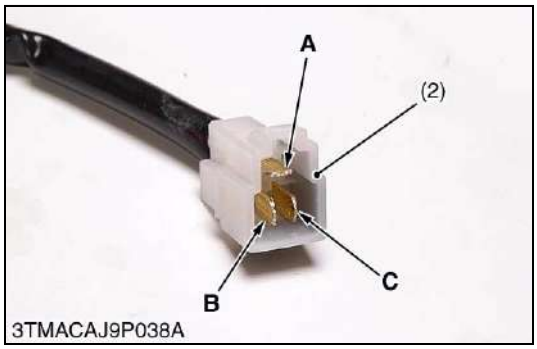
(1) Engine RPM Dual Memory A/B Indicator Switch

(A) Flow Chart (CHK-4)

9Y1210447ELS0031US0

(10) Checking Shuttle Switch





Shuttle Switch

1. Check the continuity between connector terminal as shown in table below.
2. If the switch is defective, replace it.

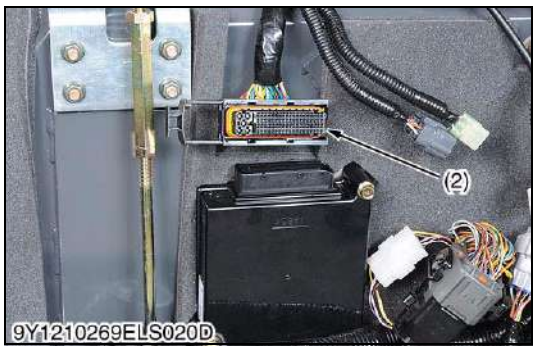
Item	Terminal	Position	Resistance
Shuttle Switch	Terminal **A** – **B**	N	Infinity
	Terminal **A** – **C**		
	Terminal **A** – **C**	F	0 Ω
	Terminal **A** – **B**	R	0 Ω

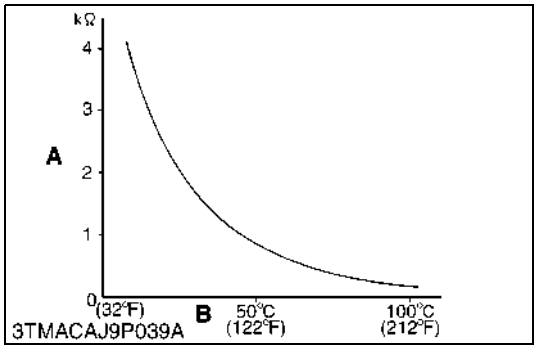
(1) Shuttle Switch
(2) Shuttle Switch Connector

A: Terminal A
B: Terminal B
C: Terminal C

9Y1210269ELS0046US0

(11) Checking Transmission Oil Temperature Sensor

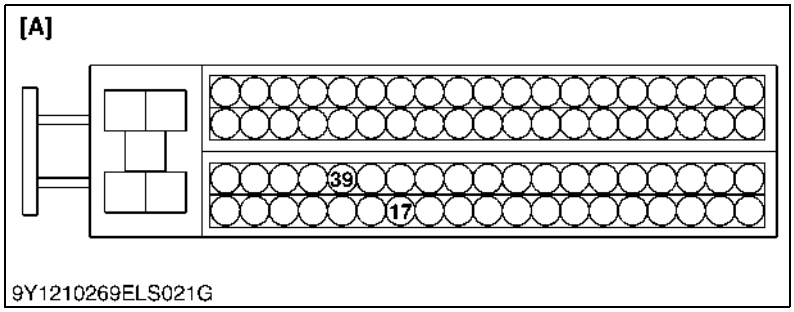




Transmission Oil Temperature Sensor

1. Remove the **CNT-A** connector (2).
2. Check resistance between terminals **A17** (White / Black) and **A39** (Black / Yellow) of the wire harness side.
3. It is OK if the resistance value is approximate to the value shown in the table below.
4. If there exists a large difference in resistance between both the values, replace the oil temperature sensor.

Resistance	Terminal **A17** – **A39**	Refer to figure left.

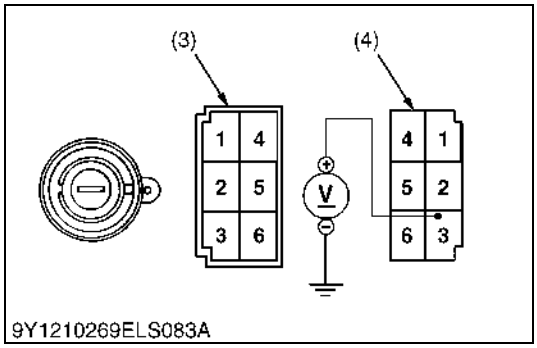


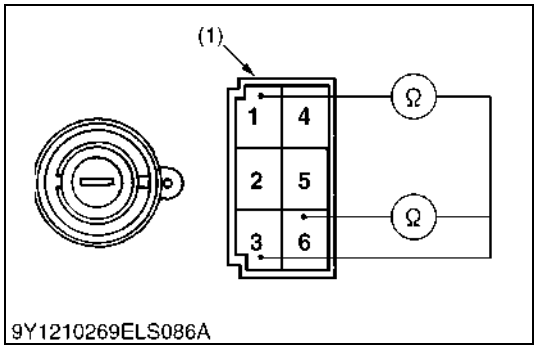
(1) Transmission Oil Temperature Sensor
(2) Connector

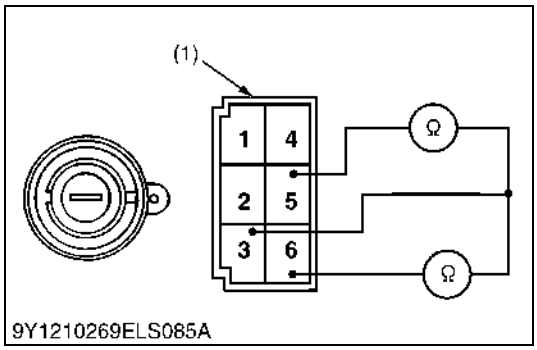
[A] CNT-A
A: Resistance
B: Temperature

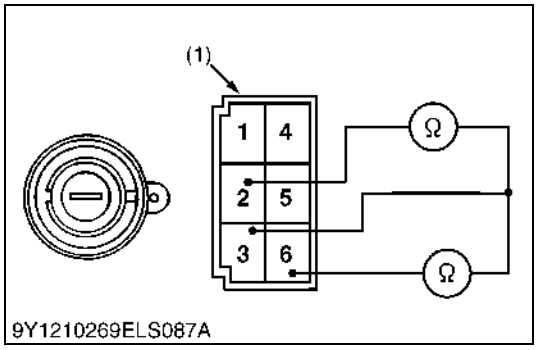
9Y1210269ELS0047US0

(2) Main Key Switch









Connector Voltage

1. Remove the rear bonnet R.H. (2).
2. Disconnect the main key switch connector after turning the main key switch **OFF**.
3. Measure the voltage with a voltmeter across the connector terminal **3** and chassis.
4. If the voltage differs from the battery voltage (11 to 14 V), the wiring harness is faulty.

Voltage	Connector terminal **3** – Chassis	Approx. battery voltage

(1) Main Key Switch
(2) Rear Bonnet R.H.
(3) Main Key Switch (Switch Side)
(4) Main Key Switch Connector (Wire Harness Side)

9Y1210447ELS0069US0

Main Key Switch at ON Position

1. Turn and hold the main key switch at **ON** position.
2. Measure the resistance with an ohmmeter across the terminal **3** and the terminal **1**, and across the terminal **3** and the terminal **6**.
3. If 0 ohm is not indicated, these contacts of the main key switch are faulty.

Resistance	Terminal **3** – Terminal **1**	0 Ω
	Terminal **3** – Terminal **6**	0 Ω

(1) Main Key Switch Connector

9Y1210447ELS0070US0

Main Key Switch at START Position

1. Turn and hold the main key switch at the **START** position.
2. Measure the resistance with an ohmmeter across the terminal **3** and the terminal **5**, and across the terminal **3** and the terminal **6**.
3. If 0 ohm is not indicated, these contacts of the main key switch are faulty.

Resistance	Terminal **3** – Terminal **5**	0 Ω
	Terminal **3** – Terminal **6**	0 Ω

(1) Main Key Switch Connector

9Y1210447ELS0071US0

Main Key Switch at PREHEAT Position

1. Turn and hold the main key switch at the **PREHEAT** position.
2. Measure the resistance with an ohmmeter across the terminal **3** and the terminal **2**, and across the terminal **3** and the terminal **6**.
3. If 0 ohm is not indicated, these contacts of the main key switch are faulty.

Resistance	Terminal **3** – Terminal **2**	0 Ω
	Terminal **3** – Terminal **6**	0 Ω

(1) Main Key Switch Connector

9Y1210447ELS0072US0

Symptom	Probable Cause	Solution	Reference Page
Insufficient Cooling (Compressor Does Not Rotate Properly)	Belt slipping	Adjust or replace	G-32
	Magnetic clutch defective	Repair or replace	10-S23 10-S41
	Compressor defective	Replace	10-S40
Insufficient Cooling (Others)	Thermostat defective	Replace	–
	Water valve defective	Replace	–
	Condenser fin clogged with dust	Clean	–
	Expansion valve defective	Replace	–
Insufficient Heating	Water valve defective	Replace	–
	Air mix door malfunctioning	Adjust control cable	10-S42
	Insufficient coolant	Fill	G-37
Too Low Air Flow Rate (Blower Motor Does Not Run)	Blower fan switch defective	Check and repair	10-S25
	A/C main relay defective	Replace	10-S24
	Brush in poor contact	Replace	–
	Fuse blown out	Replace	–
	Wrong wiring or loose connections	Check and repair	–
Too Low Air Flow Rate (Flow Rate Does Not Change in 3 Steps)	Blower resistor defective	Replace	10-S26
	Relay defective	Replace	10-S24
	Blower fan switch defective	Replace	10-S25
Too Low Air Flow Rate (Others)	Blower is not tightened enough	Check and repair	10-S26
	Blower deformed	Replace	10-S26
	Blower in contact with casing	Check and repair	–
	Obstacle at or near suction port	Check and repair	–
	Evaporator frosted	Clean or replace	–
	Filter clogged	Clean or replace	–
	Blow duct clogged or missing	Check and repair	10-S43
Insufficient Cooling (Compressor Magnetic Clutch Does Not Work)	Low battery voltage	Charge	G-23 G-24
	Rotor in contact with stator	Replace	–
	Wrong wiring loose connections	Check and repair	–
	Relay defective	Replace	10-S24
	Coil shortage	Replace	10-S23
	Ground malfunction	Check and Repair	–
	Coil burst out	Replace	10-S23
Insufficient Cooling (Hi-pressure Level is Too High)	Refrigerant overcharged	Check with manifold gauge	10-S21 10-S22
	Condenser clogged with dust and dirt	Clean	–
	Air mixed	Check with manifold gauge	–
Insufficient Cooling (Hi-pressure Level is Too Low)	Insufficient refrigerant charge	Check with manifold gauge	10-S22
	Low-pressure pipe in trouble (Cracked or clogged)	Replace	10-S44