TOYOTA

REPAIR MANUAL

5FBC13-30

CE305

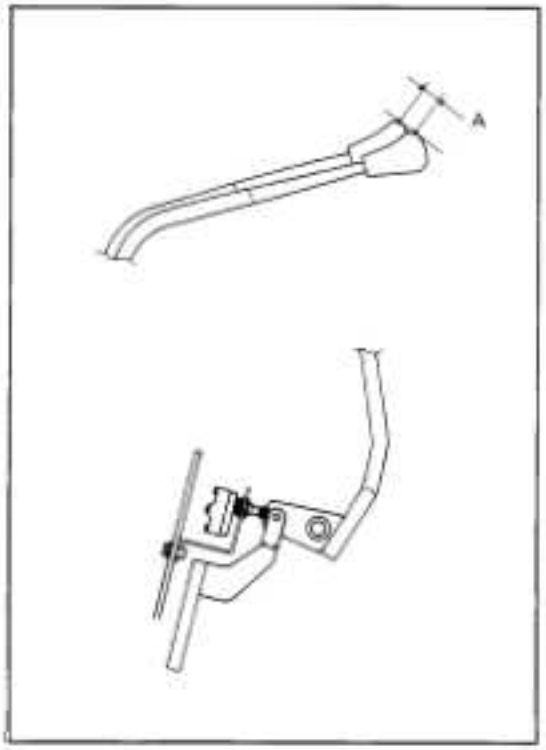
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GENERAL

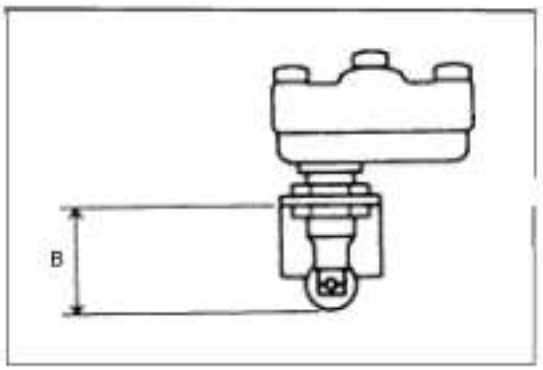
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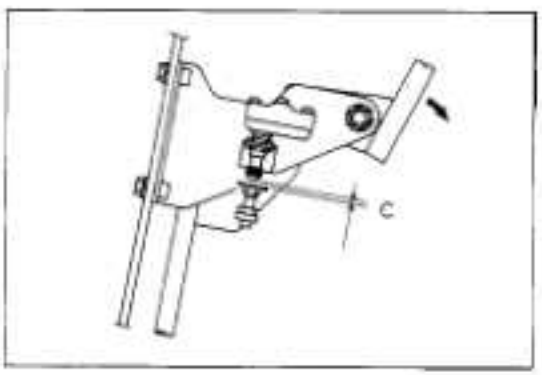
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MATERIAL HANDLING SWITCH ADJUSTMENT

1. Adjust the ON timing of switch (LS_{L1}) when the control lever is operated. The switch shall be turned ON at dimension A at the tip end of the control lever.
   Standard
   A = 5 — 20 mm (0.2 – 0.79 in)
   If the standard is not satisfied, make adjustment by the roller protrusion and mounting position.





MATERIAL HANDLING CHOPPER SWITCH (OPT) ADJUSTMENT

1. Adjust the ON timing of material handling chopper switch (LS_{L2}).
   (1) Adjust protrusion (B) of roller of LS_{L2}. Dimension B is the reference value for installation.
   B = 25 mm (0.98 in)
   (2) Pull the lift lever and keep it in the state without any looseness.
   (3) Measure the clearance between the switch roller tip end and the plate.
   Standard

Specification	Dimension C mm (in)
STD	4.5 ± 0.5 (0.177 ± 0.02)
Refrigerated specification Rustproof specification	3.5 ± 0.5 (0.138 ± 0.02)

If the standard is not satisfied, make adjustment by turning the adjusting bolt.

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GENERAL

This troubleshooting is to pursue the causes of diagnostic error indicated by the error code on the multidisplay and other electric troubles for quick repair.

Measuring instruments such as the megger and multimeter are used for the error check. Some error items may be checked by the analyzer on the vehicle.

Descriptions in this manual are for the mechanics who have mastered handling of measuring instruments, can read wiring and connection diagrams accurately and can make actual measurements using the connector drawing.

Please make use of the attached connection diagram, connector drawing and connector terminal arrangement.

TROUBLESHOOTING EXPLANATION

1. Drive system . material handling system troubles

   (1) When an error code is displayed:
   See the "Diagnosis Errors" section (page 4-4).
   (2) When no error code is displayed:
   ① Drive system abnormality
   See the "When Diagnostic Result is Not Displayed (Drive System" section (page 4-71).
   ② Material handling system abnormality
   See the "When Diagnostic Result is Not Displayed (Material Handling System)" section (page 4-106).

2. Trouble shooting-other
   See the "Trouble shooting-other" section (page 4-116)

3. Troubleshooting related to multi-display and MCS communication system
   See the "Multi-display . MCS Communication System" section (on page 4-113).

4. Steering system troubleshooting
   (1) When an error code is displayed:
   See the "Diagnosis Error" section (page 4-114).
   (2) When no error code is displayed (STD):
   See the "No Diagnosis Error" section (page 4-117).
   (3) When no error code is displayed (w/EHPS)
   See the "No Diagnosis Error" section (page 4-119)

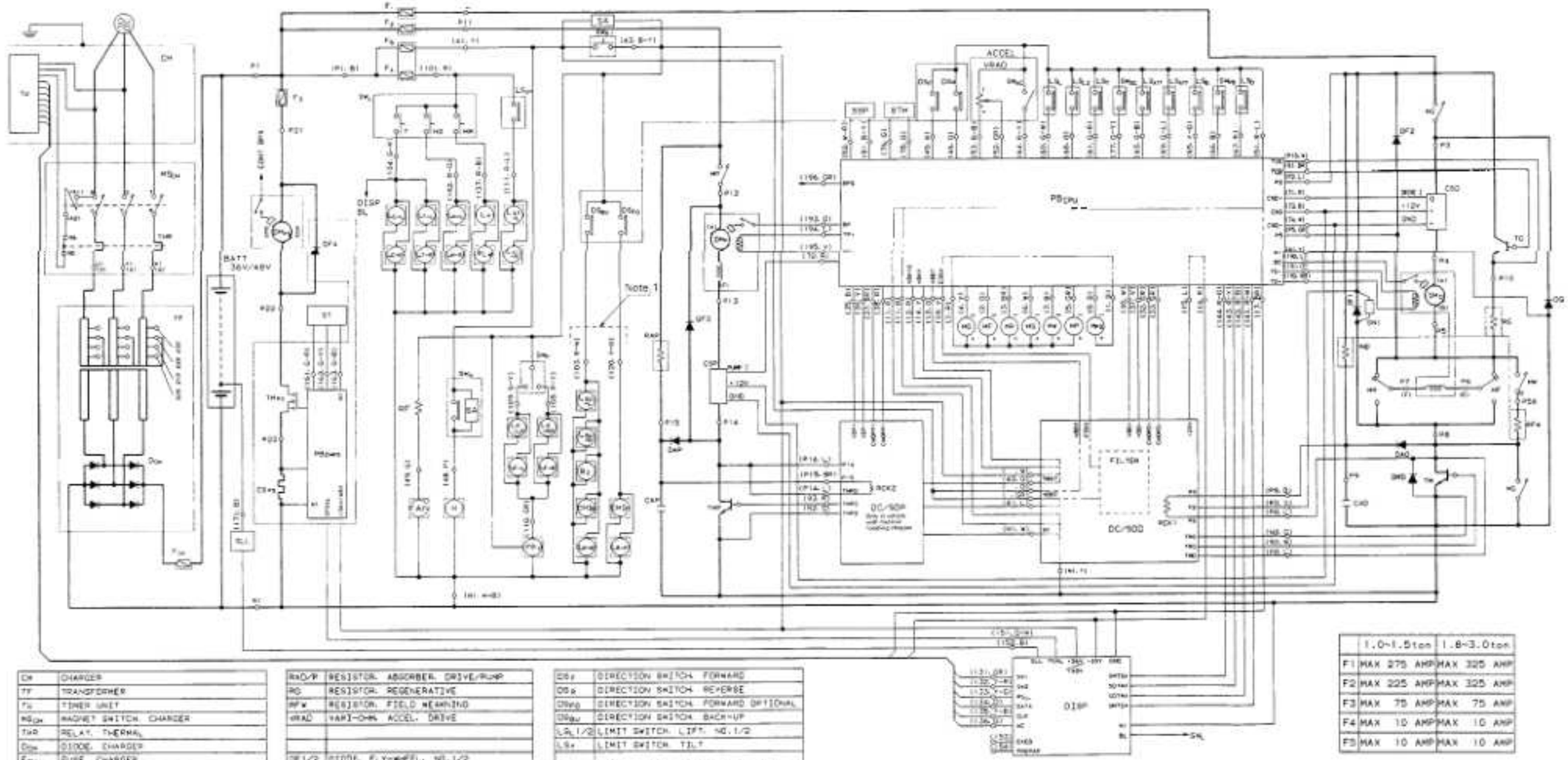
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		1 ton series	2 ton series	3 ton series
CAD·CAP conduction (Tester range Ω x 1K)	Ω	When the tester probes are brought into contact with the CAD and CAP terminals, the pointer initially diflects, then gradually reterns until it finally indicates ∞. (As CAD and CAP is charged by the current from the tester.)		
MF·MR·MS·MG·MW·MP Coil resistance (Tester range Ω x 1)	Ω	20 (20°C) (68°F)		
RG resistance (Tester range Ω × 1)	Ω	About 0.6		
RAD·RAP resistance (Tester range Ω x 1)	Ω	About 1.5		
RFW resistance (Tester range Ω x 1)	Ω	See text (page 2-18)		
OCL value (Drive circuit)	A	440±50	620a60	←

Tightening torque			N·m (kg-cm) [ft-lb]
Traveling circuit			
TM	For harness set	M5	2.13 – 2.75 (22 – 28) [1.59 ~ 2.03]
		M4	1.18 – 1.77 (12 – 18) [0.87 ~ 1.30]
	For mounting	M5	2.13 – 2.75 (22 ~ 28) [1.59 ~ 2.03]
DF1·DF2	For harness set	M6	3.14 – 3.73 (32 – 38) [2.32 ~ 2.75]
	For mounting	M6	3.14 – 3.73 (32 ~ 38) [2.32 ~ 2.75]
DG	For harness set	M6	4.61 ~ 5.20 (47 – 53) [3.40 ~ 3.83]
	For mounting	M20	21.28 ~ 21.87 (217 ~ 223) [15.70 ~ 16.13]
DAD	For mounting	M6	2.13 – 2.75 (22 – 28) [1.59 ~ 2.03]
TG	For harness set	M5	2.13 – 2.75 (22 ~ 28) [1.59 ~ 2.03]
	For mounting	M5	2.13 – 2.75 (22 ~ 28) [1.59 ~ 2.03]

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WIRING DIAGRAM (FOR OTHER THAN U.S.A.)



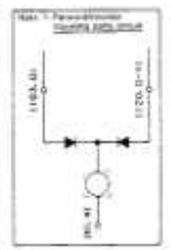
CH	CHARGER
TF	TRANSFORMER
TU	TIMER UNIT
MS$_{CH}$	MAGNET SWITCH, CHARGER
THR	RELAY, THERMAL
D$_{CH}$	DIODE, CHARGER
F$_{CH}$	FUSE, CHARGER
BATT	BATTERY
F1	FUSE, DRIVE
F2	FUSE, PUMP
F3	FUSE, POWER STEERING
F4	FUSE, LAMP
F5	FUSE, CONTROL CIRCUIT
PB$_{CPU}$	PRINT BOARD, COMPUTER
DC-SDD	DC-DC CONVERTER(SOURCE DRIVE(DRIVE)
DC-SDP	DC-DC CONVERTER(SOURCE DRIVE(PUMP)
PB$_{EPS}$	PRINT BOARD, EMPS
SDD	SIT DRIVER, DRIVE
SDP	SIT DRIVER, PUMP
DISP	DISPLAY
SM$_{DRIVE}$	MOTOR, DRIVE(TRAVEL)
SM$_{PS}$	MOTOR, POWER STEERING
TM	TRANSISTOR, MAIN
TMP	TRANSISTOR, MAIN, PUMP
TM$_{PS}$	TRANSISTOR, MAIN, POWER STEERING
TD	TRANSISTOR, REGENERATIVE

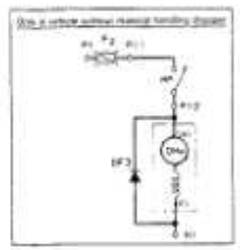
RA/P	RESISTOR, ABSORBER, DRIVE/PUMP
RG	RESISTOR, REGENERATIVE
RFW	RESISTOR, FIELD WEAKNING
VRAD	VARI-OHM, ACCEL, DRIVE
DF1/2	DIODE, FLY-WHEEL, NO.1/2
DF3/4	DIODE, FLY-WHEEL, NO.3/4
DAD/P	DIODE, ABSORBER, DRIVE/PUMP
DG	DIODE, REGENERATIVE
DRG	DIODE, REVERSE, DRIVE
CAD/P	CAPACITOR, ABSORBER, DRIVE/PUMP
CSC/P	CURRENT SENSOR, DRIVE/PUMP
CS$_{PS}$	CURRENT SENSOR, POWER STEERING
SSP	SENSOR, SPEED
ST	SENSOR, STEERING TORQUE
STH	SENSOR, THERMO
SLL	SENSOR, LEGRIS LEVEL
MF	CONTACTOR, FORWARD
MR	CONTACTOR, REVERSE
MP	CONTACTOR, PUMP
MG	CONTACTOR, REGENERATIVE
MS	CONTACTOR, SHORT
M$_{PS}$	CONTACTOR, POWER STEERING
MW	CONTACTOR, FIELD WEAKNING

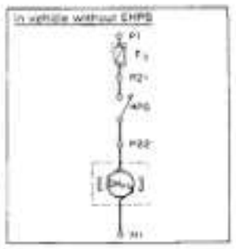
DS$_F$	DIRECTION SWITCH, FORWARD
DS$_R$	DIRECTION SWITCH, REVERSE
DSW$_O$	DIRECTION SWITCH, FORWARD OPTIONAL
DSW$_{BU}$	DIRECTION SWITCH, BACK-UP
LSL1/2	LIMIT SWITCH, LIFT, NO.1/2
LS$_T$	LIMIT SWITCH, TILT
LS$_{ATT1/2}$	LIMIT SWITCH, ATTACHMENT, NO.1/2
LS$_{SL}$	LIMIT SWITCH, STOP LAMP
LS$_B$	LIMIT SWITCH, BRAKE
LS$_{PB}$	LIMIT SWITCH, PARKING BRAKE
LS$_D$	LIMIT SWITCH, DEAD MAN
SW$_{AC}$	SWITCH, ACCEL
SW$_{KY}$	SWITCH, KEY
SW$_L$	SWITCH, LIGHT
SW$_F$	SWITCH, FLASHER
SW$_H$	SWITCH, HORN
SW$_{SC}$	SWITCH, SPEED CONTROL
PL$_W$	PILOT LAMP, WORKING
L$_{HLH}$	LAMP, HEAD LH
L$_{HRH}$	LAMP, HEAD RH
L$_{CLH}$	LAMP, CLEARANCE LH
L$_{CRH}$	LAMP, CLEARANCE RH
L$_{TLH}$	LAMP, TAIL LH
L$_{TRH}$	LAMP, TAIL RH
L$_W$	LAMP, WORKING
LF$_{LH}$	LAMP, FLASHER LH (REAR)
LF$_{RH}$	LAMP, FLASHER RH (REAR)
LF$_{FLH}$	LAMP, FLASHER LH
LF$_{FRH}$	LAMP, FLASHER RH

LST$_{FLH}$	LAMP, STOP LH
LST$_{FRH}$	LAMP, STOP RH
LT$_{RF}$	LAMP, ROTALY FORWARD
LB$_{RH}$	LAMP, ROTALY REVERSE
LB$_{RLH}$	LAMP, BACK-UP LH
LB$_{RRH}$	LAMP, BACK-UP RH
B$_Z$	BUZZER
CH$_{FW}$	CHIME, FORWARD
CH$_{REV}$	CHIME, REVERSE
H	HORN
FR$_F$	RELAY, FLASHER
SA	SURGE ABSORBER
SN1	SNUBBER NO.1
RF	RESISTOR, FAN

	1.0~1.5ton	1.8~3.0ton
F1	MAX 275 AMP	MAX 325 AMP
F2	MAX 225 AMP	MAX 325 AMP
F3	MAX 75 AMP	MAX 75 AMP
F4	MAX 10 AMP	MAX 10 AMP
F5	MAX 10 AMP	MAX 10 AMP







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