ELECTRICAL DIAGRAM (OPTIONAL)

NOME	DESCRIZIONE	COSTRUTTORE	TIPO	QTA
H1	GIROFARO /BEACON LIGHT	CIAM	110450 (KUE 88511110)	1
H10	FARO DI LAVORO POSTERIORE SX / LEFT REAR WORK LIGHT	COBO	05-531-000 (K. 88511132)	1
H11	FARO DI LAVORO POSTERIORE DX / RIGHT REAR WORK LIGHT	COBO	05-531-000 (K. 88511132)	1
H12	LUCE TARGA / PLATE LIGHT	COBO	02224.600 (KUE 88510092)	1
H4	FARO ANABBAGLIANTE SX / LEFT LOW BEAM	COBO	(KUE 88511133)	1
H5	FANALINO ANTERIORE SX / LEFT SIDE LIGHT	COBO	(KUE 88513935)	1
H6	FARO ANABBAGLIANTE DX / RIGHT LOW BEAM	COBO	(KUE 88511133)	1
H7	FANALINO ANTERIORE DX / RIGHT SIDE LIGHT	COBO	(KUE 88513935)	1
H8	FANALINO POSTERIORE SX / LEFT REAR LAMP	COBO	(KUE 88511134)	1
H9	FANALINO POSTERIORE DX /RIGHT REAR LAMP	COBO	(KUE 88511134)	1
HA2	AVVISATORE ACUSTICO /HORN	CIAM	112001 (KUE 88510009)	1
HB2.1	CONNETTORE MARK 11 VIE / 11 WAY CONN.	AMP		1
X138-X109	CONNETTORI 2 VIE FANALI ANTERIORI / FRONT LOW BEAM 2 WAY CONN.	RICKARD		2
X110-X111	CONNETTORI 2 VIE FARI LAVORO POST / REAR WORK LIGHTS 2 WAY CONN.	RICKARD		2
X115-X116-X117	CONNETTORI 1 VIA FANALI POSIZIONE ANT./ FRONT TRAFFIC LIGHTS 1 WAY CONN.	AMP		3
X118-X119-X120	CONNETTORI 1 VIA FANALI POSIZIONE ANT./ FRONT TRAFFIC LIGHTS 1 WAY CONN.	AMP		3
X121-X122-X123-X124	CONNETTORI 1 VIA FANALI POSIZIONE POST./ REAR TRAFFIC LIGHTS 1 WAY CONN.	AMP		4
X125-X126-X127-X128	CONNETTORI 1 VIA FANALI POSIZIONE POST./ REAR TRAFFIC LIGHTS 1 WAY CONN.	AMP		4

X14, X18 — **X13** — **X08** — **X07**

WIRE POSITIONING ON CONNECTOR (WIRE SIDE WIEW WIRING)

= Parts not included in the wiring

KUE 37C-06-11312 (GA005893)

POWER BOX — **SAFETY RELAY**

ENGINE PARTS

NOME/NAME	DESCRIZIONE/DESCRIPTION	COSTRUT./SUPPL.	TIPO/TYPE	QTA
FG1	FUSIBILE GENERALE 80A /GENERAL FUSE 80A	CIAM	163028	1
G1	BATTERIA /BATTERY 100Ah	FIAMM (KUE)	LS 600 110 085 (STC-06-11110)	1
G2	ALTERNATORE /GENERATOR	YANMAR (DENSO)	129423-77200	1
K01	RELE' SOLENOIDE CARBURANTE /FUEL SOLENOID VALVE RELAY	MATSUSHITA (KUE)	CB1an (88507102)	1
K02	TIMER 1 SEC PULL FUEL SOLENOID VALVE	YANMAR (KUE)		1
K03	SAFETY RELAY	YANMAR (KUE)	119602-77200	1
M1	MOTORINO AVVIAMENTO / STARTER MOTOR	YANMAR		1
M2	POMPA GASOLIO / FUEL PUMP	YANMAR	129612-52100	1
R1	RESISTENZA PRERISCALDO /PREHEATING STARTER	YANMAR	129100-77500	1
R2	SENSORE LIVELLO CARBURANTE /FUEL LEVEL SENDER	COBO (KUE)	29-0419-0000 (374-04-11140)	1
R3	TRASDUTTORE DI TEMP.ACQUA MOTORE /ENGINE WATER TEMPERATURE SENDER	YANMAR (KUE)	(TB61-40-3320)	1
S25	SENSORE INTASAMENTO FILTRO ARIA /AIR FILTER BLOCKED SWITCH	DONALDSON (KUE)	K770317 (374-06-11960)	1
S26	PRESSOSTATO INTASAMENTO OLIO IDRAULICO /HYDRAULIC OIL FILTER BLOCKED SWITCH	FMDI (KUE)	117181 (88509104)	1
S27	PRESSOSTATO LUCI STOP/STOP LIGHTS PRESSURE SWITCH	FMDI (KUE)	11717.75 (374-06-11880)	1
S28	PRESSOSTATO STOP LUCI STOP/ STOP LIGHTS PRESSURE SWITCH	FMDI (KUE)	11717.75 (374-06-11880)	1
S29	PRESSOSTATO BACK-UP /BACK-UP ALARM PRESSURE SWITCH	FMDI (KUE)	11717.75 (374-06-11880)	1
S30	PRESSOSTATO BACK-UP /BACK-UP ALARM PRESSURE SWITCH	FMDI (KUE)	11717.75 (374-06-11880)	1
S31	PRESSOSTATO MINIMA PRESSIONE OLIO MOTORE /ENGINE OIL MIN. PRESSURE SWITCH	YANMAR		1
V1	DIODO / DIODE	CIAM	1A 1N4007	1
Y9	ELETTROVALVOLA STOP SOLENOIDE CARBURANTE /STOP FUEL SOLENOID VALVE	YANMAR	129035-77950	1
X01	CONNETTORE 3 VIE LINEA TELAIO /FRAME LINE 3 WAY CONNECTOR	*	*	1
X02	CONNETTORE 2 VIE / 2 WAY CONN.	*	*	1
X03	CONNETTORE RELE' SOLENOIDE CARBURANTE / FUEL SOLENOID RELAY CONN.	*	*	1
X04	CONNETTORE 2 VIE DIODO ANTIDISTURBO / DIODE 2 WAY CONN.	*	*	1
X07	CONNETTORE 4 VIE TIMER / TIMER 4 WAY CONN.	*	*	1
X08	CONNETTORE 6 VIE SAFETY RELAY /SAFETY RELAY 6 WAY CONN.	SUMITOMO	6195-0021	1
X09	OCCHIELLO CS ALTERNATORE / CE GENERATOR TERMINAL	*	*	1
X10	CONNETTORE MARK 13 VIE LINEA TELAIO /FRAME LINE MARK 13 WAY CONN.	*	*	1
X13	CONNETTORE 3 VIE ALTERNATORE /GENERATOR 3 WAY CONN.	SUMITOMO	6189-0442	1
X13	CONNETTORE 3 VIE POOL-STOP SOLENOIDE CARBURANTE /FUEL POOL-STOP SOLENOID 3 WAY CONN.	DEUTSCH	DT06-3S	1
X14	CONNETTORE 2 VIE POMPA GASOLIO / FUEL PUMP 2 WAY CONN.	*	*	1
X15	OCCHIELLO CS RESISTENZA PRERISCALDO / PREHEATING START CS TERMINAL	*	*	1
X16	CONNETTORE 2 VIE SENSORE INTASAMENTO FITRO ARIA / AIR FILTER BLOCKED SWITCH 2 WAY CONN.	AMP	MINITIMER	1
X17	CONNETTORE 3 VIE SENSORE LIVELLO CARBURANTE /FUEL LEVEL SENDER 3 WAY CONN.	*	*	1
X18	CONNETTORE 2 VIE TRASDUTTORE TEMP.ACQUA /ENGINE WATER TEMPERATURE SENDER 2 WAY CONN.	*	*	1
X19	OCCH. CS SENSORE INTASA. FILTRO OLIO IDRAULICO / IDRAULIC OIL FILTER BLOCKED SWITCH CS TERMINAL	*	*	1
X20	CONNETTORE 2 VIE PRESSOSTATO 1 LUCI STOP / STOP LIGHT PRESSURE 1 SWITCH 2 WAY CONN.	DEUTSCH	DT06-2S	1
X21	CONNETTORE 2 VIE PRESSOSTATO 2 LUCI STOP / STOP LIGHT PRESSURE 2 SWITCH 2 WAY CONN.	DEUTSCH	DT06-2S	1
X22	CONNETTORE 2 VIE PRESSOSTATO 1 BACK-UP / BACK-UP PRESSURE 1 SWITCH 2 WAY CONN.	DEUTSCH	DT06-2S	1
X23	CONNETTORE 2 VIE PRESSOSTATO 2 BACK-UP /BACK-UP PRESSURE 2 SWITCH 2 WAY CONN.	DEUTSCH	DT06-2S	1
X29	TERMINALE MINIMA PRESSIONE OLIO MOTORE /ENGINE MIN PRESSURE SWITCH TERMINAL	*	*	1
X29	CONNETTORE 2 VIE SIRENA BACK-UP /BACK UP ALARM 2 WAY CONN.	*	*	1
X5	OCCHIELLO CS SU MOTORINO AVV. / CS START MOTOR TERMINAL	*	*	1
XF	CONNETTORE 2 VIE FUSIBILE GENERALE / GENERAL FUSE 2 WAY CONN.	*	*	1
GND	OCCHIELLO CS MASSA / CE GROUND TERMINAL	*	*	1
GND5	OCCHIELLO CS MASSA / CE GROUND TERMINAL	*	*	1
M1	OCCHIELLO CS SU MOTORINO AVV. / CE START MOTOR TERMINAL	*	*	1
X5	CONNETTORE 2 VIE SAFETY RELAY / SAFETY RELAY 2 WAY CONN.	SUMITOMO	6195-0060	1
X11	ISOLATORE / INSULATOR	*	*	1
HA3	SIRENA BACK-UP /BACK UP ALARM	CIAM (KUE)	DA001357 (312612150)	1
Y1	ELETTROVALVOLA SERVOCOMANDI /PPC VALVE	HYDRAFORCE	*	1
Y2	ELETTROVALVOLA FLOAT /FLOAT VALVE	HYDRAFORCE	*	1
Y3	ELETTROVALVOLA SECONDA VELOCITA' /SECOND SPEED VALVE	HYDRAFORCE	*	1
Y4	ELETTROVALVOLA INVERSIONE HI-FLOW MOMENTARY / REVERSE HI-FLOW MOMENTARY VALVE	HYDRAFORCE	*	1
Y5	ELETTROVALVOLA SUPER-FLOW DETENT / SUPER-FLOW DETENT VALVE	HYDRAFORCE	*	1
Y6	ELETTROVALVOLA FRENO /BRAKE VALVE	HYDRAFORCE	*	1
X01.1	CONNETTORE 4 VIE LINEA MOTORE /ENGINE LINE 4 WAY CONN.	DEUTSCH	DT04-4P	1
X02.1	CONNETTORE 2 VIE LINEA MOTORE /ENGINE LINE 2 WAY CONN.	AMP	*	1
X10.1	CONNETTORE MARK 13 VIE LINEA MOTORE /ENGINE LINE 13 WAY CONN.	AMP	*	1
X32	CONNETTORE 3 VIA PRESSOSTATO PPC SAFETY /PPC SAFETY PRESSURE SWITCH 1 WAY CONN.	AMP	SUPERSEAL	1
X33A	CONNETTORE 1 VIA PRESSOSTATO PPC SAFETY /PPC SAFETY PRESSURE SWITCH 1 WAY CONN.	AMP	SUPERSEAL	1
X33	CONNETTORE 2 VIE SERVOCOMANDI (PPC) /PPC VALVE 2 WAY CONN.	DEUTSCH	DT06-2S	1
X34	CONNETTORE 2 VIE EV /FLOAT /FLOAT VALVE 2 WAY CONN.	DEUTSCH	DT06-2S	1
X35	CONNETTORE 2 VIE EV /BRAKE /BRAKE VALVE 2 WAY CONN.	DEUTSCH	DT06-2S	1
X36	CONNETTORE 2 VIE EV. SECONDA VELOCITA' /SECOND SPEED VALVE 2 WAY CONN.	DEUTSCH	DT06-2S	1
X37	CONNETTORE 2 VIA PRESSOSTATO FRENO /BRAKE PRESSURE SWITCH 1 WAY CONN.	AMP	*	1
X39	CONNETTORE DEUTSCH 2 VIE EV /HIGHT FLOW DETENT /HIGHT FLOW DETENT VALVE 2 WAY CONN.	DEUTSCH	*	1
X40	CONNETTORE DEUTSCH 2 VIE EV /HIGHT FLOW MOMENTARY /HIGHT FLOW MOMENTARY VALVE 2 WAY CONN.	DEUTSCH	*	1
X41	CONNETTORE 5 VIE STABILIZZATORI / STABILIZER 5 WAY CONN.	AMP	*	1
X42	CONNETTORE 2 VIE ATTACHEMENT / ATTACHEMENT 5 WAY CONN.	AMP	*	1
X43	CONNETTORE 2 VIA VALVOLE ENPI / ENPI VALVE 5 WAY CONN.	AMP	*	1
X45	CONNETTORE 13 VIE LINEA CABINA / CABIN LINE 13 WAY CONN.	AMP	*	1
X46	CONNETTORE 4 VIE LINEA CABINA / CABIN LINE 4 WAY CONN.	DEUTSCH	DT06-4S	1
X47	CONNETTORE 2 VIE MASSA LINEA CABINA / GROUND CABIN LINE 2 WAY CONN.	DEUTSCH	DT06-2S	1
X48	CONNETTORE 5 VIE LINEA CABINA / CABIN LINE 5 WAY CONN.	AMP	*	1
X49	CONNETTORE 11 VIE LINEA CABINA / CABIN LINE 11 WAY CONN.	AMP	*	1
GND1-GND2	OCCHIELLO CE MASSA / CE GROUND TERMINAL	AMP	*	1
GND5	OCCHIELLO CS MASSA / CS GROUND TERMINAL	AMP	*	1

= Parts not included in the wiring

GND4-GND6	OCCH. CE MASSA /CE GROUND TERMINAL
X129-X130	CONN. LUCE TARGA / PLATE LIGHT CONN.
XP1-XP1A	CONN. PRESA 12V. / GIROFARO / CURRENT INTAKE 12V /BEACON LIGHT

KUE 37A-06-11391 (GA005426)

RELAYS UNIT

RIGHT LEVER

LEFT LEVER

CONTROL PANEL (UNIDECK)

P1 CONTROL PANEL (EXTERNAL WIEW)

INTERNAL CONNECTION CONTROL PANEL

KUE 37C-06-11331 (GA005936)

"B" WAY ATTACHEMENT
GROUND
"A" WAY ATTACHEMENT
"C" WAY ATTACHEMENT
+15
GROUND

(+12V) KEY — A WAY — B WAY — C WAY

RIGHT LEVER

KUE 37A-06-11460 (GA003433)

NOME	DESCRIZIONE	COSTRUTTORE	TIPO	QTA
X121	ATTACHEMENT 8 WAY CONN.	DEUTSCH	HDSI 18-8PN	1
X121	NUT	DEUTSCH	114020-90	1
X121	WASHER	DEUTSCH	114025	1
X121	MALE PIN	DEUTSCH	0460-204-12141	6
X121	PLUG	DEUTSCH	HDC06-18	1
X8	5 WAY FEMALE MARK II CONN.	CIAM (AMP)	125216	1
X8	MALE PIN	CIAM (AMP)	125072	5

POS.	PIN	FUNCTION	SIGNAL	WIRE COLOUR
	X80-1			
C2	X80-2	FUEL LEVEL INDICATOR	ohm	B-N1
C3	X80-3	WATER TEMPERAT. INDICATOR	ohm	C-N1
+S0	X80-4	START SIGNAL	+S0	B1
GND	X80-5	GROUND	GND	
GND	X80-6	GROUND	GND	N1
	X80-7			
+15	X80-8	POWER SUPPLY (+12V)	+15	H-R1

POS.	PIN	FUNCTION	SIGNAL	WIRE COLOUR
	X80-9	INTERNAL LIGHTS (+ LUCI)	POSITIVE	G-N1
L5	X80-10	BUZZER	NEGATIVE	Z-B1
L5	X80-11	HYDRAULIC OIL FILTER LAMP	NEGATIVE	S-G1
L2	X80-12	PREHEATING LAMP	POSITIVE	M1
L1	X80-13			
L4	X80-14	AIR FILTER LAMP	NEGATIVE	C-L1
L3	X80-15	GENERATOR LAMP	NEGATIVE	S1
L3	X80-16	ENGINE OIL PRESSURE LAMP	NEGATIVE	B-G1

POS.	PIN	FUNCTION	SIGNAL	WIRE COLOUR
DL3	X81-1	SAFETY BAR OPEN LED	NEGATIVE	B/N1
L8	X81-2	FLOAT LAMP	POSITIVE	M-N1
L8	X81-3	PARKING BRAKE LAMP	NEGATIVE	M-V1
L7	X81-4	SECOND SPEED LAMP	POSITIVE	M-B1

POS.	PIN	FUNCTION	SIGNAL	WIRE COLOUR
L9	X81-5	DIRECTION LAMP	POSITIVE	L-N1
L10	X81-6	LOW BEAM LAMP	POSITIVE	H0-5
DL1	X81-7	WARNING LED	NEGATIVE	M/B1
DL2	X81-8	SEAT LED	NEGATIVE	G/N1

SWITCH EV ENPI

NOME/NAME	DESCRIZIONE/DESCRIPTION	COSTRUT./SUPP.	TIPO/TYPE	QTA
FU01	FUSE 3A LEFT SIDE LIGHTS, PLATE LIGHT			1
FU02	FUSE 3A CONTROL PANEL LIGHTS, RIGHT SIDE LIGHTS			1
FU03	FUSE 15A HORN, LOW BEAM OR FRONT WORK LIGHTS			1
FU04	FUSE 10A SWITCH LIGHTS, DIRECTION LIGHTS			1
FU05	FUSE 15A REAR WORK LIGHT, STOP LIGHT			1
FU06	FUSE 10A LEVER SWITCH POWER SUPPLY, FLOAT			1
FU07	FUSE 15A CURRENT INTAKE 12V, HAZARD,/BEACON LIGHT			1
FU08	FUSE 10A CONTROL PANEL, ELECTRONIC UNIT, FUEL SHUT OFF, SAFETY BAR PROXIMITY, SAFETY SEAT SWITCH, BRAKE SWITCH			1
FU09	FUSE 10A BACK-UP ALARM, ATTACHEMENT 3 WAY, HI-FLOW, STABILIZER, ENPI VALVE			1
FU10	FUSE 7.5A FUEL PUMP, SAFETY ENGINE RELAY, GENERATOR			1
FU11	FUSE 30A PULL SOLENOID, PPC SAFETY PRESSURE SWITCH			1
HA1	BUZZER SEGNALAZIONE ANOMALIE /WARNING BUZZER			1
HL1	DIODO LED SUPER-FLOW / SUPER-FLOW LED DIODE			1
HL2	DIODO LED "C" WAY / "C" WAY LED DIODE			1
HL3	DIODO LED "A" WAY / "A" WAY LED DIODE			1
HL4	DIODO LED "B" WAY / "B" WAY LED DIODE			1
HL5	DIODO LED DP/DOUBLE / DPTIONAL LED DIODE			1
K04	RELE' FLOAT / FLOAT RELAY	CIAM	01170922 (KUE 88507004)	1
K05	SUPPORTO RELE' / RELAYS BOX (WITHOUT RELAYS)	CIAM	123010 (KUE 88541119)	1
K06	CENTRALINA ELETTRONICA / ELECTRONIC UNIT	CIAM	01172077 (KUE 88507004)	1
K07	RELE' "B" WAY / "B" WAY RELAY	KUE	885071044	1
K08	RELE' "A" WAY / "A" WAY RELAY	KUE	885071034	1
K09	RELE' "C" WAY / "C" WAY RELAY	KUE	885071034	1
K10	RELE' INGSO /INGSO SUPER-FLOW DETENT / SUPER-FLOW DETENT STEP BY STEP RELAY	CIAM	01170923 (KUE 374-06-11430)	1
K11	RELE' INVERSIONE HI-FLOW MOMENTARY / REVERSE HI-FLOW MOMENTARY RELAY	CIAM	1S7061 (KUE 885071043)	1
K12	RELE' LUCI STOP / STOP LIGHTS RELAY	CIAM	1S7061 (KUE 885071043)	1
K13	INTERMITTENZA /FLASHER UNIT	CIAM	00150013 (KUE 88510102)	1
K14	RELE' FRENO / BRAKE RELAY	CIAM	1S7061 (KUE 885071043)	1
K95	RELE' LUCI STOP / STOP LIGHTS RELAY	CIAM	1S7061 (KUE 885071043)	1
P1	PANNELLO STRUMENTI /CONTROL PANEL	UNIDECK	04610027(KUE 374-54-14291)	1
S01	INTERRUTTORE SW FARI LAVORO POST / REAR WORK LIGHTS SWITCH	CIAM	106A0008 (KUE 88508116/0)	1
S02	INTERRUTTORE LUCI STRUMENTI E ANAB./ PANEL LIGHTS AND LOW BEAM LIGHTS SWITCH	CIAM	106A0018 (KUE 88508115/0)	1
S03	INTERRUTTORE FRECCIE /DIRECTIONS LIGHTS SWITCH	CIAM	114003 (KUE 88508114/1)	1
S05	PULSANTE SU-GIU STABILIZZATORE SX /UP-DOWN LEFT STABILIZER BUTTON	CIAM	106A0032 (KUE 88508116/3)	1
S06	PULSANTE SU-GIU STABILIZZATORE DX /UP-DOWN RIGHT STABILIZER BUTTON	CIAM	106A0032 (KUE 88508116/3)	1
S07	INTERRUTTORE SW LAMPADA ROTANTE /BEACON LIGHT SWITCH	CIAM	106A0008 (KUE 88508116/0)	1
S08	PULSANTE FRENO / BRAKE SWITCH	CIAM	0A003455 (KUE 374-06-11411)	1
S09	INTERRUTTORE 4 FRECCE /HAZARD SWITCH	CIAM	106A0414 (KUE 88508118/2)	1
S10	QUADRO AVVIAMENTO /STARTING SWITCH			1
S11	PINECORSA DI SICUREZZA SEDILE /SAFETY SEAT SWITCH			1
S12	PROXIMITY DI SICUREZZA PNP /BRACCIOLO /PNP SAFETY SENSOR	SANET	E-A17MU3AP (KUE 374-06-1250)	1
S13	PULSANTE CLAXON / HORN PUSH BUTTON			1
S14	PULSANTE SECONDA VELOCITA' /SECOND SPEED PUSH BUTTON			1
S15	PULSANTE FLOAT /FLOAT PUSH BUTTON			1

NOME/NAME	DESCRIZIONE/DESCRIPTION	COSTRUT. /SUPP.	TIPO/TYPE	QTA
S32	PRESSOSTATO PPC SAFETY /PPC SAFETY PRESSURE SWITCH	FMDI (KUE)	11717.75 (374-06-11870)	1
S33	PRESSOSTATO FRENO /FREIN/FREINO /BRAKE VALVE PRESSURE SWITCH	FMDI (KUE)	11717.15 (88541149)	1
S35	PULSANTE INVERSIONE HI-FLOW MOMENTARY / REVERSE HI-FLOW MOMENTARY PUSH BUTTON			1
S37	PULSANTE SUPER- FLOW DETENT / SUPER-FLOW DETENT PUSH BUTTON			1
S38	PULSANTE "C" WAY / "C" WAY PUSH BUTTON			1
S39	PULSANTE "A" WAY / "A" WAY PUSH BUTTON			1
S40	PULSANTE "B" WAY / "B" WAY PUSH BUTTON			1
S104	CONNETTORE INTERRUTTORE LUCI DI DIREZIONE / DIRECTION LIGHTS SWITCH CONN.			1
S105	CONNETTORE SWF HAZARD / SWF HAZARD CONN.	SWF		1
S106	CONNETTORE SWF PULSANTI PIEDI STABILIZZATORI /STABILIZER PUSH BUTTON CONN.	SWF		1
S107	CONNETTORE SWF PULSANTI PIEDI STABILIZZATORI /STABILIZER PUSH BUTTON CONN.	SWF		1
S44	CONNETTORE RELE' FRENO/HANDHEGGIO / PARKING BRAKE RELAY CONN.	BOSCH		1
S45.1	CONNETTORE MARK 11 VIE DA LINEA TELAIO/ FROM FRAME LINE MARK 11 WAY CONN.	AMP		1
S45.1	CONNETTORE 4 VIE DA LINEA TELAIO / FROM FRAME LINE 4 WAY CONN.	DEUTSCH	DT06-4P	1
S47.1	CONNETTORE 2 VIE MASSA / GROUND 2 WAY CONN.	DEUTSCH	DT06-2P	1
S48.1	CONNETTORE MARK 5 VIE DA LINEA TELAIO / FROM FRAME LINE MARK 5 VIE CONN.	AMP		1
S49.1	CONNETTORE MARK 11 VIE DA LINEA TELAIO / FROM FRAME LINE MARK 11 VIE CONN.	AMP		1
X50	CONNETTORE 23 VIE CENTRALINA SICUREZZE /SAFETY CONTROL BOX 23 WAY CONN.	AMP		1
X52	CONNETTORE 1 VIA BUZZER /BUZZER 1 WAY CONN.	AMP		1
X53	CONNETTORE 1 VIA BUZZER / BUZZER 1 WAY CONN.	AMP		1
X54	CONNETTORE 3 VIE SENSORE BARRA / PROXIMITY BAR 3 WAY CONN.	DEUTSCH		1
X55	CONNETTORE 2 VIE SENSORE SICUREZZA SEDILE /SAFETY SEAT SWITCH 3 WAY CONN.	DEUTSCH		1
X56-X57-X58-X59-X60	CONNETTORE 1 VIA FUSIBILE /FUSE 1 WAY CONN.	AMP		5
X61-X62-X63-X64-X65	CONNETTORE 1 VIA FUSIBILE /FUSE 1 WAY CONN.	AMP		5
X66-X67-X68-X69-X70	CONNETTORE 1 VIA FUSIBILE /FUSE 1 WAY CONN.	AMP		5
X71-X72-X73-X74-X75	CONNETTORE 1 VIA FUSIBILE /FUSE 1 WAY CONN.	AMP		5
X76-X77	CONNETTORE 1 VIA FUSIBILE /FUSE 1 WAY CONN.	AMP		2
X78-X79	CONNETTORE 1 VIA PRESA DI CORRENTE /CURRENT INTAKE 1 WAY CONN.	AMP		2
X80	CONNETTORE 16 VIE PANNELLO DI CONTROLLO /CONTROL PANEL 16 WAY CONN.	AMP		1
X81	CONNETTORE 8 VIE PANNELLO DI CONTROLLO /CONTROL PANEL 8 WAY CONN.	AMP		1
X82	CONNETTORE MARK 11 VIE LINEA FARI / LIGHTS LINE 11 WAY CONN.	AMP		1
X83	CONNETTORE 12 VIE MANIPOLATORE SX / LEFT LEVER 12 WAY CONN.	DEUTSCH	DT04-12P, DT06-12S	1
X84	CONNETTORE 12 VIE MANIPOLATORE DX / RIGHT LEVER 12 WAY CONN.	DEUTSCH	DT04-12P, DT06-12S	1
X85	CONNETTORE SWF INTERRUTTORE FARI DI LAVORO POSTERIORI /REAR WORK LIGHTS SWF SWITCH	SWF		1
X86	CONNETTORE SWF LUCI STRUM. E FARI ANABB. ANTERIORI /PANEL AND FRONT LIGHTS SWF SWITCH CONN.	SWF		1
X87	CONNETTORE PULSANTE FRENO / BRAKE SWITCH CONN.	PNEUTRON		1
X88	CONNETTORE SWF INTERRUTTORE LAMPPGGIANTE /BEACON LIGHT SWITCH CONN.	SWF		1
X89	CONNETTORE RELE' FLOAT / FLOAT RELAY CONN.	BOSCH		1
X90	CONNETTORE 21 VIE CENTRALINA RELE' / RELAYS BOX 21 WAY CONN.	AMP		1
X91	CONNETTORE SWF VALVOLE ENPI / ENPI VALVE SWF CONN.	CEMBRE		1
X95	CONNETTORE RELE' LUCI STOP/STOP LIGHT RELAY CONN.	AMP		1
GND3	OCCHIELLO CS MASSA / CS GROUND TERMINAL	SWF		1

= Parts not included in the wiring

WIRING COLOURS

A	LIGHTBLUE
B	WHITE
C	ORANGE
G	YELLOW
H	GREY
L	BLUE
M	BROWN
N	BLACK
R	RED
S	PINK
V	GREEN
Z	VIOLET

EXAMPLE:

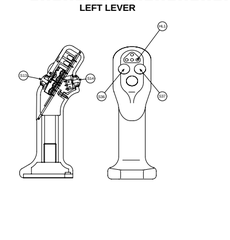
G/V =YELLOW/GREEN (TRANSVERSE MARKED)



G-V =YELLOW-GREEN(LONGITUDINAL COLOURS)



LEFT LEVER — **RIGHT LEVER**

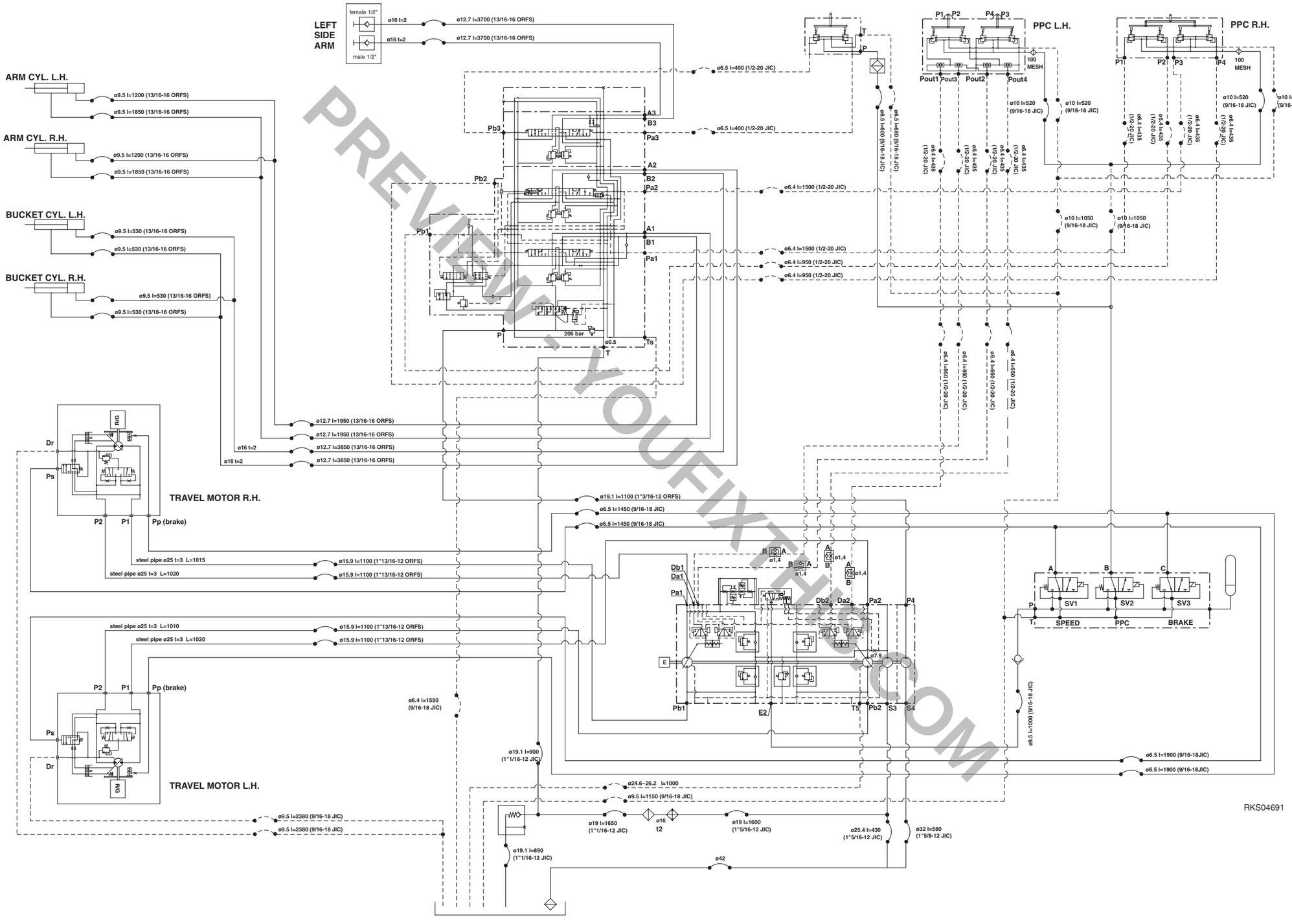


PREVIEW - YOUFIXTHIS.COM

RKS03420

Download full manual at youfixthis.com

HYDRAULIC CIRCUIT (STANDARD)

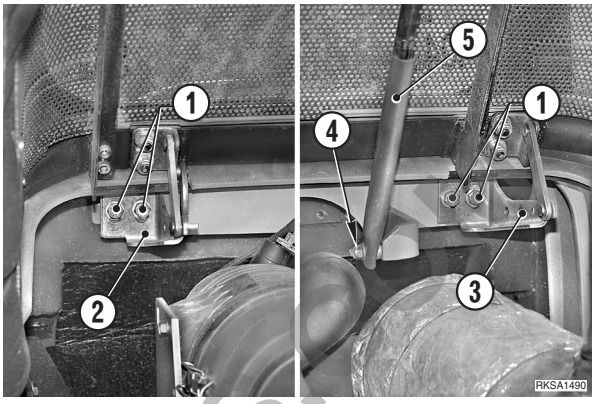


PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

ENGINE HOOD

Removal



⚠ Completely lower the working equipment to the ground and stop the engine.

1 - Remove the retainer screws (1) from hinges (2) and (3).

2 - While keeping the hood lifted, remove the retainer nut (4) from the shock absorber (5).

[*1]

Engine hood: 18.5 kg

Installation

- To install, reverse removal procedure.

[*1]

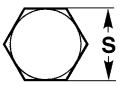
★ Check the centre and the lock engagement adjustment.

PREVIEW - YOUFIXTHIS.COM

STANDARD TIGHTENING TORQUE

The following charts give the standard tightening torques of bolts and nuts.
Exceptions are given in section of «**Disassembly and Assembly**».

1. STANDARD TIGHTENING TORQUE OF BOLTS AND NUT

Thread diameter of bolts (mm)	Pitch of bolts (mm)	Width across flat (mm)		8.8		10.9	
				kgm	Nm	kgm	Nm
6	1	10	8	0.96±0.1	9.5±1	1.3±0.15	13.5±1.5
8	1.25	13	6	2.3±0.2	23±2	3.2±0.3	32.2±3.5
10	1.5	17	8	4.6±0.5	45±4.9	6.5±0.6	63±6.5
12	1.75	19	10	7.8±0.8	77±8	11±1	108±11
14	2	22	12	12.5±1	122±13	17.5±2	172±18
16	2	24	14	19.5±2	191±21	27±3	268±29
18	2.5	27	14	27±3	262±28	37±4	366±36
20	2.5	30	17	38±4	372±40	53±6	524±57
22	2.5	32	17	52±6	511±57	73±8	719±80
24	3	36	19	66±7	644±70	92±10	905±98
27	3	41	19	96±10	945±100	135±15	1329±140
30	3.5	46	22	131±14	1287±140	184±20	1810±190
33	3.5	50	24	177±20	1740±200	250±27	2455±270
36	4	55	27	230±25	2250±250	320±35	3150±350
39	4	60	—	295±33	2900±330	410±45	4050±450

This torque table does not apply to bolts or nuts which have to fasten nylon or other parts non-ferrous metal washer.

★ **Nm (newton meter): 1 Nm = 0.102 kgm**

PREVIEW - YOUFIXTHIS.COM

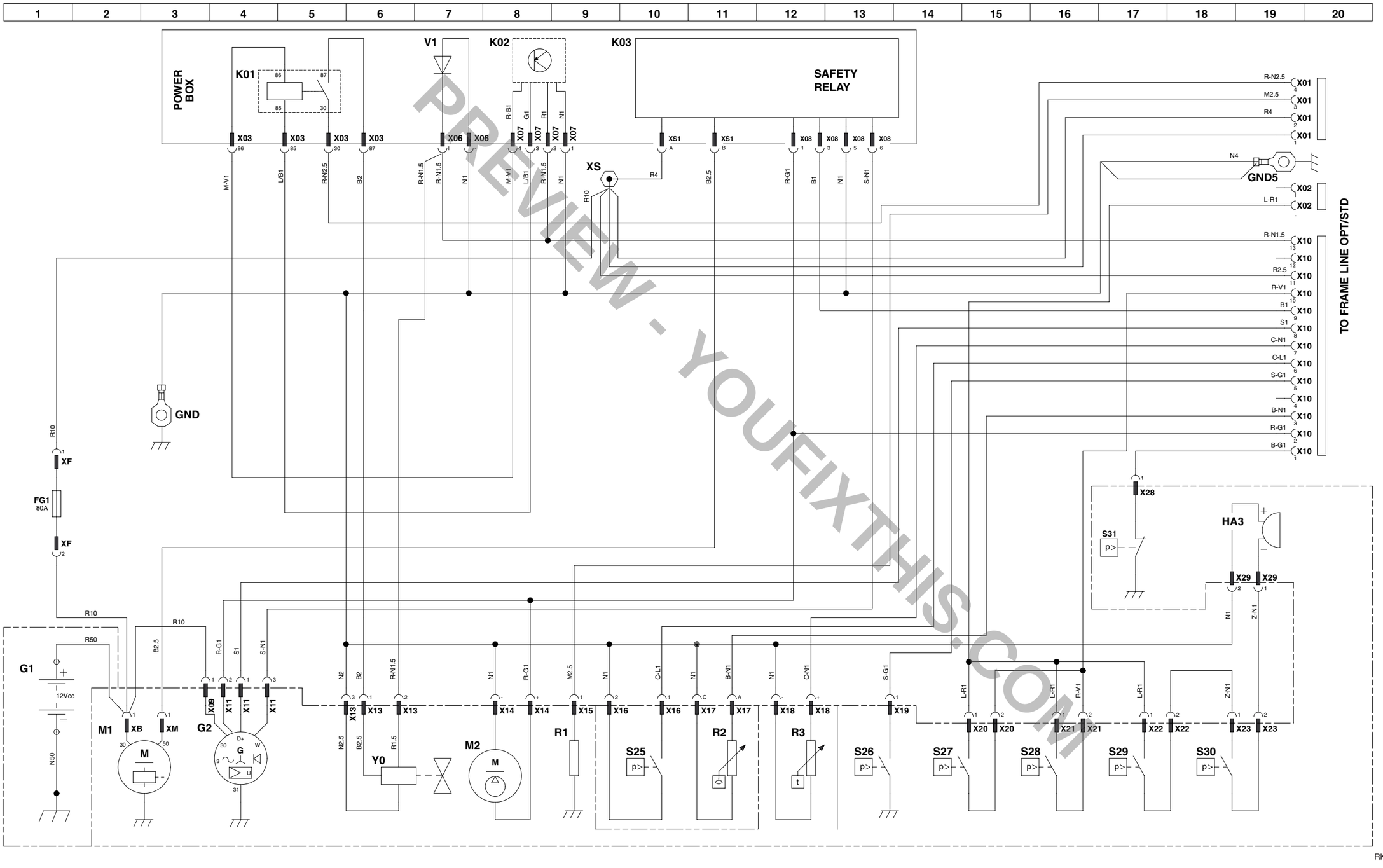
NORMAL OR STANDARD TECHNICAL DATA

FOR ENGINE

Machine model			CK35-1	
Engine			S4D98E-2NFE	
Check item	Test conditions	Unit	Standard value	Permissible value
Engine speed	High idling Low idling Set speed	rpm	2700 1100 2500±10	2650–2750 1050–1150 –
Exhaust gas colour	Sudden acceleration At high idling speed	Bosch index	–	–
Valve clearance	Intake valve (20°C) Exhaust valve (20°C)	mm mm	0.20 0.20	0.15– 0.25 0.15– 0.25
Compression pressure (SAE30 oil)	Oil temperature 40–60 °C (Engine speed)	kg/cm² (rpm)	35±1 (250)	28±1 (250)
Blow - by pressure (oil SAE30)	Water temperature in operating range At high idling speed	mm H_2O	–	–
Engine oil pressure	Oil temperature: 80 °C At high idling At low idling	kg/cm² kg/cm²	3.0–4.0 > 0.6	– –
Oil temperature	Entire speed range	°C	Max. 250 120	Max. 250 120
Fuel injection timing	B.T.D.C.	degrees	–	–
Fan belt tension	Deflection when pressed with finge forceof approx. 10 kg	mm	10	10–15

PREVIEW - YOUFIXTHIS.COM

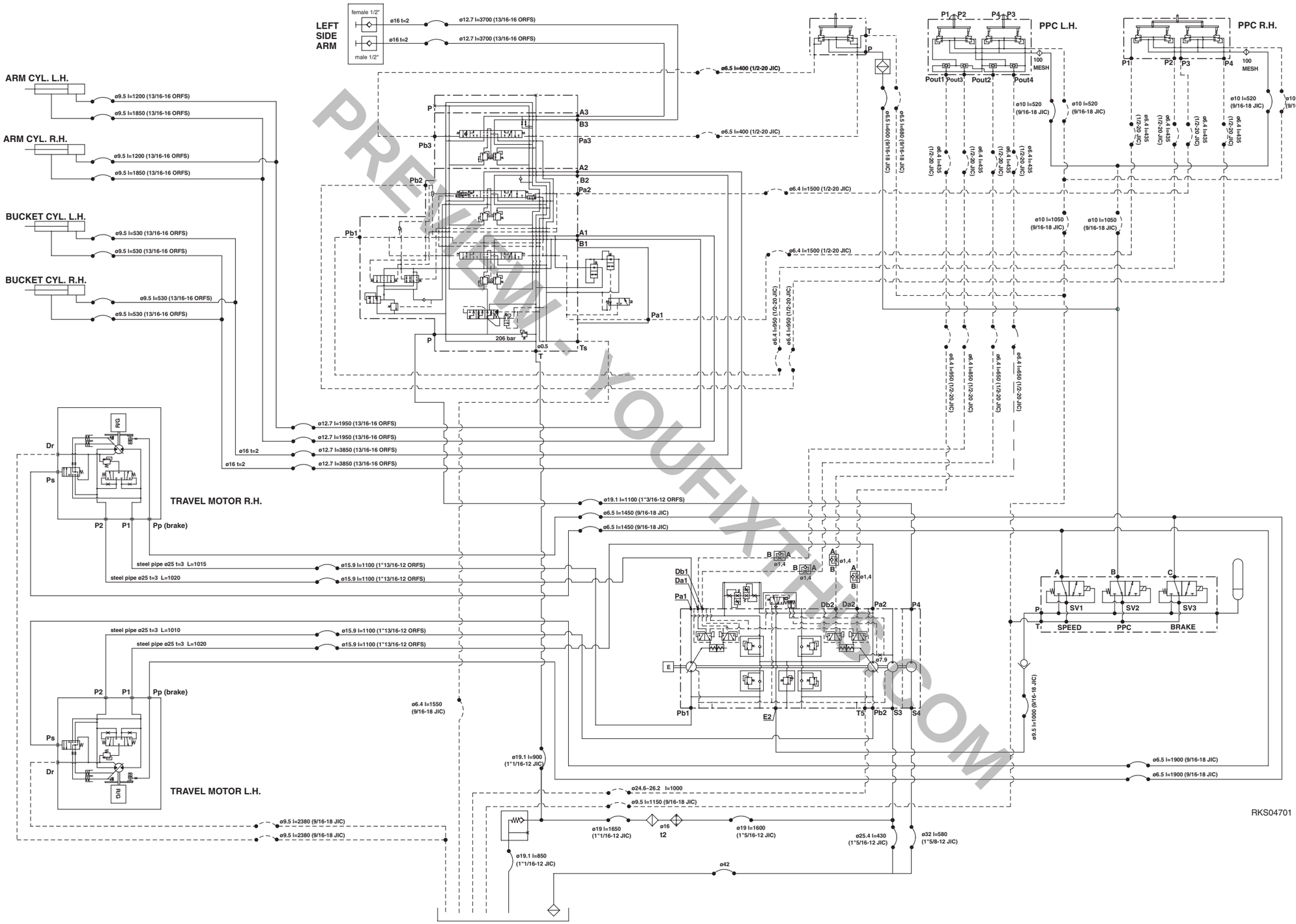
ELECTRICAL DIAGRAM (ENGINE LINE) (2/3)



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

HYDRAULIC CIRCUIT (FLOAT)



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

CAB

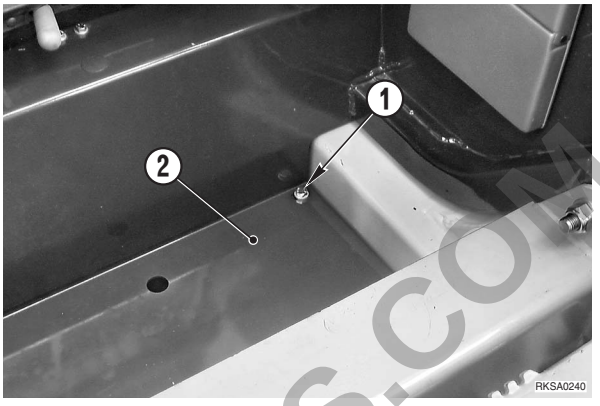
Dump

1 - Remove the lower idler roller.
(See "LOWER IDLER ROLLER" for details).

2 - Completely raise the working equipment and secure them in their safety positions.

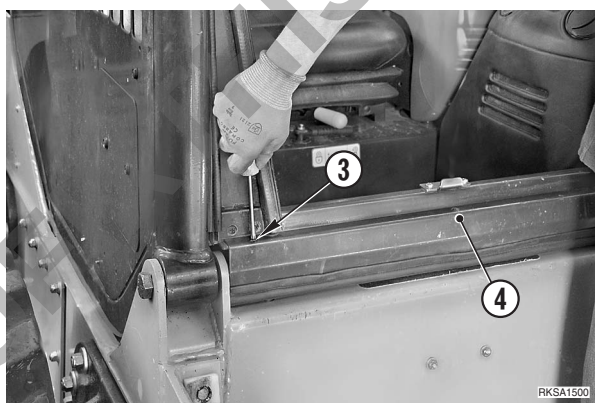
3 - Loosen the four screws (1) and remove the foot-rest (2).

4 - **Only if engine or pump assembly are to be removed.**
Remove engine hood.
(See "ENGINE HOOD" for details).



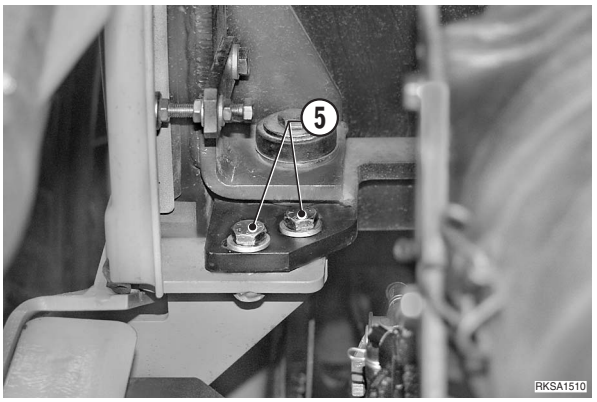
With front door

5 - Loosen screws (3) and remove bulkhead (4), and close the front door.



6 - Loosen the screws (5) (two to each side) and raise the cab as far as the safety cables allow. [*1]

7 - Insert the safety pin.

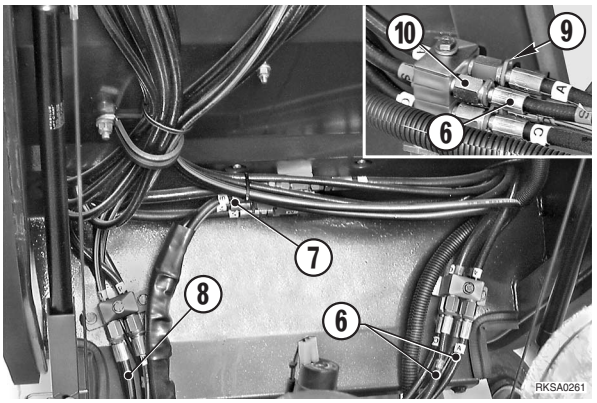


★ **If the engine or pump are to be removed, proceed as follows.**

8 - Disconnect the four pipes (6) on the RH side, the two servo-control feed-pipes (7) and the four pipes (8) on the LH side.

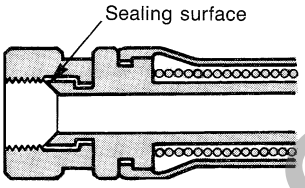
★ To disconnect the hoses, remove the retainer (9), fit hose (6) snugly inside union (10) and extract hose (6). [*2]

★ Mark the hoses to avoid mixing them during re-assembly.



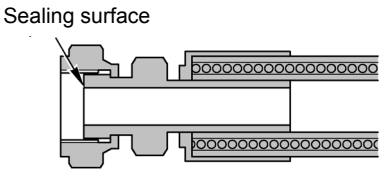
PREVIEW - YOUFIXTHIS.COM

2. TIGHTENING TORQUE FOR NUTS OF FLARED



Use these torques for nut part of flared.

Thread diameter of nut part (mm)	Width across flats of nut part (mm)	TIGHTENING TORQUE	
		kgm	Nm
1/2” - 20	17	2.6±0.5	25.5±4.9
9/16” - 18	17	4±0.5	39.2±4.9
3/4” - 16	22	6.7±2	65.7±19.6
7/8” - 14	27	8±2	78.5±19.6
1.1/16 - 12	32	9.7±3	95.15±29.4
1.5/16 - 12	38	17±3	166.7±29.4
1.5/8 - 12	50	20±5	196.2±49
22	27	8±2	78.5±19.6
33	41	20±5	196.2±49

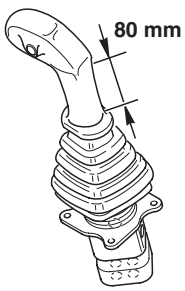


Use these torques for nut part of flared.

Thread diameter of nut part (mm)	Width across flats of nut part (mm)	TIGHTENING TORQUE	
		kgm	Nm
9/16” - 18	17	2.3–2.5	23–25
11/16” - 16	22	3.4–3.9	33–38
13/16” - 16	24	5.2–5.8	51–57
1” - 14	30	8.2–9.2	80–90
1.3/16 - 12	36	12.2–13.3	120–130
1.7/16 - 12	41	15.3–17.3	150–170
1.11/16 - 12	50	18.4–20.4	180–200
2” - 12	57	20.4–24.4	200–240

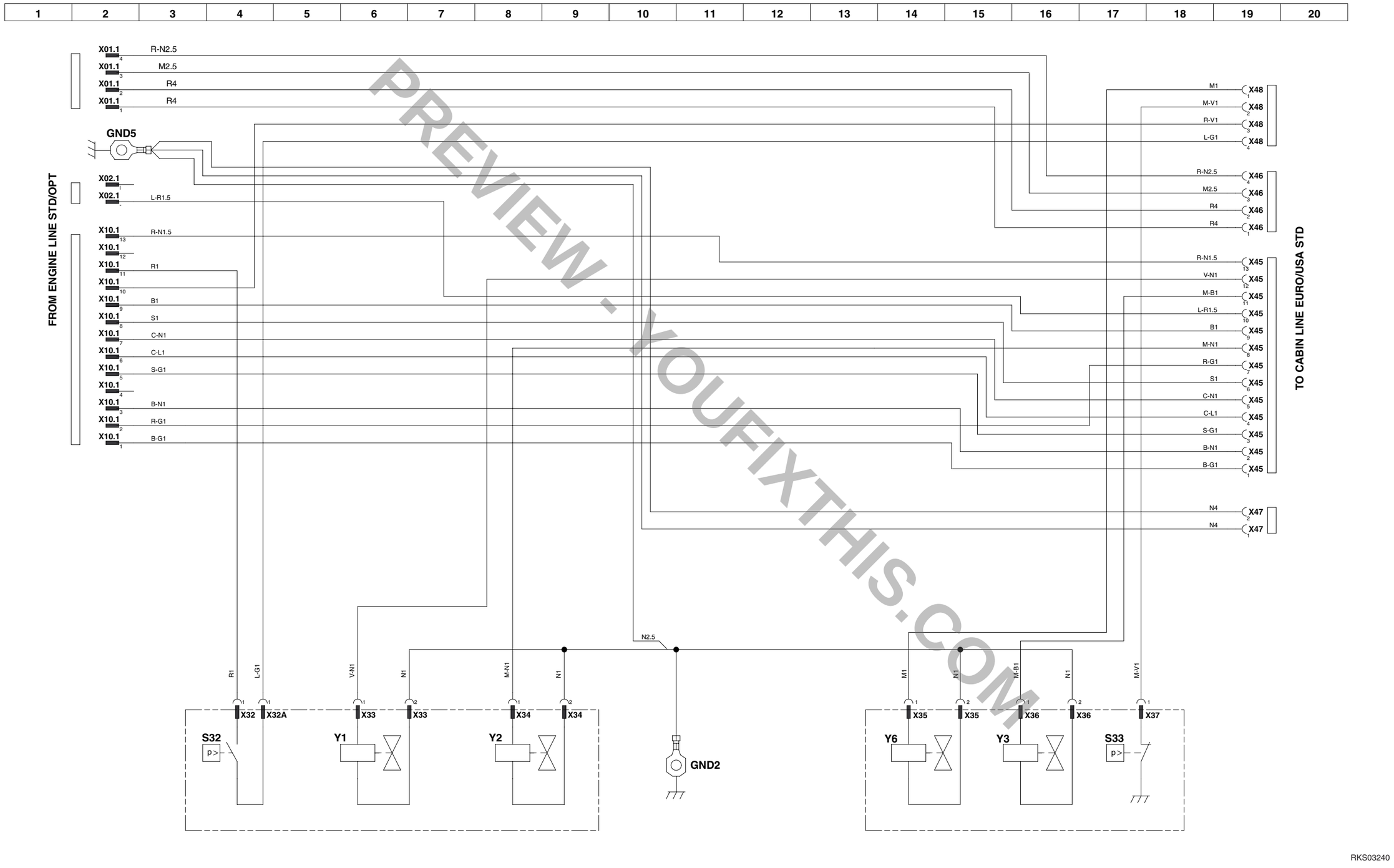
PREVIEW - YOUFIXTHIS.COM

FOR MACHINE

Machine model					CK35-1	
Classification	Check item	Test conditions		Unit	Standard value	Permissible value
Stroke of levers and pedals	Travel forward	• Engine stopped. • At centre of lever knob • Reading at end of travel • Equipment on the ground	Neutral → Forward	mm	65	58.5–71.5
	Travel reverse		Neutral → Reverse		65	58.5–71.5
	R.H. travel		Neutral → R.H.		65	58.5–71.5
	L.H. travel		Neutral → L.H.		65	58.5–71.5
	Raise arm		Neutral → Raise		65	58.5–71.5
	Lower arm		Neutral → Lower		65	58.5–71.5
	Dump bucket		Neutral → Dump		65	58.5–71.5
	Curled bucket		Neutral → Curl		65	58.5–71.5
	Attachment pedal		Neutral → R.H.		20	15–25
			Neutral → L.H.			
	Travel speed lever		Min. → Max.		105	100–110
	Accelerator pedal		Min. → Max.		40	30–50
Operating force for control of levers and pedals	Travel forward	• Engine speed: min. • Oil temperature: 45–55 °C • For PPC valves: tool attachment 80 mm from handle base • Instrument coupling on outside edge (for pedal control)		kg	2.0	1.8–2.2
	Travel reverse				2.0	1.8–2.2
	R.H. travel				2.0	1.8–2.2
	L.H. travel				2.0	1.8–2.2
	Raise arm				1.8	1.5–2.1
	Lower arm				1.8	1.5–2.1
	Dump bucket				1.8	1.5–2.1
	Curled bucket				1.8	1.5–2.1
	Attachment pedal		Right		5.0	4.0–6.0
			Left		5.0	4.0–6.0
	Travel speed lever				7.5	5.0–10

PREVIEW - YOUFIXTHIS.COM

ELECTRICAL DIAGRAM (FRAME LINE STANDARD) (2/3)

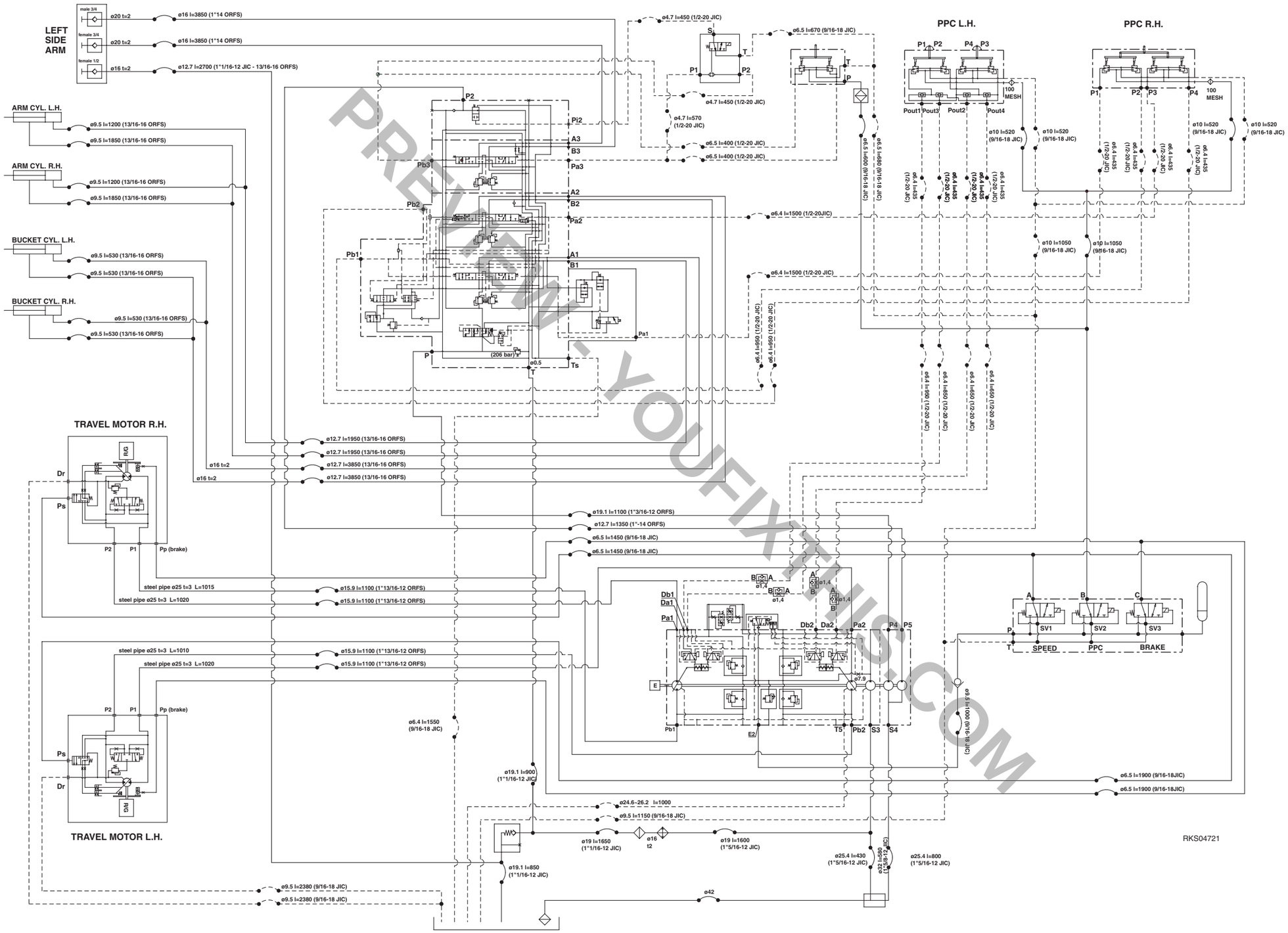


RKS03240

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

HYDRAULIC CIRCUIT (HIGH-FLOW)



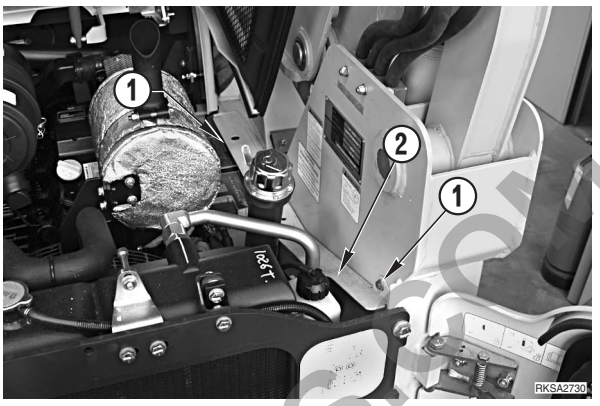
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

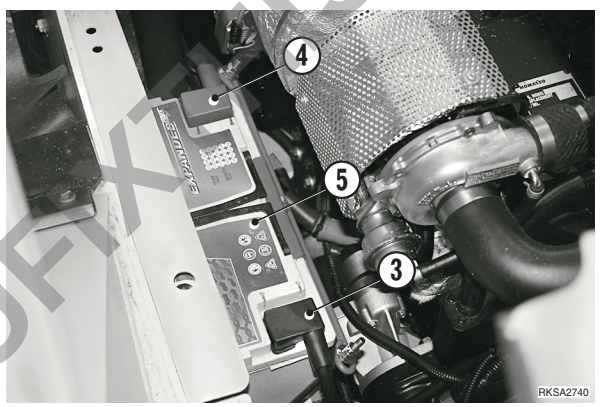
BATTERY

Removal

1 - Loosen the screws (1) and remove the carter (2).

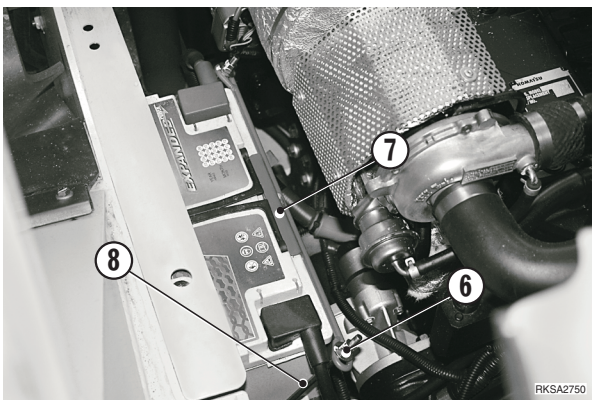


2 - Disconnect the negative cable (–) (3) and the positive cable (+) (4) from the battery (5) in that sequence.



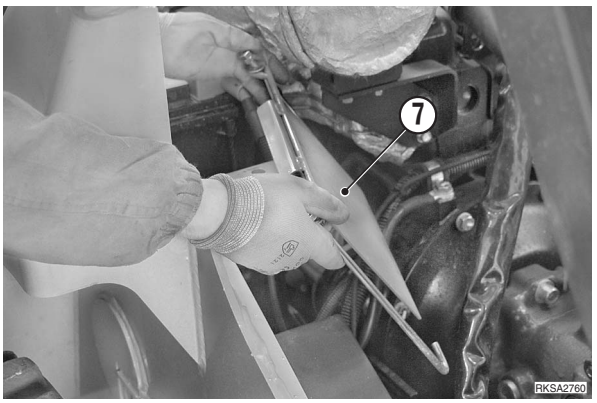
3 - Loosen the nuts (6) that secure the battery clamp (7) a release the tie-rods (8) of the battery support.

★ Disconnect the the battery clamp (7).



4 - Tilt the battery clamp (7) towards the front of the machine and lift out the battery.

5 - Remove the battery (5).



Installation

- To install, reverse removal procedure.

PREVIEW - YOUFIXTHIS.COM

FOR MACHINE

Machine model				CK35-1	
Classification	Check item	Test conditions	Unit	Standard value	Permissible value
Hydraulic pressure	Control valve	• Engine speed: ±50 rpm • Oil temperature: 45–55 °C	bar	206	196–211
	Travel motors (forward)	• Engine speed: 2500±10 rpm • Oil temperature: 45–55 °C • Parking brake: • nd speed		370	350–390
	Travel motors (backward)	• Engine speed: 2500±10 rpm • Oil temperature: 45–55 °C • Parking brake: • nd speed		370	350–390
	Servocontrol	• Engine speed: 2500±10 rpm • Oil temperature: 45–55 °C		27	25–29
	AS Valve	• Machine raised from grouns • Oil temperature: 45–55 °C • Travel levers: forward Low idling		11.8± 0.5	7.8–12.7
		at 2500±30 rpm		16.7± 0.5	12.7–18.1
	Charge safety valve	• Engine speed: max. • Oil temperature: 45–55 °C • Travel levers: at neutral		25.5±29.4	19.6–29.4
Pilot system and secondary circuit pressures	Pilot system travel forward (start-up)*	• Engine speed: 2500±10 rpm • Oil temperature: 45–55 °C • Machine raised from grouns *Pressure of wheels starting rotation	bar	–	–
	Pilot system travel (maximum)			16.5± 0.5	16–17
	Pilot system travel reverse (start-up) *			–	–
	Pilot system travel reverse (maximum)			16.5± 0.5	16–17
	Pilot system travel to right or left (start-up) *			–	–
	Pilot system travel to right or left (maximum)			16.5± 0.5	16–17
	Pilot system with parking brake disengaged			25	min. 25
Engine speed (with load)	With travel pumps in stall	• Engine speed: max. • Oil temperature: 45–55 °C • nd speed • Travel lever: at full stroke • Parking brake: applied	rpm	2600	2500–2700
	With travel pumps in stall and equipment at max. pressure	• Engine speed: max. • Oil temperature: 45–55 °C • nd speed • Travel lever: at full stroke • Parking brake: applied • Raise: at end of stroke		2300	2150–2450

PREVIEW - YOUFIXTHIS.COM

REVISED PAGES

The affected pages are indicated by the use of the following marks. It is requested that necessary actions be taken to these pages according to table below.

Symbol	Indication	Action required
○	Page to be newly	Add
●	Page to be replaced	Replace
( )	Page to be delete	Discard

Pages having no marks are those previously revised or made additions.

Symbol	Page	Time of revision	Symbol	Page	Time of revision	Symbol	Page	Time of revision	Symbol	Page	Time of revision	Symbol	Page	Time of revision
	00-1			10-16			10-59			10-102			20-36	
	00-2			10-17			10-60			10-103			20-37	
	00-3			10-18			10-61			10-104			20-38	
	00-4			10-19			10-62			10-105				
	00-5			10-20			10-63			10-106			30-1	
	00-6			10-21			10-64			10-107			30-2	
	00-7			10-22			10-65			10-108			30-3	
	00-8			10-23			10-66						30-4	
	00-9			10-24			10-67			20-1			30-5	
	00-10			10-25			10-68			20-2			30-6	
	00-11			10-26			10-69			20-3			30-7	
	00-12			10-27			10-70			20-4			30-8	
	00-13			10-28			10-71			20-5			30-9	
	00-14			10-29			10-72			20-6			30-10	
	00-15			10-30			10-73			20-7			30-11	
	00-16			10-31			10-74			20-8			30-12	
	00-17			10-32			10-75			20-9			30-13	
	00-18			10-33			10-76			20-10			30-14	
	00-19			10-34			10-77			20-11			30-15	
	00-20			10-35			10-78			20-12			30-16	
	00-21			10-36			10-79			20-13			30-17	
	00-22			10-37			10-80			20-14			30-18	
	00-23			10-38			10-81			20-15			30-19	
	00-24			10-39			10-82			20-16			30-20	
				10-40			10-83			20-17			30-21	
	10-1			10-41			10-84			20-18			30-22	
	10-2			10-42			10-85			20-19			30-23	
	10-3			10-43			10-86			20-20			30-24	
	10-4			10-44			10-87			20-21			30-25	
	10-5			10-45			10-88			20-22			30-26	
	10-6			10-46			10-89			20-23			30-27	
	10-7			10-47			10-90			20-24			30-28	
	10-8			10-48			10-91			20-25			30-29	
	10-9			10-49			10-92			20-26			30-30	
	10-10			10-50			10-93			20-27			30-31	
	10-11			10-51			10-94			20-28			30-32	
	10-12			10-52			10-95			20-29			30-33	
	10-13			10-53			10-96			20-30			30-34	
	10-14			10-54			10-97			20-31			30-35	
	10-15			10-55			10-98			20-32			30-36	
				10-56			10-99			20-33			30-37	
				10-57			10-100			20-34			30-38	
				10-58			10-101			20-35			30-39	

PREVIEW YOUFIXTHIS.COM

IMPORTANT SAFETY NOTICE

Proper service and repair is extremely important for the safe operation of your machine.
The service and repair techniques recommended by Komatsu Utility and describe in this manual are both effective and safe methods of operation. Some of these operations require the use of tools specially designed by Komatsu Utility for the purpose.

To prevent injury to workers, the symbol ⚠ is used to mark safety precautions in this manual. The cautions accompanying these symbols should always be carefully followed. If any danger arises or may possibly arise, first consider safety, and take necessary steps to face.

SAFETY

GENERAL PRECAUTIONS

Mistakes in operation extremely dangerous. Read all the Operation and Maintenance Manual carefully BEFORE operating the machine.

1. Before carrying out any greasing or repairs, read all the precautions written on the decals which are suck on the machine.
2. When carrying out any operation, always wear safety shoes and helmet. Do not wear loose work clothes, or clothes with buttons missing.
   - Always wear safety glasses when hitting parts with a hammer.
   - Always wear safety glasses when grinding parts with a grinder, etc.
3. If welding repairs are needed, always have a trained, experienced welder carry out the work. When carrying out welding work, always wear welding gloves, apron, glasses, cap and other clothes suited for welding work.
4. When carrying out any operation with two or more workers, always agree on the operating procedure before starting. Always inform your fellow workers before starting any step of the operation. Before starting work, hang UNDER REPAIR signs on the controls in the operator's compartment.
5. Keep all tools in good condition and learn the correct way to use them.
6. Decide a place in the repair workshop to keep tools and removed parts. Always keep the tools and parts in their correct places. Always keep the work area clean and make sure that there is no dirt or oil on the floor. Smoke only in the areas provided for smoking. Never smoke while working.

PREPARATIONS FOR WORK

7. Before adding or making any repairs, park the machine on hard, level ground, and block the wheels to prevent the machine from moving.
8. Before starting work, lower outrigger, bucket or any other work equipment to the ground. If this is not possible, use blocks to prevent the work equipment from falling down. In addition, be sure to lock all the control levers and hang warning sign on them.
9. When disassembling or assembling, support the machine with blocks, jacks or stands before starting work.
10. Remove all mud and oil from the steps or other places used to get on and off the machine. Always use the handrails, ladders or steps when getting on or off the machine. Never jump on or off the machine. If it is impossible to use the handrails, ladders or steps, use a stand to provide safe footing.

PRECAUTIONS DURING WORK

11. When removing the oil filler cap, drain plug or hydraulic pressure measuring plugs, loosen them slowly to prevent the oil from spurting out.
    Before disconnecting or removing components of the hydraulic circuit and engine cooling circuit, first remove the pressure completely from the circuit.
12. The water and oil in the circuits are not hot when the engine in stopped, so be careful not to get burned.
    Wait for the oil water to cool before carrying out any work on the cooling water circuits.
13. Before starting work, remove the leads from the battery. Always remove the lead from the negative (–) terminal first.

PREVIEW - YOUFIXTHIS.COM

Symbol	Page	Time of revision	Symbol	Page	Time of revision	Symbol	Page	Time of revision	Symbol	Page	Time of revision	Symbol	Page	Time of revision
	30-40			40-1										
	30-41			40-2										
	30-42			40-3										
	30-43			40-4										
	30-44			40-5										
	30-45			40-6										
	30-46			40-7										
	30-47			40-8										
	30-48			40-9										
	30-49			40-10										
	30-50			40-11										
	30-51			40-12										
	30-52			40-13										
	30-53			40-14										
	30-54			40-15										
	30-55			40-16										
	30-56			40-17										
	30-57			40-18										
	30-58			40-19										
	30-59			40-20										
	30-60			40-21										
	30-61			40-22										
	30-62			40-23										
	30-63			40-24										
	30-64			40-25										
	30-65			40-26										
	30-66			40-27										
	30-67			40-28										
	30-68			40-29										
	30-69			40-30										
	30-70													
	30-71													
	30-72			90-1										
	30-73			90-2										
	30-74			90-3										
	30-75			90-4										
	30-76			90-5										
	30-77			90-6										
	30-78													
	30-79													
	30-80													
	30-81													
	30-82													
	30-83													
	30-84													
	30-85													
	30-86													
	30-87													
	30-88													
	30-89													
	30-90													
	30-91													
	30-92													
	30-93													
	30-94													
	30-95													
	30-96													
	30-97													
	30-98													

PREVIEW - YOUFIXTHIS.COM

CHECKING ENGINE OIL PRESSURE

⚠ When measuring the engine oil pressure, take great care not to touch high-temperature parts, or to become entangled in rotating elements.

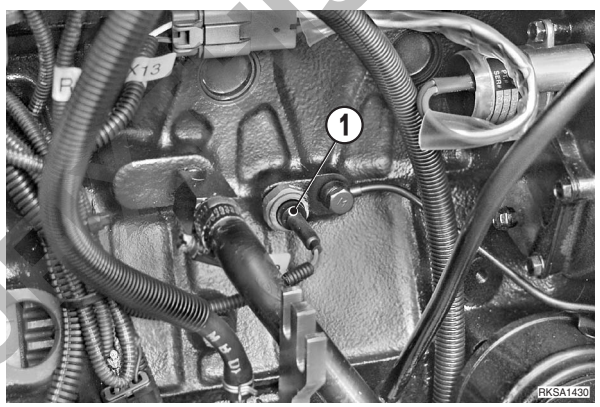
★ Check pressure with the engine at working temperature.

★ Low and high idling within permissible limits.

1 - Start the engine and wait for it to reach working temperature.

★ Working temperature:
Coolant liquid: 90°C
Engine oil: 120°C

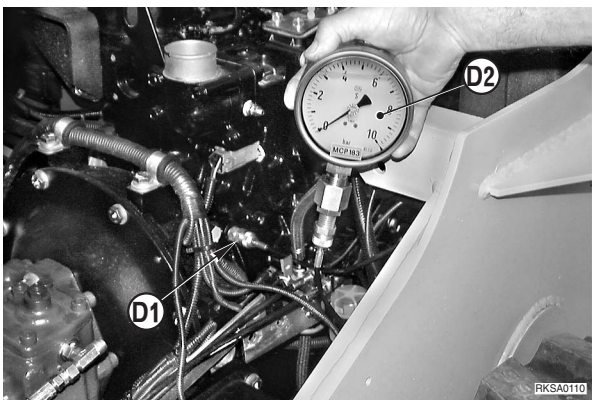
2 - Stop the engine and remove the oil pressure sensor (1).



3 - Mount the adapter **D1** and connect the pressure gauge **D2**.

4 - Start the engine and check the oil pressure at low idling (accelerator lever in low idling position) and at high idling ((accelerator lever in high idling position).

5 - Remove the adapter **D1** and install the oil pressure sensor (1).



PREVIEW - YOUFIXTHIS.COM

PREVIEW ONLY

You're viewing 18 of 304 pages

The full manual includes:

- All 304 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Komatsu CK35-1 Shop Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual