TEREXLIFT

TEREXLIFT

WORKSHOP MANUAL

Code 57.4400.4200 - 4th Edition 05/2007

Handler with telescopic boom

GIROLIFT 3514 - 3518

3714 SX - 5022 - 4010 Perfora



English

Edition

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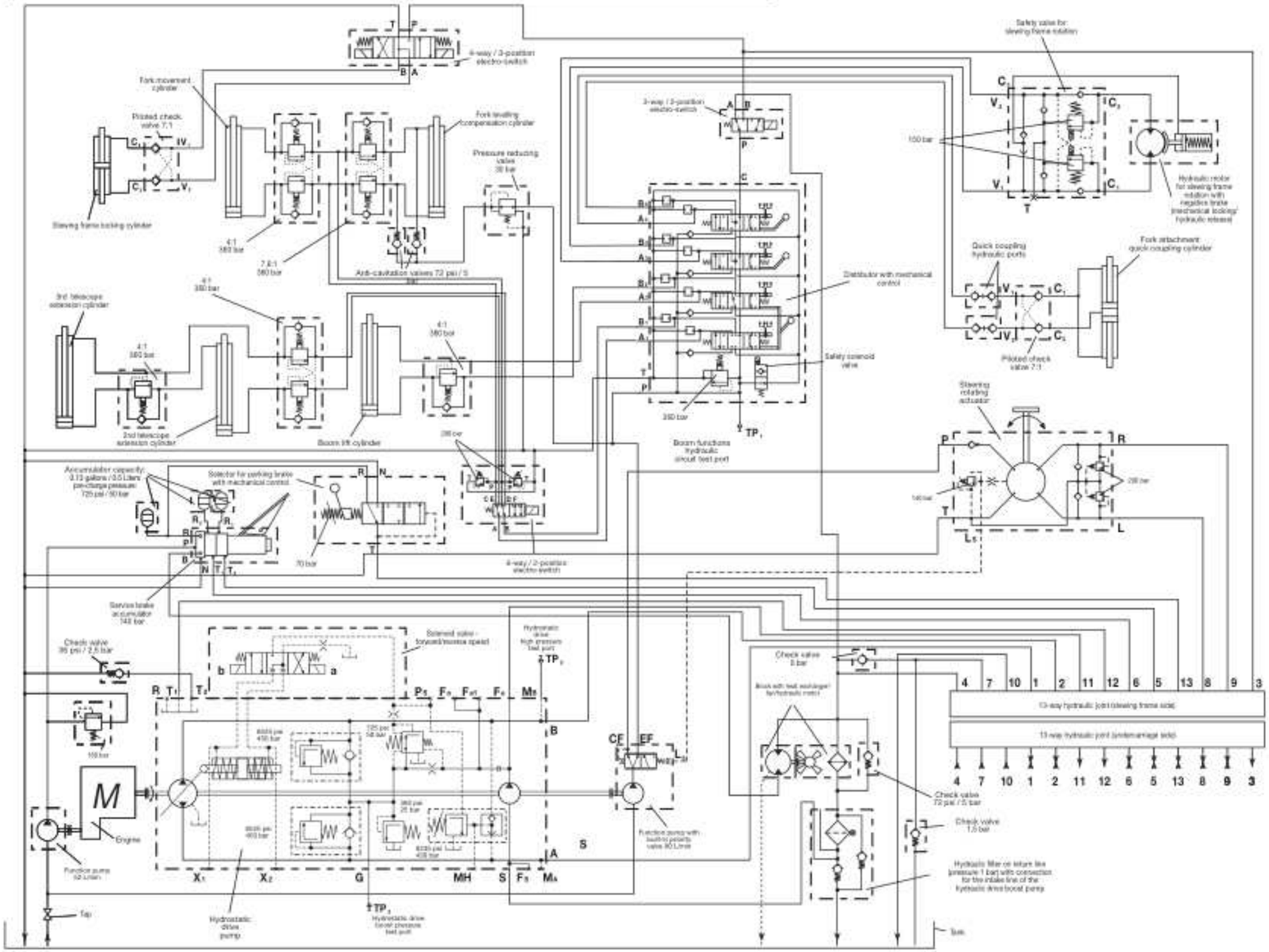
Section A
GENERAL INFORMATION

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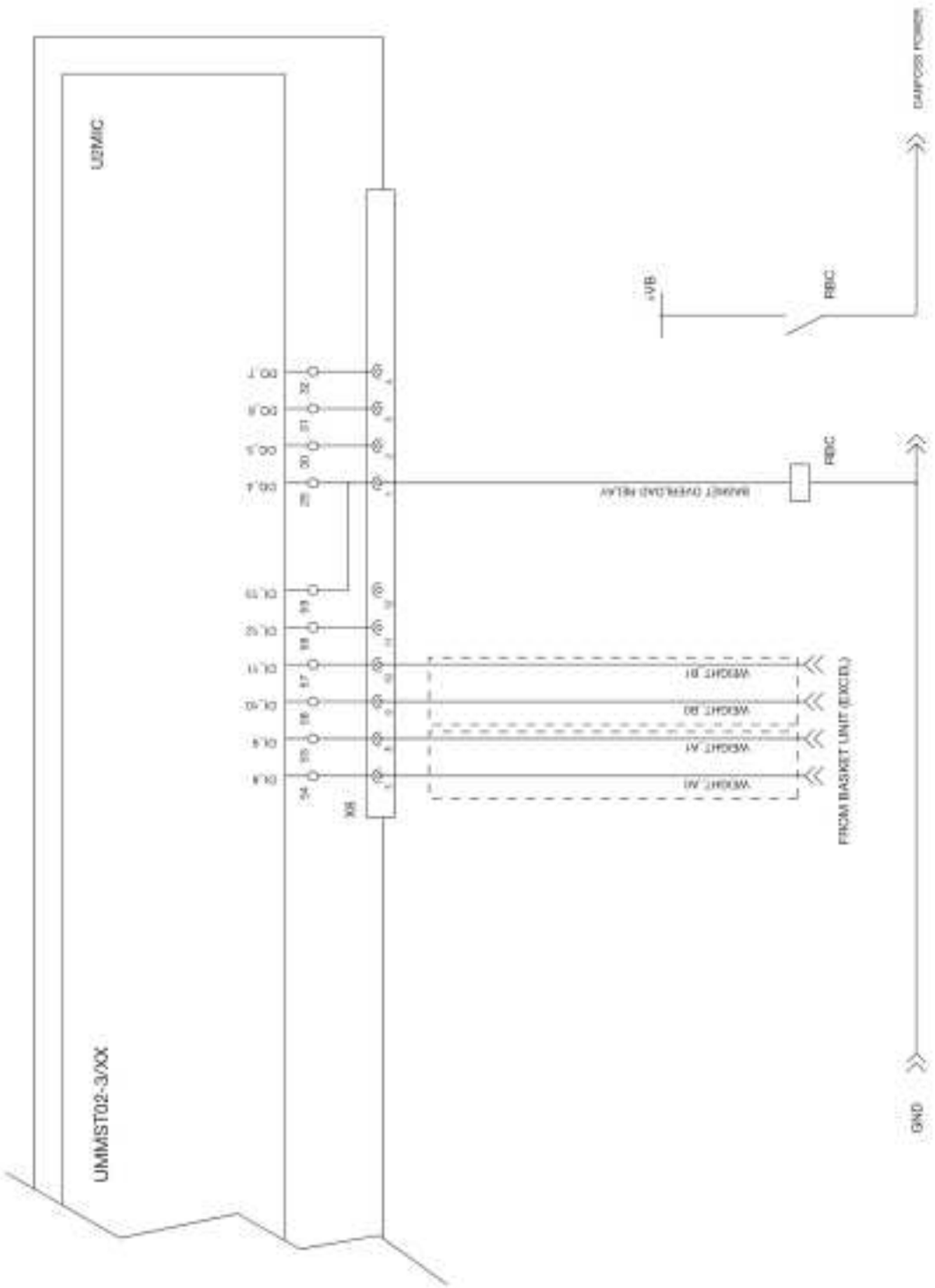
Operation: Hydraulic scheme Girolift 3714 SX (part 1 of 2)	Table: C.03.01.06



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Operation: Wiring diagram - 3B6 "Excel" load limiter	Table: C.05.11.02



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List of possible causes

1 Battery capacity low.
2 Bad electrical connections.
3 Fault in starter motor.
4 Wrong grade of lubricating oil.
5 Starter motor turns engine too slowly.
6 Fuel tank empty.
7 Fault in stop control.
8 Restriction in a fuel pipe.
9 Fault in fuel lift pump.
10 Dirty fuel filter element.
11 Restriction in filter/cleaner or air induction system.
12 Air in fuel system.
13 Fault in atomisers or atomisers of an incorrect type.
14 Cold start system used incorrectly.
15 Fault in cold start system.
16 Restriction in fuel tank vent.
17 Wrong type or grade of fuel used.
18 Restricted movement of engine speed control.
19 Restriction in exhaust pipe.
20 Engine temperature is too high.
21 Engine temperature is too low.
22 Valve tip clearances are incorrect.
23 To much oil or oil of wrong specification used in wet type oil cleaner.
24 Not enough lubricating oil in sump.
25 Defective gauge.
26 Dirty lubricating oil filter element.
27 Fan damaged.
28 Fault in engine mounting or flywheel housing.
29 Too much lubricating oil in sump.
30 Restriction in air or water passages of radiator.
31 Restriction in breather pipe.
32 Insufficient coolant in system.
33 Vacuum pipe leaks or fault in the exhauster.
34 Fault in fuel injection pump.
35 Broken drive on fuel injection pump.
36 Timing of fuel injection pump is incorrect.
37 Valve timing is incorrect.
38 Bad compression.
39 Cylinder head gasket leaks.
40 Valves are not free.
41 Wrong high-pressure pipes.
42 Worn cylinder bores.
43 Leakage between valves and seats.
44 Piston rings are not free or they are worn or broken.
45 Valve stems and/or guides are worn.
46 Crankshaft bearings are worn or damaged.
47 Lubricating oil pump is worn.
48 Relief valve does not closet
49 Relief valve does not open.
50 Relief valve spring is broken.
51 Fault in suction pipe of lubricating oil pump.
52 Piston is damaged.
53 Piston height is incorrect.
54 Flywheel housing or flywheel is not aligned correctly.
55 Fault in thermostat or thermostat is of an incorrect type.
56 Restriction in coolant passages.
57 Fault in water pump.
58 Valve stem seal is damaged (if there is one fitted).
59 Restriction in sump strainer.
60 Valve spring is broken.
61 Turbocharger impeller is damaged or dirty.
62 Lubricating oil seal of turbocharger leaks.
63 Induction system leaks (turbocharged engines).
64 Turbocharger waste-gate does not work correctly (if there is one fitted).

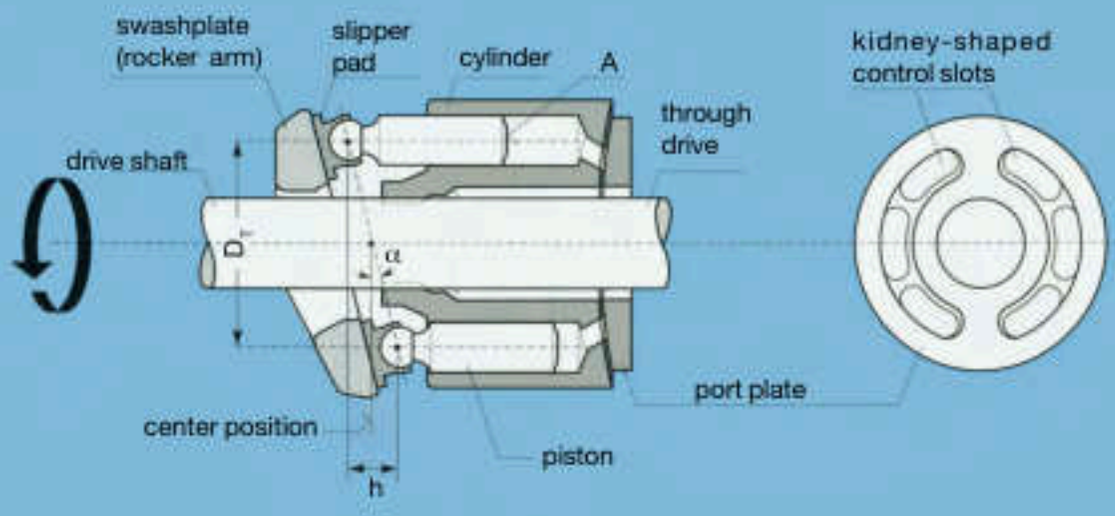
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2.2 Swashplate



Example:
Variable Displacement Pump with electro-hydraulic control, speed-related closed loop control and built-on auxiliary pump

Schematic Diagram of a swashplate unit (with pistons parallel to axis)
with fixed or variable swivel angle α



h = piston stroke
A = piston area
D_T = pitch diameter when α=0
α = swivel angle (e.g. 20°)
V_g = geom.displacement [cm³/rev.]

x = number of pistons (e.g. 9)
h = D_T • tan α
V_g = x • A • h
V_g = x • A • D_T • tanα

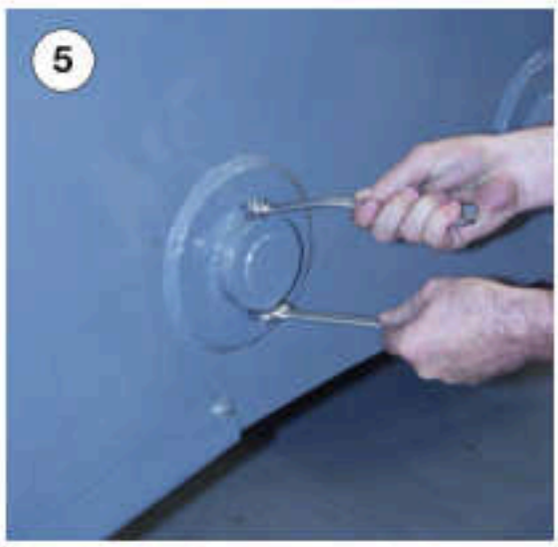
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Operation:	Dismantling the cylinders Outrigger cylinders (4)	Table: G-008

4 Remove the bottom protection casing unscrewing the 4 fixing screws with a 13mm wrench.



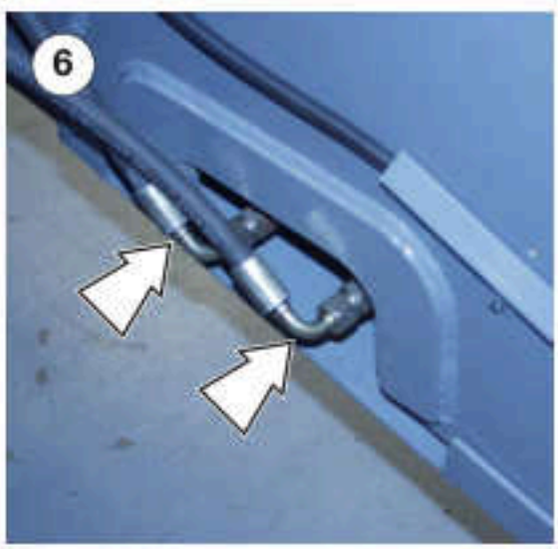
5 Remove the screw fixing the cylinder (frame side) using two 17mm wrenches.



PROTECT THE ENVIRONMENT

Used oils must be handled and disposed of according to local regulations. Address to legally authorised centres.

6 Place a container for collecting the hydraulic oil under the hoses before disconnecting them with a 22mm wrench.



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Operation:	Table:
Wiring diagram Girolift 5022 (from serial no. 09411 to serial no. 10078) • CONTROL UNIT board	**C.05.02**

X5 - MARK 21

POS.	FUNCTION DESCRIPTION	COL.	SIG.
1	MAIN HP ALARM (LS) OUT	B	OUT
2	HAZARD FLASH BUTTON POWER SUPPLY	R-A	IN
3	POSITION LIGHTS (MAIN) POWER SUPPLY	B-R	OUT
4	POSITION LIGHTS	B-G	IN
5	BLINKERS POWER SUPPLY	L-A	OUT
6	TURN SIGNALS POWER SUPPLY	31H	OUT
7	EMERGENCY FLASHER UNIT POWER SUPPLY	3M	OUT
8	HORN POWER SUPPLY	Z	IN
9	DIMMER POWER SUPPLY	V-R	IN
10	HIGH BEAMS POWER SUPPLY	B-V	IN
11	HAZARD FLASH BUTTON POWER SUPPLY	R	OUT
12	LEFT TURN SIGNAL POWER SUPPLY	2 L	OUT
13	RIGHT TURN SIGNAL POWER SUPPLY	2 A	OUT
14	FREEWHEEL MECHANICAL OVERRIDE POWER SUPPLY	15R	OUT
15	WINDSCREEN WIPER AND WASH POWER SUPPLY	3L/N	OUT
16	BACK-UP ALARM CUT-OUT FLASHER POWER SUPPLY	B-R	IN
17	EMERGENCY PUSH-BUTTON	M-N	IN
18	FROM KEY TO RELAY FOR LOW BEAM	A-V	IN
19	FROM ENGINE TO RELAY FOR DISPLACEMENT CHANGE	2-B	IN
20	REVERSE SPEED	M-H	IN
21	HAZARD PUSH-BUTTON POWER SUPPLY	R-N	OUT

X6 - MARK 17

POS.	FUNCTION DESCRIPTION	COL.	SIG.
1	BRAKE PUMP POWER SUPPLY THR STOP	R	OUT
2	LOW BRAKE PRESSURE/HIGH HYDRAULIC OIL TEMPERATURE	BW	OUT
3	LEFT TURN SIGNAL POWER SUPPLY	L	IN
4	RIGHT TURN SIGNAL POWER SUPPLY	A	IN
5	CARRIAGE ALIGNMENT SIGNAL	M-R	IN
6	EMERGENCY PUMP COIL POWER SUPPLY	A-R	IN
7	HIGH BEAM BEAM POWER SUPPLY	N	OUT
8	STEERING ACCUMULATOR SOLENOID VALVE	M-N	OUT
9	LEFT REAR POSITION LIGHTS (LESS FLASHLIGHT)	G-R	OUT
10	PRESSURE SW - LOW BRAKE PUMP PRESSURE	H-R	IN
11	HYDRAULIC OIL FILTER CLOGGING	H-L	IN
12	SLEW LIFT CYLINDER SENSOR POWER SUPPLY	28N	OUT
13	BACK-UP ALARM	B	OUT
14	SIGNAL - ROOM LOGGING SENSOR	C-L	IN
15	GND	N	IN
16	BACK-UP LAMP	M-V	OUT
17	HORN POWER SUPPLY	Z	OUT

X7 - MARK 17

POS.	FUNCTION DESCRIPTION	COL.	SIG.
1	LEFT HIGH BEAM POWER SUPPLY	V	OUT
2	SIGNAL - STABILIZER FOR OVERLOAD SYSTEM	L-R	IN
3	STABILIZER SENSOR POWER SUPPLY	R-V	OUT
4	SIGNAL - STABILIZER FOR TRANSMISSION SYSTEM ENGAGEMENT	B-G	OUT
5	SENSOR - CARDAN SHAFT	A-B	IN
6	SENSOR - 1ST SPEED ENGAGED	A-V	IN
7	SENSOR - 2ND SPEED ENGAGED	A-R	IN
8	LOW BEAM	N	OUT
9	LOW BEAM	N	OUT
10	HIGH BEAM	V	OUT
11	REPLACEMENT CHARGE SILENCE POWER SUPPLY	V	OUT
12	LEFT TURN SIGNAL	L	OUT
13	RIGHT TURN SIGNAL	A	OUT
14	OPTIONAL	L-G	OUT
15	LEFT POSITION LIGHTS	G-R	OUT
16	ECU-MCM RELAY 15 POWER SUPPLY - STEERING AXLE VALVE UNLOCKING	H-R	OUT
17	RIGHT POSITION LIGHTS	2 G	OUT

X9 - MARK 13

POS.	FUNCTION DESCRIPTION	COL.	SIG.
1	+15 MAIN CHARGE	R-R	OUT
2	SIGNAL - 3RD MECHANICAL GEAR INSERTION	A-N	IN
3	HORN SENSOR	A-V	OUT
4	SIGNAL - 1ST/2ND MECHANICAL GEAR INSERTION	X	OUT
5	2ND SPEED 1ST SOLENOID VALVE	B-R	IN
6	GND	N	OUT
7	J.U CONTROL UNIT POWER SUPPLY FROM ACTUATOR	R-N	OUT
8	1ST MECHANICAL GEAR 1ST SOLENOID VALVE	A-B	IN
9	SELECTOR (LS) (OPTIONAL)	M-H	OUT
10	TRANSMISSION OVERHEATED	L-G	IN
11	SENSOR - CARDAN SHAFT SHUTTER	A-M	OUT
12	SENSOR - 1ST SPEED ENGAGED	A-V	OUT
13	SENSOR - 2ND SPEED ENGAGED	A-R	OUT

X11 - MARK 12

POS.	FUNCTION DESCRIPTION	COL.	SIG.
1	M ELECTRONIC RELAY POWER SUPPLY	M/B	OUT
2	POSITION LIGHTS INDICATOR	G	OUT
3	CARRIAGE ALIGNMENT INDICATOR	M-B	OUT
4	+15 SENSOR - BOOM LOWERED	C-L	IN
5	+15 FOR PLATFORM	L/N	IN
6	+15 FOR SWITCHBOARD'S BUZZER ONE	ZRN	OUT
7	+15 WORK LIGHT	B-R	OUT
8	+15 STABILIZATION POWER SUPPLY FOR SYSTEM	B/N	OUT
9	+15 CHASSIS LIGHTING	ZS	OUT
10	+15 TURN SIGNALS INDICATOR POWER SUPPLY	B-G	OUT
11	+15 FROM IGNITION KEY	C-B	IN
12	+15 MAIN CHARGE FOR POWER SUPPLY	G-V	OUT
13	+15 HEATING TAP	R-R	OUT

X8 - MARK 8

POS.	FUNCTION DESCRIPTION	COL.	SIG.
1	1ST PMU SPEED SOLENOID VALVE	X-N	OUT
2	ENGINE WATER TEMPERATURE	R-L	IN
3	HYDRAULIC WATER TEMPERATURE	H-R	IN
4	AIR FILTER	A-G	IN
5	TCU ELECTROSTOP	M	OUT
6	TCC REVERSE SPEED SOLENOID VALVE	M-V	OUT
7	BRAKE OIL INDICATOR	H-R	OUT
8	STARTER KEY RELAY COIL	C	OUT
9	+15 FROM ALTERNATOR	H	OUT

X14 - MARK 8

POS.	FUNCTION DESCRIPTION	COL.	SIG.
1	EMERGENCY PUMP RELAY POWER SUPPLY	L-G	IN
2	ENABLE EMERGENCY STOP FLASHER POWER SUPPLY	M	OUT
3	+15 START DIODE (MARELLI)	C	IN
4	OPTIONAL	A-G	OUT
5	OPTIONAL +15	A-V	OUT
6	OPTIONAL	A-N	IN
7	AVAILABLE (LS-ECU)	Z	IN
8	+12 FOR PLATFORM	R-N	OUT
9	AL PITBOT JOYSTICK (MARELLI)	G-R	OUT

X12 - MARK 9

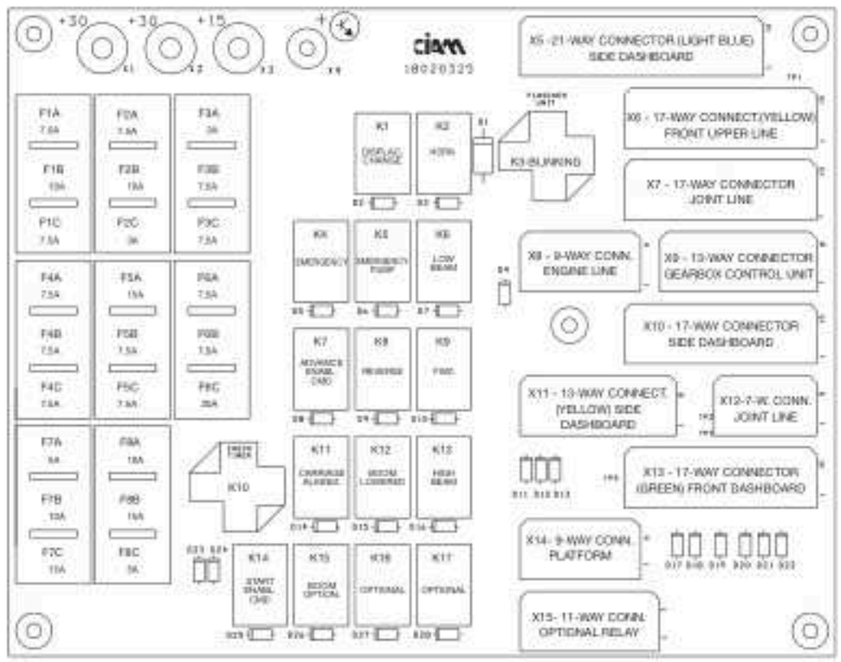
POS.	FUNCTION DESCRIPTION	COL.	SIG.
1	4 WHEEL STEERING SOLENOID VALVE	G-M	OUT
2	CRAB STEERING SOLENOID VALVE	H-R	OUT
3	SIGNAL - ROOM LOWERED	2-H	OUT
4	OPTIONAL		
5	SOLENOID VALVE - 1ST SPEED	B-N	OUT
6	DIFFERENTIAL LOCKING SOLENOID	A-E	OUT
7	SOLENOID VALVE - 2ND SPEED	M-R	OUT

X13 - MARK 17

POS.	FUNCTION DESCRIPTION	COL.	SIG.
1	HIGH BEAM INDICATOR	V-N	OUT
2	HYDRAULIC OIL INDICATOR POWER SUPPLY	2-N	OUT
3	BRAKE INDICATOR	H-R	OUT
4	ENG. WATER TEMPERATURE INDICATOR	H-R	OUT
5	AIR FILTER INDICATOR	A-G	OUT
6	OPTIONAL		OUT
7	ENGINE OIL INDICATOR	H-R	OUT
8	GEN SET INDICATOR	Z-N	OUT
9	ENGINE WATER TEMPERATURE	H-L	OUT
10	4 WHEEL STEERING POWER SUPPLY	C-N	OUT
11	CRAB STEERING POWER SUPPLY	H-R	OUT
12	ALARM INDICATOR (LEDS)	3-G	OUT
13	PARKING BRAKE INDICATOR	L-G	OUT
14	DISCONNECTED		
15	DISCONNECTED		
16	DISCONNECTED		
17	DISCONNECTED		

X15 - MARK 13

POS.	FUNCTION DESCRIPTION
OPTIONAL FOR ALL MOTIONS	



WIRE COLOURS

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

REMARK: TWO-COLOUR WIRES ARE INDICATED INDICATED THROUGH A COMBINATION OF THE APORESAID INITIALS AS FOLLOWS:

G/Y = YELLOW STRIPED (CHROMIUM COLOURING)
G-V = YELLOW-GREEN (LIGHTHOUSE COLOURING)

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