

Genie®

Service Manual

First Edition
Third Printing
Part No. 35532

Z™-30/20N

including rotating jib models

MidWestTech | Terex Genie Z-30/20N Articulated Boom Lift Service Manual | Publication 35532

Order the manual at mid-west-tech.com >

Table of Contents

Introduction

Important Information ii

Section One **Safety Rules**

General Safety Rules iii

Section Two **Specifications**

Machine Specifications ..... 2 - 1
Performance Specifications ..... 2 - 2
Hydraulic Specifications ..... 2 - 3
Hydraulic Hose and Fitting Torque Specifications ..... 2 - 4

Section Three **Theory of Operation**

Power Source ..... 3 - 1
Hydraulic System ..... 3 - 1
Electrical System ..... 3 - 1
Machine Controls ..... 3 - 2

Section Four **Scheduled Maintenance Procedures**

Introduction ..... 4 - 1
Maintenance Inspection Report ..... 4 - 3
A-1 Inspect the Operator's and Safety Manuals ..... 4 - 4
A-2 Inspect the Decals and Placards ..... 4 - 4
A-3 Inspect for Damage and Loose or Missing Parts ..... 4 - 5
A-4 Check the Hydraulic Oil Level ..... 4 - 5

MidWestTech | Terex Genie Z-30/20N Articulated Boom Lift Service Manual | Publication 3... Order the manual at mid-west-tech.com >

TABLE OF CONTENTS

Section Four **Scheduled Maintenance Procedures,** continued

A-5 Check for Hydraulic Leaks ..... 4 - 6
A-6 Test the Platform and Ground Controls ..... 4 - 6
A-7 Test the Auxiliary Power Operation ..... 4 - 8
A-8 Test the Tilt Sensor ..... 4 - 8
A-9 Test the Limit Switches ..... 4 - 9
A-10 Perform 30 Day Service ..... 4 - 12
A-11 Grease the Turntable Rotation Bearing and Worm Drive Gear ..... 4 - 12
B-1 Check the Batteries ..... 4 - 13
B-2 Inspect the Electrical Wiring ..... 4 - 14
B-3 Inspect the Tires and Wheels (including lug nut torque) ..... 4 - 14
B-4 Confirm the Proper Brake Configuration ..... 4 - 15
B-5 Check the Oil Level in the Drive Hubs ..... 4 - 15
B-6 Test the Key Switch ..... 4 - 16
B-7 Test the Emergency Stop ..... 4 - 17
B-8 Test the Ground Control Override ..... 4 - 17
B-9 Test the Platform Self-leveling ..... 4 - 18
B-10 Test the Horn ..... 4 - 18
B-11 Test the Foot Switch ..... 4 - 19
B-12 Test the Drive Enable System ..... 4 - 19
B-13 Test the Drive Brakes ..... 4 - 20
B-14 Test the Drive Speed - Stowed Position ..... 4 - 21
B-15 Test the Drive Speed - Raised or Extended Position ..... 4 - 22
B-16 Test the Alarm Package (if equipped) ..... 4 - 22
B-17 Test the Turntable Rotation Stop ..... 4 - 23

MidWestTech | Terex Genie Z-30/20N Articulated Boom Lift Service Manual | Publication 3... Order the manual at mid-west-tech.com >

TABLE OF CONTENTS

Section Four **Scheduled Maintenance Procedures,** continued

B-18 Check the Electrical Contactors ..... 4 - 24
B-19 Check the Turntable Rotation Bearing Bolts ..... 4 - 24
B-20 Replace the Hydraulic Tank Return Filter Element ..... 4 - 26
B-21 Perform Hydraulic Oil Analysis ..... 4 - 27
C-1 Check the Primary Boom Wear Pads ..... 4 - 28
C-2 Check the Free-wheel Configuration ..... 4 - 28
C-3 Replace the Drive Hub Oil ..... 4 - 29
C-4 Bleed the Platform Rotator ..... 4 - 30
D-1 Test or Replace the Hydraulic Oil ..... 4 - 31
D-2 Grease the Steer Axle Wheel Bearings ..... 4 - 33

Section Five **Repair Procedures**

Introduction ..... 5 - 1

Platform Controls

1-1 Controllers ..... 5 - 2
1-2 Diodes ..... 5 - 10
1-3 Foot Switch ..... 5 - 11
1-4 Toggle Switches ..... 5 - 12

Platform Components

2-1 Platform ..... 5 - 13
2-2 Platform Leveling Slave Cylinder ..... 5 - 14
2-3 Platform Rotator ..... 5 - 15

MidWestTech | Terex Genie Z-30/20N Articulated Boom Lift Service Manual | Publication 3... Order the manual at mid-west-tech.com >

SPECIFICATIONS

Machine Specifications, continued

Fluid Capacities		
Hydraulic tank capacity		4 gallons 15.1 liters
Hydraulic tank capacity (including tank)		6 gallons 22.7 liters
Drive hubs		
35:1 and 49:1	17 ounces	0.5 liter
62.5:1	25.6 ounces	0.76 liter

Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice.

Performance Specifications

Drive speed, maximum	
Stowed position (before serial number 3447)	
35:1 drive hubs	3.1 mph 5 km/h 40ft / 8.8 sec 12.2 m / 8.8 sec
Stowed position (before serial number 3447)	
49:1 drive hubs	2.8 mph 4.5 km/h 40 ft / 9.7 sec 12.2 m / 9.7 sec
Stowed position (after serial number 3446)	
62:1 drive hubs	3.3 mph 5.3 km/h 40 ft / 8.3 sec 12.2 m / 8.3 sec
Boom raised or extended	0.6 mph 1 km/h 40 ft / 44 sec 12.2 m / 44 sec

Gradeability	
35:1 drive hubs	17%
49:1 drive hubs	20%
62:1 drive hubs	35%

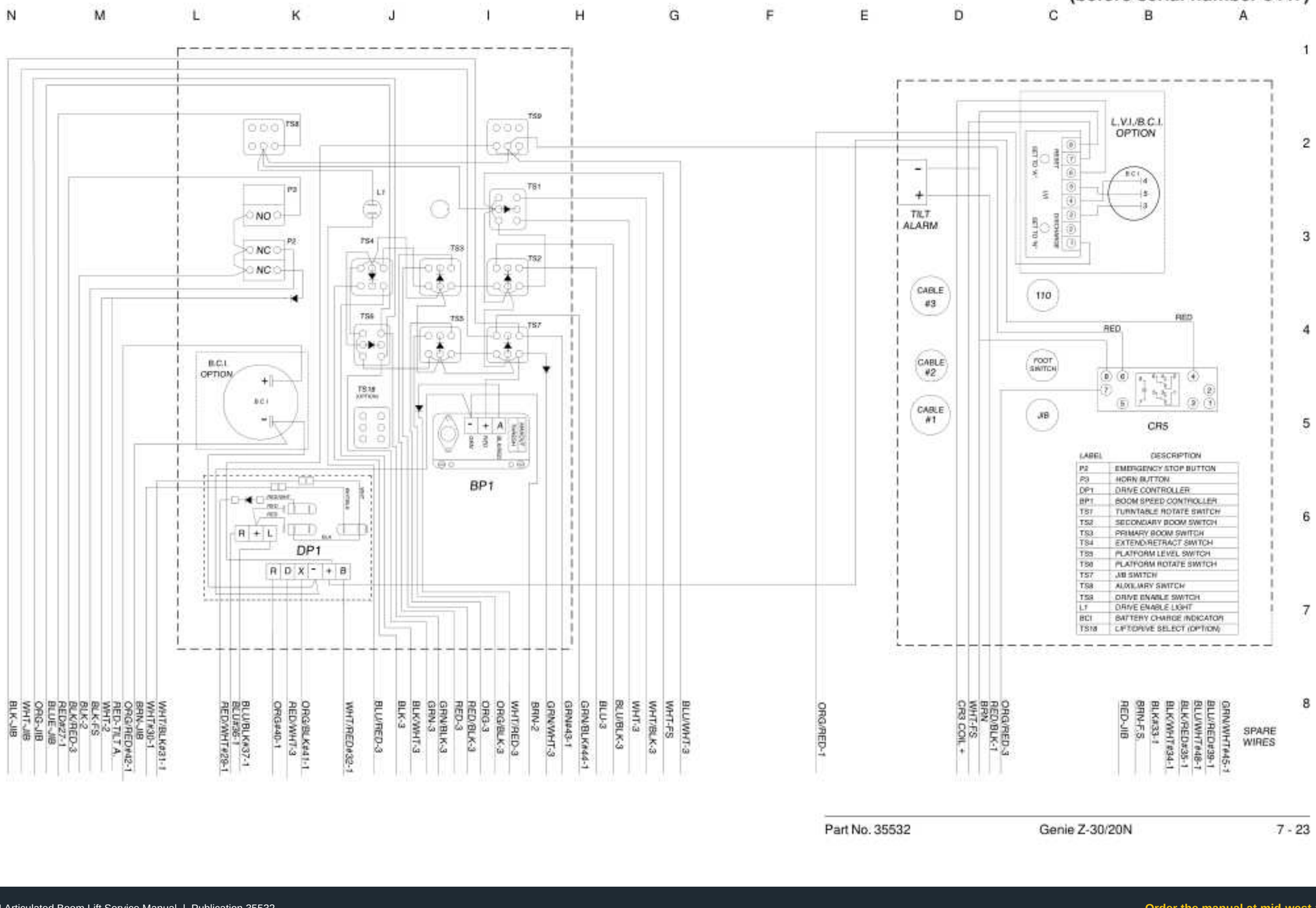
MidWestTech | Terex Genie Z-30/20N Articulated Boom Lift Service Manual | Publication 3... Order the manual at mid-west-tech.com >

FAULT CODE CHART (AFTER SERIAL NUMBER 3446)

Fault Code	Programmer Diagnostic Display	Condition	Possible Causes	Solution
21	THROTTLE FAULT 1	Machine will not drive. Controller fault indicator light on at the platform controls.	Open in wht/red wire #32 at pin 14 or red/wht wire #29 at pin 16 on the motor controller going from drive joystick to pins 14 and 16 at the motor controller OR pin 14 is internally shorted to power or ground OR the potentiometer on the drive joystick is defective.	See Chart 29A
	THROTTLE FAULT 2	Machine will not drive. Controller fault indicator light on at the platform controls.	Pin 14 (wht/red #32) is shorted to power or ground OR the potentiometer on the drive joystick is defective.	See Chart 29A
31	CONT DRVR OC	Machine will not drive. Controller fault indicator light on at the platform controls.	Main contactor (PR1) coil defective OR brake release relay CR5 defective.	Replace main contactor PR1 or brake release relay CR5 OR replace the motor controller.
32	MAIN CONT WELDED	Machine will not drive. Controller fault indicator light on at the platform controls.	Main contactor (PR1) contacts stuck closed OR grn wire at pin 17 on motor controller shorted to ground OR open in motor armature wiring OR motor controller has an internal short to ground.	See Chart 29B

MidWestTech | Terex Genie Z-30/20N Articulated Boom Lift Service Manual | Publication 3... Order the manual at mid-west-tech.com >

Platform Control Box Wiring Diagram (before serial number 3447)



MidWestTech | Terex Genie Z-30/20N Articulated Boom Lift Service Manual | Publication 35532 Order the manual at mid-west-tech.com >

Ground Control Panel Wiring Diagram (after serial number 4082)

N	M		L		K	J
BRN-CB2	BLK (OPTION 2)	52	BRN-CH	BRN-CR4	GROUND	
BRN-6	BRN-2	52	BRN-MH	BRN-SP	GROUND	
WHT-6	WHT-8	50			LS2-LS4 JUNCTION	
BLK-7	BLK-6	49			LS1-LS2 JUNCTION	
◀ WHT/BLK-SP	RED/WHT-CR5	48	RED/WHT-MH	RED/WHT-SP	BRAKE RELEASE	
	ORG/BLK-1	47		ORG/BLK-SP **	JIB BOOM ROTATE RIGHT	
	ORG-1	46		ORG-SP **	JIB BOOM ROTATE LEFT	
	GRN/BLK-1	44		GRN/BLK-SP	JIB BOOM DOWN	
	GRN-1	43		GRN-SP	JIB BOOM UP	
ORG/RED-CR1	ORG/RED-1	42	ORG/RED-CH	ORG/RED-L3	SWITCHED 48V DC	
BLK-8		40		ORG-CH	OFF-LIMIT SPEED	
◀ BLU/BLK-19D	BLU/BLK-1	37		BLU/BLK-MH	STEER RIGHT	
◀ BLU-19D	BLU-1	36		BLU-MH	STEER LEFT	
	WHT/RED-1	32		WHT/RED-CH	JOYSTICK POT. LOW	
	WHT/BLK-1	31		WHT/BLK-CH	DRIVE REVERSE	
	WHT-1	30		WHT-CH	DRIVE FORWARD	
	RED/WHT-1	29		RED/WHT-CH	2-WIRE POT.	
WHT-TILT	RED/BLK-1	28			TILT ALARM	
RED-CR3	RED-1	27		RED-SP	AUXILIARY PUMP SELECT	
(OPTION 2)		23			KEY SWITCH POWER	
RED-TILT	WHT-2	23		WHT-SP	KEY SWITCH POWER	
WHT-7	BLK-2	22	BLK-CR4	BLK-SP	+24V DC TO PLATFORM	
TB36/TB37	GRN/WHT-CR3	19		GRN/WHT-MH ◀	LIFT PUMP	
◀ WHT/BLK-SP	GRN/WHT-3	19		GRN/WHT-SP	LIFT PUMP	
	GRN/BLK-3	18		GRN/BLK-SP	PLATFORM ROTATE RIGHT	
RED-5	ORG/RED-3	16		ORG/RED-CR5	PLATFORM ROTATE LEFT	
*	ORG/BLK-3	15	ORG/BLK-MH *	ORG/BLK-SP	DRIVE ENABLE	
*	ORG-3	14	ORG-MH *	ORG-SP	PLATFORM LEVEL DOWN	
WHT-5	BLU/RED-3	13			PLATFORM LEVEL UP	
BLK-5	BLU/WHT-3	12		BLU/WHT-CH ▶	DRIVE ENABLE LIGHT	
	BLU/BLK-3	11	BLU/BLK-MH	BLU/BLK-SP	FOOTSWITCH	
	BLU-3	10	BLU-MH	BLU-SP	SECONDARY BOOM DOWN	
BLK/RED-CR4	BLK/RED-3	8			SECONDARY BOOM UP	
	BLK/WHT-3	8	BLK/WHT-MH	BLK/WHT-SP	HORN	
	BLK-3	7	BLK-MH	BLK-SP	BOOM RETRACT	
	WHT/RED-3	6	WHT/RED-MH	WHT/RED-SP	BOOM EXTEND	
	WHT/BLK-3	5	WHT/BLK-MH	WHT/BLK-SP	BOOM FUNCTION FLOW CONTROL	
	WHT-3	4	WHT-MH	WHT-SP	TURNTABLE ROTATE RIGHT	
RED/WHT-CR1	RED/WHT-3	3			TURNTABLE ROTATE LEFT	
	RED/BLK-3	2	RED/BLK-MH	RED/BLK-SP	48V DC RELAY COIL POWER	
	RED-3	1	RED-MH	RED-SP	PRIMARY BOOM DOWN	
D	C		B	A	PRIMARY BOOM UP	

[* SEE OPTIONAL WIRING]
[** JIB BOOM ROTATE OPTION]

CONTROL RELAY I.D.

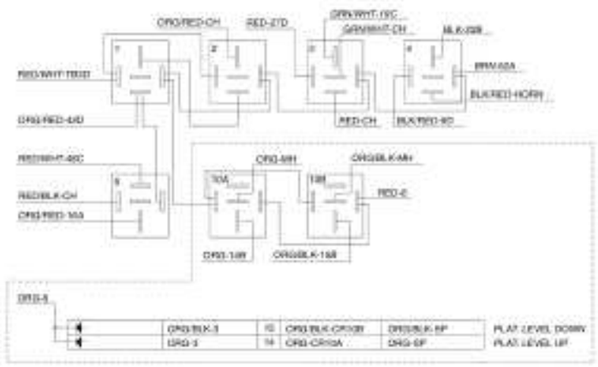
CR1 - SECONDARY 48V DC POWER
CR2 - PRIMARY 48V DC POWER
CR3 - AUXILIARY PUMP
CR4 - HORN
CR5 - BRAKE RELEASE
CR10A - PLATFORM LEVEL CUTOUT (CE ONLY)
CR10B - PLATFORM LEVEL CUTOUT (CE ONLY)

SPARE WIRE LIST

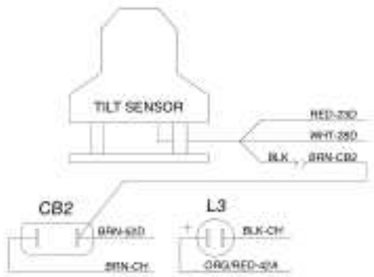
BLK-1
BLK/WHT-1
BLK/RED-1
BLU/WHT-1
BLU/RED-1
GRN/WHT-1

OPTION NUMBERS

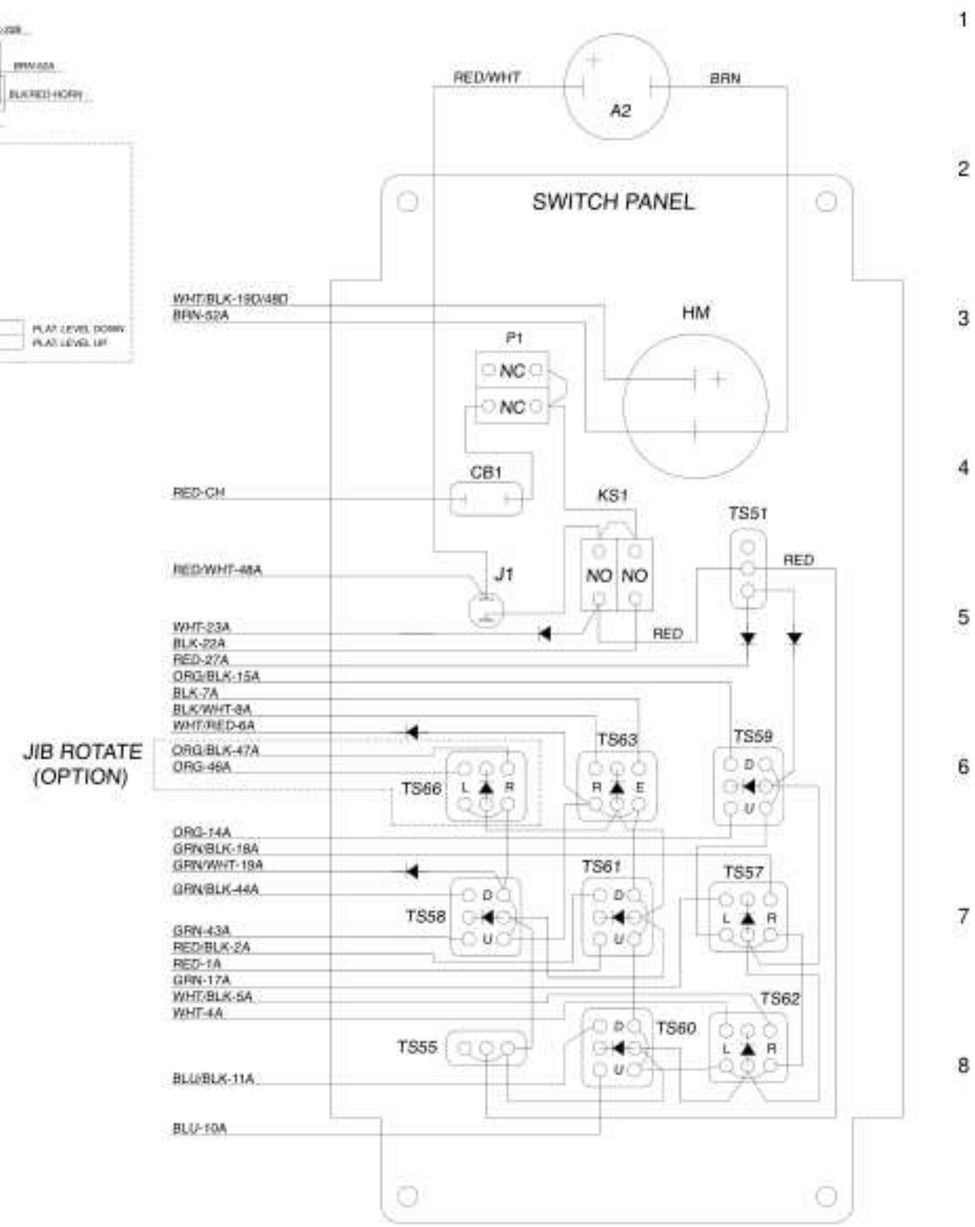
1 - PLATFORM LEVEL CUTOUT
2 - FLASHING BEACON
3 - DESCENT ALARM



PLATFORM LEVEL CUTOUT (CE VERSION ONLY)



LABEL	DESCRIPTION
P1	EMERGENCY STOP BUTTON
KS1	KEY SWITCH
TS51	AUXILIARY TOGGLE SWITCH
TS55	FUNCTION ENABLE TOGGLE SWITCH
TS57	PLATFORM ROTATE TOGGLE SWITCH
TS58	JIB BOOM UP/DOWN TOGGLE SWITCH
TS59	PLATFORM LEVEL TOGGLE SWITCH
TS60	SECONDARY BOOM UP/DOWN TOGGLE SWITCH
TS61	PRIMARY BOOM UP/DOWN TOGGLE SWITCH
TS62	TURNTABLE ROTATE TOGGLE SWITCH
TS63	BOOM EXTEND/RETRACT TOGGLE SWITCH
TS66	JIB BOOM ROTATE TOGGLE SWITCH (OPTION)
CB1	CIRCUIT BREAKER, CONTROLS, 10A
CB2	CIRCUIT BREAKER, CONTROLS RETURN, 10A
J1	BRAKE RELEASE JACK
HM	HOURMETER
CH	CHASSIS HARNESS
MH	MANIFOLD HARNESS
SP	SWITCH PANEL
CR	CONTROL RELAY
A2	BRAKE RELEASE/TRAVEL ALARM
A3	DESCENT ALARM (OPTION)
L3	CONTROLLER STATUS LED



MidWestTech | Terex Genie Z-30/20N Articulated Boom Lift Service Manual | Publication 35532 Order the manual at mid-west-tech.com >