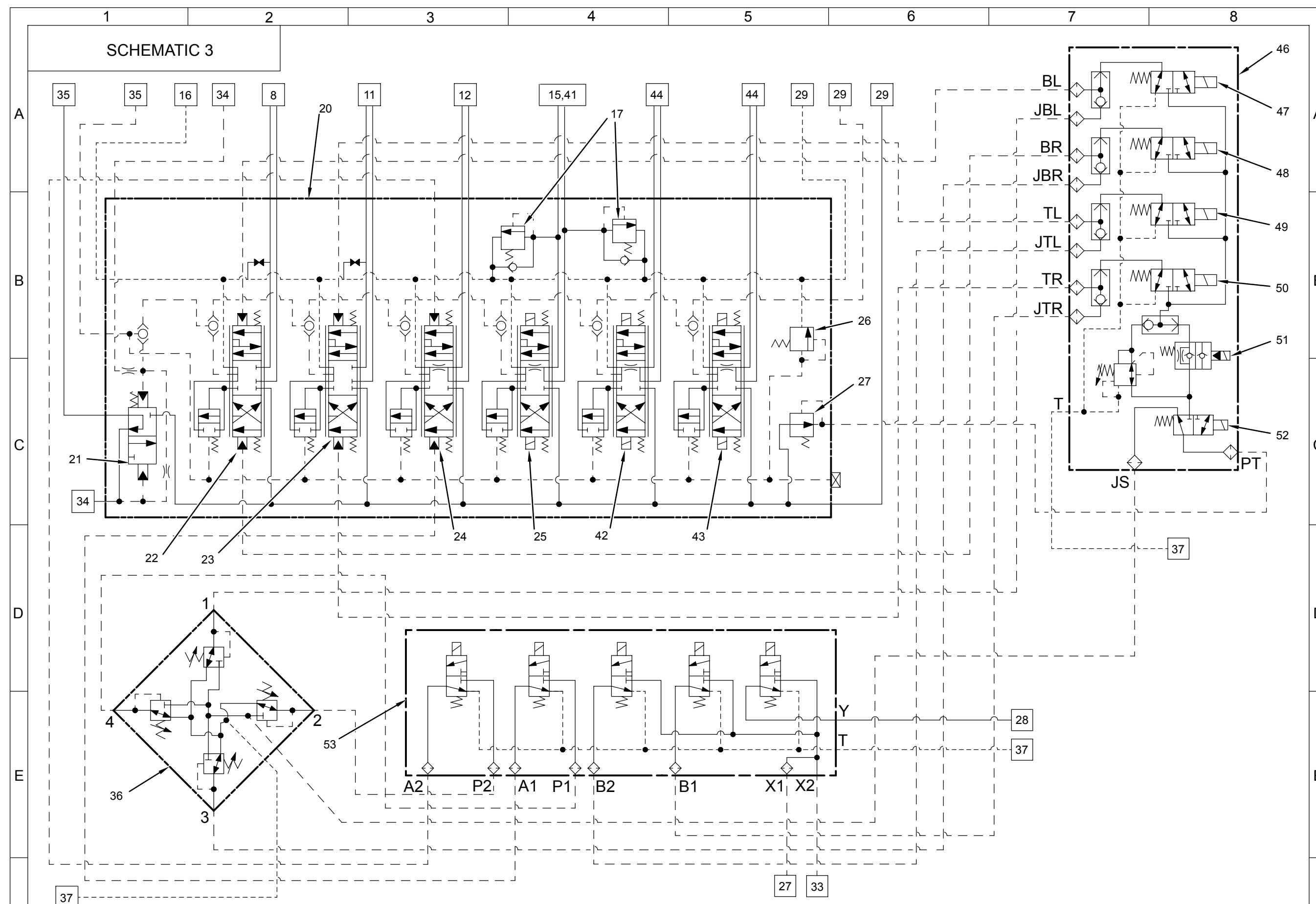


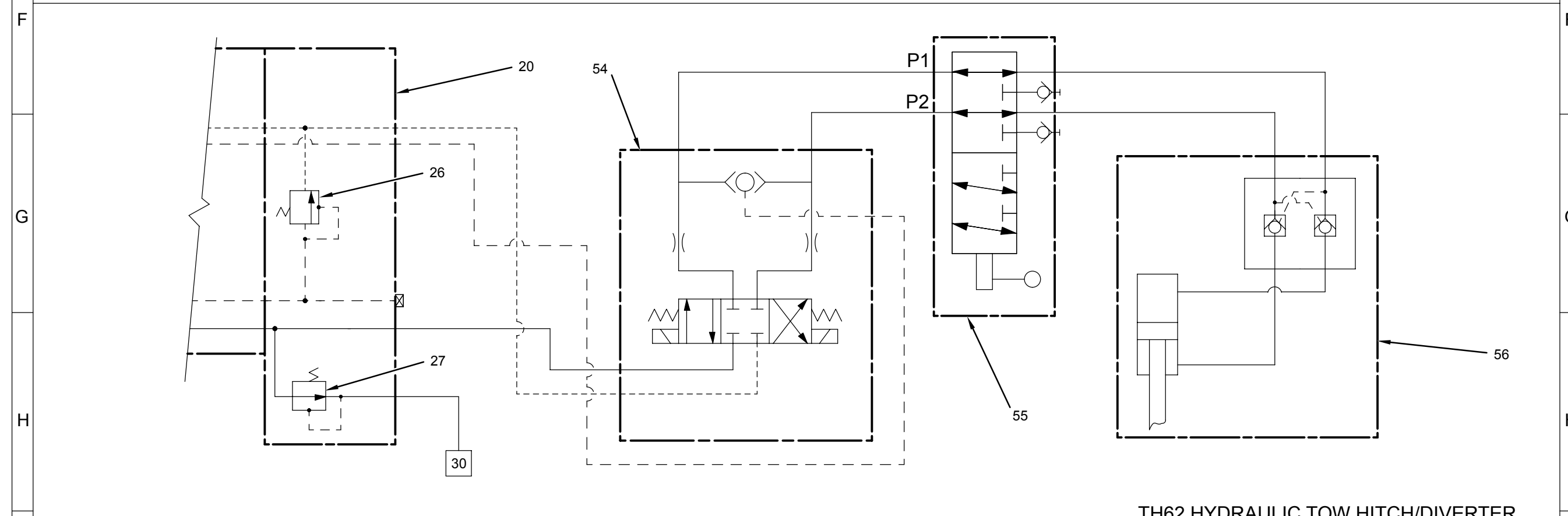
Schematic

TH62, TH 63, TH82, TH83 & TH103 Telehandler Electrical System

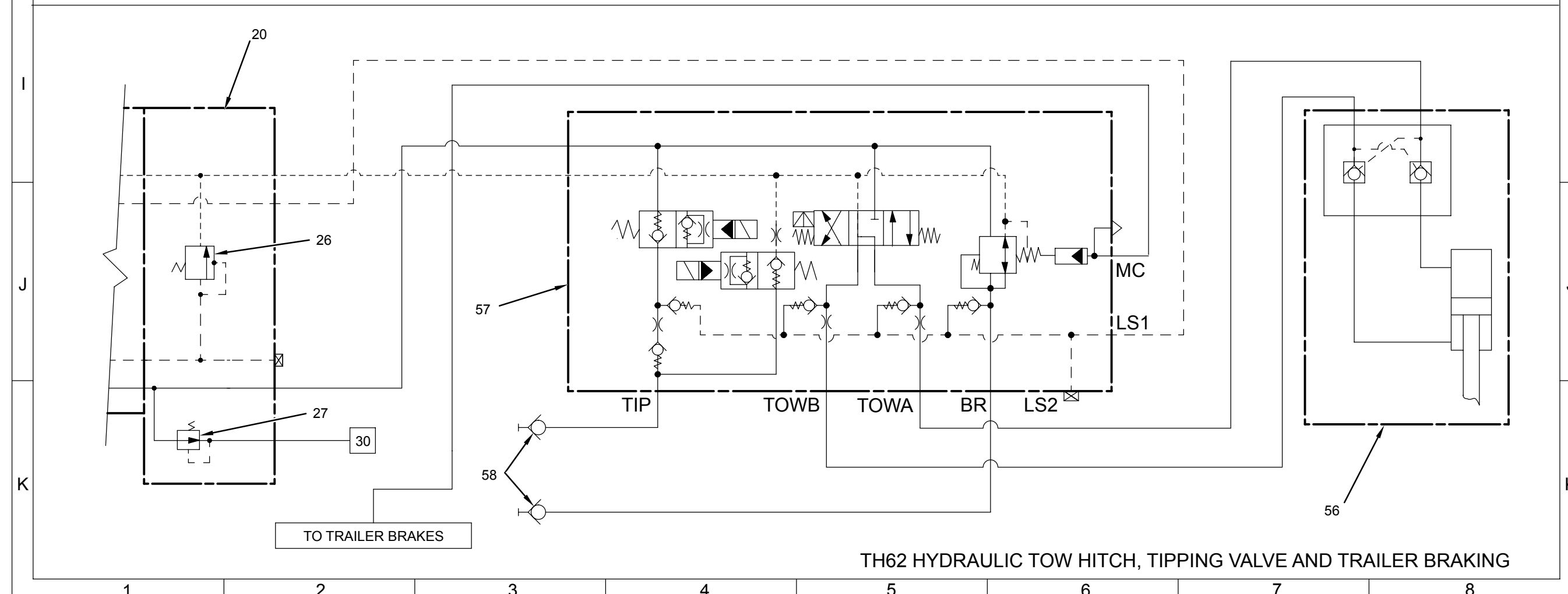
4TM1-1234
5WM1-1587
3JN1-578
3KN1-483
3LN1-749
3NN1-783
3PN1-529
3RN1-1071



TH63 AND TH83 ACCESS PLATFORM TYPE 1, TYPE 3 OR TYPE A CONTROL ARRANGEMENTS



TH62 HYDRAULIC TOW HITCH/DIVERTER



TH62 HYDRAULIC TOW HITCH, TIPPING VALVE AND TRAILER BRAKING

Schematic

TH62, TH63, TH82 & TH83 Telehandler Hydraulic System for Type 1, Type 3 or Type A Control Arrangements

- 3LN641 - Up
- 4TM892 - 4013
- 3NN509 - Up
- 5WMM918 - 6020
- 3KN434 - Up
- 3JN502 - 1509
- 3RN550 - 4014

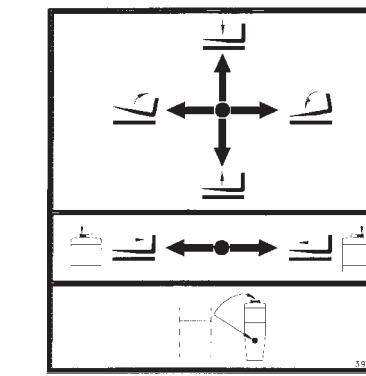
Component Location Table

Separate schematics in this publication are identified as Schematic 1, Schematic 2 and Schematic 3. Components common to all schematics have the same item number. In Schematic 3, some item numbers are shown in boxes at the end of some of the hydraulic lines. This provides a reference to the component on Schematic 1 and Schematic 2 that connects to these lines. The schematics have borders and grids to locate the components. Identify both the cross reference and the number on the schematic from the following table.

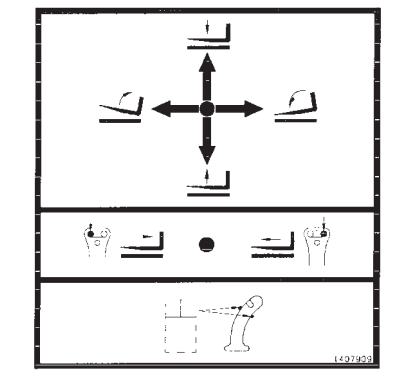
Component Item No.	Component Description	Schematic Location		
		No. 1	No. 2	No. 3
1	Front Steering Cylinder	A1	A1	-
2	Selector Valve (steering mode)	A2	A2	-
3	Rear Steering Cylinder	A2	A2	-
4	Compensating Cylinder	A3	A3	-
5	Work Tool Cylinder (if equipped)	A8	A10	-
6	Load Control Valve for Work Tool Cylinder (if equipped)	A8	A10	-
7	Boom Cylinder (boom raise/lower)	C3	C3	-
8	Load Control Valve for Boom Cylinder	C3	C3	-
9	Compensating Cylinder	B5	B5	-
10	Telescoping Cylinder	B5	B5	-
11	Load Control Valve for Telescoping Cylinder (TH63 & TH83)	B5	B5	-
11A	Load Control Valve for Telescoping Cylinder (TH62 & TH82)	A10	-	-
12	Valve (compensating cylinders)	B8	C6	-
13	Load Control Valve for Tilt Cylinder	B8	A8	-
14	Tilt Cylinder	B9	A9	-
15	Couplers (quick disconnect)	B10	B11	-
16	Oil Filter	C1	C1	-
17	Relief Valves (auxiliary services) (part of item 20)	C6	C6	A4
18	Load Control Valve for the Frame Leveling Cylinder (if equipped)	C10	C10	-
19	Frame Leveling Cylinder (if equipped)	C11	C11	-
20	Bank Valve	D2	D2	A2/F3/I2
21	Inlet Section	E2	E2	C1
22	Implement Section (boom raise/lower) (closed center spool)	E4	E4	D1
22A	Implement Section (boom raise/lower) (open center spool)	C10	-	-
23	Implement Section (boom extend/retract) (closed center spool)	E5	E5	D2
23A	Implement Section (boom extend/retract) (closed center spool) TH62 & TH82	C9	-	-
23B	Implement Section (boom extend/retract) (open center spool) TH63 & TH83	C10	-	-
24	Implement Section (coupler tilt)	E5	E5	D3
25	Implement Section (auxiliary services)	E6	E6	D4
26	Signal Relief Valve	E6	E6	B6/I3/J2
27	Pressure Reducing Valve	E7	E7	C6/H3/K2
28	Differential Lock Cylinder	E8	E8	-
29	Control Valve for Frame Leveling (if equipped) (closed center spool)	E10	D11	-
29A	Control Valve for Frame Leveling (if equipped) (open center spool)	E11	-	-
30	Control Valve	E6	E6	-
31	Solenoid Valves (pilot control system)	E6	E6	-
32	Solenoid Valve (differential lock)	E7	E7	-
33	Brake Cylinder (boost) (second type system)	F11	F11	-
33A	Brake Cylinder (master) (first type system)	F11	F11	-
34	Metering Pump (steering)	F3	F3	-
35	Piston Pump	F3	F3	-
36	Joystick Control	F11	F11	E1
37	Hydraulic Tank	H2	H2	-
38	Valve for quick coupler (disengage pins)	B8	-	-
39	Load Control Valve for Coupler Cylinder	B9	-	-
40	Coupler Cylinder	C10	-	-

Introduction

This publication shows the hydraulic system schematics for machines equipped with either of the films illustrated below for the joystick control. For full details of the joystick control arrangements refer to Operation and Maintenance Manual SEBU6865 or SEBU7112.



139-0038 Film (Boom Control). Installed on machines equipped with an early type of joystick control.



140-7909 Film (Boom Control). Installed on machines equipped with a later type of joystick control.

Early type of joystick controls have a straight handle, with a pushbutton switch on the front and a rocker switch on the top. Later type of joystick controls have curved handles with pushbutton switches on the front and rear, and a rocker switch on top. The hydraulic valve section of the joystick control is the SAME on both types.

Compare the film for the joystick control located in the machine cab with the film illustrations above to determine if these schematics apply to your machine. If the film for the joystick control on the machine you are operating is not shown above, refer to Hydraulic Schematic Form No. RENR3444.

TH62 and TH82 Machines

Telescoping cylinder (10) is equipped with a single element lock valve (11A) which blocks the rod and piston sides in the hold position.

TH63 and TH83 Machines

Telescoping cylinder (10) is equipped with a dual element lock valve (11) which blocks the rod and piston sides in the hold position.

TH62 and TH82 Machines (Early)

The spool in the implement section for boom extend/retract (23A) of bank valve (20) blocks the work port for rod side of the telescoping cylinder when it is in the center position.

TH63 and TH83 Machines (Early)

The spool in the implement section for boom extend/retract (23B) of bank valve (20) connects both work ports for the telescoping cylinder together and to tank when in the center position.

All Machines (Later)

The spools in the implement section for boom raise/lower (22) and the implement section for boom extend/retract (23) of the bank valve block the flow of oil to tank when in the center position.

TH62 Machines

Frame leveling is not an option on these machines. TH62 machines can be equipped with an optional powered tow hitch attachment which is raised and lowered by a cylinder. This attachment uses control valve (54), and the same instrument panel switch and circuits as frame leveling.

TH62, TH63, TH82 and TH83 Machines

Valve (12) for the compensating cylinders is mounted on the rear axle on TH63 and TH83 machines. The valve is mounted on the right side front of the machine frame on TH62 and TH82 machines.

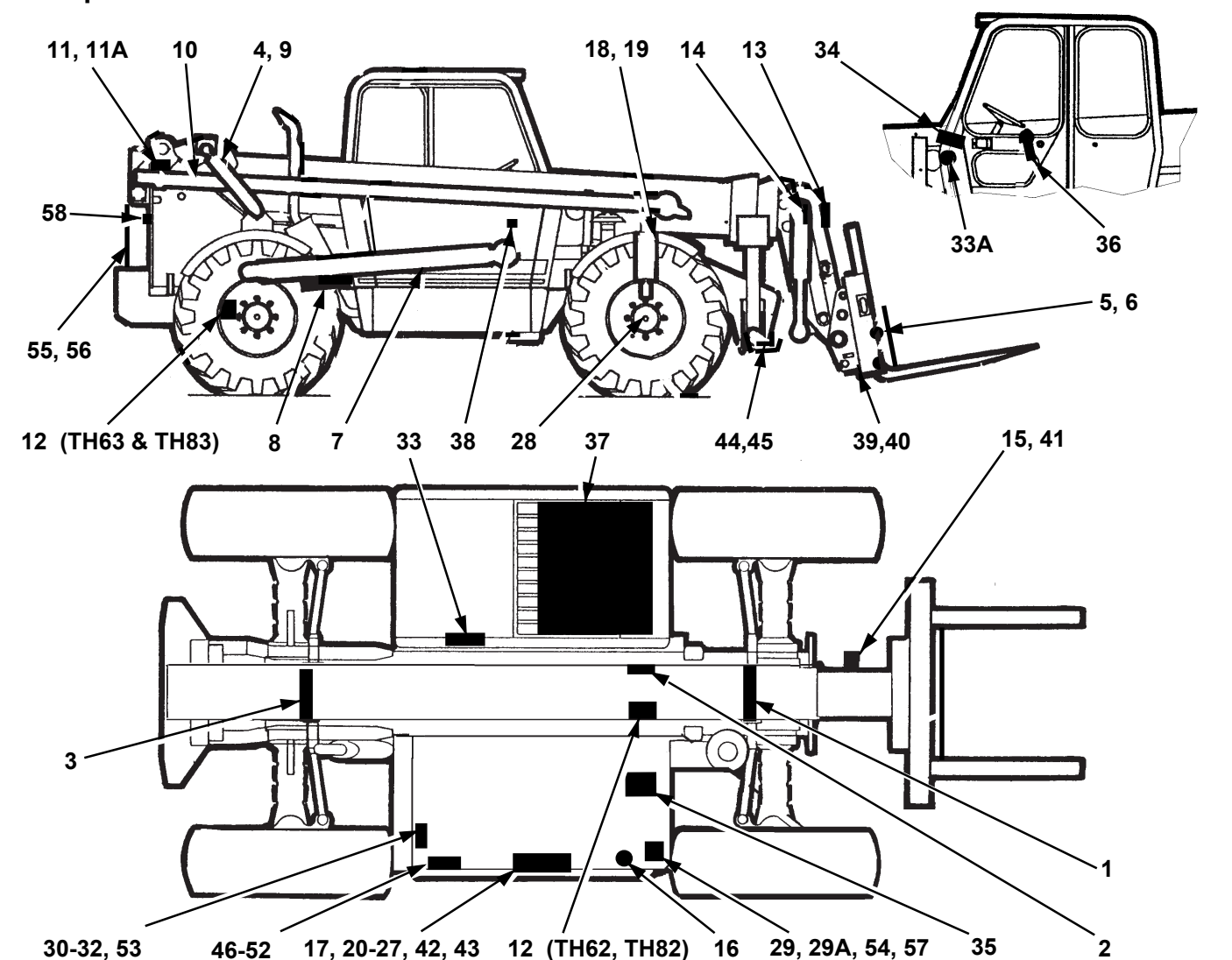
TH62, TH63, TH82 and TH83 Machines

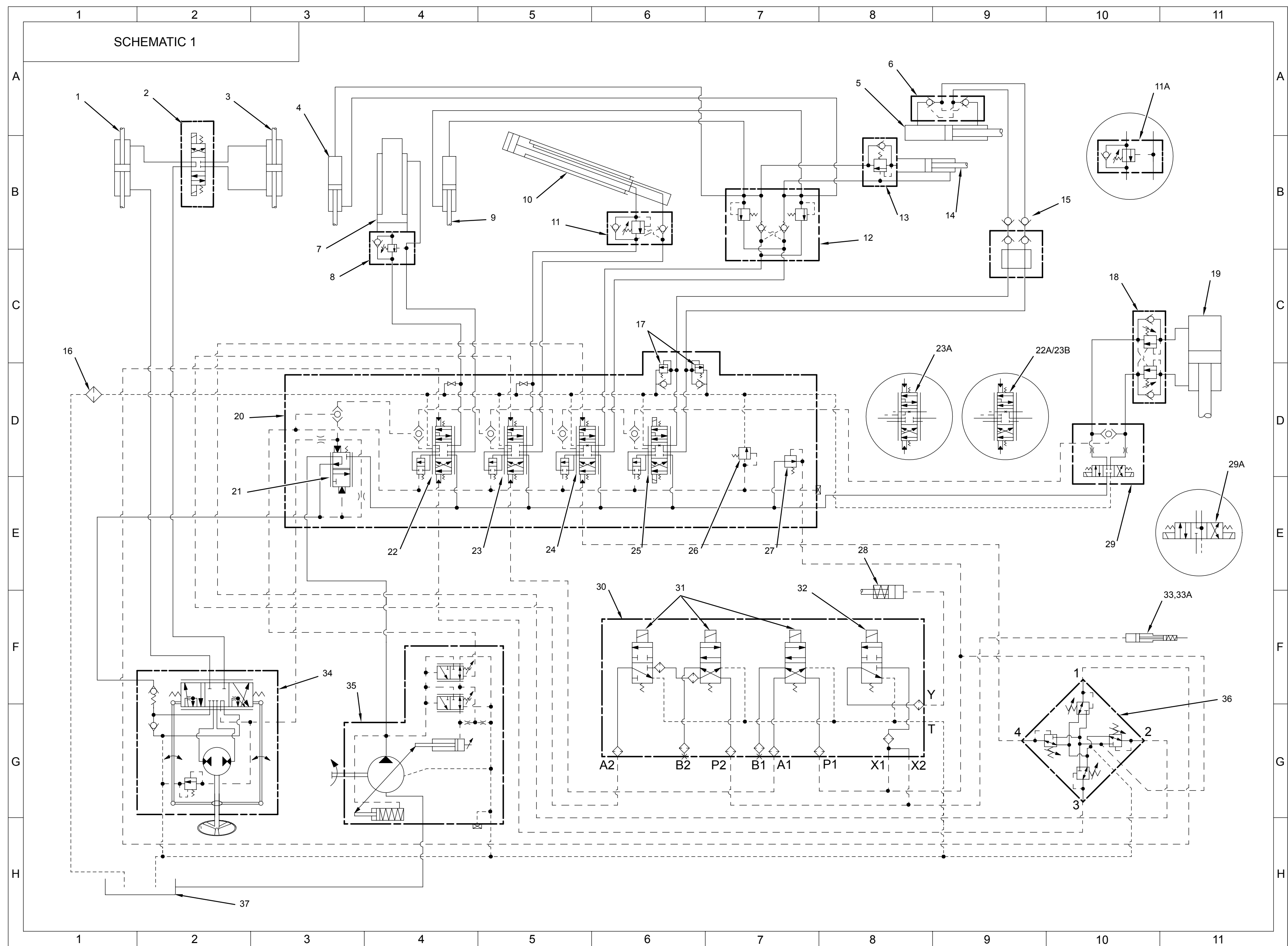
On machines equipped with a first type brake system, the brake cylinder (master) (33A), located in the front of the cab, is connected to the pilot hydraulic system. On machines equipped with a second type brake system, the brake cylinder (boost) (33), located in the machine frame is connected to the pilot hydraulic system.

Component Location Table (Continued)

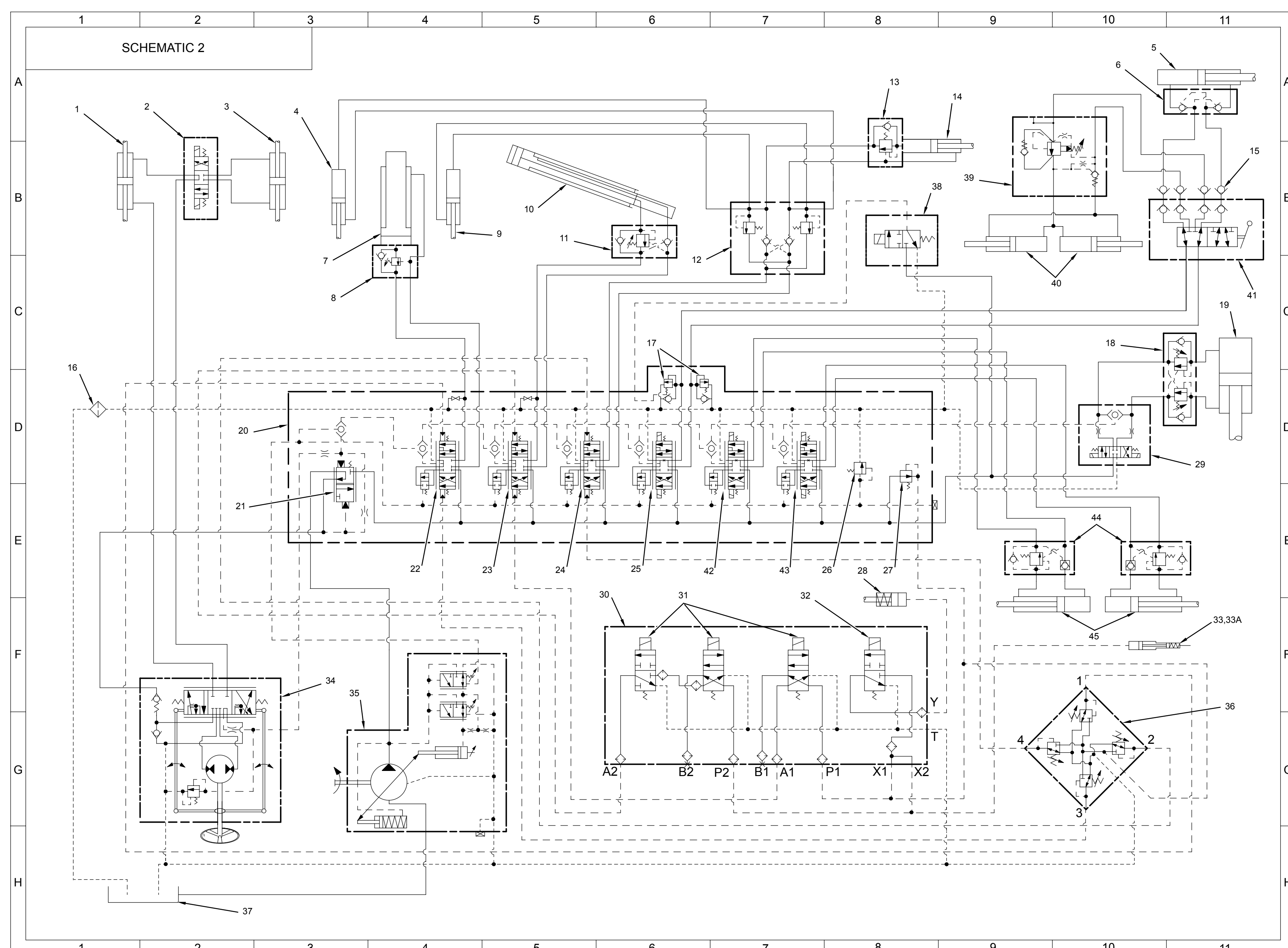
Component Item No.	Component Description	Schematic Location		
		No. 1	No. 2	No. 3
41	Diverter Valve	-	C11	-
42	Implement Section for Stabilizer (if equipped) (part of item 20)	-	E6	D4
43	Implement Section for Stabilizer (if equipped) (part of item 20)	-	E7	D5
44	Load Control Valves for Stabilizer Cylinders (if equipped)	-	E10	-
45	Stabilizer Cylinders (if equipped)	-	F10	-
46	Control Valve (access platform - if equipped)	-	-	A8
47	Solenoid Valve (boom lower)	-	-	A8
48	Solenoid Valve (boom raise)	-	-	A8
49	Solenoid Valve (boom retract)	-	-	B8
50	Solenoid Valve (boom extend)	-	-	B8
51	Solenoid Valve (boom Speed)	-	-	B8
52	Solenoid Valve (on/off)	-	-	C8
53	Control Valve (lockout - if equipped)	-	-	E2
54	Control Valve for Tow Hitch (if equipped) TH62 Only	-	-	F4
55	Diverter Valve for Tow Hitch (if equipped) TH62 Only	-	-	H6
56	Tow Hitch Cylinder (if equipped) TH62 Only	-	-	H8/K7
57	Valve for Tow Hitch/ Tip/Trailer Braking (if equipped) TH62 Only	-	-	J3
58	Couplers (quick disconnect - if equipped) TH62 Only	-	-	K3

Component Location Illustration





BASIC MACHINES EQUIPPED WITH TYPE 1, TYPE 3 OR TYPE A CONTROL ARRANGEMENTS



MACHINES EQUIPPED WITH STABILIZERS, TWO AUXILIARY HYDRAULIC SERVICES AND TYPE 1, TYPE 3 OR TYPE A CONTROL ARRANGEMENTS

Wire Description			
Wire Number	Wire Color	Description	Wire Color
Power Circuits			
101	RD	Bat (+)	
102	BU	Head Lamp Sw, Dome Lamp, Steer Col Sw	
103	YL	Func Lock Sw	
105	BR	Key Sw	
108	RD	B+ Radio	
112	PJ	Main Power Rly Output to Fuses	
113	OR	Indicator Lights (Power)	
114	GN	Warning Hom Sw (Forward)	
114	GY	Warning Hom Sw (Forward)	
115	PK	Stabilizer Switches	
116	BR	Frame Level Sw	
117	YL	Speed Limiter	
118	GY	Front Wiper Sw	
119	PK	Rear Wiper/Washer Sw	
123	WH	Power to Gauges, LH Cool Temp Alarm	
124	GN	Heater Sw	
126	PK	Park Brake Sw	
130	GN	Flood Lamp Sw	
135	BU	Not Used	
138	GN	Steer Select Sw	
144	GN	Beacon Sw	
147	PJ	Lockout Rly to Stab Fuse and Frame Lvl Fuse	
157	YL	Haz Warn Sw (Turn Sig Ckt)	
161	PK	Haz Warn Sw (Haz Ckt)	
162	YL	Aux Sw	
165	YL	Fog Lamp Sw	
174	PK	Load Indicator	
Ground Circuits			
200	GN	Main Chassis	
200	BK	Main Chassis	
Monitoring Circuits			
304	WH	Starter Relay Output	
306	GN	Neut Start Relay (contact) to Start Relay (coil)	
307	OR	Key Sw to Neut Start Relay (contact)	
308	YL	Main Par. Headlamp Rly, Backlights	
310	PJ	Cold Start Relay Coil	
317	YL	Start Aid Relay to Start Aid Sol	
321	BR	Reverse Lamp, Backup Alarm	
322	GY	Warning Hom (Forward)	
324	BU	Differential Lock Sol	
327	PK	Func Lock Sw to TR Sol, Lockout Relay	
329	YL	E Stop Sol	
330	YL	Neut Start Relay Ckt, Park Brake Sw	
332	BU	Lockout Sw to Func Lock Sw	
A314	OR	Park Brake Sw to Trans Neutralizer Relay Sol	
A315	WH	Park Brake Sw to Trans Neutralizer Rly Resat	
A318	BU	Platform Control and Boom Low Sw	
Monitoring Circuits			
403	GN	Alternator (V) Term to Serv Meter	
405	GY	Oil Press Sw	
441	OR	Eng Coolant Temp Gauge	
444	BU	Oil Temp Gauge	
447	PK	Fuel Level Gauge	
F401	GY	High Coolant Temp Sw	
Accessory Circuits			
500	BR	Wiper - Front (Park)	
501	GN	Wiper - Front (Low)	
502	OR	Wiper - Front (HI)	
506	PJ	Washer - Front	
507	WH	Washer - Rear	
508	PJ	Radio Speaker - Left	
511	BR	Radio Speaker - Right	
515	GY	Blower Motor (HI)	
517	BU	Blower Motor (Low)	
518	OR	Haz Sw to Flasher	
538	WH	Heater Sw to Steer Col Sw & Flasher	
546	BU	Aux A Sol	
547	OR	Aux B Sol	
548	GY	Aux Div Sol	

Sender Specifications		
Part No.	Component Description	Resistance (Ohms)*
3T-7076	Sender: Coolant Temperature	72-82 @ 110° C (230°F) 560-716 @ 54° C (130°F)
8I-3814	Sender: Fuel Level	33 Full 240 Empty
8I-6428	Sender: Transmission Oil Temperature	72-82 @ 110° C (230°F) 560-716 @ 54° C (130°F)

* At room temperature unless otherwise noted.

Off Machine Switch Specification				
Part No.	Function	Actuate	Deactuate	Contact Position
123-2844	Service Brake Pressure	1000 kPa (145 psi)	2000 kPa (290 psi)	Normally Closed
7W-1238	Oil Pressure	76 ± 2.1 kPa (11 ± 3 psi)	-	Normally Closed

Related Electrical Service Manuals	
Title	Form Number
Alternator	SENRS541
Electric Starting Motor	SENRS268
Powertrain Control	SENRS309

Component Location					
Component	Schematic Location	Machine Location	Component	Schematic Location	Machine Location
Alarm - Backup	D-15	1	Solenoid - Advance	F-13	2
Alternator	F-14	3	Solenoid - Aux A	A-14	8
Assembly - Heater	E-13	8	Solenoid - Aux B	A-14	8
Batteries	E-14	9	Solenoid - Aux Div	E-16	14
Control - Platform	F-1, G-1	D	Solenoid - B, Ext	A-15	5
Control - Swivel	F-2	D	Solenoid - B, Lower	A-14	5
Control - Transmission	A-8, A-9	A	Solenoid - B, Raise	A-15	5
Diode - Transmission	J-14	24	Solenoid - B, Ret	A-15	5
Ground - Chassis	D-17	7	Solenoid - C, D	A-15	5
Ground - Dash	J-17, J-17	B	Solenoid - Crab	G-13	12
Gauge - Cool Temp	C-5	A	Solenoid - D, Lock	A-13	8
Gauge - Fuel Level	C-5	A	Solenoid - Div_1	A-13	8
Gauge - Transmission Oil Temp	B-5	A	Solenoid - Div_2	A-13	8
Ground - Chassis	D-17	7	Solenoid - Div_3	A-12	8
Ground - Dash	J-5	C	Solenoid - E-Stop	F-12	13
Ground - Subframe	B-13, C-13	15	Solenoid - Frame Level Up	E-14	2
Heater	F-15	B	Solenoid - FWD	A-12	2
Horn	D-10	A	Solenoid - FWS	G-13	12
Indicator - Display	J-15	21	Solenoid - High	A-11	2
Indicator - Load	I-16	C	Solenoid - LH, Stab, Down	G-3	25
Lamp - Boom Flood LH, RR	D-1	22	Solenoid - LH, Stab, Up	H-3	25
Lamp - Boom Flood RH, RR	D-1	22	Solenoid - Pres, Red	A-15	13
Lamp - Indicator Light Op	H-4, J-4	18	Solenoid - Ret, Sig	A-13	14
Lamp - LH Fog Or Reverse	F-16	18	Solenoid - Rev	A-12	2
Lamp - LH Head Turn	K-1	A	Solenoid - RH, Stab, Down	G-3	25
Lamp - LH Head Turn Pos	J-1	A	Solenoid - RH, Stab, Up	H-3	25
Lamp - LH License Plate	E-18	18	Solenoid - Swivel Left	E-2	D
Lamp - LH Stop/Tail	F-18	18	Solenoid - Swivel Right	E-2	D
Lamp - LH Stop/Tail TUV	G-18	18	Solenoid - Tele, Out	A-12	8
Lamp - LH Turn	F-16	18	Solenoid - TR_1	A-12	8
Lamp - LH Turn TUV	G-18	18	Solenoid - TR_2	A-12	8
Lamp - License Plate	G-18	18	Solenoid - Tow Hitch Down	E-14	9
Lamp - RH Fog Or Reverse	E-18	18	Solenoid - Tow Hitch Up	D-14	9
Lamp - RH Head Turn	J-1	9	Switch - (A) Mode Select	I-7	A
Lamp - RH Head Turn Pos	I-1	9	Switch - (B) Mode Select	H-7	A
Lamp - RH License Plate	E-18	18	Switch - Aux	D-6	A
Lamp - RH Rear TUV	F-18	18	Switch - Backhoe	F-6	A
Lamp - RH Stop/Tail	F-18	18	Switch - Boom Control	K-15	C
Lamp - RH Stop/Tail TUV	F-18	18	Switch - Boom Prox	E-3	22
Lamp - RH Turn	E-18	18	Switch - Brake Pedal	H-10	6
Lamp - RH Turn TUV	G-18	18	Switch - Cold Start	E-6	A
Motor - D, Eng, Low	B-17	27	Switch - Diff Lock	G-6	A
Motor - Fan	L-1	20	Switch - Disconnect	E-16	26
Motor - Front Washer	G-13	2	Switch - Engine Start	F-1, H-1	D
Motor - Front Wiper	H-3	A	Switch - Engine Stop	F-1, H-1	D
Motor - Roof Washer	G-13	2	Switch - Engine Cool Temp	F-12	14
Motor - Roof Wiper	I-3	7	Switch - Fan	L-2	20
Motor - Starter	F-15	4	Switch - Flood Lamp	D-8	A
Plug - Jumper	A-17	1	Switch - Flood Lamp	J-3	A
Rolling Drum	F-2	D	Switch - Frame Level	H-14	C
Relay - Aux A	L-14	C	Switch - Func Lock	B-6	24
Relay - Aux B	K-14	C	Switch - Hazard Warning	H-7	A
Relay - Cold Start	F-14	2	Switch - Head Flood Lamp TUV	J-3	A
Relay - Headlamp	J-17	B	Switch - Headlamp/Side	G-7	A
Relay - Lockout 1	K-17	B	Switch - Headlamp/Side TUV	K-3	A
Relay - Lockout 2	J-18	B	Switch - Heater	I-54	C
Relay - Lowering	K-18	B	Switch - High, Cool Temp	F-12	13
Relay - Main	K-17	B	Switch - Horn	H-5	A
Relay - Neutral Start	K-17	B	Switch - Indicator	E-2	C
Relay - Start	G-18	18	Switch - LH Stabilizer	F-7	A
Relay - Steer	J-17	B	Switch - Master Steer	E-6	A
Relay - Tele, Div	L-14	C	Switch - Oil Pressure	F-12	14
Relay - Tele, Out	K-14	C	Switch - Park Brake	J-13	C
Relay - Transmission Neutralizing	L-17	B	Switch - Priority	A-18	23
Sender - Coolant Temp	E-12	17	Switch - Rear/Fog Lamp	G-7	A
Sender - Fuel Level	G-12	16	Switch - RH Stabilizer	F-7	A
Sender - Transmission Oil Temp	F-12	11	Switch - Roof Wiper Washer	E-6	A
Sensor - Strain	H-16	15	Switch - Service Brake	H-13	C
Sensor - Position	H-13	28	Switch - Start	L-6	A
Service Meter	B-5	A	Switch - Steering Column	E-4	A
Solenoid - 1st	A-11	2	Switch - Transmission Neutral	F-6	A
Solenoid - 2nd	A-11	2			

Machine locations are repeated for components located close together:
A = Located in dash area.
B = Located under seat.
C = Located inside right console.
D = Located on front of boom.

Connector Location		
Connector Number	Schematic Location	Machine Location
CONN 1	G-18	1
CONN 2	B-17	1
CONN 3	D-17, E-16, G-16	1
CONN 4	G-16	1
CONN 5	K-15, J-15	C
CONN 6	F-15	17
CONN 7	D-15	16
CONN 8	C-15	15
CONN 9	E-14	17
CONN 10	E-14	17
CONN 11	F-14	17
CONN 12	G-14	17
CONN 13	G-14	A
CONN 14	F-14	A
CONN 15	J-14, K-14, J-13	C
CONN 16	H-2, F-2	D
CONN 17	K-10	19
CONN 18	L-10	19
CONN 19	B-9	19
CONN 20	B-9	19
CONN 21	B-9	19
CONN 22	B-9	19
CONN 23	G-3	18
CONN 24	D-3	9
CONN 25	E-3	22
CONN 26	H-2, J-2, J-2	9
CONN 27	H-2, J-2, J-1	A
CONN 28	A-11	25
CONN 29	F-10	19
CONN 30	B-6, B-7	24
CONN 31	K-5, K-3, L-3	19
CONN 32	E-3	22

The connectors shown in this chart are for harness to harness connectors. Connectors that join a harness to a component are generally located at or near the component. See the Component Location Chart.



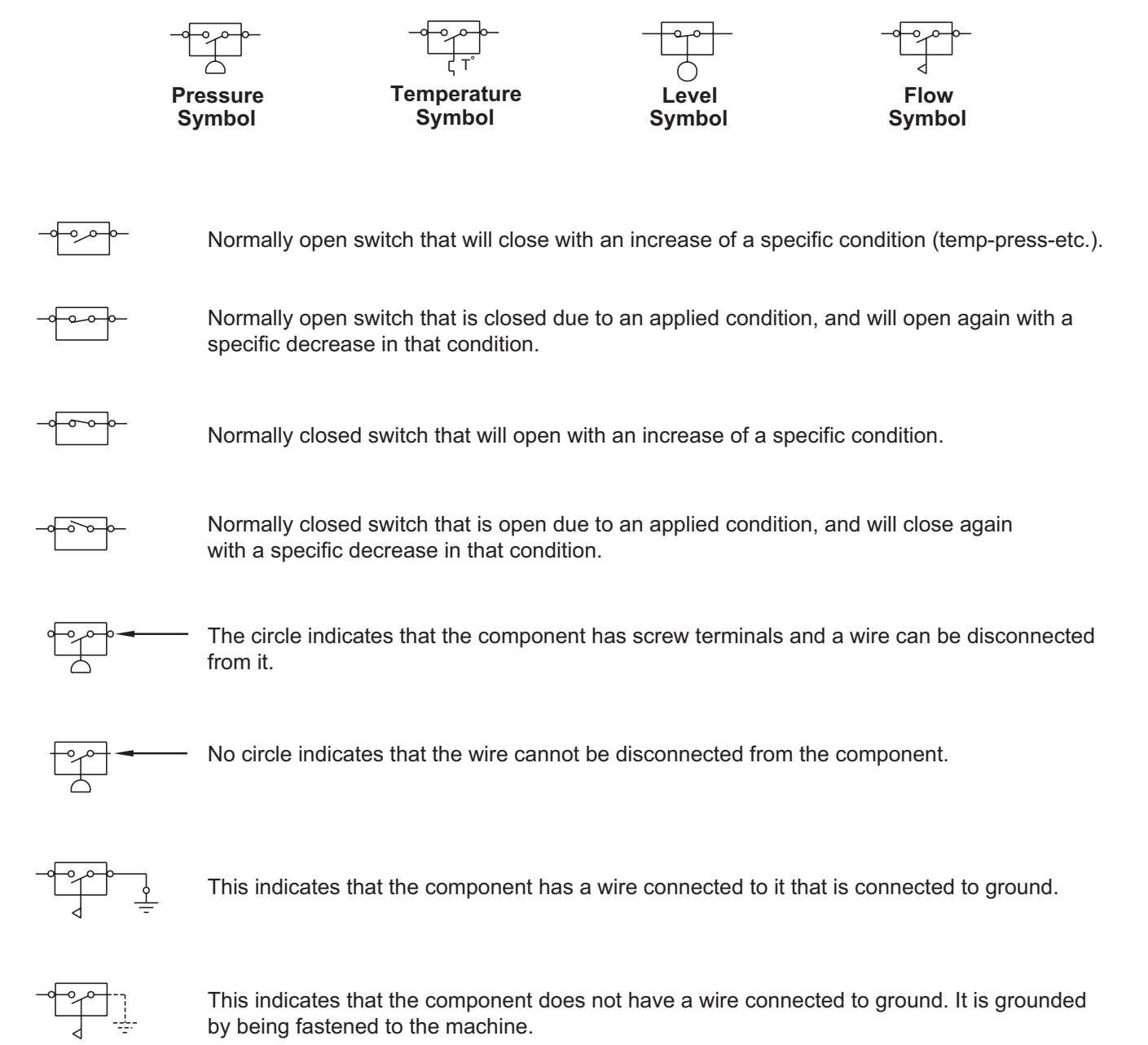
REN3415-01
November 2002

Schematic

TH62, TH63, TH82, and TH83 Telehandler Electrical System

47M4014-UP
5WM6021-UP
3JN1510-UP
3RN4015-UP

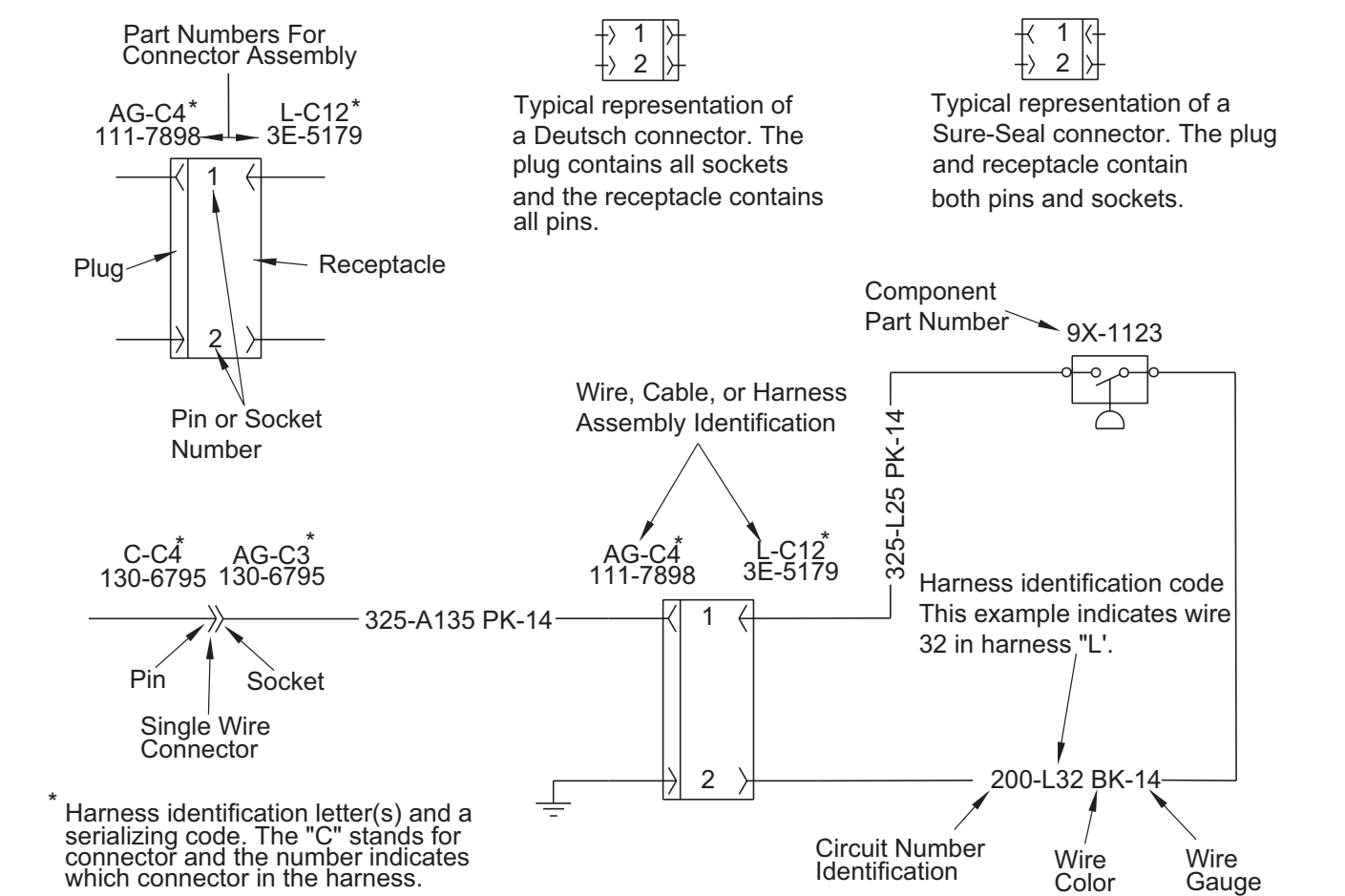
Electrical Schematic Symbols And Definitions



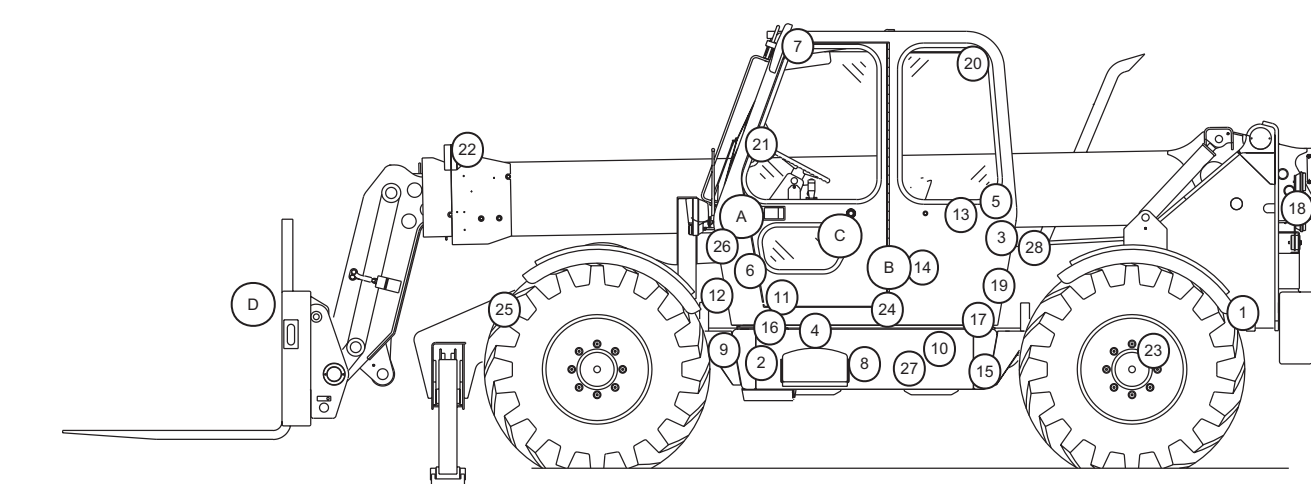
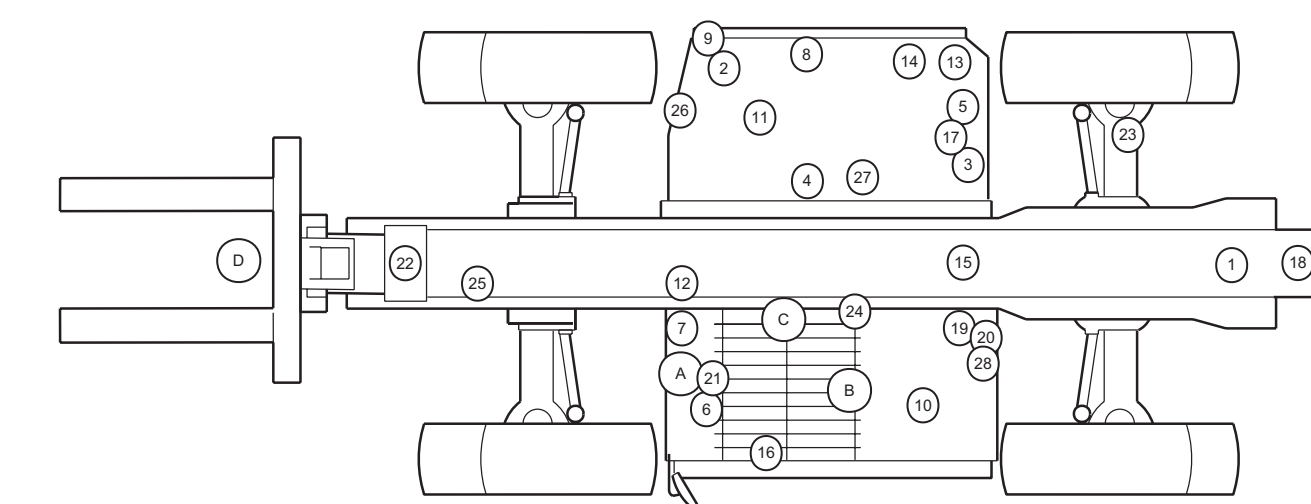
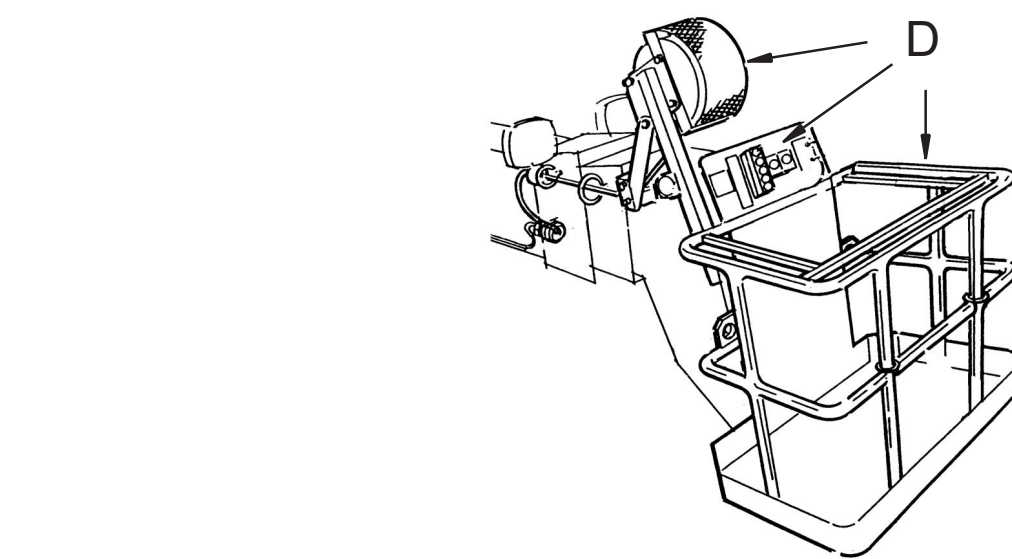
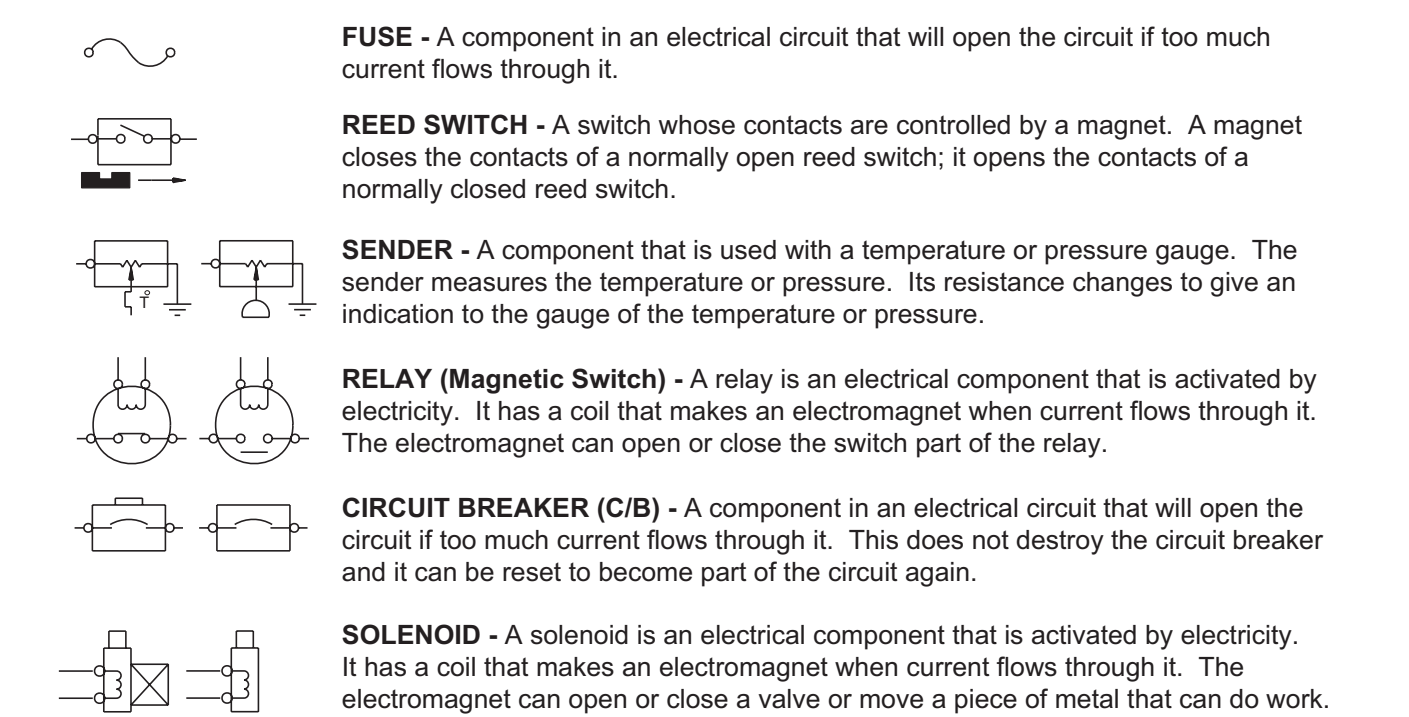
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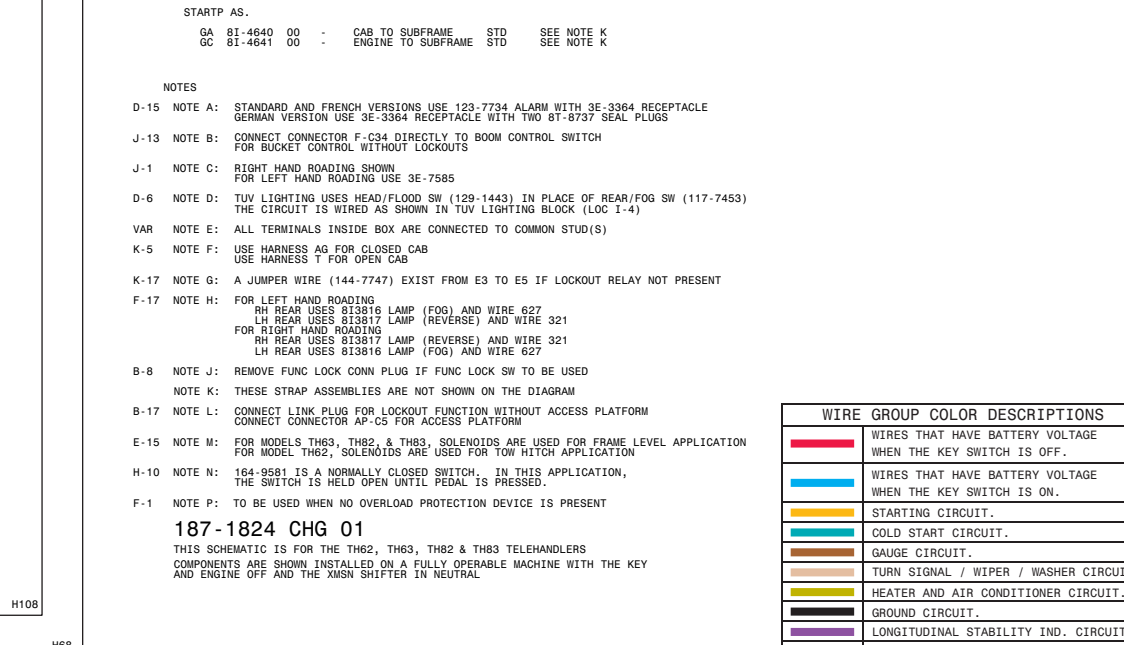
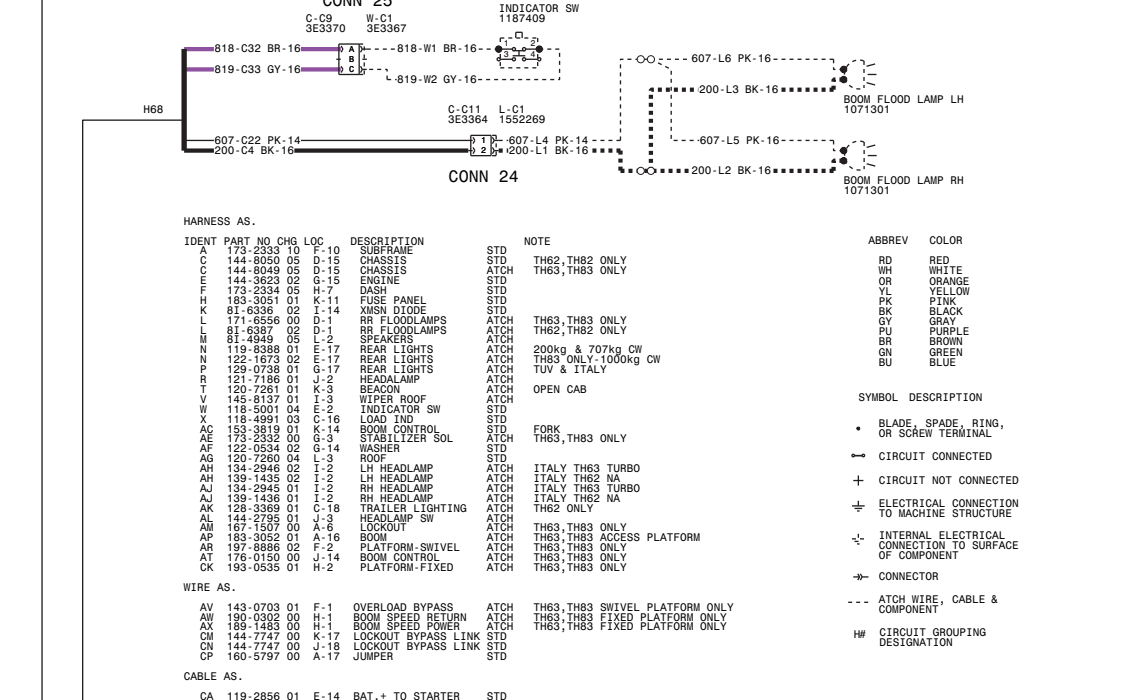
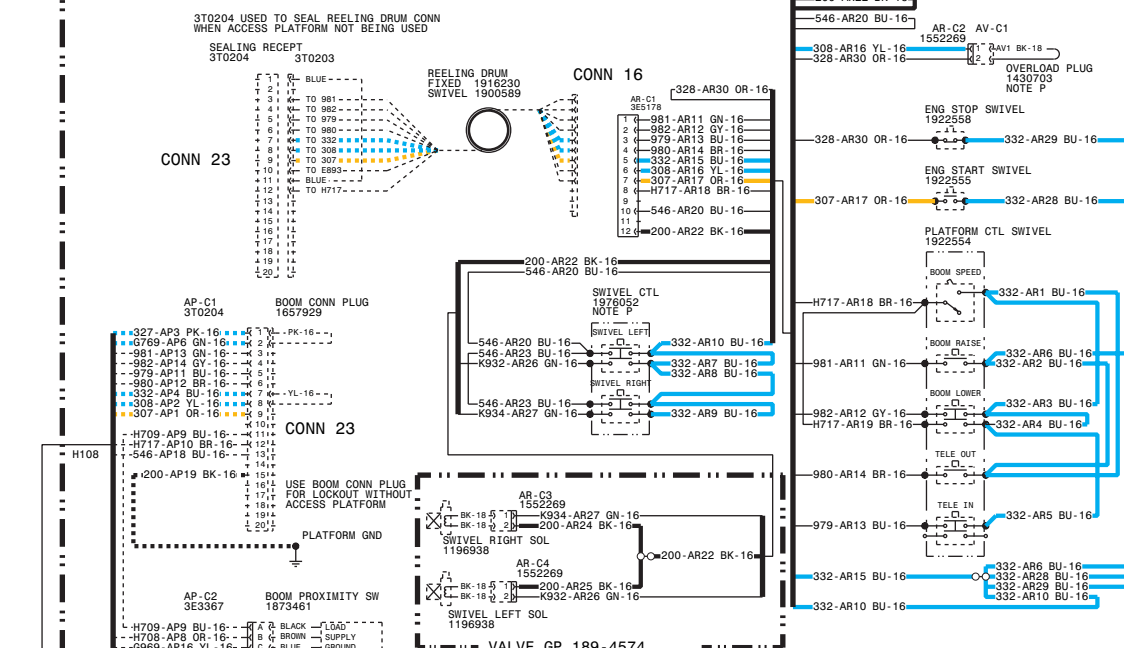
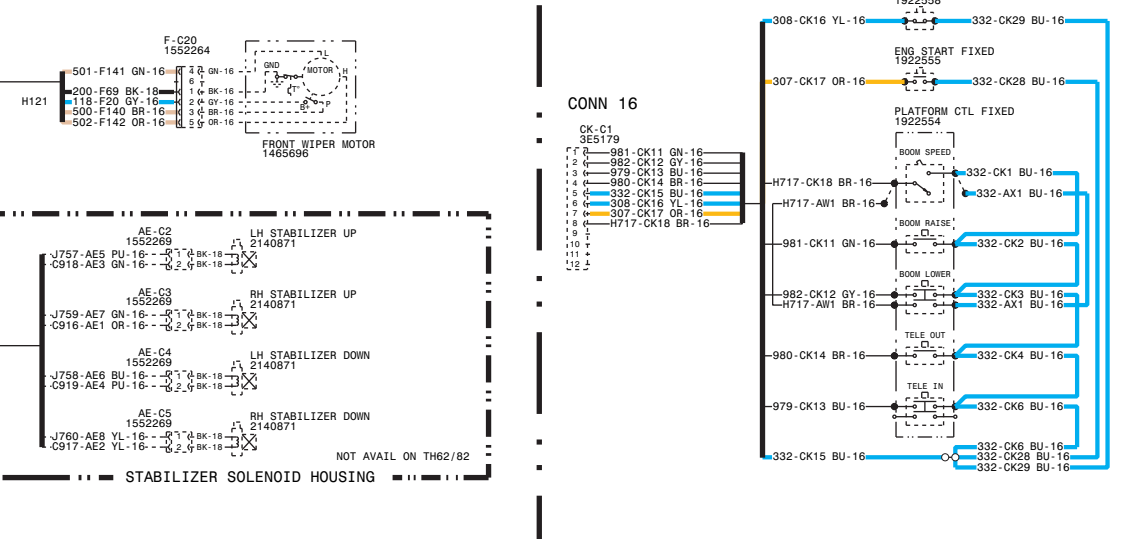
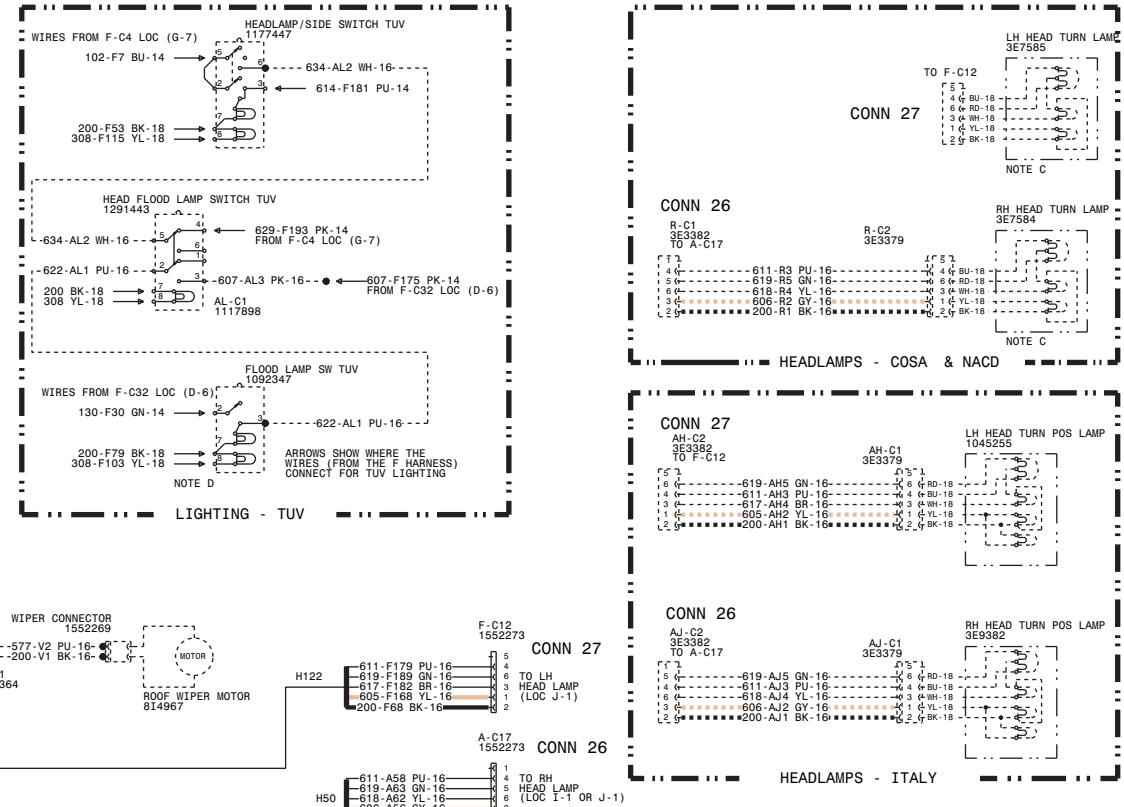
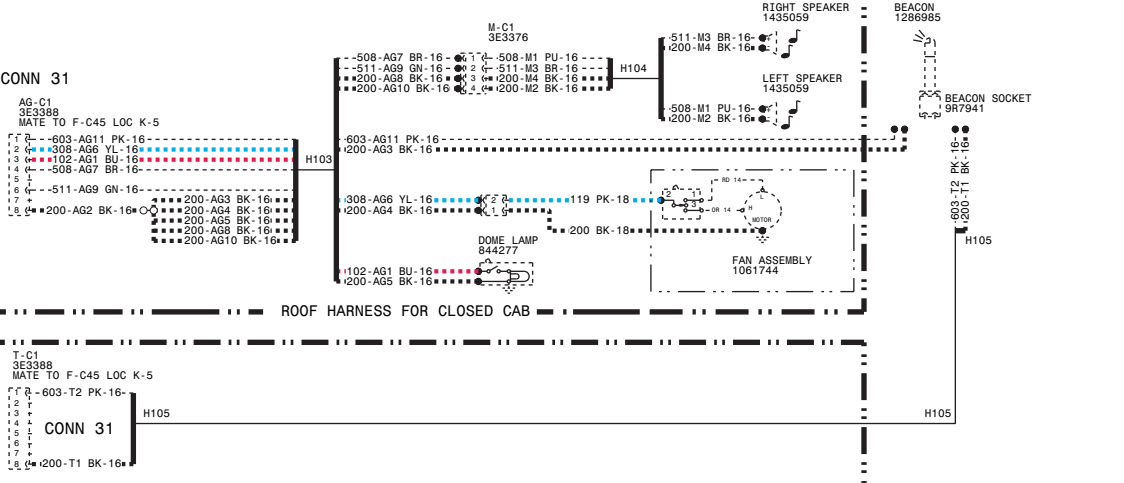
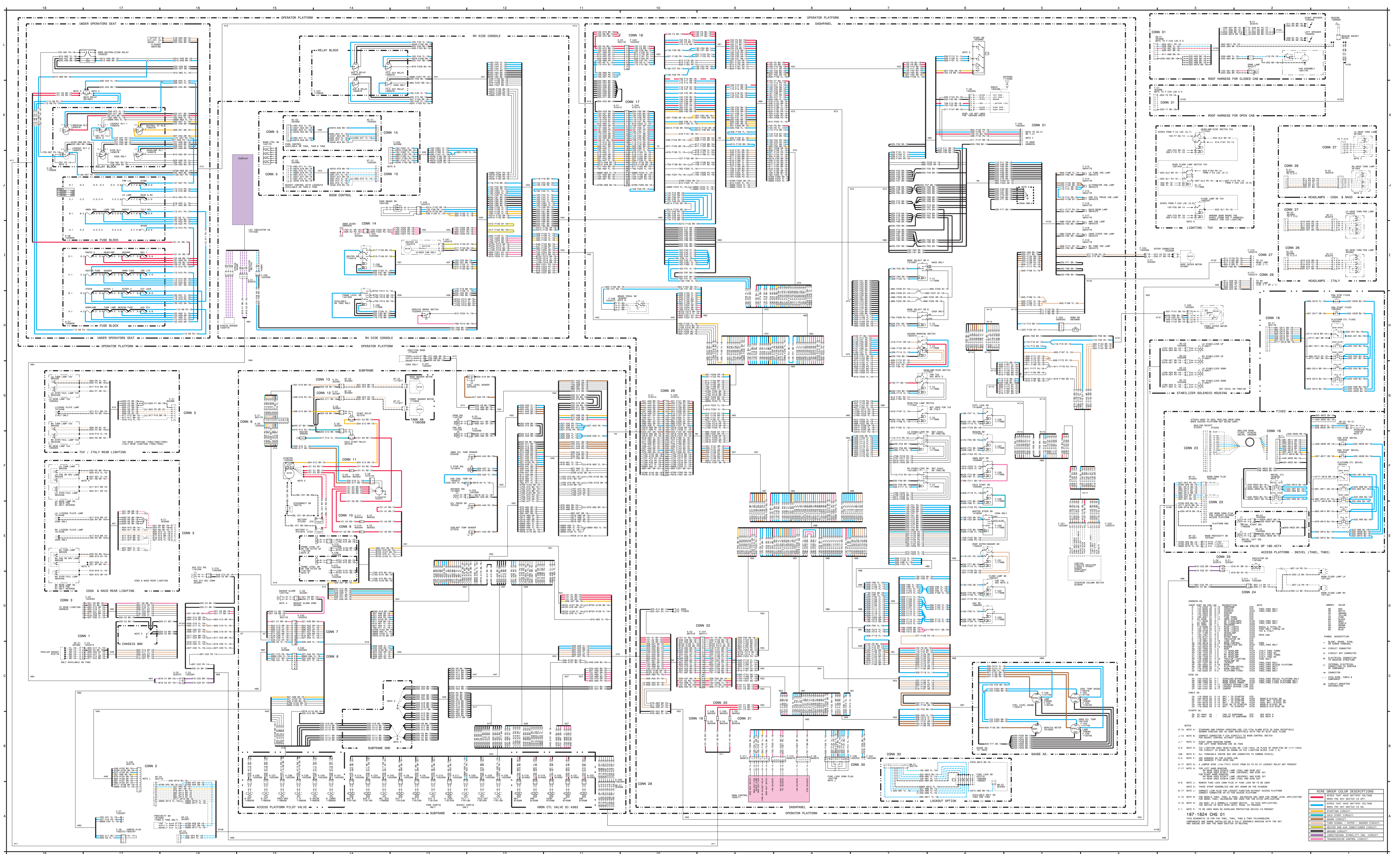
Harness And Wire Electrical Schematic Symbols



Electrical Schematic Symbols And Definitions



Machine Harness Connector And Component Locations



167-1824 CHG 01

WIRE GROUP COLOR DESCRIPTIONS

WIRE GROUP	COLOR DESCRIPTIONS
RED	RED
BLUE	BLUE
GREEN	GREEN
YELLOW	YELLOW
BLACK	BLACK
WHITE	WHITE
PINK	PINK
ORANGE	ORANGE
PURPLE	PURPLE
BROWN	BROWN
GRAY	GRAY
TEAL	TEAL
MAGENTA	MAGENTA