

OPERATOR`S & INSTALLATION
MANUAL



R140L
A2B SYSTEM
LATTICE CRANE

DIVISION OF RAYCO TECHNOLOGY GROUP



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55MW140LEOB



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1. GENERAL DESCRIPTION:

The Anti-two-block model R140L is a device designed to alert the operator and cut off motion controls of the crane upon an impending two-block situation. It is designed to fit on telescopic cranes, boom trucks, derrick trucks and conventional lattice cranes.

The device is manufactured in Canada and designed to withstand the worst Canadian environment including low temperature and corrosive environment. The R140L has been installed and, in operation, across the country for years.

It is a well thought system that will adapt easily to all crane types and requires the least amount of installation time.

The unique all position switch is well appreciated by the customers.

The R140L comes standard for 12V or 24V negative body machines. If the machine has a different type of electrical system, use either another type or an adapting relay or follow different installation procedures as shown further.

2. INTRINSIC SAFETY:

The Wylie anti-two-block is considered fail safe because it works with a normally open circuit. Closed when the switch weight is not lifted. The lock-out output is also normally open when power is off or when no weight is pulling on the switch.

The red light and buzzer will go on if:

- Power is too weak
- The cable is broken
- Any wire is cut or making contact except power wire
- The switch is broken
- The switch is disconnected
- The weight chain is broken
- The weight is lifted
- The control relays are burned

3. ENVIRONMENTAL SAFETY:

The Wylie anti-two-block is designed to operate in any weather from scorching heat up to 60° C to bitter cold as low as -50° C. It will withstand rain, snow and hail.

The system will not be affected by any radio wave or will it produce any.

The system will not be affected by any magnetic field however strong it is.

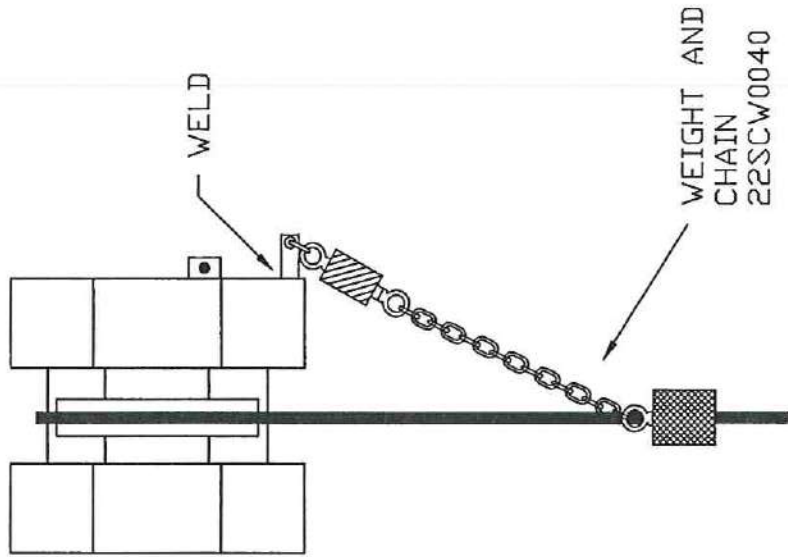
The system will not be affected by any electrostatic or capacitive current field if all parts, of both the system and the crane, and any part touching the crane, is kept within reasonable distance from any power line except for the insulated boom structure.

Insulated or partly insulated structures may represent a threat near power lines as they can charge themselves. Partly insulated structures will require the use of a double wire to the tip of the boom, the second wire being grounded. This ground wire, although connected to the boom, must never be considered as a proper grounding of the boom. It will on the other side void any insulation certification by the crane manufacturer if such insulation was intended.

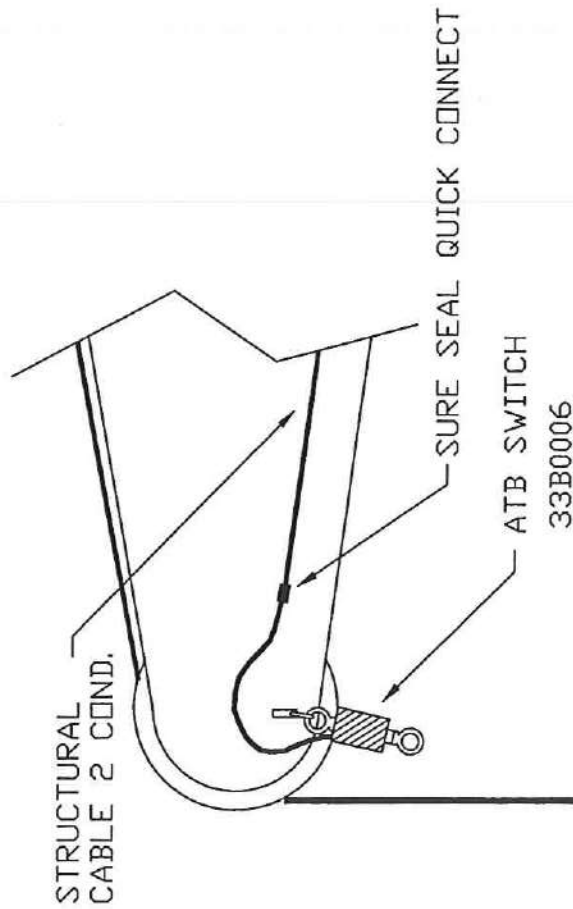
For specified insulated boom structures where the manufacturer certifies the dielectric property of the boom, an air actived anti-two-block can be supplied and certified to the same requirements R140L. (PATENT PENDING)

4. COMPONENTS INSTALLATION:

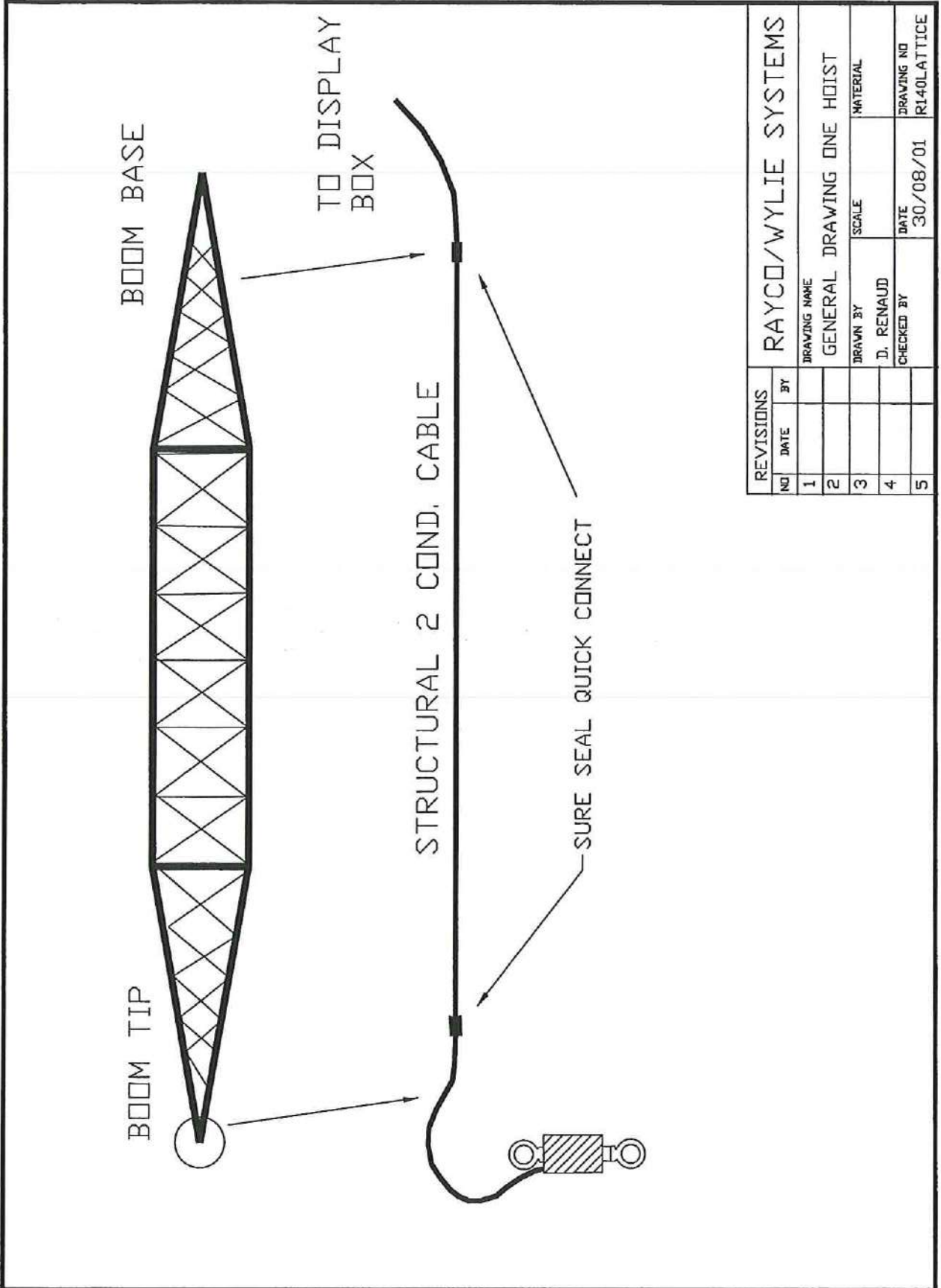
FACE VIEW



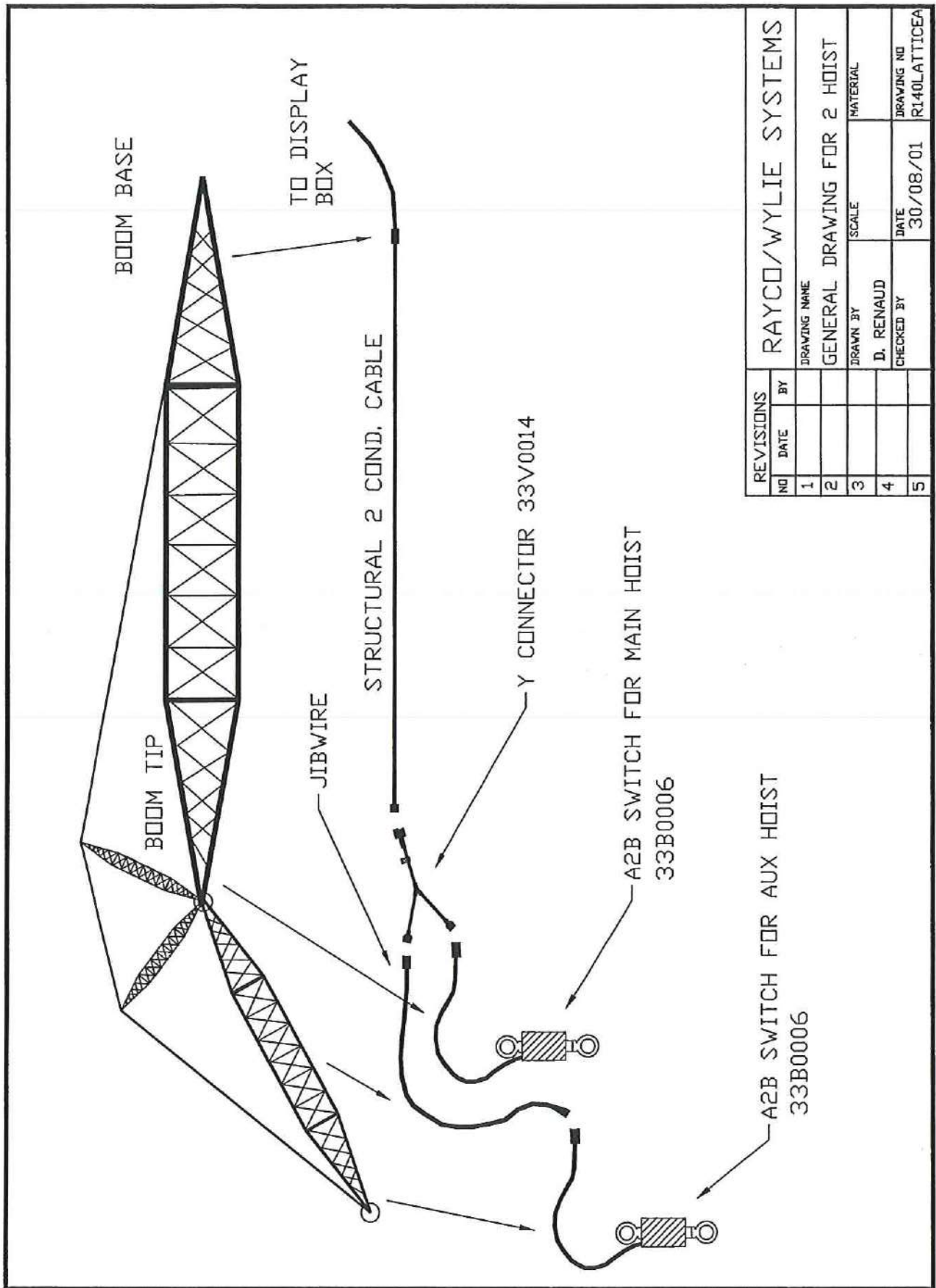
SIDE VIEW



REVISIONS		RAYC0/WYLIE SYSTEMS			
NO	DATE	BY	DRAWING NAME	SCALE	MATERIAL
1	08/29/95	DR	INSTALLATION ON BOOM TIP		
2	30/08/01	DR			
3					
4					
5					
			DRAWN BY	DATE	DRAWING NO
			D. RENAUD	07/10/95	FASLINE1
			CHECKED BY		

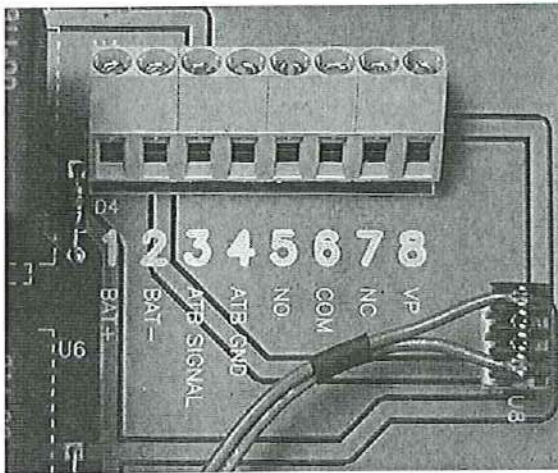
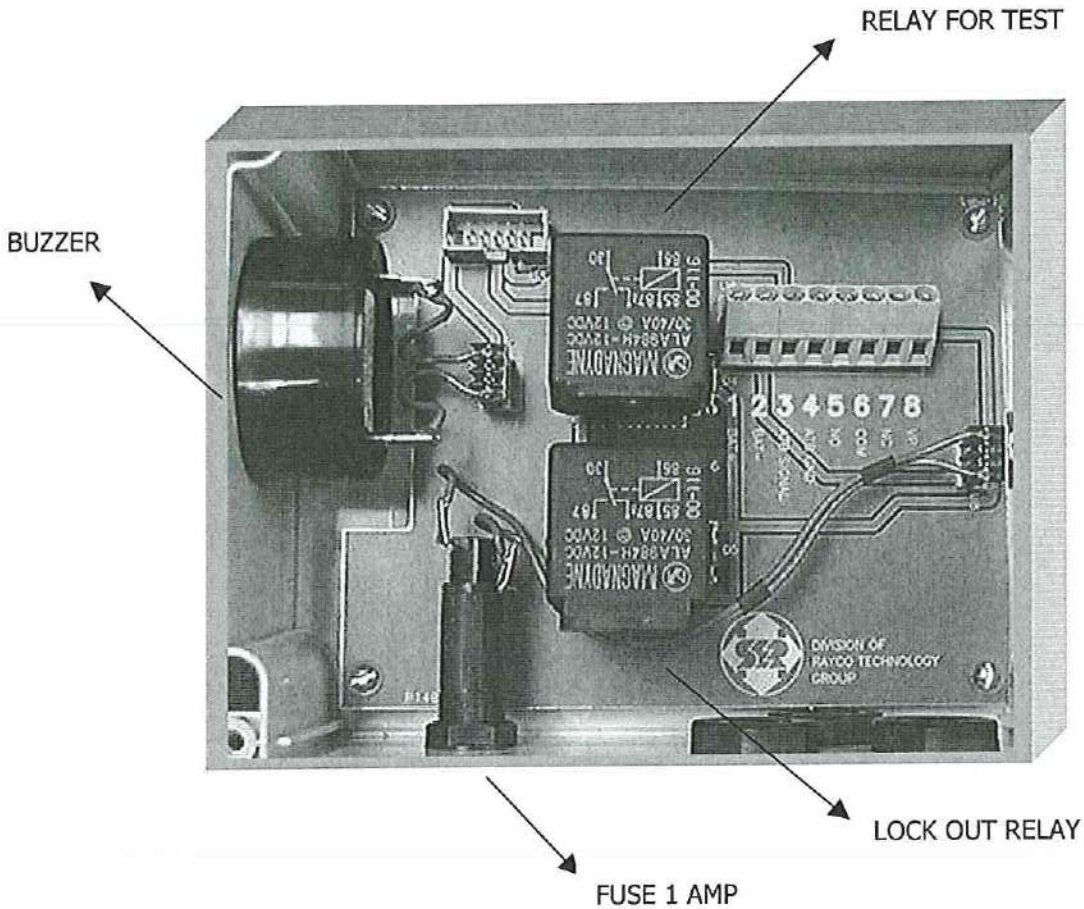


REVISIONS		RAYCO/WYLIE SYSTEMS			
NO	DATE	BY	DRAWING NAME	DRAWING NO	
1			GENERAL DRAWING ONE HOIST	R140LATTICE	
2					
3			DRAWN BY	SCALE	
4			D. RENAUD	MATERIAL	
5			CHECKED BY	DATE	
				30/08/01	



REVISIONS		BY		DATE	
NO	DATE	NO	DATE	NO	DATE
1					
2					
3					
4					
5					

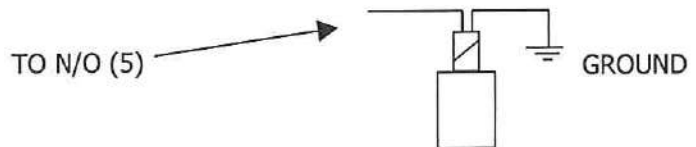
RAYCO/WYLIE SYSTEMS					
DRAWING NAME					
GENERAL DRAWING FOR 2 HOIST					
DRAWN BY		SCALE		MATERIAL	
D. RENAUD					
CHECKED BY		DATE		DRAWING NO	
		30/08/01		R140L-ATTICEA	



1. POSITIVE BATTERY (accessories)
2. NEGATIVE BATTERY (accessories)
3. SIGNAL FROM A2B SWITCH. Connect the BLACK strand coming from the structural cable.
4. GROUND TO A2B SWITCH. Connect the WHITE strand coming from the structural cable.
5. N/O SIGNAL FOR LOCK OUT SYSTEM (Safety security)
6. COMMON FOR LOCK OUT
7. N/C (normally not used)
8. VP POSITIVE VOLTAGE (For lock out)

Note:

When lock out system is installed, add a jumper between 8 and 6, use the N/O position for a strand on coil of valve and the other side of coil must be grounded to the body of the machine.



5. OPERATING PROCEDURE:

The system is automatically engaged when power in the crane is turned on. The operator can then use the crane as usual.

If a pending two-block situation arrives, The red light and the buzzer will go on continuously until the situation is corrected. If a lock-out as been installed, motions are cut for booming down and hoisting up. To obtain controls again, the operator must either hoist down or boom up.

R140L ALARM BOX CONDITIONS:

BOOM TIP SWITCH/WEIGHT POSITION	ALARM BOX SWITCH POSITION	ALARM BOX FUNCTIONS					
		LIGHT		BUZZER		FUNCTION-CUT CONTACTS	
		ON	OFF	ON	OFF	OPEN	CLOSED
SAFE CONDITION	NORMAL		X		X		X
WEIGHT FREELY SUSPENDED	RIGGING TEST	X		X		X	
SWITCH CLOSED	MOMENTARY OVERRIDE	X			X		X
TWO-BLOCKED WEIGHT LIFTED SWITCH OPEN	NORMAL	X		X		X	
	RIGGING/TEST	X			X	X	
	MOMENTARY OVERRIDE	X			X		X

6. R140L PARTS:

• **ONE HOIST:**

Control box (according to machine).....	(12 VDC) 33D0140 (24 VDC) 33D0141
Power cable 2 cond. w/ split loom (15').....	22EAA0200
Boom base cable w/ sure seal 2 pins male (30').....	33V0221
Structural cable 100' (Other lengths available).....	33V0214
Loop kit 3/8" for structural cable.....	22SRK0002
A2B switch sure seal connector.....	33B0006
A2B weight and chain.....	22SWC0040
Manual.....	55MW140LEOB

• **TWO HOISTS: (Add these parts to the first listing)**

A2B switch.....	33B0006
A2B weight and chain.....	22SWC0040
Y connector for second A2B switch.....	33V0014
Jib wire from 25' to 49' (Other lengths available).....	33V0250

• **OPTIONS:**

Manual cable reel for main boom.....	22SRM0030
Manual cable reel for jib.....	22SRM0010
Fast line A2B weight and chain.....	22SWC0020
Lock out kit according to your crane.....	

7- TROUBLESHOOTING:

First of all, verify if all quick connectors are connected either to a switch or a dummy. Then verify if proper control for machine E.G.: 12V neg. on body. Remember, all switches must be pulled down to deactivate the red light and buzzer. Also, power must be on.

- **If red light is off when two-block**

- No voltage entering control
- Burnt bulb
- Burnt fuse

- **If weak red light**

Check supply voltage and use adequate control either 12 or 24 volts.

- **If continuously red**

Check if all switches are connected properly and pulled down by weight. If so, check continuity between black and white wires. If no continuity, check continuity along wiring until the switch.

- **If slow reappearance of red light**

Supply wires cannot bring sufficient current to the control.

- **Lock-out stays on**

Check if solenoid works by feeling it while activating the switch. If not, check if voltage is present when red light is off. If so, coil may be burnt.

8- WYLIE/RAYCO MAINTENANCE INSTRUCTIONS:

- **DAILY MAINTENANCE:**

- Verify if all connectors from switches and jib are well connected.
- Test two-block switches and watch for buzzer and red light.
- Test lock-out if present.
- If any malfunction, report immediately to maintenance personnel.

- **MONTHLY MAINTENANCE:**

- Verify all connectors and insure that they are free of corrosion and filled with non-conductive grease.
- Inspect all wires and cables for tear or cuts. Replace any defective wire.
- Test system completely to detect any possible malfunction or call a Wylie/Rayco technician.

- **BIYEARLY MAINTENANCE:**

- Through inspection of all circuits, wires, lock-out, connections and mechanical parts.