

**OPERATOR'S & INSTALLATION**  
**MANUAL**

W930

**ATB SYSTEM**  
**TELESCOPIC CRANE**

**WYLIE SYSTEMS**

Crane Warning Systems  
Atlanta  
1-877-672-2951 Toll Free  
1-678-261-1438 Fax  
[www.craneindicators.com](http://www.craneindicators.com)  
[sales@craneindicators.com](mailto:sales@craneindicators.com)

55MWY0140TEOA

## INDEX

1. GENERAL DESCRIPTION
2. INTRINSIC SAFETY
3. ENVIRONMENTAL SAFETY
4. OPERATING PROCEDURE
5. R140T PARTS
6. COMPONENTS INSTALLATION
7. TROUBLESHOOTING
8. WYLIE MAINTENANCE INSTRUCTION

## 1. GENERAL DESCRIPTION:

Anti-two-block model R140T 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 hydraulic 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 R140T 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 R140T 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 activated anti-two-block can be supplied and certified to the same requirements R140T. (PATENT PENDING)

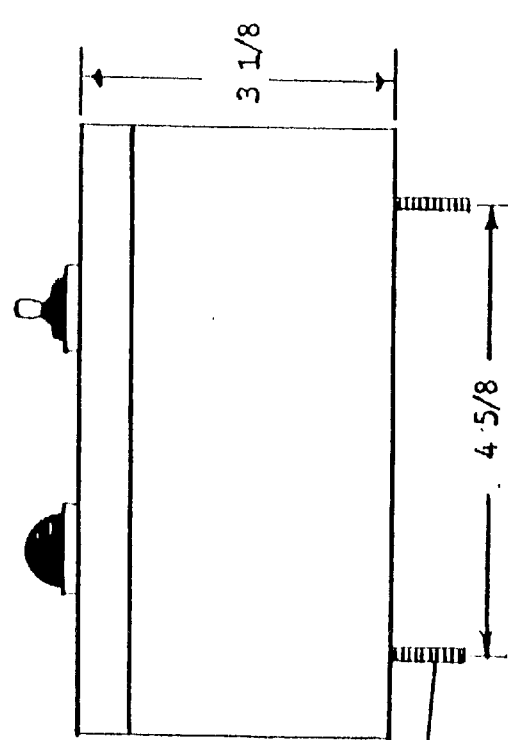
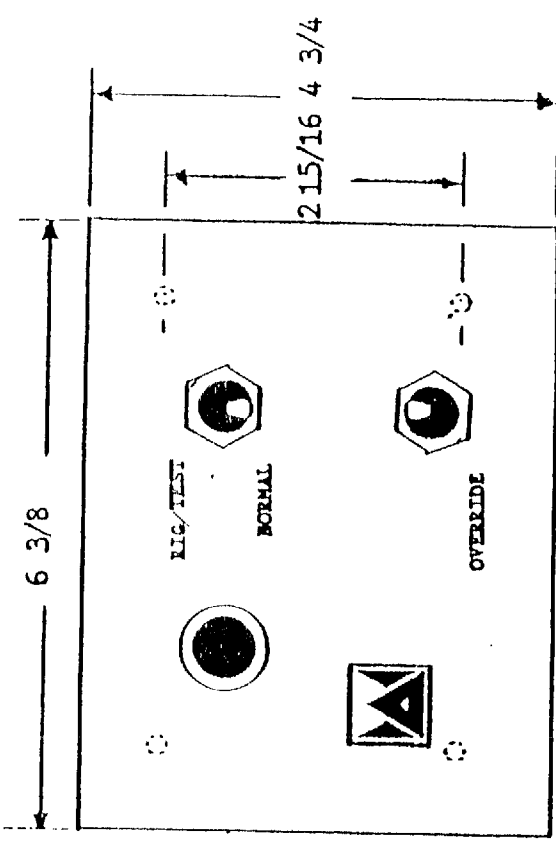
#### 4. OPERATING PROCEDURE

The system is automatically engaged when power is turned on in the crane, or when the PTO is engaged. 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 telescoping out and hoisting up. If the hoist is separated from the boom, then booming down will also be cut. To obtain control again, the operator must either hoist down or telescope in.

#### R140T ALARMS BOX FUNCTIONS:

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 WEIGHT FREELY SUSPENDED SWITCH (CLOSED)	NORMAL		*		*		*
	RIGGING/TEST	*		*		*	
	MOMENTARY OVERRIDE	*			*		*
TWO-BLOCKED WEIGHT LIFTED SWITCH (OPEN)	NORMAL	*		*		*	
	RIGGING/TEST	*			*	*	
	MOMENTARY OVERRIDE	*			*		*



FOUR  
MOUNTING  
STUDS

**PART NUMBER**  
WS414/12  
WS414/24

**VOLTAGE**  
12 VDC  
24 VDC

TOLERANCES		REVISIONS	
RESPECT AS NOTED:		NO.	DATE
DECIMAL		1	3/31/91
FRACTIONAL		2	
ANGULAR		3	
		4	
		5	

BY	WSL
DATE	3/31/91
SCALE	1/2
DRAWN BY	WSL
CHK'D	
DATE	3/31/91
TRACED	WJS
APPR'D	

**WYLIE SYSTEMS**  
Tulsa, Oklahoma

**AZB ALARM BOX**

**MATERIAL**

**DRAWING NO.**  
WS-414

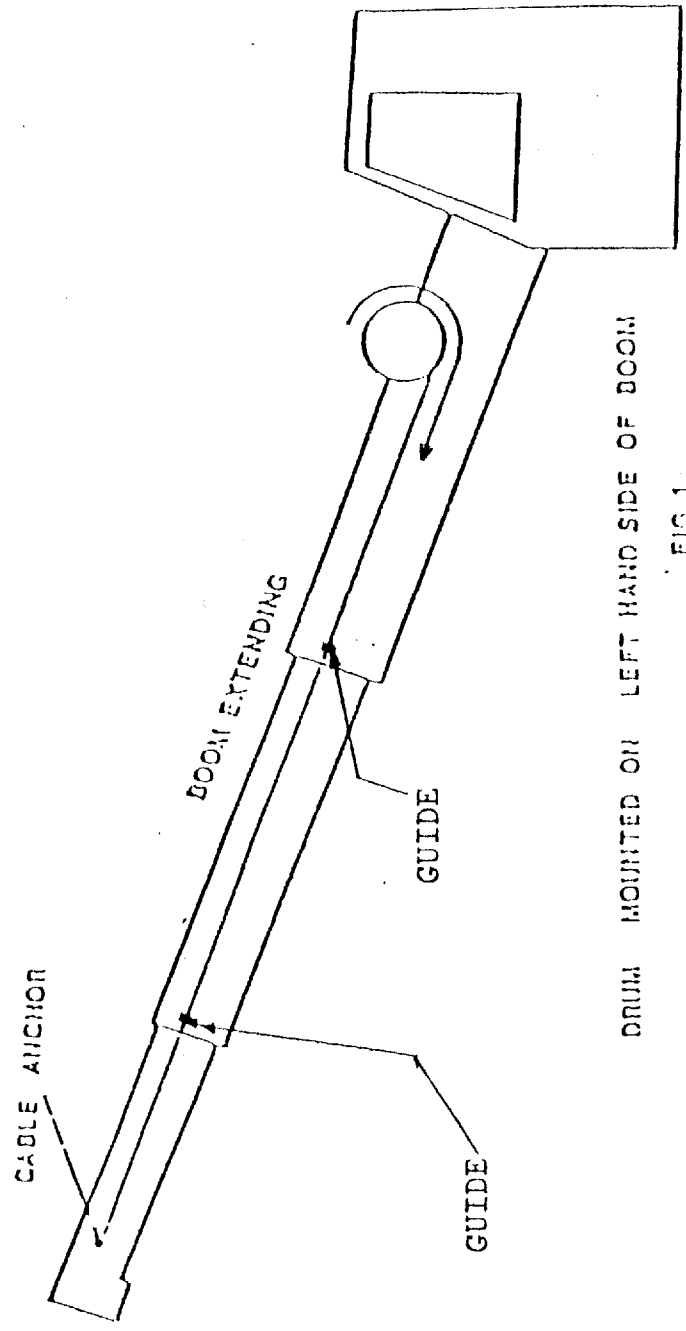
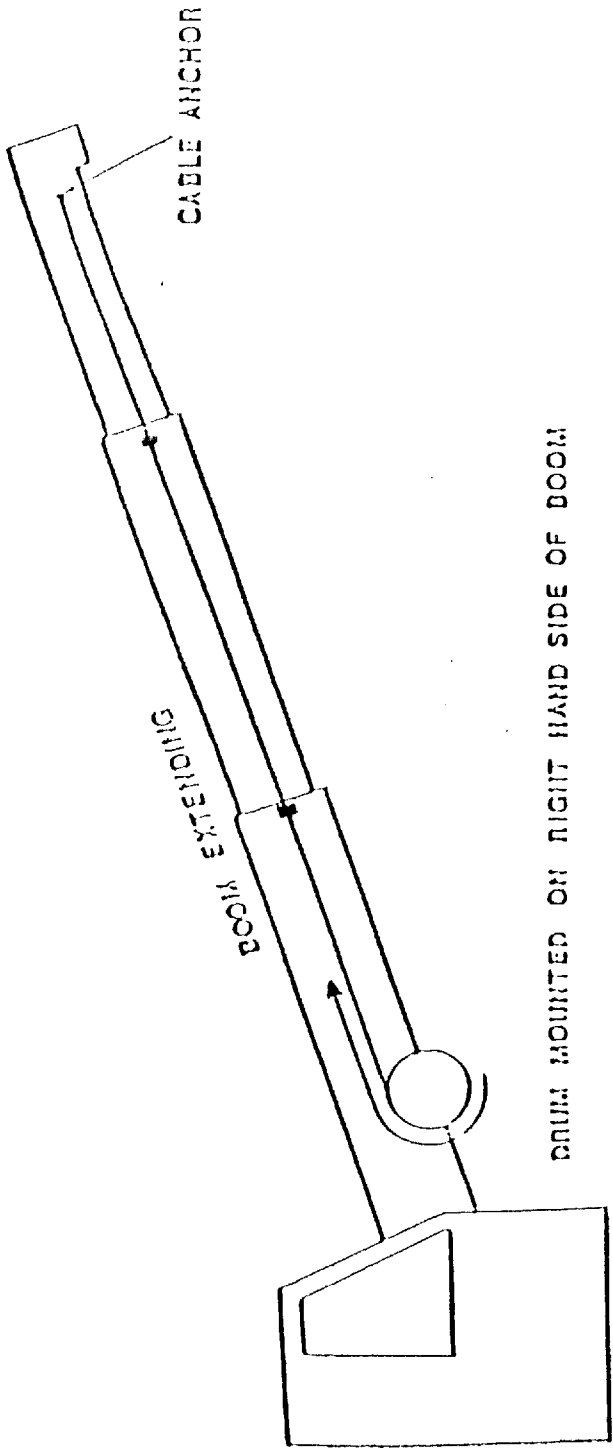


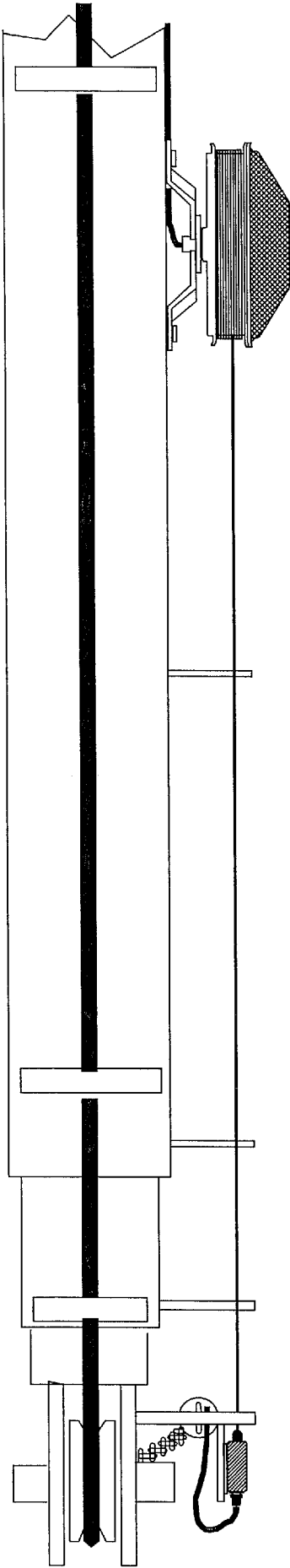
FIG. 1



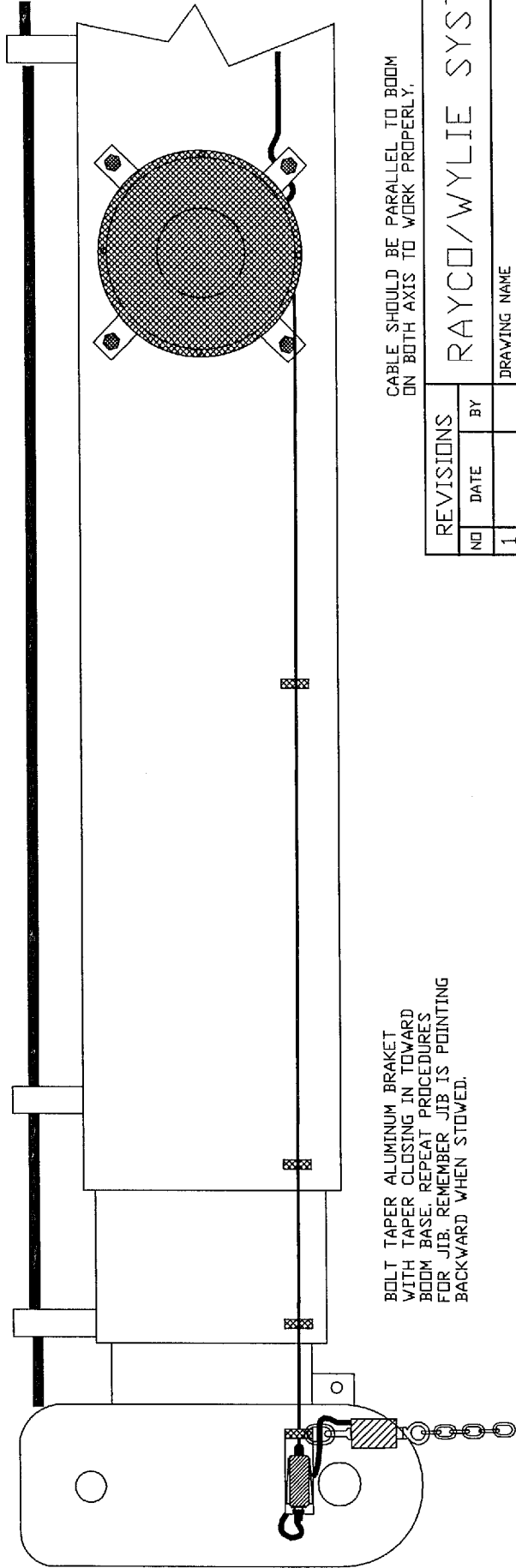
INSTALL A GUIDE AT THE END OF EACH SECTION. CUT IT TO LENGTH IN ORDER TO KEEP CABLE PARALLEL TO BOOM.

INSTALL THE FIRST GUIDE 3 TO 5 FEET AWAY FROM THE DRUM.

ON CONVENIENT SIDE OF THE BOOM, BOLT THE REELING DRUM TO THE BOOM OR STUDS. IT IS PREFERABLE THAT THE BOOM UNWINDS FROM THE BOTTOM.



SWITCH AND JUNCTION BOX ARE FITTED ON A SPECIAL END GUIDE. PASS THE WIRE AS SEEN ON THE DRAWING.



BOLT TAPER ALUMINUM BRACKET WITH TAPER CLOSING IN TOWARD BOOM BASE. REPEAT PROCEDURES FOR JIB. REMEMBER JIB IS POINTING BACKWARD WHEN STOWED.

CABLE SHOULD BE PARALLEL TO BOOM ON BOTH AXES TO WORK PROPERLY.

REVISIONS		NO	DATE	BY
1				
2				
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RAYCO/WYLIE SYSTEMS

DRAWING NAME

GENERAL DRAWING FOR TELESCOPIC CRANE

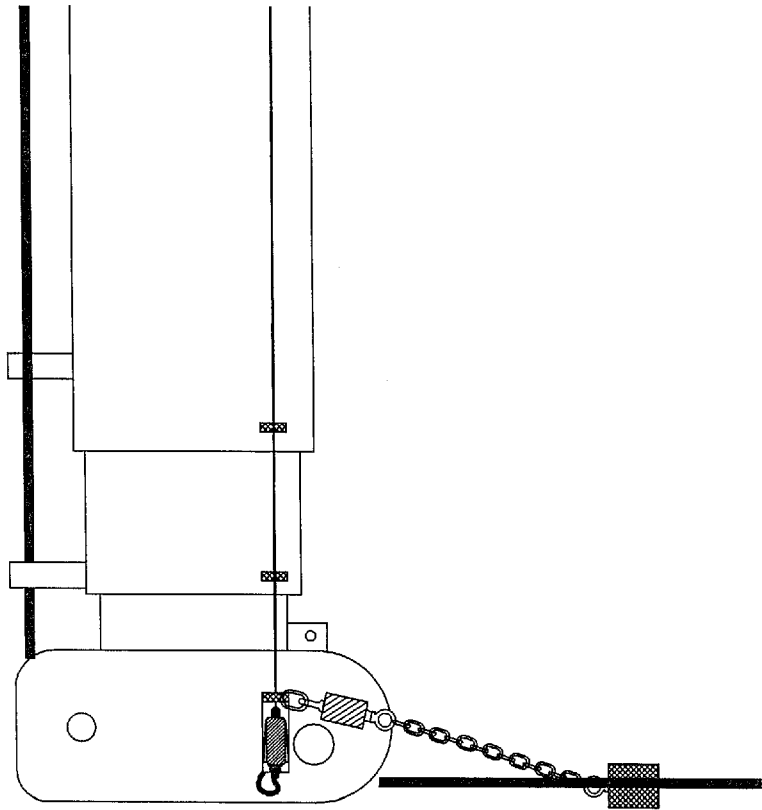
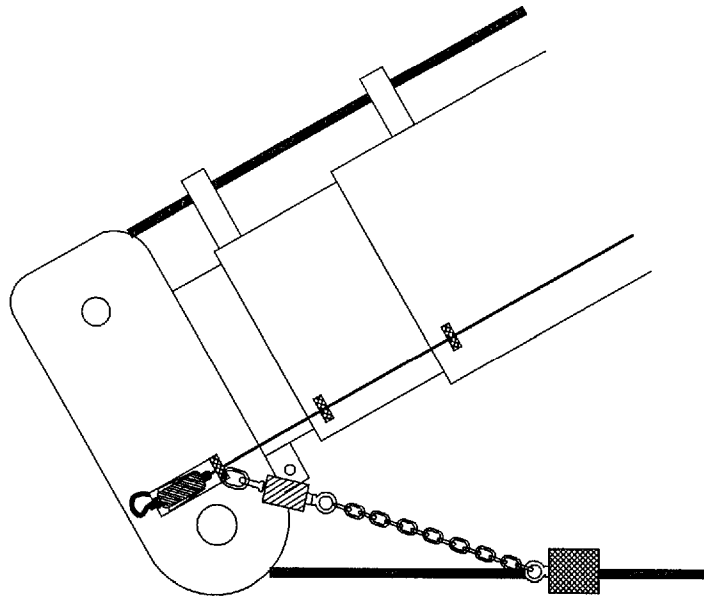
DRAWN BY SCALE MATERIAL

D. RENAUD

CHECKED BY

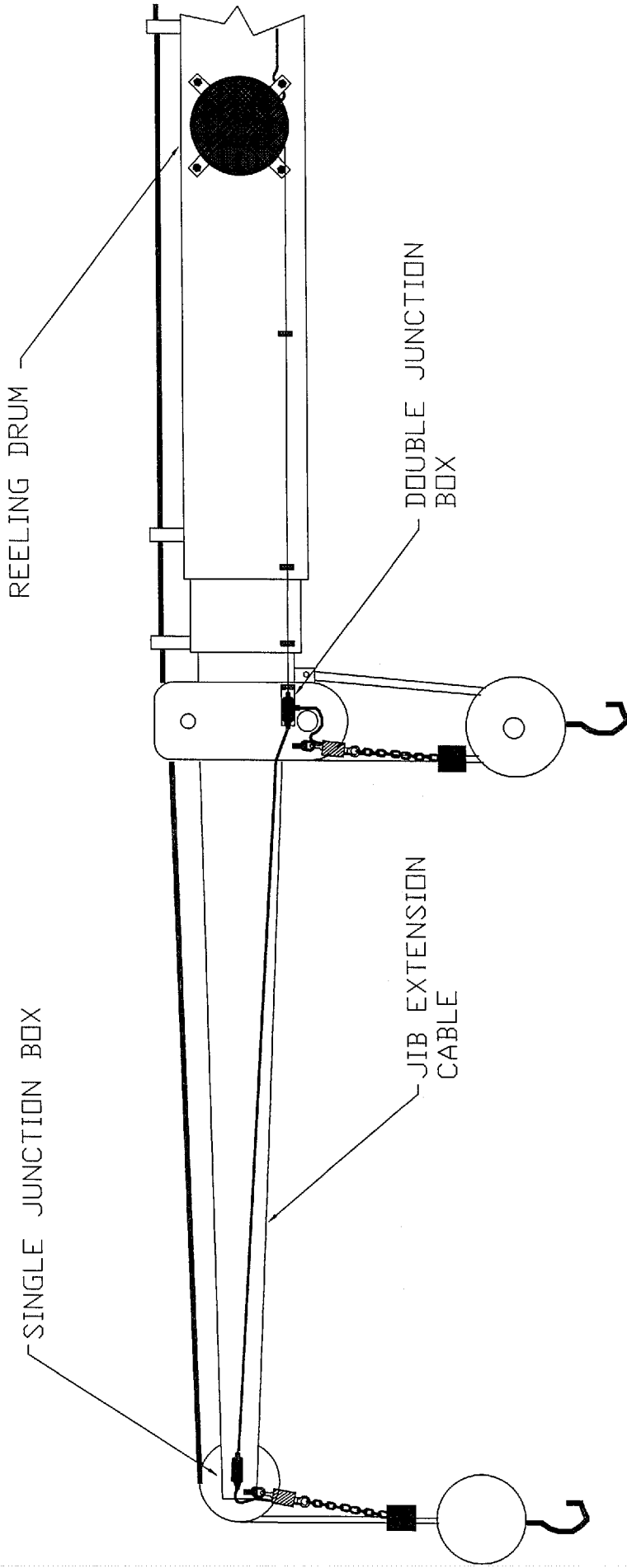
DATE 12/12/96

DRAWING NO REEL20.DWG



REVISIONS	
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1	
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RAYCO/WYLIE SYSTEMS	
DRAWING NAME	
END CABLE GUIDES INSTALLATION	
DRAWN BY	SCALE
DANIEL R.	
CHECKED BY	DATE
	08/17/95
DRAWING NO	MATERIAL
REEL6.DWG	



REVISIONS		NO	DATE	BY
1				
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RAYCO/WYLIE SYSTEMS				
DRAWING NAME A2B INSTALLATION WITH 2 HOIST				
DRAWN BY D. RENAUD		SCALE		MATERIAL
CHECKED BY		DATE 15/08/96		DRAWING NO REELS.DWG

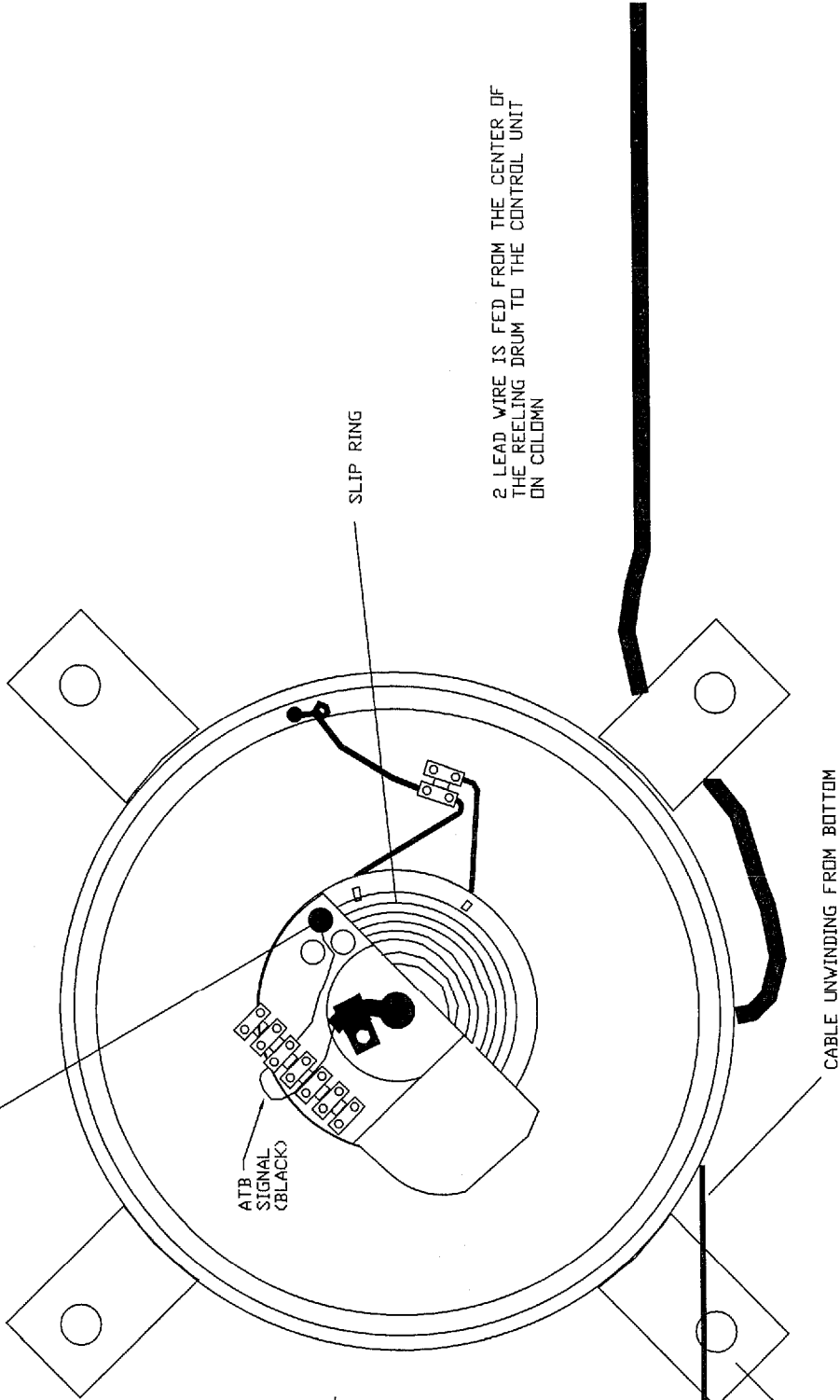
POSITION REELING DRUM MIDWAY ON THE FIRST SECTION, LEFT SIDE FROM OPERATOR'S POSITION

TO BOOM TIP

TO BOOM BASE

CARBON-COPPER BRUSH

BOOM (FIRST SECTION)



CONNECT WIRE AS FOLLOW  
 ATB SIGNAL (BLACK)  
 NO CONNECT (WHITE)

2 LEAD WIRE IS FED FROM THE CENTER OF THE REELING DRUM TO THE CONTROL UNIT ON COLUMN

GIVE NO MORE THAN 3 STARTING LAP TO REEL

USE 3/8 BOLTS ON LUGS OR DIRECTLY ON BOOM

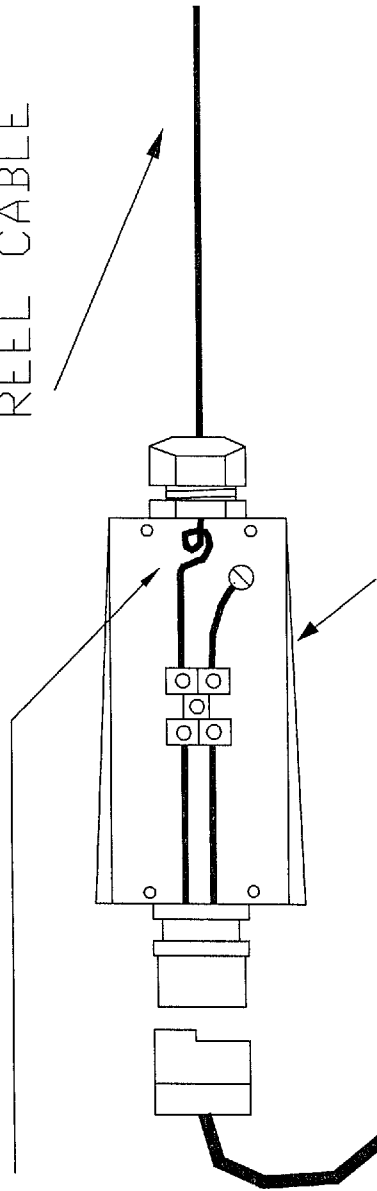
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RAYCO/WYLIE SYSTEMS			
DRAWING NAME		CONNECTION FOR A2B ON REELING DRUM	
DRAWN BY	SCALE	MATERIAL	
D. RENAUD			
CHECKED BY	DATE	DRAWING NO	REEL3.DWG
	11/27/95		

INSERT CABLE THROUGH THE BLACK COLLAR AND THROUGH THE PLATE. MAKE A KNOT AND TIGHTEN WITH HEAT APPLIED. DO NOT BURN THE HOUSING SINCE IT MIGHT DAMAGE THE INSULATION. HOLD THE KNOT TIGHT UNTIL COOL AND PULL AGAINST PLATE. TIGHTEN BLACK COLLAR.

EXPOSE THE END OF THE CABLE TO THE METAL AND INSERT IN ONE OF THE CONNECTORS. TIGHTEN SCREW AND VERIFY GOOD FIXTURE AND CONTACT. THE OTHER CONNECTOR SHOULD BE ATTACHED TO A WIRE LEADING TO THE BODY OF THE JUNCTION BOX.

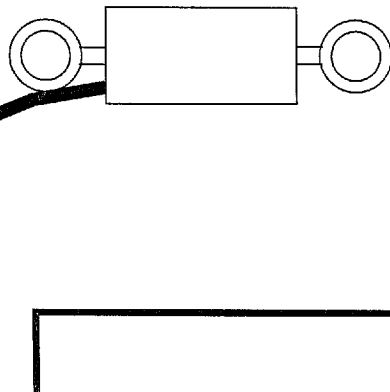
REEL CABLE



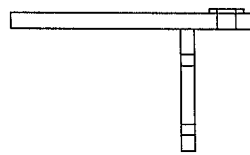
ZRJE-SS

ZRI-SS

ATB SWITCH



END CABLE GUIDE  
FOR JIB  
(KR 909)

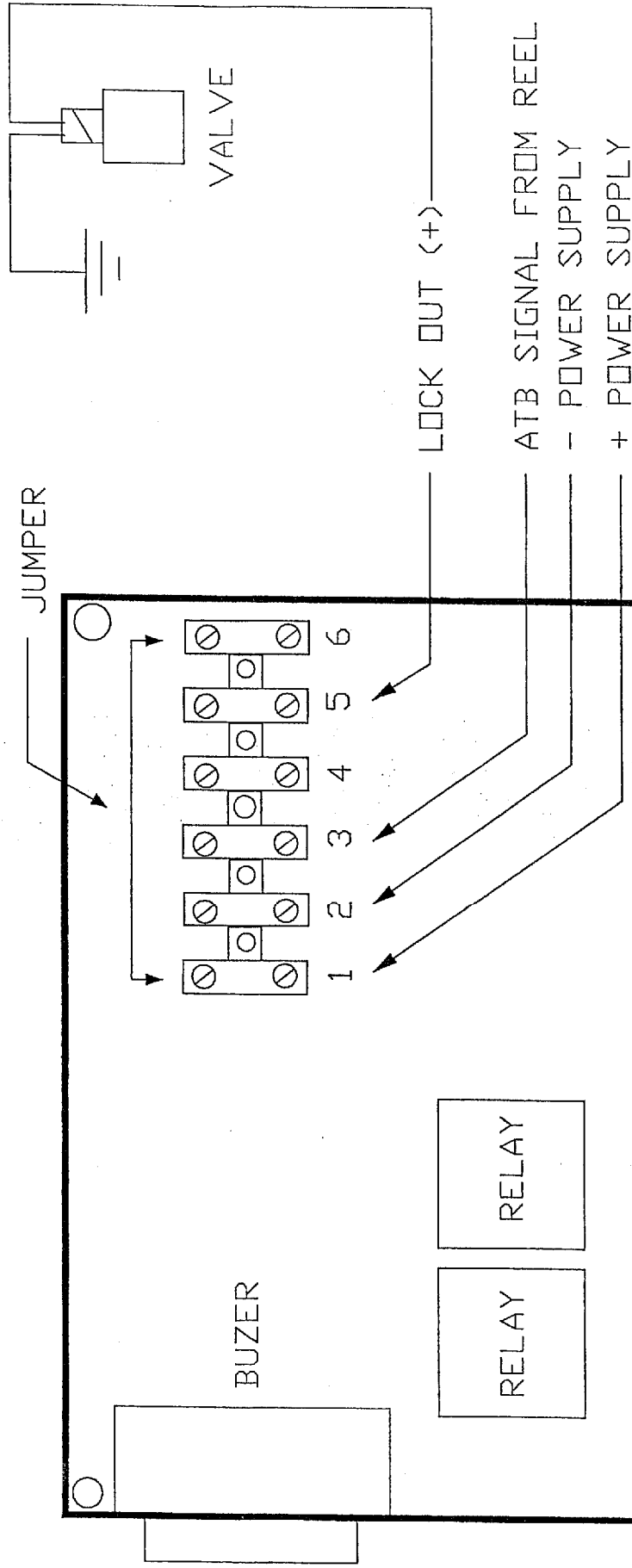


END CABLE GUIDE  
FOR MAIN BOOM  
(KR 910)

REVISIONS		BY
NO	DATE	D.R.
1	4/8/98	
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RAYCO/WYLIE SYSTEMS	
DRAWING NAME	
JUNCTION BOX CONNECTION	
DRAWN BY	MATERIAL
D. RENAUD	
CHECKED BY	SCALE
DATE	DRAWING NO
07/07/95	ATB13

# A2B CONTROL BOX INSIDE VIEW



REVISIONS	
NO	DATE
1	
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RAYCO/WYLIE SYSTEMS	
DRAWING NAME A2B CONTROL BOX GENERAL WIRING	
DRAWN BY D. RENAUD	SCALE MATERIAL
CHECKED BY	DATE 17/09/1997
DRAWING NO ATBCONT2	

## 7- TROUBLESHOOTING:

First of all, verify if all junction boxes 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 wire and body. If no continuity, check continuity along wiring and body until the switch. If body of boom causes the problem, use double wire on or cable to bring ground to 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 MAINTENANCE INSTRUCTION:

- DAILY OPERATOR: - Verify if cable of reeling drum is not jammed and if it is damaged.
  - Verify if all connectors from switches and jib are well screwed in.
  - Test two-block switch 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 technician.  
Wylie
- 
- BIYEARLY: - Through inspection of all circuits, wires, lock-out, connections and mechanical parts.