INSTALLATION/OPERATION MANUAL

MULTIQUIP

MAYCO

MIRATRON WIRELESS REMOTE CONTROL RADIO MAYCO MODEL C30HDG

Revision #0 (08/19/09)

THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.

TABLE OF CONTENTS

LIMITED ONE YEAR WARRANTY

Miratron Incorporated, hearafter referred to as Miratron, is providing this warranty in lieu of all other express or implied warranties, including any warranty of merchantability or fitness for a particular purpose. This warranty is buyer's exclusive remedy for all claims against Miratron. Miratron shall not be liable for any consequential or incidental damages. Miratron's total liability for all contracts, negligence, or other claims shall be limited to the price paid for its product.

Miratron promises buyer that any Miratron product purchased by buyer shall be free from all material defects in desgin, material, or manufacturing for a period of one year from the manufacture date; provided, however, that the warranty shall not extend to ordinary wear and tear or to normally replaceable components (e.g., batteries).

During the warranty period, Miratron may repair or replace (in its sole discretion) any product suffering from a warranty defect and returned freight prepaid by buyer, with no charge to buyer for any warranty repair or replacement.

The warranty shall remain in full force and effect for such 1 year period, provided that the product: (1) was installed, operated, and maintained properly; (2) has not been abused or misused; and (3) has not been repaired, altered, or modified outside of Miratron's authorized facilities. This warranty provides specific legal rights that may be varied by state law.

Miratron products are not designed for life or safety applications.

Product specification subject to change without notice.

NOTICE

System must be physically disconnected from the machine prior to welding on the machine. Welding may cause permanent damage to sensitive electronic components, and will void this warranty.

ALWAYS read manual before attempting to operate the equipment. Failure not to read manual could cause severe equipment damage and or damage to the receiver and transmitter.

Make sure work area is safe to operate radio control receiver and transmitter.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

If any problems or malfunctions occur using this product, discontinue use immediately, and refer to the Troubleshooting Guide in this manual. If the problem persists, call your equipment dealer immediately for parts and or service.

NOTICE

Disconnect and lock-out all power sources before making any wiring connections to the receiver.

NOTICE

Improper operation of the transmitter receiver could cause damage to the equipment. **DO NOT** allow unauthorized personnel to operate this equipment before reading manual.

NOTICE

MIRATRON, Inc. transmitters and receivers are not intended for life or safety applications, MIRATRON, Inc. shall not accept resposibility for installation, application, or safety of machine or systems which utilize MIRATRON, Inc. transmitters and receivers.

SPECIFICATIONS

Table 1. Specifications	
Miratron Model Number:	
RX4 Radio Control Receiver	CMD16-0135 ~ (MQ P/N EM98215)
General:	
Power Requirements	12-24VDC, 500mA max
Radio:	
Frequency Standard	902-928 MHz, FHSS, ISM Band
Frequecy Control	Direct FM
FCC ID	OUR9XCITE (Standard)
Receiver Sensitivity	-106 dBM
Transmitter:	CMD16-0135 ~ (MQ P/N EM98215)
Range	300 ft. (91.44 meters) Line of Sight (Standard)
Battery Type	1.5 Volt “AA” Alkaline (4)
Battery Life (Standard)	Standby, 80 hrs. — Transmitt, 12-16 hrs.
Battery Life (Extended Range)	Standby, 40 hrs. — Transmitt, 6-8 hrs.
LED Indicator	Flashing = Battery Good Double Blink = Battery Low
Enclosure:	
Transmitter	High Impact Polystyrene
Environmental:	
Operating	-14° F ~ 158° F (-10°C ~ 70° C)
Storage	-40° F ~ 185° F (-40°C ~ 85° C)

Transmitter:

- Clean transmitter gently with a damp cloth. **DO NOT** immerse transmitter in water, or spray with hose. **DO NOT** store outside.
- **DO NOT** drop transmitter or otherwise subject transmitter to physical shock.
- **DO NOT** expose transmitter to extreme temperatures.
- **DO NOT** open transmitter enclosure. Transmitter contains no serviceable parts.

Receiver:

- Remove receiver from machine prior to welding on machine
- **DO NOT** paint electrical connector.
- Use only factory provided antenna and cabling.
- **DO NOT** open receiver enclosure except to change radio channel or make adjustments to factory settings.
- Use transmitter to test functions. **DO NOT** apply voltage to circuit board directly.

RECEIVER INSTALLATION

Parts:

Make sure all parts are accounted for before performing the installation.

The following parts are included with the kit:

- Radio Transmitter
- Radio Receiver
- Spiral Antenna with associated mounting hardware
- Coaxial Antenna Cable
- Data /Power Cable (7-wire)
- Remote Control Cable

Battery Disconnection

1. Disconnect the negative terminal of the battery cable from the battery.

Antenna Mounting

1. Drill a 3/4" hole into the hood on the C30HDG as shown in Figure 1.
2. After hole has been drilled, deburr hole opening.
3. Tilt the engine hood slightly forward to gain access to the antenna hole opening. Support the hood with a block of wood to maintain the desired access position.
4. Insert antenna cable thru 3/4" hole opening in hood. Insert BNC end of cable first.
5. With one hand holding the antenna end of the cable through the antenna hole opening, connect the locking flange, antenna and rubber gasket. Tighten locking flange securely.
6. Secure coaxial antenna with pressed on tie-wrap pads (interior). Also apply pressed on tie-wrap pads (exterior) to the control box support panel (bottom).

Radio Control Receiver Mounting

1. Drill two 1/4" holes into the control box support panel on the C30HDG as shown in Figure 1.
2. After both holes have been drilled, deburr each hole opening.
3. Using a 1/4-20 x 1-1/4 bolt (2), 1/4 lock washer (2), 1/4 flat washer (2) and 1/4 nut (2), mount the radio control receiver onto the control box support panel as shown in Figure 1.
4. Connect BNC end of coaxial antenna cable to BNC connector on radio control receiver.

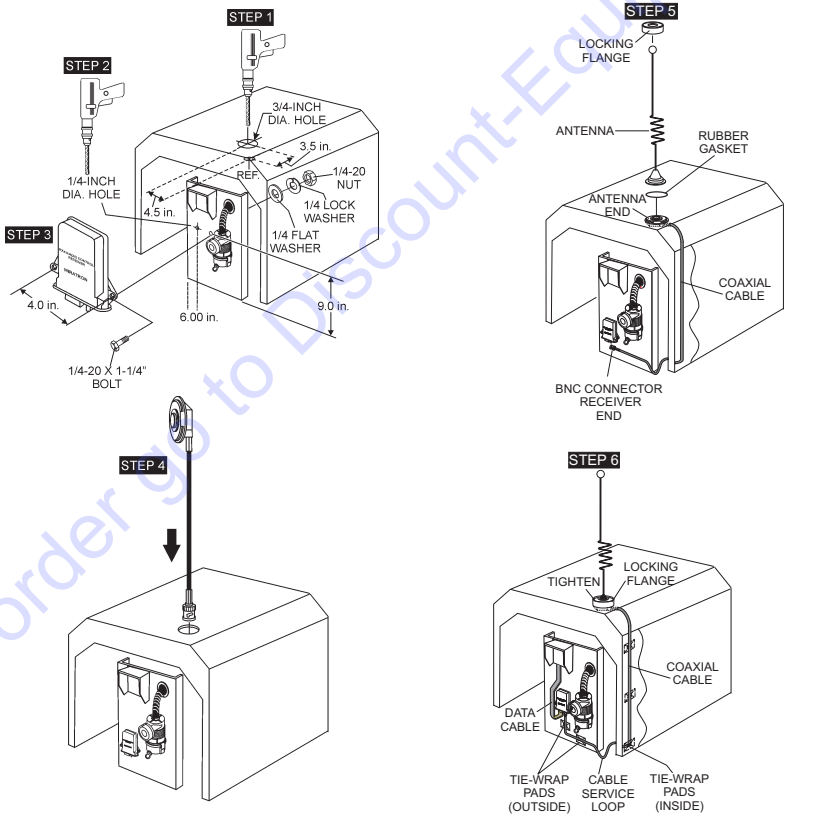


Figure 1. Antenna/Receiver Installation

Control Box Removal

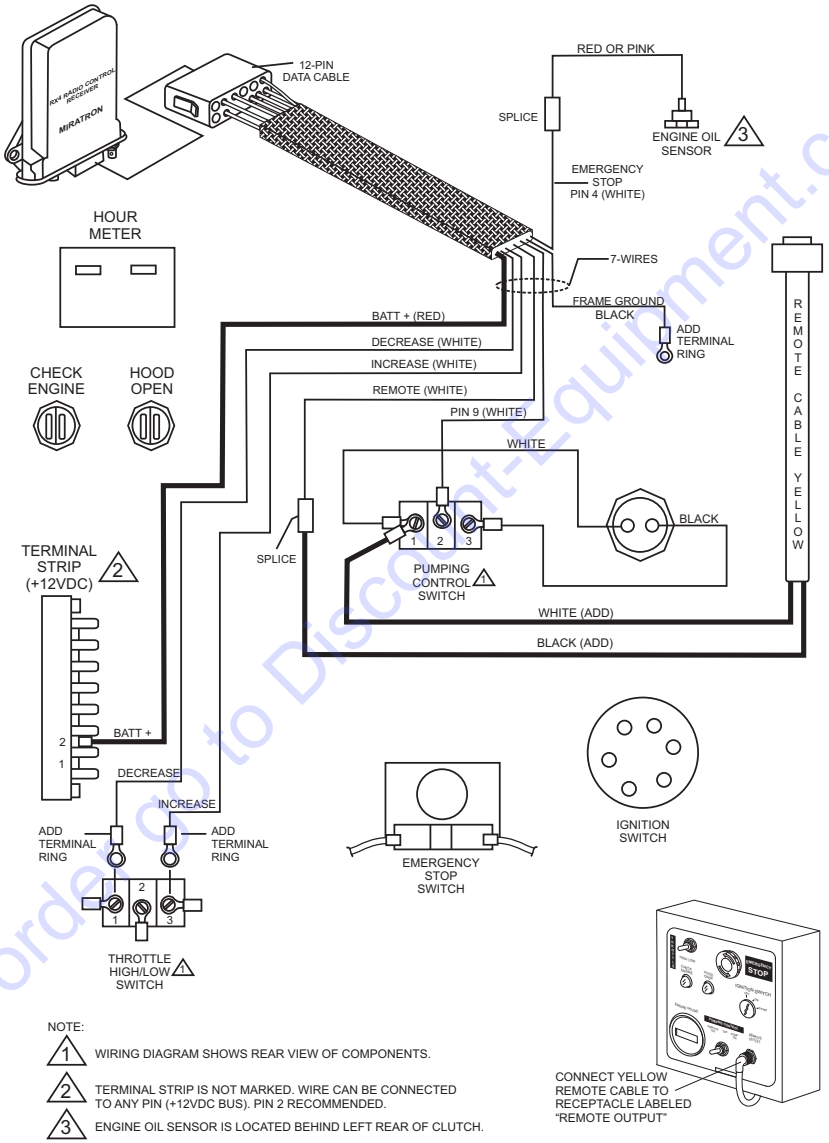
1. Using a 7/16 socket remove the mounting bolts (3) that secure the control box to the support bracket.
2. Once the bolts have been removed, flip the panel downward to gain access to the connection points.

Data Cable Connections

1. Wire data cable into control box as shown in Figure 2.
2. Crimp a 16-14 (3/16") terminal ring onto the RED wire labeled BATT+. Connect this end of the wire to the +12VDC terminal strip, pin 2.
3. Crimp a #16-14 (3/16") terminal ring onto the WHITE wire labeled DECREASE. Connect this end of the wire onto pin 3 on the throttle high low switch.
4. Crimp a 16-14 (3/16") terminal ring onto the WHITE wire labeled INCREASE. Connect this end of the wire to pin 1 of the throttle high low switch.
5. Crimp a #16-14 (3/16") terminal ring onto the WHITE wire labeled PIN 9. Connect this end of the wire to pin 2 on the pumping control switch.
6. Crimp a #16-14 (5/16") terminal ring onto the BLACK wire labeled FRAME GROUND. Connect this end of the wire to engine chassis ground.
7. Splice the WHITE wire labeled EMERGENCY STOP with the RED or PINK wire from the engine oil sensor.
8. Insert connector end of data cable into Miratron receiver.

Remote Control Cable Connections

1. Connect the remote control cable to the control box as shown in Figure 2 .
2. Splice the WHITE wire labeled REMOTE (data cable) with the BLACK wire from the yellow remote cable
3. Crimp a #16-14 (3/16") terminal ring onto the WHITE wire from the yellow remote cable. Connect this end of the wire to pin 1 on the pumping control switch.
4. Re-install control box using the existing mounting hardware.
5. Insert the yellow remote control cable into the 2-pin receptacle labled REMOTE OUTLET on the control box.
6. Reconnect negative battery cable to battery.



NOTE:

1. WIRING DIAGRAM SHOWS REAR VIEW OF COMPONENTS.
2. TERMINAL STRIP IS NOT MARKED. WIRE CAN BE CONNECTED TO ANY PIN (+12VDC BUS). PIN 2 RECOMMENDED.
3. ENGINE OIL SENSOR IS LOCATED BEHIND LEFT REAR OF CLUTCH.

Figure 2. Wiring Diagram

TRANSMITTER/RECEIVER

The definitions below describe the controls and functions of the Miratron Transmitter and Radio Control Receiver.

Transmitter

1. **Power On Switch** — Place this switch in the ON position to turn on the transmitter. Be sure to place this switch in the OFF position when the system is not in use.
2. **Status LED Indicator** — Status LED blinks to indicate transmitter is ON and active. LED will double-blink when battery strength is low.
3. **E-STOP Switch** — When activated will cause the engine stop and all pumping will cease.
4. **Belt Clip** — If desired the transmitter can be placed on a belt.
5. **Pump ON/OFF Switch** — Place this switch in the pump ON position to begin pumping. Place the switch in the OFF position to stop pumping.
6. **Engine Speed Switch** — Place this switch upward to increase engine speed. Place downward to decrease engine speed.
7. **Batteries** — Transmitter requires four AA 1.5V alkaline batteries. If rechargable batteries are to be used, nickel-metal hydride (NiMH) are recommended.

Receiver (Learn Button)

Transmitter and receiver must be matched as a pair. Perform the procedure listed below to pair the transmitter and receiver.

1. Place the ignition switch in the ON position.
2. Verify that the status LED on transmitter blinks (active).
3. Place the pumping control switch on the control box in the REMOTE ON position.
4. Press and hold the learn button on the RX4 radio control receiver. While keeping the learn button depressed, toggle the pump ON/OFF switch for 10 seconds.

Functional Test

Perform the functional test procedure below to test the remote control radio system..

1. Start the engine as outlined on the operator's manual.
2. Place the transmitter power ON/OFF switch in the ON position.
3. Place the pumping control switch on the control box in the REMOTE ON position.
4. Toggle the engine speed switch back and forth. Verify that engine speed increases and decreases.
5. Toggle pump ON/OFF switch. Verify that pumping starts and stops.

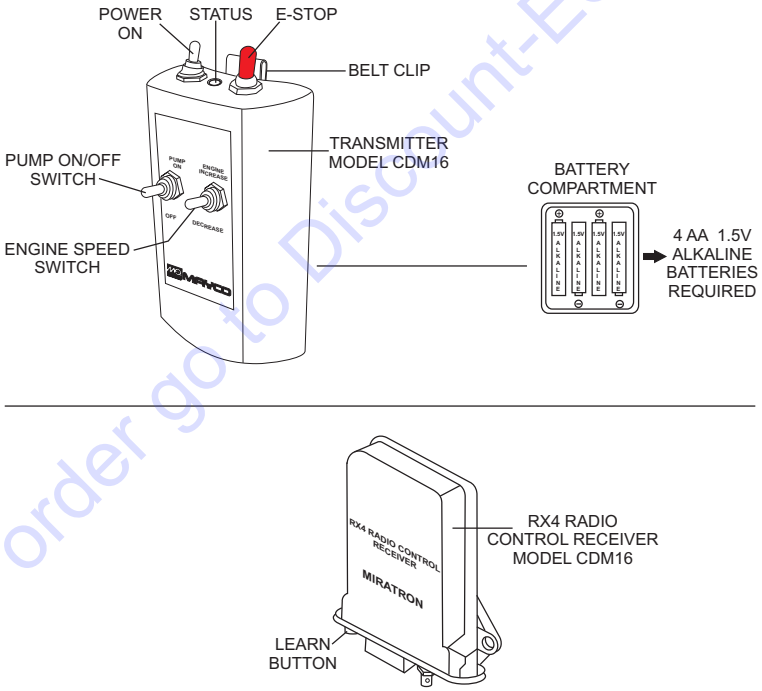


Figure 3. Transmitter/Receiver

Table 2. Troubleshooting		
Symptom	**Possible Problem**	**Solution**
Transmitter does not function at all	LED status indicator not flashing.	Turn transmitter power switch ON. Weak dead battery, replace batteries. Check orientation of batteries.
	LED indicator not lit when power ON/OFF switch is pressed.	Make sure transmitter has be matched (paired) to receiver. Receiver is not powered up.
Transmitter range is poor	LED indicator not lit when power ON/OFF switch is pressed	Weak dead battery, replace batteries.
	LED indicator lit when switch is pressed	Check receiver antenna Maintain line-of-sight Avoid obstructions Check for interference Heavy rain reduces range
Transmitter works (RX LED in receiver comes on) but outputs do not operate	Check wiring.	Make sure output wires are not shorted to Ground Verify load is wired correctly.

SYSTEM WIRING DIAGRAM

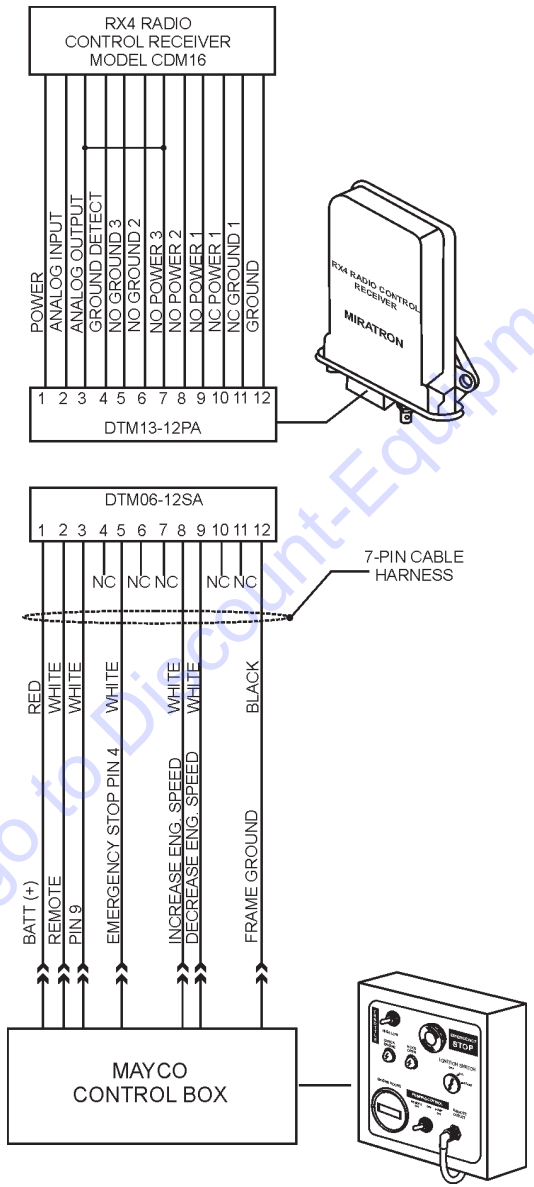


Figure 4. System Wiring Diagram

TO PURCHASE THIS PRODUCT PLEASE CONTACT US

Discount Equipment

Equipment Financing and
Extended Warranties Available

Discount-Equipment.com is your online resource for commercial and industrial quality parts and equipment sales.
561-964-4949
visit us on line @ www.discount-equipment.com

Select an option below to find your Equipment

Search by Manufacturer

Search by Product Type

Request a Quote

We sell worldwide for the brands: Genie, Terex, JLG, MultiQuip, Mikasa, Essick, Whiteman, Mayco, Toro Stone, Diamond Products, Generac Magnum, Airman, Haulotte, Barreto, Power Blanket, Nifty Lift, Atlas Copco, Chicago Pneumatic, Allmand, Miller Curber, Skyjack, Lull, Skytrak, Tsurumi, Husquvarna Target, Stow, Wacker, Sakai, Mi-T-M, Sullair, Basic, Dynapac, MBW, Weber, Bartell, Bennar Newman, Haulotte, Ditch Runner, Menegotti, Morrison, Contec, Buddy, Crown, Edco, Wyco, Bomag, Laymor, EZ Trench, Bil-Jax, F.S. Curtis, Gehl Pavers, Heli, Honda, ICS/PowerGrit, IHI, Partner, Imer, Clipper, MMD, Koshin, Rice, CH&E, General Equipment ,Amida, Coleman, NAC, Gradall, Square Shooter, Kent, Stanley, Tamco, Toku, Hatz, Kohler, Robin, Wisconsin, Northrock, Oztec, Toker TK, Rol-Air, APT, Wylie, Ingersoll Rand / Doosan, Innovatech, Con X, Ammann, Mecalac, Makinex, Smith Surface Prep,Small Line, Wanco, Yanmar