

Automated Remote Mechanism

ARM-101

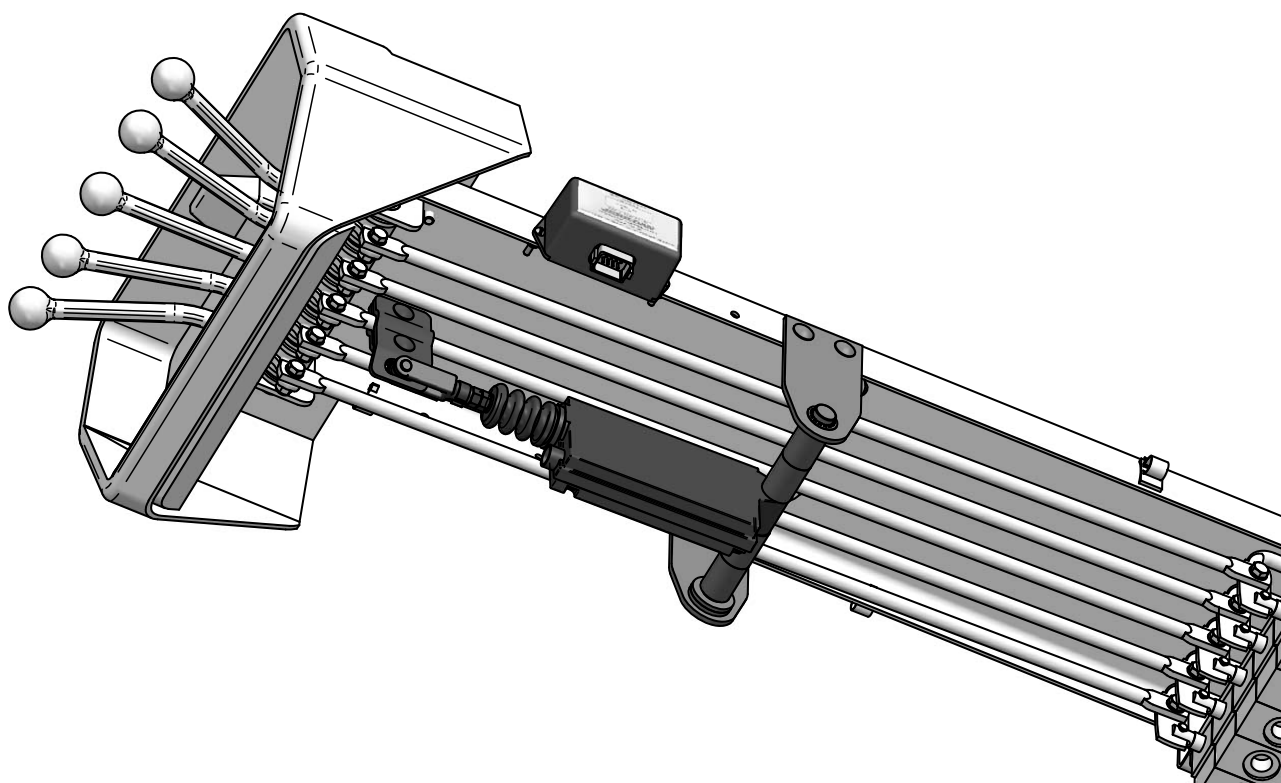
ARM-102

ARM-103

ARM-104

ARM-105

FIELD INSTALLATION MANUAL



JERR-DAN

An Oshkosh Corporation Company

13224 Fountainhead Plaza
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The “**ARM**” Control-100 System is an “**add-on**” system to provide Remote Control capability for the hydraulic valve control function(s). It is used in conjunction with a conventional manual control valve assembly with 0.25" – 0.312" Spool Travel.

The desired control function(s) is powered by an Electric Actuator which is attached to the control assembly and handle linkage.

The “**ARM**” Control-100 System consists of three (3) Kits, See Kit Contents Sheet.

Kit “1” includes the Electric Actuator Assembly(s), Control Linkage Brackets and Mounting Hardware. The brackets will fit Jerr-Dan’s control linkage only (0.50" Diameter Rod or 0.25" x 1.00" Flat Bar).

Kit “2” includes Electric Actuator Mounting Brackets, Shaft, Retaining Ring, Plastic Spacers and Mounting Hardware

Kit “3” includes Appropriate Function(s) Wireless Remote Controller, Mounting Plate and Mounting Hardware.

The “**ARM**” Control-100 System is designed to be installed on the Driver Side of the Carrier. The Shaft End of the Actuator is attached to the valve control channel with supplied brackets and hardware and the Yoke end of the Actuator is attached to the appropriate control linkage(s).

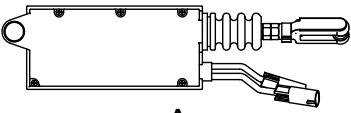
Depending on the built date of the Carrier, the control channel may or may not be predrilled for mounting brackets.

Read installation instructions THOROUGHLY prior to starting assembly and installation.


These installation instructions are for Jerr-Dan units. Installation on units other than Jerr-Dan may require additional parts (not supplied) and some modifications to these instructions.

KIT CONTENTS


KIT 1: ELECTRIC LINEAR ACTUATOR (QTY- 1 THRU 5 KITS)
QTY'S BELOW ARE PER KIT




A QTY-1
12V ELECTRIC LINEAR ACTUATOR
P/N: 700500003
INCLUDES CLEVIS, SPRING PIN,
NYLON BUSHING, AND NYLON WASHER




B QTY-1
BRACKET W/ SLOT
P/N: 4178000664



C QTY-1
BRACKET
P/N: 4178000665

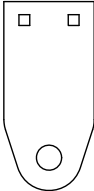


D QTY-2
CARRIAGE BOLT
Ø5/16" X 1"
P/N: 7115150864




E QTY-2
LOCKNUT Ø5/16"
P/N: 7660152601


KIT 2: MOUNT KIT (QTY-1)




G QTY-2
MOUNTING LUG
P/N: 4706005361




D QTY-4
CARRIAGE BOLT
Ø5/16" X 1"
P/N: 7115150864



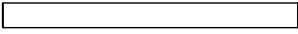
E QTY-4
LOCKNUT Ø5/16"
P/N: 7660152601




F QTY-4
FLATWASHER Ø5/16
P/N: 7950150161




J QTY-2
RETAINING RING Ø3/4
P/N: 7754000009



H QTY-1
PLATED SHAFT Ø3/4"
P/N: 4691000141 9.00"
P/N: 4691000373 10.50" OR
P/N: 4691000374 13.50"

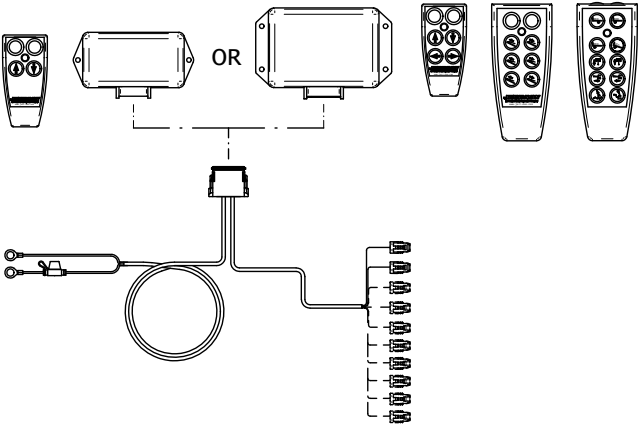


I QTY-4 THRU 7
PLASTIC PVC BUSHING P/N:
4211000001

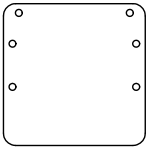


K QTY-4
FLATWASHER Ø3/4
P/N: 7950220141


KIT 3: WIRELESS REMOTE CONTROLLER (QTY-1) (1-5 ELECTRIC ACTUATORS)




L QTY-1
WIRELESS REMOTE CONTROLLER
2-FUNCTION (1 ACTUATOR) P/N: 7295000106
4-FUNCTION (2 ACTUATORS) P/N: 7295000108
6-FUNCTION (3 ACTUATORS) P/N: 7295000109
8-FUNCTION (4 ACTUATORS) P/N: 7295000111
10-FUNCTION (5 ACTUATORS) P/N: 7295000111




M QTY-1
MOUNTING PLATE P/N:
4706005595
4 - 10-FUNCTION ONLY




N
2-FUNCTION: QTY-2
4 - 10 FUNCTION: QTY-6
SCREW #10 X 1" SS
P/N: 7114100810



O
2-FUNCTION: QTY-2
4 - 10 FUNCTION: QTY-8
FLATWASHER Ø3/16" P/N:
7950100151



P
2-FUNCTION: QTY-2
4 - 10 FUNCTION: QTY-6
LOCKNUT #10 SS
P/N: 7660102604



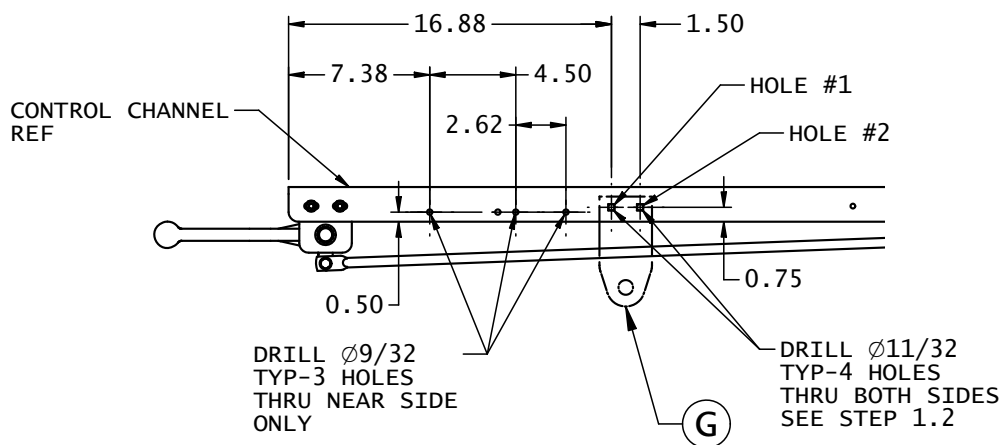
X QTY-1
DECAL LEGEND
P/N: 7330000696
6 - 10 FUNCTION ONLY

INSTALLATION INSTRUCTIONS

STEP 1: VERIFY/DRILL MOUNTING HOLES

- (1.1) VERIFY MOUNTING HOLES AND APPROXIMATE LOCATIONS BY VISUAL INSPECTION. OLDER UNITS WILL NOT HAVE SOME OR ANY HOLES PRE-DRILLED, DRILL HOLES AS SHOWN BELOW.
- (1.2) DRILL HOLE #1 AS SHOWN, IF HOLE #2 IS DIFFICULT TO DRILL: MOUNT LUG "G" USING ONE BOLT "D", NUT "E", AND WASHER "F", THEN USE LUG "G" AS TEMPLATE TO DRILL HOLE #2. REPEAT OTHER SIDE.

(VIEW FROM REAR DRIVER-SIDE OF UNIT)



STEP 2: INSTALL MOUNTING LUGS

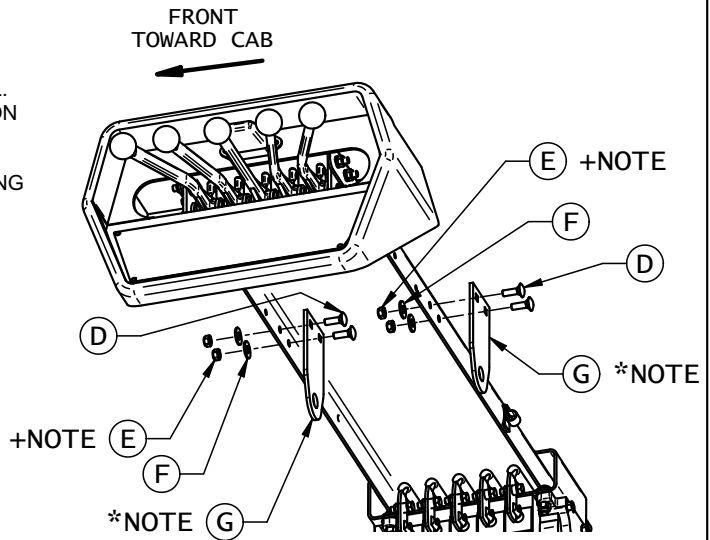
INSTALL ITEMS D, E, F, & G AS SHOWN (SEE STEP 1 FOR HOLE LOCATIONS).

*NOTE: LUG "G" TOWARD FRONT OF UNIT INSTALLED ON INSIDE OF CONTROL CHANNEL. LUG "G" TOWARD REAR OF UNIT INSTALLED ON OUTSIDE OF CONTROL CHANNEL.

+NOTE: HAND TIGHTEN LOCKNUT "E" ALLOWING LUG "G" TO SLIGHTLY MOVE.

CONTROL RODS NOT SHOWN FOR CLARITY.

D	x4
E	x4
F	x4
G	x2



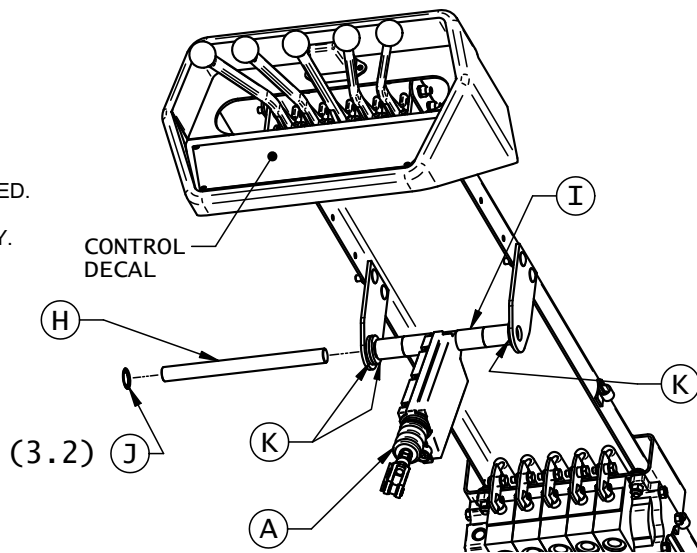
STEP 3: INSTALL ELECTRIC ACTUATOR(S)

(3.1) POSITION ACTUATOR(S) "A" BELOW DESIRED FUNCTION(S), SEE CONTROL DECAL FOR PROPER CONTROL ROD LOCATION(S). USE SPACERS "I" & WASHERS "K" AS NEEDED TO FILL IN BETWEEN ACTUATOR(S) AND LUGS.

(3.2) INSERT SHAFT "H" AND PRESS ON ONLY ONE RETAINING RING "J" AS FUTURE ADJUSTMENT MAY BE REQUIRED.

CONTROL RODS NOT SHOWN FOR CLARITY.

A	x1-5
H	x1
I	AS NEEDED
J	x1
K	AS NEEDED

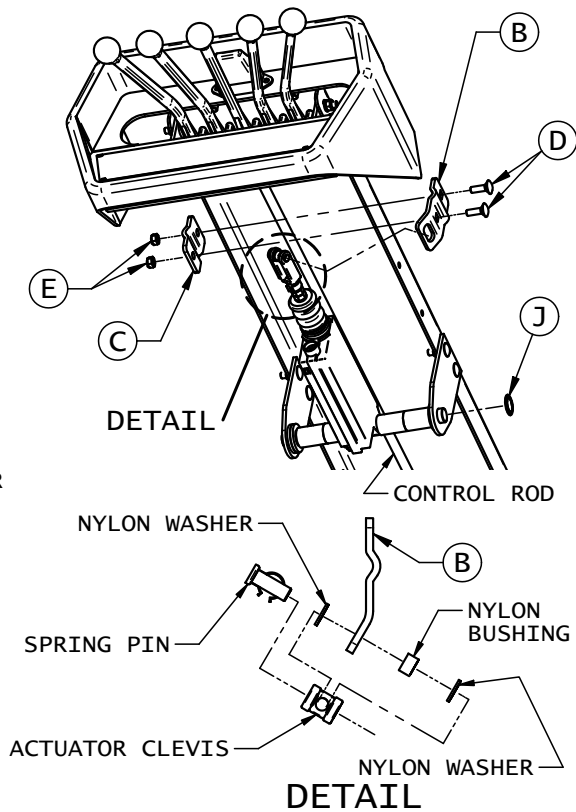


STEP 4: ATTACH ELECTRIC ACTUATOR(S) TO CONTROL ROD(S)

- (4.1) INSTALL SPRING PIN, CLEVIS, NYLON BUSHING, AND NYLON WASHER FROM ACTUATOR "A" IN BRACKET "B" SLOT, SEE "DETAIL".
- (4.2) POSITION BRACKETS "B" & "C" AROUND CONTROL ROD IN VERTICAL POSITION.
- (4.3) INSERT CARRIAGE BOLTS "D" AND HAND TIGHTEN LOCKNUTS "E". BRACKETS "B" & "C" MUST BE ABLE TO SLIDE FREELY ON CONTROL ROD.
- (4.4) REPEAT STEPS 4.1, 4.2 & 4.3 FOR EACH ACTUATOR.
- (4.5) VERIFY POSITION OF ACTUATOR(S) ARE IN LINE WITH CONTROL ROD(S). ADJUST QUANTITY AND LOCATION OF ITEMS "I" & "K" AS NEEDED TO MINIMIZE SIDE-TO-SIDE MOVEMENT OF ACTUATORS.
- (4.6) PRESS ON RETAINING RING "J".

ONE CONTROL ROD SHOWN, OTHERS NOT SHOWN FOR CLARITY.

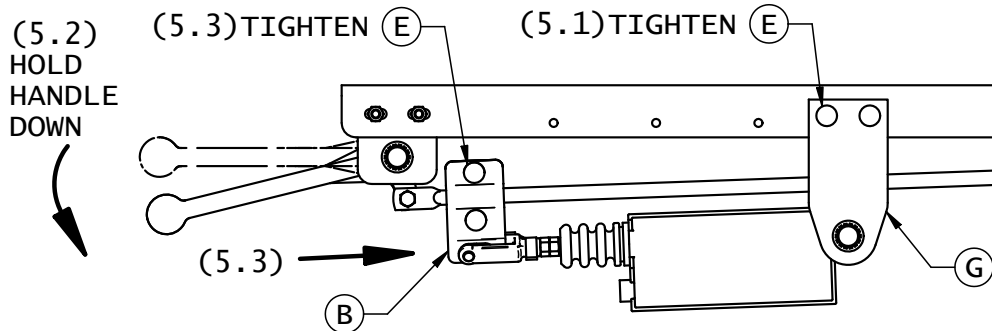
QTY PER ACTUATOR	
(B) x1	
(C) x1	
(D) x2	
(E) x2	
	(J) x1



STEP 5: TIGHTEN AND ADJUST MOUNTS AND ACTUATOR(S)

- (5.1) WHEN ACTUATOR(S) "A" ARE ALIGNED WITH CONTROL ROD(S): TIGHTEN LOCKNUTS "E" ON LUGS "G" FROM STEP 2 FIRST.
- (5.2) OPERATE CONTROL HANDLE AND HOLD ALL THE WAY DOWN.
- (5.3) WHILE HOLDING HANDLE DOWN: SLIDE BRACKETS "B" AND "C" ON ROD ALL THE WAY TOWARD ACTUATOR "A". THEN TIGHTEN LOCKNUTS "E" FROM STEP 4 WHILE KEEPING BRACKETS VERTICAL.
- (5.4) REPEAT STEPS 5.2 & 5.3 FOR EACH ACTUATOR.

THIS WILL CENTER THE ACTUATOR PIN IN THE SLOT OF BRACKET "B". OPERATE CONTROL HANDLE TO ENSURE IT MOVES FREELY IN BOTH DIRECTIONS. IF THE HANDLE ENCOUNTERS RESISTANCE FROM THE ACTUATOR REPEAT STEPS 5.2 AND 5.3 TO CENTER BRACKET "B" TO ACTUATOR PIN.



STEP 6: INSTALL WIRELESS REMOTE CONTROLLER MODULE

KIT 3 (2-FUNCTION)

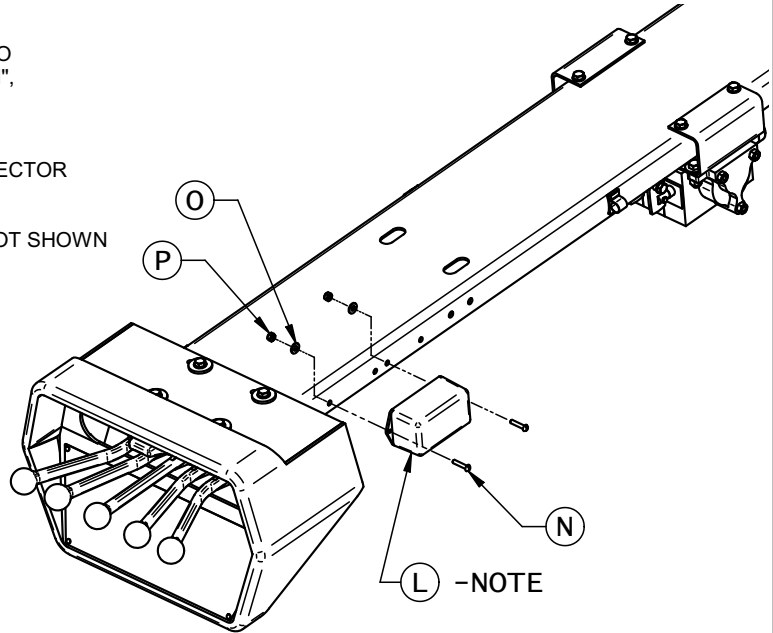
INSTALL WIRELESS CONTROLLER "L" TO CONTROL CHANNEL USING SCREWS "N", WASHERS "O" AND LOCKNUTS "P". SEE STEP 1 FOR HOLE LOCATIONS.

-NOTE: POSITION MODULE WITH CONNECTOR SOCKET FACING DOWN.

ELECTRIC ACTUATOR AND MOUNTS NOT SHOWN FOR CLARITY.

KIT 3 (2-FUNCTION)

L	x1
N	x2
O	x2
P	x2



STEP 6 ALTERNATIVE: INSTALL WIRELESS REMOTE CONTROLLER MODULE

KIT 3 (4 THRU 10-FUNCTION)

(6.1A) INSTALL WIRELESS CONTROLLER "L" TO PLATE "M" USING SCREWS "N" QTY-4, WASHERS "O" QTY-4 & LOCKNUTS "P" QTY-4.

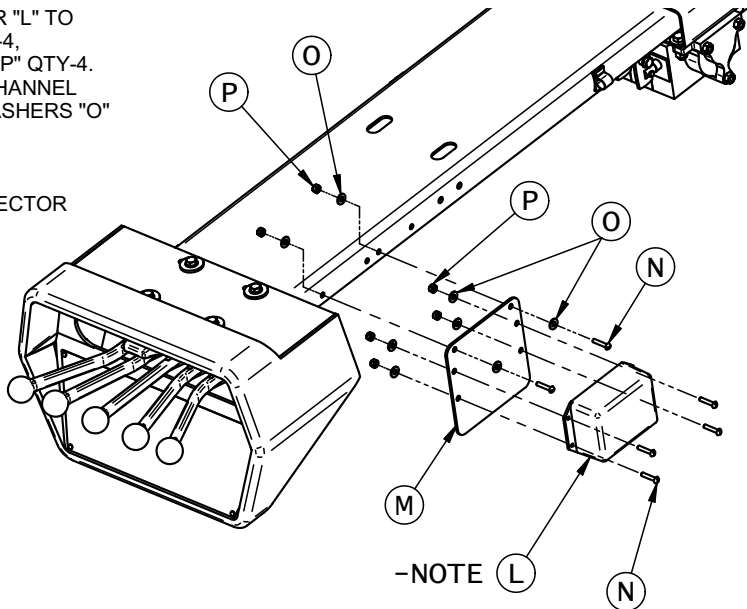
(6.2A) BOLT PLATE "M" TO CONTROL CHANNEL USING SCREWS "N" QTY-2, FLATWASHERS "O" QTY-4 & LOCKNUTS "P" QTY-2. SEE STEP 1 FOR HOLE LOCATIONS.

-NOTE: POSITION MODULE WITH CONNECTOR SOCKET FACING DOWN.

ELECTRIC ACTUATOR AND MOUNTS NOT SHOWN FOR CLARITY.

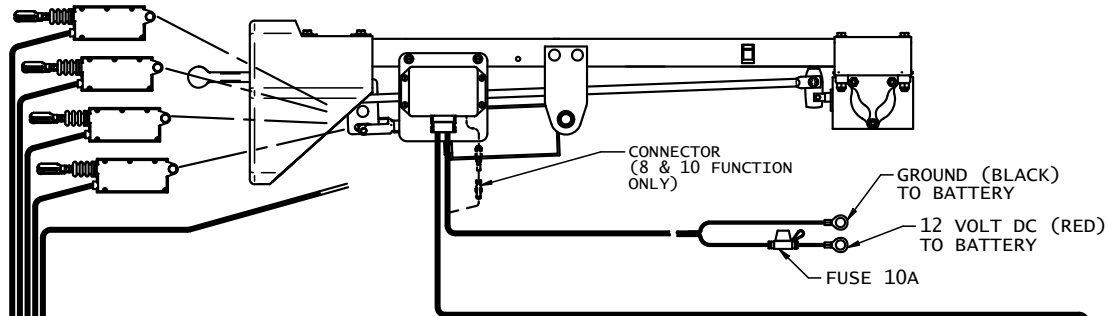
KIT 3 (4 THRU 10-FUNCTION)

L	x1
M	x1
N	x6
O	x8
P	x6



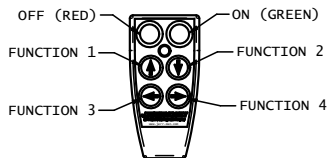
STEP 7: CONNECT WIRING HARNESSSES

- (7.1) CONNECT HARNESS TO REMOTE CONTROLLER MODULE.
- (7.2) CONNECT ELECTRIC ACTUATOR CONNECTORS TO REMOTE CONTROLLER HARNESS AS SHOWN BELOW. USE SUPPLIED TIE STRAPS TO SECURE EXCESS WIRE. YOU CAN CUSTOMIZE YOUR REMOTE CONTROLLER BY CHOOSING THE ACTUATOR/CONTROLLER CONNECTIONS.
- (7.3) ROUTE SUPPLY WIRES ALONG FRAME TO CAB OF TRUCK. CONNECT SOURCE AND GROUND TERMINALS DIRECTLY TO BATTERY. USE SUPPLIED TIE STRAPS TO SECURE WIRE TO CHASSIS. COIL EXCESS WIRE AT BATTERY AND USE TIE STRAPS TO SECURE.
- (7.4) TEST FUNCTIONS BY OPERATING REMOTE. REMOTE TRANSMITTER IS PRE-PROGRAMMED AND WILL RETAIN MEMORY WHEN POWER IS LOST TO THE MODULE. IF TRANSMITTER DOES NOT WORK WHEN MODULE IS POWERED FOLLOW THE PROGRAMMING INSTRUCTIONS AT BOTTOM OF PAGE.
- (7.5) FOR 6 THRU 10 FUNCTION CONTROLLERS: PEEL OFF AND APPLY DECALS FROM LEGEND "X" IN APPROPRIATE LOCATIONS (IF NECESSARY). IF UNSURE OF LOCATIONS, OPERATE FUNCTIONS USING REMOTE AND OBSERVE CONTROL HANDLES.

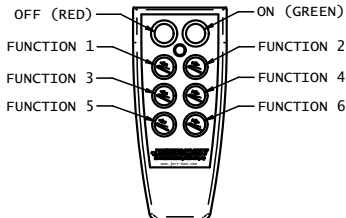


LINEAR ACTUATORS		CONNECT TO	REMOTE CONTROLLER					
ACTUATOR	CAVITY B WIRE COLOR		FUNCTION TERMINAL	WIRE COLORS				
				2-FUNC 7295000106	4-FUNC 7295000108	6-FUNC 7295000109	8-FUNC 7295000111	10-FUNC 7295000111
1	GREEN	1	1	1	1	1	1	
	YELLOW	2	2	2	2	2	2	
2	GREEN	3	-	3	3	3	3	
	YELLOW	4	-	4	4	4	4	
3	GREEN	5	-	-	5	5	5	
	YELLOW	6	-	-	6	6	6	
4	GREEN	7	-	-	-	7	7	
	YELLOW	8	-	-	-	9	8	
5	GREEN	9	-	-	-	-	9	
	YELLOW	10	-	-	-	-	10	

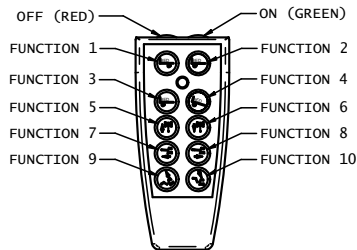
YELLOW - HANDLE DOWN
GREEN - HANDLE UP



2 OR 4-FUNCTION



6-FUNCTION



8 & 10 FUNCTION



REMOTE TRANSMITTER PROGRAMMING INSTRUCTIONS:

(NOTE: REMOTE TRANSMITTER IS PRE-PROGRAMMED AND SHOULD NOT REQUIRE INITIAL PROGRAMMING.)

IF A REMOTE CONTROLLER IS NOT WORKING OR IF REPLACING THE REMOTE:

DISCONNECT AND RECONNECT POWER TO CONTROLLER MODULE. IMMEDIATELY PUSH THE GREEN "ON" BUTTON. THEN PUSH AND HOLD THE TOP TWO YELLOW FUNCTION BUTTONS FOR APPROXIMATELY 10 SECONDS WHILE STANDING A FEW FEET AWAY FROM THE CONTROLLER MODULE. TEST FUNCTIONALITY.

TROUBLESHOOTING

The linear actuator is attached to the control linkage operating rods to provide radio control to operate functions. The actuator uses 12 volt DC to operate.

The first thing to check is the manual operation of the control valve function you are operating. The operating handle should operate control valve smoothly without excessive force required. Compare this function to other sections. The actuator operates inside a slotted hole which allows manual operation of control valve with no notice of operating force when using manually.

DO NOT TRY TO DISASSEMBLE LINEAR ACTUATOR!

The linear actuator has no serviceable parts inside. If you suspect that you have a defective linear actuator. Follow these guidelines:

1. Disconnect linear actuator from control linkage to verify actuator will extend and retract when radio control transmitter is operated.
2. If linear actuator does not operate, verify that you have 12 volts to the linear actuator supplied from the radio control receiver.
3. You can also provide a 12 volt DC source directly to the linear actuator. To check for proper operation make sure the Positive (+) 12 volts goes to the B side of linear actuator connector and the Negative (-) goes to the A side. You can check both extend and retract operations using this method. If linear actuator does not operate in either direction, contact Jerr-Dan.

Refer to Figure on Page 8.

For your records:

Mechanical Actuator(s)

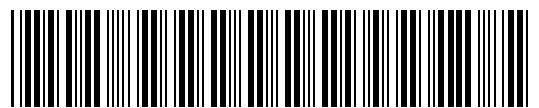
In - Service Date _____

- 1. Model No. _____ Serial No. _____
- 2. Model No. _____ Serial No. _____
- 3. Model No. _____ Serial No. _____
- 4. Model No. _____ Serial No. _____
- 5. Model No. _____ Serial No. _____
- 6. Model No. _____ Serial No. _____
- 7. Model No. _____ Serial No. _____
- 8. Model No. _____ Serial No. _____

Remote Controller

- 1. Model No. _____ Serial No. _____

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