

INSTALLATION INSTRUCTIONS



Multi-Function Joystick



INSTALLATION INSTRUCTIONS



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INTRODUCTION

The DICKEY-john **Multi-Function Joystick™** controls all hydraulic plow functions in one system when the truck ignition key is enabled. The joystick provides multi-axis proportional control for up to four independent hydraulic functions (front plow, dump body, wing, scraper).

The joystick is equipped with a safety trigger to initiate movement of hydraulic function to ensure operation activates when operator is ready. An emergency wing extract button on side of armrest automatically moves the wing plow into home position to avoid oncoming obstacles.

Figure 1

Multi-Function Joystick and Armrest



Two Joystick kits are available based on functionality requirements:

- MF Basic Kit (Front Plow and Dump Body control)
- MF Plus Kit (Front Plow, Dump Body, Body Scraper, Wing Plow control)

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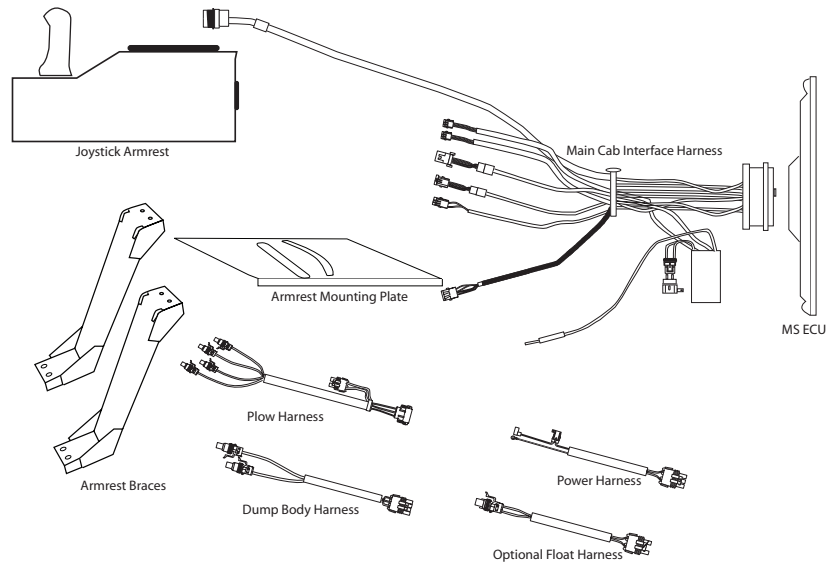


MF BASIC KIT INCLUDES

- Joystick Armrest
- Armrest Braces
- Armrest Mounting Plate with knobs
- MS ECU (Electronic Control Unit)
- Main Cab Interface Harness
- Power Harness
- Plow Harness
- Dump Body Harness
- ECU Mounting Kit (8 bushings, 4 spacers, 8 washers)
- Joystick Mounting Kit (1 mount plate washer, 4 washers, 4 nuts)

Figure 2

MF Basic Kit Components



OPTIONS

An optional float harness is available for hydraulic systems with float functionality. Not a standard part in either kit; must be ordered separately.

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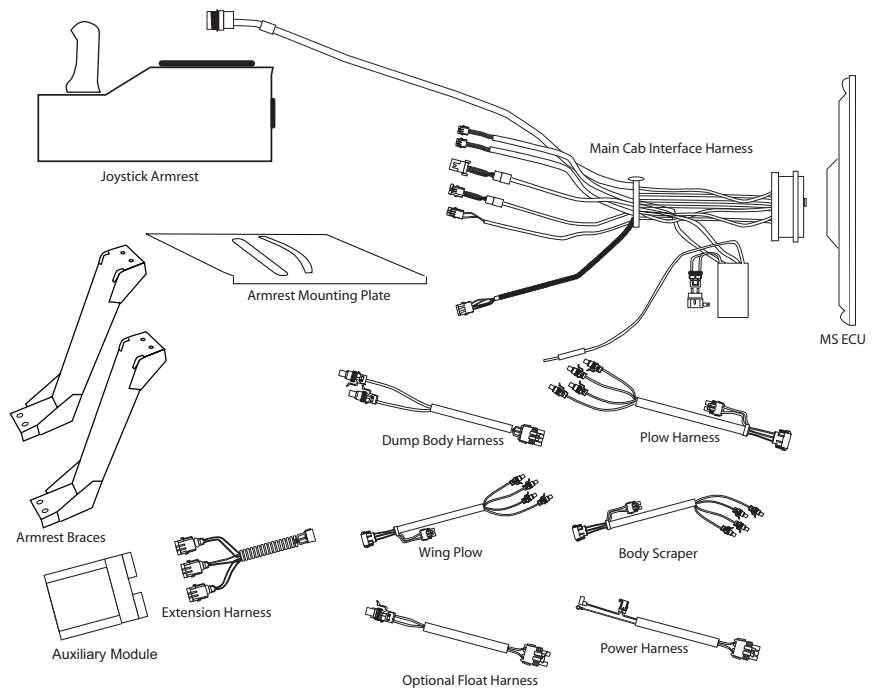
MF PLUS KIT INCLUDES

MF Plus Kit includes the same components as the MF Basic Kit plus:

- Body Scraper Harness
- Wing Plow Harness
- CAN/Power Extension Harness
- Auxiliary Module

Figure 3

MF Plus Basic Kit Components



OPTIONS

An optional float harness is available for hydraulic systems with float functionality. Not a standard part in either kit; must be ordered separately.



FEATURES

- Multi-axis joystick
- Controls up to four hydraulic functions
- Joystick grip with safety trigger to initiate movement of hydraulic function
- Auto Wing retract
- Armrest assembly attaches to driver seat maximizing cab space
- Adjustable armrest for operator comfort
- LED indication for function selection
- Truck ignition key enables joystick functionality
- Automatic power up diagnostic test of all system components
- 12V convenience plug for accessories



INSTALLATION

ARMREST ASSEMBLY

1. Place mounting plate on flat surface with screws facing up.
2. Align holes of armrest braces to the mounting plate and secure with nuts and washers.

Figure 4

Mounting Plate/Brace Assembly



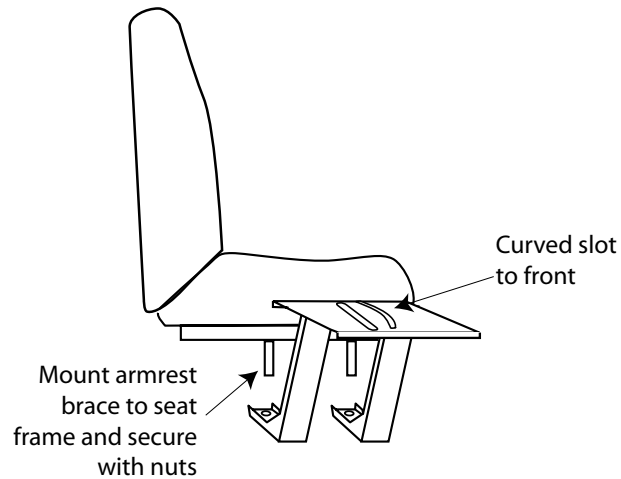
3. If armrest brace holes align to existing bolts on the seat frame, attach with nuts ([Figure 5](#)).
4. If mounting holes do not match:
 - Drill holes in seat frame to align with the holes in the foot of the armrest brace.
 - Drill holes in the armrest brace to align with the existing bolts on the seat frame.
 - Weld armrest brace to seat frame.

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Figure 5

Mounting Bracket to Seat Frame

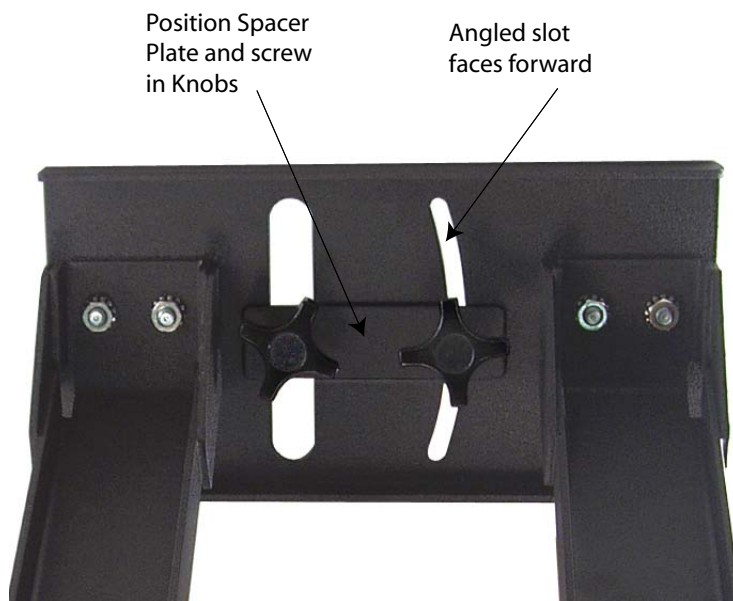


5. Place armrest brace assembly into position with the curved slot of the mounting plate facing forward and the armrest brace foot holes aligned with the drilled holes of the seat frame.
6. Secure armrest brace assembly to seat frame with bolts, not supplied.
7. Place joystick armrest onto the mounting plate of the armrest brace assembly.
8. Position Spacer Plate onto armrest brace and screw in knobs to secure.

Angled slot on mounting plate allows angling of joystick to desired position near the seat and to accommodate entering and leaving vehicle ([Figure 6](#)).

Figure 6

Installing Joystick Armrest



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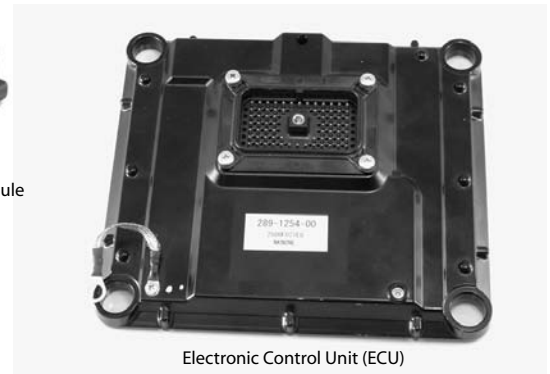
ELECTRONIC CONTROL UNIT (ECU) INSTALLATION

The ECU is to be installed inside the cab preferably in a straight up/down position with the 70-pin connector facing out.

CAUTION

The ECU should not be installed in a flat position where liquids could enter the connector and damage the circuitry or in a location that harnessing could be crushed, cut or tampered with.

Figure 7
ECU and Auxiliary Module



NOTE: *If using an auxiliary module for wing and scraper function, select an area in the cab that allows for placement of the ECU within 3' of the auxiliary module to ensure proper harness connection.*

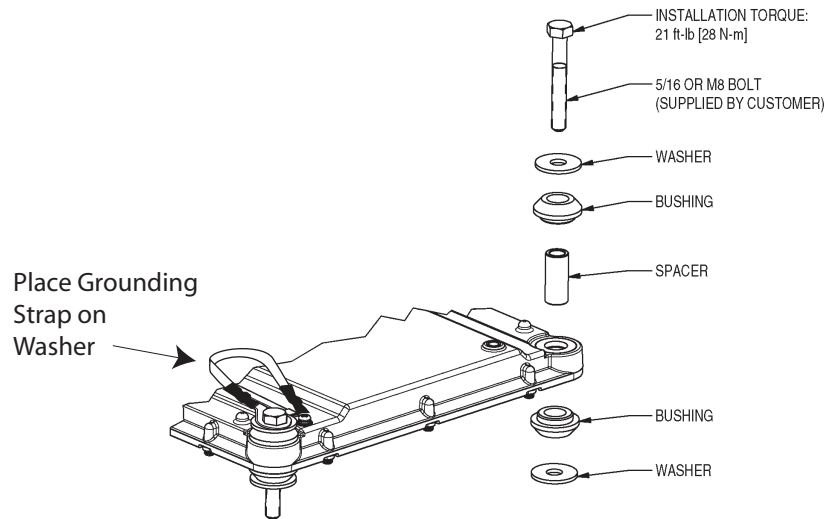
1. Place spacers inside mounting holes of ECU and secure bushings and washers on the front and back sides ([Figure 8](#)).
2. Place grounding strap, located next to one of the mounting holes, on top of the washer and screw in bolt.

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Figure 8

Spacer, Bushing, and Washer Placement



3. If using an auxiliary module for wing and scraper function, mount the auxiliary module inside the cab within 3' of the ECU.
4. Main cab harnessing can now be connected to the ECU and auxiliary module (if appropriate).



HARNESS CONNECTIONS

Reference [Figure 9](#) for harness illustration.

INSIDE THE CAB

1. Attach the 70-pin main cab harness to the ECU mounted in the cab and the 24-pin CPC connector to the back of the armrest.
2. Route the power harness from the main cab harness to the 12V battery.
3. Connect the ignition wire to a switched +12VDC keyswitch.
4. Route the plow, dump body, and float (if used) harnesses through the cab floor and strap to the frame rail of the truck to the hydraulic block.
5. If using an auxiliary module, connect the CAN/Power Extension harness to the main cab harness.
6. Connect the Wing Plow and Body Scraper harness to the Auxiliary module and CAN/Power Extension. **Do not remove the terminator from the middle connector of the CAN/Power extension harness.**
7. Route the 4 connectors of the Wing Plow and Body Scraper through the cab floor and strap to the frame rail of the truck to the hydraulic block.

OUTSIDE OF CAB

8. Connect the plow, dump body, and float harnesses (if used) to corresponding hydraulic system section valves.
9. Connect the battery harness red wire to the positive and the black wire to the negative.
10. Connect the Wing Plow and Body Scraper connectors to the corresponding hydraulic system section valves.

IMPORTANT: Part number D46796-0440 is used as a Front Plow harness and a Wing Plow harness, if applicable. When used as a Front Plow harness and connected to the main cab harness, the power connector is not used and the dust plug should NOT be removed. When used as a Wing Plow harness, the dust plug is removed and the power connector is connected to the CAN/Power Extension harness and then connected to the Auxiliary module.



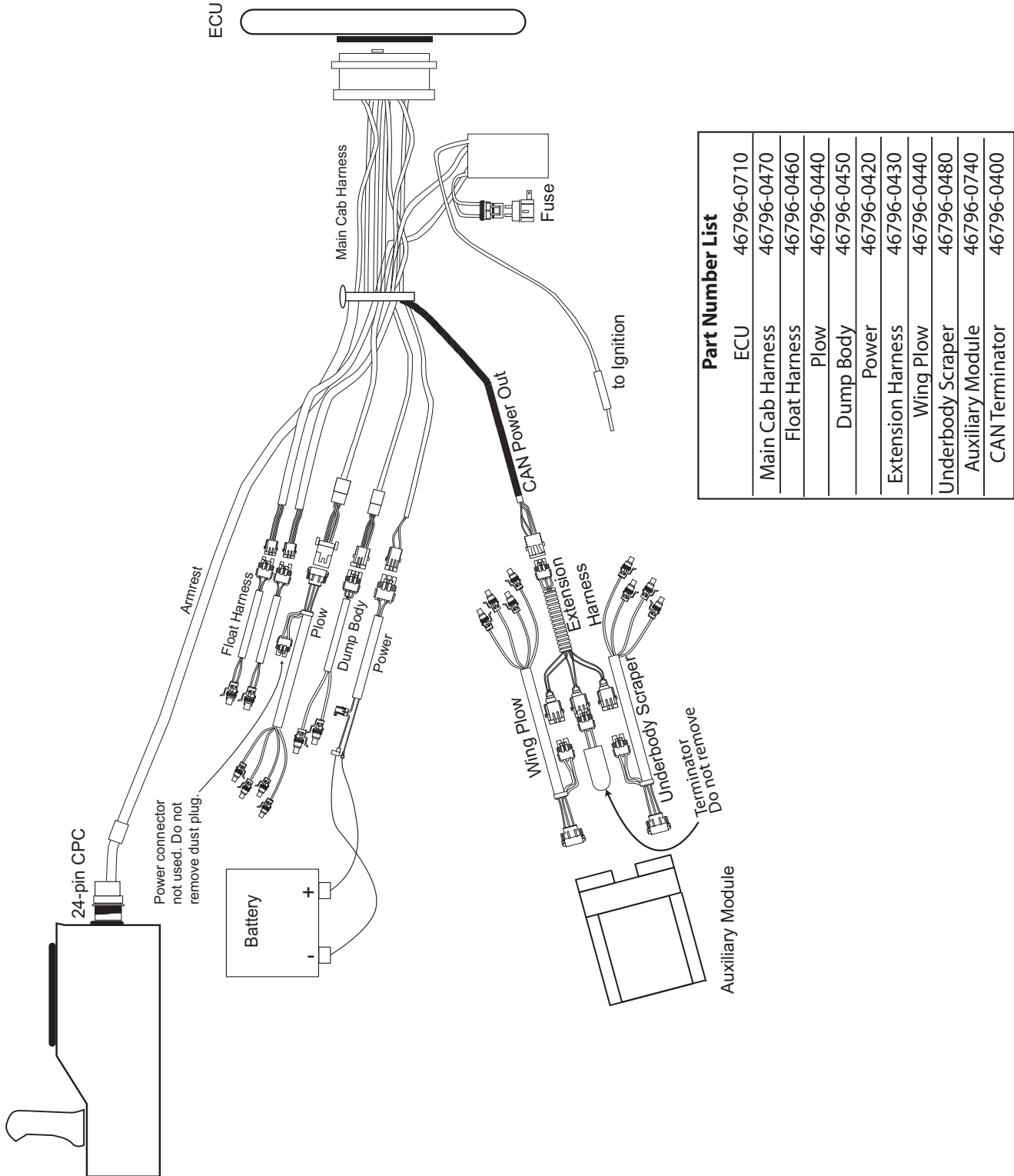
Ensure that all harnessing is properly connected before initial operation. Improper connections can result in an unexpected function to operate causing injury to persons or equipment.

INSTALLATION INSTRUCTIONS



Figure 9

Harness Installation



Part Number List	
ECU	46796-0710
Main Cab Harness	46796-0470
Float Harness	46796-0460
Plow	46796-0440
Dump Body	46796-0450
Power	46796-0420
Extension Harness	46796-0430
Wing Plow	46796-0440
Underbody Scraper	46796-0480
Auxiliary Module	46796-0740
CAN Terminator	46796-0400



JOYSTICK OPERATION

The joystick becomes active when the ignition key is turned on. An automatic power up diagnostic test is performed for approximately 10 seconds verifying all system components are operational and that the joystick is in neutral position. The joystick will not operate while performing the self-check test.

The multi-function joystick has four control push buttons that select which hydraulic functions will be active. Only one function can be active at any one time.

- Front plow (up, down, left, right)
- Dump body
- Wing (up, down, heel and toe)
- Body Scraper (up, down, left, right)

Figure 10

Joystick Functions



NOTE: Each button operates an independent function and will not run more than one function simultaneously.

ACTIVATION

The following steps must be performed in order for the joystick to operate.

1. To enable a function, press and hold button for approximately 2 seconds. An LED, located on the armrest, will illuminate to indicate the function is selected and button can be released.
2. With the joystick in neutral position, pull the trigger button and hold continuously while moving the joystick to activate control. The joystick will not operate until the trigger button is pressed.

IMPORTANT: Releasing the trigger before reaching position will stop the function immediately.

3. Trigger can be released when the control has reached the desired position.

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JOYSTICK FUNCTIONALITY

Plow Direction		
Forward	(12:00 position)	Down
Back	(6:00 position)	Up
Right	(3:00 position)	Right
Left	(9:00 position)	Left
Forward/Left	(11:00 position)	Simultaneously moves down and swings to the left
Forward/Right	(1:00 position)	Simultaneously moves down and swings to the right
Dump Body Direction		
Forward		Down
Back		Up
Body Scraper Direction		
Forward		Down
Back		Up
Right		Right
Left		Left
Forward/Left		Simultaneously moves down and swings to the left
Forward/Right		Simultaneously moves down and swings to the right
Wing Plow Direction		
Forward		Down
Back		Up
Right		Toe adjustment
Left		Heal adjustment
Forward/Left		Simultaneously moves down and heal adjustment
Forward/Right		Simultaneously moves down and and toe adjustment
Float (option)		If hydraulics are setup for function
Plow Float		Holding joystick forward full position for 2 seconds activates float function allowing plow to ride up and down with road.

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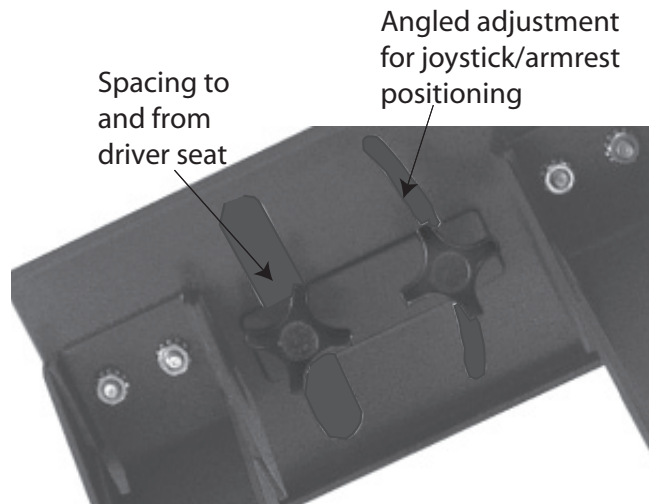
ARMREST/JOYSTICK ADJUSTMENT

The joystick/armrest is equipped with two knobs underneath the armrest that can be loosened to move and adjust the joystick/armrest to a comfortable position.

- One adjustment allows for angular armrest movement +/- 35 degrees from center position.
- The second adjustment allows for spacing to and from driver seat.

Figure 11

Armrest/Joystick Adjustment Knobs



WING EXTRACT BUTTON

A Wing Extract button is located on the side of the armrest. When pressed, the wing plow will automatically move the wing plow back to home position. This button eliminates the need to use the joystick to move back to home position, refer to (Figure 1).

CAUTION

The Wing Plow will take several seconds to move back to home position after the Wing Extract button is pressed. Allow adequate time to clear any obstacles.

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TROUBLESHOOTING

Issue	Probable Cause	Corrective Action
LEDs' stay dim when joystick function button is pressed.	There is a delay in the main joystick ECU that needs to see a function selection for 2 seconds.	<ol style="list-style-type: none"> 1) Push and hold button for two seconds. 2) Ensure that trigger is not pulled while selecting a function. 3) Press one function button at a time.
Joystick does not function and LED's do not light up.	No power is getting to the joystick.	<ol style="list-style-type: none"> 1) Verify truck ignition is turned on. 2) Verify ignition wire is connected to a 12V accessory source and is energized from the ignition keyswitch. 3) Check if any fuses are blown. 4) Unhook main joystick system power cable from battery for 10 minutes and then reconnect.
When the plow function is selected, the function LED lights up but there is no movement.	No voltage.	<ol style="list-style-type: none"> 1) Check the voltage at the coil connector in the 2-pin connector to ensure that voltage is getting to the valve when the joystick is activated.
When the plow function is selected, the dump body goes up/down.	Harnessing is not connected correctly.	<ol style="list-style-type: none"> 1) Ensure the plow harness is plugged into the plow section of the valve.
12V accessory plug does not work.	Blown fuse.	Replace with 5 Amp fuse.

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Dealers have the responsibility of calling to the attention of their customers the following warranty prior to acceptance of an order from their customer for any DICKEY-john product.

DICKEY-john® WARRANTY

DICKEY-john warrants to the original purchaser for use that, if any part of the product proves to be defective in material or workmanship within one year from date of original installation, and is returned to DICKEY-john within 30 days after such defect is discovered, DICKEY-john will (at our option) either replace or repair said part. This warranty does not apply to damage resulting from misuse, neglect, accident, or improper installation or maintenance. Said part will not be considered defective if it substantially fulfills the performance expectations. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE, AND OF ANY OTHER TYPE, WHETHER EXPRESS OR IMPLIED. DICKEY-john neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with said part and will not be liable for consequential damages. Purchaser accepts these terms and warranty limitations unless the product is returned within fifteen days for full refund of purchase price.

**For DICKEY-john Service Department, call
1-800-637-3302 in either the U.S.A. or Canada**



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