



1300-024
INSTRUCTION, QUICK ASSY
DART™



DART™ ASSEMBLY VIDEO

Scan QR code for a link to assembly video

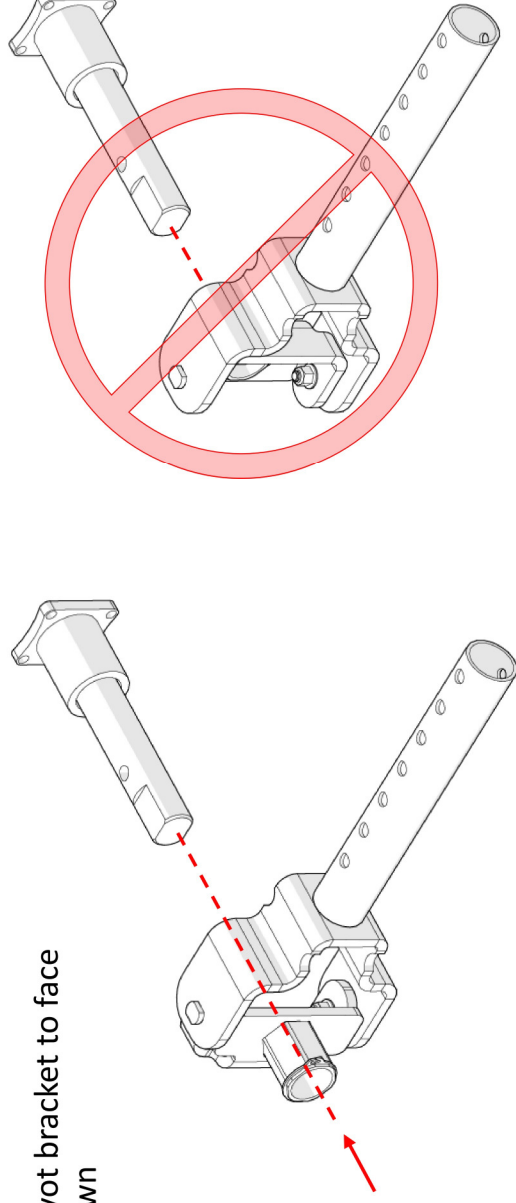
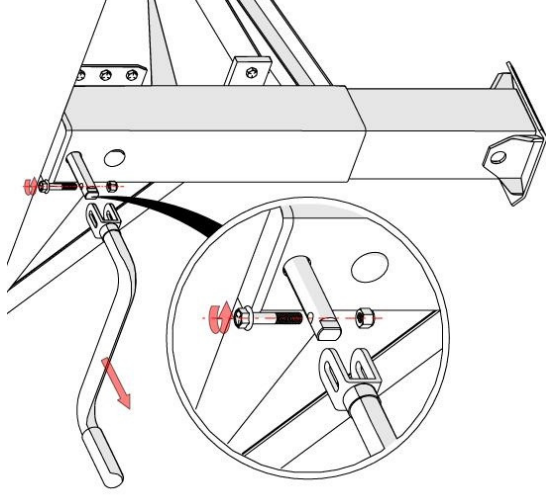


DART™ **INSTALLATION GUIDE**

EZ HANDLE™

1. Remove existing handle typically installed with a bolt and nut
2. Insert EZ Handle assembly over landing gear shaft.

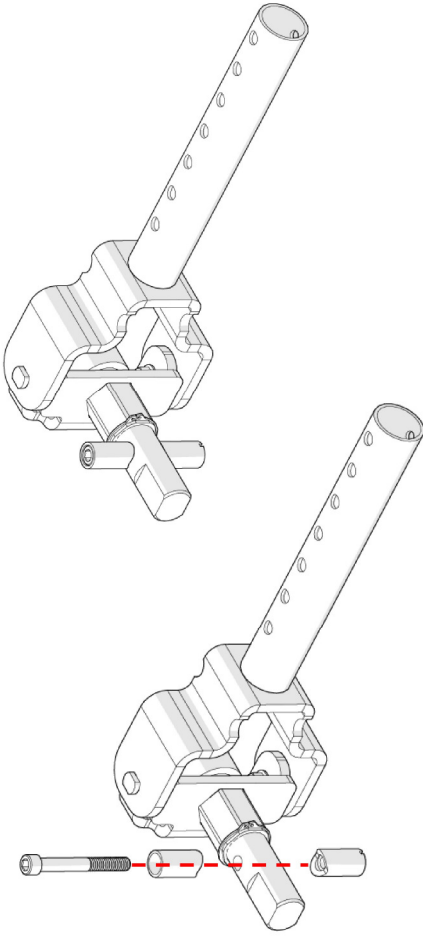
Note: Orient pivot bracket to face outward as shown



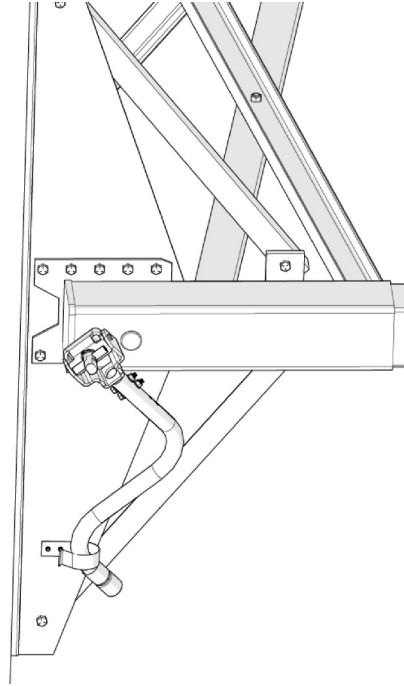
DART™ INSTALLATION GUIDE

EZ HANDLE™ cont'd

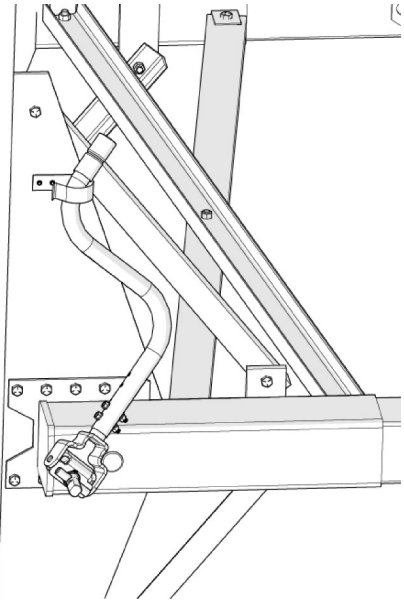
3. Insert bolt through counterbored spacer, through shift shaft, and into angled end of slotted spacer
Use flathead screwdriver on slotted spacer to tighten bolt on counterbored spacer.
Verify pivot bracket face is oriented outward to interface with pin as shown
4. Mount bracket to accommodate rearward or forward mounting as needed.



FORWARD MOUNTING



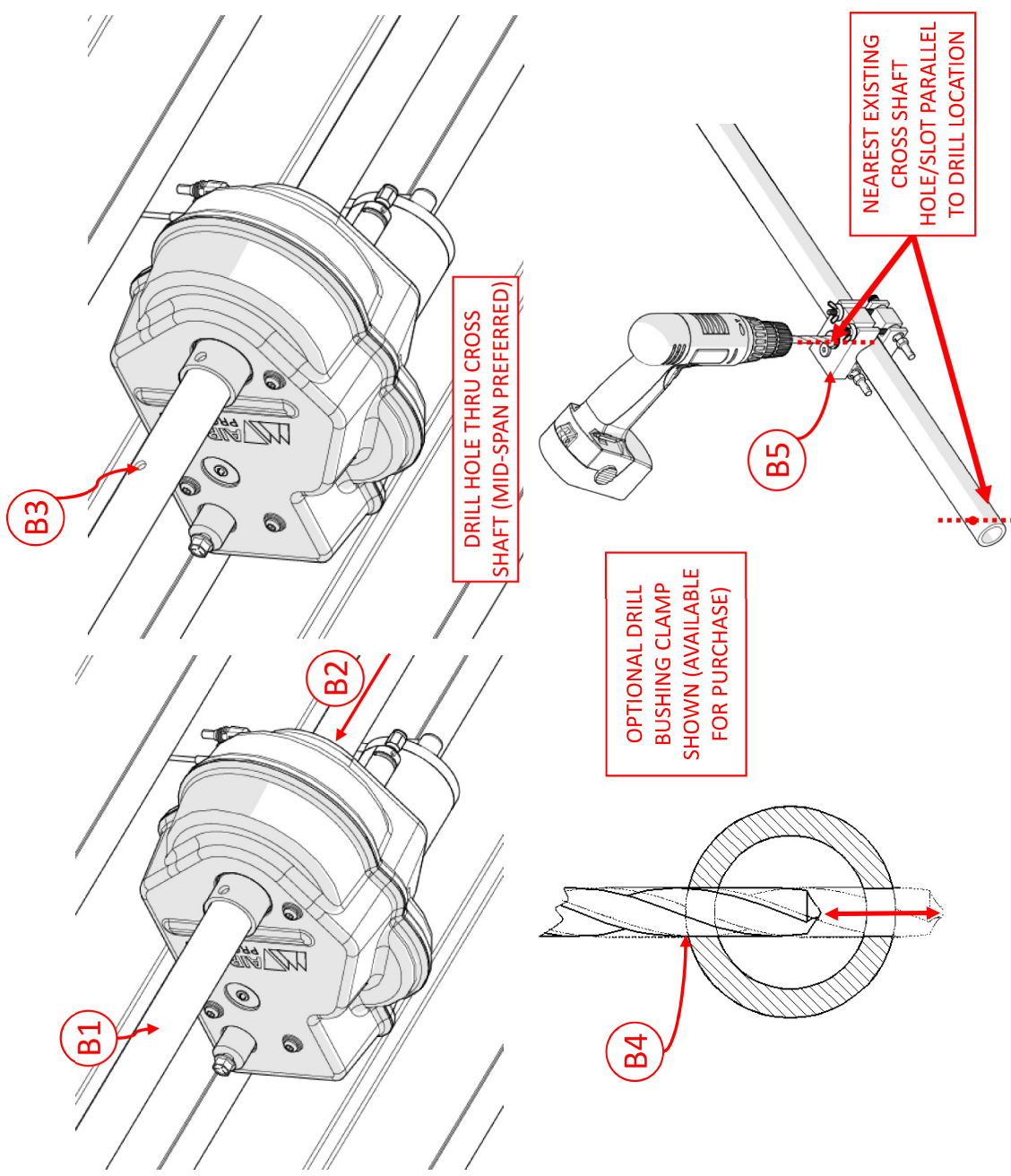
REARWARD MOUNTING



DART™ INSTALLATION GUIDE

ACTUATOR

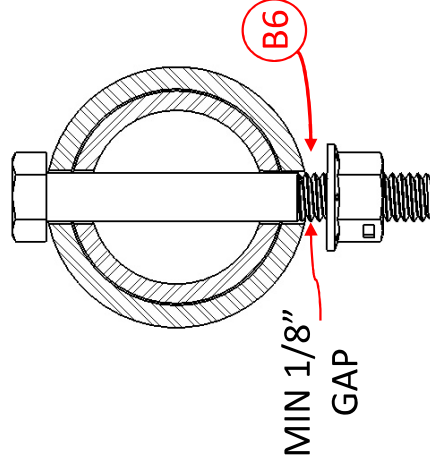
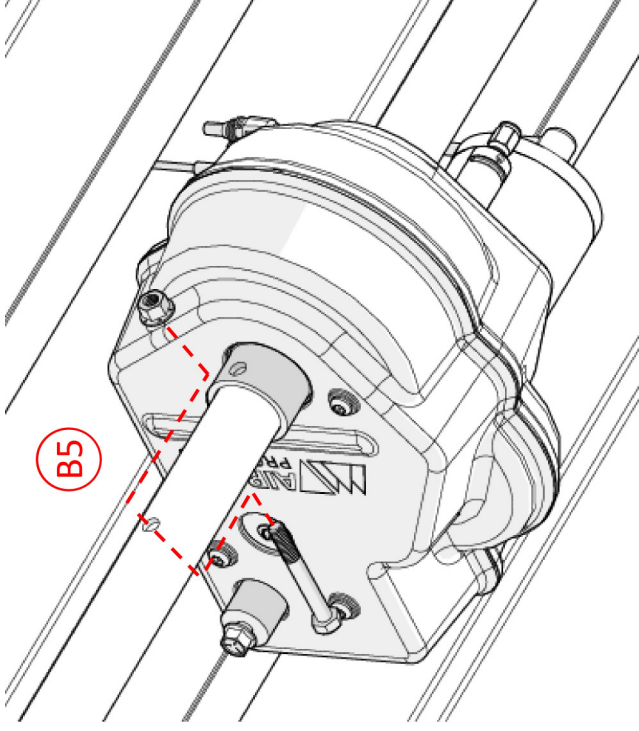
1. Disconnect cross shaft by removing bolts on both ends of it (B1).
2. Slide actuator onto cross shaft to identify suitable mounting position (B2). Midspan position preferred, avoiding interference with brackets and other vehicle obstacles.
3. Cross shafts are manufactured with mounting holes parallel or perpendicular to each other on each end. Next step is to mark position of actuator mounting hole based on the actuator position:
 - If **Midspan**, mark drill location PARALLEL WITH EITHER existing hole/slot in cross shaft.
 - If **Biased to One Side**, mark drill location PARALLEL TO NEAREST existing hole/slot in cross shaft.
4. Remove cross shaft and actuator (B3)
5. Drill hole thru both walls in marked position.
 - Ensure hole is centered in cross bar (B4)
 - Drill bushing clamp (B5) is available to help with this step (sold separately)



DART™ INSTALLATION GUIDE

ACTUATOR continued

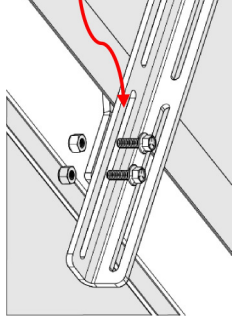
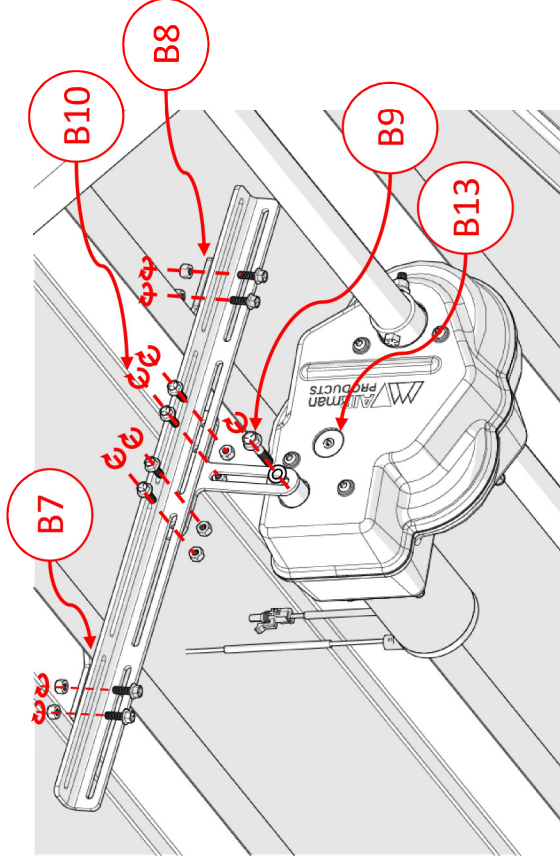
5. Reinstall cross shaft under vehicle with actuator floating on shaft.
6. Reinstall cross shaft bolts and nuts on both ends of cross shaft.
7. Align actuator thru hole on cross shaft. Install nut and bolt provided (B5).
8. Maintain clearance between nut and cross shaft diameter. **DO NOT OVERTIGHTEN BOLT, CLEARANCE NEEDED** (B6).



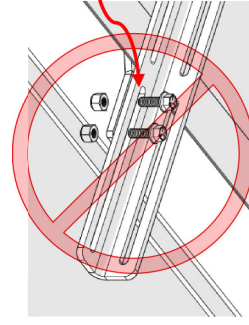
DART™ INSTALLATION GUIDE

ACTUATOR continued

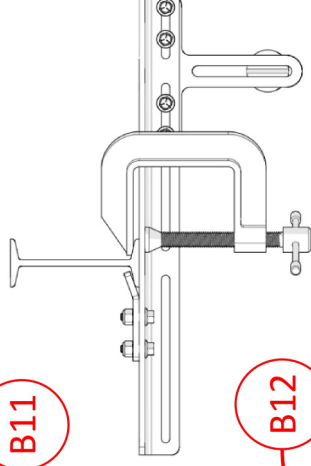
9. Align actuator so T-bracket and L-bracket are aligned square to I-beams (trailer)
 - Position wedge brackets against I-beams (trailer) (B7 and B8). Do not tighten nuts.
 - Use C-clamp to temporarily affix L-bracket in place.
 - Ensure ample clamping adjustment for wedge brackets is available.
 - Adjust as necessary for wedge bracket travel and clearance to cross shaft.
10. Tighten T-bracket to actuator using provided bolt, washer, and spacer (B9) (216 in-lbs \pm 10%). Tighten T-bracket to L-bracket (120 in-lbs \pm 10%) (B10).
11. Loosen C-clamp to allow L-bracket to relax into position. L-bracket will float left/right as required.
12. Retighten C-clamp to hold L-bracket in place.
13. Ensure wedge brackets have unrestricted travel in slot to fully contact I-beam, see B11 and B12.
14. If wedge is restricted, adjust forth/aft position of L-bracket:
 - Adjust T-bracket on the L-bracket and actuator.
 - Additional actuator mounting hole is available for further adjustment, as necessary. (B13)
 - Repeat steps 9 thru 13
15. Continue with ACTUATOR WEDGE BRACKETS instructions.



B11



B12

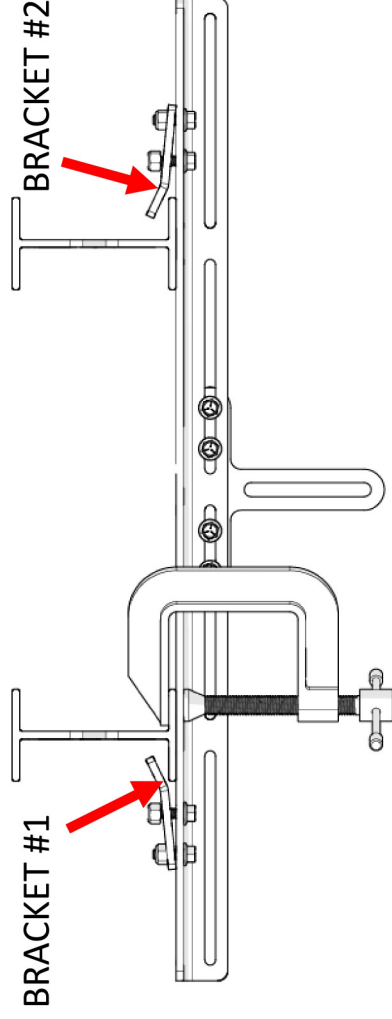
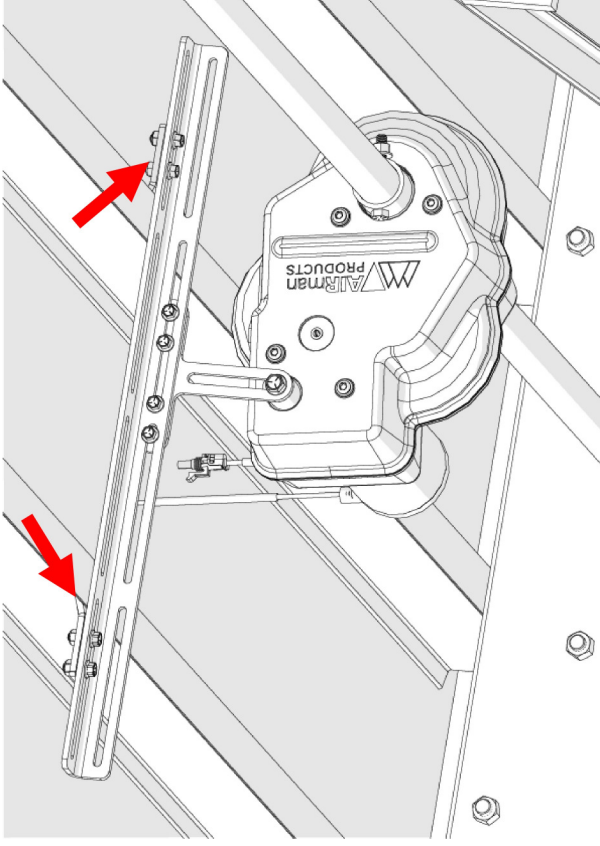


DART™

INSTALLATION GUIDE

ACTUATOR WEDGE BRACKETS

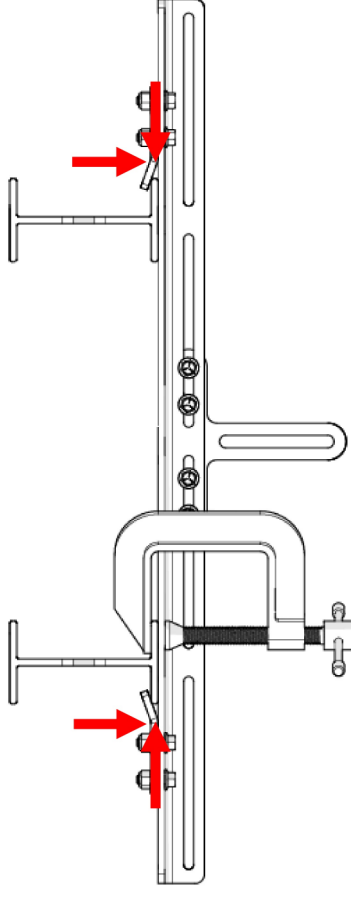
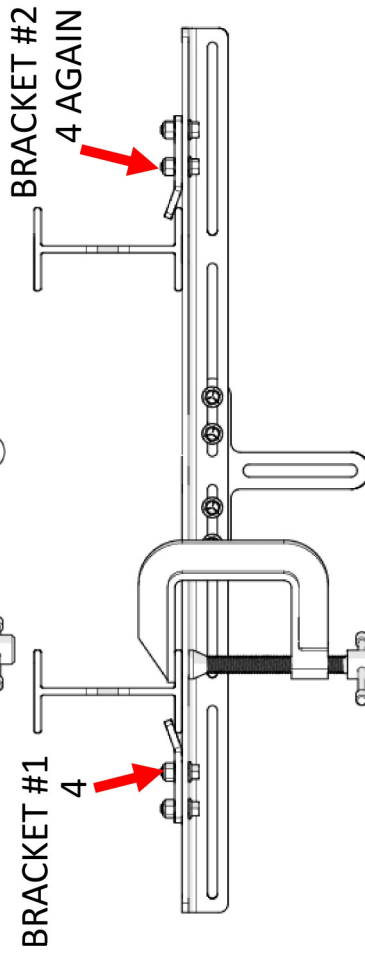
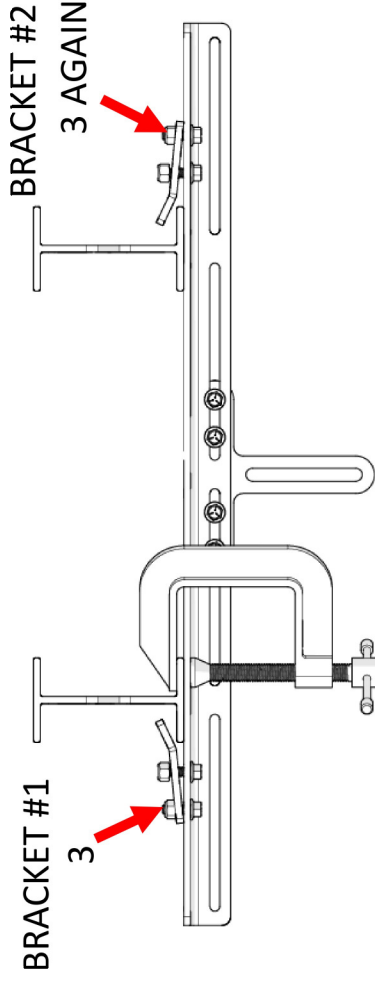
1. With fasteners loose (min 0.125" clearance), slide wedge bracket #1 against the cross member. This will raise the wedge bracket off the angle bracket face.
2. Repeat slide of wedge bracket #2 against its respective cross member.



DART™ INSTALLATION GUIDE

ACTUATOR WEDGE BRACKETS cont'd

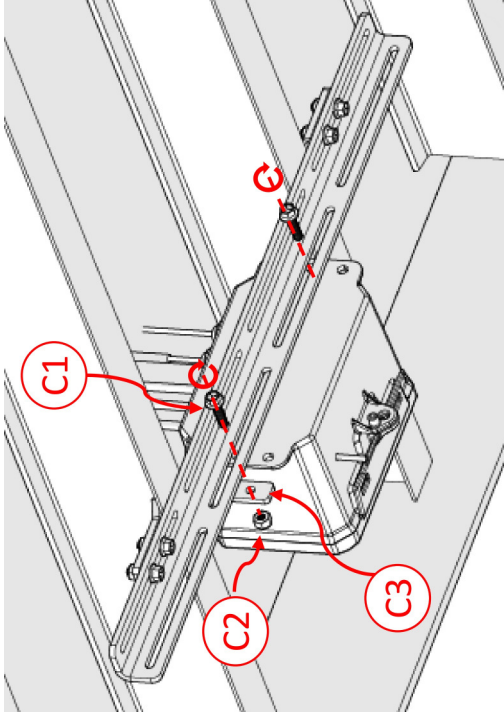
3. Tighten the outboard fastener on wedge bracket #1 (120 in-lbs \pm 10%). Confirm that the wedge bracket has a small clearance to the angle bracket face.
4. Repeat step #3 for bracket # 2.
5. Complete the installation of wedge bracket #1 by tightening the inboard fastener (120 in-lbs \pm 10%)
6. Repeat step # 5 for wedge bracket #2.
7. Resulting brackets will be clamping the beam with vertical as well as horizontal force.
8. Remove C-clamp



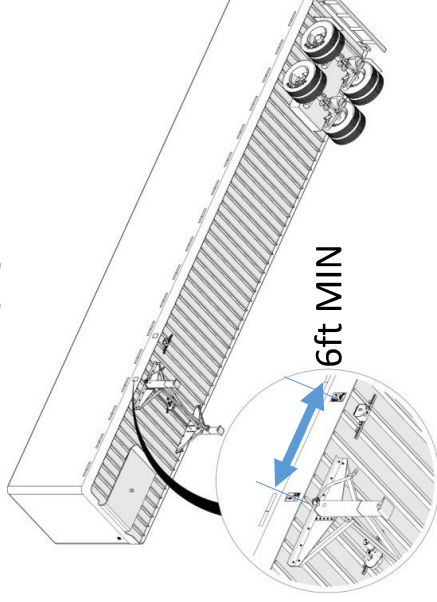
DART™ INSTALLATION GUIDE

CONTROL ENCLOSURE

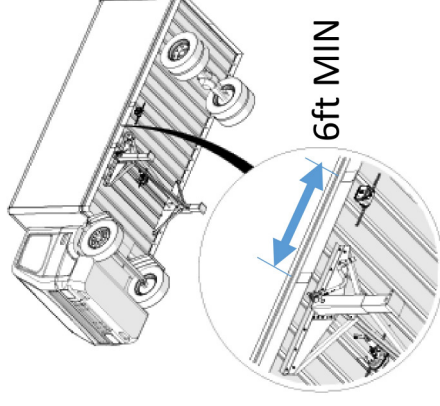
1. Find suitable location for control enclosure along driver side:
 - Minimum 6 ft away from manual handle input shaft
 - Clearance to side rail to allow adequate rocker switch access.
2. Install control enclosure wedge brackets using the same techniques as described in the actuator wedge bracket installation (see pages 8 and 9)
3. Tighten both sides of the Control Enclosure (C1 and C2) ensuring square washer (C3) is included as shown (120 in-lbs \pm 10%).



Trailer



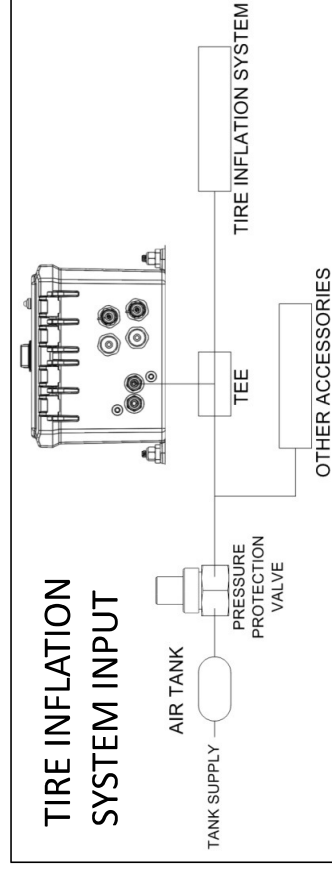
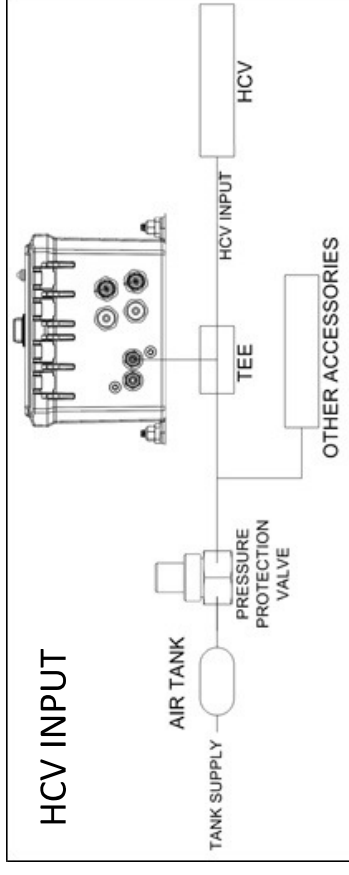
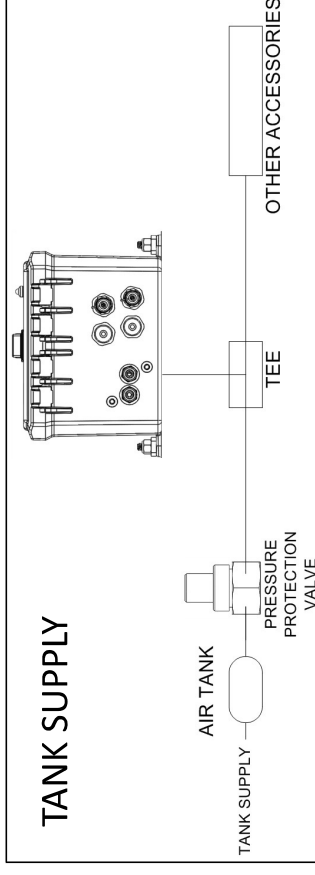
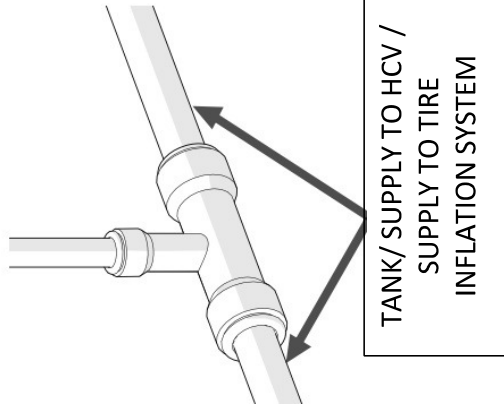
Straight Truck



DART™ INSTALLATION GUIDE

CONTROL ENCLOSURE cont'd

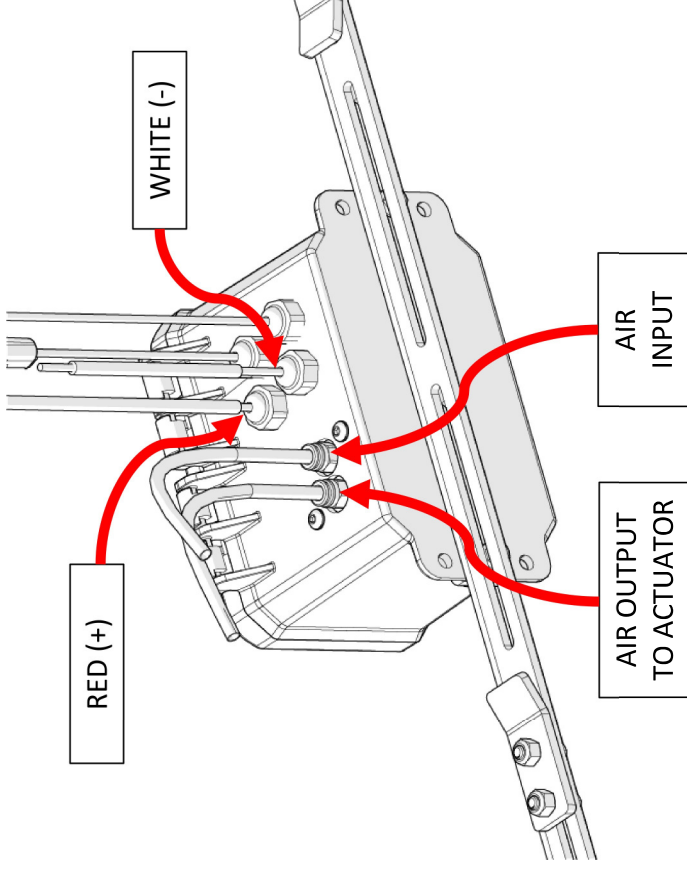
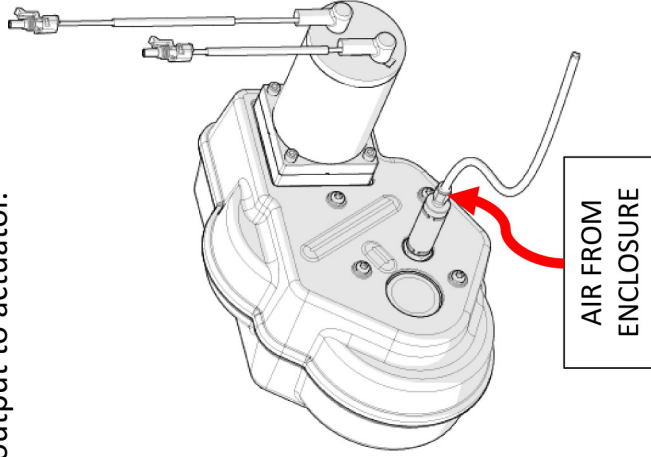
- Route air from tank or supply to HCV (Height Control Valve) line or tire inflation system input using tee fitting and tubing (included) and connect to the air input of the enclosure.



DART™ INSTALLATION GUIDE

CONTROL ENCLOSURE cont'd

3. Connect air output to actuator.



DART™ INSTALLATION GUIDE

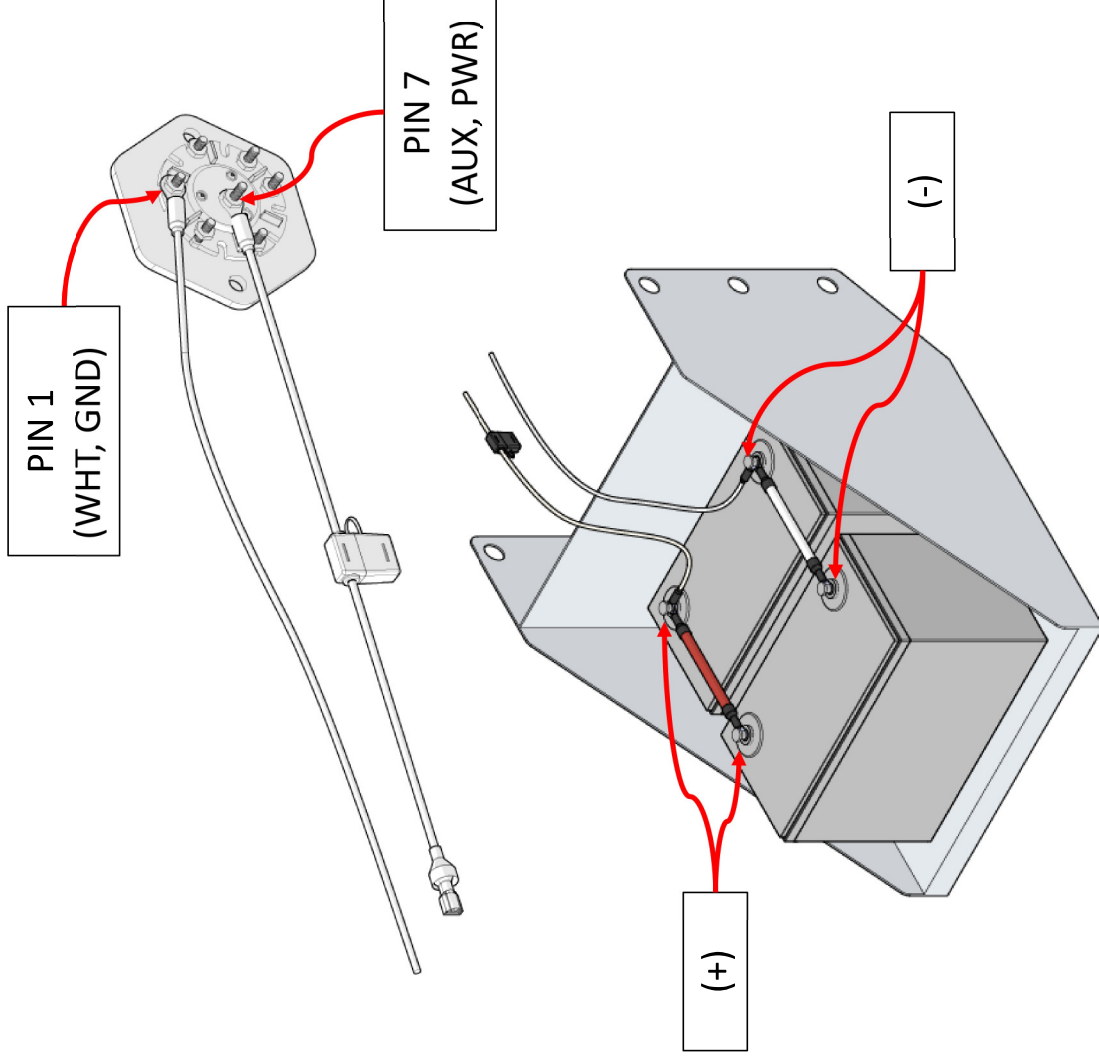
CONTROL ENCLOSURE cont'd

For Trailers:

5. Route the red (power) and white (ground) lines to the J560 connector.
 - Crimp on included ring terminal to the white line. Connect the white to PIN 1 (WHT, GND).
 - Crimp on included spade terminal to the red line. Connect the red line to in-line fuse holder and the ring terminal of the fuse holder to the J560 PIN 7 (AUX, PWR).

For Straight Trucks:

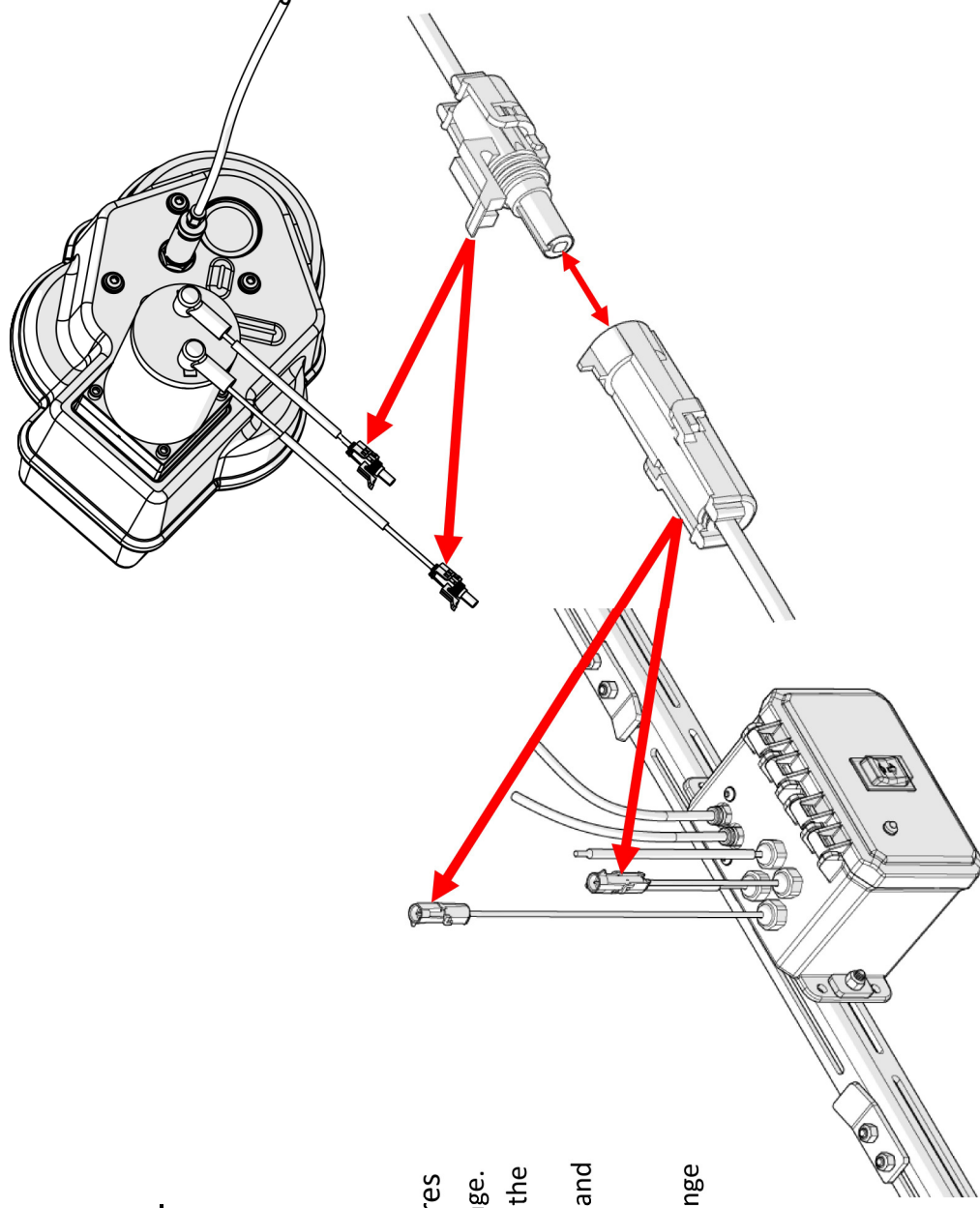
5. Route the red (power) and white (ground) lines to the battery terminal.
 - Crimp on included ring terminal to the white line. Connect the ring terminal to the battery negative (-) post.
 - Crimp on included spade terminal to the red line. Connect the red line to in-line fuse holder and the ring terminal of the fuse holder to the battery positive (+) post.



DART™ INSTALLATION GUIDE

CONTROL ENCLOSURE cont'd

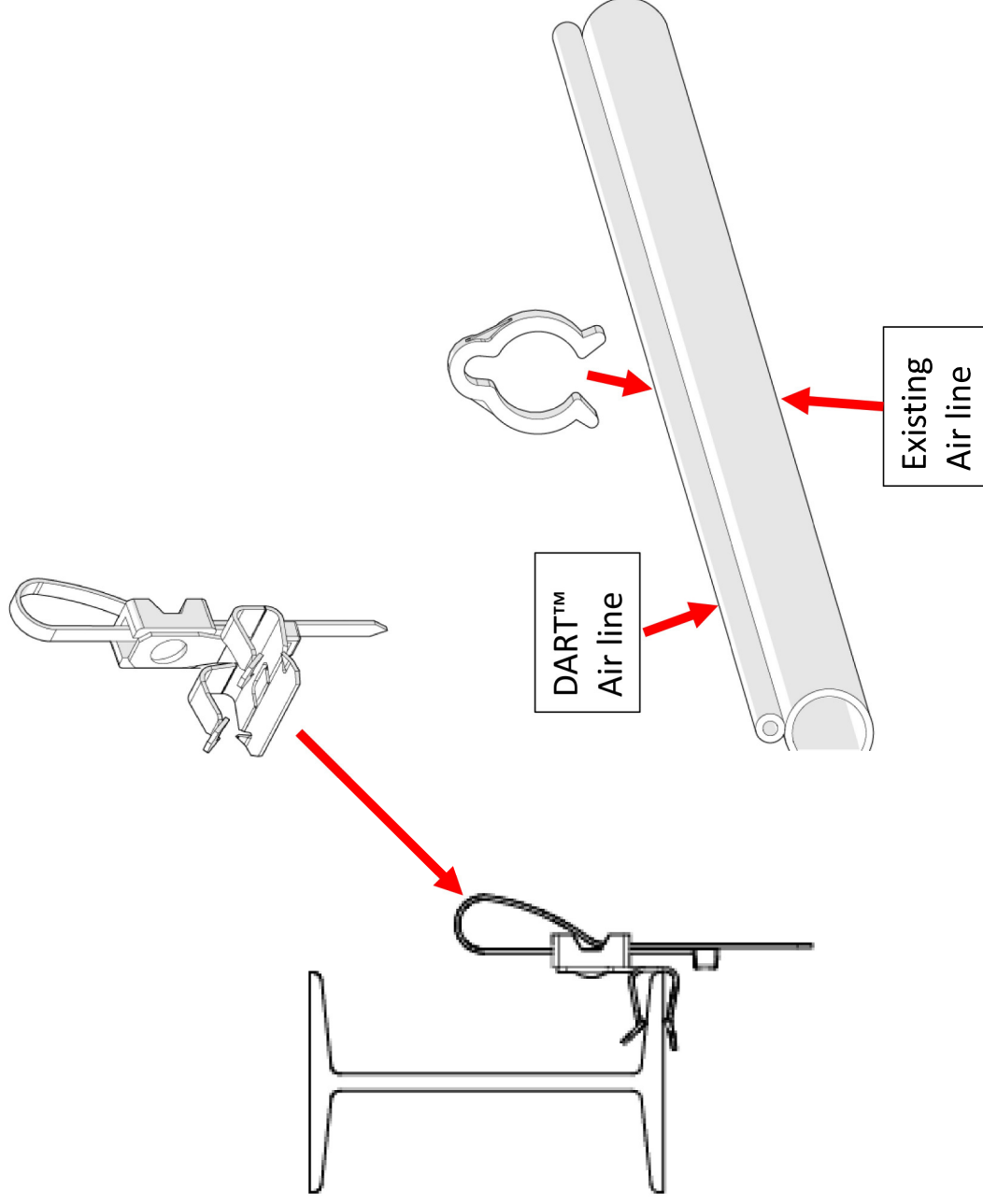
6. Route electrical lines from motor to enclosure connectors.
7. Connect enclosure wires to motor wires
 - Brown to Brown and Orange to Orange.
 - Upon connect to truck power, verify the correct rocker switch directions by pressing the switch UP (retract legs) and DOWN (extend legs).
 - If the switch directions are opposite, swap the motor wires (Brown to Orange and Orange to Brown).



DART™ INSTALLATION GUIDE

CONTROL ENCLOSURE cont'd

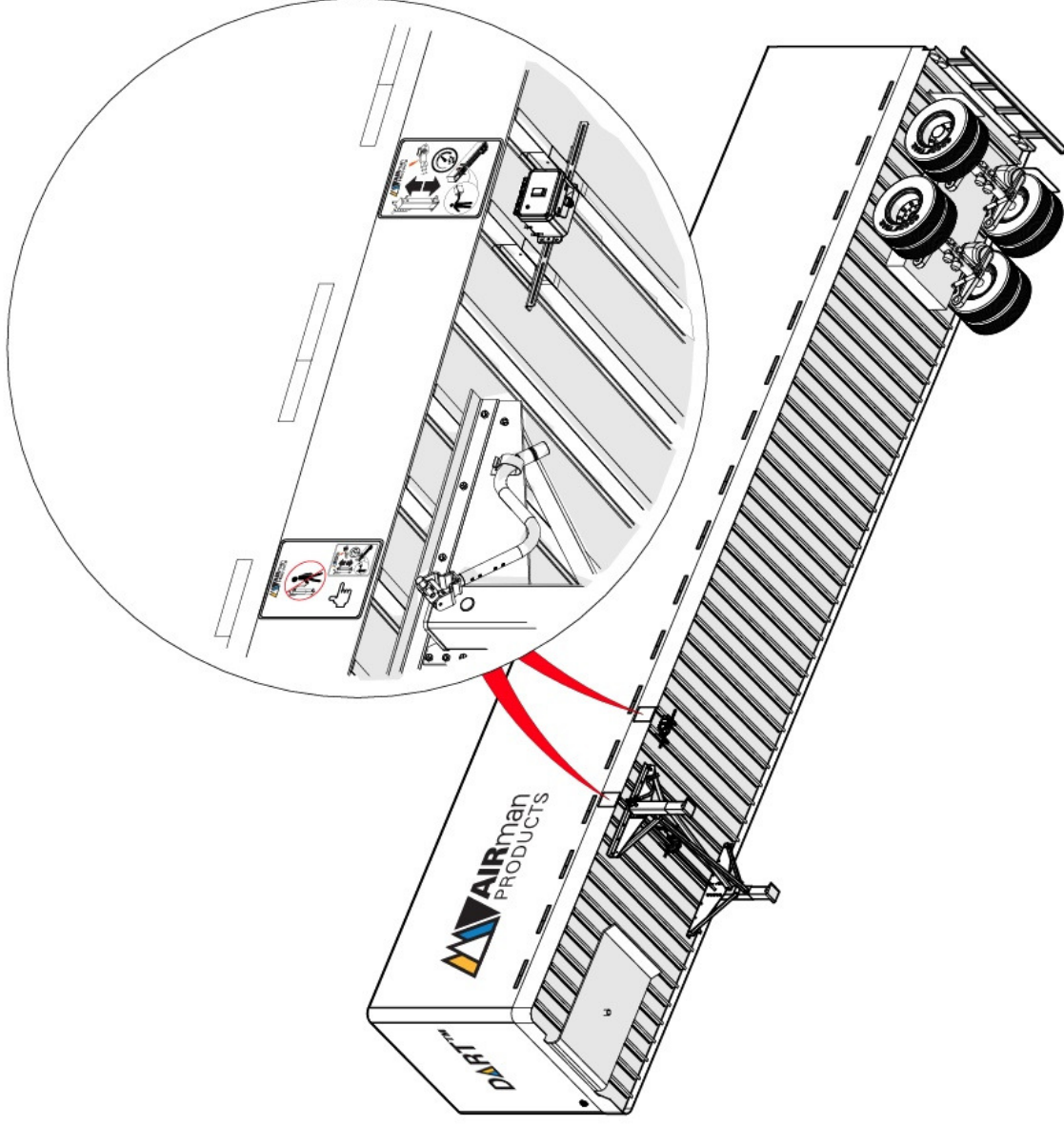
8. Use the hanging clips and zip ties (included) to secure any hanging/excess wires and air lines.



DART™ INSTALLATION GUIDE

LABELS

1. Install the “DO NOT CRANK” label near landing gear legs.
2. Install “MINIMUM PRESSURE” label near enclosure.



DART™ FREQUENTLY ASKED QUESTIONS

Observation	Correction
LED light on enclosure not lit and rocker switch is controlling actuator working	<p>Verify power to control enclosure. Verify power to LED</p>
The system is silent when the switch is engaged. (Motor is not spinning in actuator and solenoid valve is not clicking)	<p>Circuit breaker may have tripped. Wait for control enclosure circuit breaker to reset (30-60 seconds) Confirm that motor electrical quick connectors from control enclosure are fully seated for both power and ground lead connections. (SEE PAGE 13) Check electrical connection at J560. Verify that power is being supplied to the Aux terminal. (SEE PAGE 13) Check continuity of the fuse block at the J560 Aux terminal connection. (SEE PAGE 13) Check continuity of the circuit breaker within the control enclosure (SEE PAGE 21)</p>
Motor is spinning and solenoid is clicking however the landing gear legs are not being driven.	<p>Check that proper pressure is being supplied to the Control Enclosure. (A minimum of 80 psi is required to activate flow past the Pressure Protection Valve (PPV) (Show image of test of input pressure) - If pressure supplied to Control Enclosure is < 80 psi, verify that air supply is taken from the tank, Height Control Valve (HCV), or Tire Pressure System (TPS) INPUT. (HCV output (going to the ride bags) is regulated and will cause system malfunction) (show image of proper and improper connections)</p>
Rocker switch direction is reversed, UP on the rocker causes legs to move down, DOWN on the rocker causes legs to move up.	<p>Reverse the polarity of the motor leads by swapping the orange and brown wires connected to the quick disconnects just outside of the control enclosure (SEE PAGE 14)</p>
System operates but stops before the landing gear has reached full stroke	<p>Verify that the bolts connecting the cross bar to the landing gear stub shafts and the DART cross shaft are loosely installed. If these are clamped down it can cause binding of the system. (SEE PAGE 6) Check that the actuator is installed with the cross shaft through hole at the mid-span position. This allows the maximum float between the two landing gear legs. (SEE PAGES 5-6) Verify that the actuator is not applying a downward or upward force on the cross bar. With the legs suspended above ground, you should be able to manually turn the cross bar by hand without the DART system energized. If not, there is binding within the system, either due to horizontal misalignment of cross bar adapter to the cross bar, excessive grease within the legs, or damage to the landing gear legs preventing free travel. If binding occurs, realign wedge and angle brackets. (SEE PAGES 7-9) Replace the resettable circuit breaker. Over time the circuit breaker can become more sensitive and are a maintenance item that needs to be replaced over time. These can be purchased from your AIRman dealer-distributor or AIRman direct. (SEE PAGE 21)</p>
After opening the control enclosure, the unit is no longer working.	<p>Verify that all spade connections remain firmly attached to the electrical connections (SEE PAGE 21-22)</p>

DART™ INSTALLATION TOOLS (not included)

Description	Purpose
Drill bushing clamp	Used to locate 5/16" drill bit through the center of cross bar
5/16" Drill Bit	Used to drill hole
Brake Line ¼" or 3/16" diameter x 6-8 ft long	Allows routing of electrical lines through channels or conduit at front of trailer to J560 connector
3/8" Socket with Ratchet	Used to secure fastener between T-Bracket to angle bracket and wedge brackets to the angle bracket
7/16" Socket with Ratchet	Used to secure nuts on wedge bracket and angle bracket installations
½" Socket with Ratchet	Used to secure fastener between actuator and T-Bracket
Torque Wrench	Ensure proper torque is applied to installation fasteners

DART™ DIAGNOSTIC TOOLS (not included)

Description	Purpose
Voltmeter	Verify voltage on J560 Terminals
Pressure gage	Verify pressure being provided to Control Enclosure input

DART™ SERVICE AND MAINTENANCE

Description	Purpose
Every 1 year	<ul style="list-style-type: none"> Verify mechanical connections of wedge and angle brackets to vehicle cross beams and actuator (SEE PAGES 7-10) Replace cross shaft bolt with Grade 8 bolt (SEE PAGE 6) Replace the circuit breaker within the control enclosure (These are available from AIRman authorized distributor dealers or AIRman direct) (SEE PAGE 21)
Every 5 years	<ul style="list-style-type: none"> Replace electric motor Replace rocker switch

REPLACEMENT PARTS AND INSTALL TOOLS

- Replacement kits are available.
- Order through AIRman Products and distributors. Some replacement kits shown here:
- See website for most current list.

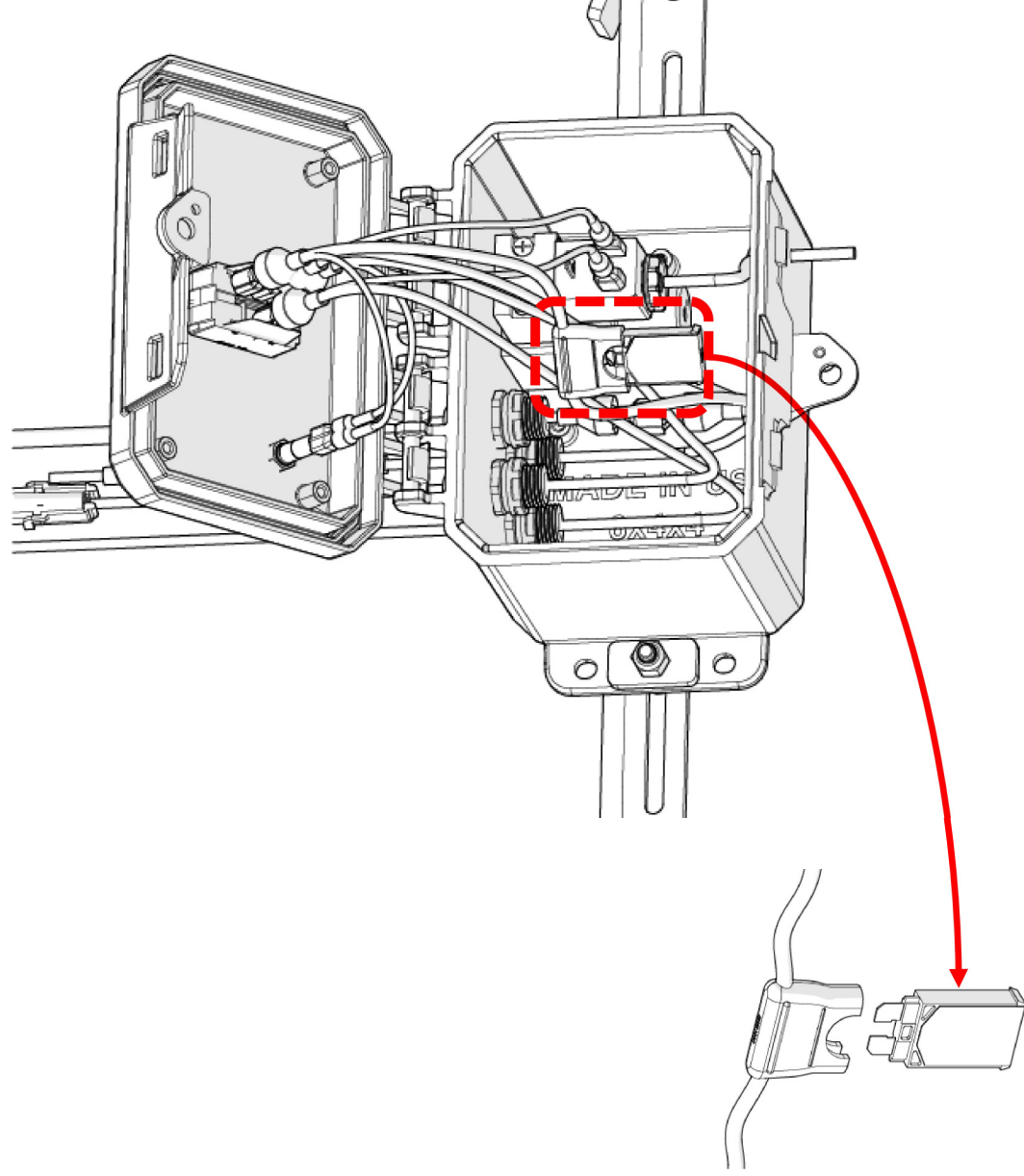
Description	P/N
"KIT, REPAIR, DART MOTOR"	K1100-365
"KIT, DART CIRCUIT BREAKER 15A, SINGLE" / 10 pack	K1100-366 / K1100-367
"KIT, DART FUSE 30A, SINGLE" / 10 pack	K1100-368 / K1100-369
"KIT, DART MAINTENANCE 1 YEAR"	K1100-371
"KIT, DART MAINTENANCE 5 YEAR"	K1100-372
"KIT, DART INSTALLATION TOOL" - Clamp for drilling cross shaft adapter, drill	K1100-373
"KIT, DART CYLINDER REPLACEMENT"	K1100-375
"KIT, DART LID SUBASSY"	K1100-376
"KIT, DART ENCLOSURE MOUNT ASSY"	K1100-375

DART™

SERVICE AND MAINTENANCE

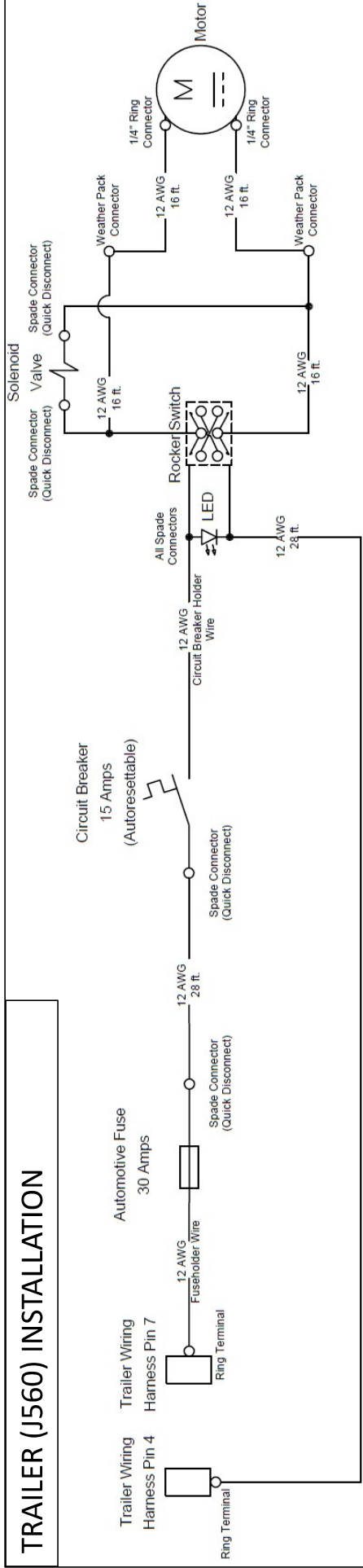
CIRCUIT BREAKER

1. Open lid of enclosure and locate circuit breaker.
2. Pull circuit breaker from base.
3. Install new circuit breaker.
4. Close lid. Ensure lid is properly snapped closed to prevent water intrusion.



DART™ ELECTRICAL SCHEMATIC

TRAILER (J1560) INSTALLATION



STRAIGHT TRUCK (BATTERY) INSTALLATION

