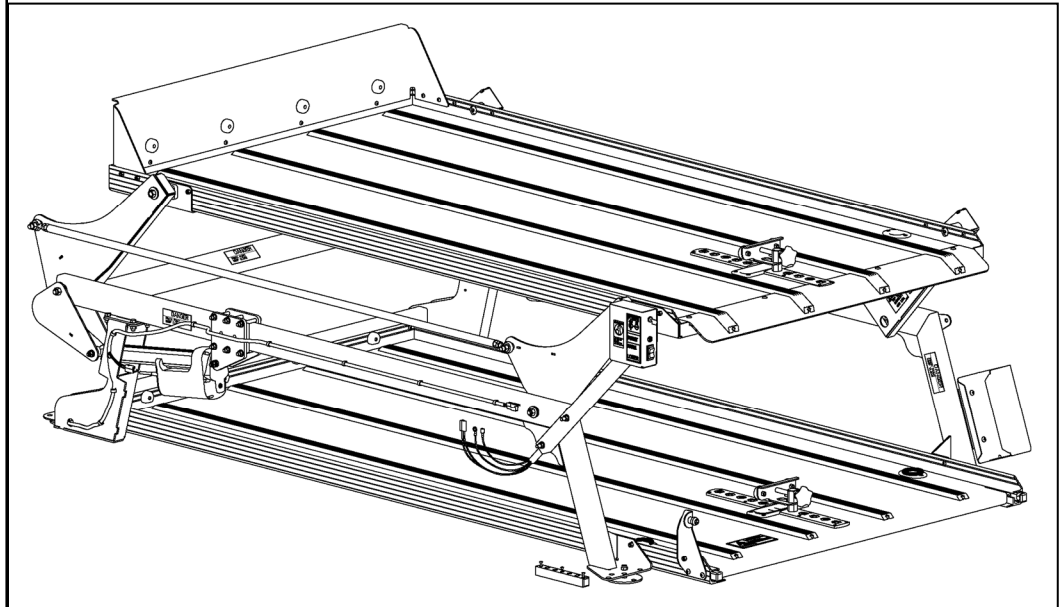




INSTALLATION INSTRUCTIONS

DD2000 (7224C000 / 7224D000)



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**QUESTIONS?
CALL CUSTOMER
SERVICE
1-800-248-3057**

The Link DD2000 fits most full-size cargo vans.

1. INTRODUCTION




Thank you for choosing a Link Cargo Management Products (CMP) DD2000 Double Deck transportation system. We want to help you to get the best results from the deck and to operate it safely. This manual contains information to introduce you to the Link CMP DD2000 and to assist you with its installation. The manual is intended solely for use with this product.



All information in this manual is based on the latest information available at the time of printing. Link Manufacturing reserves the right to change its products or manuals at any time without notice. Updated instruction are available at www.linkcmp.com or by contacting Link CMP at (800) 248-3057.

Damaged components should be returned to Link with a pre-arranged Returned Goods Authorization (RGA) number through the Customer Service Department. The damaged component may then be replaced if in compliance with warranty conditions.

2. SAFETY SYMBOLS, TORQUE SYMBOL, and NOTES

IMPORTANT: IT IS IMPORTANT THAT THE ENTIRE INSTALLATION INSTRUCTIONS BE READ THOROUGHLY BEFORE PROCEEDING WITH DECK INSTALLATION.

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
 WARNING	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.
CAUTION	CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

	The torque symbol alerts you to tighten fasteners to a specified torque value. Refer to the torque table on page 7.
NOTE:	A Note provides information or suggestions that help you correctly perform a task.
	The electrical symbol indicates the presence of electric shock hazards which, if not avoided, may result in injury to personnel or damage to equipment.

3. SAFE WORKING PRACTICES:

3.1

CAUTION

- When handling parts, wear appropriate gloves, eyeglasses, ear protection, and other

3.2

CAUTION

- Practice safe lifting procedures.
- The deck weldments are heavy, and can cause injury if lifted improperly or dropped. Consider size, shape, and weight of objects being moved.
- Obtain help or the assistance of a crane when lifting heavy assemblies. Make certain the path of travel is clear.

4. INSTALLATION GUIDELINES

- 4.1 In order for this deck to operate properly, it must operate in the parameters specified by Link.
- 4.2 The installer must verify the vehicle is configured properly for the deck being added.
- 4.3 No alterations of any Link deck component is permitted without proper authorization from qualified Link personnel.
- 4.4 No welding of any deck component is permitted except when specified by Link.

4.5

CAUTION

- The vehicle manufacturer should be consulted before any modifications are made to the frame of the vehicle.
- Cutting or altering the frame in certain areas may affect the manufacturer's warranty.

4.6

WARNING

- Proper tightening of fasteners is important to the performance and safety of the deck.
- Improperly tightened fasteners may cause unsafe conditions and accelerate wear .

5. PRE-INSTALLATION CHECKLIST

- Make certain the vehicle is placed on a level flat surface and that the parking brake is engaged.
- Refer to the vehicle owner's manual to locate the power supply where the deck power wire will attach.

WARNING



- Follow the vehicle manufacturer recommendations located in the owner's manual pertaining to accidental air bag deployment whenever performing service on system wiring.
- If in doubt, contact the vehicle manufacturer.

This may be located under the driver's seat or under hood in the engine compartment.

6. INSTALLATION PROCEDURE

- 6.1. Begin by cleaning out the area where the DD2000 is to be installed and removing any floor mats. On GM cargo vans the plastic molding at the rear of the van floor must also be removed.
- 6.2. Inside the vehicle, assemble the left and right frame weldments to the crossmember using (8) 3/8 X 1 UNC bolts

CAUTION

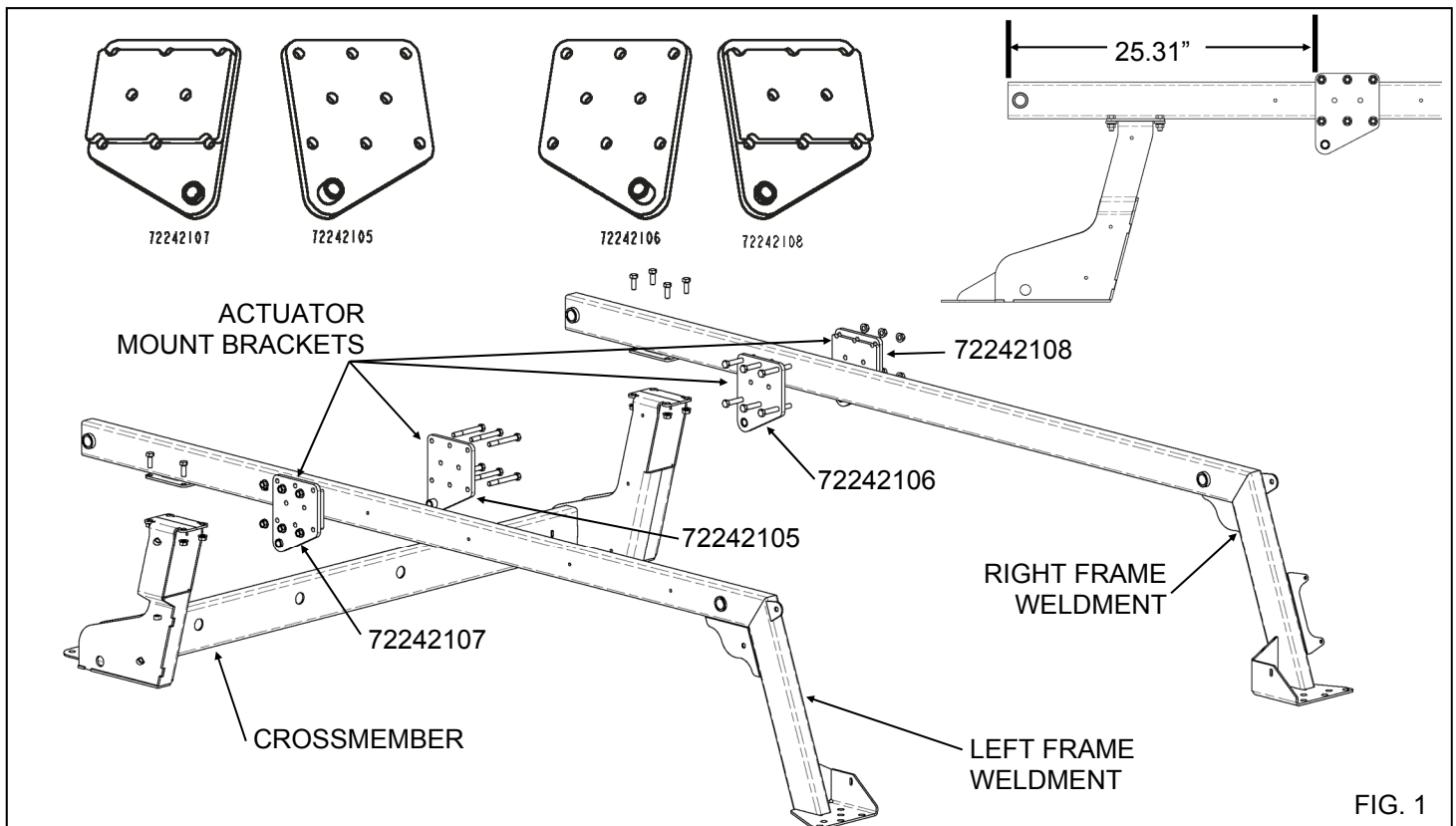
- Potential pinch points exist during installation.
- The width of the unit has been designed to maximize the amount of usable space and, as such, will come in close proximity to door jambs and internal features.
- Use caution when maneuvering the frame assembly into the vehicle.

and (8) 3/8 serrated flange nuts as shown in **FIG.1**. Finger tighten all attachment bolts. Final tightening will be

NOTE: The (4) actuator mount brackets are not interchangeable, and must be placed correctly for proper function.

completed following installation and adjustment of the torsion arm and tie-rods.

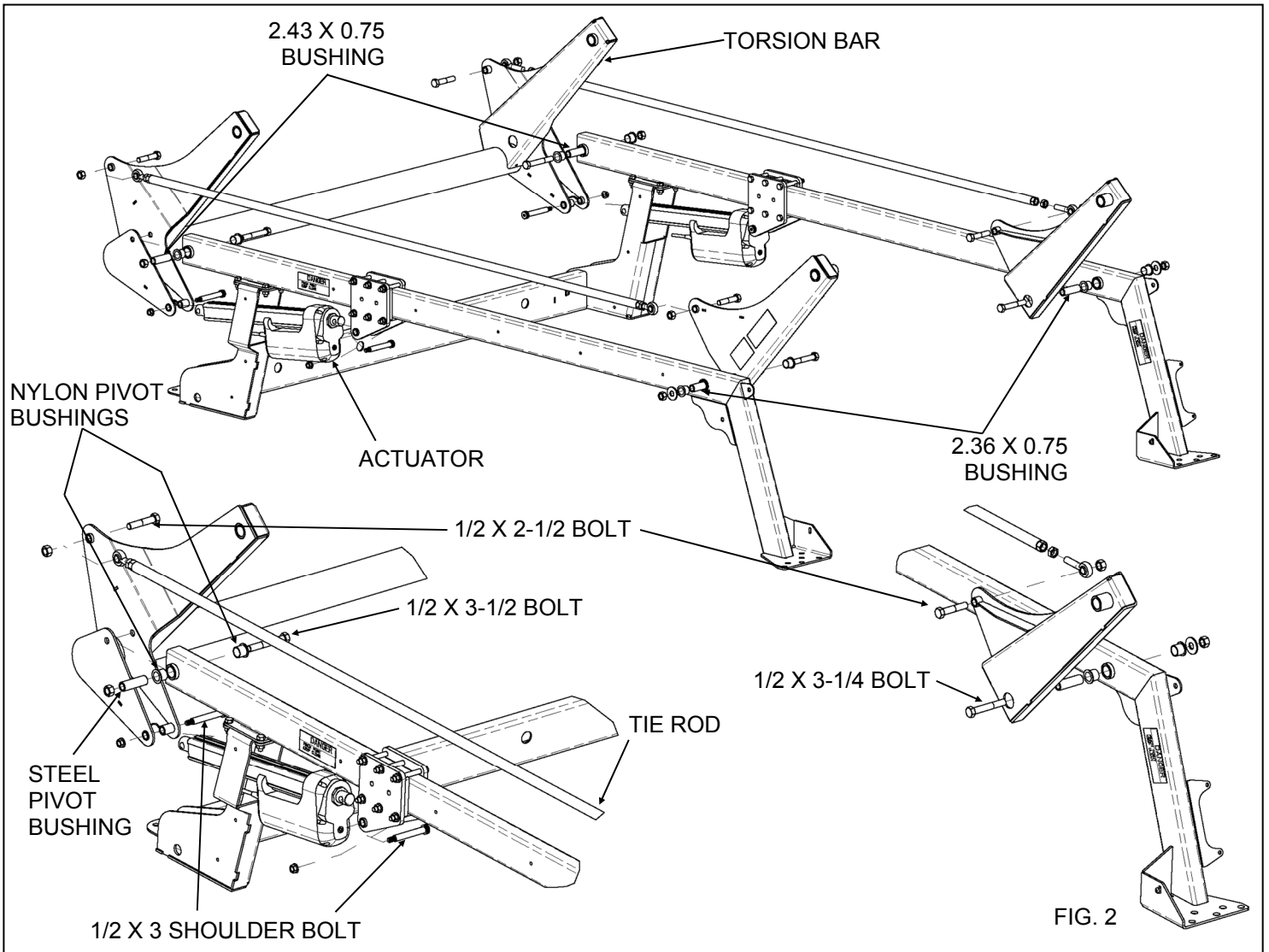
- 6.3. Assemble the Actuator mount brackets to the right and left frame weldments, using (12) 3/8 X 3 UNC bolts and (12) 3/8 serrated flange nuts. See **FIG. 1** for the placement of the actuator mount brackets.



6.4 Insert the steel and nylon pivot bushings into the deck frame. (See FIG. 2)

NOTE: The steel pivot bushing lengths are different for the front and rear arms, ensure that the bushings are placed correctly for proper fit and function.



- 6.5 Install the torsion bar weldment using (2) 1/2 X 3-1/2 bolts, and (2) 1/2 lock nuts. Torque to the value specified in the Torque Table on pg 8.
- 6.6 Install the motor end of the actuators in the actuator mounts using (2) 1/2 X 3 shoulder bolts, and (2) 3/8 serrated flange nuts. The motor housing of the actuator should be below the actuator body. (See FIG. 2)
- 6.7 Attach the rod ends of the actuators to the torsion bar with (2) 1/2 x 3 shoulder bolts and (2) 3/8 serrated flange nuts. (see FIG.2)
- 6.8 Install the rear swing arm weldments using (2) 1/2 X 3-1/4 bolts and (2) 1/2 lock nuts. Torque to the value specified in the Torque Table on pg 8.
- 6.9 Attach the tie rod links to the torsion bar and rear swing arms using (4) 1/2 X 2-1/2 bolts and (4) lock nuts. Torque to the value specified in the Torque Table on pg 8. Do not adjust the length of the tie rods at this point.



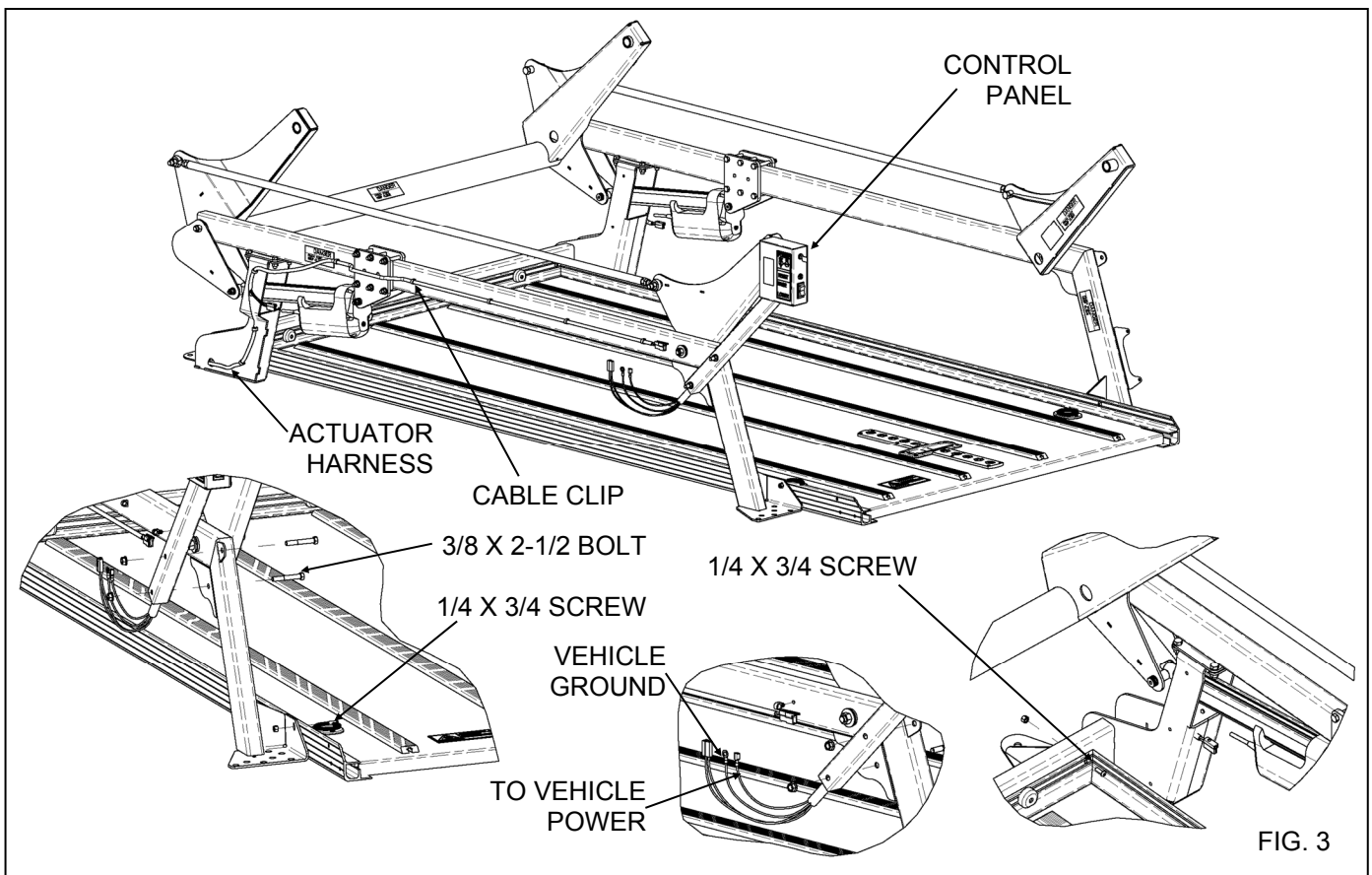


- 6.10 Place the bottom deck in the vehicle (**FIG.3**) and secure it at the front and rear with (4) 1/4 X 3/4 socket button head screws and (4) lock nuts.
- 6.11 Install the control box with (2) 3/8 X 2-1/2 bolts and (2) 3/8 serrated flange nuts. The control panel is shown installed on the driver's side, but can be installed on the passenger side if desired, with no modifications to the panel.
- 6.12 Install the plastic cable clips in the front crossmember and frame weldment forward from the control panel. Locate the end of the actuator power harness which mates with the connector on the control panel, connect this end to the control panel. Run the actuator harness along the frame in the mounting clips, down and through the holes in the crossmember weldment, and up the other side of the crossmember. Ensure that the harness is clear of moving parts and is not stretched too tightly or loosely, and connect it to the actuators.
- 6.13 Attach the control panel ground wire to the vehicle ground (usually on the rear pillar). Connect the power wire to the control panel power wire, run it forward, and attach it to the vehicle's positive terminal. (See **FIG.3**)
 - a. If an engine compartment location is used, run the power wire through the floor of the vehicle, along the frame rail, and into the engine compartment. Being sure to avoid all heat and rubbing hazards,
 - b. Use rubber grommets and wire loom on all through-floor connections to prevent damage to the wire caused by rubbing.
 - c. Do not route or attach wire to fuel or brake lines, steering linkages, or exhaust/heat shields. Secure the power wire using the provided wire clamps to prevent movement.

WARNING

-  Do not "piggy back" or tap into either side of any fuse in the vehicle's fuse box.
-  Improper wiring may cause injury to operator, or damage to vehicle systems.

NOTE: **Sprinter** and **GM** cargo vans have a positive stud terminal located under the driver's seat. **Ford** vans connect to the positive side of the starter motor relay. Refer to the vehicle owner's manual for specifics. An inline fuse is provided, and should be placed no further than 12 in. from the positive battery connection.





6.14 Attach the Front Impact Bracket to the Top Deck using the (8) 1/4-20 X 3/4 Button Head Screws and (8) 1/4 Hex nuts. (FIG. 4)

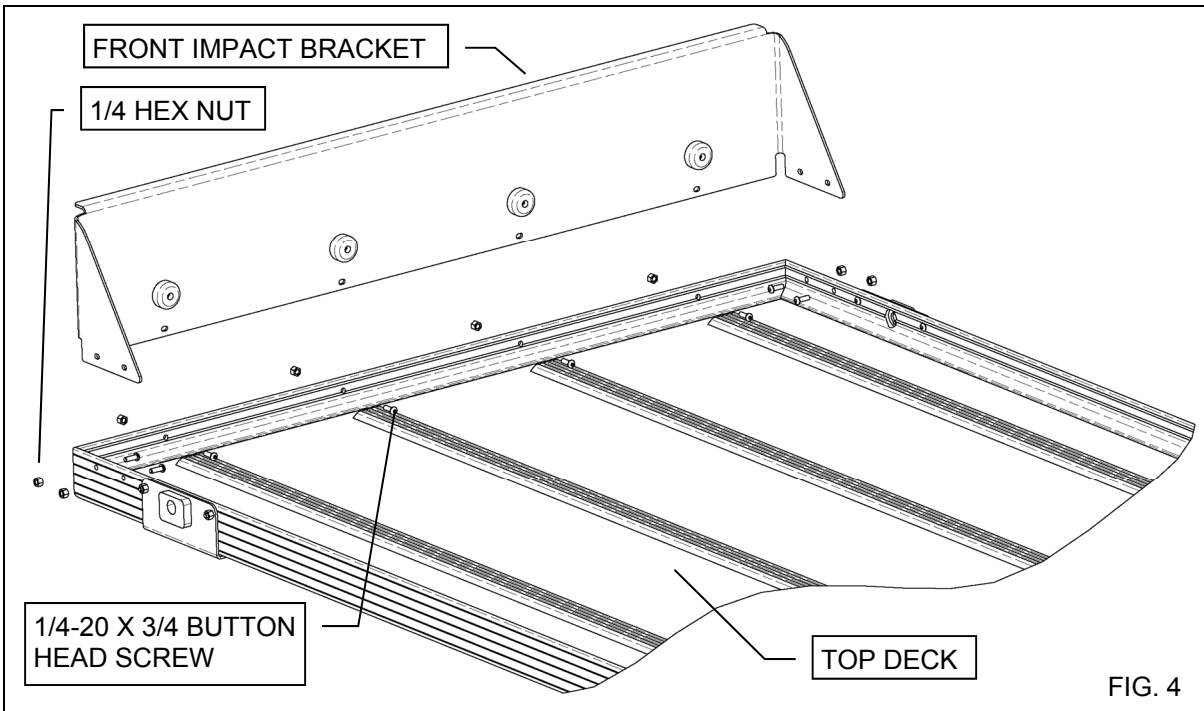


FIG. 4

6.15 Place blocks on top of the bottom deck for the top deck to rest on during installation. Place the top deck in the vehicle on top of the blocks. **(FIG.5)** Insert the nylon and steel bushings into the sleeves at the ends of the torsion bar arms, and the rear swing arms.

NOTE: The steel pivot bushing lengths are different for the front and rear arms, ensure that the bushings are placed correctly for proper fit and function.

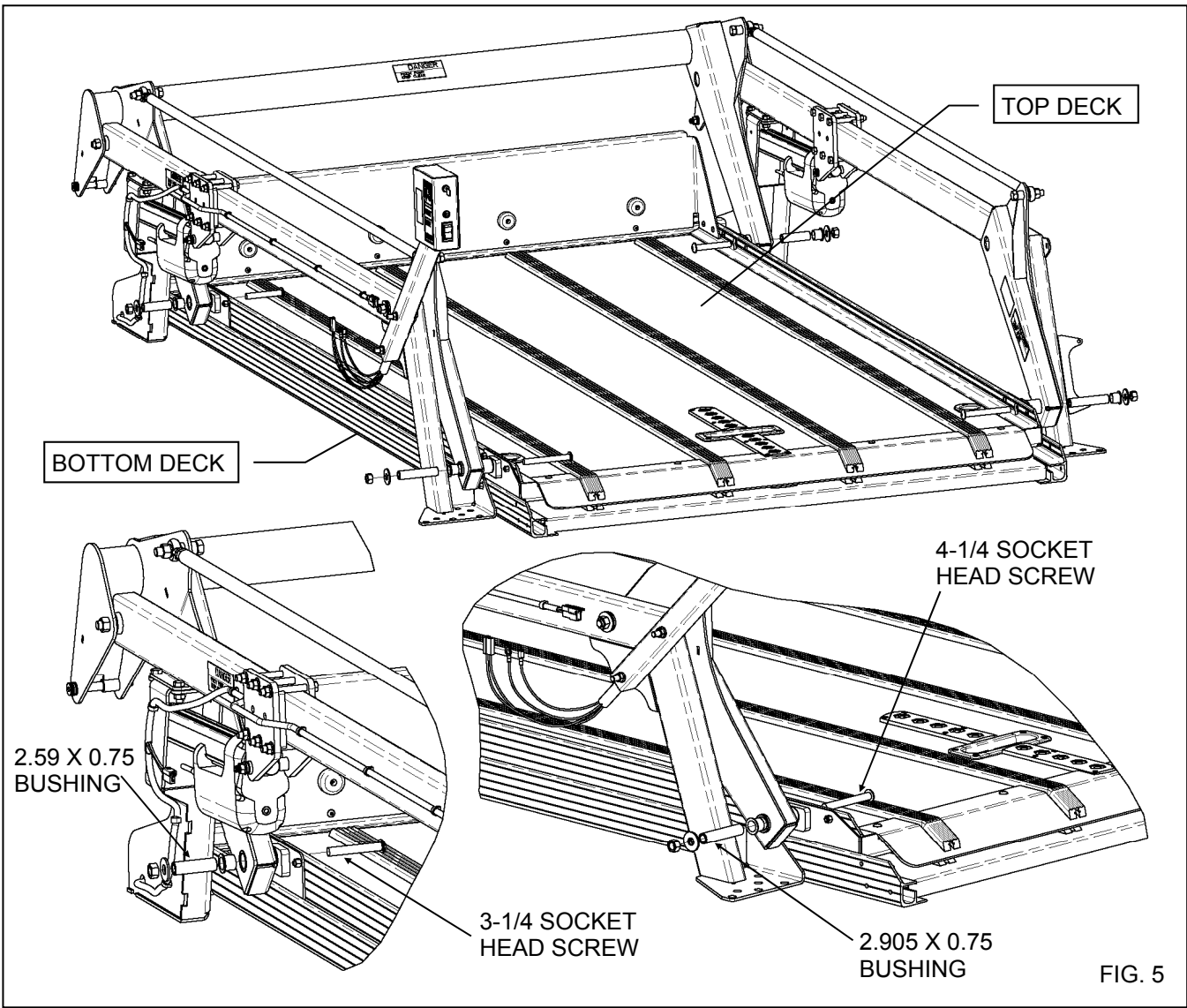


6.16 Attach the top deck to the torsion tube pivots in front with (2) 1/2 X 3-1/4 socket button head screws, (2) 1/2 plain washers, and (2) locks nuts. Attach the top deck to the rear swing arms using (2) 1/2 X 4-1/4 socket button head screws, (2) 1/2 plain washers, and (2) lock nuts. Once the top deck is installed, raise deck slightly and remove the blocks.

CAUTION

- The operation of the DD-2000 involves moving parts.
- Pinch points may exist between components during the course of travel.
- Make certain all personnel are aware of movement before it occurs and that all appendages are clear of movement areas to prevent personal injury.

6.17 Raise the top deck so that the tie rods are horizontal and in line with the top deck. Adjust the tie rods so that there is no play, and the top deck is level. Raise and lower the top deck to check for binding. If no binding occurs, tighten the jam nuts on the front and rear of the tie rods. Re-check that no binding or bowing of the tie-rods occurs by raising and lowering the top deck.



6.18 Positioning the DD2000 assembly:

Front-to-rear position:

Move the sub-assembly so that the inside of the bottom ramp rests horizontally. This is typically when the lowest bend on the ramp is on the edge of the bumper.

NOTE: Pay close attention to the control box so that it or any connections are not damaged during positioning.

Side-to-side positioning:

Position the sub-assembly left and right so that the assembly is centered on the door opening. Align the sub-assembly both by measuring and by visual aligning with the grooves in the floor.

WARNING

It is the **INSTALLER's RESPONSIBILITY** to do the following:

- Check underneath vehicle to locate the best fastener location before drilling.
- Verify that they will not interfere with fuel tanks, wiring bundles, or other important vehicle components. Damaging or drilling into vehicle components may create unsafe conditions, or affect the manufacturer's warranty.

Note that side panels may be curved when performing measurements.

Ford, Chevrolet, and Sprinter vans

6.19 Mark and drill the 4 holes for the 7/16" mounting bolts.

- a. The rear mounts offer multiple holes for the bolt to pass through. Select one location per side that will not interfere with components or structures underneath.
- b. The front mounts offer multiple locations. Use the mount holes as shown in **(FIG.7)** being sure they do not interfere with the fuel or exhaust system and are not positioned over the middle of a frame cross member of the vehicle.



Notes:

- 1) Secure with (4) 7/16 X 1-1/2 bolts, (4) mounting washers, and (4) 7/16 serrated flange nuts.
- 2) All mounting bolts should drop in from the top.
- 3) The mounting washers offer two holes for securing the DD2000: a center location and an offset location. Use the hole location that works for the particular install.
- 4) Seal all drilled holes with Sandox etching adhesion primer to prevent corrosion and tighten all bolts.
- 5) Spacers should be placed between the floor and the mount washer to prevent crushing the floor ribs while tightening the mounting bolts.

6.20 Mount the Bier pin storage mount in a location that does not interfere with the operation of the DD2000. Secure the mount using (3) #6 screws. **(FIG.6)**

6.21 Mount the glove holder on the passenger side frame weldment using (2) 1/4 X 1/2 machine screws and (2) 1/4 nuts.

Nissan vans

6.22 Mark and drill the 4 holes for the 7/16" mounting bolts **(FIG.7)**.

- a. The rear mounts offer multiple holes for the bolt to pass through. Select one location per side that will not interfere with components or structures underneath.
- b. The front mounts offer multiple locations. Use the mount holes as shown in **(FIG.7)** being sure they do not interfere with the fuel or exhaust system and are not positioned over the middle of a frame cross member of the vehicle.

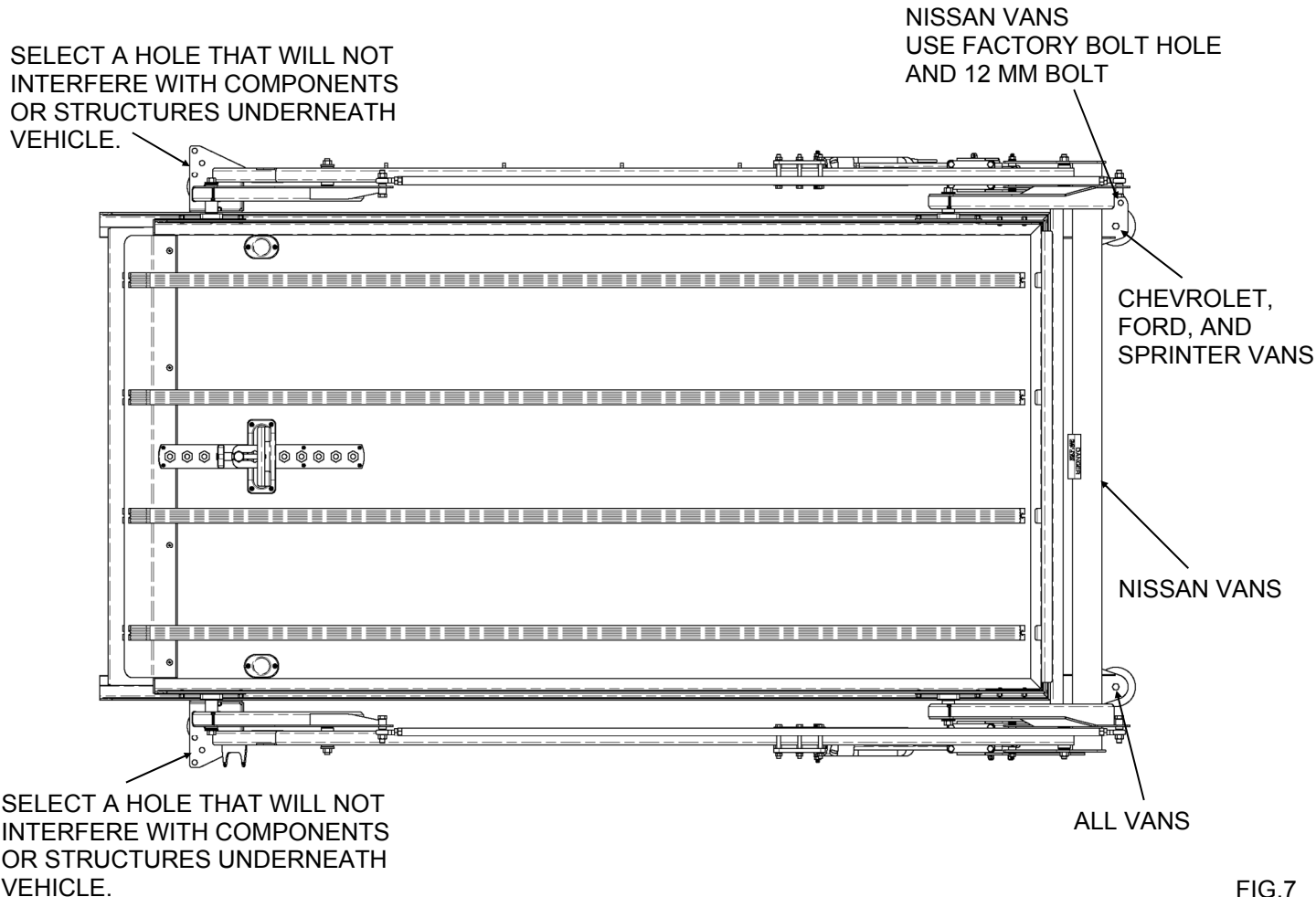
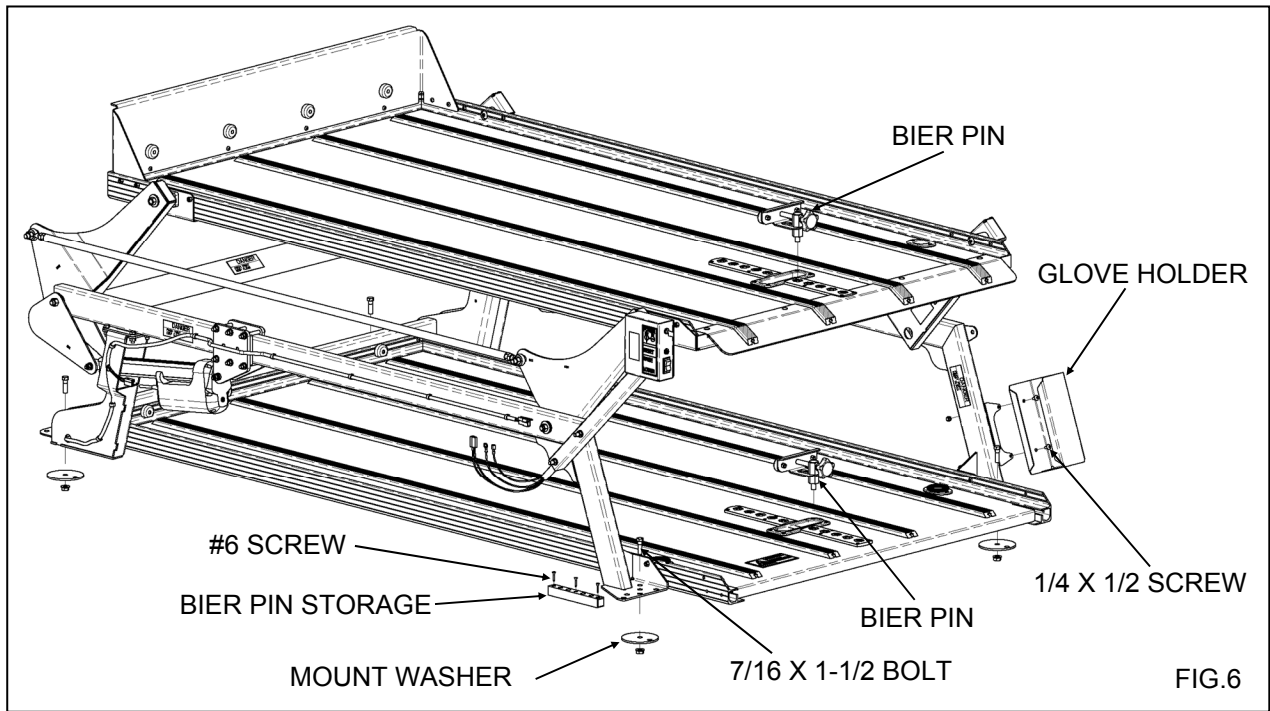


c. Notes:

- 1) Secure with (4) 7/16 X 1-1/2 bolts, (4) mounting washers, and (4) 7/16 serrated flange nuts.
- 2) Use the existing bolt from floor to secure left front corner. **(FIG.7)**
- 3) All mounting bolts should drop in from the top.
- 4) The mounting washers offer two holes for securing the DD2000: a center location and an offset location. Use the hole location that works for the particular install.
- 5) Seal all drilled holes with Sandox etching adhesion primer to prevent corrosion and tighten all bolts.
- 6) Spacers should be placed between the floor and the mount washer to prevent crushing the floor ribs while tightening the mounting bolts.

6.23 Mount the Bier pin storage mount in a location that does not interfere with the operation of the DD2000. Secure the mount using (3) #6 screws. **(FIG.6)**

6.24 Mount the glove holder on the passenger side frame weldment using (2) 1/4 X 1/2 machine screws and (2) 1/4 nuts.



6.22 Blow out all debris, pay particular attention to moving part interfaces.

6.23 Verify that the top deck raises and lowers properly, that all doors close, electrical connections are properly secured, and all fasteners are properly torque to the values specified in the Torque Table. If adjustments are necessary, refer to section 8.

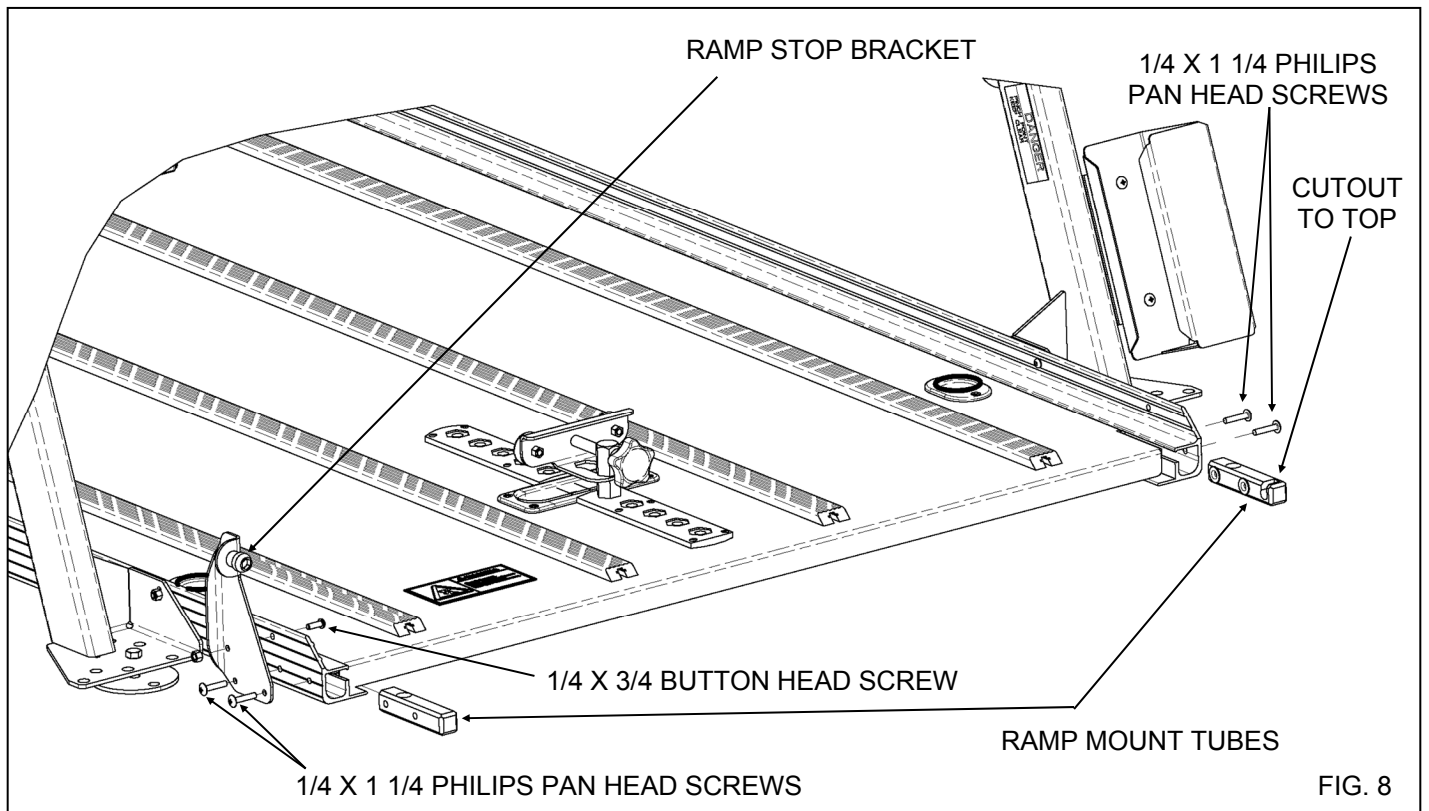


TORQUE TABLE	
FASTENER	TORQUE
1/4-UNC NUTS	75-100 IN-LBS
5/16-UNC NUTS	220-305 IN-LBS
3/8-UNC NUTS	35-40 FT-LBS
7/16-UNC NUTS	88-70 FT-LBS
1/2-UNC NUTS	80-105 FT-LBS

7. INSTALLING THE RAMP MOUNTS AND RAMP

The deck is shipped with the two ramp mounts and ramp stop bracket uninstalled. These must be installed before the deck can be used. (See **FIG. 8**)

- 7.1 Slide the two Ramp Mount tubes in to the Lower Deck being sure that the cutout is facing up and placed on the right hand side.
- 7.2 Place (2) 1/4 X 1-1/4 philips pan head screws through the right side of the Lower Deck and tighten.
- 7.3 Place (2) 1/4 X 1-1/4 philips pan head screws through the ramp mount bracket and left side of the Lower Deck side and tighten.
- 7.4 Place (1) 1/4 X 3/4 button head screw facing to the out side of Lower Deck install Flat Washer and (1) nylock nut and tighten.
- 7.5 Place the ramp into the left side Mount Tube. Using gentle pressure snap the ramp into the right side Mount Tube.



8. ADJUSTING THE DD2000

There are 2 adjustment systems used by the DD2000: the tie-rods control the levelness of the deck while the location of the actuator controls the height of the top deck.

To adjust the levelness of the deck using the tie rods:

- Raise the top deck to a neutral working position so that it is even with the side frames.
- Loosen the jam nuts located on both ends of the two tie-rods. (see **FIG.9**)
- With a level placed front-to-rear on the top deck, rotate the body of the tie-rod until the top deck is level, keeping track of how many revolutions are completed. It is best to go in small adjustments (1-2 revolutions), repeating the process until the deck is level.
- Adjust the tie-rod on the opposite side of the deck the same number of revolutions.
- Raise and lower the deck to verify that no binding occurs.
- Tighten the jam nuts on both tie-rods.



To adjust the height of the deck using the actuator:

- Loosen the six nuts securing the bolts that hold the actuator mounts in position.
Do not fully remove the nuts.

WARNING

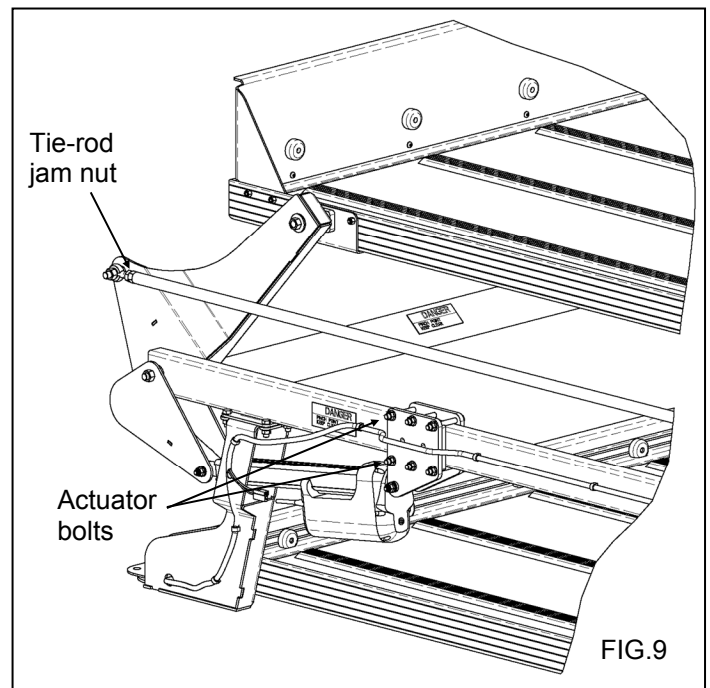
- The top deck will be free to move if both actuator mounts are loosened disconnected from the torsion arm, and **Will Fall if Unsupported.**
- **The deck must be lowered and unloaded before loosening the actuator mounts.**
- Do not loosen the actuator mounts, or remove any actuator pivot bolt with the deck raised and unsupported.

- To raise the deck, move the actuator rearward.
- To lower the deck, move the actuator forward. Ensure that the top deck does not contact the bottom deck at the end of the actuator's travel.

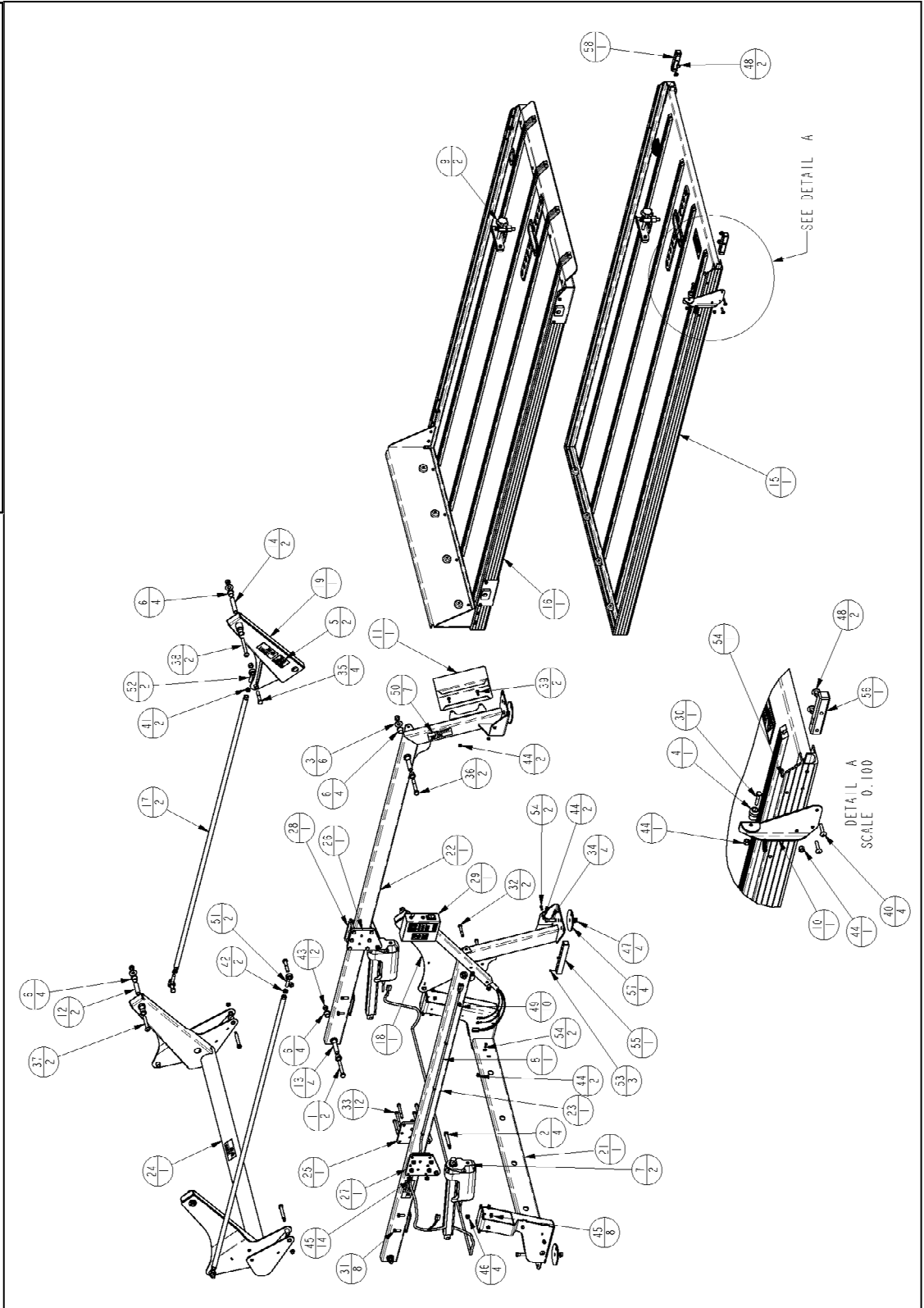
NOTE: The actuators must be the same distance from the end of the frame for proper operation. Carefully measure this distance and confirm that both sides are the same before retightening the nuts.



- Once the top deck reaches the desired height, tighten the nuts on the bolts to the values specified in the Torque Table on pg 8.
- Raise and lower the deck to verify that no interference occurs.



DD2000 ASSEMBLY
PN: 7224C000
MEDICAL EXAMINER VERSION
PN: 7224D000



ITEM	PART NUMBER	DESCRIPTION	QTY	ITEM	PART NUMBER	DESCRIPTION	QTY
1	14011628	1/2 X 3 1/2 UNC HEX CAP SCR (GR 5)	2	31	1401-1208	3/8 X 1 UNC HEX CAP SCR (GR 5)	8
2	14301624	1/2 X 3 SHOULDER BOLT	4	32	1401-1220	3/8 X 2 1/2 UNC HEX CAP SCR (GR 5)	2
3	14871600	1/2 TYPE A PLAIN WASHER	6	33	1401-1226	3/8 X 3 1/4 UNC HEX CAP SCR (GR 5)	12
4	15000006	RAMP HOLDER, MALE END	1	34	1401-1412	7/16 X 1 1/2 UNC HEX CAP SCR (GR 5)	4
5	15001338	DECAL-LOAD CAPACITY 600 LBS.	2	35	1401-1620	1/2 X 2 1/2 UNC HEX CAP SCR (GR 5)	4
6	15040095	BUSHING-PIVOT, NYLON	16	36	1401-1626	1/2 X 3 1/4 UNC HEX CAP SCR (GR 5)	2
7	15040314	ACTUATOR, 12V, 300MM STROKE, 6800N	2	37	142C1626	1/2 X 3 1/4 UNC SOCKET BUTTON HD CAP SCR	2
8	15051986	HARNES-ACTUATOR	1	38	142C1634	1/2 X 4 1/4 UNC SOCKET BUTTON HD CAP SCR	2
9	15070275	PIN-BIER, ADJUSTABLE	2	39	144C-0804	1/4 X 1/2 UNC TRUSS HD PH MACH SCR, SS	2
10	72240010	BRACKET-STOP, RAMP	1	40	144C-0810	1/4 X 1 1/4 UNC TRUSS HD PH MACH SCR, SS	4
11	72240070	HOLDER-GLOVE BOX	1	41	1475-1600	1/2 UNF HEX JAM NUT	2
12	72240072	BUSHING-PIVOT	2	42	1475-1601	1/2 UNF HEX JAM NUT LH THREADS	2
13	72240073	BUSHING-PIVOT	4	43	1476-1600	1/2 UNC HEX CTR LOCK NUT (GR B)	12
14	72240074	BUSHING-PIVOT	2	44	1478-0800	1/4 UNC HEX NYLOCK NUT (GR B)	8
15	72241002	DECK-BOTTOM	1	45	1480-1200	3/8 UNC SERRATED FLANGE NUT	22
16	72241003	DECK-TOP	1	46	1480-1201	3/8 UNC TOP LOCK FL NUT (GR F)	4
17	72241010	TIE ROD WELDMENT	2	47	1480-1400	7/16 UNC SERRATED FLANGE NUT	4
18	72241011	ARM-SWING, REAR	1	48	1484-0801	NUT 1/4-20 X 7/16 HT PROPELLER TEE	4
19	72241012	ARM-SWING, REAR	1	49	1500-0302	CLIP-LATCHING	10
20	72241022	KIT-ELECTRICAL, DD2000	1	50	1500-1311	DECAL-PINCH POINT	7
21	72242101	WELDMENT-CROSSMEMBER	1	51	1504-0100	ROD END-SPHERICAL, LEFT HAND	2
22	72242102	WELDMENT-FRAME, RIGHT	1	52	1504-0101	ROD END-SPHERICAL, RIGHT HAND	2
23	72242103	WELDMENT-FRAME, LEFT	1	53	1506-0006	#6 X 1 DRYWALL SCREW W/ DRILL POINT	3
24	72242104	WELDMENT-BAR, TORSION	1	54	1506-0033	1/4-20 X 3/4 SOCKET BUTTON HD SS CAP SCREW	5
25	72242105	BRACKET-MOUNT, ACTUATOR INSIDE DRIVER	1	55	1507-0294	BIER PIN HOLDER	1
26	72242106	BRACKET-MOUNT, ACTUATOR INSIDE PASS.	1	56	7000-0027	TUBE-MOUNT, RAMP	1
27	72242107	BRACKET-MOUNT, ACTUATOR OUTSIDE DRIVER	1	57	7000-0031	WASHER-FLOOR SUPPORT	4
28	72242108	BRACKET-MOUNT, ACTUATOR OUTSIDE PASS.	1	58	7000-0061	TUBE-MOUNT, RAMP	1
29	72242109	ASSEMBLY-CONTROL BOX, DD2000	1				
30	1401-0810	1/4 X 1 1/4 UNC HEX CAP SCR (GR 5)	1				



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