

## TARP SYSTEMS, PARTS & TARPS

P/N 1808724 Rev. C

# HY-TOWER™ DL

Hy-Tower<sup>™</sup> DL (P/N 1803900)

READ BEFORE INSTALLING

3353 SE GRAN PARK WAY ■ STUART, FL 34997 PHONE 1-800-327-8287 ■ FAX 772-287-0431 www.donovan-tarps.com

SHIPPING. Orders are shipped F.O.B. from the Shur-Co®, LLC sites listed below. No full freight is allowed or prepaid shipment accepted unless quoted and approved in writing prior to acceptance of the order. All shipments are made by the most reasonable means in accordance with size and weight of order, unless specified routing instructions are furnished by the customer. Shipments are made daily via U.P.S. and common carrier. Claims for shortages must be made within 10 days. All claims for damages or loss in transit must be made with the carrier. No collect calls will be accepted. To ensure delivery of orders, we need your full street address and phone number. When you receive your shipment, examine it carefully. Be sure all cartons listed on the delivery sheet are accounted for. Large items may be packaged separately. If a carton is damaged, open it and inspect the contents before signing for delivery. If merchandise is damaged, describe damage on the delivery receipt. Failure on your part to document damaged or missing merchandise on the delivery receipt releases the carrier of all liability; repair or replacement will be the customer's responsibility.

**WARRANTY.** We warrant all new products are free of defects in materials and workmanship.\* This warranty is effective if products are properly installed and used for the purpose for which they were intended and applies to the original buyer only. Except as set forth above or in any product-specific warranty documentation, we make no other warranties, express or implied, including but not limited to warranties of merchantability of fitness for a particular use.

Returns of a product for warranty must be accompanied by a Return Merchandise Authorization number (RMA#), obtained by by calling Customer Service at 866-748-7435, and sent, with freight paid by us, to Shur-Co®, LLC, 2309 Shur-Lok St., PO Box 713, Yankton, SD 57078. All products returned without an RMA# will be refused. When we issue the RMA#, we will also issue a call tag to have UPS (or other freight company) pick up the product. C.O.D. returns not accepted. We will pay no storage fees for a warranty product return prior to pick by us or the freight company. If a warranty product return is scheduled to be picked up by us, we will pick up the product at our earliest convenience.

If a product returned is found, in our judgement, to be defective in material or workmanship, our obligation under this warranty is limited to the repair or replacement of the product, which will be made by us. Repair or replacement will be at our discretion, with replacements being made using current products performing in the equivalent function. Labor charges, other than those incurred at our factory, including, but not limited to, any labor to install a repaired or replacement product, are not covered under this warranty. All expenses associated with delivering defective products to our factory and delivering repaired or replacement products from our factory to the owner will be paid by us.

If the product returned is found, in our judgement, to be non-warrantable, the owner will be contacted to authorize repair work, purchase of a replacement product or return of the product, all of which will be at the owner's expense. Payment authorization must be received by us before any non-warrantable product is repaired, replaced or returned. All expenses associated with delivering the repaired non-warrantable product, a replacement product or the non-warrantable product from our factory to the owner will be paid by the owner.

In no event will we be liable for any damages of any kind to person, product or property, including but not limited to indirect, incidental, special, consequential or punitive damages, or damages for loss of profits or revenue, even if we have been advised of the possibility of such damages. There are no warranties for used products or products that have been repaired, altered, modified or subjected to misuse, negligence or accident. We will not repair or replace products that fail or malfunction due to ordinary wear and tear, except as expressly noted in a product-specific warranty. Use of non-Shur-Co®, LLC parts in conjuction with Shur-Co®, LLC products will void this product warranty.

\*Certain products have specific warranties that differ from this warranty, for example motors and electronics. Product-specific warranty documentation is available for these items. In the event of a conflict between this warranty and a product-specific warranty, the product-specific warranty will govern.

**RETURN POLICY.** All sales final. See WARRANTY above for return details.

**OTHER.** All prices, product listings, sizes, weights and manufacturing details are subject to change without notice. No person is authorized to modify the foregoing conditions of sale whatsoever.

#### SHUR-CO®, LLC SERVICE AND DISTRIBUTION CENTERS

#### Corporate HQ and Outlet Store

#### SHUR-CO® of SOUTH DAKOTA

2309 Shur-Lok St., PO Box 713, Yankton, SD 57078 Ph 800.474.8756 | Fax 605.665.0501

#### SHUR-CO® of FLORIDA

3353 SE Gran Park Way, Stuart, FL 34997 Ph 800.327.8287 | Fax 772.287.0431

#### SHUR-CO® of IDAHO

610 N. 16th Ave., Caldwell, ID 83607 Ph 866.356.0246 | Fax 217.877.8270

#### SHUR-CO® of ILLINOIS

3993 E. Mueller Ave., Decatur, IL 62526 Ph 866.356.0246 | Fax 217.877.8270

#### SHUR-CO® of IOWA

3839 Midway Blvd., Ft. Dodge, IA 50501 Ph 866.356.0245 | Fax 515.576.5578

#### SHUR-CO® of MICHIGAN

5100 Lakeshore Dr., Lexington, MI 48450 Ph 800.327.8287 | Fax 772.287.0431

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1746 4th Ave. NW, West Fargo, ND 58078 Ph 877.868.4488 | Fax 701.277.1283

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4676 Lynn Rd. Rootstown, OH 44266 Ph 866.356.0242 | Fax 330.297.5599

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#### SHUR-CO® of CANADA

490 Elgin St., Unit #1 Brantford, Ontario N3S 7P8 Ph 800.265.0823 | Fax 519.751.3997

#### SHUR-CO® of SIOUX FALLS

47184 258th St., Suite B Sioux Falls, SD 57107 Ph 844.573.9322 | Fax 605.543.5469

#### SHUR-CO® of ILLINOIS

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#### SHUR-CO® of OHIO

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For more information, log on to our website:

www.shurco.com

P/N 1808724 Rev. C Hy-Tower™ DL

#### **MESSAGE TO OWNERS**

Thank you for buying this tarping system from Shur-Co<sup>®</sup>. We appreciate your confidence in our products. Please read and thoroughly understand this manual before installing and/or operating this system.

Pay particular attention to important safety and operating instructions, as well as warnings and cautions. The hazard symbol is used to alert users to potentially hazardous conditions and is followed by caution, warning or danger messages.

Failure to READ AND FOLLOW INSTRUCTIONS could result in failure of your tarping system and/or personal injury. Your trailer requirements may, however, call for minor variations to these instructions.

Please inspect your tarping system periodically. Repair or replace worn or damaged parts to your system.

#### QUESTIONS? CALL OUR HELP LINE:

1-800-327-8287

MON-FRI 8 AM-5 PM EASTERN TIME

#### **SAFETY**

We at Shur-Co® are concerned with your safety and the safety of all those operating this system. Therefore, we have provided safety decals at various locations on your tarping system. Keep decals as clean as possible at all times. Replace any decal that has become worn or damaged, painted over or otherwise difficult to read. Replacement decals are available through Shur-Co® dealers.

#### **SAFETY INSTRUCTIONS**

- 1. Always wear safety glasses during installation and operation.
- 2. Stay clear of moving parts.
- 3. Do not operate under low-hung power lines. Always check for overhead obstructions before opening or closing.
- 4. Open and close tarp only at job site.
- 5. Place safety decals in visible locations. Replace worn or damaged decals.
- 6. No other use of this system is authorized, except as designed.

#### **RUST PREVENTION**

To prevent rust, paint all exposed metal, such as weld seams and/or metal exposed by grinding or cutting, with corrosion-resistant paint.

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#### **TOOLS REQUIRED**

- 1. Wrenches 1/2", 5/16", 9/16", 3/4"
- 2. Ratcheting Socket Wrench
- 3. Sockets 1/2", 9/16", 3/4"
- 4. Allen Wrenches 1/8", 5/32", 3/16"
- 5. Drill Bits (metal cutting) 5/16", 3/8", 1/2", 3/16"
- 6. Center Punch
- 7. Hammer
- 8. Tape Measure
- 9. Flat Head or Phillips Screwdriver
- 10. Grinder
- 11. Air or Electric Impact Driver
- 12. Metal Saw
- 13. Steel Welder
- 14. Hex Driver Bit 5/16"
- 15. Phillips Driver Bit #2

#### **MAINTENANCE**

- Spray all bearings and drive chain with penetrating oil as needed.
- Brush springs with steel brush weekly to remove dirt, and spray with penetrating oil.
- Tighten any loose bolts.
- Replace damaged/bent parts.
- Replace worn or broken springs.
- Replace/repair worn or damaged tarps.





1800972 Cap Screw - 5/16" x 1-1/2"





1800795 Cap Screw - 3/8" x 1" Grade 5





1801024 Cap Screw - 1/2" x 4"





1800990 Lock Nut - 3/8"





1800993 Nylon Lock Nut - 3/8"





1800995 Lock Nut - 1/2"





1800991 Lock Washer - 3/8"





1800994 Flat Washer - 3/8"

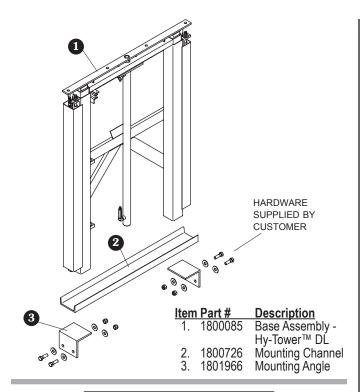




1800996 Flat Washer - 1/2"

### TARP INSPECTION

**Tarp length:** Measure tarp length with slight tension applied. Call your local dealer or call Shur-Co® FL Customer Service at 1-800-327-8287.

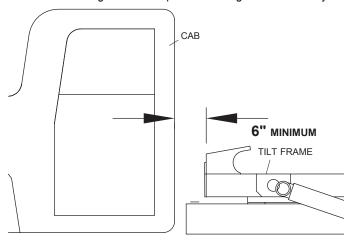


#### **CLEARANCE REQUIREMENTS**

Minimum 6" clearance between cab and tilt frame is required. Adjust components, locations as needed to achieve 6" of clearance.

Fabricate mounting brackets to fit if hydraulic hoses, exhaust or other components on truck interfere with installation of Donovan-supplied mounting brackets.

Install additional gussets for optimum strength and durability.

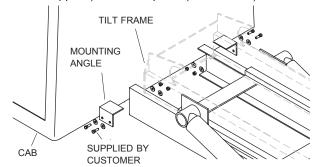


## **A** CAUTION

To prevent damage to and ensure proper operation of Hy-Tower™ DL system, center base assembly between cab and hoist with at least 6" of clearance.

#### **BASE ASSEMBLY INSTALLATION**

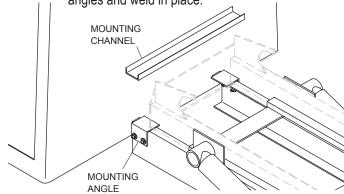
STEP 1: Locate mounting angles on both sides of truck frame, centering brackets between cab and tilt frame. Align angles on frame, mark and drill 1/2" holes and fasten with 1/2" grade 8 bolts, flat washers and lock nuts (not supplied) or weld in place (see Caution).



## **A** CAUTION

Welding components to truck frame may weaken frame and will void warranty on truck. Weld angle brackets to existing brackets on frame when possible. When not possible, drill holes in frame and bolt brackets in place.

**STEP 2:** Align and center mounting channel on mounting angles and weld in place.

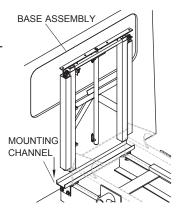


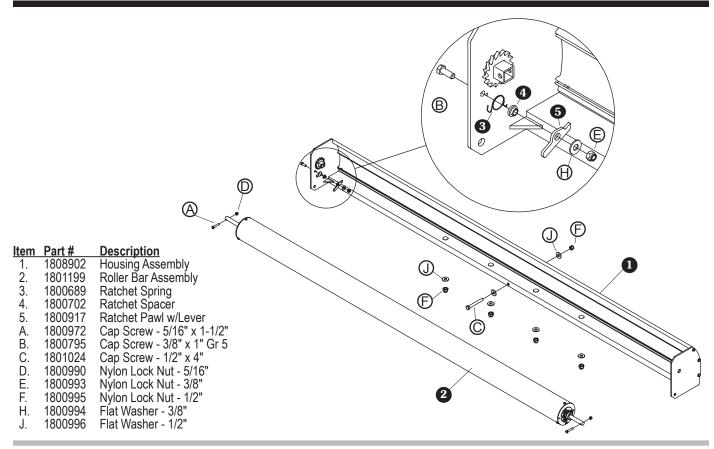
STEP 3: Square and center base assembly on mounting channel.
Weld legs to mounting channel.

STEP 4: Additional bracing may be required to stabilize base assembly and mounting channel.

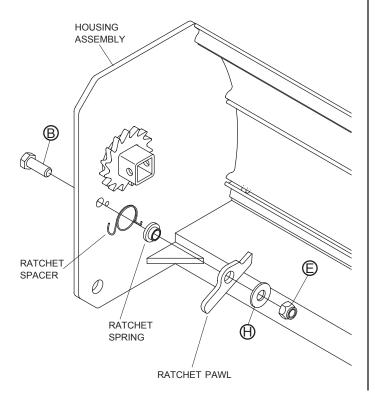
Brace to tower legs or cross supports.

Fasten to chain cover if needed.

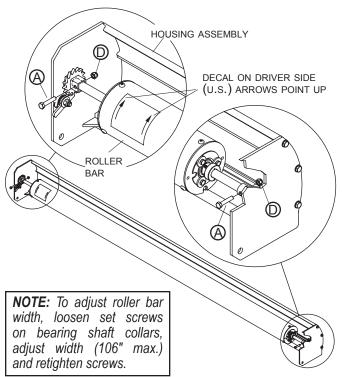




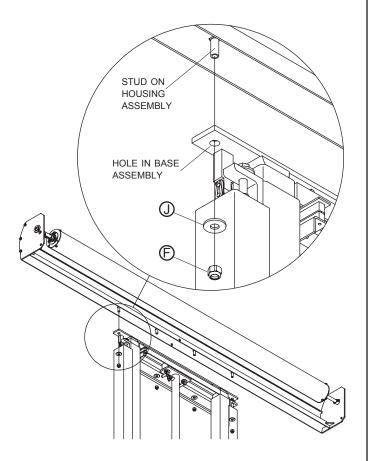
step 1: ratchet components to housing assembly as shown, using screw ③, washers ⊕ and nuts ④.



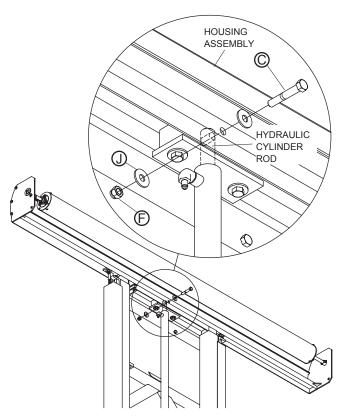
STEP 2: Assemble roller bar to housing, aligning decal on driver side (U.S.) with arrows pointing up. Fasten with screws ② and nuts ③.

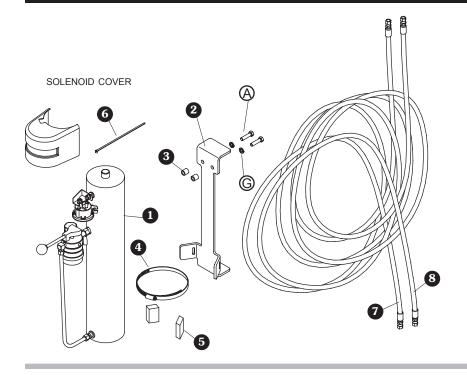


**STEP 3:** Insert studs on housing assembly into holes in base assembly. Fasten with washers **①** and nuts **①**.



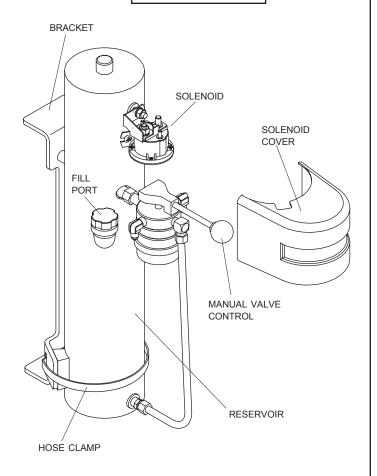
STEP 4: Fasten hydraulic cylinder rod on base assembly to housing assembly with screw **②**, washers **③** and nuts



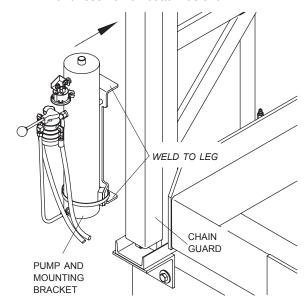


Item	Part #	Description
1.	1800090	Hydraulic Pump - 12 Volt
2.	1801623	Pump Mount Bracket
3.	1801223	Spacer Steel Pump Bracket
4.	1800906	Hose Clamp - 5" to 7"
5.	1801125	Motor Mount Rubber Tire
6.	1800976	Cable Tie - 8"
7.	1801222	Hydraulic Hose - 9'
8.	1801221	Hydraulic Hose - 12'
A.	1800972	Cap Screw - 5/16" x 1-1/2"
G	1800991	Lock Washer - 3/8"

#### HYDRAULIC PUMP



STEP 1: Locate pump mount bracket on chain guard or other easily accessible location. Locate bracket so pump will be vertical, with control valve and motor on top and reservoir on bottom as shown.

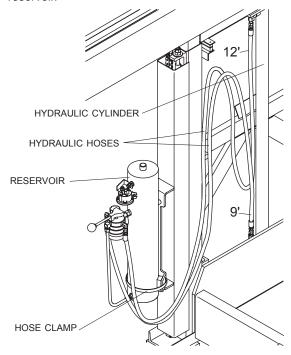


STEP 2: Mark bracket location on trailer. Unfasten and remove hydraulic pump from bracket. Weld bracket in place, then replace and refasten pump.

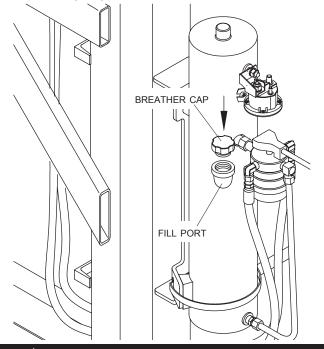
## **A** CAUTION

Welding bracket with pump attached could damage pump.

STEP 3: Connect hoses from hydraulic pump to hydraulic cylinder, making sure hose clamps are tight around reservoir.

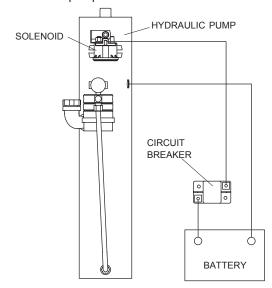


**STEP 4:** Install breather cap onto fill port. Do not reinstall shipping plug.



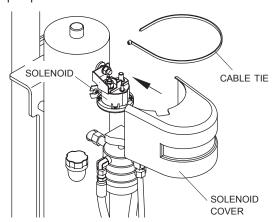
Replace shipping plug with breather cap on hydralic pump or pump will be damaged.

**STEP 5:** Connect negative wire from battery to stud on hydraulic pump.

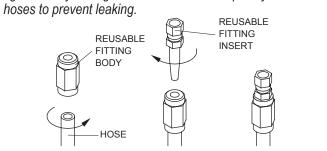


**STEP 6:** Connect positive wire from battery to circuit breaker and from circuit breaker to solenoid on pump.

STEP 7: Place solenoid cover over solenoid. Secure cover to pump with 8" cable tie.



**NOTE:** To thread fitting body onto end of hose, turn body counterclockwise until body engages hose about 1". Thread fitting insert onto body, turning clockwise until insert is snug against body. Fitting must be threaded completely onto hoses to prevent leaking.



Roller Bar Tension P/N 1808724 Rev. C

#### **ROLLER BAR PRE-LOAD TENSION**

## **A** CAUTION

To avoid possible injury:

Only use 1" wrench to adjust spring tension on roller bar.

Maintain tight grip on wrench at all times.

Always ensure lock paw is fully engaged in ratchet before releasing wrench.

Do not turn roller bar more than 50 full turns.

Pre-load has been added to roller bar at factory on new systems.

PRE-LOAD FOR TARPS: Lightweight tarp - 32 turns

#### METAL HALF RING

STEP 1: Position ring to not interfere with loading/unloading containers or contact ground when frame is fully tilted. For optimal tarp layout, align ring as close to center of tilt frame as possible.

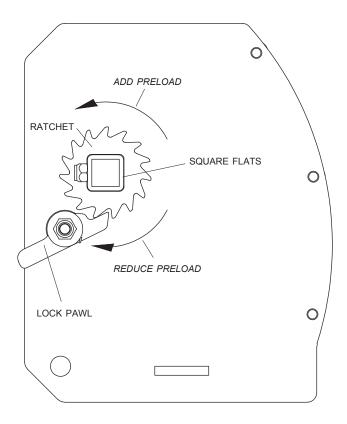
**STEP 2:** Weld 1/2 metal ring to rear of tilt frame.

**NOTE:** Before welding ring to tilt frame, locate ring where it will not interfere with loading/unloading containers or contact ground when frame is fully tilted.

#### ADJUSTMENT ROLLER BAR SPRING TENSION

To increase spring tension, grip square flats with 1" wrench and rotate ratchet clockwise, counting each full rotation of roller bar. Fully engage lock pawl before removing wrench.

To decrease spring tension, grip square flats with 1" wrench and lift lock pawl to disengage from ratchet. Rotate ratchet counterclockwise, counting each full rotation. Engage lock pawl after each turn of the wrench.



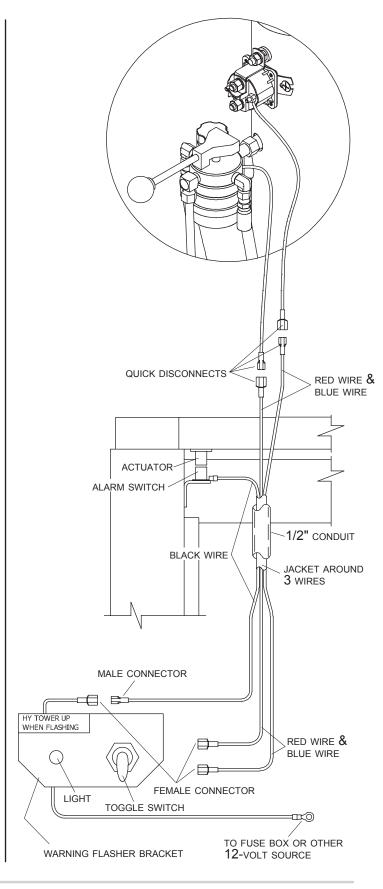
- STEP 1: Mount warning flasher bracket at visible location in truck cab.
- STEP 2: Locate three wires in jacket at end of conduit near base of Hy-Tower™ DL. Run wires to warning flasher bracket.
- STEP 3: Connect black wire from alarm switch to wire connected to light. Connect wires with quick disconnects on wire ends.
- STEP 4: Connect blue and red wires to quick disconnects on back of toggle switch. Either wire can go to either of two available quick disconnects.
- STEP 5: Connect red and blue wires located at top of conduit to wires coming from pump. Connect wires with quick disconnects on wire ends.
- **STEP 6:** Connect black wire with ring terminal on one end from light to 12 VDC power source.

#### **TEST OPERATION**

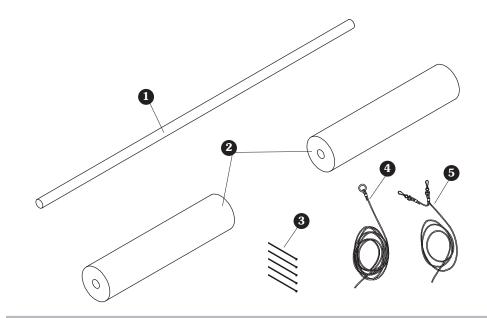
When Hy-Tower™ DL is raised about 1", red light on warning flasher should be blinking.

Place toggle switch in *Off* position and attempt to raise Hy-Tow- $er^{TM}$  DL. Hy-Tower<sup>TM</sup> DL hydraulic pump should not start.

**NOTE:** place toggle switch in Off position when Hy-Tower<sup>TM</sup> DL is not being raised or lowered.

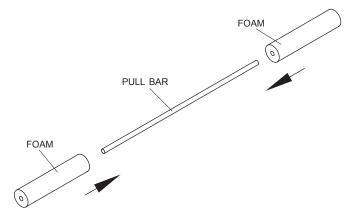


Pull Bar Installation P/N 1808724 Rev. C

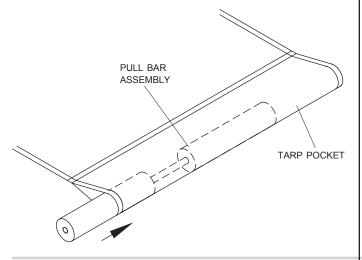


<u>Item</u>	Part #	<b>Description</b>
1.	1800820	Tube
2.	1800821	Foam
3.	1800976	Cable Tie - 8"
4.	1801367	Rope - 3/8" x 50'
5	1801388	Rone - 5/16" x 8'

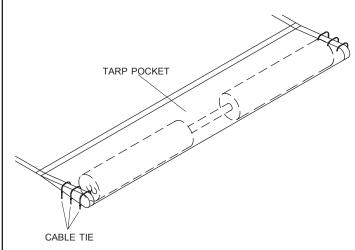
**STEP 1:** Slide 36" piece of foam over each end of pull bar.



**STEP 2:** Slide pull bar assembly into tarp pocket.



STEP 3: Cable tie each end of tarp pocket closed, installing three cable ties on each end.

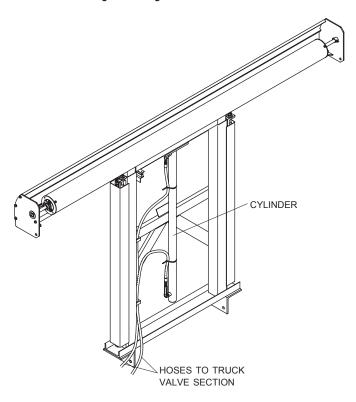


**NOTE:** 1/4" fittings are supplied on cylinder. JIC hoses are not supplied.

STEP 1: Only use 1/4" hoses to supply fluid to cylinder. Larger hoses may allow excessive flow, causing system to malfunction.

**STEP 2:** Cut hoses to length, allowing sufficient length for hoses to reach 42" upward when tower is raised.

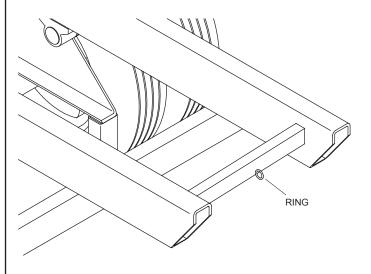
**STEP 3:** Tie-wrap both hoses to ensure system operates freely through full range of motion.



**NOTE:** Hy-Tower<sup>™</sup> system is supplied with double-acting cylinder and must be powered in both directions.

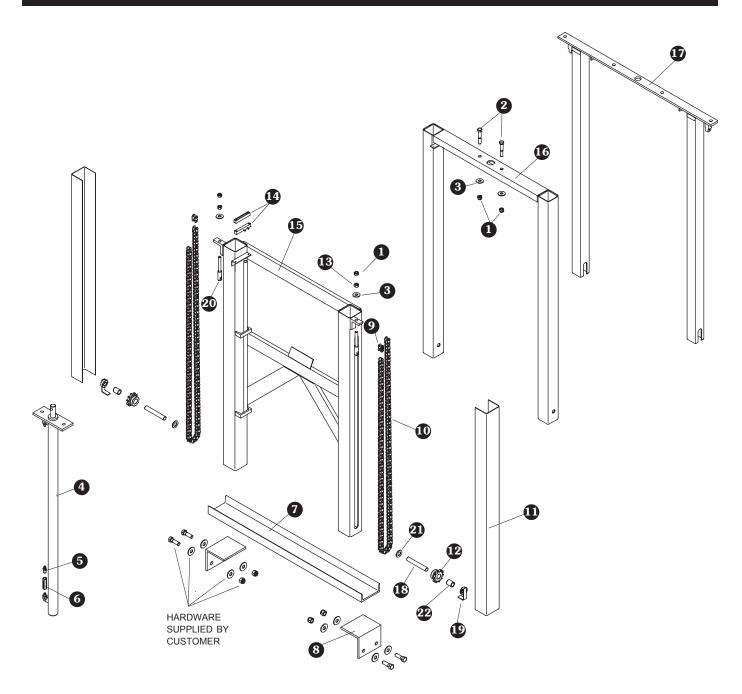
**NOTE:** When welding ring onto tilt frame, position where it will not interfere with loading and unloading container. Make sure ring will not contact ground when frame is fully filled.

**STEP 4:** Weld metal ring to rear of tilt frame. For best tarp fit, position ring as close to center of tilt frame as possible.



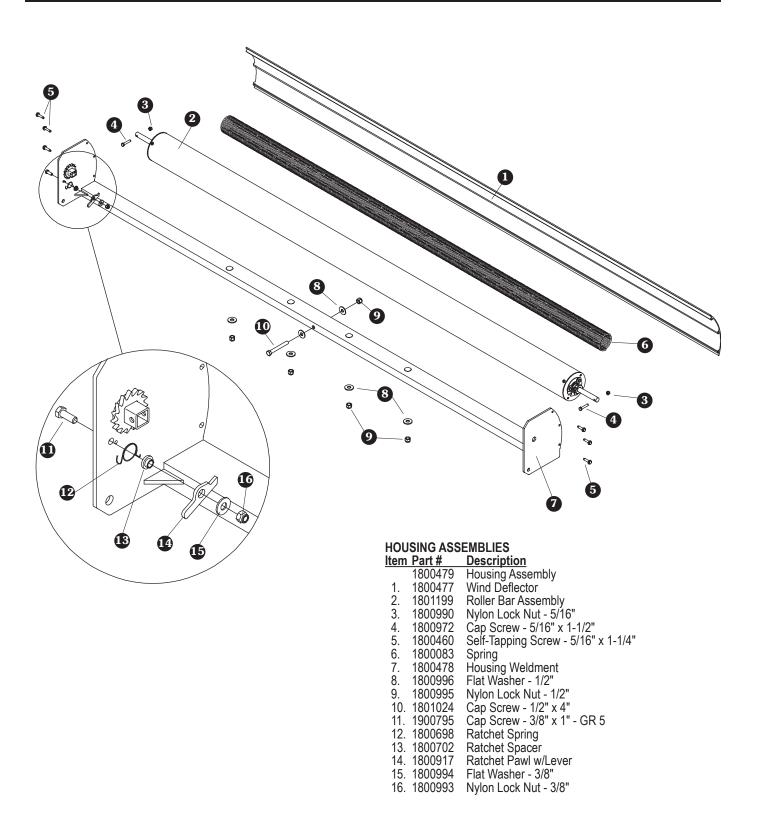
<u>Item Part # Description</u>

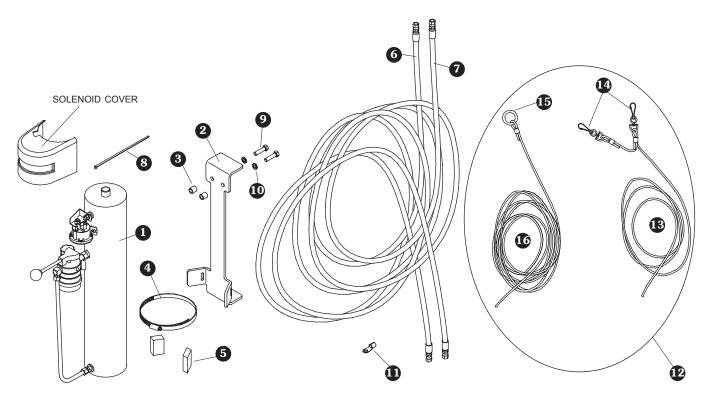
1. 1800846 O-Ring - Steel - #3 x 1-1/2"



#### **BASE ASSEMBLIES**

DAGE AGGENIDEIEG			
Part #	Description	Item Part #	Description
1800085	Base Assembly	12. 1800084	Sprocket - 60 B - 10 x 1
1800995	Lock Nut - 1/2"	13. 1800799	Hex Nut - 1/2"
1800901	Cap Screw - 1/2" x 3"	14. 1801033	Alarm
1800996	Flat Washer - 1/2"	15. 1801209	Third-Stage D/L
1800082	Cylinder - 1-1/2" x 42" x 1"	16. 1801212	Second-Stage D/L
1801017	Fitting Hyd - 4MJ 4MP STR	17. 1801215	First-Stage D/L
1801018	Pres FLow Comp Hyd - 1-3/4"	18. 1801216	Shaft Sprocket
1800726	Mounting Channel	19. 1801218	Chain Guide Assembly
1801966	Mounting Angle	20. 1801220	Chain Mount Assembly
1800080	Chain #60 - Master Link	21. 1801503	Flat Washer - 3/4"
1800081	Chain #60 x 130 P	22. 1800724	Bushing - 3/4" x 1"
1800683	Chain Guard		-
	Part # 1800085 1800995 1800901 1800996 1800082 1801017 1801018 1800726 1801966 1800080 1800081	Part #         Description           1800085         Base Assembly           1800995         Lock Nut - 1/2"           1800901         Cap Screw - 1/2" x 3"           1800996         Flat Washer - 1/2"           1800082         Cylinder - 1-1/2" x 42" x 1"           1801017         Fitting Hyd - 4MJ 4MP STR           1801018         Pres FLow Comp Hyd - 1-3/4"           1800726         Mounting Channel           1801966         Mounting Angle           1800080         Chain #60 - Master Link           1800081         Chain #60 x 130 P	Part #         Description         Item Part #           1800085         Base Assembly         12. 1800084           1800995         Lock Nut - 1/2"         13. 1800799           1800901         Cap Screw - 1/2" x 3"         14. 1801033           1800996         Flat Washer - 1/2"         15. 1801209           1800082         Cylinder - 1-1/2" x 42" x 1"         16. 1801212           1801017         Fitting Hyd - 4MJ 4MP STR         17. 1801215           1801018         Pres FLow Comp Hyd - 1-3/4"         18. 1801216           1800726         Mounting Channel         19. 1801218           1801966         Mounting Angle         20. 1801220           1800080         Chain #60 - Master Link         21. 1801503           1800081         Chain #60 x 130 P         22. 1800724

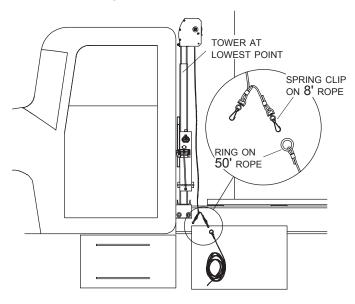




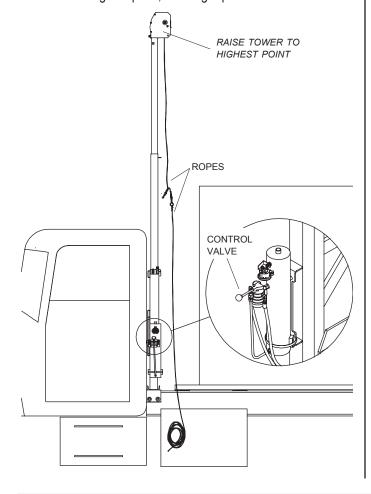
## HYDRAULIC COMPONENTS Item Part # Description

<u>ltem</u>	Part #	<u>Description</u>			
1.	1800090	Hydraulic Pump - 12 Volt			
2.	1801623	Pump Mount Bracket			
3.	1801223	Spacer - Steel Pump Bracket			
4.	1800906	Spacer - Steel Pump Bracket Hose Clamp - 5" to 7"			
5.	1801125	Motor Mount Rubber Tire			
6.	1801222				
7.	1801221	Hydraulic Hose - 12'			
8.	1800976				
9.	1800972	Cap Screw - 5/16" x 1-1/2"			
10.		Lock Washer - 3/8"			
	1800158	Ring Terminal - 3/8" x 4 Ga.			
12.	1801009	Rope Assembly - Complete Pull Rope w/Snap Hooks - 5/16" x 8'	$\supset$		
13.	1801388	Pull Rope w/Snap Hooks - 5/16" x 8'			
	1800847	Steel Snap - 1/2" Opening			
15.	1800846	O-Ring - Zinc Coated			
16.	1801387	Nylon Rope w/O-Ring - 3/8" x 50'			
		3	D :	D.4.D.0	
				BARS	<b>D</b>
			<u>Item F</u>		<u>Description</u>
				1800820	Tube
				1800821	Foam
		·	3. 1	1800976	Cable Tie - 8"

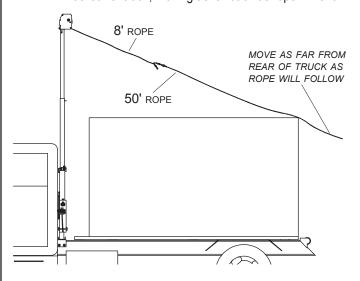
STEP 1: With tower at lowest point, clip ring on end of 50' rope to spring clip on 8' rope fastened to tarp.



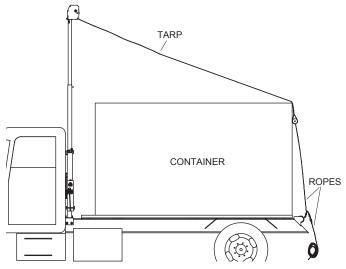
STEP 2: Activate control valve on hydraulic pump to raise tower to highest point, allowing ropes to extend with tower.



STEP 3: Holding end of 50' rope, walk directly behind container at rear of truck, moving as far back as rope will allow.



**STEP 4:** Pull rope toward rear of truck, unrolling tarp to completely cover container.



**STEP 5:** While maintaining tarp position, walk up to container at rear of truck.

STEP 6: Clip unused spring clip on 8' rope to rear of tilt frame or container. Disconnect 50' rope and store in cab or tarp box.

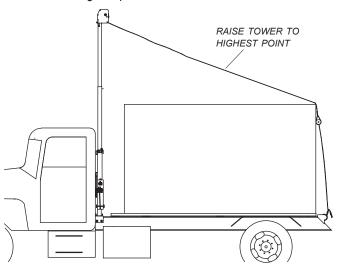
STEP 7: Lower tower to fully REAR TILT

STEP 7: Lower tower to fully retracted position.

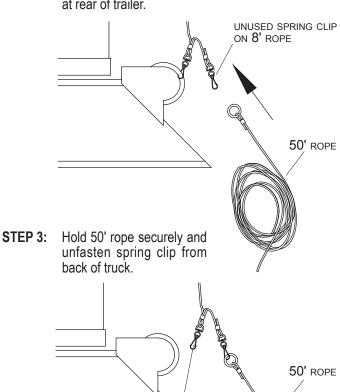
REAR TILT FRAME

**NOTE:** Do not operate truck unless tower is fully retracted.

STEP 1: Activate control valve on hydraulic pump to raise tower to highest point.



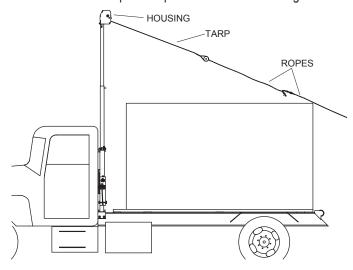
STEP 2: Clip ring on 50' rope to unused spring clip on 8' rope at rear of trailer.



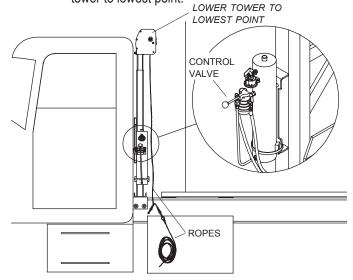
UNFASTEN SPRING CLIP

**NOTE:** To ease disconnecting spring clip from rear of truck, pull downward on 50' rope to release tension.

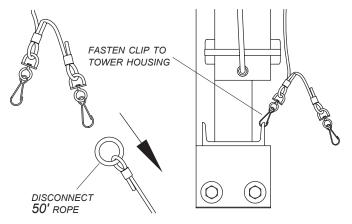
**STEP 4:** Guide tarp with ropes as it rolls into housing.



STEP 5: Activate control valve on hydraulic pump to lower tower to lowest point.



STEP 6: Disconnect 50' rope and store in cab or tarp box. Fasten spring clip on end of 8' rope to tower housing.



P/N 1808724 Rev. C **Notes** 

## MORE QUALITY PRODUCTS FROM DONOVAN™

- Construction Products
  - Arm-Matic™
  - DuraPull™
  - Econo-Pull™
  - UT Tarp™
  - 2000 Series
  - 5000 Series
  - Hammer™ II
  - Bullet<sup>TM</sup>
  - Flash™

- Waste Products
  - SWAT TM
  - Quick-Flip III™
  - Sidewinder™
  - Sidewinder™ 350
  - HyTower™ SL
  - HyTower<sup>TM</sup> DL
  - Double-Flip™
  - Donovan Belt & Ratchet (DBR)

