



11 INDUSTRY DRIVE  
PALM COAST, FL 32137  
PHONE 877.900.7278  
FAX 386.445.1122

## INSTALLATION INSTRUCTIONS FULL HYDRAULIC INSIDE COMPONENTS

- 1. Helm and steering column installation** (reference. assembly print drawing 137-9120)  
Locate a compatible area on the dash to mount the helm and steering column assemblies. Give consideration to steering wheel clearance, gauge location and hose routing clearance behind the dash. Be sure the dash area you have chosen is strong enough to support the weight of the helm and steering column. Always consider driver comfort while choosing steering column location.

Using a 2-7/16" hole saw drill a clearance hole for the steering column at the exact center point where the column is to be mounted. Using either the template provided or the dash mount beauty ring as a template, drill the four 7/16" holes used to thru bolt the column and the helm to the dashboard.

Using a multipurpose lubricant on the o-ring surfaces, now install the helm o-ring fittings into the P, T, A and B ports on the helm. A pipe thread sealant should be used on all npt threads to prevent leaks and galling upon installation. Now the helm and steering column may be installed in the previously drilled dashboard.

When bolted to the dash the steering column must move freely, no binding should be experienced for the helm to operate properly.

- 2. Before making up hoses please reference Hose End Assembly Instructions.**  
**For appropriate plumbing diagrams, please reference the following:**  
Full Hydraulic, Single Bravo/Single Cylinder (assembly print drawing 137-9400 & 137-9403 )  
Full Hydraulic, Single Bravo/Dual Cylinder (assembly print drawing 137-9401 & 137-9404)  
Full Hydraulic, Dual Bravo/Dual Cylinder (assembly print drawing 137-9402 & 137-9405)  
**IT IS THE INSTALLERS RESPONSIBILITY TO HAVE ALL HOSE ASSEMBLIES & PRESSURE TESTED TO 2000 PSI PRIOR TO INSTALLATION.**

- 3. Remote mount reservoir installation**  
Before installing the remote mount power steering reservoir the stock fill cap on the power steering pump must be removed and replaced with the power steering return dump cap provided. Simply tighten the center screw on the new cap snugly to prevent leaks. The remote reservoir tank must be mounted as close as possible to the power steering pump keeping the bottom of the tank above the top of the pump. The hose must run slightly uphill from the pump to the reservoir to insure proper purging of air.
- 4. High-pressure filter and pressure line installation**  
The power steering filter is a high-pressure filter and must be plumbed in-line on the high-pressure output hose between the power steering pump and the P port on the steering helm. It is very important to mount the filter in the direction of flow meaning IN from the pump and OUT to the helm. If not installed properly the internal element will fail and block the flow of the entire system. All -6 male adapters and -6 hose ends are provided to completely install the power steering filter.
- 5. Return line routing**  
The T port on your helm is the "tank" or reservoir low-pressure return line. This hose returns the low-pressure fluid back to the reservoir on the power steering pump. This



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hose must run through an in line power steering cooler before reaching the power steering reservoir tank.

**6. Directional line routing**

The A or rear port on the helm and the B or front port on your helm are the lines that run back and connect to your steering cylinders. The plumbing diagram provided will instruct you on the proper routing on the left and right steering hoses.

**General**

After hoses has been tested at 2000 psi, the hoses should be washed completely and blown out with compressed air before installing. Connect hoses to the hydraulic components according to the plumbing diagrams provided. Refer to STEP 2 for appropriate plumbing diagram.

## MODULAR WING PLATE & ATTACHMENT HARDWARE

**1. Side link arms installation**

Remove the 4 stock studs that hold the upper gear case to the gimbal housing. Apply red loctite to the threads of the longer supplied 7/16 studs and install into the same holes as the old style studs. On the fine thread side of newly installed studs, apply anti-seize. Slide the side link arms over the studs. Thread onto the studs the locking nuts with washers. **DO NOT TIGHTEN THE SIDE ARMS AT THIS TIME.**

**2. Rear load cap installation**

Remove the 2 upper bolts of the outdrive end cap. Apply red loctite to the 3/8 bolts. Slide bolts with washers into the Mayfair rear load cap. On the back side of the end, slide the spacers onto the bolts. Install the Mayfair rear load cap into the outdrive end cap. Make sure the spacers are sitting properly into the outdrive end cap. **DO NOT TIGHTEN THE BOLTS AT THIS TIME.**

**3. Side link arms to rear load cap installation**

Apply red loctite to the (4) 5/16 bolts. Install the bolts thru the side of side link arms to the rear load cap. **DO NOT TIGHTEN THE BOLTS AT THIS TIME.**

**4. Bolt torque specifications**

With all components attached. Torque the 7/16 nuts to 40 ft. lbs.. Now torque the 3/8 bolts to 30 ft. lbs. and the 5/16 bolts to 25 ft. lbs..

**General**

Detailed instructions for the installation of the Mayfair Modular Wing Plate are supplied inside the kit 137-9443.

## MAYFAIR STERNDRIVE STEERING CYLINDERS

**1. Attaching the clevis to steering end cap or wing plate**

Install steering cylinders to the Mayfair modular wing plate with provided 1/2 bolt, washers and nuts. Extend steering cylinder to 1/2 of the cylinders allowable stroke so that the hydraulic inlet/outlet ports are facing upward and so that the transom mounting bracket is horizontal to the transom assembly. Position the stern drive gear housing so that it is straight ahead, fore and, aft and trim the out drive to its normal operating position. This can be achieved by positioning or aligning the propeller shaft parallel to the bottom of the boat.



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## 2. Drilling transom for bracket

Next hold the steering cylinder mounting bracket against the transom of the boat maintaining a horizontal parallel mounting plane to the crankshaft centerline. At this point use the transom mounting plate and drilling template to identify and mark the location of the mounting holes that will be drilled in the next step. Refer to the drilling template for approximate distances in inches with the stroke of cylinder being installed. It may be helpful to use masking tape to reference the transom mounting plate location. A certain amount of variance is tolerated when necessary. The steering cylinder mounting flange area on the transom must flat, level, and solid. Always confirm that this area is free of any internal deterioration or dry rot. Always check the inside of the transom to make sure the area is free of any obstructions and proceed to drill the appropriate mounting holes.

## 3. Installing the transom bracket

Make sure and use a proper sealing material (3M 5200 sealant) when fastening the steering cylinder bracket to the transom. Slide the supplied 3/8 bolts and washers thru the bracket. Slide bolts thru the transom. Apply sealing material to the supplied backing plate. Slide backing plate over the bolt, make sure plate sits flat against the transom. Install the nuts and washers on the bolts. Torque to 30/35 ft. lbs..

# BLEEDING AIR FROM POWER STEERING SYSTEM

## 1. Final inspection

Before filling the system with fluid check all hose connections for tightness and proper routing according to the plumbing diagrams referenced below:

Full Hydraulic, Single Bravo/Single Cylinder (assembly print drawing 137-9400 & 137-9403)

Full Hydraulic, Single Bravo/Dual Cylinder (assembly print drawing 137-9401 & 137-9404)

Full Hydraulic, Dual Bravo/Dual Cylinder (assembly print drawing 137-9402 & 137-9405)

## 2. Bleeding the system

Fill reservoir tank 3/4 full with GM power steering fluid or 529-71532 Swepco power steering fluid. **IMPORTANT:** Keep reservoir tank at least half full during the bleeding process to prevent air being reintroduced into the system.

Without starting the engine, begin turning the steering wheel back and forth, make sure to bottom out steering rams in each direction. Keep an eye on the fluid to insure the level remains high enough not to induce air into the system. Continue this procedure till reservoir fluid maintains 3/4 full.

Now, turn the steering wheel till the starboard side steering ram is fully extended. Loosen the hose in the starboard ram that is closet to the transom bracket. Now begin turning the steering wheel the other direction. When the only fluid is flowing out, no air, tighten hose. For dual ram applications start with port side first, then do starboard.

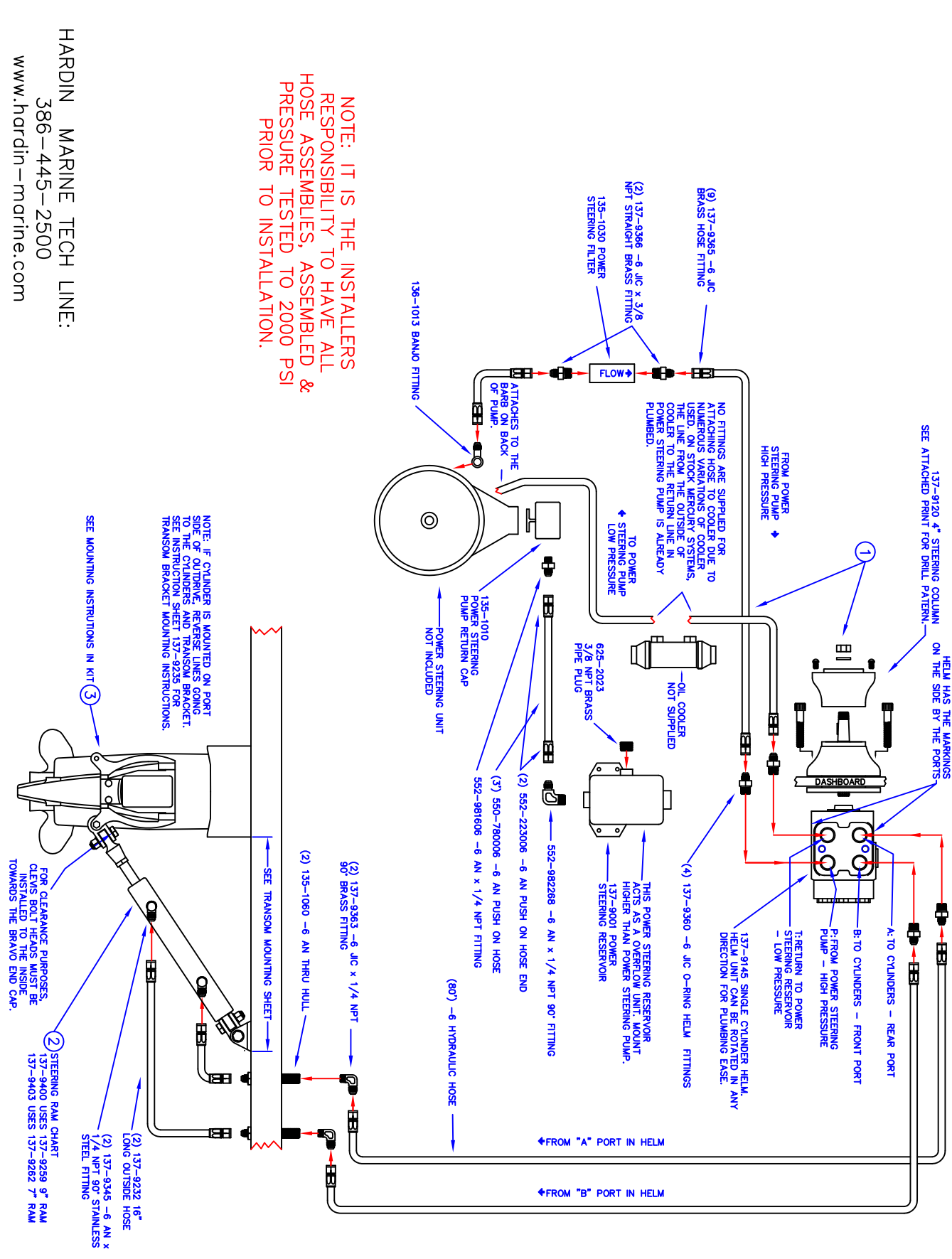
When all of the air is out of the system. Start the engine and test steering at idle by turning wheel lock to lock. Now, go behind the boat and manually try to move the sterndrive back and forth. Out drive should be tight. If loose, start engine and keep turning lock to lock.

# HARDIN MARINE

PART NUMBER: 137-9400 & 137-9403 (REVISED 07/13/12)

DESCRIPTION:  
MAYFAIR FULL HYDRAULIC STEERING KIT FOR SINGLE BRAVO/ SINGLE CYLINDERS

| ITEM | QTY. | PART NO.  | DESCRIPTION                    |
|------|------|-----------|--------------------------------|
| 1    | 1    | 137-9150  | SINGLE CYLINDER INSIDE KIT     |
| 2    | 1    | SEE BELOW | COMPLETE STEERING CYLINDER KIT |
| 3    | 1    | 137-9443  | BRAVO END CAP KIT              |



HARDIN MARINE TECH LINE:

386-445-2500

www.hardin-marine.com

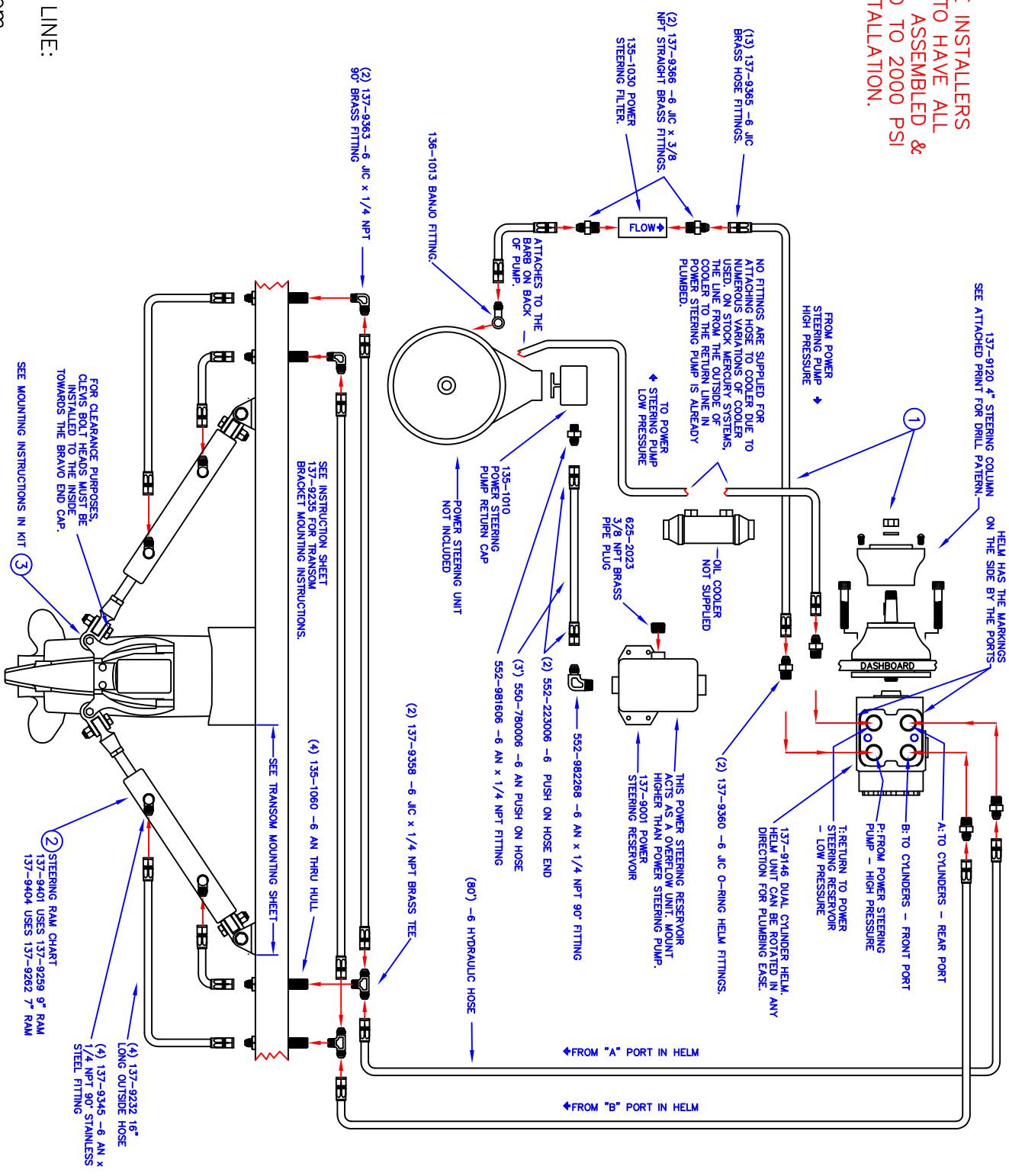
# HARDIN MARINE

PART NUMBER: 137-9401 & 137-9404 (REVISED 07/13/12)

DESCRIPTION:  
MAYFAIR FULL HYDRAULIC STEERING KIT FOR SINGLE BRAVO/ DUAL CYLINDERS

| ITEM | QTY. | PART NO.  | DESCRIPTION                    |
|------|------|-----------|--------------------------------|
| 1    | 1    | 137-9151  | DUAL CYLINDER INSIDE KIT       |
| 2    | 2    | SEE BELOW | COMPLETE STEERING CYLINDER KIT |
| 3    | 1    | 137-9443  | BRAVO END CAP KIT              |

**NOTE: IT IS THE INSTALLERS RESPONSIBILITY TO HAVE ALL HOSE ASSEMBLIES, ASSEMBLED & PRESSURE TESTED TO 2000 PSI PRIOR TO INSTALLATION.**



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# HARDIN MARINE

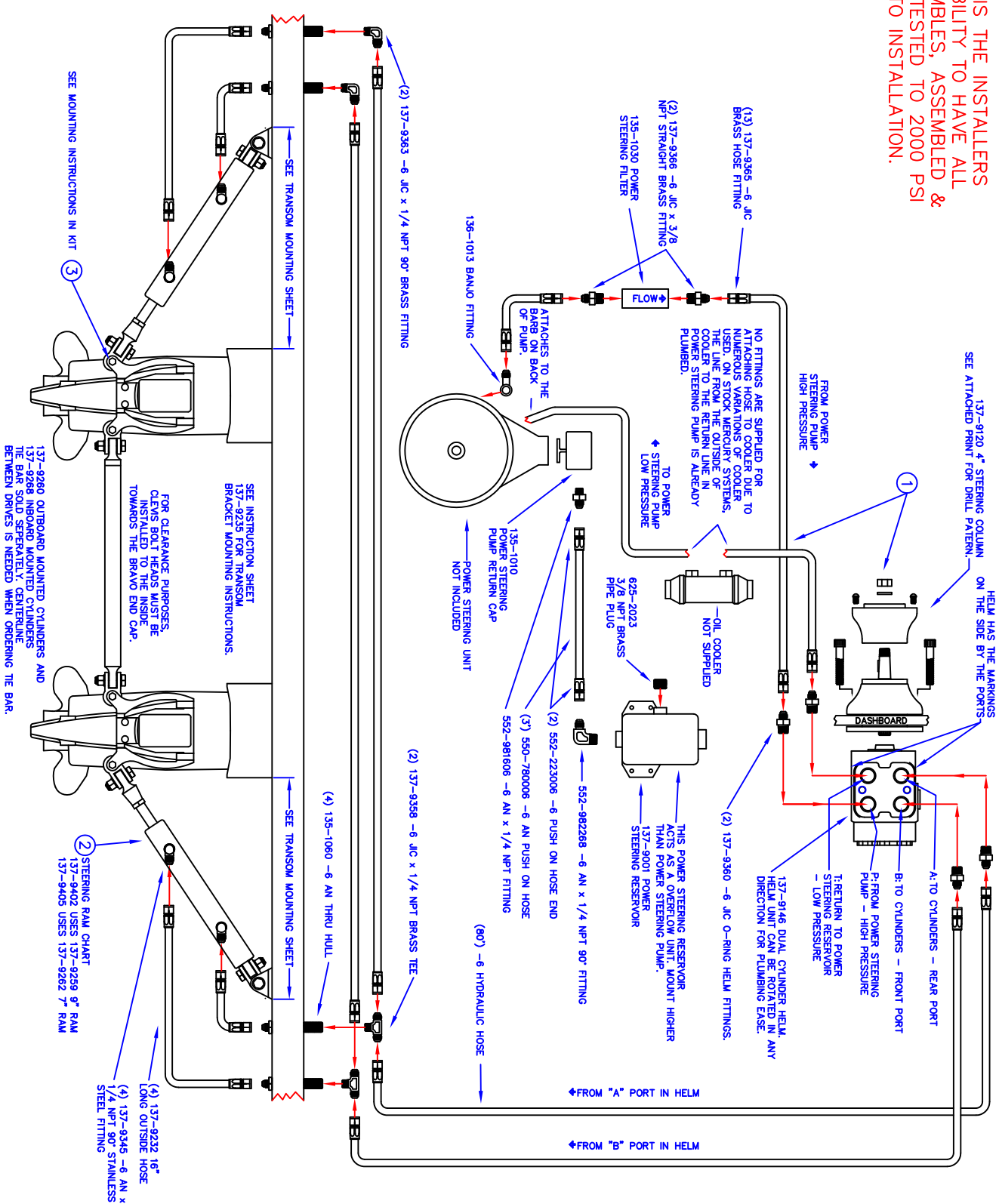
PART NUMBER: 137-9402 & 137-9405 (REVISED 07/13/12)

DESCRIPTION: MAYFAIR FULL HYDRAULIC STEERING KIT FOR DUAL BRAVO/ DUAL CYLINDERS

| ITEM | QTY. | PART NO.  | DESCRIPTION                         |
|------|------|-----------|-------------------------------------|
| 1    | 1    | 137-9151  | DUAL BRAVO/DUAL CYLINDER INSIDE KIT |
| 2    | 2    | SEE BELOW | COMPLETE STEERING CYLINDER KIT      |
| 3    | 2    | 137-9443  | BRAVO END CAP KIT                   |

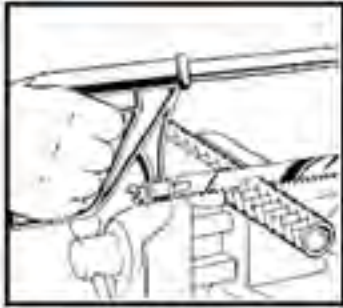
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**NOTE: IT IS THE INSTALLERS RESPONSIBILITY TO HAVE ALL HOSE ASSEMBLES, ASSEMBLED & PRESSURE TESTED TO 2000 PSI PRIOR TO INSTALLATION.**





# HOSE & FITTING ASSEMBLY INSTRUCTIONS



## Step 1

Cut hose square with fine-tooth hacksaw or cut-off wheel. Clean hose bore.



## Step 2

Put socket in vise.

Screw hose counterclockwise into socket until it bottoms.

When assembling long lengths of hose, it may be preferred to put hose in vise just tight enough to prevent from turning, and screw socket onto the hose counterclockwise until it bottoms.

Back off 1/4 turn.



## Step 3

SWIVEL ENDS: Tighten nipple and nut on assembly tool.

Lubricate nipple and inside of hose liberally. Use heavy oil or Aeroquip 222070 hose assembly lube.



## Step 4

MALE ENDS: Screw nipple clockwise into socket and hose. Leave a 1/32" to 1/16" clearance between nipple hex and socket.

SWIVEL ENDS: Screw nipple clockwise into socket and hose. Leave 1/32" to 1/16" clearance between nut and socket.

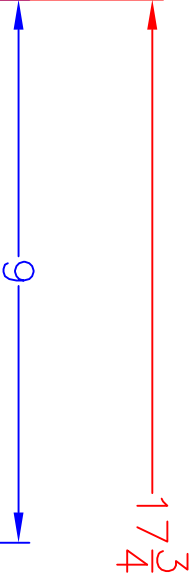
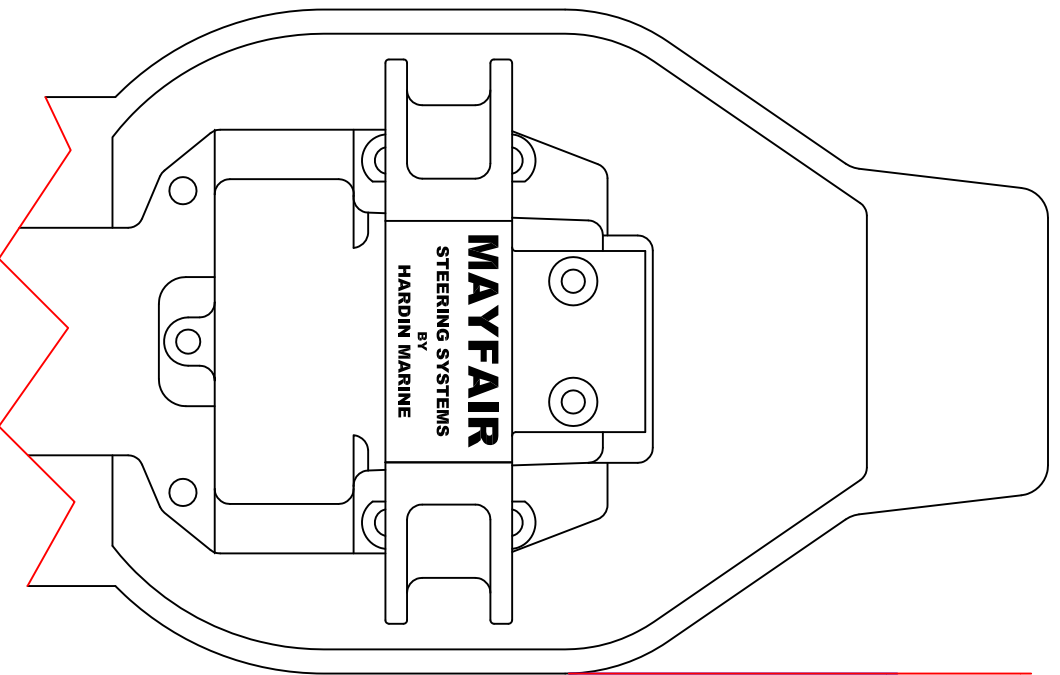
**Note: It is the installers responsibility to have all hose assemblies pressure tested to 2000 psi prior to installation.**

# HARDIN MARINE

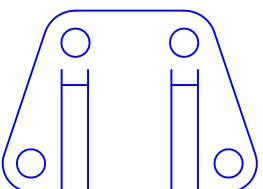
PART NUMBER: TRANSOM BRACKET

DESCRIPTION:  
MAYFAIR MODULAR WING PLATE TRANSOM BRACKET MOUNTING  
LOCATION

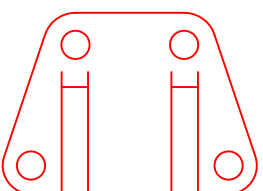
NOTE:  
THIS PRINT IS TO SHOW THE DISTANCE THAT EACH TRANSOM BRACKET IS TO BE MOUNTED. USE THE TRANSOM BRACKET DRILL TEMPLATE & INSTALLATION INSTRUCTION SHEET THAT IS SUPPLIED IN THE STEERING RAM KIT FOR MOUNTING INSTRUCTIONS.



9



TRANSOM BRACKET  
LOCATION FOR  
1.37-9268 7"  
STROKE RAM



TRANSOM BRACKET  
LOCATION FOR  
1.37-9259 9"  
STROKE RAM



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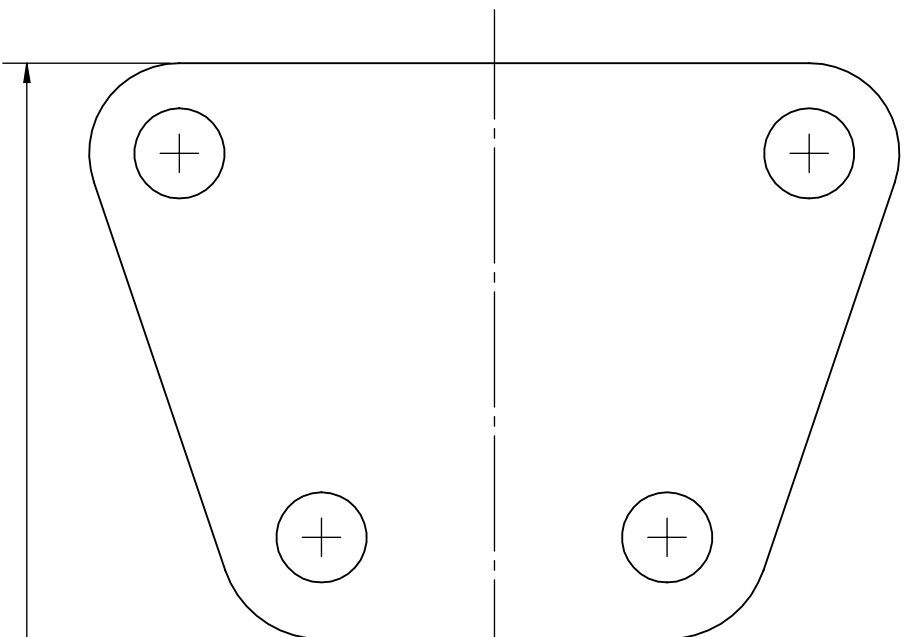
PART NO.  
137-92335

TITLE: 137-9235 TRANSOM BRACKET DRILLING AND  
INSTALLATION INSTRUCTIONS

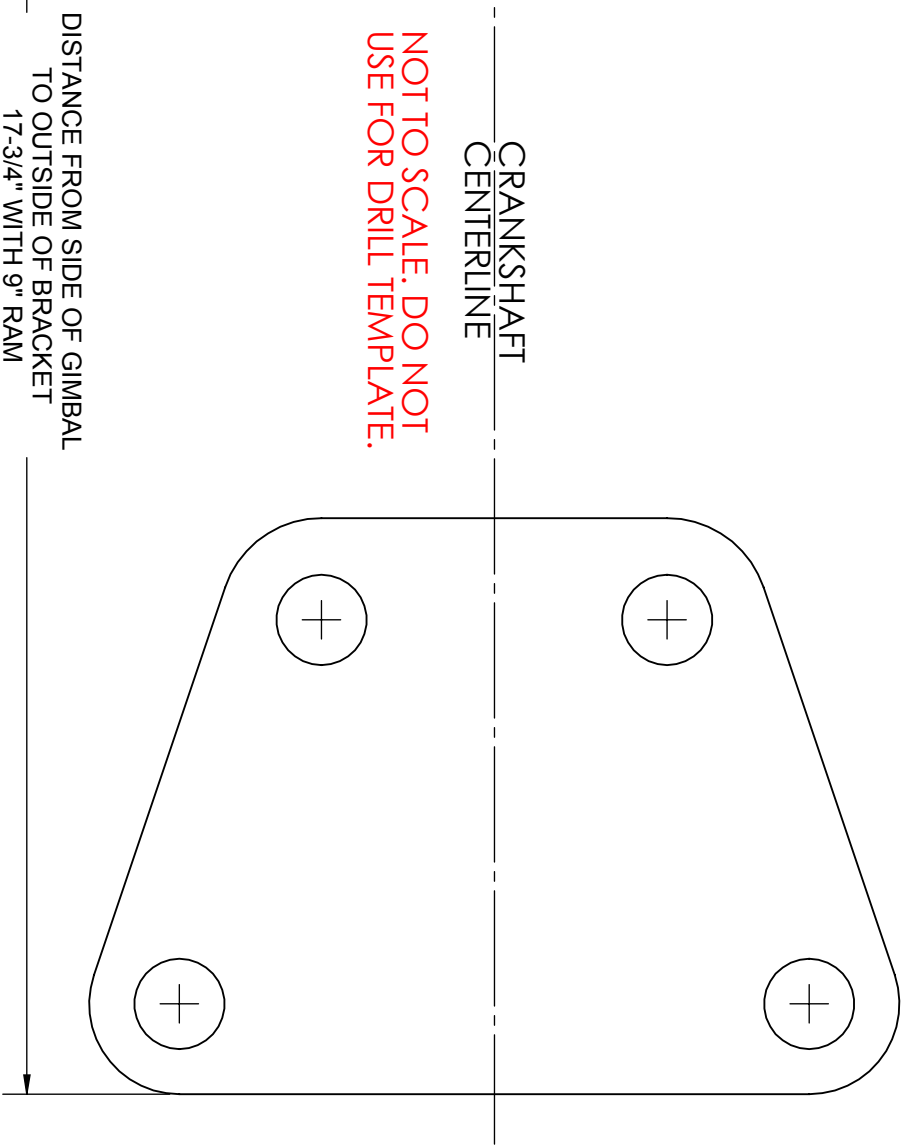
[www.hardin-marine.com](http://www.hardin-marine.com)

TRANSOM BRACKET INSTALLATION INSTRUCTIONS:  
1) MOCK UP THE STEERING ASSEMBLY TO INSURE BRACKET IS IN THE CORRECT SPOT. MAKE SURE IT IS ON CRANKSHAFT CENTERLINE. TAPE TEMPLATE TO THE TRANSOM.  
2) USING THE 137-9236 BACKING PLATE AS THE DRILL TEMPLATE, CENTER MARK THE 4 MOUNTING HOLES. DRILL (4) 3/32 HOLES.  
3) MOUNT CYLINDER ASSEMBLY TO THE TRANSOM WITH THE SUPPLIED 3/8 BOLTS, WASHER AND NUTS. USE THE PROVIDED BACKING PLATE ON THE INSIDE OF THE HULL. APPLY ANTI-SIZE TO ALL THE THREADS. TORQUE BOLTS TO 30-35 FT LBS.

PORT SIDE



STARBOARD SIDE



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