



BERKELEY PUMP COMPANY

OUTLINE DIMENSIONS

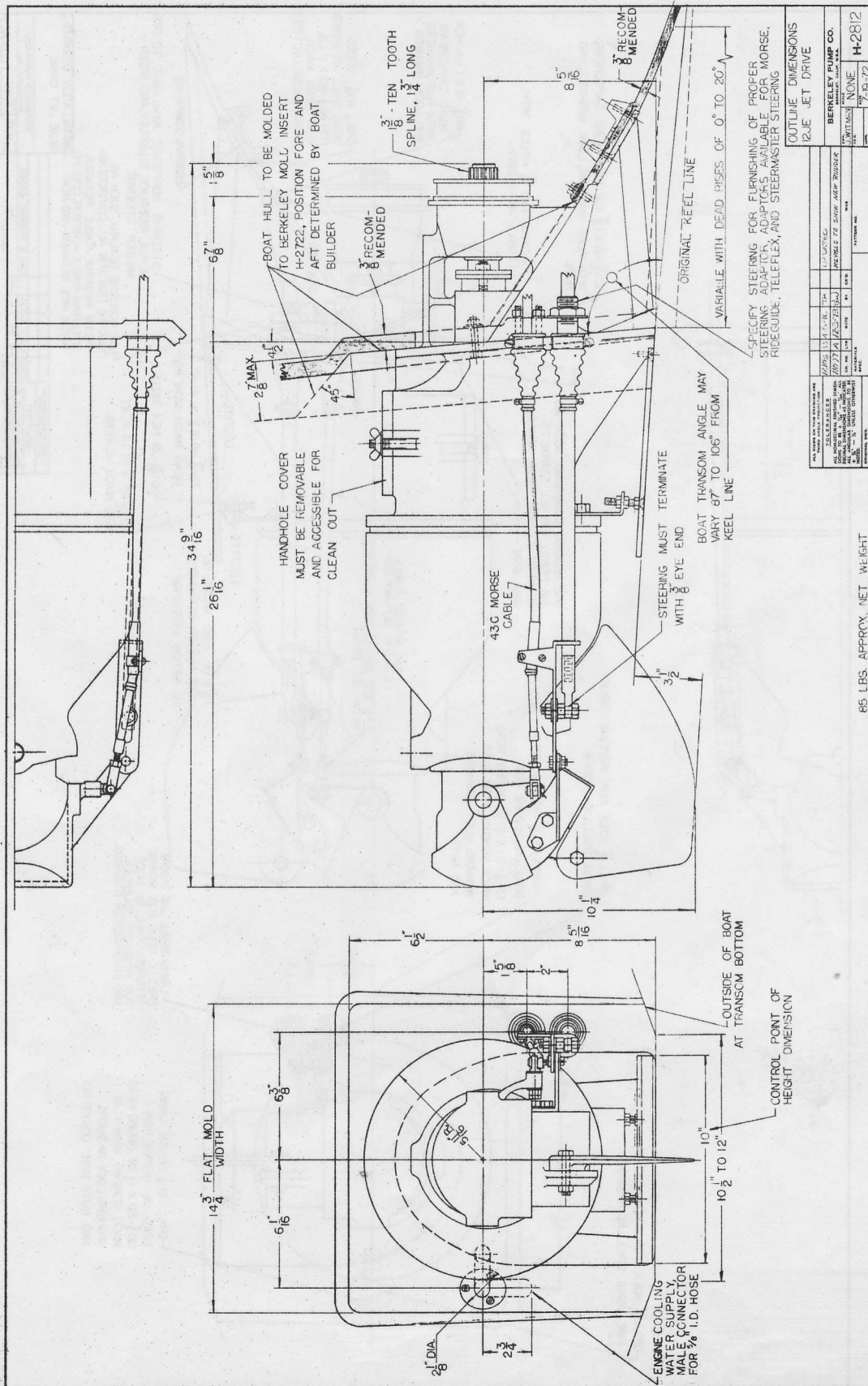
12JE JET-DRIVE

INSTALLATION 203  
SECTION 6 PAGE 6.07  
DATE 9-16-76

SUPERSEDES

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Dated 1-2-74



REVISIONS		DATE		BY		CHECKED	
1	ISSUE	7-19-72					

APPROVED FOR THE PROJECT	DATE	BY	CHECKED

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85 LBS. APPROX. NET WEIGHT

OUTLINE DIMENSIONS		12JE JET DRIVE	
DATE	BY	DATE	BY
7-19-72			

BERKELEY PUMP CO.		H-2812	
DATE	BY	DATE	BY



## INSTALLATION 12JE MOLD INSERT H-2722

SUPERSEDES

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The current 12JE male insert was designed to be set on a 2 degree up at the transom wedge of "Fast Cast" poured into the mold. The insert has a 2 degree angle down at the front offsetting the 2 degrees of the wedge. The installed jet center line will still be the 3.7 degrees down as are the 12JB and 12JC standard installations. This method was adapted for several reasons. Fitting the mold insert to the boat mold bottom and transom proved not to be practical because most of the installations were raised higher in the front than was intended and did not have the proper fairing forward. Also in order to reduce the edge drag of the 10 inch wide cavitation plate it was necessary to raise the installation so that the boat has at least a 10 inch wide flat to match and be flush with the 10 inch wide afterplane.

It is strongly recommended that the 12JE mold insert be permanently glassed into the boat mold. This is the best way the 12JE can serve the boat builder as setup time can be saved for each boat and hold the quality of all future boats. After the first boat comes out of the mold and is tested, consider making it a permanent part of the mold.

### Step No. 1 (Preparation of Boat Mold)

Normal mold waxing is required in the area where the wedge is to be poured. "Fast Cast" molding resin is recommended to be used to form the wedge. It has an extremely fast cure, four minute pot life, but has good strength, release qualities and low temperature exotherm.

Prop up the front of the mold until a gravitational level shows 2 degrees when placed on the keel center line about two feet in front of the transom. Measure out 3/4 of a gallon of water and start pouring it into the mold. Stop when the width of the water at the transom is between 10½ and 12 inches. This will show the general shape of the wedge. However, when the "Fast Cast" is poured, it will not run as far forward as did the water because of its surface tension. This is ideal because when the wedge is removed from the mold it will not be paper thin at the edges and may be handled with reasonable care without breaking at the edges. If the mold is not level from side to side, it will be evident now and it can be shimmed up on the low side to made the wedge look symmetrical from side to side. The appearance of the wedge is more important than locating it in the exact center of the boat. Here again decide by appearance how wide the water should be at the transom between the 10½ to 12 inches mentioned before. In most cases, the 3/4 gallon of water will be enough but if it is not, place something heavier than water to act as a filler on the keel line near the transom. It may protrude from the water but make sure that the mold insert will straddle it. Remove the water and dry the mold.

### Step No. 2 (Pouring the "Fast Cast" Wedge)

Remember that the pot life of the "Fast Cast" is only four minutes and this includes mixing time. The "Fast Cast" comes in two equal parts, resin and hardener. Pour the hardener into the resin and begin mixing at once. Don't bother getting the last drop of hardener out of the can. When the streaks are gone pour it into the mold up and down the center line helping it to run out. Stop when the width at the transom is approximately the same as was the water. Stand back and admire your wedge for ten minutes.

### Step No. 3 (Trimming the Mold Insert to Fit the Mold)

After the wedge has gone thru its initial set, place the mold insert on top of the wedge with the front propped up so that the bottom of the insert is parallel to the top of the wedge. The rear flange of the mold insert will have to be trimmed to match both the transom and the boat bottom. Do this in several steps because as the rear is trimmed the insert will move towards the transom and the bottom trim will become wider. A good way to mark the transom flange is to cover it with masking tape and laying a pencil on a parallel block of wood against the transom and bottom of the boat. The pencil should be perpendicular to the boat center line when marking against the transom and parallel to the center line when against the boat bottom. When marking the bottom of the transom flange, make sure the block is thinner than the prop under the front of the insert. Repeat the above process until a good fit is obtained at the transom and boat bottom with the insert fully resting on the top of the wedge.

### Step No. 4 (Attaching the Mold Insert to the Wedge)

As the "Fast Cast" wedge cures, it leaves an oily film on its surface and because of this it would be best to give it an overnight cure. However, in most of the installations the inserts have been joined to the wedges in a couple of hours.

Scribe a line on the wedge where the mold insert touches it so that it may be permanently joined to the insert on the bench after they are taken out of the mold. Tap the wedge with a rubber mallet while shoving the wedge forward with the palm of your hand. This will normally release it from the boat mold so that it may be taken out and placed on a flat bench. Remove the oil film with sandpaper. Place a bead of body filler on the inside of the scribed line on the wedge. Place the insert on top of the wedge and press it into the body filler. At this time, make a 1/4 inch radius fillet between the wedge and the insert with the body putty. This fillet should die out at the transom starting six inches forward of the transom. Additional gobs of body putty filleting the wedge and the insert on the inside applied from the rear will help attach the two together.





**INSTALLATION  
12JE MOLD INSERT  
H-2722**

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SECTION 6 PAGE 6.02
DATE 12-11-74
<b>SUPERSEDES</b>
<b>NEW</b>

**Step No. 5 (Attaching Insert and Wedge to the Mold)**

Bolting thru the transom with a single bolt is a good method. Most of the boat manufacturers are willing to do this because the hole would be in a cutout area regardless of the type of boat coming out of the mold. If this can be done, glass a block of wood behind the insert at the intersection of the intake ramp with the transom. This should be ground off so that it just touches the transom of the mold. This allows the bolt to be tightened without dislocating the mold insert. The drilled hole thru the insert and boat mold should be at least 1/8 inch bigger than the bolt size. This allows air to escape from the cavity between the insert and the wedge when the boat is being layed up.

If desired, the cutout line on the insert may be cut out before the boat is layed up and the boat cutout made with a knife during the layup process. This also allows air to escape. If this is done, a carriage bolt should be used in the block of wood behind the cutout.

If you do not wish to drill a hole in your boat mold, the insert may be temporarily glued to the boat mold by using dabs of silicone seal between the wedge and boat bottom. However, it will still be necessary to drill at least one hole in the cutout area of the insert to allow air escapement.

With silicone seal, modeling clay or clear tape make a fillet around the entire insert and wedge. The smoother transition to the boat mold the better.

Wax the insert and layup the boat in a conventional manner. A 3/8 inch thick section of glass is recommended over the entire insert. Do not use plywood backing in the transom area of the insert.

It is suggested that after the first boat is removed from the mold an impression be taken in fiberglass off the boat in the intake area covering all of the mold insert and wedge and plus a couple of inches of the original boat bottom and transom. This will serve as a more permanent mold insert for the future. It may be permanently glassed in the boat mold or used as a portable insert where the mold will be used for boat other than the 12JE Jet-Drive.

