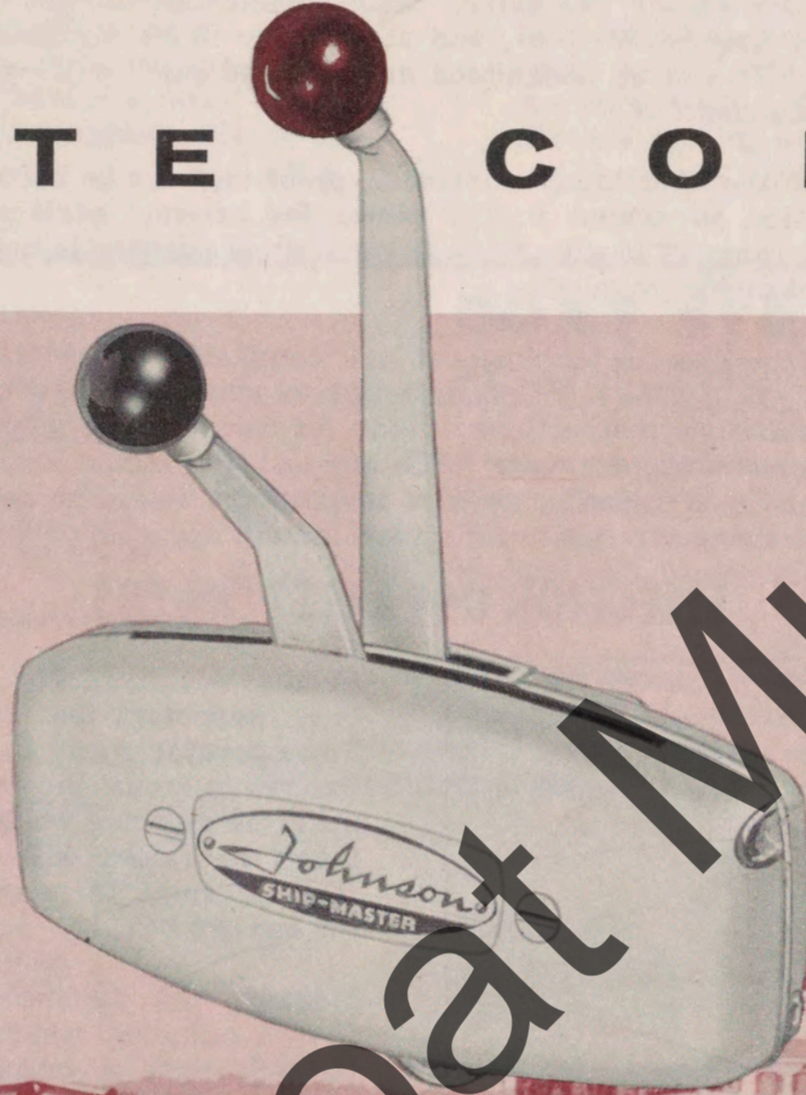


*Johnson*

**SHIP-MASTER**

**R E M O T E C O N T R O L**



Antique Boat Museum

**INSTALLATION and  
OPERATING INSTRUCTIONS**



## FOREWORD

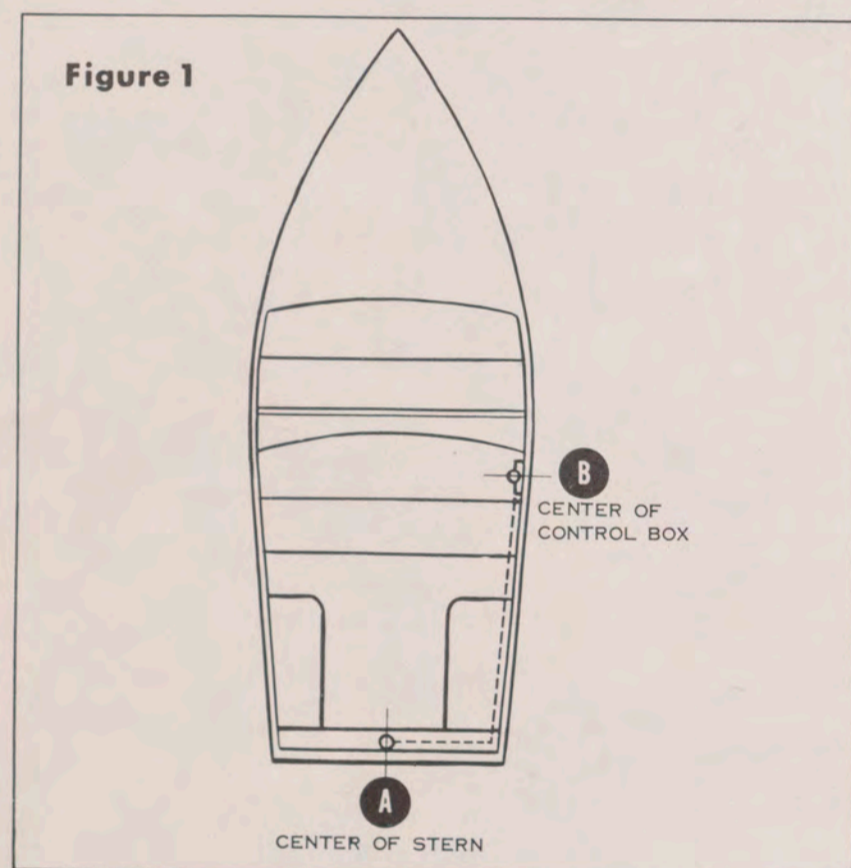
To the owner of a runabout or cruiser . . . . .

Remote control will increase your enjoyment of your runabout or cruiser by making operation both easier and safer. With remote control you can operate your motor from any seat in the boat, and always face in the direction of boat travel. Remote control kits can be assembled and attached quickly to your boat. Operation is smooth and positive.

Remote controls are completely corrosion-proof and can be used in fresh or salt water. Lubrication is sealed in the cables for lifetime service. These cables come in a wide range of lengths to fit any operating position in any size boat suitable for outboard motor propulsion.

Installation instructions in this manual are complete and concise. If you follow them carefully, you should have no difficulty in installing the remote control. In addition to installation instructions, plans for recommended boat modifications and dimensioned assembly drawings for single and dual motor installation (for both port and starboard) are included. Before installation, we recommend that you study the assembly drawing for your particular installation. See Figures 22 thru 29.

### SELECTION OF CABLE LENGTHS



Cables are available in a variety of lengths. It is very important that the correct length be selected. The operator must first select the position where he desires to mount the control box. It should be located near the steering wheel. The choice of port or starboard operation will not affect the required cable lengths, since there are cable outlets on both ends of the control box.

Measure the distance from center of boat at stern (A) to point at which control box is to be mounted (B). Be sure to measure along dotted line as illustrated in Figure 1. Then select the required cable lengths from the table below. Throttle and gear shift cable will be the same length for a single motor installation. For twin motor installation two cables will be of one length, two will be two feet longer.

#### TWIN MOTOR

DISTANCE A-B Measured along broken line	CABLE LENGTH REQUIRED (In feet)			
	Quantity	Length	Quantity	Length
2 to 3 feet	2	4	2	6
3 to 4 feet	2	5	2	7
4 to 5 feet	2	6	2	8
5 to 6 feet	2	7	2	9
6 to 7 feet	2	8	2	10
7 to 8 feet	2	9	2	11
8 to 9 feet	2	10	2	12
9 to 10 feet	2	11	2	13
10 to 11 feet	2	12	2	14
11 to 12 feet	2	13	2	15
12 to 13 feet	2	14	2	16
13 to 14 feet	2	15	2	17
14 to 15 feet	2	16	2	18
15 to 16 feet	2	17	2	19
16 to 17 feet	2	18	2	20

NOTE: Cable lengths required are longer than distance A-B to allow enough slack in the cables to permit turning of the motors without binding. See page 5 for instructions on clamping cables to boat.

#### SINGLE MOTOR

DISTANCE A-B Measured along broken line	CABLE LENGTH REQUIRED (In feet)
2 to 3 feet	5
3 to 4 feet	6
4 to 5 feet	7
5 to 6 feet	8
6 to 7 feet	9
7 to 8 feet	10
8 to 9 feet	11
9 to 10 feet	12
10 to 11 feet	13
11 to 12 feet	14
12 to 13 feet	15
13 to 14 feet	16
14 to 15 feet	17
15 to 16 feet	18
16 to 17 feet	19
17 to 18 feet	20



## PREPARING YOUR BOAT

The Outboard Boating Club Boat Specifications illustrated here are recommended by our engineering department. When working on your boat, be sure to use good, standard boat-building procedures. Always use corrosion-proof hardware and marine-treated wood. Nuts and bolts are preferable to wood screws wherever much stress may be expected. Never use nails.

#### NOTE

We recommend that you purchase a Johnson transom plate, complete with remote control clamps, from your dealer and attach it to the boat stern before mounting motor. This transom plate will protect the boat transom, provide a firm mounting for your motor and the remote control cables.

### BOAT STANDARDS RECOMMENDED PRACTICE

A 20" transom height (Dimension C) should be used on all boats having an O.B.C. rating of 30 H.P. and over. If a 15" transom is used, there should be a self draining well having a 1" diameter drain hole in each end of the well.

Add 3" to Dimension B when it is likely a passenger may get his arm caught between the outboard motor and deck if motor is suddenly tilted up due to striking submerged object.

### TRANSOM DIMENSIONS

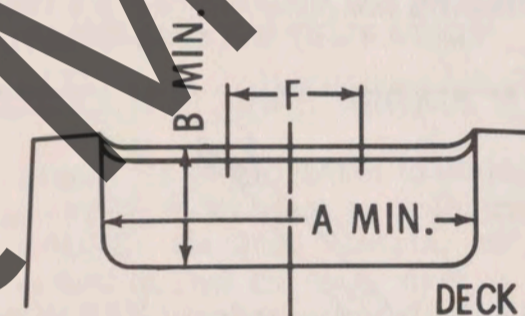
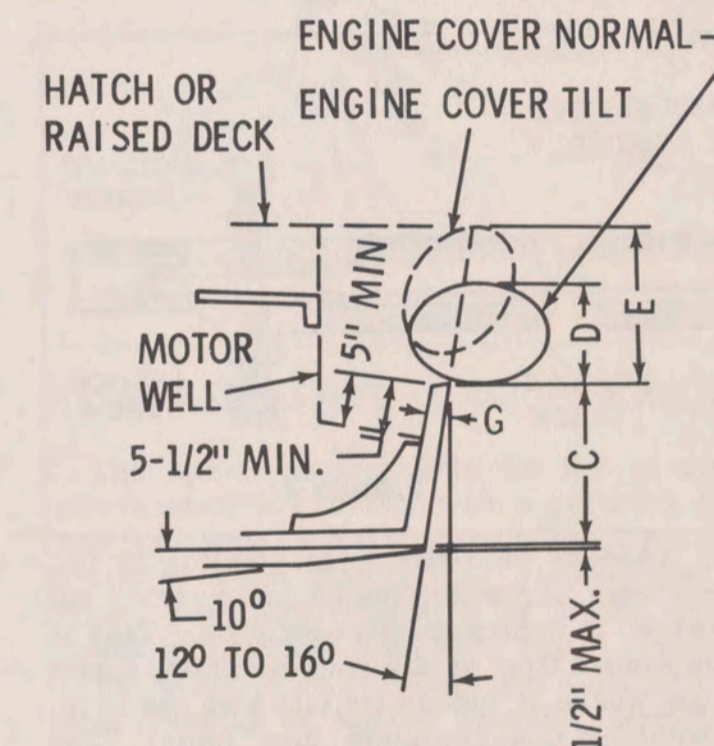
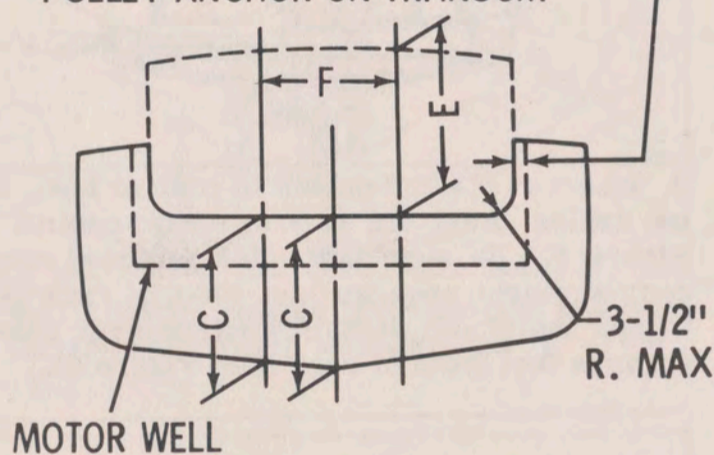


Figure 2

ALLOW 2" MINIMUM FOR STEERING  
PULLEY ANCHOR ON TRANSOM



H.P. PER MOTOR	NO. OF MOTORS	A	B	C AT MOTOR CENTERLINE	D CLEAR	E TILT	F	G	
								MIN.	MAX.
12 H.P. OR LESS	1 2	20 42	21	15 OR 20	17	20	- 22	1-3/8	1-3/4
12 H.P. THRU 40 H.P.	1 2	26 48	21	15 OR 20	21	29	- 22	1-3/8	1-3/4
OVER 40 H.P.	1 2	34 60	28	15 OR 20	20-1/2	32-1/2	- 26	1-1/2	2-1/4

APPROVED

OMMA STANDARDS COMMITTEE  
OBMA STANDARDS COMMITTEE



## ASSEMBLY INSTRUCTIONS

Your remote control kit comes with remote control box, cables, and fittings separate. Cables must first be installed in control box, control box fastened to desired position on boat, cables secured to boat with clamps provided in kit and fittings attached to cables at motor end. It is important that the cable fittings at the motor end be attached last since the relation of the length of the control wires and the casings may change due to various curves made in the cables when securing them to the boat and motor.

### NOTE

On some of the smaller motors, an additional adapter kit must be assembled to the motor before attaching remote control. It is important that you give your dealer full information on your motor before purchasing remote control. Instructions are included with the adapter kit.

Proceed as follows:

### ANCHORING CONTROL WIRES

Secure anchoring of the control wire in its respective fitting is of great importance. It must be properly secured at both ends to guard against loosening and ultimately dislodging during operation of the unit. See Figure 3.

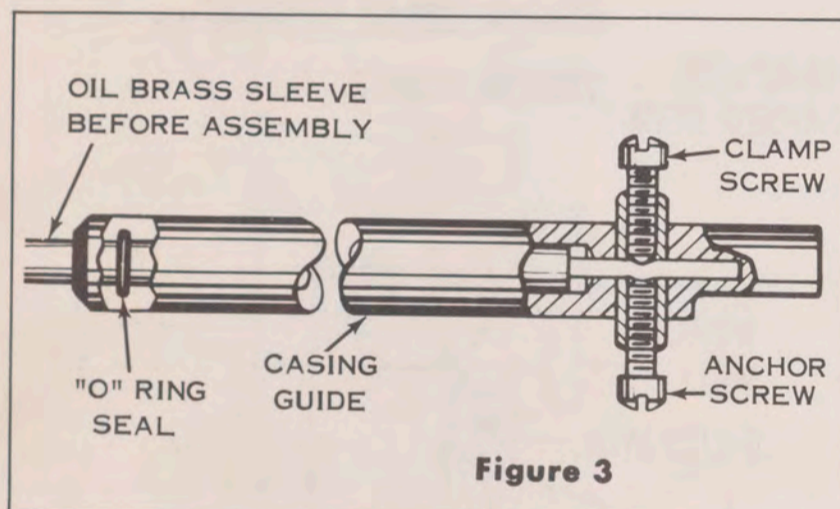


Figure 3

The control wire is held firmly in position by two screws, the clamp screw and the anchor screw - but must be "kinked" to insure positive location. This is easily accomplished first by drawing the clamp screw up to position where it makes contact with the wire; then by advancing one complete turn (only). The wire is then sufficiently "kinked" to locate its position in the fitting. This should be followed by drawing up tightly on the anchor screw to further secure.

### CAUTION

It is possible to completely shear off the wire, so be careful to advance the clamp screw only to the point of contact and then make just one complete turn to kink the wire without shearing it.

### ASSEMBLING CABLES TO CONTROL BOX

1. Disassemble control box and remove gear racks. Control box is held together with two screws at rear.
2. Insert control wire in gear rack, flush with end of gear rack. See Figure 4. Anchor control wire in gear rack as described under "Anchoring Control

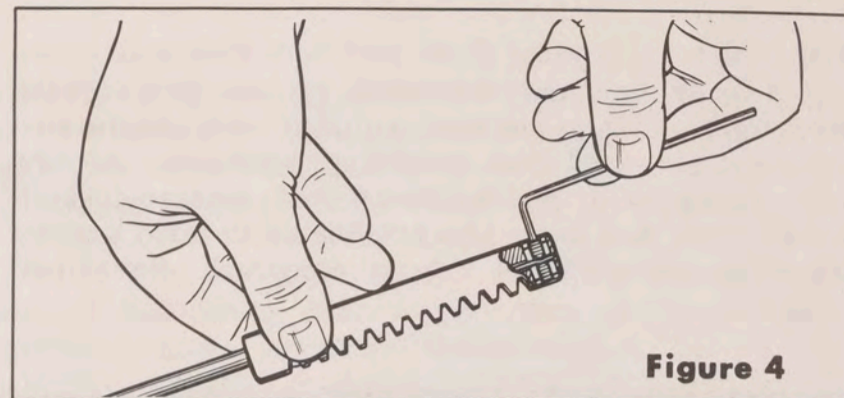


Figure 4

Wires." All gear racks are attached in this manner.

### IMPORTANT

If you are installing a dual control unit, determine which control levers the two-foot longer cables must be attached to before proceeding with steps 3, 4 and 5. See Assembly Drawings, pages 8 through 10. The two long cables will be the cables which attach to the motor farthest from the control box.

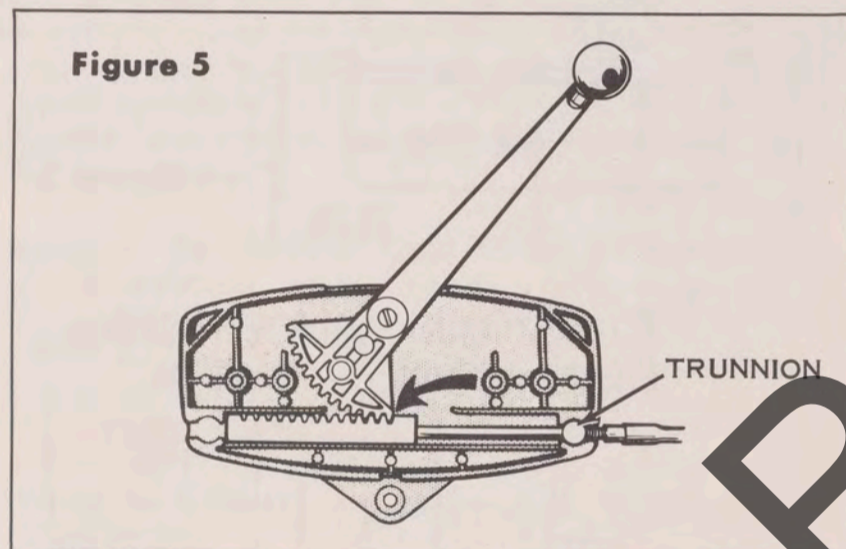


Figure 5

3. Insert racks and cables in control box. Trunnions on cables must fit in bosses on control box. See Figure 5. Be sure last tooth of speed control lever gear segment engages last tooth of rack (See Figure 5) and last tooth of shift control lever gear segment engages last tooth of rack (See Figure 6).

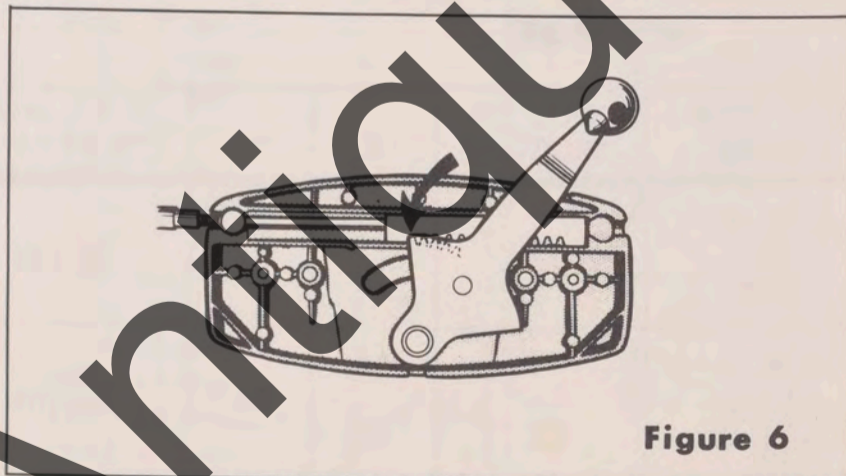


Figure 6

4. Spread lubricant provided with kit liberally on gear teeth, bottom and side walls of track and full length of gear rack travel. Avoid the use of a hard grease as it will ring or groove and leave the assembly dry.
5. Assemble control box and attach to boat with three wood screws provided with kit.

### ATTACHING CABLES TO BOAT

Clamp remote control cables securely to boat. Three 2-cable clamps are included with single remote control kit. Two 2-cable clamps and two 4-cable clamps are included with dual remote control kit; use the 4-cable clamps along boat sides, the 2-cable clamps at stern. It is important to position clamps nearest motors correctly. Enough slack must be left in cables between these clamps and attaching points on motors to permit turning of motor without binding. If the new transom plate with cable clamps is used, the cable length between this clamp and the attaching point on the motor should always be 37 inches. See the assembly drawing for your particular installation on pages 8, 9, and 10. We recommend that the distance of 37 inches (measured from cable trunnion) be marked off on the cable with tape or some other means. A loop should be formed in the cable nearest the side of the boat on which control box is mounted, between clamp and motor. NEVER CLAMP CABLES IN POSITION WHICH WILL CAUSE SHARP BEND TO BE FORMED IN THE CABLES. THIS WILL PREVENT SMOOTH OPERATION.

### ASSEMBLING SHIFT CONTROL AT MOTOR END

1. Attach BLACK bracket to starboard side of motor with screw, lockwasher and clip provided (see Figure 7). NOTE: On RDS Models, an additional bracket (enclosed in Tool Kit Bag) must be attached to motor, and BLACK bracket mounted on this bracket.

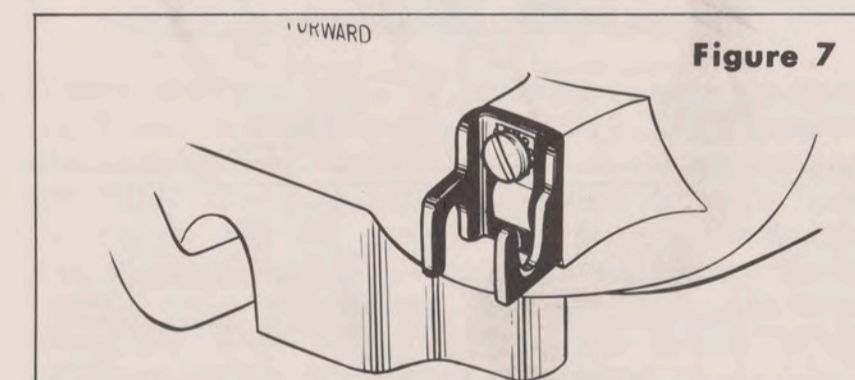


Figure 7

2. Insert shift control vertically in bracket and turn cable to horizontal position as indicated by arrow. See Figure 8.

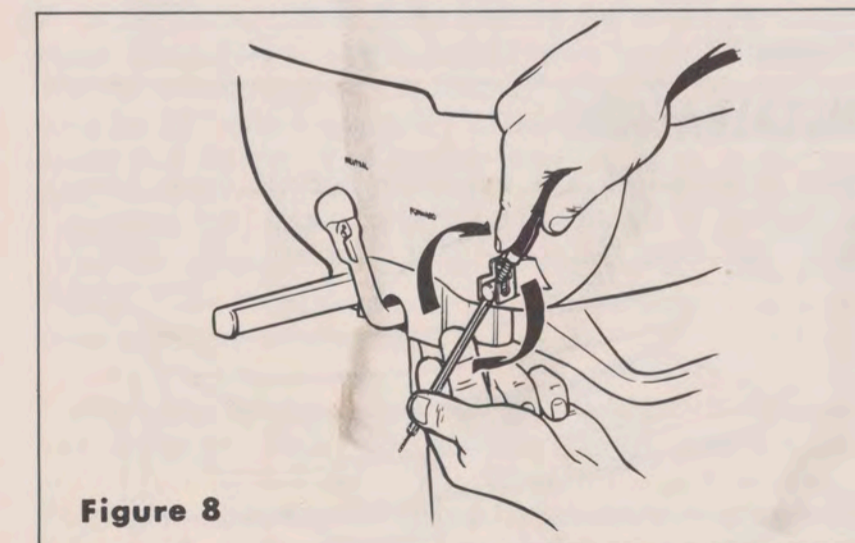


Figure 8

3. Place gear shift lever on control box in NEUTRAL position. Lubricate brass sleeve on flexible cable with oil and slide gear shift fitting on brass sleeve and control wire. Be sure that "O" ring is in place

in casing guide and control wire passes through small holes in cable clamp. See Figure 3. Near side of cable trunnion must be exactly 6-5/32 inches from center of knurled knob on gear shift fitting. See Figure 9. In order to avoid twisting cable, clamp and anchor screws must be parallel to trunnion on gear shift cable. Knurled knob on fitting must be toward outside of motor. Anchor fitting to wire as instructed under "Anchoring Control Wires."

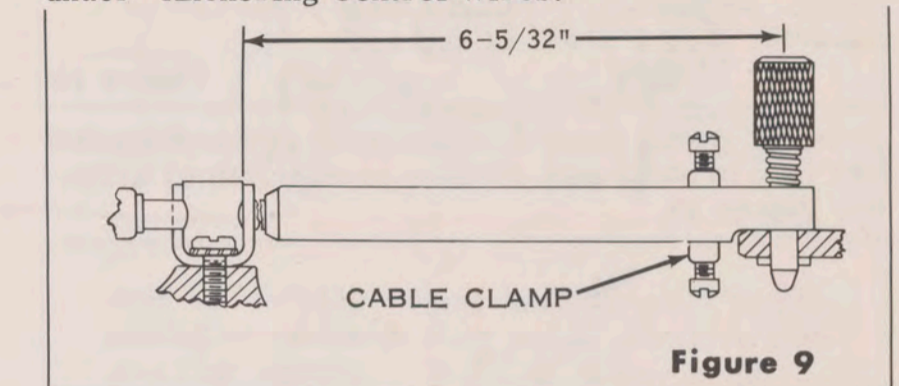


Figure 9

4. Attach gear shift fitting to shift control lever by pushing plug in against spring tension and turning to the right to lock. See Figure 10.

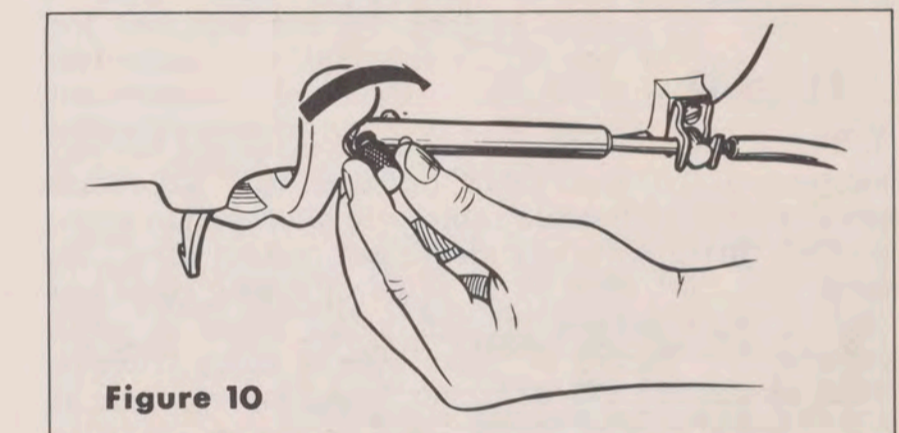


Figure 10

### ASSEMBLING SPEED CONTROL AT MOTOR END

1. The speed control grip on the steering handle (where used) is provided with a pressure plug to prevent "creeping" for operation without remote control. However, when making the remote control installation, this plug (indicated by arrow on Figure 11) should be removed for easier speed control. Loosen screw in speed control grip and slide grip off handle, being careful of spring tension. Remove plug and replace spring, grip and screw.

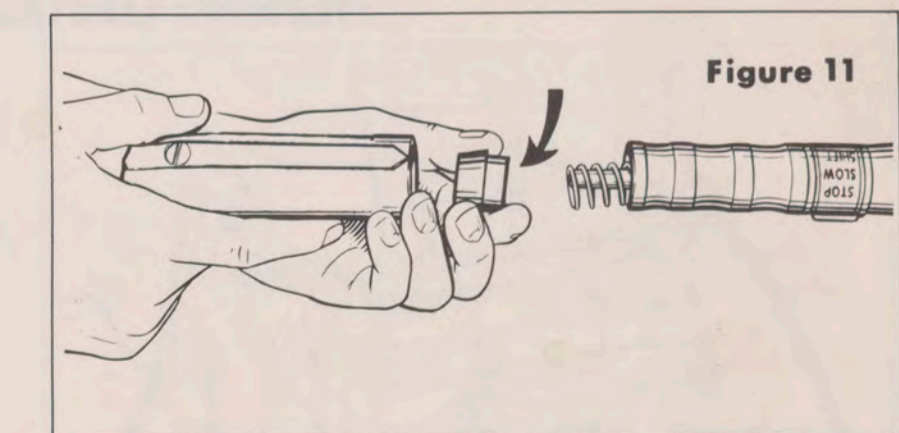


Figure 11

2. Attach the SILVER colored bracket to the port side of the motor on the boss provided, using the screw, lockwasher and clip provided. See Figure 12.

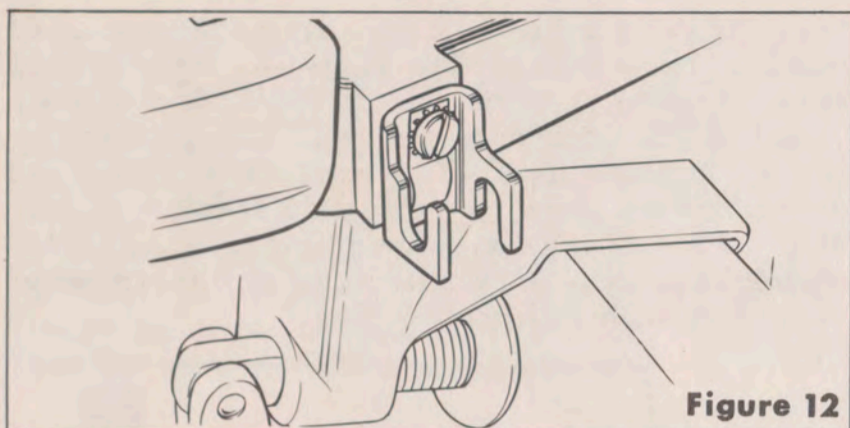


Figure 12

3. Insert speed control cable vertically into bracket and turn to horizontal position as indicated by arrow. See Figure 13.

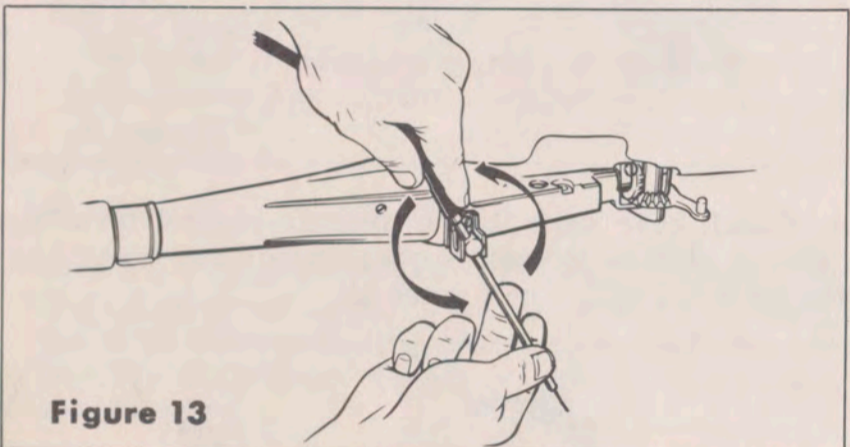


Figure 13

4. Place speed control lever on control box halfway between SLOW and FAST (straight up). Lubricate brass sleeve on flexible cable with oil and slide speed control fitting on brass sleeve and control wire. Be sure that "O" ring is in place in casing guide and control wire passes through small holes in cable clamp. See Figure 3. Near side of cable trunnion must be exactly 6-5/32 inches from center of hole at end of speed control fitting. See Figure 14. In order to avoid twisting the cable, clamp and anchor screws must be perpendicular to trunnion on speed control cable. Clip on speed control fitting must be toward outside of motor. Anchor fitting to wire as instructed under "Anchoring Control Wires."

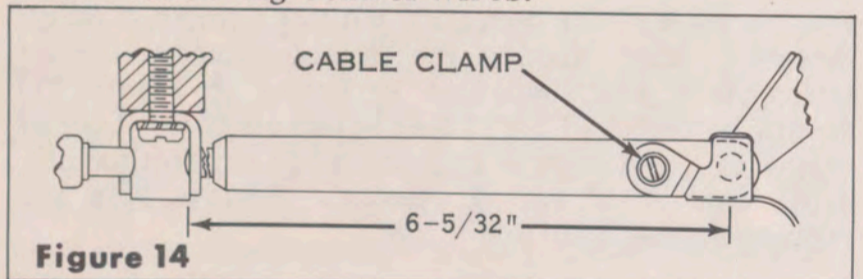


Figure 14

### STEERING CONTROL INSTALLATION

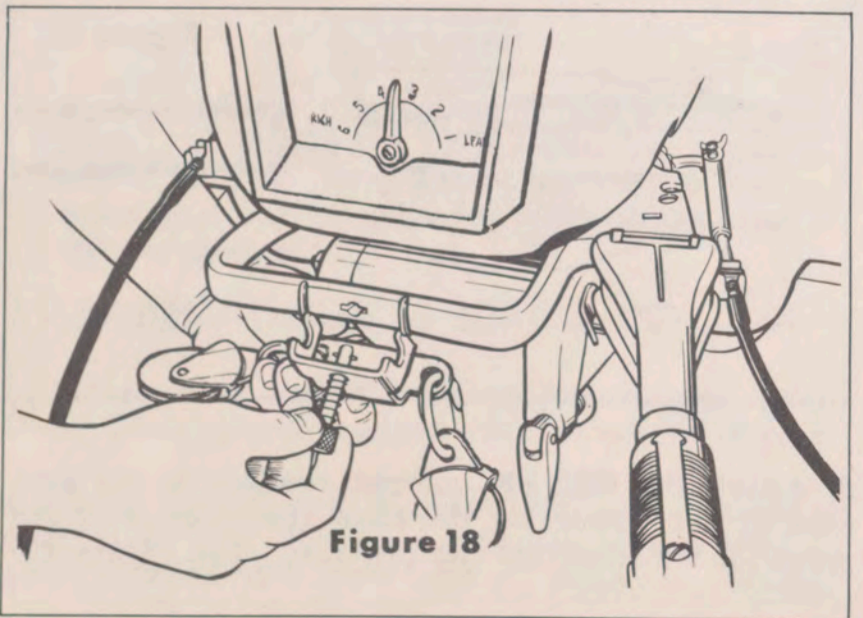


Figure 18

5. Attach speed control fitting by slipping over pin on remote control gear. Turn clip into position to lock. See Figure 15.

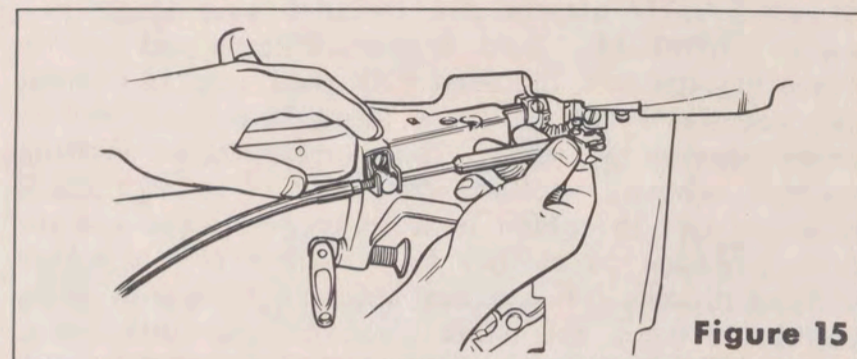


Figure 15

Try the control levers to make sure that they operate smoothly the correct controls on motor or motors. If not, check with assembly drawings in back of manual.

### ATTACHING METAL-CALS

Attach metal-cals as illustrated in Figure 16 for single installation, or in Figure 17 for dual installation. Before installing metal-cals, immerse in hot water for approximately 30 seconds, blot out surface moisture, remove small strip of cellophane to expose adhesive, then apply immediately to the clean, dry surface. Press firmly into position.

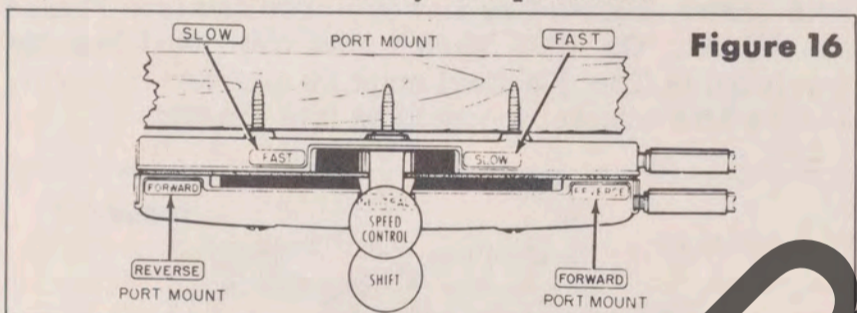


Figure 16

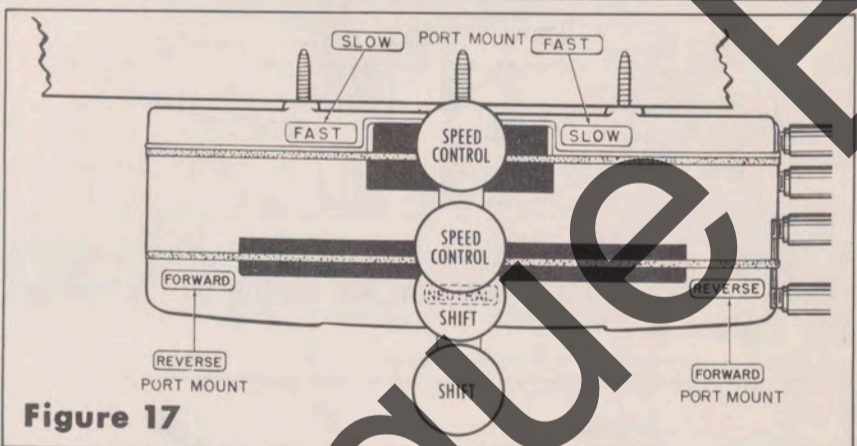


Figure 17

Tiller assemblies are available for attaching steering cables to the motors for single and twin installations. Steering wheel, tiller cable, boat pulleys,

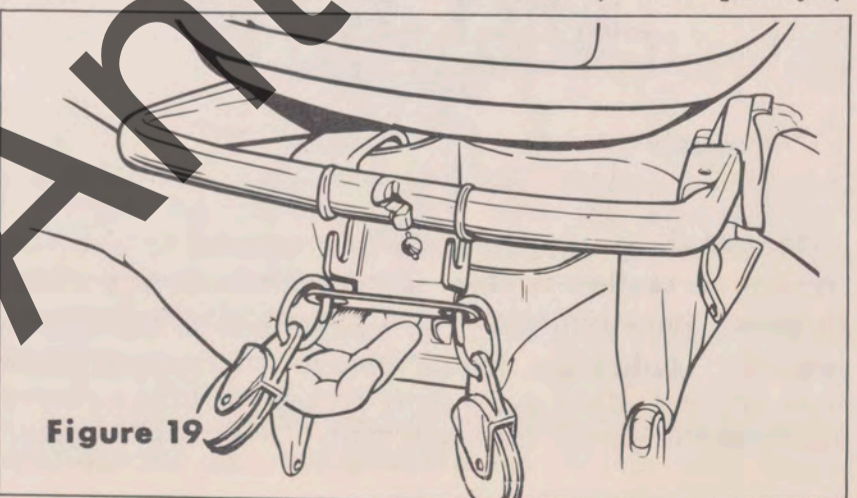


Figure 19

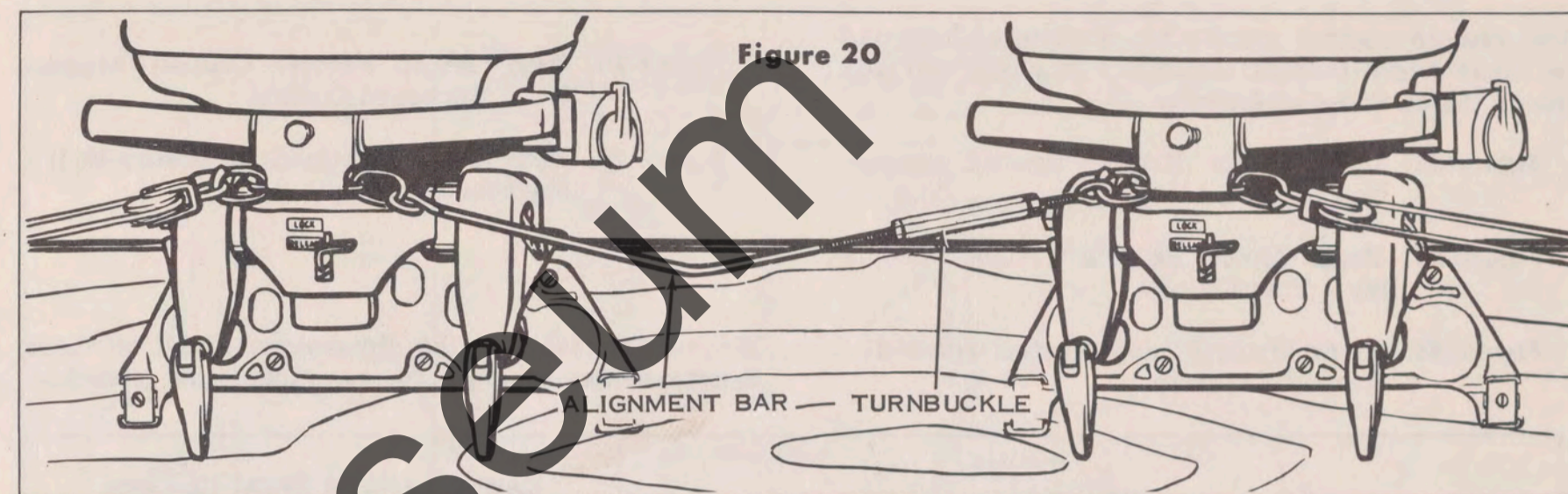


Figure 20

anchors and applicable hardware are not included. These fittings can be obtained through your dealer or a marine hardware supply house.

At the rear, these handles must be removed. Otherwise they would interfere with steering control. We also recommend removing steering handles for dual control.

### TILLER ASSEMBLY INSTALLATION

To attach the tiller assembly to the steering handle bracket, push the lock pin against spring tension and into the slot in the steering handle bracket. Turn right to lock. To detach, push plug against spring tension and turn left.

NOTE: We recommend removing steering handle or handles (where used) on larger motors for single or dual installation.

There are two types of steering handle brackets, as illustrated in Figures 18 and 19. In Figure 18, the locking lugs are at the rear of the bracket, and the tiller assembly must be installed from the front. In Figure 19, the locking lugs are at the front of the bracket, and the tiller assembly must be installed from the rear. In either case, the tiller assembly must be installed at the bottom of the steering handle bracket as illustrated.

### ATTACHING ALIGNMENT BAR AND TURNBUCKLE FOR DUAL MOTORS

It is important that both motors be in proper alignment (parallel) to obtain maximum steering efficiency. We recommend that the center lines of the two motors be 22 inches apart for 35 hp or less and 26 inches apart for 50 hp. The center line of each motor will then be 11 or 13 inches from center of stern of boat. Attach turnbuckle and alignment bar to tiller assemblies on motors, as shown in Figure 20. Use chain repair links furnished with kit. To secure, just press ends together with pliers.

Turnbuckle must be on port motor side with alignment bar bend in down position as shown in Figure 20.

Final parallel alignment of the motors can be made by means of the turnbuckle adjustment. When motors are parallel, tighten turnbuckle locknut to secure.

### IMPORTANT

If your motors have detachable carrying han-

### CABLE ANCHOR AND PULLEY INSTALLATION

Although steering cables, anchors and pulleys are not included with the remote control kit, these instructions are included as an aid to you in their installation. In addition to the instructions which follow, refer to the assembly drawings in the back of the manual for other suggestions.

Cable anchors and pulleys must be secured firmly to the boat so that there is no danger of their pulling loose, causing the operator to lose control of the boat. We strongly recommend using nuts and bolts, instead of wood screws. See Figure 21. Recommended positions and dimensions are illustrated at the rear of this manual.

Instructions for mounting the particular steering wheel you select must be obtained from your dealer.

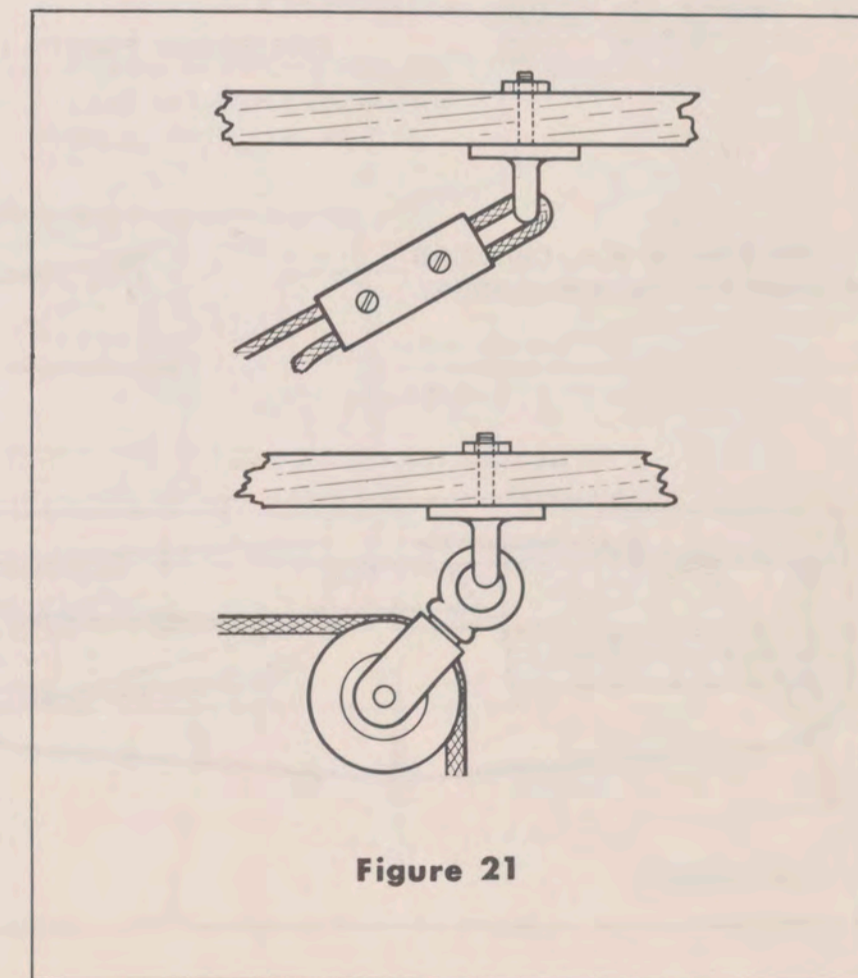


Figure 21



# ASSEMBLY DRAWINGS

The remote control installation drawings illustrated on these pages include variations of single and twin motor installations as follows:

Figure 22. Single Motor Remote Control Assembly - Starboard Control

Figure 23. Single Motor Remote Control Assembly - Port Control

Figure 24. Single Motor Remote Control with Well - Starboard Control

Figure 25. Twin Motor Remote Control Assembly - Starboard Control

Figure 26. Twin Motor Remote Control with Well - Starboard Control

We recommend that the dimensions listed on these drawings be adhered to as closely as possible.

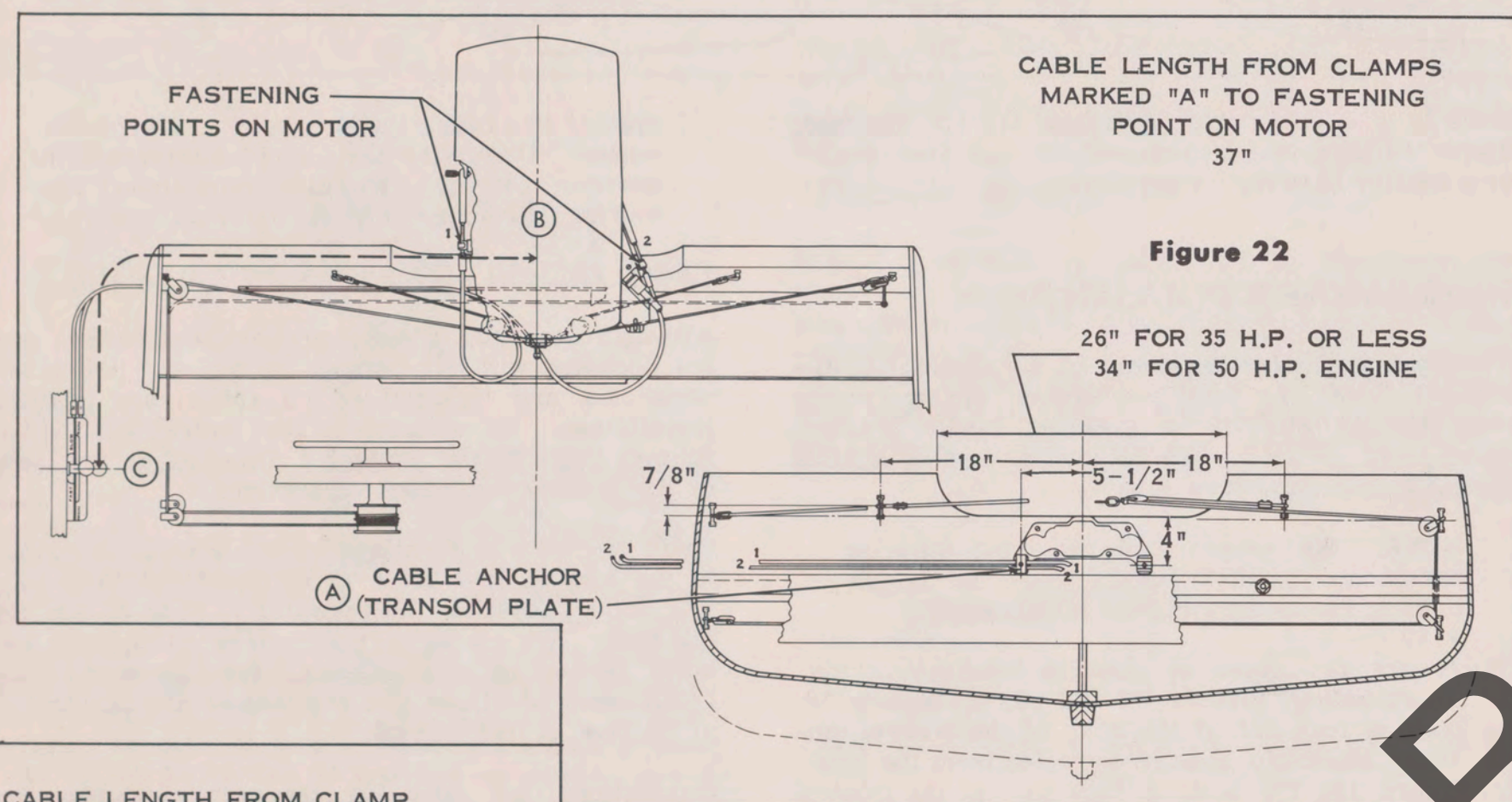


Figure 22

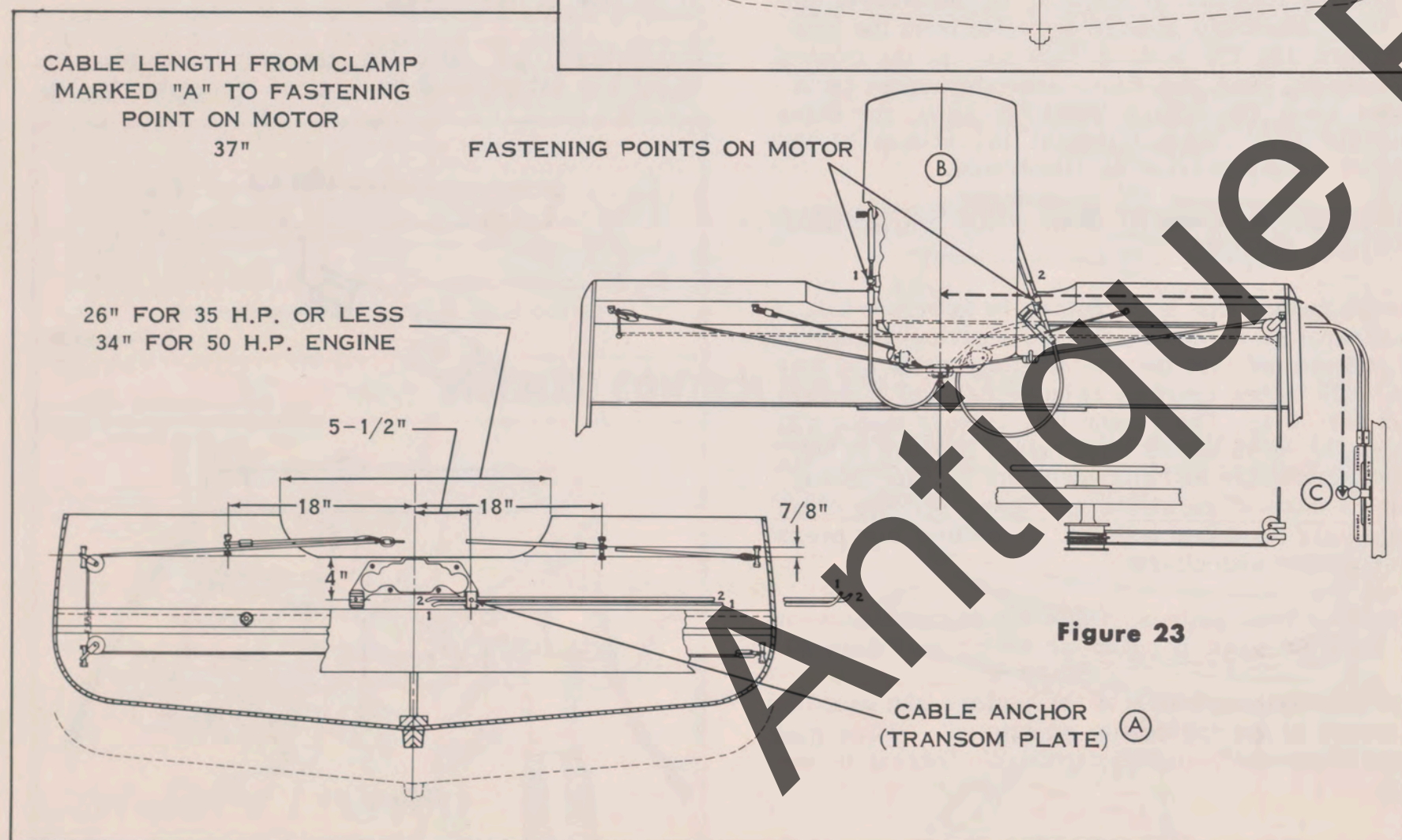


Figure 23

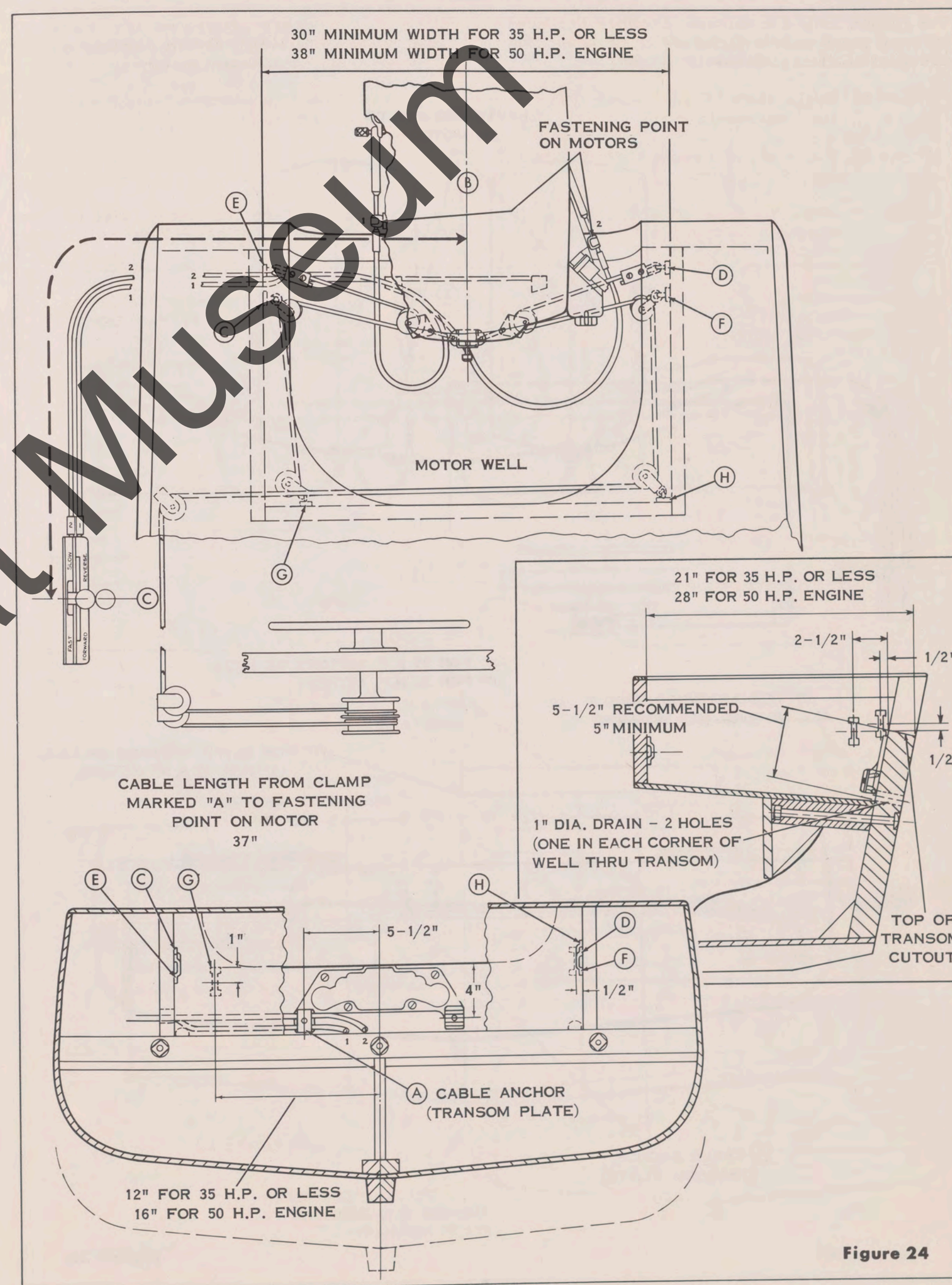


Figure 24

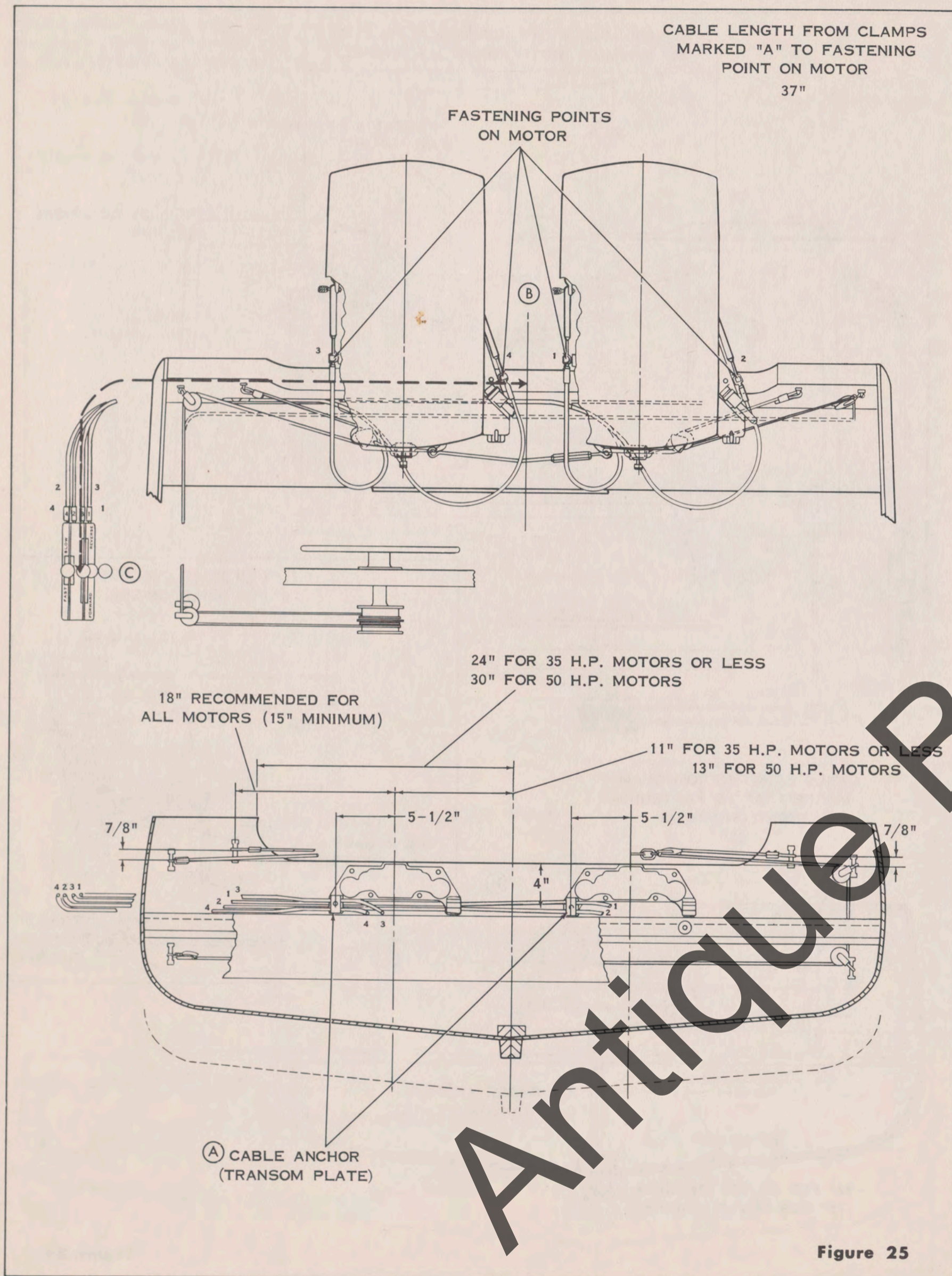


Figure 25

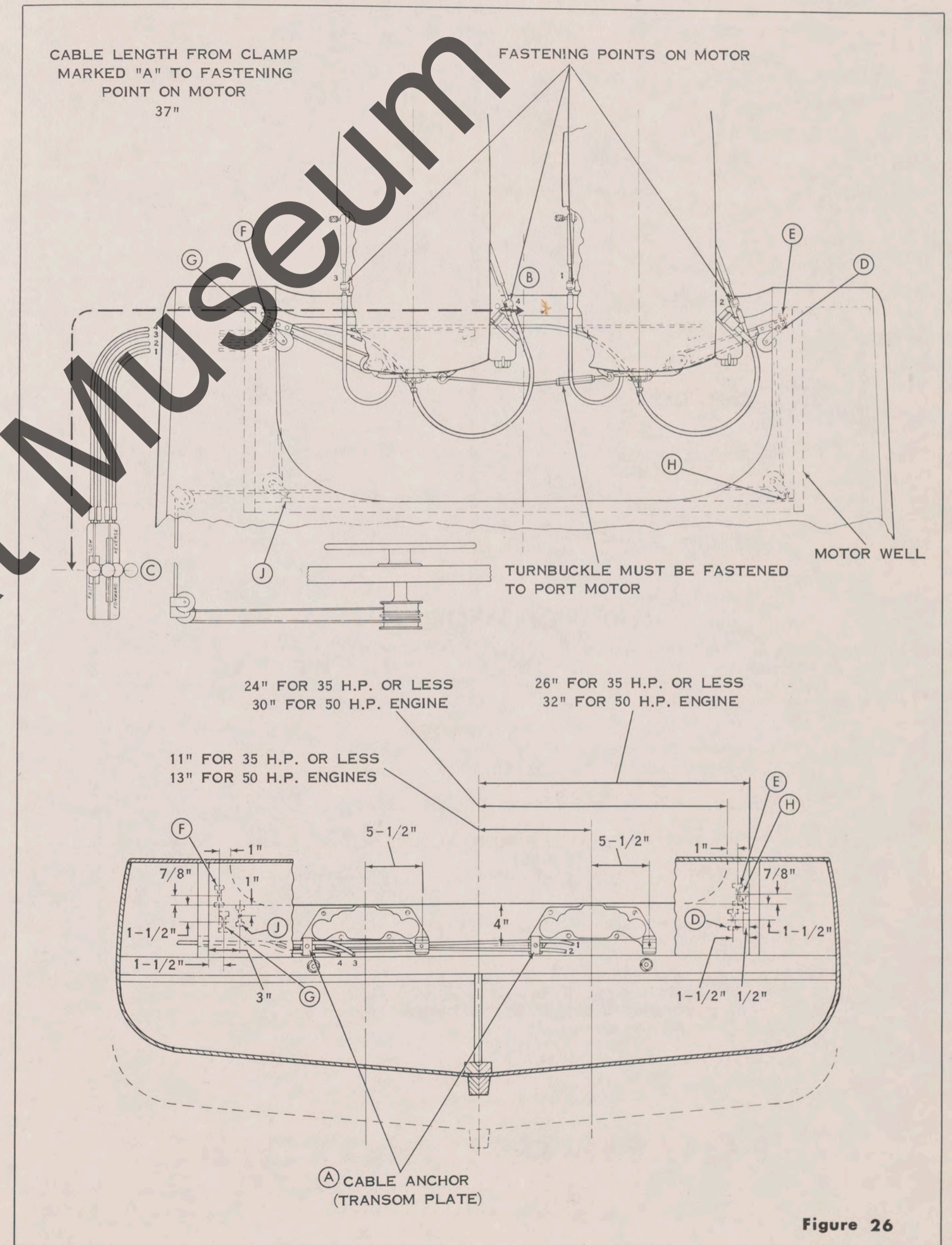


Figure 26

## PORT INSTALLATION

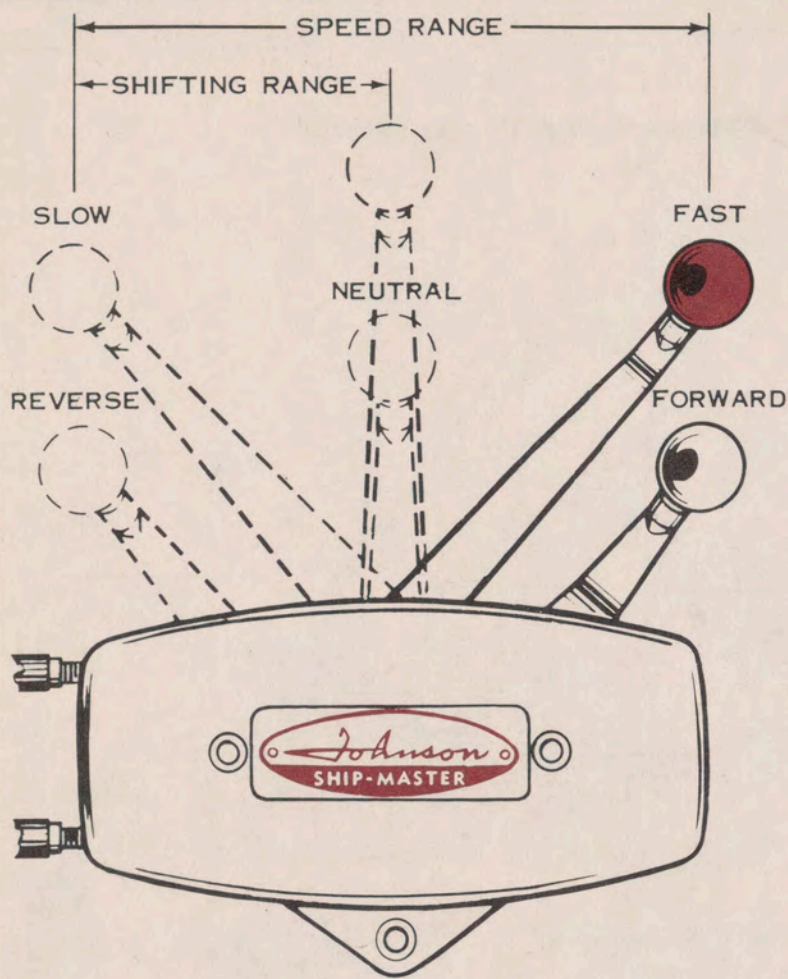


Figure 27

## STARBOARD INSTALLATION

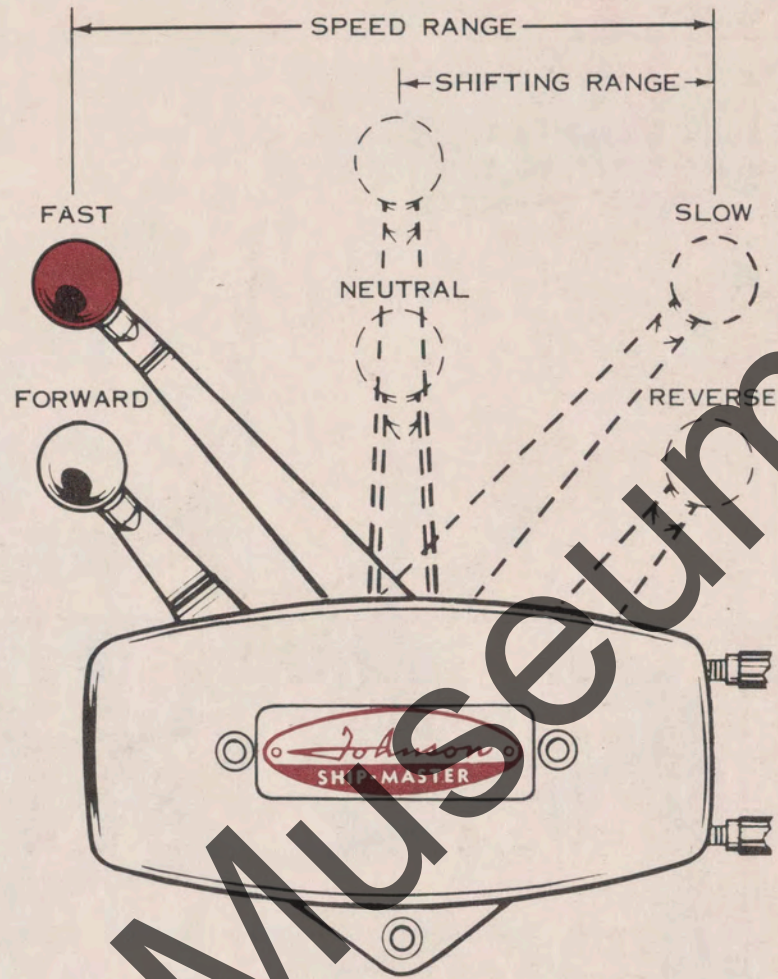


Figure 28

## OPERATING INSTRUCTIONS

Control positions for port and starboard installations are shown in Figures 27 and 28. Control positions for dual control will be similar except that there will be two speed control levers and two gear shift

control levers.

The operating instructions listed below are important and should be followed carefully.

### IMPORTANT

1. Make certain gear shift is in NEUTRAL before starting motor.
2. Always set reverse lock in LOCK position before starting motor.
3. Set speed control at top end of "shifting range" for starting.
4. Gear shifting must not be attempted unless speed control is within "shifting range."
5. Throttle motor down after starting - SNAP the shift lever with a QUICK ACTION to FORWARD or REVERSE position as desired.
6. Do not attempt shifting to FORWARD or REVERSE when motor is not running. Gear shift mechanism may be in such a position that shift lever cannot be moved. If necessary, this may be remedied by turning motor over slightly with speed control at extreme SLOW position.
7. Do not accelerate rapidly with motor partly tilted out of water - it is to your advantage not to do so, to avoid damage to boat and motor.

# JOHNSON MOTORS

## Waukegan, Illinois

### A Division of Outboard Marine Corporation