

MORSE MARINE PRODUCTS

OWNER'S MANUAL

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS
FOR THE

MT-3

C O N T R O L



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ALL SPECIFICATIONS AND FEATURES ARE SUBJECT TO CHANGE WITHOUT NOTICE

INTRODUCTION

The Morse Model MT-3 Control provides both shift and throttle operation for outboards, inboard/outboards, or inboards with *hydraulic** transmissions, or small, manual transmissions (Hurth, Yanmar) with light shifting loads of 15 lbs. (6.8kg) max. It can be used with Morse 33C or 33C SUPREME Cables. A Heavy Duty Kit (Part Number 308742) is available for a 43C Cable, when said Cable is used on the MT-3 Single Control.

NOTE: 43C CABLES CANNOT BE USED ON THE MT-3 TWIN CONTROL.

*Allison, Borg Warner, Capitol, Caterpillar, Paragon, Twin Disc, ZF

STANDARD CONTROL FEATURES

- SINGLE LEVER OPERATION.
- NEUTRAL THROTTLE WARM-UP.
- NEUTRAL SAFETY SWITCH TO PREVENT STARTING IN GEAR.
- ADJUSTABLE SHIFT STROKE TO ACCOMMODATE MOST TRANSMISSION APPLICATIONS (REFER TO FIGURE 2).

IMPORTANT SAFETY NOTICES

MORSE CONTROLS HIGHLY RECOMMENDS THE INSTALLATION, AND USAGE OF, AN ENGINE EMERGENCY SHUT-OFF SWITCH (SOMETIMES CALLED A "KILL" SWITCH) AS AN IMPORTANT SAFETY FEATURE FOR BOATS. THIS SWITCH SHOULD BE CONNECTED, BY A CORD, TO THE BOAT DRIVER. SHOULD THE DRIVER BE THROWN FROM THE HELM POSITION, THE ENGINE WILL AUTOMATICALLY SHUT OFF. THIS SHUT-OFF SWITCH IS NOT A STANDARD PART OF THE CONTROL YOU ARE USING. IT CAN, HOWEVER, BE OBTAINED FROM MOST MARINE DEALERS AND DISTRIBUTORS.

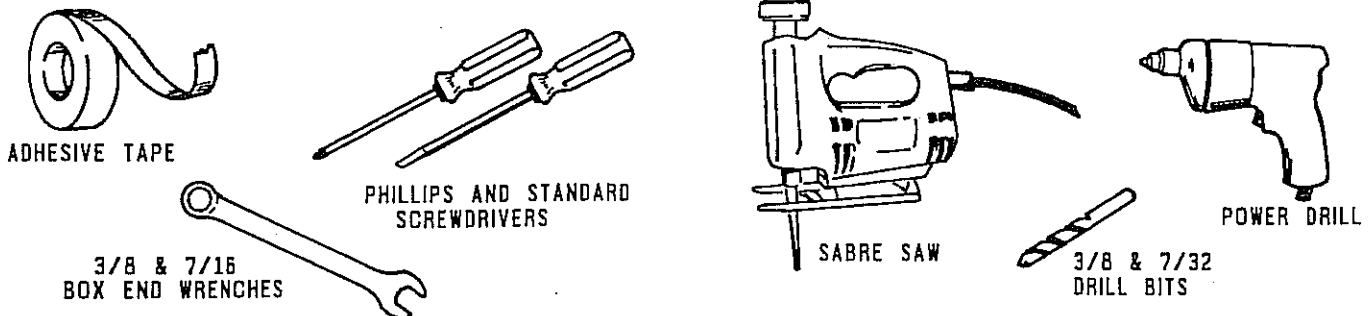
OBSERVE CAREFULLY THE NOTES, CAUTIONS AND WARNINGS IN THIS MANUAL. THEY ARE TO ALERT INSTALLERS AND OPERATORS OF POSSIBLE DANGERS OR OF IMPORTANT INFORMATION. WARNINGS ALONE DO NOT ELIMINATE DANGERS, NOR ARE THEY A SUBSTITUTE FOR SAFE BOAT HANDLING AND PROPER ACCIDENT PREVENTION MEASURES.

WARNINGS: FAILURE TO COMPLY WITH A WARNING MAY RESULT IN INJURY TO BOAT OCCUPANTS AND/OR OTHERS.

CAUTIONS: NON-COMPLIANCE WITH A CAUTION MAY RESULT IN FAILURES AND/OR DAMAGE TO THE CONTROL AND/OR EQUIPMENT.

NOTES: INDICATES INFORMATION OR INSTRUCTIONS THAT ARE NECESSARY FOR PROPER INSTALLATION, MAINTENANCE OR OPERATION.

TOOL NEEDED FOR INSTALLATION



OTHER EQUIPMENT NEEDED:

1. Two (2) each Morse 33C or 33C Supreme Cables P/N 301947-003-customer length in inches. (One for throttle and one for shift)
2. Throttle and Shift Connection Kits for engine. See Morse Product Catalog at your nearest Morse Distributor.

SECTION 1

LOCATION OF CONTROL

- 1.1 Allow adequate clearance for Hand Lever swing (forward and reverse positions).
See Figure 1 for Control dimensions.
- 1.2 Allow adequate clearance under the console for the Cables. Refer to Figure 1.
- 1.3 After a suitable location for the Control is determined, use the Mounting Template provided, and cut & drill the mounting holes required.

SECTION 2

CABLE MEASUREMENT

- 2.1 Measure from the Control Head position along an unobstructed path to the shift and throttle connections.
- 2.2 Cables lengths are measured from end to end. When a measurement is in feet and inches, specify the next whole foot.

NOTE: FOR OUTBOARD ENGINES, ADD FOUR (4) FEET TO THE LENGTH OF THE CABLE FOR A LOOP TO ALLOW FOR ENGINE SWING.

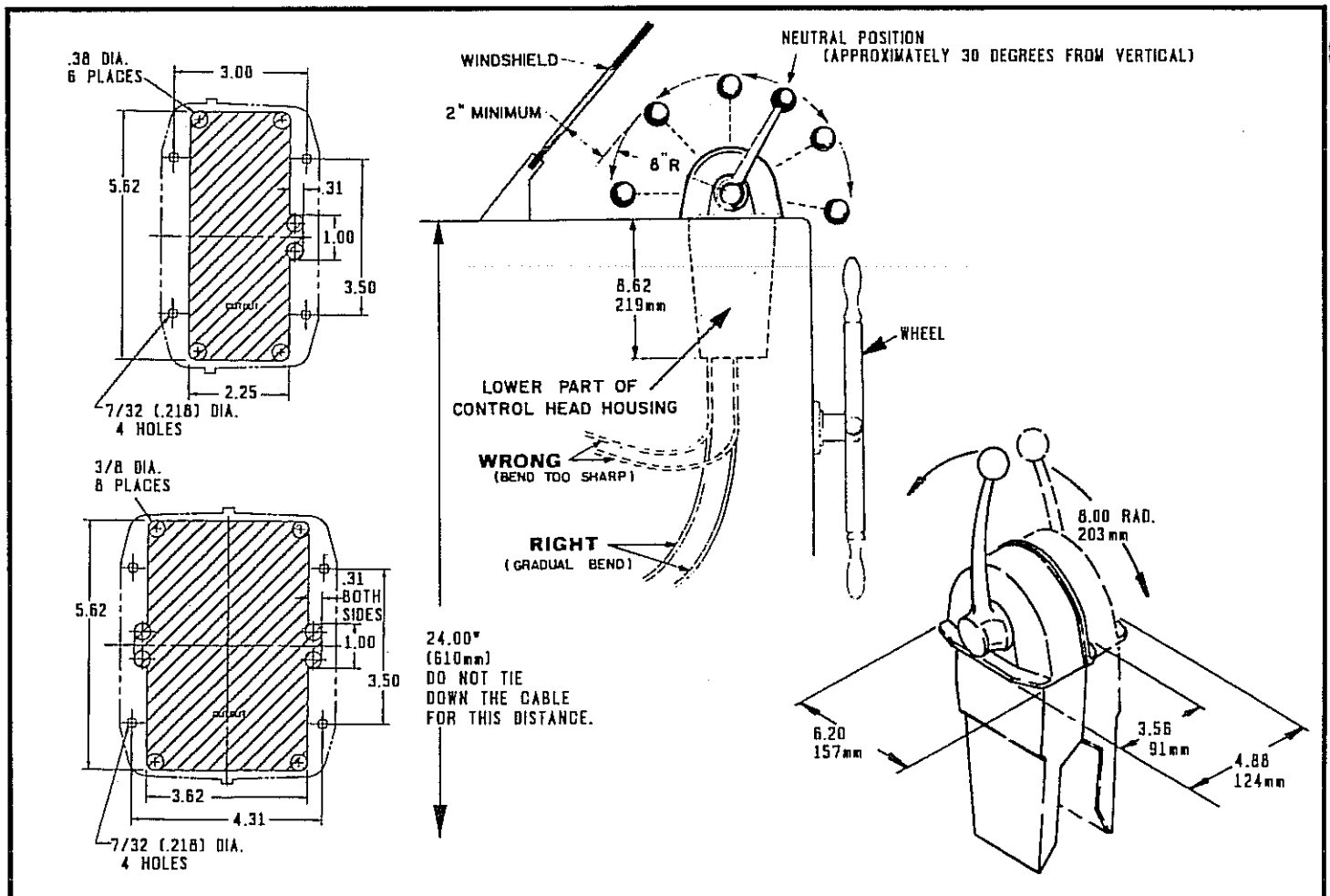


FIGURE 1 CONTROL MEASUREMENTS

SECTION 3

CABLE ROUTING

- 3.1 The Cable runs should minimize the number of bends and avoid any sharp bends. Make no bends in Cables less than eight (8) inches radius (203mm).
- 3.2 The Cables should be supported by using Cable Hangers or by running them thru straight sections of conduit for long runs.

CAUTION: DO NOT USE CABLE HANGERS OR CLAMPS WHICH MAY CRUSH OR STRESS THE CABLES IN ANY WAY. DOING SO MAY IMPAIR THE FUNCTION OF THE CABLE.

SECTION 4

SHIFT CABLE CONNECTION - CONTROL END

NOTE: TO DETERMINE THE CORRECT CONTROL CONFIGURATION FOR INBOARD ENGINES EQUIPPED WITH HYDRAULIC CLUTCHES, IT IS FIRST NECESSARY TO DETERMINE WHETHER THE CONTROL CABLES MUST EXERT A "PUSH" OR "PULL" ACTION AT THE TRANSMISSION LEVER TO ENGAGE FORWARD GEAR, AND A "PUSH" OR "PULL" ACTION AT THE CARBURETOR LEVER TO OPEN THE THROTTLE.

Refer to the Chart below for the proper cable action to suit your engine and transmission.

The Shift Arm is factory-set for standard travel (center notch). Refer to Figure 2.

ENGINE APPLICATION GUIDE			
ENGINE MAKE	SHIFT CABLE	THROTTLE CABLE	SHIFT CABLE ATTACHMENT HOLE
JOHNSON/EVINRUDE; OMC I/O, MERCURY 18 & 25 H.P.	CABLE "PULLS" TO GO FORWARD	CABLE "PUSHES" TO OPEN THROTTLE	SHORT(EXCEPT OMC "KING COBRA" I/O USES LONG HOLE)
MERCURY & MARINER OUTBOARDS; MERCUISER I/O's VOLVO I/O	CABLE "PULLS" TO GO FORWARD	CABLE "PULLS" TO OPEN THROTTLE	LONG
YAMAHA 90H.P. AND UP; US MARINE (FORCE)	CABLE "PULLS" TO GO FORWARD	CABLE "PUSHES" TO OPEN THROTTLE	STANDARD
HONDA; SUZUKI; TOHATSU (ALL MOD- ELS); YAMAHA 70 H.P. AND UNDER	CABLE "PULLS" TO GO FORWARD	CABLE "PULLS" TO OPEN THROTTLE	STANDARD
INBOARDS (DIESEL OR GAS)	MOST INBOARD TRANS- MISSIONS "PULL" TO GO FORWARD.	MOST INBOARD THROTTLES OR GOVERNORS "PULL" TO OPEN.	STANDARD
YAMAHA I/O's,(ALL)	CABLE "PULLS" TO GO FORWARD	CABLE "PULLS" TO OPEN THROTTLE	STANDARD

A. SHIFT STROKE ADJUSTMENT

If you find it necessary to change this position, proceed as follows:

1. Loosen the two (2) Hex Head cap Screws so the Shift Arm can be lifted to clear the notches.
2. Reposition the Shift Arm to the desired stroke. Be sure the notches are properly engaged before tightening the Screws. Refer to Figure 2.
3. Tighten the Hex Head Screws to 75-80 inch lbs.

NOTE: FOR OPPOSITE CABLE ACTION, SHIFT ARM AND NEUTRAL SAFETY SWITCH SHOULD BE A MIRROR IMAGE OF THAT WHICH IS SHOWN.

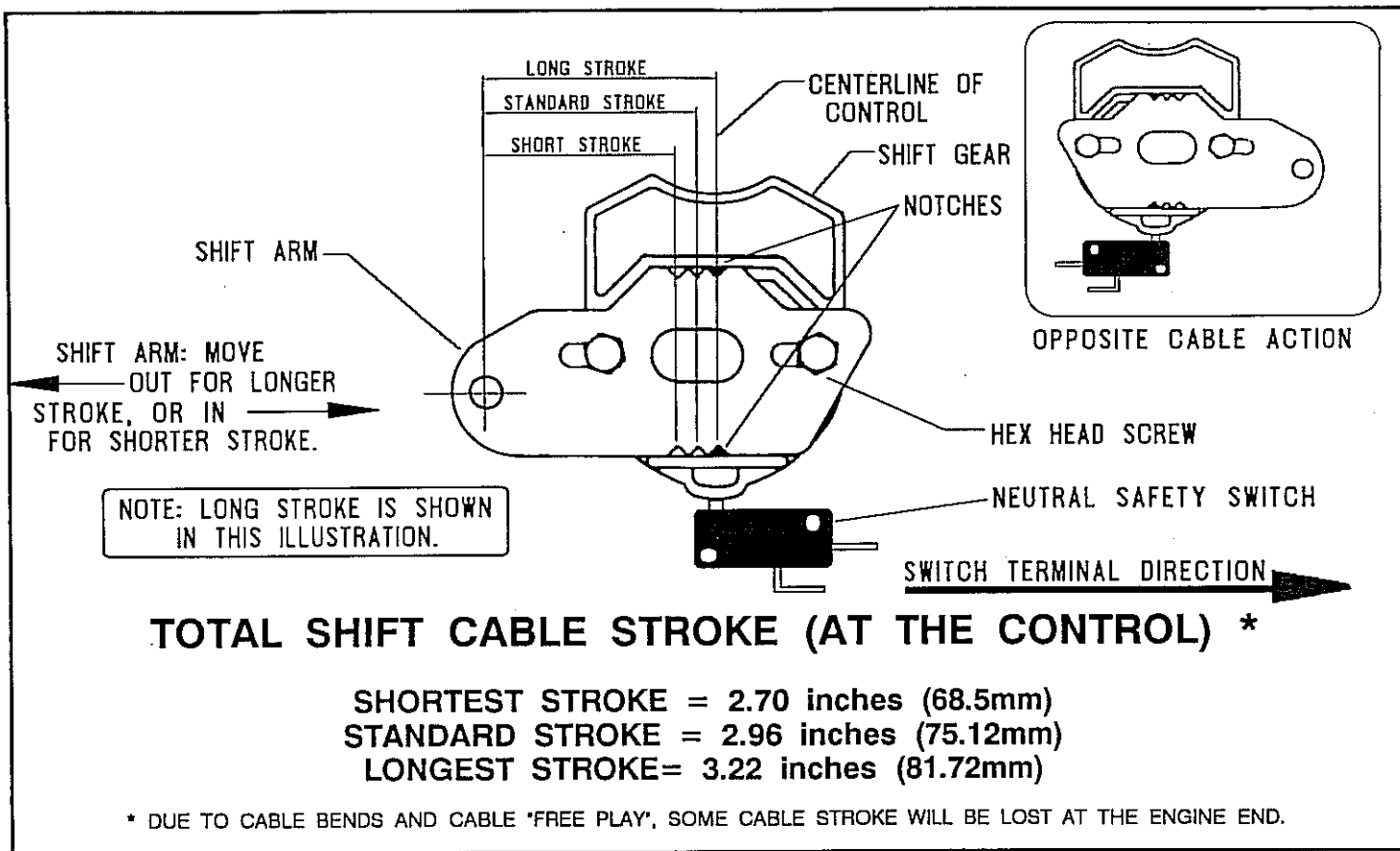


FIGURE 2 SHIFT STROKE ADJUSTMENT

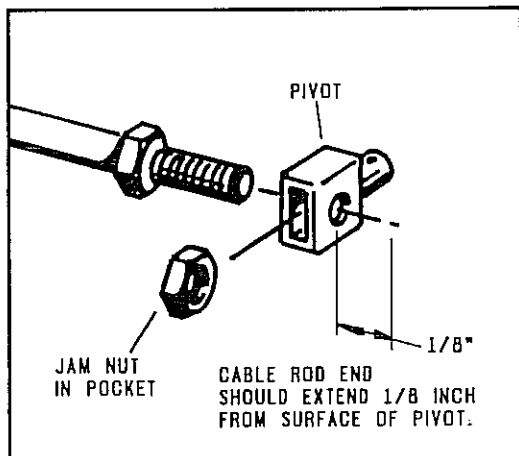


FIGURE 3
CABLE TERMINAL CONNECTION

B. SHIFT CABLE CONNECTION

1. Attach the Pivot to the end of the Shift cable, as shown in Figure 3.
2. Feed the Cable behind the Shift Arm and insert the Pivot into the hole. Secure the Pivot in place with the Cotter Pin included.
3. Attach the Cable Hub to the bottom of the Housing at the tapped hole location for 33C type cables. Make sure the groove in the cable Hub engages the Cable Clamp.

SECTION 5

THROTTLE CABLE CONNECTION - CONTROL END

Refer to the **ENGINE APPLICATION GUIDE, SECTION 4**, for the proper Cable action to suit your engine.

The Throttle lever may be factory-set for "push" to open throttle. Refer to Figure 4. If you find it necessary to change to "pull" to open throttle, proceed as follows:

1. Remove the Hand Lever.
2. Remove the Throttle Cable, if attached.
3. Remove the Swivel Bracket.
4. Remove the two (2) hex Head Screws at the Link Assembly, and remove the Link. make sure the Shift Arm does not change notch positions.
5. Push in on the Throttle Arm toward the Housing and rotate it 180 degrees until it snaps back into place.
6. Attach the Link Assembly in the desired position using the Hex Head Screws. Tighten the Screws to 75-80 inch lbs.
7. Attach the Swivel Bracket in the proper hole. See Figures 4 and 5 for proper location.
8. Reinstall the Cable and Hand Lever.

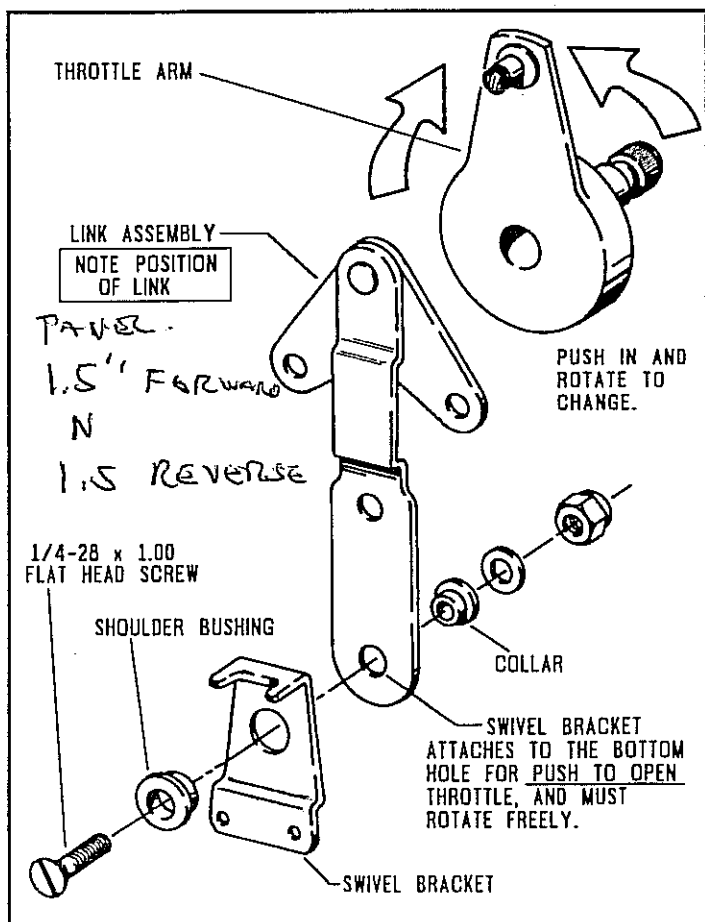


FIGURE 4 PUSH-TO-OPEN CONFIGURATION

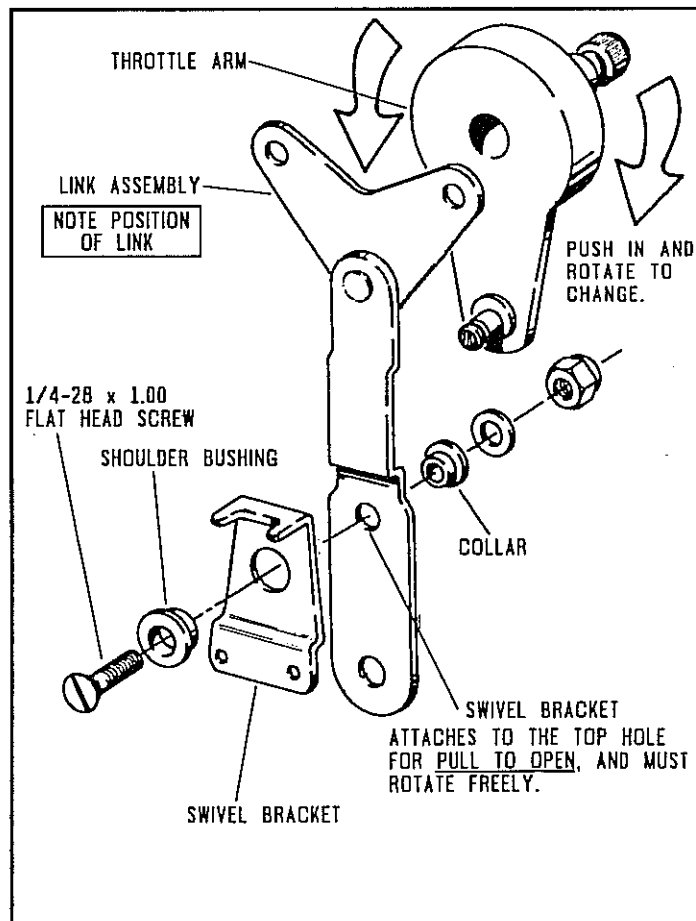


FIGURE 5 PULL-TO-OPEN CONFIGURATION

SECTION 6

THROTTLE CABLE CONNECTION - ENGINE END

CAUTION: THE THROTTLE CABLE MUST BE DISCONNECTED FROM THE MOTOR BEFORE MAKING MOTOR IDLE ADJUSTMENTS. ADJUSTMENT OF THE MOTOR IDLE WHILE THE THROTTLE CABLE IS STILL CONNECTED TO THE MOTOR MAY CAUSE A JAMMING ACTION AGAINST THE IDLE STOP. AS A RESULT, THE CONTROL MAY NOT FUNCTION PROPERLY, AND DAMAGE TO THE CONTROL, THE CABLE AND/OR MOTOR COULD RESULT.

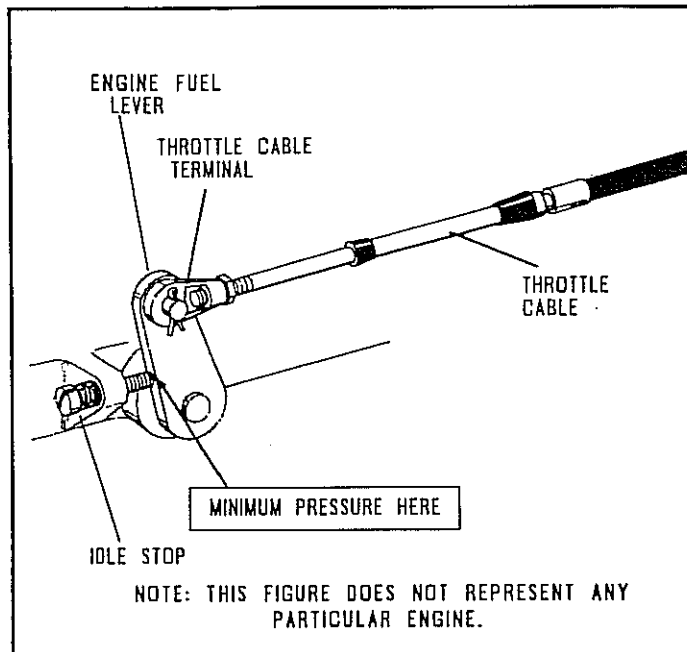


FIGURE 6 THROTTLE CONNECTION

6.1 Make sure the Control is in NEUTRAL DETENT.

6.2 The Fuel Lever should rest lightly against the Idle Stop on the carburetor.

6.3 Connect the Throttle Cable to the fuel lever.

6.4 At Neutral Detent, pull out the Hand Lever Hub and move the Lever PAST the forward range. Return to NEUTRAL and the Hand Lever should snap back into place.

NOTE: PLACE "FORWARD-REVERSE" DECAL ON HOUSING, OPPOSITE THE NEUTRAL POSITION OF THE HAND LEVER.

SECTION 7

NEUTRAL SAFETY SWITCH

The MT-3 Control is provided with a Neutral Safety Switch. This Switch prevents the engine from starting in gear.

USE A BATTERY-POWERED TEST LIGHT OR TEST METER TO CHECK CONTINUITY.

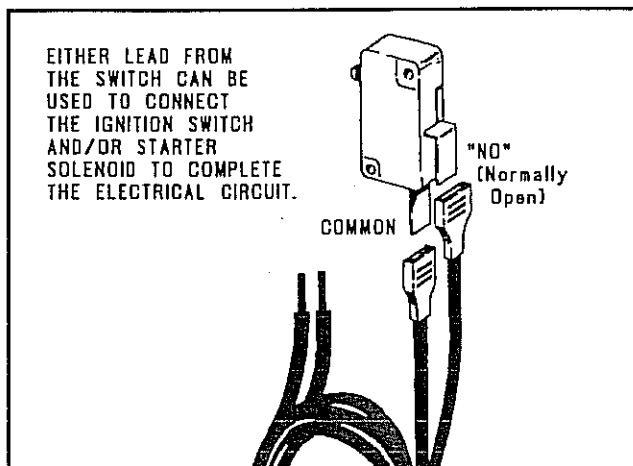


FIGURE 7 NEUTRAL SAFETY SWITCH

With the Control in NEUTRAL, connect one wire of the tester to the common terminal, and one wire to the "NO" (Normally Open) Terminal. The test light MUST light.

Connect the Neutral Safety Switch between the ignition switch (start lead) and the starter solenoid. Use the Terminals and Insulators provided with the Control to ensure against an electrical short circuit.

CAUTION: CHECK TO MAKE SURE THAT THERE IS ELECTRICAL CONTINUITY ONLY WHEN THE CONTROL IS IN NEUTRAL. WHEN THE CONTROL IS IN GEAR, THERE MUST NOT BE ANY ELECTRICAL CONTINUITY.

SECTION 8

MAINTENANCE AND CORROSION PROTECTION

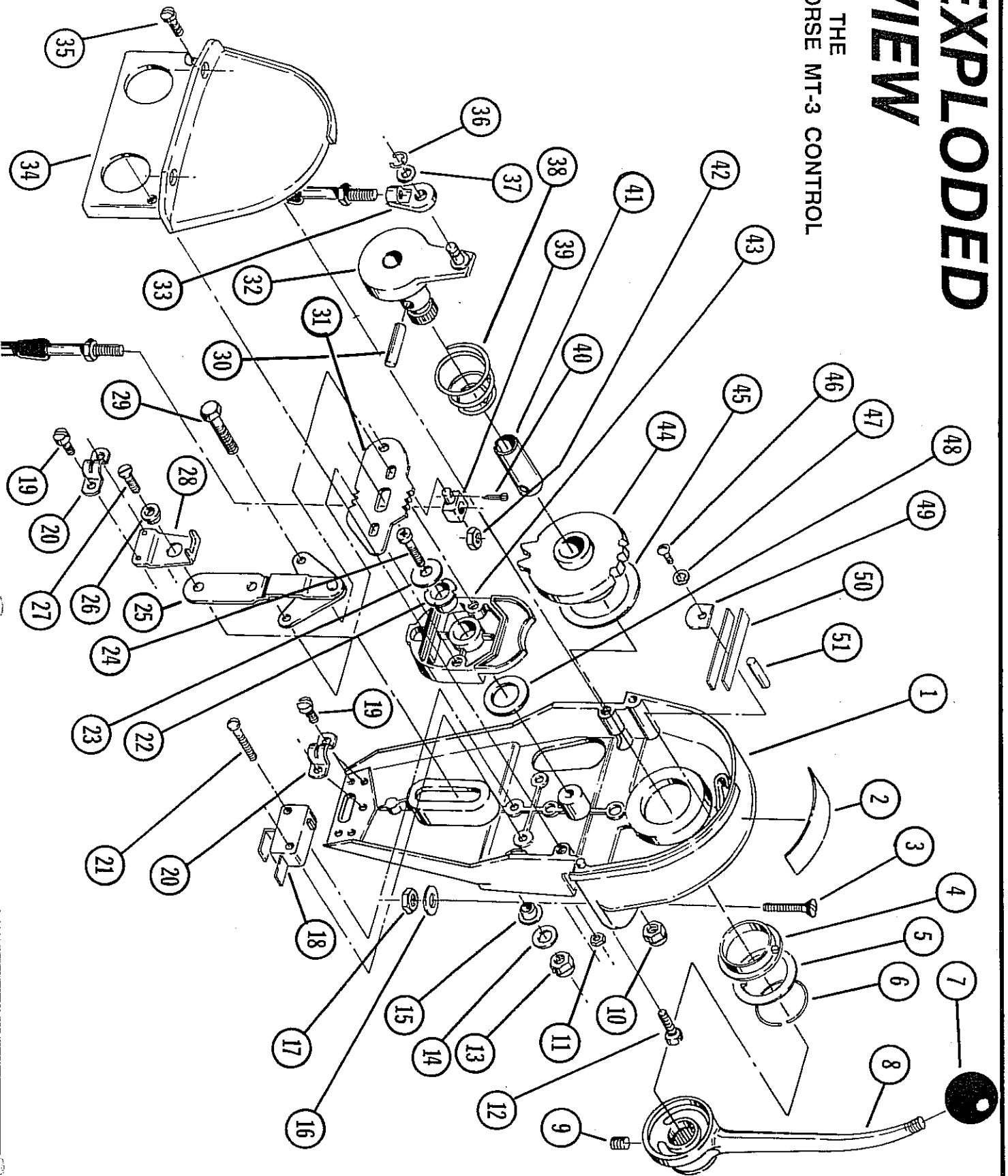
For maximum protection, especially in a salt water environment, the Control Head and Hand Lever should be washed with fresh water and waxed on a regular basis.

Periodically check the Control Head Mechanism for loose fasteners and signs of wear on moving parts. Keep these moving parts well lubricated with a moisture-displacing lubricant, such as "WD-40®".

Periodically check the Cables and engine connections for signs of wear and corrosion. Replace as necessary.

EXPLODED VIEW

OF THE
MORSE MT-3 CONTROL



BILL OF MATERIAL

ITEM	QUANTITY	DESCRIPTION	PART NUMBER
1	1	HOUSING, CHROME	308592
2	1	DECAL - "FWD - REV"	38853
3	4	OVAL HEAD SCREW, #10-24 x 1.50 LONG	COMMERCIAL
4	1	DRIVE GEAR BEARING	32786
5	1	KEYED WASHER	32787
6	1	SPLIT RING	51308-064
7	1	RED BALL KNOB	35232-001
8	1	HANDLE	32778-002
9	1	HEX SOCKET SETSCREW, 5/16-18 x 1/2 LONG	COMMERCIAL
10	1	HEX ELASTIC STOP NUT, #10-32	COMMERCIAL
11	2	HEX NUT, #4-40	COMMERCIAL
12	1	FILLISTER HEAD PHILLIPS SCREW, #10-24 x 1.00 LONG	COMMERCIAL
13	1	HEX ELASTIC STOP NUT, 1/4-28	COMMERCIAL
14	1	1/4 FLAT WASHER	32194
15	1	COLLAR	32963
16	4	#10 FLAT WASHER (.203 ID x .56 OD x .040 THK)	50800-802
17	4	HEX NUT, #10-24	COMMERCIAL
18	1	NEUTRAL SAFETY SWITCH	51801-023
19	4	FILLISTER HEAD SCREW, #10-24 x .31 LONG	COMMERCIAL
20	2	CABLE CLAMP	32010
21	2	ROUND HEAD SCREW, #4-40 x .62 LONG	COMMERCIAL
22	1	SHIFT BEARING	32020
23	1	THRUST WASHER	308589
24	1	ROUND HEAD SCREW, #10-32 x 1.00 LONG	COMMERCIAL
25	1	LINKAGE ASSEMBLY	308586
26	1	SHOULDER BUSHING	48676
27	1	FLAT HEAD SLOTTED SCREW, 1/4-28 x 1.00 LONG	COMMERCIAL
28	1	SWIVEL BRACKET	32011
29	2	HEX HEAD SCREW, 1/4-28 x .62 LONG	50414-030
30	1	GROOV-PIN, TYPE 5, .187 DIA. x 1.38 LONG, SST	51015-901
31	1	SHIFT ARM	308596
32	1	THROTTLE ARM ASSEMBLY	67954
33	1	CABLE TERMINAL	300646
34	1	SIDE COVER	308598
35	1	FILLISTER HEAD PHILLIPS SCREW, #10-24 x .62 LONG	COMMERCIAL
36	1	E-RING, .312 NOMINAL	51304-135
37	1	FLAT WASHER, .328 ID x .56 OD x .062 THK	50800-843
38	1	CONICAL SPRING	32790
39	1	CABLE PIVOT	304919
40	1	COTTER PIN, .093 x .50 LONG, BRASS	COMMERCIAL
41	1	THROTTLE ARM BEARING	32788
42	1	HEX JAM NUT, #10-32	32029
43	1	SHIFT GEAR	308587
44	1	DRIVE GEAR	308593
45	1	WAVED WASHER	32198
46	1	ROUND HEAD SCREW, #10-24 x .31 LONG	COMMERCIAL
47	1	#10 INTERNAL TOOTH LOCKWASHER	COMMERCIAL
48	1	SPACER WASHER	308594
49	1	DETENT RETAINER CLIP	32785
50	2	FLAT SPRING	302197
51	1	DETENT ROLLER	302195

LIMITED WARRANTY

MARINE PRODUCTS

Morse Controls warrants to the first retail purchaser of this product, or a Morse Controls product incorporated in another vendor's product that, for a period of one (1) year from the date of original purchase, such product will be free from defects in materials and workmanship. Morse Controls makes no warranty as to merchantability or to fitness of its products for a particular purpose.

The above warranty does not apply to a product that has not been installed or maintained in accordance with Morse Control's instructions, been subjected to damage in an accident or abuse during operation, or repaired or modified by persons other than Morse Controls. This warranty is also void when Morse marine products are installed on a boat or engine judged by Morse Controls to be inappropriate application of its product, or when Morse Products are used with other marine accessory products which in Morse Controls' judgment are incompatible with the Morse product or adversely affect its performance or durability.

If any Morse product is used commercially for such purposes as rental or other income-producing activities, then this warranty is limited to 90 days from the date of original retail purchase.

Morse Controls' responsibility in respect to warranty claims is limited solely to repair or replacement of product found by Morse to be defective. Morse Controls does not pay for labor charges connected with removal of a product deemed to be defective or with installation of replacement or repaired product, or for any other incidental or consequential damages.

To make a claim under this warranty, return the product believed to be defective to your local marine dealer along with proof of purchase. If your dealer feels that a warranty claim is justified, he should contact Morse Controls giving a description of the product and requesting authorization to return it to the factory.

MERCHANDISE SHOULD NOT BE RETURNED TO MORSE UNTIL A RETURN GOODS AUTHORIZATION FORM IS RECEIVED.



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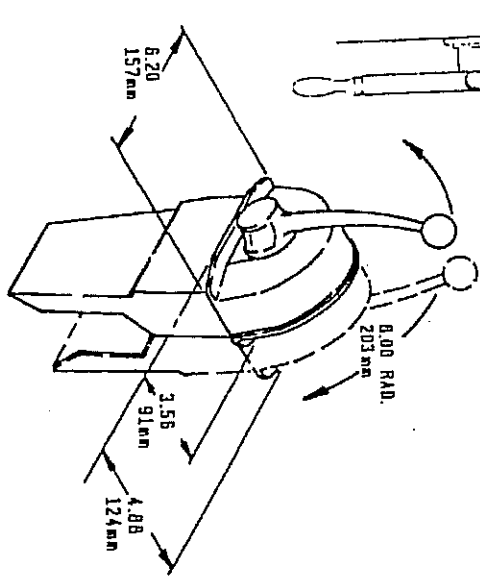
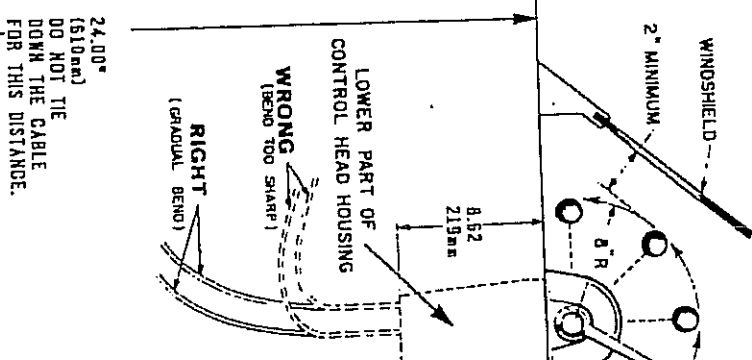
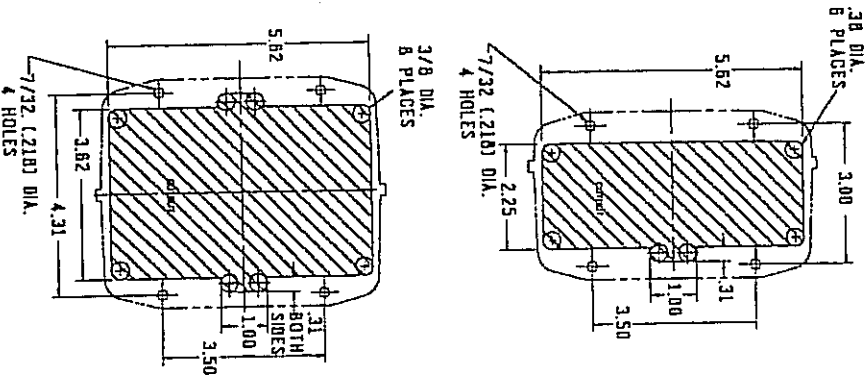
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MT-3

MOUNTING CUTOUT DIMENSIONS:



24.00°
(510mm)
DO NOT TIE
DOWN THE CABLE
FOR THIS DISTANCE.

WRONG
(BEND TOO SHARP)

RIGHT
(GRADUAL BEND)