MORSE MARINE PRODUCTS

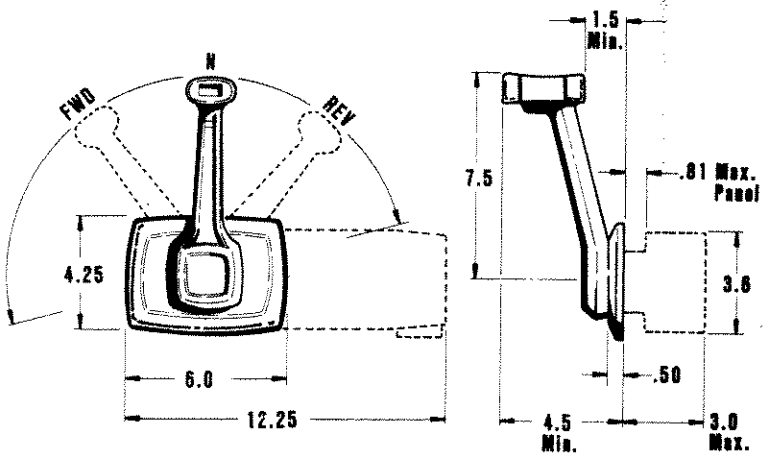
OWNER'S MANUAL

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

for the

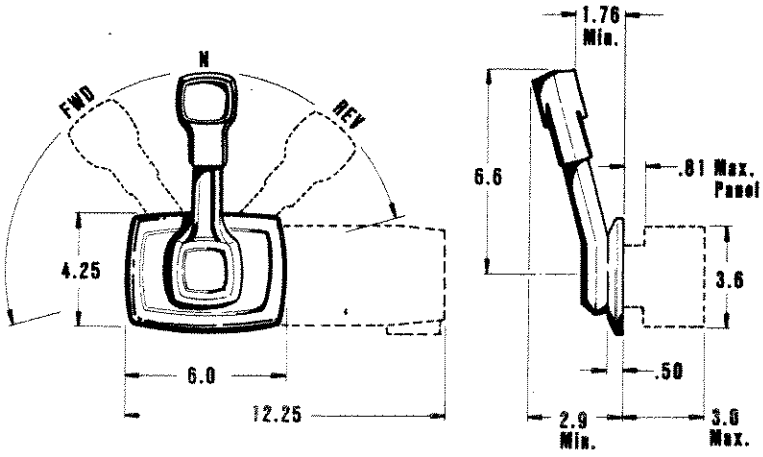
MN UNIVERSAL Series of SINGLE LEVER CONTROLS

SIDE MOUNT CONTROL



Model MNS-S Standard

Model MNS-D Deluxe



Model MNS-SB Sailboat

MORSE CONTROLS

INCOM INTERNATIONAL INC

21 Clinton Street
Hudson, Ohio 44236

Please read these instructions carefully before installing or operating the "MN" Universal Control

10-1403 (5/85)

INTRODUCTION

The Morse MN Universal Series remote controls are lever designed to provide convenient one-hand, single lever operation of shift and throttle for most popular outboards, inboard/outboard and inboards equipped with hydraulic reverse gears.

The MN Universal series remote controls will also accept, and can be used with any of the following Morse Control cables:

- 33C Red Jaket Cables P/N 032377-003-____Ft.
- 33C Supreme Red Jaket P/N 301947-003-____Ft.
- Type OS (OMC) Cables P/N 302029-000-____Ft.
- TYPE KM (Mercury) Cables P/N 063732-000-____Ft.

"Deluxe" models have the added feature of convenient hand lever switches for power tilt and power trim functions.

The MN-SB Control, for sailboats with auxiliary engines equipped with hydraulic reverse gears, is essentially the same as the standard MN control and installation is the same.

The MN-SB hand lever, designed to minimize lines becoming fouled, does not have neutral interlock or the trim & tilt switch features found on other MN Universal controls.

The following information shows the proper control assemblies for specific applications and the procedures necessary to make a correct installation.

General operation and adjustment information is provided, along with periodic maintenance information.

A parts breakdown diagram of the control is provided, should the need for a replacement part become necessary.

Important Safety Notice

Observe carefully these symbols for ▲ warnings, cautions, and ▬ notes. They are to alert installers and operators to possible dangers or important information contained in this manual. Warnings alone do not eliminate dangers nor are they a substitute for safe boat handling and proper accident prevention measures.

▲ **WARNING: FAILURE TO COMPLY WITH A WARNING MAY RESULT IN INJURY TO BOAT OCCUPANTS OR OTHERS.**

▲ **CAUTION: NON-COMPLIANCE WITH "CAUTION" MAY RESULT IN FAILURE OR DAMAGE TO CONTROL AND/OR EQUIPMENT.**

▬ **NOTE: INDICATES INFORMATION OR INSTRUCTIONS THAT ARE NECESSARY FOR PROPER INSTALLATION, MAINTENANCE OR OPERATION.**

SECTION 1
CHOOSE CONTROL LOCATION AND MEASURE CABLE LENGTH

1.1 LOCATION

Choose a mounting location for the control head which will provide comfortable operation and unobstructed movement of the hand lever and control mechanism. See front cover for control dimensions. Control can be installed through mounting surface from front or from behind.

▬ **NOTE: Installation from front of mounting surface requires 8" minimum (for 3/4" thick panel) clearance behind mounting surface.**

Use template provided to cut appropriate (front or rear installation) mounting hole, as shown in Figure 1.

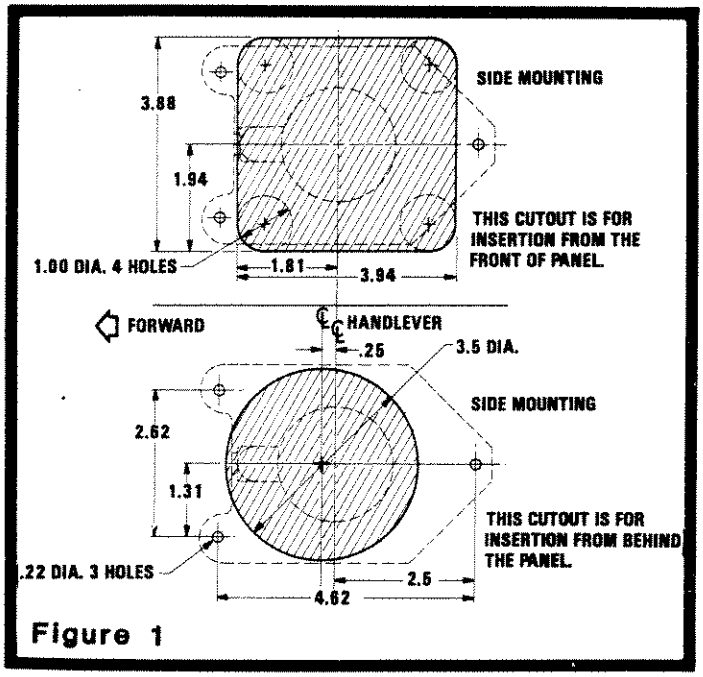


Figure 1

1.2 CABLE LENGTH

Measure from control head position along an unobstructed path to shift and throttle connections. Cable lengths are overall length. When a measurement is in feet and inches, specify next whole foot. For outboard applications, add 4 feet for loop. See Figure 2.

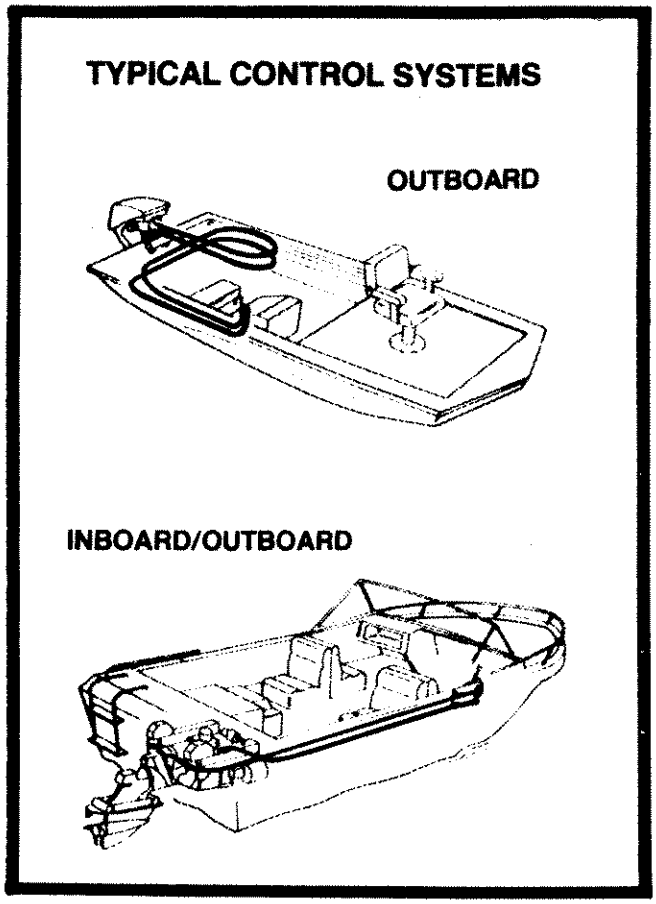


Figure 2

SECTION 2

ASSEMBLE CONTROL

2.1 CONFIGURATION

Normally the MN control should be obtained in the properly assembled configuration. Check your control with the assembly figures shown.

ASSEMBLY "A" FOR:
MARINER OUTB'DS
MERCURY OUTB'DS (Except 18 & 25)
MERCRUISER I/Os (Except 330 Models — see Assembly D
INBOARDS (Requiring "Pull to go Forward", "Pull to open Throttle" Cable Action.)

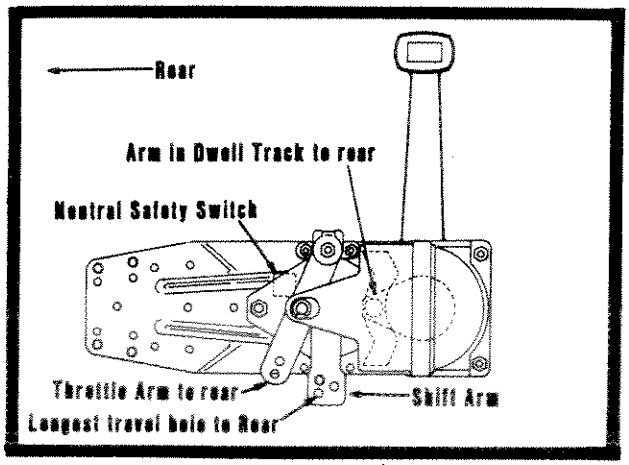


Figure 3

ASSEMBLY "B" FOR:
US MARINE OUTB'DS } formerly
US MARINE I/Os } CHRYSLER
YAMAHA 90 & up
INBOARDS (Requiring Pull to go Forward; Push to open Throttle Cable action).
(For Push to go Forward ; Assemble shift as shown , in ASSEMBLY C)

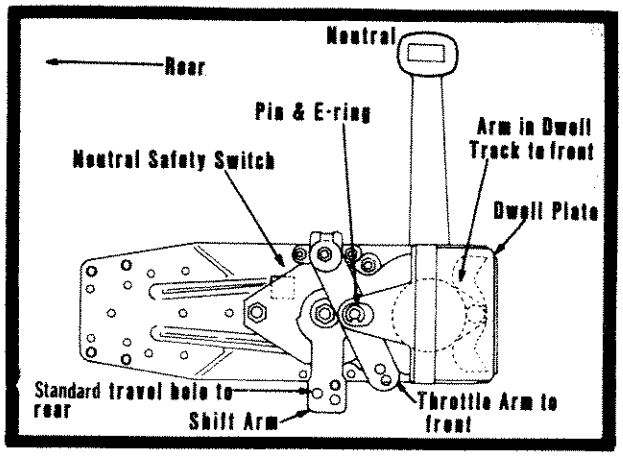


Figure 4

If the control is not according to your engine cable action requirements or a left hand configuration is required, reassemble as shown in following assembly figures. A left hand "MN" control (port side mounting) must be a mirror image of the assembly figures shown.

NOTE: To determine the correct control assembly 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 "pull" or "push" action at the carburetor lever to open the throttle.

ASSEMBLY "C" FOR:
VOLVO I/Os
INBOARDS (Requiring "Push to go Forward", "Pull to open Throttle" Cable Action.)

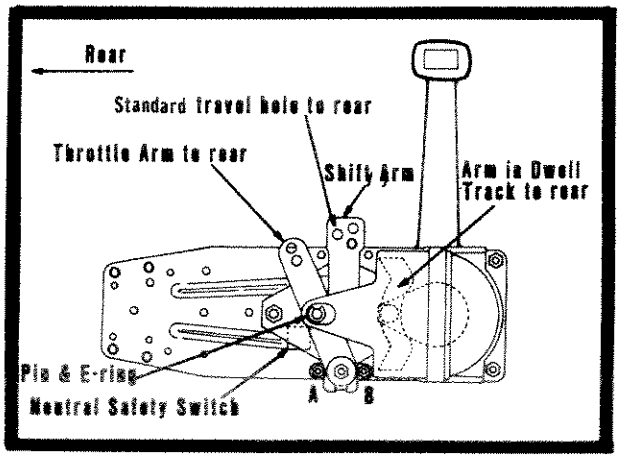


Figure 5

ASSEMBLY "D" FOR:

BMW I/Os
YAMAHA OUTB'DS-70 H.P. & BELOW
330 MERCRUISER I/O
HONDA OUTB'DS
NISSAN OUTB'DS
TOHATSU OUTB'DS
SUZUKI OUTB'DS

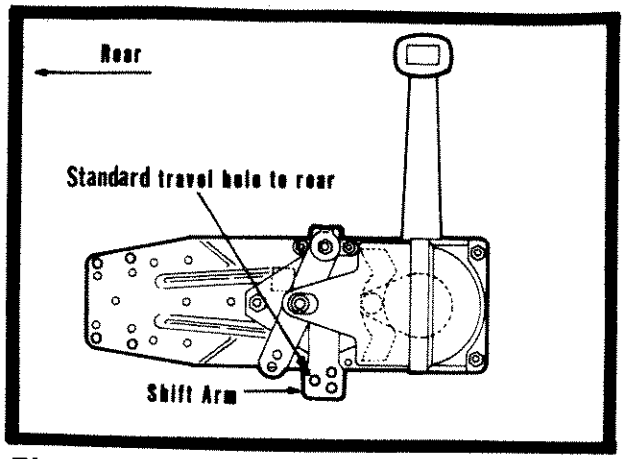


Figure 6

ASSEMBLY "E" FOR:

EVINRUDE OUTB'DS
JOHNSON OUTB'DS
OMC STERNDRIVES
MERCURY OUTB'DS - 18 & 25 H.P.

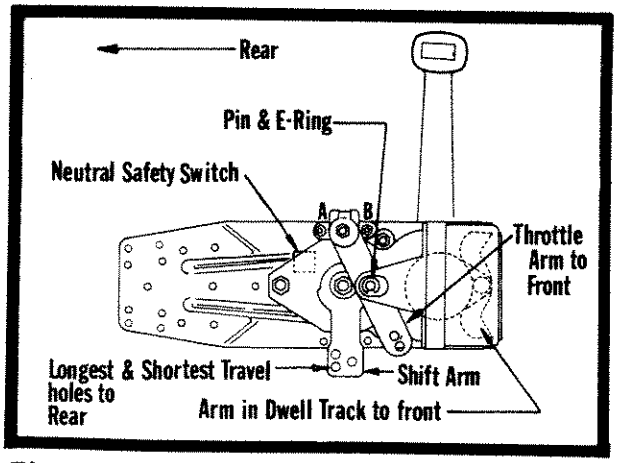


Figure 7

2.2 DWELL PLATE REMOVAL

The first step in changing the "MN" control assembly to a different requirement is normally to remove the dwell plate.

NOTE: The exception (when dwell plate does not need to be removed) is when the shift travel is changed by simply removing and flipping shift lever over to different travel.

To remove or replace dwell plate, see Figure 8 or 9, depending on whether control is assembled "PULL" or "PUSH" to open throttle. Before removing dwell plate, remove pin and E-ring which connects throttle arm and dwell plate together. (See Figures 4,5, or 7.)

In pull mode, lift dwell plate slightly and pull out of track to rear as shown in Figure 8.

In push mode, pull dwell plate out of track to front as shown in Figure 9.

NOTE: Be careful that sliding cam pin does not fall out of throttle arm.

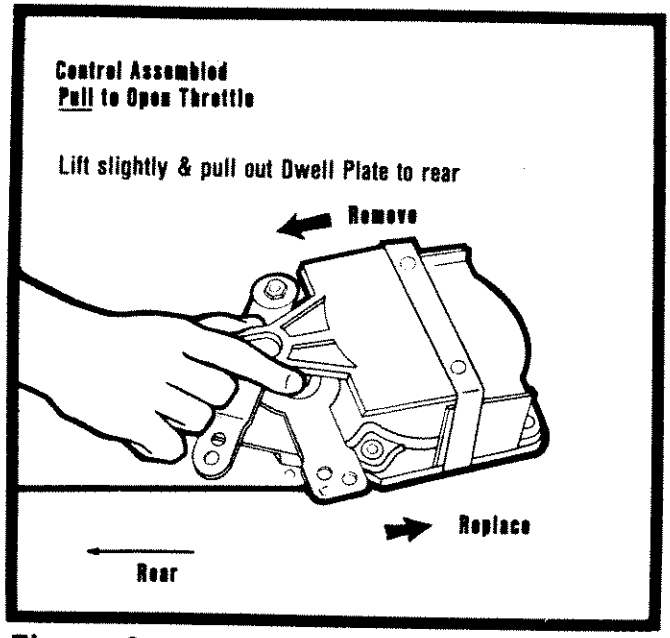


Figure 8

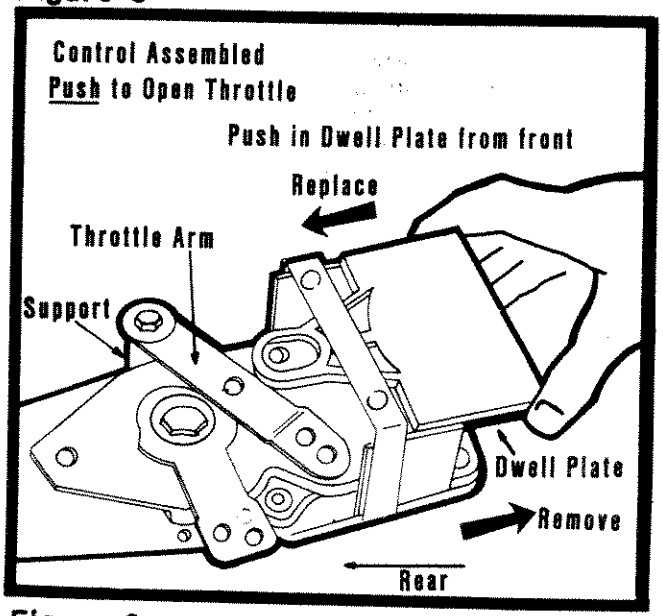


Figure 9

2.3 SHIFT LEVER & THROTTLE SUPPORT ARM

Shift lever may be removed and repositioned more easily if done while dwell plate has been removed. Remove hex head screw and large flat washer to reposition the shift lever. Pay attention to location of long or standard travel hole when reassembling shift lever. See assembly figures 3 thru 7.

Should the assembly require changing the shift direction from pull to push or from right hand to left hand, it will also be necessary to relocate throttle arm support. The throttle arm support may be relocated by removing 2 screws and nuts located at "A" and "B" as shown on the assembly figures (5 or 7), and then reposition to similar holes on other side of hanger plate.

WARNING: When replacing the nuts "A" and "B", locate them on the throttle arm support casting against the locking shoulders of the casting.

When the shift direction is changed, it will also be necessary to relocate neutral safety switch. See Figure 14.

2.4 THROTTLE CAM

While the dwell plate has been removed, the throttle cam can be rotated 180°, as shown in Figure 11, for the required change in assembly. The following procedure is required for making throttle cam rotation.

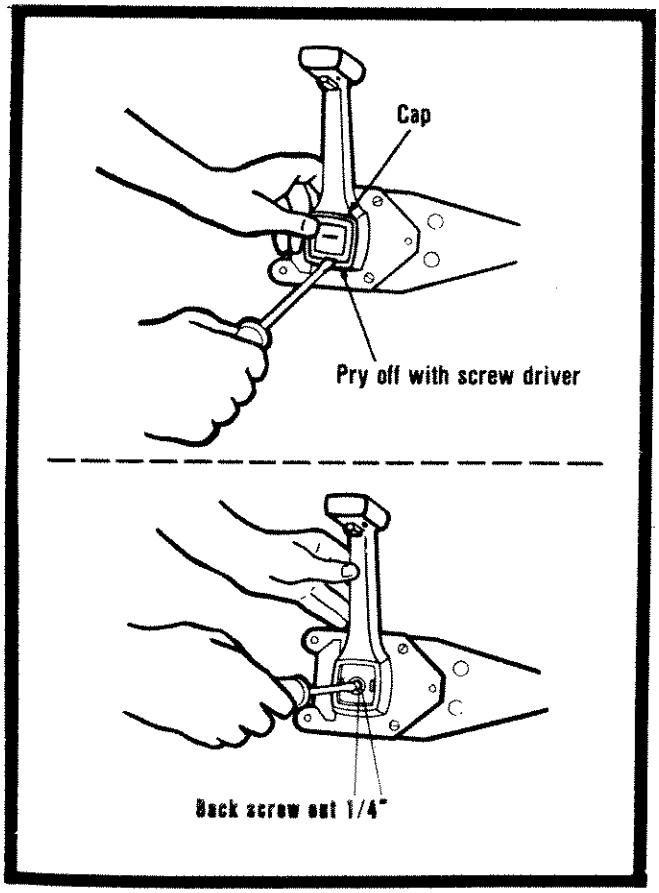


Figure 10

First loosen hand lever as shown in Figure 10 by removing cap from hand lever. Back out screw (securing hand lever) about 1/4", allowing hand lever to be pulled free of serrations. This allows throttle cam to be rotated as shown in Figure 11.

NOTE: Hand lever should not be completely removed.

Push down on throttle arm as shown in Figure 11 and rotate 180° to reposition pin.

Throttle cam pin points forward for "Push to open throttle."

Throttle cam pin points to rear for "Pull to open throttle."

Replace control hand lever. Make sure lever engages in serrations on control shaft and that neutral interlock key in hand lever aligns with the notch in the plastic collar of the control when hand lever is in neutral. See Figure 12.

NOTE: Before replacing dwell plate make sure sliding cam pin is well lubricated in throttle arm.

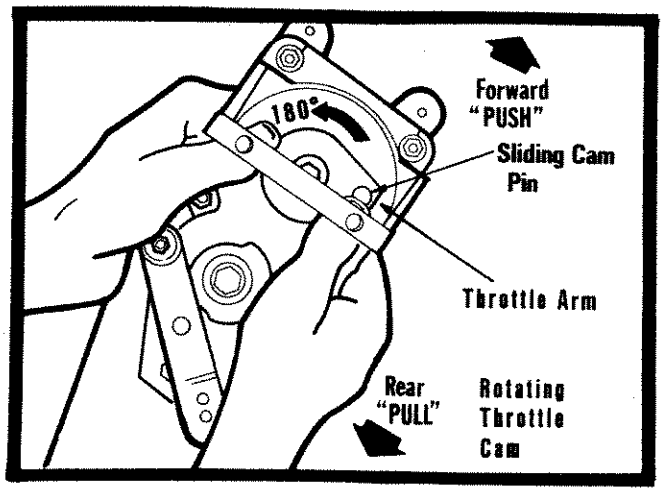


Figure 11

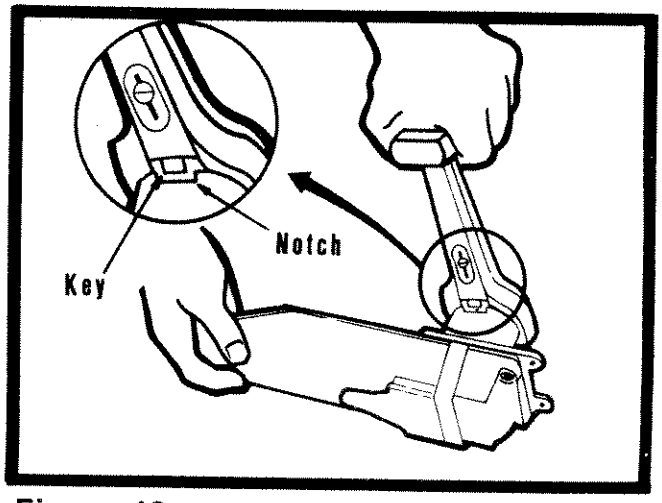


Figure 12

2.5 NEUTRAL SAFETY SWITCH

Place hand lever in "Forward" detent position to take pressure off switch. Back off switch mounting screws until switch slips free. See Figure 14.

NOTE: Should screws be removed completely, the nuts will still be retained in the pockets.

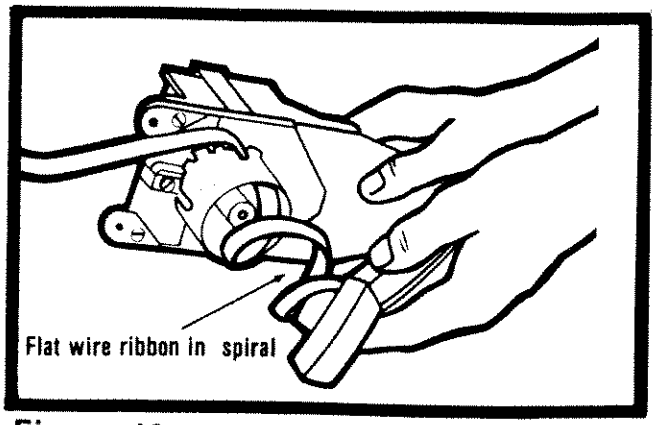


Figure 13

CAUTION: If hand lever is completely removed, care must be taken to replace wires exactly as shown in Figure 13. Wires are wound spirally 2-1/2 times around the hand lever, similar to a clock spring.

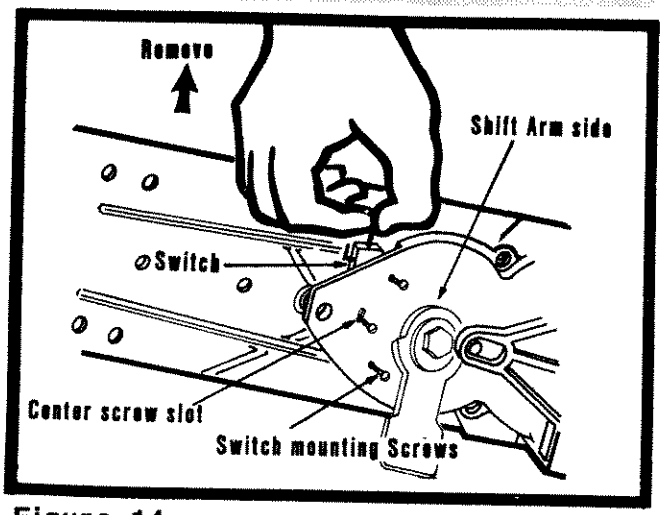


Figure 14

Relocate switch on opposite side from shift arm.

It will be necessary to slide center mounting screw and nut to opposite side of slot to line up with switch hole.

WARNING: Be careful to align screws with the holes in switch. Tightening the screws against body of switch will cause permanent damage to the switch.

Electrical connection of neutral safety switch should be accomplished by using slide terminals and insulators which are furnished with control. Electrically connect switch in circuit between ignition key switch and the starter solenoid. (See Fig. 29.) Engine must only start when hand lever is in the neutral detent position.

2.6 HAND LEVER WIRING FOR "VOLVO"

Hand lever with Trim and Tilt switches (5 wire) which is not marked "VOLVO" on harness must be corrected inside of hand grip, see Figure 15. Fold back grip from hand lever and remove short red wire which connects between both switches. Move blue wire from end terminal on tilt switch to center terminal on tilt switch and resolder.

CAUTION: When reasembling, be sure that wires does not restrict the operation of the neutral lockout trigger.

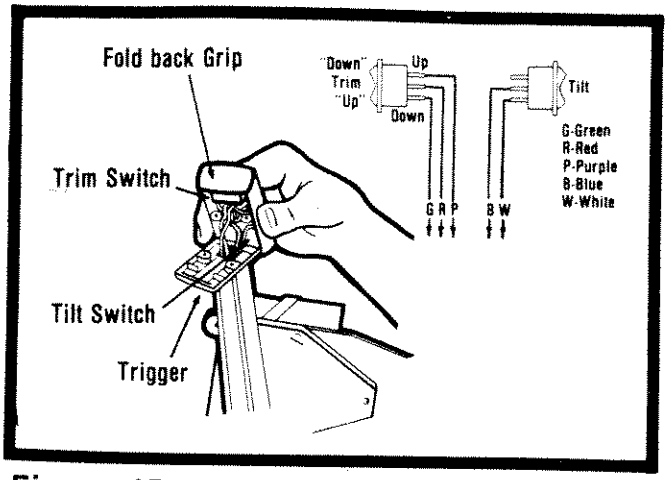


Figure 15

SECTION 3
CONNECT CONTROL

3.1 CABLE SUPPORT

Since there are 3 types of cables that can be used with the MN Universal Series control, the pair of cables being used must be properly installed in the cable support and mounted to hanger plate as shown in Figure 18 and 19.

3.2 CABLE ATTACHMENT

Examine the hanger plate in Figure 16. There are pairs of holes mrked "STD", "OMC", and "MERC". Notice the shift arm. There are 3 holes for attaching cable terminals. It is important to make sure the shift arm is assembled with the pivot holes in the correct position as shown in Figure 16. The hole being used must be nearest to the end of control which has the cable mounting support.

NOTE: SHIFT TRAVEL AT CONTROL

SHORTEST TRAVEL - 2.65 INCH (67.5 MM)
STANDARD TRAVEL - 2.94 INCH (74.6 MM)
LONGEST TRAVEL - 3.23 INCH (82.1 MM)

CAUTION: Using hole in shift arm furthest away from cable mounting support will produce unequal shift travel between neutral to forward and neutral to reverse, resulting in improper shift action.

NOTE: Control shift lever and transmission shift lever must coincide at Forward, Neutral and Reverse positions. Different makes of transmissions may require different amount of cable travel. For this reason the control shift lever is provided with 3 positions for attaching the shift cable; one for shortest travel, one for standard travel, and one for longest travel, as shown in Figure 17. Use the attaching hole appropriate for your transmission.

KM Cables (MERC) - Attach the cable support to hanger plate at location marked "MERC". Attach cable to longest travel hole in shift arm.

OS Cables (OMC) - Attach the cable support to hanger plate at location marked "OMC". Attach cable to shortest travel hole in shift arm.

33C Cables - Attach the cable support to hanger plate at location marked "STD", when using standard or longest travel holes in shift arm. When using shortest travel in shift arm, attach the cable support to the location on hanger plate marked "OMC".

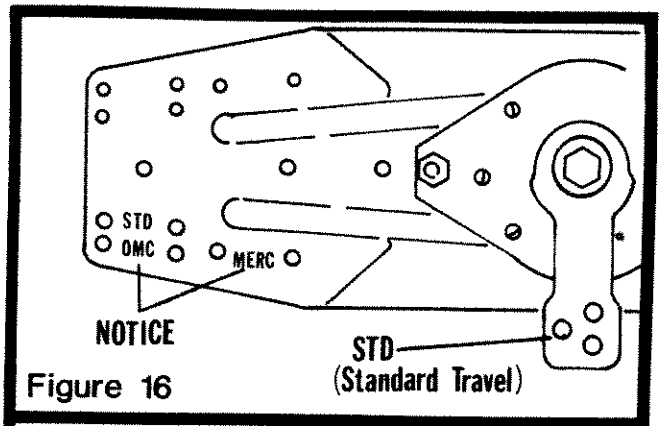


Figure 16

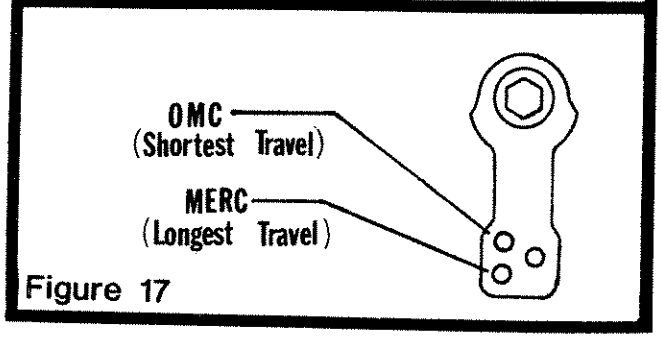


Figure 17

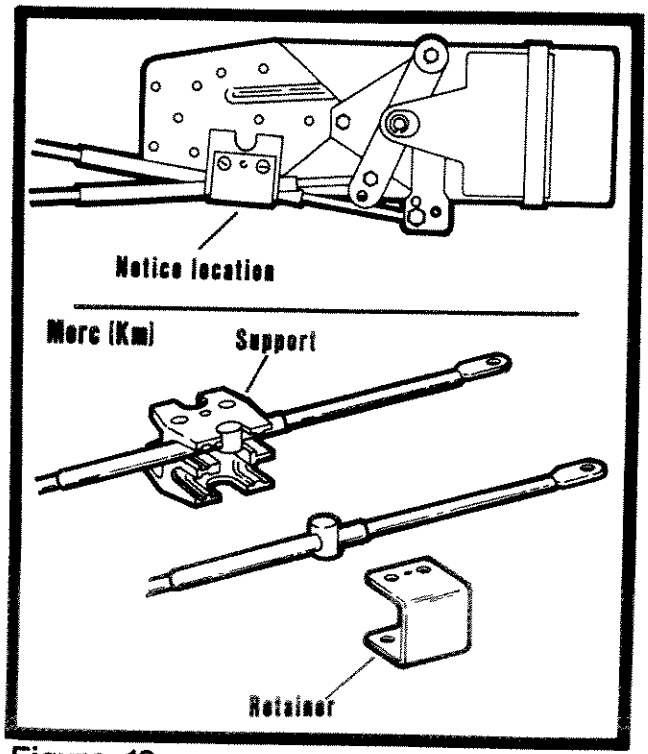


Figure 18

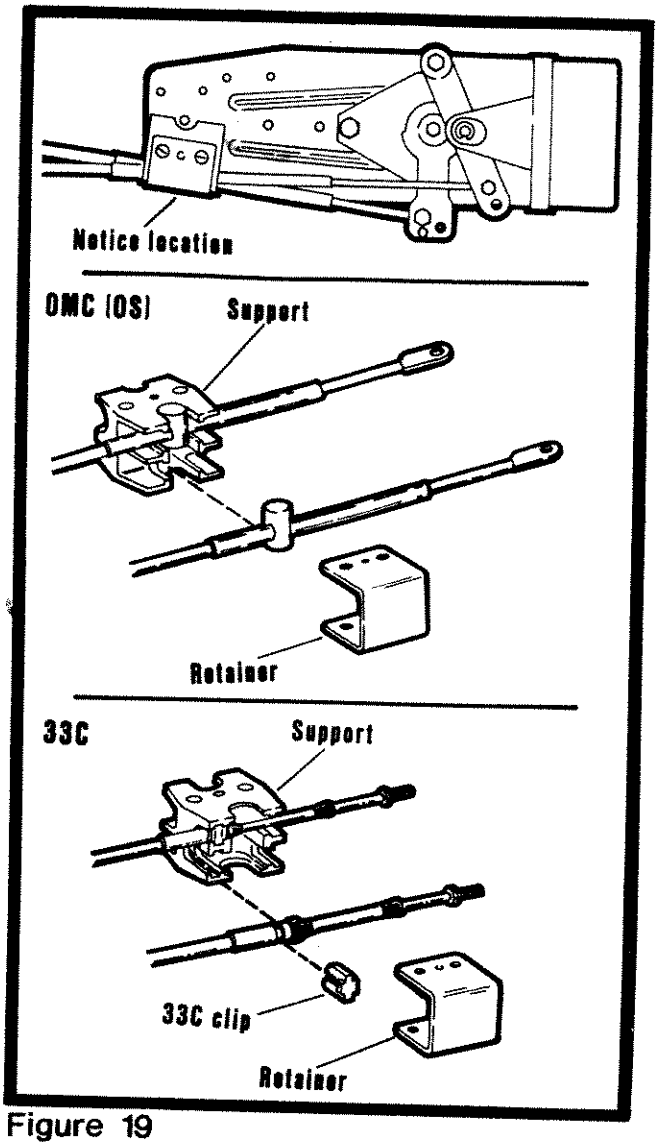


Figure 19

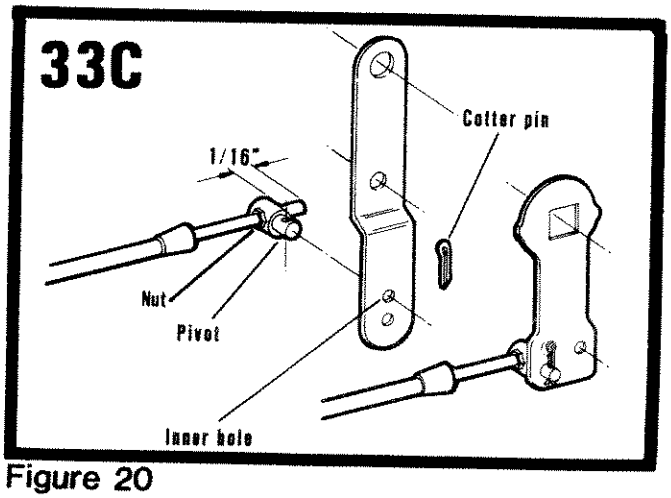


Figure 20

For OS and KM cables, use screw, collar and locking nut as shown in Figure 21.

When attaching 33C cable terminals, be sure cables extend 1/16" through terminal, as shown in Figure 20, and tighten nut against terminal.

Place throttle cable terminal in the inner hole of the throttle arm as shown in Figure 20 & 21. Outer hole should only be used if inner hole does not give full throttle action.

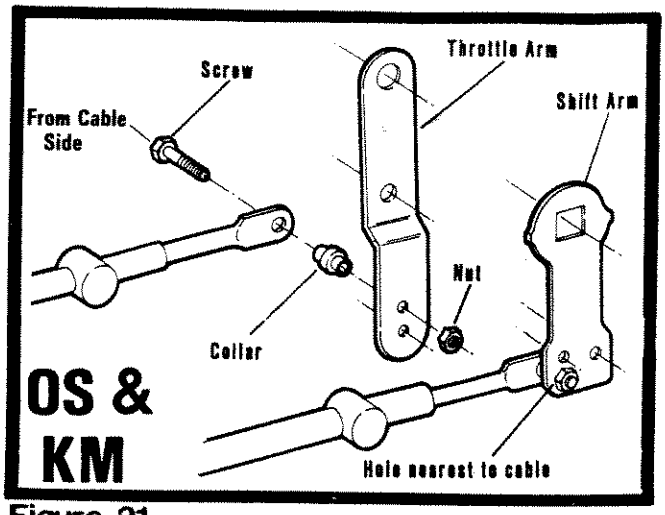


Figure 21

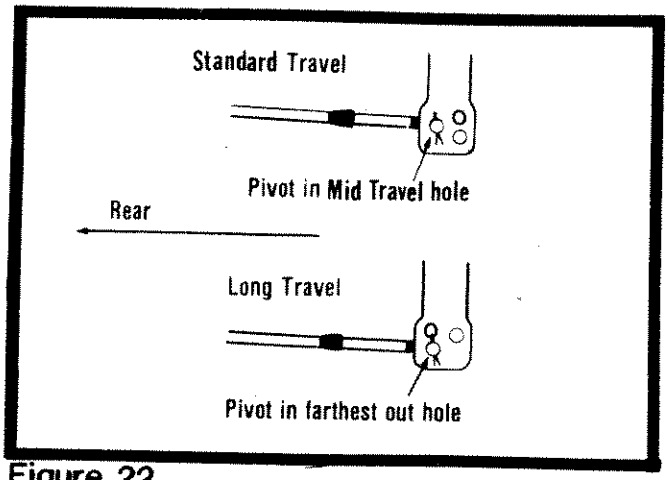


Figure 22

SECTION 4
MOUNT CONTROL

4.1 INSTALLATION

Install control through mounting surface, either from front or rear, as previously determined, as shown in Figure 23 & 24.

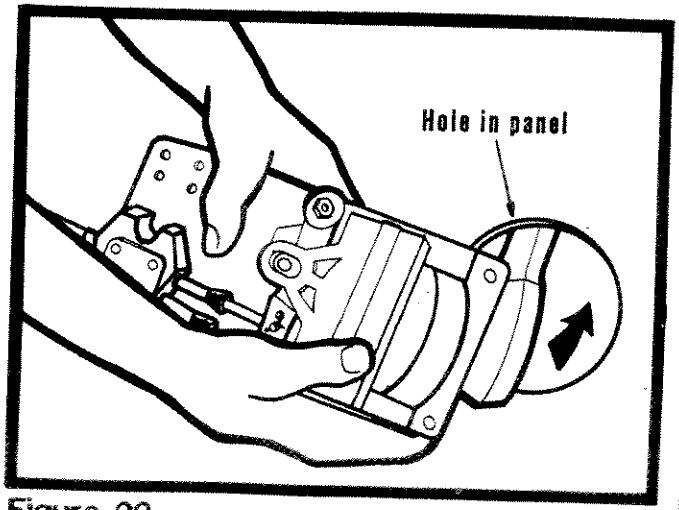


Figure 23

NOTE: Before installing from front of mounting surface, place hand lever in forward position for best clearance of shift arm.

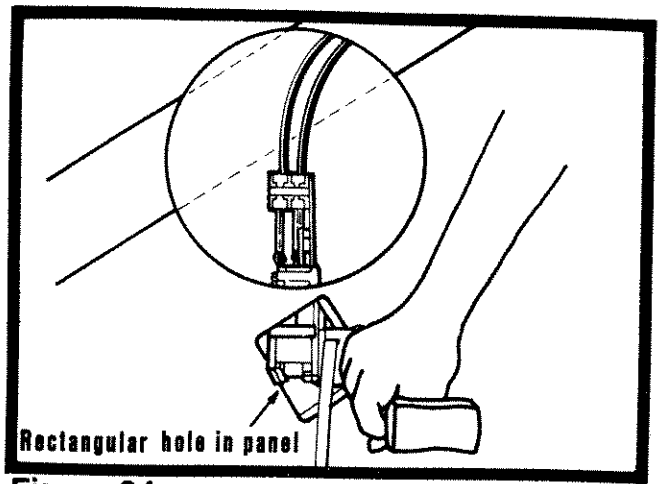


Figure 24

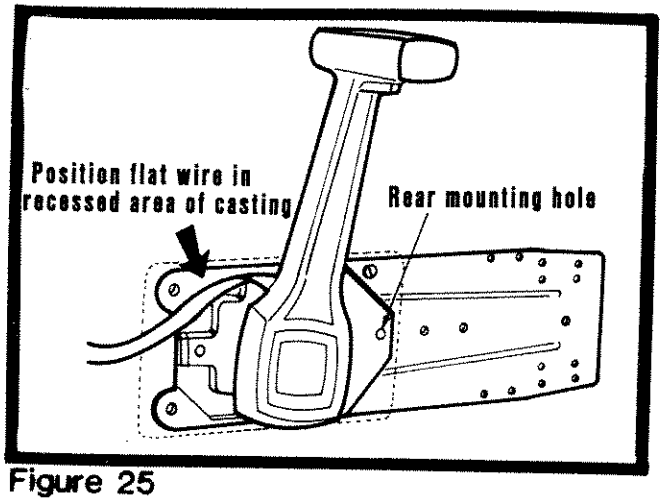


Figure 25

4.2 CABLE PATH

Run the cables through panel cutout back to the location of the throttle and shift.

The cables should be run as straight as possible, avoiding any sharp bends. Make no bends in the cable of less than 8" radius.

The cables should be supported by using cable hangers or by running them through straight sections of conduit for extremely long runs.

See Figure 25. Position wiring harness as shown to prevent damage to wires.

4.3 FASTENING

Secure control with metal retainer plate and 3 each 1-1/4" long machine screws provided. Panel thickness must not exceed 13/16".

CAUTION: For panels less than 1/2" thick, a 3/4" long screw is provided for use in rear mounting hole. (See Figure 25.) Long screws used in thin panels at this point can damage control or interfere with operation of control.

4.4 SOFT UPHOLSTERY MOUNTING

It is recommended that the soft padding underneath upholstery should be removed at least 1/2" all around metal retainer plate, so that the split trim cover will seat properly.

Alternate method for soft upholstery: Space the retainer plate out by means of some washers between plate and upholstery.

CAUTION: Maximum thickness of panel, upholstery and washers must not exceed 13/16" when retainer plate is tightened securely.

SECTION 5
CONNECT ENGINE

5.1 PROCEDURE

Connect clutch and throttle cables to throttle and shift levers at the engine, following the instructions provided with the appropriate connection kit or with the engine.

NOTE: Make sure dwell plate in the control is firmly against throttle cam pin as shown in Figure 26 when connecting throttle cable to engine as specified in Section 5.1.

5.2 THROTTLE CABLE CONNECTION & ADJUSTMENT

Proper adjustment of the throttle cables will assure having long life from this control. When the throttle cable is correctly adjusted, the motor speed will remain at idle while the control is shifted, and will increase only when the hand lever is moved beyond the shift detent.

Proceed as follows:

(a) Adjust the motor to a smooth idle as recommended by the motor manufacturer. This must be done before connecting control throttle cable to the carburetor or governor arm.

(b) Place the hand lever of the control in the neutral detent.

(c) Place the carburetor arm lightly against the idle stop.

(d) Adjust the throttle cable terminal (at motor end) to line up with hole (or pin) on the carburetor arm, then connect terminal to arm.

CAUTION: THROTTLE CABLE MUST BE DISCONNECTED FROM MOTOR BEFORE MAKING MOTOR IDLE ADJUSTMENTS. Adjustment of the motor idle while the throttle cable is still connected to motor, may cause a jamming action against the idle stop. As a result, control may not function properly and damage to control, cable, or motor may occur.

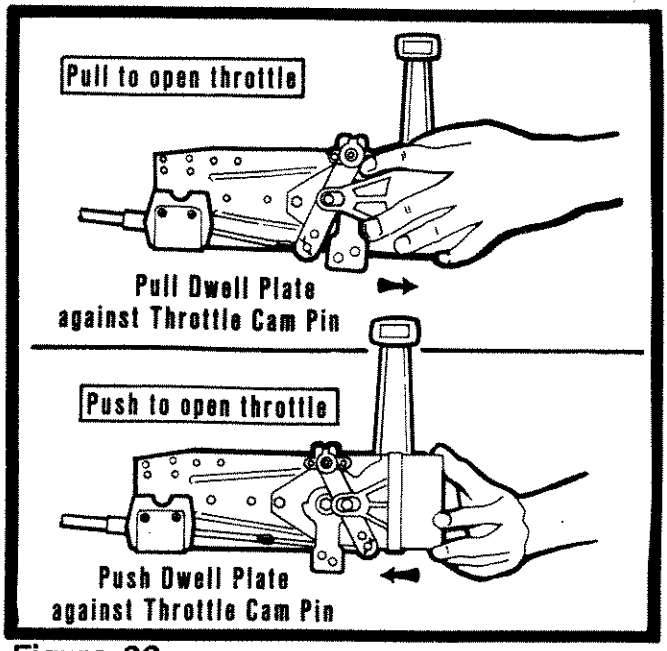


Figure 26

CAUTION: The full open throttle positon usually varies with the make of motor. If the throttle travel is less than the full stop position of the control, an effort should be made to limit the hand lever travel by means of a shelf or stop of some sort under the hand lever. Excess pressure on the hand lever at full open throttle positon may cause damage to cable, control or the motor.

5.4 SHIFT CABLE CONNECTION & ADJUSTMENT

Proper adjustment of the shift cable will result in a much better operating control. The "Forward", "Neutral" and "Reverse" positions of the control shift lever should coincide with the Forward, Neutral and Reverse positons of transmission lever.

Different makes of transmissions may require different cable travels. For this reason the control shift lever is provided with three attaching holes. The shift cable should already be assembled into the appropriate hole on the control shift lever. (See Section 3).

CAUTION: Over-jamming transmission stop on either end of the shift travel may: (1) cause excessive wear of the drive and shift gear, (2) result in a "heavy" feel of the hand lever, (3) over-stress and damage the cable.

5.5 Check to make sure there is no interference with either hand lever or control mechanism movement.

SECTION 6
OPERATION AND ADJUSTMENT

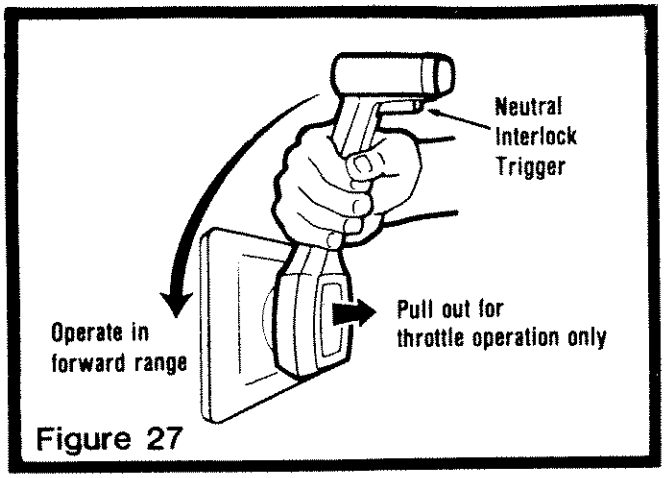


Figure 27

6.1 PRELIMINARY CHECK

Place the control hand lever in neutral position, then grasp hand lever between hub and grip. Pull out hand lever and move through forward range to operate carburetor throttle lever to full open position, as shown in Figure 27. When hand lever is returned to neutral, it should snap into operating position. Hand lever can now be operated through both shift and throttle range.

Depress neutral interlock trigger to operate the control head hand lever. Make sure the engine shift lever and the control shift coincide at forward, neutral, and reverse positions.

CAUTION: Do not force shift when motor is not running. To do so may damage control, cables, or motor, especially outboards or I/O's.

6.2 BRAKE ADJUSTMENT

See Figure 28. Place hand lever in reverse throttle position (just beyond reverse detent position) and adjust throttle brake screw to prevent throttle creep. Turning screw clockwise increases brake effect.

CAUTION: Brake must only be adjusted when hand lever is in throttle range.

6.3 INSTALL COVERS

Install split trim covers by pressing firmly against mounting surface and sliding over metal retainer plate from each end until they snap into place.

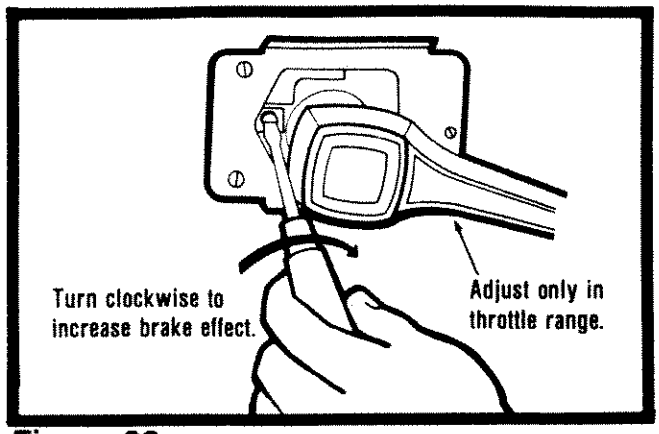


Figure 28

6.4 OPERATION

For starting or warm-up, place the control in neutral detent positon then grasp hand lever between hub and grip to pull the hand lever, as shown in Figure 27. This disengages the shift mechanism, allowing the lever to be moved forward or backward to advance the throttle. When warm-up is completed, return the lever to neutral. The lever will snap into place and the control is ready for single lever operation.

When operating the control, depress neutral interlock trigger and shift crisply out of neutral into forward or reverse. When the throttle cable is correctly adjusted, the engine speed will remain at idle while the control is shifted, and will increase only when the hand lever is moved beyond the shift detent.

WARNING: Do not shift too quickly from forward to reverse. Stay in the neutral or idle position until the boat has lost most of its headway before completing the shift to reverse.

6.5 TRIM AND TILT OPERATION

Deluxe controls have Trim and Tilt (trailering) switches in hand lever grip.

TRIM is activated by pressing projections on side of grip which is nearest to operator and marked by indications "UP" and "DN".

"UP" causes drive to go up and as a result, bow of boat will come up when boat is underway.

"DN" (Down) causes drive to go down and as a result bow of boat will come down when boat is underway.

TILT (or trailering) is activated by pressing the "UP" projection on opposite end of grip from trim. This is used only to raise drive completely out of water and for trailering of boat. Some drives use the trim switch for both trim and tilt.

NOTE: Tilt switch is only present with the 5 wire harness.

SECTION 7
MAINTENANCE

7.1 CORROSION PROTECTION

For maximum protection, especially in salt water areas, wipe metallic parts, such as screw heads, cable sleeves, etc., with oil or light grease. Chrome plated hand levers and covers should be washed with fresh water and waxed regularly.

7.2 MECHANICAL PERFORMANCE

(a) Periodically check control mechanism for loose fastenings and signs of wear on moving parts, particularly the cable terminals. Lubricate moving parts with a good quality marine grease.

(b) Periodically examine cables and engine connections for signs of physical damage, wear and corrosion, replace as required.

SECTION 8
WIRING DIAGRAMS

8.1 NEUTRAL SAFETY

As shown in Figure 29 and Section 2.5, connect the appropriate wires from the engine to the neutral start switch. Check this installation with a continuity tester to be sure switch has continuity in neutral, and is open in all other positions.

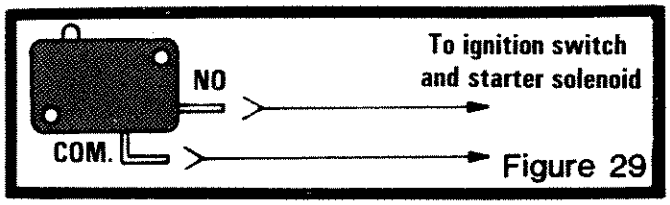


Figure 29

8.2 TRIM AND TILT

Refer to wiring diagrams, Figure 30 through 38 for correct connections for "Trim" and "Tilt" switches, then connect as required and test "Trim" and "Tilt" switch operation. Note that some outboards and outdrives require the addition of special switches or solenoids. Consult instructions in these kits for installation and wiring.

When removing the harness from the Mercury or Mariner control to use with the Morse "MN" control, connect as shown in Figure 32.

NOTE: For left hand control operation, it may be necessary to reverse connections from "TRIM" and "TILT" switches.

5 Wire

Reverse purple and green for opposite "TRIM" operation.

Reverse blue and white for opposite "TILT" operation. Do not change red connection.

3 Wire

Reverse blue and green for opposite "TRIM" operation.

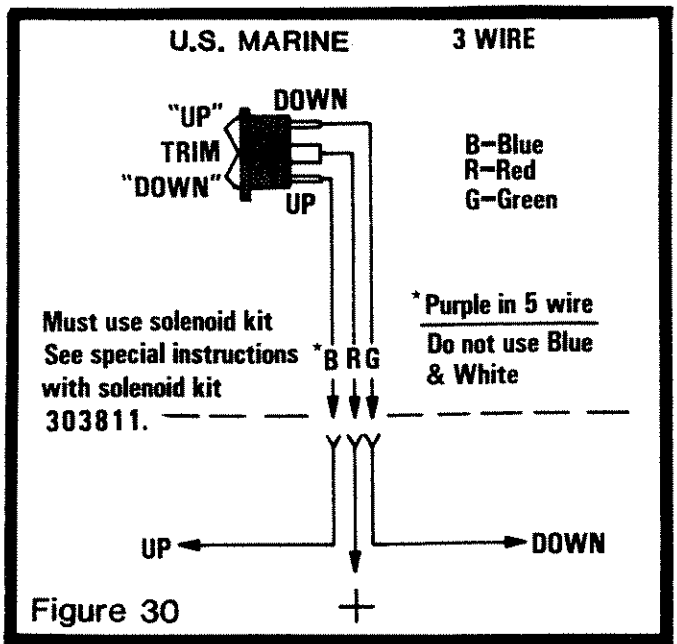
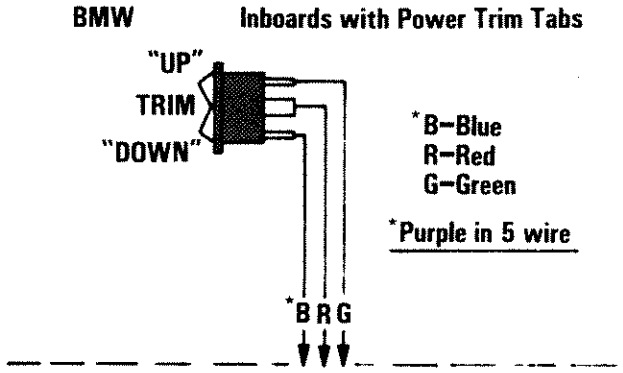


Figure 30



NOTE: For BMW connect Red lead to ground. Check continuity to determine which lead(Blue or Green) from trim motor is up or down.

Figure 31

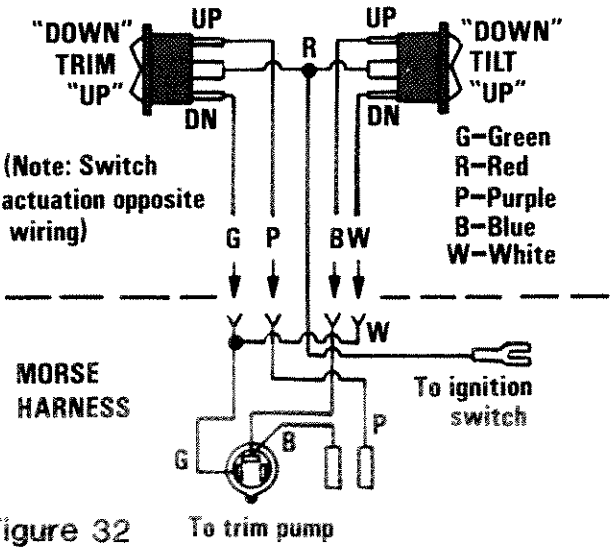


Figure 32

SUZUKI OUTBOARD 3 WIRE

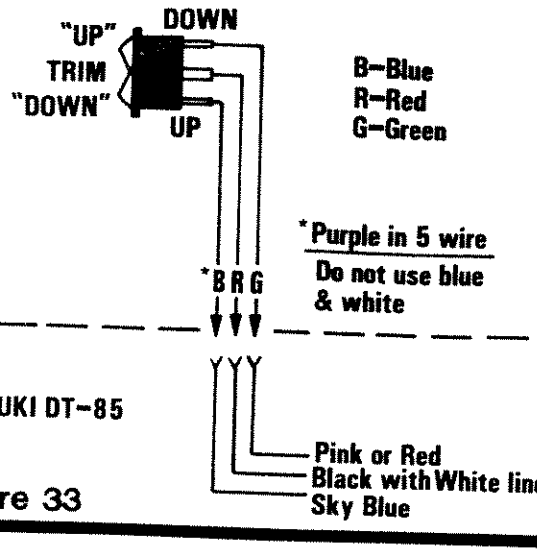


Figure 33

VOLVO 5 WIRE

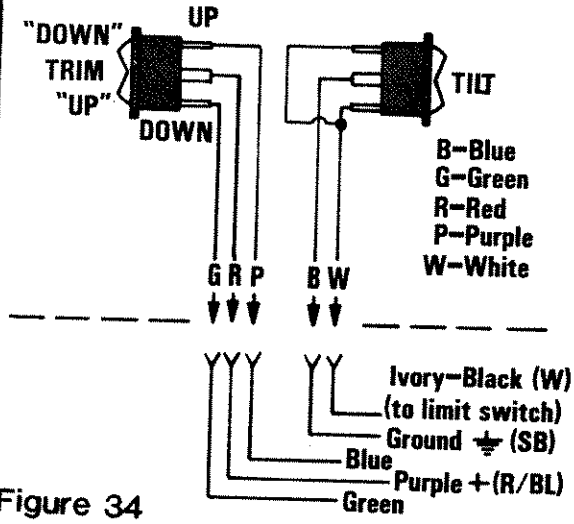


Figure 34

THRU 1985 OMC STERNDRIVE 5 WIRE

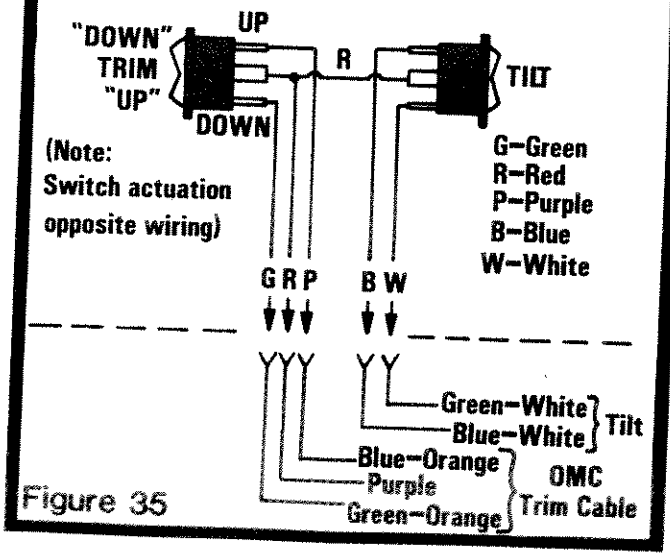


Figure 35

EVINRUDE – JOHNSON OUTBOARDS
OMC "COBRA" STERNDRIVES 3 WIRE

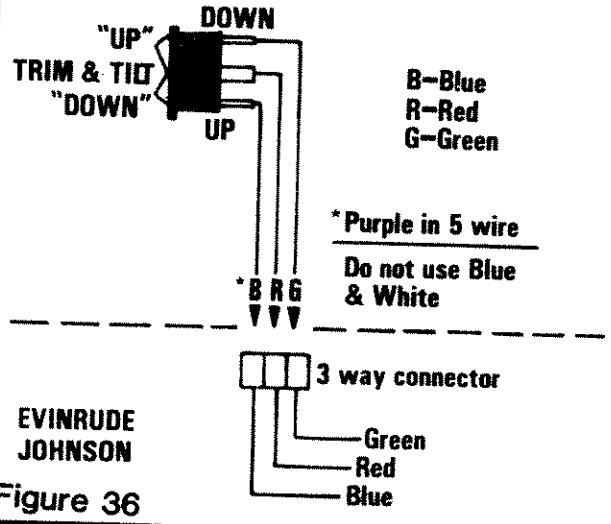


Figure 36

YAMAHA OUTBOARD 3 WIRE

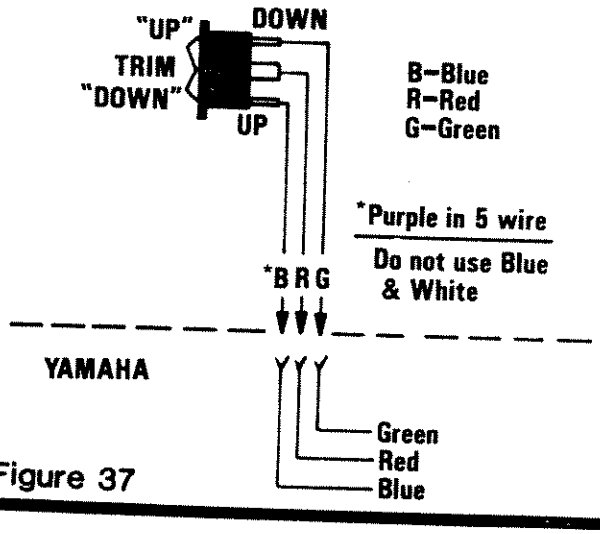
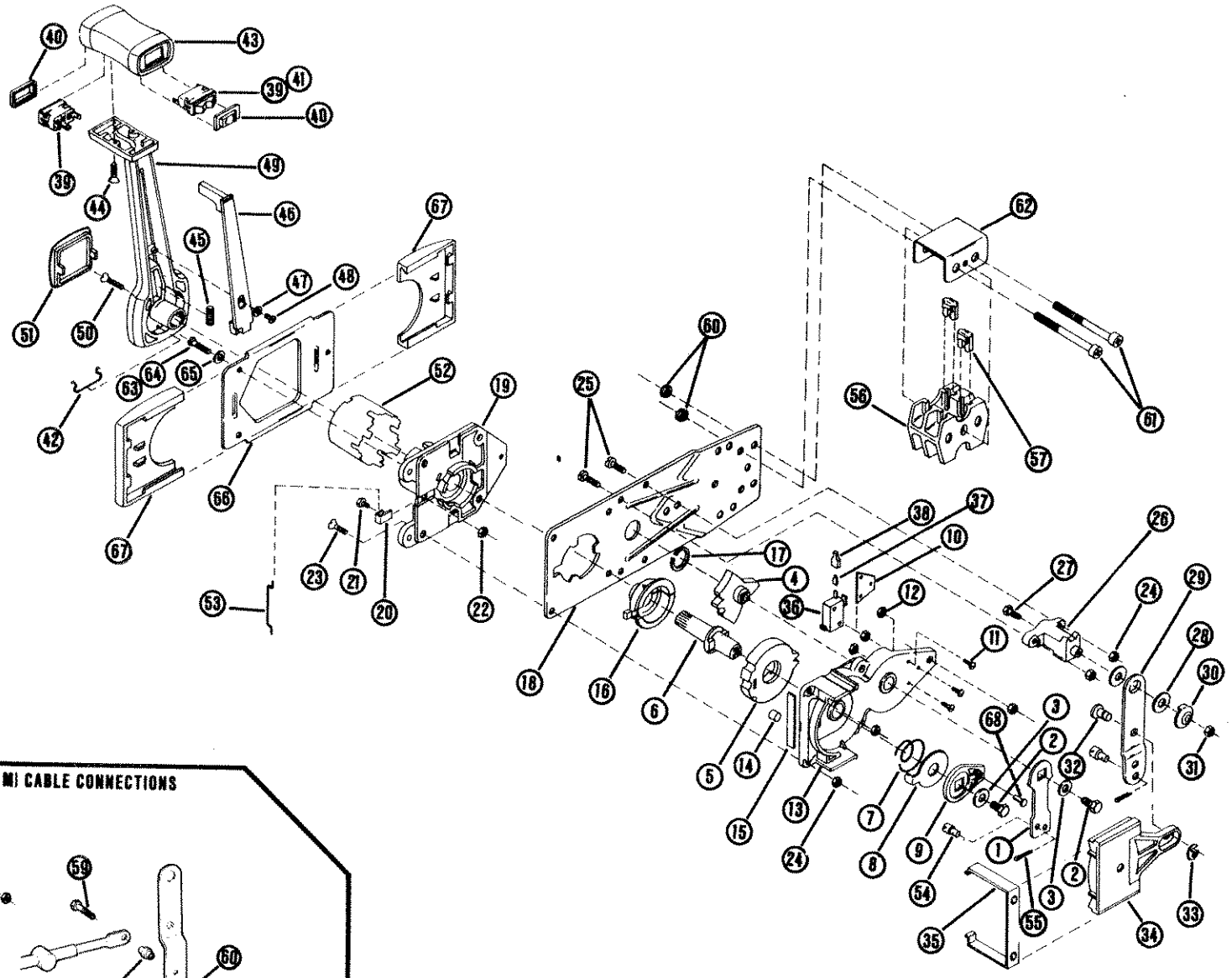
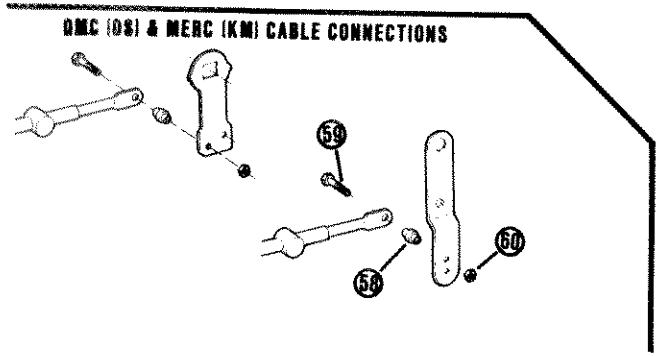


Figure 37

PARTS BREAKDOWN





Bill of Materials

ITEM	NO. REQ'D	DESCRIPTION	SEE CODE LIST
1	1	Shift Arm	B
2	2	Screw-Hex. Hd 1/4-28 x 1/2 Lg. Locking	A B
3	2	Washer, Flat	A B
4	1	Shift Gear	C
5	1	Drive Gear	C D
6	1	Drive Shaft	C D
7	1	Conical Spring	C D
8	1	Shift Lockout Plate	C D
9	1	Throttle Lever	C D
10	1	Nut Retainer	C D
11	3	Screw-Rd. Hd. #4-40 x 1/2 Lg.	C D
12	3	Nut - Hex#4	C D
13	1	Gear Housing	C D
14	1	Detent Roller	C
15	1	Detent Spring	C
16	1	Drive Bearing	A
17	1	Shift Bearing	A
18	1	Hanger Plate	303438
19	1	Side Mounting Support	F
20	1	Brake Spring	A F
21	1	Screw - Fil. Hd. #10-32 x 1/2 Lg.	A F
22	1	Nut - Hex. Locking #10-32	A F
23	4	Screw - Flat Hd. #10-32 x 3/4 Lg.	A
24	7	Nut - Hex. #10-32	A
25	3	Screw - Fil Hd #10-32 x 5/8 Lg.	A
26	1	Throttle Arm Support	B G
27	1	Screw - Hex. Hd #10-32 x 3/4 Lg.	A B G
28	2	Thrust Washer	A B G
29	1	Throttle Arm	B G
30	1	Pressure Plate	A B G
31	1	Nut - Hex. Elastic Stop #10-32	A B G
32	1	Pivot Pin	A G
33	1	E-Ring 5/16	A G
34	1	Dwell Plate	G
35	1	Dwell Plate Retainer	C
36	1	Microswitch	H
37	2	Terminal	H J
38	2	Insulator	H J
39	2	Rocker Switch - SPDT	K R S V W
40	2	Switch Seal	K L M R S V W
41	1	Wiring Harness	L M R S V W
42	1	Clip-Wire Retainer	A L M N R S V W
43	1	Hand Grip	N R S T U V W
44	2	Screw - Oval Hd. #8 x 3/4 - Self Tapping	N R S T U V W
45	1	Spring	N R S T
46	1	Trigger-Neutral Interlock	N R S T
	1	(Alt) Back Cover - Plan H.L.	N U V W
47	1	Washer - Flat	N R S T
48	1	Screw - Pan Hd. #8 x 3/8 - Self Tapping	N R S T U V W
49	1	Hand Lever	302229 RSTUVW
50	1	Screw - Flat Hd. 1/4-28 x 3/4 Lg.	A N
51	1	Hub Insert w/decal	N

ITEM	NO. REQ'D	DESCRIPTION	SEE CODE LIST
52	1	Collar	N
53	1	Wire Retainer	A
54	2	Pivot - (33C)	A B P
55	2	Cotter Pin 3/32 x 1/2 Lg.	A P
56	1	Cable Support - Universal	E P
57	2	Clip (33C)	E P
58	2	Terminal Bearing	A P
59	2	Screw - Hex Hd. #10-32 x 1/2 Lg.	A P
60	4	Nut - Hex Elastic Stop #10-32	A E P
61	2	Screw - Fil. Hd. #10-32 x 2" Lg.	A E P
62	2	Retainer - Cable Support	E P
63	3	Screw - Rd. Hd. #10-24 x 1-1/4 Lg.	A P
64	1	Screw Rd. Hd. #10-24 x 3/4	A P
65	3	Washer - Internal Lock #10	A P
66	1	Cover Retainer Plate	P
67	1	Side Trim Cover	302276
68	1	Pin-Throttle Cam	305377

Spare Parts Kits

CODE	PART NO.	DESCRIPTION	CONTAINS ITEMS:
A	A303002	General Service Parts Kit	33, 42, 50, 53, 54, 55, 58, 59 60, 61, 63, 64, 65, 2, 3, 16, 20 21, 22, 23, 24, 25, 27, 28, 30, 31, 32
B	A303011	Shift & Throttle Arm Kit	1, 2, 3, 26, 27, 28, 29, 30, 31 54, 55
C	A303009	Gear Unit Kit	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 35
D	D302738	Gear Housing Assembly	5, 6, 7, 8, 9, 10, 11, 12, 13
E	A304026	Cable Support Ass'y Universal	56, 57, 62, 61, 60
F	B302721	Side Mounting Support Ass'y	19, 20, 21, 22
G	D302717	Throttle Arm & Dwell Ass'y	26, 27, 28, 29, 30, 31, 32, 33, 34
H	A303014	Neutral Switch Kit	36, 37, 38
J	A302070	Electrical Terminal Kit	37, 38
K	A303022	Trim Switch Kit	39, 40
L	A303019	3 Wire Harness Kit	40, 41, 42
M	A303020	5 Wire Harness Kit	40, 41, 42
N	A303015	Hand Lever Parts	42, 43, 44, 45, 46, 47, 48, 49 50, 51, 52
P	A302827	Mtg. Hardware Kit - Universal	54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66
R	D302255	Hand Lever Ass'y w/Interlock & Trim	39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49
S	D302257 D303874 (Volvo)	Hand Lever Ass'y w/Interlock, Trim & Tilt	39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49
T	D302251	Hand Lever Ass'y w/Interlock	43, 44, 45, 46, 47, 48, 49
U	D302243	Hand Lever Ass'y Plain	43, 44, 46, 48, 49
V	D302258	Hand Lever Ass'y w/Trim	39, 40, 41, 42, 43, 44, 46, 48, 49
W	D302256	Hand Lever Ass'y w/Trim & Tilt	39, 40, 41, 42, 43, 44, 46, 48, 49