TOHATSU OUTBOARDS

40 C

OWNER'S HAND BOOK

003-11015-5

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FOREWORD

To get the maximum amount of pleasure and performance out of an outboard motor it is important that you understand the functions of the mechanism and learn to operate the controls with ease and confidence. This operating manual will explain the construction of the TOHATSU outboard motor and how to carry out periodical inspection. As TOHATSU follows a policy of continuous product improvement, it reserves the right to make changes to specifications without prior notice. For further information please contact TOHATSU dealers or TOHATSU distributors.

TOHATSU CORPORATION

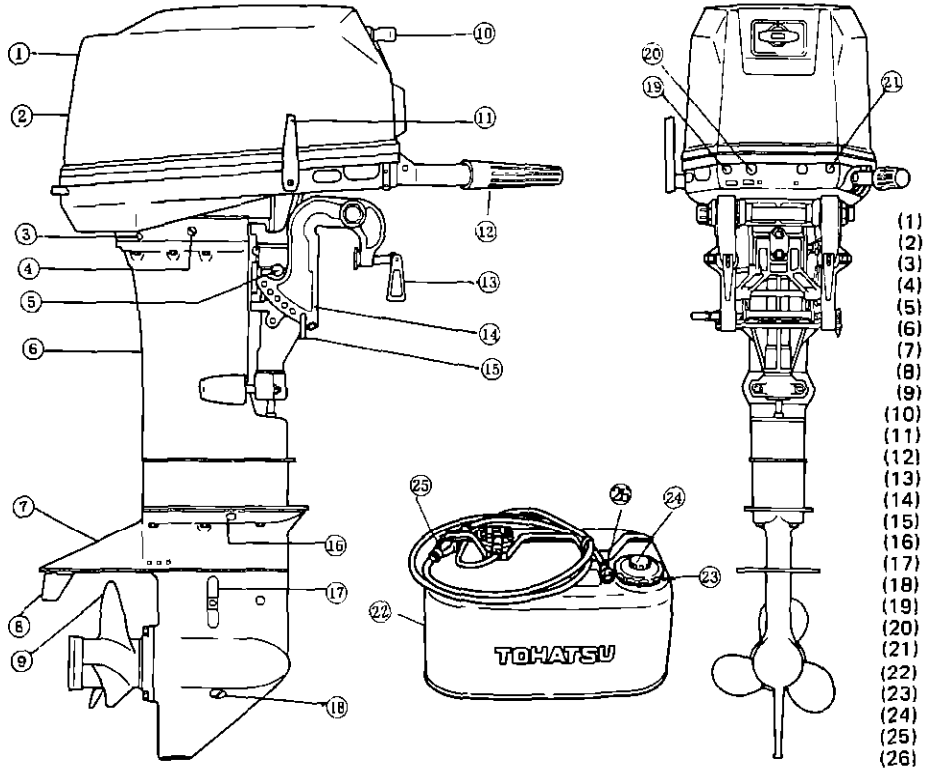
CONTENTS

1. SPECIFICATIONS

Model	M40C	M40CEF	M40CEP
Overall length	919 mm (36.18")		600 mm (23.6")
Overall width	415 mm (16.3")		355 mm (14")
Overall height	S: 1118 mm (44") L: 1245 mm (49") LL: 1321 mm (52") XL: 1372 mm (54")		
Transom height	S: 435 mm (17") L: 562 mm (22") LL: 638 mm (25") XL: 689 mm (27")		
Weight (S transom)	59 kg (129.95 lb)	61.5 kg (135.46 lb)	60.3 kg (132.82 lb)
Max. output PS	40		
Max. rpm range	5,200 ~ 5,800		
Number of cylinders	2		
Piston displacement	493 cc		
Bore & stroke	2.76" x 2.52" (70 mm x 64 mm)		
Exhaust system	Through hub		
Fuel mixing ratio	Gasoline/oil mixture 50 : 1		
Cooling system	Water cooling (Rotary rubber impeller)		
Ignition system	C.D. ignition		
Starter	Manual recoil starter	Manual recoil starter, electric starter	
Spark plug	NGK B7HS-10 or CHAMPION L82YC (gap 1.0)		
Tilt stage	6		
Gear oil	TOHATSU GEAR OIL GL5 (SAE #80)		
Fuel tank capacity	24 ℓ (6.3 US gals.)		
Gear reduction ratio	13 : 25		

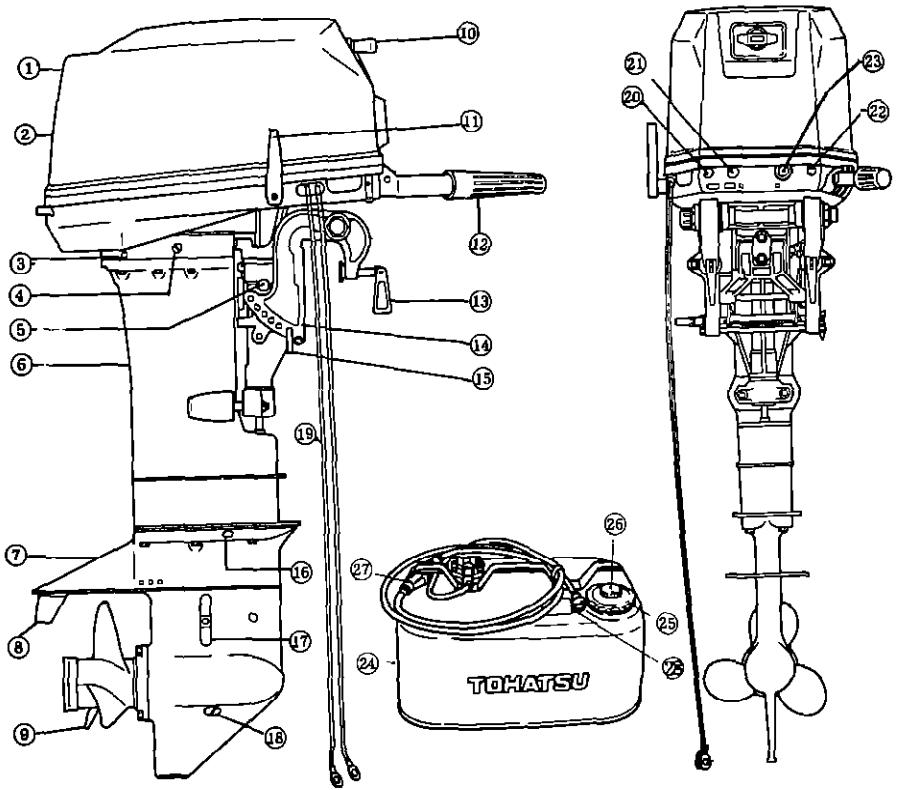
2. MAIN PARTS

1) Model M40C



(1) Tilt Handle
(2) Motor Cover Upper
(3) Flushing Plug
(4) Water Plug
(5) Tilt Stopper
(6) Drive Shaft Housing
(7) Anti-cavitation Plate
(8) Trim Tub
(9) Propeller
(10) Starter Handle
(11) Shift Lever
(12) Throttle Grip
(13) Clamp Screw Handle
(14) Stern Bracket
(15) Thrust Rod
(16) Oil Plug (upper)
(17) Water Strainer
(18) Oil Plug (lower)
(19) Stop Switch
(20) Choke Knob
(21) Connecter B
(22) Fuel Tank
(23) Fuel Tank Cap
(24) Air Vent Screw
(25) Primer Valve
(26) Fuel Connecter A

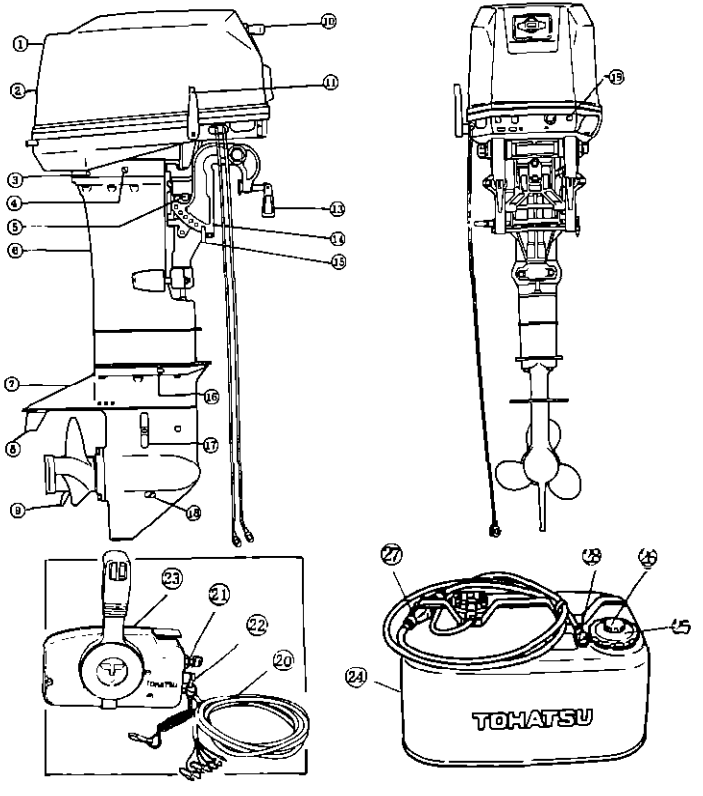
2) Model M40CEF



(1) *Tilt Handle*
(2) Motor Cover Upper
(3) Cooling Water Check Port
(4) Water Plug
(5) Tilt Stopper
(6) Drive Shaft Housing
(7) Anti-Cavitation Plate
(8) Trim Tub
(9) Propeller
(10) Starter Handle
(11) *Shift Lever*
(12) Throttle Grip
(13) Clamp Screw Handle
(14) Stern Bracket
(15) Thrust Rod
(16) Oil Plug (Lower)
(17) Water Strainer
(18) Oil Plug Lower
(19) Battery Cord
(20) Stop Switch
(21) Choke Knob
(22) Connecter B
(23) Main Switch
(24) Fuel Tank
(25) Fuel Tank Cap
(26) Air Vent Screw
(27) Primer Bulb
(28) Connecter A

3) Model M40CEP

M40CEP



(1) Tilt Handle
(2) Motor Cover Upper
(3) Cooling Water Check Port
(4) Water Plug
(5) Tilt Stopper
(6) Drive Shaft Housing
(7) Anti-Cavitation Plate
(8) Trim Tub
(9) Propeller
(10) Starter Handle
(11) Shift Lever
(12) Clamp Screw Handle
(13) Stern Bracket
(14) Thrust Rod
(15) Battery Cord
(16) Oil Plug (Upper)
(17) Water Strainer
(18) Oil Plug (Lower)
(19) Connecter B
(20) Main Switch Cord
(21) Main Switch
(22) Safety Switch
(23) Remote Control Box
(24) Fuel Tank
(25) Fuel Tank Cap
(26) Air Vent Screw
(27) Primer Bulb
(28) Fuel Cock
(29) Connecter A

3. INSTALLATION

3-1. Mounting the engine on boat

(1) Setting position ..... above keel line
Distance between engines (Fig. 1)
approximately 580 mm (22.8")

(2) Transom height
Fit the engines so that the anti-cavitation plate is 30 ~ 50 mm (1.2" ~ 2") lower than bottom of the boat by (30 ~ 50 mm) (Fig. 2).

(3) Tighten engines to boat by cramp screw handle and bolt of engine bracket. Tighten engines to boat to prevent loss. (Fig. 3)

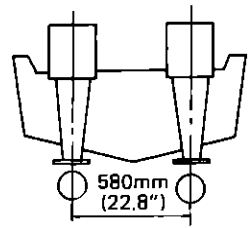


Fig. 1 Twin engine mounting

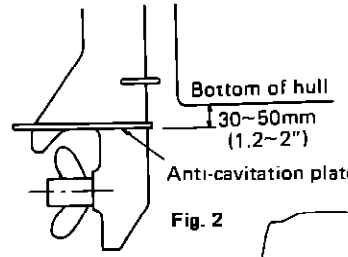


Fig. 2

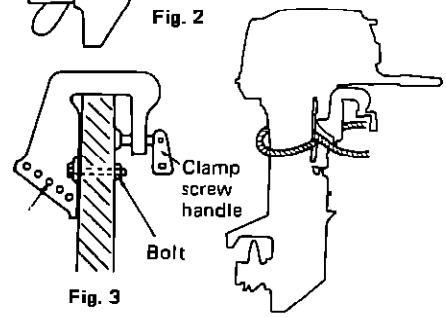


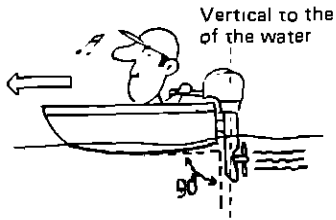
Fig. 3

(4) Tilt angle

The outboard motor is adjustable its tilt angle depending on stern angle of a boat and loading condition. Choose appropriate tilt angle of the motor that the anti-cavitation plate is paralel to water face while running.

●Proper tilt angle

When the boat is holizontal while running, a position of the thrust rod is proper.



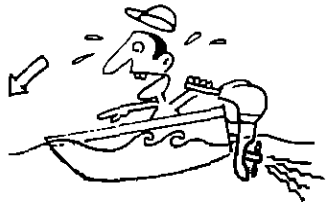
●Improper tilt angle

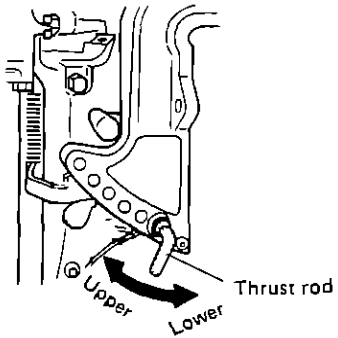
Set the thrust rod lower.

If a bow of a boat is rising, having heavy pitching or unstable straight running, set the thrust rod lower.

Set the thrust rod upper

If a bow of a boat goes under a wave, set the thrust rod upper.





3-2. Installing the remote control device

Explanation of right hand Remote Control Box is written in this book.

(1) Installation position of the Remote Control Box and length of the Remote Control Cable.

(1) Position of the Remote Control Box

Decide installation position for the Remote Control Box where there is no obstruction to operate the Remote Control Lever and switches.

Check if there is obstruction on the way of the Remote Control Cables.

(2) Length of the Remote Control Cable

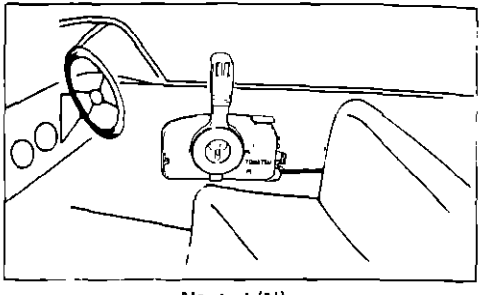
Note. Do not bend the Remote Control Cable smaller than 406 mm (16 inches) with a diameter.

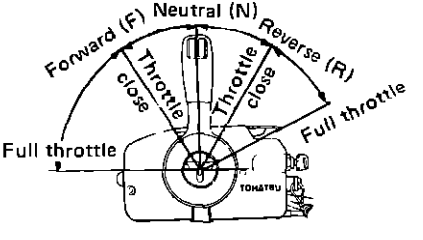
(2) Installation of the Remote Control Cable (the Box side)

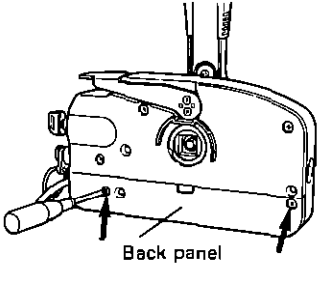
(1) Take out the back panel of the Remote Control Cable by loosing two screws.

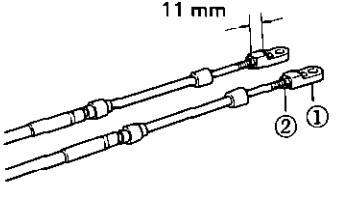
(2) Screw the Remote Control Cable Terminal Eye ① more than 11 mm (0.43 inch).

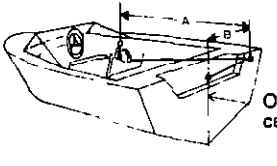
Hold the Terminal Eye by a nut ② for not turn the Terminal Eye.





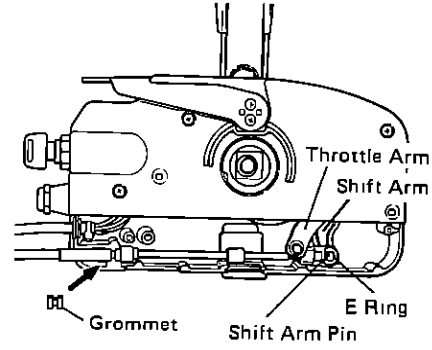


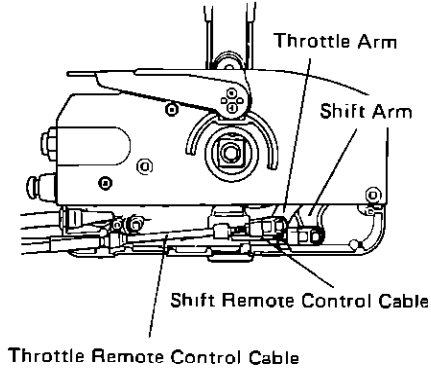


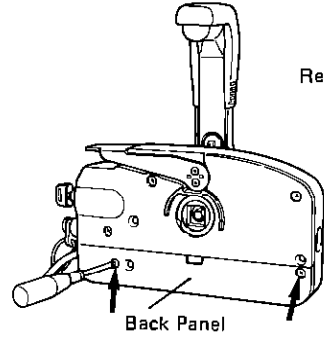


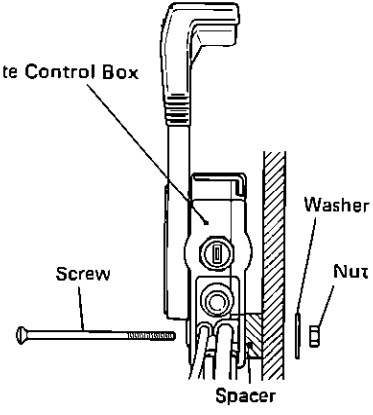
Outboard motor center

(3) Set the Shift Remote Control Cable outer groove into the Housing groove.
Set the Terminal Eye on the pin of the Shift Arm and fix it with E-ring.
(4) Insert attached grommet to the clamp groove of the Remote Control Box.
(5) Install the Throttle Remote Control Cable to the Throttle Arm.
(6) Install the Back Panel of the Remote Control Box.
(7) After installation of the Remote Control Cable, mount the Remote Control Box by using attached screws, spacers, washers and nuts (each 3).









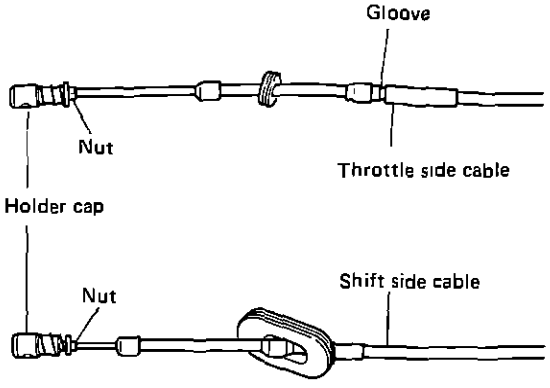
(3) Fitting of holder cap

(1) Throttle side

- Take out the grommet from the advancer arm side of the lower motor cover.
- Set the grommet on the cable after making a hole in grommet.
- Attach holder cap to cable and lock in position by nut.

(2) Shift side

- Take out the grommet from the shift lever side of the lower motor cover.
- Set grommet in position.
- Attach holder cap to cable and lock in position by nut.



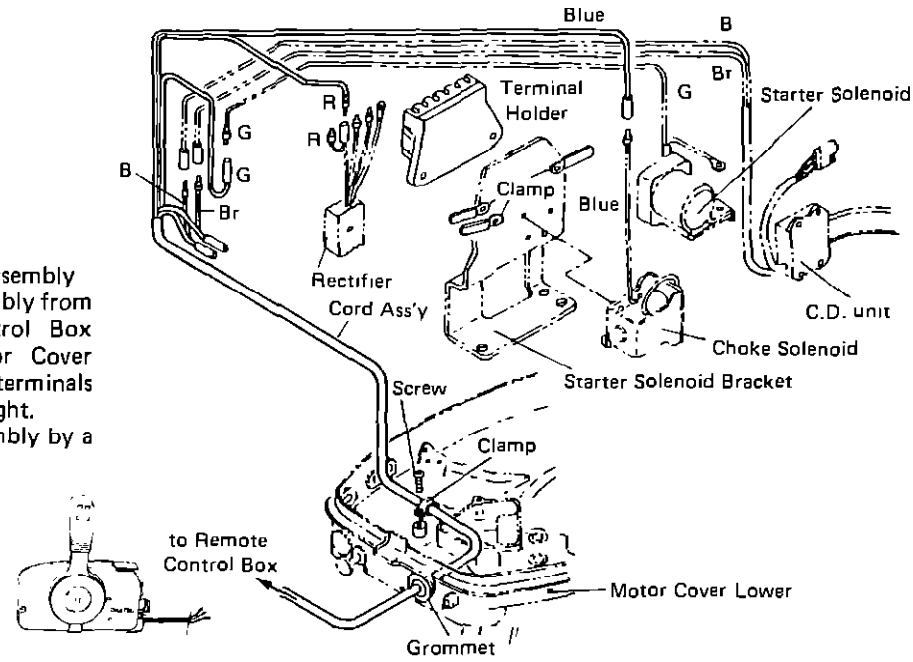
(4) Fitting of remote control cable to engine

Note: Position the control lever to Neutral with free accel lever is in the throttle 'closed' position.

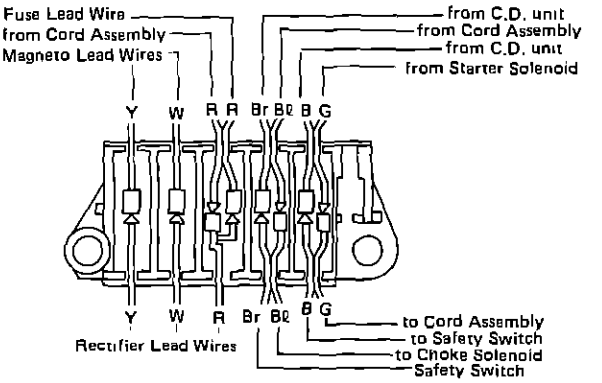
- Pass throttle cable through hole provided on the lower motor cover advancer arm side.
- Install the holder cap of end tip of the throttle cable on the ball joint.
- Fix the throttle cable by cable clip using groove of the cable.
- Install the grommet on the motor cover lower.

Note: Confirm if the Engine side shift is in when turn the control lever of the remote control box to first stopping position in Forward or Reverse direction (about 32°) and if the throttle of the carburetor is fully opened when turn the lever further.
Confirm if the throttle of the carburetor is fully closed when turn the control lever to Neutral position. When the throttle of the carburetor will not be fully closed, adjust position of the holder cap and re-install it.

(1) Fitting of Cord Assembly
- Pass the Cord Assembly from the Remote Control Box through the Motor Cover Lower and connect terminals referring drawing right.
- Fix the Cord Assembly by a clamp.

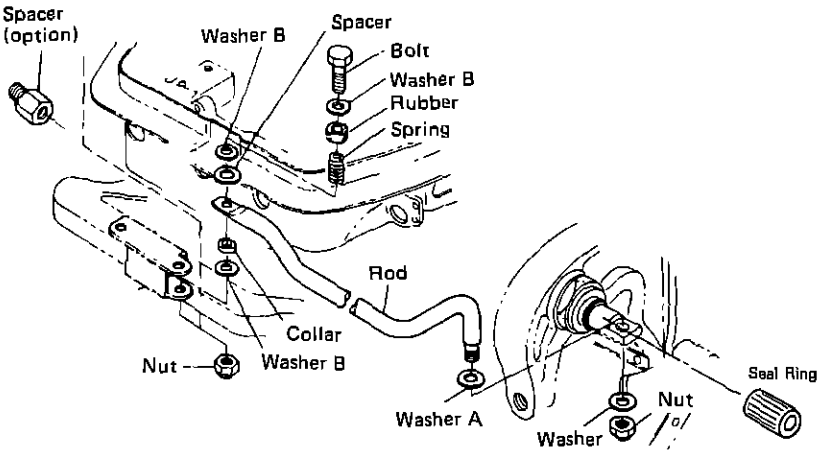


- Set the terminals of the Lead Wires in the Cable Terminal Holder.



3. Fitting the Drag Link (attached to EP type)

Drag Link parts have been provided.
Refer to the drawing right for fitting.
The Spacer will be needed depending on kinds of steering cables.



3-5. Mounting the battery

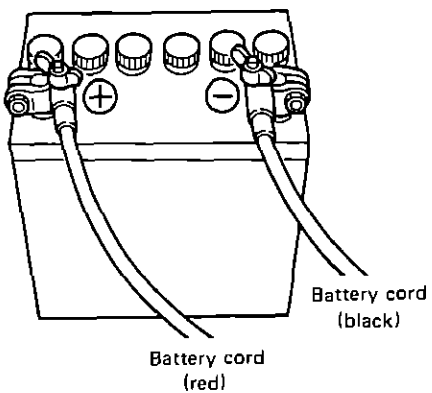
(1) Locate the battery box in a convenient position away from possible spray damage. Securely fasten both the box and battery so they do not shake loose.

The battery capacity is 70AH at 12V.

(2) Connect the positive lead (+) to the positive terminal (+) of the battery, and then connect the negative lead (−). When disconnecting the battery always remove the negative lead (−) first. After connecting peace a protective cover on the positive terminal (+) to prevent short circuits.

Note:

(1) Use battery leads having sufficient length.
(2) Make sure that the battery leads are not trapped between motor and boat when turning, etc.
(3) If leads are incorrectly connected, the starter may fail to operate.
(4) Be sure to connect (+) and (−) leads correctly. If they are mis-connected, charging system will be damaged.
(5) Keep battery fully charged at all times.



3-6. Preparing the engine for operation and precautions

Use only TOHATSU genuine engine oil in the fuel mixture.

[1] Fuel

(1) Fuel is mixed in the ratio 50 parts gasoline and 1 part of Tohatsu genuine engine oil.

A new outboard motor should be broken-in by running for the first 10 hours on fuel having a 20:1 mixing ratio (gasoline and engine oil).

(2) When ordinary two cycle engine oil is used, fuel should be mixed in the ratio of either 20:1 or 15:1 for breaking-in period.

(3) The use of poor quality gasoline and engine oil will shorten the life of an engine and also cause poor starting and other troubles. Be sure to use only high quality gasoline and Tohatsu genuine engine oil.

(4) Check that a tank contains a sufficient amount of fuel before starting for the day's operation.

Always carry a spare tank (can) since running of fuel at sea may result in a serious accident.

• FUEL AND LUBRICANT FOR TOHATSU OUTBOARD MOTORS

Fuel Gasolin

Premium (super) gasoline is highly recommended for TOHATSU Outboard motors.

Fuel gasoline should be a minimum pump posted octane rating of 87 (91 by research octane rating). Gasoline containing alcohole, methanol (methyl), or ethanol (ethyl), may cause:

- Wear and damage on bearings, piston, piston rings and cylinder liners
- Corrosion on metal parts
- Deterioration of rubber parts and plastic parts.

Note:

Engine damage resulting from the use of fuel containing such alcohl(s) is not the responsibility of TOHATSU, and will not be covered under the limited warranty.

Engine Oil

Use genuine TOHATSU Outboard Motor Oil.

If TOHATSU Outboard Motor Oil is not available, another Marine Engine Manufacturers' Outboard Motor Oil with NMMA(BIA) certified TC-W or TC-WII rating must be used to maintain the TOHATSU Outboard Motor Warranty.

Caution

Do not mix different brands of oil.

The mixing of different brands of oil or different kinds of oil even in same brand may cause jelling (gel), resulting in blockage of filter screens.

This may lead to serious engine damage, due to the lack of powerhead lubrication.

[2] Break-in Running

1) Break-in running time . . . . . 10 hours

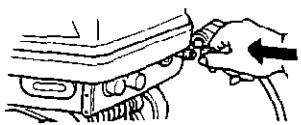
Time	0 min. ∿	10 min. ∿	1 hr. ∿	2 hrs. ∿	10 hrs. ∿
Method of break-in run	Trolling or idling	Throttle opening < ½ about 3,000rpm	Throttle opening < ¾ about 4,000rpm	Throttle opening ¾ about 4,000rpm	Normal running
Running conditions	Cruising at minimum speed		Full-throttle run is allowed for 1 min. in 10 min.	Full-throttle run is allowed for a short time.	

- The use of poor quality fuel will shorten the life of a motor and cause trouble, including starting failure. It is recommended to use a high quality gasoline and genuine Tohatsu Engine Oil.

4. STARTING ENGINE

4-1. To start

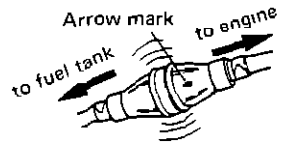
(1) Preparation to start



(1) Set the fuel connecter to the engine side connecter.
An arraw mark on the primer valve is to be lead to the engine.

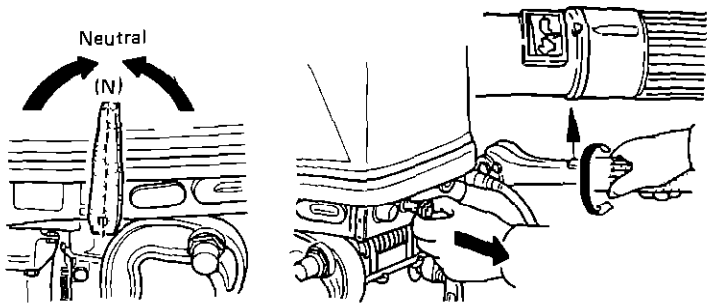
(2) Loose the air vent screw on the tank cap.

For tanks with a fuel tank auto air-vent. (optional)
There is no need to loosen the air vent screw. An air vent opens automatically when the connector is attached to the tank.



(3) Transfer fuel oil to the carburetor by squeezing the primer valve.

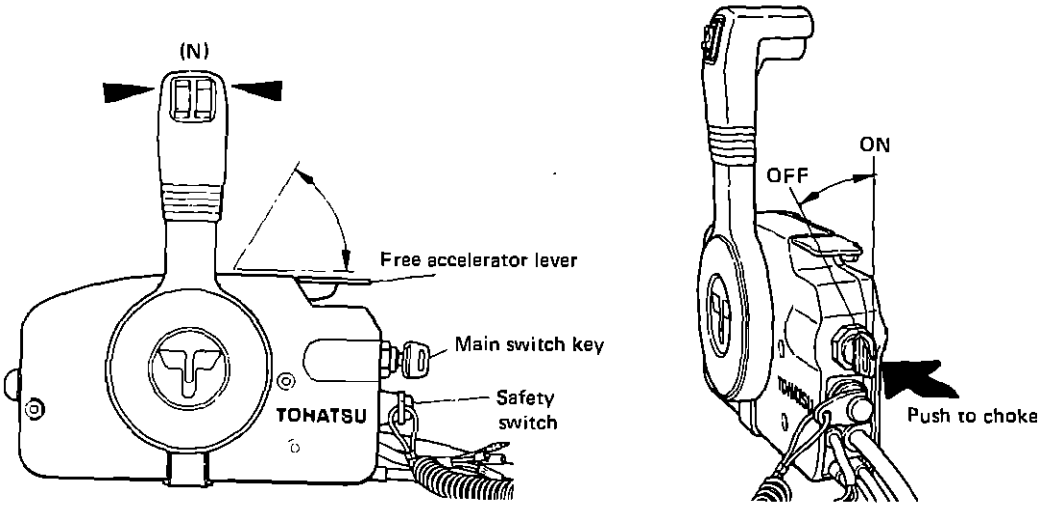
Note: Do not operate Engine without cooling water.



M40C/M40C EF type

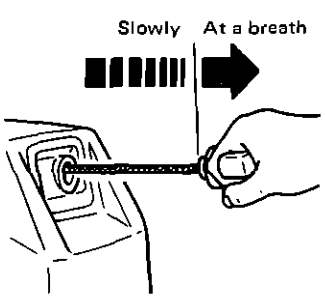
(1) Confirm if the shift lever is in Neutral position.
(2) Turn the handle grip until the bar mark on the grip faces the tri-angle mark on the steering handle.
(3) Pull out the choke knob fully.
(No choke operation is necessary on warmed engine.)

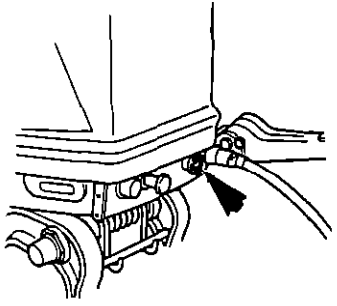
Note: The engine will not start when the shift lever is out of neutral position because of the starter lock safety device.

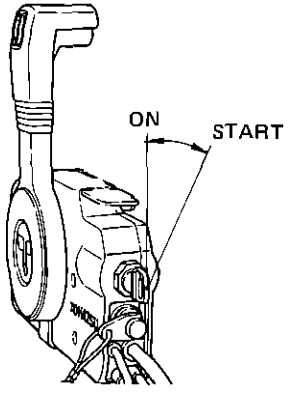


EP type

(1) Insert the switch key.
(2) Set the control lever in Neutral position.
Raise up the free accelerator lever.
(3) Turn the main switch key one stage.
When the key is pushed in this condition, it works the choke.
(No choke operation is necessary on warmed engine.)







(2) Starting

M40C type

- Pull the starter handle slowly until you feel resistance, then pull it at a breath.

M40CEF type

- Push the starter switch button.
- Release hand from the button when after the engine is started.

40CEP type

- Turn the main switch key to START position with keeping pushing the key to choke.

  Note: On warmed engine, turn the main switch key without choke operation.

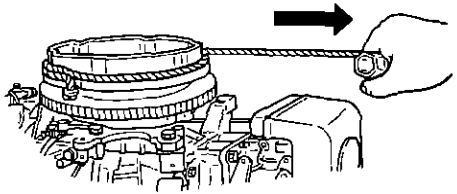
- Release hand from the key when after the engine is started.
  The key returns to original position automatically.

Note: EF · EP type
Continuous long time operation of the starter motor makes short battery life.
Use the starter motor with an interval of 3 second operation and 5 sec. rest.
Do not operate the starter motor when after the engine is started.

(3) If the recoil starter or starter motor fails to operate

(1) Remove recoil starter cover and pull starter rope directly.
(2) Use a 10 m/m socket wrench as a hand on the rope grip.

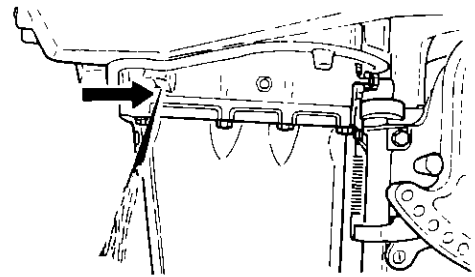
Note: Take care clothing is not caught in the rope when starting by this emergency method.



4-2. Warming up engine

Warm the engine by running at low speed for about three minutes. This allows the lubricating oil to circulate to all parts of the engine. Careful warming up will prolong the life of the engine.

Note: If cooling water is not circulating overheating will occur. This will cause erratic running followed by engine seizure.



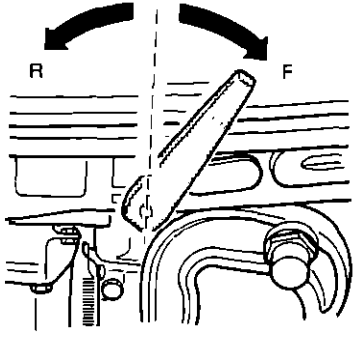
- Engine speeds
  Idling speed when warming up.

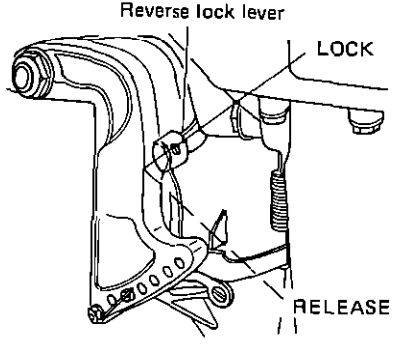
Model	Clutch in	Clutch off
M40C/EF/EP	850 rpm	950 rpm

Maximum operating speed at full throttle.

Model	Full throttle rpm range
M40C/EF/EP	5,200 ~ 5,800

4-3. Forward and reverse running





M40C/EF type

(1) Forward

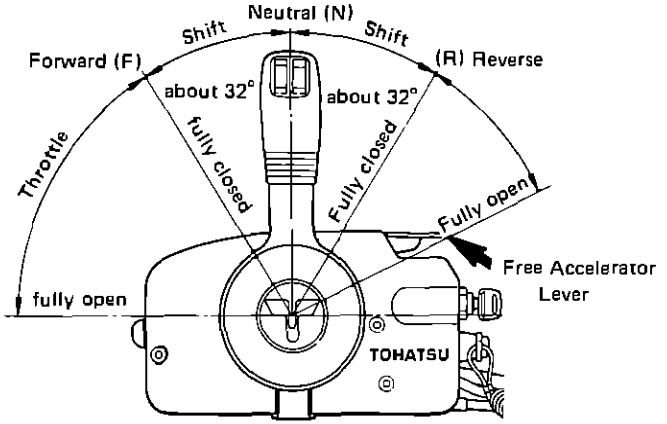
Note: Engage and disengage clutch with engine at idling speed. Move handle grip to low speed position.

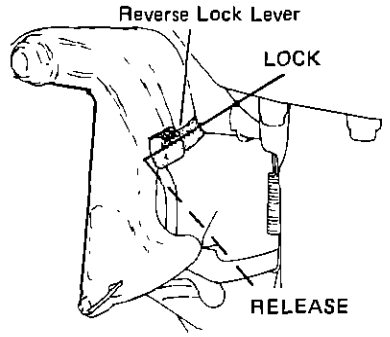
Shift the lever quickly into forward position when engine revolutions have slowed down.

(2) Reverse

Shift the lever quickly into Reverse position after engine revolution comes low enough.

Note: Check to see if the reverse lock lever is in "LOCK" position.
When running in reverse keep engine revolutions at the minimum.





EP type

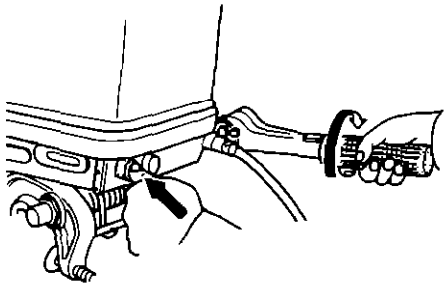
(1) Forward
Swiftly shift the control lever to Forward (F) at 32° where the lever is latched automatically, while lifting up the lock button located at the bottom of the control lever grip. Further shifting will open the throttle.

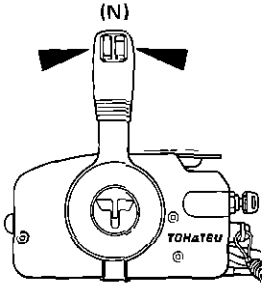
(2) Reverse
Swiftly shift the control lever to Reverse (R) at 32° where the lever is latched automatically, while lifting up the lock button located at the bottom of the control lever grip. Further shifting will open the throttle.

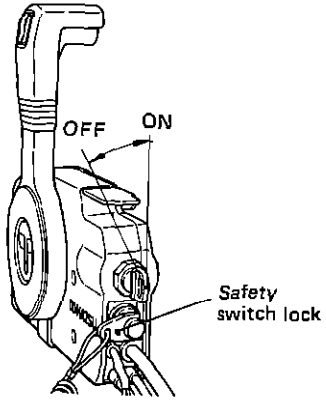
Note: The Control Lever is inoperative unless the Free Accelerator Lever is in the fully closed position.

Note:
- **Check if the Reverse Lock Lever is in "Lock" position.**
- **Reduce the engine speed properly when the Control Lever is in "Neutral" position and do not increase the engine speed unnecessary.**

4-4. Stopping







M40C/M40C EF type

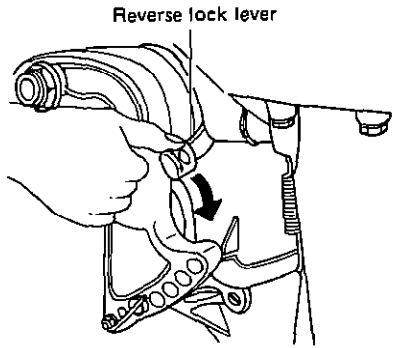
(1) *Turn the throttle grip to low speed position.*
(2) Set the shift lever to Neutral position.
Run the engine for 2~3 minutes at idling speed if it has been running at full speed.
(3) Press stop switch to stop engine.

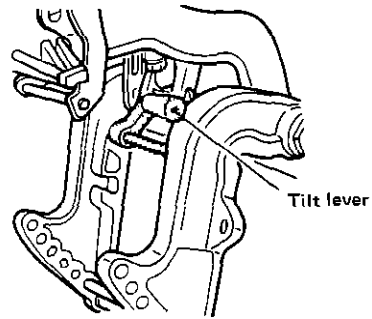
M40C EP type

(1) Set the shift lever to Neutral position and run the engine 2~3 minutes at idling speed.
(2) Turn the main switch key to OFF position or pull out the safety switch lock.

Note:
- **After the engine stopped, close the air vent screw on the tank cap.**
- **Disconnect the fuel connecter of the engine or the fuel oil tank.**
- **Disconnect the battery cord of EF or EP type engine, when the engine will not be used for days.**

4-5. Tilt up and tilt down





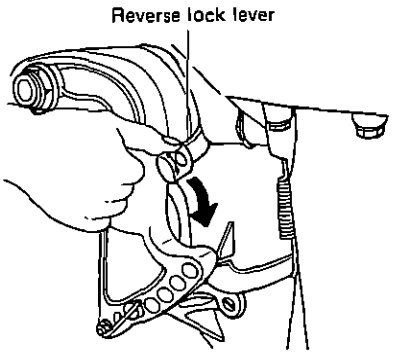
(1) Tilt up

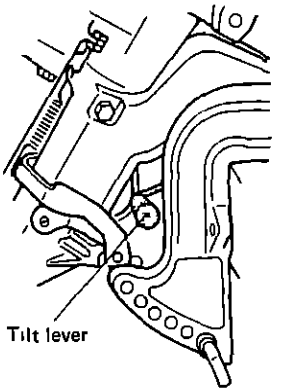
Move the reverse lock lever to the "RELEASE" position.
Tilt up the engine and lock by using tilt lever.

(2) Tilt down

Lift the engine up slightly and operate the tilt lever upward to release lock system.
Tilt down the engine.
(A reverse lock will work automatically – when tilting down an engine.)

4-6. Shallow water running





(1) Shallow water driving position

Put a reverse lock lever to "RELEASE" position.

Set an engine on shallow water driving position by tilting up an engine and putting down a tilt lever.

(2) Tilt down from shallow water driving position

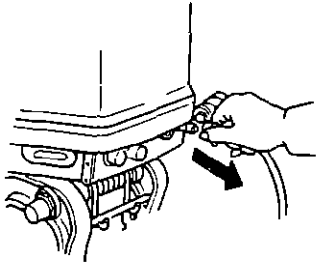
Release an engine from shallow water driving position by bringing up it slightly and move a tilt lever to upward.

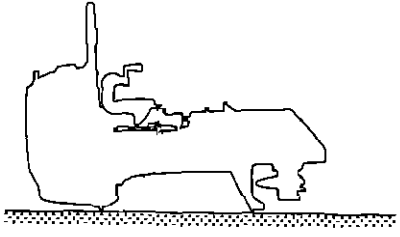
By tilting down an engine, it will be reverse locked automatically.

Note: Reverse driving is to be done in trolling speed when an engine is at shallow water driving position.
Do not increase engine revolution than requiring.
To use an engine in high revolution is very dangerous, because of jumping up an engine from water.
Forward driving is to be done within engine revolution range that a propeller does not have cavitation.

4-7. Removing the engine from the boat

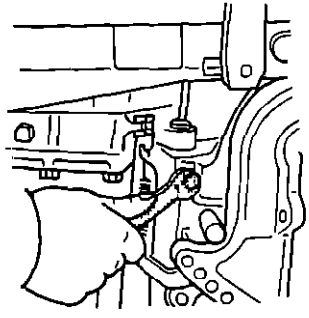
(1) Stop the engine.
(2) Disconnect the fuel pipe connecter from the engine.
(3) Remove the engine from boat. Empty water from the gear case.
When moving the engine aways keep the power head higher than the propeller.
(4) When placing the engine on the ground again keep the power head on a higher level than the propeller and keep the steering handle uppermost.





5. ADJUSTMENTS

5-1. Adjusting steering resistance

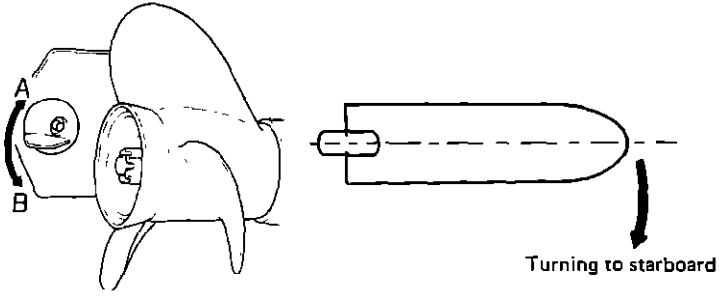


- Adjust steering resistance by turning steering adjust bolt.

Lighter steering Heavier steering

5-2. Adjusting a trim tab

If the boat fails to run straight, adjust the trim tab which you will find underneath anti-cavitation plate.



- (Example–1) If the boat has a tendency to pull to the right, move the trim tab in the direction A as shown in the drawing.
- (Example–2) Alternatively if it tend to pull to the left, move the trim tab towards B as shown in the drawing.

Note: A trim tab is also a sacrificial anode that protects against corrosion. Do not paint it as this would made it ineffective function.

6. INSPECTION AND ADJUSTMENT

6-1. Daily check

1. **Fuel system**
   - o Top up fuel in tank.
     Fuel mixing ratio is 50:1 (gasoline: TOHATSU ENGINE OIL).
   - o Check fuel pipes for leakage.
   - o Check for water in fuel filter, dirt and dust in fuel system. Clean if necessary.
2. **Electrical system**
   - o Clean spark plugs, replacing if necessary. Check gap.
     NGK B7HS-10 or CHAMPION L82YC (gap 1.0)
   - o Check condition of terminals and contacts. Tighten if necessary.
   - o Check insulation of electric wiring.
   - o Check stop switch operation.
3. **Control wires and cables**
   - o Check cables between carburator, magnetic base and handle grip control.
   - o Check state of linkages.
   - o Check choke value for smooth operation.
4. **Recoil starter**
   - o Check wear or damage on starter rope.
   - o Check state of ratchet gear
5. **Clutch, propeller**
   - o Check clutch and clutch lever operation
   - o Check wear or damage on propeller.
   - o Check condition of split pin.
   - o Check kit for spare split pin.
6. **Battery**
   - o Check electrolyte level, topping up if necessary.
7. **Other check points**
   - o Check condition of trim tab (anode).
   - o Anode for erosion and damage.
   - o Tightness of bolts securing engine to boat.
   - o Lashing of safety rope between engine and boat.
   - o Freedom of stearing handle.
   - o Cooling water discharge from check port.

(1) Cleaning with fresh water

Wash down engine with fresh water to remove mud and salt from body casing. Flush out the cooling system with clean, fresh water after operating in salt or muddy water.

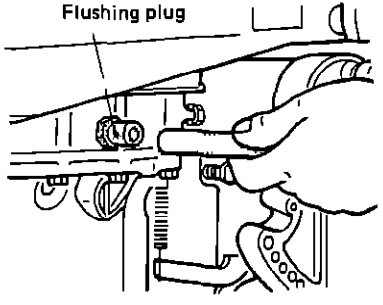
(1) Removing water plug from engine

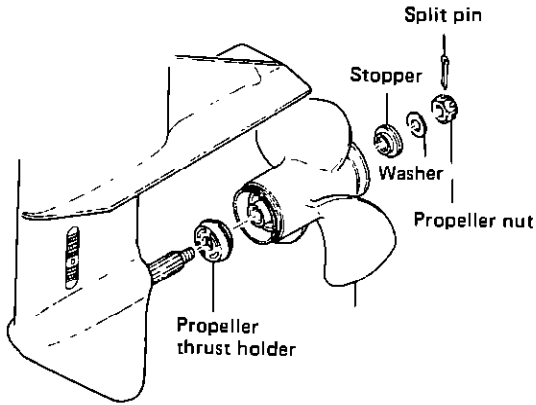
Replace drain plug with flushing plug on engine and wash out engine with fresh water. (Close water strainer and sub water strainer on gear case with tape etc., before washing out.)

Note: Take out a propeller from engine when use a flushing plug. Be sure to clean with fresh water before storage for long term.

(2) Start engine in neutral position and flush cooling water system to remove salty or muddy water.

Note: This work should be done with the engine turning over slowly.

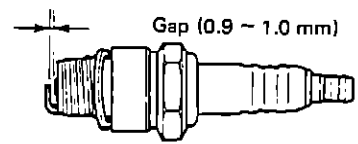




(2) Changing the propeller

Worn or bent propeller will cause both poor engine performance and eventually engine trouble.

- Take out the split pin and remove propeller nut and propeller thrust washer.
- Withdraw the propeller.
- Before re-assembling, apply TOHATSU GREASE to the propeller shaft.



(3) Checking spark plug

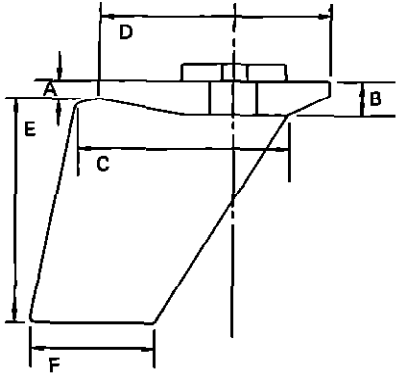
Remove carbon from around the center electrode. Replace with new if necessary.

> **Note: Remove the ignition wire to the spark plug before removing the propeller in order to prevent accidents.**

(4) Trim tab (anode)

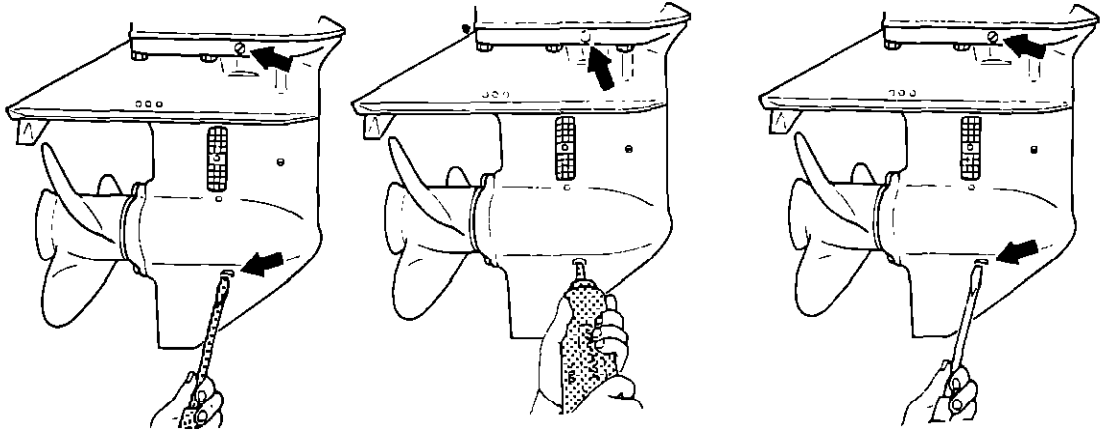
When the dimensions of the trim tab (anode), installed under the anti-cavitation plate, are reached replace it to a new immediately.

Note:
- **Neither apply oil nor paint to the trim tab (anode).**
- **Since the area around the mounting bolt for the trim tab tends to suffer from the electrical corrosion be sure to tighten the bolt properly.**



Dimensional division (m/m)	Reference dimensions					
	A	B	C	D	E	F
Dimensions of new product	3.0	8.0	51	50	49.5	25
Dimensions for replacement	1.5	6.5	43	44	30	14

(5) Changing gear oil



(1) Drain gear oil completely by removing both upper and lower plugs.

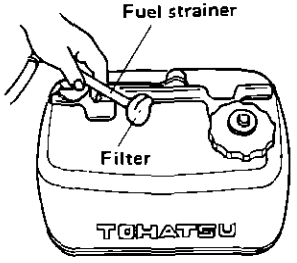
Note: Use TOHATSU gear oil (GL5 or SAE #80)
Capacity . . . abt 470 cc

(2) Inject oil into lower oil plug hole until it flows from upper oil plug.

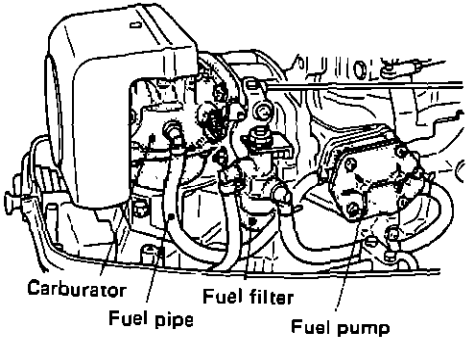
(3) Replace upper plug, then lower plug after withdrawing oil injector.
Tighten lower oil plug.

(6) Cleaning fuel filter

Fuel filters are installed to both fuel tank and engine intake.



- When cleaning the filter on the tank side remove 4 mounting screws and housing.



- When cleaning the fuel filter on the engine side remove the cap for the fuel filter.

6-2. Off-Season Storage

The off-season gives you a good opportunity to have your motor served or overhauled by your TOHATSU dealer. Not only with the motor be better preserved in storage, but it will also be ready for immediate use as soon as the new season opens. Storage procedures are as follows.

Outboard motor

1) Wash the outboard motor externally, and flush the cooling system completely with fresh water and drain water completely. Dry and wipe over with an oily waste cloth.
2) Drain fuel from tank, piping, fuel pump and carburetor, and clean them. For corrosion protection, add a small amount of rich gasoline/engine oil mixture into the fuel tank
3) Remove the spark plug, feed genuine Tohatsu engine oil through the spark plug hole, and pull the recoil starter several times to protect internal parts of the engine from corrosion.
4) Apply grease to the propeller shaft
5) Change the gear case oil.
6) Apply grease to sliding parts, joints, bolts, nut, etc.
7) Attach the motor cover and then place the motor in a vertical position in a dry place.

Battery

1) Disconnect battery cables.
2) Clean the exterior of the battery with fresh water or compressed air.
   Wipe sulfate, dirt and grease off the battery with a dry waste cloth.
3) Apply grease or vaseline to battery terminals.
4) Before storing, be sure to charge the battery completely and check its liquid level monthly.
5) Apply grease to the starter shaft and pinion of the starter motor.
6) Store the battery with its cover attached in a dry place.
7) Before reuse, charge the battery completely.

Note: Wipe water and salt off the electrical components thoroughly with a dry cloth.

6-3 Treatment before-after store motor

- When a outboard motor is going to be re-used after long period store.

  1) Run a engine with slow speed for 5 minutes.

  2) Run a engine with half throttle for 10 minutes.

  These are for cleaning of fitting engine oil inside of engine that was changed in quality.
  (: lowered performance by storing for long period).

- For daily using outboard motor.

  Be sure to carry warming-up engine for at least 3 minutes to supply engine oil on required position.

- Before storage engine

  Drain engine oil in a cup of fuel oil filter assembly and clean filter element of it with kerosene or part cleaning liquid before storage to avoid deterioration of oil itself in filter cup while storing for long period.

6-4. The "SUBMERGED" motor in water

If the outboard motor would be submerged into water it must be immediately disassembled and oiled. If this is neglected or delayed, all parts of the engine may become rusty and corroded and may become unstable.
The emergency measures include:

(1) Remove the engine from water and wash seawater and mud from the engine with fresh water.
(2) Remove the spark plug and remove water from the cylinder by turning the engine over by the starter rope.
(3) After discharging water inject TOHATSU genuine engine oil into the cylinder through the spark plug holes and from the carburetor side and disperse the engine oil by turning the engine over again by recoil starter rope.
(4) After taking these emergency measures have your engine repaired at your TOHATSU dealer as soon as possible.

6-5. Laying up the engine in winter

If the boat with an outboard motor mounted is moored for some time under conditions where the air temperature falls below 0°C, water in the cooling water pump may freeze and damage the pump impeller. To prevent water from freezing, the lower part of the motor is kept in the water or discharge water completely from the pump by turning the engine by the starter rope when it is in the tilted up position.

7. TROUBLE SHOOTING

Possible causes of engine troubles are listed below.
For checking and repairing the engine, refer to this table. Contact your TOHATSU dealer as required.

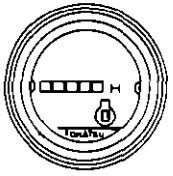
Engine does not start.	Engine starts but stops soon.	Poor idling	Poor acceleration	Engine revolutions abnormally high	Engine revolutions abnormally low	Slow speed	Overheating of engine	Possible cause
•	•							Empty fuel tank
•	•	•	•		•	•	•	Incorrect connection of fuel system
•	•	•	•		•	•	•	Air entering fuel line
•	•	•	•		•	•	•	Distorted fuel pipe
•	•	•	•		•	•	•	Closed fuel cock of fuel tank and air vent of fuel cap
•	•	•	•		•	•	•	Clogged fuel filter, fuel pump or carburator
		•	•		•	•	•	Improper engine oil
•		•	•			•	•	Improper gasoline
•	•	•	•		•	•		Excessive oil in mixture
							•	Shortage of oil in mixture
•			•					Excessive supply of fuel
•	•	•	•		•	•	•	Poor carburetor adjustment
•	•	•	•			•	•	Recirculation pipe broken
•	•	•	•		•	•	•	Incorrect spark plug used
•	•	•	•		•	•		Dirt or bridge on spark plug

•	•	•	•		•	•		No or weak spark	
						•	•	(Insufficient cooling water flow) faulty pump, clogged pump	
		•				•	•	Faulty thermostat	
			•	•		•	•	Cavitation	
			•	•	•	•	•	Unsuitable propeller used	
		•	•	•	•	•	•	Damaged and bent propeller	
			•	•		•	•	Improper thrust rod position	
			•	•	•	•	•	Unbalanced load position	
			•	•	•	•	•	Transom too high or low	
•								Short-circuit of engine stop switch	
•		•	•		•	•		Incorrect adjustment of throttle link mechanism	
•		•	•		•	•		Incorrect adjustment of ignition timing	
•								Loose battery terminal connection, corrosion	(EP and EF types)
•								Excessive discharge of battery	
•								Faulty main switch	
•								Lock plate of safety switch absent	
•								Breaks of wires, loose grounding	
•								Insufficient battery capacity, loose terminal connection, corrosion	

8. ATTACHMENTS

Name		Quantity	Dimensions	Remarks
Tools	Tool bag	1		
	Pliers	1		
	10 x 13 socket wrench	1	10 x 13 mm	
	21 socket wrench	1	21 mm	
	Socket wrench handle	1		
	Slotted-head screwdriver	1		
Spare parts	Starter rope	1	1000 mm	
	Spark plug	1	NGK B7HS-10 or CHAMPION L82YC (Gap: 1.0 mm)	
	Split pin	1		
Other items packed	Fuel tank	1		
	Primer valve	A complete set		
	Remote control box	A complete set		(EP type only)
	Remote control fitting parts	A complete set		(EP type only)
	Drag link	A complete set		(EP type only)
	Flushing plug	1		

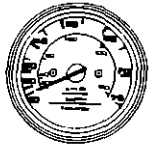
9. OPTIONAL ACCESSORIES



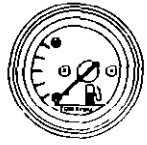
(1) Hour meter

(2) Tachometer

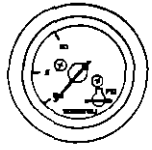
(3) *Speedometer* (50 MPH)



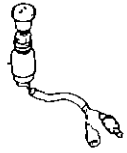
(4) Speedometer (75 MPH)



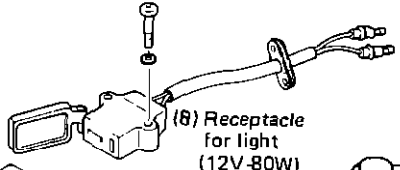
(5) Fuel meter



(6) Water pressure meter

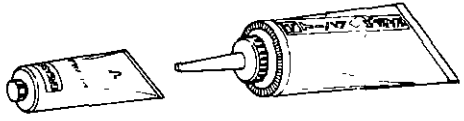


(7) Meter lamp switch



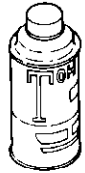
(8) *Receptacle* for light (12V-80W)

(10) Receptacle plug



(11) TOHATSU grease (50 g, 250 g)

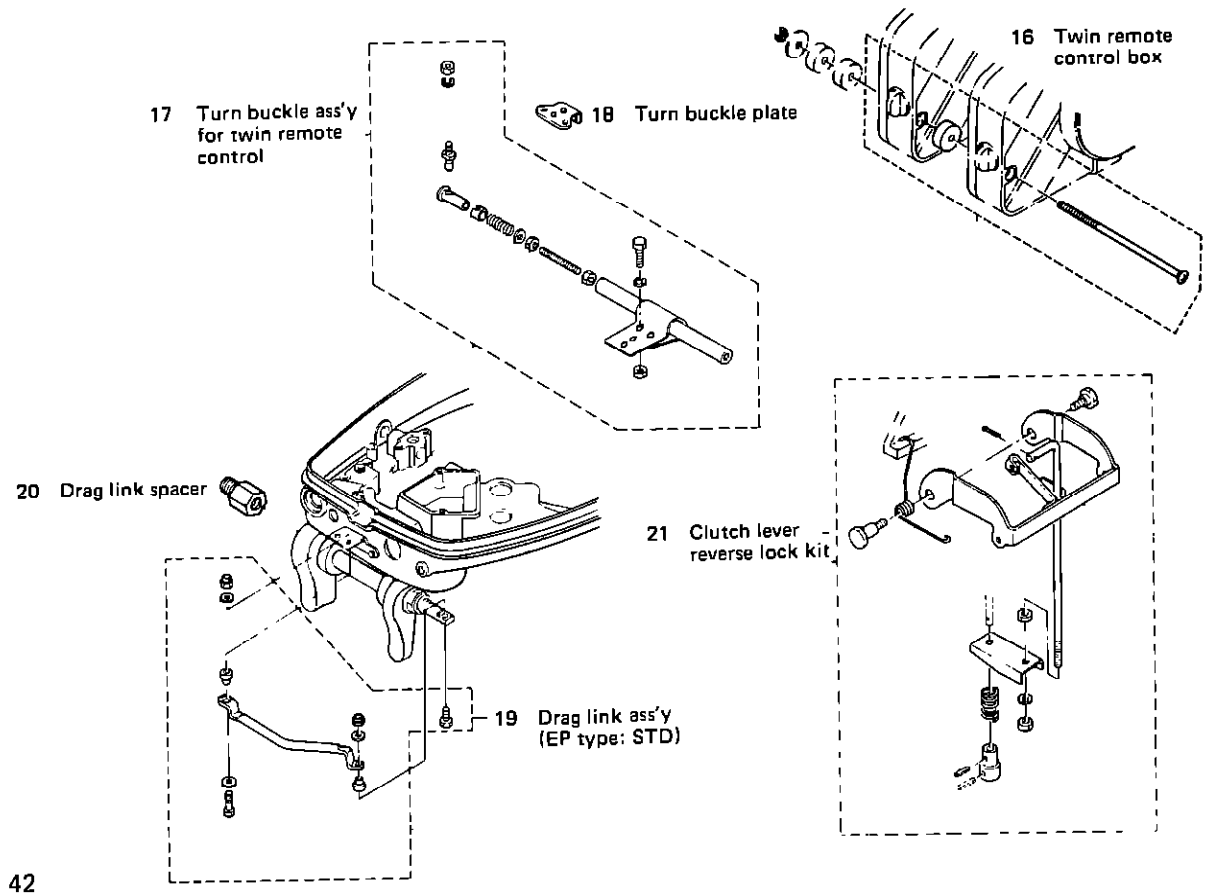
(12) TOHATSU gear oil (260 cc, 500 cc)



(13) Touch-up spray paint (300 mℓ)

(14) TOHATSU engine oil (0.5 ℓ, 1 ℓ, 20 ℓ)

(15) TOHATSU engine oil GOLD (5 ℓ)


16 Twin remote control box
17 Turn buckle ass'y for twin remote control
18 Turn buckle plate
20 Drag link spacer
21 Clutch lever reverse lock kit
19 Drag link ass'y (EP type: STD)

10. PROPELLER SELECTION

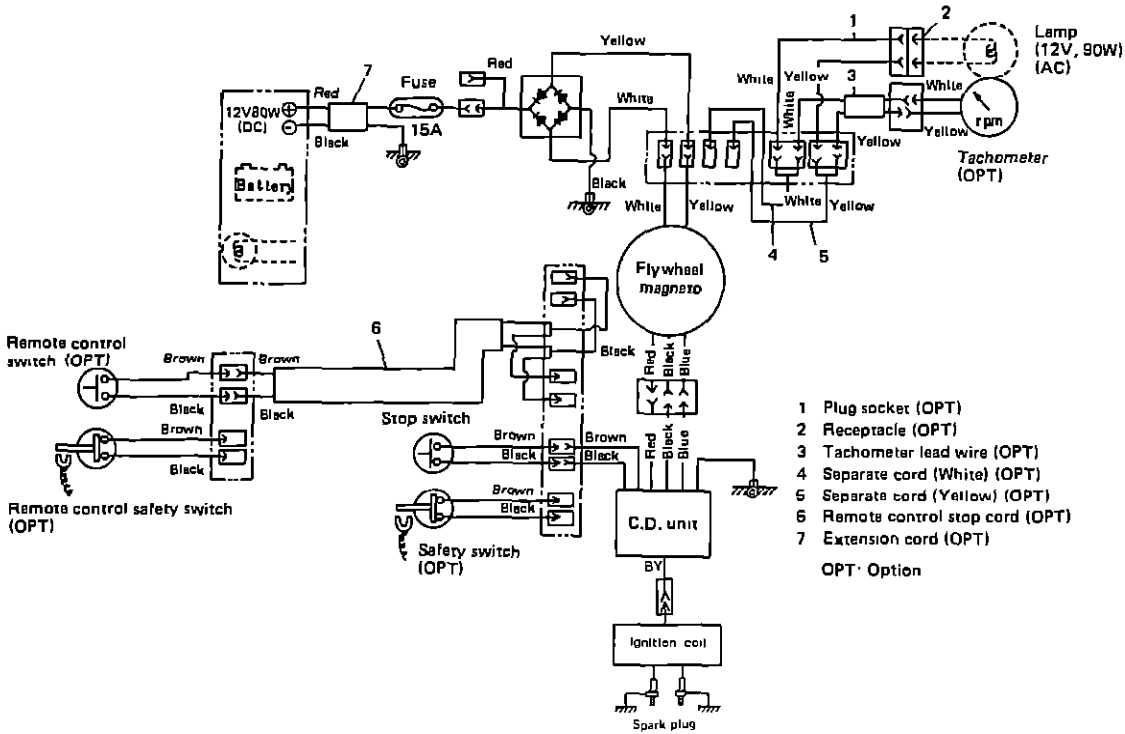
Light duty boat ⟵ ⟶ Heavy duty boat (propeller dimensions: D x P)								
Propeller Mark	14	13	12	11	10	9	8.5	7*
Size (mm)	260 x 352	262 x 322	268 x 296	268 x 287	275 x 252	276 x 226	285 x 220	290 x 180
Size (inch)	10.2 x 13.9	10.3 x 12.7	10.6 x 11.7	10.6 x 11.3	10.8 x 9.9	10.9 x 8.9	11.2 x 8.7	11.4 x 7.1

⇧For S. L. LL

Note: Propellers are 3-blades type except * marked one.
* marked propeller has 4-blades.

11. WIRING DIAGRAM

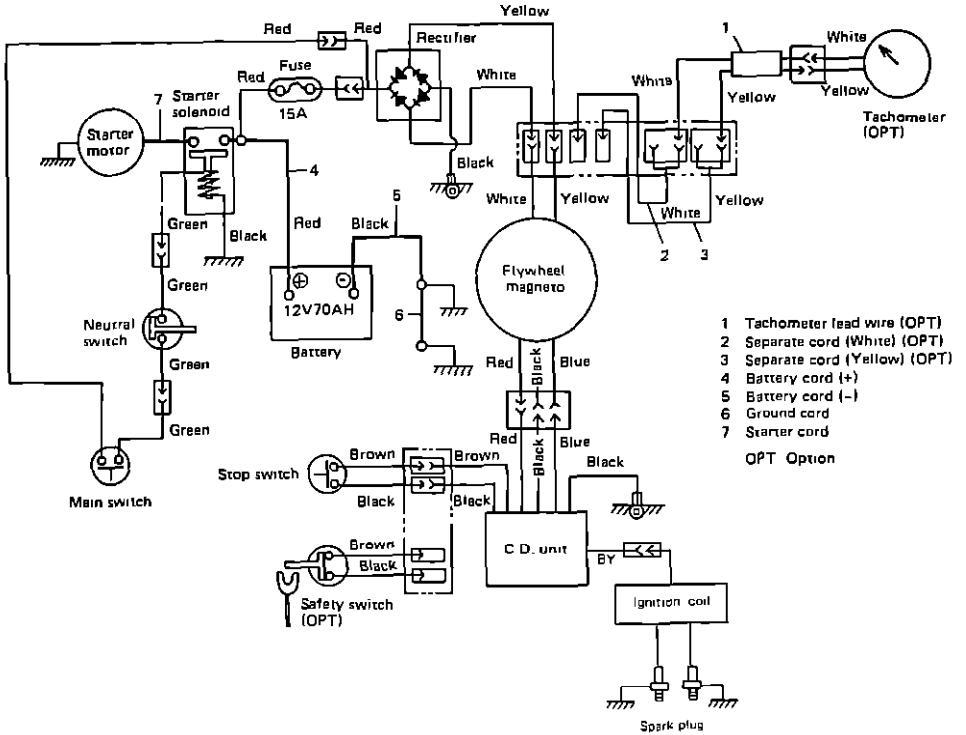
1. M40C TYPE



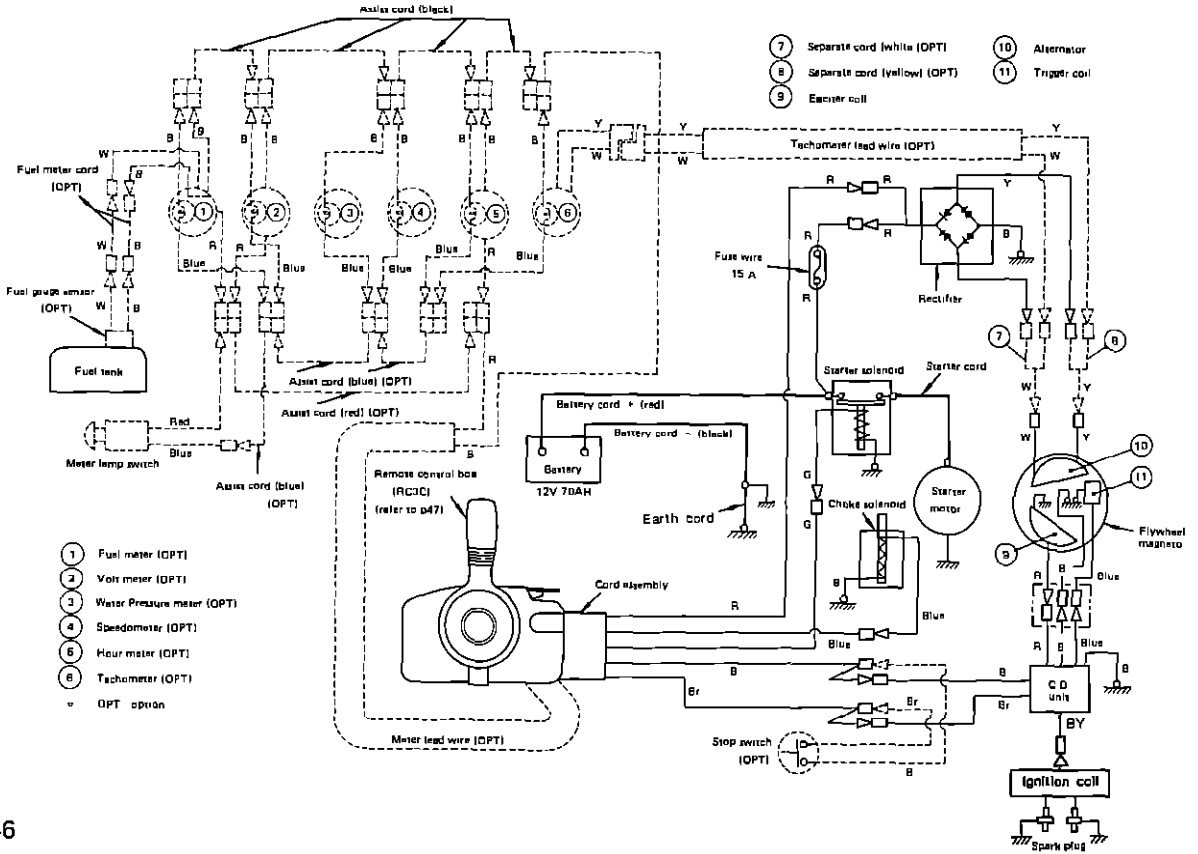
1 Plug socket (OPT)
2 Receptacle (OPT)
3 Tachometer lead wire (OPT)
4 Separate cord (White) (OPT)
5 Separate cord (Yellow) (OPT)
6 Remote control stop cord (OPT)
7 Extension cord (OPT)

OPT: Option

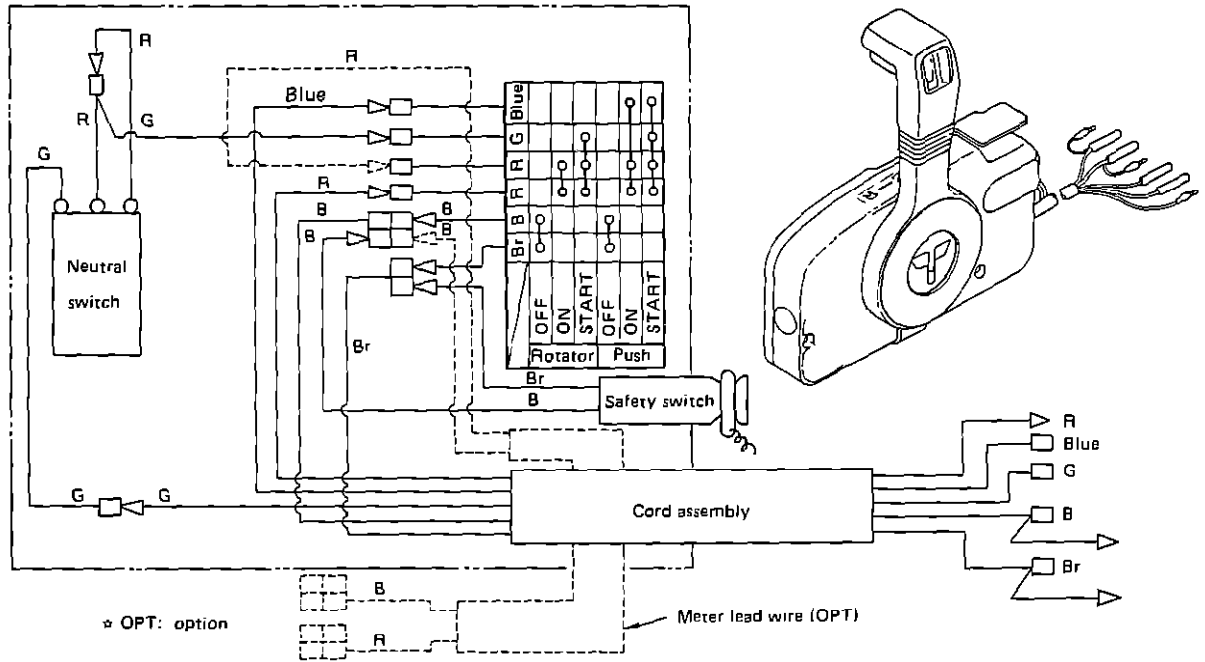
2. M40CEF TYPE



3. M40C EP TYPE



4. REMOTE CONTROL BOX (RC3C, RC5C)



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