

DATA SHEET

\_\_\_\_\_  
NAME OF BOAT

\_\_\_\_\_  
OWNER'S NAME & ADDRESS

\_\_\_\_\_  
HAILING PORT

\_\_\_\_\_  
HULL NUMBER

\_\_\_\_\_  
REGISTRATION NUMBER

\_\_\_\_\_  
HEIGHT ABOVE  
WATERLINE

\_\_\_\_\_  
BEAM

\_\_\_\_\_  
DRAFT

\_\_\_\_\_  
LENGTH  
OVER ALL

\_\_\_\_\_  
FUEL CAPACITY

\_\_\_\_\_  
IGNITION KEY NUMBER

\_\_\_\_\_  
DOOR KEY NUMBER

TECHNICAL DATA

HULL NO. \_\_\_\_\_

ENGINE

Manufacturer \_\_\_\_\_

Outdrive Manufacturer \_\_\_\_\_

Model \_\_\_\_\_

Outdrive Model \_\_\_\_\_

Type Fuel Filter:

Gear Ratio \_\_\_\_\_

1. \_\_\_\_\_

Type Spark Plugs \_\_\_\_\_

Type Oil Filter:

\_\_\_\_\_

Gear Serial No. \_\_\_\_\_

Engine Serial No. \_\_\_\_\_

BATTERY

Manufacturer \_\_\_\_\_

Type \_\_\_\_\_

PROPELLER

Manufacturer \_\_\_\_\_

Style \_\_\_\_\_

Diameter \_\_\_\_\_

Pitch \_\_\_\_\_

No. of Blades \_\_\_\_\_

Material \_\_\_\_\_

## A WORD OF WELCOME

We are pleased that you have chosen a Bertram, and know that her unique design will give you outstanding performance and many years of boating pleasure.

Your Bertram is built of the finest, most modern materials and is manufactured under rigid quality controls. Her hull is of high-impact, multi-laminate fiberglass. High pressure laminates and vinyl throughout further reduce maintenance. She comes to you as the most thoroughly tested and trouble-free boat on the market today.

As durable as her construction is, your Bertram will benefit by reasonable care. And, as is always true with things mechanical, maintenance, adjustments, or repairs may be required from time to time for certain components. Thus, this Owner's Manual, containing a wealth of detailed information, has been specially prepared for your particular model to guide you in keeping her in yacht condition.

To fully enjoy your Bertram, you should understand her completely. To this end, we suggest that you read this manual thoroughly. If any points arise that you do not completely understand, your Bertram dealer will be glad to assist you.

Included are warranties, ours plus those of manufacturers of engines and accessories.

When your boat requires service, contact your Bertram dealer. He is anxious to help you.

We wish you many years of pleasurable yachting on your new Bertram.

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## INITIAL CHECKLIST

Upon boarding his Bertram 20<sup>1</sup> for the first time, the wise owner will want to familiarize himself with the total operation of the various systems.

- I. Location and function of all 12V DC electrical switches and fuses.
  - a. Master Switch, located on battery box. The only circuit excluded from this master switch control is the Bilge Pump Circuit. This circuit operates at all times and is protected by a fuse. This fuse is located behind the instrument panel.
  - b. Master Fuses are grouped on a fuse block and numbered, with a plaque that identifies each circuit with the corresponding number attached nearby. The fuse block is located behind the instrument panel.
  - c. Optional DC System: The radio, if installed is powered by the installed battery and the fuse for this circuit is mounted in the engine compartment.
- II. Location, description and operation of mechanical systems such as valves, fuel system, etc., are described in the Sections which follow and their accompanying diagrams.

## CONTROLS AND INSTRUMENTS

### THE IMPORTANCE OF INSTRUMENTS

To avoid mechanical damage, become accustomed to checking your instruments frequently when running and particularly when first starting the engine.

### IGNITION AND STARTER SWITCH

After inserting the ignition key, turn key all the way to the right. This will energize the starter motor. As soon as the engine starts, release key and it will automatically return to the ignition position. To stop motor, turn the key to the left as far as it will go. The starter should not be operated for prolonged periods. This may result in overheating the starter motor or draining the battery or both.

### ACCESSORY SWITCHES

Each of these toggle switches operates lights or electrical accessories as marked and they all operate from the engine starting battery. Excessive use of accessories when engine is not charging the battery could make engine starting difficult.

### GAUGES

Gauges are as follows: Tachometer, Oil Pressure, Fuel, Ammeter and Water Temperature. All these instruments operate on the boat's 12 volt, D. C. system. During boat's running, these gauges should be checked periodically.

### POWER TRIM SWITCH

This is a switch by which you can control the trim of your boat. Read the MerCruiser Operator's Manual for the best operation of this advantage offered by MerCruiser.

### AMMETER

This is an indicator that measures the rate of electrical current going to the battery from the alternator to maintain its full charge. The ability of the alternator to maintain a charge depends on the ratio of current generated and the rate of consumption by the electrical units. A low charging rate normally indicates that the battery is fully charged.

### FUEL GAUGE

The electric fuel gauge is standard equipment and is located on the instrument panel.

### LUBE OIL PRESSURE GAUGE

Almost all serious engine trouble will be reflected on the oil pressure gauge. Therefore, if any radical change in oil pressure should occur turn off the engine immediately. During operation, there may be some slight fluctuation in gauge readings. This is normal due to the variation in the temperature of the lube oil. Consult your engine manual for operating procedure.

### WATER TEMPERATURE GAUGE

The water temperature gauge records the water temperature circulating through the engine. This temperature is controlled by a thermostat installed in the engine. The temperature and oil pressure gauges should be observed simultaneously as most malfunctions will be reflected in these gauges.

## TACHOMETER

This instrument registers the revolutions per minute in increments of 100 of the engine. There is no correlation of RPM's to speed of the boat due to propeller slippage, condition of bottom and load factor.

## CONTROLS

### CONTROL CONSOLE

The control console contains all controls, gauges, and switches necessary for the operation of the boat. Included on the console are, Engine Control, Clutch Control, Power Trim Switch, Navigation Light Switch, Fuel Gauge, Horn Switch (opt.), and Wiper Switch (opt.).

### ENGINE & REVERSE GEAR CONTROL

The Reverse Gear and Throttle Control is a single lever control, located within easy reach of the helmsman. The controls are the push/pull type. To work the throttle lever independently, push the button in the center of the control hub with the lever in the neutral position and push lever forward to open throttle of engine. The control head is marked Forward, Neutral and Reverse.

### POWER TRIM CONTROL SWITCH

This control is located within easy reach of the helmsman and is operated by the engine starting battery. See your Engine Operators Manual to be informed how to take advantage of this feature of the MerCruiser Outdrive.

## STEERING SYSTEM

Steering on your Bertram is cable controlled of the "push-pull" type, the cable runs through a flexible watertight conduit. The cable acts alternately in tension and compression.

## POWER PLANT

### ENGINE

All necessary data and information about the engine is contained in the enclosed Engine Operator's Manual so they will not be repeated here. It is suggested that you read the manual thoroughly and if you have any questions, ask your dealer for the information you desire. Just a reminder, the life and performance of the engine is dependent on the care given to it. It is suggested that you follow the manufacturer's recommendations and watch the instruments carefully to obtain many hours of pleasurable boating.

### REVERSE GEAR

This gear is housed in the outdrive and controlled by a cable of the push-pull type. Information and maintenance procedure can be found in the Engine Manual.

### PROPELLERS

Information on the propeller for your boat will be found on the Ship's Information Page of this book. The propeller recommended is the one that your type of boat has been tested with. If weight has been added or the operating characteristics have been changed due to addition of special equipment, it may be necessary to change the pitch of the propeller to suit the existing conditions.

### INSTALLATION OF PROPELLERS

Instructions for removing and installing propellers will be found in the Engine Operator's Manual.



## BOAT SPEED

Boat speed is dependent on many variable factors, so no catalogue or advertised speed can be guaranteed. A short discussion of some of the more important factors affecting boat speed are presented below.

### ENGINE EFFICIENCY:

With normal care and maintenance the engines will maintain peak efficiency; however, if they are neglected, the power will fall off and expensive repairs could become necessary. 'Take care of the engine'

### ATMOSPHERIC CONDITIONS:

Engines will develop more power when the ambient air and water temperatures are cool, in fact the power variations due to temperature can be as much as ten percent. For this reason greater speeds are generally obtained in the spring and fall, rather than in the summer.

### PERSONAL EQUIPMENT AND ACCESSORIES:

All personal equipment and accessories added to the boat will tend to decrease the speed, just as adding passengers will. Often the effect of this added weight is not taken into consideration on the performance of the boat.

### MARINE GROWTH:

In order to obtain maximum speed, the bottom of the boat must be kept free of marine growth including moss. Any growth on the boat's bottom will increase the resistance of the boat as it moves through the water, thus decreasing speed.

### WATER IN THE BILGE:

Since a barrel of water weighs over 400 lbs., the bilges must be kept pumped dry in order to keep excess weight down. As mentioned before, added weight will reduce boat speed.

### DAMAGED UNDERWATER EQUIPMENT:

Loss of speed and excessive vibration can result from damaged propellers.

## ELECTRICAL

### GENERAL

The Bertram 20 has a 12 volt D. C. electrical system. This system obtains its power from the installed battery. The electrical circuits are protected by fuses, grouped on a fuse block under the instrument panel.

### BATTERY

There is a heavy duty battery installed in your boat. The battery is located in the engine compartment on all models with the exception of the Sportsman. On the Sportsman, the battery is located forward of the engine compartment with its own access hatch in the cockpit sole. Water in the battery is to be kept at approximately 1/4" above the plates to insure maximum service.

### GROUND AND BONDING SYSTEM

All Bertrams are fitted with a bonding system to minimize electrolysis. This system consists of a copper strip running fore and aft, on or near the keel. All underwater fittings and hardware are bonded into this system.

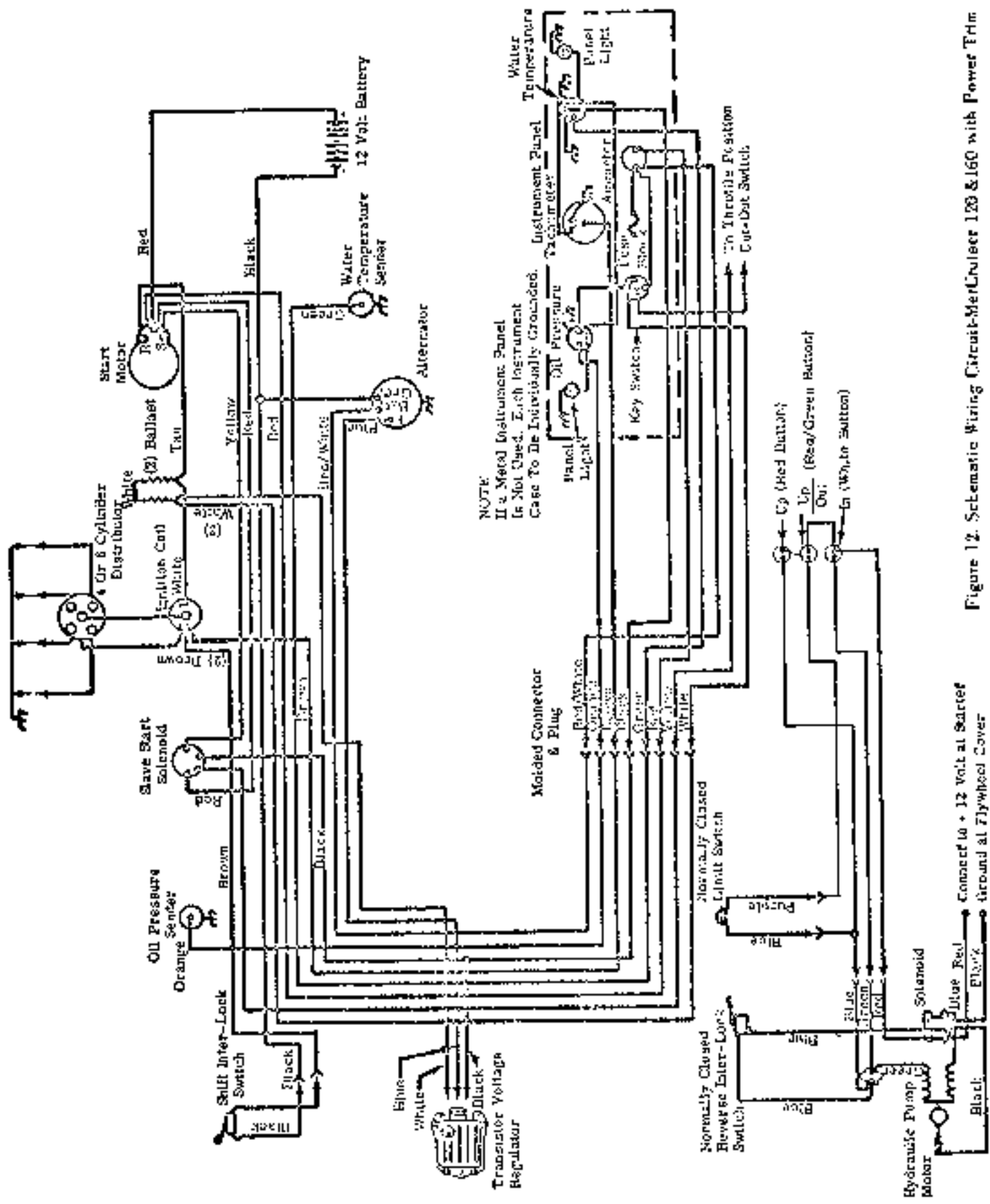


Figure 12. Schematic Wiring Circuit-MerCruiser 120 & 160 with Power Trim

## FUEL SYSTEM

### FUELING INSTRUCTIONS

These steps should be followed in this order each time you fuel your Bertram:

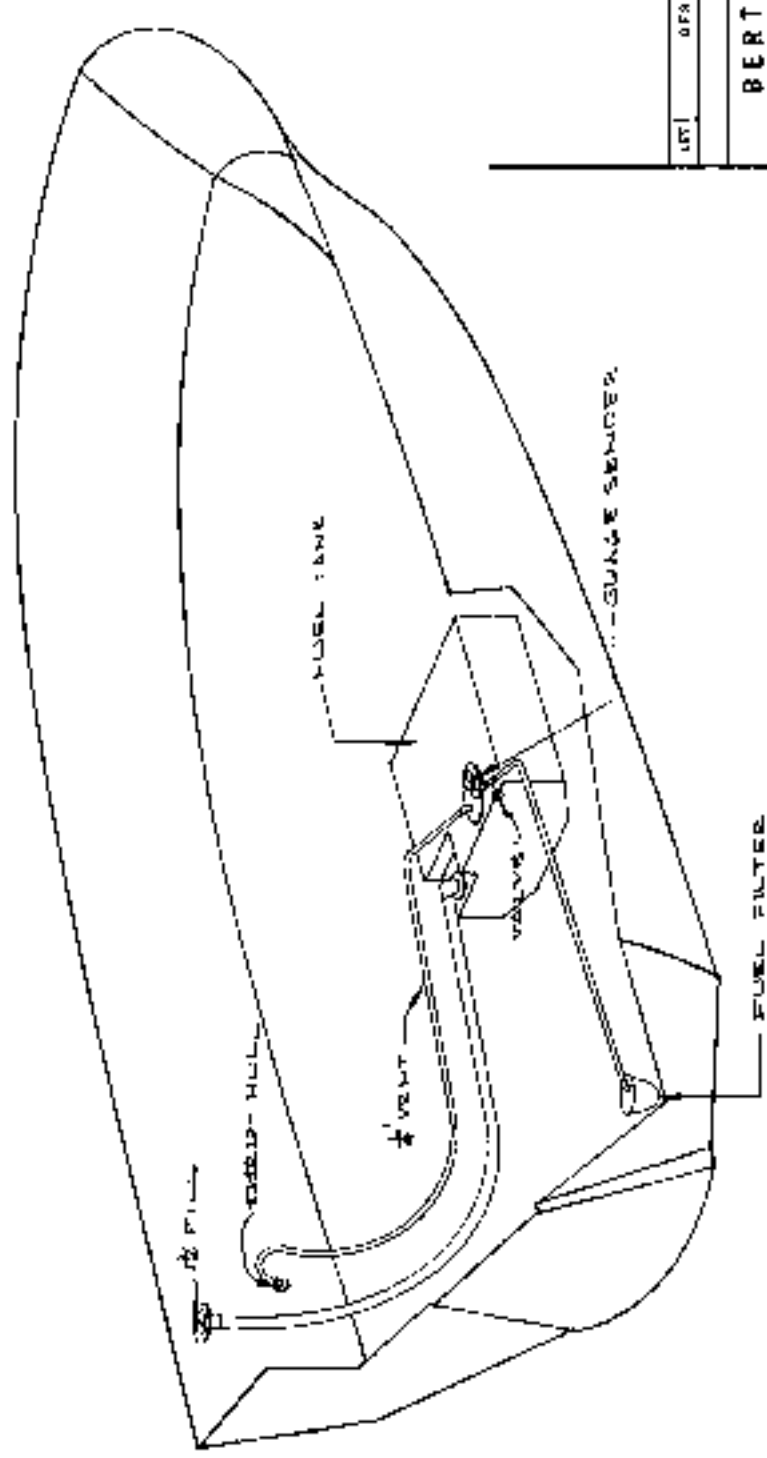
- 1) Close windows, doors, hatches and engine hatch.
- 2) Do not operate any equipment: This means engine, or bilge blower and close service valve on fuel line.
- 3) Make sure the filling hose nozzle is touching the yacht's fill pipe fitting before any fuel is pumped.
- 4) Top the tank until fuel overflows through the vent fitting on hull side below fill pipe.
- 5) Open hatches and engine hatch. Then visually and by smell check to make sure there are no fuel leaks or fuel fumes present. At the same time, open the fuel feed line located close to the tank and inspect all fuel lines and fittings.
- 6) Operate the bilge blower and leave it running until you start the engine. Start engine after a minimum of five minutes of operating the blower.
- 7) Close engine hatch and other hatches after main engine has been running for some time.

## FUEL SYSTEM

The Bertram 20' has a molded fiberglass fuel tank with a capacity of 32 gallons, with exception of the Baron, which has a 50 gallon capacity. The tank is made of fire retardant resins. The fuel tank is not an integral part of the hull. The vent and gauge sender are located at the middle of the tank. There are two shutoff valves in all fuel feed lines; a service valve at fuel filter, and another at the tank. The fuel filling connection is located on the port side just forward of the transom. The tank vent is a thru hull fitting just below the filling connection.

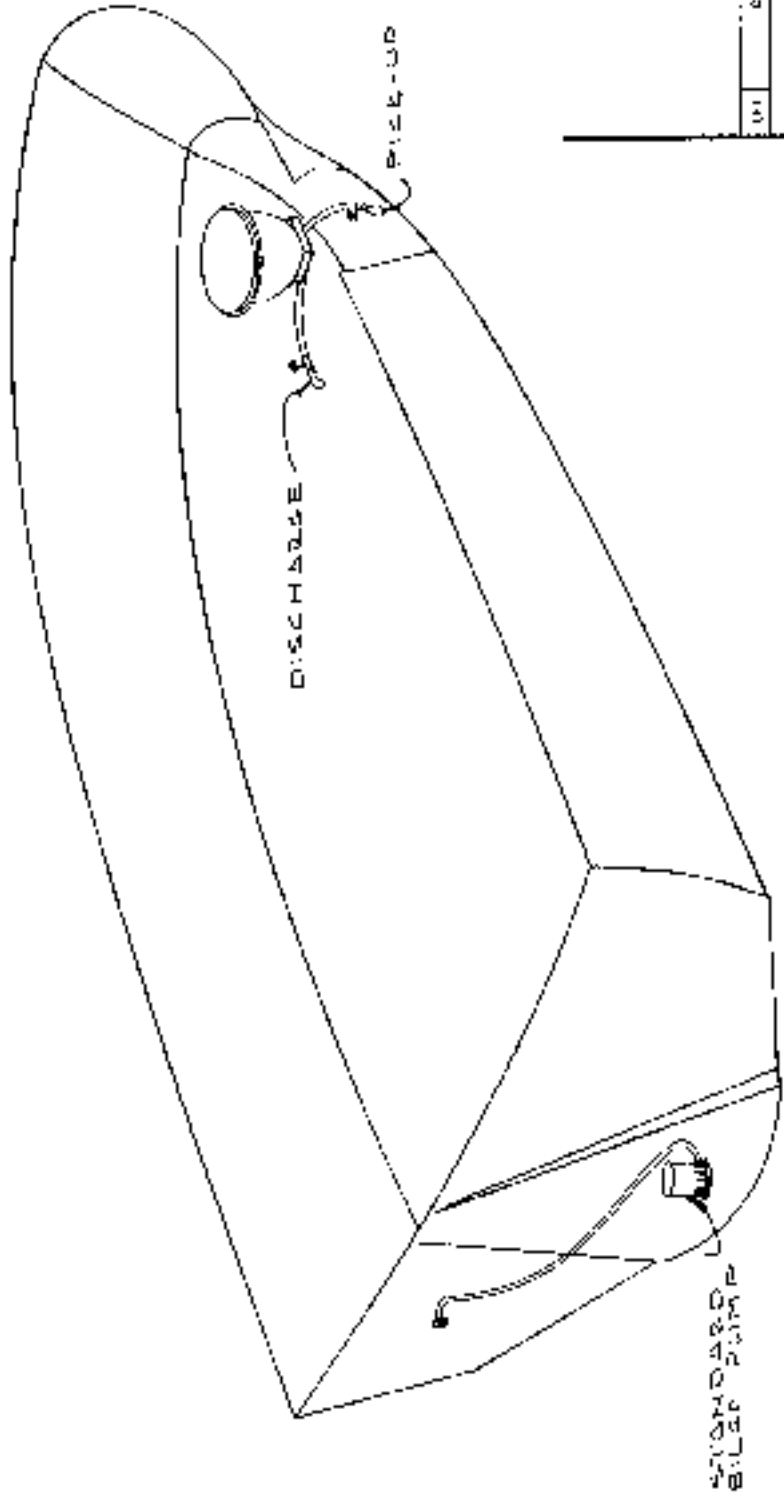
## FUEL

Use only the fuel recommended by the engine manufacturer. Should you be forced to use lower than specified octane in gasoline engines, do not exceed 2700 RPM under any conditions as severe internal damage to the engines could result at a faster RPM. See the Engine Operator's Manual for more information.



REV	DESCRIPTION	BY	DATE	APPN
	REVIS DMS			
<b>BERTRAM YACHT</b> MIAMI, FLORIDA, U.S.A. A SUBSIDIARY OF WHITTAKER CORPORATION				
MODEL	22	DATE	1-10-66	10
TITLE	... FUEL LINE ...			
SHEET	NUMBER	PLAN NO	REV	
PLANNING	DATE	2-3-62	B	
DATE	7-23-69			
TRG... 22.03				

NOTE:  
 HEAD INSTALLED  
 IN BERMUDA LAR  
 MODEL ONLY



NO.	DESCRIPTION	BY	DATE	APP.
REVISIONS				
<b>BERTRAM YACHT</b> MIAMI, FLORIDA, U.S.A. A DIVISION OF WATKINS COMPANY				
MODEL 20' ALL MODELS TITLE BILGE PUMP SYSTEM				
SCALE	1/4" = 1'	PLAN NO.	REV.	
DESIGNED	APRIL 27	B	242A	
DRAWN	JULY 2, 1954		DATE: 7-23-54	
				PAGE 2 OF 2



## ELECTRICAL ACCESSORIES

### BILGE PUMP (OPTIONAL)

The bilge pump is installed in the engine compartment and is wired on an independent circuit. The bilge pump circuit bypasses the master switch and is controlled by a toggle switch on the console. The fuse for this circuit is located under the instrument panel and is clearly marked.

### ENGINE COMPARTMENT BLOWER (OPTIONAL)

The engine compartment blower is mounted on the transom and has a flexible suction hose leading to the lowest point in the bilge; it exhausts through one of the clamshell ventilators. The switch for the blower is mounted on the instrument panel and the circuit is protected by a fuse on the main fuse block.

### ELECTRIC HORN (OPTIONAL)

The electric horn is mounted on the foredeck and is actuated by a toggle switch on the instrument panel. This circuit is protected by a fuse on the main fuse block and the instrument panel.

## COMMANDING YOUR BERTRAM

### PRESTARTING INSTRUCTIONS

The following are routine procedures that should be followed each time you take your Bertram out.

- 1) Always check your fuel and see to it that the fuel valve is open.
- 2) If equipped with a bilge blower, run blower for at least five (5) minutes. If not, open engine hatch and check for gasoline fumes.
- 3) Check engine lube oil level.

### STARTING INSTRUCTIONS

- 1) Be sure Master Battery Switch is in "on" position.
- 2) Check gear shift lever to be sure it is in Neutral position.
- 3) Disengage throttle and advance throttle about (1) one inch.
- 4) Insert key in ignition switch and turn to right as far as it will go. When engine starts, release key and it will automatically return to ignition position. Adjust throttle to idling speed.

### STOPPING ENGINES

To stop the engine, simply turn the key to the left as far as it will go.

## MANEUVERING

In docking, approach the dock at a slow speed at about a 30° angle. When your bow is about five feet from the dock, put the shift lever in reverse and turn the wheel toward the dock. This will reduce your forward movement and bring your stern in toward the dock.

## CRUISING SPEEDS

As you increase speed, your Bertram will increase her angle of trim. That is, the bow rises. From a maximum angle, she will start to level off, and assume a planing attitude. Do not stay at the maximum angle, or "on the hump" any longer than necessary. Take note of your engine RPM's on the hump. Then cruise either under that speed or over it. Best cruising speed depends on the type of engine and the weight load of your Bertram. But as a rule, top cruising speed RPM should be 10% to 15% less than the top RPM. (Consult your engine manual).

Top and cruising speed and RPM are indicated in the enclosed table. These were obtained on actual tests of boats similar to yours under ideal conditions. The speeds and ranges indicated are not guaranteed but they will serve as a valuable guide for you. Some additional considerations: Engine performance will be affected to a slight degree by atmospheric conditions. You will find your engines develop less power in warm air

temperatures. Similarly, dry air reduces power, as will high altitudes. If you are cruising regularly in waters well above sea level, you will want to change carburetor adjustments to get a better air fuel mixture.

The famous Bertram V-Hull cushions pounding by slicing rather than slapping waves. You'll be able to go out in weather that keeps ordinary boats at their moorings. But even Bertrams can encounter extreme conditions that call for sensible seamanship. While your Bertram will withstand far greater punishment than you will probably ever subject her to, speed should be reduced under severe conditions in the interest of your comfort, and to reduce needless strain on the engines.

### CRUISING

In order to avoid going aground or damaging underwater gear, it is important to know the draft of your Bertram, or the amount of water you must have under you at all times. Draft will vary depending on how many people and how much equipment or personal effects you are carrying. What's more, your draft will be somewhat less in salt water than in fresh water.

You can determine maximum draft by measuring the freeboard from the sheer to the water line at the center of the transom. Subtract this freeboard from the hull depth at the transom (see docking plan in this manual) to get the hull draft at the transom. Add depth of underwater gear as indicated in Docking Plan, and you have the maximum draft. Record the figure where you can refer to it quickly.

If you plan to travel waterways crossed by bridges, you'll want to know the height of your Bertram from the waterline. Take your measurement when your Bertram is lightened of its fuel, passengers and equipment. This will give you a small safety factor when boat is loaded.

For the best results, try to maintain the original trim of the boat. You can do this by noticing her trim carefully when she is first launched, before extra equipment has gone aboard. Of course, all gear and equipment should be properly stored while cruising. To maintain proper trim on your boat there is a switch on the console which controls the angle of the outdrive from the transom and by moving the outdrive you can change the trim of your boat. See MerCruiser Operators Manual.

#### CALLING AT PORTS AWAY FROM HOME

When cruising abroad, try to purchase fuel equal to American standards. (See fuel systems section for requirements in your engine). Carry extra fuel filters with you, since replacement may be necessary.

#### LEAVING YOUR BERTRAM

The following are procedures to follow when leaving your boat overnight, or for a short period of time.

- (1) Lock all ignition or engine circuits.
- (2) Make sure mooring lines are well secured with adequate allowance for tide.

- (3) Bumper and spring lines set.
- (4) Cockpit drain plug in place.
- (5) Automatic bilge pump should be left on "auto" position.

If for some reason your boat is taking on water, the battery should be checked frequently.

The following steps should be followed when leaving your boat for longer periods of time, such as a week or more:

- (1) Follow all of the above steps.
- (2) Turn master battery switch to OFF position.
- (3) Turn off fuel valve.

## MAINTENANCE

### PERIODIC MAINTENANCE

The maintenance the Bertram 20' requires during the boating season depends to a great extent on the conditions under which the boat is used. Adequate ventilation of the boat during periods of non-use will reduce the interior maintenance, and keeping the exterior waxed will minimize the exterior maintenance.

In this section, a suggested preventive maintenance program is set forth for the boat under "average" conditions, and if this program is to be used, it should be used in conjunction with the periodic maintenance recommended in the respective operating manuals for the engines and generator.

### DAILY

- (1) Pump bilges as required.
- (2) Ventilate engine compartment.
- (3) Check engine lubricating oil levels.
- (4) Check fuel, water, and oil systems for leaks.
- (5) With engines running, check engine circulating water by observing engine exhausts. Water should be exhausting along with the gases.
- (6) Top off fuel tanks at end of day's operation.
- (7) Wash down boat with fresh water.

EVERY 100 HOURS OR 60 DAYS (WHICHEVER COMES FIRST)

EXTERIOR

(1) Visually inspect exterior fiberglass finish;  
clean and wax.

(2) Inspect all hardware and apply protective polish,  
tighten any loose fittings.

(3) Inspect all exterior seat cushions. If wet, remove covers and air dry in sunlight all polyfoam and covers. Clean covers with mild soap solution or light Clorox solution. Wash any cleaning materials off with fresh water.

INTERIOR

(1) Completely air out the boat.  
(2) Inspect all life jackets.  
(3) If any mildew is found, thoroughly wash down area  
with Clorox solution.

(4) Lubricate dog threads with Vaseline.

(5) Check all fire extinguishers for full charge.

(6) Check operation of lights.

(7) Check bow hatch for operation and watertight fit.

ENGINE COMPARTMENT

(1) Follow periodic preventive maintenance for engines and marine gears as specified in engine manual.



- (2) Inspect exhaust hoses and hose clamps.
- (3) Check engine mounting bolts to see that they are tight. If bolts are found to be loose, realign engine.
- (4) Check all hoses on engines, and hose clamps. Inspect for leaks.
- (5) Check fuel lines, flare nuts, and valves for leaks.
- (6) Check control cable brackets for tightness.
- (7) Check electrical connections and clean if corroded.
- (8) Check exhaust blower for operation and hose for leaks.
- (9) Check all wiring to see that it is not rubbing or insulation worn off.
- (10) Check all gauge senders.
- (11) Check studs for ground plates.
- (12) Check all battery cells with hydrometer. They should be between 1.250 and 1.265. Add water to cells as necessary.
- (13) Clean battery terminals, scrape and pack with Vaseline.
- (14) Clean out stringer timber holes.
- (15) Remove and clean screen on bilge pump pick up and check operation of pump.
- (16) Lubricate control heads and cables with Vaseline.

AS REQUIRED

(1) Pull boat out of water, scrub if necessary.

NOTE: The mold release that is used to lay up the hull at the factory has a certain amount of wax which makes it difficult to get good adherence of the anti-fouling fiberglass bottom paint during the first several months of operation.

## STORING YOUR BERTRAM

### DRY STORAGE

(1) Indoor storage is generally preferred, if there is good ventilation, and if the location is otherwise safe and dry. However, outdoor storage may be all that is available, or economically practical.

(2) For any special instructions for covering the Bertram 20' for outdoor storage, refer to Docking Plan.

(3) To keep bilge dry, remove bilge drain plug and open all valves and/or seacocks.

(4) Drain all tanks, water lines and pumps of water to prevent damage from freezing. Add anti-freeze to any low position lines that can't be drained. In warm climates, draining will prevent water stagnation.

(5) Open hatches sufficiently to allow air to circulate. Also, leave locker doors open.

(6) If possible, remove cushions, clean and store in a dry place. If they must be left aboard, prop up on one edge for maximum ventilation.

(7) Synthetic material lines need only proper handling and occasional cleaning. Natural fiber lines should be dried and kept in a well ventilated place.

### CAUTION

Do not oil any rubber or leather parts.

(8) To protect chrome, stainless or aluminum deck hardware, first remove any salt deposits with fresh water. Then clean with a good quality non-abrasive type metal cleaner. Finally give items a light coat of wax or other protective coating.

(9) Check propellers for nicks, dents and bent blades. Any replacement or repairs should be made at this time instead of during the Spring rush.

(10) Be sure all linkages of steering, engine and other controls are free and well lubricated.

(11) Remove battery and make arrangements for storage and period recharging.

#### WET STORAGE

All the above applies, except of course valves, and thru hull fittings should remain closed, and the electrical master switch placed in the OFF position. Cockpit drain plugs should be fitted and secured.

#### FITTING OUT

In order to ensure maximum pleasure and enjoyment from your Bertram 20' after an extended lay up, a thorough check of the boat and equipment is necessary with maintenance being done as indicated. The following list should serve as a guide for the more important items to be accomplished.

## PRE-LAUNCH AND POST-LAUNCH CHECKS

In all likelihood, your Bertram has been delivered to you in the water, with these checks already made by your Bertram dealer. However, when she has been hauled, and you are fitting out for a new season, be sure these checks are made.

### PRE-LAUNCH

- (1) Bilge drain plug should be in place and secure.
- (2) Cockpit drain plugs in place and secured.

### AFTER LAUNCH

- (1) Supply and discharge lines are secure.
- (2) Arc fittings all tight.
- (3) Bilge pumps working.
- (4) Bilge blower working.

### ELECTRICAL SYSTEM CHECK

- (1) Battery is properly charged at 1.260 sg. If below 1.220 sg., have charged.
- (2) Engine wire looms secure, away from exhaust manifold, connections tight.
- (3) Check the following standard and optional electrically operated equipment to make sure each is working properly.

Navigation Lights	Radio
Horn	Wipers

### ENGINE CHECK

- (1) Fuel lines and cooling lines secure and tight fittings.
- (2) Exhaust fittings secure and tight.
- (3) Engine mount fastening tight, locked.
- (4) See engine manual for service.

### CONTROLS CHECK

- (1) Clutch adjusted, fittings secured.
- (2) Throttle adjusted, fittings secured.
- (3) Steering is positive, linkage secure.
- (4) All gauges, water temperature, oil pressure, tachometer, ammeter, are properly operating (after starting engines).

## MAINTAINING YOUR BERTRAM

### CARE OF FIBERGLASS CONSTRUCTION:

The fiberglass construction which makes up the entire hull and most of the superstructure, consists of several parts. The exterior layer gelcoat is a special polyester resin into which coloring pigments have been incorporated to give built-in color. Just beneath the gelcoat, is a series of glass fabric laminations bonded together with polyester resin. The complete lamination and gelcoat are bonded together by a chemical action, and the part is a one-piece unit. The outside gelcoat -- approximately 0.015 inch depth -- gives the fiberglass part its glossy finish. The following recommendations will help you keep this unique material in the same condition it was when it left the factory.

### SEASONAL CARE (AT FITTING OUT TIME):

- (1) Clean surface with soap and water.
- (2) Treat with an automotive type rubbing compound.

Use lightly.

- (3) Wax and polish the surface with an automotive type wax.

Some modern products give you rubbing and waxing action in one. These are also acceptable.

### LOSS OF GLOSS:

To restore the glossy appearance of the gelcoat surfaces, a light buffing may be advisable. For hand buffing, use a slightly

abrasive rubbing compound similar to Dupont No. 7. If a powder buffer is used, Mirro-Glaze No. 1 or similar product is recommended. After buffing, the surface should be waxed and polished as described above for Seasonal Care.

#### STAINS:

The fiberglass gelcoat surface is non-porous and therefore highly resistant to stains. Most can be removed easily with household detergent. Crayon, lipstick or shoe polish can be removed with plain alcohol. Ink spots will come off with Ajax or a similar detergent. While penetrating stains are very uncommon, some products with unusual chemical contents may go too deep for ordinary methods of removal. In such cases, weak solutions of acids or alkalies, such as hydrochloric acid or ammonia can be tried. These may, however, produce a slight discoloration in the gelcoat. If none of the above methods are successful, it may be necessary to sand down through the gelcoat to remove the stain. This will require refinishing (see below).

#### SCRATCHES AND ABRASIONS:

Those that do not penetrate the full thickness of the gelcoat can be treated by lightly sanding and buffing the area. Larger scratches that penetrate the gelcoat, but do not go deeply into the fiberglass or weaken the structure, can also be repaired, as follows:

- (1) Clean damaged area, first with mineral spirits



or turpentine to remove dirt and wax. Follow with detergent and rinse. Allow to dry completely.

(2) Secure a small amount of pigmented gelcoat resin matching the color of the area to be repaired. This is available from your Bertram dealer.

(3) Add two drops of catalyst per cubic inch of gelcoat, and mix thoroughly. The mixture will gel in 15 minutes.

(4) Fill scratch with the mixture before it hardens, and round off about 1/16" to 1/8" above surrounding surface.

(5) Lay a piece of wax paper or cellophane on top of the patch and press lightly to remove air. Take off wax paper after 20 minutes, and allow patch to cure overnight.

(6) Sand down patch with 600 grit wet sandpaper. Finish by rubbing and buffing with regular buffing compound.

Any repairs to fiberglass that are more extensive than those described here should be made only with the help and advice of your Bertram dealer.

#### PAINING FIBERGLASS SURFACES:

(1) Thoroughly clean fiberglass part to be painted, removing any wax with mineral spirits, turpentine or other commercial solvents. Then wash with detergent and rinse.

(2) After surface is dry, sand lightly with garnet, fine oxide or #220 sandpaper. Wipe clean of all dust.

(3) Apply two thin coats of primer as recommended by marine paint manufacturer.

(4) Apply regular of epoxy paint of good quality as manufacturer directs. While the fiberglass bottom of your Bertram is inherently anti-fouling, you may find your cruising waters make an anti-fouling paint application worthwhile. Follow the above directions (and those of the manufacturer) in applying such a paint to your hull.