

HUNTER OWNER'S MANUAL

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*✓ Engine test
for impeller*

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▶ Other:

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Welcome To THE HUNTER MARINE FAMILY

Congratulations on your new sailing yacht manufactured by Hunter Marine. We have engineered and constructed your boat to be as fine a yacht as any afloat. In order to get the best performance and most enjoyment from your boat you should be familiar with its various elements and functions. Please take the time to study this manual and its recommendations for your sailing pleasure.

We stand behind the quality of your boat with a warranty which you should also review. To insure your warranty is valid, please fill out the attached card and send it to us within ten (10) days of the purchase date. Section 15 of the U.S. Federal Boat Safety Act requires first owners to be registered. The warranty data should also be recorded in the space below for your own reference.

This manual has been compiled to help you to operate your craft with safety and pleasure. It contains details of the craft, the equipment supplied or fitted,

its systems, and information on its operation and maintenance. Please read it carefully, and familiarize yourself with the craft before using it.

If this is your first craft, or you are changing to a type of craft you are not familiar with, for your own comfort and safety, please ensure that you obtain handling and operating experience before assuming command of the craft. Your dealer or national sailing federation or yacht club will be pleased to advise you of local sea schools, or competent instructors.

PLEASE KEEP THIS MANUAL IN A SECURE PLACE, AND HAND IT OVER TO THE NEW OWNER WHEN YOU SELL THE CRAFT.

You also need to fill out and mail the warranty cards on your engine, stove, head, electric water pump and other accessories. These are enclosed in the manufacturers' manuals which are included with your owner's manual.

OWNER INFORMATION CARD

**HULL IDENTIFICATION NUMBER IS ON THE STARBOARD AFT SIDE OF THE HULL OR TRANSOM
THIS NUMBER MUST BE GIVEN IN ALL NECESSARY COMMUNICATIONS.**

HULL NO.		DATE DELIVERED TO OWNER
YACHT NAME		
OWNER NAME		
STREET ADDRESS		
CITY	STATE/COUNTRY	ZIP CODE
HOME PORT		
ENGINE MODEL	SERIAL NO.	PROPELLER SIZE
DEALER	PHONE	
STREET ADDRESS		
CITY	STATE/COUNTRY	ZIP CODE

HUNTER MARINE LIMITED WARRANTY

LIMITED ONE YEAR WARRANTY

Hunter Marine warrants to the first-use purchaser and any subsequent owner during the warranty period, that any part manufactured by Hunter will be free of defects caused by faulty workmanship or materials for a period of twelve (12) months from

the date of delivery to the first-use purchaser under normal use and service. During this period, Hunter will repair or replace any part judged to be defective by Hunter.

LIMITED FIVE YEAR HULL STRUCTURE AND BOTTOM BLISTER WARRANTY

Hunter warrants to the first-use purchaser and any subsequent owner during the warranty period that the hull of each boat will be free from structural defects in materials and workmanship for a period of five (5) years from the date of delivery to the first-use purchaser under normal use and service.

This limited warranty applies only to the structural integrity of the hull and the supporting pan/grid or stringer system. Hulls, pan/grid or stringers modified in any way or powered with engines other than the type and size installed or specified by Hunter are not covered by this limited warranty. The obligation of Hunter under this limited warranty is limited to the repair or replacement of hulls, that it determines to be structurally defective. This is your sole and exclusive remedy.

Hunter also warrants to the first-use purchaser and any subsequent owner during the warranty period that the boat will be free from gel-coat blistering on underwater surfaces of the hull, excluding the keel and rudder, for a period of five (5) years from the date of delivery to the first-use purchaser under normal use and service. During this period, Hunter will

supply or reimburse an authorized Hunter dealer for all of the parts and labor required to repair a blistered underwater surface of the hull. The labor cost reimbursement will be based on the Labor Allowance Schedule established by Hunter from time to time. However, if the repair is performed by a non-Hunter dealer, the repair cost must be authorized by Hunter in advance and be based on a reasonable number of hours as determined by Hunter. Transportation, hauling, launching, bottom paint, storage, dockage, cradling rental, rigging and derigging, or other similar costs will not be paid by Hunter. It is recommended that the repair be done during a seasonal haul out for service or storage.

The following circumstances will void the bottom blister limited warranty:

(1) If the gel-coat has been sanded, sand-blasted, or subjected to abrasion or impact.

(2) If the instructions provided in the Hunter Owner's Manual are not followed according to Hunter's required bottom preparation procedures.

RESTRICTIONS APPLICABLE TO WARRANTIES

These limited warranties do not cover:

(1) Paint, window glass, gel-coat, upholstery damage, plastic finishes, engines, engine parts, bilge pumps, stoves, blowers, pressure water pumps, propellers, shafts, rudders, controls, instruments, keels and equipment not manufactured by Hunter. Any warranty made by the manufacturer of such items

will be, if possible, given on to the first use purchaser.

(2) Problems caused by improper maintenance, storage, cradling, blocking, normal wear and tear, misuse, neglect, accident, corrosion, electrolysis or improper operation.

HUNTER MARINE LIMITED WARRANTY

RESTRICTIONS APPLICABLE TO WARRANTIES (continued)

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY AND ALL OTHER REMEDIES AND WARRANTIES EXPRESSED AND IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS. SOME STATES OR COUNTRIES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THE PURCHASER ACKNOWLEDGES THAT NO OTHER REPRESENTATIONS WERE MADE TO HIM OR HER WITH RESPECT TO THE QUALITY AND FUNCTION OF THE BOAT.

ANY CONSEQUENTIAL DAMAGES WHICH MAY BE INCURRED ARE EXCLUDED AND JUDGED DEFECTIVE BY HUNTER. SOME STATES OR COUNTRIES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE OR COUNTRY TO COUNTRY.

WARRANTY REGISTRATION

These limited warranties shall not be effective unless the Hunter Warranty Registration Form and Pre-Delivery Service Record, which are furnished with each new boat, are filled out completely and returned to Hunter within fifteen (15) days of delivery. Responsibility for sending the completed Registration Form remains with the dealer.

Return to the Warranty Registration Form to Hunter, signed by both Dealer and Owner, is critical. Warranty coverage cannot be initiated until the completed form is received at Hunter.

All repairs and/or replacements will be made by an authorized Hunter dealer, or at the option of Hunter, at the Hunter plant. If the repairs are of such a nature that the warranty work must be performed at the Hunter plant, transportation costs to and from the Hunter plant shall be paid by the owner. The labor cost reimbursement will be based on a Labor allowance Schedule established by Hunter and where not applicable, on a reasonable number of hours as determined by Hunter. Any repairs and replacements must be approved in advance by an authorized Hunter service representative.

TRANSFER OF LIMITED WARRANTIES

Limited warranties will be transferred to a subsequent purchaser of the boat if:

(1) A notice of the transfer of ownership of the boat is given by the subsequent purchaser in writing to Hunter within thirty (30) days of the transfer.

(2) The notice shall include the name, address and telephone number of the subsequent purchaser,

the date of purchase, the hull number and the name of the seller of the boat.

Hunter will mail to the subsequent purchaser notice of the expiration dates of the limited warranties. The transfer of the ownership of the boat will not extend the expiration dates of the limited warranties.

HUNTER MARINE LIMITED WARRANTY

EPOXY BARRIER COAT

Should a customer wish to have an epoxy barrier coat applied to his hull, example Interlux Interprotect 1000, 2000 or West Systems or Vc Tar, this will not void the Five Year Blister Warranty.

Hunter Marine refers to epoxy barrier coatings as mentioned above, not epoxy primer paints.

If an epoxy barrier coat is applied to a Hunter vessel, it must be registered with the Warranty Department prior to application of the product. If the dealer applies bottom paint only, sanding will not be allowed and the no sanding system must be used.

CUSTOMER SATISFACTION SURVEYS

During the first year of ownership, the first purchaser will receive two Customer Satisfaction Surveys - the first (CSS#1) will be received shortly after taking delivery and focuses on the dealer's ability to sell and commission the boat, and the Owner's initial satisfaction. The second survey (CSS#2), nine to ten

months into ownership, "measures" dealer service capability and allows the owner to evaluate most of the boat's functional systems and characteristics. Both surveys are dependent upon receipt of the first purchaser's Warranty Registration Form.

HUNTER MARINE'S OWNER AND FOUNDER

WARREN R. LUHRS

BRIEF HISTORY

Born in 1944 in East Orange, New Jersey, Warren R. Luhrs' ancestry goes back to his great-grandfather, Henry, who helped pioneer railroading and clipper ships in America, and to his great-uncle, John, who helped build the famous St. Petersburg-to-Moscow railroad for Czar Alexander II.

Henry Luhrs owned shares in twenty-two different ocean-going vessels - barks, brigs and schooners - and was principal owner of the bark, *Sophia R. Luhrs*, named after his wife. He was also a partner with Albert Sprout, who managed a shipyard in Melbridge, Maine, where the *Sophia R. Luhrs* was built.

The Luhrs' family sea tradition was carried on during the great depression by Warren Luhrs' father, Henry, who worked at a small boat manufacturer in Morgan, New Jersey, and later started his own company. When war broke out in Europe, the Coast Guard asked Henry Luhrs to repair their boats and install ice sheathing on their bows.

After World War II, Henry built 27-foot fishing boats and in 1948 began to construct custom-built pleasure craft. He then turned to skiffs and in 1952 incorporated as Henry Luhrs Sea Skiffs. He constructed lap strake sea skiffs using assembly-line techniques. Henry personally "shook down" his prototypes with family trips up the Hudson River to Lake Champlain.

The sea skiff is a class of boat which has been very popular, owing to its seaworthiness. It features a sharp bow, which reduces pounding in surf or choppy seas, and a hull whose forward section is rounded

below the water line to increase stability in rough water or a following sea. Such skiffs can either be smooth-sided or of lapstrake construction.

Henry Luhrs' basic philosophy was to emulate the late Henry Ford in building an inexpensive boat for the average man, thus enabling him to enjoy the luxury of boating. He was both designer and engineer, creating innovative and progressive new models. He designed the change in the line of the bow from straight to curved at a time when all boats were being built with the straight square effect. It is believed he was also the first designer-builder to popularize a small boat with a fly-bridge.

In 1960, Luhrs acquired the Ulrichsen Boat Company, Marlboro, New Jersey. It was here, too, that the Luhrs' Alura fiberglass Division was located. In 1965, Henry sold his company to Bangor Arrostock Railroad, which was to become the recreational conglomerate, Bangor-Punta. It was also during this period that Silverton of Tom's River, New Jersey was purchased by John and Warren Luhrs.

Today, Warren R. Luhrs and his brother John, own Hunter Marine Corporation, Silverton Marine Corporation, Mainship Motor Yachts and Luhrs Fishing Boats with its Alura division. Hunter Marine produces sailboats while the other companies produce powerboats.

In January of 1996, Warren and John transferred a portion of the Luhrs Group to its employees through an ESOP program.

GLOSSARY OF SAILING TERMS

A

Aback: describes a sail when the wind strikes it on its lee side.

Abaft: towards the boat's stern.

Abeam: at right angles to the *center-line* of the boat.

Aft: at or near the stern.

Amidships: the center of the boat, *athwartships* and fore and aft.

Anti-fouling: a poisonous paint compound used to protect the underwater part of a hull from marine growths.

Apparent wind: the direction and speed of the wind felt by the crew. It is a combination of *true wind* and that created by the movement of the boat.

Astern: behind the boat; to go astern is to drive the boat in reverse.

Athwartships: at right angles to the fore and aft line of the boat.

B

Back: when a wind backs, it shifts anticlockwise.

Back a sail: to sheet it to windward so that the wind fills on the side that is normally to *leeward*.

Backstay: a stay that supports the mast from aft and prevents its forward movement.

Ballast: extra weight, usually lead or iron, placed low in the boat or externally on the keel to provide stability.

Ballast keel: a mass of ballast bolted to the keel to increase stability and prevent a keel boat from capsizing.

Batten: a light, flexible strip fed into a batten pocket at the *leech* of the sail to support the *roach*.

Beam: 1, the maximum breadth of a boat; 2, a transverse *member* which supports the deck; 3, on the beam means that an object is at right angles to the *center-line*.

Bear a way: to steer the boat away from the wind.

Bearing: the direction of an object from an observer, measured in degrees true or magnetic.

Beat: to sail a *zigzag course* towards the wind, *close-hauled* on alternate *tacks*.

Belay: to make fast a rope around a *cleat*, usually with a figure-of-eight knot.

Bend: 1, to secure a sail to a *spar* before hoisting; 2, to moor a boat; 3, a sleeping place on board.

Bight: a *bend* or loop in a rope.

Bilge: the lower, round part inside the hull where water collects.

Block: a pulley in a wooden or plastic cas, consisting of a *sheave* around which a rope runs. It is used to change the direction of pull.

Boot-topping: a narrow colored stripe painted between the bottom paint and the *topside* enamel.

Bottlescrew: see Rigging screw.

Broach: when a boat *running* downwind slews broadside to the wind and *heels* dangerously. It is caused by heavy following seas or helmsman's error.

Broad reach: the point of sailing between a beam *reach* and a *run*, when the wind blows over the *quarter*.

Bulkhead: partition wall in a boat normally fitted *athwartships*.

C

Caulk: to make the seams between wooden planks watertight by filling with cotton, oakum or a compound.

Cavitation: the formation of a vacuum around a propeller, causing loss in efficiency.

Center-board: a board lowered through a slot in the *keel* to reduce *leeway*.

Center-line: center of the boat in a fore and aft line.

Center of effort (COE): the point at which all the forces acting on the sails are concentrated.

Center of lateral resistance (CLR): the underwater center of pressure about which a boat pivots when changing *course*.

Chain pawl: a short lug which drops into a toothed rack to prevent the anchor chain running back.

Chain plate: a metal plate bolted to the boat to which the *shrouds* or *backstays* are attached.

Chart datum: reference level on a chart below which the tide is unlikely to fall. Soundings are given below chart datum. The datum level varies according to country and area.

Chine: the line where the bottom of the hull meets the side at an angle.

Cleat: a wooden, metal or plastic fitting around which rope is secured.

Clevis pin: a locking pin through which a split ring is passed to prevent accidental withdraw.

Clew: the after, lower corner of a sail where the foot and *leech* meet.

Close-hauled: the point of sailing closest to the wind; see also *beat*.

Close reach: the point of sailing between *close-hauled* and a beam *reach*, when the wind blows forward of the *beam*.

Close-winded: describes a boat able to sail very close to the wind.

Coamings: the raised structure surrounding a *hatch*, cockpit etc., which prevents water entering.

Cotter pin: soft, metal pin folded back on itself to form an eye.

Course: the direction in which a vessel is steered, usually given in degrees: true, magnetic or compass.

Cringle: 1, a rope loop, found at either end of a line of *reef* points; 2, an eye in a sail.

D

Dead run: running with the wind blowing exactly aft, in line with the *center-line*.

Deviation: the difference between the direction indicated by the compass needle and the magnetic *meridian*; caused by object aboard.

Displacement: 1, the weight of water displaced by a boat is equal to the weight of the boat; 2, a displacement hull is one that displaces its own weight in water and is only supported by buoyancy, as opposed to a planing hull which can exceed its hull, or displacement, speed.

Downhaul: a rope fitted to pull down a sail or spar.

Draft: the vertical distance from the *waterline* to the lowest point of the *keel*.

Drag: 1, an anchor drags when it fails to hold; 2, the force of wind on the sails, or water on the hull, which impedes the boat's progress.

Drift: 1, to float with the current or wind; 2, US the speed of a current (rate UK); 3, UK: the distance a boat is carried by a current in a given time.

GLOSSARY OF SAILING TERMS

Drogue: a sea anchor put over the stern of a boat or life raft to retard *drift*.

Drop keel: a retractable *keel* which can be drawn into the hull, when entering shallow waters and recovering on to a trailer.

E

Eye of the wind: direction from which the true wind blows.

F

Fair: well-faired line or surface is smoother with no bumps, hollows or abrupt changes in direction.

Fairlead: a fitting through which a line is run to alter the direction of the lead of the line.

Fathom: the measurement used for depths of water and lengths of rope. 1 fathom = 6 ft. = 1.83 m.

Fid: a tapered tool used for *splicing* heavy rope and for sail-making, often hollow.

Fiddle: a raised border for a cabin table, chart table etc., to prevent objects falling off when the boat *heels*.

Fix: the position of the vessel as plotted from two or more *position lines*.

Forestay: the foremost stay, running from the masthead to the stemhead, to which the headsail is hanked.

Freeboard: vertical distance between the *waterline* and the top of the deck.

G

Genoa: a large headsail, in various sizes, which overlaps the mainsail and is hoisted in light to fresh winds on all *points of sailing*.

Gimbals: two concentric rings, pivoted at right angles which keep objects horizontal despite the boat's motion, e.g. compass and cooker.

Go about: to turn the boat through the *eye of the wind* to change *tack*.

Gooseneck: the fitting attaching the boom to the mast, allowing it to move in all directions.

Goosewing: to boom-out the headsail to *windward* on a *run* by using a *whisker pole* to hold the sail on the opposite side to the mainsail.

Ground tackle: general term used for anchoring gear.

Guard rail: a metal rail fitted around the boat to prevent the crew falling overboard.

Gudgeon: a rudder fitting. It is the eye into which the *pin* fits.

Guy: a steadying rope for a spar; a spinnaker guy controls the fore and aft position of the spinnaker pole; the foreguy holds the spinnaker pole forward and down.

Gybe: to change from one *tack* to another by turning the stern through the wind.

H

Halyard: rope used to hoist and lower sails.

Hank: fitting used to attach the *luff* of a sail to a stay.

Hatch: an opening in the deck giving access to the interior.

Hawse pipe: see Navel pipe.

Head-topwind: when the bows are pointing right into the wind.

Headfoil: a streamlined surround to a *forestay*, with a groove into which a headsail *luff* slides.

Heads: the toilet.

Headway: the forward movement of a boat through the water.

Heave-to: to *back* the jib and lash the tiller to *leeward*; used in heavy weather to encourage the boat to lie quietly and to reduce *headway*.

Heaving line: a light line suitable for throwing ashore.

Heel: to lean over to one side.

I

Isobars: lines on a weather map joining places of equal atmospheric pressure.

J

Jackstay: a line running fore and aft, on both sides of the boat, to which safety harnesses are clipped.

Jury: a temporary device to replace lost or damaged gear.

K

Keel: the main backbone of the boat to which a *ballast keel* is bolted or through which the *centerboard* passes.

Kicking strap: a line used to pull the boom down, to keep it horizontal, particularly on a *reach* or *run*.

L

Lanyard: a short line attached to one object, such as a knife, with which it is secured to another.

Leech: 1, the after edge of a triangular sail; 2, both side edges of a square sail.

Leehelm: the tendency of a boat to *bear away* from the wind.

Lee shore: a shore on to which the wind is blowing.

Leeward: away from the wind; the direction to which the wind blows.

Leeway: the sideways movement of a boat off its *course* as a result of the wind blowing on one side of the sails.

Lifeline: a wire or rope rigged around the deck to prevent the crew falling overboard.

Limber holes: gaps left at the lower end of frames above the *keel* to allow water to drain to the lowest point of the *bilges*.

List: a boat's more or less permanent lean to one side, owing to the improper distribution of weight, e.g., *ballast* or water.

Log: 1, an instrument for measuring a boat's speed and distance travelled through the water; 2, to record in a book the details of a voyage, usually distances covered and weather.

Luff: the forward edge of a sail. To luff up is to turn the boat's head right into the wind.

Luff groove: a groove in a wooden or metal spar into which the *luff* of the headsail is fed.

Lurch: the sudden roll of a boat.

M

Marlin spike: a pointed steel or wooden spike used to open up the strands of rope or wire then *splicing*.

Mast Step: the socket in which the base of the mast is located.

Measured mile: a distance of one nautical mile measured between buoys or *transits/ranges* ashore, and marked on the chart.

Member: a part of the skeleton of the hull, such as a *stringer* laminated into a fiberglass hull to strengthen it.

GLOSSARY OF SAILING TERMS

Meridian: an imaginary line encircling the Earth which passes through the poles and cuts at right angles through the Equator. All lines of longitude are meridians.

Mizzen: 1, the shorter, after-mast on a *ketch* or *yawl*; 2, the fore and aft sail set on this mast.

N

Navel pipe: a metal pipe in the foredeck through which the anchor chain passes to the locker below.

Noon sight: a vessel's latitude can be found, using a sextant, when a heavenly body on the observer's *meridian* is at its greatest altitude. The sight of the sun at noon is the one most frequently taken.

O

Off the wind: with the *sheets* slacked off, not *close-hauled*.

One the wind: *close hauled*.

Outhaul: a rope used to pull out the foot of a sail.

Overall length (LOA): the boat's extreme length, measured from the foremost part of the bow to the aftermost part of the stern, excluding bowsprit, self-steering gear etc.

P

Painter: the bow line by which a dinghy, or *tender*, is towed or made fast.

Pintle: a rudder fitting with a long pin which slips into the *gudgeon* to form a hinged pivot for the rudder.

Pitch: 1, the up and down motion of the bows of a boat plunging over the waves; 2, the angle of the propeller blades.

Point of sailing: the different angles from the wind on which a boat may sail; the boat's *course* relative to the direction of the wind.

Port: the left-hand side of a boat, looking forward (opp. of *starboard*).

Port tack: a boat is on a port tack when the wind strikes the port side first and the mainsail is out to *starboard*. A boat on the port tack gives way to a boat on a *starboard tack*.

Position line/line of position: a line drawn on a chart, as a result of taking a bearing, along which the boat's position must i.e.. Two position lines give a *fix*.

Pulpit: a metal *guard rail* fitted at the bows of a boat to provide safety for the crew.

Pushpit: a metal *guard rail* fitted at the stern.

Q

Quarter: the portion of the boat midway between the stern and the beam; on the quarter means about 45 degrees *abaft* the beam.

R

Rake: the fore and aft deviation from the perpendicular of a mast or other feature of a boat.

Range: 1, see **Transit**; 2, of tides, the difference between the high and low water levels of a *tide*; 3, the distance at which a light can be seen.

Rating: a method of measuring certain dimensions of a yacht to enable it to take part in handicap races.

Reach: to sail with the wind approximately on the *beam*; all sailing points between running and *close-hauled*.

Reef: to reduce the sail area by folding or rolling surplus material on the boom or *forestay*.

Reefing pennant: strong line with which the *luff* or leech *cringle* is pulled down to the *boom* when reefing.

Rhumb line: a line cutting all *meridians* at the same angle; the *course* followed by a boat sailing in a fixed direction.

Riding light to anchor light: an all-round white light, usually hoisted on the *forestay*, to show that a boat under 50 ft. (15m) is at anchor. It must be visible for 2 mls. (3km).

Rigging screw: a deck fitting with which the tension of *standing rigging*, e.g. *stays*, *shrouds*, is adjusted.

Roach: the curved part of the *leech* of a sail which extends beyond the direct line from head to *clew*.

Run: to sail with the wind *aft* and with the *sheets* eased well out.

Running rigging: all the moving lines, such as *sheets* and *halyards*, used in the *setting* and *trimming* of sails.

S

Scope: the length of rope or cable paid out when *mor anchoring*.

Scuppers: holes in the *toe rail* which allow water to drain off the deck.

Seacock: a valve which shuts off an underwater inlet or outlet passing through the hull.

Seize: to bind two ropes together, or a rope to a *spar*, with a light line.

Serve: to cover and protect a *splice* or part of a rope with twine bound tightly against the lay.

Serving mallet: tool with a grooved head, used when serving a tope to keep the twine at a constant and high tension.

Set: 1, to hoist a sail; 2, the way in which the sails fit; 3, the direction of tidal current or steam.

Shackle: a metal link with a removable bolt across the open end; of various shapes: D, U.

Sheave: a grooved wheel in a *block* or *spar* for a rope to run on.

Sheet: the tope attached to the *clew* of a sail or to the boom, enabling it to be controlled or *trimmed*.

Shrouds: ropes or wires, usually in pairs, led from the mast to *chain plates* at deck level to prevent the mast falling sideways; part of the *standing rigging*.

Sloop: a single-masted sailing boat with a mainsail and one head sail.

Spar: a general term for any wood or metal pole, e.g., mast or boom, used to carry or give shape to sails.

Spindrift: spray blown along the surface of the sea.

Spinnaker: a large, light, balloon-shaped sail set when *reaching* or *running*.

Splice: to join ropes or wires by unlaying the strands and interweaving them.

Split pin: see **Cotter pin**.

Spreaders: horizontal struts attached to the mast, which extend to the *shrouds* and help to support the mast.

Stall: a sail stalls when the airflow over it breaks up, causing the boat to lose way.

Stanchion: upright metal post bolted to the deck to support *guard rails* or *lifelines*.

Standing part: the part of a line not used when making a knot; the part of a rope which is made fast, or around which the knot is tied.

Standing rigging: the *shrouds* and *stays* which are permanently set up and support the masts.

GLOSSARY OF SAILING TERMS

Starboard: right-hand side of a boat looking forward (opp. of *port*).

Starboard tack: a boat is on the starboard tack when the wind strikes the starboard side first and the boom is out to *port*.

Stay: wire or rope which supports the mast in a fore and aft direction; part of the *standing rigging*.

Steerage way: a boat has steerage way when it has sufficient speed to allow it to be steered, or to answer the helm.

Stem: the timber at the bow, from the *keel* upwards, to which the planking is attached.

Sternway: the backward, stern-first movement of a boat.

Stringer: a fore and aft *member*, fitted to strengthen the frames.

T

Tack: 1, the lower forward corner of a sail; 2, to turn the boat through the wind so that it blows on the opposite side of the sails.

Tacking: working to windward by sailing *close-hauled* on alternate *courses* so that the wind is first on one side of the boat, then on the other.

Tack pennant: a length of wire with an eye in each end, used to raise the tack of a headsail some distance off the deck.

Tackle: a purchase system comprising of rope and *blocks* which is used to gain mechanical advantage.

Tang: a strong metal fitting by which *standing rigging* is attached to the mast or other spar.

Tender of dinghy: a small boat used to ferry stores and people to a yacht.

Terminal fitting: fitting at the end of a wire rope by which a *shroud* or *stay* can be attached to the mast, a *tang* or a *rigging screw/turnbuckle*.

Tide: the vertical rise and fall of the oceans, caused principally by the gravitational attraction of the moon.

Toe rail: a low strip of metal or moulding running around the edge of the deck.

Topping lift: a line from the masthead to a *spar*, normally the boom, which is used to raise it.

Topsides: the part of a boat's hull which is above the *waterline*.

Track: 1, the *course* a boat has made good; 2, a fitting on the mast or boom into which the slides on a sail fit; 3, a fitting along which a *traveller* runs; used to alter the tension of the *sheets*.

Transit: two fixed objects are in transit when seen in line; two transits give position *fix*.

Traveller: 1, a ring or hoop which can be hauled along a *spar*; 2, a fitting which slides in a *track* and is used to alter the angle of the *sheets*.

Trim: 1, to adjust the angle of the sails, by means of *sheets*, so that they work most efficiently; 2, to adjust the boat's load, and thus the fore and aft angle at which it floats.

True wind: the direction and speed of the wind felt when stationary, at anchor or on land.

Turnbuckle: see *Rigging screw*.

U

Under way: a boat is under way when it is not made fast to the shore, at anchor or aground.

Uphaul: a line used to raise something vertically, e.g., the spinnaker pole.

V

Veer: 1, the wind veers when it shifts in a clockwise direction; 2, to pay out anchor cable or rope in a gradual, controlled way.

W

Wake: the disturbed water left *astern* of a boat.

Waterline: the line along the hull at which a boat floats.

Waterline length (WL): the length of a boat from *stem* to *stern* at the *waterline*. It governs the maximum speed of a *displacement hull* and affects a boat's *rating*.

Weather helm: (opp. of *lee helm*).

Weather side: the side of a boat on which the wind is blowing.

Wetted surface: the area of the hull under water.

Whisker pole: a light pole used to hold out the *clew* of a headsail when *running*.

Winch: a mechanical device, consisting usually of a metal drum turned by a handle, around which a line is wound to give the crew more purchasing power when hauling taut a line, e.g., a jib *sheet*.

Windage: those parts of a boat which increase *drag*, e.g., rigging, *spars*, crew, etc.

Windlass: a *winch* with a horizontal shaft and a vertical handle, used to haul up the anchor chain.

Windward: the direction from which the wind blows; towards the wind (opp. of *leeward*).

Y

Yaw: a two masted boat with a *mizzen* stepped *aft* of the rudder stock/post.

EXPLANATION OF SAFETY PRECAUTIONS

This book contains safety precautions which must be observed when operating or servicing your boat.
Review and understand these instructions.



DANGER

Denotes an extreme intrinsic hazard exists which would result in high probability of death or irreparable injury if proper precautions are not taken.



WARNING

Denotes a hazard exists which can result in injury or death if proper precautions are not taken.



CAUTION

Denotes a reminder of safety practices or directs attention to unsafe practices which could result in personal injury or damage to the craft or components.

SAFE BOATING TIPS

BE PREPARED

Take a safe boating course. In the U.S., contact your local Coast Guard office for information. Outside the U.S., contact your local Boating Industry for details.

Carry all safety equipment required by the laws that apply to your area. Requirements are generally available from the Coast Guard or your local Boating Industry.



WARNING

As the owner of the craft, obtaining and maintaining necessary safety equipment is your responsibility. For more information about equipment required, contact your local boating authorities.

MINIMUM RECOMMENDED SAFETY EQUIPMENT

- Required life saving equipment including life vests and throwables
- Required fire extinguishing equipment
- First Aid kit
- Emergency Position Indicating Radio Beacon (EPIRB)
- Manual bailing device
- Anchor with sufficient line and/or chain
- Flashlight with good batteries
- Binoculars
- VHF radio
- Navigational charts for the appropriate areas
- Flares
- Fog bell
- Noise emitting device
- Radar reflector
- Sufficient food and water provisions
- Auxiliary starting battery
- Spare fuses and bulbs
- Sunglasses and sunblock
- Blanket

The required safety equipment you must have on board may vary by region or body of water. Therefore, please check with the local boating authorities prior to leaving on your trip for a safety examination.

LIFE JACKETS

A life jacket may save your life, but only if you wear it. Keep jackets in a readily accessible place — not in a closed compartment or stored under other gear. Remove them from their packaging, if so provided. In addition, throwable floatation devices must be immediately available for use.



WARNING

LIFE SAVING HAZARD: It is especially important that children, handicapped people and non-swimmers wear a life jacket at all times. Children and non-swimmers need special instruction in the use of life jackets.

FIRE EXTINGUISHERS

Approved fire extinguishers are required on most boats, therefore check with your local authorities. All passengers should know the location and operating procedure of each fire extinguisher. Fire ex-

tinguishers are normally classified according to fire type. Be familiar with what type of fire extinguishers are on board.

SAFE BOATING TIPS

FLARES

Most boats operating on coastal waters are required to carry approved visual distress signals, therefore check with your local authorities as to which type are required.



WARNING

FIRE/EXPLOSION HAZARD; Pyrotechnic signaling devices can cause injury and property damage if not handled properly. Follow manufacturer's directions regarding the proper use of signaling devices.

DRUGS AND BOATING

Do not drink alcohol while boating. The combination of noise, sun, wind and motion all combine to produce fatigue on the water. The effects of alcohol are greater on the water than on land.



WARNING

IMPAIRED OPERATION HAZARD; Operating any boat while intoxicated or under the influence of other drugs is both dangerous and illegal. Impaired vision or judgment on the water may lead to accidents and personal injury.

BEFORE GETTING UNDERWAY

- Leave a Float Plan (example included).
- Perform a Pre-Departure Checklist (example included).
- Check the weather. Do not venture out if the weather is, or will be, threatening.

WHILE UNDERWAY

- Keep a good lookout. This is especially true of sailboats. Keep a watch to leeward under the headsail. Keep away from swimmers, divers, and skiers.
- Know and obey local boating laws.
- Respect bad weather, and be prepared for quickly changing conditions.



WARNING

COLLISION HAZARD; Use extra caution in shallow water or where underwater/floating objects may be present. Hitting an object at speed or severe angle can seriously injure people and damage your boat.

PRE-DEPARTURE CHECKLIST

- ☐ Check bilge for excess water
- ☐ **Check weather conditions and tides**
- ☐ Check food supply
- ☐ Foul weather gear
- ☐ Linen, sleeping bags
- ☐ Fuel
- ☐ Water
- ☐ Sunscreens and sunglasses
- ☐ Tools
- ☐ Docking and anchor gear
- ☐ Check radio operations
- ☐ Navigation charts and instruments
- ☐ **Float plans to a friend or Coast Guard** (*See next page*)
- ☐ Fuel for stove
- ☐ Cooking and eating utensils
- ☐ Check battery water level
- ☐ Oil level, tight Vp-belts
- ☐ Check for loose electrical connections in engine compartment
- ☐ Secure tools or any loose equipment in engine compartment so as not to get fouled in engine
- ☐ AC systems off; electrical cord stowed
- ☐ Doors and drawers secured
- ☐ Check steering lock to lock
- ☐ Check mast for rigging irregularities and tightness
- ☐ Halyards and sheets are clear and ready to run
- ☐ No lines or other obstructions near the propeller or bow
- ☐ Anchor ready to run
- ☐ Check lifelines for tightness
- ☐ Turn on fuel and water lines
- ☐ Stow all loose gear
- ☐ Open engine cooling water intake thru-hull valve

FLOAT PLAN

1. Name of person reporting and telephone number:

2. Description of boat:

NAME	TYPE	
MAKE	LENGTH	REGISTRATION #
HULL COLOR	STRIPE COLOR	DECK COLOR
OTHER DISTINGUISHING MARKS		

3. Persons aboard: _____ NUMBER

NAME	AGE	PHONE #
ADDRESS		
NAME	AGE	PHONE #
ADDRESS		
NAME	AGE	PHONE #
ADDRESS		

4. Engine: _____ TYPE _____ H.P. _____ FUEL CAPACITY _____

5. Safety Equipment: ☐ PFDs ☐ Flares ☐ Mirror ☐ Flashlight
☐ Food ☐ Water ☐ EPIRB ☐ Raft/Dinghy

6. Radio: _____ TYPE _____ FREQUENCIES _____

7. Trip Expectations:

DEPARTING AT (APPROX. TIME)	ON (DATE)	FROM (LOCATION)
GOING TO (LOCATION)	RETURNING (DATE)	IN NO EVENT LATER THAN (TIME & DATE)

8. Automobile: _____ LICENSE # _____ STATE _____

MAKE	COLOR	PARKED AT
------	-------	-----------

9. If not returned by _____, call the Coast Guard or:

at: _____

AFTER SAILING CHECKLIST

When leaving your Hunter at the dock for more than a short time, it is a good idea to review the following checklist to make sure everything is in order.

This will help protect the various parts of your boat and add considerably to their attractiveness and usable life.

- ☐ Flake or furl mainsail and cover, or remove and bag.
- ☐ Remove and stow all portable deck hardware such as snatch blocks, winch handles, etc.
- ☐ Secure the boom to the topping lift and set it firmly amidships with the mainsheet purchase. (It is also a good idea to rig a line from the steering wheel or tiller to a convenience cleat to keep the rudder from swinging back and forth with the motion of the water or employ the wheel brake if so equipped.
- ☐ Attach the shackle ends of all halyards to convenient fittings and take up slack. Find a location leading away from the mast to keep the halyard from slapping the mast.
- ☐ Coil and stow all lines in line lockers
- ☐ Cover the winches and steering pedestal when leaving the boat for several days or more.
- ☐ Close all fuel lines and seacocks.
- ☐ Switch off the electrical system.
- ☐ Pump out the bilge.
- ☐ Check air vents, secure ports and hatches, swab the deck, and clean deck stainless, particularly if you have operated in saltwater.
- ☐ Make a final check of mooring lines, chafing gear, fenders, etc.

SAFE BOATING TIPS

DOCKING

Docking your boat should be handled carefully to avoid potential damage. Under normal wind and water conditions, the following considerations should be made:

1. Whenever possible, your approach should be made against the prevailing wind and current to assist in stopping the boat. Where these conditions are contrary, the strongest should be used to determine approach.
2. Approaching the dock: Dock lines and fenders should be at ready, loose gear stowed and decks cleared. Determine the direction of wind and current, and, once you decide which side of the boat will be against the dock, rig dock lines and fenders

on the appropriate side. One dock line should be attached to the bow cleat, another to the stern cleat opposite the side that will lie against the dock.

NOTE: If the boat is to lie against a piling, rig a fender board across two or more fenders.

3. Tying up: Attach bow and stern lines to dock, hauling boat in with fenders against dock. Rig crossing spring lines to limit motion forward and aft. Be sure to allow some slack in all lines to compensate for tidal activity if present. Never use bow rail, stern rail or stanchions to secure vessel, even for brief periods. For other types of moorings, or for abnormal wind or water conditions, consult an approved boating guide.

ANCHORING

Your Hunter comes with an on-deck anchor well and a Danforth type anchor as standard equipment. The anchor is selected to suit the size and weight of your boat under normal anchoring conditions, and provides its best holding characteristic in muddy or sandy bottoms.

When anchoring, pay particular attention to the scope of your anchor rode (i.e., the relationship between the depth of the water and the length of the rode). A good rule of thumb is to allow a scope of about 7:1 (a rode seven times as long as the vertical distance from the bow to the bottom). A helpful aid is to mark the rode every 20 feet or so with knots or other types of indicators. Before dropping anchor, make sure the bitter end is secured to the cleat in the anchor well.

Also, be sure to consider wind direction, currents, mean low tide depths and other local conditions when anchoring, as well as the positions of any boats already anchored nearby.



CAUTION

Anchoring in unusual water and/or weather conditions will require additional precautions. Consult an approved guide for suggestions.

To weigh anchor, motor or sail (under main only) forward slowly. When at a point directly above the anchor, a quick tug should free it from the bottom. Take care not to damage the topsides when hauling.

SAFE BOATING TIPS

STARTING YOUR DIESEL ENGINE

1. Visually check engine compartment to see that the throttle linkage, shifting controls, electrical connections and fuel lines are properly secured.
2. *Before each start* check oil in engine and transmission, and check to ensure coupling bolts are tight.
3. Insure that engine shut-off cable is properly secured and operating.
4. Place the shift lever in the neutral position. Pull out the button beside the shift lever to disengage the shift. On single lever controls, lift the collar under the shift lever knob and move the lever forward to advance the throttle for neutral warm-up.
5. Insert the starter key and turn to the "on" position.
6. Press the starter button and hold until engine starts, then release. The buzzer and/or light should then go off. **Press the starter button no longer than 5 seconds continuously.**
7. Allow cold engine to warm up a minimum of five minutes.
8. When warm-up is completed, return the hand le-

ver to neutral position, and push the button back in to re-engage the shift. The shift is ready for shift and throttle operation.

9. Check that the lube oil pressure warning light and the charge lamp go off. If any of the warning lamps do not go off above 1,000 rpm, the engine is malfunctioning and should be stopped immediately. Consult your nearest engine dealer.

NOTE: To stop engine at any time, pull "engine stop" lever all the way out.



CAUTION

Follow engine manufacturer's recommendations for types of fuel and oil. Use of improper products can damage the engine and void the warranty.

MOTORING YOUR DIESEL ENGINE

Upon departure, remember to unplug the shorepower. When the engine is warm, but prior to releasing the dock lines, move the shift lever to forward and to reverse to insure that it engages properly. To increase RPMs, push throttle lever forward and pull back to decrease RPMs.

IMPORTANT: When sailing, it is best to start the engine before the sails are lowered. This way, it is still possible to maneuver if the engine should not start.



CAUTION

Your rigging will conduct electricity. Always check for overhead high tension wires before proceeding. Once clear, you may increase your speed in a reasonable and safe manner as desired.

ELECTRICAL SYSTEM

Your Hunter is fitted with an electrical system designed for both AC and DC. While in port, you can operate any tool, appliance or other device designed to function on regular house current simply by plugging your dockside power cord into a convenient outlet on shore and turning your AC main breaker on.



WARNING

ELECTROCUTION HAZARD: If polarity is reversed, **DO NOT** use the shore power source. Immediately turn off the power source and disconnect the shore power cord. Reversed polarity is a dangerous and potentially lethal condition which may cause shock, electrocution, or death.

SAFE BOATING TIPS

ELECTRICAL SYSTEM (continued)

To minimize shock hazard, connect and disconnect cable as follows:

1. Turn off the boat's shore connection switch before connecting or disconnecting shore power cable.
2. Connect shore power cable at the boat first.
3. If polarity warning indicator is activated, immediately disconnect cable and have the fault corrected by a qualified electrician.
4. Disconnect shore power cable at shore outlet first.
5. Close inlet cover tightly.

DO NOT ALTER SHORE POWER CABLE CONNECTORS.

Storage: Your shore power cable set is intended for use outdoors. To prolong the life of the set, store indoors when not in use.

General: The metallic parts of your cable set are made to resist corrosion. In salt water environment, life of the product can be increased by periodically wiping the exposed parts with fresh water, drying and spraying with a moisture repellent.

A soiled cable can be cleaned with grease cutting household detergent. A periodic application of vinyl protector will help both ends and cable maintain their original appearance.

In case of salt water immersion, rinse plug end and/or connector end thoroughly in fresh water, shake or blow out excess water and allow to dry. Spray with a moisture repellent before re-use.



WARNING

Do not allow your dockside power cord to come in contact with the water. Never operate any AC power tool or other electrical equipment while you or the device are in contact with the water, as this may cause electrocution resulting in shock or death.

When leaving port, disconnect the dockside power cord and turn the main DC breaker on. This allows

you to use the ship's lights and other equipment designed to operate on direct current. Keep in mind that your DC power source is a 12-volt battery, just as with your automobile, and it must be charged regularly by operating the engine (or by running the battery charger, if you have that option installed). Unless a state of charge is maintained, there may not be enough power to operate the starter motor. Dangerous situations can result if the engine cannot be started when needed.

Make a regular visual check of batteries to insure proper water level and inspect terminals for signs of corrosion. If your boat sits for long periods without use, it is often a good idea to remove the batteries and attach them to a trickle charger to keep them fully charged and ready to use.



WARNING

EXPLOSION/FIRE HAZARD - Ensure adequate ventilation of battery to prevent buildup of gases, especially hydrogen.



WARNING

WHEN CHARGING THE BATTERY:

- Battery electrolyte contains sulfuric acid. Protect your eyes, skin and clothing. In case of contact, flush thoroughly with water and get prompt medical attention, especially if your eyes are affected.
- Batteries generate hydrogen gas which can be highly explosive. Do not smoke or allow flames or sparks near a battery, especially during charging.
- Charge the battery in a fully ventilated place.

SAFE BOATING TIPS

COOKING STOVE

LPG is a popular choice in cooking fuel aboard sailboats. LPG is an explosive gas however, and should be treated with great care. Please refer to the stove manual for detailed instructions.



WARNING

EXPLOSION/FIRE/ASPHYXIATION HAZARD

- Open flame cooking appliances consume oxygen. This can cause asphyxiation or death.
- Maintain open ventilation.
- Liquid fuel may ignite, causing severe burns.
- Use fuel appropriate for type of stove.
- Turn off stove burner before filling.
- Do not use stove for comfort heating.

FIRE/ASPHYXIATION HAZARD

Use special care with flames or high temperatures near urethane foam, if used in construction of your boat. Burning, welding, lights, cigarettes, space heaters and the like can ignite urethane foam. Once ignited, it burns rapidly, producing extreme heat, releasing hazardous gases and consuming much oxygen.

TOILET

IMPORTANT; When not in use, lever must be left in the "dry" position to prevent flooding.

Before using, place the lever in the "wet" position and pump slowly to partly fill and wet the inside of the bowl. Return to "dry" position.

After using, return the level to the "wet" position for flushing and pump until the bowl is thoroughly cleaned. Continue with several more full strokes to flush discharge lines. Return lever to the "dry" position and pump slowly until bowl is empty.

NOTICE:

- There is a possibility of being fined for having an operable direct overboard discharge of waste in some waters. Removing seacock handle, in closed position, or other means must be used to avoid fine.
- It is illegal for any vessel to dump plastic trash anywhere in the ocean or navigable waters of the United States.



CAUTION

Do not place facial tissue, paper towels or sanitary napkins in head. Such material can damage the waste disposal system and the environment.

SAFE BOATING TIPS

PUMPS

All pumps should be checked frequently to insure proper operation. This is an especially important regular maintenance item since functioning of a pump could save your vessel from serious damage at some future time.

Bilge pump — Inspect all hoses for chafing and dry rot. See that the hose clamps are tight. Check the the bilge pump impeller area is clean and free of obstructions. Inspect electrical wiring for corrosion. Make sure float switch moves freely and is making an electrical connection.



WARNING

SINKING HAZARD - Ensure proper bilge pump operation.



CAUTION

Run pump only as long as necessary to remove water. Running dry can damage pump motor.

WATER SYSTEM OPERATION

Fill fresh water tank at deck fill. The tank filler cap will be marked “water”. When tank is full, water will back up through the vent hose and exit through a vent located on the side of the hull.

To activate the water system, flip the “water pressure” switch on the electrical panel. This will start the pump and pressurize the system. When the pressure builds, the pump will shut off. With continued use of fresh water the pressure in the system is reduced, automatically restarting the pump. Make sure there is water in the system while pump is in operation to prevent damage to the motor.

The water heater operates either on 120 or 240 volts AC or when the engine is running. To obtain hot water from the engine, it must run a minimum of one-half hour.

Pressure water pumps are the demand type. Once the circuit breaker switch is on, opening the faucet will produce water flow.

NOTE: Intermittent operation of the freshwater pump while all faucets are closed usually indicates a leak somewhere in the lines. Trace the lines to locate the leak and repair.

To operate shower, turn on hot and cold faucets until desired temperature is reached, while shower head is retracted at sink. Pull the shower head out and use. The faucets must be turned off to prevent system drainage.

Opening the faucet will allow the pump to empty the tank. Flushing the tank and lines will be necessary for winterization. Refer to Maintenance & Winterization section for more information.



CAUTION

Run pump only as long as necessary to remove water. Running dry can damage pump motor.

SAFE BOATING TIPS

WASTE DISCHARGE

The Hunter is equipped with a head waste holding tank, hose lines, and thru-hull fittings for either overboard discharge, using the standard equipped handpump, or deck pumpout at dockside. Tank levels will be indicated on the gauge located below the main electrical panel. Familiarize yourself with the

locations of the deck pumpout, overboard discharge thru-hull, and vent locations pictured in the Waste Water System section, as well as your local boating regulations concerning the overboard discharge of raw sewage.

ENVIRONMENTAL CONSIDERATIONS

FUEL AND OIL SPILLAGE

The spilling of fuel or oil into our waterways contaminates the environment and is dangerous to wildlife. Never discharge or dispose of fuel or oil into the water as it is prohibited and you could be fined. Two common, accidental types of discharge are — overfilling the fuel tank, and pumping contaminated bilge water into the sea.



WARNING

EXPLOSION/FIRE/POLLUTION HAZARD: Fill fuel tank to less than rated capacity. Overfilling forces fuel out the tank vents which can cause explosion, fire, or environmental pollution. Also, allow for fuel expansion.

DISCHARGE AND DISPOSAL OF WASTE

Waste means all forms of garbage, plastics, recyclables, food, wood, detergents, sewage, and even fish parts in certain waters. We recommend that you bring back everything you take out with you for proper disposal ashore.

Your marine toilet holding tank (if so equipped) must, in many areas, be pumped out by an approved pump-out facility, normally found at marinas.

EXHAUST EMISSIONS

Hydrocarbon exhaust emissions pollute our water and air. Keep your engine properly tuned to reduce

emissions and improve performance and economy.

ANTI-FOULING PAINTS

The use of anti-fouling paints is common for boats kept in the water. Be aware of environmental regulations that may govern your paint choice. These regulations may affect which paint may be used, and also the application or removal. Contact your local boating authorities for information.



WARNING

EXPLOSION/FIRE/ HAZARD: Ventilate when painting or cleaning. Ingredients may be flammable and/or explosive.

CLEANING CHEMICALS

Cleaning chemicals should be used sparingly and not discharged into waterways. Never mix cleaners and be sure to use plenty of ventilation in enclosed areas. Do not use products which contain phosphates, chlorine, solvents, non-biodegradable or petroleum based products.

Common household cleaning agents may cause hazardous reactions. Fumes can last for hours, and chemical ingredients can attack people, property and the environment.

INSTRUCTIONS FOR PREPARATION FOR BOTTOM PAINTING

WARNING!

Do not use any sanding, sandblasting or other abrasive preparation of the bottom as this will void your

hull blistering warranty. More information on the warranty is available in this owner's manual.

BOTTOM PAINTING

Choose a bottom paint system that suits the environment in your area.

Follow the procedure recommended by the manufacturer of the paint, while making sure not to void

the Hunter Hull Blistering Warranty. The procedure for preparing for and painting the bottom varies between paint manufacturers, but should always include dewaxing, etching and sometimes priming of the surface.

EPOXY BARRIER COAT

Sanding of the gel-coat bottom surface will be permitted should a customer wish to have an epoxy barrier coat applied to the hull, (example Interlux Interprotect 1000, 2000, West System or VCTar). This will not void the five Year Blister Warranty.

Hunter Marine refers to epoxy barrier coatings as mentioned above, not epoxy primer paints.

If an epoxy barrier coat is applied to a Hunter vessel, it must be registered with the Warranty Depart-

ment prior to application of the product. If the dealer applies bottom paint only, sanding will not be allowed and the no sanding system must be used.



WARNING

Cleaning agents and paint ingredients may be flammable and/or explosive, or dangerous to inhale. Be sure to use adequate ventilation, and appropriate safety clothing (gloves, safety glasses, respirator, etc.).

ENGINE, TRANSMISSION and DRIVETRAIN

ENGINE

Follow the fuel and lubrication requirements in the Engine Manual. Check the engine oil level before and after operation and use quality motor oil (refer to Engine Manual). Be certain the proper amount of oil is in the crankcase at all times.

Engine Alignment: The engine should be aligned by experienced marine service personnel. Final alignment should be done after launching, with all normal gear aboard. A description of the procedure follows:

The coupling flanges must come together evenly at all points, a feeler gauge is used to check the gap. If adjustment is necessary, the engine is tilted up or down and/or side to side until the flanges meet equally. Severe vibration will result from misalignment and can cause strut bearing and shaft damage. Alignment should be checked again after several weeks of use. Routine checks of coupling bolts are a must to ensure they are tight.

Shaft alignment:

1. Separate the coupling, move the shaft end back

to clear the pilot in the center.

2. Establish the shaft in the center of the shaft log by raising the shaft until it touches the top of the log — note position — lower the shaft until it touches bottom of the log — note position — repeat side-wise and locate shaft in the center; block shaft in this position, using a block of wood under the shaft packing gland.

3. Now, adjust the engine mounts to allow the pilot on the coupling halves to slip together without moving shaft up, down, or sideways.

4. Adjust the engine mounts as necessary until a 0.004" feeler gauge will not enter anywhere along the edge of the flange between the faces.

5. Tighten the locks on the adjustable mounts.

6. Recheck coupling with feeler, readjust if necessary.

7. Check stuffing box (allow to drip 3 to 5 drops per minute).

Any questions or problems concerning the engine, please contact the U.S. distributor, Mack Boring at (201) 964-0700, or your local Yanmar service agent.

TRANSMISSION

Follow the lubrication requirements of the Engine Manual. The oil level should be checked immediately after operation.

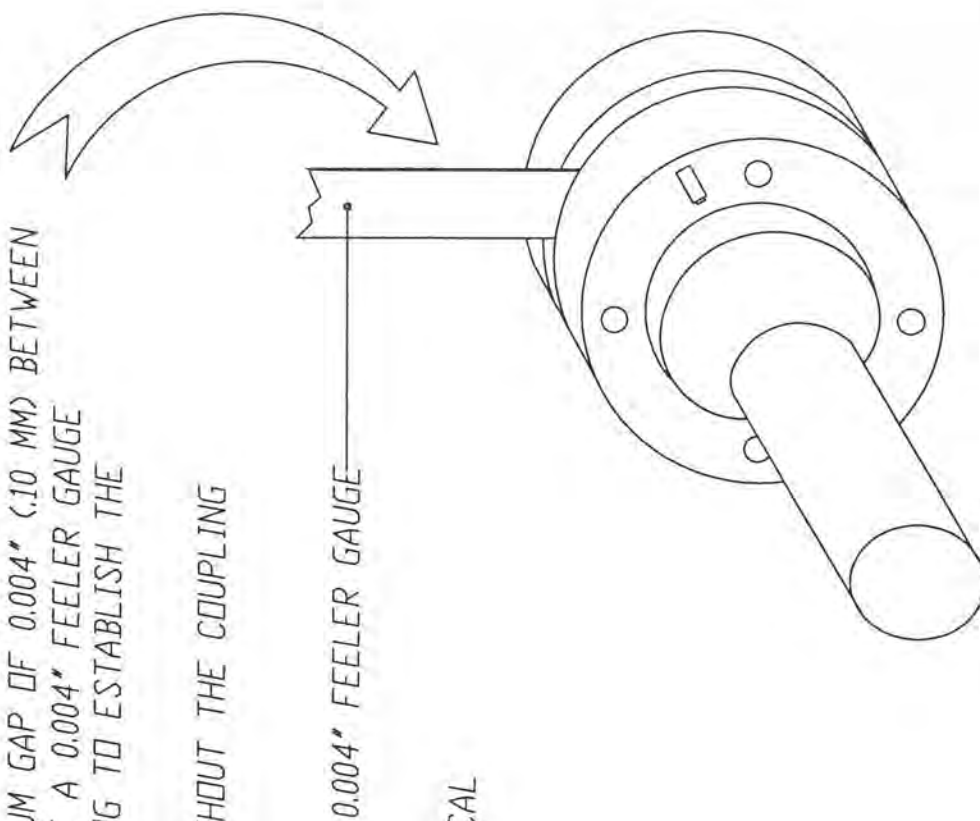
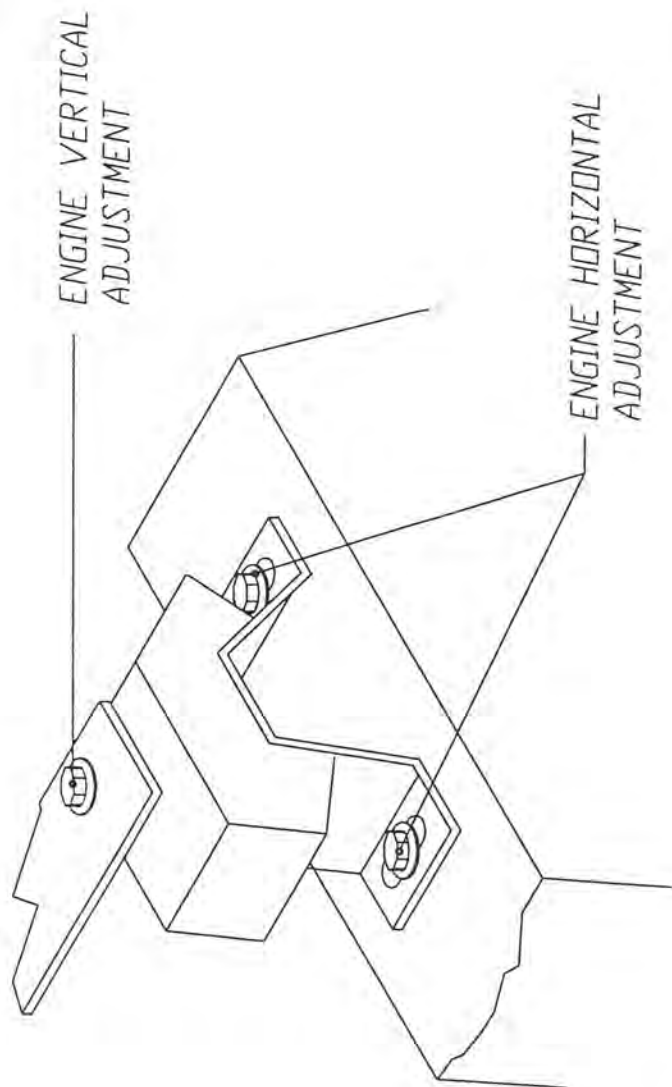
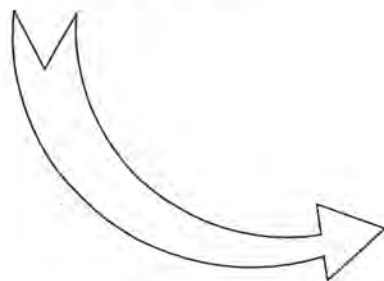
STUFFING BOX

The stuffing box is held to the stern bearing by a rubber hose secured with hose clamps. (See the Shaft and Propeller section) The clamps should be tight and no water should leak from this location. While underway a slight drip from the stuffing box at the shaft exit is necessary (three to five drops a minute) and is normal.

To adjust, loosen the locknut, tighten the gland nut one quarter turn, and retighten the lock nut. If excessive water flow persists after adjustment, replace the packing with 3/16" (or 5mm) square flax packing and then adjust as above.

ADJUST THE VERTICAL & HORIZONTAL ENGINE MOUNTS AS NECESSARY TO OBTAIN A MAXIMUM GAP OF 0.004" (0.10 MM) BETWEEN THE COUPLING FLANGE FACES. USE A 0.004" FEELER GAUGE ALL THE WAY AROUND THE COUPLING TO ESTABLISH THE CORRECT TOLERANCE.

CHECK FOR THE COUPLING GAP WITHOUT THE COUPLING BOLTS IN PLACE.



STEERING

Refer to the manufacturer's instructions for maintaining pedestal steering system. Cables should be routinely inspected for proper tension. Lightly oil all cables.



WARNING

CONTROL HAZARD - Inspect and maintain steering system regularly. An improperly maintained system may fail, causing sudden loss of steering control, resulting in personal injury and property damage.

ELECTRICAL SYSTEMS

The electrical system is a 12-volt, negative ground installation, plus a shore power system of either 110V or 240V. The owner should inspect batteries, terminals and cables weekly for signs of corrosion, cracks, and electrolyte leakage. Battery terminals are to be kept clean and greased. Refer to separate instructions on batteries, wiring diagram, and electronics.



WARNING

SHOCK/FIRE HAZARD

- Disconnect electrical system from its power source before performing maintenance. Never work on the electrical system while it is energized.
- Electrical appliances must be within the rated amperage of the boat circuits.
- Observe boat carefully while the electrical system is energized. The only electrical components which can be left unattended are the automatic bilge pump, fire protection and alarm circuits.
- Only a qualified marine electrical technician may service the boat's electrical system.



WARNING

SHOCK/FIRE HAZARD - Replace breaker or fuse with same amperage device. Never alter overcurrent protection.



CAUTION

- Turn off engine before inspecting or servicing battery.
- Disconnect battery cables before working on electrical system to prevent arcing or damage to alternator.

PLUMBING SYSTEMS

All pumps should be checked frequently to insure proper operation. This is an especially important regular maintenance item since proper functioning of a pump could save your vessel from serious damage in the future.

Inspect all hoses for chafing and deterioration. See that hose clamps are tight. Check that the pump impeller area is clean and free of obstructions.

Inspect electrical wiring for corrosion. Make sure float switches move freely and are making an electrical connection.

The owner should become familiar with the layout

of the water and waste systems by walking through the boat with the diagrams provided in this manual. It is especially important that the owner knows all thru-hull valve locations and inspects for leaks frequently. Refer to plumbing diagrams in Specifications and Technical section of this manual.

General Thru-hull List (varies from boat to boat — see diagrams in Systems and Circuits section).

- 1) Engine cooling system
- 2) Galley sink
- 3) Head sink
- 4) Head toilet (water intake)
- 5) Holding tank discharge
- 6) Scupper drains

FUEL SYSTEM

The owner should inspect the condition of fuel lines for cracks or leaks. A primary source of fuel-related problems is water in the system. The owner should use only well maintained fueling facilities and make sure fuel fill caps are tightly secured after filling. Check and maintain fuel filters periodically. Refer

to your Engine Manual for additional information. Periodically, add biocide to prevent bacteria and fungi from contaminating diesel fuel which may contain some water. Carefully follow manufacturer's instructions and clean filters regularly.

GENERAL CARE

CLEANING FIBERGLASS SURFACES:

Fiberglass surfaces should be cleaned regularly. Normal accumulations of surface dirt can be removed simply by occasional rinsings with water. If your boat is operated in salt water, more frequent rinsing will be required. To remove stubborn dirt, grease or oil, use a mild detergent and a soft brush. Rinse with clean fresh water. Avoid the plexiglass companionway slider, windshield, deck hatches and fixed ports when using a deck brush, since these surfaces can scratch.

It is a good idea to wax the fiberglass once or twice a year to maintain a deep, glossy appearance. Your

local marine supply should be able to provide an appropriate wax.



WARNING

Cleaning agents and paint ingredients may be flammable and/or explosive, or dangerous to inhale. Be sure to use adequate ventilation, and appropriate safety clothing (gloves, safety glasses, respirator, etc.).

CLEANING ACRYLIC:

Use only mild soap and water to clean acrylics. Do not use products containing solvents such as ammonia, which is found in many window cleaners.



CAUTION

Use care when cleaning acrylic. Dry cloth and many glass cleaners will scratch. Solvents will attack the surface.

GENERAL CARE (continued)

Sail Care

Sunlight is a sail's worst enemy, so **cover the main sail when not in use**. (An ultraviolet guard, fitted down the leech of a roller headsail, will protect the exposed part from the weathering effect of the sun and from dirt and grit). Mildew, which discolors, is prevented by storing sails dry and by hand washing twice a season. Check all sails regularly for chafe, particularly where they chafe on deck fittings or rigging, at reef points, batten sleeves and the foot of

the headsail. Sail batten pockets should be inspected on a regular basis.

To stow the mainsail, start at the leech and flake it on to the boom, left and right, in about 18-in. (46-cm) folds, while pulling the leech aft. Secure with a sail tie and continue to the luff. Lash to the boom with sail ties or shock cord.

FABRIC CARE

Vinyl: Clean with mild soap and water. Wipe with vinyl or upholstery cleaner monthly, and especially before and after storage.

Leather: Mild soap and water. Blot dry. Do not scrub as this will stretch and scratch. Wipe with leather cleaner/oil to preserve and help prevent cracks before and after storage.

Fabric: Blot dry. Do not machine wash. Use only mild soap and water. Wipe with a clean white cloth. If stain persists, dry clean. Be sure to treat cleaned

surfaces with Scotch Guard. Stretched or loose covers may be steam cleaned. If foam is removed they will restuff easier if wrapped with thin plastic.

Storage: Cover with airflow fabric to reduce dust built up. Do not use plastic as this will cause cushions to sweat and mildew.

Cushions: If wet, prop cushions vertically to promote airflow around each cushion. Cushions can be cleaned by most dry cleaners. **Dry clean only.**

GENERAL HARDWARE MAINTENANCE

Check all fittings regularly to be sure screws are tight. Occasionally lubricate (use silicone lubricants) all moving parts on such fittings as blocks, turnbuckles and cam cleats, as well as the locking pins of snatch blocks, track slides, spinnaker poles, etc. Inspect cleats and fairleads for roughness and smooth

with fine grained emery paper if necessary. Also, replace any missing or damaged cotter pins in turnbuckles and shackles, and either tape them or use protective covers manufactured for that purpose. Grease winches a minimum of once yearly.

MAINTENANCE

ELECTROLYSIS AND GALVANIC PROTECTION

Salt water allows electric current to flow from anodic to cathodic material. Any two metals from two components, and their relative positions in the galvanic rating table, will determine which loses material (the anode) and which remains largely undisturbed (the cathode). The rate of wear is determined by the distance apart on the galvanic table of two metals. Thus a sacrificial zinc anode is often fitted to the underwater area of a boat to attract any destructive currents away from bronze or steel propeller shafts, for example.

It is not enough to know that your boat does not suffer from electrolysis: a newcomer in the adjacent

marina berth may start a too-friendly association with metal components on it. An easy place to fit an anode is on the propeller shaft, or covering the propeller nut. The anode should not be painted because this will only defeat the purpose.

To prevent electrolysis in sea water, the difference between the voltage of two adjacent metals should not exceed 0.20V. Zinc and carbon steel, for example, used together, risk corrosion, while lead and active stainless steel are compatible. Metals with a high voltage corrode faster and need a larger area to diffuse the electrochemical reaction.

TEAK CARE

Teak wood is a high quality, extremely durable wood with a high oil content. In order to help you protect the original beauty of your teak interior, we have sealed the beauty of your interior with a 3 to 4 coat finish system of high quality Seafin Teak Oil, manufactured by *Dalys* (wood finishing products). This material is a penetrating oil that dries to a low sheen to seal and protect the wood from moisture and

weathering. It creates a durable, nonslip surface to repel water and resist wear. It won't chip, peel or blister. It reduces work and maintenance cost because it is easy to maintain and repair. With proper maintenance it will outlive urethane varnish on interior and even exterior surfaces. (Floor, bulkheads, trim wood and furniture).

MAINTENANCE

When oiled surfaces require renewing, simply wipe the surface area free of loose dirt, dust or other contaminants. Dampen a cloth with the Seafin Teak Oil

and wipe on. Let stand for 5-15 minutes, then polish dry. If your dinette table has an epoxy finish, simply clean with furniture polish.

REPAIRS

When woodwork is damaged from scrapes or abrasions that go into or thru the finish, take the following steps:

1. Take 180 to 200 grit wet/dry sand paper to smoother out rough spots.
2. Wipe clean of dust and dirt with a clean rag. Note — before applying oil, wood surface must be dry.
3. Wipe or brush on oil, allow to penetrate 5-15 minutes while surface is still wet.
4. Sand until smooth with a 400A wet/dry sandpaper.
5. Wipe dry with a clean rag. Allow 8-12 hours drying time.

6. Apply second coat, sand, repeat above procedure.

This process may be repeated as many times as needed to bring damaged area back up to its original finish. If you have trouble with getting the same sheen, you may apply with a completely dampened/rung out cloth, a very light coat over this area and/or whole surface area to get an even sheen.

Dalys
3525 Stoneway North
Seattle, WA 98103
(206) 633-4200

STORAGE/WINTERIZATION

IMPORTANT

Winter storage is recommended to be done in one of the following three ways, either: 1) by blocking the boat via a cradle; or 2) with chained stands on level ground; or 3) by storing the boat in the water with a bubbler system to prevent icing. Damage to your boat, including engine misalignment caused by twisting, is not covered by the warranty.

SAILS

Sails should be properly folded and stowed in a dry, well ventilated place. Many sailboat owners send their sails back to the sail manufacturer at the end of each season. The sailmaker will check the stitching and sailcloth for wear and store the sails until the start of the next season.

ELECTRICAL

Remove battery from boat. (Refer to Engine Manual) and charge. It is a good idea to also remove the electronics (radio, radar, etc.) and store in a safe place.

CUSHIONS

Cushions should be removed and stored at home if possible. If not, prop them vertically to promote airflow around each cushion. *Dry Clean Only!*

HATCHES

Tenting the deck during storage will help prevent ice from forming and damaging hatches and deck fittings. The installation of a passive vent will help with ventilation while the boat is in storage.

WATER SYSTEM

Open a faucet and allow the pump to empty the tank. Then add approximately two gallons of nontoxic antifreeze solution to the tank and repeat the pumping out procedure.

A second method is to disconnect the hoses at the pump, allowing them to drain. Find the lowest point in the system and disconnect the fitting. Open all faucets to allow the lines to drain. If possible, use a short piece of hose on the faucet to blow through the lines to clear all water. A diluted solution with baking soda will help freshen the system.

WATER HEATER

Open valve and drain fully. Leave valve open during lay-up time.

TOILET AND HOLDING TANK

Drain and flush toilet. Using automotive antifreeze (ethyleneglycol) in a 50/50 mixture with water, pump through toilet and into holding tank. Refer to Systems and Circuits section for instructions.

ENGINE

1. Drain the cooling water completely out of the engine and flush the line thoroughly with fresh water. Don't use high pressure through the line.
2. Remove the fuel completely from all fuel lines.
3. Disconnect the main battery cables from the battery terminals.
4. To prevent corrosion inside the cylinders, pour a little lubricating oil into the suction pipe while turning the engine. Enough oil to reach the intake/exhaust valve is sufficient.
5. Put the piston at top dead center of compression stroke so that the intake/exhaust valves are completely closed.
6. Apply a thin anticorrosion treatment to the plating and exposed painted surfaces.
7. The engine should be in a well ventilated area, and protected from any kind of dampness.
8. Put a dust cover over the engine.
9. Check your operation manual for engine diagram and for "Manufacturer's Recommended Winterizing Procedures."

OUTBOARD ENGINE

Take it home and store it in a safe place. Be very careful storing the gas tank as the gasoline is very flammable. Refer to "Engine Manual" for specific maintenance schedule.

STORAGE/WINTERIZATION (continued)

DEPARTURE FROM THE BOAT

The check list for leaving a boat unattended is very important because items overlooked often will not be remembered until you are far from the boat and corrective actions are impractical or impossible. Primary choices for this list are items relating to the safety and security of the unattended craft—turning off fuel valves, the proper settings for electrical switches, pumping out the bilge and leaving the switch on automatic (or arranging for periodic pumping out). Other departure check list items are securing ports, windows, hatches, and doors.

ROUTINE MAINTENANCE

Routine maintenance check lists should include items based on how much the boat is used (usually

in terms of engine hours) and on calendar dates (weekly, monthly, or seasonal checks). Typical of the former are oil level checks and changes, and oil and fuel filter changes.

On a calendar basis the lists should note such matters as electrolyte levels in storage-batteries, pressure gauges on dry-chemical fire extinguishers, and all navigation lights. Check the operation of automatic bilge alarms or pump switches by running water into the boat. Periodically close and open seacocks several times to ensure their free and easy operation in case they are needed in an emergency. Equipment and supplies carried on board for emergencies should be inspected for any signs of deterioration.

CERTIFICATION DETAILS

CE CERTIFIED

Your Hunter has been manufactured in the United States and has been certified by IMCI to be in compliance with the relevant parts of the Recreational Craft Directive 94/25/EC from the European Parliament. The CE mark means your craft meets or exceeds all current International Organization for Standardization (ISO) standards and directives in effect at the time of manufacture. The builder's plate (copy provided on page 35 of this manual), affixed to your boat, describes various parameters involved in the design of your boat. Please refer to it regularly when operating your boat.

Following are the Design Categories, established by the Recreation Craft Directive, which is to be considered a guideline of use application as per the Directive's criteria. This criteria is NOT established by Hunter Marine Corporation, and the category assigned is only a reference to the assigned category. The safety of the captain and crew of any vessel is not measurable by such categories, and you should not interpret these categories as an indication of your safety in such conditions. The skill of the captain and crew, together with proper preparation, appropriate safety equipment for the given conditions, and a well maintained vessel are critical to safe sailing.

CE CRAFT DESIGN CATEGORIES

Category A - "Ocean": Craft designed for extended voyages where conditions experienced may exceed wind force 8 (Beaufort Scale) and include significant wave heights of 4 m, for vessels that are largely self-sufficient.

Category B - "Offshore": Craft designed for offshore voyages where conditions up to and including wind force 8 and significant wave heights up to and including 4 m may be experienced.

Category C - "Inshore": Craft designed for voyages in coastal waters, large bays, estuaries, lakes and rivers, where conditions up to and including wind force 6 and significant wave heights up to and including 2 m may be experienced.

Category D - "Sheltered waters": Craft designed for voyages on small lakes, rivers and canals, where conditions up to and including wind force 4 and significant wave heights up to and including 0.5 m may be experienced.

For additional information, contact: International Marine Certification Institute (IMCI)
Treves Centre, rue de Treves 45
1040 Brussels, Belgium
FX: (32) 2238-7700

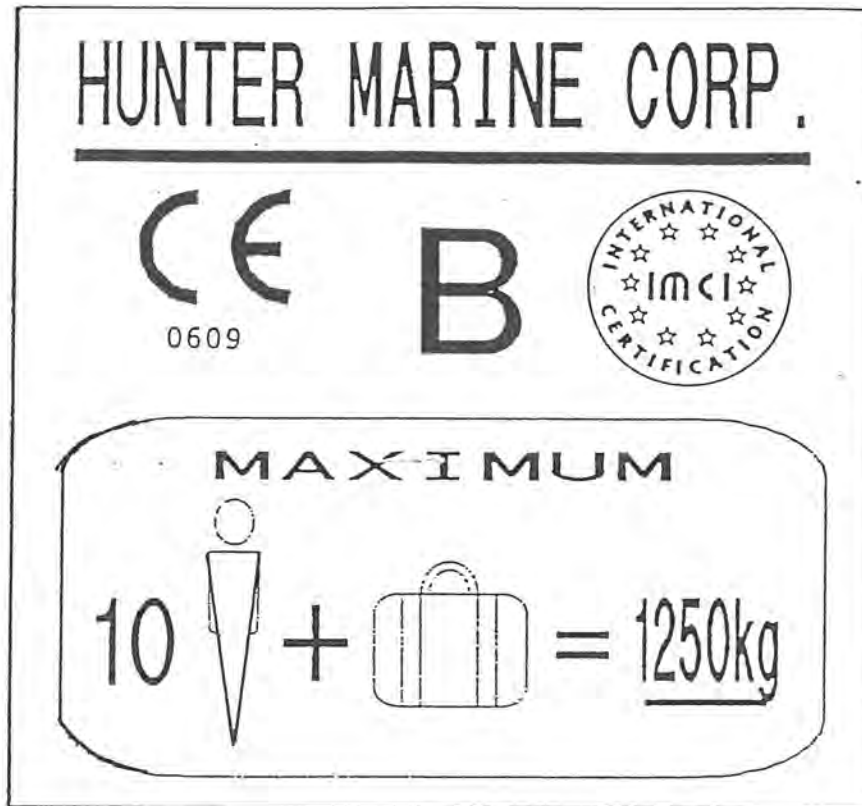
NMMA CERTIFIED

Your Hunter has been judged by the National Marine Manufacturers Association (NMMA) to be in compliance with the applicable federal regulations and American Boat and Yacht Council (ABYC) standard and recommended practices in effect at the time of manufacture.

For additional information, contact: National Marine Manufacturers Association
200 E. Randolph Dr., Suite 5100
Chicago, IL 60611
PH: (1) 312-946-6200 FX: (1) 312-946-0388

BUILDER'S INFORMATION PLATE

HUNTER MARINE CORPORATION H310



LIGHT SHIP DISP. = 3909 KG (8,600#)

FULL LOAD DISP. = 4794 KG (10,547#)

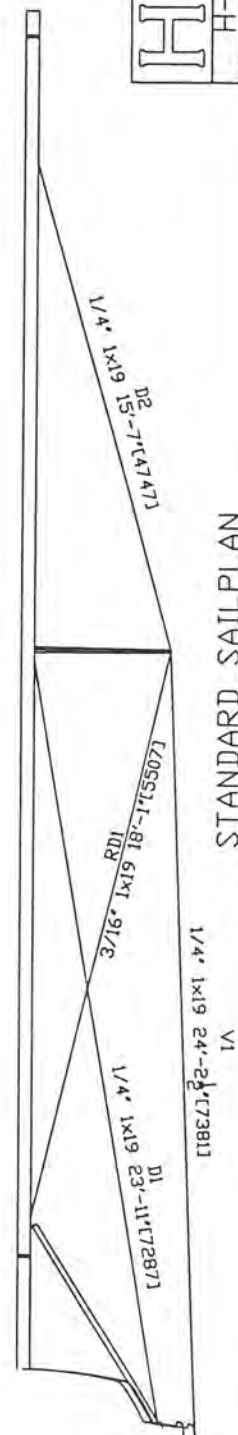
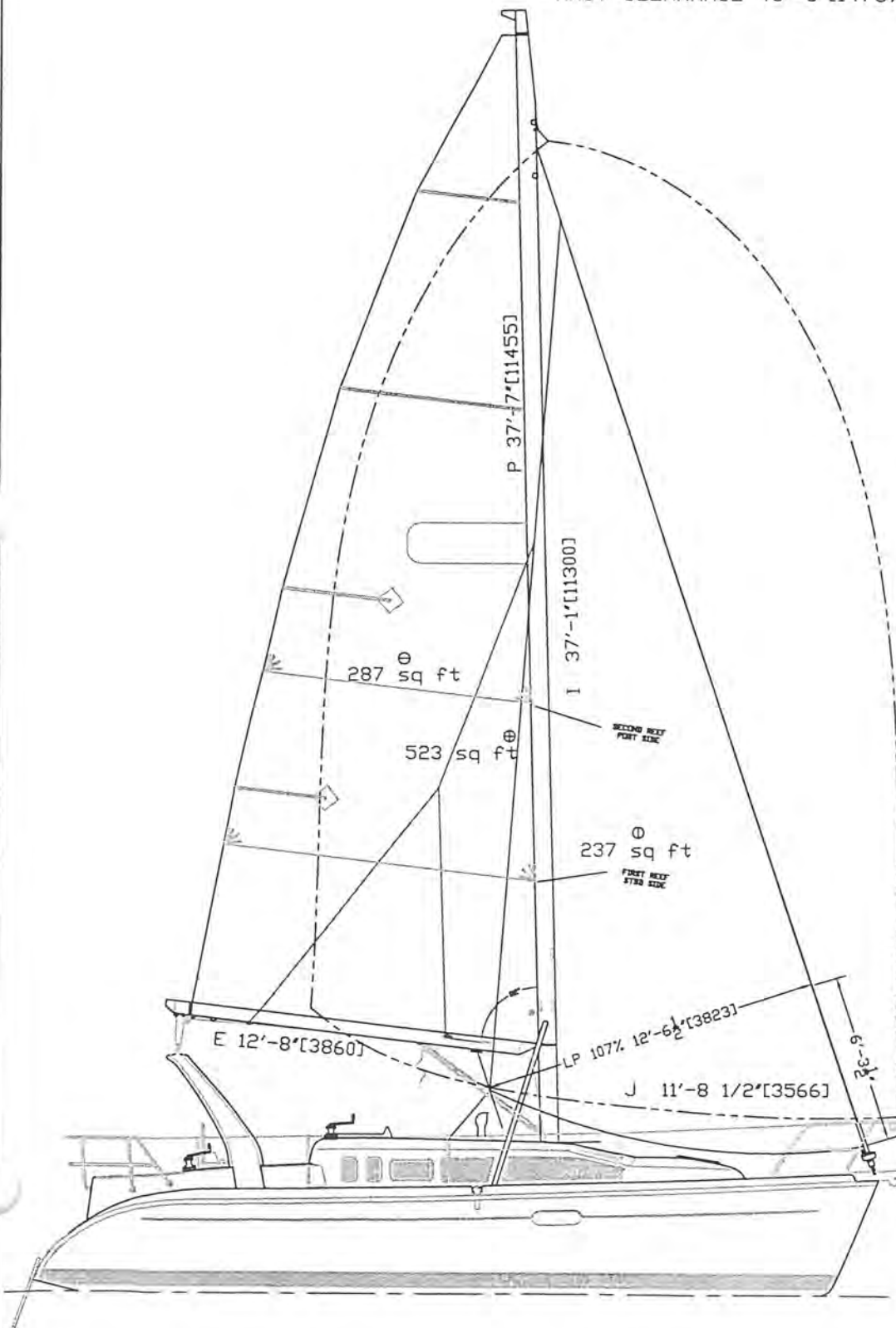
SINK @ FULL LOAD DISP. = 66MM (2.59")

Each Hunter 310 model with the CE Mark is and will continue to be identical to the individual unit of that model which was officially inspected and approved.

IMPORTANT!
USE CAUTION WHEN EASING LAZY JACK TENSION
TO PREVENT BOOM FROM STRIKING ARCH

HUNTER
H-310 SAILPLAN STD.
DRAWING # 3108036A

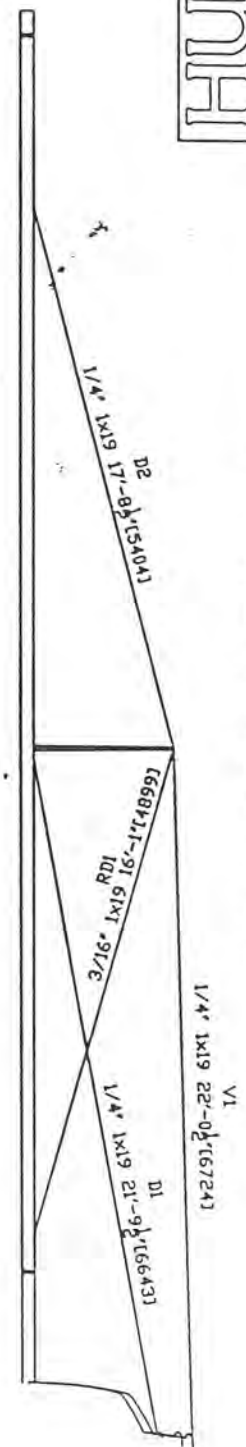
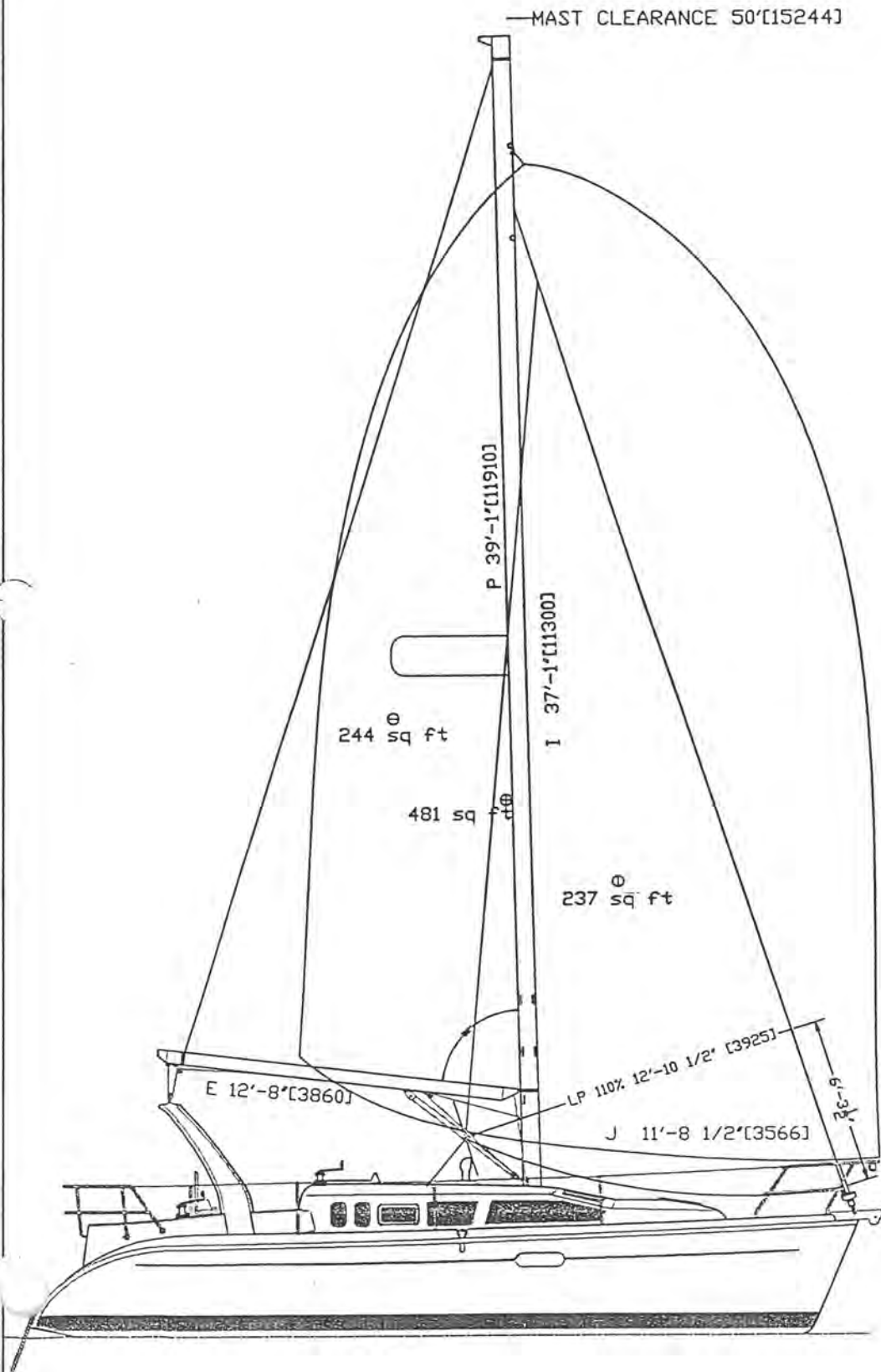
—MAST CLEARANCE 48'-6" [14787]



STANDARD SAILPLAN

1/4" 1x19 24'-2" [7381]
1/4" 1x19 23'-11" [7287]

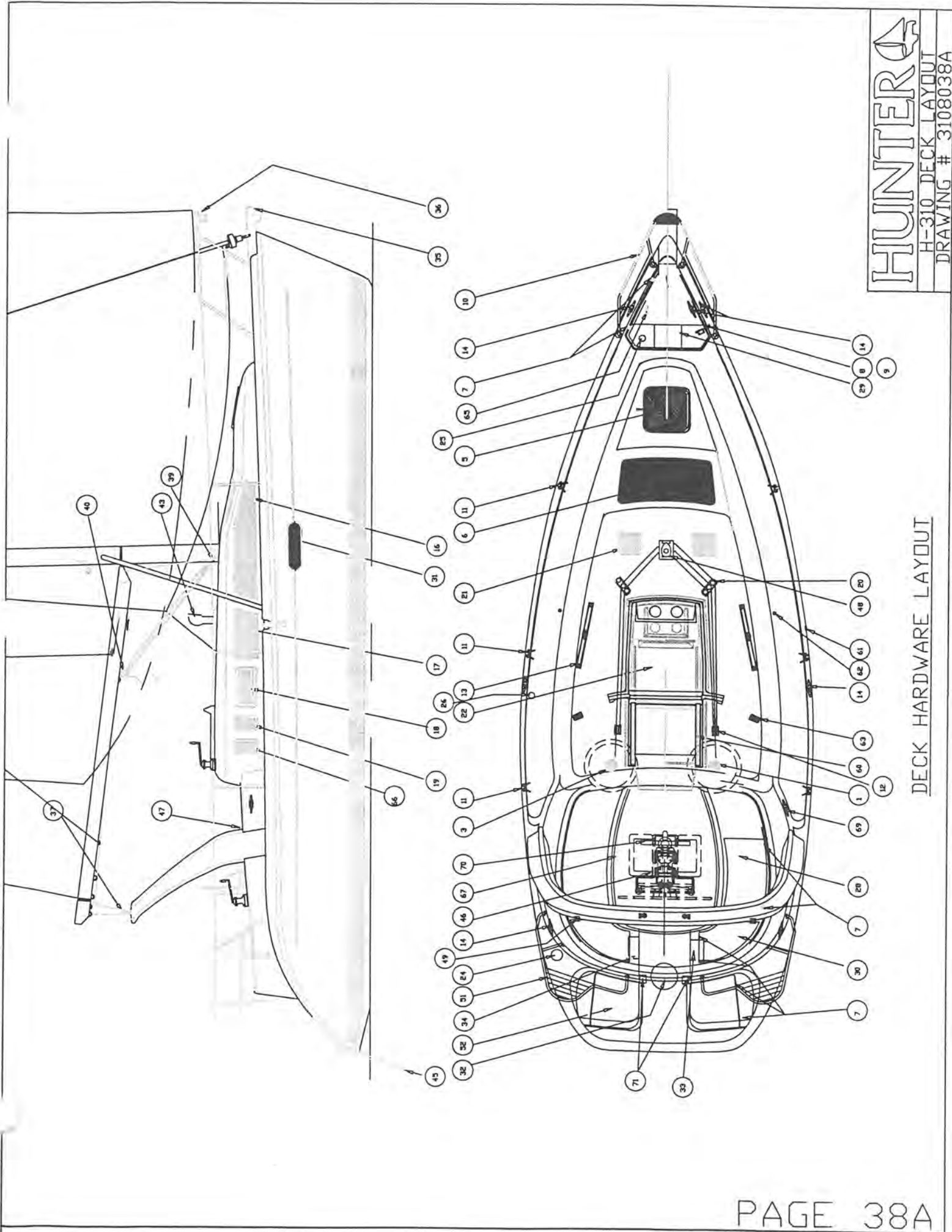
FURLING SAILPLAN (OPTIONAL)



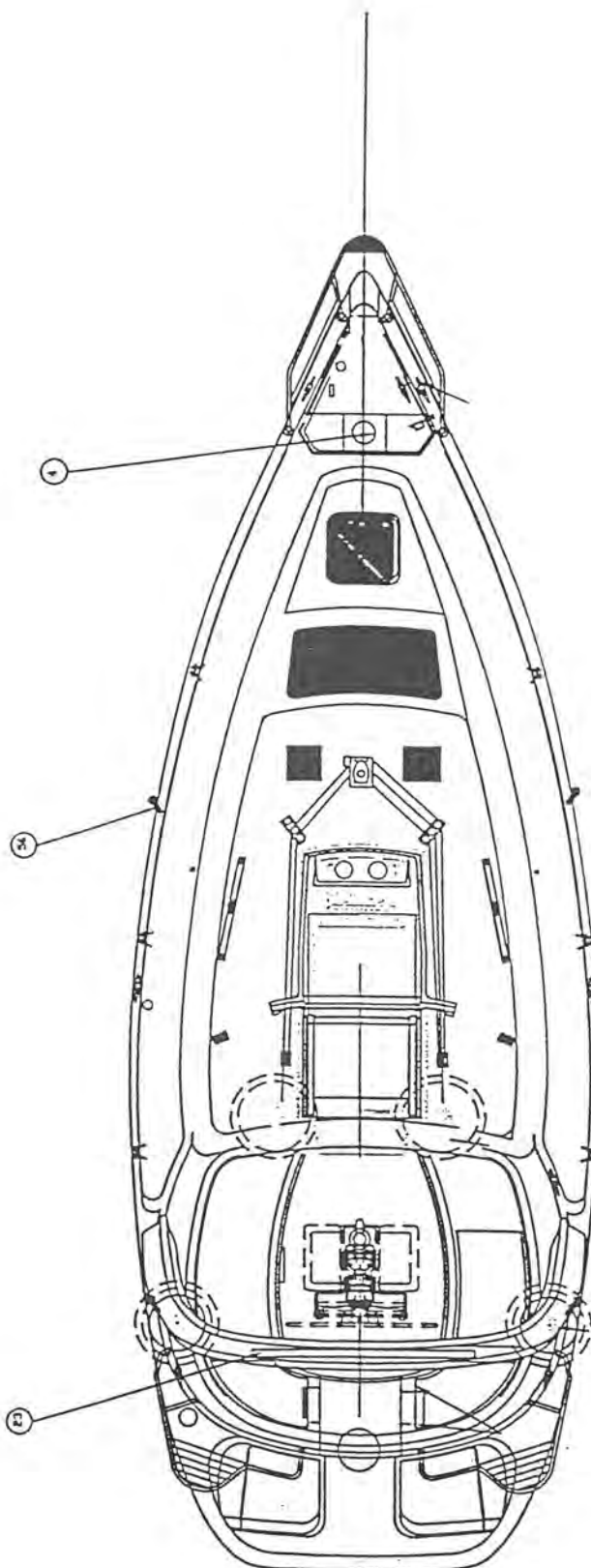
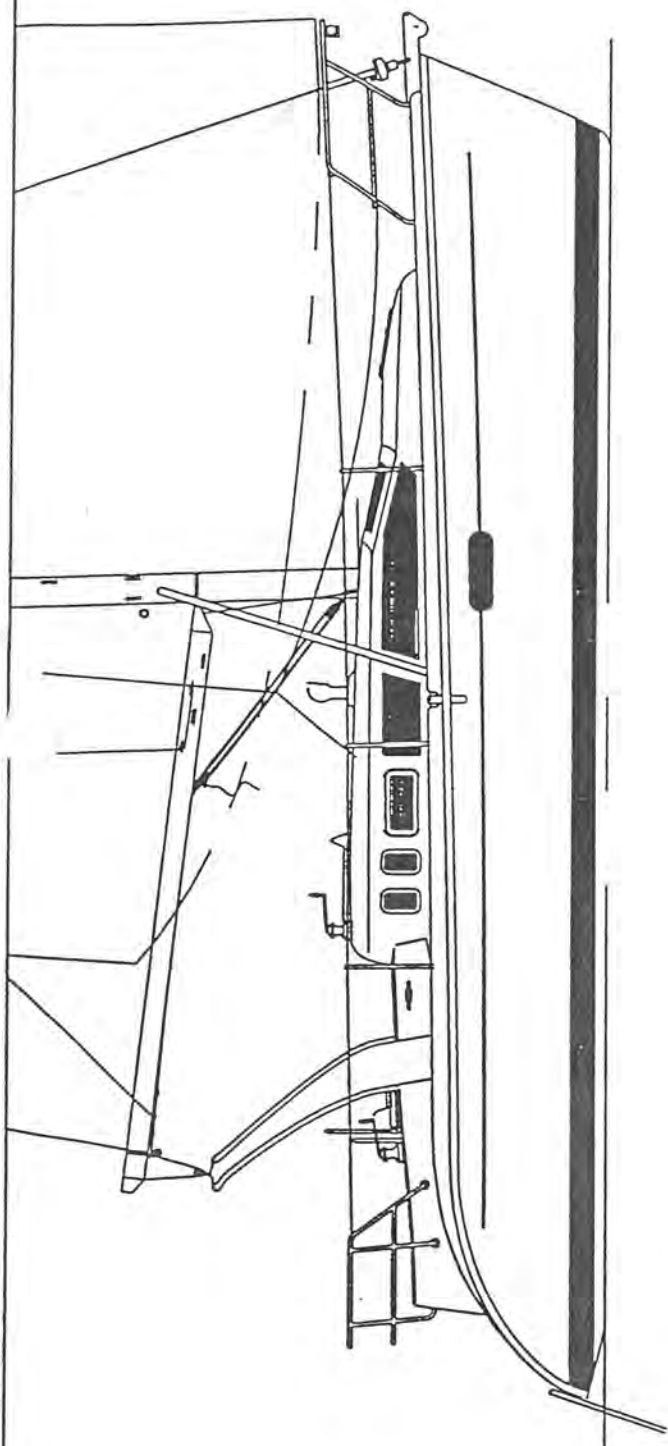
DIMENSIONS, CAPACITIES, ETC.

HUNTER 310

Length overall (LOA)	30'10"	9.40m
Length of waterline (LWL)	28'0"	8.53m
Beam (max)	10'10"	3.30m
Draft (shoal).....	4'0"	1.22m
Draft (deep).....	5'6"	1.68m
Displacement	8,500 lbs	3,856 kg
Ballast	3,000 lbs	1,361 kg
Sail Area (100% triangles)	455 sq ft	42.3 sq m
Sail Area (actual w/standard sails).....	523 sq ft	48.6 sq m
I	37'1"	11.30m
J	11'8"	3.56m
P	37'7"	11.45m
E	12'8"	3.86m
Mast height (from waterline).....	48'6"	14.78m
Headroom	6'4"	1.93m
Water capacity	50 U.S. gal.	189 liters
Holding tank capacity	20 U.S. gal.	76 liters
Fuel tank capacity	25 U.S. gal.	95 liters
LPG tank capacity	4 lbs.	1.82 kg
Battery capacity	Dealer supplied	
Electrical voltages	See Electrical Drawings	
Inboard engine	18 hp	13.4 kw
Maximum loading	10 people	570 kg luggage
Lifting points	Indicated by "Sling" labels on hull	



OPTIONAL DECK LAYOUT



310 DECK GEAR

11/23/96

NUMBER	PART	HUNTER #	MANUFACTURER	MANUFACT #	FILE NAME	QUANTITY
1	WINCH	HW2519	LEWMAR	30ST		1
3	WINCH	HW2518	LEWMAR	16ST		1
5	FWD HATCH	HW0120	BOMAR	1080-10A		1
	TRIM RING	HW				1
	SCREEN	HW				1
6	CABIN WINDSHIELD	PX				1
21	MID HATCH	HW0014	LEWMAR	COAST 10		2
	TRIM RING	HW				2
	SCREEN	HW				2
7	HINGE	HW4172	GEM			12
8	ANCHOR LOCKER HANDLE	HW4481	SOUTHCOST			1
9	STRIKER PLATE	HW	KENS		30620024	1
10	BOW PULPIT	HW	SOUTHCOST		306008	1
11	STANCHION 450 TYPE	HW1747	SOUTHCOST		30620018	6
12	HALYARD STOPPER STBD	HW1259	SPINLOCK	XA3		2
	HALYARD STOPPER PORT	HW1276	SPINLOCK	XA2		
13	JIB TRACK	29.5 STYLE	25" LONG			2
	JIB TRACK ENDS	HWO205	SCHAEFER			2
	JIB TRACK CAR	HW0238	SCHAEFER			2
14	CLEAT	HWO975				7
69	CLEAT	HW0980				1
15	CABIN WINDSHIELD	PX	VIPLEX			1
16	WINDOW (PLEXI)	PX				2
17	WINDOW (PLEXI)	PX				2
18	WINDOW	PX0323				2
19	OPENING WINDOW	HW0043				2
66	WINDOW (PLEXI)	PL				2
67	WINDOW (COCKPIT)	HW0039				1
	TRIM RING	HW				1
	SCREEN	HW				1
20	HALYARD ORGANIZER	HWO399	SCHAEFER	505-81		2
22	SEA HOOD		GLASS PART		3060003	1
24	DIESEL FILL	PL1126	SEADOG			1
25	WATER FILL	PL1130	SEADOG			1
26	WASTE PUMP OUT	PL1140	TIMA			1
28	FORMER EURO HATCH LID		GLASS PART			1
29	ANCHOR HATCH LID		GLASS PART			1
30	GULL WING HATCH LID		GLASS PART			2
31	HULL SIDE PORT (FIXED)	PX	NORTH FLORIDA			2
32	INSPECTION PORT	VC010004	BECKSON			1
33	TRANSOM SHOWER	PLO189	SAILING SPEC			1
34	BILGE PUMP	PLO371	RULE			1
35	BOW ROLLER	HW1610	SOUTHCOST		30620023	1
36	BOW LIGHT	ELO380	HELLA			1
37	MAINSHEET SYSTEM					
	ARCH MS. BLOCK	HW	HARKEN	O11		2
	BOOM BLOCK MS.	HW	HARKEN	O11		1
	STRAP EYE	HW	HARKEN	1558		2
	SPRING	HW	HARKEN	71		2
39	VANG BLOCK	HW0211	SCHAEFER	505-45		1
40	VANG BLOCK	HW0280	SCHAEFER	505-75		1
43	DORADE	HW4257	MARINCO			2
45	SWIM LADDER	HW	WINDLINE	TLD-3X		1
46	COCKPIT TABLE	N/A	HUNTICI MIII			1
	STEERING SYSTEM	HW	EDSON	RACK AND PINYON		1
47	COMPASS	LGO135	RITCHIE	PO79397		1
48	MAST STEP	HW	Z-SPAR	1103		1

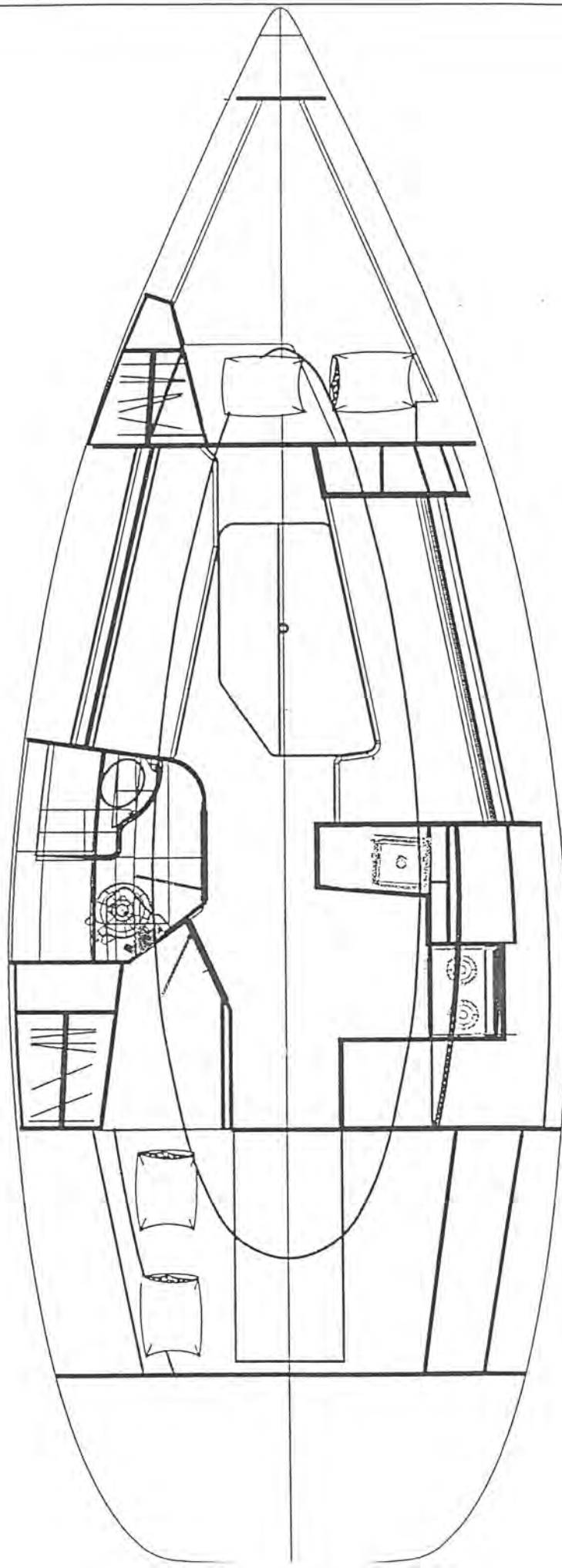
49	GULL WING SEAT HANDLE	HW2318					2
51	STERN RAIL	HW2246					
52	TRANSOM HATCH LID		GLASS PART				2
61	VERTICAL CHAINPLATE	HW1748			30620022		2
62	LOWER CHAINPLATE	HW1748			30620021		2
63	BLOCK WITH CAM STOPPER	HW	SPINLOCK	JK/50			2
65	U BOLT	HW5512					1
70	GRAB HANDLE	HW2315					1
71	HELM SEAT HINGE	HW4175					2
	MAIN HALYARD	RIO775					1
	JIB HALYARD	RIO775					1
	MAIN TRAVELER LINE	RIO775					2
	REEFING LINE #1	RIO775					1
	REEFING LINE #2	RIO775					1
	JIB SHEET	RIO775					2
	VANG	RIO775					1
	LAZY JACK WIRE	RIO775					2
	ADJUSTABLE LAZY JACK LINE	RIO775					2
	MAINSHEET	RIO775					1

OPTIONAL GEAR

4	WINDLASS	HW	SIMPSON LAWREN	SL00605167			1
56	SNATCH BLOCK OPTIONAL	HW	SCHAEFER	07-99			2
	STEERING SYSTEM	HW	EDSON	QUADRENT			1
23	TRAVELER BAR	HW	HARKEN	1510-5' 6"			1
	TRAVELER CAR	HWO340	HARKEN	1508			1
	TRAVELER END CAPS	HWO343	HARKEN	1524			2
	STAND UP TOGGLE	HWO340	HARKEN	1561			
	PORT CONTROL BLOCK	HWO341	HARKEN	1520			2
	STBD. CONTROL BLOCK	HWO342	HARKEN	1521			2
	TRAVELER CONTROL BLOCK	HW	HARKEN	1845			2
	3" HARKEN BLOCK		HARKEN	1540			1

SPINN. GEAR

2	WINCH	HW2519	LEWMAR	30ST			2
50	SPIN BLOCK OPTIONAL	HW0276	SCHAEFER	505-15			2
68	MAST STEP BLOCK	RIO448	ZSPARS	275			1
69	LINE STOPPER	HW1274	XA-1				
	SPIN. SHEET	RI0245					2
	SPIN. HALYARD	RI0245					1

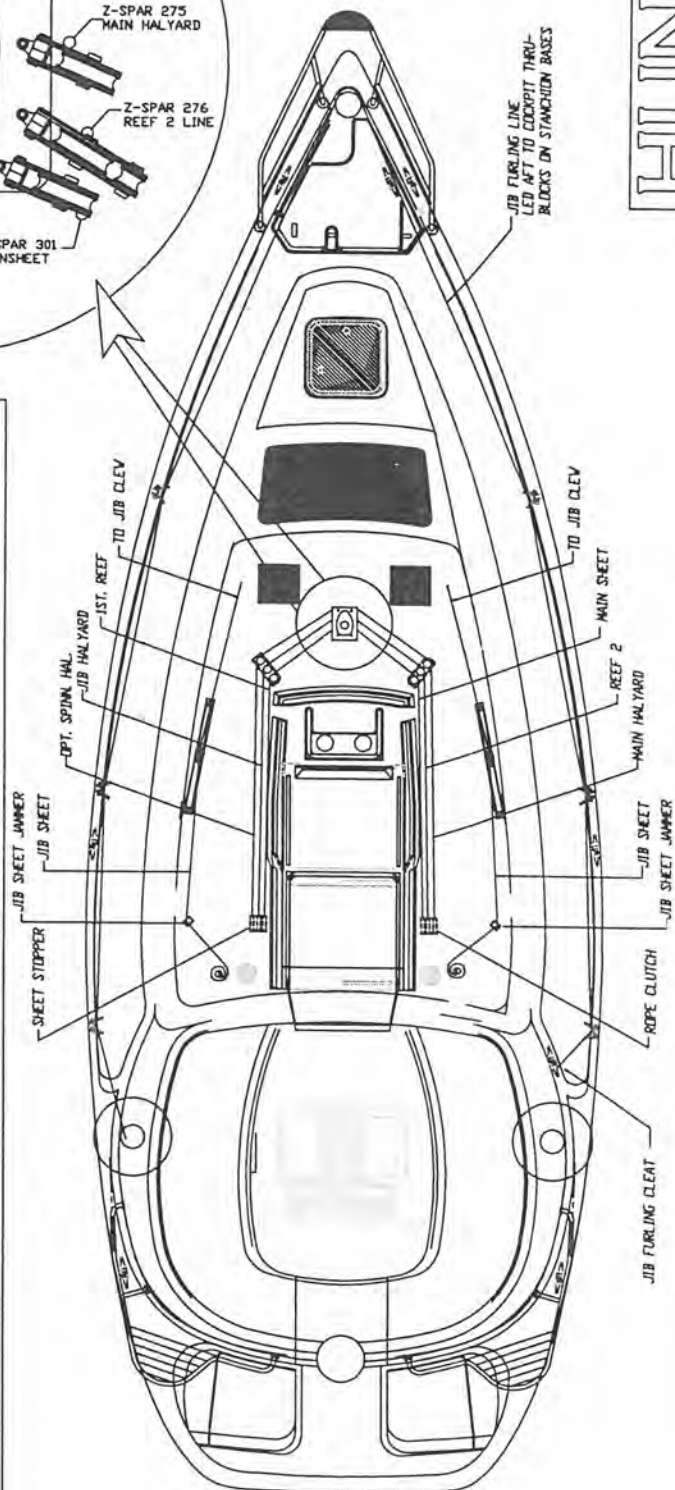
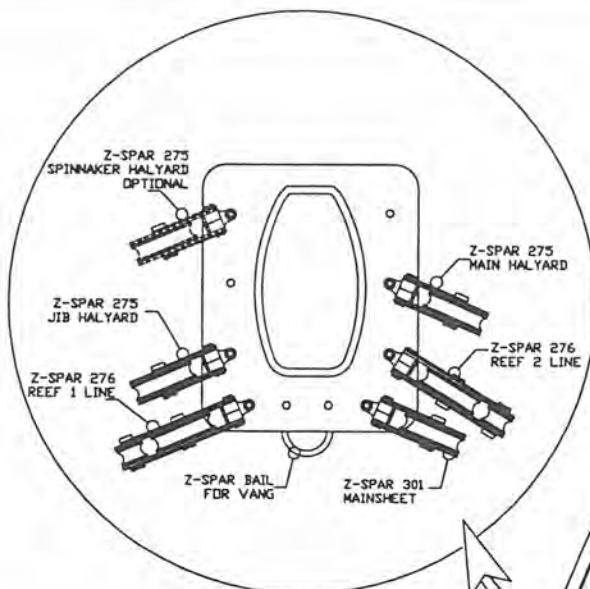
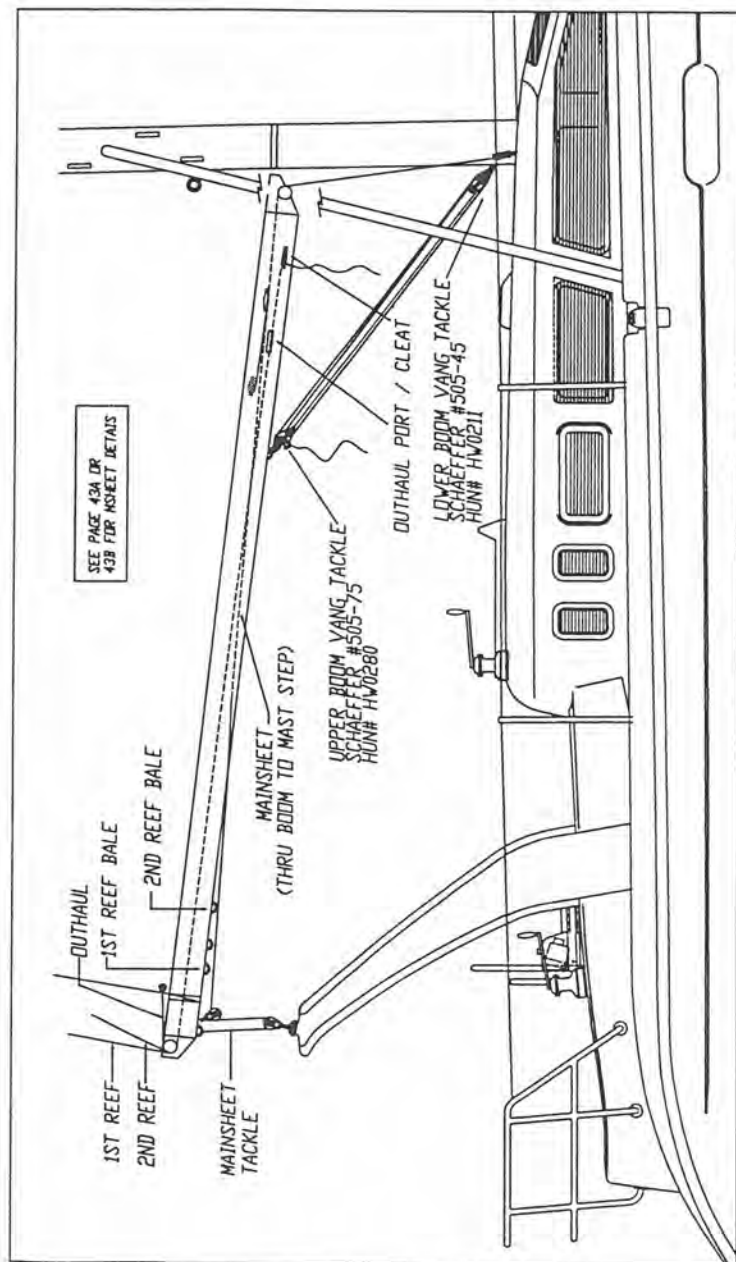


HUNTER

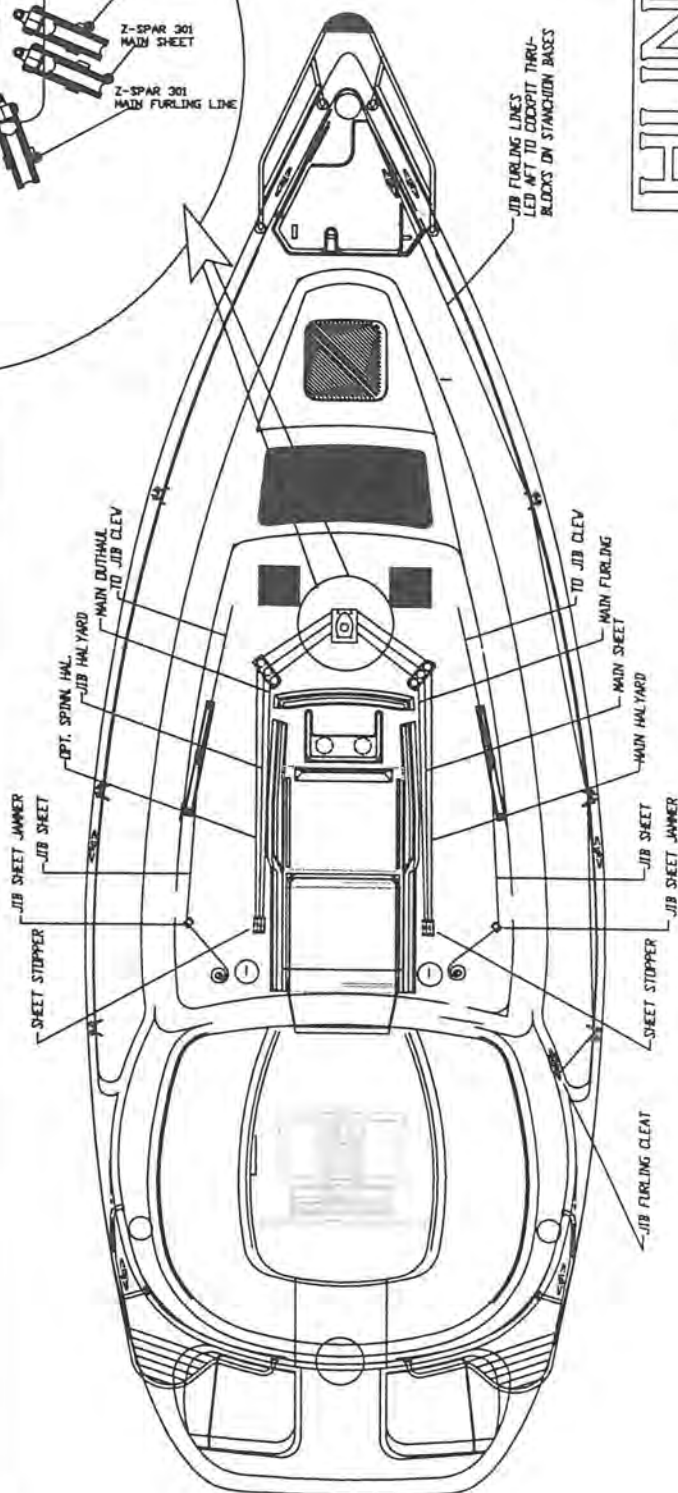
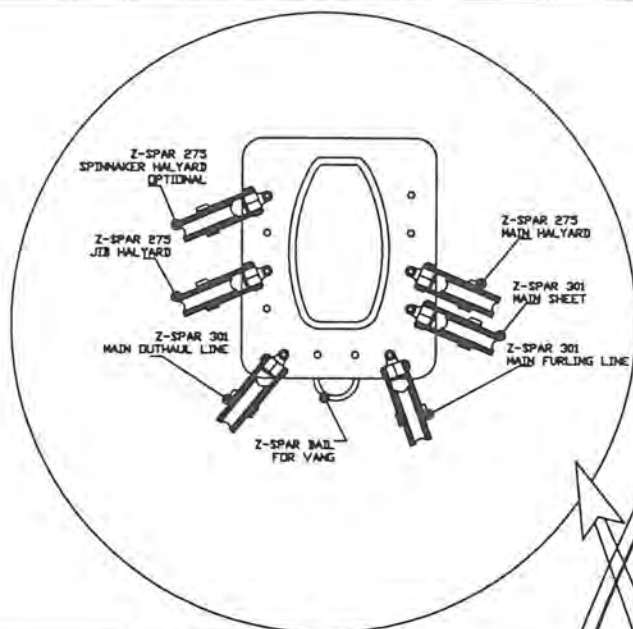
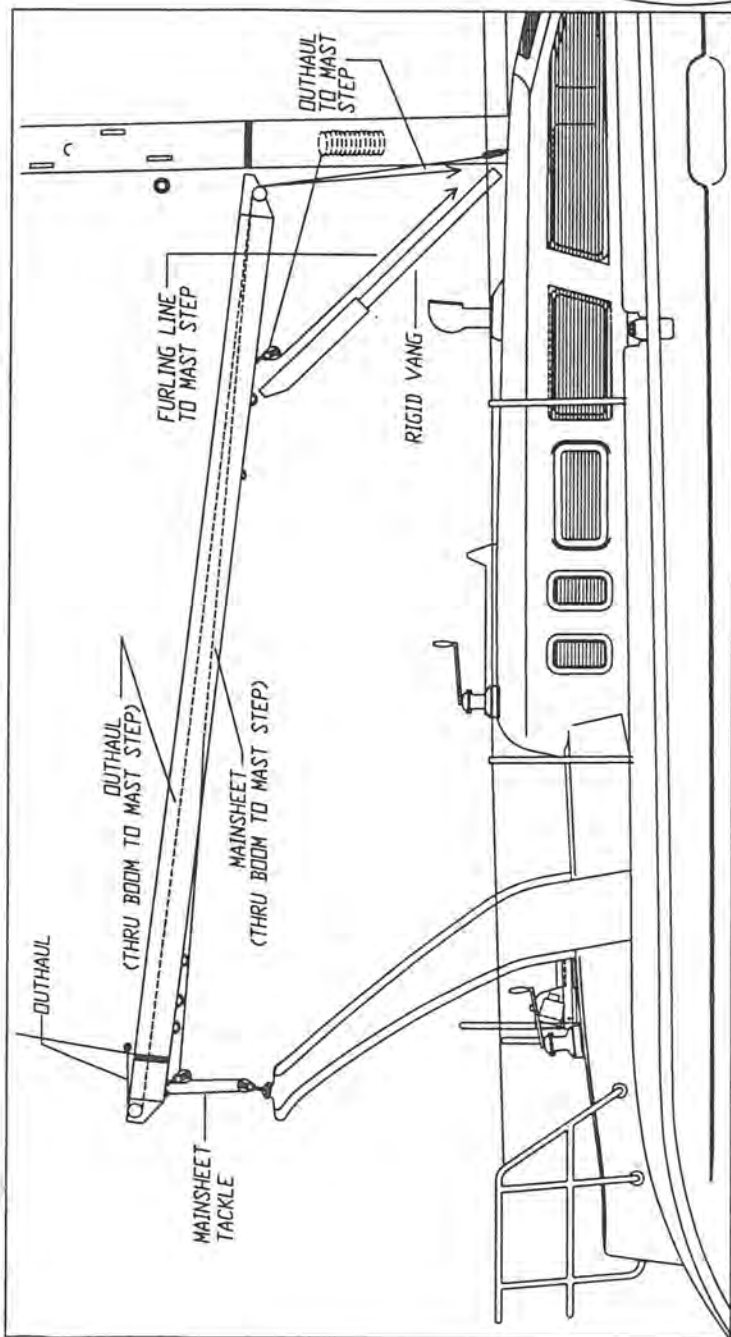
H-310 ACCOMMODATION

DRAWING # 3108041

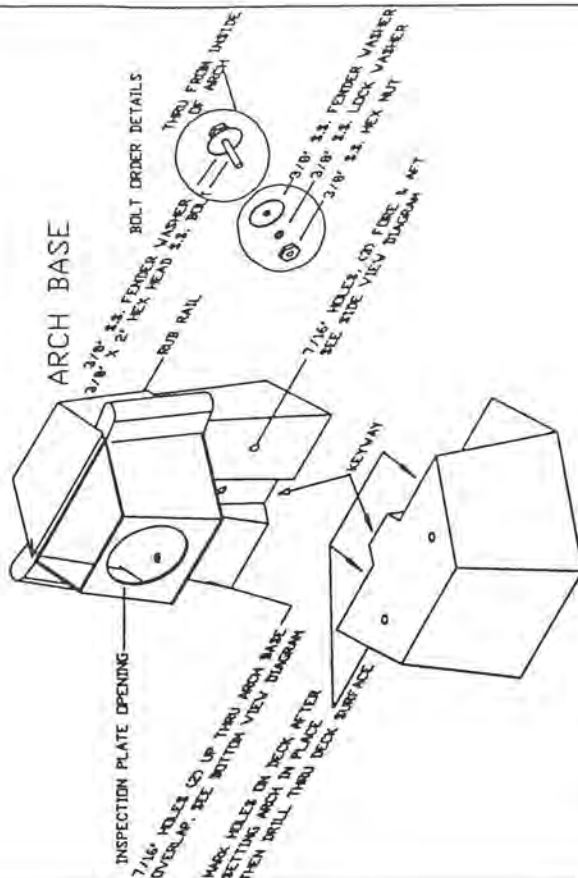
ACCOMMODATION PLAN



RUNNING RIGGING & MAST STEP LAYOUT (STANDARD)



ISO VIEW OF STBD. SIDE
AFT LOOKING FORWARD
(PORT SIDE MIRROR IMAGE)

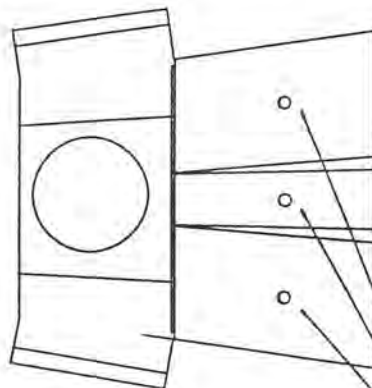


DECK SURFACE
(ARCH RECEIVER BASE)

INSTRUCTIONS:

1. DRILL HOLES IN ARCH AS SHOWN IN SIDE VIEW AND BOTTOM VIEW DIAGRAMS. HOLES ARE 7/16" DIA. (3 EASIED NOTE). BOLTS ARE INSTALLED FROM INSIDE OF ARCH AND NUTS ARE INSTALLED FROM O-BERTH SIDE, PT. SIDE & INSIDE OF COCKPIT LOCKER STBD. SIDE. VERIFY CLEARANCE INSIDE OF ARCH AT HOLE LOCATIONS BEFORE DRILLING.
5. SET ARCH IN PLACE, USING A SHORT PENCIL, REACH INSIDE OF ARCH AND MARK DECK SURFACE THRU HOLES INSIDE OF ARCH.
6. REMOVE ARCH, DRILL 7/16" HOLES AS MARKED. APPLY SILICONE SEALANT GENEROUSLY AROUND HOLES AND MATING SURFACES TO ENSURE A WATERTIGHT SEAL.
7. RE-SET ARCH IN PLACE, INSTALL 3/8" HEX HEAD BOLTS WITH 3/8" FENDER WASHER FROM INSIDE OF ARCH AND A 3/8" FENDER WASHER THEN A 3/8" LOCK WASHER THEN A 3/8" NUT FROM O-BERTH SIDE, & LOCKER SIDE AND TIGHTEN ALL.
8. CLEAN ALL EXCESS CAULK, THEN FINAL CAULK SEAM WITH WHITE SILICONE.

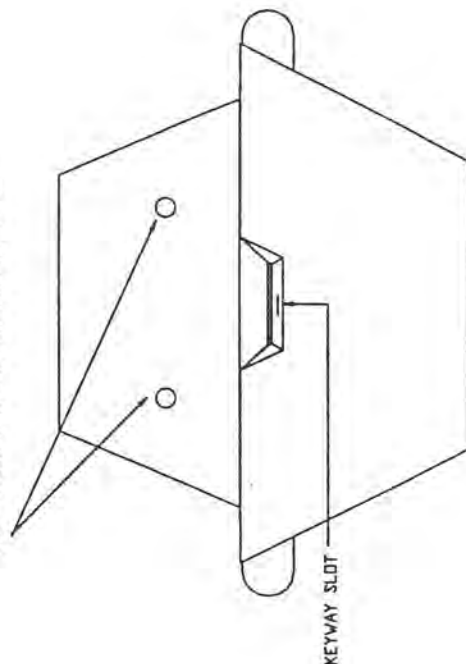
ONLY ARCH BASE & ARCH
RECEIVER SHOWN FOR CLARITY



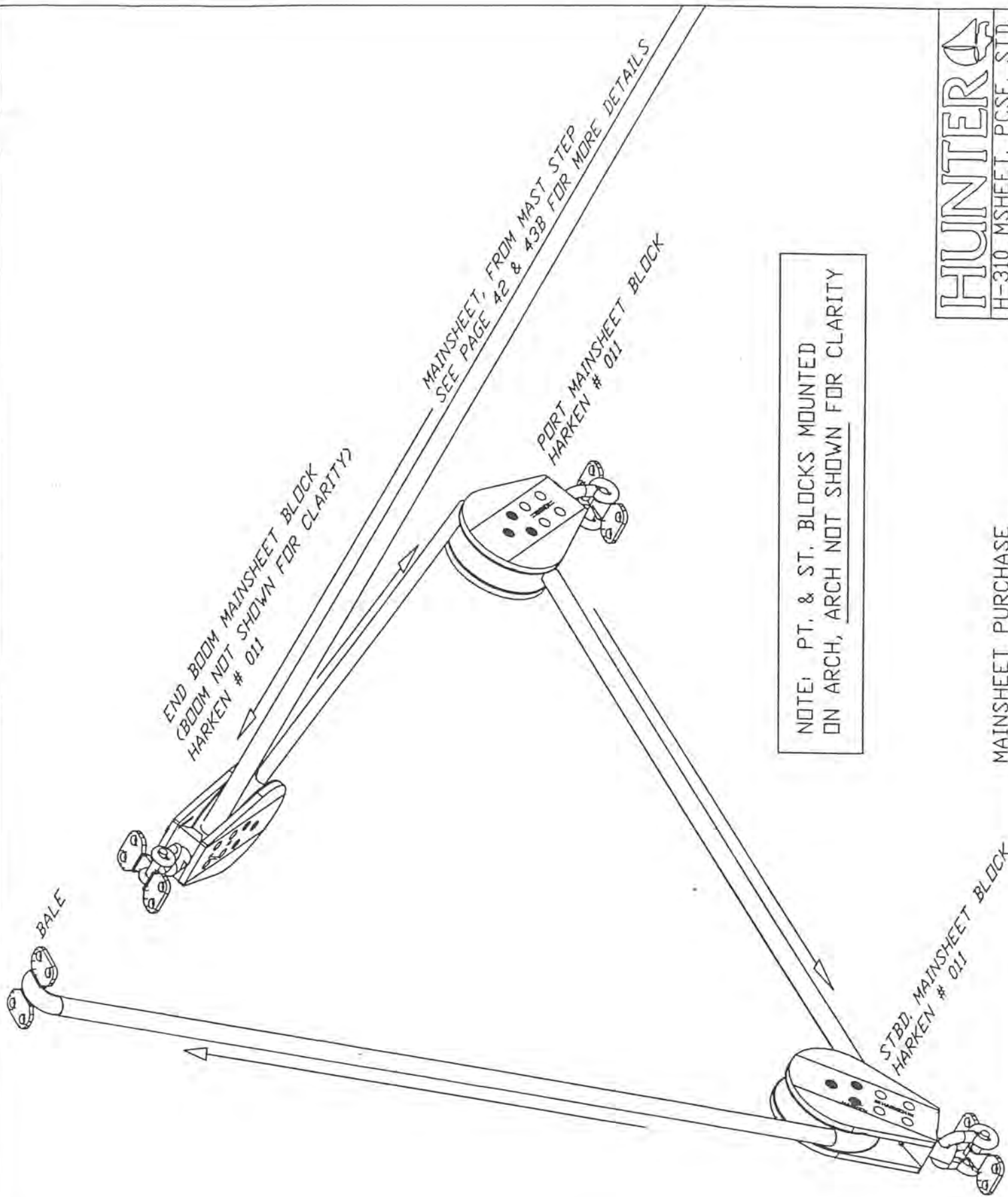
DRILL 7/16" HOLES HERE AS SHOWN
(APPROX. ON CENTER BOTH DIRECTIONS
ONE IN CENTER OF KEYWAY SLOT, AND ONE ON CENTER
OF EACH FLAT FWD, AND AFT OF KEYWAY SLOT)

ARCH BASE SIDE VIEW

7/16" HOLES THRU ARCH OVERLAP AS SHOWN



ARCH BASE BOTTOM VIEW



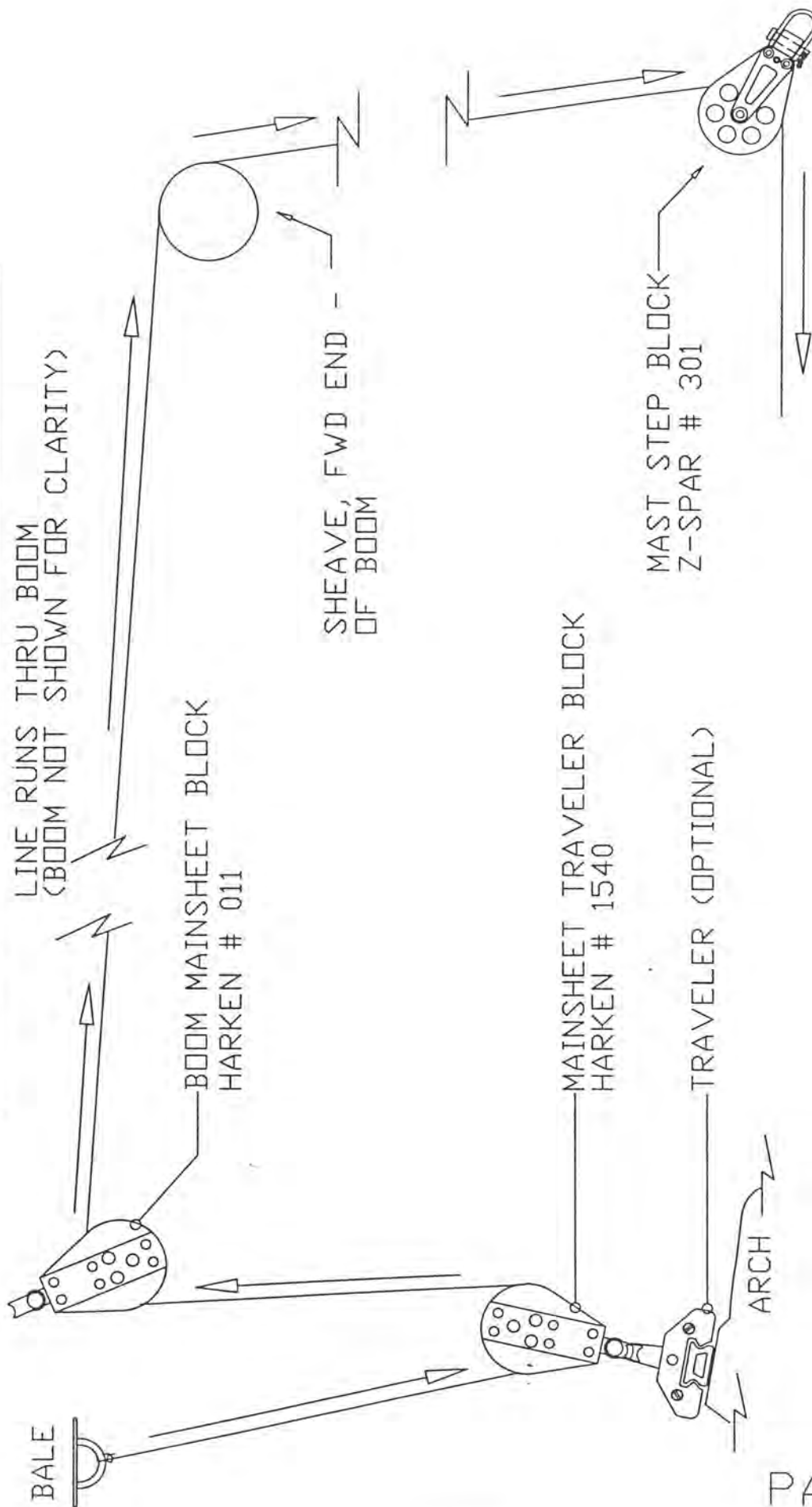
HUNTER

H-310 MSHEET, PCSE, STD.
DRAWING # 3108043B

MAINSHEET PURCHASE

IMPORTANT!

USE CAUTION WHEN EASING LAZY JACK TENSION
TO PREVENT BOOM FROM STRIKING ARCH

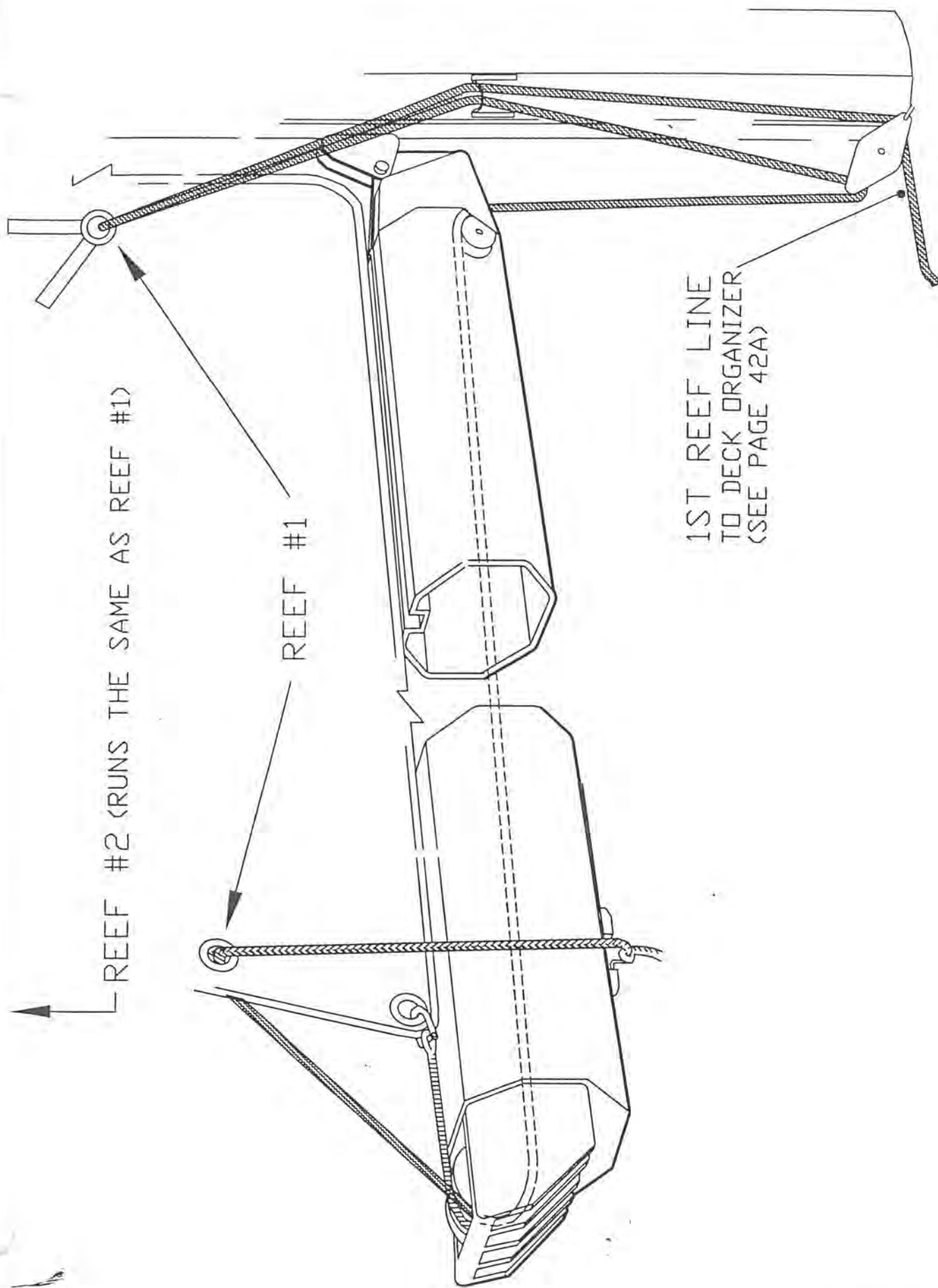


TO STBD. ORG. THEN -
TO SHEETSTOPPER
(SEE PAGE 42)

TRAVELER BAR NOT SHOWN
FOR CLARITY



H=310 UPL TRAV. LAYOUT
DRAWING # 3108043D



HUNTER

H-310 BOOM & REEF
DRAWING # 3108044

BOOM & REEF LAYOUT

REEFING INSTRUCTIONS

PRE-MARK THE MAIN HALYARD FOR EACH REEF

1. Shackle tack reef blocks to first and second reef tack cringles.

2. Run both reefing lines as illustrated in the boom & reef layout. Both portions of the reefing line leading to the reef tack block must run through the stainless steel eye on the side of the spar. The shorter reef line will be used on the first reef (starboard side, GREEN) the longer reef line on the second reef (portside, RED.).

3. Raise the main sail.

4. Ease the mainsheet vang.

5. Lower the main sail to approximately the first reef position

6. Take up the slack in the first reefing line.

7. Adjust the main halyard so that the tack reef block is not contacting the stainless steel eye on the side of the spar and is applying tension to the luff of the main

above the reef, not below. There will be approximately 6" (150 mm) of stretch in the main luff and make sure that this is allowed for when adjusting the main halyard to locate the tack reef block.

8. Tension the reef line with the appropriate self-tailing winch until the clew reef cringle is brought down to the boom.

9. Confirm that the tack reef block is still clear of the stainless steel eye and that only the main luff above the reef cringle is tensioned, not the luff between the cringle and the top stacked sail slide. Ease the reef line and readjust the halyard if necessary.

10. Mark the halyard at the stopper with a 1" (25- mm) single band of indelible marker ink. By dropping the halyard to this mark every time a reef is required the halyard is automatically in the correct position for the reef.

11. Repeat the procedure for the second reef, using double bands to mark the halyard in the correct position.

REEFING PROCEDURE

1. Head up into the wind.

2. Ease the mainsheet & vang.

3. Lower the main halyard to the appropriate mark,

and snug the line with the stopper.

4. Tension the reefing line with the self-tailing winch until the reef clew is brought down to the boom. Apply stopper. Ease the topping lift.

SHAKING OUT A REEF

1. Head up into the wind.

2. Ease the mainsheet and vang.

3. Release the reef stopper and remove the reef line from the winch.

4. Tension the main halyard to raise the mainsail, ensuring that the reef lines run freely while the sail is

being raised. Then apply the line stopper to the main halyard.

5. Re-tension the boom vang and mainsheet

BOAT: h310				FILE NAME: PR3091				RUNNING RIGGING SPECIFICATIONS			
BY: KJC				DATE: 10/10/96				REVISION: SHORTENED JIB SHEET 11/26/96			
CHECKED BY:				DATE:				SHORTENED MAIN HALY, CHANGE LAZY JACKS 12/10/96			

OPT/STD	ITEM	QUANTITY	LINE SIZE	LINE TYPE	COLOR	END 1	LENGTH	END 2
1 STD	MAIN HALYARD	1	3/8" (9.5mm)	XLS EXTRA	BLUE	HEADBOARD SHACKLE	29.1 m	95 ft
2 STD	JIB HALYARD	1	3/8" (9.5mm)	XLS	RED	EYE	27.0 m	89 ft
3 OPT	MAIN TRAVELER LINE	2	5/16" (8mm)	LS	WHITE	SMALL EYE	6.7 m	22 ft
4 STD	MAINSHEET	1	3/8" (9.5mm)	LS	BLUE FLECK	SMALL EYE	15.6 m	51 ft
5 STD	REEFING LINE #1	1	3/8" (9.5mm)	TRACER	GREEN FLECK	BARE	18.0 m	59 ft
6 STD	REEFING LINE #2	1	3/8" (9.5mm)	TRACER	RED FLECK	BARE	25.9 m	85 ft
7 STD	JIB SHEET	2	7/16" (11mm)	LS	RED FLECK	BARE	9.0 m	29 ft
8 OPT	SPINN. SHEET	2	3/8" (9.5mm)	LS	BLACK FLECK	BARE	21.0 m	69 ft
9 OPT	SPINNAKER HALYARD	1	3/8" (9.5mm)	XLS	BLACK	SNAP SHACKLE NF11000S	27.0 m	89 ft
10 STD	VANG	1	3/8" (9.5mm)	LS	WHITE	SMALL EYE	14.7 m	48 ft
11 STD	LAZY JACK WIRE	2	5/32" (4mm)	PLASTIC COATED 1x19 WIRE	WHITE	EYE & THIMBLE, SMALL SHACKLE	3.4 m	11 ft
12 STD	ADJUSTABLE LAZY JACK LINE	1	5/16" (8mm)	LS	WHITE	BARE	18.3 m	60 ft

h310 FURLING MAST RUNNING RIGGING SPECIFICATIONS			
BOAT: h310	FILE NAME: PR310FRL	REVISION: ADDED BOOM TOPPING LIFT 12/12/96	
BY: KJC	DATE: 11/25/96		
CHECKED BY:	DATE:		

OPT/STD	ITEM	QUANTITY	LINE SIZE	LINE TYPE	COLOR	END 1	LENGTH	END 2
1 STD	MAIN HALYARD	1	3/8" (9.5mm)	XLS EXTRA	BLUE	HEADBOARD SHACKLE	30.0 m	98 ft BARE
2 STD	JIB HALYARD	1	3/8" (9.5mm)	XLS	RED	EYE	27.0 m	89 ft BARE
3 OPT	MAIN TRAVELER LINE	2	5/16" (8mm)	LS	WHITE	SMALL EYE	5.2 m	17 ft BARE
4 STD	MAINSHEET	1	3/8" (9.5mm)	LS	BLUE FLECK	SMALL EYE	15.6 m	51 ft BARE
5 STD	JIB SHEET	2	7/16" (11mm)	LS	RED FLECK	BARE	10.5 m	34 ft BARE
6 OPT	SPINN. SHEET	2	3/8" (9.5mm)	LS	BLACK FLECK	BARE	21.0 m	69 ft BARE
7 OPT	SPINNAKER HALYARD	1	3/8" (9.5mm)	XLS	BLACK	SNAP SHACKLE NF11000s	27.0 m	89 ft BARE
8 STD	BOOM TOPPING LIFT	1	5/16" (8mm)	LS	WHITE	1/4" D-SHACKLE	25.6 m	84 ft BARE

h310 B&R RIG WITH STRUTS DESCRIPTION

The B&R rig, utilized on the Hunter 310, eliminates the need for a backstay to allow for a more efficient mainsail shape. Fixed backstays are commonly being designed out of today's performance-oriented boats to allow the mainsail to incorporate a full roach design - a more aerodynamic shape both for racing and cruising performance.

To accomplish this, the B&R rig has 30 degree swept spreaders, creating 120 degrees between each rigging point. This tri-pod arrangement has excellent strength for sailboat rigs, and has been used for years to support huge radio towers.

The latest advancement to the B&R rig is the addition of mast struts. These struts stabilize the lower section of the mast, allowing compression loads to be spread, reducing the point loading at the mast base. They also create a strong point for the boom and spinnaker pole loadings. The struts function also allow us to use a smaller mast section reducing weight aloft to decrease the heeling and pitching moments, making for a more comfortable ride. Additionally, they provide a secure handhold when going forward.

The struts perform an important structural function, **therefore never sail your boat without the struts properly fitted.** If your 310 is equipped with the in-mast furling option, the mast is a larger section size and the struts are not utilized.

Additional support is given to the B&R rig (and is unique to it) with the

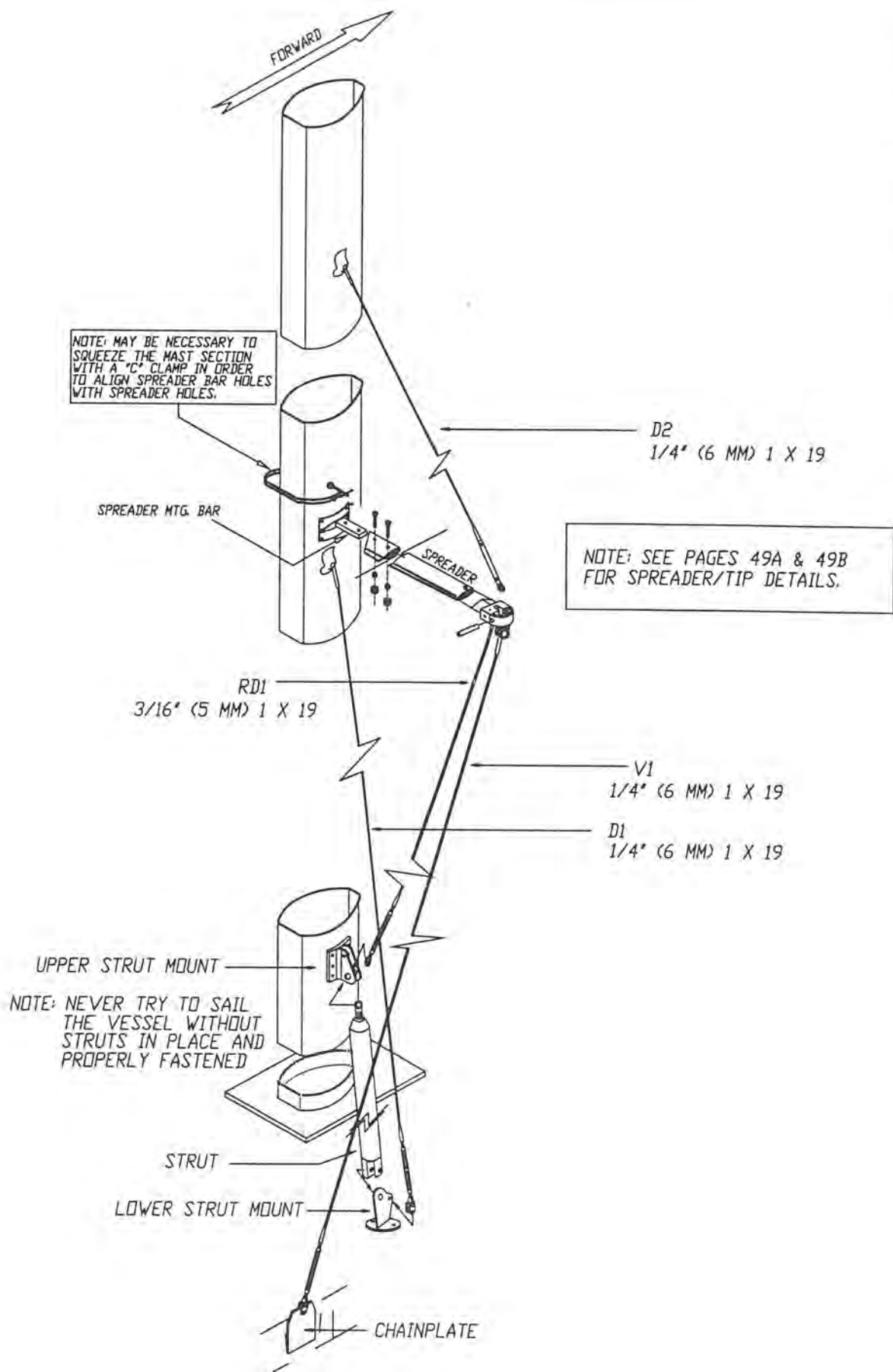
addition of reverse diagonal rigging. For example, the diagonals that you see beginning by the top of the mast strut, ending at the tip of the spreader, supports and stabilizes the upper section of the mast as it creates a triangle with the upper shroud.

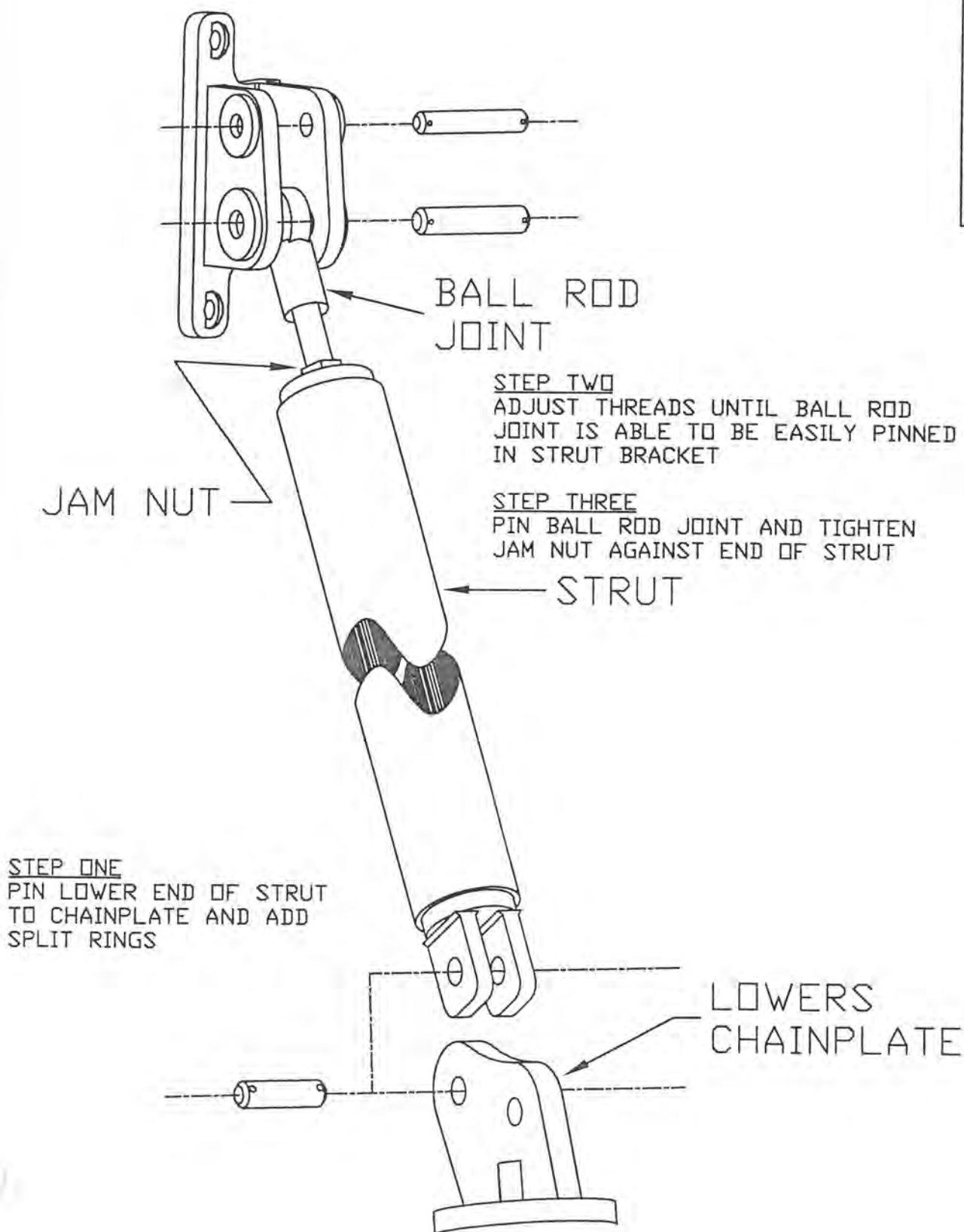
The B&R rig is designed to be pre-bent to further add rigidity to the mast section and eliminate the need for adjustable rigging (like backstay adjusters). This design should prove more reliable than a rig with adjustable backstays or runners, as there is less chance for error.

The large main, small jib, sail plan on the 310 also eliminates the need for large overlapping headsails (genoas), as the driving power comes from the much improved shape and size of the mainsail. This allows for an easier tacking small jib, creating good performance and more comfortable sailing as it is less work for the crew.

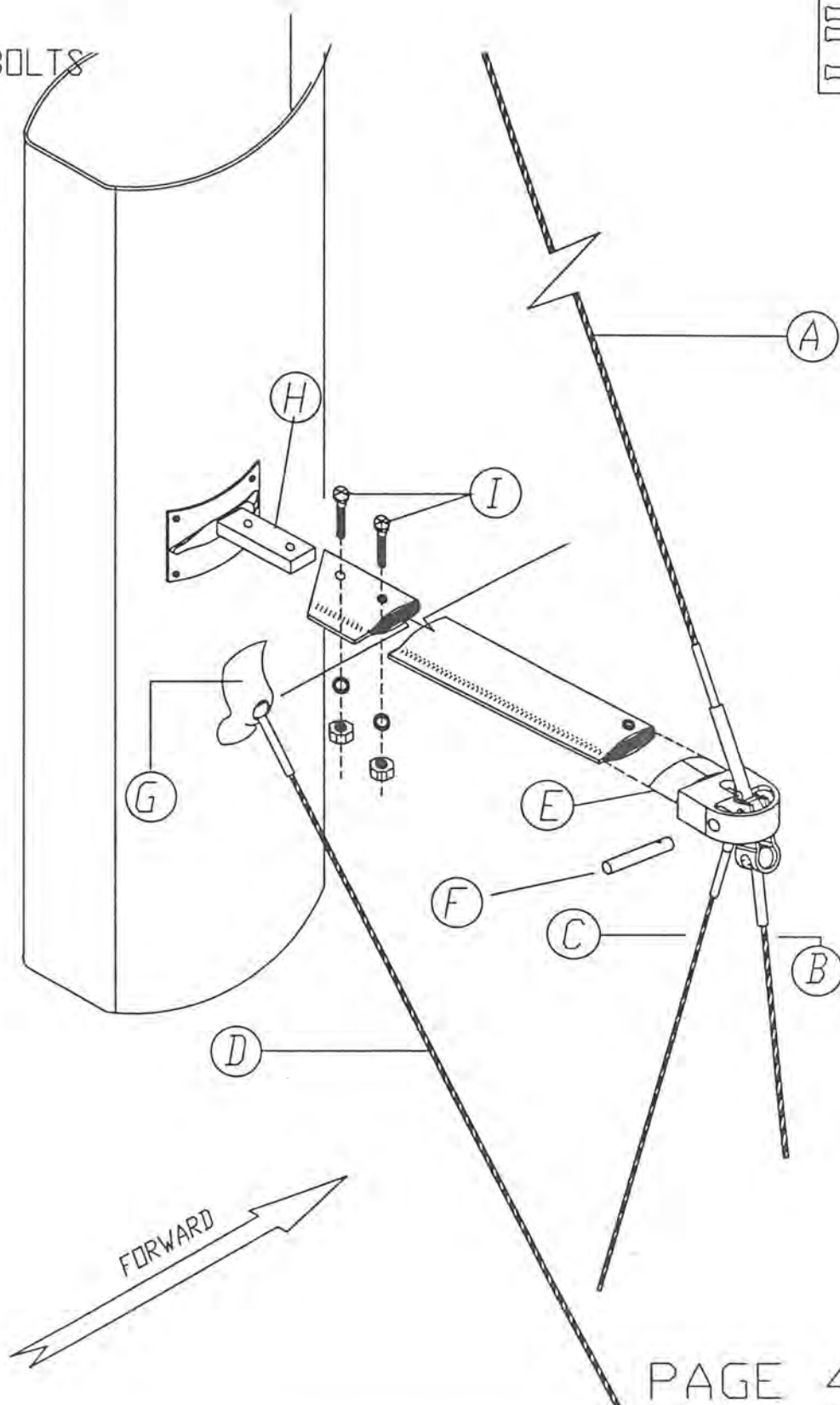
As the large main is creating additional mainsheet and leech loading, Hunter has included a cockpit arch whereby the mainsheet and leech loads are directed to the strong part of the boom (the outboard end) and is located at the heaviest loading point of the mainsail. The cockpit arch serves addition safety and comfort functions as handholds and cockpit canvas attachment points.

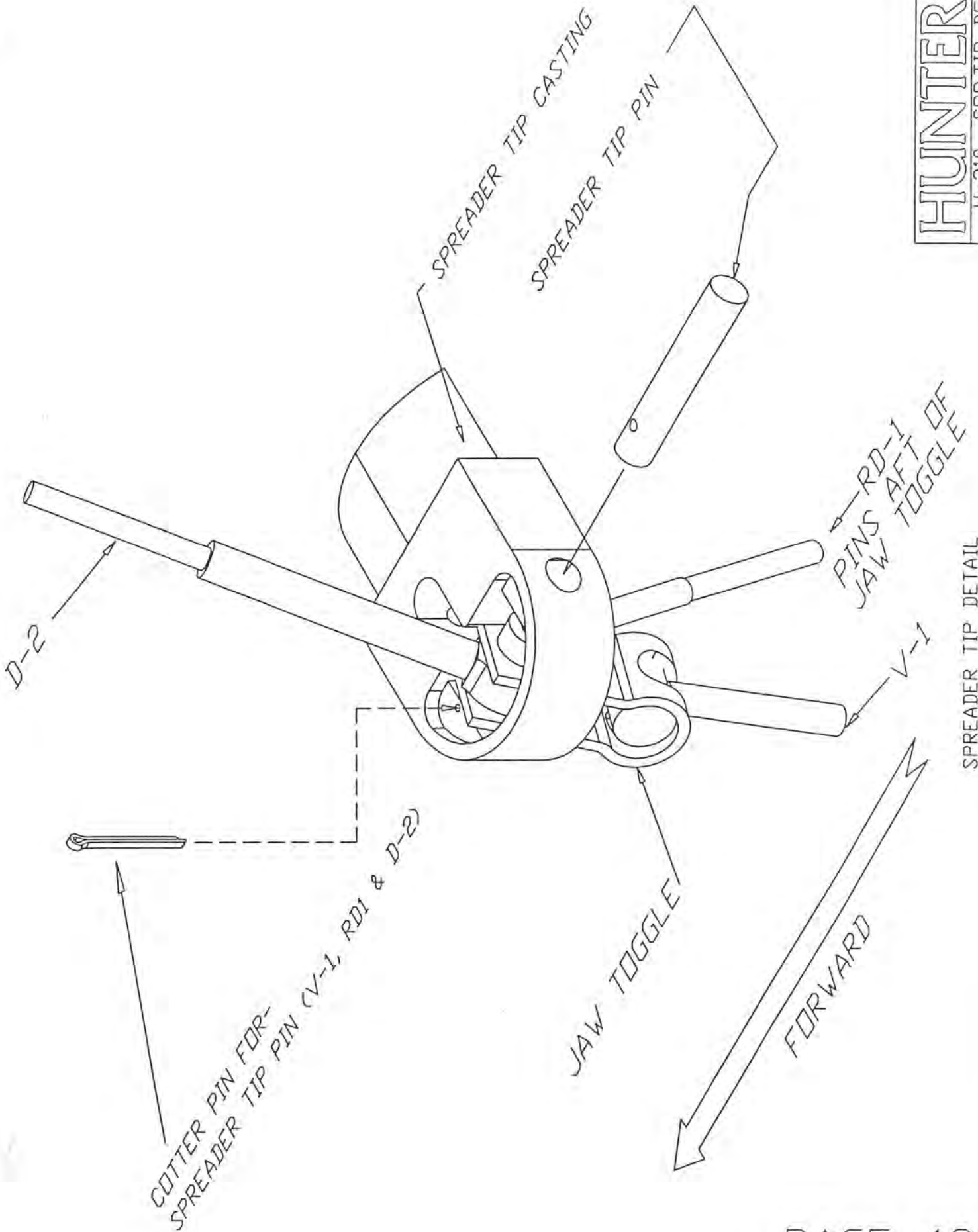
B&R rigs have been used on thousands of sailboats, and we are proud to incorporate this successful design on your new Hunter.





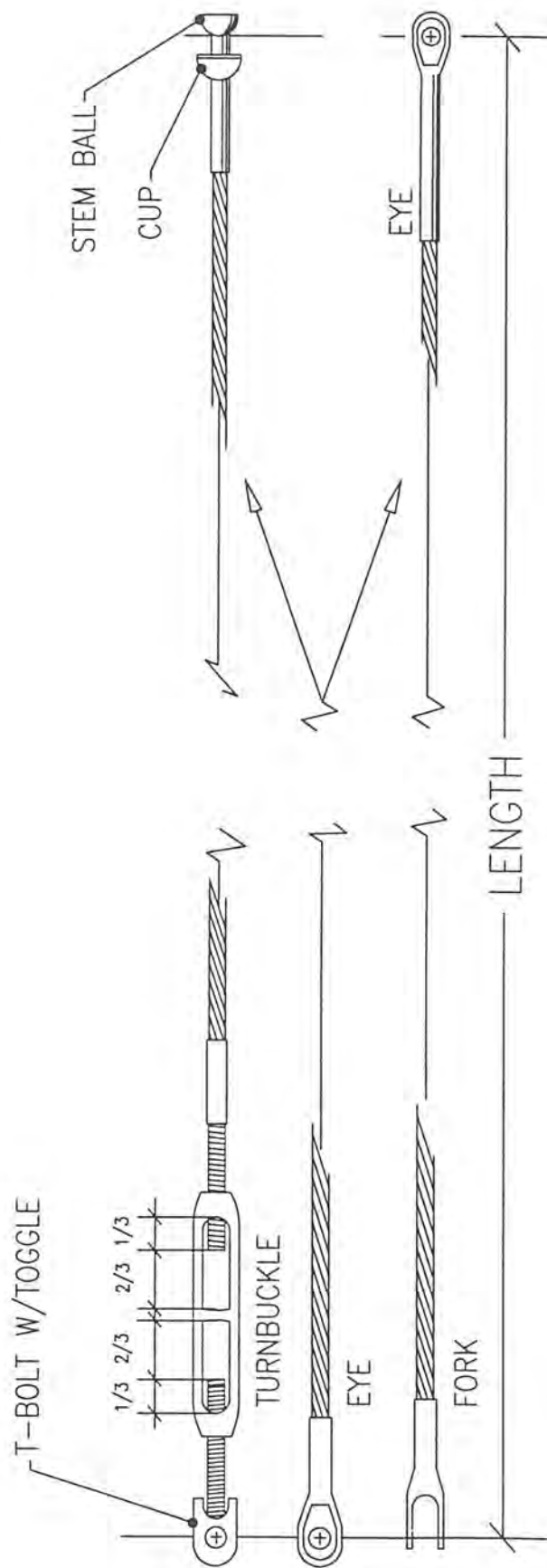
- (A) UPPER DIAGONAL (D2)
- (B) VERTICAL (V1)
- (C) REV. DIAG. (RD1) MARINE EYE
- (D) LOWER DIAG. (D1)
- (E) SPREADER TIP CASTING
- (F) SPREADER TIP PIN
- (G) BACKING SHELL
- (H) SPREADER BAR
- (I) SPREADER BAR BOLTS





h310 STANDING RIGGING SPECIFICATIONS									
BY:		KJC	DATE: 29-Apr-97		REVISION:		4/29/97 lengthen RD1 1" for lower strut brkt		
OPT/STD	ITEM	QUANTITY	WIRE SIZE	UPPER END	LENGTH		LOWER END		
1 STD	D2	2	7/32" (5.5mm) 1x19	STEMBALL, BACKING SHELL	4,718 m	15 ft. 5 3/4 in.	MARINE EYE		
2 STD	V1	2	1/4" (6.4mm) 1x19	JAW TOGGLE	7,398 m	24 ft. 3 1/4 in.	8-16-16 TURNBUCKLE		
3 STD	D1	2	1/4" (6.4mm) 1x19	STEMBALL, BACKING SHELL	7,264 m	23 ft. 10 in.	8-12-12 TURNBUCKLE		
4 STD	LOWER DIAMOND, RD1	2	1/4" (6.4mm) 1X19	MARINE EYE	5,632 m	18 ft. 5 3/4 in.	6-10-10 STEMBALL TURNBUCKLE WITH JAW TOGGLE		
5 STD	FORESTAY	1	N/A	OS JAW TOGGLE w/ 7/16" PINS	0,000 m	0 ft. 0 in.			

h310 FURLING STANDING RIGGING SPECIFICATIONS									
BY:		KJC	DATE: 5-Mar-97		ST310FRL.XLS				
OPT/STD	ITEM	QUANTITY	WIRE SIZE	UPPER END	LENGTH		LOWER END		
1 STD	D2	2	7/32" (5.5mm) 1x19	STEMBALL, BACKING SHELL	5.385 m	17 ft. 8 in.	MARINE EYE		
2 STD	V1	2	1/4" (6.4mm) 1x19	JAW TOGGLE	6.706 m	22 ft. 0 in.	8-16-16 TURNBUCKLE		
3 STD	D1	2	1/4" (6.4mm) 1x19	STEMBALL, BACKING SHELL	6.620 m	21 ft. 8 5/8 in.	8-12-12 TURNBUCKLE		
4 STD	LOWER DIAMOND, RD1	2	1/4" (6.4mm) 1X19	MARINE EYE	4.959 m	16 ft. 3 1/4 in.	6-10-10 STEMBALL TURNBUCKLE WITH BACKING SHELL		
5 STD	FORESTAY	1	N/A	OS JAW TOGGLE	0.000 m	0 ft. 0 in.			



TUNING THE h310 B&R RIG

The easiest method for tuning the B&R rig is to perform step one as follows before the mast is stepped, with it lying aft side down on two sawhorses. Begin with all rigging slack. If the mast is already stepped, loosen all the rigging, and then proceed to step one.

1. Start with all the rigging slack. Then induce the mast bend by tightening the reverse diagonals (diamonds). Measure the bend by tensioning a line or the main halyard between the masthead and the gooseneck. The maximum amount of bend should be no more than 5" measured perpendicular from the aft face of the mast to the halyard at the deepest part of the bend. It can be less than that based on the sail shape and your own preference. The bend should also be evenly distributed along the mast to give a smooth shape. It is very important that the mast also be straight from side to side at this time. Tighten or loosen the reverse diagonals to achieve this.
2. Step the mast with all shrouds attached but with the turnbuckles completely loosened (if the mast was not already stepped).
3. Attach the jib halyard to a cleat on the bow to support the mast in a raked position (the masthead should be about 2-1/2' behind the step). Attach the verticals and tighten them until you can just see the hole for the cotter pin in the turnbuckle. Tighten the jib halyard until you can attach the forestay. At this point the masthead should be raked so that a weight hung on the main halyard hangs about 1' to 1-1/2' behind the mast step.
4. Use the main halyard to check that the mast is centered from side to side. Pull it tight and mark the halyard next to the verticals chainplate. Now do the same to the other side to see if the marks line up. If not, tighten and/or loosen the verticals until the marks line up. Once the masthead is centered, begin tightening the verticals until the turnbuckles are approximately half closed. While tightening the verticals you may notice the bend in the mast increasing. Now you can tighten the lowers which will tend to straighten the lower part of the mast.
5. Now you should tighten the headstay until it is approximately half closed as well. This should induce the appropriate amount of headstay tension. Never use anything more than a pair of wrenches to tighten your rigging. If you use an extended piece of pipe on the handle of a wrench you can over tighten the rigging and do damage to the mast or rigging.
6. You need to attach the struts at this time. Attach the lower end of the strut to the smaller hole in the chainplate. Adjust the length by turning the ball joint bearing in the upper end of the strut until the holes in the pin can be attached. It is normal to have some play between the strut and the chainplate and strut bracket.
7. The final test is to go sailing in 10-15 knots of wind. First, adjust the tension in the shrouds. If when sailing upwind, the shrouds on the leeward side are slack then tighten them to remove about half the slack keeping note of the number of turns. Then tack and do the same to the other side. Do this until you are happy with the tension and the leeward side does not get loose when the boat is heeled. Now sight up the mast to be sure it is still relatively straight from side to side. If it is not then adjust to appropriate rigging to correct it. For example: if the mast is straight until the spreader and then hooks to the windward side then you will have to tighten the lower shroud. Remember to always tighten the leeward shroud, tack and tighten the new leeward shroud the same amount. This prevents damage to the turnbuckles and is also much easier to do. Keep in mind it is also possible to have something too tight such as a diagonal shroud.
8. At this point you should have adequate headstay tension. The sails are built for about 9" of headstay sag, the bend in the mast should be about 5" fore and aft and it should be nearly straight from side to side.

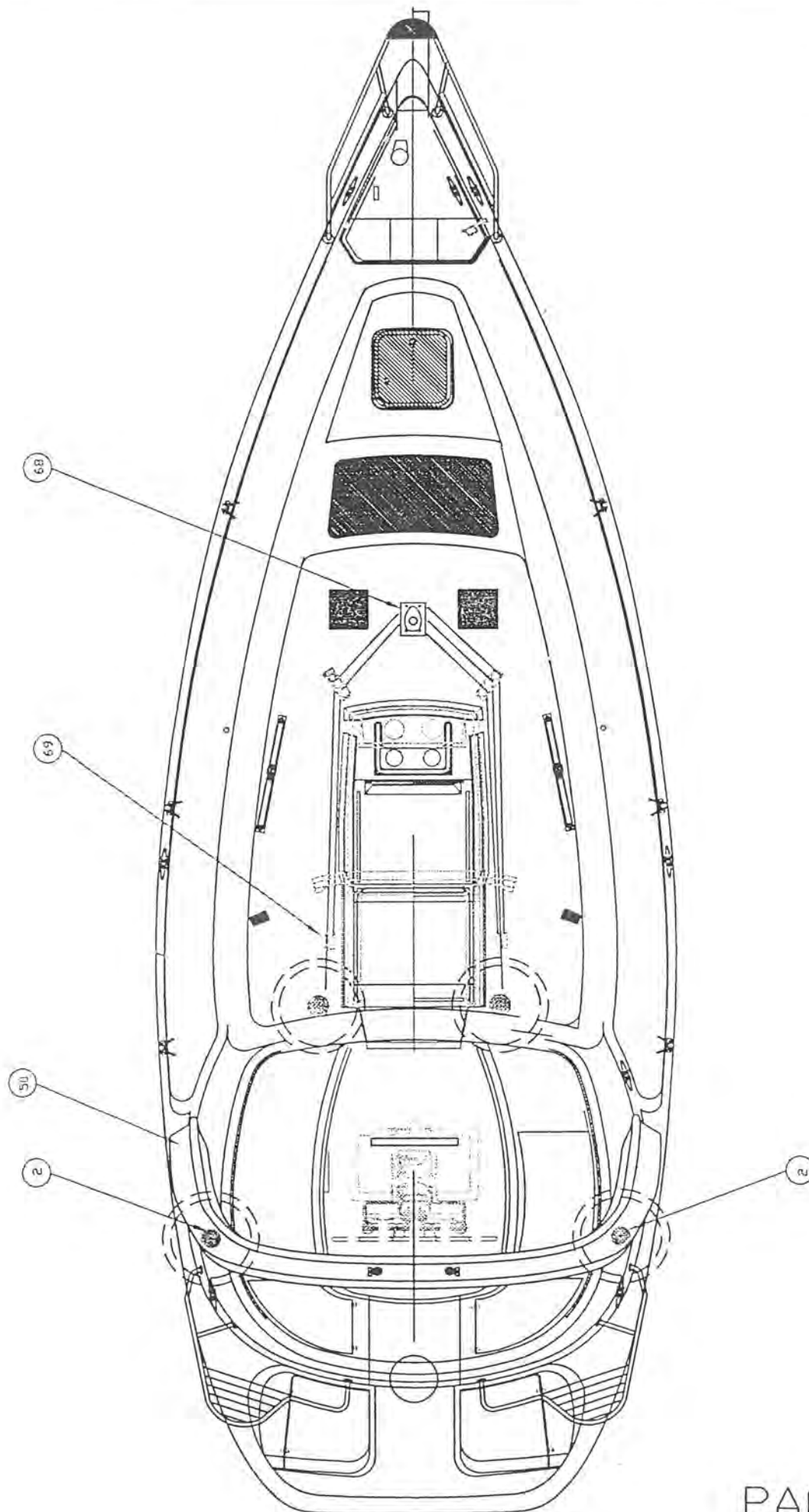
Be sure to tighten port and starboard sides evenly.

TUNING THE h310 B&R RIG

when sailing upwind. If any of these are not true then revisit the appropriate step above to correct it. If the sag in the headstay is too much then adding tension to the verticals will fix it.

9. Once the rig is tuned you should make sure to add the cotter pins to all the rigging bending back the ends and taping them to prevent snagged lines sails and fingers.

Remember that rigging, like everything else, can age. As it gets older it may need to be replaced. The frequency for which this becomes necessary depends on the climate and conditions in which the boat is sailed. For example: if you sail in the Caribbean it should be replaced every 2-3 years compared to every 10 for the great lakes. You should consult a professional rigger for advice.



HUNTER

H-310 OPT. SPINN.

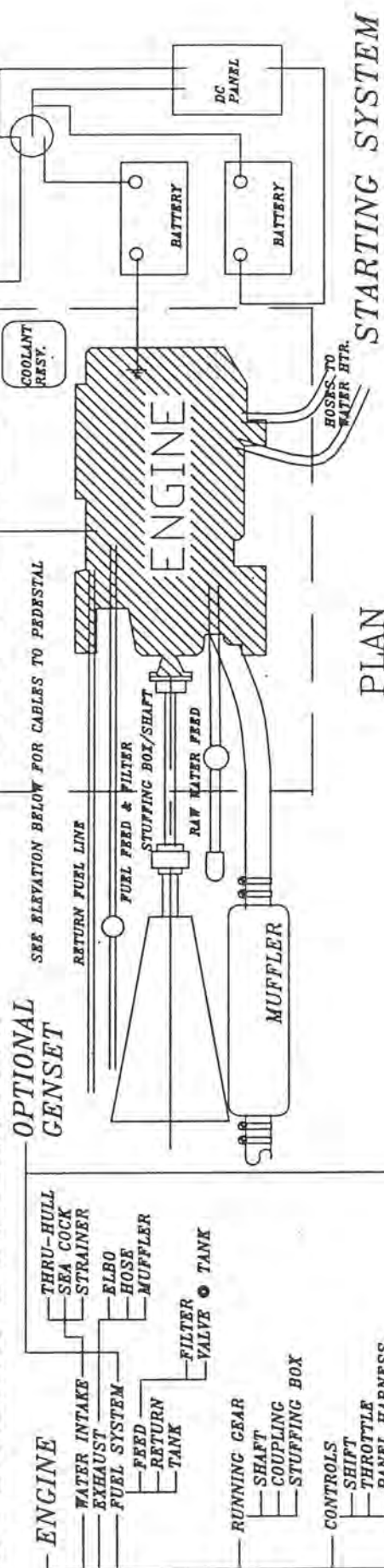
DRAWING #3108054A

OPTIONAL SPINNAKER LAYOUT

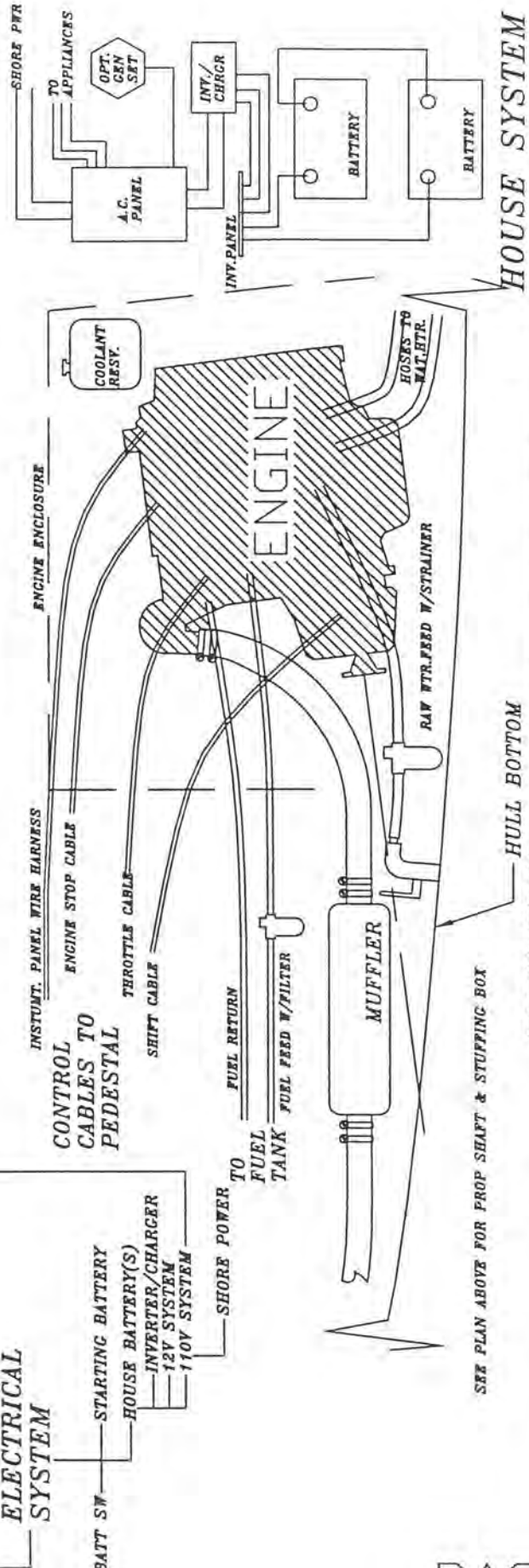
SPINN. GEAR

2	WINCH	HW2519	LEWMAR	30ST	2
50	SPIN BLOCK OPTIONAL	HW0276	SCHAEFER	505-15	2
68	MAST STEP BLOCK	RIO448	ZSPARS	275	1
69	LINE STOPPER	HW1274	XA-1		
	SPIN. SHEET	RI0245			2
	SPIN. HALYARD	RI0245			1

SYSTEMS SCHEMATIC

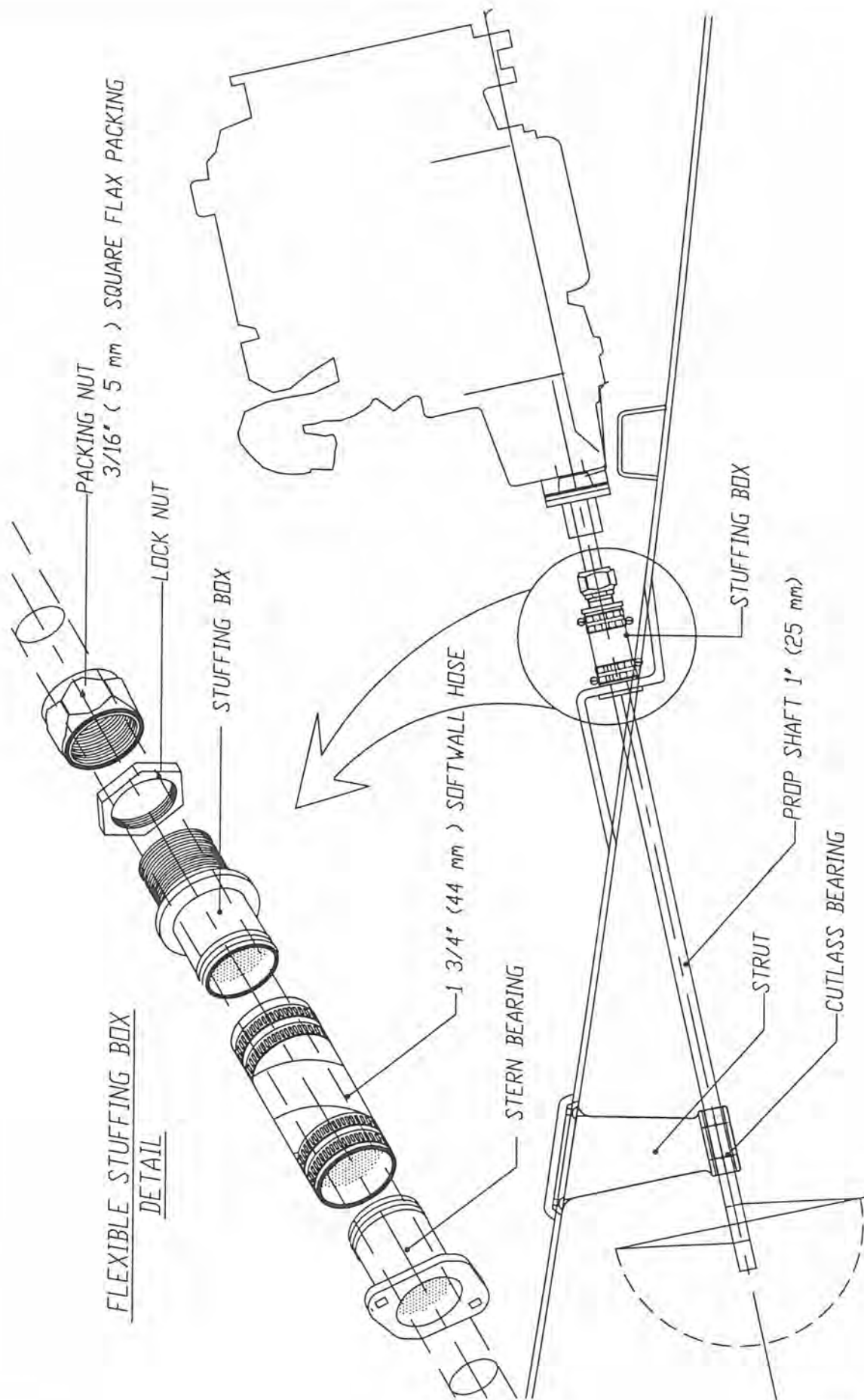


PLAN



ELEVATION

NOTE: THIS DWG. IS SCHEMATIC FORM
SEE SPECIFIC SYSTEM DWGS. FOR
BATTERIES/SWITCHES/ CHARGER ETC. LOCATIONS
AND WIRE RUNS.



FLEXIBLE STUFFING BOX
DETAIL

PROP SHAFT & STUFFING BOX DETAIL

NOTE:

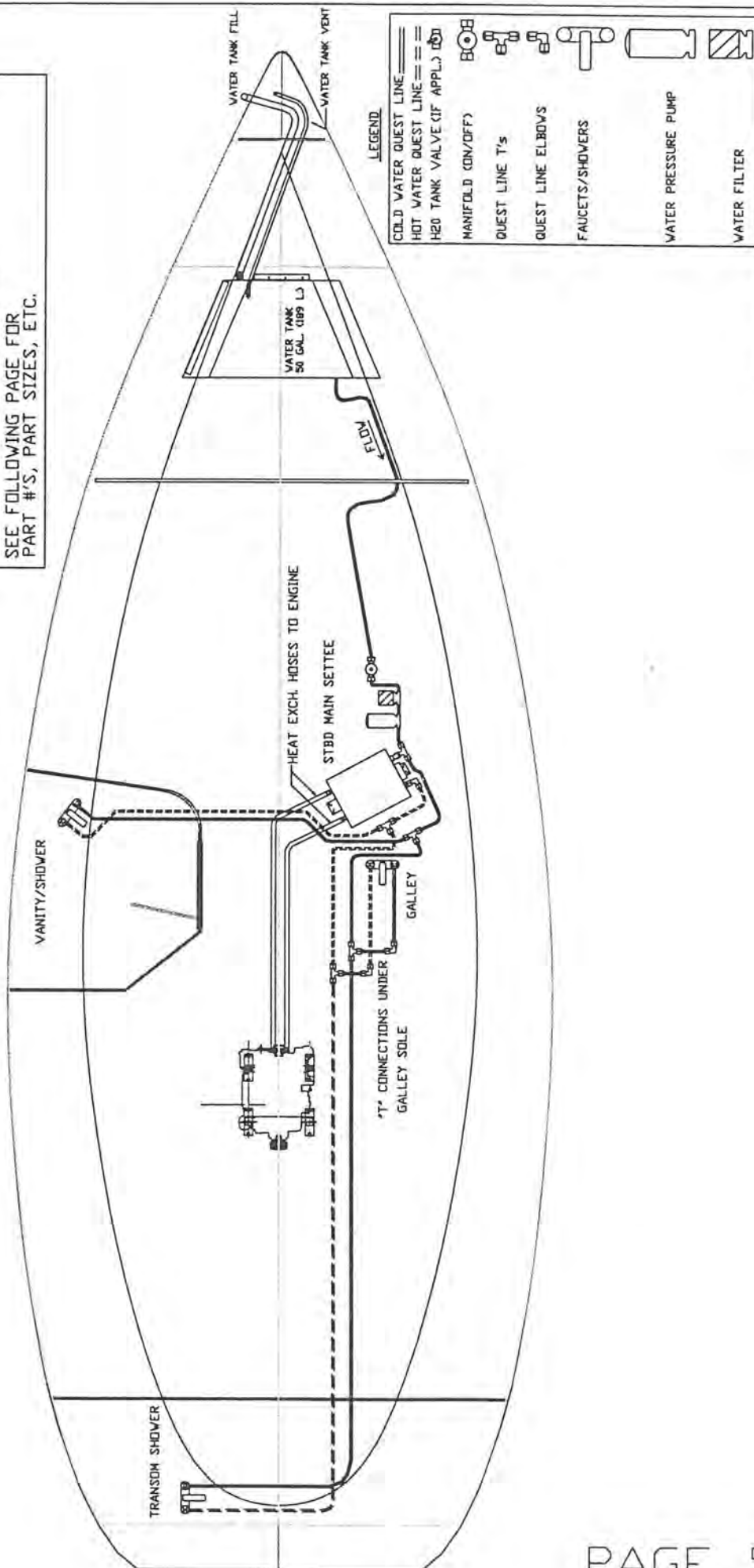
SEE PAGE 60A FOR SPECIFIC-
SEACOCK / THRUHULL / DECK FITTING LOCATIONS

SEE PAGE 60B FOR SPECIFIC-
SEACOCK / THRUHULL / DECK FITTING ASSEMBLY

SEE PAGE 64D FOR SPECIFIC-
WATER PUMP WIRING LAYOUTS

SEE PAGE 63A FOR SPECIFIC-
WATER HEATER WIRING LAYOUTS

SEE FOLLOWING PAGE FOR
PART #'S, PART SIZES, ETC.



HUNTER

POTABLE WATER SYSTEM (310 MODEL)

H-310 H2O SPECIFIC

DRAWING # 3108057A

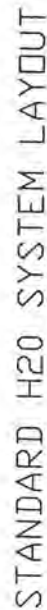
WATER HEATER 6 GAL. (23 L.)	PL0280
WATER PUMP	PL0301
WATER FILTER	PL0350
TANK VALVE	PL1815
COCKPIT SHOWER	PL0189
QUEST LINE 1/2" (12.7 MM)	PL1825
QUEST LINE NUTS	PL1820
QUEST LINE T'S	PL1830
QUEST LINE ELBOW	PL1853
WATER DECK FILL 1/2" (38.1 MM)	PL1130
1-1/2" (38.1 MM) SHIELD/VAC HOSE	PL1440
1-1/2" (38.1 MM) HOSE CUFF	PL1500
TANK VENT FITTING	PL0520
3/4" (19.1 MM) SHIELD/VAC. HOSE	PL1450
3/4" (19.1 MM) HOSE CUFF	PL1480
WATER TANK	TO BOAT MODEL
FAUCET'S	SPECIFIC TO BOAT MODEL
SENDING UNIT(S)	SPECIFIC TO BOAT MODEL

SEE PAGE 60A FOR SPECIFIC-
SEACOCK / THRUHULL / DECK FITTING LOCATIONS

SEE PAGE 60B FOR SPECIFIC-
SEACOCK / THRUHULL / DECK FITTING ASSEMBLY

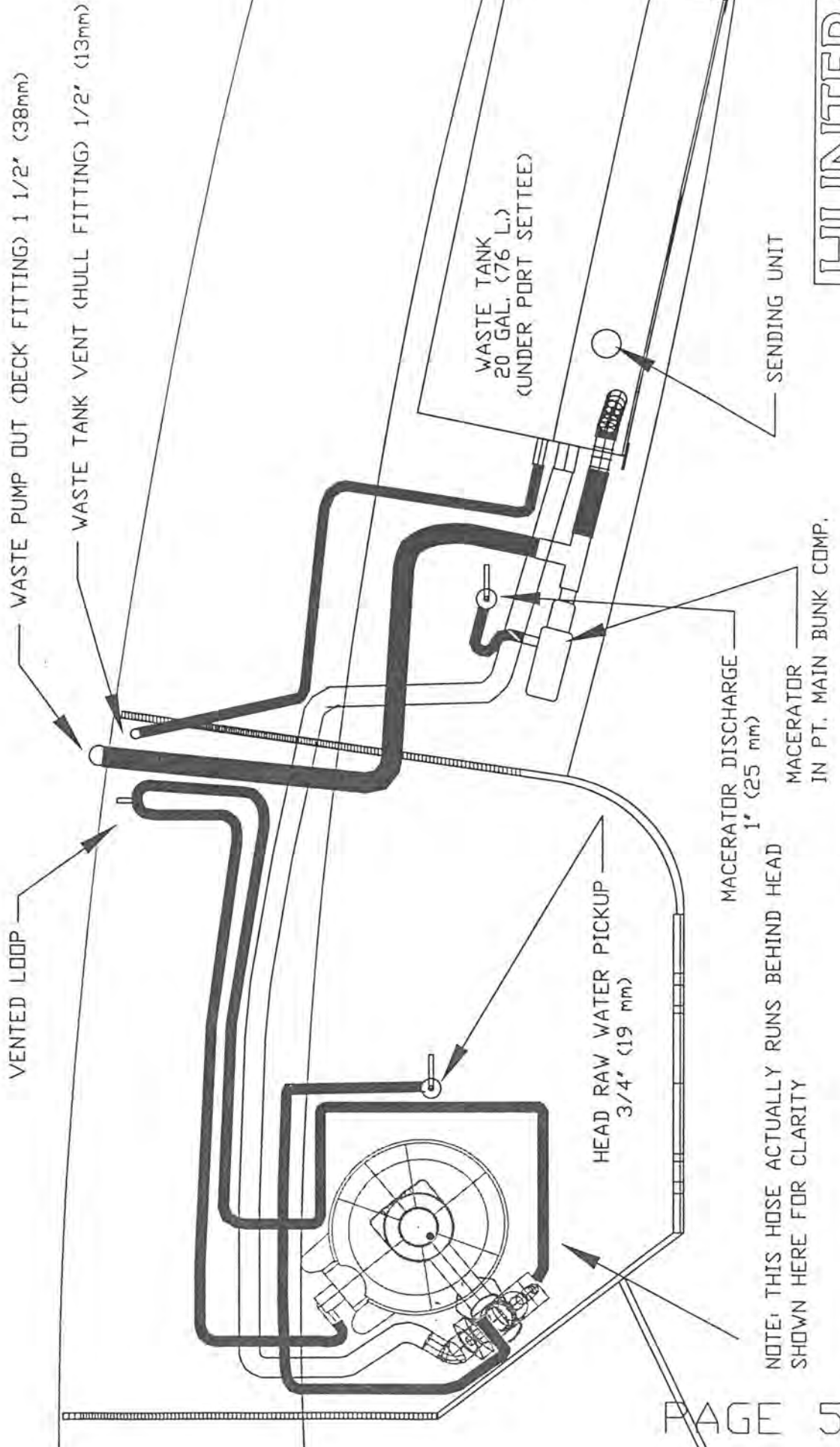
SEE PAGE 64D FOR SPECIFIC-
WATER PUMP WIRING LAYOUTS

SEE PAGE 63A FOR SPECIFIC-
WATER HEATER WIRING LAYOUTS



NOTE:

SEE PAGE 60A FOR SPECIFIC-
SEACOCK / THRUHULL / DECK FITTING LOCATIONS
SEE PAGE 60B FOR SPECIFIC-
SEACOCK / THRUHULL / DECK FITTING ASSEMBLY
SEE PAGE 64D FOR SPECIFIC-
MACERATOR, SENDING UNIT WIRING LAYOUTS
SEE FOLLOWING PAGE FOR
PART #'S, PART SIZES, ETC.



HUNTER

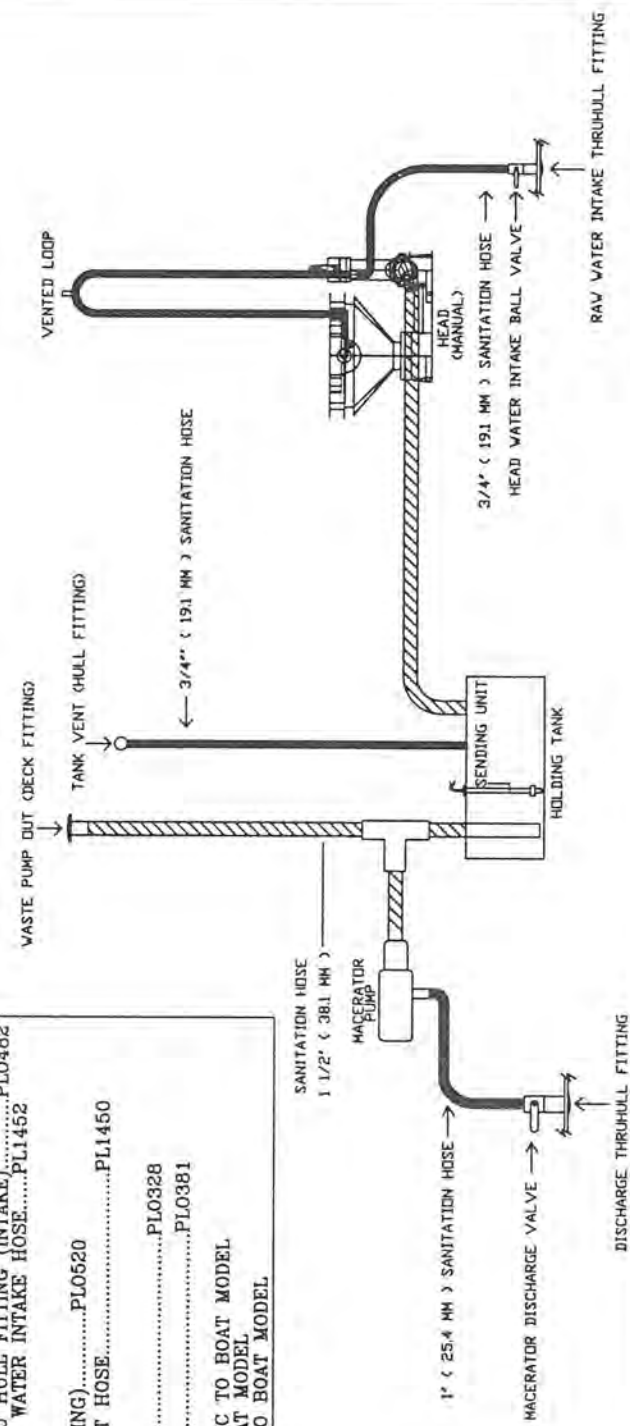
H-310 WASTE SYSTEM
DRAWING # 3108058A

HEAD(S) & WASTE SYSTEM

HUNTER PART #'S

WASTE (PUMP OUT) DECK FITTING.....	PL1140
1" { 25.4 MM } BALL VALVE (DISCHARGE).....	PL801A
1" { 25.4 MM } DISCHARGE THRU HULL FITTING.....	PL0483
1" { 25.4 MM } WASTE (SEA) DISCHARGE HOSE.....	PL1525
1-1/2" { 38.1 MM } DECK WASTE PUMPOUT HOSE.....	PL1525
3/4" { 19.1 MM } BALL VALVE (INTAKE).....	PL863A
3/4" { 19.1 MM } THRU HULL FITTING (INTAKE).....	PL0482
3/4" { 19.1 MM } RAW WATER INTAKE HOSE.....	PL1452
TANK VENT (HULL FITTING).....	PL0520
3/4" { 19.1 MM } VENT HOSE.....	PL1450
MACERATOR PUMP.....	PL0328
VENTED LOOP.....	PL0381
HOLDING TANK...SPECIFIC TO BOAT MODEL.	
HEAD...SPECIFIC TO BOAT MODEL.	
SEND UNIT...SPECIFIC TO BOAT MODEL.	

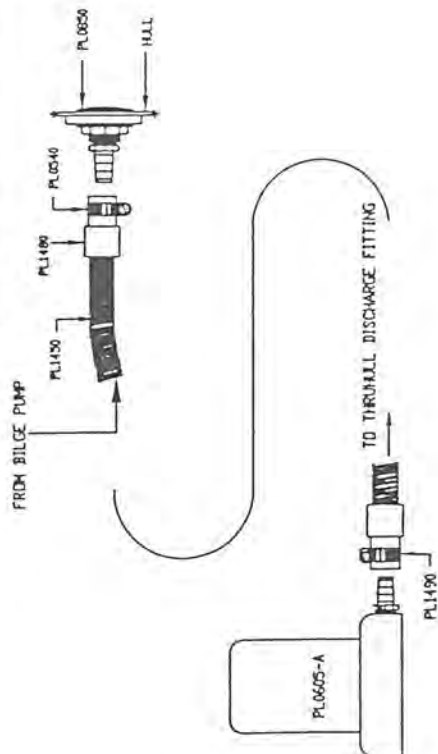
STANDARD WASTE SYSTEM LAYOUT (NON ELECTRIC HEAD MODELS)



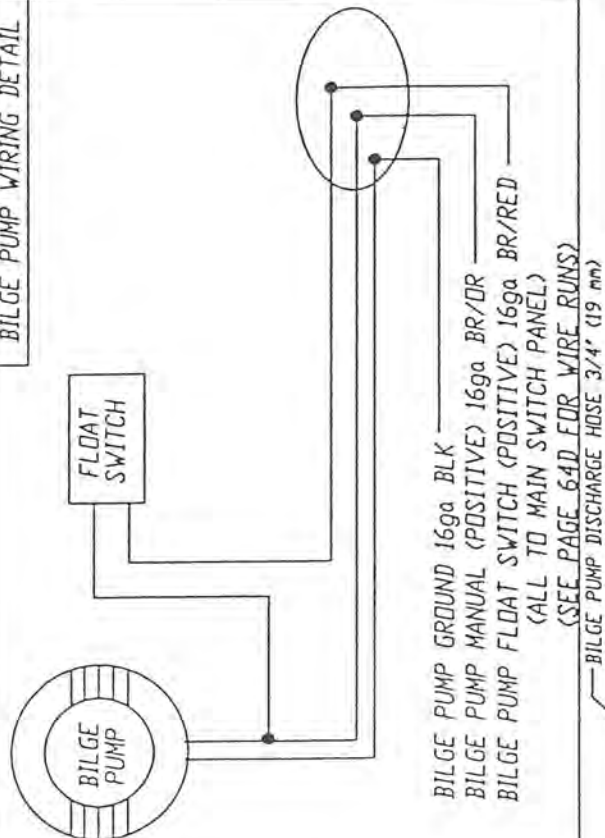
NOTE:
SEE PAGE 60A FOR SPECIFIC -
SEACOCK / THRUHULL / DECK FITTING LOCATIONS
SEE PAGE 60B FOR SPECIFIC -
SEACOCK / THRUHULL / DECK FITTING ASSEMBLY
SEE PAGE 64D FOR SPECIFIC -
SENDING UNITS / MACERATOR -
WIRING LAYOUTS

STD. WASTE SYSTEM LAYOUT

BILGE PUMP PLUMBING DETAIL



BILGE PUMP WIRING DETAIL



MANUAL BILGE PUMP, LOCATED UNDER HELM SEAT

MANUAL BILGE PUMP DISCHARGES-
UNDER QUAD COVER
1" (25 mm)

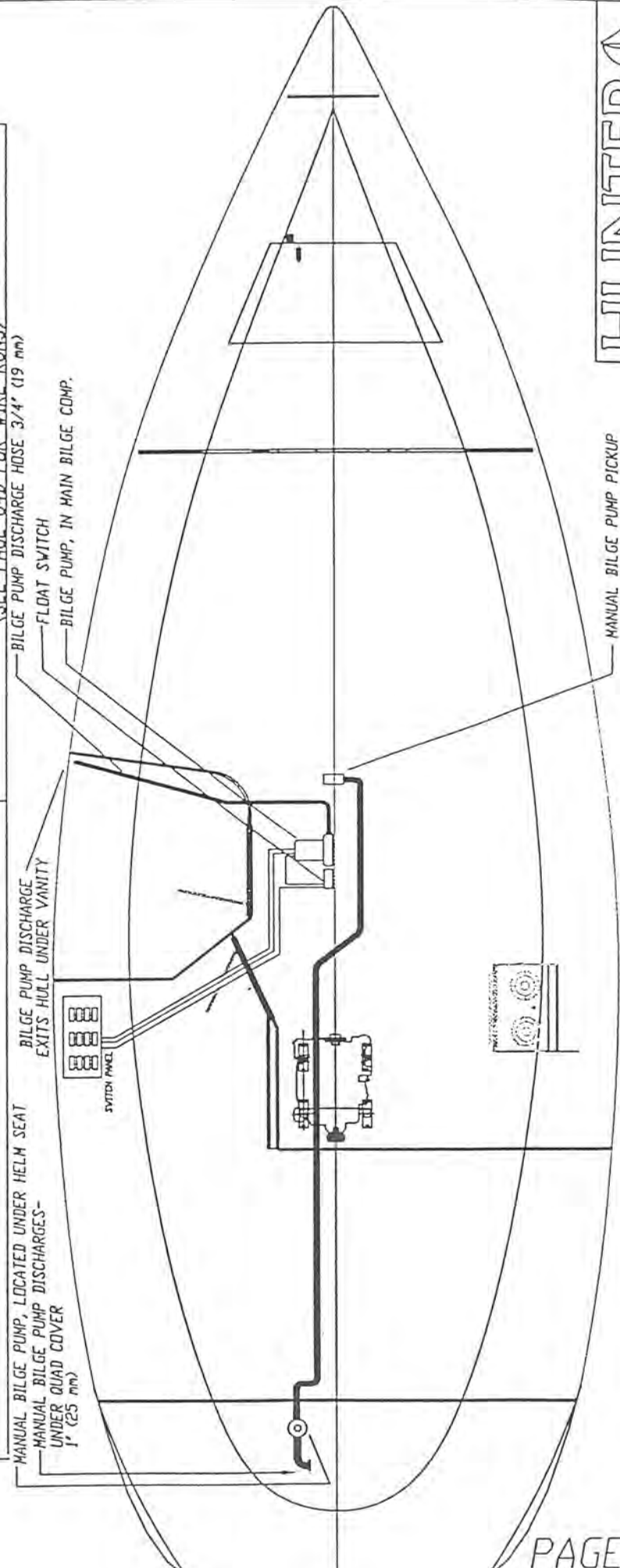
BILGE PUMP DISCHARGE
EXITS HULL UNDER VANITY

SWITCH PANEL

BILGE PUMP DISCHARGE HOSE 3/4" (19 mm)

FLOAT SWITCH

BILGE PUMP, IN MAIN BILGE COMP.

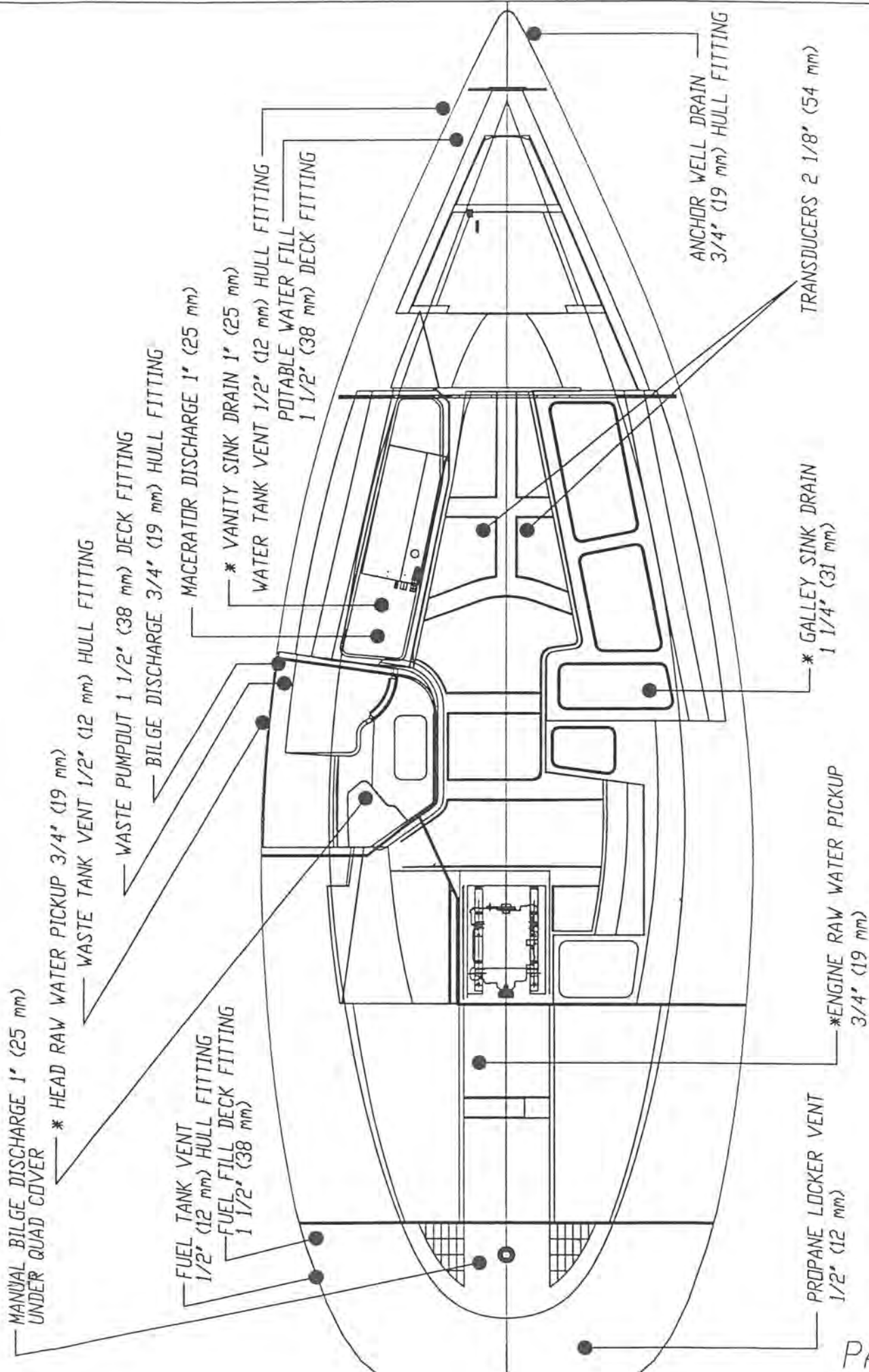


BILGE PUMP SYSTEM

HUNTER

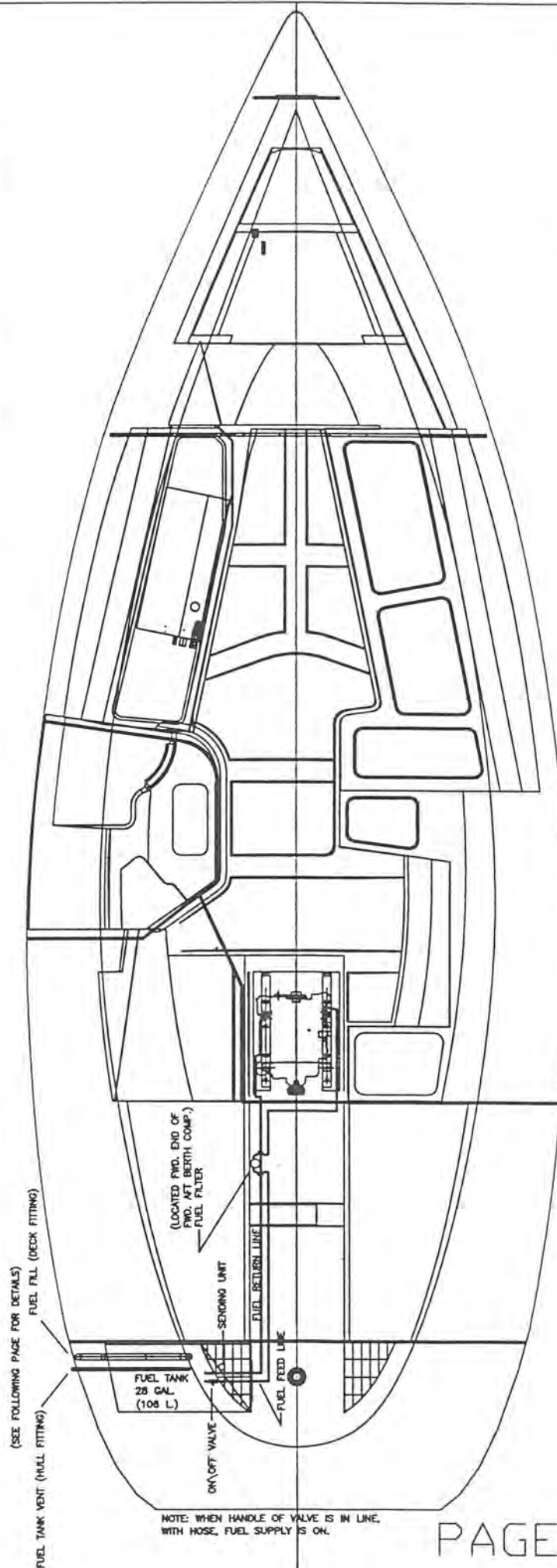
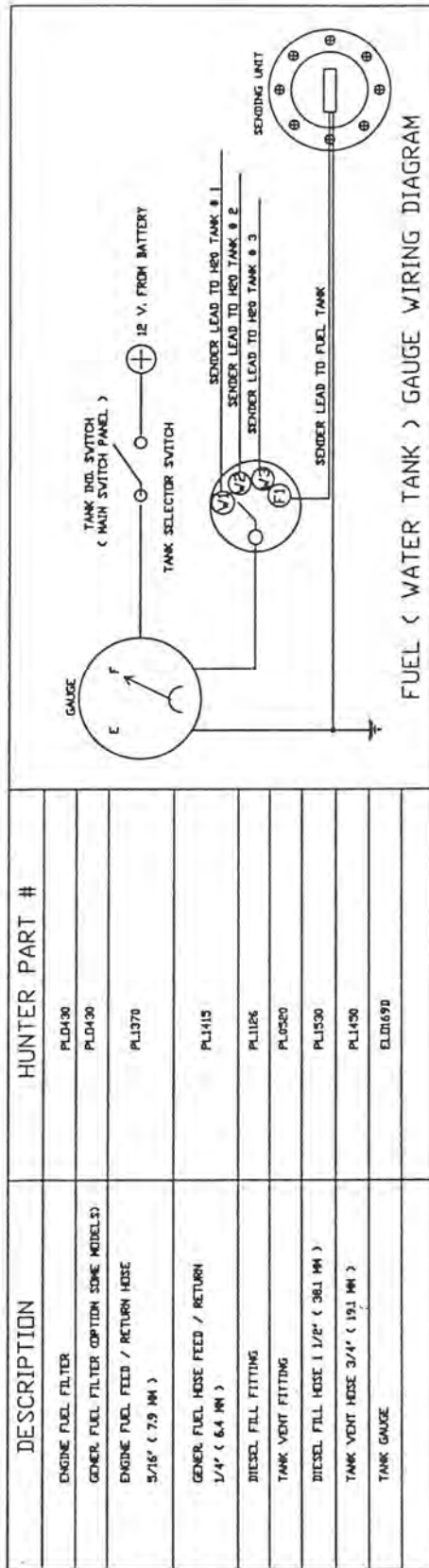
H-310 BILGE PUMP SYSTEM

DRAWING # 3108059



THRU HULL/DECK/SEACOCK LOCATIONS
(* = SEACOCKS)

TYP. VENT DETAIL	TYP. DECK PLATE DETAIL	TYP. THRU-HULL V/ SEACOCK DETAIL
TYP. VENT SIZES	TYP. DECK PLATE SIZES (REFLECTS HOSE SIZE)	TYP. THRU-HULL/SEACOCK SIZES (REFLECTS HOSE SIZE)
WATER TANK VENT 1/2" (12.7 MM)	WATER FILL 1/2" (38.1 MM) PL1130	ENGINE WATER PICKUP MODELS 376 ON UP = 1" (25.4 MM) MODELS 336 ON DOWN = 3/4" (19.1 MM)
WASTE TANK VENT 1/2" (12.7 MM)	DIESEL FILL 1/2" (38.1 MM) PL1126	HEAD WATER PICKUP 3/4" (19.1 MM)
DIESEL TANK VENT 1/2" (12.7 MM)	WASTE POUT 1/2" (38.1 MM) PL1140	GEN. WATER PICKUP (IF APPL.) 3/4" (19.1 MM)
L.P. TANK VENT 1/2" (12.7 MM)		REF. WATER PICKUP (IF APPL.) 3/4" (19.1 MM)
VENT HOSE SIZES AS FOLLOWS: H₂O/WASTE/L.P. HOSE = 3/4" (19.1 MM) FUEL HOSE 5/8" (15.9 MM)	MACERATOR DISCHARGE MODELS 29.5 ON DOWN = 3/4" (19.1 MM) MODELS 336 ON UP = 1" (25.4 MM)	A. C. WATER PICKUP (IF APPL.) 3/4" (19.1 MM)
	WASTE OBOARD DISCHARGE MODELS 1/2" (38.1 MM) ONLY	SH. SUMP DISCHARGE (IF APPL.) 3/4" (19.1 MM) ALL MODELS EXCEPT P-42 P-42 = 1" (25.4 MM)



HUNTER PART #'s

FUEL FILL (DECK FITTING).....	PL1126
1-1/2" FUEL FILL HOSE.....	PL1530
1-1/2" HOSE CLAMP.....	PL0550
FUEL TANK VENT (HULL FITTING).....	PL0520
5/8" VENT HOSE.....	PL1374
5/8"HOSE CLAMP.....	PL0540
1/4" FUEL FEED & RETURN HOSE.....	PL1415
1/4"HOSE CLAMP.....	PL0536

FUEL SHUT OFF VALVE.....SUPP. BY TANK MANUF.
FUEL TANK.....SPECIFIC TO BOAT MODEL
ENGINE.....SPECIFIC TO BOAT MODEL

FUEL FILL (DECK FITTING)

FUEL TANK VENT (HULL FITTING)

FUEL SHUT OFF VALVE

FUEL TANK

ENGINE

→ FUEL FEED LINE →

← FUEL RETURN LINE ←

NOTE: LOCATION OF FUEL FEED & RETURN LINES AT ENGINE VARY PER ENGINE MODEL

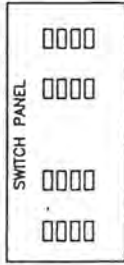
STD. FUEL SYSTEM LAYOUT

HUNTER

H-310 STD.FUEL SYSTEM
DRAWING # 3108061B

L.P.G. TANKS LOCATED
PT. AFT SEAT COMP.

SEE FOLLOWING PAGE
FOR MORE DETAILS.



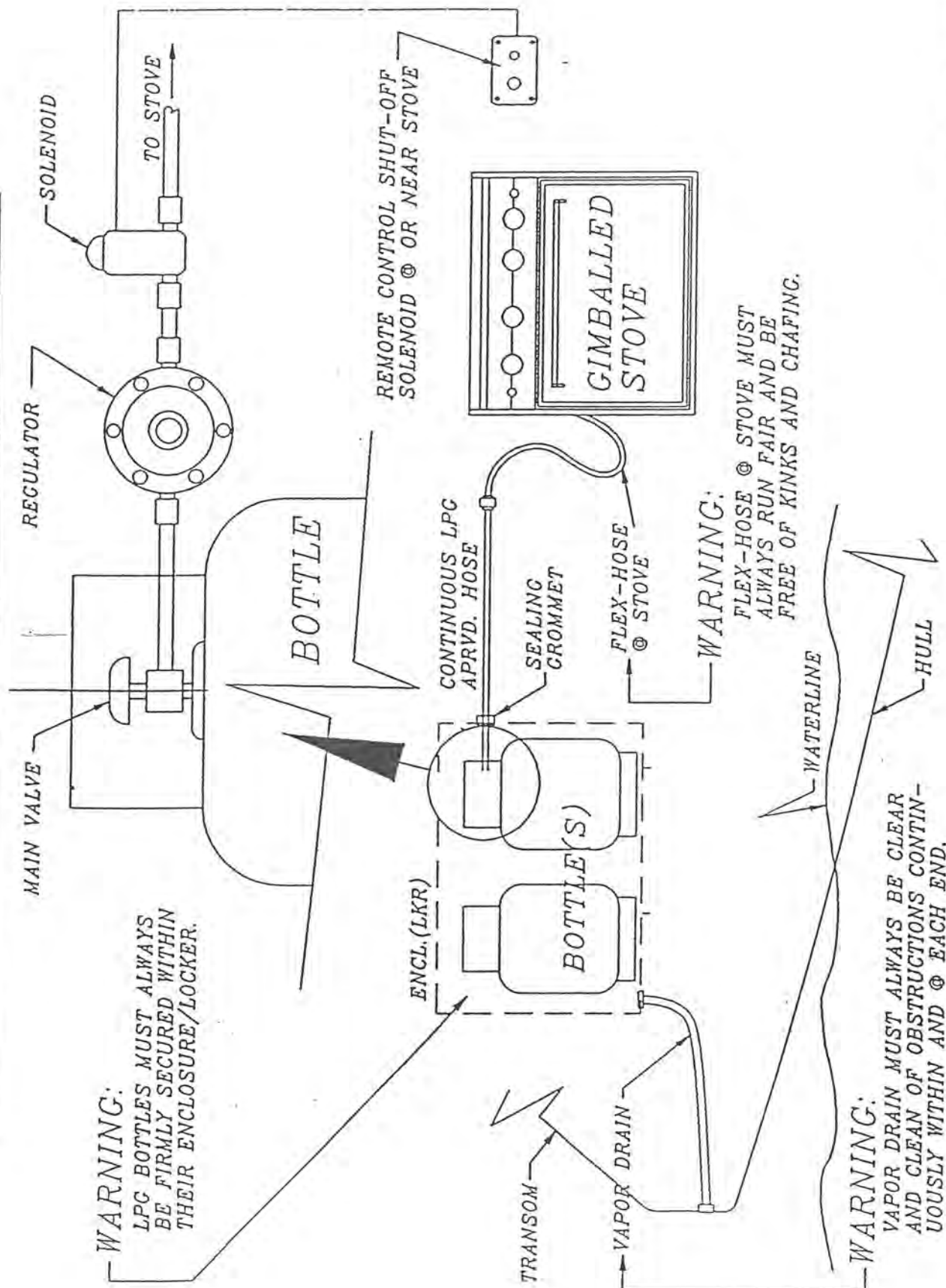
L.P.G. ON/OFF SWITCH

L.P.G. VENT 1/2" (12 mm)

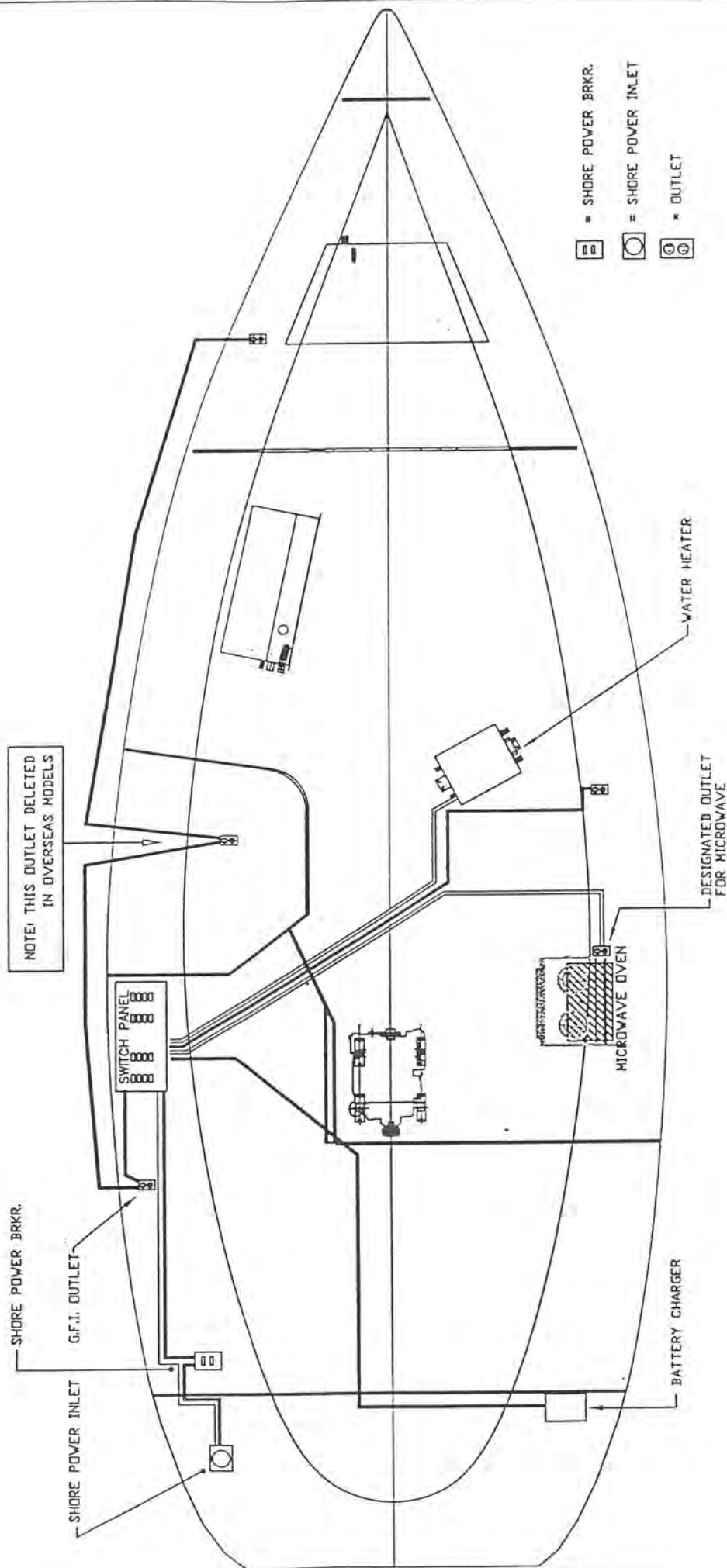
L.P.G. SUPPLY HOSE
L.P.G. SOLENOID POWER LINE

L.P.G. SYSTEM (310 MODEL)

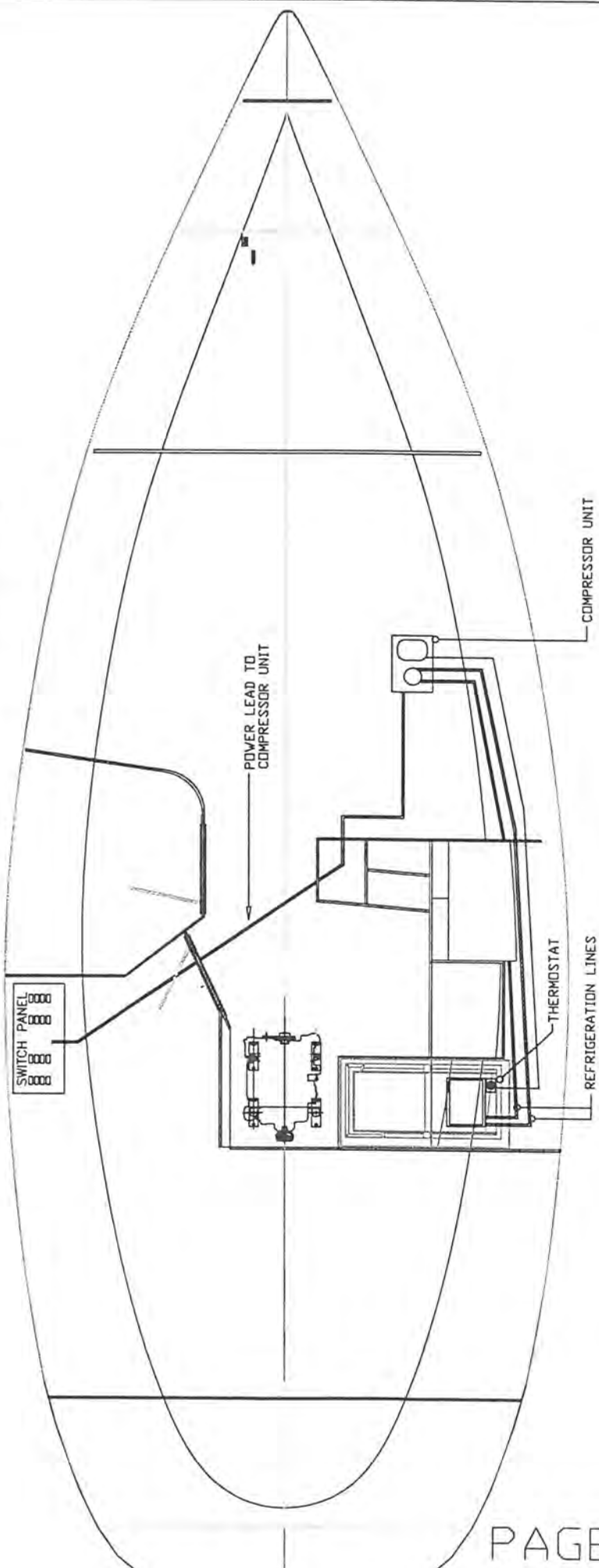
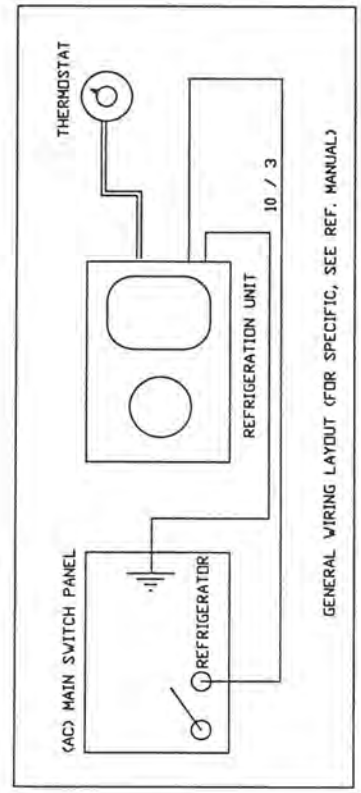
NOTE: P-45 MODEL, TANKS ARE LOCATED IN PORT COCKPIT SEAT LOCKER.



STD. L.P.G. SYSTEM LAYOUT



REFRIGERATION SYSTEM (OPTIONAL)

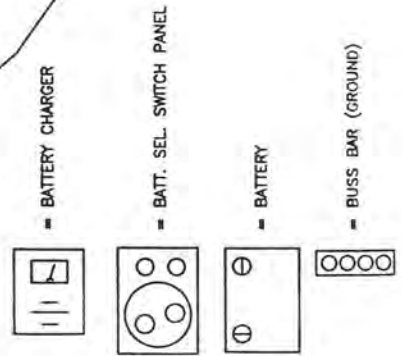
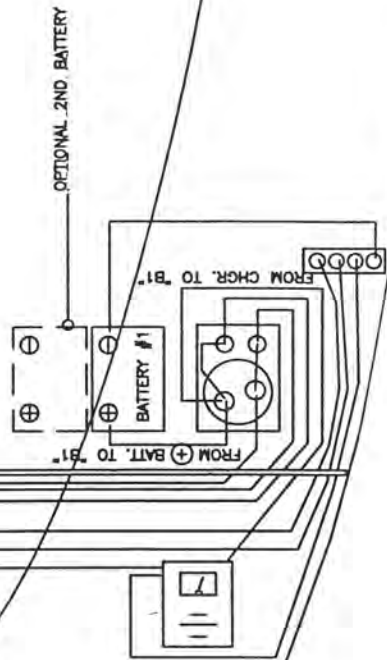


NOTE:
SEE PAGE 65A FOR SPECIFIC
CHGR./BATT. SEL. WIRING LAYOUT
SEE PAGE 65B FOR SPECIFIC
WIRE SIZE & COLOR

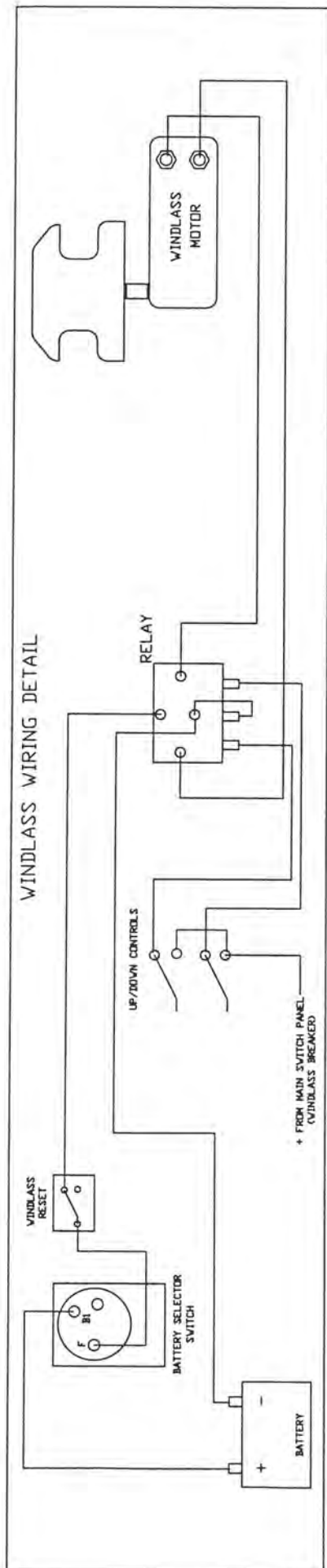
SWITCH PANEL 0000
0000
0000
0000

FROM BILGE FUSE TO SWITCH PANEL
FROM BATT. FUSE TO SWITCH PANEL
POWER FROM PANEL TO BATT. CHGR.
FROM BUSS BAR TO SWITCH PANEL
FROM BUSS BAR TO ENGINE
FROM "F" TO ENG. STARTER

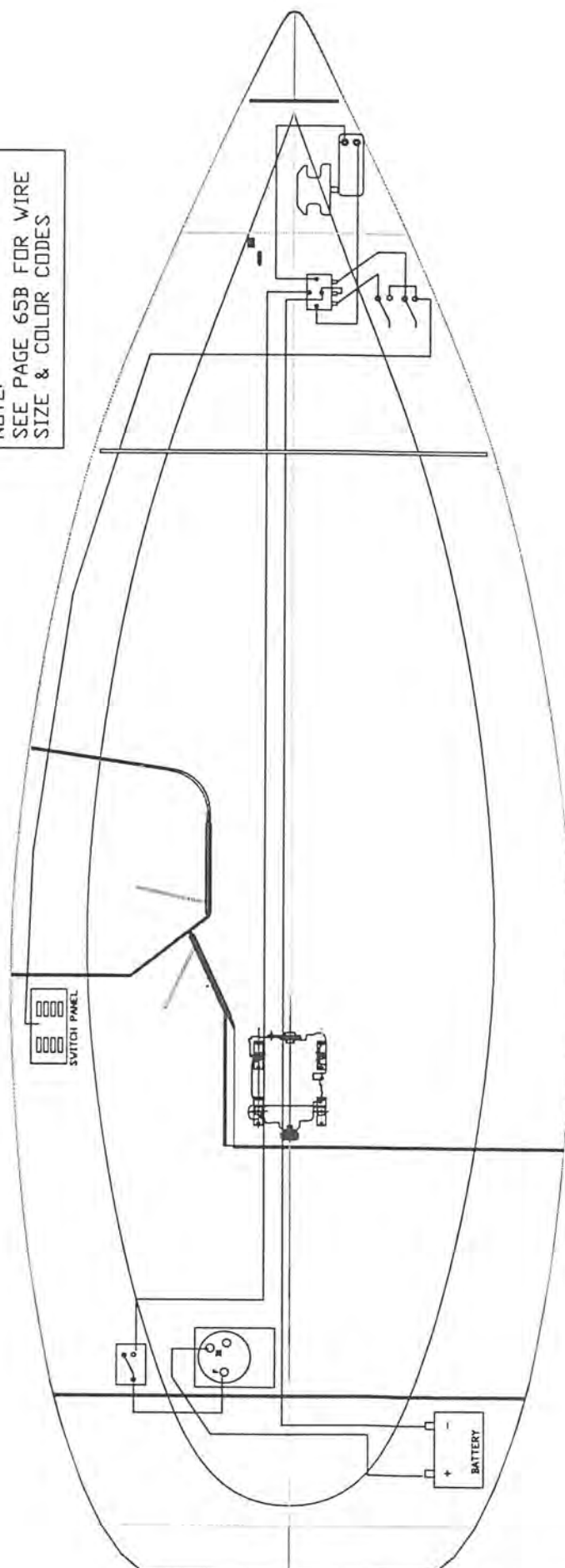
(14/3 BOAT CABLE)

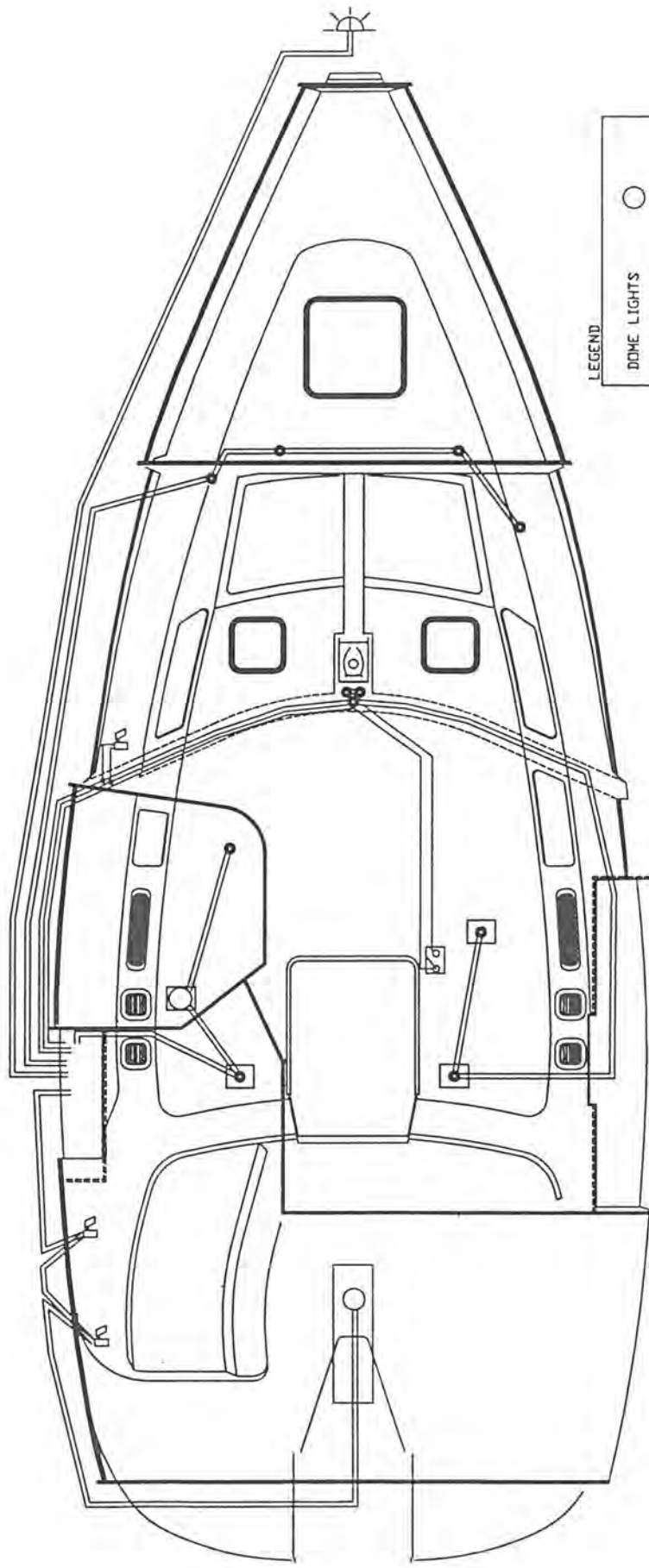


CHARGING SYSTEM



NOTE:
SEE PAGE 65B FOR WIRE
SIZE & COLOR CODES

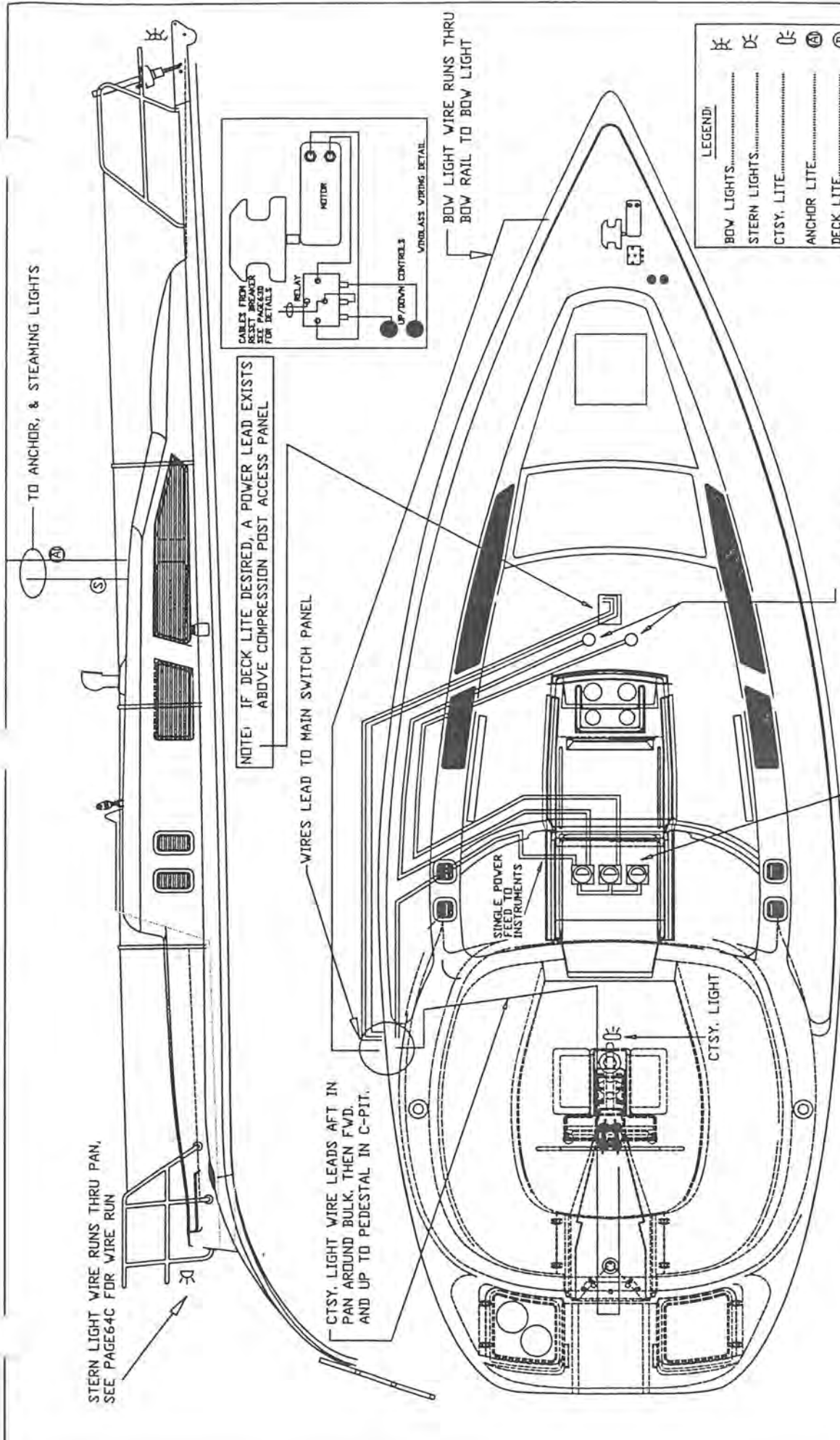




LEGEND

○	DOME LIGHTS
⊙	HALOGEN LIGHTS
⌞	BOW LIGHT
⌞	READING LIGHTS
—	WIRE RUNS
⊞	ON/OFF SWITCH

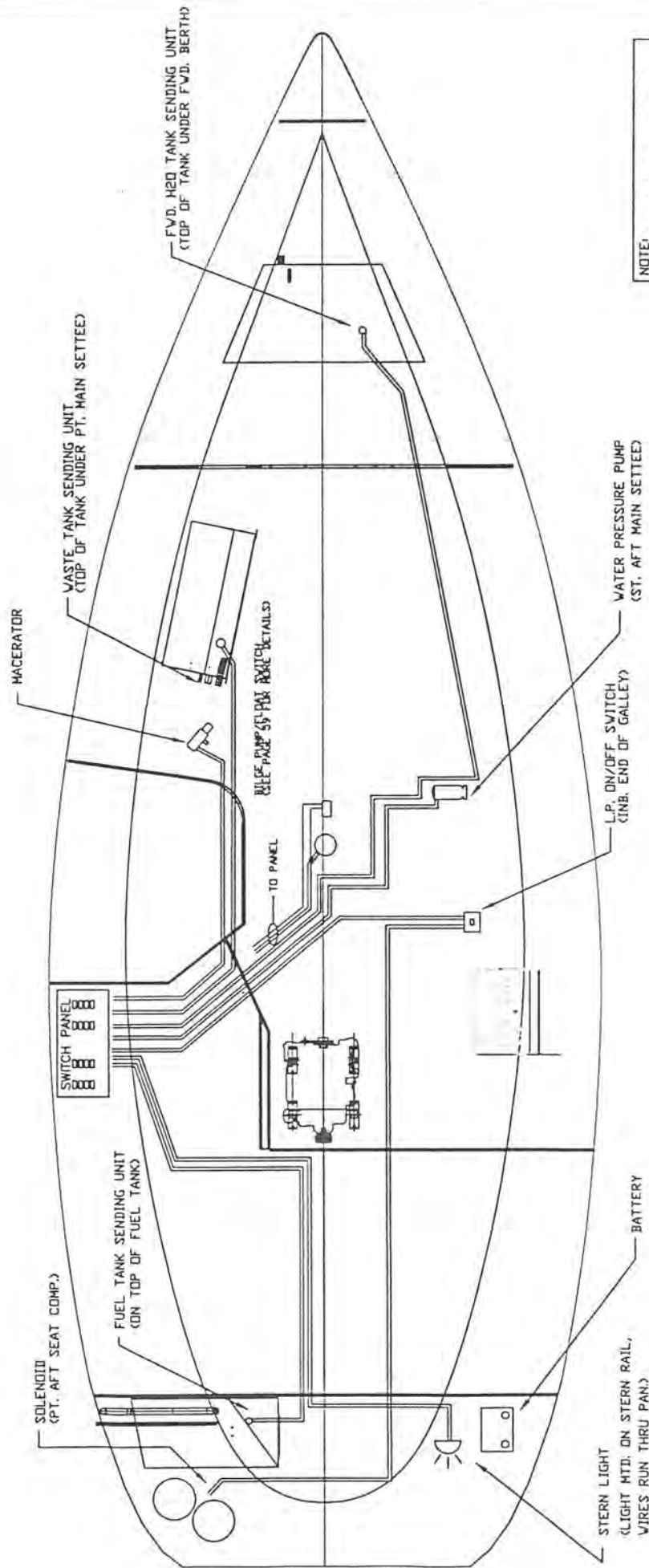
NOTE: SEE PAGE 65B FOR WIRE SIZE & COLOR CODE



LEGEND:

BOW LIGHTS.....	⚡
STERN LIGHTS.....	⚡
CTSY. LITE.....	⚡
ANCHOR LITE.....	⚡
DECK LITE.....	⚡
STEERING LITE.....	⚡
WINDLASS.....	⚡
WINDLASS MAY BE OPT.....	⚡
WINDLASS CONTROLS.....	⚡
WINDLASS RELAY.....	⚡
INSTRUMENTS.....	⚡

NOTE: SEE PAGE 65B FOR WIRE SIZES & COLOR CODE



NOTE:
SEE PAGE 63D FOR WINDLASS
WIRING DETAILS (OPTIONAL)
SEE PAGE 64B FOR INSTRUMENTS
WIRING DETAILS
SEE PAGE 65B FOR
SPECIFIC WIRE SIZES
& COLOR CODE

HUNTER

H-310 12V. ACC. PAN
DRAWING # 3108064C

12V. ACCESSORIES (PAN) WIRING LAYOUT

ELECTRICAL WIRING INFO,			
12V, ONLY			
EL. COMP.	GA. WIRE	COLOR CODE	
INSTMTS.	22GA.	RED/YEL/SHIELD	VENDOR SUPPLIED
ANC. LITE	16 GA.	GRAY / RED & - *	
CAB. LITE	16 GA.	BLUE & BLK	
CTSY LITE	16 GA.	BLU/WH & BLK	
DECK LITE	16 GA.	GRAY & - *	
FANS	16 GA.	WH & BLK	
RUN. LITE	16 GA.	GRAY/WH & BLK	
SPEAKERS	16 GA.	YEL & BLK	PORT SIDE OF BOAT
SPEAKERS	16 GA.	BRN & BLK	STBD SIDE OF BOAT
STEAMING	16 GA.	GRAY/GRN & - *	
STERED	16 GA.	RED & YEL & BLK	
VHF RADIO	16 GA.	RED/WHI & BLK	
WINDLASS	16 GA.	PINK	
L.P. SYS.	14/2	BOAT CABLE	
TANK IND.	14/2	BOAT CABLE	
SHWR.SUMP	12GA.	BRN/YEL & BLK	FORWARD SHOWER
SHWR.SUMP	12GA.	BRN/BLK & BLK	AFT SHOWER
WAT. PUMP	12 GA.	BROWN & BLK	
MACERATOR	10GA.	BRN/WH & BLK	
FREEZER	8 GA.	RED/WH & BLK	
FRIDGE	8 GA.	RED/BLK & BLK	
BILGE PUMP	16GA.	BRN/RED & BRN/OR & BLK	
NOTE: * = (1) 12 GAUGE CABLE (BLACK) FOR - ANC./ DECK/ STEAMING LIGHTS			

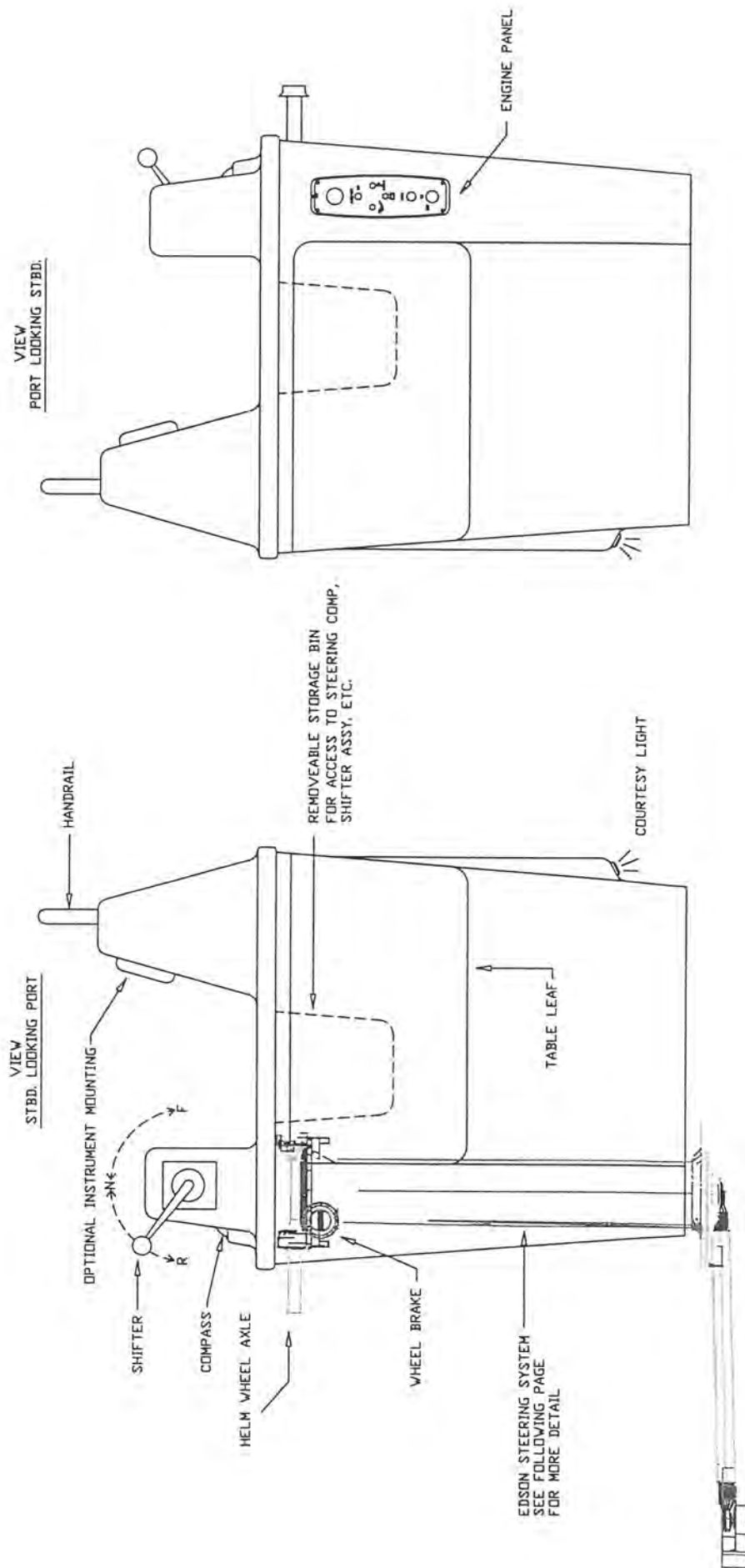
ELECTRICAL CABLE INFO,			
12V, & 110V.			
EL. COMP.	GA. WIRE	COLOR CODE	
BAT. CABLES	2/0	RED & BLK	
ENG.ST. CAB.	2 GA.	RED & BLK	
HAL.WINCH "	2 GA.	RED & BLK	
WDL.S. CABLE	2/0	RED & BLK	STANDARD 376=2 GAUGE
	↑ (12 V) ↑		
SH. POWER			
INVERTER	10/3 (110V)	BOAT CABLE	NOTE: EURO. MODELS = 220 V.
AIR COND.			
AC. RELAY			
BAT. CHGR			
MICRO.	14/3 (110V)	BOAT CABLE	NOTE: EURO. MODELS = 220 V.
OUTLETS			
WATER HTR.			
MAST BR-BLK KELCO-GRY BULB-WHT			

2" (50.8 mm) EXHAUST HOSE
NOTE: ALL HOSE ENDS DOUBLE CLAMPED

MUFFLER
IN CENTER COMP. OF AFT BERTH

HOSE RUNS AFT, EXITS HULL—
IN STBD. AFT SWIM SEAT COMP.

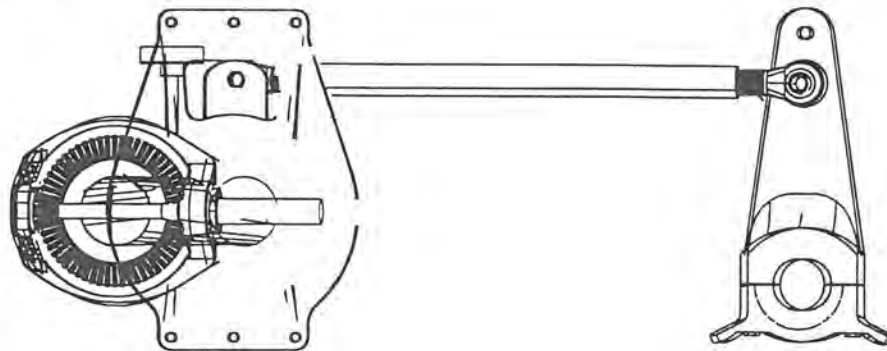
EXHAUST SYSTEM LAYOUT



IMPORTANT:

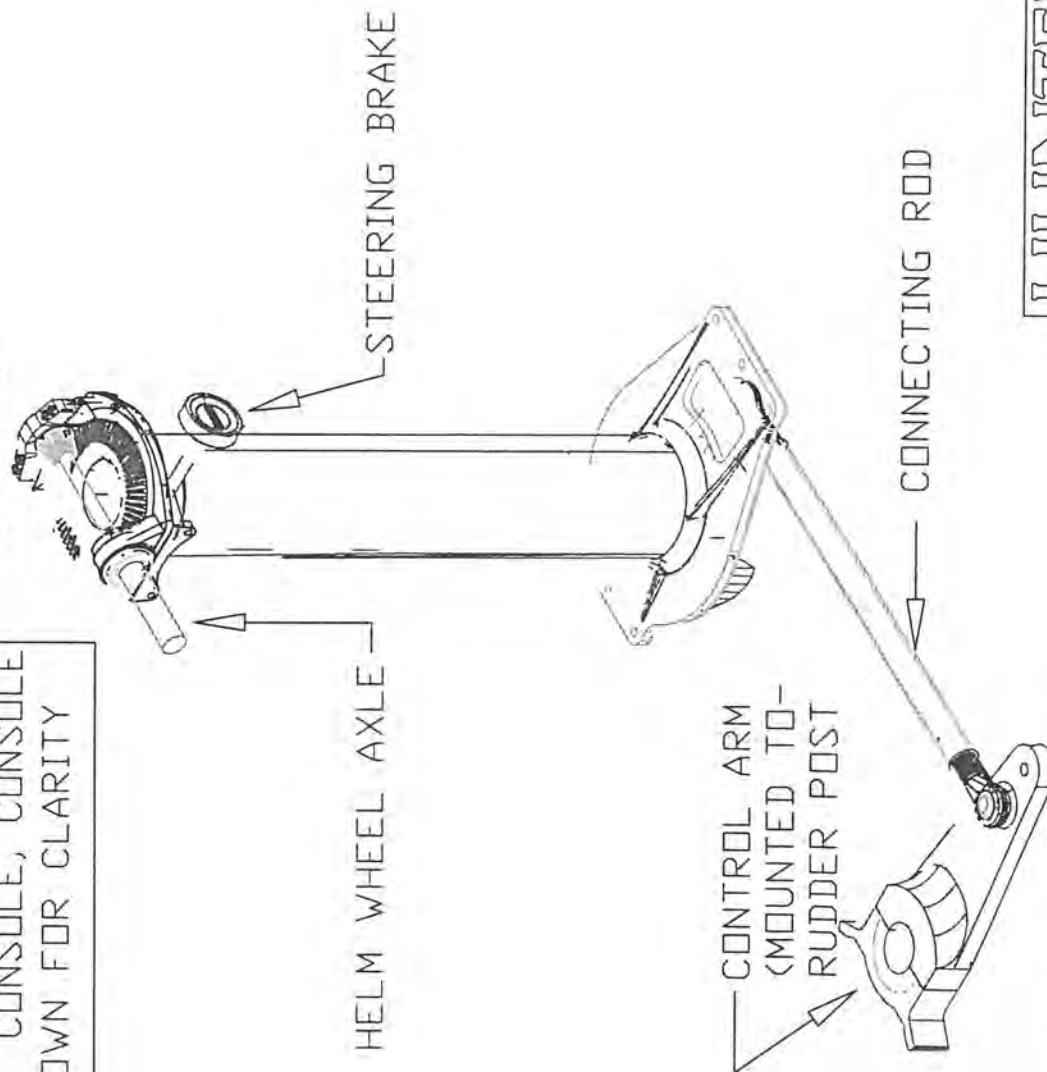
SEE EDSON STEERING MAINTENANCE UNDER "MAINTENANCE" FOR A COMPLETE DESCRIPTION OF STEERING COMPONENTS AND VITAL ROUTINE MAINTENANCE PROCEDURES.

PLAN VIEW



NOTE: THIS UNIT IS INSIDE COCKPIT CONSOLE, CONSOLE NOT SHOWN FOR CLARITY

ISO VIEW



H-310 STEERING LAYOUT

Steering Specifications

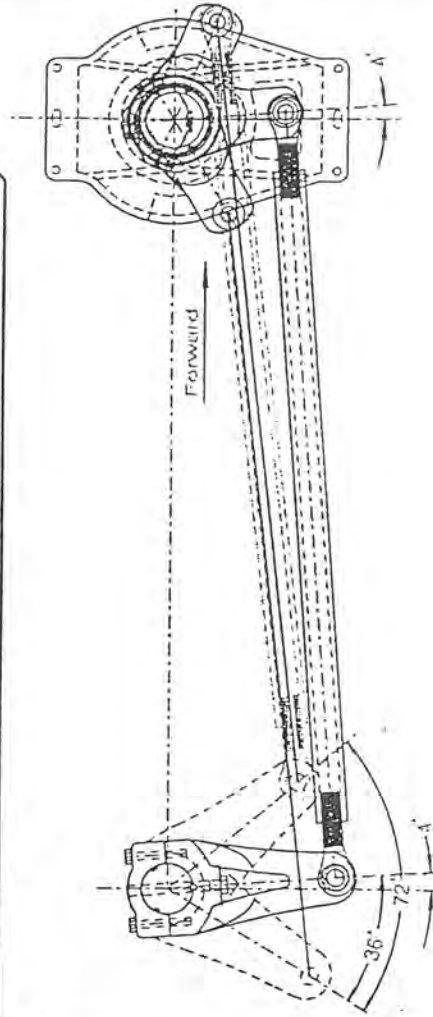
Length Overall	31' - 0"
Length Waterline	28' - 7"
Rudder Area	8.75 sq.ft.
Wheel Diameter	28 Inches
Rudder Travel	72 Degrees
Offset Angle	4 Degrees
Wheel Travel	1.8 Turns - Lock to Lock
Equivalent Tiller Length	8 Feet
Steerer:	

Edson Fig. 470-5

- 5 1/4" Output Lever - #B-643
- 8" Tiller Arm - #B-676
- 37" Tie Rod - #B-680
- 2 Part Brake Assembly

Steering Geometry Arrangement

16 th Size



Edson
INTERNATIONAL

EDSON Corporation
148 Duane Street
New Bedford, MA 01905
Phone 508-531-1111 Fax 508-531-1111

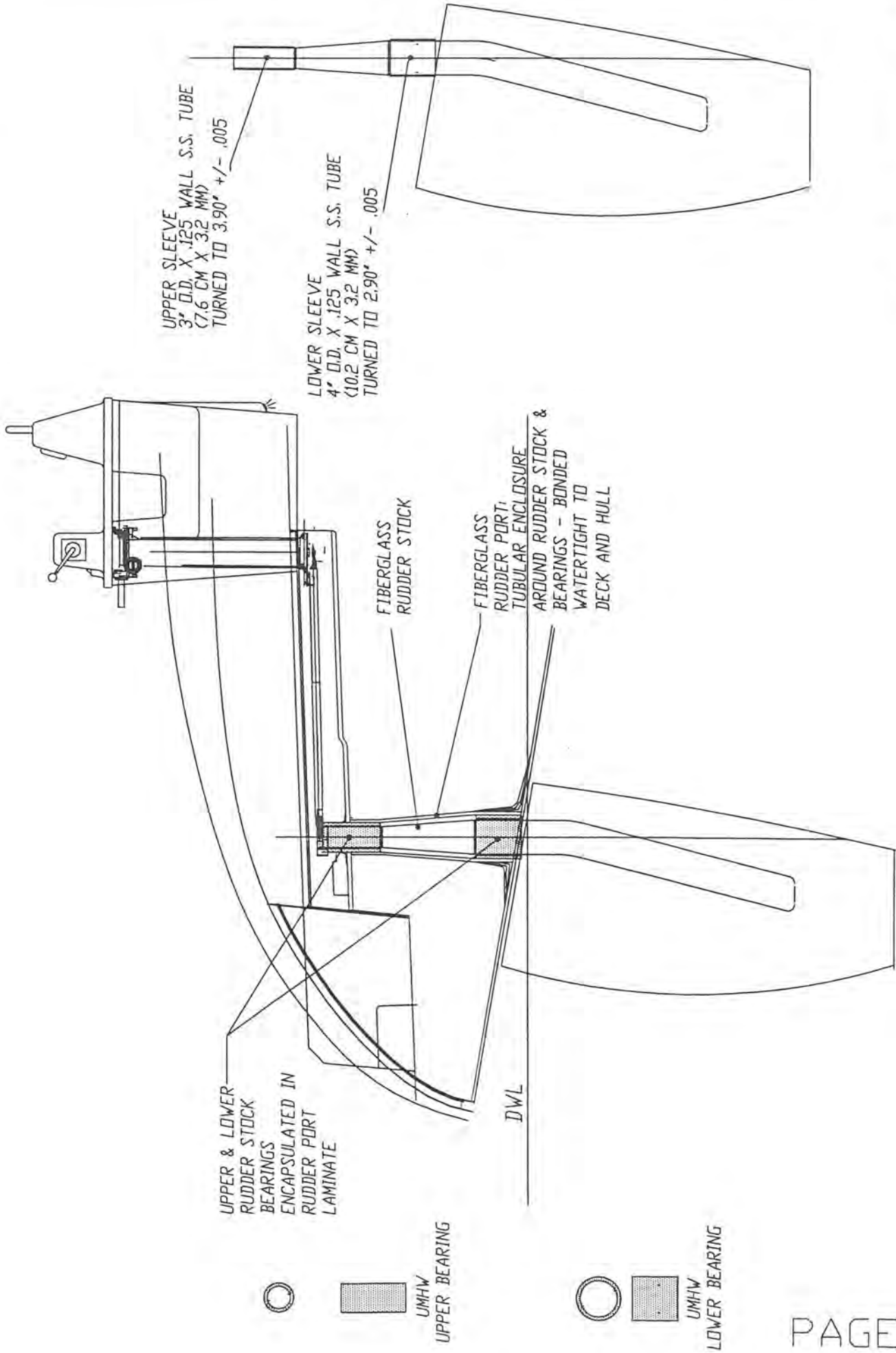
Hunter 310 Steering System

Scale
1" = 1'-0"
Date
April 7, 1997

Drawn By
RWB

Drawing Number

S-96-2498



RUDDER & SHAFT DETAIL

EMERGENCY TILLER SYSTEM

