



## LASER 13 RIGGING INSTRUCTIONS

The Laser 13 rigging instructions are a comprehensive guide to rigging your Laser 13. Due to production supplies certain parts may be slightly modified to those shown. This instruction manual is not a guide to sailing your craft and it should not be considered suitable for the purpose of learning to sail a dinghy.

## LASER SCHOOL (Laser Dinghy Sailing Tuition)

Options, accessories and spare parts for your Laser 13 can be purchased from your Laser Centre. Laser Centre Staff will always be able to offer knowledgeable advice on all aspects of rigging and maintaining your new boat.

For details of your nearest Laser Centre please contact:

#### The Laser Centre

6 Riverside Banbury, Oxon OX16 8TL Tel: 0295 268191

## LASER CENTRE

Laser School is the only specialist sailing centre recommended by LASER. Here you will find the extensive range of Laser products ready for your use. Laser School teaching techniques have been refined and developed to the highest possible standards. Sailors of all abilities visit the Centre to improve their skills. Laser School is a centre of excellence and further details of its various locations and training programmes are available by contacting:

## LASER SCHOOL

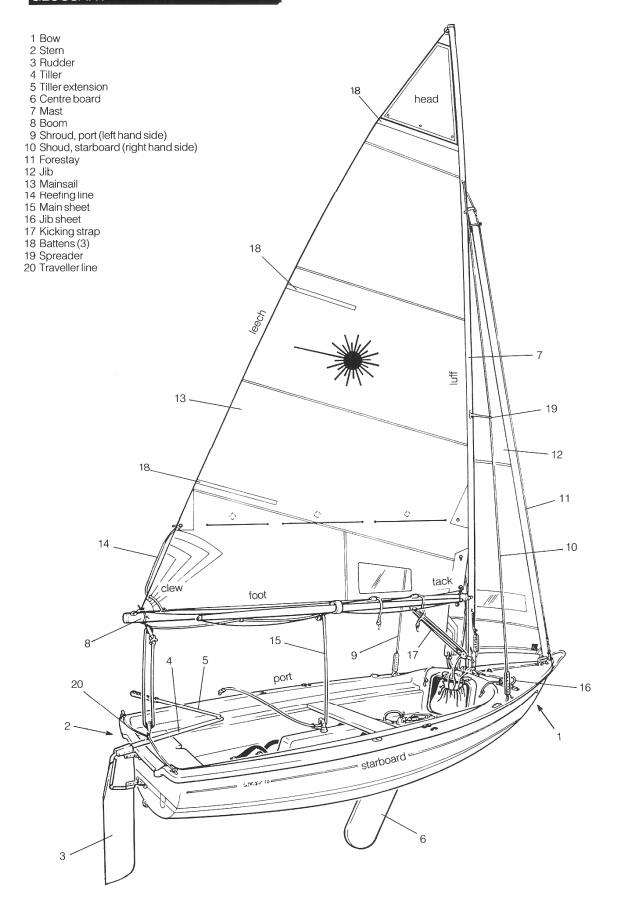
Mylor Yacht Harbour Falmouth, Cornwall TR11 5UF

Telephone number: 0326 76191 Fax number: 0326 76192

### CONTENTS

GLOSSARY	3
RIGGING INSTRUCTIONS	4
SAFETY FEATURES	12
SPINNAKER OPTION	12
ROWING OPTION	14
ENGINE MOUNTING OPTION	14
GENERAL MAINTENANCE AND SERVICE	15
OPTION ATTACHMENT DIMENSIONS	16
PARTS - RIGGING	17
PARTS - RUDDER	18
PARTS – CENTRE BOARD	18
PARTS - LOWER MAST	18
PARTS - HULL	19
PARTS - MAST ASSEMBLY	20

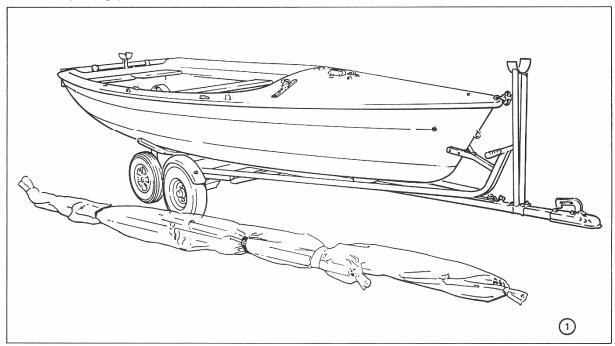
## **GLOSSARY**

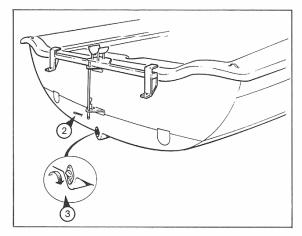


## RIGGING INSTRUCTIONS - LASER 13

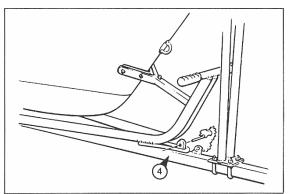
## REMOVING BOAT FROM TRAILER

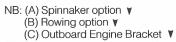
- \* Remove all securing straps.\* Remove the spars (Fig 1). ▼



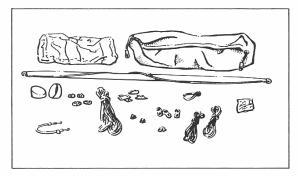


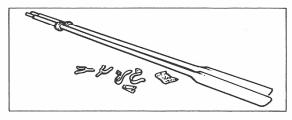
- \* Detach rear mast support by removing R clip (Fig 2). ▲
  \* Secure bung in transom drain hole as shown (Fig 3). ▲
  \* Release trolley from road trailer base by releasing pin (Fig 4). ▼
  \* Slide launching trolley carefully off road trailer base.

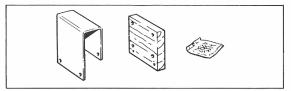


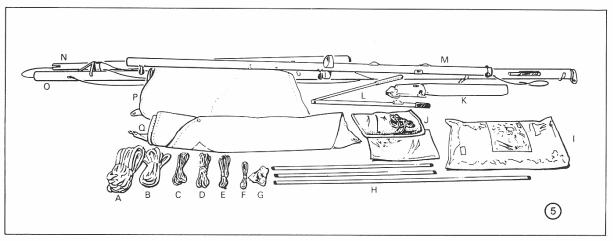


(These accessories are dealt with separately)









\* Layout all parts of the boat and identify with contents list (Fig 5). ▲

A Mainsheet

B Jibsheet

C Clew outhaul line

D Reefing line

E Traveller line

F Clew tie downG Mainsheet/traveller block

**RIGGING YOUR LASER 13** 

H Battens (3)

l Cover (accessory)

J Rope bag

Rudder

\_ Tiller

M Boom N Top mast

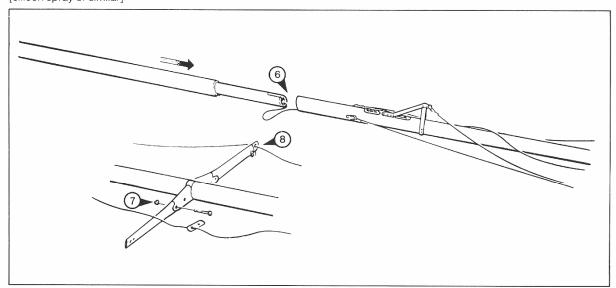
O Bottom mast

P Mainsail

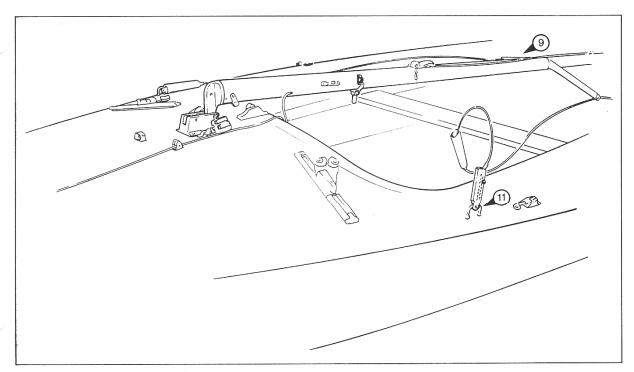
Q Jib sail

#### 1 Cover (accessory)

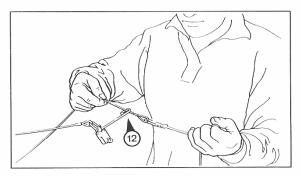
\* Take top mast section part N, slide into bottom mast part O making sure the luff grove is in line and the sleeve is fully pushed home (Fig 6). ▼ (It is a good idea to put some lubricant on the mating surfaces before assembling.)
[silicon spray or similar]



- \* Connect spreader arms to the spreader fixing on the mast with the supplied bolts as shown (Fig 7). ▲
- \* Identify the spreader ends on the port and starboard shroud and slide them into the end of the spreader arms, securing with clevis pin as shown (Fig 8). NB only one hole position is available.

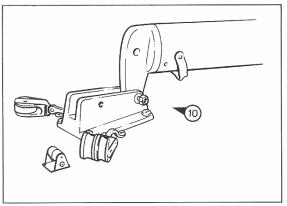


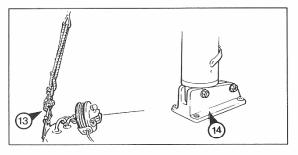
- \* Place the mast on the boat in a horizontal position with the luff grove facing down (Fig 9). A
- \* Secure the mast heel to the mast step with supplied nut and bolt as shown (Fig 10) the mast can now be rested gently on the boat's transom.
- \* Connect the port and starboard shroud to the shroud plates on the boat, as shown, making sure there are no loops or kinks in the wire (Fig 11). The shroud adjuster plates are preset at the factory on the third hole down.
- \* Feed the fore-stay wire through jib-halyard roller system as shown (Fig 12). ▼ Lay the fore-stay and jib-halyard wires out towards the bow of the boat.
- \* Pull down the main halyard from top of mast and secure temporarily at the goose-neck fitting. The mast is now ready to raise.

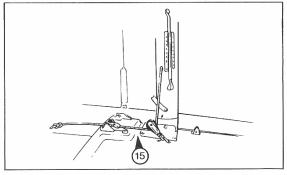


- \* With one person steadying the mast by holding the fore-stay wire, a second person can stand in the boat facing forwards lifting the mast so that it pivots forward and is restrained by the shrouds. (This can be done single handed if required).
- \* Secure the fore-stay on the bow plate as shown (Fig 13) and place the second retaining pin in the mast step casting 

  (Fig 14). Take the spinnaker halyard where it exits from the right hand side of the mast. Feed it through the single block and secure in cleat as shown (Fig 15). All boats are fitted with the spinnaker halyard as standard. ►







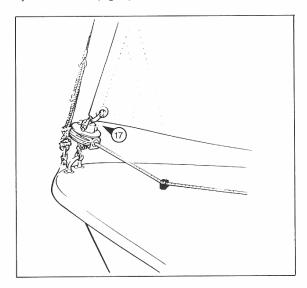
## ADDING THE SAILS

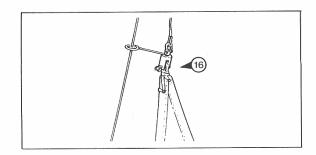
- \* Turn the boat so that it is pointing into the wind in readiness for adding the jib.

  \* Unfold the jib, Part Q, and identify the HEAD.

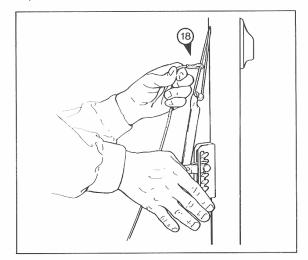
  \* Secure the head of the jib to the jib halyard roller reefing
- system as shown (Fig 16). ►

  \* Secure the tack of the jib to the bottom of the roller reefing
- system as shown (Fig 17). ▼

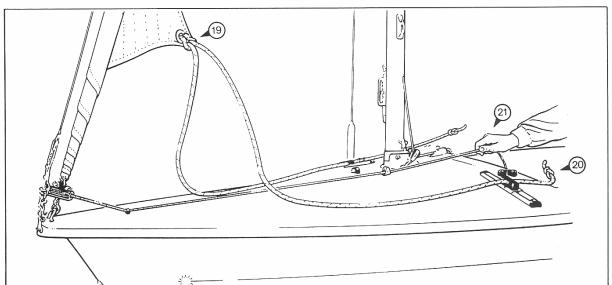




- \* Raise the jib by pulling the halyard line on the right hand side of the mast until the jib has been hoisted and the wire loop connected to the halyard line is showing.
- \* Connect the wire to the high field lever making sure not to pinch the halyard line between the two surfaces. Set the lever so maximum amount of tension is achieved on jib halyard and fold down lever as shown (Fig 18). ▼



- \* Connect the jib sheets Part B to the Jib Clew as shown (Fig 19). \* Feed the jib sheet through the jib fair-leads and make a
- stopper knot as shown (Fig 20). ▼
- You may find at this point that the fore-stay is slack and that it is a good idea to retension it.
- The jib can now be furled using the jib furler line as shown (Fig 21). ▼

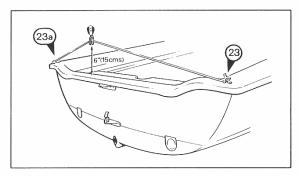


## THE ROPE BAG (Item J)

- \* Place the rope bag in position on the hatch and secure with supplied lines as shown (Fig 22). ►
- All excess lines/halyards can be put into the bag to keep the cock-pit area clear.

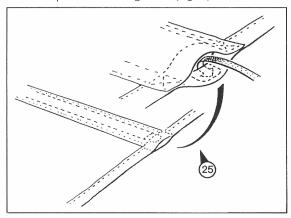
## ATTACHING TRAVELLER LINE (Item E)

- \* Tie one end of the traveller line to the eye-bolt as shown (Fig 23).
- \* Feed the traveller line through the smaller traveller block Item G and secure on the other side of the boat as shown (Fig 23A). (6ins [15cm] of slack is approximately correct). •

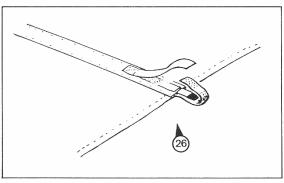


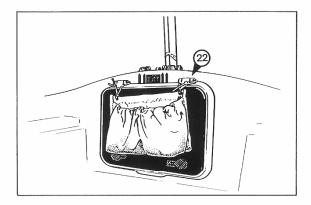
## ATTACHING THE MAIN SAIL (Item P)

- \* Lay out the main sail on a clear piece of ground and insert the battens.
- \* Battens one and two are inserted in the sail and retained similar to a pillow case arrangement. (Fig 25). ▼



\* Batten three (the long batten) will need securing with velcro. (Fig 26). ▼

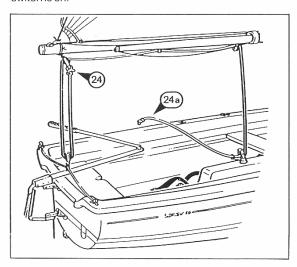




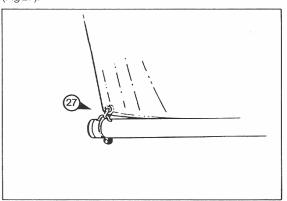
## ATTACHING THE BOOM AND SHEETS (Items M & A)

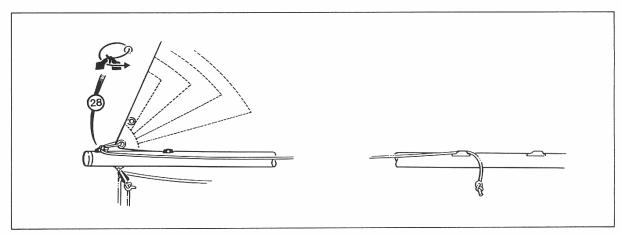
- \* Place the boom on the boat with the blocks facing downwards.
- \* Feed the main sheet through the rear block and secure as shown (Fig 24). ▼
- \* Feed the main sheet through the traveller block, through the main sheet system and back to the main sheet ratchet block as shown (Fig 24A). ▼

NB: Make sure the main sheet is fed through the ratchet block in the correct direction so that friction is only activated when the main sheet is released and the ratchet switch is on.



\* Secure the tack of the sail to the front of the boom as shown (Fig 27). ▼



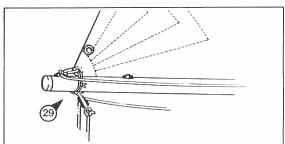


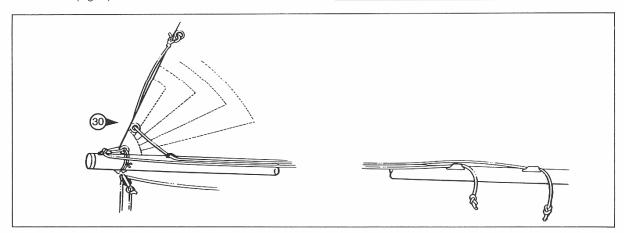
- \* Tie the clew out haul line Item C to the eye at the end of the boom and feed through the sail clew and up to the cleat finishing with a stopper knot as shown (Fig 28).
- finishing with a stopper knot as shown (Fig 28). A

  \* Take the clew tie down Item F, pass it through the clew eye and twice round the boom as shown before tieing off (Fig 29). >

## ATTACHING THE REEFING LINE (Item D)

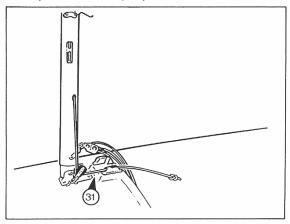
- \* Secure the reefing hook to the reefing line and clip to the sail.
- \* Feed the reefing line as shown finishing with a stopper knot after the cleat (Fig 30).▼



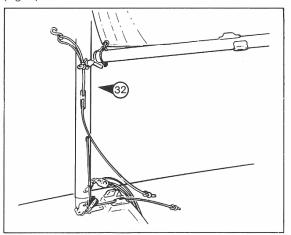


## CUNNINGHAM AND THE MAIN HALYARD CLEATS

\* Take the end of the main halyard where it comes out of the base of the mast and feed it through the block and cleat as shown (Fig 31). (Make sure the end is finished with a stopper knot to prevent loss of halyard). ▼

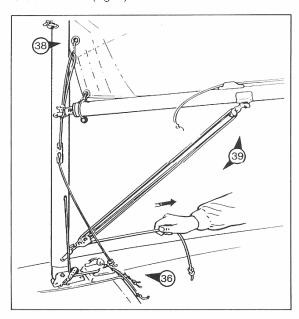


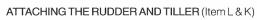
\* Take the cunningham line and feed it through the bulls-eye and cleat as shown securing the end with a stopper knot (Fig 32). ▼



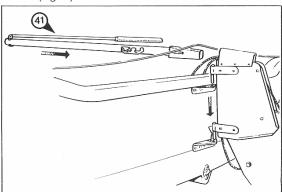
#### RAISING THE MAIN SAIL

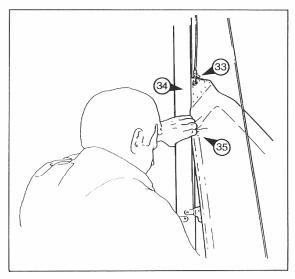
- \* Attach the head of the main sail to the halyard with a suitable knot as shown (Fig 33). ►
- \* Check the boat is still head to wind and insert the HEAD of the main sail into the groove on the back of the mast as shown (Fig 34). ►
- \* Carefully raise the main sail via the halyard at the base of the mast, making sure that the bolt rope does not catch in the luff groove of the mast (Fig 35). ►
- \* Raise the sail to the top of the mast and secure the halyard in the cleat by the mast step (Fig 36). ▼
- \* Pull the front of the boom down and slide it onto the gooseneck fitting as shown (Fig 37).
- \* Secure cunningham hook to cunningham hole as shown (Fig 38). ▼
- \* Secure kicking strap key to under side of boom and adjust tension as shown (Fig 39). ▼

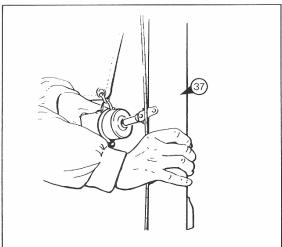




- \* Clip the rudder to the rudder fitting on the stern of the boat making sure the retaining clip is fully home as shown (Fig 40).
- \* Slide the tiller under the traveller line into the rudder stock making sure that the up haul/down haul lines of rudder blade are free (Fig 41). ▼

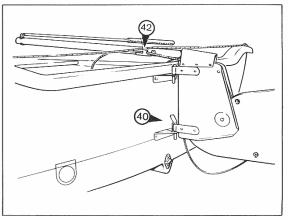






 Place all spare line in rope bag.
 NB: Make sure when the sail is fully hoisted that the main sheet is not under tension and the boom is allowed to swing freely from side to side.

\* Raise the rudder and secure in the cleat as shown (Fig 42).



## YOUR FIRST SAIL

Your boat is now ready to sail but before you launch it is best to familiarise yourself with the boat's equipment, reefing system and any other accessories. It is also important you consider all safety aspects of dinghy sailing.

## PERSONAL SAFETY

The LASER 13 is an excellent compromise between fun and safety and we recommend you always wear suitable clothing and an adequate buoyancy aid/life jacket when venturing afloat.

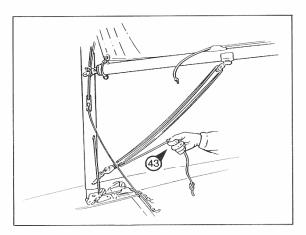
## REEFING

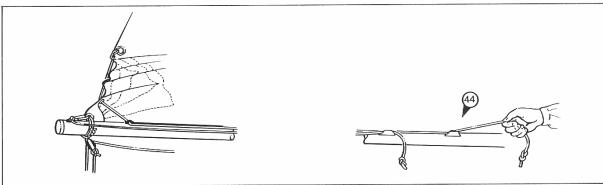
In the event of too much wind, sail area can be reduced by:

- 1. roller reefing the jib.
- 2. reefing the main sail to a smaller size

## REEFING THE MAIN SAIL

- Loosen the kicking strap (Fig 43). ►
  Pull clew reefing line until the reefing line is down to the boom, cleat line (Fig 44). ▼

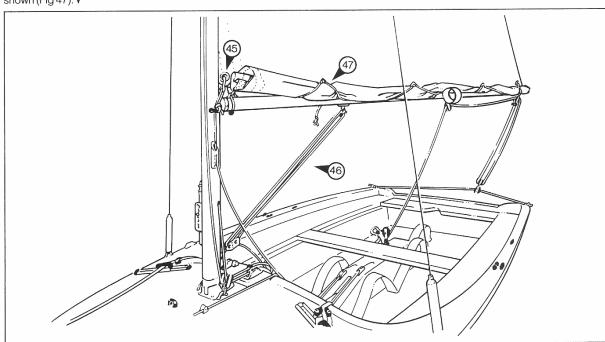




- \* Release main halyard and lower main sail luff until the reefing tack eye is just above the boom (Fig 45). ▼
- \* Connect the cunningham down haul hook to the reefing line and tension.
- \* Tension the kicking strap (Fig 46). ▼
- \* Roll up the excess sail cloth and pull the reefing shock cords around the sail and secure to the hooks on the sail as shown (Fig 47). ▼

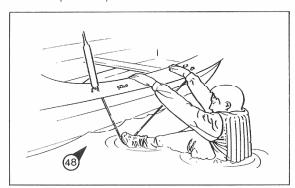
NB: Reefing is always best done ashore but if the situation arises that you have to reef afloat, port tack is favourable as it leaves easy access to the sail hooks.

\* The reverse procedure is followed when shaking out a reef.



#### CAPSIZE AND RECOVERY

 $^{\star}\,$  The LASER 13 is an enjoyable boat for all the family. Should you ever capsize your craft, the built-in buoyancy makes it virtually unsinkable. The masthead float pack will help prevent the boat from possible inversion and the process of recovery is simply to stand on the centre board and lean out. Having righted your craft, the capsize stirrup (Fig 48) can be used to help recover persons outside the craft. V



## SAFETY FEATURES

## FORWARD HATCH

It is advisable that the forward hatch is closed whenever the boat is in motion, this will afford you extra buoyancy in the event of a capsize.

#### CENTRE BOARD

The centre board is fitted with two way jamming cleats. This will prevent the centre board from sliding back into the hull should you capsize.



## SPINNAKER OPTION

Identify all parts for spinnaker option.

- A Spinnaker
- Spinnaker bag
- Spinnaker pole Spinnaker boom holders x 2
- Spinnaker fair lead x 2
- Spinnaker sheets
- G Spinnaker jamming cleats x 2
- Spinnaker reaching cleats plus plates x 2
- Spinnaker bow catcher
- Spinnaker up-haul/down-haul cleats x 2
- K Attachment clips x 3
- L Down-haul fair lead
- M Spinnaker boom strap
- N Up-haul line
- O Down-haulline
- P Various screw fittings

NB: The halyard for the spinnaker is already attached to the mast during production.

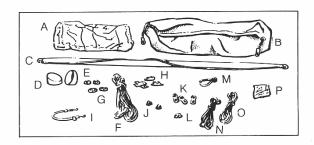
## FITTING INSTRUCTIONS

Attach all accessory spinnaker fittings to hull and deck moulding in position shown on drawings. (Page 16) All screw holes and base of fittings should be sealed with sealant.

## RIGGING INSTRUCTIONS

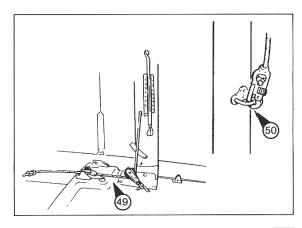
#### SPINNAKER HALYARD

- Feed the tail of the halyard where it exits from the right hand side of the mast through the block and into the side entry spinnaker cleat (Fig 49). >
- Take the other end of the halyard and attach one of the plastic clips. Attach the clip to the spinnaker boom fitting for security. (Fig 50).



Tools required for fitting spinnaker option:

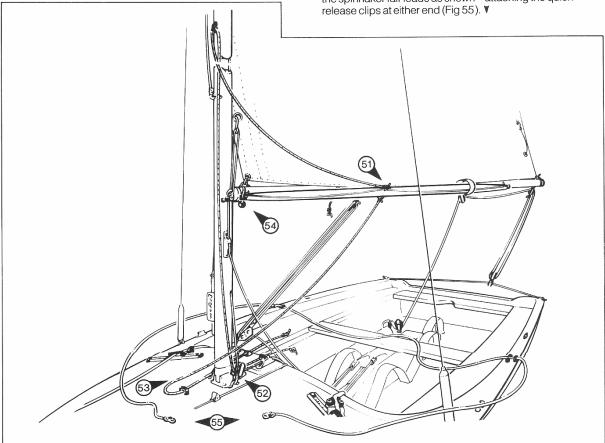
- 1 Drill
- Drill bits
- Philips-style screw driver
- Straight screw driver
- Spanners to fit 6mm nuts
- Extension rule
- Silicon sealant



Up-haul/Down-haul

Identify correct position for spinnaker pole (C), ie release pins on the spinnaker pole ends should be facing up

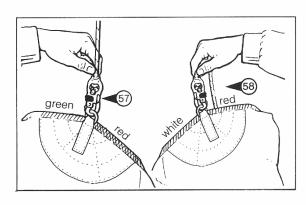
- \* Take the longer up-haul line (N). Attach it to the upper 'U' clip on the spinnaker boom using a suitable knot. (Fig 51). ▼ Feed it through the mast fairlead and down to the cleat as shown (Fig 52). ▼
- \* Take the down-haul line (O) attach it to the lower 'U' clip on the spinnaker pole with a suitable knot and feed through the fairlead to the cleat, as shown (Fig 53). ▼The spinnaker boom can now be placed in the boom holder alongside the boom secured by the shock cord strap, (M) as shown (Fig 54). ▼
- \* Attaching the sheets. Feed one end of the sheets (F) through the spinnaker fair leads as shown attaching the quick release clips at either end (Fig 55). ▼

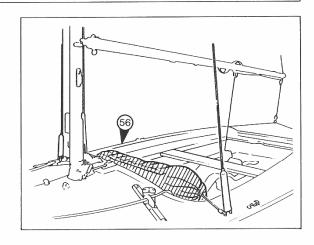


### Attaching the spinnaker

Clip the spinnaker bag (B) between the two shrouds as shown (Fig 56). ►

- \* Identify the head of the spinnaker as shown and connect the spinnaker halyard clip. Make sure that the halyard is clear and not twisted around any other rigging (Fig 57). ▼
- \* Identify the port hand side of the spinnaker (red edging tape) and attach the port sheet as shown. Make sure the sheet and sail are outside all standing rigging (Fig 58). ▼
- \* Identify the starboard tack (green edging tape) and secure the starboard spinnaker sheet, as above.





## Stowing of spinnaker

- \* Stow the spinnaker into its storage bag by recovering it between the shroud and mast.
- \* When stowed, a velcro flap will prevent accidental deployment.
- \* Recover all slack spinnaker sheets and secure in rope pocket.

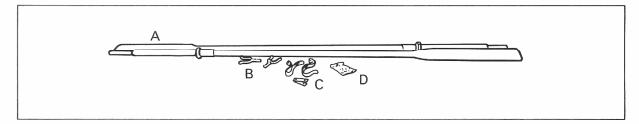
## **ROWING OPTION**

Identify all parts of rowing option.

- A Oars x 2
- B Rowlocks x 2
- C Securing straps and plates x 2
- D Various screw fittings

Tools required

- 1 Drill
- 2 Drill bits
- 3 Extension rule
- Straight blade screw-driver
- 5 Philips style screw-driver
- 6 Silicon sealant

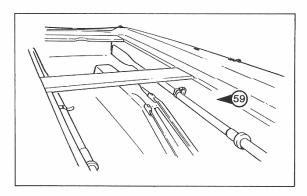


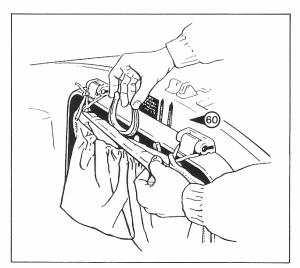
## Fixing instructions

Secure restraining straps in position as shown in drawings, (Page 16).

## Attachment of equipment

Oars should be stowed with the blade facing aft. You will note there is a cut-out in the stern thwart to allow easy access when required (Fig 59). ▼





\* Rowlocks should be kept in the front of the rope pocket as shown (Fig 60). A

## ENGINE MOUNTING OPTION

Identify all parts

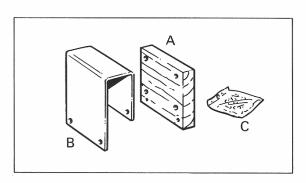
- A Hardwood packing
- B Stainless steel plate C Various screws and fixings

## Tools required

- 1 Drill
- 2 Drill bits
- 3 Straight head screw-driver
- 4 Philips style screw-driver
- 5 Silicon sealant



- \* Secure hardwood packing as shown on drawings (page 16).
- \* Slide stainless steel plate down over the transom and secure from either side.
- \* Sealant should be used around all screws.



NB: It is not advisable to sail with the engine in position. A facility is available within the storage hatch to clamp the engine to the mast support post, secure it firmly and protect it from salt water.

## GENERAL MAINTENANCE AND SERVICE

#### **WEEKLY**

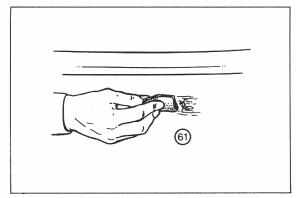
- Your boat should always be tied down securely to ground fixing when not in use. Sails should be stored dry when possible.
- \* Storage hatch should be left slightly open to prevent condensation.
- \* The keel line should be tilted towards the stern to allow drainage of any water that may find its way into the cockpit.

#### MONTH! Y

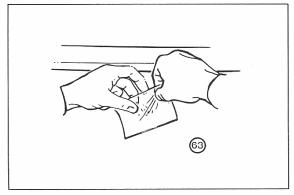
- \* Ropes and rigging should be checked periodically for wear or damage.
- \* All moving parts such as jamming cleats and blocks should be lubricated lightly with WD40 or similar.

#### **GELCOAT REPAIRS**

Should you damage the gelcoat surface of your boat you should repair it as soon as possible. The correct gelcoat colour can be ordered through the Laser Centre.



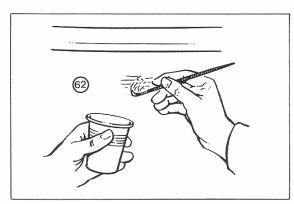
- \* Sand back the damaged or flaking gelcoat until a solid area is produced. Make sure the area is clean and there are no sharp edges (Fig 61). ▲
- \* Mix the gelcoat with approximately 2% of hardener and apply using a fine artist's brush or similar (Fig 62). ▼ Cover the area with cellophane and allow to dry (Fig 63). ▼



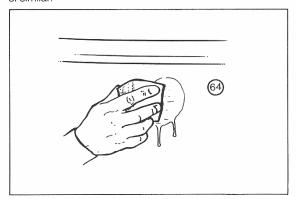
NB: If substantial damage is sustained to your craft, you should take it to your nearest authorised Laser Repair Centre or contact the Laser Centre at Banbury, Tel: 0295 268191.

#### **END OF SEASON**

- \* At the end of each season it is a good ideal to check your boat thoroughly for signs of damage or wear.
- \* Damage or worn parts should be replaced using the Laser parts identification system.
- \* The hull should be washed down with fresh water and a protective cover placed over it.
- \* Spars and rigging should be washed thoroughly, dried and placed in a protective area.
- Sails should be dried, checked and stored in a dry place.
- \* Road trailer and lunching trailer should be washed, checked and greased where necessary.

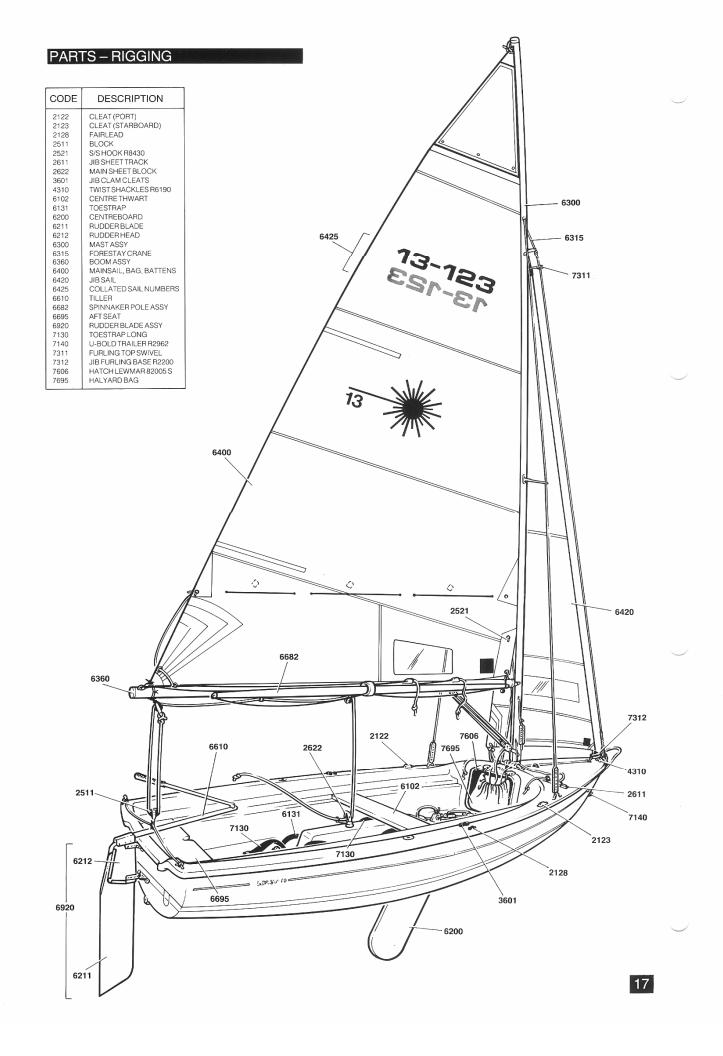


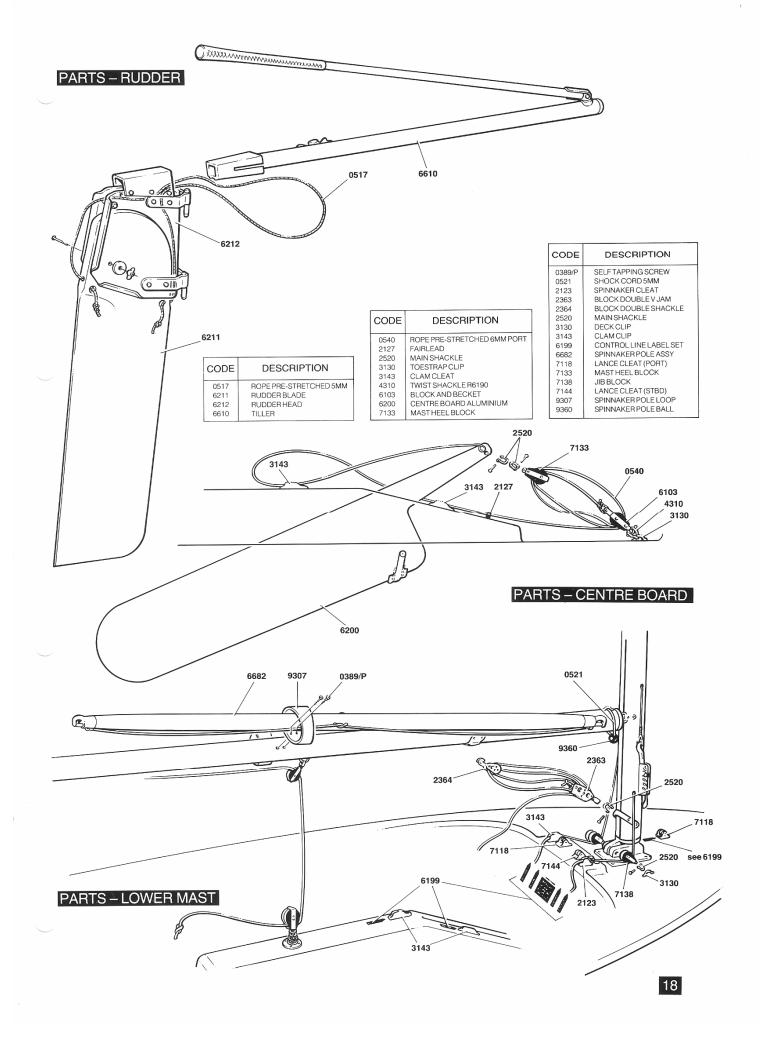
- \* Brushes and equipment should be washed out in acetone if required.
- \* When dry, carefully remove cellophane and sand the surface with wet and dry sand paper until it blends in with the original area (Fig 64). ▼
- \* Finally polish the area using a fibre glass rubbing compound or similar.

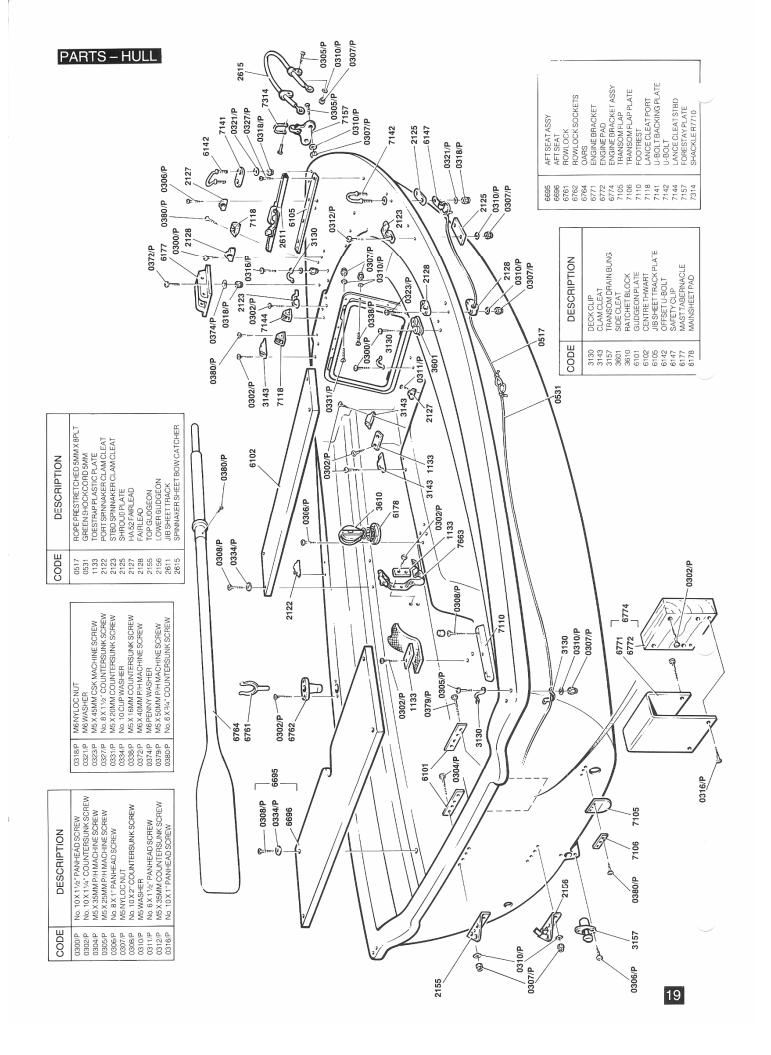


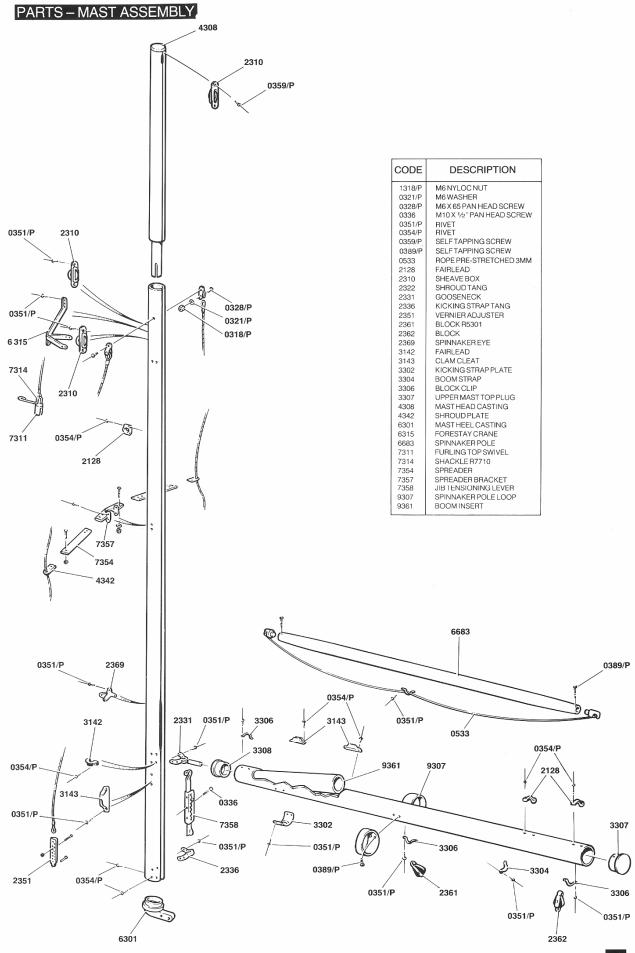


# OPTION ATTACHMENT DIMENSIONS S 1085 S 45 R 25 S 65 S 165 R 1090 S 920 90° - 🗀 Spinnaker Pole stowage pos'n on boom Spinnaker option prefix S Engine mounting option prefix E S 149 Rowing option prefix R All measurements in millimeters E 197 **►** E 148 S 145 rear of boom









## BASIC SAFETY AFLOAT: By the CAT CLINIC

## Before you go sailing:

- 1. Check you are wearing suitable clothing and safety equipment for the conditions and time of year. NB Always wear a buoyancy aid or life jacket.
- 2. Make sure a third party knows where you are sailing and how many there are in your group.

  3. Check the weather forecast: radio, television or
- coastquards.
- 4. Check the time of high and low tides, if applicable.
- 5. Seek advice on local conditions when sailing in a new area.
- 6. Check the condition of your craft.
- 7. Beware of overhead cables.

#### On the water:

- 1. Conform to the sailing rules of the road.
- 2. Look out for changing weather conditions.
- 3. Never sail beyond your ability or that of your crew.
- 4. Understand and be competant in the sailing and righting techniques of your craft.

- The end of the day:

  1. Check the condition of your craft.
- 2. Secure your craft to its parking berth.
- 3. Advise any third party of your safe return.
- 4. Look forward to your next successful sailing trip.