

PROFURL P31

OWNER'S MANUAL

The PROFURL reefing and furling gear is a reliable system. It requires little maintenance and has a three year guarantee. Its assembly is simple and requires no special skill. It goes over the existing forestay.

If you follow the assembly instructions and the operation recommendations described in this manual you will achieve correct installation and avoid any damage to the reefing gear, the sail or the rigging of your boat. This will give you the best performance from your PROFURL.

Your PROFURL agent can arrange to have your PROFURL professionally installed if you prefer.

PROENGIN

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TEL : 33 (1) 33.50.47.34

TELEX : 697 113 F

E. ASSEMBLING UPPER SWIVEL & LOWER DRUM MECHANISMS

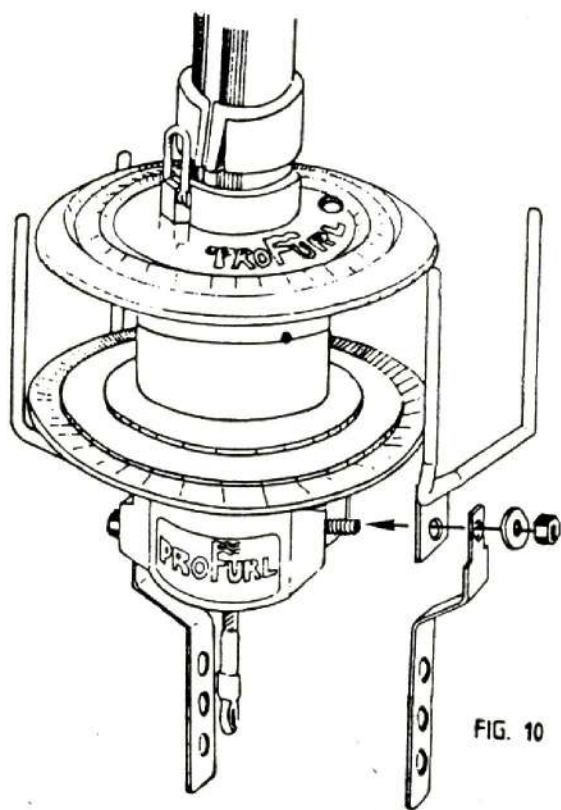


FIG. 10

- I. Slide the upper swivel on to the bottom end of the extrusions with the wider part upwards and the jib shackle hole down at the same time feeding the plastic guide into the sail entry of the luff groove.
- II. Insert and tighten the luff guide stop (panhead screw) at the sail entry opening. This is to allow the halyard swivel to rest here when not in use.
- III. Next slide on the sail feeder on to the bottom end with the asymmetric slot opening pointing downwards.
- IV. Remove the drum cylinder from the bearing mechanism after taking out the retaining screws. These are diametrically opposite in the centre of the cylinder.
- V. Slide the bearing mechanism up the LOWER extrusion engaging the luff groove by the locating spline.
- VI. Replace drum cylinder and line up with bearing mechanism and extrusion by sighting through and then insert the retaining screws again.

At this point the drum assembly must rotate freely on the bearing. The retaining screw heads must not protrude from the hub of the drum. These two screws should be tightened cautiously because they self-tap into the drum plastic, which does not require hard tightening.

F. CONNECTING THE FURLER TO THE BOTTOM FORESTAY TERMINAL

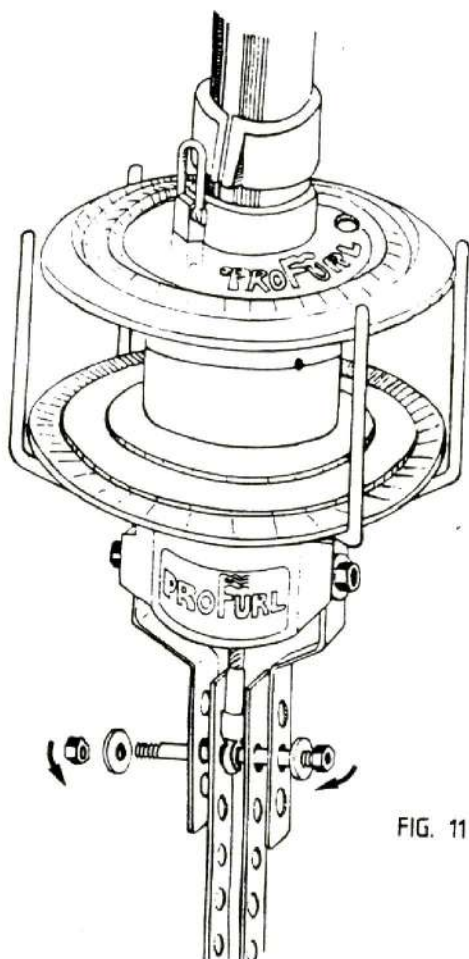
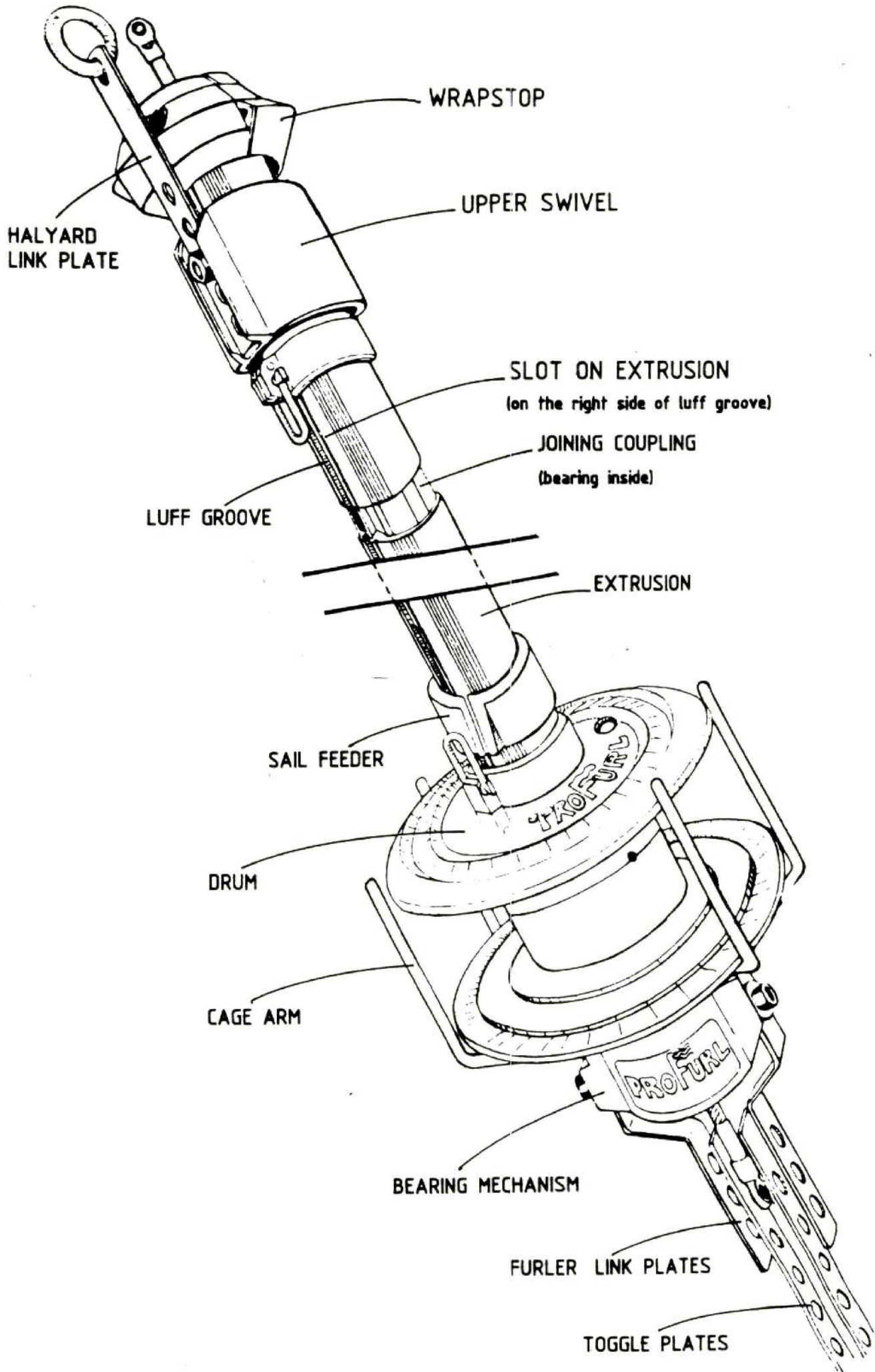


FIG. 11

- I. Assemble the two drum cage arms and the link plates together over the bottom terminal or rigging screw (using long link plates if with a rigging screw).
 - II. Offer the link plate to match the terminal (or rigging screw) and select the suitable hole and trim off the remainder of the link plate not required. Open up hole to match the pin of the terminal or rigging screw in use.
 - III. Using a special long clevis pin or partially threaded bolt (neither supplied) pass this through the link plate and terminal or rigging screw fork end and upper eye of the toggle.
- Note : the special long pin or bolt connects the link plates and the terminal/rigging screw and NOT the stemhead fitting. Never fit the furler assembly direct to the stemhead - always via a toggle.
- IV. If necessary use washers to pack the special pin or bolt if too long.
 - V. Release the halyard being used to haul up the furler.
 - VI. Connect the lower toggle to the stemhead.
 - VII. Release the halyard being used as a temporary forestay.
 - VIII. Re-tension the backstay.



WRAPSTOP

UPPER SWIVEL

HALYARD
LINK PLATE

SLOT ON EXTRUSION
(on the right side of luff groove)

JOINING COUPLING
(bearing inside)

LUFF GROOVE

EXTRUSION

SAIL FEEDER

DRUM

CAGE ARM

BEARING MECHANISM

FURLER LINK PLATES

TOGGLE PLATES

COMPLET MULTITOP

- 2 nuts M6
- 2 screws M6
- UPPER STOP**
- 1 stop fixing screw
- 1 ending fish plate
- 1 stop
- 2 1/2 bearings $\phi 6$
- $\phi 7,5$

COMPLET SWIVEL

- 1 swivel mecanism
- 1 holed plate
- 1 nut M8 "NYLSTOP"
- 1 shackle
- 1 guide + 1 pin

LUFF EXTRUSION

- 1 upper
- n intermediate
- 1 lower

JOINING

- 1 joining fish plate
- 2 1/2 bearings $\phi 6$
- $\phi 7,5$
- 4 screws ST/HC M6x6

BOLT ROPE GUIDE

- 1 bolt rope guide stop screw TCL M6x10

DRUM

- P31N
- P31L
- 1 mecanism
- 1 drum 31N
- 1 drum 31L
- 2 screws for drum immobil.
- 2 arms 31N
- 2 arms 31L
- 2 nuts M8 "NYLSTOP"
- 1 shackle

- 2 standard link plates
- 2 long link plates
- 2 reinforced link plates

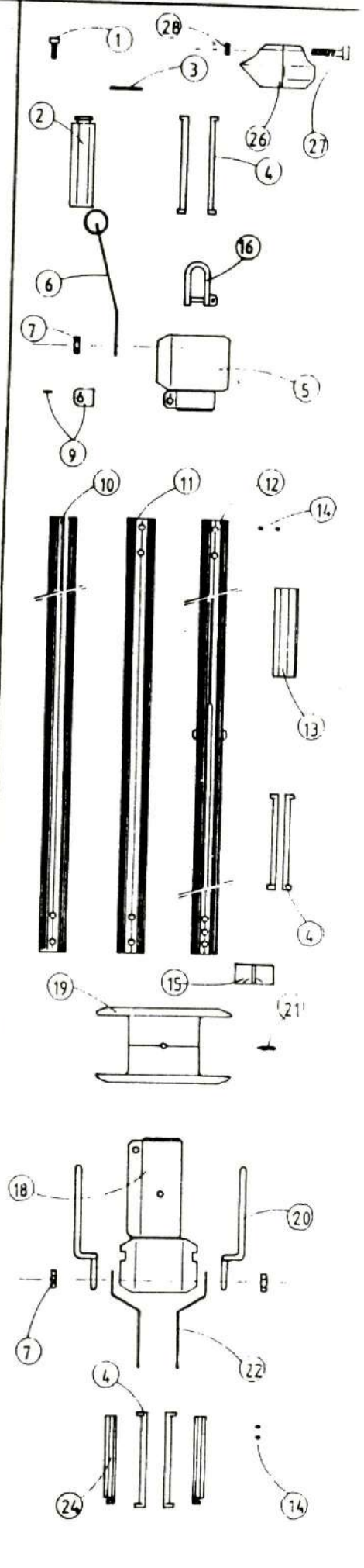
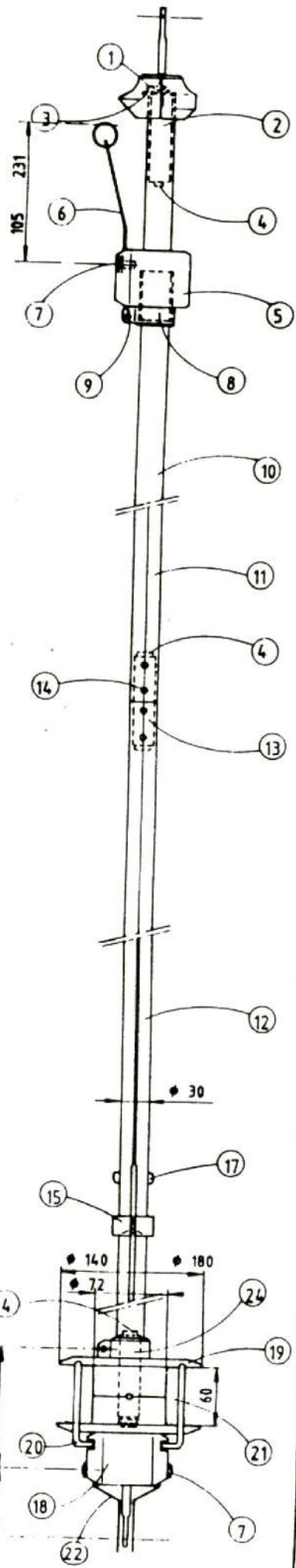
LOWER STOP

- 2 1/2 ending fish plates
- 2 1/2 bearings $\phi 6$
- $\phi 7,5$
- 2 srews ST/HC M6x6

MISCELLANEOUS

- 1 hexagonal wrench 6mm
- 1 hexagonal wrench 3mm

28	P00250
27	00061
	00144
1	00057
2	00049
3	00056
4	00050
	00051
	P00230
5	P00231
6	00036
7	00018
16	00195
9	00037
10	00045
11	00044
12	00043
13	00048
4	00050
	00051
14	00052
15	00055
17	00053
	P00210
	P00220
18	P00211
19	P00212
	P00221
21	00065
20	00643
	00622
7	00018
16	00195
22	00693
	00694
	00695
24	00046
4	00050
	00051
14	00052
	00063
	00062



RECEIPT OF GOODS

All goods must be checked on delivery and the Buyer should claim from the carrier verbally within three days in the event of loss or damage, and in writing within seven days.

TOOLS REQUIRED FOR INSTALLATION

1. A short tape measure at least one metre long
2. A long tape measure as long as your forestay
3. A caliper quage to measure your stay diamater
4. Six feet of 5 or 6 mm cord
5. A drill and set of bits
6. A marker pen
7. A fine toothed hacksaw
8. An adjustable spanner
9. 2 wrench 13 mm
10. Binoculars
11. A screwdriver
12. A pair of pliers
13. A 1/2 inch smooth round file

Allen keys required are supplied with each furler.

The following procedure can be applied to most boats.
Some specail cases are discussed at the end of the manual.

Special note

If you want to retain your rigging screw below the furler you will require long link plates to bridge this (optional extraform your dealer).

You will also require a long clevis pin to pass through the bottom link plates and the toggle (see drawing n°.11)

PROFURL is simple to install and is well within the capability of most practical yachtsmen. The following instructions are written for installing the gear with the mast and forestay upright. To do it this way you will need to do some careful measuring. It is, however, easier to instal with the forestay taken down and on the dockside. Doing it this way requires less measuring because the PROFURL can be place alongside the forestay and the exact position marked off.

The main problem when installing the gear on the ground is hoisting the finished assembly into position without damaging the joints between the extrusions. The joining couplings are in fact very strong and will take the weight of the assembly in spite of sagging without damage but it must be hoisted slowly and carefully in calm wind conditions.

F R A C T I O N A L R I G

If you have fractional rig and the upper terminal of the forestay is a tee type you have two options for installation of furling gear. Either it is installed with the mast stepped and the forestay in position or the mast is taken out and the whole job is done on the ground. It is impossible to insert a tee terminal into the mast key-hole with a furler mounted on the forestay.

If the upper swage terminal is a ball type it will be necessary to cut this off the existing forestay and swage a fork on and connect this to the mast with an eye-ball fitting available from your dealer by prior notice. Upper end ball terminals are rare in the U.K. but most French boats are fitted with them so if you have a french boat please check this before you start.

Always consult your PROFURL dealer if you have any problems.

A. P R E P A R A T I O N

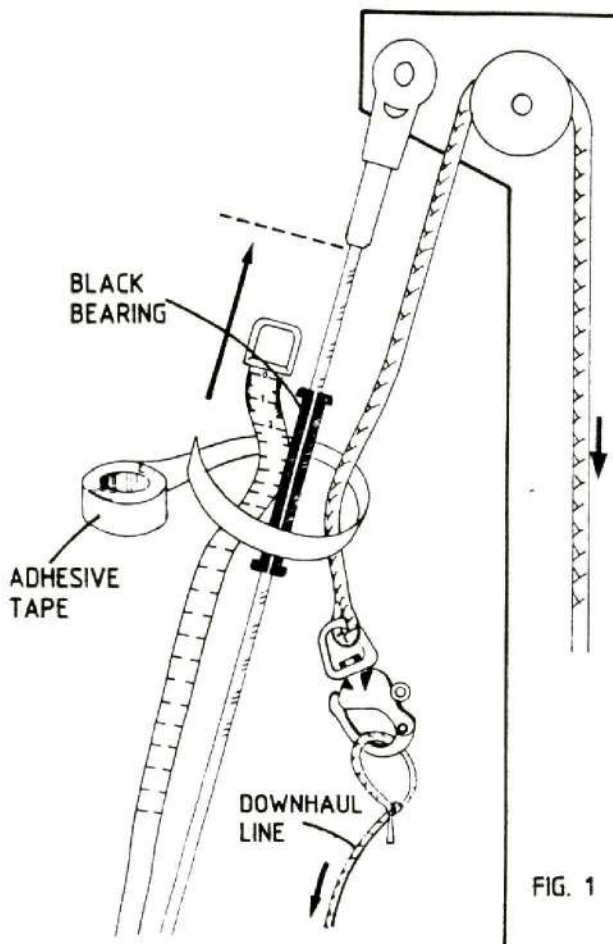
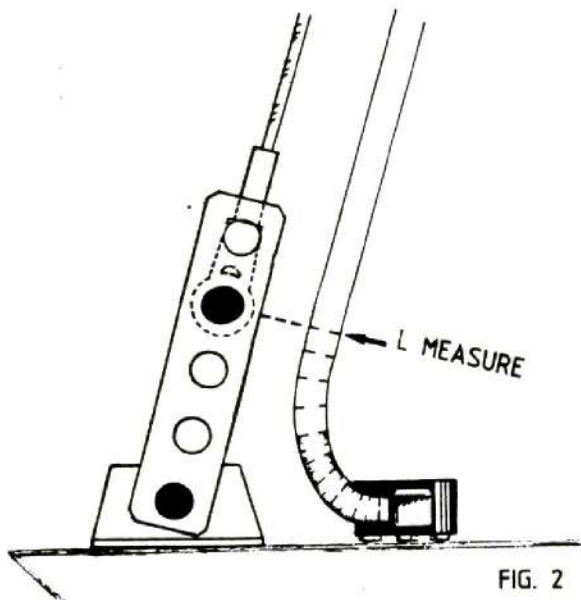


FIG. 1

- I. Loosen the backstay a little to reduce tension on the fore-and-aft rig while still keeping it taut but unloaded.

- II. Take the long tape measure and fasten the end to a black bearing together with the jib halyard as shown in fig.1 with adhesive tape. At the same time tie a downhaul line to the jib halyard shackle. The whole assembly should be adhesive taped so that the tape measure zero ring touches the bottom of the upper terminal and hoisted. If you cannot feel this when hoisting use binoculars to verify that the tape zero end is touching the terminal.



III. With light tension on the tape alongside the forestay measure the distance to the centre of the eye of the lower terminal - this is length L as fig. 2.

IV. Loosen off the backstay. Secure the jib halyard shackle end to a strong point near but not too close to the bow (to support the mast disconnecting the bottom end of the forestay). Winch in firmly.

FIG. 2

B. HOW TO DETERMINE DRUM HEIGHT ABOVE THE DECK

I. If there is no rigging screw disconnect the forestay from the toggle and leave this attached to the stemhead.

II. Fit the furler link plates to the upper eye of the toggle with a suitable clevis pin (not supplied but available from your dealer).

III. If you have a rigging screw disconnect it at the bottom of the forestay and leave it attached to the stemhead. Fit LONG link plates (available as an optional extra from your PROFURL dealer) to the upper eye of the TOGGLE (not the stemhead) and secure with a long clevis pin of suitable size (not supplied but available from your dealer).

IV. The LONG link plates are supplied with a number of holes for choice to match the length required to accommodate your rigging screw. Any excess can be trimmed off.

Your choice will be determined by deciding the best compromise between the following two options :

- High drum gives good visibility under the jib and good access for anchoring and mooring.
- Low drum gives maximum luff length and therefore sail area.

After choosing the desired option refer to the table below and deduct the 'F' length from the 'L' length you measured, according to which hole you are using.

	Upper hole	: F = 210 mm
<u>CAUTION</u> : this applies to the standard link plate only	Intermediate hole	: F = 245 mm
	Lower hole	: F = 230 mm

As the luff extrusions are 2 metres long it is easy to work out the amount of extrusions to be trimmed off. This should be done on the top length of extrusion only. Dress cut edge smooth with file.

C. ASSEMBLING EXTRUSIONS ON THE FORESTAY

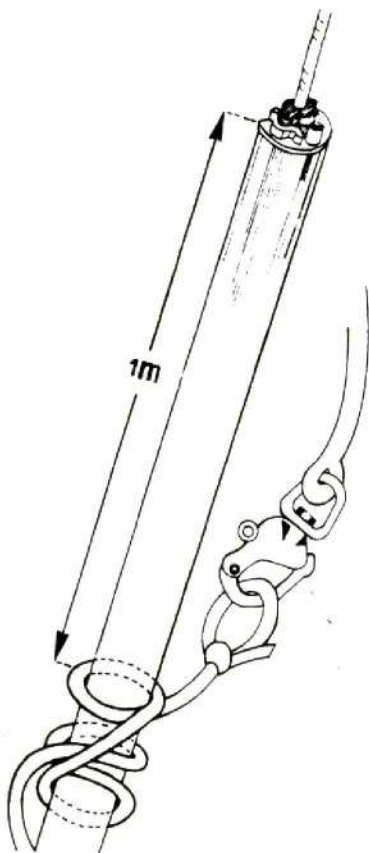


FIG. 3

I. Push the UPPER (trimmed length) extrusion piece up over the bottom terminal.

II. Tie the 6 ft. length of cord to this piece about one metre from the top with a rolling hitch and tie the other end to the halyard shackle.

III. At the top end of the upper extrusion insert the UPPER coupling (different to the bottom and intermediate couplings with its black bearing into the top end of the upper extrusion. Place the crescent shaped washer under the top of the coupling pushing the assembly down the luff groove. Secure all this with the 6 mm allen screw which will self-tap itself down the luff groove.

* Do not confuse the upper coupling with bottom one which is in two halves.

IV. Insert the four allen screws (3 mm) loosely and fit an INTERMEDIATE coupling with black bearing followed by the first INTERMEDIATE extrusion length.

Insert the four allen screws in this piece and secure all the screws firmly but not forced (torque load : 2,5 mkg).

Adjust halyard each time a length is added. Slot on extrusion should be on the right hand side of the luff groove looking upwards and care should be taken each time the halyard is hauled up that nothing is fouling the progress of the extrusions.

The last piece is the LOWER extrusion with the sail entry cut out of the luff groove.

Connect this to the last INTERMEDIATE piece in the same way then fit the LOWER couplings which are in two halves.

V. COUPLING

The UPPER coupling has a cap on the end under which a crescent shaped washer is placed as an end-stop and is secured by an allen bolt which goes down the luff groove.

The INTERMEDIATE coupling is similar to the UPPER but has no cap.

The LOWER coupling is in two halves.

All couplings are fitted with the same black bearing which is split into two halves which wrap round the wire. To fit the bearing place one half in the coupling, lay it on the wire, then place the other half round the wire to match the first bearing, then twist the whole bearing as a pair through 90° which will lock the coupling/bearing assembly together.

CHECK that all allen screws are secured tightly without forcing.

CAUTION : When hauling the furler assembly up into position during assembly on the forestay or from the ground, avoid excessive bending of the extrusion joints by pulling slowly and gently making sure that nothing catches the bottom end to hold it back. Avoid strong breezes and never attempt the operation in a high wind.

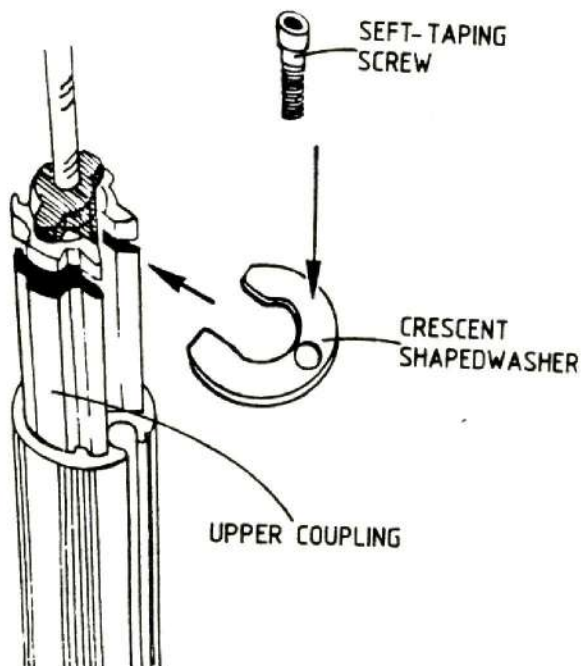


FIG. 4

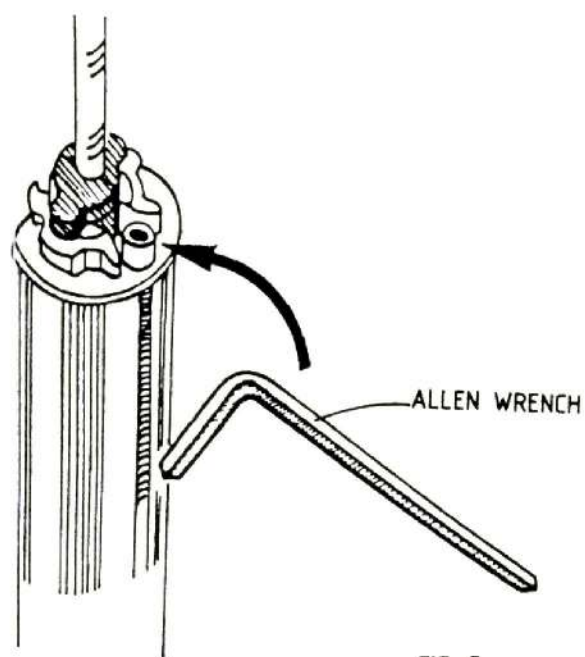


FIG. 5

INTERMEDIATE COUPLING ASSEMBLY

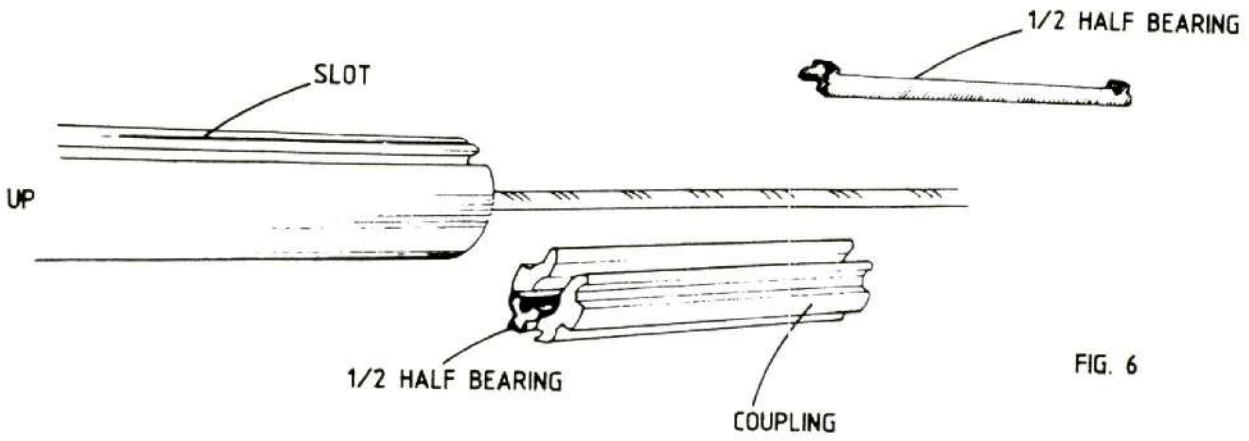


FIG. 6

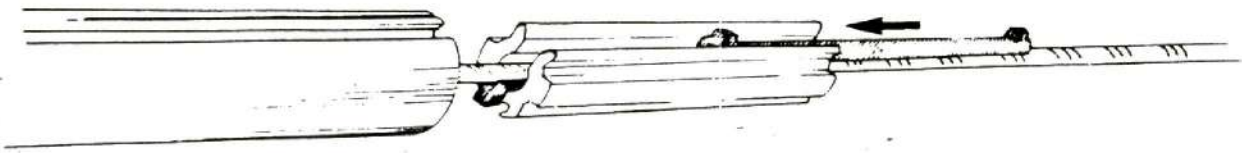


FIG. 7

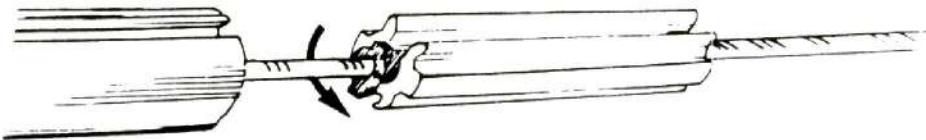


FIG. 8

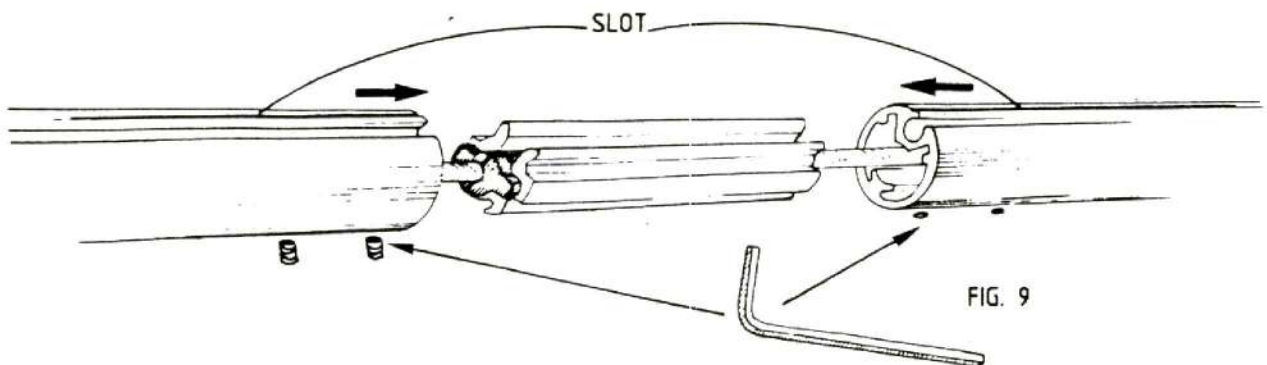


FIG. 9

G. THE ANTI-WRAP SYSTEM

Drill out the pre-drilled hole on the WRAPSTOP to the diameter of the forestay less 1 mm.

I. For example : for a 6 mm forestay - drill the Wrapstop hole 5 mm (3/16").

II. Pre-adjustment : assemble the halyard link plate (with the ring) on to the swivel and allow it to extend fully beyond the top extrusion.

III. Tie or shackle the jib halyard to the ring on the link plate. It is better to tie rather than use a shackle.

IV. Use the 13 mm allen key to tighten the WRAPSTOP (key supplied). Read the following instructions carefully before climbing the mast to carry out the next operations.

V. Climb the mast with someone below to assist.

VI. Disconnect and send down the spinnaker halyard and the short cord which were fastened to the UPPER extrusion length.

VII. Fit the WRAPSTOP on to the forestay to butt up under the upper terminal. It must fit on the wire not on the terminal. The wider part of the Wrapstop must face forward. Tighten the Wrapstop screws as tightly as possible. The Wrapstop must fit tightly to the forestay.

VIII. Hoist the swivel by the jib halyard. See that the link plate ring passes over the Wrapstop freely and that the plate slots into the Wrapstop so that the extrusion assembly does not turn more than 180° from beam to beam. The link plate should remain trapped in the slot preventing the extrusion making more than half a turn thus preventing the halyard wrapping round.

IX. Undo the link plate nut and remove the plate. Lift the swivel manually until it is about 2 inches under the Wrapstop. Select the nearest hole for re-fastening the nut to maintain this position. Secure tightly.

X. Lower the swivel with the halyard. Trim off any of the unwanted link plate which protrudes below the swivel (it may foul a line sometime).

After fitting head and tack shackles measure the distance between and report this length to your sailmaker for him to determine the luff length for maximum sail tension.

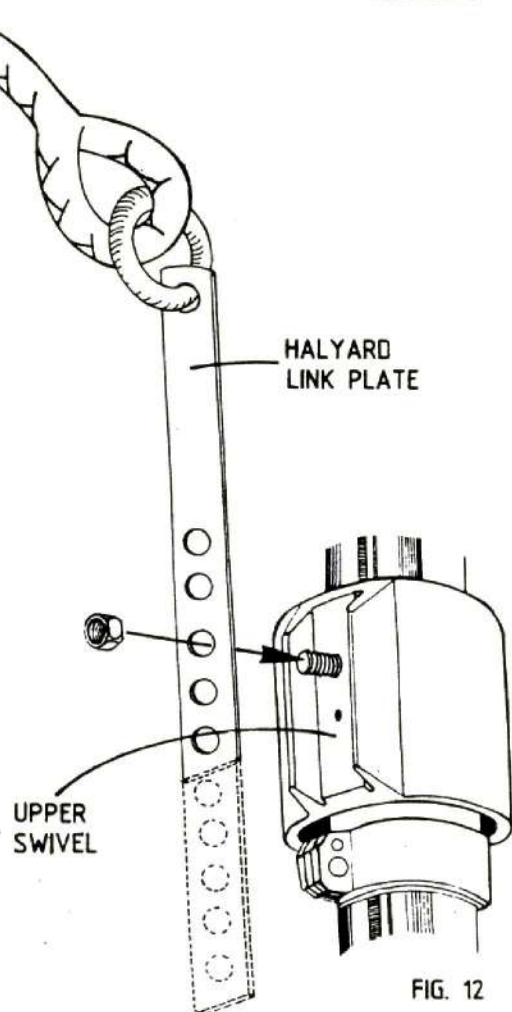
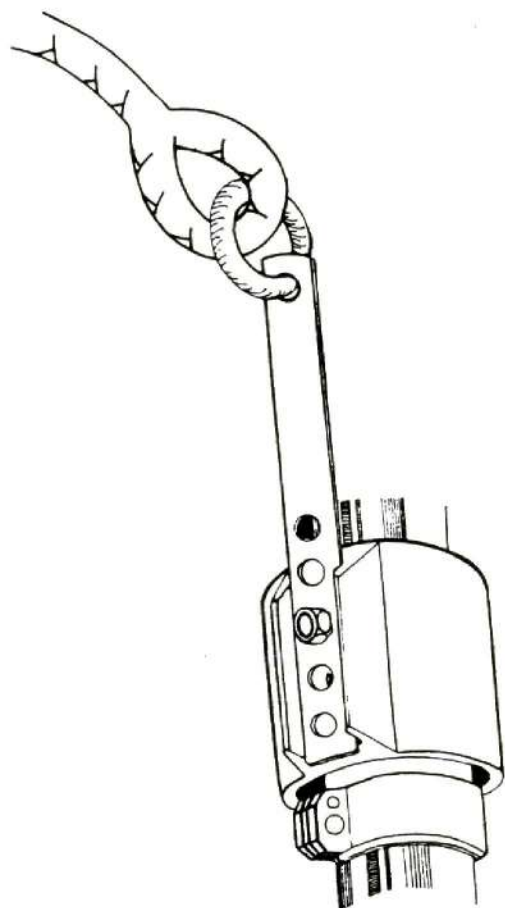


FIG. 12



H. REEVING REEFING LINE

Use 6 mm or 8 mm braided rope of a different colour to your sheets.

Pass one end up through the hole in the upper flange of the drum and tie a knot and seal the end.

The furling system can turn clockwise or anti-clockwise. However, if the sail has been sewn with a anti-U.V. strip this must appear outside the furled sail so turn the furler in the correct direction when feeding on the reefing line.

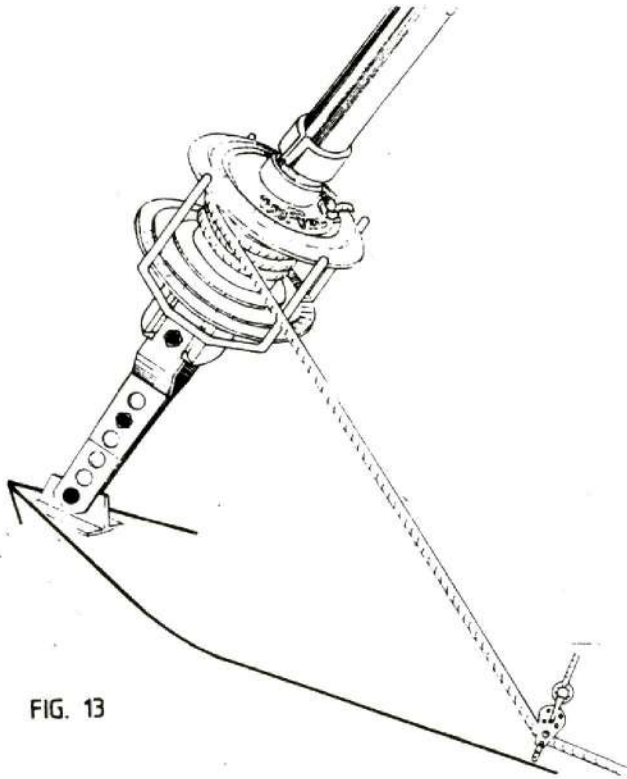


FIG. 13

- I. Feed the reefing line on the drum first and lead the tail end aft.
- II. The drum cage has four retaining arms. Lead the reefing line between one pair (see fig. 13 & 14).
- III. The best lead is either along the guardrail stanchions or over the top of coachroof.
If along the stanchions use special blocks which fit on stanchions and lead aft to cockpit area.

Whichever way the line is led aft the first lead block will have to be positioned to guide the line to the drum at 90° (fig. 15).

The number of lead blocks required depend on the number of stanchions and the length from the drum to the cleat aft, but do not use too many to minimise friction.

The assembly instructions in this manual are for standard boats but there can be variations in the lower terminations of the forestay.

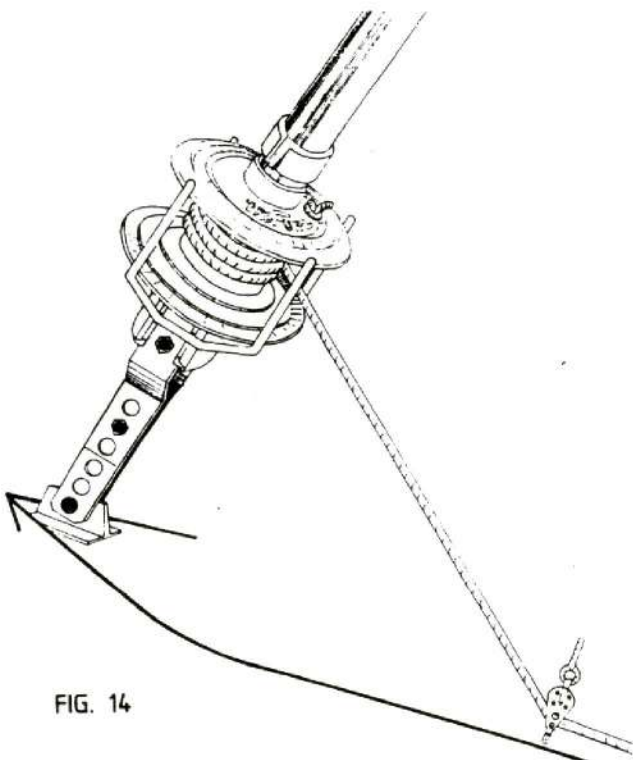


FIG. 14

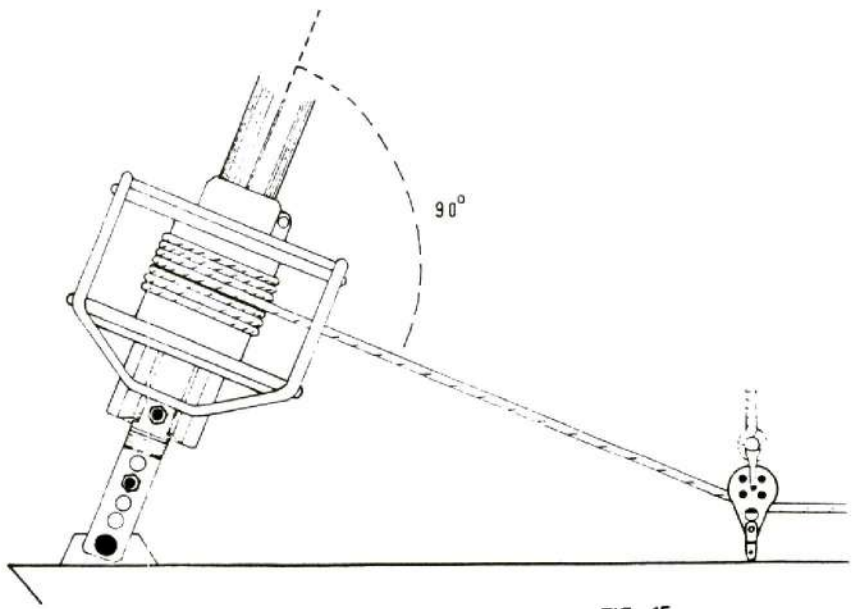


FIG. 15

I. SPECIAL PROBLEMS

- I. If there is a high wind it is better to bring the forestay down and assemble on the dockside or any clean surface.
- II. Once the assembly on the dockside is complete it can be hoisted into position with the spinnaker halyard attached to a shord cord lashed to the top extrusion about 5 feet down.
- III. Hoist the completed furler over the bow avoiding excessive bending of the joints.
- IV. When the furler is as high as possible climb the mast to connect the upper terminal. Check that the Wrapstop is facing the correct way and remove the lashing and send down the spinnaker halyard before returning to the deck.
- V. If the STANDARD bottom link plates are not long enough to raise the drum high enough above the deck there are longer plates available as an optional extra. Ask your PROFURL dealer.
- VI. If the bottom terminal on the forestay is a swaged stud and rigging screw there is an optional alternative type - the integrated turnbuckle type furler - which is available to order only.