

Dear PDRacer Builder

This is my somewhat idealised list – with everything perfect as I would choose to do it on my own boat. My bias is not toward doing things the cheapest possible way but to use very reliable fittings and parts that won't break or cause problems over a very long period of use. Part of the PDR ethos though is to go cheap and I respect that completely if that's what you want to do. One caution though – please put any bolts in the rudder construction where I specify them. They hold the rudderbox together under the splitting loads from the rudderblade.

It can be simplified if you don't want to get all those different types of rope but they do have advantages as stated.

See the "News" page on the website for a link to pictures of how to rig the PDRacer.

### Fastenings

RH - Round head or pan head

CSK - countersunk

MT - metal thread - normal stainless steel bolts

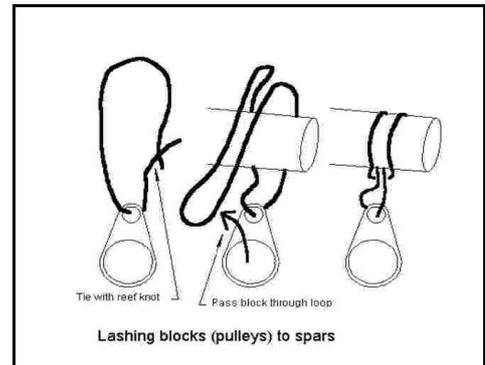
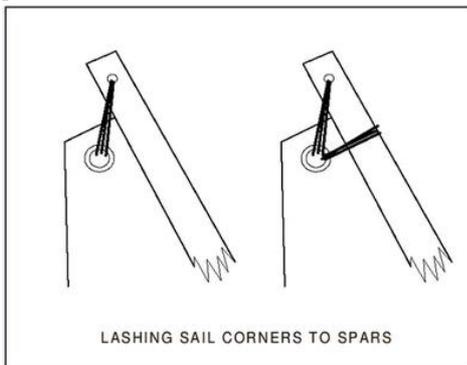
ST - self tappers - woodscrews are quite uncommon on boats now - these are self tapping and can be driven in with a cordless driver.

### Use of epoxy of fastenings

If fastenings are washed in solvent and dipped in epoxy and the pilot hole is wet out with epoxy (using a pipecleaner) just before the fitting is attached it increases the strength a huge amount. You will need to use a soldering iron to remove the component if you need to later but the reliability of bonded fastenings is worth the extra care and effort.

### Summary of ropes

Spectra - is very low stretch. If you are racing or just want the boat to operate efficiently in a carefree way this can be used where specified. I don't believe that every rope should be spectra like most racing guys, but there are some good places to use a bit of it.



Prestretch - An older style of rope with slightly lower stretch than normal. Generally spectra has replaced it but it can be easier to get.

Double Braid - a soft rope that is nice to handle - it is ideal for the mainsheet which is the only rope on the PDR which is handled more or less continuously.

VB cord - a thin 3 or 4mm polyester cord that is usually used indoors for blinds and awnings. It is a cheap rope for the long lashing that attaches the sail to the mast.

Shock cord - a "bungee" with made of strands of rubber with a woven case protecting the outside.

### Hull

Plastic inspection ports – you could just use bungs to drain the tanks but a port is useful because you can sponge it out

2 x diameter 150mm (6")

1 x diameter 200mm (8") - the bigger port makes it easier to check whether

the mast is sitting on its pin correctly.

Short screws to suit

Small tube silicon or polyurethane sealant



## Mast

Mast Step Bolt - can be heavy galvanised steel or stainless steel. Hex 9mm x 120mm (3/8 x 5") nut and two washers.

## Snotter

Rope - 4mm (5/32) prestretch or spectra (or thicker something else) - 3.0m (10ft)

Horn Cleat plastic or homemade wooden - 3 or 4" long – on side of mast about 450mm from deck

SS Self Tappers 3/4" x 10g (epoxied in)

Single Block with Becket

Attached by rope loop (right)

Single Block without Becket

Attached by rope loop (Right)



Note that the pic right shows the amount of mast bend from the correct tensioning of the snotter. The sail has been temporarily tied out at the bottom by tying to the mast base for demonstration purposes. That rope will tie to the deck saddle.

## Attachment for Mainsail tack lashing

On deck just behind mast – needs to screw into transverse part of mast partner under deck.

Saddle - 5mm (3/16") fastenings

SS Self Tappers 1" x 10g (epoxied in)

Washers to go under saddle so deck is not indented.



Corner Lashings - 3 or 4mm (1/8 or 5/32") prestretch or spectra. - 3.0m (10ft) (or 4.5m (15ft) venetian blind cord)

Luff lacing - 3mm or 4mm (1/8 or 5/32") venetian blind cord - 7.0m (24ft)

Downhaul - 4mm (5/32") prestretch (or same thickness something else) - 1.5m (5ft)

The photo shows our Mk1 PDR arrangement. There is no timber collar on MK2s

## Traveller

Rope - 4mm (5/32") prestretch or spectra (or thicker something else) - 1.5m (5ft) – drill a 5mm 3/16" hole through each gunwale around 4" from the back of the boat but close as possible to the plywood side of the boat. Pass the end of the traveller rope through then tie a knot to prevent it pulling out.

Single Block to suit mainsheet thickness (tie into a small loop in the middle of traveller).



Note that our rudder fittings are homemade ones. The timber gudgeons on the rudderbox are hardwood with lots of layers of fibreglass tape (5) wrapped round the radius and running onto the faces of the rudderbox about 50mm. A trick is to put the pin through both before attaching them to the box so they will glue up aligned correctly.

## Boom

Single Block without becket ( to suit mainsheet thickness ) - through hole in end of boom attached by rope loop.

Mainsheet Rope - 6mm (1/4") Double Braid - 8m (27ft) – ties to beckett of block on traveller then up through mainsheet block then through block on traveller then forward to boat. Tie a knot in the end so it cant pull back out through the system.

Note – the rope here also goes through the sail eyelet. I think this may be a bad idea. Two separate ropes may be safer



### **Rudderbox/Tiller Extension**

The rudder box doesn't need to come off the transom unless it is a matter of storage.

#### **Rudderbox/Attachment**

- Rudder pin (about 6mm (1/4") diameter)
- Transom gudgeons
  - bolts, nyloc nuts, washers - transom thickness approx 23mm.
- Rudder gudgeons (gap between tines to be approx 42mm (1 5/8"))
  - 2 x sets RH bolts, nyloc nuts, washers to go through the lot
  - 4 x sets CSK bolts, nyloc nuts - length of bolt 25mm (1")

#### **Tiller**

Tiller extension swivel - offcut from mainsheet. Thread through holes in tiller and extension and tie a knot in each end. Try to tie the knot close so there is not too much initial sloppiness

- Bolt RH 3" x 3/16, nyloc nut, two washers (to prevent tiller from splitting rudderbox).



#### **Centerboard/Rudder**

Loop handles - use offcut from mainsheet - thread through both holes in rudderblade head so it is diagonally across top of rudderblade. Then tie knots so that the rope cant pull out. Same with centreboard.

#### **Centreboard and rudder Hold up/down**

- Shockcord 6mm (1/4") - to base of mast - 2.5m (8ft)
- Plastic clip (tie in end of shockcord).

ie End of centreboard shockcord is tied off to saddle on deck behind mast. Then shockcord end with clip goes through centreboard rope handle then clops through the loop that attaches the first end

Rudder shockcord wraps around rudderbox two or three times. It gets tied just tight enough to pull the rudderblade into the box with reasonable tension - it should be a comfortable pull to get the blade in behind the pretied shockcord.



### **Block attachments - no screws**

4mm (5/32") prestretch or braid or spectra - 1.5m (5ft)

Blocks to be attached to spars by simple lashings - diagram above. I just make up a loop about 6 inches in diameter tied with a reef knot or fisherman's bend. To attach to block. Put one end of loop through hole in block. Pass other end of loop through the first loop. and pull it snug. See link to pictorial guide in "News" section of [www.pdracer.info](http://www.pdracer.info)

To attach to spar put one end of loop round the spar - pass block through loop and pull.

### **Toestraps**

50mm (2") wide seatbelt webbing - heatseal ends - 2.2m (7ft)

Pads to attach webbing to frame - 6mm ply offcuts approx 50 x 25mm (2" x 1") - pic below right

- 25mm (1") screws
- 5mm (3/16") saddle
- 3/4" x 10g screws and washers (epoxy in predrilled holes)

Tension for toestraps 3 or 4mm venetian blind cord - (offcut from sail lacing)



#### **Towrope**

skiroppe 6mm (1/4" min) length min - 7.6m (25ft)

