FITTING TWIN POLES TO A FIREBALL

I have now fitted twin poles to three boats and have sailed multiple regattas in each boat testing the systems.

The first two boats were existing YMS boats in Australia, 15101 and 15000. The third boat is my brand new Winder 15173.

Note lengths of ropes suggested below will vary boat to boat depending on where systems can be fitted.

There are several steps to fitting the poles which can be broken down into the following sections.

Mast Modifications

- Fitting the higher pole height pulley in the mast and preparing twin pole uphauls
- Fitting the pole launcher fitting
- Fitting the pole launcher cleats

Boom Modifications

- Remove existing pole storage wire loops
- Fitting the pulleys in the boom for the retractor system
- Fit 5mm elastic

Making the Poles and Launching Ropes

- Source Two 28mm carbon poles 1970mm long
- Fit the two ends
- Fit loops to the outer end of the poles for pole up and downhaul systems
- Splice and fit pole launcher ropes
- Fit elastic helper system

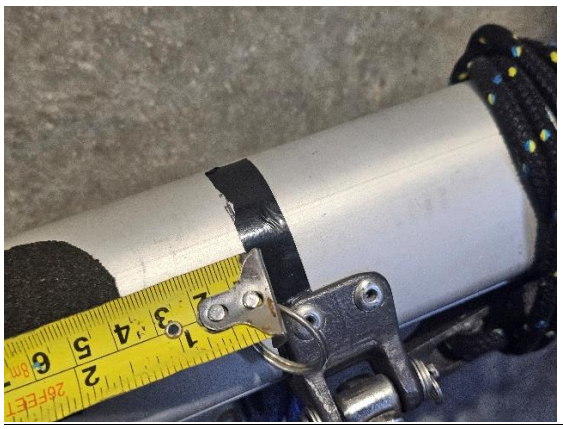
Hull Modifications

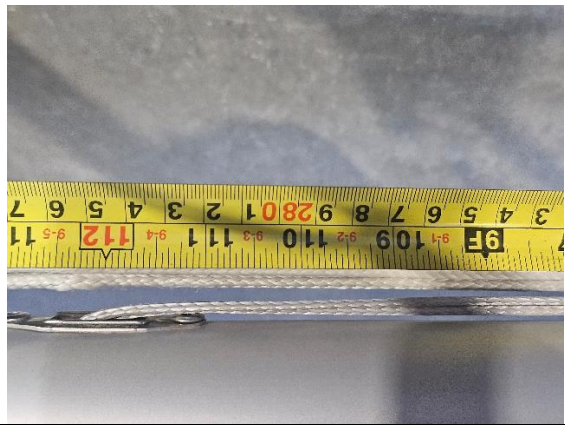
- Removing the old fittings
- Fitting the down haul elastic system
- Fitting the brace system

Mast Modifications

Fitting the higher pole height pulley in the mast and preparing twin pole uphauls

Fit a new exit block 2850mm from top of bottom band / 3870mm from heal of mast.





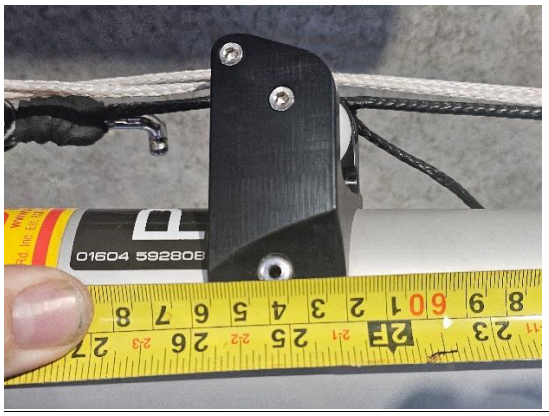
Twin 3mm dyneema pole height lines joining inside mast to then go to single adjustment in boat.qq
Cut one piece of dyneema 3300mm long and one piece 8500mm long.
Join the two together using a locking splice so you have two pieces 3150mm long coming down to the poles and the other end threaded through the mast for adjustment.

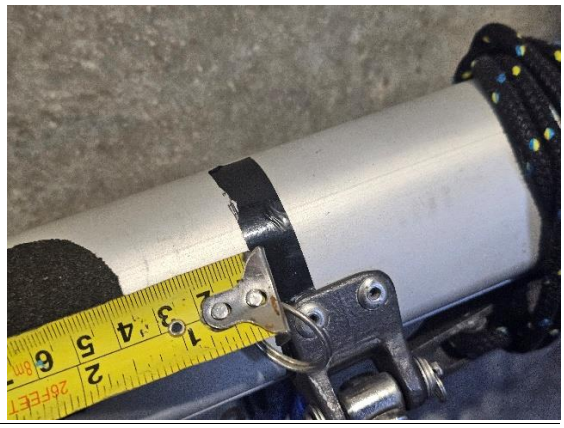
Fit a “dog bone” to each to allow connection to the two poles.

At 8500mm long you should have plenty of rope to go to your existing pole height adjustment system in the boat. There may be some to trim off.

Fitting the pole launcher fitting

Attach the Ezi Launcher 300 dual pole launcher fitting to the mast 620mm to bottom measured from top of bottom black band / 1640mm from mast heal using 3 pop rivets or screws.





Fitting the pole launcher cleats

Attach the two Ronstan swivel cleats 330mm down from top of bottom mast band to top of fitting with the cleats facing downwards. I recommend screws as I have had trouble with getting the pop rivets to hold.

Note that before putting the two fittings on you will need to move the pulley in each from the top to the bottom hole for use upside down.

Boom Modifications

Remove the existing pole storage wire loops.

I stuck some sticky grip over the holes in the top of the boom to hide them rather than fill them with rivets.

Fitting the pulleys in the boom for the retractor system

Cut a hole each side in the boom approximately 1950mm from front of boom to sheave point as shown below. Fit an exit block suitable for 5mm elastic.

In the front of a Selden boom there are normally three pulleys already installed.

One is normally used for the outhaul leaving at least one spare.

Use 4 metres of high quality 5mm elastic

The elastic runs from the starboard pole, through exit block to one of the pulleys in the goose and then back to the exit block on the port side. The elastic can either be attached to the pole by threading it into the pole next to the end in the fitting slot and tying a knot as per the above photo or have a knot and ball with a loop on the pole so the pole can be removed like the photo below.

Making the Poles and Launching Ro

Source Two 28mm carbon poles

Remember that the class rules state that the pole must not protrude more than 2025mm from the mast front when out. Rule 19.1

Cut the carbon tubes to 1970mm long.

Fit the two ends

You will need the two inner pole ends that come with the Ezi Launcher 300
https://www.pinbax.com/ezi-launcher-300-standard-ends-p876

You will need the two out pole ends from Ezi Launcher

https://www.pinbax.com/ezi-outboard-end-p7688

Inner End -

The hole that the rope passes through on the inner end of the pole is quite small so I normally drill this out with a 10mm drill bit. I then use a large counter sinking drill bit to round the edges so the pole launcher rope travels smoothly.

Outer End –

I normally cut 20mm off the end of the outer end fitting to allow my loops below to be closer to the end of the poles.

Use a small removable screw to hold the ends in place.

Fit loops to the outer end of the poles for pole up and downhaul systems

Drill a 4mm hole from top to bottom in each pole approximately 50mm from the end of tube Make sure that when the outer end is fitted the hole is clear of the fitting.

Make two loops approximately 30mm long using 3mm dyneema with a knot in the end of the loop. Using some whipping twine to assist thread loop into the pole and out through the hole with the knot holding the loop in. One loop will come out the top hole to attach to the pole height rope and the other will come out the bottom hole to attach to the down haul elastic.

Repeat the process on the second pole.

Splice and fit pole launcher ropes

On the YMS boats I have used 5mm spectra for the launching ropes which is easy to hold onto but has a bit of friction.

The latest version on the Winder uses 4mm spectra which reduces the friction.

The rope should be approximately 7.5m long – you can always trip some off later.

Remove the outer casing of the rope 2m from one end and splice in the taper.

Splice a loop into the tapered end that can be attached to a small stainless-steel ring. From the ring to the taper it should be 1.8 metres.

When the pole is pulled out to the mast for use, the taper will remain inside the pole and when the pole is away the taper should also remain inside the pole.

Fit elastic helper system

When dropping the pole it is important for the pole launcher rope to move freely through the pole so the steel ring that attaches to the guy / brace comes back out approximately 1.2m.

The ring needs to rest on the deck near the gunnel – see below.

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This is required for two reasons, firstly so the launcher rope does not foul on the jib and secondly to allow the brace to come off enough to pack the spinnaker in the spinnaker bag.

To help with this I have fitted a piece of 2mm elastic to the pole launcher rope inside the pole – as close as possible to the splice. This elastic comes out the pole end and ties to the opposite end of the pole. When the pole is stowed, the elastic is just under tension and when pulled out the elastic is highly tensioned. As the pole is dropped the elastic pulls the launcher rope back out the pole.

Elastic tied to inner end of pole

Elastic coming out pole

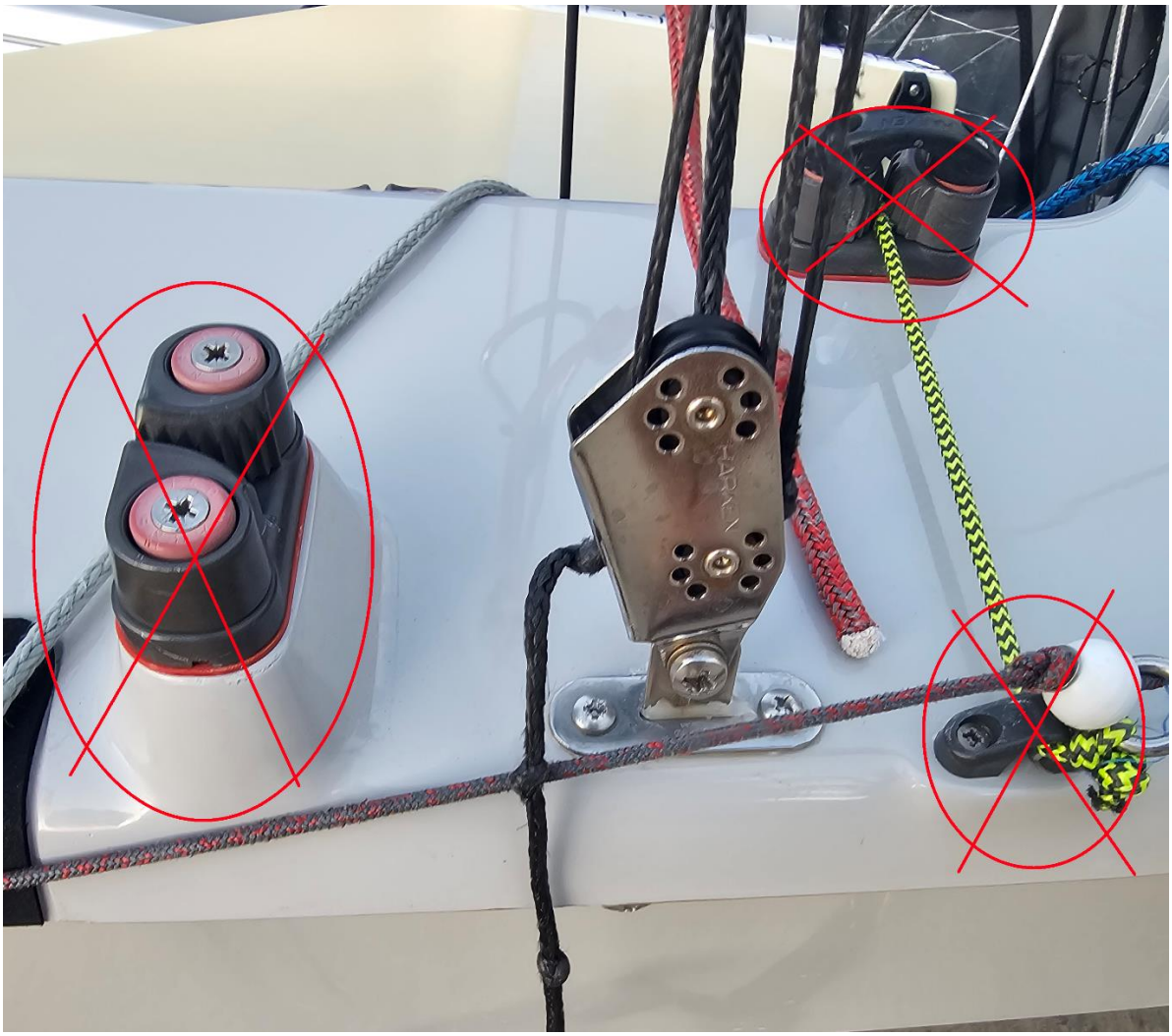
Hull Modifications

Removing the old fittings

The twin pole system uses a “Lazy guy / brace” in conjunction with a standard spinnaker sheet.

The lazy guy replaces the need to have barber haulers or twinners.

As a result, you can remove the fittings that were used for these.



You will need to remove the knot and ball from the spinnaker sheet not just the fittings.

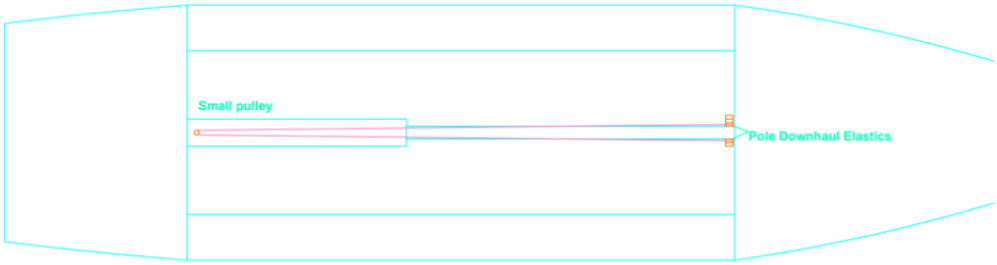
Fitting the down haul elastic system

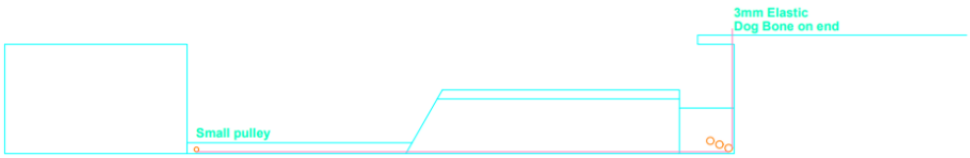
Remove the old system for the pole down haul.

You will now need an elastic downhaul for each pole. I use a continuous one from side to side.

You may need to drill additional holes down through the chock at the front of the mast gate.

The elastic is led down through the plastic chock, around a pulley (either mounted to the side of the keelson under the mast step or bolted through the front bulkhead) then along the case to the rear of the boat to a turning pulley inside the rear keelson moulding and then forward on the opposite side, around a pulley (either mounted to the side of the keelson under the mast step or bolted through the front bulkhead) then up through the plastic chock. Each elastic is then fitted with a dog bone to allow connection to the pole.





Fitting the brace system

As the Fireball has bags instead of a chute it will be necessary to let about 25cm -30cm of brace off to allow the corner of the kite to go into the spinnaker bag when dropping. If the brace is not released it is not a big problem, the spinnaker will just protrude like the photo below.

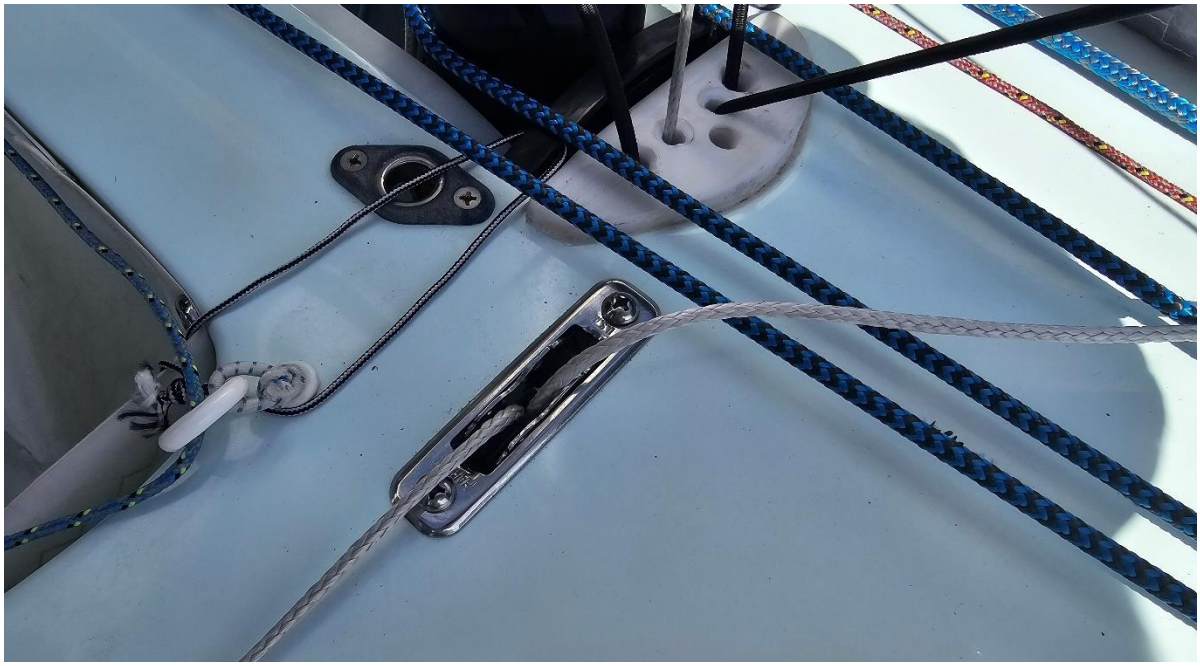
With the brace released 25cm – 30cm the spinnaker can just fit in the bag.

This means that when looking to set the spinnaker the helm will need to pull the brace on before the set.

The Starboard and Port brace lines are joined together so they both pull on and release at the same time.

<u>Fit the brace system blocks.</u>

Start by fitting a double exit block through the deck on the starboard side, as close to the front bulkhead as possible.



Next you will need to fit a high load pulley, to each gunwale approximately 400mm forward of the chain plates – just behind the front bulkhead point.

Drill two holes through the gunwale at this point and tie the block on using 3mm dyneema.

Make the brace ropes.

Make the brace ropes. Use 3mm dyneema for this. Use a piece of dyneema approximately 15 metres long. This can be trimmed to length later. Fold in half and splice a loop with a locking splice. This loop will attach to the adjuster system on the boat.

Next fit the adjuster system.

The new Winder now has 10 slots for controls at the rear of the centre case. With plenty spare slots, I fitted a course adjuster (2-1) and a fine tuner (4-1) for the brace in this boat.

The YMS and potentially a older Winder only had space for one control line, so I fitted 3-1 system for all adjustment in the YMS.

Fit a saddle bolted through the front bulkhead directly below the double exit block fitted earlier.

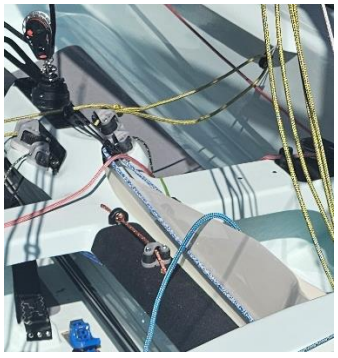
To this saddle fit either two single micro blocks or one double.

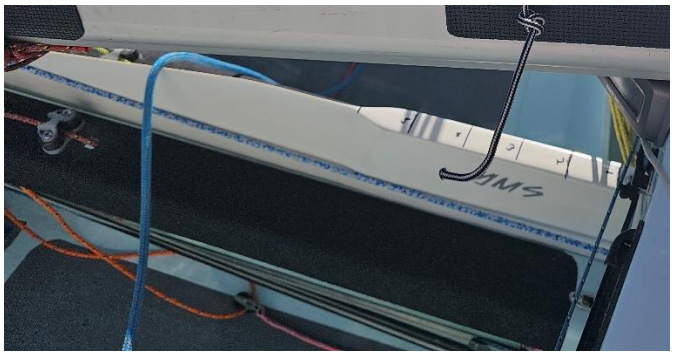
The height of the saddle off the floor will be determined by the height along the case the control system is going to be fitted. In the YMS the system runs near the top of the case so the saddle is approx. 20cm off the floor. In the Winder the system runs closer to the floor so the saddle is fitted approx. 5cm off the floor.

In the next photos you can see the YMS setup with the pulleys attached to the bulkhead and the 3 – 1 control system using the red spectra.

The YMS has the cleat on the top of the case with a deadeye behind it. A hole has bee drilled through the case top for the red control line to come up through.

Bolted under the case top utilising the cleat bolts is a saddle with a single micro block completing the 3 – 1 system.





<u>Threading the brace system.</u>

The spliced centre loop in the brace ropes attaches to the control system. The two brace ropes run forward through the **<u>same</u>** pulley attached to the bulkhead and then up through the double exit block through the deck.

From here the lines separate out to each side and through the pulley fitted to the gunwale earlier.

Before being led forward around the bow the brace needs to be threaded through the steel ring on the pole launcher rope.

The brace line from each side then continues forward and is spliced to the spinnaker sheet.

When connecting the spinnaker, the sheet and brace tie to the corner of the spinnaker together.

Note that initially you will have excess length on the brace lines so they will need to be shortened so that when the braces are all the way off, the spinnaker can just be packed in the bag. The looser the brace is when in the bag, the more you will need to pull on when setting the spinnaker.

Fitting the elastic take up.

The second puller attached to the saddle on the front bulkhead is for an elastic take up to help release the brace when uncleated for dropping the spinnaker.

Use a piece of 3mm elastic approximately 3m long. Tie this to the adjuster system. Then lead it through the second pulley and finally pack to a point towards the rear of the boat where is can be tied off.

Drawings of brace fitment in new Winder with course and fine tune –

Final Note –

You may need to fit a pulley to your boat if using chocks or a low strut to stop the mast inverting with the load of the pole pushing back. The pole attachment to the mast is 200mm higher than in the past so there will be more load pushing the mast back.

A system like in the diagonal grey line going from the gooseneck to the deck in photo below is recommended –

Note we have removed the blue line around the mast now as the puller replaces it.

We have our puller so it comes on automatically when we pull the spinnaker up and releases when we uncleat the spinnaker halyard. This way we never sail a reach without it on.