

	part #	swl	line max	quantity
Sheet blocks				
Ronstan Series 40 Smart Ratchet	RF42100	550	5/16	2
stand up spring	RF 319			2
eyestraps	RF 94A			2
4 #10 fasteners complete				4
Cams:				
Halyard & two sheets	HK 150 -	300	1/8-1/2	3
Tackline (HK 150 with eyestraps)	HK 316	300	1/8-1/2	1
8 #10 fasteners complete				8
Halyard block & bail				
29 mm carbo swivel block	HK 340	500	5/16	1
Ronstan Boom Bail	RF 1045			1
1/4" fastener complete				1
aluminum compression tube				1
tufgel antiseize				1
Turning blocks for halyard				
upright (108 IS 500# SWL)	HK 108	500	5/16	1
cheek block (109 IS 500 swl) (estimated price)	HK 109	500	5/16	1
4 #10 fasteners complete				6
Tackline at bowpulpit (test leads!)				
Spinlock stanchion fairlead (or HK 061)	SPIN WL1	660		2
Alternate stanchion mount base for block	HK 061	350		?
? #10 fasteners complete				?
SUBTOTAL STANDARD RIGGING				
Running rigging - color coded - at a minimum, sheets diff from tackline				
5/16 Staset or StaSetX halyard (per foot)				50
5/16 Staset sheets (per foot)				86
1/4" Staset sheets (per foot)				86
5/16 staset or stasetx tackline (per foot)				32
OR:				
5/16 XLS Yachtbraid halyard				50
5/16 LS or XLS Yachtbraid sheets				86
1/4" LS or XLS Yachtbraid sheets				86
5/16 XLS tackline				32
TOTAL				
Alternate cam cleats				
Ronstan cam cleats	RF 5010	400	1/2	4
RWO carbo cam cleat - small	rwo 3620	300	5/16	4
rwo fairlead	rwo 3626			1
Upgrade/Downgrade sheet Blocks				
Downgrade- carbo 40 mm ratchet	HK2608	485	3/8	2
Standard- Ronstan Series 40 Smart Ratchet	RF42100	550	5/16	2
Upgrade for hand-held, front-of-cockpit sheeting - add Ronstan S30 standup	RF 42100	550	5/16	2
	RF30140	485	5/16	2
Carbo 57 mm ratchomatic for cross sheeting	HK 2625	500	3/8	2
Downgrade- Carbo 40 mm swivel-no ratchet	HK 2636	485	3/8	2
Downgrade - Ronstan series 30 standup swivel with spring and eyestraps	RF30140	660	5/16	2
Maritime Selfaligning bullseye - low profile	BE 10		3/8	
consider carbo 57 with ratchomatic, becket, and				

IMPORTANT- READ THIS!!!

General Instructions

Your boat may have optional or owner installed hardware that may interfere with the recommended locations for installing hardware described in this guide. These guidelines can't anticipate problems with hardware that is already on the boat.

Before you drill any holes to mount blocks and other hardware, check the position carefully to ensure that lines have a fair, friction-free path. Tape the hardware in place, run some line through it, and check carefully to ensure that the lines run freely, do not chafe against the cheeks of the blocks, and that you can reach them easily.

When you install the hardware, use a sealant around the fasteners to prevent leaks. We recommend polysulfides (like 3M 101), and modified polyurethanes (like 3M 4200) for sealing fasteners. We do not recommend extremely strong polyurethanes (like 3M 5200) which are intended for permanent bonding.

The cabin top and sides of the P19 have balsawood coring. When you install hardware fasteners, you must take extra precautions to prevent water leaking into the wood core and causing rot. We recommend building epoxy fillets around the holes you drill. (See <http://www.blumhorst.com/potterpages/gennytracks/installinggennytracks.html> for one method of building fillets)

The side decks of the P19 are solid fiberglass. There is no balsawood coring there, so there is no reason to build epoxy fillets.

INSTALLATION OF RIGGING FOR A P19 ASYMMETRIC SPINNAKER
IMPORTANT DISCLAIMER: THE INFORMATION IN THIS DOCUMENT IS PRESENTED ONLY FOR THE PURPOSE OF DISCUSSION. IT IS A DRAFT AND MAY CONTAIN SUBSTANTIVE ERRORS.

This document was written by Judy Blumhorst. She is not a professional rigger, nor does she make any claims to be an expert in the field of boat rigging.

Judy does not have any formal training in rigging, nor any professional credentials in the field of boat rigging.

Judy is not an expert on asymmetric spinnakers either.

This document contains some of Judy's ideas regarding how to install the rigging necessary to fly a small, asymmetric spinnaker on a Potter 19.

Neither Judy Blumhorst, nor any person who reproduces this document with or without permission, claims or represents that the equipment describe herein or method of installation contained herein is advisable or safe.

USE YOUR OWN JUDGEMENT WHEN YOU INSTALL HARDWARE FOR AN ASYMMETRIC SPINNAKER.

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Rigging needed for flying an Asymmetric Spinnaker

- Two spinnaker sheets (shown below)
- The spinnaker halyard (shown in this picture on the port side of the mast and cabintop. However, we suggest installing it on the starboard side of the mast and cabintop)
- The spinnaker tackline (shown below on starboard)



On our 1985 Potter 19, Redwing, we launch and douse the spinnaker from a turtle bag hanging in the companionway. This means that the crew member remains in the cockpit at all times. Launching and dousing is usually done while sailing on starboard tack.

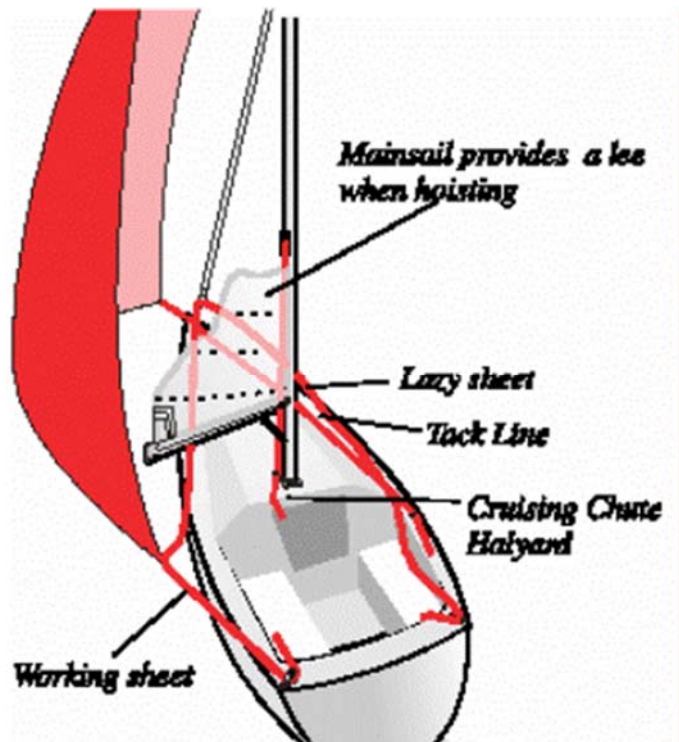
We prefer to launch the spinnaker while sailing on starboard tack (with the boom out to starboard and the wind coming from the starboard side of the boat). Boats on starboard tack generally (not always!) have the right of way over sailboats on port tack.

We also prefer to stand on either the centerline or the high side (the starboard side when sailing on starboard tack) during launching.

The asymmetric spinnaker is launched and retrieved over the port side of the boat, in the wind-shadow of the mainsail.

The controls for setting and dousing (the tackline and the halyard) are located on the starboard (right) side of the boat. Having the line controls on the opposite side of the boat from the launch keeps the sail from covering up the cleats on the lines if we have to abort the set.

We can launch the asymm in under 30 seconds, and more importantly, we can usually douse it in under 15 seconds if the need arises -- all without leaving the safety of the cockpit.



Above:

From: http://www.kempsails.com/sitedata/PDF_Forms_for_Download/Kemp-Using-A-Cruising-Chute.pdf

This picture illustrates the sheets and tack line rigged for doing inside gybes.

OVERVIEW OF RIGGING FOR AN ASYMMETRIC SPINNAKER

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Ronstan 40 mm Smart Ratchet for sheet blocks

See <http://www.ronstan.com/catalogue/p024.pdf>

FEATURES

- Low friction, 2-stage ball bearing system provides consistent performance over the full load range. High static and dynamic load capacity.
- Cheek cut-outs for easy bearing maintenance.
- Load-sensitive ratchet engages automatically when the sheet is loaded and disengages when the load is released for smooth, free running in tacks and gybes.
- Saddle RF94A and spring RF319 available for stand-up block configuration.
- Precision CNC machined alloy sheave provides up to 14:1 holding power, yet minimises rope wear for extended sheet life.
- Unique adjustment mechanism allows the engagement load to be set precisely as required. Higher setting keeps the ratchet off for light air sailing or until the sheet

load increases. Lower setting will trigger the ratchet at a lower sheet load. Ratchet engagement setting can also be varied to suit the load felt in your hand, so that younger sailors can set the engagement at a lower load to match their strength.

Location of 2 sheet blocks:

Install one smart ratchet block (with a stand up spring and eyestraps) on each side side of the boat, on the side deck, as far aft and as far outboard as practical. Use washers as backing plates.

Location for cam cleat:

Choose one of the following two options:

- If you don't have winches on the coaming: Install one cam cleat on each side of the boat, on top of the coaming, a few inches aft of the cam cleat for the jib sheets (so that the spinnaker sheet doesn't cross over the jib sheet). Position the cleat at an angle so that there is a fair lead from the ratchet block to the jaws of the cam cleat. Use washers as backing plates.
- If you have winches on the coaming, you can run the bitter end of the spinnaker sheet from the smart ratchet block, forward to the winches, and then to the cam cleat. Install the cam cleat in a position where it has a fair lead from the winches to the jaws.

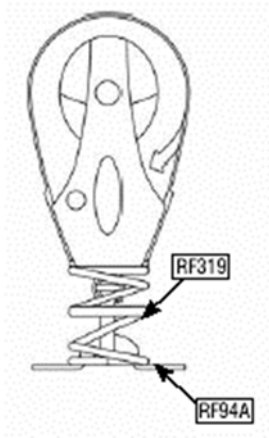
Why do we use a cam cleat without a fairlead for the spinnaker sheets? We don't want a fairlead on the cleat for the spinnaker sheet because. In the event there's a snag in the spinnaker sheet, it could get caught in the fairlead and prevent us from releasing the spinnaker sheet if a broach occurred. If your existing jibsheet cleat has a fairlead built in, don't use it for the spinnaker sheets.

SHEET BLOCK AND CAM-CLEAT INSTALLATION:

2 Harken 150 Cam Cleats for spinnaker sheets



Pasted from <<http://www.harkenstore.com/IMAGES/150.jpg>>



Ronstan SmartRatchet on stand up

RATCHET 'ENGAGEMENT LOAD' ADJUSTMENT



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Install two fairleads for the tackline at the bow:

- Install one Spinlock fairlead WL/1 on the top center of the bow pulpit. If your mast attaches to the center of the bow for trailering, put the fairlead slightly off center, towards starboard.
- Install a second WL/1 on one of the starboard pulpit legs, down low near the deck.

TACKLINE INSTALLATION



The tackline runs from the tack of the sail, through a fairlead mounted near the center of the bow pulpit, and then through a fairlead mounted near the bottom of the pulpit stanchion on starboard side.



Cam cleat without a fairlead, for the tackline



Spinlock Fairlead WL/1

Pasted from <<http://www.spinlock.co.uk/sitev2/default.cfm?section=1020&prodnum=239&ProductArea=blocks&ProductType=wl>>

The tack-line will be adjustable from the cockpit.

- For sailing deeper downwind, ease the tackline to rotate the the sail out in front of the bow, with the luff across the centerline to windward.
- For sailing on a reach, tighten the tackline to keep the luff on centerline, pull the draft forward and open the leech of the sail, giving it a more genoa-like shape.

The tack of the asymmetric will be attached to the bow pulpit

- This maximizes the separation between the mainsail and the spinnaker, and makes it easier to keep the spinnaker filled with air when you sail deep downwind.
- Decreases the chances of snagging the asymmetric on the pulpit during a gybe. The P19 pulpit projects quite far forward beyond the bow of the boat, making it a great place to catch the spinnaker on.
- Attaching the tackline to the bow pulpit makes it possible to do "inside gybes" possible on the P19, even though the boat does not have a bow sprit, because it puts the tack of the sail a significant distance away from the forestay



The tackline runs from the bow aft to a cam cleat mounted on the side of the cabin (or to a camcleat mounted on the side deck, within reach of the crew member)

Install a cam cleat for the tackline near the cockpit:

For the tackline cleat, use the camcleat without an eyestay on top of the jaws. Use washers for backing plates.

There are two options when deciding where to install the camcleat near the cockpit. Choose the one which gives you the best lead and avoids interference with existing hardware.

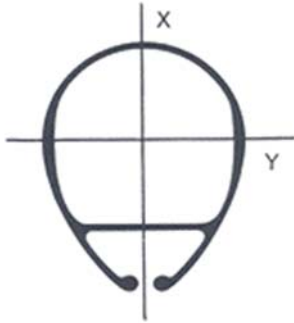
- Option 1: On the starboard side of the cabin-wall, near the aft edge, and an inch or so up from the side deck, where you can easily reach it from the cockpit. This option has the advantage of keeping your side decks clear of lines that could trip a crew member.
- Option 2: On the side deck, anywhere between the front edge of the cockpit and the middle of the cockpit.
-

Note: I don't recommend that you use a camcleat with eyestay for the tackline. If something goes wrong and you need to get the sail down fast, it's necessary to release the tackline instantaneously. If the line is tangled or hockled, the fairlead could stop it from playing out freely.

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HALYARD BAIL INSTALLATION

HALF-WAY BETWEEN
THE TOP OF THE MAST AND THE FORESTAY



Drill two holes in the mast on the Y-axis , half way between the forestay and the top of the mast.

OVERVIEW:

- The block for the spinnaker halyard will be attached half-way between the forestay and the top of the mast.
- The block will be suspended from a bail.
- The bail will be attached to the mast using a 1/4" through-bolt.
- The through-bolt will pass through a compression post made from aluminum tubing, to protect the mast from being damaged by the through-bolt

STEP ONE:

- Mark the location for the halyard bail and block ***half-way between the top of the forestay and the top of the mast.***

Step Two: Drill two holes in the mast for attaching the bail for the halyard.

- You will need to drill two holes for the through bolt on the side of the mast, through the widest part of the mast. Make a template before drilling, per the following instructions:
 - Wrap a strip of paper around the mast and tape it there.
 - Mark both edges of the opening on the aft face of the mast,
 - Remove the paper strip. Cut the paper strip at the pencil marks. Fold the paper in half length-wise and make a pencil mark on the fold.
 - Tape the paper to the mast again. Align the edges of the paper strip with the edges of the opening. Put a mark on the paper at widest part of the mast (on the Y-axis in the picture to the right) on the port side.
 - Remove the paper, fold it in half length-wise, and hold it up to the light. Trace/make a pencil mark on the starboard side of the paper strip for the hole on the starboard side of the mast
- Tape the strip of paper to the mast, half-way between the top of the forestay and the top of the mast.
 - Check to confirm that the marks for the holes are both located very close to the widest part of the mast, and are opposite each other.
 - It is not necessary to locate the Y-axis with great precision. If you are within 1/8" of the precise location, it'll be fine
- Use a sharp centerpunch to mark the center of the holes for drilling.

- Drill a small pilot hole on each side of the mast. Take care prevent the drill bit from jumping out of the centerpunch marking.
- Enlarge the hole to the correct diameter for the compression post (the aluminum tubing)
 - The diameter should be approximately 3/8", but check to confirm that it was manufactured with the correct diameter before drilling.



Harken 29 mm Carbo swivel block for spinnaker halyard



Install the bail using a 1/4" bolt through an aluminum tube compression post. (shown here on a boom, but the method is similar)

The picture above shows a bolt and compression tube inserted through the boom before the tube was trimmed to the correct length.

I took the picture that way so viewers would be able to see the tube. If I had cut it to the proper length, it would have been difficult to see the compression tube inside the mast.

After I took the picture, I cut the tubing to the correct length.



Rontan bail (part RF 10450)

STEP THREE: ATTACH THE SPINNAKER BAIL TO THE MAST, WITH THE THROUGH BOLT AND COMPRESSION TUBE

- Slip the 1/4" bolt into the aluminum tubing. Slip the bolt/tube thru the holes in the mast. Trim the aluminum tubing so the ends of the tube are flush with the outer wall of the mast.
- Check the fit of the bail on the mast. You may have to open it wider or squeeze it smaller to make it fit. It should touch the sides of the mast lightly. It should not pinch so tightly that it squeezes tight against the mast.
- Coat the 1/4" bolt and the inside of the aluminum tube with a good corrosion eliminator and anti-seize lubricant (to prevents seizing and galvanic corrosion between the aluminum and the stainless steel metal.)
 - One of the best anti-seize lubricants for use in the marine environment is TefGel. Lanacote is also good, but doesn't last long in hot climates. Vaseline works too. You should disassemble the hardware and inspect it periodically for safety.
 - Tef-Gel™ is a unique corrosion eliminator and anti-seize lubricant which prevents the seizing of metals and galvanic corrosion between dissimilar metals. It absolutely will not break down in salt water or detergents. Pasted from <<http://www.tefgel.com.au/>> TefGel can be purchased in the USA from Svendsens' <<http://www.svendsens.com/>> and Brion Toss Rigging <<http://www.briontoss.com/>>
- Install the bail on the mast, using the through bolt, compression post and a nylock nut. Tighten the nut only enough to snug the bail to the side of the mast. It is not necessary make the nut so tight that the bail doesn't swivel.
- Put the Harken 28 mm Carbo block on the bail. Tape the ring with rigging tape, to prevent it from coming loose.



Install a camcleat on the starboard side of the companionway, for the spinnaker halyard.

HALYARD TURNING BLOCKS AND CAM CLEAT INSTALLATION

- Install a halyard turning block near the base of the mast, on the starboard side. Use washers as backers. Use sealant. It is highly recommended that you protect the balsa core by making epoxy fillets.
- Install a cheek block on starboard side, outboard and slightly aft of the mast. Position the cheek block so that the line is deflected less than 90 degrees. Use washers as

backers. Use sealant. It is highly recommended that you protect the balsa core by making epoxy fillets.

- Install a camcleat for the spinnaker halyard on the starboard side of the companionway, as close to the centerline as practical. Use washers as backers. Use sealant. It is highly recommended that you protect the balsa core by making epoxy fillets.

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