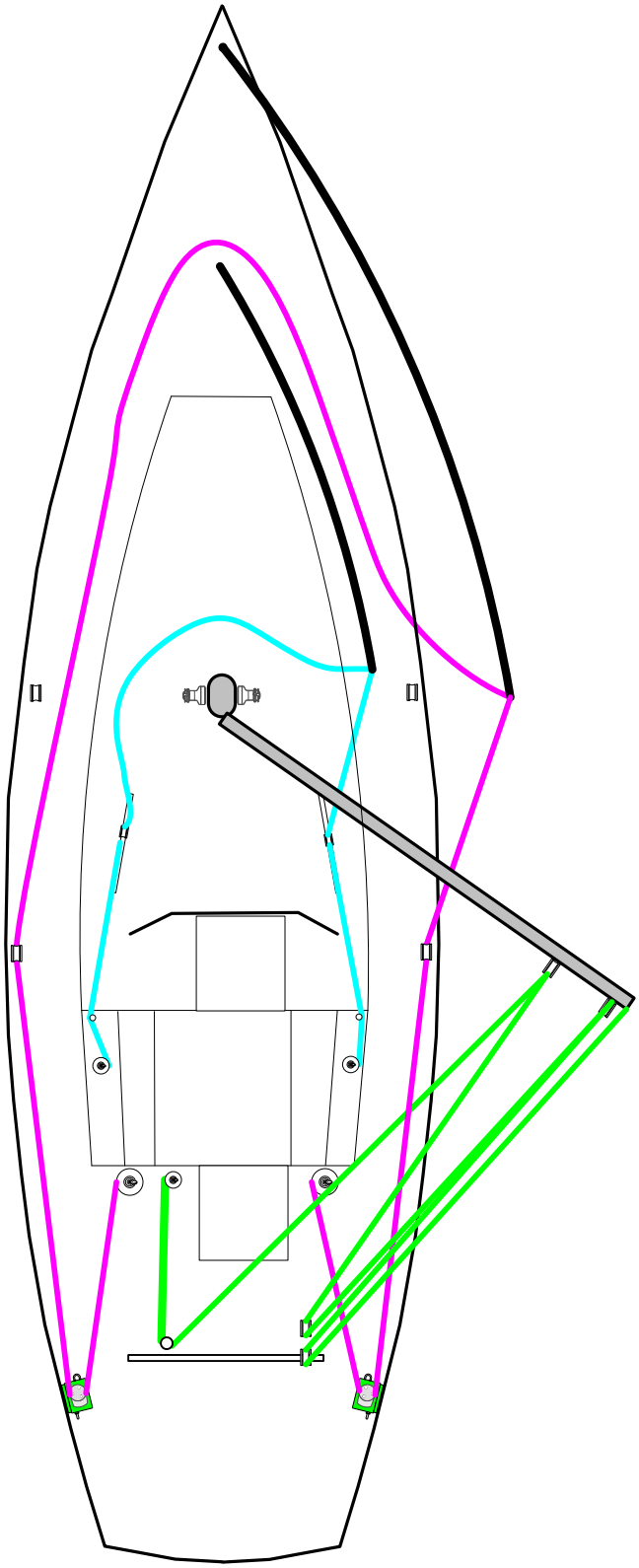


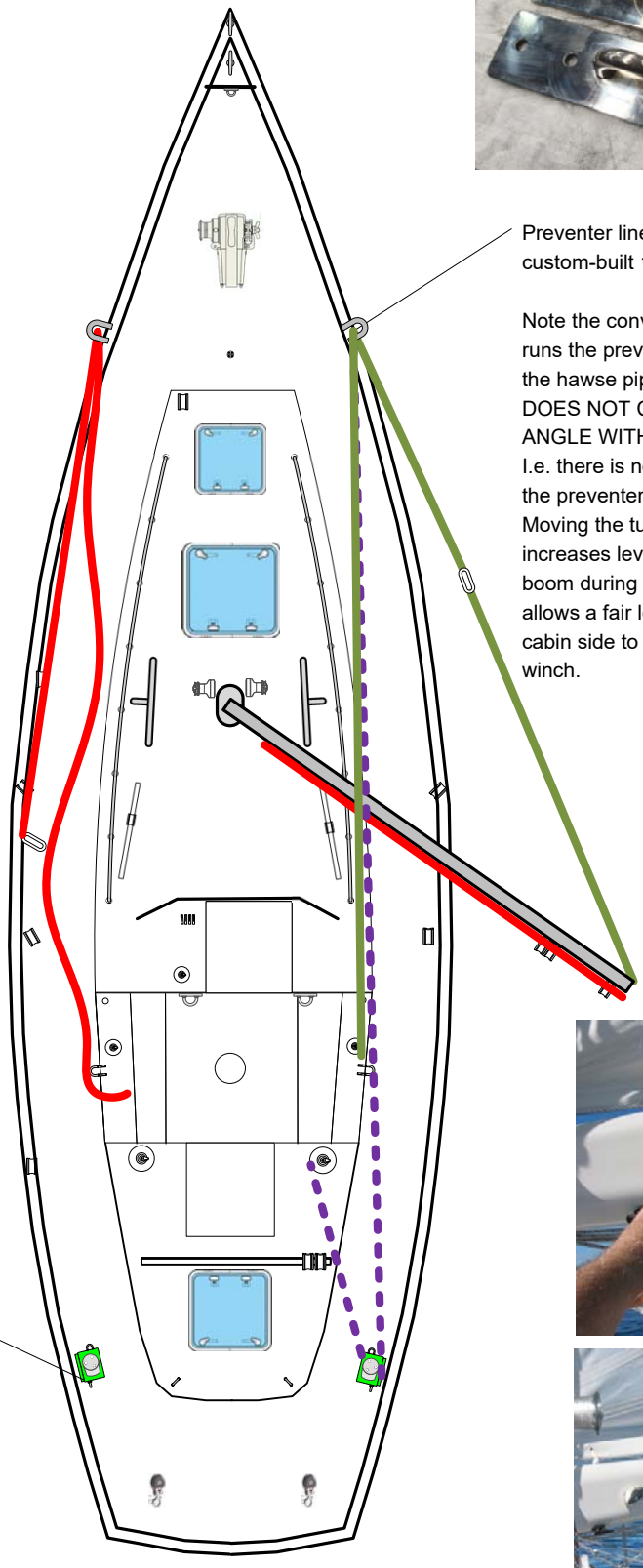
S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE				PAGE
Running Rigging - Main, Jib & Staysail				1 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"

There are two separate preventer lines for port and starboard tacks. Each line is separated into a 12-strand Dyneema segment that ends in an eye and clips to the side of the boom. The running segment of the preventer uses a carabiner to clip to that eye, runs outboard of all rigging to the padeye forward, and then is led down the deck to a winch.

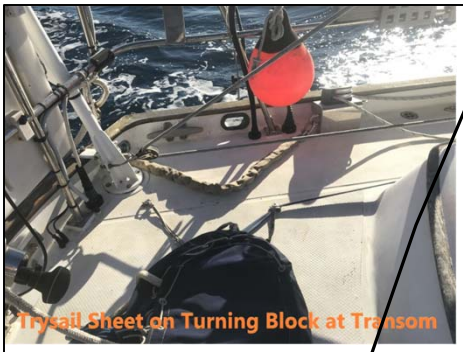
The 12-strand Dyneema clipped to the boom has shock cord buried in the core to keep enough tension so it stays on its clip.

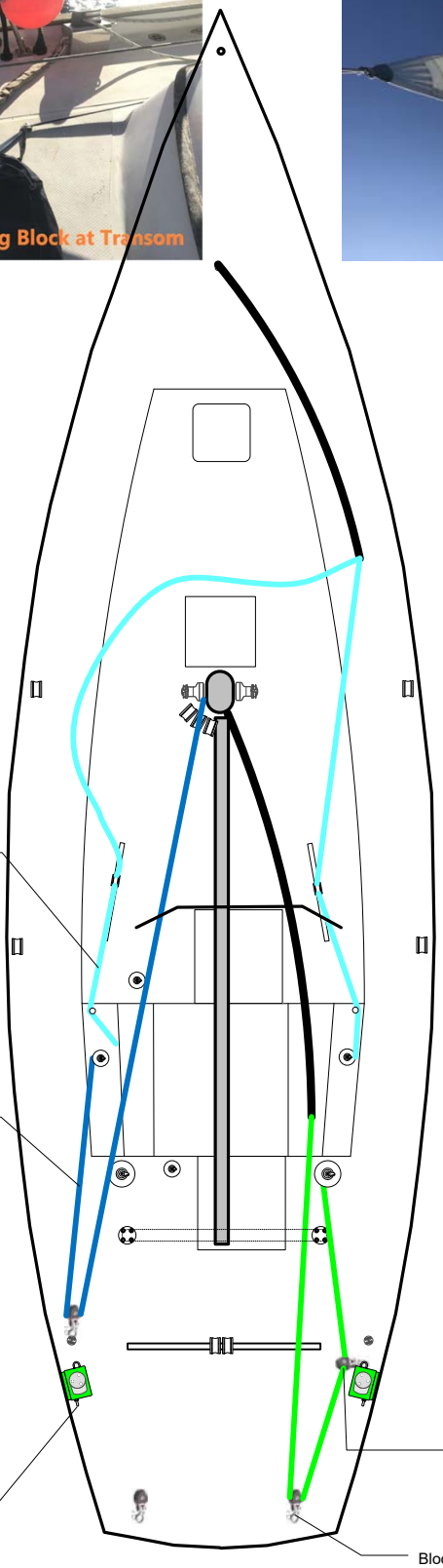
Note there are two alternate routings of this line, one leads aft through the double turning block and back to one of the two offside winches (purple dashed). The other routing leads directly from the bow to the secondary winch (solid blue).

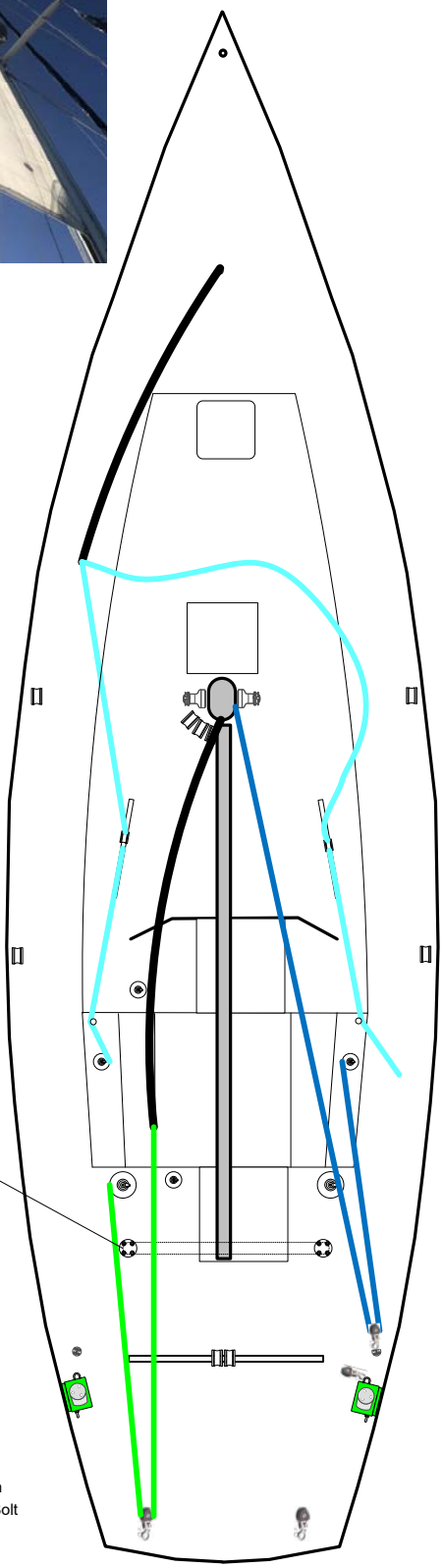


S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE				PAGE
Running Rigging - Preventer				2 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"







Trysail
Lazy Sheets
not Shown

Storm Staysail Sheets
Pass through standup
Block (on track) on
cabin top and through
cheek block on coaming.

Running Backstay

Starboard Tack:
Storm Trysail Sheet
passes **outside** of boom
gallows stanchion

Drogue Attachment
Point ½" U-Bolt on
Turnng Block Base

Port Tack Storm Trysail Sheet
passes through Snatch Block on
Turning Block Base forward U-Bolt
(necessary to clear aft cabin)

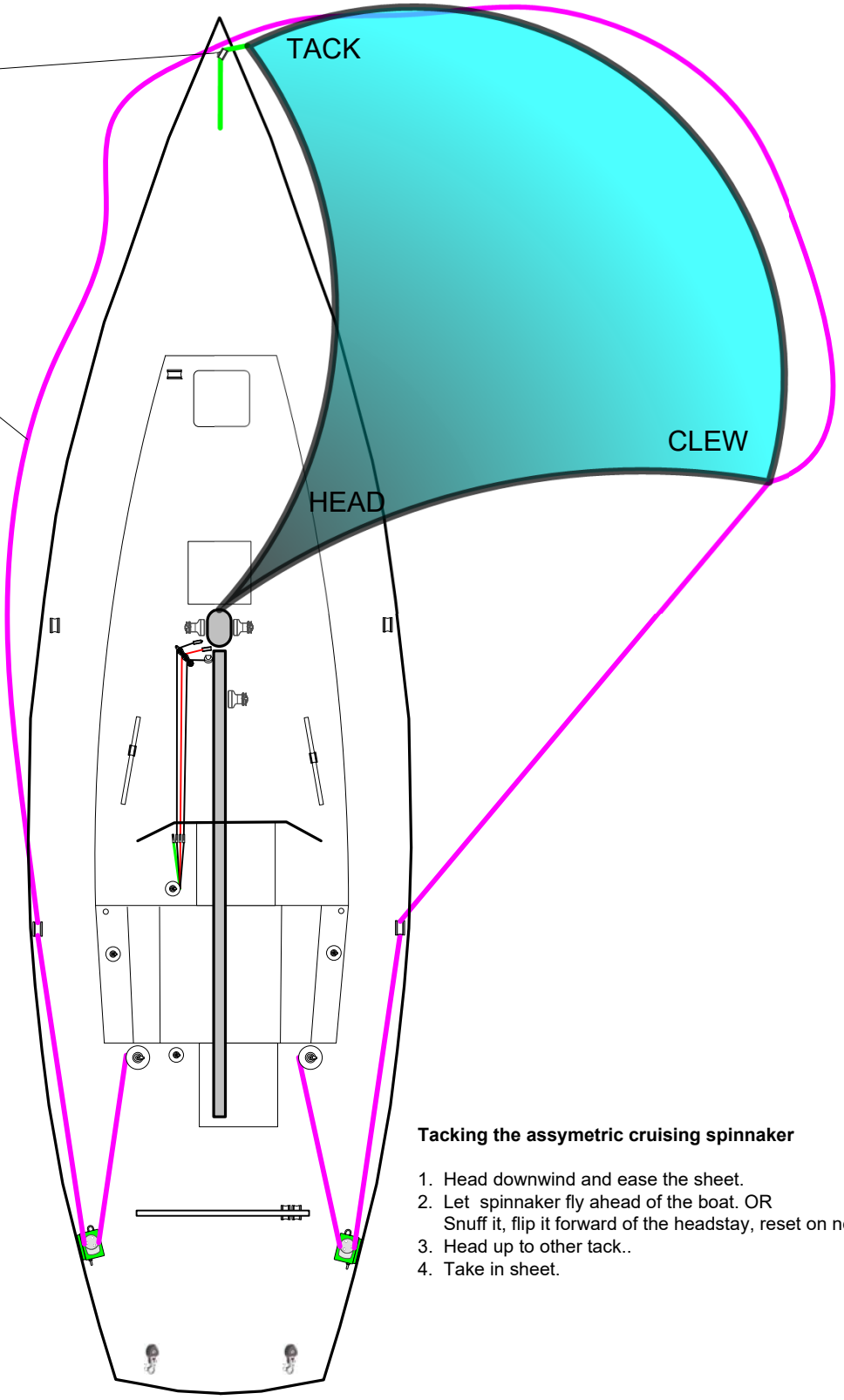
Block on U-Bolt
at Davit Bases

S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE				PAGE
Running Rigging - Storm Trysail, Storm Staysail & Running Backstays				3 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"

TACK LINE: Through block forward of forestay to horn on anchor windlass

Sheets run outside of everything. Lazy sheet must travel outside the headstay and around the sail.

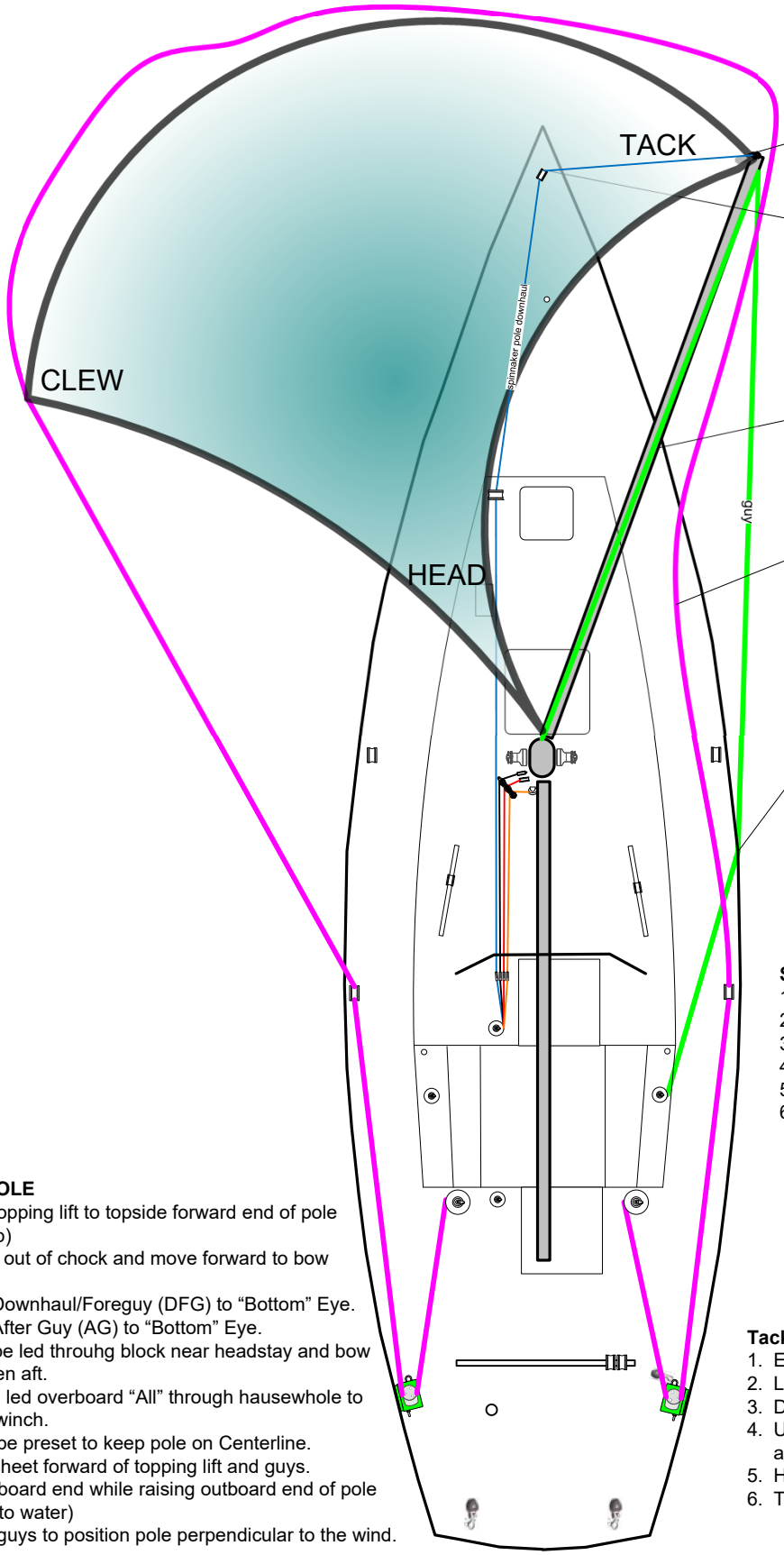


Tacking the assymetric cruising spinnaker

1. Head downwind and ease the sheet.
2. Let spinnaker fly ahead of the boat. OR
   Snuff it, flip it forward of the headstay, reset on new tack.
3. Head up to other tack..
4. Take in sheet.

S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE				PAGE
Running Rigging - Assymetric Spinnaker w/o Pole				4 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"



Assymetric Cruising Spinnaker Tack

Block on bail between anchor rollers

Use staysail halyard as topping lift

Sheets run outside of everything. Lazy sheet must travel outside the headstay and around the sail.

Guy passes through hawse hole

STRIKE POLE

1. Ease pole forward (ease AG, tension DFG)
2. Blow sheet. Snuff the sail.
3. Release Guys.
4. Raise inboard pole (ease Topping Lift)
5. Secure Pole
6 Remove Topping Lift

DEPLOY POLE

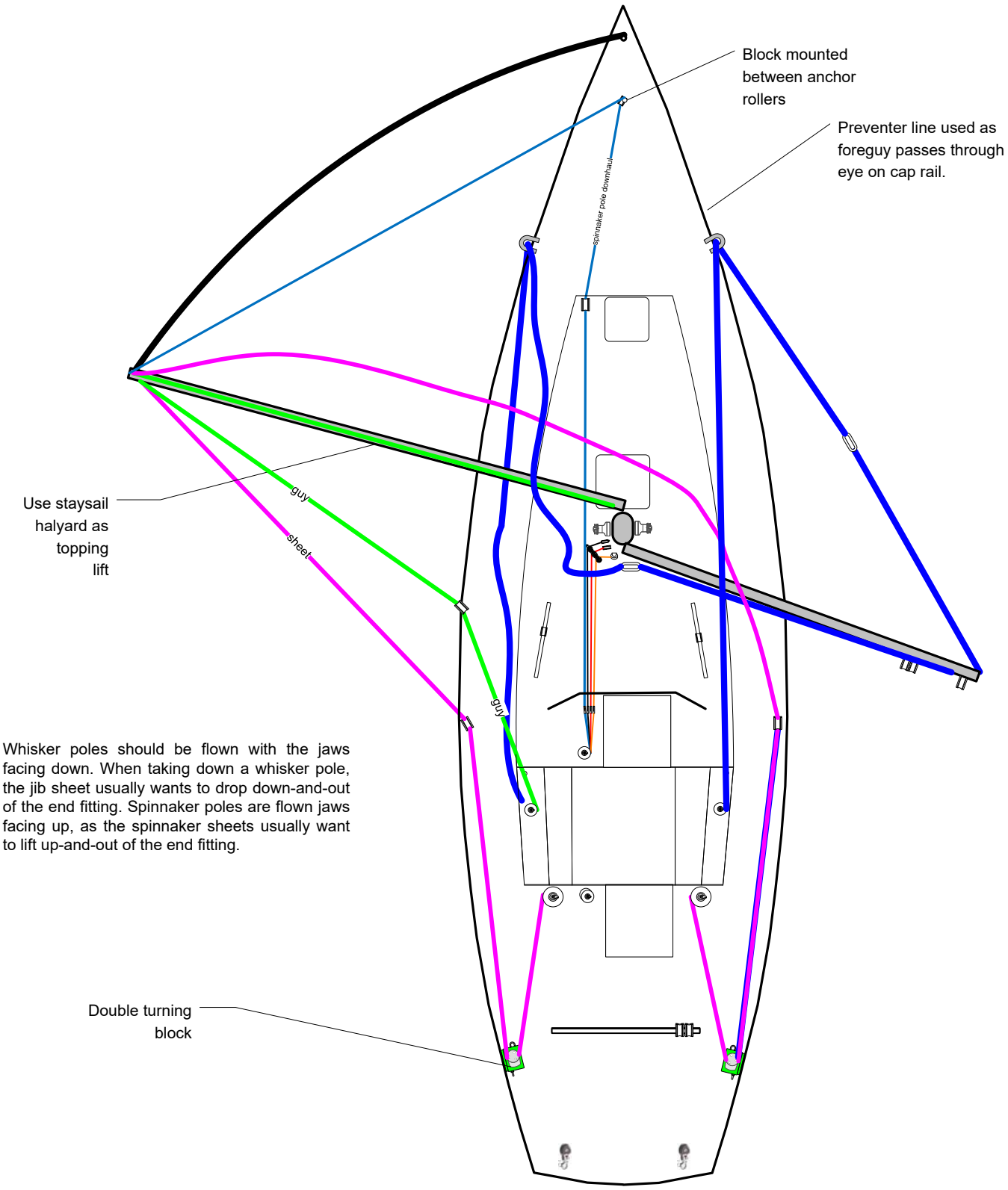
1. Secure topping lift to topside forward end of pole (Jaws Up)
2. Pull pole out of chock and move forward to bow pulpit.
3. Secure Downhaul/Foreguy (DFG) to “Bottom” Eye.
4. Secure After Guy (AG) to “Bottom” Eye.
5. DFG to be led throuhg block near headstay and bow roller, then aft.
6. AG to be led overboard “All” through hausewhole to staysail winch.
7. Guys to be preset to keep pole on Centerline.
8. Secure sheet forward of topping lift and guys.
8. Lower inboard end while raising outboard end of pole (parallel to water)
9. Use the guys to position pole perpendicular to the wind.

Tacking the assymetric cruising spinnaker with the pole:

1. Ease the sheet and guy.
2. Let spinnaker fly ahead of the boat.
3. Dip pole by running inboard end up the mast.
4. Uncleat pole from tack, pass to other side of headstay, and re-cleat pole.
5. Head up to other tack..
6. Take in sheet, adjust guy.

S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

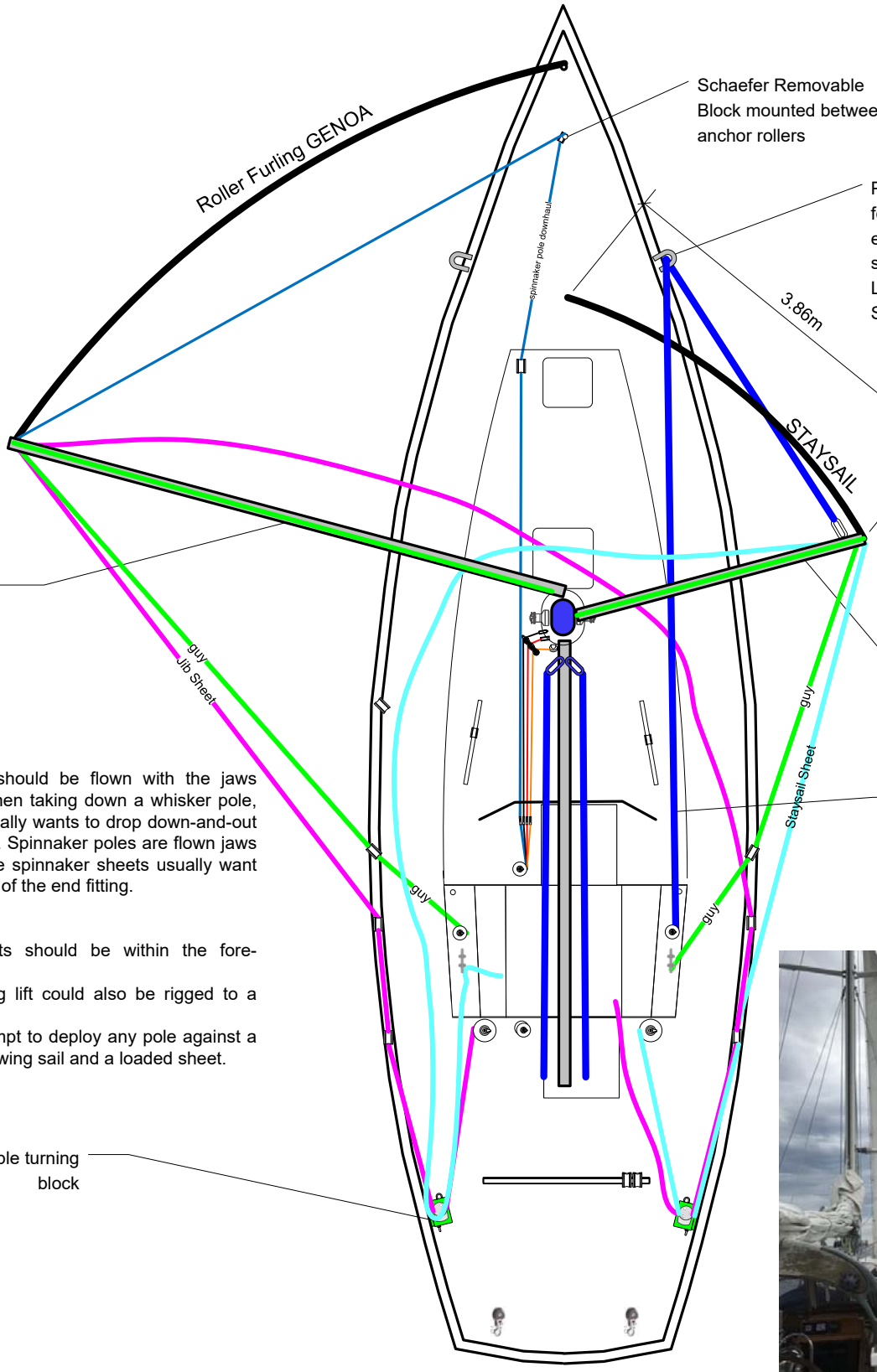
TITLE				PAGE
Running Rigging - Assym.Spinnaker w/Pole				5 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"



Whisker poles should be flown with the jaws facing down. When taking down a whisker pole, the jib sheet usually wants to drop down-and-out of the end fitting. Spinnaker poles are flown jaws facing up, as the spinnaker sheets usually want to lift up-and-out of the end fitting.

S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE				PAGE
Running Rigging - Jib Wing & Wing w/ Whisker Pole & Preventer				6 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"



Whisker poles should be flown with the jaws facing down. When taking down a whisker pole, the jib sheet usually wants to drop down-and-out of the end fitting. Spinnaker poles are flown jaws facing up, as the spinnaker sheets usually want to lift up-and-out of the end fitting.

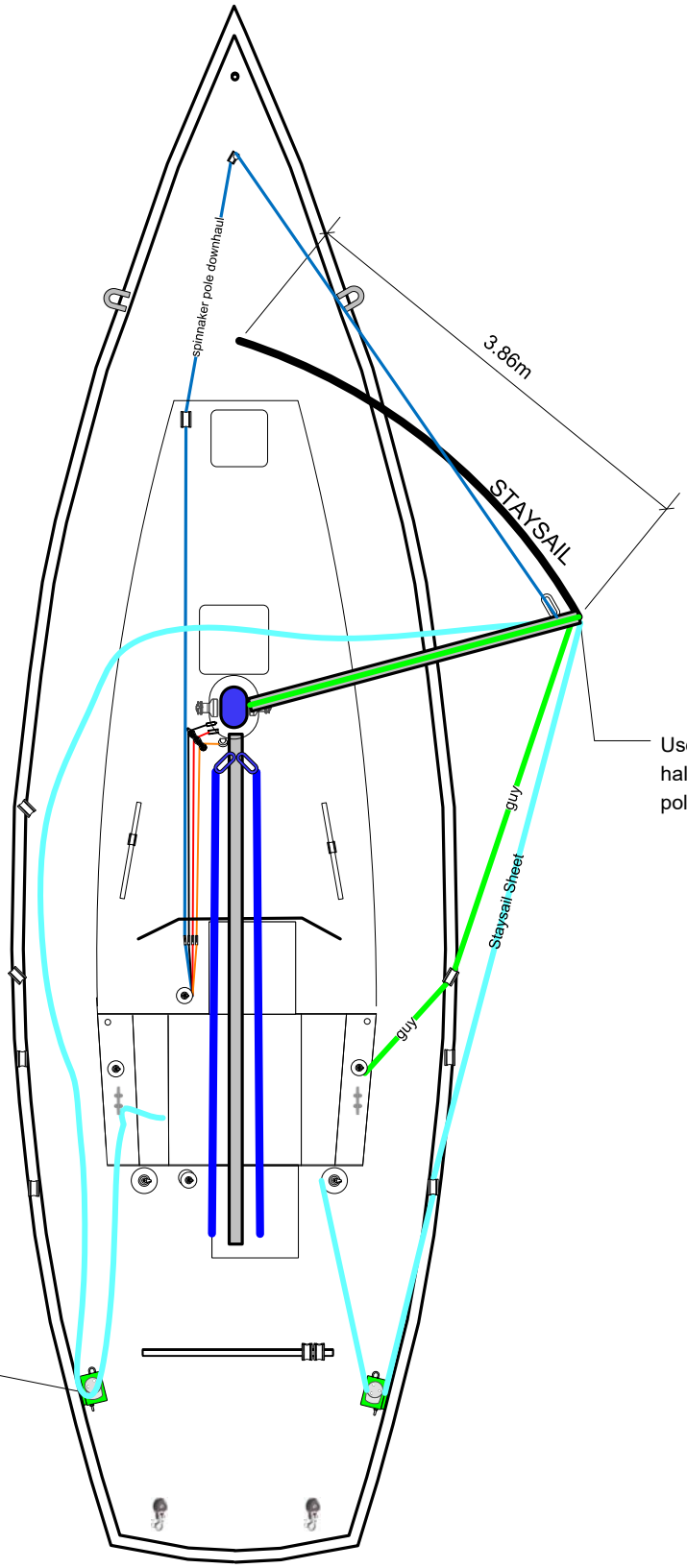
Rigging Issues:

- Topping lifts should be within the fore-triangle.
- The topping lift could also be rigged to a bridle.
- Never attempt to deploy any pole against a full and drawing sail and a loaded sheet.

S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE				PAGE
Running Rigging - Poled Out Jib and Staysail Running Wing and Wing - No Mainsail				7 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"

Whisker poles should be flown with the jaws facing down. When taking down a whisker pole, the jib sheet usually wants to drop down-and-out of the end fitting. Spinnaker poles are flown jaws facing up, as the spinnaker sheets usually want to lift up-and-out of the end fitting.

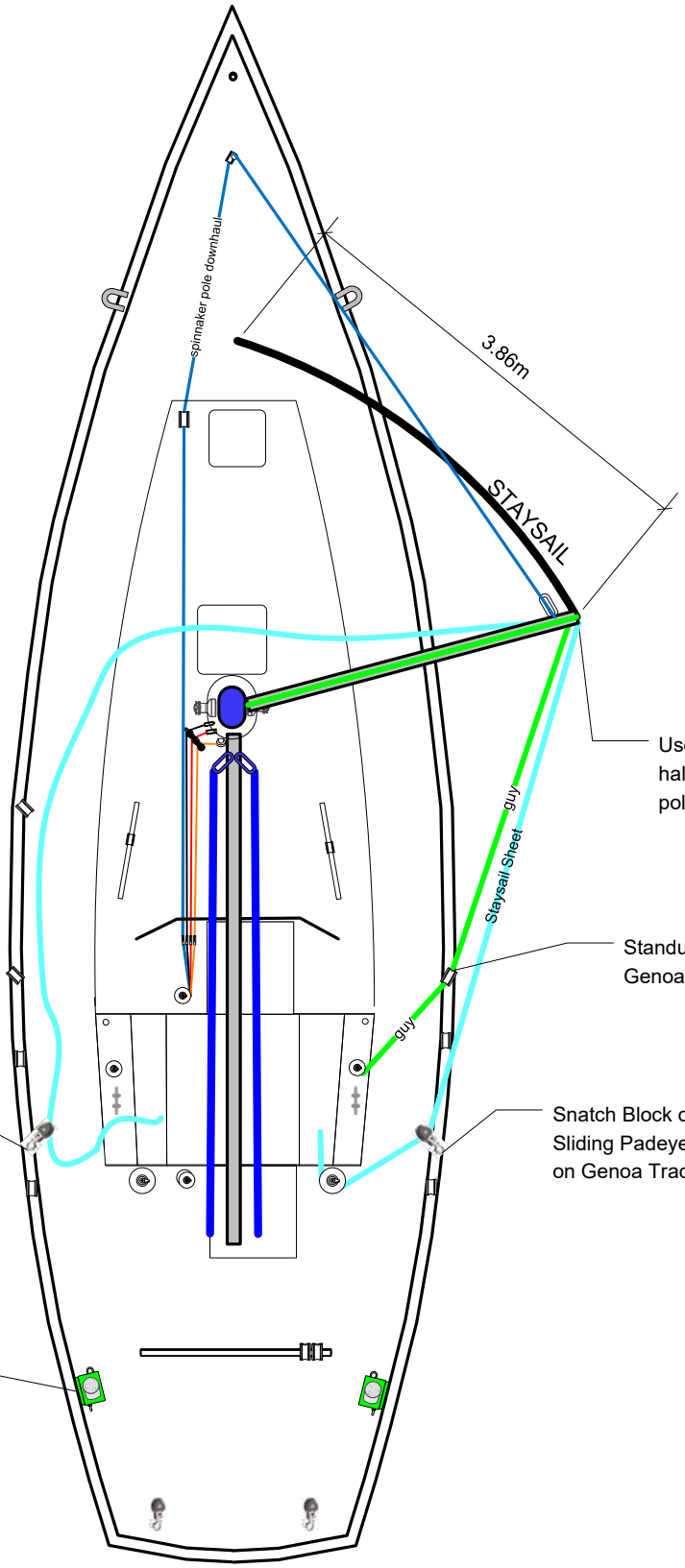


S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE				PAGE
Running Rigging - Poled Out Staysail Only Running - No Mainsail				8 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"

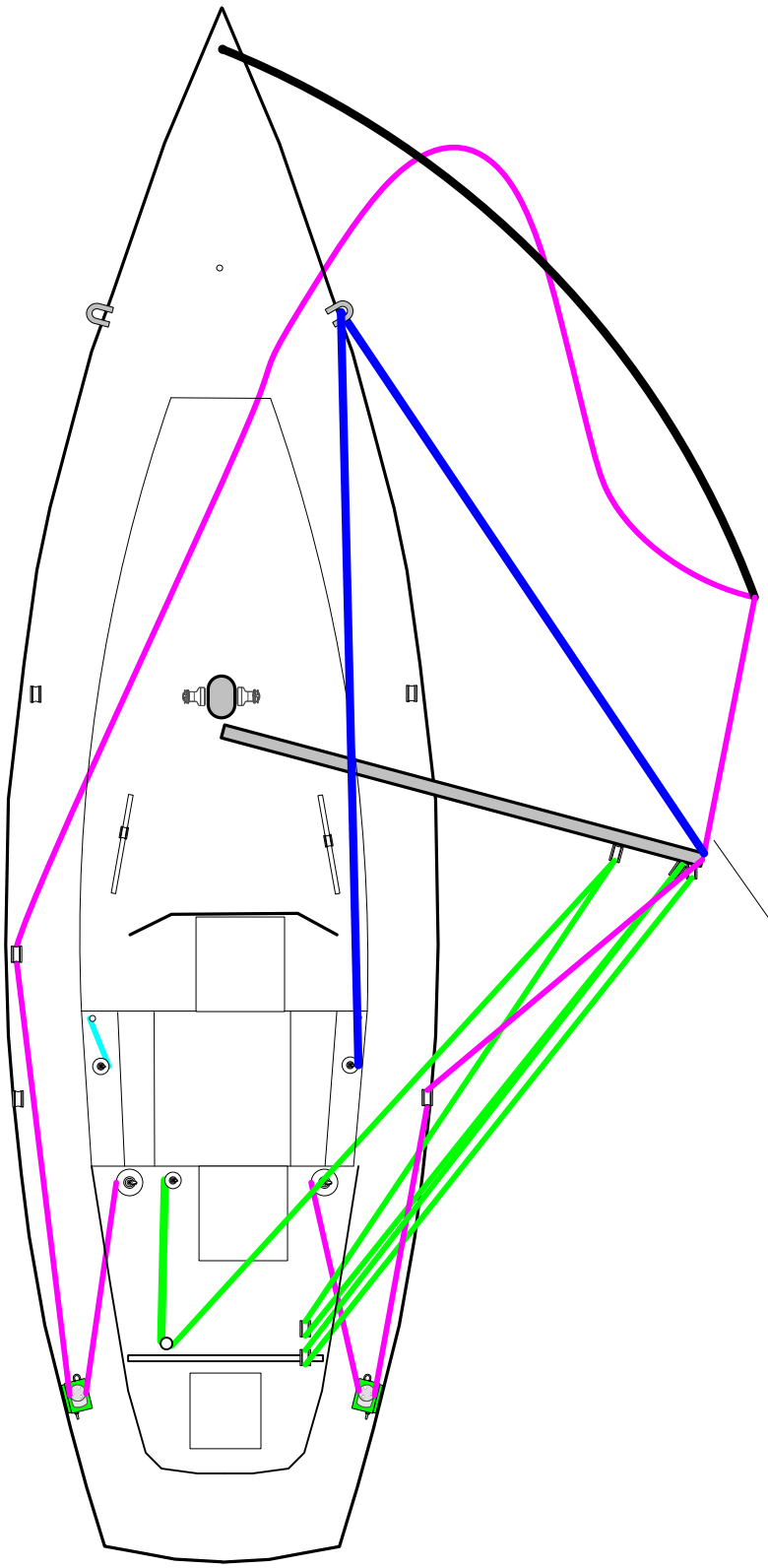
Whisker poles should be flown with the jaws facing down. When taking down a whisker pole, the jib sheet usually wants to drop down-and-out of the end fitting. Spinnaker poles are flown jaws facing up, as the spinnaker sheets usually want to lift up-and-out of the end fitting.

Practice deployment 12/03/2020:
1. Tried sheet on car. No good. Needs snatch block or standup block.
2. Watch genoa sheet. Needs be outside of all staysail lines.
3. Need to re-organize sliding padeyes.
4. Add center-of-pole lifting eye / strop.
5. Fix two release lines to release ends independently and have drop lines and pull-balls.
6. Fix or replace bent spinnaker ring on mast.
7. Build stanchion or deck chocks for stowage.



S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE				PAGE
Running Rigging - Poled Out Staysail (Alternate Sheet Run)				9 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"



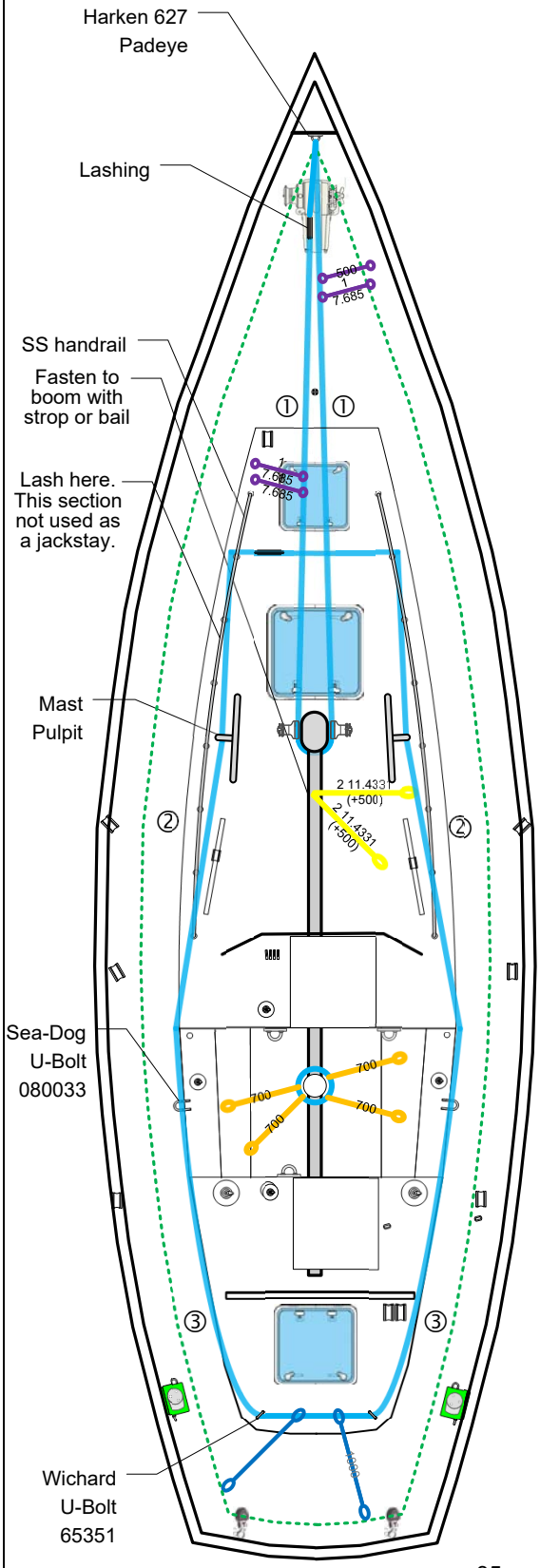
S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE				PAGE
Running Rigging - Poled Out Jib using Boom - No Mainsail				10 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"

Jackstay (jackline)

Working Tether on Hard Point

Working/Relocation Combo Tether



Functions:

- Working at specific Work Stations
- Relocation (travel between work stations). Current design has zero relocation tethers and only two Combo tethers.

Design Requirements:

- Tethers are attached to the boat, not the person. Carabiners are on person, not on boat.
- All tethered lengths (eye-to-eye) must terminate 30cm from the lifelines, except at the bow where this is not possible. (i.e. within the green line: --------)
- Combo tethers require a relaxation of the 30cm rule at certain locations.

Tethers (12) – Nylon 25mm tubular webbing, 1800kg b/s or better, stitched eyes.

- Mast to Foredeck (4 combo tethers on two foredeck jackstays)
- On Boom (2 working tethers)
- Aft Deck (2 working tethers)
  460mm around the boom, 250 for eyes & stitching, 1400mm – 300mm for tether.
- Cockpit (4 working tethers)

Jackstays – Bainbridge Intl. E150 3000kg polyester 25mm webbing with stitched eye terminations

AAC recommends jackstay & anchor points at 6750 lbs (3061 kg) BS which is 150% of World Sailing Regulations of 4500 lbs (2040 kg) BS. This might be upsizing syndrome. Two separate tapes are used to create six jackstay "panels".

- ① Mast to Foredeck. Two Central jackstays on each side of the staysail stay. Made of a single jackstay tape looped around the mast base (under the trysail track) to create the two segments.
- ② Aft-Deck-to-Cockpit and ③ Cockpit-to-Mast jackstay covers both Port and Starboard. ② and ③ are created from a single jackstay webbing tape that passes through padeyes below the coaming and runs all the way from the handrail across from the mast to the aft deck. The lashing is forward of the useable section of this jackstay. It looks complex but provides the best solution for forward of the cockpit.

Tether Terminations

- We considered the AAC method where all tethers have dedicated carabiners at the crew end and possibly at the boat end as well. This method is more expensive (14 to 28 carabiners compared to 3 x harnesses) and also raises the possibility of having hard metal parts on the end of a loose tether colliding with a crewperson's head. Instead we have a short double tether with carabiner terminations on each harness to facilitate clipping on to and off of the working tethers permanently on the jackstays.
- Travel tethers on cockpit-to-mast jackstay (②) are likely not needed.
- We considered using a Wichard Quick Release Shackle (on harness only) but the design of the system is to stay aboard the boat. We will not have quick releases.
- New Kong Tango carabiners are used throughout; we will not re-use our older carabiners.
- Length of the short attachment tethers on the harness. 85cm & 35cm. System is designed for working tethers attached to jackstay where needed. Spinlock standard 3-clip tether with 1m fixed and 2m expandable with KTs is also nice, but long tethers won't be required.

NOTES:

1. To "park" the moveable tethers so they are not at the wrong end of the jackstay we have stitched a short length (60mm) of tape to the jackstay at just one end of the piece. The open end catches the tether and prevents it from running forward.
2. Working Tether terminations are bar-tacked with V92 on the Sailrite with 8SPI.
   a. First straight stitch with two passes up and down the edge of the eye to lock the webbing together.
   b. Start with straight stitch 2 passes across the tape
   c. Do a 3.5mm zigzag for 6 passes using forward & reverse stitch.
   d. Straight stitch for 3 stitches 90º along the tape to reach the start of the next bar tack,
   e. rotate 90º and start the next bar tack by repeating b. to e.
3. Hand stitching was an option (see image below) but was way too time consuming.
4. Attachment and tensioning methods for jackstays are lashings.
5. Working Load on padeyes depend on angle of pull. See next page.

Harken 627
57mm
4200kg WL

Hand Stitching

KT Kong Tango
Carabiner
$32.95

Wichard 80mm
Quick Snap
Shackle Large
Bail (WD2773)
A$70.75
Large Bail at
Whitworths

S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)

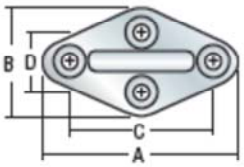
TITLE				PAGE
Running Rigging - Jackstays & Tethers				11 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"

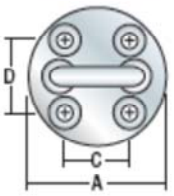
Padeyes

Padeyes are great for mounting blocks and are also used as attachment points for staysails, reefing blocks, and hundreds of other items.

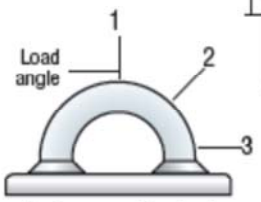
Harken offers a range of stainless steel padeyes. The diamond-shaped padeyes, 688 and 689, are 316 stainless and often used at mastbases where the diamond shape allows them to be mounted very close together. The 2759 is 316 cast stainless steel. The 627, 629, and 648 padeyes are 17-4 PH stainless.

For maximum strength always align fixed padeye bails to the load.





Part No.	Maximum working load 1 lb	1 kg	2 lb	2 kg	3 lb	3 kg	Breaking load 1 lb	1 kg	2 lb	2 kg	3 lb	3 kg	Fasteners (FH) in	mm
627	5000	2270	4500	2040	4300	1950	10000	4535	9000	4080	8600	3900	1/4	6
629	20000	9070	12000	5440	14000	6350	40000	18140	24000	10890	28000	12700	1/2	12
648	11800	5358	10375	4705	8500	3855	23600	10716	20750	9430	17000	7710	3/8	10
688	3800	1770	5000	2270	4300	1950	7800	3540	10000	4535	8600	3900	1/4	6
689	8500	3855	8000	3628	7800	3540	19000	8618	17200	7800	15600	7075	5/16	8
2759	2550	1156	2392	1086	2450	1111	5100	2313	4784	2172	4900	2222	1/4	6



Maximum working load

Part No.	Description	A in	A mm	B in	B mm	C in	C mm	D in	D mm	E in	E mm	F in	F mm	G in	G mm	Weight oz	Weight g
627	Small round	2 1/4	57			1 1/16	27	1 3/16	30	1 3/16	30	5/8	16	1 5/16	24	4.16	118
629	Large round	3 3/4	95			1 3/4	44	1 7/8	48	2	51	1 1/16	27	1 3/4	44	23	652
648	High-load medium	3	76			1 5/16	33	1 9/16	40	1 15/16	50	1 1/8	29	1 7/16	37	11	312
688	Small diamond	3 1/8	79	2	51	2 3/8	60	1 1/4	32	1 3/16	30	9/16	14	7/8	22	4.75	135
689	Large diamond	3 7/8	98	2 5/16	59	2 7/8	73	1 3/8	35	1 9/16	40	7/8	22	1 1/16	27	7.5	213
2759	Padeye/fits 22 mm cars with sheaves	2 1/4	56	3/4	18	1 1/2	38			1	26	9/16	15	5/8	16	1.3	38

DO NOT use Harken equipment for human suspension unless product is specifically certified and labeled for such use.

JACKSTAYS (dimensions in mm) (Overall length may vary for individual boats)	EYE-TO-EYE LENGTH	WRAP AROUND MAST	ADD FOR 2 EYES	CUT LENGTH	QTY	TOTAL MATERIAL LENGTH	COLOR	ATTACHMENT
Mast to Bow	10000	570	440	11010	1	10440	WHITE	HARD POINT
Aft Cabin Top to Cockit to Handrails	10000	570	440	11010	1	10440	WHITE	HARD POINT

TETHERS (dimensions in mm)	EYE-TO-EYE LENGTH	WRAP AROUND BOOM	ADD FOR 2 EYES	CUT LEN	QTY	TOTAL MATERIAL LENGTH	COLOR	ATTACHMENT
Forward Deck	500		440	940	4	3760	PURPLE	JACKSTAY
Boom	900	500	440	1840	2	3680	YELLOW	HARD POINT
Cockpit	800		440	1240	4	4960	ORANGE	HARD POINT
Aft	1000		440	1440	2	2880	BLUE	JACKSTAY
Harness Long	850		220	1070	3	3210	YELLOW	CREW
Harness Short	350		220	570	3	1710	YELLOW	CREW
Harness Double Tether (shared eye at top)	1200		220	1420	3	4260	YELLOW	CREW

NYLON TETHER MATERIAL BY COLOR	LEN	ORDER(m)	COST	EXCESS
PURPLE	3760	4	$ 12.76	240
YELLOW	7940	11	$ 35.09	3060
ORANGE	4960	5	$ 15.95	40
BLUE	2880	3	$ 9.57	120
		SUBTOTA	$ 73.37	

EQUIPMENT	QTY	UNIT PRIC	NET PRICE
Kong Tango Caribiners	6	$ 32.95	$197.70
E150 Jackstay Webbing 25mm x 50m roll	1	$ 75.00	$ 75.00
Wichard 8mm U-Bolt 65651	2	$ 40.00	$ 80.00
Sea-Dog 3/8 " Bow Eye p/n 080033*	2	$ 23.00	$ 46.00
* substitue Wichard U-Bolt if desired		TOTAL	$472.07

Wichard U-Bolt 316SS
8mm 2400kg WL 4800kg BS*
10mm 3600kg WL 7000 BS*
p/;n 65351

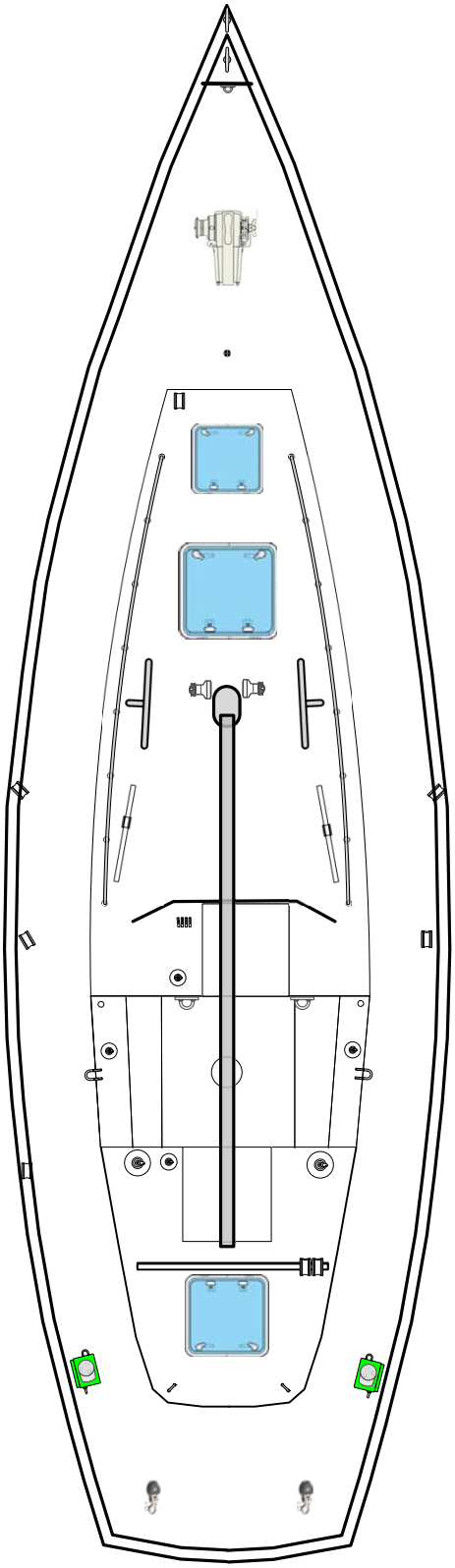
Harken 627
57mm 4200kg WL*

KT Kong Tango Carabiner
$32.95

Sea-Dog Bow Eye
⅜" 7250kg BS
304SS
p/n 080033

S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)

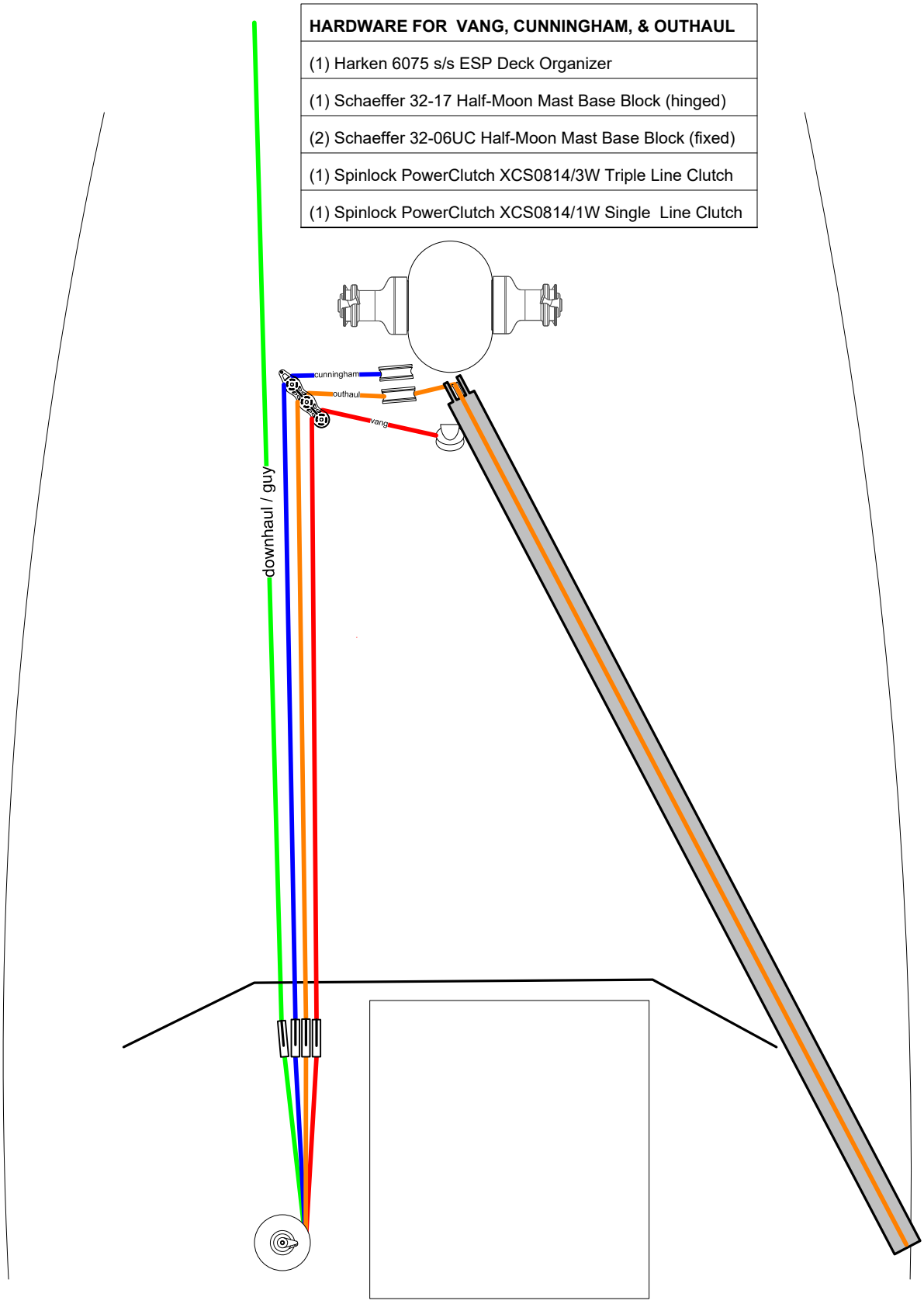
TITLE				PAGE
Running Rigging - Deck Gear - Jackstay Tethers, Carabiners and Padeyes				12 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"



S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)

TITLE				PAGE
Running Rigging - Deck Plan				13 OF 17
REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/16" = 1'-0"

HARDWARE FOR VANG, CUNNINGHAM, & OUTHAUL
(1) Harken 6075 s/s ESP Deck Organizer
(1) Schaeffer 32-17 Half-Moon Mast Base Block (hinged)
(2) Schaeffer 32-06UC Half-Moon Mast Base Block (fixed)
(1) Spinlock PowerClutch XCS0814/3W Triple Line Clutch
(1) Spinlock PowerClutch XCS0814/1W Single Line Clutch



S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE: **Running Rigging - Control Lines**

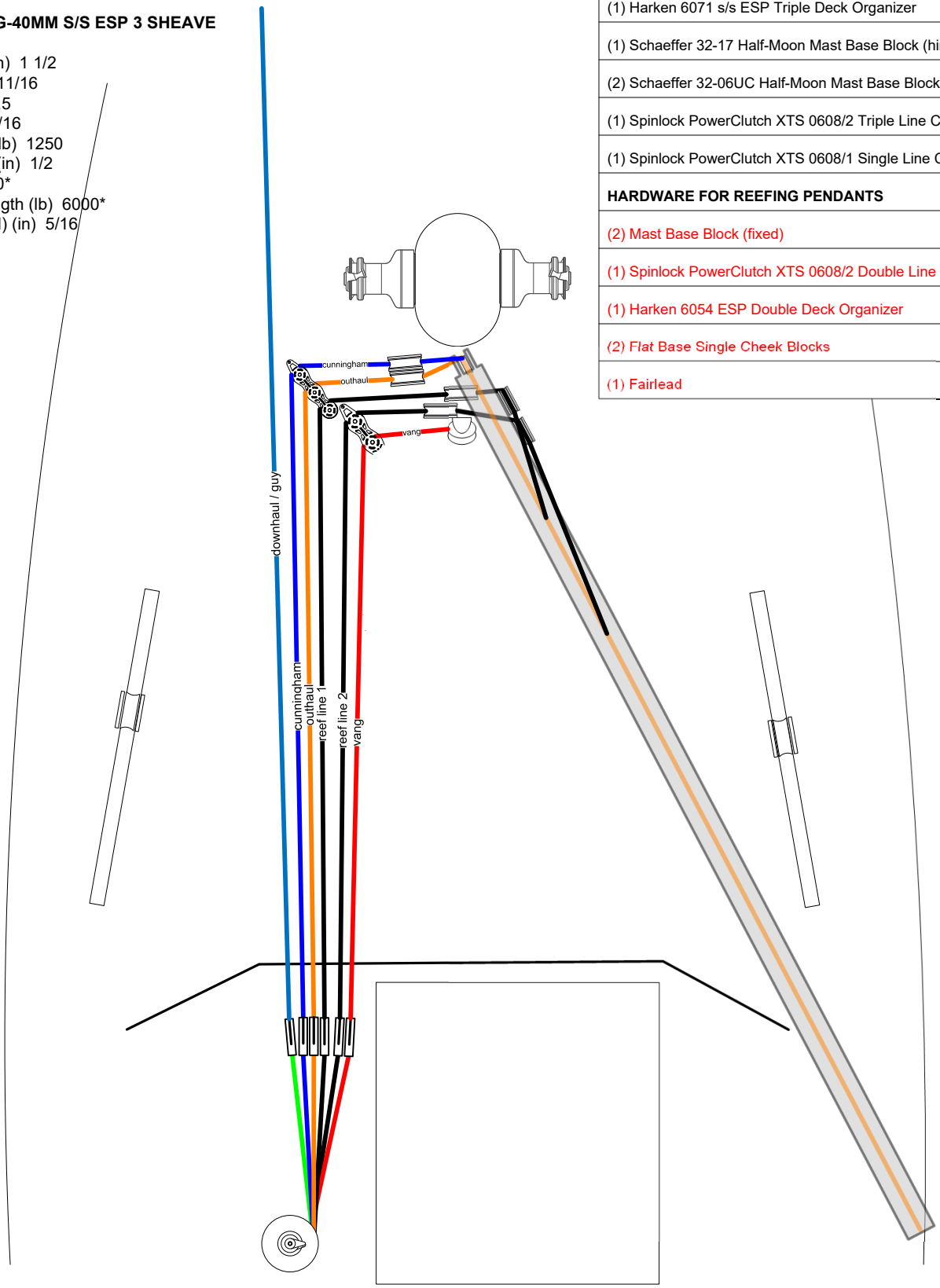
PAGE: 14 OF 17

REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D		31/03/2022	JMS	Scale: 3/4" = 1'-0"

6071 DECK ORG-40MM S/S ESP 3 SHEAVE

Sheave dia. (in) 1 1/2
Length (in) 7 11/16
Weight (oz) 5.5
Height (in) 15/16
SWL/sheave (lb) 1250
Max. line dia. (in) 1/2
SWL (lb) 3000*
Breaking strength (lb) 6000*
Fasteners (RH) (in) 5/16

HARDWARE FOR VANG, CUNNINGHAM, & OUTHAUL
(1) Harken 6071 s/s ESP Triple Deck Organizer
(1) Schaeffer 32-17 Half-Moon Mast Base Block (hinged)
(2) Schaeffer 32-06UC Half-Moon Mast Base Block (fixed)
(1) Spinlock PowerClutch XTS 0608/2 Triple Line Clutch
(1) Spinlock PowerClutch XTS 0608/1 Single Line Clutch
HARDWARE FOR REEFING PENDANTS
(2) Mast Base Block (fixed)
(1) Spinlock PowerClutch XTS 0608/2 Double Line Clutch
(1) Harken 6054 ESP Double Deck Organizer
(2) Flat Base Single Cheek Blocks
(1) Fairlead



S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)

TITLE

Running Rigging - Optional: Reefing Pendants to Cockpit (not implemented)

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REV.	DESCRIPTION	DATE	BY	RunningRiggingDiagrams_D.vsd
D	This is a concept and is not yet implemented	31/03/2022	JMS	Scale: 3/4" = 1'-0"