

# HARKEN®

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## ONLINE INSTRUCTIONS

### T2™ Carbo® Blocks



**WARNING!** Strictly follow all instructions to avoid an accident, damage to your vessel, personal injury, or death. See [www.harken.com/manuals](http://www.harken.com/manuals) for additional safety information.

### Specifications

Part No.	Description	Sheave Ø	Max line Ø		Max working load		Breaking load		Replacement lashing line
			in	mm	lb	kg	lb	kg	
2146	29 mm single	29 mm	5/16	8	330	150	1000	454	HCP1438
2147	29 mm double	29 mm	5/16	8	600	272	1900	861	HCP1438
2149	40 mm single	40 mm	3/8	10	485	220	1200	544	HCP1419
2150	40 mm double	40 mm	3/8	10	700	317	2100	952	HCP1419
2152	57 mm single	57 mm	7/16	11	792	359	2380	1080	HCP392
2153	57 mm double	57 mm	7/16	11	1080	490	3200	1451	HCP392

### Terms



### Planning Installation



**CAUTION!** Avoid injury or damage to equipment. Follow these precautions:

1. Lash only to objects with rounded edges. Avoid sharp corners.

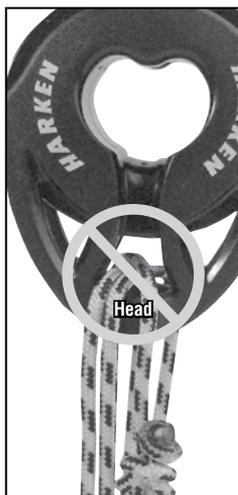


**WARNING!** Lashing to objects with sharp edges can cause line to chafe and break suddenly when load is applied.

2. Always lash to mouth of the block. Head is not strong enough to secure line.



**WARNING!** Lashing to head of block seriously weakens the block. This will cause the block to break suddenly when load is applied.



Do not tie through block head.



Do not tie through block head.



Do not tie through block head.

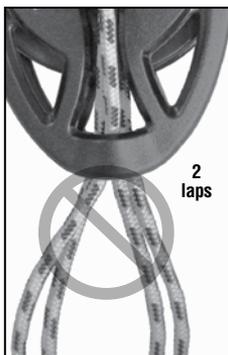
3. Use three (3) laps of line to create six (6) strands to match the maximum working load of the block.



**WARNING! Using fewer laps will weaken block, causing it to break suddenly when load is applied.**



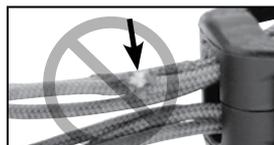
Three (3) laps, six (6) strands are required for proper strength.



This block only has two (2) laps, four (4) strands of supplied line.

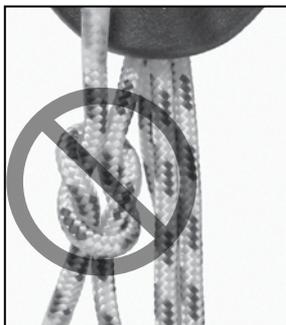
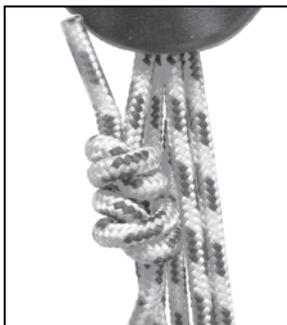
### Inspect Line Every Time You Sail

Inspect lashing line for chafe or UV damage every time you sail. **Replace damaged line immediately. Replace line with no visible damage every two years.** Use Harken replacement line, but if using own line, see *Using Alternate Line, Knots and Splices* and chart on back page for important information to help you select the correct line.



**WARNING! Failure to inspect and replace UV-damaged, worn or frayed line can cause the line to break suddenly when load is applied.**

Check knots or splices before sailing. Use a double fisherman's knot, or other secure knot: [www.harken.com/knots](http://www.harken.com/knots)



**WARNING! Failure to inspect and correct knots can cause the line to slip suddenly when load is applied.**

### Lashing to Boom

When lashing to a large object such as a boom, cross each line to prevent pushing out on sides of head. See next page.

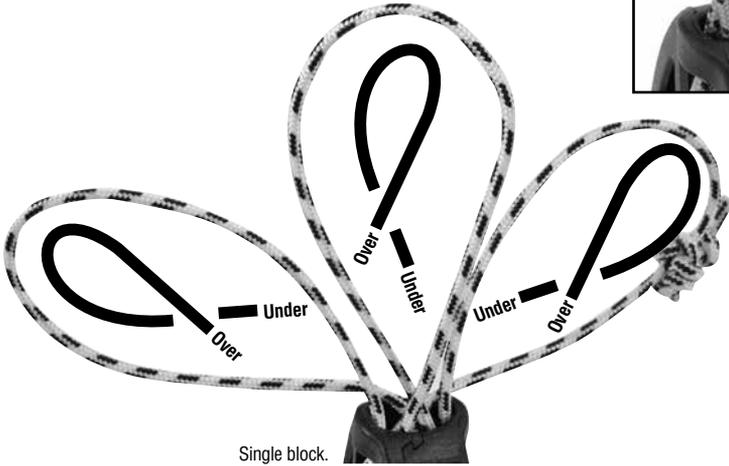


Lines can pull head apart.

If you have access to end of boom, twist each lap.  
 Secure using double fisherman's knot or other secure knot.  
 See *Lashing to Bail Using Harken-Supplied Line* below.



Double block.



Single block.

### Lashing to Bail Using Harken-Supplied Line

Use three (3) laps to create six (6) strands. Tie ends using double fisherman's knot or other secure knot.  
 Photos are not intended to teach this knot: [www.harken.com/knots](http://www.harken.com/knots) or consult knot tying books.

**IMPORTANT!** If you are not comfortable tying this or other secure knots, get help from professional rigger.



Knot can also be located on side of block or inside the mouth.



To lash block at 90°, cross lines each pass similar to lashing to boom.

## Using Alternate Line, Knots, and Splices

Harken is not liable or responsible for use of line used to secure blocks. Go to *Harken Limited Warranty* at [www.harken.com](http://www.harken.com) for complete details. It is your responsibility to choose the correct line for the block.

**When choosing line, use a breaking load that exceeds the block's breaking load to account for strength loss from:**

1. Knots slipping or breaking at a much lower load than line breaking load.  
Spectra® or Dyneema®-type lines require specialized knots.
2. Splices slipping or failing due to incorrect type or execution.
3. UV damage increasing with each passing year.
4. Chafing seriously reducing strength.

If you are not comfortable choosing line, work with a qualified rigger.

Go to [www.harken.com/knots](http://www.harken.com/knots) for additional information.

**IMPORTANT! Fewer lashing strands require line with higher breaking load.**

### Lashing Line Example Breaking Load

Strands	lbs	kg
1	2000	907
2	1000	454
3	667	302
4	500	227
5	400	181
6	333	151
7	286	130
8	250	113
9	222	101
10	200	91

### EXAMPLE

A breaking load of 900 kg (2000 lb) can be achieved by using:

- Fewer strands of higher-strength line  
or
- More strands of lower-strength line

Check fit of lashing line in block mouth



**Read important information on choosing line, knots, and splices:  
[www.harken.com/knots](http://www.harken.com/knots).**



**WARNING! Failure to account for loss of strength due to chafe or UV damage when choosing line can result in line breaking suddenly when load is applied.**



**WARNING! Improper knots or splices can weaken the block installation causing it to break suddenly when load is applied.**

*Dyneema is a registered trademark of DSM Dyneema.*

*Spectra is a registered trademark of Honeywell International, Inc.*

## Maintenance

Harken equipment is designed for minimal maintenance. However, some upkeep is required to give the best service and comply with the Harken limited warranty.

Keep your equipment clean and free-running by frequently flushing with fresh water. Periodically clean with mild detergent and water solution. Spin sheaves to distribute soap solution evenly. Flush with fresh water.

**IMPORTANT! Exposure to some teak cleaners and other caustic solutions can result in discoloration of part and is not covered under the Harken warranty.**

## Warranty

For additional safety, maintenance, and warranty information: [www.harken.com/manuals](http://www.harken.com/manuals), or the Harken catalog.

## Additional Information

For additional information, go to online manual 5032.W: [www.harken.com/manuals](http://www.harken.com/manuals).