

T2™ Ratchamatic® Blocks 2159, 2160

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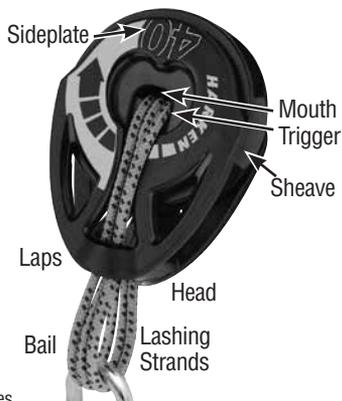


WARNING! Strictly follow all instructions to avoid an accident, damage to your vessel, personal injury or death. See www.harken.com/manuals for additional safety information.

Features

- Versatile attachment:** block can be lashed or spliced.
- Ratchet engages automatically** as load increases.
- 10:1 Holding power** with 180° wrap.
- Shifts crisply** from ratchet to free run (light air) mode.
- Sheave runs free** with light load.
- Sideplates are lightweight, UV-resistant,** glass fiber-reinforced plastic. Eight-sided, Hardcoat-anodized **aluminum sheave.**
- Delrin® ball bearings** for low friction.

Terms



Delrin is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates.

Specifications

Part No.	Description	Sheave Ø	Max line Ø		Maximum working load		Breaking load	
			in	mm	lb	kg	lb	kg
2159	40 mm	40 mm	3/8	10	300	136	1000	454
2160	57 mm	57 mm	3/8	10	500	227	2000	907

Replacement Line

Part No.	Description	Sheave Ø	Replacement Loops /Lines	Replacement line Ø		Line length before making loop		Line Type
				in	mm	ft	m	
2159	40 mm	40 mm	HCP1419	3/32	2.5	4	1.22	Maxibraid
2160	57 mm	57 mm	HCP392	1/8	3	4	1.22	Maxibraid

Important information on choosing line, knots and splices.
 Go to www.harken.com/knots

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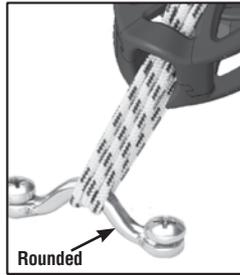
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Planning Installation



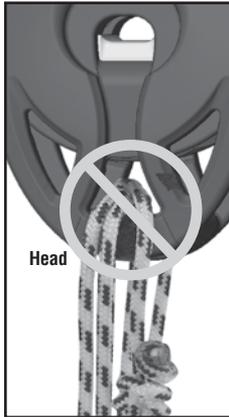
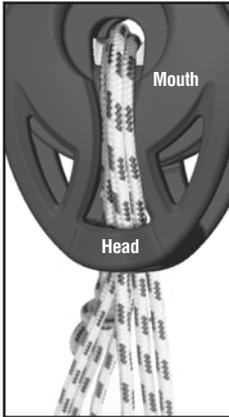
WARNING! Lashing to objects with sharp edges can cause line to chafe and break suddenly when load is applied.

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. Ratchet mechanism will only work with lashing line on trigger. Head is not strong enough to secure line.



Do not lash through block head.

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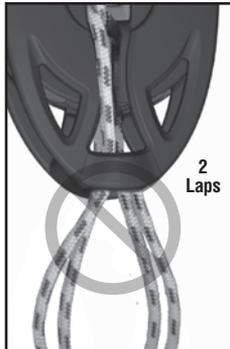


WARNING! Lashing to head of block seriously weakens the block. This will cause the block to break suddenly when load is applied. Always lash to mouth.

3. Use three laps of line to create six 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. Use three laps of line.



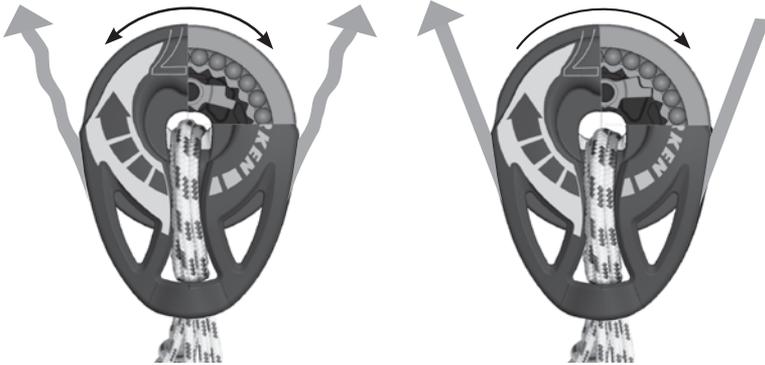
Three laps, six strands are required for proper strength.

This block only has two laps, four strands of supplied line.

4. **IMPORTANT!** Do not use mouth as an adjustable block. Carbo® surface will wear or wear the line if used as a 2:1 adjustable block under load.



Using T2 Ratchamatic Block

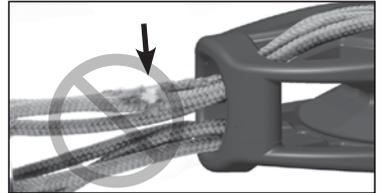


Ratchet blocks are hand and crew savers. The eight-sided sheave grips loaded sheets with up to 10:1 holding power. Ratchamatic blocks spin freely in both directions under low load. At higher load, ratchet engages, providing holding power. As the load decreases, the ratchet shifts back into light air mode and free spins. Unloaded main and jib sheets run out freely during mark roundings and asymmetrical spinnakers run free during jibes.

Ratchet Direction Arrow on side of block shows direction that sheave will spin in ratchet mode. Refer to arrow when reeving block.

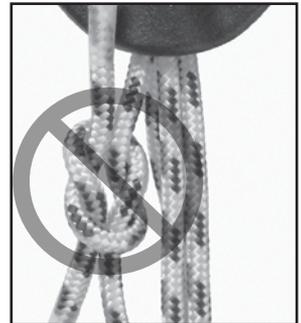
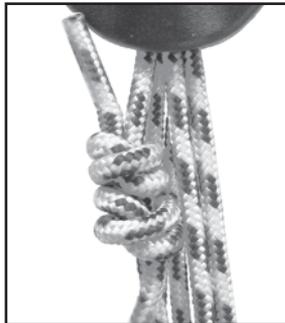
Inspect Line Every Time You Sail

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. See www.harken.com/knots



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

Replacement Line

Part No.	Description	Sheave Ø	Replacement Loops /Lines	Replacement line Ø		Line length before making loop		Line Type
				in	mm	ft	m	
2159	40 mm	40 mm	HCP1419	3/32	2.5	4	1.22	Maxibraid
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Lashing to Boom

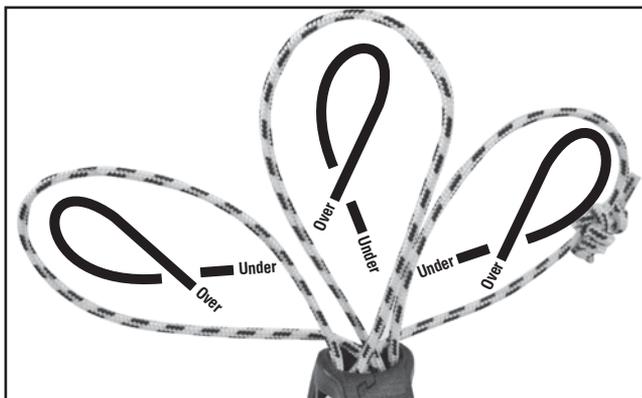
When lashing to a large object such as a boom, cross each line to prevent pushing out on sides of head. See next page.



Lines can pull block head apart.



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



Lashing to Bail Using Harken-Supplied Line

Note sheave direction of rotation when block is under load in ratchet mode. Make sure the block is facing the correct way before lashing. Use three laps to create six strands. Tie ends using double fisherman's knot or other secure knot. Knot can also be located on side of block. Photos are not intended to teach this knot. See www.harken.com/knots or consult a knot tying book. **IMPORTANT! If you are not comfortable tying this or another secure knot, get help from a professional rigger.**



Lashing 90°



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 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 much lower than line breaking load. Spectra® or Dyneema®-type lines require specialized knots.
2. Splices slipping or failing due to the 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 for additional information. **IMPORTANT! Fewer lashing strands require line with higher breaking load.**



Lashing Line Minimum 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

Notes

A breaking load of 2000 lb (900 kg) 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 at: 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 see www.harken.com/manuals or the Harken catalog.