

ONLINE INSTRUCTIONS

32 mm Big Boat CB Traveler Cars



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.

IMPORTANT: See Inspection and Maintenance at end of manual.

Features

One-piece car body: Machined from 6061-T6 aluminum for strength and durability.

Hard Lube-anodized: PTFE coated for durability.

Captive ball bearings: Cars easy to load and maintain.

Free running ball bearings in car and control blocks: Easy to adjust car under load.

Newer style CB+ cars: Can convert to old-style non-CB track.

Terms

CB – Captive bearings. Wire retaining clips hold bearings captive for easy loading onto track and for maintenance.

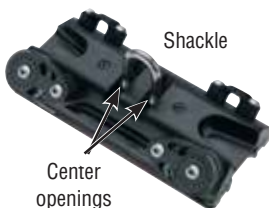
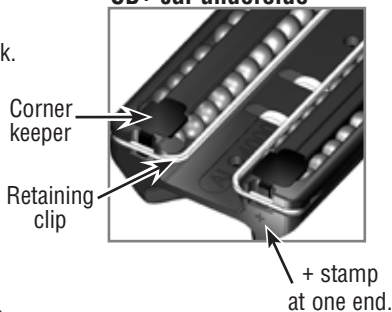
CB+ cars – CB cars that can convert to old-style, non-CB track.

Corner keepers – Used on CB+ cars to help retain balls when cars are off track. Introduced beginning of 2015.

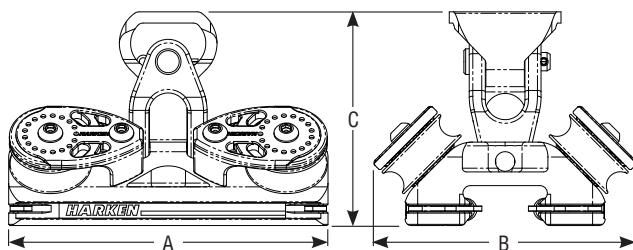
Retaining clips – Formed wires for holding bearings.

CB style track – Track designed with deeper grooves to accept CB car retaining clips.

CB+ car underside



Specifications



Part No.	Description	Length A		Width B		Height C		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	lb	kg	lb	kg
T3201B	Car/shackle	5 ⁵ / ₁₆	136	3 ¹¹ / ₃₂	85	2 ⁵ / ₈	73	3000	1361	7000	3175
T3201B.HL	HL car/shackle	7 ¹ / ₁₆	188	3 ¹¹ / ₃₂	85	2 ⁵ / ₈	73	4500	2041	9000	4081
T3202B	Car/stand-up toggle	5 ⁹ / ₁₆	132	3 ¹¹ / ₃₂	85	3 ¹ / ₂	89	3000	1361	7000	3175
T3202B.HL	HL car/stand-up toggle	7 ¹ / ₁₆	188	3 ¹¹ / ₃₂	85	3 ¹ / ₂	89	4500	2041	9000	4081
T3203B	Car/stand-up toggle/ears	5 ⁹ / ₁₆	132	3 ¹¹ / ₃₂	85	3 ¹ / ₂	89	3000	1361	7000	3175
T3203B.HL	HL car/stand-up toggle/ears	7 ¹ / ₁₆	188	3 ¹¹ / ₃₂	85	3 ¹ / ₂	89	4500	2041	9000	4081
T3204B	Car/2 stand-up toggles	9 ¹ / ₈	231	3 ¹¹ / ₃₂	85	3 ¹ / ₂	89	5000	2268	10000	4536
T3204B.HL	2 HL cars/2 stand-up toggles	15	381	3 ¹¹ / ₃₂	85	3 ¹ / ₂	89	9000	4082	18000	8163
T3205B	Car/soft attachment	5 ⁹ / ₁₆	132	3 ¹¹ / ₃₂	85	2	50	3000	1361	7000	3175
T3205B.HL	HL car/soft attachment	7 ¹ / ₁₆	188	3 ¹¹ / ₃₂	85	2	50	4500	2041	9000	4081
T3221B	Car/shackle/2:1	5 ⁵ / ₁₆	136	3 ³ / ₈	98	2 ⁵ / ₈	73	3000	1361	7000	3175
T3221B.HL	HL car/shackle/2:1	7 ¹ / ₁₆	188	3 ³ / ₈	98	2 ⁵ / ₈	73	4500	2041	9000	4081
T3222B	Car/stand-up toggle/2:1	5 ⁹ / ₁₆	136	3 ³ / ₈	98	2 ⁵ / ₈	73	3000	1361	7000	3175
T3222B.HL	HL car/stand-up toggle/2:1	7 ¹ / ₁₆	188	3 ³ / ₈	98	2 ⁵ / ₈	73	4500	2041	9000	4081
T3224B	Car/2 stand-up toggles/2:1	9 ¹ / ₈	231	3 ³ / ₈	98	3 ¹ / ₂	89	5000	2268	10000	4536
T3224B.HL	2 HL cars/2 stand-up toggles/2:1	15	381	3 ³ / ₈	98	3 ¹ / ₂	89	9000	4082	18000	8163

Table continues next page

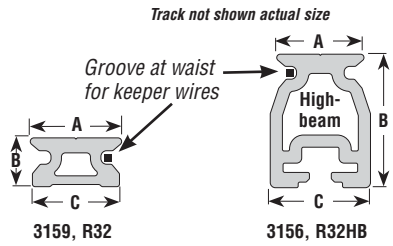
Specifications (continued)

Part No.	Description	Length A		Width B		Height C		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	lb	kg	lb	kg
T3231B	Car/shackle/3:1	5 ⁵ / ₈	136	4	101	2 ⁵ / ₈	73	3000	1361	7000	3175
T3231B.HL	HL car/shackle/3:1	7 ⁷ / ₁₆	188	4	101	2 ⁵ / ₈	73	4500	2041	9000	4081
T3232B	Car/stand-up toggle/3:1	5 ⁵ / ₈	136	4	101	3 ¹ / ₂	89	3000	1361	7000	3175
T3232B.HL	HL car/stand-up toggle/3:1	7 ⁷ / ₁₆	188	4	101	3 ¹ / ₂	89	4500	2041	9000	4081
T3234B	Car/2 stand-up toggles/3:1	9 ⁹ / ₈	231	4	101	3 ¹ / ₂	89	5000	2268	10000	4536
T3234B.HL	2 HL cars/2 stand-up toggles/3:1	15	381	4	101	3 ¹ / ₂	89	9000	4082	18000	8163
T3241B	Car/shackle/4:1	5 ⁵ / ₈	136	4 ⁴ / ₈	111	3 ¹ / ₂	89	3000	1361	7000	3175
T3241B.HL	HL car/shackle/4:1	7 ⁷ / ₁₆	188	4 ⁴ / ₈	111	3 ¹ / ₂	89	4500	2041	9000	4081
T3242B	Car/stand-up toggle/4:1	5 ⁵ / ₈	136	4 ⁴ / ₈	111	3 ¹ / ₂	89	3000	1361	7000	3175
T3242B.HL	HL car/stand-up toggle/4:1	7 ⁷ / ₁₆	188	4 ⁴ / ₈	111	3 ¹ / ₂	89	4500	2041	9000	4081
T3243B.HL	HL car/stand-up toggle/4:1	7 ⁷ / ₁₆	188	4 ⁴ / ₈	111	3 ¹ / ₂	89	4500	2041	9000	4081
T3244B	Car/2 stand-up toggle/ears/4:1	9 ⁹ / ₈	231	4 ⁴ / ₈	111	3 ¹ / ₂	89	5000	2268	10000	4536
T3244B.HL	2 HL cars/2 stand-up toggles/4:1	15	381	4 ⁴ / ₈	111	3 ¹ / ₂	89	9000	4082	18000	8163

Track Compatibility

CB cars are shipped for use on CB track with grooves at waist to accept retaining clips, first supplied by Harken in 2004. See end of manual for older track.

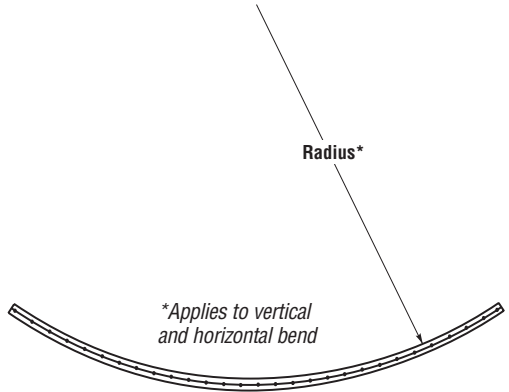
Part No.	A in mm	B in mm	C in mm
Low-profile track			
3159, R32.1.5M, R32.2.1M, R32.3M, R32.3.6M, R32.6M, 3159.8, 3159.12	1/4 32	3/4 19	1 5/8 42
High-beam track			
3156, R32HB.1.5M, R32HB.1.8M, R32HB.2.5M, R32HB.3.6M	1/4 32	2 1/4 57	1 3/16 30



Curved Track Limitations

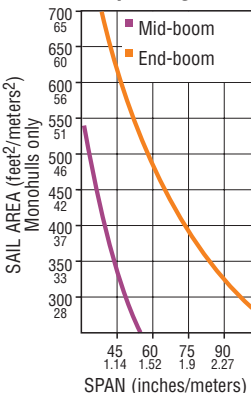
Cars will not roll on curved track if radius is under minimum listed below. A shorter car can roll on a smaller radius. Refer to chart below and make sure radius is equal or greater than radius listed for car. To determine radius go to www.harken.com. Go to product support, FAQs, traveler track Q&A.

Car	Minimum radius	
	ft	m
3160/3163/3164/3176/3177		
T3201B, T3202B, T3203B, T3205B, T3221B, T3222B, T3231B, T3232B, T3241B, T3242B	8	2.44
3161/3165/3166 3172/3178/3179		
T3201B.HL, T3202B.HL, T3203B.HL, T3205B.HL, T3221B.HL, T3222B.HL, T3231B.HL, T3232B.HL, T3241B.HL, T3242B.HL, T3243B.HL	18	5.49
T3204B.HL, T3224B.HL, T3234B.HL, T3244B.HL	18	5.49
3167		
T3204B, T3224B, T3234B, T3244B	24	7.32



Track for Unsupported Spans

32 mm high-beam track spanning chart



Harken high-beam track is designed for unsupported spans. The length of span depends on car load. The higher the car load, the less span track can handle. If car is sized correctly, car length determines spanning capability. Longer, high-load (HL) cars require shorter spans because loads are so much greater. See track spanning chart in track instructions. www.harken.com



Attaching Mainsheet and Control Blocks

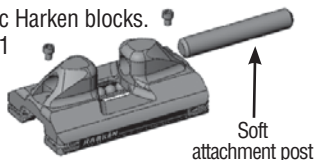


Stand-up toggle

Stand-up toggles – Harken stand-up toggles fit specific Harken blocks.

To determine mainsheet block compatibility, see 4521 instructions online: www.harken.com/manuals

Soft attachment (T3205B, T3205B.HL) – To attach loops or straps, remove stop screws and push out attachment post. Assemble post using blue Loctite® adhesive on screws.



Installing Traveler Car on Track

Position car at end of track and gently roll on. If car does not roll on easily, check to make sure you are using CB track. **Do not remove ball retaining wires.** *Cars will not roll unless they have retaining clips.*

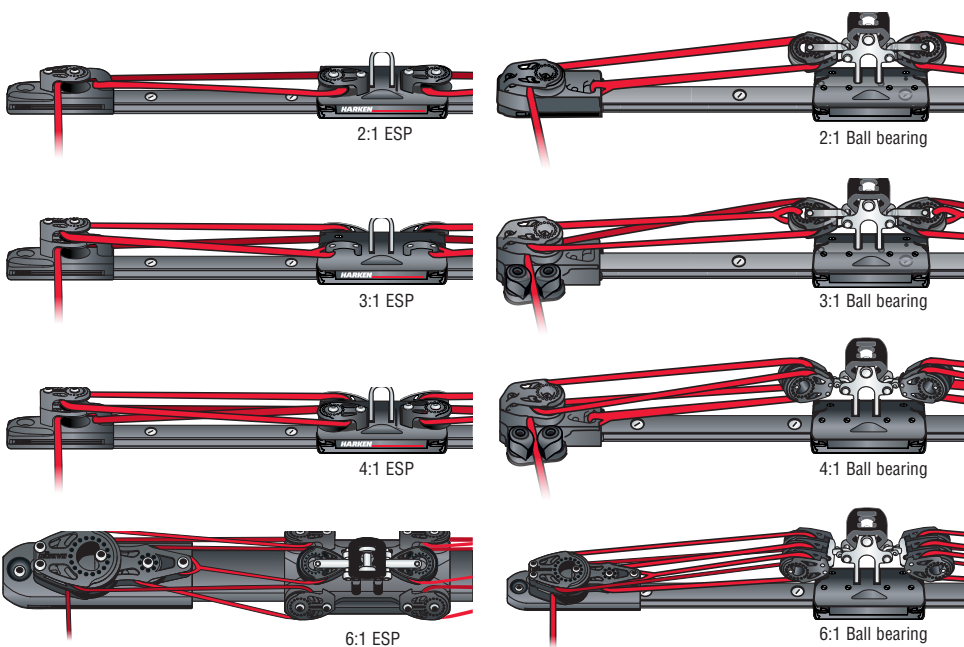
Exception: CB+ cars can convert to non-CB cars. See end of manual. If any balls are lost, refer to following instructions for quantities and how to load.

Attaching Splice to Deadend on Car or Controls

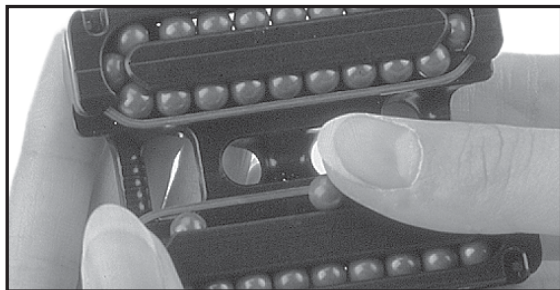
To attach premade splice, pass eye through bail and run tail through to make a hitch without undoing bail. If line is too large for this, remove one screw and rotate deadend eyestay to load the splice. Reassemble screws using threadlocking solution such as blue Loctite® adhesive.



Reeving Cars and End Control Blocks



Loading Ball Bearings into CB Cars



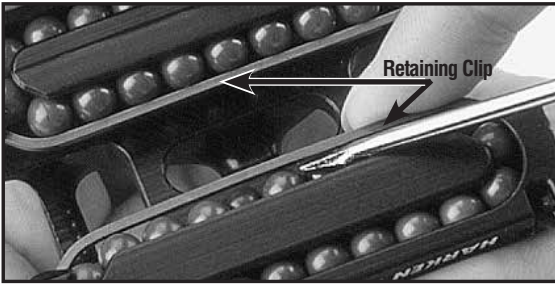
Position car on edge with retaining clip in place. Gently push one ball at a time into car from center of clip. Allow balls to roll into return race and insert remaining balls. **Do not overfill car!**

Ball Replacement Chart

Car	Car length	Balls per car	Balls	Order	Balls per set	Ball Ø
T3201B, T3202B, T3203B, T3205B, T3221B, T3222B, T3231B, T3232B, T3241B, T3242B	5 7/8" (136 mm)	50	Torlon®	547	25	3/8" (10 mm)
T3201B.HL, T3202B.HL, T3203B.HL, T3205B.HL, T3221B.HL, T3222B.HL, T3231B.HL, T3232B.HL, T3241B.HL, T3242B.HL, T3243B.HL	7 7/16" (188 mm)	72	Torlon	547	25	3/8" (10 mm)
T3204B, T3224B, T3234B, T3244B	9 1/8" (231 mm)	90	Torlon	547	25	3/8" (10 mm)
T3204B.HL, T3224Bj.HL, T3234B.HL, T3244B.HL	15" (381 mm)	144*	Torlon	547	25	3/8" (10 mm)

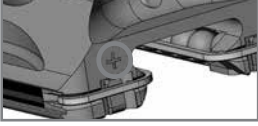
*Coupled car assembly—each car has 72 balls

Removing Ball Bearings from CB Cars



Position car on edge and gently push one ball at a time from center of retaining clip. **Do not remove retaining clip from car!**

CB + Big Boat Cars Can Convert To Fit Old-style Non-CB Track.



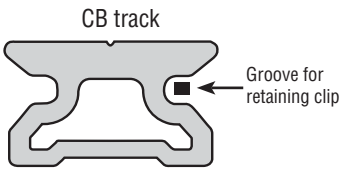
CB+ cars designed for CB track



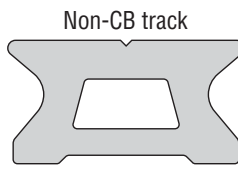
CB+ cars can convert to run on old-style, non-CB track



Order car loader



Track built after 2003 - No need to convert car



Track built through 2003

Car length	Loader
5 3/8" 136 mm	HBB1
7 7/16" 188 mm	HBB28
9 1/8" 231 mm	HBB25

Converting CB + Cars to Fit Old-Style Non-CB Track

Important! Requires CB+ cars. See complete instructions at www.harken.com/manuals. See traveler instructions 5070.



1. Use flat-bladed screwdriver to push retaining clip toward end.



2. Pry retaining clip off and dump balls in box.



3. Remove retaining clips and corner keepers over box to catch balls.



4. Hold car on edge and load lower side with correct number of balls. **DO NOT OVERLOAD.** Consult chart to confirm quantity.



5. Remove two (2) clips from car loader. Slide car loader in so loading port is on side of car without balls.



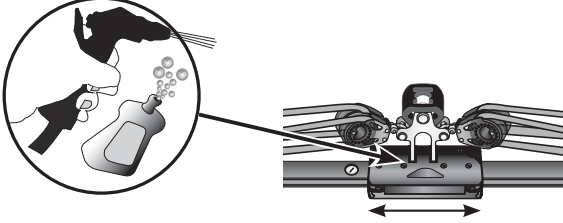
6. Put one (1) clip on "open" end of loader. Load rest of balls through ball loading port into empty bearing race. Consult chart to confirm quantity. Line up car loader with track and gently roll car onto track.

Inspect

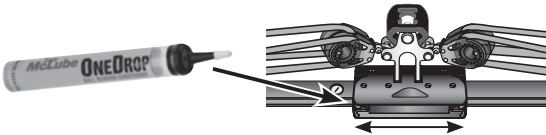
Frequently inspect shackles and control block fittings for signs of fatigue. Replace as necessary. Make sure every installation includes Harken track endstops. Arrange control tackle so cars do not hit endstops under load.

Maintenance

Traveler cars: Clean by frequently flushing with fresh water. Periodically clean car by squirting a detergent/water solution into center openings. Roll car back and forth to distribute evenly. Flush bearings with fresh water.



Do not use spray lubricants; ball bearings will skid, not roll. Once car and track are dry, apply one (1) to two (2) drops of McLube® OneDrop™ ball bearing conditioner to ball contact surfaces of track. Roll car back and forth through OneDrop conditioner several times to distribute onto bearings. Wipe remaining OneDrop off track. OneDrop conditioner is preferred, but you can also use one (1) to two (2) drops of a light machine oil. Too much oil attracts dirt.



Track: Clean with detergent and 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.