

# 27 mm Midrange: End Controls

About Carbo ball bearing or ESP sleeve bearing end controls:  
see feature pages at beginning of this section.

Aventura 33, 10.06 m (33'), Aventura Catamarans © STGI Marine / Eric Roger



1631



1632



1633



1652



1642



E2730



E2750



E2756



E2750HB

## CARBO BALL BEARING END CONTROLS

## ESP SLEEVE BEARING END CONTROLS

Fasteners not included.

Part No.	Description	Sheave		Length		Width		Weight (pair)		Max line		Height above track		Maximum working load		Breaking load		Purchase
		Ø	mm	in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
<b>Carbo Ball Bearing End Controls</b>																		
1631	Single sheave (pair)*	1 <sup>9</sup> / <sub>16</sub>	40	4 <sup>1</sup> / <sub>2</sub>	114	1 <sup>19</sup> / <sub>16</sub>	49	20	574	3/8	10	1 <sup>1</sup> / <sub>16</sub>	33	350	159	875	397	2:1/3:1
1632	Double sheave (pair)*	1 <sup>9</sup> / <sub>16</sub>	40	4 <sup>1</sup> / <sub>2</sub>	114	1 <sup>19</sup> / <sub>16</sub>	49	26	730	3/8	10	2	50	700	318	1750	794	3:1/4:1
1633	Double sheave/365 Carbo-Cam (pair)*	1 <sup>9</sup> / <sub>16</sub>	40	4 <sup>1</sup> / <sub>2</sub>	114	3 <sup>15</sup> / <sub>16</sub>	100	36	1020	3/8	10	2	50	600	272	1500	680	3:1/4:1
1642	Pinstop	—	—	2 <sup>5</sup> / <sub>16</sub>	59	1 <sup>19</sup> / <sub>16</sub>	49	4.8**	136**	—	—	1 <sup>1</sup> / <sub>16</sub>	33	—	—	—	—	—
1652	Self-tacking jib controls (pair)***	2	51	4 <sup>1</sup> / <sub>16</sub>	106	2 <sup>1</sup> / <sub>4</sub>	57	20.4	578	1/2	12	2 <sup>5</sup> / <sub>16</sub>	59	610	277	1200	544	1:1
<b>ESP Sleeve Bearing End Controls</b>																		
E2730	Single sheave/deadend (pair)	1 <sup>1</sup> / <sub>8</sub>	35	4 <sup>13</sup> / <sub>16</sub>	122	1 <sup>19</sup> / <sub>16</sub>	45	19.54	554	3/8	10	1 <sup>1</sup> / <sub>16</sub>	36	1800	816	3600	1633	1:1/2:1
E2750HB	High-beam double sheave (pair)‡	1 <sup>9</sup> / <sub>16</sub>	40	4 <sup>1</sup> / <sub>4</sub>	108	1 <sup>9</sup> / <sub>16</sub>	40	23.4	662	3/8	10	1	25	600	272	1200	544	3:1/4:1
E2750	Double sheave/deadend (pair)	1 <sup>9</sup> / <sub>16</sub>	35	4 <sup>13</sup> / <sub>16</sub>	122	1 <sup>19</sup> / <sub>16</sub>	45	24.2	686	3/8	10	2 <sup>1</sup> / <sub>4</sub>	56	1800	816	3600	1633	3:1/4:1
E2756	Double sheave/deadend/365 Carbo-Cam (pair)‡‡	1 <sup>9</sup> / <sub>16</sub>	35	3 <sup>3</sup> / <sub>4</sub>	95	3 <sup>15</sup> / <sub>16</sub>	96	23.4	1278	3/8	10	2 <sup>1</sup> / <sub>4</sub>	56	600	272	1500	680	4:1

\*Includes 8 mm PH fasteners. \*\*Weight each. \*\*\*Includes 5/16" RH fasteners. †Requires high-beam track. ‡‡Maximum working loads and breaking loads based on cam strengths.



Carbo ball bearing end controls have an integrated bar for deadending control line.



Assemblies secure to track, eliminating additional holes.

Tough one-piece bases and cam arms are machined from a single piece of aluminum.



Use E2750HB double-sheave ESP end controls for cabintop travelers where lines lead to the aft edge of the cabintop.

Contact Harken to order special length track with mounting holes for E2750HB end controls.

# 27 mm Midrange: Car Accessories

## Stand-Up Toggles

Stand-up toggles hold blocks upright on travelers. Stand-up toggles with control tangs allow attachment of ball bearing Carbo control blocks.

Refer to stand-up toggles chart for mainsheet block compatibility. See purchase selection guide for control blocks.

## Control Block Kits

Kits are available for Midrange cars to add ESP sleeve-bearing control systems for up to 4:1 purchase. Combine with ESP end controls.



## Stand-Up Toggles

Part No.	Description	Mainsheet block pin Ø		Control block pin Ø		Height		Weight		Maximum working load		Accepts mainsheet blocks		
		in	mm	in	mm	in	mm	oz	g	lb	kg			
1561	Stand-up toggle	1/4	5/16	6	8	—	—	2 5/16	59	3.5	99	2500	1134	75 mm Carbo singles, doubles, and triples, 3" Small Boat single, fiddle, Midrange blocks, 57 mm
1638	Stand-up toggle/control tangs	1/4	5/16	6	8	3/16	5	2 5/16	59	4.4	124	2500	1134	75 mm Carbo singles, doubles, and triples, 3" Small Boat single, fiddle, Midrange blocks, 57 mm

## Control Block Kits

Part No.	Description	Includes
T27KIT	ESP purchase upgrade kit	Kit includes (4) 25 mm control blocks, (2) Small Boat deadends, (8) M5 fasteners
T32KIT	ESP purchase upgrade kit*	Kit includes (4) 35 mm control blocks, (2) Midrange/Big Boat deadends, (8) M6 fasteners

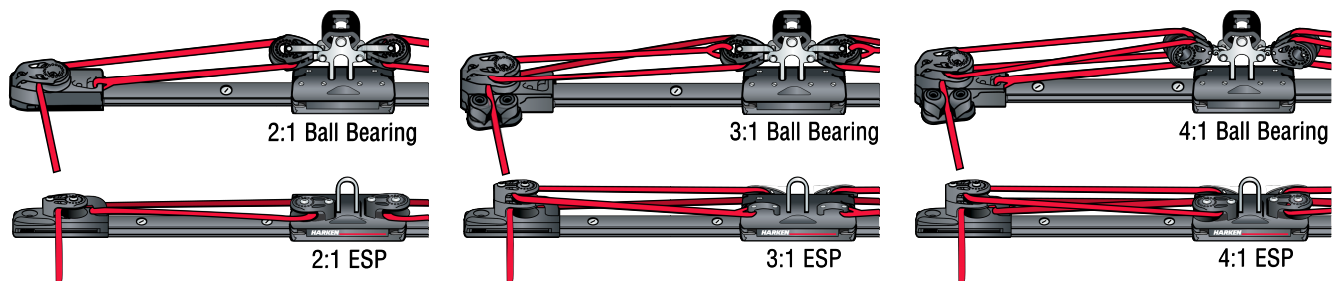
\*Use with G27 genoa lead cars.



2650 2638  
See page 45-46

T27KIT  
T32KIT

# 27 mm Midrange: Purchase Selection Guide



Purchase	Car	End control	Control block on car
2:1 Ball bearing	T2701B	1631	1638 with 2650
2:1 ESP	T2701B	E2730	T27KIT
3:1 Ball bearing	T2701B	1632, 1633	1638 with 2650*
3:1 ESP	T2701B	E2750, E2756	T27KIT
4:1 Ball bearing	T2701B	1632, 1633	1638 with 2638
4:1 ESP	T2701B	E2750, E2756	T27KIT

\*Deadend line through center of sheave.

Control purchase recommendations				
Sail area				
End-boom sheeting		Mid-boom sheeting		Purchase
ft²	m²	ft²	m²	
Under 140	Under 13	Under 125	Under 12	2:1
140-235	13-22	125-200	12-19	3:1
235-275	22-25	200-250	19-23	4:1