

AC25C End Cap App

Instructional Guide

Introduction

The End Cap App is a Web Application to be used to evaluate and select a Tandemloc, Inc. AC25C End Cap pair.

This app is available via your web browser on most computer, tablet and smartphone devices. It does require that your device has access to the internet either through a WiFi or Cellular connection.

The current web page configurations are designed to accommodate commonly available screens and will work on tablets and web capable cell phones with some limitations. We are continuously evaluating and updating the app for improved performance and device support. Each time you launch this app you will be launching the latest version available. No download to your device is required. The primary means of accessing the app is through the Tandemloc, Inc. website at <u>www.tandemloc.com</u>. It can be accessed directly at <u>tandemloc.tools/End_Cap_App</u>.

This app is presented in three main segments, End Cap model selection, End Cap fixed spreader beam design and evaluation, End Cap & Pipe Kit telescopic spreader beam evaluation.

Other features and capabilities include lift report printing and display of the AC25C Selection Chart

Nominal Pipe Si	e - lb./ft	3" - 10	.25lb./ft	4" - 14.	.98lb./ft	5" - 20.	78lb./ft	6" - 28.	.57lb./ft	8" - 43.	39lb./ft	10" - 54	.74lb./ft	12" - 65	.42lb./ft	14" - 72.09lb./ft	14" - 72.09lb./ft	26" - 136.2lb./ft	32" - 168.2lb./ft	
Inner Dia wall	thickness	2.90	300	3.826	337	4.813		5.761	432	7.625	500	9.75	500	11.750)500	13.000500	13.000500	25.000500	31.000500	
	Sling Angle		60°		60°		60°		60°		60°		60°		60°	60°	60°	60°		
	3 ft	26	26	50	50	26	26	26	26	Spread t	oo short	Spread t	oo short	Spread t	too short	Spread too short	Spread too short	Spread too short	Spread too short	
S	4 ft	26	26	50	50	50	50	85	90	50	50	Spread t	oo short	Spread t	too short	Spread too short	Spread too short	Spread too short	Spread too short	
	5 ft	26	26	50	50	50	50	85	90	85	90	85	90	Spread t	too short	Spread too short	Spread too short	Spread too short	Spread too short	
	6 ft	26	26	50	50	50	50	85	90	85	90	130	130	Spread t	too short	170	220	Spread too short	Spread too short	
	8 ft	26	26	50	50	50	50	85	90	85	90	130	130	130	130	170	220	Spread too short	Spread too short	
Ē	10 ft	17	26	43	50	50	50	85	90	85	90	130	130	130	130	170	220	500	Spread too short	
.=	15 ft	7	13	19	33	41	50	81	90	85	90	130	130	130	130	170	220	500	1544	
ğ	19 ft	4	8	11	20	25	45	50	88	85	90	130	130	130	130	170	220	500	1544	
	20 ft	х	Х	10	18	23	40	45	79	85	90	130	130	130	130	170	220	500	1544	
en lift	24 ft	х	Х	7	12	16	28	31	55	83	90	130	130	130	130	170	220	500	1544	
	25 ft	х	Х	х	х	14	25	29	50	76	90	130	130	130	130	170	220	500	1544	
	30 ft	х	Х	х	х	10	17	20	35	52	90	106	130	130	130	170	220	500	1544	
	35 ft	х	Х	х	х	Х	х	14	25	38	67	77	130	130	130	170	220	500	1544	
ŭ	36 ft	х	Х	х	х	х	х	13	24	36	63	73	128	126	130	170	220	500	1544	
ž	40 ft	х	Х	х	х	х	х	х	X	29	51	59	103	101	130	170	220	500	1544	
	45 ft	х	Х	х	х	х	х	х	X	22	40	46	81	79	130	170	187	500	1544	
Ū.	48 ft	х	Х	х	х	х	х	х	X	19	35	40	71	69	122	164	164	500	1544	
9	50 ft	х	х	х	х	х	х	х	X	х	X	37	65	64	112	150	150	500	1544	
ne	55 ft	х	Х	х	х	х	х	х	X	х	X	30	53	52	92	124	124	500	1544	
	60 ft	X	X	X	х	х	х	х	х	Х	х	24	44	43	77	103	103	500	1544	
ö	66 ft	X	Х	х	х	Х	х	х	X	х	х	х	х	35	63	85	85	500	1544	
S	70 ft	х	X	х	x	х	X	х	x	х	x	X	x	31	55	75	75	500	1544	
	72 ft	X	X	х	x	х	x	х	x	х	X	X	х	29	52	70	70	490	1476	
	79 ft	x	х	х	х	х	х	х	x	х	х	х	x	X	X	58	58	405	1224	
	90 ft	х	х	х	x	х	х	х	X	х	x	х	х	X	x	x	x	310	940	
	100 ft	х	X	х	X	х	х	х	X	х	X	х	х	X	X	x	x	249	758	

Always refer to End Cap App for detail data on acceptability of End Cap model for lift.

Spread capability limited to lower capacity End Cap selection at this Pipe Diameter. Maximum capacity allowable at this Pipe Diameter. Length exceeds allowable Spreader Beam length for this Pipe Diameter

Maximum capacity allowable at this Pipe Diameter and Spread length.

AC25C Selection Chart (Pipe Capacity Chart)

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Cell Color Legend

End Cap Model Selection

The End Cap model selection capability was designed to offer an alternative to utilizing the AC25C Selection Chart (Pipe Capacity Chart, shown above) to determine which model AC25C End Cap pair to utilize for a lift. Most customers will find this a simpler alternative for making the model selection.

As when determining which model AC25C End Cap pair to purchase using the Pipe Capacity Chart the End Cap App requires you to use three data components, Beam Spread (in ft. or inches), Lift Capacity (in tons or lbs.) and top rigging Sling Angle (°) to make your selection. The End Cap App returns the smallest model that can safely be used to perform the lift. In most cases you will be able to use a slightly larger model to perform the same lift but when doing so it may require larger rigging hardware to match that required of the larger size/capacity AC25C End Cap pair.

- The End Cap App Model Selection page provides the following information;
- AC25C Model to purchase. (e.g. AC25C-013060EH)
- The pipe size & Tandemloc model number for that pipe size. (e.g. AC22P-06X)
- The Tandemloc model number for the sleeve to be used if two lengths of pipe are to be used to create a single spreader. (e.g. AG08A00-06X) (Note: When using a sleeve to accomplish a lift the combined pipe lengths of the two sections will be slightly shorter than the length of a single pipe solution.)
- · Physical characteristics of the components to be used.
- Length of the pipe to be used to create the required spread with the recommended AC25C End Cap pair.

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Define your lift paramet Define your lift paramet Once defined the minimum model will be displayed 1. Enter Beam Spread (in Beam Spread 5.5 fer	AC25C En ©2019 Tan ers. acceptable size Ar feet or in inches)	d Cap Model Selecti demloc, Inc. C25C End Cap as shown. whes After changing ar	on y value pres	Other Eva Evalues	luations or Actions - aluate a Fixed End Cap Sr late a Telescopic End Cap Show Cf Printable R	et Set eport
2. Enter Capacity (in ton	s or in Ibs.) as show	wn. 3. Choose	Sling Angle			_
Capacity 14	tons 28000	Ibs. Sling Angl	e 🖲 45° 🔵	60°		
AC25C End Cap sel Pipe Size Selected End Cap Selected Pipe Selected Sieeve	ected for defined 3 NP5 3 AC25C-007030EH AC22P-03X AG08A00-03X	lift. 3.5 in. dia. End Cap Weight 18.20 Pipe Weight 45 Sieeve Weight 13.0	lbs. Ei lbs. Pi lbs. M	nd Cap Lost Length pe Cut Length inimum Spread	6.75 inches 52.50 inches 19.50 inches	
Technical Data						
Est. Spreader Beam W	gt. 81 lb	IS.	-	TANDEMOCI WIL 1940	00 LB	
Axial Load W/Spreader Axial Load [Load Only]	Wgt 14,041 lb 14,000 lb	IS. IS.				
	A SME B30.20-2018 Spe	cifies that if a proof test is done it sha	ll be at no greater	than 125% of WLL		
	238-7224 acities to 40,000 Lbs	rices Quoted Instantly - No Walti rices Quoted Instantly - No Walti Irders Shipped in 5-7 Days! Proof tested to 125%	Spread lengt	wLL 10,0 ** *********************************	Mare 1	·

- Minimum possible spread when using this AC25C End Cap pair.
- The estimated weight for the spreader beam made from these components for this capacity & spread.

End Cap Fixed Spreader Beam Design and Evaluation

You must press RETURN or ENTER after any data entry to re-run the calculation engine. The purpose of this feature of the End Cap App is to evaluate the use of a specific End Cap Fixed Spreader Beam, possibly a pair that the user currently owns, for a specific lift.

Again, certain data inputs are required to fully evaluate the lift.

- · Identify your End Cap model from the Pull Down List
- Enter Beam Spread (ft.)
- Enter Capacity (tons)
- Choose Sling Angle (°)
 - There are standard inputs for the model to be evaluated plus a choice for defining a custom

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C25C Fixed Sprea etermine if a specif	Other Evaluations or Actions - End Cap Set for your lift Telescopic End Cap Set Show Chart												
AC25C-025080EH (8 inch	NPS Pipe) V	Capad	ity 32	tons	After ch	anging ar	ıy val	ue pres	S ENT	ER or TA	в		
2. Enter Beam Spre Beam Spread	ead (in feet).	4. Choo Sling	ose Sling Ang Angle 45° 	le ◎ 60°	Custom	Pass - Pas	Fail S		All Fa	ictors Greer	1		
Selected End Cap	AC25C-0250	80EH	Est. Spreader B	eam Weight	1,311	lbs.	En	nd Cap Ma	x. Capac	ity			
End Cap Lost Length	15.43	inches	End Cap Weight		168.9	lbs. per unit	L/I	'R Ratio					
Minimum Spread	46.86	inches	Pipe Unit Weigh	t	43.39	lbs./ft.	Bu	uckling Pol	tential			51	
Matching Pipe AC22P-08X			Sleeve Weight	77.0	lbs.	Ex	ceeds Shi	backle Capacity					
Matching Sleeve AG08A00-08X			Shackle Can	35.00 metric ton	s 77,161	lbs	Evrande May, Charted Length						
Pipe Cut Length	269.14	inches	Est. Sling Tensio	on (each leg)	46,182	lbs.	Be	elow Minin	num Spre	ead		51	
Show Detail Data	A SME B30.20	-2018 Specifie	s that if a proof tes	t is done it shall be at n	o greater than 1	25% of WLL	-				_		
Maximum Spread		48	feet	Maximum Capacity		50	tons	1	00,000	lbs.			
Capacity @ Maxim	um Spread	19	tons	Spread @ Maximun	n Capacity	30	feet						
Primary Sling Angl	e for Maximum Spr	ead 4	5 degrees			45	degree	IS					
Maximum Spread		48	feet	Maximum Capacity		50	tons	10	0,000	lbs.			
Capacity @ Maxim	um Spread	35	tons	Spread @ Maximun	n Capacity	40	feet						
Alternate Sling Ang	le for Maximum Sp	read 6	0 degrees			60	degree	S					

angle between 45° and 70°. If a custom angle is chosen that angle MUST be the MINIMUM angle used for the lift.

Once the inputs are complete and the ENTER or RETURN key has been pressed the calculation engine will execute and PASS/FAIL chart will reflect whether any of the 6 critical factors are outside of safe bounds. **DO NOT use the AC25C End Cap set if any of the PASS/FAIL red lights are on.**

- End Cap Max. Capacity Exceeds design capacity of the AC25C End Cap set selected.
 - Corrective Action reduce capacity requested.
- L/R Ratio Spread length exceeds the maximum length allowed for this size pipe.
 - Corrective Action reduce spread requested.
- Buckling Potential The capacity and spread entered create a buckling risk for the AC25C End Cap set selected.
 - Corrective Action reduce some combination of spread and/or capacity requested.
- Exceeds Shackle Capacity Each AC25C End Cap set is designed for a specific capacity shackle. In some situations the shackle capacity can become a capacity limiting factor (most likely when a larger sling angle is used).
 - Corrective Action increase sling angle or reduce capacity requested.
- Exceeds Max. Charted Length Exceeds maximum length shown in the Pipe Capacity Char
 - Corrective Action reduce spread length requested.
- Below Minimum Spread The spread is too short. There is physical interference preventing this spread from being accommodated with this AC25C End Cap set.
 - Corrective Action increase spread length beyond minimum shown for this AC25C End Cap set.

The AC25C product is designed to allow repeated use at varying spreads and capacities simply by the substitution of a different length of NPS schedule 80 (Extra Heavy) pipe of a specific size, (sized for the end cap pair). The End Cap App Model Evaluation Page allows the customer to quickly determine whether an AC25C End Cap set can be used for a specific lift and what variations to the lift criteria, principally the sling angle, might allow the use of their current model AC25C in this lift instance.

The output data also provides the cut length of the NPS pipe in order to achieve the required spread using their model AC25C End Cap set.

The AC25C product is designed to allow repeated use at varying spreads and capacities simply by the substitution of a different length of NPS schedule 80 (Extra Heavy) pipe of a specific size, (sized for the end cap pair).

The End Cap Fixed Spreader Beam Design and Evaluation webpage allows the customer to quickly determine whether a specific AC25C End Cap model pair can be used for a specific lift and what variations to the lift criteria, principally the sling angle, might allow the qualified use of the defined AC25C model pair in this lift instance.

The output data provides the cut length of the NPS pipe in order to achieve the required spread using the AC25C End Cap model pair. Other detailed information that might be of use is also provided.

Output Data

• The pipe size & Tandemloc model number for that pipe size. (e.g. AC22P-06X)

- The Tandemloc model number for the sleeve to be used if two lengths of pipe are to be used to create a single spreader. (e.g. AG08A00-06X). (Note: When using a sleeve to accomplish a lift the combined pipe lengths of the two sections will be shorter than the length of a single pipe solution.)
- Physical characteristics of the components to be used.Length of the pipe to be used to create the required spread with the recommended AC25C End Cap pair, as noted above. (For single length solution only).
- Minimum possible spread when using this AC25C End Cap pair.
- The estimated weight for the spreader beam made from these components for this capacity & spread. (For single length solution only).
- · Shackle required for use with this AC25C End Cap pair.
- Estimated tension in each sling leg at the entered lift specifications.

In the extended section, Show Detailed Data, we also show some maximized lift specifications for the selected AC25C End Cap pair.

- Maximum Spread & associated capacity @ 45° sling angle or lowest charted sling angle.
- Maximum Spread & associated capacity @ 60° sling angle or highest charted sling angle.
- Maximum Capacity & associated spread @ 45° sling angle or lowest charted sling angle.
- Maximum Capacity & associated spread @ 60° sling angle or highest charted sling angle.

End Cap Telescopic Spreader Beam Evaluation

The purpose of this feature of the End Cap App is to evaluate the use of a specific End Cap Telescopic Spreader Beam, possibly a pair that the user currently owns, for a specific lift.

Again, certain data inputs are required to fully evaluate the lift.

- · Identify your End Cap model from the Pull Down List
- · Identify your Pipe Kit from the Pull Down List
- · Select the Beam Spread from available choices in the Pull Down List



• Enter Capacity (lbs. or tons)

In this first release of the End Cap Telescopic Spreader Beam Evaluation webpage we are making the assumption that for any individual Pipe Kit selection the user will use the minimum possible sling angle to keep the headroom requirement at a minimum when at the longest available spread. For all currently available Pipe Kits the minimum possible sling angle is 45°.

Once the inputs are complete and the ENTER or RETURN key has been pressed the PASS/FAIL chart will reflect whether any of the 4 critical factors are outside of safe bounds. **DO NOT use the AC25C End Cap set if any of the PASS/FAIL red lights are on.**

- End Cap Max. Capacity Exceeds design capacity of the AC25C End Cap set selected.
 - Corrective Action reduce capacity requested.
- L/R Ratio Spread length exceeds the maximum length allowed for this size pipe.
 - Corrective Action reduce spread requested.
- Buckling Potential The capacity and spread entered create a buckling risk for the AC25C End Cap set selected.
 - Corrective Action reduce some combination of spread and/or capacity requested.
- Exceeds Shackle Capacity Each AC25C End Cap set is designed for a specific capacity shackle. In some situations the shackle capacity can become a capacity limiting factor (most likely when a larger sling angle is used).
 - Corrective Action For the End Cap Telescopic Spreader Beams there is no user corrective action that can be analyzed at this time. The actual change that can be made to eliminate this failure situation is to increase the base Pipe Kit sling angle to a value greater than 45°. This will be a user action that can be entered in future revisions.

Output Data

- Physical Characteristics of the components to be used.
- Pipe Kit minimum and maximum spreads and relative sling angles for each.
- Pipe Kit maximum WLL for each of the extreme Pipe Kit spreads, minimum and maximum.
- The estimated weight for the spreader beam made from the selected components.
- Shackle required for use with this AC25C End Cap pair.
- Estimated tension in each sling leg at the entered lift specifications.

FAQ

This section has yet to be written

Error Report

Desktop/Laptop Version

- 1. Missing Go/No-Go 'Stoplights' on result image
 - 1. Refresh webpage

Tablet/Smartphone Version -

- 1. Continual screen refresh at startup
 - 1. Work-around rotate device to change orientation several times. This should resolve the screen refresh issue. This is due to a message being sent regarding the orientation of the screen. Currently in review.
- 2. UI element artifacts remaining at startup
 - 1. Work-around -Change webpage selection to alternate webpage (Select -> Telescopic, etc.). This does not always resolve the artifact residue but will in many instances.
- 3. Missing Go/No-Go 'Stoplights' on result image
 - 1. Refresh webpage