

2:1 ROPE CHANGE-OUT TOOL

Part No. 60-800, 60-820 & 60-810

INSTALLATION INSTRUCTIONS

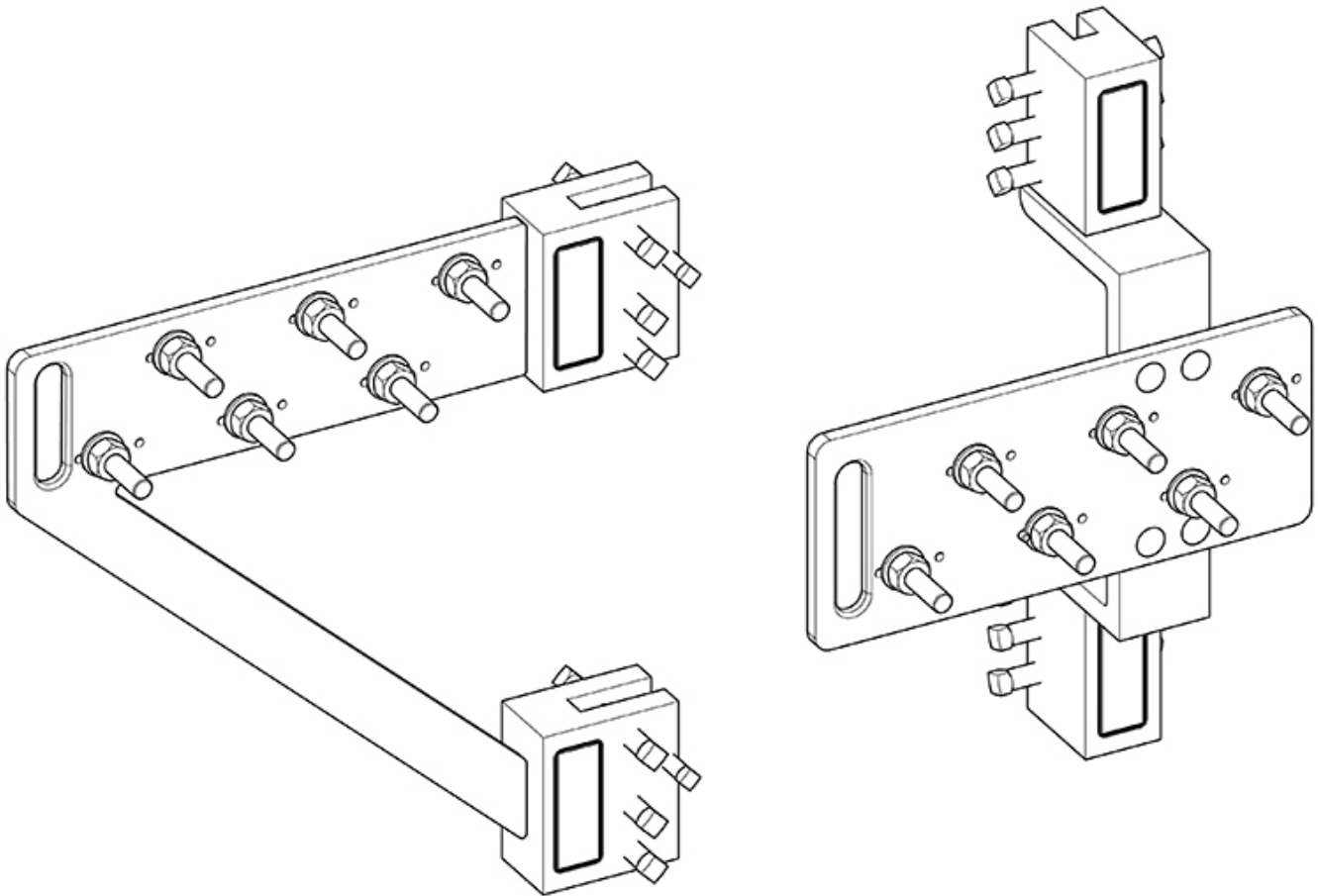


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PRODUCT INFORMATION & SAFETY WARNINGS

PRODUCT WARRANTY & INFORMATION



Scan the QR code to view detailed warranty information at wurtec.com. For questions or product support, contact Wurtec Customer Service at 1-800-837-1066. If a Declaration of Conformity is available for this product, it can be downloaded from its product page on wurtec.com.

WARNING

FAILURE TO COMPLY WITH THE FOLLOWING GUIDELINES COULD RESULT IN DEATH OR SERIOUS INJURY

EXCLUSION OF LIABILITY

This equipment should only be installed and serviced by trained personnel. This manual is intended as a guide only and is not a substitute for formal training; it may not cover every scenario or condition of use. Wurtec reserves the right to change product design and specifications without notice. Always use standard PPE, including safety glasses, gloves, boots, a hard hat, and fall protection.

- Before each use, inspect all components for damage, excessive wear, worn welds, damaged hardware, or faulty cable clips. Do not use damaged components.
- Installation should be performed by two qualified personnel. Both installers should lift and position the tool on the rail. One person should secure the tool while the other tightens the screws. Torque all screws to the specified rating and verify settings before use.
- Do not use worn or damaged cable clips. Cable clips must have intact gripping grooves. Worn clips can allow wire ropes to slip, causing uncontrolled descent and serious injury or death.
- Ensure the tool blocks are properly seated against the rail before tightening screws.
- Tighten all rail block and cable clip screws to the specified torque rating. Improper tightening may cause tool failure and serious injury.
- Do not use the tool if load capacity or torque labels are missing, damaged, or unreadable. Use this tool only for its intended purpose.

SPECIFICATIONS

Max Safe Working Load Per Cable (P):

6 Ropes: 525 lbs. (238 kg)

7-9 Ropes: 467 lbs. (212 kg)

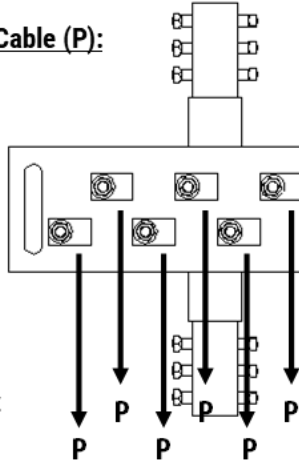
Max Load ÷ Rope Density =
Max Cable Length

Example:

1/2" 6 Rope Capacity

525 lb. ÷ 0.48 lb./ft = 1094 ft

238 kg ÷ 0.71 kg/m = 335 m



Dead-End Support Bracket Loading Diagram

Max Safe Working Load Per Cable (P):

6 Ropes: 750lb (340 kg)

7-9 Ropes: 667lb (303 kg)

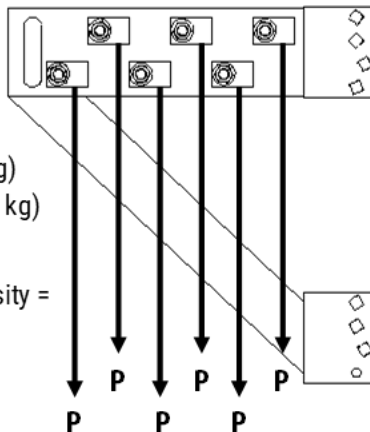
Max Load ÷ Rope Density =
Max Cable Length

Example:

1/2" 6 Rope Capacity

750lb ÷ 0.48lb/ft = 1563ft

340kg ÷ 0.71kg/m = 479m



Live-End Support Bracket Loading Diagram

Estimated Rope Density and Clip Part Numbers

Size	Cable Clip Part No	Rope Density	
		lb/ft	kg/m
5/16" (8 mm)	60-800-03	0.18	0.27
3/8"	60-800-04	0.26	0.39
10 mm	60-800-04	0.29	0.43
7/16" (11 mm)	60-800-05	0.35	0.52
1/2" (12-13 mm)	60-800-06	0.48	0.71
14 mm	60-800-08	0.57	0.85
9/16"	60-800-08	0.59	0.88
5/8" (16 mm)	60-800-09	0.74	1.10
11/16" (18 mm)	60-800-10	0.88	1.31
3/4" (19 mm)	60-800-11	1.04	1.55

Max Cable Length With and Without Extension (ft)

Size	Dead End		Live End	
	w/o EXT	w/ EXT	w/o EXT	w/ EXT
5/16" (8 mm)	2917'	2594'	4167'	3706'
3/8"	2019'	1796'	2885'	2565'
10 mm	1810'	1610'	2586'	2300'
7/16" (11 mm)	1500'	1334'	2143'	1906'
1/2" (12-13 mm)	1094'	973'	1563'	1390'
14 mm	921'	819'	1316'	1170'
9/16"	890'	792'	1271'	1131'
5/8" (16 mm)	709'	631'	1014'	901'
11/16" (18 mm)	597'	531'	852'	758'
3/4" (19 mm)	505'	449'	721'	641'

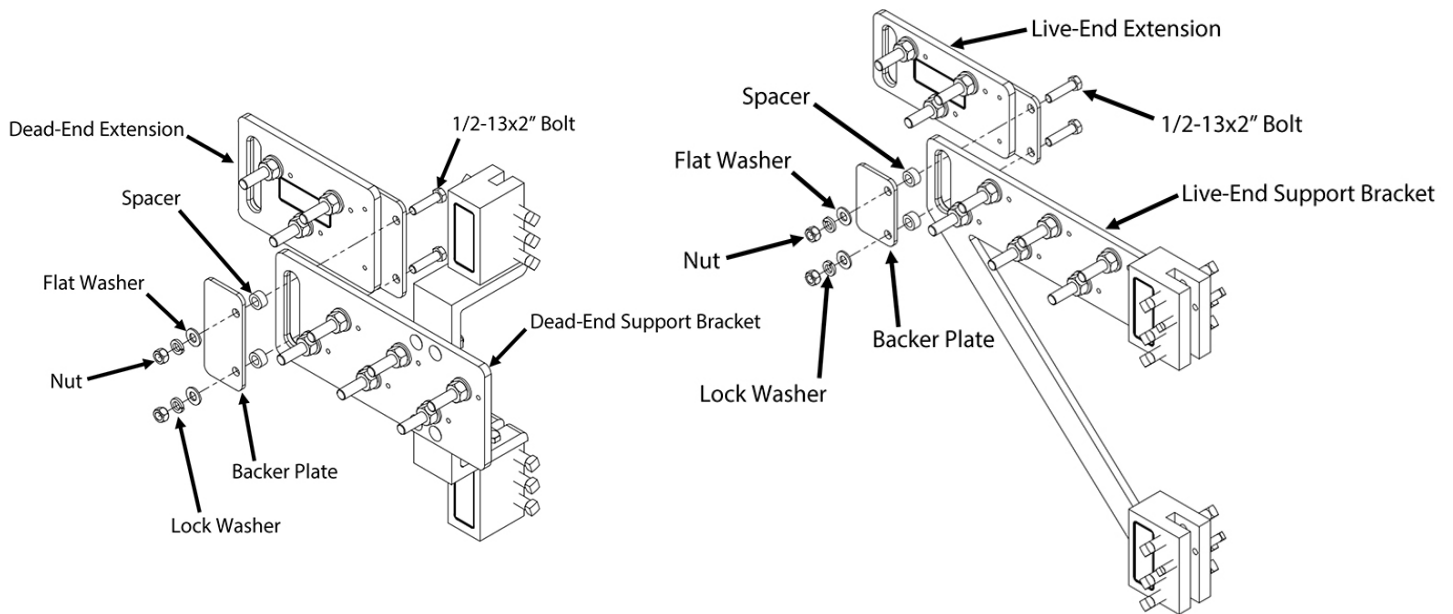
TORQUE SPECIFICATIONS

All bolts/screws shall be tightened in a pattern such that all bolts/screws in a group are torqued uniformly.

- Square head set screws = 70-80 ft-lbs (95-108 Nm)
- Cable clamp hex bolts = 90-100 ft-lbs (122-136 Nm)

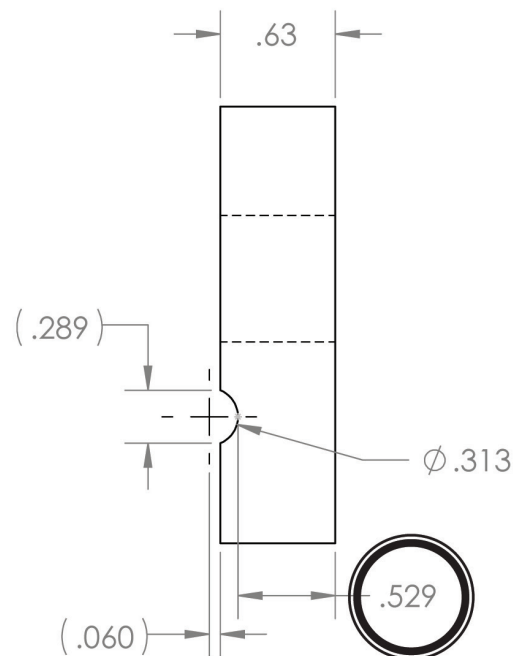
EXTENSION ASSEMBLY (OPTIONAL)

For applications requiring the replacement of more than six ropes, optional bolt-on extensions increase the tool's capacity to nine ropes. Extension Kit P/N 60-810 includes both the 60-810-01 Live-End Extension and 60-810-02 Dead-End Extension.



MAINTENANCE

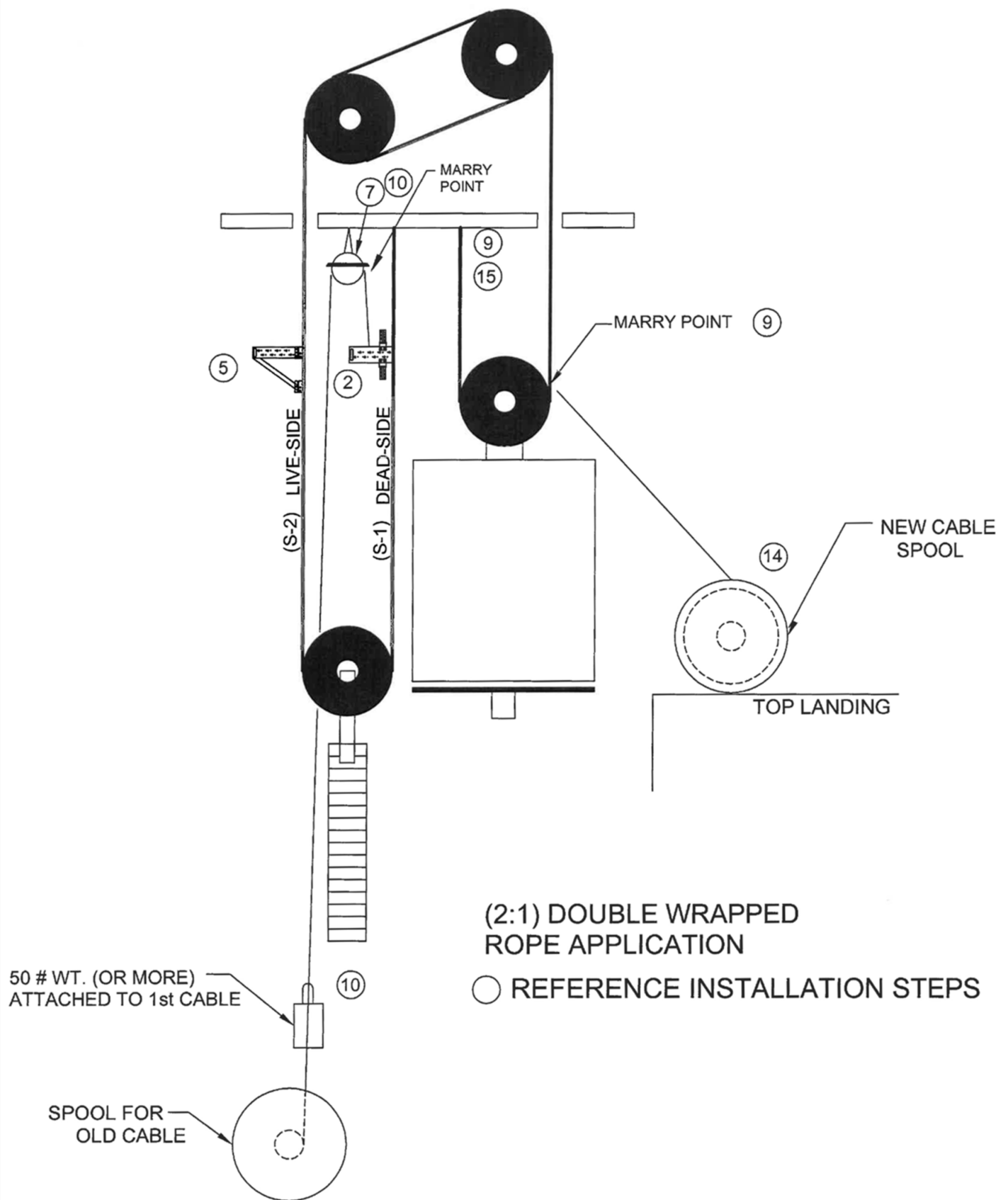
Assy	Clamps	Replace (in : mm)	
60-800-03	60-10048536	0.509	12.93
	60-10048538	0.284	7.44
60-800-04	60-10048573	0.478	12.14
	60-10048574	0.253	6.43
60-800-05	60-10048562	0.461	11.71
	60-10048563	0.236	5.99
60-800-06	60-10048533	0.430	10.92
	60-10048534	0.205	5.21
60-800-08	60-10048565	0.414	10.52
	60-10048566	0.189	4.80
60-800-09	60-10048582	0.383	9.73
	60-10048583	0.158	4.01
60-800-10	60-10048585	0.366	9.30
	60-10048586	0.141	3.58
60-800-11	60-10048605	0.335	8.51
	60-10048606	0.110	2.79



Replace the clamp halves when their measured thickness is below the value specified in the table. The circled dimension in the graphic identifies the measurement to check.

For each clamp assembly, the first clamp part number is the top half and the second clamp part number is the bottom half.

ROPING DIAGRAM

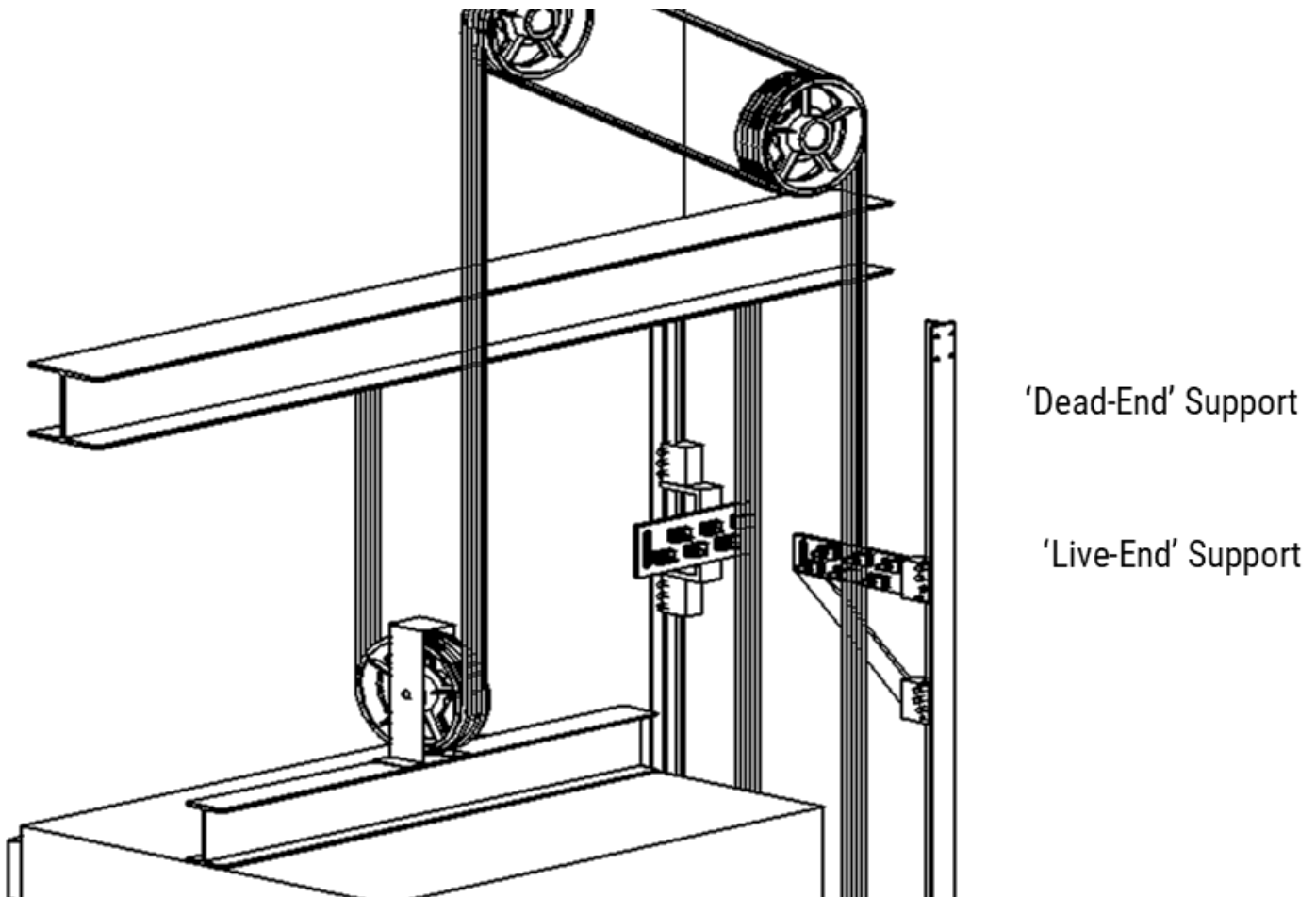


EQUIPMENT DESCRIPTION & INTENDED USE

The Wurtec 2:1 Rope Change-Out Tools are elevator maintenance tools designed to support the safe and efficient replacement of wire ropes during rope change-out operations. The tools use live-end and dead-end cable support assemblies to securely hold and manage the wire ropes throughout the replacement process.

Two configurations are available based on guide rail size. The 60-800 Rope Change-Out Tool is designed specifically for T89 rails and uses the 60-800-01 Live-End Tool.

The 60-820 Rope Change-Out Tool is designed for 12-lbs, 15-lbs, and 18-lb guide rails and uses the 60-820-01 Live-End Tool. Both configurations use the same 60-800-02 Dead-End Tool. The tools are intended for use on 2:1 roping systems and can accommodate up to six wire ropes ($\varnothing 3/8"$ – $3/4"$, $\varnothing 8$ – 19 mm) in their standard configuration.

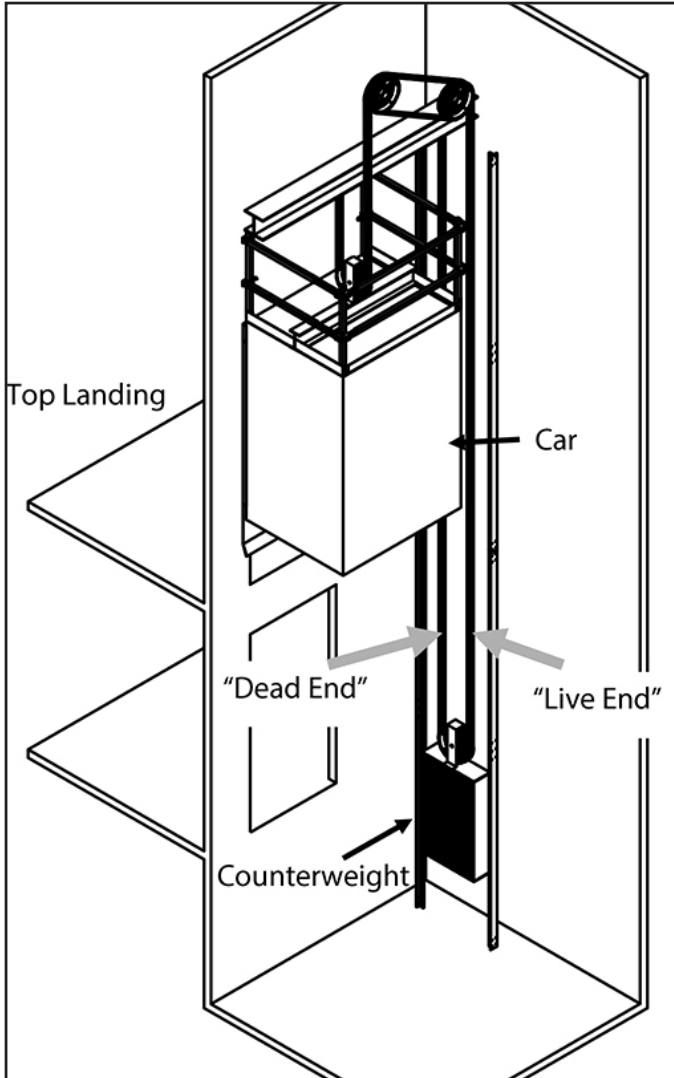


REQUIRED TOOLS

The following are the minimum required tools for installation:

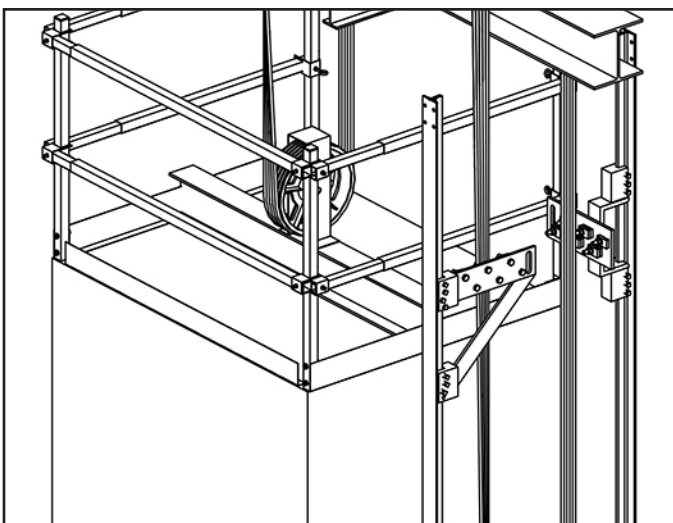
- Torque wrench
- 15/16" 6-pt socket
- 3/4" 12-pt socket
- 3/16" T-handle hex driver

INSTALLATION

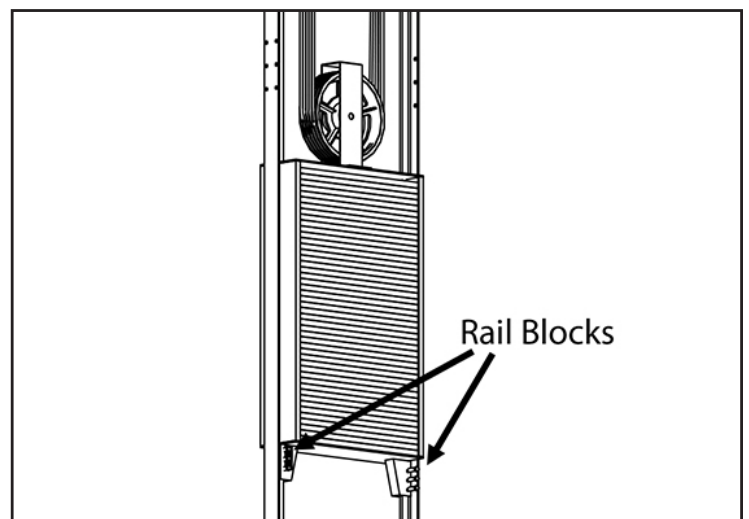


Hoistway Layout for Rope Change-Out

1. Drive the car to the top landing.
2. Create slack in the counterweight cables.
 - Place Rail Blocks (#11-180) on the counterweight rails immediately beneath the counterweight to prevent it from lowering any further.
 - Lift the car above the top landing. Wurtec recommends the use of a pair of Rail Blocks w/Clevis (#11-190), and cable winches to lift from above the car.
 - Allow for clear working overhead from the top of the car. If there is insufficient overhead, lift the counterweight instead of the car to create slack in the cables.
 - As an additional safety measure, set the car safeties.
3. Install 'Dead-End' side cable support at an accessible physical level on the counterweight rail at the top of the hoistway, below the counterweight dead end point. Torque all rail-holding bolts to the required setting as noted on the tool label.
4. Install 'Live-End' Cable Support Bracket on the opposite counterweight rail, at an accessible physical level approximately the same height as the 'Dead-End' Cable Support Bracket.

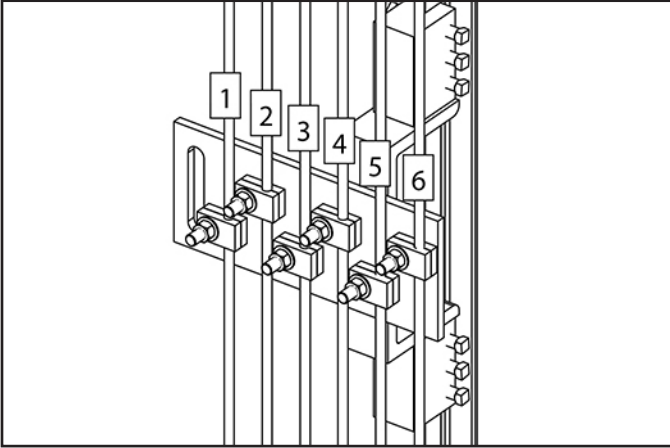


Support Bracket Locations



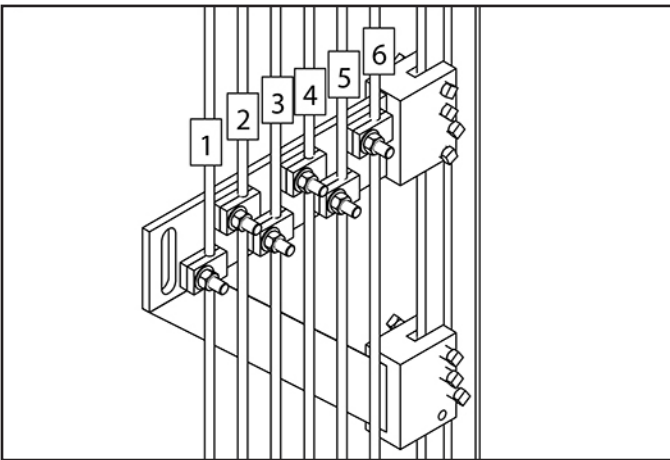
Rail Blocks Beneath Counterweight

INSTALLATION



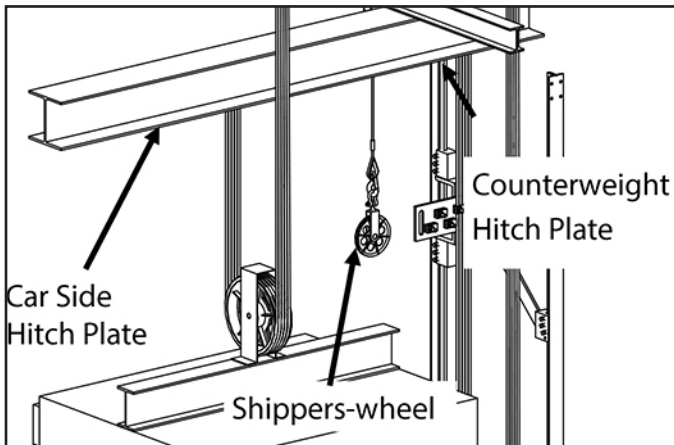
1. Label each cable to keep them from getting crossed.
2. Prior to clamping, verify cable placement and maintain consecutive cable layout through entire tool installation.
3. Clamp each cable in its appropriate position on the support bracket. Torque all cable-holding bolts to the required setting as indicated on the tool label.
4. Install shippers-wheel adjacent to the 'Dead-End' Cable Support Bracket.
5. Remove 'Dead-End' cables from the counterweight hitch point.

After they are removed from the counterweight hitch plate, loose cables will hang from the 'Dead-End' Cable Support Bracket. Place the cables over the bracket and out of the way of the shipper-wheel.

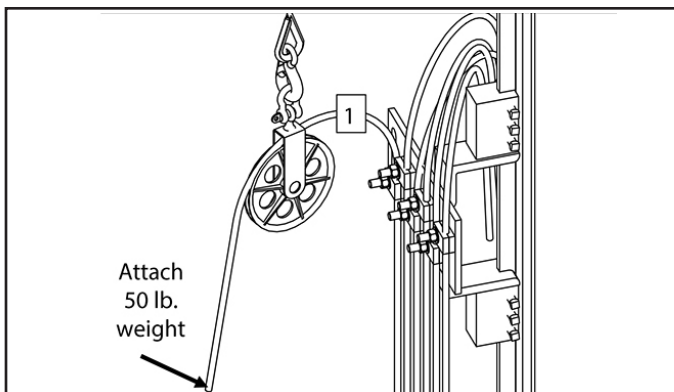


6. Determine which cable is in the cable #1 position on both brackets, and remove this cable from the car side hitch plate.
7. Marry a new cable from its reel to the cable you just removed from the car side hitch plate.

Wurtec recommends the wire ropes to be married via the reeving method. It is also acceptable to splice the individual strands of two sections of wire rope together. Check the car top and counterweight sheave guards for clearance of the reeving splice joint. If too tight, a reeving splice may not fit through and cannot be used.

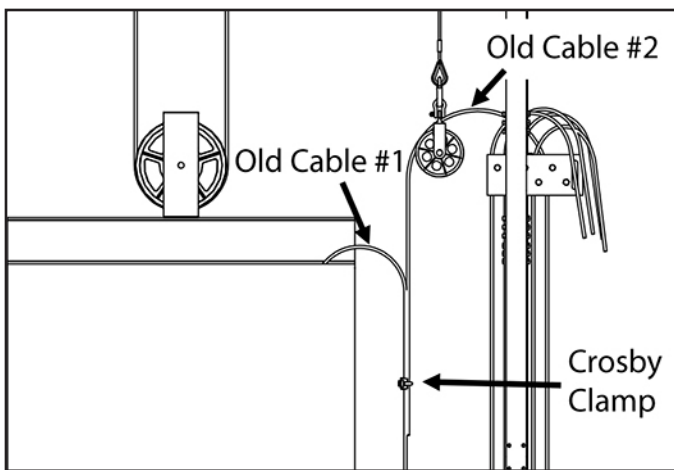
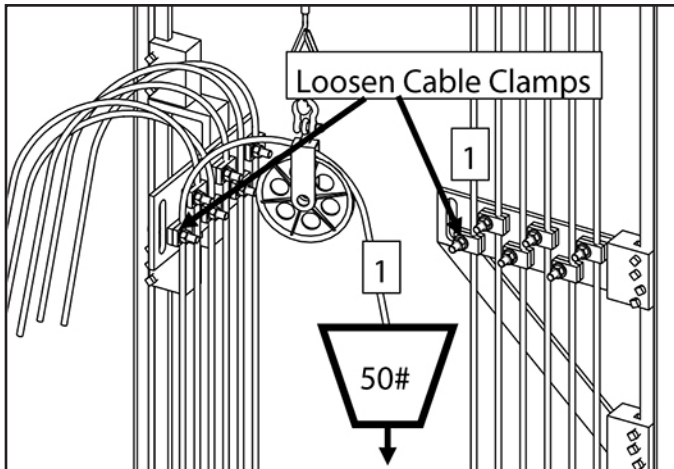


Reeving Wire Rope Together



8. Place first cable over the shipper-wheel from the 'Dead-End' Support Bracket and attach a 50-lb (or applicable) weight to the end of that first cable. (The purpose of the weight is to assist with carrying the first cable down the hoistway.)
9. Loosen/release the cable clamp bolts for the first cable at the support brackets, 'Dead-End' side first. Allow the weight to carry the first cable down to the pit where the old cable will be spooled for removal from the building.

INSTALLATION



With the old and new cables married together, “spooling” the old cable will prevent the new cable from becoming torqued/ twisted and potentially damaging the new cable. Hand-coiling can easily cause the cable to twist, unless you carefully coil using a Figure-8 process.

10. After the (old and new) ‘marriage’ passes over the shippers-wheel, allow it to continue to the bottom of the car. Secure the new cable to the Cable Support Brackets.
11. Bring the ‘marriage’ back to the top of the car and secure the old cable to the top of the car. The old cable will be used as a weight to carry the next cable down to the pit.
12. Cut ‘marriage’ and remove new cable from the shippers-wheel and hang it over the backside of the ‘Dead-End’ Support Bracket.
13. Take the next consecutive old cable from the ‘Dead-End’ Support Bracket and place over the shippers-wheel.
14. Connect this cable to the previous old cable (that was secured to the top of the car) by means of a Crosby clamp.
15. Release secured cable from the top of the car and let it hang down from the shippers-wheel.
16. Cut newly-installed cable from spool, allowing enough cable to reach under the car top sheave and up into the hitch plate.
17. Attach new cable to the car side hitch plate.
18. Remove the next consecutive cable from the car side hitch plate and marry it to new cable from the spool.

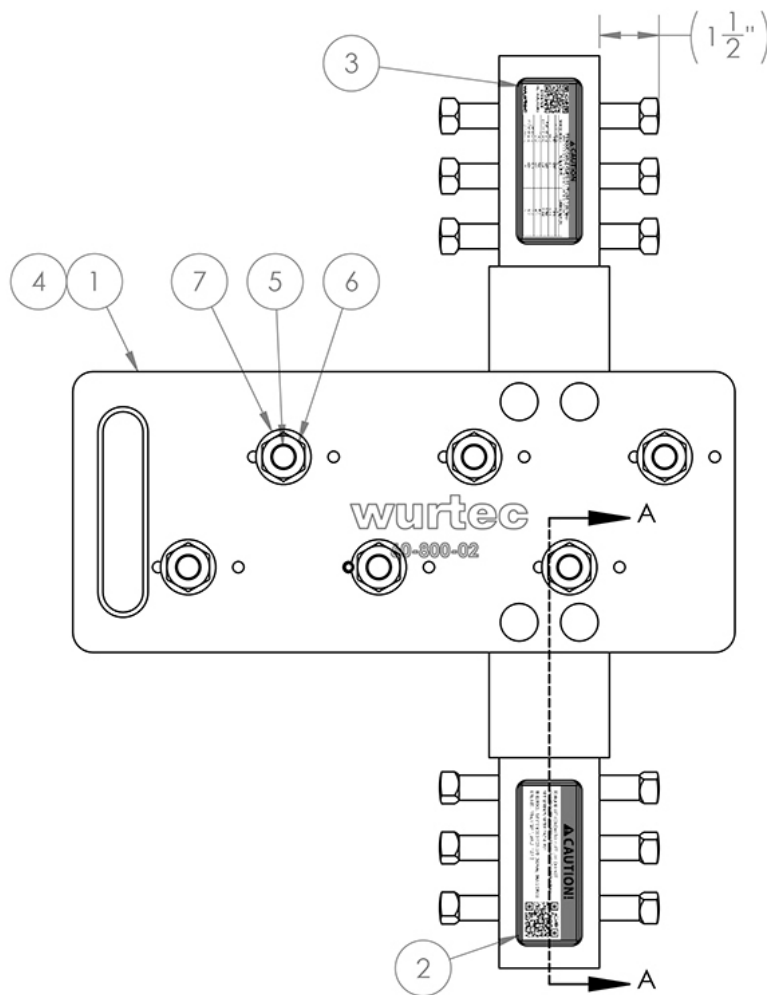
At this point you should have one new cable in place (except at the counterweight hitch plate), clamped to the support brackets. The remaining old cables will be replaced in the same manner as the first, except each preceding cable will act as the weight to help carry the old cables down the hoistway to the pit for removal.

19. Loosen the cable clamps for the next married cable at the support brackets (dead-end side first) and allow the next cable to be carried by the weight of the old cable to the pit.
20. As the next ‘marriage’ passes over the shippers-wheel, allow it to continue to the bottom of the car. Secure the new cable to the Support Brackets.
21. Bring the ‘marriage’ back up to the top of the car and secure the old cable to the top of the car.
22. Cut ‘marriage’ and remove new cable from shippers-wheel and hang it over the backside of the Dead-End Support Bracket.
23. Take the next old cable from the Dead-End Support Bracket and place it over the shippers-wheel. Connect this cable to the old cable secured to the top of the car via Crosby Clip.
24. Release the secured cable from the car top and let it hang down from the shippers-wheel.
25. Cut new cable from spool. Allow for enough cable to reach under the car top sheave and up to the hitch plate.
26. Attach new cable to the car side hitch plate.
27. Repeat steps 19-26 until all cables have been replaced.
28. Secure the last ‘old’ cable to the car.
29. With all new cables securely clamped to the support brackets, proceed with connecting the new cables to the counterweight hitch plate.
30. Once all the new cables have been attached to the hitch plates, loosen the wire rope clamps on the support brackets to release the cables.

INSTALLATION

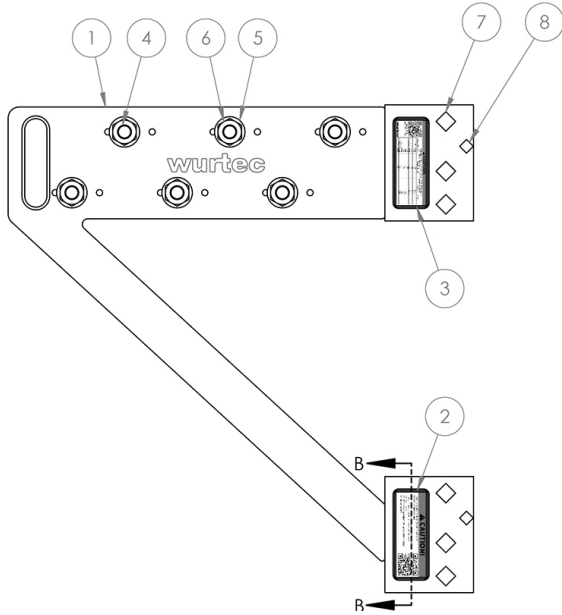
31. Remove the support brackets from the counterweight rails.
32. Make sure all of the cables are in place and properly secured to the hitch plates.
33. Remove the Rail Blocks used to create slack in the cables.
34. Run the car to the bottom landing and disconnect the last 'old' cable from the car and remove it from the hoistway.
35. Properly tension the new wire ropes based on your company's guidelines.

BILL OF MATERIALS - DEAD END TOOL - 60-800-02

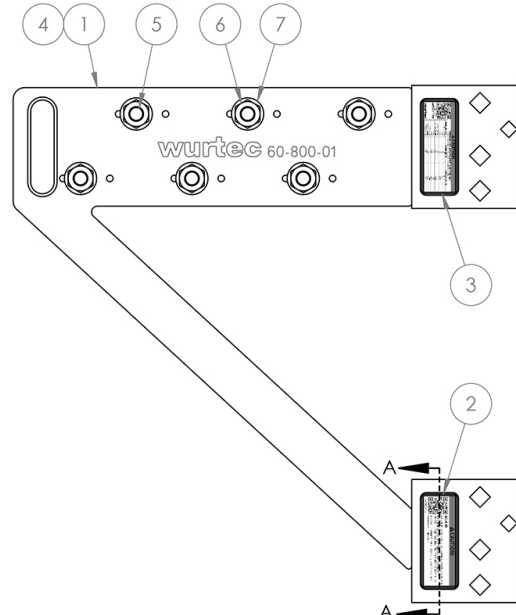


ITEM	QTY	PARTNO	DESCRIPTION	SIZE	LENGTH
1	1	60-10049087	DEAD END WELDMENT	-	-
2	1	15-10062173	DEAD END SCREW TORQUE TAG	-	-
3	1	15-10057885	DEAD END CABLE LENGTHS TAG	-	-
4	12	93203	SOCKET HEAD CAP SCREW	1/4-20	3/4 In
5	6	15315	HEX HEAD CAP SCREW	5/8-11	3 In
6	6	36552	HEAVY HEX NUT	5/8-11	
7	6	302707-130481	FLATWASHER	5/8"	-
8	12	26159	SQUARE HEAD SET SCREW	5/8-11	1 1/2 In

BILL OF MATERIALS - LIVE END TOOLS - 60-800-01 & 60-820-01



60-800-01
Live End Tool for T89 Rails



60-820-01
Live End Tool for 12, 15, and 18 lb Rails

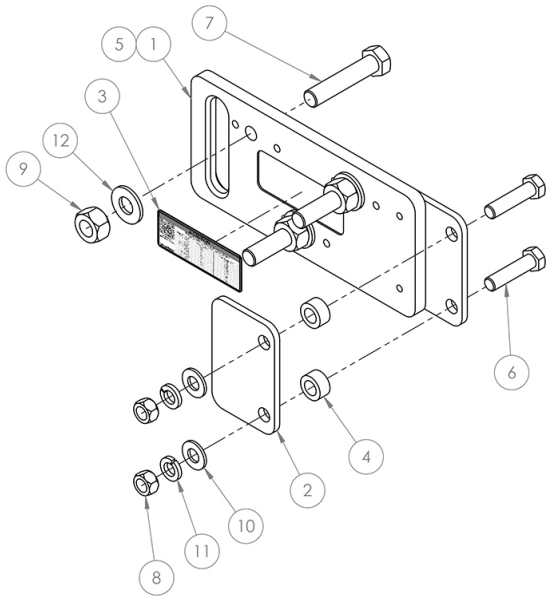
60-800-01 - Live End Tool for T89 Rails

ITEM	QTY.	PartNo	Description	Size	Length
1	1	60-10049088	LIVE END WELDMENT	-	-
2	1	15-10062174	LIVE END SCREW TORQUE TAG	-	-
3	1	15-10057883	LIVE END CABLE LENGTHS TAG	-	-
4	6	15315	HEX HEAD CAP SCREW	5/8-11	3 In
5	6	302707-130481	FLATWASHER	5/8"	-
6	6	36552	HEAVY HEX NUT	5/8-11	
7	12	26159	SQUARE HEAD SET SCREW	5/8-11	1 1/2 In
8	4	26102	SQUARE HEAD SET SCREW	7/16-14	1 1/2 In
9	12	93203	SOCKET HEAD CAP SCREW	1/4-20	3/4 In

60-820-01 - Live End Tool for 12, 15, and 18 # Rails

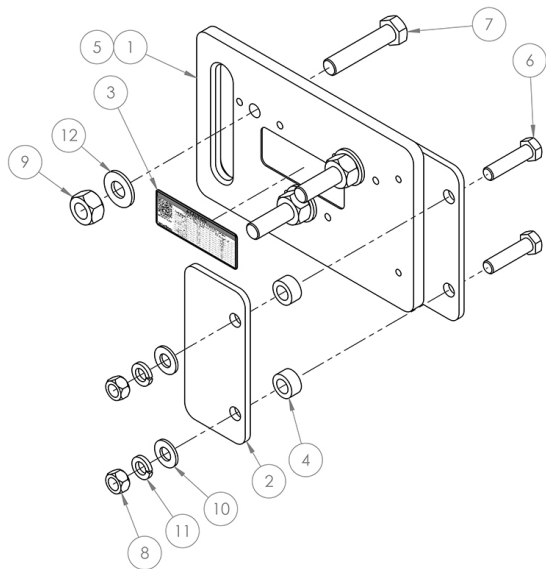
ITEM	QTY.	PartNo	Description	Size	Length
1	1	60-10054288	12-18 LB LIVE END WELDMENT		
2	1	15-10062172	12-18 LB LIVE END SCREW TORQUE TAG		
3	1	15-10057883	LIVE END CABLE LENGTHS TAG		
4	12	93203	SOCKET HEAD CAP SCREW		
5	6	15315	HEAVY HEX CAP SCREW		
6	6	36552	HEAVY HEX NUT		
7	6	302707-130481	FLATWASHER		
8	12	26159	SQUARE HEAD SET SCREW		
9	4	26121	SQUARE HEAD CAP SCREW		

BILL OF MATERIALS - EXTENSION ASSEMBLIES - 60-810-01 & 60-810-02



**60-810-01
Live End**

ITEM	QTY	PARTNO	DESCRIPTION	SIZE	LENGTH
1	1	60-10048986	LIVE END EXTENSION WELDMENT	-	-
2	1	60-10048984	LIVE END ADAPTER PLATE	-	-
3	1	15-10057884	LIVE END EXT CABLE LENGTHS TAG	-	-
4	2	60-10048993	EXTENSION SPACER	-	-
5	6	93203	SOCKET HEAD CAP SCREW	1/4-20	3/4 In
6	2	15211	HEX HEAD CAP SCREW	1/2-13	2 In
7	3	15315	HEX HEAD CAP SCREW	5/8-11	3 In
8	2	0169238	HEX NUT	1/2-13	-
9	3	36552	HEAVY HEX NUT	5/8-11	-
10	2	33086	FLATWASHER	1/2"	-
11	2	0123524	SPRING LOCKWASHER	1/2"	-
12	3	302707-130481	FLATWASHER	5/8"	-



**60-810-02
Dead End**

ITEM	QTY	PARTNO	DESCRIPTION	SIZE	LENGTH
1	1	60-10048982	DEAD END EXTENSION WELDMENT	-	-
2	1	60-10048966	DEAD END ADAPTER PLATE	-	-
3	1	15-10057886	DEAD END EXT CABLE LENGTHS TAG	-	-
4	2	60-10048993	EXTENSION SPACER	-	-
5	6	93203	SOCKET HEAD CAP SCREW	1/4-20	3/4 In
6	2	15211	HEX HEAD CAP SCREW	1/2-13	2 In
7	3	15315	HEX HEAD CAP SCREW	5/8-11	3 In
8	2	0169238	HEX NUT	1/2-13	-
9	3	36552	HEAVY HEX NUT	5/8-11	-
10	2	33086	FLATWASHER	1/2"	-
11	2	0123524	SPRING LOCKWASHER	1/2"	-
12	3	302707-130481	FLATWASHER	5/8"	-