

Wednesday, June 29, 2022 | 9:38:07 AM EDT, USA

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Military Critical Technical Data Agreement (<https://ebyoj2gi6ug.exactdn.com/wp-content/uploads/2021/03/Military-Critical-Technical-Data-Agreement-0052035.pdf>)

Helpful Information:

Rigger's Guide to proper swaging techniques (<https://loosnaples.com/how-tos/riggers-guide/>)

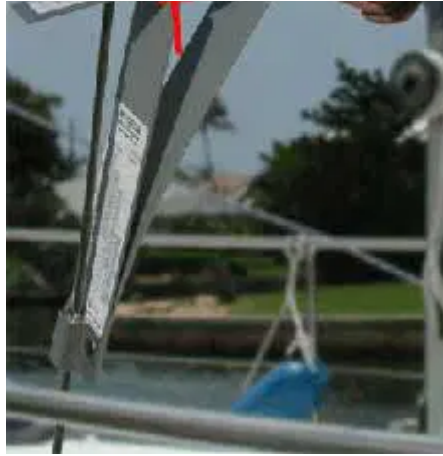
How to use 90 & 91 Series Tension Gauges

The Loos economy tension gauge takes the guesswork out of cable tension adjustment. It's especially designed for accurate, repeatable tuning of a sailboat's standing rigging.

Model	Cable Diam.
Model Number 91	Cable Diam. 3/32", 1/8", 5/32"
Model Number 90	Cable Diam. 3/16", 7/32", 1/4", 9/32"

HOW TO MEASURE





To measure tension, simply hook the gauge on the cable as illustrated (see picture above). Pull the lanyard (Blue arrow) until the pointer is positioned at the black calibration mark (red arrow), read the scale at the exact point where the middle of the cable touches the scale (white arrow). For best accuracy, the gauge should be held so that the scale barely touches the cable, thus eliminating friction. A word of caution, however: excessive pull on the lanyard, which pulls the pointer beyond the calibration mark, may permanently bend the spring and damage the gauge.

To convert the scale reading to actual tension in pounds for each wire diameter, see the conversion table on the gauge. Metric tension gauge available on request.

HOW MUCH TENSION?

Table 1 recommends an initial tension setting, but there is no simple solution since the optimum rigging tension will be a function of the boat design, the rig (masthead or fractional, one or more spreaders, etc.), and even the cut of the sails. Many skippers use insufficient tension because of a fear of “breaking something.” It should be noted that on America’s Cup contenders, where electronic state of the art tension instrumentation is available, the standing rigging is set as tight as is structurally feasible.

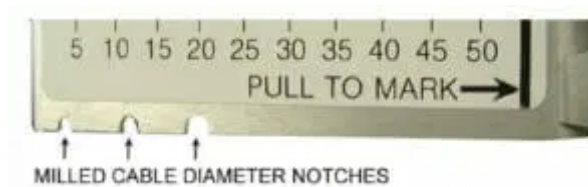
Table 1			
302 / 304 1 X 19 Stainless Steel Rigging Cable			
Diam., In.	Breaking Strength Pounds	Forestay* Pounds	Shrouds* Pounds
3/32	1200	180	120
1/8	2100	320	240
5/32	3300	500	350
3/16	4700	750	500
7/32	6300	1000	700
1/4	8200	1300	850
9/32	10,300	1600	1000
*Suggested initial settings.			

When no specific requirements are provided by the sail maker, the following general comments will provide a basis for a rational procedure for tuning the rig.

FORESTAY TENSION

Masthead Rig

On the masthead rig it's almost always advantageous to set the forestay tension as high as possible within the limits of structural strength. Generally, it's possible to use 15% of the breaking strength of the cable. Thus, a forestay tension of 1,000 lbs. is a reasonable place to start with a 7/32" diam., 302/304 1×19 stainless steel cable. **To check the cable diameter use the milled end to determine the proper cable size.**



Backstay tension would, of course, have to be adjusted to maintain a straight mast with the desired forestay tension. Since the backstay makes a greater angle to the mast, the backstay tension will be lower than the forestay tension.

NOTE ! ROLLER FURLING CAN ONLY BE SET BY BACK STAY TENSION.

Fractional Rig

In a fractional rig the forestay does not go all the way to the masthead and forestay tension cannot be directly balanced by tension in the backstay. Therefore, some mast bend is generally accepted and the mainsail is cut to fit the bend. A forestay tension of at least 15% of the cable strength is desirable. However, if this results in excessive mast bend it will be necessary to back off a bit. On some fractional rigs, diamond shrouds are used to reduce mast bend.

UPPER AND LOWER SHROUD TENSION

Masthead Rig

There is a simple criterion for shroud tension. The initial rigging tension should be high enough that the leeward shrouds do not go slack when sailing close-hauled in a reasonably brisk breeze. The proper value for your boat can be found by a few trial runs under sail. Once the correct tension is

proper value for your boat can be found by a few trials runs under sail. Once the correct tension is known, the gauge can be used to maintain the value. For many boat designs a shroud tension of 10% to 12% of the breaking strength of the cable is adequate. Thus, for 7/32", 302/304 1×19 stainless steel cable, the upper and lower shrouds would be set to 600 to 700 lbs. tension. On some rigs it may be desirable to carry more tension in the uppers than in the lowers.

Fractional Rig

For most fractional rigs the correct shroud tension is the same as that for a masthead rig, i.e., a tension setting that will keep the leeward shrouds from going slack. However there is one exception. On certain fractional rigs, the upper and lower shrouds lead to chainplates that are aft of the mast. The spreader is swept back. For such a rig most of the forestay tension is balanced by the upper shrouds. A shroud tension of approximately 20% of the cable strength may be required to achieve the desired forestay tension. Never exceed 25% of the cable breaking strength. (Refer to the breaking strength chart Table 1.)

NOTE ! THE INTENDED USE OF THIS GAUGE IS TO BE USED ON 302 / 304 1X19 S.S. CABLE IN APPROPRIATE SIZES. IF USED ON OTHER CABLE TYPES, SIZES, AND CONSTRUCTION YOUR READINGS WOULD BE CONSISTENT (REPEATABLE) BUT POUND TENSION VALUES WOULD DIFFER FROM THOSE LISTED ON THE LABEL.

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<https://loosnaples.com/how-tos/tension-gauges/90-91/>

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Upcoming Holidays

Following is a list of the holidays for 2022:

December 31st – New Year’s Day (Observed)

April 15th – Good Friday

May 30th – Memorial Day

July 4th & 5th – Independence Day

September 5th – Labor Day

October 10th – Columbus Day in observance for Veterans Day

November 24th & 25th – Thanksgiving

December 26th – Christmas Day Observed

About Loos Naples

In 1979 the Cableware Division of Loos & Co., Inc was started in Naples, Florida. With only 10 employees at our inception, we have now grown into a very busy company with diversified products and over 64 employees.

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