The Rod Rigging Tension Gauge

Loos & Co. Inc.

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INTRODUCTION

The Loos rod rigging tension gauge is designed to provide an accurate measurement of the tension in rod rigging used in sailing yachts and other such applications. It is particularly useful for accurate and repeatable tuning of sailboats standing rigging. [For the Soverel 33, the **Model RT-10** is appropriate. The Lower and Upper shrouds have a 0.198"rod diam., and the intermediate shrouds have a 0.172" rod daim.]

The **Model RT-10** covers a tension range of approximately 5% to 25% of the breaking strength of the rod and is designed and tested to provide an accuracy of plus or minus 5% at mid range. [The breaking strengths of 0.198 and 0.172 rod is 6,300 lbs. and 4,700 lbs. respectively.]

SAFETY AND PERFORMANCE

Safety

The failure of a fitting or shroud or stay could damage your boat, buckle the mast or even cause personal injury. To avoid such failure of rod or fittings from either fatigue or shock loading, it is important to set up your standing rigging with proper tension. Too little tension in the shrouds will permit the leeward shrouds to go slack, only to fetch up with a jolt when the boat rolls or pitches. A less common problem is excessive tension. This can cause permanent stretch to the rods and, possibly damage the mast.

Performance

The actual set of sails under load is determined by the cut of the sail and the **shape of the structure which supports the sail**. Rigging tension plays an important part in determining the set of the sails.

When a boat has been tuned for peak performance, measured rod tension should be recorded. The stainless steel used to make the standing rigging can stretch a little bit over time under high loading. Thus, marring turnbuckles, etc. cannot guarantee that subsequent adjustments will provide the desired tension. Only by gauging is it possible to repeat the initial tuning or improve it.

If the shrouds are not set up with enough tension, the leeward shrouds will go slack when the boat is sailing to windward.

How Much Tension?

Many skippers use insufficient tension because of tear of "breaking something." It should be noted the on Americas Cup contenders, where good tension instrumentation is available, the standing rigging is set as tight as is structurally feasible.

Upper and Lower Shroud Tension

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 you boat can be found by a few trial runs under sail. Once the correct tension is know, the gauge can be used to maintain this value.

Benefits of Correct Rigging Tension

Contrary to popular thought, a slack rig is more punishing on a hull than a properly adjusted, tight rig. Insufficient tension will reduce the loads transmitted to the hull. Slack rigging will punish the spar and rigging needlessly by allowing excessive movement, chafe and shock loading. Modern fiberglass hull should not be damaged by a properly adjusted, tight rig.

Orders and information for this Loos Tension Gauge should be sent to:

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Loos Tension Gauge: www.loosnaples.com/cable/RT.htm

RT-10 Calibration				
SCALE	LBS. 0.172	% of Breaking Strength	LBS. 0.198	% of Breaking Strength
0	514	11%	418	7%
1	529	11%	434	7%
2	545	12%	451	7%
3	561	12%	467	7%
4	579	12%	484	8%
5	**600**	13%	**500**	8%
6	623	13%	516	8%
7	648	14%	533	8%
8	674	14%	550	9%
9	**700**	15%	**568**	9%
10	725	15%	587	9%
11	750	16%	606	10%
12	775	16%	627	10%
13	**800**	17%	**650**	10%
14	853	18%	674	11%
15	826	18%	700	11%
16	881	19%	728	12%
17	909	19%	757	12%
18	939	20%	787	12%
19	969	21%	818	13%
20	**1000**	21%	**850**	13%
21	1032	22%	883	14%
22	1065	23%	916	15%
23	**1100**	23%	**950**	15%
24	1137	24%	984	16%
25	1176	25%	1019	16%
26	1217	26%	1055	17%
27	1260	27%	1091	17%
28	1305	28%	1129	18%
29	1352	29%	1168	19%
30	**1400**	30%	1208	19%
31	1449	31%	1251	20%
32	1500	32%	1295	21%
33	**1550**	33%	1342	21%
34	1600	34%	1391	22%
35	1650	35%	1444	23%
36	**1700**	36%	**1500**	24%
37			1560	25%
38			1622	26%
39			1686	27%
40			**1750**	28%
41			1813	29%
42			1876	30%
43			1938	31%
44			**2000**	32%