



TorqTraQ®

Closure Testing Device

Overview of independent studies performed by customers



TorqTraQ[®] Closure Testing Device

Comparing the device to other equipment



- How does the device compare to other equipment? Many of our customers have tested the TorqTraQ[®] device and shared the results.
- The following slides show:
 - TorqTraQ[®] device vs. analog bench-top meter
 - TorqTraQ[®] device vs. digital bench-top meter
 - TorqTraQ[®] device vs. automated torque testing equipment
 - TorqTraQ[®] device measuring capper head application torque
 - TorqTraQ[®] device R&R study
 - Customer feedback



TorqTraQ[®] Closure Testing Device

Comparing the device to bench-top meters



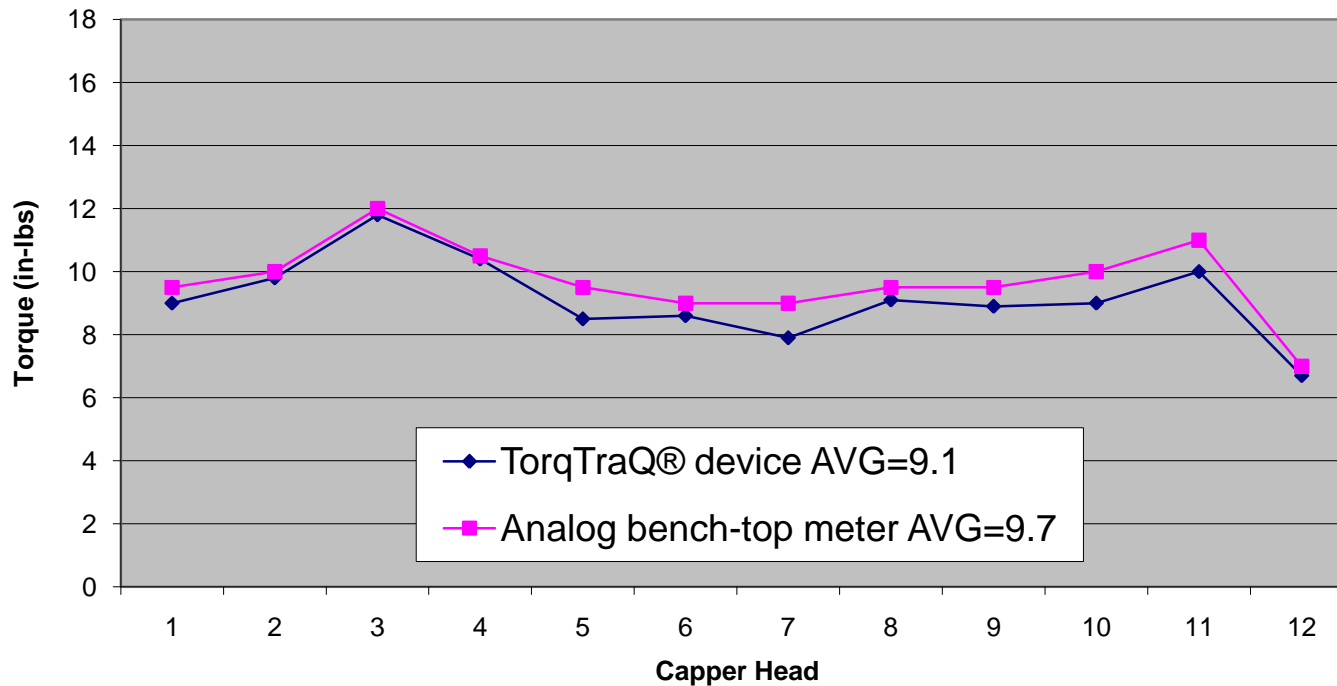
- To compare the TorqTraQ[®] device to bench-top style meters, the following steps were followed:
 1. Place the base of the bottle onto the bench-top meter
 2. Adjust the 4 gripping pegs, and clamp the base of the bottle
 3. Place the TorqTraQ[®] device over the closure
 4. Zero both devices
 5. Remove the closure using the TorqTraQ[®] device
 6. Readings are taken from both devices:
 - Bench-top meter measures torque at the base of the bottle
 - TorqTraQ[®] device measures torque at the closure

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TorqTraQ[®] device vs. analog bench-top meter - Customer study #1



TorqTraQ[®] device vs. analog bench-top meter
2 operators testing different samples from each capper head

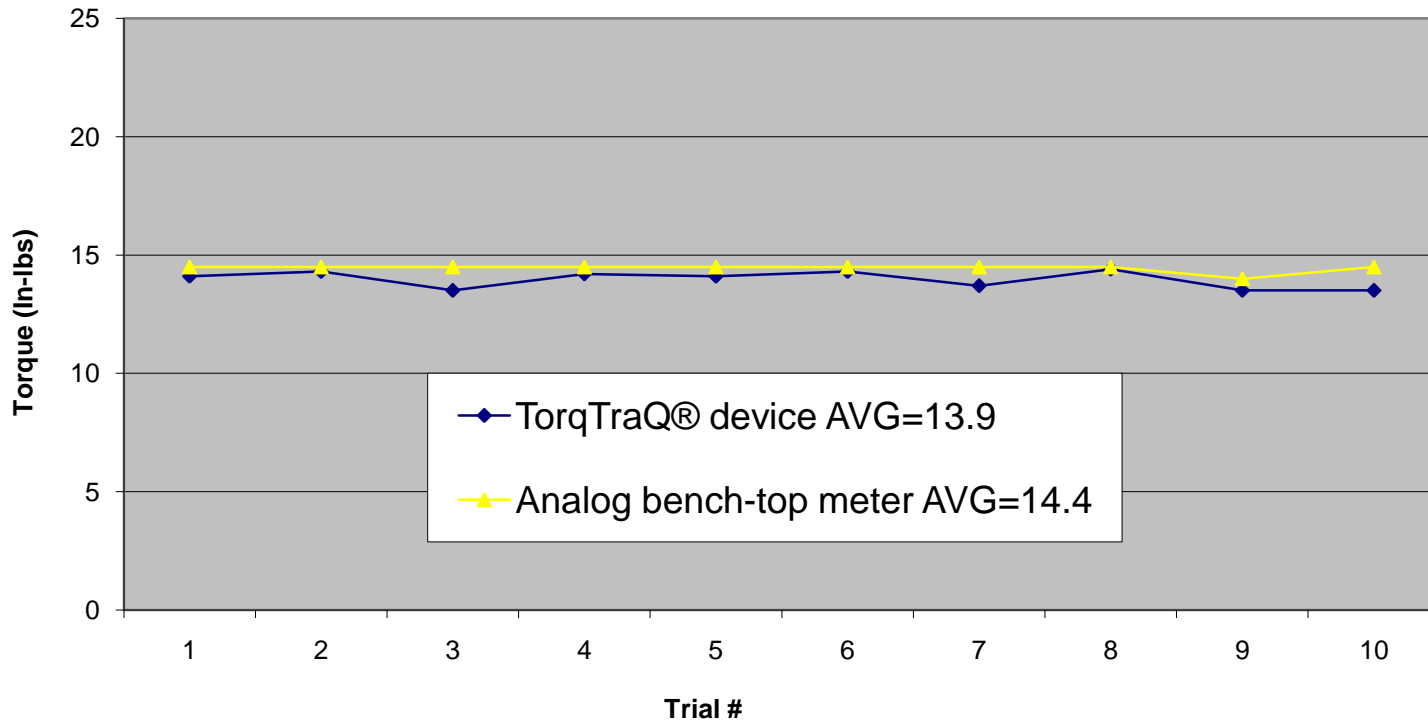


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TorqTraQ[®] device vs. analog bench-top meter - Customer study #2



TorqTraQ[®] device vs. analog bench-top meter
Customer study #2

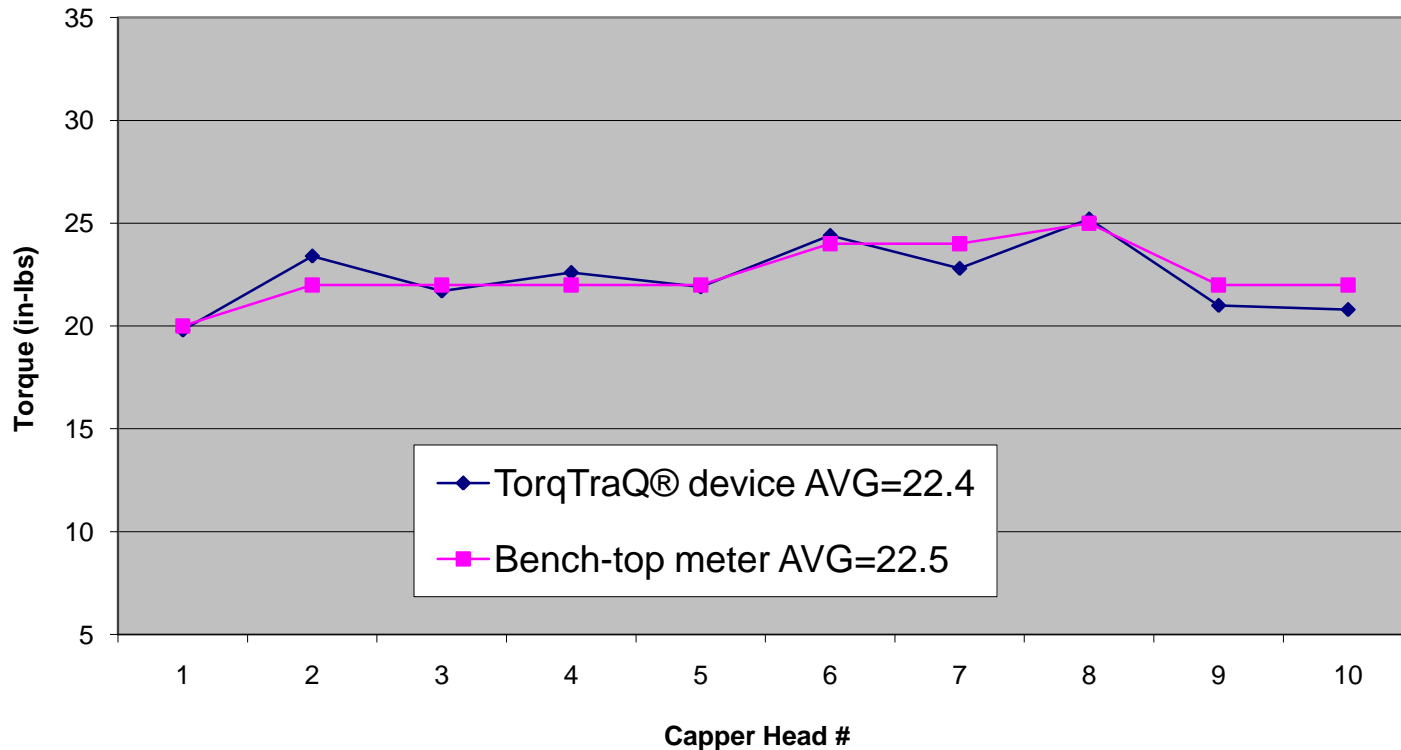


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TorqTraQ[®] device vs. digital bench-top meter

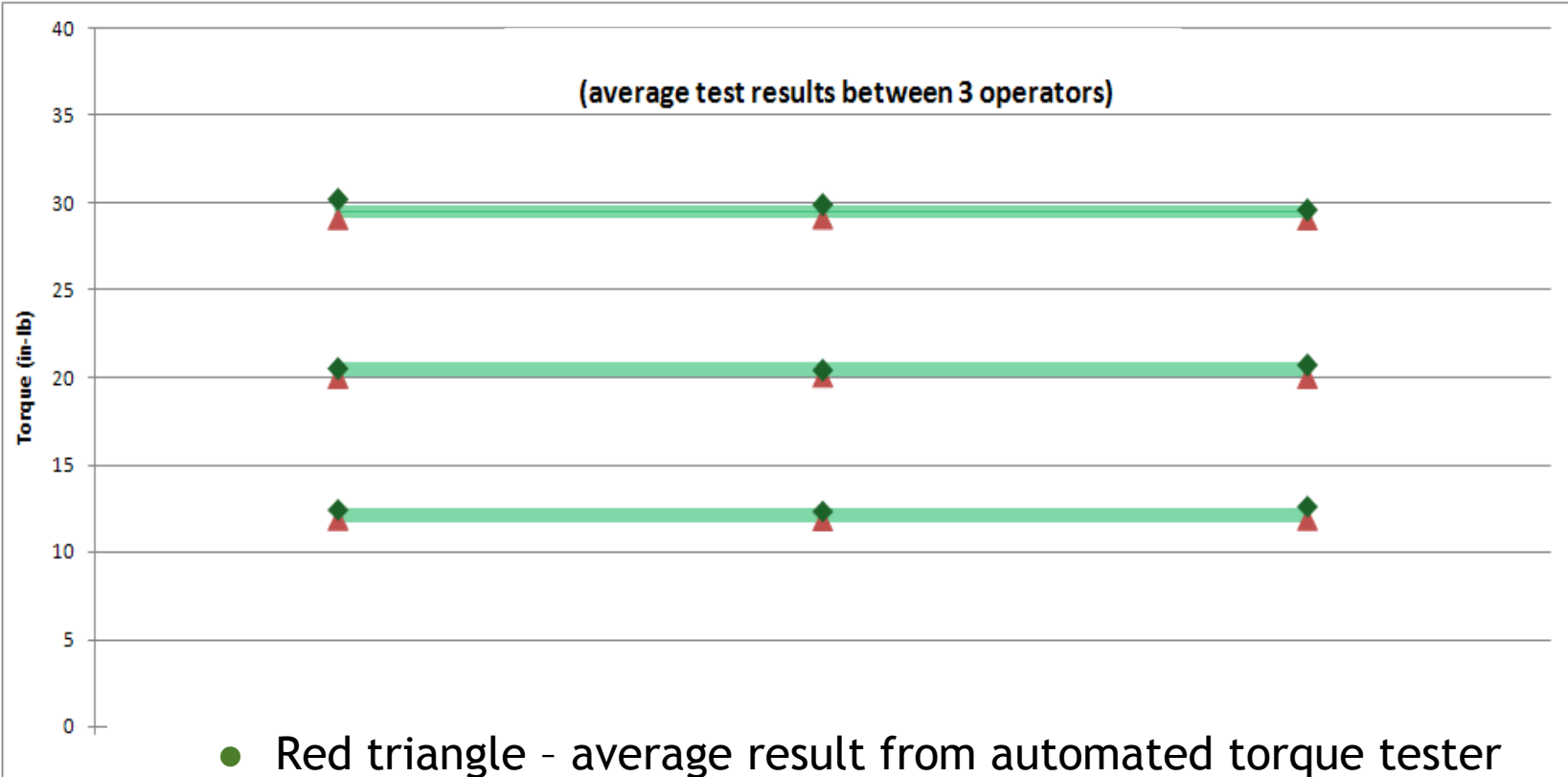


TorqTraQ[®] device vs. digital bench-top meter
2 operators testing different samples from each capper head



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TorqTraQ[®] device vs. automated torque tester - Measurement of a Gold Bottle Standard



- Red triangle - average result from automated torque tester
- Green diamond - average result from TorqTraQ[®] device
- Light green - gold standard specification

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TorqTraQ[®] device vs. existing lab equipment

- Customer compared device to their existing methods



- The TorqTraQ[®] device provided results comparable to existing equipment
- Averages:
 - TorqTraQ[®] device = 16.7 in-lbs
 - Bench-top meter = 17.0 in-lbs
 - Automated torque tester = 17.2 in-lbs

		Equipment		
		TorqTraQ [®] device	Bench-top meter	Automated device
User	#1	16.2	16.8	16.9
	#2	16.3	16.0	17.5
	#3	17.6	18.1	17.4
	average	16.7	17.0	17.2
st.dev		0.8	1.1	0.3
min		16.2	16.0	16.9
max		17.6	18.1	17.5

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TorqTraQ[®] device vs. analog bench-top meter -Measuring the capper head



- The TorqTraQ[®] device can be equipped with a capper setup chuck that allows it to measure the application torque set-point of a capper head.
 - The capper head was tested in the maintenance area using both devices.
 - Bench-top meter vs. TorqTraQ[®] device with capper setup chuck
 - Bench-top device average was 8.14 in-lbs
 - TorqTraQ[®] device average was 8.10 in-lbs
 - The correlation is good, and the client determined that they could also measure the application torque while the capping head was still mounted in the machine.



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TorqTraQ[®] device independent R&R Study



- Test consisted of 3 operators, completing 3 trials, 10 samples per trial... totaling 90 samples. Trials were randomized.
- Gold standard tested was certified to: 11.8 - 12.2 in-lb
- Average results between operators:
 - Operator #1 = 12.1 in-lb Std. dev. = 0.2
 - Operator #2 = 11.8 in-lb Std.dev. = 0.3
 - Operator #3 = 11.9 in-lb Std. dev. = 0.1
- EV (Equipment Variance) = 7.6%
- AV (Appraiser Variance) = 5.0%
- R&R (Repeatability and Reproducibility) = 9.4%

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Customer feedback...



- ... allows us to execute an evaluation of all of the capper heads right at the machine, cutting the current setup time in more than half.
- ... a best practice tool; a great advantage for all of our plants using light-weight closures.
- ... our technical service guys love it. They no longer have to lug around the heavy tabletop meters.
- ... direct correlation study showed that the slab meters and TorqTraQ[®] device are very similar. The difference in means was only 0.34 in-lb's.
- ... the TorqTraQ[®] device gives us a “true” torque reading.
- ... in the first two days, I've used the [TorqTraQ[®] device] to evaluate capping of no fewer than 1000 containers. It is awesome. Makes torque evaluation a breeze.”



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For more information on the TorqTraQ[®] device, and to order online, please visit our website:

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