

**SOUTHWEST****RESEARCH****INSTITUTE**

6220 CULEBRA ROAD • POST OFFICE DRAWER 28510 • SAN ANTONIO, TEXAS, 78228-0510 • TEL (210) 522-5215 • FAX (210) 522-3692

**To:** Don Bannon, Div20, Ext. 5118**From:** Walt Hill, Manager  
Institute Calibration Laboratory**Date:** Oct. 13, 2008**Subject:** Out-of-tolerance Notice

The purpose of this notice is to alert you of a condition, which may have caused erroneous measurements affecting safety or the quality of products or services your organization provides. The attached as-found readings are provided for your evaluation to determine if the instrument listed below had an impact and if further action is required.

Your review/evaluation should be conducted in accordance with your organizational quality policy and procedural requirements. Please contact the Institute Calibration Laboratory if you have questions at 5215.

**Manufacturer:** Snap-On **Model:** QDRIVER2**Description:** Torque Screwdriver **Serial Number:** 1001200319**Asset Number:** 010443 **User ID Number:****Last Calibration:** Apr. 19, 2008**Date Received for Service:** Oct. 10, 2008 **Work Order Number:** 303083918**Service Requested:** Scheduled calibration

Remarks: The torque screwdriver is reading out of tolerance and can't be adjusted to meet specifications. The unit requires repair or replacement. See measurement report for actual values.

OUT OF TOLERANCE

OUT OF TOLERANCE

Southwest Research Institute  
Calibration Laboratory  
Measurement Report

Work Order:	303083918	Mfr:	Snap-On	Technician:	JRG
Asset No:	010443	Model:	QDRIVER2	Cal Date:	13-Oct-08
Serial No:	1001200319	Type:	Torque Screwdriver		
Remarks:	Cal'd clockwise only				

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found
Torque Clockwise	oz/in	oz/in	oz/in	oz/in	oz/in	Result
	20.8	20.0	-0.8	1.2	0.061	Pass
	21.0	20.0	-1.0	1.2	0.061	Pass
	20.4	20.0	-0.4	1.2	0.061	Pass
	21.1	20.0	-1.1	1.2	0.061	Pass
	20.7	20.0	-0.7	1.2	0.061	Pass
	20.7	20.0	-0.7	1.2	0.061	Pass
	20.8	20.0	-0.8	1.2	0.061	Pass
	21.2	20.0	-1.2	1.2	0.061	Pass
	21.2	20.0	-1.2	1.2	0.061	Pass
	20.3	20.0	-0.3	1.2	0.061	Pass
	20.9	20.0	-0.9	1.2	0.061	Pass
	21.2	20.0	-1.2	1.2	0.061	Pass
	59.9	60.0	0.1	3.6	0.18	Pass
	61.2	60.0	-1.2	3.6	0.18	Pass
	59.0	60.0	1.0	3.6	0.18	Pass
	60.7	60.0	-0.7	3.6	0.18	Pass
	61.8	60.0	-1.8	3.6	0.18	Pass
	61.5	60.0	-1.5	3.6	0.18	Pass
	59.9	60.0	0.1	3.6	0.18	Pass
	61.7	60.0	-1.7	3.6	0.18	Pass
	61.6	60.0	-1.6	3.6	0.18	Pass
	61.4	60.0	-1.4	3.6	0.18	Pass
	59.7	60.0	0.3	3.6	0.18	Pass
	62.6	60.0	-2.6	3.6	0.18	Pass
	108.4	100.0	-8.4	6.0	0.30	Fail
	109.0	100.0	-9.0	6.0	0.30	Fail
	109.9	100.0	-9.9	6.0	0.30	Fail
	108.8	100.0	-8.8	6.0	0.30	Fail
	112.5	100.0	-12.5	6.0	0.30	Fail
	112.1	100.0	-12.1	6.0	0.30	Fail
	110.8	100.0	-10.8	6.0	0.30	Fail
	111.3	100.0	-11.3	6.0	0.30	Fail
	108.6	100.0	-8.6	6.0	0.30	Fail
	112.3	100.0	-12.3	6.0	0.30	Fail
	111.3	100.0	-11.3	6.0	0.30	Fail
	107.6	100.0	-7.6	6.0	0.30	Fail

END OF REPORT



Ext: 5215  
Fax: 522-4834



# SOUTHWEST RESEARCH INSTITUTE®

6220 Culebra Road, P.O. Drawer 28510  
Institute Quality Systems  
Institute Calibration Laboratory  
Phone: 210-522-5215 Fax 210-522-4834



Calibration Laboratory  
Certificate #0972-01

## Certificate of Calibration

**Cost Center:** DIV20

**Mail Stop:** B51

**Customer:** DON BANNON

**Manufacturer/Model:** SNAP-ON / QDRIVER2

**Description:** TORQUE SCREWDRIVER

**Serial Number:** 1001200319

**Asset Number:** 010443

**Procedure:** TORQUE TOOLS - 29 NOV 2007

**Work Order:** 303083918

**Date Issued:** 17-Nov-2008

**Date Calibrated:** 17-Nov-2008

**\*Date Due :** 17-May-2009

**\*\*Results:** AS-LEFT

**Temperature:** 67°F

**Humidity:** 44 %

This certificate documents traceability to the National Institute of Standards and Technology (NIST) and the International System of Units (SI). The Laboratory quality system conforms to ISO/IEC 17025, 2005, ANSI/NCCL Z540-1-1994 and relevant requirements of the ISO 9000-2000 standard. This certificate shall not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. This certificate shall not be used to claim product endorsement by Southwest Research Institute, American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government. Results of this calibration relate only to the instrument described above at the time of calibration and does not imply any long term stability of the instrument.

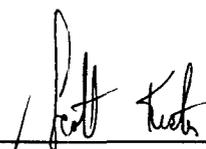
\*Determined by the customer, does not imply the instrument will remain within tolerance as any number of factors may cause an out-of-tolerance condition before this date. \*\*Found/Left = adjustment and/or repair was not required, As Left = adjusted and/or repaired was required. The customer has sole responsibility for determination of in-/out-of-tolerance or compliance/noncompliance. See Remarks or attached Measurement Report with the same Work Order number for data.

Reported uncertainty calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM) and represents an expanded uncertainty with a coverage factor of k=2 to approximate a 95% confidence level.

**Remarks** Cal'd ± 6%

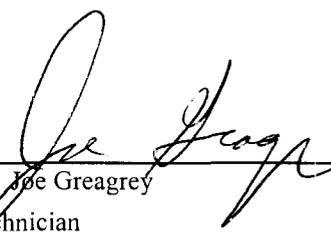
### Standards Used

<u>Asset #</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Description</u>	<u>Cal Date</u>	<u>Due Date</u>
012699	CDI	2000-5-02	TORQUE TRANSDUCER 15 - 200 INOZ	7-May-2008	7-May-2009

Reviewed By:  ( ) srk ( ) mar ( ) wgh

Laboratory Quality Manager

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Calibrated By:  Joe Greagrey  
Metrology Technician

Southwest Research Institute  
Calibration Laboratory  
Measurement Report

Work Order:	303083918	Mfr:	Snap-On	Technician:	JRG
Asset No:	010443	Model:	QDRIVER2	Cal Date:	17-Nov-08
Serial No:	1001200319	Type:	Torque Screwdriver		
Remarks:	Repaired by Team Torque				

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Left
Torque Clockwise	oz/in	oz/in	oz/in	oz/in	oz/in	Result
	18.9	20.0	1.1	1.2	0.061	Pass
	18.8	20.0	1.2	1.2	0.061	Pass
	19.6	20.0	0.4	1.2	0.061	Pass
	19.6	20.0	0.4	1.2	0.061	Pass
	19.8	20.0	0.2	1.2	0.061	Pass
	19.3	20.0	0.7	1.2	0.061	Pass
	19.8	20.0	0.2	1.2	0.061	Pass
	20.7	20.0	-0.7	1.2	0.061	Pass
	20.0	20.0	0.0	1.2	0.061	Pass
	19.4	20.0	0.6	1.2	0.061	Pass
	18.8	20.0	1.2	1.2	0.061	Pass
	19.4	20.0	0.6	1.2	0.061	Pass
	58.1	60.0	1.9	3.6	0.18	Pass
	60.0	60.0	0.0	3.6	0.18	Pass
	60.1	60.0	-0.1	3.6	0.18	Pass
	59.9	60.0	0.1	3.6	0.18	Pass
	58.0	60.0	2.0	3.6	0.18	Pass
	59.5	60.0	0.5	3.6	0.18	Pass
	60.6	60.0	-0.6	3.6	0.18	Pass
	58.4	60.0	1.6	3.6	0.18	Pass
	58.1	60.0	1.9	3.6	0.18	Pass
	60.6	60.0	-0.6	3.6	0.18	Pass
	62.5	60.0	-2.5	3.6	0.18	Pass
	62.5	60.0	-2.5	3.6	0.18	Pass
	103.7	100.0	-3.7	6.0	0.30	Pass
	103.1	100.0	-3.1	6.0	0.30	Pass
	103.1	100.0	-3.1	6.0	0.30	Pass
	104.9	100.0	-4.9	6.0	0.30	Pass
	105.3	100.0	-5.3	6.0	0.30	Pass
	105.6	100.0	-5.6	6.0	0.30	Pass
	104.1	100.0	-4.1	6.0	0.30	Pass
	105.1	100.0	-5.1	6.0	0.30	Pass
	103.7	100.0	-3.7	6.0	0.30	Pass
	104.3	100.0	-4.3	6.0	0.30	Pass
	104.5	100.0	-4.5	6.0	0.30	Pass
	105.1	100.0	-5.1	6.0	0.30	Pass

END OF REPORT