

# SOUTHWEST RESEARCH INSTITUTE®

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**To:** Darrell Dunn, Div 20  
**From:** Walt Hill, Group Leader  
Institute Calibration Laboratory  
**Date:** May 4, 2005  
**Subject:** Out-of-tolerance Notice

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The as-found condition of the equipment listed below may have caused erroneous measurements affecting safety or quality of services your organization provides customers. The attached measurement report is provided for your evaluation to determine the impact and if further action is required.

When the as-found results are near the test point limits, +/- the measurement uncertainty, it is not possible to state in-tolerance or out-of-tolerance with a 95% level of confidence. Institute Calibration Laboratory policy is to notify the customer because there is a risk the instrument may not meet measurement requirements.

Your evaluation should be conducted in accordance with your organization's quality policy and procedural requirements. If you have any question or need additional assistance, please contact the Institute Calibration Laboratory at 522-5215.

**Manufacturer:** Snap-On      **Model:** QDRIVER2  
**Description:** Torque Screwdriver      **Serial Number:** 1001200319  
**Asset Number:** 010443      **User ID Number:**

**Last Calibration:** Enter MMM,dd,yyyy or Unknown  
**Date Received for Service:** Apr 8, 2005      **Work Order Number:** 303063649

**Service Requested:** Scheduled calibration

**Remarks:** Unit was reading out of tolerance at different points. See as found data.

## OUT OF TOLERANCE

Southwest Research Institute  
Calibration Laboratory  
Measurement Report

Work Order:	303063649	Mfr.	Snap-On	Technician	WCL
Asset No.	010443	Model	QDriver2	Cal Date.	11-Apr-05
Serial No.	1001200319	Type.	Torque Screwdriver		
Remarks:					

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found
Torque Clockwise	oz-in	oz-in	oz-in	oz-in	oz-in	Result
	20.0	19.1	-0.9	1.2	0.61	Pass
	20.0	20.6	0.6	1.2	0.61	Pass
	20.0	22.4	2.4	1.2	0.61	Fail
	20.0	18.8	-1.2	1.2	0.61	Pass
	20.0	19.4	-0.6	1.2	0.61	Pass
	20.0	20.1	0.1	1.2	0.61	Pass
	20.0	21.1	1.1	1.2	0.61	Pass
	20.0	18.4	-1.6	1.2	0.61	Fail
	20.0	19.6	-0.4	1.2	0.61	Pass
	20.0	19.4	-0.6	1.2	0.61	Pass
	20.0	20.4	0.4	1.2	0.61	Pass
	20.0	18.5	-1.5	1.2	0.61	Fail
	60.0	59.4	-0.6	3.6	0.83	Pass
	60.0	58.0	-2.0	3.6	0.83	Pass
	60.0	58.3	-1.7	3.6	0.83	Pass
	60.0	58.5	-1.5	3.6	0.83	Pass
	60.0	58.1	-1.9	3.6	0.83	Pass
	60.0	58.1	-1.9	3.6	0.83	Pass
	60.0	56.2	-3.8	3.6	0.83	Fail
	60.0	57.3	-2.7	3.6	0.83	Pass
	60.0	58.0	-2.0	3.6	0.83	Pass
	60.0	57.9	-2.1	3.6	0.83	Pass
	60.0	56.6	-3.4	3.6	0.83	Pass
	60.0	57.8	-2.2	3.6	0.83	Pass
	100.0	103.8	3.8	6.0	1.2	Pass
	100.0	102.8	2.8	6.0	1.2	Pass
	100.0	100.8	0.8	6.0	1.2	Pass
	100.0	105.0	5.0	6.0	1.2	Pass
	100.0	105.9	5.9	6.0	1.2	Pass
	100.0	103.8	3.8	6.0	1.2	Pass
	100.0	102.6	2.6	6.0	1.2	Pass
	100.0	105.3	5.3	6.0	1.2	Pass
	100.0	101.0	1.0	6.0	1.2	Pass
	100.0	103.2	3.2	6.0	1.2	Pass
	100.0	102.8	2.8	6.0	1.2	Pass
	100.0	104.2	4.2	6.0	1.2	Pass

END OF REPORT



# SOUTHWEST RESEARCH INSTITUTE®

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



Certificate #

0972-01

## Certificate of Calibration

**Submitted By:** DIV20  
**Address:** B57  
**Contact:** DARRELL DUNN  
**Manufacturer Model:** SNAP-ON QDRIVER2  
**Description:** TORQUE SCREWDRIVER  
**Serial No:** 1001200319  
**Asset No:** 010443  
**Procedure:** TORQUE HAND TOOLS, MAR/03

**Work Order:** 303063649  
**Date Issued:** May 4, 2005  
**Calibration Date:** May 4, 2005  
**\*\*Calibration Due:** Nov 4, 2005  
**Calibration Location:** Bldg. 64  
**Environment:** Temp. 68.0°F Hum. 42 %RH  
**\*As Found:** OUT OF TOLERANCE  
**\*As Left:** IN TOLERANCE

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, 1999 and ANSI/NC SL Z540-1-1994 which are equivalent to relevant requirements of the ISO 9000-1994 series of standards. This certificate may not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. The results of this calibration relate only to the individual instrument described above. This certificate shall not be used to claim product endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government.

Uncertainty evaluation includes the item under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor of k=2 to approximate a 95% confidence level. See Remarks or attached Calibration Report with the same Work Order number for calibration data.

\*The client has sole responsibility for determination of in/out of tolerance or compliance/noncompliance. An in/out of tolerance opinion is provided for your convenience based only on the Test Instrument (TI) reading(s) and limits as reported. The reported uncertainty relates only to the results at the time of calibration and does not imply any short or long term stability of the TI.

\*\*Calibration interval is determined by the client and does not assure the instrument will remain within tolerance until this date. Any number of factors may cause the instrument to be out of tolerance before the next calibration date.

**Remarks:** None

### Standards Used

Asset	Serial Number	Manufacturer	Model	Description	Cal Due
007010	08803	CDI	1001-0-TTTP	TORQUE TRANSDUCER	Jul 08, 05

Approved by: Walt Hill  
Manager

Measurements by: Curtis Laurence  
Metrology Technician

Southwest Research Institute  
Calibration Laboratory  
Measurement Report

Work Order:	303063649	Mfr.	Snap-On	Technician	WCL
Asset No.	010443	Model	QDriver2		
Serial No.	1001200319	Type.	Torque Screwdriver	Cal Date.	04-May-05
Remarks:					

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Left
Torque Clockwise	oz-in	oz-in	oz-in	oz-in	oz-in	Result
	20.0	20.2	0.2	1.2	0.61	Pass
	20.0	21.2	1.2	1.2	0.61	Pass
	20.0	20.4	0.4	1.2	0.61	Pass
	20.0	19.5	-0.5	1.2	0.61	Pass
	20.0	19.9	-0.1	1.2	0.61	Pass
	20.0	20.2	0.2	1.2	0.61	Pass
	20.0	20.1	0.1	1.2	0.61	Pass
	20.0	20.1	0.1	1.2	0.61	Pass
	20.0	20.3	0.3	1.2	0.61	Pass
	20.0	19.7	-0.3	1.2	0.61	Pass
	20.0	19.9	-0.1	1.2	0.61	Pass
	20.0	20.7	0.7	1.2	0.61	Pass
	60.0	58.9	-1.1	3.6	0.83	Pass
	60.0	61.4	1.4	3.6	0.83	Pass
	60.0	61.4	1.4	3.6	0.83	Pass
	60.0	58.6	-1.5	3.6	0.83	Pass
	60.0	59.5	-0.5	3.6	0.83	Pass
	60.0	60.7	0.7	3.6	0.83	Pass
	60.0	60.9	0.9	3.6	0.83	Pass
	60.0	60.1	0.1	3.6	0.83	Pass
	60.0	59.9	-0.1	3.6	0.83	Pass
	60.0	61.8	1.8	3.6	0.83	Pass
	60.0	60.2	0.2	3.6	0.83	Pass
	60.0	60.7	0.6	3.6	0.83	Pass
	100.0	105.3	5.3	6.0	1.2	Pass
	100.0	105.1	5.1	6.0	1.2	Pass
	100.0	103.5	3.5	6.0	1.2	Pass
	100.0	105.8	5.8	6.0	1.2	Pass
	100.0	104.4	4.4	6.0	1.2	Pass
	100.0	105.0	5.0	6.0	1.2	Pass
	100.0	105.0	5.0	6.0	1.2	Pass
	100.0	102.8	2.8	6.0	1.2	Pass
	100.0	104.6	4.6	6.0	1.2	Pass
	100.0	104.0	4.0	6.0	1.2	Pass
	100.0	103.5	3.5	6.0	1.2	Pass
	100.0	103.0	3.0	6.0	1.2	Pass

END OF REPORT