

A/N 9202 W/O# 444047144 Cal. Date 14 Feb. 02

Torque Wrench (TI)	Units		Acc. +/-	Resolution
	in/lb		1.2	0.01
Source of Uncertainty	Value in/lb	Distribution	Divisor	Std. Uncert. in/lb
Standard @ 20 in/lb	0.05	Normal	2	0.025
*Reproducibility	0.137	Normal	1	0.137
**Resolution (STD)	0.01	Rectangular	Sqrt 3	0.0058
Combined Uncertainty	RSS			0.139
Expanded Uncertainty	k=2			0.28
Test Accuracy Ratio (TAR)	TI Acc./STD Acc.		Clockwise.	
	24	to 1		
Test Uncertainty Ratio (TUR)	TI Acc./Muk=2			
	4.3	to 1		

Torque Wrench (TI)	Units		Acc. +/-	Resolution
	in/lb		3.6	0.01
Source of Uncertainty	Value in/lb	Distribution	Divisor	Std. Uncert. in/lb
Standard @ 60 in/lb	0.15	Normal	2	0.075
*Reproducibility	0.376	Normal	1	0.376
**Resolution (STD)	0.01	Rectangular	sqrt 3	0.003
Combined Uncertainty	RSS			0.383
Expanded Uncertainty	k=2			0.77
Test Accuracy Ratio (TAR)	TI Acc./STD Acc.		Clockwise.	
	24	to 1		
Test Uncertainty Ratio (TUR)	TI Acc./Muk=2			
	4.7	to 1		

Torque Wrench (TI)	Units		Acc. +/-	Resolution
	in/lb		6	0.01
Source of Uncertainty	Value in/lb	Distribution	Divisor	Std. Uncert. in/lb
Standard @ 100 in/lb	0.25	Normal	2	0.13
*Reproducibility	0.244	Normal	1	0.24
**Resolution (STD)	0.01	Rectangular	Sqrt 3	0.003
Combined Uncertainty	RSS			0.27
Expanded Uncertainty	k=2			0.5
Test Accuracy Ratio (TAR)	TI Acc./STD Acc.		Clockwise.	
	24	to 1		
Test Uncertainty Ratio (TUR)	TI Acc./Muk=2			
	12	to 1		

*Reproducibility is the std.dev. of three readings divided by sqrt 3

** Reslotion is that of the Calibration standard.



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Department of Quality Assurance
Calibration Laboratory

Certificate of Calibration

18 February 2002

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: PROTO 6104
Description: TORQUE SCREWDRIVER
Serial Number: 139072
Asset Number: 009202
Work Order Number: 444047144

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NCSL Z540-1-1994. Standards used in this calibration, described in the referenced calibration procedure with associated uncertainties or tolerances, are traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and is available for examination upon request. This certificate is not to be reproduced, except in full, without the written approval of the Southwest Research Institute Department of Quality Assurance Calibration Laboratory.

The uncertainty of the calibration was sufficient to determine that the item met the manufacturer's published specifications unless stated otherwise below.

Ambient Conditions: Temperature: 68.0 Degrees Fahrenheit Humidity: 35 % RH

Calibration Date: 14 Feb 02 **Calibration Procedure:** CL-586, 1/01

Condition as Received: IN TOLERANCE

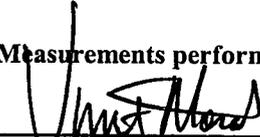
Condition as Returned: IN TOLERANCE

Remarks:

Approved by:


Walt Hill, Supervisor
Institute Calibration Laboratory

Measurements performed by:


Vince Morales, Technician