

PRODUCT ADVISORY NOTICE

KEEPING YOU INFORMED OF PRODUCT CHANGES

To: All Customers, Sales Representatives and Distributors

Date: November 11, 2014

Subject: Re-tooling 62S Series 24 Position Bushing

Please forward this notification to the appropriate person(s) in your organization.

Description of Change

Grayhill has re-tooled the 62S series 24 position die cast bushing due to excessive wear on the existing tool. Grayhill has also made a very slight change to the detent profile to improve torque at the end of encoder life. See attached drawing. This change does not affect the initial torque specifications.

Grayhill has successfully completed qualification testing on encoders built with bushings from the new tool. The qualification consisted of an approved supplier PPAP and rotational life testing to the rated cycle life.

Reason for the Change

The die cast bushing had to be re-tooled since the old tool is reaching its end of life.

Test reports summarizing our qualification testing is attached. No change to the form, fit, or function of the encoders will take place.

Effective Date

1/1/15

Part Numbers Affected

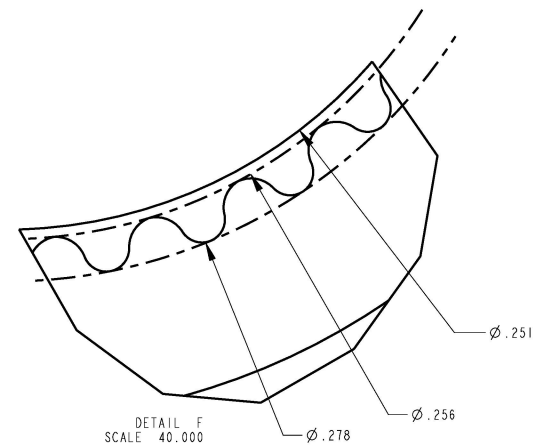
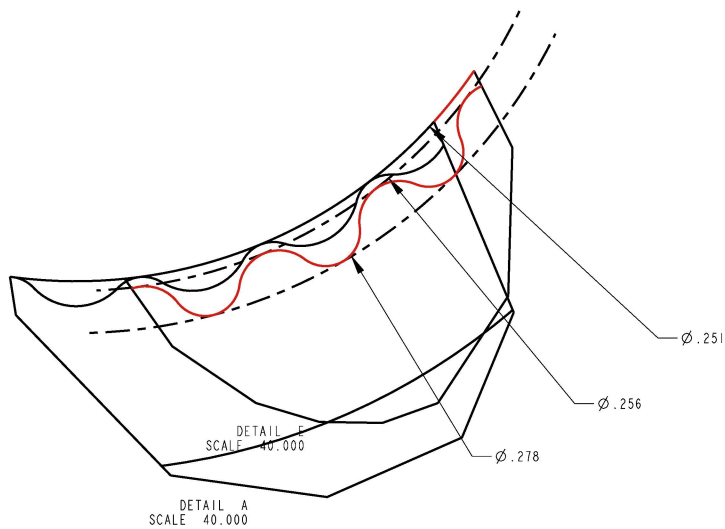
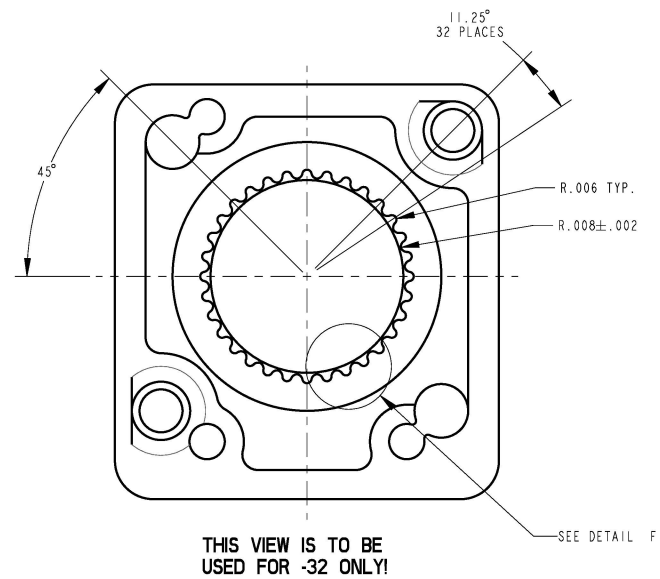
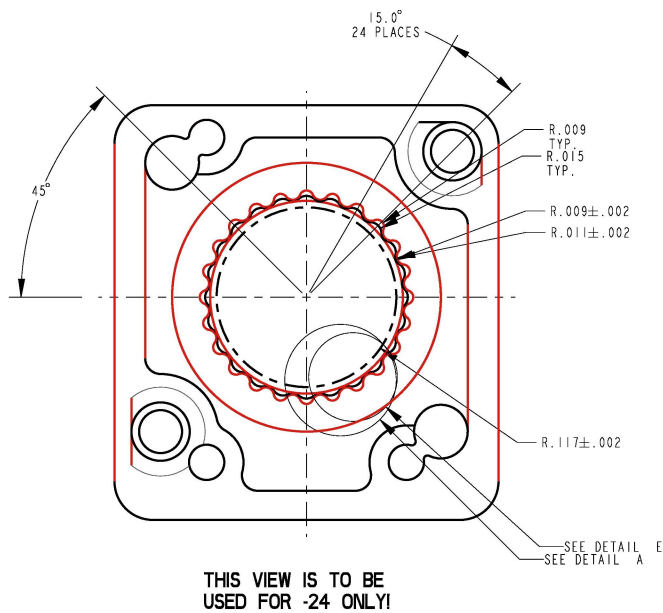
62S15-M5-XXX					

Action Required

No action required. Please contact your Grayhill, Inc. customer advocate for further information or to request a sample. The qualification test report can be found on our website at:
<http://www.grayhill.com/about-us/product-advisory-notices/>



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Red = New Tool
Black = Existing Tool

ALL SHEETS HAVE THE SAME REVISION LEVEL. ADD ALL DESCRIPTIONS OF REVISIONS FOR THIS SHEET ON SHEET I.		
		GRAYHILL, INC. 561 HILLGROVE AVE. LA GRANGE, IL 60525 PHONE (708) 354-1040
C SIZE	DWG. NO. 621488-X	ISSUE 1
SCALE	SHEET	OF



Intuitive Human Interface Solutions

Equipment Under Test:
(10) 62S15-M5-020C

Environmental Test:

Physical Test:
Rotational Life Cycle Test

Test Report Number:	SP02-742
Test Start Date:	7/3/2014
Test Completion Date:	9/3/2014
Test Facility:	Grayhill Rotational Life Cycle Lab
Test Requested By:	Eric Tan
Test Performed By:	Kevin Evans Laboratory Technician
Report Written By:	Kevin Evans Laboratory Technician
Report Approved By:	Nicole Jachna Quality Lab Manager

1.0 PURPOSE

62S rotational life with new Inventix bushing design, to ensure the encoders are free from manufacturing defects.

2.0 TESTING PERFORMED

Encoders were tested in accordance with MIL-STD-202G, Method 206.

Test Profile and Setup Details:

- A. Take initial torque readings
- B. Program Smart Motors to rotate encoders at 15 CPM to 1M cycles
- C. Mount encoders 46-55 in the normal orientation in the test fixture
- D. Check for torque at 100, 250, 500, 1K, 2K, 5K, 10K, 100K, 250K, 500K and 1M cycles
- E. Repeat steps C and D
- F. Take final torque readings

Table 1 – Equipment List

Equipment ID	Equipment Type	Model Number	Manufacturer	Calibration Due Date
PAL-7	Torque Sensor	BGI	Mark-10	8-14
GT-400	Torque Wrench	CAL-36/4 Roto Torq	Sturtevant Richmond	4-15
P-145	Torque Sensor	BGI	Mark-10	10-14
RLS-78 w/fix #18	Rotational Life Cycle Assy.	N/A	Grayhill	N/A

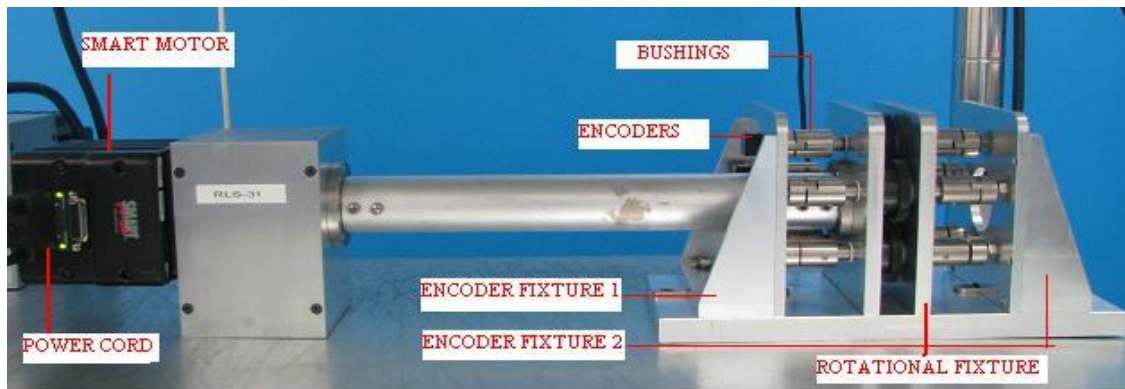


Figure 1 -Test Setup Photo

Table 2 – Test Conditions

Test Condition	Units	Parameters
Quantity	DUT	10
Operational Mode		Unpowered
Cycles		1M cycles in CW/CCW
Rotational Speed	CPM	15
Temperature	°C	23
Relative Humidity	%	30

3.0 TESTING SUMMARY

Acceptance Criteria:

All units under test are subject to the same pass/fail criteria. A test unit is deemed to have failed if the encoder has a bind of the switch shaft or if the spring has failed (no detent). Although torque readings are taken, the failure criterion is easily identified as increased torque, drag or binding of the shaft/bushing interface.

Table 3 – Test Results

DUT	Test	Specification	Pass	Test Location	Test Date
10	Rotational	MIL-STD-202G, Method 206	PASS	Grayhill Rotational Life Cycle Lab	9/3/2014

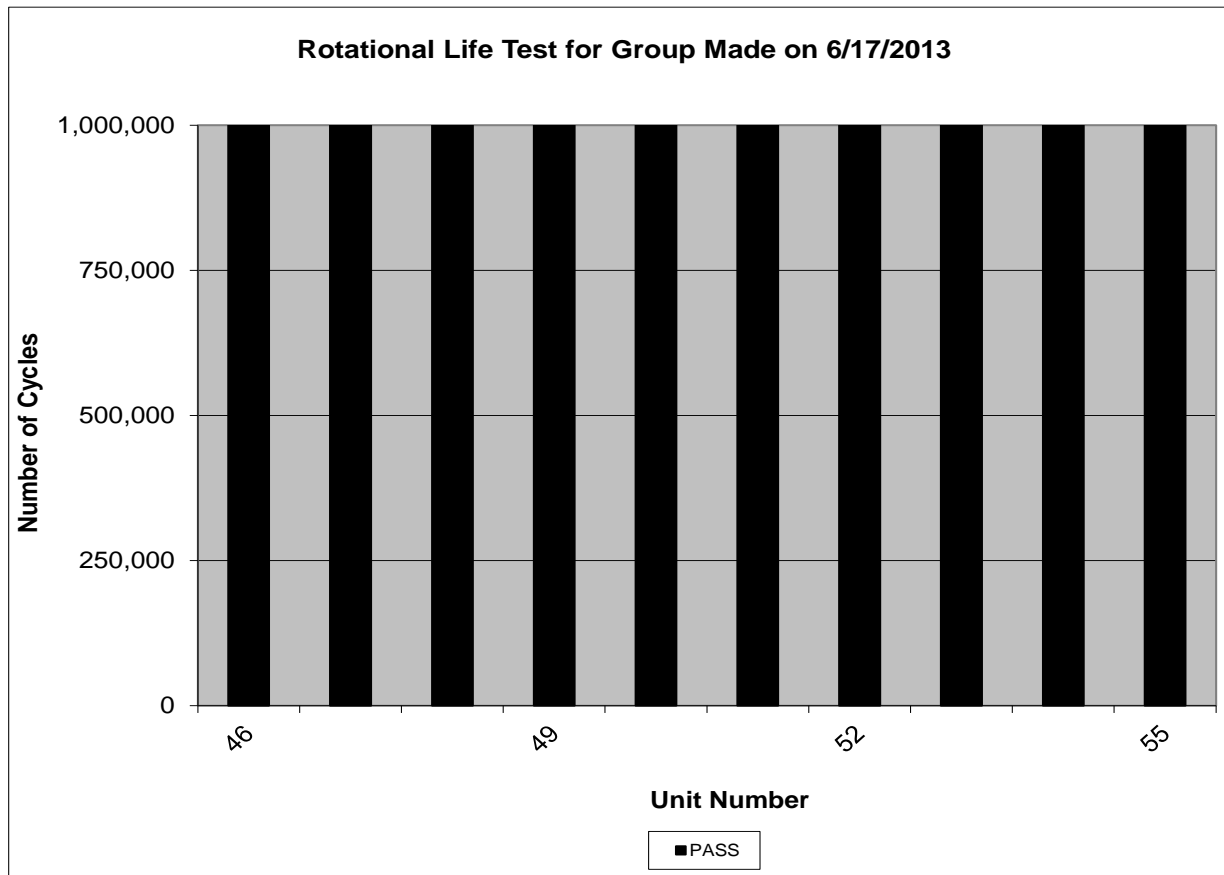


Figure 2 -Test Results