FABRICATION OF T-156 TRACK BUSHING ASSEMBLIES

FINAL REPORT

JULY, 1982

U. S. ARMY

TANK - AUTOMOTIVE COMMAND

CONTRACT NO. DAAE07-81-C-4095

by

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20. ABSTRACT (CONTINUE ON REVERSE SIDE IF NECESSARY AND IDENTIFY BY BLOCK NUMBER)
    This report gives a brief description of the manufacturing process for rubberizing 1500 T-156 pins according to drawing P3-18483
SUMMARY

The Goodyear Tire & Rubber Company, a manufacturer of component products for military tracked vehicles, rubberized 1500 T-156 track shoe pins (Ref Dwg 12274418) to a given configuration as shown on Dwg P3-18483.

Material used in the rubberization process was Goodyear's QPL rubber - SM7541 as specified on Dwg P3-18483.

Materials and processing were monitored according to Military Specification Mil-T-11891 and Goodyear's QCI - No. 25.

Manufacturing technology applicable to this part is similar to that used in the fabrication of other military track-shoe-pin bushing assemblies.
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>2</td>
</tr>
<tr>
<td>Objective</td>
<td>4</td>
</tr>
<tr>
<td>Description of Assembly Procedure</td>
<td>5</td>
</tr>
<tr>
<td>Conclusion</td>
<td>6</td>
</tr>
<tr>
<td>Physical Testing Results</td>
<td>7</td>
</tr>
<tr>
<td>Distribution Statement</td>
<td>8</td>
</tr>
<tr>
<td>Drawings</td>
<td>9</td>
</tr>
</tbody>
</table>
OBJECTIVE

The purpose is to identify the manufacturing processes of a T-156 track shoe bushing assembly and denote problem areas within that procedure.

An independent contractor, not an agent of the Government, shall provide the personnel, materials and manufacturing facilities to fabricate 1,500 T-156 track pins and rubberize them per drawing P3-18483.
DESCRIPTION OF ASSEMBLY PROCEDURE

The description of assembly procedures is presented in the following flow chart.

1. Fabricated Pin P/N 12274418
2. Metal Preparation and Cementing
3. Mixing of Compound SM 7541
4. Rubber Preparation for Molding
5. Molding of Rubber onto Track Pin
6. Trimming of Bushing Assemblies
7. Inspection of Bushing Assemblies
8. Acceptance of Assemblies
9. Shipment
CONCLUSION

The assembly and molding process for the 1,500 T-156 track-shoe-pin bushing assemblies was accomplished at the manufacturing facilities of The Goodyear Tire and Rubber Co., St Marys Plant, St Marys, Ohio.

No particular problems were encountered in any of the various production processes.

All phases were monitored under Mil-T-11891 and Goodyear's QCI 25.
PHYSICAL TESTING RESULTS

Shot Peening Intensity Values  
(Checks per MIL-S-13165 to 0.010 A to 0.020# A)

Results: 0.012 - 0.013 Range  
Average Value - 0.0125

Bushing Adhesion Pull Values  
(Checks per MIL-T-11891 - Outer Bushings - 33 lb/min)  
- Inner Bushings - 37 lb/min)

Results: 40 - 65 Range - Inner  
Average Value - 52 lb

Results: 34 - 62 Range - Outer  
Average Value 50 lb
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DRAWINGS

Attachment I - Dwg No. P3-18483, Rev 3, Dated 1-20-81

Attachment II - Dwg No. 12274418, Rev C, Dated 5-12-80
9. QUALITY ASSURANCE REQUIREMENTS
   DRAWING APPLIED TO THIS DRAWING.
   PART NO. SAME AS PART NO.

7. REMOVE ALL BURRS AND SHARP EDGES

6. IF STRAIGHTENING IS REQUIRED IT
   MAY BE PERFORMED AT
   ROOM TEMPERATURE.

5. SHOT PEEN ENTIRE PIN, EXCEPT ENDS MAY BE UNPEENED,
   PER SPEC MIL-S-13165 TO .005A TO .020A.

4. SURFACE ROUGHNESS VALUES ARE
   PRIOR TO SHOT PEENING

3. NO TOTAL AND NOT MORE THAN .005 PARTIAL
   DECARBURIZATION PERMITTED BEFORE SHOT PEENING

2. HEAT TREATMENT:
   QUENCH AND TEMPER
   AS QUENCHED HARDNESS 52 RC MIN
   AS TEMPERED HARDNESS 40/45 RC

1. MATERIAL:
   STEEL ALLOY BAR 8650H
   SPEC A151M A322 OR A331.

NOTES: