





Part Number: 924-807 **Revision:** A **Product:** Cup Holder **Date:** 3/22/2010

Author: Jessica Casey

Fit & Function Overview

Retractable in-dash cup holder

Design Objective:

Vendor will document performance and dimensions based on analysis of the supplied reference sample(s) and based on the included technical & material specifications given below. The vendor will submit the documentation for approval by Dorman Engineering Services. The vendor will produce the requested product based on the approved vendor documentation. The vendor will provide process information and material certification for their submitted product sample. Dorman Engineering Services will review and approve all vendor documentation prior to accepting a first article (FAI) sample(s) for inspection.

Patent Disclaimer:

Vendor is responsible for performing patent search to identify any relevant US patent that applies or potentially applies to the reference sample provided. A report of the research must be provided to Dorman Engineering Services at the time of the drawing submittal. The patent search report must include details of:

- Research procedure
- Patent numbers which were identified as being applicable or potentially applicable
- The design differences contained in the vendor design and how they eliminate any patent infringements.

In the event any conflicts and/or discrepancies exist in the information provided contact Dorman Products for clarification. Final approval concerning any conflicts and/or discrepancies is the decision of Dorman Products.

Reference Samples:

The following Approved Reference Sample is part of this specification: Original Equipment

Reference Documents:

Note: International equivalents to American standards such as SAE may be used with Dorman Products Engineering Services review and approval.

SAE J 403: Chemical Composition of SAE Carbon Steels SAE J 405: Chemical Composition of SAE Wrought Stainless Steel MIL-A-8625F: Military Specification Anodic Coatings for Aluminum and Aluminum Alloys ASTM B117: Salt Spray Testing ASTM B633: Zinc Plating Guidelines







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Materials and Finish Definition: As set forth by California State Proposition 65: The Safe Drinking Water and Toxic Enforcement Act of 1986; Material, Paint or other type of coatings are not to exceed <0.06% (600 ppm) lead by weight.

<u>Metal</u>

Front Metal Bracket:

Material: Low Carbon Steel Grade: SAE 1008-1010 per SAE J403 Finish: Zinc Plated, Yellow Chromate

Slide:

Material: Stainless Steel Grade: UNS S30400 per SAE J 405 Finish: Zinc Plated, Clear Chromate

Cast Metal Bracket:

Material: Die Cast Zinc-Aluminum Grade: UNS Z35631 (ZA-27 Zn-Al Alloy) Finish: Black Anodized Coating Type 1B, Class 2 per MIL-A-8625F

Spring Plate:

Material: High Carbon Steel Grade: SAE 1070 per SAE J403 Thickness: 0.25mm Finish: Black Epoxy Coating

Rear Metal Bracket:

Material: Low Carbon Steel Grade: SAE 1008-1010 per SAE J403 Finish: Black Epoxy Coating

Shaft:

Material: Low Carbon Steel Grade: SAE 1020 per SAE J403 Hardness: HRC 50-55 Finish: Zinc Plated, Yellow Chromate

Springs:

Material: Stainless Steel Grade: UNS S30400 per SAE J 405 or Music Wire Finish: SS: None, Music Wire: Zinc Plated, Yellow Chromate

Zinc plated components are to be plated per ASTM B633, minimum plating thickness 7.5um Chromate using trivalent chromium, thickness range 0.3um to 0.5um (*Hexavalent Chromium not permitted*)







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<u>Rubber</u>

Foam Pad: Material: Silicone Foam Color: Black Durometer: Shore A 20-25

<u>Plastic</u>

Plastic Bracket: Material: PA6 Color: Black Surface Finish: To match OE. No regrind material allowed

Arms and Cup Holder Plates: Material: ABS Color: Black Surface Finish: To match OE. No regrind material allowed

Gears and Track Slides: Material: POM Color: Black Surface Finish: To match OE. No regrind material allowed

Flaps:

Material: Lead Free PVC Color: Black Surface Finish: To match OE. No regrind material allowed

All other plastic parts: Material: PA66 + 15% Glass Filler Color: Black Surface Finish: To match OE. No regrind material allowed

<u>Grease</u>

Slide assembly is to be coated generously with white lithium grease.

Felt

Black felt protector pads are used throughout the assembly.

Exception to Sample:

- Alternative material use is acceptable, but only with the approval of Dorman Products Engineering Services.
- Alternative finishes are acceptable, but only with the approval of Dorman Products Engineering Services.







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Dimensions and Measurements: This section contains information regarding significant dimensions, characteristics, or measurements that that are required to manufacture this product.

- Part or Assembly Weight: 405g
- Unless otherwise specified, all part dimensions to match the supplied samples.
- Unless otherwise specified, dimensions specified in Bid Package are for reference only.
- Surface finishes to match supplied samples.

Images of Product Sample:



Figure 1: Cup Holder Closed Assembly – Top View











Figure 5: Slide Assembly (All moving parts should be greased)

924-807 – Design Specification







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Figure 6: Arm Assembly



Figure 7: Cast Metal Bracket Top View



Figure 8: Rear Metal Bracket and Slide Assembly







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Figure 9: Cup Holder Plate and Flap Assembly



Figure 10: Front Metal Bracket Assembly



Figure 11: Plastic Bracket







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Figure 12: Arms



Figure 13: Track Slides



Figure 14: Spring Clip







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Figure 15: Shaft

Process & Performance Information:

This section contains information regarding significant performance requirements and / or manufacturing processes that are required to manufacture this product.

- Zinc plated parts to be tested in accordance with ASTM B117.
 - Minimum corrosion resistance:
 - 72 hours: no white corrosion
 - 120 hours: no red corrosion of base metal
- Part must withstand exposure to -40 to 80 C without loss of performance or construction.
- Slides are riveted onto main brackets

Critical Characteristics:

This section contains information significant to the proper function and durability of the product.

- Average time for the cup holder to completely open: 0.6s
 - Spring constants and torsional coefficients need to match the OE samples for the average time to match the OE sample

Marking and Identification:

- Unless otherwise specified, part is to be marked in accordance to *Dorman Products Inc. Marking Requirements*.
- Unless otherwise specified; part numbers, logos, recycling marks, date codes or other marking found on the approved product samples are not to be copied.
- Part to be marked with the Dorman Wings Logo, Country of Origin, vendor code, date code, and part number on locations shown below.







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