

Specialty Products / Accessories

1. Silicon-Free Vacuum Suction Cups



Orrvacup-2x2-001



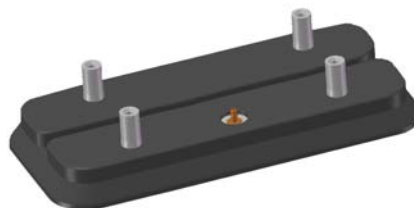
Orrvacup-4x2-001



Orrvacup-4x2-AF-001



Orrvacup-5x2-002



Orrvacup-6x2-001



Orrvacup-6x6-001



Orrvacup-OVAL-4x2-002



Vacuum Rings- 4"OD / 8.7"OD



Orrvacup-3INOD-HALF

2. Silicon-Free Rubber Protective Pads



16" OD Tomb Stone Guard



Ladder Top Cap



Ladder Foot Pad

Notes:

1. Material: Silicon-free, Ozone-, oil- and chemical-resistant (including BOELUB & most solvents) rubber.
2. Applications: Flex Track Rails, Circular-Joint Flex Tracks, portable Quad-Pod drill motors, etc.
3. Available in custom shapes, dimensions, and spacer layouts as well as built-in vacuum generators.

Prototype Machining (Low Volume, Short Lead Time)



ORRVACUP-2x2 Vacuum Cup Mold



787 Wing Drill Jig Fixture



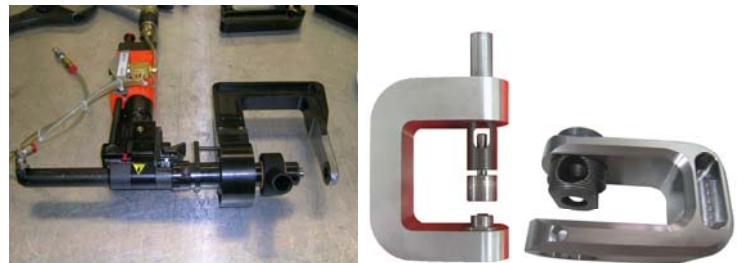
Sealant Fairing Tools (Polypropylene)



787 Hydraulic Drill Jig Support



Sealant Applicator Assembly



Power-Feed & Hand-Held C-Clamps



Teflon Coated Sealant Mold



Adjustable Torque Plates



Welded/Bent Metal Parts

Equipment: 3-, 4-, and 5-axis CNCs, Horizontal Lathe, Wire & Sinker EDM, 3D Printer (ABS & Nylon), 3D Laser Scanner, Welding (Plastic, Steel, Stainless Steel, & Aluminum), Surface Grinding, CMM (Coordinated Measurement Machine).

Material Capability: Tool steels, Aluminum, Titanium, UHMW/ Delrin, Phenolic, Precision Casting, Laser Engraving, Rubber/PU Thermal Molding, Polycarbonate Injection Molding, Delrin Brushes with Nylon Bristles, Polypropylene, and PTFE coating.

Mass-Production/ Stocking Items

1. Drilling Spindles, Spindle Guards, and Spindle Guard Protective Covers (P/N: ST7020P-F-1~6)



2. Sealant Applicator Brushes



3. Ø28 mm (ID) Rubber Bellow (P/N: BELO-28MMID) & Vacuum Shroud



4. 787 SOB FOD Collecting/ Blocking Foams (Silicon-Free, Fire Retardant Polyurethane)



5. Automatic Flow Sensing On/Off Lubricating System



Add-On Turnkey System

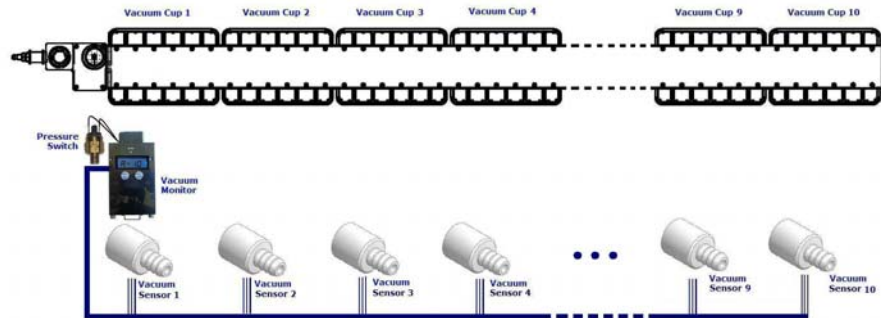
1. Vacuum Monitor for 787 SOB & Circular Joint Flex Track System



Vacuum Monitor



Vacuum Cup w/Pressure Sensor



Flex Track Vacuum Monitoring System Layout

2. 3-Step Aim & Lock Hydraulic Drill Jig Controller for 787 SOB Drilling



3. Vacuum Mounting Base (w/ Vacuum Monitor) for Free-Hanging Torque Wrench



Notes:

1. Vacuum monitor scans up to 20 vacuum pressures in real time. Programmable alarm setting let users set alarm trigger thresholds. Screen displays the failing location(s) and pressure value(s).
2. Standard RS232 port allows remote monitoring and data backup. Data can be stored remotely or on a built-in SD card slot (option) for long term performance analysis and maintenance scheduling. Other available communication protocols: USB, RS232, RS485, Modbus.
3. Miniature vacuum sensor (15mm OD x 10mm height) provides digitized pressure readout in a ID-encrypted format.



Machining Capabilities

Equipment (Qty)	Maximum Machinable Size
5-axis CNC (2)	Ø23" (Ø600 mm)
4-axis CNC (4)	Ø15.5" (Ø400 mm)
3-axis CNC (15)	59*29.5*23" (1500*750*600 mm)
Horizontal Lathe (2)	Ø15.7*47.2" (Ø400*1200 mm)
EDM (Wire and Sinker, 2)	10*10*12" (250*250*300 mm)
3D Printer (ABS and Nylon only, 1)	12*12*10" (300*300*250 mm)
CMM (Coordinate Measuring Machine, 1)	31.5*20*20" (800*500*500 mm)

Boeing Supplier IDs

Supplier:	3A4542
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