



ACTUATION SOLUTIONS PROVIDER

Beaver Aerospace & Defense Inc., a subsidiary of Phillips Service Industries, is a global leader in the design and manufacturing of unique and broad-range actuation technologies for the commercial and military aerospace and defense industries. Beaver's actuation components and systems are custom designed to fit your applications with superior performance, quality, and precision. We provide complete design and compliance systems engineering.

Design, manufacturing, testing and overhaul activities are performed in our SAE AS9100-registered facilities in Livonia, Michigan USA. Our worldwide sales force of technically-trained representatives provide customers with a source for immediate service and technical assistance. Our people, our tools, and our investments in technology make us the world's premier provider of precision ball screws and actuators.

Certifications/Programs:

- Service Disabled Veteran-Owned Small Business
- ISO 9001:2008
- AS9100 C
- Nadcap Certified for NonDestructive Testing
- EASA Part #145.4246
- FAA Repair Station #M15R042N for Ball Screws and Actuators
- FAA Part 21.303 Approved PMA-Parts Manufacturing Authority

Defense and Commercial Applications

- Air Frame, Sea and Ground Vehicles
- Flight Control
- Landing Gear
- Door and Utility
- Servo
- And Many More

Customer Awards:

- Northrop Grumman Awards:
 - ▶ 2007 Socioeconomic Business Program Award
 - ▶ Mission Systems Supplier of the Year 2005 and 2007
- Boeing Gold Performance Excellence Award 2010

Actuator Product Types

- Linear
- Rotary
- Smart/Semi-Smart Complete Systems Integration

Capabilities:

- Linear & Rotary Electromechanical Actuation Systems and Components
- Complete Ball Screw Design and Manufacturing Capability
- High / Medium / Low Volume Production
- Aerospace-Part 23/25/Military
- FEA Capability
- 1308 System Level HIRF Requirements
- DO 160/MIL 810/DO 254/DO 178
- Qualification Experience
- Military Ground
- MIL-STD 461
- AC 20-158
- Vertically Integrated in-house capabilities for:
 - ▶ Ball screws
 - ▶ Gears
 - ▶ Machining
 - ▶ Motor/Brake Design Capability
 - ▶ Controls and Printed Circuit Board Design Capability
 - ▶ Compliance Testing



Aerospace Actuation Testing & Controlling Expertise

The Beaver Aerospace & Defense design and development staff has extensive experience with DO-160A–DO-160F, as well as, AC 20-158 system level HIRF (High-Intensity Radiated Fields) risk analysis and lightning testing and requirements: 200 V/m- CW, 3-5,000 V/m spot illumination-5,000 V/m mode tuned experience, lightning up to and including level 5. Beaver Aerospace & Defense has a qualified IEEE/EMC Society senior member on staff.

Aerospace Actuator Application Capabilities—Partial List

Program/Application	Beaver P/N	Design Requirement	Operating Load	Ultimate Load	Stroke	Voltage
VLJ Aileron Trim Actuator	JA23024	DO160	25 lbs	125 lbs	3 in.	28 VDC
VLJ Pitch Trim Actuator	JA23025	DO160	37 lbs	125 lbs	3in.	28 VDC
ALB Actuator	BA22776	MIL-810	400 lbs	1,200 lbs	8 in.	24 VDC
Gun Lock Actuator	J20812	MIL-810	700 lbs	1,000 lbs	6 in.	28 VDC
VLJ Flap Actuator	JA23073	DO160	2,864 lbs	5,374 lbs	16 in.	28 VDC
Elevation Actuator	BA22953	MIL-810	800 lbs	19,000 lbs	35 in.	400 VDC
VLJ Flap Actuator	JA23089	DO160	2,000 lbs	6,000 lbs	10 in.	28 VDC
Radome Door Actuator	BA22699	DO160 / MIL 461	3,000 lbs	12,000 lbs	30.5 in.	28 VDC
LCS Actuator	BA22805	DO160 / MIL 461	1,100 lbs	5,000 lbs	12 in.	28 VDC
VLJ HSTA	JA23075	DO160	4,200 lbs	7,800 lbs	4 in.	28 VDC
Wind Tunnel Actuator	J20633	MIL-810	11,500 lbs	20,000 lbs	30 in.	28 VDC
MLRS Elevation Actuator	J17693	MIL-810	13,587 lbs	45,861 lbs	45 in.	28 VDC
Dish Elevation Actuator	J20221	MIL-810	13,660 lbs	102,300 lbs	6 ft.	208 VAC
B-Plug Actuator	BA22694	MIL-810	14,500 lbs	17,500 lbs	149 in.	208 VAC
Solar Panel Actuator	J20263	MIL-810	18,225 lbs	65,000 lbs	45 in.	208 VAC
Patriot Actuator	J16116A	MIL-810	25,000 lbs	52,000 lbs	34 in.	28 VDC

- SDVOSB
- CAGE Code: 088K1
- ISO 9001:2008
- AS9100 C
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- EASA Part-145 Certified
- FAA Repair Station #M15R042N for Ball Screws and Actuators
- FAA Part 21.303 Approval for Manufacturing

