



Photo: Lance Cpl. Alexis Moradian



Photo: USCG Chief Petty Officer Charly Hengen



Photo: Airman 1st Class Caleb Pierce



Photo Courtesy U.S. Marines

# UH-60

## SUSTAINMENT SERVICES



# UH-60 SUSTAINMENT SERVICES

## MOOG CONTENT ON UH-60:

Moog is the OEM for a number of different systems on the UH-60 Helicopter. Our flight controls include the Pitch Trim Actuator, the Roll Trim Actuator and Hydraulic Accumulator. In terms of operation, a Pilot's force input at the stick is mechanically transferred to the input linkage of the Pitch and Roll Trim Actuators. On the Pitch Trim, the input linkage is connected to the output linkage through the Boost Actuator, which multiplies the pilot's input force. On the Roll Trim, the input linkage is connected to the output linkage through a stiff link. Movements at the output linkages are mechanically transferred to the main rotor of the aircraft. Trim functionality is controlled by the Pilot's signal input, which will command either the Pitch or the Roll Trim actuator to hold a specific position, therefore trimming the main rotor in the corresponding direction.

The UH-60 also utilizes our Vibration Control Actuation System (VCAS). This system replaces traditional passive systems by measuring vibration levels at key locations in the aircraft and applying cancellation forces in an equal and opposite direction. The VCAS system adjusts these forces as the aircraft maneuvers and as payloads change thereby increasing overall efficiency. This also results in reducing airframe fatigue, pilot fatigue and overall maintenance costs.

Additionally, the SDA (self-displacing accumulator) provides hydraulic pressure to the APU (auxiliary power unit) motor used to start the two engines. It consists of high-pressure hydraulic fluid and dry nitrogen chambers separated by a piston, and a low-pressure hydraulic fluid chamber (reservoir) containing a second piston connected to the first piston. A mechanical tape attached to the piston rod indicates high-pressure chamber volume from 0 (discharged) to 100% (fully charged). After motor start the hydraulic fluid is circulated, or returned back to the reservoir (self-displacement).

## MILITARY SUSTAINMENT SERVICES

**FAST, FLEXIBLE AND RELIABLE SUPPORT SOLUTIONS** – To best service the challenges of operators and maintainers in the military aircraft market, Moog offers a variety of support solutions to complement the highly responsive repair and overhaul services we provide for our existing products. These value-added services include:

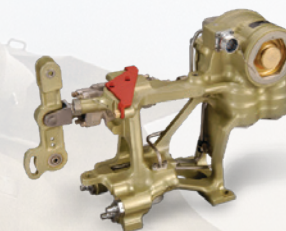
- **Repair and Overhaul Support** – Moog can provide cost-effective alternatives to challenging repair and overhaul issues. Support covers all Moog legacy hardware as well as non-Moog products
- **Reliability Enhancements/Technology Insertion** – Aircraft worldwide are flying far beyond their intended design life. As a result, there is high demand for new technologies and reliability improvements to offset the escalating costs of maintaining these aging systems. Moog's highly skilled engineers can apply state of the art technology into aging aircraft systems, resulting in increased reliability, lower operating costs and extended useful life



# MOOG MAINTENANCE CAPABILITIES ON UH-60

Nomenclature	Configuration Status	Sikorsky Part Number	NSN	Moog Model/Part Number
Pitch Trim	Pitch Trim Actuator	70410-02561-105	1650-01-106-1957	W017-313B
	Pitch Trim Actuator Flight Safety Version	70410-02561-112	1650-01-375-3160	W017-313C
	Pitch Trim Assembly with SAS Flight Safety Version	70410-02760-047	1680-01-137-3533	N/A
	Pitch Trim Actuator Flight Safety Version with Reliability Upgrade	70410-02561-115	1650-01-647-4590	W017-313E
Yaw Boost	Yaw Boost Actuator	70410-02910-065	1650-01-143-1227	N/A
	Yaw Boost Servo Assembly with SAS	70410-02910-067	6615-01-158-5985	N/A
Collective Boost	Collective Boost	70410-02920-053	1650-01-140-0967	N/A
SAS Assembly	SAS Module Assembly	70410-02650-047	1650-01-308-9459	N/A
	Servovalve	70410-02540-102	1650-01-263-7870	N/A
	SAS Actuator	70410-02500-049	1560-01-129-1256	N/A
APU Accumulator	APU Accumulator	70651-03201-105	1650-01-222-4316 1650-01-298-8467	3197170-5
Vibration Control Actuation System (VCAS)	VCAS Electronics Unit	70600-01816-103	6635-01-557-9607	-156-070A / C99081-001
	VCAS 450lb Mechanical Unit	70600-01816-101	6635-01-559-4795	-176-132A / C79618-002
	VCAS 1000lb Mechanical Unit	70600-01816-102	6635-01-559-2514	-176-125B / C87084-002

\*All non-flight safety hardware returned to Moog for overhaul will be upgraded to flight safety configurations.



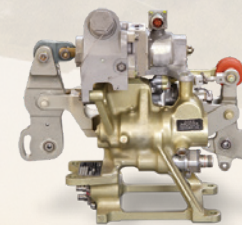
Pitch Trim Actuator



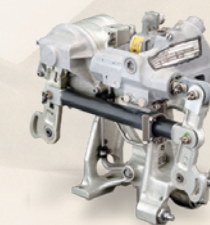
APU Accumulator



SAS Module Assembly



Yaw Boost Servo Assembly



Roll Trim Assembly



Vibration Control Actuation System (VCAS)

## GLOBAL SALES AND SUPPORT

Our regional sales are focused on working with you to understand the specific needs of your organization. Our managers work closely with our customer support team to convey your needs and develop tailored support programs to best address your objectives.

Director, Army Sustainment

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