



HARCOSEMCO
EMPOWERED 2 BE BETTER

CABLE HARNESSES



ENGINE | FIXED WING | ROTORCRAFT

STATIC HARNESSSES

HarcoSemco's static harnesses are designed for resilience in the toughest of applications. In order to protect the critical wiring components from exposure to harsh environmental conditions, HarcoSemco utilizes connector overmolds (Polyurethane, Viton, Rubber and Fluoroelastomer) and jacket or coatings (Viton, Neoprene, Silicon, Polyurethane, PEEK). Through custom material selection and detailed design of componentry, HarcoSemco engineers the harness to meet all demands, while maintaining the lightest possible weight.

FEATURES

- Manufactured in 3D configuration
- Chafe, moisture and vibration resistant
- In-house machine braiding
- Rigid conduits
- Customized molding for connectors and branches

BENEFITS

- Proven reliability
- Fluid ingress protected
- Fully chafe resistant
- Minimal installation stress
- Reduced weight

APPLICATIONS

- HUMS Index
- Position Light
- Landing Light
- Weapons Pylon
- FLIR
- ICS
- Reel Winch/Rescue Hoist Harness
- Aerial Refuel Harness



DYNAMIC HARNESSES

Through unique features such as rotating clamps, customized connector overmolds and high-flex wiring, HarcoSemco's harnesses are capable of operation in extreme dynamic applications. For blade-fold and ice protection systems on helicopter blades, for both main and tail rotors, HarcoSemco's harnesses deal with high frequency blade rotation and wide variation of blade pitch-up/pitch-down, tilt/flap and lead/lag angles. These factors mean the harnesses are put under extreme structural and fatigue stress during operation. HarcoSemco's harnesses excel under these conditions while maintaining their high level of environmental protection, essential for external installations.

HarcoSemco validates dynamic harness designs through use of in-house fatigue life test fixtures that replicate the particular movement of the application. These fixtures can be modified to suit the intended platform and installation. Typical harness test to operation ratio is 40:1, meaning one hour on our test fixture represents 40 in-flight hours.

FEATURES

- Manufactured in 3D configuration
- Chafe, moisture and vibration resistant
- In-house machine braiding
- Rigid conduits
- Customized molding for connectors and branches

BENEFITS

- Proven reliability
- Fluid ingress protected
- Fully chafe resistant
- Minimal installation stress
- Reduced weight
- High fatigue life

APPLICATIONS

- Blade-Fold
- De-Ice
- Tail-Fold





APU HARNESSSES

APU harnesses are typically of open-bundle type construction making them inherently easier to maintain because the wires, connectors and back-shells are not covered by any external covering or coating. Environmental protection is typically less critical in this area and therefore affords this design methodology.

BENEFITS

- Field repairable
- Low cost



ENGINE HARNESS/FADEC

HarcoSemco's engine harnesses withstand the grueling environment of an engine in operation. HarcoSemco has designed and qualified harnesses that are resilient to intense levels of vibration and exposure to potentially harmful fluids. Critical to on-engine applications, HarcoSemco has identified and refined the combination of materials and processes to offer maximum resilience to high temperatures.

HarcoSemco can offer the latest advances in lightweight components featuring integral back shells, replaceable shielding at connector transitions and shrink boots lending for on-engine repair.

APPLICATIONS

- Accessory
- Control/monitor
- FADEC/DECU
- Thermocouple lead

FEATURES

- Temperature resistant materials (Viton)
- Water resistant
- Manufactured in 3D configuration customized molding
- Potted back-shells
- Machine braided
- Color coded for system identification

BENEFITS

- Fluid ingress protected
- Moisture and chafe resistant
- Vibration and heat tolerant
- High reliability
- Better fit
- Reduced weight



VIBRATION ACCELEROMETER HARNESS

HarcoSemco Accelerometer Harnesses are manufactured with a Low Noise Cable and are overbraided with various jacket materials; with Nomex being the preferred abrasion resistant jacket. Custom-designed Accelerometer Harnesses provide a cost-effective solution for transmission of a low impedance accelerometer's signal requiring a high level of noise attenuation. Designed for harsh environments,

HarcoSemco's Accelerometer Harnesses provide a low-noise interface to the accelerometer utilizing mil-spec. connectors and/or custom header assemblies (that may be glass-sealed) for welded connection to the accelerometer housing. HarcoSemco utilizes various types of conductor shielding that includes aluminum-flash, fine gage nickel-copper braid and carbon layer treatment that provide superior EMI protection. The HarcoSemco Accelerometer Harness packaging can also provide for integration of signal processing circuitry within the header or connector back-shell.

FEATURES

- Application-specific design • Mil-Spec. connector interface • Lightweight composite connectors available
- Hermetically sealed headers • Conductors with low noise treatments • Low impedance shield terminations
- Color coded abrasion resistant braid • High temperature potting compounds

BENEFITS

- Harsh environmental operation • High accuracy/low signal degradation
- Flexibility/ease of installation • Operating temperature to 500°F





FLIGHT CONTROL HARNESSES

HarcoSemco cables are designed to the specific aircraft model and include both static and dynamic configurations. Flight control jumper cables are designed for flexure, resistance to SWAMP environments and temperature extremes to -75°C .

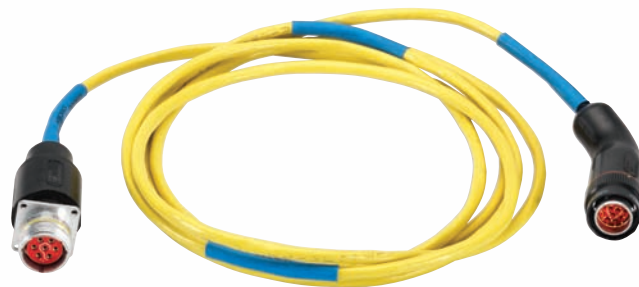
HarcoSemco harnesses utilize highly flexible conductors of high strength copper alloy. Conductors are fabricated into cables featuring nickel coated copper braids and extruded, cross-linked ETFE. Construction features of the finished flight control cables include low impedance shield termination to connector shells, custom back-shells, epoxy encapsulated conductor terminations and EPDM over-molded cable to connector transitions.

FEATURES

- Custom back-shells for shield termination and conductor encapsulation
- Rubber over-molded cable to connector transitions
- Custom mold configurations
- Enhanced conductor sealing
- Qualified to SWAMP environments
- Low impedance shield terminations
- Color coded installation markers

BENEFITS

- Harsh environment operation, including flexure to -75°C
- Excellent EMI performance
- Flexibility/ease of installation
- No maintenance
- Compatible with aircraft fluids



FUEL CABLES

HarcoSemco fuel cables are designed for installation inside the aircraft's fuel tanks and utilize highly flexible conduit assemblies to seal against the intrusion of all aircraft fuels. These conduit assemblies are qualified to seal against fluid ingress with internal pressures up to 50 PSIG.

FEATURES

- Spiral-welded, helical corrugated conduits
- Modified connector flanges to accommodate locking washers
- Stainless steel, 360° welded conduit adapters
- Fuel-resistant potting compounds, fully encapsulated conductors

BENEFITS

- Operating temperatures from -65°F to 160°F
- Highly flexible conduit construction
- Flexibility/ease of installation



LANDING GEAR

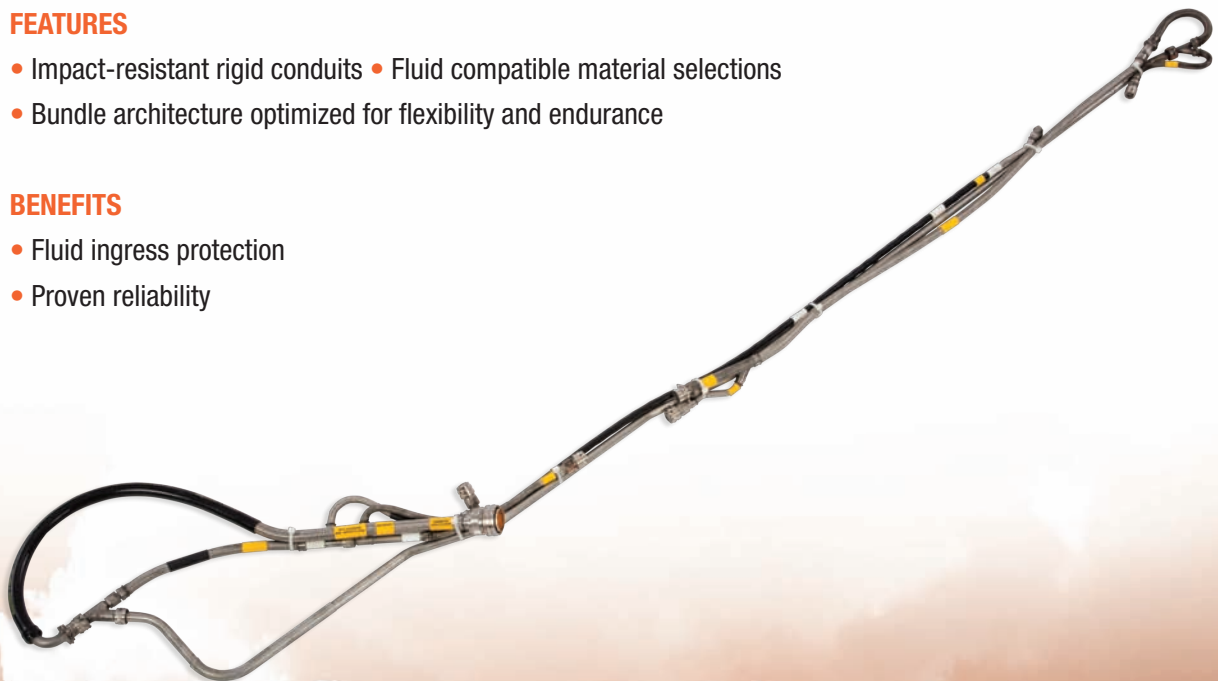
Landing gear harnesses are exposed to particularly hostile environments, including high g-force landings, flying debris and rapid temperature variation. In addition, the harnesses must remain reliable through thousands of flex cycles as the landing gear retracts and deploys. Through the employment of specific design features such as rigid conduits, HarcoSemco manufactures rugged assemblies capable of withstanding these extreme requirements.

FEATURES

- Impact-resistant rigid conduits
- Fluid compatible material selections
- Bundle architecture optimized for flexibility and endurance

BENEFITS

- Fluid ingress protection
- Proven reliability



CUSTOM THERMOCOUPLE, CABLE HARNESS AND SENSOR SOLUTIONS.

HARCOSEMCO EMPOWERED 2 BE YOUR GLOBAL PARTNER.

HarcoSemco's mission is to provide superior service, technologically advanced products and custom solutions for challenging aerospace applications. We deliver on that commitment by empowering our people to provide a better customer experience, find innovative solutions, and deliver quality products on time, every time. We have been the partner of choice in the Aerospace industry for over 65 years and continue to be a cutting edge supplier that you can trust.



The fusion of Harco & Semco has created a truly exceptional, united body of people whose attention to detail, unwavering desire to innovate, and devotion to their customers is second to none. We at HarcoSemco, look forward to working with you.

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