

SERVICE BULLETIN

Purpose:

This service bulletin (1) provides guidance on the cleaning solvent and lubrication for remote control drive cables used in QSA Global, Inc. (QSA) isotope radiography systems, and (2) provides general guidance on proper inspection and maintenance of QSA Global radiography systems (specific guidance can be found in the respective Operating and Maintenance manual).

QSA has updated their product operating and maintenance manuals to identify the maintenance frequencies, detailed maintenance instructions, and the recommended cleaning solvent and lubricants for all QSA remote control drive cables. Refer to the specific product manuals for these instructions.

Recommended cleaning solvent:

Clean mineral spirits is the only remote control drive cable cleaning and degreasing solvent currently recommended by QSA. The user must follow the mineral spirits manufacturer's safety precautions to ensure safe use, handling, storage and disposal of this solvent.

Mineral spirits have been used for decades to clean and degrease the remote control drive cables. The drive cable must be completely dry before applying lubrication.

Recommended lubricants:

Mil-spec grease MIL-G-23827B (or C), or MIL-PRF-23827C is the only remote control drive cable lubricant currently recommended by QSA. These greases are available under the brand names of AeroShell 7, AeroShell 33, and Texaco Unitemp.

The Mil-spec greases have a butter-like consistency and when properly applied will migrate to the core of a drive cable to prevent internal corrosion. The grease also provides a protective barrier against moisture and has resistance to chemical changes resulting from high doses of radiation emitted by the radiography sources.

Problem Solvents and lubricants:

The following is a partial list of solvents and lubricants known to be problematic with remote control drive cables and therefore not recommended for use by QSA Global: Acetone, WD-40TM and other penetrating oils, quench oils, water and Black BeautyTM.

Recommended Daily Inspections

Exposure Device

- Visual inspection for signs of physical damage
- Verification of locking mechanism operation, including plunger assembly and security of mounting screws
- Verification of outlet port operation (smooth rotation) and cleanliness (not clogged with dirt, grease, etc.)

Source Guide Tube

- Visual inspection of swage fittings, both ends (threads not stripped or clogged with dirt, bayonet ears not bent, broken, etc.)
- Inspection of swivel bayonet fitting for proper free operation
- Visual inspection of guide tube exterior for cuts, dents, heat damage
- Visual inspection of source stop (exposure head) for bends, excessive wear, perforations, etc.
- Visual inspection of collimators for physical damage

Remote Controls

- Visual inspection for signs of physical damage, crank handle properly secured, instruction label legibility
- Verification of odometer and/or lever brake operation, if so equipped
- Visual inspection of control conduits at swage points for cracks, breaks, or bulging
- Inspection of entire conduit length for cuts, cracks, dents
- Visual and physical inspection of connecting plug assembly for signs of damage or excessive wear (e.g. jaws too loose, roll pins loose/missing, collar pins not rotated or bent)

Drive Cable

- Visual inspection of male connector, ensuring cable not excessively bent at connector and ball and shank of connector not bent / cracked
- Visual inspection of drive cable (first 30 cm or so) for signs of damage such as cuts, breaks or fraying of spiral winding, kinks / permanent bends, rust, uniformity of winding spacing, and wear/flattening of outer winding
- Physical check for cable flexibility
- Physical check for light coating of proper lubrication
- Physical verification of freedom of movement of cable within the remote controls
- Physical checks using the NO GO gauge in accordance with the operating and maintenance manual

Quarterly Maintenance

Exposure Device

- Clean device
- Inspect for signs of damage
- Verify labeling is legible from minimum 1 meter
- Radiation survey of device (if loaded) verifying dose rates within specifications
- Verification of proper metal source identification tag installation (if device is loaded)
- Visual inspection of welds for cracks
- Verification that all bolts/screws are present and tight
- Physical inspection of outlet port for proper operation
- Physical inspection of locking mechanism for proper operation
- Physical check of source to drive cable connection using NO-GO gauge
- Physical performance of misconnect test in accordance with operation and maintenance manual
- Operational check of automatic securing (locking) mechanism following first exposure

Source Guide Tube

- Clean guide tubes
- Inspect as per daily inspection

Remote Controls

- Disassemble, clean, inspect and maintain control crank, control conduits, and control cable

Annual Inspection and Maintenance

The annual inspection and maintenance requires that the source be unloaded from the device to allow disassembly of exposure device. The annual maintenance operations must be performed by individuals specifically trained, qualified, and authorized for this work. See the operating and maintenance manual.

IMPORTANT

The use of third party (“copy”) repair parts and components on QSA Global, Inc. industrial radiography equipment will invalidate the associated Type B and/or Type A certifications as applicable. Additionally, use of copy parts and/or improper maintenance will invalidate the ISO 3999 certification of the respective equipment.

The certification of QSA Global equipment and accessories is based in part on the regulatory confidence that all equipment and components meet the stringent dimensional, material, and tolerancing requirements specified by QSA Global to its suppliers. All QSA Global devices and accessories are designed, built and tested in accordance with our ISO 9001 accredited Quality Assurance program.

Third-party suppliers do not have the detailed knowledge of QSA Global manufactured equipment and therefore cannot ensure all the safety and reliability aspects of the equipment and/or accessories are considered. QSA Global, Inc. has not tested, nor does it authorize the use of, third-party supplied components for any of its industrial radiography devices or accessories.

If additional information is required, please contact a Technical Manager at our Baton Rouge, Louisiana, La Porte, Texas, Burlington, Massachusetts, or Dobransy, Czech Republic offices, or our Belgian-based European Technical Manager:

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