	WORK INSTRUCTION Reduction of Mineral Insulated Cables	
	REVISION: 02	PROCEDURE NO.: WI-8.2.4.20

A. Scope:

This is a procedure to reduce the diameter of mineral insulated cables by drawing or swaging operation.

B. Materials and Equipment

Drawing and Swaging equipment

Drawing dies

Swaging dies, sizes 3 ¼", 1 ¼" & 7/8"

Swaging shims

Micrometer

Lubricant, Compressor Oil 100 SAE 30


Lubricant, Tower A-187 grease

Lubricant, Mobil lithium grease XHP222

Solvent, Crystal Clean CC100⁺

C. Procedure:


- 1) Set up swaging and drawing machines as recommended by manufacturer.
- 2) Crimp the end of cable string assembly to prevent the wire and insulators from coming out.
- 3) Point the opposite end from the crimped end of the heater, as required, for approximately 3" unless otherwise specified on the drawing. The diameter of the point must be smaller than the current reduction pass diameter so that the material enters the die easily.
- 4) Select and install the required reduction die.
- 5) Swage or draw the material as needed as indicated per specification sheet. Material must be cleaned before entering the dies.
- 6) If drawing operation is used, the Lubricant Tower A-187 grease must be used.
- 7) If size 3 ¼" swaging dies (largest machine) are used, Compressor Oil 100 SAE 30 shall be used for lubricant when pointing or swaging empty tube. When swaging tube with resistance and MGO, Mobil lithium grease XHP222 shall be used. If smaller swaging dies (smaller machines) are used, Compressor Oil 100 SAE 30 shall be used for pointing or complete swaging.
- 8) Reduced material must be cleaned with Crystal Clean CC100⁺ solvent.
- 9) Anneal reduced material as needed per OSS-115-113
- 10) Repeat step 7 to 9 as needed per specification sheet to attain the required final diameter.

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REVISION HISTORY

REVISION LEVEL	DATE OF REVISION	SECTIONS	DESCRIPTION OF CHANGE
00	05/22/09	All	Initial release
01	06/06/12	C	Add after as needed in Procedure 9: per OSS-115-113
02	06/15/26	C	Revised procedure step numbers 3 and 7. Updated logo.

AUTHORIZATION

POSITION	HELD BY	AUTHORIZATION SIGNATURE OR INITIALS
Prepared By: Production Manager	Jason Dour	
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