INSTRUCTIONS

PACKING JOINTS OF HYDROGEN COOLED MACHINES

Process Specification 290518-D

GENERAL

1. This specification covers packing joints of hydrogen cooled machines.

The packing to be used for the various joints or seals shall be as specified on the drawing or manufacturing information.

Specification Designation	*Description*
290518-1	Metal to metal joints with enamel 672-1
290518-2	All joints specifying packing 1925-1 with enamel 672-1
290518-3	All joints specifying cork neoprene 7249-1 with enamel 672-1
290518-4	All joints specifying cork neoprene 7249-1 without any adhesive
290518-5	All joints specifying rubber sheet 7531 with enamel 672-1
290518-6	All joints specifying packing 4331-1 with varnish 7247-1

Safety Requirements. Some materials used in these operations are hazardous. See Safe Practice Data Sheets, SPDS E-1, V-1, S-9, S-6, T-2 and A-9.

GENERAL INSTRUCTIONS

Clean all metal joint surfaces with solvent 1609-1 (SPDS S-6) or other suitable solvent to remove oil, grease or dirt.

Important: Solvent left in hole may run out under the gasket and loosen the gasket, so be sure to dry out all holes.

Note: When necessary to remove enamel 672-1 from the gasketed or metal joints after it has hardened, heat the surface and while hot scrape off the enamel with a putty knife, or brush the surface of the enamel with a heavy coat of alcohol 1701 (SPDS A-9). Keep the surface wet with the solvent and, after it has softened, wipe it off with a rag saturated with the solvent. If any scraping is necessary, use a putty knife.

Thin varnish 7247-1 (SPDS V-1) with toluol 5052-1 (SPDS T-2); thin enamel 672-1 (SPDS E-1) with alcohol 1701 or shellac 1130 (SPDS S-9).

Note: Use shellac 1130 only for thinning enamel 672-1 in the field.

In the application of all adhesives, apply an extra heavy coat at all confined corners in assembling.

If the adhesives become too dry before assembling for good adhesion, brush the surface with a very light coat of toluol 5052-1 in the case of varnish 7247-1, and alcohol 1701 or shellac 1130 in the case of enamel 672-1.

OPERATIONS

Specification 290518-1. Metal to metal joints with enamel 672-1.

2. *Method.* In making the metal to metal joints, apply a medium heavy, uniform coat of enamel 672-1 to both metal surfaces of the joint. Air dry until the enamel becomes tacky to the touch (about 5 to 10 minutes) and complete the joint. Where it is not possible to assemble the gland seal bracket in ten minutes, assemble the parts as soon as possible after applying the enamel.

Note: It is important that the enamel be applied as a uniform coat.

3. *Application.* For securing a gas or oil tight joint between two metal surfaces which have been lapped.

Specification 290518-2. All joints specifying packing 1925-1 with enamel 672-1.

4. *Method.* In applying packing 1925-1, brush one of the surfaces of the joint with a medium heavy coat of enamel 672-1. Immediately after coating the metal member, apply a thin, uniform coat of the enamel to one side of the gasket and air dry the enamel until it becomes tacky to the touch (about 5 to 10 minutes). Place the gasket in position on the previously coated member with the coated surfaces together. Press the gasket against the surface with a soft rag to remove any wrinkles, unevenness or air pockets. When assembling the part with the gasket attached, apply a medium heavy coat of the enamel to the gasket

surface and airdry until it becomes tacky to the touch (approximately 5 to 10 minutes), and then complete the joint.

Note: In some applications, packing 1925-1 will have a tendency to squeeze out of the joint as the bolts are tightened. This can be prevented by making the joint as follows:

Brush a thin coat of enamel 672-1 on both metal surfaces and permit the enamel to dry hard before assembling the gasket. Use only enough enamel to fill the machine marks on the metal surfaces.

5. ***Application.*** For securing a gas or oil tight joint where metal surfaces may be lapped or have a finish machine surface.

Specification 290518-3. All joints specifying cork neoprene 7249-1 with enamel 672-1.

6. ***Method.***

(a) Special care shall be taken in making a joint with cork neoprene 7249-1 and enamel 672-1. It is absolutely necessary that the enamel be permitted to dry hard before the joint is pulled up tight. The packing will flow out of the joint if the enamel is not hard and gas leaks will result. Brush a thin coat of enamel 672-1 on each of the metal surfaces, using just enough to fill the machine marks. Permit the enamel to dry hard. Test the enamel for slippage by pressing downwards and sideways with the finger. Be sure the enamel is more than just skin hard. If the skin on the enamel surface is hard and the enamel below the skin is soft, the packing will flow out of the joint, the soft enamel acting as a lubricant. Use the above method where possible as this is preferred.

(b) In some few applications, it will be desirable to stick the gasket to a metal surface with enamel 672-1. When this is necessary, brush one of the surfaces of the joint with enamel 672-1, using a thin coat. When the enamel has become quite tacky to the touch, apply the gasket and allow to dry until it is impossible to make the gasket slip. Apply a light coat of the enamel to the other member of the joint, using just enough to fill the machine marks. Allow the enamel to dry hard so it will not slip. (See paragraph 6(a) above).

(c) A joint made with cork neoprene 7249-1 and enamel 672-1 is not satisfactory if there is evidence that the packing has squeezed out of the joint. This always results in gas leaks.

7. ***Application.*** For gas or oil tight joints having medium bolt pressure and having a finish machined surface.

Specification 290518-4. All joints specifying cork neoprene 7249-1 without any adhesive.

8. ***Method.*** Apply cork neoprene 7249-1 without any adhesive.

9. ***Application.*** For gas or oil tight joints with medium bolt pressure and finish machined surfaces. This application covers joints where it is practical to assemble the gasket dry, such as main lead bushing gaskets.

Specification 290518-5. All joints specifying rubber sheet 7531 with enamel 672-1.

10. ***Method.*** In applying rubber sheet 7531, brush a thin coat of enamel 672-1 to both surfaces of the metal members. Use just enough enamel to fill the machine marks. Allow the enamel to dry hard. Test the enamel for slippage by pressing downwards and sideways with the finger. Be sure the cement is not just skin hard, as this may result in flow of the rubber when the joint is pulled up.

11. ***Application.*** For gas tight joints for diaphragm applications; for joints with medium bolt pressure and finish machined surfaces.

Specification 290518-6. All joints specifying packing 4331-1 with varnish 7247-1.

12. ***Method.*** In applying the asbestos compressed sheet gaskets, brush one of the surfaces of the joint with a medium heavy coat of varnish 7247-1, thinned with toluol 5052-1, such that it can be applied readily by brushing. The thinning requires the addition of approximately 20 to 25 percent, by volume, of toluol. When the varnish becomes quite tacky to the touch, which will occur in about 20 minutes, apply the gaskets. When applying the gaskets to sections in a vertical position, hold in place with "U" shaped springs and when applied on sections in a horizontal position, weigh the gaskets. Place the other member in position without varnish and complete the joint.

13. ***Application.*** For gas tight joints having high bolt pressure and rigid metal members having finish machined surfaces.

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