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NEWS VIEWS

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Determination to Establish Excellence Through Efficiency and Expertise

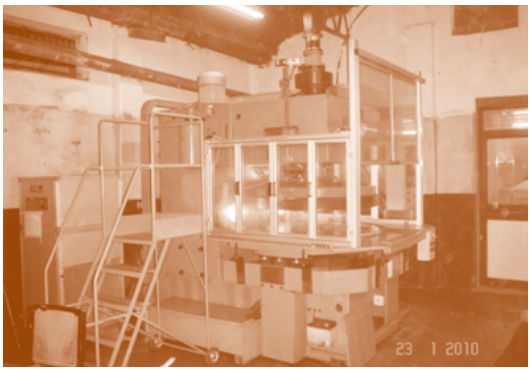
Lapped Slitter Tooling

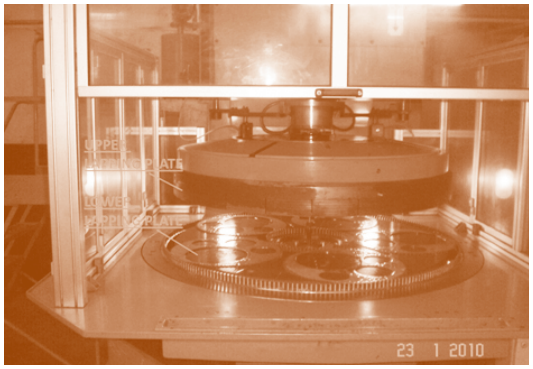
Lapping is a very precise machining process in which two surfaces are rubbed together with an abrasive in between. Oil is used as media for carrying abrasive between both surfaces. Knife or spacer is kept between two rotating discs of machine which rotate in opposite direction. Load is applied on upper plate to give pressure.

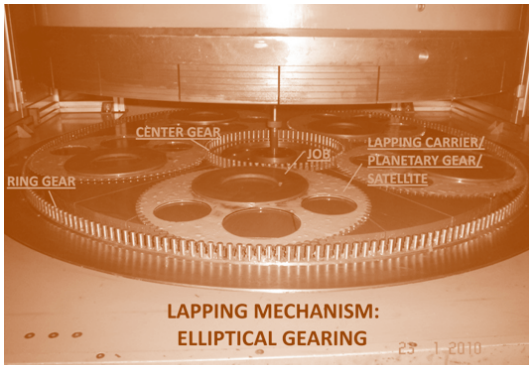
Lapping is accomplished in two steps. Initially, coarse emmery is used for faster material removal then fine abrasive is used to achieve, accuracy and surface finish.

Process is rather slow and material removal is .5 to 1 micron/ minute.

Lapping on slitter tooling is done to achieve closer thickness tolerance and to remove roughness. In the process flatness is improved.







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Lapped slitter tooling is recommended

1. When material being slitted is very soft, normally non ferrous.
2. When material to be slitted is very thin.
3. When width of strip is important and much variation is not allowed.
4. For shimless tooling where tooling is designed in a manner when shims are not used.

Normal tolerances achievable in lapping:-

1. Surface roughness .1 Ra.
2. Thickness and Flatness,

	Thickness Tole.	**Flatness within**	
		For Thickness	**For Thickness**
		>2,≤5	>5
Up to 255 mm dia	+/- .001 mm	.02	.005
Up to 355 mm dia	+/-.001 mm	.03	.005

As lapped slitter tooling is required to cut thin strips, hence bore tolerance on knives should be closer, (may be G-6). Gap between shaft and bore of knife should be less so that knife rotates concentric and vertical clearance is maintained.

Slitter spindle should be precise; O.D. should be within 10 microns and collar run out within 5 microns.

Measurement: Thickness - accuracy is within +/-.001 mm hence thickness comparator should be capable of measuring .1 micron. Surface plate should be of o o grade. Only ceremic slip gauges should be used for setting.

Controlled Atmosphere

Lapping machine should be kept in a room having temperature 22 - 24 deg C.

Measurement should also be done in inspection room having temperature 22-24 deg. C.

Feeding to Lapping Machine -

Before jobs are lapped they should be finished ground within +/-.005 mm, having controlled flatness i.e. within .030 mm. Normal lapping margin is .060 mm.