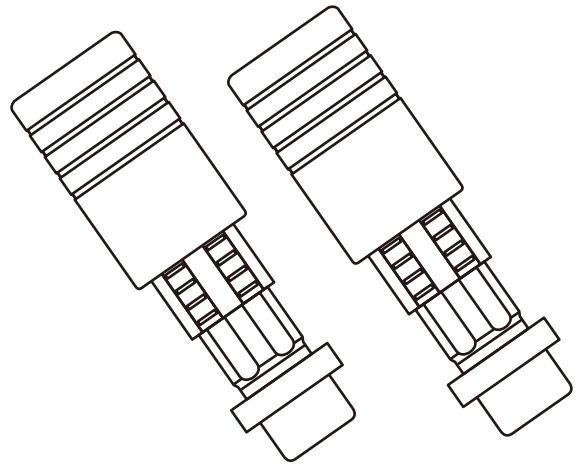


MILLION GUIDE GNG Series



User's Manual of MILLION GUIDE GNG Series

Introduction

Thank you very much for choosing ISEL Million guide.
First of all, please check the followings before installation.

- 1) The part number of the delivered product is correct.
- 2) There is no damage on the product during transportation.
- 3) The accessories are all enclosed.

Our Million guide is a guide component for a dieset of press mold etc. Please read carefully, understand this manual and strictly observe the followings to instal/ remove/maintain the product for its enough performance and safe use. Ask us for any uncertain things on this product.

●Safety Precautions!!

- Wear proper clothes and protector for the work.
- Start the work after confirming the power OFF and the machine is completely stopped.
- Take measures not to accidentally turn the power ON.
- Work safely by putting things tidy to prevent secondary accident.
- Use the product according to the industrial safety and health standard of each country.
- Take safety measures to keep out of danger by putting some covers where the workers might be endangered by our product operation.
- Stop using our product if it loses its regular functions by the deformation or notable rust etc. Take safety measures on the machine to keep from dangers.

●Prohibition!!

- No modification and no irregular use of this product are allowed. (May affect the accuracy and specification)

Notes

- Select the post length so that the post keeps the bush at the top dead center during the press process.
- Use it with the stroke where the needle rollers make one revolution or more if possible.
- Million guide is a pair of the bush and the post. Check the serial numbers before installation.
- Make sure there is no rotational moment between the post and the bush at installation.
- Design so that the retainer does not come out from the bush during operation.
- Million guide cannot be used without any lubrication. Therefore regular lubrication is required.
- Use the dust proof boot on Million guide to protect the sliding area from dust etc.
- Use the Million guide at 0-80°C environment.

- Do not modify the Million guide. (May affect the accuracy and specification)
- Volatile pressing oil vaporizes the lubrication of Million guide, and shortens the guide life. Be careful not to splash the pressing oil to the guide post or protect it with some cover.

Million guide lubrication

Million guide cannot be used without lubrication; Regular lubrication is necessary. In case Million guide is not properly lubricated, premature wear may occur, leading to the performance degradation. Lubricate the Million guide properly with reference to the followings.

①Recommended lube

We recommend oil lubrication under the environment where oil is usable. In case oil is unusable, lubricate with grease.

- Oil lubrication
Isel/Million oil MOF-3 recommended
(Lubrication antirust agent (spray) with fluoro resin mixed)

- Grease lubrication
Isel/Million grease MGS recommended (Urea extreme-pressure grease)
※We also provide grease for clean room and vacuum. Please contact us.

②Lubrication method

- Oil lubrication
Lubricate with an oiler or a spray etc. at the proper points according to the installation posture so that oil reaches every part of needle rollers.

- Grease lubrication
Apply grease directly to the needle rollers of the retainer if possible. If direct application to the needle roller is difficult, apply thinly to the sliding part of the post or the bush. The grease application during stroke makes good lubrication. Be careful not to apply excessively because the excessive amount of application may cause heat generation and sliding resistance increase for both cases.

③Lubrication frequency

We recommend lubrication per 100,000 shots. (It depends on the operation condition or environment.)

[Check points of Million guide]

1. Damage on the retainer

※ The retainer could be damaged when the mold die is installed/ uninstalled for regrinding or maintenance etc. Install the Million guide in the mold die after confirming the retainer is not damaged.

2. Needle roller(s) drop

※ The lowered retaining force could make the needle rollers drop during operation caused by the crack on the retainer when you drop or damage the retainer. Confirm the needle rollers are included in the retainer when you install the Million guide in the mold die.

3. Surface of the post, bush and needle roller(s)

※ Check the surface of the post, the bush and the needle roller(s) and if there is any harmful damage on them at the timing of mold die regrinding and maintenance.

※ The sliding surface of the guide post roller might become whitish or brownish depending on the operating condition. Such things are no problem for use.

[Cleaning of Million guide]

1. Cleaning of the post surface and the bush inner surface

※ Clean the guide post surface and the bush inner surface with cleaning solution (our recommendation : α cleaner ALP-CL made by Sumico Lubricant Co. Ltd.) and wipe them with nonwoven fabric etc.

Then lubricate our recommended lube on the guide post surface and bush inner surface.

2. Cleaning of the retainer

※ Clean the retainer with ultrasonic cleaning equipment (pure water as cleaning fluid).

Dry the retainer completely with air blow after cleaning. If the ultrasonic cleaning equipment is not available, remove dust and inclusion from the retainer with pure water and air blow.

Then lubricate our recommended lube on the whole retainer.

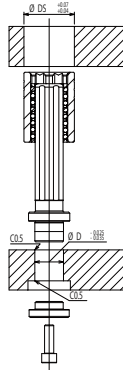
※ Do not use organic solvent for cleaning the retainer.

Million guide installation

① Drilling a post and bush installation hole

- Installation hole must be drilled at the punch plate in the tolerance of $\phi DS+0.04 \sim +0.07$.
- Installation hole must be drilled at the die plate in the tolerance of $\phi D-0.025 \sim -0.035$.

Notes) Remove the plate warp (grind both top & bottom surface), then bore each installation hole. Completely remove the burrs at the mouth of the installation hole with oil stone etc.



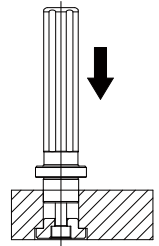
② Guide post installation

After cleaning the installation hole and the press-fit part of the post, draw the post in with a bolt, then press to fix it to the hole.

Measure the perpendicularity of the installed post. (Standard: Less than 0.01mm per 100mm)

For your reference) 90 degree direction change of one among the multiple guide posts prevents the mismatch of the punch/die set assembly.

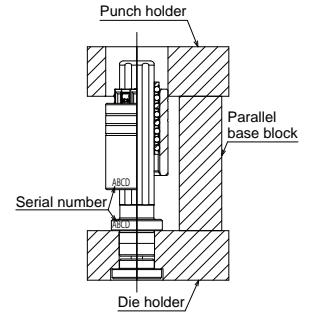
Notes) Do not hit the post with a hammer etc. at the installation.



③ Preparation for bush installation

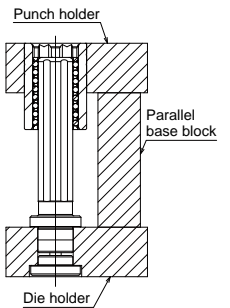
Combine the post and the bush. Make sure the serial number and its position are correspondent between the post and the bush.

Place the parallel base block on the die holder, put the punch holder on it, then slide the bush up and down and check there is no interference with the punch holder.



④ Bush installation

After cleaning the bush outer diameter and the installation hole inner diameter with some solvent (alcohol etc.), apply anaerobic adhesive (Loctite638 recommended) to the adhesive flute portion of the bush, insert the bush into the installation hole to the regulated position and dry adhesive (3 to 6 hours under normal temperature).



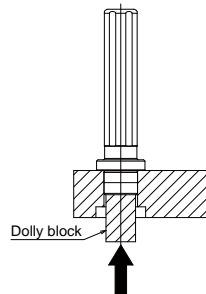
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Removal of Million guide

① Post removal

- Remove the punch plate, the retainer and spring etc. from the die set.
- Loosen the screw and remove the end cap (washer) from the die set.
- Place the dolly block (copper plate etc.) on the post, hit the dolly block with a hammer then remove the post from the die set. Be careful not to damage the installation hole of die plate and the post tap.

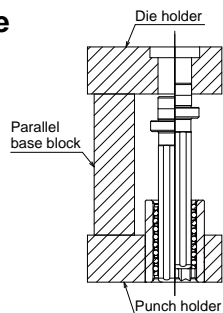


Re-installation of Million guide

① Preparation for re-installation of the post

- Assemble the spring and the retainer onto the post.
- Place the punch holder at the bottom, assemble the post into the bush glued in the punch holder.
- Put the parallel base block on the punch holder, then place the die holder on the parallel base block.
- Adjust the die holder position by sliding the guide post up and down, so that the post does not interfere with the installation hole of the die holder.

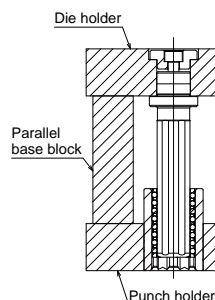
Notes) Make sure the serial number and its position are correspondent between the post and the bush.



② Re-installation of the post

- After cleaning the installation hole inner diameter of the die holder and the press-fit part of the post, draw the post in with an end cap and a bolt from the die holder side, then press to fix it to the hole.

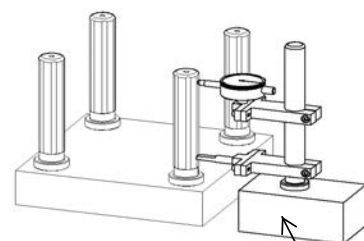
Notes) Do not hit the post with a hammer etc at the installation.



Accuracy standard for Million guide assembly

Inspection matters	Measuring method	Tolerance			
		100 and less	200 and less	300 and less	600 and less
Parallelism of the punching holder upper plate and the die holder lower plate	Longer side length of nominal size	0.004	0.008	0.01	0.015
	Accuracy	0.004	0.008	0.01	0.015
Perpendicularity of the die holder lower plate and the guide post		0.01/100 or less			
Parallelism of after assembling	Longer side length of nominal size	0.006	0.012	0.02	0.025
	Accuracy	0.006	0.012	0.02	0.025

Example of measuring the post assembly perpendicularity of Million guide



※ Measure the perpendicularity on the flat place such as the stone plate.

Perpendicularity measuring device for the post of Million guide, made by ISEL Co., Ltd.

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