

10 MAINTENANCE

10.1 GENERAL INSTRUCTIONS

The FLEXYS-10 requires little maintenance, but the following instructions are important:

- All the maintenance work shall be performed after having switched off the machine, with the emergency stop button pressed, and having made sure that the nozzle head is in the up position.
- Before switching on the machine again and starting an automatic placement cycle, make sure that there are no tools on the framework or slides.
- Carefully wipe off any excess lubricant.
- Special care must be taken with the camera (optical, mirror) to preserve the characteristics of the machine. Clean them with alcohol but do not use solvents.

The Appendix 8 "PREVENTIVE MAINTENANCE SCHEDULE" summarizes the scheduling of the maintenance operations

10.2 DAILY MAINTENANCE

10.2.1 Nozzle magazine

- Clean the nozzles tips with clean water.
- Check that there is no glue on the nozzles or on the magazine.
- Dry with clean compressed air.
- Check that the magazine slide cover operates smoothly.
- Empty the rejected component box.

10.2.2 Tape feeders

- Check that there are no components in the drive mechanism.
- Empty the container used to collect the tapes.

10.2.3 Conveyor

- Clean with a vacuum cleaner.

NOTICE : Do not use compressed air

10.2.4 Tape feeder holder

- Clean with a vacuum cleaner.

NOTICE : Do not use compressed air

10.3 WEEKLY MAINTENANCE

- Spray the transparent parts of the ALTUGLAS covers with spray anti-static product to avoid any problems due to static electricity.
- Drain, if necessary, the air filters located at the input of the machine.
- Theta movements : check according to the table in § 10.8.
- Check vacuum pressure at the tip of the nozzle : - 0.7 bars minimum.

10.4 MONTHLY MAINTENANCE

10.4.1 Turret assembly

- Clean the velvet background with a soft brush.
- Nozzle holder axis: grease as described in the lubrication table § 10.8.
- Gear: Lubricate as described in the lubrication table in § 10.8.
- Change the filters A061445 in the bottom of the nozzle holders every month (for weeks of 5 days x 16 hours). But, it can be done more or less often, it depends of the working time and the atmosphere around the machine. The filters can be removed and replaced with a special tool, see Appendix 5. They can be cleaned several times in an ultra-sonic tank : 1 hour of cleaning in hot water with **2% of special ultra-sonic product**.

10.4.2 X - Y & Z movements

- Lubricate as described in the lubrication table in § 10.8.

10.4.3 Conveyors

- Lubricate as described in the lubrication table in § 10.8.

10.4.4 Control cabinet

- Clean the filters. These are slid from under the supply plate at the front of the machine. Remove the housing in order to reach it.

10.4.5 Vacuum circuit

- Clean the 2 input filtering cartridges of the machine.
- All the pressure cylinders on the machine are designed to be operated with dry compressed air. Never fill the reservoirs of the pressure regulators with oil, this will accelerate the fouling up of the filters and will interfere with the vacuum pump operation.

10.5 QUARTERLY MAINTENANCE

10.5.1 Vacuum circuit

- Change the 2 input filtering cartridges of the machine.

10.5.2 Turret

- Replace the filter A8509 on the turret (it is fitted on the feeding tube for the lowest nozzle holder).

Note : Replace the electrovalve A7275 on the turret every 2 years.

10.6 HALF-YEARLY MAINTENANCE

- Indexing table : grease as described in the table in § 10.8.

10.7 YEARLY MAINTENANCE

- Cleaning and greasing of the theta wheel : see instructions given in the table in § 10.8.

10.8 RECOMMENDED LUBRICANT FOR THE FLEXYS-10

We would point out the importance of the correct lubrication of our machines. The use of the most suitable and correctly chosen lubricants guarantees best results and avoid breakdowns with their consequences.

Lubricants are not auxiliaries but form an integral part of the machine. We, therefore, ask you to use these lubricants. ISOFLEX TOPAS NB52 grease is a KLUBER product (see website www.klueber.com).

The below-mentioned lubrication intervals in the "**Lubrication table**" are based on 16 hours daily operation.

LUBRICATION TABLE FOR FLEXYS-10

LUBRICATION POINTS	RECOMMENDED LUBRICANT	APPLICATION METHOD	LUBRICATION INTERVALS
Turret head : 8 Nozzle-holder axis	ISOFLEX TOPAS NB52	- Remove the dirty grease with a plastic spatula and replace it with clean grease stuffed into the turret centre. - Move the nozzle holder axis manually.	Every month
Turret gear : - 2 gears	ISOFLEX TOPAS NB52	- Wipe away the old grease with a tissue. - Apply a fine film of grease with a brush (only used for this purpose).	Every month
Z movement : - 1 runners.	ISOFLEX TOPAS NB52	- Wipe away old grease with a tissue. - Grease the shaft using the grease pump and introduce little grease through the grease nipple (1 on the Z axis runner).	Every month
Z glue movement : - 1 runners.	ISOFLEX TOPAS NB52	- Remove the Z block and the runner. - Remove the remains of old grease. Grease while the ball are moving.	Grease for life in factory. To be checked during major maintenances
X movement : - 1 ball screw - 4 runners	ISOFLEX TOPAS NB52	- Wipe away old grease with a tissue. - Inject a small amount of grease using the supplied grease pump, through the 5 grease nipples. - 4 grease nipples are accessible from the front (runners). - 1 grease nipple is accessible from the back of the head.	Every month
Y movement : - 1 ball screw nut - 2 runners on the main rail. - 2 runners on the second rail.	ISOFLEX TOPAS NB52	- Wipe away old grease with a tissue. - Inject a small amount of grease using the supplied grease pump, through the 5 grease nipples. - 3 grease nipple are accessible from the back of the machine (1 main ball screw & 2 main runners). - 2 grease nipples are accessible from the front (2 secondary runners).	Every month
4 vertical ball screws for board indexing	ISOFLEX TOPAS NB52	- Clean with a tissue. - Use the supplied grease pump.	Every 6 month
Theta Movement	X	- Check manually that there is no play and no hard points.	Every week
	ISOFLEX TOPAS NB52	- Clean the teeth of the theta wheel with a tissue and a cleaner product. - Apply with a brush (only used for this purpose), a fine film of grease on the teeth of the theta wheel.	Every 12 months

Continuation of the "**Lubrication**" table

LUBRICATION POINTS	RECOMMENDED LUBRICANT	APPLICATION METHOD	LUBRICATION INTERVALS
All unprotected ball bearings	ISOFLEX TOPAS NB52	- Grease using syringe with its adapter.	Grease for life in factory. To be checked during major maintenances
Tape feeders (worm & wheel)	ISOFLEX TOPAS NB52	- Check the wear of the worm & wheel. - Apply a small quantity of grease.	Every 6 month

