

Drilling Machine

Description and Data



DESIGN and MANUFATURED BY: SIDIA

Tools and Machines

Engineering - Developing - Manufacturing

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MANUFACTURED IN: 05-2013

1 Customer request and needs

Needs: realize holes in a rod with countersink

N° of holes 2 per rod

Rods per Year: 60.000 pieces

Cycle time request: 90 sec*

Lenghts of rods: 2 sizes: 655 mm and 514 mm

* Including flashing in manual operation



2 Machine Achivements

Loading and positioning: manual with poka-yoke system on the support

N° of holes: 2 simultaneously

Cycle time: 20 sec*

Countersink: included (by special drill bits)

Length check on-line: by LVDT (± 0,25 mm) before drill

Lubrication system: by venturi, automatic and synchronized

Cleaning: by air blow, automatic and synchronized

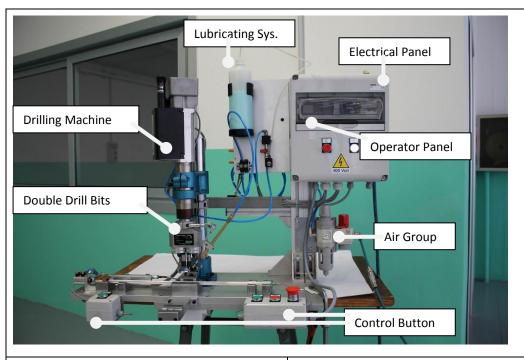
Inter-axes check: by gig to check drilling tuning

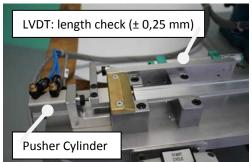
Tuning and setting: quick change from 655 mm and 514 (less then 2

min.)

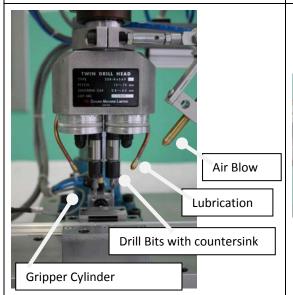
 $^{{}^{}st}$ including loading and unloading and flashing in manual operation

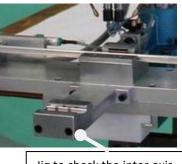
3 Description





- Double green buttons to operating safely
- Alarms and diagnostics message
- Plug and work (air and electrical connection)
- Easy placement





Jig to check the inter-axis

Note: in order to see better the machine, cover and protection have been removed.

4 Cycle

- 1. Loading by operator
- 2. Start (by double green button)
- 3. Pusher align the rod on the left
- 4. Sensor detect the piece in the correct position
- 5. LVDT measure the length (and give GOOD or NOT GOOD)
- 6. Gripper lock the rod
- 7. Drilling start vertical stroke (fast)
- 8. Lubrication system is activated by a timer
- 9. An hydraulic dumper reduce the speed in the last part of the stroke (machining)
- 10. Final part of the stroke realize the countersink by means of special drill bit
- 11. Meanwhile the drilling cylinder come back up, the air blow clean the resisual material
- 12. Gripper open
- 13. Pusher release the rod
- 14. Unloading by operator

5 Engineering Ideas

With more then 30 years of experience, SIDIA is able to share with Customers a wide range of solution for different problems.

Every Jig, tool or machine has been developed with the target to satisfied completely the Customer's need.

With our fully availability is also easy to focus solutions that have a complete payback in a really short time.

Without Machine	With Machine
90 sec	20 sec
220 day (1 year men)	46 day
30.000 euro/year (e.g.)	8.500 euro/year (compare to left colum)

