MORI-SAY 632AC

TECHNICAL DATA

STANDARD EQUIPMENT
- Spindle drum locking by a triad of rims with spur gearing
- SIMODRIVE SIEMENS variable speed motors
- PLC – SIEMENS SIMATIC programmable logic controller, S 7.300 model
- 6 cross slides and 6 frontal slides
- 4 independent compound slides in the 1st, 2nd, 4th and 5th stations
- Feeding, clamping and bar stop in the 6th station
- 4 safety clutches preventing from the slides overloading
- Standard bar stock guide

MACHINE VERSIONS
- S version with the possibility of the general stop of spindles (632SAC and 642AC models)

OPTIONAL EQUIPMENT
- Independent drive of the central block
- Bar stock feeding attachment in the 1st station
- Device for the general stop of spindles – 632SAC and 642AC versions
- Hydraulic oriented stop of spindles – 632SAC and 642AC versions
- Bar stock feeding attachment in the 1st station
- Pick-up spindle with hydraulically controlled collet clamping
- Brake of pick-up spindle
- NC drive of the pick-up spindle
- Mechanically controlled tool slide for the cut-off side machining in the 6th and 3rd stations
- NC tool slide for the cut-off side machining in the 6th station
- Tapping and thread chasing attachments
- High-speed drilling attachment
- Reaming attachment
- Attachment for a face milling at rotation and at spindle in standstill
- Push-broaching attachment
- NC drives of rotary tools
- Necking-down attachment
- Drilling heads on frontal slides – Two-spindle head, Three-spindle head, Four-spindle head
- Extra-axial drilling, fixed
- Extra-axial drilling, synchronous
- Cross drilling
- Drilling, milling and threading units
- Radial thread rolling
- Workpiece marking
- Thread milling and polygon machining at rotation
- Thread chasing
- NC compound slides for the 1st, 2nd, 4th and 5th stations
- Preparation for the automatic bar magazine
- Preparation for the oil mist exhaustion
- Selection of the equipment for the swarf carrying out and coolant in an independent sedimentation tank
- High-pressure coolant and tool wash-out
- Setting-up for a part machining and the machine acceptance in the TAJMAC–ZPS plant

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632AC 632SAC 642AC 642SAC

| Number of spindles | 6 |
| Inner dia of clamping tube (mm) | 43, 43, 53, 53 |
| Bar stock dimension |
| Round cross section (mm) | 32, 32, 42, 42 |
| Hexagonal cross section (mm) | 27, 27, 36, 36 |
| Square cross section (mm) | 22, 22, 29, 29 |
| Pitch diameter of spindles (mm) | 276 |
| Max. length of bar feeding (mm) | 125 |
| Cross slides – number | 6 |
| Max. total strokes (mm) | 60 |
| Range of working strokes (mm) | 0 – 55 |
| Compound slides – number | 4 |
| Max. total longitudinal strokes (mm) | 70 |
| Range of working longitudinal strokes (mm) | 0 – 64 |
| Working cycle |
| Range of working times (sec) | 1.4 - 90 |
| Idle time (sec) | 1-1,3 |
| Spindle stopping | no, yes, no, yes |
| Main motor |
| Nominal power output (kW) | 22 |
| Speed range of spindles (rpm) | 250-4 250 |
| Speed range STOP spindle (rpm) | 250-3 350 |
| Feed motor |
| Nominal power output (kW) | 9 |
| Nominal torque (Nm) | 38 |
| PLC | SIEMENS SIMATIC S 7-300 |
| Drives | SIEMENS |
| Machine dimensions |
| Total length with bar stock guide (mm) | 6 884 |
| Total length w/o bar stock guide (mm) | 4 520 |
| Machine width (mm) | 1 920 |
| Machine height (mm) | 2 570 |
| Machine weight without bar stock guide (kg) | 11 620, 11 880, 11 625, 11 885 |
| Cooling oil / coolant (litre) | 1200 |
| Hydraulic oil (litre) | 170 |
| Lubricating oil (litre) | 90 |
| Machine electrical consumption |
| Operational input of electrical equipment (kW/kVA) | 35/41 |
| Connecting cable cross section (mm²) | 4/35 |
| Maximum current (A) | 160 |
| Voltage (V/Hz) | 400/50 or 220/60 |

Description, illustrations and numerical data may not always correspond with the machine latest version.
Six-spindle automatic lathe of the highest quality

High accuracy at mass and series production

High rigidity at machining

SIMATIC S 7 programmable logic controller

Controlled feed and spindle motors

High thermal and dynamic stability

Version for machining of bars of 32 mm and 42 mm max dia

Machine version with general stop of spindles

Machine conforms to the 89/392 EEC directive
This innovated machine is comparable with other cam machines of the same size for the bar stock machining offered on the market. The important improvements of the constructional character with the emphasis on amplification of the machine technological possibilities have been done without an interference with the conception of the MORI-SAY machines.

**CONSTRUCTION**

The conception characteristics is the high accuracy and rigidity at machining

- Spindle drum indexing mechanism with safety clutch
- Working space – couple of slides in the 6th station
- Sedimentation tank capacity of 1 200 litres makes it possible to keep the temperature of coolant at acceptable temperature levels which influences favourably the machine thermal stability and subseqently the stability of workpiece dimensions
- Replacement of the Geneva mechanism by a stepping mechanism with a double cam and carrousel enabled
  - reduction of the unproductive angle of the cam shaft rotation by 20°
  - elimination of the vibration caused by the effect of the Geneva mechanism dynamic characteristics
- Spindle drum indexing with a precision which reduces the stress of the locking mechanism
- Independent overload released clutch is installed on each of four cam shafts
- Usage of the controlled AC motor enables the stepless setting of the spindle speed from the machine control panel this replaces the step-by-step change of the spindle speed by means of the gear wheels exchange

- Bar stock feeding and clamping
- Spindle drum with locking rim
- Detail of 4 independent overload release clutches
- Spindle drum with triad of locking rims
STRONG POINTS OF TECHNICAL IMPROVEMENT

Tool slide for the machining of the cut-off side in the 6th station is controlled by an independent cam which enables the fast and complete machining of a part

Bar stock feeding can be fixed, as the option, in the 1st station. This enables the extension of the operational angle for the cut-off side machining in the 6th station up to 100°

Slide in the 3rd station can be divided into two slides controlled by independent cams to enable both the operation with double feeding and the machining of the cut-off side as well as the double machining during the machine normal cycle

Centre block can additionally be equipped with an independent movement controlled by the cam, and with the supporting stays for machining of the long or extremely precision components

Spindle drum indexing hydraulic disengagement, feeding and clamping of the bar stock are controlled from the machine control panel

Speed of spindles, feed rates and preselected stop according to the number of workpieces is chosen on the machine control panel keyboard

High congruence of parts used with the MORI-SAY 832 machine

Sufficiently dimensioned electrical cabinet for additional installation of the NC options

Simple installation of the NC drives of frontal saddles including the pick-up

New arrangement of the work space improves the swarf removal from the machine and ensures more efficient oil mist exhausting

Easy access to the transfer pump

Adapted supporting of the spindle drum

COMPATIBILITY

Majority of the standard and optional equipment is congruent with the equipment of the 6 or 8 spindle automatics of the 25, 32 and 42 mm size series which are in the MORI-SAY type series manufactured since the year 1993