

1600SL 1600SE

User Friendly and
High Efficiency
Machines



PROVALVE
Valve Guide And Seat Machine



New advanced technology
with three dimensional
friction free air cushion
positioning system

CE

industry **4.0**

1600SL 1600SE

Valve Seat and Guide Machine

New advanced technology with three dimensional friction free air cushion positioning system

Automatic start of the precise centering process and automatic stop at the end of process

Servo motor of spindle has constant torque spindle rotation on lowest r.p.m as in all r.p.m

Depth control and memory with digital counter and stop with the buzzer

Four friction free air cushions

12 inches touch color screen control panel

Machining capacity
from $\varnothing 16\text{mm}$ to $\varnothing 100\text{mm}$ (1600SL)
from $\varnothing 16\text{mm}$ a $\varnothing 80\text{mm}$ (1600SE)

The main base body made of monoblock cast - iron

CE

industry 4.0

1 CONTROL PANEL

12 inches Color Touch Screen Control Panel



- a) The friction free air cushion of Sphere and Sphere Cylinder on/lock by touch button.
- b) Movement of Work-Table and Work-head on/lock by touch button.

- c) Locking of Work-Table on/lock by touch button
- d) Rotation of Spindle on/off by touch button
- e) Vacuum test on/off by touch button
- f) The vacuum test result is obtained by digital pressure sensor which has attached on the machine and the results can be saved to the USB Flash drive.
- g) Depth control of the stroke linear encoder is to keep track of the stroke. Memory function is to warn operator when the desired depth is reached by the help of buzzer. In the settings menu it can be adjusted that when the desired depth is reached spindle shall stop at the given time in seconds.
- Depth report is to take the report how deep the stroke has reached for each job and if they are equal or not, this report also can be saved to the USB Flash drive.

Automatic Centering

Automatic centering is to start the high precise centering which is done by automatically instead of done by operator manually. When the adjustments are set on the setting page, the automatic centering function will complete whole operation according to given time intervals. When the centering is done, work table is locked by vacuum pump. This operation is called Automatic Centering. The purpose of this operation is to use the air cushions at the optimum time for high precise centering and do this operation only by single click.

2 USB & ETHERNET PORTS

- a) eServer is a PC software used to help the customers collect and transfer production information and history data directly from production site to a PC in the office via Ethernet or USB flash drive.
- b) eRemote is a PC software used to help the customers view and check the same screen shown on HMI at the production site, and control the manufacturing process via Ethernet. No matter where you are, remote controlling is not an arduous task at all
- c) Both software are compatible with Provalve.

3 HANDLE WITH MICROSWITCH

- Handle with microswitch is on the work-head for horizontal movement of the work-head

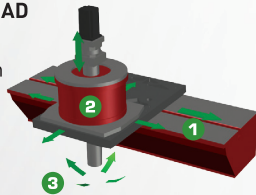
4 MOVEMENTS of FRICTION FREE AIR CUSHIONS

HORIZONTAL MOVEMENT OF WORK-HEAD

- 1) Longitudinal horizontal movement of work-head by friction free air cushion 850 mm

MOVEMENT OF SPHERE and SPHERE CYLINDER DURING SENSITIVE CENTERING

- 2) Front - back - right - left as radius movement of sphere cylinder by friction free air cushion 14 mm.
- 3) Spindle inclination in all directions by spherical bearing by friction free air cushion 10 degree



5 PROTECTION CLOTH BELLOWS



- There are protection cloth bellows on the vertical column slides to the right and to the left for protection from dust.

6 LED LIGHTNING

- LED lighting for an increased light ratio and a better energy saving.

7 CUTTING INSERT SHARPENER

- Diamond wheel cutting bit sharpener for fast easy sharpening of single angle and three angle tool bits mounted on machine.

8 SPINDLE

- a) Spindle rotation by A.C Servo motor with constant torque coupled planetary helical gear reducer.
- b) Infinitely variable speed from 0 to 500 r.p.m (1600 SL) / 0 to 700 r.p.m (1600 SE)
- c) It is long life and maintenance free.
- d) Spindle output constant torque 17 Nm (1600 SL) / 12 Nm (1600 SE)
- e) Spindle cover with diameter 80 mm, hardened and plated hard chrome
- f) The cone standard of spindle ISO 30.
- g) Spindle movement up-down 250 mm (1600 SL) / 200 mm (1600 SE)
- h) Spindle stroke steering wheel for rapid and fine feed mechanism

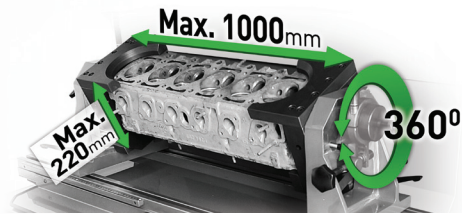
9 TOOLING STORAGE CABINET



- a) Three drawers and a top tray allows convenient storage of a wide selection of tooling
- b) The mounted arm of tooling storage cabinet swivels 130 degrees.

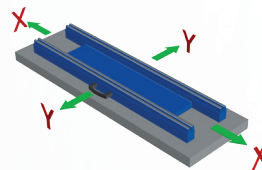
DIMENSIONS of TOOLING STORAGE CABINET
L350x D280 x H310 mm.

10 SINGLE AXIS ROLL-OVER FIXTURE



- Cylinder head clamping system that combined a side clamps for cylinder head, used for different angles with a universal mechanical fixture and rotatable adjustable 360° also for simple and combined angles.

11 WORK - TABLE



X : 760 mm. Y : 200 mm.

- a) The work-table is made of rigid cast-iron.
- b) The work-table move free all directions on the table bed rigid platform by friction free air cushion.
- c) Locking of work-table is done by providing a vacuum pressure. Through separate vacuum pump motor than vacuum pump of vacuum testing

12 TABLE BED

- a) The table bed made of rigid cast-iron.
- b) The surface of the table bed is precision grinded.

USEFUL AREA of PLATFORM 545 x 1400 mm.

13 MAIN BASE

- The main base body made of monoblock cast-iron

14 VACUUM TESTING

- a) Vacuum test is done by providing a constant vacuum pressure through separate vacuum pump motor than vacuum pump of work-table locking
- b) The machine contains vacuum pipe, vacuum filter and pads with foam

SIZE OF VACUUM PADS (8)
Ø40 mm / Ø50 mm / Ø60 mm / Ø75 mm
50x65 mm / 50x80 mm / 60x90 mm / 60x150 mm

TECHNICAL SPECIFICATIONS	1600 SL	1600 SE	1600 S
-Machining capacity of valve seat (min.-max.)	Ø16 – Ø100 mm	Ø16 – Ø80 mm	Ø16 – Ø80 mm
-Longitudinal travel of the Work-Table (free all directions)	760 mm	760 mm	760 mm
-Transverse travel of the Work-Table (free all directions)	200 mm	200 mm	200 mm
-Longitudinal travel of the Work-Head	850 mm	850 mm	850 mm
-Longitudinal total machining capacity of valve seat	1610 mm	1610 mm	1610 mm
-Spindle stroke	250 mm	200 mm	200 mm
-Spindle inclination (in all directions)	10°	10°	10°
-Sphere cylinder movement (radius)	14 mm	14 mm	14 mm
-Spindle speed	0 to 500 r.p.m	0 to 700 r.p.m	0 to 700 r.p.m
-Spindle motor - AC Servo motor with Servo driver	0.75 Kw	0.75 Kw	0.75 kW
-Spindle nominal torque (Constant torque in all speeds)	17 Nm	12 Nm	12 Nm
-Carbide tip sharpener motor	0.25 kW	0.25 kW	0.25 kW
-1 th Vacuum pump motor for vacuum testing	0.25 kW	0.25 kW	0.25 kW
-2 th Vacuum pump motor for locking of work-table	0.25 kW	0.25 kW	0.25 kW
-Maximum cylinder head length (with single roll-over fixture)	1000 mm	1000 mm	1000 mm
-Maximum cylinder head width (with single roll-over fixture)	400 mm	400 mm	400 mm
-Maximum cylinder head height (with single roll-over fixture)	220 mm	220 mm	220 mm
-Maximum cylinder head length (on the parallel blocks)	1230 mm	1230 mm	1230 mm
-Maximum cylinder head width (on the parallel blocks)	550 mm	500 mm	500 mm
-Maximum cylinder head height (on the parallel)	475 mm	425 mm	425 mm
-Electrical requirements	3 Ph-400 VAC-50/60Hz	3 Ph-400 VAC-50/60Hz	3 Ph-400 VAC-50/60Hz
-Air requirements (Pressure & Volume supply)	6 Bar-400 l/min	6 Bar-400 l/min	6 Bar-400 l/min
-Machine dimensions (wide x deep x high)	1870 mm x 1050 mm x 2225 mm	1870 mm x 1000 mm x 2175 mm	1870 mm x 1000 mm x 2175 mm
-Machine weight	1750 Kg	1650 Kg	1375 Kg.
-Vertical column – spindle axis between distance	315 mm	265 mm	265 mm
-Control panel	12" Touch color screen	12" Touch color screen	10" Touch color screen
-Useful area of table bed	545x1400 mm	545x1400 mm	545x1400 mm
-Main base	Monoblock Cast Iron	Monoblock Cast Iron	Welded Sheet Steel Construction
	USB & ETHERNET PORTS	USB & ETHERNET PORTS	USB & ETHERNET PORTS
	4.0 INDUSTRY	4.0 INDUSTRY	4.0 INDUSTRY

BASIC EQUIPMENTS

- SINGLE AXIS ROLL – OVER FIXTURE (1 set)
- CARBIDE BIT SHARPENER
- VACUUM TESTING
- PADS WITH FOAM FOR VACUUM TESTER (8)
- TOOL RACK WITH DRAWERS
- TOOL SETTING DEVICE
- BUBBLE LEVEL FOR PILOT DIA SHANK Ø9.5
- TORX T9 SCREW DRIVER / ALLEN KEY T 2.5 mm.
- PROTECTED GLASSES

• Dimensions, weights and construction are not binding and may be modified.

OPTIONS

- PARALLEL BLOCKS (h:140 mm L:340 mm.) (1 set)
- PARALLEL BLOCKS (h:110 mm L:340 mm.) (1 set)
- PARALLEL BLOCKS (h:90 mm L:340 mm.) (1 set)
- UNIVERSAL QUICK CLAMPING (1 set)
- CYLINDER HEAD ALIGNMENT ROD
- MICROMETER FOR COUNTERBORING TIPS
- PROTECTION CLOTH BELLOWS of VERTICAL COLUMN SLIDE
- HANDLE WITH MICROSWITCH AND LED MOVIE OF WORK-HEAD

industry **4i.O** CE



User Friendly and High Efficiency Machines

İvedik Organize Sanayi Bölgesi 1548. Sk. No: 21-23
06378 Yenimahalle / ANKARA – TURKEY
Tel : +90 312 395 39 65 / +90 312 395 39 66
Mobil : +90 507 923 89 03
Fax: +90 312 395 41 69

DEALER