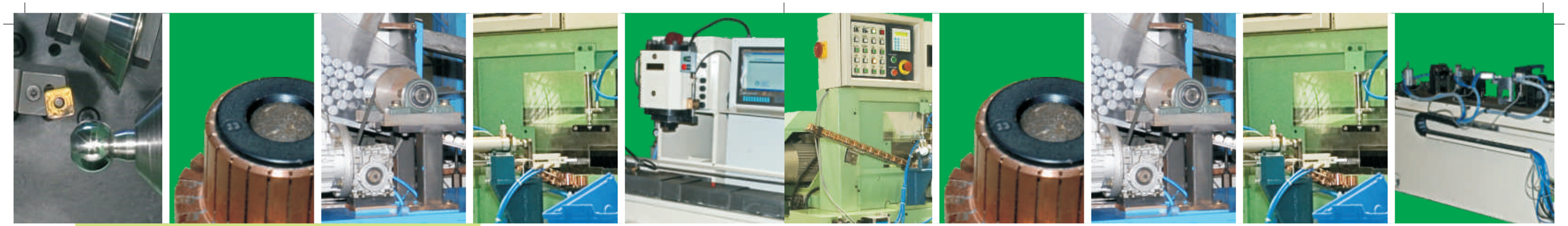

ETA Product Range Includes:

Friction Welding Machines
- Continuous drive Rotary Friction Welding
- Linear Friction Welding
- Friction Stir Welding
- Friction Surfacing

Electrical Upsetting Machines
(Metal Gathering Machines)
- Hydraulic & Electrical Servo Upsetters

Servo Controlled Screw Presses

Machines for making Engine Valves
- Tappet End Grinding
- Valve End Cut off
- Grooving
- Head diameter Turning and Facing
- Profile Turning
- Straightening
- Chemical Etching
- Friction Welding Machine (Pin to Pin and Head to Pin)
- Servo Electric Upsetters

Special Purpose Machines
- Ball Turning and Burnishing
- Commutator Slotting
- Shaft Straightening
- Double Ended CNC Turning
- Duplex Milling for Gear Pump Body
- Bore Grinding - Carbon Bushes

Testing Machines
- OBJ Boot Testing
- Parking Brake Testing
- Fatigue Test Rig for Steering Column
- Axial Elasticity Testing for SBJ, OBJ and IBJ
- Test Rigs for Steering Gears
  - -Rack Push Pull Testing
  - -Endurance Testing
  - -Impact Testing
  - -Torque to Failure Testing
  - -3-Axis Durability Test
  - -Functional Test
  - -Alternated Fatigue Test
- Accelerator Pedal Module Active Endurance Test Rig
- Control Arm and Silent Block Test Facility
- Control Arm Test Facility
- Stewart Platform
- Hub and Knuckle Test Facility
- Rear Beam Test Facility
- Hydraulic Hose Flex - Impulse Testing

Assembly Machines
- Steering Gear
- Forward Carrier (Differential Case)

Packaging Machines
- Tablet Filling
- Bottle Filling and Capping

Global customer base
24 hours on-line service support

ETA TECHNOLOGY PVT. LTD.,
484-D, Rotary Udyog Road (13th Cross),
IV Phase, Peenya Industrial Area,
Bangalore - 560 058,
Karnataka, India.

Tel: +91-80-28361487, 41171481/ 1491
Fax: +91-80-28360581

E-mail : info@etatechnology.in
URL: www.etatechnology.in

CAT-SPM-E-0114-SWE-1

Special Purpose Machines

ETA TECHNOLOGY

SOME OF OUR SPECIAL PURPOSE MACHINES

Ball Turning And Burnishing Machine

Ball diameter Turned / Burnished	: 15mm – 40mm
X-Axis Stroke (Spindle head slide)	: 160mm
C-Axis rotation (Rotary Head)	: -5 º to 150º clockwise
W-Axis (Turning tool slide) adjustment	: 12mm max.
Max. Thrust of burnishing tool	: 2500N (spring loaded)
- Surface finish attained	: 0.1µm Ra
- Sphericity achieved	: 4 µm
- Depth of cut	: upto 2mm

Can be tooled up for machining ball valves also

Commutator Slotting Machine

Slotting machine is used for slot cutting of commutator risers. The job is rotated by one turn and the angular position of every copper segment is recorded by means of a laser sensor. Now the job is precisely positioned such that the slotting cutter can cut the first slot in the middle of the segment. After every slot the job is indexed by precise angular displacement and all slots are cut. Jobs are loaded and unloaded automatically. Average cycle time (floor to floor) for a 23 segment commutator is 16 seconds.

Twin head machines are available where six slots can be cut in a second.

CNC Profile Turning and Burnishing Machine with integral spindle

Any job where the hardness is less than 40HRC and which needs grinding after turning can be economically manufactured by turning–cum–burnishing method. In this machine there is provision for three axis (Z, X & A) interpolation of tool to machine and burnish any profile.

Spindle torque	: 48Nm
Spindle speed	: 0 - 4000rpm
X-axis stroke	: 150mm
Z-Axis stroke	: 150mm
A-Axis rotation (tool)	: 360º
Max. thrust of burnishing tool	: 1000N (spring loaded)
Control system	: Siemens CNC

Engine Valves - Head Dia. Turning, Facing And Profile Turning

Attaining a face run out of under 50 micron on the face of Engine valve is a difficult proposition because, the reference for facing is the seat or top of radius. Since the valve is not a rigid component, while clamping it against the seat, the head bends to the extent of seat runout and after facing, when it is removed from the collet, the head will spring back and will show the same runout as the seat had.

This problem is overcome by providing a nose-stopper for the valve, which is hemispherical. This provides a rocking action for the stopper and thus avoids bending of valve head.

Cycle time <12 sec for a 40mm dia. Valve
Run out on face < 0.05mm
Run out on head < 0.08mm

Shaft Straightening Machine

This is an intelligent machine that automatically calculates the extent and location of bends on a shaft, and then straightens it using a built-in hydraulic press. The machine consists of a servomotor-driven slide on which a set of V-blocks supports the job. A stepper motor rotates the job through one revolution and three linear scales measure the 'runouts' at three points on the job. A computer determines at what point and to what extent the straightening load is to be applied.

Machines are available for straightening jobs of various diameters and lengths.

Tablet Filling Machine

This machine is designed for filling tablets into tubes and to insert the cap on the filled tube.

The machine is a linear filling machine with a slat conveyor which carries the tubes and pre-decided number of tablets in one straight line. Caps are also loaded on the same conveyor in the same axis. Once tube filling and capping are over the tube will be delivered to a take off chute.

No. of tablets per tube	: 10, 20 or 30
Speed	: 60/ 100 tubes per min.

Functions
Checking tubes for orientation/ damaged mouth/ rejection by blow-cut