



Marshall's

***Super-Optimized (S-O)
Turning Solutions***

JOBS: MASS PRODUCED 'CHUCKING COMPONENTS'

S-O Solution:

**TWINTURN
UBER**

with **SmartLoad**

TWINTURN UBER with **SmartLoad** has following advantages that make it the World's Best Automated System for CNC Turning:

- **RELIABLE:** Min. No. of Moving Parts
- **COMPACT:** Smallest Footprint
- **SAFE:** Mechanism inside machine. No risk to humans
- **FAST:** 8 Sec. Load/unload time
- **ECONOMICAL:** 50% the cost of Gantry or Robot based Automation.



Key features:

- 60 Degree Slant Bed • Monoblock casting with Vibration Damping Filling
- 5500 Rpm & 30m/min. Rapids • Upto 8 tools per spindle with **SmartFlow** (Patented) Coolant System

Jobs: Small Shafts

S-O Solution: *Citius* single Spindle CNC Lathe



Fastest single spindle machine with 'Smart' features;

- 6000 RPM & 36 m/min. rapids
- Monoblock structure with 'Thermastable' technology
- High Pressure Coolant (HPC) (70 Bar) for chip breaking, long insert life & 20% extra cutting speed
- Closed Loop **SmartCorrect**® Gauging Station (Patent Applied)
- Motorized Tool Pre-setter with 'Smart Change' cycle for insert change
- **SmartInsert**® tool insert optimization technology (Patent Applied)

More than 30% extra productivity in Turning of Shafts

IMPORTANT SPECIFICATIONS

| | | | |
|-----------------------------|--------------------------|-----------|--------|
| Spindle Nose | (std.) | A2-5 | |
| Max. Spindle Rpm | Rpm | 6000 | |
| Maximum Bar Capacity (Std.) | mm (inch) | 36 | (1.4) |
| Max. Turning Dia. | mm (inch) | 250 | (9.8) |
| Max. Turning Length | mm (inch) | 400 | (15.7) |
| Rapids X/Z | (m/min.) | 30/36 | |
| Spindle Power | KW (HP) | 7.5 | (10) |
| Turret & Stations | Servo (Baruffaldi Italy) | 8 Station | |



TRANSFORMING Manufacturing... *Smartly!*

Jobs : Forgings & Castings

S-O Solution: **Fortius** single Spindle CNC Lathe



Fortius Most **RIGID** single spindle machine with 'Smart' features;

- Servo turret with hydraulic clamping & 70 Bar HPC option
- Monoblock structure with 'Thermastable' technology
- Motorized Tool Pre-setter with 'Smart Change' cycle for insert change
- Special filling in bed structure for vibration damping for longer insert life under heavy cutting parameters.

50% extra productivity in **DIRECT** Turning of **Forgings & Castings**

IMPORTANT SPECIFICATIONS

| | | | |
|-----------------------------|-----------|-------|--------|
| Spindle Nose | (std.) | A2-6 | |
| Max. Spindle Rpm | Rpm | 4000 | |
| Maximum Bar Capacity (Std.) | mm (inch) | 52 | (2) |
| Max. Turning Dia. | mm (inch) | 300 | (11.8) |
| Max. Turning Length | mm (inch) | 500 | (19.6) |
| Rapids X/Z | (m/min.) | 30/30 | |
| Spindle Power | KW (HP) | 11 | (15) |



TRANSFORMING Manufacturing... *Smartly!*

Jobs : Hardened high precision Jobs

S-O Solution: *Altius* single Spindle CNC Lathe



Altius

**Super Precision
Hard Turning**
with Closed Loop
to eliminate
Grinding

Most accurate single spindle machine with IoT^Q

- Repeatability ± 0.7 microns ($\pm 1/4$ T)
- Single piece Monoblock with Thermastable technology + vibration damping
- Motorized Tool Pre-setter with 'Smart Change' cycle for insert change + Touch Probe + **SmartCorrect**[®] for zero defect precision hard turning to replace grinding
- **SmartInsert**[®] tool insert optimization technology (Patent Applied)
- **SmartChek**[®] (Patent applied) automatic machine health check & accident detection technology.

Hard Turning upto 6 times faster than Grinding

IMPORTANT SPECIFICATIONS

| | | | |
|-----------------------------|-----------|-------|--------|
| Spindle Nose | (std.) | A2-5 | |
| Max. Spindle Rpm | Rpm | 5000 | |
| Maximum Bar Capacity (Std.) | mm (inch) | 36 | (1.4) |
| Max. Turning Dia. | mm (inch) | 250 | (9.8) |
| Max. Turning Length | mm (inch) | 400 | (15.7) |
| Rapids X/Z | (m/min.) | 30/36 | |
| Spindle Power | KW (HP) | 7.5 | (10) |



TRANSFORMING Manufacturing... *Smartly!*

Jobs : Axles, Spindles & other Jobs needing heavy rate of metal removal S-O Solution: RIGIDTURN Series Turnmill Centre

Our design, manufacturing processes & selection of finest machine elements from the best manufacturers in the world ensure the following;

- **RIGIDITY of Bed & Base**
- **RIGIDITY of Head & Spindle Assembly**
- **RIGIDITY of Tailstock**
- **RIGIDITY of LM Guideways**



This Attribute of RIGIDITY is present in even our smallest models because RIGIDITY is vital for:
PRODUCTIVITY | ACCURACY | SURFACE FINISH | TOOL LIFE

SPECIFICATIONS

| | | TMH-20 | TMH-25 | TMH-30 |
|----------------------------------|----------------------------|---------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------|
| CAPACITY | | | | |
| Swing Over Carriage Cover | mm (inch) | 595 (23.4) | 735 (28.9) | 815 (32.1) |
| Maximum Turning Dia. | mm (inch) | 350 (13.8) | 400 (15.7) | 500 (19.7) |
| Maximum Turning Length | mm | 700/1000/ 1500 | 700/1000/ 1500/2000 | 700/1000/1500/ 2000/2500/3000 |
| | (inch) | (27.6/39.4/59.0) | (27.6/39.37/59/ 78.7) | (27.6/39.37/59/ 78.7/98.4/118.1) |
| MAIN SPINDLE | | | | |
| Spindle Nose | (std.) | A2-8 | A2-8 | A2-11 |
| Front Bearing Bore | mm (inch) | 110 (4.3) | 110 (4.3) | 150 (5.9) |
| Maximum Bar Capacity (Std.) | mm (inch) | 52 (2.0) | 52 (2.0) | 75 (2.9) |
| Max. Speed | Rpm | 50-3000 | 50-2800 | 50-2000 |
| SPINDLE DRIVE | | | | |
| Spindle Motor Cont. Power | KW (HP) | 11 (15) | 11 (15) | |
| TOOL TURRET | | | | |
| No. of Stations | (std.) | 12 | 12 | 12 |
| Tool Cross Section | mm (Inch) | 25x25 (1x1) | 25x25 (1x1) | 25x25 (1x1) |
| Max. Boring Bar Dia. | mm (Inch) | 32 (1.3) | 32 (1.3) | 40 (1.6) |
| POSITIONING REPEATABILITY | | | | |
| X-Axis | | + 1/4 T | + 1/4 T | + 1/4 T |
| Z-Axis | | + 1/4 T | + 1/4 T | + 1/4 T |
| CNC Controls | | | | |
| | SIEMENS 828 (SL/FANUC 0iTF | | | |
| Weight (approx.) | Kg (Lb) | 6500/7500/8000 (14300/16500/17600) | 8000/9000/ 11000/ 13000 (17600/19800/ 24200/28600) | 8000/9000/11000/ 13000/14500/15500 (17600/19800/24200/ 28600/31900/34100) |

Note: Product improvement in a continuous process at "Marshall". Design & Specifications are therefore, subject to change without prior notice.

Jobs : Mass Produced Jobs upto 10 Kg (22 lb)
S-O Solution: **Roboturn** **VERSA** Series Cell



Most Versatile automated twin spindle turning center in the world.

- Twin Spindles for completing job (OP 10 + OP 20) on the machine.
- Roof mounted 6 Axis Robot with 7th Linear Axis for covering wide area.
- Multiple functions of Robot: Tending to two spindles, cleaning station, Measurement Station & Laser marking station (for traceability)

Roboturn **TULIP** *CELL*



TRANSFORMING Manufacturing... *Smartly!*

Jobs : Heavy Duty Components from 10 Kg-100 Kg (22-220 lb)
S-O Solution: **Roboturn** xz Series Cells



ALLOY WHEEL CELL



FLY WHEEL CELL

Our clients who use **SmartCorrect™** supply parts to:



Factories & Works:



Headoffice & Works
(Ludhiana, India)



Automation Unit
(Ludhiana, India)



Tech Center
(Delhi, India)



Tech Center
(Atlanta, USA)



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