

Marshall's Smart7[®] @ IMTEX 2017



Roboturn VERSA

Most Versatile automated twin spindle turning center in the world.

Integrated with Cleaning Station

SmartCorrect[®]
Gauging Station



&

Laser Marking
for job traceability



'Smart Technologies to **TRANSFORM** your Machine Shop'



'Smart' Single Spindle Machines



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 | A2-5 |
| Max. Spindle Rpm | 5500 |
| Bar capacity | 42 |
| Max. Turning dia. | 250 |
| Max. Turning length | 400 |
| Rapids X/Z (m/min.) | 30/36 |
| Spindle power (Kw) | 7.5/11 |
| Turrets & stations | Servo (Baruffaldi Italy) 8 Station |



'Smart Technologies to **TRANSFORM** your Machine Shop'




'Smart' Single Spindle Machines



Fortius

Most RIGID single spindle machine with 'Smart' features;

- **TMA4** by  (USA) World # 1 tool monitoring & adaptive control
- 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
- 'Harcrete' 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 | A2-6 |
| Max. Spindle RPM | 4000 |
| Bar capacity | 52 |
| Max. Turning dia. | 300 |
| Max. Turning length | 500 |
| Rapids X/Z (m/min.) | 30/30 |
| Spindle power (Kw) | 11/15 |



'Smart Technologies to **TRANSFORM** your Machine Shop'



'Smart' Single Spindle Machines



Altius

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

Most accurate single spindle machine with IoT

- Least count 0.1 micron
- Repeatability ± 0.7 microns
- 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

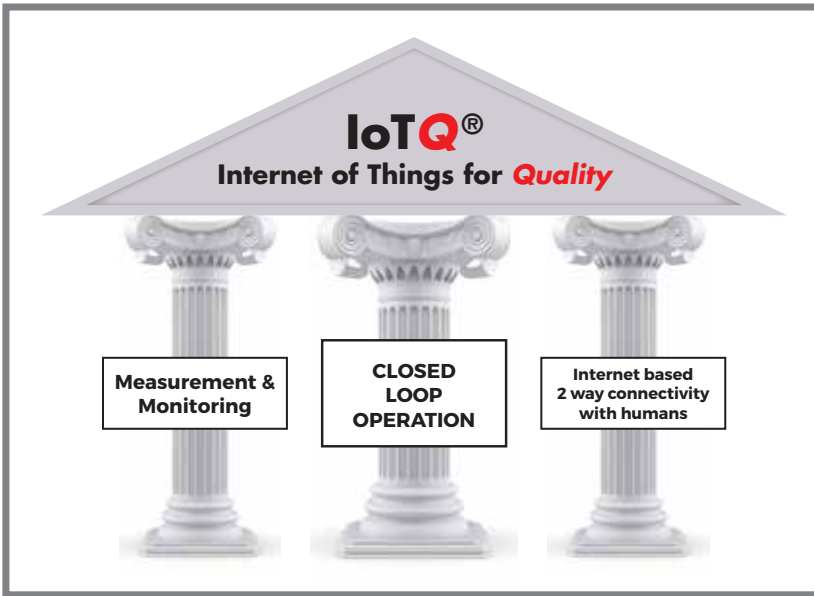
| | |
|---------------------|---------|
| Spindle Nose | A2-5 |
| Max. Spindle RPM | 5000 |
| Bar capacity | 42 |
| Max. Turning dia. | 250 |
| Max. Turning length | 400 |
| Rapids X/Z (m/min.) | 30/36 |
| Spindle power (Kw) | 5.5/7.5 |



'Smart Technologies to **TRANSFORM** your Machine Shop'



IoTQ[®] 'Internet of Things for Quality'



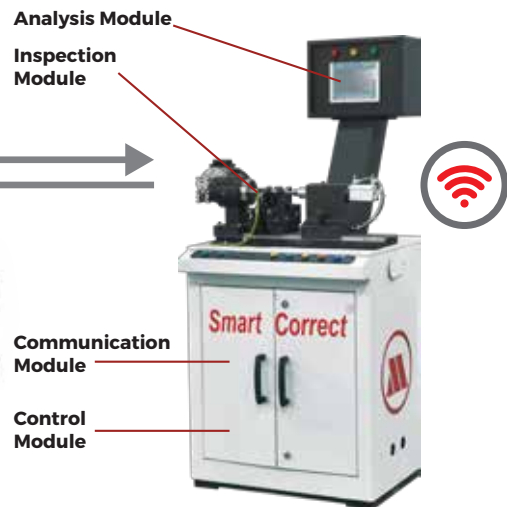
Marshall's IoTQ (Internet of Things for Quality) is the most powerful technology in the world today in the field of CNC Turning which acts like a 'PERFORMANCE MULTIPLIER' for each IoTQ enabled machine. The multiplication is because of quantum jumps in the following areas:

- **Zero defect quality** with **SmartCorrect[®]** (Patent Applied)
- **Much higher productivity** with **TMAC[®]** by **CARDN** (USA)
- **Longer machine life & OEE** with machine health monitoring & predictive maintenance with **SmartChek[®]** (Patent Applied)
- **Tool Insert life optimization** with **SmartInsert[®]** (Patent Applied)



SmartCorrect[®] The heart of IoTQ[®] Facilitates 3 Vital Functions:

#1 Auto-Correction of Tool offsets to ensure Zero Diftect Production.



#2 **SmartInsert[®]** technology for Tool insert life optimization & activation of "Sister" tools.

RESULTS:

- Upto 30% extra tool life
- Much Higher OEE

#3 **SmartChek[®]** technology for regular automatic machine health checks & accident detection.

RESULTS:

- Predictive Maintenance ensures much longer life.
- Immediate remote detection of Accidents & Corrective action initiation
- Automatic transmission of required information to concered person.



'Smart Technologies to **TRANSFORM** your Machine Shop'



Multi Spindles for Mass Production



RAPIDTURN **DS 450**

Most productive manually operated CNC lathe for small mass produced components with **Smart** features;

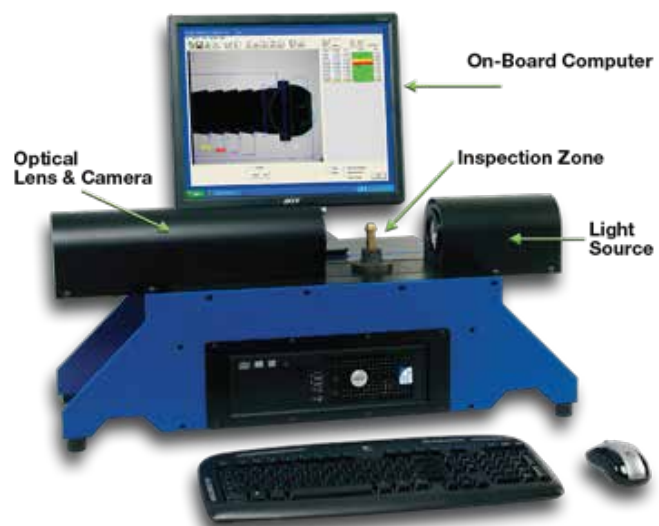
- Double Spindle Machine (Patented)
- **8 Tools per spindle (max. in the world)**
- Internal through coolant in all blocks (without pipes)
- World # 1 OASIS measurement system for inspecting upto 99 parameter in per sec.
- Upto 6 machines connected to one OASIS measurement system

OASIS

INSPECTION SYSTEM

(World's #1)

by George Products Company, Inc.



'Smart Technologies to **TRANSFORM** your Machine Shop'



Roboturn *FLEXI*CELL



Robot changes Grippers in 2 seconds to perform flexible tasks



Robot wrist attached to one set of 'Quick change' gripper for shaft handling.



Robot ready to load from Rear of machine (**First time in the World**)



Robot enters from Rear to load/unload job.



Robot loading crankshaft on **SmartCorrect**® gauging station



Robot drops Shaft Gripper set on its stand & goes to pick gear blank gripper set



Robot wrist attached to new set of 'Quick change' grippers for Gear Blank handling.



Robot loading/unloading Gear blanks with New gripper set



Robot wrist attaching to vision sensor.



Robot using vision sensor for Inspection.

'Smart Technologies to **TRANSFORM** your Machine Shop'



Multi Spindles for Mass Production



Roboturn QUATTRO 4S

World's most productive automated CNC chucker with **Smart** features;

- Four Spindle Machine
- Upto 6 tools per spindle
- Through coolant in all blocks without pipes
- **SmartCorrect**® Gauging Station (Patent Applied)
- One Robot for 4 spindles: cheapest automation in the world

Mass Produced Jobs Suitable for Marshall Multi Spindle CNC Lathes



Bearing Ring

Door Roller

Hard Turned (Bored) Gear

Bevel Pinion

Shocker Bolt

Threaded Ring (LCV)

Gear Blank

LPG Valve

Fan Cover



Head Office & Works

C 86, Phase-V, Focal Point, Ludhiana 141 010
Phone: +91 161 5012406, 5012407, 5019648

National Sales, Services & Technology Center

75-B, Sector 5, IMT Manesar, Distt. Gurgaon
Phone: +91-0124-4241813-15 | Cell: +91-96502 93942

Automated Solutions Division (Unit II)

D-116A, Ph.-V, Focal Point, Ludhiana-141010

headoffice@marshallcnc.com | cncsales@marshallcnc.com
marshallcnc.com | marshallcnc.in | marshallautomation.in



Smart CNC Automation & Gauging Solutions

Regd. Office

415, Lakehill Court, Johns Creek, GEORGIA 30022 (USA)
Phone: 404-394-6678

info@marshallautomationamerica.com
marshallautomationamerica.com