

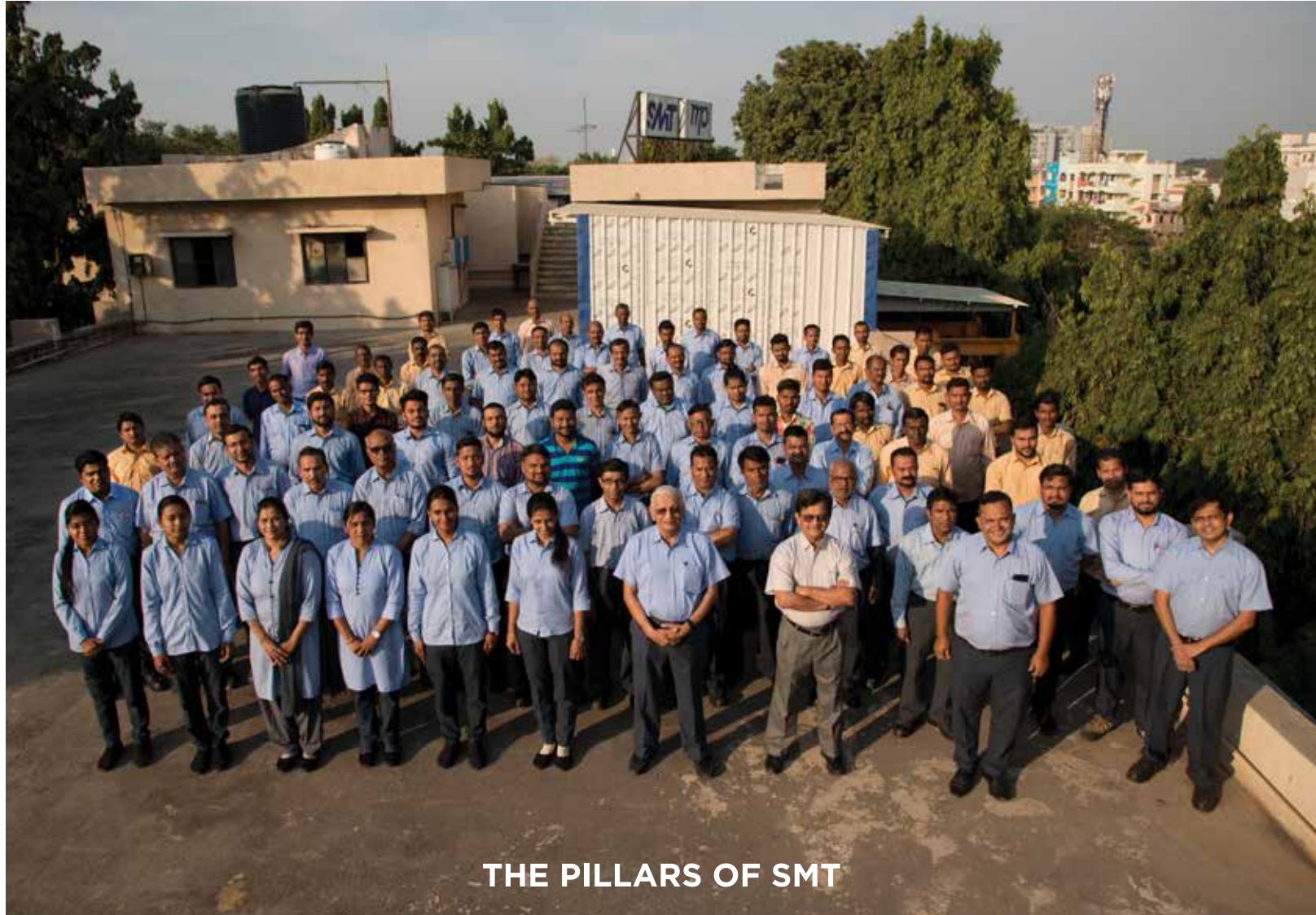
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**DECADES OF EXCELLENCE.  
DECADES OF PRECISION.**

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**SMT**  
SOLITAIRE MACHINE TOOLS LIMITED



## THE PILLARS OF SMT

### ABOUT US

#### SOLITAIRE - ETERNAL AND INDESTRUCTIBLE

Founded in 1987, Solitaire has reached the position of leadership among Centerless grinding machine companies. The foundation of the company has been the core on which it has built a durable edifice.

After completing 3 successful decades, today Solitaire offers machinery that constitutes the latest technological advancement. This technical know-how was received from Cincinnati Milacron of USA.

Solitaire aced being the first 100% export oriented unit (EOU) scheme.in machine tools field

Hundreds of grinders are working all across the globe. Since then, the plant has produced over 875 Centerless grinders.

SMT sooner sensed the need of customers for CNC controls; thus, the first CNC grinder was produced in 1994.

Technology was at a pace that no one imagined; this is when SMT realized they need higher technology. Thus, a tie-up was made with Bocca & Malandrone, Sunebo SpA of Italy for their CNC grinders in 2008.

Solitaire with its own R & D has developed grinders with 100 mm, 300 mm and 500 mm wheel width completing the range of grinding from 1 mm to 150 mm diameter components.

The company puts a premium on serving customers better.

This indestructible and eternal company aims at providing highly productive, user friendly and effective solution to Centerless grinders.



## OUR 4M PHILOSOPHY TO PRODUCTION

01

### MAN

The foundation holds the pillars strong! Our foundation has always been our team. Each employee at Solitaire has an experience of 20 years. Our engineers are solid and believe in developing new ideas for improvement of qualities and efficiency of the final product.

02

### METHOD

With 800 components required to manufacture a machine, we have developed a strong quality control department; this maintains the specifications as per Cincinnati standards. Amidst the challenge around, Solitaire has developed processes to obtain the best results of SMED.

03

### MATERIAL

We believe not only in maintaining our inventory to reduce cost but also to provide spares whenever customer requirement arises at any time to reduce their downtime.

04

### MACHINE

Our machine shop has state-of-the-art machines like:

- ◆ Waldrige Coburg CNC Slideway Grinder
- ◆ SUMITOMO CNC Slideway Grinder
- ◆ Giddings and Lewis 6 Axis Boring Machine
- ◆ Cincinnati 7 Axis Horizontal Machining Centre
- ◆ Cincinnati 5 Axis Horizontal Machining Centre
- ◆ Dorries Scharman 6 Axis Machining Centre
- ◆ BFW Vertical Machining Centre
- ◆ Batliboi Vertical Machining Centre
- ◆ LUCAS Boring Mill
- ◆ Churchill CNC Slideway Grinder

We have over 30 machines of different kinds to obtain quality-end products

# SOLITAIRE NO.1-4" (100mm) PRECISION CENTERLESS GRINDER



## THE FALCON

Just as the Falcon is known as the 'King of Birds,' so does this machine resemble being the 'King of Machines!' It's small in size, combined with high speed and accuracy. Solitaire No. 1-4" Precision Centerless Grinder is powerful, rugged, offers the simplicity of operation, reliability and cost-effectiveness. This 'King of Machines' is best suited for mass production of small components like pins, bushes, needles, crank pins, etc.

WORK RANGE: Ø 1mm upto 40mm

- INFEEED LENGTH: 100mm
- DRIVE POWER: 7.5Hp(5.5KW), 10Hp(7.5KW)
- GRINDING WHEEL: 400mm\*100mm\*255mm (Diameter\*Width\*Bore)
- INFEEED AS WELL AS THRUFEED MODE OF GRINDING
- AVAILABLE IN CONVENTIONAL AND CNC
- CNC SYSTEM- Siemens/Fanuc
- MAJOR APPLICATIONS- Pins, Bushes, Medical Equipments, Crank Pins, Motor Shafts, Carbide Tools Etc.

## Application



**SMT NO.1-4" GRINDER WITH 1 AXIS CNC  
TOOLED UP FOR GRINDING PINS**



**SMT NO.1-4" CONVENTIONAL GRINDER  
GRINDING OF ALUMINIUM COMPONENTS**



**SMT NO.1-4" GRINDER WITH 3 AXIS CNC TOOLED UP FOR GRINDING  
ENGINE VALVE STEM FEATURED WITH AUTO LOADING SYSTEM**

## SOLITAIRE NO.2-8" (200mm) PRECISION CENTERLESS GRINDER



### THE HAWK

The Hawk resembles qualities of being 'The Leader.' It represents speed and power. Solitaire No. 2-8" Precision Centerless Grinder is varied and rich as the Hawk and is known for being the leader in the game. These grinders are capable of grinding a wide range of components – such as shafts, pins, long bars, etc.

### No.2-8" (200mm)

WORK RANGE: Ø 1mm upto 100mm

- › INFEEED LENGTH: 200mm
- › DRIVE POWER: 15Hp(12KW), 20Hp(15KW), 25Hp(20KW)
- › GRINDING WHEEL: 508mm\*203mm\*305mm (Diameter\*Width\*Bore)

## SOLITAIRE NO.2-10" (250mm) PRECISION CENTERLESS GRINDER



### THE GOLDEN EAGLE

The Golden Eagle is considered sacred and represents strength, speed, wisdom and power. Solitaire No. 2-10" Precision Centerless Grinder justifies the qualities of speed, agility, combined with infinite power. Designed to be a workhorse for the longer haul, these grinders are manufactured with technology from Cincinnati Milacron, USA. These machines work with various manufacturers in the Auto Ancillary, Carbide tool, Textile machinery & Engineering industry.

### No.2-10" (250mm)

WORK RANGE: Ø 1mm upto 100mm

- › INFEEED LENGTH: 250mm
- › DRIVE POWER: 25Hp(20KW), 30Hp(24KW), 40Hp(30KW)
- › GRINDING WHEEL: 610mm\*254mm\*305mm (Diameter\*Width\*Bore)

## Application



**SOLAIRE NO.2-8" CONVENTIONAL GRINDER TOOLED UP FOR THRUFEED GRINDING OF CERAMIC COMPONENTS**



**SMT NO.2-10" CONVENTIONAL GRINDER TOOLED UP FOR THRUFEED GRINDING OF SHOCK ABSORBER SHAFT**



**SMT NO.2-10" WITH 3 AXIS CNC FOR GRINDING ENGINE LINERS**



**SMT NO.2-10" WITH 3 AXIS CNC TOOLED UP FOR GRINDING HYDRAULIC SPOOLS. ALSO EQUIPPED WITH AUTO LOADER, AUTO BALANCER**



**SMT NO.2-10" 3 AXIS CNC GRINDER FOR CRANKSHAFTS. AUTO LOADER AND LIGHT SENSITIVE CURTAINS**



**SMT NO.2-10" WITH 3 AXIS FOR GRINDING PINS OF Ø 2mm 3 AXIS CNC WITH BOWL FEEDER**

## **SOLITAIRE NO.3-12” (300mm) PRECISION CENTERLESS GRINDER**



### **THE CONDOR**

The Condor is connected with the heavenly Thunderbird. It represents inspiration and creativity and is also known to be the largest flying bird. With much similarity, the Solitaire No. 3-300” Precision Centerless Grinder is midsize with exceptional rigidity and lifespan like the Condor. It soars high performances and is the most flexible grinder for wide range of components.

WORK RANGE: Ø 6mm upto 120mm

- › INFEED LENGTH: 300mm
- › DRIVE POWER: 30Hp(37KW)
- › GRINDING WHEEL: 610mm\*508mm\*305mm (Diameter\*Width\*Bore)
- › TWIN GRIP SPINDLE
- › INFEED AS WELL AS THRUFEED MODE OF GRINDING
- › AVAILABLE WITH 5 AXIS CNC
- › CNC SYSTEM- Siemens/Fanuc
- › MAJOR APPLICATIONS- Shock absorber shafts, Tubes, Crankshaft, Engine Valves

## **SOLITAIRE NO.3-20” (500mm) PRECISION CENTERLESS GRINDER**



### **THE RAVEN**

The Raven has been called the ‘Master of Time.’ It is also known for its large size and so is the Solitaire No. 3-20” Precision Centerless Grinder considered as the largest of all the machines in the SMT family. These are machines are built for quality, maintainability and precision.

WORK RANGE: Ø 12mm upto 150mm

- › INFEED LENGTH: 500mm
- › DRIVE POWER: 50Hp(37KW), 60Hp(45KW), 75Hp (56KW)
- › GRINDING WHEEL: 610mm\*508mm\*305mm (Diameter\*Width\*Bore)
- › TWIN GRIP SPINDLE
- › INFEED AS WELL AS THRUFEED MODE OF GRINDING
- › AVAILABLE WITH 5 AXIS CNC
- › CNC SYSTEM- Siemens/Fanuc
- › MAJOR APPLICATIONS- Shock absorber, Piston rods, Bearings, Pipes, Axles, Bar steel bars



## Application



**GRINDER TOOLED UP FOR PISTON RODS EQUIPPED WITH AUTO LOADING AUTO BALANCER, LINEAR SCALE, MIST COLLECTOR**



**TRUCK REAR AXLE GRINDING WEIGHT OF AXLE- 200KGS**



# SMT-BMS PRECISION CENTERLESS GRINDER

Technical collaboration with BOCCA & MALANDRONE, Sunebo S.P.A. of ITALY



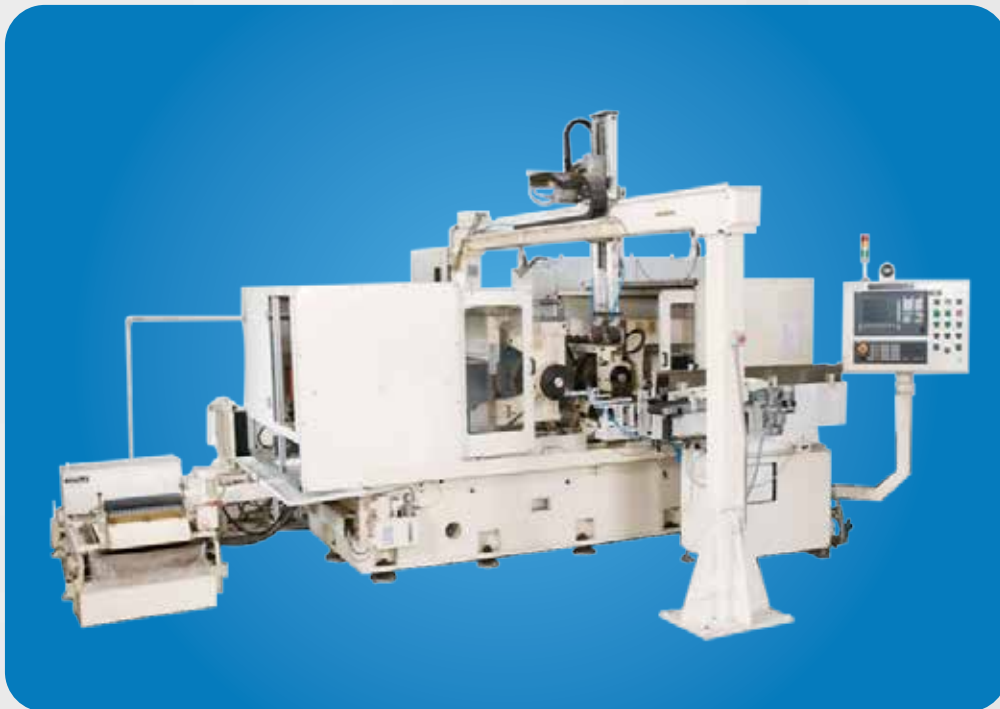
Hydrodynamic Spindle Twin Supported for Regulating Wheel



Hydrodynamic Spindle Twin Supported



Hydrostatic Slides for HIGH PRECISION



Fabricated Bed with Anti-Friction Concrete for HIGH RIGIDITY



Fixed Center to obtain best result in Automation

# SMT-BMS PRECISION CENTERLESS GRINDER

## Machine Specifications

	BMS-SMT R50CF	BMS-SMT R90CF	BMS-SMT R130CF
Work Diameter Range	1mm to 80mm	1mm to 150mm	1mm to 300mm
Grinding Wheel	610mm x 254mm x 305mm	610mm x 355mm x 305mm	610mm x 500mm x 305mm
Regulating Wheel	305mm x 254mm x 152.4mm	305mm x 350mm x 152.4mm	305mm x 600mm x 152.4mm
Grinding Wheel Motor Power	25HP	60HP	100HP
Approximate Weight	8000Kgs	13000Kgs	17000Kgs



**R50 BMS-SMT TOOLED UP FOR ROUGH AND FINISH GRINDING OF TEXTILE SPINDLE**



**R-90 BMS-SMT TOOLED UP FOR GRINDING OF UNIVERSAL JOINT CROSS**

# SOLITAIRE DOUBLE DISC GRINDER

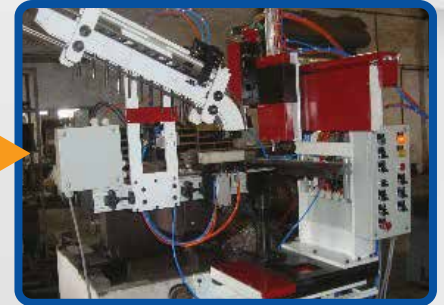
PRECISE... AGILE... SWIFT

## Machine Specifications

	Part Feeding System		
	Through Feed	Rotary Feed	Slide Feed
Workpiece Thickness (mm)	1 - 100	3 - 120	20 - 120
Max. Workpiece Size (mm)	200	100	250
Grinding Wheel Diameter (mm)	660	660	660
Grinding Wheel Speed (m/s)	35	35	35
Grinding Wheel Head Motors (Kw)	30 + 30	30 + 30	30 + 30
Axis Travel Distance	130mm (Approx.)		
Total Machine Weight (kgs)	10000	9000	10000



# COMPONENT HANDLING SYSTEM



# REMANUFACTURE AT SOLITAIRE MACHINE TOOLS LTD.

REMANUFACTURING AND RETROFITTING OF CINCINATTI MILACRON OMV-8  
CENTERLESS GRINDER (YEAR 1989)

CONVENTIONAL GRINDER CONVERTED TO 4 AXIS CNC WITH  
LINEAR GUIDEWAYS (YEAR 2012)



BEFORE REMANUFACTURING

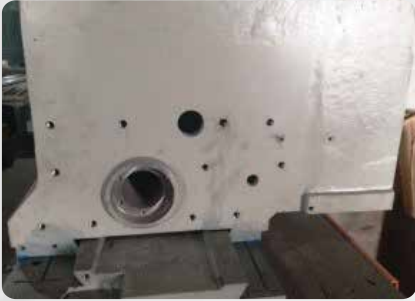


BEFORE REMANUFACTURING

## PROCESS OF REMANUFACTURING

- Step 1** - Dismantle the machine.
- Step 2** - Disassemble all sub-assemblies & other units.
- Step 3** - Clean and inspect all parts of the machine, remove paint & paint all parts of the machine with Acrylic Polyurethane paint.
- Step 4** - Regrind or re-scrape regulating wheel housing, upper and lower slides, swivel and bed casting - rescape or replace and adjust gibs.
- Step 5** - Regrind or rescape regulating wheel dresser slides - check and rebuild/replace hydraulics. Replace lead screw if necessary. Install new CNC Grinding wheel dresser slides with ball screws, etc.
- Step 6** - Recoat regulating wheel spindle, grind to original diameter and rescape and replace or rescape special alloy bronze bearings.
- Step 7** - Recoat grinding wheel spindle, grind to original diameter and replace or rework bearings as required and scrape to suit spindle.
- Step 8** - Rebuild transmission and replace worn pulleys, belts, etc.
- Step 9** - New hydraulic unit and pump. Replace hoses, fittings as necessary.
- Step 10** - Rebuild and replace regulating wheel infeed lead screw/ball screw.
- Step 11** - New lubrication system. Replace parts.
- Step 12** - New electrical panel with CNC Controls. Overhaul electric motors as required.
- Step 13** - Assemble the machine and test.

## REMANUFACTURE OF SUB ASSEMBLIES



### LOOKING AT REMANUFACTURING THE FOLLOWING?

- REGULATING WHEEL DRESSER
- GRINDING WHEEL DRESSER
- INFEEED SLIDES
- REGULATING WHEEL HOUSING
- CNC DRESSER
- REGULATING WHEEL SPINDLE
- GRINDING WHEEL SPINDLE
- THE COMPLETE GRINDER

**SMT has a solution for all!**

### WHAT MAKES US DIFFERENT?

- ◆ Our in-house artisans have the expertise in scrapping, lapping to bring the assembly to the original geometrics.
- ◆ Perfect re-grinding with the state-of-the-art facilities.
- ◆ Replacement of ball screws, electricals, bearings, motors wherever necessary.
- ◆ Dedicated team for the spindle and bearing re-work - The Heart of a Centerless Grinder.
- ◆ Painting to give an aesthetic touch.

**We strongly believe that good work done by us will cost you money, but bad work done will cost us our reputation. Hence, we do not have any shortcuts in manufacturing.**

# GLOBAL PRESENCE



**SOLITAIRE MACHINE TOOLS LIMITED**

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**Tel:** 91 265 2761776 **Email:** sales@smtgrinders.com **Website:** www.smtgrinders.com

**Plant II:** A-24/25, Krishna Industrial Estate, Nr. BIDC, Gorwa, Vadodara- 390 016, India