

SUCCESS STORY

Mechanical Revamp of Herkules Roll Grinder SBA New Roll Grinder – Bangkok Roller - Thailand

1.) Mechanical revamp Herkules Roll Grinder

Machine Details

OEM : Herkules
Year of Installation : 1987
Model : WST 300
Control System : Original OEM
Bed length : 9600 mm
Max. Roll length : 9000 mm
Max. Roll diameter : 1250 mm
Max. Roll weight: 10 to.

Description of Project *(which problems guided customer to go for revamp and what was the target) :*

Bangkok Roller has bought an old second hand roll grinder in year 2008 from Europe. The original OEM grinder control system was still running but the machine documentation was insufficient. Customer tried to install the machine in new own made foundation with all mechanical parts and control system. The grinder was not able to perform well and the profile tolerance was out of the expectation.

Condition before job :



Scope of Supply :

- New levelling shoes and anchor bolts for the grinding bed.
- Supervising for fixing and alignment the grinding bed and work piece bed.
- Supervising for the installation of mechanical components
- Re-scraping grinding bed

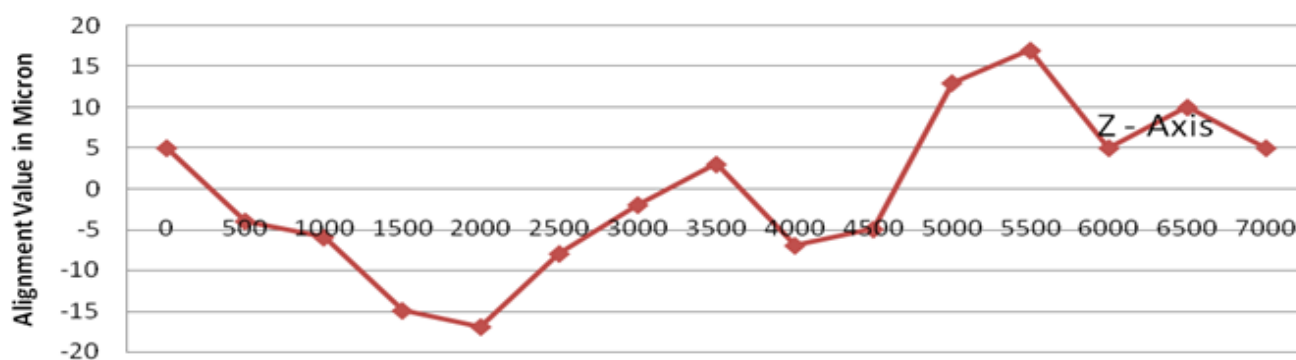
Condition after finished job :



Result of machine bed measuring report:

The result of the machine bed measuring shows that the bed alignment is now in the good condition. The maximum alignment deviation is 17 micron in plus and 17 micron in minus of direction.

Machine Bed Alignment



Start Point [mm]	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000
Value [μm]	5	-4	-6	-15	-17	-8	-2	3	-7	-5	13	17	5	10	5

Grinding report:

The expectation from Bangkok Roller for machine for grinding the rolls is (+/-) 25 micron.

PROFILE REPORT

Bangkok Roller

Job Number 9-4-777
 Operator Tum
 Customer Panjapol Bangpla
 Measured on Thu Jun 25 05:25:54 2009
 Printed on Thu Jun 25 05:27:04 2009
 Report Data 1:..
 Report Data 2:..
 Report Data 3:..
 Measured AFTER GRINDING
 Configuration . GAUGE HEAD ONE
 Meas. Length .. 5200 mm
 Tolerance Band. ± 0.0250 mm
 Scale 0.5000 mm
 Taper Correct . 0.000 mm

RollTrack (R) V9.21

Thailand
 Tel ; +662-4162288
 www.bangkokroller.com
 Roll Number ... 1A-56
 Roll Name Breast
 Face Length ... 5870 mm
 Diameter 800.00 mm
 Hardness 80 D
 Roll Data 1:..
 Roll Data 2:..
 Roll Data 3:..
 Roll Data 4:..
 Roll Data 5:..
 Roll Data 6:..
 Centering USE MEAN VALUE
 Filtering 0
 Recording Mode. AUTOMATIC

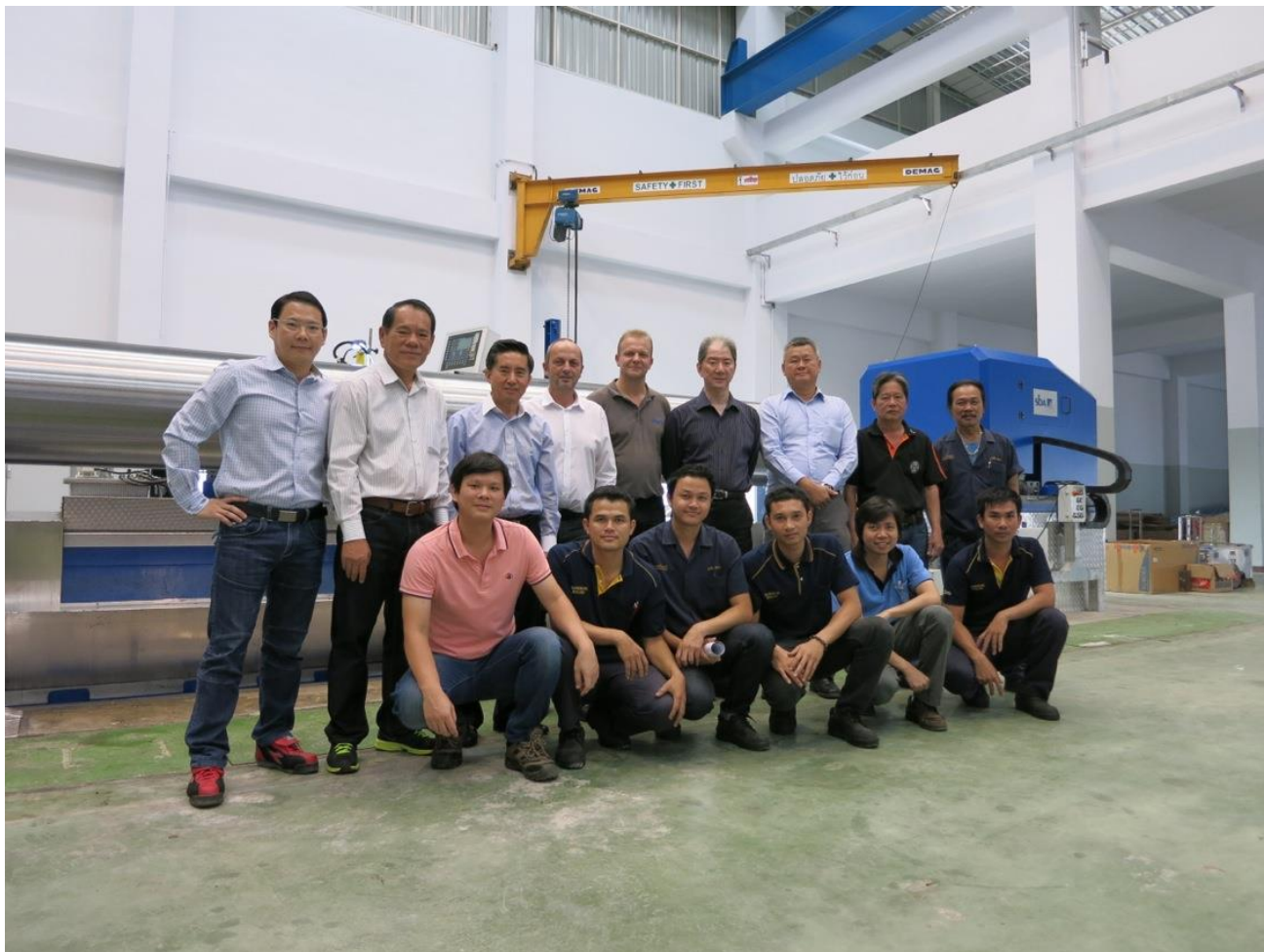
DRIVE END



Max. Deviation. 0.027 mm @ 2650 mm Max. Difference 0.052 mm
 Min. Deviation. -0.025 mm @ 280 mm Measured Taper. 0.000 mm

2.) New roll grinder

Because of this good experience the customer has decided to purchase a new roll grinding machine from SBA in year 2012. The new SBA grinding machine has been delivered and installed in year 2013 with the full satisfactory of Bangkok Roller.



TECHNICAL PERFORMANCE DATA

Basic Data

Machine bed length	13.000	mm
Maximum grinding length	10.000	mm
Maximum barrel length	9.000	mm
Maximum roll diameter	2.000	mm
Minimum roll diameter	200	mm
Maximum roll weight on bearing housing	80	to
Maximum roll weight on steady rest	50	to
Total machine weight	100	to
Space covered	16 x 6	meter

Grinding wheel

Maximum grinding wheel diameter	750	mm
Minimum grinding wheel diameter	450	mm
Bore of grinding wheel	304.8	mm
Maximum width of grinding wheel	100	mm
Grinding wheel motor	50	kW
Maximum grinding wheel speed	45	m/sec

Headstock

Headstock - speed	0 - 100	rpm
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X – Axis Grinding

Maximum travel length X-Axis	600	mm
In-feed speed	0 – 1500	mm/min
Torque	40	Nm
Resolution	0,1	µm

Control Specification

Power Rating	150 - 200	kW
Control System	SINUMERIK 840D SL on request Power Line	CNC
Drive system	SINAMICS S120	Servo

Roll Measurement System

Measurement device stationary	sba – CP design	
Measuring range max. diameter	2000	mm
Measuring range min. diameter	100	mm
Measuring accuracy:	1	µm

Machine accuracy - Surface Quality

Cylindrical and crown grinding roll		
Shape tolerance:	1µm/m	max. 5 µm
Shape deviation, conicity:	1µm/m	max. 5 µm
Maximum crown diameter	+/- 10	mm
Roundness:	depends on roll shaft/bearing	
Surface quality of soft covers:	Depends on wheel quality and grinding technology	

Machine Software

Surfaces to be ground	cylinder, cone, cosine — convex, concave, multiple compound, up to 5 part curves, VALMET, point to point interpolation, variable resolution (empirical), taper with various profile, single, double and triple, CVC curves
Grinding wheel dressing	special shapes for complex grinding shapes and covers
Bed alignment correction	few different table are available (summer/winter)
Integrated safety feature	safety integrated Siemens

Auxiliaries

Filter system	Magnetic/Paper System
Venta-Nip Groove Milling	PU and Rubber Covers
Super finishing device	LÖSER
Grinding Wheel Dressing Device	Common wheels
Roll support	Steady rest on the roll necks or in chocks, without steady rests
Measuring device	CP Design

