



## **LANDIS LT2E**

Camshaft/crankshaft grinding

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Date: 3/2/2022

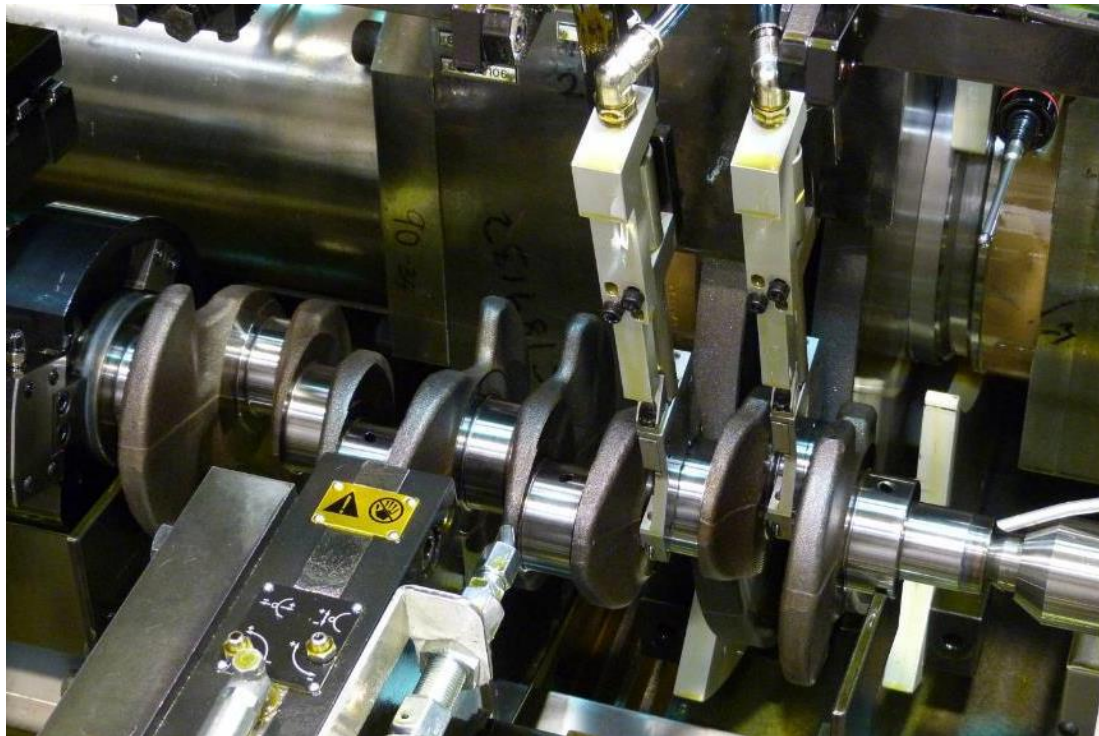
Prepared by: Caitlin Barnhart

## CNC Orbital Grinder Features

- Landis system CNC control
- CNC hydrostatic wheelhead feed
- CNC hydrostatic cross slides traverse
- Hydrostatic wheel spindles
- CBN grinding wheels
- CNC wheel dressing
- Integral wheel spindle drives
- Variable speed workdrive
- Work supported by centres
- Fixed rigid work axis
- Brushless servos on all axes
- Linear motor and absolute encoder technology on X and Z axes
- Automatic wheel balancing
- Automatic in-process gauging
- Flexible table tooling
- CNC Swivel wheelhead option



## CNC Orbital Grinder – Twin Wheelhead



Finish grinding crankpin & journal diameters  
on a 4 cylinder crankshaft

**ALBERT WEBER**  
MARKDORF (GERMANY) - 2

**ALBION**  
LEYLAND (UK) - 1

**AUDI**  
GYOR (HUNGARY) - 7  
GYOR (HUNGARY) - 8

**BAJAJ AUTO**  
PUNE (INDIA) - 1

**B.M.W.**  
STEYR (AUSTRIA) - 3  
MUNICH (GERMANY) - 6  
HAMS HALL (UK) - 11

**CHANGAN FORD MAZDA**  
NANJING (CHINA) - 4

**FIVES LANDIS CORP**  
WAYNESBORO (USA) - 1

**DAIMLER AG**  
STUTTGART (GERMANY) - 33  
STUTTGART (GERMANY) - 16 (S)  
STUTTGART (GERMANY) - 3

**D.P.C.A.**  
XIANG YANG (CHINA) - 9

**DONG FENG HONDA**  
BAODING (CHINA) - 2  
HUIZHUO (CHINA) - 3

**DONG FENG RENAULT**  
WUHAN (CHINA) - 1

**F.A.W. 2<sup>nd</sup> ENGINE**  
CHANGCHUN (CHINA) - 3  
CHANGCHUN (CHINA) - 11

**F.A.W. - V.W.**  
CHANGCHUN (CHINA) - 4  
CHANGCHUN (CHINA) - 15  
CHENGDU (CHINA) - 9  
CHENGDU (CHINA) - 1 (S)  
DALIAN (CHINA) - 2

**FEUER POWERTRAIN**  
NORDHAUSEN (GERMANY) - 3

**FFG EUROPE & AMERICAS MAG IAS GmbH**  
BEIJING (CHINA) - 4  
VIETNAM - 4

**FIAT**  
BELO HORIZONTE (BRAZIL) - 3  
AVELINO (ITALY) - 3  
TERMOLI (ITALY) - 5  
BIELSKO BIALA (POLAND) - 7  
BIELSKO BIALA (POLAND) - 3

**FORD**  
TAUBETE (BRAZIL) - 3  
COLOGNE (GERMANY) - 2  
CHENNAI (INDIA) - 2  
CHIHUAHUA (MEXICO) - 14  
CRAIOVA (ROMANIA) - 3  
ELABUGA (RUSSIA) - 2  
PORT ELIZABETH (S.AFRICA) - 2  
VALENCIA (SPAIN) - 2  
BRIDGEND (UK) - 6  
DAGENHAM (UK) - 7  
DAGENHAM (UK) - 3  
DUNTON (UK) - 1  
DEARBORN (USA) - 7

**FUDA**  
GUILIN (CHINA) - 12

**G.M. / OPEL**  
ASPERN (AUSTRIA) - 7  
BOCHUM (GERMANY) - 6  
KAISERSLUTERN (GER) - 2  
KAISERSLUTERN (GER) - 3 (S)  
TALEGAON (INDIA) - 2  
TYCHY (POLAND) - 2  
TYCHY (POLAND) - 3 (S)  
RAYONG (THAILAND) - 2  
TASHKENT (UZBEKISTAN) - 3

**GREAT WALL MOTORS**  
BAODING (CHINA) - 4  
DINGXING (CHINA) - 3  
TIANJIN (CHINA) - 3  
XUSHUI (CHINA) - 1

**GUANGXI YULING**  
YULING (CHINA) - 1

**HAIMA ZHENGZHOU**  
ZHENGZHOU (CHINA) - 2

**HAPPY FORGINGS**  
LUDHIANA (INDIA) - 6

**HYUNDAI**  
PUSAN (KOREA) - 6

**JAGUAR CARS**  
CHANGSU (CHINA) - 3  
WOLVERHAMPTON (UK) - 4  
WOLVERHAMPTON (UK) - 2 (S)

**JAGUAR LANDROVER**  
WOLVERHAMPTON (UK) - 8

**JIANGLING**  
NANCHANG (CHINA) - 2  
NANCHANG (CHINA) - 1

**JIANGSU WANLI**  
JIANGSU (CHINA) - 2

**KIA MOTORS**  
ZILNIA (SLOVAKIA) - 7  
ZILNIA (SLOVAKIA) - 1

**LANDTOURER**  
SHANGRAO (CHINA) - 2

**LOMBARDINI**  
REGGIO EMILIA (ITALY) - 1

**MAHINDRA & MAHINDRA**  
MUMBAI (INDIA) - 1

**MAHINDRA C.I.E.**  
PUNE (INDIA) - 2

**MERCEDES A.M.G.**  
BRIXWORTH (UK) - 1 (S)

**NANYA AUTO**  
NANJING (CHINA) - 1

**NETALKAR POWER TRANSMISSION**  
BELGAUM (INDIA) - 2

**P.S.A.**  
DOUVRIN (FRANCE) - 22  
DOUVRIN (FRANCE) - 4  
TREMERY (FRANCE) - 25  
TREMERY (FRANCE) - 6

**RENAULT**  
CLEON (FRANCE) - 4  
PITESTI (ROMANIA) - 2  
VALLADOLID (SPAIN) - 3

**SAAB**  
SODERTALJE (SWEDEN) - 2

**S.A.I.C.**  
SHANGHAI (CHINA) - 1

**SAME DEUTZ**  
TREVIGLIO (ITALY) - 1

**SCANIA**  
SODERTALJE (SWEDEN) - 2 (S)  
SAO BERNADO DO CAMPO - 1 (S)

**S.G.M.**  
SHENYANG (CHINA) - 3  
WUHAN (CHINA) - 8  
YANTAI (CHINA) - 1

**S.G.M.W.**  
QINGDAO (CHINA) - 4

**SHANGHAI JIJIA MACHINE CO. LTD**  
SHANGHAI (CHINA) - 3

**SHANGHAI TRACTOR**  
SHANGHAI (CHINA) - 2  
SHANGHAI (CHINA) - 1

**SRINIVAS INDUCTION HARDENING**  
BELGAUM (INDIA) - 1  
BELGAUM (INDIA) - 4

**SUZUKI POWERTRAIN INDIA LTD.**  
MANESAR (INDIA) - 3

**S.V.W.**  
SHANGHAI (CHINA) - 3  
SHANGHAI (CHINA) - 3

**TATA MOTORS**  
PUNE (INDIA) - 2  
SANAND (INDIA) - 1

**TIANRUN**  
WENDENG (CHINA) - 1

**TURK TRAKTOR**  
ANKARA (TURKEY) - 2

**V.W.**  
CHEMNITZ (GERMANY) - 6  
CHEMNITZ (GERMANY) - 3  
SALZGITTER (GERMANY) - 7  
SALZGITTER (GERMANY) - 14  
SILAO (MEXICO) - 8

**VOLVO CAR**  
SKOVDE (SWEDEN) - 4  
SKOVDE (SWEDEN) - 4  
SKOVDE (SWEDEN) - 1 (S)  
ZHANGJIAKOU (CHINA) - 5

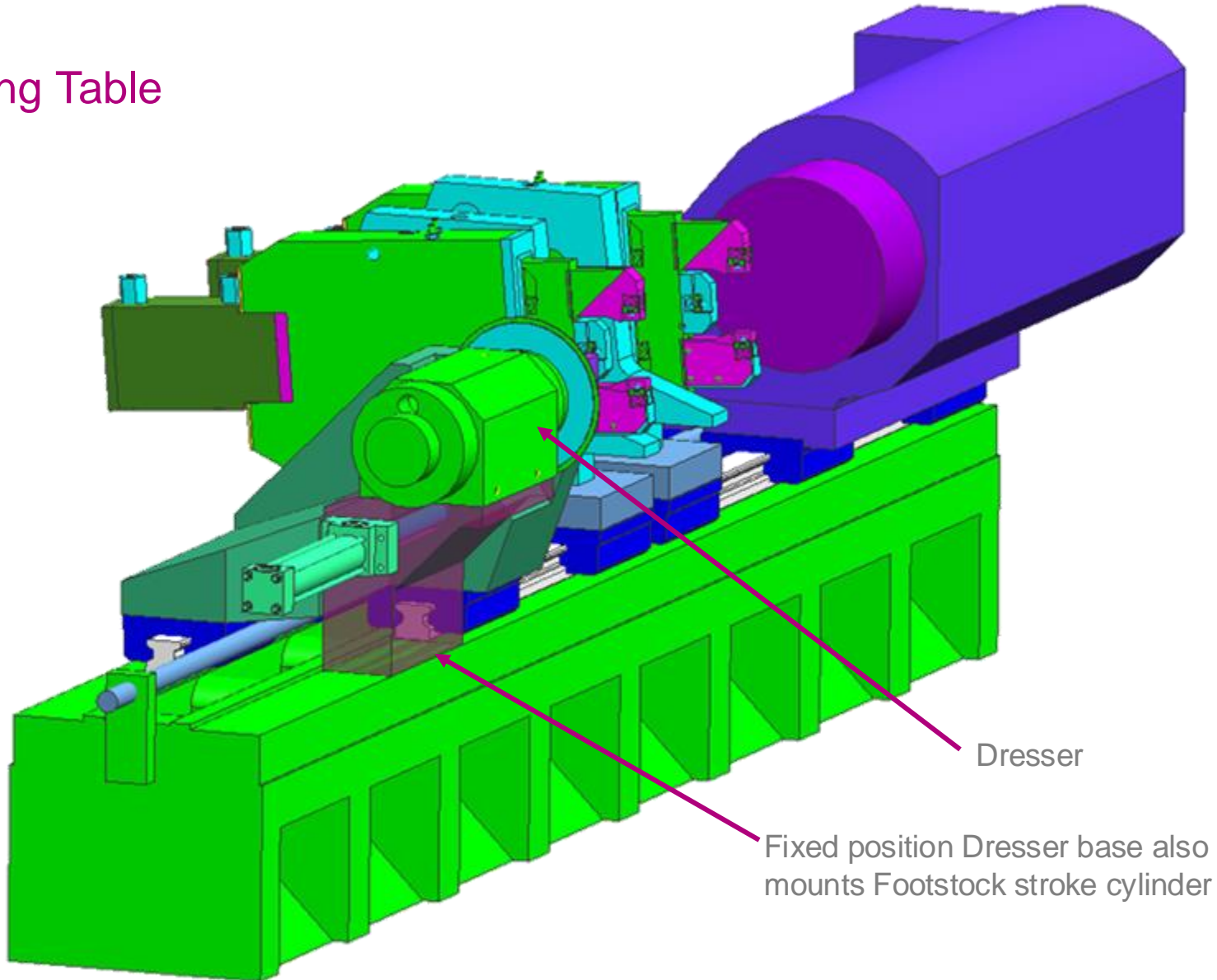
**ZHEJIANG SUN STOCK**  
SHANG YU (CHINA) - 2  
SHAOXING (CHINA) - 1

**ZHEJIANG YUCHAI**  
TIANTAI (CHINA) - 1

**TOTAL 536 MACHINES**

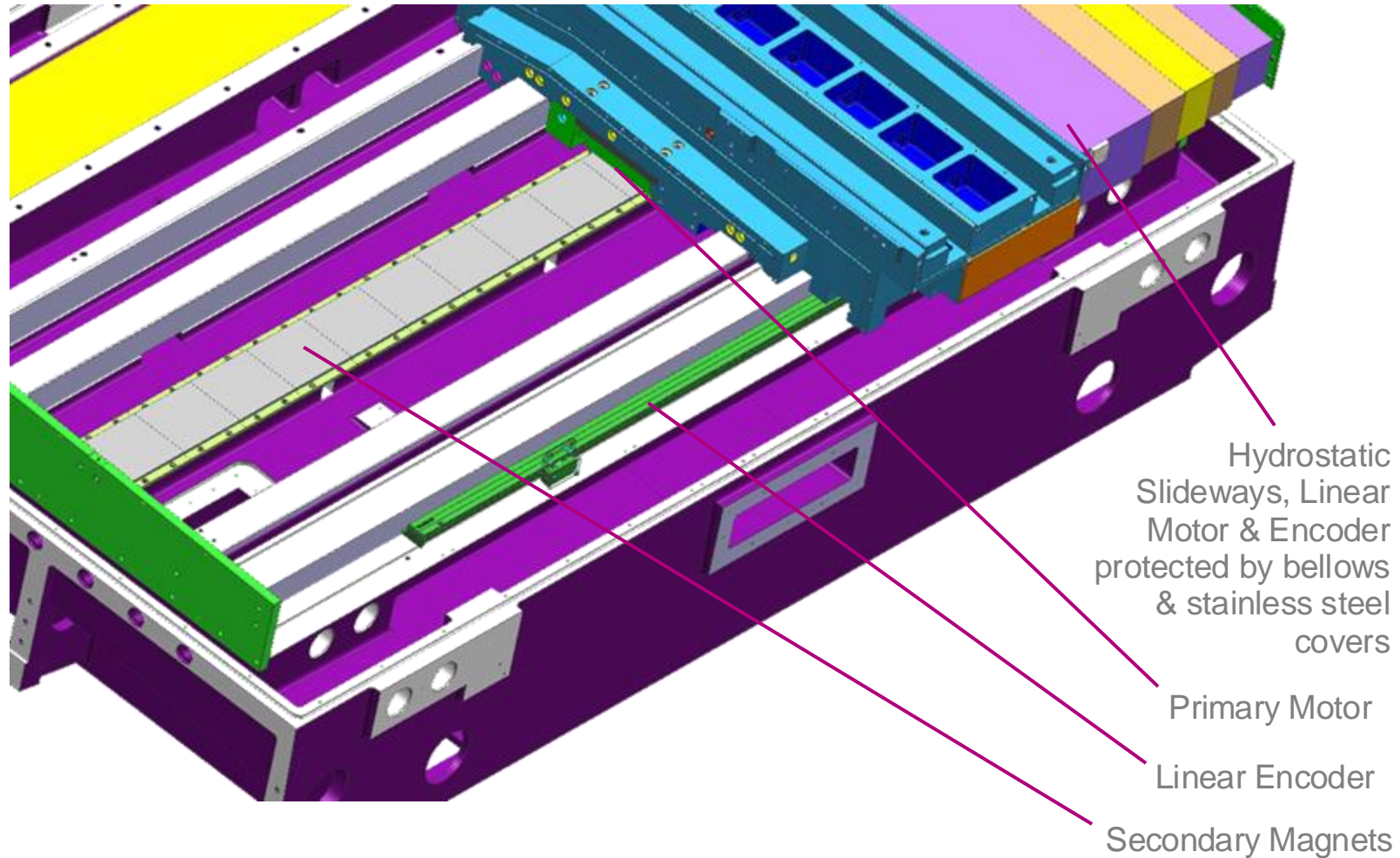
LT2 / LT2E / (S)=Swivel

## Tooling Table

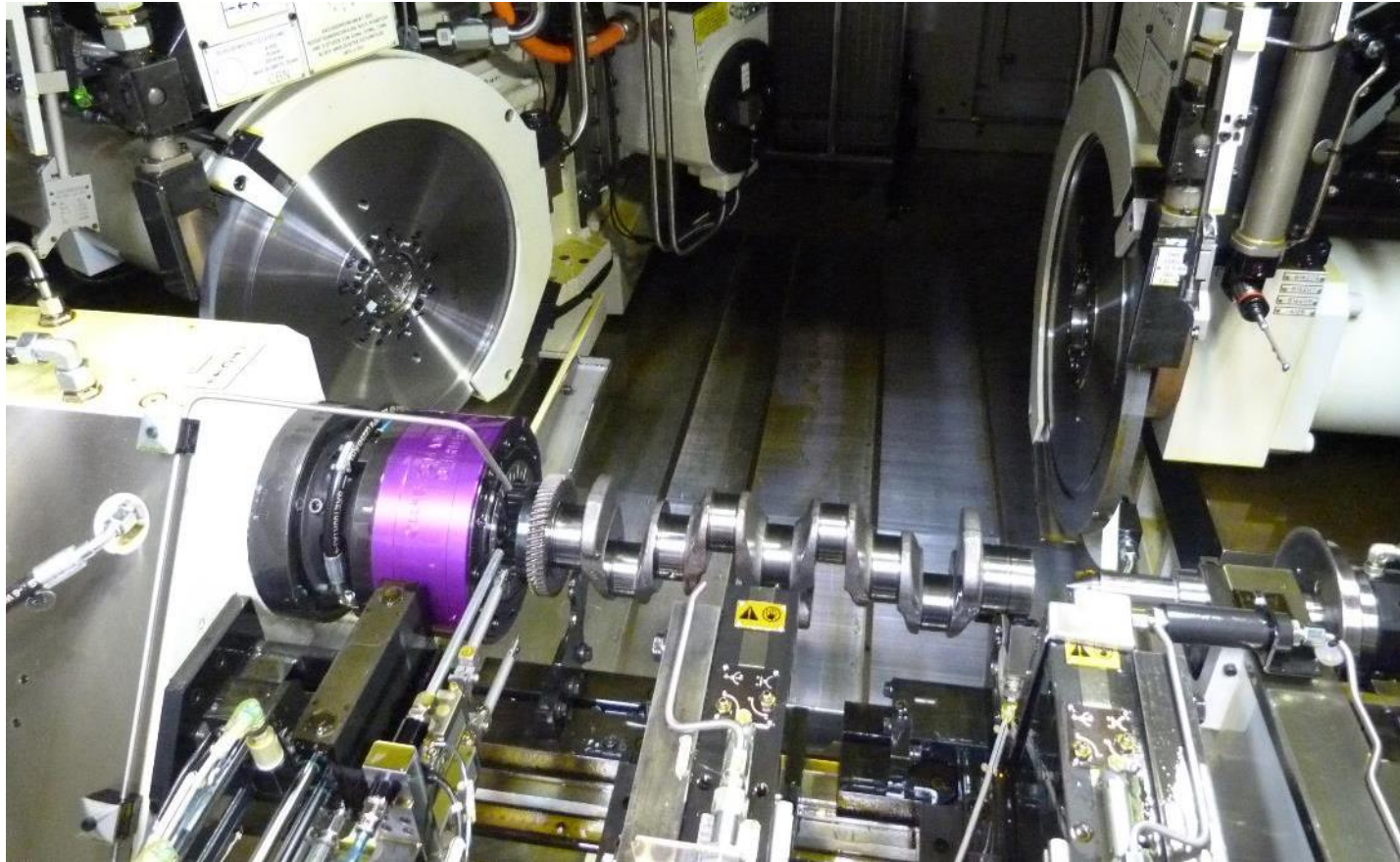




## Wheelhead Slide (Z-Axis)

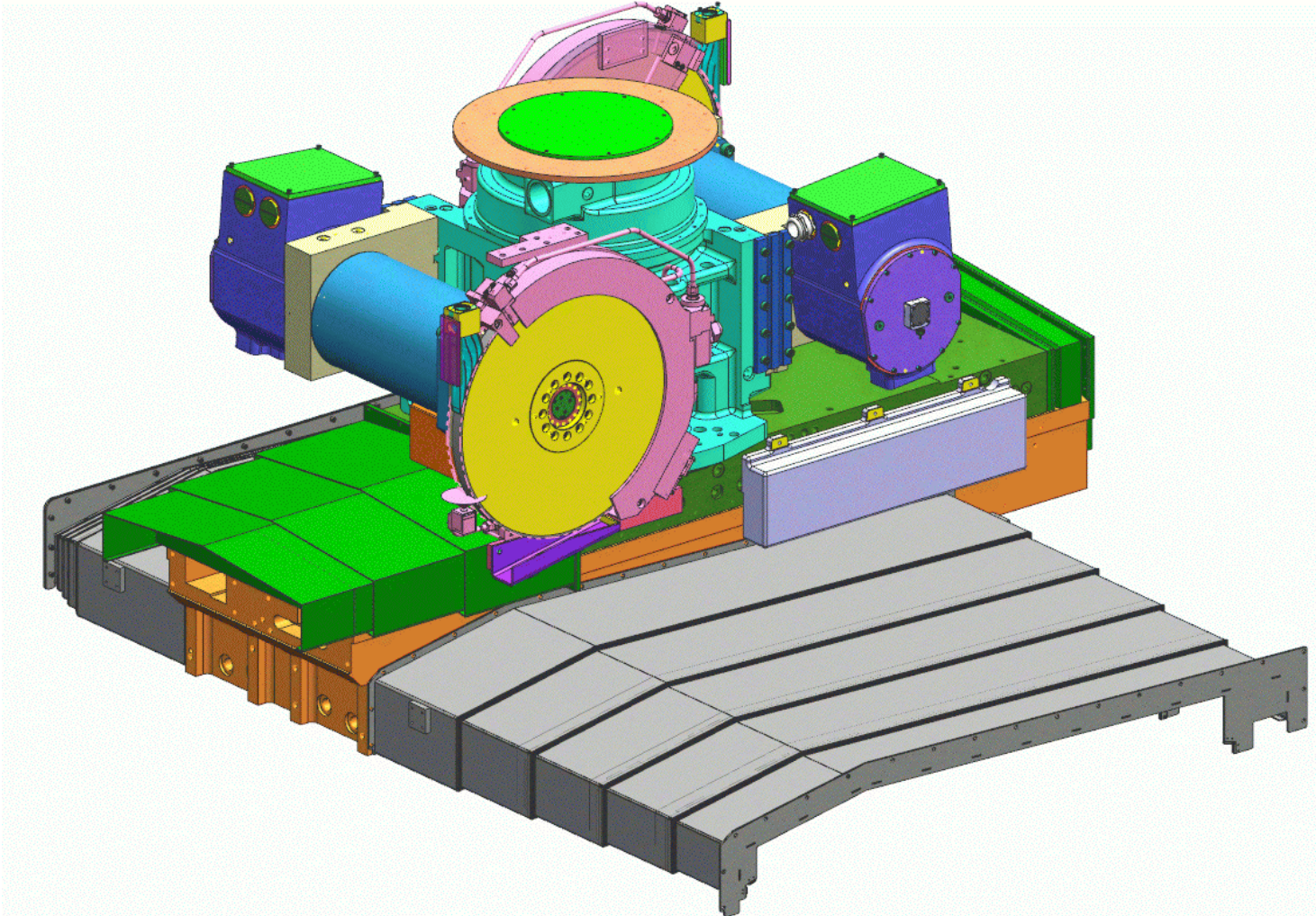


## Wheelhead Swivel (B-Axis)





## Wheelhead Swivel (B-Axis)





## Wheel Spindle (S-Axis)

### Wheel spindle Motor

MBS 162J – 0500 HMV - R

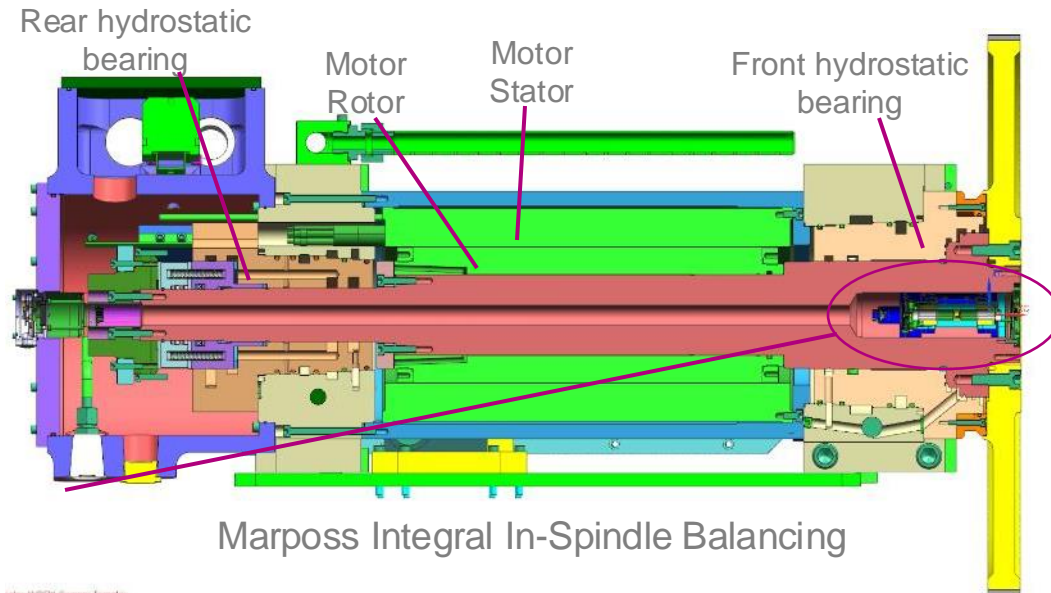
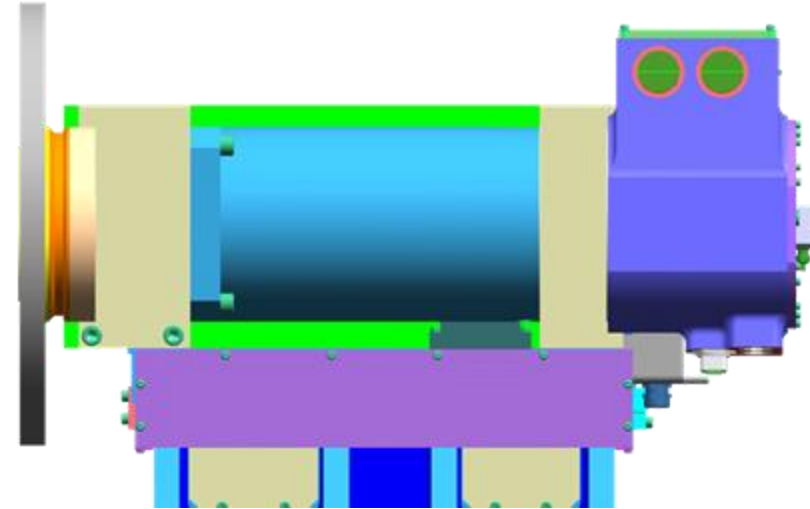
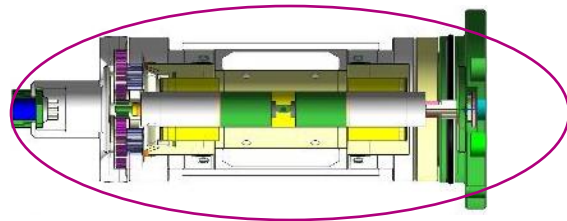
RATED POWER @ 80 M/S = 38 KW

RATED POWER @ 150 M/S = 73 KW

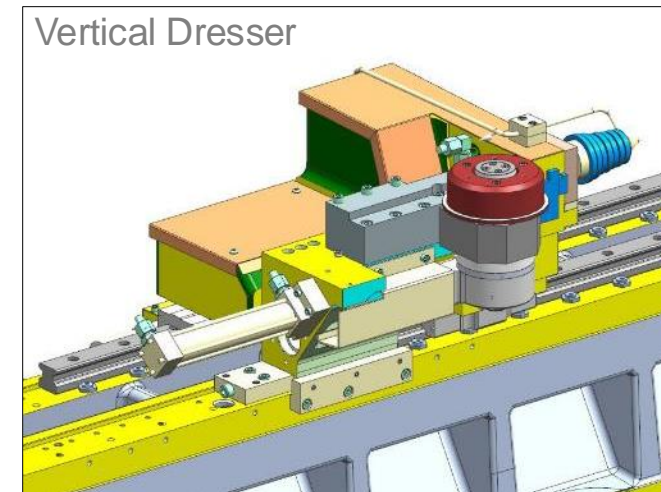
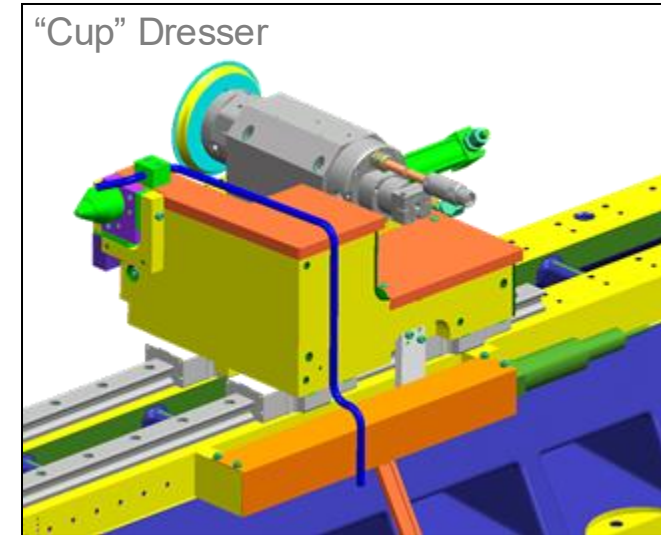
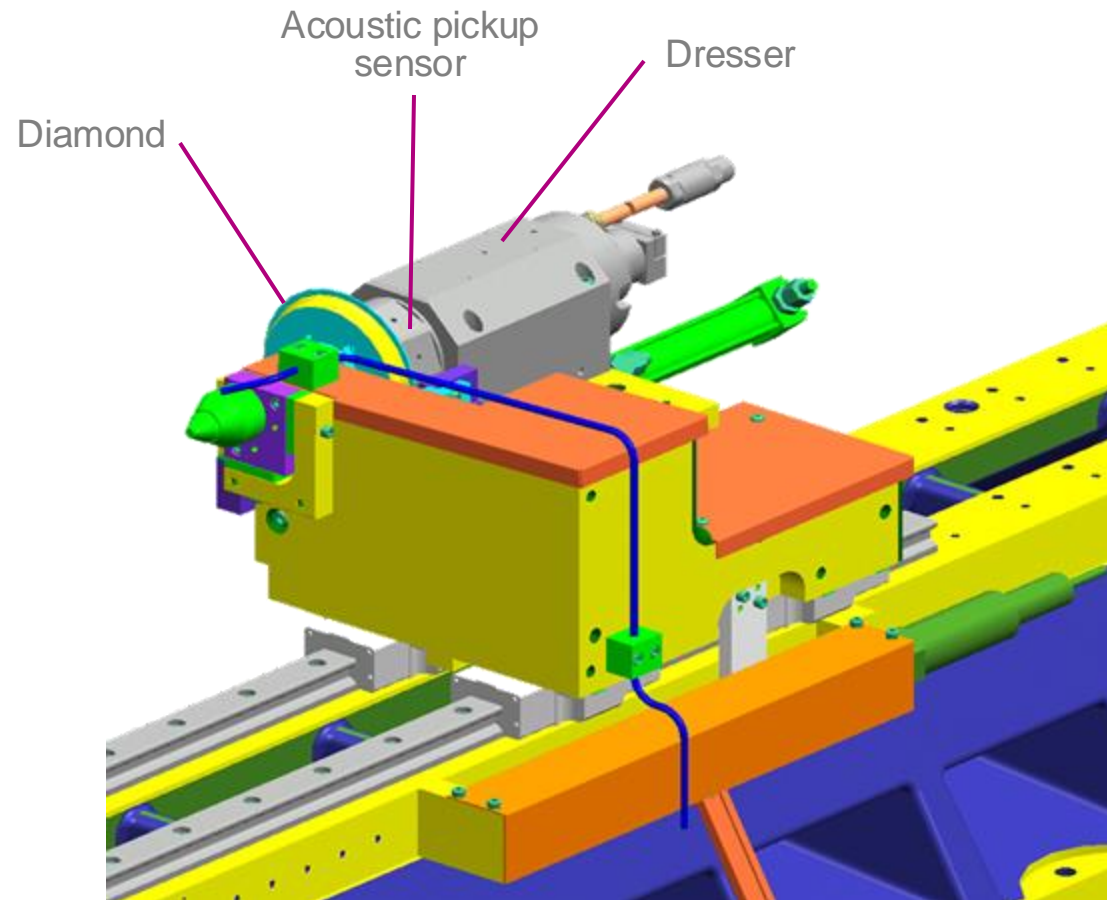
Motor Limited to 5,500 RPM

$\varnothing 520 @ 5500 = 150\text{M/S}$

Hydrostatic cartridge spindle and hubbed wheel allows the 20mm dimension between wheels.

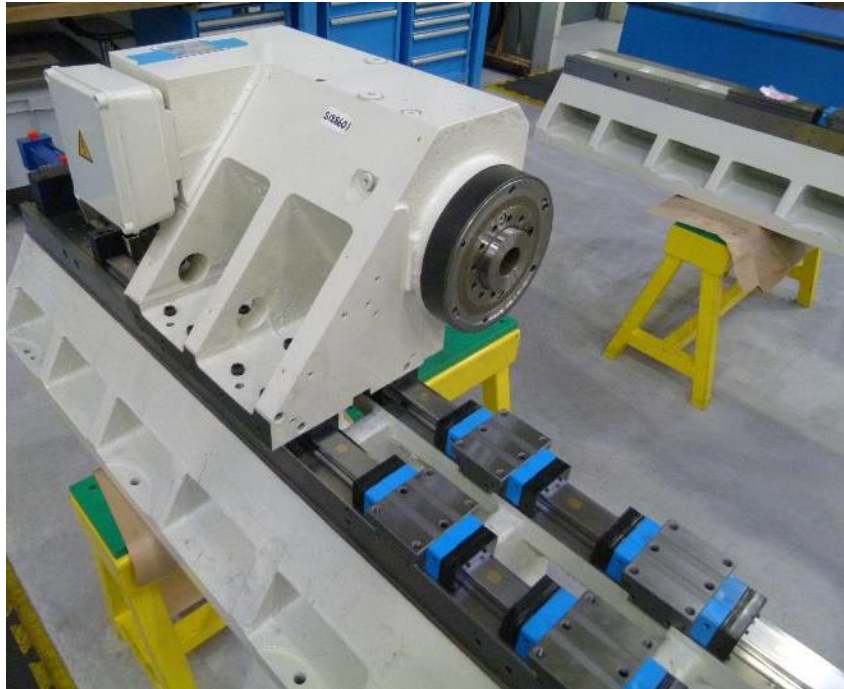


## Wheel Dressing Unit

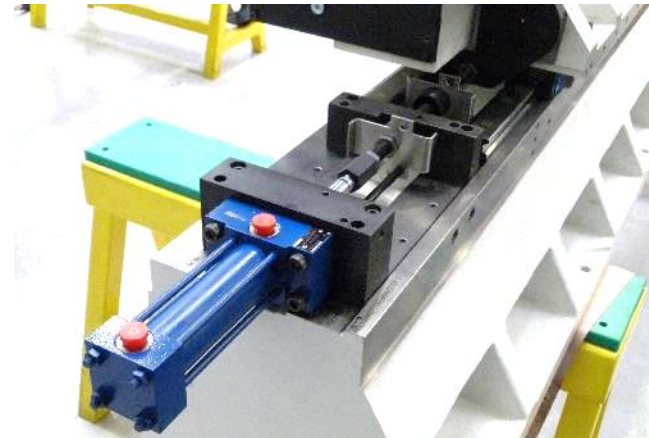


## Headstock (C-Axis)

- MBT 161E
- RATED TORQUE = 105 N/M
- PEAK TORQUE = 230 N/M



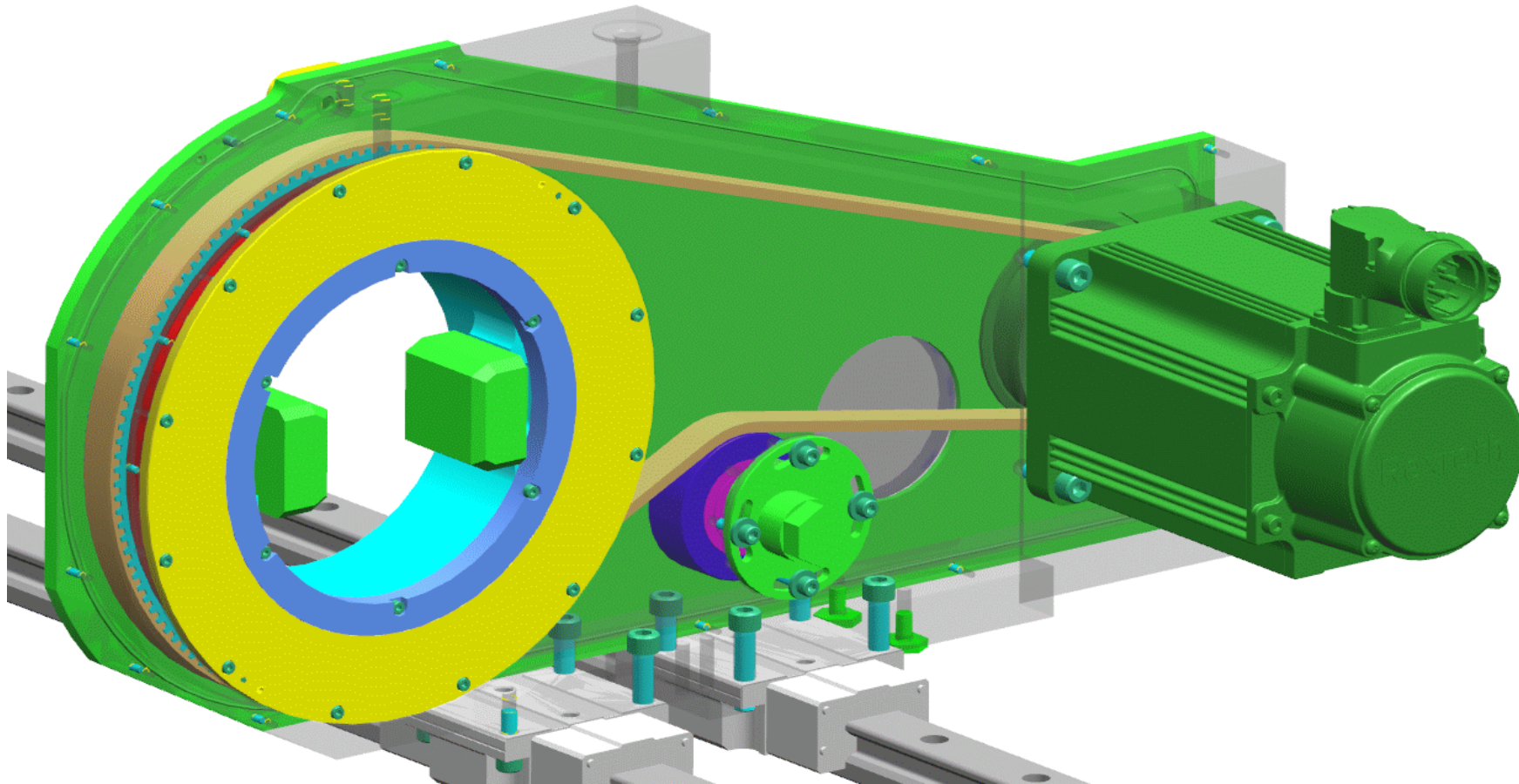
Servo shifter mechanism



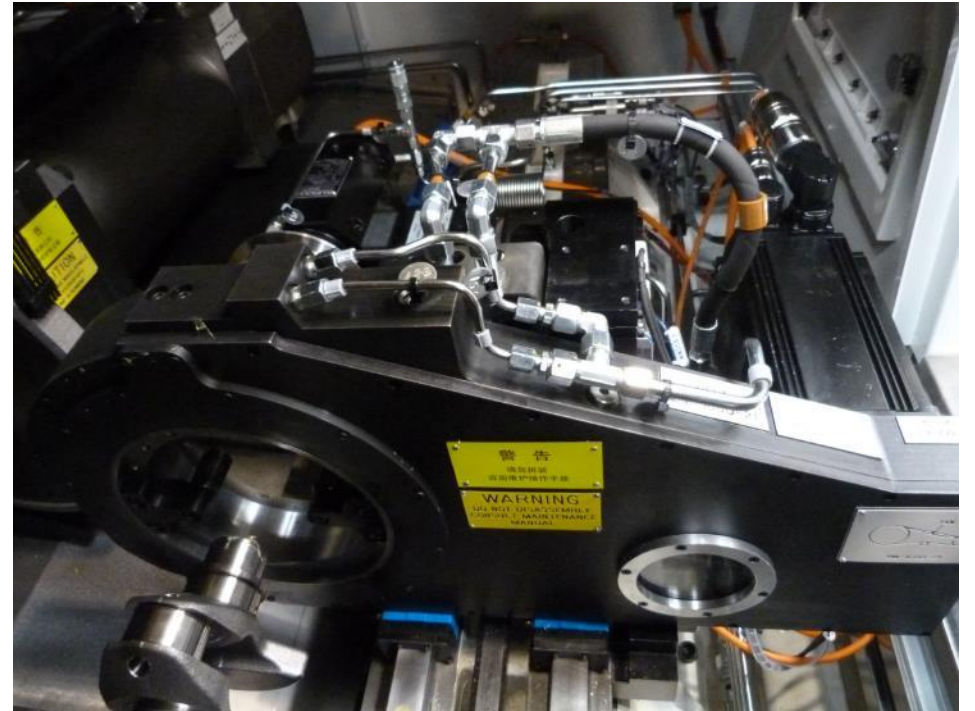
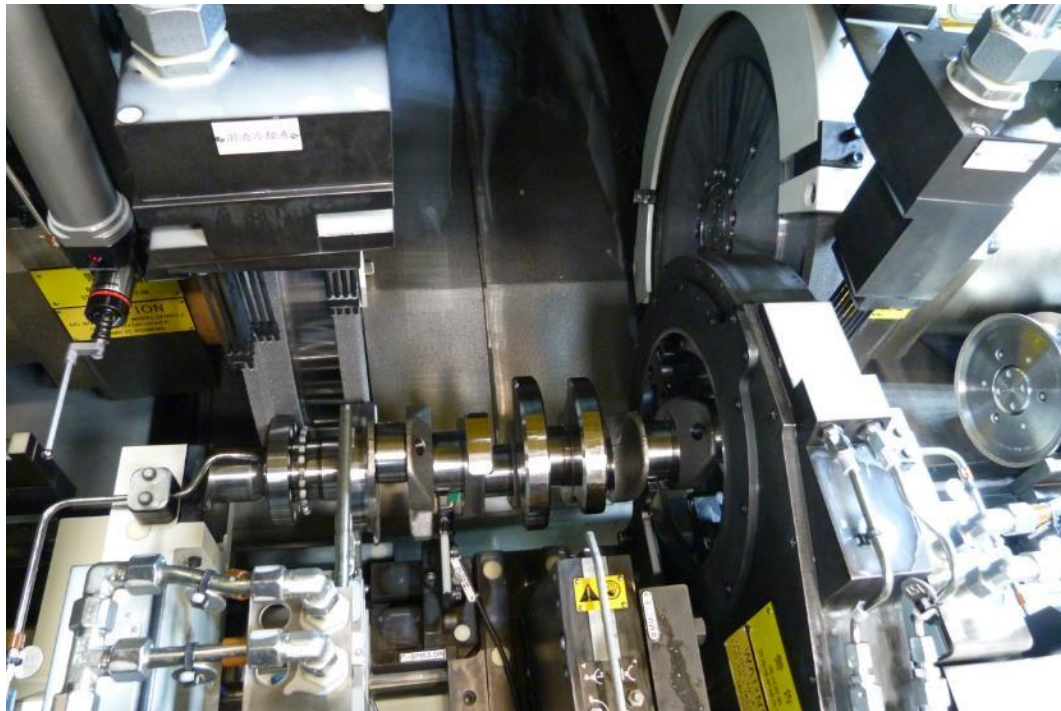
Hydraulic shifter mechanism



## Work Driver – Web Type (C-Axis)

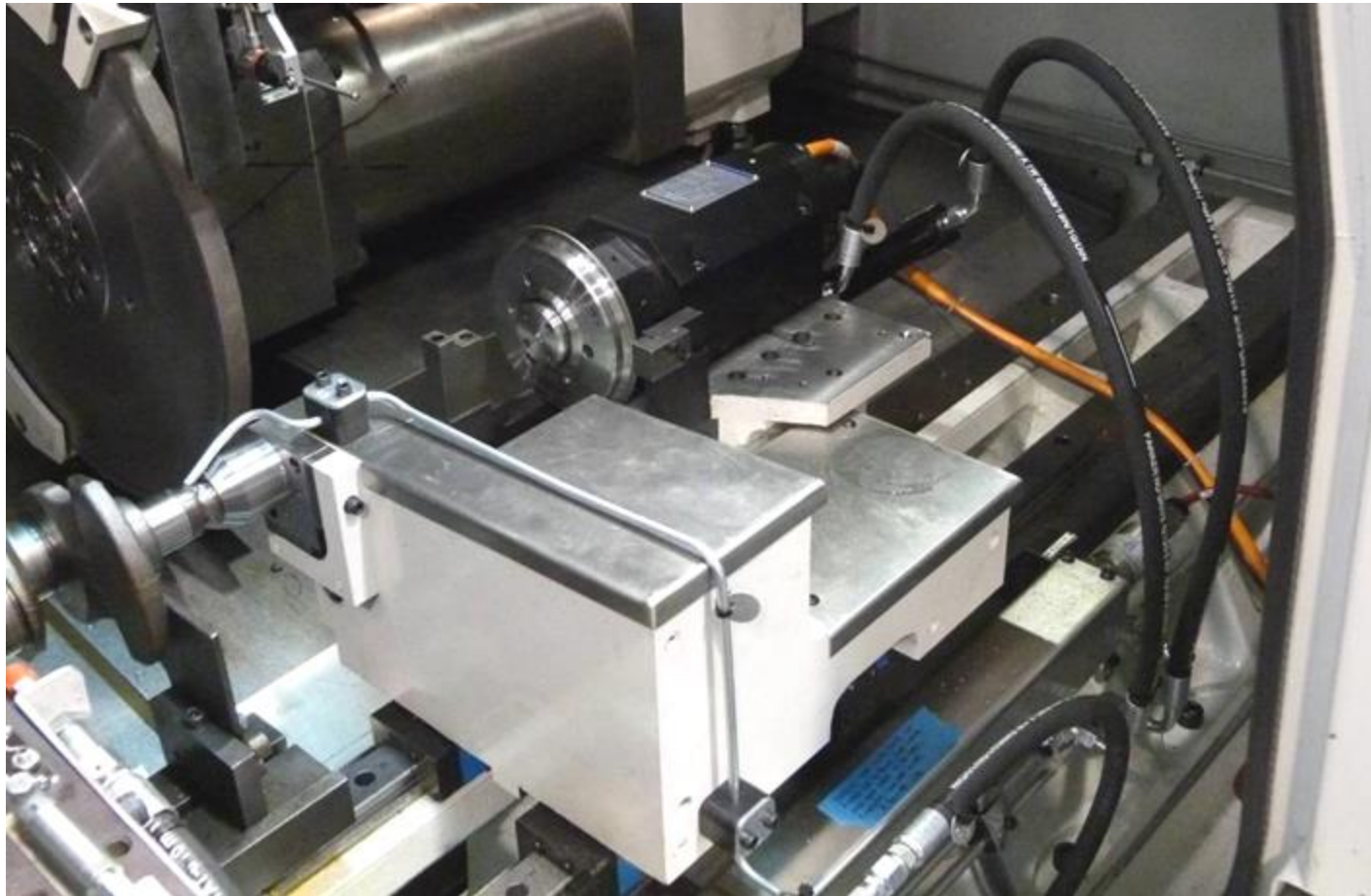


## Work Driver – Web Type (C-Axis)



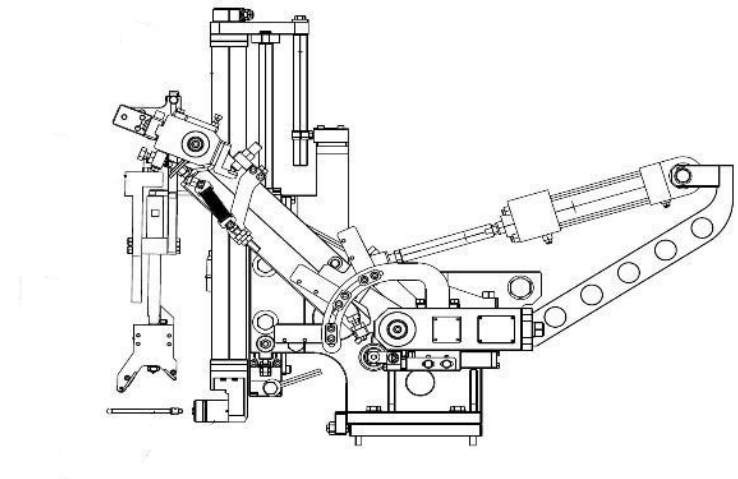
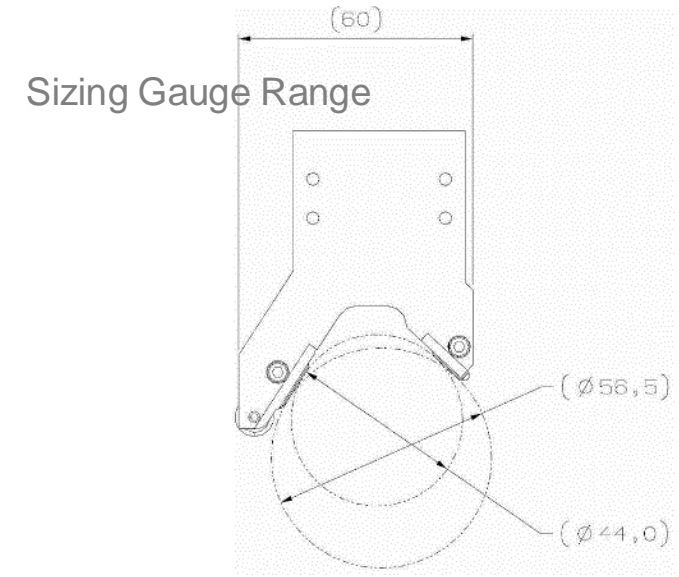
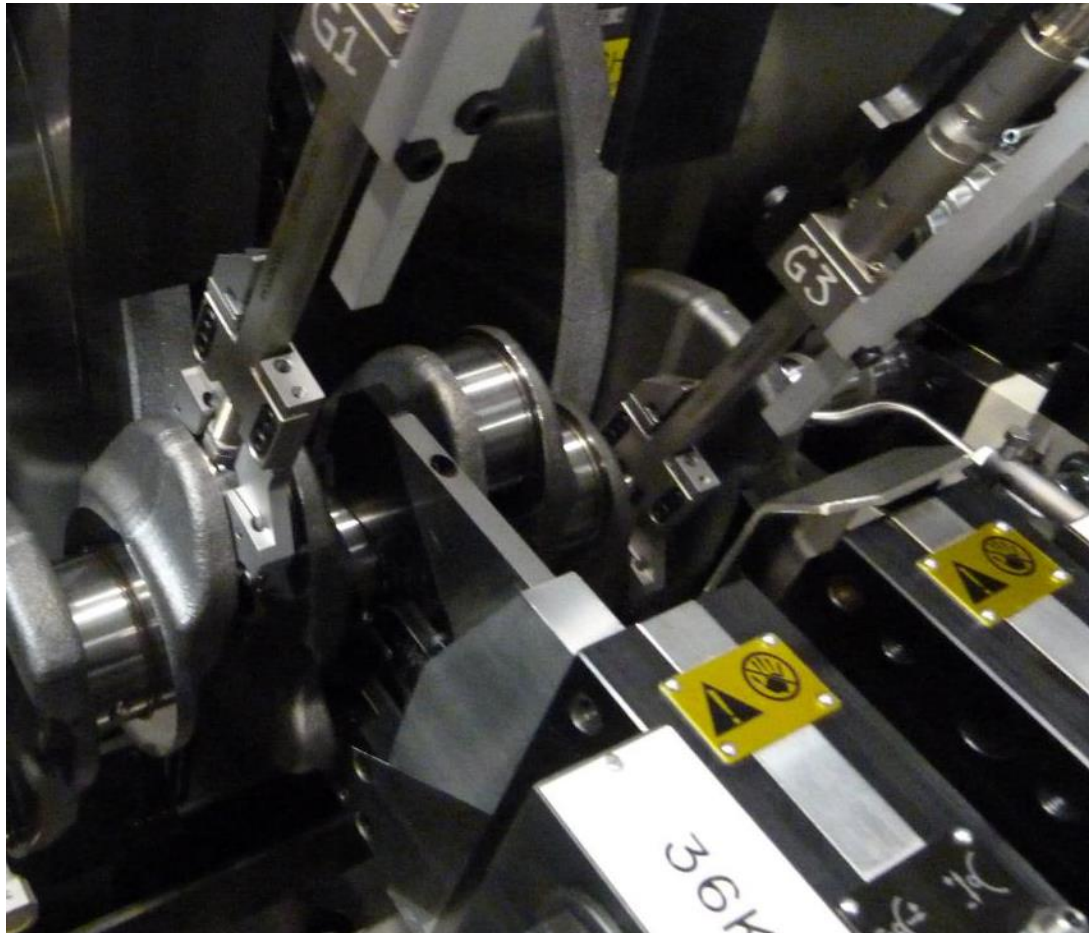


## Footstock

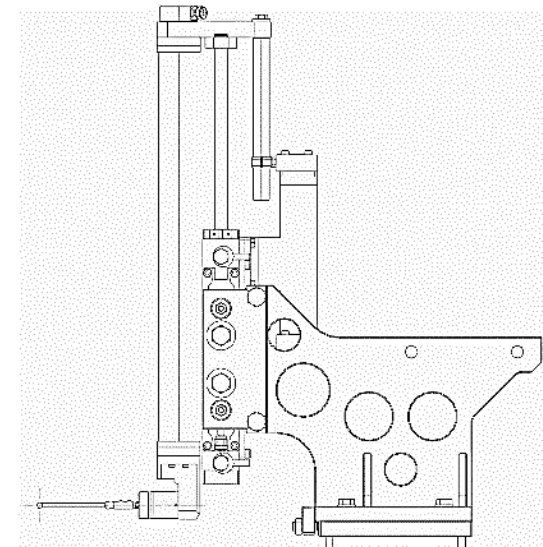
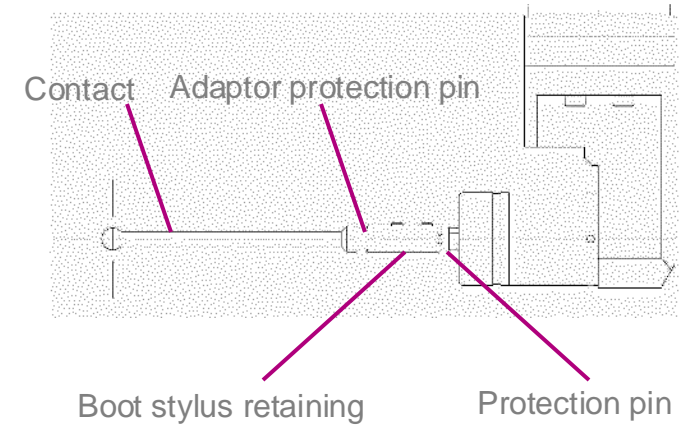
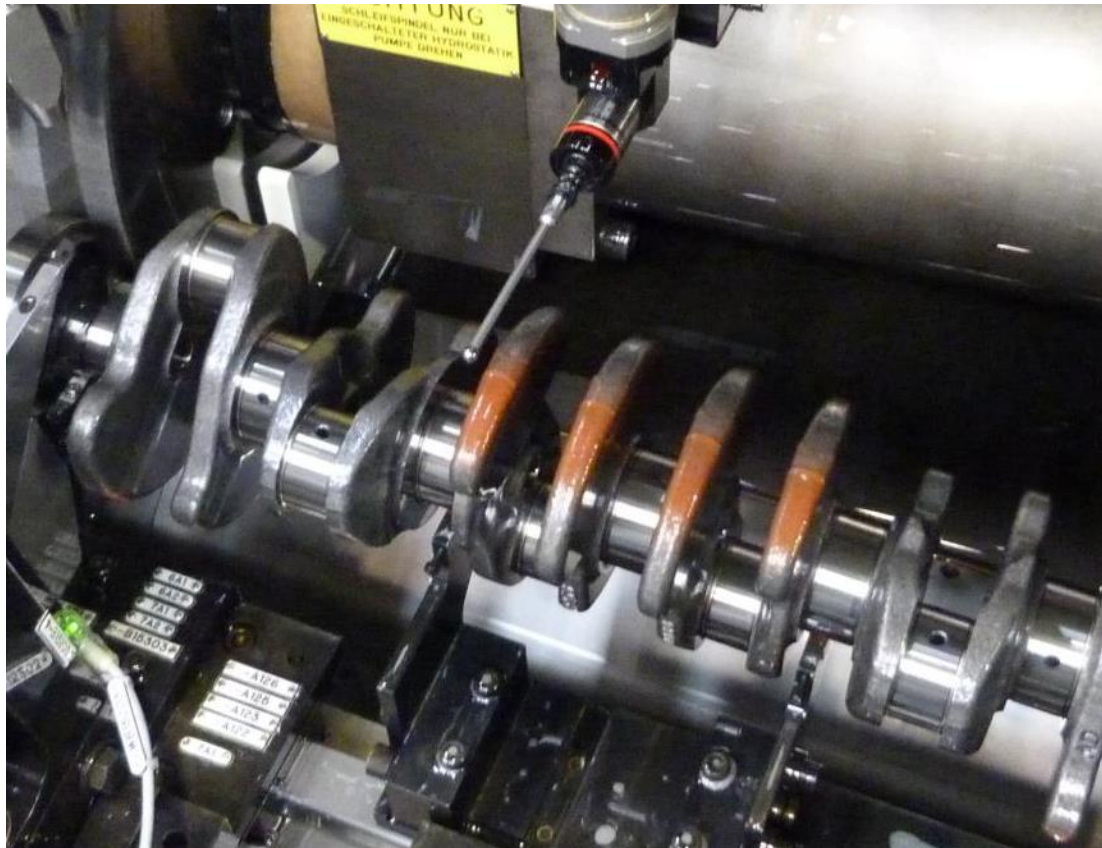




## Automatic Sizing Gauge



## Lateral Location Probe

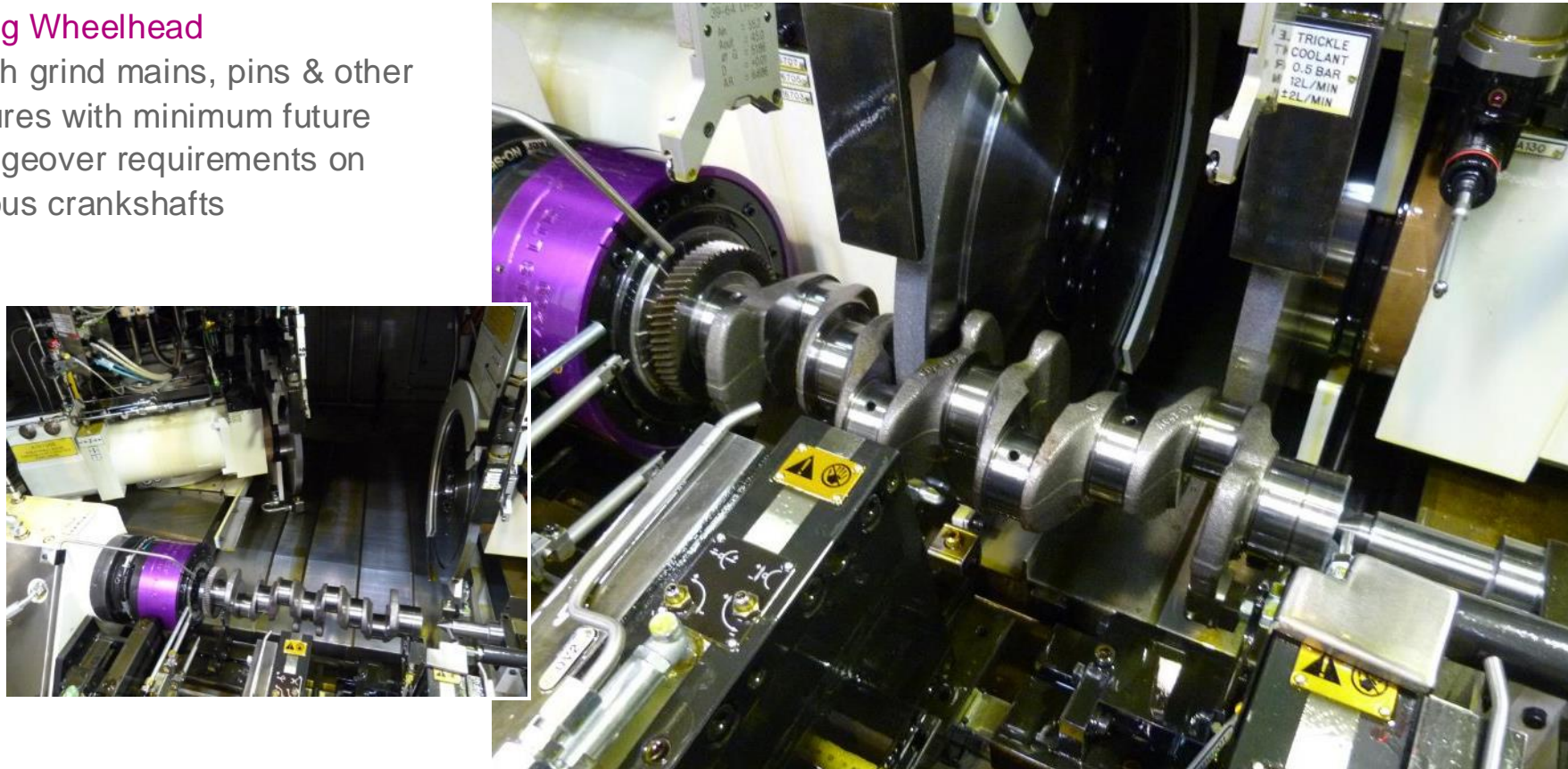




## Finish grinding mains & pins

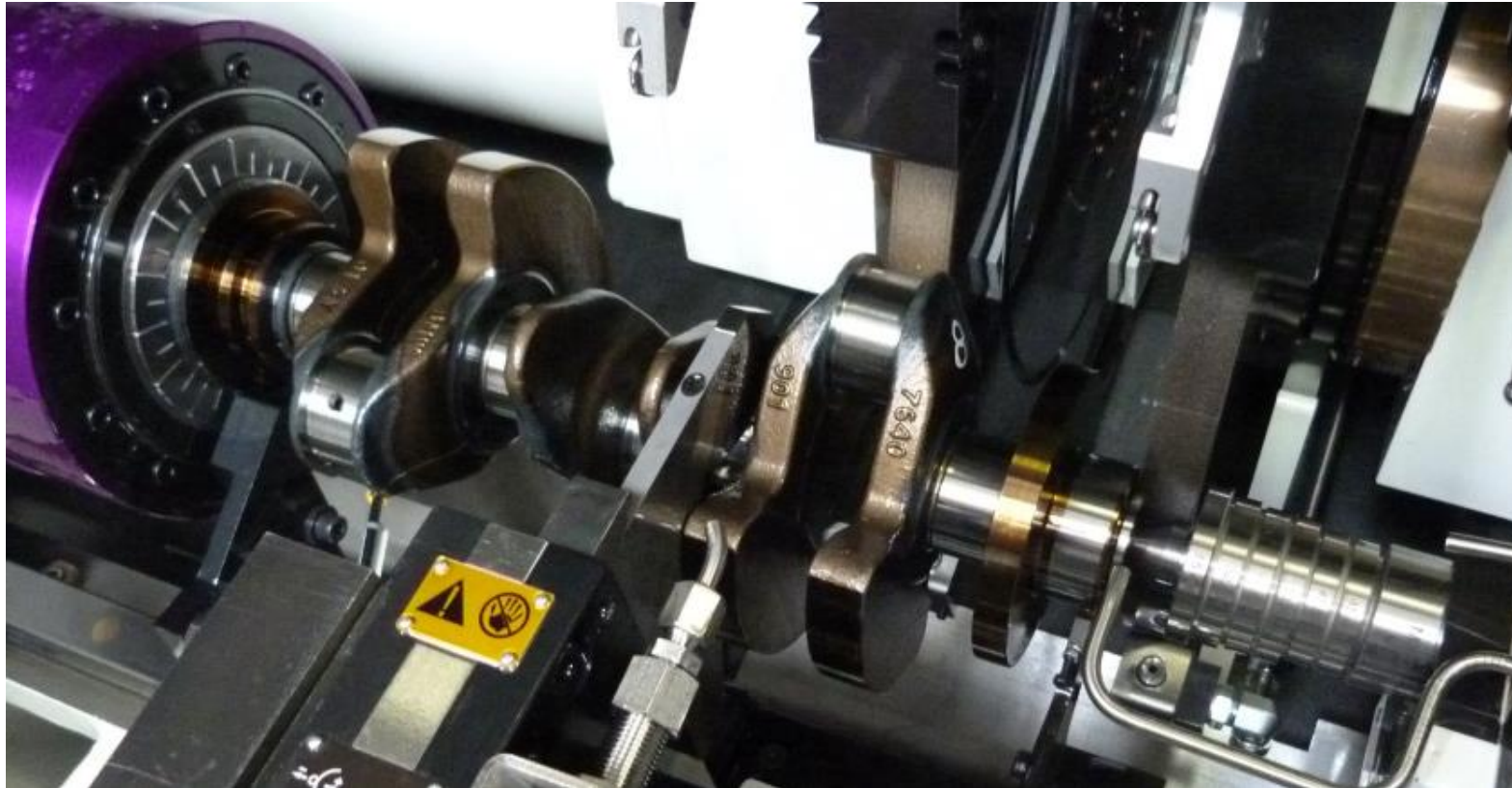
### Swiveling Wheelhead

- Finish grind mains, pins & other features with minimum future changeover requirements on various crankshafts





Rough Grind Pin  $\varnothing$ 's Including Sidewalls and Undercuts  
Semi-Finish Grind Main  $\varnothing$ 's Clear of Sidewalls and Undercuts



## Specifications

Model	Landis LT2e Single Swivel	Landis LT2e Twin Standard	Landis LT2e Twin Opposed 5°	Landis LT2e Flange & Bore	Landis LT2e XS 2 Spindle	Landis LT2e 4 Spindle (3 spindle option)
<b>Grinding capacity</b>						
Max. component swing	210 mm (8.3")	210 mm (8.3")	210 mm (170) (8.3")	210 mm (8.3")	210 mm (8.3")	210 mm (8.3")
Max. grinding length	1,500 mm (59")	750 mm (29.5")	550 mm (21.7")	750 mm (29.5")	850 mm (33.5")	750 mm (29.5")
Max. workpiece weight	250 kg (551 lb.)	250 kg (551 lb.)	250 kg (551 lb.)	250 kg (551 lb.)	250 kg (551 lb.)	250 kg (551 lb.)
<b>Wheelhead</b>						
Wheel type	CBN	CBN	CBN	CBN	CBN	CBN
Max. wheel Ø	520 mm (20.5")	520 mm (20.5")	520 mm (20.5")	520 mm (20.5")	600 mm (23.6")	520 mm (20.5")
Max. wheel width	30 mm / 40 mm / 60 mm options (1.2" x 1.6" x 2.4")		20 mm (0.8")	120 / 60 mm bore (4.7"/2.4")	30 mm / 40 mm / 60 mm options (1.2" x 1.6" x 2.4")	
Max. wheel surface speed	180 m/sec (591 ft/sec)	180 m/sec (591 ft/sec)	180 m/sec (591 ft/sec)	180 m/sec (591 ft/sec)	180 m/sec (591 ft/sec)	180 m/sec (591 ft/sec)
Max. spindle power	70 kW	70 kW	70 kW	70 kW	70 kW	70 kW
B-axis swivel range	230° infinitely	N/A	Optional	Optional	N/A	230° infinitely

## Specifications

Model	Landis LT2e Single Swivel	Landis LT2e Twin Standard	Landis LT2e Twin Opposed 5°	Landis LT2e Flange & Bore	Landis LT2e XS 2 Spindle	Landis LT2e 4 Spindle (3 spindle option)
<b>Workhead &amp; footstock</b>						
Type	Headstock drive between centers		Dual footstock	Headstock drive		
Workhead drive power	13 kW	13 kW	3.7 kW	13 kW	13 kW	13 kW
Max. motor torque	250 Nm	250 Nm	210 Nm	250 Nm	250 Nm	250 Nm
Footstock stroke	160 mm (6.3")	160 mm (6.3")	160 mm (6.3")	160 mm (6.3")	160 mm (6.3")	160 mm (6.3")
<b>Axes</b>						
Linear guide ways	Hydrostatics	Hydrostatics	Hydrostatics	Hydrost./Linear elem.	Hydrostatics	Hydrostatics
Grinding spindle	Hydrostatics	Hydrostatics	Hydrostatics	Hydrost./Linear elem.	Hydrostatics	Hydrostatics
Drive	Linear Motors	Linear Motors	Linear Motors	Linear Motors / Ballscrew	Linear Motors	Linear Motors
<b>Dimensions</b>						
Dimensions (W x D x H)	4,075 x 3,326 x 2,825 mm (13.4' x 11' x 9.3')	4,406 x 3,085 x 2,300 mm (14.5' x 10' x 7.5')	4,406 x 3,085 x 2,300 mm (14.5' x 10' x 7.5')	4,406 x 3,085 x 2,300 mm (14.5' x 10' x 7.5')	4,075 x 3,326 x 2,300 mm (13.4' x 11' x 7.5')	4,575 x 3,326 x 2,825 mm (15' x 11' x 9.3')
Machine weight	21,500 kg (47,400 lb)	17,500 kg (38,581 lb)	17,500 kg (38,581 lb)	17,500 kg (38,581 lb)	22,000 kg (48,500 lb)	24,000 kg (52,911 lb)