



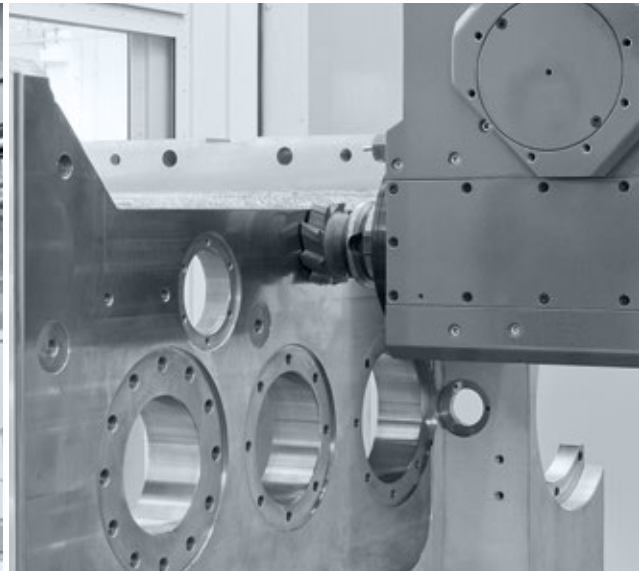
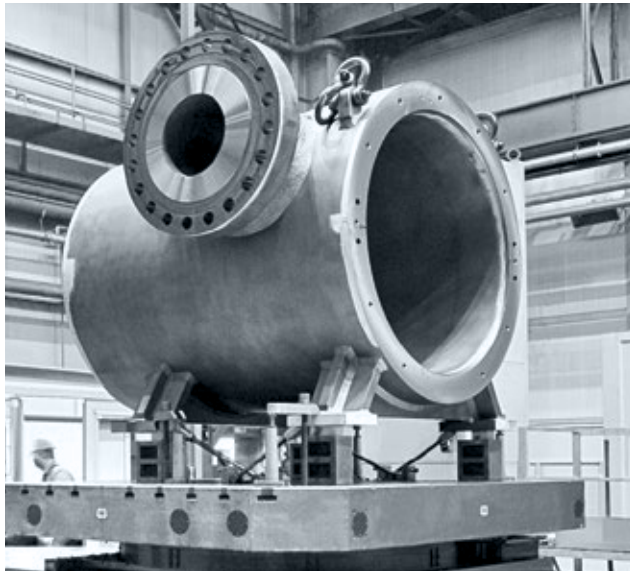
**BORING AND MILLING CENTERS**

**SPEEDMAT**

**TARGET  
AND APPLICATION**



AEROSPACE  
ENERGY  
EARTH MOVING  
OIL & GAS  
GENERAL MACHINING



Speedmat technology is the perfect solution for all the most demanding machining applications requiring precise boring.

the Speedmat series consists of four base models with:  
boring spindle diameter of 130 or 160 mm  
pallet sizes from 1250 x 1250 mm up to 2000 x 2500 mm  
with maximum table load capacity from 10 to 25 t (metric ton)  
maximum work piece swing diameter from 2000 to 4600 mm

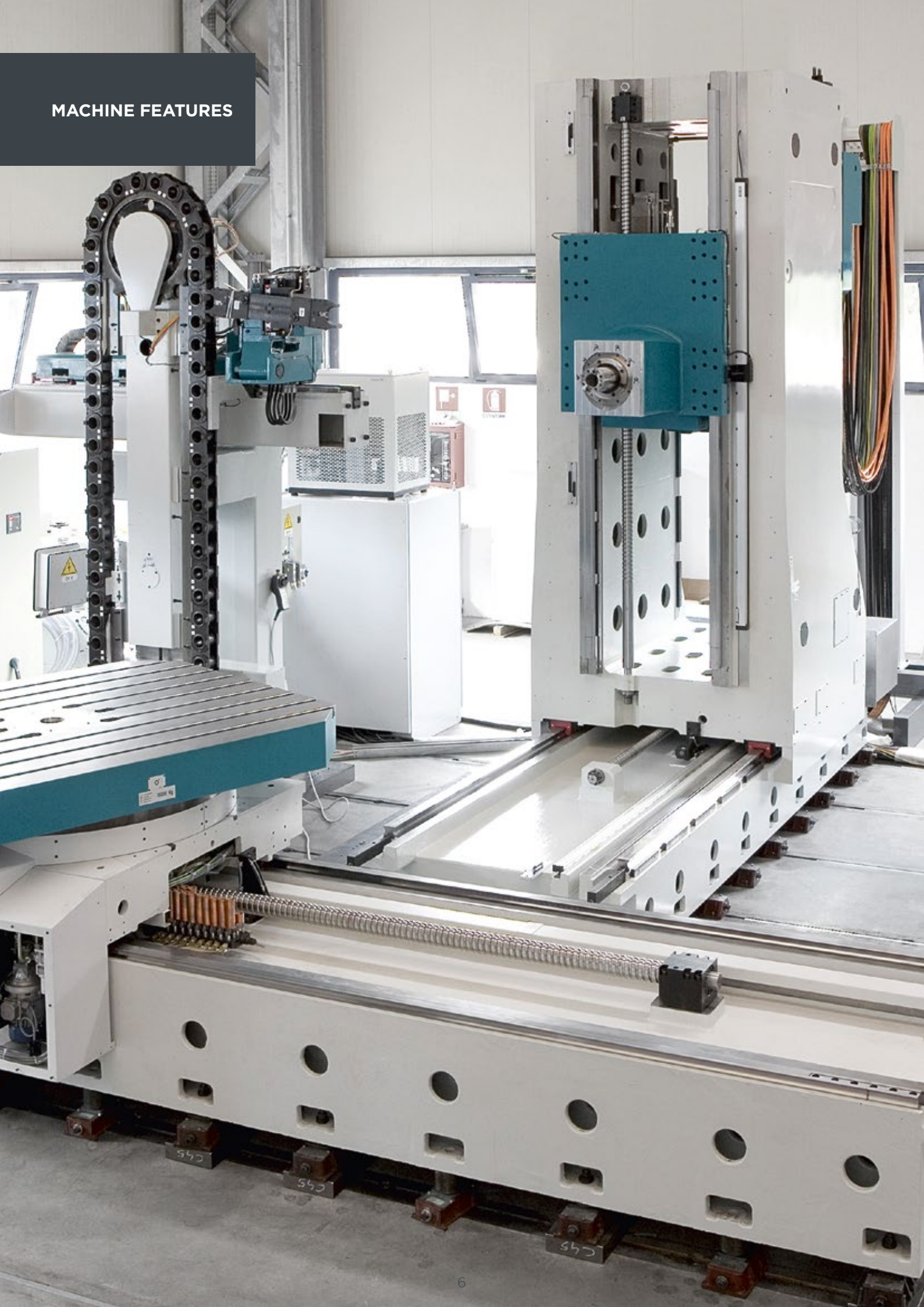
**BORING AND  
MILLING CENTERS**





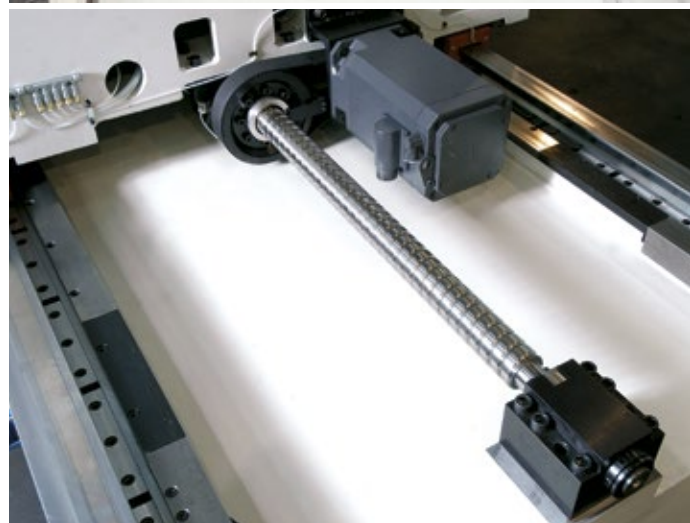


## MACHINE FEATURES



thermo-symmetric structure with headstock located in central position for maximum accuracy

all main components are cast iron for maximum rigidity and dampening.  
T-type configuration for column cross movement



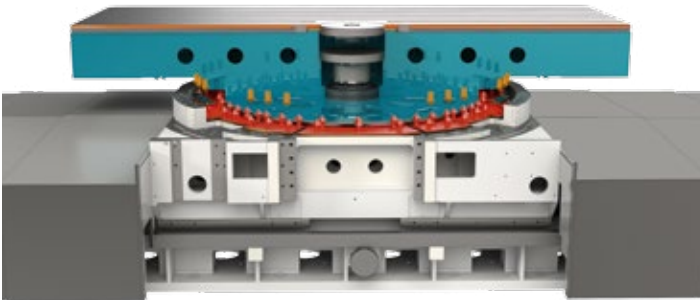
Large size linear roller guideways to provide high rapid traverse rate as well as maximum rigidity on all linear axes





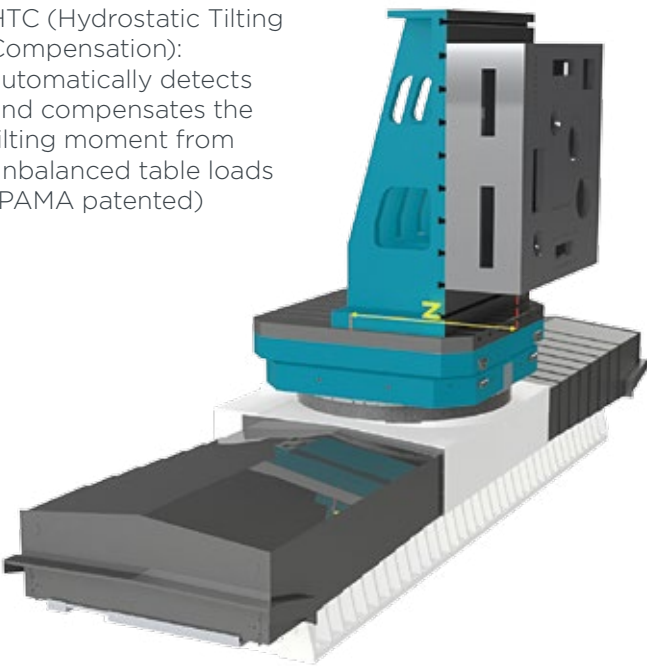


fully hydrostatic contouring table driven by a bull gear and double pinion system (preloaded for backlash free operation)



hand scraped and fully hydrostatic contouring tables allows for optimal simultaneous 4 and 5 axes precision machining

HTC (Hydrostatic Tilting Compensation): automatically detects and compensates the tilting moment from unbalanced table loads (PAMA patented)



B axis is driven via bull gear and double pinion system (preloaded for backlash free operation)



HTC (Hydrostatic Tilting Compensation): automatically detects and compensates the tilting moment from unbalanced table loads (PAMA patented)



DOT (Dynamic Optimized Tuning): optimized automatic adjustment of table control parameters according to work piece inertia



PTB (PAMA Thrust Bearing): full hydrostatic table axial bearing

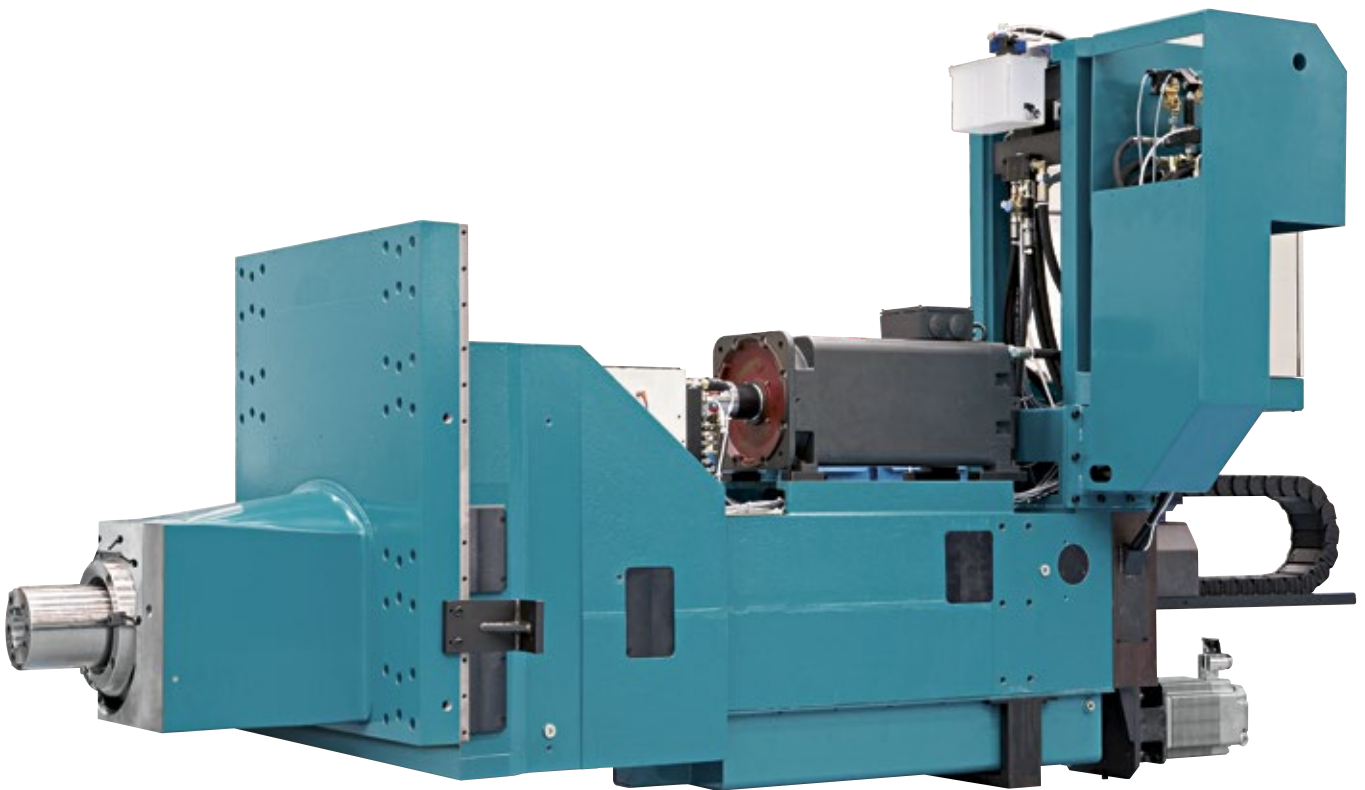


## MACHINE FEATURES



## MACHINE FEATURES

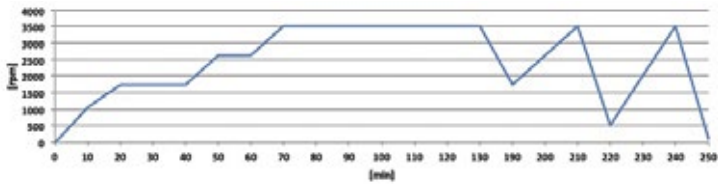
monolithic casting boring spindle  
headstock centrally mounted in a  
thermo symmetrical column



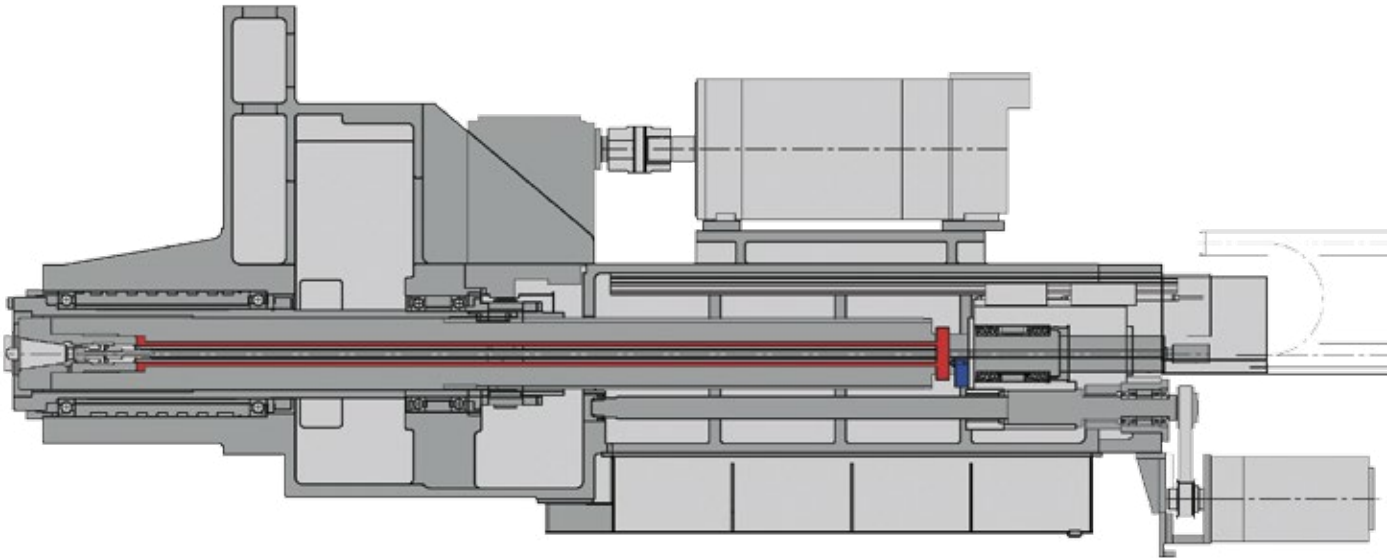
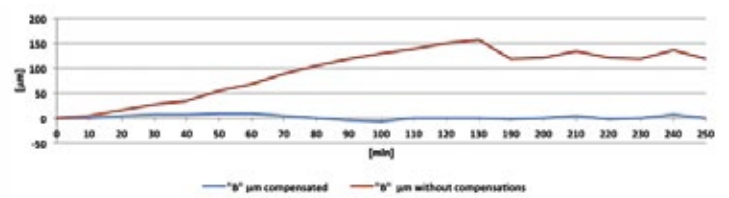
boring spindle with stroke of  
800 mm available in 130 mm or  
160 mm diameter



## spindle speed



## boring bar nose displacement



ATC (Automatic Thermal Compensation):  
Real time CNC controlled compensation  
system of boring spindle thermal  
elongation, by physical direct  
measurement (option)

the spindle powertrain includes a particularly  
silent and robust 2 speed ranges gearbox  
with hardened and ground gears, maintained  
at constant temperature by internal  
recirculation of thermally-controlled oil



ATC (Automatic Thermal Compensation): real time  
CNC controlled exclusive compensation of ram  
and spindle elongation / contraction by direct  
measurement (PAMA patents)









## HEAD ATTACHMENTS





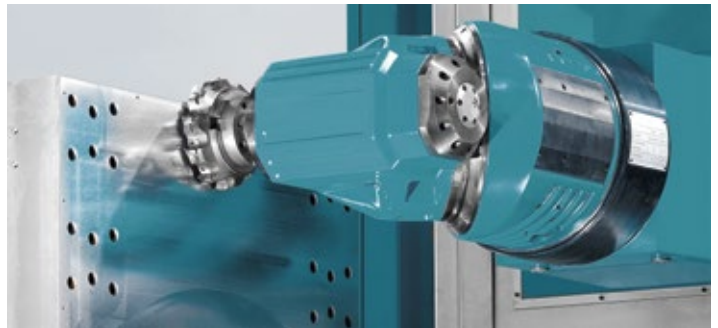
**UT**  
facing heads



**TS**  
right angle milling heads



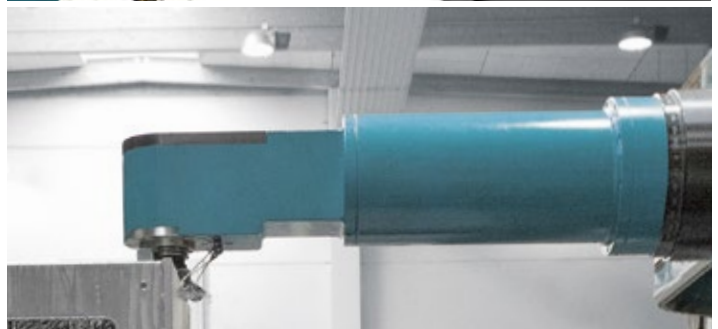
**TU**  
indexable universal milling heads



**TTL**  
right angle indexing universal heads



**customized solutions**  
any special head required to solve  
specific technological problems



CSH (Clever Sensored Heads): equipped with temperature and acceleration sensors, allows for continuous head monitoring and predictive maintenance



AHC (Automatic Head Calibration): automatic verification of head geometry and adjustment of offset parameters



PMP (PAMA Maintenance Program): software system reminds operators and maintenance personnel of scheduled PM activities

## ATTACHMENT CHANGER

Speedmat can be equipped with different type of automatic tool changer and magazine in order to fulfill any customer need.

the versatility of Speedmat can be further enhanced by a wide range of head attachments



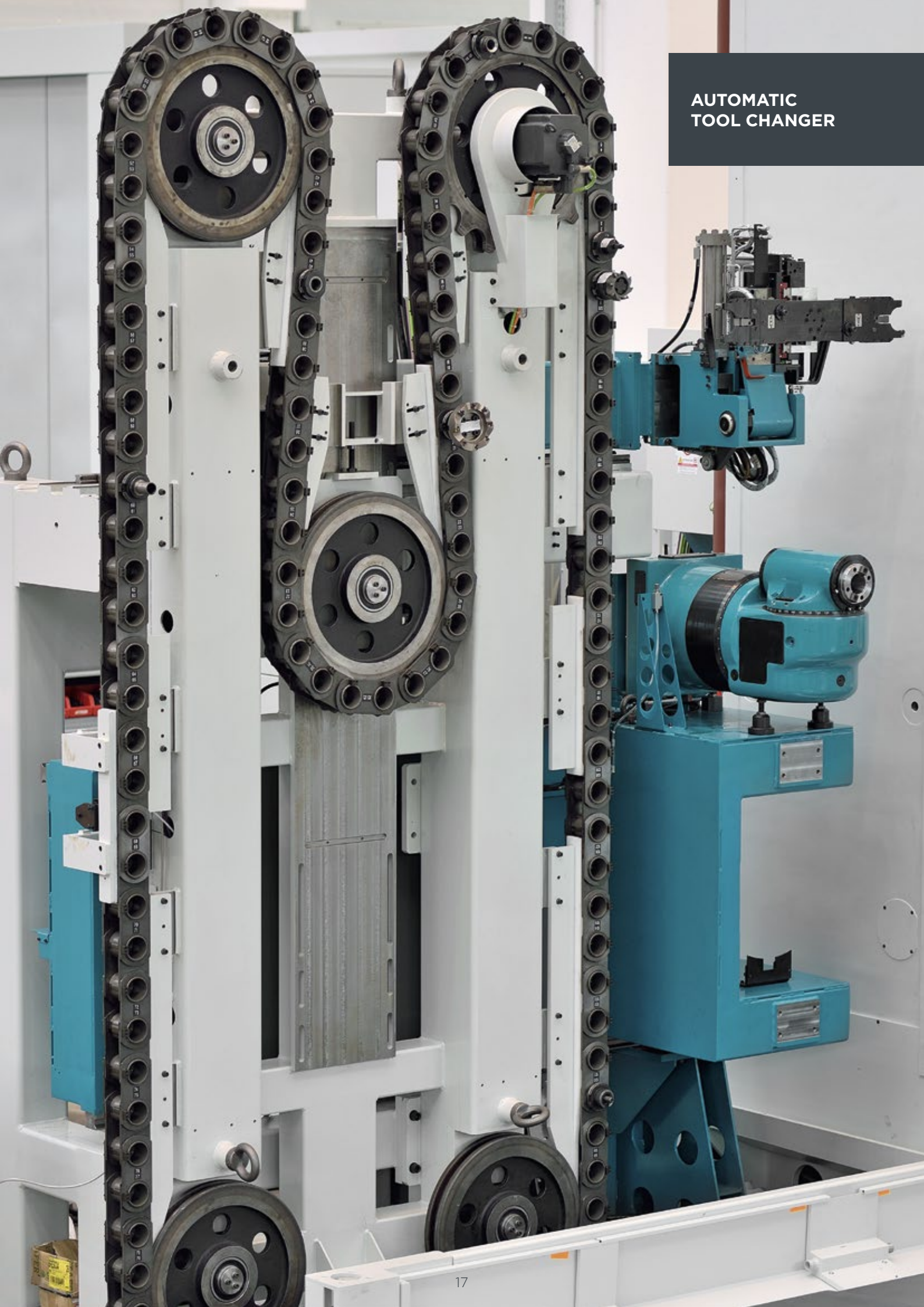
PMP (PAMA Maintenance Program): software system reminds operators and maintenance personnel of scheduled PM activities



PR2 (Predictive Production Management): optimize the efficiency and the saturation of the production system

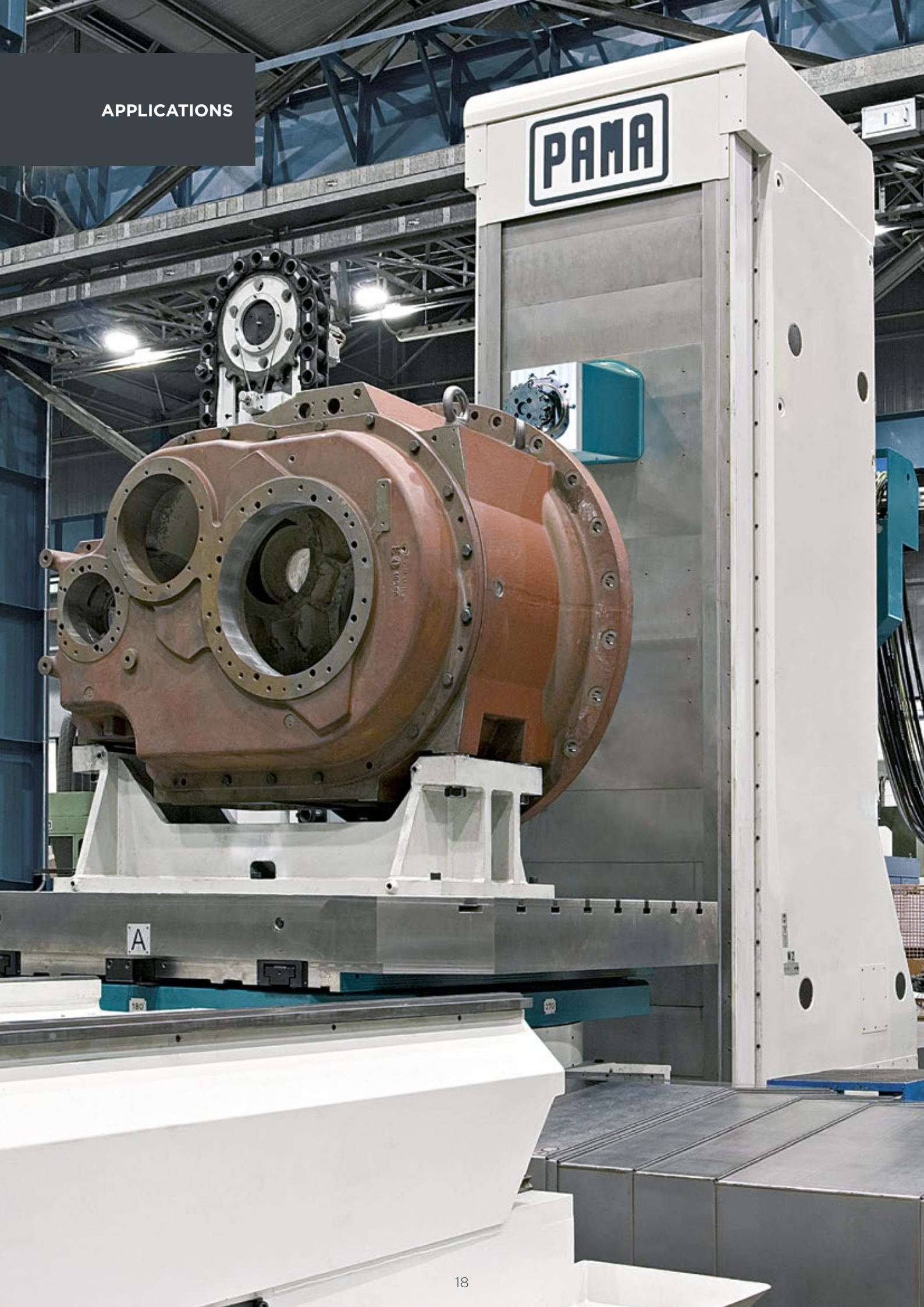


## AUTOMATIC TOOL CHANGER



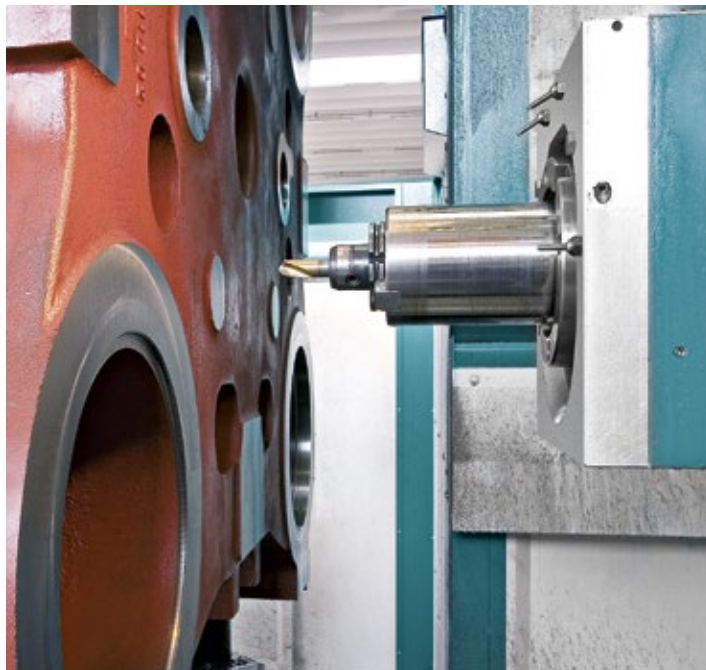


## APPLICATIONS

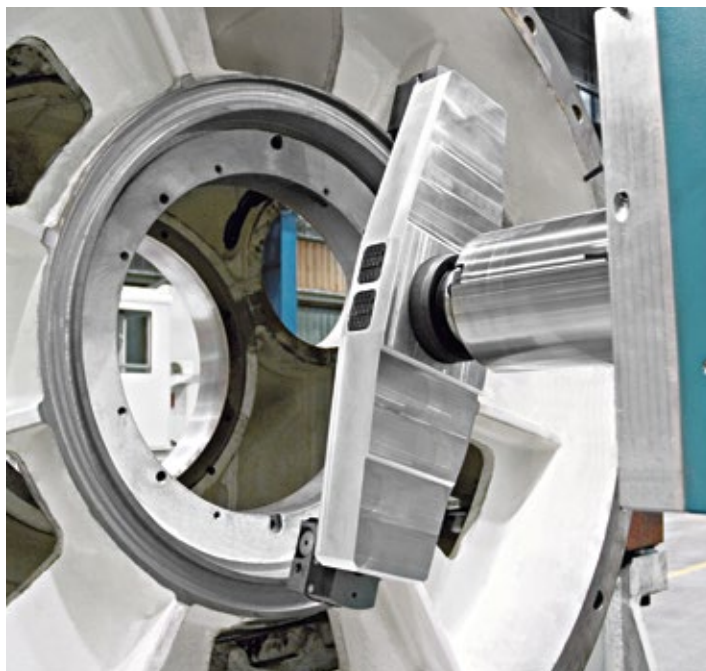




Speedmat technological innovations, developed upon PAMA sound tradition and experience, guarantee the highest machining accuracy



hydraulic press



gear box for  
wind power generator

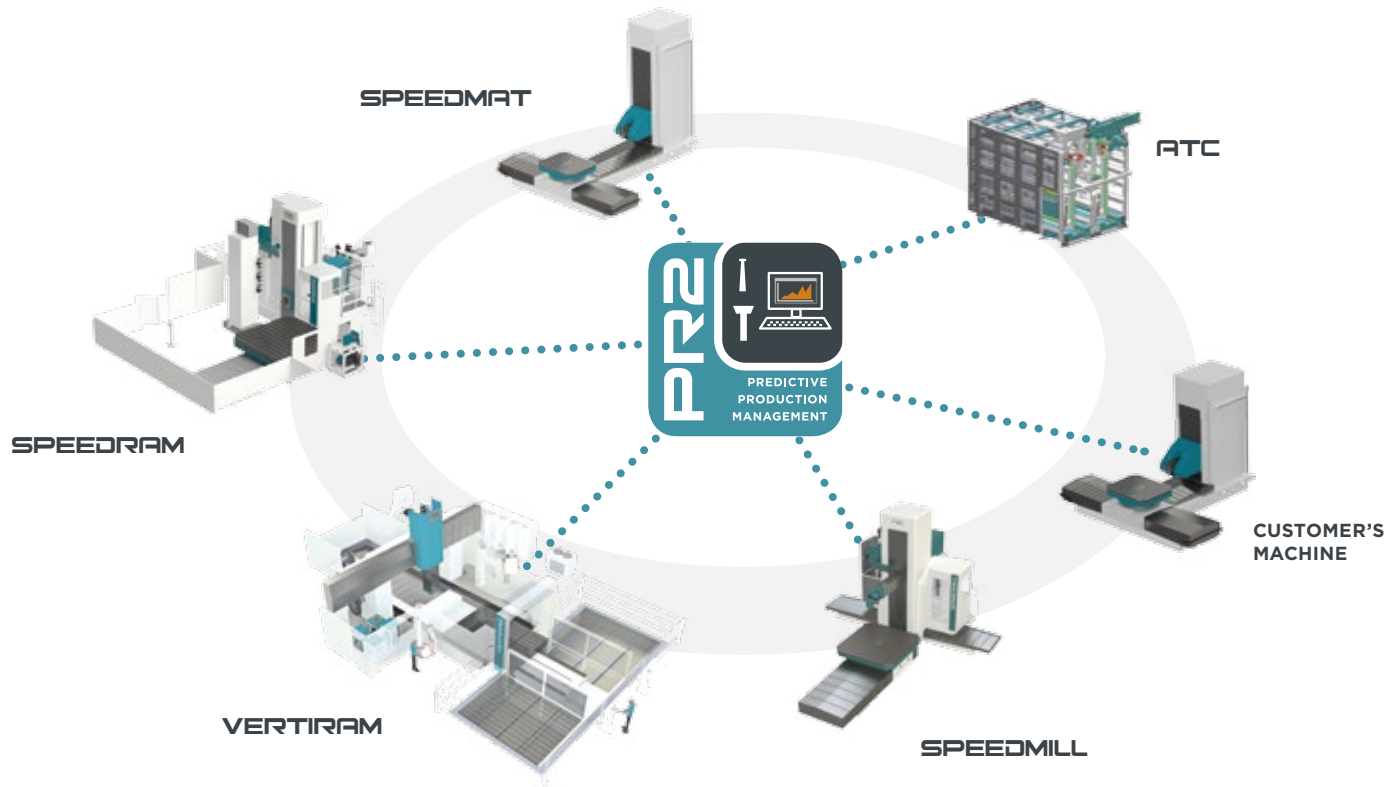


gear housing  
for marine thruster



## PR2 SUITE

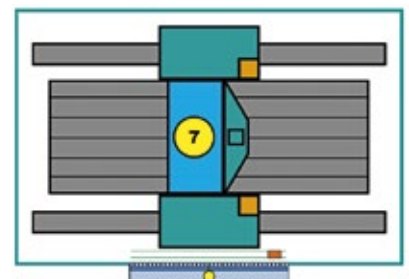
a general purpose framework, integrated with software applications, created by PAMA with the aim to bring our clients to a higher level of efficiency and profit. thanks to its great intuitive user interface it allows to manage the production unit in real time with predictive approach in manned or unmanned condition.



complete reporting of production unit activities



efficient managing of complex units (even with compatible customer's machines)



efficient managing of single production unit



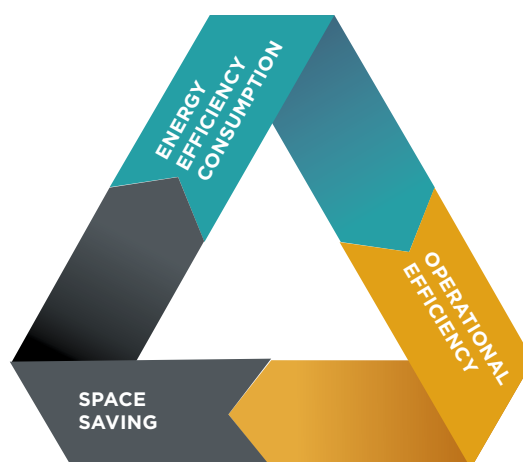
PR2 (Predictive Production Management): optimize the efficiency and the saturation of the production system

## PAMA GLOBAL EFFICIENCY



Energy saving: low friction guides, use of direct drive technology, regenerating drives, intelligent use of all auxiliary units

Space saving: compact design, wide choice of tool changer, pallet changer and chip conveyors



Operational efficiency: multitasking configuration, machine reliability, PMP preventive maintenance software, MSM machine sensor monitoring and predictive maintenance, PR2 suite to optimize the efficiency and the saturation of the production system



PGE (PAMA Global Efficiency): energy saving, space saving, operational efficiency



**ERGONOMICS  
MAINTENANCE**



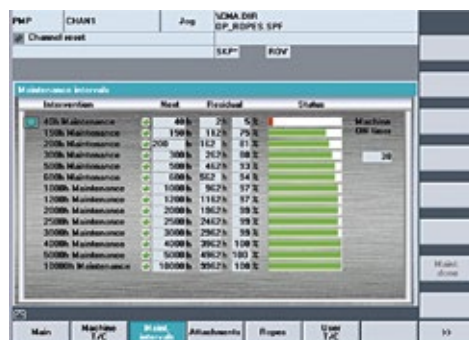


Easy maintenance, combined with predictive maintenance, is a must for an efficient workshop management.

Piping, wiring and components location are studied for easy visual inspection at a glance.



PMP (Pama Maintenance Program): reminds operators and maintenance personnel of scheduled preventive maintenance activities via messages, alarm and or icons permanently displayed on the CNC screen.



Required operations are illustrated by the visualization of the corresponding part of the operator maintenance manuals



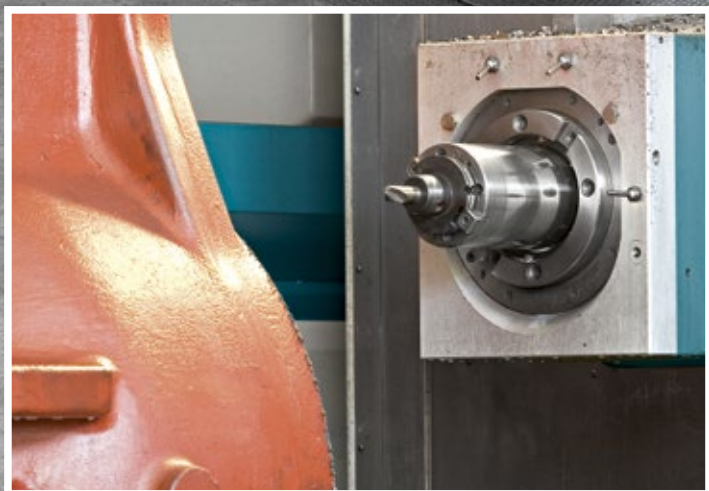
PMP (PAMA Maintenance Program): software system reminds operators and maintenance personnel of scheduled PM activities



MSM (Machine Sensor Monitoring): temperature and acceleration sensors for continuous machine monitoring and predictive maintenance



## BORING AND MILLING CENTERS









## SPEEDMAT

2600/10

3000/10

### WORKING AREA

|                         |    |             |             |
|-------------------------|----|-------------|-------------|
| X axis (table)          | mm | 2600        | 3000        |
| Y axis (headstock)      | mm | 2000 - 2500 | 2000 - 2500 |
| Z axis (column)         | mm | 2300        | 2300        |
| W axis (boring spindle) | mm | 800         | 800         |
| Max. swing diameter     | mm | 2600        | 3000        |

### TABLES

|                 |    |             |             |
|-----------------|----|-------------|-------------|
| Table sizes     | mm | 1400 x 1600 | 1400 x 1600 |
| Table capacity  | t* | 10          | 10          |
| Pallet size     | mm | 1250 x 1250 | 1250 x 1250 |
|                 | mm | 1250 x 1600 | 1250 x 1600 |
| Pallet capacity | t* | 8           | 8           |

### AXIS FEEDS

|                                 |       |    |    |
|---------------------------------|-------|----|----|
| X axis rapid traverse/feed rate | m/min | 25 | 25 |
| Y,Z,W rapid traverse/feed rate  | m/min | 25 | 25 |
| B axis feed rate/rapid traverse | rpm   | 5  | 5  |

### HEADSTOCK W130

|                         |     |      |      |
|-------------------------|-----|------|------|
| Boring spindle diameter | mm  | 130  | 130  |
| Max spindle speed       | rpm | 4000 | 4000 |
| Spindle speed ranges    |     | 2    | 2    |
| Max spindle power S1    | kW  | 37   | 37   |
| Max spindle torque S1   | Nm  | 1530 | 1530 |

### HEADSTOCK W160

|                         |     |      |      |
|-------------------------|-----|------|------|
| Boring spindle diameter | mm  | 160  | 160  |
| Max spindle speed       | rpm | 3500 | 3500 |
| Spindle speed ranges    |     | 2    | 2    |
| Max spindle power S1    | kW  | 52   | 52   |
| Max spindle torque S1   | Nm  | 2396 | 2396 |

\* t in metric ton

| 3000/16     | 3800/16     | 3800/25     | 4600/25     |
|-------------|-------------|-------------|-------------|
| 3000        | 3800        | 4000        | 5000        |
| 2000 - 2500 | 2500 - 3000 | 2500 - 3000 | 2500 - 3000 |
| 2300        | 2700        | 2700        | 2700        |
| 800         | 800         | 800         | 800         |
| 3000        | 3800        | 3800        | 4600        |
| 1800 x 2200 | 1800 x 2200 | 2000 x 2500 | 2000 x 2000 |
| 16          | 16          | 25          | 25          |
| 1600 x 1600 | 1600 x 1600 | 2000 x 2000 | 2000 x 2000 |
| 1600 x 2000 | 1600 x 2000 | 2000 x 2500 | 2000 x 2500 |
| 12          | 12          | 20          | 20          |
| 25          | 25          | 20          | 20          |
| 25          | 25          | 25          | 25          |
| 4           | 4           | 3           | 3           |
| 130         | 130         | 130         | 130         |
| 4000        | 4000        | 4000        | 4000        |
| 2           | 2           | 2           | 2           |
| 37          | 37          | 37          | 37          |
| 1530        | 1530        | 1530        | 1530        |
| 160         | 160         | 160         | 160         |
| 3500        | 3500        | 3500        | 3500        |
| 2           | 2           | 2           | 2           |
| 52          | 52          | 52          | 52          |
| 2396        | 2396        | 2396        | 2396        |



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