

SPEEDRAM

FLOOR TYPE BORING AND MILLING MACHINES



SPEEDRAM product range consists of five models with boring spindle diameter from 130 mm to 260 mm and vertical stroke from 2000 mm to 8000 mm, all developed based on the same high tech solutions and built with utmost care and attention



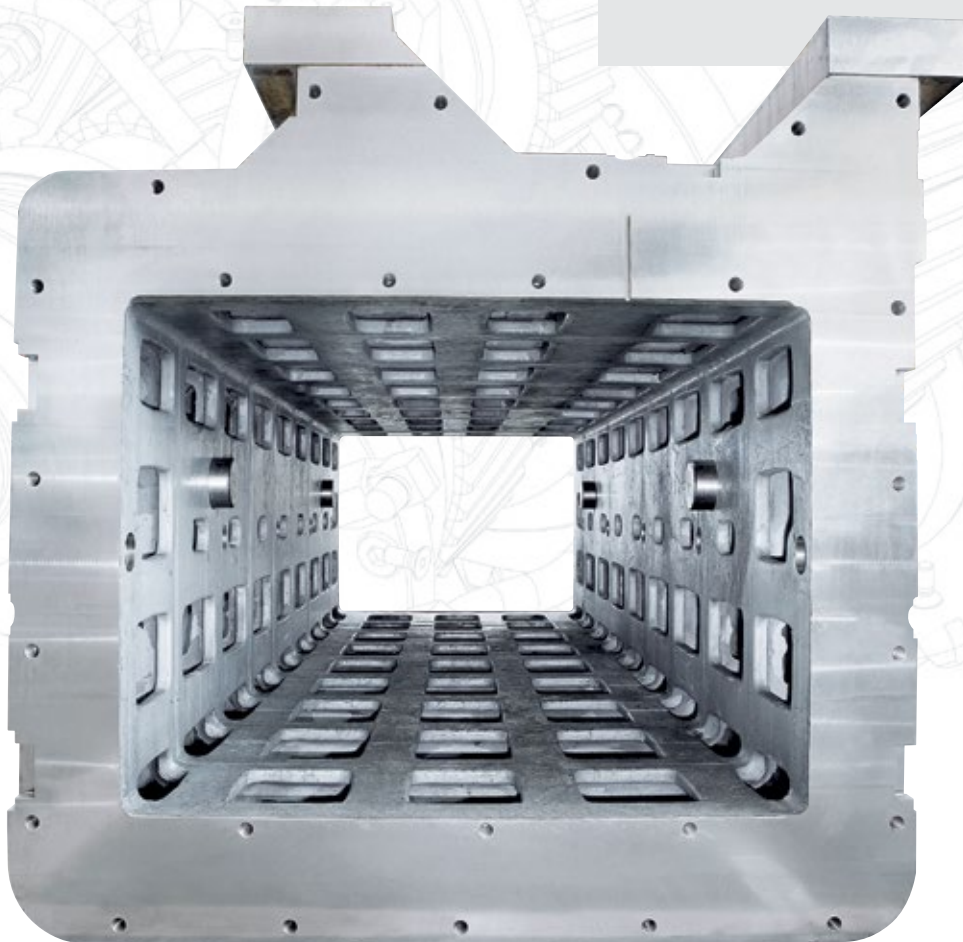
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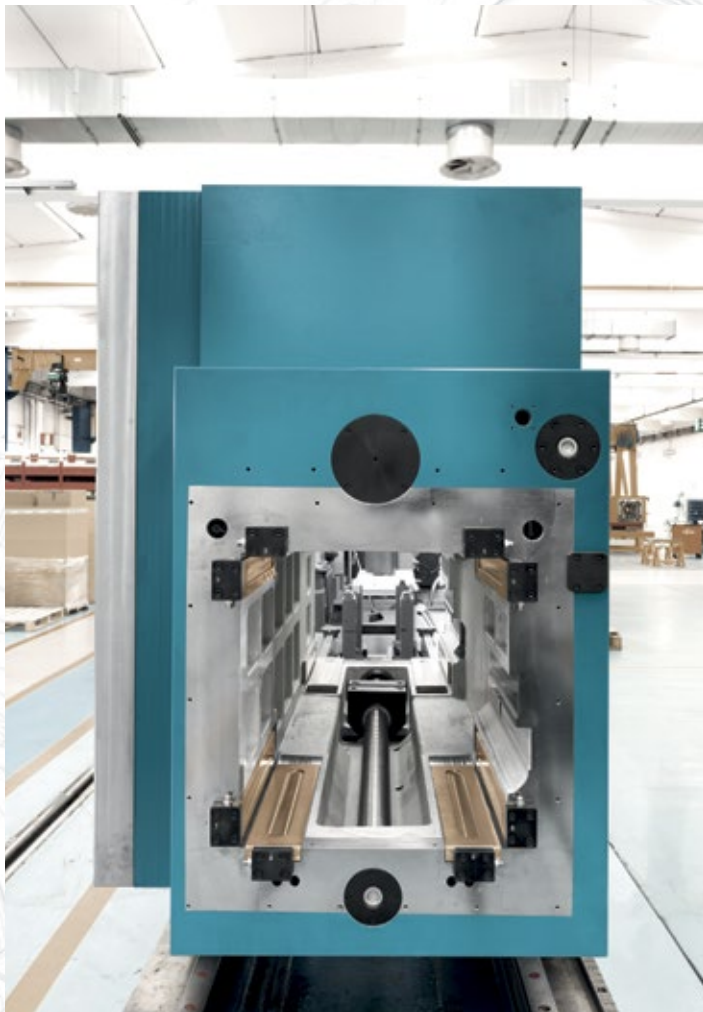


STRUCTURAL FEATURES

all SPEEDRAM boring and milling machines are designed to guarantee maximum rigidity and stock removal ability throughout their work envelope and to maintain their accuracy in time



double wall column
construction



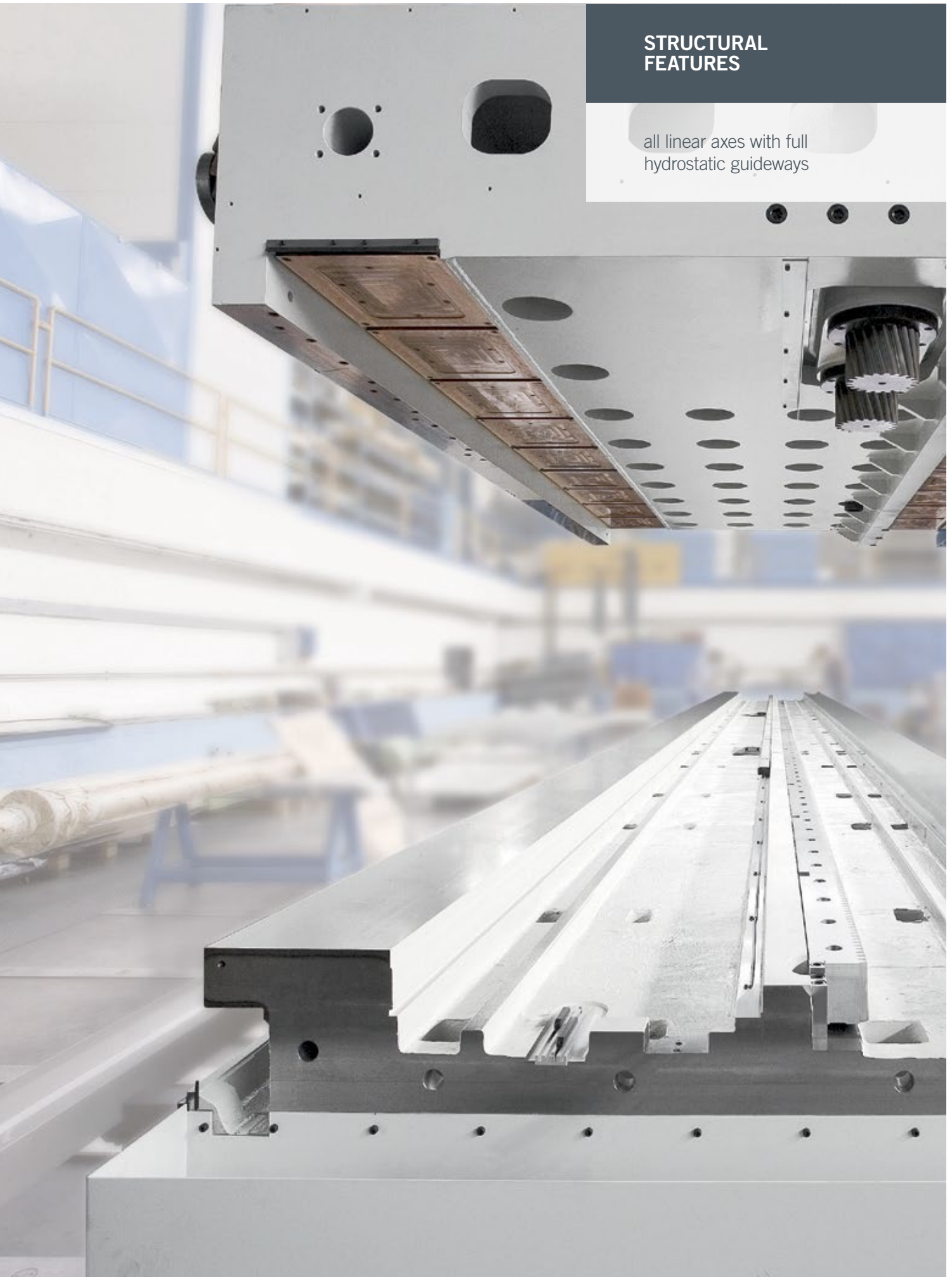
monolithic cast iron headstock with
hydrostatic support on all sides

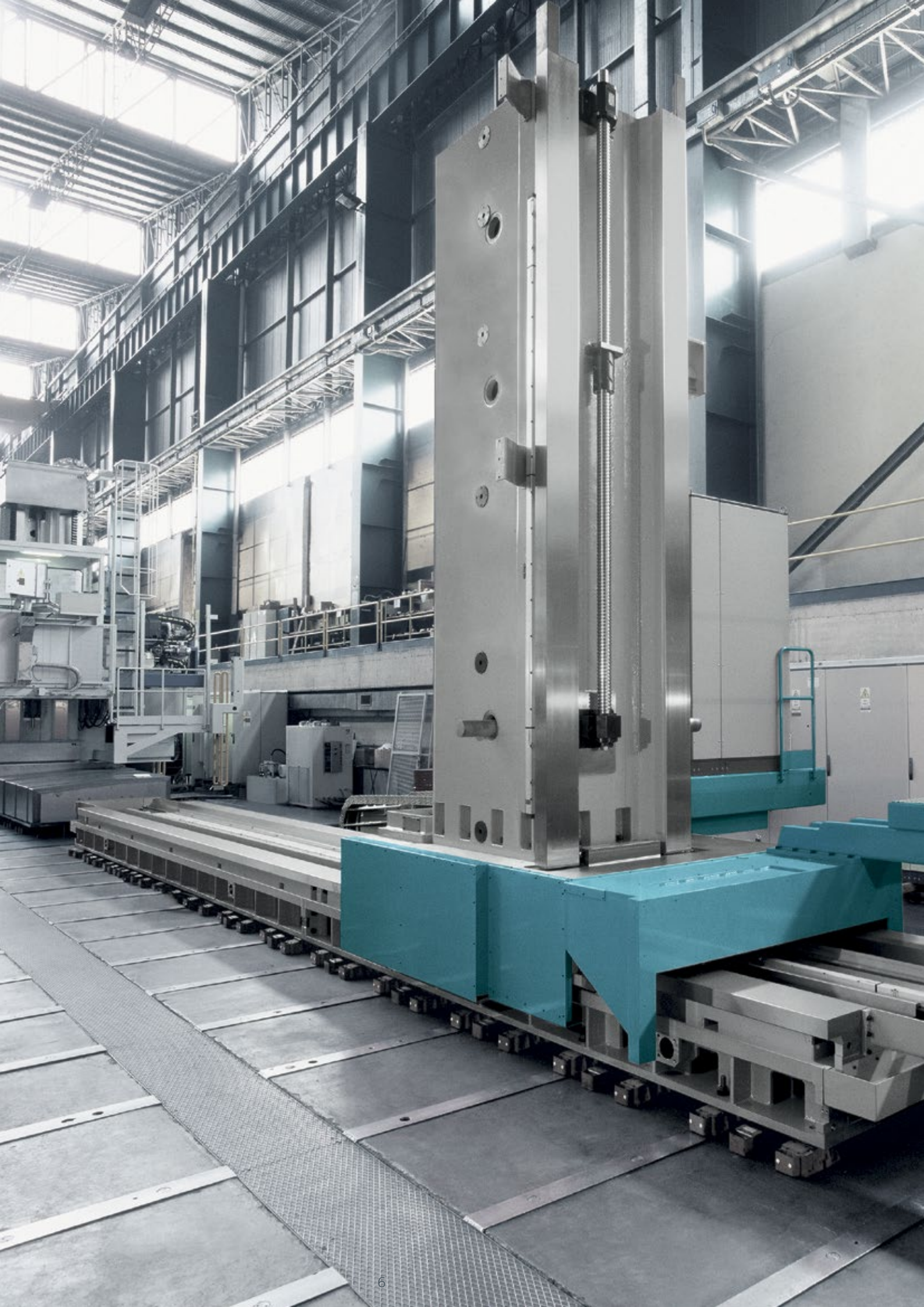
individually hand scraped hydrostatic
bronze pads guarantee maximum
accuracy of the oil film thickness and
performance



STRUCTURAL FEATURES

all linear axes with full
hydrostatic guideways



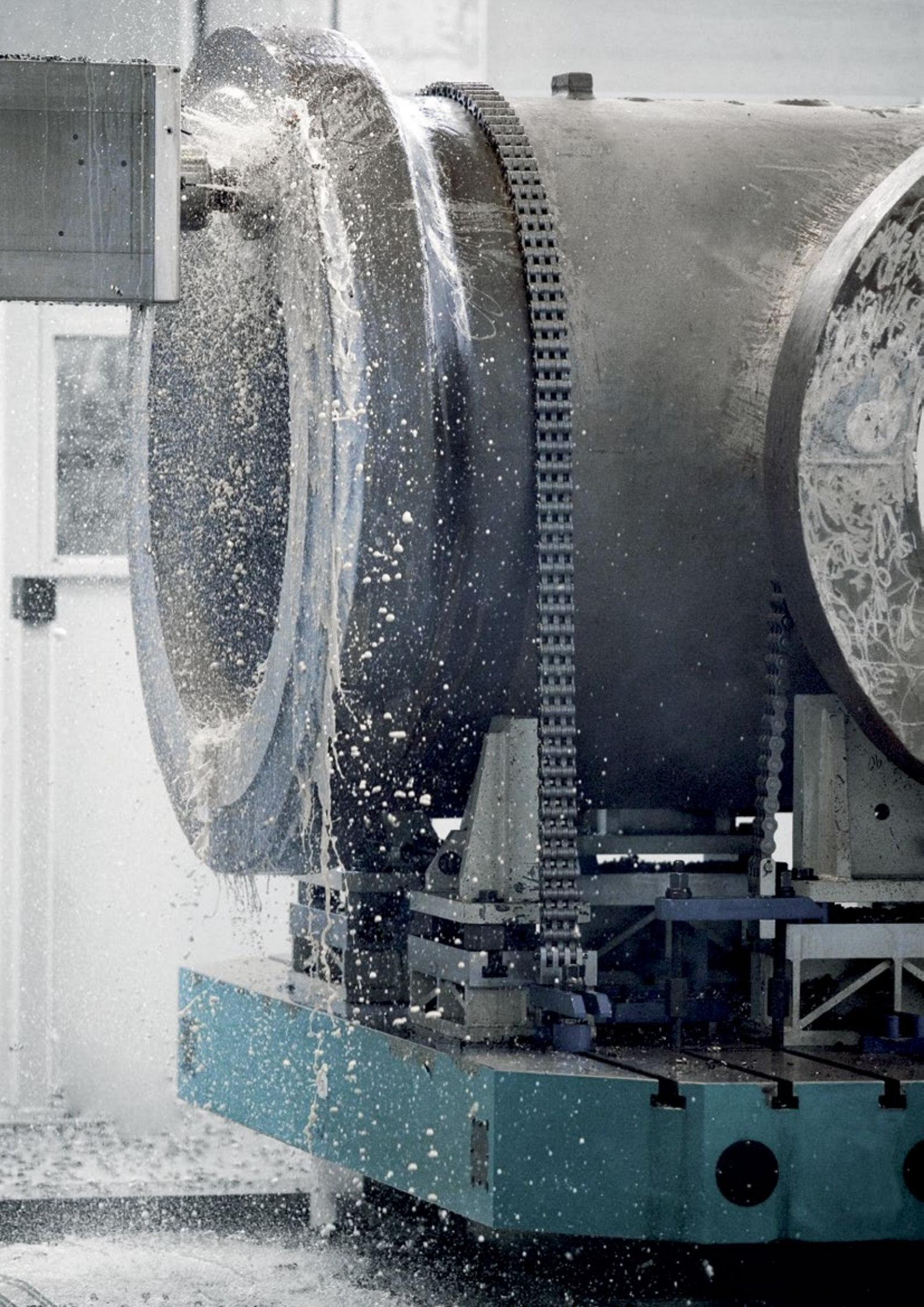




TECHNICAL SOLUTIONS

rectangular ram fully enclosed in a monolithic headstock casting with hydrostatic support on all sides

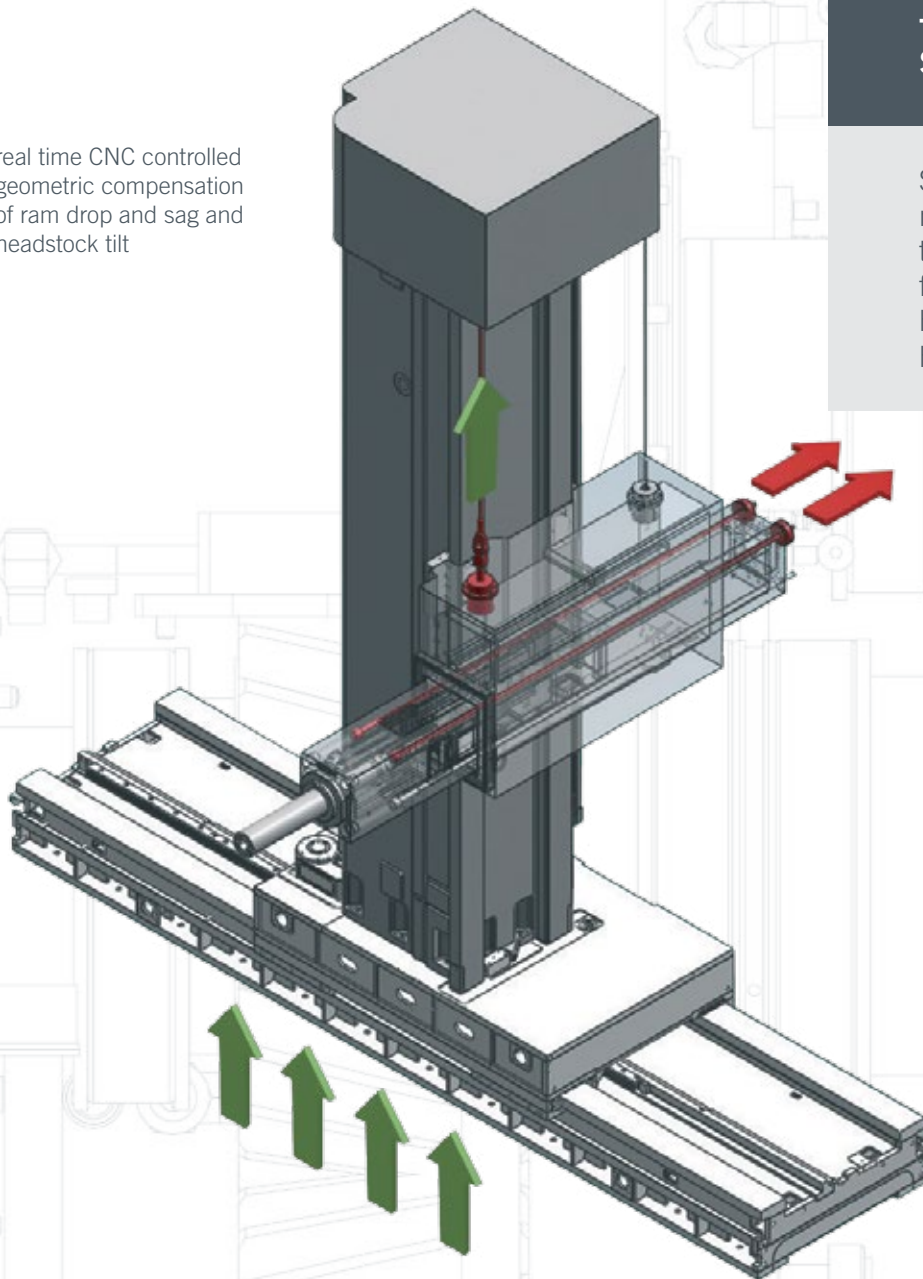




TECHNICAL SOLUTIONS

real time CNC controlled geometric compensation of ram drop and sag and headstock tilt

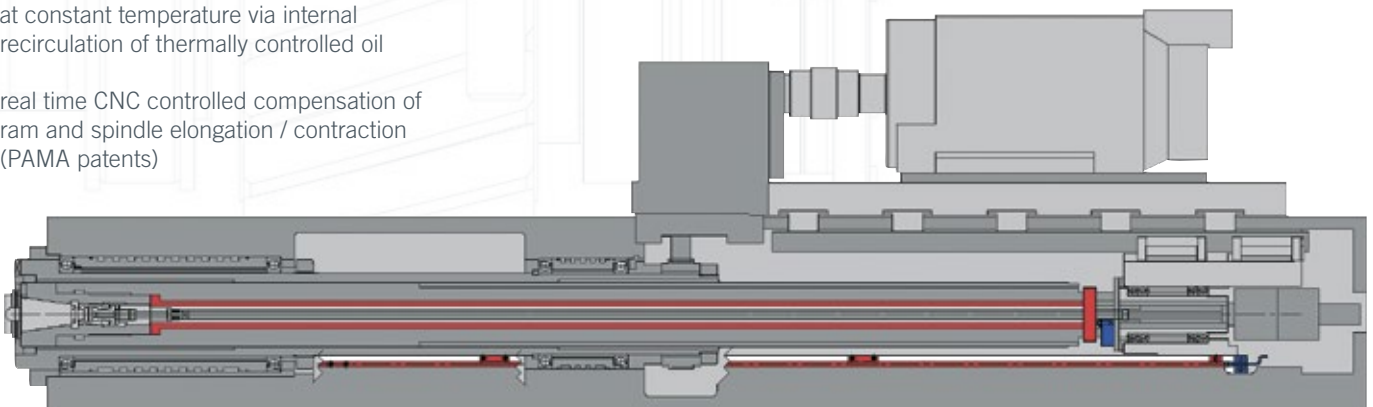
SPEEDRAM boring and milling machines are a combination of well tested and sturdy elements like frames and structure, with innovative high tech solutions, to achieve the highest accuracy and productivity



the spindle powertrain uses hardened and ground gears

ram and spindle gearbox are maintained at constant temperature via internal recirculation of thermally controlled oil

real time CNC controlled compensation of ram and spindle elongation / contraction (PAMA patents)





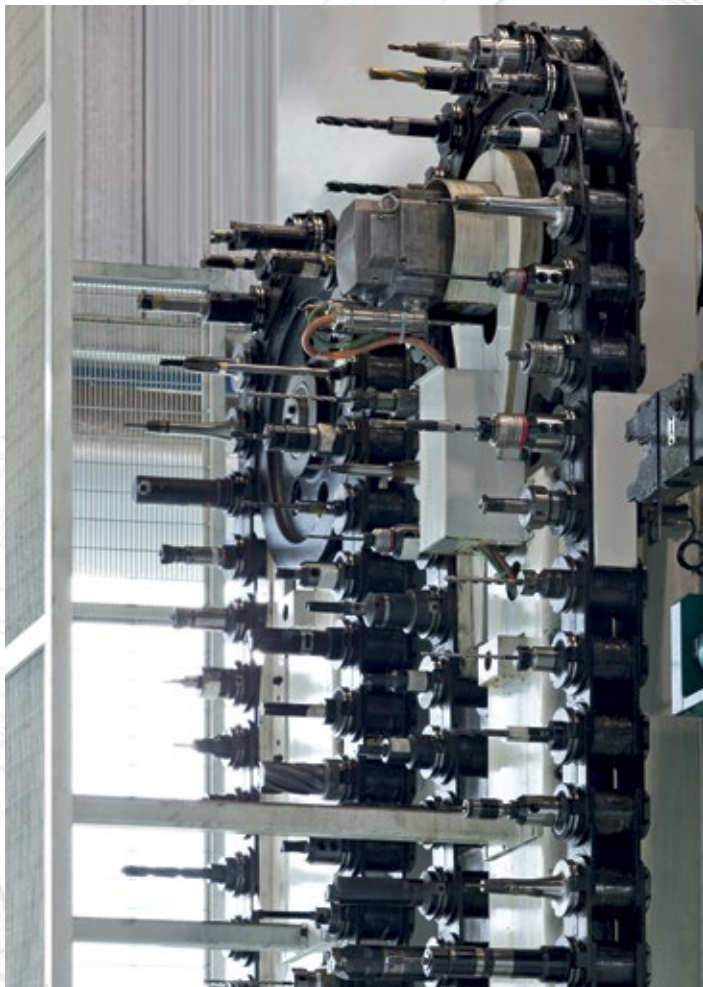




TOOL MAGAZINES

productivity of SPEEDRAM
machines is further enhanced
by a complete range of tool
magazine options





chain type tool magazines, column side mounted, with capacity from 60 to 140 tools

rack type tool magazines, floor mounted and served by robot, with capacity up to 1000 tools



TOOL MAGAZINES

rack type tool magazines, column
side mounted, with capacity up to
200 tools

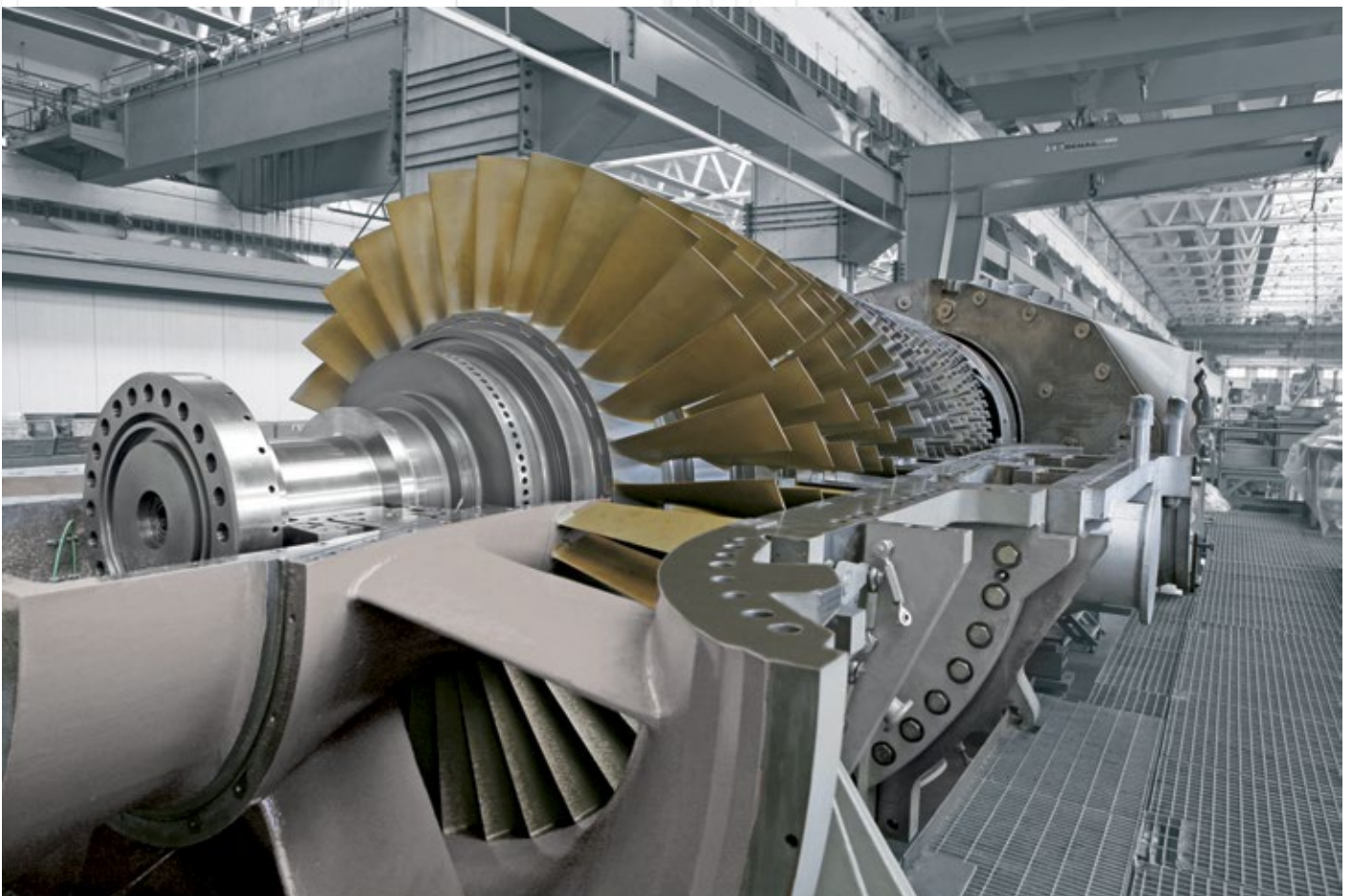






APPLICATION FIELDS

all SPEEDRAM models may be customized to meet specific needs and satisfy nearly all the requirements in the fields of power generation, earthmoving, heavy mechanical engineering, shipbuilding, railway, large diesel engines, aerospace, general machining

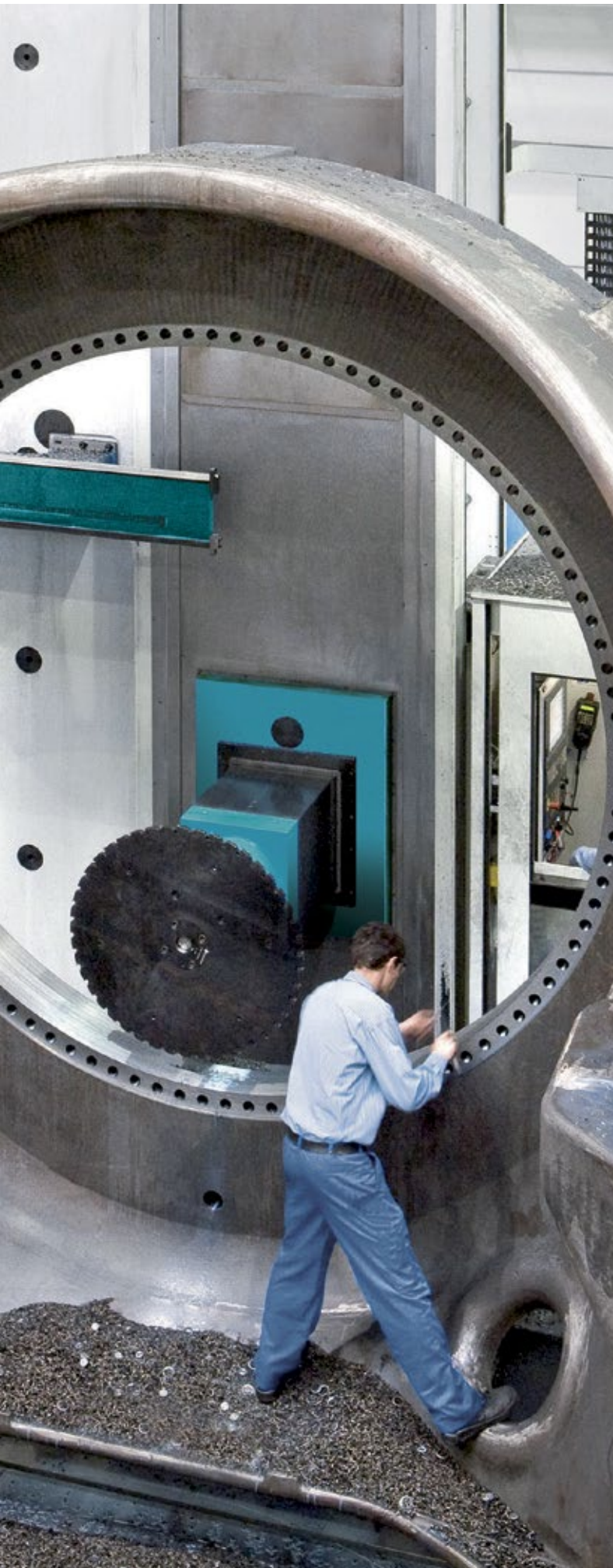


POWER GENERATION

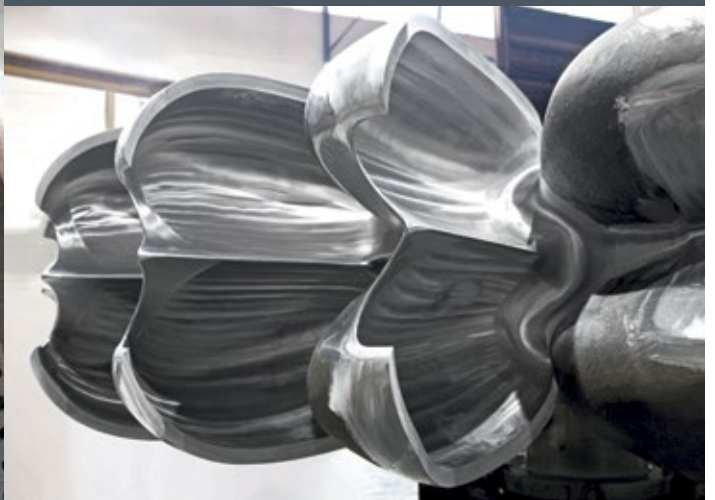


wind power generation nacelle
machining





pelton turbine machining



steam turbine case machining





EARTHMOVING FIELD
hydraulic excavator upper
frame machining

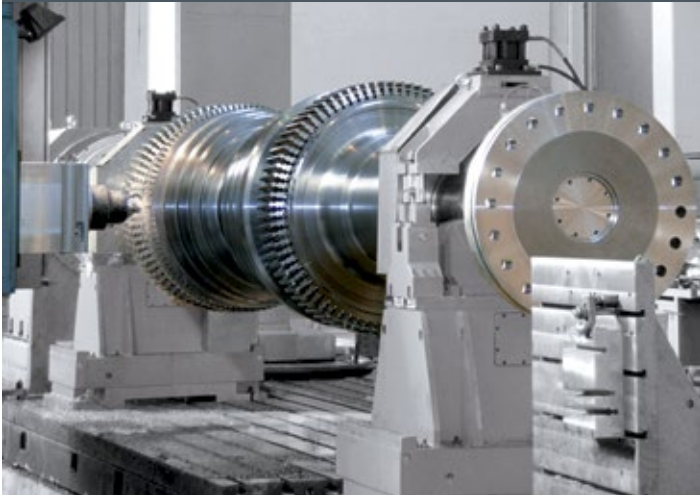


**LARGE DIESEL ENGINES
FIELD**
engine block machining

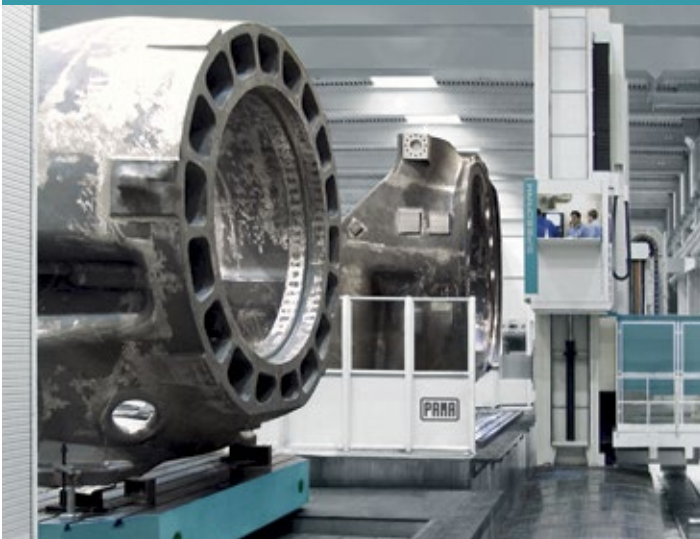


POWER GENERATION

steam turbine rotor
machining

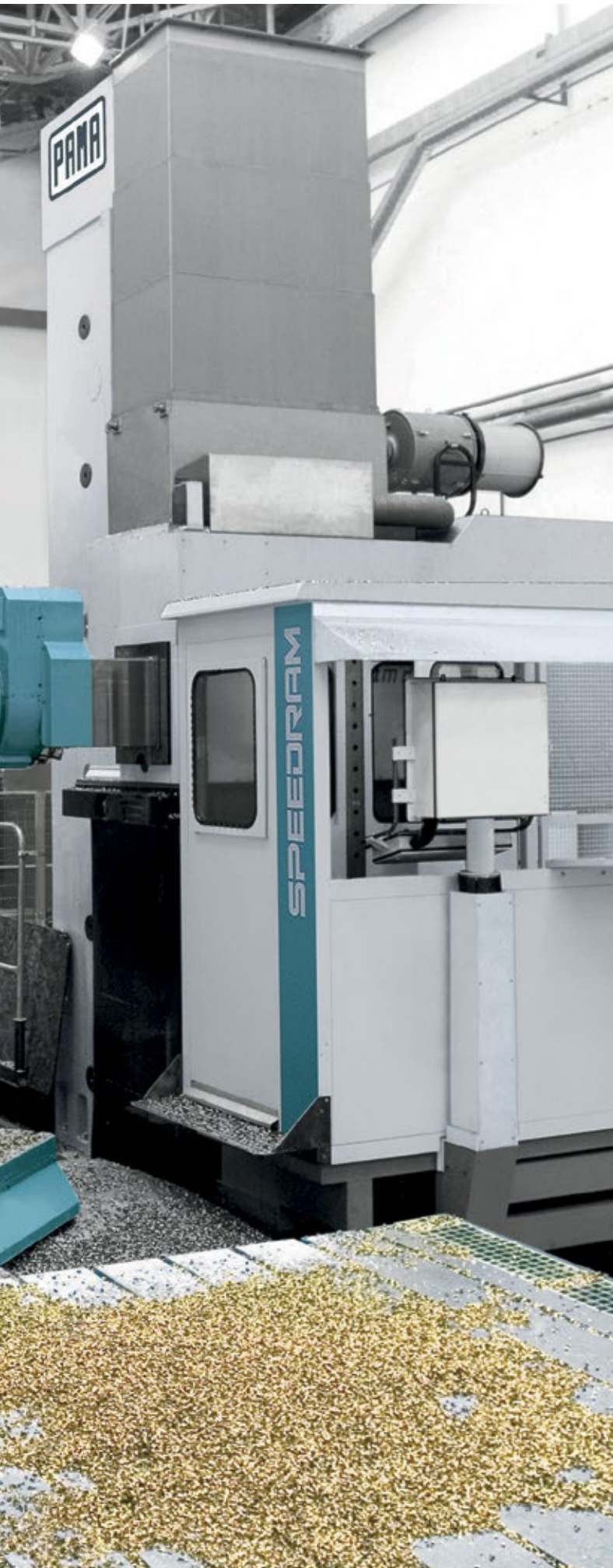


wind power generation
nacelle machining



SHIPBUILDING FIELD
variable pitch propeller
blade machining





gas turbine shaft
machining



steam turbine case
machining











SPEEDRAM

SPEEDRAM floor type boring and milling machines with full hydrostatic guideways



HEAD ATTACHMENTS

the versatility of the SPEEDRAM machines is further enhanced by the wide range of attachments available, all capable of being automatically loaded / unloaded for maximum efficiency

2 axes contouring head TW 2 AC



right angle head TS



universal head TU



right angle head TS





universal head with orthogonal axes TTL



facing head UT



ROTOTRAVERSING TABLES

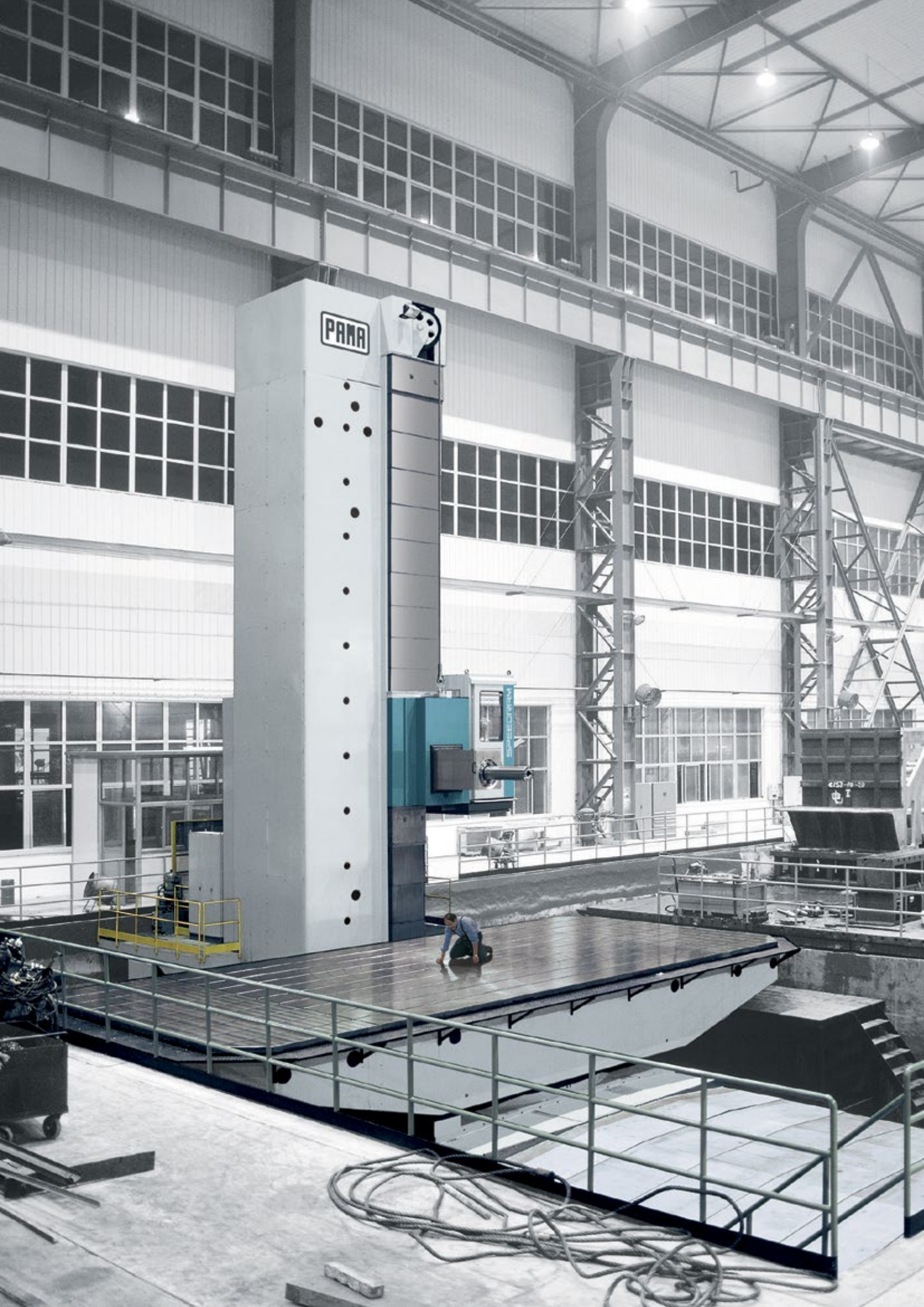
PAMA produces a wide range of hydrostatic rototraversing tables naturally complementing the SPEEDRAM machines. Optimal integration of machines and tables is achieved thanks to the commonality of technology and solutions used

TECHNICAL FEATURES OF HYDROSTATIC ROTOTRAVERSING TABLES

		TH 50	TH 65	TH 80	TH 100	TH 120
loading capacity	t	50	65	80	100	120
table surface - min.	mm	2000 x 2000	2500 x 2500	2500 x 2500	3000 x 3000	3000 x 3000
table surface - max.	mm	3000 x 3000	3500 x 3500	4000 x 4000	4500 x 4500	5000 x 5000
V axis longitudinal travel	mm	1500 - 4000	1500 - 4500	1500 - 4500	2000 - 4500	2000 - 4500

		TH 160	TH 250	TH 300	TH 600
loading capacity	t	160	250	300	600
table surface - min.	mm	4000 x 4000	4500 x 4500	5000 x 5000	6000 x 6000
table surface - max.	mm	6000 x 6000	6000 x 8000	6000 x 12000	8000 x 12000
V axis longitudinal travel	mm	3000 - 5000	5000 - 7000	5000 - 8000	5000 - 8000

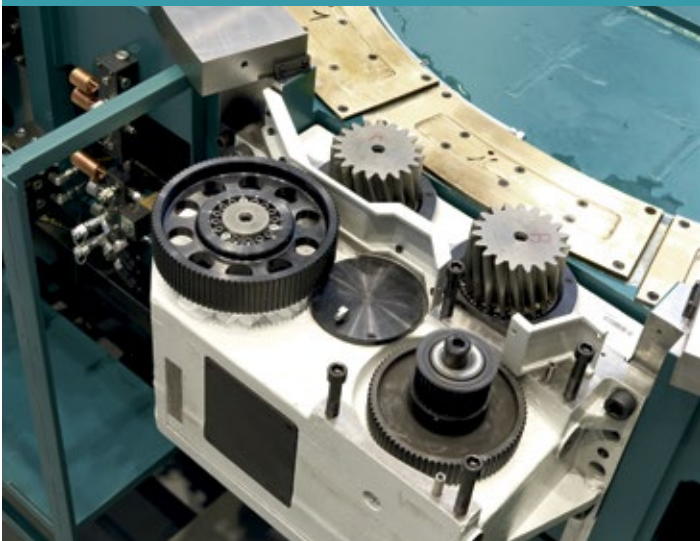
tables with other dimensions and loading capacity are available upon request



hydrostatic support for both rotary table and
linear traversing axis



B axis is driven via a double rack and
pinion system (preloaded for backlash
free operations)

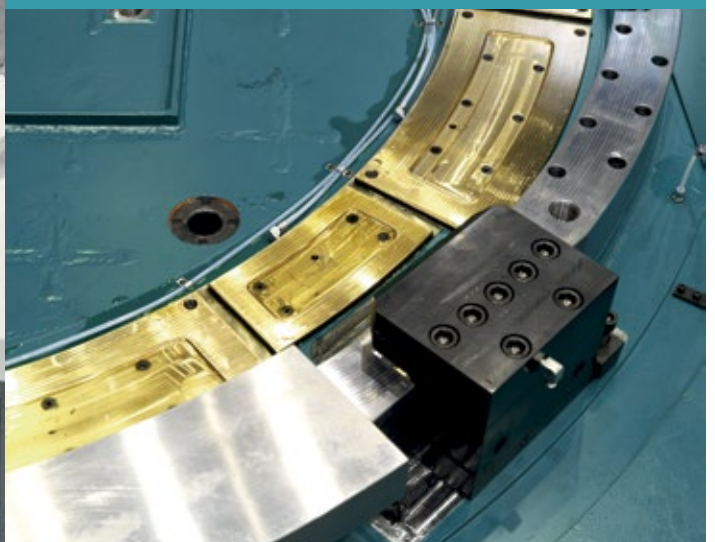




hydrostatic thrust bearing
and hydrostatic pads



self adjusting hydraulic
brakes on rotary table (B axis)





SPEEDRAM

sliding enclosure movable between
working areas for SPEEDRAM 2000

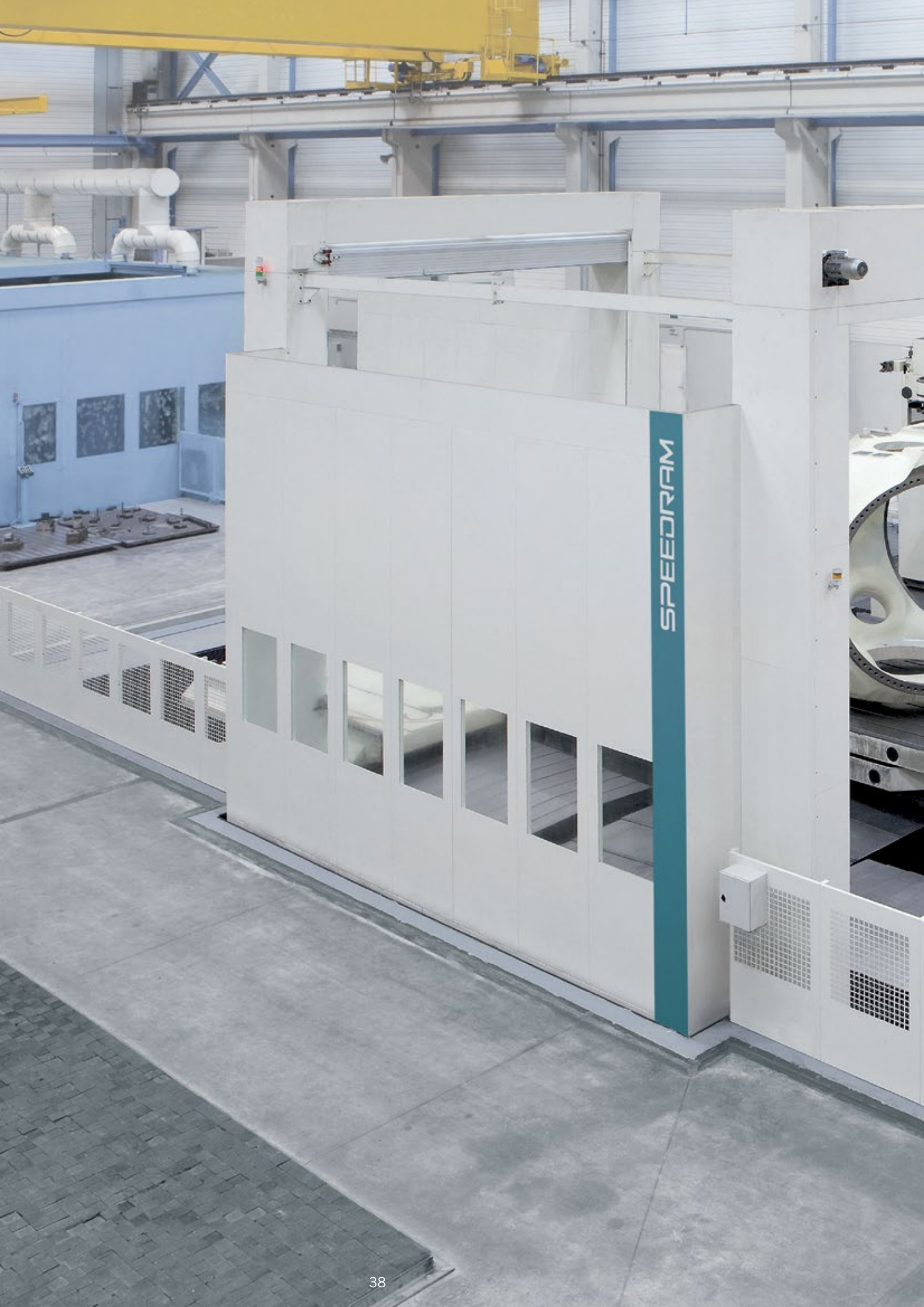


SAFETY AND ERGONOMICS

fully enclosed guardings are
available for SPEEDRAM machines
in order to guarantee a safe and
clean working environment

enclosure for SPEEDRAM 2000,
completely closed on five sides, equipped
with centralized mist collector





ERGONOMICS AND SAFETY

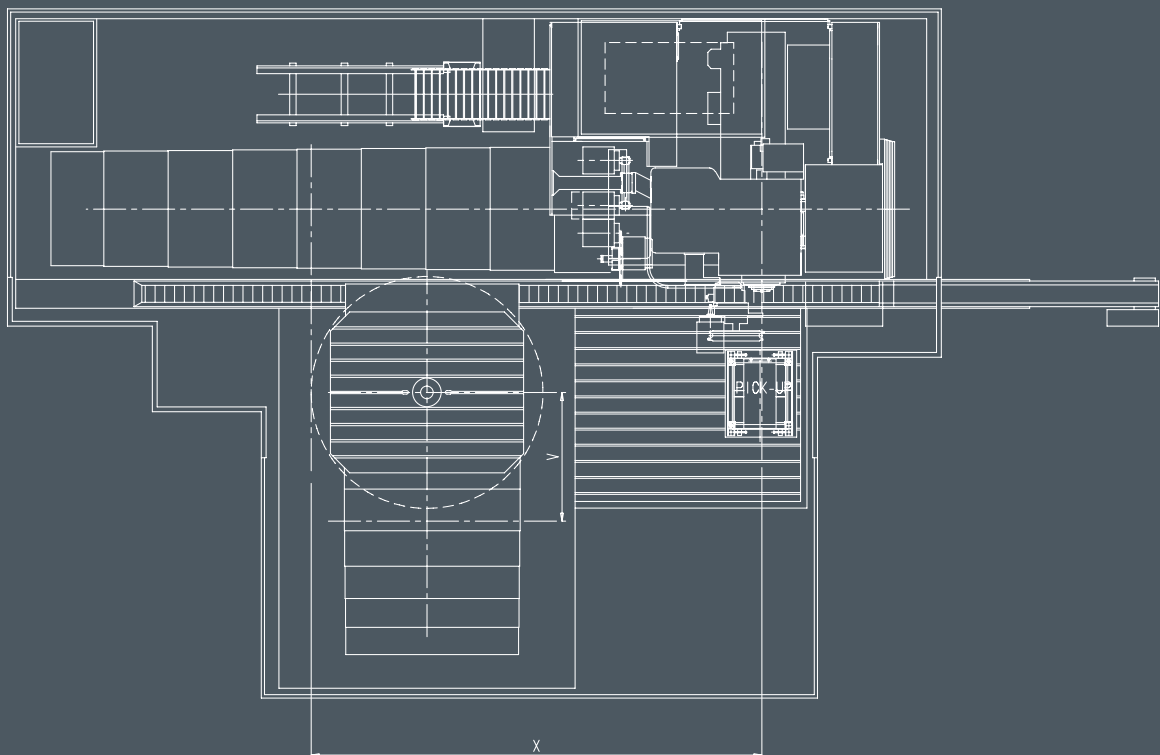
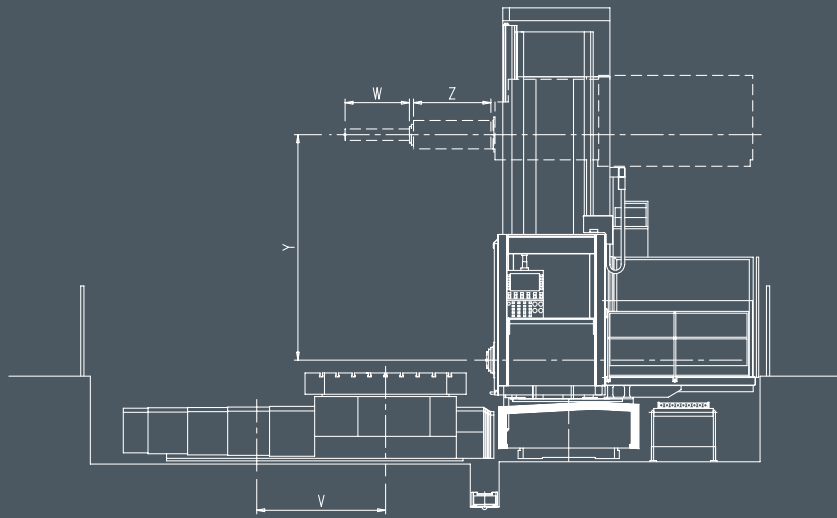
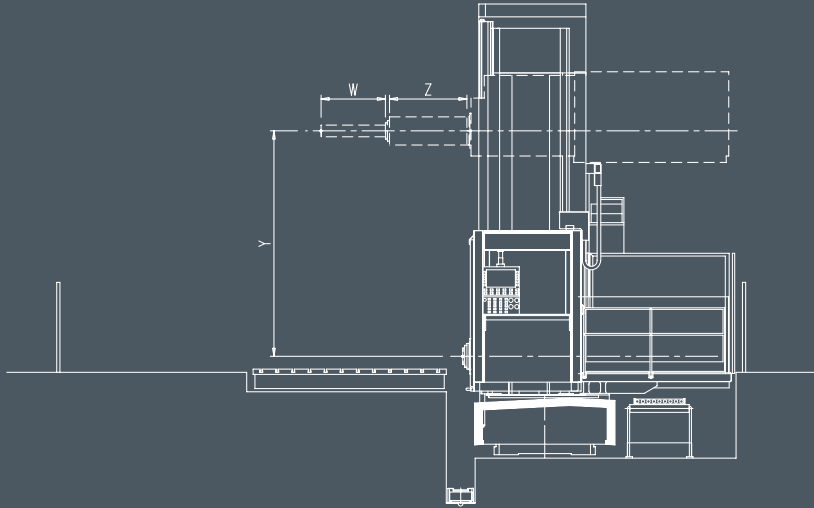
guarding systems for
SPEEDRAM 3000 with
palletized rototraversing table



TECHNICAL SPECIFICATIONS

the SPEEDRAM product range allows to perfectly match any of our customer application requirements in terms of size, power, productivity and accuracy

SPEEDRAM		1000	2000	3000	4000	5000
WORKING AREA						
X axis (column)	mm	4000	4000	6000	6000	6000
	mm	+N° x 1000	+N° x 1000	+N° x 1000	+N° x 1000	+N° x 1000
Y axis (headstock)	mm	2000-4000	3000-5000	4000-6000	5000-7000	5000-8000
Z axis (ram)	mm	1000	1200	1500	1700	1900
W axis (boring spindle)	mm	700	1000	1200	1400	1600
Z+W axes	mm	1700	2200	2700	3100	3500
HEADSTOCK						
Ram section	mm	360 x 400	400 x 440	440 x 480	520 x 560	560 x 600
Boring spindle diameter	mm	130 - 150 - 160	150 - 160 - 180	160 - 180 - 200	200 - 225 - 262	225 - 262
Max. spindle speed	rpm	4000 - 3500 - 3500	3500 - 3500 - 2500	3500 - 2500 - 2200	2200 - 2000 - 1600	2000 - 1600
Spindle gear ranges		2	2 - 3	3	3	3
Max. spindle power (S1-100%)	kW	37 - 52	60 - 93	70 - 93	119	145
Max. spindle torque (S1-100%)	Nm	1525 - 2396	2822 - 9252	5757 - 10385	12881 - 17087	20351-25685
Tool taper	mm	ISO 50	ISO 50	ISO 50 - ISO 60	ISO 60	ISO 60
AXES RATES						
X-Y-Z-W axes feed / rapid	mm	30000	25000	25000	18000	12000





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