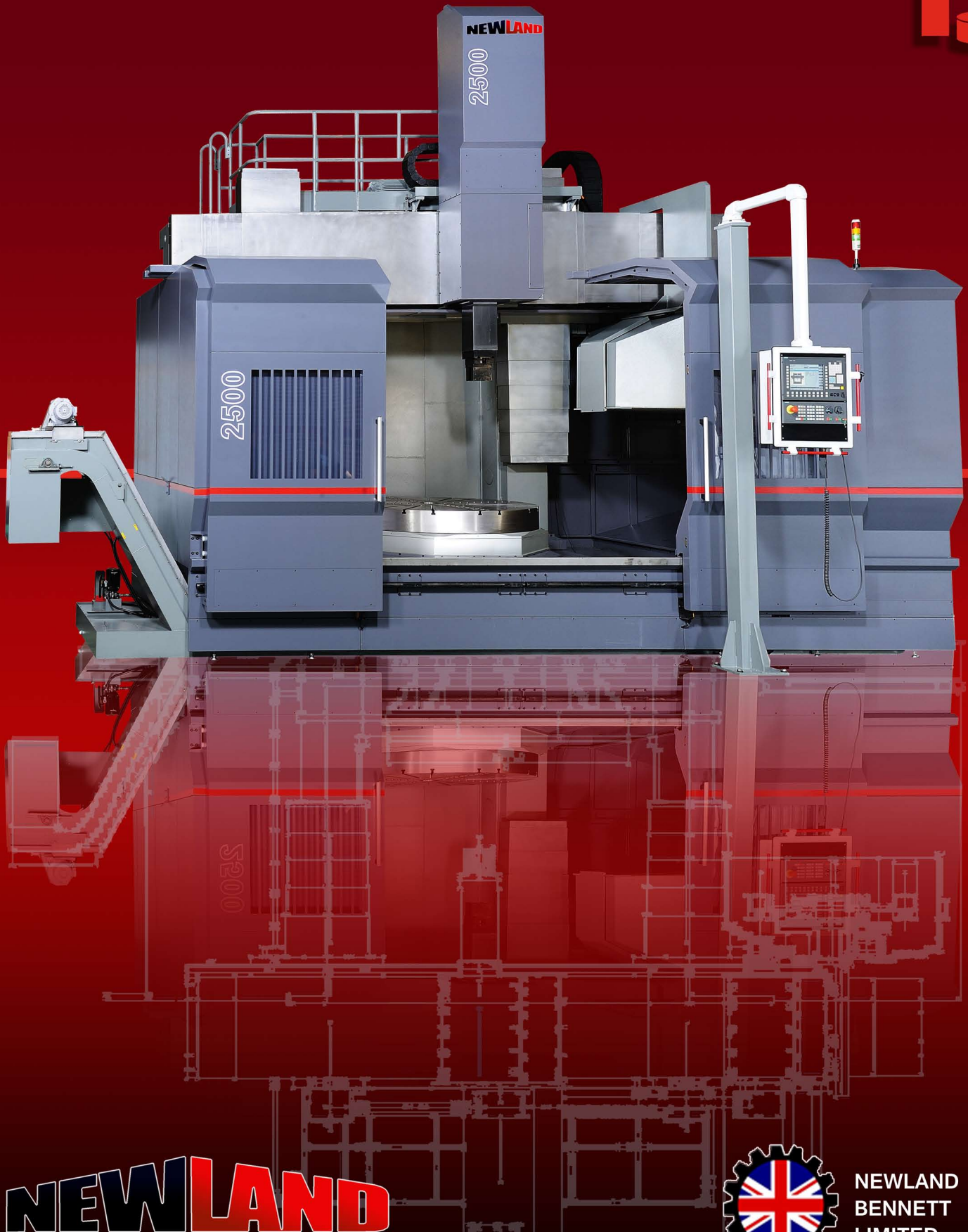


Vertical Turning Centers



NEWLAND
Newland Machine Tool Group Inc.



NEWLAND
BENNETT
LIMITED



Vertical Turning Centers

The Newland line of Vertical Turning Centers offers the following **ADVANTAGES**:

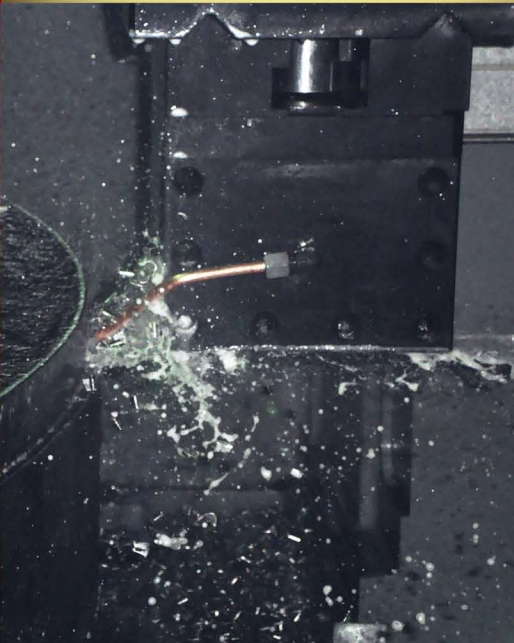
- Hand scraped heavy duty cast iron construction
- Large crossed roller table bearings with proprietary preload and lubrication techniques for high speeds, high payload capacity and increased rigidity and accuracy(NVT1600 –3200)
- New generation of hydrostatic table bearings (NVT4000-5000)
- Combination box ways for superior dampening, rigidity and long life
- Proprietary crossrail positioning and clamping for rigidity and accuracy
- Heavy duty ballscrews and supports for increased rigidity and life
- A proprietary tool adaptation system providing extremely rigid coupling between ram and tool
- 24-month warranty standard with all machines

BASIC FEATURES

- Standard swing diameters from 1600 to 5000mm
- Larger machines available in special configurations
- Fixed and moveable crossrail
- 3 range gear box (tandem drives for NVT4000 & 5000 models)
- Faceplate type chuck with 4 top mount jaws
- 12 position ATC
- Chip conveyor
- Standard enclosure
- Linear glass scales

PERFORMANCE ENHANCING OPTIONS

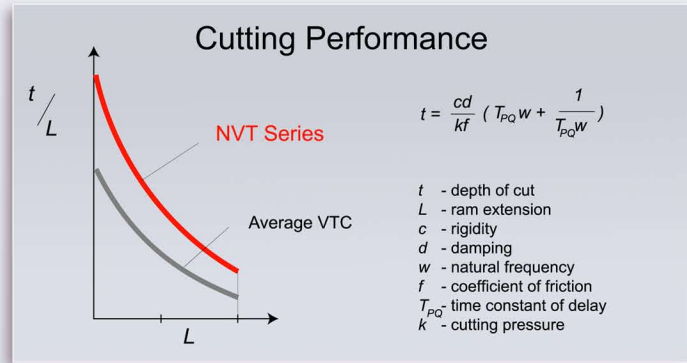
- C axis and live spindle (requires 254 x 254mm ram on NVT1600 & NVT2000 machines)
- Dual rams for 4 axis turning
- Larger capacity tool storage
- Increased traverse rates
- Part and tool probes
- Extended height and ram travel
- Grinding capability with wheel dresser
- Angle heads
- CNC Tilt head
- Special table sizes, speeds and power
- Special manual and hydraulic chucks
- Second chip conveyor
- Pallet systems





The Newland line of vertical turning centers is the culmination of the Newland VTL engineering experience, and the designs and applications resulting from over 100 years of experience at Wickman Bennett and Webster & Bennett.

The Newland Vertical Turning Centers offer unsurpassed rigidity, dampening, accuracy and reliability by design.

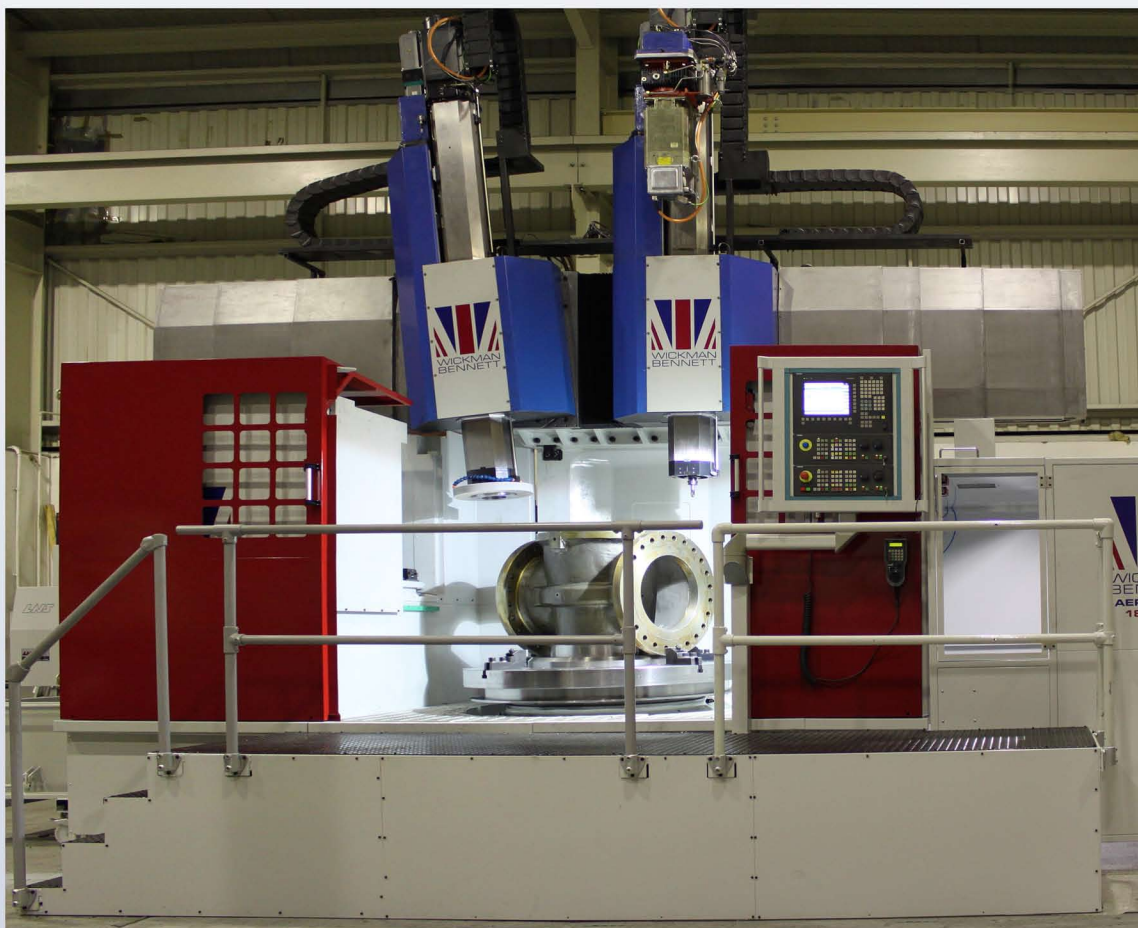


SPECIFICATIONS

	NVT1600	NVT2000	NVT2500	NVT3200	NVT4000	NVT5000
	Single Column		Double Column		Double Column	
Capacity:						
Max turning diameter and swing, mm (in)	1600 (63)	2100 (82)	2500 (98)	3400 (133)	4000 (157)	5000 (197)
Table Diameter, mm (in)	1250 (49)	1600 (63)	2000 (78)	2800 (110)	3500 (138)	4500 (177)
Max turning height, mm (in)	1000 (39.4)		1600 (63)		2500 (98)	
Extended turning height options, mm (in)	1600 (63)	1600 / 2000 (63 / 78)	2000 / 2500 (78 / 98)		3200 (126)	3200 / 4000 (126 / 157)
Max table load capacity, kg (lb)	12000 (26400)	20000 (44000)	30000 (66000)	40000 (88000)	50000 (110000)	80000 (176000)
Table Drive:						
Max speed, RPM	650	450	260	190	100	80
Power, kW (HP)	60 (80)		60 (80)		120 (160)	120 (160)
Increased power option, kW (HP)	N/A		90 (120)		Available	
Torque, Nm (lb.ft)	200000 (147500)	30000 (22125)	49000 (36140)	66000 (48680)	200000 (147500)	250000 (184390)
Ram:						
Ram size, mm (in)	204 x 204 (8 x 8)		254 x 254 (10 x 10)		305 x 305 (12 x 12)	
Max cutting force, N (lb)	40000 (8990)		50000 (11240)		60000 (13490)	
Travels:						
Ram (Z-axis), mm (in)	800 (31.5)		1250 (49)		1600 (63)	
Extended ram (Z-axis) travel, mm (in)	1250 (49)	1250/1600* (49/63)	1600 (63)		2100 (82.7)	
Crossrail travel, mm (in)	600 (24)		1000 (39.4)		1600 (63)	
Crossrail fixed positions pitch, mm (in)	200 (7.8)		200 (7.8)		400 (15.7)	
Number of crossrail positions	4		6		5	
Extended crossrail travel options, mm (in)	1000 (39)	1000; 1600 (39; 63)	1400; 1800 (55; 71)		2400 (94)	2400; 3200 (94; 126)
X and Z rapid travers, mm/min (ipm)	12000 (472)		10000 (400)		10000 (400)	
X and Z max feed rates, mm/min (ipm)	5000 (200)		5000 (200)		5000 (200)	

* 1600mm ram stroke requires 10 x 10 inch ram option

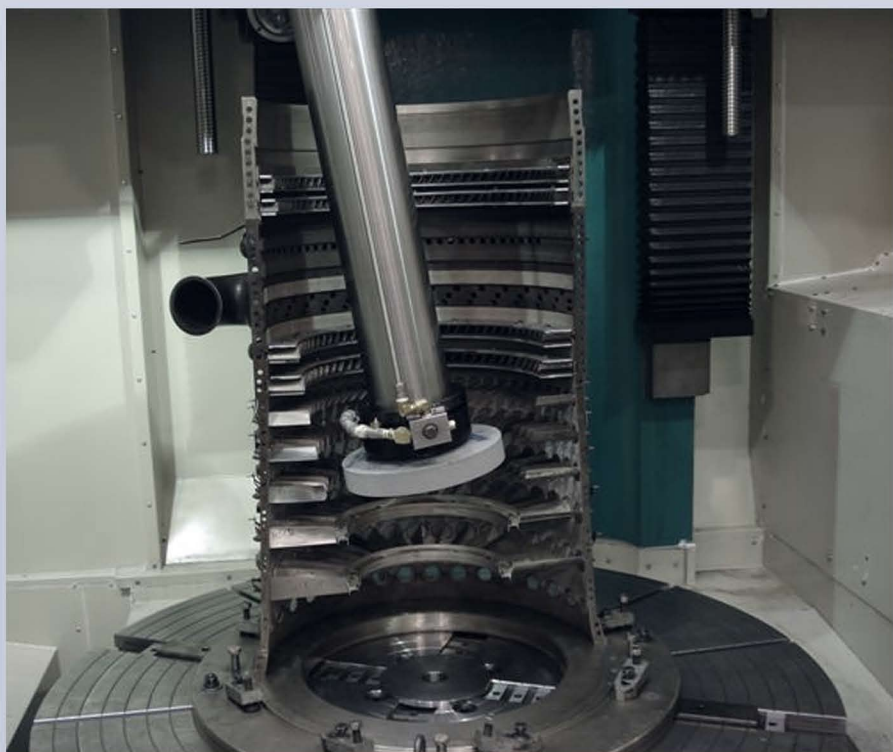
The Newland Machine Tool Group and Newland Bennett bring over 100 years of experience to bear in the design of unique machine features, ancillary equipment and applications to meet even the most challenging production requirements.

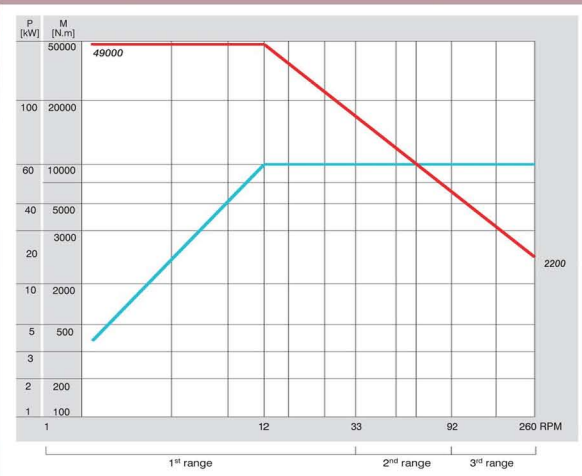


Turn, Mill & Grinding of Valve Bodies with fixed angle or adjustable angle rams.



Turn, Mill, Grind & Probing of Aircraft Components





Main Table Power and Torque
Newland mid-range NVT2500 diagram.

Precision, heavy duty, chatter free machining requires a massive stable platform. Newland machines provide the industries' best structural rigidity, vibration dampening and thermal stability.

MACHINE CONTROL

Machines are available with either Fanuc 31i or Siemens 840D CNC controls and servo drives.

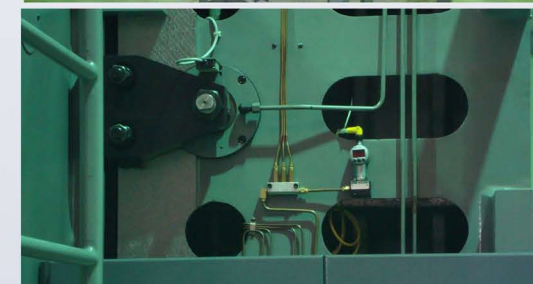


X-AXIS ASSEMBLY
The X-axis ways are a combination box way-guide way design consisting of lubricated bronze opposite pre-loaded roller bearings on hardened steel. This design provides the rigidity and dampening of sliding-type box ways and the high accuracy of linear ways and is the key to maintaining long-term durability and reliability. Newland uses oversized ballscrews supported by combination roller bearings rather than ball bearing packs typical in similar machines. This design provides greater rigidity, improved reliability and longer life. Linear position feedback is via linear glass scale for improved accuracy and thermal stability.



CROSS RAIL CLAMPING

The cross rail is hydraulically clamped on each way. The number of clamps and their location provides significant improvements in rigidity and volumetric accuracies.



CROSS RAIL POSITIONING

The crossrail is located at fixed positions on precision ground ledges. The cross rail motion between positions is controlled by our proprietary linear encoder measuring system, which increases reliability by eliminating a number of switches.



MAIN DRIVE GEARBOX

The main table is driven by Newland's proprietary three range gearbox with optimized ratios for the best dynamic performance available.



MAIN TABLE

Three meter and smaller diameter tables run on a crossed-row roller bearing lubricated by recirculating oil. Newland uses a special proprietary preload and lubrication procedure, which permits the use of larger bearing sizes while maintaining higher table speed. Larger tables will run on hydrostatic bearings. Our bearing designs provide better rigidity, dampening and runout accuracy, critical in machining parts with large diameters, increased height and interrupted cuts. The drive gear with Rc55 teeth, ground to AGMA 12 specifications provide long life and low noise and vibration.



CROSS RAIL TRAVEL

The cross rail elevating motion is driven by dual lead screws and worm & wheel gearboxes. The mechanical advantage from the gearboxes and lead screws eliminate the need for brakes and counterbalance mechanisms greatly improving safety and reliability.

TOOL ADAPTATION

Turning tools are located separate from live tools by two V shaped channels and keys and clamped in two places adjacent to the locating keys. This design provides maximum rigidity for heavy turning operations and improved accuracy and surface finish for finishing operations.

RAM HEAD

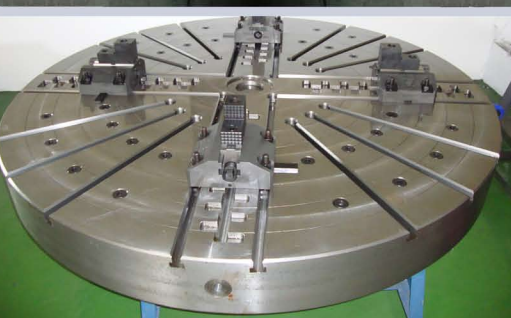
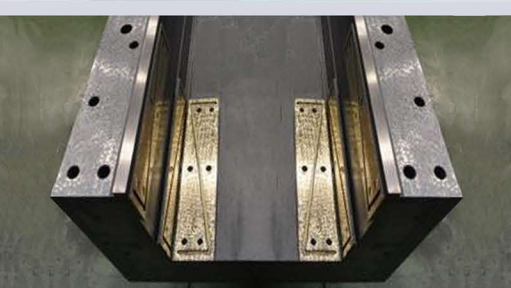
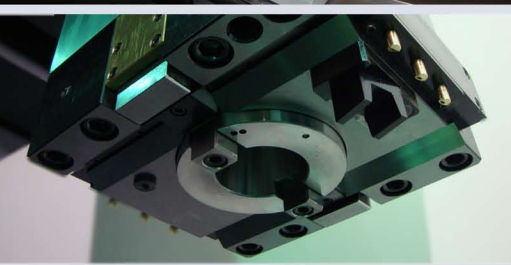
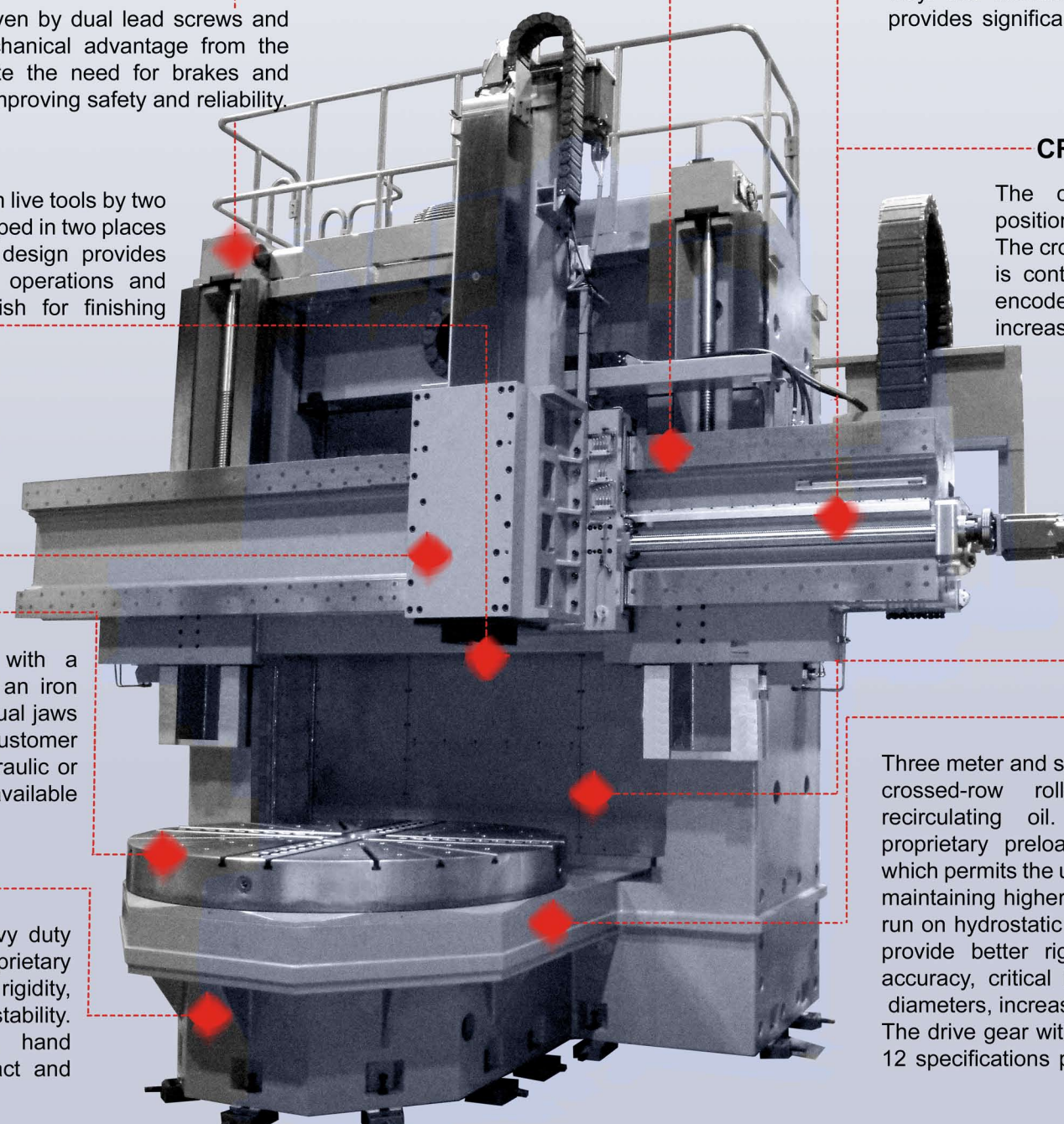
The ram head fully encloses the ram with lubricated bronze bearing surfaces on all four sides. The head is designed to provide greater contact area for improved rigidity, accuracy, life and crash protection.

WORK HOLDING

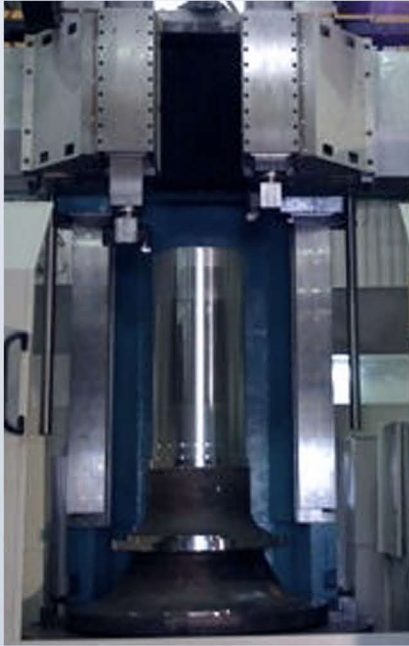
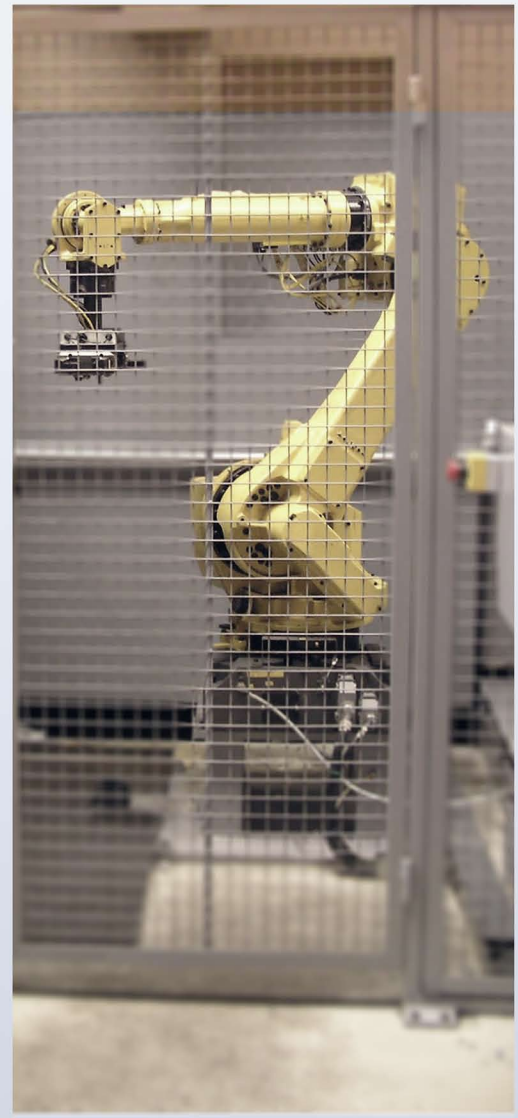
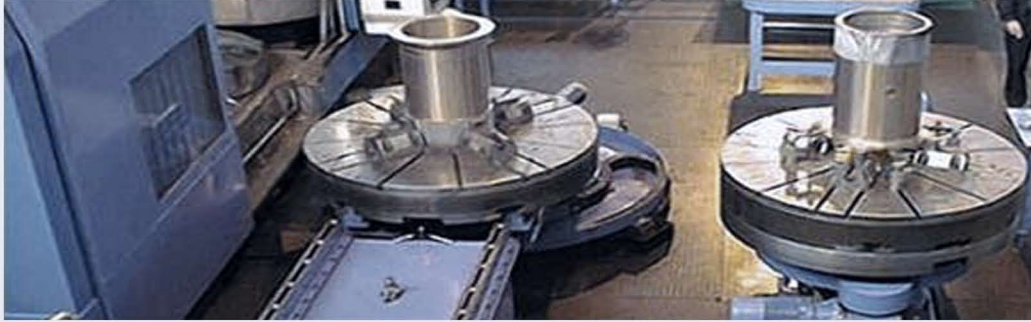
Newland machines are equipped with a faceplate style chuck. The chuck is an iron casting with four top mount type manual jaws and twelve key slots for mounting customer fixturing details. Special manual, hydraulic or electromagnetic chucks are available optionally.

CASTINGS

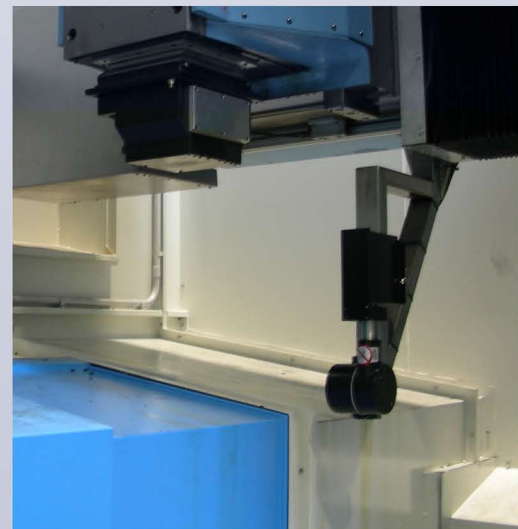
Major machine components are heavy duty iron castings incorporating our proprietary design methods for ribbing for greater rigidity, vibration dampening and thermal stability. Mounting surfaces are precision hand scraped for maximum surface contact and accuracy.



Production enhancing options include Dual Rams, Automatic Pallet Changers, Robot Load, Robotic Tool Exchange, quick change tooling, elliptical turning with Capto automatic tool exchange, and much more.



Inconel Impellor Machining



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