

GRINDING OF STRAIGHT TRACK AND TWO LIPS

INTEGRATED ARTICULATED ROBOT FOR WORKPART LOAD AND UNLOAD



NOVAMATIC 2G/4G

A range of high productivity internal grinding systems for workparts with external diameter ranging from 5 to 440 mm and width up to 200 mm. Several clamping systems available including diaphragm chuck, roll-shoe and mag-drive shoe-centerless devices. Dressing units depending on the workpart profiles ranging from diamond rolls and rotary dressing wheels to CNC-controlled double-fulcrum rotary dressers or single-point dressers for both conventional and CBN wheels. Special external grinding unit with wheel outside diameter 300 mm for tangential grinding and diamond ring directly mounted to the workhead.

MODEL	STANDARD MACHINE RANGE
NOVAMATIC 2G-J	Ø 5 – 25 mm ≠ 20 mm
NOVAMATIC 2G M	Ø 10 - 90 mm ≠ 60 mm
NOVAMATIC 2G R	Ø 10 – 65 mm ≠ 100 mm
NOVAMATIC 2G P	Ø 10 – 90 mm ≠ 70 mm
NOVAMATIC 2G T	Ø 10 - 40 mm ≠ 35 mm
NOVAMATIC 2G-S M	Ø 20 – 130 mm ≠ 100 mm
NOVAMATIC 2G-S R	Ø 16 - 120 mm ≠ 100 mm
NOVAMATIC 2G-S P	Ø 20 – 130 mm ≠ 70 mm
NOVAMATIC 4G R	Ø 80 – 200 mm ≠ 80 mm
NOVAMATIC 4G P	Ø 50 - 225 mm ≠ 125 mm
NOVAMATIC 4G-S P	Ø 80 – 440 mm ≠ 200 mm



NOVAMATIC 2G-J FOR GRINDING WORKPARTS FROM 5 TO 35 MM DIAMETER

WORKED PARTS

Main Available Devices

- Automatic loader and workpart load and unload conveyors
- Automatic taper correction device
- Acoustic emission system for gap elimination
- Acoustic emission system for wheel-to-dresser contact control
- High frequency electric spindles with hybrid bearings
- Nova CNC control specially designed for optimum grinding performance

2G / 4G

NOVAMATIC

NOVAMATIC 4G-S GRINDING OF INSIDE DIAMETER ON BEARING OUTER RINGS FOR THE WIND ENERGY SECTOR

MAG-DRIVE SHOE-CENTERLESS DEVICE

ROLL-SHOE CENTERING FIXTURE WITH INTEGRATED AUTOMATIC LOADER



DIAPHRAGM CHUCK TYPE CLAMPING FIXTURE WITH ENVELOPING JAWS DIAPHRAGM-CHUCK TYPE CLAMPING FIXTURE WITH DIAMOND RING DIRECTLY MOUNTED TO THE WORKHEAD FOR INTERNAL AND EXTERNAL WHEEL DRESSING



Workhead Units

The wheelhead unit is supported by two overlapping slides mounted partially crosswise, each sliding on a pair of preloaded V roller guideways: lower slide (X axis) for cross feed motion and upper slide (Z axis) for wheel oscillation. Possibility to mount hydrostatic guideways on the Z axis.



SHOE-CENTERLESS DEVICE WITH INTEGRATED AUTOMATIC LOADER ENSURING LOAD/UNLOAD TIMES < 1.5 SEC

HYDRAULICALLY OPERATED AUTOMATIC 2-POSITION LOAD ARM

DIAPHRAGM CHUCK TYPE CLAMPING FIXTURE WITH ENVELOPING JAWS, LOAD AND UNLOAD CHUTES AND 1-ARM LOAD/UNLOAD UNIT





THE WHEELHEAD UNIT IS SEPARATED FROM THE WORKING AREA THEREBY OPERATING IN AN ENVIRONMENT DEVOID OF CONTAMINANTS FOR THE SLIDING SURFACES. THE WHEEL SPINDLE HOUSING IS DIRECTLY OPBTAINED IN THE Z AXIS ENSURES THE OPTIMUM BALANCE IN THE AXIS STRUCTURE AND CONTRIBUTES TO THE UTMOST RIGIDITY OF THE UNIT

Server Menne B

Wheelhead Unit 2G Model

The wheelhead unit is supported by two overlapping slides mounted partially crosswise, each sliding on a pair of preloaded V roller guideways (lower X axis slide for cross feed motion and upper Z axis slide for wheel oscillation). Possibility to mount hydrostatic guideways on the Z axis.

TWO WHEELS MOUNTED ON THE SAME WHEEL ADAPTOR FOR SPHERICAL TRACK GRINDING



INTERNAL SIMULTANEOUS GRINDING OF THE TWO TAPER TRACKS AND LIPS ON DOUBLE ROW TAPER ROLLER BEARING OUTER RINGS FOR THE RAILWAY INDUSTRY GRINDING OF STRAIGHT TRACK AND FRONT AND REVERSE FACE GRINDING ON STRAIGHT ROLLER BEARING OUTER RINGS FOR THE RAILWAY INDUSTRY

Wheelhead Unit 4G Model

Two slides mounted crosswise for the utmost rigidity, each sliding on four preloaded and lubricated V roller guideways. The X and Z slide movements are controlled via linear measuring systems which ensure a resolution to within a tenth of a micron.



X AXIS SLIDE FOR CROSS FEED MOTION AND WHEEL WEAR COMPENSATION Z AXIS SLIDE INCORPORATED INTO THE X AXIS SLIDE FOR THE LONGITUDINAL MOTION





DIAMOND ROLL DRESSER



Dressing Units

SINGLE-POINT DRESSER

The unit can accommodate holders for one, two or three single-point diamonds depending on the profile to be obtained on the wheel

DIAMOND ROLL DRESSER

The upward and downward motion of the dresser is hydraulically operated. Dressing takes place in plunge system with a profiled roll or by interpolation of the machine axes with forming roll. The dresser is equipped with a device monitoring the effective diamond roll rotation

DOUBLE-FULCRUM ROTARY DRESSER

To obtain wheel radius profiles with form errors lower than 1μ . The unit can accommodate a fixed holder for up to three single-point diamonds. The rotation of the dresser holder is electrically controlled by AC motor via gear reducer and encoder (E axis)

DRESSING TURBINE

Dressing spindle for CBN wheel dressing

Additional Accessories

- In-process electronic sizing unit
- Post-process electronic sizing unit
- Possibility to equip the machine with Siemens or Fanuc CNC controls
- Automation: gantry loaders or articulated robots
- B axis for grinding diverging lips in a single workpart chucking. Angular displacement +/- 0.5 degrees
- Quick-changeover device for off-line setup
- Automatic grinding cells for workpart load and unload
- Workpart demagnetizer
- Vibratory bowl feeder for automatic workpart load







EDY

DESIGN QUALITY TECHNOLOGY

9-18









GRINDING OF



PARTS



Advanced grinding Solutions



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