ADVANCED GRINDING

SOLUTIONS



A Range of Highly Flexible Combined Grinding Systems





BORE GRINDING ON GEARS

FACE GRINDING ON GEARS







NOVA M12 Combined grinding systems

A range of highly flexible combined grinding systems suitable for multi-surface and simultaneous grinding applications for workpart with outside diameter ranging from 5 mm to 350 mm and width up to 400 mm (max length to be ground max. 225 mm). Several clamping systems available including diaphragm chuck, roll-shoe and mag-drive shoe-centerless devices. Dressing units depending on the workpart profiles including diamond rolls, single-point diamonds, cup wheels, diamond disks and CNC controlled double-fulcrum rotary dressers for both conventional and CBN wheels.

MODEL	STANDARD MACHINE RANGE
NOVA M12 S	Ø 350 mm ≠ 400 mm
NOVA M12 T	Ø 280 mm ≠ 400 mm
NOVA M12 S M	Ø 350 mm ≠ 400 mm
NOVA M12 T M	Ø 280 mm ≠ 400 mm



Main Available Devices

- Four-position wheel spindle turret
- External grinding unit with wheel diameter 508 mm for outer surface grinding
- Automatic wheel balancing unit
- Nova CNC control specially designed for optimum grinding performance

DIAPHRAGM TYPE CHUCK with centering on the pitch diameter







Workhead Unit

The electric workhead spindle is drivern by an electronic module in the axes drive revolves on highprecision ball bearings and is equipped with incremental gear transducer and brake for the spindle stop in a set position. The machine can also be equipped with encoder (C axis) for the grinding of out-of-round or eccentric surfaces.

Available Fixtures for Workpart Clamping or Centering

- Diaphragm type chuck with clamping on the pitch or outside diameter (specially designed for gears)
- Diaphragm type chuck with front clamp
- Workpart clamping by self-centering chuck
- Roll-shoe centering fixture with integrated loader
- Shoe-type centering fixture, loader and workpart drive by electromagnetic chuck
- Expanding mandrel

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.

Dressing Disk

Directly mounted to the workhead.

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.



DIAMOND ROLL DRESSING OF STRAIGHT OR PROFILED WHEELS BY INTERPOLATION





Wheelhead Unit

The strongest feature of the Nova M12 range is flexibility.

This range of grinders can be configured to meet the specific grinding needs of our customers.



HIGH FREQUENCY SPINDLE BODY DIAMETER 120 MM OR 150 MM FOR THE INTERNAL GRINDING WHEEL MAX. EXTERNAL GRINDING WHEEL OUTSIDE DIAMETER: 508 MM; WHEEL SURFACE SPEED: 80 M/S



Wheelhead Unit

Indexable Multi-Spindle Turret

Up to four high frequency spindles with CNC-controlled indexing (A axis). Indexing repeatibility at 150 mm from the spindle holder withing 1μ , ideal for CBN wheels. One of the high frequency spindle holders can be swivelled up to max. 6 degrees for the grinding of an inside front face with tangential wheel RFT External Grinding Unit for Tangential Grinding

For the plunge or oscillating grinding of straight or taper outside diameters and outer front faces simultaneously to bore grinding. The wheel displacement takes place by means of two CNC-controlled overlapping slides (U and W axes). The RFT External Grinding Unit is complete with wheel flange and primary wheel guard

Additional Accessories

- In-process electronic sizing unit
- Post-process electronic sizing unit
- Possibility to equip the machine with Siemens or Fanuc CNC controls
- Automation: integrated automatic loaders or articulated robots
- Quick-changeover device for off-line setup
- Automatic taper correction device for the internal grinding wheel
- Steady rest for workpart centering

LOAD AND UNLOAD CONVEYORS PLUS ONE-ARM GANTRY LOADER WITH INDEXING GRIPPER

GRINDING OF BORE, CONE AND FACE IN ONE SINGLE CHUCKING OPERATION













EXAMPLE OF WORKED PARTS





ADVANCED GRINDING SOLUTIONS



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