NG STEEL RULE NICK-GRINDER

Mod. "NG2000"

Mod. "NG2000 p-std" and "NG2000 p-ext" – *pneumatically operated.*

DECLARATION OF CONFORMITY

OPERATION MANUAL

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DECLARATION OF CONFORMITY

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We
NOR-GRAPHIC LTD,
declare under our sole responsibility that the product:

NG-Steel rule nick-grinder – Mod. "NG2000"

–pneumatically operated

-to which this declarations relates, is in conformity with the previsions of the following EU-directive:

98/ 37/ EEC

Sarpsborg, 01.01.2009

NOR-GRAPHIC LTD

Hilde Jelsness-Larsen

OPERATION MANUAL

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• Field of application:

The NG Steel rule nick-grinder is designed to the sole purpose of grinding “nicks” of various widths and depths in the cutting rule of steel rule dies used for the die cutting and creasing of paper, cardboard and corrugated board.

THE MACHINE MUST NOT BE USED FOR ANY OTHER PORPOSES.

• Work station:

The NG-Steel rule nick-grinder is installed and operated:

- In the die-room at a suitable working table, or
- At the die-cutting machine with the die pulled out and supported by the two carrier arms of the die cutter.

For maximum safety:

- Keep work area clean and tidy.
- Use appropriate lighting in work areas
- When not in use, store the NG-steel rule nick-grinder n a safe place to avoid unintentional starting

IF STORED A WAY IN A DRAWER, DISCONNECT THE UNIT FROM THE AIR SUPPLY LINC.

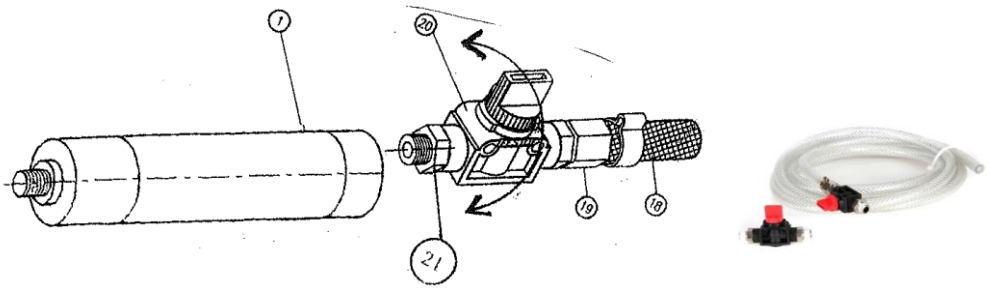
• Instructions for assembly:

The NG-Steel rule nick-grinder consists of the following main components:

- Grinding head assembly (grinding head and base-plate - (upper part).
- Air-motor.
- Air-hose -2.5mm with on/off-valve.

The unit is delivered with the grinding head assembly and Air-motor completely assembled.

Complete the assembly by:



- Connecting the threaded part of the on/off-valve to the air-motor at the unmarked air inlet hole.
- Fix the on/off-valve firmly to the air-motor by tightening nut (21).
  Turn the swiveling valve-housing (20) to a vertical position with the knob facing upwards.

• Instruction for installation:

- Connect the air-hose to the central, compressed air line, or to a suitable compressor.
  The air consumption at maximum load is 0.22 m3/min. at 6.3 bar air pressure.
- To avoid unintentional starting of the air-motor when connecting the unit to the air supply line, make sure that the on/off-valve for the air-motor is shut off.

Airmotor:

- The air-motor is designed to operate at an air pressure of 6-7 bar.
- The correct air size is: 5mm.
- Blow out the air-hose before connecting.
- During operation the air-motor should be lubricated with oil.

Lubrication is preferable carried out by means of Atlas Copco Lubricating system DOSOL, or by means of Atlas Copco oil-fog lubrication Mini-dim 08. In most cases the oil-fob lubricator Mini-dim08 is preferred. However, if the air-motor is operated only for short periods of time (max.1 min) the oil supply will be more effectively controlled by means of the DOSOL lubricating system.

Recommended lubricating oils: (temperature of ambient air: +10 oc - +30 oc		
Make:	Grade	Air supply requirements:
BP Esso Mobil Shell Castorol Gulf Nynäs Texaco	Energol/RD-E-46 Arox-EP68 Almo oil 525 Turcule 68 RD Oil 100 Gulfstone oil 46 LB-31 RD Lube 32	The ISO/DIS quality specifications require that: • The air is free from solid particles larger that 15 micron. • Remaining water content in the air to be max. 6gr./m3 (pressure dew point: +3 degrees c.) • That air may contain max. 5 mg/m3 of oil. Dirty and un-lubricated air will drastically reduce the lifetime of the air-motor, as rust will cause damage to gears and ball bearings.

• Instructions for operation:

- A NG-grinding disc (50x8mm) in the desired widths – (thickness available from 0.3 – 6.0mm) is chosen and mounted on the air motor spindle between the washers –pos.14.
  Lock the spindle with the spanner, and fasten securely by means of the knurled retaining nut – pos. 17.
- The depth of the nick to be ground can be set by adjusting the depth control screw – pos. 9. By turning the depth control screw clockwise, the grinding depth will be reduced, and vica versa. The depth of the nick should be equivalent to the thickness of the board to be die-cut.
  Avoid grinding unnecessarily deep, as this will only cause undue wear on the grinding discs.
- Switch on the air supply to the motor by means of the on/off-valve located at the air-hose coupling.
- Position the grinding head squarely on top of the cutting rule to be nicked, and press down the upper, spring-loaded part of the grinding head firmly and quickly to bring the grinding disc into the steel rule.
  A quick grinding action will considerably reduce the wear on the grinding discs.

Important safety precautions:

- **During the grinding action it is vitally important to keep the grinding head absolutely steady as the grinding disc is penetrating the cutting rule. Twisting or undue movement of the grinding head at this stage, may cause breakage or damage to the grinding disc.**
- **The operator should wear safety goggles and face the grinding disc guard at all times.**
- **If the noise level at the work station exceeds 85 db (A), the operator must use ear-protection (ear-plugs/or ear-mufflers.)**
- **Disconnect air supply before changing grinding discs.**
- **Check that the spanner used for locking the air-motor spindle when changing grinding discs, is removed before starting the motor.**
- **In order not to deteriorate the environmental air quality do not lubricate the air-motor in excess of the quantity of oil specified in the "instructions for installation".**
- **Check that the grinding disc has no cracks or other damages before starting the nick-grinder.**
- **Run the unit for a few seconds at no load before starting the grinding operation.**
- **Use only original, "NG"-marked grinding discs which have been tested for safe performance in the NG-steel rule nick-grinder.**

- **Product data** – Air-motor Lzb14 A-190 - **at air pressure 6.3 bar (91 psi)**

Max power:	0.16	Kw
	0.22	Hp
Speed at max power:	9100	r/min
Torque at max power:	0.17	Nm
	0.12	lbf.ft
Min. starting torque	0.26	Nm
	0.19	lbf.ft
Free speed	19500	r.min
Air consumption at max power	4.2	litre/sec
	8.9	cmf
Weight	0.3	Kg.
	0.66	Lb
Shaft loading code	a	
Lubrication free	No	

- **Instructions for overhaul/maintenance:**

- **AIRMOTOR:**

Regular overhaul and cleaning will considerable add to the lifetime of the air-motor.
The air-motor should be taken apart for overhaul and cleaning every 6. Months, even if it is working satisfactory. If the air-motor is in continuous service, it should be overhauled and cleaned more frequently.
The planetary gears, ball-bearings and needle bearings should be greased when taking the air-motor apart for the regular overhaul.

Recommended types of grease:			
Makes:	**Grade.**	**Makes:**	**Grade.**
BP	Energrease LS-EP2	Mobil	Mobilplex 48
Castrol	Spheerol EP L2	Nynäs	FL3-42 EP
Esso	Beacon 2	Shell	Alvania grease EP 2
Gulf	Gulfcrown grease EP no. 2	Texaco	Multifak EP 1
Gulf	Universal Greas		

Equivalent grades of other reputable makes can, of course, also be used.

To get access to the air-motor, for regular overhaul and repairs, proceed in the following manner:

- Disconnect the nick-Grinder from the air supply line to avoid unintentional starting of the air-motor.
- Loosen locking screw-pos.10,unbrako:M5x20
- Remove the grinding disc.
- Pull the air-motor out of the grinding head.
- Disconnect the on/off-valve and air-hose.

- **GRINDING HEAD:**

Every 6 months the grinding head should be taken apart for cleaning and greasing.

- Separate base-plate – pos.2, from the grinding head – pos. 7, by unscrewing screw -pos.11, -unbrako: MGx45
  The base-plate may now be separated from the upper part of the grinding head.
- Apply 2/3 gr. Of ball bearing grease to each of the 2 linear ball bushings – pos. 6. (use grease according the standard DIN-51825 –K2K).
- Apply the grease on top of the ball-race with a suitable wooden stick.
- Remove possible dust in the 2 holes accommodating the sleeves – pos. 3, and spring – pos. 5, of the base-plate, by means of compressed air.
  Also blow out possible dust in the two sleeves -pos.4, of the base-plate. Grease slightly the two springs -pos.5.
- Unscrew depth control screw – pos.9, and blow out possible dust in its treaded hole.
- Grease depth control screw – pos. 9, as well as spring – pos.8.