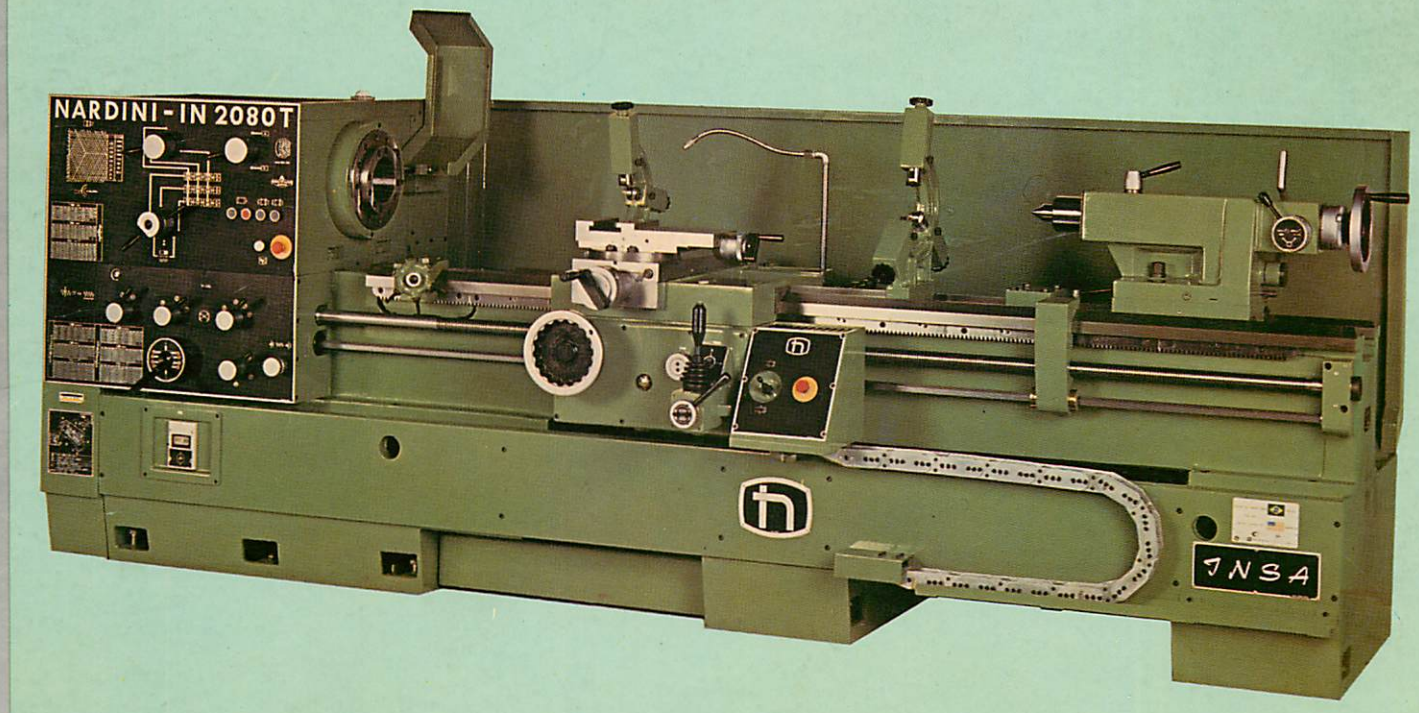
# HIGH PRECISION LATHE

# "INSA"

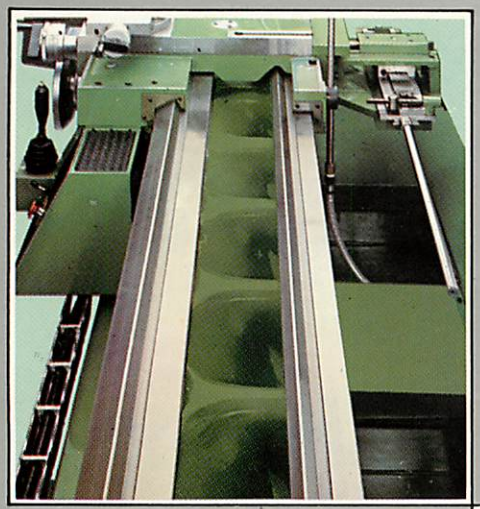
# IN-2000 T

# IN-2500 T

# NARDINI

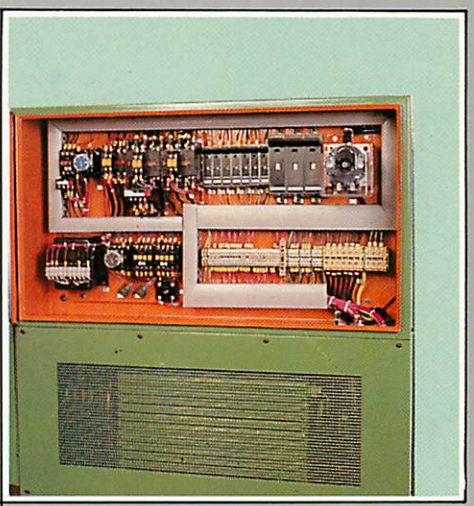


# Features



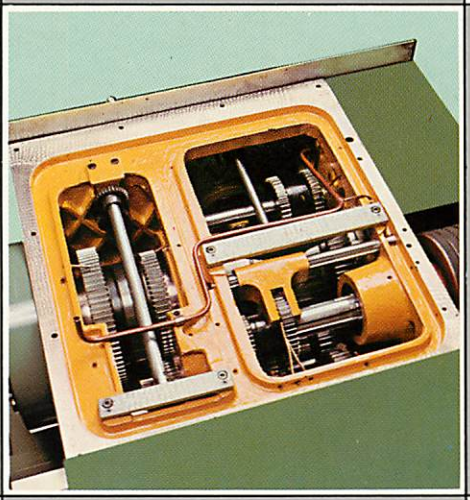
## Bed Ways

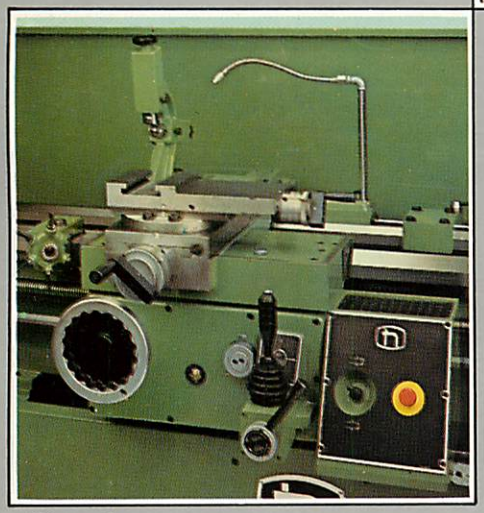
*The heavy duty compact one piece bed is extremely rigid and multi-ribbed to eliminate torsional twisting and vibrations. All "V" ways and flat ways of the bed are induction hardened to BRINELL 400 and above (ROCKWELL 43 RC and above) and precision ground. Bed ways are made of special grey iron alloy, and aged at the Nardini Foundary to relieve internal stress and tension. Autocallimated bed ways permit true alignment and parallelism throughout the life of the lathe.*



## Electrical Equipment

*The electrical equipment used is made of the highest quality components. Klockner Moeller and Telemecanique electrical components offer high and low voltage protection with a 110V magnetic starter. GE Motors are supplied as our standard. The electrical panel conforms to "JIC STANDARD", designed for easy access and is fully protected from dust and contamination. Six "V" belt drive is used for positive and smooth power transmission.*





## Carriage

*Four way rapid traverse that superimpose cutting feeds. Easy to read large dials have been designed to provide ultimate ease of operation. The Nardini carriage is guided by a long wee-way bearing surface providing smooth feeds and travel with maximum accuracy and minimal wear. Wide carriage is properly fitted to saddle base adding strength and reducing torsional twisting. Cross feed adjustment eliminates backlash, permitting greatest possible accuracy. Fully adjustable tapered gibs on cross slide and top slide provide to wear, compensation and long life. Hardened and ground gears are automatically lubricated. Leadscrew is used only for threading. Single lever provides rapid engagement of cross feed and longitudinal movement. Full length "T" slot on cross slide permits quick mounting of rear tool post and other accessories.*

## Headstock

*Rugged headstock design provides maximum efficiency in all forms of turning and finishing.*

*The short and riggidly supported spindle is made from Chromium, Nickel, Molybdenum alloy steel, case hardened and fully ground. Spindle largely dimensioned in respect to the stresses to which it might be subjected is supported on 3 points. The spindle turns on preloaded high precision "TIMKEN" taper roller bearings on the front and midle and needle bearings at the rear. All spindle assemblies are high speed dynamically balanced on a "SCHENCK" balancing machine.*

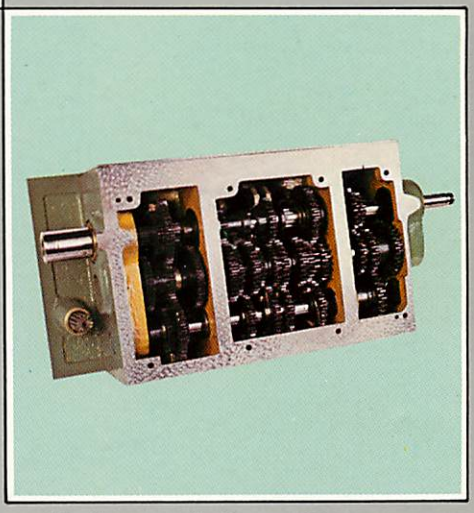
*The ASA A1-11" spindle nose has a large hoje through the spindle of 4.3/4" (120mm).*

*The headstock provides 18 spindle speeds which are in geometric progression and are easily selected.*

*All headstock gears are case hardened and "REISHAUER" ground with splined shafts which turn on antifriction bearings. Headstock lubrication system consists of automatic pump and oil bath with sight glass.*

*Spindle start, stop and reverse by double electromagnetic multi-disc clutches and brake with dual control, from headstock and apron.*

*All test conditions and deviations are according to the ISO Norm 1708-1979 (E).*



## Universal Gear Box

*The universal gear box allows immediate selection of both inch and metric threads without changing end gears. The totally enclosed gear box provides the user with one of the most comprehensive range of metric and inch feeds and threads.*

*All gears are hardened and are made of special alloy steel. The spline shaft is case hardened and turns on antifriction bearings.*

*Automatic pump and oil bath lubrication system creates cascade flow of oil. Adjustable safety overload feature disengages feed in case of excess stress and misuse of lahte.*

# Specifications

| CAPACITY | IN-2000 T | | IN-2500 T | |
|---|---|---|---|---|
| | inches | mm | inches | mm |
| Height of centers | 9.7/8 | 250 | 12.3/4 | 325 |
| Distance between centers | 40 to 160 | 1000 to 4000 | 40 to 160 | 1000 to 4000 |
| Swing over bed | 19.11/16 | 500 | 25.5/8 | 650 |
| Swing over wings of saddle | 18.1/8 | 460 | 23.1/4 | 590 |
| Swing over cross slide | 11.7/16 | 290 | 17.5/16 | 440 |
| (*) Swing in gap | 27.15/16 | 710 | 33.7/8 | 860 |
| (*) Length of gap in front of faceplate | 12.1/4 | 310 | 12.1/4 | 310 |
| Cross slide travel | 13 | 330 | 15.3/43 | 400 |
| Top slide travel | 6.11/16 | 170 | 6.11/16 | 170 |
| Tool section | 1.1/4 x 1.1/4 | 32 x 32 | 1.1/4 x 1.1/4 | 32 x 32 |
| **BED** | | | | |
| Width | 15. | 380 | 15. | 380 |
| Height | 15.3/16 | 385 | 15.3/16 | 385 |
| **HEADSTOCK** | | | | |
| Spindle nose (ASA) | A1-11" | A1-11" | A1-11" | A1-11" |
| Spindle bore | 4.3/4 | 120 | 4.3/4 | 120 |
| Spindle internal taper | 1:20 | 1:20 | 1:20 | 1:20 |
| Taper in induction sleeve (MT) | 6 | 6 | 6 | 6 |
| Spindle speeds (number) | 18 | 18 | 18 | 18 |
| Speeds range (RPM) | 16 to 1250 | 16 to 1250 | 16 to 1250 | 16 to 1250 |
| **TAILSTOCK** | | | | |
| Quill Diameter | 3.9/16 | 90 | 3.9/16 | 90 |
| Quill travel | 10.7/16 | 265 | 10.7/16 | 265 |
| Quill internal taper (MT) | 5 | 5 | 5 | 5 |
| Lateral adjustment | 5/8 | 15 | 5/8 | 15 |
| Two speeds quill | 1:1/1:4 | 1:1/1:4 | 1:1/1:4 | 1:1/1:4 |
| **GEAR BOX** | | | | |
| Number of threads | 264 | 264 | 264 | 264 |
| Metric threads (mm) | (70) 0.4 - 35 | (70) 0.4 - 35 | (70) 0.4 - 35 | (70) 0.4 - 35 |
| Inch threads (TPI) | (61) 42 - 2 | (61) 42 - 2 | (61) 42 - 2 | (61) 42 - 2 |
| Module threads (Mod) | (68) 0.20 - 15 | (68) 0.20 - 15 | (68) 0.20 - 15 | (68) 0.20 - 15 |
| Diametral Pitch threads (DP) | (65) 84 - 1.1/2 | (65) 84 - 1.1/2 | (65) 84 - 1.1/2 | (65) 84 - 1.1/2 |
| Pitch of leadscrew (TPI) | 4 | 4 | 4 | 4 |
| **FEEDS RANGE** | | | | |
| Number of feeds | 216 | 216 | 216 | 216 |
| Cross feeds (108) | 0.0008-0.0663in/rev | 0.021-1.685mm/rev | 0.0008-0.0663in/rev | 0.021-1.685mm/rev |
| Longitudinal feeds (108) | 0.0033-0.2653in/rev | 0.085-6.740mm/rev | 0.0033-0.2653in/rev | 0.085-6.740mm/rev |
| **MOTORS** | | | | |
| Main motor (HP) | 20 | 20 | 20 | 20 |
| Rapid traverse motor (HP) | 3/4 | 3/4 | 3/4 | 3/4 |
| Coolant unit motor (HP) | 1/8 | 1/8 | 1/8 | 1/8 |

(*) Optionai

## DIMENSIONS (PACKING) AND APROXIMATE WEIGHT

| MODEL | DISTANCE BETWEEN CENTERS | | DIMENSIONS | | | | | | VOLUME | | GROSS WEIGHT | | NET WEIGHT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LENGTH | | WIDTH | | HEIGHT | | | | | | | |
| | INCHES | MM | INCHES | M | INCHES | M | INCHES | M | Ft³ | M³ | Lb | Kg | Lb | Kg |
| IN-2000T | 40 | 1000 | 100 | 2,55 | 57 | 1,45 | 63 | 1,60 | 213 | 5,92 | 8560 | 3890 | 7080 | 3220 |
| | 60 | 1500 | 132 | 3,35 | 57 | 1,45 | 63 | 1,60 | 280 | 7,77 | 9810 | 4460 | 7900 | 3590 |
| | 80 | 2000 | 152 | 3,85 | 57 | 1,45 | 63 | 1,60 | 322 | 8,93 | 10910 | 4960 | 8710 | 3960 |
| | 120 | 3000 | 191 | 4,85 | 57 | 1,45 | 63 | 1,60 | 405 | 11,25 | 13110 | 5960 | 10340 | 4700 |
| | 160 | 4000 | 230 | 5,85 | 57 | 1,45 | 63 | 1,60 | 489 | 13,57 | 15270 | 6940 | 11970 | 5440 |
| IN-2500T | 40 | 1000 | 100 | 2,55 | 57 | 1,45 | 63 | 1,60 | 213 | 5,92 | 9810 | 4460 | 8340 | 3790 |
| | 60 | 1500 | 132 | 3,35 | 57 | 1,45 | 63 | 1,60 | 280 | 7,77 | 11070 | 5030 | 9150 | 4160 |
| | 80 | 2000 | 152 | 3,85 | 57 | 1,45 | 63 | 1,60 | 322 | 8,93 | 12170 | 5530 | 9970 | 4530 |
| | 120 | 3000 | 191 | 4,85 | 57 | 1,45 | 63 | 1,60 | 405 | 11,25 | 14370 | 6530 | 11600 | 5270 |
| | 160 | 4000 | 230 | 5,85 | 57 | 1,45 | 63 | 1,60 | 489 | 13,57 | 16522 | 7510 | 13220 | 6010 |

## CHARACTERISTICS AND STANDARD EQUIPMENT

● One piece induction hardened and ground bed ● Six positions turret stop device ● Electromagnetic clutches and brake ● Steady rest with bearings (interchangeable broinze tips ∅ 5/8" (15mm) to 5.15/16" (150mm)) ● Follow rest with bearings (interchangeable broinze tips ∅ 5/8" (15mm) to 3.9/16" (90mm)) ● Four way power rapid traverse ● Splash guard up to 60" (1500mm) ● Top slide with "T" slot ● Chip pan ● Change gears ● Dual reading inch / metric dial ● Graduated quill (inch / metric) ● Coolant system ● MT5 and MT6 hardened centers ● Color: green RAL 6011 ● Spindle reduction sleeve 1:20 x MT6 ● Thread cutting indicator ● Manual lubrication pump ● Left side apron handweel ● Tailstock with two speeds quill ● Service wrenches ● Set of leveling screws ● Adjustable feed shaft overload protection device ● Complete electrical equipment for 220V, 60Hz (110V-control) ● Operating and parts manual.

## CHARACTERISTICS AND OPTIONAL EQUIPMENT

● Lighting system ● Four independent jaw chuck ∅ 17" (430mm) ASA A1-11" ● Faceplate 17.3/4" (450mm) ● Driving plate ∅ 12" (305mm) ● Three jaw universal chuck ∅ 15" (380mm) ASA A1-11" ● Backplate for universal chuck ∅ 15" (380mm) ● Rear tool post ● Collet chuck ● Four way turret tool post ● Quick change tool holder ● Taper turning attachment [capacity 10° x 13.3/4" (400mm)] ● Hydraulic tracer unit ● Air operated chuck ∅ 10" (254mm) ● Splash guard ● Chuck guard ● Bed with gap ● Other equipment on special request.