THIELENHAUS
MICROFINISH

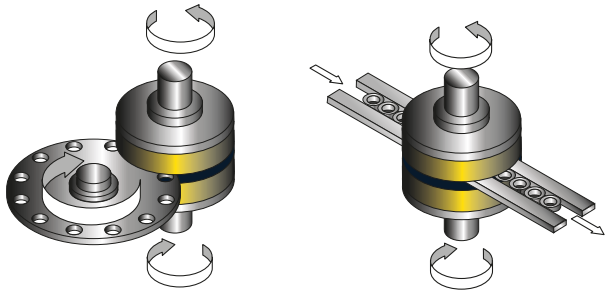
Cost-effective Double Disc Grinding for Flat Components

Powerful design for high precision, ease of operation and flexibility

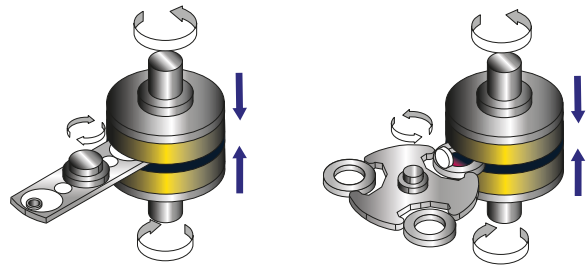
in cooperation with
NISSEI INDUSTRY CORP.

GRINDING PROCESSES

Throughfeed process radial / linear
for short cycle times



Plunge cut process oscillation / rotation
for high-end qualities



With the Thielenhaus-Nissei solution, manufacturers can grind mass produced flat parts using the plunge cut, through-feed or oscillation methods. A uniquely compact and stiff machine design ensures high precision, all while providing for excellent cycle times. Several hundred sales of this machine series – worldwide as well as in all industry sectors – confirm its status as one of the most practical double disc grinding solutions available on the market.

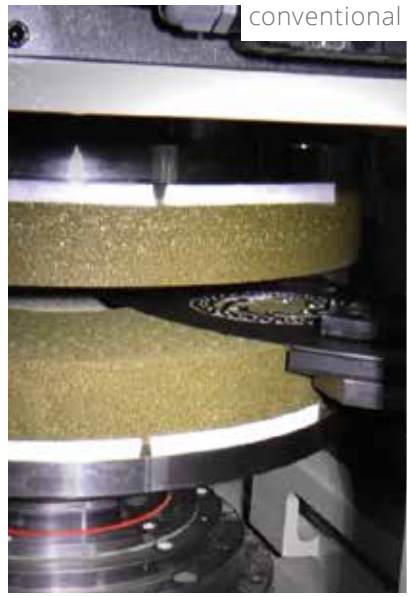
MODEL OVERVIEW

Model	Grinding method	Tool ∅	Workpiece ∅
V-2	C/PO*	305 mm	40 mm
V-3	C/PO/P/TH*	355 mm	50 mm
V-4	C/PO/P/TH*	450 mm	80 mm
V-5	C/PO/P/TH*	585 mm	140 mm
V-7	C/PO/TH*	760 mm	220 mm
VP-3	P*	355 mm	100 mm
VP-4	P*	450 mm	120 mm
VP-5	P*	585 mm	150 mm

* C = rotary through-feed,
PO = plunge cut/oscillation
P = plunge cut
TH = linear throughfeed

TOOL SYSTEMS

conventional or super-abrasive

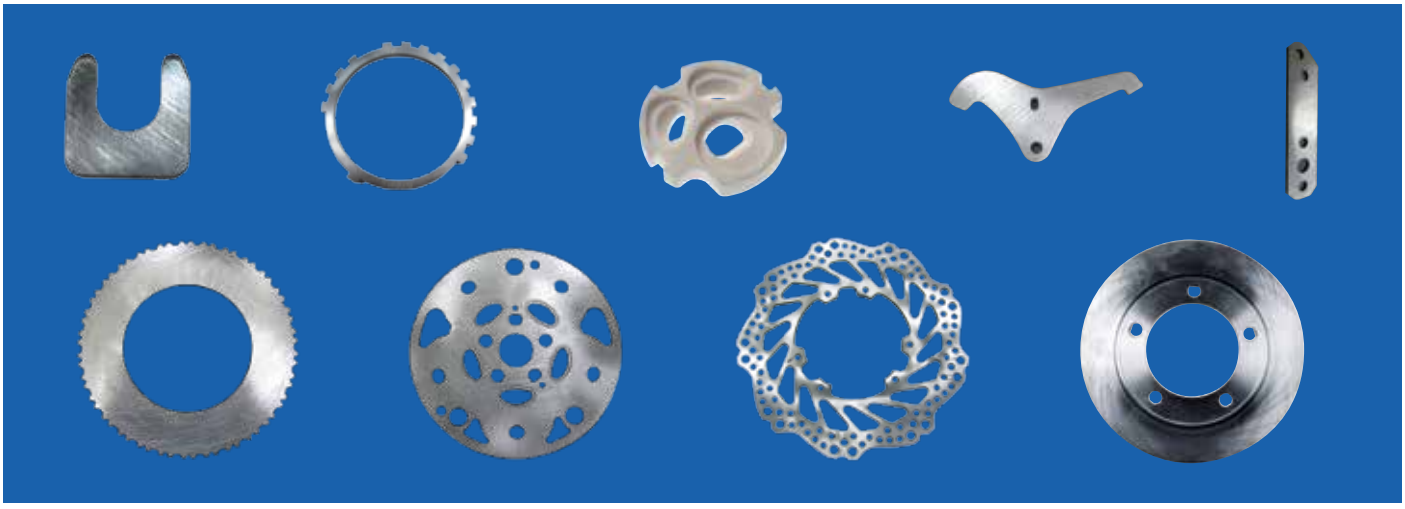


super-abrasive

HIGH QUALITY IN SECONDS

Precision metal and ceramic parts for automotive, bearing, stamped applications, etc.

Machine type	V-5C	V-7C	V-5P
Workpiece	Pistonring	Roller bearing outer ring	Washer
Material	SC-1	SUJ-2	SAPH45
Dimensions (mm)	53 x 0.8	60.5 x 26.5	68 x 45 x 2.6
Stock removal (mm)	0.02	0.18	0.15
Cycle time (sec.)	< 1	4	0.6
No. of runs	1	1	1
Dim. tolerance (µm)	6	30	15
Parallelism (µm)	3	4	3
Surface	Rz 4	Ra 0.4	Rz 3.2



LOADING

manual, robot, stacking magazine, etc.

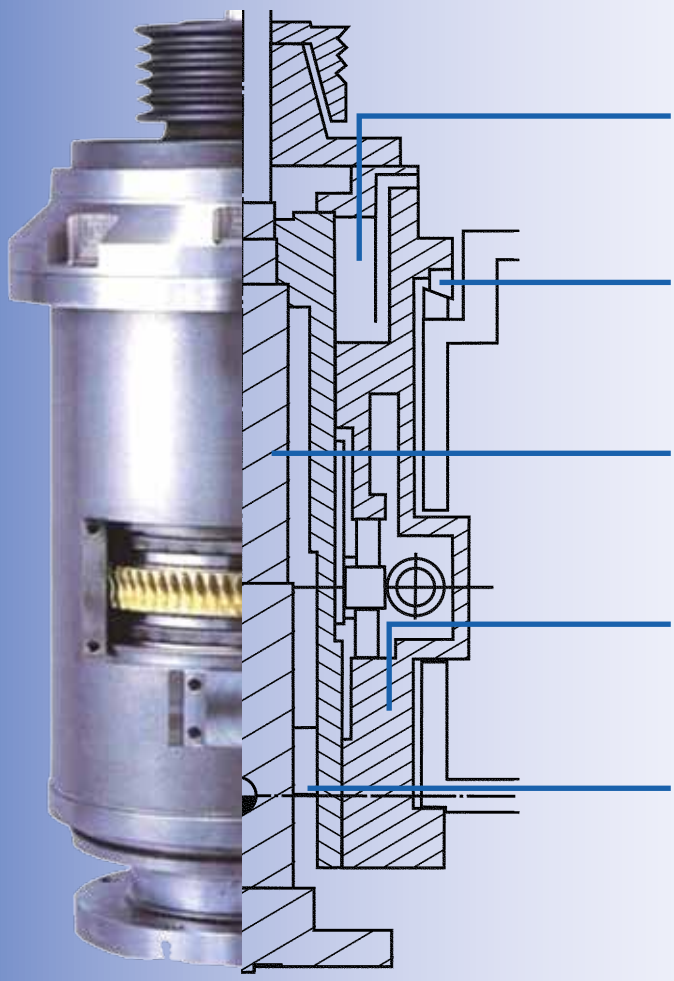
manual

robot

stacking magazine

TECHNOLOGY + DESIGN FOR EXTREME PRECISION

- Closed cast-iron, double walled box frame provides superior temperature resistance and stability in comparison to C-frames
- Automatic tool-wear compensation system for the lower grinding disc by means of in-process measurement
- Optional post-process measurement (e.g.: Marposs)
- Infinitely variable feed distance for both spindles with minimal feed steps of 1 µm
- 360° tilting of top spindle



SPINDLE ASSEMBLY

Patented air chamber system for pneumatic backlash compensation

Tilting mechanism located on spindle maintains highest levels of rigidity in the grinding plane

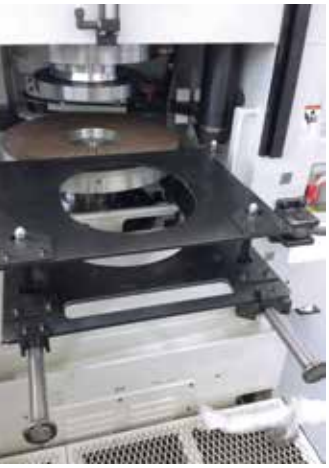
Single-piece forged main spindle with integral GW mounting flange

Massive quill-slide feed system in conjunction with a worm gear

High precision ABEC-7 class bearings

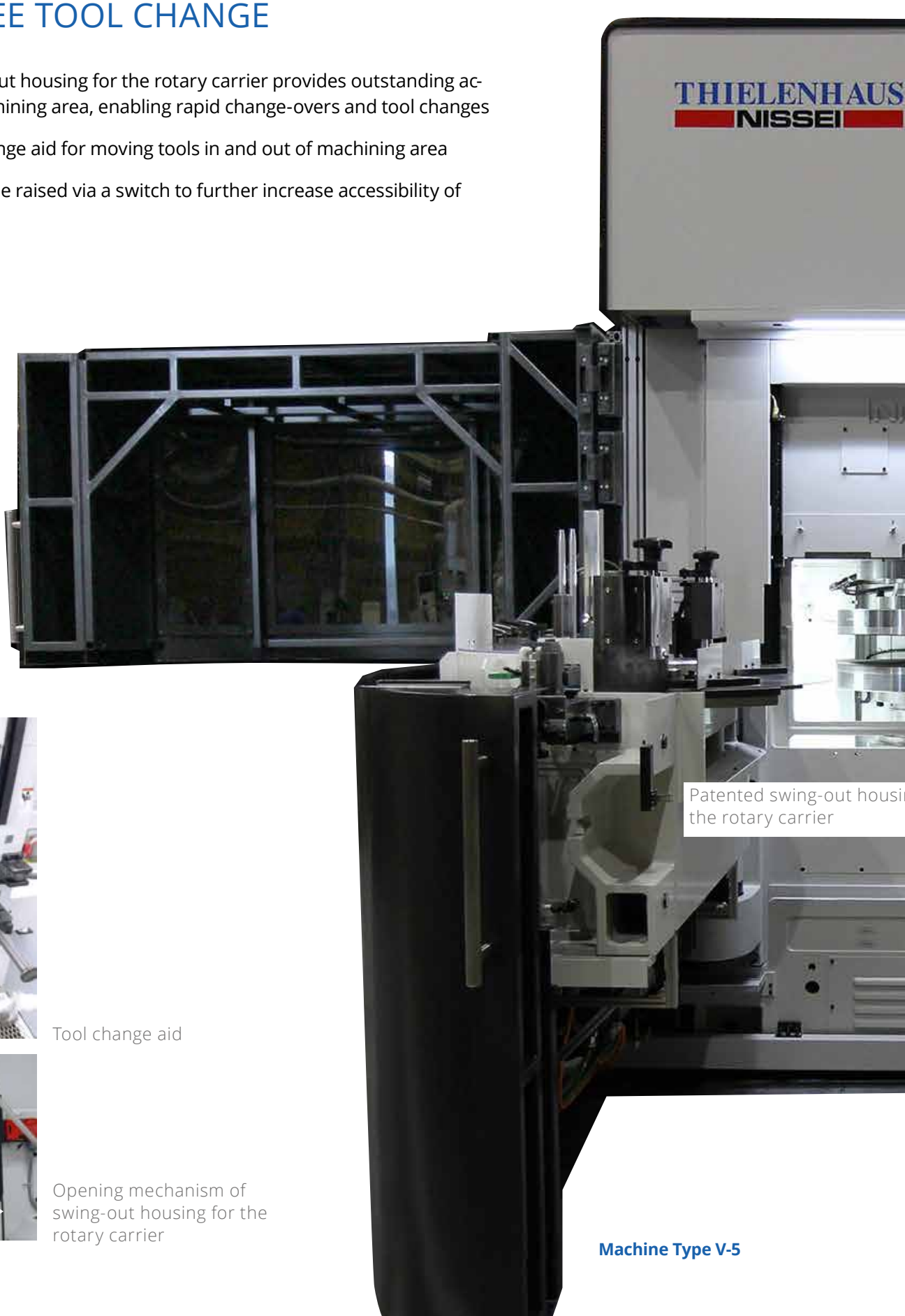
UNIQUE ACCESSIBILITY FOR HASSLE-FREE TOOL CHANGE

- Patented swing-out housing for the rotary carrier provides outstanding accessibility to machining area, enabling rapid change-overs and tool changes
- Portable tool change aid for moving tools in and out of machining area
- Safety plate can be raised via a switch to further increase accessibility of machining area



Tool change aid

Opening mechanism of swing-out housing for the rotary carrier



Patented swing-out housi
the rotary carrier

Machine Type V-5

DRESSING

- Electromechanical dressing unit with adjustable feed speed for simultaneous dressing of upper and lower grinding wheels
- Dressing unit with acoustic sensors for touch detection
- Integrated sharpening unit for improving microgeometry
- Service door on the side of the machine with a simplified control panel facilitates carrying out of set-up procedures

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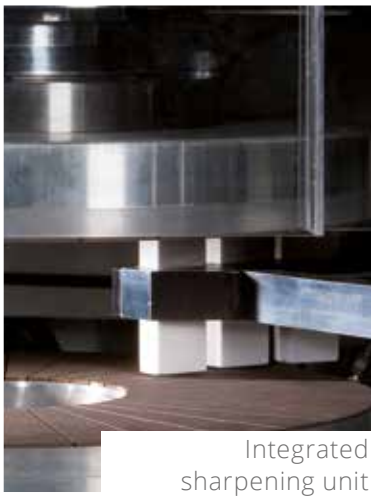
Electromechanical dressing unit with acoustic sensors

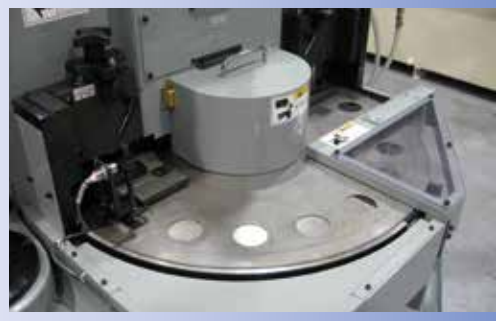


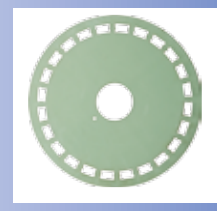
Integrated sharpening unit

Service door on the side of the machine

QUICK CARRIER DISC CHANGE

Carrier discs available for all component types, exchangeable in < 2 minutes



HIGH-END APPLICATIONS

for tightest tolerances, customized solutions with planetary-driven work pieces between plunge-feed grinding discs


OVERVIEW TECHNICAL DATA

(Model V-5 shown in photo)

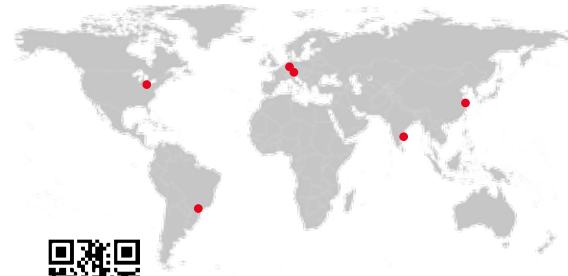
Ø Tool	585 mm (23") or 600 mm	**Workpiece carrier**	Rotary carrier throughfeed with or without oscillation
Max. Ø workpiece	140 mm	**Spindle output**	2 x 22 kW
Min. workpiece height	0.8 mm	**Max. workpiece height**	160 mm
Grinding wheel speed	910 rpm (max.)	**Tool feed rate**	200 mm/min (max.)
Carrier disc speed	10 rpm (max.)	**Controls**	Siemens 840 D (on pivoting arm)
Dimensions (L/W/H) incl. integrated electrical cabinet	195 x 255 x 260 cm	**Weight**	8,000 kg
Safety	CE conform, automatic tool retraction in case of power-out		

The Power of Precision.

FULL SERVICE

Our service portfolio ensures that your double disc grinding solution benefits from a consistently high level of production quality and minimized downtime. Services range from consulting, sample part processing, and process development to operator training, repairs and inspections. Our 24/7 hotline and our service offices in Europe and the USA are constantly at our customer's disposal to address any service inquiries.

THIELENHAUS/NISSEI SOLUTIONS AROUND THE WORLD:



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