

# CNC Equipment Specifications

Mazak Machine Portfolio — Site Zero Configuration

## PRELIMINARY

Aurelian Manufacturing AS | VDR 04 | February 2026 | Confidential  
Source: Ravema AB Offers 25011042 / 25011043 / 25011044 | Dated 2025-11-24

## 1. Summary

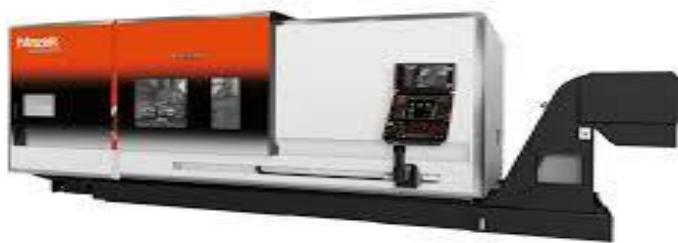
Site Zero is configured with five Mazak CNC machines in three types, covering multi-tasking, 5-axis milling, and turning with milling capability. All machines are sourced through Ravema AB (Nordic Mazak distributor) and configured for progressive automation toward lights-out operation.

*Note: This configuration is preliminary and represents the estimated scope of equipment required to serve the preferred client base. Final machine selection and option packages will be confirmed during facility planning.*

Parameter	Specification
INTEGREX i-450HSx1500	Multi-tasking turn/mill center — SmoothAi — 3 units
CV5-500	5-axis vertical machining center — SmoothX — 1 unit
QUICK TURN 250MSY	Turning center with milling + Y-axis + 2nd spindle — SmoothG — 1 unit

Supporting equipment includes a dedicated metrology room (Wenzel CMM, Jenoptik Opticline), material preparation (bandsaw, storage), and facility systems (Kaeser compressed air, Absolent oil mist extraction).

## 2. INTEGREX i-450HS × 1500



Mazak INTEGREX i-450HS — representative image (source: Ravema AB)

Multi-tasking center combining turning and milling in a single setup (DONE IN ONE®). Two spindles, B-axis milling head, 74-tool chain magazine. Primary production machine at Site Zero.

**Offer:** 25011043 | Qty: 3 | Control: MAZATROL SmoothAi

### Key Specifications

Parameter	Specification
Axes	X, Y, Z, B, C1, C2 (index)
Max machining dia / length	Ø 670 mm / 1,500 mm
Main spindle	12" chuck, 37 kW, 3,300 RPM, Ø 112 mm bore
Second spindle	10" chuck, 26 kW, 4,000 RPM
Milling spindle	B-axis 240° travel, 12,000 RPM
Tool magazine	74 tools — Capto C-6, chain magazine, ID chips
Coolant	70 bar through-spindle, programmable 7 steps
Automation	Auto door, robot interface Ethernet/IP, Mazacheck
Probing	Renishaw RMP600QE + Inspection Plus
AI features	Smooth AI vibration control, energy monitoring

Chip handling	ConSep conveyor, right-side discharge
Footprint	6,500 × 4,000 mm (machine) + 4,000 × 4,150 mm (automation)

## Preliminary Order Options

Code	Description
A2271500U	Base machine — INTEGREX i-450HSx1500, SmoothAi
A227NC611	Extra screen
A227SD140	Foundation kit (anchor bolts and plates)
A227SI098	C-axis spindle 2 — programmable 0.0001°
A227AT375	74-tool chain magazine — Capto C-6
A227MM053	Tool for mounting/dismounting ID chips
A227AS066	Energy monitoring
A227CP253	Smooth Tool Management
A227CP514	Smooth AI milling spindle — vibration minimization
A227AS080	Cutting force monitoring
A227MO084	Portable pulse generator
A227PL083	Status light tower (3-colour)
A227CS527	70 bar coolant, programmable 7 steps
A227CS808	Prep for 70 bar through-spindle (40 µm filtration)
A227AS321	Automatic door (1500 mm spec)
A227CS668	Prep for oil mist separator (Losma GX1000)
A227MB277	Renishaw RMP600QE probe
A227MB621	MazaCheck
A227MB624	Renishaw Inspection Plus software
A227MB650	Reference sphere with magnetic base
A227GL015	Robot interface — Ethernet/IP
A227CV350	ConSep chip conveyor, right discharge
A227CV512	Prep for ConCep chip conveyor
A227TE810	Multi-tool function 24 positions
A227NO056	Mazak API
A227NO059	MT Connect
A227NO066	Synchronized tapping rotary tools (G84.2)
A227NO116	EIA/ISO simultaneous 5-axis
A227NO117	Tool tip control 5-axis (G43.4)
A227NO127	Engraving option
A227NO128	Cutting point control 5-axis (G43.8)
A227NO134	Simultaneous 5-axis spindle 2
A227NO159	Max program size 32 MB
A227NO442	G00 Slope Constant
A227NO482	Re-threading function
A227NO484	Variable thread start position
A227NO507	Coordinate rotation internal turning
A227NO531	Turn-milling with Mazatrol
A227NO599	Cylindrical and polar coordinates (G12.1 / G07.1)
A227YI360	V-axis control

A227R1001	ID chips for Capto holders (75 pcs)
A227PTekn	Production technical assistance — 5 days
A227DDP01	DDP delivery to customer site

### 3. CV5-500



Mazak CV5-500 — representative image (source: Ravema AB)

5-axis vertical machining center with bridge construction and dual-supported trunnion table. Roller Gear Cam drive in rotary axes eliminates backlash.

**Offer:** 25011044 | Qty: 1 | Control: MAZATROL SmoothX

#### Key Specifications

Parameter	Specification
Axes	X, Y, Z, B ( $\pm 110^\circ$ ), C (360° continuous)
Table diameter	$\emptyset 500$ mm
Spindle	18,000 RPM, 18.5 kW, CAT-40
B/C indexing	0.0001° — Roller Gear Cam (zero backlash)
Tool magazine	48 tools, CAT-40
Coolant	15 bar through-spindle and around spindle
Automation	Auto side-door, robot interface Ethernet/IP
Probing	Renishaw RMP-600 + RLP 40 + Mazacheck
Chip handling	Mayfran CleanSweep, bed and guard flushing

#### Preliminary Order Options

Code	Description
D34000000	Base machine — CV5-500, SmoothX
D340CS089	Prep for oil mist separator
D340CS213	Through-spindle air blast (during rotation)
D340MM006	Tool ID system (touchpanel)
D340SR395	18,000 RPM spindle, CAT-40

D340AT050	48-tool magazine, CAT-40
D340AS080	Cutting force monitoring
D340MO060	Portable pulse generator
D340PL082	Status light tower (3-colour)
D340UK350	Coolant package 4 — CleanSweep, 15 bar through + around spindle
D340PD296	Automation package 1 — auto side-door, robot interface, table ports
D340UK358	Measurement package 2 — RMP-600, RLP 40, Mazacheck
D340MO006	T-slot table
D340NO056	Mazak API
D340NO059	MT Connect
D340NO091	Synchronized tapping
D340NO116	EIA/ISO simultaneous 5-axis
D340NO117	Tool tip control 5-axis (G43.4)
D340NO123	Radius compensation 5-axis
D340NO127	Engraving option
D340NO157	Max program size 8 MB
D340NO442	G00 Slope Constant
D340PTekn	Production technical assistance — 4 days
D340DDP01	DDP delivery to customer site

## 4. QUICK TURN 250MSY 1000 mm



Mazak QUICK TURN 250MSY — representative image (source: Ravema AB)

Turning center with milling capability (M), second spindle (S), and Y-axis (Y). Handles complete parts in one setup. Direct-drive turret eliminates belt wear.

**Offer:** 25011042 | Qty: 1 | Control: MAZATROL SmoothG

### Key Specifications

Parameter	Specification
Axes	X, Y, Z, C1, C2 (index)
Max swing / machining dia	673 mm / 375 mm

Max machining length	1,000 mm between chucks
Main spindle	10" chuck, 26 kW, 4,000 RPM, Ø 91 mm bore
Second spindle	6" chuck, 11 kW, 6,000 RPM
Turret	12-position direct-drive, rotary tools 7.5 kW / 6,000 RPM
Y-axis travel	±52.5 mm
Coolant	15 bar
Chip handling	Lamell conveyor (Crowther), side discharge

## Preliminary Order Options

Code	Description
B7ZK1000U	Base machine — QT 250MSY 1000 mm, SmoothG
B7ZKCS176	Through-turret air blast
B7ZKPD106	Productivity package Crowther — bar feeder interface, auto part catcher, 15 bar coolant, chip conveyor
B7ZKSI095	C-axis spindle 2 — programmable 0.0001°
B7ZKAS080	Cutting force monitoring
B7ZKPL083	Status light tower (3-colour)
B7ZKCS628	Prep for oil mist separator G500
B7ZKNO059	MT Connect
B7ZKNO127	Engraving option
B7ZKNO157	Max program size 8 MB
B7ZKNO482	Re-threading function
B7ZKNO602	Cylindrical interpolation (G07.1)
B7ZKPTekn	Production technical assistance — 4 days
B7ZKDDP01	DDP delivery to customer site

## 5. Support Equipment

### 5.1 Metrology Room

Parameter	Specification
CMM	Wenzel LH 87 Revo — parts up to Ø 350 mm, 1,500 mm length
Optical	Jenoptik Opticline — shaft measurement and contour analysis
Handheld	Micrometers, bore gauges, surface roughness testers, calipers

### 5.2 Material Preparation

Parameter	Specification
Automatic bandsaw	Max Ø 360 mm, programmable cut lengths
Manual bandsaw	Backup / secondary cuts
Storage	Raw material shelving with traceability

### 5.3 Facility Systems

Parameter	Specification
Compressed air	Kaeser compressor + Secotec refrigeration dryer

Oil mist extraction	Absolent system, ducted for 4 machines
Material handling	Forklift, 3.5 t capacity

## 6. Automation Readiness

All machines are specified with automation-ready options supporting progressive rollout from manual operation to lights-out production.

Parameter	Specification
Feature	INTEGREX (3) / CV5-500 (1) / QT 250MSY (1)
Robot interface	Ethernet/IP on all INTEGREX + CV5-500
Auto door	INTEGREX (auto door) + CV5-500 (auto side-door)
In-process probing	Renishaw RMP600QE (IG) / RMP-600 (CV5)
Geometry check	MazaCheck on INTEGREX + CV5-500
Tool management	Smooth Tool Management + ID chips (INTEGREX)
AI optimisation	Smooth AI vibration control (INTEGREX)
Connectivity	MT Connect + Mazak API on all machines
Bar feeding	Crowther bar magazine interface (QT 250MSY)

Control platforms: SmoothAi (INTEGREX), SmoothX (CV5-500), SmoothG (QT). All share Mazatrol conversational programming and iCONNECT cloud monitoring.

## 7. Commercial Terms

Identical terms apply across all three Ravema offers.

Parameter	Specification
Delivery	FCA Göteborg, upgraded to DDP customer site (Hølen)
Delivery time	To be agreed (subject to global supply chain)
Payment	30% at order / 60% at delivery / 10% after approval — all 30 days net
Currency	Based on 1 EUR = 11.80 SEK, adjusted at payment date
Training	Mazatrol course at Ravema Värnamo (2 persons/machine) + on-site 8 hrs
Tech assistance	4–5 days per machine, included
Warranty	12 months regardless of operating hours
Warranty conditions	Preventive maintenance every 3,000 hrs, documented
General terms	NL 01 (Swedish standard delivery terms)
Non-proliferation	Relocation detector — locks if moved without Mazak authorisation

## 8. Reference Documents

### Supplier Offers

- ▶ 25011042 — Quick Turn 250MSY 1000 mm
- ▶ 25011043 — INTEGREX i-450HSx1500
- ▶ 25011044 — CV5-500

### Machine Specs & Layouts

- ▶ Maskinspec\_Quick\_Turn\_250MSY\_1000\_mm\_2.pdf
- ▶ Maskinspec\_Integrex\_i450HSx1500\_3.pdf
- ▶ Maskinspec\_CV5500\_8.pdf
- ▶ Layout and foundation drawings (QT, IG, CV5)

### Support Equipment

- ▶ Secotec dryer, Kaeser compressor & air receiver prospectuses
- ▶ Investeringer\_Maskiner\_og\_Utstyr.xlsx — equipment register

### Related VDR Documents

- ▶ 04\_CNC\_Resale\_Value\_Analysis.pdf
- ▶ 04\_Automation\_Feasibility\_Study.pdf