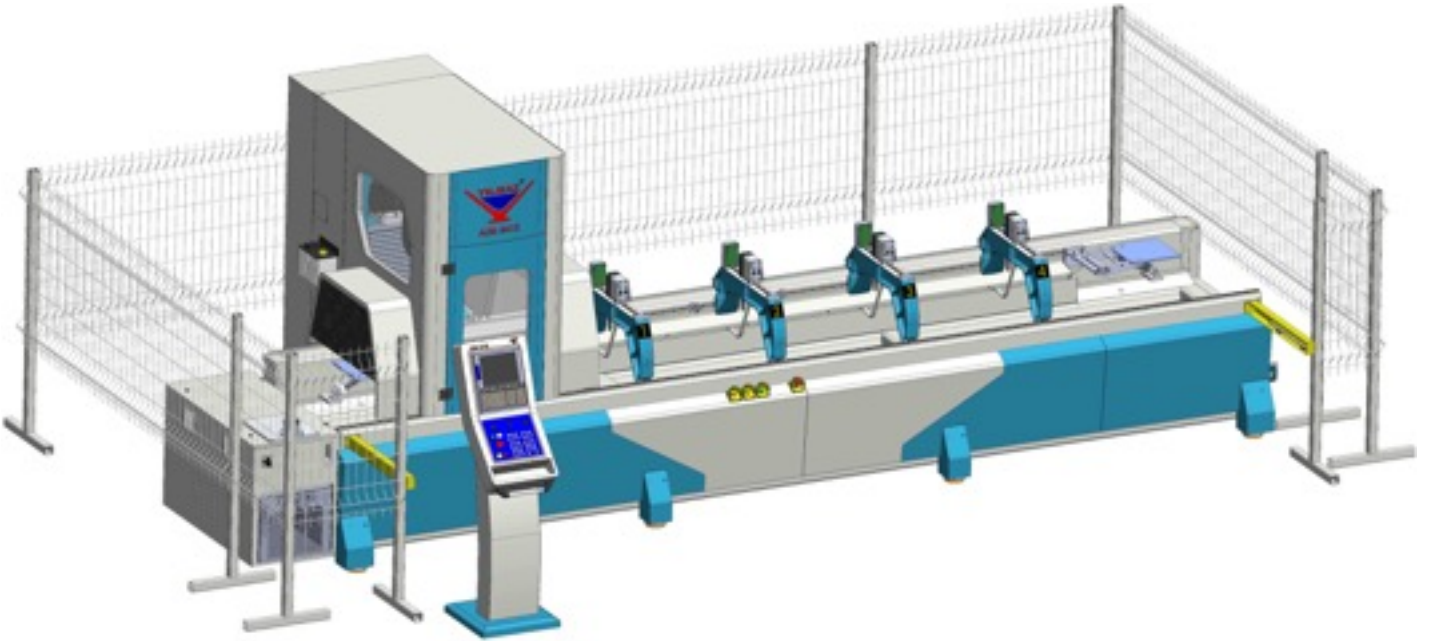


# **AIM 4410 4-AXIS ALUMINIUM PROFILE PROCESSING CENTER**



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## 1. OVERVIEW

AIM 4410 is 4-axis servo controlled machining center which is designed to perform drilling, grooving, notching, tapping, saw milling, etc. on all kinds of aluminum & PVC profiles, light alloys in general and thin walled steel profiles.

Efficient and economic processing on the five sides of the profiles is possible with this fully automatic machining center.

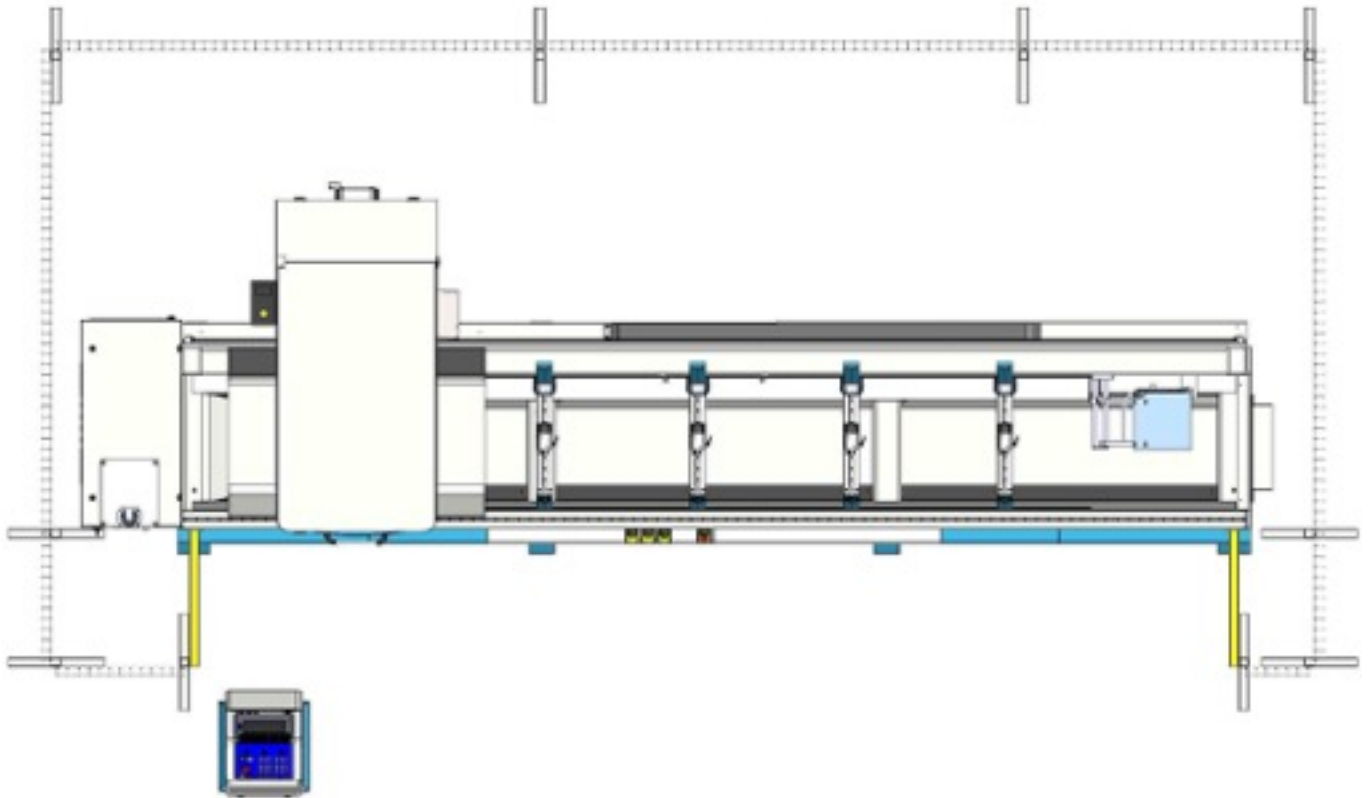
The moveable turret type of tool magazine equipped with 12 standard tools provide a fast tool change. It is housed in the mobile gantry to minimize the tool change time. An additional magazine for the saw blade with 180 mm dia. ensures the ease of machining on the exterior applications of the profiles.

The machine can be used in tandem mode, a work method that allows machine stop times to be reduced to a minimum as it allows work piece change time (loading/unloading) to be run "while the machine is operating.

Automatic clamp recognition and clamp positioning is available. The machine can be operated as two stations with separated working zones to avoid the loss of loading & unloading time.

Machine is produced with steel profiles and sheet, and designed for the agronomy that allows operator easy installation of work pieces by hand.

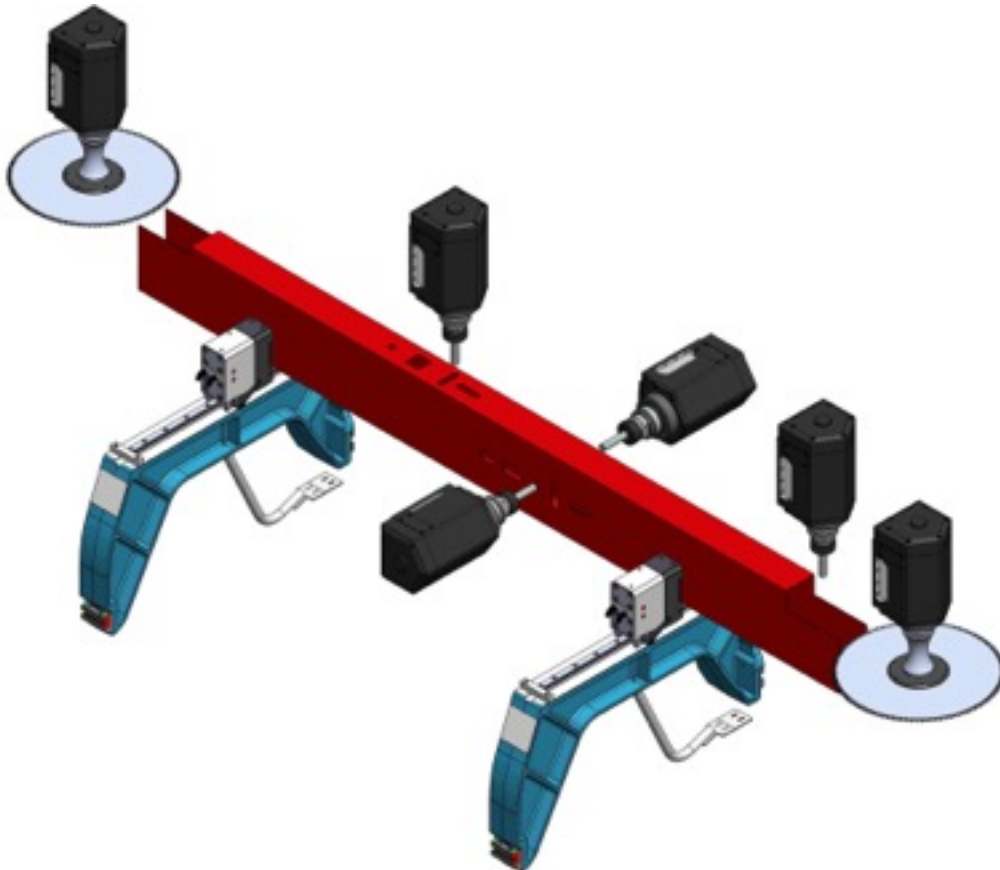
Metal parts are painted with Electrostatic Powder Paint which provides resistance against corrosion. Front section of machine is covered with moving door with transparent plexiglass windows so that operator can easily follow the machining process of work piece. This door also provides safety for operator.



## 2. TECHNICAL INFORMATION

### 2.1 General Features:

- CNC automation system providing motion control at 4-axis
- 2 x separate magazine unit for 12 standard tools and 1 for saw blade with 180 mm dia.
- Solid steel construction of the body and dynamic performance gantry
- Automatic clamp recognition and clamp positioning are available
- Tapping feature up to M8
- Special sound insulation cabinet around the machining center
- CNC controlled spray tool lubrication system
- 4 x automatic clamps used for grabbing the work piece firmly
- 2 x pneumatic rests used for resetting the work piece in X direction
- Hand held controller allows you to prove the job before running at speed
- Optimum safety barrier
- 10" color touch screen
- Program import via USB flash memory stick
- Standard ISO 'G' code programming language
- Automatic central guide lubrication system
- LED lighting in the cabinet
- Multi-language support

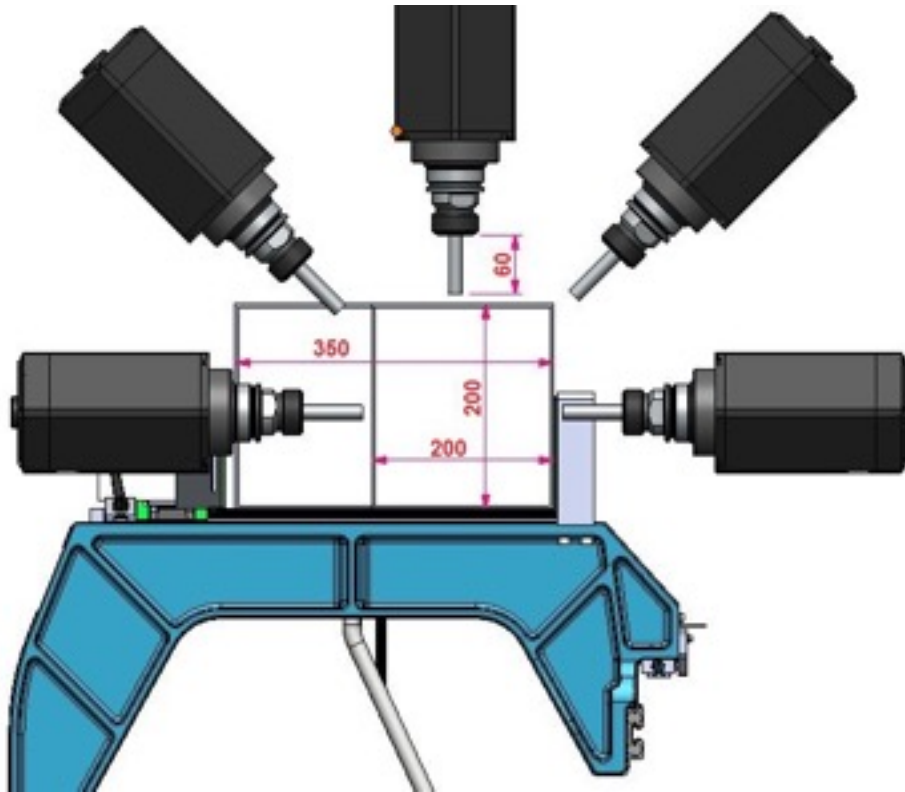


## 2-1 Technical Features

<b>WORKING CAPACITY</b>	
X-axis (mm)	4020 (13.2 ft)
Y-axis (mm)	*350 (14")
Z-axis (mm)	200 (8")
A-axis (	+110° / -110°
<b>ELECTRO SPINDLE</b>	
Max. speed (R.P.M))	20,000
Max. power with S6 (kW)	8.7
Spindle taper	HSK F- 63
<b>AUTOMATIC TOOL MAGAZINE</b>	
Tool capacity	12+1
Automatic tool magazine type	turret type
Saw blade dia. (mm)	180
Max. tool weight (kg)	3
<b>FUNCTIONS</b>	
Multi-piece operations (holes, slots, notching, saw blade cuts, tapping)	
<b>MACHINABLE FACES</b>	
With straight tool (top + side faces + ends)	1+2+2
With blade tool (top + side faces + ends)	1+2+2
<b>FEEDRATE</b>	
Axis speed (m/min.)	X-axis: 60m/min, Y-axis: 60m/min, Z-axis: 19m/min, A-axis: 240°/s
5-axis servo motors (kW)	X-axis:1.5 / Y-axis:0.4 / Z-axis:1.5 / A-axis:0.2
<b>WORKPIECE CLAMPING</b>	
Standard number of vices	4
Max. loadable number of the vices	6
Vice positioning through the X-axis	Automatic
<b>GENERAL</b>	
Net / gross weight (kg)	3200 / 3550 (7,040 lbs / 7,810 lbs)
Net / packing dimensions (WxLxH) (mm)	3250 x 6700 x 2200 / 2050 x 6250 x 2200 (128" x 264" x 87" / 81" x 246" x 87")
Air supply required (bar)	6 (90 psi)
Voltage-frequency	400V 3P-50/60Hz / 208-220-440V 3P
Total power (kW)	15

YILMAZ reserves the right to carry out modifications without prior notice

\* In case of front side milling 200 mm

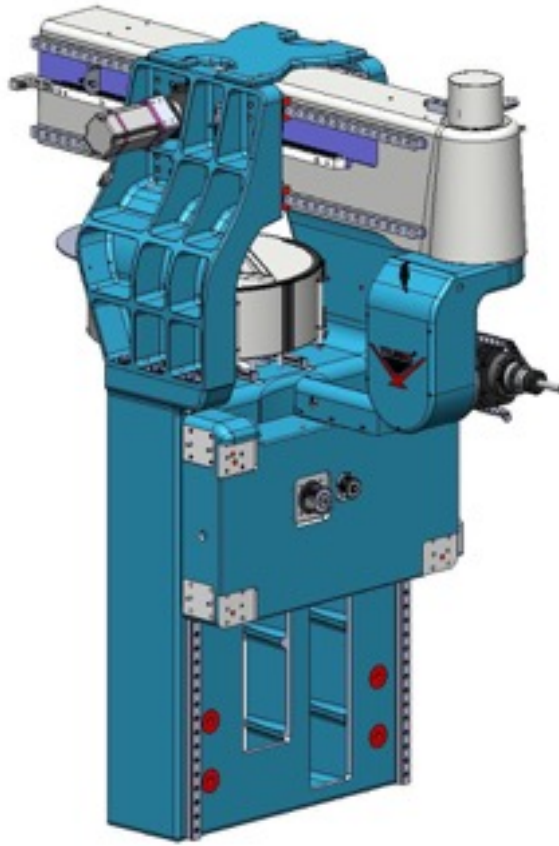


	TOTAL POWER							kg	kg
<b>AIM 4410</b>	15 kW	3000 r.p.m	D=180 max. d: 30 mm	Ømax: 63 mm.	6 Bar	250 lt/ min	W= 2050 H= 2200 L = 6250	3200	3500

### 3. FEATURES OF PROCESSING CENTER

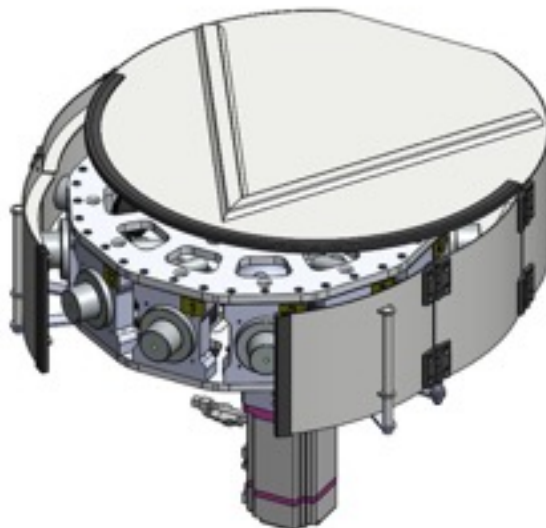
The parts of processing center are as following,

- Single piece of mono bloc processing center produced by aluminum casting



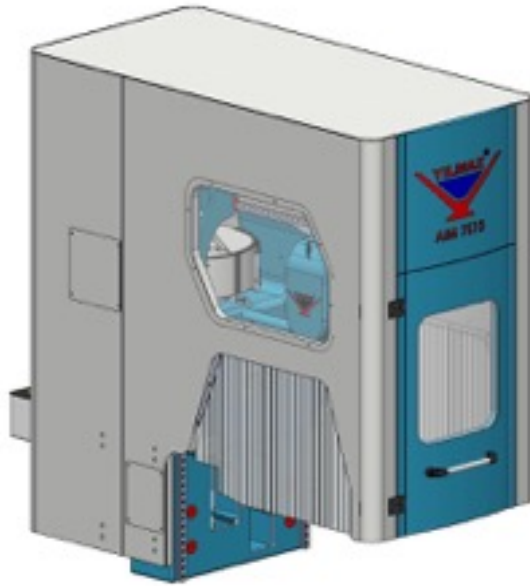
Main Milling Unit: 8.7 kW (max), 20.000 R.P.M HSD motor  
Machining accuracy (X,Y,Z) : +/- 0.02 mm

- 
- Magazine on which 12 pieces of tool sets can be placed & protection cover

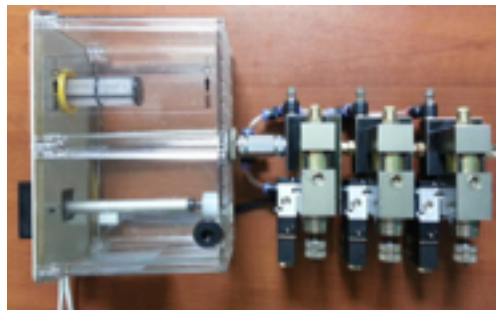




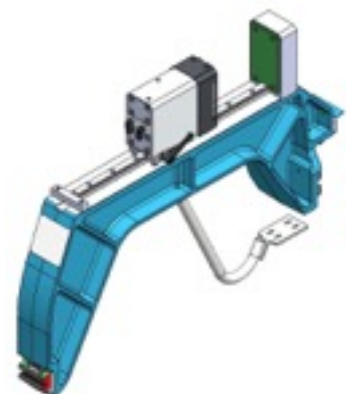
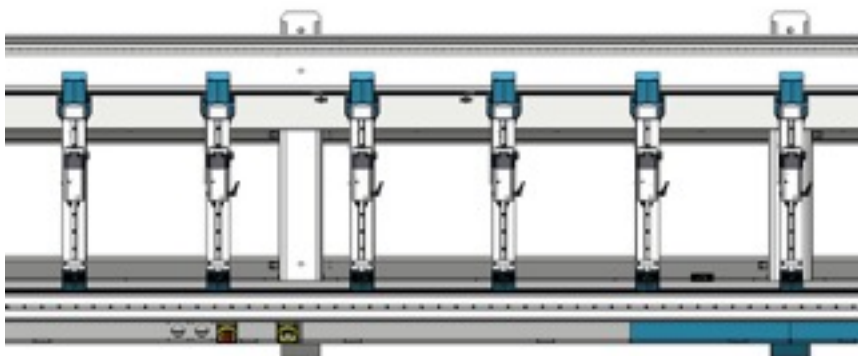
- Noise isolation cabinet around the machining head



- Tool cooling unit with PLC controller

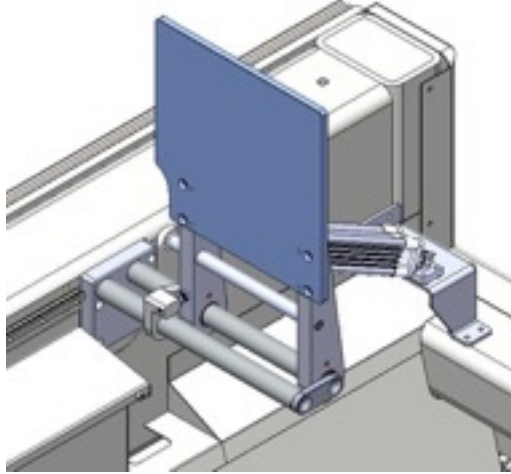


- 8 pieces of automatically operated clamps to hold the workpiece

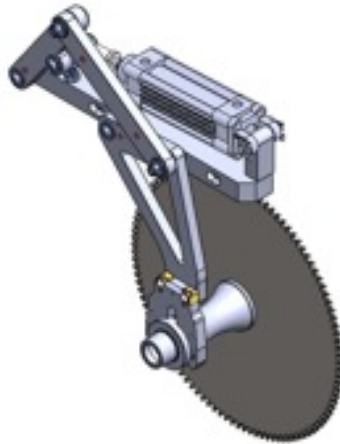




- 2 pieces of pneumatically operated supports to determine the reference of workpiece in X- direction



- Saw magazine up to Ø180 of saw blade



#### **4. MAIN SPINDLE**

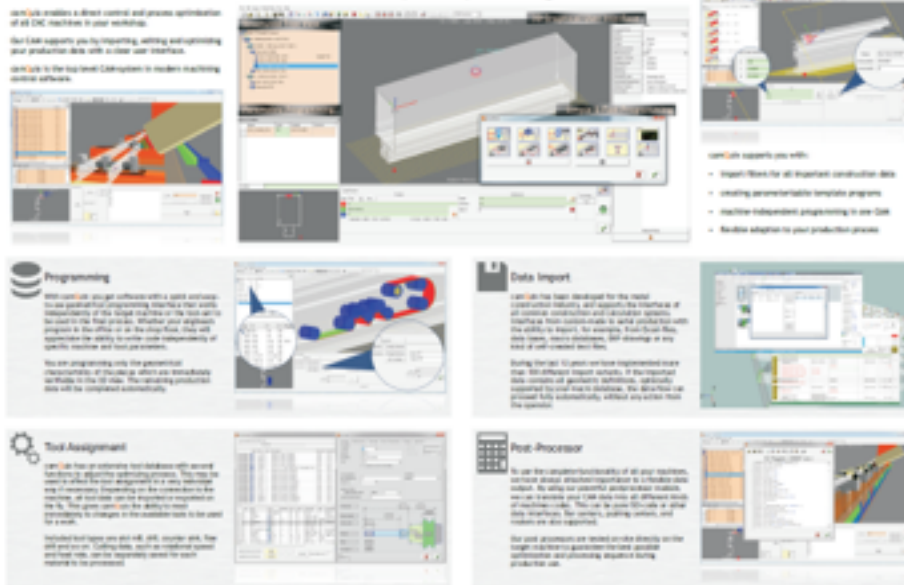
Spindle is of HSD brand, having 4 poles, power of 7 kW, rotating speed of 14.000 rpm, HSK F63 certification. The power of spindle depending on the rotation speed is provided below.



ISO programming language not only provides ease of programming for any kind of machine operations (drilling, slotting, sawing, tapping etc.) but also convenience in management of all machine functions such as automatic vice repositioning, etc.



### camQuix a modern CAM software for profile processing

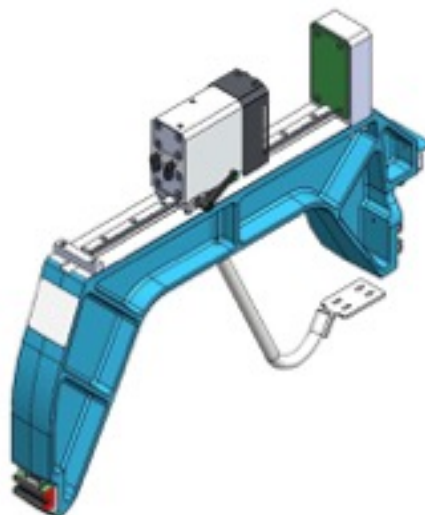


## 6. PROFILE CLAMPING SYSTEM

Profile clamping system is composed of 4 clamps. Each 4 of 2 clamps are operated at the same time by different hand buttons. The main purpose of utilizing the tree clamps at a time is to allow processing of two different profiles simultaneously on machine bed.

Clamps are covered with teflon material in order not to leave scratches on profiles.

Clamps can be repositioned automatically by machine depending on the processes, performed on workpiece by means of CAMPROX software.



## 7. ACCURACY OF PROCESSING CENTER

Machine has a repeatable point accuracy of  $\pm 0.05$  mm/meter. Positioning accuracy is  $\pm 0.05$  mm.

## **8. DECLARATION OF CE CONFORMITY**

Machine is delivered in conformity with UL & CSA safety directives, and with CE sign and Certificate of CE Conformity to the customer. (Machine complies with the AT 2006/42EC, EN ISO 12100, 2006/95-EC Low Voltage Equipment, 2004/108-EC Electromagnetic Compatibility and EN 60204-1 standards).

## **9. PROJECT MANAGEMENT**

Machine is developed depending on the needs of customer and in accordance with Yilmaz Makine Quality Procedures.

### **1. Design**

When order is confirmed, technical properties of equipment in quotation is detailed together with customer. Non-standard parts are designed by Research and Development (R&D) Department of Yilmaz Makine. Standard parts are provided under the control of qualified R&D personnel.

### **2. Manufacturing and Assembly**

Based on the design documents, parts, which are not standard, will be manufactured and controlled by Yilmaz Makine. Machine will be assembled later.

### **3. Internal Tests**

Having completed the assembly of machine, machine is tested according to Internal Test Procedure. These tests include mechanical checks, setting up different software parameters, machine tests, repeatability- accuracy tests, electrical and safety tests.

### **4. Installation and Commissioning**

Installation and commissioning will be decided.

### **5. Training**

Yilmaz Makine shall provide necessary training to customer.

The content of the training is as following;

- Presentation of Processing Center and parts
- ISO programming language
- Maintenance of Processing Center
- Support for programming the customer specific operation

Customer should assign an operator, who will be responsible of efficient operation and maintenance of machine, for this training.

## **10. DOCUMENTATION**

Machine is delivered with the following documents to customer:

- AIM User and Maintenance Manuals
- Electrical and Pneumatic Connection Documents
- Programming Guide
- CAMPROX Software Guide

## 11. TERMS OF SALE

### 1. Guarantee

YILMAZ Makine asserts that all machines are manufactured in accordance with international standards and tested before delivery.

Guarantee period is 24 months from the date of shipment and it does not cover electrical equipment.

Items under guarantee:

- All faults and failed parts, due to manufacturing processes in factory, are fixed and or replaced without any payment (Notice that the delivery cost of parts are invoice to customer).
- In case the faults or failed parts of machine is fixed or replaced by our technical service, transportation, accommodation and daily allowance of technical personnel is under responsibility of customer.

Guarantee does not cover any kind of faults due to following conditions.

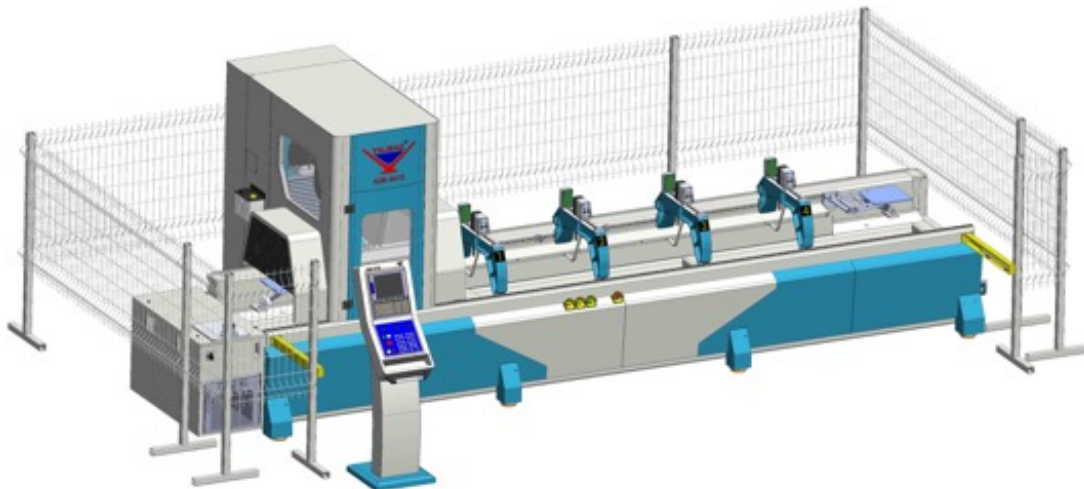
- Not following the instructions in user manual
- Wrong electrical supply
- Misusage or using the machine other than what it is designed for
- Using unqualified or non-original machining tools
- Programming faults
- Not cleaning the machine or not applying protective maintenance on machine
- Any damage while replacing the machine in shop or carrying the machine to another production plant
- Natural disasters (lightning, fire, flood)
- Any damage when failed machine is forced to operate.

### 2. Equipment and Service Included in Quotation

Equipment and services included in proposal are listed below:

#### Mechanic Parts

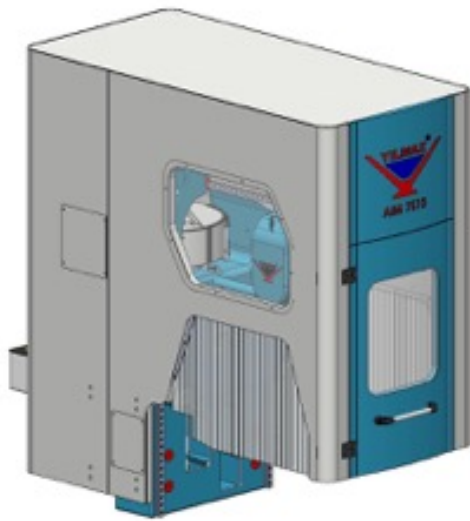
1 pc of 4-AXIS machine processing center having 4020 mm (13.2 ft) machining capacity



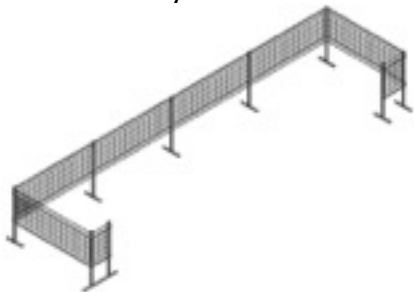
1 set of operator safety bars (2 pcs.)



1 pc of protection cabinet around machining head



1 set of safety fence around the machine



### **Software and Accessories**

1 pc. of DELTA operating system

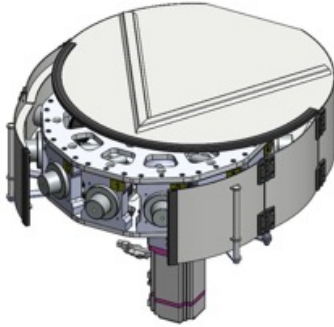




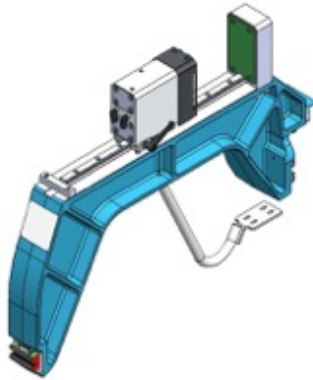
1 pc CAMPROX CamQuix for 4-Axis Milling Center



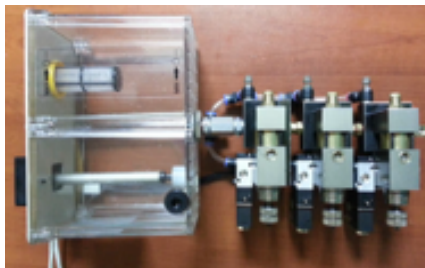
1 pc of 12 Tool capacity magazine (without tool adaptor and tools )



4 pcs of profile holding clamps



1 set of misty coolant spray system



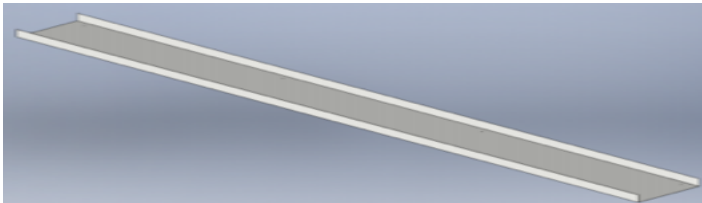
1 pc of automatic machine lubrication system



1 set of tool holder setup kit (assembled)



1 set of chip pan (assembled)




### 11.3 Optional equipment & parts

PART #	PICTURE	STOCK CODE	PART NAME
1		3UA920030-0050	TOOL & APARATUS KIT -6 pc cutters (2 pc. Ø5, 1 pc. Ø6, 1 pc. Ø8, 1 pc. Ø10, 1 pc. Ø12) -12 pc. HSK F63 Tool holders -6 pc. Collets ( 3 pc. Ø5-6, 1 pc. Ø7-8, 1 pc. Ø9-10, 1 pc. Ø11-12) -12 pc. mold height
3		1SK050000-0038	Ø 5*15 L50-Z1 SINGLE FLUTE CARBIDE BIT
4		1SK050000-0039	Ø 6*18 L57-Z1 SINGLE FLUTE CARBIDE TIP
5		1SK050000-0040	Ø 8*20 L63-Z1 SINGLE FLUTE CARBIDE BIT
6		1SK050000-0018	Ø 10*72-Z2 DOUBLE FLUTE CARBIDE BIT
7		1SK050000-0072	Ø 12*83-Z2 DOUBLE FLUTE CARBIDE BIT
8		1SK050000-0056	Ø13-Z2 DOUBLE FLUTE CARBIDE BIT
9		3UB010030-0003	AIM 4410 HSK F63 Ø180 SAW BLADE KIT
10		1SK050000-0256	HSK F63 TOOL HOLDER

11		1SK050000-0023	ER 32 COLLET FOR Ø5-6
12		1SK050000-0057	ER 32 COLLET FOR Ø7-8
13		1SK050000-0024	ER 32 COLLET FOR Ø9-10
14		1SK050000-0073	ER 32 COLLET FOR Ø11-12
15		1SK050000-0058	ER 32 COLLET FOR Ø13-14
16		1SK050000-0048	ER 32 COLLET FOR Ø19-20
17		2TU013210-0196	MOULD HEIGHT PART (4 pc)
18		3UA920030-0009	AIM 7510 CLAMPING UNIT
19		1SK400000-0001	DIGITAL TOOL LENGTH MEASUREMENT GAUGE (300 mm/12")
20		3UA740030-0045	TAPPING CHUCK (M4-M8)
21		3UB010030-0007	AIM 4410 CHIP REMOVAL CONVEYOR

22		1SK010000-0114	Ø180*5*30 Z=45 SPECIAL SAW BLADE
23		1EL180000-0047	ET3U-16kVA IN 3x208-220-240V / OUT 3x400V PE TRANSFORMER
24		1EL180000-0510	C/A3-020A VOLTAGE STABILIZER (20 KVA)
25		1EL070003-0030	CRD/H04 MISTRAZE OIL MIST BLOWER
26		1TC100001-0050	TOOL CAR
27		1TC100001-0060	DELL T 1700 WORKSTATION PC FOR CAM APPLICATIONS
28		3UA920030-0035	HIGH SAFETY FENCE
29		3UA740030-0500	DOUBLE ACTING PRESSURE VALVES FOR CLAMPS
30		0AA020000-0842	CADXTRACT SOFTWARE (3D STEP FILE IMPORT)

31		1EL320000-0011	BARKOD READER ( QD2130) ( CAB-327 - RS 232 )
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#### 11.4 Equipment and Services Excluded from Proposal

The below equipment and services are excluded in price proposal.

- Customer is responsible for electrical and pneumatic connections of machine before delivery
- Special Clamps
- Customer specific machining software
- Shipment