

# **AIM 7510**

## **5-AXIS ALUMINIUM PROFILE PROCESSING CENTERS**

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## 1. OVERWIEV

AIM 7510 is 5-axis servo controlled machining center which is designed to perform drilling, grooving, notching, taping, 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 six sides of the profiles is possible with this fully automatic machining center.

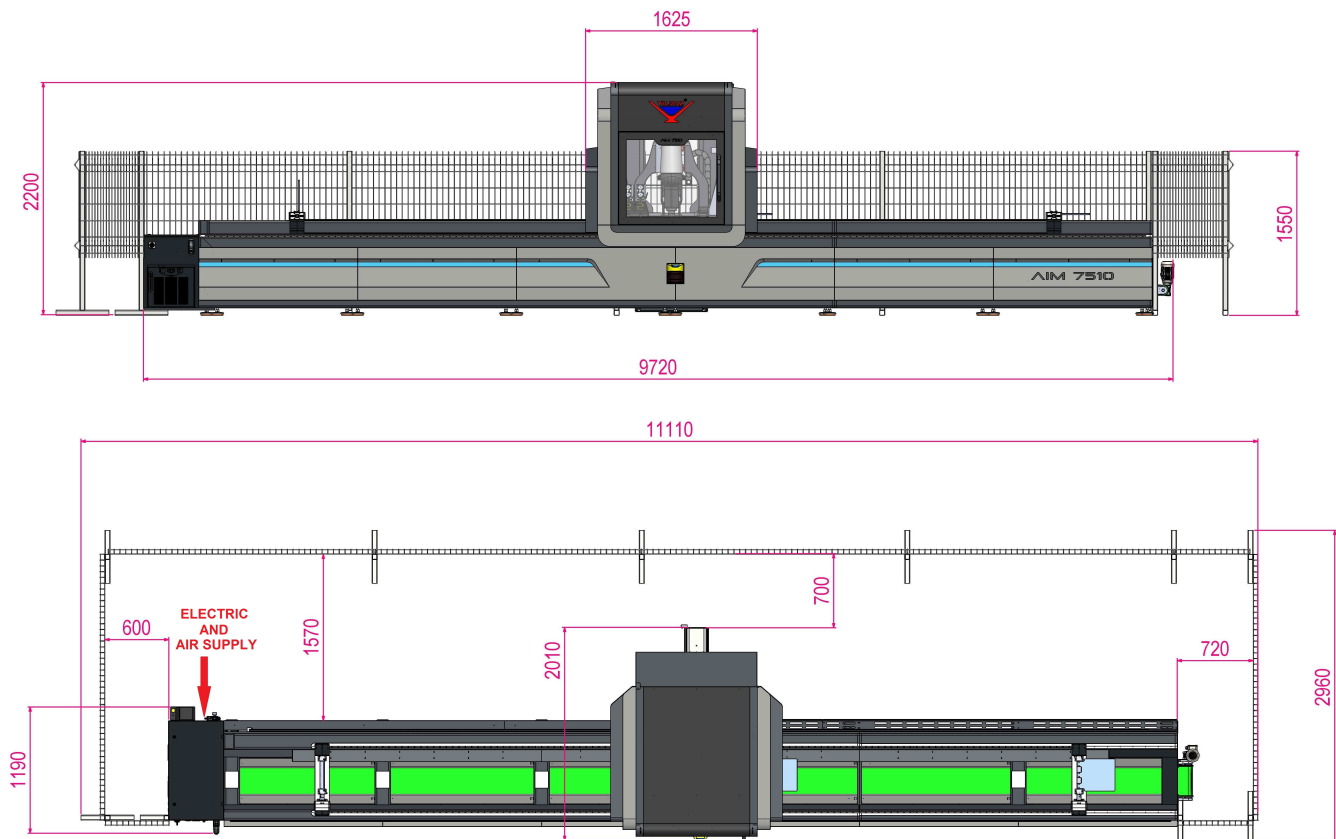
The moveable turret type of tool magazine equipped with 12 standard tools provides a fast tool change. It is housed in the mobile gantry to minimize the tool change time. An additional magazine for the saw blade with 350 mm dia. ensures the ease of machining on the exterior applications of the profiles.

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.

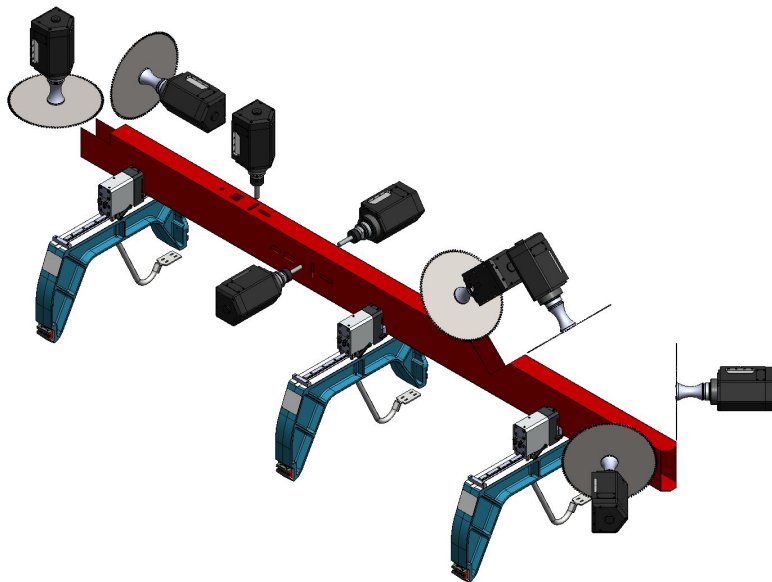
Metal parts are painted with Electrostatic Powder Paint which provides resistance against corrosion. Front section of machine is covered with moving door with transparent plexiglass windows so that operator can easily follow the machining process of work piece. This door also provides safety for operator.



## 2. TECHNICAL INFORMATION

### 2.1 General Features:

- CNC automation system providing motion control at 5-axis
- Uninterrupted machining property by means of the tandem mode to prevent waste of time
- 2 x separate magazine unit for 12 standard tools and 1 for saw blade with 350 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
- 8 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 operational safety guaranteed by 3-zone field scanner system
- 10" color touch screen
- Program import via USB flash memory stick
- 4 GB capacity CF card
- Standard ISO 'G' code programming language
- Automatic central guide lubrication system
- LED lighting in the cabinet
- Multi-language support

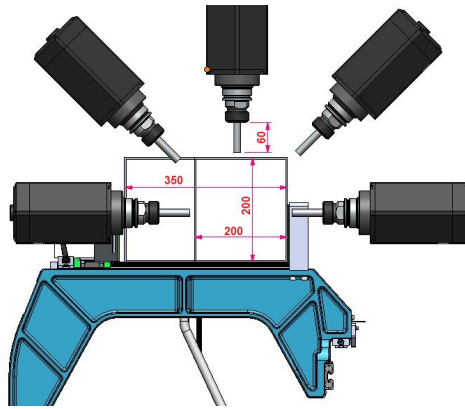



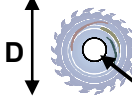


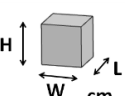
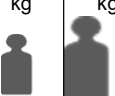
## 2-1 Technical Features

<b>WORKING CAPACITY</b>	
X-axis (mm)(AIM 7510- AIM 10510)	7000 - 10000
Y-axis (mm)	*350
Z-axis (mm)	200
C-axis (mm)	+180° / -180°
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)	350
Max. tool weight (kg)	3
<b>FUNCTIONS</b>	
Multi-piece operations (holes, slots, notching, saw blade cuts, taping)	
<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: 71m/min, Y-axis: 60m/min, Z-axis: 18m/min, A-axis: 100°/s, C- axis : 40°/s
5-axis servo motors (kW)	X-axis:1.5 / Y-axis:0.4 / Z-axis:1.5 / A-axis:0.2 / C-axis : 0.4
<b>GENERAL</b>	
Net / gross weight (kg)	4500/4800
Net / packing dimensions (WxLxH) (mm)	9720 x 2000 x 2200 / 9950 x 2200 x 2400
Air supply required (bar)	6
Voltage-frequency	400V 3P-50/60Hz
Total power (kW)	15
<b>WORKPIECE CLAMPING</b>	
Standard number of vises	8
Max. loadable number of the vises	10
Vice positioning through the X-axis	Automatic

YILMAZ reserves the right to carry out modifications without prior notice

\* In case of front side milling it is 200 mm

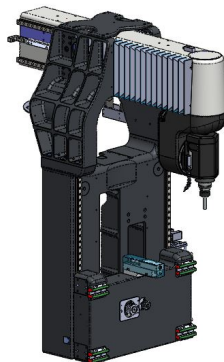


	TOTAL POWER							kg	kg
<b>AIM 7510</b>	15 kW	3000 rpm	D : 350 mm d : 30 mm	Ømax: 63 mm.	6 Bar	250 lt/min	W= 220 H= 240 L = 995	4500	4800

### 3. FEATURES OF PROCESSING CENTER

The parts of processing center are as following,

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

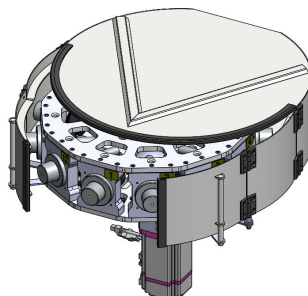


Main Milling Unit: 8.7 kW (max), 20.000 R.P.M HSD motor

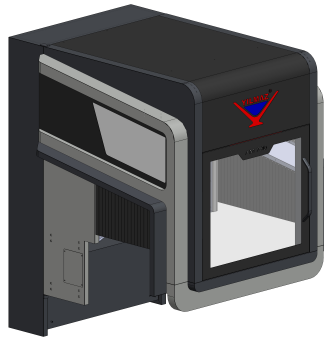
Machining accuracy : +/- 0.06 mm

Positioning accuracy: +/- 0.1 mm

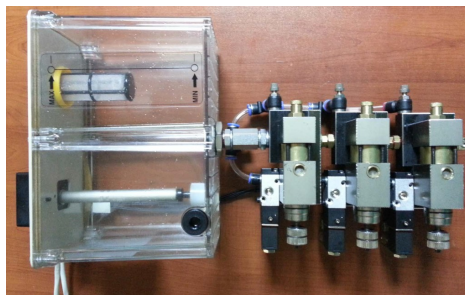
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- Magazine on which 12 pieces of tool sets can be placed & protection cover



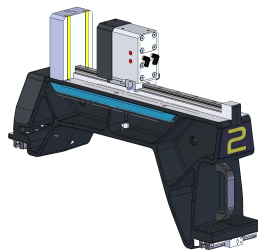
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- Noise isolation cabinet around the machining head



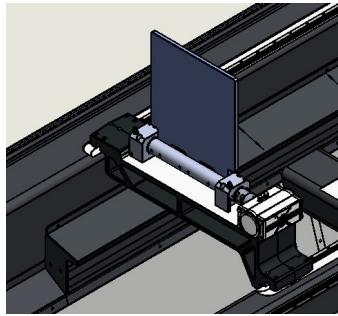
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- Tool cooling unit with PLC controller



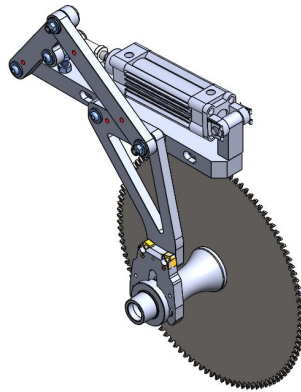
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- 8 pieces of automatically operated clamps to hold the workpiece



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

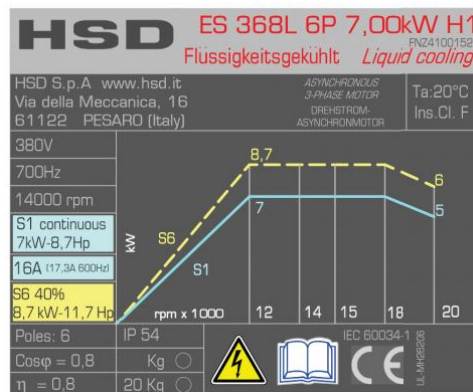


- Saw magazine for Ø350 of saw blade



#### 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.

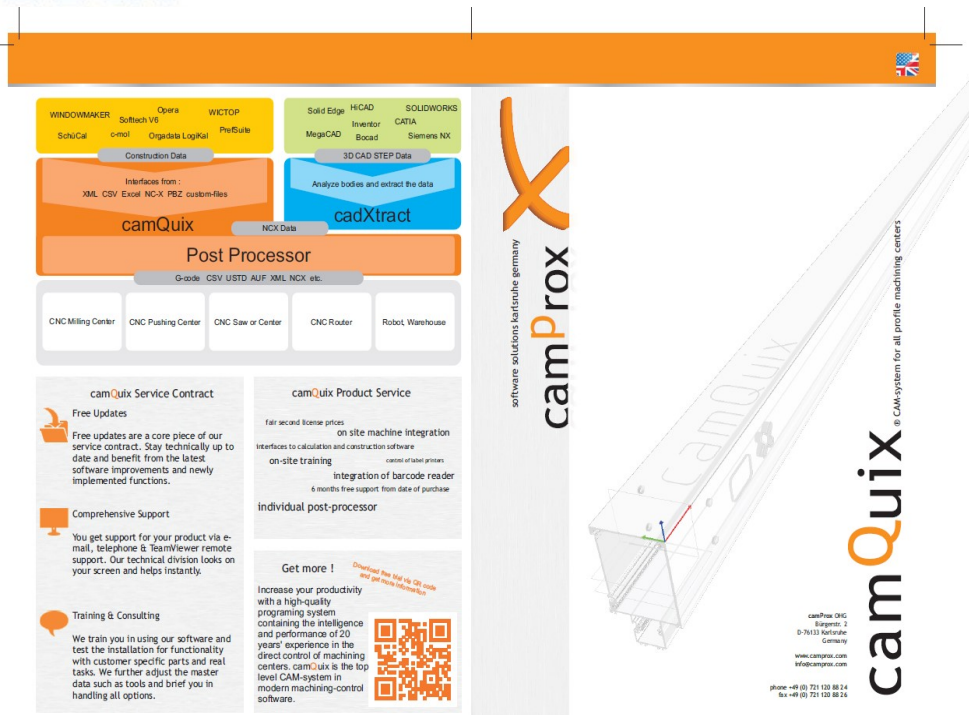


#### 5. PROGRAMMING

**CAMPROX** CamQuix software allows generating of customer specific operations with ISO G codes, and then program can be transmitted to machine.

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 vise repositioning, etc.





**camQuix** software architecture diagram showing data flow from various CAD systems (SolidWorks, CATIA, etc.) through a Post Processor to CNC machines. It also includes service contract details and contact information.

**camQuix Service Contract**

- Free Updates: Free updates are a core piece of our service contract. Stay technically up to date and benefit from the latest software improvements and newly implemented functions.
- Comprehensive Support: You get support for your product via e-mail, telephone & TeamViewer remote support. Our technical division looks on your screen and helps instantly.
- Training & Consulting: We train you in using our software and test the installation for functionality with customer specific parts and real tasks. We further adjust the master data such as tools and brief you in handling all options.

**camQuix Product Service**

- fair second license prices
- on site machine integration
- on-site training
- integration of barcode reader
- 6 months free support from date of purchase
- individual post-processor

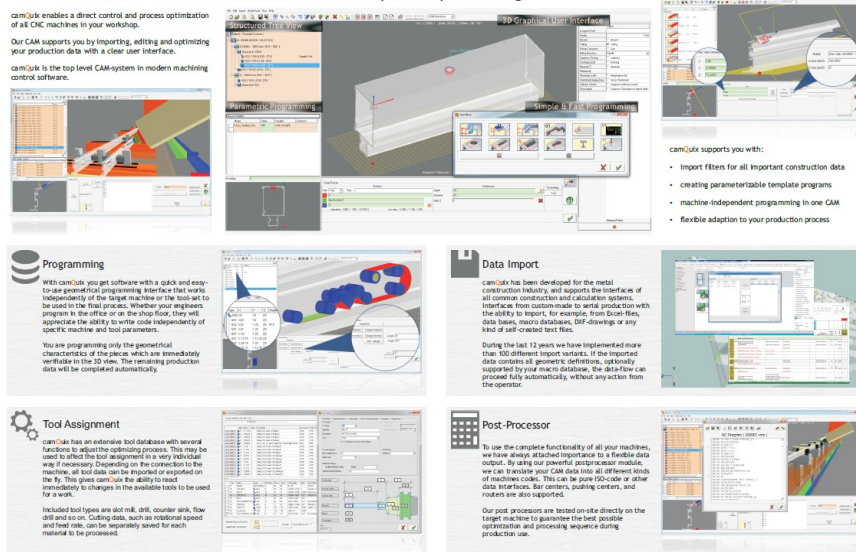
**Get more !**

Increase your productivity with a high-quality programming system containing the intelligence and performance of 20 years' experience in the direct control of machining centers. camQuix is the top level CAM-system in modern machining-control software.

**camProX** software solutions for profile machining centers

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## camQuix a modern CAM software for profile processing



**camQuix** enables a direct control and process optimization of all CNC machines in your workshop. Our CAM supports you by importing, editing and optimizing your production data with a clear user interface.

**camQuix** is the top level CAM-system in modern machining control software.

**camQuix supports you with:**

- Import filters for all important construction data
- creating parameterizable template programs
- machine-independent programming in one CAM
- flexible adaption to your production process

**Programming**

With camQuix you get software with a quick and easy-to-use graphical programming interface that works independently of the target machine or the tool set to be used in the final process. Whether your engineers program in the office or on the shop floor, they will appreciate the ability to write code independently of specific machine and tool parameters.

You are programming only the geometrical characteristics of the piece, which are immediately verifiable in the 3D view. The remaining production data will be completed automatically.

**Data Import**

camQuix has been developed for the metal construction industry and supports the interface of all common construction and calculation systems. Interface from customer-made to serial production with the ability to import, for example, from Excel files, data bases, micro databases, GDF drawings or any kind of self-created text files.

During the last 12 years we have implemented more than 100 different import variants. If the imported data contains all geometric definitions, optionally supported by your machine database, the data file can be processed fully automatically, without any action from the operator.

**Tool Assignment**

camQuix has an extensive tool database with several functions to adjust the optimizing process. This may be used to affect the tool assigned in a very individual way if necessary. Depending on the connection to the machine, all tool data can be imported or exported on the fly. This gives camQuix the ability to react immediately to changes in the available tools to be used for work.

Included tool types are slot mill, drill, counter sink, flow drill and so on. Cutting data, such as rotational speed and feed rate, can be separately saved for each material to be processed.

**Post-Processor**

To use the complete functionality of all your machines, we have always attached importance to a flexible data output. By using our powerful post-processor module, we can translate your CAM data into all different kinds of machine codes. This can be pure ISO code or other data interfaces. Bar centers, pushing centers, and macros are also supported.

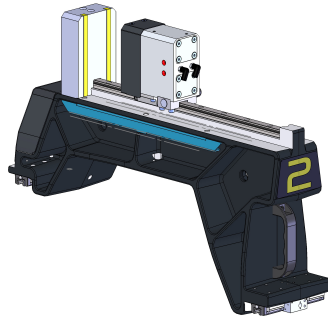
Our post processors are tested on-site directly on the target machine to guarantee the best possible optimization and processing sequence during production use.

## 6. PROFILE CLAMPING SYSTEM

Profile clamping system is composed of 8 clamps. Each 4 of 8 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/m. Positioning accuracy is  $\pm 0.05$  mm.

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

Machine is delivered 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.

### **9.1. 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.

### **9.2. 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.

### **9.3. 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.

### **9.4. Installation and Commissioning**

Installation and commissioning will be decided.

### **9.5. 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**

### **11.1 Guarantee**

Yilmaz 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:

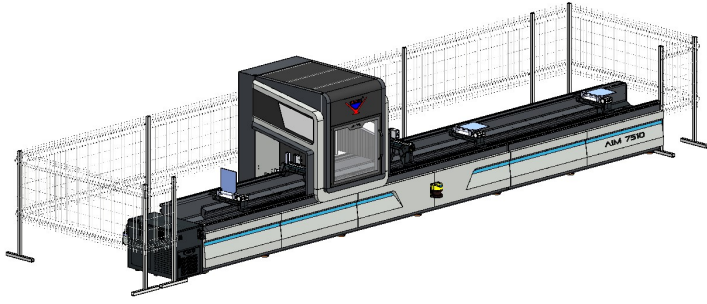
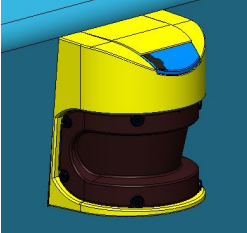
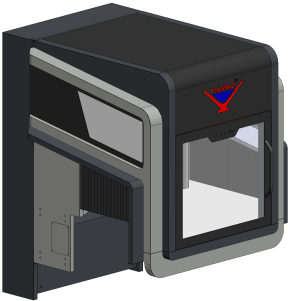
- All faults and failed parts, due to manufacturing processes in factory, are fixed and or replaced without any payment (Notice that the delivery cost of parts are invoice to customer).
- In case the faults or failed parts of machine is fixed or replaced by our technical service, transportation, accommodation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

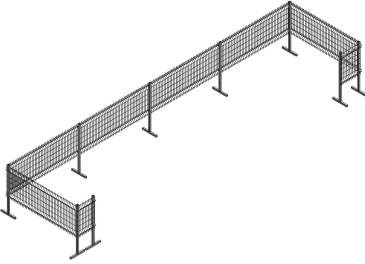
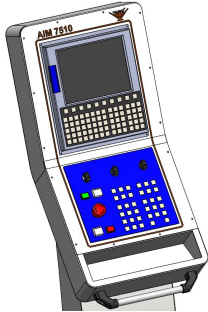

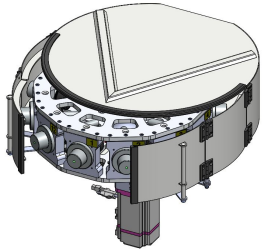
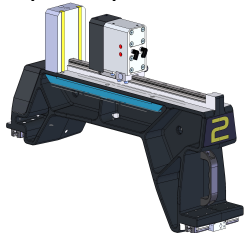
Guarantee does not cover any kind of faults due to following conditions.

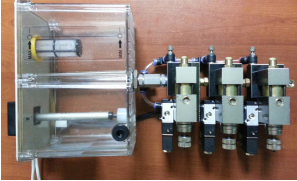

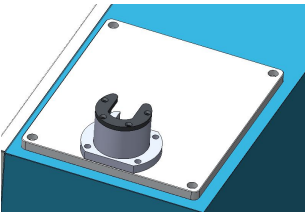
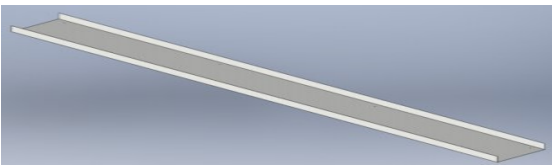
- Not following the instructions in user manual
- Wrong electrical supply
- Misusage or using the machine other than what it is designed for
- Using unqualified or non-original machining tools
- Programming faults
- Not cleaning the machine or not applying protective maintenance on machine
- Any damage 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.

## 11.2 Equipment and Service Included in Quotation









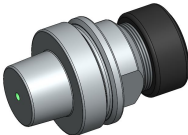




Equipment and services included in proposal are listed below

Mechanical Parts	Price USD
<p>1 pc of 5-AXIS machine processing center having 7120 (AIM 7510) -10120 mm (AIM 10510) machining capacity</p> 	
<p>1 pc of 3 zone LASER field scanner system</p> 	
<p>1 pc of protection cabinet around machining head</p> 	
<p>1 set of safety fence around the machine</p>	

	
<b>Software and Accessories</b>	
<p>1 pc. of DELTA operating system</p> 	
<p>1 pc CAMPROX CamQuix for 5-Axis Milling Center</p> 	
<p>1 pc of 12 Tool capacity magazine (without tool adaptor and tools )</p> 	
<p>8 pcs of profile holding clamps</p> 	
<p>1 set of misty coolant spray system</p>	






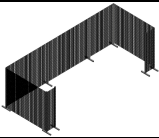




		
<p>1 pc of automatic machine lubrication system</p> 		
<p>1 set of tool holder setup kit (assembled)</p> 		
<p>1 set of chip pan (assembled)</p> 		

### 11.3 Optional equipment & parts

PART #	PICTURE	STOCK CODE	DESCRIPTION
1		3UA920030-0050	AIM 7510 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 CARBIDE CUTTER
4		1SK050000-0039	Ø 6*18 L57-Z1 CARBIDE CUTTER
5		1SK050000-0040	Ø 8*20 L63-Z1 CARBIDE CUTTER
6		1SK050000-0018	Ø 10*72-Z2 CARBIDE CUTTER
7		1SK050000-0072	Ø 12*83-Z2 CARBIDE CUTTER
8		1SK050000-0056	Ø13-Z2 CARBIDE CUTTER
9		3UA920030-0031	AIM 7510 HSK F63 Ø350 (14") SPECIAL SAW BLADE KIT
10		1SK050000-0256	HSK F63 TOOL HOLDER
11		1SK050000-0023	470 E-6 ER32 Q6 COLLET (Ø5-6)
12		1SK050000-0057	470 E-8 ER32 Q8 COLLET (Ø7-8)
13		1SK050000-0024	470 E-10 ER32 Q10 COLLET (Ø9-10)
14		1SK050000-0073	470 E-12 ER32 Q12 COLLET (Ø11-12)

15		1SK050000-0058	470 E-14 ER32 Ø14 COLLET (Ø13-14)
16		1SK050000-0048	470E-20 ER32-Ø20 COLLET (Ø19-20)
17		2TU013210-0196	MOULD HEIGHT PART (12 pc)
18		3UA920030-0009	AIM 7510 CLAMPING UNIT
19		1SK400000-0001	MEASUREMENT GAUGE (300 mm)
20		1SK400000-0002	HSK F63 F63 GAUGE(A63.18.40.300)
21		1SK400000-0003	ASIMETO DIAL GAUGE (501- 08-7-NC)
22		1SK400000-0004	MOUNTING APPARATUS (INSIZE 6211-10)
23		3UA920030-0056	TAPPING CHUCK (M4-M8)
24		3UA920030-0059	AIM 7510 CHIP CONVEYOR BELT
25		1SK010000-0210	SAW BLADE Ø350 (14")x3,2x30mm Z108



26		1EL180000-0047	ET3U-16kVA IN 3x208-220-240V / OUT 3x400V PE TRANSFORMER
27		1EL180000-0510	020A VOLTAGE STABILIZER (20 KVA)
28		3UA920030-0065	AIM 7510 MISTRAZE OIL MIST BLOWER
29		1TC100001-0050	AIM 7510 (2740) TOOL CAR
30		1TC100001-0060	DELL T 1700 WORKSTATION PC FOR CAM APPLICATIONS
31		3UA920030-0035	AIM 7510 HIGH SAFETY FENS
32		0AA020000-0842	(3D STEP FILE IMPORT)
33		1EL320000-0011	( QD2130)( CAB-327 - RS 232 ) BARCODE SCANNER
34		3UA740030-0511	INDIVIDUAL CLAMP CONTROL SET (FOR 8 PCS OF CLAMPS)
35		3UA740030-0510	ADJUSTABLE CLAMP PRESSURE SYSTEM

#### 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