(someco)

a voilàp company

SBZ SL2

THROUGH FEED PROCESSING CENTERS



18-axis through-feed bar automatic CNC machining line for milling, drilling, cutting, contouring and screwing reinforcements, specialising in the production of PVC window frames. The machining and cutting unit can be equipped with an integrated contouring module for preparing the PVC profile for welding with Seamless® technology. SBZ SL consists of an automatic magazine with a profile through-feed system, complete with gripper movement for profile clamping. Thanks to the synchronised movement of the gripper and bar magazine, the feeder returns to the start position allowing the loader to prepare the next profile at the same time. The dimensional control system for the profile section allows checking if the profile loaded by the operator is the one indicated in the machining list. The milling module, cutting module and contouring module are located in the SBZ SM unit of the machine. There are 9 or 11 electrospindles installed on the CNC milling module which allow working on the whole edge of the workpiece, whichever way it faces. The cutting module is equipped with a Ø 500 mm blade with CNC 3-axis horizontal movement. The optional contouring module operates on 3 CNC axes by means of an electrospindle that allows milling the ends of the profiles cut at 45°. An automatic extractor transfers the workpiece from the cutting unit to the intermediate unloading magazine. This 36-position belt magazine transfers profiles from the SBZ SM unit to the SBZ SF2 unit, a machining module for metal-reinforced segments, perfectly balancing the productivity of the two units. The SBZ SF2 unit is made up of a pneumatic double horizontal screwing unit that can be automatically adjusted both vertically and horizontally via software. The unit fixes the metal support with self-tapping screws that automatically reach the machine from a loader, a triple drilling unit for drilling holes for cremone bolts, 2 drilling units for frame assembly holes and a single-tool unit for drilling the frame hinges. The unit consists of a transversal belt magazine for the unloading of machined workpieces long up to 3500 mm. The machining units are equipped with soundproofed cabins in the operating part which, in addition to protecting the operator, also reduce the environmental noise impact. The cabin of the SBZ SM can be connected to the swarf exhauster (optional). PVC waste and swarf are collected in 2 drawers at the base of the machining module, which, combined with a belt evacuation system, facilitate and speed up

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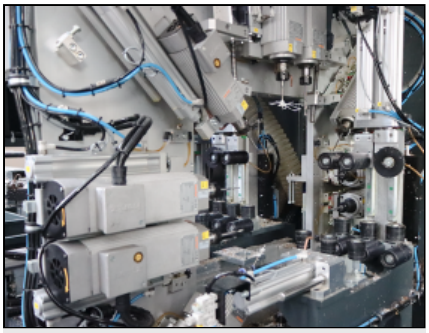
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cleaning operations. The line is supplied with an intuitive operator interface for machining list management connected to the production programming software. Industry 4.0 ready.

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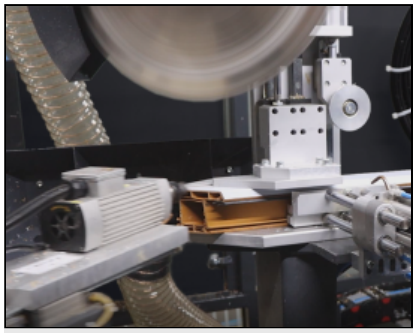
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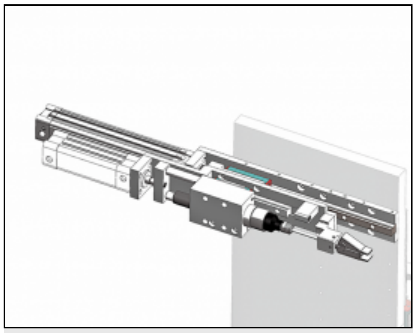
Milling and drilling unit

The milling module provided on SBZ SM features 9 electrospindles, of which three can be adjusted to perform all necessary machining operations on the PVC profile. In the second machining phase, the drilling units on the SBZ SF2 drill the holes for fitting hinges and the wall mounting holes, and perform the Cremone bolt drilling.



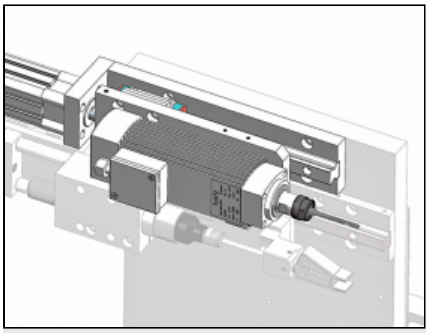
Cutting unit

The line is equipped with a down-stroking movement with Ø 500 mm blade, which is an integral part of the SBZ SM cutting and milling unit. The cutting disc is expressly designed to cut PVC with a high degree of efficiency and is optimised for precise cutting of gaskets. The numerical control unit allows performing cuts at an angle from -45° to +45° on a vertical axis.



Screwing unit

The line has 2 pneumatic screwing units with automatic feeding. These units, which are part of the SBZ SF2 supply, are mounted on a rotary base with automatic movements on 2 NC axes, which allows fixing the reinforcement by programming the optimal position of the screws. One unit is dedicated to screwing the reinforcement into profiles for sashes, the other machines profiles for frames.



Drilling unit for wall mounting

Two drilling units, which are parallel to the screwing units, are used to perform machining operations intended for wall mounting of frames.



Line management software

The line is equipped with a simple and ergonomic user interface, which allows machining the work flows in an efficient and balanced way. The totem has a Wi-Fi antenna for connecting the machine to the network that ensures both interconnection with the production programming, through specific drivers, and remote connection for the management of the technical service in case of need.

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SBZ SL2 / THROUGH FEED PROCESSING CENTERS

MACHINE SPECIFICATIONS

Number of controlled axes	18
Standard milling unit no. (SBZ SM)	9
Cutting unit	●
Contour unit: milling for seamless welding	○
Dowel drilling units no. (SBZ SF2)	2
Triple drilling unit	●
Single-tool unit for drilling hinges	●
Multi-tool unit for drilling hinges	○
Screwing units	2
Maximum no. of screwing units	4
Bar positioning speed (m/min)	50
Bar dimension check	●
Operating pressure (bar)	6 ÷ 8
Air consumption (Nl/min)	1.300
Installed power (kW)	22,8
Programmable digital adjustment of the clamp pressure	●
Presetting for machining of PVC profiles with fiber-glass reinforcement	○

WORK AREA

Minimum profile height (mm)	45
Minimum profile width (mm)	40
Maximum profile height (mm)	160
Maximum width of the profile (mm)	130
Maximum reinforce thickness (mm)	3

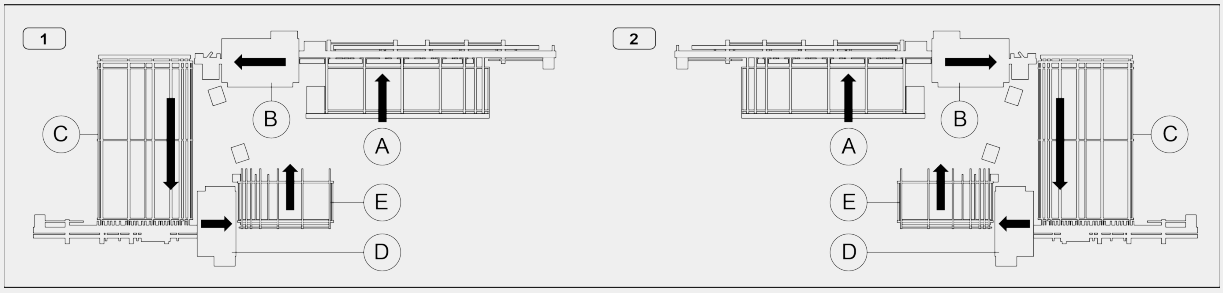
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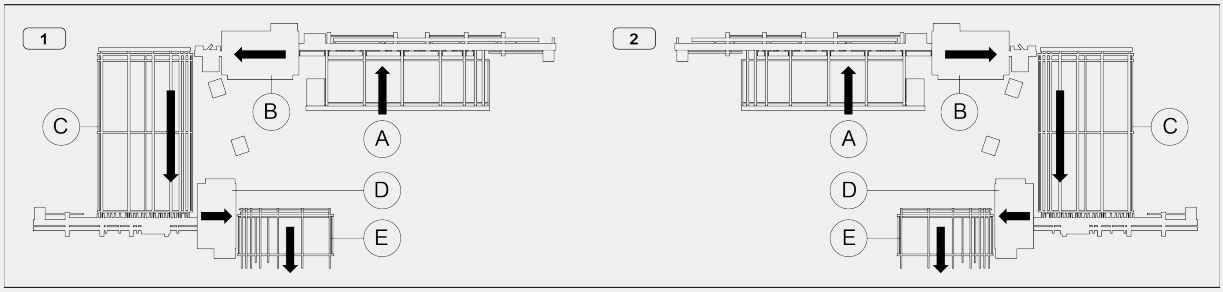
LAYOUT

"C" configuration (loading and unloading on the same side)



1 - Right feed 2 - Left feed

"S" configuration (loading and unloading on opposite sides)



1 - Right feed 2 - Left feed

A – Loading magazine
B – Milling and cutting unit – optional provision for seamless machining
C – Transport magazine
D – Drilling and screwing unit
E – Unloading magazine

LOADING UNIT: PROFILE POSITIONING

Loading feeder with 2 controlled axes gripper	●
Maximum loadable length (mm)	6.500
Minimum loadable length (mm)	600
Maximum length that can be machined on a single workpiece (mm)	6.000
Maximum workpiece length that can be cut (mm)	3.000
Minimum workpiece length that can be cut (mm)	400
Profile loading in concurrent operation time	●

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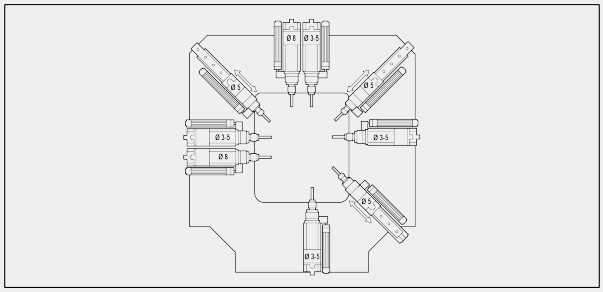
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MILLING UNIT

Maximum power in S1 (kW)	1,1
Maximum speed (rpm)	18.000
Electrospindles in fixed position	6 - 8
Electrospindles adjustable with NC	3

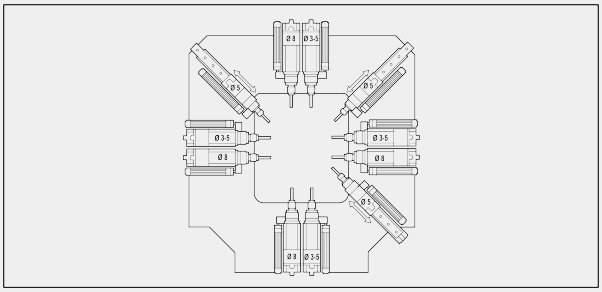
MILLING UNITS WORKING CAPACITY

9 electrospindles configuration



Loading side view

9+2 electrospindles configuration



Loading side view

VERTICAL CUTTING UNIT

Blade diameter at carbide-tipped (mm)	500
NC blade positioning	-45° ÷ +45°
Blade motor power (kW)	2,2
Specific blade design for perfect cutting of gasket	●

DOWEL DRILLING UNITS

Maximum power in S1 (kW)	1,1
Maximum speed (rpm)	6.000
Tool diameter (mm)	6 / 8

TRIPLE DRILLING UNIT

Tools diameter (mm)	10 / 12 / 10
Maximum power in S1 (kW)	1,5
Maximum speed (rpm)	900

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FRAME HINGES DRILLING UNIT

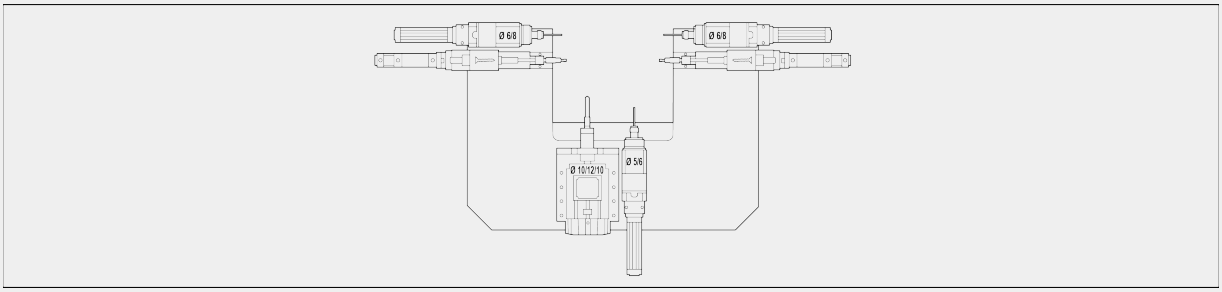
Tools diameter (mm)	5 / 6
Maximum power in S1 (kW)	1,1
Maximum speed (rpm)	6.000

SCREWING UNIT

Number of screwing units	2
Minimum profile length with screwing of reinforcement (mm)	400
Screw minimum length (mm)	16
Screw maximum length (mm)	20
Screw head diameter (mm)	6,5 ÷ 7,5
Screw diameter (mm)	3,9 ÷ 4,2
Discharging time of screw from loader (s)	0,1

DRILLING AND SCREWING UNITS WORKING CAPACITY

Electrospindle and screwing units configuration



Loading side view

UNLOADING UNIT

Belt unloading magazine for workpieces of up to 3.500 mm	●
Belt magazine unloading depth (mm)	1.800
Extraction NC clamp	●
Fast profile unloading system	●

Included ● Available ○

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