

Fladder® GYRO

The perfect all-in-one
solution for finishing, sanding
and deburring



Oscillating
process

For wood, metal, plastics

- a powerful and efficient machine concept..!

A characteristic of all FLADDER® finishing machines is that they are the result of intensive, targeted product development work, producing a design which is able to meet all manufacturers' requirements for durability, efficiency and ease of operation.

In the development work, emphasis has been put on making the design as strong and compact as possible, employing a minimum of components.

In addition, many resources have been spent on ensuring that the machines are easy to operate and have a minimum risk of faults, yet are sophisticated enough to allow them to be integrated in production lines with automatic procedures.

One of the keywords in the design of our machines is simplicity: The construction is simple, using few but strong components, operation is simple, adjustment is simple, servicing is simple, buying it is simple (all customers are offered a free test).

The machines are built on a self-supporting body frame onto which the other components are mounted. Where technically appropriate, all components have been powder-coated to ensure a durable surface finish.

The machine design is made as compact as possible. This means that the machine takes up a minimum of space, for instance when used in an automatic production line.

The design of the FLADDER® GYRO allows it to be placed in an automatic line. The unit's 1300 mm wide vacuum mat and automatic controls make it an ideal choice for this purpose.

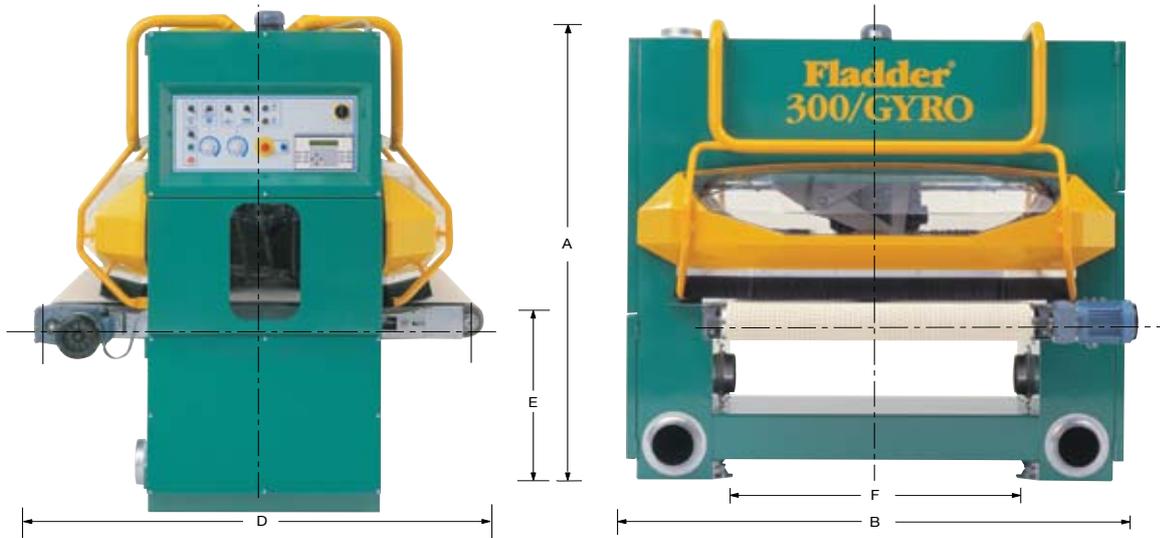
Many of the functions incorporated in the FLADDER® GYRO are patented, which is formal proof that this is a truly unique machine. It is also our way of protecting our customers against poor imitations.



We attach importance to finding the best solution in constructive cooperation with every customer. A free test performed on the customer's products is a natural part of our service and is the customer's guarantee that he is investing in the right product.

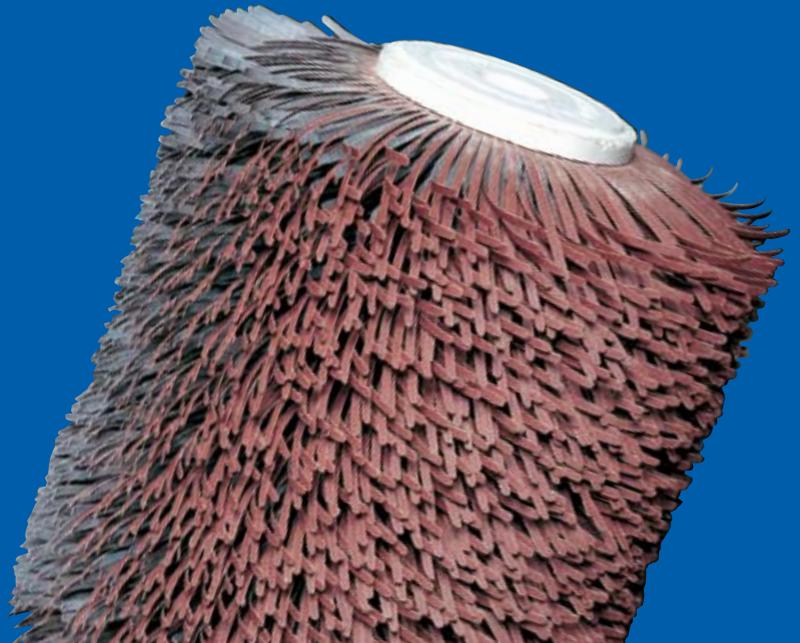


Technical specifications



FLADDER®	300/GYRO	400/GYRO	
A. Total height	2210 mm	2670 mm	2400 mm
B. Machine width	2300 mm	2410 mm	2300 mm
D. Total length	2070 mm	2070 mm	2430 mm
E. Height of conveyor belt	850 mm	865 mm	865 mm
F. Working width	1300 mm		1300 mm
Max. part height	100 mm		100 mm
Max. part width	1300-1600 mm		1300-1600 mm
Infeed speed	0,3-10 m/min.		0,3-10 m/min.
Spindle length	350 mm		350 mm
Number of spindles	6		6
Number of FLADDER® abrasive blades	144-220		144-220
Main motor	7,5 kW		11 kW
Rotation motor	0,37 kW		0,55 kW
Oscillation motor	0,55 kW		0,55 kW
Conveyor belt motor	1,5 kW		2,2 kW
Vacuum turbine motor	2x7,5 kW		2x7,5 kW
Voltage	3x400/500 V		3x400/500 V
	50 or 60 Hz		50 or 60 Hz
Max. fuse capacity	63 A		63 A
Min. fuse capacity	50 A		63 A
Pressurized air	1/4", 6 Ato.		1/4", 6 Ato.
Dust extraction	5000 m3/h		5000 m3/h
Stubs for dust extraction	2xØ200 mm		2xØ200 mm
Net weight	2300 kg	900 kg	3000 kg

The above specifications may be limit values to be adjusted to meet customers' requirements and may vary.



Fladder® GYRO - topclass

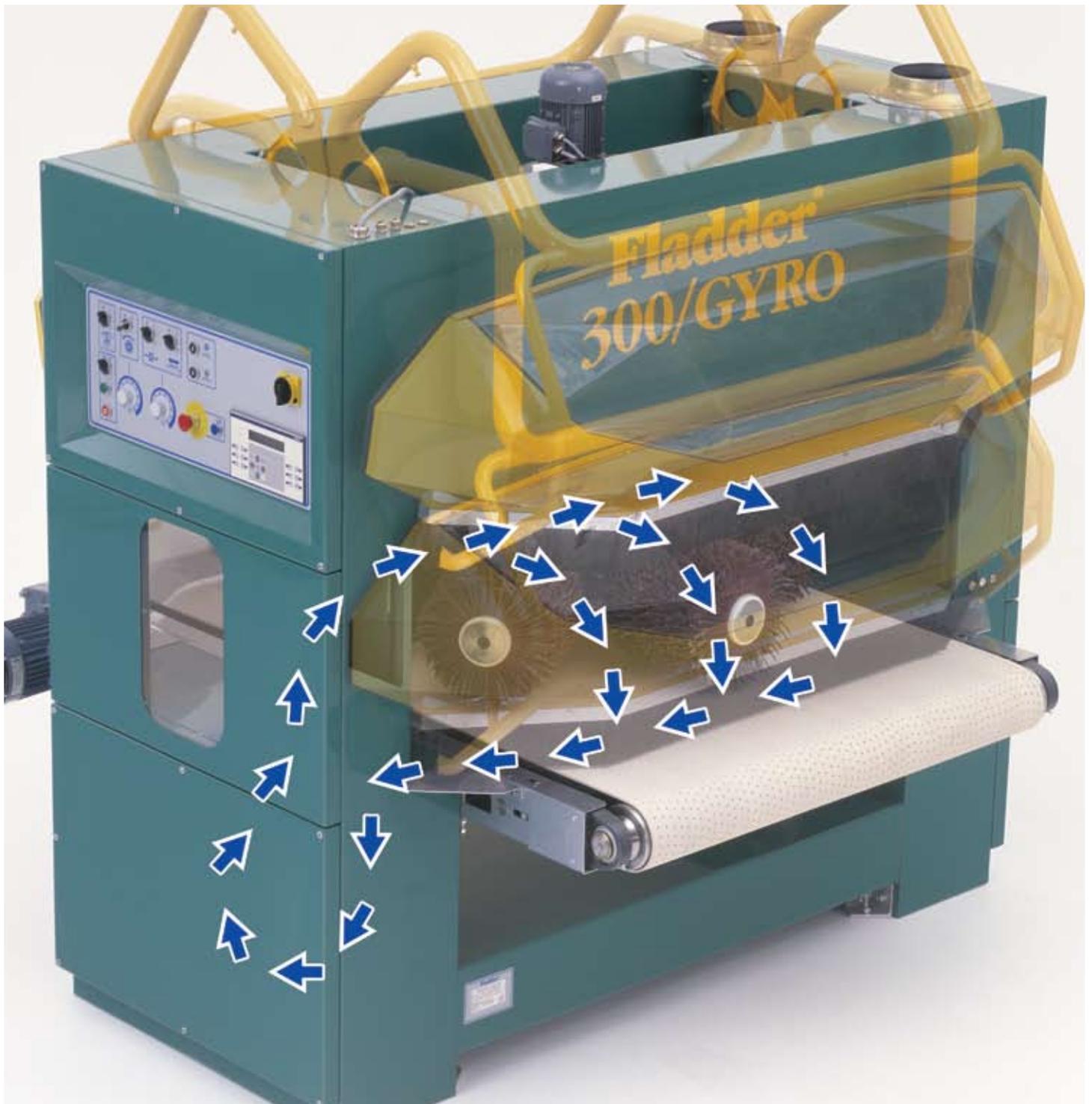
A built-in PLC control is a standard feature of the machine and allows programming of the machine's functions and the ability to control the machine from a centralized control panel.

The vacuum pumps are supplied either as an integrated part of the machine or as external pumps to be placed away from the machine in order to reduce noise.

There are many reasons why the vacuum system is an important part of the machine's function. Through the carefully balanced impellers, the air is led into the shields covering the machine and from the shields through a series of nozzles the air is ejected back towards the conveyor

belt. As a result, the parts are cleared of any dust, and the air turbulence inside the machine prevents the dust from settling down again.

Besides, the shields on the machine perform more functions than just to recirculate the vacuum air to clear the parts of dust.



FLADDER® 300/GYRO Air flows of the machine.

Operation

The machine is highly user-friendly. All functions are accessed from a central control panel with symbols indicating the functions, making it easy and clear for the operator to work the machine. As several functions are synchronized, this also minimises the risk of making faulty settings.

The operator can monitor the process through a number of windows in the machine's cabinet and shields, and if required he can adjust settings during the finishing process.

It goes without saying that the machine is equipped with interior light.

Depending on the thickness of the part, the abrasive position may be set by means of a number of push-buttons which move the tool further away from or closer to the part. A display on the operating panel provides a digital read-out of the tool's position in relation to a preset base position.

Then, all that remains is to start the vacuum system, set the values for the sanding spindles and possibly the speed of the conveyor belt. All other functions are automatically synchronized with these functions.

Vacuum and shields

All parts are held in place on the machine's conveyor belt by a powerful vacuum system. The vacuum is created by one or two centrifugal pumps which evacuate the air through the many holes in the conveyor belt. This means that even small parts are taken safely through the process, no matter where they are placed on the belt.

The shields also ensure safety and will stop the process entirely if opened during operation.

The shields may be fully opened to facilitate access to the inside of the machine for maintenance, e.g. replacement of abrasives, service and inspections. Finally, the shields also serve to suppress the noise.

Energy

The machine preserves energy. Most motors are controlled by frequency converters, which means that the motors are always supplied just the right amount of energy.

At the same time, the frequency converters are programmed with the maximum motor load values and will automatically interrupt the motors' operation if these values are exceeded.

The use of frequency converters also allows variable power transmission directly to a motor and thus to the associated function. Just to name one example, the power is transferred directly from the main motor to the spindles.

If this function was to be controlled by means of a gear, this would result in a loss of energy.

Central gear head

The central head carrying the tools is an extremely strong and compact unit. The housing is made from a single piece of aluminium with cooling fins on the outside, and the inside is specifically designed to house the special gears in Chromium Molybdenum Vanadium Steel.

The strong design allows transmission of high torque values, making it

possible to use several types of FLADDER® abrasive tool. Furthermore, the construction may be modified to use other types of tool, for instance disc polishers.

The central head with a main motor and rotation motor is mounted in an ingenious, unique scissor-type suspension system. By opening and closing the scissor arms, the head can be lifted and lowered, respectively, to the right position.

The scissor arms are resting on four wheels of specially hardened and milled steel, allowing them to move. This makes it possible to create the linear, oscillating movement across the conveyor belt.

Each of the wheels is equipped with mechanical scrapers which automatically scrape off any dust from the wheels and rails.

The wheels, rails (GYRO-models) and oscillating guides (GYRO + AUT-models) are equipped with convenient lubricating cartridges which automatically supply the appropriate amount of lubricants.

Conveyor belt

Like all the other components in the machine, the conveyor belt is a component of the highest quality. The belt is an endless belt consisting of several layers of synthetic fibre material covered by a layer of natural rubber for improved friction properties.

This provides great accuracy, which ensures accurate tracking of the belt throughout its life cycle. The drive shaft's convex shape reduces the belt's ability to wander. The holes in the belt create an efficient vacuum which will easily hold even small parts in place.



Fladder[®] AUT

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Oscillating
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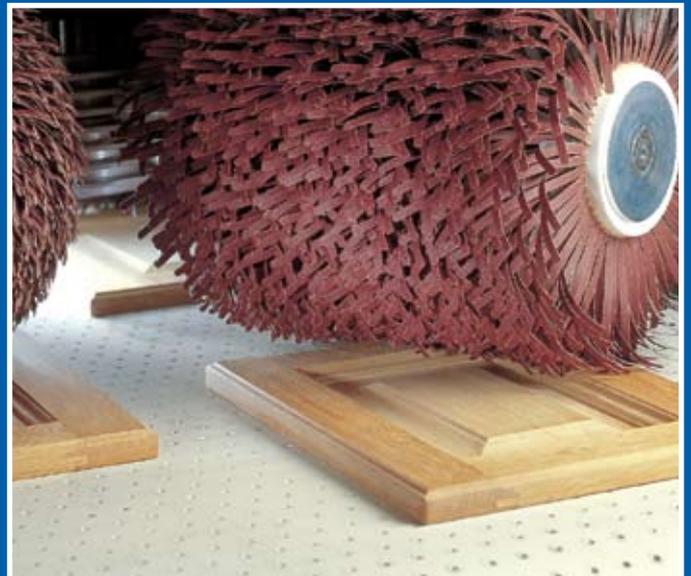
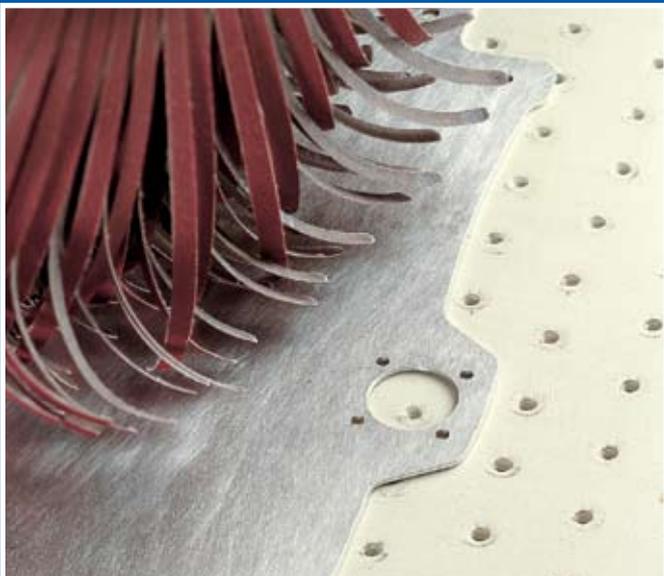
For wood, metal, plastics

Technical specifications



FLADDER® AUT	
A. Total height	1950 mm
B. Machine width	1800 mm
D. Total length	1710 mm
E. Height of conveyor belt	850 mm
F. Working width	1000 mm
Max. part height	100 mm
Max. part width	1000-1200 mm
Infeed speed	0,3-10 m/min.
Spindle length	350 mm
Number of spindles	6
Number of FLADDER® abrasive blades	144-220
Main motor	7,5 kW
Rotation motor	0,37 kW
Oscillation motor	0,55 kW
Conveyor belt motor	0,37 kW
Vacuum turbine motor	1x7,5 kW
Voltage	3x400/500 V
Max. fuse capacity	50 A
Min. fuse capacity	32 A
Pressurized air	1/4", 6 Ato.
Dust extraction	2500 m3/h
Stubs for dust extraction	1xØ200 mm
Net weight	1500 kg

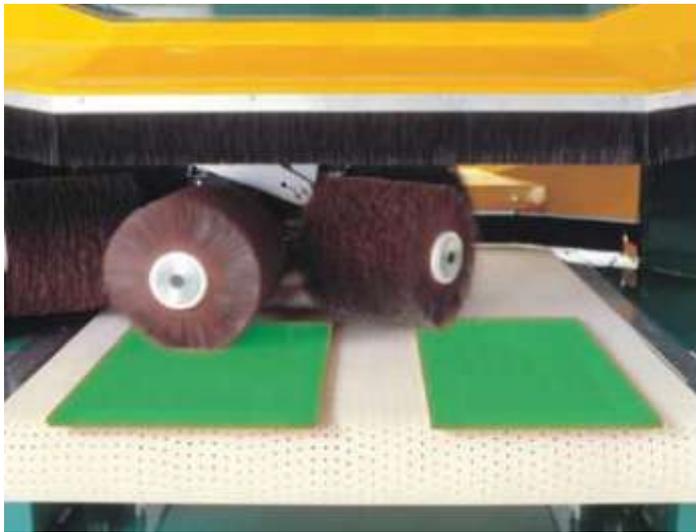
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Oscillating method

In terms of finishing technology, the FLADDER® GYRO and FLADDER® AUT is in a class of its own. The strong, compact gear head is equipped with a total of six spindles, mounted in pairs, rotating alternately clockwise and counter-clockwise. The gearing of the spindles vary between the pairs to ensure uniform finishing of all faces on the parts and uniform wear on the finishing tools.

During the process, the entire head and the six spindles rotate and oscillate across the surface of the parts, which



means that the processing of the surface is applied from every possible direction, no matter how the part is placed on the conveyor belt. This fact is especially important in set-ups where the machines are placed in a line, making it possible to utilise the full 1300 (GYRO-model) working width.

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