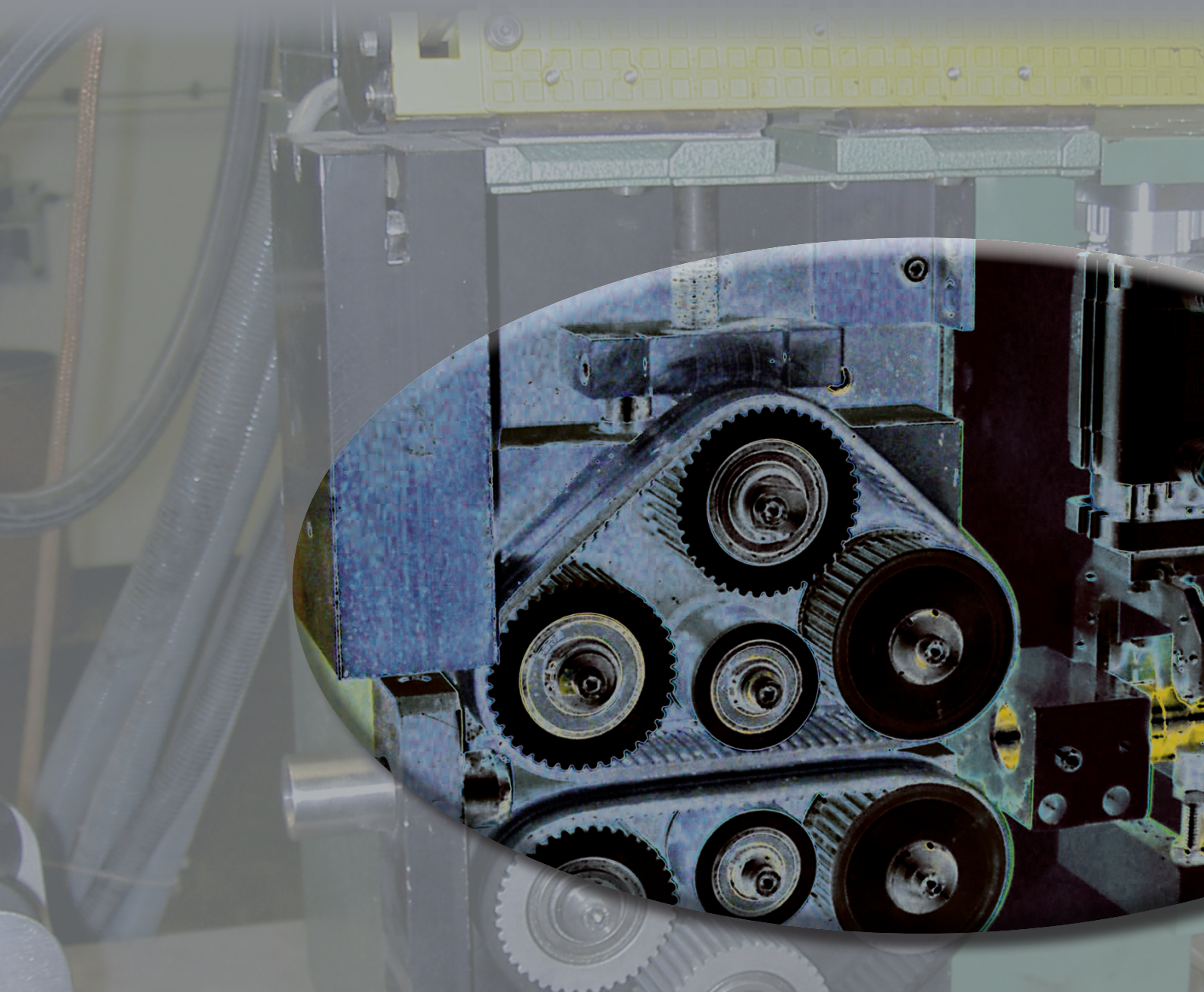
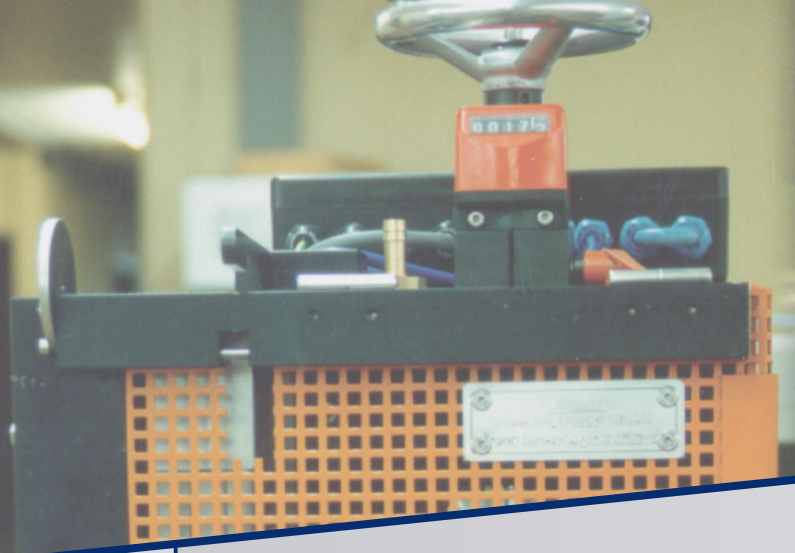


bowasag

SINGLE STRANDS CUTTING MACHINE

FOR CONTINUOUS CUTTING
TO GRAINS & TO STICKS





SINGLE STRANDS CUTTING MACHINE

FOR CONTINUOUS CUTTING TO GRAINS and TO STICKS

This cutting machine for single strands is a special machine for cutting propellant powder strands offering precision and speed combined with economy. The single strand is fed continuously into the machine.

When extruding propellant powder strands through the double or triple die, no matter whether by means of hydraulic presses or screw extruders, it is inevitable that the individual strands are leaving the die at different discharge velocities. Therefore, the cutting rate needs to be adapted to each strand individually during the cutting.

The Cutting Machine, object of our present offer, is an ideal solution to this problem, always

using one machine for one strand.

The machine consists of four main parts. These are:

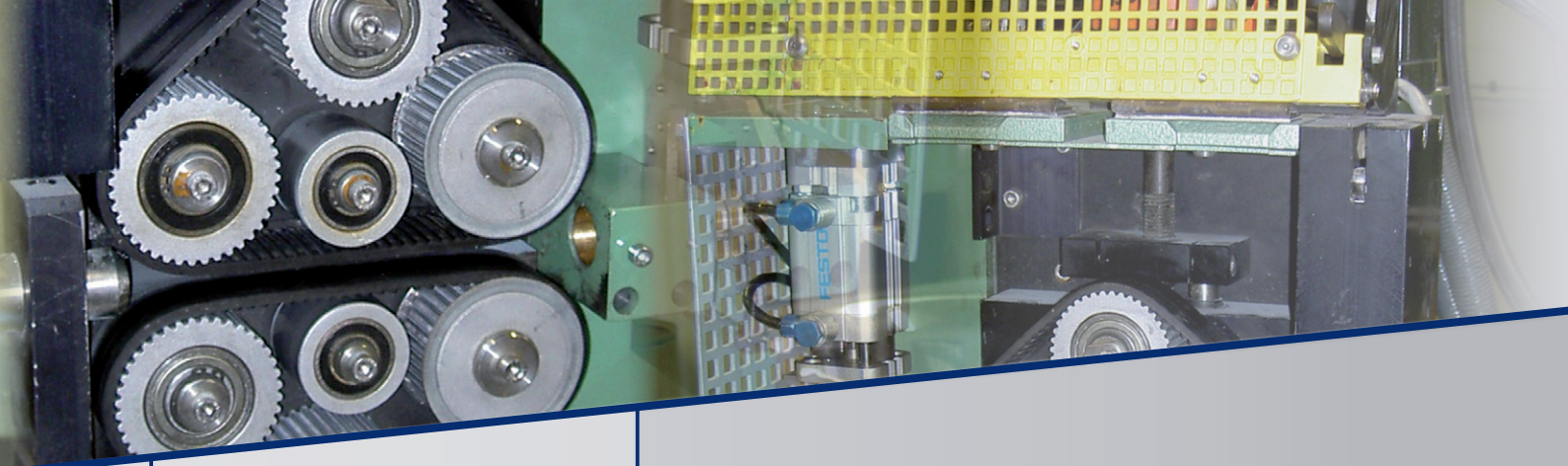
- The cutting machine
- The switch board
- The control panel
- The loop control unit

CUTTING MACHINE

■ The Cutting Machine is a desktop model requiring no stationary installation on a foundation. With a weight of approx. 43 kg and with the given dimensions, the machine together with its switch-board can be moved easily and quickly from one operating location to another. Cable and pneumatic hoses have been provided with plug connections. In contrary to stationary cutting machines, this cutting machine does not cause extensive downtimes.

The cutting machine comprises a belt feed and cutting head.

The belt feed comprises an upper and lower belt which centralize and guide the strand. It was specifically designed to transport sensitive materials. The belt pressure is precision adjustable and optimizes the transport and

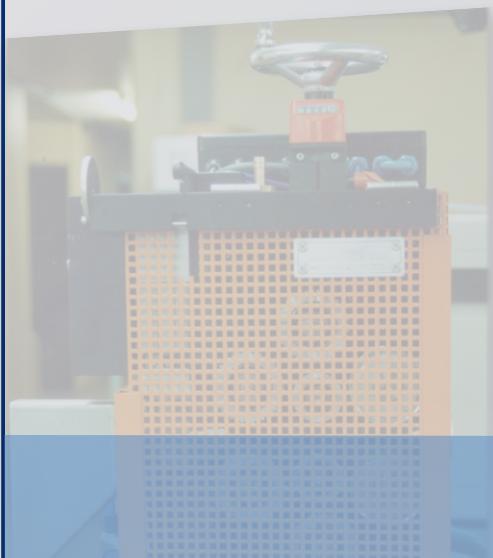


length accuracy of the strand. The cutting head is fitted with an industrial blade which is aligned to produce a rectangular cut. Exchange of blades and cleaning can all be done easily.

All electrical components of the cutting machine and the control panel are designed in an explosion-proof type.

Safety Devices

- all electrical parts of the cutting machine are in explosion-proof design
- safety switch at the cover housing, i.e. immediate stop of the machine when cover is opened
- connection for water for optional fire fighting system
- emergency stop button

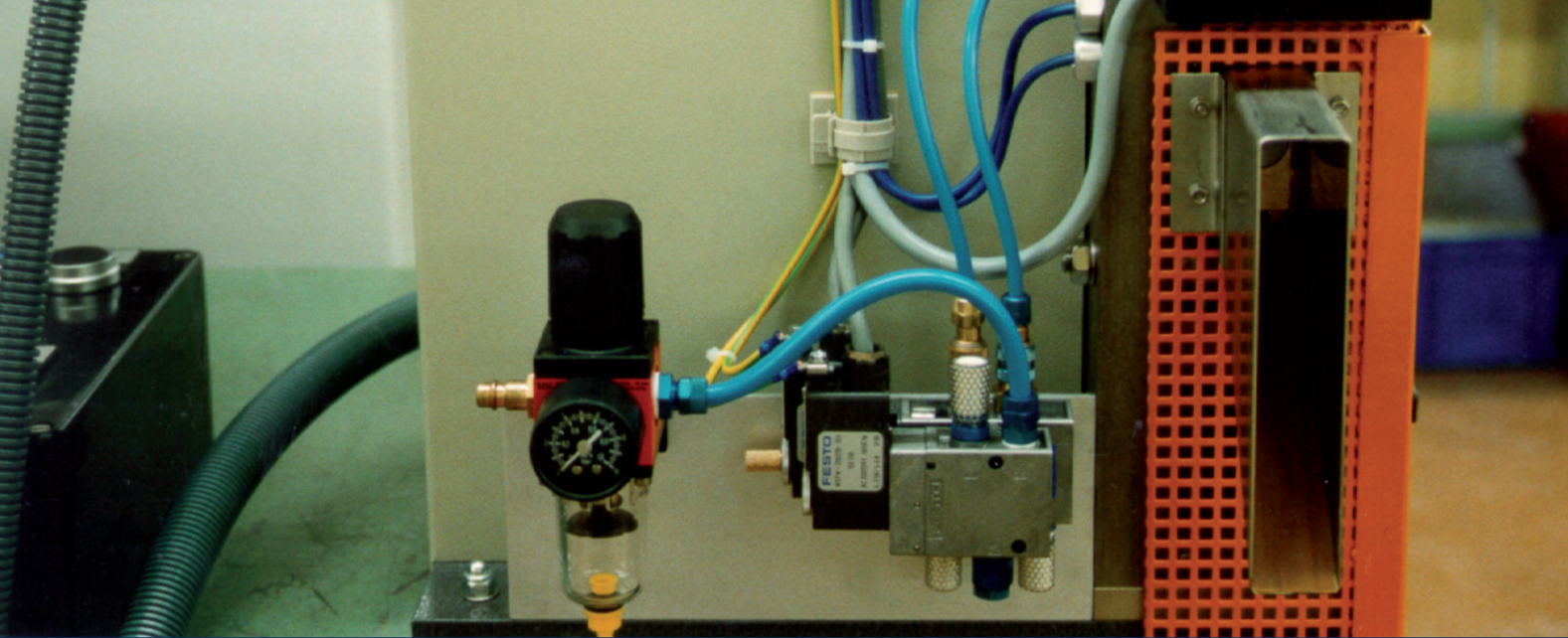


Technical Data

Strand feed-in via a microprocessor controlled stepping motor which drives the feed belts. Cutting head operated pneumatically, including the necessary compressed-air maintenance unit.

Dimensions L x W x H:	400 x 370 x 640 mm (without support) For bigger strands diameters length L will be extended
Weight:	approx. 43 kg
Essential bearing surface L x W (mm):	500 x 500
Power supply, electr.:	230 V, 50 Hz
Air supply:	4-6 bar
Intake air consumption:	approx. 0.2 l/double stroke
Type of cut:	rectangular cut
Using low-cost, industrial knife blades:	replaceable
Max. strand diameter:	18 mm
Max. cutting rate:	250 cuts/min. depending on cutting length and diameter
Length adjustment digital (theoretically):	0,1 mm – 99999,9 mm
Cutting force:	approx. 45 kp at 6 bar
Cutting depth:	infinitely variable
Contact pressure of feed belts:	adjustable via spindle and hand wheel with counter for digital display
Pre-feed speed:	from 0,5 – 40 m/min.
Feeding rate:	variable in 10 steps from 0.5 – 38 m/min.
Knife, cutting and guide bushes:	exchangeable
Belt drive motor:	stepping motor, ex-proof (cutting in no motion phase)
Frame:	aluminum profile

- Microprocessor control 80537
- Pressure regulator with water separator/
Material direction to be fixed with order
- 1 set of cutting and guide bushes is included in the delivery. Any further guiding and bushes according to the different strand diameters or blinds have to be ordered separately.



SWITCH BOARD

■ The configuration, with the switch-board separated from the cutting machine, makes it possible to install the switch-board (with normal protected design) in a separate room with non hazard environment.

■ Connecting cables, length 15 m, enclosed in protective hose, link switch board with control panel and cutting machine.

■ The electronic components are easily interchangeable.

■ Via a user-friendly interface commands can be passed to the control panel and cutting machine.

■ apart from the control devices for the cutting machine provision has been made for: connection for the loop control

and

■ the control panel in 19" design, suitable for assembly to an existing cabinet on site

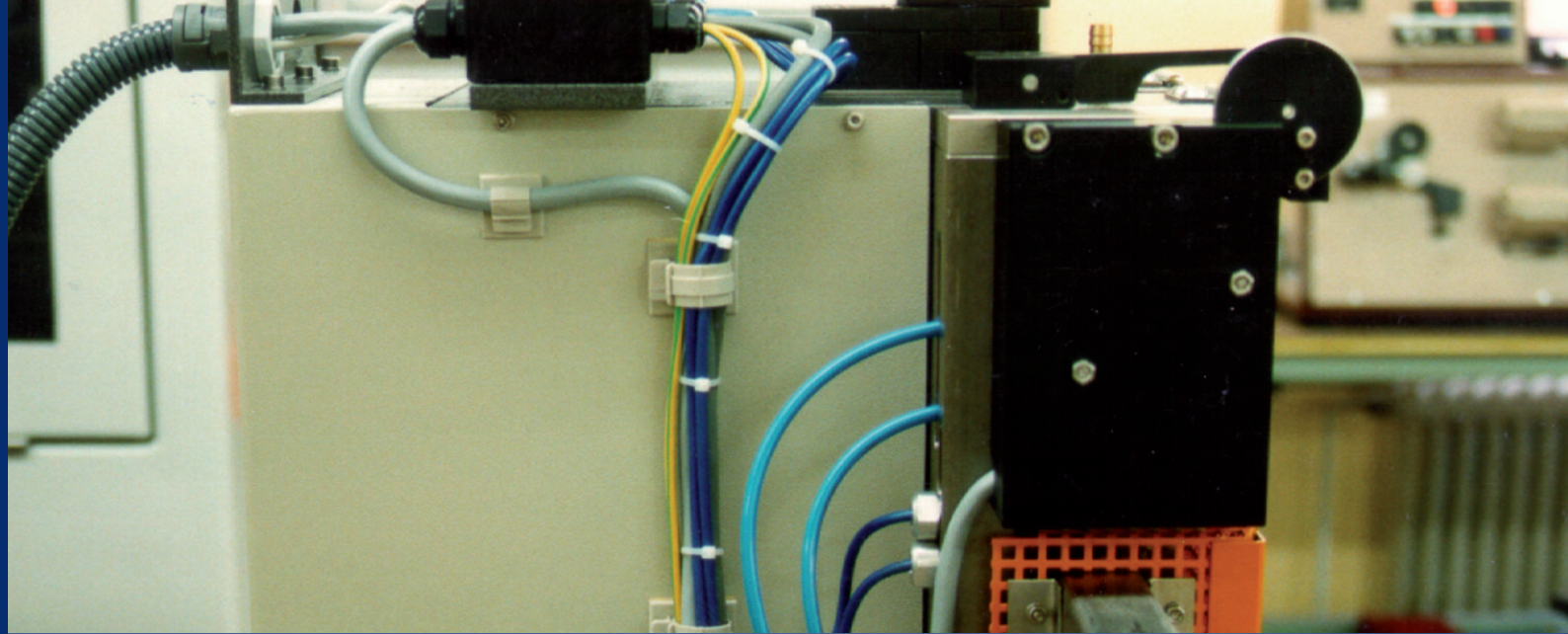
CONTROL PANEL

■ The separately mounted control panel in explosion-proof design integrates the buttons and control signals for the following operational functions:

- Start Button
- Stop Button
- Emergency Stop Button
- Individual Cut Button
- Potentiometer Controller for Feed Speed
- Indicator Control System on
- Indicator Piece Number reached

Technical Data SWITCH BOARD

Weight:	approx. 20 kg
Dimension of switch board:	450 x 450 x 400 mm
Digital cutting length setting (theoretically):	0.1 mm - 9999.9 mm
6-digit counter (theoretically):	1 to 99.999 pieces



LOOP CONTROL UNIT

■ The strand, while in the loop control unit, is forming a loop. The loop control unit is equipped with 3 light barriers.

■ In case this loop is tightened too much because the feeding rate is higher than the strand discharge velocity, and if the strand therefore touches the upper light barrier, the step motor for the feed is stopped. The control unit is storing that portion of the feeding already carried out for the correct cutting length of the still uncut stick. When loop formation has progressed so far that the light barrier in the middle is touched, the feed movement is completed and the feeding sequence continued with the slow speed.

■ In case the loop in the loop control unit is extended too much because the feeding rate is slower than the strand discharge velocity, and if the strand therefore touches the lower light bar-

rier, the step motor for the feed is switched to the high speed until the loop will reach the light barrier in the middle.

This is the safe method to prevent strand breaking and the need to discharge short-length sticks.

Technical Data for Loop Control Unit

- with strand lead-through duct, width 85 mm
- connecting cable, length 15 m, enclosed in protective hose
- all electrical components of (Ex) explosion-proof design



Bowas AG für Industrieplanung
Industriestrasse 13b · CH-6300 Zug

 +41417112722

Fax +41417110817

e-mail: office@bowas.ch