



## Contens

<b>1. Blasting Result - optimization of the parameter</b>	<b>2</b>
1.1. Soft blasting	2
1.2. Power blasting	2
<b>2. Adjustments and settings</b>	<b>2</b>
2.1. Directional data for settings	3
2.2. Compressor size required as a function of the blasting nozzle	4
<b>3. Blasting nozzle and operating</b>	<b>4</b>

# Information for practice

This information will help you to use the machine better for all the different possible works.

## 1. Blasting Result – optimization of the parameter

The setting of the machine depends on the result which is needed. The following settings influence the blasting result and have to be conformed to the result:

- blasting pressure;
- blasting hose;
- blasting nozzle;
- blasting media;
- quantity of blasting media and water;
- additional water.

There is no general solution for the setting because of always different working conditions. But there are some rules to exclude typical mistakes at the setting and to find a close optimized solution for the setting.

### 1.1. Soft blasting

The target for soft blasting is to have an equable and clean result without respectively with low damage of the surface.

The most unnecessary mistakes during soft blasting are:

- Selection of the blasting media (hardness, grain),
- Setting blasting mixture consumption,
- Setting blasting pressure,
- Combination of blasting hose and blasting nozzle and
- Handling of the blasting nozzle.



- For settings look at chapter 2. „Adjustments and settings“
- For the right handling look at chapter 3. „Blasting nozzle and operating“

### 1.2. Power blasting

The target for power blasting is to have a maximum on abrasion power.

This means not only that it is enough to have plenty of air volume and the right blasting media and setting for blasting mixture, but also to have low power losses.

Needless power losses arise when:

- The cross-section of the air hose between air-compressor and machine or the cross-section of the blasting hose is too small;
- The hoses are too long or have too much arcs;
- The nozzle has a wrong cross-section or –shape;
- The blasting mixture or the setting of blasting mixture is wrong.



- For settings look at chapter 2. „Adjustments and settings“
- For the right handling look at chapter 3. „Blasting nozzle and operating“

## 2. Adjustments and settings

In the first column of the first table „Material of object to be blasted“ the work to be done is to be stipulated. Following this, the approximate values for the selection of the blasting mixture, the required volume of blasting mixture, the pressure at the machine, the diameter of the blasting nozzle and of the blasting hose may be taken from the respective line.

After selecting the settings and the blasting nozzle by means of the first table you have to select the right air-compressor size, air hose between compressor and machine and the blasting hose size for the blasting nozzle by using the information shown in the second table.

The data in the tables are approx. values only and may differ from case to case.

### 2.1. Directional data for settings

	Type of blasting media	Volume of blasting mixture in l/min	Blasting pressure in bar	blasting nozzle in mm
Softest cleaning	a)	0,4 / 0,6 / 0,8 / 1,0	0,5 bis 1,5	6 bis 8
Soft cleaning	a)	0,6 / 0,8 / 1,0 / 1,5	0,5 bis 2,0	8 bis 10
cleaning	a) b)	0,6 / 0,8 / 1,0 / 2,0	1,0 bis 5,0	10 bis 12
Blasting up to 5 m <sup>3</sup> /min	b) c)	2,0 / 3,0	bis 10	10 bis 12
Blasting up to 7 m <sup>3</sup> /min	b) c)	3,0 / 4,0	bis 10	12 bis 14
	b) c)	4,0 / 5,0	bis 10	14 bis 16
Sanierung bis 15 m <sup>3</sup> /min	b) c)	4,0 / 5,0 / 6,0	bis 10	14 bis 16

#### Information to the table 1

Column 2 „Tupe of blasting media

- a) Stone dust, calcite powder, basalt, finical and soft blasting media without sharp edges resp. soft media upto 0,4 mm and with a hardness upto 4 Mohs.
- b) Stone dust, glas powder and other fine blasting media upto 0,8 mm and a hardness upto 8 Mohs.
- c) Slag, granite powder, garnet and other blasting media upto 1,5 (2,0) mm and with hardness upto 8 (9) Mohs.
- d) Sodium bicarbonate, lime (suitable for the removal of paint coat without damaging the metallic sur-face) and other fine and soft blasting media of a very low hardness.



- In order to ensure a good flow of the blasting mixture it is recommended to use a blasting mixture containing superfines (disadvantageous e.g. a grainage from 1 to 2 mm; better: e.g. 0,4 to 2,0 mm).
- To get more soft cleaning, you may have to use extra water (handwheel „Z“ – equipment 507).

Column 3 „Volume of blasting mixt.“



- For cleaning, always test soft blasting media first.
- The blasting mixture is already mixed with 20% water. If you need more water for soft cleaning, you may have to use extra water (handwheel „Z“ – equipment 507).
- For cleaning, the percentage of water may be increased in the case of machines with dos-ing facility for extra water (with dosing equipment ZW (506) resp. with handwheel „Z“ (507)) to achieve an optimum result in a still more gentle way.

Column 4 „Blasting pressure“



- For cleaning, always test with a low blasting pressure first.
- The blasting pressure at the machine and at the blasting nozzle may differ because of different length and different diameter of the blasting hoses.

## 2.2. Compressor size required as a function of the blasting nozzle

Diameter blasting nozzle	mm	6	8	10	12	14	16
Compressor output (max.)	m <sup>3</sup> /min	1,8	3,2	5,0	7,2	9,8	12,8
Blasting hose and	mm	13/7, 19/7	19/7, 25/7	25/7, 32/8	32/8	32/8, 49/8	32/8, 49/8
Compressed-air hose	zoll	1/2, 3/4	3/4, 1	1, 5/4	5/4	5/4, 1 1/2	5/4, 1 1/2



- The shorter the hose and the bigger the diameter of the hose, the lower is the loss of blasting power. (This concerns the air hose between the compressor and the machine and the blasting hose).

## 3. Blasting nozzle and operating

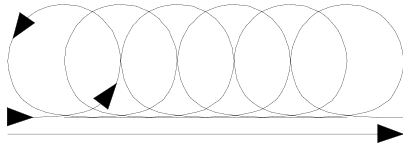
**The nozzle:** Standard nozzles are Cylinder- and Venturi-nozzles, but the Venturi-nozzle produces a higher speed of the blasting mixture at the nozzle. The result of the higher blasting mixture speed is a higher production efficiency of blasting power (upto 30%).

Also long blasting nozzles have upto 20% more blasting power in comparison to short nozzles.

**B. Handling of the blasting nozzle:** This is not a question of the machine or the equipment, but of the training of the operator. A well trained operator with experience get up to 50% more production efficiency than a operator without training.

The first step to get the maximum blasting performance is to have a good planning, the right blasting mixture and the right setting of the machine.

After planning, the operator has to know which result is required, so that the operator knows how to handle the nozzle.



Pic. III.3.01: movement of the nozzle

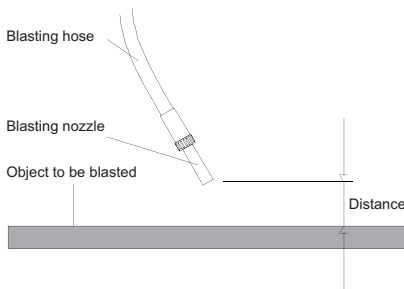
### Movement of the nozzle

The best way to move the blasting nozzle on large objects is to circulate and side longe the nozzle at the same time.

If you don't circular the nozzle, the surface will look unintegrated.



- The faster the circulating and the side longe, the lower the wear on the surface.



Pic. III.3.02: distance of the nozzle

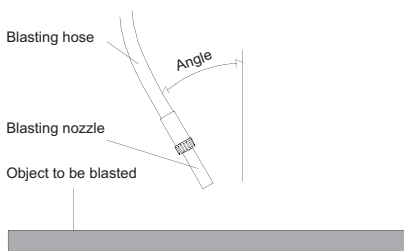
### Distance of the nozzle

The normal distance between object to be blasted and blasting nozzle is approx. 20 to 25 cm.

One possibility to influence the aggressiveness of the blasting process, is to increase the distance between object and blasting nozzle.



- The nearer the blasting nozzle to the object, the stronger the aggressiveness of the nozzle and the smaller the surface simultaneously treated.



Pic. III.3.02: angle of the nozzle

### Angle of the nozzle

The normal angle between object and blasting nozzle is 20 to 45°.

One possibility to influence the aggressiveness of the blasting process, is to increase the angle between object and blasting nozzle.



- The smaller the specified angle to the object, the stronger the aggressiveness of the nozzle and the smaller the surface simultaneously treated.

