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# Centrifugal Disc-Finishing

## Basic Process

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## Definition and Discription

Nearly every industrial made workpiece will cause a step of grinding or deburring during the manufacturing process

Mass-Finishing in the industrial use are grinding processes with use of grinding stones or granules.

The workpieces will be put into barrels or containers.

This containers are filled with this grinding stones –we will call them chips - water and additives.

Some processes get done dry.

Generated through the movement of the working-container or/and the movement of the workpieces, the grinding process starts.

Depending on the way of movement, the processes are specified:



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# Mass-Finishing with Tumblers

Tumblers are vibratoy barrels which are flexible mounted with springs. The movement of the barrel is proceed by unbalance-motors.

The complete content will oszillate after starting of the process.

The different mass moments of inertia will cause the movement and the pressure bewtween chips and workpieces.

This is the reason, why small and light workpieces can not be really addapted to this process.  
Or the running time will be extremely long.



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# Advantages and Disadvantages

- ❖ Heavy loads are possible
- ❖ Systems for move-trough processes are available
- No light and/or small workpieces
- Long running times necessary
- Exchange of chips is complex and expensive
- Separation of chips and workpieces is complicated



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# Barrel-Finishing

This is one of the oldest systems.

A barrel, in further times from wood, now made from steel, is covered at the inside with rubber or a special Polyurethane.

- ❖ Slow movement allows to treat very thin and long workpieces
  - Not enough pressure and speed to grind hard materials
  - No change of water during process time – no rinsing/cleaning of the workpieces





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# Centrifugal Disc Finishing

This technologie was develloped for short running times and light workpieces.

The number of rpm of the basic disc in the container causes working times, which are factor 10 and more quicker than before.

This open system allows also to insert stops and rinsing times during the operation.

You can work in steps;

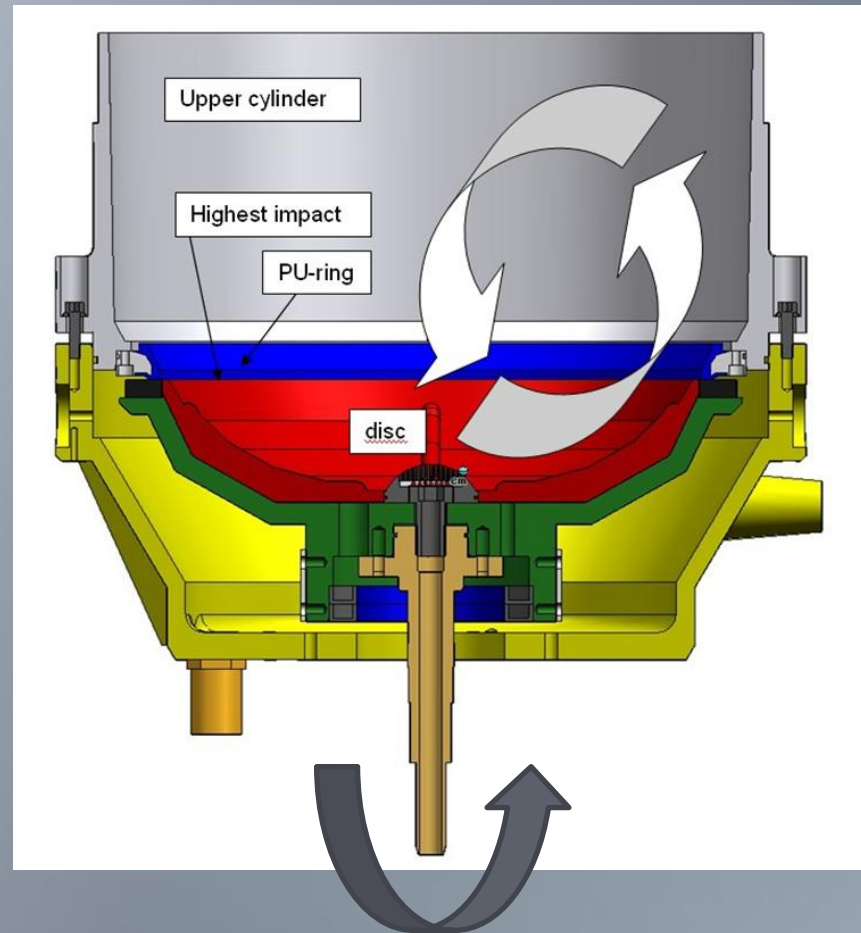
- Degreasing
- Grinding
- Polishing

can be done without changing media or/and the container.



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# Movement:





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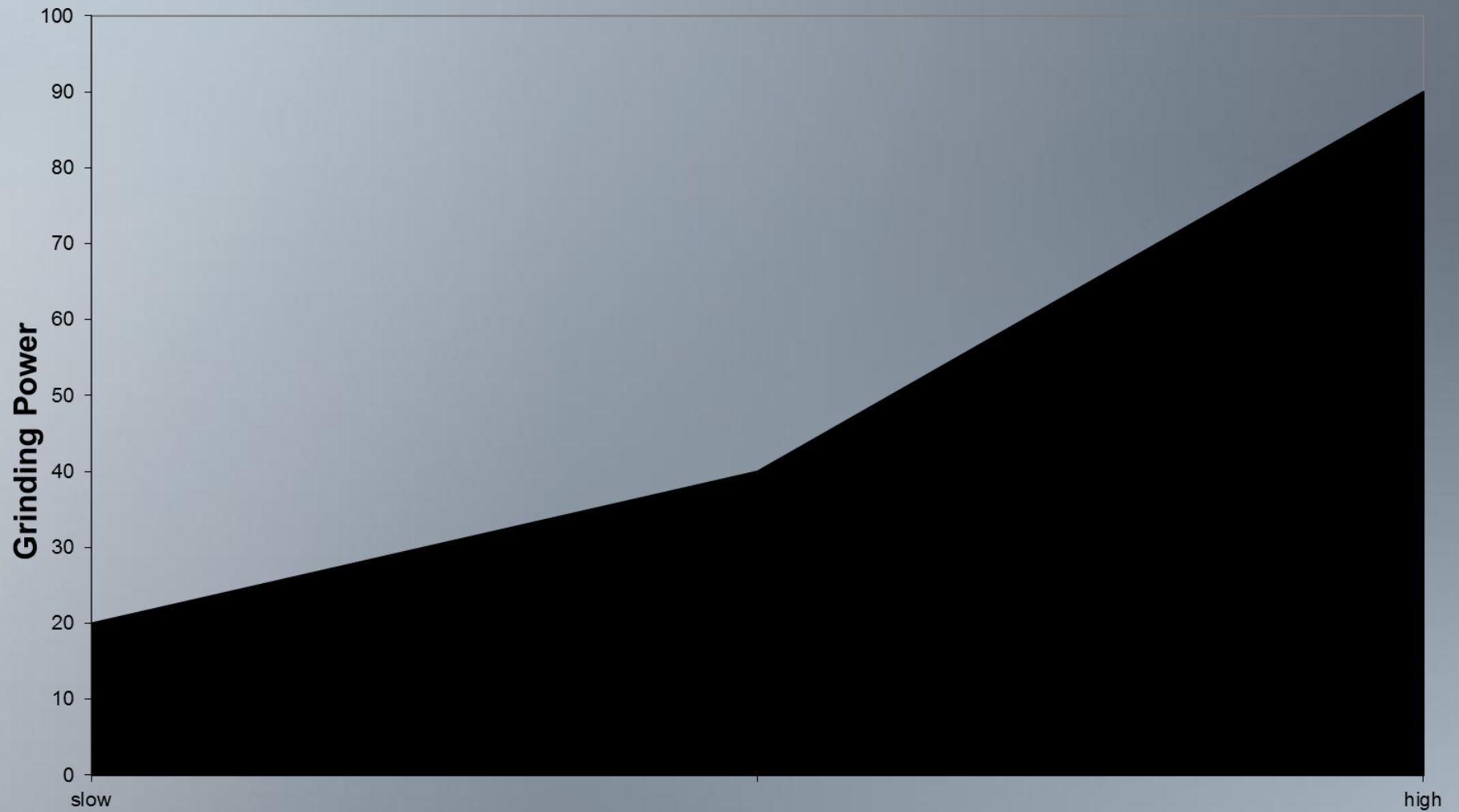
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Following parameters as an influence on the result of the mass-finishing processes:



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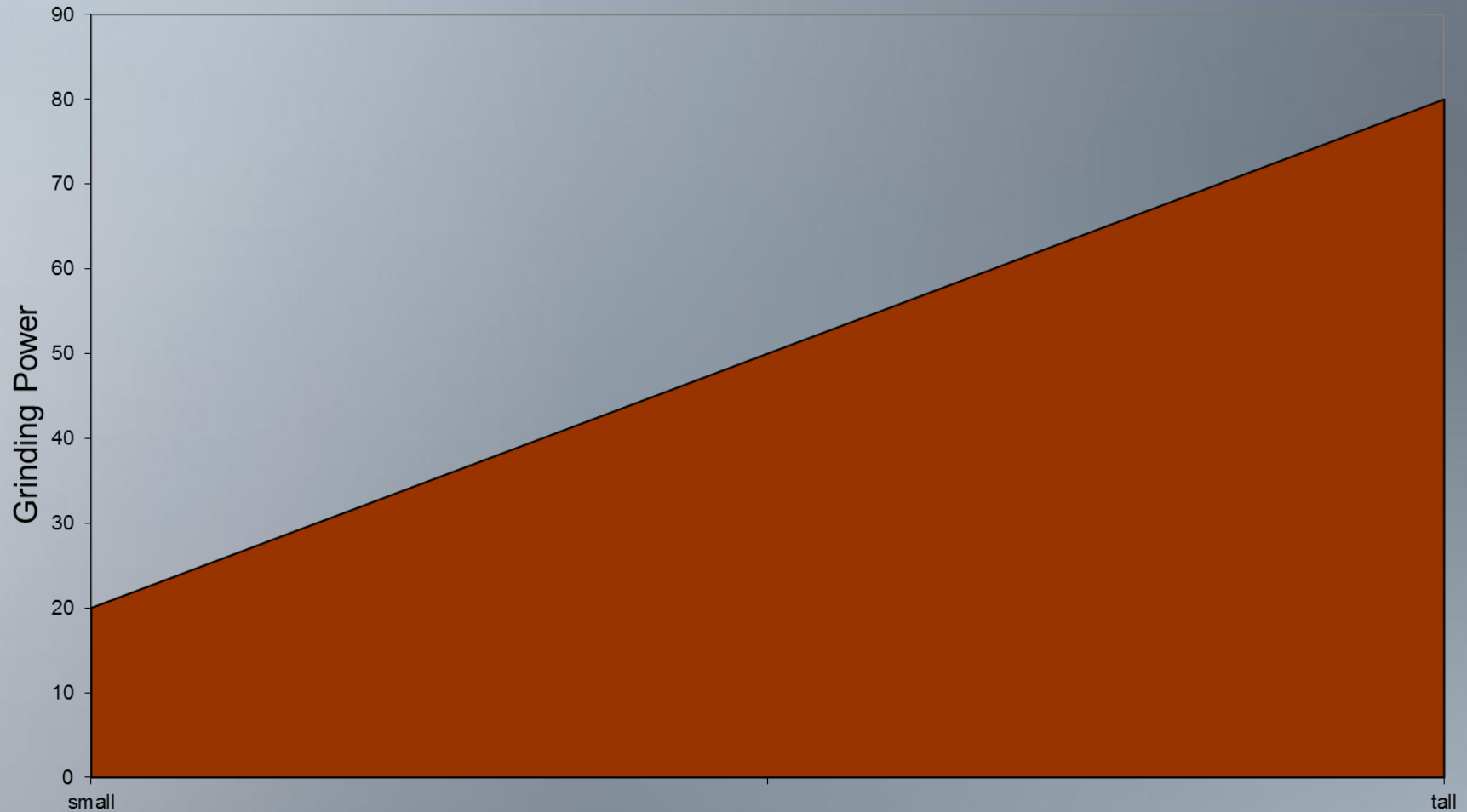
Speed rpm





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size of chips

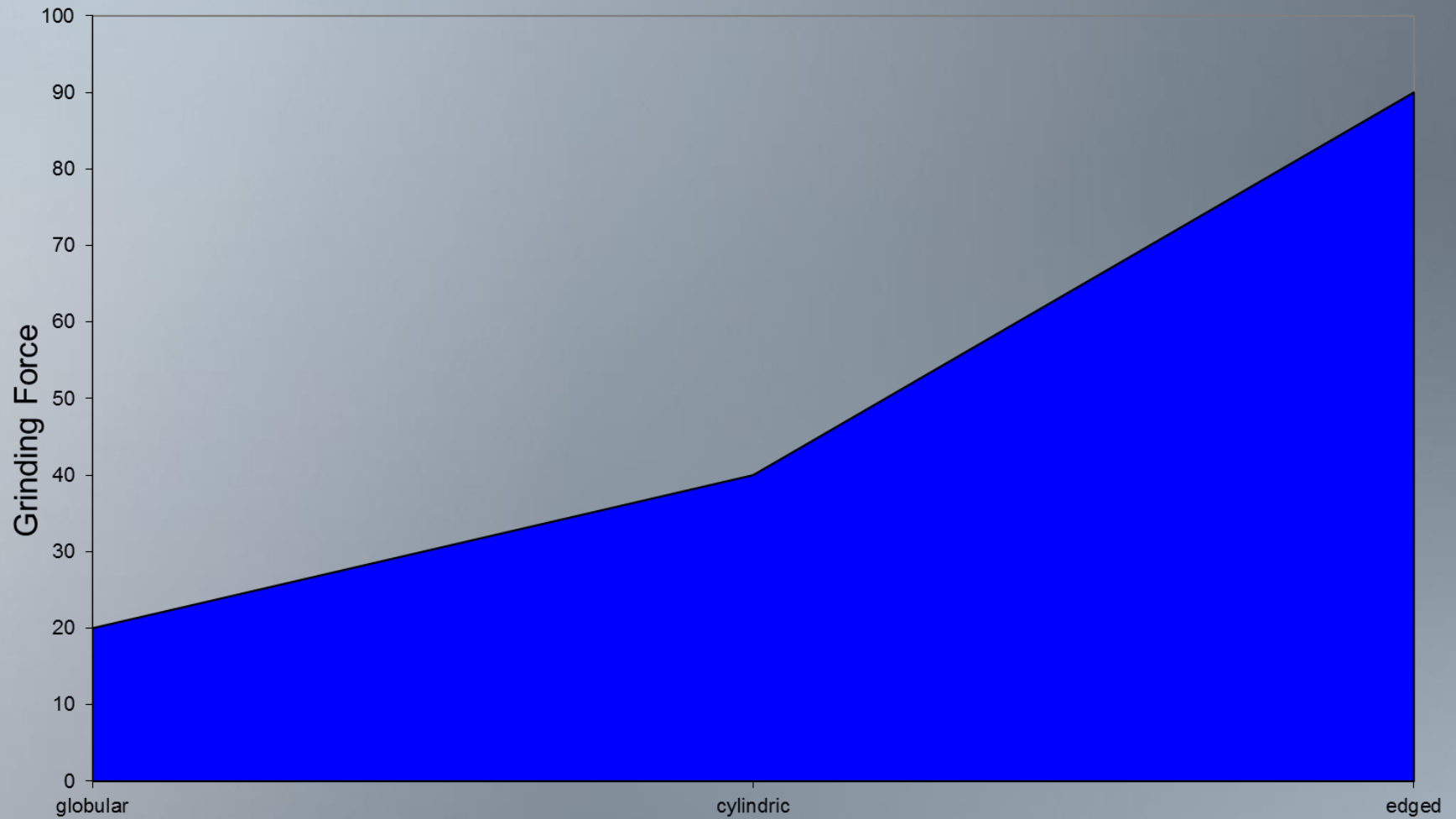






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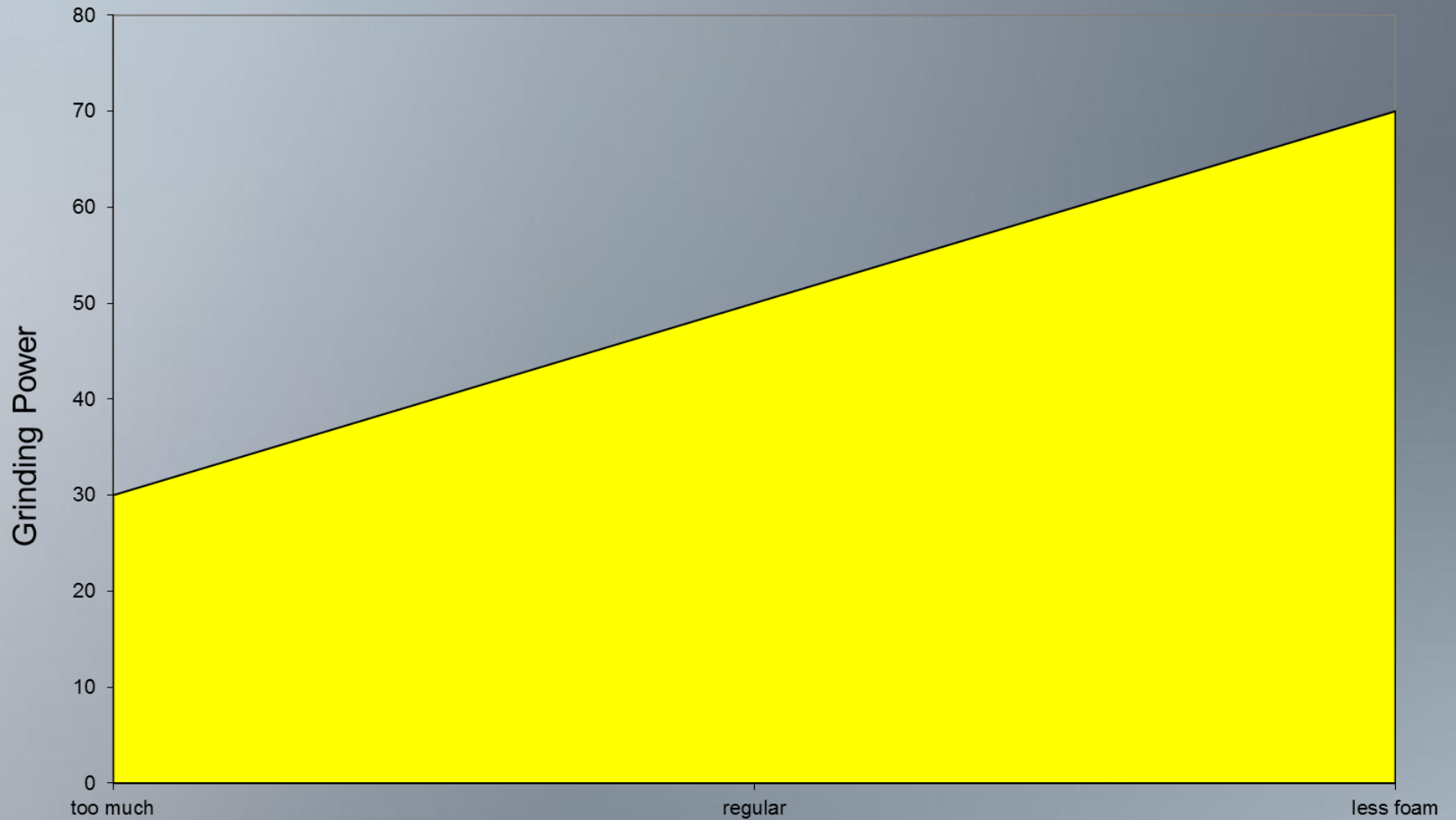
## geometry of chips





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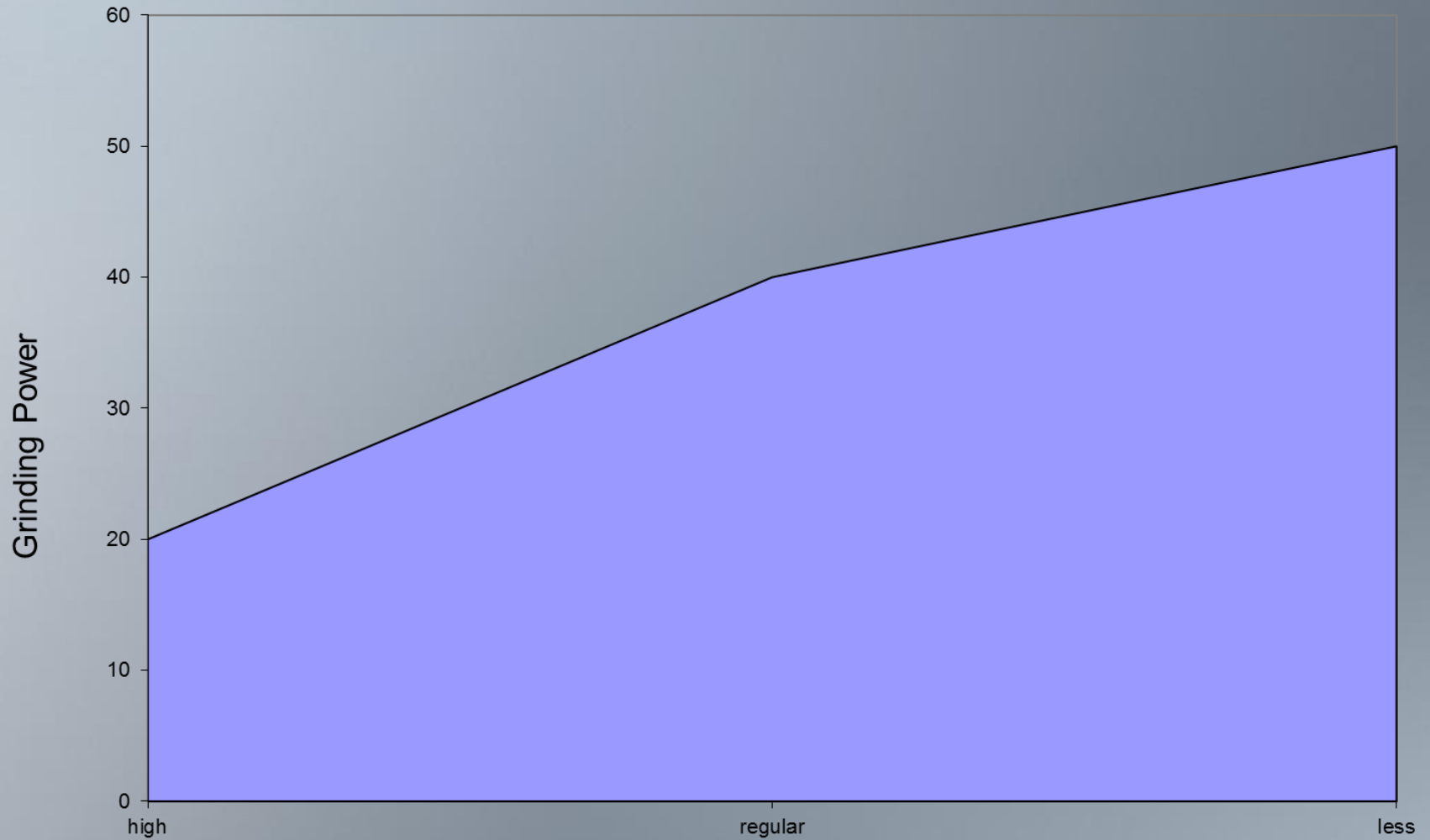
## volume of foam during process





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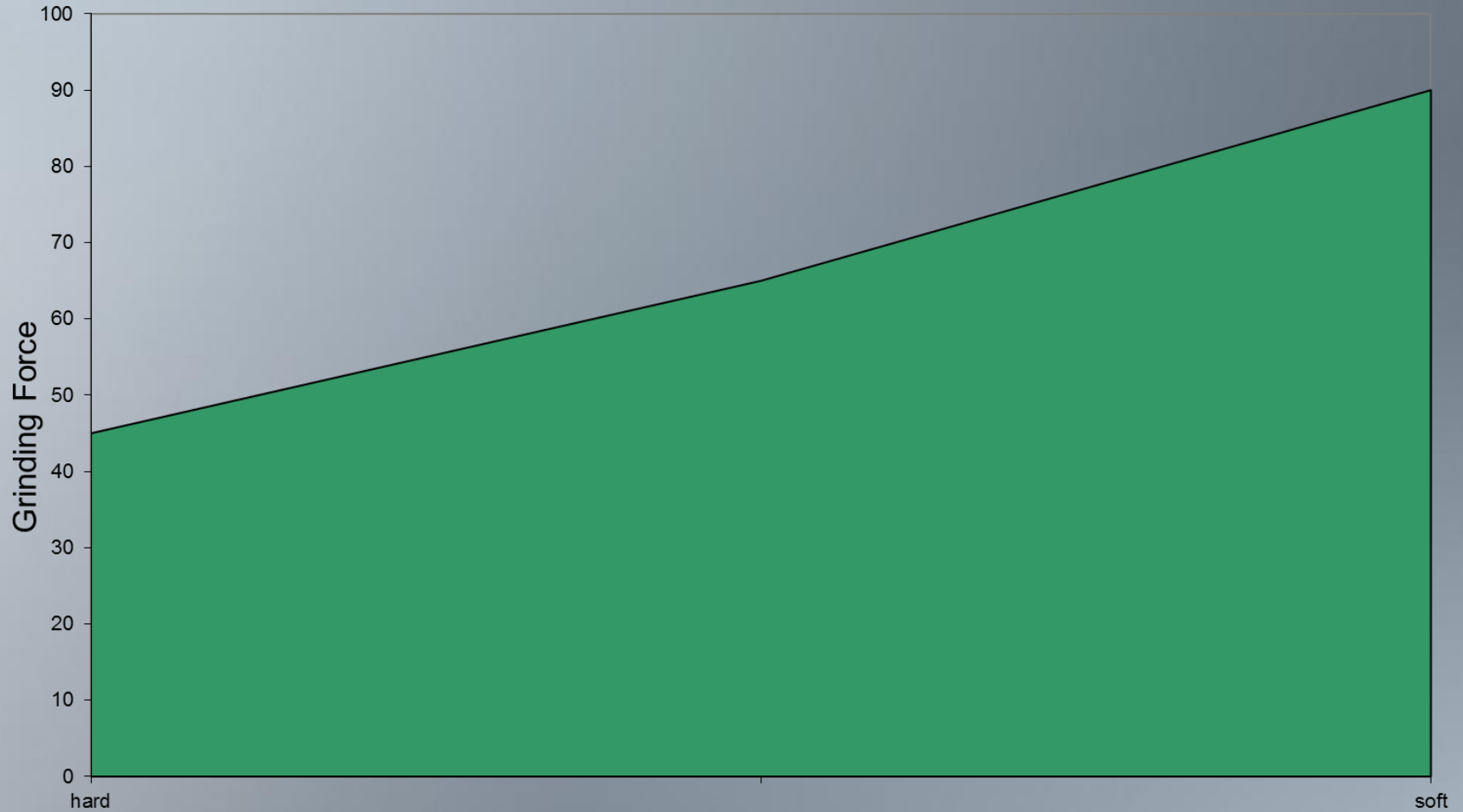
## waterlevel during process





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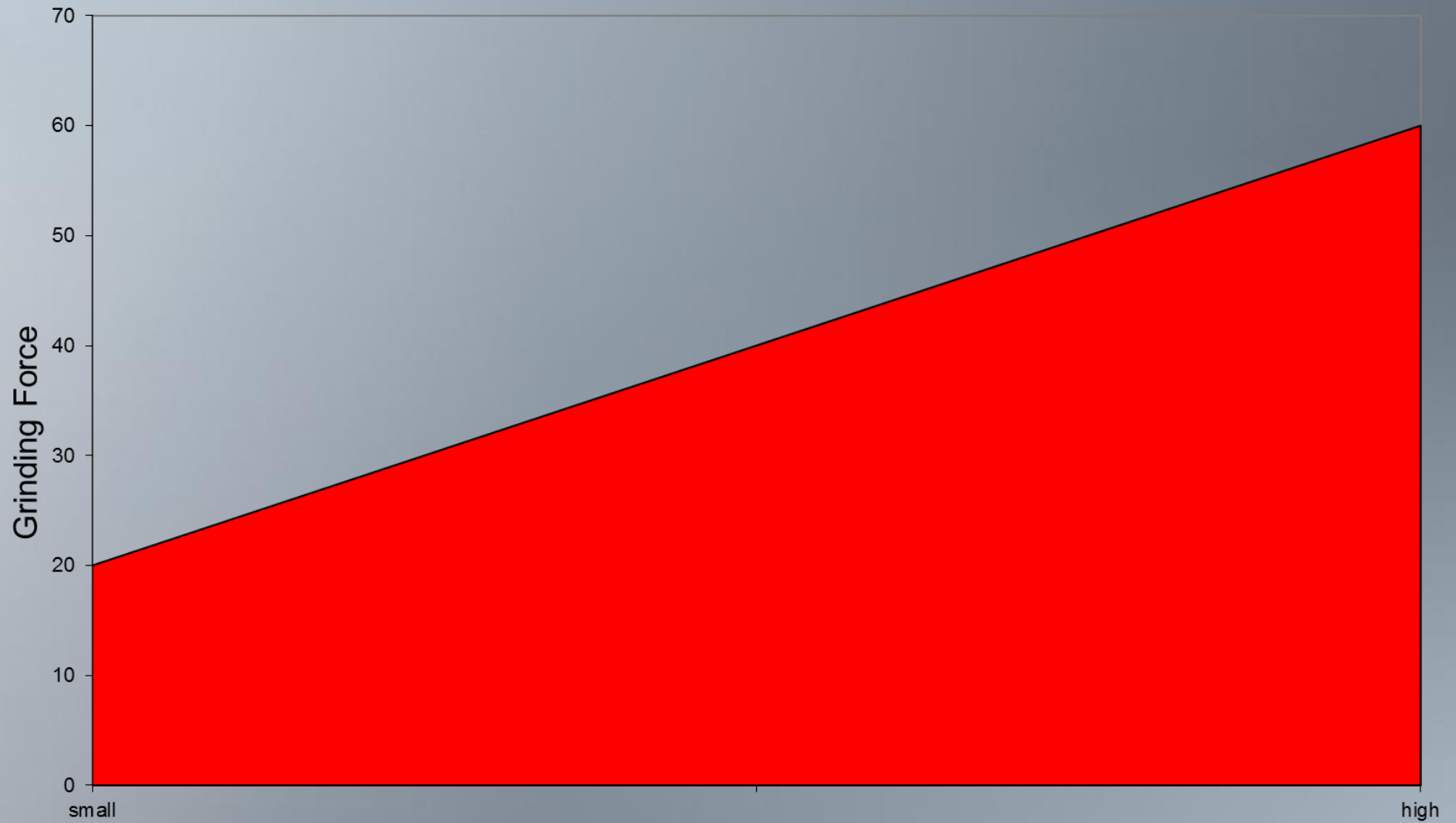
## bonding of chips





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density of chips





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**Werkstückname:** Knochenplatten  
**Industrie:** Medizinische Industrie  
**Versuchsaufgabe:** Schleifen und polieren  
**Material:** Edelstahl  
**Beschichtet** ☐  
**Herstellungsverfahren:** Frästeil

Maschine	Stp.	Zeit	Bearbeitung	Media	Compound	U/min
CF 1x18-I	1	1,5 h	Nassschleifen	DS 10/10 Keramiksleifkörper	SC 15 Compound	280
CF 1x18-I	2	2 h	Nassschleifen	KM 10/PM 10 Kunststoffsleifkö	SC 15 Compound	260
CF 1x18-I	3	30 min.	Nasspolieren	ZSP 3/5 Porzellanpolierkörper	SC 25 Compound	260





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Protocol No. 15690

**Sample name:** turned and machined parts

Industry: Metall industry

Process required: deburring

Material: Stainless steel

Manufacturing process turned and machined part

Machine	Stp.	Time	Process	Media	Compound	Speed
CF 1x18-I	1	30 min.	wet grinding	DS 3/3 ceramic grinding chips	SC 15 compound	230





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Protocol No. 16076

**Sample name:** Milled part  
**Industry:** Metall industry  
**Process required:** deburring  
**Material:** Stainless steel  
**Manufacturing process** milled parts

Machine	Stp.	Time	Process	Media	Compound	Speed
CF 1x18-I	1	2 h	wet grinding	DZS 6/6 ceramic grinding chips	SC 15 compound	225



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Protocol No. 15580

**Sample name:** stampings

Industry: Metall industry

Process required: deburring

Material: Steel

Manufacturing process pressed, drawn, bent part

Machine	Stp.	Time	Process	Media	Compound	Speed
CF 1x18-I	1	2 h	wet grinding	SS 4/10 ceramic grinding chips	SC 15 compound	330



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Protocol No. 16513

**Sample name:** connerctor  
**Industry:** Metall industry  
**Process required:** deburring  
**Material:** Brass  
**Manufacturing process** turned and machined part

Machine	Stp.	Time	Process	Media	Compound	Speed
CF 1x18-I	1	15 min.	wet grinding	PM 10 plastic grinding chips	SC 5 compound	200



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Protocol No. 14087

**Sample name:** cast parts  
**Industry:** Metall industry  
**Process required:** deburring  
**Material:** Die-cast zinc  
**Manufacturing process** casting

Machine	Stp.	Time	Process	Media	Compound	Speed
CF 1x18-I	1	30 min.	wet grinding	ZSS 3/10 ceramic grinding chips	SC 15 compound	330
CF 1x18-I	1	30 min.	wet grinding	ZSS 3/10 ceramic grinding chips	SC 15 compound	330



297 mm

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Thanks for your attention!

Any questions?