

DeGorter
since 1922

Process Water Treatment Systems

Save money - Protect the environment



Why use a Sedimentor?

The Sedimentor Coolant Cleaning System from Bohle is an intelligent improvement for every glass fabricator's grinding and polishing process. It is a completely closed coolant recirculation system that receives dirty grinding water from the grinding machine, and through a two-step process, returns virtually clean water back to the grinding machine's spindles.

Bohle Sedimentors offer glass fabricators improved feed-rates, longer diamond tooling life as well as showing improved glass edge quality. The most significant benefit of the Sedimentor however, is the reduction of man-hours lost due to grinding tank cleaning and the disposal of contaminated water with coolant.

Bohle Sedimentors excel due to their versatile application possibilities. The following applications have already been successfully completed:

- Connection of a Sedimentor to one or multiple glass processing machines for cleaning the water tank
- Connection of several Sedimentors to a production line for cleaning water tanks
- Connection of a Sedimentor to a CNC machine with integrated cooling water supply to main spindle for cleaning of water tanks and fine filtering of the main spindle cooling water
- Cleaning of the process water of a scraper conveyor in the glass production
- Cleaning of contaminated waste water from colored ceramic screen printing procedures

Each application has to be suited to individual requirements. We look forward to assisting you.

Please do not hesitate to contact us at 704-282-2055 or sales@degortor.com.

Fast pay-off

Due to an increase in productivity and considerable cost savings, a Bohle water treatment system usually pays off after a short time:

Increase in Productivity:

- Extended operating times as the machine does not have to be cleaned regularly
Example: 2.5 hours @ \$ 20.00 per hour / week x 48 weeks = \$2,400.00 / year
- Higher output due to an increased grinding speed with edge quality remaining the same
= approx. 10 - 20% higher hourly output of the machine when using cooling lubricant
- Less subsequent cleaning effort of the polished glass panes

Cost savings:

- Considerable reduction of fresh and waste water costs
Example: 250 gal. / week x 48 x \$ 0.15 / gal. = \$1,800.00
- Reduced tool wear
Example: a tool costs for 9-spindle straight line edger \$ 3,000.00 / year = \$ 600.00 for 20% longer life
- Significantly reduced energy costs (compared to centrifuges)
Example: typical energy costs for centrifuge approx. \$1,500.00 / year vs. Sedimentor \$100.00 / year
- Greatly reduced maintenance costs (compared to centrifuges)
Example: Centrifuges with a comparable performance to Sedimentor 2.4, typically generate around \$4,000.00 to maintain per year. The Sedimentor is practically maintenance free.

A Sedimentor system usually amortizes in less than a year!

Additional advantages:

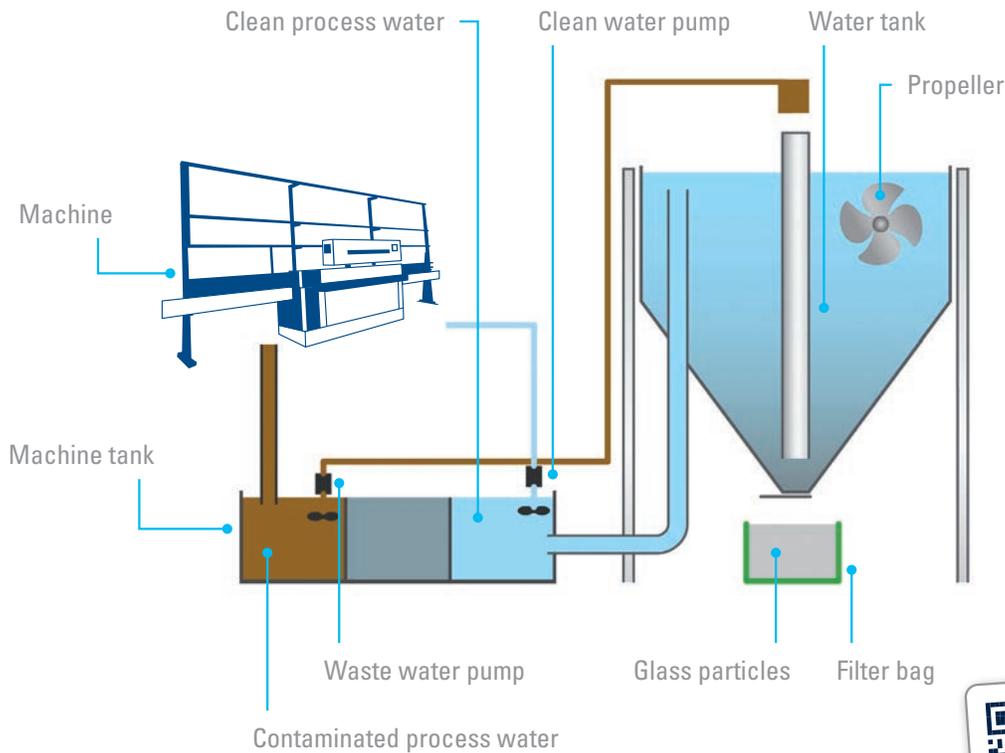
- Prevents machine corrosion
- Compliance with (future) official requirements
- Simple and low-maintenance systems technology

Your benefits



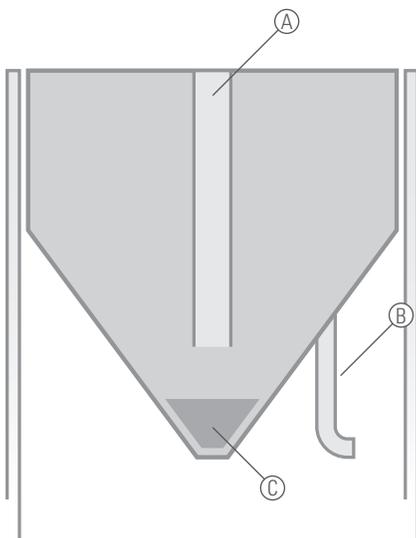
- Less cleaning required for machine and water tank
- Reduced fresh water costs
- Reduced waste water costs
- Environmental protection
- Improved quality of grinding and polishing
- Longer service life of tools
- Reduction of machine corrosion
- Cost reduction of subsequent processes (e. g. washing)
- Compact system for one or more machines
- Low maintenance costs
- Automatic operation
- Compatible with coolants
- Low operating expenses (costs for sedimentation granules, energy)

The operating principle



For more information,
check out this video.
Just scan this code!

Two steps for a clean solution

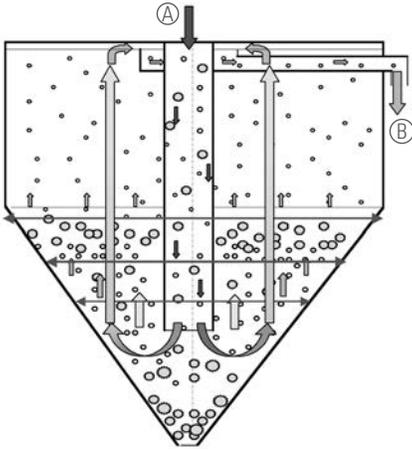


- 1.** An optimal tank design with special features causes coarse glass particles to be continuously separated from the coolant during circulation (effective sedimentation).
- 2.** Then fine particles are separated out in batch processes. Aided by optimised sedimentation granules, the system binds the finest glass particles in an automated cycle and produces almost clear process water.

- Ⓐ Waste water inlet
- Ⓑ Clear water overflow
- Ⓒ Sludge



Effective sedimentation in detail



- The waste water is fed down through a central pipe.
- The design of the overflow at the top of the tank forces the water flow upwards.
- Due to the size of the diameter, the speed of the upward flow slows down continuously.
- As particles have a higher density than water, the movement continues in the sedimentation area.
- Thus up to 70% of the glass particles are sedimented.

Ⓐ Waste water inlet

Ⓑ Cleared water

Automatic flocculation process

- A short blast of air through the valve releases the grinding sludge from the inner walls of the water tank.
- With rapid rotations, the propeller mixes the grinding sludge and the water.
- While the propeller rotates more slowly, sedimentation granules are added to the water and mixed.
- The propeller then stops, allowing the sedimentation granules to bind the suspended glass particles and form larger flakes. These flakes settle to the bottom of the tank.
- The valve opens and the water pressure forces the flakes into the filter bag.



Box with sedimentation granules

Sedimentor Success Story

Process water treatment with a sedimentor reduces follow-up costs

Egger Glas is using four process water treatments plants from Bohle

The Austrian company Egger Glas, located in Gersdorf, draws on 30 years of experience in producing insulating and safety glass for high specification façades, glass canopies, conservatories and all-glass systems. Egger Glas have long been convinced of the quality of Bohle for glass processing products. When deciding about the most recent investments, Erich Pribek, Managing Director of the company, arranged for three straight line edgers and one large twin belt grinding machine to be equipped with the Bohle coolant cleaning system from the sedimentor series.

Convincing test run

In the first step a test run was organized for an 8-spindle straight line edger to operate with a 320 litre sedimentor, the smallest Bohle model. After only a few weeks Erich Pribek realized that this investment involved enormous advantages: "Due to the improved water quality in the cooling circuit and the resulting lower contamination of the straight line edger, a considerably longer durability of grinding discs is achieved. The reduced service costs furthermore extend maintenance intervals. This saves huge amounts of time and staff expenses when it comes to cleaning the water tanks."

Investments that immediately pay off

"During its test run the coolant cleaning system has proven to save man and machine hours and moreover has a positive impact on the durability of grinding discs. The logical consequence was to equip our 14-spindle straight line edger with a large 2,100 litre sedimentor", Managing Director Pribek explains and adds. "This machine alone processes more than 60.000 metres of glass edges every year." The fact that the 8-spindle straight line edger at the company located in Ilz was also equipped with a 320 litre sedimentor shows how much Egger Glas have been convinced of the cost efficiency of the Bohle sedimentors. This location also uses a VertiClean glass washing machine in one of its processing units. "Both the company management and the



Egger Glas has 200 employees at five locations; its core business lies in the fabrication of safety and insulating glass. The company has its own team for mounting glass installations, they are active predominantly in Eastern Austria.



"The particle removal, cooling and service lives of the abrasive belt are significantly improved by clean cooling water and the reduced pollution translates into simplified cleaning for the entire system" reports the Egger Glas machine operator.

machine operators have clearly recognized the advantages of the Bohle system", Franz Schreiber says. The staff operating the machine have reported that the diamond grinding discs show much more efficient results now and abrasion and durability of the grinding discs have been considerably improved due to the purified coolant. The contamination is significantly lower which eases the cleaning of the complete system.

Sedimentor Success Story

White Aluminium Enterprises L.L.C., Abu Dhabi Clean Process Water with Bohle Sedimentor

Increasing productivity by working with clean process water is recognized and realized more and more in modern glass processing companies. This is also confirmed by Mr. Samer Zaineddin, Operations Manager of White Aluminium Enterprises L.L.C. in Abu Dhabi, UAE, where two Bohle "Sedimentor" units for the cleaning of process water were installed in June 2013.

Outstanding results

"Although I was convinced of the quality of Bohle products due to our long history of cooperation, I would not have thought that the results of this water cleaning system would be so obvious" says Mr. Samer, pointing out that after only 3 months of operation he can't believe how he could ever work without such a system. Two "Sedi 2.4" systems are connected to two interlinked double edgers, efficiently cleaning the process water of the large quantities of glass sludge being produced. "While we had to clean the water tanks every 5 days previously, we are now cleaning them only once per month. And the cleaning takes only 1 hour instead of 5 hours, due to the cleaner water. And this is not the end – we are working with a very delicate type of glass at the moment. Once we work with normal glass again, we plan to extend the cleaning cycle even more." Mr. Samer points out. Apart from the higher productivity due to less cleaning time, the advantages of a water cleaning system are manifold: the cleaner water, especially in combination with a coolant, allows an increase of the processing speed of up to 20% without compromising on the polishing quality, combined with an increase of the life time of the diamond tools of up to 30%. Cleaner water prevents machinery corrosion, thus reducing maintenance. The glass itself has considerably less water stains, making it easier to clean after processing.

One of the most efficient
systems on the market

As the Bohle system works with a powder flocculant



One of the sedimentors at White Aluminium Enterprises L.L.C. in Abu Dhabi

in a bypass cleaning cycle, no flocculant reaches the process water in the edging machine itself, thus avoiding any chemicals in the process water. The flocculant is inexpensive and non-hazardous, making the Bohle "Sedimentor" system one of the safest, most efficient and most economical in the market. "The Bohle system is easy to use and practically self-explanatory. We are so satisfied that we are already planning to invest in further systems to connect our other glass processing machines." says Samer.

More than 300 systems were
installed in recent years

Bohle UAE agent Gotal is convinced that within a short period of time, more glass processing companies will be investing in Bohle water cleaning systems. "If you consider all combined advantages in addition to the fact that local guidelines on the disposal of waste water are becoming much stricter, there is actually no way around such systems" says Mr. Sandeep Ponnarambil (aka Sam), General Manager of Gotal Trading Est. "We are already in discussion with several companies in the Gulf region about the installation of further systems within the year 2014." So far, Bohle "Sedimentor" systems are installed at glass processing companies in Abu Dhabi, Sharjah and Qatar – in addition to the more than 150 systems which have been installed in Europe and worldwide in the last few years.

Bohle Sedimentors

BLUECOMPETENCE

Alliance Member

Partner of the Engineering Industry
Sustainability Initiative



	Sedimentor 0.3	Sedimentor 1.0	Sedimentor 2.4
Flow rate (approx.)	13 gal. / min	37 gal. / min	74 gal. / min
Capacity	79 gallons	317 gallons	634 gallons
Glass grind removal	1.0 kg/h	3.6 kg/h	7.2 kg/h
Electrical	2.4Kw, 480v, 60Hz, 3NPE UL Approved	2Kw, 480v, 60Hz, 3NPE UL Approved	2Kw, 480v, 60Hz, 3NPE UL Approved
Item No.	BO SEDI03UL	BO SEDI10UL	BO SEDI24UL



Made in Germany: Sedimentor production at Bohle in Haan

Selecting your ideal Sedimentor Model

Customer no.		Telephone	
Company		Fax	
Contact person		E-Mail	
Street		Website	
Town/City		Date	

1. Type and model of the machine equipment

Number of connected machines: _____

Manufacturer: _____

Model: _____

Type of processing:

- Edge
- C-edge
- Mitre
- Bevel

Miscellaneous: _____

Average glass thickness (mm): _____

Average feed rate (m/min): _____

Average grind dimension (mm): _____

Abrasion (mm³/min): _____

Glass for processing: _____

- LSG
- Float glass
- Fire-protection glass

Miscellaneous: _____

Production time/usage time (hours/day): _____

2. Specifications on the cooling water system

Volume of the machine tank (ltr.): _____

Number: _____

Cooling water flow (ltr./min.): _____

Sludge accrual (kg/h): _____

Frequency of machine tank cleaning:

- Daily
- Weekly
- Per month, How many times: _____

3. Use of cooling lubricant

- No - only water
- Yes

Grinding water:

- Tap water
- Rainwater

Hardness: _____

Manufacturer: _____

Type: _____

Concentration: _____

Automat. dosing

- Yes
- No

Consumption (ltr./month): _____

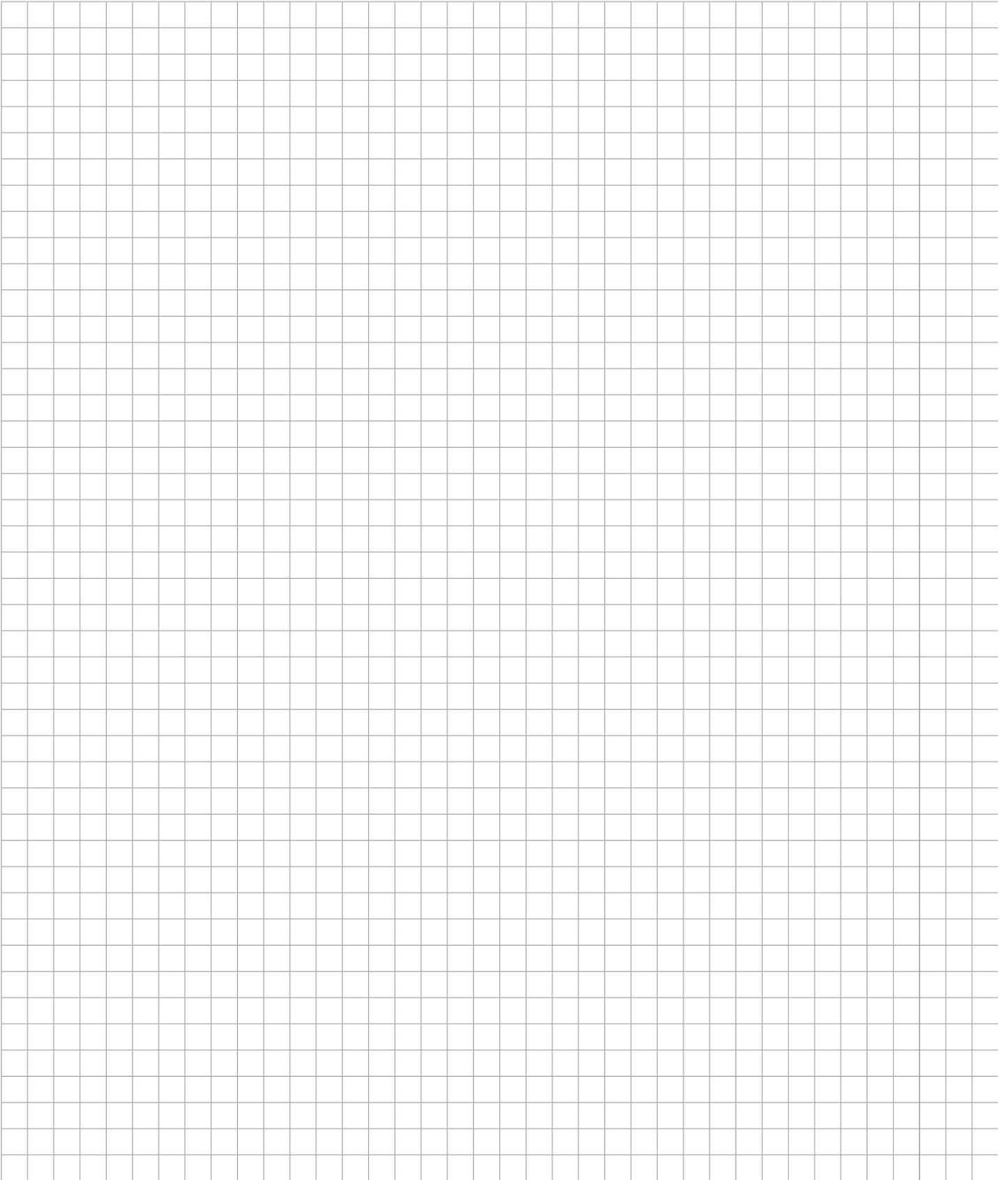
Current disposal: _____

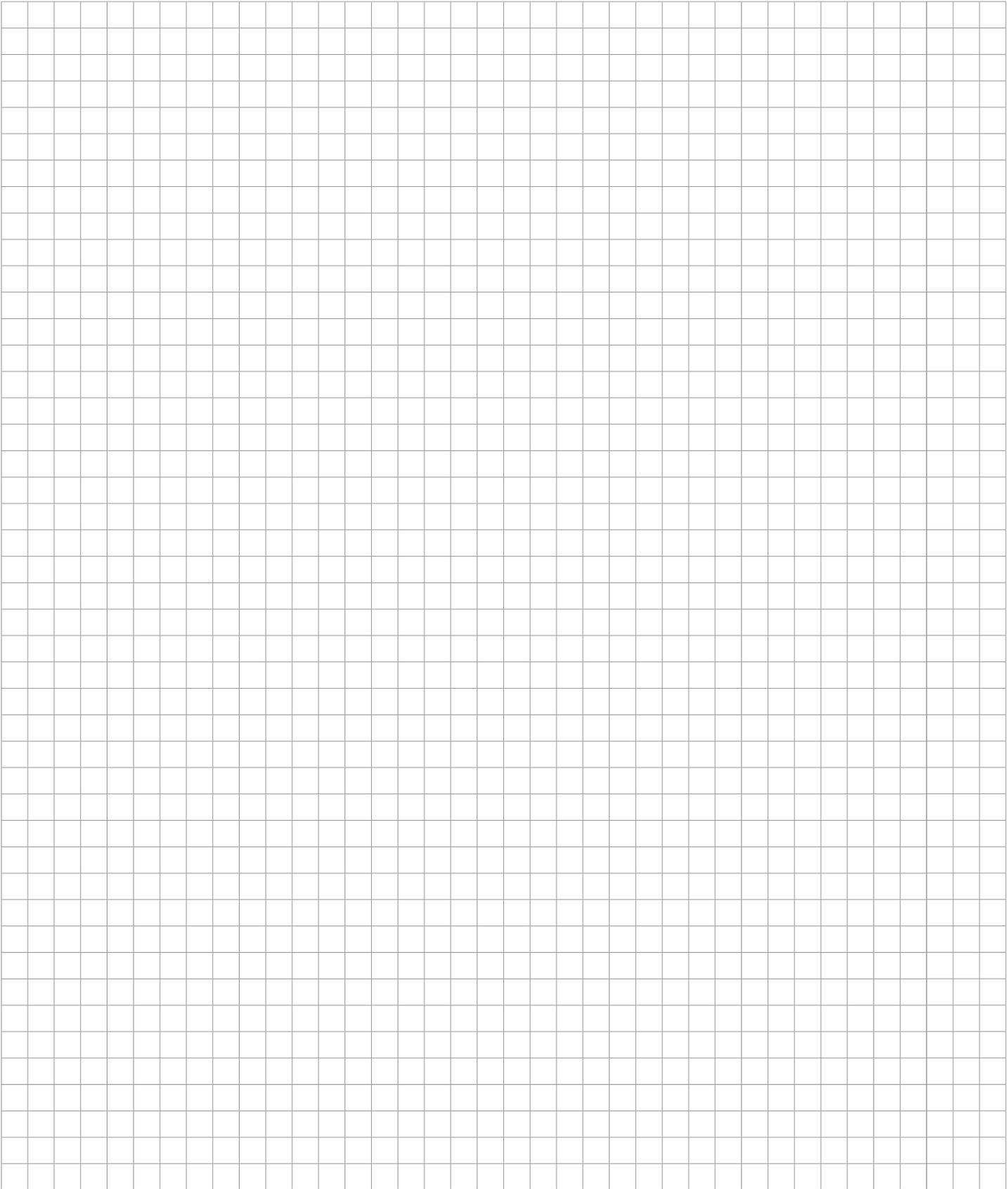
4. Aim of using a Bohle treatment system

- Reduction of the cleaning expenditure - container
- Improvement of the cooling water quality
- Increase of production
- Reduction of down time
- Improvement of the processing quality
- Reduction of the cleaning expenditure - machine
- Reduction of cooling lubricant material costs
- Increase of production capacity
- Reduction of disposal costs
- Minimisation of the floor space requirement

Other objectives: _____

Notes and sketches





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