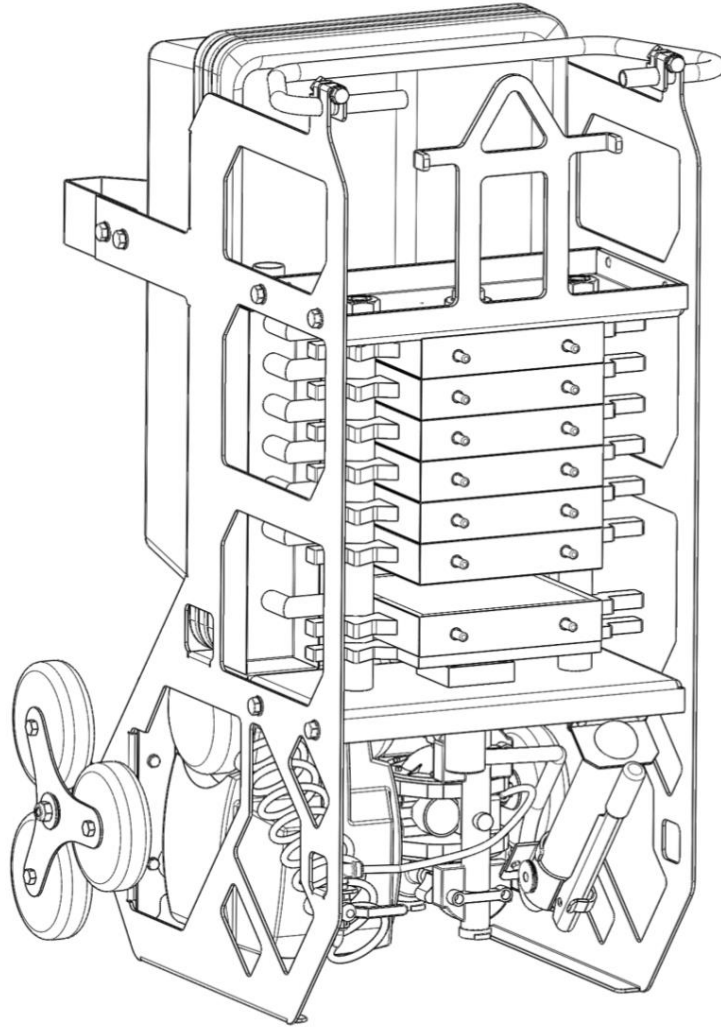


CSL 501

OPERATING INSTRUCTIONS

Translation of the original Instructions



NORTON
SAINT-GOBAIN®

clipper®



CE Declaration of conformity

The undersigned manufacturer:

SAINT - GOBAIN ABRASIVES S.A.
190, BD. J. F. KENNEDY
L-4930 BASCHARAGE

Declares that this product:

Masonry saw: **CSL 501**

Code: **70184608428**

Is in conformity with the following Directives:

- **"MACHINES" 2006/42/CE**

And European standard :

- **EN ISO 12100:2010 – Safety of machinery**

Valid for machines as of serial number :

1801XXXXX

Storage site for the technical documents :

Saint-Gobain Abrasives 190, Bd. J. F. Kennedy 4930 BASCHARAGE, LUXEMBOURG

This declaration of conformity loses its validity when the product is converted or modified without agreement.

Bascharage, Luxembourg, the 15.05.2018 :

François Chianese, executive officer.




**Slurry Machine OPERATING INSTRUCTIONS
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1 BASIC SAFETY INSTRUCTIONS

1.1 Symbols

Important warnings and pieces of advice are indicated on the machine using symbols. The following symbols are used on the machine:


	Danger!	Indicates that failure to comply could lead to severe injury or even death.
	Caution!	Indicates that failure to comply could sometimes lead to injuries.
	Note	Indicates that failure to comply leads to damage to the machine or other property.


Handling information for operators


The defined sequence of the handling steps makes proper and safe handling of the machine easier.


- Handling instructions for the operator

The following warning and safety symbols were attached on the machine.






	This symbol indicates the reference to read the operating manual carefully before the machine is placed in operation
---	--

	This symbol indicates the reference to wear always safety glasses when operating with this machine
---	--

	This symbol indicates the recommendation to wear gloves when operating with this machine
---	--

	This symbol indicates the recommendation to wear ear protection when operating with this machine
---	--

Warning and safety symbols

	Warning of health-hazardous or irritating substances
	Warning of corrosive substances
	Warning of a danger of crushing
	Warning of hand injuries
	Warning of slip danger

1.2 *Operating manual*

Before starting the work

This operating manual should make it easier to get to know the machine and make use of its intended applications.

The operating manual contains important information on how to operate the machine safely, properly and economically. Your close attention helps avoid risk, repair costs and downtime, and increase the reliability and lifetime of the machine.

The operating manual is to be supplemented by directives for accident prevention and environmental protection, according to applicable national requirements.

The operating manual is to be kept permanently available at the machine location.

The operating manual must be read and used by each person assigned to work with the machine, e.g.:

- Operating, including tooling, troubleshooting during operating, correction of production rejects, service, disposal of operating and auxiliary materials
- Maintenance (service, inspection, repair) and/or
- Transport

Along with the operating manual and the valid legal regulations for accident prevention in the country of use and the place of use, also recognized technical regulations for safety and proper work are to be observed.

Additional documents

Additional documentation of the respective manufacturers of individual components of the machine are available as supplements to this operating manual:

- diaphragm pump operating manual
- air compressor operating manual
- hydraulic manual pump/cylinder operating manual

Saint Gobain abrasives assumes no responsibility or liability for the completeness of any additional documents.

Changes and reservations

We attempt for this operating manual to be correct and up-to-date. To maintain our technological lead, it can be necessary to change the product without advance notice and to perform their operation. We accept no liability for malfunctions, breakdowns and damage caused by this.

1.3 *Basics of intended use*

- The warranty obligation of the manufacturer and supplier is voided for improper or non-intended use. Any change to the machine which is not carried out by the manufacturer is prohibited. Changes, removal or addition of parts to the machine only with the written approval of the manufacturer.
- The machine is constructed according to the state of the art and official technical and current safety rules. However, danger to life and limb of the user or third parties, and/or damage to the machine or other property may still arise from its use.
- Only use the machine in technically faultless condition and for intended use, aware of safety and danger complying with the operating manual. You should particularly handle malfunctions which can compromise safety immediately or have them addressed by experts.
- The slurry-filtration-system is used exclusively for an environmentally filtration of drilling- and cutting slurry respectively waste water into containing solid particles (filter cake) and cleaned water. Any other use or use above and beyond is not considered intended use. Intended use also includes compliance with the operating manual and observance of inspection and maintenance manual.

1.4 Organizational measures

- The operating manual must be easily accessible for each person at the location of the machine.
- All additions to the operating manual, all generally valid legal and otherwise binding regulations for accident prevention and environmental protection are to be followed and instructed!
- Such obligations may also apply, for example, to the handling of hazardous materials or the wearing of personal protective gear or traffic regulations.
- Personnel assigned to jobs must have read and understood the operating manual, particularly the Safety Instructions chapter, before starting work. In the middle of work it is too late. This particularly applies to personnel only occasionally engaged with the crane, such as those involved in tooling and maintenance.
- At least occasionally, perform checks for safe and hazard awareness work by operators while following the operating manual!
- Use personal protection equipment if necessary or required by regulations!
- Observe all safety instructions and danger warnings and keep them in legible condition! Replace safety and danger instructions that are damaged or non-readable any more.
- For safety-related changes to the machine or its running behavior, stop the machine immediately and mark it accordingly. Report the problem to the responsible post/person!
- No changes, removal or addition of parts without the written approval of the manufacturer! The instructions of the tool maker must be followed.
- Only use tested original replacement parts from the manufacturer!
- Observe required or prescribed deadlines given in the operating manual for inspection.

1.5 Personnel choice and personnel qualification; basic responsibilities

- Only qualified personnel 18 years of age or older may operate the masonry saw independently. All personnel must be trained in the operation and be explicitly authorized by the company to operate the machine.

- Establish responsibilities of the personnel for operating, changeover, servicing, and repairing the machine!
- Make sure that only authorized personnel works at the machine.
- The operator must wear personal safety equipment according to the safety regulations, such as safety shoes, safety gloves and safety glasses.
- Remaining in the working area of the machine unnecessarily is prohibited! Direct unauthorised personnel, who are not working on the machine, away from the work area. Block off the working area, if necessary
- During all movements, operating personnel must ensure that they and other people are not endangered. All obstacles which may hinder the operation or implementation of the machine at the location of use must be moved out of the way.
- Any personnel training, learning, being instructed, or currently involved in general education may only work with the machine under the continual supervision of an experienced person!

1.6 Safety instructions for operation phases

1.7.1. Danger for the operator by the machine

- The operator can get fingers pinched by closing the chamber filter press. Pay especially attention when closing the chamber filter press!
- The operation must make sure that the slurry-filtration-system is standing securely and cannot fall over.

1.7.2. Transport, assembly and installation

- The transport may only be done, as long as all machine parts are tightened on the machine and individual parts cannot fall.
- Transport must only take place when all water hoses are removed and placed respectively secured at the intended holder.

1.7.3. Commissioning

- The machine has to be checked before every single use for externally recognizable damage and deficiencies! Any changes which occur (including operating behavior) must be reported immediately to the responsible post/person! If necessary, immediately stop the machine and secure it against restart!
- All water hoses must be inspected for damage before commissioning.
- Before commissioning the filter cloth of the filter plates must be inspected for damage.

1.7.4. Operation

- Refrain from working in any manner that is questionable in regard to safety!
- Take measures to ensure that the machine is operated only in a safe, functional condition!

- The machine has to be checked before every single use for externally recognizable damage and deficiencies! Any changes which occur (including operating behavior) must be reported immediately to the responsible post/person! If necessary, immediately stop the machine and secure it against restart!
- Immediately stop and secure the machine in case of malfunctions! Immediately correct malfunctions!
- Only suitable and tested tools must be used.

1.7.5. Special work while using the machine

- Follow all setup, maintenance, and inspection activities and schedules prescribed by the operating manual, including all information about the replacement of parts / assemblies! These activities may only be carried out by technical personnel.
- Inform operating personnel before beginning special and maintenance work! Name a supervisor!
- If the machine is turned off during maintenance and repair work, it must be secured against unexpected application of power.
- Before cleaning all openings in which no cleaning agent should penetrate due to safety and/or functional reasons must be covered and glued. Electric motors, switches and plugs are especially at risk. After cleaning, remove the covers/tape completely!
- During service and repair work, always tighten loose bolt joints!
- If dismantling is required for fitting, servicing and repair, the safety fittings must be remounted and checked immediately following the service and repair work!

1.7 **Packaging and Storage**

To ensure sufficient protection during shipping and transport, the machine and its components are carefully packaged. When receiving the machine, the machine must be checked for damage.

The packaging of the device consists of materials which can be recycled. Put these by type into the relevant recycling containers, so that they can be recycled properly.

In the case of damage, the machine must not be put into operation. Even damaged cable and plugs represent a safety risk and must not be used. In this case, please contact the manufacturer or distributor.

If the machine is not immediately put into operation after unpacking, it must be protected from moisture and dirt.

1.8 **Environmental protection**

Packaging material, cleaning agents, used or residual operating materials, as well as removed wear parts, such as drive belts or hydraulic oils must be taken to recycling corresponding to the valid regulations for environmental protection at the place of use.

1.9 **Disposal**

If the expiry date of the device has been reached, in particular if functional errors happen, make the machine unusable.

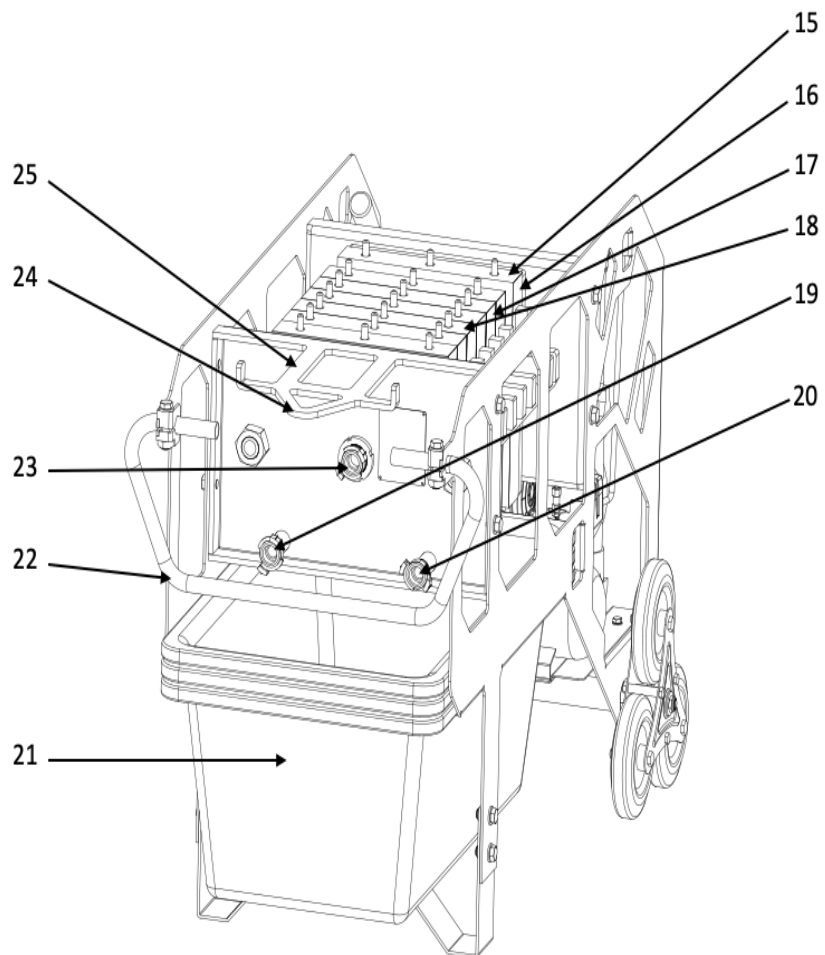
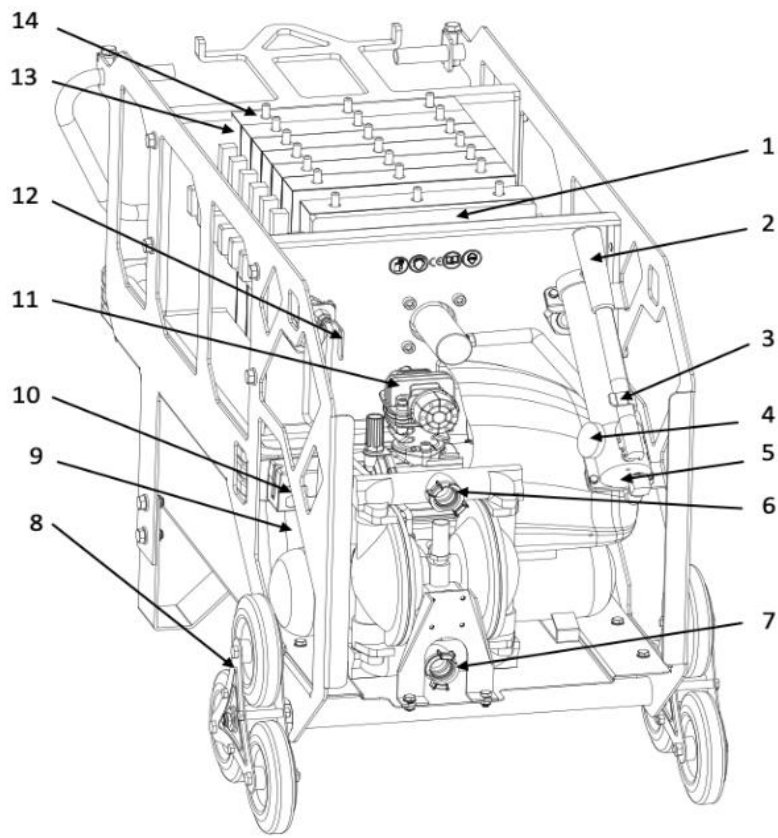
Dispose of the device according to the valid regulations for environmental protection of your country. Electrical waste may not be disposed of in household waste. Take the used device to a central rubbish collection center.

2 MACHINE DESCRIPTION

Any modification, which could lead to a change in the original characteristics of the machine, may be done only by Saint-Gobain Abrasives who shall confirm that the machine is still in conformity with the safety regulations.

2.1 *Layout*

Pos. 1	Pressure plate	Pos. 8	Star wheel (stair climbing possible)
Pos. 2	Handle hydraulic pump	Pos. 9	Ball valve (pneumatic coupling)
Pos. 3	Clip (to lock the hydraulic pump)	Pos. 10	ON/OFF switch air compressor
Pos. 4	Drain valve hydraulic pump	Pos. 11	Air compressor
Pos. 5	Hydraulic pump with integrated overpressure valve	Pos. 12	Ball valve (speed regulation of the diaphragm pump)
Pos. 6	Diaphragm pump (output – blue)	Pos. 13	Filter plate head element
Pos. 7	Diaphragm pump (input - yellow)	Pos. 14	Filter cloth head element
Pos. 15	Filter cloth end element	Pos. 21	Container (slurry/filter cake/filtrated water)
Pos. 16	Filter plate end element	Pos. 22	Handlebar (can be swiveled individual in angle)
Pos. 17	Filter plate middle element	Pos. 23	Input filter press (red)
Pos. 18	Filter cloth middle element	Pos. 24	Crane hook
Pos. 19	Output filter press (green)	Pos. 25	Hose holder
Pos. 20	Output filter press (green)		



2.2 Technical data

Recycling capacity	approx. 500 l/h
Plate size (l x w)	300 x 300 mm
No. of plates	7 pcs. (5+1+1)
Chamber volume	1,45 – 8,70 l
Pump output capacity max.	131 l/min
Capacity of container	3 x 90 l (slurry/filter cake/filtrated water)
Closing pressure	400 bar
Operating pressure	8 bar
Operating mode	Hydraulic/electric/pneumatic
Dimensions l/w/h	1200/670/800 mm
Weight (incl. air compressor)	160 kg

3 ASSEMBLY AND COMMISSIONING

3.1 *Connections and operating materials*

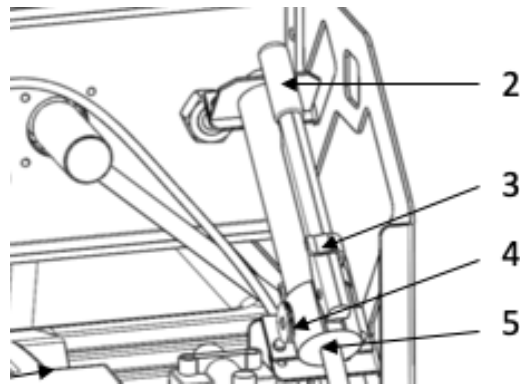
Compressed air connection

The in the machine integrated air compressor has to be connected on a 230V/50Hz net. To use a PRCD safety switch is recommend!

Water hose

All water hoses must be inspected for damage before commissioning.

3.2 *Closing of the chamber filter press*

**Danger!**

When closing the chamber filter press, the machine must only be operated by one person. In the area of the chamber filter press is a danger of crushing!

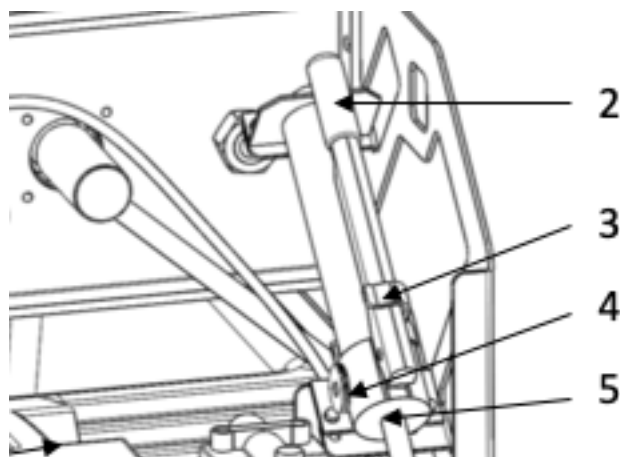
**Note**

The hydraulic hand pump is limited to a maximum pressure of 400 bar by an integrated overpressure valve.

As first unlock the handle of the hydraulic hand pump by swiveling the clip (Pos. 3).

By manually pumping of the hydraulic hand pump (Pos. 2) the chamber filter press is closing to the max. pressure of 400 bar. Pump as long till you recognize by feeling and hearing that oil excess through the integrated overpressure valve (Pos. 5) respectively 400 bar are reached.

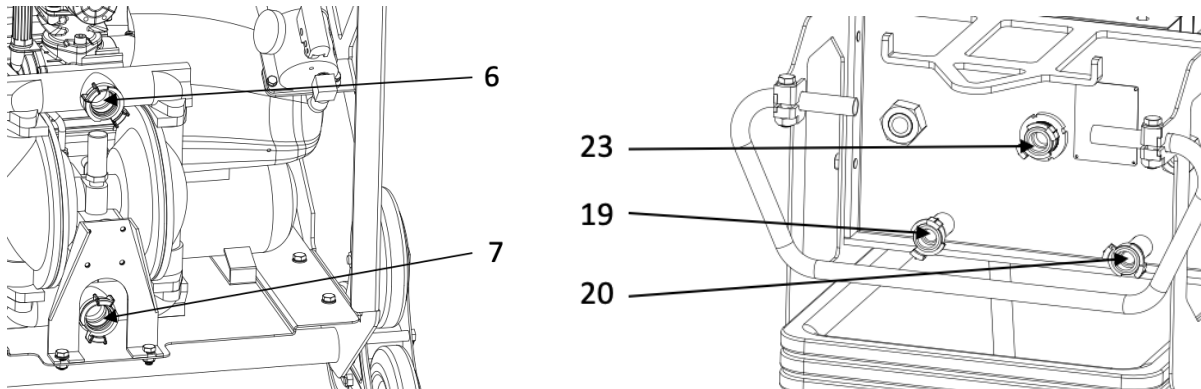
3.3 *Opening of the chamber filter press*



By turning of the drain valve the pressure of the hydraulic cylinder release and the chamber filter press opens automatically by the integrated pull spring.

- Opening the drain valve of the hydraulic hand pump (Pos. 4)

3.4 Connection of the water hoses



Pay attention on the color codes!

- Connect the blue end of the water hose; filter press – pump with the diaphragm pump (Pos. 6/blue)
- Connect the red end of the water hose; filter press – pump with (Pos. 23/red)
- Connect the yellow end of the water hose; slurry – pump with the diaphragm pump (Pos. 7/yellow)
- Connect the green end of the water hoses; output filter press (Pos. 19&20/green)



Note

All water hoses must be inspected for damage before commissioning.

4 TRANSPORT AND STORING

4.1 Before transporting



Caution!

Before the transportation of the slurry-filtration-system the chamber filter press must be closed (with a certain pressure that the chamber filter plates cannot falling out).

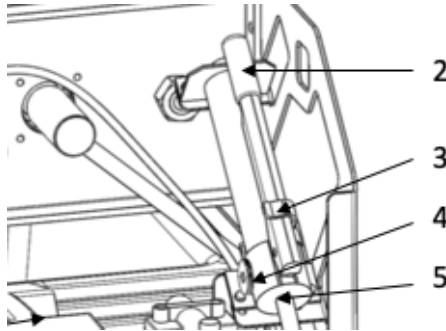


Note

To ensure that nothing of drilling and cutting slurry deposits in the system, the whole system has to be rinsing out after every use!

- Close the chamber filter press with a certain pressure that the chamber filter plates cannot falling out
- Remove all water hoses from the connections
- Water hoses can be stored at the intended hose holder

4.2 *Secure for transportation*



- The hydraulic hand pump has to be secured before transportation.
- By swivelling the clip (Pos.3) the hydraulic hand pump handle can be locked

4.3 *Transportation*



Note

The slurry-filtration-system can be comfortably transported over stairs using the star wheels and also can be lifted up by a crane by using the crane hook.

- Lift up and push the slurry-filtration-system by using the handle bar
- Lift up the slurry-filtration-system by using the crane hook

5 OPERATING THE MACHINE

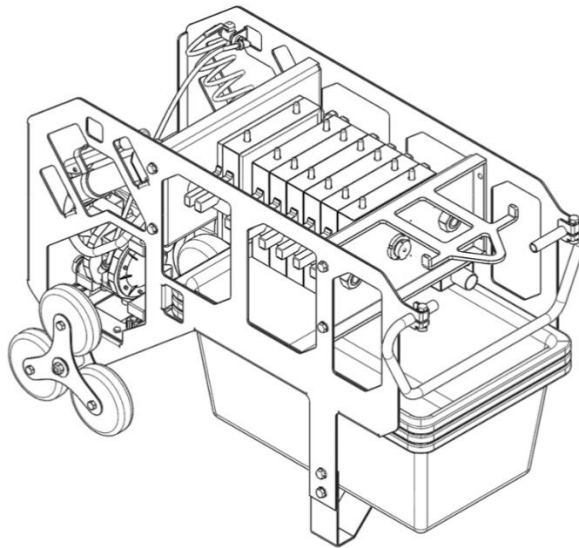
5.1 *Preparation*



Note

Before operation the following requirements must be met:

- Place two container (slurry/filtrated water) next to the machine
- Insert the water hose; water drain channel into the filtrated water container
- Connect the water hose; slurry-pump (pay attention to the color codes)
- Insert the water hose; slurry-pump into the slurry container
- Connect the water hose; chamber filter press-pump (pay attention to the color codes)
- Connect the water hoses; output filter press (pay attention to the color codes)
- Fill in the drill and cutting slurry into the slurry container
- Close the chamber filter press by pumping of the hydraulic hand pump
- Connect the air compressor to the power net
- Control if the ball valve is closed



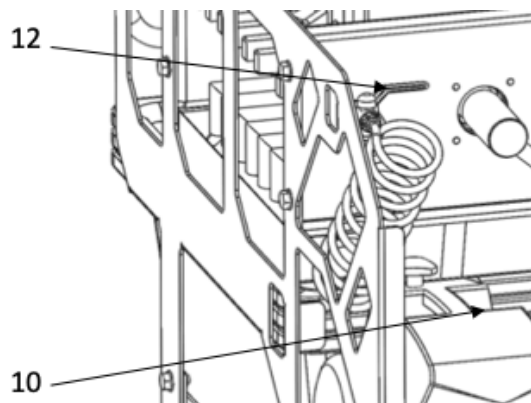
5.2 Filling of the chamber filter press

ON/OFF air compressor switch (Pos. 10)

- Turn on the air compressor

Ball valve of diaphragm pump (Pos. 12)

- Regulate the hoist speed of the diaphragm pump the ball valve
- Regulate the hoist speed of the diaphragm pump the ball valve at that speed that the water is not overflowing of the water channel
- The hoist speed of the diaphragm pump will reduce during the filling of the chamber filter press
- Reduce the hoist speed of the diaphragm pump to 0 the chamber filter press is complete full and the filter cakes ready
- The air compressor can be switched OFF and the chamber filter press can be opened that the filter cakes can falling down into the filter cake container
- The chamber filter press can be filled up again
- Before The chamber filter press can be filled up again the filter clothes has to be controlled and if needed to be cleaned



5.3 **Cleaning of the slurry-filtration-system after use**


- All parts which have been in contact with the drilling and cutting slurry must be cleaned carefully after use
- Open the chamber filter press (see 3.3) and let the filter cakes falling into the filter cake container
- Clean the filter cloths of the filter plates with a wash brush.

Steam and high-pressure washers are prohibited!

- When you are finished with using the slurry-filtration-system close the chamber filter press and rinse the complete system with filtrated or clean water!
- Emptying the complete slurry-filtration-system if there is any danger of frost


6 MAINTENANCE AND SERVICING

6.1 **Service**

	Danger!	Maintenance and repair works must only be carried out by qualified personnel. The machine must be secured against turning on by other people. Maintenance and repair works may only be carried out when the machine is turned off.
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Cleaning

To protect powder coated surfaces no aggressive cleaning agents may be used.

	Note	When there is danger of frost the water must be removed from the slurry-filtration-system. Rinse also the complete slurry-filtration-system carefully.
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	before each use	daily	weekly	monthly	annually
Visual inspection for recognisable damage and deficiencies	●	●			
Thoroughly clean the machine		●			
Check hydraulic assembly for leaks	●				
Check oil level in hydraulic hand pump				●	
Hydraulic oil change					●
Screw connections	Retighten all screw connections after 20 operating hours see Erreur ! Source du renvoi introuvable.				

6.2 **Filter cloths of the filter plates**

The slurry-filtration-system is equipped complete with filter plates and filter cloths when delivered from the factory. If you are performing the first filtration, this section can be ignored and the commissioning can be done.

However, if you are in continuing system operation, and want to put filter cloths on or off, the following is an example of putting on a filter cloth with instructions that must be followed.



Note

The filter cloths change on the pass-through filter cloths for chamber filter plates is described in the following.

First take the filter plate vertically upwards out of the plate package and set it on a solid surface.

- Place the double-layer filter cloth on a level surface and fold one half of the cloth together from the middle according to the following figure 1 and 2.

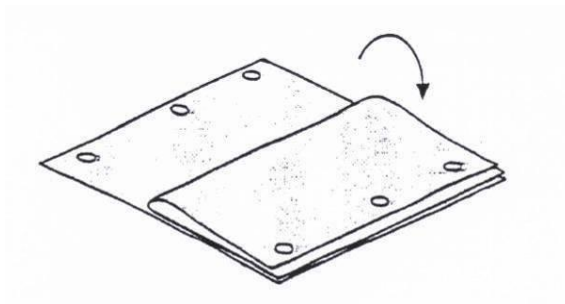


figure 1

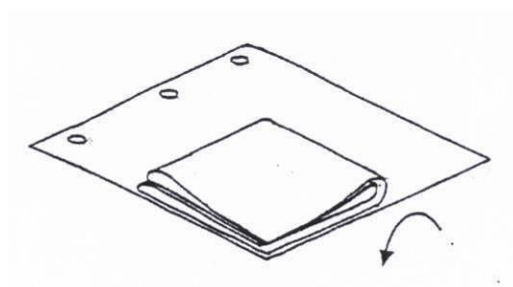


figure 2

- Now roll this half of the cloth together in a roll as shown in figure 3.

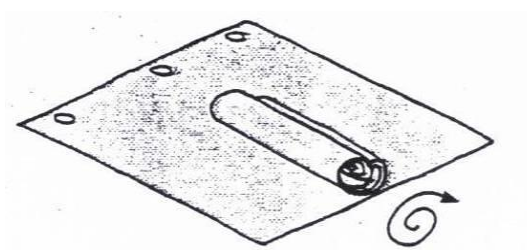


figure 3

- Now stick this cloth roll up to the throat of the cloth through the hole in the filter plate according to the following figure 4

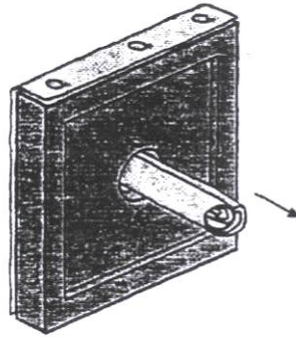


figure 4

- Unroll the cloth and align it so that the cloth side with the large eyes, $d=12\text{ mm}$, is on the top side of the filter plate.
- Now smooth out the cloth in the area of the center hole and make sure that it sits on the entire surface and the edges with no creases.
- There are small eyes on the side of the filter cloth, to connect the halves of the cloth together. Plastic closures must be used for this. These must not become loose during the pressing operation. This prevents a part of the filter cloth from being folded in, which can negatively influence the filtering properties of the press significantly.



Note

Remove the cloth in the corresponding reverse sequence!

7 HANDLING INSTRUCTIONS FOR CHAMBER FILTER PLATES MADE OF POLYPROPYLENE (MANUFACTURER'S INSTRUCTIONS)

7.1 Generals

There are chamber filter plates available in a large range of variants, in different sizes and cake thicknesses:

- For high and low filtration pressure
- With slurry feed centralized, decentralized or in the corner
- Slurry exit open, via valves or closed
- For pass through cloths or cloth screwed connections
- For good washing results or only for clear filtration
- For automatic transport or manual operation
- For side beam pressing or pressing with suspensions
- For sealed cloths or in liquid-tight design

Therefore, there is always the option to design the chamber filter plates so that the user achieves optimum filtration results.

The special design of the chamber filter plates and the high-quality material thoroughly guarantee a high service life. However, the durability of the chamber filter plate is not only dependent on the construction design and the material, but also on correct treatment and service.

7.2 Treatment before the initial operation

Chamber filter plates must be protected against mechanical damage and against temperatures below 0°C, since the polypropylene material (PP) loses its elasticity at low temperatures.

It is recommended to store chamber filter plates in closed areas. The filter plates should be stored vertically for longer storage times.

Permanent ultraviolet radiation (e.g., sun, bright daylight, etc.) is damaging to PP; it can discolor. The chamber filter plates are protected against radiation by covering with black plastic film.

Chamber filter plates must absolutely be protected from welding splatter during welding work.

Also, uneven heat should be avoided, since the filter plates can warp with exposure to uneven temperatures.

7.3 Inspection before every commissioning

- Are the filter plates arranged in the proper sequence?
- Is the handle centring correct?
- Are the filter cloths seated correctly and taut?? The holes for the flow must be exposed. The filter cloths must not make any creases on the sealed edge.
- Is the max. closing pressure reached?

7.4 Chamber filter plates during operation

- The slurry should be conditioned uniformly and without clumps. Clumps can lead to stoppages, i.e., to uneven chamber filling. Differential pressures then result, which can lead to plate fracture.
- The cloths must not filter in the slurry channel. It must be ensured, that the slurry channel has liquid up to the end of the filtration in the entire plate package, and thus a problem-free filling of the individual chambers is guaranteed. Plugged slurry channels and plugged chamber feeds lead to differential pressures and can lead to plate deformation with differing cake thicknesses and plate fractures.
- The filter cloths should be uniformly clean, so that varying filtration is avoided. Damaged filter cloths must be immediately replaced.
- A filtration cycle should never be interrupted for a long period of time, because the cake sags and the subsequent filtration becomes uncontrollable.
- It is practical to inspect the nap surface of the chamber filter plates in specified intervals and, if necessary, to clean them so that there is free drainage.
- After emptying, the sealed edge of the cloths should be inspected for cleanliness and the slurry channel of the filter plates for residues (cake / sludge). Insufficiently cleaned slurry channels can lead to uneven filling and cake thickness in the individual chambers and thus the risk of bending of the plates exists. Cake residue on the sealed edges leads to leaks and can cause warpage of the pressing frame.
- Chamber filter plates are light and easy to handle. However, dropping of the chamber filter plates on the beams must be avoided, because this impact can damage the plates.
- Polypropylene is sensitive to the continual exposure to free chlorine. Therefore, for example, no bleaching lye should be used for cleaning.

7.5 Post treatment of the filter plates

After the filtration is completed, the filter plates and the filter cloths should be inspected and cleaned. The seat and the condition of the filter cloths should be checked.

8 FAULTS : CAUSES AND CURES

8.1 Fault-finding procedures

Should any fault occur during the use of the machine, turn it off, and isolate it from the electrical supply. Any works dealing with the electrical system or supply of the machine can only be carried out by a qualified electrician.

8.2 Trouble-shooting guide

Error	Cause	Remedy
Filtration phase does not run properly	Operating pressure too low	Check operating pressure
	Filter plates full	Empty filter plates
	Filter basket plugged	Clean the filter basket
	Filtrate flows too thick	Thin filtrate with water
Filter plates leak	Closing pressure not reached	Check closing pressure
	Contact surface not clean	Clean contact surfaces
Closing pressure is not reached	Insufficient hydraulic fluid in the hydraulic hand pump	Check level of hydraulic fluid

8.3 *Customer service*

When ordering spare parts, please mention:

- The serial number (7 digits).
- The code of the part.
- The exact denomination.
- The number of parts required.
- The delivery address.
- Please indicate clearly the means of transportation required such as "express" . Without specific instructions, we will forward the parts through the means which seem appropriate to us --- but which is not always the quickest way.

Clear instructions will avoid problems and faulty deliveries.

If not sure, please send us the defective part.

In the case of a warranty claim, the part must always be returned for evaluation.

This machine has been manufactured by: Saint-Gobain Abrasives S.A.:
190, Bd. J. F. Kennedy
L-4930 BASCHARAGE
Grand-duché de Luxembourg
Tel. : 00352 50 401 1
Fax. : 00331 83717792
<http://www.construction.norton.eu>
e-mail : sales.nlx@saint-gobain.com

8.4 Spare parts

In order to consult the spare parts lists, we invite you to visit the after-sales website of Norton Clipper by using the following address:

<https://spareparts.nortonabrasives.com>

For a quick access, you can also use the QR Code shown below using your mobile phone:



This electronic catalogue provides exploded views and spare parts lists for different machines designed by Norton Clipper so you can find references you need.

Guarantee can be claimed and technical support obtained from your local distributor where machines, spare parts and consumables can be ordered as well:

SAINT-GOBAIN ABRASIVES NV/SA
INDUSTRIELAAN 129
1070 ANDERLECHT /BRUSSEL
BELGIUM
TEL: +32 (0)2 267 21 00
FAX: +32 (0)2 267 84 24

SAINT-GOBAIN ABRASIVES, S.R.O.
POČERNICKÁ 272/96, MALEŠICE
108 00 PRAHA 10
CZECH REPUBLIC
TEL: +420 255 719 326
FAX: +420 255 719 321

SAINT-GOBAIN ABRASIVES A/S
ROBERT JACOBSENS VEJ 62A
2300 KØBENHAVN S
DENMARK
TEL: +45 4675 5244

PO BOX 643706
FORTUNE TOWER OFFICE 2106
JLT BLOCK C
(NEXT TO METRO STATION)
JUMEIRA LAKE TOWER, DUBAI
UNITED ARAB EMIRATES
TEL: +971 4 431 5154
FAX: +971 4 431 5434

SAINT-GOBAIN ABRASIFS
RUE DE L'AMBASSADEUR - B.P.8
78 702 CONFLANS CEDEX
FRANCE
TEL: +33 (0)1 34 90 40 00
FAX: +33 (0)1 39 19 89 56

SAINT-GOBAIN ABRASIVES GMBH
BIRKENSTRASSE 45-49
D-50389 WESSELING
GERMANY
TEL: +49 (0) 2236 703-1
+49 (0) 2236 8996-0
+49 (0) 2236 8911-0
FAX: +49 (0) 2236 703-367
+49 (0) 2236 8996-10
+49 (0) 2236 8911-30

FÜR DEN FACHHANDEL
ÖSTERREICH
TEL: +43 (00) 662 430 076

SAINT-GOBAIN ABRASIVES KFT.
1225 BUDAPEST
BÁNYALÉG U. 60/B.
HUNGARY
TEL: +36 1 371 22 50
FAX: +36 1 371 22 55

SAINT-GOBAIN ABRASIVI S.P.A
VIA PER CESANO BOSCONI 4
I-20094 CORSICO MILANO
ITALY
TEL: +39 02 44 851
FAX: +39 02 44 78 266

SAINT-GOBAIN ABRASIVES S.A.
190 RUE J.F. KENNEDY
L-4930 BASCHARAGE
GRAND DUCHE DE LUXEMBOURG
TEL: +352 50 401 1
FAX: +33183 717 792
NO. VERT (FRANCE) 0800 906 903

SAINT-GOBAIN ABRASIFS, S.A.
2 ALLÉE DES FIGUIERS
AIN SEBAË - CASABLANCA
MOROCCO
TEL: +212 5 22 66 57 31
FAX: +212 5 22 35 09 65

SAINT-GOBAIN ABRASIVES BV
GROENLOSEWEG 28
7151 HW EIBERGEN
P.O. BOX 10
7150 AA EIBERGEN
THE NETHERLANDS
TEL: +31 545 466466
FAX: +31 545 474605

SAINT-GOBAIN ABRASIVES AS
POSTBOKS 11, ALNABRU,
0614 OSLO
BROBEKKVEIEN 84,
0582 OSLO
NORWAY
TEL: +47 63 87 06 00
FAX: +47 63 87 06 01

SAINT-GOBAIN HPM POLSKA SP. Z O.O.
UL. NORTON 1
62-600 KOŁO
POLAND
TEL: +48 63 26 17 100
FAX: +48 63 27 20 401

SAINT-GOBAIN ABRASIVOS, L. DA
ZONA INDUSTRIAL DA MAIA
I-SECTOR VIII, NO. 122
APARTADO 6050
4476 - 908 MAIA
PORTUGAL
TEL: +351 229 437 940
FAX: +351 229 437 949

SAINT-GOBAIN GLASS
BUSINESS UNIT ABRASIVI
PUNCT DE LUCRU: LOC.VETIS, JUD.
SATU MARE 447355
STR. CAREIULUI 11
PARC INDUSTRIAL RENOVATIO
ROMANIA
TEL: 0040-261-839.709
FAX: 0040-261-839.710

SG HPM RUS
58, F. ENGELS STR.
STROENIE 2
105082 MOSCOW
RUSSIA
TEL: +74 955 408 355
FAX: +74 959 373 224

SAINT-GOBAIN
ABRASIVES (PTY) LTD
2 MONTEER ROAD
ISANDO 1600
P.O. BOX 67
SOUTH AFRICA
TEL: +27 11 961 2000
FAX: +27 11 961 2184/5

SAINT-GOBAIN ABRASIVOS, S.A.
CTRA. DE GUIPÚZCOA, KM. 7,5
E-31195 BERRIOPLANO (NAVARRA)
SPAIN
TEL: +34 948 306 000
FAX: +34 948 306 042

SAINT-GOBAIN ABRASIVES AB
BOX 495
SE-191 24 SOLLENTUNA
SWEDEN
TEL: +46 8 580 881 00
FAX: +46 8 580 881 01

SAINT-GOBAIN INOVATIF
MALZEMELER VE AŞINDIRICI
SAN. TIC. A.Ş.
GOLD PLAZA, ALTAY ÇEŞME
MAHALLESİ, ÖZ SOKAK, NO:19/16
34843 MALTEPE-ISTANBUL,
TURKEY
TEL: 0090-216-217 12 50
FAX: 0090-216-442 40 74

SAINT-GOBAIN ABRASIVES LTD.
DOXEY RD
STAFFORD
ST16 1EA
UNITED KINGDOM
TEL: +44 1785 222 000
FAX: +44 1785 213 487



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