



PATENT
PENDING

English

Automatic self-cleaning filtering system
with constant pressure output

DUO



DUO



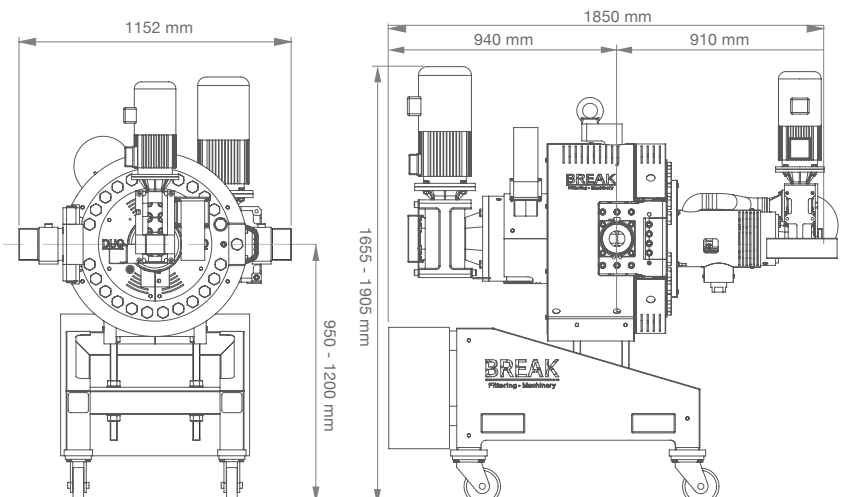
Constant pressure self-cleaning filter system DUO

This is a **double filter system** operating at constant pressure for high process stability, which allows maximum productivity while ensuring high product quality..

The design of the scraper disc and the **innovative screw discharge system** allow the fast and controlled removal of contamination and **the reduction of waste quantity**.

| | DUO |
|---|---------|
| Filtering surface area [cm ²] | 1750 |
| Heating zones | 7 |
| Max. pressure [bar] | 350 |
| Max. flow rate [kg/h] ¹ | 3000 |
| Weight [kg] | 1800 |
| Total installed power [kW] | 37 |
| Filtration [µm] | 60-2000 |

(1) The flow rate depends on different factors: viscosity of the melt, filtration size, type and percentage of contamination, production line.



Technical features

■ Continuous filtration

DUO guarantees to work in continuous way and at constant pressure.

■ Single independent discharge screw

Contamination collected by both filter surfaces is discharged by means of a single independent screw, which is able to carry out the contamination.



■ Filters replacement

DUO is designed to make maintenance operations and filter replacement easier and faster, without removing machine's components.

■ Double filter

DUO uses two filters. This makes it possible to reduce the size of the filtration chamber and have large filtering surfaces, in order to increase the production volume.

■ Flexibility

The ability to adjust the speed of the discharge screw allows even the most contaminated materials to be handled according to the customer's requirements.

■ Versatility

DUO is designed for the filtration of various types of plastics. It is designed to handle different types of contamination such as: paper, wood, aluminium, copper, etc...

■ Reliability

DUO and all its components, as well as the consumables, are manufactured using high quality alloy steels and wear-resistant treatments are carried out on the most stressed parts. It is also designed to guarantee high resistance to pressures line (up to 350 bar).

■ Cleaning efficiency

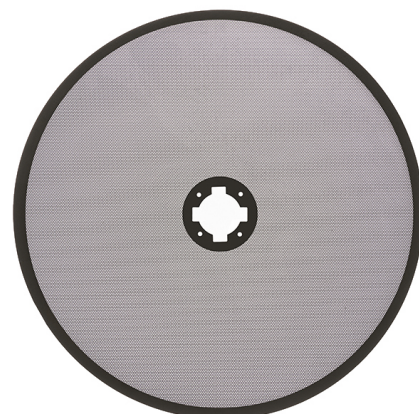
The unique design of the independent scraper disc, equipped with 6 blades, allow excellent cleaning, even at low rotation speed. Its design also prevents contaminants filtrates from re-entering the melt. Continuous cleaning allows to use filters longer than traditional technologies.

■ Amount of contaminants

DUO can be used to filter materials with high percentages of contaminants (up to 15% by weight depending on the type of pollutant).

■ Laser filtration

Filter discs are drilled using the latest laser technology and treated to be wear resistant. The conical shape of the holes helps the plastic to go through them.



Economic advantages

■ Cost-effective

The efficiency of the continuous cleaning system, increase the life cycle of filters, reducing the amount of consumable components to be purchased.

■ Productivity

The continuous pressure filtration system maximises the productivity of the line.

■ Labour

Innovative design reduces cleaning and replacement times for filters and blades.

The presence of the operator is reduced considerably.

Standard and special maintenance operations are simple, fast and can be carried out directly at the customer's production site.



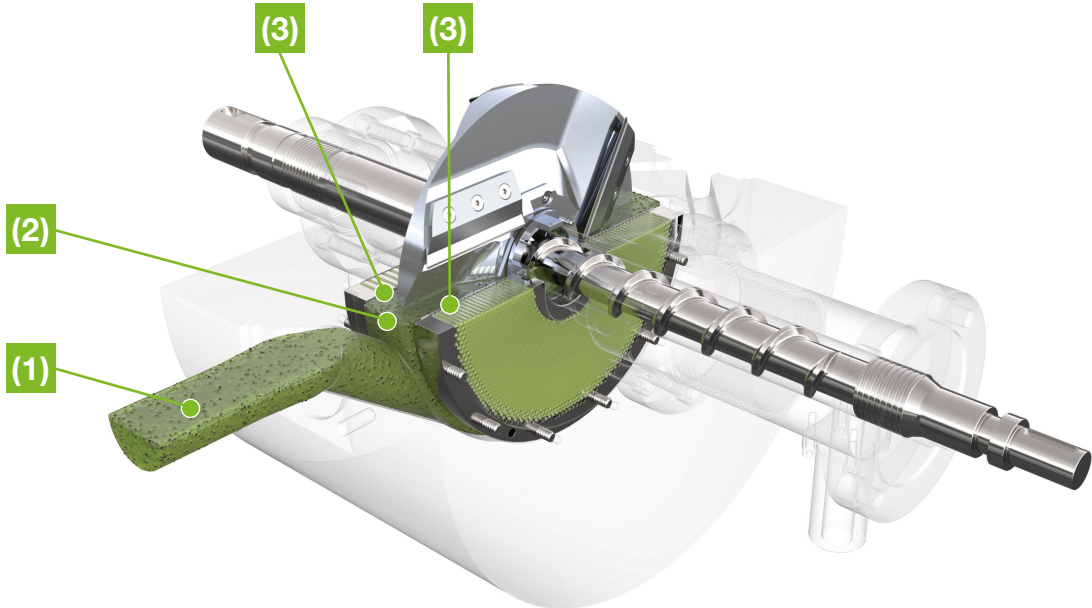
■ Minimum waste

The screw rotates independently of the scraper disc. In this way the waste can be minimised depending on the contamination.

■ Optimisation

The possibility of adjusting the independent discharging screw of the speed of the scraper disc, helps the managing of highly contaminated materials.

Scraping operation

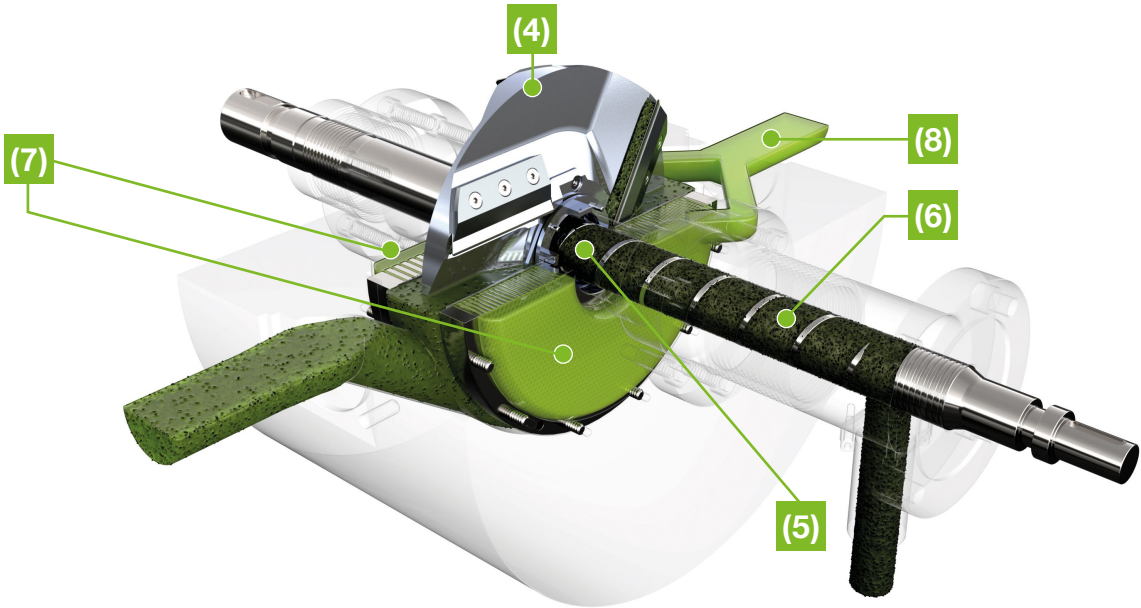


The molten plastic material **(1)** is conveyed into the filtration chamber **(2)** and goes through two screens **(3)** facing each other.

Between the two screens there is a scraper disc **(4)**, equipped with six blades, which rotates to remove the contamination from the screens by driving it into the disc itself **(5)**.

The core of the scraper receives the contamination, which is then transferred to the independent discharge screw **(6)** that ejects it.

The plastic material, filtered **(7)** by the two filters, then rejoins the output channel **(8)** to move on to the next process.



Automatic opening system

DUO is also available with an automatic opening system that makes opening and closing lid's operations easier, faster and safer.

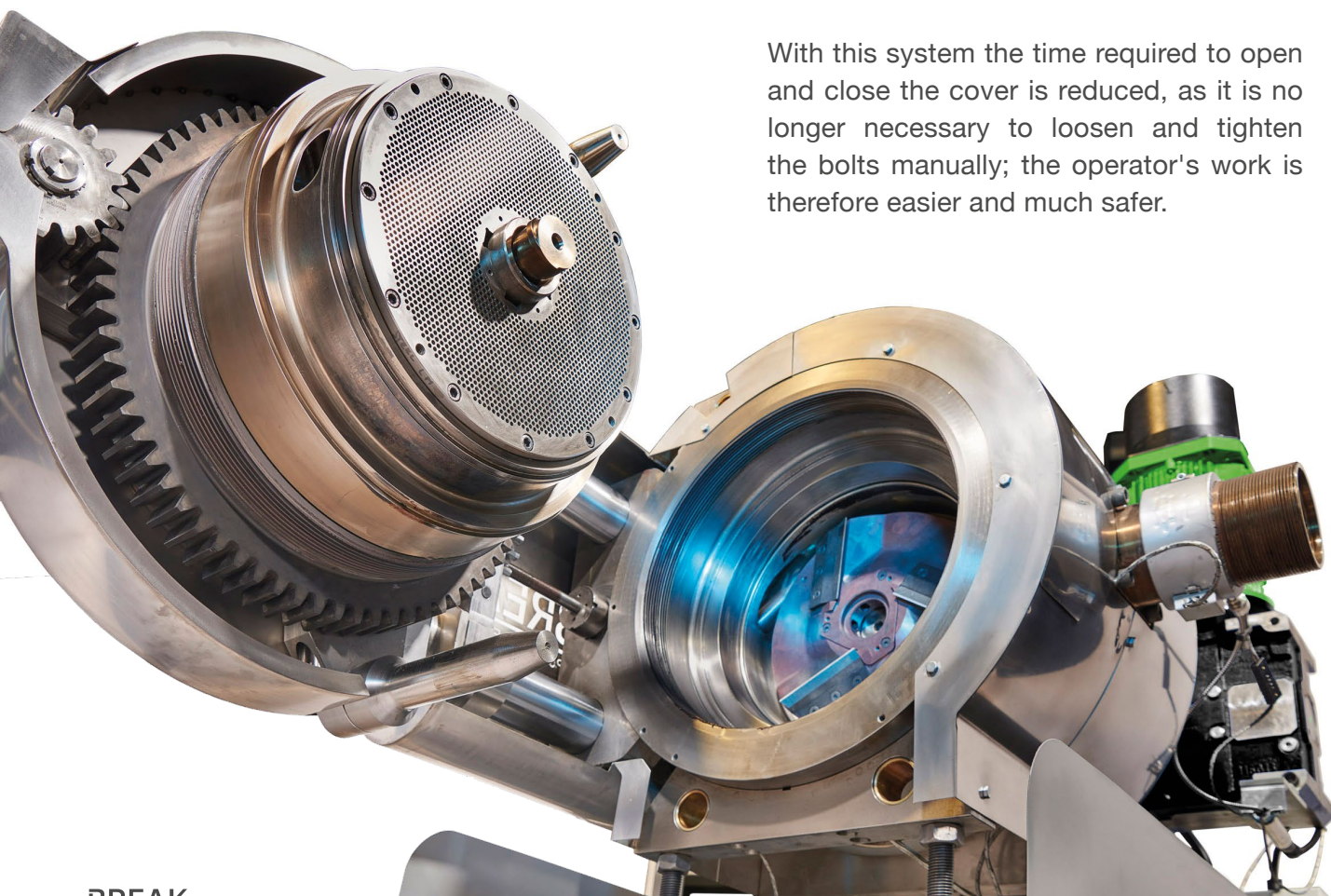
This system consists of a threaded lid that screws directly onto the machine body, and by a drive which controls both the screwing and the translation of the cover.

These two movements occur simultaneously thanks to a mechanism and a special clutch that allows the screw and nut to couple during the closing phase.

Operation is activated via a single selector switch located on the front of the **DUO**.



With this system the time required to open and close the cover is reduced, as it is no longer necessary to loosen and tighten the bolts manually; the operator's work is therefore easier and much safer.



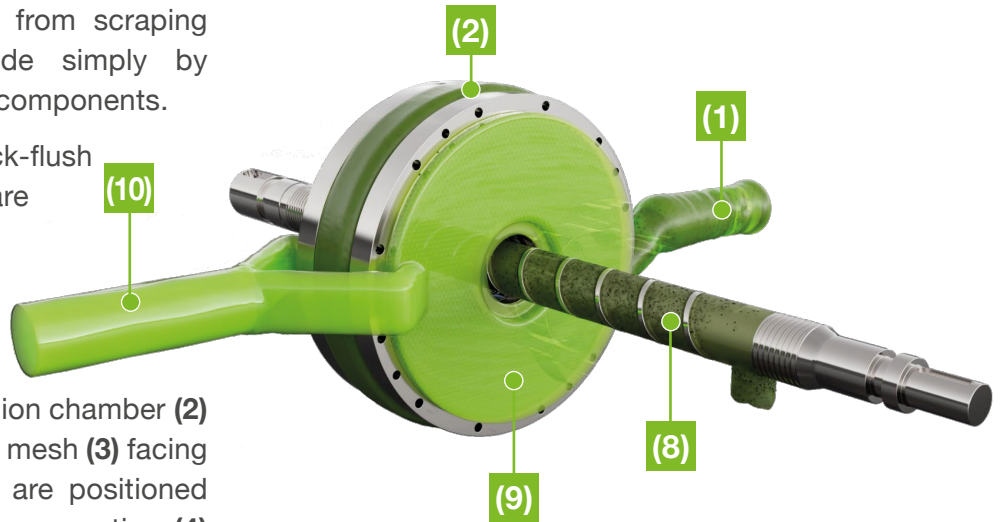
Back-flushing operation

The back-flush mode is suitable for materials with a low percentage of contamination. Each machine can switch from scraping mode to back-flush mode simply by changing the kit of internal components.

Furthermore, in case of, back-flush no laser or punched filters are necessary anymore. Only metallic mesh filter.

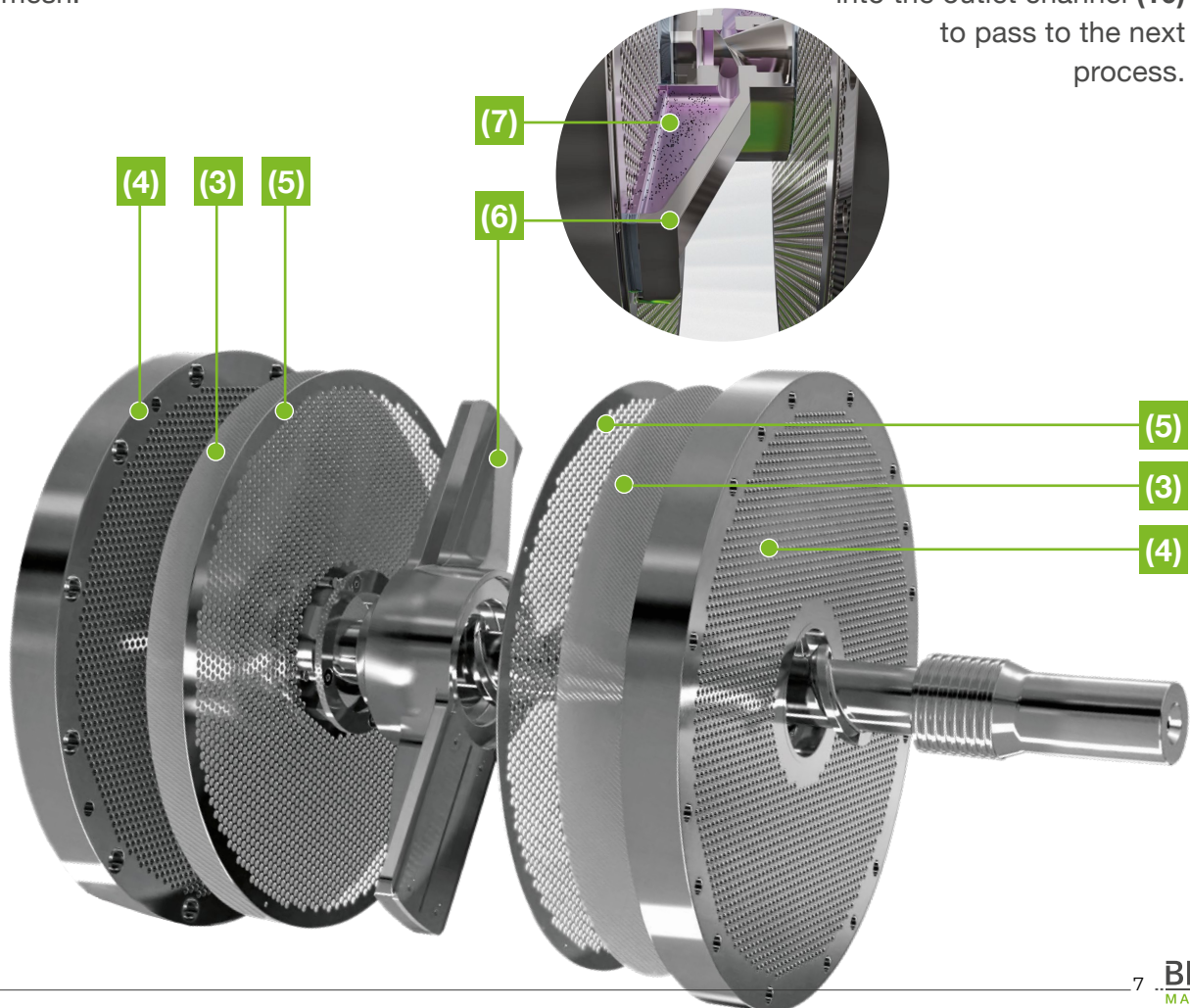
The plastic material (1) is conveyed inside the filtration chamber (2) and goes through two metal mesh (3) facing each other, both of which are positioned between two breakers: one supporting (4) and a protective one (5).

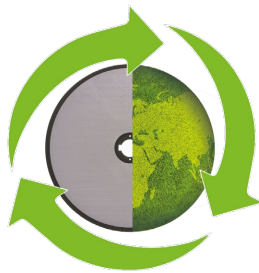
Supporting the two protective breakers is a cleaner (6) which sucks up the contamination (7) settled on the metal mesh.



The centre of the cleaner is in communication with an independent discharge screw (8) that ejects the contaminated material.

The filtered melted material (9) then rejoins into the outlet channel (10) to pass to the next process.





**Environmental sustainability
is always at the core of our vision.**

BREAK MACHINERY s.r.l.

Via Martiri della Libertà, 7
35010 Grantorto (PD) Italy
Tel +39 049 9490350
info@breakmachinery.com
www.breakmachinery.com