isg®

Authorized distributor in Poland

briklis

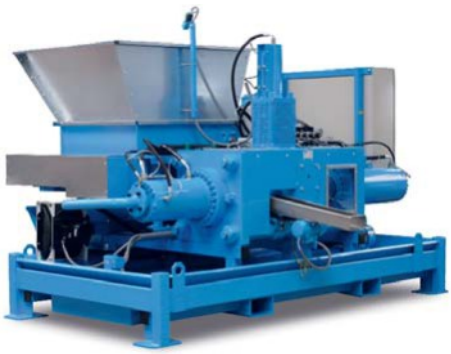
Briquetting presses for pressing metals

Chips coming from metal machining are a valuable raw material which should be handled as economically as you treat the initial material. Using the briquetting presses for processing the chips provides you with one of the possible and economically favourable solutions. Our customers have repeatedly assessed the return of the briquetting presses for metal processing from six months to one year. Our design engineers shall design for each customer the most favourable type of the briquetting press in order to make the use of waste as high-yielding as possible. The briquetting technology is intended for machine works companies that deal with cutting economy, and also for companies engaged in the secondary processing of metal chips.

Suitability of the material for pressing is best verified by material tests. Metal chips must be short, loose, and suitable for feeding screw. Aluminium chips may contain a small proportion of long chips, which must not create large clumps. The feeding screw is able to pick up a small clump but almost always it will reduce the output of the press and uneven size of the briquettes. Chips of stronger materials than aluminium must not contain these clumps. It is also important to sort out the large pieces.

The content of cutting fluids in chips is not limited. It is important to process the material at standard temperatures to achieve the required properties of briquettes with low content of liquids. High oil or emulsion viscosity at low temperatures enhances the adhesion of the liquid on the surface of the material and reduces the efficiency of the process.

Briquettes always have a cylindrical shape with a diameter of 40 – 100 mm. Some briquetting machines are able to squeeze the contained cutting fluid out of aluminium chips reaching the humidity value less than 2 %. The briquettes are mechanically resistant. Their density ranges from 60 to 90 % of the density of the original material. Density of aluminium briquettes can be up to 2 350 kg/m^3, density of the cast iron briquettes up to 5 300 kg/m^3, density of the brass briquettes up to 6 500 kg/m^3.



Hydraulic Briquetting Presses for Metal Machining Chips

Presses **iSwarf** are economical machines with low power consumption. They process chips from machining steel, cast iron and non-ferrous metals particularly aluminium. The standard range of presses iSwarf is large and offers many variants of throughputs and equipments. The combination of hydraulic pump motor input ranging from 4 kW to 15 kW and the diameter of the pressing tools from 55 mm do 100 mm resolves the requirement for the briquettes quality and the throughput of the briquetting press. The advantage of the briquetting press iSwarf is the use of the patented hydraulic system construction which enables very easily to increase the pressing power in case of increased production. The hopper type can be selected with respect to the material and the way of connection to the technological line. Thanks to their modular construction the presses iSwarf can fulfil the most demanding requirements for operation automation and other technology equipment.

Presses **BrikStar M** process chips of cast iron, steel, non-ferrous metals, and grinding sludge. Pressing takes place in a cylindrical die closed from both sides by pressing tools. Working pressure in the die operates on both sides of the cylindrical briquette. The unique method of material pressing ensures uniform compression of material in the whole volume of the briquette. The briquettes are pushed out of the pressing chamber to the space above the vibrating trough and are transported into the containers by this trough. If there is required transportation of briquettes to greater height or distance, the press can be completed with a chain conveyor.

Presses **BrikStar MD** use a special hydraulic cylinder with an internal linear hydraulic motor which accelerates the movement of tools back to the starting positions. This solution provides up to 30 % performance increase with the same power of the briquetting press.

Briquetting preses are completing the system of chips transport from machining centres, or they can work independently with a high-capacity container or crusher in front. Press machine hoppers are usually filled by a screw conveyor from a high-volume container of material located near the pressing machine. It is possible to fill them by means of a tipper which tips containers with chips into the press hopper, or manual filling is available too. The mentioned technology is not demanding and it considerably reduces material costs of foundry operations and it reduces requirements for storage and manipulation.

aluminium

copper

brass - bronze

lead

titan

Technical Information	Briquette Diameter (mm)	Working Pressure in die (MPa)	Throughput * (kg/h)	Pump Motor (kW)	Dimensions (mm)
iSwarf 440 - 4	45 - 60	130 - 280	60 - 170	4	2250 x 2050 x 1590
iSwarf 440 - 5	45 - 60	130 - 280	80 - 220	5,5	2250 x 2050 x 1590
iSwarf 550 - 7	60 - 100	130 - 360	85 - 405	7,5	2300 x 2160 x 1630
iSwarf 550 - 11	60 - 100	130 - 360	110 - 500	11	2300 x 2160 x 1630
iSwarf 550 - 15	60 - 100	130 - 360	130 - 600	15	2300 x 2160 x 1630
iSwarf 550 - 2x15	60 - 100	130 - 360	260 - 900	30	2920 x 2340 x 1610
BrikStar M - 7	40	320	100	7,5	2050 x 1200 x 1740
BrikStar M / MD - 15	55 - 60	290 - 350	200 / 280	15	3320 x 2080 x 1940
BrikStar M / MD - 22	60 - 70	290 - 350	300 / 400	22	3620 x 2300 x 2460
BrikStar M / MD - 30	70 - 80	290 - 350	500 / 650	30	4620 x 2590 x 2800
BrikStar M - 40	80 - 90	290 - 350	600 / 800	40	4620 x 2590 x 2800

*) The mentioned throughputs are just rough. The throughputs differ with respect to the processed material and the briquette diameter.

Optional Hoppers and Containers

Hopper with four screws (4SN) is suitable for longer chips which are not loose, but which can be easily disentangled. The set of screws disintegrates long clumps and breaks long chips in such a way that they can be dosed into the pressing chamber. The hopper size is 0.7 m^3 or 1.2 m^3.

High-volume hopper with capacity 1 m^3 is equipped with an extracting cutter with a separate engine and feeding screw on the bottom of the hopper. It is suitable only for short loose chips of light metals.

Hopper on the feeding screw through with dimensions 200 x 400 mm or 600 x 1000 mm can be equipped with a disrupter shaft, which prevents the formation of material dome above the feeding screw. This type of hopper has a minimum storage capacity and it is designed for connection to an external transport system.

Chip container with vibrating bottom, capacity from 1 to 10 m^3 for storage material is a solid steel hopper with vibrating bottom, which delivers material in a required layer into the screw conveyor over the integrated separating screen for the separation of the piece waste.

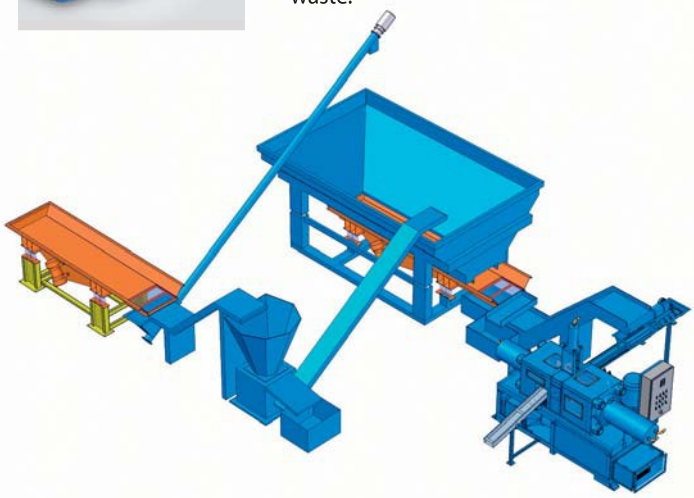
Optional accessories of briquetting presses

System for catching fluids with a delivery pump prevents leakage of fluids during pressing and mainly allows to collect squeezed cutting fluids and bring them back into production.

Level sensor signals in the hopper allows to control the press operation or to control the external conveyor.

Hydraulic oil for ambient temperature below +5 °C allows operation in unheated rooms or in outdoor environments down to -15 °C.

Connection of remote status reporting on the state of technology using GSM network or LAN is used for higher safety and comfort.



cast iron	zinc dust	grinding sludge	steel	other materials
				Your sample ?

Additional devices that can help to build up tailor-made technologies

Tipping equipment tips containers with chips into the hopper of the briquetting press.

Crusher of the chips adjust long chips and their clumps to dimensions suitable for briquetting.

Vibration, magnetic or drum separators separate material unsuitable for briquetting.

Screw or plate conveyors transport the material into the briquetting press from a high-capacity container or from the production line.

Fencing of the tipping equipment workspace protects the operator from injury.

Filtering of the entrained liquid from mechanical impurities allows its reuse.

Advantages of Briquetting

- Enables metal chips recycling, reduces melting loss.
- Minimizes generation of dangerous waste.
- Increases the purchasing price of the waste material.
- Saves space, manipulation and storage costs.
- Extrusion followed by filtration save costs for a new cutting fluid.
- Reduces the amount of cutting fluids as well as centrifugation.
- Increases operations safety by implementing ecological production.

BRIKLIS Competitive Advantages

- We make pressing tests of material on different types of briquetting machines in our test centre in Malšice free of charge.
- We will recommend the most suitable briquetting machine with respect to test results and production hall conditions:
  iSwarf - universal, the most adaptable with the variable working pressure 130-360 MPa
  BrikStar M, MD - for the highest quality briquettes, for steel and cast iron chips and sludge with the pressure up to 350 MPa
- We are able to dose and press different shapes of chips with a wide variety of hopper types that we offer.
- We can design and deliver atypical equipment and custom modifications.
- We supply complete technology with warranty on all equipment including the purchased equipment.
- We provide wide-ranging training.

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Industrial Solutions Group Sp. z o.o.
Lipnicka 25, Szczepanów
55- 300 Środa Śląska
Tel: +48 71 396 87 08
E: biuro@is-groupl.pl
www.is-group.pl