



**Briquetting presses
for metallic and
inorganic waste**



Watz Hydraulik
 Your competent partner
 for the processing of
 metallic and inorganic
 waste

From residues to Recycled material

Competence for the future

Metal swarf is a valuable asset for the metal-processing industry. Their recycling serves as the the closure of cycles and the sustainability in resource efficiency and environmental management.

The revenue from the sales of the swarf is a fixed component in the company's costing as the scrap is already taken into account during the production.

The correct handling of dripping swarf that is adhered with cooling lubricant begins at the place of origin and is therefore the responsibility of the producer. For economical and ecological reasons, the cooling lubricant is returned to the circuit. The recovery of expensive cooling lubricant is growing in significance in the scope of necessary environmental certificates.

Metal swarf must be expressly distinguished from metal grinding sludge. Grinding sludge is fine metal swarf mixed with grinding agent abrasion, cooling lubricant and, in some cases, other contamination. According to the EU Waste List, they are categorised as "Hazardous waste" and the producers are responsible for the correct disposal.

This can be carried out via a hazardous waste landfill or special waste incinerators. However, high energy costs are caused there. A better option is the recycling back to the metallurgic cycle of materials.

With Watz briquetting presses for metal swarf and grinding sludge and FAUDI filtration plants for treating the cooling lubricant we are making an important contribution to the disposal and treatment processes that are used to convert expensive production residues into exploitable secondary raw materials.

We would be pleased to consult and assist you.

We test the briquetting ability of your material.

Demonstrations and trials with your material are possible in our technical centre or at your location. We can provide you with a test / rental press and set it up at your location.

Our test laboratory is equipped with a state-of-the-art test rig for filtration tests.

The cooling lubricants or grinding sludge obtained can be examined for their composition. Moreover, there is a possibility to determine the residual moisture in the briquettes.





Watz Hydraulik
Your developer
of technically-optimised
and economical
solutions

The benefits at a glance

Solutions for Swarf and Grinding Sludge

Briquettes

Due to the significant volume reduction when briquetting, there are much lower costs for transportation and storage. The high-density briquettes can then be sold to the disposal company with a significant profit. Moreover, the briquetting naturally has a positive contribution for your operational environmental management.

The benefits at a glance:

- / Volume reduction up to 90%
- / Positive appearance in environmental audits
- / Optimum recovery of valuable cooling lubricants
- / Higher melting yield from equal melting properties of the briquettes

Grinding sludge

The particularly high-quality procedure for the recovery of grinding sludge in the metal and foundry industries is recycling. For recycling, first the grinding sludge must be converted to a usable shape and the oil content has to be reduced. This is precisely why briquetting has been developed.

- / No definition as "Hazardous waste"
- / Low bacteria build-up during storage
- / Easy handling when collecting and storing
- / Complex storage containers and storage rooms are omitted
- / Simple waste verification management



Volume reduction up to 90%

The briquette formats and quality

The diameter of the briquettes varies from 40 to 125 mm. The size of the briquettes depends on, amongst others, the required throughput. The length of the briquette is variably adjustable within a defined range using the automatic briquette length adjustment.

The quality processing and the use of high-quality materials in the press components such as, compacting bushing, pre-pressing bushing and pressing piston ensure for a high-quality briquette quality and equally high operating reliability.

Our briquetting systems are equipped with an automatic briquette length adjustment to ensure for simple operation and trouble-free operating. The automatic briquette length adjustment as well as an electronic briquette cycle counter ensure for the optimum utilisation and efficiency of the press.

Under optimal conditions, our grinding sludge reduce the residual moisture in the briquettes down to 3%.



Fitted with an automatic briquette length adjustment as standard



Watz Hydraulik
Get to know our
spectrum as specialists
for hydraulics

The WSPK Briquetting Presses

Compact. Intelligent. Reliable.

The new WSPK series combines high flexibility and system availability. It is characterised by the particularly compact design and robust method of construction in combination with an innovative control technology.

The WSPK presses can be setup as an individual press or integrated, fully-automated, into existing processes. You receive a high-performance briquetting system for each operational requirement as well as, where required, a complete disposal and treatment process for cooling lubricant and production residues.

More than 45 years in the hydraulics industry makes us a reliable partner for hydraulic briquetting presses.



Energy efficiency from variable speed pump drive

Variable speed pump drives are always worthwhile if the machine cycle operates with variable volumetric flows. In doing so, there is a simple rule of a thumb: the higher the share of the partial-load operation in the cycle, the more energy is saved. Our experience has shown potential savings between 30 and 70 percent depending on the cycle characteristics.

Optimised throughput and automatic briquette length adjustment

The briquette length is set via the path measuring system of the main pressing cylinder, amongst others: if the briquette is shorter than specified, more material is added via the metering screw during the next pressing procedure. In this way, the filling quantity is regulated in the primary compressor that corrects the briquette length and therefore, optimises the throughput of the press.

The variable speed drive with frequency converter has a highly-dynamic control behaviour and the cycle times of the press are shorter. That increase the throughput of the press.

Low noise emission

By using an internal gear pump, the noise emission is reduced by up to 20 db(A). Effort and costs for noise insulating measures are therefore reduced significantly and work guidelines can frequently be fulfilled without having to apply additional measures.

No cooling by reducing the power dissipation

The hydraulic power dissipation and the heat input in the hydraulic system are much lower than with a conventional system with axial piston pump and proportional valves. Due to the low heat input, the cooling for the hydraulic unit is less and under certain circumstances, can be omitted completely. As a result, the running Total Cost of Ownership is significantly reduced.

Reliability of the hydraulic system

Compared with a conventional control unit with proportional technology, the hydraulic control unit with switching valves is far less complicated and less prone to failure. Reliability and availability are increased significantly as a result.

Reduced costs for replacement and wear parts

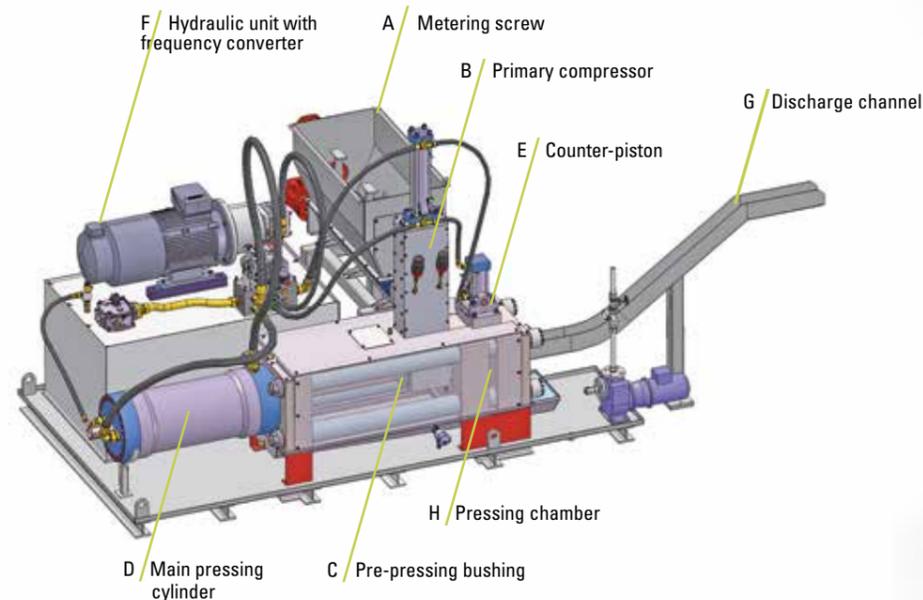
No expensive proportional valves and regulating pumps are used for the variable speed drive. Moreover, with up to 3,600 rpm, the frequency converter drive has a very high rotating speed. As a result, a much smaller pump is required with equal flow rate. The costs for replacement and wear parts of the hydraulic system are thus reduced significantly.

High-quality pressing tools

Our briquetting systems are equipped for particularly abrasive substances and grinding sludge with carbide inserts. This ensures for a long service life of the machine and reduces costs for replacement and wear parts.

Intelligent electric control unit

The WSPK series is standard-equipped with a user-friendly menu function. Operating parameters such as e.g., language selection, briquette lengths and start time delay are thus easy to set. An integrated remote maintenance (Industrie 4.0) is possible on request. The press will be delivered by us ready for connection.



Watz Hydraulik
Get to know
our spectrum as specialists
for special solutions

Process Schema

- / The waste substances are filled in the metering screw A via a conveyor unit. This conveys the material to the primary compressor B.
- / Primary compressor B presses the material into the pre-pressing bushing C and stops there.
- / Main pressing cylinder D extends and, under high pressure, compresses the material to a solid briquette in the compacting bushing.
- / Main pressing cylinder D releases and stops.
- / Counter-piston E moves down and opens the discharge channel G. Primary compressor B is started up again at the same time.
- / Main pressing cylinder D knocks the briquette out and pushes it into discharge channel G.
- / Main pressing cylinder D retracts.
- / Metering screw A fills primary compressor B again.
- / The position of the pressing piston is detected via the path measuring system, the position of the primary compressor and the counter-piston using the limit switch. Release for retracting and extending the cylinder is given according to the cylinder position.
- / The briquette length is also set using the path measuring system. If the briquette is, e.g. shorter than specified, more swarf is added via the metering screw during the next pressing procedure. In this way, the filling quantity is continuously regulated in the primary compressor, and adapted to the briquette length.

An overview of our WSPK series

	BG 1		BG 2		BG 3
	WSPK 1-60	WSPK 1-70	WSPK 2-95	WSPK 2-110	WSPK 3-125
Max. throughput [kg/h]					
Aluminium	65 - 110	90 - 150	235 - 390	315 - 525	490 - 810
Steel & cast iron	150 - 250	205 - 340	540 - 900	725 - 1210	1125 - 1870
Grinding sludge	45 - 60	60 - 80	150 - 220	200 - 290	320 - 450
Motor rating [kW]	5.5 - 11		11 - 30		37 - 75
Briquette format	Ø 60	Ø 70	Ø 95	Ø 110	Ø 125
Briquette length [mm]*	70		100		120
Pressure force [kN]	750		2080		3340
Pressure compacting bushing [bar]	1770 - 2650	1300 - 1950	1960 - 2930	1460 - 2190	1800 - 2717
System pressure [bar]	300		300		300
Dimensions [mm]	L 2300 B 1600 H 1800		L 3000 B 1800 H 2200		L 3400 B 2500 H 2400
Weight [t]	approx. 1.5	approx. 1.6	approx. 3.6	approx. 4.5	approx. 5.8

* Variable adjustable briquette length

For smaller companies with small quantities of swarf or grinding sludge, we offer a basic version of the briquetting presses.

You can obtain more information about this on request, or under: www.watzhydraulik.de/brikettieren



Watz and Faudi:
Get to know us
as specialists for
cooling lubricant
processing

The WSPK Briquetting Presses

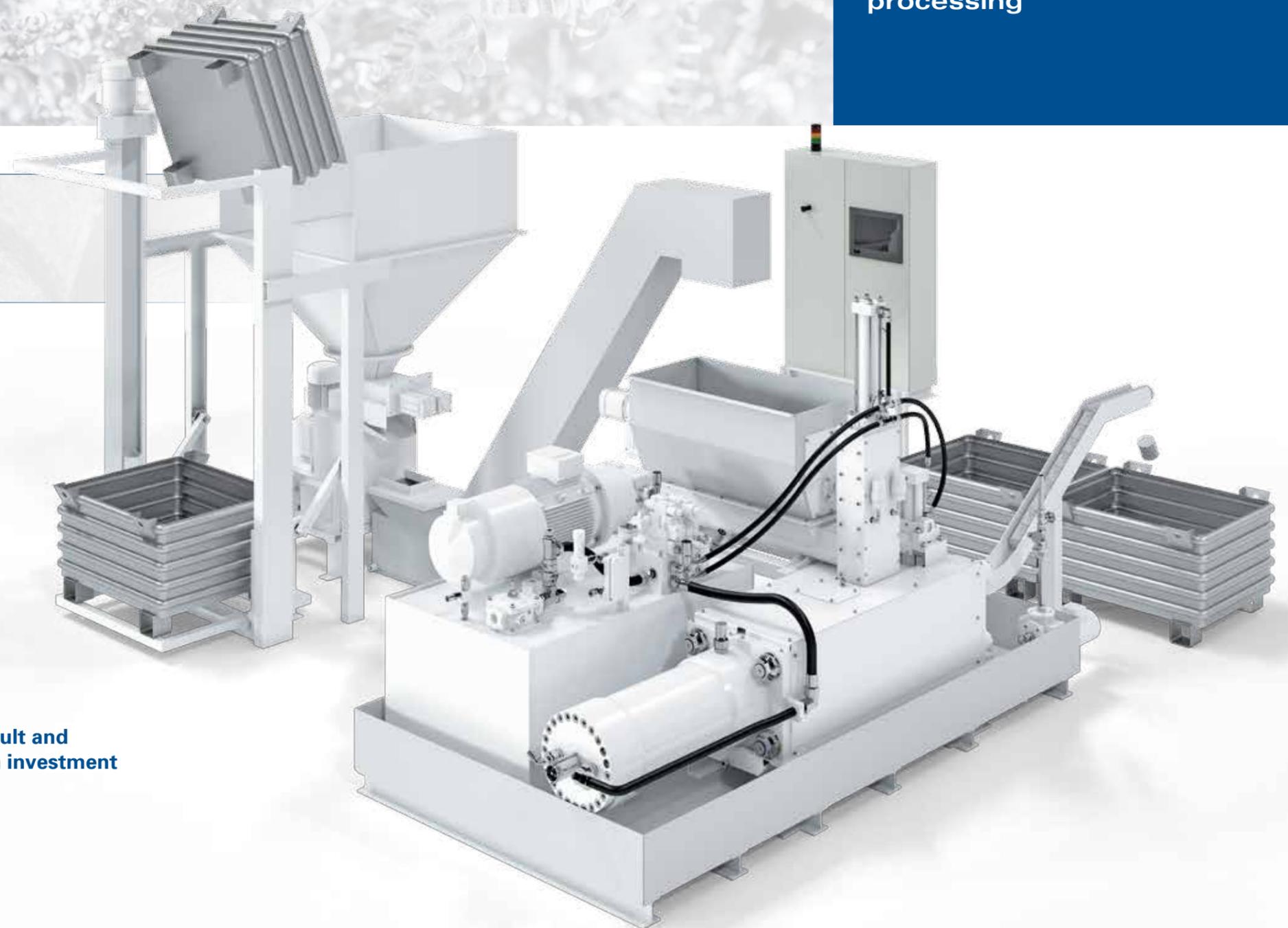
**Are you efficient?
A method that pays-off.**

At Watz, we want to make your path to success easier. With our low-maintenance and low-wear briquetting presses designed for 24 hour operation, you will be able to sustainably reduce your operating and repair costs.

The reduction of waste quantities and costs as well as the drastic reduction of the fresh oil requirement and the conversion of residues into recycled materials speak for the economical features of a briquetting press.

Studies have shown that briquetting is a high-performance alternative to conventional processing methods such as, centrifugation or drying.

We would be pleased to consult and assist you when preparing an investment comparative calculation.



Watz Service - More performance through optimum service

The Watz Hydraulik Service offers you a customised range of services over the entire service life of your machine.

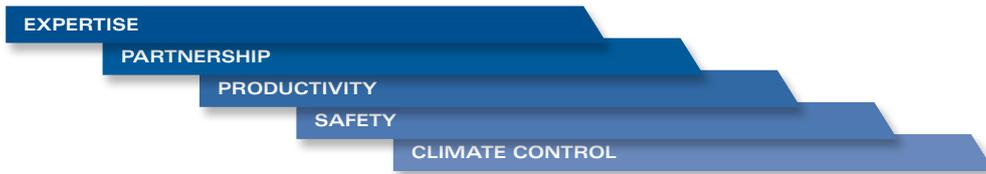
Our service employees ensure competent support and cooperative partnership around the clock and around the world.

In doing so, our focus is on the efficiency and safety of your production plant.

If however, an operational failure should occur caused by abrasion or wear, we will ensure the quickest possible re-commissioning of your briquetting press. Watz service on demand that you can rely on.

Find out more under:

www.watzhydraulik.de/brikettieren.html



A product in co-operation with
Faudi GmbH | Stadtallendorf
www.faudi.de

A company of the

WATZGroup



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