



Great Products, Great People.



HSM PET Waste Disposal Solutions

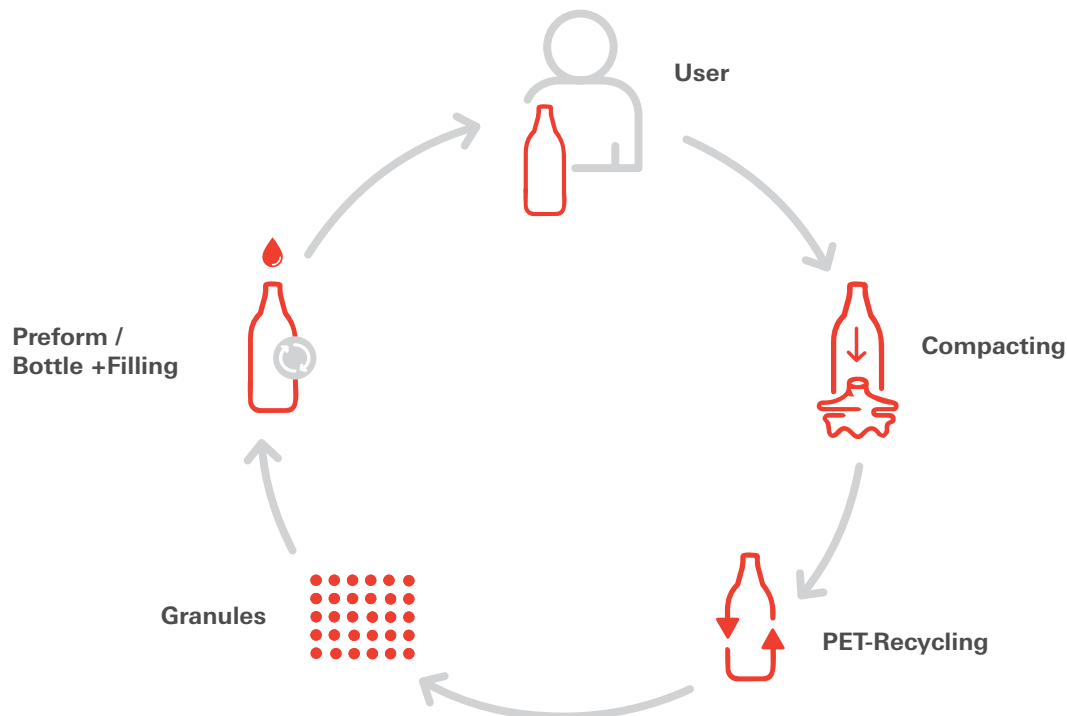
Draining – Perforating – Compacting – Compressing

Our consumer habits require new solutions

500 billion PET bottles are produced annually worldwide. For the production of 1 kg PET bottles, 1.9 kg of oil is required. This piece of information alone shows that it is vital to recycle used PET bottles. More than 90 % of all PET bottles are non-returnable bottles. Since PET can be recycled 100 %, it is an important link in the material cycle, particularly in the production of fibres for textile production, foils, packing straps and even furniture. HSM has been dealing with this challenge for many years

now and, using its extensive know-how in the environmental sector, has been developing tailor-made solutions for effective PET recycling.

A world without bottles made of polyethylene-terephthalate, PET for short, is no longer imaginable. New solutions for the disposal of this material are therefore necessary, since both social and political opinion expects the bottles to be fully recycled.



HSM quality "Made in Germany"

HSM has always committed itself to the principle of "Quality". HSM relies on Germany as a production location and quality products "Made in Germany". All three German HSM plants are certified under DIN EN ISO 9001. Since we manufacture our products ourselves, we can guarantee first-class quality. The large vertical

range of manufacture is characteristic of HSM and brings decisive advantages. Production can thus be controlled reliably, flexibly and independently. But it also allows us to control the origin, quality and ingredients of the raw materials and other materials used.



HSM has solutions to cover all aspects of PET recycling. Our experience over many years as pioneers in PET compression, combined with the HSM "Made in Germany" quality, means that we are your ideal partner for profitable PET recycling.

Our extensive product portfolio includes:

- Machines for draining PET containers
- PET perforators
- PET crusher
- PET crusher-press combination
- HSM baling presses developed especially for the compression of PET-bottles





HSM PET FluidEx 600

The HSM PET FluidEx 600 empties quickly and reliably those full PET bottles, carton based packaging containers and cans which have been filled or labelled incorrectly or where the sell-by date has been exceeded.

The containers thrown in via the loading funnel are pulled in by the 2-roller mechanism and almost completely emptied. Small pieces of plastic and labels are removed from the liquid using a filter system and the liquid is then discharged using a dedicated system. The hinged loading funnel means that the machine can be easily cleaned.

A high performance, low space requirement and the possibility of integration the machine into existing recycling processes are the decisive advantages of the HSM PET FluidEx 600.

- Perforation of full PET bottles, carton based packaging containers and cans
- Containers emptied by up to 98 %
- Optimum removal of any remaining liquids using the 2 shaft technology
- Low space requirement
- Both manual and automatic filling possible
- Cutting unit made of specially hardened steel, other machine frame parts made of stainless steel
- Durable and robust – for a long life-cycle
- Intake shafts ensure that the PET bottles are fed reliably into the cutting unit
- Specific discharge system for liquids via hose or pump
- Easy to clean due to inspection door and hinged outlet chute
- Ideal in combination with HSM baling presses

Model	HSM PET FluidEx 600
Throughput per hour PET bottles (1 litre)	10000
Working width in mm	600
Loading height in mm	approx. 1270
Motor in kW	3.0 perforator / 4.0 screw
Voltage / Frequency	3 x 400 V / 50 Hz
Machine dimensions (W x L x H) in mm	1215 x 3304 x 1775
Machine weight in kg	approx. 1230



HSM PET Perforator PF 600-4 / PF 1200-4

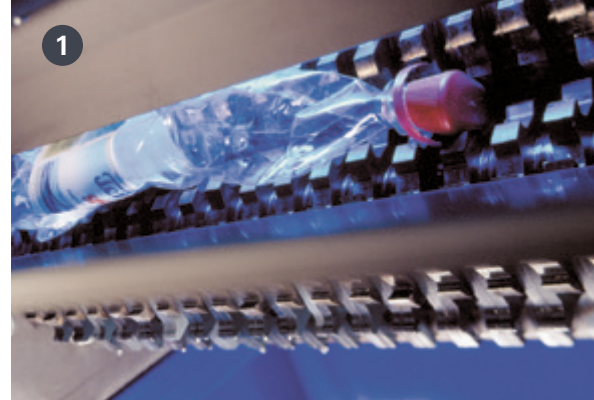
HSM perforators effectively perforate PET-bottles before compaction thus creating an optimum compact bale. The HSM PET PF 600-4 and PF 1200-4 perforators have very high throughput capacities with excellent price/performance ratios and complete the HSM range of disposal systems.

- Perforation of empty and/or full plastic bottles (max. approx. 2.5 litre) is possible, with or without caps
- Perforation of the plastic bottles achieves optimum compression for reduced transport and storage costs
- Sturdy cutting unit – will handle the occasional glass bottle
- Ideal as an option for the HSM VK- / AK channel baling presses or alternatively as an independent system
- Perforator may be mounted in a loading chute, moved manually or automatically / hydraulically to allow compression of alternative materials which do not need perforation
- Applicable for all systems using underframe and hopper with conveyor-belt, also possible for retrofitting to existing systems

1 The HSM perforator is ideal for multipurpose applications

2 Sturdy cutting unit

Model	HSM PET Perforator PF 600-4	HSM PET Perforator PF 1200-4
Throughput per hour PET bottles (1 litre)	37500	75000
Working width in mm	600	1200
Throughput capacity in m ³ /h	50-60	100-120
Motor in kW	2 x 3.0	2 x 4.0
Voltage / Frequency	3 x 400 V / 50 Hz	3 x 400 V / 50 Hz
Machine dimensions (W x L x H) in mm	990 x 1200 x 500	1560 x 1200 x 500
Machine weight in kg	approx. 670	approx. 950



HSM PET Crusher 1049 SA

This HSM solution reduces the space requirement for returned containers to approx. 25 to 30 percent of the original volume, thus also reducing the time required for disposal.

The special roller system perforates and crushes the containers. The sidewalls mesh into each other, making the reduction in volume permanent. Crushing has an additional advantage: deposit plastic bottles and cans are reliably invalidated.

- An efficient system for the volume reduction of PET bottles and cans down to 1/3 or 1/4 of the original size
- Crusher rollers made of specially hardened and ground steel, completely resistant to wear and very strong, for a long service life
- A scraper system removes the compressed plastic bottles and cans from the crusher rollers to prevent blockages and downtime while clearing
- A dosing shaft with integrated blades ensures that the plastic bottles and cans are fed in reliably
- Manual control of the machine via easy-to-use keypad with forward, reverse and stop functions
- LED display provides information on the current status of the machine (ready, overload, door open, container full)
- Automatic switch off after two minutes to save energy
- The cutting head can also be used in combination with a deposit return machine.
- Available for continuous operation

Model	HSM PET Crusher 1049 SA
Throughput of 1 litre PET bottles / per cycle	50-70
Throughput per hour PET bottles (1 litre)	up to 2400
Volume reduction at a ratio of	1:3 to 1:4
Working width in mm	490
Loading height in mm	1206
Bottle diameter in mm	50-120
Motor in kW	1.5 / 3.0
Voltage / Frequency	230 V / 3 x 400 V / 50 Hz
Machine dimensions (W x L x H) in mm	793 x 1751 x 2037
Machine weight in kg	230 / 288



HSM PET CP 4988

This efficient PET recycling system reduces the volume of empty PET bottles by up to 90 % in one cycle and produces compact raw material bales.

A dosing shaft ensures that the bottles are drawn in securely and achieves a throughput capacity of up to 4000 (1 litre) bottles every hour. The drainage system discharges all residual fluid before pressing. With a pressing power of 11 tonnes, the downstream baling press compresses the crushed bottles into raw material bales with a weight of up to 100 kg.

- Efficient PET recycling system to reduce the volume of empty PET bottles by up to 90 % and produce compact raw material bales
- Low space requirement
- Manual and automatic filling possible
- Crusher rollers made of specially hardened and ground steel, impervious and sturdy – for a long service life
- Scraper system removes the compressed plastic bottles reliably from the crusher rollers
- Dosing shaft with several paddles ensures that the PET bottles are reliably fed to the rollers
- Automatic photoelectric control of the pressing process
- Manual, 3-fold strapping with continuous polyester strap
- Display to indicate “bale ready”

Model	HSM PET CP 4988
Throughput per hour PET bottles (1 litre)	up to 4000
Working width in mm	490
Loading height in mm	1511
Pressing power in kN	100
Bale weight in kg (for 1200 mm in length)	up to 100
Bale size (W x H x L) in mm	500 x 500 x max. 1200
Voltage / Frequency	3 x 400 V / 50 Hz
Motor in kW	2.2 Crusher / 4.0 Press
Machine dimensions (W x L x H) in mm	990 x 3826 x 1800
Machine weight in kg	1150



HSM V-Press 610 P

The vertical baling press is specially designed for the compression of opened or perforated PET/UBC bottles and beverage cans.

- Simple loading thanks to the filling flap at a convenient working height
- Intuitive, multi-lingual operating instructions via a graphic display with membrane keypad
- Special retaining claws optimize the compression of the material being pressed and reduce the number of loading actions
- HSM TCS (Torsion Control System) for monitoring press ram movement
- Handwheel for easy door opening when pressing expansive material
- Strapping with polyester tape



HSM V-Press 860 P

The vertical baling press HSM V-Press 860 P is specially designed for the compression of opened or perforated PET/UBC bottles.

- Secured filling flap and bale removal door
- Loading flap with hydraulic door lock
- Compact and robust design, small footprint, large filling opening
- Rapid stroke technology saves time and money
- Double quantity of retaining claws optimises the compression of the material being pressed and reduces the number of loading actions
- HSM TCS (Torsion Control System) for monitoring press ram movement
- Intuitive, multi-lingual operating instructions via a graphic display with membrane keypad
- Robust mechanical bale ejector chain

Model	HSM V-Press 610 P	HSM V-Press 860 P
Pressing power in kN	120	434
Motor in kW	3.0	4.0
Voltage / Frequency	3 x 400 V / 50 Hz	3 x 400 V / 50 Hz
Loading aperture (W x H) in mm	800 x 488	1195 x 650
Bale weight in kg (depending on material)	up to 100	up to 230
Max. bale size (W x H x L) in mm	800 x max. 800 x 600	1200 x max. 1200 x 780
Cycle time in idle operation (theor.) in sec.	22	25
Press chamber size (W x D x H) in mm	800 x 600 x 1045	1195 x 780 x 1640
Machine dimensions (W x L x H) in mm	1192 x 823 x 1986	1870 x 1294 x 2985
Machine weight in kg	540	2290
Strapping	3-fold with strapping tape	4-fold with wire



HSM V-Press 860 E

The vertical baling press HSM V-Press 860 E is specially designed for the compression of crushed PET/UBC bottles in bags.

- Special retaining claws optimise the compression by stopping the expansion into the press chamber
- Reinforced press chamber and door lock
- Stainless steel tray for manual draining
- Loading flap with hydraulic door lock

1 Simple loading thanks to the filling flap

2 The drainage system controls the discharge of residual fluid

Model	HSM V-Press 860 E
Pressing power in kN	548
Motor in kW	4.0
Voltage / Frequency	3 x 400 V / 50 Hz
Loading aperture (W x H) in mm	1195 x 640
Bale weight in kg (depending on material)	up to 320
Max. bale size (W x H x L) in mm	1200 x max. 1200 x 780
Cycle time in idle operation (theor.) in sec.	25
Press chamber size (W x D x H) in mm	1195 x 780 x 1640
Machine dimensions (W x L x H) in mm	1785 x 1544 x 2990
Machine weight in kg	2100
Strapping	4-fold with wire

HSM Fully Automatic Channel Baling Presses

individual system solutions, customised disposal systems

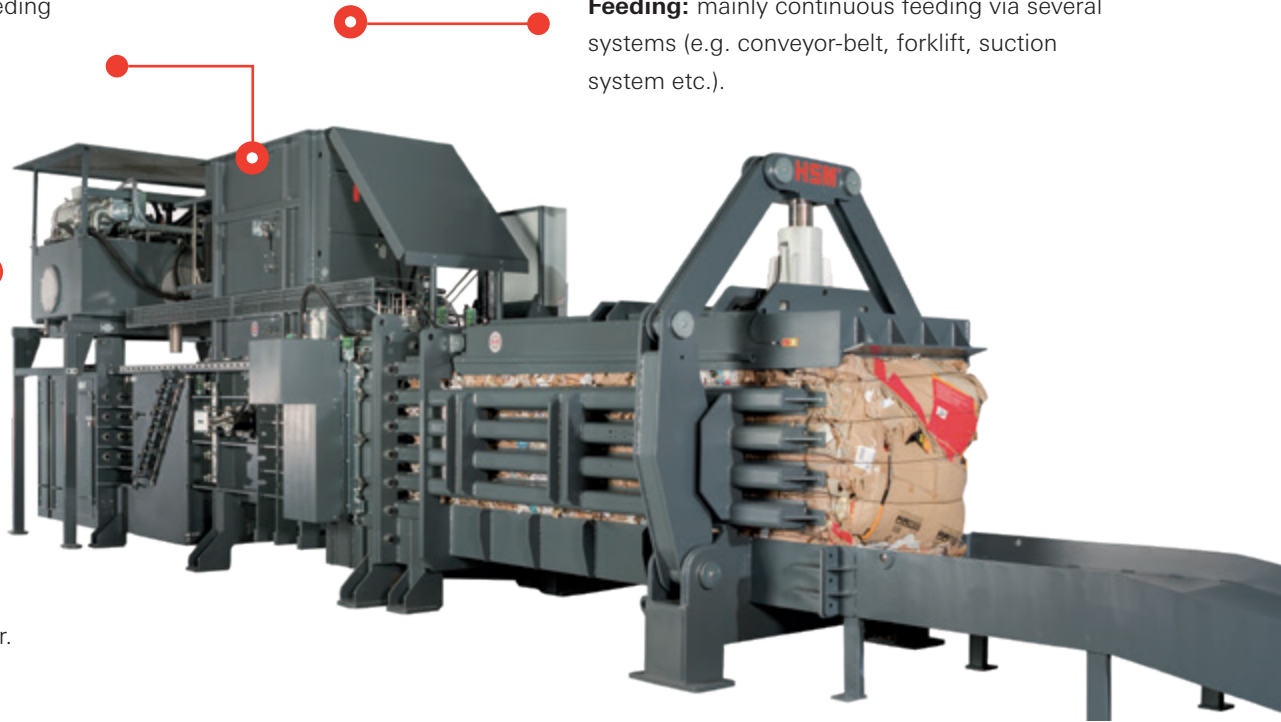


Option: with frequency-controlled drive – saves 40 % of the energy used by standard drives.

All kinds of feeding possible.

Feeding: mainly continuous feeding via several systems (e.g. conveyor-belt, forklift, suction system etc.).

Up to 1500 kN pressing power.



Application areas: logistics, central storages, paper industry, printing plants, distribution centres, industry, disposal companies.



Suitable for the following material: cardboard, paper, films (PPK), DSD, PET/ UBC, composite materials and more.



HSM does not just offer hardware alone, but provides individual system solutions as well. When it comes to demanding systems, you can benefit from our extensive know-how and broad experience. Experienced HSM specialists assist you right from the start on site and provide ongoing support and service. With the wide range of options and accessories, our disposal solution can be fully integrated into your existing operation and processes. The customised design makes the entire system efficient.

Get in touch with us and HSM will find the right solution for your individual requirements.





HSM VK 1206

The bestseller in the small to medium HSM range – tried and tested for years, reliable and with multiple uses. Particularly suitable for compressing cardboard, film and PET bottles / UBC.

- Volume throughput of up to 1.8 t/h
- Suitable for continuous loading
- Operating side can be selected
- Control of compression cycle via light barrier
- Compact bale dimensions
- Low space requirement
- Suitable for applications with a throughput of up to approx. 92 m³/hour
- Optimal for connecting to air feeding systems (fast cycle times) – 600 mm loading aperture
- Particularly suitable for cardboard, film and PET bottles / UBC

Model	HSM VK 1206
Pressing power in kN	160
Main driving power in kW	9.2
Specific pressing power in N/cm ³	42.7
Cycle time in idle operation (theor.) in sec.	8.2
Volume throughput in idle operation (theor.) in m ³ /h	99
Max. bale size (W x H x L) in mm	750 x 500 x var.
Loading aperture (W x H) in mm	670 x 600
Bale weight in kg (depending on material with 1200 mm bale length)	up to 100
Machine dimensions (W x L x H) in mm	3450 x 2450 x 1940
Machine weight in t	3.4
Strapping (fully automatic)	3-fold with wire



HSM VK 2306

The HSM VK 2306 is comparable with the HSM VK 1206, but features a higher pressing power. It produces highly compressed PET bales which are marketable immediately – no additional compression required.

- Volume throughput of up to 5.6 t/h
- Suitable for continuous loading
- Operating side can be selected
- Control of compression cycle via light barrier
- Compact bale dimensions
- Low space requirement
- Suitable for applications with a throughput of up to approx. 113 m³/hour
- High bale density, higher bale weights compared to HSM VK 1206
- Particularly suitable for cardboard, film and PET bottles/UBC
- Available as an option with manual strapping

Model	HSM VK 2306
Pressing power in kN	240
Main driving power in kW	9,2 / 15
Specific pressing power in N/cm ³	64.0
Cycle time in idle operation (theor.) in sec.	12.3 / 6.7
Volume throughput in idle operation (theor.) in m ³ /h	66 / 121
Max. bale size (W x H x L) in mm	750 x 500 x var.
Loading aperture (W x H) in mm	670 x 600
Bale weight in kg (depending on material with 1200 mm bale length)	up to 130
Machine dimensions (W x L x H) in mm	5130 x 2700 x 1940
Machine weight in t	3.5 / 3.9
Strapping (fully automatic)	3-fold with wire



HSM VK 4812 P

HSM channel baling press for professional disposal management or larger industrial applications – with high throughput rates especially for compressing PET bottles.

- Suitable for applications with a throughput of up to approx. 204 m³/ hour
- Particularly suitable for compression of cardboard, film, DSD goods and much more on request
- Suitable for continuous loading
- 4-fold strengthened strapping for the optimum bale result
- Optimised bale dimensions and bale weights for efficient truck loading
- Large loading aperture, quick mode of operation
- Control of compression cycle via light barrier
- High compression level
- Press chamber with highly wear-resistant steel “XAR” for low wear and tear
- Strengthened retention system prevents re-expansion
- Rear loading possible

Model	HSM VK 4812 P
Pressing power in kN	480
Main driving power in kW	15 / 22
Specific pressing power in N/cm ³	58.2
Cycle time in idle operation (theor.) in sec.	24.5 / 18.2
Volume throughput in idle operation (theor.) in m ³ /h	151/204
Max. bale size (W x H x L) in mm	1100 x 750 x var.
Loading aperture (W x H) in mm	1020 x 1250
Bale weight in kg (depending on material with 1200 mm bale length)	up to 375
Machine dimensions (W x L x H) in mm	6820 x 2570 x 2791
Machine weight in t	approx. 10.0
Strapping (fully automatic)	4-fold with wire



HSM VK 5012

For professional disposal management or larger industrial applications – with high throughput rates of up to approx. 442 m³/h.

- Suitable for cardboard, plastic film and compressing DSD goods, as well as PET bottles (other materials on request)
- Optimised bale dimensions and bale weights for efficient truck loading
- Large loading aperture suitable for bulky material
- Programmable Siemens logic controller with touch panel
- Optimally adjusted software for different materials guarantees high bale quality even when material is frequently changed
- Solid steel construction with highly wear-resistant steel parts inside the press chamber and press channel
- Easy access to all servicing parts due to large inspection doors

Model	HSM VK 5012
Pressing power in kN	500
Main driving power in kW	15 / 22 / 30 / 45
Specific pressing power in N/cm³	60.6
Cycle time in idle operation (theor.) in sec.	22.8 / 16.6 / 12.0 / 8.4
Volume throughput in idle operation (theor.) in m³/h	163 / 223 / 308 / 442
Max. bale size (W x H x L) in mm	1100 x 750 x 600-1200
Loading aperture (W x H) in mm	1020 x 1250
Bale weight in kg (depending on material with 1200 m bale length)	up to 450
Machine dimensions (W x L x H) in mm	8861 x 3994 x 2950
Machine weight in t	14.0
Strapping (fully automatic)	4-fold with wire



HSM VK 6015

For industrial applications with special requirements in pressing PET.

- Suitable for applications with a throughput of up to approx. 291 m³/hour
- Very high specific pressure – for high compaction
- High shearing force
- 4-fold strapping for optimised bale result
- Also suitable for materials with bulk weights higher than 60 kg/m³
- Large loading aperture, quick mode of operation
- Control of compression cycle via light barriers
- Approved system solution and technology
- Optimised bale dimensions and bale weights for efficient truck loading
- High compression and bale weights
- Available as an option with frequency-controlled drive – saves 40 % of the energy used by standard drives
- For continuous operation with all standard conveyor and feeding facilities
- Particularly suitable for cardboard, paper and film and also for compressing DSD goods

Model	HSM VK 6015
Pressing power in kN	720
Main driving power in kW	30 / 45 / 55 (mit FU 45) / 75 (mit FU 55) / 90 (mit FU 75)
Specific pressing power in N/cm ³	128.0
Cycle time in idle operation (theor.) in sec.	23.7 / 16.5 / 13.2 / 10.4 / 8.9
Volume throughput in idle operation (theor.) in m ³ /h	128 / 184 / 231 / 291 / 340
Max. bale size (W x H x L) in mm	750 x 750 x var.
Loading aperture (W x H) in mm	620 x 1500
Bale weight in kg (depending on material with 1200 m bale length)	up to 270
Machine dimensions (W x L x H) in mm	10500 x 3789 x 3260
Machine weight in t	24.0
Strapping (fully automatic)	4-fold with wire



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● **Sales and service points**

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