

SWARF CRUSHER RS



CRUSHING OF LONG SWARF OF ALL COMMON TYPES OF METAL SUCH AS STEEL, STAINLESS STEEL, ALUMINUM OR NON-FERROUS METALS.

- Reduction of the swarf volume up to 75%
- High crushing performance
- Can be integrated into any swarf processing system
- Low noise level crushing
- Long service life due to wear resistant crushing chamber construction
- Low repair costs due to the quick exchange of the crushing tools
- No special foundations are required



FUNCTION

Long swarf is transported to the crusher hopper by a conveyor or any other loading arrangement. The crusher is automatically switched on to start, by means of the filling level control in the crusher hopper.

However, this is not the case with the Type RS 300 K crusher, which was developed for direct loading by a continuously working drag-out conveyor fitted to a swarf producing machine.



The swarf crusher RS 300 K on the photo (green) is directly filled by the drag-out conveyor of an NC-processing machine.

Swarf bundles entering the crusher hopper, are caught by a rotating tearing arm and aided by the crushing chamber profile and tearing hooks, are fed into the crushing tools where they are crushed. The now short crushed swarf is driven out of the crushing chamber by steel wiper blades attached to the crusher's rotating mainshaft, which positively discharges the swarf into a chute.

Small solid material inclusions in the swarf can pass through the crusher without jamming it, but if larger solid material such as bar-ends or small parts etc., do jam the crusher rotation, then a control arrangement is activated. In this event the forward rotation stops and rotation is reversed to free the solid material. But if it is too large to pass through the crushing head tooling, then the forward rotation automatically re-starts repeating the forward and reversing cycle several times, before stopping, so that the solid material can be manually removed via an inspection hatch.

The typical inclined design of the STEIMEL swarf crusher avoids the problem of swarf or coolant spillage.

Alternatively for the automatic discharge of solid material unable to pass through the crushing head the crusher can be fitted with an optional automatic solid material release unit (Type suffix E, see page 6).

Material discharged by this means can be separated from the crushed swarf by means of an optional sieving or swivelling diverter chute.

CONSTRUCTION

Crushing chamber

The crusher housing consists of a solid steel welded fabrication and the whole crushing chamber has a manganese steel alloy, wear resistant lining.

The crushing tools are manufactured in case-hardened steel and are easily replaceable.

Feeding hopper

The feeding hopper in the lower part, as well as the hopper and tearing hooks which are also fixed there, are made of manganese steel. The hopper geometry prevents any bridging and helps for a better filling of the swarf into crushing chamber.

Drive

Type RS 300 K:

The drive is directly connected to the crusher mainshaft via a bevel gear-drive motor with rotation monitored by a current relay device.

Types RS 300, RS 500 and RS 600:

The drive is directly connected to the crusher mainshaft via a bevel gear-drive motor having a torque limiting friction clutch and electronic monitor.

Types RS 600 H and RS 800 H:

Static displacement drive, radial piston motor connected to the crusher mainshaft, hydraulic power unit with adjusting piston pump by a three-phase motor, the drive having an oil cooler and oil filter in the return-line. Jamming control is by pressure monitor.

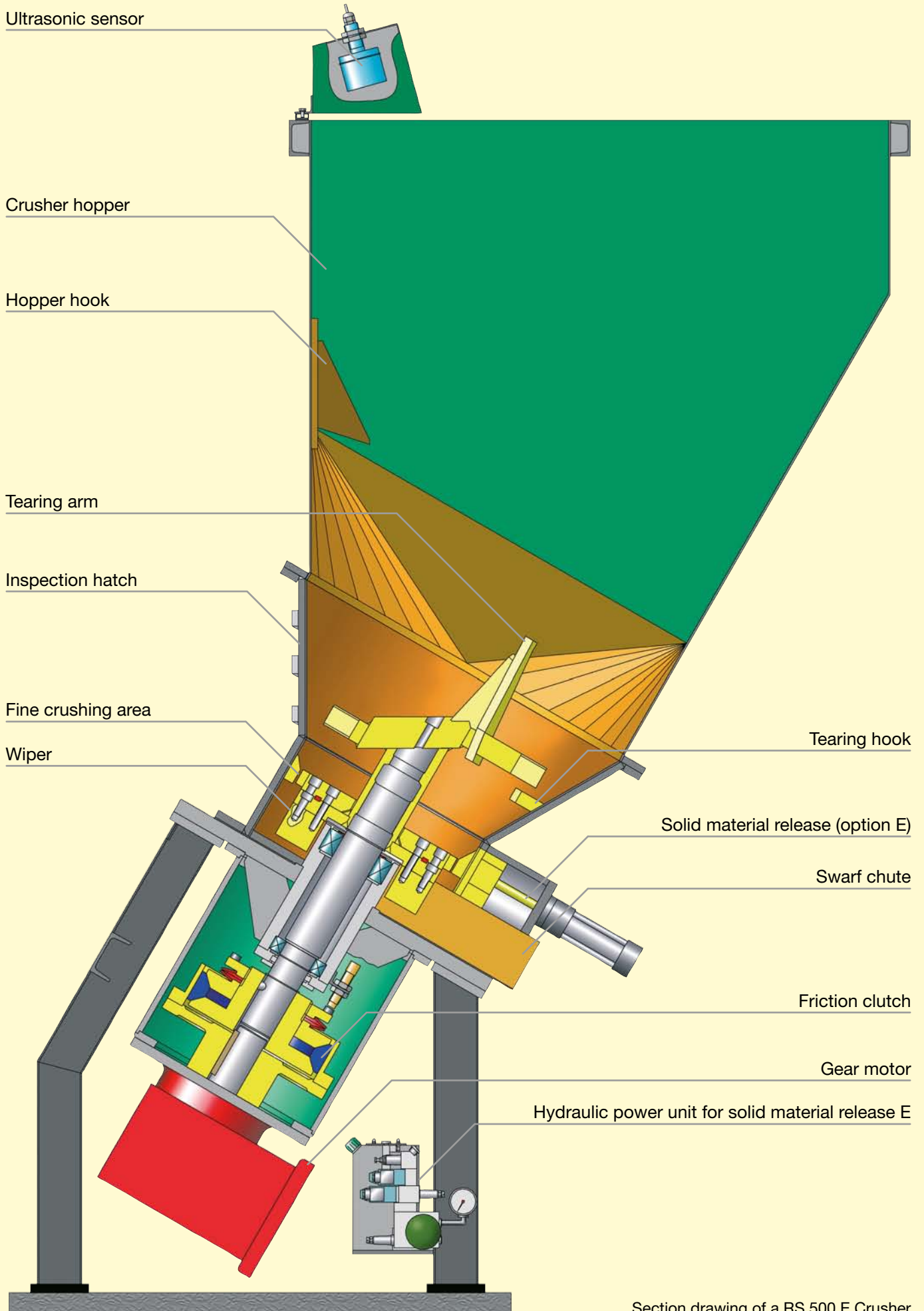
Ultrasonic sensor

The sensor is mounted in the crusher hopper and acts as a filling level control to switch the crusher on and off.



Swarf crusher RS 300 E in a swarf processing plant consisting of a lifting and tipping unit, swarf crusher RS 300 E, scraper conveyor, a Type Permolux-Polar K 51 centrifuge and a second scraper conveyor having a swivelling discharge chute to discharge the crushed swarf into the customer's containers.

CONSTRUCTION



Section drawing of a RS 500 E Crusher

DIMENSIONS AND TECHNICAL DATA

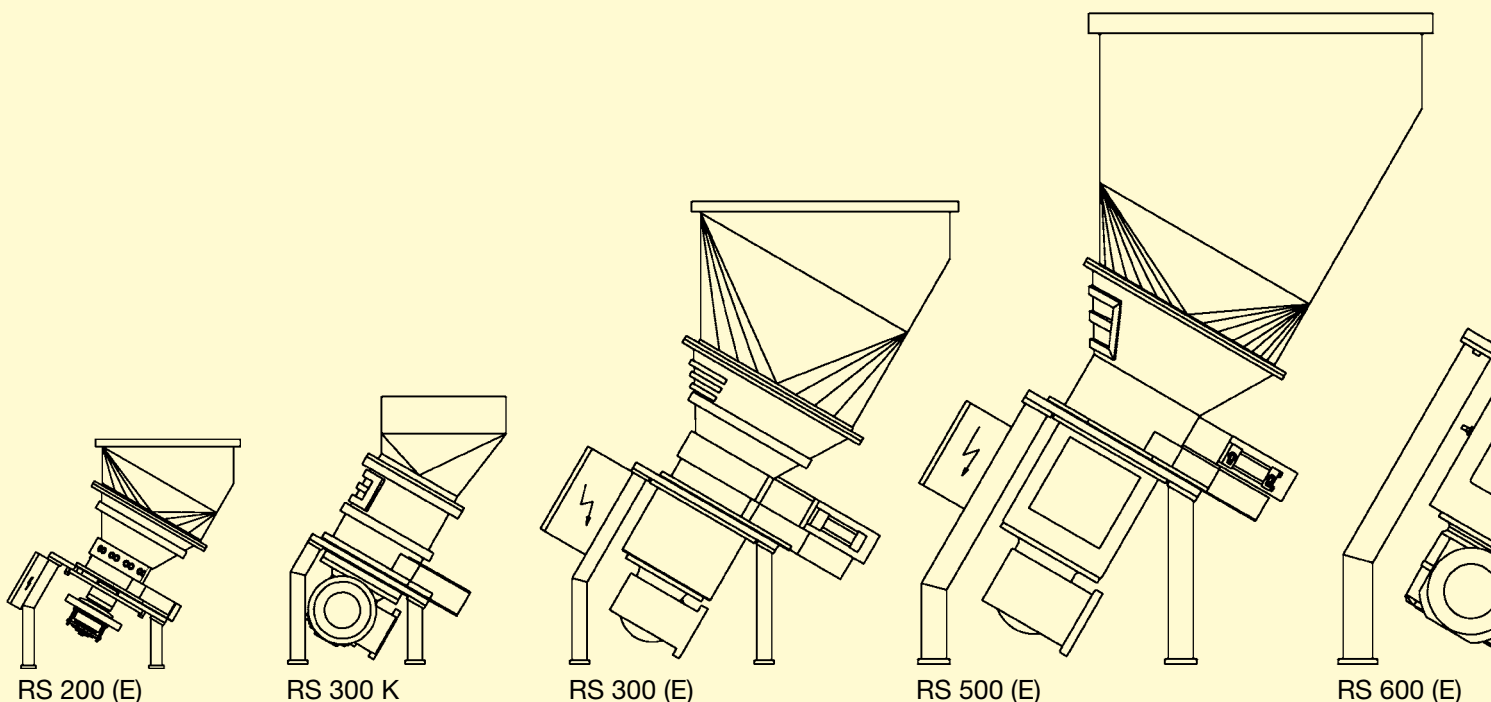
Dimension	RS 200 (E)	RS 300 K	RS 300 (E)	RS 500 (E)	RS 600 (E)	RS 600 H(E)	RS 800 H(E)
a		1,072 mm	1,850 mm	2,605 mm	3,200 mm	3,200 mm	3,250 mm
b		243 mm	340 mm	570 mm	630 mm	630 mm	540 mm
c		50 mm	275 mm	250 mm	400 mm	400 mm	330 mm
d		550 mm	820 mm	1,120 mm	1,368 mm	1,368 mm	1,165 mm
e		986 mm	1,044 mm	1,236 mm	1,462 mm	900 mm	980 mm
f	Dimensions	685 mm	760 mm	900 mm	900 mm	900 mm	980 mm
g	on	986 mm	1,335 mm	1,462 mm	1,557 mm	1,557 mm	1,300 mm
h	page 7	874 mm	1,524 mm	2,066 mm	2,478 mm	2,478 mm	2,478 mm
i		500 mm	1,000 mm	1,000 mm	1,000 mm	1,000 mm	1,200 mm
j		500 mm	1,000 mm	1,290 mm	1,420 mm	1,420 mm	1,500 mm
k		—	—	—	—	1,420 mm	1,265 mm
l		—	—	—	—	1,430 mm	1,725 mm
m		—	—	—	—	1,680 mm	2,135 mm
Size solid material release (option E)	165x32 mm	—	210x50 mm	230x80 mm	300x110 mm	300x110 mm	350x150 mm
Weight (without hopper)	628 kg	410 kg	580 kg	1,200 kg	1,650 kg	1,650 kg	2,750 kg
Weight (only hopper)	60 kg	30 kg	100 kg	165 kg	245 kg	245 kg	350 kg
Performance data	RS 200 (E)	RS 300 K	RS 300 (E)	RS 500 (E)	RS 600 (E)	RS 600 H(E)	RS 800 H(E)
Power	7.5 kW	5.5 kW	7.5 kW	15 kW	22 kW	37 kW	55 kW
Rated current	27 / 15.5 A	20 / 11.5 A	27 / 15.5 A	52 / 30 A	75 / 43 A	72 / 42 A	104 / 60 A
Voltage ¹	230 / 400 V	230 / 400 V	230 / 400 V	230 / 400 V	230 / 400 V	400 / 690 V	400 / 690 V
Drive speed	53 RPM	45 RPM	53 RPM	76 RPM	70 RPM	70 RPM	67 RPM
Through-put	RS 200 (E)	RS 300 K	RS 300 (E)	RS 500 (E)	RS 600 (E)	RS 600 H(E)	RS 800 H(E)
Steel-swarf (as basic indication)	up to 0.4 t/h	up to 0.2 t/h	up to 1 t/h	up to 1.5 t/h	up to 3 t/h	up to 4.5 t/h	up to 8 t/h
Max. feeding volume / cycle	120 l	continuous	250 l	600 l	1,000 l	1,000 l	1,500 l
Hopper volume, approx.	200 l	—	500 l	1,300 l	1,400 l	1,400 l	1,800 l

¹ Other voltages possible on request.

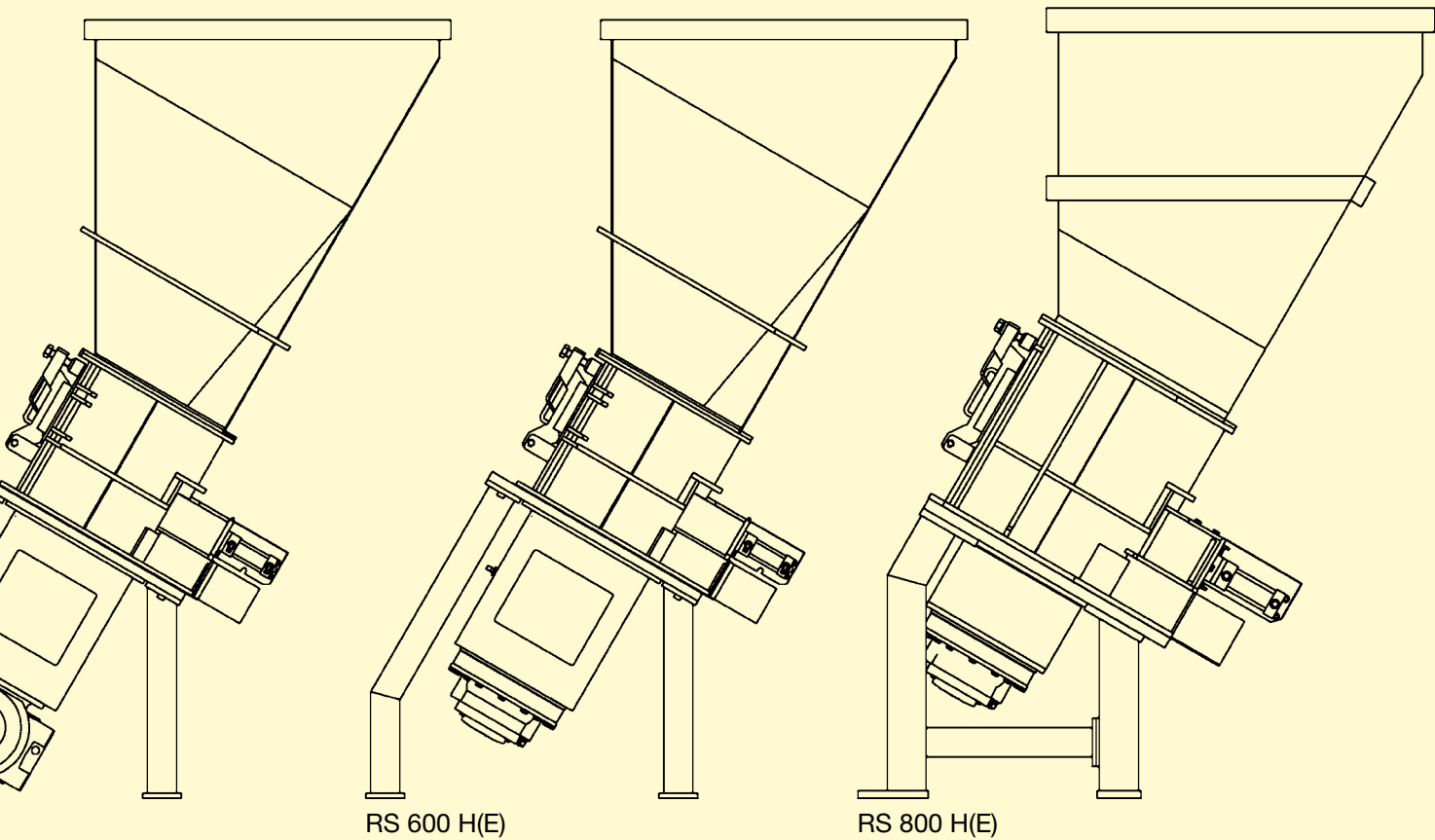
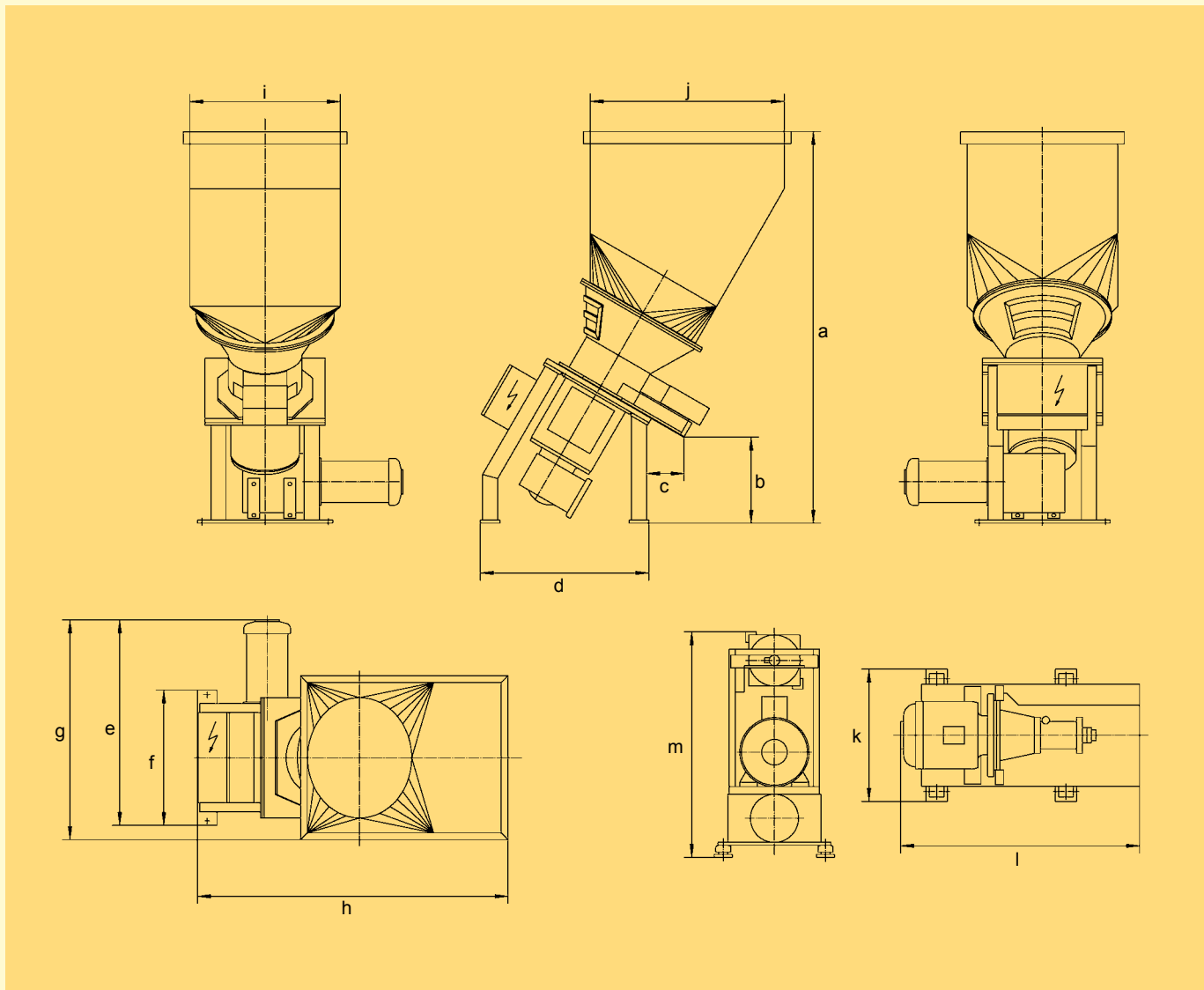
Technical and other modifications reserved.

Type suffix **E** for solid material release (e.g. RS 300 **E**), type suffix **H** for hydraulic drive (e.g. RS 600 **H**)

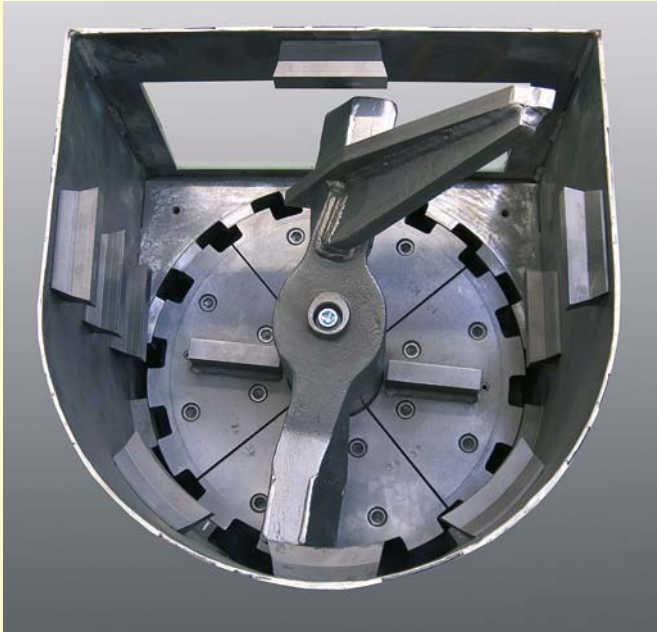
The types of swarf crushers RS 300 K to RS 600 have a laterally protruding drive motor. For these types please refer to the dimensions **e** and **g**. The swarf crushers RS 600 H and RS 800 H have a hydraulic drive. The necessary hydraulic power unit (dimensions **k**, **l** and **m**) is mounted separately from the swarf crusher. The dimensions **k**, **l** and **m** for the hydraulic power unit vary according to the construction requirements of the customer.



DIMENSIONS AND TECHNICAL DATA



OPTIONAL EQUIPMENT FOR SWARF CRUSHERS



▲ Types of fine crushing areas

Depending on the type of swarf and the required crushing result it can be necessary to choose a fine crushing area that is different from the standard form. We can deliver different forms, such as cranked, overlapping or conical forms.

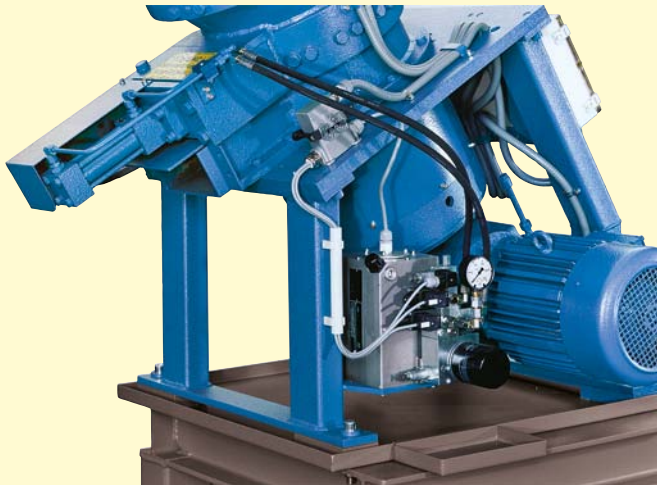


▲ Pneumatic swivelling diverter chute

Swarf crushers with solid material release can be fitted with a pneumatic swivelling chute. In normal operation, the crushed swarf is led out via this chute to the conveyor. In case of a crusher jamming and the solid material release is opened, the diverter discharge chute automatically swivels to discharge the solid material and some swarf into the customer's container placed below. When the solid material release closes, the discharge chute returns to the normal operating position. This system permits continuous operation of the swarf processing system.

◀ Automatic solid material release (Type suffix E)

All crusher types (except the RS 300 K) are combined with an automatic solid material release facility. With this Type E unit the fine crushing area has a hydraulically actuated release hatch to allow the solid material and some swarf to be driven out into the discharge chute. Once the solid material is clear of the fine crushing area the hatch closes hydraulically and crushing continues as normal. If separation of crushed swarf and solid material is required, then an optional sieve or grid chute can be offered.



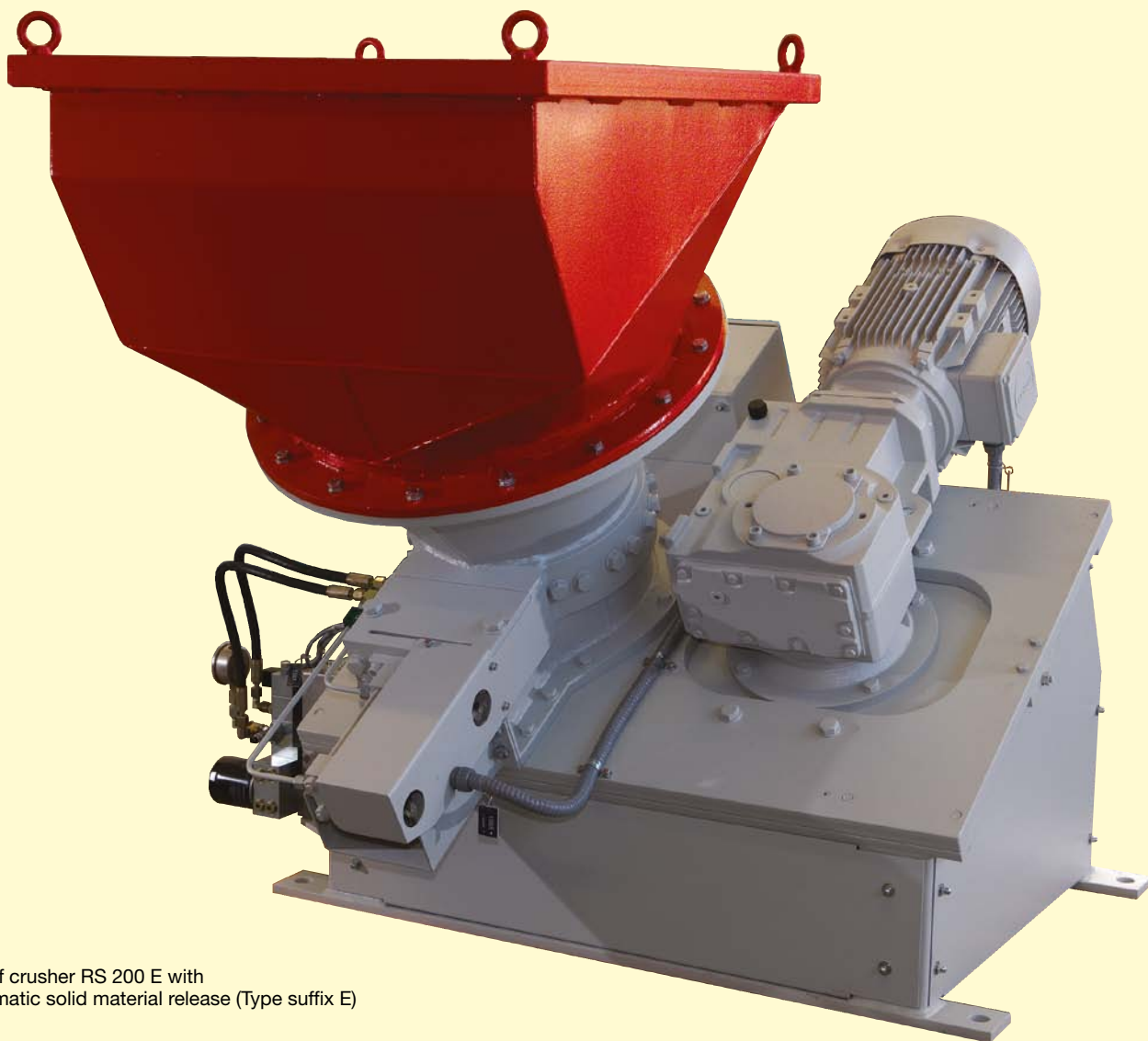
Hydraulic power unit and solid material release Type E as fitted to a Type RS 300 E crusher.

▶ Pneumatic closing gate

Depending on the swarf crusher application, the discharge chute can be fitted with a pneumatic closing gate. Where there is a need to batch the crushed swarf, as in the case of collection in a swarf barrow or trolley, the gate closes and seals both swarf and coolant discharge, preventing spillage during change-over of swarf barrows or other automatic means of batch collection. A coolant overflow can be provided if required.

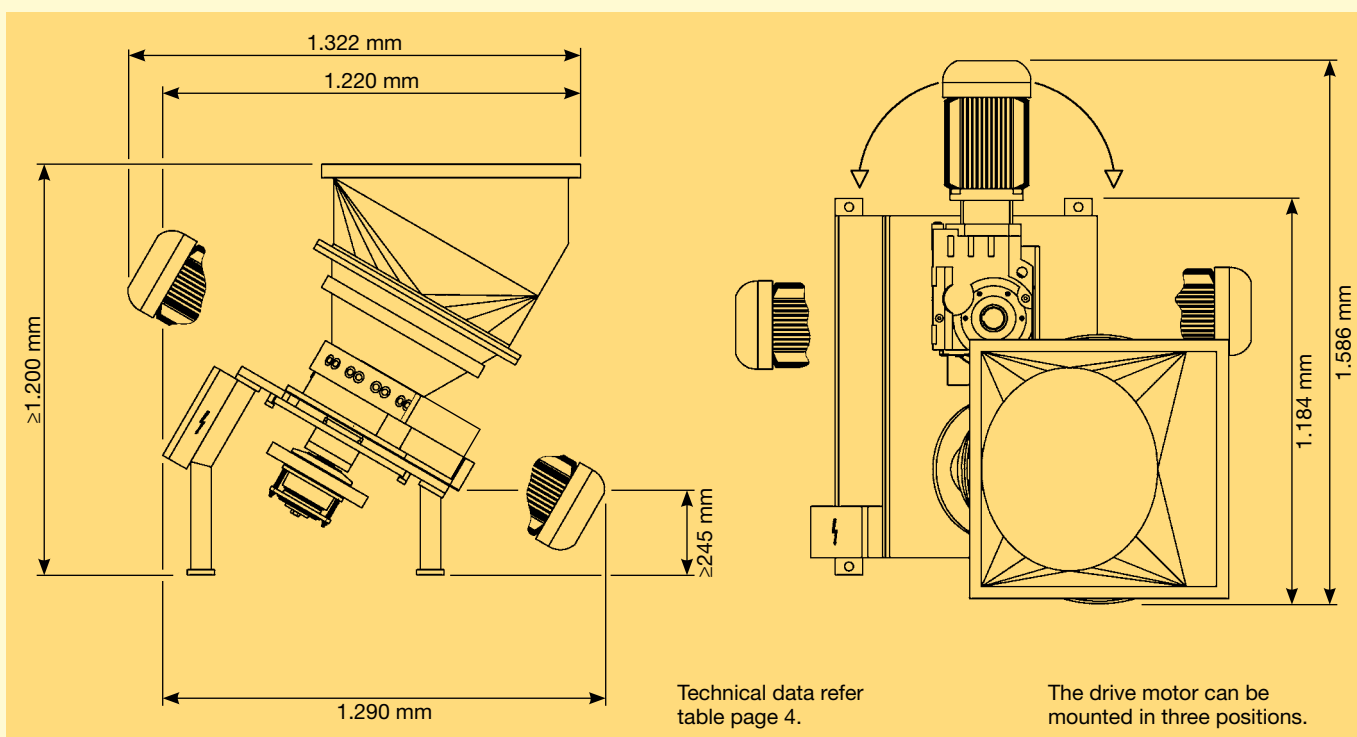


THE COMPACT SWARF CRUSHER RS 200 (E)



Swarf crusher RS 200 E with automatic solid material release (Type suffix E)

DIMENSIONS OF THE RS 200 (E)



OUR DEMONSTRATION/TEST UNIT



To be able to achieve ideal solutions and to select suitable units from the range of Gebr. Steimel products, it is often necessary to determine by tests in the preliminary project stages, the appropriate equipment for various applications. Steimel has therefore provided a test plant facility, which is available to our customers for simulated trials to be carried-out with their swarf material etc.

Steimel are quite prepared to conduct these tests to determine the right equipment for particular applications.

Our engineers working with our customers, to determine the best project solutions, will prepare their proposals and quotations to meet your specific requirements.

APPLICATION EXAMPLES



▶ A swarf separating plant with Robot-Polar-System and swarf crusher for different swarf and coolant.



▲ A swarf separating plant is shown and consists of: A lifting and tipping unit to feed swarf material into a Type RS 300 E crusher, a scraper conveyor carrying the swarf to a Type K 51 Permolex-Polar-centrifuge, which having de-oiled the swarf then discharges it into an on-site container.

▶ A swarf separating plant with swarf crusher and Permolex-Polar-centrifuge for de-oiling and drying of the crushed swarf.

GEBR. STEIMEL GMBH & CO. MASCHINENFABRIK
Pumps and centrifuges

COMPETENCE AND PASSION.

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