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# in productivity

## CPM CHAMPION HAMMERMILLS

*A true winner*

Since many years, hammermills are used in various industries and nowadays often play an important role in production facilities. The most hammermill grinders are used in the animal feed industry, but also in other industries, hammermills are found.

Grinding of products like saw dust and wood chips for fuel purpose are nowadays very common. Grinding of tough, fibrous products require stronger and more heavy duty machinery.



### THE ROBUST DESIGN

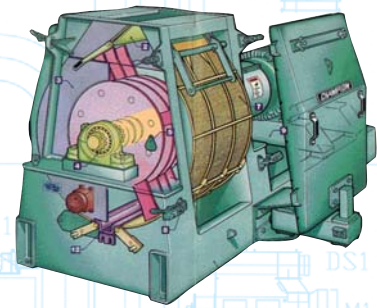
To withstand the heavy loading on the hammermills while grinding tough and fibrous materials like biomass, the Champion hammermills have been designed with an extremely heavy duty base frame. The mass of the hammermill absorbs any vibrations while the stiffness of the frame allows a very small clearance between hammer and screen. In combination with the very high hammer tip speeds, this hammermill assures efficient fine grinding under smooth running conditions.

### BIG SCREEN AREA

The screens encircle the grinding chamber with nearly continuous screen surface for maximum grinding action and throughput per cycle. Especially for fine grinding applications like pet foods and aquatic feeds, the champion hammermills have a wide range of screen areas available. Grinding pet foods through as small as 0,4 mm screens will reduce the effective open area dramatically. Using the enormous screen area available on the Champion hammermills will optimize the capacity even while grinding extremely fine.

### HIGH TIP SPEED

A very important parameter of hammermill grinding is the circumferential or tip speed of the hammer. High tip speeds are very suitable for fine grinding. For coarser grinding requirements, lower tip speeds can be



For grinding pet foods and aquatic feeds also other demands apply. The ability of fine grinding at high capacity requires hammermill features like large screen area, high tip speeds and a small clearance between hammer and screen.

The hammermills of the Champion product line have been designed to suit each specific grinding requirement.



Champion Hammers

Rotor

Screens

Heavy Duty Split Bearings

applied. Champion hammermills cover a wide range of tip speeds, from low speed for efficient coarse grinding to very high speed for effective fine grinding applications.

### HAMMER TO SCREEN CLEARANCE

For some applications, the distance between the tip of the hammer and the screen is a very important parameter. For example fine grinding of fibrous products or fatty raw materials like aqua or pet foods require a very low hammer to screen clearance. This low clearance improves the sweeping of the screen and reduces the residence time of the product in the

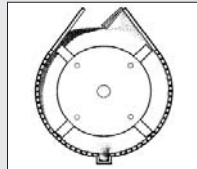


hammermill grinding chamber, preventing heating up and moisture loss of the product. All Champion hammermills have a so called coarse and fine grinding position, which refers to the distance between hammers and screen. Because of the rigidity of the base frame, the Champion hammermills can maintain a very low hammer to screen clearance in fine grinding position. This, in combination with the high tip speed, makes the Champion hammermill a true winner.

### TEAR DROP CIRCLE

The so called tear circle design is characteristic for the Champion hammermills and refers to the shape of the screen. In conventional hammermills, the screen

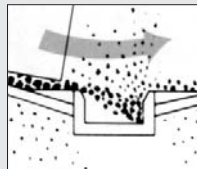
describes a full circle. The centrifugal force is causing the product to follow the screen profile while being dragged forward by the hammers. The higher the speed of the product, the more difficult it is to escape through the screen holes. Also the reduced speed difference between the hitting hammer and the product reduces the grinding efficiency. The tear circle shape actively eliminates this full circle movement. Therefore the product escapes the screen easier and increases the differential speed so that an improved efficiency is created.



Tear Drop Circle

### PATENTED REGRIND CHAMBERS

A double grinding action is created since material is forced at high speed into the regrind chamber and quickly deflected back up into the path of the rotating hammers. This results in a greater operating efficiency and higher material throughput.



Regrind Chamber

### AIR SWEEP GRINDING CHAMBER

The air swept design reduces dead air space in the hammermill housing. This reduces contamination and fire risk and improves the efficiency of the air flow. For fatty or moisty products Champion hammermills are equipped with an extra air inlet on the doors to keep the interior of the mill clean.



Large Diameter Rotor

### HARDENED HAMMER

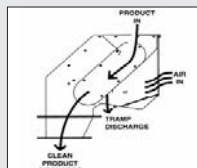
An important wear item in a hammermill are the hammers, which are in contact with the product all the time. By applying special hard facing on the hammer tips, the hardness and the wear resistance of the hammers is increased enormously to improve the service life. Depending on the grinding application, different type of hard facing can be applied.



Screen Carriage



Air Separator Feeder



Air Separator Work Flow



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# Hammer Mills

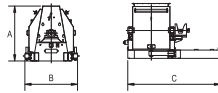


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# Hammer Mills

### CPM CHAMPION SERIES

CPM Champion hammermills are made in a wide variety of sizes. For special applications additional models are available.



Hammermill Series	Type		Screen Dimensions				Motor			Hammermill Dimensions			
	Dia ø (inch)	Width (inch)	Dia ø (mm)	Width (mm)	Surface (m2)	Air Ass. mg/hr	Tip Speed m/s	P (kW)	rpm	A	B	C	
Int. Standard	28	11,5	711	292	0,597	1970	112	55	3000	1238	968	1495	
	28	15	711	381	0,779	2571	112	75	3000	1238	968	1727	
	Impactor	28	20	711	508	1,038	3425	112	90	3000	1238	968	1829
		28	30	711	762	1,548	5108	112	132	3000	1238	968	2134
Magnum	28	40	711	1016	2,064	6811	112	160	3000	1238	968	2591	
	28	48	711	1219	2,476	8171	112	200	3000	1238	968	2794	
	28	60	711	1524	3,095	10213	112	250	3000	1238	968	3098	
	Magnum	44	11,5	1118	292	0,890	2937	88	75	1500	1664	1397	1918
		44	15	1118	381	1,161	3831	88	110	1500	1664	1397	2007
		44	20	1118	508	1,548	5108	88	160	1500	1664	1397	2134
		44	30	1118	762	2,322	7663	88	200	1500	1664	1397	2388
	Int. Magnum	44	40	1118	1016	3,096	10217	88	250	1500	1664	1397	2638
44		48	1118	1219	3,715	12260	88	315	1500	1664	1397	3277	
Int. Magnum		54	15	1372	381	1,432	4726	108	160	1500	2013	1689	2010
		54	20	1372	508	1,909	6300	108	200	1500	2013	1689	2216
		54	30	1372	762	2,864	9451	108	250	1500	2013	1689	2692
		54	40	1372	1016	3,818	12599	108	315	1500	2013	1689	2946
HM 54		54	48	1372	1219	4,582	15121	108	355	1500	2013	1689	3277
		54	16	1372	406	1,522	5023	108	160	1500	2013	1930	2388
	54	24	1372	610	2,291	7564	108	200	1500	2013	1930	2591	
	54	32	1372	813	3,055	10082	108	250	1500	2013	1930	2794	
54	40	1372	1016	3,818	12599	108	315	1500	2013	1930	2997		
54	48	1372	1219	4,582	15121	108	400	1500	2013	1930	3200		

### WORLD-WIDE

CPM offers service through a world wide network of local agents in nearly every country. They get supported directly from the regional headquarters by teams of pelleting technology specialists.

### SALES DEPARTMENTS

Our establishments are staffed with qualified sales, engineering and service personnel and are well stocked with dies, parts and accessories. This ensures prompt efficient processing of all customer service requirements.

### CONTACT

Please feel free to contact your local agent, our offices or our Internet sites [www.cpm europe.nl](http://www.cpm europe.nl) or [www.cpmroskamp.com](http://www.cpmroskamp.com).



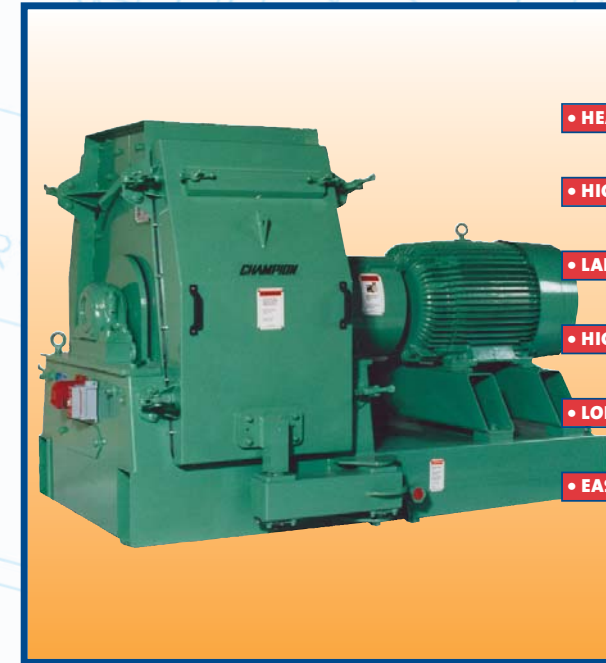
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## CHAMPION SERIES



- HEAVY DUTY •
- HIGH TIP SPEED •
- LARGE SCREEN AREA •
- HIGH CAPACITY •
- LONG LIFE HAMMERS •
- EASY ACCESS •

## Robust THE CPM ADVANTAGE

The CPM Champion hammermills have been designed extremely heavy duty to perform under the most demanding conditions. The Characteristic tear circle design in combination with the high tipspeed, makes the CPM Champion a true winner.

■ HIGH PERFORMANCES ■ LOW COST MAINTENANCE ■ MAXIMUM SAFETY

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