



Alternative Natural Rubber

after dandelion (green*), now comes banana (green**)



DE10 2019 133 85.2 & DE 10 2019 133 787.9
(joint patents claimed, 10.12.2019)

Process for the separation of polyisoprene and other non-polar materials from vegetable raw materials

Rotating powered grinding media mill for the extraction of polyisoprene and / or other non-polar materials



Natural Rubber

NR is obtained from rubber trees providing latex, growing within the "green belt" of the planet.

Alternative NR from dandelion roots

ANR can be obtained from Russian dandelion (Continental-Taraxagum™) representing an amazing green new product, saving resources in the green belt.

next step - continuous processing

Zoz designed, manufactured and in first years operated the first batch processing plant for rubber-extraction from dandelion roots in pre-industrial scale and in 2018 designed a continuous route.

next resources - Banana Peels

BP represent the first flora candidate at high rubber content + available in large scale. Worldwide, about 135mio tons of bananas are cultivated where the peels today are just waste.



Taraxagum™ at OZ-16 + OZ-18

Zoz / IME joint technology initiative sustainable biorefinery route for banana peels processing

cosmosmagazine.com, zoz.de, freepik.com, seed-bank.ca, georgeperry.co.uk



Zoz-TRM at Anklam (left)



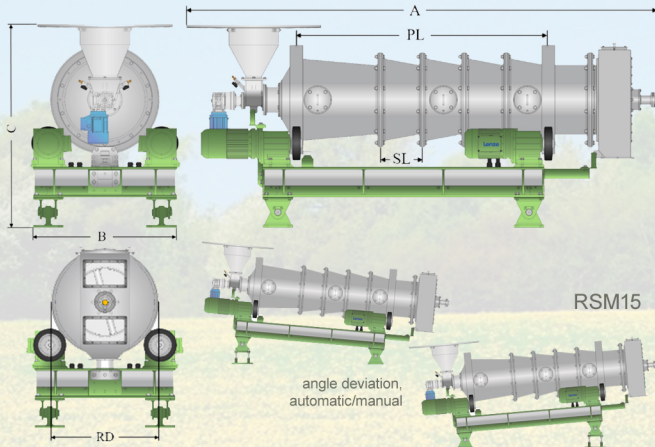
[Tube Segment Mill RSM]

in general

Tube Segment Mill RSM is representing a continuous processing device combining ball-milling with multiple other mechanical/thermo/ bio/ chemical engineering/ treatment steps such as heating, cooking, washing and agglomerating of solids and slurries under highest assembly flexibility.

application

RSM is particularly made for processing/ generating fractions from bio-mass, e.g. natural rubber, preferably on slurry. In wet & dry operation, RSM can be applied at in situ separation during classic fine grinding. 24/7 manufacturing can lead to best economics, low labor cost and less product transfer.



RSM15

angle deviation,
automatic/manual



segment shield,
PDL-gate (center)

options/features

- automatic loading unit axial revolving or axial batch-wise, all continuously;
- segment shields designed for particular products/processing;
- multi-function lance (PDL) for media backflow from discharging to inside charging;
- interactive process observation by inside camera unit from PDL over all axis;
- media charging via compartments and dynamically via center charging segment;
- additional media charging circumferential at charging segment;
- circumferential thermal/chemical impact by outer halfway segment tanks (PHW);
- entire process communication by MALTOZ®-software incl. angle deviation control;

dimensions/data

RSM Scale	RSM15	RSM30	RSM50	RSM100	RSM150
length -A- [mm]	2.800	5.000	8.150	15.000	22.150
length -B- [mm]	850	1.200	1.700	2.700	3.840
length -C- [mm]	1.200	1.850	2.400	3.850	5.300
main drive power MDP [kW]	4,5	10	26	110	240
aux. Power AP [kW]	0,75	1,5	2	4	6
net-weight [kg]	1.400	2.800	5.200	9.600	18.500
process segment tube					
core length PL [mm]	1.500	3.000	5.250	10.000	15.000
gateway max WD [mm]	475	725	1.050	1.825	2.600
process volume PVmax [L]	265	1.240	4.160	26.145	79.600
process volume PVmin [L]	185	870	2.910	18.300	55.720
GPP [NKD]	6,36	29,76	99,84	627,48	1.910,4
rolling diameter RD [mm]	650	900	1.300	2.075	2.850
segments length SL [mm]	250-500	250-750	250-1.000	500-2.000	500-2.500
segments min/max	3-6	4-12	6-15	5-18	6-20