

Merlin VSI Crushers

Sandvik Rock Processing



Merlin-VSI®

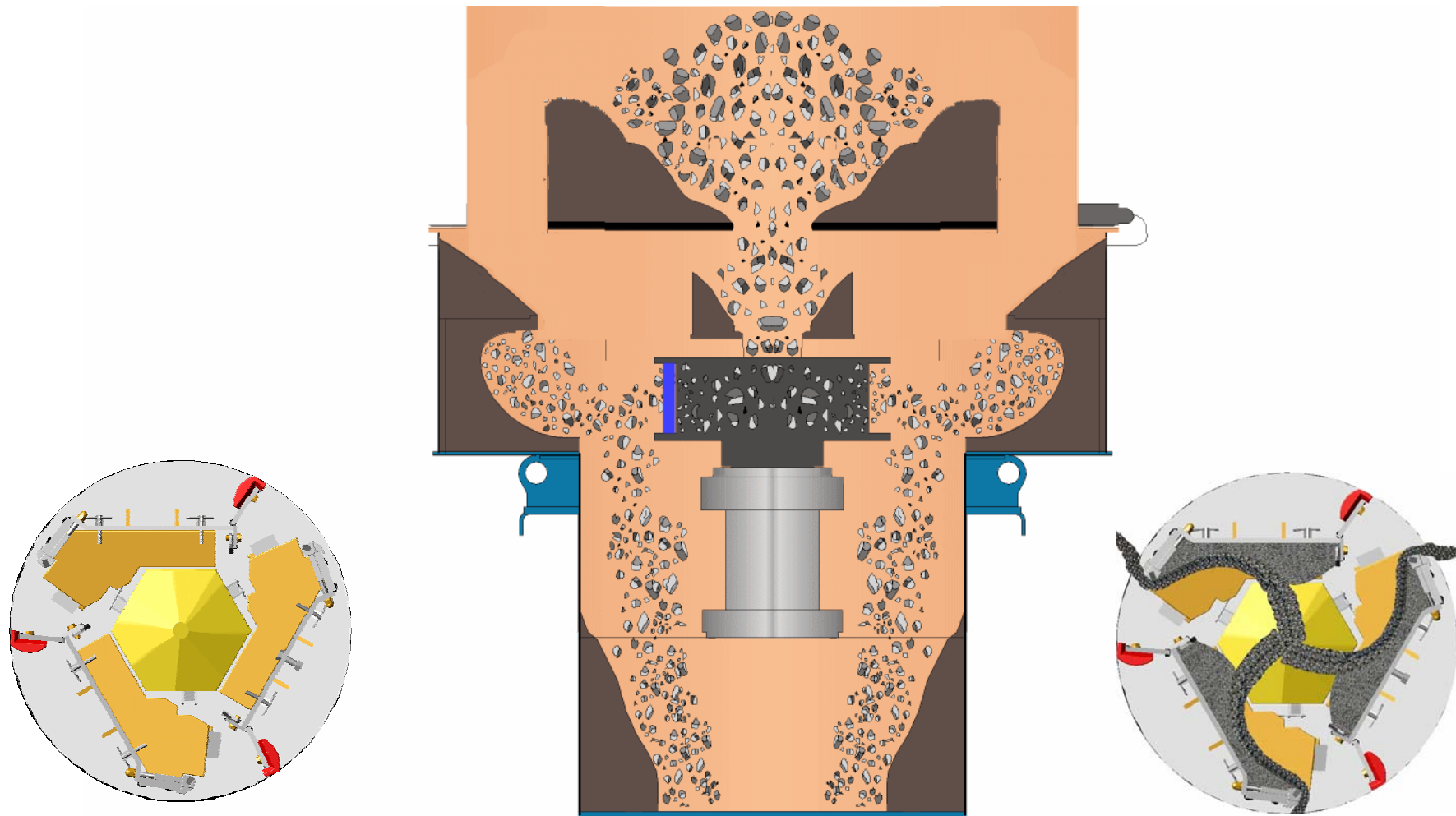
- **What** is an Autogenous crusher ?
- **How** Does it Work ?
- **Where** does it belong ?
- **Why** should it be used ?



What is an Autogenous Crusher ?

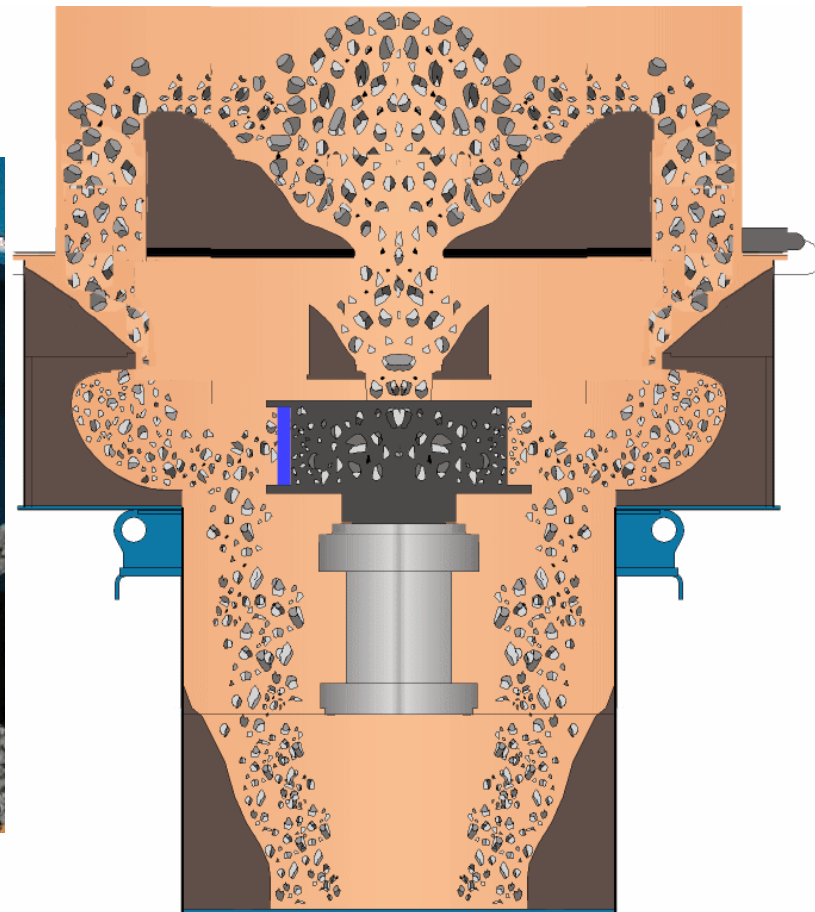
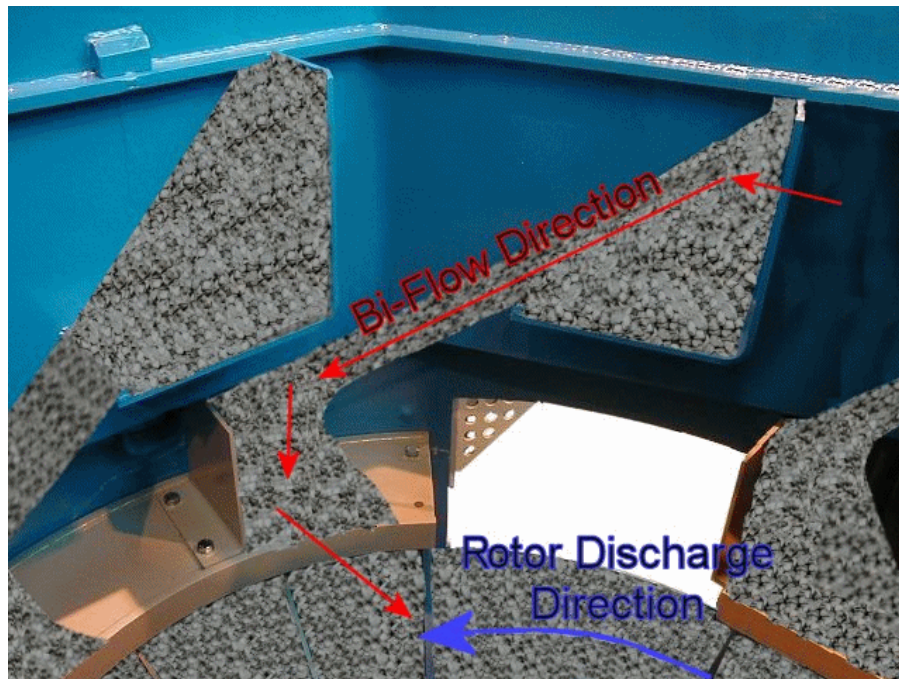
- **What mother nature achieves over millions of years (weathering, glacial deposits etc), Merlin-VSI[®] accomplishes in seconds.**
- **A third or fourth stage crusher, that crushes with a “rock on rock” crushing action.**
- **No wear parts are used to directly “crush” the rock.**

Merlin-VSI® How It Works



Rotor Only Feed

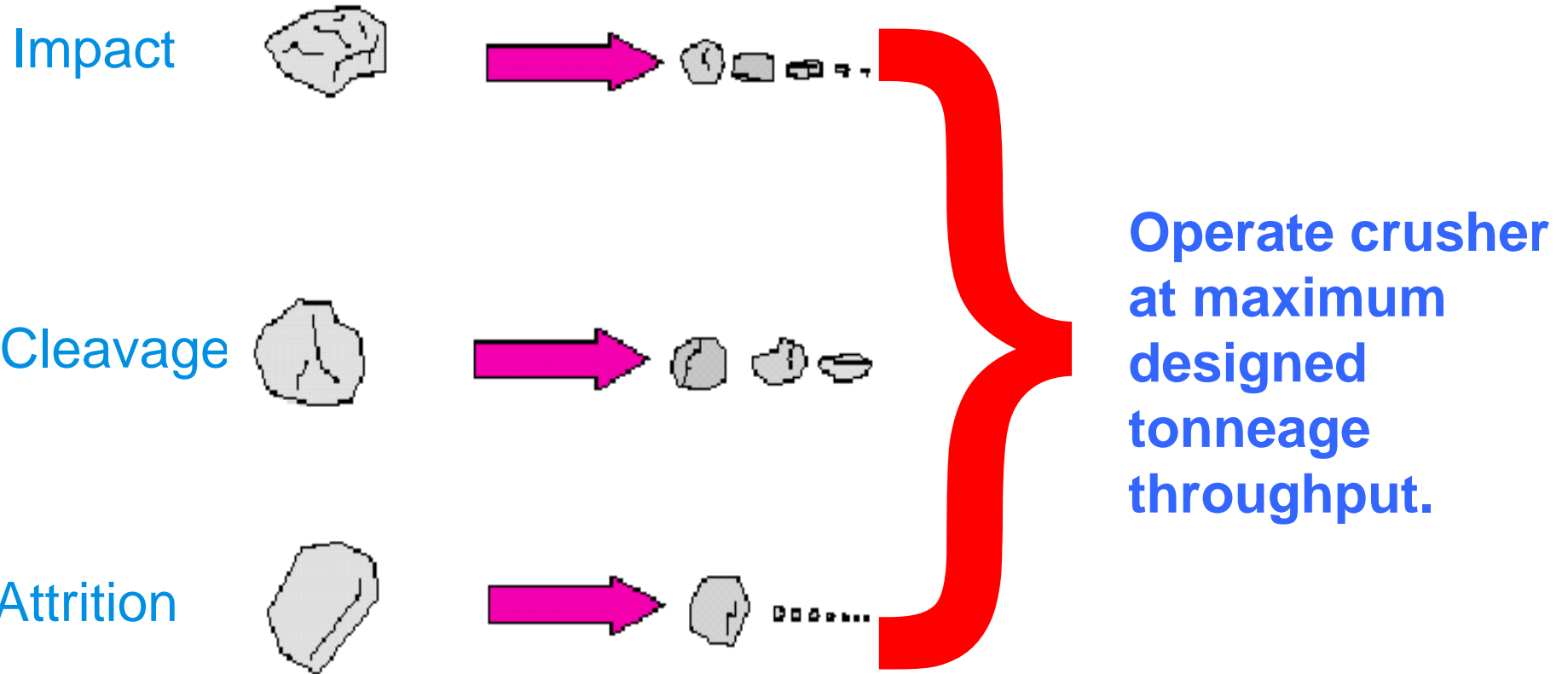
Merlin-VSI® How It Works



Rotor And Bi-Flow Feed

How It Works - VSI Crushing Action

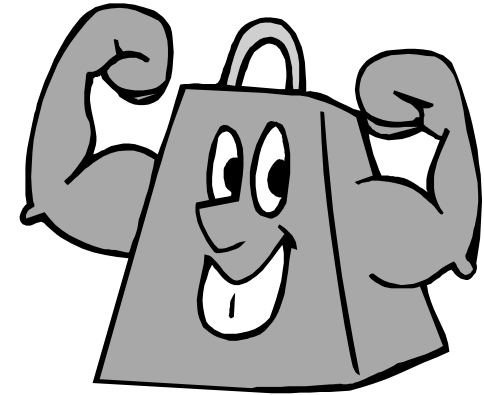
To maximise all 3 types of crushing action listed below which are:-



MERLIN  **VSI**

How It Works - Maximum Designed Tonnage Throughput ?

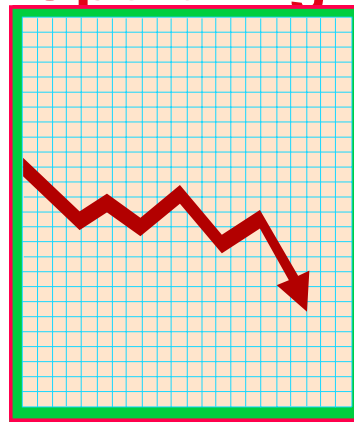
- Set the crusher at a middle to low range speed.
- Load the crusher to pull full load motor current.
- Add up to a further 17% in Bi-Flow.



You will then achieve.

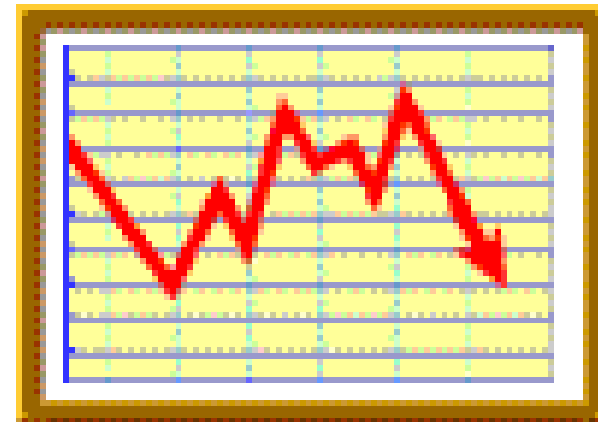
Maximum Tonnage Production

Lowest cost per Tonne Operating Costs.



How can we change the product gradation?

- Rotor speed is normally referred to in terms of “Tip Speed”. This is measured as Metres per second (M/sec.).
- Tip speeds vary with machine size and vary from 44M/sec. to 66M/sec.
- Increasing Tip speed, generally results in a “finer” gradation product.
- **BUT BE AWARE !!**
- Total throughput of rotor fed material will decrease, resulting in a reduced production rate.
- Operating costs increase with rotor speed.

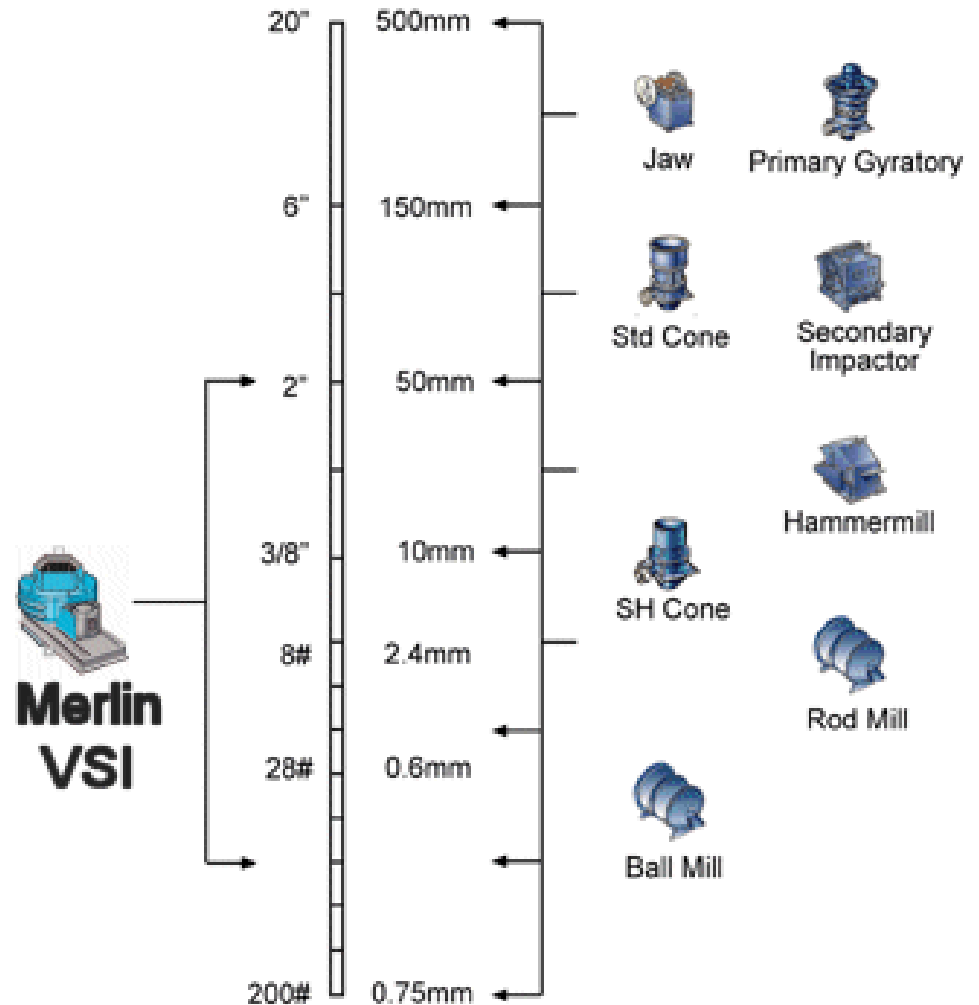


Where In The Production Line ?

The VSI – where does it belong?

If there is nothing in the feed below $1\frac{1}{2}$ " (37mm), then it is NOT a VSI application.

However, if the top feed is less than 1"(25mm), Nothing can compare to the VSI's efficiency.



Merlin-VSI® Capacities (nominal)

Model	Min. tonnage	Max. Tonnage	Max Feed Size	Kw Power Range
RP109D/D	445	600	55	400 - 500
RP108 D/D	251	444	55	264 - 370
RP108S/D	193	250	55	200 - 220
RP107 S/D	122	192	50	132 - 185
RP106 S/D	51	121	50	75 - 110
RP105 S/D	10	50	37	55

Why Merlin-VSI® ?

- Autogenous rock on rock action results in unbeatable cost per tonne, especially for very abrasive materials such as Industrial minerals (Brown Fused Alumina, Zirconia, White Fused Alumina, Calcined Bauxite etc.).



Quartz

Why Merlin-VSI® ?

- In applications where superior product shape is required, e.g. concrete aggregate / sand, road surfacing.



Why Merlin-VSI® ?

- To reduce flake and elongation from preceding crushers (jaws, cones etc.).



Why Merlin-VSI® ?

- In recycling applications, where minimal contamination of product is required in conjunction with cubicle shape (glass cullet etc.)



0.500 – 1.00mm



0.125 - 0.250mm

Why Merlin-VSI® ?

- For differential crushing to liberate ores (gold heap leaching etc.)
- To remove contaminants (clay, lignite, sandstone, etc.).
- Production of De-Gasser for Steel industries.
- Production of fertiliser from steel furnace slag.

Why Merlin-VSI® ?

- In Mining applications, to reduce the feed size to the ball mills, enabling huge savings to be realised in both mill charge and tonnage throughput of the mills.



S.S.G.P.O. Kazakhstan

Why Merlin-VSI® ?

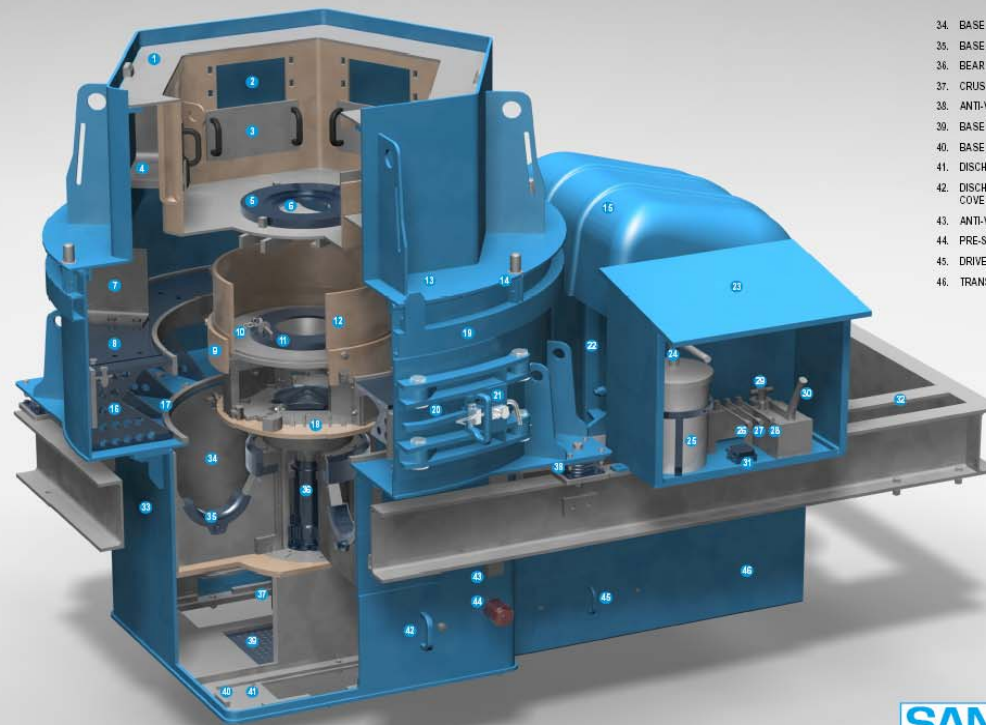
- To manufacture sand – a growing market area due to the increased worldwide environmental restrictions for digging natural sand.



Merlin-VSI®

MERLIN-VSI®

1. BI-FLOW HOPPER
2. BI-FLOW PORT
3. BI-FLOW ADJUSTER GATE
4. BI-FLOW DIRECTION ARMS
5. CONTROL PLATE
6. ROTOR THROTTLE GATE
7. BI-FLOW COLLECTION PLATES
8. CAVITY RING
9. WEAR SKIRT
10. CLAMP RING RETAINING WEDGES
11. FEED TUBE CLAMP RING
12. FEED KIT ASSEMBLY
13. CRUSHER ROOF
14. ROOF SWING BOLTS
15. MOTOR COVER
16. CHAMBER GUSSET
17. TOE BOARD RING
18. HURRICANE ROTOR
19. CRUSHING CHAMBER
20. INSPECTION DOOR
21. SAFETY INTERLOCK
22. MOTOR MOUNT
23. HYDRAULIC CABINET
24. GREASE PUMP
25. GREASE KEG
26. ROTOR-FEED-BI-FLOW THROTTLE ADJUSTMENT
27. MOTOR 1 ADJUSTMENT
28. MOTOR 2 ADJUSTMENT (DUAL DRIVE ONLY)
29. PRESSURE GAUGE
30. HYDRAULIC OPERATING LEVER
31. GREASE DISTRIBUTION BLOCK (WITH TELLTAI)
32. SUPPORT FRAME
33. CRUSHER BASE



34. BASE LINERS
35. BASE WEAR CASTINGS
36. BEARING CARTRIDGE ASSEMBLY
37. CRUSHER DRIVE PULLEY
38. ANTI-VIBRATION PADS
39. BASE BELT GUARD
40. BASE LINER LOCATION BLOCK
41. DISCHARGE CHUTE BASEPLATE
42. DISCHARGE CHUTE INSPECTION COVER
43. ANTI-VIBRATION SWITCH
44. PRE-START SOUNDER
45. DRIVE INSPECTION PANEL
46. TRANSMISSION GUARD



THE END