

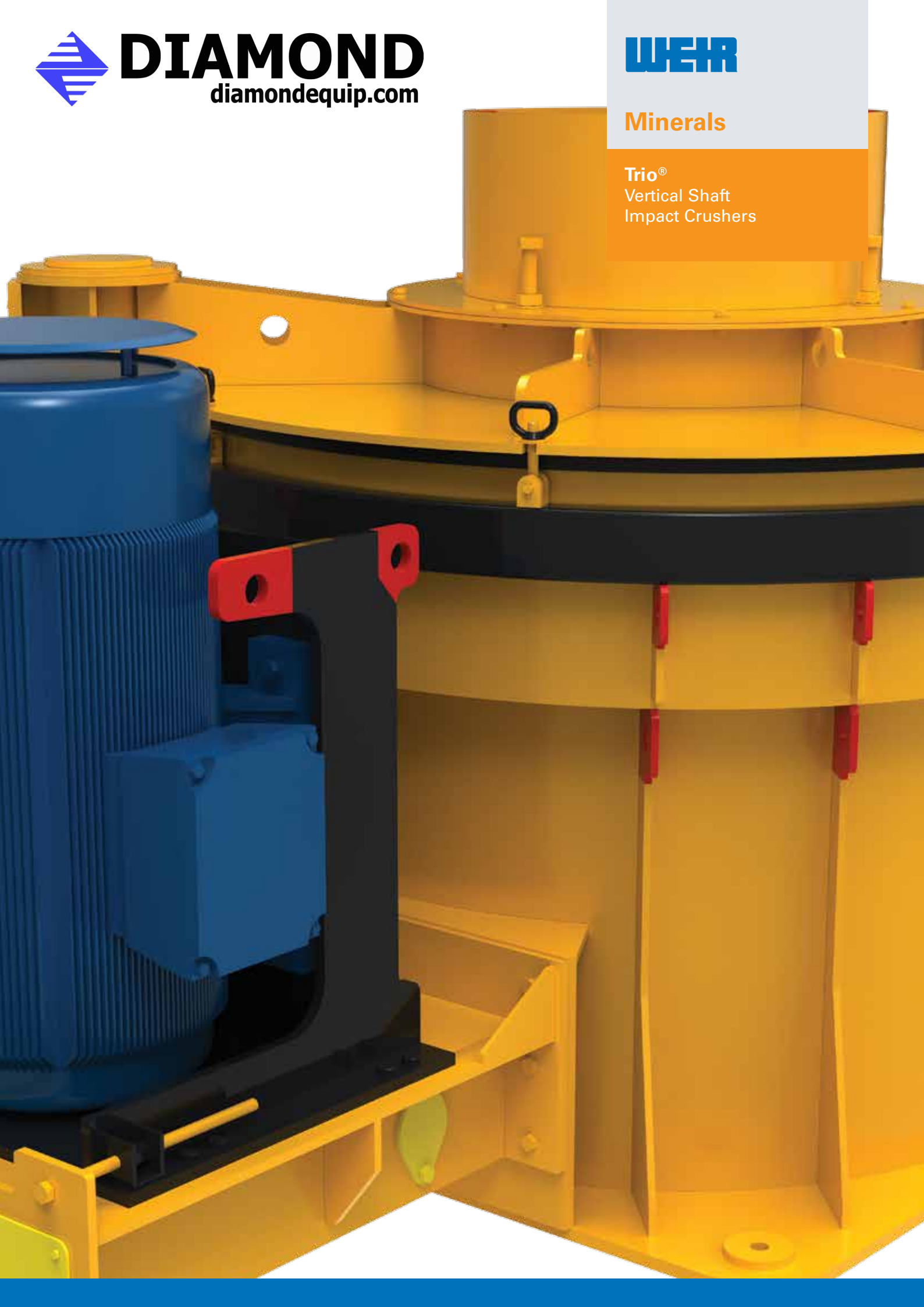


**DIAMOND**  
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**WEIR**

**Minerals**

**Trio®**  
Vertical Shaft  
Impact Crushers









**Our heavy-duty Trio® VSI crusher range is designed with exceptional minerals beneficiation capabilities and is expertly engineered to achieve higher throughput.**



Our Trio® vertical shaft impact (VSI) crusher utilises innovative technology to deliver outstanding performance in secondary, tertiary or quaternary stage crushing. The crushers are designed to reliably operate in even the harshest of environments, and are suitable for a wide range of applications including the production of high-quality manufactured sand, premium shaped aggregates and industrial minerals.

Featuring advanced open table designs, multi-port rotors and a larger bearing capacity than many other VSI crushers, our hard-working Trio® VSI crushers are designed to provide high value solutions and deliver high performance.

#### **Comprehensive Solutions**

At Weir Minerals we partner with you to understand your budget, project schedule, working environment, capacity and product gradation requirements, and provide customised recommendations so you can make informed choices for your business. From design to decommission, and every stage in between, our team works alongside you to ensure you achieve the maximum value possible from your Weir Minerals equipment and from our Weir Minerals know-how.

#### **Global Service and Support**

We are renowned for our design, engineering and manufacturing capabilities, and deliver unsurpassed service and support. We work hard to ensure fast and efficient installation, and our replacement parts and skilled service teams are there for you every step of the way. We also provide professional on-site training for your personnel to ensure smooth, safe and efficient plant operations and maintenance.



#### Design Features

- Large receiving hopper
- Adjustable feed diverter within the feed hopper ensures even feed distribution
- Externally adjusted feed tube, with a convenient inspection door mounted on the lid, provides safe and easy inspection
- Off-set dual drive design reduces radial and thrust loading on the electric motors
- An integral solid lower V-belt drive guard prevents dust intrusion to the V-belt drive
- Air transfer system enables internal air recirculation and reduces dust emission
- Factory installed pipe couplers used to install a water spray system eliminates material build-up if needed
- Bearing assembly mounted into a rigid base frame support provides maximum strength ideal for large feed or high speed applications
- Adjustable and flexible crushing chamber options

#### Applications

- Fractured gravel
- Manufactured sand
- Material beneficiation
- Precious metals recovery
- Re-crush of slow selling inventory
- Crushing and grinding of man-made materials for industrial abrasives
- Grinding of cement clinker
- Crushing of glass
- Cubical products

#### Materials

- Brown fused alumina
- Taconite pebbles
- Gold ore for heap leaching
- Porphyry copper ore
- Container glass recycling
- Plate glass recycling
- Copper reverberation slag
- Steel slag
- Iron ore

## Our Trio® VSI crusher range is designed to meet the ever-changing requirements in the construction aggregate environments.

### Reliable and Innovative

Our Trio® VSI crushers are equipped with welded-in pipe couplers to allow for easy, in-field fitting of a water spray system under the open table or enclosed rotor. This feature is designed to control material build-up in the discharge area when crushing sticky materials.

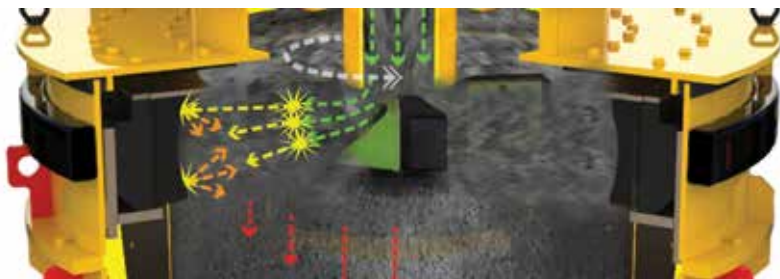
The innovative air transfer system is designed to allow air within the crusher to be recirculated to reduce dust emissions.

The off-set dual drive design reduces the radial and thrust loading on the electric motors, resulting in an extra-long service life for the motors. The lower V-belt drive guarding is solid, preventing dust intrusion, while end-venting of the drive assembly provides cooling. Additionally, a V-belt inspection port provides easy access to check proper belt tension.

Our Trio® VSI crushers feature oil lubricated, self-aligning roller bearings with a drop-in style bearing assembly. The bearing assembly is mounted within a rigid main frame housing. The rigid main frame housing design provides maximum strength for the bearing assembly. This feature is especially important for Rock on Rock and high speed grinding applications.

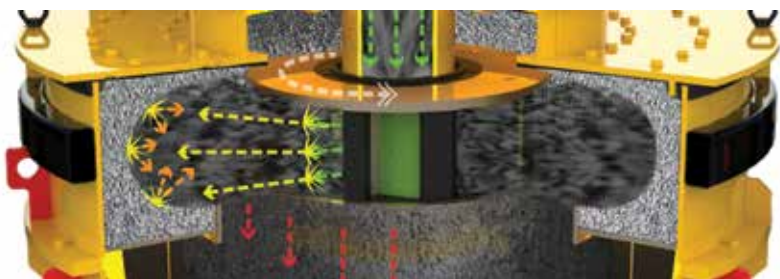


**Our Trio<sup>®</sup> VSI crushers are designed to deliver maximum application flexibility, with the crushers being able to interchange between three different crushing chamber configurations.**



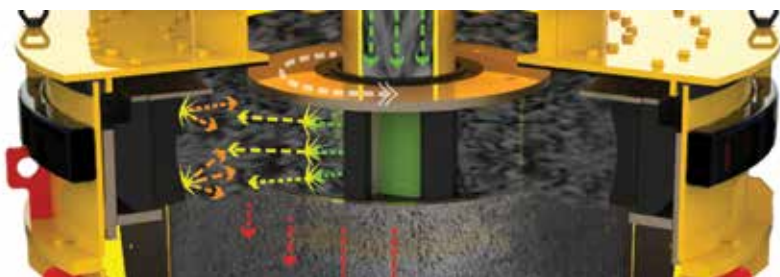
**Steel on Steel (pictured top)**

Steel on Steel (SOS) configurations are recommended when crushing non-abrasive materials, such as limestone, in secondary and tertiary crushing applications with larger feed sizes.



**Rock on Rock (pictured middle)**

Rock on Rock (ROR) configurations are recommended when crushing the most abrasive materials, in tertiary and quaternary applications where additional fines production is desired.



**Rock on Steel (pictured bottom)**

Rock on Steel (ROS) configurations are recommended when crushing low abrasive materials, such as limestone, in tertiary and quaternary applications where a higher rotor speed is necessary to achieve additional fines production.





### Adaptable and Versatile

Designed to offer maximum versatility and easily adapted to suit your specific requirements, all our Trio® VSI crushers can accept a high percentage of fines and moisture compared to many other types of crushers.

### Aggregates and Manufactured Sand

Trio® VSI crushers have consistently demonstrated their ability to produce high quality cubical aggregates. Our crushers can be operated in either open or closed circuits, depending on the types of performance required.

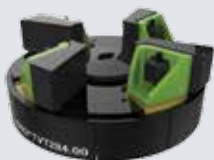
### Industrial Minerals

With features such as controlled product grading, preferential crushing, low production costs, and the ability to produce finely graded products, the addition of a Trio® VSI crusher can optimise the performance of most industrial mineral processing installations.

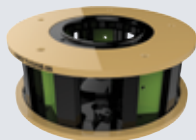
### Mining

In mining (metallic minerals), the Trio® VSI crusher, with its high capacity and ability to produce finely graded products such as mill feed, sinter feed or material for heap leach operations, is an ideal machine to replace high cost, inefficient crushing and milling equipment.

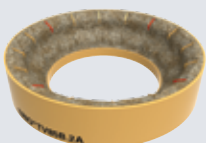
The addition of a Trio® VSI crusher to an existing circuit can save considerable capital funds when increased production is required from an existing milling circuit.



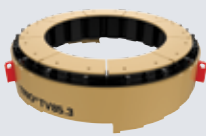
Shoe Table



Enclosed Rotor



Rock Shelf



Anvil Ring

### Versatile Configuration Options

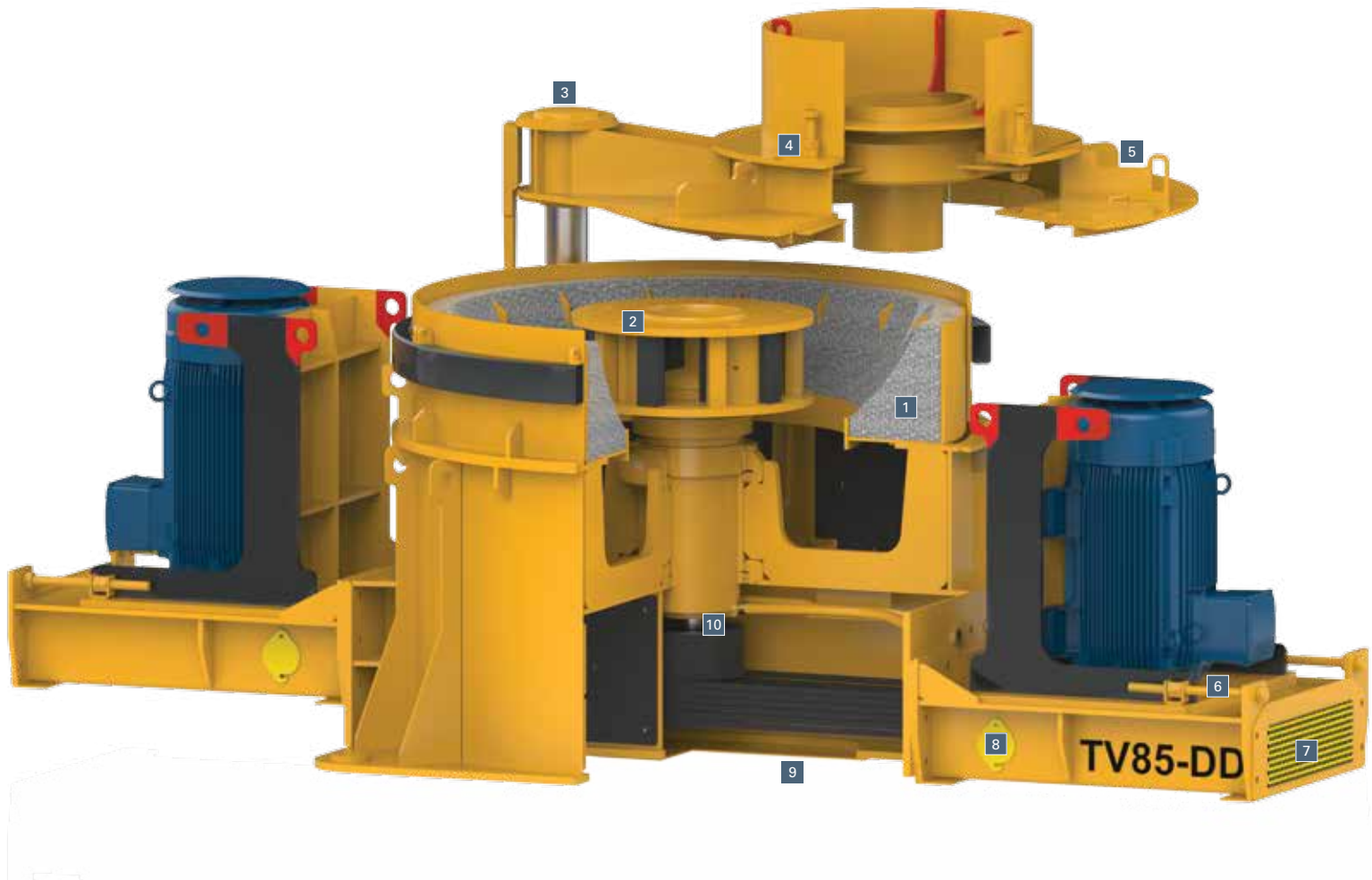
- Open shoe table and anvil ring (SOS)
- Enclosed rotor and anvil ring (ROS)
- Enclosed rotor and rock shelf (ROR)

The open shoe table uses bolt-on and/or pin-on impeller shoes and is available in four, five or six shoe configurations.

Impeller shoes are available in high chrome wear castings.

The enclosed rotors are available in four, five, six or seven ports, and feature drop-in replacement part designs.

The anvil ring is designed with a five step adjustability system, with the assembly being able to be lifted out for safe and easy parts replacement. The rock shelf crushing chamber is able to be dropped into the crushing chamber if the application requires it. This flexibility allows the crusher to be configured as needed to achieve the highest performance possible.



#### Trio® VSI Crusher Range Product Features

- |   |   |    |                                      |
|---|---|----|--------------------------------------|
| 1 | Crushing chamber (rock shelf configuration) | 6  | Motor mount adjustment               |
| 2 | Enclosed rotor                              | 7  | End venting enclosed V-belt guarding |
| 3 | Hydraulic lid lifter                        | 8  | Inspection port for V-belt           |
| 4 | External adjustable feed tube               | 9  | Enclosed V-belt drive                |
| 5 | Lid with inspection door                    | 10 | Bearing cartridge                    |



## Our Trio® VSI crusher range is fully customisable to meet all of your unique requirements.

### Lubrication and Safety Features

Standard in all our Trio® VSI crushers is an independent modular oil lubrication system with built-in heating and cooling to provide superior bearing lubrication.

The lubrication unit (pictured below) is equipped with an oil pump, directional selector valves, pressure and temperature gauges, and an oil filter. A flow meter and temperature sensors with inter-lock safety shut switches. The lubrication system is also used to utilise the lid lift hydraulics, providing full access to the crushing chamber.

Our Trio® VSI crusher is supplied with a vibration protection system that includes a maintenance alarm to alert you to potential problems. If excess vibration occurs, the vibration switch will shut down the crusher to protect it from possible damage.

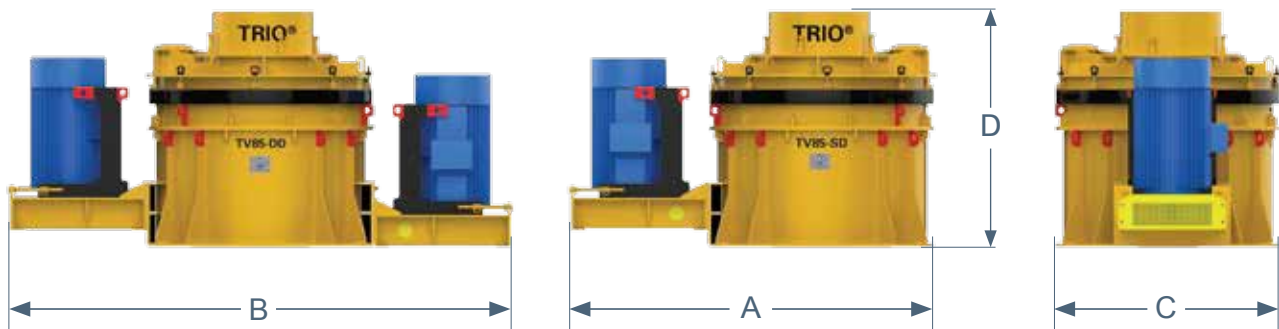
A micro switch incorporated into the lid lift (pictured right) is a further safety feature that prevents the crusher from start-up during inspection or maintenance.



### Lubrication Unit Assembly

- 1 Oil tank
- 2 Oil filter
- 3 Oil tank temperature sensor
- 4 Lid lift (hydraulic)
- 5 Oil cooler
- 6 Oil flow meter
- 7 Oil pump
- 8 Oil motor
- 9 Oil heater





### Product Range

MODEL	A mm	B mm	C mm	D mm
TV65	3346	-	1800	2385
TV85	3720	5035	2240	3005
TV95	3720	5035	2510	3005
TVSM115	-	6679	3156	3758

### Typical Physical Properties

MODEL	POWER		MACHINE WEIGHT*		MAX FEED SIZE** mm	SPEED RPM	MAX CAPACITY***	
	kW	HP	kg	lbs			MTPH	STPH
TV65-ROR-SD	90	125	8040	17688	40	1500-2700	125	140
TV85-ROR-SD	250	350	11900	26180	50	800-1800	250	275
TV85-ROR-DD	132x2	150x2	13200	29040	50	800-1800	250	275
TV85-ROS-SD	315	400	13900	30580	40	800-1650	300	330
TV85-ROS-DD	160x2	200x2	15480	34056	40	800-1650	300	330
TV85-SOS-SD	315	400	14300	31460	90	800-1400	300	330
TV85-SOS-DD	200x2	250x2	15980	35156	90	800-1400	400	440
TV95-ROR-SD	315	400	12840	28248	50	800-1650	300	330
TV95-ROR-DD	315x2	400x2	15600	34320	50	800-1650	500	550
TV95-ROS-SD	315	400	15840	34848	50	800-1650	350	385
TV95-ROS-DD	315x2	400x2	18600	40920	50	800-1650	550	606
TV95-SOS-SD	315	400	16340	35948	125	800-1300	350	385
TV95-SOS-DD	315x2	400x2	19100	42020	125	800-1300	550	606
TVSM115-ROR-DD	560x2	750x2	39400	86680	50	800-1300	800	880

\* Machine weight shown does not include drive motor package.

\*\* Longest one-way dimension is subject to the application, crusher rpm, crushing chamber configuration, installed power and the crushing circuit design.

\*\*\* Crusher performance may vary depending on the feed gradation to the crusher, feed moisture content, crushability/friability of the material, crusher rpm, installed power and the crushing circuit design.

Note: Please consult Weir Minerals for specific crusher performance and capacity for your application.





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