Impact Crushers

TRF Hammer Bar type Impact Crushers are suitable for crushing hard rocks such as limestone, dolomite, granite and other similar materials under toughest operating conditions.

Rotor
The rotor is made of high-carbon steel casting, and has a wedge-shape hammer holding grooves extending parallel to the shaft. Its peripheral part is hardened by high frequency induction heating for greater wear resistance. The shaft is press-fitted and the rotor shaft assembly is dynamically balanced to assure vibration free operation.

Hammer Bars
The hammer bars extend over the full width of the rotor. The bars are so designed that those can be reused by repositioning after one face wears out. The hammer bars are of Mn steel castings.

Breaker Plates
Two or three Breaker plates of Mn Steel casting are positioned to form an arc of the circle centered to the point of impact. The first plate is normally fixed in initial crushing zone. The second and the last plates are suspended from the frame through hinged connections. These are adjustable by heavy duty coil spring.

Frame
This frame is fabricated with heavy steel plates and is stress relieved. Inside surface of the frame is provided with cast Mn Steel liners.

Approximate Capacity & Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Rotor Size</th>
<th>Max. Feed Size</th>
<th>Capacity</th>
<th>Rotor Dia</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Approx. Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KC 16/310</td>
<td>2100x2100</td>
<td>1800x1500</td>
<td>200-600</td>
<td>150-200</td>
<td>3000</td>
<td>2500</td>
<td>3500</td>
<td>82000</td>
</tr>
<tr>
<td>KS 12/2100</td>
<td>1800x1500</td>
<td>1500x1000</td>
<td>300-750</td>
<td>250-500</td>
<td>3600</td>
<td>2500</td>
<td>4000</td>
<td>38000</td>
</tr>
<tr>
<td>KR 9/1400</td>
<td>1400x1400</td>
<td>1000x1000</td>
<td>4750</td>
<td>400-700</td>
<td>3000</td>
<td>2800</td>
<td>4100</td>
<td>13500</td>
</tr>
</tbody>
</table>

1. KC type is designed as primary crusher for crushing limestone and dolomite.
2. KS type is extensively used as a secondary crusher for crushing limestone, dolomite and other friable materials.

MODEL KC

MODEL KS

Capacities are based on reducing an average limestone to a product of 20 mm and under, when operating in closed circuit with a screen. Ratings & dimensions are approximate.

Impact Crushers
Impact Crushers

**Impact Crushers**

- **High Crushing ratio up to 80**
- **Reversible rotation which maximizes use/life of hammers and grinding blocks**
- **Easy maintenance**
- **Suitable for fine crushing**
- **High crushing efficiency**

## TRF LIMITED

**A Enterprise**

**TECHNICAL SPECIFICATIONS**

### Impact Crushers

**TRF LIMITED**

**A Enterprise**

**TRF Limited**

11, Station Road, Burma Mines, Jamshedpur-831007, Jharkhand

Phone: +91-657-3046500/598

Fax no.: +91-657-2345732, e-mail: co@trf.co.in

**HYDERABAD**

Business Development Department

Block - D, 3rd Floor,

22 Camac Street, Kolkata - 700 016

Ph: +91-33-44033553

e-mail: biz.development@trf.co.in

**NEW DELHI**

Assistant Divisional Manager

Cell: +91-9304813195

Ph: +91-657-3046259

Fax: +91-657-2345724

e-mail: r.k.shukla@trf.co.in

**MUMBAI**

Magnet House, 1st Floor,

Narottam Morarji Marg, Ballard Estate,

Ph: +91-22-22616853 / 22641320

Fax: +91-22-22614085

e-mail: mum@trf.co.in

**REGIONAL OFFICES**

**MARKETING OFFICES**

Bulk Material Handling Equipment

Kongressberg Road

110001 Delhi, India

Ph: +91-11-62628282

Fax: +91-11-62628285

e-mail: info@trf.co.in

**HEAD OFFICE & WORKS**

TRF Limited

11, Station Road, Burma Mines, Jamshedpur-831007, Jharkhand

Ph: +91-657-3046500, e-mail: sales@trf.co.in

**TECHNICAL SPECIFICATIONS**

- **MODEL KR**

  1. KC type is designed as a primary crusher for crushing limestone and dolomite.
  2. KS type is extensively used as a secondary crusher for crushing limestone, dolomite, and other friable materials.
  3. KR type is reversible machine and used extensively for fine crushing of gravels, coke, etc.

### Approximate Capacity & Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Rotor Size</th>
<th>Max. Feed Size (mm)</th>
<th>Capacity (TPH)</th>
<th>Rotor Speed (M/Sec)</th>
<th>Drive (KW)</th>
<th>Length (mm)</th>
<th>Width (mm)</th>
<th>Height (mm)</th>
<th>Approx. Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KC 14/2100</td>
<td>2100X2100</td>
<td>1000X1500</td>
<td>200-400</td>
<td>15-30</td>
<td>300-750</td>
<td>5300</td>
<td>4700</td>
<td>3560</td>
<td>82000</td>
</tr>
<tr>
<td>KS 12/2100</td>
<td>1600X1500</td>
<td>350X450</td>
<td>150-300</td>
<td>20-40</td>
<td>4750</td>
<td>2830</td>
<td>3200</td>
<td>3080</td>
<td>13500</td>
</tr>
<tr>
<td>KR 9/1400</td>
<td>1400X1400</td>
<td>100X100</td>
<td>120-200</td>
<td>25-30</td>
<td>300X450</td>
<td>200X350</td>
<td>2030</td>
<td>1500</td>
<td>13500</td>
</tr>
</tbody>
</table>

Capacities are based on reducing an average limestone to a product of 20 mm and under, when operating in closed circuit with a screen. Ratings & dimensions are approximate.
The machine is provided with central inlet and open discharge to the reversible rotor with crushing ledges arranged on both sides. The hammer heads on the hammer arms are reversible and can be worn down to 70% of their original size. The impact walls are arranged around the rotor and are symmetrically around the rotor assembly. Breaker blocks are of cast Mn steel and arranged symmetrically around the rotor assembly. The complete grinding wall assembly can be adjusted.

Impact Crushers (type TE With Single Piece Hammer Arrangement)

Mode of Operation

Material driven against breaker blocks rebounds and is again struck by the hammers, shattering under this high-impact velocity. Small, finished particles cease to react freely to additional hammer blows and are swept from the active reduction zone. By this maximum crushing power is applied to large fragments while little energy is expended on finished products. The impactor is ideally suited to the closed circuit crushing systems to obtain maximum crushing efficiency.

Construction Feature

Frame

The frame is of heavy fabricated design and is provided with wear-resistant wear liners. Large access door is provided to facilitate the inspection of hammer and breaker blocks.

Breaker Blocks

Breaker blocks are of cast Mn steel and arranged symmetrically around the rotor assembly. Breaker blocks are easily replaceable. The complete grinding wall assembly can be adjusted.

Driver System

Impactor are generally driven by electric motors and V belts or an internal combustion engine. V-belt drives ensure the future adjustment and fine tuning after commissioning for the desired product gradation. Crushers can also be directly driven by electric motor coupled with the gear box.

Impact Crushers

TRF Impact Crushers are ideal processing machines for primary and secondary crushing of raw materials for the steel and iron industry, hard coal and limestones, quarries or minerals. They are also extensively used for the tertiary crushing of limonite, dolomite, granite for the Brickling and Blending Plant in cement preparation and coke for Coking Plant. Its sturdy and proven design offers the following advantages:

- increased throughput capacity
- maximum possible operating reliability
- increased throughout capacity
- low maintenance cost
- maximum possible operating reliability
- increased throughout capacity
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- maximum possible operating reliability
- increased throughout capacity
TRF Impact Crushers are ideal processing machines for primary and secondary crushing of raw materials for the steel and iron industry, road and building materials, cement and minerals. They are also extensively used for the tertiary crushing of limestones, dolomites, and stones for the Building and Blending Plant for similar preparation and coarse for Coal for Coking Plant. Its sturdy and proven design offers the following advantages:

1. Increased throughput capacity
2. Maximum possible operating reliability
3. Almost unaffected by foreign bodies
4. Low maintenance cost

Features

1. Crushing ratio can be set at an extremely large value: normally a=12 and maximum up to 80.
2. A high crushing efficiency reduces the power consumption.
3. Selective crushing can be made with ease.
4. The shape of crushed material will increasingly become cubic.
5. Mechanism and operation are simple.
6. Safety running is assured.
7. The shape of crushed material will increasingly become cubic.

Hydraulically Hinged Housing

The housing of the Impact Crusher is divided into parts and can be opened hydraulically (or mechanically) on the left and right side of the rotor. Thus, all wearing parts become accessible and can be easily replaced. The housing is also provided with large extensions allowing quick inspection of the inside condition of the machine.

Impact Crushers (Type TA with Two Part Hammer Arrangement)

Mode of Operation

The feed material is crushed by means of rotating beaters with replaceable heads by impact against the grinding ledges. Due to the replaceable rotors with grinding ledges arranged on both sides the wearing face of the hammer can be used to the maximum extent without renewing the hammers. The machine is provided with central inlet and open discharge passages which eliminates the chances of clogging of grate openings.

Hammers & Crushing Ledges

The rotor of the crusher consists of a forged heavy duty rotor and hammer discs loosely keyed to the shaft. The rotor is provided with two part hammer arrangement consisting of hammer heads and hammer heads which are arranged around the circumference of the rotor in a staggered manner. The quantity of hammers per row is decided by this maximum crushing power is applied to large fragments while little energy is expended on freed particles. The impactor is ideally suited to the closed circuit crushing systems obtaining maximum crushing efficiency.

Note 1. The dimensions are approximate and should not be used for construction purposes. Certified drawings will be furnished on receipt of order.

Capacity of screens are based on reducing the average limestone to a product of 20 mm and under, when operating in closed circuit with a screen. Ratings & dimensions are approximate.
The machine is provided with central inlet and open discharge to the reversible rotor with crushing ledges arranged on both sides of Hammer Arrangement.

Impact Crushers (Type TA with two Part Hammer Arrangement)

Mode of Operation

Material driven against breaker blocks rebounds and is again struck by the hammers, shattering under this high impact velocity. Small, finished particles cease to react freely to additional hammer blows and are swept from the active reduction zone. By the maximum crushing power is applied to large fragments while little energy is expended on finest particles. The impact is ideally suited to the closed circuit crushing systems obtaining maximum crushing efficiency.

Impact Crushers (type TE With Single Piece Hammer Arrangement)

Construction Feature

Frame

The frame is of heavy fabricated design and is provided with wear-resistant renewable liners. Large access door is provided for easy inspection of the hammer, breaker blocks.

Rotor Assembly

The rotor assembly runs in self-aligning spherical roller bearings. The bearings are fitted in dust proof cast steel housing with lubrication system. Hammers are of cast Mn steel and free swaying to absorb the crushing shock.

breaker Blocks

Breaker blocks are of cast Mn steel and arranged symmetrically around the rotor assembly. Breaker blocks are easily replaceable. The complete grinding wall assembly can be altered.

Drive System

Impact crushers are generally driven by electric motors and V belts. V belts ensure the future adjustment and fine tuning after commissioning for the desired product gradation. Crushers can be directly driven by electric motor coupled with the gear box.

Hammers & Crushing Ledges

The rotor of the crusher consists of a forged heavy duty rotor and machined rotor disc keyed to the shaft. The rotor is provided with two part hammer arrangement consisting of Hammer arms and hammer heads which are arranged around the circumference of the rotor in a staggered manner. The quantity of hammers per row is decided depending on the duty requirement. The location holes for the hammer arms are drilled on special device with high precision pitch thus eliminating the vibration when the machine is running.

The hammer heads on the hammer arms are reversible and can be worn down to 70% of their original size. The impact walls are arranged around the rotor and are replaceable. The complete grinding wall assembly can be adjusted.

Typical Crushing Capacity

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>HP (kw)</th>
<th>TPH (tonnes/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-200</td>
<td>50-60</td>
<td>70-150</td>
</tr>
<tr>
<td>200-300</td>
<td>40-50</td>
<td>60-100</td>
</tr>
<tr>
<td>300-400</td>
<td>30-40</td>
<td>50-80</td>
</tr>
<tr>
<td>400-500</td>
<td>25-35</td>
<td>40-70</td>
</tr>
<tr>
<td>500-600</td>
<td>20-25</td>
<td>30-50</td>
</tr>
<tr>
<td>600-700</td>
<td>15-20</td>
<td>20-30</td>
</tr>
</tbody>
</table>

*For hydraulic design only.

Note 1. The dimensions are approximate and should not be used for construction purposes. Detailed drawings will be furnished on receipt of order.

Overall Dimension in mm

<table>
<thead>
<tr>
<th>TYPE TA</th>
<th>TYPE TE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>1150</td>
</tr>
<tr>
<td>Height</td>
<td>1850</td>
</tr>
<tr>
<td>Depth</td>
<td>1850</td>
</tr>
</tbody>
</table>

Overall Dimension and Capacity (TPH)

<table>
<thead>
<tr>
<th>Model</th>
<th>Size (mm)</th>
<th>Width (mm)</th>
<th>Height (mm)</th>
<th>Length (mm)</th>
<th>Overall Width (mm)</th>
<th>Overall Height (mm)</th>
<th>HP (kw)</th>
<th>TPH (tonnes/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE-260</td>
<td>115 x 1850</td>
<td>1150</td>
<td>1850</td>
<td>1850</td>
<td>280</td>
<td>910</td>
<td>1.65</td>
<td>50-60</td>
</tr>
<tr>
<td>TE-305</td>
<td>150 x 1850</td>
<td>1500</td>
<td>1850</td>
<td>1850</td>
<td>300</td>
<td>1200</td>
<td>3.33</td>
<td>40-50</td>
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<tr>
<td>TE-350</td>
<td>200 x 1850</td>
<td>2000</td>
<td>1850</td>
<td>1850</td>
<td>330</td>
<td>1450</td>
<td>5.50</td>
<td>50-80</td>
</tr>
<tr>
<td>TE-385</td>
<td>250 x 1850</td>
<td>2500</td>
<td>1850</td>
<td>1850</td>
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<td>1750</td>
<td>8.47</td>
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<tr>
<td>TE-420</td>
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<td>3000</td>
<td>1850</td>
<td>1850</td>
<td>390</td>
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<td>11.35</td>
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<tr>
<td>TE-450</td>
<td>350 x 1850</td>
<td>3500</td>
<td>1850</td>
<td>1850</td>
<td>420</td>
<td>2350</td>
<td>14.85</td>
<td>60-100</td>
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<td>1850</td>
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<td>2550</td>
<td>17.60</td>
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<td>1850</td>
<td>1850</td>
<td>570</td>
<td>3350</td>
<td>28.80</td>
<td>110-180</td>
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<td>TE-660</td>
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<td>1850</td>
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<td>3550</td>
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<td>120-200</td>
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<tr>
<td>TE-700</td>
<td>700 x 1850</td>
<td>7000</td>
<td>1850</td>
<td>1850</td>
<td>630</td>
<td>3750</td>
<td>34.25</td>
<td>130-240</td>
</tr>
<tr>
<td>TE-750</td>
<td>750 x 1850</td>
<td>7500</td>
<td>1850</td>
<td>1850</td>
<td>660</td>
<td>3950</td>
<td>36.90</td>
<td>140-300</td>
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<tr>
<td>TE-800</td>
<td>800 x 1850</td>
<td>8000</td>
<td>1850</td>
<td>1850</td>
<td>690</td>
<td>4150</td>
<td>39.55</td>
<td>150-360</td>
</tr>
</tbody>
</table>

TRF manufactures various types of Impact Crushers and hence is in position to offer the most suitable crushers required for the specific duty conditions.

Capacities are based on reducing an average limestone to a product of 10 mm size and when operating in closed circuit with a screen. Ratings & dimensions are approximate.
Impact Crushers

**TRF Limited**

**A Tata Enterprise**

**TECHNICAL SPECIFICATIONS**

**Impact Crushers**

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**MODEL KR**

The frame is fabricated with heavy duty steel plates and is stress relieved. Inside surface of the frame is provided with cast Mn steel liners.

**Breaker Plates**

Two or three Breaker plates of Mn Steel casting are positioned to form an arc of the circle centered to the point of impact. The first plate is normally fixed in initial crushing zone. The second and the last plates are suspended from the frame through hinged connections. These are adjustable by heavy duty coil springs.

**Hammer Bars**

The hammer bars extend over the full width of the rotor. The bars are so designed that these can be reused by repositioning after one face wears out. The hammer bars are of Mn Steel castings.

---

**Capacities**

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity (TPH)</th>
<th>Approx. Weight (Kg)</th>
<th>Length (mm)</th>
<th>Width (mm)</th>
<th>Height (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KC 14/2100</td>
<td>350-900</td>
<td>82000</td>
<td>5300</td>
<td>4700</td>
<td>3560</td>
</tr>
<tr>
<td>KS 12/2100</td>
<td>200-400</td>
<td>38000</td>
<td>4700</td>
<td>3200</td>
<td>2830</td>
</tr>
<tr>
<td>KR 9/1400</td>
<td>150-200</td>
<td>13500</td>
<td>3400</td>
<td>3200</td>
<td>2830</td>
</tr>
</tbody>
</table>

---

**Approximate Capacity & Dimensions**

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity (TPH)</th>
<th>Feed size (mm)</th>
<th>Capacity (TPH)</th>
<th>Drive (KW)</th>
<th>Length (mm)</th>
<th>Width (mm)</th>
<th>Height (mm)</th>
<th>Approx. Weight (Kg)</th>
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</thead>
<tbody>
<tr>
<td>KC 14/2100</td>
<td>350-900</td>
<td>1000X1500</td>
<td>350-900</td>
<td>15-35</td>
<td>5300</td>
<td>4700</td>
<td>3560</td>
<td>82000</td>
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<tr>
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<td>200-400</td>
<td>300X450</td>
<td>200-400</td>
<td>20-40</td>
<td>5300</td>
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<td>3080</td>
<td>38000</td>
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<td>13500</td>
</tr>
</tbody>
</table>

---

1. KC type is designed as a primary crusher for crushing limestone and dolomite.
2. KS type is extensively used as a secondary crusher for crushing limestone, dolomite and other friable materials.
3. KR type is reversible machine and used extensively for fine crushing of gravels, coke, etc.

---

Impact Crusher [type HB With Hammer]

**Bar Arrangement**

TRF Hammer Bar type Impact Crushers are suitable for crushing hard rocks such as limestone, dolomite, granite and other similar materials under toughest operating conditions.

**Rotor**

The rotor is made of high-carbon steel casting, and has wedge-shape hammer holding grooves extending parallel to the shaft. Its peripheral part is hardened by high frequency induction heating for greater wear resistance. The shaft is press fitted and the rotor shaft assembly is dynamically balanced to assure vibration free operation.

**Hammer Bars**

The hammer bars extend over the full width of the rotor. The bars are so designed that these can be reused by repositioning after one face wears out. The hammer bars are of Mn Steel castings.

---

**TRF Limited**

**11, Station Road Burma Mines, Jamshedpur-831007, Jharkhand**

**Phone:** +91- 657-3046500/ 598

**Fax no.:** +91- 657-2345732, e-mail: co@trf.co.in

---

**NEW DELHI**

**Himalaya House,**

**11th Floor 23, Kasturba Gandhi Marg**

**Ph:** +91-11-223310788 / 23314540

**Fax:** +91-11-23722447

**e-mail:** nd@trf.co.in

---

**MUMBAI**

**Magnet House, 1st Floor,**

**Narottam Morarji Marg, Ballard Estate,**

**Ph:** +91-22-22616853 / 22641320

**Fax:** +91-22-22614085

**e-mail:** mum@trf.co.in

---

**REGIONAL OFFICES**

**MARKETING OFFICES**

**Bulk Material Handling Equipment**

**Port & Yard Equipment Division**

**Assistant General Manager**

**Cell:** + 91 - 9334002278

**Ph:** +91-657 - 3046242

**Fax:** +91-657-2345214

**e-mail:** dcjha@trf.co.in

---

**HEAD OFFICE & WORKS**

**TRF Limited**

**1/3, Sector Power House, Sham Shad Ali Road, Jamshedpur 831007, Jharkhand**

**Phone:** +91-657-3046500/ 598, **Fax:** +91-657-2345732, **e-mail:** co@trf.co.in

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**TECHNICAL SPECIFICATIONS**

- High Crushing ratio up to 80
- Reversible rotation which maximizes use life of hammers and grinding blocks
- Easy maintenance
- Suitable for fine crushing
- High crushing efficiency