



## SPECIFICATION

Technical Specification No.: 1-401-01645-A-3  
Installation: One Primary RollSizer and One  
Secondary Double Roll Crusher

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## PART A TECHNICAL SPECIFICATION OF DELIVERIES AND SERVICES

### 1. BASIC DATA

Feed material	Limestone (very sticky)
Feed size	0 – max 1000x1000x1000 mm ROM
Feed moisture Limestone	Max 17,2%
Bulk density	approx. 1,3 t/m <sup>3</sup>
Altitude	280 m a.s.l
Working Temperature	-20 °C to +37 °C
Standards	DIN, VDE, IEC, ISO

### 2. PERFORMANCE DATA

Throughput capacity	1100 t/h
Product size	95% < 80 mm, 98% < 100 mm measured on square mesh according to DIN 66165 and ISO 3310



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### 3. TECHNICAL SPECIFICATION

#### ITEM 01 PRIMARY RollSizer DRS 1000 x 2000 Center Sizer

##### Technical data:

<u>Type</u>	DRS 1000 x 2000 Center Sizer
<u>Roll width</u>	2000 mm
<u>Distance of rolls</u>	1000 mm
<u>Crushing tools</u>	<b>Exchangeable pics</b>
<u>Feed opening</u>	Approx. 2100 x 2000 mm
<u>Number of crushing rolls</u>	2
<u>Peripheral tip speed of the rolls</u>	approx 2.1 m/s low speed
<u>Type of drive</u>	2 x 250 kW / 50 Hz dual drive. Two mechanical drives incl. fluid coupling and parallel shaft speed reducer gears
<u>Protection of drive</u>	Fluid coupling Reversible rolls
<u>Required motors</u>	Squirrel cage motors <b>(by others)</b> 2 x 250 kW, 1500 rpm, design B3, protection IP 54

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### THE THYSSENKRUPP PRIMARY ROLLSIZER MAINLY CONSISTS OF:

#### Crusher Housing

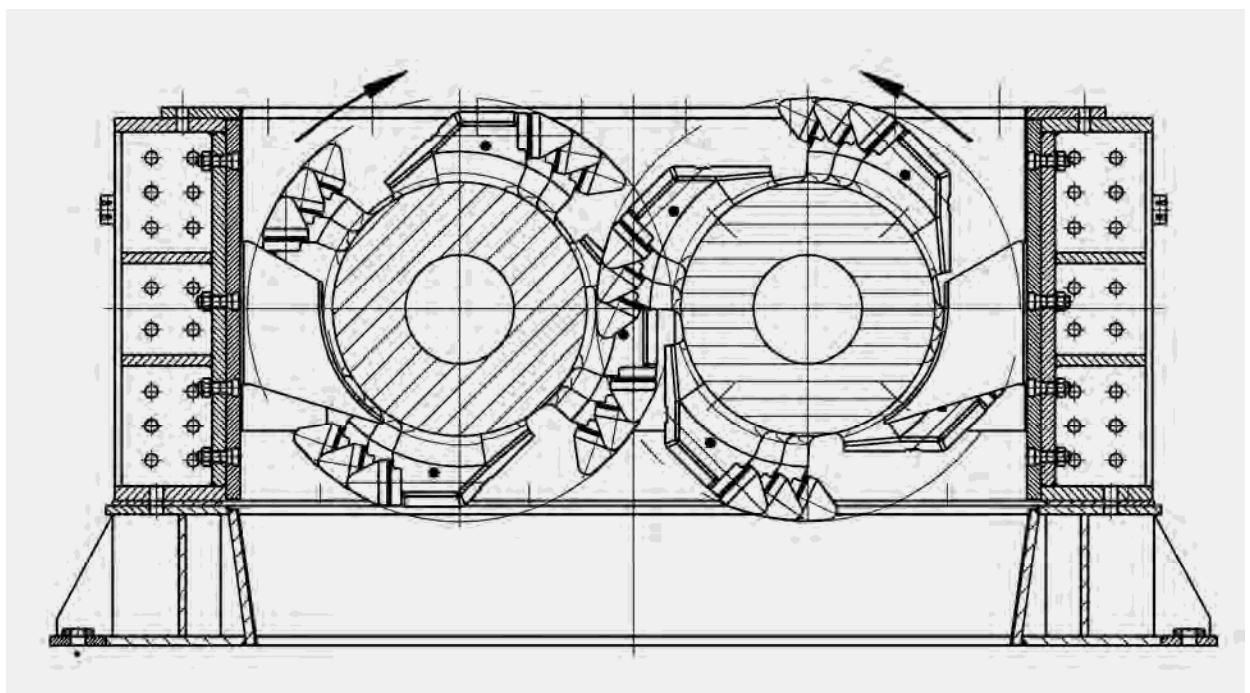
Mainly consisting of:

- the side walls and the front walls in bolted and welded design
- the bearing housings for the shaft bearings
- the standard wear protection for the crushing chamber

#### Crushing rolls

Mainly consisting of:

- two rolls, supported in the side walls by the means of antifriction bearings (SKF/FAG)
- the replaceable crushing tools including special tool for exchanging of crushing picks
- the sealing arrangement of the antifriction bearings



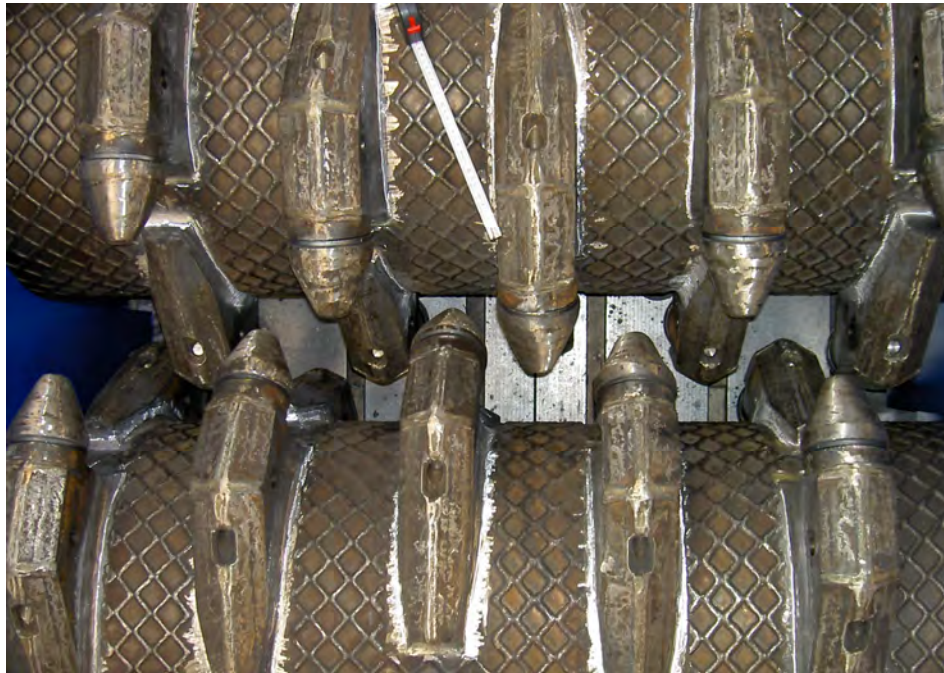
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Replaceable pics



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Typical picture

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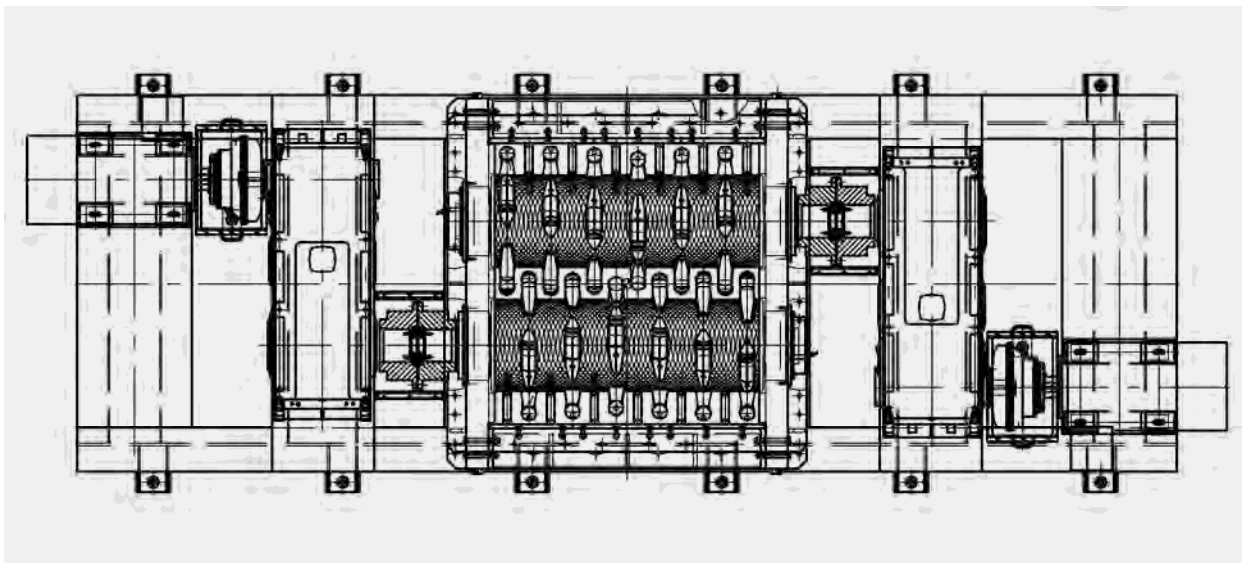
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### Mechanical Double Drive

One drive unit for each roll mainly consisting of:

- the curved tooth coupling
- the spur gear reducer with oil lubrication
- the fluid coupling incl. elastic coupling
- the squirrel cage drive motor 250 KW **(by client)**
- Protection of the drive train:
  - Speed monitor to indicate stoppage of the rolls
  - Hydraulic fluid coupling with overheat protection
  - PT 100 to control the temperature of the bearings
- the drive trains will be arranged on both sides of the crusher housing.



### Base Frame (To be manufactured by CBMI according to TKF drawings)

mainly consisting of:

- a welded, bolted and machined frame, designed to support the crusher housing and the two drive strains.
- Information about slide rails will be provided by TKF



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### Chutes (not included)

- Crusher inlet hood
- Crusher discharge chute

of strongly ribbed welded steel plate design with the necessary bracings and mounting structure.





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### ITEM 02 Secondary Double roll crusher WS 14 x 20

#### Technical data:

Type	WS 14 x 20
Roll circle diameter	approx. 1400 mm
Roll width	approx. 2000 mm
Roller shell material	High alloyed steel
Feed opening	approx. 1500 x 1950 mm
Number of crushing rolls	2
Peripheral speed of the rolls	approx. 6.5 m/s
Gap between rollers	80 mm, adjustable
Roller tension and protection system	Dual hydraulic cylinders
Type of drive:	Fixed speed drive with different velocity of each roller
Floating roll, fixed speed	1 x 315 kW / 50 Hz dual drive V-belt drive and speed reducer gears as well as flexible coupling
Fixed roll, fixed speed	1 x 315 kW / 50 Hz dual drive V-belt drive and speed reducer gear as well as flexible coupling
Required motors and starters (if required)	<b>(by others)</b>  2 x 315 kW, 1500 rpm, design B3, protection IP 55

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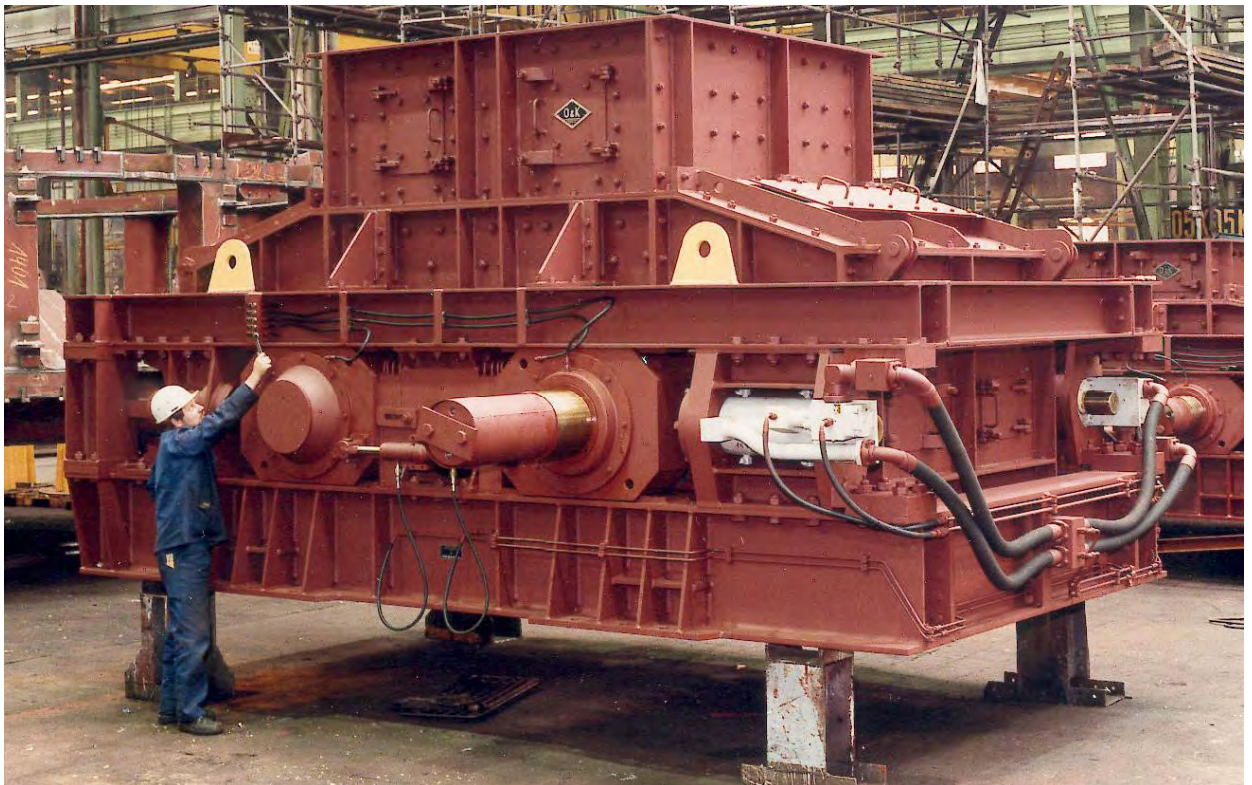
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### THE THYSSENKRUPP DOUBLE ROLL CRUSHER CONSISTS OF:

- the crusher housing with liner plates
- the hydraulic gap adjusting system
- the hydraulic support system of the movable roller
- the two toothed rollers
- the fly-wheels
- the V-belt drives



Typical picture



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### - Crusher housing including maintenance doors

The crushing housing consists of a rigid main frame made of steel profiles and sections in a bolted and welded design. The main frame supports the bearing housings including the grease lubricated antifriction bearings.

The housing is protected by liner plates fixed at the side walls.

Limit switches for maintenance doors are included.

### - High alloyed crusher segments

The segments are made of high alloyed steel. The teeth are additionally protected by wear resistance overlays.

### - Roller gap adjustment

The roller gap is adjustable by two integral hydraulic cylinders. This allows optimizing the final product size according to the requirements.

### - Hydraulic pre-tension of the rollers

One of the two rollers is designed as movable roll and pre-tensioned by two lateral hydraulic cylinders. In case of feeding unbreakable tramp iron to the roll crusher the floating roll will automatically be moved backwards to increase the roller gap. After reducing the overload, the floating roll will be moved back by the two hydraulic cylinders in the former position.

- hydraulic power pack including housing

- hydraulic cylinders



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### - Two V-belt drives

#### mainly consisting of:

- the base frames with slide rails **(by CBMI according to TKF drawings)**
- the gear reducers
- the flexible couplings
- the hydraulic tensioning devices
- the pulleys and the V-belts incl. protection hood  
**(the protection hood to be manufactured by CBMI according to TKF drawings)**
- the 2 x AC-motors **(by others)**
- protections of the drive train:
  - Speed monitor for the rolls
  - PT 100 temperature control of bearings

### - Crusher inlet hood and discharge chute (not included)



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### 6. LIST OF WEIGHTS

Item	No.	Equipment	TKF supply (approx kg)	Local supply (approx kg)*
01	1	Primary RollSizer DRS1000x2000 Center Sizer Supporting Frame  2 x AC Motor 250 kW	44.050  Drwg  -	-  12.300  By others
02	1	Double Roll Crusher WS 14-20 cpl. with drive i.e. bearings, spur gear, pulley Drive Base Frame with Slide Rails Drive Motors 2 x 315 kW Drive Guards	63.130  Drwg  -  Drwg.	-  5.100  By others  1.700
03	1	Commissioning Spares  For each Double RollerSizer: 1 set of resistant thermometer 1 set of seals for curved tooth coupling 1 set of seals for turbo coupling  For each Double Roll Crusher: 1set of sealing for hydraulic cylinder.	included	-
	1	Engineering	included	-
		<b>Total weight approx.</b>	<b>107.180</b>	<b>19.100</b>

\* equipment mentioned by weight means local fabrication by Customer according to ThyssenKrupp fabrication drawings