



## TG Series Gyrotory Crusher

Highly Effective Crushing Solution



# DIAMOND

[diamondequip.com](http://diamondequip.com)

Building Solutions Together  
[www.trioproducts.com](http://www.trioproducts.com)

TRIO strives to provide the most rugged, robust, and reliable equipment for the most demanding environments.

TRIO provides customized high value solutions according to our customers' needs, from single machines to stationary or portable plants, including turnkey projects

## Building Solutions Together



TRIO continues to expand as a world class designer & manufacturer of crushers, screens, washing equipment and conveyors for aggregate, mining, recycling, and industrial minerals. The core goal of the company is to pursue product improvement, quality, and provide our customers with the most cost-effective equipment solutions.

## TRIO Creates Value for You

TRIO's outstanding gyratory crushers combine latest design together with innovative engineering, advanced technology and manufacturing that provides high performance, reliability, and cost-effective solution.

TRIO's TG Series gyratory crusher can be applied in extra-large scale mining and aggregate industries.

The innovatively designed crushing chamber features inclined angle , expanded space for throughput and larger crushing surfaces, extra-ordinary high duty capacity and maximum liner life.

Longer service life and reliable operation are guaranteed by TRIO TG Series gyratory crushers' specially designed heavy duty frame, large size main shaft assembly, and an outstanding bearing assembly.

Advanced design for crushing chamber brings optimized solution for customers' application

Crushing capacity can be altered by a simple change of the eccentric bushing based on customers' demand and requirements.

### Features:

High Capacity

Rugged And Reliable Design

Extra Heavy Duty Design

Advanced Mechanical Design

Low Operating Cost

Balanced Design

Easy Maintenance



### High Capacity

The 54-75 Gyratory is designed to maximize the throughput capacity with our ability to choose the correct combination of the throw, the computer generated crushing profile and the crusher speed to suit your application and goals.

### Rugged and Reliable Design

The structural design is based on 3D modeling and stress analysis to create the most rugged and reliable design to withstand stresses generated by the toughest rock known in the world. Shells are strengthened by reinforcing them with diametric and vertical ribs of ample sections and numbers.

### Extra Heavy Duty Design

Mainshaft and head are merged into a single part to create a strong structural member that can withstand heavy crushing loads and impacts. No need to worry about head separating from the shaft. It is made of alloy steel for a long extended life.

The Sleeve is press fitted on the mainshaft and held down by a bolted plate at the top of the shaft to protect the shaft from possible damage caused by rocks and debris. It is threaded to assemble the mainshaft nut used to hold the mantle on the shaft. Since the threads are on the replaceable sleeve, the mainshaft does not have the high stresses caused by the machining of the threads thus assuring long life.

### Advanced Mechanical Design

Full ring spider design is used to add rigidity to the top of the shell assembly where largest rocks are crushed. It is locked to the top shell using tapered fit and large bolts to provide rigid connection. A hydraulic disassembly system helps greatly in removing the spider assembly from the crusher.

The spider bearings are lubricated with an Automatic lubrication system that provides adequate amounts of lubrication at timed intervals. Oil with very high viscosity and extreme pressure additives is used to provide the thickest oil film to carry heavy loads.

The system quickly and effortlessly moves the head assembly to adjust the cavity setting with a push of a button. Once the shaft assembly is moved, it stays in that position with locked in oil. An electronic sensor constantly monitors the shaft position and transmits the information to an indicator at the control panel so the operator can maintain the desired setting.

Meanwhile, the hydraulic adjustment system will allow the operator to start the crusher under load and clear the cavity. A responsive relief valve backed by an accumulator makes sure that the system pressure stays within the safe limits in case of any overloads.

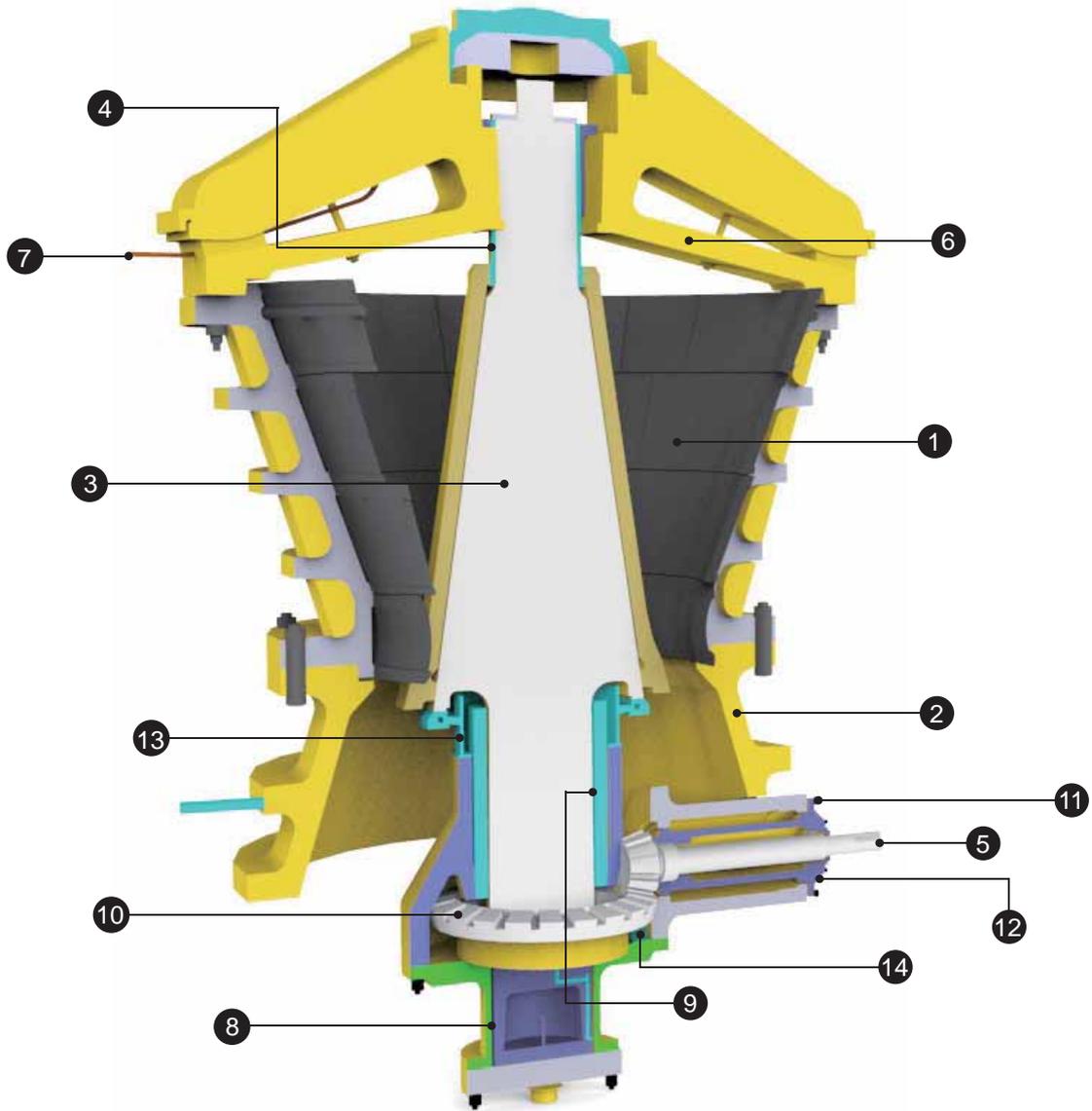
TRIO use high leaded bronze bearings to support the eccentric and the mainshaft which are subjected to heavy loads and some overloads during crushing, ensuring security, stability and reliability in operation. We have designed these bearings with correct clearances and supply them with more than adequate amounts of oil so they can operate reliably for years to come.

Gear and pinion are of spiral bevel design. They run very smooth and quiet. They are also induction hardened to provide more durability and ruggedness.

The ct.shaft box design lets you adjust the gear/pinion backlash and the root clearance externally between the pinion and the gear. This way you can maintain the optimum contact between these precision made parts for a long and reliable life.

Advanced sealing arrangement can prevent contaminants from entering the space. This installation assures Long and reliable operation for the machine.





- ① High Capacity
- ② Rugged and Reliable Design
- ③ Heavy Duty Mainshaft and Head Design
- ④ Protective Sleeve
- ⑤ Countershaft
- ⑥ Spider Design
- ⑦ Spider Lubrication System
- ⑧ Hydraulic Adjustment
- ⑨ Bearing Design
- ⑩ Gear and Pinion Design
- ⑪ External Adjustment of the Backlash and Root Clearance
- ⑫ Ct. Shaft Box Assembly
- ⑬ Effective Dust Seal
- ⑭ Balanced Design

### Low Operating Cost

Maximum power utilization and energy efficiency based on correct use of crusher variables i.e. throw, crushing profile and speed, results in the most efficient crushing action. This leads to lowest cost per ton of total production

### Balanced Design

This crusher is balanced with a Ct. Weight on the eccentric to minimize the unbalanced forces and moments on the foundation flange. This makes the crusher very desirable for a portable as well as stationary application.

### Easy Maintenance

TRIO' s products are easy to repair and maintain, and equipped with special tool to de-assemble, crane, and change spare parts to minimize downtime.

### Portable Application

Comparing with heavy truck, portable plant is more economical. TRIO' s portable gyratory crushing plant is capable of providing more flexible and creative solution for customers, which creating extra value for customers.

### Training

TRIO will provide a wide range of professional trainings delivered by experienced professionals to ensure that customers' operators will obtain adequate knowledge of proper procedures, all specially designed functions and important safety measures, which will maximize equipment efficiency and create extra value for customers.

### Regular Inspection

Regular inspection on crusher can bring about smooth operation. TRIO' s experts will regularly check the correct installation of customers' crushers to ensure the optimized installation and smooth operation of the crushing plant.

### Security and Environmental Protection

TRIO attaches special importance to health, security and environmental protection in pursuant of product improvement, product quality and availability. TRIO will be always dedicated to the responsibility to ensure TRIO' s operations are environmental friendly, which also help you to fulfill your environmental responsibilities.





**TRIO Gyratory Parameters**  
Open Circuit Maximum Capacities in MTPH  
( Largest Throw )

Model	Weight KG	Power (KW/HP)	Rotation Speed (RPM)	Feed Opening (mm/in)	Capacity								
					Open Side Discharge Setting								
					125mm (5.0")	140mm (5.5")	150mm (6.0")	165mm (6.5")	180mm (7.0")	190mm (7.5")	200mm (8.0")	215mm (8.5")	230mm (9.0")
TG4265	120,000	375 (500)	600	1,065 (42.0")	1,585 ~1,830	1,795 ~2,065	2,050 ~2,365	2,195 ~2,535	2,515 ~2,900	2,715 ~3,135			
TG5065	150,000	375 (500)	600	1,270 (50.0")		1,835 ~3,115	2,100 ~2,420	2,430 ~2,810	2,570 ~2,970	2,995 ~3,295			
TG5475	230,000	450 (600)	600	1,370 (54.0")		2,100 ~2,430	2,430 ~2,820	2,675 ~3,105	2,710 ~3,160	3,290 ~3,620	3,500 ~3,850		
TG6275	300,000	450 (600)	600	1,575 (62.0")		2,115 ~2,455	2,460 ~2,850	3,080 ~3,580	3,265 ~3,810	3,890 ~4,280	4,120 ~4,530		
TG6090	360,000	600 (800)	600	1,525 (60.0")			3,190 ~3,520	3,855 ~4,230	4,260 ~4,680	4,500 ~4,945	4,705 ~5,175	5,115 ~5,625	5,420 ~5,960

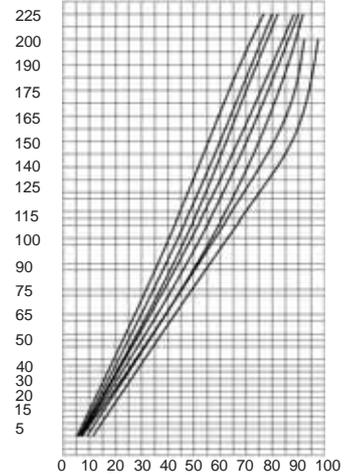
\* The values are for the average feed material with WI=12 to 14 and bulk density=1.6 metric tons/cubic meter ( 100 lbs/ cubic foot )

\* Max. feed size should be 80% of the feed opening. The capacities will vary with the method of feeding , feed gradation, crushing cavity, bulk density, moisture content, material fracture characteristics, speed, throw, etc. Consult TRIO Engineered Products for more accurate estimate.

### Open Circuit Product Gradations – Hard Rock (WI>16)

( Approximate numbers based on typical run of the quarry/mine feed gradations )

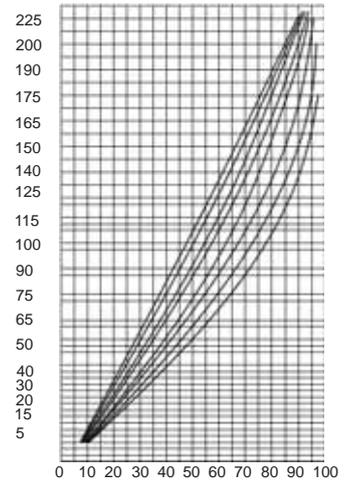
Product Size	Open Side Discharge Setting							
	125mm (5.0")	140mm (5.5")	150mm (6.0")	165mm (6.5")	180mm (7.0")	190mm (7.5")	200mm (8.0")	215mm (8.5")
225mm(9ins)			92	89	87	82	79	76
200mm(8ins)	97	92	88	85	82	78	75	72
175mm(7ins)	94	88	82	77	74	71	68	65
150mm(6ins)	87	79	75	69	66	63	60	56
125mm(5ins)	75	68	63	60	57	53	50	47
100mm(4ins)	62	57	52	49	46	43	40	37
75mm(3ins)	48	44	40	38	35	33	31	29
50mm(2ins)	36	31	29	27	26	24	22	20
25mm(1ins)	21	19	17	16	15	14	13	12



### Open Circuit Product Gradations – Medium Hard Rock (WI=12-16)

( Approximate numbers based on typical run of the quarry/mine feed gradations )

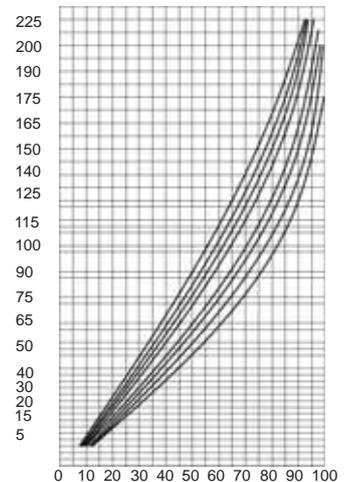
Product Size	Open Side Discharge Setting							
	125mm (5.0")	140mm (5.5")	150mm (6.0")	165mm (6.5")	180mm (7.0")	190mm (7.5")	200mm (8.0")	215mm (8.5")
225mm(9ins)			97	96	95	94	92	90
200mm(8ins)		97	95	91	89	87	85	83
175mm(7ins)	97	95	91	88	85	82	78	75
150mm(6ins)	93	87	82	78	75	72	68	64
125mm(5ins)	85	76	72	68	65	63	61	59
100mm(4ins)	71	65	60	57	54	52	50	48
75mm(3ins)	56	51	47	45	43	41	38	36
50mm(2ins)	41	37	34	32	31	30	28	26
25mm(1ins)	24	23	21	20	19	18	16	15



### Open Circuit Product Gradations – Soft Rock (WI<12)

( Approximate numbers based on typical run of the quarry/mine feed gradations )

Product Size	Open Side Discharge Setting							
	125mm (5.0")	140mm (5.5")	150mm (6.0")	165mm (6.5")	180mm (7.0")	190mm (7.5")	200mm (8.0")	215mm (8.5")
225mm(9ins)					96	94	92	91
200mm(8ins)		99	98	97	93	91	89	87
175mm(7ins)	99	97	96	95	91	88	86	84
150mm(6ins)	97	93	90	87	84	82	80	77
125mm(5ins)	90	85	81	76	74	72	70	67
100mm(4ins)	75	71	68	65	61	59	57	54
75mm(3ins)	60	57	55	51	48	46	44	41
50mm(2ins)	43	41	40	37	35	34	32	29
25mm(1ins)	27	26	25	23	21	20	19	17



### Correct Installation

Crusher's reliable operation is greatly influenced by feeding and discharging installation.

Spider arm should be in consistency with truck discharge. For even feed distribution, spider arm will separate the material flow discharged into the chamber.

The spider is constructed with a large capacity feed bin with rock bed to ensure that material will fall on dead rock bed after discharged from truck, and then fall into the chamber.

Impact from the dumping material will be reduced to protect and lengthen the service life of spider cap or main shaft assembly

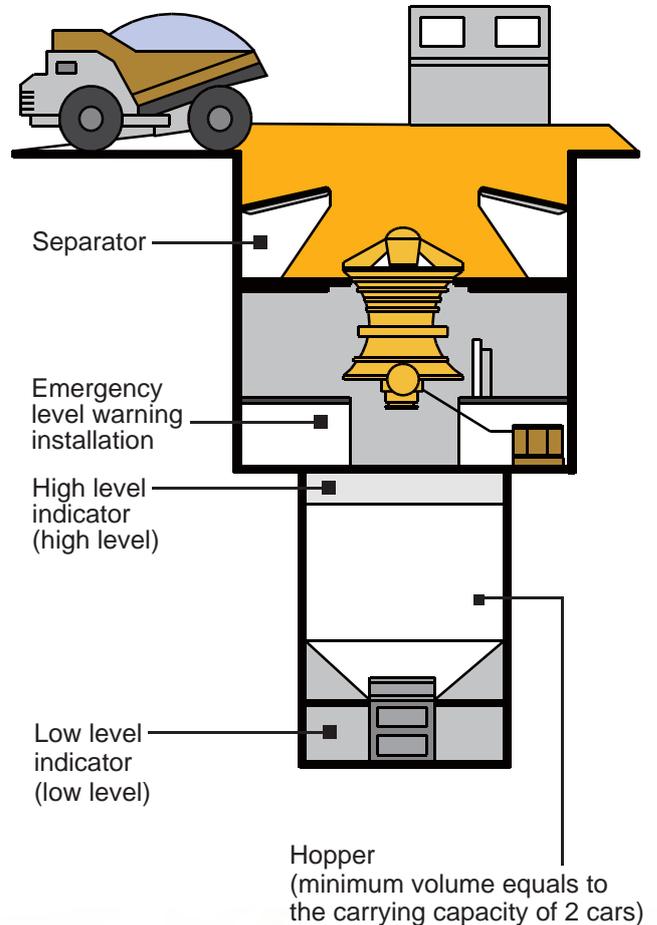
Truck capacity is enlarged to change the discharge angle and impact point of heavy material. Meanwhile, relevant alternation is required for the truck dumping platforms.

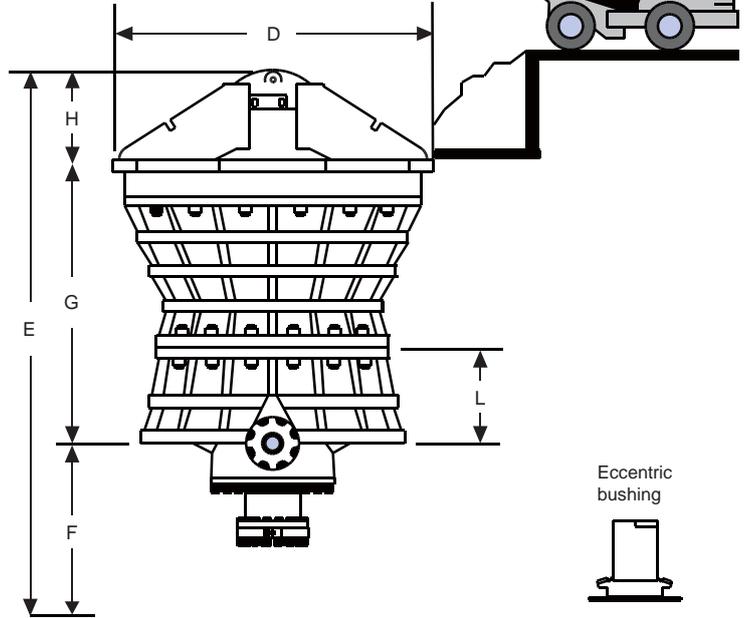
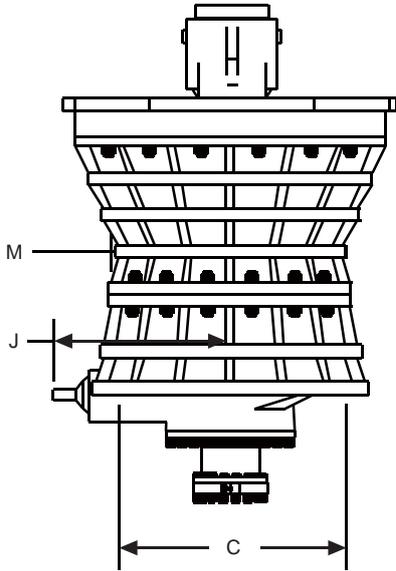
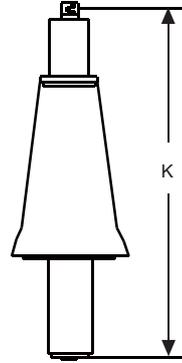
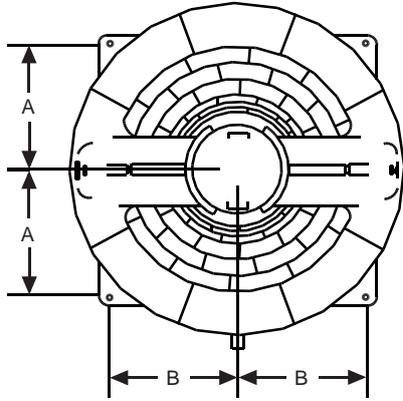
Capacity of surge bin shall be at least as large as two truckloads.

Bin level indicator (optional) will send signal to operator when the surge bin is full.

Surge bin and discharge flow should be enlarged when crusher's capacity is increased.

Correct installation is able to increase chamber wear life and bearing life, which ensures the highly effective and reliable operation of the crusher.

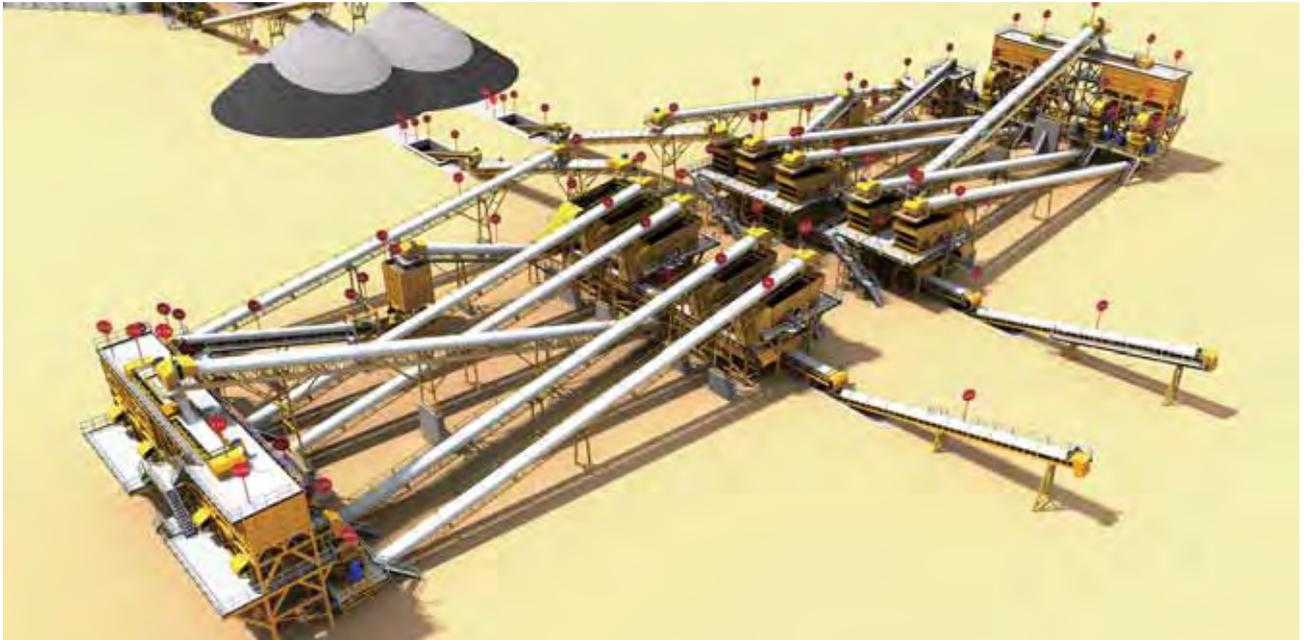




Size	unit	A	B	C	D	E	F	G	H	J	K	L	M
42 X 65	CM	154.0	154.0	275.0	394.0	703.0	211.0	343.5	139.0	236.5	468.8	129.0	302.6
	INS	61	61	108	155	277	83	135	55	93	185	51	119
50 X 65	CM	154.0	154.0	275.0	447.0	775.1	211.0	406.4	147.3	236.5	530.9	129.0	302.6
	INS	61	61	108	176	305	83	160	58	93	209	51	119
54 X 75	CM	190.0	190.0	340.4	495.0	839.6	256.4	441.4	141.8	264.8	577.0	150.0	360.0
	INS	75	75	134	195	331	101	174	56	104	227	59	142
62 X 75	CM	190.0	190.0	340.4	559.9	906.8	256.4	441.4	141.8	264.8	632.5	150.0	360.0
	INS	75	75	134	220	357	101	174	56	104	249	59	142
60 X 90	CM	221.5	221.5	395.0	561.5	1029.0	296.8	544.5	190.4	283.4	699.0	180.8	390.6
	INS	87	87	156	221	405	117	214	75	112	275	71	154

## Comprehensive Solution Solution

TRIO can provide not only key single machines, but also complete crushing, screening, washing, and material conveying solutions. We will take your investment scale, operation cost, working environment, capacity, and product gradation requirements into consideration to provide a personalized and customized solution, including machine model selection, operating simulation, and on-site layout. Our outstanding design & engineering capability together with complete after-sales service will ensure the successful implementation of your project, creating value to help achieve your objectives.



## Global Service

From Europe to mid-Asia, Africa to America, China to Australia, and Chile to India, in every corner of the world, no matter what you order (a complete system, single machine, or a spare part) TRIO will provide you with professional service and support.

This service is not only on installation, maintenance & repair, and after-sales support. These services are provided from conception through commissioning. All TRIO products will be assembled and test run in our factory to ensure a fast and efficient installation, creating extra value for you. We also provide professional training for maintenance and operations personnel to lower your operating cost.

TRIO TG series gyratory crushers are rugged, reliable, high performance crushers, and your best choice. Please contact us to get more information.





### Crushers

CT Series Jaw Crusher  
TC Series Cone Crusher  
APS& APP Series Impact Crusher  
TV Series VSI Crusher

### Screens

TIH, TIO&TIOSP Series  
Inclined Screen  
TTH Series Horizontal  
Screen  
TBSS& TBSD Series Banana  
Screen

### Portable Plants

Track mounted portable plants  
Wheel mounted portable plants

### Plant Solutions

'Turn-key' projects

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