



TRIO TC Cone Crushers at -40° C

TRIO TC SERIES CONE CRUSHERS

Efficient Crushing Solutions



DIAMOND
diamondequip.com

TRIO Engineered Products offers World Class Design, Engineering and Manufacturing to provide high value solutions for your crushing, screening, washing and material handling requirements.

Our core goals are to pursue product improvement, product quality, and provide our customers with the highest value processing solutions.

TRIO - Building Solutions Together



TC36

TC51

TC66

TC84

TC84X

TRIO continues to expand as a world-class designer & manufacturer of crushers, screens, washers, and conveyors for the aggregate, mining, recycling, and industrial minerals industries.

We strive to provide the most rugged, robust, and reliable equipment for the most demanding applications. We provide customized high value solutions according to our customers' needs, from single machines to stationary or portable plants, including turnkey projects.



TRIO - Creates Value for You

TRIO's design and manufacturing teams have many years of experience building the TC cone crusher series. These crushers combine quality, reliability, and performance and can be widely applied in mining, concrete and asphalt recycling, and aggregate industries.

The TC Series Cones provide outstanding performance in both Secondary and Tertiary crushing applications. These crushers are rugged and reliable providing an extra long service life, while operating in the most demanding applications and extreme conditions.

TRIO Cones can be installed as single machines or combined with a full product line of TRIO crushers, screens, and conveyors to provide total solutions for portable and modular plants.



- **Features:**
- Rugged & reliable: Ideal for secondary & tertiary crushing
- Innovative design produces high capacity, quality product
- Multiple hydraulic cylinder clamping & adjustment
- Advanced tramp relief and clearing system
- Safety & protection systems
- Advanced automatic control system and other optional equipment
- User friendly and simple to maintain



RUGGED RELIABLE DESIGN

TC series cone crushers incorporate a heavy duty design. TRIO Cone crushers have large cone head diameters, which allow a medium-speed increase to equal the linear velocity and processing capacity of high-speed crushers in the market.

Operating at medium-speed, TRIO's larger socket assembly provides full support under both extreme and light load conditions, which provides a longer crusher service life. The TC series is reliable in even the most difficult operating conditions. It is the best choice for large mining projects.

HIGH PERFORMANCE

The bushing design allows closer tolerances between the main shaft and eccentric bushing enables, TC Series cone crushers to achieve higher crushing forces. Combining this additional crushing force with a moderate increase in rotating speed and additional horsepower, increases the TC cone's processing capacity and delivers a finer finished product gradation.



HYDRAULIC CLAMPING & ADJUSTMENT SYSTEM

TRIO cone crusher's use evenly positioned hydraulic cylinders for thread lock, which ensures 360 degree thread clamping during crushing. The locking cylinders release to allow adjustment of the CSS.

With push button control, the hydraulic motor provides power to a driven bull gear allowing precision adjustment of the upper frame ring gear for easy and flexible opening or closing of the crusher setting.

ADVANCED TRAMP RELIEF & CLEARING SYSTEM

Hydraulic cylinders evenly spaced around the outer frame of the cone crusher clamp the upper and lower frames together. Each cylinder has a high volume adjustable pressure relief valve. When a tramp iron incident occurs, the upper frame raises, increasing the hydraulic pressure on the top side of the cylinder. At a preset pressure the relief valve opens and the displaced oil moves rapidly to the bottom side of the hydraulic cylinder or back to tank.

During a tramp incident the pressure created never exceeds the relief valve setting, thereby protecting the internal mechanical components from excess stress. Accumulators maintain an even and constant pressure during clamping. TRIO also utilizes an innovative sealing system to isolate dust and protect internal components for a longer service life.

SAFETY PROTECTION SYSTEMS

MAIN SYSTEM PROTECTION

TRIO utilizes an integrated PLC system to monitor and control vital crusher functions as standard equipment.

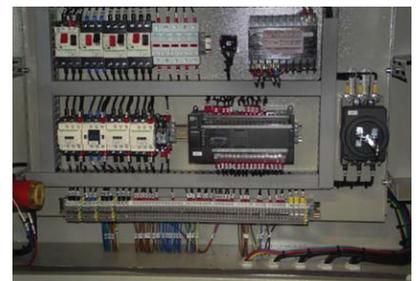
OIL LUBRICATION SYSTEM PROTECTION

When the lubrication oil flow rate or pressure is lower than the pre-set value or the returning oil temperature is higher than the pre-set value. Trio's integrated control system will shut down the crusher's electric motor.

HYDRAULIC SYSTEM PROTECTION

When thread clamping or mainframe hold down/clearing cylinders have abnormal pressure, the system will stop the crusher motor. The crusher feed system must be interlocked to shutdown when the crusher motor does.

**When customers choose the TCCA system, the listed protection, shut down, and alarm functions will be combined into the TCCA system.



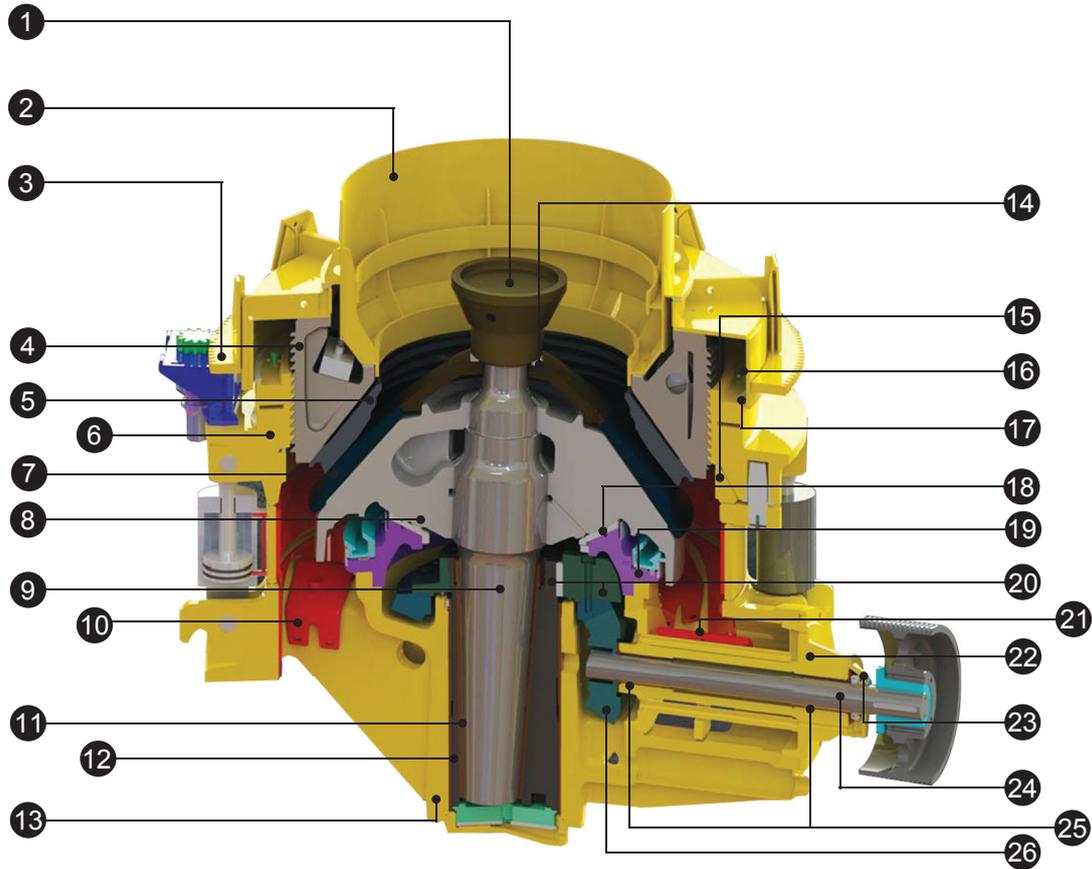
The specially designed lubrication oil pump and dual element filter provide a longer service life and reduced down time.



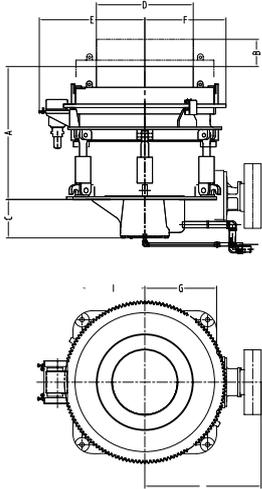
Model & Cavity Type	Standard Head			Short Head			Discharge opening adjustment range (mm)		Power of electric motor (kw)	
	Minimum discharge opening (mm)	Close feed opening (mm)	Open feed opening size (mm)	Minimum discharge opening (mm)	Close feed opening (mm)	Open feed opening size (mm)				
TC36	SE	25	155	176	-	-	-	25-38		75/90
	SC/SHC	13	136	158	6	51	76	13-38	3-16	
	SHM	-	-	-	3	33	60	3-16		
	SF/SHF	9	85	105	3	13	41	9-22	3-13	
TC51	SE/SHE	25	238	259	16	100	133	25-51	16-25	160/185
	SC/SHC	19	216	241	8	70	105	19-51	10-20	
	SM/SHM	16	188	210	6	54	90	16-38	6-16	
TC66	SF/SHF	13	109	137	3	30	65	13-30	3-16	220/250
	SE/SHE	38	331	368	13	115	133	38-64	13-25	
	SC/SHC	25	241	269	10	95	133	25-64	10-25	
TC84	SM/SHM	22	213	241	6	55	90	22-38	6-19	400
	SF/SHF	16	188	209	5	35	70	16-38	5-13	
	SE/SHE	38	425	460	16	152	203	38-64	16-25	
	SC/SHC	32	334	369	12	127	178	31-64	12-25	
TC84X	SM/SHM	25	303	334	10	95	133	25-51	10-19	450
	SF/SHF	19	253	278	5	51	105	19-38	5-16	
	SE/SHE	38	425	460	16	152	203	38-64	16-25	
	SC/SHC	32	334	369	12	127	178	25-64	12-25	
TC84X	SM/SHM	25	303	334	10	95	133	22-38	10-19	450
	SF/SHF	19	253	278	5	51	105	16-38	5-16	

Data for marketing use, detail information subject to change without notice due to product updates and customization.





- | | | |
|-------------------|----------------------------|---------------------------|
| 1 Main Shaft Nut | 11 Inner Eccentric Bushing | 21 Countershaft Box Guard |
| 2 Feed Hopper | 12 Outer Eccentric Bushing | 22 Counter Shaft |
| 3 Adjustment Gear | 13 HD Main Frame | 23 Flinger & Seal |
| 4 Support Bowl | 14 Torch Ring | 24 Countershaft |
| 5 Bowl Liner | 15 Frame Seat w/Liner | 25 Bushings |
| 6 Adjustment Ring | 16 Thread Locking Cylinder | 26 Pinion Gear |
| 7 Mantel Liner | 17 Lock Ring | |
| 8 Cone Head | 18 Socket Liner | |
| 9 Main Shaft | 19 Socket | |
| 10 FrameArm Guard | 20 Eccentric w/Gear | |



	TC36 (mm)	TC51 (mm)	TC66 (mm)	TC84/ TC84X (mm)
(A) Mounting Hole Centerline	1,321	1,765	2,261	2,490
(B) Length	2,700	3,185	3,960	4,500
(B1) Width	1,960	2,280	2,910	3,500
(C) Machine center to center of belt wheel	1,304	1,518	2,045	2,375
(C1) Center to edge of transmission shaft	1,390	1,665	2,192	2,565
(C2) Space required for disassemble transmission shaft	800	950	1,200	1,500
(D) Feed hopper (ID)	990	1,362	1,780	1,860
(D1) Recommended ID of discharge hopper	1,230	1,598	2,180	2,520
(D2) OD of transmission wheel	720	914	914	942
(H) Installation surface to top of machine distance	1,650	1,900	2,480	3,050
(H1) Installation surface to bottom of oil pipe	445	760	780	1,000
(H2) Recommended depth of discharge hopper	1,050	1,100	1,558	1,800
(H3) Total height of machine	2,100	2,660	3,280	4,050
(J) Space for cavity clear adjustment	200	200	220	220
(K1) Space for disassemble adjustment liner	600	700	800	1,200
(K2) Space for disassemble cone head	1,500	1,900	2,300	3,100
(M) distance from lubrication station installation	1,700	2,100	2,200	2,300

Model	TC36	TC51	TC66	TC84	TC84X
Machine Weight (kg)	12,000	22,500	43,500	72,500	78,000
Max Installation Weight (kg)	5,000	9,200	19,000	32,500	36,500
Max Maintenance Part Weight (kg)	<2,700	<5,000	<10,000	<18,000	<17,000
Recommended power (kw)	75-90	160-185	250-315	400	450
Rotating speed (rpm)	585	550-625	485-550	480-530	480-530

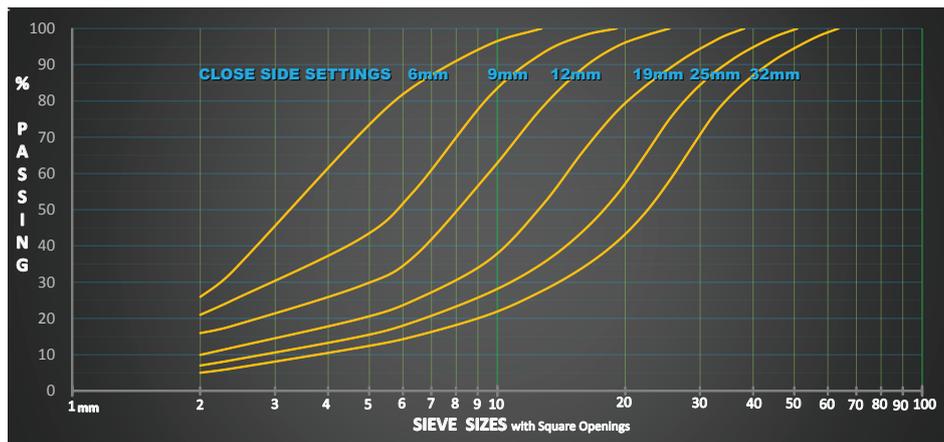
Data for marketing use, detail information subject to change without notice due to product updates and customization.



TECHNICAL SPECIFICATIONS

Model & Cavity		Capacity	Closed Side Setting (CSS) Open Size										
			3mm	6mm	10mm	13mm	16mm	19mm	25mm	32mm	38mm	51mm	64mm
TC36	Standard	TPH			30-65	35-75	55-105	60-125	70-135	75-150	80-170		
	Short Head	TPH	10-30	25-55	50-90	70-110	85-130	95-150					
TC51	Standard	TPH				110-160	135-195	170-240	190-255	220-290	265-340	320-425	
	Short Head	TPH	20-40	35-75	75-115	120-170	135-195	155-215	175-245				
TC66	Standard	TPH					180-225	205-255	285-355	305-410	360-480	425-560	620-770
	Short Head	TPH		105-155	140-200	190-255	240-325	270-360	280-385				
TC84	Standard	TPH						380-490	540-690	670-870	760-950	1040-1300	1200-1500
	Short Head	TPH		215-315	300-415	360-520	410-570	450-620	520-670				
TC84X	Standard	TPH						395-525	500-740	675-960	790-1050	1060-1430	1170-1650
	Short Head	TPH		230-340	320-445	385-520	440-630	480-680	525-740				

Results may vary depending on feed material gradation, density, moisture content, friability, applications and crusher settings. Consult Trio for your specific application capacity.



* Data collected when material compressive strength from 110 to 140 Mpa, build specific weight at 1.6 metric ton/m³, humidity <=4%, with appropriate feeding material gradation. Please contact us for detailed info.

OPTIONAL EQUIPMENT

CRUSHER SUB-FRAME

This sub-frame is designed with isolators to reduce the vibration stress transferred into steel support structures.

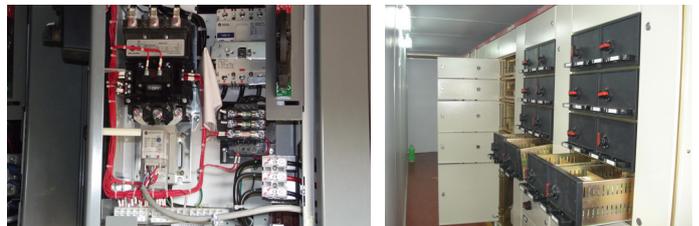
AUTOMATIC CONTROL SYSTEM (TCCA):

The TCCA system controls the crusher feed rate by monitoring crusher motor amps, crusher discharge CSS setting, cavity fill level, and adjusts the feed rate to insure maximum production. The TCCA system can control single or multiple machines.

- Automatically adjust crusher CSS to compensate for wear according to the pre-set discharge opening size.
- Collects real-time operating data for oil lubrication temperatures, oil pressure, flow, hydraulic system pressure, cavity clear pressure, clamping pressure, and crusher motor amp draw.
- All parameters collected are integrated into the system PLC for automatic control and real-time monitoring and adjustment on HMI systems.
- All trending data can be downloaded for comparisons over time.
- Remote control function and communication is provided via PROFIBUS-DP protocol.
- Options for manual and automated operation.

ELECTRICAL OPTIONS

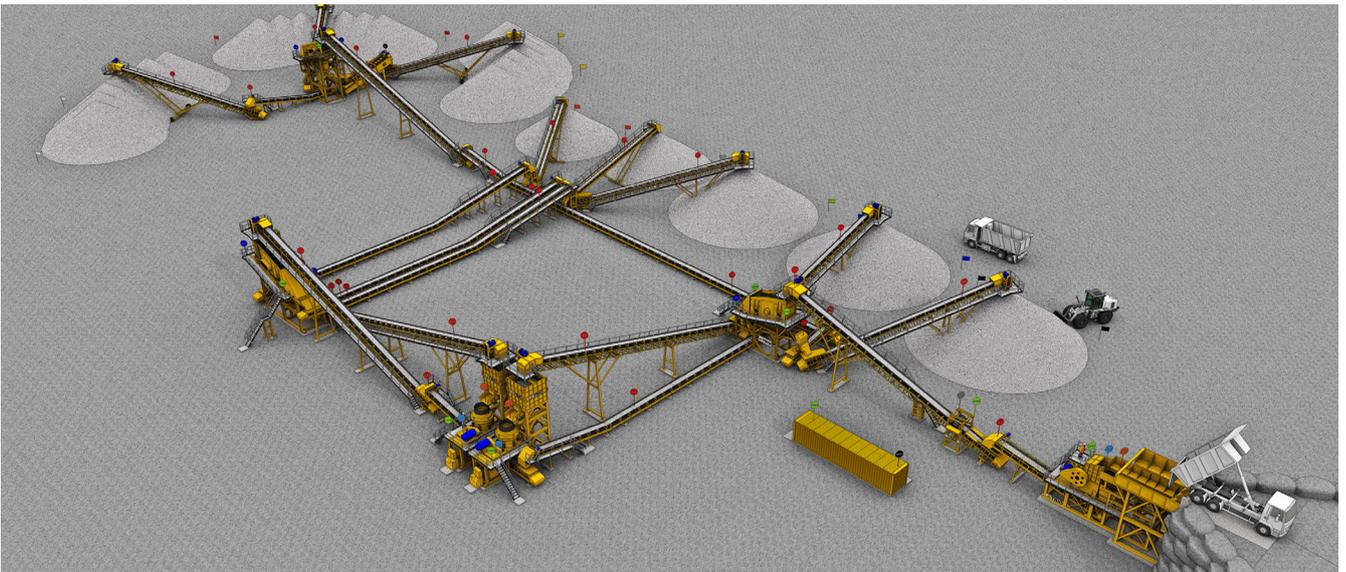
With Customer specifications: TRIO can provide electric controls for high voltage, low voltage, and special applications. TRIO has a complete electrical facility using the worlds leading brands to build Containerized Electrical Control Centers for individual machines or complete TRIO turnkey crushing systems.



COMPREHENSIVE SOLUTIONS

TRIO can provide not only key single machines, but also complete crushing, screening, washing, and material conveying solutions. We take your budget, working environment, capacity and product gradation requirements into consideration to provide a customized solution. Our optimized solutions include machine model selection, operating simulation, and on-site layout drawing.

TRIO's outstanding design, engineering and manufacturing capabilities, together with complete after-sales service, will ensure the successful implementation of your project, creating value to help you achieve your objectives.



GLOBAL SERVICE & SUPPORT

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

Combined with off-the-shelf availability, global distribution for rapid delivery and superior quality, TRIO replacement parts and skilled service support personnel make TRIO a valued partner in the global mining and aggregate industries.

All TRIO products are assembled and test run in our factory to ensure reliable performance. We also provide professional training for maintenance and operations personnel to ensure smooth and efficient plant operations along with safe and easy maintenance.



CRUSHERS

CT Series Jaw Crusher
CTHT Series Jaw Crusher
TC Series Cone Crusher
T Series Cone Crusher
APS Series Impact Crusher
APP Series Impact Crusher
TV Series VSI Crusher

Screens

TIH Inclined Screens
TIO Inclined Screens
TIOSP Inclined Screens
THDS Scalping Screens
TTH Horizontal Screens

Portable Plants

Track mounted plants
Wheel mounted plants

Plant Solutions

'Turn-key' projects

TRIO - US

Corporate Office
12823 Schabarum Ave.
Irwindale, CA 91706
United States
Tel +1 626 851 3966
Fax +1 626 851 9526
productinfo@trioproducts.com

