One Source

Gyratory Crushers

TC, NT and TS model crushers

FLSmidth

FLSmidth's Fuller-Traylor® Crushers

Our experience with Mining Industries (Minerals, Cement, and Aggregate) has resulted in a complete line of Gyratory Crushers to satisfy the requirements of a wide variety of our customers' applications.

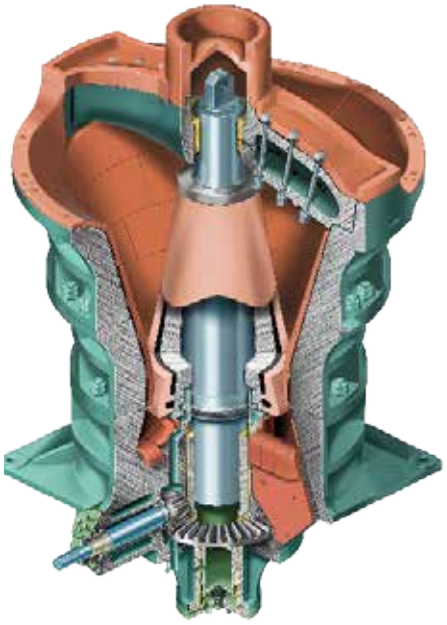
FLSmidth holds a leading position in crushing technology with thousands of crushers installed since the inception of the Traylor brand. These gyratory crushers have been operating successfully in some of the world's harshest conditions for 50+ years. This long operating life can be attributed to the robust design that FLSmidth still utilizes to this day. The basic concept behind the Gyratory Crusher remains the same as it did during its inception, but the machine is entirely updated to address today's advanced technology, safety concerns, and operation schedules.

Our focus is on continually improving the design of our equipment to better serve our customers. This ongoing improvement has taken us from the original Bulldog Crushers through the world renowned "TC" model Crushers, to the "NT" line with updated maintenance-friendly features, and now into our current "Top-Service " (TS) line which can be serviced and maintained from above for added safety.

Design Features and Benefits:

- **Bar Type Spider:** Requires smaller lay-down areas and less maintenance time than conventional ring spiders.
- **Countershaft Bearings**: The preloaded self-adjusting tapered roller bearings automatically adjust to temperature fluctuations and wear, requiring minimal maintenance.
- **Main Shaft Assembly:** The Main Shaft Assembly is designed with a threaded sleeve to remove stress risers from the forged shaft and self-tightening head nut to assure security
- **Hydraulic Adjustment & Accumulator with Relief Valve**: Adjusts shaft position, absorbs crushing spikes and relieves pressure during extreme tramp events to extend component life.
- **Gearing:** Forged alloy gears and carburized pinions are engineered to prevent catastrophic tooth failure and ensure long service life. They are designed to AGMA standards with robust safety factors and high quality materials.
- **Bushings:** All bushings are designed keyless and manufactured from leaded bronze for long life.
- **High Capacity Lubrication**: The risk of burned bushings is minimal during demanding crushing operations because of large capacity reservoirs and high oil flow rates to Eccentric and Shaft bushings.
- **Crushing Chamber:** Chamber geometry is optimized for each application to ensure even wear and high throughput.
- **Drive Protection Coupling:** Torque Safety Coupling reduces shock loading of drive components during tramp events. The torque coupling makes it safer for personnel to remove tramp from the chamber since it relieves all preload in the drive system.
- **Automation System:** All Gyratory Crushers are available with complete control and sub-control systems.

Gyratory crushers

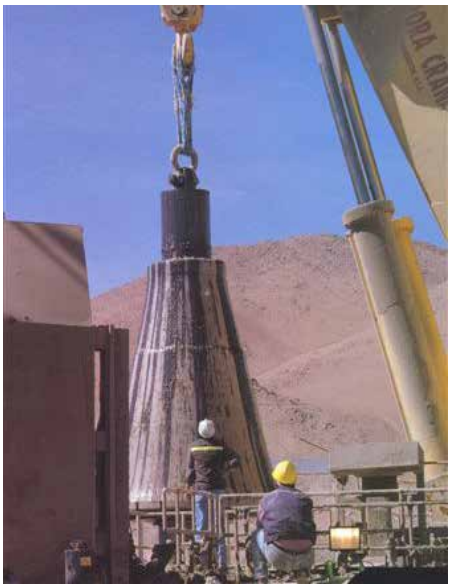


Original TC Crusher

The TC model gave Fuller Traylor Engineering a reputation throughout the worldwide mining industry as a provider of reliable, high quality equipment. After acquiring Fuller Company, FLSmidth has taken this original TC design and expanded on it to develop the NT line. The Type "NT" incorporates all of the "TC's" Heavy-Duty design features (Heavy Cast-Steel Shell Sections, Forged Main Shaft and Counter Shaft, Robust Gearing, Generous Lubrication, Long-Life Bronze Components) and focuses on coupling these historical characteristics with updated maintenance- friendly features. These design features allow more to be safely accomplished during shut-downs and ultimately leads to increased operational availability.

Current Applications

- **Aggregate**
- **Alumina/Bauxite**
- **Basalt**
- **Copper Ore**
- **Dolomite**
- **Gold Ore**
- **Granite**
- **Gypsum**
- **Iron Ore**
- **Limestone**
- **Molybdenum**
- **Nickel Ore**
- **Silver Ore**
- **Trap Rock**



Continued innovation

The "Top-Service" (TS) Line is the newest generation of Fuller-Traylor Gyratory Crushers from FLSmidth. This entire Gyratory Crusher is engineered from the ground up with Safety and Maintenance in mind. The feature that distinguishes the "TS" design from other Gyratory Crushers is that the "TS" machine is designed to be Serviced & Maintained from an Overhead Crane.

The Eccentric & Hydraulic Cylinder Assemblies are removed through the crusher feed opening instead of the discharge. The Safety advantage of the Top Service is that maintenance personnel can access the Eccentric and Hydraulic Cylinder Assemblies without entering the discharge bin (No more injury risk from falling debris). The Top Service maintenance advantage is being able to service the Eccentric Assembly without touching the Hydraulic Piston. By accessing the Eccentric first, it removes a wasteful step and creates a faster and more productive shut-down. Plants that take advantage of housing Spare Capital Components [Eccentric / Bronze] are able to remove FLSmidth's 4 Bolt bar-Type Spider and change-out the entire Eccentric Assembly in just one shift.

The Top Service design doesn't just transform into easier maintenance, it also transforms into more cost effective and flexible foundation designs. Since the Eccentric Maintenance Cart is no longer a necessary part of the layout, the large doors for accessing the crusher discharge bin have been transformed into a single-person access door. Discharge Conveyors can be more closely located to the crusher discharge without need for the Eccentric Cart, and because of the intrinsic design of the TS Eccentric, the Out of Balance Forces are minimal when compared to its predecessor.

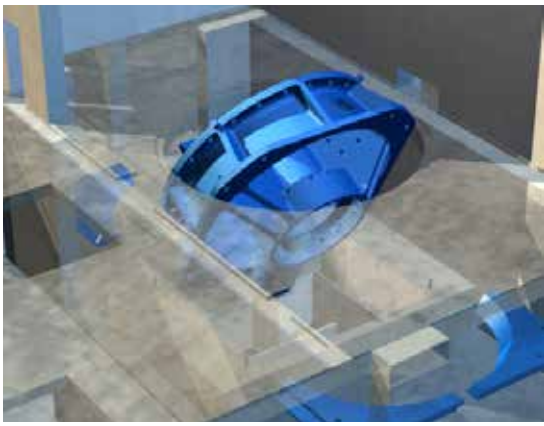
We offer a full line to compliment our "NT" size range. The TS design maintains all the same design standards and options (except the eccentric cart) as the NT.

Customer engineered solutions:

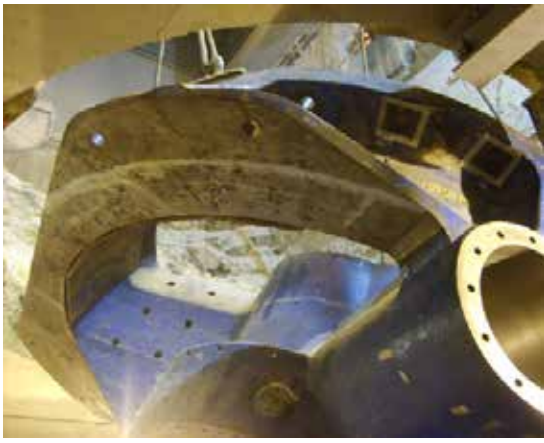
FLSmidth offers custom engineered solutions as an answer to our customers' unique requests. In past projects, FLSmidth has supplied custom-engineered equipment, accessories, and solutions all stemming from customer requests. FLSmidth's solution to a unique crushing application in Canada was a custom designed 72"x 89" Gyratory Crusher. In addition to this crusher, multiple dual pinion drive crushers were designed and successfully installed for the Minnesota (USA) Iron Ore Range. Numerous Hard-Rock applications that required oversized motors prompted FLSmidth to develop its Ultra-Duty line. This UD line of crushers offers our customers a higher power motor and matching drive train without having to move into a larger size crusher. Underground Mining and shipping restrictions presented a unique opportunity for FLSmidth to design and supply a "Split-Shell" Crusher [multi-piece shell section] to save costs on underground excavations.

In a recent application, a customer was running a 1956 vintage 60"x 89" Traylor Bulldog Gyratory Crusher. This piece of equipment had many years of service and the customer was looking at either refurbishing or upgrading. FLSmidth performed an Engineering Study of the existing Station and Foundation and determined that this customer was presented with the unique opportunity of being able to upgrade their existing station with a new 60"x113" Gyratory.

In the end, FLSmidth designed and supplied the new crusher, ancillary equipment, and and all critical interface components and equipment necessary. FLSmidth was able to modify their Crusher slightly to accommodate the building restrictions during installation to ultimately ensure a successful operation. FLSmidth provided their Field Service Supervision, and the entire removal and installation was completed in 25 Days.



FLSmidth Installation Feasibility Study



Actual Installation of the Crusher

FLSmidth Custom Engineered Sub-Frame

Customer services

Value Added:

FLSmidth offers Engineering & Maintenance Services, Custom Designs, and Parts Options to improve the operational efficiency and scheduled maintenance practices of your Gyratory Crusher.

- **Specialty Tools**
- **Concave Installation & Removal Tool**
- **Main Shaft Servicing Stand**
- **Dump Pocket Access Tools**
- **Crusher Maintenance Carts**
- **Operations and Maintenance Services**
- **Installation Services**
- **Equipment & Maintenance Seminars**
- **OEM Spare/Emergency Parts**
- **Automation Packages**
- **Laboratory Testing Services**
- **Entire Plant Systems**
- **Process Optimization**

Quality & Reliable OEM Parts

Contact our trained service personnel to get authentic, high quality, original equipment manufacturer (OEM) spare and replacement parts for your FLSmidth, FFE, Fuller, Traylor, ABON, EIMCO, Excel, Conveyor Engineering, Krebs, KOCH, Möller, MVT, Pneumapress, RAHCO, WEMCO, Dorr-Oliver, Shriver, and FLSmidth Minerals supplied equipment. FLSmidth Minerals is the only place to find field engineers and technicians trained specifically to deal with the unique characteristics of this equipment.

Operations and Maintenance

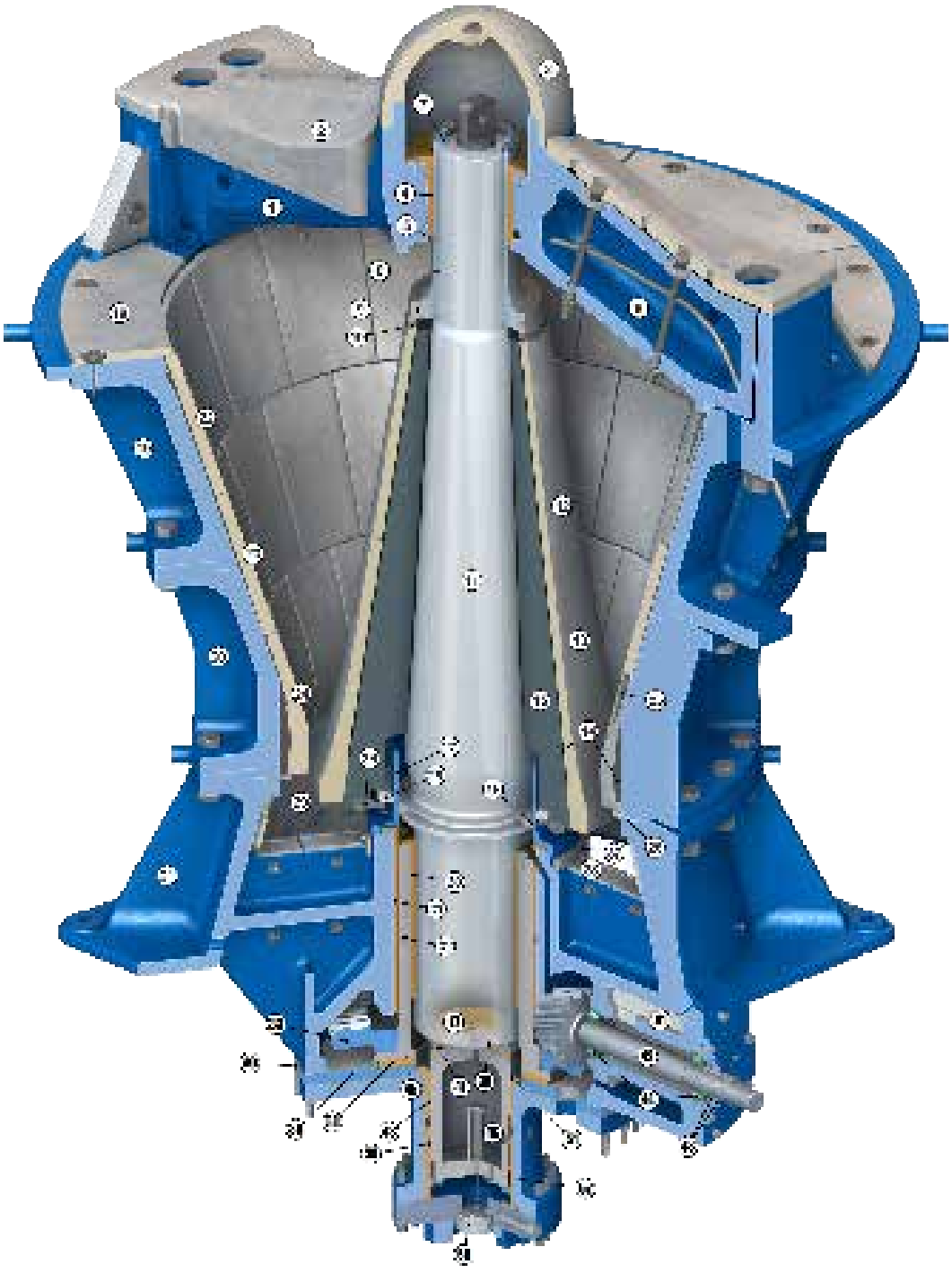
Our Customer Services experts have the know how to optimize your maintenance and shutdown management programs. We can help plan your preventive maintenance programs, manage scheduled repairs, and even implement these programs for you.

Rebuilds & Modernizations

Keep your equipment current with the latest advancements to enhance your operations and provide for better efficiencies. FLSmidth can rebuild your equipment or provide the most current state-of-the-art equipment improvements and/or system upgrades for operational efficiency and enhanced functionality.

Concave Installation Tools

FLSmidth's Fuller-Traylor NT Gyratory Crusher



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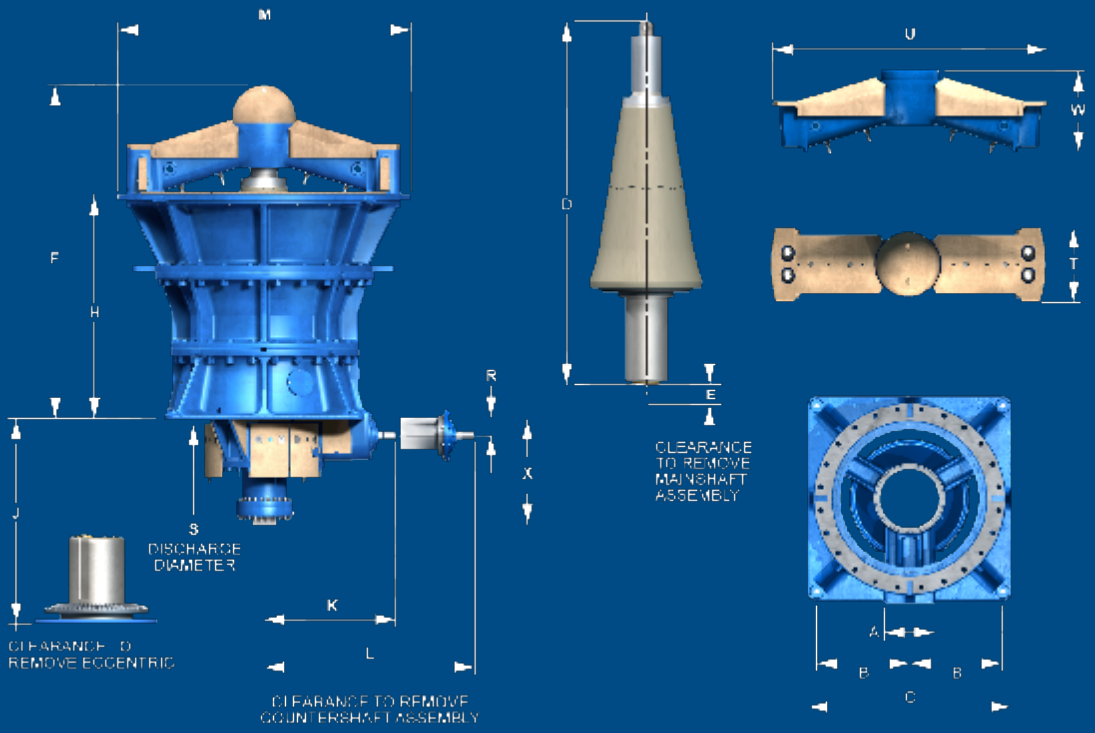

	1100 x 1750 (43" x 69")	1300 x 1750 (51" x 69")	1370 x 1950 (54" x 77")	1600 x 2000 (63" x 79")	1525 x 2260 (60" x 89")	1525 x 2790 (60" x 113")
A	405 [16 in.]	405 [16 in.]	435 [17 in.]	443 [17 in.]	510 [20 in.]	560 [22 in.]
B	1500 [59 in.]	1575 [62 in.]	1580 [62 in.]	1893 [75 in.]	2390 [94 in.]	2390 [94 in.]
C	3300 [130 in.]	3300 [130 in.]	3658 [144 in.]	3660 [144 in.]	4395 [173 in.]	5380 [212 in.]
D	5355 [211 in.]	5765 [227 in.]	6466 [255 in.]	6950 [274 in.]	7122 [280 in.]	7596 [299 in.]
E	150 [6 in.]	150 [6 in.]	150 [6 in.]	150 [6 in.]	150 [6 in.]	150 [6 in.]
F	5126 [202 in.]	5488 [216 in.]	6103 [240 in.]	6517 [257 in.]	6791 [267 in.]	7372 [290 in.]
H	3378 [133 in.]	3753 [148 in.]	4248 [167 in.]	4645 [183 in.]	4675 [184 in.]	5123 [202 in.]
J	1460 [57 in.]	1460 [57 in.]	1680 [66 in.]	1680 [66 in.]	1725 [68 in.]	2210 [87 in.]
K	2150 [85 in.]	1700 [67 in.]	2535 [100 in.]	2530 [100 in.]	2970 [117 in.]	3440 [135 in.]
L	3400 [134 in.]	3400 [134 in.]	4000 [157 in.]	4000 [157 in.]	4635 [182 in.]	5440 [214 in.]
M	4430 [174 in.]	5030 [198 in.]	5182 [204 in.]	6140 [242 in.]	5890 [232 in.]	5210 [205 in.]
R	275 [11 in.]	275 [11 in.]	270 [11 in.]	270 [11 in.]	178 [7 in.]	206 [8 in.]
S	2910 [115 in.]	2910 [115 in.]	3373 [133 in.]	3373 [133 in.]	3925 [155 in.]	4760 [187 in.]
T	1065 [42 in.]	1065 [42 in.]	1195 [47 in.]	1195 [47 in.]	1420 [56 in.]	1530 [60 in.]
U	3900 [154 in.]	4300 [169 in.]	4636 [183 in.]	5332 [210 in.]	5310 [209 in.]	5620 [221 in.]
W	1276 [50 in.]	1336 [53 in.]	1327 [52 in.]	1342 [53 in.]	1499 [59 in.]	1499 [59 in.]
X	1808 [71 in.]	1808 [71 in.]	2124 [84 in.]	2124 [84 in.]	2020 [80 in.]	2167 [85 in.]
Max Lift for Maintenance	29,000 kg	32,000 kg	48,000 kg	54,000 kg	68,000 kg	106,000 kg
Capacity	1780 - 2730 tph	1650 - 2560 tph	1800 - 3160 tph	1750 - 2920 tph	3700 - 5485 tph	5485 - 8200 tph
OSS Range	125 [5 in.]-175 [7 in.]	125 [5 in.]-175 [7 in.]	125 [5 in.]-200 [8 in.]	125 [5 in.]-200 [8 in.]	175 [7 in.]-225 [9 in.]	175 [7 in.]-275 [11 in.]
Motor*	375 kW – 500 HP	375 kW – 500 HP	450 kW – 600 HP	450 kW – 600 HP	600 kW – 800 HP	750 kW – 1000 HP

**Ultra Duty (UD) versions are available in the 1370 x 1950 (54 x 77) & 1525 x 2790 (60 x 113)*

www.flsmidth.com

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