SYTECHS MINERALS
MINING TECHNOLOGY

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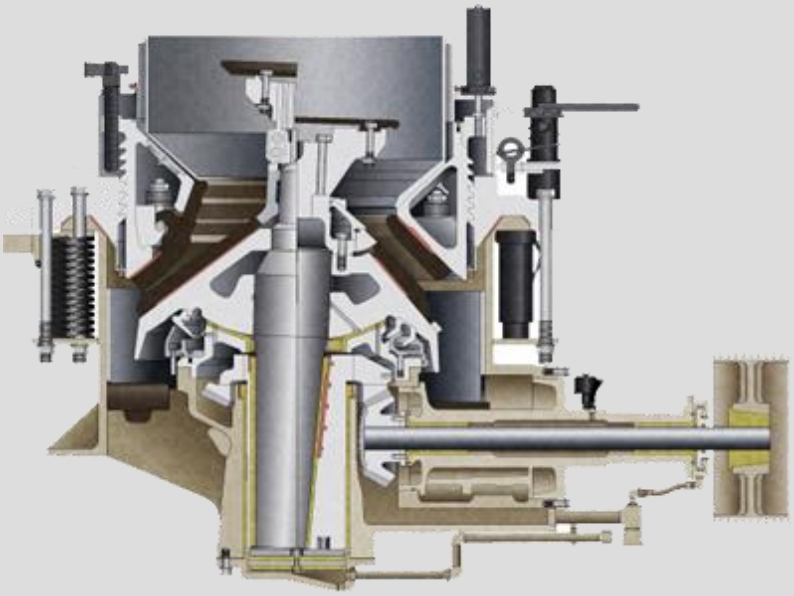
SYMONSTECHNOLOGY ST-S CONE CRUSHERS

www.symonstechnology.com

SYMONSTECHNOLOGY (SYTECHS) ST-S SERIES CONE CRUSHERS

Proven Reliability

The reliability and safe operation of the Symonstechnology (Sytechs) cone crushers are the result, among other things, of their high-quality steel. Their reliability in demanding crushing applications is guaranteed by (Sytechs) acclaimed metallurgical know-how and ongoing development projects involving manganese materials and metallurgical compounds.



Low Production Costs

Symonstechnology (Sytechs) has used its long experience in liner profile design and its know-how in wear part metallurgy to minimize the cost of worn manganese per tons produced.

Maximum Performance

The ST-S series cone crushers are designed to give maximum performance in a wide variety of crushing processes: from secondary to extra fine crushing. Full process adaptability is the result of being able to use several different crushing cavities in the same frame structure.
This feature ensures you are always able to adapt your Symons cone to the crushing process.

Large Feed Opening

The ST-S concept allows large feed openings with a fairly small cone diameter. This is especially important in secondary applications as it means you can open your primary jaw crusher wider and potentially increase the capacity of your plant. Symons standard cone crushers in the secondary line can also be used in gravel pits as primary crushers.

Soft Start Drive (SSD) System

The ST-G Series Cone crushers are supplied with Soft Start Drives (SSD) System which are used to limit inrush current associated with electric motor startup. Soft-start drives lower the initial voltage by adding solid-state series impedance and ramp up until full speed is achieved. Doing this extends the life of the motor and mechanical components that are connected to it. The SSD also eliminates high inrush current on large electric motors which places a high demand (Power Surge) on the electrical supply system and often results in extra cost and larger power generators.

Guaranteed performance when original Symonstechnology (Sytechs) parts are used, a long lifetime of the cone crusher is guaranteed

Wearing parts are available with High Manganese MN13%, Mn18%, Mn21%

SYTECHS MINERALS MINING TECHNOLOGY

SYMONSTECHNOLOGY (SYTECHS) STANDARD CONE CRUSHERS

Type		ST-PYS-B			ST-PYS-B		
Model		607	609	610	910	917	918
Diameter of Cone		600 (2')			900 (3')		
Feed Opening (mm)		72	109	109	102	175	178
Discharge Setting (mm)		6-38	9-38	13-38	9-22	13-38	25-38
Capacity (Tons/hr)		16-54	18-68	23-72	45-91	59-163	118-163
Main Electric Motor	Power (Kw)	22			75		
	Speed (rpm)	985			985		
	Voltage (V)	380			380		
Overall Dimension	Length (m)	2.195			2.656		
	Width (m)	1.158			1.746		
	Height (m)	1.651			2.241		
	Weight (Tons)	N/A			N/A		

Type		ST-PYS-B				ST-PYS-B			
Model		1213	1215	1219	1225	1313	1321	1324	1325
Diameter of Cone		1200 (4')				1259 (41/4')			
Feed Opening (mm)		131	156	191	250	137	210	241	259
Discharge Setting (mm)		9-31	13-38	19-51	25-51	13-31	16-38	19-51	25-51
Capacity (Tons/hr)		63-188	100-200	141-308	190-317	109-181	132-253	172-349	236-358
Main Electric Motor	Power (Kw)	110				160			
	Speed (rpm)	985				980			
	Voltage (V)	380				380			
Overall Dimension	Length (m)	2.656				4.809			
	Width (m)	1.974				2.354			
	Height (m)	3.112				3.156			
	Weight (Tons)	N/A				27.6			

Type		ST-PYS-B				ST-PYS-B			
Model		1620	1624	1626	1636	2127	2133	2136	2146
Diameter of Cone		1676 (5 1/2')				2134 (7')			
Feed Opening (mm)		209	241	269	368	278	334	369	460
Discharge Setting (mm)		16-38	22-51	25-64	38-64	19-38	25-51	31-64	38-64
Capacity (Tons/hr)		181-327	258-417	299-635	431-630	381-726	608-998	789-1270	880-1361
Main Electric Motor	Power (Kw)	240				315			
	Speed (rpm)	490				490			
	Voltage (V)	380				380			
Overall Dimension	Length (m)	3.911				4.613			
	Width (m)	2.87				3.251			
	Height (m)	3.771				4.732			
	Weight (Tons)	N/A				N/A			
Remarks	1.Crusher length doesn't include the length of the Electric Motor 2.Crusher weight doesn't include the weight of the Electric Motor								

SYMONSTECHNOLOGY (SYTECHS) SHORT HEAD CONE CRUSHERS

Type		ST-PYS-D		ST-PYS-D		
Model		603	605	904	906	907
Diameter of Cone		600 (2')		900 (3')		
Feed Opening (mm)		35	51	41	60	76
Discharge Setting (mm)		3-13	5-16	3-13	3-16	6-19
Capacity (Tons/hr)		9-36	16-50	27-90	27-100	59-127
Main Electric Motor	Power (Kw)	22		75		
	Speed (rpm)	985		985		
	Voltage (V)	380		380		
Overall Dimension	Length (m)	2.195		2.656		
	Width (m)	1.158		1.746		
	Height (m)	1.651		2.41		
	Weight (Tons)	N/A		N/A		

Type		ST-PYS-D				ST-PYS-D			
Model		1205	1207	1208	1211	1306	1308	1310	1313
Diameter of Cone		1200 (4')				1259 (41/4')			
Feed Opening (mm)		57	73	89	117	64	89	105	133
Discharge Setting (mm)		5-16	10-16	13-19	13-25	3-16	6-16	10-25	19-25
Capacity (Tons/hr)		50-132	90-145	141-181	145-218	36-163	82-163	109-227	209-236
Main Electric Motor	Power (Kw)	110				160			
	Speed (rpm)	985				985			
	Voltage (V)	380				380			
Overall Dimension	Length (m)	2.56				2.958			
	Width (m)	1.942				2.254			
	Height (m)	2.298				3.156			
	Weight (Tons)	N/A				N/A			

Type		ST-PYS-D			ST-PYS-D			
Model		1607	1608	1613	2110	2113	2117	2120
Diameter of Cone		1676 (5 1/2')			2134 (7')			
Feed Opening (mm)		70	89	133	105	133	178	203
Discharge Setting (mm)		5-13	6-19	10-25	5-16	10-19	13-25	16-25
Capacity (Tons/hr)		90-209	136-281	190-336				
Main Electric Motor	Power (Kw)	240			315			
	Speed (rpm)	490			490			
	Voltage (V)	380			380			
Overall Dimension	Length (m)	3.917			4.13			
	Width (m)	2.87			3.251			
	Height (m)	3.771			4.454			
	Weight (Tons)	N/A			99.600 - 103.020			
Remarks	1.Crusher length doesn't include the length of the Electric Motor 2.Crusher weight doesn't include the weight of the Electric Motor							

EXTENDED WARRANTY POLICY (OPTIONAL)

PART	TIME PERIOD			
	1yr.	2yrs.	3yrs.	4yrs.
Class Ⅰ Parts				
Class Ⅱ Parts	100%	66%	33%	
Class Ⅲ Parts				

Aggregate industry (Months)	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
Mining industry (Hours)				2500				5000				7500				10000		12500

CLASS Ⅰ

Adjustment Cap
Adjustment Ring Bowl
Bowl Adapter Ring Clamp
Ring Countershaft
Counter shaft Box
Eccentric Extension Cap
Feed Distributor
Head
Head Center
Head Nut Locking Collar
Lower Spring Segment
Main Frame
Main Shaft Main Shaft
Nut Shaft Extension Shell
Socket
Spider
Spider Cap
Springs Tie Rod
Tie Rod Nut
Upper Spring Segment

CLASS Ⅱ

Bowl Lock Counterweight
Gear
Gear Housing
Lower Step Bearing Plate
Lower Thrust Bearing
Main Frame Cap
Main Frame Pin Oil
Flinger
Oil Flinger Housing Pinion
Upper Step Bearing Plate
Upper Thrust Bearing

CLASS Ⅲ

Anti-Spin Mechanism
Arm Guard
Bottom Sleeve
Bowl Adjustment Ram
Clamping Cylinder
Clearing Jack
Countershaft Box Guard
Countershaft Bushing
Dust Collar
Eccentric Bushing
Eccentric Thrust Bearing
Eccentric Thrust Washer
Feed Cone
Feed Hopper
Feed Plate
Floating Ring
Floating Ring Retainer
Gearbox Guard
Head Wiper Ring Lower
Hydraulic Cylinder
Hydraulic Lock Post

Locking Nut Locking
Nut Cover Lock Link
Main Frame Liner
Main Shaft Sleeve
Motorized Rotating Feed
Distributor
Oil Collar Gear
Oil Pump Gear
Outer Eccentric Bushing
Power Unit
Sealing Ring
Socket Liner
Socket Plate
Socket Sealing Ring
Spider Bushing Spider
Guard Spider Wing
Guard Spring Bolt
Swivel Plate
Thrust Plate
Top Sleeve
Tramp Release Cylinder T-
Seals
Guide Bushing
Head Wiper Ring

ESTIMATING CRUSHER CAPACITY

Cone Crusher capacity chart have been developed for use as an application tool to properly utilise the machine's capabilities. Symonstechnology Cone Crushers have separate and distinct capacities

STANDARD AND SHORT HEAD CONE CRUSHER CAPACITIES

The difference between these capacities is the point in the circuit at which the measure is taken in either open or closed circuit operation. The Cone Crusher is one component of the circuit. As such, it's performance is in p art dependent on the proper selection and operation of feeders, conveyors, screens, supporting structure, electric motors, drive components and surge bins. Where used , pay attention to the following factors which will enhance your crusher capacity and performance.

1. Proper selection of crushing chamber for material to be crushed.
2. A feed grading containing proper distribution of the particle sizes.
3. Controlled feed rate.
4. Proper conveyor sized to carry maximum crusher capacity.
5. Discharge conveyor sized to carry maximum crusher capacity.
6. Properly sized scalping and closed circuit screen.
7. Automation control.
8. Adequate crusher discharge area.

MAIN FRAME STEEL CASTING PROCESS

SELECTION OF PROPER LINERS

Through extensive research and study, various liners have been developed to cover a wide range of feed and product sizes. Since there are so many variable conditions and types of operations to be considered, it would be difficult to list all types of liners that would best suit specific site conditions and type of operations.

If for any reason, it is felt that unsatisfactory wear life was obtained from the original liners, it is suggested to contact your local dealer for wear analysis in order to determine the exact concentration of wear . An- other bowl liner and mantle can then be recommended which will have a different contour at the determined wear points.

Continuous operation with liners, having a crushing cavity not suitable for the operation, results in uneconomical wear of the liners, poor crushing efficiency and in some instances, abuse to the Crusher.

CRUSHER TERMINOLOGY

FEED: The raw material that is to be crushed.
LINERS: The bowl liner and mantle are the crushing members and are commonly referred to as liners.
CAVITY: The internal contour formed by the two crushing members.
FEED OPENING (Closed Side): The smallest distance between the top of the crushing members as measured when the two crushing members are at their closest relationship during their gyrating cycle.
FEED OPENING (Open Side): The largest distance between the top of the crushing members as measured when the two crushing members are at their farthest relationship during their gyrating cycle. The feed opening (open side) determines the maximum size of feed.
DISCHARGE SETTING: The distance between the bottom of the crushing members as measured at the point where the two crushing members are at their closest relationship during their gyrating cycle. This discharge setting regulates product size.
OPEN CIRCUIT OPERATION: The type of operation where precise uniformity of product size is not considered to be of prime importance and the feed is run through the Crusher but once.
CLOSED CIRCUIT OPERATION: The type of operation where precise uniformity of product size is important and the product is important and the product is screened as it is being discharged and the material which does not pass through the screen is returned to the Crusher

For high productivity, low operating and wear costs, long service life, and high product yield with desired fines, there's no better choice than a cone crusher.

A history of success

Symonstechnology (Sytechs) Standard and Short Head cone crushers are built on the success of years of Sytechs cone experience. They are manufactured as per North American design and specifications at the Shenyang manufacturing Plant in China. The product is ISO9001 quality system and CE certified.

The Symons cone is well known for its rugged construction and application versatility. It has set the standard in the mining industry. It introduced many new innovations to reduce maintenance and operating costs. It is supplied with special features such as hydraulic clamp adjustment, and others.

The field-proven Symons cone combines the best of these technologies to provide the highest capacity, the best product shape, easy automation, and the greatest possible reliability and flexibility. All to help you achieve the highest possible levels of profitability and performance

Crusher Capacities

The capacity figures shown apply to material weighing 100 pounds per cubic foot or 1600 kg per cubic meter. The crusher is one component of the circuit. As such, its performance is in part dependent on the proper selection and operation of feeders, conveyors, screens, supporting structure, electric motors, drive component and surge bins. Where used, attention to the following factors will enhance crusher capacity and performance.

- ✓ Proper selection of crushing chamber for material to be crushed.
- ✓ A feed grading containing proper distribution of the particle sizes.
- ✓ Controlled feed rate.
- ✓ Proper conveyor sized to carry maximum crusher capacity.
- ✓ Discharge conveyor sized to carry maximum crusher capacity.
- ✓ Properly sized scalping and closed circuit screens.
- ✓ Automation controls.
- ✓ Adequate crusher discharge area.

The following factors will detract from crusher capacity and performance.

- ✓ Sticky material in crusher feed.
- ✓ Fines material in crusher feed (smaller than crusher setting) exceeding 10% of crusher capacity.
- ✓ Excessive feed moisture.
- ✓ Feed segregation in crushing cavity.
- ✓ Improper feed distribution around circumference of crushing cavity.
- ✓ Lack of feed control.
- ✓ Inefficient use of recommended connected horsepower. 8 Insufficient conveyor capacity.
- ✓ Insufficient scalper and closed circuit screen capacities. 10 Insufficient crusher discharge area.
- ✓ Extremely hard or tough material.
- ✓ Operation of crusher at less than recommended full load countershaft speed.

Manufactured as per North American Design and Specifications,
Under License of Sytechs Minerals N.A

SYTECHS MINERALS
MINING TECHNOLOGY

ISO 9001
QUALITY SYSTEM
CERTIFIED

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