

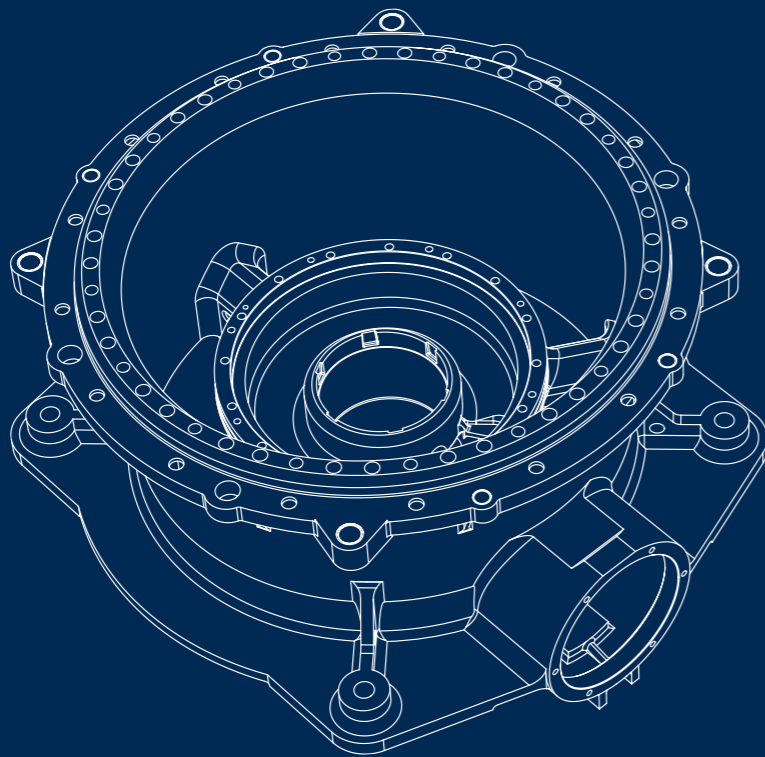
EXCEL™ Replacement parts for Symons cone crushers



FLS

Longer wear life for your crusher's parts

Enjoy higher throughput and longer duration between maintenance and repair downtimes. Optimised EXCEL™ replacement parts cover a wide range of cone crushers and will help ensure that you get the most out of your vital crushing equipment. Our engineering and technical experts work directly with you to find innovative solutions to your problems – developing customised solutions for lasting performance in your critical equipment.



Key benefits

- Reduced downtime
- Lower operating costs
- Improved performance
- Mine-specific design innovations

Extraordinary components do not happen by accident

EXCEL™ bronze bushings and components perform better because our standards are higher.

Higher tensile strength

Tin is the most expensive ingredient in the metallurgy of bronze alloys, but it creates tougher bushings that last longer. We use the maximum percentage of tin to increase your profits. We certify our crusher bronze to the top end of the CDA specification for tin.

Uniform lead distribution

During casting, we use an innovative technique that distributes lead and other alloy grains uniformly. We then use a unique chilling process that ensures the uniform distribution is locked in. Our dedication to lead distribution means that when you use EXCEL™ cast alloys, there is less friction and more defense against heat build-up. In short, our bushings and other cast parts last longer and have fewer problems.

Optimum concentricity

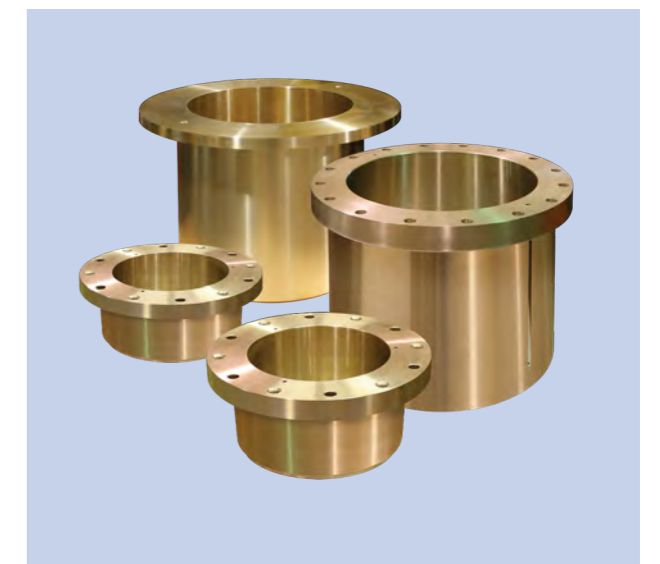
Our competitors are content with bushings that are close enough to concentric. We create perfectly concentric bushings using a unique pinch turning method during machining and cut the inside and outside diameters simultaneously. This process guarantees that your bushings are concentric with no weak spots or deformities and lowers the risk of hot spots.

Porosity-free/uniform grain structure

We begin preparing for casting by selecting the highest grade pure raw materials. The unique centrifugal casting technique that we use produces a tighter, denser grain structure in the alloy and eliminates nearly all gas pockets. What does this mean to you? The cast alloys you buy from us last longer and have significantly fewer defects.



Standard bronze pour from furnace to ladle in our foundry for EXCEL™ parts, located in Pekin, Illinois, USA

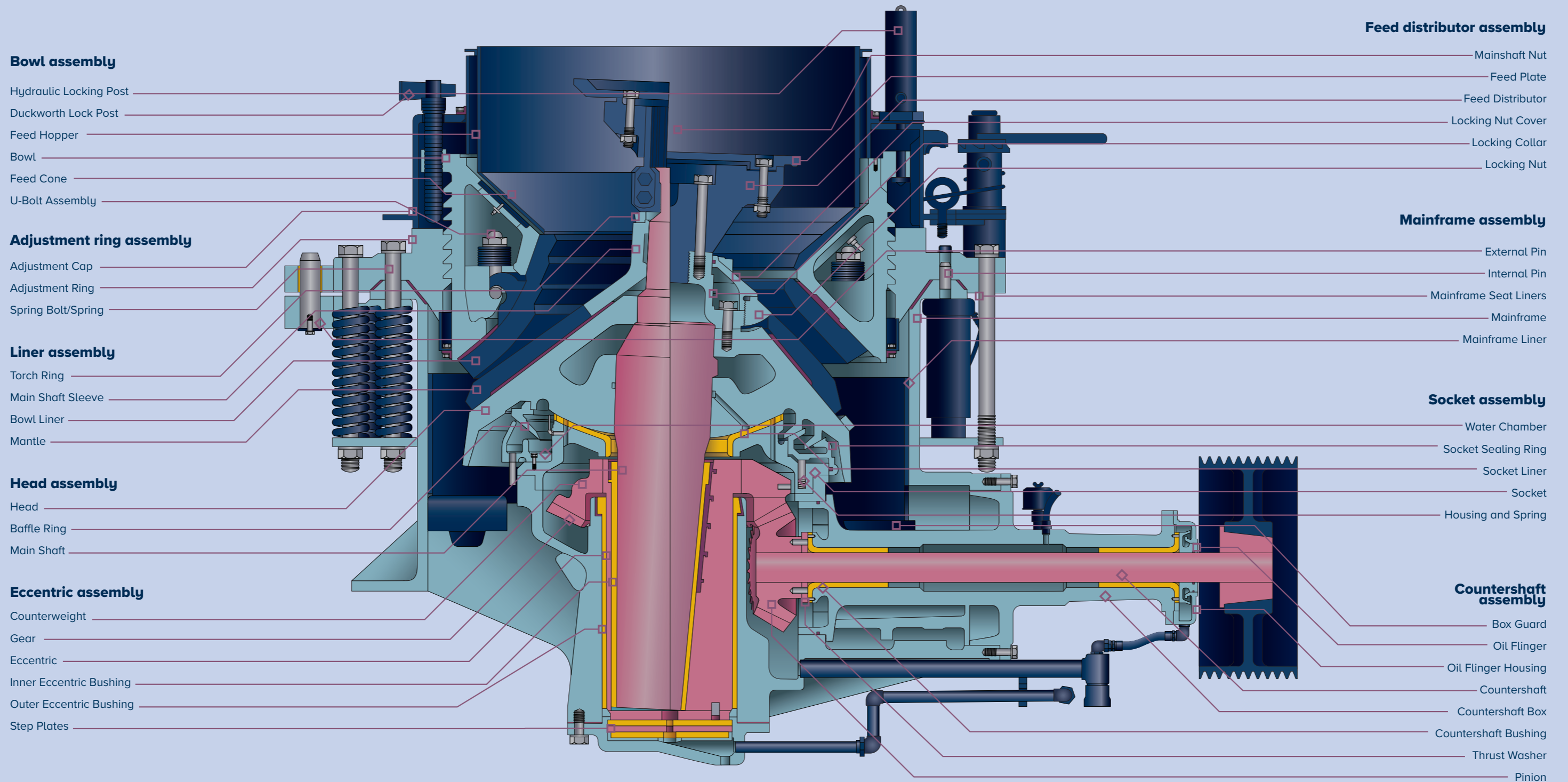


XL40 bronze components

Symons® series cone crushers

2ft, 3ft, 4ft, 4¼ ft, 5½ ft, 7ft

Component identification



Bowl assembly

- Hydraulic Locking Post
- Duckworth Lock Post
- Feed Hopper
- Bowl
- Feed Cone
- U-Bolt Assembly

Adjustment ring assembly

- Adjustment Cap
- Adjustment Ring
- Spring Bolt/Spring

Liner assembly

- Torch Ring
- Main Shaft Sleeve
- Bowl Liner
- Mantle

Head assembly

- Head
- Baffle Ring
- Main Shaft

Eccentric assembly

- Counterweight
- Gear
- Eccentric
- Inner Eccentric Bushing
- Outer Eccentric Bushing
- Step Plates

Feed distributor assembly

- Mainshaft Nut
- Feed Plate
- Feed Distributor
- Locking Nut Cover
- Locking Collar
- Locking Nut

Mainframe assembly

- External Pin
- Internal Pin
- Mainframe Seat Liners
- Mainframe
- Mainframe Liner

Socket assembly

- Water Chamber
- Socket Sealing Ring
- Socket Liner
- Socket
- Housing and Spring

Countershaft assembly

- Box Guard
- Oil Flinger
- Oil Flinger Housing
- Countershaft
- Countershaft Box
- Countershaft Bushing
- Thrust Washer
- Pinion

Quality and innovation for a full range of Symons® components

Symons® crusher parts are engineered for excellence.

Quality redefined

We know that your success depends on our quality control so we dedicate more time and people to our inspections than any of our competitors. From our strict metallurgical standards and precision machining processes to our exacting inspections, our quality assurance protocols align our processes to produce quality and dependable results. We are ISO 9001 certified, and our program is managed here along with our traceability and record retention. Our procedures allow us to trace any part that we produce, even years later. For each part, we can confirm any possible production details that are needed.



Installing the Symons® inner eccentric bushing



Mainframe assembly



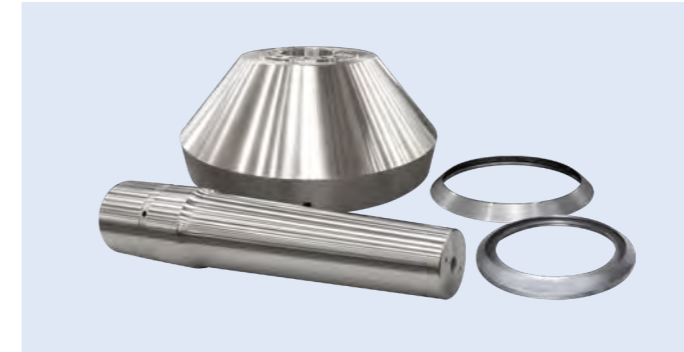
Bowl assembly



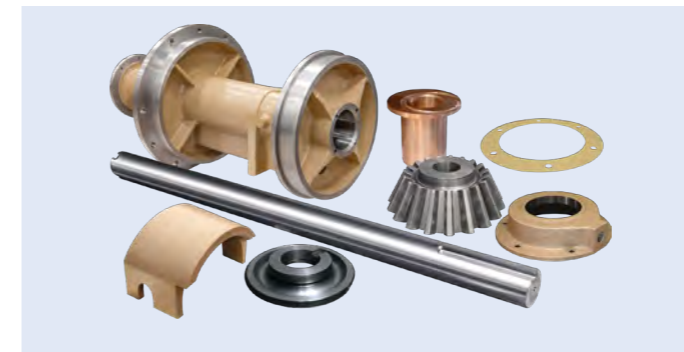
Adjustment ring assembly



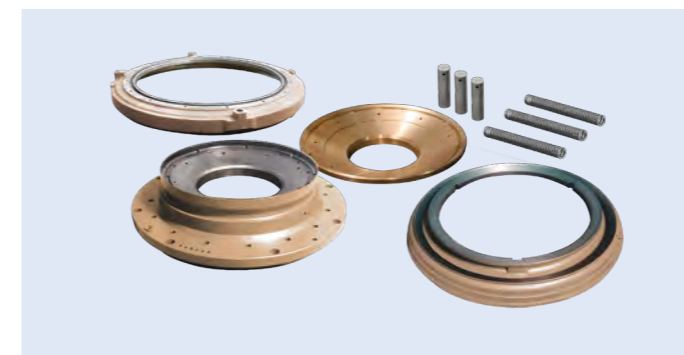
Eccentric assembly



Head assembly



Countershaft assembly



Socket assembly



Feed distributor assembly



Liner assembly



Miscellaneous components

All brand names, model names or marks are owned by their respective manufacturers. FLSmidth/FLS has no affiliation with the original equipment manufacturer. These terms are used for identification purposes only and are not intended to indicate affiliation with or approval by the OEM. All parts are manufactured by, for and warranted by FLSmidth and are not manufactured by, purchased from or warranted by the original equipment manufacturer.

Symons® cone crusher accessories and hydraulic options

Full range of components for all Symons® models

Duplex Oil Filter

Our duplex oil filter is compatible with Symons® 4¼ ft, 5½ ft, and 7ft cone crushers.

We ship the filter pre-assembled for easy, fast installation. All you need to do is connect the discharge line from the oil pump to the In port and connect the Out port to the crusher. Then you are ready to resume operation.



Eye bolts

Our eye bolt is specifically engineered for the Symons® 7ft Cone Crusher. We have manufactured the eye bolt using swivel hoist rings, and it is certified to handle the special loads of the head and shaft during maintenance. The swivel hoist rings make it much safer to lift equipment from an angle than the conventional eye bolts sold by the OEM.

- Certified load rating
- 5 to 1 safety factor for designed loads
- Swivel hoist ring



Long and short swivel hoist rings



Locking posts

FLS stocks locking posts for the Symons® 4¼ ft, 5½ ft, and 7ft cone crushers for both standard and short head designs.

Our hydraulic locking post is designed with reliability and durability in mind. It is completely sealed at the top to prevent dust and water from entering it. Large wear bands in the piston and gland prevent side loading so that the seals and critical parts last longer. As with the other replacement parts that we sell, no additional fittings or hoses are required to replace the original equipment manufacturer (OEM) locking post with ours.

Clamping Cylinders

FLS stocks clamping cylinders for the HP®, MP®, and Omnicone® series crushers.



Customised feed distributor

Feeding a crusher with the best possible distribution is the first step to maximising crusher production. Incorrect feed arrangements cause higher bearing load and more power consumption, lower throughput, higher manganese wear, lower reduction, poorer product shape and higher costs. Every application has its own unique requirements, and we've developed feed distributor options and main shaft extension kits that match your specific needs to improve your productivity and reduce your costs.

Although larger feed plates typically do a better job of evenly distributing the feed with minimum segregation, smaller feed plates with spherical nuts give significant advantages.

- Save money
- Create a clear view for a camera or sensor system to monitor the feed rate
- Reduce damaging effects of feed falling from too great a distance
- Allow an obstructed crusher to be cleared more easily and safely



Many feed distributor options for your application

Main shaft extension conversion component for Symons® short head cone crusher

We have designed a main shaft extension conversion component for short head crushers to make liner replacement faster, easier and safer. Our main shaft extension comes with a torch ring that is located above the backing cavity and manganese mantle.

The conventional main shaft design requires operators to spend a lot of time welding a lug onto the locking nut for liner replacement. The lug must then be removed, which can take hours. Depending on the position of the mantle, it is sometimes nearly impossible to remove the lug without torch cutting or carbon arcing. This exposes personnel to the dangerous fumes of burning manganese, epoxy crusher backing material and zinc.

In contrast, the torch ring on our main shaft extension can be more quickly and safely removed. The torch ring is made of low carbon steel and has a small diameter. Its position away from the backing cavity and mantle limits the possibility of dangerous fumes while torch cutting. For special applications, a spherical main shaft nut can be used on short head crushers.



Short head mainshaft extension

Tune-up kit

Our tune-up kits are pre-packaged, have extended shelf life and are ready to use at a moment's notice. With the help of a convenient kit, your regular maintenance becomes easier. All kit configurations are vacuum-heat packaged on oil impregnated boards to leave the parts identifiable, sealed and protected.

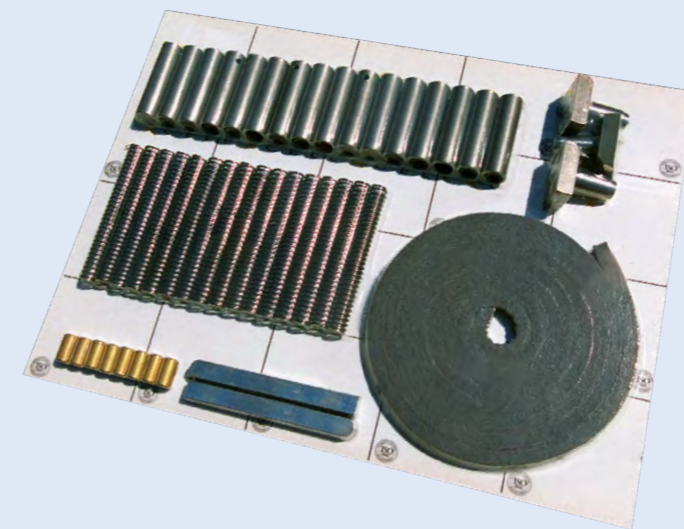
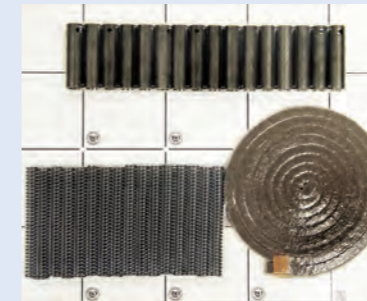
Basic kit

- Compression springs
- Spring housings
- Felt strip



Standard kit

- All basic kit contents
- Dowel pins
- Guide babbitt
- Locating keys



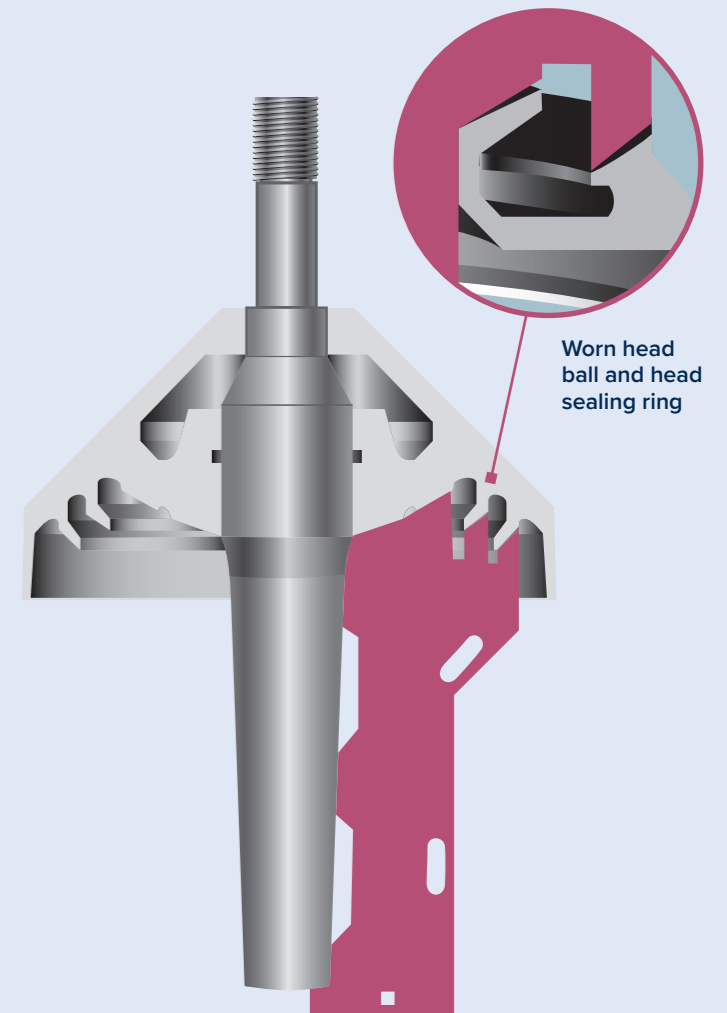
Deluxe kit

- All basic and standard kit contents
- Cap screws

Templates for socket and head sealing ring

Our exclusive sealing ring templates allow you to easily examine your head sealing ring, socket sealing ring and spherical bearing seats. Simply position the template against the bore of the sealing ring to do an inspection on the contour of the sealing surfaces and their relationship to each other. A 3/16 inch gap between the template and the part indicates that the sealing ring needs to be replaced. The contour condition of the spherical bearing seat is also easily apparent so you can monitor when it needs maintenance.

Doing this inspection at each liner change and at least once per year makes sure that you know ahead of time when you need to replace the socket sealing ring and head sealing ring, and rebuild the spherical bearing seats. These components may be small, but proper maintenance is important to prevent oil contamination. With less oil contamination, the spherical bearing seat and all internal parts of the crusher last longer.



Say goodbye to clearing your Symons® crusher by hand

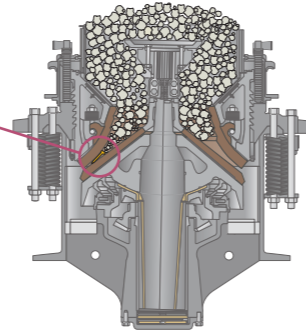
Sentinel™ Hydraulic Crusher cleaning system for Symons® crusher

Our Sentinel™ hydraulic crusher clearing and tramp release system reduces downtime and improves the flexibility, capacity and safety of your Symons® crusher. Our system allows you to automate the crusher cavity clearing. It is completely safe and has you back in operation in less than 15 minutes.

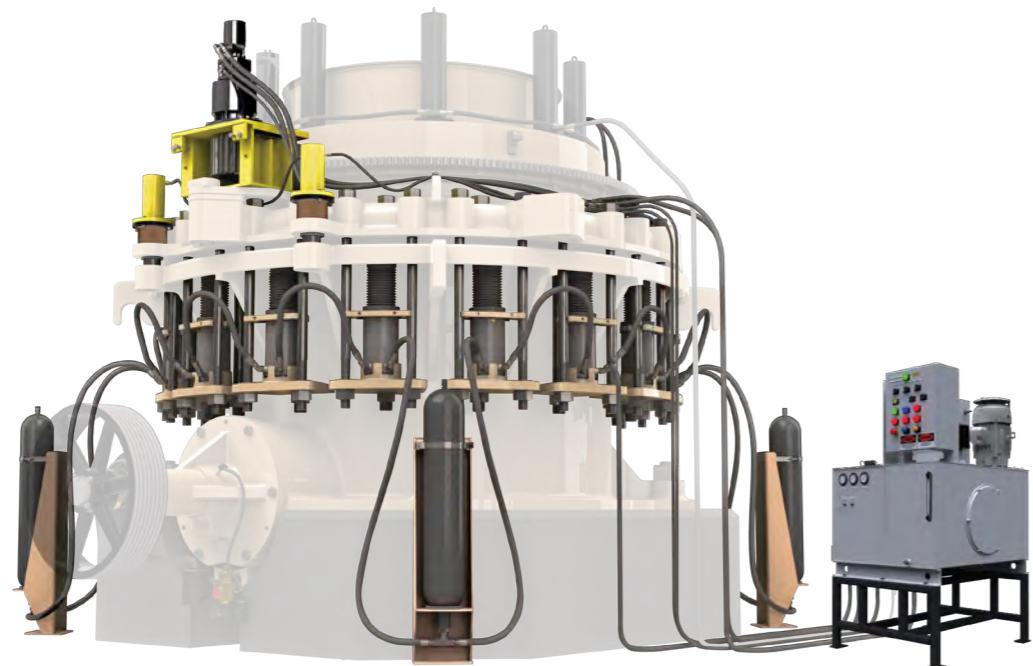
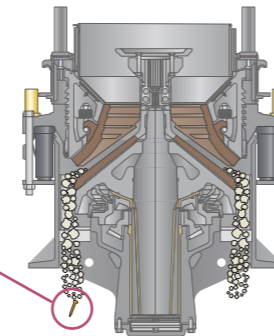
With this system, your operators no longer need to perform the dangerous and time intensive task of manually clearing the crusher cavity. Keep your employees safer and your operation more profitable.

- Simplifies crusher cavity clearing
- Drastically reduces costly downtime
- Reduces ring bounce and cuts down on related maintenance and repair costs
- Requires little or no modification to your existing Symons® frame
- Maximises tonnage by adjusting the crusher to a smaller setting without risk of stalling

Manual cavity clearing can take up to 5 hours and is very dangerous

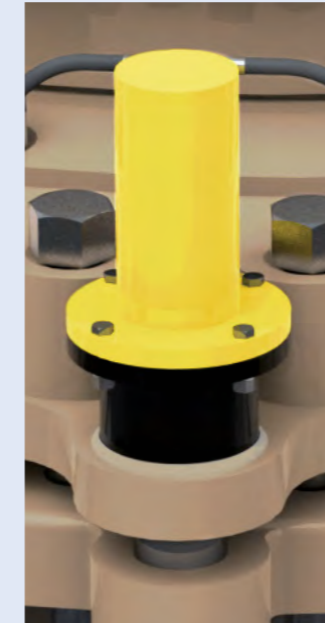


Automated cavity clearing is absolutely safe and has you back in operation in less than 15 minutes



Complete Sentinel™ system

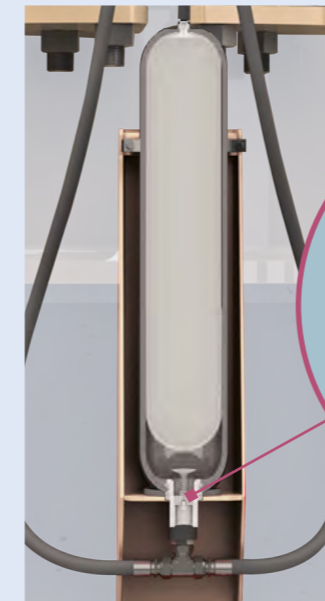
With the Sentinel™ advanced hydraulic system, you also have the option to include remote bowl adjustments. With this design, you can quickly change the closed-side setting (CSS) and more easily turn the bowl during liner changes.



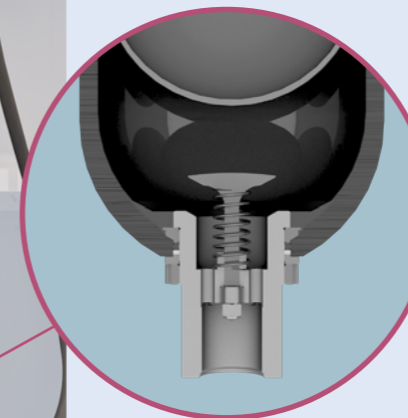
Clearing cylinder



Clamping cylinder



External accumulators



Hydraulic ram bowl adjust



Hydraulic gear bowl adjust



Hydraulic power unit

The Sentinel™ hydraulic power unit (HPU) constantly monitors the hydraulic pressure, temperature and filter conditions. Indicator and warning lights advise the operator of reservoir oil level, oil temperature, oil pressure in the tramp and lock post hydraulic circuits and filter status.



Making a difference through engineering and unbeatable service

We offer superior parts. Then we go a step further by backing our parts with a team of specialists to answer your technical questions and work with you in the field to get your equipment working better than new.



Engineering you can count on

Original equipment manufacturers often leave room for improvement when it comes to part performance and site-specific considerations on the machines they design. EXCEL™ replacement parts are designed to get you better performance, longer wear life, improved safety, higher quality, complete compatibility and more durability. The only things you will see less of are maintenance and expense.

Yes, we use state-of-the-art, 3D-based design technology. But we also take advantage of the experience of former miners and quarry engineers who are on our staff and feedback from customers like you to make sure that what we are designing is relevant in the real world. We have been developing and manufacturing replacement components for more than 80 years, and we have produced a wide line of parts that surpass what you can expect from the equipment manufacturer.

Sales and technical support

We have you covered with world-class service before, during and after the sale. Whether you need help finding a part for your application, have a custom request, need a metallurgical analysis or need any other technical assistance, we are here to help. Our talented and accessible team of design engineers and technical service engineers are ready to offer support because your time is too valuable to spend trying to find answers on your own.

Dependable field service

Our field service team is here to take care of you. We want to hear about any problems that you encounter in the field and will show up to help you resolve them. Many of our new part designs have come about as we work with customers to find solutions to common problems.



"Our customers need replacement parts that operate in harsh environments. For this reason, we demand metallurgically sound castings produced through the careful control of chemistry and processing parameters for our replacement parts. Our promise is to provide our customers with the highest quality components."

MIKE BERGERHOUSE
Senior Metallurgical Engineer
FLSmith Inc. - Pekin Operations

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