600 SERIES
SPLIT-FRAME CLAMSHELLS

TRI TOOL
BUILDING PERFORMANCE

The TRI TOOL® 600 Series Clamshell is the ultimate rotating platform for a wide range of applications from in-line cutting, precision weld preps to special machining and milling operations.

Model 614 RBL-G2

Tri Tool's reputation has been built on the precision, durability and overall quality of our equipment, so you can trust that you are using the best tool for your specific challenge. Our 600 Series Clamshells are engineered to handle any application; any pipe size or material and our machine tool experts are available to ensure you get the right equipment to fit your needs.

- *Best-In-Class Precision*
- *Designed for Maximum Durability*
- *Both In-Line and End Prep Versatility*
- *Cold Cutting - No Heat Affected Zone*
- *Rapid, Dependable Performance*
- *A Comprehensive Range of Accessories*

Tri Tool Clamshells produce superior results, able to deliver exacting diameter and surface tolerances within thousandths of an inch, making them ideal for use with advanced orbital welding systems.

Clamshells can simplify the processes of cutting to length and weld end preparation by performing both operations simultaneously.

Easy to setup and operate, Tri Tool 600 Series Clamshells offer reduced labor and time requirements for pipe and component replacement, the perfect solution for plant maintenance where downtime is a critical economic issue.

Our unique Clamshell bit designs allow for optimal machining speed and feed rates. A simple, reliable feed control system provides the flexibility to perfectly match the cut depth for any material.

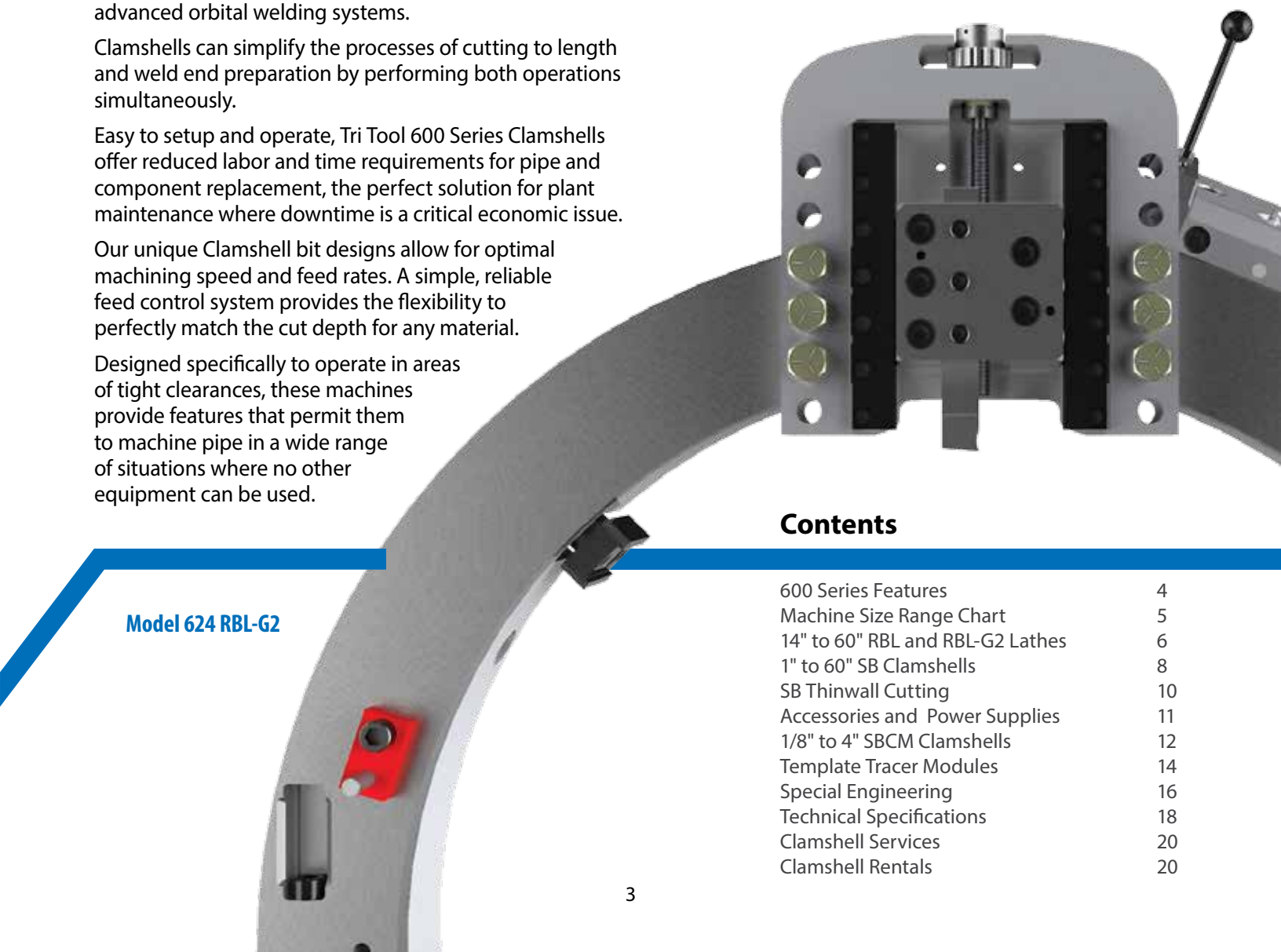
Designed specifically to operate in areas of tight clearances, these machines provide features that permit them to machine pipe in a wide range of situations where no other equipment can be used.

Clamshells are cold cutting and can be used in controlled environments where flame cutters are unacceptable.

Clamshells can be operated by remote control, making them perfectly suited for machining operations in nuclear, explosive, toxic, underwater and other hazardous environments.

Tool blocks are heat-treated for durability and parts that could be damaged, such as gears, pins, and bearings, are protected to reduce the chance of accidental damage. Our clamshells do not have moving gears that protrude to provide increased operator safety.

When your work demands ultimate precision and durability in in-line/end-prep equipment, choose Tri Tool 600 Series Clamshells for guaranteed performance.



Model 624 RBL-G2

Contents

600 Series Features

Through field-proven design experience, each of the versatile RBL, RBL-G2, SB and SBCM lathes offer unique advantages.

Tri Tool 600 Series clamshell lathes are manufactured in four distinct types, the RBL, RBL-G2, SB and SBCM. The different types, and wide range of models, cover the full range of standard pipe sizes and wall thicknesses. We provide optimal cutting configurations with benefits uniquely suited to your specific work requirements.

RBL and RBL-G2 Series

The RBL and second generation RBL-G2 clamshells' adjustable vee-track bearings are ideal when maximum portability is a prime consideration. The reduced-friction and drag of the roller bearings result in more power focused on the cut for faster operation. Requiring less input power, most roller bearing lathes can operate efficiently with a single drive motor. An optional second drive motor can be used to provide additional horsepower when required. The lightweight design of the RBL and RBL-G2 allow easier setup and handling. Long-travel, spur gear driven tool modules deliver smooth feed across the wide pipe size range. Mounting points for 2 tripper assemblies provide maximum allowable tool feed for different materials, reducing required cutting time. Optional tool modules and machining accessories are available for heavy-wall cutting.

SB Series

The venerable SB (Sliding Bearing) lathes feature adjustable full-contact bearings for maximum strength, providing the ultimate solution for simultaneous severing and beveling, deep counterbores, and close tolerance machining. The signature sliding bronze bearings provide maximum stability for a smooth finish, precision machining, and long tool bit life, even on the most demanding materials. In harsh or contaminated environments such as offshore oil platforms or nuclear power plants, sliding bearings can be easily and economically cleaned and adjusted, maintaining consistent operating performance. Standard tool modules for the SB Series require minimal radial clearance, important when working where space is limited. A vast array of accessories are available for cutting extra heavy-wall pipe, as well as a wide range of specialized uses.

A 600 Series SB Clamshell performing a deep counterbore, critical to a pipe end-matching operation on an Oil and Gas Pipeline project.

SBCM Series

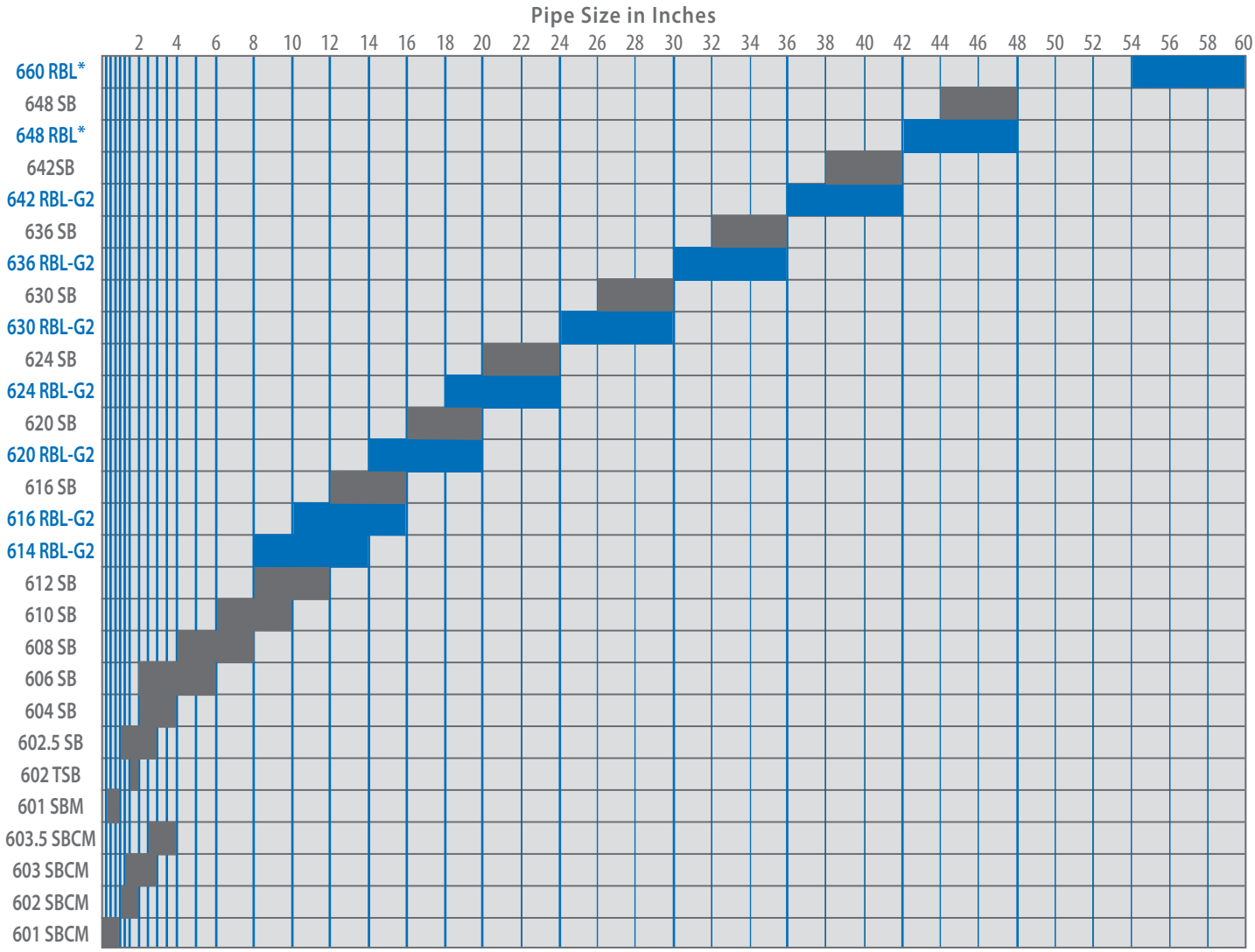
Tri Tool's versatile lineup of lathes includes the outstanding precision of the SBCM (Sliding Bearing Collet Mounted) lathes. Designed to operate on 1/8" pipe to 4" tube, the SBCM series offers accurate and secure, self centering collet-type clamping that protects smaller pipe and tube from distortion or damage due to clamping forces.

Special Applications

As a precision rotating platform, the clamshell lathe can be configured for many in-place machining operations along with severing and beveling such as socket weld removal, counterboring, and single-point machining.

SB, SBM and SBCM Clamshells are used to salvage welded fittings and perform seal weld cutting between pipe and bulkheads in situations with sufficient mounting space. For socket weld removal, adjustable clamp pads center the clamshell with the tool bit positioned over the socket weld. An auto-feed tool module feeds the bit radially and machine the weld fillet back to the socket face.

The split-frame design of the Clamshell lathe allows the machine to separate and mount around the OD of in-line pipe or fittings for strong, stable clamping.

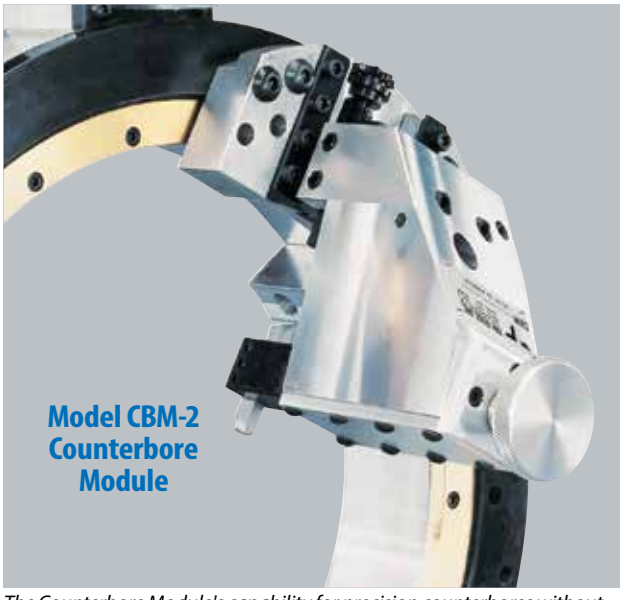


** The 648 - 660 RBL clamshell lathes include cutting modules and surface treatments that are different from those included with the 614-642 RBL-G2 type clamshell lathes. When using optional or custom accessories with 600 Series lathes, the actual cutting range may be extended wider, higher, or lower than those shown. Refer to the Specifications on Page 18 of this brochure, or contact your Tri Tool technical sales representative for more information.*

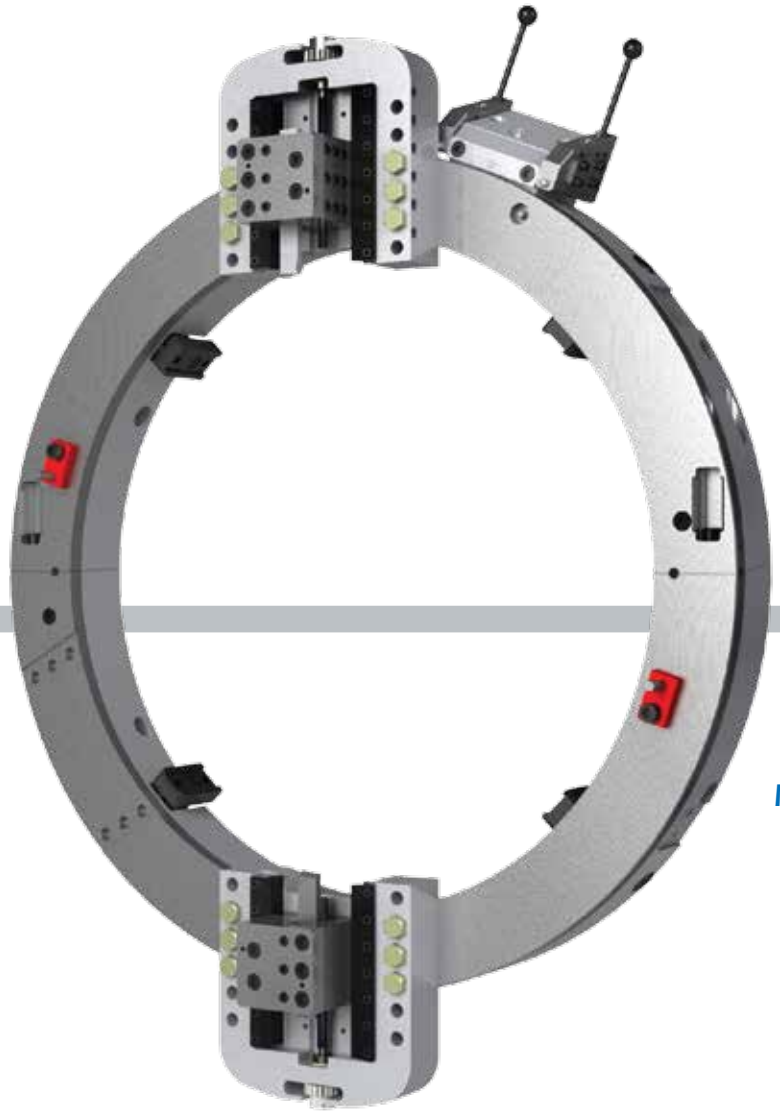
Reliable, Precise Counterbores

Our Counterbore Modules (CBM) produce a precision counterbore on the inside wall of a pipe end immediately following a cut. Because they are mounted directly to the clamshell without repositioning, they consistently provide a uniform bore perpendicular to the cut face. An additional feature of the CBM-3 counterbore module is a taper boring adjustment for 0° to 30° chamfers or lead-out angles.

Model	RBL Clamshells	RBL-G2 Clamshells	SB Clamshells
CBM-1	n/a	n/a	601 to 602.5
CBM-2	n/a	n/a	604 to 612
CBM-3	n/a	n/a	616 to 648
CBM-3	648 to 660	614 to 642	n/a



The Counterbore Module's capability for precision counterbores without changing machines (while the Clamshell is still in perfect alignment to the cut) is a significant advantage.



Faster Better Safer

Model 624RBL-G2

Tri Tool's new 600 Series RBL-G2 represents the next generation in clamshell lathes designed with safety as the top priority. Get faster, better performance with the durability you expect from Tri Tool.

In addition to addressing safety, Tri Tool examined every aspect of the clamshell lathe design and improved performance, speed and ease of use while maintaining the power and durability our customers have come to expect. The newly redesigned RBL-G2 will now sever and bevel up to three times faster with a new high speed, in-line and right angle motor options in a single drive housing adding flexibility and reducing machining time without compromising power.

"We've also simplified the tool bit setup which should save the operator time and reduce the amount of training needed to operate the machine" A. Ferozepurwalla, Lead Engineer.

The new, economical high speed carbide sever kit allows for sequential sever and bevel operations with minimal setup and without having to reposition the clamshell lathe.

The RBL-G2 clamshells are designed to sever and bevel 7" through 60" in-line tube and pipe. These clamshells feature precise, lightweight vee-track roller bearings which feature low drag, with lower weight to maximize portability. As with our venerable SB series, set-up and operation of the RBL-G2 clamshell is simple and straightforward.

The RBL-G2 lathe provides adjustable bearings and tool slides to ensure long and dependable operation.

Our wide range of clamshell sizes and models permit excellent matching of equipment to the work. Simultaneous sever and bevel operations are possible for most wall thicknesses.

Split-frame roller bearing lathes provide the highest degree of portability for applications where lighter weight and easier handling is an important advantage.

For reliable pipe cutting in tight spaces, the slim design RBL-G2's are the perfect solution.

Safety is our first core value at Tri Tool and was the primary goal for our engineers when tackling this redesign effort.

Our patent tool module design along with the integration of the new fixed-position tripper mechanism with the drive housing, and the tapered drive housing design minimizes pinch points for superior operator safety.

The high performance, second generation RBL-G2 brings improved speed and safety over the already field proven RBL series of split frame lathes.

- *Pinch points minimized for improved safety*
- *A new, high-speed in-line motor option severs and bevels up to 3x faster for higher productivity*
- *Patented tool module provides stability for smooth operation and superior surface finishes.*
- *New, updated tripper for operator safety*
- *Corrosion-resistant coatings increase tool durability for long lasting protection in the roughest environments*
- *Simplified tool bit setup saves time and minimizes training*
- *Economical high speed carbide sever kit allows for sequential sever and bevel operations with minimal setup*
- *Low friction, field adjustable, roller bearing system*
- *Requires low input horsepower*
- *Lightweight, easy to setup*
- *Tool modules with spur gear drive for finer feed increments*
- *Cold cutting - means no heat affected zones*
- *Modular design to enhance interchangeability of parts*
- *Extended-reach tool modules for deep severs*

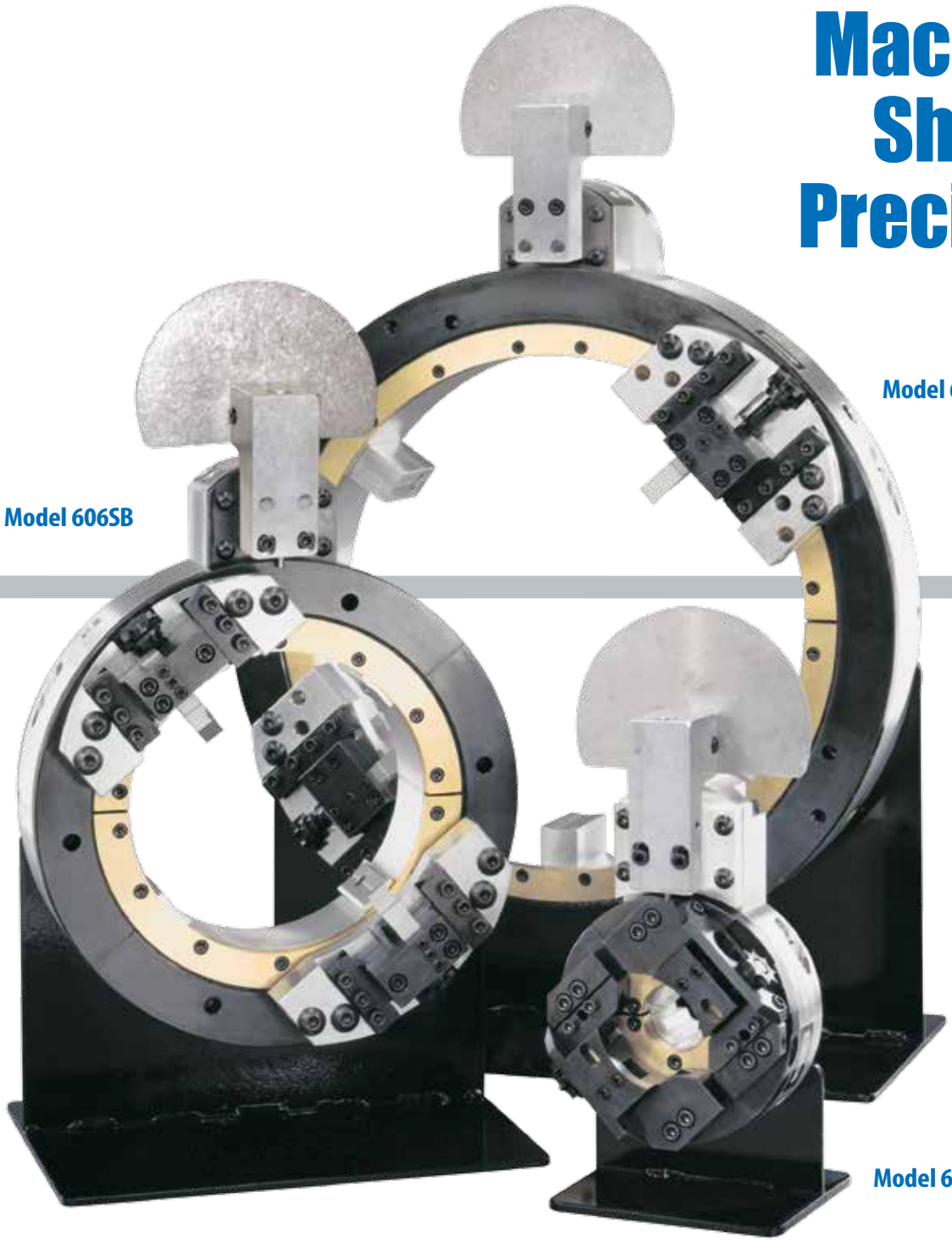
Low Profile RBL-G2 Tripper

"We wanted to eliminate as many pinch points on the new RBL-G2 as possible. Our engineering team developed an innovative, patented tool block design that allows for the tripper mechanism to remain in a fixed and low-profile location adjacent to the tapered drive housings. The result is significantly fewer pinch points throughout the entire usable range of the machine" Justin Tripp, P.E., Mgr of Engineering

48" to 60" RBL Clamshells

The versatile , field proven 648 - 660 RBL clamshell lathes utilize cutting modules and surface treatments that are different from those used with the 614-642 RBL-G2 clamshell lathes. Refer to the Specifications on Page 18 of this brochure, or contact your Tri Tool technical sales representative for more information.

Portable Machine Shop Precision



Model 612SB

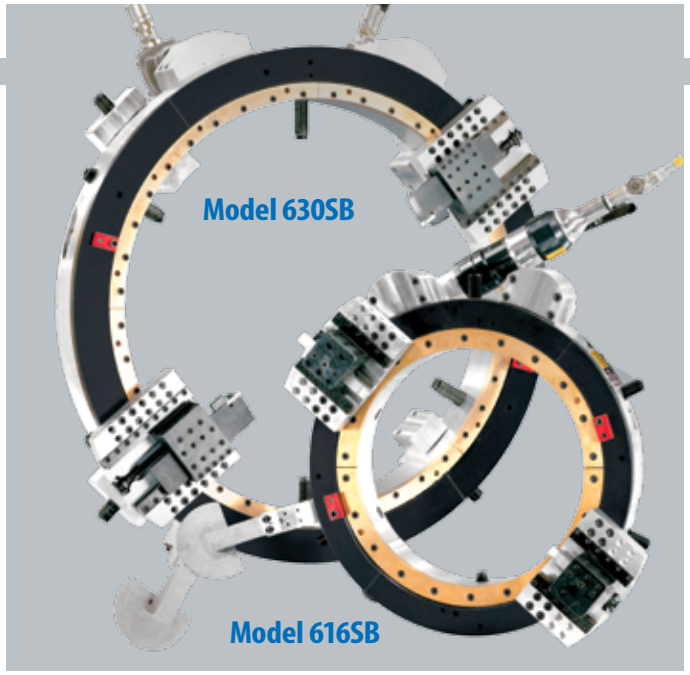
Model 606SB

Model 601SBM

The split-frame SB lathes offer the precision and power to sever and bevel a wide range of pipe sizes in the most demanding applications.

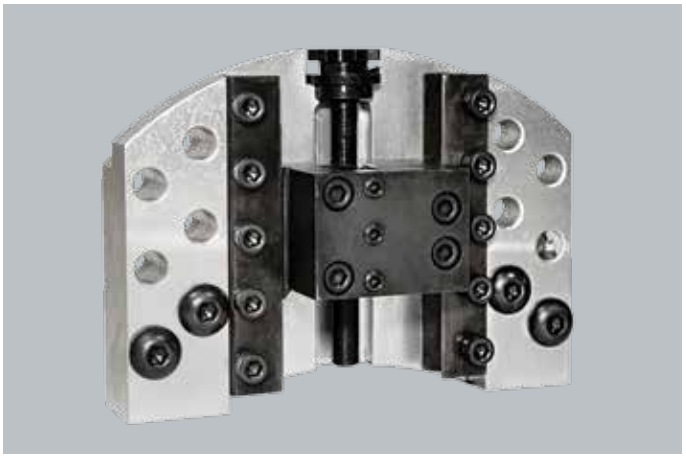
The Model SB Series lathes are designed for severing and beveling pipe from 1" through 60" and offers tool modules and accessories for a wide range of cutting operations from OD Tracking modules to complex, heavy-wall single-point machining. The large SB clamshells produce otherwise unattainable levels of accuracy and control, critical to pipe welding operations in heavy industry and power production. Because of the clamshell's power and superior stability, it is ideal for new construction, in-place maintenance, component replacement, decommissioning and production.

While most often used in a portable role, clamshells are extremely effective in fabrication shops where high volume, precise severs, bevels and end preps are needed. The above Clamshell is shown performing a simultaneous sever/bevel operation on titanium pipe.



- *Updated tripper mechanism for operator safety*
- *Simultaneously sever and bevel on thin or heavy-wall pipe*
- *Numerous drive options*
- *Adjustable OD mounting system featuring locator pads & jackscrews for maximum stability*
- *Excellent for working in tight spaces with little clearance*
- *Extend capabilities with additional machining accessories*

The 3 Position Tool Holder Increases Cut Range for 6 - 12" SB Clamshells



The 3 Position Tool Holder mounting bolts (shown) can be mounted in one of the three positions to shift the module in or out to accommodate different pipe sizes.

A tool holder for use with the Model 606 through 612 SB Clamshell permits cutting on pipe that is one size smaller than before. The 3 Position Tool Holder is standard with all 606SB through 612SB Clamshells, and is available as an optional accessory for customers with existing SB clamshells in that range.

SB Model	Previous Pipe Size Range	Range With 3 Position Tool Module
606 SB	4" to 6"	2" to 6"
608 SB	6" to 8"	4" to 8"
612 SB	10" to 12"	8" to 12"

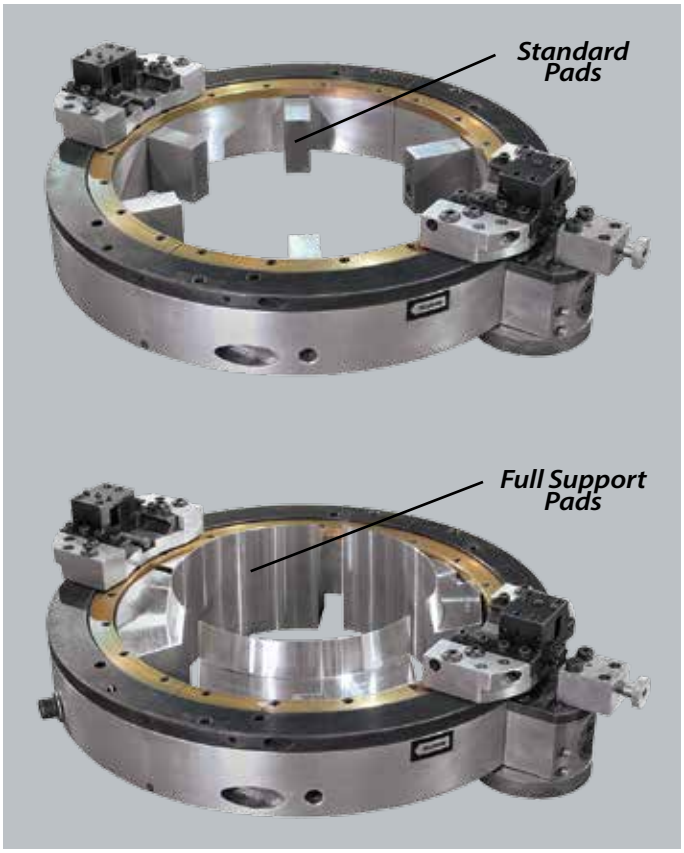
SB Thin-wall Cutting

The versatility of our 600 Series SB Clamshells is demonstrated by the precision severing that can be achieved for exacting thin-wall applications.

The smooth, precision cutting characteristics of the SB Clamshell are ideal for severing and beveling of thinner wall Schedule 5 to 10 pipe and tube, making them perfect for use in the semiconductor , pharmaceutical, chemical, and food processing industries.

Proper cutting of a typical .062" to .250" wall requires some specialized accessories to prevent deformation created by clamping forces of mounting pads. Other considerations are tracking the OD and rounding methods, all designed to produce a consistent land thickness and profile.

Mounting pads are size specific for the pipe or tube being worked on and pad sets are typically aluminum but can be made from different materials (such as stainless steel or plastic) depending on requirements.



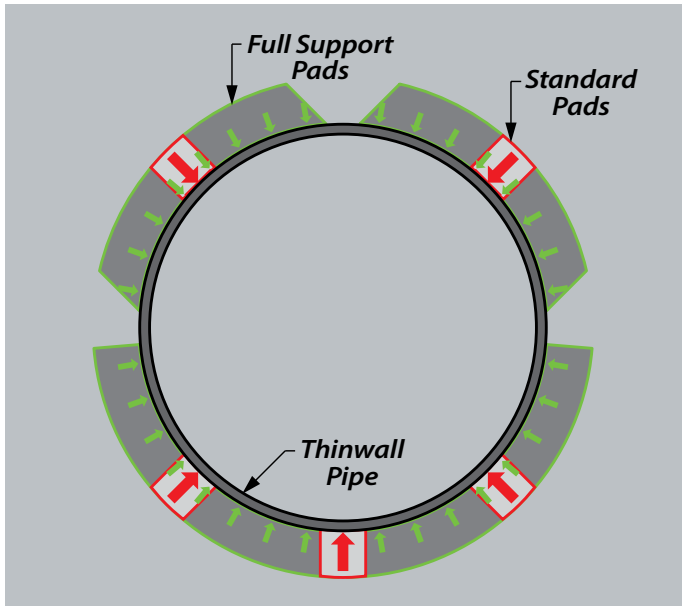
In the 612SB Clamshell shown above, the increased surface area of Full Support Pads is clearly seen. While conventional Clamshell mounting pads provide secure grip on regular to heavy wall pipe, they can focus strong clamping forces that could distort and deform thinner wall thicknesses.

A piping system contractor performing outage maintenance on thin-wall stainless piping system uses an electrically powered SB clamshell fitted with full support pads. The piping system was part of an auxiliary high purity nitrogen supply line at a semiconductor manufacturing facility. A prefabricated pipe assembly was then orbitally welded in place without any additional end-prep being required.

Full Support Pads

Clamshells use full support pad sets for severing and beveling thin-wall pipe and tube. Full Support Pads provide excellent distribution of clamping forces.

Full support pads can be utilized for pipe sizes up to 1" less than a Clamshell model's maximum mounting specification. Full support pads spread the mounting forces equally over a much larger area, protecting thin-wall pipe from warping or distortion, providing a secure grip, and helping to reshape out-of-round conditions.



An illustration showing distribution of clamping force, a comparison is easy to make between the standard (Red) and Full Support Pads (Green).

Clamshell Accessories

Reversed Drive Housing

Designed specifically for use in tight clearance situations, the reversed drive housing optionally positions the drive motor on the front side of the lathe.

Back Mounted Support Rings

For special situations requiring additional rigidity or mounting flexibility, back support rings can be added. The back support rings provide a second row of offset jackscrews for improved mounting force distribution and positioning control.

Roller Cutters

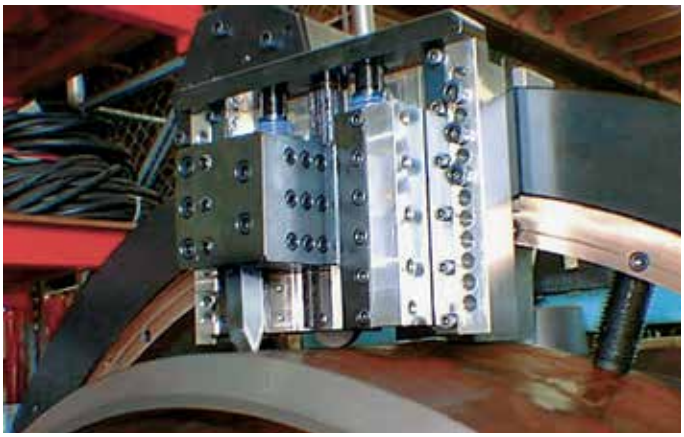
Also known as "chipless" cutters, roller cutters use sharp-edged wheels to sever thin wall tube or pipe. The cutting wheel is progressively fed into the pipe, displacing metal as it rolls, producing a cut without chips. This is valuable when chip contamination is a concern.

Template Tracer Modules

This module is used to produce complex bevels on open-ended pipe. The template tracer follows a fixed profile template in order to transfer the desired bevel configuration to the pipe end when using single-point machining techniques.

OD Tracking Modules

When working with "out-of-round" pipe, the OD tracking module uses a wheel which follows the pipe's outside diameter, constantly adjusting the tool bit position to provide the most consistent land thickness and bevel possible.



An OD Tracking Module accessory being utilized on a large SB clamshell. The Tracking Module compensates for out-of-round conditions by "reading" the pipe shape with a wheel, automatically adjusting cut depth.

Automatic Tripper Disengage

The automatic tripper assembly features a spring-loaded pin that stops the tool bit feed at a preset travel point to control the depth of cut.

Hydraulic Power Supplies

Tri Tool's Hydraulic Power Supplies ensure reliable power for our 600 Series Clamshells. Featuring a powerful electric motor (or diesel engine by special order), the system provides adjustable volume, constant flow pressure and responsive pumps. This adds up to optimum power delivery as required by pipe lathes that are designed to machine a wide range of pipe sizes and materials.

The **Model 765RVC** is a premium 20 GPM power supply with a low voltage full function remote control pendant. The pendant provides Stop/Start, Forward/ Neutral/ Reverse, and Volume control functions. Pendant extensions and hose kits allow operation of the lathes up to 200' away from the power supply. The unit incorporates full flow recirculation and reservoir filters, , forward and reverse flow pressure bypass valves, oil cooler and thermal overload protection. Primary power for the 15 HP, 3 phase 50/60 Hz electric motor can be set for 208, 230, 380, 415, or 480 VAC.

The **Model 757RSS** is a 10 GPM, power supply with a low voltage remote Stop/Start pendant control. Forward/Reverse/ Volume control functions are provided at the power supply. Pendant extensions and hose kits allow the operation of pipe lathes up to 200' away from the power supply (factory configuration required). Primary power for the 7.5 HP, 3 phase 50/60 Hz electric motor can be set for 208, 230, 380, 415 or 480 VAC.

SBCM Collet Lathes

Model 601 SBCM (1/8" to 1" Pipe)
Model 602 SBCM (1" to 2" Pipe)
Model 603 SBCM (1.25" Pipe to 3" Tube)
Model 603.5 SBCM (2.5" Pipe to 4" Tube)

- *Collet mounting prevents deforming thin wall pipe & tube*
- *Simple, precise in-line cutting*
- *Sever and prep in one step*
- *Compact design is perfect for low radial profile operation*
- *Flexible drive shaft with quick detach bayonet mount*
- *The perfect machining solution for field tie-ins*

Model 602 SBCM

The Flex Drive Shaft System

The precision SBCM Series of in-line cutters has been designed to operate with the Flex Drive system that enables the tool to operate with maximum flexibility. Perfect for tight, confined spaces, the Flex Drive attaches by means of a quick-detachable bayonet lug connector for rapid and secure set-up and ease of use.

SBCM Series low profile split-frame collet type lathes are excellent for precision tube and pipe severing and beveling in tight spaces.

These unique lathes have the capability to split in two for mounting on either side of in-line 1/8" pipe to 4" tube in order to perform precision severing and/or beveling.

The SBCM Series offers secure collet type clamping that provides not only self-centering, but also protects the work from distortion or damage from clamping forces.

They are protected by Nickel plating that makes them easy to clean and decontaminate. Their design requires only a short perch length for operation, and are sized to cover a wide range of cutting applications. Bits can be specified to provide optimal cutting results on specific materials.

An SBCM clamshell has just completed the severing of a training coupon. This machine had been configured for a sequential sever and bevel operation. You can see the top most bit has completed the sever and the severed end is falling away. The bit at the bottom is in the process of generating the bevel to the specified depth.

With the ability to efficiently combine different end finishing operations, the SBCM ensures that you get reliable, repeatable results, each and every time.

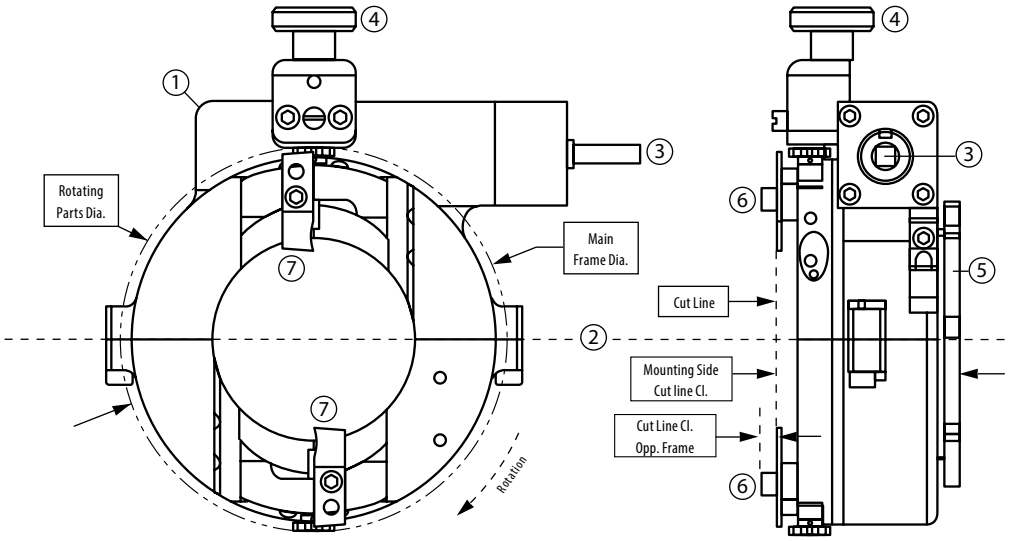
Model	*Model Specific Module*	*Socket Weld Removal Kit*	*Single Pneumatic Drive*	*Electric (DC) Drive*	*Auto Disengage Tool Module Kit*
601 SBCM	●	●	●	○	○
602 SBCM	●	●	●	○	○
603 SBCM	●	●	●	○	○
603.5 SBCM	●	●	●	○	○

● *Standard* ○ *Special*

(Model 602 SBCM Shown)

1. Drive housing
2. Split Line
3. Drive Input
4. Tripper Assy.
5. Collet
6. Tool Holder
7. Tool Bit

Notes:
A. Please refer to the operator's manual and/or technical specifications.
B. Some listed specifications may refer to specific configurations, pipe schedules or material types.



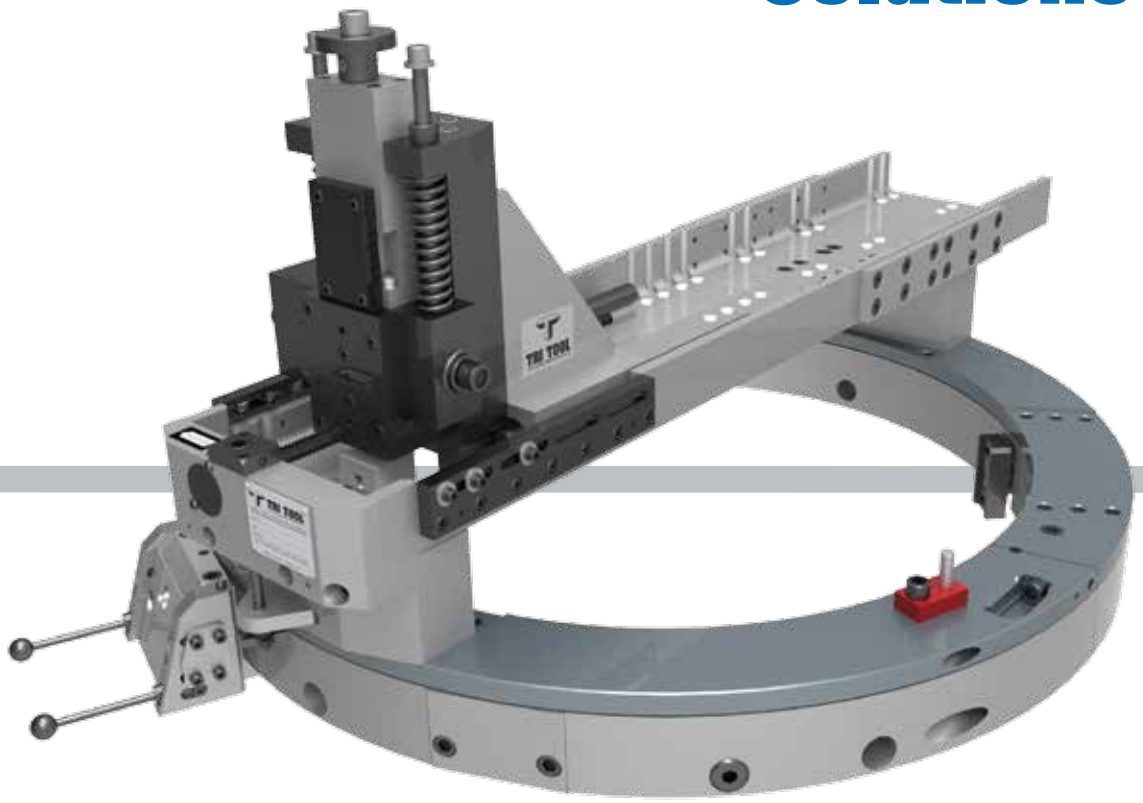
Model	Pipe Size Range	Mounting Range	Rotating Parts Diameter	Main Frame Diameter	Max Wall Thickness (w/ special procedures)	Cut Line Clearance (Mounting Side)	Cut Line Clearance (Opposite Frame)	Machine Weight
	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Lbs. (kg)
601 SBCM	1/8 (10.3) - 1 (33.4)	.405 (10.3) - 1.31 (33.4)	3.45 (87.6)	3.25 (82.6)	.358 (9.09)	2.24 (56.9)	.25 (6.35)	4.0 (1.81)
602 SBCM	1 (33.4) - 2 (60.3)	1.31 (33.4) - 2.37 (60.3)	4.61 (117.1)	4.40 (111.8)	.358 (9.09)	2.24 (56.9)	.25 (6.35)	6.0 (2.67)
603 SBCM	1 1/4 (42.16) - 3" Tube	1.66 (42.16) - 3.0 (76.2)	5.25 (133.4)	5.03 (127.8)	.358 (9.09)	2.19 (55.0)	.25 (6.35)	6.2 (2.81)
603.5 SBCM	2 1/2 (73.02) - 4" Tube	2.875 (73) - 4.0 (101.6)	6.23 (158.3)	6.03 (153.2)	.358 (9.09)	2.67 (67.9)	.25 (6.35)	8.7 (3.95)

This information is provided as a guideline only to assist with the selection of equipment only. This information is subject to change without notice. Contact a Tri Tool sales representative for specific details or technical specifications.

Template Tracing Modules

TTM-1 (7" to 42" Pipe)
TTM-2 (42" to 60" Pipe)

Versatile End Prep Solutions



TTMs span across the clamshell's rotating ring, attaching to the standard tool module mounting holes to perform heavy-wall end prep with the RBL or RBL-G2 clamshell lathes.

Model	RBL-G2 Size	RBL-G2 Pipe Range	Extension
TTM-1	614 RBL-G2	7" - 14" (177.8 mm - 355.6 mm)	n/a
TTM-1	616 RBL-G2	10" - 16" (273.1 mm - 406.4 mm)	n/a
TTM-1	620 RBL-G2	14" - 20" (355.6 mm - 508.0 mm)	n/a
TTM-1	624 RBL-G2	18" - 24" (457.2 mm - 609.6 mm)	624 - 630 RBL-G2 Extension
TTM-1	630 RBL-G2	24" - 30" (609.6 mm - 762.0 mm)	624 - 630 RBL-G2 Extension
TTM-1	636 RBL-G2	30" - 36" (762.0 mm - 914.4 mm)	636 - 642 RBL-G2 Extension
TTM-1	642 RBL-G2	36" - 42" (914.4 mm) - (1066.8 mm)	636 - 642 RBL-G2 Extension
TTM-2	648 RBL	42" - 48" (1066.8 mm - 1219.2 mm)	n/a
TTM-2	660 RBL	54" - 60" (1371.6 mm - 1524.0 mm)	660 RBL Extension

Optional extensions expand TTM-1 capabilities to pipe sizes up to 42" and TTM-2 up to 60."

TTMs are perfect for light duty form tool applications such as counterboring and cutting a bevel radius, and producing weld bevels that have compound angles and radii.

Designed to utilize readily available and easy to source components, the Template Tracer Module cuts with standard tool holders and inserts.

Tri Tool's lightweight Template Tracer Module is engineered to rapidly bevel, face and counterbore up to 2.5" wall pipe. The TTMs' unique design handles the widest range of pipe sizes and allows for a quick switch from counterboring to single point beveling without removing the module from the pipe.

Our Template Tracer Module delivers the versatility and economy of two tools with the durability and performance you expect from Tri Tool.

- ***Perform beveling, facing and counterboring.***
- ***Precision feed produces optimal surface finishes.***
- ***Aircraft grade aluminum for strength and light weight.***
- ***No open gearing for operator safety.***
- ***Quick and easy counterboring tooling change out.***

The simple and reliable spring-loaded TTM tool module follows a pair of adjustable templates, transferring the traced shape precisely to the pipe end.

Choose the Power Source you need.

Single Hydraulic Motor.

Single or Dual Pneumatic Motors used in tandem (shown).

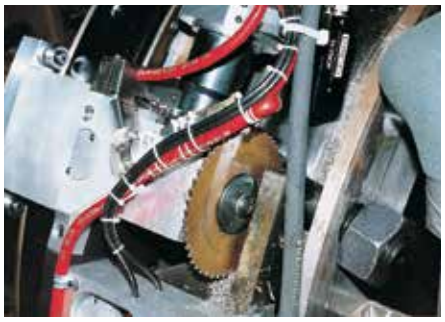
An Electric Motor is an option for quiet dependable power.

Most of our Clamshell lathes can be powered by air, hydraulic, or electric motors configured to match the input power requirements of the work being done. Note that an "Air Caddy" (In-line air filter/lubricator) is required for all Tri Tool equipment that uses pneumatic motors.

Special Engineering

Even with an extensive standard product line, some applications still require special engineering support.

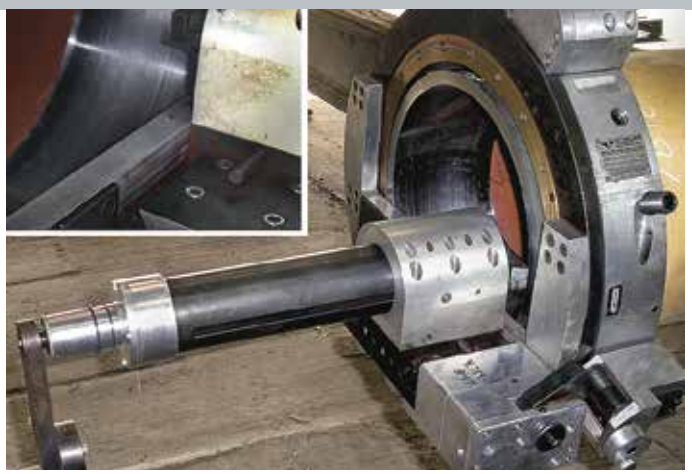
With extensive OEM manufacturing experience and unique special engineering capabilities we can help with all your special needs. Cutting capabilities can be expanded by modifying standard equipment or with custom accessories.



Clamshell mounted saw with video camera, designed for remote seal repair in a nuclear power plant.

Our engineering department has experience in providing machine tool solutions to satisfy the most rigorous and demanding specifications for a wide range of industries.

Typical special engineering applications fall into several main categories which address specific elements of the machining process.



Clamshell configured to perform extremely accurate deep counterboring.

Clamping

Special accessories can be designed to clamp unique shapes or sensitive materials, difficult or automated cutting procedures to be performed or to provide extreme accuracy.

Automatic Bit Feed and Shut-Off

Standard manual tripper control pin mechanisms are not suitable for some remote operations or some specific cutting procedures. In those instances, special accessories have been developed to provide remote control over tool bit feed rate, machining speed, and depth of cut shut-off.

Clamshell/AdaptARC® Welding Solution for Power Plant Shaft Repair

A Tri Tool DualARC® Weld Head is shown mounted to a custom SB Clamshell lathe performing a fill-in weld on a shaft the SB has previously machined.

Tri Tool special engineering provided custom design and manufacturing for a comprehensive repair system that was successfully used to repair a power plant shaft. The damaged shaft surface was first milled away, re-welded with an AdaptARC® system, then precision machined to restore the final critical dimensions. All machining and welding operations were performed while mounted on a custom SB Clamshell.

Special Tool Bits and Tool Bit Holders

Some situations or materials require the development of custom tooling to generate specific machining results. Special bit holders can be produced to replace the standard tool holders.

Remote Operation

An ongoing requirement of special engineering is for remote control when the clamshell is employed in hazardous environments.

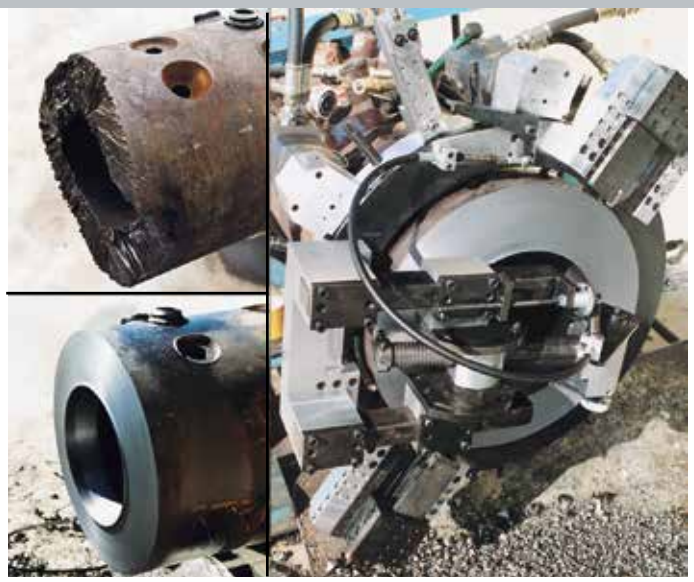
Construction and maintenance projects being performed underwater require that the equipment be set-up by divers, a situation in which the clamshell's easy set-up is a clear advantage. While it is possible for a diver to operate the machine, the equipment can be powered, controlled and monitored from above.

Another need for remote operation arises in the nuclear power industry. Many of the critical maintenance operations are performed in high radiation areas where equipment characteristics such as reliability, precision and ease-of-use are not merely advantageous - they're mandatory.

Complete remote control stations can be developed to control maintenance projects involving the use of clamshells to limit the exposure of personnel to radiation during operation.

As a stable rotating platform, the clamshell can accept numerous accessories such as video cameras to monitor the work being done. Many maintenance operations in nuclear plants involve replacement of critical piping systems, fittings, and components.

The ability to cut with extreme accuracy without generating contaminated fumes or grinding debris makes the safety and control of the cold cutting operation superior to any other method. The clamshell, when combined with Tri Tool custom equipment manufacturing, has proven uniquely able to solve numerous problems for the nuclear industry in construction, maintenance, storage, decommissioning, and clean-up operations.



A 600 RBL series split frame lathe configured with a single point machining module generating a precision heavy wall "J Prep" weld profile and counterbore on a flame-cut pipe end.

Special Operations

Accessories have been developed to perform many different operations such as to allow the OD mounted SB clamshell to be ID mounted for inside-out cutting.

Other examples include chipless roller wheel cutting with milling tools, automatic welding, grooving and other types of end finishing.

A small SB lathe fitted with a cut-off wheel module performs "chipless" cutting of thin-wall tubing.

While the need for a completely custom clamshell is usually not required, the importance of a critical or repetitive task can justify the need for custom machinery.

Tri Tool's special engineering team can develop and manufacture custom equipment based on proven designs, to meet virtually any project requirement or specific work situation. The clamshell lathe is an excellent choice for special OD mounted pipe machining applications.

You can depend on Tri Tool special engineering for thorough and experienced technical design and custom manufacturing assistance for any cutting or welding requirements you may have.

600 Series Clamshells are the Ideal Platform for Specialty In-Line Applications.

This Clamshell lathe has been configured to perform precision, in-line weld-profiling to strengthen weld joints for offshore platform tendon legs.

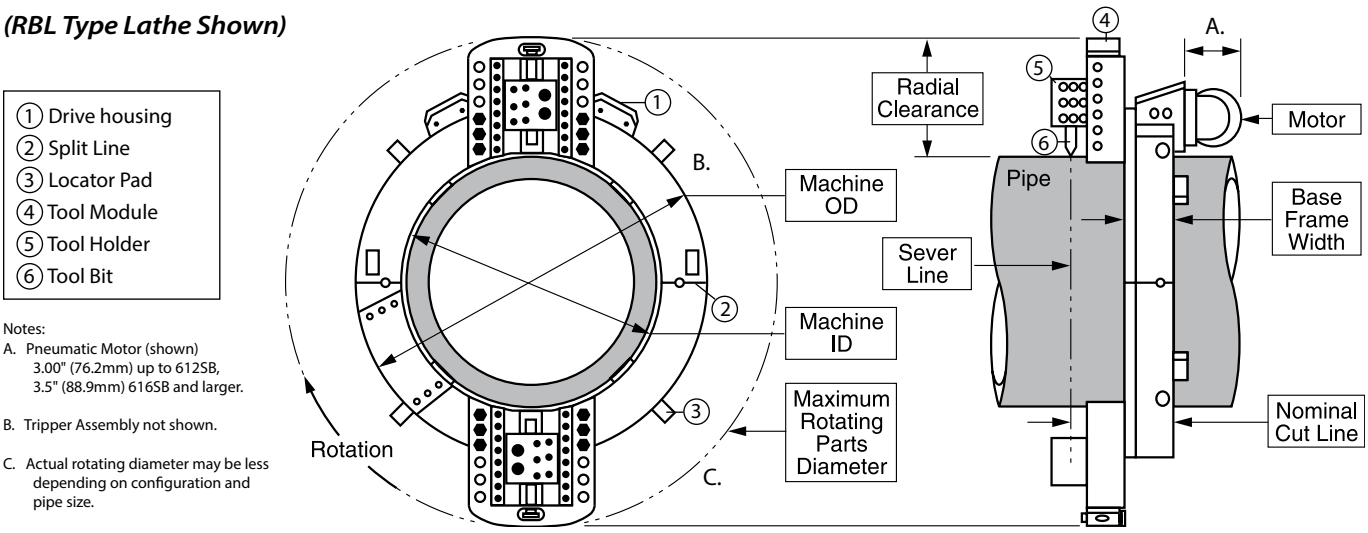
As a precision bearing lathe that can be split into two or more sections, the RBL-G2 and SB Clamshells have proven themselves time and time again as the ideal platform that can be configured for virtually any in-line machining procedure including milling, grooving, weld profiling, coating removal.

With the winning combination of a secure mounting system, and rigid frames, our 600 Series machines produce excellent finishes and rapid results for countless projects in numerous industries.

Specifications

NOTE: Contact Tri Tool for specs on the SBCM Series clamshells.

(RBL Type Lathe Shown)



Model	Pipe Size Range	Radial Clearance	Machine Weight	Rotating Parts Diameter	Machine OD	Machine ID	Base Frame Width	Nominal Cut Line
	Inch (mm)	Inch (mm)	lbs. (kg)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)	Inch (mm)
601 SBM	1/4 (13.7) - 1 (33.4)	2.00 (50.8)	11.5 (5.2)	5.31 (134.9)	5.31 (134.9)	1.44 (36.6)	2.00 (50.8)	3.50 (88.9)
602 TSB	*1 1/2 (38.1) - *2 (50.8)	1.49 (37.8)	12.0 (5.4)	4.98 (126.5)	4.98 (126.5)	2.10 (53.3)	2.50 (63.5)	4.00 (101.6)
602.5 SBM	1 (33.4) - *3 (76.2)	1.94 (49.3)	14.5 (6.6)	6.87 (174.5)	6.87 (174.5)	3.13 (79.5)	2.00 (50.8)	3.50 (88.9)
604 SB	2 (60.3) - 4 (114.3)	2.25 (57.2)	29 (13.1)	9.00 (228.6)	9.00 (228.6)	4.75 (120.7)	3.00 (76.2)	4.50 (114.3)
606SB	3 (88.9) - 6 (168.3)	4.29 (109.0)	37 (16.8)	15.12 (384.0)	11.12 (282.4)	6.87 (174.5)	3.00 (76.2)	4.50 (114.3)
608 SB	4 (114.3) - 8 (219.1)	4.29 (109.0)	43 (19.5)	17.12 (434.8)	13.12 (333.2)	8.95 (227.3)	3.00 (76.2)	4.50 (114.3)
610 SB	6 (168.3) - 10 (273.1)	4.56 (115.8)	55 (25.0)	19.78 (502.4)	15.75 (400.1)	11.20 (284.5)	3.00 (76.2)	4.50 (114.3)
612 SB	8 (219.1) - 12 (323.9)	4.56 (115.8)	62 (28.1)	21.78 (553.2)	17.75 (450.9)	13.20 (335.3)	3.00 (76.2)	4.50 (114.3)
616 SB	12 (323.9) - 16 (406.4)	6.55 (166.4)	200 (91)	29.10 (739.1)	24.00 (609.6)	17.00 (431.8)	4.25 (108.0)	6.93 (176.0)
620 SB	16 (406.4) - 20 (508.0)	6.63 (168.4)	320 (145)	33.25 (844.6)	29.20 (741.7)	21.20 (538.5)	4.90 (124.5)	7.58 (192.5)
624 SB	20 (508.0) - 24 (609.6)	6.70 (170.2)	350 (159)	37.40 (950.0)	33.40 (848.4)	25.40 (645.2)	4.90 (124.5)	7.58 (192.5)
630 SB	26 (660.4) - 30 (762.0)	6.75 (171.5)	420 (191)	43.50 (1104.9)	39.50 (1003.3)	31.50 (800.1)	4.90 (124.5)	7.58 (192.5)
636 SB	32 (812.8) - 36 (914.4)	7.05 (179.1)	490 (223)	50.10 (1272.5)	46.00 (1168.4)	38.00 (965.2)	4.90 (124.5)	7.58 (192.5)
642 SB	38 (965.2) - 42 (1066.8)	7.10 (180.3)	570 (259)	56.20 (1427.5)	52.00 (1320.8)	44.00 (1117.6)	4.90 (124.5)	7.58 (192.5)
648 SB	44 (1117.6) - 48 (1219.2)	7.15 (181.6)	820 (372)	62.30 (1582.4)	58.00 (1473.2)	50.00 (1270.0)	5.75 (146.1)	8.43 (214.1)
614 RBL-G2	*7 (177.8) - 14 (355.6)	8.24 (209.3)	146 (66)	30.24 (768.1)	21.10 (535.9)	15.00 (381.0)	3.31 (84.1)	6.25 (158.8)
616 RBL-G2	10 (273.1) - 16 (406.4)	8.28 (210.3)	159 (72)	32.34 (821.4)	23.10 (586.7)	17.00 (431.8)	3.31 (84.1)	6.25 (158.8)
620 RBL-G2	14 (355.6) - 20 (508.0)	8.30 (210.8)	184 (83)	36.44 (925.6)	27.10 (688.3)	21.00 (533.4)	3.31 (84.1)	6.25 (158.8)
624 RBL-G2	18 (457.2) - 24 (609.6)	8.46 (214.9)	207 (94)	40.79 (1036.1)	31.10 (789.9)	25.00 (635.0)	3.31 (84.1)	6.25 (158.8)
630 RBL-G2	24 (609.6) - 30 (762.0)	8.49 (215.6)	239 (108)	46.89 (1191.0)	37.10 (942.3)	31.00 (787.4)	3.31 (84.1)	6.25 (158.8)
636 RBL-G2	30 (762.0) - 36 (914.4)	8.53 (216.7)	264 (120)	52.99 (1345.9)	43.10 (1094.7)	37.00 (939.8)	3.31 (84.1)	6.25 (158.8)
642 RBL-G2	36 (914.4) - 42 (1066.8)	8.53 (216.7)	305 (138)	58.86 (1495.0)	49.10 (1247.1)	43.00 (1092.2)	3.31 (84.1)	6.25 (158.8)
648 RBL	42 (1066.8) - 48 (1219.2)	9.00 (228.6)	940 (427)	67.50 (1714.5)	60.00 (1524.0)	50.00 (1270.0)	5.13 (130.3)	7.97 (202.4)
660 RBL	54 (1371.6) - 60 (1524.0)	9.00 (228.6)	1120 (508)	79.50 (2019.3)	72.00 (1828.8)	62.00 (1574.8)	5.13 (130.3)	7.97 (202.4)

The specifications listed above are presented to illustrate the wide range of configurations possible. Custom configurations are available.

Call your Tri Tool sales representative for assistance in determining which equipment and accessories are right for your requirements.

Measurements are for the basic machine fitted with standard tool modules. Optional low axial dimension tool modules are available for the 601SBM and 602.5SBM, and 606SB through 612SB. Radial Clearance and Max Rot. Dia. for 606SB to 612SB is shown for the standard 3 Position Tool Module. Note: Measurements will vary from those indicated when machinery is configured for different pipe sizes and with different height tool modules. Pipe size range is based on ANSI pipe dimensions. Pipe sizes indicated with (*) indicate tube sizes, not pipe sizes. Machine weight is the lifting weight of the machine which includes the basic machine with standard tool modules. Rotating parts diameter is the dimension across the face of the machine, including its moving parts (inner ring and standard tool modules) when the machine is set-up for the maximum pipe size for the specific model. The rotating parts diameter becomes less when tool modules are positioned inward to reach smaller pipes or when using special, low profile, or multiple position tool modules. Nominal cut line is the dimension from the back of the machine to the center line of the tool bit slot.

NOTE: Contact Tri Tool for specs on the SBCM Series clamshells.

● Standard
○ Special

	Tool Modules						Tool Holders and Machining Accessories							Drive Options				
Model	Standard Modules (Low Profile)	Extended Modules	3 Position Modules	Heavy-Duty Modules	Heavy-Duty Sever Modules	OD Tracking Modules	Socket Weld Removal Kit	Heavy-Duty Sever Tool Holders	Carbide Sever Tool Holders	Low Axial Clearance Tool Holders	Counterbore Module	Single-Point Module	Reversed Drive Housing Kit	Pneumatic (Single)	Pneumatic (Dual)	Electric (Single)	Hydraulic (Single)	Hydraulic (Dual)
601 SBM	●[1]						●				●			●				
602 TSB	●										●			●				
602.5 SBM	●[1]						●				●			●		●	○	
604 SB	●[2]	●		○		○	●		○		●		●	●		●	○	
606SB	●[2]	●	●	○		○	●		○		●		●	●		●	○	
608 SB	●[2]	●	●	○		○	●		○		●		●	●		●	○	
610 SB	●[2]	●	●	○		○	●		○		●		●	●		●	○	
612 SB	●[2]	●	●	○		○	●		○		●		●	●		●	○	
616 SB	○	●		●	●	●			○	○	●	●	○		●			●
620 SB	○	●		●	●	●			○	○	●	●	○		●			●
624 SB	○	●		●	●	●			○	○	●	●	○		●			●
630 SB	○	●		●	●	●			○	○	●	●	○		●			●
636 SB	○	●		●	●	●			○	○	●	●	○		●			●
642 SB	○	●		●	●	●			○	○	●	●	○		●			●
648 SB	○	●		●	●	●			○	○	●	●	○		●			●
614 RBL-G2		●				●		●	●	●	●	●	○	●	●	●	●	●
616 RBL-G2		●				●		●	●	●	●	●	○	●	●	●	●	●
620 RBL-G2		●				●		●	●	●	●	●	○	●	●	●	●	●
624 RBL-G2		●				●		●	●	●	●	●	○	●	●	●	●	●
630 RBL-G2		●				●		●	●	●	●	●	○	●	●	●	●	●
636 RBL-G2		●				●		●	●	●	●	●	○	●	●	●	●	●
642 RBL-G2		●				●		●	●	●	●	●	○	●	●	●	●	●
648 RBL		●				●		●	●	●	●	●	○		●		○	●
660 RBL		●				●		●	●	●	●	●	○		●		○	●

1 Tool modules which reduce the required axial perch length are available for the 601SBM and 602.5SBM clamshells.
2 On the 604SB through 612SB clamshells the standard tool modules do not extend outside of the OD of the machine.

Tool Modules (function)- Tool modules mount on the rotating face of the clamshell and carry the tool bits within the tool holder section. The tool bit is fed into (towards) the pipe a fixed increment for each revolution of the head stock with one tripper pin assembly engaged. Multiple trippers increase the total feed of the tool bit per revolution.

Standard (Low Profile) Tool Modules- Standard or Low Profile modules fit within the OD of the clamshell to minimize the radial clearance required. Normally they only function on the largest pipe size that fits within the Clamshell.

Extended Tool Modules- Extended tool modules provide longer tool bit feed travel and a greater pipe size range. When mounted for the largest pipe size that fits the clamshell the modules extend outside the OD of the clamshell, requiring more radial clearance, but also allow mounting inboard to reach smaller pipe sizes.

3 Position Tool Modules- Permit cutting on one size smaller pipe (compared to Extended Modules) when using a 606SB through 612SB Clamshell.

Heavy Duty Tool Modules- Heavy Duty Tool Modules allow use of heavier tool bits for extremely heavy cutting operations.

Heavy Duty Sever Modules- Heavy Duty Sever Modules use part-off blades to extend the reach of the cutting tool for deep sever operations.

Tool Holders - Tool Holders install into the Tool Modules to allow the Module to perform different functions, fit limited space or use alternate tooling.

Machining Accessories
- *Socket weld removal kits contain the special tool holders and parts to equip the clamshell for machining the fillet welds off of a socket weld joint.*
- *Counterbore kits mount to the tool modules to allow the machining of a counterbore (on open ended pipe).*
- *Singlepoint modules provide full lathe type machining operations on open ended pipe.*

Drive Motors- Clamshells can be driven with pneumatic motors which provide the maximum power per unit weight, electric motors for light duty machining (HP per unit volume restricts the maximum HP motors that can be fitted) and hydraulic motors which provide the maximum power and speed range capabilities at the machine (a separated power supply is required). Dual drives can be fitted for additional power and machining capabilities as required.

Special Options- Special options not shown include: full support pads for thin wall pipe or tube (some pipe size restrictions apply due to space requirements to incorporate the pads), out-of-round tracking modules to machine the prep concentric to the OD without rounding the pipe, custom tool bit configurations, back-support rings for added mounting rigidity, etc.

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Clamshell On-Site Service

Get 600 Series versatility, along with experienced, reliable operation.

When you are challenged with an in-line machining requirement that you absolutely need to get done right the first time, call Tri Tool Services. Their expert staff of experienced field machining and code welding technicians are backed with state-of-the-art equipment and OEM support. This guarantees that you get the experience and project-optimal equipment that your most important work requires.

Tri Tool Service technicians can perform a comprehensive range of machining and welding operations, and can assist you with new Clamshell purchases through on-location operation training, for your machining personnel or for your safety program.

This 600 Series Clamshell is being used with the mounting screws and tool modules turned to cut from the inside out. Tri Tool's Services can assist you with custom and innovative equipment solutions for all your special machining and code welding requirements.

Clamshell Rental Options

Tri Tool Clamshells can be rented, providing a cost-effective alternative for projects or unplanned outages.

Each returning Clamshell is thoroughly inspected and adjusted by expert technicians, ensuring "like new" operation and ready-to-rent status.

Tri Tool maintains a nationwide network of stocked rental facilities to ensure that you get the equipment at competitive rates, when and where you need it. Offices in Rancho Cordova CA, Atlanta GA, Houston TX, and Columbus OH provide localized technicians and parts inventories, and you can return equipment to your nearest facility, saving you money.

With our flexible rental program you can try out our equipment before you buy!

Should you decide that you want to buy the rented equipment within the first 30 days of rental, Tri Tool offers a pro-rated schedule that applies rental costs to a purchase price. You get up to a month's rental free!

Renting equipment with the option to buy is a popular and affordable way to experience first-hand, how a Clamshell lathe can be an important, versatile, high performance addition to your in-place machining equipment.

Call today for more information.

TRI TOOL
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3041 SUNRISE BLVD.
RANCHO CORDOVA, CA 95742
800.345.5015
WWW.TRITOOL.COM