

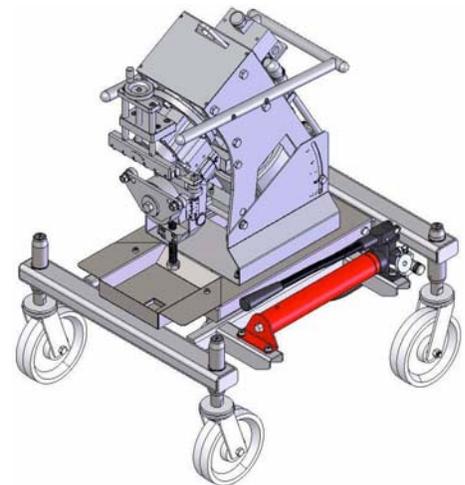


# KBM<sup>®</sup>-18

## PORTABLE PLATE EDGE BEVELLING MACHINE

Adjustable bevel head produces  
bevel angles from 22.5° through 55°  
Supplied with angle bevel pin for 30°  
Other bevel angle pins are available  
upon request.

**NOTE: Machine shipped with the 30°  
bevel pin in place.**



### PARTS LIST & OPERATING INSTRUCTIONS

Website: [www.gullco.com](http://www.gullco.com)

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## READ BEFORE USING THE KBM®-18 BEVELLER

### IMPORTANT NOTES:

- All machine operators must be familiar with the Safety Instructions on [pages 1 & 2](#) of this manual before attempting to use the KBM®-18 Beveller.
- The machine must be set in accordance with the “Bevel Setting” section of this manual ([pages 10 - 15](#)) prior to bevelling or machine / cutter damage will occur.
- Bevelling should always be done conservatively. No more than 70% of the machines total bevelling capacity may be bevelled in a single pass. Multi-pass bevelling is required in such instances.
- As the bevelling capacity of the machine is reduced on higher tensile materials, no more than 50% of the machines total bevelling capacity should be bevelled in a single pass when bevelling high tensile steel and stainless steel.

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## SAFETY INSTRUCTIONS

Although the KBM<sup>®</sup>-18 bevelling machine is manufactured for safe and dependable operation, it is impossible to anticipate those combinations of circumstances which could result in an accident. An operator of the bevelling machine is cautioned to always practice "**Safety First**" during each phase of operation, setup and maintenance.

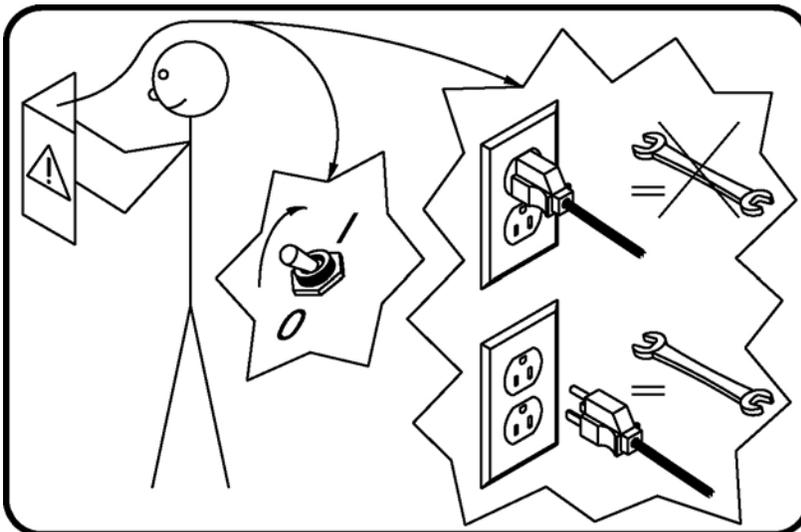
Read and understand the whole operating instruction manual before operating or performing service of this equipment. Become familiar with the machines operation, applications and limitations. Keep the operation manual clean and in a readily available location.

The material feed and cutting areas of this machine are guarded for operator safety as much as the functionality of the equipment will allow. However, it is important to keep hands, clothing, tools etc. away from the feeding and cutting area when there is the slightest possibility of the machine operating. The guards and guarded areas should only be accessed after the power has been positively disconnected.

Each KBM<sup>®</sup>-18 bevelling machine is equipped with a manual motor starter and protective switch assembly, that features short-circuit and motor load protection. There is also an under-voltage release device that will reset the switch to an off state and will not allow it to be switched on until the power has been re-established and the Start push button is manually activated. This provides protection against unwanted restart after a power failure etc. The Stop push button is the red, raised mushroom button. The start push button is the flush (green or black) push button labelled "I". Become familiar with the start/stop switch and its use prior to operating the machine.

It is important to maintain proper balance and footing when feeding plate/material into the machine. Use additional work tables to support the weight when feeding unbalanced or heavy plate material into the machine. It is recommended that work tables have free moving rollers on top and levelled to the proper cutting position. The start/stop switch should always be accessible to the operator.

This machine must not be operated in highly explosive environments.



This label is attached to the Gullco bevelling machine and its intent is to instruct all those concerned to read the manual before operating the unit and before performing service, as well as to positively disconnect the unit from all power supplies before servicing.

## **SAFETY INSTRUCTIONS CONTINUED**

A careless operator invites troubles, and failure to follow safety practices may cause serious injury or even death. Additional important safety precautions are given in the following:

### **Electrical Shock Prevention**

- ◆ Do not use this equipment in damp or wet locations.
- ◆ Do not expose this equipment to rain.
- ◆ Never carry or tow this equipment by the cables or pull the cables to disconnect from the receptacle.
- ◆ Keep all cables from heat, oil and sharp edges.
- ◆ Inspect all cables periodically and replace if damaged.
- ◆ Inspect the security of all cables periodically and repair if loose.
- ◆ Disconnect the power cord when not in use.
- ◆ Disconnect the power cord **positively** to prevent electrical shock before repair and service of the equipment.
- ◆ Report any unsafe condition for immediate correction.

### **Bodily Injury Prevention**

- ◆ Only operate this equipment in a well-illuminated environment.
- ◆ Do not operate this machine if ill or drowsy from medication or fatigue.
- ◆ Avoid horseplay around this machine.
- ◆ Keep positioning handles dry, clean and free from oil and grease.
- ◆ Do not try to lift the machine by the positioning handle bars or wheel handles; refer to the appropriate section of the manual for correct lifting technique.
- ◆ Keep hands away from the cutting area and any possible pinch points when there is the slightest possibility of operation.
- ◆ Keep bystanders at a safe distance from the operation area.
- ◆ Always wear protective gloves when handling the material and or swarf cuttings, to prevent injury from sharp edges.
- ◆ Keep the work area clean and clear from clutter.
- ◆ Remove all oil and coolant spills.
- ◆ Do not wear loose clothing, jewellery and loose, long hair, which may get caught in moving parts.
- ◆ As a minimum, safety glasses, safety shoes and leather gloves should be worn.
- ◆ Always keep the bevelling machine clean and in good working order.
- ◆ Report any unsafe condition for immediate correction.

**ALL THE SAFE PRACTICES AND PRECAUTIONS MAY NOT BE GIVEN IN WRITING. SOME ARE BASED ON COMMON SENSE, BUT OTHERS MAY REQUIRE TECHNICAL BACKGROUND TO EXPLAIN.**

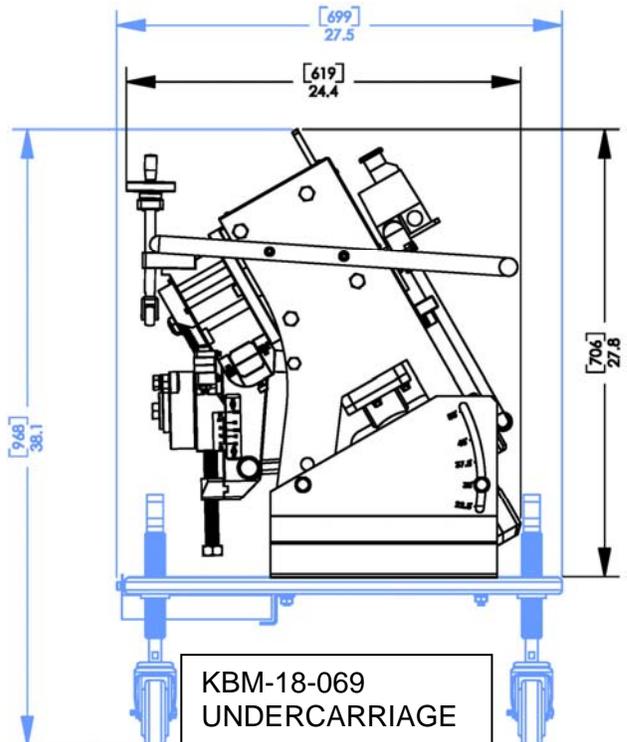
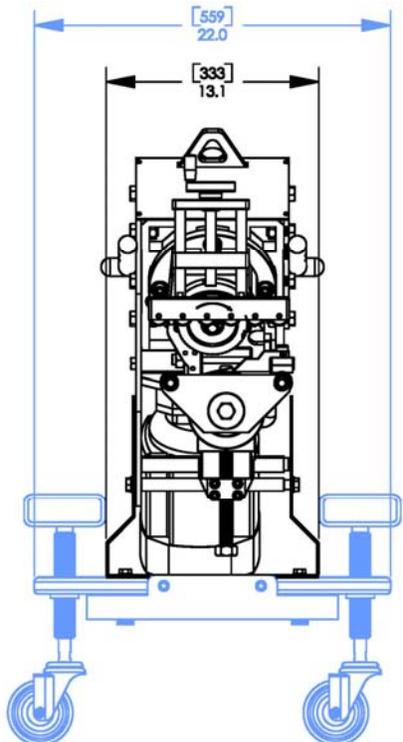
## KBM®-18 PLATE EDGE BEVELLING MACHINE DETAILS

This manual covers the operation instructions, maintenance requirements and provides parts lists for the **Gullico Plate Edge Beveling Machine**, part number: **KBM®-18-100**.

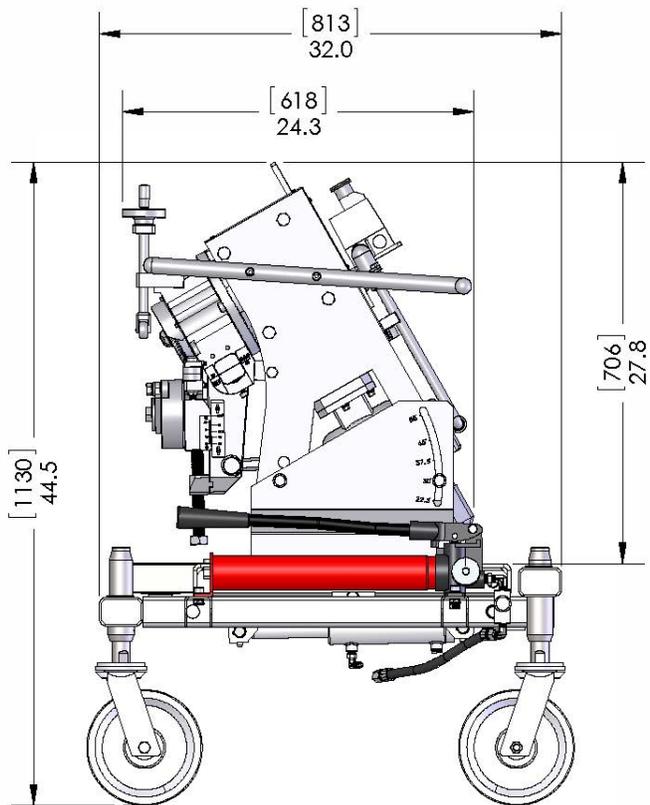
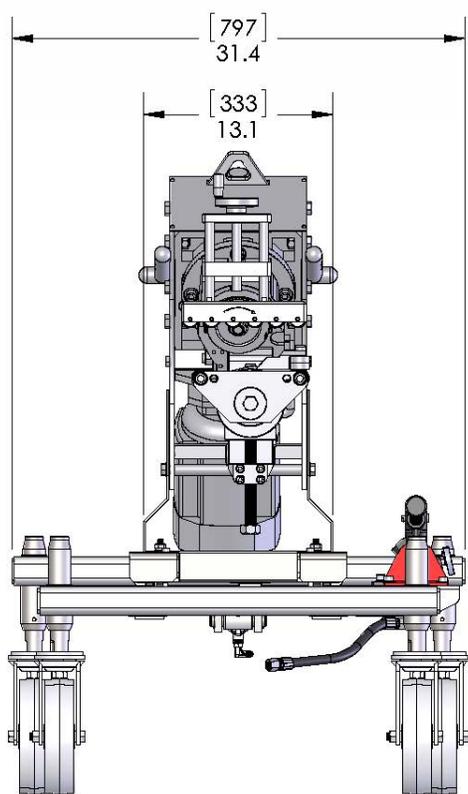
**DECLARATION OF CONFORMITY - CE** - designed and manufactured in compliance with 89/392EEC provisions and further amendments.

### MACHINE SPECIFICATIONS

<b>Maximum Bevel Width:</b>	0.71" [18 mm] at standard 30° bevel angle on material with a tensile strength of 64,000 lb/in <sup>2</sup> [45 Kg/mm <sup>2</sup> ] (multiple passes)
<b>Maximum Bevel Depth:</b>	0.61" [15.6 mm] at standard 30° bevel angle on material with a tensile strength of 64,000 lb/in <sup>2</sup> [45 Kg/mm <sup>2</sup> ] (multiple passes)
<b>Minimum Plate Thickness:</b>	1/4" (6.3 mm)
<b>Bevel Speed:</b>	13' [4 m] per minute†
<b>Motor:</b>	2 H.p., 3 phase, available for 230, 460 and 575 V at 60 Hz. and also 380 and 400/415 V at 50 Hz. supply
<b>Gearbox Oil:</b>	1 US Gallon (4 Litres) of Shell Tivela S 320 ( <a href="#">See section "Periodic Inspection &amp; Maintenance" for further details</a> )
<b>Weight:</b>	275 lb [125 Kg] without an undercarriage assembly; 449 lb [204 Kg] with KBM®-18-080 undercarriage assembly 337 lb [153 Kg] with KBM®-18-069 undercarriage assembly



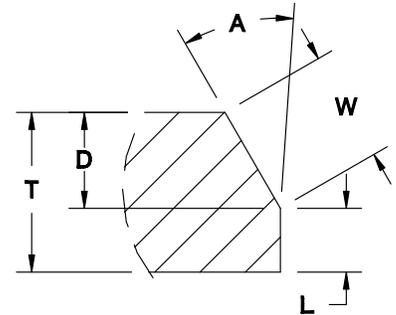
† Top speed can vary depending on variations of bevel depth, voltage and frequency.



KBM-18-080  
UNDERCARRIAGE

## BEVELLING CAPACITY

The adjacent diagram, indicates the root face (also referred to as nose or land), identified as "L"; the bevel width identified as "W"; the bevel depth identified as "D"; the plate thickness identified as "T"; and the bevel angle identified as "A".



The bevelling capacity of the Gullco KBM<sup>®</sup>-18 is governed by the following factors:

- ◆ Tensile strength of the material.
- ◆ Material thickness.
- ◆ The bevel angle selected.
- ◆ The cutter and operating conditions.
- ◆ The operator's skill and experience.

The maximum recommended multiple pass bevelling capacity is provided in the table below.

BEVEL ANGLE	TENSILE STRENGTH					
	64,000 lbs/in <sup>2</sup> (45 kg/mm <sup>2</sup> )		71,000 lbs/in <sup>2</sup> (50 kg/mm <sup>2</sup> )		85,000 lbs/in <sup>2</sup> (60 kg/mm <sup>2</sup> )	
A	W	D	W	D	W	D
22.5°	0.71" [18.0 mm]	0.66" [16.7 mm]	0.67" [17.0 mm]	0.62" [15.7 mm]	0.55" [14.0 mm]	0.51" [12.9 mm]
30°	0.71" [18.0 mm]	0.61" [15.6 mm]	0.59" [15.0 mm]	0.51" [13.0 mm]	0.51" [13.0 mm]	0.44" [11.2 mm]
37.5°	0.67" [17.0 mm]	0.53" [13.5 mm]	0.55" [14.0 mm]	0.44" [11.1 mm]	0.47" [11.9 mm]	0.37" [9.5 mm]
45°	0.67" [17.0 mm]	0.47" [12.0 mm]	0.55" [14.0 mm]	0.39" [9.9 mm]	0.47" [11.9 mm]	0.33" [8.4 mm]
55°	0.59" [15.0 mm]	0.34" [8.6 mm]	0.55" [14.0 mm]	0.32" [8.0 mm]	0.47" [11.9 mm]	0.27" [6.8 mm]

The bevelling capacity is based on the bevel width "W", which corresponds to the amount of material removed by the cutter. If the maximum bevel width is exceeded, overloading of the machine and cutter may result.

In general, as the tensile strength of the material increases, the bevelling capacity is reduced.

Whenever there is any doubt about the required bevel versus the capacity of the machine, the operator is always urged to bevel conservatively. It is recommended that no more than 70% of the machines total bevelling capacity be bevelled in a single pass, or no more than 50% when bevelling high tensile or stainless steel. If the desired finished bevel is greater than 70% (50% for high tensile and stainless steels) than the capacities shown in the above table, then multi-pass bevelling is required. In order to perform multi-pass bevelling, the bevel depth for the first pass (cut) is performed conservatively (less than 70% or 50% of maximum capacity), and then the bevel depth is re-adjusted to provide the finished depth required for the second pass.

## **GENERAL DESCRIPTION**

The Gullco KBM®-18 Portable Plate Edge Beveling Machine is an electrically powered rotary shear. It is used to bevel a wide variety of plate edges, usually for the purpose of a weld joint preparation.

It is designed for one-man operation and is capable of beveling straight or circular plate sections at a speed of approximately 13' [4 m] per minute<sup>‡</sup>. It is capable of performing multi pass beveling for larger bevels that cannot be accomplished in a single pass. Easy adjustment is provided for altering the depth and angle of bevel.

A push button, mechanical starter complete with short circuit, motor overload and also under-voltage protection, is used to start and stop a 2 H.p., 3 phase motor, which in turn uses a heavy duty industrial type gearbox assembly to drive a serrated cutter. This cutter provides the "Rotary Shearing" as well the tractive effort to propel either the plate through the machine, or the machine along the plate, depending on the application.

The KBM®-18 is capable of supporting its own weight while beveling horizontal plate. The machine is typically equipped with the optional spring loaded caster assembly that allows the machine to roll along the floor, or runway, during the beveling operation. The KBM®-18 machine can be used without the optional undercarriage assembly to either; be used as a two-man unit in such cases where it is impractical to use the caster assembly; or it could be bench mounted for applications where the plate sections are small enough to manually feed through the cutter. The adjustable beveling head enables the beveling of angles 22.5° through 55°.

The KBM®-18 is available for use with the following power supplies; 230, 460 and 575 V at 60 Hz. and also 380 and 400/415 V at 50 Hz. The supply to be used must be specified at the time of order. Gullco can also provide machines for use with supplies that are not listed above, please consult Gullco for more details.

The KBM®-18 machine comes from the factory with a 30° bevel angle pin in place.

**Note: Other bevel angle pins are available, 22.5° through 55°**

## **INTENDED / FORESEEN USAGE**

The Gullco KBM®-18 Portable Plate Edge Beveling machine is used throughout the world to automate and improve the quality and efficiency of the weld preparation required for manual, semiautomatic and fully automatic welding operations.

It provides industry with a highly efficient, practical and truly portable method of producing straight machined bevels on a wide variety of plate materials, including mild steel, stainless steel and aluminum..... effectively meeting V, X or K weld joint preparation requirements.

Loss of production through operators suffering from skeletal, muscular and hearing loss injuries normally associated with pneumatic and hand held milling type beveling equipment is greatly reduced and detrimental factors such as operator fatigue, or inconsistent workmanship are eliminated. Required quality levels are consistently attained and productivity and profitability increased.

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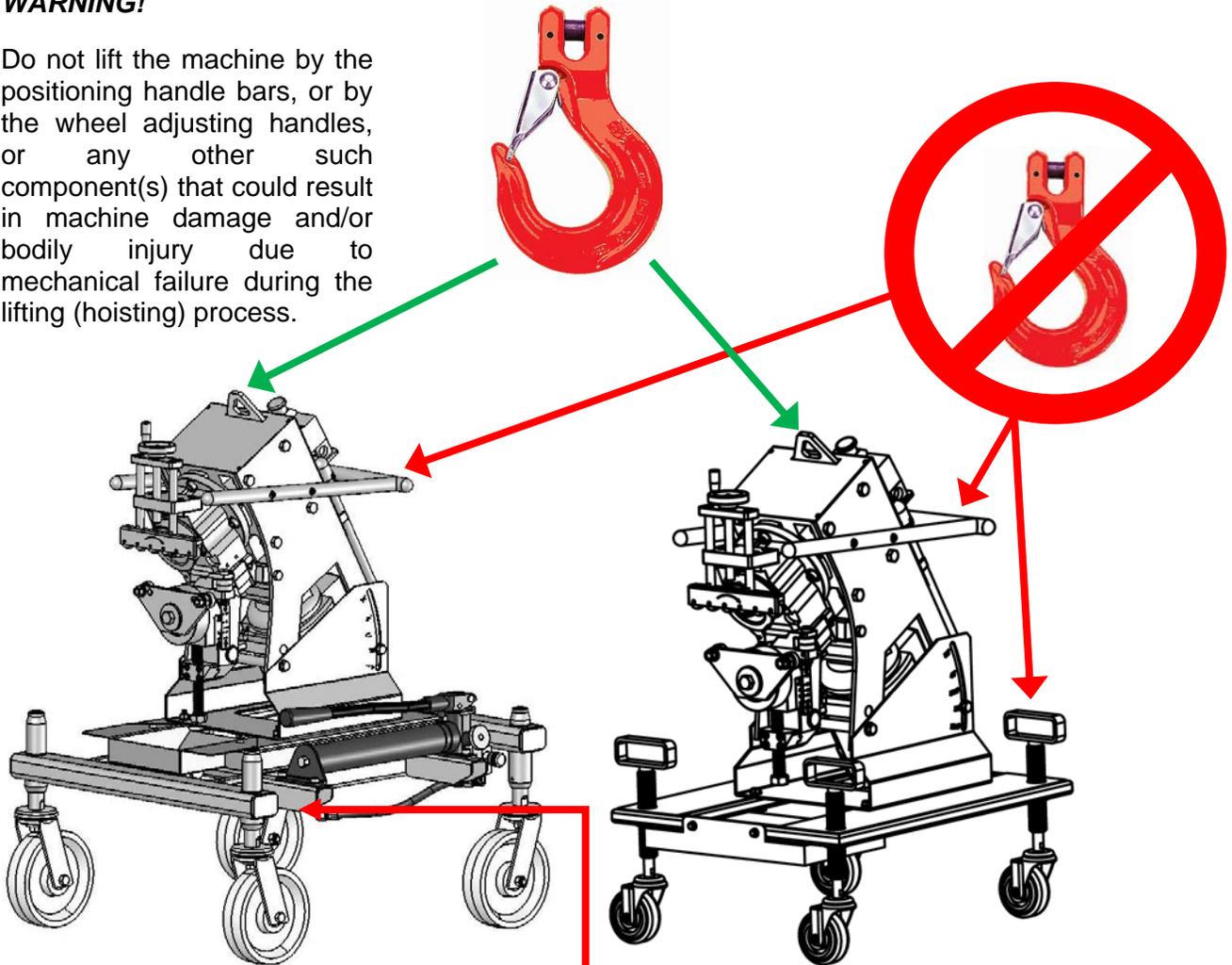
<sup>‡</sup> Top speed can vary depending on variations of bevel depth, voltage and frequency.

## LIFTING (HOISTING)

When it is necessary to lift (hoist) the Gullco KBM®-18 Portable Plate Edge Beveling machine, use the Lifting Plate as shown below (or by using two (2) equal length slings, safely fed through the machine). All lifting (hoisting) equipment must be suitably rated and clearly identified to be of a greater capacity than the weight of the machine (as detailed [on page 3](#)). Never raise the machine any higher than necessary and never transport it over the top of people!

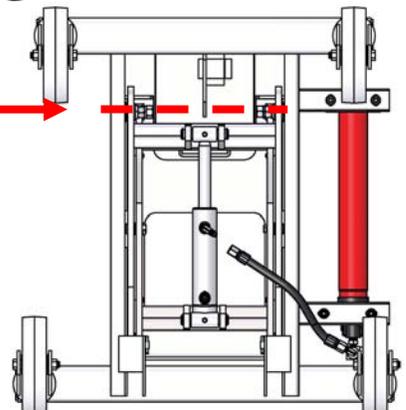
### **WARNING!**

Do not lift the machine by the positioning handle bars, or by the wheel adjusting handles, or any other such component(s) that could result in machine damage and/or bodily injury due to mechanical failure during the lifting (hoisting) process.



### **IMPORTANT!**

To prevent air from entering the hydraulic system it is important that the scissor mechanism is not allowed to open during lifting of the KBM-18 equipped with the hydraulic undercarriage. Holes are provided to accept a  $\frac{3}{4}$ " or 19 mm dia steel rod (not provided) that will prevent the mechanism from opening. Otherwise use suitable strapping on the scissor frame. It is equally important that the rod or strapping be removed before attempting to use the hydraulic pump to raise the machine when in use, otherwise the machine can be damaged.



## INSTALLATION

### ELECTRICAL CONNECTION

**WARNING!** Ensure proper AC earth grounding of the KBM®-18 before applying power. Failure to do so may invalidate the Gullco Warranty.

**WARNING!** Before connecting the KBM®-18 to a power source (receptacle, outlet, etc.), be sure that the voltage supplied is the same as that specified on the product label. If in doubt, **DO NOT SUPPLY POWER TO THE MACHINE.** Copies of the possible product labels are listed below:

<b>GULLCO</b>		EQUIPMENT FOR AUTOMATED WELDING AND CUTTING	
WWW.GULLCO.COM			
MODEL: KBM-18-100-A	SERIAL:		
SUPPLY: 230 V ~ 3 PHASE	FREQUENCY: 60 Hz.		
WATTS: 1445	F.L.A.: 6.3 AMP		
S. C. RATING: 5 KA	MANUFACTURED: MM/DD/YYYY		
MADE IN CANADA			
<b>GULLCO INTERNATIONAL</b>			
ONTARIO, CANADA Phone: (905) 953-4140	LANCASHIRE, U.K. Phone: +44 1257-253579	CLEVELAND, OHIO, U.S.A. Phone: (440) 439-8333	
SHANGHAI, CHINA Phone: +8621-50460341	QUEENSLAND, AUSTRALIA Phone: 61 (0) 7 5439-0701	PUNE, INDIA Phone: 91-20-65260382	
  			

<b>GULLCO</b>		EQUIPMENT FOR AUTOMATED WELDING AND CUTTING	
WWW.GULLCO.COM			
MODEL: KBM-18-100-B	SERIAL:		
SUPPLY: 380 V ~ 3 PHASE	FREQUENCY: 50 Hz.		
WATTS: 1445	F.L.A.: 3.7 AMP		
S. C. RATING: 5 KA	MANUFACTURED: MM/DD/YYYY		
MADE IN CANADA			
<b>GULLCO INTERNATIONAL</b>			
ONTARIO, CANADA Phone: (905) 953-4140	LANCASHIRE, U.K. Phone: +44 1257-253579	CLEVELAND, OHIO, U.S.A. Phone: (440) 439-8333	
SHANGHAI, CHINA Phone: +8621-50460341	QUEENSLAND, AUSTRALIA Phone: 61 (0) 7 5439-0701	PUNE, INDIA Phone: 91-20-65260382	
  			

<b>GULLCO</b>		EQUIPMENT FOR AUTOMATED WELDING AND CUTTING	
WWW.GULLCO.COM			
MODEL: KBM-18-100-C	SERIAL:		
SUPPLY: 400/415 V ~ 3 PHASE	FREQUENCY: 50 Hz.		
WATTS: 1445	F.L.A.: 3.4 AMP		
S. C. RATING: 5 KA	MANUFACTURED: MM/DD/YYYY		
MADE IN CANADA			
<b>GULLCO INTERNATIONAL</b>			
ONTARIO, CANADA Phone: (905) 953-4140	LANCASHIRE, U.K. Phone: +44 1257-253579	CLEVELAND, OHIO, U.S.A. Phone: (440) 439-8333	
SHANGHAI, CHINA Phone: +8621-50460341	QUEENSLAND, AUSTRALIA Phone: 61 (0) 7 5439-0701	PUNE, INDIA Phone: 91-20-65260382	
  			

<b>GULLCO</b>		EQUIPMENT FOR AUTOMATED WELDING AND CUTTING	
WWW.GULLCO.COM			
MODEL: KBM-18-100-D	SERIAL:		
SUPPLY: 480 V ~ 3 PHASE	FREQUENCY: 60 Hz.		
WATTS: 1445	F.L.A.: 3.1 AMP		
S. C. RATING: 5 KA	MANUFACTURED: MM/DD/YYYY		
MADE IN CANADA			
<b>GULLCO INTERNATIONAL</b>			
ONTARIO, CANADA Phone: (905) 953-4140	LANCASHIRE, U.K. Phone: +44 1257-253579	CLEVELAND, OHIO, U.S.A. Phone: (440) 439-8333	
SHANGHAI, CHINA Phone: +8621-50460341	QUEENSLAND, AUSTRALIA Phone: 61 (0) 7 5439-0701	PUNE, INDIA Phone: 91-20-65260382	
  			

<b>GULLCO</b>		EQUIPMENT FOR AUTOMATED WELDING AND CUTTING	
WWW.GULLCO.COM			
MODEL: KBM-18-100-E	SERIAL:		
SUPPLY: 575 V ~ 3 PHASE	FREQUENCY: 60 Hz.		
WATTS: 1445	F.L.A.: 2.5 AMP		
S. C. RATING: 5 KA	MANUFACTURED: MM/DD/YYYY		
MADE IN CANADA			
<b>GULLCO INTERNATIONAL</b>			
ONTARIO, CANADA Phone: (905) 953-4140	LANCASHIRE, U.K. Phone: +44 1257-253579	CLEVELAND, OHIO, U.S.A. Phone: (440) 439-8333	
SHANGHAI, CHINA Phone: +8621-50460341	QUEENSLAND, AUSTRALIA Phone: 61 (0) 7 5439-0701	PUNE, INDIA Phone: 91-20-65260382	
  			

The F.L.A. ratings referenced in the above labels represent the maximum values to which the adjustable overload setting of the starter switch must be set to and are based on the Full Load Amp rating of the motor for the voltage being used.

This equipment must be installed in accordance with CEC, NEC or other applicable electrical code.

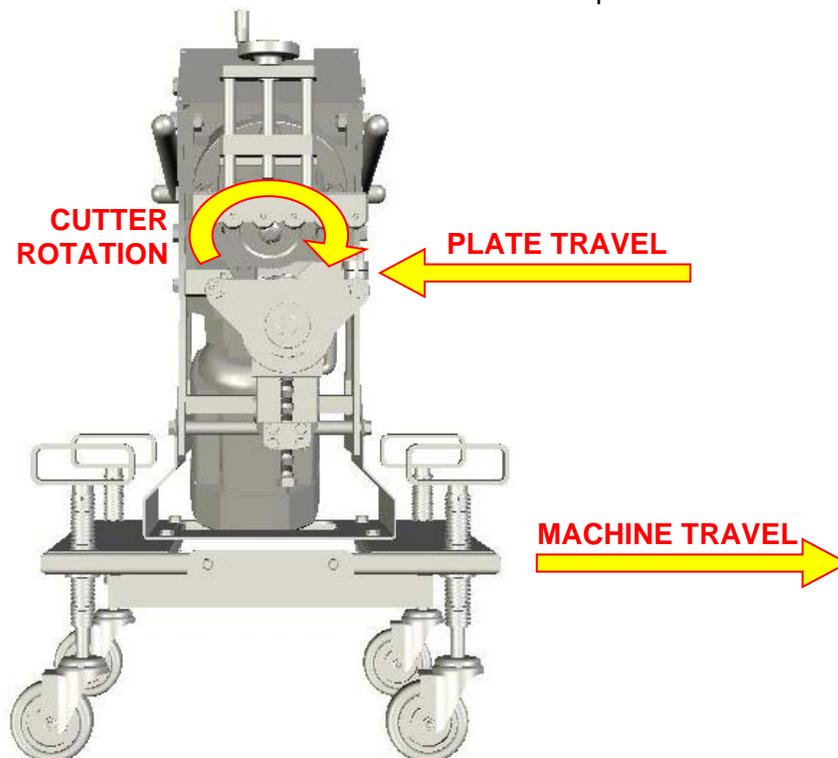
As the colours of the wires in the mains lead of this equipment may not correspond with the coloured markings identifying the terminals in your plug/receptacle, proceed as follows:

- The Green wire must be connected to the terminal in the plug which is allocated for “Earth” / “Ground”.
- The Black, Red and White wires must be connected to individual terminals in the plug which are allocated for; “Live 1” (“L1”); “Live 2” (“L2”); and “Live 3” (“L3”). Before feeding any material into the beveller, check the cutter rotation as described below, and swap two of these wire terminations at the plug if the rotation is incorrect.

Note: The mechanical starter is equipped with a low voltage protection device which de-latches (resets) the Start button whenever the voltage to the machine falls below an acceptable level. This protects against the machine from accidentally starting up when power is re-applied.

Note: The Emergency stop push button latches when activated and requires a counter-clockwise twist to release.

**WARNING!** As shown in the accompanying drawing, the cutter rotation **MUST** be clockwise (as viewed from the front). **IT IS IMPORTANT THAT THIS ROTATION DIRECTION BE CORRECT OTHERWISE DAMAGE TO THE MACHINE MAY OCCUR AND WARRANTY WILL BE VOID.** Be certain to check the cutter rotation before operating the machine. The plate should be fed in the direction shown if the machine is static and the material is being manually fed, alternatively, the bevelling machine should travel in the direction shown if the plate is static and the machine is running along the plate. If the cutter rotation is incorrect, it means that the 3 phase AC connection is incorrect and two out of the three Live wires must be swapped. The correct cutter rotation direction is shown on the clamp roller block.

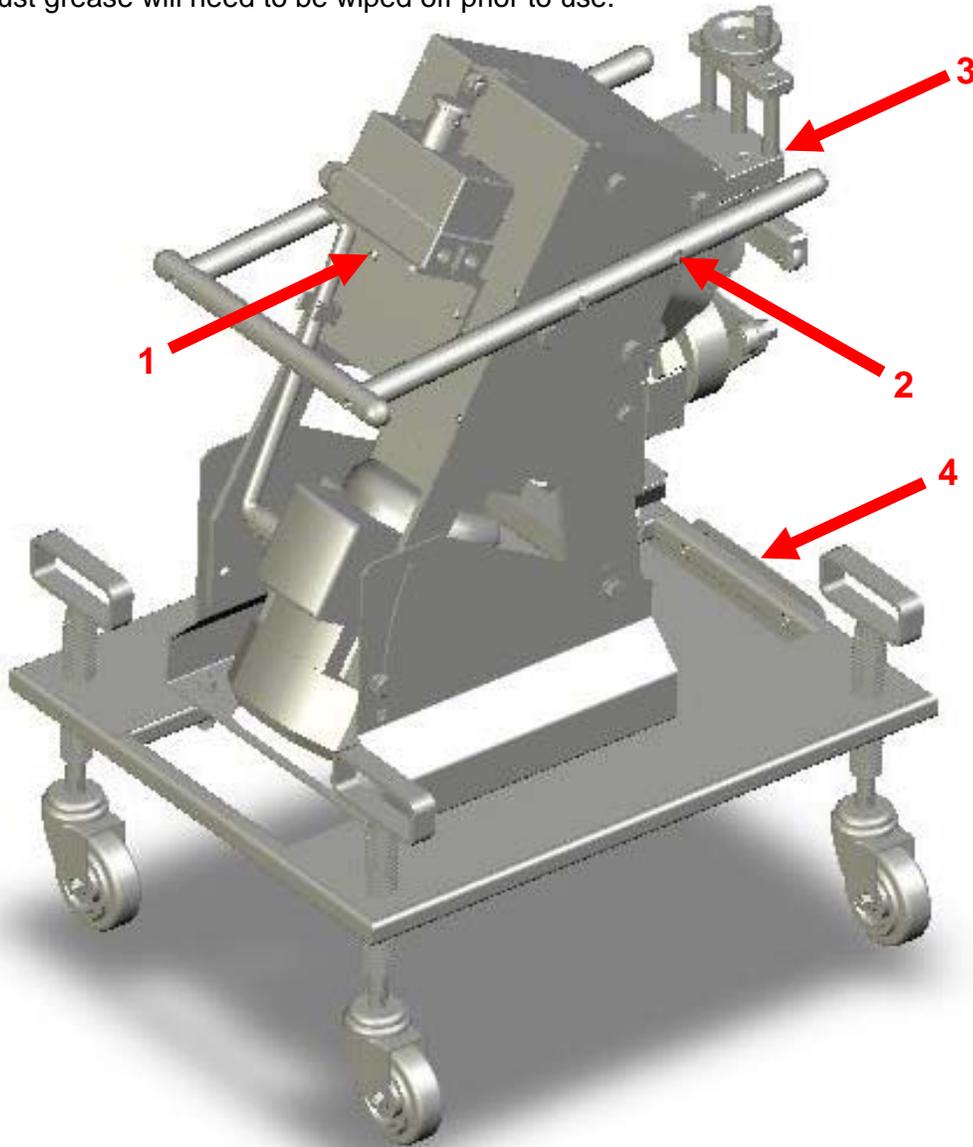


## **MECHANICAL INSTALLATION**

**WARNING!** Check to ensure that no parts have become loose during transportation.

Depending upon the shipping location, the final destination and the method of shipment, various degrees of re-assembly may be required before initial operation. All of the necessary hardware will be provided with the machine. Refer to the parts list drawings later in this manual for more assembly details.

1. The Starter Switch Assembly may need to be re-orientated or re-attached;
2. The handle bars may need re-attaching;
3. The Clamp Roller Assembly may need re-attaching;
4. The Chip Pan may need re-inserting into the optional undercarriage assembly.
5. The anti-rust grease will need to be wiped off prior to use.



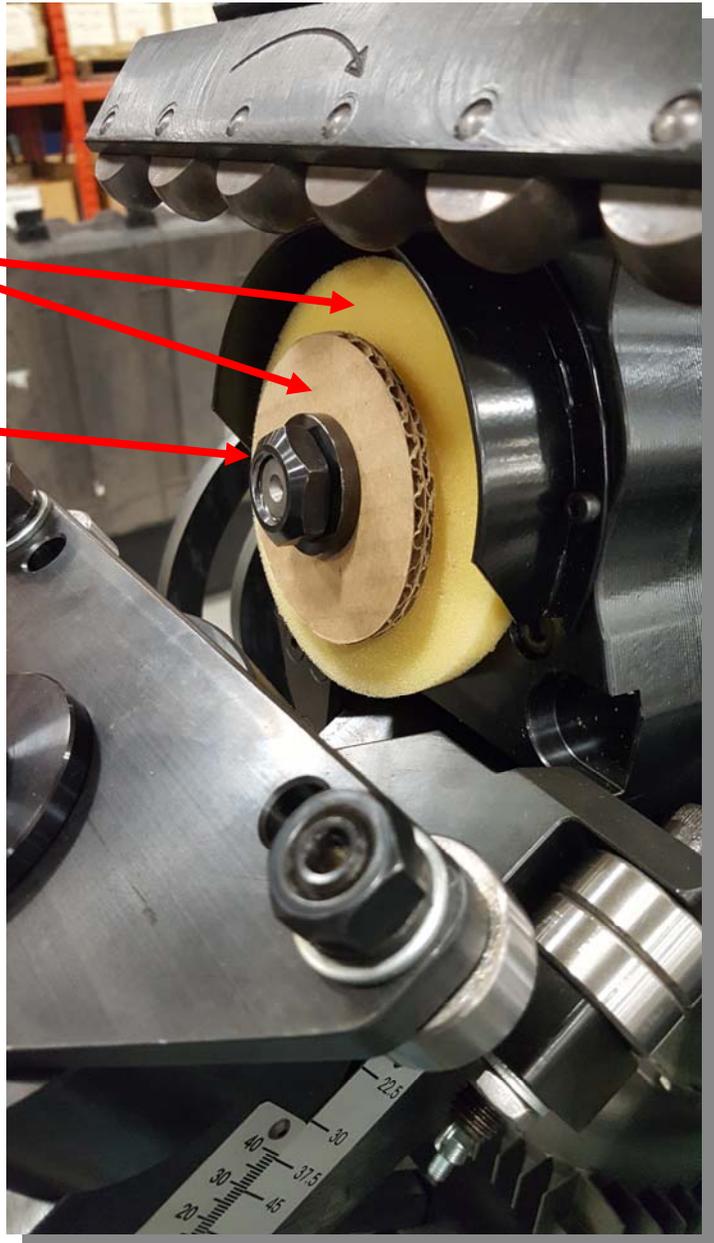
## **CUTTER INSTALLATION**

The cutter on the KBM-18 is not supplied or installed on the machine unless specified. To install, first loosen and remove the cutter nut and washer with a 27mm wrench (not supplied). Then remove and discard the cardboard and foam spacer that are used to retain the cutter shaft collar during shipping. Install the cutter onto the shaft, do not apply excess force if the cutter does not slide on to the shaft easily, there may be burrs or damage on the cutter if it's been excessively used.

Reinstall the cutter nut & washer, complete the assembly by firmly tightening the cutter nut.

Cardboard and foam spacer,  
remove and discard.

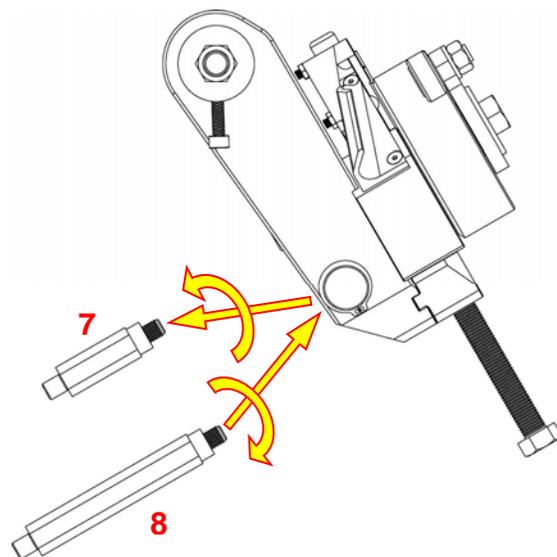
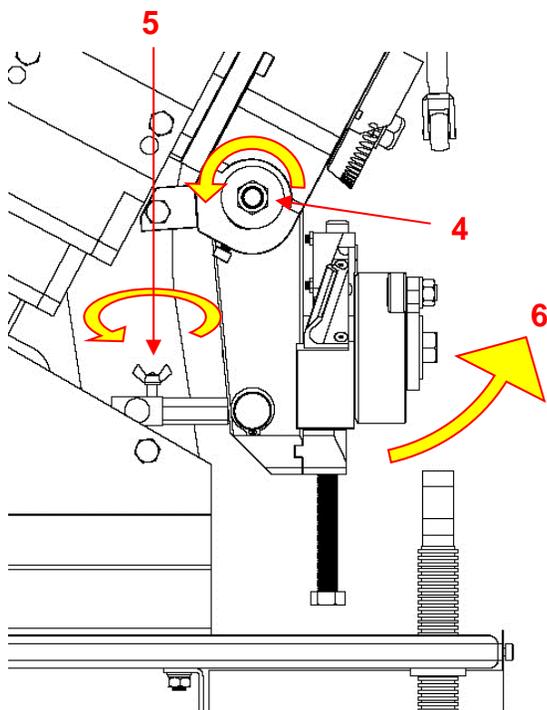
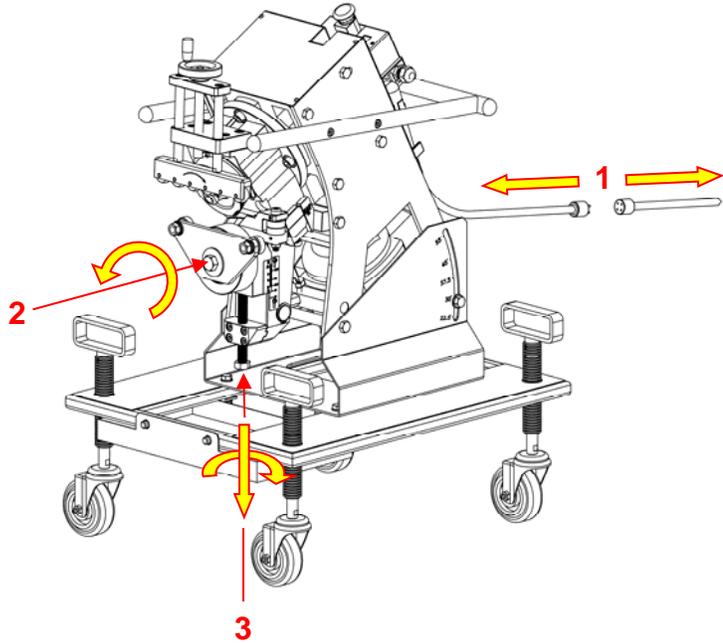
Cutter nut (27mm) and  
washer.



## OPERATION

### BEVEL SETTINGS

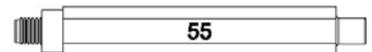
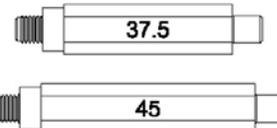
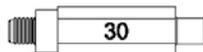
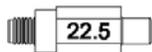
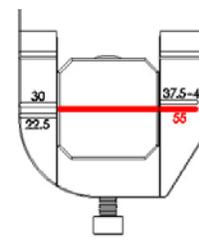
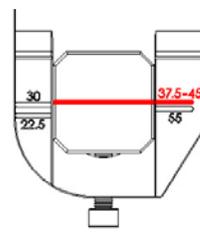
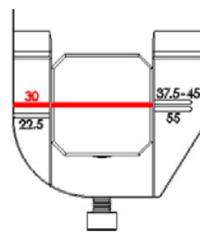
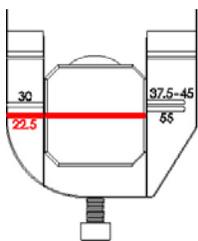
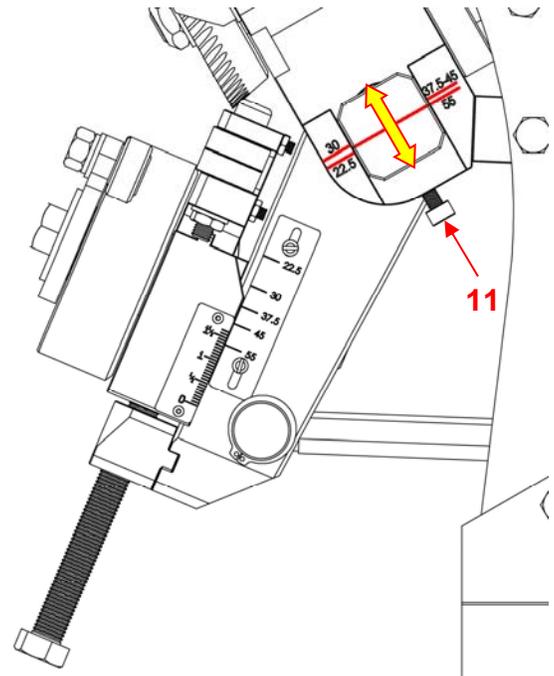
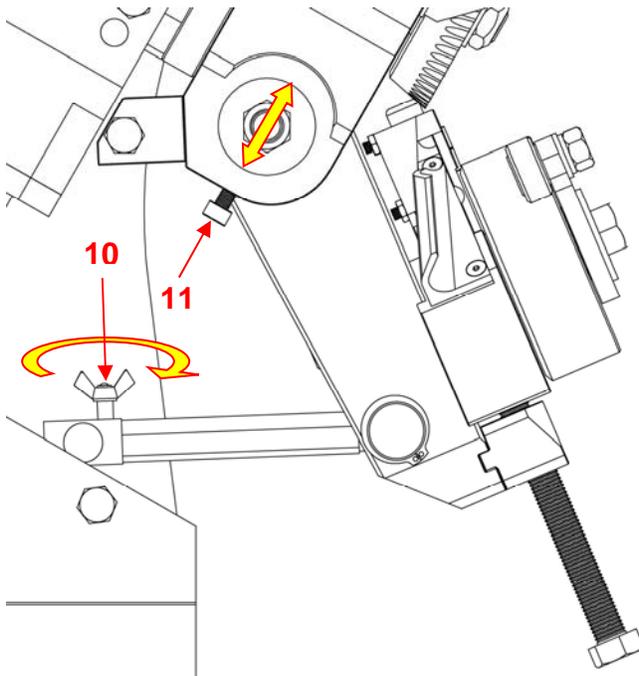
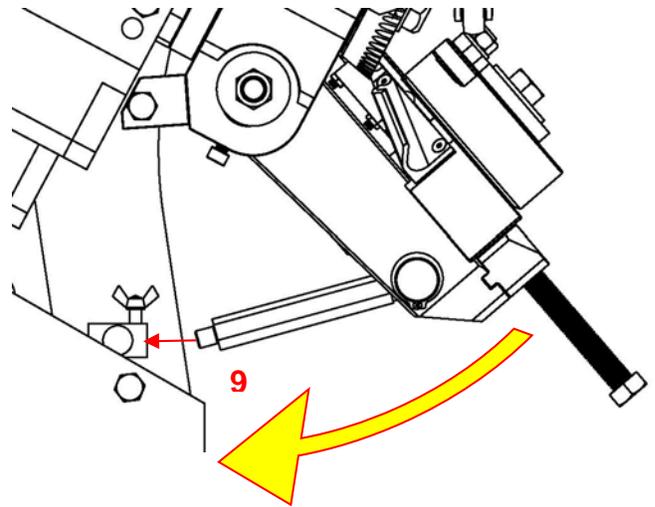
1. Positively isolate/disconnect the AC power supply.
2. Clean the area around the Main Roller and Slide Base Assembly, then loosen the Slide Base Clamping Bolt.
3. Lower the Slide Base Assembly by turning the Slide Base Adjusting Bolt counter-clockwise.
4. Loosen the nut of the Angle Alignment Bolt.
5. Loosen the Wing Screw.
6. Tilt the Pivot Arm Assembly upward.
7. Unscrew and remove the Angle Pin.
8. Screw in the correct Angle Pin to match the desired bevel angle to be produced.



9. Lower the Pivot Arm Assembly downward while guiding the end of the Angle Pin into its mating hole in the Angle Support Bar.

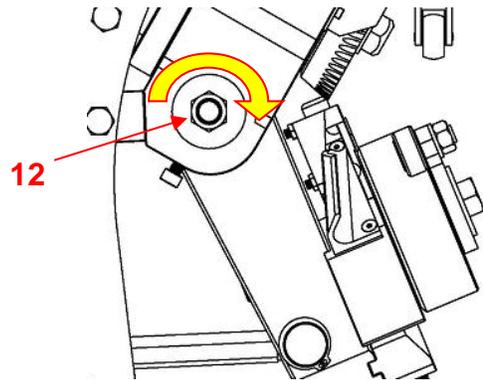
10. Re-tighten the Wing Screw.

11. Using the screws on each side of the Cutter Shaft Housing, adjust the Angle Alignment Bolt, up or down, so that the notched mark on the end of the Angle Alignment Bolt lines-up with the appropriate mark engraved on the side of the Cutter Shaft Housing. The Alignment Bolt must be adjusted equally from both sides of the Cutter Shaft Housing to prevent the bolt from twisting. *Note: the alignment is the same for the 37.5° & 45° bevel angles.*

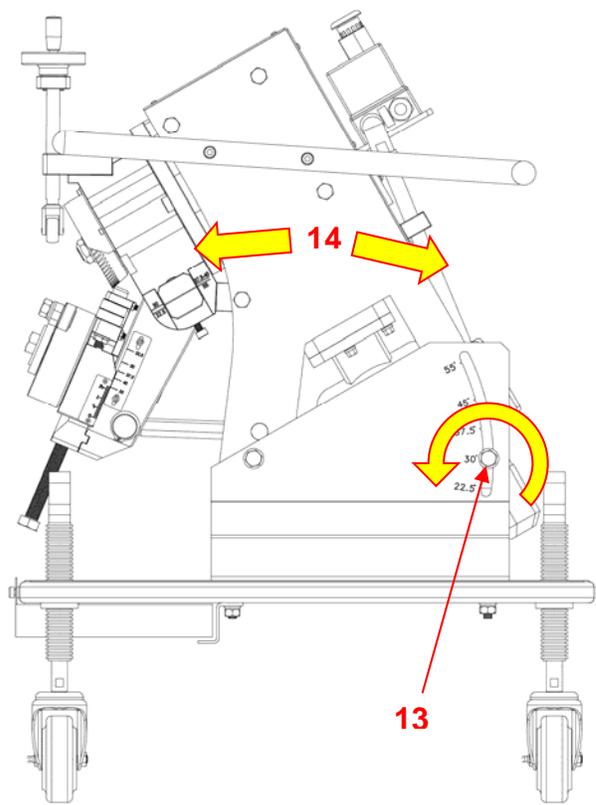
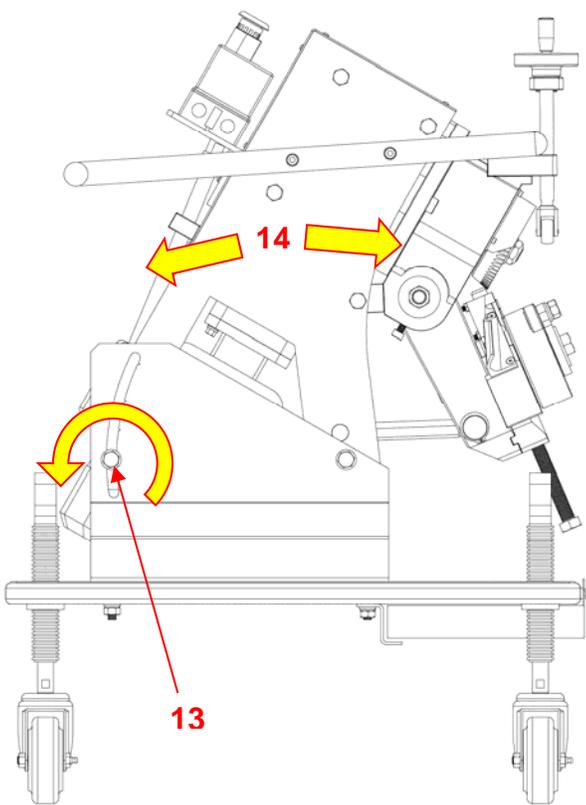


12. Re-tighten the nut of the Angle Alignment Bolt.

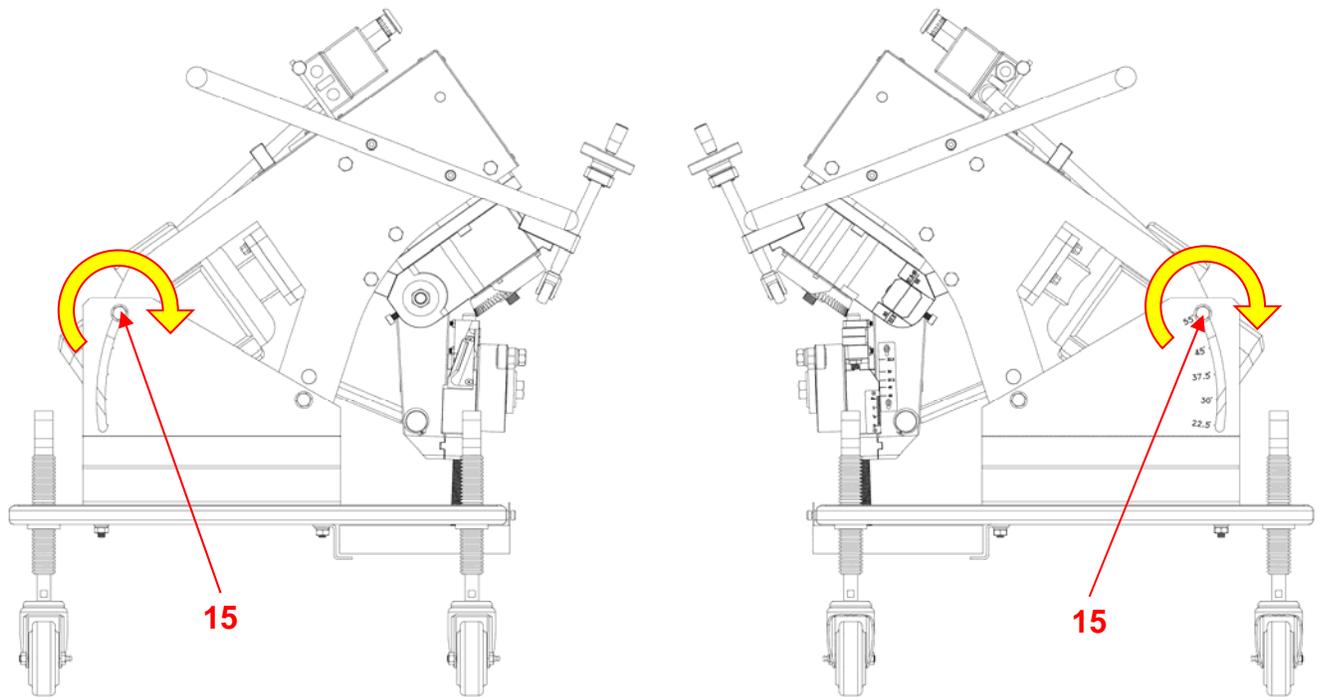
13. **Warning!** Ensure that the weight of the machine is securely supported to prevent unwanted tipping and that no body parts, or other items, are located near pinch points prior to performing this next procedure! In order to tilt the main body of the machine to the desired bevel angle, two (2) clamping bolts must be loosened, allowing the machine to pivot around an axis at the front of the Tilting Base Frame. **The weight of the main body of the machine will result in undesirable motion (forward or backwards, depending on the tilt angle) if it is not properly supported first.** Slightly loosen the two (2) bolts, one (1) on each side of the Tilting Frame Base, so that there is still enough clamping tension to prevent undesirable tilting motion of the main body of the machine, but sufficient enough to allow the tilting angle to be manually positioned.



14. Tilt the main body of the machine so that the centre of the rear clamping bolts line-up with the appropriate marks engraved on each side of the Tilting Base Frame.

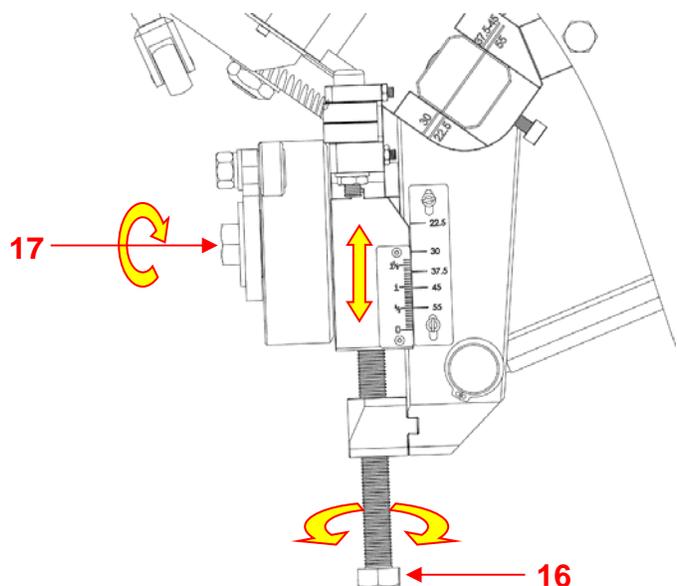


15. Re-tighten the two (2) bolts, one (1) on each side of the Tilting Frame Base.

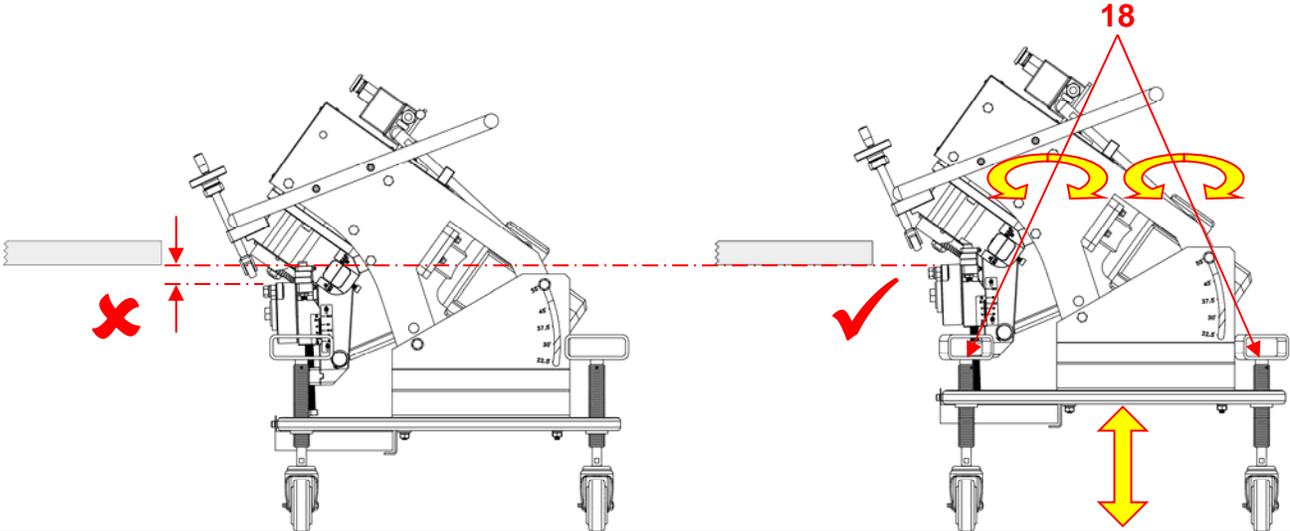


16. Using the Slide Base Adjusting Bolt, adjust the Slide Base Assembly, up or down, to the desired depth of bevel cut, using the appropriate Angle Reference Scale attached to the Pivot Arm Block and the fixed Root Face (land) Scale attached to the Slide Base Assembly as a reference. **Note: several set-up and operational elements can affect the accuracy of the Root Face / Angle Reference Scales. Therefore these scales should only be used as approximate reference guides and a test run is recommended to check the actual root face setting.** The Angle Reference Scale is slotted to allow the operator to recalibrate based on an actual bevel. The Root Face Scale is reversible, with inch markings on one side and millimetres on the other side.

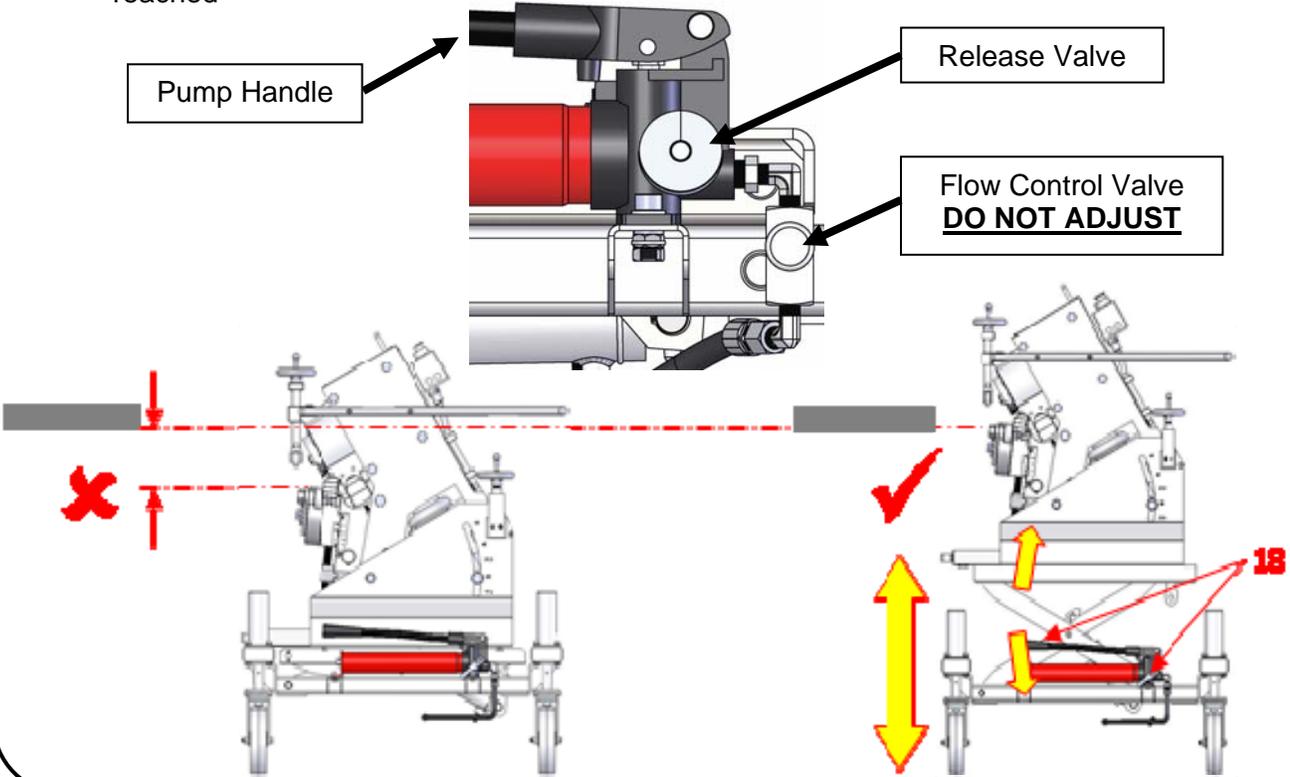
17. **IMPORTANT:** Ensure that no dirt or other contaminant has been trapped behind the Main Roller, or behind the Slide Base, and ensure that the slide base is seated properly, and then **FIRMLY** re-tighten the Slide Base Clamping Bolt.



18. Using the adjustable caster handles on each corner of the optional Base Frame Assembly, adjust the working height of the machine to suit the height of the work table (the top of the Main Roller, after adjusting to desired bevel depth, is to be the same height as the underside of the plate to be bevelled). Take care to adjust all four casters so that the machine is level.



Using the hydraulic pump on the optional hydraulic lift undercarriage, adjust the working height of the machine to suit the height of the work table (the top of the Main Roller, after adjusting to desired bevel depth, is to be the same height as the underside of the plate to be bevelled). To lower the working height of the machine, slowly turn the release valve (located on the pump body) counter clockwise. Turn the valve clockwise once the desired height is reached



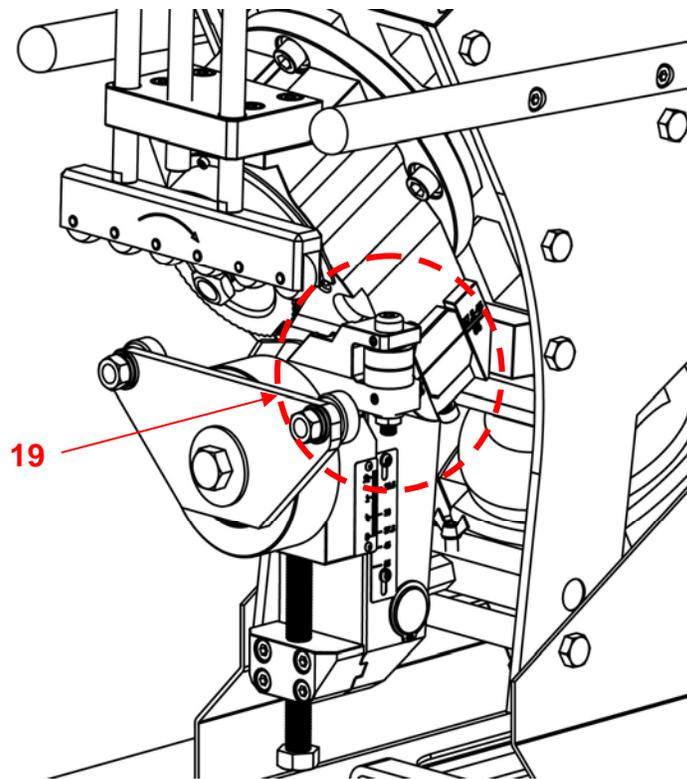
19. Check that the Guide Rollers are correctly adjusted. The intent of the Guide Rollers is to reduce drag caused by the plate feeding through the machine. This is achieved by the plate running against these free moving bearings which are slightly in front of the Guide Roller Bracket, and thereby reducing the surface contact with the face of the Guide Roller Bracket.

For plates with straight edges, the Guide Rollers should be slightly in front of the face of the Guide Roller Bracket, by approximately 0.020" [0.5 mm].

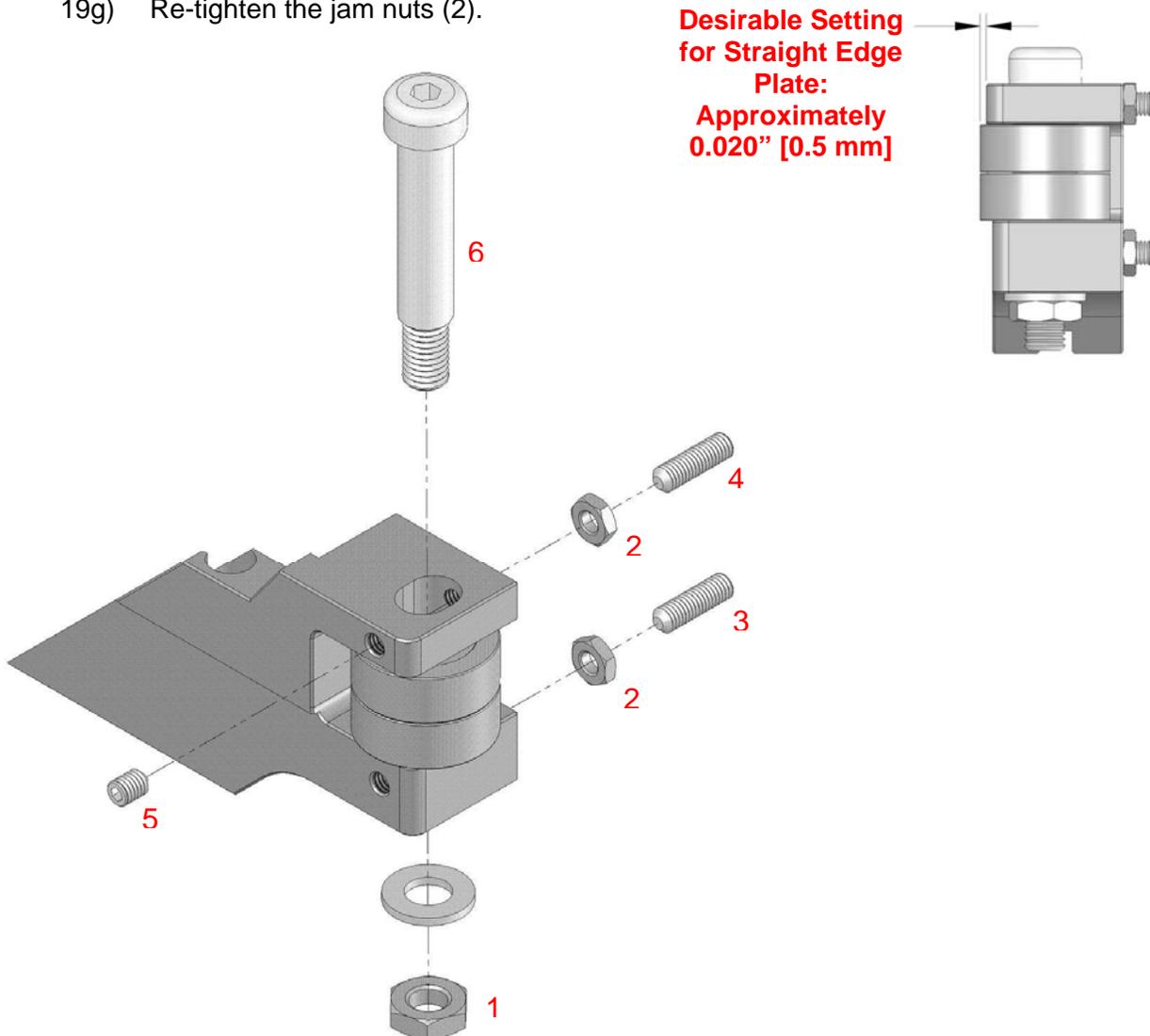
For plates with concave edges (i.e. bevelling the inside diameter of a large disk) the Guide Rollers will need to be set further back (in towards the machine).

For plates with convex edges (i.e. bevelling the outside diameter of a large disk) the Guide Rollers will need to be set further forward (out from the machine).

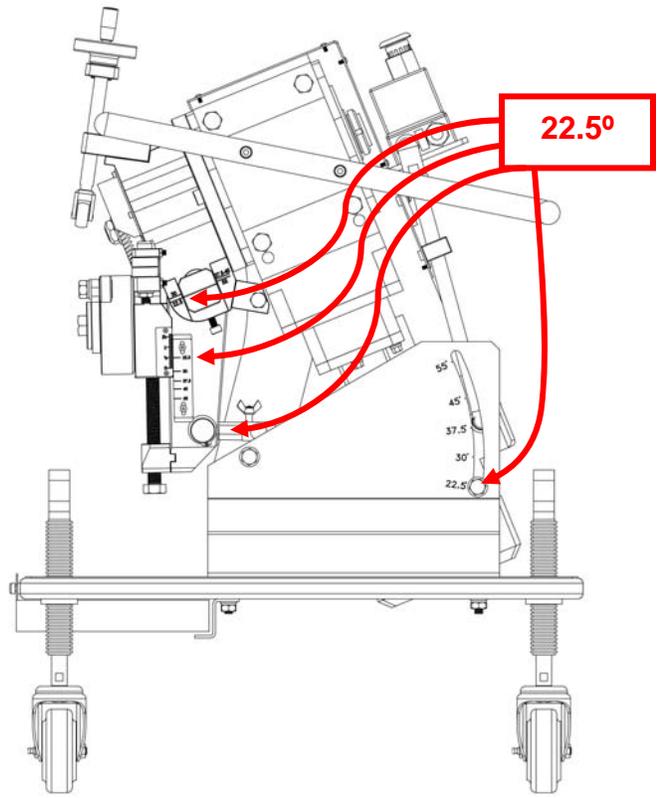
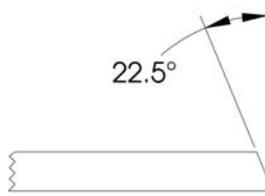
To adjust the Guide Rollers, follow the procedure on the following page.



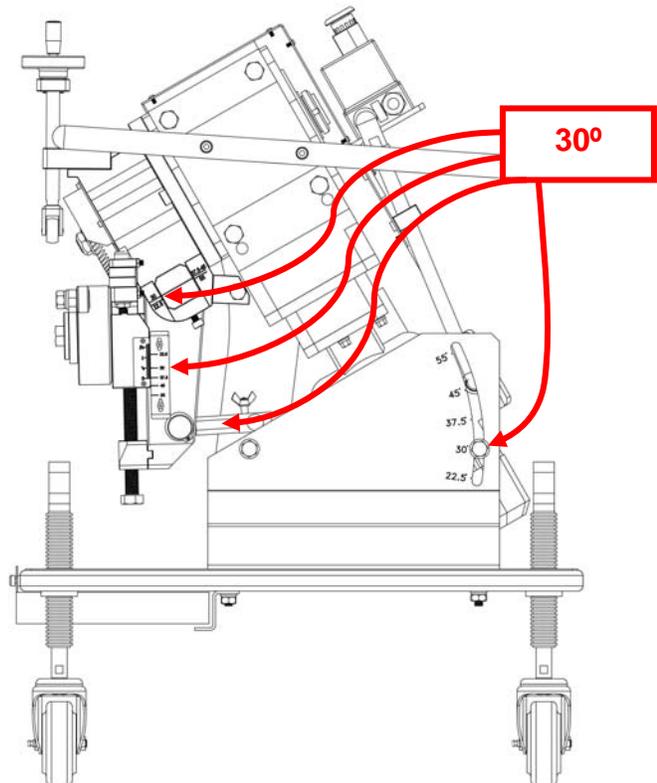
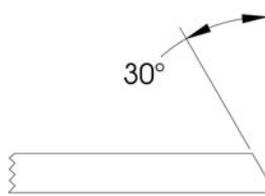
- 19a) To adjust the Guide Rollers, loosen the guide roller clamp nut (1).
- 19b) Loosen the 2 set screw jam nuts (2).
- 19c) Back the lower rear set screw (3) away from the guide roller shoulder bolt (6) so that the set screw will not interfere with the adjustment of the bolt.
- 19d) Use the upper rear set screw (4) and the upper front set screw (5) to position and pinch the guide roller shoulder bolt (6) so that the Guide Rollers are in the desired position. Both of the upper set screws (4 & 5) should be applying captive pressure to the guide roller shoulder bolt (6).
- 19e) Re-tighten the guide roller clamp nut (1).
- 19f) Screw in the lower set screw (3) so that it rests against the guide roller shoulder bolt (6) (thus providing extra support against the forces acting on the guide roller assembly during bevelling operation).
- 19g) Re-tighten the jam nuts (2).



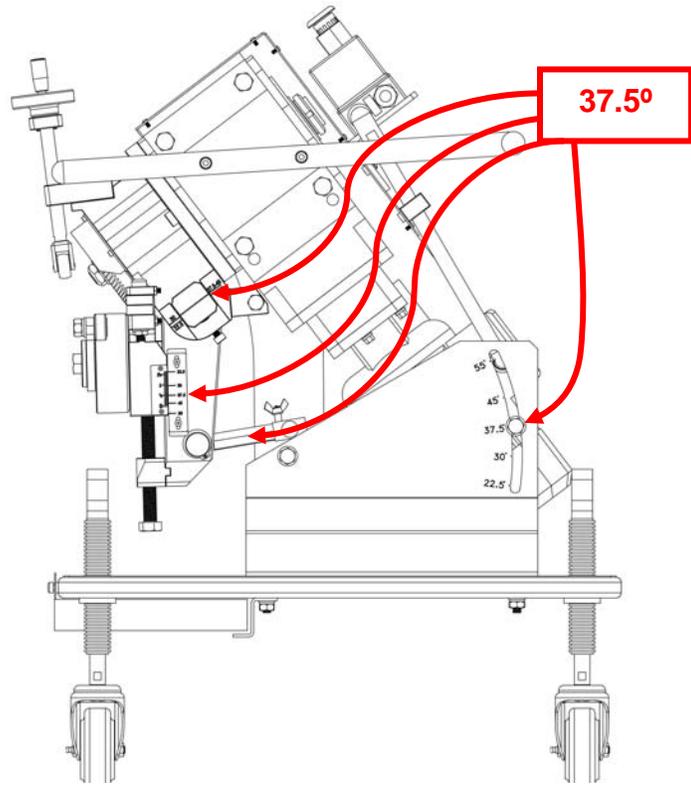
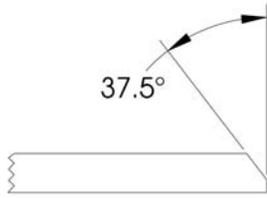
### 22.5° BEVEL ARRANGEMENT



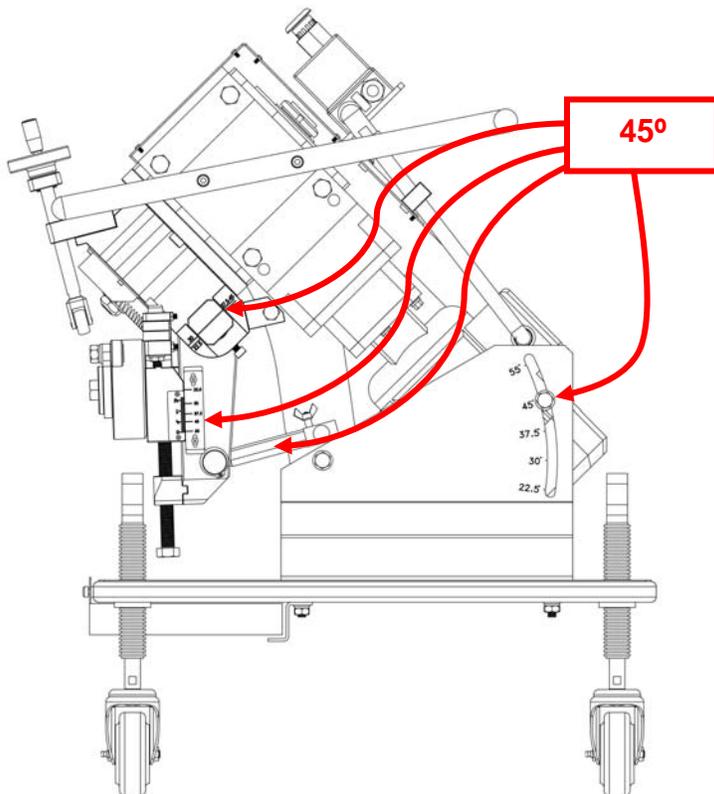
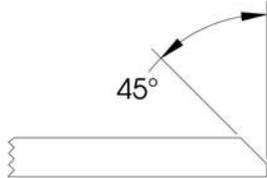
### 30° BEVEL ARRANGEMENT



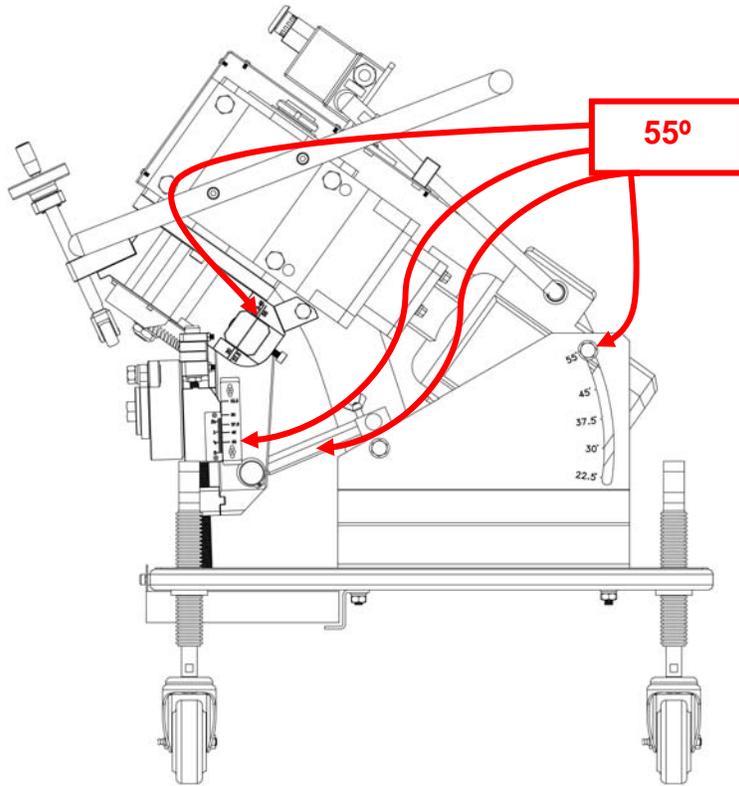
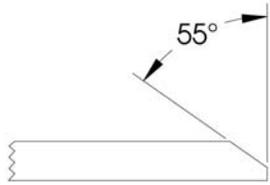
**37.5° BEVEL ARRANGEMENT**



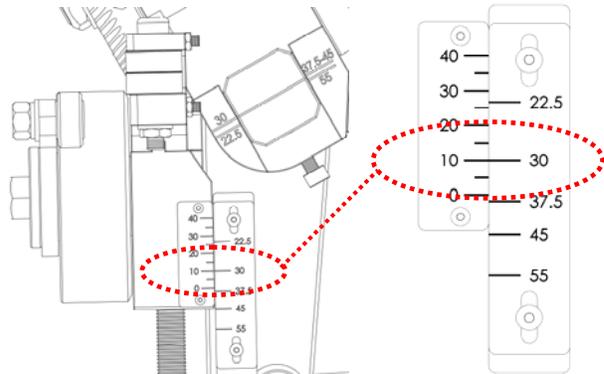
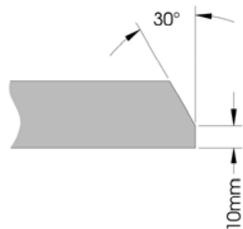
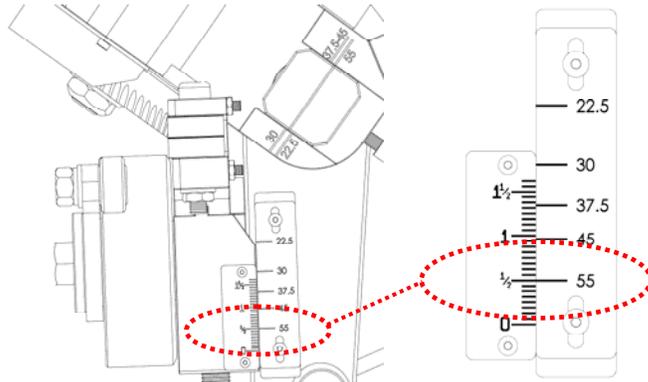
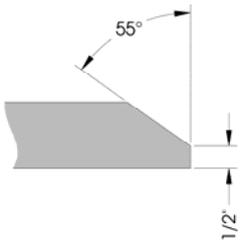
**45° BEVEL ARRANGEMENT**



## 55° BEVEL ARRANGEMENT



## ROOT FACE SCALE EXAMPLES



## PREPARATION FOR SELF PROPELLED OPERATION

The Gullco KBM®-18 Plate Edge Bevelling Machine is typically used with the optional spring loaded caster Undercarriage Assembly, enabling self propelled operation. I.e. the material stays stationary while the bevelling machine propels itself down its edge. This system is employed for bevelling large and heavy plate materials which cannot be fed through the machine. When both the machine and material are properly set up, as described below, the cutter will drive the machine on its caster mount, along a floor or runway.

Plate materials should be secured on a work table/platform that is of an appropriate height above the floor, or runway, for the angle of bevel to be performed. See the table below for minimum plate heights.

### KBM®-18 MINIMUM WORKING HEIGHT (when used with KBM®-18-069 Undercarriage Assembly)

DEGREES	*TABLE HEIGHT
22.5°	21-7/8" [556 mm]
30°	21" [533 mm]
37.5°	20" [508 mm]
45°	18-3/4" [476 mm]
55°	17-1/4" [438 mm]

### KBM®-18 MINIMUM WORKING HEIGHT (when used with KBM®-18-080 Undercarriage Assembly)

DEGREES	*TABLE HEIGHT
22.5°	35" [889mm]
30°	
37.5°	
45°	
55°	

\* This is an absolute minimum height and should be used as a guide only. Most bevelling will be 1/2" [12.7 mm] to 1" [25.4 mm] higher than above.

**IMPORTANT:** The KBM®-18 Undercarriage Assembly is equipped with spring loaded casters designed to accommodate slight floor to work table height variances, however, if the table height (work-piece) becomes too low (springs unable to compress any more), machine damage will likely occur.

## **PREPARATION FOR BENCH OPERATION**

The Gullco KBM®-18 Plate Edge Bevelling Machine may be used as a bench mounted rotary shear for bevelling small, light and manually manageable work pieces. For bench mounted applications, the optional Base Frame and spring loaded caster assemblies can be removed from the machine (if applicable). To establish an efficient, safe working position, mount the bevelling machine to a levelled bench or work table, capable of handling the load involved. It is always advisable to tilt the mounting of the bevelling machine to allow the work pieces to remain in a flat, horizontal plane. It is not recommended to bevel heavy or large work pieces that are difficult to manually handle, with bench mounted machines. If a heavy or large piece must be bevelled with a bench mounted machine, support the material with a suitable arrangement of rollers or casters to allow free movement of the material. Ensure that the work piece is level with, and sits flat on, the Main Roller and Support Rollers.

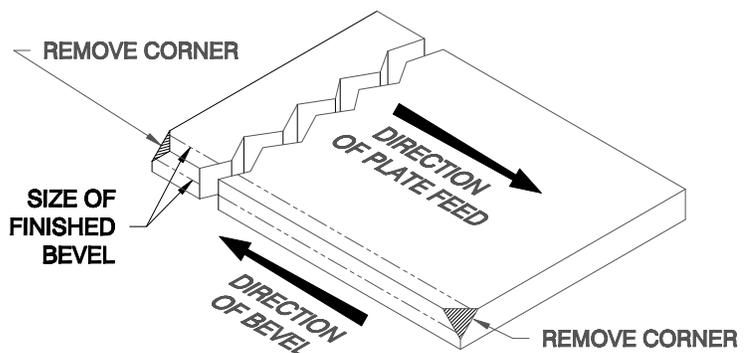
***IMPORTANT:*** Heavy work pieces being bevelled on bench mounted machines can cause a twisting force on the cutter and may lead to cutter / machine damage.

***IMPORTANT:*** Make sure all plates are started square to the cutter, or damage could result.

## **BEVEL OPERATION**

1. Before performing a bevel, always check the following:
  - a. The machine has been set-up in accordance with the previous section of this manual, entitled "Bevel Settings" (I.e. correct bevel angle settings; initial Slide Base setting; machine height adjustment; and correct Guide Roller adjustment).
  - b. **IMPORTANT: The Main Roller and two Support Rollers must run free and smooth.**
  - c. **IMPORTANT: The Slide Base must be seated correctly, with no contamination between it and the Pivot Arm Block, and the Slide Base Bolt must be firmly tightened.**
  - d. **IMPORTANT: The cutter nut must be firmly tightened and the cutter teeth must be in good condition.**
2. Raise the Clamp Rollers so that the clearance between the Clamp Rollers and the Main Roller is greater than the thickness of the plate to be bevelled.
3. Place the material, or an off-cut of the material, on the Main and Support Rollers.
4. Then screw the fluted handle, clockwise until the clamp rollers have pinched the material.  
**Note: The clamp rollers should not be screwed down too tightly on the plate material. This will cause feeding difficulties. The material should be able to move freely under the clamp rollers.**
5. Remove the material.

6. It is recommended that the corners of the leading and trailing edges of the plate material be ground prior to bevelling. The notched corners should be at least the depth of the final bevel depth. This procedure will reduce the initial and the final stresses applied to the cutter and will improve the initial grip of the material for feeding.

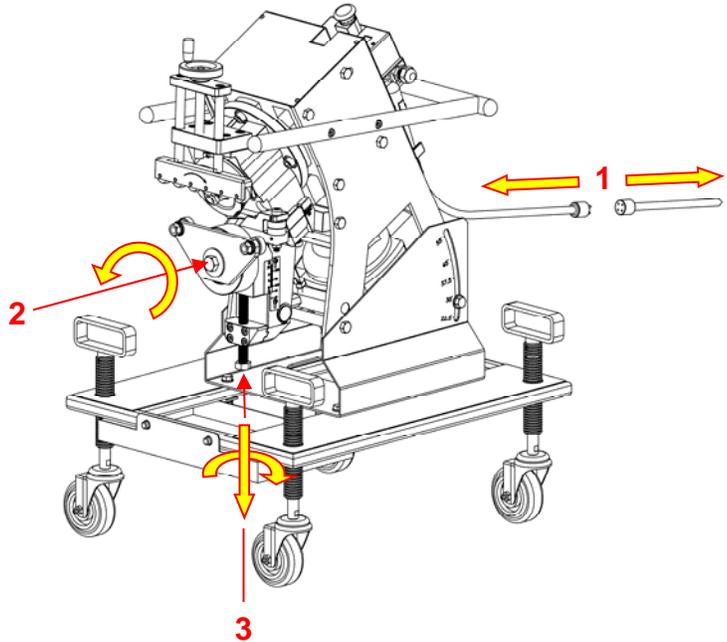


7. Connect electrical power, release the Emergency Stop Mushroom button (if latched) and start the cutter rotation by pressing the start ("I") push button. **Check for correct cutter rotation!**
8. Feed the machine/material straight in and out. Try to minimize the external forces applied to the cutter. Avoid applying twisting forces to the machine or plate. Do not shake the machine or twist the plate when the cutter is engaged with the plate. Do not attempt to readjust the machine settings such as root face or Guide Roller alignment during bevelling operations. Always stop the machine and disengage from the material before adjustment of these settings.

## INTERRUPTED MATERIAL FEED

Material feed may be interrupted when the cutter slips due to several possibilities, such as worn cutters, excessive external forces etc.. Should interruption of the material feed occur, **do not try to move the machine with the cutter engaged in the cutting position, or shake the machine or plate, as this is likely to break the cutter.** Proceed as follows:

1. Positively isolate/disconnect the AC power supply.
2. Clean the area around the Main Roller and Slide Base Assembly, then loosen the Slide Base Clamping Bolt.
3. Lower the Slide Base Assembly by turning the Slide Base Adjusting Bolt counter-clockwise.
4. Disengage the cutter from the plate being bevelled.
5. Draw the machine back from the plate and grind off any projections from the bevelled surface.
6. Rectify the problem that caused the interruption (i.e. worn cutter; too large of a cut; incorrect height adjustment; etc.).
7. Readjust the machine settings. **IMPORTANT: Ensure that no dirt or other contaminant has been trapped behind the Main Roller, or behind the Slide Base, and ensure that the Slide Base is seated properly, before FIRMLY re-tightening the Slide Base Clamping Bolt.**
8. Reconnect the AC power supply.
9. Restart the machine and bevel operation.



## **BEVELLING FLAME CUT STEEL PLATES**

Flame cut steel plates may be work hardened and have slag on the edges. Flame cut **mild steel** can be bevelled with the KBM®-18, but all slag should first be removed from the edge to be bevelled. Flame cut **high tensile steel**, however, may be difficult to bevel with the KBM®-18. This material is subject to hardening by rapid cooling after flame cutting. Check to see if the material is capable of being machined before attempting to bevel it with the KBM®-18.

## **BEVELLING OF TOUGHER MATERIALS**

Because materials such as stainless steel and high grade steels tend to be tougher and generally possess a higher tensile strength than mild steels, it is more difficult to bevel these materials with the KBM®-18 machine.

The amount of metal to be removed in one pass by the KBM®-18, is adjusted by the Slide Base mechanism (as previously described in the manual), to give a bevel cut setting suited to the tensile strength of the material. The maximum recommended bevel widths for various tensile strengths at various degrees of bevel angles are shown in the table located earlier in this manual, under a section entitled "Bevelling Capacity".

The following are recommendations for bevelling high tensile plate;

1. Bevelling tougher materials should always be performed on the conservative side in terms of smaller bevel cuts and increased number of passes.
2. Always use a sharp cutter. The need for re-grinding/replacing cutters depends on the amount of use and work involved, however, it is always advisable to closely monitor the cutter, as worn cutters may produce detrimental factors such as loss of performance due to feeding problems, poor quality and consistency of bevel as well as the possibility that the cutter might break before it can be re-ground.
3. When a heavy work load is involved, time and operating costs can be reduced by using two or more KBM®-18 machines, each adjusted to provide a different bevel depth for multi pass bevelling, allowing the operator/operators to use one machine for each pass without having to make adjustments to the machine in-between.

It is generally agreed throughout the steel fabrication industry that machining bevels on tough, heavy, steel plates such as stainless steel, is both difficult and costly, as is plasma cutting, which requires additional hand grinding. If properly planned and carefully performed, bevelling tough plate with the Gullco KBM®-18 Portable Plate Edge Bevelling machine remains the most economical method in terms of total cost.

## CUTTER

The circular cutter on the Gullco KBM®-18 bevelling machine is made from special, high strength and abrasion resistant tool steel and is designed to withstand the heavy stresses applied during normal bevelling operations. All cutters are heat treated to provide maximum cutter life. The specifically designed serrated cutting edge provides a firm grip on the material for both feeding and cutting purposes.

Three (3) types of cutters are available for use with the KBM®-18. The table below shows the basic features of each cutter. It is important to note that the properties of different materials will respond differently to each other with respect to rotary shearing. Therefore the following is only intended as a guideline. It is Gullco's recommendation that the best cutter for the project be found by trial and experimentation.

AVAILABLE CUTTERS	CUTTER PROPERTIES			
	FEEDABILITY	BEVEL FINISH	IMPACT/HARD SPOT RESISTANCE	FEATURES
KBM®-18-X1C	GOOD	EXCELLENT	GOOD	TOUGHER, MORE DURABLE, MORE FORGIVING OF MINOR IMPROPER SETUP/OPERATION
KBM®-18-X1H	GOOD	GOOD	FAIR	HARDER, BETTER WEAR RESISTANCE
KBM®-18-X1A	EXCELLENT	FAIR	LOW	HARD, AGGRESSIVE CUTTER PERFORMS WELL UNDER PERFECT CONDITIONS, BUT WILL FAIL IF NOT PROPERLY SETUP/OPERATED

### CUTTER LIFE

KBM®-18 cutters are subject to wear under normal working conditions and should be re-ground at regular intervals, as per the procedure described later in this manual. The service life of the cutter, before resurfacing or replacement is necessary, depends on a number of factors. The tougher the plate material, the shorter the expected service life. It is also shortened by heavier cuts and greater bevelling angles. However, the most important factor contributing to premature failure of the cutter is misapplication of heavy stress to the cutter. How and why this occurs is described later in this manual. Generally, it involves errors relative to the proper setup and use of the machine. A well experienced operator will obtain a much longer service life from the cutter than indicated in the "guide" below. An inexperienced operator may experience cutter failure after only a few feet [meters] of cut. The following re-grinding schedule is provided as a guide:

- Mild Steel                      - Re-grind after bevelling 600 feet (182 meters)
- Stainless Steel                - Re-grind after bevelling 300 feet (91 meters)

The most effective way to obtain maximum cutter life is:

1. All operators of the KBM®-18 machine must have a thorough understanding of how the machine and material are set up for proper operation and that proper operational procedures are followed.
2. Perform trial runs before the actual application. This is particularly important. **Most cutter troubles are encountered at the start or finish of the operation.**
3. Remember that the misapplication of stress to the cutter will damage or break it. Plates should be fed square to the cutter. Twisting forces should not be applied to the cutter. Large and unbalanced pieces should be properly supported so that the material is always positioned square to the cutter. This is particularly true when bevelling circular discs or curved plates.

Worn and dull cutters may produce a coarse bevelled surface, create feeding problems and tend to be broken more easily. It is recommended that the cutters be re-sharpened or replaced **before** these conditions occur. If a few extra cutters were kept on-hand, it would allow a frequent rotation or replacement of the cutters without delays and significant down time, which would ultimately reduce the total bevelling costs.

### **SHARPENING INSTRUCTIONS FOR KBM®-18 CUTTERS**

Normally up to 10 re-grinds can be performed before the cutters 0.110" [2.8 mm] recess is ground flat. When resurfacing GBM-18 & KBM®-18 cutters, the following instructions will help to provide the maximum cutter life:

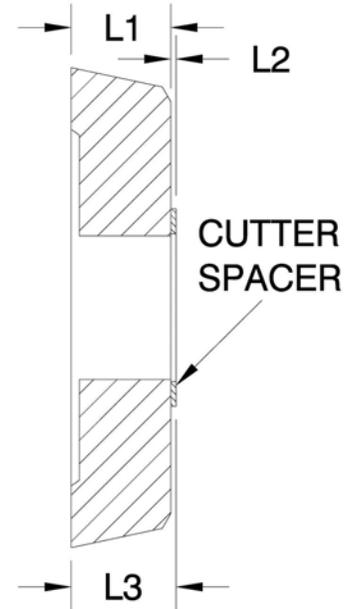
1. The cutter should be surface ground until all of the burred and dulled edges of the flutes are removed.
2. The recommended grinding wheel is a "Carborundum, S.G. Medalist, 461 Grit" or equivalent.
3. The manufacturers recommended cutting oil, if any, for the grinding medium to be used, should be applied when grinding (the above recommended grinding wheel performs best with no cutting oil).
4. Never allow the cutter to overheat when grinding.
5. The last pass/passes of the resurfacing process should be light enough to ensure that all the burrs that have been produced due to the grinding process, are removed. This is important, as large burrs around the cutting edges may dull or possibly deform the cutter immediately on reuse.
6. Ensure that the back face of the cutter is smooth and clean before grinding and that the front face of the cutter is parallel to within 0.001" [0.03mm] of the back face after grinding.
7. Demagnetize the cutter before reuse.

**IMPORTANT: If the Gullco KBM®-18 cutter is resurfaced below the original recess, or if cutters other than those approved by Gullco International are used on the Gullco KBM®-18 Portable Plate Edge Bevelling Machine, the warranty will be void.**

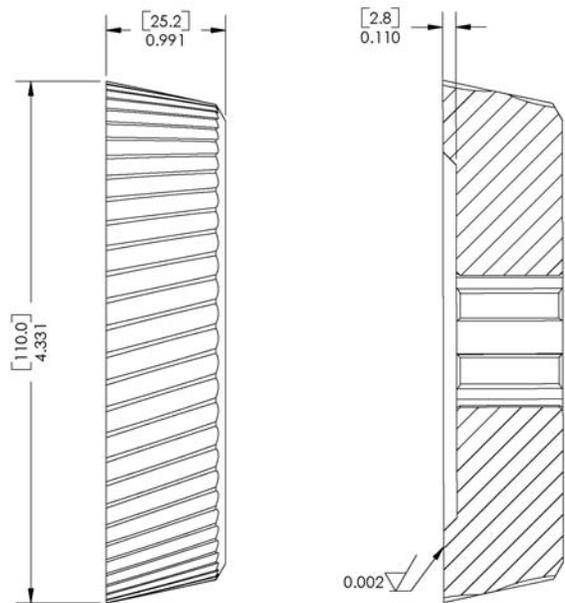
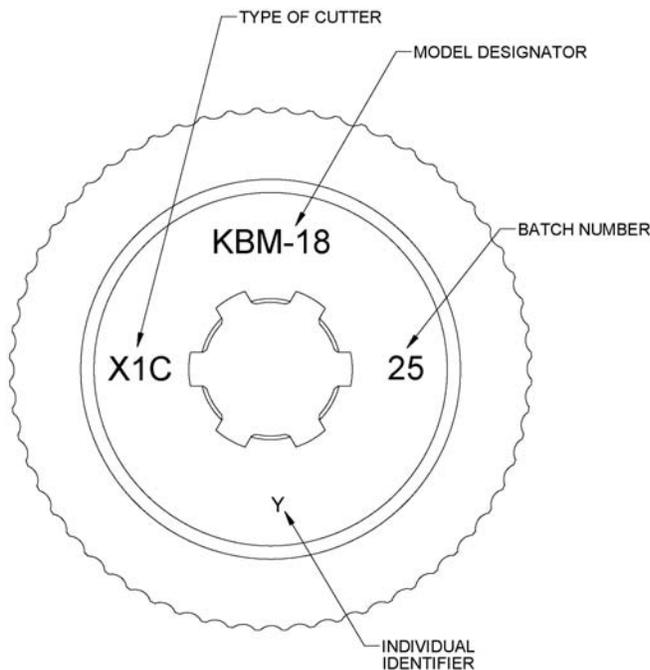
The thickness of the original cutter is 0.991" [25.2 mm] and must be kept in its original proximity after sharpening, by using cutter spacers. It is recommended that after sharpening, measurement of the cutter thickness be made and appropriate spacers installed behind the cutter to bring the total thickness as close as possible to the 0.991" [25.2 mm]. **NOTE: Cutter spacers are available in two (2) nominal thicknesses: 0.02" [0.5 mm] thick and 0.04" [1.0 mm] thick.**

For Example:

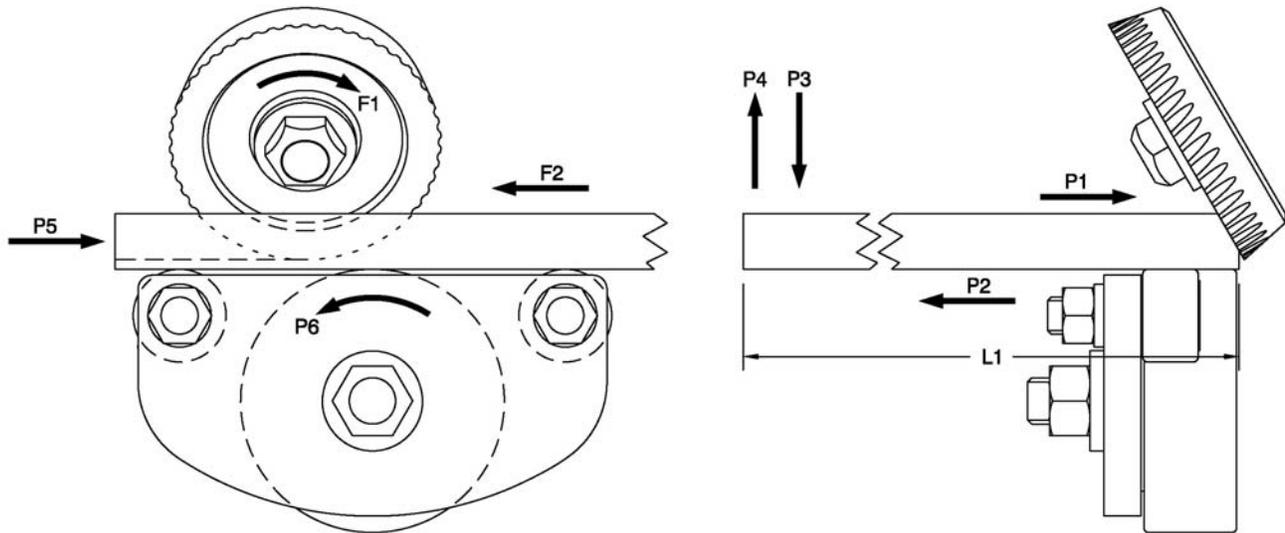
Cutter thickness after several sharpenings - L1 = 0.964" [24.5 mm]  
 Add one spacer - L2 = 0.020" [0.5 mm]  
 Total Thickness - L3 = 0.984" [25.0 mm]



## CUTTER DETAILS



## FORCES ACTING ON THE CUTTER



The rotary shearing cutter on the KBM<sup>®</sup>-18 Portable Plate Edge Beveling Machine is subjected to considerable stress under load. The drawings above outline the dynamic forces that may be applied to a cutter in operation.

F1 = Cutter rotation shearing force.

F2 = Material feeding force generated by the cutter serrations.

P1 = Material pulling force generated by F1 and F2 as the material is drawn against the cutter during operation.

P2 = External force pulling material away from the cutter.

P3 = Downward moment onto material.

P4 = Upward moment onto material.

P5 = External force interfering with feeding force F2.

P6 = Poor Main Roller rotation.

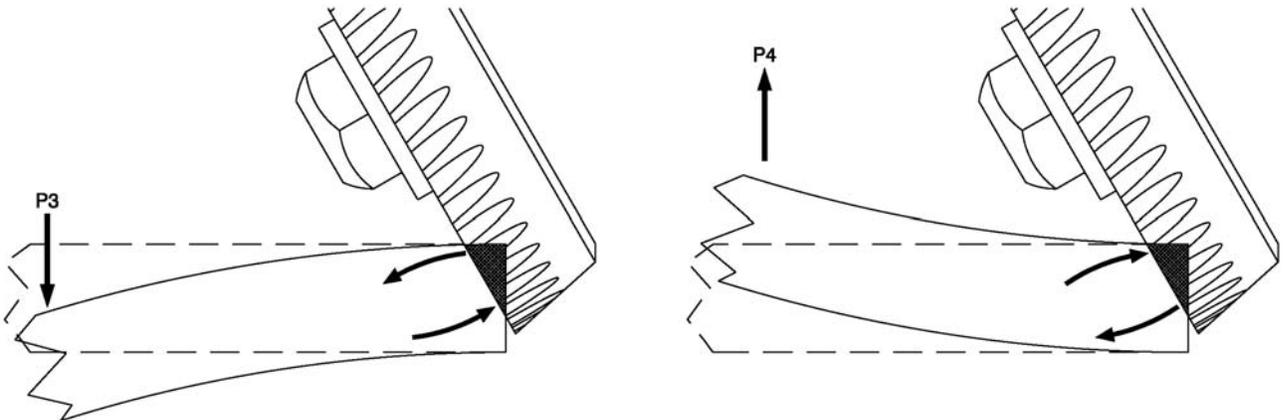
L1 = Material extension from the cutter.

The cutter rotation F1, material feeding force F2 and the material pulling force to the cutter P1 are generated by the KBM<sup>®</sup>-18 machine itself. Under normal circumstances and correct operating procedures, the machine is capable of withstanding these self generated forces. There are, however, a number of factors that will cause the cutter to break, as described in the following section.

## **CUTTER BREAKAGE CAUSED BY EXTERNAL FORCES**

In most cases the cutter will break when one or a combination of the external forces, P2 through to P6 described on the previous page, is applied beyond the limit of the cutter.

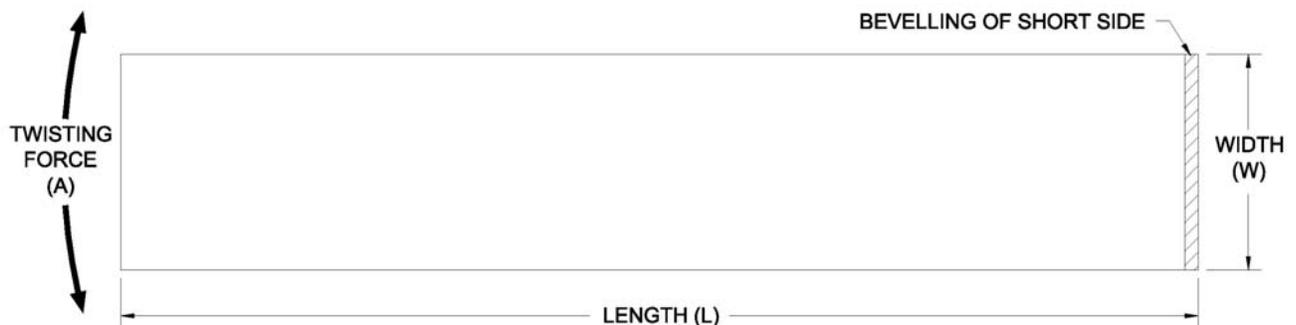
Exceptionally heavy stress may be applied to the cutter by moments P3 and P4. These moments apply a lever action upon the cutter as shown below. The extent of these moments are dependent on the length of the plate extension, indicated as L1 on the drawing on the previous page.



To avoid situations that will cause external forces to break the cutter, the following recommendations are made:

1. Use a support table and conveyor system when moment P3 or P4 is great (bench mounted operation with large, heavy plates, or plates with a long extension L1).
2. Use a pinch roller and roller conveyor to improve the feeding force F2 and minimize the interference force P5 (bench mounted operation with large, heavy plate).
3. Use a caster assembly to minimize the pulling force P2 away from the cutter (self propelled operation).

When the KBM<sup>®</sup>-18 is used as a bench mounted unit to bevel the short sides of rectangular plates such as that shown in the diagram below, the plates should be supported on additional work tables. Otherwise, a twisting force (A) will give a heavy side stress to the cutter and cause breakage. Always feed the material square to the machine. As previously mentioned, the greater the unsupported length L1, the greater the moment P3 or possibly P4, creating an undue load to the cutter. Therefore it is important that even narrow width plates with a length of 20" [508mm] or more, be supported by some form of work table and, or, clamp roller system.



## INSPECTION & MAINTENANCE

The Gullco KBM®-18 Portable Plate Edge Beveling Machine is a heavy duty, robust piece of equipment and under normal conditions, it will provide years of trouble free service if it is operated within the limits of its expected use and if the following inspection and maintenance points are adhered to.

### DAILY INSPECTIONS

Check for smooth and free movement of the Main and secondary Support Rollers.

**IMPORTANT:** The Main Roller should always run free. Cutting chips, dust, dirt etc. can restrict the free movement of the Main Roller, which, in turn creates feeding drag. This will result in undesirable stress and will likely damage the feed/guidance components and possibly the cutter and drive line components. To avoid this problem, check that the Main Roller runs smoothly before each use. If necessary clean or replace the bearing and roller. It is also recommended that the Main Roller be demagnetized on a regular basis. This will help reduce the build up of cutting chips etc. from around the roller.

Check the security of the Cutter Nut; the Slide Base Clamping Bolt; and the nut of the Angle Alignment Bolt.

**IMPORTANT:** The Slide Base Clamping Bolt must be tightened firmly. If it is loose during use, damage to Pivot Arm Assembly components, and possibly cutter and drive-line components, will result.

**IMPORTANT:** Ensure that no contamination has been trapped behind the Slide Base before retightening. It is essential that the clearance between the Slide Base and the Pivot Arm Block be zero. If even a slight clearance is present, due to chips etc., it could result in significant damage to Pivot Arm Assembly components, and possibly cutter and drive-line components.

**NOTE:** In order to clean contamination from behind the Slide Base, the Support Roller Assembly, the Main Roller Assembly and the Slide Base Assembly must first be removed.

Check for smooth and free movement of the Clamp Rollers. Inspect the condition of the clamp roller wheels. Replace the pins and roller wheels if play is present, or if there is any damage.

Check the condition of the cutter.

Check the set-up of the machine for conformity to that described earlier in this manual.

Check that the Guide Rollers are adjusted correctly.

**IMPORTANT:** The Guide Rollers must be adjusted so that the plate being fed into the machine contacts the Guide Rollers prior to contacting the face of the Guide Roller Bracket, however, the Guide Rollers must not be too far out to significantly twist the plate as it is being bevelled (resulting in component damage). For straight edged plate the Guide Rollers should be in front of the face of the Guide Roller Bracket by approximately 0.02" [0.5 mm]. Curved

plate will require the rollers to be further extended (convex edge plate) or recessed (concave edge plate). This is necessary to prevent feeding problems during bevelling. Regularly check to make sure that the plate is running against the Guide Rollers as it is being bevelled and that there is only a minimal gap between the edge of the plate and the face of the Guide Roller Bracket (directly next to the Guide Rollers), especially when changing setups between straight edged plates and curved edged plates or disks. [See page 14 for further details.](#)

## **MONTHLY INSPECTIONS**

**NOTE:** The following inspections should be performed with greater frequency if conditions and usage requires.

Inspect the security of all fasteners.

Inspect the condition of the Slide Base; Guide Roller Bracket; and Chip Deflector, and replace them if damaged or gouged from wear, or if the cutting chips have worn a pocket that affects smooth chip flow.

Inspect the condition of the optional undercarriage casters and the spring loaded height adjustment assemblies and replace worn/damaged parts as necessary. Apply general purpose grease to lubricate the spring loaded mechanisms as needed.

All cables and conduits should be inspected for breaks, abrasions and security.

## **PERIODIC INSPECTION & MAINTENANCE**

**NOTE:** The following inspection & maintenance should be performed with greater frequency if conditions and usage requires.

Periodically clean the machine with compressed air.

**IMPORTANT:** The gearbox oil must be changed after the first 300 hours of operation (approximately 2 months of single shift usage) and then every 12,500 hours thereafter.

The Gearbox is typically shipped from the factory with “Shell Tivela S 320” - a synthetic, ISO VG 320 oil. When replacing the gearbox oil, refer to the chart below for the best Viscosity Grade (VG) oil to suit the operating environment of the machine. The gearbox requires 1 Gallon (US) [4 Litres] of oil.

**NOTE:** Do not mix mineral oils with synthetic oils! If necessary to change from one type of oil to the other, carefully wash the internal parts of the unit using suitable detergents.

32 – 70°F [0 - 20°C]		70 - 104°F [20 - 40°C]	
Mineral Oil ISO VG	Synthetic Oil ISO VG	Mineral Oil ISO VG	Synthetic Oil ISO VG
220	220	460	320

It is recommended that the machine be taken out of service once a year, stripped down and all moving parts be cleaned, lubricated and inspected for wear and damage. All damaged and worn parts should be replaced.

## **STORAGE**

The KBM®-18 Portable Plate Edge Beveling Machine should be kept in a dry environment with no possibility of impact or damage due to stacking of objects on top of the equipment.

It is also recommended that due to the susceptibility of the Clamp Roller Hand Wheel and Revolving Handle to damage, the Clamp Roller Assembly should be removed for storage.

The machine should be stored with a Cutter in place to avoid losing the Cutter Shaft Collar.

When the equipment is brought out of storage, always inspect the condition of the machine prior to use. Pay particular attention to the condition of the oil.

For storage periods of over 60 days, all machined surfaces should be protected with a suitable anti-oxidation product.

For storage periods of over 6 months, it is recommended that in addition to the points above, the gearbox should be filled with extra oil (requiring draining to the correct amount before re-use). It is also recommended that the rotor be turned every 1 to 2 months and to take adequate measures against corrosion and humidity.

## **SHIPPING**

When shipping the KBM®-18 beveling machine without the optional undercarriage, lag bolt the tilting frame to the skid. If the unit is being shipped with the undercarriage, it is recommended that the machine be secured to a skid that raises the four (4) casters off the floor.

The Clamp Roller Assembly should be removed from the Cutter Shaft Housing to protect it from damage.

The machine should be shipped with a Cutter in place to avoid losing the Cutter Shaft Collar.

The starter switch assembly should either be removed or protected against damage.

## TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	REMEDY
Difficult to Feed Plate.	Slight Overload.	Push plate forward to help feeding.
	Overload.	Check bevel width relative to the plate tensile strength. Take smaller cuts per pass. Refer to "Bevelling Capacity" earlier in the manual.
	Guide Roller not functioning.	Check the guide roller for correct set-up. Refer to the appropriate section under "Bevel Settings" earlier in the manual.
	Clamp Roller is too tight.	Check if plate is in true (flat) contact with the Main Roller. Re-adjust Clamp Roller Assembly if necessary. Refer to the appropriate section under "Bevel Operation" earlier in the manual.
	Main Roller not functioning.	Free-up the rotation of the main roller replacing the bearing if necessary.
Uneven Bevel Measurement.	Burrs on the plate make the edge uneven.	Grind off all burrs and irregularities before bevelling.
	Guide roller extends beyond the slide base surface.	Check the guide roller for correct set-up. Refer to the appropriate section under "Bevel Settings" earlier in the manual.
	Loose setting of the Slide Base Locking Bolt.	Clean mating surfaces of the Slide Base and Pivot Arm Block, check for true seating of the Slide Base, and firmly tighten the Slide Base Locking Bolt.
Cutter Slips and does not feed the plate through the machine.	Overload.	Check bevel width relative to the plate tensile strength. Take smaller cuts per pass. Refer to "Bevelling Capacity" earlier in the manual.
	Burrs in sheared edge of plate interfere with feeding.	Grind off all burrs and irregularities before bevelling.
Chips are not sheared off at the root.	The cutter edge extension is not far enough beyond the edge of the plate.	The bottom dead-centre of the cutter must be at least 0.039" [1 mm] recessed from the front face of the Guide Roller Bracket (I.e cutter is shimmed too far out).
	The cutting chips are too heavy	The depth of cut is too heavy. Take smaller cuts per pass. Refer to "Bevelling Capacity" earlier in the manual.
Cutter Damage.	Wrong machine settings.	Check.
	Overload.	Check bevel width relative to the plate tensile strength. Take smaller cuts per pass. Refer to "Bevelling Capacity" earlier in the manual.
	Main roller not functioning.	Free-up the rotation of the Main Roller, replacing the bearing if necessary.
	Too much external force applied to the cutter.	Relieve all external forces. Refer to "Forces Acting on the Cutter" and "Cutter Breakage Caused by External Forces" earlier in this manual.

## TROUBLESHOOTING GUIDE, CONTINUED....

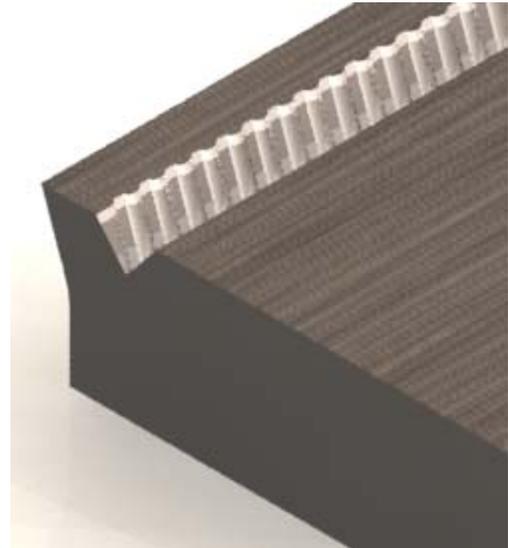


If the bevelled plate looks similar to the adjacent image:

- Check that the cutter thickness and spacers are not too great (as described [on page 29](#)).
- Check that the correct angle pin is installed and that the Angle Alignment Bolt setting is correct (as described [on page 13](#)).
- If the above checks do not find the problem, try adjusting the Angle Alignment Bolt so that it is slightly higher than the appropriate mark engraved on the side of the Cutter Shaft Housing.

If the bevelled plate looks similar to the adjacent image;

- ***Stop bevelling with the machine immediately!***
- ***Serious component damage will result after a very short period of use under these conditions.***
- Perform the same checks as listed next to the image above.



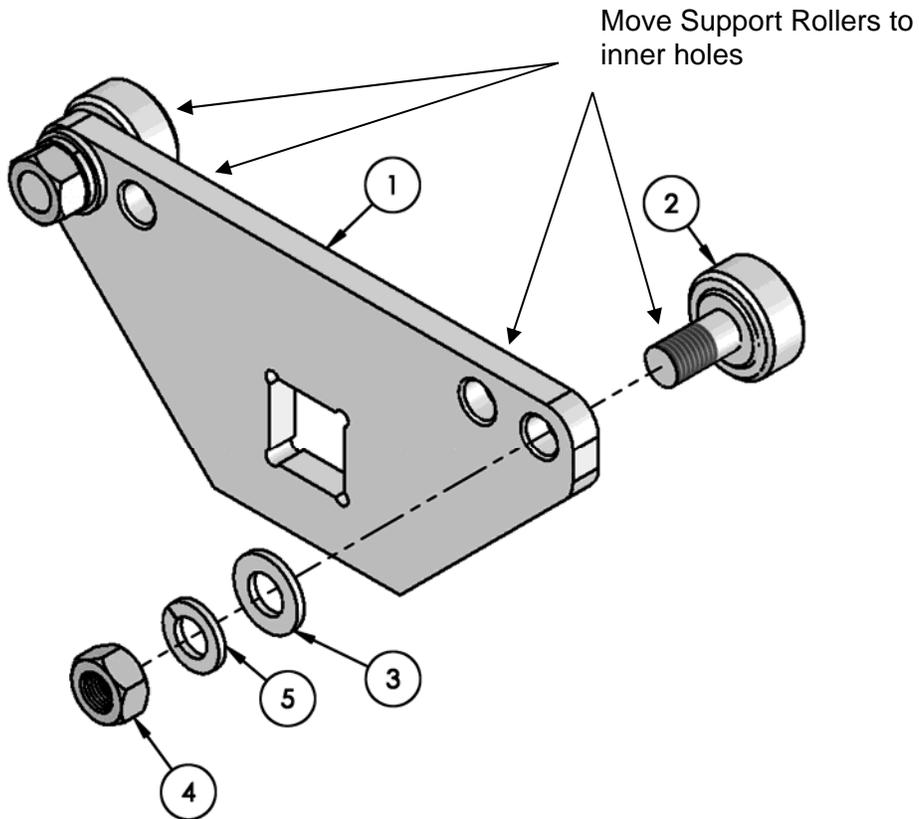
If the bevelled plate looks similar to the adjacent image:

- Lower the slide base assembly (as described [on page 15](#)).
- It may be necessary to perform a bevel, leaving a small root face (land), measuring the root face, and then adjusting the Angle Reference Scale accordingly.

### TROUBLESHOOTING GUIDE, CONTINUED....

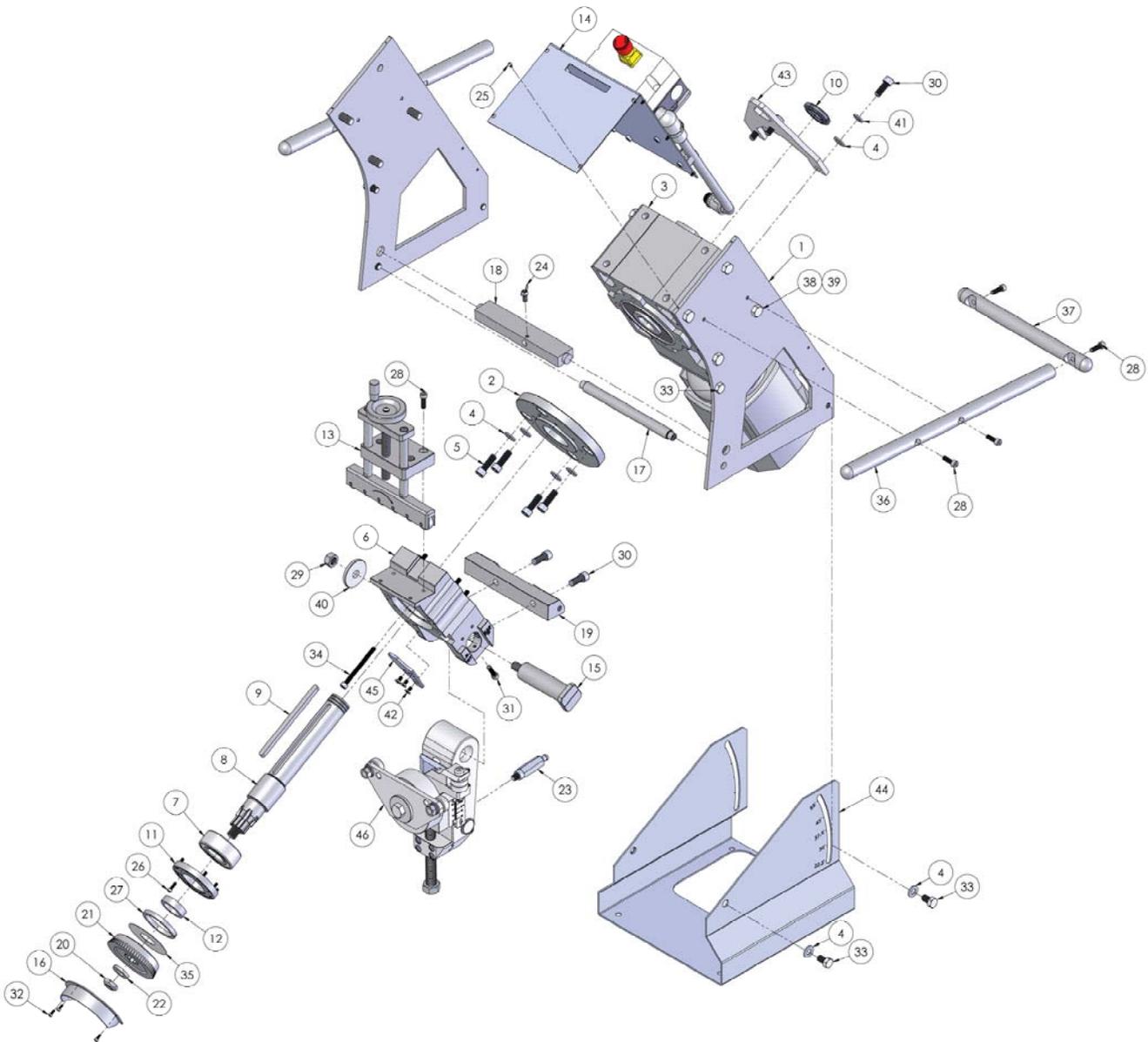
On some applications it is necessary to move the two (2) Support Rollers (item #2 below) closer to the Main Roller to prevent the machine, or plate, from 'kicking/bucking' at the start and at the end of the bevel, thereby providing a more constant bevel across the whole edge of the plate.

It may also be necessary to move the Support Rollers to the inner holes of the Support Roller Plate when bevelling malleable material, especially thin malleable plate. This will provide support to the plate closer to where the material is being sheared, thus reducing plate deformation and improving the starting feed.



# **KBM®-18-100 GENERAL ASSEMBLY BREAKDOWN**

Drawing Number: KBM-18-100



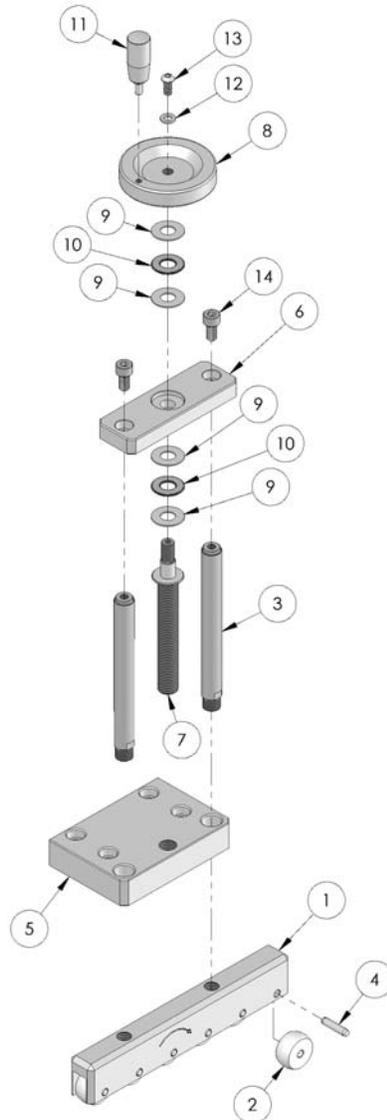
## KBM®-18-100 GENERAL ASSEMBLY BREAKDOWN

Drawing Number: KBM-18-100

ITEM	PART NO.	DESCRIPTION	QTY.
1	KBM-18-034	BODY SIDE	2
2	KBM-18-098	GEARBOX MOUNT	1
3	KBM-18-120-A	230/460V GEARMOTOR (KBM-18-100-A, B, C & D)	1
	KBM-18-120-B	575V GEAR MOTOR (KBM-18-100-E)	
4	GK-111-095	WASHER 12mm BOLT x 24 OD x 2.5	11
5	GK-107-137	M12-1.75 x 35mm SHCS	4
6	KBM-18-035	CUTTER SHAFT HOUSING	1
7	KBM-18-05759	MAIN ROLLER BEARING	1
8	KBM-18-032	CUTTER SHAFT	1
9	KBM-18-033	CUTTER SHAFT KEY	1
10	KBM-18-111	M40-1.5 SELF LOCKING NUT	1
11	GBM-18-031	STOP DISC	1
12	GBM-18-076	CUTTER SHAFT COLLAR	1
13	KBM-18-024	CLAMP ROLLER ASSEMBLY	1
14	KBM-18-214	STARTER ASSEMBLY	1
15	KBM-18-030	ANGLE ALIGNMENT BOLT	1
16	KBM-18-036	CUTTER GUARD	1
17	KBM-18-045	TILT BAR	1
18	KBM-18-055	ANGLE SUPPORT BAR	1
19	KBM-18-070	MAIN SUPPORT BAR	1
20	GBM-18-07786	CUTTER NUT	1
21	KBM-18-X1C	MEDIUM TOOTH CUTTER (SOLD SEPARATELY)	1
	KBM-18-X1H	HIGH TENSILE MATERIAL CUTTER (SOLD SEPARATELY)	
	KBM-18-X1A	DEEP TOOTH CUTTER (SOLD SEPARATELY)	
	GBM-18-FXS	FINE TOOTH CUTTER (SOLD SEPARATELY)	
22	KBM-18-106	CUTTER SHAFT WASHER	1
23	GBM-18-020-225	22.5 DEGREE ANGLE PIN (OPTIONAL)	1
	GBM-18-020-030	30 DEGREE ANGLE PIN	
	GBM-18-020-375	37.5 DEGREE ANGLE PIN (OPTIONAL)	
	GBM-18-020-045	45 DEGREE ANGLE PIN (OPTIONAL)	
	GBM-18-020-055	55 DEGREE ANGLE PIN (OPTIONAL)	
24	GK-161-002	WING SCREW M8-1.25 x 15mm	1
25	GK-112-129	M4-0.7 x 8mm BHCS	10
26	GK-107-140	M5-0.8 x 16mm SHCS	8
27	GBM-18-094	CUTTER FELT INSERT	1
28	GK-107-121	M8-1.25 x 25mm SHCS	10
29	GK-109-070	M16-2.0 HEX NUT	1
30	GK-107-144	M12-1.75 x 30mm SHCS	5
31	GK-107-106	M8-1.25 x 30mm SHCS	2
32	GK-107-139	M4-0.7 x 10mm SHCS	3
33	GK-108-144	M12-1.75 x 20mm HEX BOLT	6
34	GK-107-138	M8-1.25 x 90mm SHCS	7
35	GBM-18-015-A	0.5mm CUTTER SHIM (FOR USE WITH GROUND CUTTER)	INCLUDES (1) OF EACH - USE AS NEEDED
	GBM-18-015-B	1.0mm CUTTER SHIM (FOR USE WITH GROUND CUTTER)	
36	KBM-18-023	HANDLE	2
37	KBM-18-022	HANDLE SUPPORT	1
38	GK-108-151	M14-2.0 x 35mm HEX BOLT	8
39	GK-109-081	M14-2.0 HEX NUT	8
40	KBM-18-031	HEAVY DUTY WASHER	1
41	GK-136-070	LOCK WASHER 12mm BOLT	3
42	GK-105-105	M6 x 12mm FHSCS	3
43	KBM-18-076	LIFTING PLATE	1
44	KBM-18-081	TILTING FRAME	1
45	KBM-18-210	CUTTER SHAFT HOUSING WEAR PLATE	1
46	KBM-18-213	PIVOT ARM ASSEMBLY	1

## CLAMP ROLLER ASSEMBLY BREAKDOWN

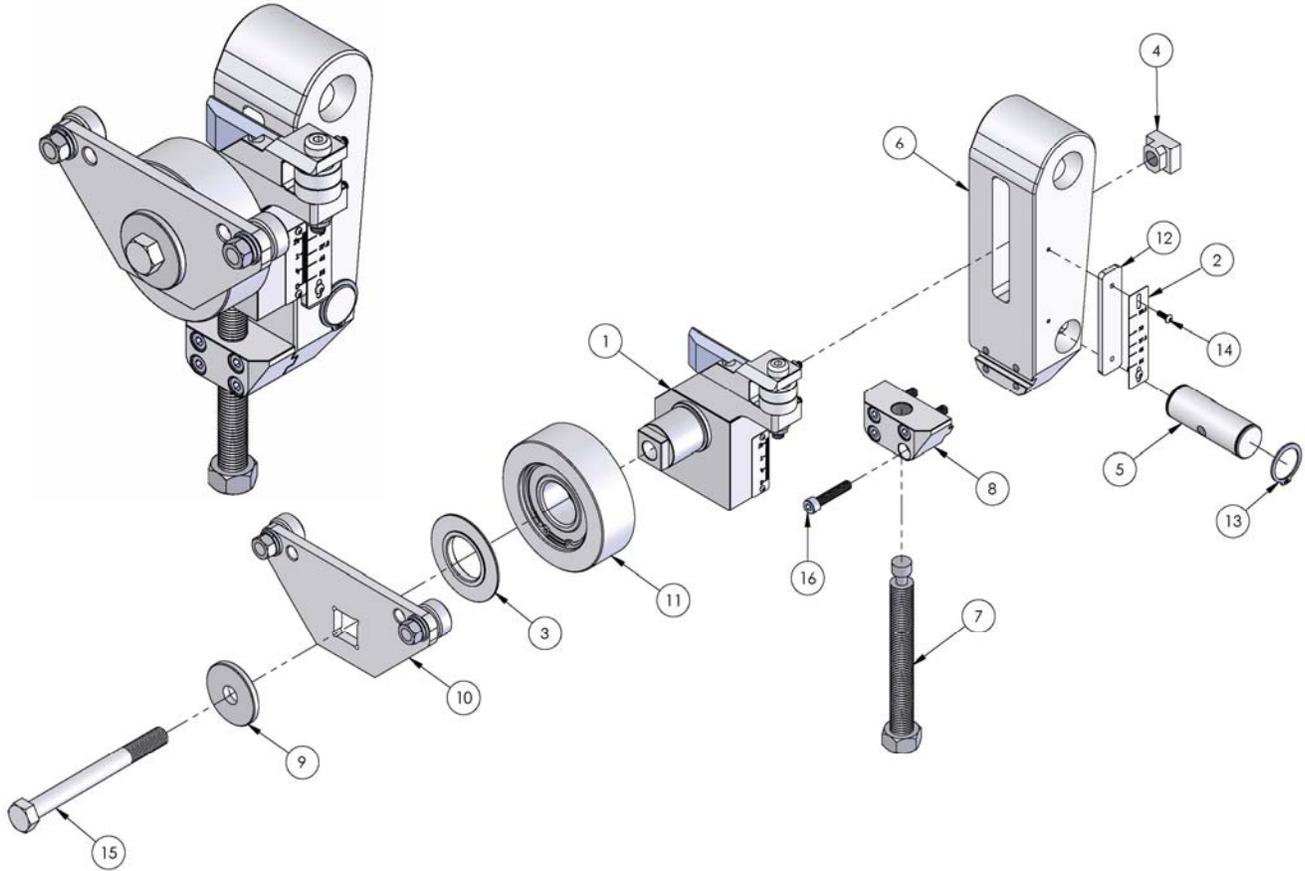
Part Number: KBM-18-024



ITEM	PART NUMBER	DESCRIPTION	QTY
1	KBM-18-051	CLAMP ROLLER BLOCK	1
2	KBM-18-049	CLAMP ROLLER	6
3	KBM-18-059	SLIDE SHAFT	2
4	GK-115-088	6mm x 26mm DOWEL PIN	6
5	KBM-18-060	SLIDE SHAFT SUPPORT PLATE	1
6	KBM-18-058	SLIDE SHAFT RETAINING PLATE	1
7	KBM-18-052	SCREW SHAFT	1
8	KBM-18-057	HAND WHEEL	1
9	KBM-18-053	BEARING WASHER	4
10	KBM-18-054	THRUST BEARING	2
11	KBM-18-110	REVOLVING HANDLE	1
12	GK-111-094	WASHER 6mm BOLT x 12 OD x 1.6	1
13	GK-112-130	M6-1.0 x 14mm BHCS	1
14	GK-107-123	M8-1.25 x 16mm SHCS	2

## PIVOT ARM ASSEMBLY BREAKDOWN

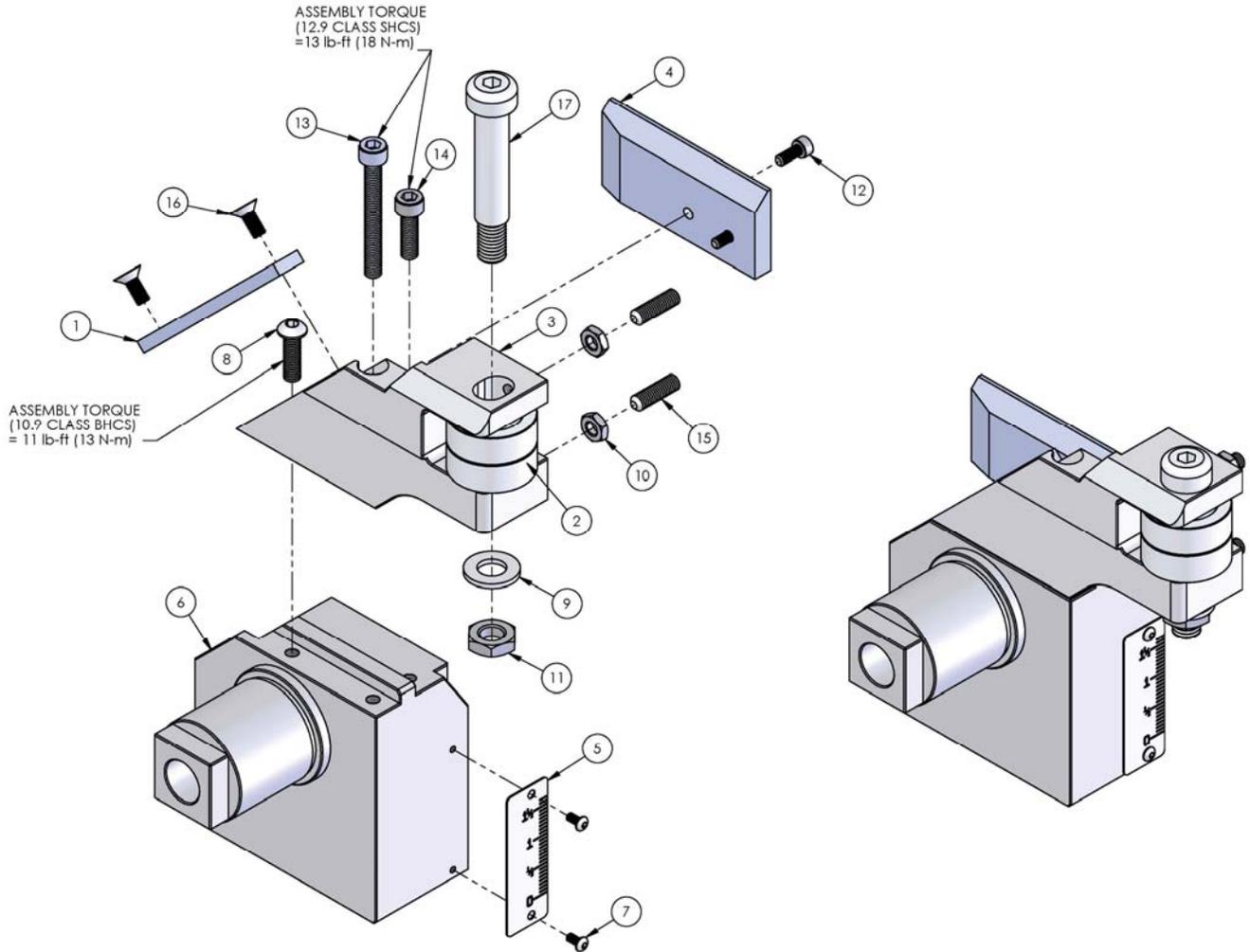
Part Number: KBM-18-213



ITEM	PART NO.	DESCRIPTION	QTY.
1	KBM-18-212	SLIDE BASE ASSEMBLY	1
2	KBM-18-112	ANGLE REFERENCE SCALE	1
3	KBM-18-097	COVER PLATE	1
4	KBM-18-046	T-NUT	1
5	KBM-18-043	ANGLE PIVOT PIN	1
6	KBM-18-042	PIVOT ARM BLOCK	1
7	KBM-18-039	SLIDE BASE ADJUSTING BOLT	1
8	KBM-18-038	ADJUSTING BOLT SUPPORT	1
9	KBM-18-031	HEAVY DUTY WASHER	1
10	KBM-18-029	SUPPORT ROLLER ASSEMBLY	1
11	KBM-18-026	MAIN ROLLER ASSEMBLY	1
12	KBM-18-021	SCALE SPACER	1
13	GK-119-067	30MM EXT. RETAINING RING x 1.5MM	2
14	GK-112-117	M4-0.7 x 12mm BHCS	2
15	GK-108-143	M16-2 x 160mm HEX BOLT	1
16	GK-107-111	M8-1.25 x 40mm SHCS	4

## SLIDE BASE ASSEMBLY BREAKDOWN

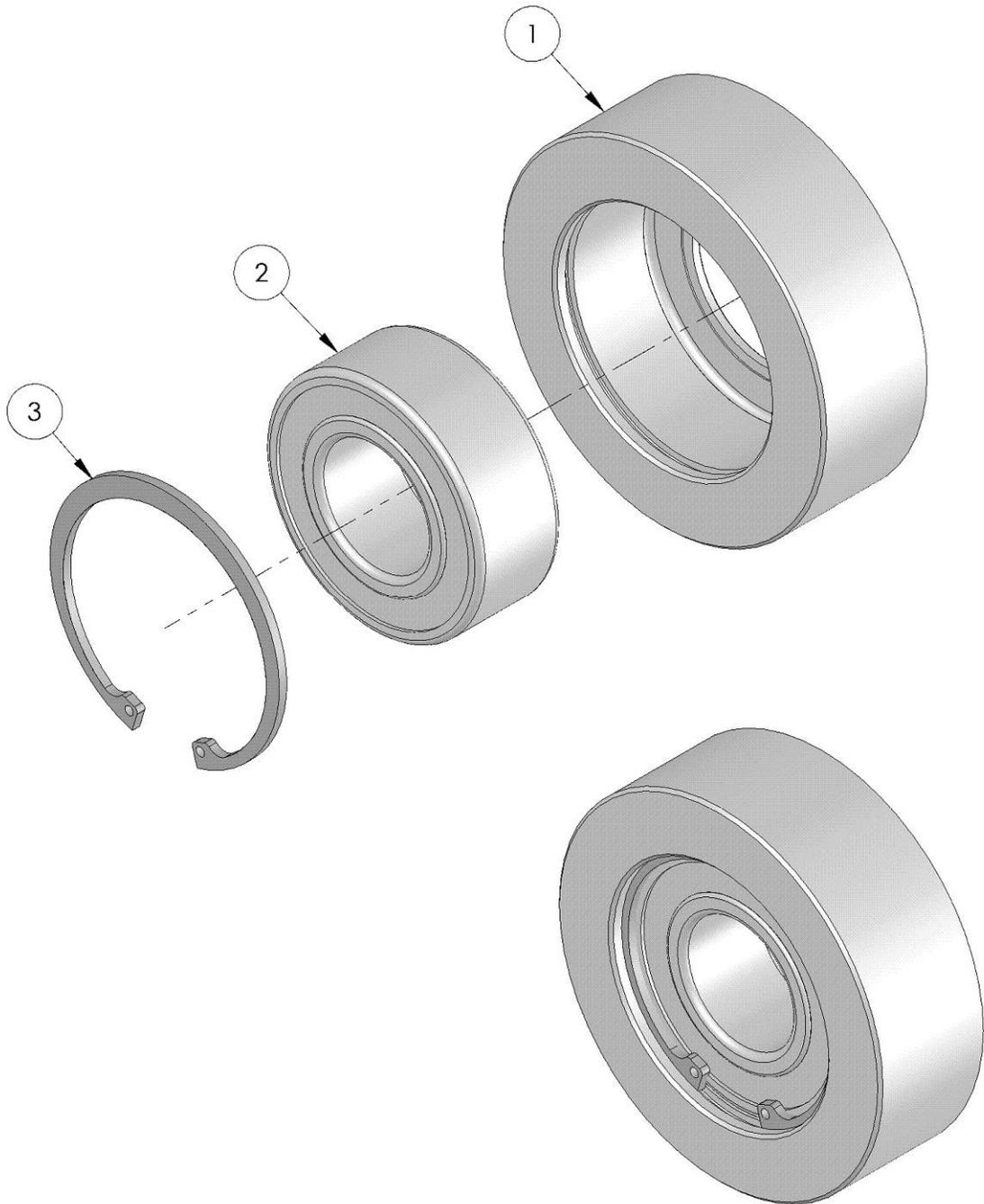
Part Number: KBM-18-212



ITEM	PART NO.	DESCRIPTION	QTY.
1	KBM-18-211	SLIDE BASE WEAR PLATE	1
2	KBM-18-064	GUIDE ROLLER	2
3	KBM-18-063	GUIDE ROLLER BRACKET	1
4	KBM-18-056-S	REAR CHIP DEFLECTOR	1
5	KBM-18-041	ROOT FACE SCALE	1
6	KBM-18-040	SLIDE BASE	1
7	GK-112-132	M3 x 6mm BHCS	2
8	GK-112-131	M6-1.0 x 20mm BHCS	1
9	GK-111-096	WASHER 10mm BOLT x 20 OD x 2	1
10	GK-110-071	M6 x 1.0 HEX HEAD JAM NUT	2
11	GK-110-070	M10 x 1.5 HEX HEAD JAM NUT	1
12	GK-107-139	M4-0.7 x 10mm SHCS	2
13	GK-107-136	M6-1.0 x 50mm SHCS	1
14	GK-107-120	M6-1.0 x 20mm SHCS	1
15	GK-106-086	M6-1.0 x 20mm SET SCREW	2
16	GK-105-100	M5-0.8 x 12mm FHSCS	2
17	GK-104-087	12mm x 50mm SHOULDER BOLT	1

## MAIN ROLLER ASSEMBLY BREAKDOWN

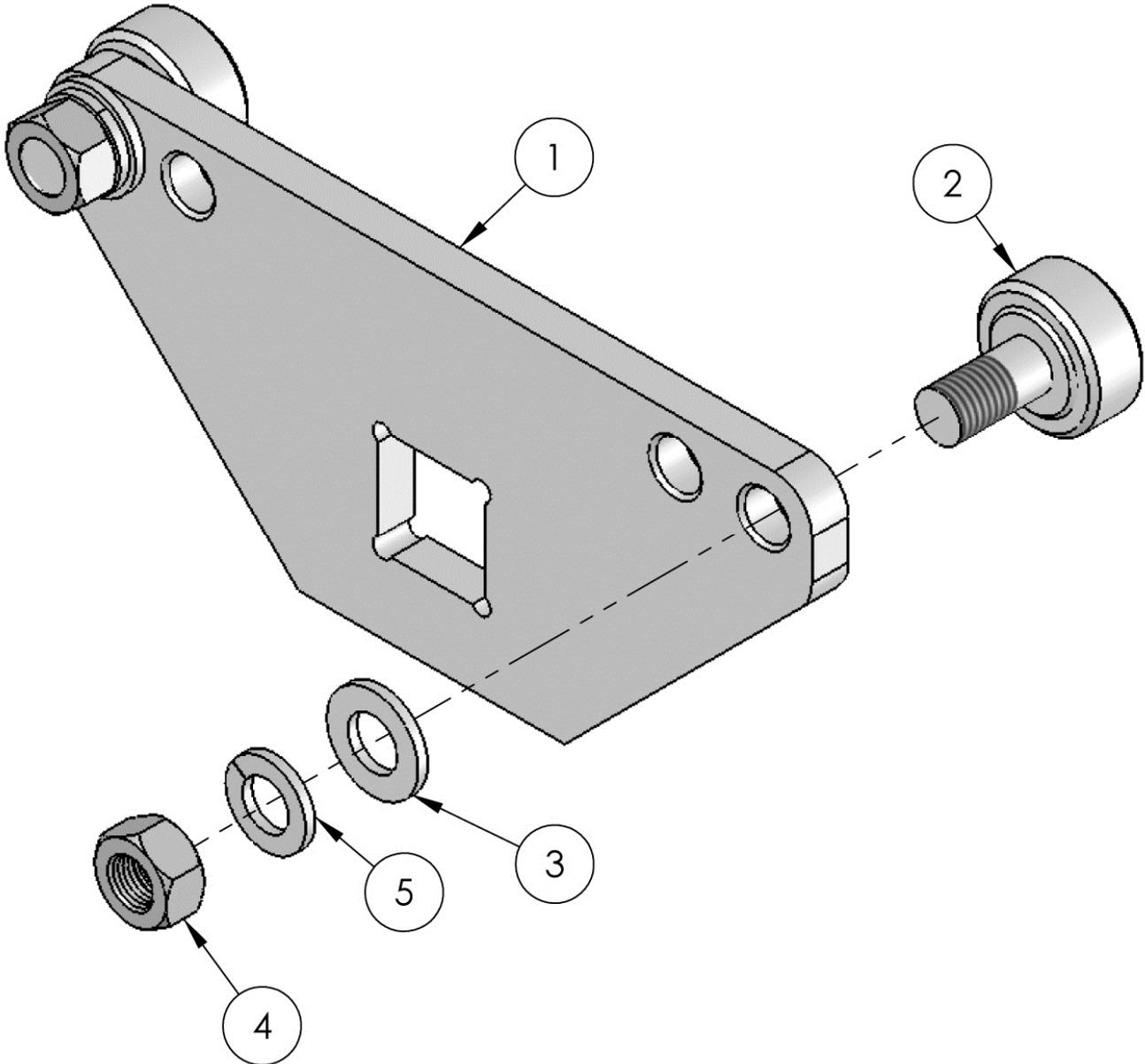
Part Number: KBM-18-026



ITEM	PART NUMBER	DESCRIPTION	QTY
1	KBM-18-067	MAIN ROLLER	1
2	KBM-18-05759	MAIN ROLLER BEARING	1
3	KBM-18-05230	80mm INTERNAL RETAINING CLIP	1

## SUPPORT ROLLER ASSEMBLY BREAKDOWN

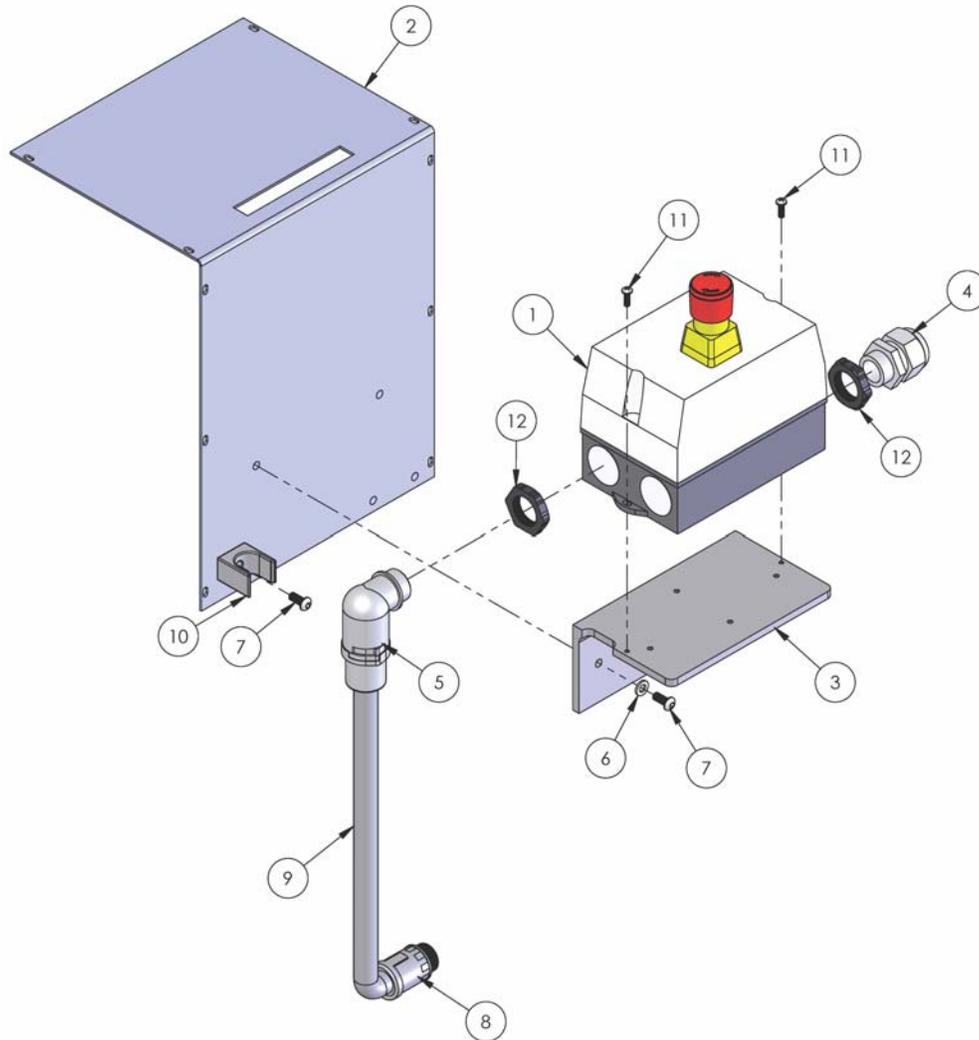
Part Number: KBM-18-029



ITEM	PART NUMBER	DESCRIPTION	QTY
1	KBM-18-066	SUPPORT ROLLER PLATE	1
2	KBM-18-108	SUPPORT ROLLER	2
3	GK-111-095	WASHER 12mm BOLT x 24 OD x 2.5	2
4	GK-109-069	M12-1.5 HEX NUT	2
5	GK-136-070	LOCK WASHER 12mm BOLT	2

## STARTER ASSEMBLY BREAKDOWN

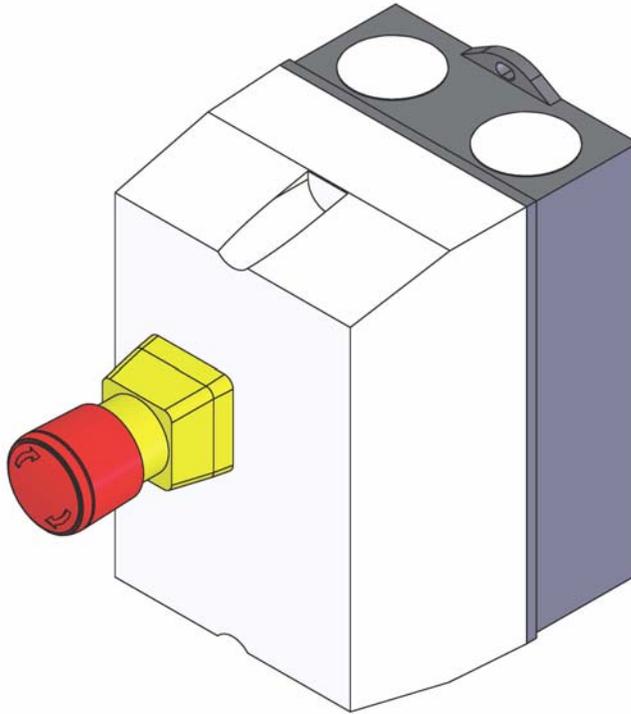
Drawing Number: KBM-18-214



ITEM	PART NO.	DESCRIPTION	QTY.
1	KBM-18-215-1	MANUAL STARTER ASSEMBLY (230V)	1
	KBM-18-215-2	MANUAL STARTER ASSEMBLY (380V, 415V & 460V)	
	KBM-18-215-3	MANUAL STARTER ASSEMBLY (575V)	
2	KBM-18-061	GEAR BOX COVER	1
3	KBM-18-107	STARTER MOUNTING BRACKET	1
4	GK-148-032	M25 CABLE GLAND	1
5	GK-148-031	M25-1.5MM 90 DEG. CONNECTOR	1
6	GK-111-094	WASHER 6mm BOLT x 12 OD x 1.6	2
7	GK-112-130	M6-1.0 x 14mm BHCS	3
8	GK-148-025	PG16 STRAIGHT CONNECTOR	1
9	RM-114-111	BLACK FLEX TUBE PMA	9"
10	GK-156-082	CO-FIX SYSTEM SUPPORT	1
11	GK-112-050	#8-32UNC x 1/2 RND HEAD SCREW	2
12	KBM-28-224	M25 X 1.5 LOCK NUT	2

## MANUAL STARTER ASSEMBLY BREAKDOWN

Drawing Number: KBM-18-215-1/2/3



### **KBM-18-215-1 (230V)**

PART NO.	DESCRIPTION	QTY.
KBM-28-215	SURFACE MOUNT ENCLOSURE WITH E-STOP	1
KBM-28-216	MANUAL MOTOR STARTER 6.3-10A	1
KBM-28-219	UNDERVOLTAGE TRIP RELEASE 230V	1

### **KBM-18-215-2 (380V, 415V & 460V)**

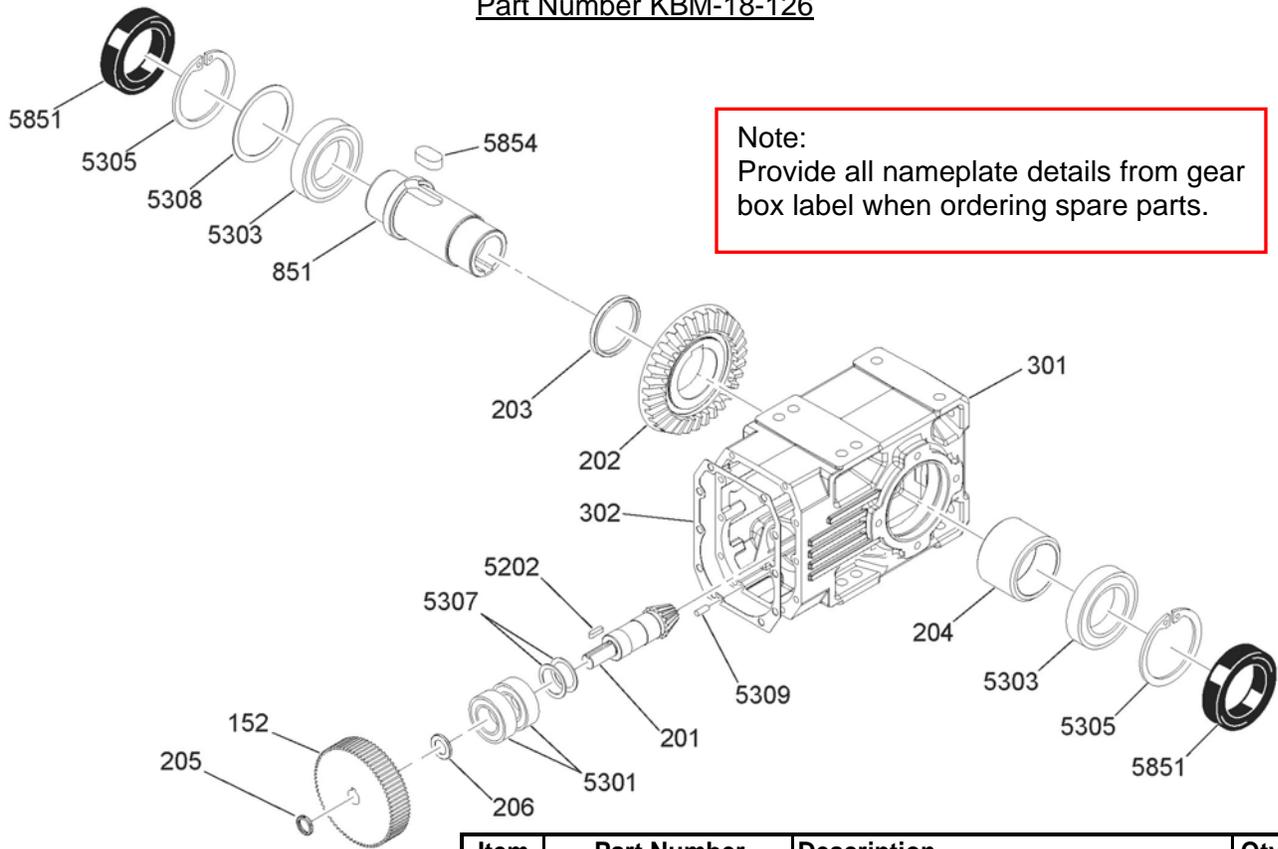
PART NO.	DESCRIPTION	QTY.
KBM-28-215	SURFACE MOUNT ENCLOSURE WITH E-STOP	1
KBM-28-217	MANUAL MOTOR STARTER 2.5-4A	1
KBM-28-220	UNDERVOLTAGE TRIP RELEASE 380V TO 460V	1

### **KBM-18-215-3 (575V)**

PART NO.	DESCRIPTION	QTY.
KBM-28-215	SURFACE MOUNT ENCLOSURE WITH E-STOP	1
KBM-28-217	MANUAL MOTOR STARTER 2.5-4A	1
KBM-28-221	UNDERVOLTAGE TRIP RELEASE 575V	1

## KBM®-18 MAIN GEARBOX BREAKDOWN

Part Number KBM-18-126



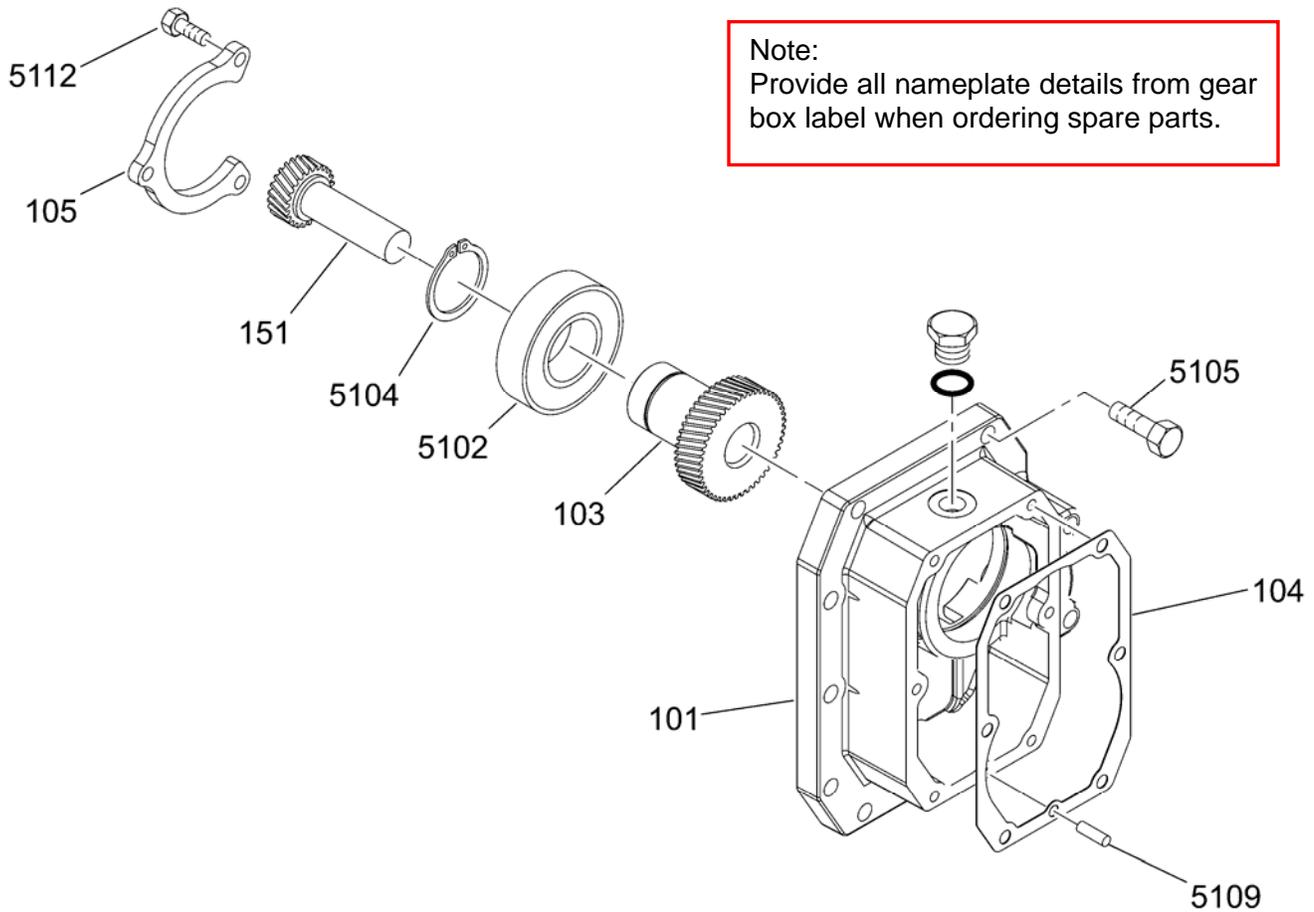
**Note:**  
Provide all nameplate details from gear box label when ordering spare parts.

If component damage occurs, Gullco strongly recommends replacing the KBM-18-127 Gearbox Sub Assembly, as it is more readily available and has been precision assembled & adjusted. Special tooling and procedures are required to rebuild these gearboxes and therefore not recommended.

Item	Part Number	Description	Qty
152	KBM-18-152	Gear	1
302	KBM-18-120-GL	Gasket	1
5309	GK-115-094	Dowel Pin 6x16	2

KBM-18-127		Gearbox Sub Assembly (All Items Below)	
201	Not Sold Individually	Bevel Pinion	1
202	Not Sold Individually	Bevel Gear	1
203	Not Sold Individually	Spacer Ring	1
204	Not Sold Individually	Spacer Ring	1
205	KBM-18-205	Ring Nut M20x1.5	1
206	Not Sold Individually	Spacer Ring	1
301	Not Sold Individually	Gear Housing	1
851	Not Sold Individually	Output Shaft	1
5202	KBM-18-5202	Key 6x6x25 C	1
5301	KBM-18-5301	Bearing 32007X	1
5303	KBM-18-5303	Bearing 6213	2
5305	KBM-18-5305	Circlip 120	2
5307	KBM-18-5307	Bevel Pinion Washer 35.3x48x1	1
5308	KBM-18-5308	Output Shaft Washer 100x120x1 R	1
5851	KBM-18-5851	Oil Seal 65x120x13 DL	2
5854	Not Sold Individually	Key 20x12	1

## KBM®-18 GEARBOX ADDITIONAL GEAR MODULE BREAKDOWN



If component damage occurs, Gullco strongly recommends replacing the KBM-18-201 Gear Module Assembly, as it is more readily available and has been precision assembled & adjusted. Special tooling and procedures are required to rebuild these gear modules and should only be performed by qualified technicians.

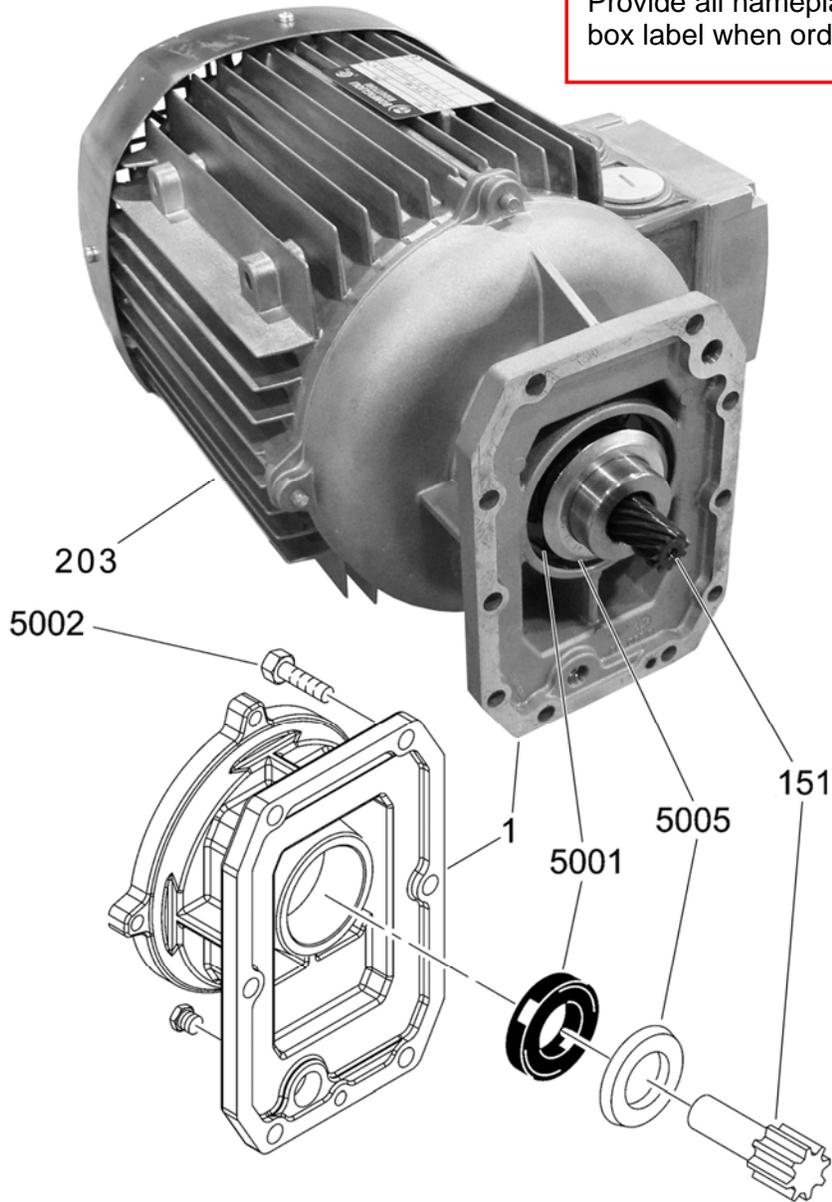
Item	Part Number	Description	Qty
104	KBM-18-120-GS	Gasket	1
151	KBM-18-151-PS	Pinion Gear	1
5105	GK-108-112	Bolt M8x25	9
	GK-108-161	Bolt M8x65	1
5109	GK-115-091	Dowel 5x16	1

	KBM-18-201	<b>Gear Module Assembly</b> (KBM-18-200 Module Sub Assy + KBM-18-151-PS Pinion Gear)	
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	KBM-18-200	<b>Additional Module Sub Assembly</b> (All items below)	
101	KBM-18-141	Additional Gear Module	1
103	KBM-18-142	Gear	1
105	KBM-18-143	Bearing Retainer	1
5102	KBM-18-144	Bearing 3206-2RS	1
5104	GK-119-072	External Retaining Clip 30	1
5112	GK-108-122	Bolt T.E. M6x16	3

## **KBM®-18 MOTOR ASSEMBLY BREAKDOWN**

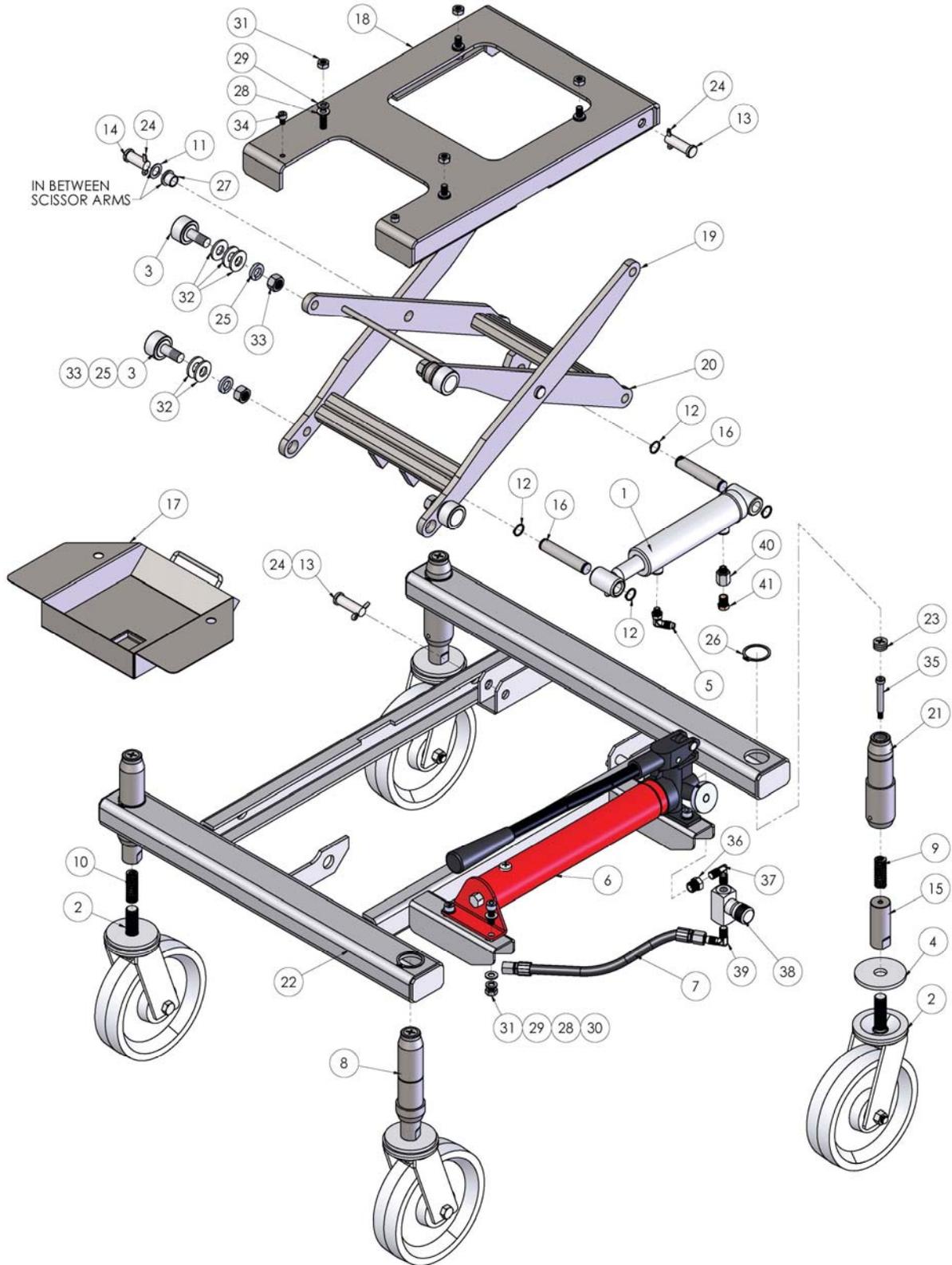
Note:  
Provide all nameplate details from gear  
box label when ordering spare parts.



Item	Part Number	Description	Qty
203	KBM-18-203-A	230/460V Motor Assembly (KBM-18-100-A, -B, -C & D) Includes items 1, 151, 5001 & 5005	1
	KBM-18-203-B	575V Motor Assembly (KBM-18-100-E) Includes items 1, 151, 5001 & 5005	
1	KBM-18-207	Cover	1
151	Not Sold Individually	Pinion Gear	1
5001	KBM-18-5001	Oil Seal	1
5002	KBM-18-5002	Bolt 6 x 20	10
5005	KBM-18-5005	Gamma Seal	1

# OPTIONAL HYDRAULIC UNDERCARRIAGE ASSEMBLY BREAKDOWN

Part Number: KBM-18-080



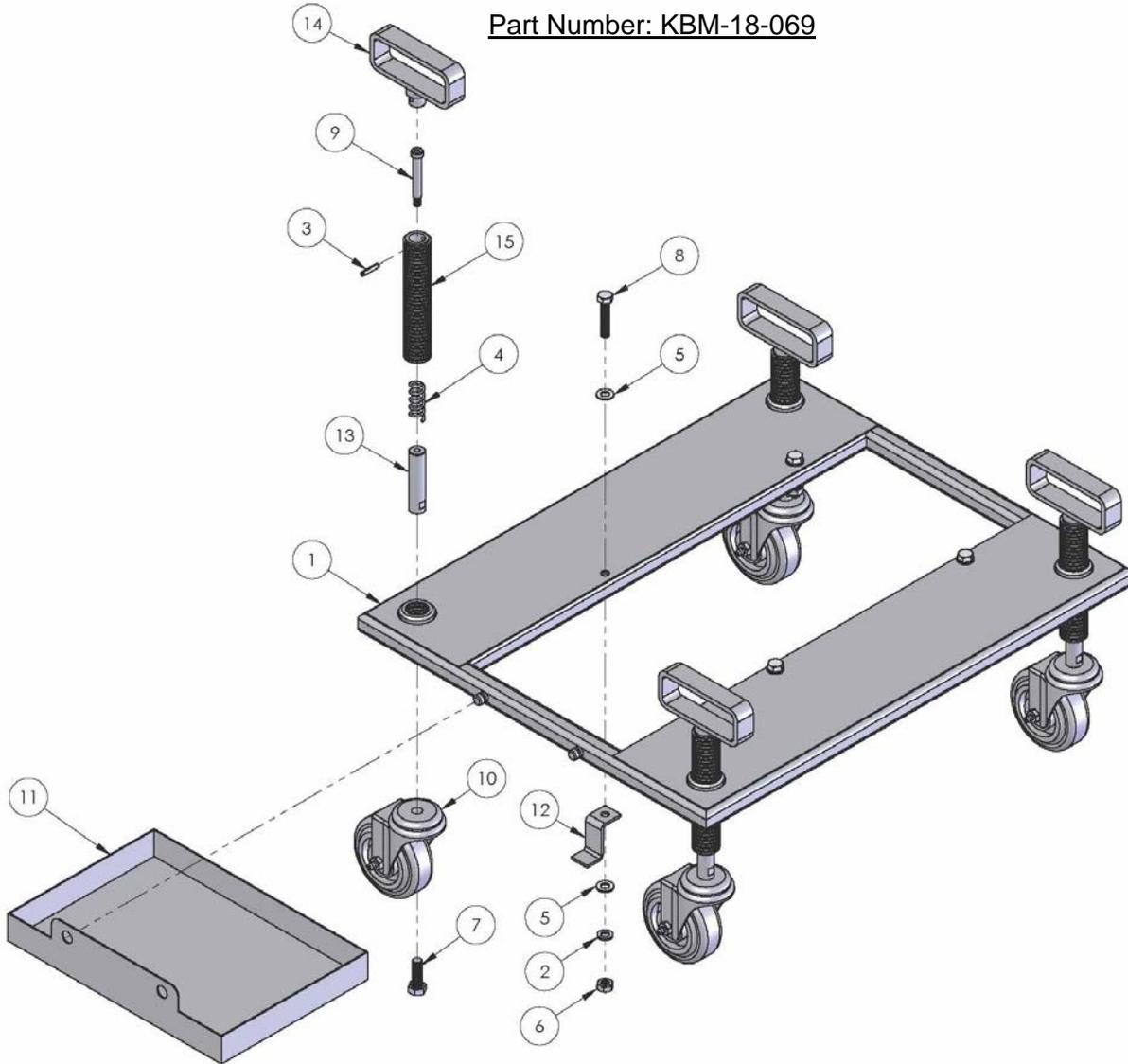
## OPTIONAL HYDRAULIC UNDERCARRIAGE ASSEMBLY BREAKDOWN

Part Number: KBM-18-080

ITEM	PART NO.	DESCRIPTION	QTY.
1	KBM-18-173	1.5" BORE X 4" STROKE HYDRAULIC CYLINDER	1
2	KBM-28-116	8" SWIVEL CASTER	4
3	KBM-28-109	CRS-26 CAM FOLLOWER	4
4	KBM-28-091	WHEEL SPACER	4
5	KBM-18-199	90°ELBOW ADAPTER MJIC-6 TO MORB-4	1
6	KBM-18-192	HAND PUMP 3000 PSI	1
7	KBM-18-191	HYDRAULIC HOSE	1
8	KBM-18-178	FRONT CASTER SUPPORT STRUT	2
9	KBM-18-175	DIE SPRING - RED	2
10	KBM-18-174	DIE SPRING - GOLD	2
11	KBM-18-172	SHIM RING 5/8" ID X 1" OD X .047" THK	2
12	KBM-18-171	.75 EXT. RETAINING RING x .042	4
13	KBM-18-170	5/8 X 1.77 CLEVIS PIN	4
14	KBM-18-169	5/8 X 1.27 CLEVIS PIN	2
15	KBM-18-168	CASTER PIN	4
16	KBM-18-167	HYDRAULIC CYLINDER PIN	2
17	KBM-18-166	CHIP TRAY (OPTIONAL)	1
18	KBM-18-165	TABLE TOP	1
19	KBM-18-164	OUTER SCISSOR ARM	1
20	KBM-18-163	INNER SCISSOR ARM	1
21	KBM-18-162	REAR CASTER SUPPORT STRUT	2
22	KBM-18-160	CHASSIS	1
23	GK-171-405	NYLASTIC PLUG	4
24	GK-142-002	COTTER PIN, 1/8 X 3/4	6
25	GK-136-064	LOCK WASHER 5/8 BOLT	4
26	GK-119-068	40MM EXTERNAL RETAINING RING	4
27	GK-118-088	5/8" BRONZ BUSHING	2
28	GK-111-096	WASHER 10mm BOLT x 20 OD x 2	12
29	GK-136-069	LOCK WASHER 10mm BOLT	8
30	GK-107-083	M10-1.5 x 30mm SHCS	4
31	GK-109-075	M10-1.5 HEX NUT	8
32	GK-111-078	BLACK OX. WASHER 5/8 BOLT x 1-3/8 OD x 0.130	10
33	GK-109-085	5/8-18UNF HEX NUT GR.8	4
34	GK-107-122	M8-1.25 x 12mm SHCS	2
35	GK-104-075	3/8 x 2-1/4 SHOULDER BOLT	4
36	KBM-18-197	3/8" NPT TO 1/4" BUSHING ADAPTER	1
37	KBM-28-119	1/4" NPT 90 ELBOW MALE	1
38	KBM-28-108	FLOW CONTROL VALVE	1
39	KBM-28-111	1/4" NPT TO 3/8" TUBE 90 ELBOW MALE	1
40	KBM-18-198	FNPT-4 TO MORB-4 ADAPTOR	1
41	KBM-28-117	1/4" BREATHER PLUG	1

## OPTIONAL UNDERCARRIAGE ASSEMBLY BREAKDOWN

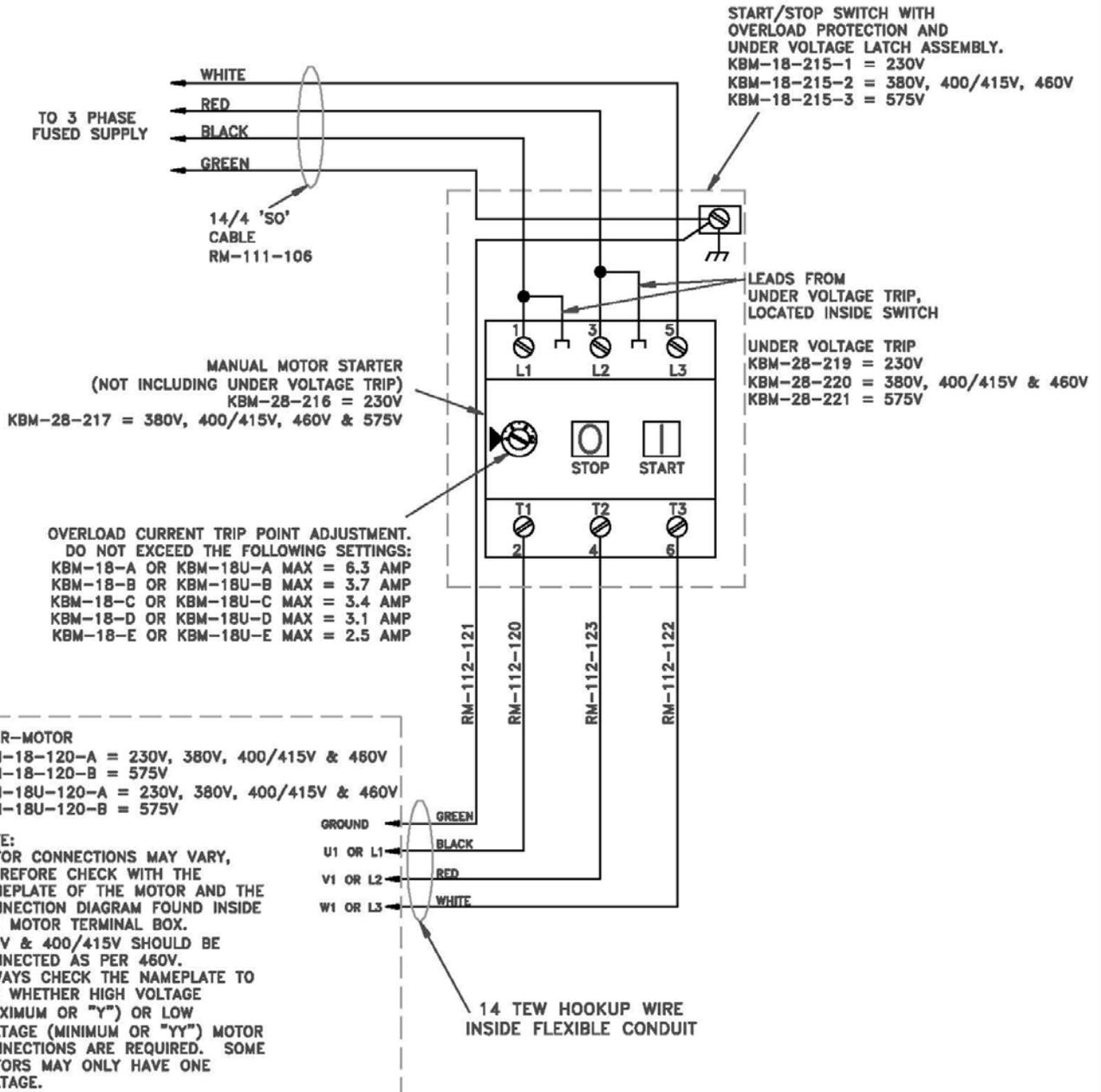
Part Number: KBM-18-069



ITEM	PART NO.	DESCRIPTION	QTY.
1	KBM-18-089	BASE FRAME	1
2	GK-136-069	LOCK WASHER 10mm BOLT	4
3	GK-117-026	3/16 x 1 SPRING PIN	4
4	GK-116-022	SPRING	4
5	GK-111-096	WASHER 10mm BOLT x 20 OD x 2	8
6	GK-109-075	M10-1.5 HEX NUT	4
7	GK-108-134	M12-1.75 x 35mm HEX BOLT	4
8	GK-108-124	M10-1.5 x 50mm HEX BOLT	4
9	GK-104-075	3/8 x 2-1/4 SHOULDER BOLT	4
10	GBM-18-093	SWIVEL CASTER	4
11	GBM-18-092	CHIP TRAY (OPTIONAL)	1
12	GBM-18-091	CHIP TRAY MOUNTING BRACKET	2
13	GBM-18-087	CASTER PIN	4
14	GBM-18-086	HANDLE	4
15	GBM-18-084	HEIGHT ADJUSTMENT SCREW	4

# KBM®-18 WIRING SCHEMATIC

Drawing Number: KBM-18-215-SCH



## **REVISIONS LIST**

### **October, 2006**

- Page 40 Changed 2 x mounting bolts from BHCS to Hex Bolts.  
Page 41 & 43 Updated to reflect common components between 380V & 415V 50Hz machines.

### **November, 2006**

- Title Page Updated Gullco Australia's phone and fax numbers.

### **January, 2007**

- Title Page Updated Gullco India's contact details and Gullco USA's e-mail address.  
Page 7 Updated the product label.  
Page 30 Added instruction to store/ship machine with cutter in place to avoid loss of spacer.

### **March, 2007**

- Title Page Updated Gullco contact details.  
Page 7 Updated the product label.  
Page 41 Manual Starter for 575V was GBM-18-019-02 (now GBM-18-019-03).  
Page 43 Updated wiring schematic including new Current Trip Point Values (F.L.A. ratings).  
General Changed references of 415V to 400/415V.

### **January, 2008**

- Title Page Updated Gullco contact details.  
Page 7 Revised the S.C. Rating on the Product labels.  
Page 32 Inserted additional Troubleshooting page (resulted in page numbering changes).  
General Revised to reflect optional undercarriage.

### **February, 2008**

- Page 44 Added KBM-18 Gearbox Input Assembly Breakdowns page.

### **March, 2008**

- Page 43 Added Part Number KBM-18-126 to page.

### **April, 2008**

- Pgs 43-45 Updated Motor and Gearbox Breakdown Assemblies.

### **October, 2008**

- Page 33 Added trouble shooting details of when to move the Support Rollers in (resulted in page numbering changes)

### **October, 2015**

- Title Page Updated Gullco contact details.  
Overall General update to include optional hydraulic undercarriage, KBM-18-080.

### **September, 2017**

- Title Page Updated Gullco contact details.  
Overall General update to include wear plates, drawings KBM-18-212 (item 1) & KBM-18-100 (item 45).

May, 2018

Pgs 45, 46 & 53 Updated starter details and part numbers.

Sept, 2019

Pgs 39 Corrected part number and description, item 44 was KBM-18-068

**ADDITIONAL NOTES**

Specifications and products are subject to change without notice.  
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Only use genuine/authorized replacement parts.



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QUICK SETUP TIME

## KAT® OSCILLATOR

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- Motorized stroke width
- Oscillation speed control
- Store up to 10 welding programs



PORTABLE PLATE EDGE  
BEVELLING MACHINE  
QUICK SETUP TIME

## KBM®

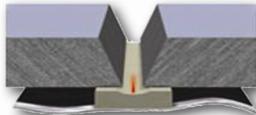
- Produce clean bevels with no thermal distortion
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