Operation Manual

92-1942 Rev. 250307

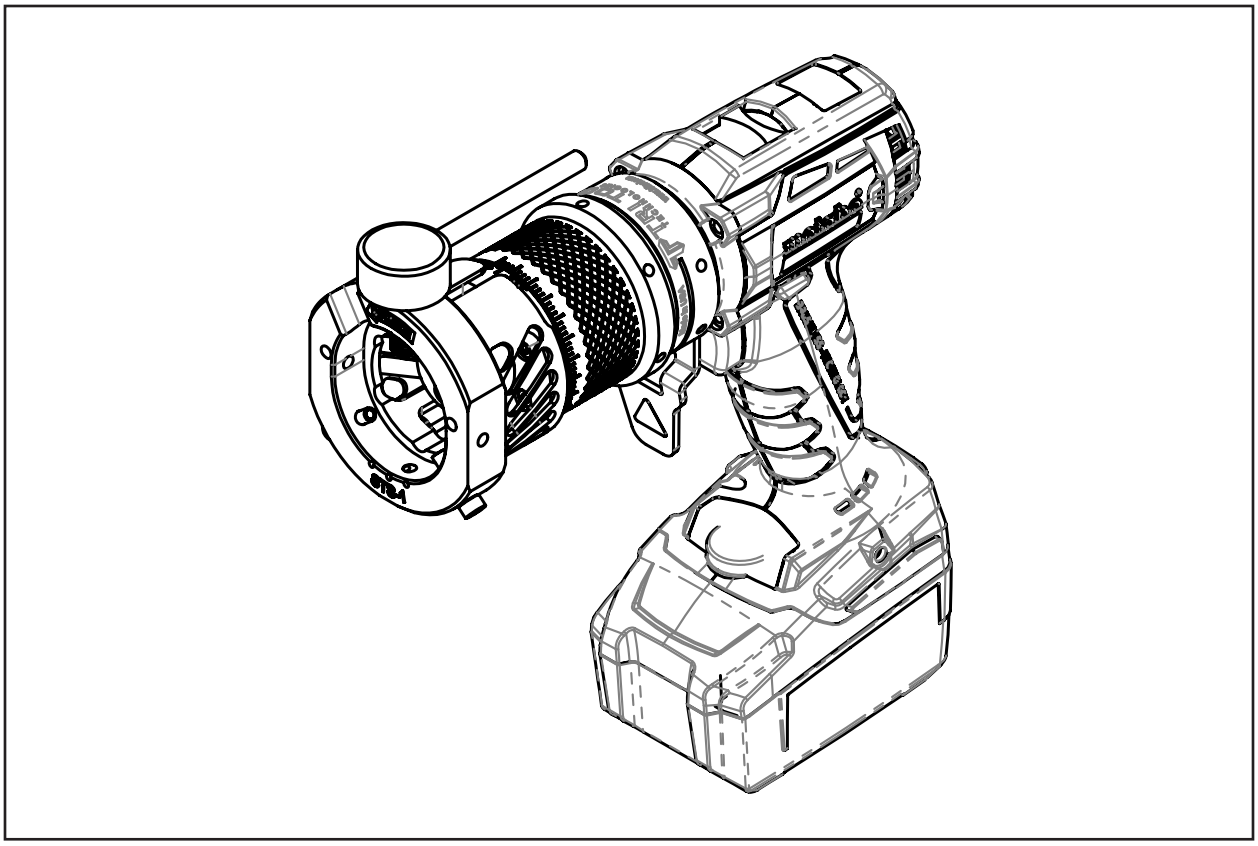
Model STS-1/STS-2 Tube Squaring Machine

TRI TOOL TECHNOLOGIES

ABOUT TRI TOOL TECHNOLOGIES

At Tri Tool Technologies, we are committed to your success through relentless innovation and powerful partnership. We insist on developing tools and equipment that exceed your expectations of performance, precision, safety, and durability. As a full-service engineering firm, we are here to support you every step of the way.

For more information on engineered solutions, products, and trainings, visit tritool.com or contact our engineers at +1 (916) 288-6100.



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Tri Tool Technologies Warranty

LIMITED WARRANTY: All products manufactured by Seller are warranted to be free from defects in materials and workmanship under normal use. The period of this warranty shall be three years from the date of shipment for all products, except for welding and Non-Standard Products which shall be one year from the date of shipment. The Buyer shall bear all shipping, packing and insurance costs and all other costs to and from a designated repair service center. All return goods must be authorized in advance and communicated upon issuance of a Return Material Authorization (RMA) by Seller. The product will be returned to the Seller accompanied by a RMA number and associated paperwork, freight prepaid and billed to the Buyer. This warranty is not transferable and will not apply to tool bits or other consumables, or to any Goods to have been (i) mishandled, misused, abused or damaged by Buyer or any third party; (ii) altered without the express permission in writing by Seller, (iii) repaired by a party other than Seller without Seller's prior written approval; or (iv) improperly stored, installed, operated, or maintained in a manner inconsistent with Seller's instructions. This warranty does not apply to defects attributed to (i) normal wear and tear or (ii) failure to comply with Seller's safety warnings.

No warranty for any parts or other supplies provided to seller by buyer, whether or not they are incorporated into goods. Goods supplied by seller which are designed or manufactured by a third party are subject strictly to the third party's warranty for those goods. Seller makes no warranty and disclaims all statutory or implied warranties for these goods, including the implied warranties of merchantability, freedom from patent infringement and fitness for a particular purpose.

Neither this warranty nor any other warranty, expressed or implied, including implied warranties of mechanical ability, fitness for a particular use, or merchantability, shall extend beyond the warranty period. No responsibility is assumed for any incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts and some states do not allow the exclusion or limitations incidental or consequential damages, so the above limitation of exclusion does not apply to all Buyers. This warranty gives the Buyer specific legal rights. Other rights vary from state to state.

Warranty Claims and Remedies

Buyer must promptly notify Seller in writing during the applicable warranty period, of any defective Goods covered by Seller's warranties under the Limited Warranty section herein, and no later than fifteen (15) calendar days after discovery of the defect. Seller has no obligation to honor any warranty claim made after the expiration of the warranty period. However, despite the expiration of the warranty period, Seller, at its reasonable discretion, may accept warranty claims submitted up to fifteen (15) calendar days after the expiration of the warranty period provided that Buyer provides Seller with credible and persuasive documentary evidence that the defect was discovered during the warranty period. No warranty claims submitted after this fifteen (15) day calendar period will be considered by Seller.

Buyer's notice of a defective Goods must identify the specific Goods affected, and the nature of the defect. It is required when returning the defective Goods, that it is suitably packed, fully insured, and transportation and insurance prepaid in accordance with instructions issued by Seller. Seller, at its sole option, will either repair or replace any Goods authorized for return to Seller. Such repair, replacement, or credit shall be Buyer's sole remedy for defective Goods. Buyer must promptly provide Seller with all information requested regarding the identified defect.

If the defect claimed by Buyer cannot be reproduced or otherwise verified by Seller, the Goods will be returned to Buyer unmodified at Buyer's expense.

The warranty period for repaired or replaced Goods shall be (i) ninety (90) days or (ii) the unexpired portion of the original warranty period. Under no circumstances is Seller liable for recall, retrieval, removal, dismantling, re-installation, redeployment, or re-commissioning of any defective Goods or any costs associated therewith.

Tool Bit Resharpening Policy

Buyer is required to check all tool bits prior to returning and ensure they are packaged well for shipment. The price structure is available from the Seller's sales coordinator. Seller cannot resharpen badly gouged, chipped, or broken tool bits. Seller will return tool bits that are not suitable for resharpening with the tool bits that were resharpened upon Buyer's request. Buyer is responsible for all shipping charges to and from Seller.

1. ABOUT THE MANUAL

Copyright

Disclaimer

The instructions and descriptions in this manual were accurate when the manual was written. However, the information in the manual is subject to change without notice. Check for updated information before you start any job. The Tri Tool Technologies web site has the most current information.

Do not operate or work on this equipment unless you have read and understood the instructions in this Manual. Failure to follow the instructions or follow the safety instructions could result in serious injury or death. This manual describes conditions and hazards that are common and anticipated during equipment operation. No manual can address all conditions which may occur.

Safety Symbols

The manual may contain one or more safety symbols. These symbols and the associated text warn you of potentially hazardous conditions. Examples of the safety symbols and the associated text follow:

DANGER

DANGER: Indicates a hazardous situation that, if not avoided, will result in serious injury or death.

WARNING

WARNING: Indicates a hazardous situation that, if not avoided, could result in serious injury or death.

CAUTION

CAUTION: Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury, or cause property damage.

 GLASSES	**SAFETY GLASSES: Indicates a hazardous situation that requires the use of safety glasses.**
 HOT SURFACE	**HOT SURFACE: Indicates a hazardous situation that hot surfaces may be present.**
 GLOVES	**GLOVES: Indicates a hazardous situation that requires glasses.**
 SHOCK HAZARD	**ARC FLASH & SHOCK HAZARD: High voltage. Entry by authorized personnel only. Appropriate PPE and tools required when working on this equipment.**
 READ MANUAL	**READ MANUAL: Read manual before use, refer to manual for Tri Tool Technologies machine being used.**
 DISCONNECT FROM POWER	**DISCONNECT FROM POWER: Disconnect main plug from electrical outlet before performing all maintenance.**

2. SAFETY PRECAUTIONS

In General

Use standard safety equipment such as: hard hats, safety shoes, safety harnesses, protective clothes, and other safety devices when appropriate.

Operate this tool only in accordance with specific operating instructions.

WARNING: Do not override the dead-man switch on the power unit. Locking down, obstructing, or in any way defeating the dead-man switch on the power drive unit may result in serious injury.

Personal Protective Equipment

Use standard safety equipment such as: hard hats, safety shoes, safety harnesses, protective clothes, and other safety devices when appropriate.

Wear safety glasses.

Do not wear loose clothing or jewelry.

Wear nonskid footwear.

Put long hair in a cap or a net to make sure hair does not get tangled in equipment.

Personnel

Only personnel who are trained or are being trained may operate the equipment.

Keep the operation manual available where the equipment is used.

The operator must read the operation manual before using the equipment.

The equipment must be operated in accordance with the manual information.

The operator must follow the safety precautions in this manual and good engineering practices to reduce the risk of injury.

Before using the equipment, the operator must ensure that all safety messages on the equipment are legible.

Work Area

Keep the work area clean.

Keep the area well lit.

Keep items such as electrical cords, cables, rags, rigging straps, away from rotating equipment.

Do not use power-cutting tools in the presence of flammable liquids and gases.

Do not let visitors or untrained personnel near tools that are in use.

Ensure all observers wear eye protection.

Keep proper footing at all times.

Area Equipment

Secure the pipe with clamps, vises, chains or straps.

Ensure that both sides of the pipe at the cut site are fully supported so that the pipe will not move after the cut is completed. Long lengths of pipe may be under load and the separation of the pipe can release pressure. This pressure can cause both sides of the pipe to move.

Tool Care

Keep tools in good operating condition. Sharp tool bits perform better and are safer than dull tool bits.

Do not use damaged tools. Always check your tools for damage especially if a tool has malfunctioned, been dropped or hit, check it for damage.

Before you start operating the equipment, do no-load tests and feed function checks.

Tool Use

Use the right tool and tool bit for the job. Contact Tri Tool Technologies to help with your application.

Keep the tool bits fully engaged in the tool bit holders. Loose bits are sharp and can cause cuts or punctures.

Disconnect power supply during setup and maintenance. Use all ‘Stop’ or Shut off’ features available when changing or adjusting tool bits, maintaining the tool, or when the tool is not in use.

Remove adjusting keys and wrenches before applying power to the equipment. Check the tool before turning it on to make sure that all keys and wrenches have been removed.

Do not force tools. Tools and tool bits function better and safer when used at the recommended speeds.

Do not reach into rotating equipment.

Do not reach into the rotating head stock to remove chips, to make adjustments, or to check the surface finish.

Handle chips with care. Chips have very sharp edges and are hot. Do not try to pull chips apart with bare hands.

Store tools properly. Disconnect tools from the power source, remove the tool bits, and store in a safe place.

3. GENERAL DESCRIPTION

The STS-1/STS-2 Tube Squaring Tool is designed specifically to prepare tubes for autogenous welding.

The STS-1/STS-2 uses an OD saddle clamping system for holding and rounding the tube. It accepts its torque through the saddle clamping system.

Speed is controlled by a variable speed electric motor. Feed is actuated by rotating an inline feed collar.

The STS-1 will face .125” (3.2mm) to 1.125” (28.6mm) outside diameter tubing with a wall thickness up to .125” (3.2mm).

The Standard saddle clamping system for the STS-1 requires a straight length of tube .60” (15.2mm) long.

The Short Perch saddle clamping system for the STS-1 requires a straight length of tube .19” (4.8mm) long.

The STS-2 will face .188” (4.8mm) to 2.5” (63.5mm) outside diameter tubing with a wall thickness up to .200” (5.1mm).

The Standard saddle clamping system for the STS-2 requires a straight length of tube .875” (22.2mm) long.

The Short Perch saddle clamping system for the STS-2 requires a straight length of tube .19” (4.8mm) long.

DESIGNATIONS FOR THE MODEL STS-1/STS-2

Model No.	P/N	Description
STS-1 B	01-2534	Electric Motor, Battery Powered, 18V (115V charger)
STS-1 B	01-2535	Electric Motor, Battery Powered, 18V (230V charger)
STS-1 E120	01-2536	115VAC Electric Motor (Metabo)
STS-1 E220	01-2537	230VAC Electric Motor (Metabo)
STS-1 E100	01-2543	Electric Motor (Makita) 100V (Japan only)
STS-1 B	01-2542	Electric Motor, Battery Powered, 18V (100V charger Japan only)
STS-2 B	01-2538	Electric Motor, Battery Powered, 18V (115V charger)
STS-2 B	01-2539	Electric Motor, Battery Powered, 18V (230V charger)
STS-2 E120	01-2540	115VAC Electric Motor (Metabo)
STS-2 E220	01-2541	230VAC Electric Motor (Metabo)
STS-2 E100	01-2545	Electric Motor (Makita) 100V (Japan only)
STS-2 B	01-2544	Electric Motor, Battery Powered, 18V (100V charger Japan only)

4. SPECIFICATIONS

MODEL STS-1/STS-2 with Motor

POWER REQUIREMENTS

Model STS-1/STS-2 115	115 VAC +/- 10%, 50 - 60 Hz
Model STS-1/STS-2 230	230 VAC +/- 10%, 50 - 60 Hz

WEIGHTS

Base Machine, STS-1	3.1 lbs. (1.4 Kg)
Base Machine, STS-2	6.1 lbs. (2.8 Kg)
Cordless Metabo Motor	4.2 lbs. (1.9 Kg)
Corded Metabo Motor	5.6 lbs. (2.5 Kg)

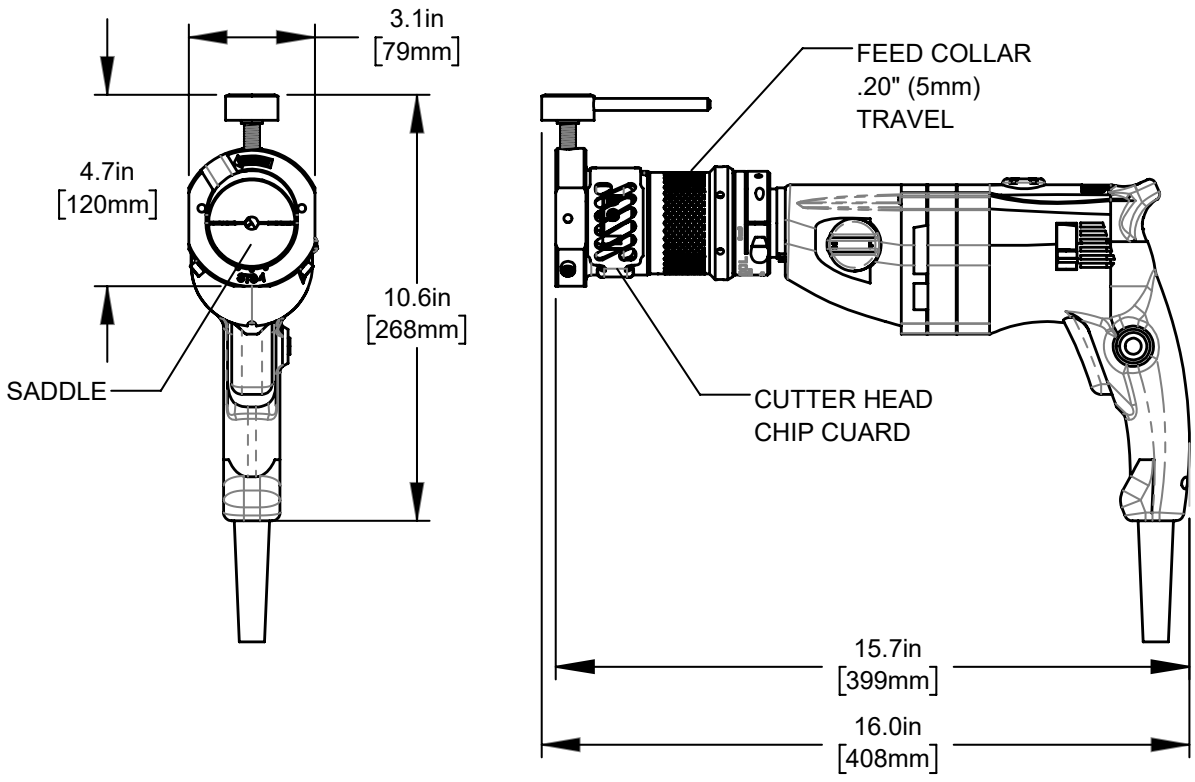


Figure 1: Envelope Drawing STS-1 Corded Motor (115V, 230V)

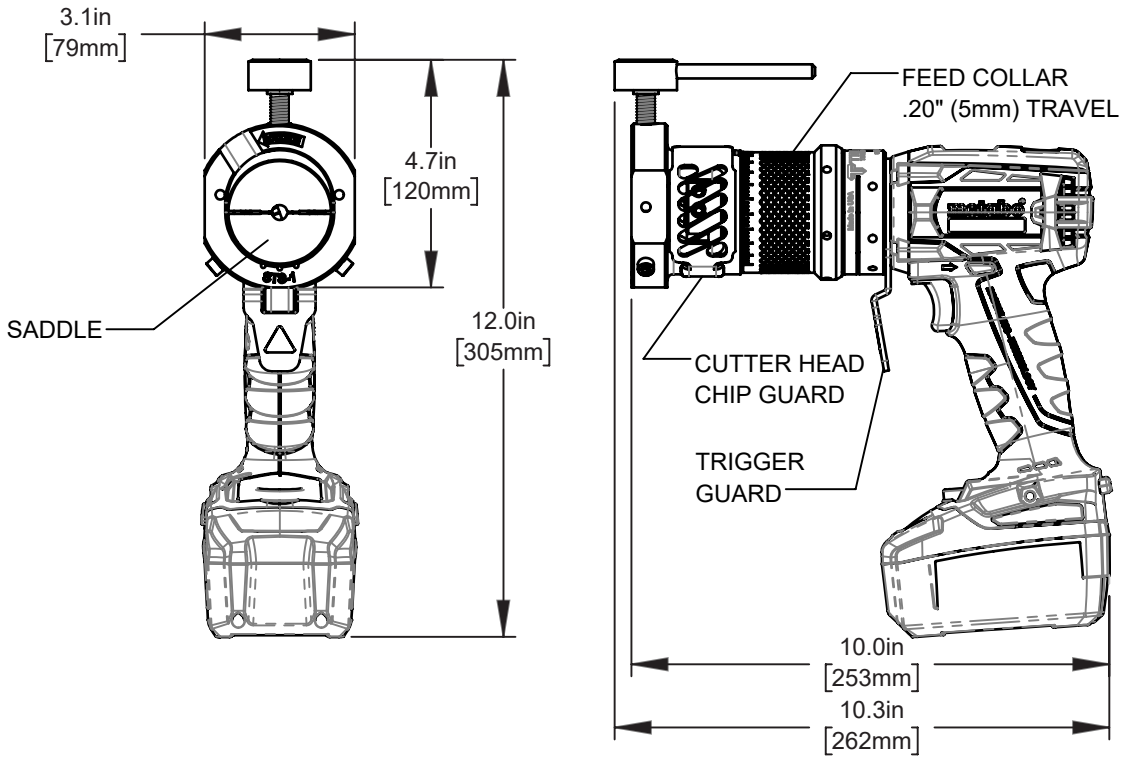


Figure 2: Envelope Drawing STS-1 Cordless Motor (18VDC)

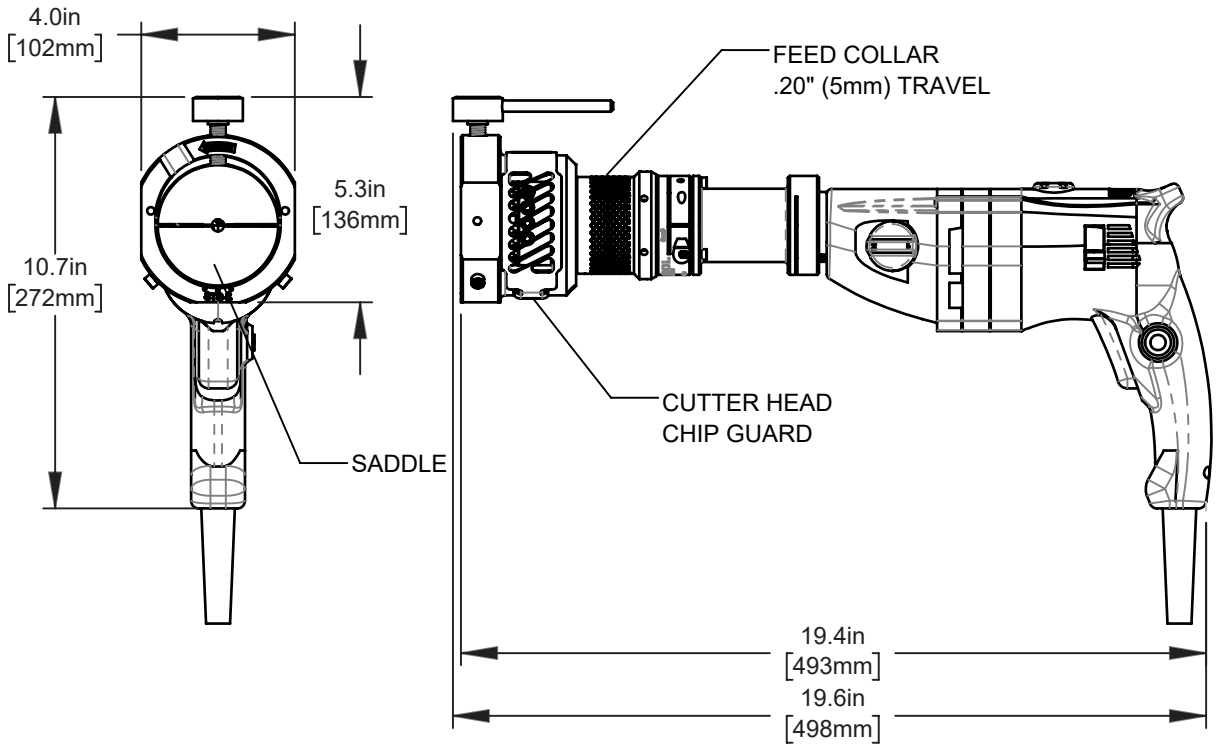


Figure 3: Envelope Drawing STS-2 Corded Motor (115V, 230V)

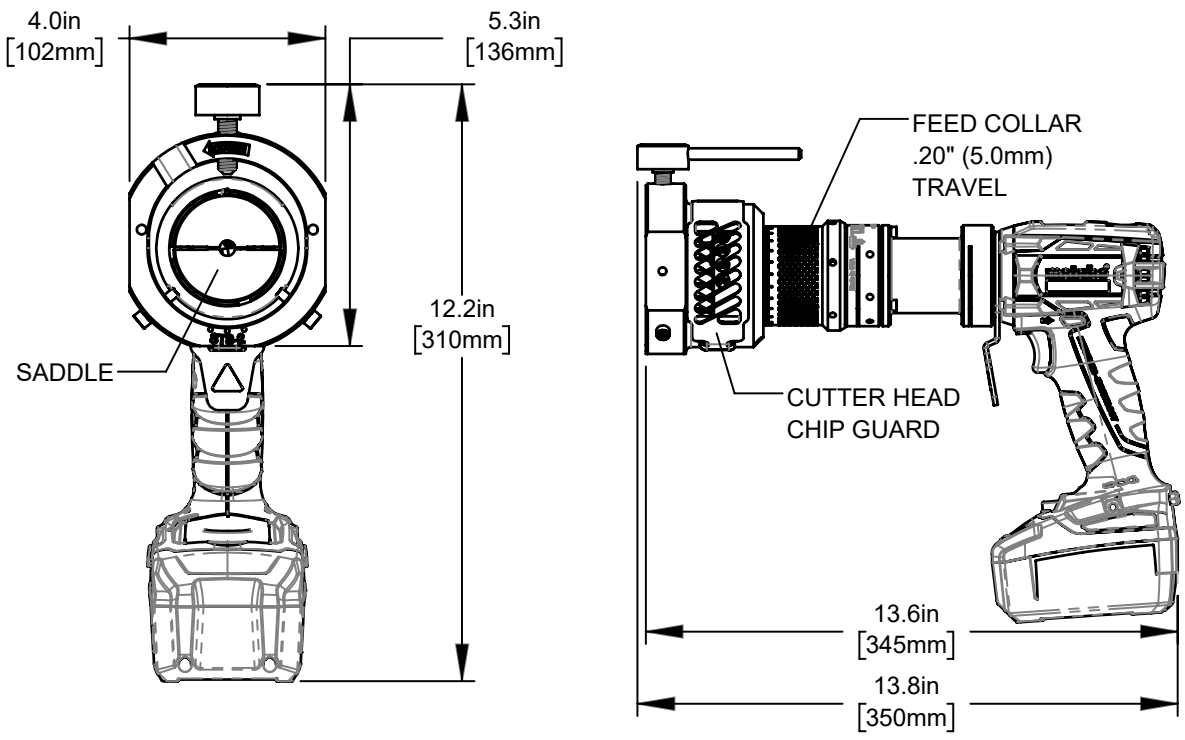


Figure 4: Envelope Drawing STS-2 Cordless Motor (18VDC)

5. MAINTENANCE

- Clean all components, refer to Fig 5.
- Coat all components with a light film of oil prior to use. Use a clean, non-detergent oil, preferably SAE 10 (90SSU) or lighter.
- If the Model STS-1/STS-2 is operated in the vertical position (cutting head up), turn it upside down and remove the chips and other debris after each cut.

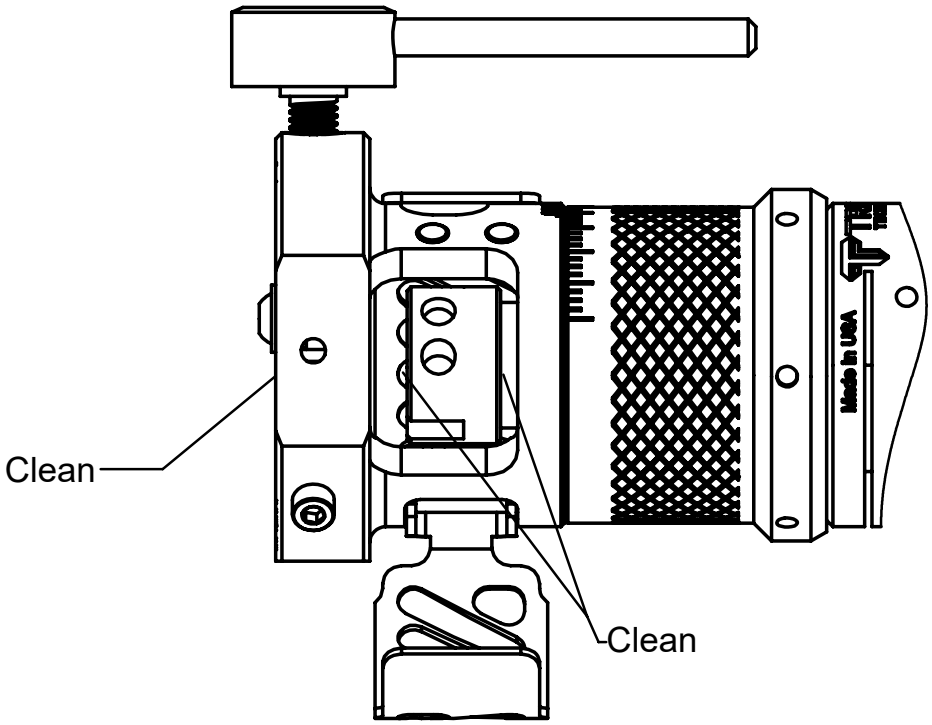


Figure 5: Sites to Clean

- Lubricate bearings with a high string utility grease (P/N 68-0024). Refer to Fig 6. (For the Model STS-2, lubricate the gearbox at the point where the splined shaft enters the gearbox).

CAUTION

CAUTION: If the chips are not removed, the tool life may be severely shortened.

- Disassembly of the Model STS-1/STS-2 will void the warranty, except when performed by a Tri Tool Technologies designated repair technician.

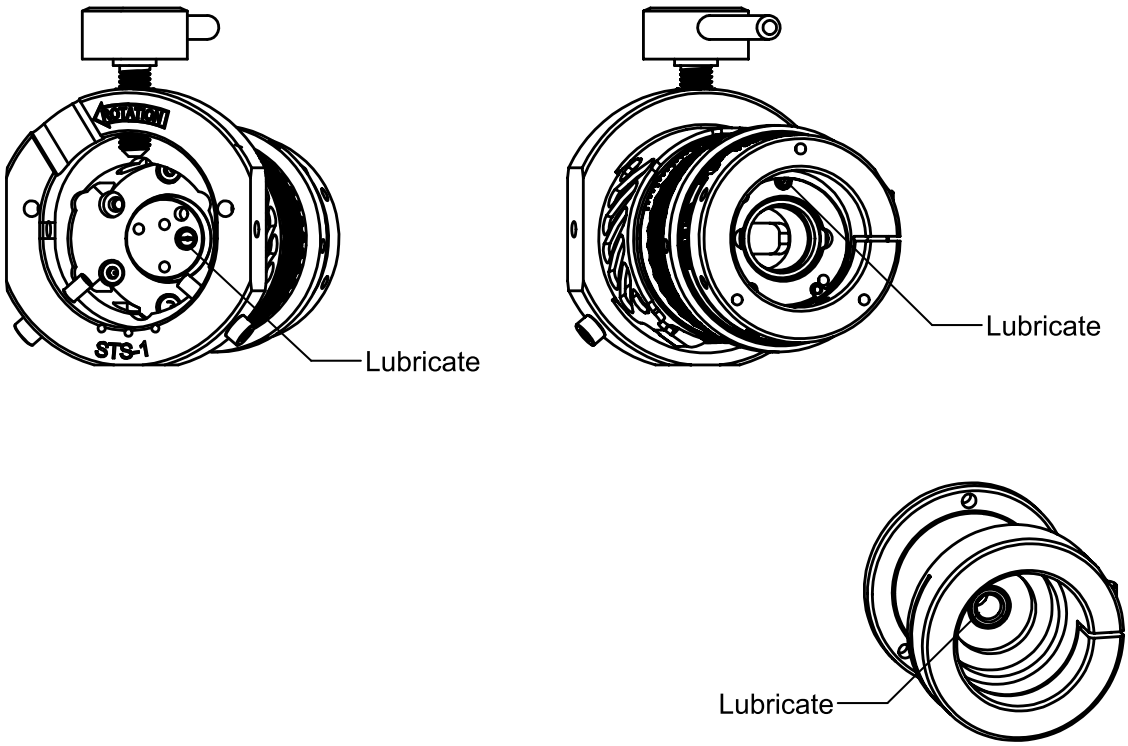


Figure 6: Models STS-1 and STS-2

NOTE: Use of a flush mount grease gun tip is required.

6. OPERATION

GUIDELINES FOR SELECTING A TOOL BIT

CAUTION: The use of dull or improperly designed Tool Bits or Tool Bits not manufactured by Tri Tool Technologies may result in poor performance and may constitute abuse of this machine and therefore void the Tri Tool Technologies factory warranty.

- Select a tool bit according to the tubing material, tubing size, and how critical it is to have a near burr free end.
- A standard entrance angle tool bit is recommended for carbon steel. These tool bits also work well with some stainless steel applications where a near burr free end is not a critical requirement.
- A high entrance angle tool bit is recommended for most stainless steels. Generally, this is the most suitable edge geometry for about 90% of all the stainless steel tubing applications.
- An extra hook angle tool bit is recommended for stainless steels that are very soft. These stainless steels include materials like 316L, which have been bright hydrogen annealed, vacuum annealed or annealed and Electro-polished. Electro-polished stainless steel has a micro-thin surface, which is high in Cr and Ni, which makes it very soft, but tough and difficult to cut without a burr.
- The M-42 tool bits are for use with the exotic alloys where the high heat resistance is required to avoid burning the cutting edge of the tool bit. M-42 can improve the life expectancy of the tool bit under some conditions on stainless steel. Since M-42 tool bits are more brittle than the standard M-2 tool bits, there is a much greater risk of damaging the M-42 tool bit when installing the tubing in the Tube Squaring Machine. Loss of tool bits from damaged edges may not offset the improved cutting life that those tool bits may provide. Some exotic alloys may require tool bits with both the extra hook angle as well as the M-42 tool steel for heat resistance.

INSTALL THE TOOL BIT

CAUTION: Make sure that the Model STS-1/STS-2 is disconnected from the power source before you install a tool bit.

1. Insert the Tool Bit into the slot in the Cutting Head, Refer to Fig. 7. Make sure the cutting edge of the tool bit is facing toward the center of the cutting head. Do not install the tool bit backwards.
    - The standard tool bit position, shown below in Fig. 7, is used for 1.000” (25.4mm) and smaller diameter tubing. This is the designed working position of the tool bit and will leave virtually no burr with standard tubing. When working with Electro-polished stainless steel tubing, use slow cutting speeds to minimize the ID burr.

- The tool bit may be reversed. Use the reversed position for tubing with an ID greater than 1.000” (25.4mm). With the extreme shear cutting action, the burr on the ID will be virtually eliminated.

2. Use the Hex wrench to tighten the set screws.

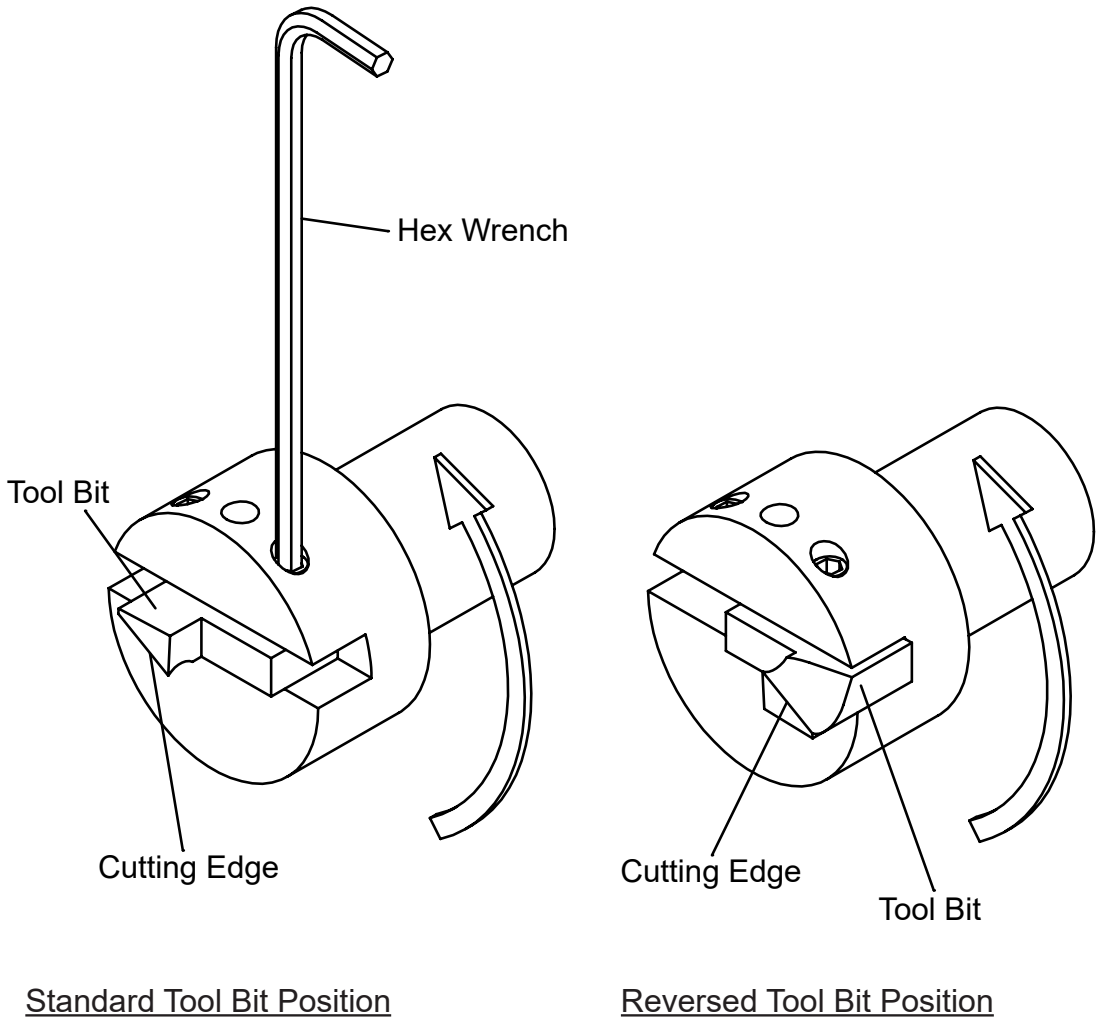


Figure 7: Tool Bit Installation

INSTALL A SADDLE IN THE MODEL STS-1/STS-2

1. Select a saddle for the desired outside diameter of the tubing to be squared. Refer to the section on Saddle Sets.
2. Back the Saddle Clamping Knob out so that it does not protrude into the mounting bore for the saddles.
3. Make sure there is no debris in the saddle mounting bore.

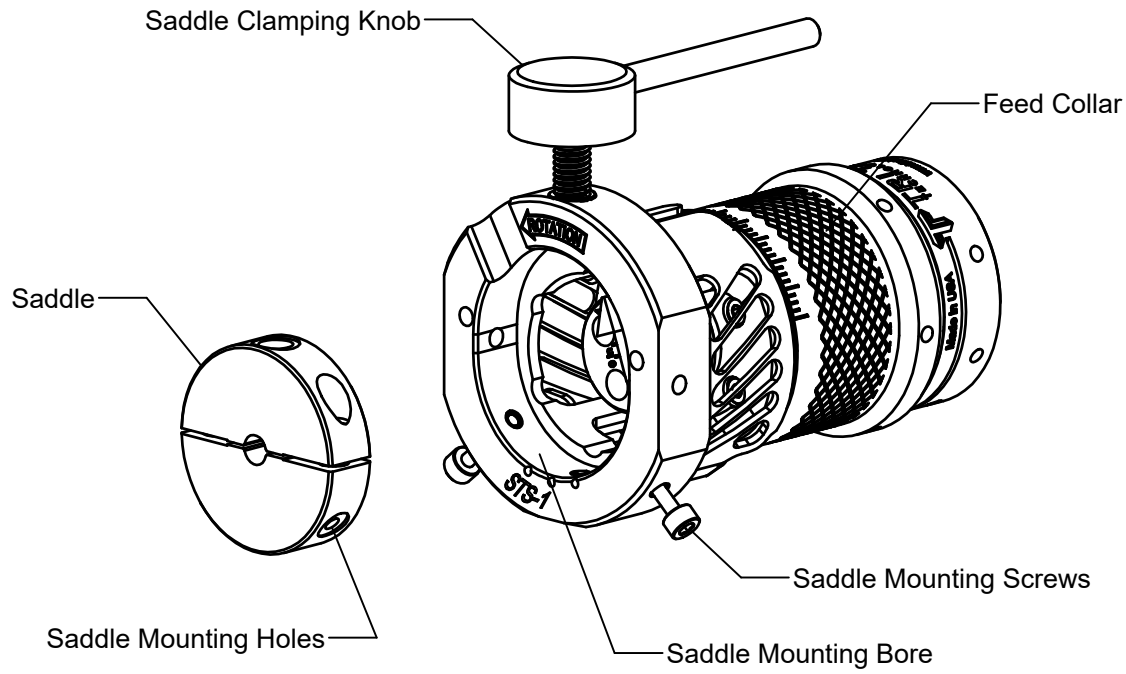


Figure 8: Saddle Installation

4. Insert the saddle into the bore.
5. Align the mounting holes of the lower saddle half with the captured mounting screws and tighten.
6. Turn the Saddle Clamping Knob clockwise so that the cone point engages the upper saddle half.

INSERT THE TUBE

1. Retract the feed to the start position.
2. Insert the tube to be machined in the front of the Model STS-1/STS-2. Position the tube or pipe approximately 1/16” (1.6mm) from the tool bit.

CAUTION: Do not let the tool bit touch the tube or pipe. This will damage the tool bit or the Tube Squaring Machine when power is applied.

3. Tighten the Saddle Clamping Knob to tighten the tube in the Saddle.

OPERATION SEQUENCE

1. Connect the Model STS-1/STS-2 to the power source.
2. Pull the Trigger to start rotation of the Cutting Head, Refer to the section on Cutting Speeds and Feeds.
3. The Metabo Motor speed is controlled via the trigger. Use it to adjust the cutting speed.

CAUTION: The Two Speed Gearbox Knob should be in the 1st gear position. If the Knob does not snap into the desired position, turn the chuck by hand slightly until the Knob snaps back into place. Put the speed control in the drill position. (Any other position will limit the motor torque.)

- To obtain a minimum burr tube end, avoid heat build up. When the tube or the tool bit gets hot, the tube material starts to flow or push away from the tool bit edge in the form of a burr, instead of being cut cleanly with a minimum burr. Keep the RPMs low to avoid generating excessive heat. An excessive cutting speed will generate unwanted heat.
- Keep the chip curl loose by avoiding very deep cuts. A dull tool bit will not do the job correctly, so be sure that there is a sharp tool bit mounted in the Machine.

4. Rotate the Feed Collar clockwise (as viewed from the motor end) to bring the Cutting Head and tube closer together. The machining operation begins when the tool bit contacts the tube or pipe.
5. If the tube end is not square to the tube axis, the tool bit will contact only a small segment of the tube during each revolution. To avoid tool bit damage, use a very slow feed rate until the tool bit contacts the tube continually for at least one revolution.

6. Adjust the cutting RPM with the Speed Control Trigger until it is just above the required cutting speed as the tool bit enters the cut. The tool will slow down slightly as the cutting load increases. Apply additional power to hold the cutting speed.
7. Observe the chip as the Machine is cutting. The ideal chip will come off in a loose pig tail spiral. A chip that is coming off in a tight straight spiral indicates that the feed is too heavy. A straight or slightly curled chip normally indicates that the feed is too light. Back off the feed as required to break the chips and let them fall away.
8. If a significant amount of stock must be removed, occasionally back out of the cut and let the tool bit spin free in the air to cool. Remove any chips, they may harm the electro-polished tube.
9. Rotate the Feed Collar clockwise until the end of the pipe is completely machined.

CAUTION

CAUTION: Be careful not to let the tool bit cut into the Saddle or the Saddle Adapter.

10. Discontinue the feed and allow the Cutting Head to rotate one time for stainless steel and up to three times for other materials. This will improve the finish of the prep surface. Never let a tool bit ‘rub’ the surface of a stainless steel tube without cutting. This will work harden the material and make it difficult for the tool bit to get under the material to finish the cut. This will also cause excessive tool bit wear.
11. For precise cuts, engage the tool bit into the end of the tube and use the indicator sleeve located on the Feed Collar to check the depth of the cut. The graduations are in .005” (.13mm) increments.
12. Rotate the Feed Collar counterclockwise to separate the Cutting Head and the tube.
13. Release the Trigger to stop the Cutting Head rotation.
14. Continue to rotate the Feed Collar counterclockwise until the Cutting Head clears the tube or pipe by at least 1/8” (3.2mm) or more.
15. Loosen the Clamp Knob Assembly to release the tube or pipe.
16. Remove all chips before starting the next end prep.

7. CUTTING SPEEDS AND FEEDS

CUTTING SPEEDS

TRUE DIA	RPM for 200 in/min (5080 mm/min)	RPM for 250 in/min (6350 mm/min)	RPM for 300 in/min (7620 mm/min)
.250” (6.4 mm)	255	318	382
.375” (9.5 mm)	170	212	255
.500” (12.7 mm)	127	159	191
.750” (19.1 mm)	85	106	127
1.000” (25.4 mm)	64	80	95
1.250” (31.8 mm)	51	64	76
1.500” (38.1 mm)	42	53	64
2.000” (50.8 mm)	32	40	48

NOTE: Cutting Speeds are approximate. Reducing the RPM will significantly increase tool bit life and reduce the formation of burrs.

Use 200 surface inches per minute (5080 surface millimeters per minute) for:

- Stainless steels in general when no coolant is allowed, all heavy-wall tube and some chrome/molybdenum steels.

Use 250 surface inches per minute (6350 surface millimeters per minute) for:

- Mild steels and some thin-wall stainless steels when coolants are permitted and applied.

Use 300 surface inches per minute (7620 surface millimeters per minute) for:

- Aluminum and some thin-wall mild steel and tube with coolants.

FEED RECOMMENDATIONS

Use very light feed for initial facing or until a continuous cut is established. This is very important for longer tool bit life when cutting through flame cut or out-of- round pipe ends.

Use adequate feed, .003” to .006” (.08mm to .15mm) per revolution thereafter, to establish a continuous chip cut.

- If the feed is too light, only light stringer chips will be removed.
- If the feed is too heavy, the drive will start to overload and the chip will start to have a rough or torn appearance.

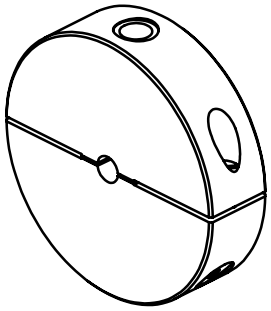
Stainless steel, which work hardens, must be worked with a heavy enough feed to prevent work hardness (.003” to .006” or .08mm to .15mm feed)

Do not let the tool bit burnish the surface.

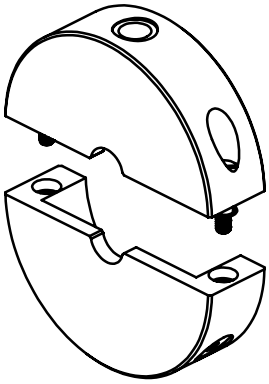
Reduced feeds and speeds will normally minimize chatter problems.

8. SADDLE SETS

Saddle Sets STS-1



Standard Saddle Set



Short Perch Saddle Set

Figure 9: Saddle Sets STS-1

SADDLE SET PART NUMBERS			
Decimal (in.)	**Metric (mm)**	**STS-1**	**STS-1 S-P**
0.125	3.18	67-5470	67-5650
0.156	3.96	67-5471	67-5651
0.158	4.00	67-5472	67-5652
0.188	4.78	67-5473	67-5653
0.197	5.00	67-5474	67-5654
0.218	5.54	67-5475	67-5655
0.236	6.00	67-5476	67-5656
0.250	6.35	67-5477	67-5657
0.276	7.00	67-5478	67-5658
0.281	7.14	67-5479	67-5659
0.283	7.20	67-5480	67-5660
0.313	7.95	67-5481	67-5661
0.315	8.00	67-5482	67-5662
0.344	8.74	67-5483	67-5663
0.354	9.00	67-5484	67-5664

SADDLE SET PART NUMBERS			
Decimal (in.)	**Metric (mm)**	**STS-1**	**STS-1 S-P**
0.359	9.13	67-5485	67-5665
0.365	9.27	67-5486	67-5666
0.375	9.53	67-5487	67-5667
0.391	9.92	67-5488	67-5668
0.394	10.00	67-5489	67-5669
0.400	10.16	67-5490	67-5670
0.406	10.31	67-5491	67-5671
0.413	10.50	67-5492	67-5672
0.422	10.72	67-5493	67-5673
0.430	10.92	67-5494	67-5674
0.433	11.00	67-5495	67-5675
0.438	11.13	67-5496	67-5676
0.440	11.18	67-5497	
0.469	11.91	67-5498	67-5677
0.472	12.00	67-5499	67-5678

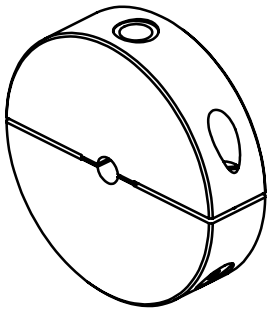
SADDLE SET PART NUMBERS

Decimal (in.)	Metric (mm)	STS-1	STS-1 S-P
0.483	12.27	67-5500	
0.489	12.42	67-5501	67-5679
0.500	12.70	67-5502	67-5680
0.512	13.00	67-5503	67-5681
0.528	13.40	67-5504	67-5682
0.531	13.50	67-5505	67-5683
0.540	13.72	67-5506	67-5684
0.543	13.80	67-5507	67-5685
0.547	13.89	67-5508	67-5686
0.551	14.00	67-5509	67-5687
0.563	14.30	67-5510	67-5688
0.579	14.70	67-5511	
0.591	15.00	67-5512	67-5689
0.594	15.08	67-5513	67-5690
0.602	15.29	67-5514	67-5691
0.610	15.49	67-5515	
0.625	15.88	67-5516	67-5692
0.630	16.00	67-5517	67-5693
0.641	16.27	67-5518	67-5694
0.656	16.66	67-5519	67-5695
0.669	17.00	67-5520	67-5696
0.675	17.15	67-5521	67-5697
0.677	17.20	67-5522	67-5698
0.681	17.30	67-5523	67-5699
0.688	17.48	67-5524	67-5700
0.709	18.00	67-5525	67-5701
0.718	18.24	67-5526	67-5702

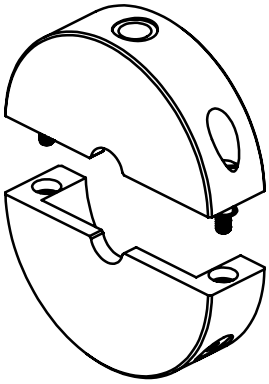
SADDLE SET PART NUMBERS

Decimal (in.)	Metric (mm)	STS-1	STS-1 S-P
0.750	19.05	67-5527	67-5703
0.781	19.84	67-5528	67-5704
0.787	20.00	67-5529	67-5705
0.790	20.07	67-5530	67-5706
0.813	20.65	67-5531	67-5707
0.825	20.96	67-5532	
0.840	21.34	67-5533	67-5708
0.844	21.44	67-5534	67-5709
0.848	21.55	67-5535	
0.854	21.70	67-5536	67-5710
0.859	21.83	67-5537	67-5711
0.866	22.00	67-5538	67-5712
0.875	22.23	67-5539	67-5713
0.896	22.75	67-5540	
0.906	23.00	67-5541	67-5714
0.938	23.83	67-5542	67-5715
0.969	24.61	67-5543	67-5716
0.984	25.00	67-5544	67-5717
0.990	25.15	67-5545	
1.000	25.40	67-5546	67-5718
1.050	26.67	67-5547	67-5719
1.059	26.90	67-5548	
1.063	27.00	67-5549	
1.071	27.20	67-5550	67-5720
1.102	28.00	67-5551	67-5721
1.125	28.58	67-5552	

Saddle Sets STS-2



Standard Saddle Set



Short Perch Saddle Set

Figure 10: Saddle Sets STS-2

SADDLE SET PART NUMBERS			
Decimal (in.)	**Metric (mm)**	**STS-2**	**STS-2 S-P**
0.188	4.78	67-5553	67-5723
0.218	5.54	67-5554	
0.250	6.35	67-5555	67-5724
0.276	7.00	67-5556	
0.281	7.14	67-5557	
0.313	7.95	67-5558	
0.315	8.00	67-5559	
0.344	8.74	67-5560	
0.354	9.00	67-5561	
0.359	9.13	67-5562	
0.365	9.27	67-5563	
0.375	9.53	67-5564	67-5725
0.391	9.93	67-5565	
0.394	10.00	67-5566	
0.400	10.16	67-5567	
0.406	10.31	67-5568	

SADDLE SET PART NUMBERS			
Decimal (in.)	**Metric (mm)**	**STS-2**	**STS-2 S-P**
0.413	10.50	67-5569	
0.422	10.72	67-5570	
0.430	10.92	67-5571	
0.433	11.00	67-5572	
0.438	11.13	67-5573	
0.469	11.91	67-5574	
0.472	12.00	67-5575	
0.489	12.42	67-5576	
0.500	12.70	67-5577	67-5726
0.512	13.00	67-5578	
0.531	13.50	67-5579	
0.540	13.72	67-5580	
0.543	13.80	67-5581	
0.547	13.89	67-5582	
0.551	14.00	67-5583	
0.563	14.30	67-5584	

SADDLE SET PART NUMBERS

Decimal (in.)	Metric (mm)	STS-2	STS-2 S-P
0.591	15.00	67-5585	
0.594	15.08	67-5586	
0.602	15.29	67-5587	
0.625	15.88	67-5588	
0.630	16.00	67-5589	
0.641	16.27	67-5590	
0.656	16.66	67-5591	
0.669	17.00	67-5592	
0.675	17.15	67-5593	
0.677	17.20	67-5594	
0.681	17.30	67-5595	
0.688	17.48	67-5596	
0.709	18.00	67-5597	
0.718	18.24	67-5598	
0.750	19.05	67-5599	67-5727
0.781	19.84	67-5600	
0.787	20.00	67-5601	
0.790	20.07	67-5602	
0.813	20.65	67-5603	
0.840	21.34	67-5604	
0.844	21.44	67-5605	
0.854	21.70	67-5606	
0.859	21.83	67-5607	
0.866	22.00	67-5608	
0.875	22.23	67-5609	
0.906	23.00	67-5610	
0.938	23.83	67-5611	
0.969	24.61	67-5612	
0.984	25.00	67-5613	
1.000	25.40	67-5614	67-5728
1.050	26.67	67-5615	

SADDLE SET PART NUMBERS

Decimal (in.)	Metric (mm)	STS-2	STS-2 S-P
1.063	27.00	67-5616	
1.071	27.20	67-5617	
1.102	28.00	67-5618	
1.125	28.58	67-5619	
1.188	30.18	67-5620	
1.250	31.75	67-5621	67-5729
1.260	32.00	67-5622	
1.313	33.35	67-5623	
1.315	33.40	67-5624	
1.327	33.70	67-5625	
1.339	34.00	67-5626	
1.375	34.93	67-5627	
1.378	35.00	67-5628	
1.438	36.53	67-5629	
1.500	38.10	67-5630	67-5730
1.563	39.70	67-5631	
1.625	41.28	67-5632	
1.660	42.16	67-5633	
1.681	42.70	67-5634	
1.688	42.88	67-5635	
1.750	44.45	67-5636	
1.752	44.50	67-5637	
1.813	46.05	67-5638	
1.875	47.63	67-5639	
1.900	48.26	67-5640	67-5731
1.913	48.59	67-5641	
1.938	49.23	67-5642	
1.969	50.00	67-5643	
2.000	50.80	67-5644	67-5732
2.375	60.33	67-5645	
2.500	63.50	67-5843	

9. TOOL BITS

TOOL BITS FOR STANDARD SADDLES

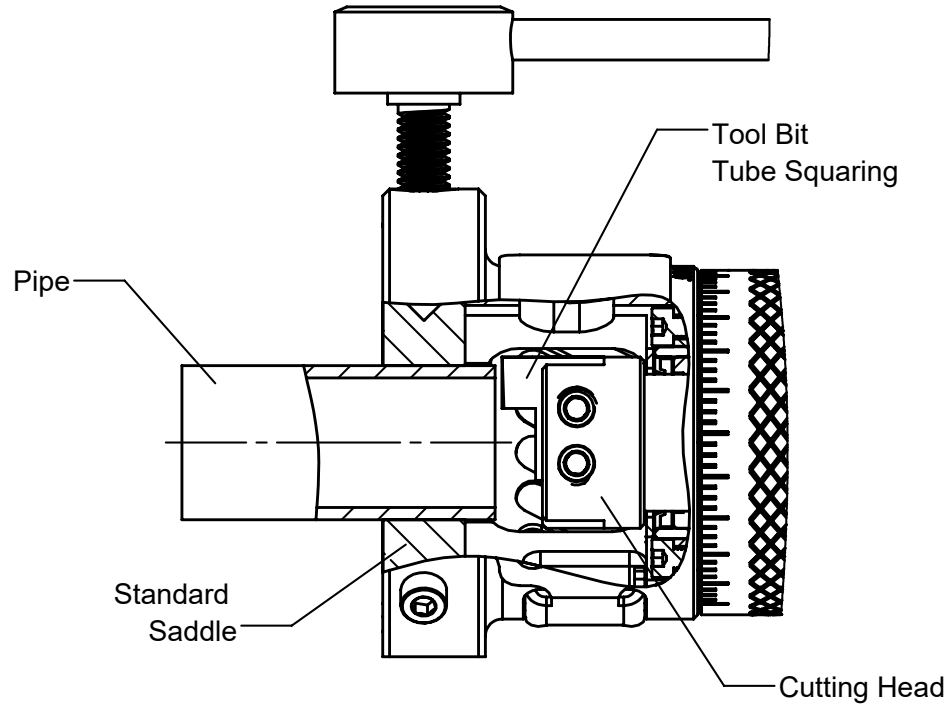


Figure 11: Tube Squaring Tool Bits for Standard Saddles

TUBE SQUARING TOOL BITS FOR STANDARD SADDLES

Range	Max Wall Thickness	Pipe or Tube Material	Tool Bit Height	Squaring Tool Bit P/N
.125" OD thru 2.5" (3.2mm OD thru 63.5mm OD)	.200" (5.1mm)	CS SS 316L	.750" (16.1mm)	Durabit 1

TOOL BITS FOR SHORT PERCH SADDLES

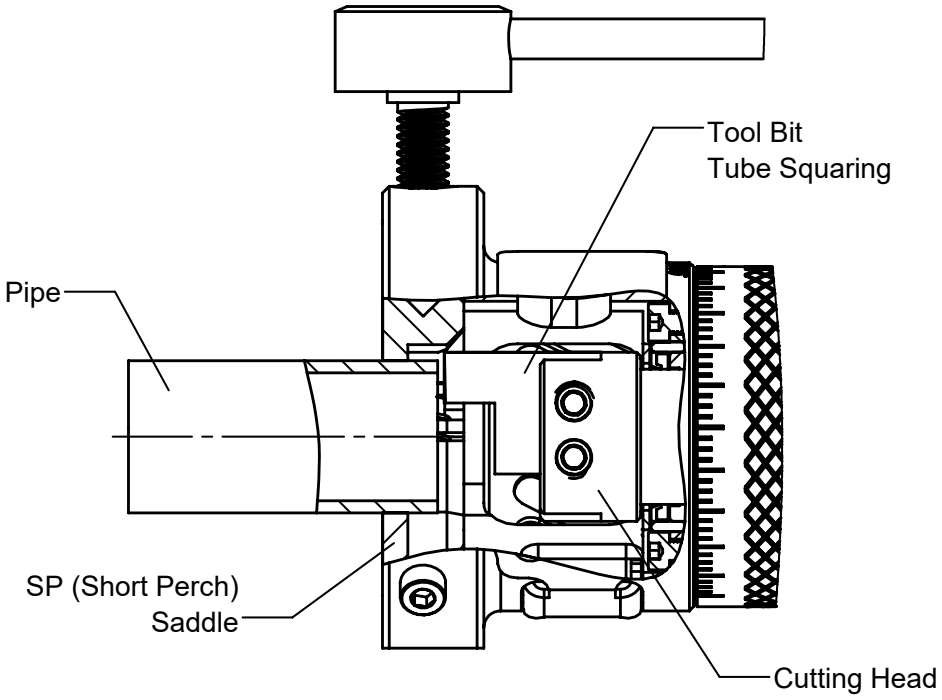


Figure 12: Tube Squaring Tool Bits for Short Perch Saddles

TUBE SQUARING TOOL BITS FOR SHORT PERCH SADDLES

Range	Max Wall Thickness	Pipe or Tube Material	Tool Bit Height	Tool Bit Material	Squaring Tool Bit P/N
.125" OD thru 2.37" (3.2mm OD thru 60.2mm OD)	.200" (5.1mm)	CS SS 316L	1.160" (29.5mm)	M2	Durabit 3

10. TROUBLESHOOTING

Problem: Tool Bit Chatters

The tool bit is loose or overextended.

The tool bit is damaged.

The tool holder is too loose in the slides.

The cutting speed is too fast.

The clamping pads are loose on the pipe or tube.

Cutting fluid is required.

The main bearing pre-load is loose.

Problem: Excessive Tool Bit Wear

The pipe or tube material is too hard or abrasive.

The cutting speed is too fast.

Cutting fluid is required.

A dull Tool Bit is causing surface hardening conditions (Stainless pipe or tubing).

There is scale or other foreign matter on the pipe or tube, which is dulling the tool bit at the start of the cut.

The tool bit is incorrect for the material being cut.

Problem: Rough Surface Finish

The tool bit is dull, chipped, etc.

Metal build-up on the cutting edge of the tool bit is creating a false cutting edge.

Cutting fluid is required.

The cutting speed is incorrect.

Problem: Tool Holder Is Not Feeding

The feed pin is broken or out of position.

The feed sprocket shear pin is broken.

The feed screw is stripped.

The feed nut is stripped.

The slide rails are too tight.

Problem: Tool Bit Does Not Reach Work

Incorrect tool blocks are installed for the size of the pipe or tube being worked on.

Incorrect tool bit is installed.

11. ACCESSORIES

Tri Tool Technologies offers the following accessories for the Model STS-1/STS-2 Tube Squaring Machine:

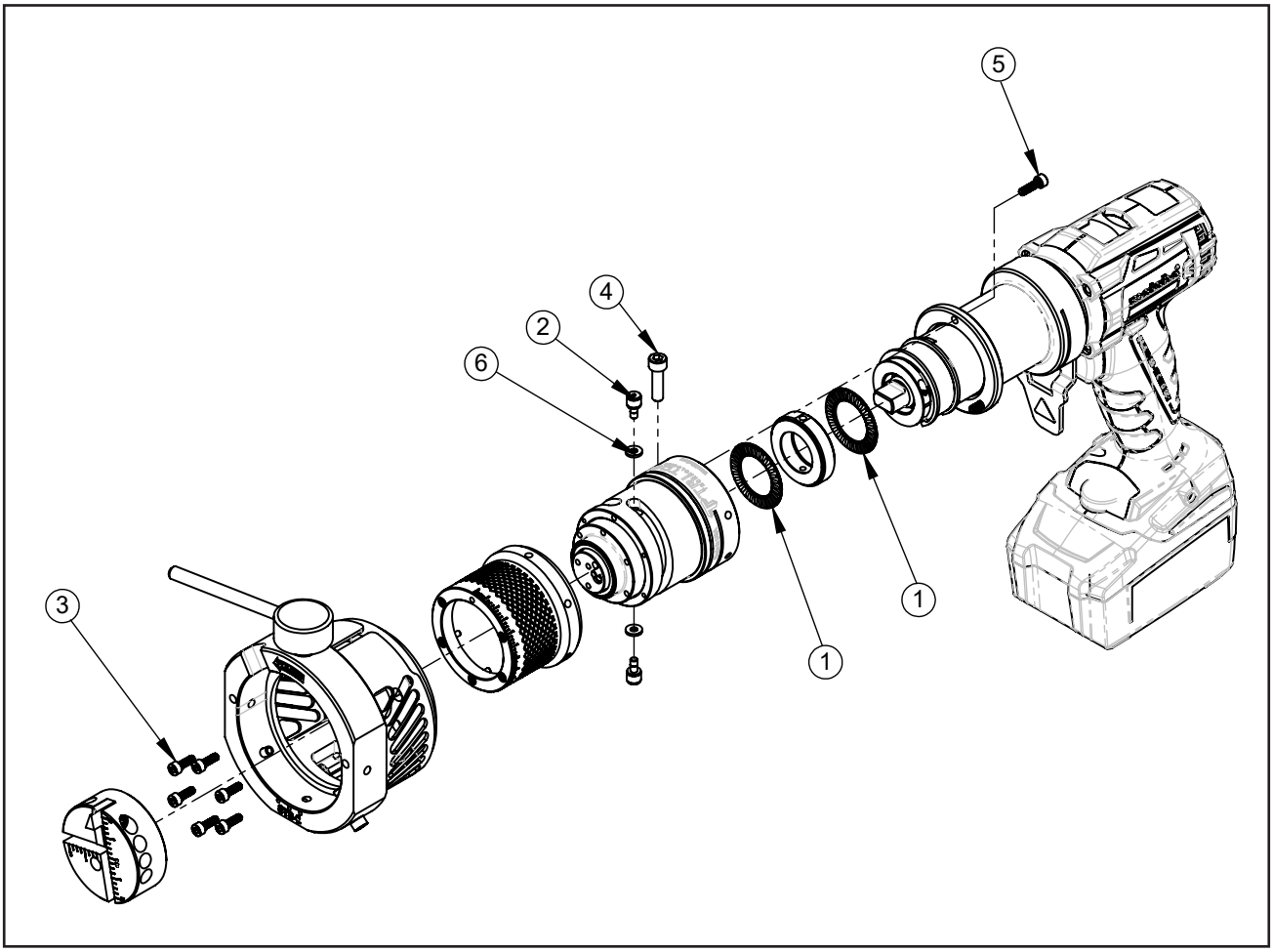
- Saddles
- Tool Bits
- Bench Top Stand Model STS-1 (P/N 60-0121)
- Bench Top Stand Model STS-2 (P/N 60-0122)
- Feed Collar Handle (included in Bench Top Stands) (P/N 41-1166)
- Battery Charger Assembly:

  115V Standard (P/N 30-6143)

  230V Optional (P/N 30-6144)
- Battery 18V 5.2ah (30-6142)

12. RECOMMENDED SPARE PARTS

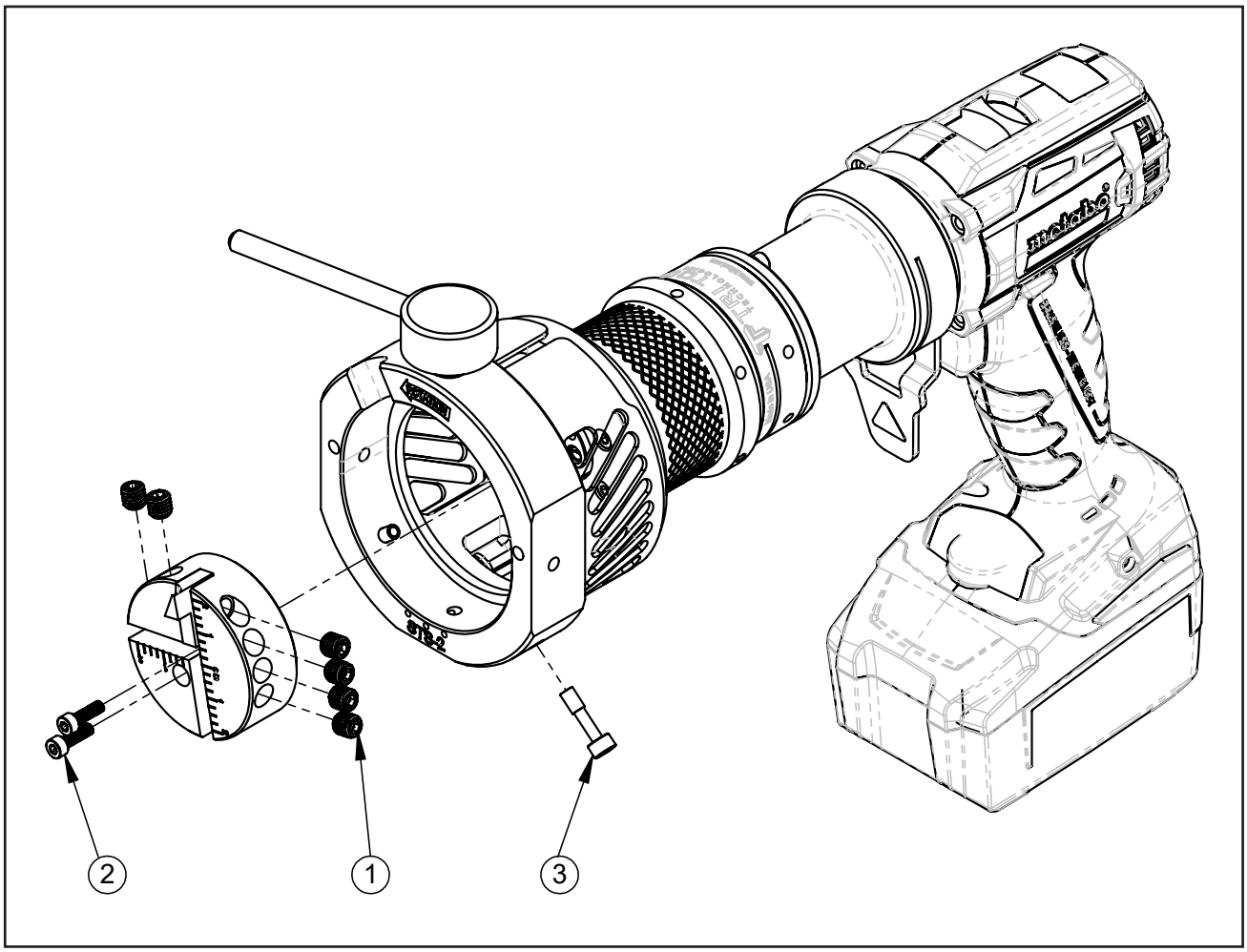
STS FEED KIT (P/N 05-1745)



Parts List, STS Feed Kit (P/N 05-1745)

Item No	Part No.	Description	Qty
1	29-0208	BEARING, THRUST, 1” X 1-9/16” X 5/64”	2
2	29-0883	CAM FOLLOWER, 8MM OD, M4 X 0.7” THREAD	2
3	33-2547	SCREW, CAP, M4 X 0.7” X 12MM	6
4	33-4516	SCREW, CAP, M6 X 1-22MM	1
5	33-4961	SCREW, CAP, M4 X 0.7 X 14MM	3
6	44-1746	SPACER, CAM FOLLOWER	2

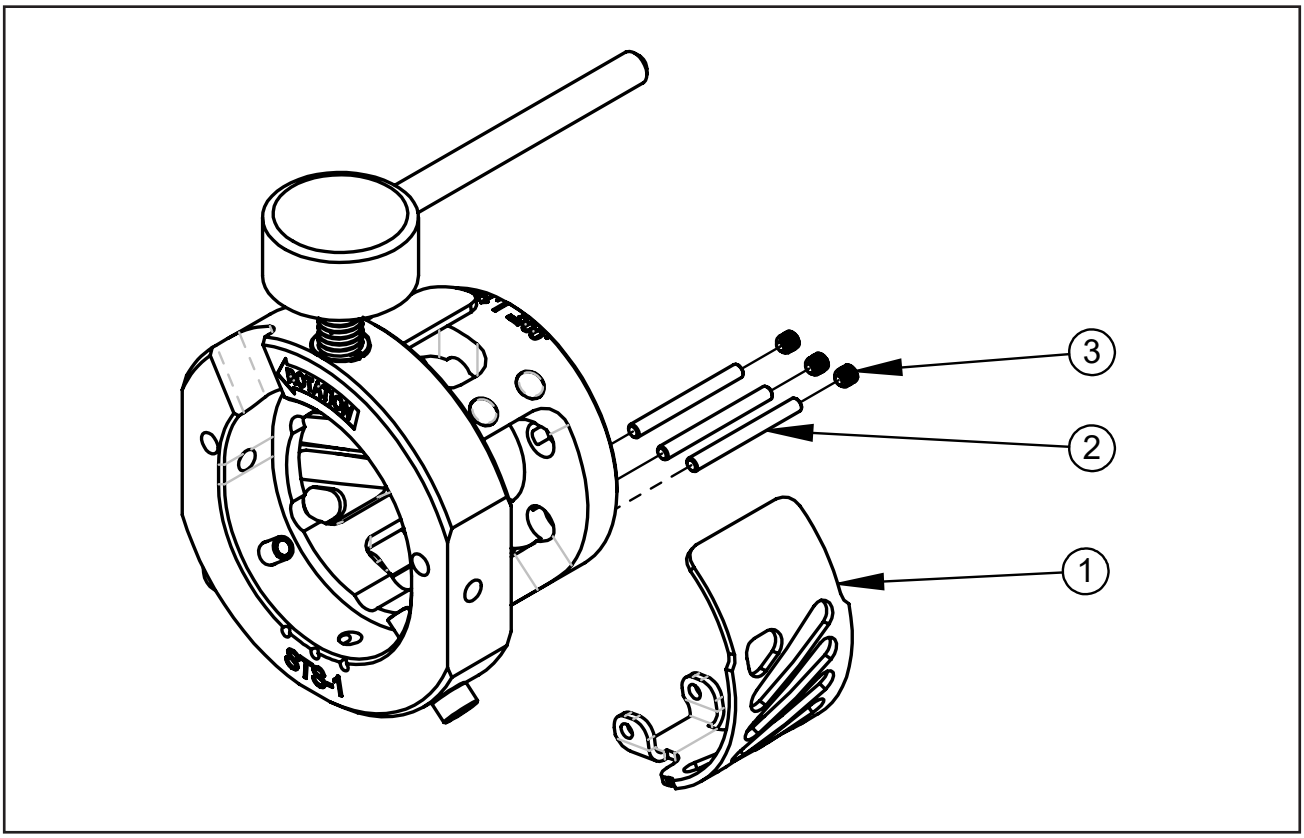
STS HEAD KIT (P/N 05-1746)



Parts List, STS Head Kit (P/N 05-1746)

Item No	Part No.	Description	Qty
1	33-4960	SCREW, SET, M8X1.25 X 8MM, CUP PT	8
2	33-4961	SCREW, CAP, M4 X 0.7” X 14MM	2
3	33-4970	SCREW, CAP, M5 X 0.8” X 22MM, MOD	2

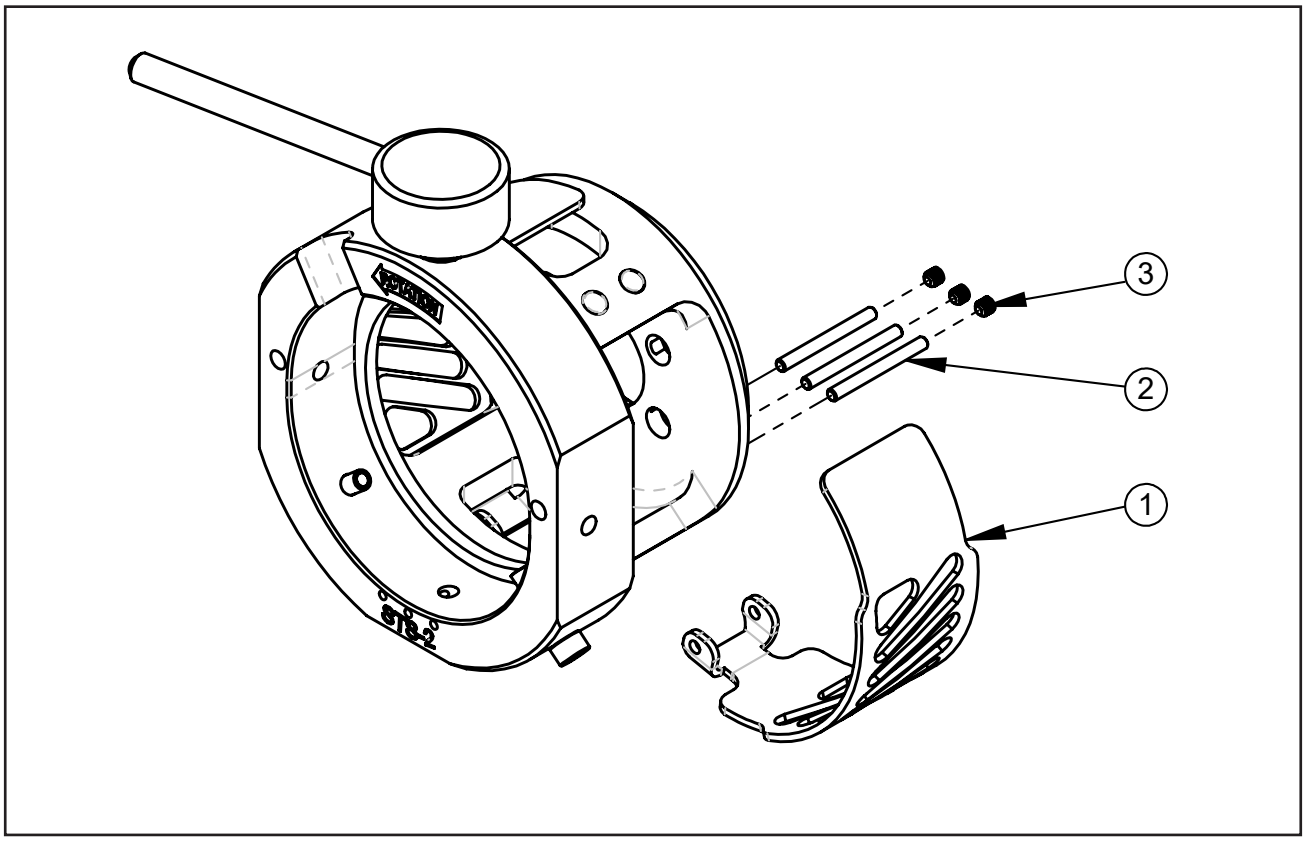
STS-1 GUARD KIT (P/N 05-1747)



Parts List, STS-1 Guard Kit (P/N 05-1747)

Item No	Part No.	Description	Qty
1	24-5019	PLATE, CHIP GUARD, STS-1	2
2	32-1217	PIN, DOWEL, 1/8" X 1-1/4"	2
3	33-4968	SCREW, SET, M4 X 0.7” X 4MM, CUP PT	2

STS-2 GUARD KIT (P/N 05-1748)

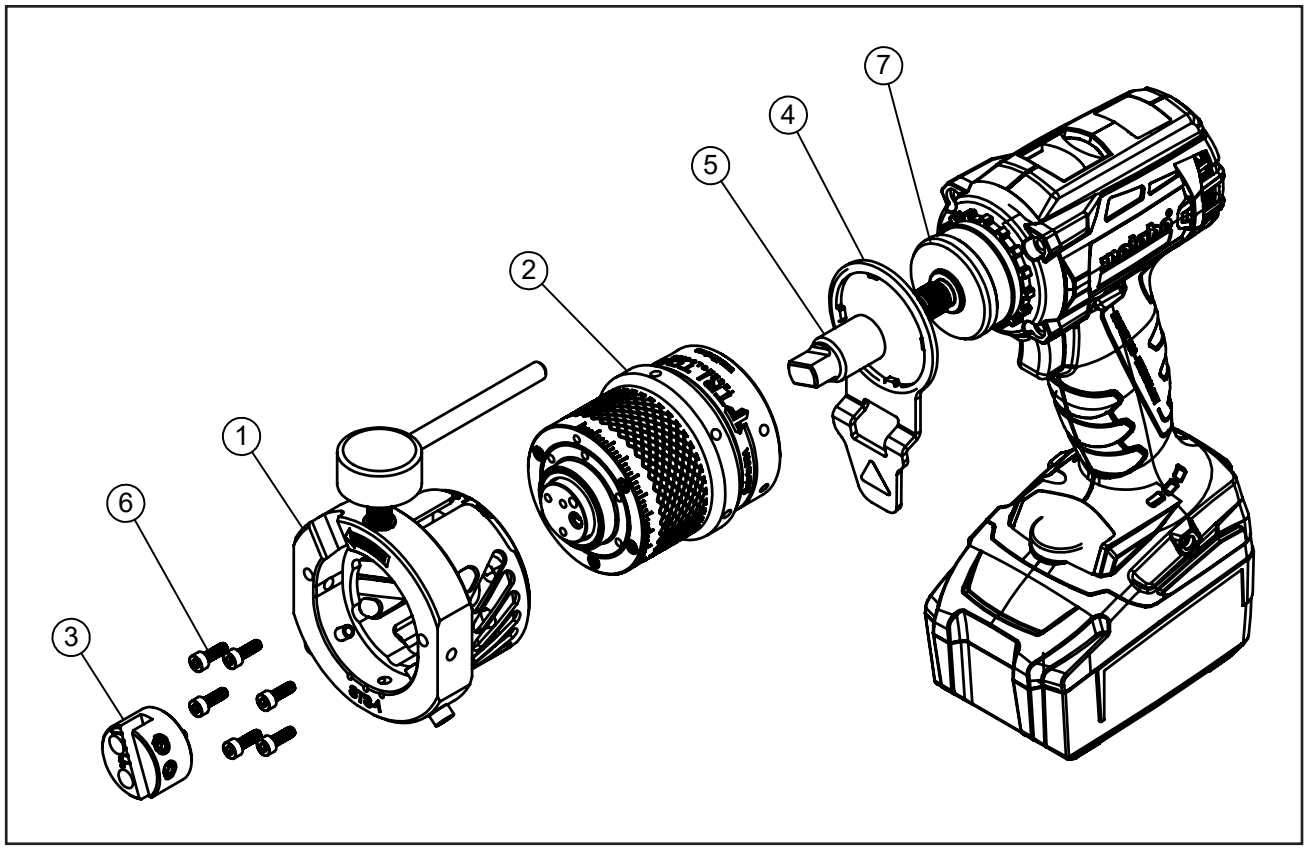


Parts List, STS-2 Guard Kit (P/N 05-1748)

Item No	Part No.	Description	Qty
1	24-5020	PLATE, CHIP GUARD, STS-2	2
2	32-1217	PIN, DOWEL, 1/8" X 1-1/4"	3
3	33-4968	SCREW, SET, M4 X 0.7” X 4MM, CUP PT	3

13. ILLUSTRATED PARTS BREAKDOWN

MODEL STS-1, CORDLESS



Parts List, Model STS-1, Cordless, 115V Metablo (P/N 01-2534)

Item No	Part No.	Description	Qty
1	02-3205	SUB-ASSEMBLY, FRONT END, STS-1	1
2	02-3128	SUB-ASSEMBLY, STS	1
3	03-0210	KIT, HEAD, STS-1	1
4	05-1694	KIT, TRIGGER GUARD, METABO CORDLESS	1
5	27-1630	ADAPTER, DRIVE, METABO CORDLESS	1
6	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
7	58-0317	MOTOR, CORDLESS, 18V, METABO, 115V MOD CW	1

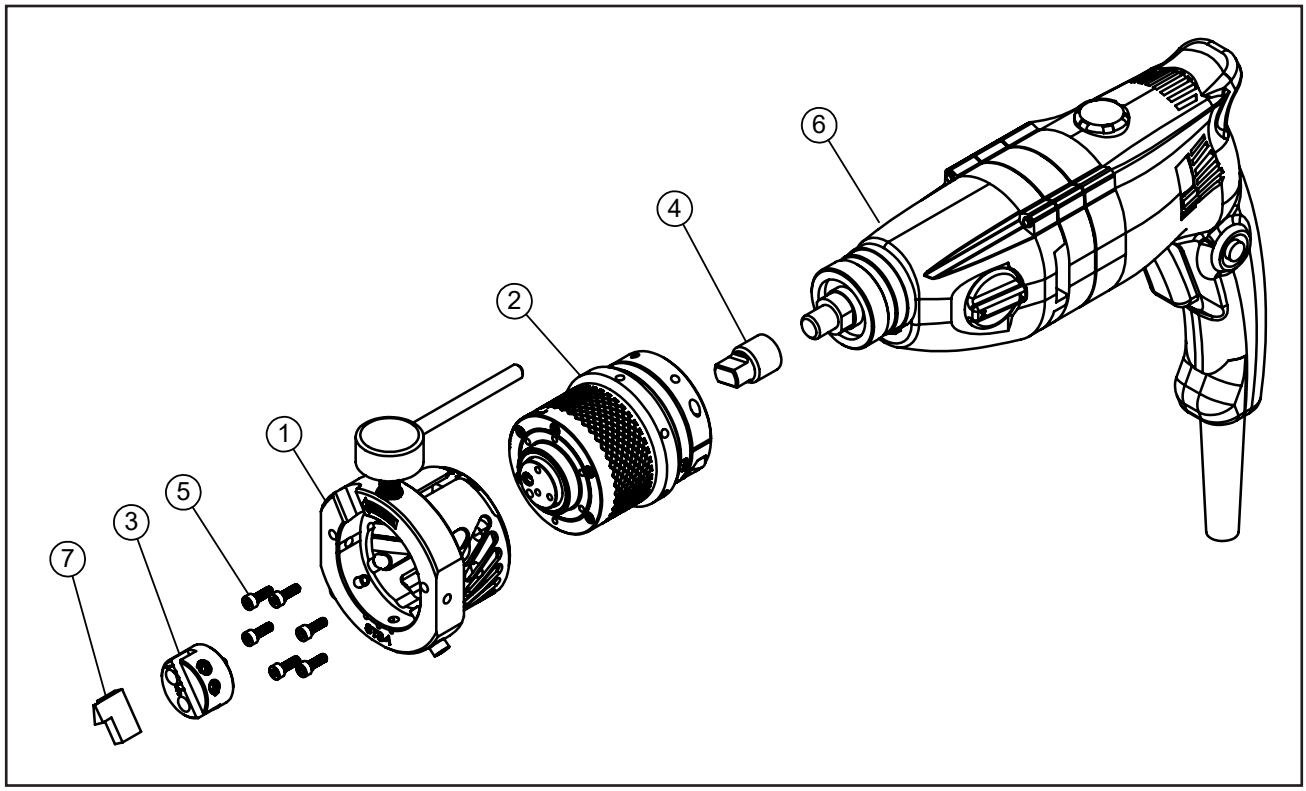
Parts List, Model STS-1, Cordless, 220V Metablo (P/N 01-2535)

Item No	Part No.	Description	Qty
1	02-3205	SUB-ASSEMBLY, FRONT END, STS-1	1
2	02-3128	SUB-ASSEMBLY, STS	1
3	03-0210	KIT, HEAD, STS-1	1
4	05-1694	KIT, TRIGGER GUARD, METABO CORDLESS	1
5	27-1630	ADAPTER, DRIVE, METABO CORDLESS	1
6	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
7	58-0320	MOTOR, CORDLESS, 18V, METABO, 230V MOD CW	1

Parts List, Model STS-1, Cordless, 100V (Japan Only) (P/N 01-2542)

Item No	Part No.	Description	Qty
1	02-3205	SUB-ASSEMBLY, FRONT END, STS-1	1
2	02-3128	SUB-ASSEMBLY, STS	1
3	03-0210	KIT, HEAD, STS-1	1
4	NOT USED		
6	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
6	58-0386	MOTOR, CORDLESS, 18V, JAPAN	1

MODEL STS-1, CORDED



Parts List, Model STS-1, Corded, 115V Metablo (P/N 01-2536)

Item No	Part No.	Description	Qty
1	02-3205	SUB-ASSEMBLY, FRONT END, STS-1	1
2	02-3128	SUB-ASSEMBLY, STS	1
3	03-0210	KIT, HEAD, STS-1	1
4	27-1506	ADAPTER, MTR COUPLING, 115V METABO	1
5	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
6	58-0277	MOTOR, C.W. ELEC, METABO, 115V	1

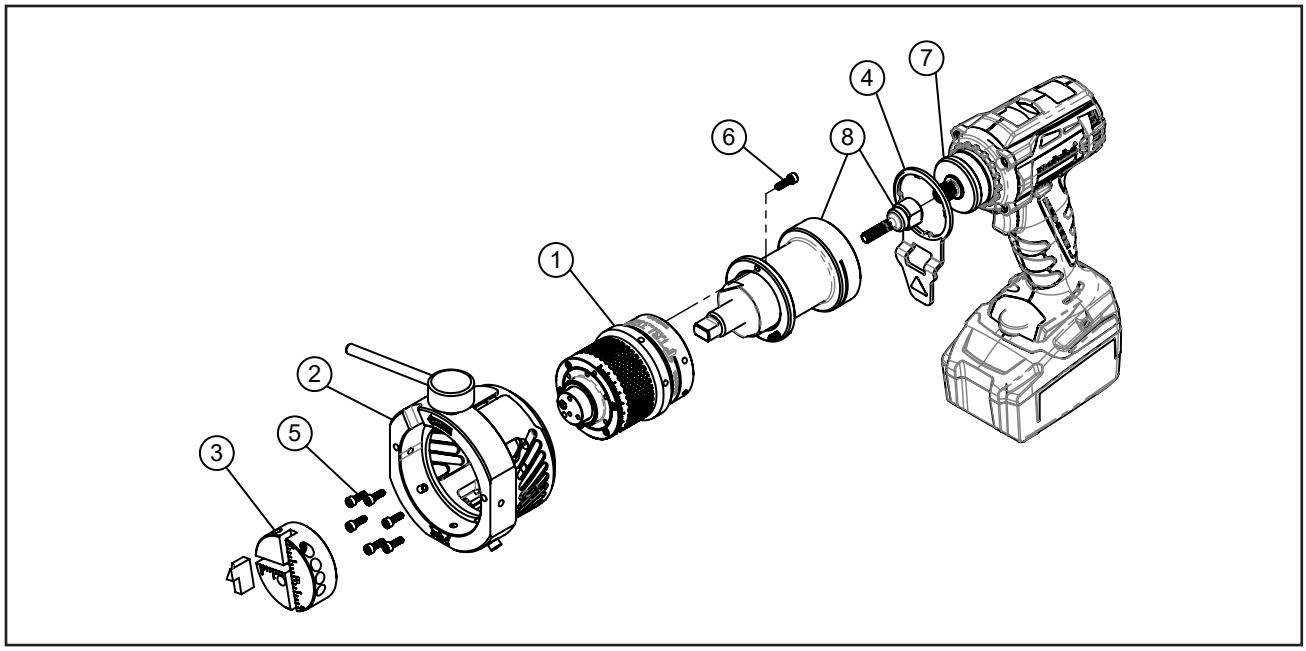
Parts List, Model STS-1, Corded, 230V Metablo (P/N 01-2537)

Item No	Part No.	Description	Qty
1	02-3205	SUB-ASSEMBLY, FRONT END, STS-1	1
2	02-3128	SUB-ASSEMBLY, STS	1
3	03-0210	KIT, HEAD, STS-1	1
4	27-1506	ADAPTER, MTR COUPLING, 115V METABO	1
5	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
6	58-0321	MOTOR, C.W. ELEC, METABO, 230V	1

Parts List, Model STS-1, Corded, 100V (Japan Only) (P/N 01-2543)

Item No	Part No.	Description	Qty
1	02-3205	SUB-ASSEMBLY, FRONT END, STS-1	1
2	02-3128	SUB-ASSEMBLY, STS	1
3	03-0210	KIT, HEAD, STS-1	1
4	27-1657	ADAPTER, DRIVE, GEAR REDUCTION, MAKITA	1
5	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
6	58-0331	MOTOR, MOD, 100V MAKITA, JAPAN	1

MODEL STS-2, CORDLESS



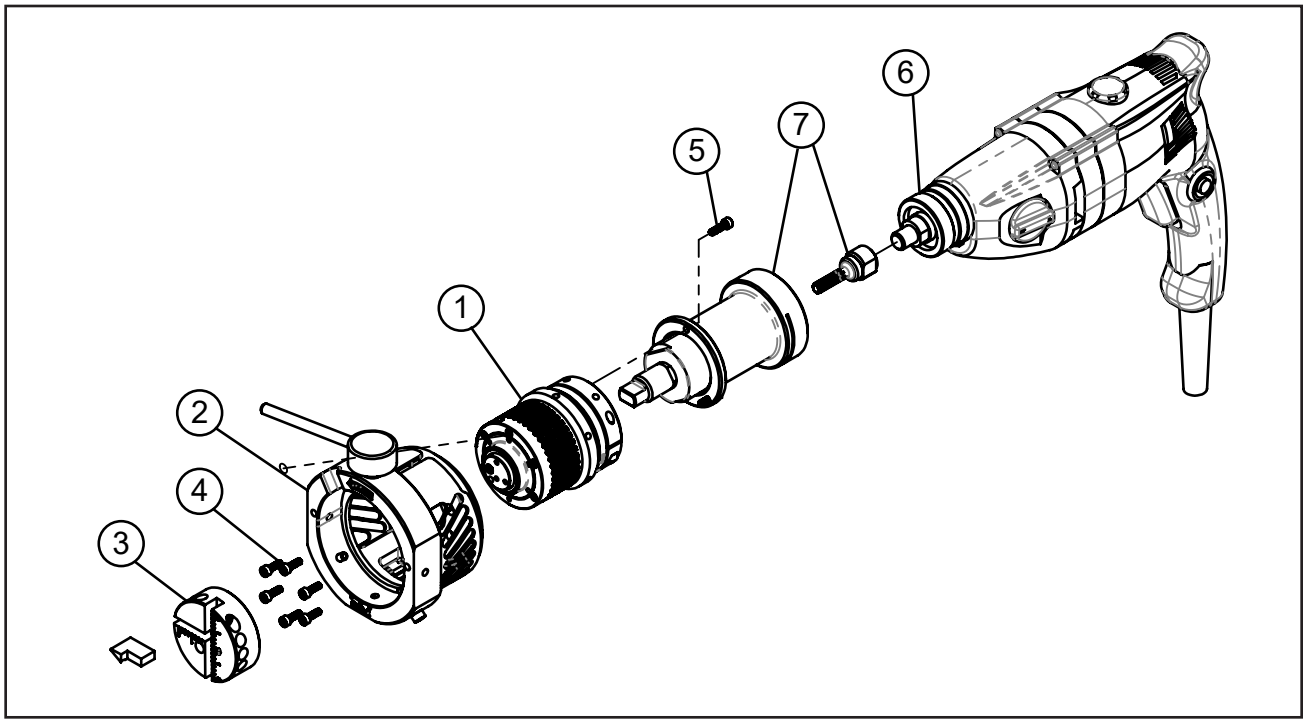
Parts List, Model STS-2, Cordless, 115V Metablo (P/N 01-2538)

Item No	Part No.	Description	Qty
1	02-3128	SUB-ASSEMBLY, STS	1
2	02-3206	SUB-ASSEMBLY, FRONT END, STS-2	1
3	03-0211	KIT, HEAD, STS-2	1
4	05-1694	KIT, TRIGGER GUARD, METABO CORDLESS	1
5	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
6	33-4961	SCREW, CAP, M4 X 0.7 X 14MM	3
7	58-0317	MOTOR, CORDLESS, 18V, METABO, 115V MOD CW	1
8	59-0043	GEAR REDUCER ASSEMBLY, STS-2, CORDLESS	1

Parts List, Model STS-2, Cordless, 230V Metablo (P/N 01-2539)

Item No	Part No.	Description	Qty
1	02-3128	SUB-ASSEMBLY, STS	1
2	02-3206	SUB-ASSEMBLY, FRONT END, STS-2	1
3	03-0211	KIT, HEAD, STS-2	1
4	05-1694	KIT, TRIGGER GUARD, METABO CORDLESS	1
5	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
6	33-4961	SCREW, CAP, M4 X 0.7 X 14MM	3
7	58-0320	MOTOR, CORDLESS, 18V, METABO, 230V MOD CW	1
8	59-0043	GEAR REDUCER ASSEMBLY, STS-2, CORDLESS	1

MODEL STS-2, CORDED



Parts List, Model STS-2, Corded, 115V Metablo (P/N 01-2540)

Item No	Part No.	Description	Qty
1	02-3128	SUB-ASSEMBLY, STS	1
2	02-3206	SUB-ASSEMBLY, FRONT END, STS-2	1
3	03-0211	KIT, HEAD, STS-2	1
4	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
5	33-4961	SCREW, CAP, M4 X 0.7 X 14MM	3
6	58-0277	MOTOR, C.W. ELEC, METABO, 115V	1
7	59-0045	GEAR REDUCER ASSEMBLY, STS-2, CORDED	1

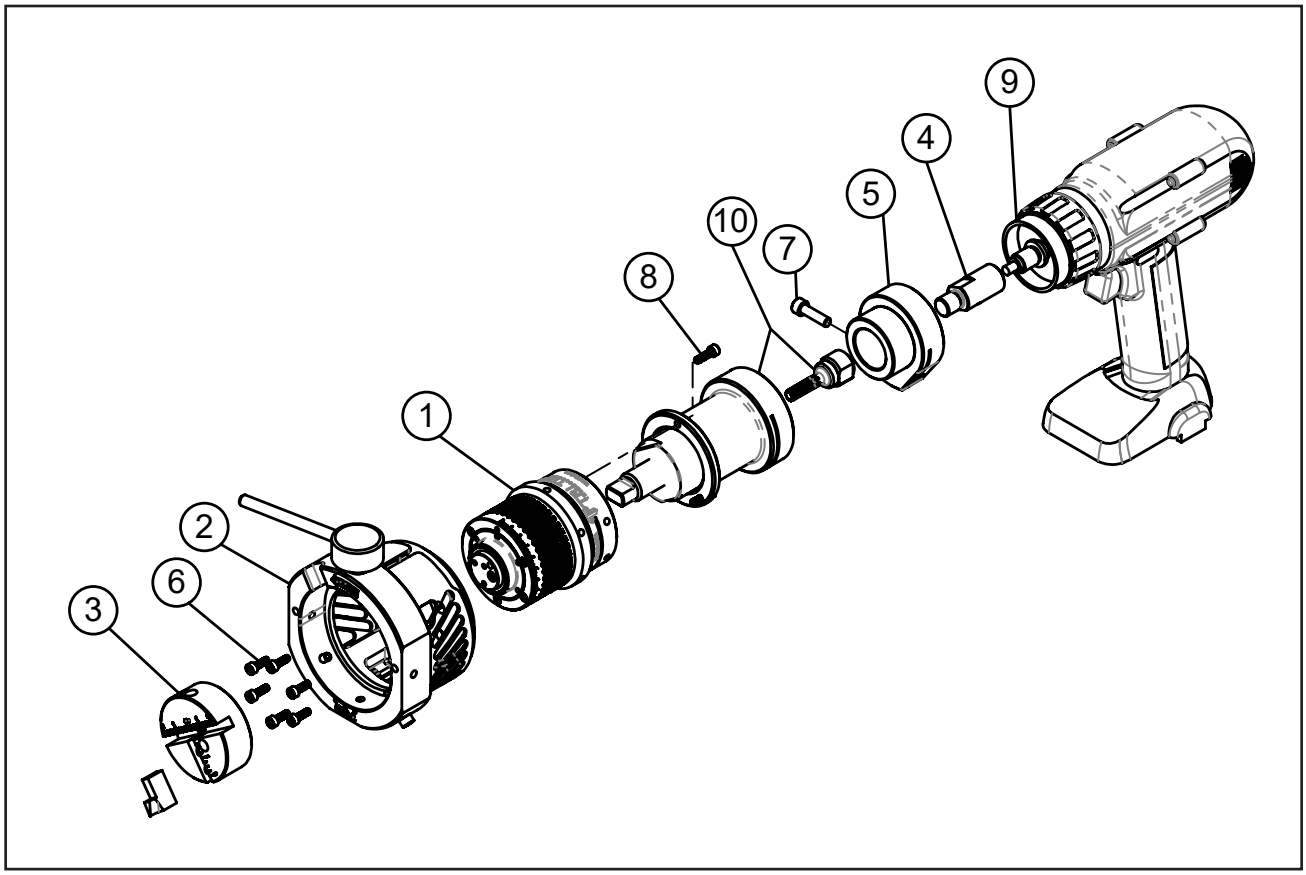
Parts List, Model STS-2, Corded, 230V Metablo (P/N 01-2541)

Item No	Part No.	Description	Qty
1	02-3128	SUB-ASSEMBLY, STS	1
2	02-3206	SUB-ASSEMBLY, FRONT END, STS-2	1
3	03-0211	KIT, HEAD, STS-2	1
4	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
5	33-4961	SCREW, CAP, M4 X 0.7 X 14MM	3
6	58-0321	MOTOR, C.W. ELEC, METABO 230V	1
7	59-0045	GEAR REDUCER ASSEMBLY, STS-2, CORDED	1

Parts List, Model STS-2, Corded, 100V (Japan Only) (P/N 01-2545)

Item No	Part No.	Description	Qty
1	02-3128	SUB-ASSEMBLY, STS	1
2	02-3206	SUB-ASSEMBLY, FRONT END, STS-2	1
3	03-0211	KIT, HEAD, STS-2	1
4	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
5	33-4961	SCREW, CAP, M4 X 0.7 X 14MM	3
6	58-0331	MOTOR, MOD., 100V MAKITA, JAPAN	1
7	59-0046	GEAR REDUCER ASSEMBLY, STS-2, CORDED, JAPAN	1

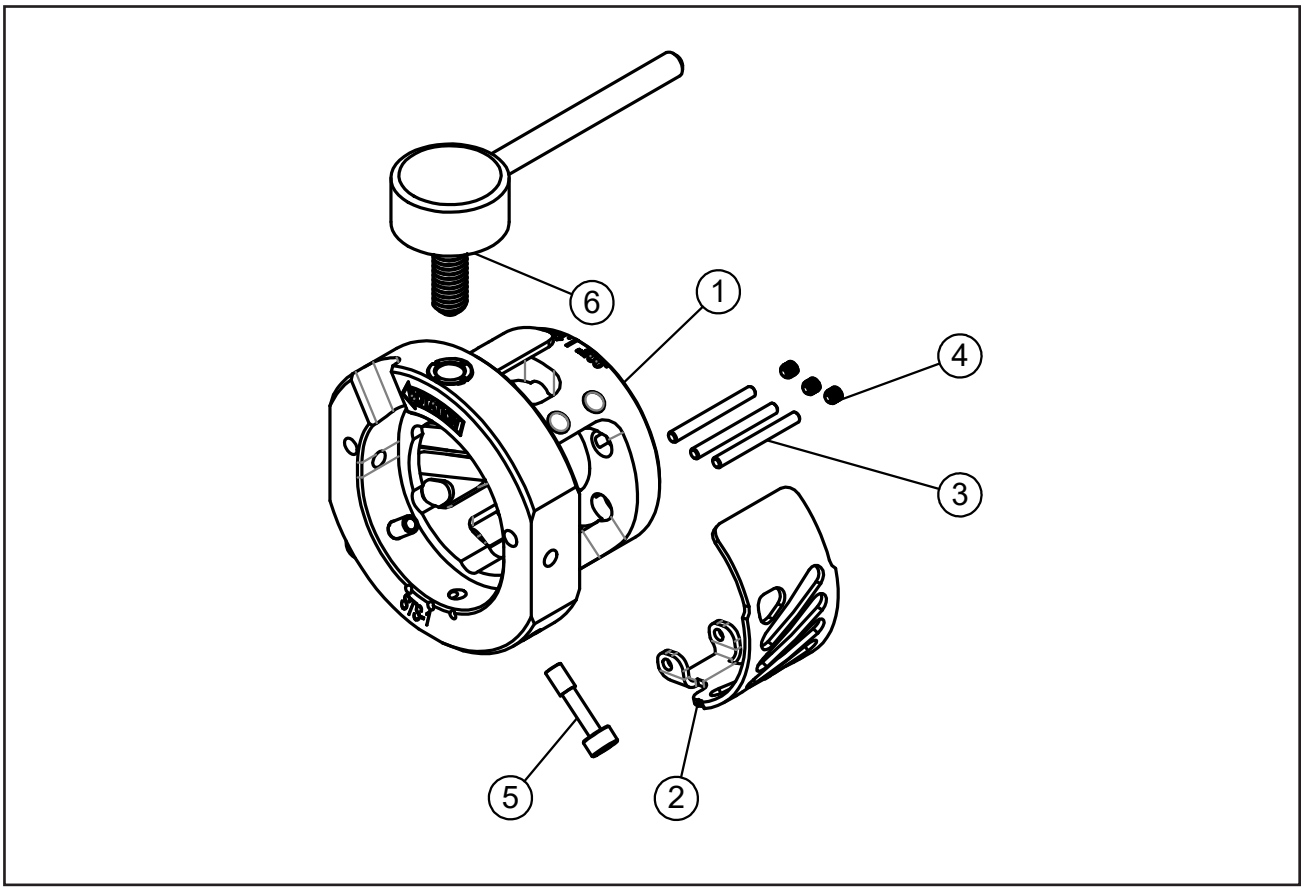
MODEL STS-2, CORDLESS, 18V (JAPAN) (P/N 01-2544)



Parts List, Model STS-2, Cordless, 18V (Japan) (P/N 01-2544)

Item No	Part No.	Description	Qty
1	02-3128	SUB-ASSEMBLY, STS	1
2	02-3206	SUB-ASSEMBLY, FRONT END, STS-2	1
3	03-0211	KIT, HEAD, STS-2	1
4	20-1814	SHAFT ADAPTER	1
5	27-1661	ADAPTER, MOTOR, STS-1/STS-2, CORDLESS, JAPAN	1
6	33-2547	SCREW, CAP, M4 X 0.7 X 12MM	6
7	33-4516	SCREW, CAP, M6 X 22MM	1
8	33-4961	SCREW, CAP, M4 X 0.7 X 14MM	3
9	58-0353	MOTOR, CORDLESS, BRUSHLESS, JAPAN, MOD	1
10	59-0043	GEAR REDUCER ASSEMBLY, STS-2, CORDLESS	1

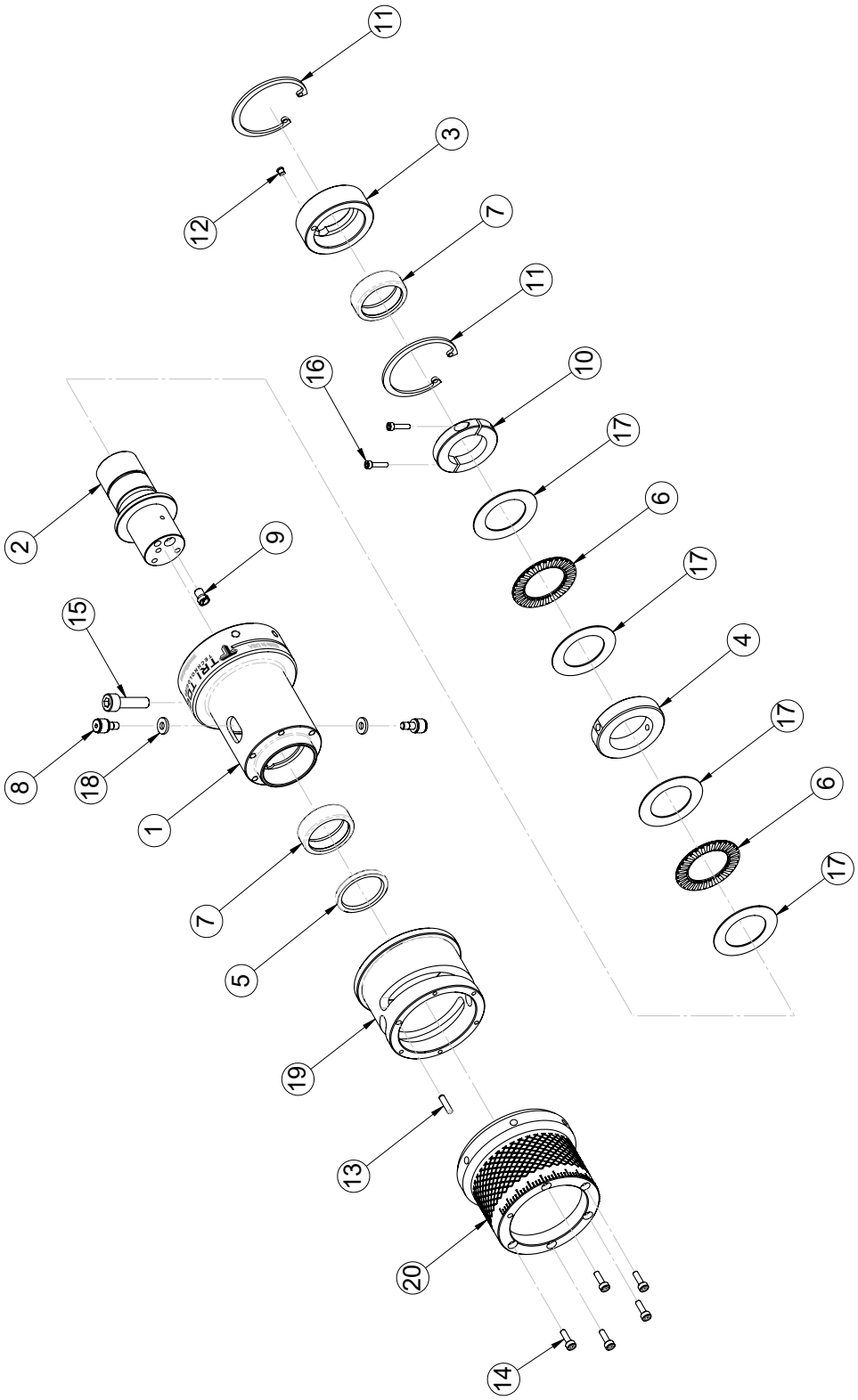
MODEL STS-1, SUB-ASSEMBLY, FRONT END (P/N 02-3205)



Parts List, Sub-Assembly, Front End, STS-1, V2.0 (P/N 02-3205)

Item No	Part No.	Description	Qty
1	19-2011	HOUSING, ASSEMBLY, FRONT, STS-1, V2.0	1
2	24-5019	PLATE, CHIP GUARD, STS-1	2
3	32-1217	PIN, DOWEL, 1/8" X 1-1/4"	3
4	33-4968	SCREW, SET, M4 X 0.7 X 4MM, CUP PT	3
5	33-4970	SCREW, CAP, M5 X 0.8 X 22MM, MOD	2
6	41-1165	HANDLE, ADJ, MOD	1

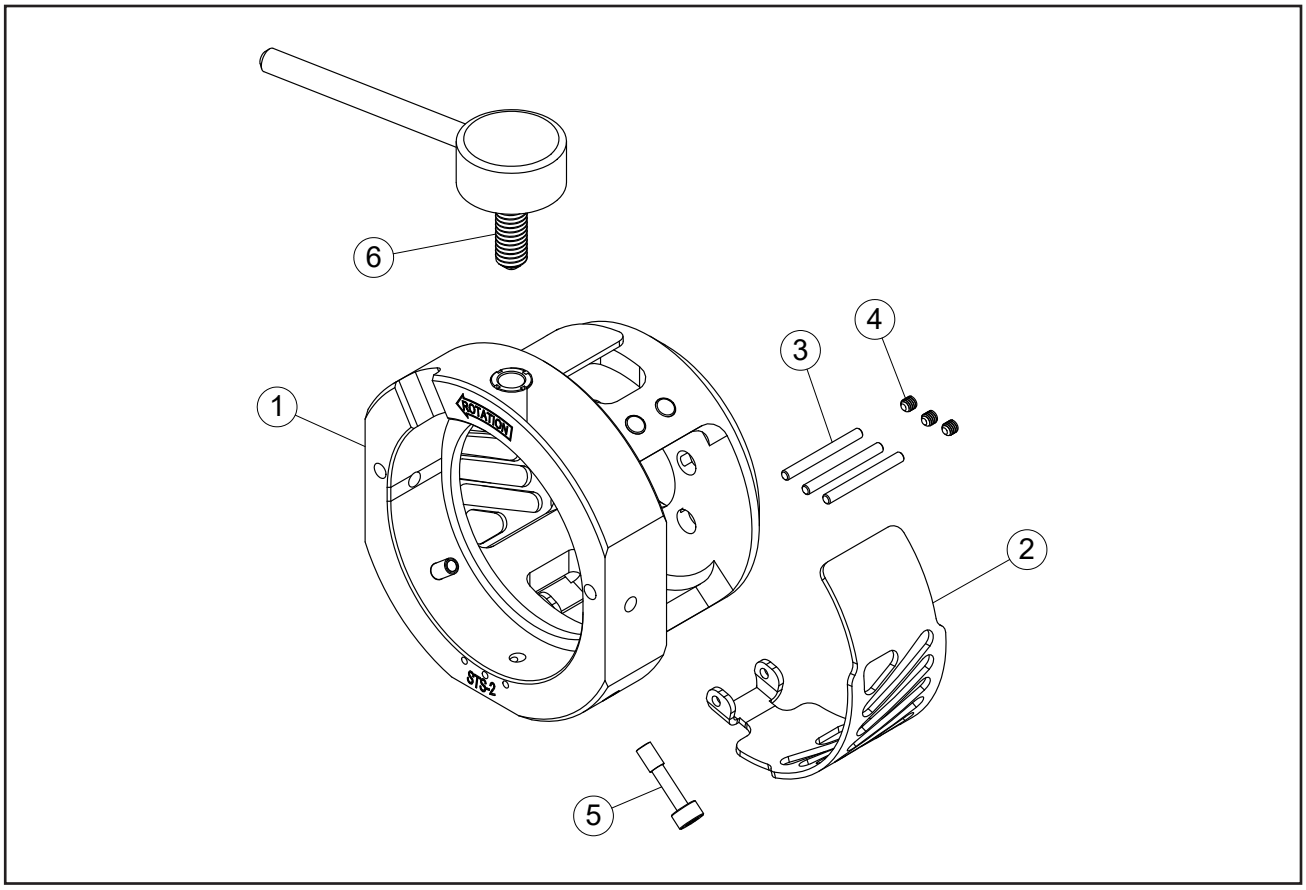
SUB-ASSEMBLY, BASE, STS (P/N 02-3128)



Parts List, Sub-Assembly, Base, STS (P/N 02-3128)

Item No	Part No.	Description	Qty
1	19-1895	HOUSING, MAIN	1
2	20-1781	SHAFT, SPINDLE	1
3	27-1631	ADAPTER, BEARING	1
4	27-1632	ADAPTER, COLLAR	1
5	28-0687	SEAL, LIP, 1” X 1.25” X .25”	1
6	29-0208	BEARING, THRUST, 1” X 1 9/16” X 5/64”	2
7	29-0856	BEARING, NEEDLE, 1” X 1.25” X .375”	2
8	29-0883	CAM FOLLOWER, 8 MM O.D., M4 x 0.7	2
9	30-7073	FITTING GREASE, FLUSH, #10 - 32	1
10	30-7074	COLLAR, CLAMP, 1” - 20 UNEF	1
11	30-7077	RING, RETAINING, INTERNAL, 43 MM BORE	2
12	30-7090	FITTING, GREASE, FLUSH, .125” PRESS FIT	1
13	32-0177	PIN, DOWEL, 1/8” DIA. X 1/2”	1
14	33-4141	SCREW, CAP, M3 X 0.5 X 10 MM	5
15	33-4516	SCREW, CAP, M6 X 22 MM	1
16	33-4963	SCREW, CAP, M2.5 X 0.45 X 12 MM	2
17	34-0216	WASHER, THRUST, 1” X 1 9/16” X 1/32”	4
18	44-1746	SPACER, CAM FOLLOWER	2
19	46-0821	SLEEVE, FEED	1
20	46-0822	SLEEVE, ROTARY FEED	1

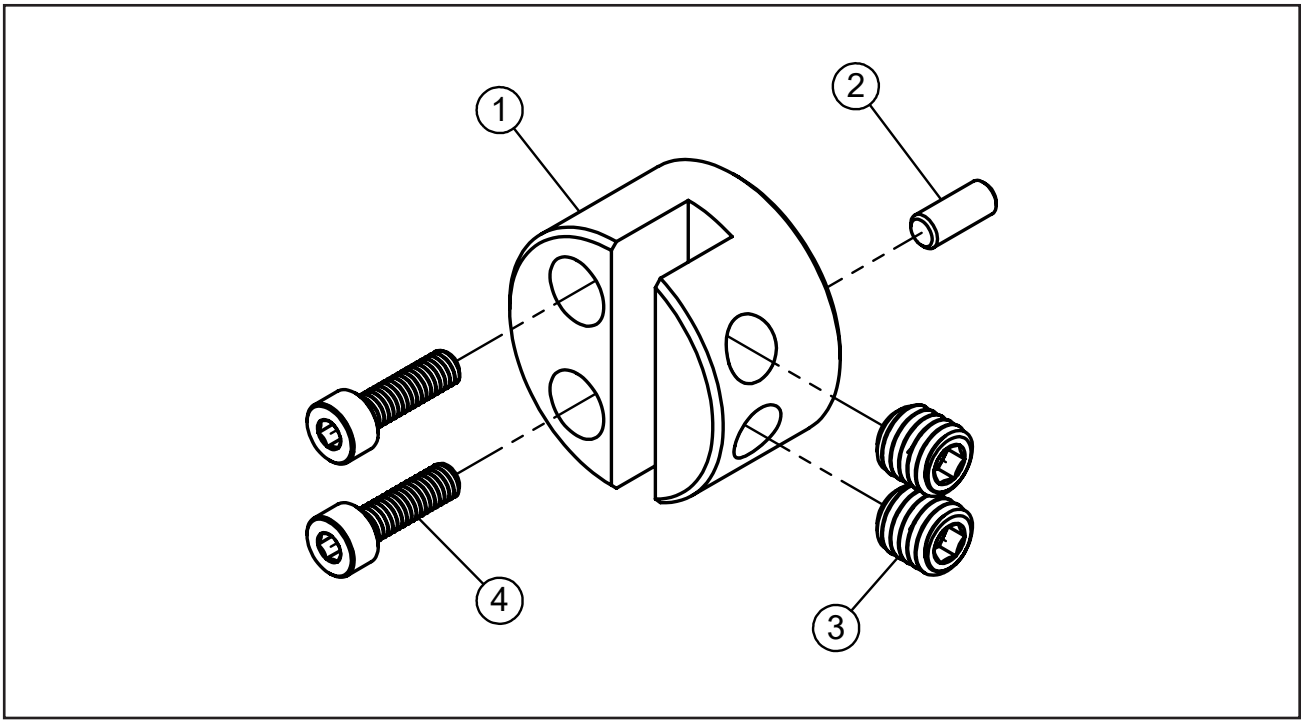
MODEL STS-2, SUB-ASSEMBLY, FRONT END (P/N 02-3206)



Parts List, Sub-Assembly, Front End, STS-2, V2.0 (P/N 02-3206)

Item No	Part No.	Description	Qty
1	19-2013	HOUSING, ASSEMBLY, FRONT, STS-2, V2.0	1
2	24-5020	PLATE, CHIP GUARD, STS-2	2
3	32-1217	PIN, DOWEL, 1/8" X 1-1/4"	3
4	33-4968	SCREW, SET, M4 X 0.7 X 4MM, CUP PT	3
5	33-4970	SCREW, CAP, M5 X 0.8 X 22MM, MOD	2
6	41-1165	HANDLE, ADJ, MOD	1

MODEL STS-1/STS-2, KIT, HEAD



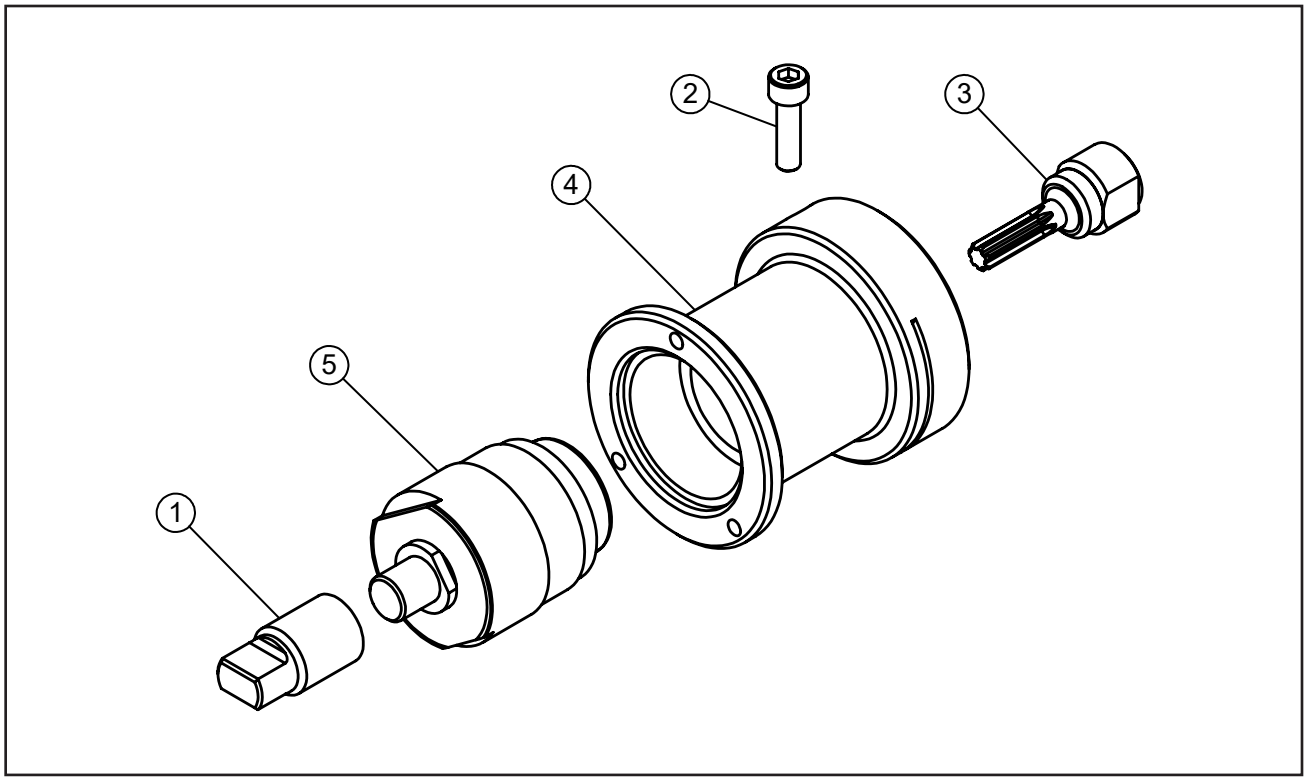
Parts List, Model STS-1/STS-2, Kit, Head (P/N 03-0210)

Item No	Part No.	Description	Qty
1	21-0797	HEAD, CUTTING, STS-1	1
2	32-1214	PIN, DOWEL, 5/32 X 3/8L	1
3	33-4960	SCREW, SET, M8 X 1.25 X 8MM, CUP PT	2
4	33-4961	SCREW, CAP, M4 X 0.7 X 14MM	2

Parts List, Model STS-1/STS-2, Kit, Head (P/N 03-0211)

Item No	Part No.	Description	Qty
1	21-0798	HEAD, CUTTING, STS-2	1
2	32-1214	PIN, DOWEL, 5/32 X 3/8L	1
3	33-4960	SCREW, SET, M8 X 1.25 X 8MM, CUP PT	6
4	33-4961	SCREW, CAP, M4 X 0.7 X 14MM	2

MODEL STS-2, GEAR REDUCER ASSEMBLY



Parts List, Model STS-2, Gear Reducer Assembly, Cordless (P/N 59-0043)

Item No	Part No.	Description	Qty
1	27-1688	ADAPTER, DRIVE, GEAR REDUCTION	1
2	33-4516	SCREW, CAP, M6 X 22MM	1
3	39-1412	SPINDLE, DRIVE, GEAR REDUCTION	1
4	46-0794	SLEEVE, MOTOR, CORDLESS, STS-1/STS-2	1
5	59-0044	GEAR REDUCER MOD	1

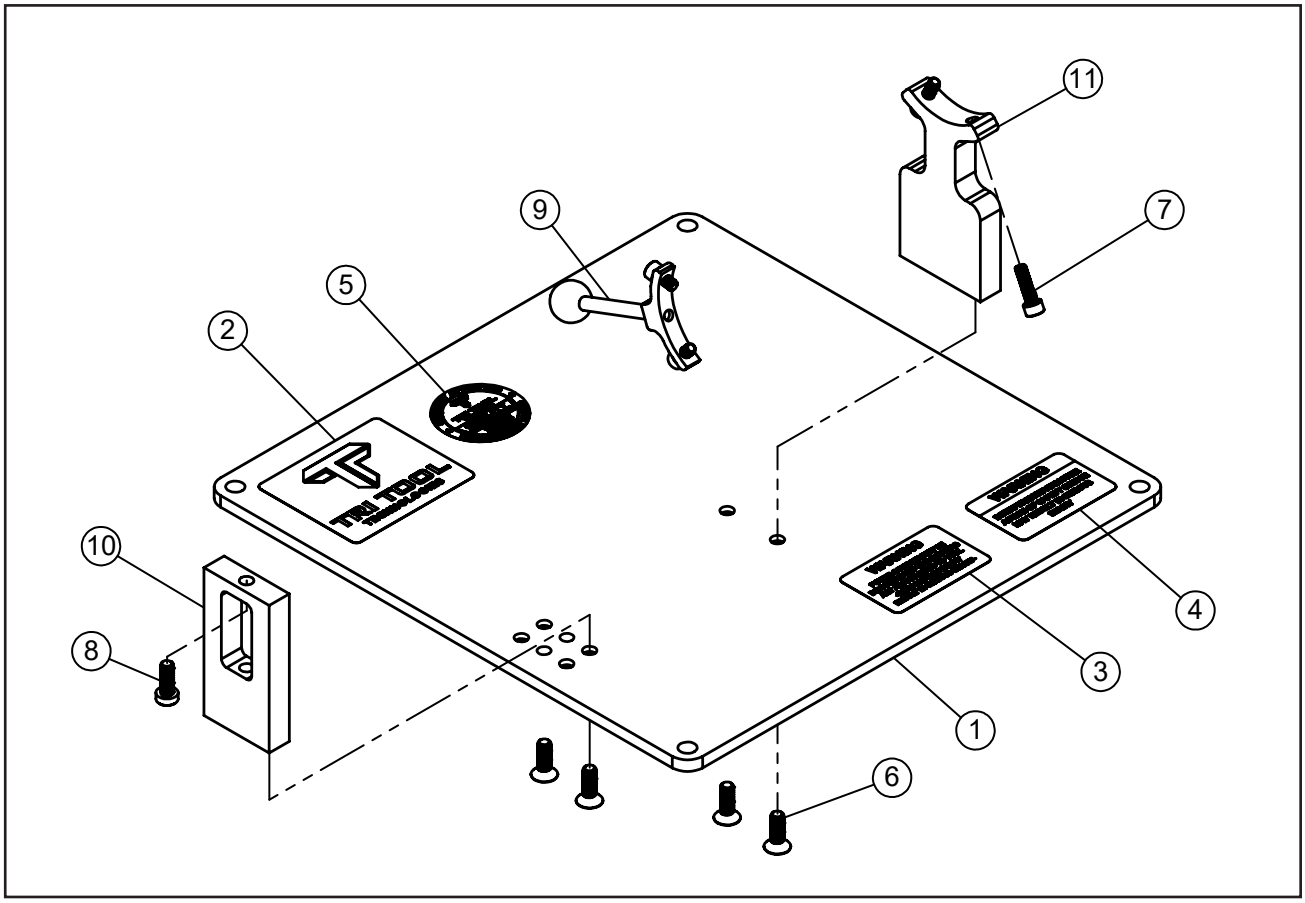
Parts List, Model STS-2, Gear Reducer Assembly, Corded (P/N 59-0045)

Item No	Part No.	Description	Qty
1	27-1688	ADAPTER, DRIVE, GEAR REDUCTION	1
2	33-4516	SCREW, CAP, M6 X 22MM	1
3	39-1412	SPINDLE, DRIVE, GEAR REDUCTION	1
4	46-0801	SLEEVE, MOTOR, CORDED, STS-1/STS-2	1
5	59-0044	GEAR REDUCER MOD	1

Parts List, Model STS-2, Gear Reducer Assembly, Corded, Japan (P/N 59-0046)

Item No	Part No.	Description	Qty
1	27-1688	ADAPTER, DRIVE, GEAR REDUCTION	1
2	33-4516	SCREW, CAP, M6 X 22MM	1
3	39-1412	SPINDLE, DRIVE, GEAR REDUCTION	1
4	46-0802	SLEEVE, MOTOR, CORDED, MAKITA (JAPAN)	1
5	59-0044	GEAR REDUCER MOD	1

MODEL STS-1/STS-2, STAND, LATHE



Parts List, Model STS-1, Stand, Lathe (P/N 60-0121)

Item No	Part No.	Description	Qty
1	24-5091	STAND, LATHE, BASE, STS-1/STS-2	1
2	30-0483	LABEL, LOGO, SMALL	1
3	30-0508	LABEL, "WARNING, DISCONNECT"	1
4	30-0961	LABEL, WARNING, SAFETY SWITCH	1
5	30-2061	LABEL, TRI TOOL, QUALITY	1
6	33-5022	SCREW, FLAT, M6 X 1 X 18MM	4
7	33-5023	SCREW, CAP, M5 X 0.8 X 18MM	2
8	33-5024	SCREW, CAP, M6 X 1 X 16MM, LOW HEAD	1
9	41-1166	HANDLE ASSEMBLY, STS-1/STS-2	1
10	47-2959	STAND, LATHE, FRONT MOUNT, STS-1	1
11	47-2960	STAND, LATHE, REAR MOUNT, STS-1/STS-2	1

Parts List, Model STS-2, Stand, Lathe (P/N 60-0122)

Item No	Part No.	Description	Qty
1	24-5091	STAND, LATHE, BASE, STS-1/STS-2	1
2	30-0483	LABEL, LOGO, SMALL	1
3	30-0508	LABEL, "WARNING, DISCONNECT"	1
4	30-0961	LABEL, WARNING, SAFETY SWITCH	1
5	30-2061	LABEL, TRI TOOL, QUALITY	1
6	33-5022	SCREW, FLAT, M6 X 1 X 18MM	4
7	33-5023	SCREW, CAP, M5 X 0.8 X 18MM	2
8	33-5024	SCREW, CAP, M6 X 1 X 16MM, LOW HEAD	1
9	41-1166	HANDLE ASSEMBLY, STS-1/STS-2	1
10	47-2961	STAND, LATHE, FRONT MOUNT, STS-2	1
11	47-2960	STAND, LATHE, REAR MOUNT, STS-1/STS-2	1

Parts List, Model 300STS, Wrench Kit (Not Shown) (P/N 05-1606)

Item No	Part No.	Description	Qty
1	36-0693	WRENCH, T, 3MM X 6”	1
2	36-0694	WRENCH, T, 4MM X 6”	1
3	36-0695	WRENCH, L, 5MM	1

REVISION HISTORY

ADDED 7/22/2024:

Part No.	Description	Page
24-5091	KIT, TRIGGER GUARD, METABO CORDLESS	31 / 35

REVISED 9/18/2024:

Description

REBRANDED 300STS-1 AND 300STS-2 TO STS-1 AND STS-2

REVISED 11/1/2024:

Description

P/N 02-3121 SUB-ASSEMBLY, FRONT END, STS-1, REPLACED BY P/N 02-3205
P/N 02-3129 SUB-ASSEMBLY, FRONT END, STS-2, REPLACED BY P/N 02-3206

REVISED 11/13/2024:

Description

ADDED “RECOMMENDED SPARE PARTS” SECTION, INCLUDING:
- STS FEED KIT (P/N 05-1745)
- STS HEAD KIT (P/N 05-1746)
- STS-1 GUARD KIT (P/N 05-1747)
- STS-2 GUARD KIT (P/N 05-1748)

WARNING

Read the manual and be familiar with all safety precautions before operating equipment. The following are general warnings for industrial equipment with moving parts. Refer to the manual for specific warnings applicable to your equipment.

EYE HAZARD - Always wear appropriate eye protection while operating the equipment.

PINCH HAZARD - Keep your hands and clothing away from moving parts.

CRUSH HAZARD - The machinery, pipe, or work piece can shift, separate, lurch, or fall.

CHIP HAZARD - Metal chips may be hot and sharp. Be careful when you clear the tooling path or clean up chips.

TIE DOWN HAZARD - Deliberate overriding of safety triggers can result in serious injury. Never lock or tie down any safety triggers.

SHOCK HAZARD - Ensure that the equipment is properly installed and grounded. Ensure that the equipment is not damaged and that the power cord is intact.

OTHER HAZARDS

• Tool bits are sharp and can cause serious injury.
• Do not defate or modify safety features.
• Disconnect power sources before servicing or moving the equipment.
• Remove all loose articles of clothing and jewelry before operating the equipment.

Be Safety Conscious!

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