

Equalizer®

Glass Removal Powered Cut-Out Knives

OPERATION SPECIFICATIONS FOR:

- SR1418360 • Equalizer® 360 120-Volt AC Powered
- HHT2013 • Equalizer® Black-Ops™ 120-Volt AC Powered
- LDT204 • Equalizer® StingRay™ 120-Volt AC Powered
- SP1416 • Equalizer® Air - Pneumatic
- ATV2012 • Equalizer® Ambush™ 20-Volt Battery Powered
- BH2019 • Equalizer® BlackHawk™ 20-Volt Battery Powered

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Express® Power Tool
Instructional Video



Equalizer®



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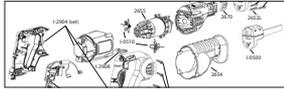
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Warranty Information

Equalizer® Auto Glass Tools are warranted* to be free of factory defects. Warranty does not apply to abuse, misuse, or normal wear and tear. Warranty also does not apply to accessories or damage caused where repairs have been made or attempted by unauthorized persons. We will repair or replace, at our option, any defective part. Tools are repaired and sent back the same day they are received.

When sending in your tool for repair, send the entire tool which may include the battery, blades & sheath to:

EQUALIZER®
ATTN: Repair Department
2611 OAKMONT DRIVE
ROUND ROCK, TEXAS 78665

or to find an authorized repair center nearest you contact us at 800.334.1334.

Equalizer® reserves the right to refuse to repair, at our expense, any tool which has not been properly maintained as specified in the Users Guide.

1. **KEEP THE BLADES SHARP!** This is the one thing most technicians do not do and it WILL damage the tool.
2. **USE WATER AS A CUTTING LUBRICANT.**
3. **USE HIGH HEAT GREASE.** This protects the sheath and blade shaft.
4. **DO NOT HIT THE PINCHWELD!** This will destroy the drive mechanism of your tool.

If you have any questions about your tool, call us toll free at 800.334.1334, fax us at 512.388.4188 or email to repairs@equalizer.com or sales@equalizer.com

*Warranty period varies by product.

EQUALIZER® SERIAL NUMBER _____

Keep this for your records.

BLADES & SHEATH

Equalizer® Express® Standard Blades

The BFE1400 is the most used size and is perfect for slicing through wide bands of urethane. It works well in all places where you plunge cut or angle cut. The BFE1401 blade is perfect for removing glass that is not broken. Its narrow width is more flexible, which puts less stress on the glass. The LBE1402 work well where the urethane is far below the glass, but there is a limited amount of vertical space inside the vehicle. The LBE1403 blade is perfect for removing glass that is not broken. Its narrow width is more flexible, which puts less stress on the glass. The RLE1404 work well where the urethane is very deep below the dash.

BFE1401 • 1-1/2" W x 10" L

LBE1403 • 1-1/2" W x 12" L

BFE1400 • 3" W x 10" L

LBE1402 • 3" W x 12" L

RLE1404 • 3" W x 14" L



Equalizer™ Express® HydroBlades™

These are the same as our standard Express® Blades but they have a series of small dimples stamped on the side of the blade that rides against the urethane. These dimples are designed to carry cutting lubricant into the urethane that is being cut by the blade. With each stroke the blade picks up cutting lubricant on the outside of the urethane and deposits it inside the urethane allowing for each additional stroke of the blade to slide easily through the urethane. Besides making the blade cut easier they also lengthen the tool life and reduce vibration because of the reduced friction on the blade. These blades can also be used with our Express® Blade Handle.

EHB145 • 1-1/2" W x 10" L

EHL146 • 1-1/2" W x 12" L

EHB186 • 3" W x 10" L

EHL187 • 3" W x 12" L

EHE160 • 3" W x 14" L



Equalizer® Express® Specialty Blades

Serrated For An Even Better Cut!

Some areas require side-to-side cutting. This is more common around very radical curves in the glass, and in vehicles that have corners with a sharper-than-90° angle. It can be difficult to get all the way up into these corners with a square-end blade, but with the round tip it will reach up into the corner and cut the urethane. This blade can also be used with our Express® Blade Handle.

EHF173 • Express™ Specialty Blade



**With Proper Care & Maintenance
All Equalizer® Blades Can Last Up To 50 Removals**

Equalizer® Express® Spacer Blades

Some vehicles have a moulding with a piece of metal inside. Mouldings with metal inserts can be difficult to cut, but by using the Express® Spacer Blade cutting these is a breeze. Also, many encapsulated glasses have a very dense encapsulation material that is difficult to cut. To save unbroken glass these blades are designed to hold the blade below the moulding and prevent the blade from cutting into the encapsulation. A permanently attached, self-lubricating nylon spacer lets the blade move easily back and forth while holding the blade under the lower lip of the moulding or encapsulation. These blades can also be used with our Express® Blade Handle.

EHS174 • 1-1/2" W x 10" L

EHS175 • 3" W x 10" L



Quarter and Corner Glass Blade

These narrow blades are designed to cut quarter glasses that come to a sharp point in the back. They are also very useful on those vehicles that have corners with sharp angles. The blades are flexible to allow the tool to be held outside the quarter glass opening while cutting inside.

HQS176 • Narrow Passenger • 1-3/8" W x 12" L

HQS177 • Narrow Driver • 1-3/8" W x 12" L



These wide blades are designed to accommodate the quarter glasses and corners that are not as pointed. Each blade is designed for a specific side of the vehicle.

HQW178 • Wide Passenger • 2" W x 12" L

HQW179 • Wide Driver • 2" W x 12" L



Piranha™ Blade

The Equalizer® Piranha™ blade uses the same cutting technology as the original HydroBlade™ but also incorporates serration on a portion of each side of the blade, making cutting from left to right and right to left much easier.

PHB169 • 3" W x 10" L

PHB174 • 3" W x 12" L

PHB175 • 3" W x 14" L



There is a difference in how the Piranha™ blade performs versus our standard HydroBlade™. When using the Piranha™ blade, the serrations cause the blade to pull you into your cut and guide you. This blade is more aggressive than the standard HydroBlade™ and must be used with a lubricant! When used correctly, it is very effective.

**With Proper Care & Maintenance
All Equalizer® Blades Can Last Up To 50 Removals**

Bullet™ Blade

Bullet™ Blades are elongated, rounded blades designed to cut from all angles. Their unique shape and sharpening make side-to-side cutting easier and make slicing through wide beads of urethane a breeze.

REL261 • 1-1/2" W x 12" L

REB262 • 3" W x 10" L

REL263 • 3" W x 12" L

REE264 • 3" W x 14" L



**With Proper Care & Maintenance
All Equalizer® Blades Can Last Up To 50 Removals**

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Web: www.equalizer.com

Sharpening The Blade

Keep your blades sharp! This is crucial for effective cutting action and tool longevity. A dull blade will destroy the drive mechanism in your Equalizer® auto glass cut-out knife. Sharpen the blade between each removal with an SFE329 Blade Sharpener. Be careful to maintain the original sharpening angle. Every ten removals, re-sharpen the blade on a bench grinder. Keeping a sharp blade will help the tool cut faster, will reduce vibration, increase the life of the tool, and reduce fatigue for the user. Most tool damage is caused because the blade has not been kept sharp. Equalizer® does not warranty tools in these cases.



Discard the blade when it has been sharpened down to the line that says: DO NOT SHARPEN BELOW THIS LINE. Using a blade past this point will eliminate the flexibility of the blade, damage the tool & VOID WARRANTY!

About The Equalizer® Express® Sheath...

The sheath is the unique idea that allows the Equalizer® Express® Tools to use a flexible blade and still have the strength to cut the toughest urethane. The sheath also provides protection for the dash and interior vehicle parts. To keep the sheath cool we recommend that you periodically apply a light film of High Heat Grease (Equalizer® Part# 4237) to the blade shaft that goes inside the sheath.

Equalizer® Express® Blades come in longer and shorter sizes, but there is only one size sheath and it fits all Equalizer® Express® Tools.



Changing The Sheath

The sheath is not adjustable! There are four top screws that are secured in place with Loctite® to prevent loosening from vibration. These are not meant to be removed unless you are replacing the sheath. Please be aware that some force may be required to remove these screws. If difficulty is encountered, to prevent stripping of the screws we recommend warming the sheath retainer with a heat gun or other warming device and follow these steps:

1. Loosen the screws with a 3/16" hex wrench.
 2. Make note of the built-in sheath stop located at the back of the sheath holder.
 3. Remove the old sheath.
 4. Insert the new sheath until it touches the stop, but DO NOT insert the sheath past the stop!
-

Damaged Blades

Damage to blades can be caused by forcing the tool to cut faster rather than letting it cut at its own pace. Damage can also be caused by not using a cutting lubricant, not properly maintaining a sharp edge on the blade, and by hitting metal clips, rivets, and the pinchweld when cutting. Damaged blades can cause excess vibration making your tool harder to control. When you have a damaged blade resharpen to maintain a sharp, straight edge. Not doing so will VOID WARRANTY!



Damaged Sheath

Worn out sheaths must be replaced. If not replaced, the blade will not flex properly which will result in damage to your tool and VOID WARRANTY!



WARRANTY INFORMATION

All Equalizer® auto glass removal tools are warranted for one year to be free of factory defects. Warranty does not apply to abuse, misuse, or normal wear and tear. Warranty also does not apply to accessories or damage caused where repairs have been made or attempted by unauthorized persons. We will repair or replace, at our option, any defective part. Tools are repaired and sent back the same day they are received.

Equalizer® reserves the right to refuse to repair, at our expense, any tool which has not been properly maintained as specified in the Users Guide. Particularly important are the following:

1. Keep the blades sharp! This is the one thing most technicians WILL NOT do and it WILL damage the tool.
2. Use a cutting lubricant.
3. Use High Heat Grease to protect the sheath and blade shaft.
4. Do not hit the pinchweld. This will destroy the drive mechanism of your tool.

CUTTING METHODS

Before You Begin Cutting...

Spray the entire cutting area and blade with plenty of water. Lubrication is vital for maximum cutting ease. Failure to use water increases cutting friction and will cause tool damage. Periodically spray the blade with water. To prevent potential rust caused by water droplets, place a few drops of oil into the sheath every day and allow it to run down into the blade holder.

Removal Of Glass

Start cutting from the inside top center of the glass and cut toward the A-pillars. Keep the blade properly orientated and flat against the glass. Reverse and cut from the top center of the glass toward the other A-pillar. Relax and let the tool do the work. After the sides are loose, cut the bottom of the glass loose, utilizing one or a combination of two cutting methods. *In some cases, you can work from the outside of the vehicle.

1. Plunge Cut

Cut straight down, move over three inches and repeat this process until finished cutting.

2. Angle Cut

Turn the tool at roughly a 45-degree angle and cut along the bottom until finished.



SAFETY INFORMATION

1. Always wear safety glasses and safety gloves when using any Equalizer® auto glass cut-out knife.
2. Do not activate Equalizer® tools until they are in the cutting position. Disengage the tool and let it stop before taking it out of the urethane.
3. The blade is sharp and can cut even when the tool is not running.
4. Do not force the tool. Put light forward pressure on the tool. Let it do the work.
5. Consider your work environment. Do not use in or expose power tools to rain or damp weather.
6. Do not lay tool on the dash, the blade and sheath can be hot after use and could scorch the dash.
7. Unplug from electric source before servicing and when changing accessories.
8. Stay Alert!! Watch what you are doing. Use common sense.

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EQUALIZER® 360 120-VOLT ELECTRIC AUTO GLASS CUT-OUT KNIFE SR1418360



Specifications:

Power Source: 120 Volts

Watts: 1560

Amps: 13

Tool Weight: 10 lbs.

Strokes Per Minute: 0-3,000

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Express® Power Tool
Instructional Video



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Equalizer® 360
Features Video



FEATURES

The Equalizer® 360, 120-Volt tool is a multipurpose auto glass removal tool, designed primarily for inside use on bonded auto glass parts. It may be used outside on A-pillars for windshields of some vehicle models, and on all broken tempered parts. The blade shaft is enclosed in a sheath which protects interior car parts. Most of the cutting is accomplished on the end of the blade, therefore the operator utilizes upper torso muscles, making the tool easy to operate and ergonomically friendly. The Equalizer® 360 tool's specific blade stroke length and dynamic two-way cutting power slices through the toughest urethane adhesive with ease.

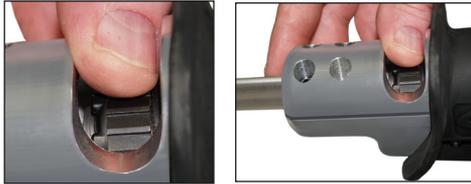
One of the great features of the Equalizer® 360 is the ability to rotate the head so you can get into confined or awkward spaces. To rotate the head, pull the release latch back and twist the front barrel. The head will rotate and lock in 45° increments. Because of its unique design, it can be swiveled 360° around (without turning it backwards) to get back to the standard configuration.

When set to reciprocating the blade will move in a straight back and forth direction. When set to oscillating the blade moves back and forth and as it reaches the end of its stroke it moves up slightly as it reciprocates. Besides the in and out thrusting this gives some sideways cutting ability to the blade.



CHANGING THE BLADE

To put a blade in the tool, the blade latch must be rotated 90°. You can rotate the blade latch with your finger, fingernail, or a straight screwdriver. Put a blade into the tool until it stops. Push in lightly on the blade and rotate the blade latch until the blade drops into place. Release the blade latch and it will rotate back in the opposite direction locking the blade in place.



- Before changing a blade the tool should be disconnected from the power source.
 - Do not hold the tool by the aluminum foot assembly. This may result in your fingers being pinched by the moving blade holder. The proper way is to hold the front part of the tool by the rubber boot.

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EQUALIZER® BLACK-OPS™ 120-VOLT ELECTRIC AUTO GLASS CUT-OUT KNIFE HHT2013



Specifications:

Power Source: 120 Volts

Watts: 1200

Amps: 12

Tool Weight: 6.5 lbs.

Strokes Per Minute: 0-3,000

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Express® Power Tool
Instructional Video



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Black-Ops™
Features Video



FEATURES

The Equalizer® Black-Ops™ 120-Volt tool is a powerful addition to the Equalizer® line of Auto Glass Removal tools. It has a compact design measuring only 14.5" in length for easy access to tight areas and more flexibility of applications. It's also lightweight at only 6.5 lbs and has an ergonomic design with a soft grip handle and boot area to provide additional comfort and reduce vibration. The powerful 12 Amp motor drives the blade at up to 3,000 strokes per minute and will cut through the thickest of urethane with ease. It also has a quick blade release that allows you to change the blade without any tools.

CHANGING THE BLADE

The blade is installed by lifting the quick connect lever, fully inserting the shaft of the blade into the sheath, and pressing the quick connect lever back down.



- Before changing a blade the tool should be disconnected from the power source.



EQUALIZER® STINGRAY™ 120-VOLT ELECTRIC AUTO GLASS CUT-OUT KNIFE LDT204



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Instructional Video



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StingRay™
Features Video



Specifications:

Power Source: 120 Volts

Watts: 840

Amps: 7

Tool Weight: 7 lbs.

Strokes Per Minute: 500-3,200

FEATURES

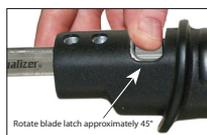
The Equalizer® StingRay™ has an ergonomic design for ease of use. The plunger floats on a series of ball bearings and the blade is driven by a floating pin bearing system. This allows more of the power of the StingRay™ to be applied directly to the blade. The low profile of the handle gives you clearance no matter which direction you are cutting. A rotating speed control gives a wide range of speeds from 500 to 3200 strokes per minute. It has a quick blade release that allows you to change the blade without any tools.

CHANGING THE BLADE

To put a blade in the tool, the blade latch must be rotated approximately 45°. You can rotate the blade latch with your finger, fingernail, or a straight screwdriver. Put a blade into the tool until it stops. Push in lightly on the blade and rotate the blade latch until the blade drops into place. Release the blade latch and it will rotate back in the opposite direction locking the blade in place.



- Before changing a blade the tool should be disconnected from the power source.



EQUALIZER® AIR AIR-POWERED (PNEUMATIC) AUTO GLASS CUT-OUT KNIFE SP1416



Specifications:

Power Source: Air

PSI: 90

CFM: 8

Tool Weight: 4 lbs.

Strokes Per Minute: 0-2800

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Express® Power Tool
Instructional Video



- Use a filter, airline pressure regulator and lubricator mounted as closely as possible to the tool.

FEATURES

The Equalizer® Air is a multipurpose auto glass removal tool, designed primarily for inside use on bonded auto glass parts. It may be used outside on A-pillars for windshields of some vehicle models, and on all broken tempered parts. The blade shaft is enclosed in a sheath which protects interior car parts. Most of the cutting is accomplished on the end of the blade, therefore the operator utilizes upper torso muscles, making the tool easy to operate and ergonomically friendly. The Equalizer® Air's specific blade stroke length and cutting power slices through the toughest urthane adhesive with ease.

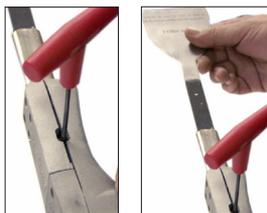


Do Not Exceed 90 psi when using this tool!

Doing so could damage the tool and/or accessories and VOID WARRANTY!

CHANGING THE BLADE

A hex screw holds the blade in place. Loosen the screw and pull the blade out of the sheath. Insert a new blade and tighten the screw. The blade retaining screw is accessible through the side of the Equalizer® Air base.



EQUALIZER® AMBUSH™ 20-VOLT BATTERY POWERED AUTO GLASS CUT-OUT KNIFE ATV2012



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Express® Power Tool
Instructional Video



Scan to watch
Ambush™
Features Video



Specifications:

Power Source: 20 Volts

Output: 20-Volt Battery

Tool Weight (w/ battery): 6 lbs.

Strokes Per Minute: 0-2800

FEATURES

The Equalizer® Ambush™ 20-Volt cordless tool is a multipurpose auto glass removal tool, designed primarily for inside use on bonded auto glass parts. It may be used outside on A-pillars for windshields of some vehicle models, and on all broken tempered parts. The blade shaft is enclosed in a sheath which protects interior car parts. A heavy-duty 20-Volt motor provides the power to quickly remove the most difficult glass and with the convenience of the battery, there is no need to worry about finding an electrical outlet or extension cords. It has a rubber over molded comfort grip that allows for optimal comfort and control and a quick release blade clamp that makes it fast and easy to change blades on the fly.



Use Only DeWalt DCB205 batteries!

There are several off-the-shelf batteries that will fit the Equalizer® Ambush™ but it is only made to operate with the DCB205.

The DeWalt battery feeds electricity to the motor and runs it backwards so that it will stop quickly.

Some other batteries may feed too much electricity into the switch and cause the drive mechanism to unwind.

Whereas others may not send enough electricity which can lead to the switch being destroyed.

Use of other batteries will VOID WARRANTY! Li-Ion tools are designed with an Electronic Protection System that will protect the battery pack against overloading, overheating or deep discharge. If the Electronic Protection System engages the tool to automatically turn off. If this occurs, place the battery on the charger until it is fully charged.

CHANGING THE BLADE

The blade is installed by lifting the quick connect lever, fully inserting the shaft of the blade into the sheath, and pressing the quick connect lever back down.



EQUALIZER® BLACKHAWK™ 20-VOLT BATTERY POWERED AUTO GLASS CUT-OUT KNIFE BH2019



Scan to watch
Express® Power Tool
Instructional Video



Specifications:

Power Source: 20 Volts

Output: 20-Volt Battery

Tool Weight (w/ battery): 6 lbs.

Strokes Per Minute: 0-2800

FEATURES

BlackHawk™ has a heavy-duty, 20-Amp brushless motor to provide ample power for quickly removing the most difficult glass. It's compact and lightweight design allows for maneuvering tight areas and features a bright LED light to provide visibility in dark work areas.



Use Only DeWalt DCB205 batteries!

There are several off-the-shelf batteries that will fit the Equalizer® Ambush™ but it is only made to operate with the DCB205.

The DeWalt battery feeds electricity to the motor and runs it backwards so that it will stop quickly.

Some other batteries may feed too much electricity into the switch and cause the drive mechanism to unwind.

Whereas others may not send enough electricity which can lead to the switch being destroyed.

Use of other batteries will VOID WARRANTY! Li-Ion tools are designed with an Electronic Protection System that will protect the battery pack against overloading, overheating or deep discharge. If the Electronic Protection System engages the tool to automatically turn off. If this occurs, place the battery on the charger until it is fully charged.

CHANGING THE BLADE

The blade is installed by lifting the quick connect lever, fully inserting the shaft of the blade into the sheath, and pressing the quick connect lever back down.



Battery Use and Care

Upon receiving your Equalizer® Ambush™ Tool or 20-Volt replacement battery (DCB205), you will need to FULLY charge your 20-Volt battery before use - about 1 Hour. A fully charged battery should remove about three (entire) windshields or about ten (bottom only) cut-outs. Removal expectations depend on a number of factors including weather, thickness of urethane, age of urethane, size of windshield, & operator skill. Colder weather conditions will get only about 50% of the expected cut-outs.

DO NOT slam the battery into the Equalizer® tool. Gently slide the battery into the tool until you hear it “click” into place.



DCB115 - 120-Volt AC Charger

The DCB115 battery charger is designed to use standard household 120-Volt AC 60 Hz power. The use of other power sources like, but not limited to, those that convert DC to AC is not recommended and will destroy the internal circuitry of the DCB115 charger. If you do not use standard household 120-Volt AC, 60 Hz power then only use a true sine wave inverter.



DCB119 - 12-Volt Automotive Charger

The DCB119 battery charger is designed to plug into the cigarette lighter or power point of a vehicle and use 12-Volt DC power. Do not use AC power. The use of any other power source, such as a device to convert AC to DC power, is not recommended and may cause serious damage to the circuitry of the DCB119 charger.



Charging Procedure

1. Plug the charger into an appropriate power outlet.
2. Insert the battery pack into the charger making sure the pack is fully seated in the charger. The red (charging) light will blink continuously, indicating that the charging process has started.
3. The battery pack will be fully charged in about 1 hour. The completion of charge will be indicated by the red light remaining ON continuously. The pack is fully charged and may be used at this time or left in the charger. In colder weather conditions, the battery will charge at about 1/2 the normal rate.

Important Safety Information About the Battery and Chargers

When using Equalizer® battery powered tools, the following are basic safety precautions that should be followed to reduce risk of fire, electrical shock and personal injury:

- Do not incinerate the battery pack even if it is severely damaged or is completely worn out. The battery pack can explode in a fire.
- A small leakage of liquid from the battery pack cells may occur under extreme usage or temperature conditions. This does not indicate a failure. However, if the outer seal is broken and this leakage should get on your skin:
 1. Wash quickly with soap and water.
 2. Neutralize with mild acid such as lemon juice or vinegar.
 3. If battery liquid gets into your eyes, flush them with clean water for a minimum of 15 minutes and seek immediate medical attention.

(Medical Note: The battery electrolyte is a mixture of liquid organic carbonates and lithium salts.)

- Never attempt to open the battery pack for any reason. If the plastic housing of the battery pack breaks or cracks, immediately discontinue use and do not recharge.
- Do not carry extra, charged battery packs in aprons, pockets, or tool boxes along with other metal objects. Battery pack could be short circuited, causing damage to the battery pack and possibly causing severe burn or fire.

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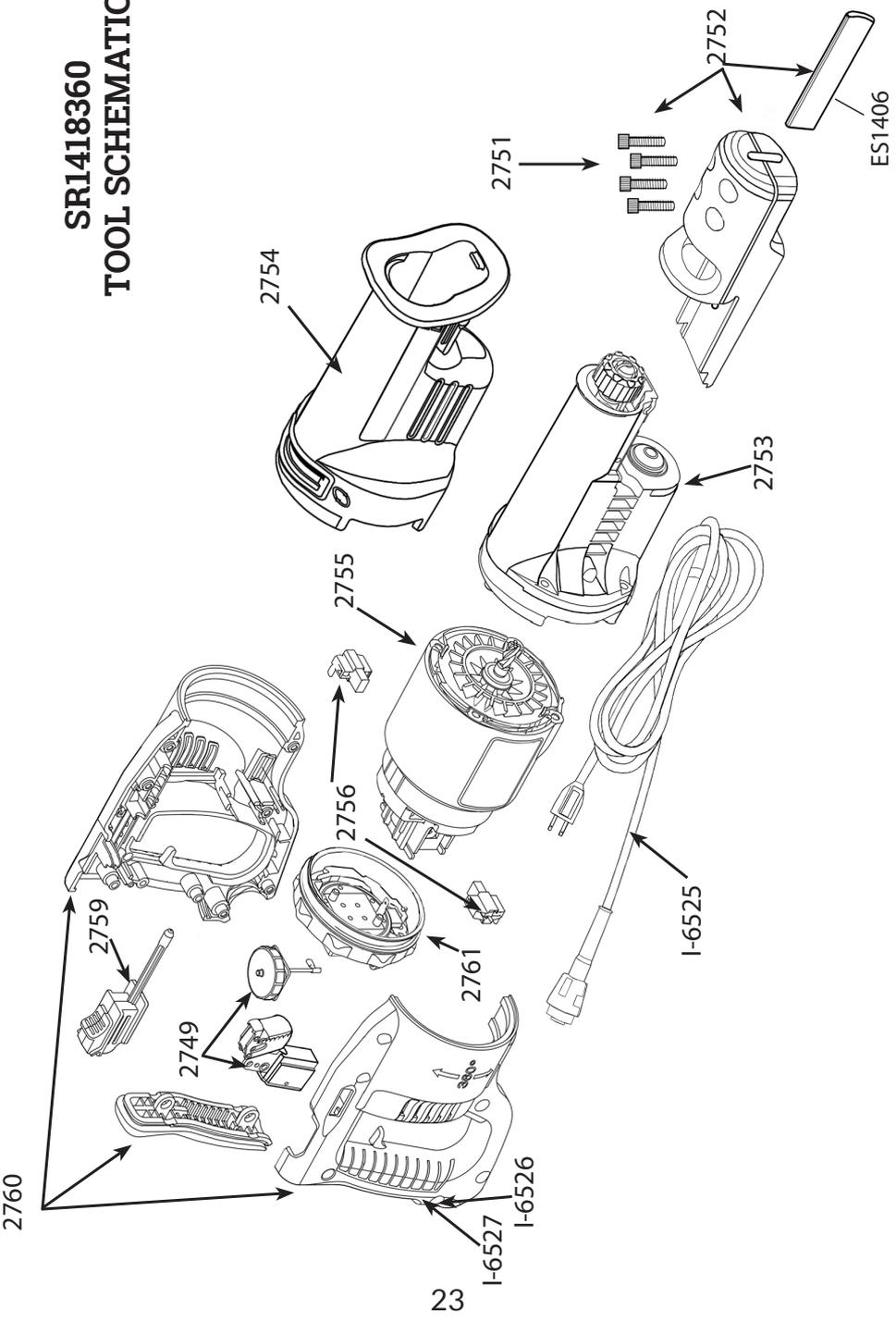
**ILLUSTRATED
PARTS DIAGRAMS
FOR
EQUALIZER® EXPRESS®
POWER TOOLS**

SR1418360 EQUALIZER® 360 PARTS BREAKDOWN



Part No.	Description	QTY
2749	Speed Control Dial (2757) & Switch (2758) (Can be ordered separately if needed)	1 set
2751	Sheath Clamp Screws (set of 4)	1 set
2752	Complete Sheath Clamp Assembly (includes 2750, 2751, & ES1406)	1
2753	Gear Case includes All Internal Parts	1
2754	Gear Case Cover Boot	1
2755	Drive Motor Assembly	1
2756	Brushes (set of 2)	1 set
2759	Swivel Lock Release	1
2760	Replacement Handles (3-pieces)	1 set
2761	Swivel Lock	1
I-6525	Electrical Cord	1
I-6526	Lower Clamp for Electrical Cord	1
I-6527	Upper Clamp for Electrical Cord	1
ES1406	Equalizer® Express® Sheath	1

SR1418360 TOOL SCHEMATIC

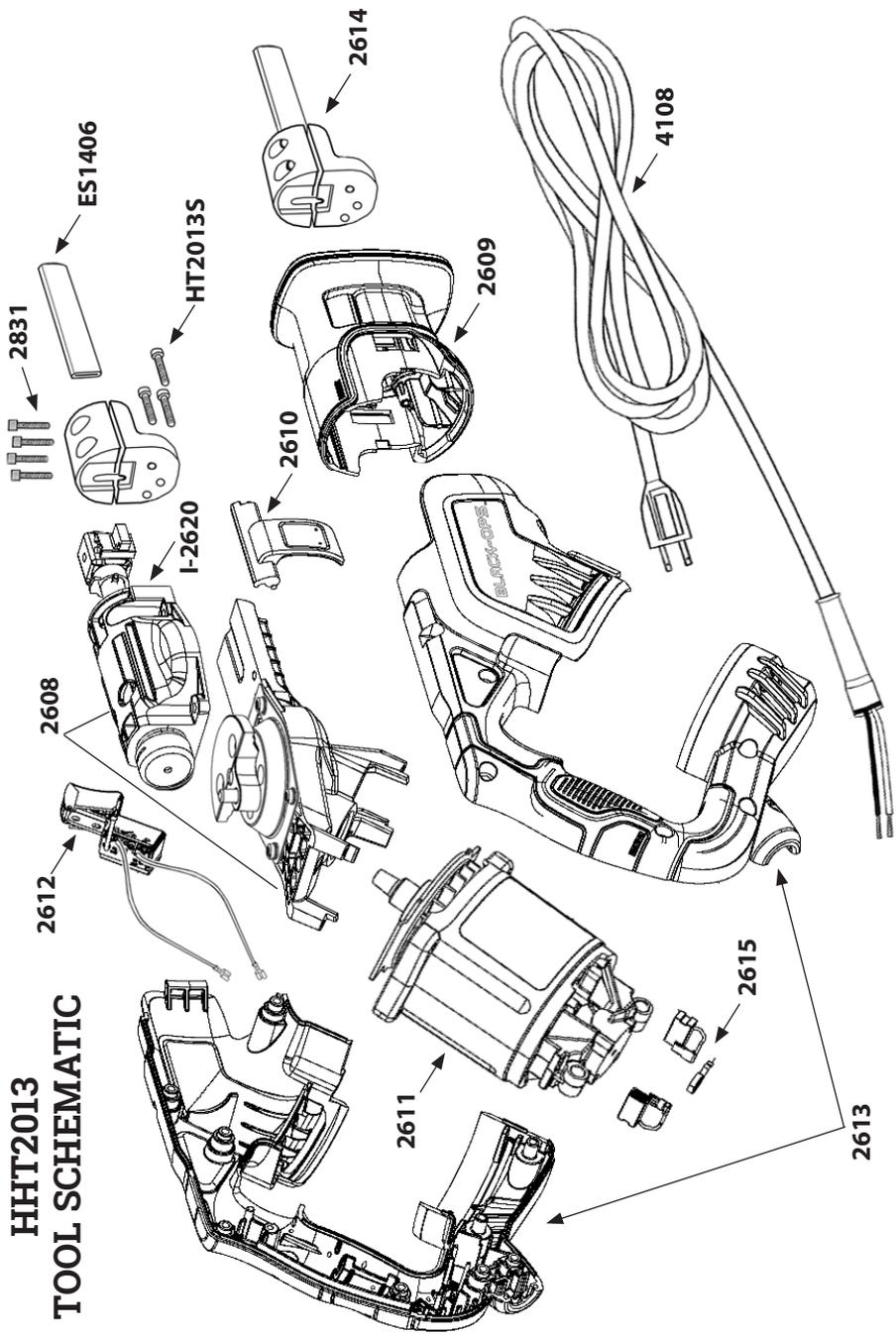


HHT2013 EQUALIZER® BLACK-OPS™ PARTS BREAKDOWN



Part No.	Description	QTY
2831	Sheath Clamp Screws (Set of 4)	1 set
HT2013S	Base Mounting Screws (Set of 3)	1 set
2608	Gear Case includes all internal parts and gear case plate	1
I-2620	Upper Gear Case Assembly	1
2609	Gear Case Cover Boot	1
2610	Blade Release	1
2611	Drive Motor Assembly (includes drive motor cover)	1
2612	Switch With Lead Wires	1
2613	Replacement Handle Set	1 set
2614	Complete Sheath Clamp Assembly (includes: 1-pc. sheath clamp, 2831 screws, HT2013S screws and ES1406 sheath)	1
2615	Brush Set	1 set
4108	Power Cord and Plug	1
ES1406	Equalizer® Express® Sheath	1

HHT2013 TOOL SCHEMATIC

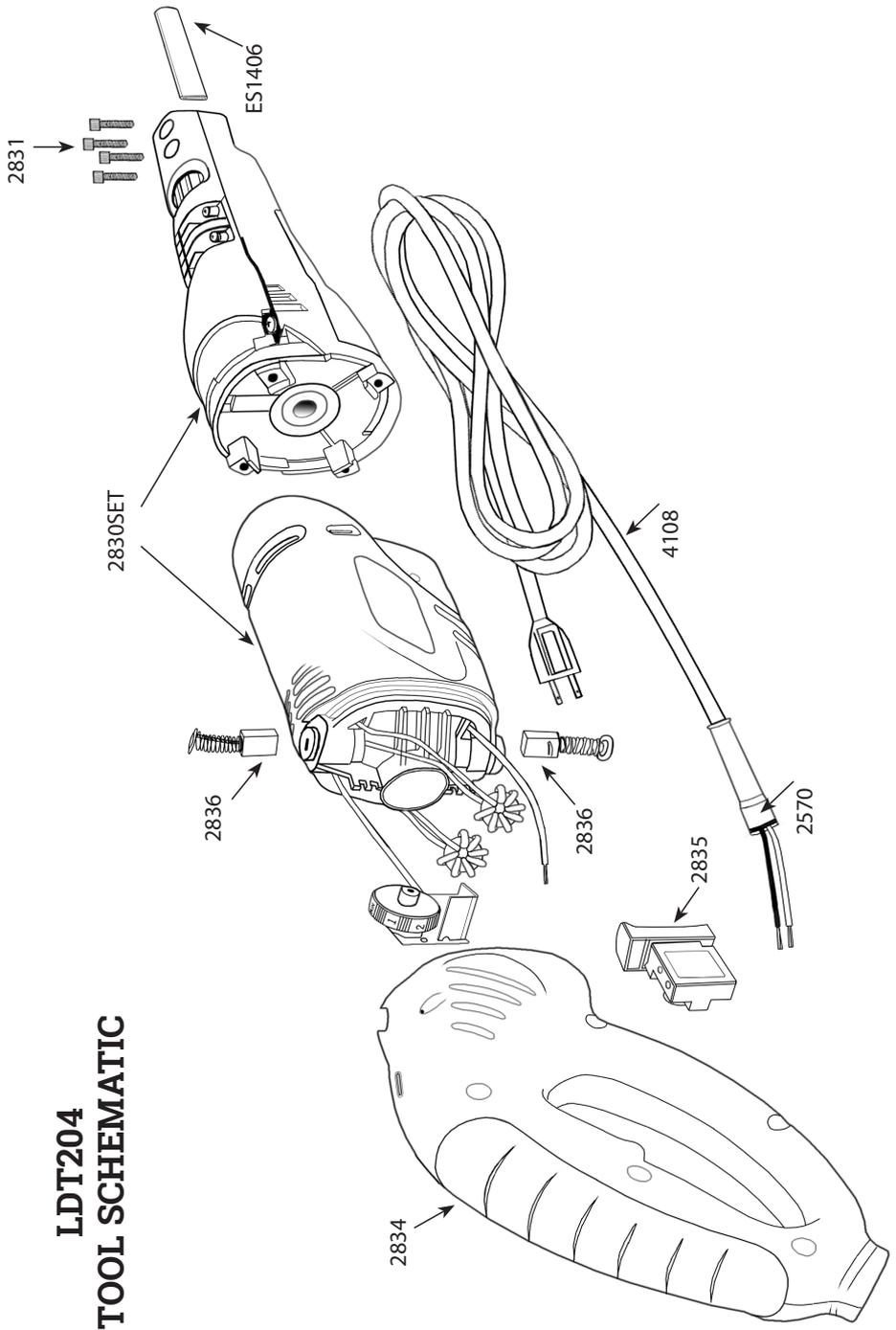


LDT204 EQUALIZER® STINGRAY PARTS BREAKDOWN



Part No.	Description	QTY
2830SET	Gear case with sheath clamp & Motor, Housing & Speed Control	1
2831	Blade retainer screws (set of 4)	8
2834	Handle Set	1
2835	Switch	4
2836	Brushes (set of 2)	1
2570	Cord Protector	1
4108	Cord & Plug	1
ES1406	Equalizer® Express® Sheath	1

**LDT204
TOOL SCHEMATIC**

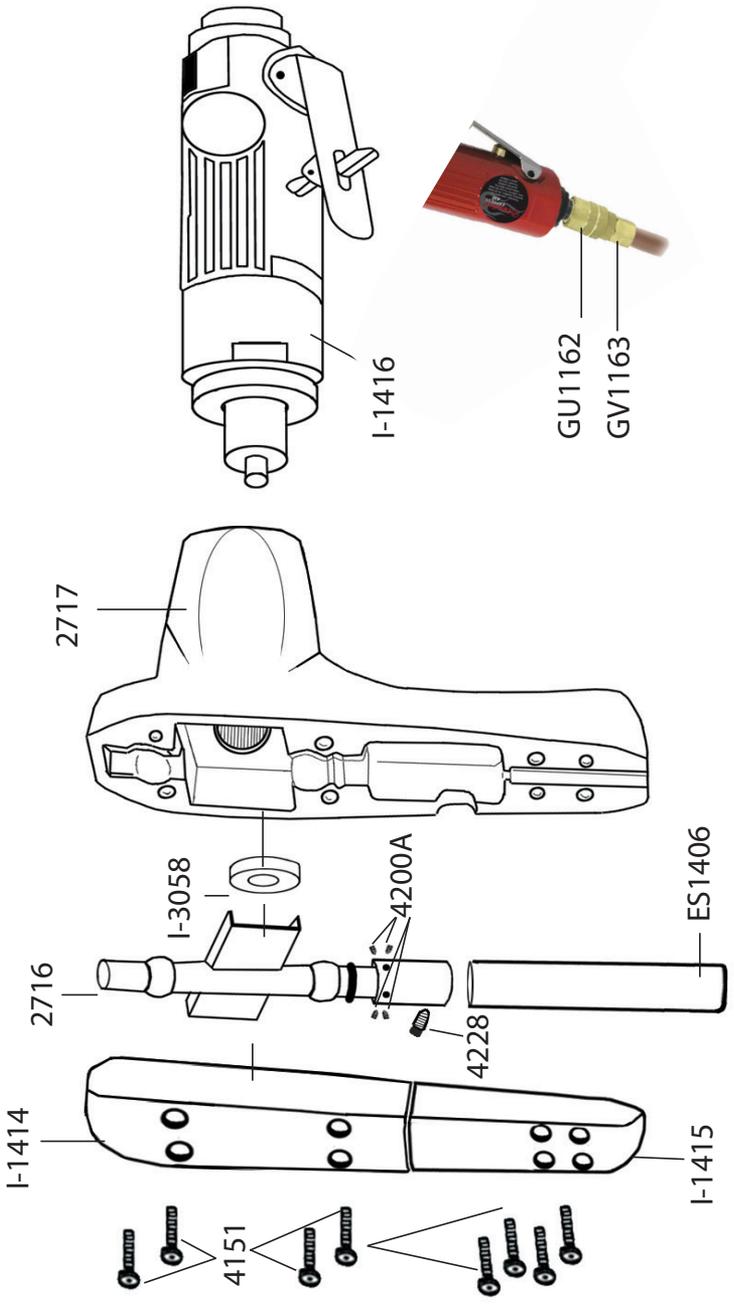


SP1416 EQUALIZER® AIR PARTS BREAKDOWN



Part No.	Description	QTY
2716	Plunger Assembly (includes blade holder and all screws)	1
2717	Rear Head Assembly	1
4151	Sheath and Head Retainer Screws	8
4228	1/4 x 20 x 3/8 Blade Retaining Screw	1
4200A	10 x 32 x 1/4 Blade Holder Screws	4
I-1414	Plunger Cover	1
I-1415	Sheath Clamp	1
I-1416	Motor Assembly / Drive Unit	1
I-3058	Drive Bearing	1
ES1406	Equalizer® Express® Sheath	1
GV1163	1/4" NPT Male Type Plug (Does Not Come With Tool)	1
GU1162	1/4" NPT Quick Coupler (Does Not Come With Tool)	1
I-3126	Gasket (Not Pictured)	1

SP1416 TOOL SCHEMATIC

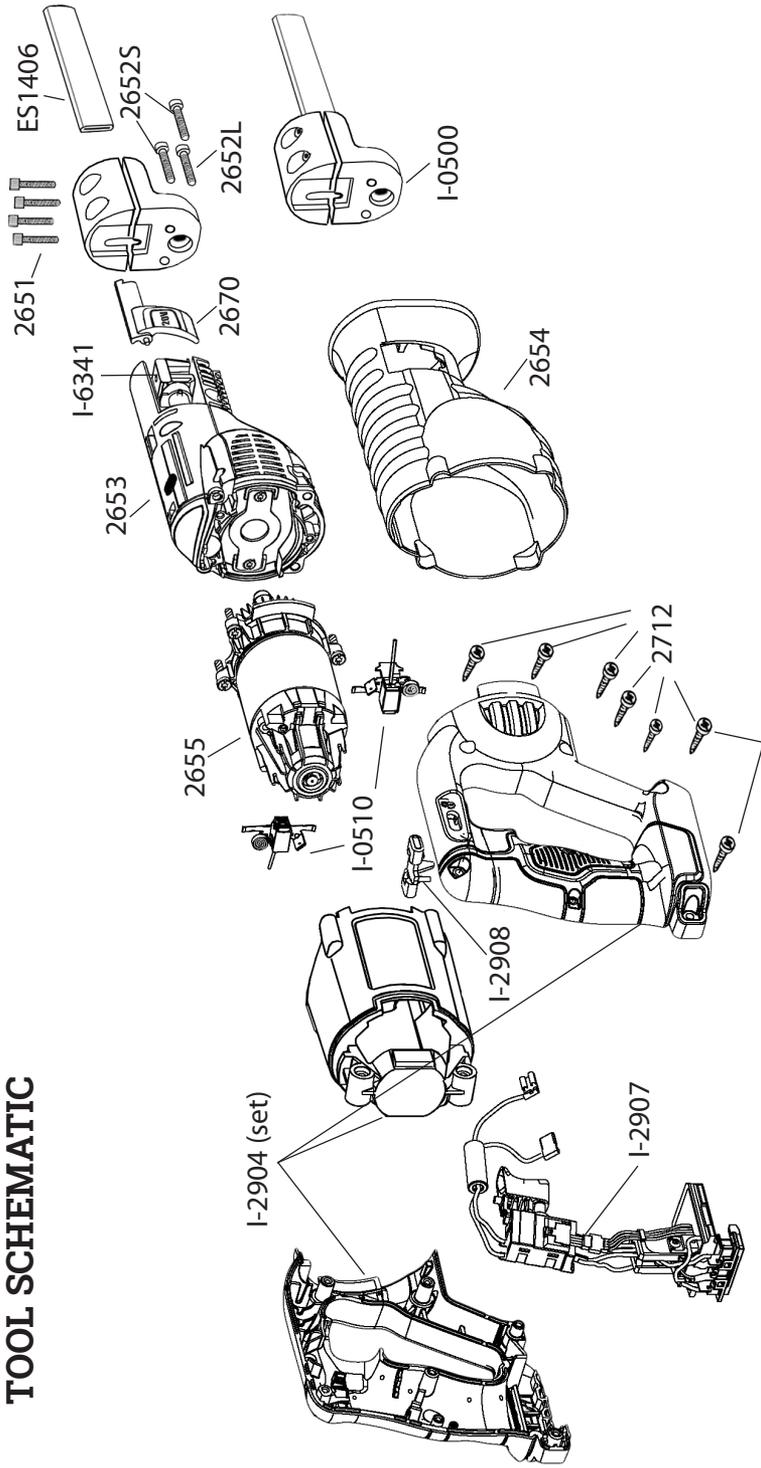


ATV2012 EQUALIZER® AMBUSH™ PARTS BREAKDOWN



Part No.	Description	QTY
2651	Sheath clamp screws (set of 4)	1 set
2652S	Base mounting screws	2
2652L	Base mounting screw	1
2653	Gear case includes all internal parts & gear case plate	1
2654	Gear case cover boot	1
2655	Drive motor assembly	1
2670	Blade Release Latch	1
2712	Housing Screws (6 large, 1 small)	1 set
I-2904	20V replacement handle set (includes barrel and 2 handles)	1 set
I-2907	Switch & Lead Wires	1
I-2908	Lock Latch	1
I-0500	Complete sheath clamp assembly (includes 2-pc sheath clamp, 2651 and 2652 screws & ES1406 sheath)	1
I-0510	Brushes (set of 2)	1 set
DCB205	20-Volt Battery	1
DCB115	120-Volt Charger	1
ES1406	Sheath	1
I-6341	Torsion Spring	1

ATV2012 TOOL SCHEMATIC

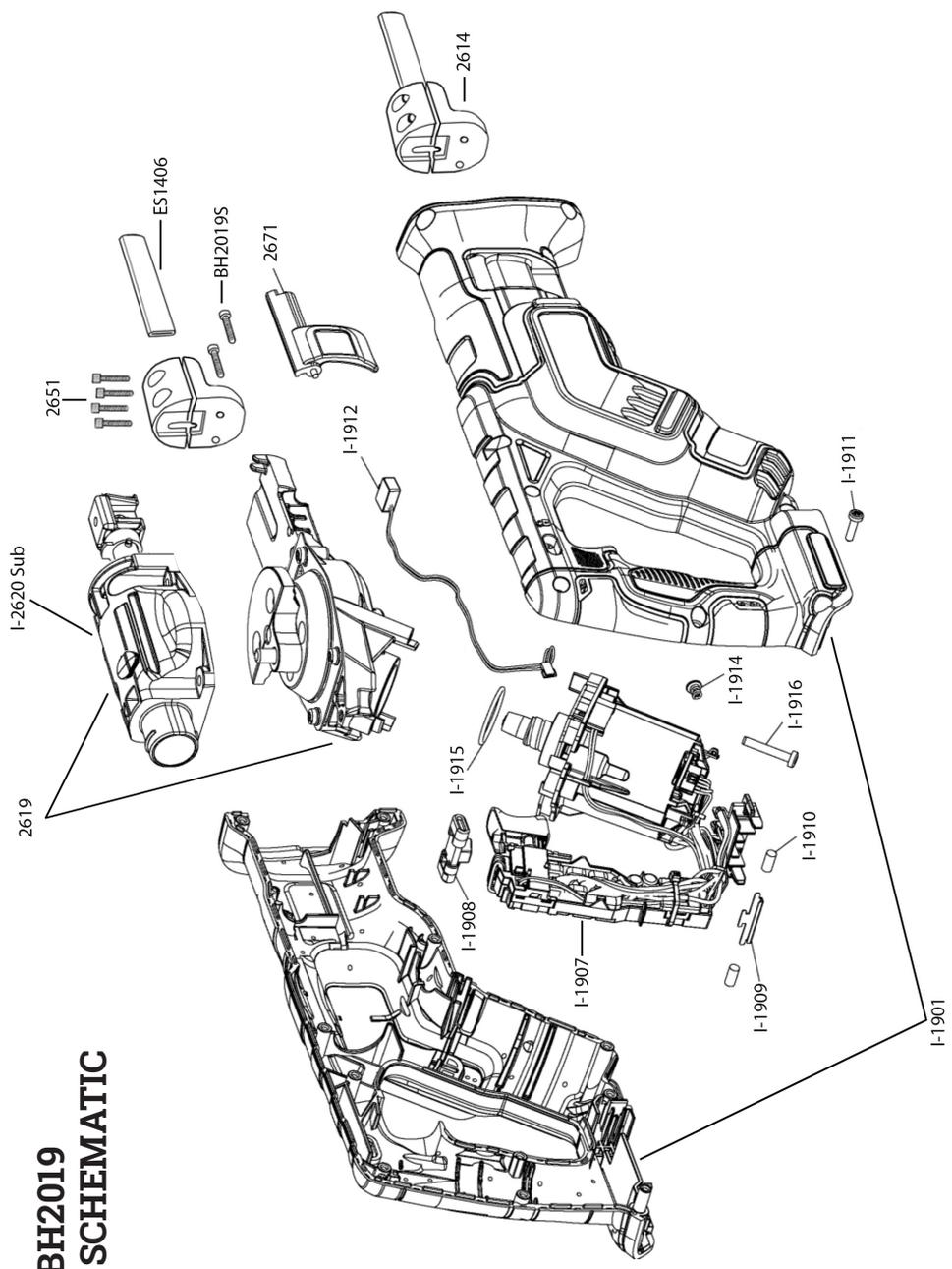


BH2019 EQUALIZER® BLACKHAWK™ PARTS BREAKDOWN



Part No.	Description	QTY
2614	Complete Sheath Clamp Assembly (Includes: 1-pc. sheath clamp, 2651 screws, BH2019S screws and ES1406 sheath)	1
2619	Gear Case Assembly	1
I-2620	Upper Gear Case Assembly	1
2651	Sheath Clamp Screws (4)	1 set
2671	Blade Release Latch	1
BH2019S	Base Mounting Screws (2)	1 set
DCB205	20-Volt Battery Pack	1
DCB115	120-Volt Charger	1
ES1406	Equalizer® Sheath	1
I-1901	Handle Set	1 set
I-1907	Motor and Switch Assembly	1
I-1908	Lock Latch	1
I-1909	Plate	1
I-1910	Rubber Plug	1
I-1911	Handle Set Screws (11)	1 set
I-1912	LED Light Assembly	1
I-1914	Load Spring	1
I-1915	ORing	1
I-1916	Screw #8X1.00 Pan HD (3)	1 set

BH2019 TOOL SCHEMATIC





Warranty Information

Equalizer® auto glass tools are warranted* to be free of factory defects. Warranty does not apply to abuse, misuse, or normal wear and tear. Warranty also does not apply to accessories or damage caused where repairs have been made or attempted by unauthorized persons. We will repair or replace, at our option, any defective part. Tools are repaired and sent back the same day they are received.

When sending in your tool for repair, send the entire tool which may include the battery, blades & sheath to:

EQUALIZER®
ATTN: Repair Department
2611 OAKMONT DRIVE
ROUND ROCK, TEXAS 78665

or to find an authorized repair center nearest you contact us at 800.334.1334

Equalizer® reserves the right to refuse to repair, at our expense, any tool which has not been properly maintained as specified in the Users Guide.

1. **KEEP THE BLADES SHARP!** This is the one thing most technicians do not do and it WILL damage the tool.
2. **USE WATER AS A CUTTING LUBRICANT.**
3. **USE HIGH HEAT GREASE.** This protects the sheath and blade shaft.
4. **DO NOT HIT THE PINCHWELD!** This will destroy the drive mechanism of your tool.

If you have any questions about your tool, call us toll free at 800.334.1334, fax us at 512.388.4188 or email to repairs@equalizer.com or sales@equalizer.com

*Warranty period varies by product.

EQUALIZER® SERIAL NUMBER _____

Keep this for your records.

WARRANTY REGISTRATION

Please PRINT clearly and fill in all of the blanks.
Place in envelope and mail to address on right.



2611 OAKMONT DRIVE
ROUND ROCK, TEXAS 78665

TOOL SERIAL # _____

TOOL TYPE: SR1418360 HHT2013 LDT204 SP1416 ATV2012 BH2019

DATE YOU PURCHASED THIS TOOL _____

YOUR COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

TELEPHONE NUMBER () _____

YOUR NAME _____

YOUR POSITION _____

PURCHASED FROM _____

THEIR ADDRESS _____

CITY, STATE, ZIP _____



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