

Radley®

8.5 Amp Impact Wrench

120V • 60Hz

Owner's
Manual



Intertek
3042597
JD2172U

**READ ALL INSTRUCTIONS
BEFORE FIRST USE.
KEEP THIS MANUAL
FOR FUTURE REFERENCE.
KEEP AWAY FROM CHILDREN.**



**WEAR CSA APPROVED
EYE PROTECTION**



**WEAR EAR
PROTECTION**



**WEAR A
FACE MASK**

PRODUCT SPECIFICATIONS

Rating:	120V AC, 60 Hz
Amperes:	8.5 AMP
Speed:	2,200 RPM (no load)
Impact speed:	3,000 IPM (no load)
Torque:	300 ft/lbs
Square drive:	½" / 13 mm
Weight:	8 lb 1 oz / 3.7 kg

Need Assistance?

Call us on our toll free customer support line:

1-866-349-8665 (Monday through Friday 9am – 5pm Eastern Standard Time)

- Technical questions
- Replacement parts
- Parts missing from package

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GENERAL SAFETY WARNINGS

WARNING: Before using this tool or any of its accessories, read this manual and follow all Safety Rules and Operating Instructions. The important precautions, safeguards and instructions appearing in this manual are not meant to cover all possible situations. It must be understood that common sense and caution are factors which cannot be built into the product.

This instruction manual includes the following:

- General Safety Warnings
- Specific Safety Rules and Symbols
- Functional Description
- Assembly
- Operation
- Maintenance
- Accessories

EYE, EAR & LUNG PROTECTION



**WEAR CSA APPROVED
EYE PROTECTION**



**WEAR EAR
PROTECTION**




**WEAR A
FACE MASK**


ALWAYS WEAR EYE PROTECTION THAT CONFORMS WITH CSA REQUIREMENTS or ANSI SAFETY STANDARD Z87.1

FLYING DEBRIS can cause permanent eye damage. Prescription eyeglasses ARE NOT a replacement for proper eye protection. **WARNING:** Non-compliant eyewear can cause serious injury if broken during the operation of a power tool.

ALWAYS WEAR EAR PROTECTION

 **WARNING:** Use hearing protection, particularly during extended periods of operation of the tool, or if the operation is noisy.

WEAR A DUST MASK THAT IS DESIGNED TO BE USED WHEN OPERATING A POWER TOOL IN A DUSTY ENVIRONMENT.

 **WARNING:** Dust that is created by power sanding, sawing, grinding, drilling, and other construction activities may contain chemicals that are known to cause cancer, birth defects, or other genetic abnormalities. These chemicals include: Lead from lead-based paints; Crystalline silica from bricks, cement, and other masonry products; Arsenic and chromium from chemically treated lumber. The level of risk from exposure to these chemicals varies, according to how often this type of work is performed. In order to reduce exposure to these chemicals, work in a well-ventilated area, and use approved safety equipment, such as a dust mask that is specifically designed to filter out microscopic particles.

ELECTRICAL SAFETY



WARNING: To avoid electrical hazards, fire hazards or damage to the tool, use proper circuit protection.

This tool is wired at the factory for 120 V AC operation. It must be connected a 120 V AC, 15 AMP circuit that is protected by a time delayed fuse or circuit breaker. To avoid shock or fire, replace power cord immediately if it is worn, cut or damaged in any way.

POWER TOOL SAFETY



WARNING: Read all safety warnings and instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. **Save all warnings and instructions for future reference.**

WORK AREA SAFETY

Keep work area clean and well lit. Cluttered or dark areas invite accidents.

Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.

Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

ELECTRICAL SAFETY

Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.

Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.

Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.

Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.

When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.

If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. Use of a ground fault circuit interrupter (GFCI) reduces the risk of electric shock.

PERSONAL SAFETY

Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.

Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.

Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

Do not overreach.

Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.

Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.

If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust related hazards.

POWER TOOL USE AND CARE

Do not force the power tool. Use the correct power tool for your application.

The correct power tool will do the job better and safer at the rate for which it was designed.

Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.

Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.

Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.

Service

Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

SPECIFIC SAFETY RULES

WARNING: Know your impact wrench. Do not plug the tool into the power source until you have read and understand this Instruction Manual. Learn the tool's applications and limitations, as well as the specific potential hazards related to this tool. Following this rule will reduce the risk of electric shock, fire, or serious injury.



WEAR CSA APPROVED EYE PROTECTION

Always wear eye protection. Any power tool can throw foreign objects into your eyes and cause permanent eye damage. **ALWAYS** wear safety goggles (not glasses) that comply with ANSI safety standard Z87.1. Everyday glasses have only impact resistant lenses. They **ARE NOT** safety glasses.

WARNING: Glasses or goggles not in compliance with ANSI Z87.1 could cause serious injury when they break.

Always use hearing protection when operating the impact wrench.

Use only impact sockets and accessories that are designed for use with a impact wrench. Do not use chrome plated sockets and accessories. Chrome plated sockets and accessories are designed for hand use only and **MUST NOT** be used with a impact wrench. They may shatter and possibly cause serious injury.

Before each use, check the impact sockets and accessories for excessive wear or cracks. Worn or damaged sockets or accessories may shatter and possibly cause serious injury. Worn accessories may allow the socket to come off during operation of the impact wrench.

WARNING: Always use a torque wrench to verify the torque being delivered. This will prevent over or under tightened fasteners.

Keep the impact wrench handle and body clean and free of oil and grease. Always use a clean dry cloth when cleaning. Do not use solvents, brake fluid, gasoline or other petroleum products to clean the tool. They will damage the tool.

Do not wear neckties or loose clothing.

When wearing gloves, they must be tight fitting and slip resistant type. Leather gloves offer the best protection.

Always use two hands when operating the impact wrench. Use one hand on the handle and the other on the front of the tool body.

Never place your hand so it is touching the socket or accessory when the tool is turned **ON**. Your hand could be seriously injured.

Always remove the plug from the power source before installing or removing any socket or accessory.

Be ready for components to shift when removing any fastener. The speed of the fastener removal could cause unexpected shifting of the components.

Hold the tool by the insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord. Contact with a “live” wire will make exposed metal parts “live” and shock the operator.

EXTENSION CORD SAFETY

⚠ WARNING: Keep the extension cord clear of the work area. Position the cord so it will not get caught on the workpiece, tools or any other obstructions while you are working with the power tool.

Make sure any extension cord used with this tool is in good condition. When using an extension cord, be sure to use one of heavy enough gauge to carry the current the tool will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.

The table below shows the correct size to use according to cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number the heavier the cord.




Be sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it. Protect your extension cord from sharp objects, excessive heat and damp or wet areas.










Use a separate electrical circuit for your power tools. This circuit must not be less than 14-gauge wire and should be protected with either a 15A time delayed fuse or circuit breaker. Before connecting the power tool to the power source, make sure the switch is in the OFF position and that the voltage of the power source is the same as the voltage that is indicated on the tool's nameplate. Running at lower voltage will damage the motor.

MINIMUM GAUGE (AWG) EXTENSION CORDS (120 V use only)					
Amperage rating		Total length			
More than	Not more than	7.5 m (25')	15 m (50')	30 m (100')	45 m (150')
0	6	18	16	16	14
6	10	18	16	14	12
10	12	16	16	14	12
12	16	14	12	Not Applicable	

SYMBOLS

⚠ WARNING: Some of the following symbols may appear on the impact wrench. Study these symbols and learn their meaning. Proper interpretation of these symbols will allow for more efficient and safer operation of this tool.

V	Volts
A	Amperes
Hz	Hertz
W	Watts
kW	Kilowatts
μF	Microfarads
L	Litres
kg	Kilograms
H	Hours
N/cm ²	Newtons per square centimeter
Pa	Pascals
Min	Minutes
S	Seconds
	Alternating current
	Three-phase alternating current
	Three-phase alternating current with neutral

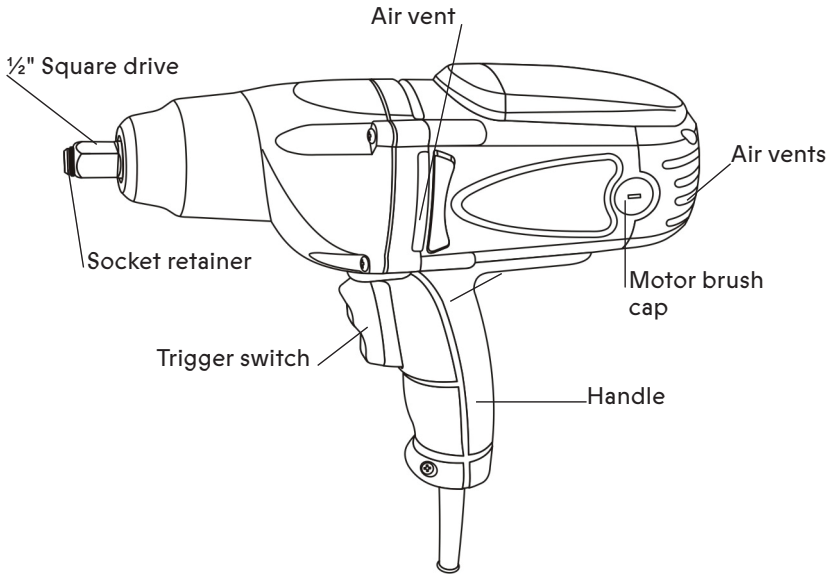
	Direct current
	No load speed
	Alternating or direct current
	Class II construction
	Splashproof construction
	Watertight construction
	Protective grounding at grounding terminal, Class I tools
.../min	Revolutions or reciprocations per minute
∅	Diameter
0	Off position
	Directional arrow
	Warning symbol



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This symbol designates that this tool is listed with Canadian requirements by ETLTesting Laboratories, Inc. Conforms to UL Std. 60745-2-2. Certified to CAN/CSA Std. C22.2 No. 60745-2-2.

KNOW YOUR IMPACT WRENCH



ACCESSORIES

⚠ WARNING: Use only accessories that are recommended for this impact wrench. Follow the instructions that accompany the accessories. The use of improper accessories may result in injury to the operator or damage to the impact wrench.

Before using any accessory, carefully read the instructions or the owner's manual for the accessory.

- Impact sockets
- Impact extensions
- Impact adapters

⚠ WARNING: If any part is missing or damaged, do not plug the impact wrench into the power source until the missing or damaged part is replaced.

ASSEMBLY AND OPERATING INSTALLING IMPACT SOCKETS

⚠ WARNING: Use only impact sockets and accessories that are designed for use with an impact wrench. Do not use chrome plated sockets and accessories. Chrome plated sockets and accessories are designed for hand use only and **MUST NOT** be used with a impact wrench. They may shatter and possibly cause serious injury.

⚠ WARNING: Always remove the plug from the power source before changing any sockets or accessories. You may injure your hand if the tool is started accidentally.

To install a socket, press the square portion of the socket (1) onto the square drive (2) of the impact wrench (Fig. 1).

NOTE:

Slide the socket fully onto the square drive so the socket retainer (3) will hold the socket firmly in place.

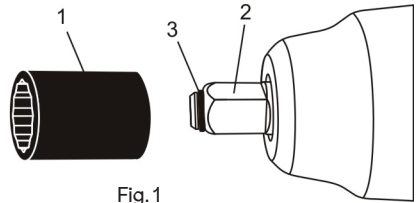


Fig. 1

FORWARD/REVERSE TRIGGER SWITCH

This impact wrench is equipped with a rocker style forward/reverse switch (1) (Fig. 2).

1. To operate the impact wrench in the forward direction, press and hold the bottom part of the switch (2). The socket will rotate in a clockwise direction to **tighten** the fastener.

NOTE: This tool includes a soft start feature to improve control over the tool during the high torque generated when the tool starts.

2. To operate the impact wrench in the reverse direction, press and hold the top part of the switch (3). The socket will rotate in a counter clockwise direction to **loosen** the fastener.

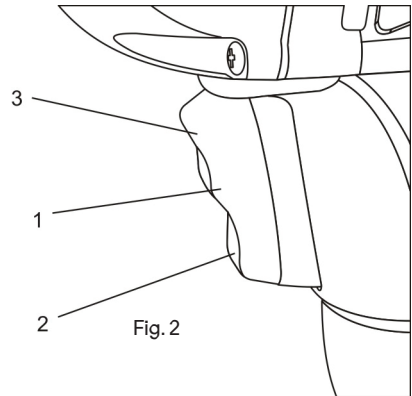


Fig. 2

ASSEMBLY AND OPERATING

! WARNING: For safety reasons, the operator must read the sections of this Owner's Manual entitled "General safety warnings", "Power tool safety", "Specific safety rules", "Extension cord safety" and "Symbols" before using this impact wrench.

Verify the following every time the impact wrench is used:

1. Safety glasses and hearing protection are being worn.
2. Socket or accessory is "impact wrench" rated.
3. Socket or accessory is in good condition.

Failure to observe these safety rules will significantly increase the risk of injury.

REMOVING WHEEL NUTS

One of the most common uses for the impact wrench is to remove car wheel nuts for rotating the tires. Car wheel nut removal is used for illustrative purposes.

! DANGER: Before attempting to remove a car wheel, make sure all jacking, wheel blocking and wheel removal safety procedures illustrated in the Owner's Manual for your car are followed exactly. Failure to follow those safety instructions could result in serious injury or death.

1. Install the correct size of impact socket on the impact wrench as outlined in Fig. 1.
2. Plug the impact wrench power cord into an appropriate power source.
3. Grasp the impact wrench handle (1) with one hand and the front housing of the impact wrench (2) with the other hand (Fig. 3).
4. Place the impact socket (3) onto the wheel nut.

NOTES:

- a) Make sure the socket is fully engaged with the nut to avoid potentially damaging the socket or the wheel nut.
 - b) Maximum torque will be applied to the socket when the impact wrench is used in the "reverse" direction.
5. While holding the tool level with the ground and with a firm grasp, squeeze the upper portion of the trigger switch (4).

NOTE: Once the nut has been removed, release the trigger. The tool will turn OFF.

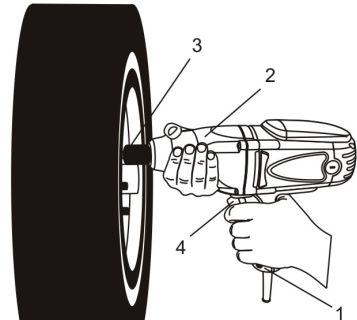


Fig. 3

ASSEMBLY AND OPERATING

REMOVING WHEEL NUTS *cont.*

When removing fasteners, do not operate the impact wrench for more than 10 seconds unless the fastener begins to turn. If the fastener fails to turn within 10 seconds, reverse the direction of rotation and operate the impact wrench in a forward direction on the fastener for a few seconds. Now switch back to reverse direction and remove the fastener. This procedure will usually break loose seized or "frozen" fasteners.

! WARNING: Operating the impact wrench for more than 10 seconds at a time on a seized or "frozen" fastener will place severe stress on the impact wrench and cause damage. It may also break the fastener.

TIGHTENING WHEEL NUTS

This impact wrench can be used to tighten wheel nuts and other fasteners.

1. Install the correct size of impact socket on the impact wrench (Fig. 1).
2. Place the wheel on the wheel studs and thread one wheel nut (1) clockwise onto each wheel stud (Fig. 4).

NOTE: Thread each wheel nut at least three full turns onto the wheel stud by hand to make sure the nuts are NOT cross threaded. The wheel stud and wheel nut will be damaged if the nut is cross threaded.

3. Grasp the impact wrench handle with one hand and the front housing of the impact wrench with the other hand.
4. Place the impact socket onto the lower wheel nut (1) (Fig. 5 & 6).

NOTE: Make sure the socket is fully engaged with the nut to avoid potentially damaging the socket or the wheel nut.

5. While holding the tool level with the ground and with a firm grasp, squeeze the **lower portion** of the trigger switch. The impact wrench will tighten the wheel nut.

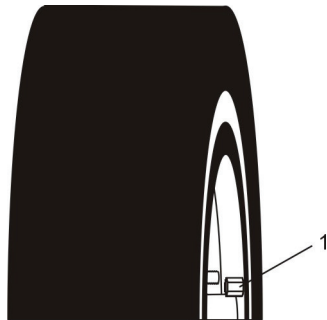


Fig. 4

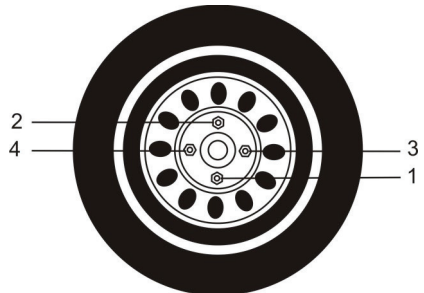


Fig. 5

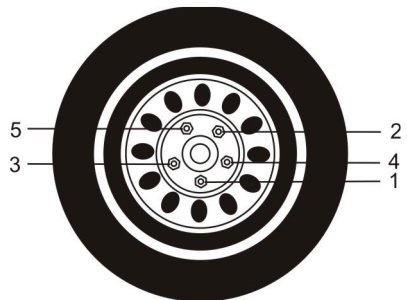


Fig. 6

ASSEMBLY AND OPERATING

TIGHTENING WHEEL NUTS *cont.*

NOTE: Release the trigger switch as soon as the impact wrench begins to “rattle” to avoid over tightening the nut.

6. Proceed with tightening the remaining wheel nuts in a similar manner.

WARNING: Tighten the wheel nuts in the sequence outlined in Fig. 5 for 4 stud wheel patterns and Fig. 6 for 5 stud wheel patterns. Following this sequence is extremely important to avoid potential distortion of the brake rotors or drums.

7. Once all the wheel nuts have been initially tightened with the impact wrench, lower the vehicle so the wheel is firmly in contact with the ground and verify the torque of each wheel nut using a conventional torque wrench.

MAINTENANCE

REPLACING CARBON MOTOR BRUSHES

The carbon motor brushes will wear down and require replacing. The time intervals between replacements will vary depending upon the torques being achieved and the hours of use. It is recommended that the brushes be checked after each 10 hours of use. When the length of the carbon brush reaches $1/4"$ / 6.35 mm, the brushes should be replaced.

WARNING: Unplug the tool from the power source.

1. Use a $3/16"$ / 4 mm slot screwdriver and remove one brush cap (1) (Fig. 7). Turn the brush cap counterclockwise to remove it from the motor housing.
2. Pull the spring & brush assembly (2) from the brush holder (3) in the motor housing (4).
3. Insert the new spring & brush assembly into the motor housing.
4. Compress the spring into the brush holder and thread the brush cap back into the motor housing.

NOTE: Make sure the brush cap threads are not cross-threaded. Do NOT over tighten.

5. Repeat steps 1 to 4 and replace the second carbon brush located on the opposite side of the motor housing.

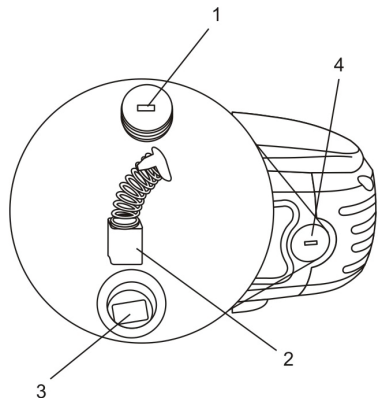


Fig. 7

MAINTENANCE

GENERAL

⚠ WARNING: When servicing, use only identical replacement parts. Use of any other part may create a hazard or cause product damage.

DO NOT use solvents when cleaning plastic parts. Plastics are susceptible to damage from various types of commercial solvents and may be damaged by their use. Use a clean cloth to remove dirt, dust, oil, grease etc.

⚠ WARNING: Do not at any time allow brake fluids, gasoline, petroleum-based products, penetrating oils, etc. to come into contact with plastic parts. They contain chemicals that can damage, weaken or destroy plastic.

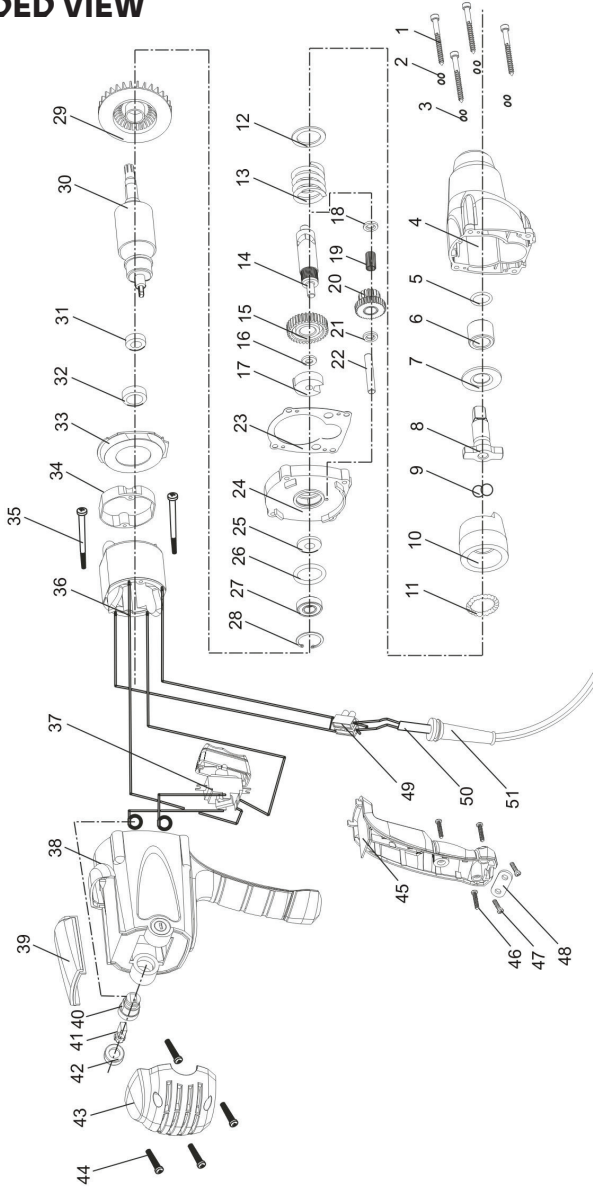
DO NOT abuse power tools. Abusive practices can damage the tool as well as the workpiece.

⚠ WARNING: DO NOT attempt to modify tools or create accessories. Any such alteration or modification is misuse and could result in a hazardous condition leading to possible serious injury. It will also void the warranty.

LUBRICATION

All of the bearings in this tool are lubricated with a sufficient amount of high-grade lubricant for the life of the unit under normal conditions. Therefore, no further lubrication is required.

EXPLODED VIEW



PARTS LIST

! WARNING: When servicing, use only original equipment replacement parts. The use of any other parts may create a safety hazard or cause damage to the impact wrench.

Any attempt to repair or replace electrical parts on this impact wrench may create a safety hazard unless repairs are performed by a qualified technician. For more information, call the Toll-free Helpline, at 1-866-349-8665 Monday – Friday from 9am to 5pm Eastern Standard Time.

Always order by PART NUMBER, not by key number.

Key #	Part #	Part name	Quantity
1	4030010187	Self tapping screw ST4.9X45	4
2	4040030003	Lock washer ø5	4
3	4040010011	Washer ø5.0	4
4	2020050030	Gear housing	1
5	3140020017	O Ring	1
6	2010080084	Bushing	1
7	2030020196	Washer	1
8	2040040051	Output shaft	1
9	4080080002	Ball ø6.35	2
10	2040200004	Impact hammer	1
11	4080040001	Ball bearing ring ø5.0	19
12	2030020197	Washer	1
13	2050060139	Spring	1
14	2040040052	Impact assembly drive shaft	1
15	2040070002	Gear	1
16	2030020198	Washer	1
17	2010080085	Bushing	1
18	2030020198	Washer	1
19	4110010011	Needle pin	1
20	2040070003	Step gear	1
21	2030020198	Washer	1
22	2040160119	Gear pin ø8	1
23	2030170009	Gasket	1
24	2020130033	Bearing seat	1
25	3190010023	Felt seal	1

PARTS LIST

Key #	Part #	Part name	Quantity
26	3140020068	O Ring	1
27	4010010055	Bearing 6001-2RS	1
28	2030110019	Circlip	1
29	3150010071	Fan	1
30	1010180008	Rotor assembly	1
31	4010010048	Bearing 608-2RS	1
32	3140040001	Bearing sleeve	1
33	3150050046	Air baffle plate	1
34	3150160134	Baffle plate pedestal	1
35	4030010122	Self tapping screw ST3.9X70	2
36	1020180007	Stator	1
37	1062020029	Switch assembly	2
38	3011180003	Rear housing	1
39	3110010162	Cover plate	4
40	3150150019	Brush holder	1
41	1230010066	Carbon brush	1
42	3150140018	Carbon brush cap	2
43	3160010043	Rear cover	1
44	4030010105	Self tapping screw ST3.9X20	4
45	3120070072	Front handle	1
46	4030010106	Self tapping screw ST3.9X20	3
47	4030010099	Self tapping screw ST3.9X14	2
48	2030050002	Cord clamp	1
49	1250010002	Terminal block	1
50	1190040004	Cord	1
51	3140010004	Strain relief	1

WARRANTY

If this Radley tool fails due to a defect in material or workmanship within one year from the date of purchase, return it to any Home Hardware store with the original bill of sale for exchange. This warranty does not include expendable parts including but not limited to blades, brushes, belts, light bulbs and/or batteries. This warranty covers defects in material or workmanship only. It does not cover normal wear and tear, failure due to abuse/misuse, or defects caused by careless or accidental mishandling. If this Radley product is used for commercial or rental purposes, this warranty does not apply.

8.5 Amp
**Impact
Wrench**
120V • 60Hz



Radley[®]

EXCLUSIVE TO HOME HARDWARE

For information on the entire line-up of Radley power
tools visit homehardware.ca or your local Home Hardware retail store.

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