Operating Instructions and Parts Manual

Please read and save these instructions. Read through this owner's manual carefully before using product. Protect yourself and others by observing all safety information, warnings, and cautions. Failure to comply with instructions could result in personal injury and/or damage to product or property. Please retain instructions for future reference.

CONSTRUX PRO

20V MAX* LITHIUM–ION BRUSHLESS 1/2" DRILL

UNPACKING

After unpacking unit, inspect carefully for any damage that may have occurred during transit. Check for loose, missing, or damaged parts. If any damage is observed, a shipping damage claim must be filed with carrier. Do not use the CONSTRUX PRO Drill if broken, bent, cracked or damaged parts (including labels) are noted. Any Drill that appears damaged in any way, operates abnormally or is missing parts should be removed from service immediately. If you suspect that the Drill was subjected to shock load (a load that was dropped suddenly, unexpectedly, etc.) immediately discontinue use until it has been checked by a factory authorized service center.

*Voltage is measured without workload. Maximum initial battery voltage after charging. Nominal voltage is 18 Volts.

⚠ WARNING

The following safety information is provided as a guideline to help you operate your Drill under the safest possible conditions. Any tool or piece of equipment can be potentially dangerous to use when safety or safe handling instructions are not known or not followed. The following safety instructions are to provide the user with the information necessary for safe use and operation. Please read and retain these instructions for the continued safe use of your service system. Failure to follow instructions listed below may result in serious injury. In addition, make certain that anyone who uses the equipment understands and follows these safety instructions as well.

Explanation of Safety Signal Words

⚠ **WARNING**: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION: Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTES: Provide clarity and helpful information.

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POWER TOOL SAFETY

⚠ WARNING

Read and understand 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

1. Keep work area clean and well lit. Cluttered or dark areas invite accidents.
2. Do not operate power tools in explosive atmospheres, such as in the presence of fammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
3. Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

ELECTRICAL SAFETY

1. 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.
2. 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.
3. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
4. 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.
5. 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.
6. 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

1. 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.
2. 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.
3. 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.
4. 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.
5. Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
6. Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
7. 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 SAFETY

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
7. 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.
8. Hold power tool by insulated gripping surfaces, when performing an operation where the fastener may contact hidden wiring or its own cord. Fasteners contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.
9. Hold power tool by insulated gripping surfaces, when performing an operation where the fastener may contact hidden wiring or its own cord. Fasteners contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

BATTERY TOOL USE AND CARE

1. Recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
2. Use power tools only with specifically designated battery packs. Use of any other battery packs may create a risk of injury and fire.
3. When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.
4. Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.

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

1. Know your cordless, brushless Drill. Do not plug in the charger or install the battery in the tool 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.
2. 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.
3. Glasses or goggles not in compliance with ANSI Z87.1 could cause serious injury when they break.
4. Always use a safety shield, hearing protection and dust mask when operating the Drill.
5. To avoid fire or toxic reaction, never use gasoline, naphtha and acetone, lacquer thinner or similar highly volatile solvents to clean the tool.
6. Use only accessories that are designed for use with this tool. Follow the instructions that accompany accessories. The use of improper accessories may result in injury to the operator or damage to the tool.
7. If any part is missing or damaged, do not plug the tool into the power source or install any accessory until the missing or damaged part is replaced. Do not drill material too small to be securely held.
8. Always keep hands out of the path of the drill bit. Avoid awkward hand positions where a sudden slip could cause your hand to move into the path of the drill bit.
9. Secure the workpiece. Use clamps or a vice to hold the workpiece. It is safer than using your hand and it frees both hands to operate the tool.
10. Make sure there are no nails or foreign objects in the part of the workpiece to be drilled.

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11. To avoid injury from accidental starting, always remove the battery from the tool before installing or removing a drill bit.
12. Do not install or use any drill bit that exceeds 7" (17.5 cm) in length or extends more than 6"(15 cm) beyond the chuck jaws. They can bend or break suddenly.
13. Before starting the operation, jog the drill switch to make sure the drill bit does not wobble or vibrate.
14. Do not use fly cutters or multiple–part hole cutters, because they can come apart or become unbalanced during use.
15. Make sure the spindle has come to a complete stop before touching the chuck or attempting to change the drill bit.
16. Always make sure the chuck is tight and the drill bit firmly tightened in the chuck before starting drill.

IMPORTANT SAFETY INSTRUCTIONS

The warnings, precautions, and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. The operator must understand that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

⚠ WARNING

Use only attachments recommended or sold by manufacturer.

1. Do not disassemble the Drill. Take it to a qualified professional when service or repair is required. Incorrect reassembly may result in electric shock or fire.
2. Wear approved safety eye/face shield, ear defenders and hand protection.

DISPOSAL

At the end of the useful life of the construx PRO 20V Brushless Drill, dispose of the components according to all state, federal and local regulations.

BATTERY DISPOSAL

Exposure to high temperatures can cause the batteries to explode; do not dispose of in a fire. Some countries have regulations concerning battery disposal. Follow all applicable regulations. Return used batteries to a collection location for recycling. Call 800–822–8837 or visit www.call2recycle.org to find a collection location.

PURPOSE

The construx PRO 20V Max* Lithium–Ion Brushless 1/2" Drill is used for drilling holes, driving screws, loosening or tightening various materials together with fasteners and other applications.

PRODUCT SPECIFICATIONS

Keyless Jacob's Chuck:	1/2"
Variable Speed:	0–600 RPM and 0–2000 RPM
Max. Torque:	370 In/Lbs
Clutch:	21+1 Torque Setting
Electric Brake:	Yes
Battery:	2.0 Ah Li–Ion
Charge time:	1 Hr.
Weight:	7.63 Lbs.

INSTRUCTIONS

Always wear safety goggles and gloves.

DRILLING

1. If drilling in a small workpiece, make sure it is securely held in a vise or clamped to a secure platform such as a bench or table.
2. Install the correct drill bit in the chuck. Rotate the chuck body to loosen or tighten the drill bit in the chuck. Never use the drill's power to rotate the chuck body.
3. Select the rotation direction to clockwise using the button located above the trigger switch.
4. Select the correct transmission speed. Use the slower speed for drilling large holes.
5. Set the torque adjusting collar to the drilling position (drill icon on tool).
6. Slide the fully charged battery pack onto the base of the handle.
7. Mark the drilling point with a center punch when drilling in metal to prevent the drill bit from slipping off center as you begin drilling.
8. Place the drill bit at the location of the hole to be drilled and squeeze the trigger. The harder you squeeze, the faster the drill turns.

DRIVING SCREWS

1. Install the correct screwdriver bit in the chuck. Use the largest bit size that will properly fit the screw. Make sure the flat sides of the bit are gripped by the chuck.
2. Set the transmission speed to low speed.
3. Set the rotation directions to clockwise.
4. Set the torque collar to #10.
5. Place the screwdriver bit into the screw and hold the bit firmly into the screw to prevent slippage and drive a test screw.
6. After driving a test screw, adjust the torque setting up or down so the screw is driven to the desired depth without being over driven.
7. Release the trigger immediately when the torque clutch begins to "rattle".
8. Driven screws can be removed by reversing the direction of the rotation.

⚠ WARNING

Always charge the battery pack indoors in a well–ventilated area. The charger must never be subjected to wet conditions.

⚠ ELECTRICAL WARNING

POWER SOURCE CONNECTION POWER REQUIREMENTS

This product is designed to operate on a properly grounded 120 volt, 60Hz, single–phase alternating current (AC) power source fused with a time delayed fuse or circuit breaker. It is recommended that a qualified electrician verify the ACTUAL VOLTAGE at the receptacle into which the product will be plugged and confirm th at the receptacle is properly fused and grounded.

DO NOT OPERATE THIS PRODUCT if the ACTUAL power source voltage is less than 105 Volts AC or greater than 132 Volts AC. Contact a qualified electrician if this problem exists. Improper performance and/or damage to the product will result if operated on inadequate or excessive power.

DO NOT abuse cord. Never use the cord to carry tools or pull the plug from an outlet. Keep cord away from heat, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.

CHARGING THE BATTERY PACK:

1. Place the charger in a dry location near a 120V/60 Hz electrical outlet.
2. Plug the charger into the electrical outlet.
3. The green LED light will turn on.
4. Turn the battery pack upside down and slide it onto the charger.
5. The green LED light will turn off and the red LED light will begin to flash indicating the battery pack is charging.
6. The red LED light will turn off and the green LED light will turn on when fully charged.
7. Once the battery pack is fully charged, remove the charger plug from the power source and remove the battery pack from the charger.

NOTE: Do not charge batteries when the work area or the battery temperature is at or below 32° F (0° C) or above 113° F (45° C).

Green Light	Red Light	Battery on the Charger	Charging Status
ON	OFF	NO	Charger connected to power supply
OFF	FLASHING	YES	Battery charging
ON	OFF	YES	Battery fully charged
OFF	ON	YES	Battery defective or bad contact
ON	ON	YES	Battery too hot or too cold to be charged

Intertek 3042597 JD6286

This symbol designates that this tool is listed with U.S. requirements by ETL Testing Laboratories, Inc. Conforms to UL Std. 60745–1 and 60745–2–2.

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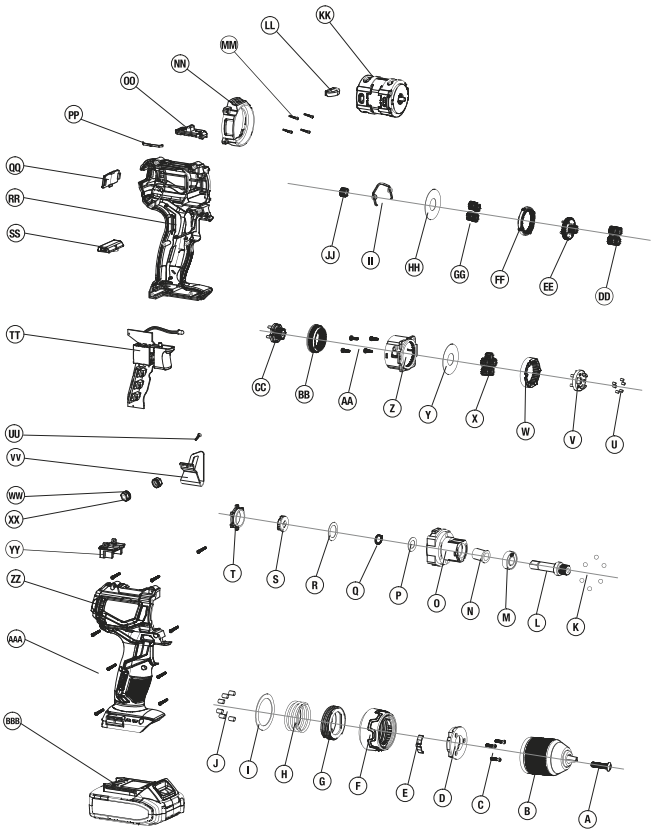
Parts Diagram



NOTE:
Not all components of the Drill are replacement items, but are illustrated as a convenient reference for location and position in the assembly sequence.

Parts List

Figure	Description	Qty.
A	Chuck Screw	1
B	Chuck	1
C	Screw	3
D	Plate	1
E	Positioning Spring	1
F	Torque Setting Ring	1
G	Inner Threaded Ring	1
H	Spring	1
I	Washer	2
J	Needle Roller	6
K	Needle Roller	6
L	Shaft	1
M	Bearing	1
N	Bushing	1
O	Gear Box	1
P	Washer	1
Q	Circlip for Shaft	1
R	Washer	1
S	Driving Block	1
T	Shaft Lock Ring	1
U	Needle Roller	6
V	Planetary Carrier	1
W	Gear Ring	1
X	Planetary Gear	4
Y	Washer	1
Z	High/Low Gear Box	1
AA	Screw	4

Figure	Description	Qty.
BB	Moveable Ring Gear	1
CC	Planetary Carrier	1
DD	Planetary Gear	4
EE	Planetary Carrier	1
FF	Fixed Ring Gear	4
GG	Planetary Gear	4
HH	Washer	1
II	2–Speed Lever	1
JJ	Motor Gear	1
KK	Brushless Motor	1
LL	Optical Rod	1
MM	Screw	4
NN	Cover Plate	1
OO	Speed Selector Button	1
PP	Lever	1
QQ	Rear Housing	1
RR	Left Housing	1
SS	Forward/Reverse Lever	1
TT	Trigger Assembly	1
UU	Screw	1
VV	Belt Hook	1
WW	Lock Washer	2
XX	Hex Nut	2
YY	Contact Plate	1
ZZ	Right Housing	1
AAA	Screw	7
BBB	Battery	1