Volume

1.0

OPERATIONAL MANUAL

MODEL: 10”Z1 TEL TELESCOPING CORE DRILLING MACHINE

BLUEROCK TOOLS

by BLUEROCK ® Tools

UNPACKING THE ITEM

CAUTION: This machine is packed together with items that may be sharp, oily and overly heavy objects. Remove the machine from the packaging in a safe manner. Check to ensure all accessories are included with the item while unpacking. If any parts are found to be missing, contact the retailer as soon as possible. Do not throw away the packaging until the item is out of the guarantee period. Dispose of the packaging in an environmentally responsible manner. Recycle if possible. Keep all plastic bags away from children due to risk of suffocation.

WEEE - Waste Electrical & Electronic Equipment. Note this machine should be disposed of as electrical & electronic waste.

SLURRY DISPOSAL

NOTE: It is recommended to dispose of the drilling slurry (the muddy/dusty water material) in an environmentally responsible manner. The disposal of slurry directly into sewage systems, sewers, lakes, rivers, or direct earth without treatment can be environmentally harmful and possibly illegal. Ask your local public authorities about current regulations in your area.

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Chapter 1

Safety

DO NOT USE THIS MACHINE UNLESS YOU HAVE READ THE OPERATING INSTRUCTIONS!

Safety glasses must be worn at all times in work areas.

Appropriate footwear must be worn.

Safety gloves should be worn at all times and jewelry must not be worn.

Hard-hat must be worn while using machine.

Read operational manual prior to use.

Long and loose hair must be contained.

Close fitting/protective clothing must be worn.

Hearing protection should be worn when using this machine.

Dust mask must be worn while using this machine.

PRE-OPERATIONAL SAFETY CHECKS

- Examine the power cord and plug for damage. This tool is supplied with a ground plug and must always be used with a properly grounded circuit.
- Examine the body of the machine and inspect for damage or defects.

OPERATIONAL SAFETY CHECKS

- ONLY to be operated by qualified personal who have read instructions.
  - NOTE: Failure to read and follow instructions could result in electrical shock, fire, property damage and/or serious injury!
- DO ensure all non-essential people are clear of the immediate work area.
- DO be attentive at all times. Keep your eye on the work piece. Always be in a sensible state of mind and do not use the machine if you cannot fully concentrate.
- DO keep body parts, clothing & power cords clear of turning/cutting pieces. Stay alert and use common since when using this tool.

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- **DO allow machine to reach operating speed before starting a hole.**
- **DO unplug machine while changing or adjusting cutting bits so as not to accidentally turn machine on.**
- **DO remove adjusting wrenches prior to turning the machine on.**
- **DO guard against electric shock by only operating this tool on a properly functioning GFCI (Ground Fault Circuit Interrupt) circuit.**
- **DO be mindful that power tools can expose an operator to vibrations transmitted trough contact with the machine. Prolonged exposure can lead to medical issues which should be discussed with a medical professional.**
- **DO tie in a drip loop in the power cord to prevent water from running into the power receptacle.**
- **DO use a dust extraction system for cutting materials that create dust. The operator should also wear a protective respiratory device.**
- **DO NOT make adjustments to machine while the machine is running.**
- **DO NOT switch off the machine when it is under load, except in an emergency.**
- **DO NOT remove or modify grounding plug. Only to be used on a properly grounded GFCI circuit.**
- **DO NOT leave the machine running when not in use.**
- **DO NOT hold the work piece by hand or using body. Always mechanically clamp or secure work piece.**
- **DO NOT allow operator to make contact with grounded surfaces such as metal objects.**
- **DO NOT allow liquids to enter the machine’s ventilation system.**
- **DO NOT operate machine outside of machine specifications.**
- **DO NOT touch moving parts while the machine is running as death or dismemberment could occur.**
- **DO NOT operate machine overhead (Inverted) when drilling “wet” type cores.**
- **DO NOT remove machines electrical components while connected to a power source. Only to be removed for service by qualified personal and put back on the machine after service is complete.**
- **DO NOT allow children or untrained personal to operate machine.**
- **DO NOT use this machine in the rain or a wet environment.**
- **DO NOT operate in the presence of explosive materials as power tools create sparks which may ignite dust or fumes.**
- **DO NOT drill into an area that may contain a live electrical wire/circuit.**
- **DO NOT use this machine without safely securing to the work piece being drilled.**
- **DO NOT use full water pressure when drilling with “wet” type bits! You only need minimal water to drill with these machines. Extreme water pressure can cause water to enter the gearbox!**
- **DO NOT operate this machine on a lower voltage as it may result in reduced power level and the machine could become unstable while cutting. This could also limit the motor life.**
  - **NOTE: Use of long small gauge power extension cords can result in decreased voltage. As local voltages can vary, it may be a good idea to test the voltage at the end of the extension cord to ensure proper voltage requirements are met. You might also consult an electrician to make sure the length of cord matches up with the proper wire gauge for this size motor. Make sure to use outdoor cords when operating outdoors.**

HEALTH WARNINGS

- **Certain dust created by drilling contains chemicals known to cause cancer, birth defects or other reproductive harm. The examples of these chemicals are below:**

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- **Lead from lead based paint.**
- **Crystalline silica from bricks, cement and assorted masonry products.**

  - **TO REDUCE RISK OF EXPOSURE TO THESE CHEMICALS, WORK IN A WELL VENTILATED AREA WITH VACUUM SYSTEMS, RESPIRATORS AND WITH ALL SUITABLE SAFETY EQUIPMENT.**

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Chapter

2

Specifications

ELECTRICAL DATA	
Voltage	**110V, 50-60Hz, Single Phase**
Current	**21.6 Amps (30A Circuit Use Recommended)**
Motor Size	**2600W**
Power Connection	**US Standard 3 Prong Type B Plug**

MECHANICAL DATA	
Cutter Range	**1” to 10” Max Diameter (255mm)**
Cutting Speed	**460/900 RPM Two Speed Gearbox 1) Gear 2 (900 rpm) for 1”-4” Holes 2) Gear 1 (460 rpm) for 4”-10” Holes**
Tool Holder	**Direct Arbor 1-1/4” 7 UNC Spindle**
Safety Clutch	**Yes**
Water hose and Valve	**Yes**
Main Telescoping Stand Adjustability	**105” Total Travel**
Main Telescoping Stand Height	**At Rest (Min): 68.75” (~5’ 8”) Extended (Max): 111.25” (~9’ 3”)**
Secondary Stand Travel	**20”**

SHIPPING DATA	
Shipping Weights	**64lbs & 60lbs**
Shipping Cartons	**38”x10”x15” & 71”x9”x9”**

Included Accessories

DESCRIPTION	*QTY*
Instruction Manual	**1**
Wrenches	**2**
Feed Handle	**1**
Water Hose and Valve	**1**
Top Bolt for Binding in Ceilings	**1**
Hex Wrench	**3**
Spare Brushes (set)	**1**
Leveling Bolts with nuts M12	**4**
Stand Base Mounting Bolts M10	**3**
Drill Stand Connecting Bolts M10	**2**

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Stand Base	1
Outer Pipe Stand Piece with 4 Point Carriage	1
Inner Pipe Stand Piece with Top Cap	1
Tightening Metal Pin	1
Locking Pin with D ring and Cotter Pin	1

Note

UPON RECEIPT, CHECK CAREFULLY TO ENSURE THAT THE MACHINE IS IN GOOD CONDITION AND HAS ALL ACCESSORIES LISTED ABOVE.

Additional Available Accessories

Additional accessories for this machine can be found in BLUEROCK ® Tools online shop at www.bluerocktools.com or from your local retailer.

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Chapter

3

Operations

Note

THOROUGHLY READ THROUGH THE ENTIRE MANUAL BEFORE OPERATING THIS MACHINE!

PURPOSE

- **The purpose of the 10”Z1 TEL Core Drill is to drill through masonry, concrete or other mineral rock types using annular coring bits.**
- **These drills are designed to be wedged between parallel surfaces using their telescoping base. The machine can then be turned in a variety of directions to enable angled drilling.**
  - **NOTE: Make sure the base fits completely on the surface and the base is tightly fastened to avoid stand movement during drilling.**
- **These machines can be used vertically, horizontally or overhead (inverted) provided an acceptable work environment.**
  - **CAUTION: If drilling overhead you are only permitted to use dry type core bits with a vacuum system. “Wet” type holes overhead would allow water into the motor and create an extremely dangerous situation.**

OPERATIONAL PRINCIPLES

- **The main drilling shaft rotates in a forward clockwise direction. The main drilling motor connects to the tool spindle to make contact with a surface and slowly bore a hole. Using the feed handles on the side of the drill, the user can raise or lower the drilling motor.**
- **These drills are ONLY to be used with diamond impregnated coring bits.**
  - **When drilling with “wet” type bits, the bit end pulverizes the material and the water brings the material out of the cut.**
  - **When drilling with “dry” type bits, the bit end pulverizes the material and dust brings the material out of the cut.**

MACHINE COMPONENTS

- **The main components of the 10”Z1 TEL are the spindle, gearbox, motor, carriage, drill stand and base. The spindle is driven by the transfer case and the motor.**
  - **These components must be not be removed except by a qualified technician. Power must be disconnected prior to any service.**

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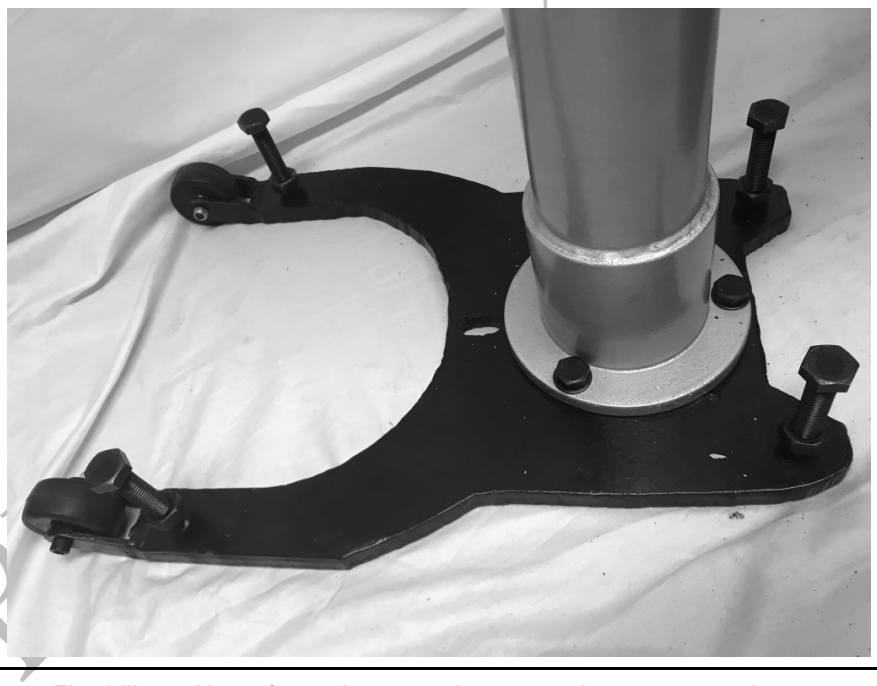
- **This machine has one primary adjusting point for the travel between the drill carriage and the drill stand. The main way to increase or decrease the user's ability to move the drill by hand is with this system. These are the black hex bolts on the side and back of the machine that have a locking nut around them. These are generally used to tighten up the travel as the slides wear over time. Be mindful to evenly adjust these so that the travel is even and smooth. The ideal travel generally keeps the drill in place when the user is not using the drill (this is usually on the tighter side) although individual users needs may vary. The side black carriage bolt can also be used for temporarily locking the carriage in place.**

- **The telescoping stand of this machine comes in four main parts. One is the inner pipe with a cap on the top. The inner pipe is pictured below with the top cap attached:**

- **The outer pipe connects to the black rolling base with three bolts. The base is pictured below. The outer pipe is connected to the base as pictured below:**



- **The drill stand has a four-point connection system that connects to the outer stand. This system is the primary system used when setting the drill in the spot and angle needed. CAUTION: Make certain to tighten all set screws and handles on all of these locking components prior to drilling. This is connection system is pictured below:**

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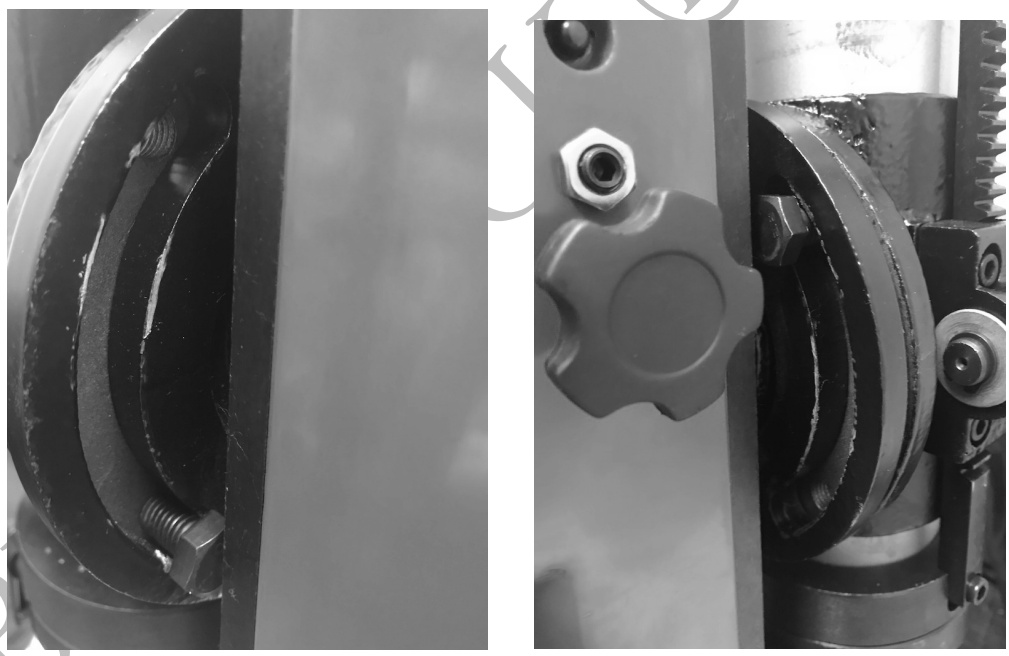
- **If using the inner stand as your mounting surface, you must use the adapter collars that fit inside the main adjusting collars on that four-point connections system. The slots in each are designed to fit the Allen head screws on the four-point connection system. Those adapters are pictured below:**

- **The locking pin is used in the inner pipe hole and outer pipe slot to tighten the drill between structures. Insert the locking pin with the D-ring on one side and the cotter pin on the other side. Use the straight metal pin to turn the tightening nut on the outer pipe.**

PRICE BLACK & BOOLS

- **The main machine with it’s own secondary stand is connected to the primary stand using the round slotted backer on the drill body. It is bolted down using two of the short bolts with washers (one on each side). If planning to tilt the drill horizontally to the right, you would attach one bolt/washer on the left in the bottom bolt hole and the bolt/washer on the right side through the top bolt hole as pictured below. If you are planning to tilt the drill horizontally to the left, you would use the left top and right bottom bolt holes opposite below. When your angle is set, tighten the bolts.**



TRANSPORTING THE MACHINE

- **When transporting the machine, always use two hands.**
- **DO NOT transport the machine with bits in the spindle.**
- **If transporting inside a vehicle, it is recommended to transport it on its side so as to avoid the item falling over.**
- **DO NOT carry the machine by the cord.**

- **DO NOT allow the cord or plug to drag along the floor when transporting.**

RUNNING THE MACHINE

- **Do all pre-operational and operational safety checks from Chapter 1.**
- **Consider your security and stability as well as the orientation of the machine in the work area.**
  - **Consider the work surface material, condition, strength, density and rigidity. These factors directly affect the tools efficiency.**
- **Secure the machine to the work surface by using the telescoping function to wedge the stand. Make certain the two parallel surfaces being wedged are strong enough to support the extreme tightening of the telescoping stand. Generally acceptable surfaces will consist of two reinforced concrete walls.**
- **Ensure the feed handles are securely attached to the feed spindle.**
- **Ensure the work surface is free of debris, oil, etc.**
- **Select and set up fluid delivery method or dust system.**
- **Select the gear you will be using.**
  - **Do not force the gear shifter when changing between gears. There is a neutral position between gear 1 and gear 2.**
  - **Change gears when the machine is stopped or almost stopped.**
- **If using the machine horizontally with the water system, connect hose to the side of the machine using the connector.**
  - **This connector takes standard ¾” US garden hose hookup.**
  - **Make sure the water valve is in the off position.**
    - **This is generally at a 90 degree angle from the valve hose.**
  - **Partially turn the water spigot on (usually half a turn).**
    - **CAUTION: DO NOT turn the hose on fully! You need sufficient water when using wet type bits. Using too much water pressure can cause the bits to not cut properly as well as water entering the gearbox.**
- **Select appropriate size cutting bit. See section below for details on securing bit.**
- **Check that the machine is firmly attached to the work area.**
- **Plug the machine into power source.**
  - **Form a loose knot in the power cord close to the plug connection to prevent fluid from running down the cord and into the power receptacle.**
- **Turn feed handle raising the cutter until the bit is above the work surface.**
- **Open the water valve to allow water to come out to the work surface.**
- **ATTENTION: BE AWARE THESE MACHINES ARE EXTREMELY POWERFUL. THEY HAVE A TREMENDOUS AMOUNT OF TORQUE WHICH MIGHT NOT BE SUITABLE FOR ALL POTENTIAL USERS. ESPECIALLY IN LOW GEAR AND WITH LARGER BITS. DESPITE THE SAFETY CLUTCH, THESE DRILLS CAN STILL INJURE THE USER. IF IN DOUBT, CONTACT A PROFESSIONAL FOR ADVICE.**
- **Turn the machine on by flipping the breaker switch to the “on” position.**
- **Very slowly engage the cutting bit with the material surface by lightly engaging the hand crank down towards the material.**
  - **NOTE: During the initial stages of contact the bit may wander.**

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- **After about 1/8” of cutting has been achieved in the work surface, slightly more force can be applied. This will be the normal amount of force the rest of the hole.**
  - **NOTE: Do not force the hole. Let the machine do most of the work. Excessive physical effort should be avoided as it can cause damage to the machine or the user.**
  - **If the unit jams in a hole, stop the drill immediately to prevent injury. Disconnect the drill from the power supply and loosen the cutter by turning drill spindle counterclockwise. Never attempt to free bit by starting motor!**
    - **After an interruption in drilling, make sure the drill bit is free and turns before restarting the hole. Be very careful at this point to make certain the drill does not bind when restarting.**
- **Make sure to keep the cutting material lubricated.**
- **Ease up on feed pressure as the cutter starts breaking through the backside of the material.**
  - **Be certain all is clear on the output side of this core to prevent injury to persons or property.**
- **Finish drilling the hole.**
- **Turn the motor off and disconnect power once the drill is safely back up in the non-drilling position.**
- **Turn water valve off.**

INSTALLING CORING BITS

- **WARNING: Core bits can be sharp and should only be handled with gloves so as not to cut the user during installation or removal.**
- **Check that the bits are not damaged.**
  - **Coring bits that are damaged should not be used.**
- **Make certain the machine is unplugged from power.**
- **Raise the drill motor to ensure ample room to install the bit.**
  - **Apply grease to the spindle thread to prevent corrosion and allow easier core bit removal.**
- **Insert the coring bit and screw it onto the drill spindle.**
- **Tighten the bit until fully tightened.**
  - **Use wrenches that fit the spindle and coring bit to fully tighten.**

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Chapter

4

Troubleshooting

Note

SERVICING SHOULD ONLY BE DONE BY A QUALIFIED TECHNICIAN.

DON’T FORGET TO UNPLUG POWER TO UNIT PRIOR TO SERVICE!

PROBLEM	*SOLUTION*
Motor does not turn on.	1) Check external power source (extension cord, breaker, etc). 2) Loose internal wire. Check and secure if necessary. 3) Motor brushes defective. Replace if necessary. 4) Check to ensure the motor on/off switch is operable. Replace if necessary.
Excessive sparking when motor is running.	1) This may indicate the presence of debris in the motor or worn out carbon brushes. Check the brushes for unusual wear and replace if necessary. Clean out the internal motor armature if necessary. 2) Armature has a rough edge. Inspect and replace if necessary.
Hole is not cutting.	1) Cutting bit is dull. Replace bit. 2) Work area material is not appropriate for bit type.
Bit is jammed while coring.	1) Debris is lodged between core hole and bit. Rotate bit in both directions to and inspect bit for debris. 2) Make sure stand is secured to work surfaces.
Coring speed has reduced.	1) Bit has hit rebar. Adjust feed control to prevent motor overload while cutting through rebar. 2) Diamonds on bit have glazed over. Deglaze bit or dress diamond rim on bit and check water flow rate. 3) Diamonds on bit have worn away. Replace core bit. 4) New core bit. Core at slow rate with new bits for 2-3 coring cycles. 5) The safety clutch is slipping. Tighten clutch. 6) Drilling progress is prevented by an accumulation of dust. Use suitable vacuum cleaner. 7) Water flow rate is too low. Increase water flow. 8) Core is stuck in the core bit. Remove core.
Core bit appears to wobble.	1) Spindle is damaged. Replace spindle and check bearings. 2) Bit is bent or damaged. Replace bit. 3) The core bit is not screwed securely onto the spindle. 4) Coring material is attaching to the bit. Inspect bit and increase water flow rate.
Water escapes at the water swivel or gear housing.	1) The water pressure is too high. Turn down water flow. 2) The shaft seal is defective. Replace seal 3) The water hose is damaged. Replace hose.

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Chapter 5

General Maintenance

- Inspect electrical cords and electrical connections.
- Keep machine clean and free of debris.
- Check for misalignment, binding and breakage of all moving parts. If damaged, repair tool before use.
- Keep cutting tools sharp and clean. Sharp bits are less likely to bind and are easier to control.

Occasional Maintenance

- Have the power tool serviced by a qualified service technician using identical replacement parts.
  - Change motor brushes:
    1) Disconnect drill from power.
    2) Unscrew left and right side brush holder caps using a flathead screw driver.
    3) Take out old brushes.
       - If you need to, use the screw driver to nudge them out.
    4) Replace with exact same size new brushes.
    5) Screw in brush holder caps tightly.
  - Adjusting Carriage:
    1) Periodically check and adjust slides as necessary.
    2) Use hex wrench to loosen the hex bolts on the carriage. There are four hex bolts on each adjusting slide. Backing out the bolts will loosen feed tension, while tightening the bolts will increase feed tension.
    3) Adjust the bolts evenly while moving the handle up and down so that there’s no free play yet not binding anywhere through its range of travel.
  - Change Gear Oil:
    1) Change if necessary using NLGL-2 grade grease. This service is generally done around the 50 hour service mark.
  - Adjust Safety Clutch:
    1) Adjust clutch as necessary.
       - NOTE: A torque wrench is necessary for this service.

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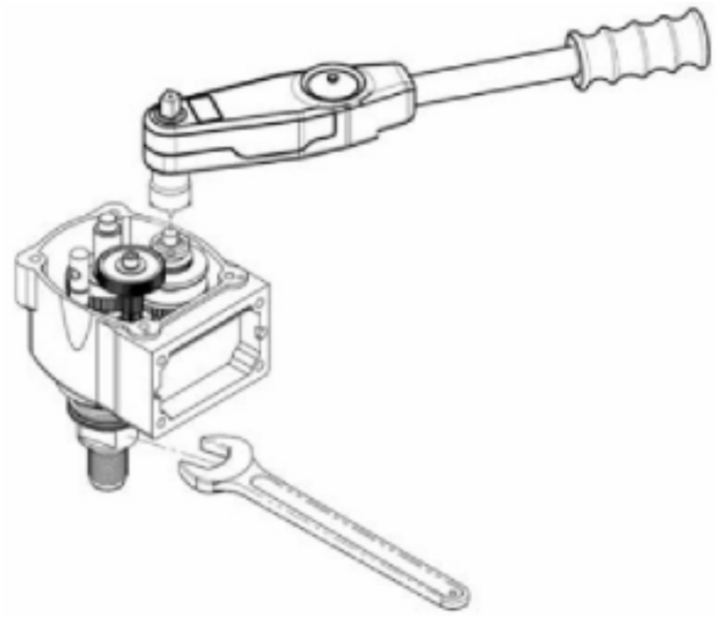
○ **Make certain the spindle is facing the ground so as not to get oil/grease everywhere. Locate the hex screws holding the gear housing together and remove them.**
○ **Gently pull the gear housing apart. You may use a couple flat screwdrivers to gently apply pressure to separate the housings.**
○ **Take the main clutch nut off of the clutch. Apply some Loctite type of thread glue on the clutch threads.**
○ **Reapply the nut to the thread.**
○ **Hold the spindle in place using the box wrench. See diagram below.**
○ **Use the torque wrench to tighten the clutch nut.**
○ **Torque the tensioning nut to 40 NM (354 inch/lbs, 29.5 ft/lbs).**
○ **With the clutch nut tightened, reassemble the housings. Make sure the orientation of the internal gears is correct and the housings mate correctly.**
○ **Reattach the bolts that hold the housing together.**



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Chapter 6

Motor and Gearbox Parts List

#	Description	#	Description	#	Description
1	Spring ring for holes	33	Friction disk	65	Bead flange
2	Washer	34	Inner spline friction disk	66	Stator
3	Rubber sealing 42x55x8	35	Disk spring	67	Cover of stator
4	Label	36	Shaft sleeve	68	6201 32mm bearing
5	Water sealer	37	Hex nut	69	Shell
6	Adjust shim	38	Needle bearing BK1816	70	Brush cap cover
7	Main spindle	39	Seal ring	71	Brush assembly
8	Spring ring for holes 52	40	Adapter of water switch	72	Brush holder
9	6205 bearing	41	Water switch	73	Rivet of label
10	Label	42	Ball valve	74	Label
11	Seal gland	43	Binding ring	75	M5x10 socket head cap screw
12	Small cover plate	44	Shim	76	Rear cover of shell
13	M4x6 nut bolt	45	Binding bolt	77	M4x14 nut bolt
14	Spring plate	46	Water adapter with machine	78	Socket head cap screw M4x90
15	Pin 10x30	47	6201 bearing	79	Spring washer
16	Spring column pin	48	No7 gear spindle	80	Plain washer
17	Spring	49	Ball thrust bearingAXK3047	81	Nut
18	Spring plate	50	No6 gear	82	Washer
19	Column pin A3x25	51	Copper tube	83	Spring washer
20	Button	52	Flat key C4x12	84	M5x6 nut bolt
21	Spring for shaft	53	Change speed spindle	85	Cover of switch box
22	Middle cover	54	Ball thrust bearingAXK4060	86	M4x10 nut bolt
23	Mechanic stick	55	Copper tube	87	Seal of switch box
24	Inner hexagonal screwM6x105	56	No4 gear	88	Electric capacity
25	Spring washer	57	Ball thrust bearingAXK1730	89	Switch
26	Plain washer	58	6200 bearing	90	Switch box
27	Gear box	59	Gear spindle	91	ST4.2x13 nut bolt
28	Pressing ring	60	Flat key C4x16	92	Wire with plug
29	Small friction disk	61	No2 gear	93	PRCD switch (Optional)
30	No8 gear	62	6202 35mm bearing	94	Protecting jacket
31	Spline tube	63	Armature	95	Ring of wire
32	Outer friction disk	64	Draught ring	96	M4x16 nut bolt

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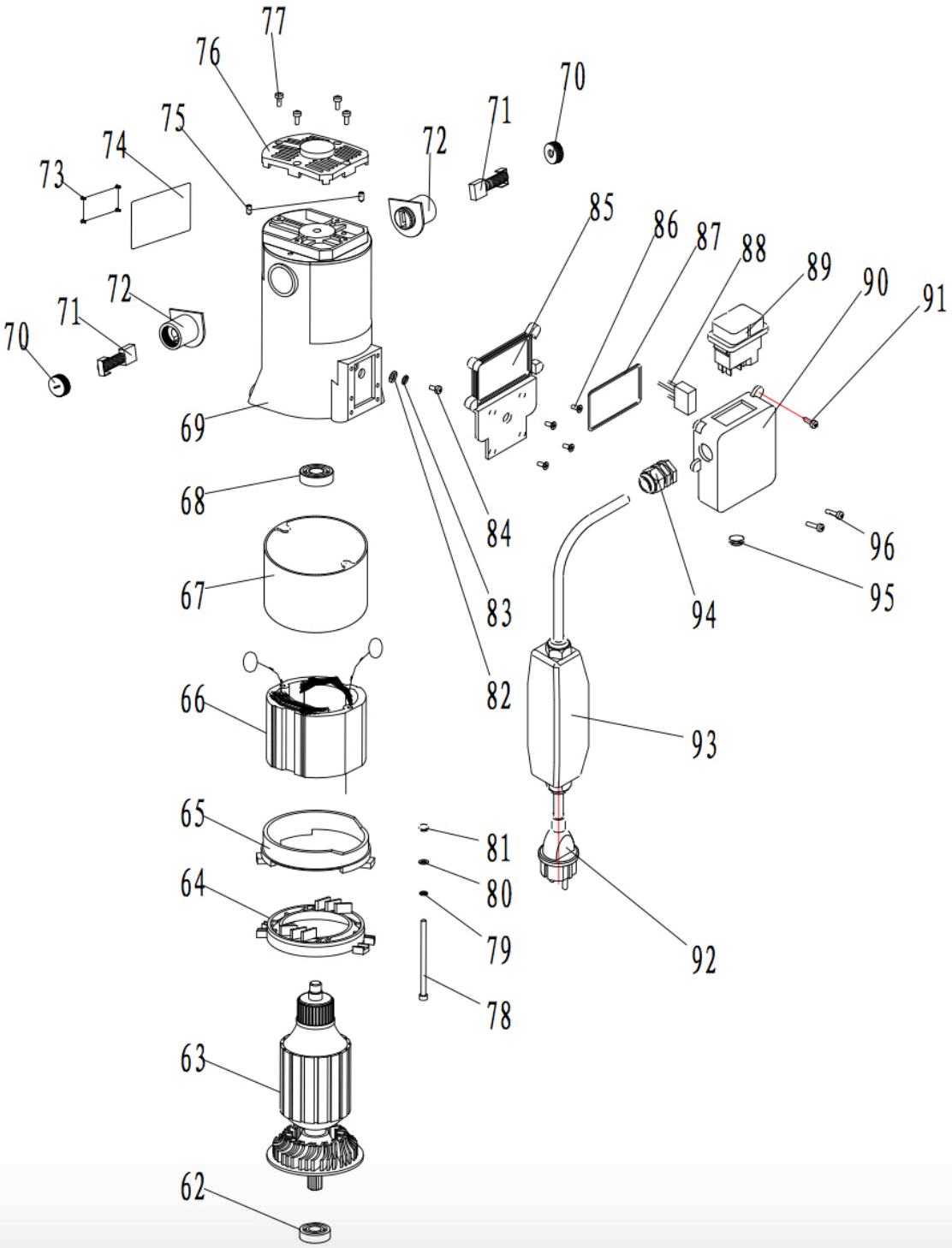
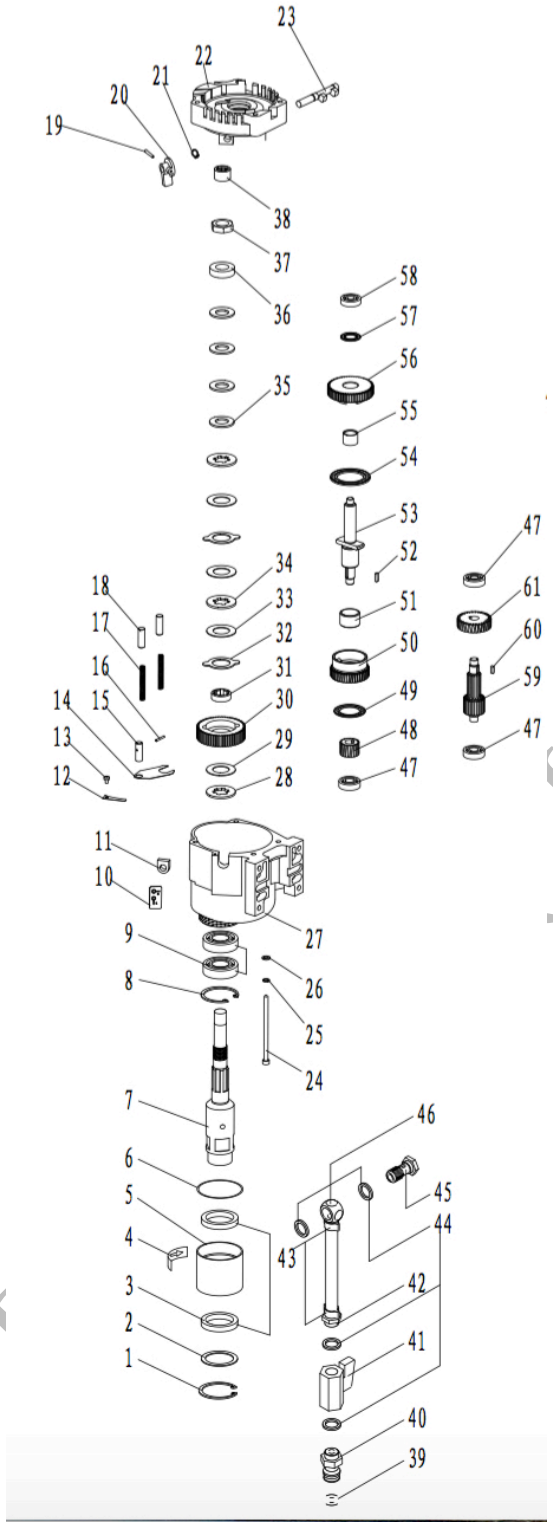
Breakdown View – Motor



Breakdown View – Gearbox



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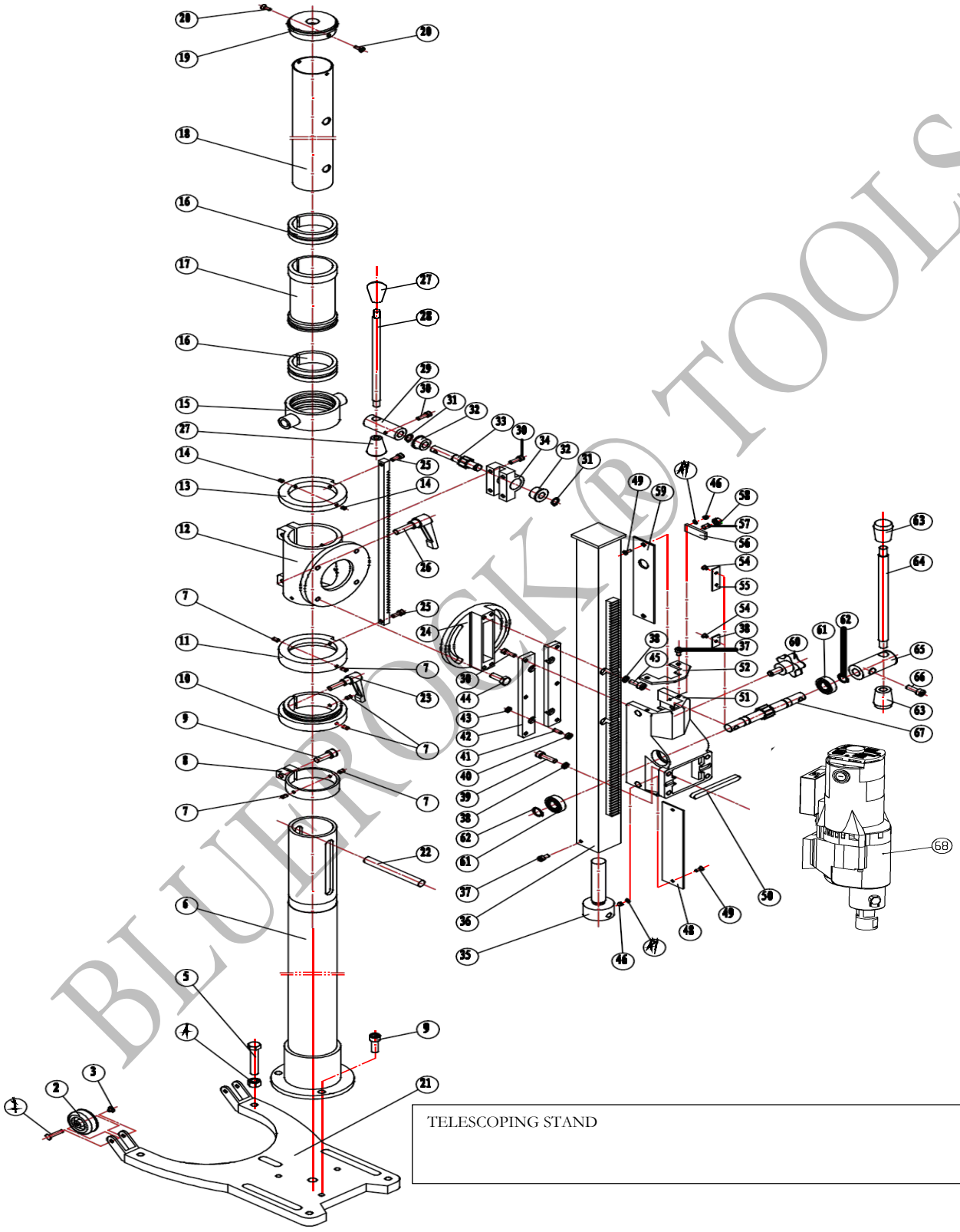
Parts List – Drilling Stand

#	Part Name	Description	Qty	#	Part Name	Description	Qty
1	GB/T873-1986	Round head hollow rivets 6x30	2	35	Z1Z-CF-102-3-07	Head screw	1
2		2 " trundle	2	36	Z1Z-CF-160S/01-05	Square tube components	1
3		Rivet cap	2	37	GB/T70.1-2000	inner hexagonal bolt M6x10	3
4	GB/T6170-2000	hex nut M12	4	38	GB/T859-1987	spring washer 8	8
5	GB/T5781-2000	hexagon bolt M12x65	4	39	GB/T70.1-2000	inner hexagonal bolt M8x30	4
6	Z1Z-CF-160S/01-06	Column components	1	40	Z1Z-CF-110A-26/8	adjusting gasket	4
7	GB/T73-1985	set screw M6x10	6	41	GB/T79-2000	inner hexagonal bolt M6x14	4
8	Z1Z-CF-160S/01-21	Auxiliary shackle	1	42	Z1Z-CF-160S/01-02	pressing plate	2
9	GB/T70.1-2000	inner hexagonal bolt M10x30	4	43	GB/T6174-2000	hexagon thin nut M6	4
10	Z1Z-CF-160S/01-13	safety loop	1	44	GB/T5781-2000	hexagon bolt M10x25	2
11	Z1Z-CF-160S/01-14	under rotating ring	1	45	GB/T70.1-2000	inner hexagonal bolt M8x20	4
12	Z1Z-CF-160S/01-09	lifting support	1	46	GB/T923-1988	cap nut M4	4
13	Z1Z-CF-160S/01-15	upper rotating ring	1	47	GB/T97.1-1985	flat gasket 4	4
14	GB/T73-1985	set screw M6x6	2	48	Z1Z-CF-180-07/6	track A（big、atresia）	1
15	Z1Z-CF-160S/01-19	Set screw nut	1	49	GB/T819.1-2000	cross recess screw M4x16	4
16	Z1Z-CF-160S/01-16	lifting pillar safety loop	2	50	GB/T1096-1979	flat key A10x8x100	1
17	Z1Z-CF-160S/01-17	Strengthen cover	1	51	Z1Z-CF-160S/01-01	lifting body	1
18	Z1Z-CF-160S/01-07	lifting pillar	1	52	Z1Z-CF-160S/01-03	stiffening plate	1
19	Z1Z-CF-160S/01-08	pillar head cover subassembly	1	53	Z1Z-CF-180-07/5	track（small）	2
20	GB/T819.1-2000	sunk screw M5x12	2	54	GB/T819.1-2000	cross recess screw M4x6	6
21	Z1Z-CF-160S/01-20	base	1	55	Z1Z-CF-180-07/4	track（middle）	2
22	Z1Z-CF-160S/01-18	connecting pin	1	56	Z1Z-CF-180-07/2	lifting body Top iron	2
23		positioning set screw M8x30	1	57	GB/T77-2000	inner hexagonal flush bolt M8x16	2
24	Z1Z-CF-160S/01-04	track seat	1	58	GB/T6174-2000	hexagon thin nut M8	2
25	GB/T70.1-2000	inner hexagonal bolt M6x14	2	59	Z1Z-CF-180-07/6	track B（big）	1
26		Adjustable set screw M10x35	2	60	JB/T7274-1994	five-star handle M10x40x24	2
27	JB/T7271-4	M10 Bakelite ball	2	61	GB/T276-1994	bearing 6003	2
28	Z1Z-CF-110A-26/10	Operating handle lever	1	62	GB/T894.2-1986	shaft ring 17	2
29	Z1Z-CF-110A-26/11	Extended cover	1	63	Z1Z-CF02-205/0-7	Bakelite handle sleeve	2
30	GB/T70.1-2000	inner hexagonal bolt M6x20	11	64	Z1Z-CF-180-28	operating lever	1
31	GB/T894.2-1986	shaft spring13	2	65	Z1Z-CF-180-29	operating lever sleeve	1
32	Z1Z-CF-110A-26/6	copper cover	2	66	GB/T70.1-2000	inner hexagonal bolt M8x25	1
33	Z1Z-CF-160S/01-11	gear shaft	1	67	Z3Z-CF-180-16	Control gear shaft	1
34	Z1Z-CF-160S/01-11	bearing pedestal	1	68	Z1Z-CF02-255	See Motor/Gearbox Parts list	1

BLUEROCK® TOOLS

Breakdown View – Drilling Stand



TELESCOPING STAND

BLUEROCK® TOOLS