

Volume

1.3

OPERATIONAL MANUAL

MODEL: 8"Z1 CORE DRILLING MACHINE



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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BLUEROCK® TOOLS

Safety

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



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



Long and loose hair must be contained.



Appropriate footwear must be worn.



Close fitting/protective clothing must be worn.



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



Hearing protection should be worn when using this machine.



Hard-hat must be worn while using machine.



Dust mask must be worn while using this machine.



Read operational manual prior to use.

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 the proper 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.

8" Z1 CORE DRILL

➤ DO keep body parts, clothing & power cords clear of turning/cutting pieces. Stay alert and use common sense when using this tool.
➤ 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 through 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 machine's electrical components while connected to a power source. Only to be removed for service by qualified personnel and put back on the machine after service is complete.
➤ DO NOT allow children or untrained personnel 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.

8" Z1 CORE DRILL

- **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 contain chemicals known to cause cancer, birth defects or other reproductive harm. The examples of these chemicals are below:

- 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.**

Specifications

ELECTRICAL DATA	
Voltage	120V, 50-60Hz, Single Phase
Current	20 Amps (20A Circuit Use Recommended)
Motor Size	2400W
Power Connection	US Standard 3 Prong Type B Plug

MECHANICAL DATA	
Cutter Range	1" to 8" Max Diameter (205mm)
Cutting Speed	750 RPM One Speed Gearbox
Tool Holder	Direct Arbor 1-1/4" 7 UNC Spindle
Safety Clutch	Yes
Water hose and Valve	Yes
Travel	21"
Stand Height	31.5"

SHIPPING DATA	
Shipping Weight	58 lbs.
Shipping Carton	35" x 10" x 15"

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
Black Frame Handle	1
Side Black Carriage Bolt	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.newmantradingcompany.com or from your local retailer.

DESCRIPTION
1" Wet Coring Bit
1.25" Wet Coring Bit
1.5" Wet Coring Bit
1.75" Wet Coring Bit
2" Wet Coring Bit
2.5" Wet Coring Bit
3" Wet Coring Bit
3.5" Wet Coring Bit
4" Wet Coring Bit
4.5" Wet Coring Bit
5" Wet Coring Bit
6" Wet Coring Bit
7" Wet Coring Bit
8" Wet Coring Bit
1" Dry Coring Bit
1.25" Dry Coring Bit
1.5" Dry Coring Bit
1.75" Dry Coring Bit
2" Dry Coring Bit
2.5" Dry Coring Bit
2.75" Dry Coring Bit
3" Dry Coring Bit
3.5" Dry Coring Bit
4" Dry Coring Bit
5" Dry Coring Bit
1-1/4" 7 UNC to 5/8" 11 UNC Core Bit Adapter
10" Extension Rod
12" Extension Rod
18" Extension Rod

Operations

Note

THOROUGHLY READ THROUGH THE ENTIRE MANUAL BEFORE OPERATING THIS MACHINE!

PURPOSE

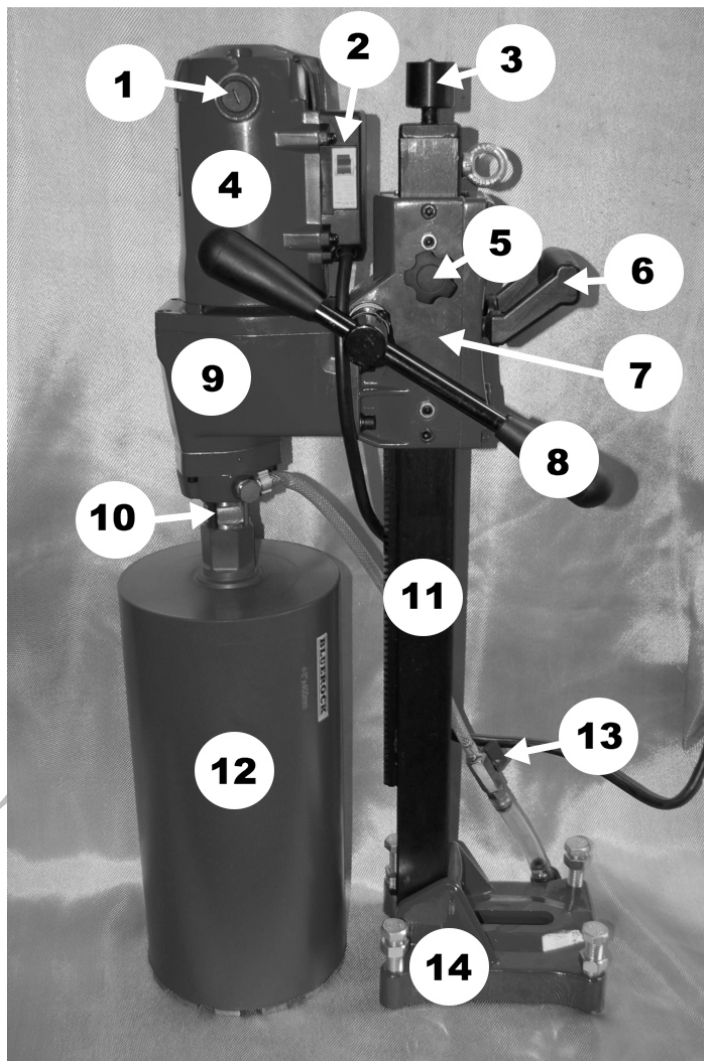
- The purpose of the 8"Z1 Core Drill is to drill through masonry, concrete or other mineral rock types using annular coring bits.
- These drills are designed to be bolted to the drilling surface through their base.
 - NOTE: Make sure the base fits completely on the surface and the base is securely fastened using wedge anchors to bolt to the surface.
- These machines can be used vertically, horizontally or overhead (inverted) provided an acceptable work environment. NOTE: For safety, when drilling horizontally or overhead a safety chain/strap should always be used.
 - 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 ends 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 8"Z1 are the spindle, gearbox, motor, carriage, drill stand and base. The spindle is driven by the transfer case and the motor.
 - These components must not be removed except by a qualified technician. Power must be disconnected prior to any service.
- 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 user needs may vary. The side black carriage bolt can also be used for temporarily locking the carriage in place.



- | |
|-------------------------------------|
| 1) Motor Brush Holder |
| 2) Motor On/Off Switch |
| 3) Top Bolt for Binding in Ceilings |
| 4) Drill Motor |
| 5) Side Carriage Bolt |
| 6) Black Frame Handle |
| 7) Drill Carriage |
| 8) Feed Handle |
| 9) Gearbox |
| 10) Spindle |
| 11) Drill Stand |
| 12) Coring Bit (not included) |
| 13) Water Valve |
| 14) Stand Base |

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 base to the work surface by using a wedge anchor or other method to ensure the base does not move.
- Use the four leveling bolts on the corners of the base to level the machine.
- After placing the machine in work area, connect a safety chain or strap if necessary.
 - The safety chain should attach to the machine (preferably through the carrying handle or O bolt) as well as attached to the work area in such a manner that prevents the machine from detaching or falling from the work area.
- 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.
- If using the machine horizontally with the water system, connect hose to the side of the machine using the connector.
 - This connector takes standard 3/4" 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.
➤ 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.
➤ Unbolt the wedge anchor.
➤ Disconnect safety chain/strap and move the drill to a new drilling location.

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.

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.	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1) Cutting bit is dull. Replace bit. 2) Work area material is not appropriate for bit type.
Bit is jammed while coring.	<ol style="list-style-type: none"> 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 surface.
Coring speed has reduced.	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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.

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 lock nuts and hex screws.
- 3) Adjust the screws evenly while moving the handle up and down so that there's no free play yet not binding anywhere through its range of travel.
- 4) Retighten the lock nuts.

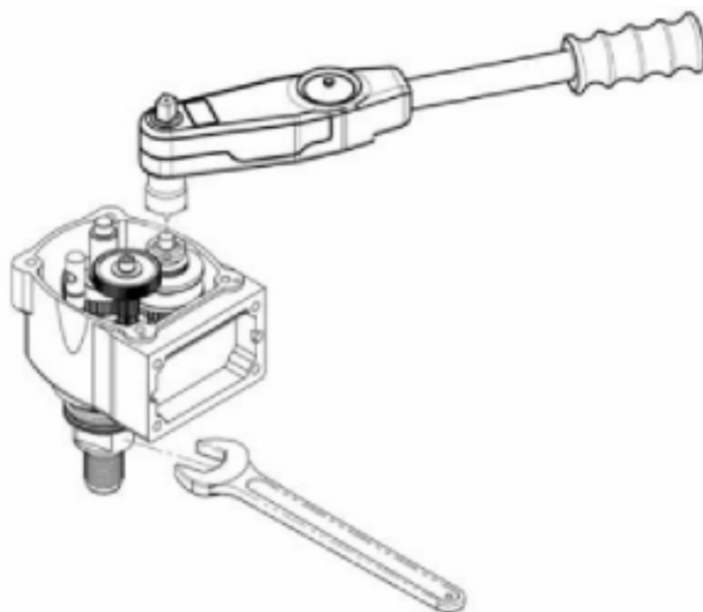
- Change Gear Oil:

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.
- 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 37 NM (327 inch/lbs, 27 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.



Chapter

6

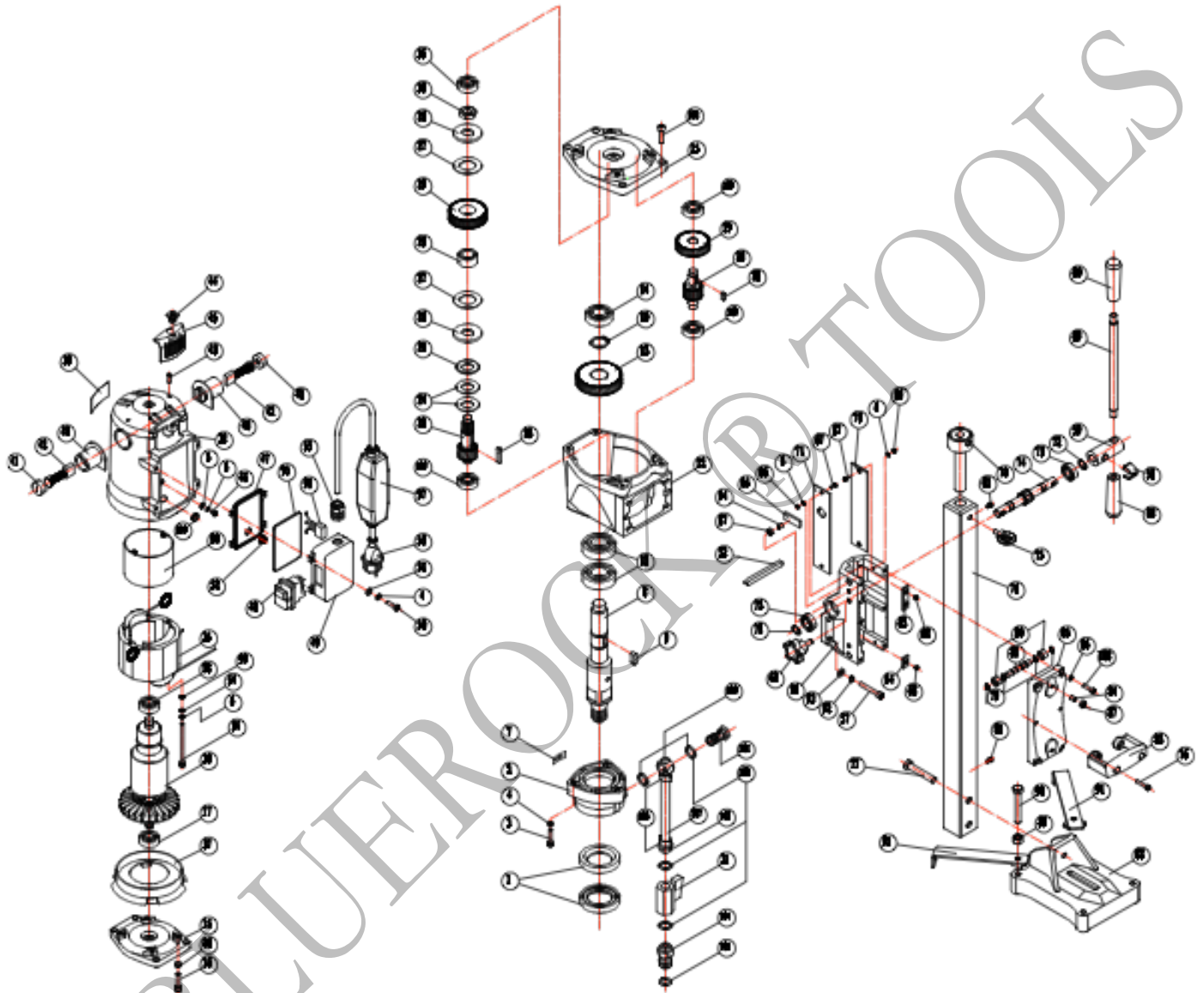
Parts List

#	Old	Symbol	Name	#	Old	Symbol	Name	#	Old	Symbol	Name
1	62	GB/T987 7.1	Sealing ring FB42x62x10	39	23		Name plate	77	86	GB/T57 81-2000	Hexagonal bolt M12x65
2	60	Z1Z-CF- 180-18	Water ring housing	40	19	Z1Z- CF- 205-23	Brush hold	78	91	Z1Z-CF- 102-3- 07	Screw
3	63	GB/T70. 1-2000	Inner hexagonal boltM5x35	41	20	Z1Z- CF- 180-23- 1	Carbon brush	79	97	GB/T89 4.2- 1986	Spring shield ring for pindle10
4	11	GB/T859 -1987	Spring spacer 5	42	21	Z1Z- CF- 180-35	Electric brush	80	95	Z1Z-CF- 180-34	Rotating wheel 10x18x10
5	1	GB/T862 .2-1987		43	18	GB/T78 -2000	Inner hexagonal fastening boltM5x14	81	96	Z1Z-CF- 180-33	Pin shaft Φ10x65
6	2	GB/T859 -1987		44	16	GB/T81 9.1- 2000	Countersunk head bolt M5x10				
7	61		Arrow	45	17	Z1Z- CF- 180-06	Cover board of shell	83	104	Z1Z-CF- 180-07- 3X	Hand drip
8	50	Z1Z-CF- 180-17	Output shaft	46	3	GB/T81 8-2000	Button headed boltM4x6	84	102	GB/T77- 2000	Inner hexagonal fastening bolt M8x16
9	51	GB/T109 6-1979	Falt key A8x18	47	6	Z1Z- CF- 180-04	Switch box cover	85	94	Z1Z-CF- 180-07- 1	Elevating body cover
10	46	GB/T894 .2-1986	Spring25	48	15	Z1Z- CF- 180-09	Switch	86	105	GB/T85 9-1987	Spring washer 6
11	49	GB/T276 -1994	Rolling bearing 6205	49	14	Z1Z- CF- 180-03	Switch box	87	73	GB/T61 74-2000	nut M8
12	48	Z1Z-CF- 180-01	Reducer casing	50	12	GB/T81 8-2000	Button headed bolt M5x20	88	99	Z1Z-CF- 180-32	Base
13	47	Z1Z-CF- 180-20	6#Gear	51	10	GB/T97 .1-1985	Light-duty spring washerΦ5	89	100	GB/T61 70-2000	Hexagonal nut M16
14	45	GB/T276 -1994	Rolling bearing 6004	52	5	Z1Z- CF- 180-22	Jacket	90	101	GB/T57 81-2000	Hexagonal spanner M16x75
15	34	Z1Z- CF02- 180/0-05	Middle cover	53	8		Three-prong plug of three- conductor(cable)	91	98	Z1Z- CF02- 205/06	Pressing board
16	33/1 03	GB/T770. 1-2000	Inner hexagonal bolt M6x30	54	28	GB/T81 8-2000	Bolt M4x14	92	84	GB/T85 9-1987	Spring spacer 8
17	31	GB/T276 -1994	Rolling bearing 6202- 2RZ/Z1	55	13	Z1Z- CF- 180-02	Cable press board	93	85	GB/T97. 1-1985	Washer 8
18	26	GB/T276 -1994	Rolling bearing6201- 2RZ/Z1	56	69	Z1Z- CF- 180-07	Elevating body	94	74	GB/T77- 2000	Inner hexagonal fastening bolt M8x16
19	66	Z1Z- CF02- 180/0-01	2#Gear	57	83	GB/T70 .1-2000	Inner hexagonal round head bolt M8x30	95	7	Z1Z- CF02- 205/0-5	Sealing ring
20	65	Z1Z- CF02- 180/0-02	3#Gear	58	79	Z1Z- CF- 180-41	Inner hexagonal round head bolt	96	4	Z1Z- CF02- 205/0-8	Capacitance
21	64	GB/T109 6-1979	Key A5x12	59	78	Z1Z- CF- 180- 29X	Joy stick sleeve	97	9		PRCD (optional)
22	43	Z1Z- CF02- 180/0-04	5#Gear	60	76	Z1Z- CF02- 205/0-7	M10 Bakelite ball	98	24	Z1Z- CF02- 205/0-1	Insulating cover of stator
23	44	GB/T109 6-1979	Key C5x25	61	93	GB/T70 .1-2000	Inner hexagonal bolt M5x8	99	27	Z1Z- CF02- 205/0-2	Insulating shim of screw
24	42	Z1Z-CF- 180-10/2	Butterfly spring shim A	62	67	JB/T72 74- 1994	Knob M10x40x24	100	52	Z1Z - CF02- 80/0-62	Connector of water faucet
25	41	Z1Z-CF- 180-10/Z	Butterfly spring shim B			Z1Z- CF- 255/3-	Knob	101	53	Z1Z - CF02- 80/0-61	Tightening screw

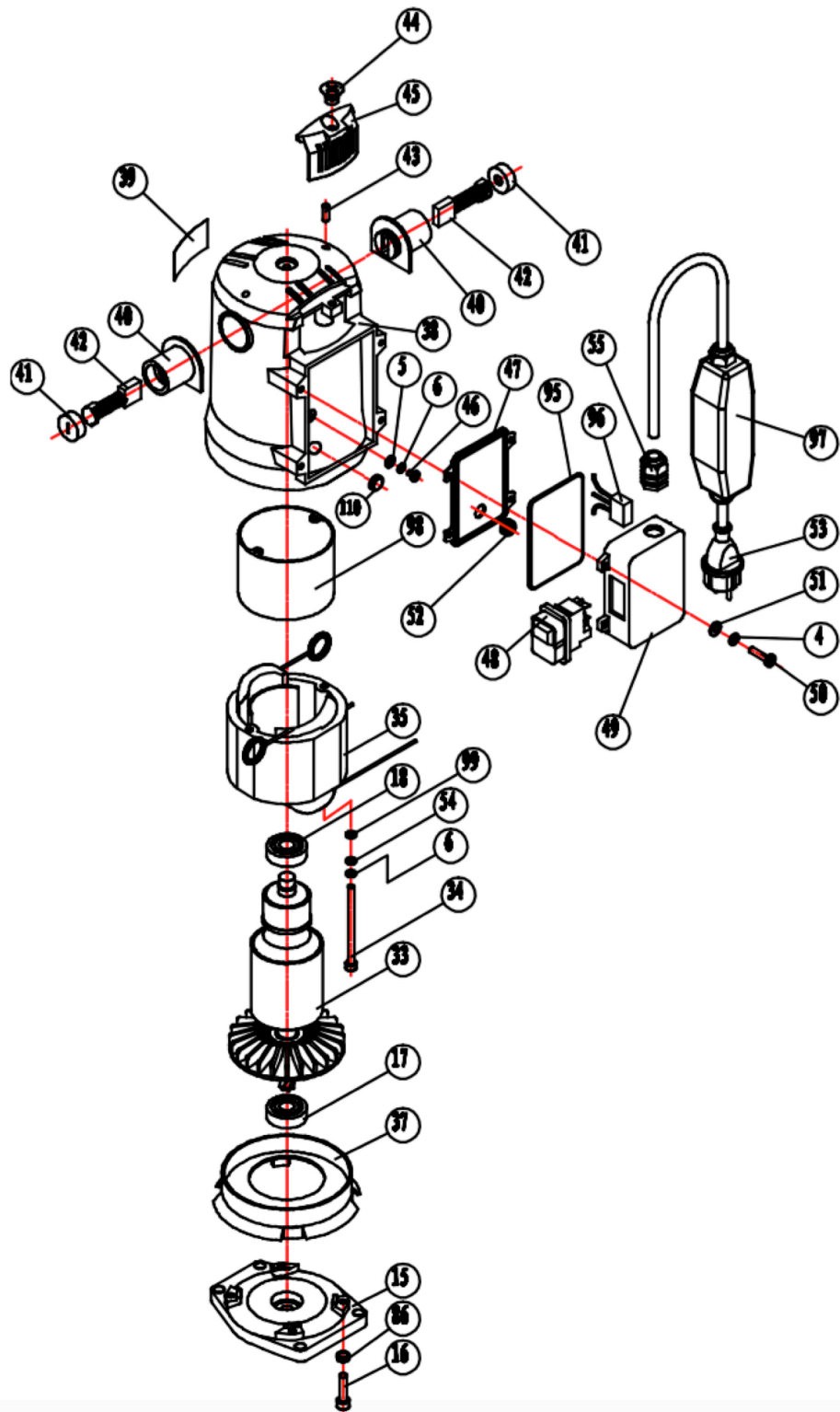
8 "Z1 CORE DRILL

						13						
26	37	Z1Z-CF-180-11	Shield ring	63	81	Z1Z-CF-180-07-4	Track piece(middle)	102	54	Z1Z - CF02-80/0-60	Washer	
27	38	Z1Z-CF-180-12	Friction shim	64	82	Z1Z-CF-180-07-5	Track piece(small)	103	55	Z1Z - CF02-80/0-63	Connector of water faucet	
28	40	Z1Z-CF-180-16	Copper cover 30x18x15.5	65	72	Z1Z-CF-180-07-2	Track lining	104	57	Z1Z - CF02-80/0-64	Connector of water switch	
29	39	Z1Z-CF02-180/0-03	4#Gear	66	70	GB/T923-1988	Acorn nut	105	58	GB/T3452.1	O shape sealing ring	
30	36	GB/T6173-2000	Hexagonal nut M16x1.5	67	71	GB/T819.1-2000	Countersunk bolt M4x16	106	59	Z1Z - CF02-80/0-65	Tightening ring	
31	56	Z1Z - CF02-80/0-43	G1/4 " mini ball-valve	68	80	GB/T819.1-2000	BoltM4x6	107			Inner dia.8"350 mesh tube	
			Water switch	69	77	Z1Z-CF-180-28	Frame joy stick	108	33	GB/T70.1-2000	Inner hexagonal round head bolt M6x20	
32	68	GB/T1096-1979	Key A10x8x100	70	75	Z1Z-CF-180-07-6	Track strip A	109	26	GB/T276-1994	Ball bearing 6201	
33	30	Z1Z-CF02-205/1-01	Rotor	71	75	Z1Z-CF-180-07-6	Track strip B	110			Jacket	
34	29	GB/T70.1-2000	Inner hexagonal boltM5x85	72	87	GB/T894.2-1986	Spring shield ring for spindle17					
35	25	Z1Z-CF-205-25	Stator	73	88	GB/T276-1994	Rolling bearing 6003					
36	35	GB/T276-1994	Rolling bearing 6200	74	89	Z3Z-CF-180-16	Frame gear shaft					
37	32	Z1Z-CF-180-08	Shield ring	75	92	GB/T825-1988	Rack M8x12					
38	22	Z1Z-CF-205-05	Shield of drill	76	90	Z1Z-CF-180-31	Square pipe					

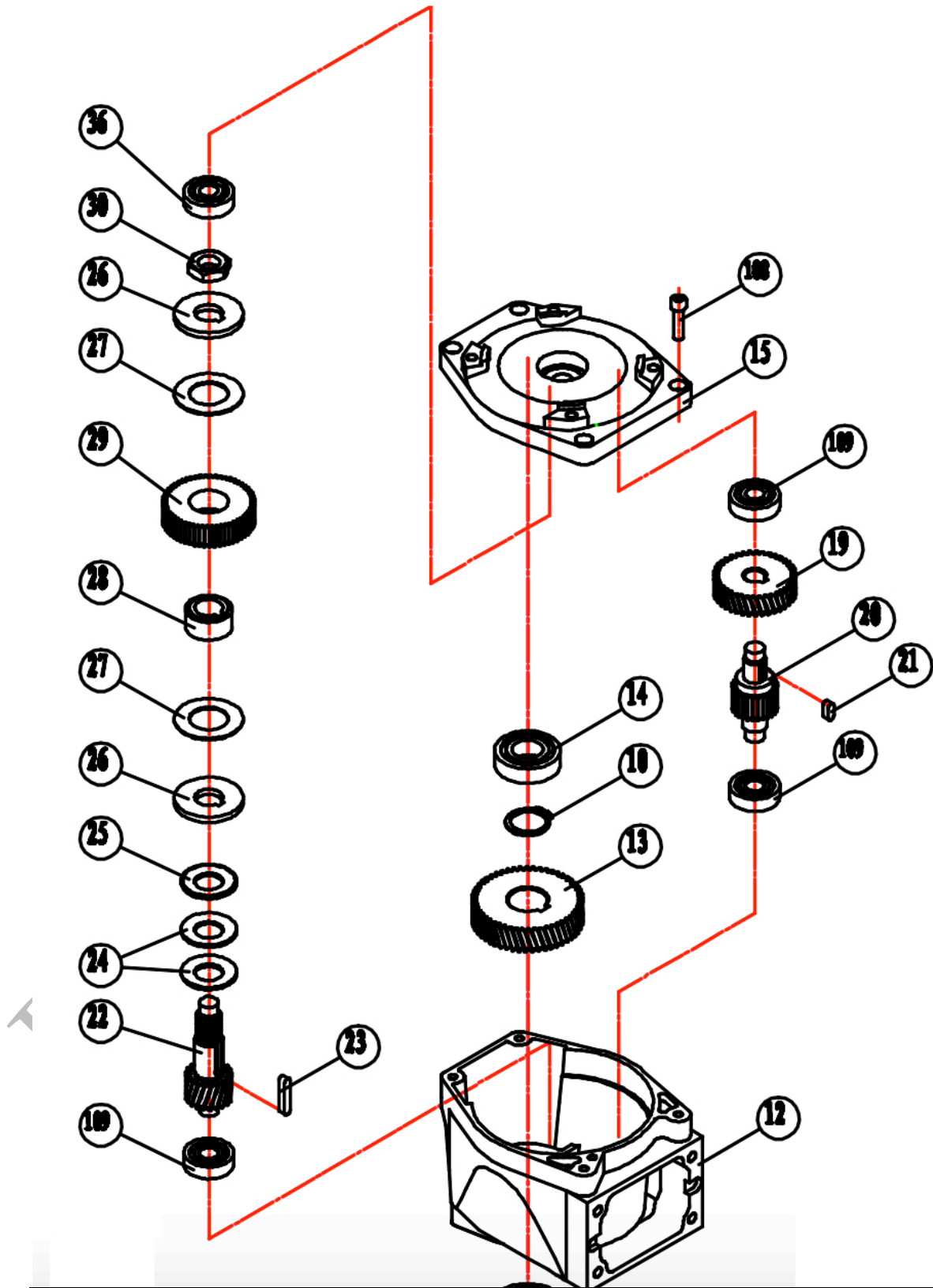
Breakdown View - Overview



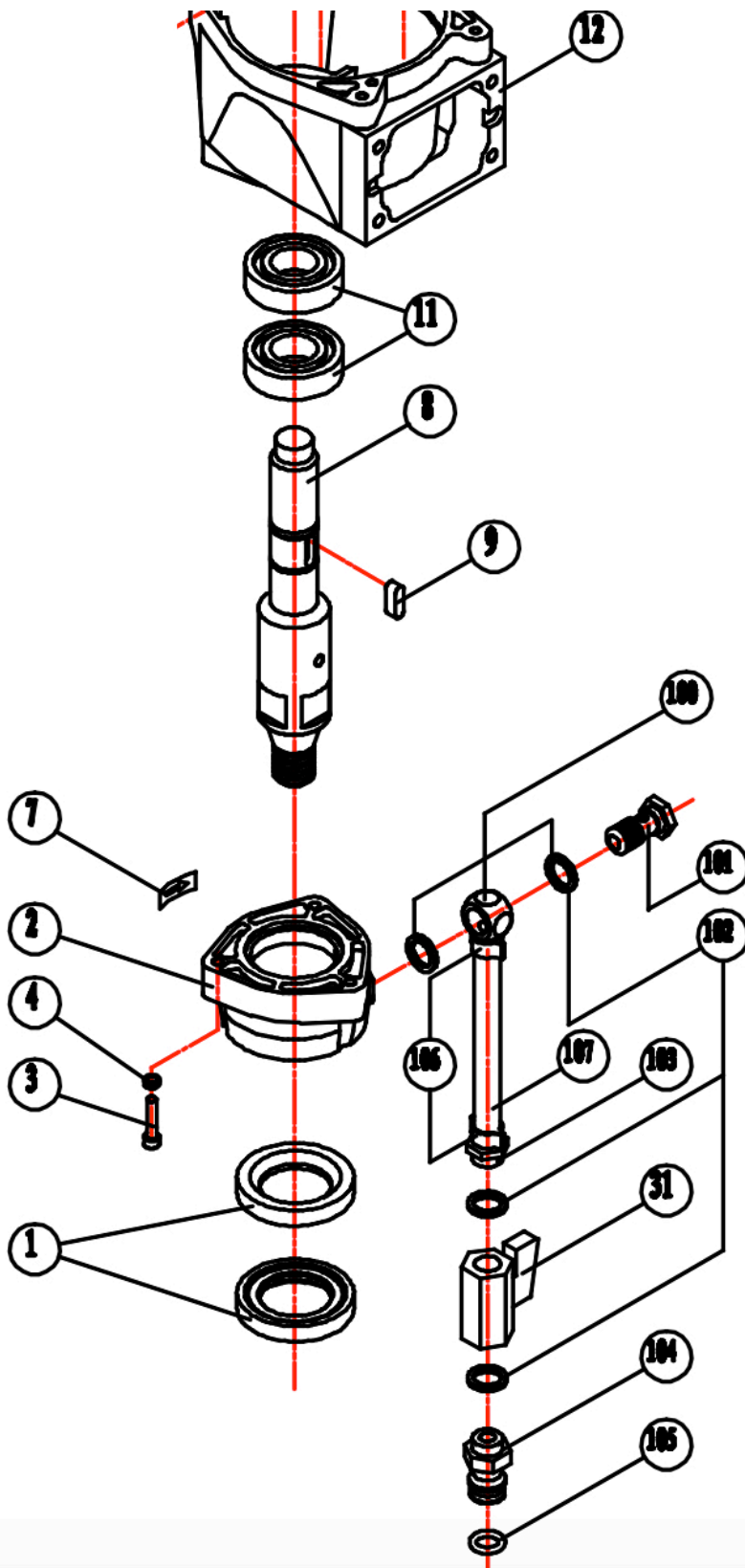
Breakdown View - Close-up Motor



Breakdown View - Close-up Top Half Gearbox



Breakdown View - Close-up Bottom Half Gearbox



Breakdown View - Close-up Drill Rig

