Thanks for choosing TRITORC products

Before using the machine please make sure read this Operation Manual

OD-Mounted Pipe Cutting & Beveling Equipment

Operation Manual

TRITORC INC.

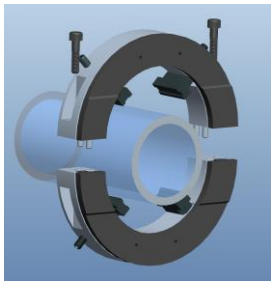
TABLE OF CONTENTS

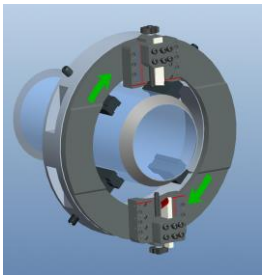
PART 1: EQUIPMENT INTRODUCTION

We supplies machines and equipment to diverse industries where process piping systems are essential to their operation but require divergent machine tool technology. From power and petrochemical to semiconductor, food and dairy, ours wide range of portable tools can be found on all pipe and tube types, sizes and wall thickness.

FEATURES

- Cold Cutting and Beveling
- Split Frame
- Tool bits feed automatically
- Minimal Axial and Radial Clearance
- Lightweight and compact design
- Easy Set-up
- Pneumatic, Electrical or Hydraulic driven





PACKAGE

- The machine is placed into a portable plywood case with mail body, tool slide, expanding block, usual tool, beveling & cutting tools

SPECIFICATION

Driven： Electric, Pneumatic or Hydraulic
Air Supply: 0.6-1.0 Mpa@1500-3000L/min
Electric supply: 220V-240V 1PH 50/60HZ
Hydraulic supply: 380-415V 3PH 50/60HZ 12.5Mpa@2-60L/Min

PART 2: SAFTY INSTRUCTIONS

We take great pride in manufacturing safe, quality products. Please comply with the following safety rules and instructions before operating the equipment.

READ THE FOLLOWING CONTENT BEFORE WORKING

READ THE OPERATION MANUAL

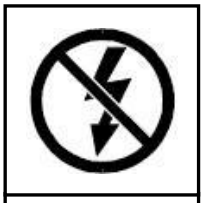
Before installing, you should read the manual, and make sure you understand all setup and operating instructions, it can help you save time and avoid injuring the operator and the machines

INSPECT MACHINE & ACCESSORIES

Before starting the machine, look for loose bolts or nuts, leaking lubricant, and any other physical conditions that may affect operation. Properly maintaining the machine can greatly decrease the chances for injury.

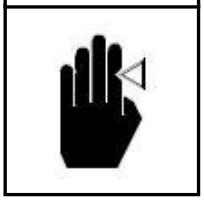
ALWAYS READ SIGNS AND LABLES

Please read the marks and signs. All the marks and signs should be clear and easy to read, and you should carefully to keep them.



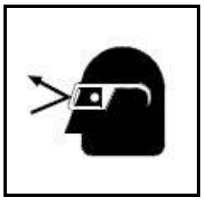
DANGER! ELECTRIC SHOCK

Always disconnect machine to power source before moving or removing motor security of the electricity.



CAUTION INJURE HAND

Keep hands, arms and fingers clear of all moving parts



WEAR SAFETY GOGGLE

Eye protection required. When using equipment,
Please wear safety goggle. No goggle no work

Use standard safety equipment. Hard hats, safety shoes, safety harnesses, protective clothes, and other safety devise should always be used when appropriate.

Dress properly. Do not wear loose clothing or jewelry. They can be caught in rotating and moving parts. Avoid slippery floors or wear nonskid footwear.

PART 3: MACHINE SPECIFICATIONS

Electric-Driven

Model	Working Range(OD)		Speed （rin）/m	Ring Weight (Kgs)	Wall Thickness (mm)	Power
	Inch	mm				
TTCB-6	2-6	50-168	18	38	≤30	220V 1PH 50-60HZ Power Supply:1.6-2.4Kw Current:6-12A
TTCB-8	3-8	80-230	15	41	≤30	
TTCB-10	5-10	125-275	14	48	≤30	
TTCB-12	6-12	168-325	13	53	≤30	
TTCB-14	8-14	219-377	12	60	≤30	
TTCB-16	10-16	273-426	12	66	≤30	
TTCB-18	12-18	300-457	12	72	≤30	
TTCB-20	14-20	355-508	12	85	≤30	
TTCB-22	16-22	400-560	12	96	≤30	
TTCB-24	18-24	457-610	11	105	≤30	
TTCB-26	20-26	508-660	11	116	≤30	
TTCB-28	22-28	550-715	11	140	≤30	
TTCB-30	24-30	600-762	11	150	≤30	
TTCB-32	26-32	660-813	10	154	≤30	
TTCB-36	30-36	762-914	10	193	≤30	
TTCB-42	36-42	914-1066	10	244	≤30	
TTCB-48	42-48	1066-1230	10	298	≤30	

Pneumatic-Driven

Model	Working Range(OD)		Speed（r/min）	Ring Weight (Kgs)	Wall Thickness (mm)	Power
	Inch	Mm				
TTCB-6	2-6	50-168	18	38	≤30	1500L-3000L Per Minute @ 0.6/0.7Mpa
TTCB-8	3-8	80-230	15	41	≤30	
TTCB-10	5-10	125-275	14	48	≤30	
TTCB-12	6-12	168-325	13	53	≤30	
TTCB-14	8-14	219-377	12	60	≤30	
TTCB-16	10-16	273-426	12	66	≤30	
TTCB-18	12-18	300-457	12	72	≤30	
TTCB-20	14-20	355-508	12	85	≤30	
TTCB-22	16-22	400-560	12	96	≤30	
TTCB-24	18-24	457-610	11	105	≤30	
TTCB-26	20-26	508-660	11	116	≤30	
TTCB-28	22-28	550-715	11	140	≤30	
TTCB-30	24-30	600-762	11	150	≤30	
TTCB-32	26-32	660-813	10	154	≤30	
TTCB-36	30-36	762-914	10	193	≤30	
TTCB-42	36-42	914-1066	10	244	≤30	
TTCB-48	42-48	1066-1230	10	298	≤30	

Hydraulic-Driven

Model	Working Range(OD)		Speed (r/min）	Ring Weight (Kgs)	Wall Thickness (mm)	Power
	Inch	mm				
TTCB-6	2-6	50-168	18	38	≤70	2-60L Per minute @12.5Mpa
TTCB-8	3-8	80-230	15	41	≤70	
TTCB-10	5-10	125-275	14	48	≤70	
TTCB-12	6-12	168-325	13	53	≤70	
TTCB-14	8-14	219-377	12	60	≤70	
TTCB-16	10-16	273-426	12	66	≤70	
TTCB-18	12-18	300-457	12	72	≤70	
TTCB-20	14-20	355-508	12	85	≤70	
TTCB-22	16-22	400-560	12	96	≤70	
TTCB-24	18-24	457-610	11	105	≤70	
TTCB-26	20-26	508-660	11	116	≤70	
TTCB-28	22-28	550-715	11	140	≤70	
TTCB-30	24-30	600-762	11	150	≤70	
TTCB-32	26-32	660-813	10	154	≤70	
TTCB-36	30-36	762-914	10	193	≤70	
TTCB-42	36-42	914-1066	10	244	≤70	
TTCB-48	42-48	1066-1230	10	298	≤70	

PART 4: SET UP AND OPERATING PROCEDURES

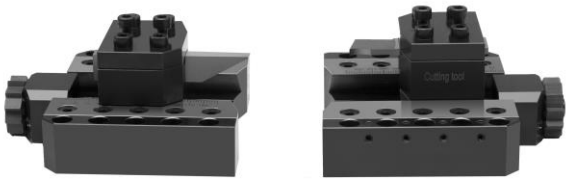
SECTION I: CHECK BEFORE SETTING UP

Split frame

The equipment consists of one rotating ring and one stationary ring; every ring splits into 2 pieces, when assembled the rotating ring and stationary rings are integrated, and split apart simultaneously for mounting in-line piping applications. These rings are preassembled and adjusted prior to dispatch the factory.

Check the following parts in the case:

- Tool slide
- Expanding block kit
- Tool feed structure
- Drive motor
- Hand tool
- Beveling & Cutting tool bits



Tool Slide
Carrier of the cut and bevel tool
In order to operation easier, we set up the height of cutting tool bit 2mm higher than beveling tool bit on the tool slide

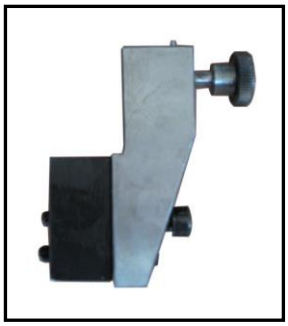
Explanation:
The setting makes the iron scrap easy come out to avoid the tool bits nipped.

Note:
We mark the “cutting”, “beveling” on the tool slide, please install the tool on the correct tool slide. If you only want to sever the pipe, install the cutting tool bits on each tool slide.

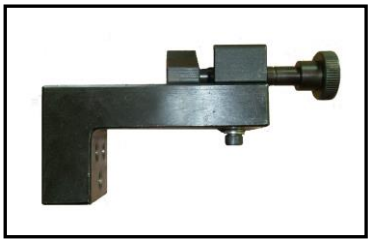
Expanding Block kit
Necessary parts for install the machine on the different size pipe firmly. We mark the range of use on the block. It’s very easy for choose

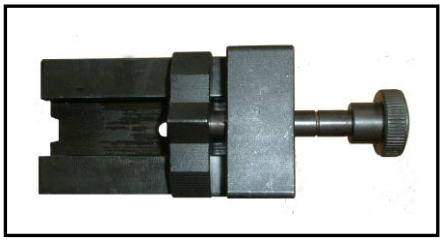
Tool Feed Structure

The right illustration specifies to OCE/P-89, comprised of a trip base, trip pin and extension blocks. The trip can be engaged or disengaged depending upon feed requirements, by lowering or raising the trip pin. Refer to tool slide mounting location and trip assembly configuration.



The below illustration specify to TTCB-6 up to TTCB-48, is used for tool bit be fed automatically. It's easy operation. Once installed, no need to change when working with any size pipe.





Note:

When the triangle tripper engages with the star wheel, the tool bit will be fed automatically by feed screw. Operator can pull or push the tripper, make it engages with star wheel or disengage with the star wheel, to choose feed which tool bit.

Drive Motor

We supply electric-driven, air-driven or hydraulic driven type machine
Electric-driven: electric motor, reducer, gear set with connect flange
Air-driven: air motor, reducer, gear set with connect flange

Note:

The certain model, electric type and air type can be interchanged.

Air Motor

Compressed air required: Dehydration and filtrated air
Required air treatment: air **filter**, **regulator** and atomized **lubricator** (**FRL system**)
Air filter makes the compressed air dry and clean, avoid make air motor part rust and be jammed.
Atomized lubricator makes the air motor parts lubricating
If you do not have FRL system, required add lubricating oil (engine oil and kerosene 1:1) at air in-inlet every time before and after use, and clean the motor parts regularly

Caution:

This is a remedy, indeed requires the air filter and atomized lubricator maintain air motor

Note:

Check the exhaust muffler. Broken or damaged mufflers can restrict air low or cause excessive noise. Dirty air, low-pressure air or over pressure air will cause malfunctions, including delayed starting

Electric Motor

Use only with proper AC voltage power sources and observe all normal electric shock hazard procedures

Hydraulic driven

Observe proper procedures for electrically drive power sources. Avoid damage to hydraulic lines. Keep quick-disconnects clean. Grit contamination causes malfunctions.

Hand Tool

Each machine is delivered from factory with all hand tools necessary for setup and operation.

Bevel & Cut tool bits

Each unit completes with 2 pieces cutting tool bits and 2 pieces beveling tool bits
The beveling angle and seam (V or J-prep.) as you requirement.

Note:

Maintain tools with care. Keep tools in good operating condition. Sharp tool bits perform better and safer than blunt tool bits. Well maintained tools function properly when needed.
Keep the tool bits fully engaged in the tool bits holders. Loose bits are a safety hazard.

Inside Beveling tool slide (Optional)

This part applied for inside beveling

Boring tool slide (Optional)

This part applied for inside beveling and counter boring

Work Area

Keep the work area clean. Cluttered work areas and benches invite injuries

Consider the work area environment. Keep the area well lit. Keep electrical cords, cables, rags, rigging straps and etc. clear of rotating equipment. Do not use power-cutting in the presence of flammable liquids and gases.

Keep visitors away. Do not let visitor or untrained personnel at or near operating tools. Enforce eye protection requirements for all observers.
Stay alert. Watch what you are doing. Use common sense. Do not operate tools when you are tired.

SECTION II: SETUP PROCEDURES OF THE EQUIPMENT

1. **Take out the mainframe from case**
   (All models machine are packaged in a custom plywood case)

   Caution:
   Above the type 275, it's necessary to utilize additional personnel or use the lifting tool, in order to avoid injures.

2. **Insert the frame locking pins into the mainframe ring**
   The locking pins can avoid the ring fall apart when the machine split for installing on the in-line pipe**.**

3. **Install the tool slide**
   On the back of tool slide, there are three holes and two fast pin in two rows, these holes represent the three possible mounting positions: separately represent High / Mediate / low position
   Insert the fast pin in proper hole according the pipe diameter
   Tighten the four Hex. Screw, install the tool slide on the rotating ring
4. **Install the Tool Feed Structure**
   (See introduce for this structure)

5. **Install the cutting tool bit and beveling tool bit on the tool holder, and install the cover plate of tool holder**
   Tighten tool bits into position lightly; you will be positioning them for cutting later

   Note:
   Make sure the blades (cutting edge) of each tool bits are clockwise when viewing the machine from the front.
   Note:
   If only sever the pipe, install two cutting tool bits on each tool holder

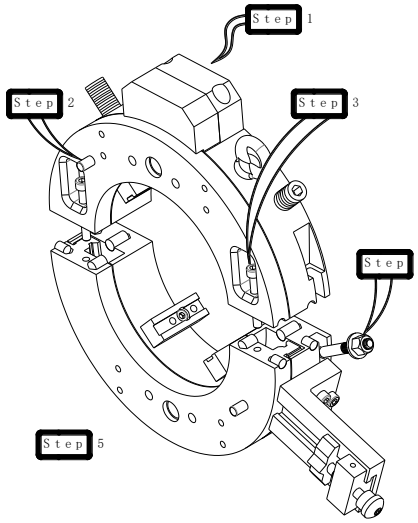
6. **Measure the outer diameter of the pipe to be machined and determine whether expanding blocks will be necessary**
   If expanding blocks are required, install them at this moment. Range of use is marked on every block.
   Note:
   Expanding blocks are secured with integrated captivated SHCS to secure themselves to the stationary ring.
   Note:
   If the machine is to be used on open-ended pipe, continue to step 7. If split is needed, install machine on in-line pipe, come to step 9

7. **For open ended pipe, slide the machine over pipe end. It may be necessary to use lifting tool such as a hoist**.
   Note:
   When mounting machine to pipe, keep in mind clearances for the motor and trip assembly. Try to allow for easiest access to both of these.

8. **Come to step 10**

9. **Splitting Procedure for installing the machine on in-line pipe**

9.1 Loosen all locking screws on the ring completely.



9.2 Separate the machine halves. Be sure to use an equal amount of force when separating to prevent the halves from binding.

9.3 With the halves split, place the upper half (the one with pinion housing) on the top of pipe

9.4 Bring another half to a position at the bottom of pipe directly under the half already mounted. Align the dowel pin holes with the dowel pins to ensure proper fit and press the halves together.

9.5 Partially tighten one of locking screw in the rotating ring. This will secure the machine while the other bolts are tightened.

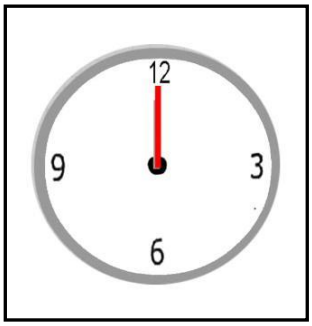
Caution:

Make sure that all frame locking screws are equally tightened before continuing with mounting procedure. Failure to do so may cause damage to drive gears.

10. **After the machine securely seated on the pipe, take away the frame locking pin**

11. **Slide machine to desired cut line using the tip of the cutting tool bit as your guide.**

12. **Starting with the expanding block in the 12 o'clock position or as close to 12 o'clock as possible. Tighten the expanding block screw until the gap at the top and the bottom of the machine are approximately equal**



13. **Snug the expanding block at 6 o'clock position**

14. **Adjust the expanding block position at 3 and 9 o'clock. At this point the machine should be fairly square.**

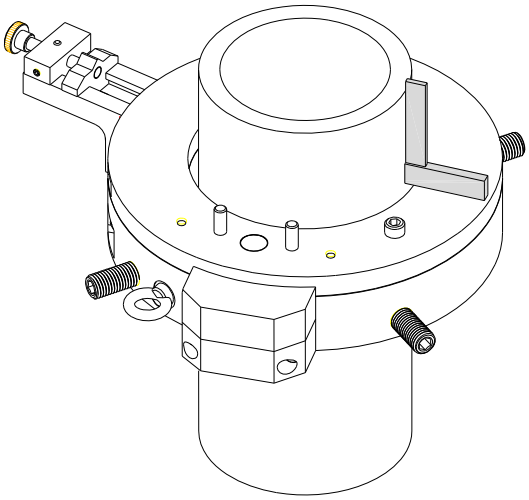
15. **Using the provided L-square to check the machine perpendicular/squareness to the pipe O.D (at 12, 3, 6, 9 o'clock position), make sure it's a right-angle between machine and pipe OD.**

    Note:

    Can use wooden mallet beat the frame ring to adjust the squareness between machine and pipe O.D.

    Note:

    The machine should still be able to move slightly at this time. If necessary, SLIGHTLY loosen the expanding block at the 3 and 9 o'clock positions and re-adjust as need.

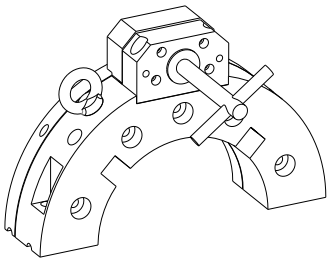


16. Once the machine is square to the pipe O.D., tighten all the frame locking screws completely.

17. Centering

17.1 Rotating the cutting tool to 12 o'clock position manually.

(For the large size, use the tool provided)



Note:

Use the tool provided rotate the machine

17.2 Lower the cutting tool, 2-3mm above the pipe O.D.

17.3 Rotate the tool at 6 o'clock position and adjust the expanding block as necessary to center.

Note:

If cutting tool is closer to the pipe at 6 o'clock position than at the 12 o'clock position, loosen the expanding block at 12 o'clock SLIGHTLY and tighten the clamp pad at the 6 o'clock position. This will effectively move the tool away at 6 o'clock and closer at 12 o'clock further centering machine.

Note:

This step is very important, if the machine not centering, the beveling surface will be unbalanced

18. Repeat the related step if necessary, make sure the distance between pipe and cutting tool are nearly same at 12, 3, 6, 9 o'clock position.

19. Adjustment procedure of the tool bit to make sure it can run normally and avoid damage

19.1 The cutting tool bit should extend beyond the bottom of the tool holder a distance equal to the wall thickness of the workpiece plus 3mm

19.2 The beveling tool bit should extend beyond the bottom of the tool holder a distance equal to the wall thickness of the workpiece plus 3mm

Note:

If only sever the pipe, the two cutting tool bits setting same way.

20. Secure tool bits in place by installing the tool holder cover

Tighten the four corner bolts on each tool holder cover

Note:

In the case of cutting tool, be sure that the gap between the cover plate and the tool holder is equal on either side of the cutting tool

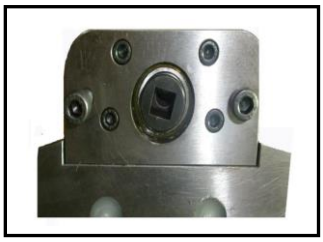
With the cover plates installed, snug the two remaining screws on each cover plate.

21. Time the starwheel feed system

Always rotate the start wheel counter clockwise. Make sure to remove all backlash from the feed screw and feed nut. According to the pipe size locate the position of triangle tripper.

22. Install the driven motor

Begin by loosening the 2 bolts located on the back of the pinion housing. Align two of the bolts holes in the motor mounting flange with the 2 bolts in the pinion housing.



Note:

The motor can be positioned in several different positions. The motor should be mounted in such a way as to allow the operator the easiest and safest access possible.

Note:

The drive head on the motor must insert fully into the socket in the pinion housing. If need be, turn the rotating frame slightly by hand, back and forth, until the drive head seats itself properly.

23. Verify tool bit clearance

Using the provided hex tool kit, rotate the cutting and beveling tool slide starwheel counter clockwise until the cutting tool bit is roughly 2mm apart from pipe surface and the beveling tool bit is 3mm apart from the pipe surface.

Note:

By setting the tool bits in this way, you will ensure that the cutting tool penetrates the pipe wall firstly allowing for the beveling tool to perform its functions more effectively.

Note:

If only sever the pipe, the two cutting tool bits setting same way.

24. Connect the motor the air source / power supply

Note:

Details see instruction about motor.

25. To begin the working, turn on the motor. The machine should initially rotate at 3-4 circles to verify proper starwheel setting.

Note:

If starwheel does not engage the triangle tripper smoothly, stop machine immediately and follow step 21.

26. Once the tool bits begin to remove material from the workpiece, be sure to apply liberal amounts of coolant for the duration of the machining process.

Caution：

If the metal chips build up so much that they tangle in the machine, disengage the feed for 2-3 revolutions to clear the metal chip. The chips have very sharp edges and are hot, do not try to pull chips apart with hands, remove the metal chips by tool.

Caution:

When cutting, never extend the male tool holder of the tool beyond the red line scribed on the tool slide body.

Caution:

In-line pipe stores energy. When the pipe is severed, the pipe may move. To prevent accidents due to the spring in the pipe system, be sure to secure the pipe on both sides of the sever line in order to prevent differential movement of the pipe ends.

Machine removal

27.1 Retract the tool slides

27.2 Disconnect power source and remove motor

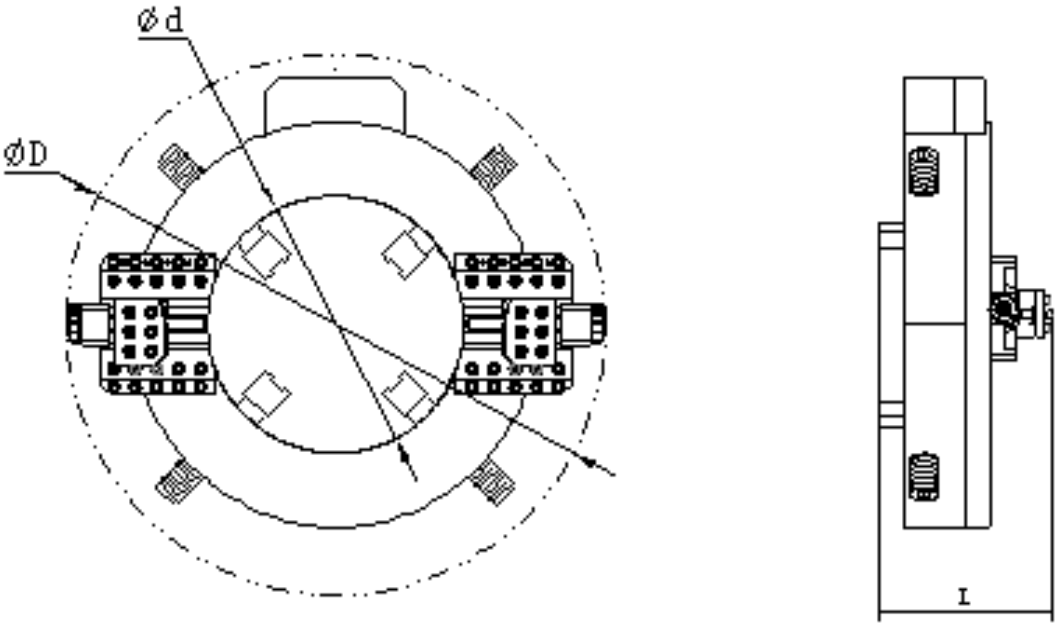
27.3 Loosen the four expanding blocks that hold the split frame in position

27.4 Remove split frame from pipe

Note:

When the operations have been satisfactorily completed and the machine is ready for storage, be sure that it is free of debris such as metal chips and excess coolant. It's recommended that the machine halves be opened and the bearing race ways examined for metal

PART 5: AXIAL & RADIAL CLEARANCE



Steel body

Model Size	d(mm)	D(mm)	L(mm)
TTCB-6	185	512	178
TTCB-8	236	564	178
TTCB-10	283	612	178
TTCB-12	334	665	178
TTCB-14	386	719	178
TTCB-16	438	776	180
TTCB-18	469	807	180
TTCB-20	519	862	190
TTCB-22	570	910	190
TTCB-24	618	960	190
TTCB-26	670	1020	190
TTCB-28	719	1084	190
TTCB-30	770	1134	190
TTCB-32	830	1194	192
TTCB-36	924	1296	212
TTCB-42	1077	1468	212
TTCB-48	1248	1646	212

Aluminum body

Model Size	d(mm)	D(mm)	L(mm)
TTCB-6	185	512	192
TTCB-8	236	564	192
TTCB-10	283	612	192
TTCB-12	334	665	192
TTCB-14	386	719	192
TTCB-16	438	776	195
TTCB-18	469	807	195
TTCB-20	519	862	195
TTCB-22	570	910	195
TTCB-24	618	960	195
TTCB-26	670	1020	195
TTCB-28	719	1084	198
TTCB-30	770	1134	198
TTCB-32	830	1194	207
TTCB-36	924	1296	214
TTCB-42	1077	1468	216
TTCB-48	1248	1646	216

PART 6: MAINTENANCE AND MACHINE ADJUSTMENTS

1. **All components should be cleaned and coated with a light film of oil prior to use. Use clean, non-detergent oil, preferably SAE 10 or lighter.**
   Note:
   The motor warranty is void if damage occurs from contaminated hydraulic fluid or air supply.

2. **The power cable or air/hydraulic hose should be inspected for damage or wear out**

3. **Tool slide should be inspected for gib tension. If the tool slide is loosen, Gib adjustment will be needed.**

   Tension wedge bar's inner Hex. Screw to make it slightly resistant the tool slide
   Re-Check tool slide tension by rotating starwheel. If there is a slight resistance the tool slide is properly tensioned.

4. **Machine Lubrication**

   Tool slides
   Lubricate the male and female tool block slide and feed screw, copper nut every 10 hours of actual operation

   Pinion Housing
   Thoroughly clean and lubricate the main gear, drive gear every 40 hours of actual operation.

   Tool Feed structure
   Thoroughly clean and lubricate the triangle tripper every 40 hours of actual operation.

5. **Air Motor Maintenance**
   See the exploded view drawing of air motor in the part 10
   Required air treatment: air **filter**, **regulator** and atomized **lubricator** (**FRL system**)
   After long time operation, the motor vanes (blade) will wear out, the air motor weak power, disassembling air motor, and replace with the new motor vane

   Note:
   The components of air motor is high precision, when replace the motor vane, make sure the height of vane exact same as motor rotor, otherwise may the air motor does not work or weak power.

6. **Electric Motor Maintenance**
   6.1 The carbon brush was adjusted before dispatch, they can feed automatically. Please do not adjust it once again;

Note:

After 50 working hours, check the wear condition. Replace the carbon brush in time. If the carbon brush wear out, please turn off the machine immediately, otherwise the motor will be damaged. We suggest: when carbon brush wear 2/3, pay attention to replace the carbon brush, avoid that due to the carbon brush wear out, make the motor damage.

6.2 The machine required the motor high speed rotation, after long time working, the bearing on the rotor may disperse. This is a physical cause, not quality problem.

Note:

7. Storage

When the machine is to be stored or if it will remain out of service for a significant period of time, 30 days or more, it should be thoroughly cleaned, lubricated and sprayed with a rust preventative prior to storage.

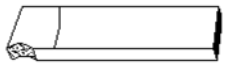
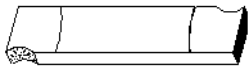
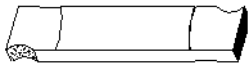
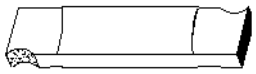
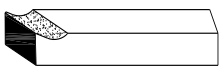
8. Bearing system:

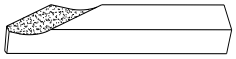
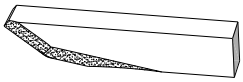
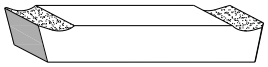
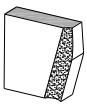
Do not move the bearings away its settled position, otherwise may damage the frame ring. After long time operation, it's required re-adjust; if there is a radial gap on the stationary ring, it's also required re-adjust the bearing system. All the adjustment, please contact us for the further assistance.

PART 7: DIAGRAM OF THE TOOL BITS

M42 Tooling Chart

Pipe Cutting and Beveling Machine

Cutting tools			
Description	**Part Number**	**Application**	**Sketch**
Cutting tool Material: AISI M42 Width:25mm Thk:5mm Length:100mm	42C-5100	Standard cutting, for most materials up to 30mm	
Cutting tool Material: AISI M42 Width:25mm Thk:5mm Length:200mm	42C-5200	Longer cutting tool, both ends have blade, for most materials up to 60mm Cutting job only, with 2C-6200	
Cutting tool Material: AISI M42 Width:25mm Thk:6mm Length:200mm	42C-6200	Longer cutting tool, both ends have blade, for most materials up to 60mm Cutting job only, with 2C-8200	
Cutting tool Material: AISI M42 Width:25mm Thk:8mm Length:200mm	42C-8200	Longer cutting tool, both ends have blade, for most materials up to 60mm Cutting job only, with 2C-6200	
Beveling tools			
Description	**Part Number**	**Application**	**Sketch**
Beveling tool Material: AISI M42 Width:12mm Thk:20mm Length:105mm	42B-RH1220-30° 42B-RH1220-32.5° 42B-RH1220-37.5° 42B-RH1220-a	Right Hand Standard beveling tool for most matrials. Up to 30mm a is beveling angle required	

Beveling tool Material: AISI M42 Width:12mm Thk:20mm Length:105mm	42B-LH1220-30°	Left Hand Standard beveling tool for most matrials. Up to 30mm a is beveling angle required	
	42B-LH1220-37.5°		
	42B-RH1220-a		
Compound Beveling Material: AISI M42 Width:12mm Thk:20mm Length:150mm	42B-CB1220-10°x30°	Right hand 10° x 30°, For most material, up to 30mm	
	42B-CB1220-10°x37.5°	Right hand 10° x 37.5° as per ASME B[16].25 For most material, up to 30mm	
Compound Beveling Material: AISI M42 Width:25mm Thk:25mm Length:150mm	42B-CB2525-10°x30°	Right hand 10° x 30°, For most material, up to 60mm Fit the heavy wall tool slide	
	42B-CB2525-10°x37.5°	Right hand 10° x 37.5° as per ASME B[16].25 For most material, up to 60mm Fit the heavy wall tool slide	
Beveling tool Material: AISI M42 Width:25mm Thk:25mm Length:200mm	42B-2525-10°	Longer Beveling tool, both ends have blade, for most materials up to 60mm Fit the heavy wall tool slide	
	42B-2525-30°		
	42B-2525-37.5°		
Counterboring Tool			
Description	**Part Number**	**Application**	**Sketch**
Counterboring tool Material: AISI M42	42T	For pipe Counterboring Used on counter boring tool slid	

*** Consult with us for special application**

PART 8: DIAGRAM OF THE EXPANDING BLOCK

Model	No block	1 level	2 level	3 level	4 level	5 level
TTCB-6	155-185	125-155	95-125	65-95	50-65	—
TTCB-8	206-236	176-206	146-176	116-146	86-116	76-86
TTCB-10	253-283	223-253	193-223	163-193	133-163	—
TTCB-12	304-334	274-304	244-274	214-244	184-214	154-184
TTCB-14	356-386	326-356	296-326	266-296	236-266	—
TTCB-16	402-432	372-402	342-372	312-342	282-312	—
TTCB-18	439-469	409-439	379-409	349-379	319-349	289-319
TTCB-20	485-515	455-485	425-455	395-425	365-395	—
TTCB-22	536-566	506-536	476-506	446-476	416-446	—
TTCB-24	588-618	558-588	528-558	498-528	468-498	438-468
TTCB-26	640-670	610-640	580-610	550-580	520-550	—
TTCB-28	689-719	659-689	629-659	599-629	569-599	—
TTCB-30	740-770	710-740	680-710	650-680	620-650	590-620
TTCB-32	800-830	770-800	740-770	710-740	680-710	—
TTCB-36	894-924	864-894	834-864	804-834	774-804	744-774
TTCB-42	1047-1077	1017-1047	987-1017	957-987	927-957	—
TTCB-48	1218-1248	1188-1218	1158-1188	1128-1158	1098-1128	1068-1098

Note: The range of use marked on the expanding blocks, easy for choose.

PART 9: TROUBLE SHOOTING

Trouble	Possible reason	Remedy
Machine doesn't work	Locking pin not removed Power supply not on	Remove pins Check the power supply
Machine wave when working	The expansion structure is not fastened or the expanding block wrongly choose	Check the expansion screw or change a proper expanding block
Working face not good	The bevel tool bit is blunt or damaged	Edge the tool bit or replace with new tool bits
Machine chatters during working	Cutting speed too fast (Hydraulic type)	Slow down the cutting speed
Tool bit easy broken	Machine not perpendicular to pipe	Refer to installation
Reducer Driven gear and Driving gear shaft damaged	Tool bits blunt; Machine not perpendicular to pipe	Edge the tool bit or replace with new tool bits; Refer to installation
Air Motor weak	The motor vane(blade) wear	Replace with new motor vane
Air Motor does not work	Dirt jam; Parts rust	Clean the air motor and adopt the air treatment (air filter / regulator / lubricator) for compressed air
Electric motor abnormal sound	Check the carbon brush or the motor bearing	Replace with new carbon brush or bearing
Electric motor burnt	scrap-iron or water goes into; unsteady power voltage; Tool bit blunt, result in high load;	Replace with new motor rotor or stator; Replace complete motor

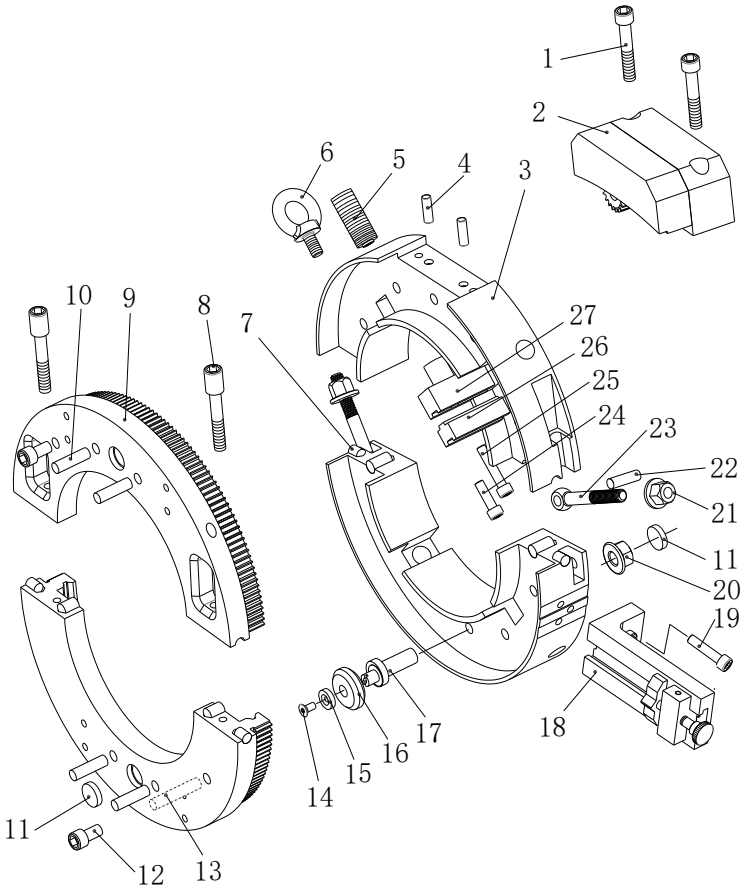
Note:

If a problem not listed in the chart, stop operation and contact us for additional instructions

PART 10: PARTS LISTS AND EXPLODED VIEWS

Important Note:
When need the replace part, please advise machine Model No. & Part No.

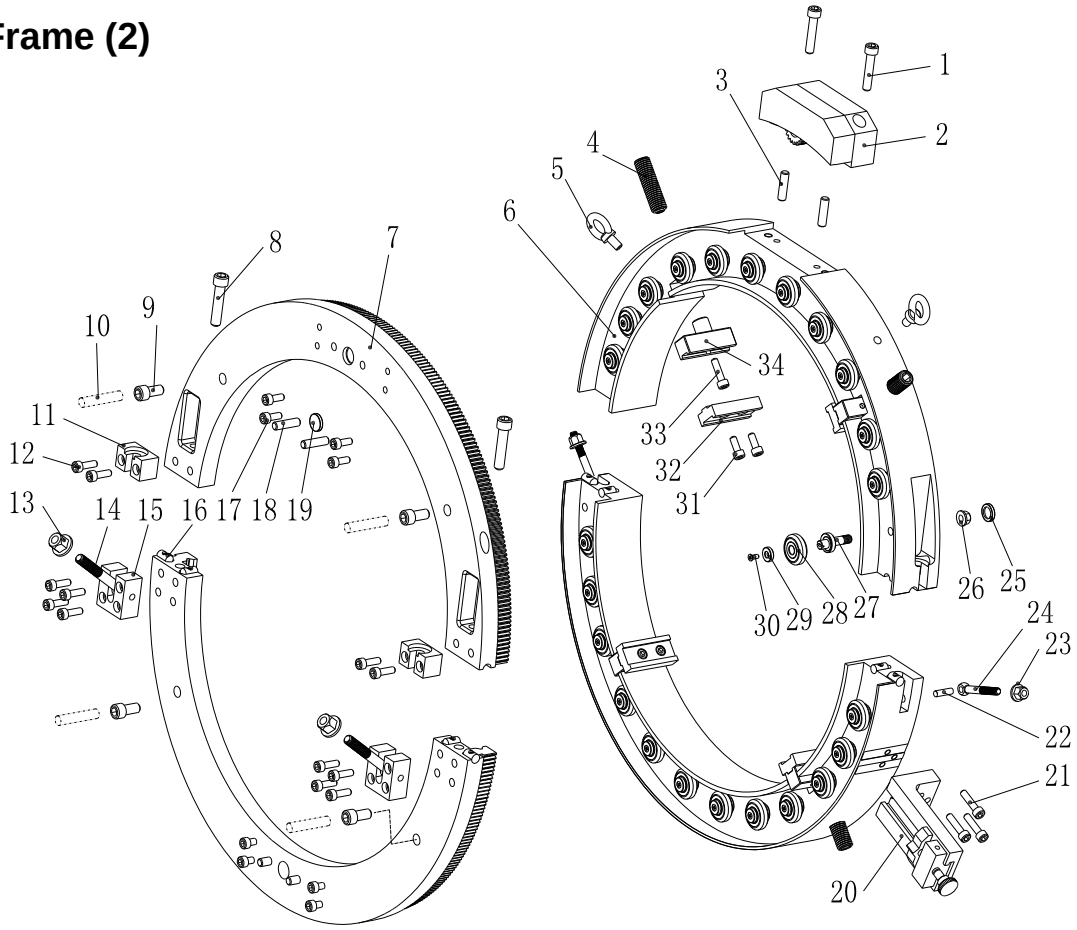
Ring Frame (1)



No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	0218-01	Allen screw	1	15	0218-15	Eccentric shaft washer	x
2	0218-02	Driven gear assembly	1	16	0218-16	Bearing	x
3	0218-03	Stationary ring	2	17	0218-17	Eccentric shaft	x
4	0218-04	Driven locating pin	2	18	0218-18	Tripper assembly	1
5	0218-05	Clamping screw	4	19	0218-19	Allen screw	3
6	0218-06	Lifting ring	2	20	0218-20	Fasten nut	x
7	0218-07	Ring body locating pin	8	21	0218-21	Hex flange nut	2
8	0218-08	Rotary ring split screw	2	22	0218-22	Eyelet pin	2
9	0218-09	Rotary ring	2	23	0218-23	Eyelet bolt	2
10	0218-10	Tool box locating pin	4	24	0218-24	Allen screw	4
11	0218-11	Hole cover	2	25	0218-25	Allen screw	8
12	0218-12	Allen screw	2	26	0218-26	Clamping pads	4
13	0218-13	Locking pin	2	27	0218-27	Clamping jaws	4
14	0218-14	Fix screw	X				

- **“X” different model, quantity different**

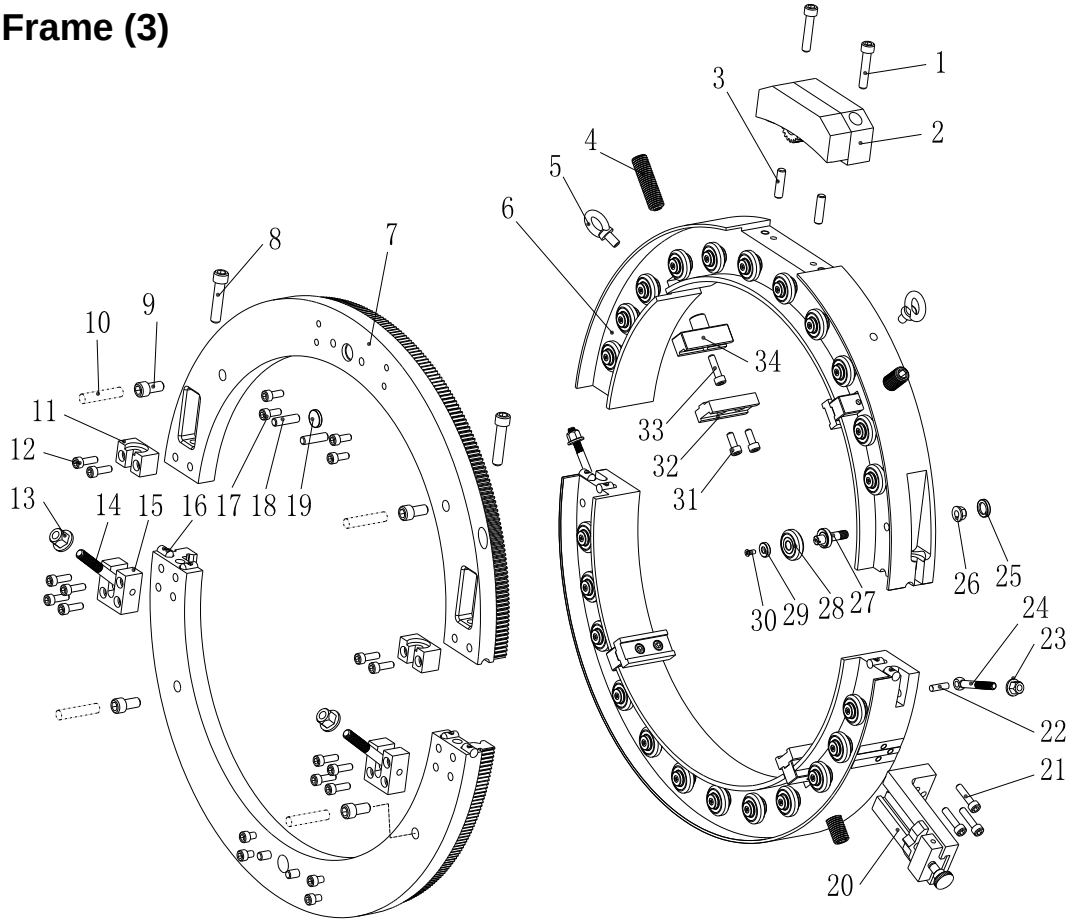
Ring Frame (2)



No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	1426-001	Allen screw	2	18	1426-018	Tool box locating pin	3
2	1426-002	Driven gear assembly	1	19	1426-019	Hole cover	2
3	1426-003	Driven locating pin	2	20	1426-020	Tripper assembly	1
4	1426-004	Clamping screw	4	21	1426-021	Allen screw	3
5	1426-005	Lifting ring	2	22	1426-022	Eyelet pin	4
6	1426-006	Stationary ring	1	23	1426-023	Eyelet nut M12	2
7	1426-007	Rotary ring	1	24	1426-024	Eyelet bolt M12	2
8	1426-008	Rotary rng split screw	2	25	1426-025	Hole cover	x
9	1426-009	Allen screw	4	26	1426-026	Fasten nut	x
10	1426-010	Locking pin	4	27	1426-027	Eccentric shaft	x
11	1426-011	Eyelet nut seat	2	28	1426-028	Bearing	x
12	1426-012	Allen screw	12	29	1426-029	Eccentric shaft cover	x
13	1426-013	Eyelet nut M10	2	30	1426-030	Cross head screw	x
14	1426-014	Eyelet bolt M10	2	31	1426-031	Allen screw	8
15	1426-015	Eyelet bolt seat	2	32	1426-032	Clamping pads	4
16	1426-016	Ring body locating pin	8	33	1426-033	Allen screw	4
17	1426-017	Allen screw	8	34	1426-034	Clamping jaws	4

- **“X” different model, quantity different**

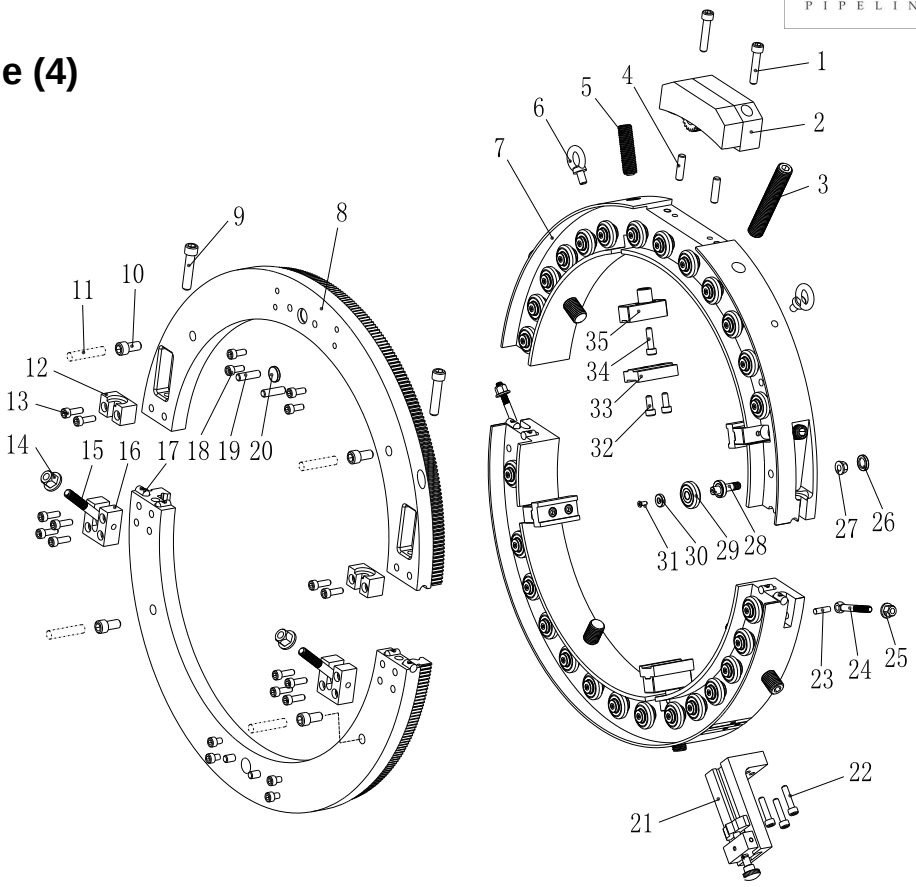
Ring Frame (3)



No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	2230-001	Allen screw	2	18	2230-018	Tool box locating pin	3
2	2230-002	Driven gear assembly	1	19	2230-019	Hole cover	2
3	2230-003	Driven locating pin	2	20	2230-020	Tripper assembly	1
4	2230-004	Clamping screw	4	21	2230-021	Allen screw	3
5	2230-005	Lifting ring	2	22	2230-022	Eyelet pin	4
6	2230-006	Stationary ring	1	23	2230-023	Eyelet nut M12	2
7	2230-007	Rotary ring	1	24	2230-024	Eyelet bolt M12	2
8	2230-008	Rotary rng split screw	2	25	2230-025	Hole cover	x
9	2230-009	Allen screw	4	26	2230-026	Fasten nut	x
10	2230-010	Locking pin	4	27	2230-027	Eccentric shaft	x
11	2230-011	Eyelet nut seat	2	28	2230-028	Bearing	x
12	2230-012	Allen screw	12	29	2230-029	Eccentric shaft cover	x
13	2230-013	Eyelet nut M10	2	30	2230-030	Cross head screw	x
14	2230-014	Eyelet bolt M10	2	31	2230-031	Allen screw	8
15	2230-015	Eyelet bolt seat	2	32	2230-032	Clamping pads	4
16	2230-016	Ring body locating pin	8	33	2230-033	Allen screw	4
17	2230-017	Allen screw	8	34	2230-034	Clamping jaws	4

- **“X” different model, quantity different**

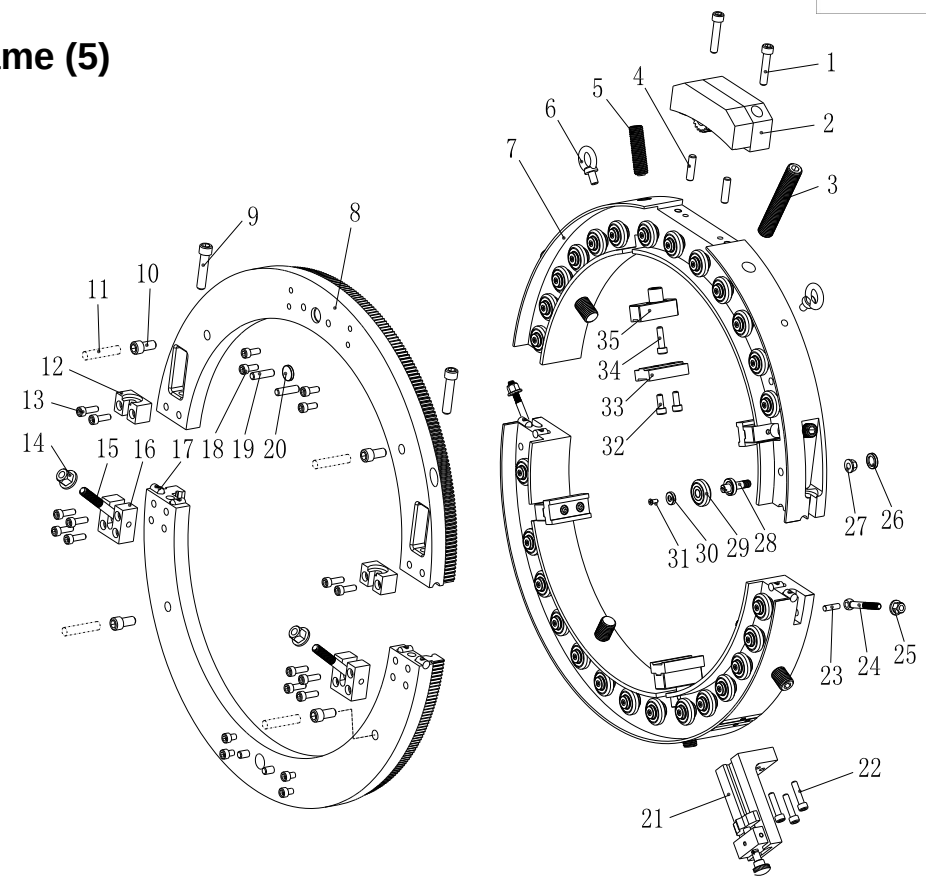
Ring Frame (4)



No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	2636-001	Allen screw	2	19	2636-019	Tool box locating pin	3
2	2636-002	Driven gear assembly	1	20	2636-020	Hole cover	2
3	2636-003	Auxiliary clamping Screw	2/4	21	2636-021	Tripper assembly	1
4	2636-004	Driven locating pin	2	22	2636-022	Allen screw	3
5	2636-005	Clamping screw	4	23	2636-023	Eyelet pin	4
6	2636-006	Lifting ring	2	24	2636-024	Eyelet nut M12	2
7	2636-007	Stationary ring	1	25	2636-025	Eyelet bolt M12	2
8	2636-008	Rotary ring	1	26	2636-026	Hole cover	x
9	2636-009	Rotary ring split screw	2	27	2636-027	Fasten nut	x
10	2636-010	Allen screw	4	28	2636-028	Eccentric shaft	x
11	2636-011	Split bolt	4	29	2636-029	Bearing	x
12	2636-012	Eyelet nut seat	2	30	2636-030	Eccentric shaft cover	x
13	2636-013	Allen screw	12	31	2636-031	Cross head screw	x
14	2636-014	Eyelet nut M10	2	32	2636-032	Allen screw	8
15	2636-015	Eyelet bolt M10	2	33	2636-033	Clamping pads	4
16	2636-016	Eyelet bolt seat	2	34	2636-034	Allen screw	4
17	2636-017	Ring body locating pin	8	35	2636-035	Clamping jaws	4
18	2636-018	Allen screw	8				

- **“X” different model, quantity different**

Ring Frame (5)



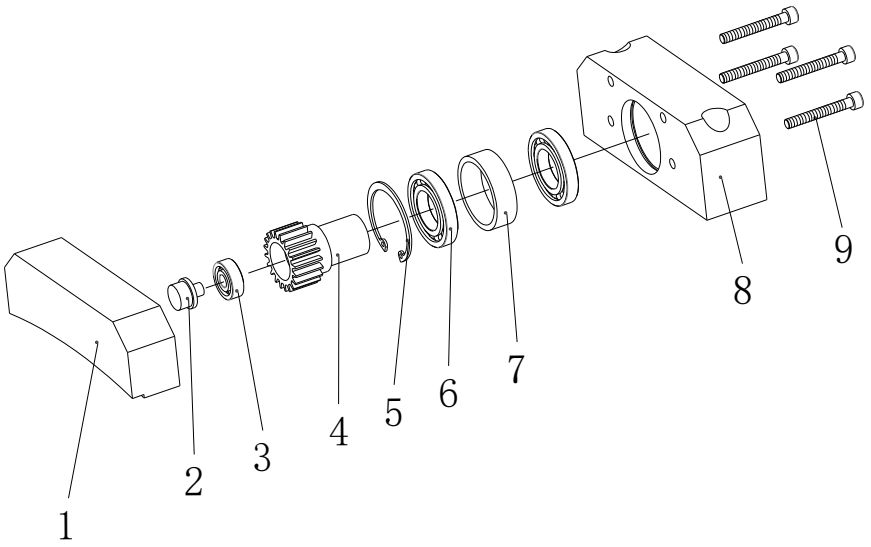
No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	3642-001	Allen screw	2	19	3642-019	Tool box locating pin	3
2	3642-002	Driven gear assembly	1	20	3642-020	Hole cover	2
3	3642-003	Auxiliary clamping Screw	4	21	3642-021	Tripper assembly	1
4	3642-004	Driven locating pin	2	22	3642-022	Allen screw	3
5	3642-005	Clamping screw	4	23	3642-023	Eyelet pin	4
6	3642-006	Lifting ring	2	24	3642-024	Eyelet nut M12	2
7	3642-007	Stationary ring	1	25	3642-025	Eyelet bolt M12	2
8	3642-008	Rotary ring	1	26	3642-026	Hole cover	x
9	3642-009	Rotary ring split screw	2	27	3642-027	Fasten nut	x
10	3642-010	Allen screw	4	28	3642-028	Eccentric shaft	x
11	3642-011	Split bolt	4	29	3642-029	Bearing	x
12	3642-012	Eyelet nut seat	2	30	3642-030	Eccentric shaft cover	x
13	3642-013	Allen screw	12	31	3642-031	Cross head screw	x
14	3642-014	Eyelet nut M10	2	32	3642-032	Allen screw	8
15	3642-015	Eyelet bolt M10	2	33	3642-033	Clamping pads	4
16	3642-016	Eyelet bolt seat	2	34	3642-034	Allen screw	4
17	3642-017	Ring body locating pin	8	35	3642-035	Clamping jaws	4
18	3642-018	Allen screw	8				

- **“X” different model, quantity different**

Gear Box Assembly (1)

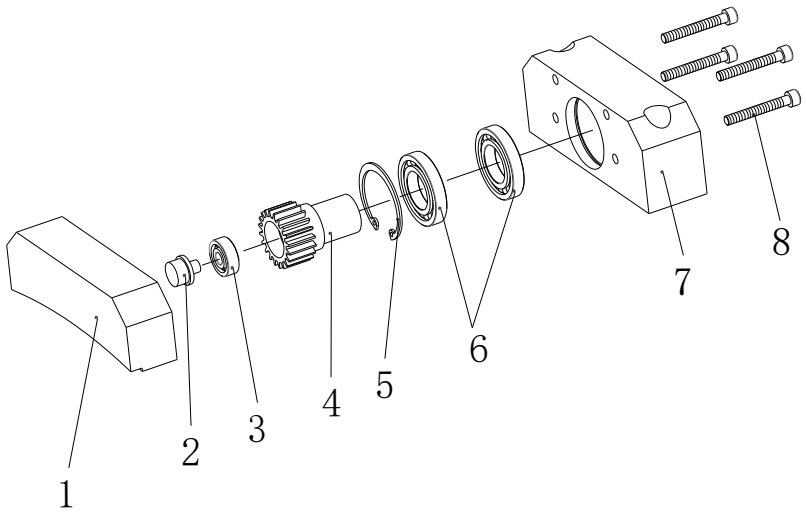
Model: 168-457

Aluminum Body



No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	ACLH-1801	Upper Housing	1	6	ACLH-1806	Deep groove ball bearing	2
2	ACLH-1802	Axis Pin	1	7	ACLH-1807	Bearing washer	1
3	ACLH-1803	Deep groove ball bearing	1	8	ACLH-1808	Lower Housing	1
4	ACLH-1804	Driving gear	1	9	ACLH-1809	Allen screw	4
5	ACLH-1805	Circlip	1				

Steel Body

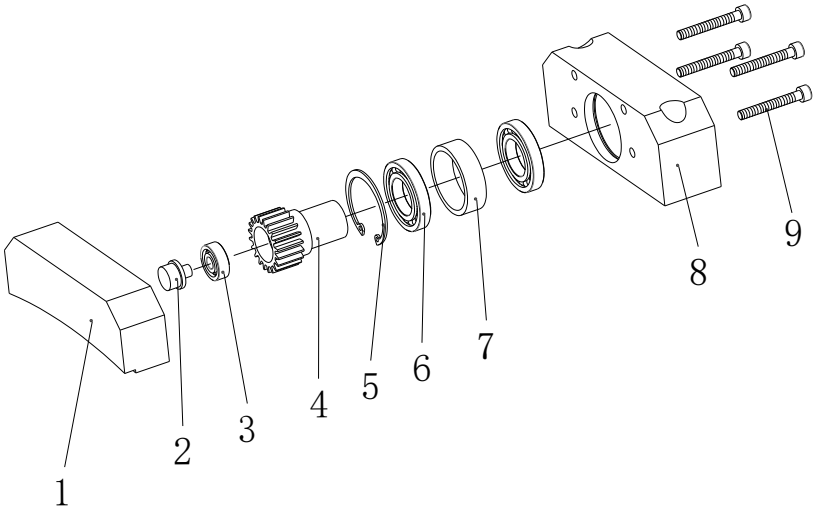


No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	SCLH-1801	Upper Housing	1	5	SCLH-1805	Circlip	1
2	SCLH-1802	Axis pin	1	6	SCLH-1806	Deep groove ball bearing	2
3	SCLH-1803	Deep groove ball bearing	1	7	SCLH-1807	Lower Housing	1
4	SCLH-1804	Driving gear	1	8	SCLH-1808	Allen screw	4

Gear Box Assembly(2)

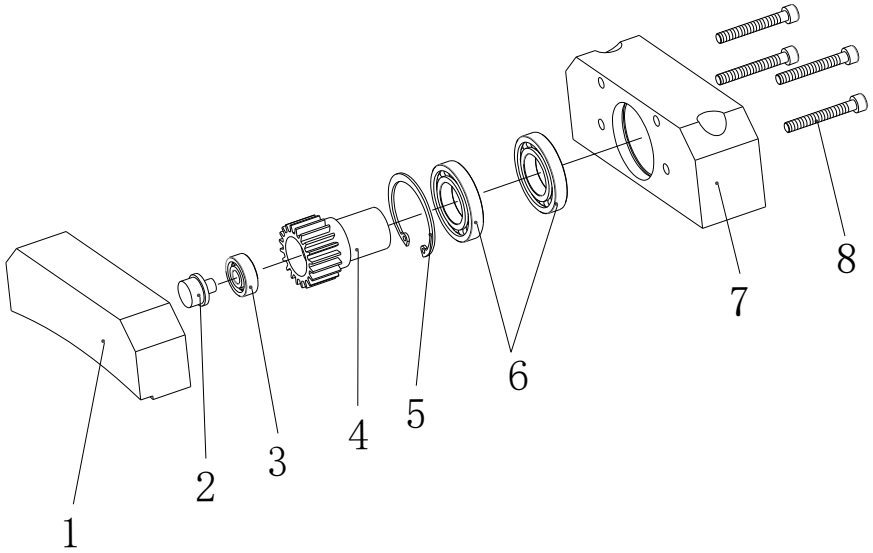
Model: 508-1230

Aluminum Body



No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	ACLH-2001	Upper Housing	1	6	ACLH-2006	Deep groove ball bearing	2
2	ACLH-2002	Axis Pin	1	7	ACLH-2007	Bearing washer	1
3	ACLH-2003	Deep groove ball bearing	1	8	ACLH-2008	Lower Housing	1
4	ACLH-2004	Driving gear	1	9	ACLH-2009	Allen screw	4
5	ACLH-2005	Circlip	1				

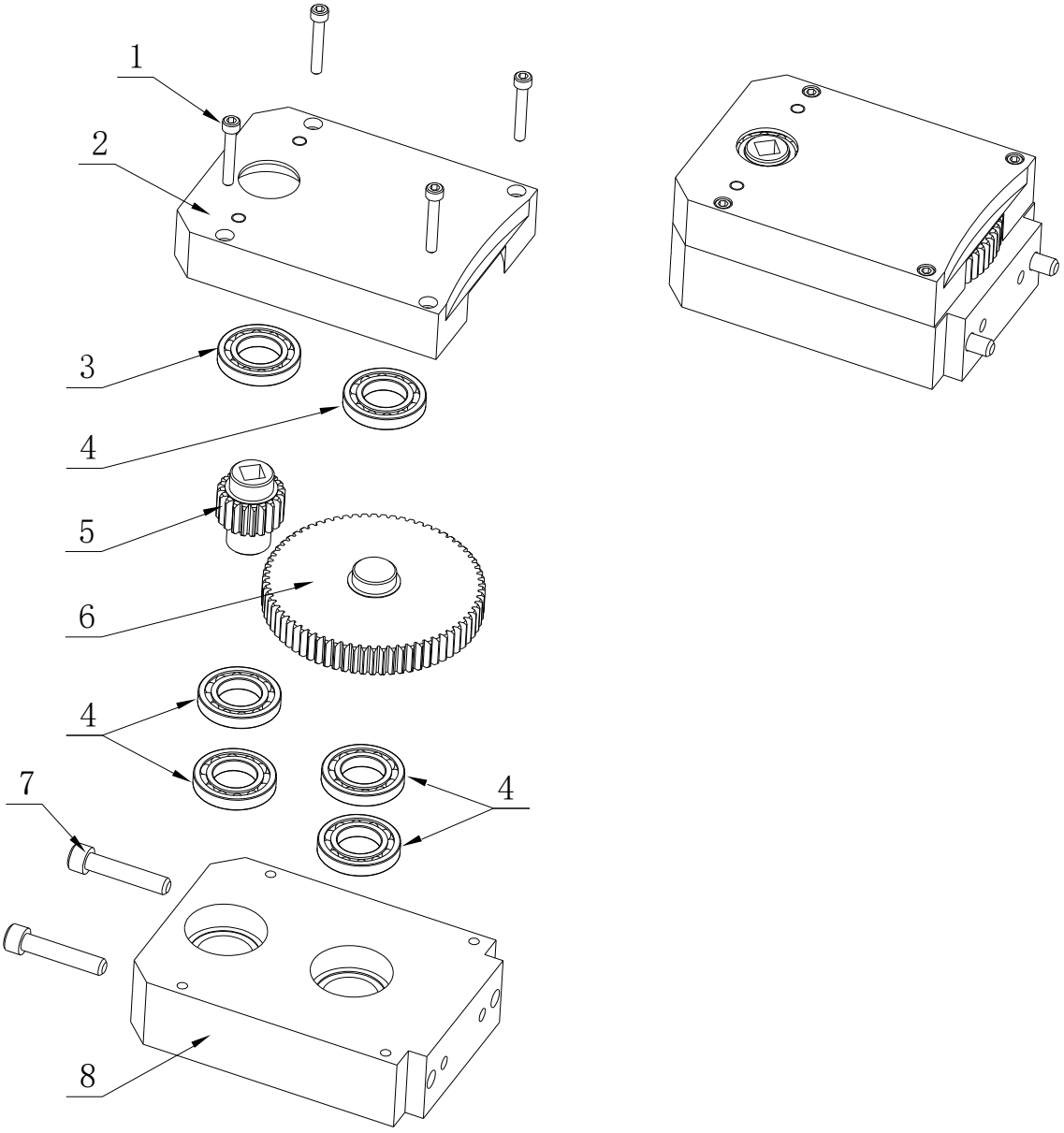
Steel Body



No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	SCLH-2001	Upper Housing	1	5	SCLH-2005	Circlip	1
2	SCLH-2002	Axis pin	1	6	SCLH-2006	Deep groove ball bearing	2
3	SCLH-2003	Deep groove ball bearing	1	7	SCLH-2007	Lower Housing	1
4	SCLH-2004	Driving gear	1	8	SCLH-2008	Allen screw	4

Gear Box Assembly (3)

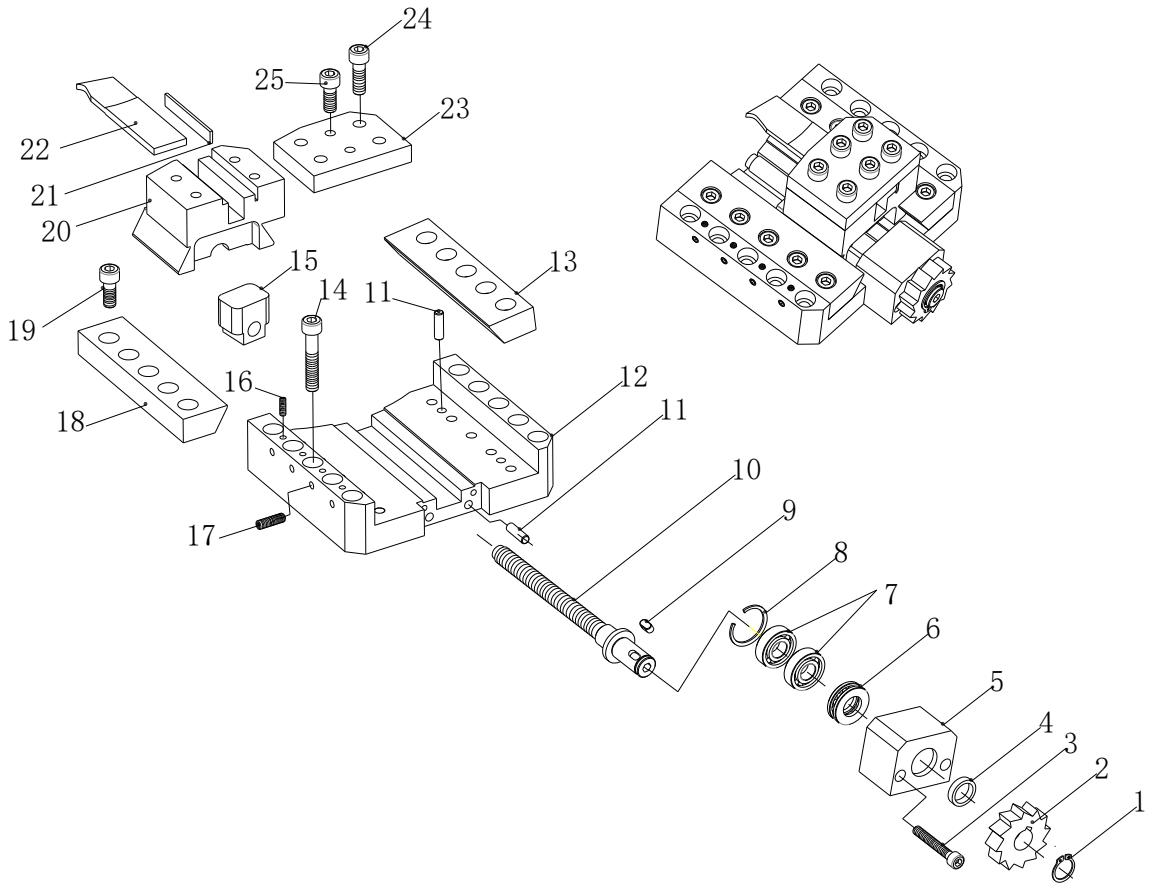
Front Driven



No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	FD-001	Allen screw	4	5	FD-005	Square hole gear	1
2	FD-002	Upper Housing	1	6	FD-006	Idler	2
3	FD-003	Deep groove ball bearing	1	7	FD-007	Allen screw	2
4	FD-004	Deep groove ball bearing	5	8	FD-008	Lower Housing	1

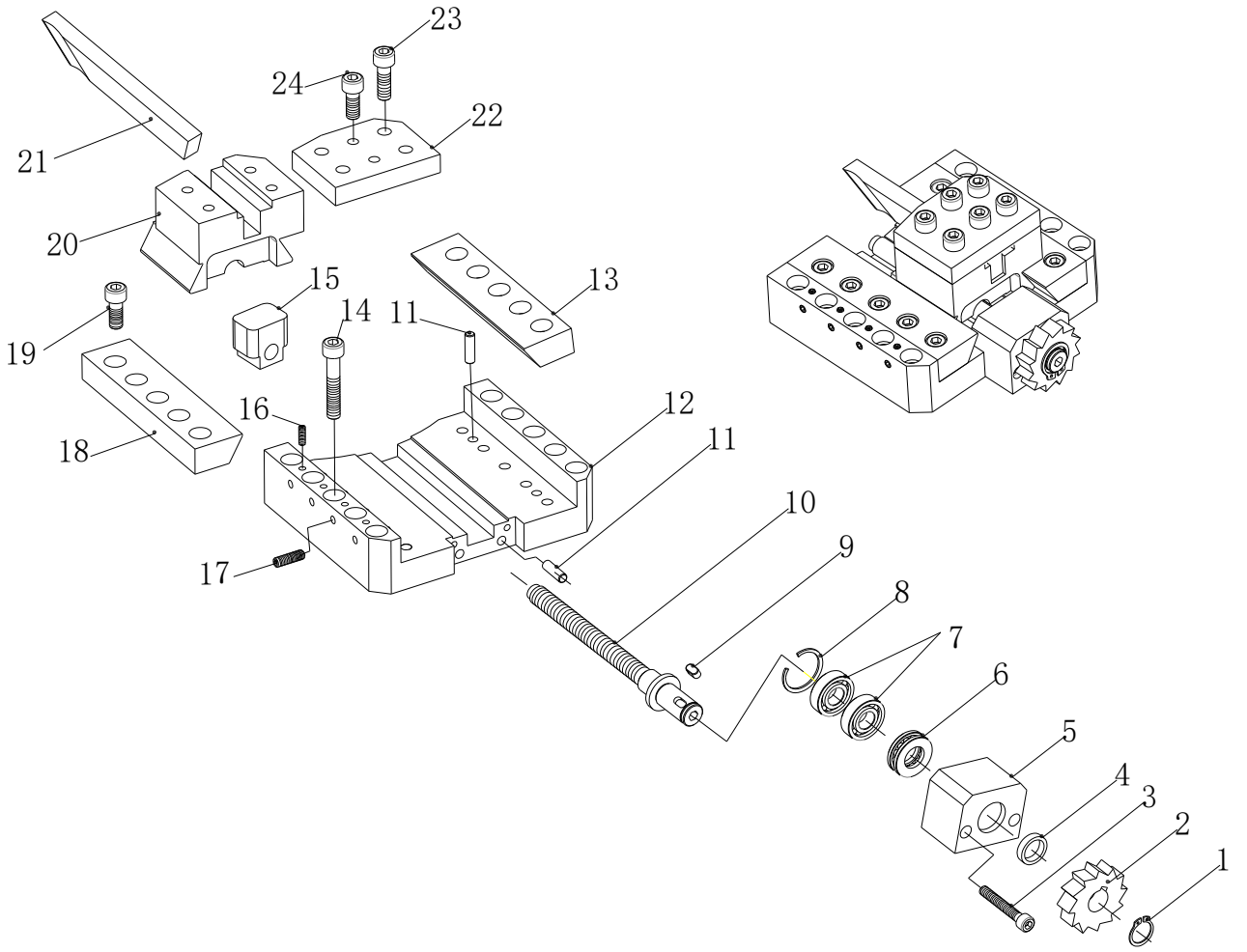
Tool Box Graph

Standard Cutting Tool Box



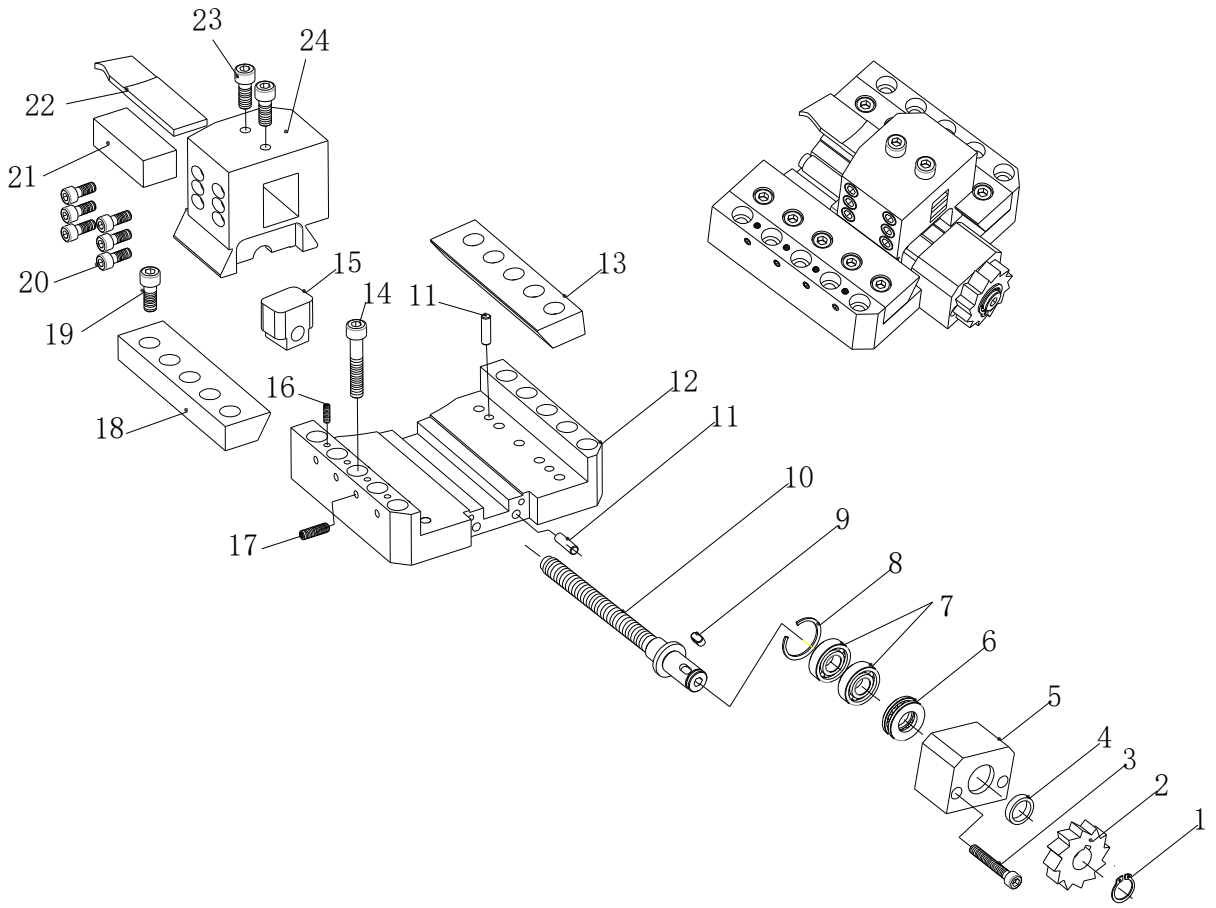
No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	SC-001	Circlip	1	14	SC-014	Allen screw	10
2	SC-002	Feed wheel	1	15	SC-015	Copper nut	1
3	SC-003	Allen screw	2	16	SC-016	Allen tight screw	4
4	SC-004	Wheel washer	1	17	SC-017	Allen tight screw	4
5	SC-005	Lead screw bearing pedestal	1	18	SC-018	Adjustable wedge block	1
6	SC-006	Thrust ball bearing	1	19	SC-019	Allen screw	1
7	SC-007	Deep groove ball bearing	2	20	SC-020	Cutting tool slide	1
8	SC-008	Round wire circlips	1	21	SC-021	S.S. strip	1
9	SC-009	Flat key	1	22	SC-022	Cutting tool	1
10	SC-010	Feed lead screw	1	23	SC-023	Tool cover	1
11	SC-011	Locating pin	4	24	SC-024	Allen screw	4
12	SC-012	Tool holder baseplate	1	25	SC-025	Allen screw	2
13	SC-013	Fixed wedge block	1				

Standard Beveling Tool Box



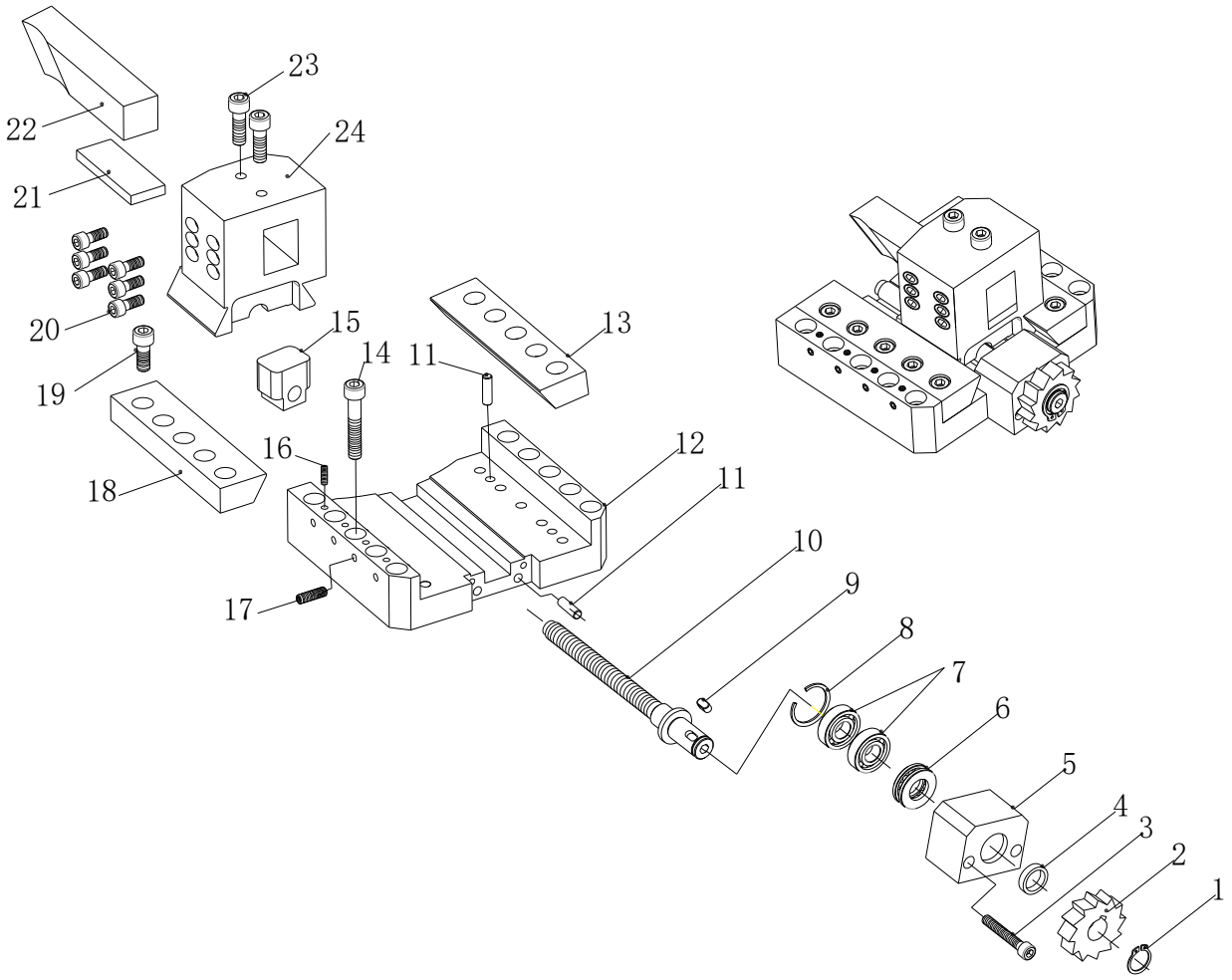
No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	SB-001	Circlip	1	13	SB-013	Fixed wedge block	1
2	SB-002	Feed wheel	1	14	SB-014	Allen screw	10
3	SB-003	Allen screw	2	15	SB-015	Copper nut	1
4	SB-004	Wheel washer	1	16	SB-016	Allen tight screw	4
5	SB-005	Lead screw bearing pedestal	1	17	SB-017	Allen tight screw	4
6	SB-006	Thrust ball bearing	1	18	SB-018	Adjustable wedge block	1
7	SB-007	Deep groove ball bearing	2	19	SB-019	Allen screw	1
8	SB-008	Wire circlips	1	20	SB-020	Beveling tool slide	1
9	SB-009	Flat key	1	21	SB-021	Beveling tool	1
10	SB-010	Feed lead screw	1	22	SB-022	Tool cover	1
11	SB-011	Locating pin	4	23	SB-023	Allen screw	4
12	SB-012	Tool holder baseplate	1	24	SB-024	Allen screw	2

Heavy walled Cutting Tool Box



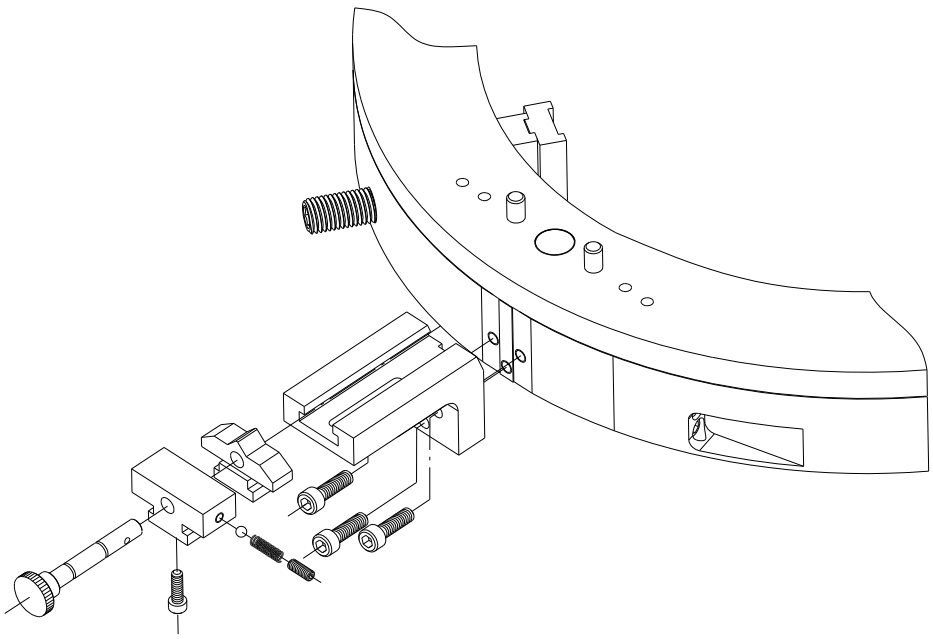
No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	HC-001	Circlip	1	13	HC-013	Fixed wedge block	1
2	HC-002	Feed wheel	1	14	HC-014	Allen screw	4
3	HC-003	Allen screw	2	15	HC-015	Copper nut	1
4	HC-004	Wheel washer	1	16	HC-016	Allen tight screw	4
5	HC-005	Lead screw bearing pedestal	1	17	HC-017	Allen tight screw	4
6	HC-006	Thrust ball bearing	1	18	HC-018	Adjustable wedge block	1
7	HC-007	Deep groove ball bearing	2	19	HC-019	Allen screw	10
8	HC-008	Circlip	1	20	HC-020	Allen screw	6
9	HC-009	Flat key	1	21	HC-021	Spacer	1
10	HC-010	Lead screw	1	22	HC-022	Cutting tool	1
11	HC-011	Locating pin	4	23	HC-023	Allen screw	2
12	HC-012	Tool holder baseplate	1	24	HC-024	Cutting tool slide	1

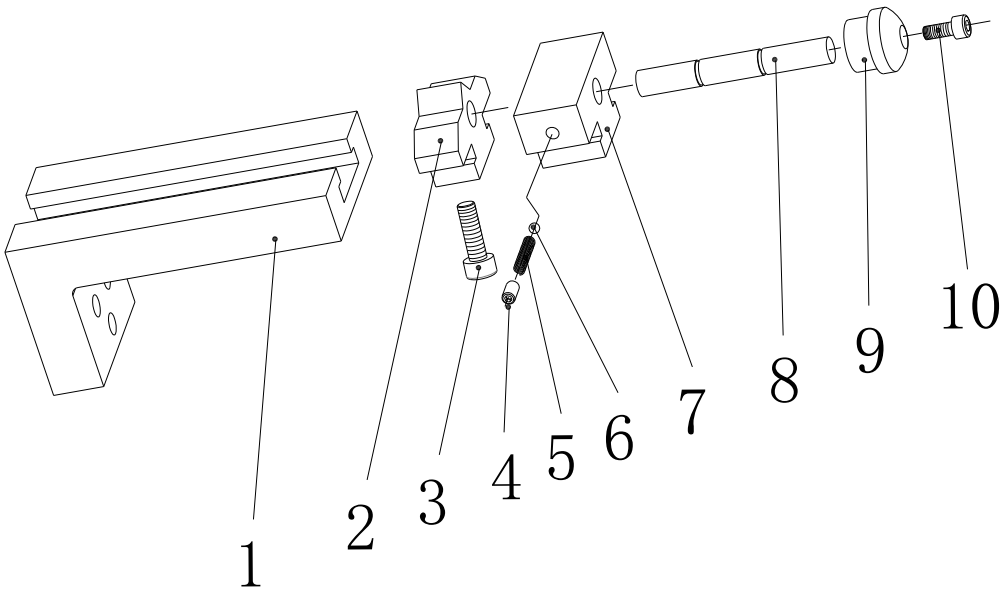
Heavy walled Beveling Tool Box



No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	HB-001	Circlip	1	13	HB-013	Fixed wedge block	1
2	HB-002	Feed wheel	1	14	HB-014	Allen screw	4
3	HB-003	Allen screw	2	15	HB-015	Copper nut	1
4	HB-004	Wheel washer	1	16	HB-016	Allen tight screw	4
5	HB-005	Lead screw bearing pedestal	1	17	HB-017	Allen tight screw	4
6	HB-006	Thrust ball bearing	1	18	HB-018	Adjustable wedge block	1
7	HB-007	Deep groove ball bearing	2	19	HB-019	Allen screw	10
8	HB-008	Circlip	1	20	HB-020	Allen screw	6
9	HB-009	Flat key	1	21	HB-021	Spacer	1
10	HB-010	Lead screw	1	22	HB-022	Beveling tool	1
11	HB-011	Locating pin	4	23	HB-023	Allen screw	2
12	HB-012	Tool holder baseplate	1	24	HB-024	Beveling tool slide	1

Tripper Assembly



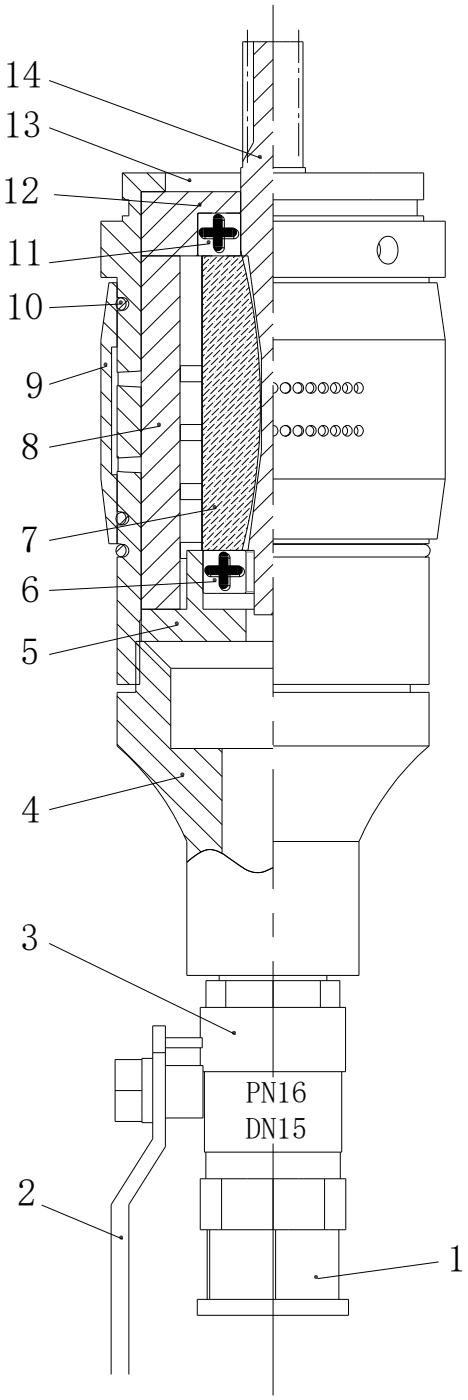


No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	SA-001	Feeding fixture	1	6	SA-006	Steel ball	1
2	SA-002	Tripper block	1	7	SA-007	Pull pin pedestal	1
3	SA-003	Allen screw	1	8	SA-008	Pull pin	1
4	SA-004	Tight screw	1	9	SA-009	Cap	1
5	SA-005	Spring	1	10	SA-010	Allen screw	1

Air Driven

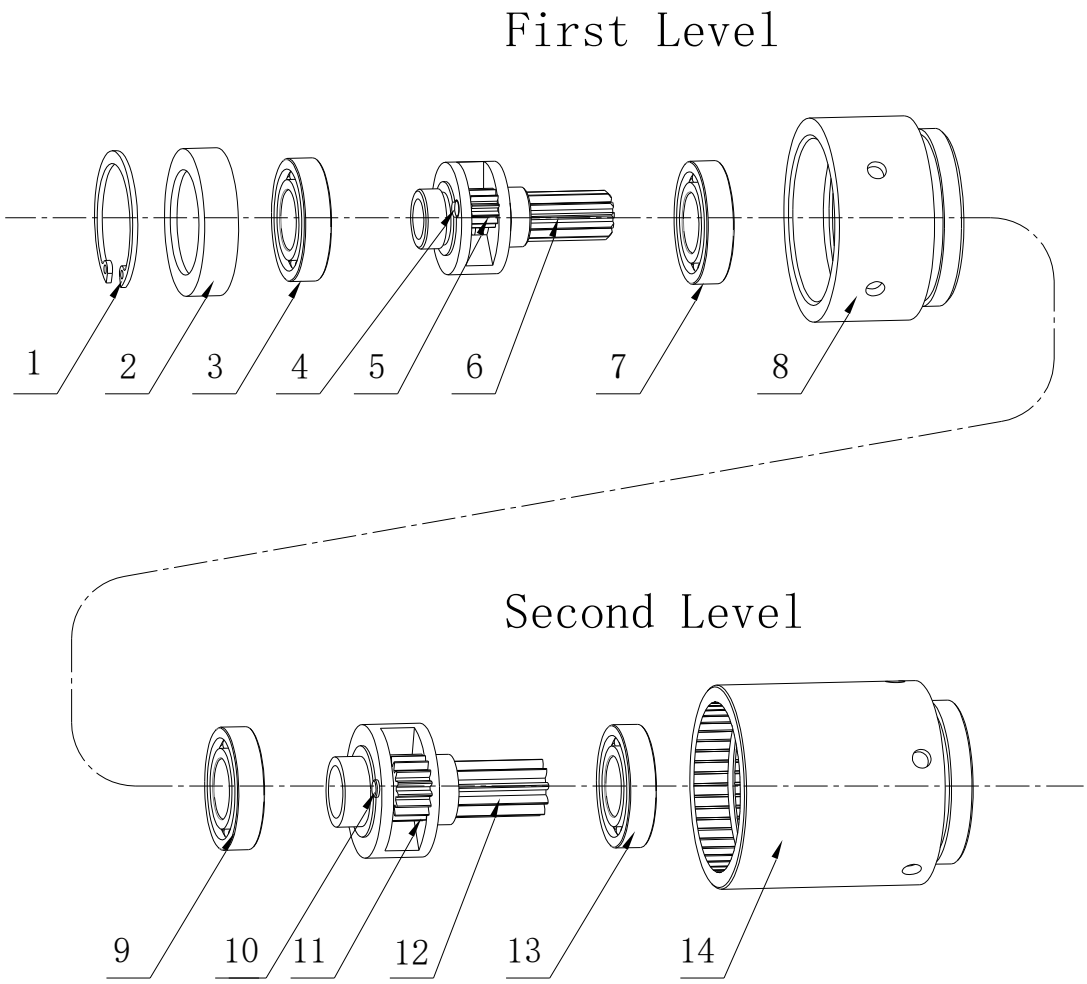
Air Motor

No.	Part No.	Description	Qty
1	AD-001	Quick coupling	1
2	AD-002	Valve switch	1
3	AD-003	Valve	1
4	AD-004	Motor rear cover	1
5	AD-005	Rotor rear cover	1
6	AD-006	Deep groove ball bearing	1
7	AD-007	Motor vane (blade)	1
8	AD-008	Eccentric stator	1
9	AD-009	Exhaust cover	1
10	AD-010	Seal ring	3
11	AD-011	Deep groove ball bearing	1
12	AD-012	Rotor front cover	1
13	AD-013	Air motor housing	1
14	AD-014	Air motor rotor	1



Air Driven

Reducer

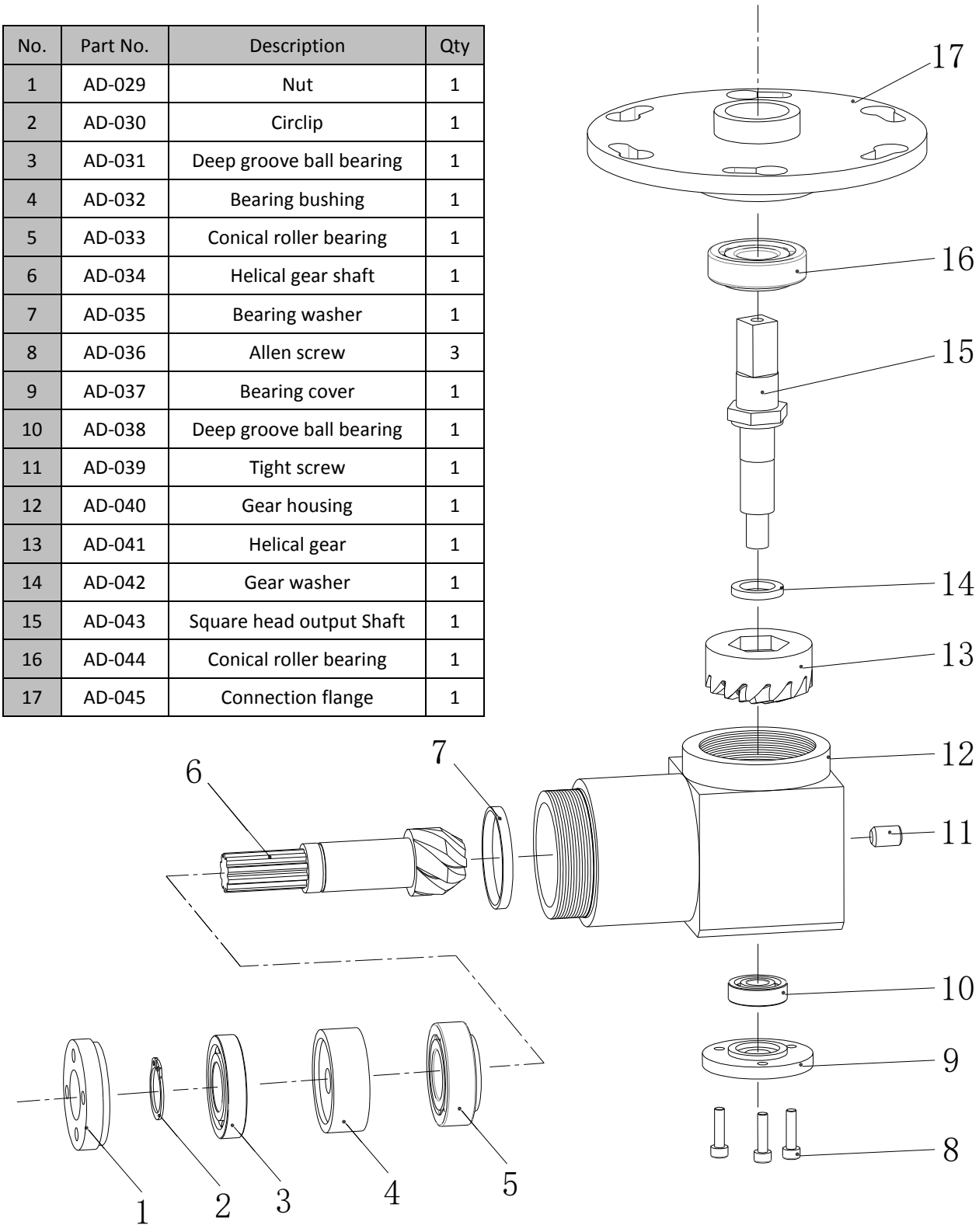


No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	AD-015	Internal circlip	1	8	AD-022	First level gear ring (Left hand thread)	1
2	AD-016	Bearing bushing	1	9	AD-023	Deep groove ball bearing	1
3	AD-017	Deep groove ball bearing	1	10	AD-024	Second level planet carrier	3
4	AD-018	Cylindrical pin	3	11	AD-025	Cylindrical pin	3
5	AD-019	First level planet gear	3	12	AD-026	Second level planet gear	3
6	AD-020	First level planet carrier	1	13	AD-027	Deep groove ball bearing	1
7	AD-021	Deep groove ball bearing	1	14	AD-028	Second level gear ring (Left hand thread)	1

Air Driven

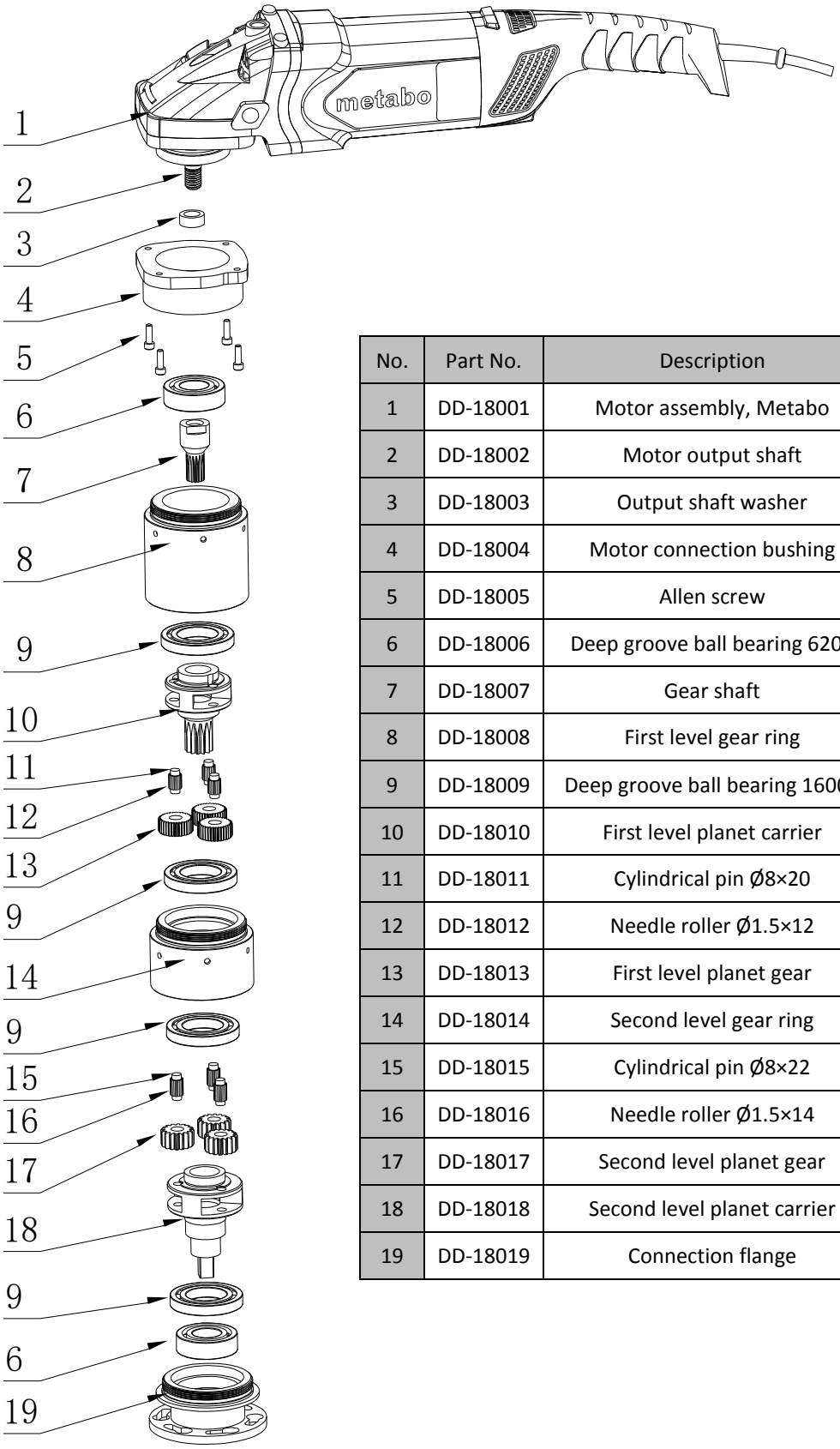
T-shape Gear set

No.	Part No.	Description	Qty
1	AD-029	Nut	1
2	AD-030	Circlip	1
3	AD-031	Deep groove ball bearing	1
4	AD-032	Bearing bushing	1
5	AD-033	Conical roller bearing	1
6	AD-034	Helical gear shaft	1
7	AD-035	Bearing washer	1
8	AD-036	Allen screw	3
9	AD-037	Bearing cover	1
10	AD-038	Deep groove ball bearing	1
11	AD-039	Tight screw	1
12	AD-040	Gear housing	1
13	AD-041	Helical gear	1
14	AD-042	Gear washer	1
15	AD-043	Square head output Shaft	1
16	AD-044	Conical roller bearing	1
17	AD-045	Connection flange	1



Electric Driven

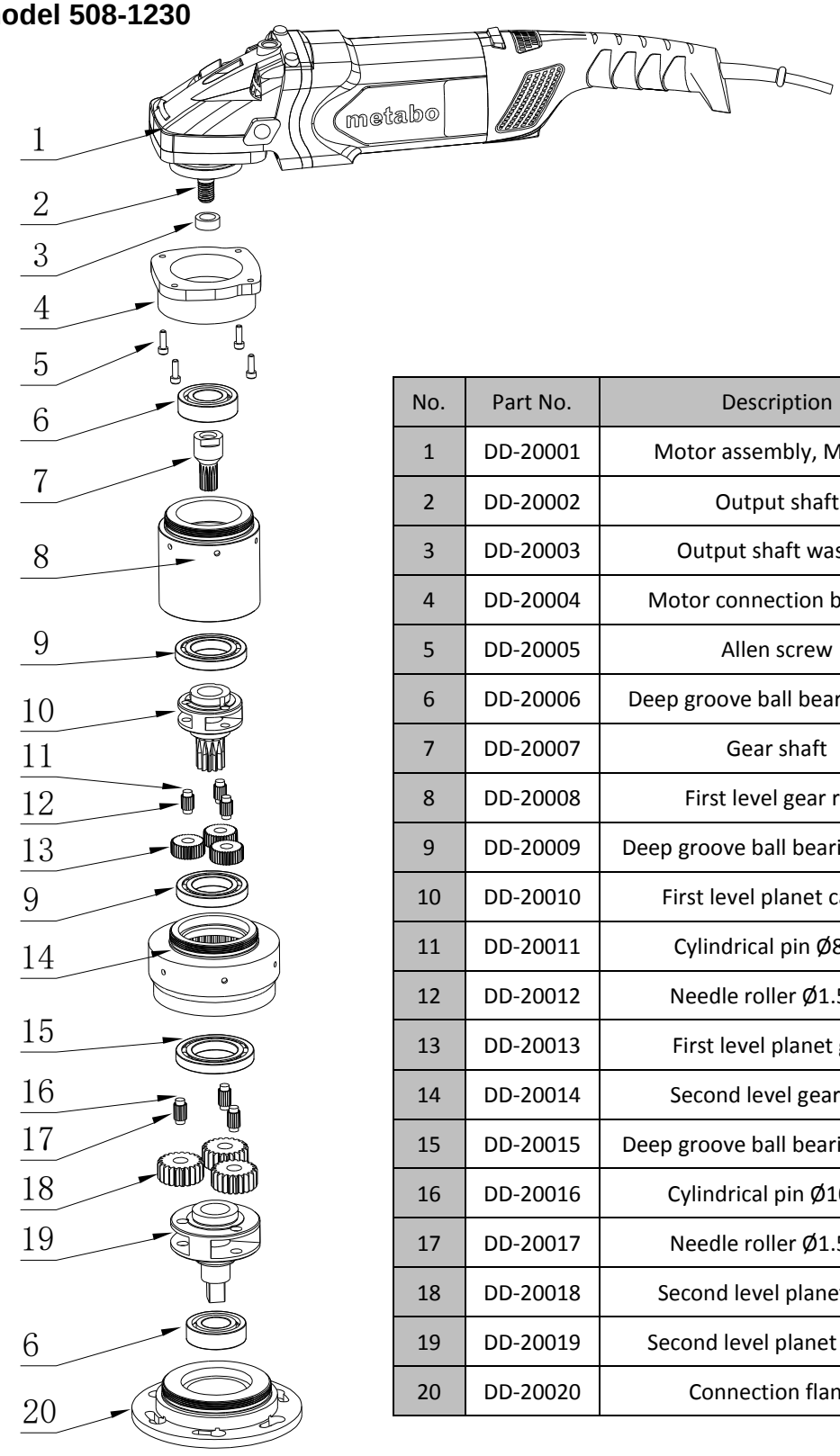
For model 168-457



No.	Part No.	Description	Qty
1	DD-18001	Motor assembly, Metabo	1
2	DD-18002	Motor output shaft	1
3	DD-18003	Output shaft washer	1
4	DD-18004	Motor connection bushing	1
5	DD-18005	Allen screw	4
6	DD-18006	Deep groove ball bearing 6205	2
7	DD-18007	Gear shaft	1
8	DD-18008	First level gear ring	1
9	DD-18009	Deep groove ball bearing 16007	4
10	DD-18010	First level planet carrier	1
11	DD-18011	Cylindrical pin Ø8×20	3
12	DD-18012	Needle roller Ø1.5×12	57
13	DD-18013	First level planet gear	3
14	DD-18014	Second level gear ring	1
15	DD-18015	Cylindrical pin Ø8×22	3
16	DD-18016	Needle roller Ø1.5×14	57
17	DD-18017	Second level planet gear	3
18	DD-18018	Second level planet carrier	1
19	DD-18019	Connection flange	1

Electric Driven

For model 508-1230

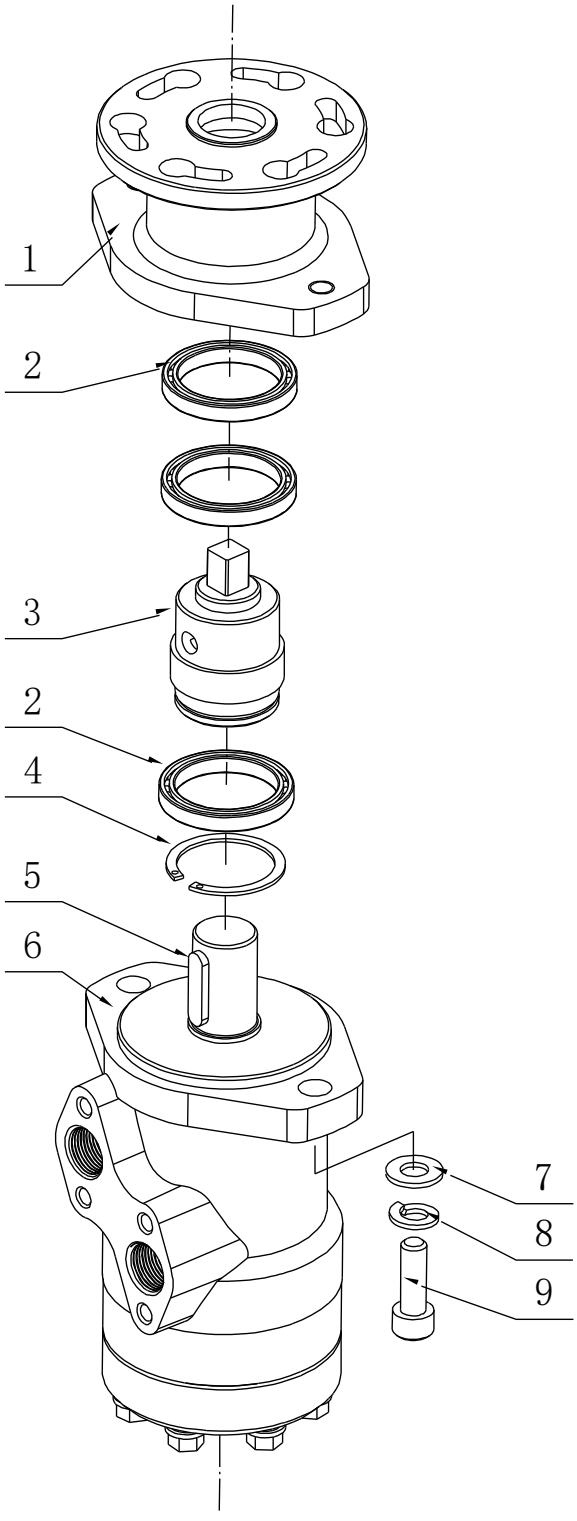


No.	Part No.	Description	Qty
1	DD-20001	Motor assembly, Metabo	1
2	DD-20002	Output shaft	1
3	DD-20003	Output shaft washer	1
4	DD-20004	Motor connection bushing	1
5	DD-20005	Allen screw	4
6	DD-20006	Deep groove ball bearing 6205	2
7	DD-20007	Gear shaft	1
8	DD-20008	First level gear ring	1
9	DD-20009	Deep groove ball bearing 16007	3
10	DD-20010	First level planet carrier	1
11	DD-20011	Cylindrical pin Ø8×20	3
12	DD-20012	Needle roller Ø1.5×12	57
13	DD-20013	First level planet gear	3
14	DD-20014	Second level gear ring	1
15	DD-20015	Deep groove ball bearing 16008	1
16	DD-20016	Cylindrical pin Ø10×25	3
17	DD-20017	Needle roller Ø1.5×17	69
18	DD-20018	Second level planet gear	3
19	DD-20019	Second level planet carrier	1
20	DD-20020	Connection flange	1

Hydraulic Driven

For model 168-457

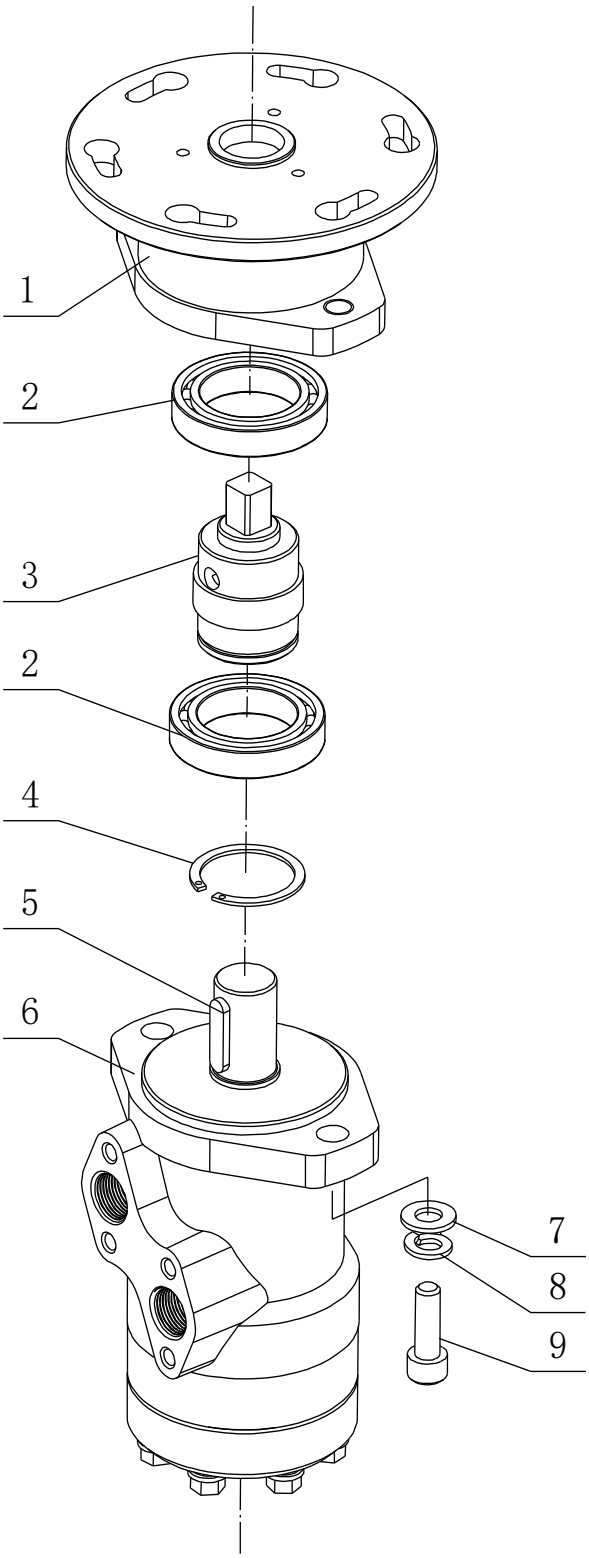
No.	Part No.	Description	Qty
1	HYA-1801	Connection flange	1
2	HYA-1802	Deep groove ball bearing	3
3	HYA-1803	Output shaft	1
4	HYA-1804	Circlip	1
5	HYA-1805	Flat key	1
6	HYA-1806	Hydraulic Motor	1
7	HYA-1807	Flat washer 10	1
8	HYA-1808	Spring washer 10	1
9	HYA-1809	Allen screw M10	1



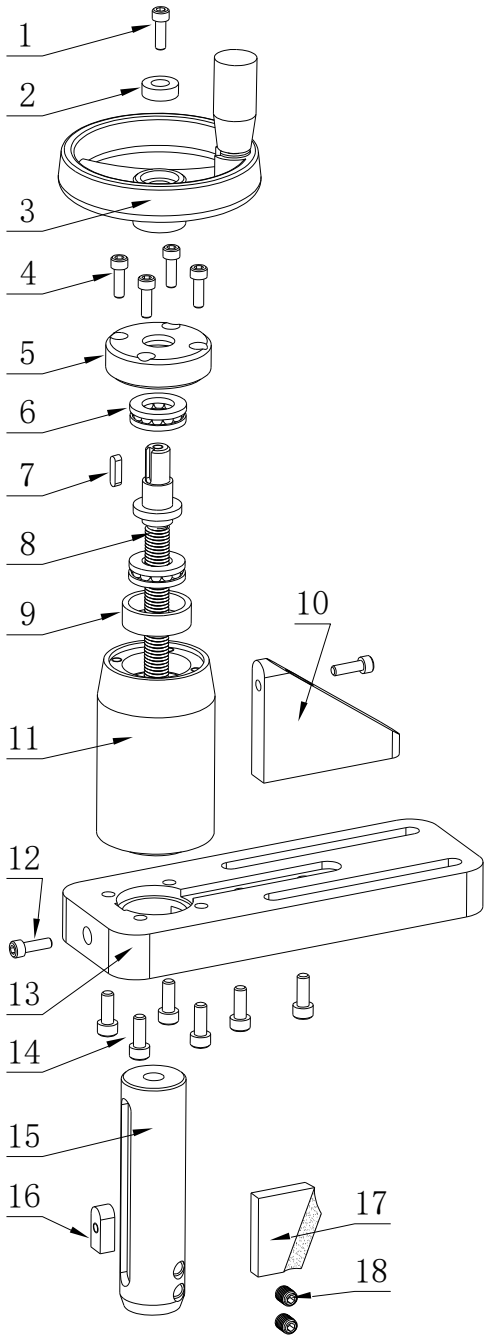
Hydraulic Driven

For model 508-1230

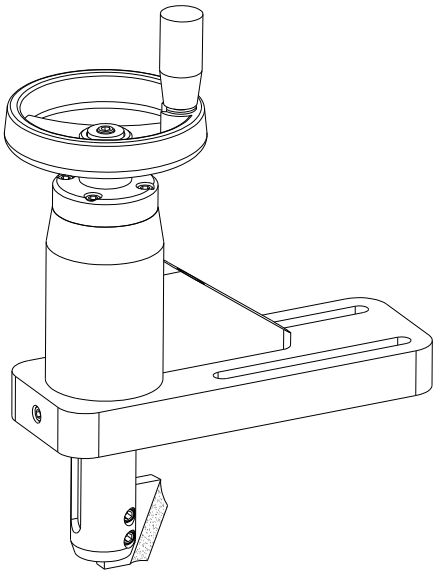
No.	Part No.	Description	Qty
1	HYB-2001	Connection flange	1
2	HYB-2002	Deep groove ball bearing	2
3	HYB-2003	Output shaft	1
4	HYB-2004	Circlip	1
5	HYB-2005	Flat key	1
6	HYB-2006	Hydraulic Motor	1
7	HYB-2007	Flat washer 10	1
8	HYB-2008	Spring washer 10	1
9	HYB-2009	Allen screw M10	1



Counter boring Tool slide



No.	Description	Qty
1	Allen screw	1
2	Washer	1
3	Hand wheel	1
4	Allen screw	4
5	Screw bearing pedestal	1
6	Thrust ball bearing	2
7	Flat key	1
8	Lead screw	1
9	Bearing bushing	1
10	Rib plate	1
11	Tool rod sleeve	1
12	Allen screw	1
13	Baseplate	1
14	Allen screw	7
15	Tool rod	1
16	Flat key	1
17	Tool bit	1
18	Tight screw	2



ORDERING REPLACEMENT PARTS

Please refer to parts lists provided in manual. Advise us part number and description of replacement parts to help expedite order and ensure proper parts are being ordered.

Or take photo for replacement parts, send email to us.

REPAIR INFORMATION

Please call TRITORC prior to returning any equipment for repair. We will advise you of shipping and handling. Please enclose with machine your name, address, phone number and a brief description of problem or work to be done or estimated.

All repair work done at our plant will be estimated and the customer advised of cost and time required to complete repair.

POSTAL ADDRESS

TRITORC INC,

Add: 5041 Spencer Highway Suite #302,
Pasadena, Texas:- 77502
Tel: +1 - 281 - 658 0558
Email: info@tritorc.com
Web: www.tritorc.com

Quality Information Feedback

Dear Users:

Thanks for choosing TRITORC product!

In order to optimize our machines continuously and carry out the service commitment, please help finish the following content. Your precious suggestion will help us growth better.

The Model No. you bought :

What's your overall evaluation of TRITORC product:

What's your suggestion and expectation for TRITORC product:

Thanks for your support and cooperation, please post or email the sheet to us, we will embody it to our database.

TRITORC Sales Department

TRITORC INC.
Add: 5041 Spencer Highway Suite #302,
Pasadena, Texas:- 77502

WARRANTY CARD

Company name			
Address			
Contact person		**Phone number**	
Model No.			
Series No.		**Production date**	
Warranty period	**12 months**		

Inspector:

Company seal:

Warranty Rules:

1. **Warranty period start from the date shipped on board, 12 month free warranty.**
2. **Over warranty period, spare parts charge at cost price.**
3. **Within warranty period, the following conditions are not included in guarantee:**

a) **Improper operations not following the operation manual**

b) **Damage by self-maintain**

c) **Damage by force majeure or transport**

d) **Can not present this certificate**