OPERATION MANAUAL

1/2”-4” ELECTRIC PIPE THREADING MACHINE

Catalogue

I. Instruction

This machine is suitable for threading & cutting & beveling various of water, electricity and gas pipes with size of 1/2”-4”. It is compact design, easy operation and high efficiency. Because with device of automatic threading & cutting taper thread of standard pipe, good clamping device and advanced cooling lubricant system, working life could be prolonged, pipe could be installed stably without deforming, as a result, machine could make high quality taper thread.

This machine could be widely used in equipment installation and construction industries and is an ideal equipment for improving efficiency, shortening process of construction, ensuring construction quality and decreasing manpower workload.

II. Main Specifications and Parameters

1. Capacity: 1/2”-4”

2. Applicable Threader Standard: BSPT / NPT

3. Die: 1/2”-3/4” one set

1”-2” one set

2 1/2”-4” one set

Rockwell Hardness: HRC58-62

4. Die Head: 1/2”-2” Automatic Die Head one set

2 1/2”-4” Automatic Die Head one set

5. Motor: YL7132, 14.5A, 2800RPM

6. Rotation Speed of axis: 28 RPM for 1/2”-2” threading

1/2”-4”cutting and beveling

12 RPM for 2 1/2”-4” threading

7. Output Power: 1100W

8. Max. Chuck Capacity: 124mm

9. Sledge Stroke: 150mm

10. Oil Feeder: gerotor oil pump, constant oil flow

11. Net Weight: 130Kg

12. Overall Dimensions: 950*560*520mm(without tubular supporters)

III. Special Safety Requirement

1. Keep the working site clean and bright(illumination condition 600lux) as disorder and darkness may cause accidents.

2. To avoid electric shock, do not expose the machine in the rain or operate it in moist workshop.

3. Operators should wear tight clothing, operators should remove gloves, jewelry, watch or likewise and should not loosen long hair.

4. When the threading machine(including its accessories) is installed in the working site, use the 30mA leakage resistance switch only.

5. The following is forbidden when the machine is running:

---Touching or grabbing the workpieces.

---Replacing or removing components(pipe accessories, valve or pipes etc.)

---Cutting or sawing pipes by hand tools

6. If the dangerous areas in the machine or its workpieces cannot be examined closely, the spinning workpieces or the dangerous areas should be protected. The protective devices must be reliably and stably placed. The supporting devices must be stable if they are used. Installing 4 pcs of tubular supporters and adjusting screws can ensure height and stability.

7. Keep children away when the machine is running, they are forbidden to operate the machine or drag the cable and wires.

8. Avoid overload operation, the unsuitable accessories, overload operation and blunt or damaged screwing die must not be used for fear that the machine would be damaged.

9. Extending too long pipes to operate the machine is forbidden. Keep this machine be balanced and stable all the time. Calculate the danger caused by suddenly-broken workpieces(based on the length of the workpieces, the section, the material and the rotate speed) and use enough supports to avoid danger.

10. Maintain this machine with care, lubricate the machine and replace the accessories according to the instruction of this manual operation to make the operation safer. Check the cables of the machine regularly . If there is any danger, it must be repaired by technician immediately. Keep various handles clean and tidy all the time. Keep them free of oil pollution.

11. Turn the power off. Pull the attaching plug out when the machine is not in

use.

12. Starting the motor carelessly is forbidden, make sure the switch is at the position of “off” before the plug is connected with the machine.

13. Do not operate the machine when the operator is tired, or if he has used any drugs.

14. Check the damaged spare parts, check any cutting tools and parts carefully before using them, and see if they are in normal working condition and function. Any damaged parts must be repaired and replaced by professional technicians.

15. Operation is forbidden when any switch can not be properly turned on or off.

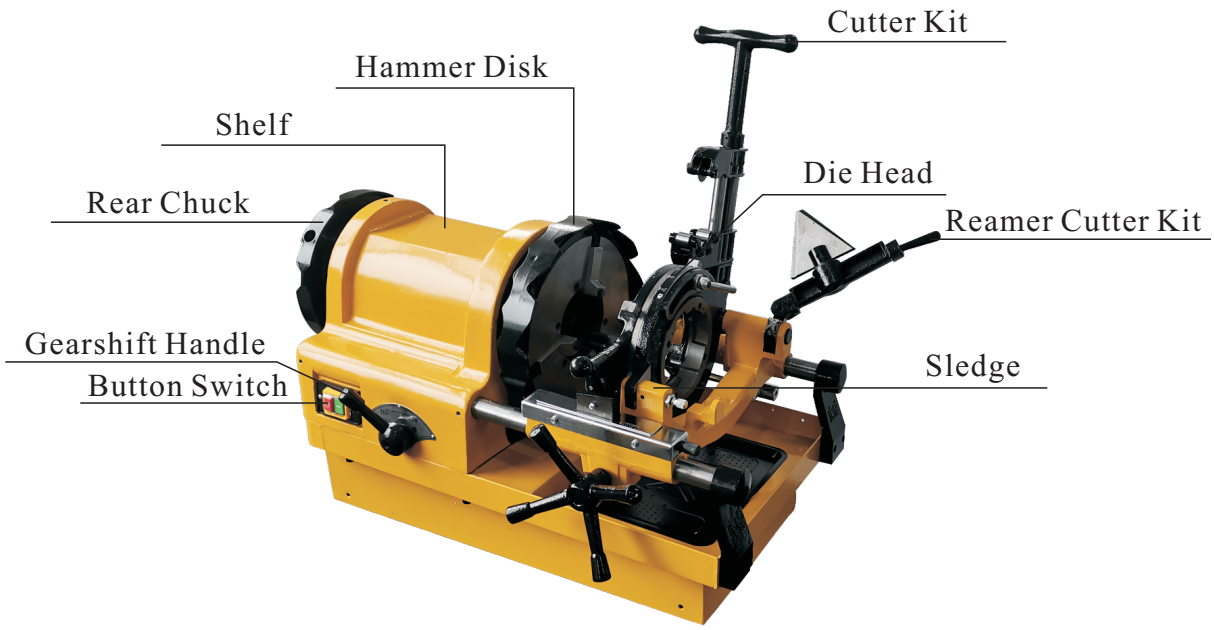
16. Replacing parts and accessories: use the parts of SHIDA Electric Threader for safety and proper operation.

IV. Machine Structure

Main parts of this machine is made of high-strength aluminum alloy and high-quality cast iron, as a results, machine is lighter and high strength.Outside structure please refer to below drawing.

Die Head, Reamer Cutter Kit and Cutter Kit are all installed on sledge of machine, and sledge could be moved longitudinally.

Electrical motor, Gearbox and cooling oil pump are set inside of machine body.



V. Operation

1. Unpacking:

When unpack the case, check if the following accessories are enclosed

① One barrier of cutting oil (2.5L)

② Two sets of Threading Die packed in plastic box(4 pcs each set).

③ One set of Automatic Type Die Head

④ Four piece of tubular supporter.

⑤ Tools (one set of Hexagon Inner Spanner/ 1 Screw Driver/ 1 wrench)

⑥ Dope Can

2. Transportation:

Fix the Die Head at the position of threading, and open all dies thoroughly, put a short pipe in Front Chuck tightly, and put Cutter Kit on the pipe, and also Reamer Cutter Kit is fixed on the position of reaming, hence machine could be transported.

3. Installation:

① Put all accessories aside and install 4 pcs of tubular supporters into the hole at the bottom of machine.

② Fasten it with screws safely and reliably.

③ When install the machine, length of 4 pcs of tubular supporters should be adjusted to ensure that Rear Chuck is a little higher than Front Chuck. And the pipe put in the Front Chuck have to be removed, and re-put when next transportation.

4. Operation

4.1. Preparation for Threading

① Replacing Die

a. There are three sets of Dies, each of which threads different pipes, as below:

Pipe	Die
1/2”-3/4”	1/2”-3/4” 11.5 threads/inch
1”-2”	1”-2” 11.5 threads/inch
2 1/2”-4”	2 1/2”-4” 8 threads/inch

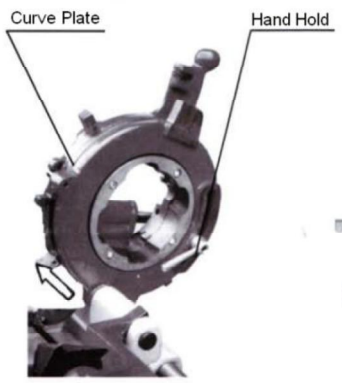
Choose a set of that matches the diameter of pipe. There are two groups of figures on each die, one of which represents its specification, the other represents the assemble sequential numbers, such as 1,2,3,4.

b. Remove the Die Head from sledge(Fig. 1), loosen the nut of handle, and turn the curve plate around to the maximal position of the scale.

c. Put the selected Dies into die grooves according to their sequential numbers, and its lock notch will fit curve plate. Then pull the curve plate until the Scale Indicator of the curve plate points at the scale on the ruler of the job. Then the

die is fixed.

Note: 1/2”-3/4” & 1”-2” Dies are installed in small Die Heads, while 2 1/2”-4” Die is installed in big one.



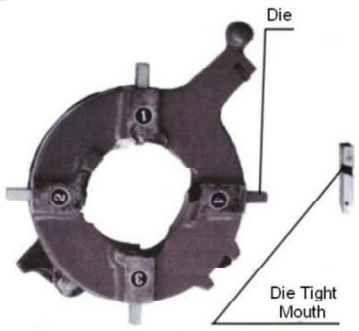


Fig.1 Fig. 2

d. Place the assembled Die Head on the Sledge.

②**Checking cutting oil**

a. Check whether there is enough cutting oil in the tank.

b. Add oil when needed through the oil filling opening.

c. Cutting oil will overflow over the Die Head after the machine runs.

Note: use cutting oil only to ensure to produce high-quality threads.

③**Threading Operation**

a. Any operation requiring non-rotating condition should be done only when the machine stops running.

b. Loosen Front & Rear Chuck.

c. Hold the pipe by hand, tighten the Rear Chuck firstly, then tighten the Front Chuck to fix the pipe, then beat the Hammer Disk in counter clockwise to be tight, hence the pipe is clamped well.

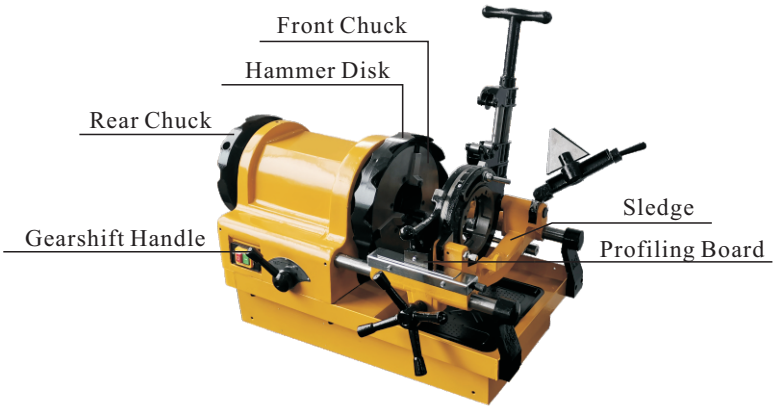


Fig.3

d. If pipe could not reach the Rear Chuck when threads short pipe, to loose little the Front Chuck, put short pipe in and make it touch the Die, which is good for ensuring the pipe is in the central position when tighten the Front Chuck. Pls refer to the Fig.4.

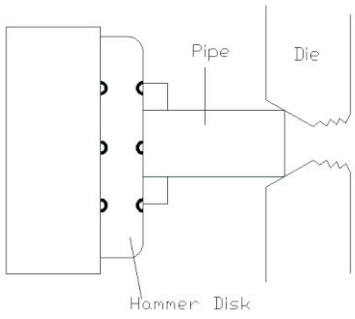


Fig.4

e. Pull up the Cutter Kit and Reamer Cutter Kit to make room, then push down the Die Head, make it to touch the Profiling Board(see Fig.6), and lock it tight with locking pin. Push the button switch to start the machine after the Die Head is fixed on its proper position.

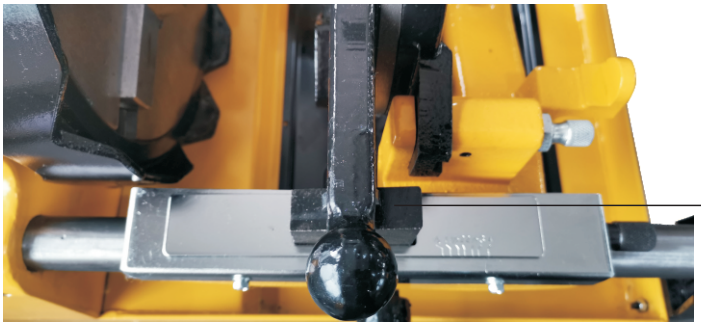


Fig.6

Caution: To keep the machine run in order, Gear Shift Hand should be place at the position of bottom gear when threading pipes with diameter bigger than 2 inches, otherwise, place the Gearshift Handle at the position of top gear (See Fig.7).

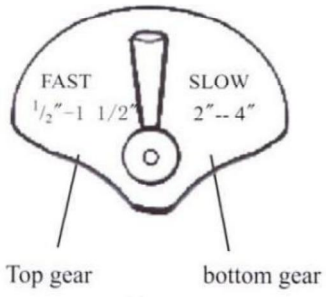


Fig. 7

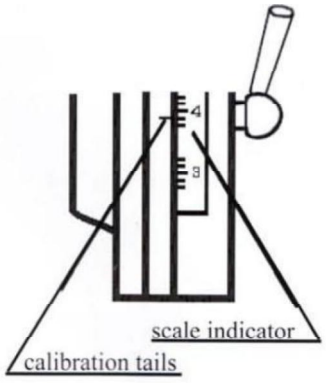


Fig.8

f. The pipe must rotate in counter clockwise, then rotate the sledge handle to move the Die Head to the pipe.

g. Apply force on the sledge handle wheel until 3-4 threads are made on the pipe.

h. Stop applying force. The machine begins to thread automatically until the roller of Die Head passes the Profiling Board and falls down.

Caution: Two steps should be followed when threading pipes with diameter bigger than 2 inches. Firstly, place the Size scales one scale lower than the scale required; secondly, make the scale indicator point to the scale required.

i. Stop the machine and quit the Die Head to the right unused position.

j. Loosen the Front and Rear Chucks clockwise, and remove the pipe from Rear Chuck.

④ **Cutting the pipe**

a. Pull up Die Head and Reamer Cutter Kit, make Front Chuck and Rear Chuck fasten pipe well.

b. Push down the Cutter Kit, and rotate the handle to open the rack to let the cutting wheel touch the pipe.

c. Rotate sledge handle to move the cutter kit to cutting position(See Fig.9).

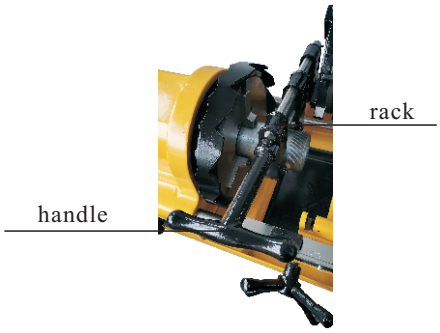


Fig.9

d. Rotate the handle to move the cutter wheel to touch the pipe.

e. Start the machine. Switch the Gearshift Hand to the top gear and make the cutting wheel cut into the pipe. Cut about 0.15-0.25mm for one turn of the pipe, i.e. for each turn of the basic shaft the handle forwards about 1/10 turn. Quit the cutter wheel and pull up the Cutter Kit to its un-working position after cutting.

Caution: Cut with moderate speed and force to avoid distortion of pipe and damage to the wheel.

⑤ **Inner Wall Beveling**

a. Pull up the Die Head and Cutter Kit and push down the Reamer Cutter Kit, make the Front Chuck and Rear Chuck fasten the pipe well.

b. Start the machine. Move the Gearshift Hand to the top gear, rotate the sledge handle wheel and drive the Reamer Cutter Kit to the inside of pipe(See Fig.10)

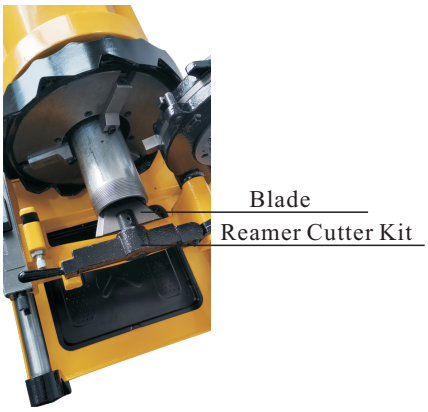


Fig.10

c. Stop the machine after beveling, and move the Reamer Cutter Kit to its un-working position.

VI. Maintenance

1. Turn the master switch to the position of“OFF”, or unplug the power when machine is checked and maintained.

2. Shell of machine is cast with a whole piece of aluminum alloy, its reduction gearbox keeps lubricating permanently. Do not impact the shell violently.

3. Cooling oil system: clean the oil filter disk and oil suction filter disk after running for 8-12 hours. Clean the oil tank and refill it if the oil inside is dirty or turns black.

4. Small iron filings may fall into the oil tank when threading, it is therefore essential to clean the filter disk once a week to keep the machine in order.

5. Check the cutter wheel each once a week, replace it when it is blunt.

6. Check the attrition of the Chuck Jaw Inserts once a month. If the Chuck Jaw Inserts are worn, replace them(three each set) to ensure to produce threads of high quality.

7. Clean Die Head and Die every shift. Check if the teeth of Die are broken, if they are, remove the cuttings between teeth; if the Die has already been broken, replace a set of Die instead of the broken one.

8. There are two oil cups on the shell of main shaft, oil at least twice each shift to be lubricated the fore and rear bearing.

9. Unplug the power when the machine is not in use, coat corrosion resistant oil on both fore and rear guideposts and other working surface. Store it in dry ventilated place.

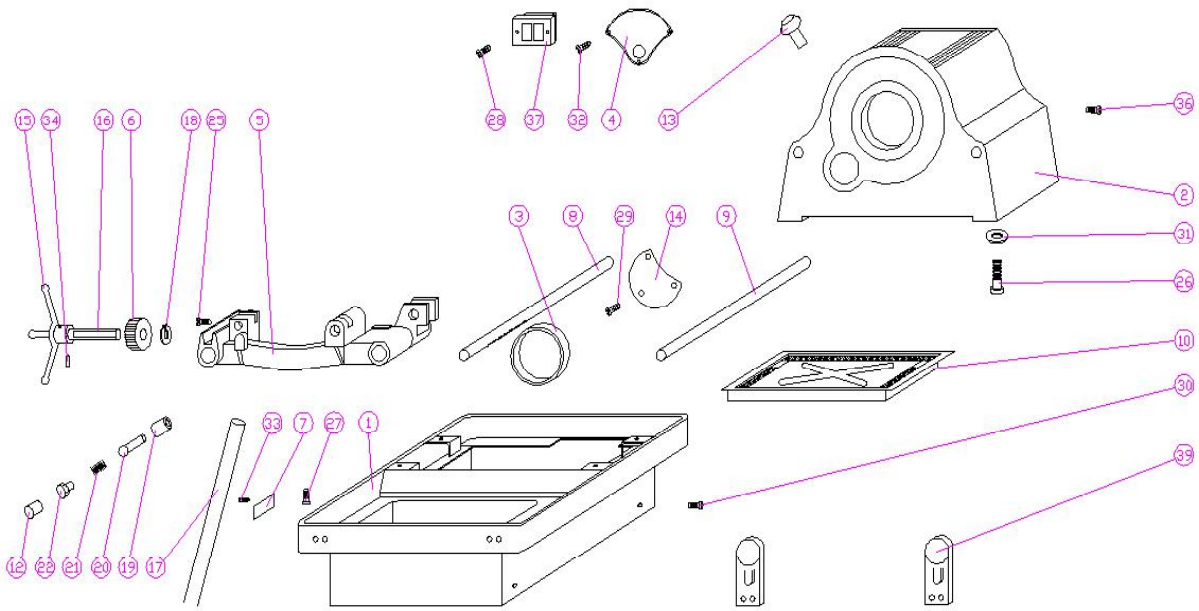
VII. Problem and Remedy

Problem	Cause	Remedy
The motor doesn't run or makes breaking sounds when running	The fuse is blown	Replace the fuse
	A poor power contact	Replace the plug wire
	The insider of the cable is broken	Locate the point broken with multimeter
	Electric capacity is broken down	Replace the electric capacity
The pipe can't be fastened or it slips when threading	Less forceful stroke	Hammer with force
	The chuck jaw insert is upside-down	Adjust the chuck jaw insert
	One of chuck jaw inserts is broken or notch-edged	Replace the chuck jaw inserts
The cutting knife can't cut	The point of cutting knife is worn-out and not sharp	Replace the blade
	The pin roll of cutter knife is worn down	Replace the pin roll
	Apply less force when starting cut	Cut with force
The cutting knife doesn't work when threading	The knife doesn't open widely when starting to thread	Use the knife properly
	A few teeth of the cutter head are broken	Replace the knife
	The type and size of the knife is not suitable	Reinstall the knife
	There are iron filings in the groove	Clean the Die Head
The Front Chuck body is loose	M6 bolts are loose for long-term use	Check at all times
The main shaft heats up	Lack of oil	Oil regularly
		Remove the beam barrel and scratch the shaft

The cooling oil can not be sufficiently provided	The oil circuit is blocked	Clean the oil circuit
	The oil hole is not installed properly after the fulcrum shaft of the Die Head is removed	Reinstall it
	The oil in oil pump has leaked out	Fill some cooling oil in the oil pump
The cooling oil leaks into the motor	The oil seal of the oil pump PD8x22x8 has been damaged	Replace the oil seal
The threads are deflected	The pipe is curved too much or out of round	Select appropriate pipe
	The long pipe isn't supported by support	Equip with supporter
	There is extra substance in the chuck jaw insert	Remove extra substance
	One of the chuck jaw insert is broken or notch-edged	Replace the chuck jaw insert
The threads are shapeless and the threads are thin instead of thick	The rigidity of the pipe is slightly higher	Select appropriate pipe
	The outer diameter of pipe is too bigger	Select appropriate pipe
	The cutting edge of pipe is out of vertical	Machining it vertical
	The carriage moved hard	Find out the reason and modify
	The order of Die doesn't match the groove	Correct the order of Dies
	The gap of Die Head is too wide	Repair or replace the Die Head
The surface of threads is not perfect	Process with high speed	Process with low speed
	The dies are blunt	Change the die
	The oil isn't infused	Use cutting oil
Can't change speed	The middle clutch in the gearbox is worn	Replace the middle clutch and repair the gear
	The connecting pin is broken	Replace a new one

VIII. Section Drawing of Main Parts

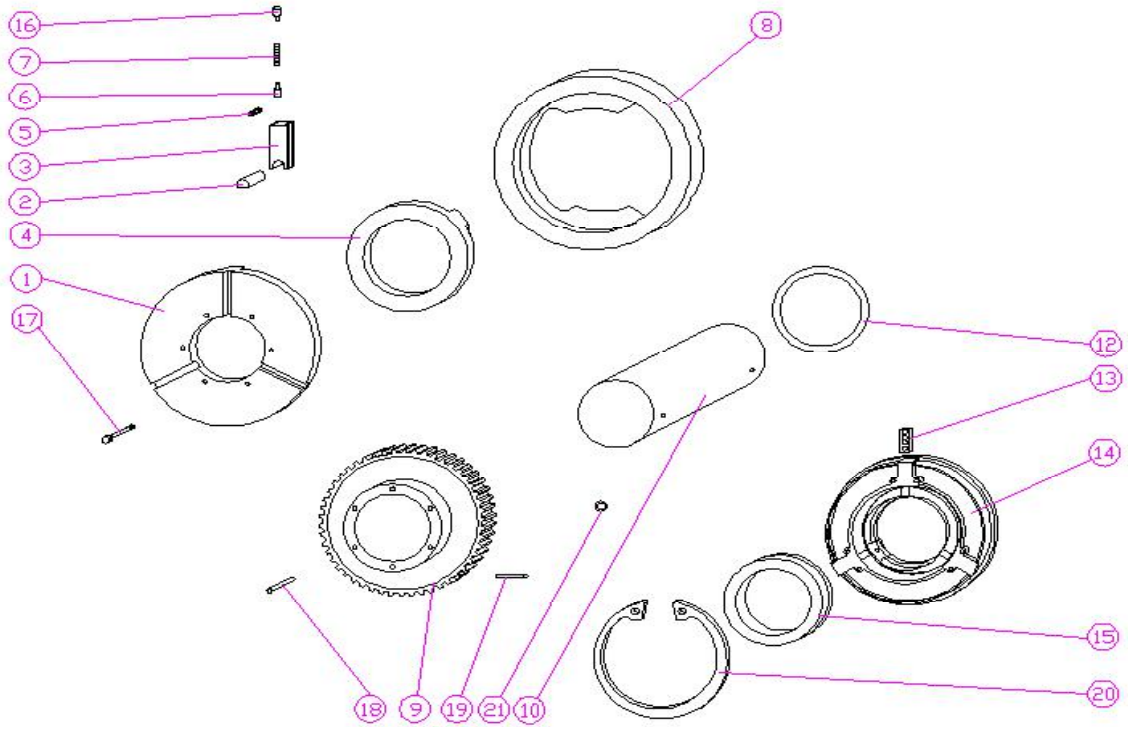
1. 40100 Body of Machine



Item	Code	Name	Qty	Remark
1	40101	Seating	1	– 0001
2	40102	Head Stock	1	– 0002
3	40103	Bearing	2	– 0003
4	40104	Gearshift Handle	1	–0004
5	40105	Sledge	1	–0005
6	40106	Shaft gear of handle wheel	1	–0006
7	40107	Data plate	1	– 0003
8	40108	Front lead screw	1	– 0009
9	40109	Rear lead screw	1	– 0010
10	40110	Chip pan	1	– 0005
12	40112	Pull knob	1	–0015
13	40113	Cover of oil filling opening	1	–0016
14	40114	Cover	2	–0018
15	40115	Handle wheel	1	– 0018 – 1
16	40116	Handle spindle	1	–0008 – 2
17	40117	Tubular supporter	1	–0006
18	40118	Circlip	1	–0009
19	40119	Lock tongue	1	–0011
20	40120	Lock stem	1	–0012
21	40121	Spring	1	–0013

22	40122	Bolt sleeve	1	−0014
25	40125	Slotted cap screw M5X10	2	GB67－85
26	40126	Hex. Socket head screw M10X70	4	GB70－85
27	40127	Hex. Socket holding screw	6	GB77－85
28	40128	Slotted cap screw M4X14	2	GB67－85
29	40129	Slotted cap screw M4X8	3	GB67－85
30	40130	Square head holding screw	4	GB85－88
31	40131	Spring washer Φ10	4	GB93－86
32	40132	Rivet of Gearshift Handle 3X15	2	GB827－86
33	40133	Rivet of data plate 3X15	4	GB827－86
34	40134	Flexible round pin 6X35	1	GB879－87
36	40136	Cable clamp	1	－0118
37	40137	Button switch	1	$K_{AO}-5$
39	40139	lifter	2	－0004

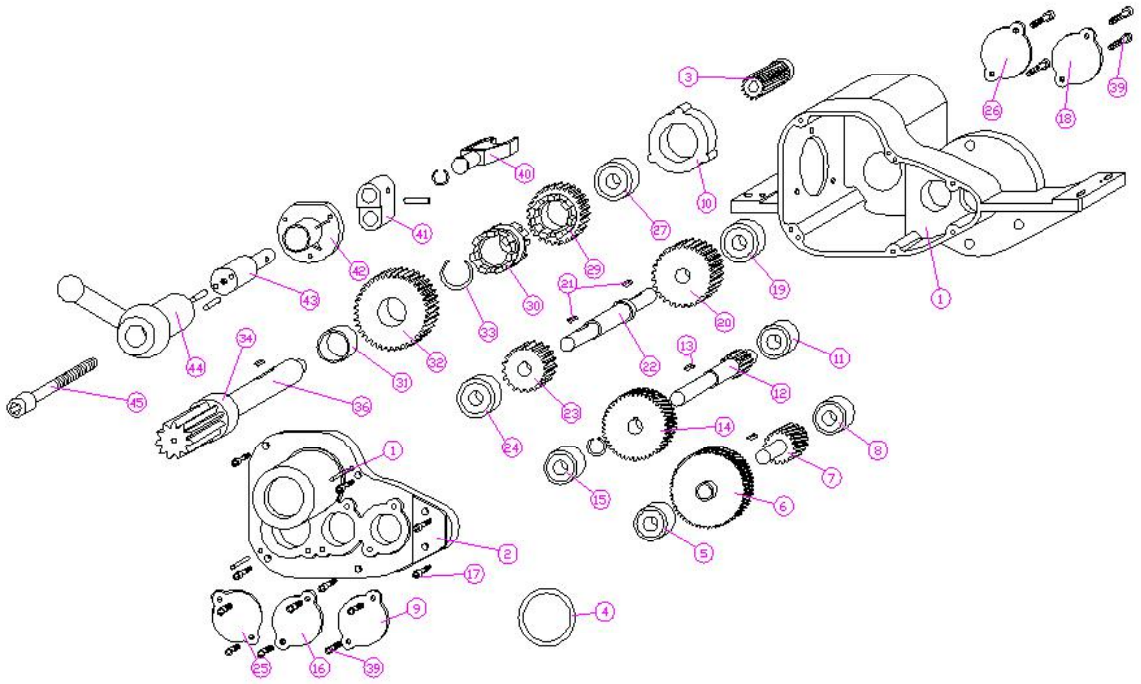
2. 40200 / 40222 Front Chuck/ Rear Chuck



Item	Code	Name	Qty	Remark
1	40201	Chuck plate	1	－0601

2	40202	Chuck jaw inserts	3	－0604
3	40203	Chuck haws	3	－0603
4	40204	Big screw caliper	1	－0608
5	40205	Supporting screw	3	－0606
6	40206	Stock foot	3	－0605
7	40207	Spring	3	－0607
8	40208	Hammer disk	1	－0602
9	40209	Big gear	1	－0027－2
10	40210	Hollow spindle	1	－0027－1
12	40212	Washer	1	－0705
13	40213	Rear chuck jaw	3	－0704
14	40214	Back plate of rear chuck	1	－0702
15	40215	Small screw caliper	1	－0703
16	40216	Hex. socket screw M6X14	3	GB70－85
17	40217	Hex. socket screw M8X55	6	GB70－85
18	40218	Round pin 8X20	1	GB119－86
19	40219	Hex. socket screw M8X25	3	GB70－85
20	40220	Φ180 circlip	1	
21	40211	Spring washer M8	3	GB93－87

3. 40300 Gearbox



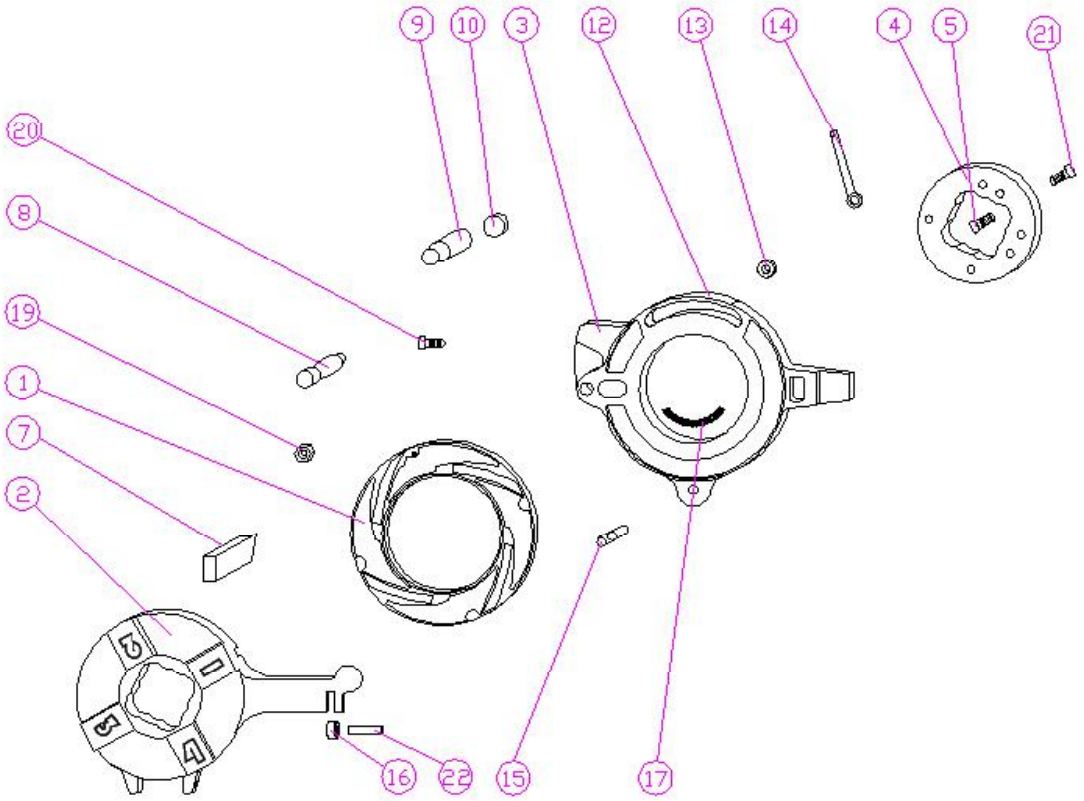
Item	Code	Name	Qty	Remark
1	40301	Body	1	－0518
2	40302	Cover	1	－0518
3	40303	Motor gear	1	－0501
4	40304	Oil seal	1	HG4－692－67
5	40305	Bearing 6002	1	GB276－64
6	40306	High-speed gear	1	－0502
7	40307	High-speed gear spindle	1	－0503
8	40308	Bearing 6002	1	GB276－64
9	40309	Cover	3	－0502
10	40310	Oil pump seat	1	－0526
11	40311	Bearing 6003	1	GB276－64
12	40312	2# gear spindle	1	－0504
13	40313	Flat key 5X12	3	GB1096－97
14	40314	Bull gear of 2# gear spindle	1	－0504
15	40315	Bearing 6202	1	GB276－64
16	40316	Cover	1	－0529
17	40317	Socket screw M5X16	6	GB70－86
18	40318	Cover	1	－0528
19	40319	Bearing 6203	1	GB276－64
20	40320	Bull gear of 3# gear spindle	1	－0506
21	40321	Flat key 5X12	2	GB1096－79
22	40322	2# gear spindle	1	－0508
23	40323	Pinion of 3# gear spindle	1	－0507
24	40324	Bearing 6203	1	GB276－64
25	40325	Cover	1	－0528
26	40326	Cover	1	－0528
27	40327	Bearing 6203	1	GB276－64
29	40329	High-speed gear	1	－0529
30	40330	joint	1	－0512
31	40331	sleeve	1	－0514
32	40332	Low-speed gear	1	－0513
33	40333	Anti-extrusion ring	1	－0515
34	40334	Bearing 6205	1	GB278－64
36	40336	Output gear spindle	1	－0516

39	40339	Button-headed screw M5X6	10	GB67－66
40	40340	Shifting yoke	1	－0519
41	40341	Connecting rod of gearbox	1	－0511
42	40342	Axle seat of shifting yoke	1	－0522
43	40343	Declutch shift shaft of gearbox	1	－0523
44	40344	Speed-regulating hand wheel	1	－0501
45	40345	Socket screw M8X55	1	GB70－86

4. 40400 Die Head

40400(A)　1/2”-2” Die Head

40400(B)　2 1/2”-4” Die Head

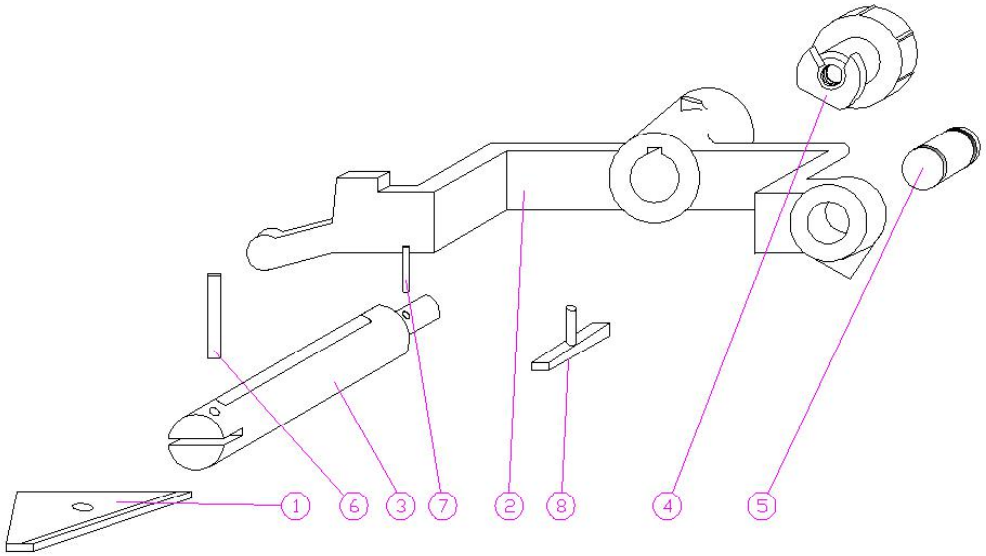


Item	Code	Name	Qt	Remark

1	40401(A) 40401(B)	Curve plate A（small）B（big）*	2	-0102^{A}_{B}
2	40402(A) 40402(B)	Front plate A（small）B（big）*	2	-0103^{A}_{B}
3	40403(A) 40403(B)	Rear plate A（small）B（big）*	2	-0101^{A}_{B}
4	40404(A) 40404(B)	Backing ring A（small）B（big）*	2	-0104^{A}_{B}
5	40405	Hex. Socket holding screw M6X15	1	GB78－85
6	40406	hoodle	8	
7	8002 8003 80011	Die $\frac{1}{2}\sim\frac{3''}{4}$ 、 $1\sim2''$ 、 $2\frac{1}{2}\sim4''$	3	－0107
8	40408	Pinching screw	2	－0110
9	40409	Support shaft	2	－0108
10	40410	Hex. Socket holding screw M12X12	2	GB78－85
12	40412(A) 40412(B)	Size scales $A(\frac{1}{2}''\sim2'')B(\frac{1''}{2}\sim4'')$	2	-0111^{A}_{B}
13	40413	Washer	2	－0106
14	40414	Handle	2	－0105
15	40415	Dowel pin	2	－0109
16	40416	Roller wheel	2	－0112
17	40417	Inner pul-out piece spring (40400A Die Head only)	1	－0113
18	40418	Slotted cap screw M4X8	4	GB67－85
19	40419	Hex. Nut M10（thin）	2	GB170－86
20	40420	Hex. Socket holding screw M8X10	2	GB78－85
21	40421	Hex. Socket holding screw M6X35	8	GB70－85
22	40422	Column pin 6X25	2	GB119－86

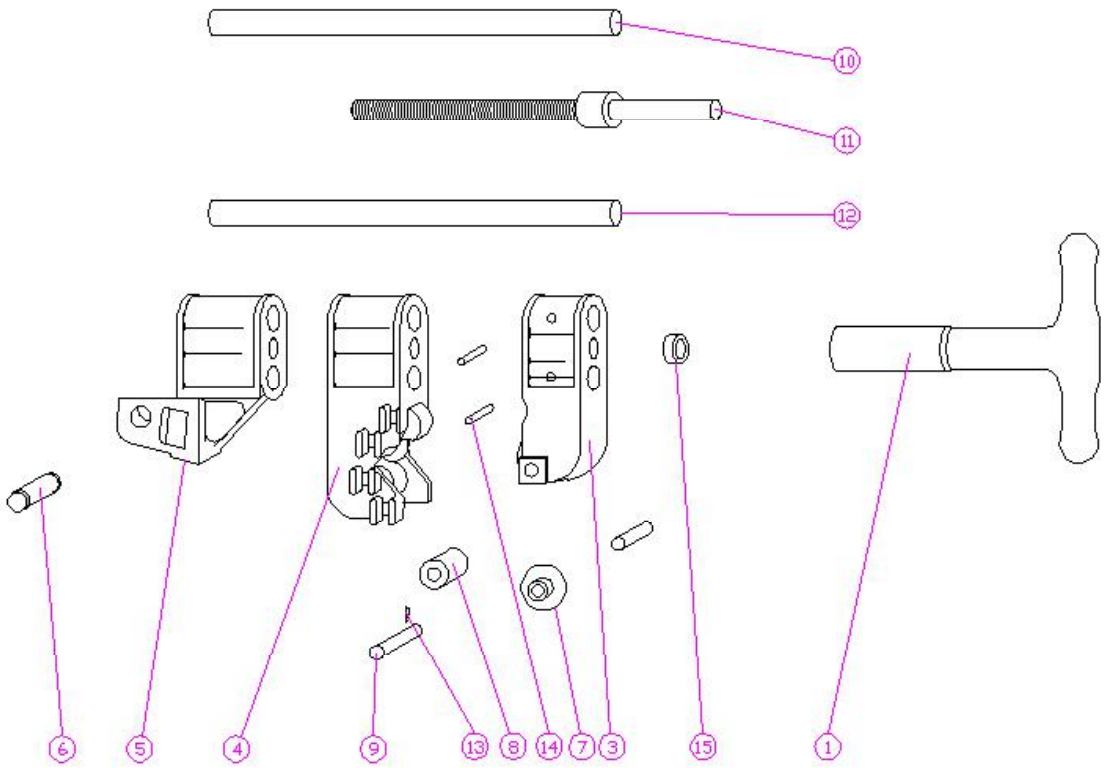
- Die Head(big) is 2 1/2”-4”; Die Head(small) is 1/2”-2”

5. 40500 Reamer Kit



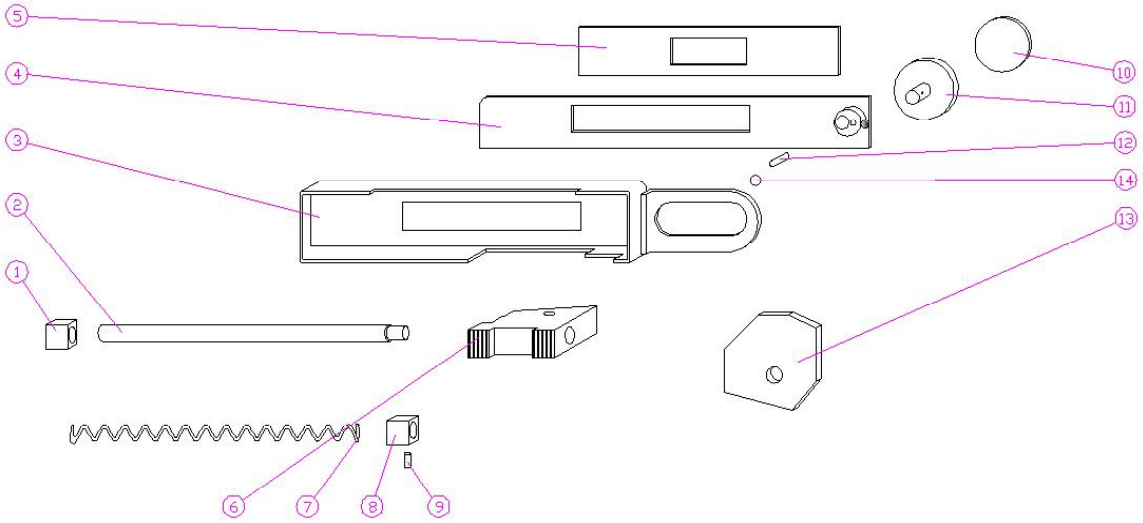
Item	Code	Name	Qty	Remark
1	40501	Blade	1	－0301
2	40502	Holder of reamer cutter	1	－0302
3	40503	Shaft of reamer cutter	1	－0303A
4	40504	Handle	1	－0304
5	40505	Axle pin	1	－0305
6	40506	Flexible round pin 8X50	1	GB879－86
7	40507	Flexible round pin 4X12	1	GB879－86
8	40508	Key	1	－0306

6. 40600 Cutter Kit



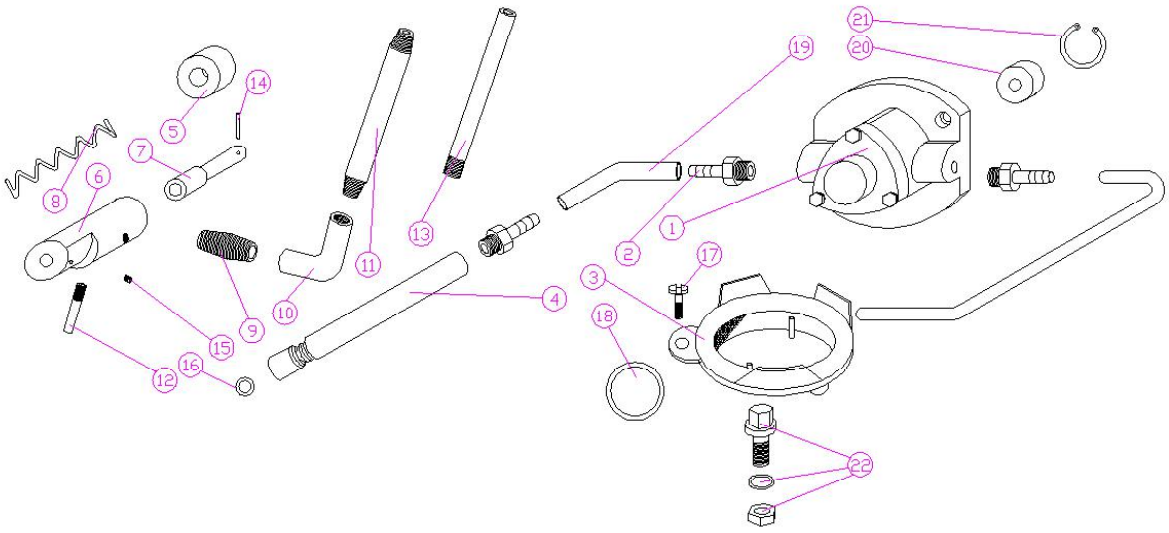
Item	Code	Name	Qty	Remark
1	40601	Cutter handle	1	－0201－1
3	40602	Cutter holder	1	－0203
4	40603	Roller holder	1	－0202
5	40604	Cutter seat frame	1	－0204
6	40606	Dowel pin	1	－0211
7	80606	Cutting wheel	1	－0210
8	40607	Rollers	4	－0208
9	40609	Axle pin	5	－0209
10	40610	Long idler	1	－0206
11	40611	Feed screw	1	－0205
12	40612	Short idler	1	－0207
13	40613	Pin 3X19	5	GB91－86
14	40614	Flexible round pin 6X35	5	GB897－86
15	40615	Bearing 8103	1	GB301－64

7. 40700 Length Changing Apparatus



Item	Code	Name	Qty	Remark
1	40701	Front anti-extrusion ring	1	—0402
2	40702	Axle	1	—0411
3	40703	Body frame	1	—0401
4	40704	Distance plate	1	—0402
5	40705	Dust proof cover	1	—0405
6	40706	Profiling board	1	—0401
7	40707	Spring	1	—0406
8	40708	Rear anti-extrusion ring	1	—0403
9	40709	Bearing spring	2	—0408
10	40710	Size plate	1	—0409
11	40711	Length changing indicator	1	—0407
12	40712	Spring	1	—0413
13	40713	Displacing plate	1	—0410
14	40714	Steel ball 5mm	1	GB308—77

8. 40800 Cooling system



Item	Code	Name	Qty	Remark
1	80801	Oil pump	1	—0801
2	40802	joint	3	—0808
3	40803	Oil-filter	1	—0809
4	40804	Oil pipe	1	—0810
5	40805	Throttle valve handle	1	—0811
6	40806	Throttle valve body	1	—0812
7	40807	Throttle valve core	1	—0813
8	40808	Spring	1	—0814
9	40809	Pipe joint	1	—0815
10	40810	Angle fittings	1	—0816
11	40811	Short oil pipe	1	—0817
12	40812	Oil overflowing pipe	1	—0818
13	40813	Oil draining pipe	1	—0819
14	40814	Column pin 3X24	1	GB119—86
15	40815	Hex. Socket holding screw M5X10	1	GB78—85
16	40816	○ type lock ring 13X1.9	1	GB3452.1—82
17	40817	Slotted cap screw M4X10	1	GB67—85
18	40818	○ type lock ring 33X2.65	1	GB3452.1—82
19	40819	Oil-proof rubber hose	2	
20	40820	Skeleton type rubber oil seal	1	HG4—692—67
21	40821	Circlip for hole Φ22	1	GB893.1—86
22	40822	Screw of oil tank	1	