



**YANCHENG TEDA**

DRILLING AND PRODUCTION EQUIPMENT CO., LTD

**MODEL ZQ127/25**  
**DRILL PIPE POWER TONG**



2012-12

**PARTS OPERATION AND  
MAINTENACE MANUAL**



## SAFETY CAUTION

- 1.Operators should read and understand this manual before operation.
- 2.Operators should wear protective clothing, hard hat and safety boots.
- 3.Tie the back guy according to the instructions.
- 4.Make sure to operate at the side of the tong opening.
- 5.Close the safety door in make-up/break-out operation.
- 6.Keep hands away from rotating parts.
- 7.Keep sundries out of the operation range.
- 8.Cut off the hydraulic source and move the tong off the wellhead during maintenance, changing dies or other parts.
- 9.Never use the power tong under over-pressure or over-torque conditions, otherwise the tubing will be damaged and so the planetary gear of the tong will be damaged.
- 10.Keep the tong turning center according to the center of tubing before make-up/break-out, otherwise the planetary gear of the tong would be damaged.
- 11.Don't dismantle or add parts to the tong.
- 12.Please adopt the original fitting parts made by TEDA.

**If the manual is changed or revised later, we have no obligation to notify any person.  
If the pictures vary from the practicality, please accept the practicality.**



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## 1. Summary

Model ZQ127-25 Drill Pipe Tong is mouth-opening type power tong used for make up and break out 2 3/8"-3 1/2" drill pipe, 2 3/8"-4 1/2" tubing and 4 1/2"-5 1/2" casing in the oil field well workover operation.

## 2. Technology Parameter

### 2.1 Application Range

2 3/8"-3 1/2" drill pipe, 2 3/8"-4 1/2" tubing and 4 1/2"-5 1/2" casing

<b>2.2 Rated Oil Supply Pressure</b>	16Mpa
<b>2.3 Rated Oil Supply Amount</b>	120 lpm
<b>2.4 Rated High Gear Torque</b>	5.1 KN.m
<b>2.5 Rated Low Gear Torque</b>	25 KN.m
<b>2.6 Rated Rotation Speed at High Gear</b>	43 rpm
<b>2.7 Rated Rotation Speed at Low Gear</b>	8 rpm
<b>2.8 Overall Weight</b>	680 kg
<b>2.9 Dimension of Combination tongs</b>	1270×770×780mm

## 3. Installation

### 3.1 Lifting

Connect the lifting bucket to the lifting bar of the master tong, lift the drill pipe tong at the well servicing rig. The lifting point is supposed to be 15m above the wellhead. In the state of free suspension, the center of the tong head is 0.5m away from the wellhead. The suspension height is appropriate when the backup tong clamps the drill pipe connector or the coupling of tubing, or casing.

### 3.2 Leveling

Adjusting the adjusting screws on the lifting bar to keep the drill pipe level, if not, the clamping will fail to work.

### 3.3 Tie the back guy

Tie one end of the back guy to the rig, the other end to the seat of the back guide pole of the drill pipe tong, the back guy is supposed to be able to bear load of 50 KN. When the drill pipe is in the making-up state, the back guy should be vertical to the drill pipe so as to make the operator safety.

## 4.Operation Instruction

### 4.1 The Choice of Die Seats

Part No.	Part Name	Application Range	Steel Mark	Note
ZQ25.1.1-7(1)	Die Seat (1)	2 3/8" drill pipe, 3 1/2" tubing	3 1/2"	
ZQ25.1.1-7(2)	Die Seat (2)	2 7/8" drill pipe, 4" tubing	4"	
ZQ25.1.1-7(3)	Die Seat (3)	4 1/2" tubing, 3 1/2" tubing coupling, 4 1/2" casing	4 1/2"	For selection
ZQ25.1.1-7(4)	Die Seat (4)	3 1/2" drill pipe, 4" tubing coupling, 5" casing, 4 1/2" casing coupling	5"	
ZQ25.1.1-7(5)	Die Seat (5)	4 1/2" tubing coupling, 5 1/2" casing, 5" casing coupling	5 1/2"	
ZQ25.1.1-7(6)	Die Seat (6)	5 1/2" casing coupling	6 1/8"	For selection
ZQ25.1.1-7(7)	Die Seat (7)	2 7/8" tubing	2 7/8"	For selection
ZQ25.1.1-7(8)	Die Seat (8)	2 3/8" tubing	2 3/8"	For selection

Choose die seats according to the seat marks and part numbers.

### 4.2 Choice of dies

Part No.	Part Name	Application Range	Steel Mark	Note
XYQ12.Z-01.12(1)	Die Seat (1)	2 3/8"-4 1/2" tubing	73-78	
XYQ12.Z-01.12(2)	Die Seat (2)	2 3/8"-3 1/2" drill pipe, 3 1/2"-4 1/2" tubing, 3 1/2" tubing coupling, 4 1/2" casing	89-114	
XYQ12.Z-01.12(3)	Die Seat (3)	3 1/2" drill pipe, 4"-4 1/2" tubing coupling, 5"-5 1/2" casing, 5"-5 1/2" casing coupling	121-156	

Choose dies according to the steel marks and part numbers.

### 4.3 Adjustment method for the suspended height of power tong

#### 4.3.1 Lifting

Turn off the throttle valve of the lifting bucket valve, then open the stop valve, the power tong will be Lifted. (See fig1)

#### 4.3.2 Drop

Open the throttle valve of the lifting bucket valve, then open the stop valve, the power tong will be dropped.(See fig 1)

#### 4.3.3 Lock height

When the power tong will be lifted or dropped at the predetermined height, turn off the stop valve, then the height is locked. Just now open the throttle valve,the power tong can be worked in make up and break out condition. (See fig 2)

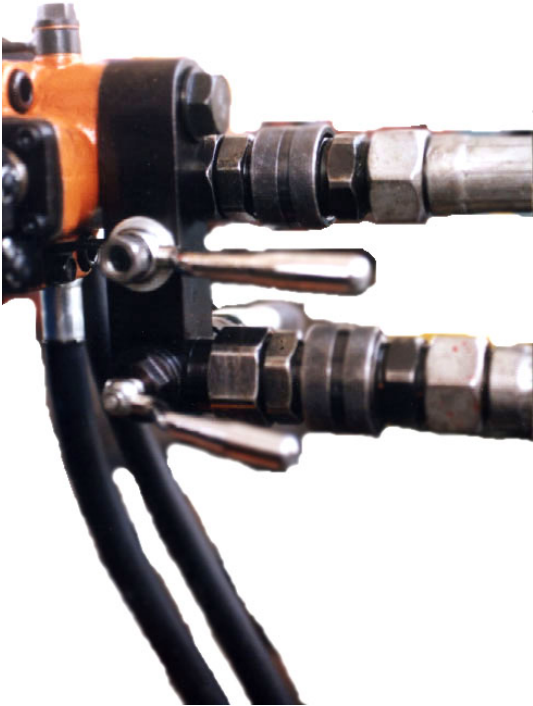


Fig 1



Fig 2

4.4 The pin axle of the guide pole must be moved to the lowest hole when break out operation.

## 5. Maintenance and lubrication

5.1 Before work, the fastening screws must be checked to see whether they are loose, if loose, the screws must be tightened.

5.2 Before work, enough lubricating grease should be added to each transmitting part.

5.3 After each use, the tong body must be checked to clean up water or oil stain in time.

5.4 After each well operation is over, the tong must be cleaned with diesel fuel, and lubricating grease must be added to each transmitting part after cleaning.

5.5 After each operation, the steam is prohibited to clean the power tong for it could cause the grease lost.

5.6 The temperature of the hydraulic should be kept below 65°C, overheating may lead to the failure of the hydraulic system sealing.

5.7 The hydraulic oil must be kept clean to guarantee the normal filtering of the oil filter, if the oil is dirty, it should be replaced in time.

5.8 The choice of hydraulic oil

5.8.1 YC-N46 low freezing hydraulic oil, suitable ambient temperature: -20°C-+40°C.

5.8.2 YB-N46 wear resistant hydraulic oil, suitable ambient temperature: -10°C-+40°C.

5.8.3 YA-N46 ordinary hydraulic oil, suitable ambient temperature: 0°C-+40°C.

**6. Common troubles and remedy**

Common troubles	Reason	Remedy
Tong dies slip	Die groove fill with hard objects	Cleaning up sundries in the groove
	Dies over worn	Replace new dies
	Tong body not level	Adjusting tong level (master tong and backup tong)
Master tong head backup tong head not in alignment with the opening	Retaining pin can't be contained by reset knob axle	Turn the reset knob and reset again
Master tong clamps well while backup tong slips	The turning direction of jaw plate frame of backup tong opposite to the turning direction of the master tong	Exchange the positions of the two hoses.



7. Attached figures and part list.

7.1 General assembly (Fig1. Table1)

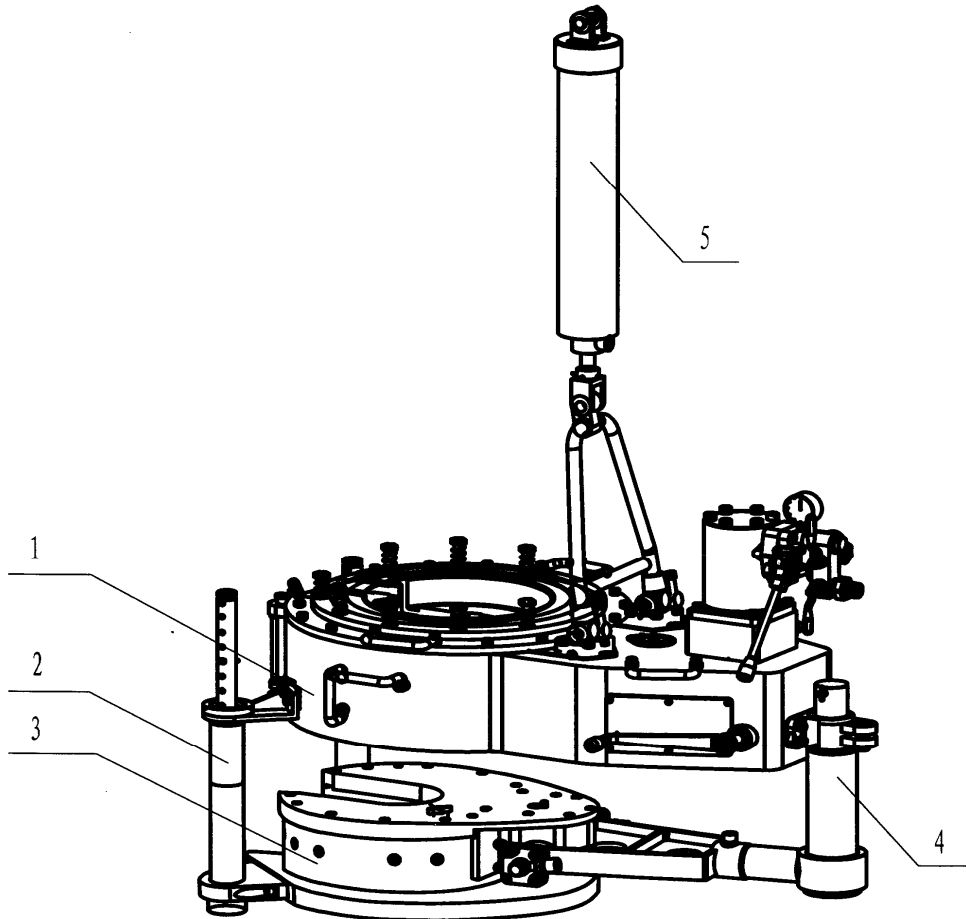


Fig1. General assembly

Table1. Detailed table for General assembly

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-1	ZQ25.1	Master tong	1
2	ZQ25-3	ZQ25.3	Front guide pole assembly	2
3	ZQ25-2	ZQ25.2	Backup tong	1
4	ZQ25-4	ZQ25.4	Back guide pole assembly	1
5	ZQ25-5	XYQ12.YD-01.0	Hydraulic bucket	1

7.2 Master tong (Fig2. Table2)

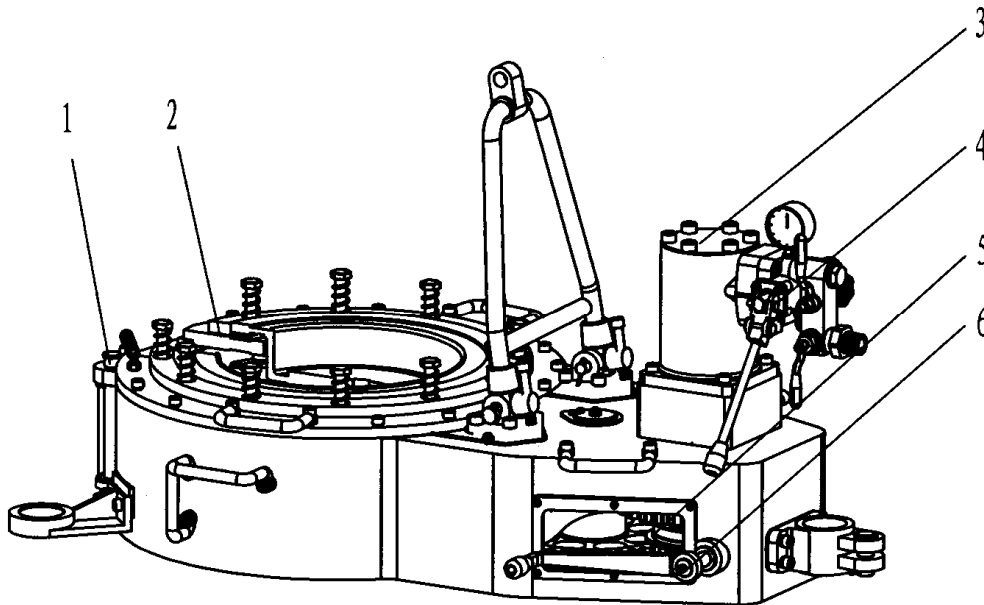


Fig2. Master tong

Table2. Detailed table for Master tong

Item	Purchase No.	Part No.	Part name and Description	QTY
1			Shell assembly and parts	1
2			tong head assembly and brake mechanism	1
3	ZQ25-30		Hydraulic motor J6K-625	1
4			Hand control valve and lift valve	1
5			Drive gear assembly and parts	1
6			Shift mechanism assembly	1

7.2.1 Shell assembly and parts (Fig3. Table3)

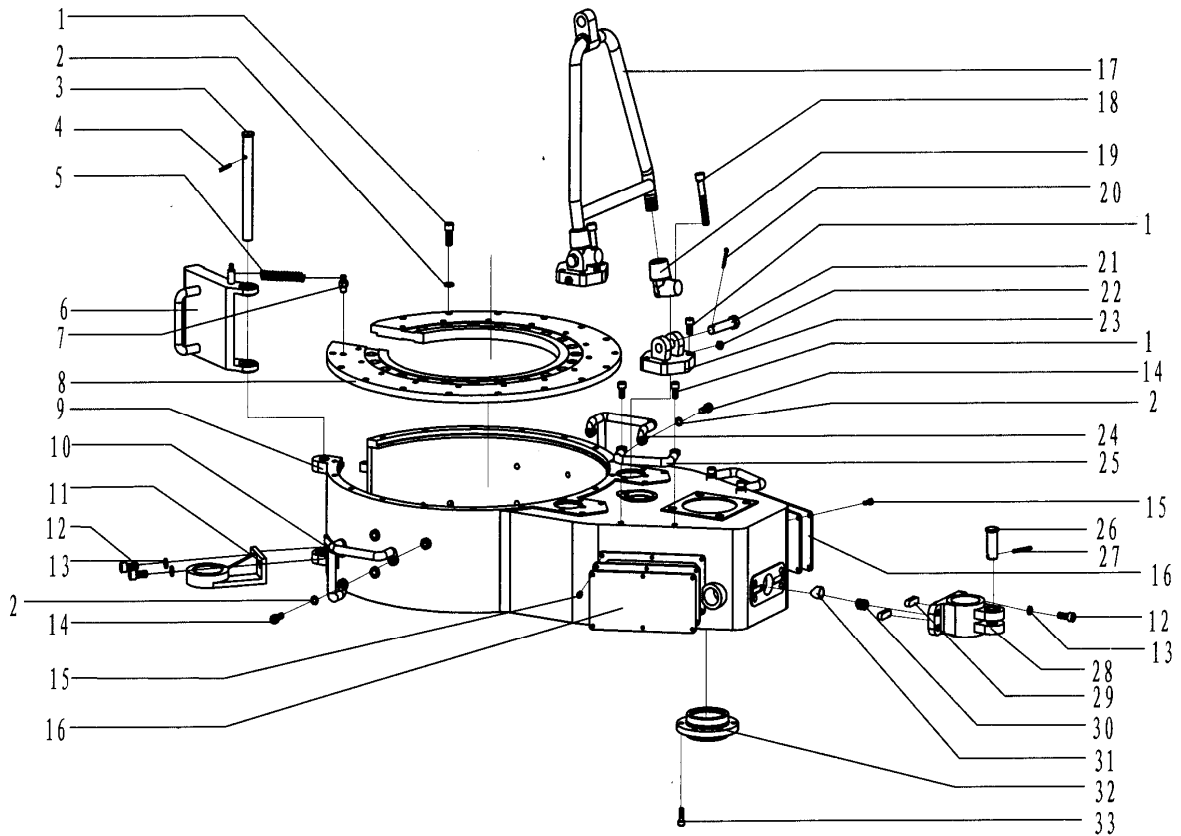


Fig3. Shell assembly and parts

Table3. Detailed table for Shell assembly and parts

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-47	GB70	Hexagon socket head cap screw M10×25	29
2	ZQ25-111	GB93	Washer 10	23
3	ZQ25-126	ZQ25.1.9-1	Safety door shaft	1
4	ZQ25-127	GB91	Cotter pin 5×35	1
5	ZQ25-53		Tension spring (Φ17×95)	1
6	ZQ25-125	ZQ25.1.9.1	Main body of safety door	1
7	ZQ25-121	ZQ25.1.8-6	Pin shaft	1
8	ZQ25-116	ZQ25.1.8-1	Tong head cover	1
9	ZQ25-12	ZQ25.1-2	Tong body	1
10	ZQ25-8	XYQ3C.Z.3	Fore handle (RH)	1
11	ZQ25-6	ZQ25.1-1	Fore support seat	2
12	ZQ25-7	GB70	Hexagon socket head cap screw M12×25	4
13	ZQ25-202	GB93	Washer 12	4
14	ZQ25-10	GB5781	Hex head bolt M10×20	6
15	ZQ25-177	GB65-85	Slotted cylinder head screw M6×10	12
16	ZQ25-203	ZQ25.1-14A	Name plate	1
17	ZQ25-48	ZQ25.1.7	Hanging rod	1
18	ZQ25-51	GB70	Hexagon socket head cap screw M12×100	2
19	ZQ25-204	ZQ25.1.7-1A	Hanging caput	2
20	ZQ25-50	GB91	Cotter pin 4×30	2
21	ZQ25-49	ZQ25.1-16	Hanging pin shaft	2
22	ZQ25-29	GB1152	Oil cup M10×1	2
23	ZQ25-46	ZQ25.1-13A	hanging seat	2
24	ZQ25-9	XYQ3C.Z.4	Fore handle (LH)	1
25	ZQ25-55	XYQ3C.Z-37	Back handle	2
26	ZQ25-26	XYQ12.Z-62	Tail guy pin	1
27	ZQ25-27	GB91	Cotter pin 5×35	1
28	ZQ25-24	ZQ25.1-4	Back guide rod seat	1
29	ZQ25-25	GB1096	Parallel key 12×40	2
30	ZQ25-23	XYQ3C.Z-21	spring	1
31	ZQ25-22	XYQ12.Z.1-21	Locating block	1
32	ZQ25-100	ZQ25.1.5-8	Bearing cover	1
33	ZQ25-20	GB70	Hexagon socket head cap screw M8×25	6

7.2.2 Tong head assembly(Fig4. Table4)

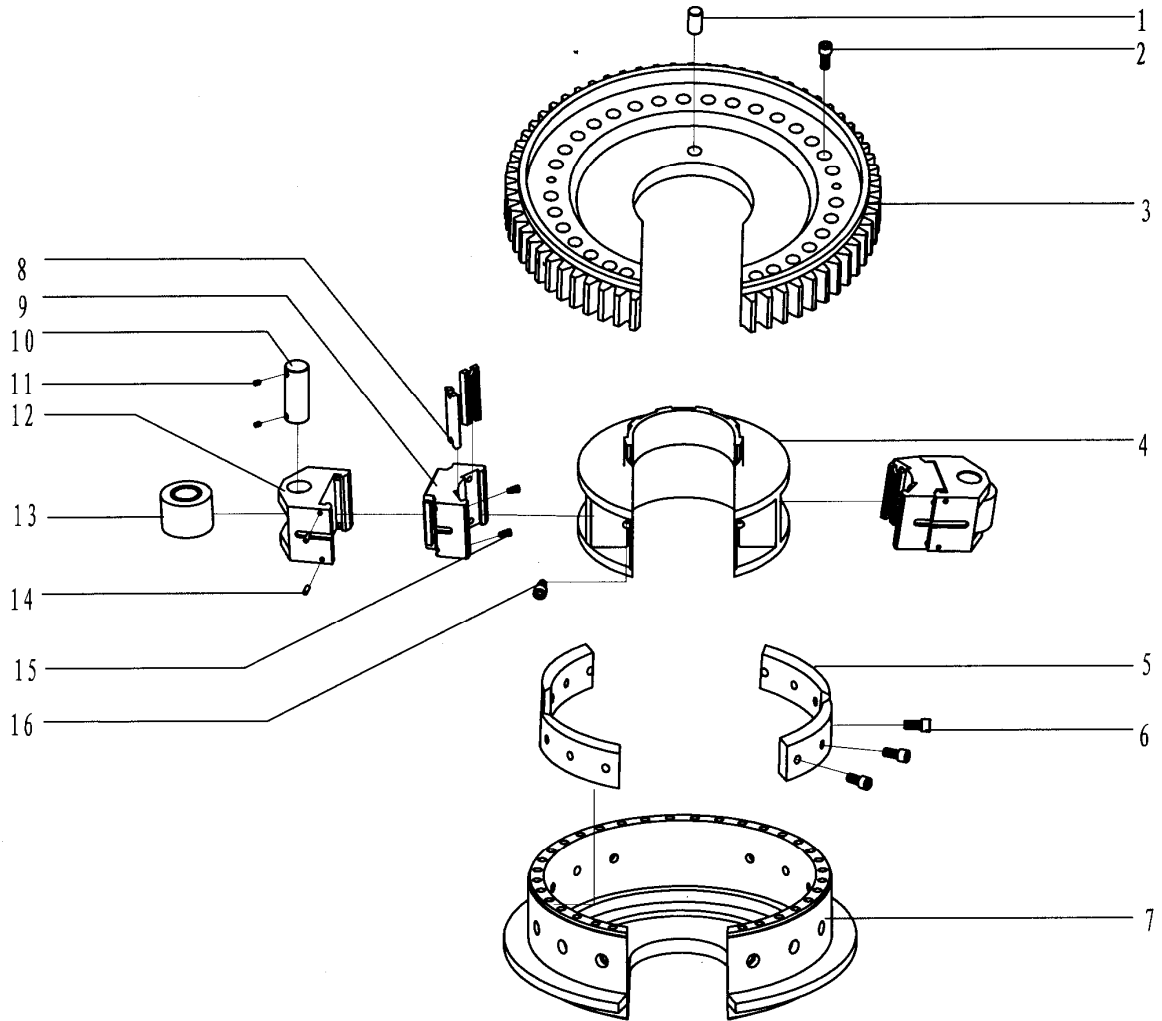


Fig4. tong head assembly

Table4. Detailed table for tong head assembly

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-69	ZQ25.1.1-9	Retainer pin	1
2	ZQ25-70	GB70	Hexagon socket head cap screw M12×30	30
3	ZQ25-68	ZQ25.1.1-8	Open gear	1
4	ZQ25-58	ZQ25.1.1-3	Jaw set bracket	1
5	ZQ25-57	ZQ25.1.1-2	Ramp	4
6	ZQ25-7	GB70	Hexagon socket head cap screw M12×25	12
7	ZQ25-56	ZQ25.1.1-1	Main body	1
8	ZQ25-65(1)	XYQ12.Z-01.12(1)	Die (1)	4
	ZQ25-65(2)	XYQ12.Z-01.12(2)	Die (2)	4
	ZQ25-65(3)	XYQ12.Z-01.12(3)	Die (3)	4
9	ZQ25-64(1)	ZQ25.1.1-7(1)	Die seat (1)	2
	ZQ25-64(2)	ZQ25.1.1-7(2)	Die seat (2)	2
	ZQ25-64(3)	ZQ25.1.1-7(3)	Die seat (3)	2
	ZQ25-64(4)	ZQ25.1.1-7(4)	Die seat (4)	2
	ZQ25-64(5)	ZQ25.1.1-7(5)	Die seat (5)	2
	ZQ25-64(7)	ZQ25.1.1-7(7)	Die seat (7)	2
	ZQ25-64(8)	ZQ25.1.1-7(8)	Die seat (8)	2
10	ZQ25-62	ZQ25.1.1-6	Roller shaft	2
11	ZQ25-63	GB71	Slotted cone end fastening screw M8×10	4
12	ZQ25-59	ZQ25.1.1-4	Jaw set	2
13	ZQ25-61	ZQ25.1.1-5	Roller	2
14	ZQ25-60	GB119	Cylindrical pin 6×18	4
15	ZQ25-66	XYQ12.Z-01.11	Screw retainer pin	20
16	ZQ25-67	XYQ12.B-10	Set screw	2

7.2.3 Tong head brake mechanism(Fig5. Table5)

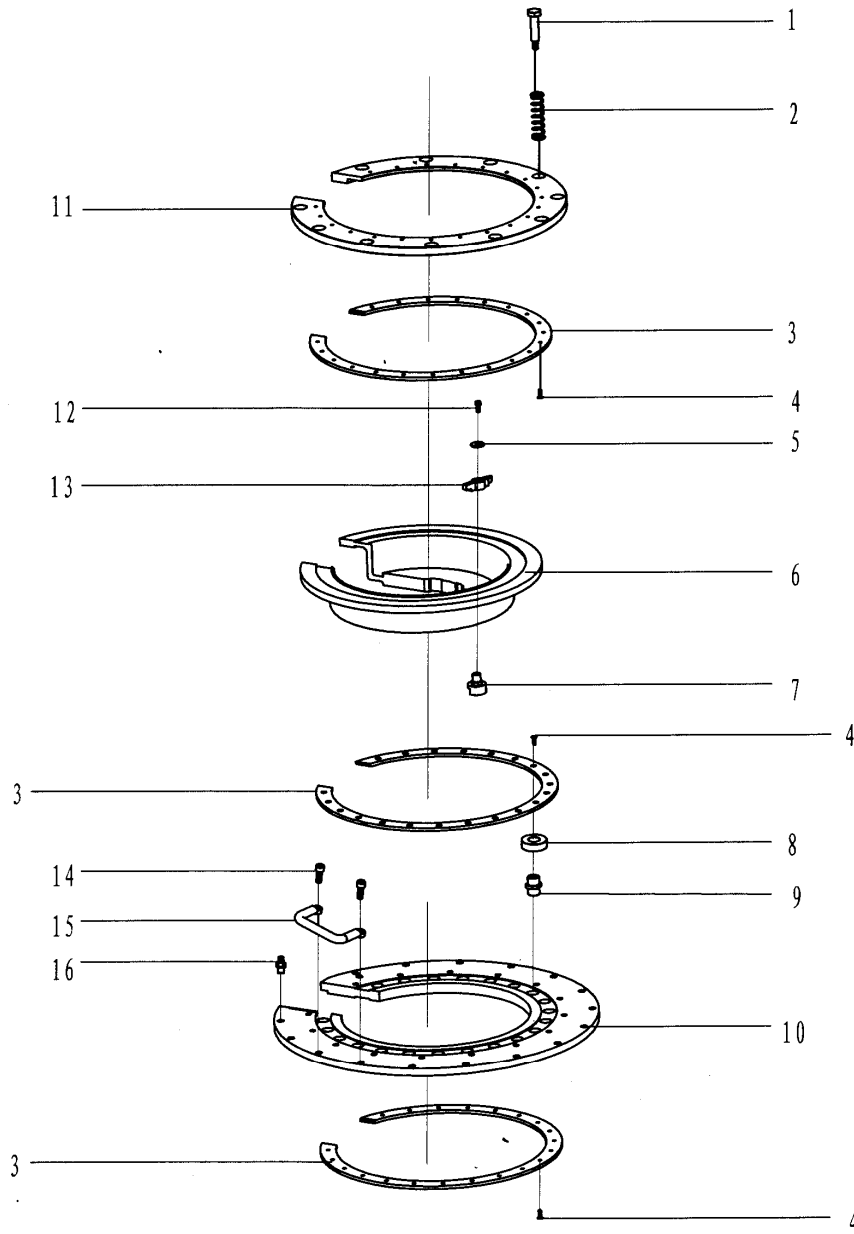


Fig5. tong head brake mechanism

Table5. Detailed table for tong head brake mechanism

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-124	ZQ25.1.8-9	Brake blot	11
2	ZQ25-123	ZQ25.1.8-8	Brake spring	11
3	ZQ25-117	ZQ25.1.8-2	Friction disc	3
4	ZQ25-16	GB68	Slotted countersunk screw M6×12	63
5	ZQ25-109	ZQ25.1.6-2	shim	1
6	ZQ25-118	ZQ25.1.8-3	Brake steel plate	1
7	ZQ25-119	ZQ25.1.8-4	Knob shaft	1
8	ZQ25-14	XYQ12.Z-03	Centralizing roller	21
9	ZQ25-13	ZQ25.1-3	Centralizing roller shaft	21
10	ZQ25-116	ZQ25.1.8-1	Tong head cover	1
11	ZQ25-122	ZQ25.1.8-7	Brake disc	1
12	ZQ25-87	GB70	Hexagon socket head cap screw M6×10	1
13	ZQ25-120	ZQ25.1.8-5	knob	1
14	ZQ25-47	GB70	Hexagon socket head cap screw M10×25	4
15	ZQ25-55	XYQ3C.Z-37	Back handle	2
16	ZQ25-121	ZQ25.1.8-6	Pin shaft	1



7.2.4 Idle shaft assembly (Fig6. Table6)

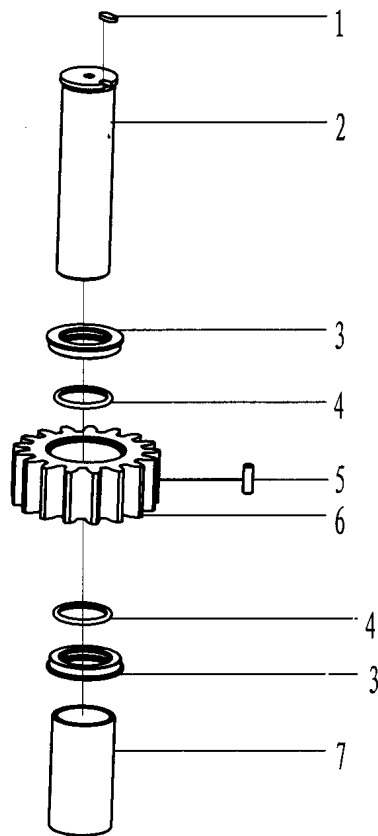


Fig6.Idle shaft assembly

Table6. Detailed table for Idle shaft assembly

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-86	XYQ3C.Z-5	Locating disc	2
2	ZQ25-80	ZQ25.1.3-4	Idler shaft	2
3	ZQ25-76	ZQ25.1.3-2	Seal ring (1)	4
4	ZQ25-77	GB1235-76	O ring 63×5.7	4
5	ZQ25-75	ZQ25.1.3-1	idler (1)	2
6	ZQ25-78		Roller Φ10×30	40
7	ZQ25-79	ZQ25.1.3-3	Shaft sleeve (1)	2

7.2.5 Duplex gear assembly (Fig7. Table7)

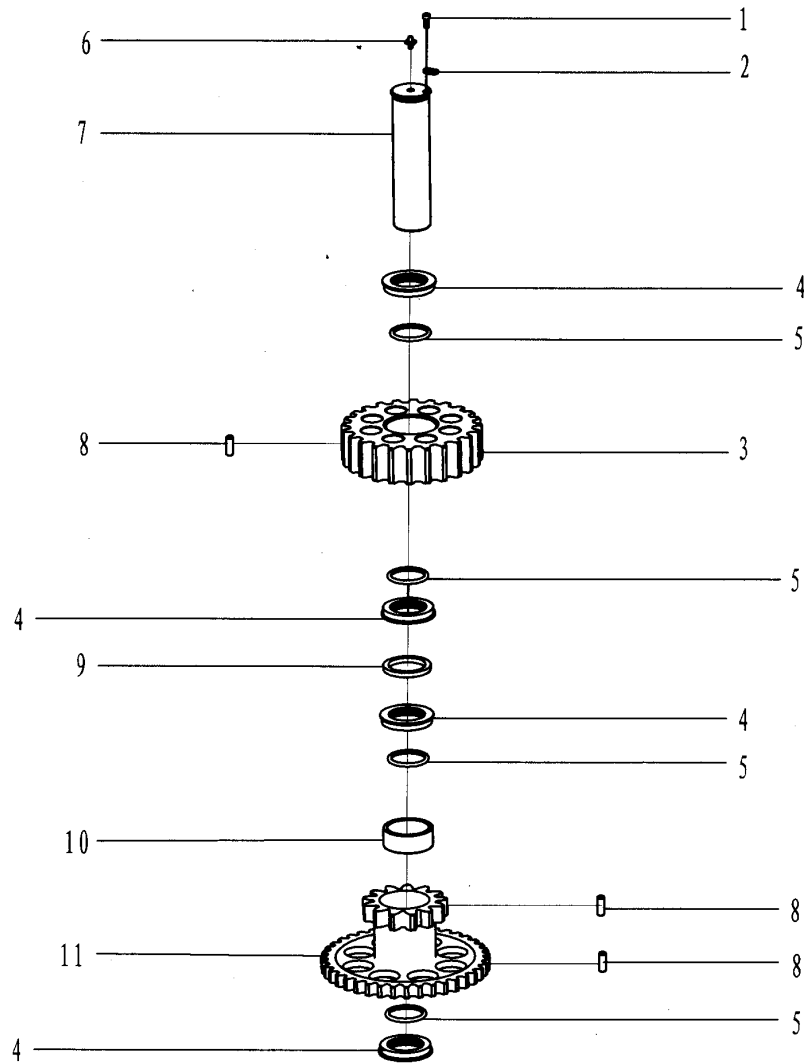


Fig7. Duplex gear assembly

Table7. Detailed table for Duplex gear assembly

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-87	GB70	Hexagon socket head cap screw M6×10	1
2	ZQ25-86	XYQ3C.Z-5	Locating disc	1
3	ZQ25-84	ZQ25.1.4-4	Idler (2)	1
4	ZQ25-76	ZQ25.1.3-2	Seal ring (1)	4
5	ZQ25-77	GB1235-76	O ring 63×5.7	4
6	ZQ25-29	GB1152	Oil cup M10×1	1
7	ZQ25-85	ZQ25.1.4-5	Duplex shaft	1
8	ZQ25-78		Roller Φ10×30	60
9	ZQ25-83	ZQ25.1.4-3	shim	1
10	ZQ25-82	ZQ25.1.4-2	Shaft sleeve (2)	1
11	ZQ25-81	ZQ25.1.4-1	Duplex gear (1)	1

7.2.6 Power input shaft assembly (Fig8. Table8)

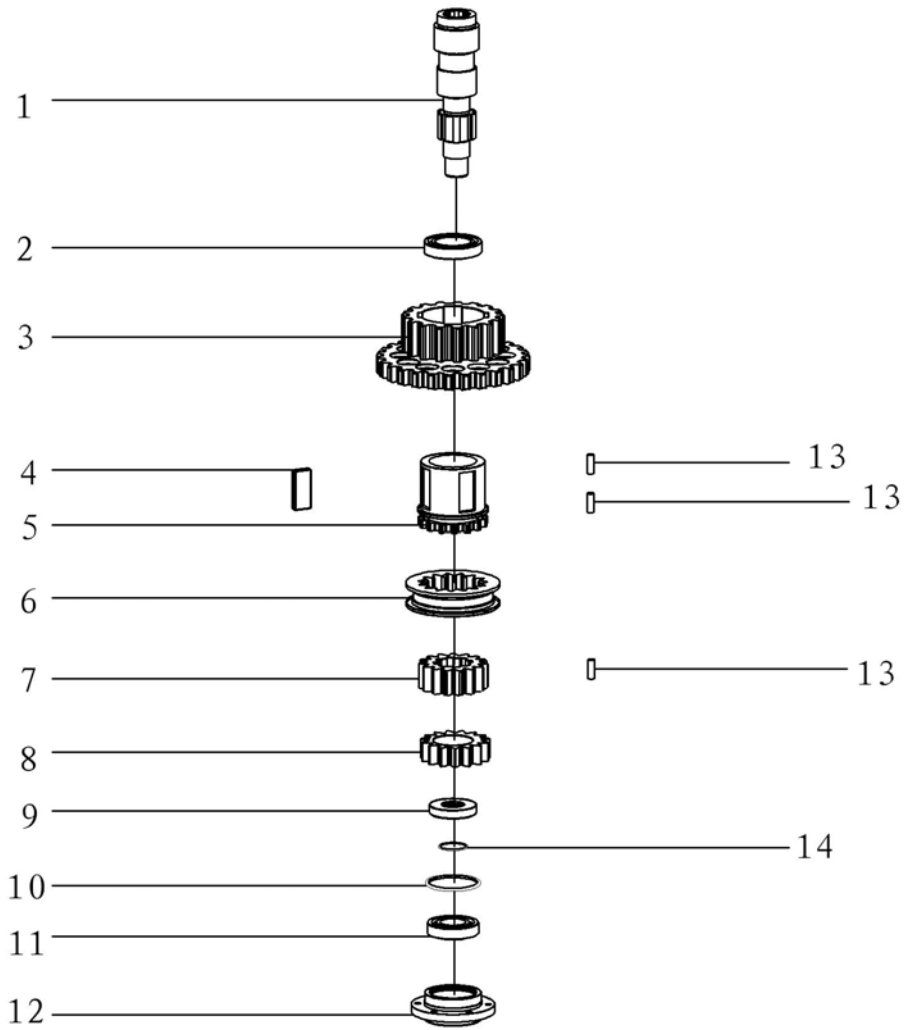


Fig8. Power input shaft assembly

Table8. Detailed table for Power input shaft assembly

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-88	ZQ25.1.5-1	Power input shaft	1
2	ZQ25-89	GB276	Deep groove ball bearing 112	1
3	ZQ25-92	ZQ25.1.5-3	Duplex gear (2)	1
4	ZQ25-91	GB1567	Thin flat key 28×10×63	4
5	ZQ25-90	ZQ25.1.5-2	Clutch gear	1
6	ZQ25-94	ZQ25.1.5-5	Inner gear sleeve	1
7	ZQ25-93	ZQ25.1.5-4	Inner spline gear	1
8	ZQ25-95	ZQ25.1.5-6	Shifting gear	1
9	ZQ25-96	ZQ25.1.5-7	Seal ring (2)	1
10	ZQ25-99	GB1235	O ring 80×3.1	1
11	ZQ25-98	GB276	Deep groove ball bearing 207	1
12	ZQ25-100	ZQ25.1.5-8	Bearing cover	1
13	ZQ25-78		Roller Φ10×30	68
14	ZQ25-97	GB1235	O ring 40×3.1	1

7.2.7 Shifting mechanism assembly (Fig9. Table9)

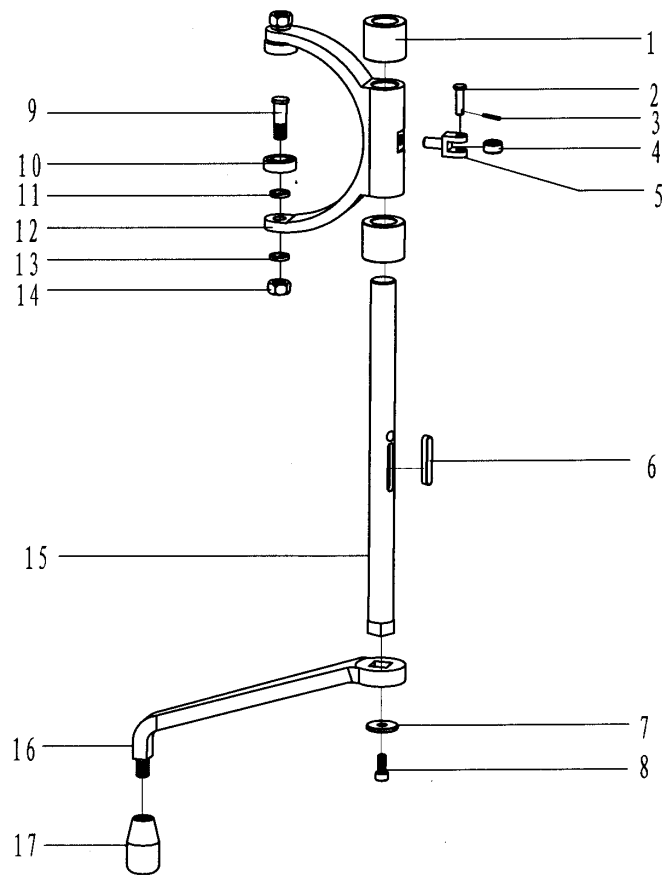


Fig9. Shifting mechanism assembly

Table9. Detailed table for Shifting mechanism assembly

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-101	XYQ12.Z-19.01	Shaft sleeve	2
2	ZQ25-104	XYQ3C.Z.6-4	Roller shaft	1
3	ZQ25-105	GB91	Cotter pin 2×10	1
4	ZQ25-103	XYQ3C.Z.6-3	roller	1
5	ZQ25-106	XYQ3C.Z.6-5	Roller support seat	1
6	ZQ25-107	GB1096	Flat key 6×6×40	1
7	ZQ25-109	ZQ25.1.6-2	shim	1
8	ZQ25-87	GB70	Hexagon socket head cap screw M6×10	1
9	ZQ25-112	XYQ12.Z-19.04	Bolt shaft	2
10	ZQ25-114	GB276	Deep groove ball bearing 100	2
11	ZQ25-113	GB848	Washer 10	2
12	ZQ25-102	XYQ12.Z-19.02	fork	1
13	ZQ25-111	GB93	Washer 10	2
14	ZQ25-110	GB6170	Nut M10	2
15	ZQ25-108	ZQ25.1.6-1	Fork shaft	1
16	ZQ25-115	ZQ25.1.6.1	Operating handle assembly	1
17	ZQ25-205	XYQ3C.Z.5-10	Handle	1

7.3 Backup tong

7.3.1 Backup tong head assembly (Fig10. Table10)

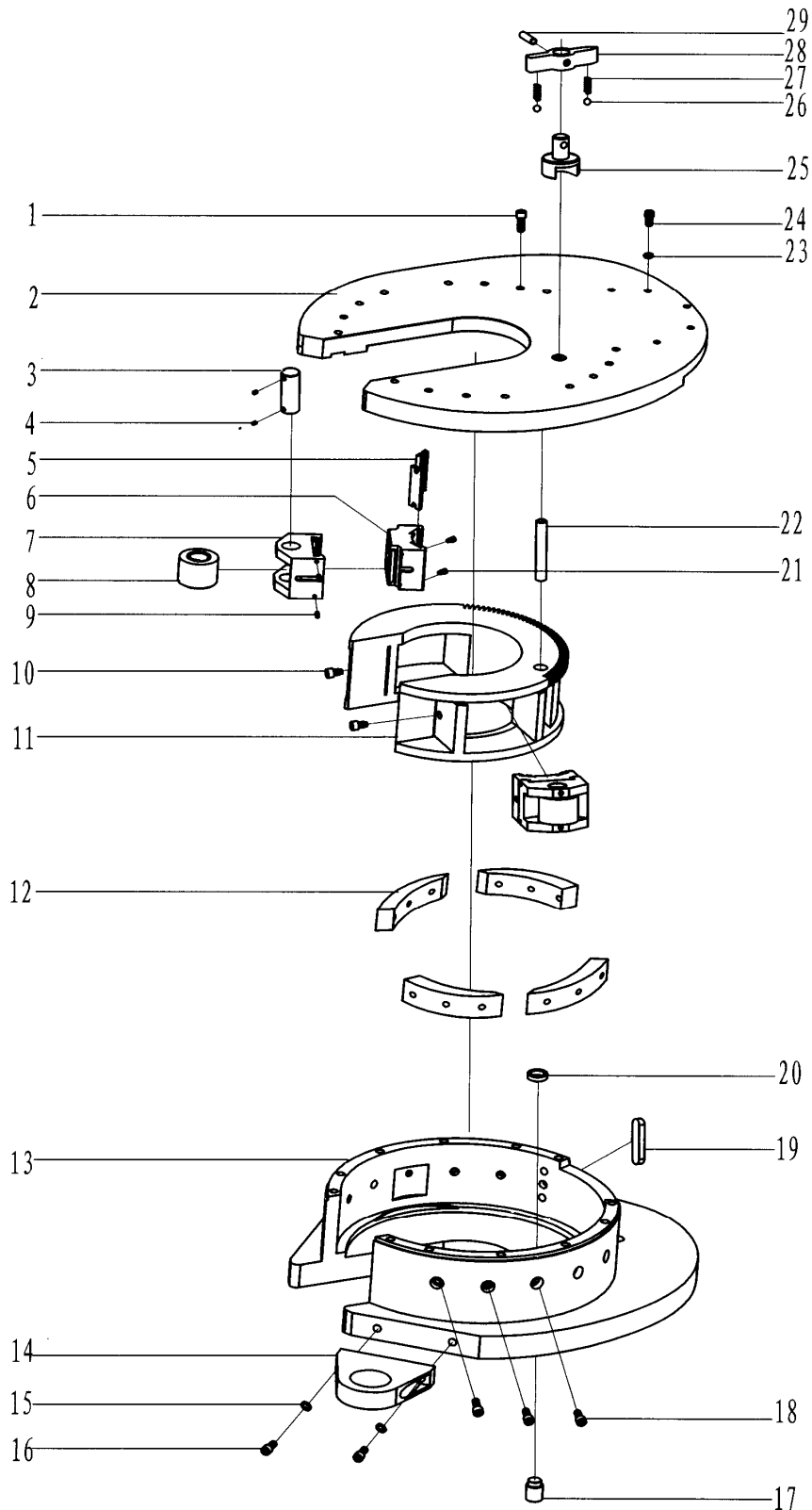


Fig10. Backup tong head assembly

Table10. Detailed table for Backup tong head assembly

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-192	GB70	Hexagon socket head cap screw M10×30	12
2	ZQ25-146A	ZQ25.2-10A	Cover board	1
3	ZQ25-62	ZQ25.1.1-6	Roller shaft	2
4	ZQ25-63	GB71	Slotted cone end fastening screw M8×10	4
5	ZQ25-65(1)	XYQ12.Z-01.12(1)	Die (1)	4
	ZQ25-65(2)	XYQ12.Z-01.12(2)	Die (2)	4
	ZQ25-65(3)	XYQ12.Z-01.12(3)	Die (3)	4
6	ZQ25-64(1)	ZQ25.1.1-7(1)	Die seat (1)	2
	ZQ25-64(2)	ZQ25.1.1-7(2)	Die seat (2)	2
	ZQ25-64(3)	ZQ25.1.1-7(3)	Die seat (3)	2
	ZQ25-64(4)	ZQ25.1.1-7(4)	Die seat (4)	2
	ZQ25-64(5)	ZQ25.1.1-7(5)	Die seat (5)	2
	ZQ25-64(6)	ZQ25.1.1-7(6)	Die seat (6)	2
	ZQ25-64(7)	ZQ25.1.1-7(7)	Die seat (7)	2
	ZQ25-64(8)	ZQ25.1.1-7(8)	Die seat (8)	2
7	ZQ25-59	ZQ25.1.1-4	Jaw set	2
8	ZQ25-61	ZQ25.1.1-5	Roller	2
9	ZQ25-60	GB119	Cylindrical pin 6×18	9
10	ZQ25-67	XYQ12.B-10	Set screw	2
11	ZQ25-131A	ZQ25.2-4A	Jaw set bracket	1
12	ZQ25-130	ZQ25.2-3A	Ramp	4
13	ZQ25-129A	ZQ25.2-2C	Main body	1
14	ZQ25-128A	ZQ25.2-1B	Fore support seat	2
15	ZQ25-188	GB/T93	Spring washer 12	26
16	ZQ25-189	GB/T70	Hexagon socket head cap screw M12×40	4
17	ZQ25-190	ZQ25.2-18	Centralizing shaft	1
18	ZQ25-7	GB/T70	Hexagon socket head cap screw M12×25	20
19	ZQ25-136	GB1096	Ordinary parallel key 16×50	1
20	ZQ25-191	ZQ25.2-19	Centralizing roller	
21	ZQ25-66	ZQ25.1.1-8	Screw stop pin	24
22	ZQ25-132A	ZQ25.2-5A	Stop pin	1
23	ZQ25-193	GB/T93	Spring washer 6	5
24	ZQ25-152	GB70	Hexagon socket head cap screw M6×25	5
25	ZQ25-183	ZQ25.1.8-4	Knob shaft	1
26	ZQ25-186	GB308	Steel ball Φ5	2
27	ZQ25-185	XYQ3C.B-10	spring	2
28	ZQ25-184	ZQ25.1.8-5A	knob	1
29	ZQ25-187	GB119	Cylindrical pin 5×25	1

7.3.2 Backup tong tail assembly (Fig11. Table11)

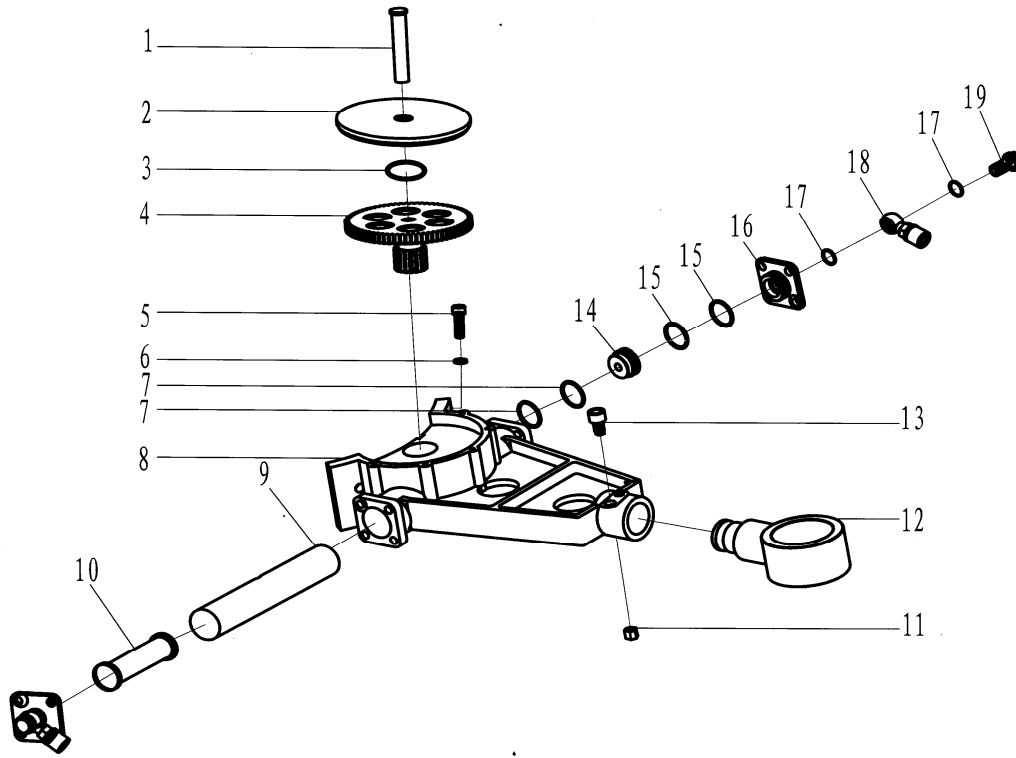


Fig11. Backup tong tail assembly

Table11. Detailed table for Backup tong tail assembly

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-148A	ZQ25.2-11A	Shaft (1)	1
2	ZQ25-151A	ZQ25.2-13A	Gear cover	1
3	ZQ25-150	GB1235	O ring 50×3.1	1
4	ZQ25-149	ZQ25.2-12	Duplex gear	1
5	ZQ25-138	GB5781	Hex head bolt M16×40	4
6	ZQ25-137	GB93	Standard spring washer 16	4
7	ZQ25-140	GB1235	O ring 45×3.1	4
8	ZQ25-135	ZQ25.2-7	Tail handle	1
9	ZQ25-156	ZQ25.2-16	Cylinder sleeve	1
10	ZQ25-157	ZQ25.2-17	Rack plunger	1
11	ZQ25-194	GB/T41	Nut M12	2
12	ZQ25-15	ZQ25.2-15	Tail seat	1
13	ZQ25-195	GB/T5780	Hex bolt M12X90	2
14	ZQ25-145	ZQ25.2-9	Piston	2
15	ZQ25-141	GB1235-75	O check ring 45	4
16	ZQ25-139	ZQ25.2-8	Cylinder cover	2
17	ZQ25-142	GB1235	O ring 22x2.4	4
18	ZQ25-144	JB/ZQ4427	Hose adaptor 10 II -1400	2
19	ZQ25-143	XYQ3C.B-21 (1)	Oil passage bolt (1)	2



7.4 Fore guide pole assembly (Fig12. Table12)

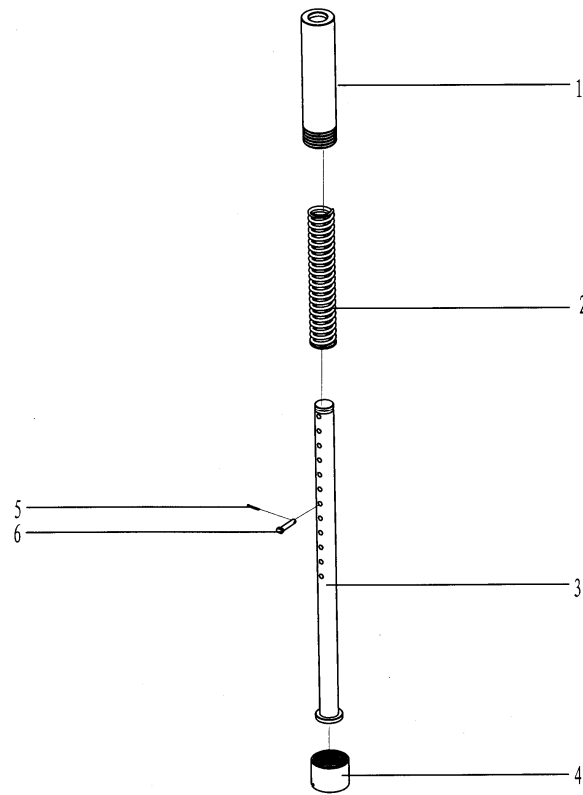


Fig12. Fore guide pole assembly

Table12. Detailed table for Fore guide pole assembly

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-164	ZQ25.3.1	Fore guide pole assembly	1
2	ZQ25-166	XYQ12.QD-04	Fore guide pole spring	1
3	ZQ25-165(1)	XYQ12.QD-03(1)	Fore guide pole(1)	1
	ZQ25-165(3)	XYQ12.QD-03(3)	Fore guide pole(3)	
4	ZQ25-163	XYQ12.QD-01	Fore guide pole seat	1
5	ZQ25-168	GB91	Cotter pin 2.5×20	1
6	ZQ25-167	XYQ12.QD-05	Pin shaft	1

7.5 Back guide pole assembly (Fig13. Table13)

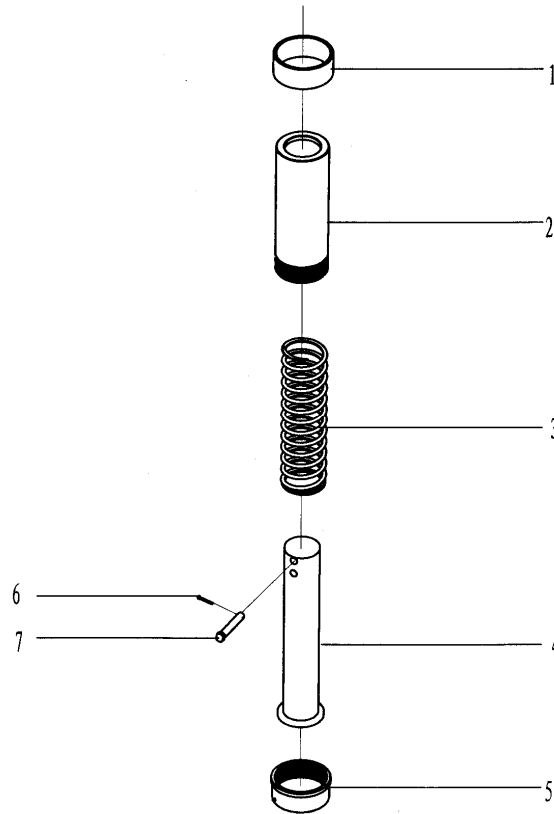


Fig13. Back guide pole assembly

Table13. Detailed table for Back guide pole assembly

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-175	ZQ25.4-1	Sleeve	1
2	ZQ25-170	ZQ25.4.1	Back guide pole assembly	1
3	ZQ25-172	XYQ12.HD-06A	Back guide pole spring	1
4	ZQ25-171(1)	XYQ12.HD-03(1C))	Back guide pole(1)	1
	ZQ25-171(3)	XYQ12.HD-03 (3)	Back guide pole(3)	1
5	ZQ25-169	XYQ12.HD-01	Back guide pole seat	1
6	ZQ25-174	GB91	Cotter pin 3.2×20	1
7	ZQ25-173	XYQ12.HD-06A	Pin shaft	1

**8 .Easy-damaged parts list**

Item	Purchase No.	Part No.	Part name and Description	QTY
1	ZQ25-13	ZQ25.1-3	Centralizing roller shaft	37
2	ZQ25-14	XYQ12.Z-03	Centralizing roller	37
3	ZQ25-16	GB68	Slotted countersunk screw M5×10	79
4	ZQ25-33	GB1235	O ring 28×2.4	2
5	ZQ25-37	GB1235	O ring 24×2.4	8
6	ZQ25-40	GB1235	O ring 36×3.5	4
7	ZQ25-43	GB1235	O ring 32×3.5	2
8	ZQ25-45	GB1235	O ring 38×3.5	2
9	ZQ25-65(1)	XYQ12.Z-01.12(1)	Die (1)	
10	ZQ25-65(2)	XYQ12.Z-01.12(2)	Die (2)	
11	ZQ25-65(3)	XYQ12.Z-01.12(3)	Die (3)	
12	ZQ25-72	XYQ12.Z-48	roller	16
13	ZQ25-73	XYQ12.Z-49	Pin shaft	16
14	ZQ25-77	GB1235	O ring 63×5.7	16
15	ZQ25-78		Roller Φ10×30	168
16	ZQ25-97	GB1235	O ring 40×3.1	2
17	ZQ25-99	GB1235	O ring 80×3.1	2
18	ZQ25-117	ZQ25.1.8-2	Friction disc	6
19	ZQ25-140	GB1235	O ring 45×3.1	8
20	ZQ25-142	GB1235	O ring 22×2.4	8
21	ZQ25-150	GB1235	O ring 50×3.1	2