




Model XQ89/4.5
HYDRAULIC POWER TONG
OPERATION MANUAL



TOPLAND OILFIELD SUPPLIES LTD.

Safety Instruction

1. Operators must read and know this manual well.
2. Operators must wear work uniform, safety shoes, safety helmet, safety gloves, etc.
3. Tie the back guy according to the instruction. Don't tie it in the wrong direction.
4. Operate at the side of the tong body opening.
5. The safety door must be closed as making-up or breaking-out.
6. Don't touch the running parts with hands when the tong is running.
7. Keep sundries out of the working area.
8. The pump should be off or the hydraulic tong power shut down as maintaining or changing the jaw plates, die seats or tong dies.
9. Over-pressure and over-torque are forbidden.
10. Don't add or dismount any parts to the tong.
11. Original parts made by  should be used.

 **SAFETY FIRST, STANDARD OPERATION PROBLEMS MAY OCCUR IF BUGS ARE NOT.**

Catalog

1. Summary.....	1
2. Parmeters.....	1
3. Installation.....	2
4. Hydraulic circuit.....	3
5. Operation.....	4
6. Maintenance and lubrication.....	5
7. Common Troubles and Trouble shooting.....	6
8. Figures and detailed parts table.....	7
8.1Assembly and parts list(Fig.8-1,Table 8-1).....	7
8.2Master tong and parts list(Fig.8-2,Table 8-2).....	8
8.3Shell accessory and parts list(Fig.8-3,Table 8-3).....	9
8.4Tong head assembly and parts list(Fig.8-4,Table 8-4).....	11
8.5Shifting mechanism assembly and parts list(Fig.8-5,Table 8-5).....	13
8.6Braking , resetting and centring mechanism and parts list(Fig.8-6,Table 8-6).....	14
8.7Transmission mechanism and parts list(Fig.8-7,Table 8-7).....	16
8.8Safety door assembly and parts list(Fig.8-8,Table 8-8).....	18
8.9Backup tong and parts list(Fig.8-9,Table 8-9).....	19
8.10Backup tong head assembly and parts list(Fig.8-10,Table 8-10).....	20
8.11Backup tong tail and parts list(Fig.8-11,Table 8-11).....	22
8.12Gear shifting and parts list(Fig.8-12,Table 8-12).....	24
8.13Front guide pole and parts list(Fig.8-13,Table 8-13).....	26
8.14Rear guide pole and parts list(Fig.8-14,Table 8-14).....	27
8.15Spring hanger assembly and parts list(Fig.8-15,Table 8-15).....	28
9.Easily Damaged Parts.....	29
10.Trucking, Storage and After Service.....	30

1. Summary

XQ89/4.5 hydraulic tong is a special tool for workover, mainly used for filling and breaking of tubing thread. The maximum used pipe diameter is 3 1/2" and the maximum torque exceeds 5 kN.m. Adapt to complex work and workover operations.

This product has the following features.

- The tong head uses inner curved roller climbing and clipping mechanism and needn't to change any part during making up or breaking out the tubing thread which diameter is 2 7/8" or 3 1/2"
- Two shifts provides high speed at the high gear and large torque at the low gear.
- Brake belt assembly, easy to operate and convenient to maintain and replace.
- Adapt latch type reversing device, which has simple structure and convenient to change
- The new type hydraulic Backup tong and master tong form a combined tong . Operating the manual control valve of master tong, the combined tong clipping and unloosing simultaneously.
- Users can choose fin-tooth dies ,reduce the damage of pipe.
- Users can equip gating safety device according to needs, which can provide safety protection. It can make the system auto-release pressure when the door open, then the power tong will stop running.
- Users can equip gating safety device according to needs, which can provide safety protection. It can make the system auto-release pressure when the door open, then the power tong will stop running.
- Users can equip hand control reversing relief valve according to needs, which can obtain the best make up torque of the various oil pipe by adjusting oil supply pressure.
- Users can equip hydraulic spring hoist according to needs,.
- This product has owned several patent in China

2. Parmeters

2.1 Master tong

- 1) Application Range: 2 3/8"-3 1/2"(60 mm-89 mm)
- 2) High Gear Rated Torque(@1740PSI/12 MPa): 1105 ft-lbs /1.5 kN.m
- 3) Low Gear Rated Torque(@1740PSI/12 MPa): 3320 ft-lbs /4.5 kN.m/
- 4) High Gear Rated Rotation Speed(@26.7GPM /100 L/min): 100 r/min/
- 5) Low Gear Rated Rotation Speed(@26.7GPM /100 L/min): 30 r/min

- 6) Opening of tong head: 95 mm
- 7) Weight: 330lb/150 kg
- 8) Rated System Pressure: 1740PSI/12 MPa
- 9) Max System Pressure: 2000PSI/14 MPa
- 10) Rated oil supply : 26.7GPM /100 L/min

2.2 Backup tong

- 1) Application Range: 2 ³/₈"-4 ¹/₂" (60 mm-114 mm)
- 2) Opening: 4.5" (116 mm)
- 3) Weight: 117lb/53 kg

2.3 Overall dimension of Combined tong 30"×17.5"×22.2 "(765×442×564 mm)

3. Installation

3.1 hanging

Connect bucket with hanger rod(XQ4.5-18) of mater tong and hang the power tong on the derrick of workover rig. The hanging point is 15m above ground and the hanging should be in free condition. The distance between the tong center and the center of the well is recommended to be 0.5m, the height of the suspension bar should make the backup tong directly face the oil tube coupling. (Fig3-1).

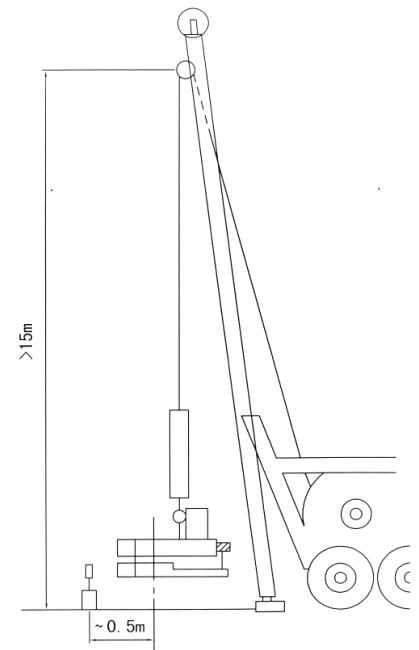


Fig.3-1

3.2 leveling

Adjust the screw (XQ4.5-19) on the tong hanger to level the tong. If it is not leveled. It will cause malfunction of the tong.

3.3 the end of the rope

Tie one end of back guy on derrick and the other end on back guide seat (XQ4.5-44) of power tong. Back guy should be capable of bearing a load of 20kN. When power tong is in make up position, the back guy should keep vertical with power tong which can ensure the safety of the operator who operates the control handles.

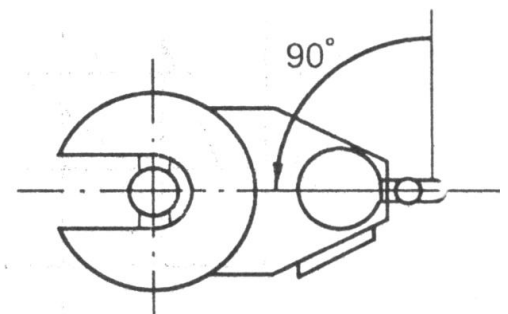


Fig.3-2

3.4 Pressure hoses

Connect hoses from the hydraulic power source to the control valve bank of the power tong. The inlet and the outlet hoses never wrong position.

4. Hydraulic circuit.

Fig 4-1 is the hydraulic circuit of power tong.

Manual control valve (3) controls power tong motor (1) and hydraulic cylinder(2)on the backup tong. Connect two hydraulic hoses of backup tong to master tong. The pressure gauge (4)displays both system pressure and torque. The relationship between pressure on the gauge and torque is shown in the figure 4-2 : line 1 is low gear rated torque and line 2 is high gear rated torque.

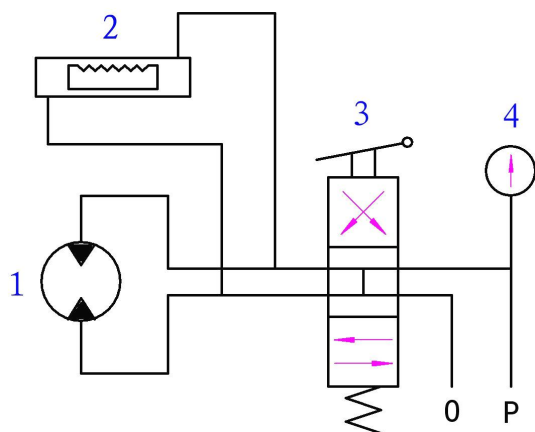


Fig.4-1

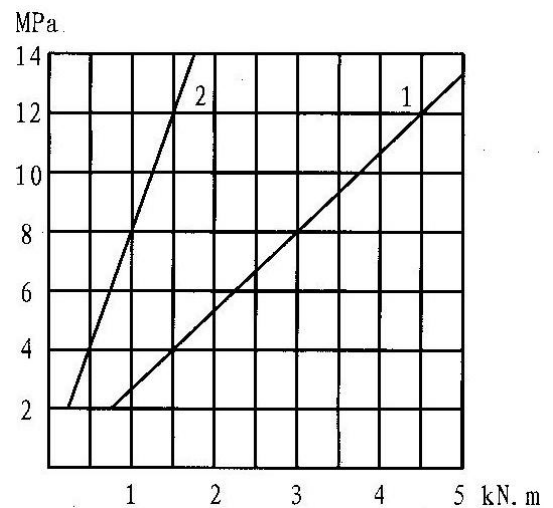


Fig.4-2

5. Operation

4.1 Make up

After aligning the master tong head with the backup tong head, turn reversing shaft (XQ4.5-98) and the reset knob(XQ4.5-173) switch the arrow to point the direction of make-up. Locate the master and backup on to the tubing. The backup should be engaged to lock onto the tubing first. Once the backup jaws have been locked on, commence make up with the tong. After the tubing making up, reserve rotation of the tong to align the opening of the tong with the tubing. Once this is accomplished, reverse the backup to align the opening of the backup to the tubing. The tong can be moved off the tubing. Confirm proper make up torques required from your tubing supplier.

4.2 Break out

Aligning the opening tong head with the backup, turnturn reversing shaft (XQ4.5-98) and the reset knob (XQ4.5-173) switch them to point the direction of break out, then push it towards the tubing. Make the jaws of the tong and the backup line up squarely on tubing. Engage the backup first locking onto the tubing. Commence break out with the tong. Initial break out should always be done in low gear range. Once break out is accomplished. The joint may be spun off in high gear. To come off the couplings reverse the rotation of the tong and backup slowly to align the opening of the tong and backup to the tubing. The tong can now be removed off the tubing.

4.3 Replacing jaws

Tong and backup insert jaws slide into the tong heads easily. Between opening sides of master tong and back tong, limit screw (XQ4.5-53) shall be set to prevent(XQ4.5-66)(XQ4.5-67) jaws (1), (2) and (XQ4.5-178)(XQ4.5-179)(XQ4.5-180) jaws (1), (2),(3)out of positionwhen in operation. In case of taking jaw out, activate master tong or back tong to expose limit screw,loose limit screw (XQ4.5-53) or , take out or load jaws from the master tong or back tong opening place. Specification of jaws shall comply with gripper pipe.

	Clamp tubing size (mm)	Dies identify	Purchase NO.	Drawing NO.	Remark
Master tong	Φ60	4.5Z 60	XQ4.5-67	XQ4.5.Z.1-5(2)	purchase
	Φ73、Φ89	4.5Z 73-89	XQ4.5-66	XQ4.5.Z.1-5(1)	equipped
Backup tong	Φ60	4.5B 60	XQ4.5-180	XQ4.5.B-6(3)	purchase
	Φ73	4.5B 73	XQ4.5-179	XQ4.5.B-6(2)	purchase
	Φ89-93、Φ107-114	4.5B 89-114	XQ4.5-178	XQ4.5.B-6(1)	equipped

5.4 Replacing dies

Use screwdriver to knock out die stop pin (XQ4.5-63) then tack out die.

Oil tubing size	Purchase NO.	identify	Remark
2-3/8"—4-1/2"	XQ4.5-59		Straight die(purchase)
2-3/8"— 2-7/8"	XQ4.5-59(1)	4.5 60-78	Arc die(purchase)
3-1/2"— 4-1/2"	XQ4.5-59(2)	4.5 89-141	Arc die(purchase)

5.5 Shift operation

Manipulate hand control valve (XQ4.5-30), press fork axle gear (XQ4.5-75), it is top gear, manipulate hand control valve, up fork axle gear, now it is low speed gear. Gear shift operation must be carried out under low speed to avoid any damage to transmission gear.

6. Maintenance and lubrication

To ensure the operation is reliable, users should establish normal maintenance program. Observe the following suggestions, normal maintenance and lubrication will prolong the service life and ensure the safety of the operators.

- After every transportation, it is necessary to wash master tong and backup tong with kerosene or diesel oil and inject grease to oil cups of machine body, jaw set and jaw set bracket on master tong and backup tong, the surface of open gears.
- Use kerosene or diesel oil clean master tong and backup tong after clean the tong. Then grease every moving parts before operating the power tong.
- After clean tong head, grease jaw, jaw set and opening gear.
- After every use, clear water and oil dust in tong immediately and keep the equipment clean.
- After every use in well service, it is necessary to inject lubricating grease to every rotary pin shaft.
- Do not use vapor to clear tong in case the inner part loses oil or water enters into the inner part which may cause damage to parts.
- The temperature of hydraulic oil should not be over 65°C. The over heat will make the seal of hydraulic pressure system out of order.
- Hydraulic oil must be kept clean and filter must be cleaned regularly. If the hydraulic oil has been dirty, it must be changed without delay.

7. Common Troubles and Trouble shooting.

Ordinary Troubles	Cause	Remedy
Tong dies slippage	1.Solid dirt fills die groove	Clean the dirt
	2.Tong dies are much worn	Change dies
	3.The brake moment of tong bead is a little small.	Tighten spring properly (3C1-33)
	4.The Tong body is not level.	Level tong body (master tong backup tong)
Tong head of master tong or backup tong does not align with the opening of housing	Retaining pins (XQ4.5-177) is not wrapped by reset knob.	Turn reset knobs (XQ4.5-173) 180°,then reset.
The clipping of master tong is normal but backup tong slippage	The rotation direction of jaw set shelf of backup tong and maker tong are reverse.	Exchange the position of the hoses (3C2-40)of backup tong.
Engaging a gear is not firm and it disengage easily	Locking force is a little small.	Add adjusting slim and increase the pressure of spring(3C1-33)

8. Figures and detailed parts table

8.1 Assembly and parts list(Fig.8-1,Table 8-1)

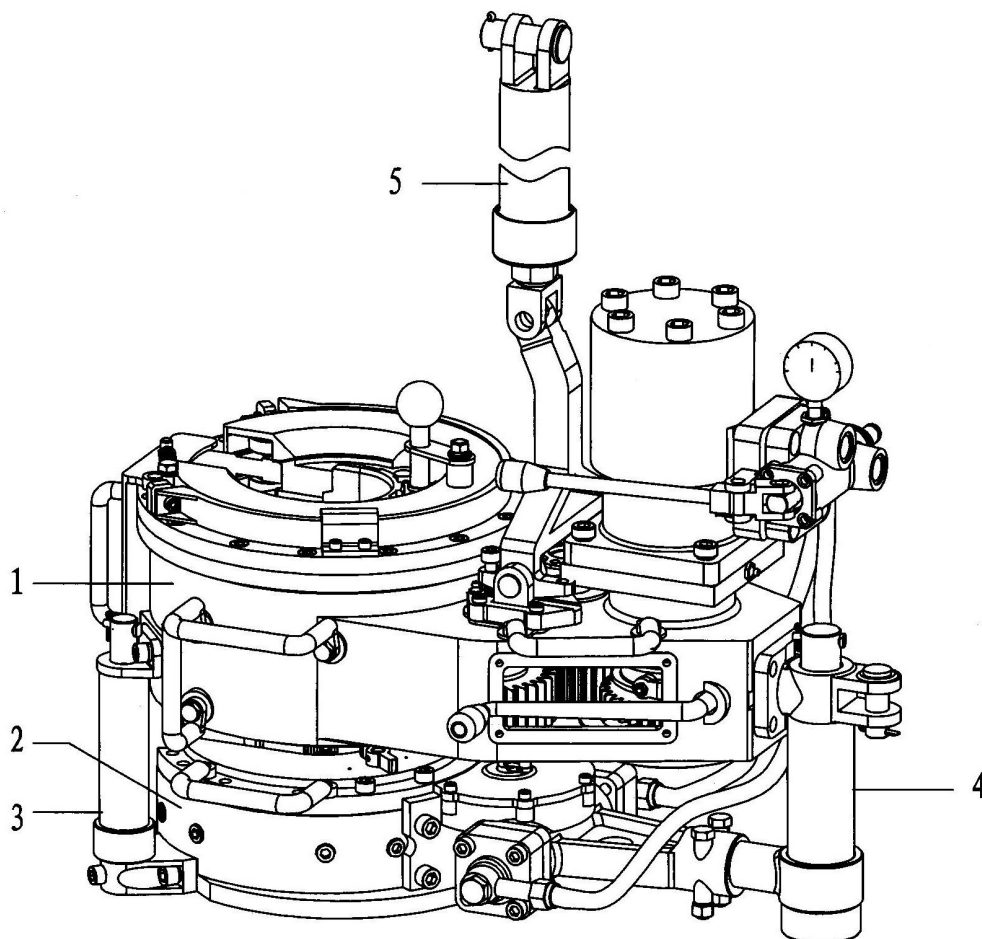


Fig.8-1

Table 8-1 Assembly parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-1	XQ4.5.Z.0	Master tong	1
2	XQ4.5-2	XQ4.5.B.0	Backup tong	1
3	XQ4.5-3	XYQ3C.QD.0	Front guide pole assembly	2
4	XQ4.5-4	XYQ3C.HD.0	Rear guide pole assembly	1
5	XQ4.5-5	XYQ3C.DT.0	Hanger assembly	1

8.2 Master tong and parts list(Fig.8-2,Table 8-2)

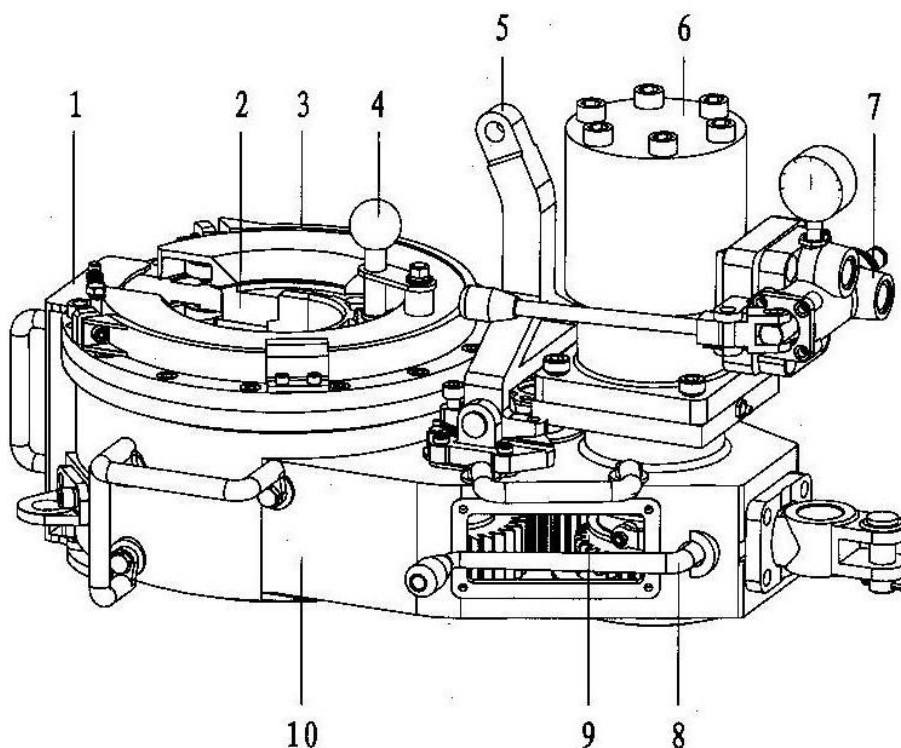


Fig.8-2

Table 8-2 Master tong parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-7	XQ4.5.Z.3	Safety door assembly	1
2	XQ4.5-8	XQ4.5.Z.1	Tong head assembly	1
3	XQ4.5-9	XQ4.5.Z.4	Braking assembly	1
4	XQ4.5-10		Resetting assembly	1
5	XQ4.5-11		Hanger assembly	1
6	XQ4.5-12		Hydraulic motor assembly	1
7	XQ4.5-13		Hand control valve assembly	1
8	XQ4.5-14	XQ4.5.Z.2	Gear shifting assembly	1
9	XQ4.5-15		Transmission assembly	1
10	XQ4.5-16	XQ4.5.Z-1	Shell and accessory	1

8.3 Shell accessory and parts list(Fig.8-3,Table 8-3)

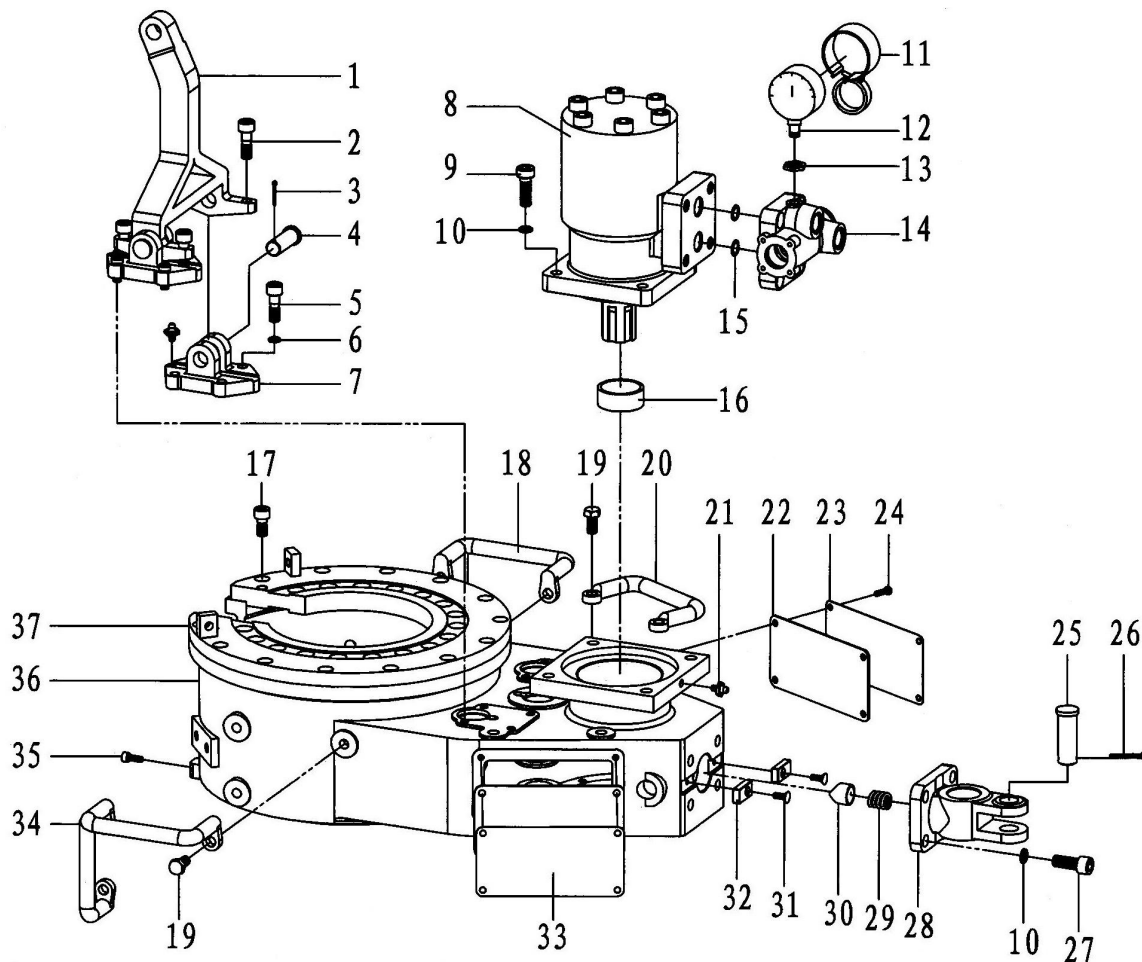


Fig.8-3

Table 8-3Shell accessory parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-18	XYQ3C.Z-25(2)	Hanger rod	1
2	XQ4.5-19	GB/T70	Hexagon socket head cap screw M10×30-8.8	4
3	XQ4.5-20	GB/T91	Cotter pin 2.5×20	2
4	XQ4.5-21	XYQ3C.Z-39	Hanging suspended shaft	2
5	XQ4.5-22	GB/T70	Hexagon socket head cap screw M8×20-8.8	8
6	XQ4.5-420	GB/T93	Standard spring washer 8	8
7	XQ4.5-23	XQ4.5.Z-22	Hanging suspended shaft	2
8	XQ4.5-24		Cycloid hydraulic motor BM4-400	1
9	XQ4.5-25	GB/T70	Hexagon socket head cap screw M12×40-8.8	4
10	XQ4.5-26	GB/T93	Standard spring washer 12	8
11	XQ4.5-27	BZ.0A	Pressure gauge cover assembly	1
12	XQ4.5-28		Pressure gage 0-16MPa	1
13	XQ4.5-29		Nut M14×1.5	1
14	XQ4.5-30	XYQ3C.Z.5	Manual valve	1
15	XQ4.5-31	GB1235-76	O ring 18×2.4	2
16	XQ4.5-32	XQ4.5.Z-12	Motor bushing	1
17	XQ4.5-33	GB/T70	Hexagon socket head cap screw M10×20-8.8	13
18	XQ4.5-34	XYQ3C.Z-4	Front handle assembly(LH)	1
19	XQ4.5-35	GB/T5782	M10×20	10
20	XQ4.5-36	XYQ3C.Z-37	Rear handle	2
21	XQ4.5-37	GB/T1152	Straight hydraulic grease nipple M8×1	3
22	XQ4.5-38	XYQ3C.Z-40	Baffle	2
23	XQ4.5-39	XQ4.5.Z-21	Name plate	1
24	XQ4.5-40	GB/T65	Hexagon socket head cap screw M6×10-4.8	8
25	XQ4.5-41	XYQ3C.Z-23	Back guy pin	1
26	XQ4.5-42	GB/T91	Cotter pin 4×30	1
27	XQ4.5-43	GB/T70	Hexagon socket head cap screw M12×30-8.8	4
28	XQ4.5-44	XYQ6B.Z-18A	Rear guide pole seat	1
29	XQ4.5-45	XYQ3C.Z-21	Spring	1
30	XQ4.5-46	XYQ3C.Z-20	Slider	1
31	XQ4.5-83	GB/T819	Slotted countersunk flat head screw M5×15-4.8	2
32	XQ4.5-84	XYQ6B.Z-29	Flat key	2
33	XQ4.5-47	XQ4.5.Z-19	Pressure and torque corresponding plate	1
34	XQ4.5-48	XYQ3C.Z-3	Front handle assembly(RH)	1
35	XQ4.5-49	GB/T70	Hexagon socket head cap screw M6×10-8.8	2
36	XQ4.5-16	XQ4.5.Z-1	Shell	1
37	XQ4.5-50	XQ4.5.Z-13	Tong head	1

8.4 Tong head assembly and parts list(Fig.8-4,Table 8-4)

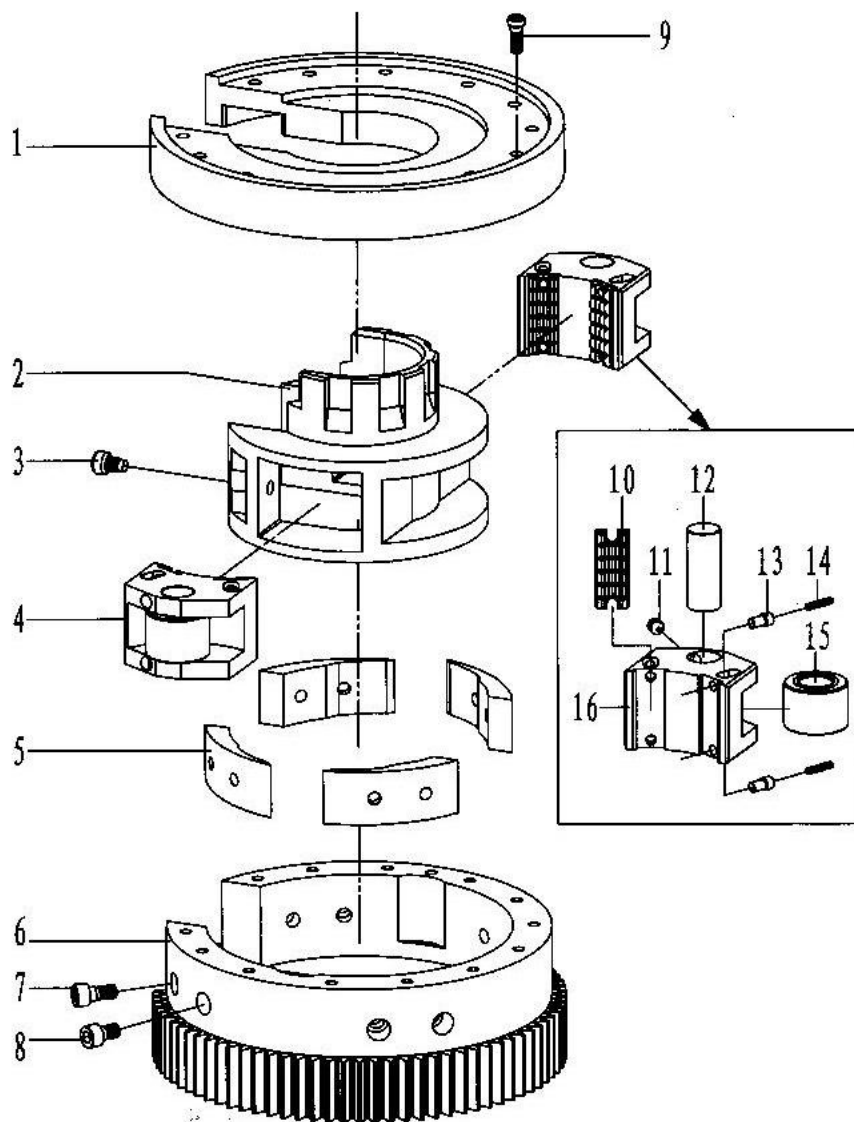


Fig.8-4

Table 8-4 Tong head assembly parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-51	XQ4.5.Z.1-1	Open gear cover	1
2	XQ4.5-52	XQ4.5.Z.1-3	Jaw set bracket	1
3	XQ4.5-53	XYQ3C.Z.1-16	Retaining pin	2
4	XQ4.5-54		Jaw seat (1) assembly	2
	XQ4.5-55		Jaw seat (2) assembly	2
5	XQ4.5-56	XYQ3C.Z.1-4	Ramp	4
6	XQ4.5-57	XQ4.5.Z.1-2	Open gear	1
7	XQ4.5-33	GB/T70	Hexagon socket head cap screw M10×20-8.8	4
8	XQ4.5-58	GB/T70	Hexagon socket head cap screw M10×16-8.8	4
9	XQ4.5-22	GB/T70	Hexagon socket head cap screw M8×20-8.8	13
10	XQ4.5-59	XQ4.5.Z.1-4	Die	8
11	XQ4.5-61	GB/T78	Inner hexagon end set screw M10×12	4
12	XQ4.5-62	XYQ6B.Z-40	Roller shaft	4
13	XQ4.5-63	XYQ6B.Z-38	Retaining pin	16
14	XQ4.5-64	XYQ3B.Z.1-18	Spring	16
15	XQ4.5-65	XQ4.5.Z.1-6	Jaw seat roller	4
16	XQ4.5-66	XQ4.5.Z.1-5(1)	Jaw seat (1)	2
	XQ4.5-67	XQ4.5.Z.1-5(2)	Jaw seat (2)	2

8.5 Shifting mechanism assembly and parts list (Fig.8-5, Table 8-5)

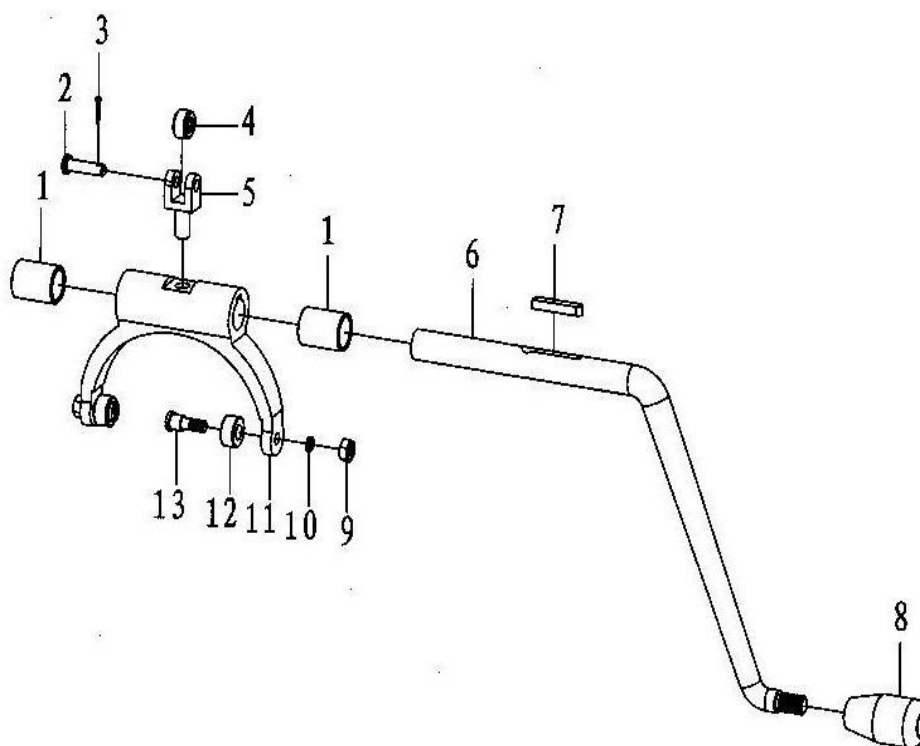


Fig.8-5

Table 8-5 Shifting mechanism assembly parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-70	XYQ3C.Z.6-1	axle sleeve	2
2	XQ4.5-71	XYQ3C.Z.6-4	Roller shaft	1
3	XQ4.5-72	GB/T91	Cotter pin 2×10	1
4	XQ4.5-73	XYQ3C.Z.6-3	Roller	1
5	XQ4.5-74	XYQ3C.Z.6-5	Roller seat	1
6	XQ4.5-75	XQ4.5.Z.2-2	Shift fork shaft	1
7	XQ4.5-76	XYQ3C.Z.6-6	Flat key	1
8	XQ4.5-77	XYQ3C.Z.5-10	Ball handle	1
9	XQ4.5-78	GB/T6170	Hexagon nutM6	2
10	XQ4.5-79	GB/T93	Standard spring washer 6	2
11	XQ4.5-80	XQ4.5.Z.2-1	Shift fork	1
12	XQ4.5-81	XYQ3C.Z.6-8	Sleeve	2
13	XQ4.5-82	XYQ3C.Z.6-9	Stud shaft	2

8.6Braking , resetting and centring mechanism and parts list(Fig.8-6,Table 8-6)

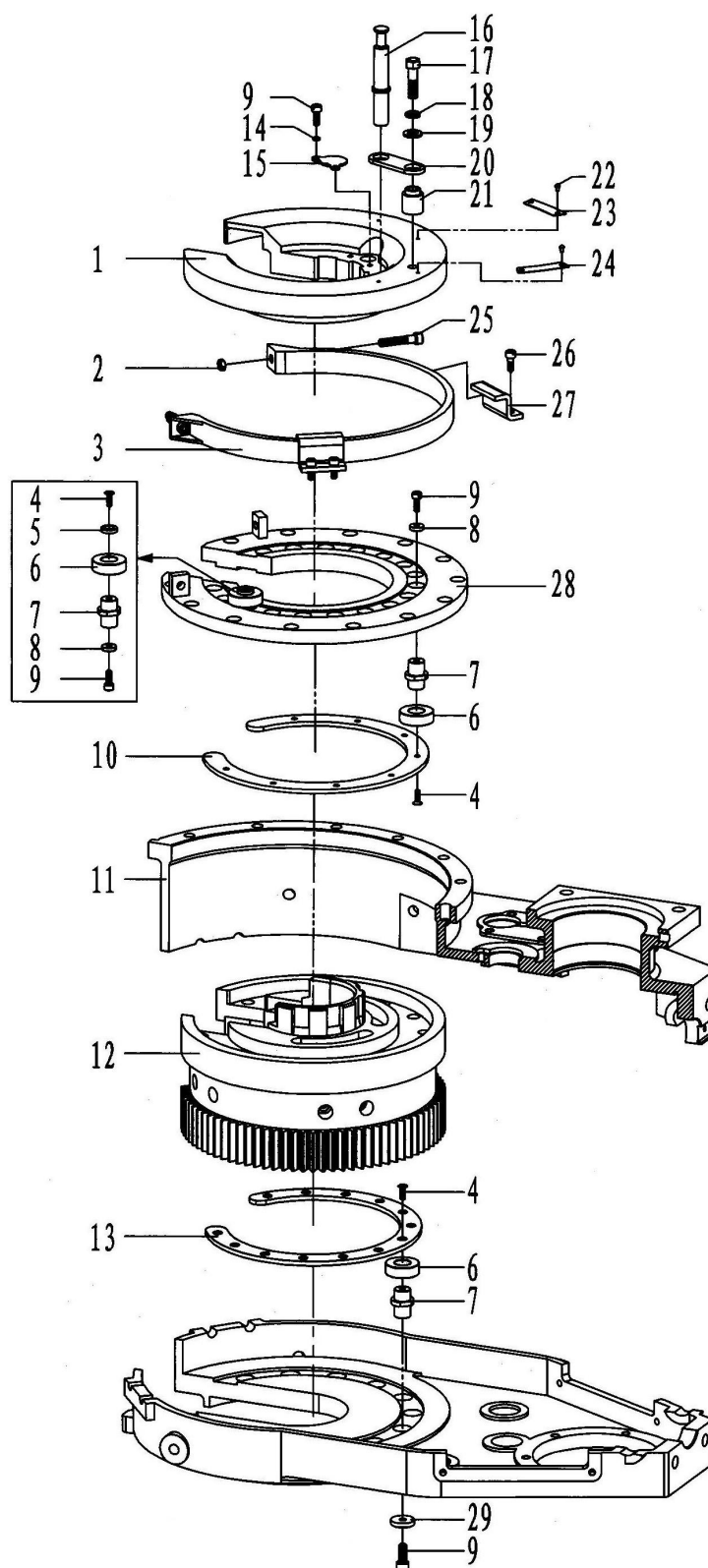


Fig.8-6

Table 8-6 Braking , resetting and centring mechanism parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-86	XQ4.5.Z-15	Braking plate	1
2	XQ4.5-87	GB/T41	Hex nutM8	4
3	XQ4.5-88	XQ4.5.Z.4.1	Brake band (asbestos rubber)	1
	XQ4.5-88A	XQ4.5.Z.4.1(2)	Brake band (metallic copper)	1
4	XQ4.5-89	GB/T819	Slotted countersunk flat head screw M5×10-4.8	30
5	XQ4.5-90A	XQ4.5.Z-25	Connecting plate	1
6	XQ4.5-91	XYQ3C.Z-2	Centralizing roller	30
7	XQ4.5-92	XYQ3C.Z-4	Centralizing roller shaft	30
8	XQ4.5-93	GB/T892	Bolt fastening shaft end ring B16	17
9	XQ4.5-94	GB/T70	Hexagon socket head cap screw M5×16	32
10	XQ4.5-95	XQ4.5.Z-14	Upper bearing plate	1
11	XQ4.5-16	XQ4.5.Z-1	Shell	1
12	XQ4.5-8	XQ4.5.Z.1	Tong head assembly	1
13	XQ4.5-96	XQ4.5.Z-2	Lower bearing plate	1
14	XQ4.5-101	GB/T93	Spring washer 5	2
15	XQ4.5-102	XQ4.5.Z.5 (2)	Cover plate	1
16	XQ4.5-98	XQ4.5.Z-18	Reversing shaft	1
17	XQ4.5-99	GB/T5782	Hexagon bolt M10×35-8.8	1
18	XQ4.5-103	GB/T93	Standard spring washer 10	1
19	XQ4.5-104	GB/T95	Flat washer 10	1
20	XQ4.5-105	XQ4.5.Z-17	Connecting plate	1
21	XQ4.5-106	XQ4.5.Z-16	Shaft sleeve	1
22	XQ4.5-107	GB/T827	Rivet 3×5	4
23	XQ4.5-108	ZQ203/100-01.05-08 (1B)	Make up indicator	1
24	XQ4.5-109	ZQ203/100-01.05-08 (1B)	Break out indicator	1
25	XQ4.5-110	GB/T70	Hexagon socket head cap screw M8×40	2
26	XQ4.5-111	GB/T70	Soket head cap screw M6×16	4
27	XQ4.5-112A	XQ4.5.Z-26	Locating ring	1
28	XQ4.5-50	XQ4.5.Z-13	Tong head	1
29	XQ4.5-113	GB/T892	Bolt fastening shaft end ring B18	13

8.7 Transmission mechanism and parts list(Fig.8-7, Table 8-7)

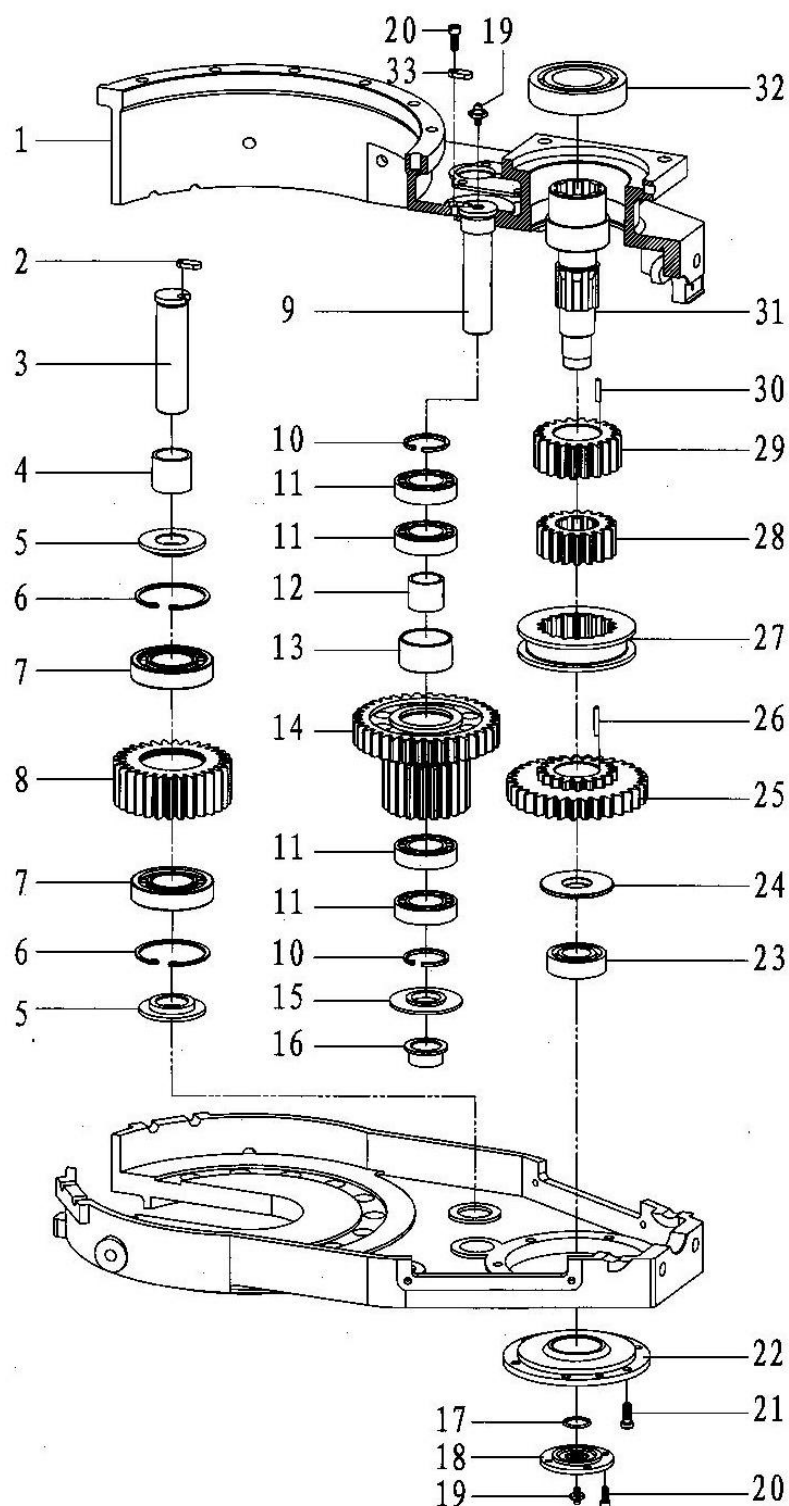


Fig.8-7

Table 8-7 Transmission mechanism and parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-16	XQ4.5.Z-1	Shell	1
2	XQ4.5-114	XYQ3C.Z-5	Position spacer	2
3	XQ4.5-115	XYQ3C.Z-43	Idler gear shaft	2
4	XQ4.5-116	XYQ3C.Z-42	Idler gear shaft sleeve	2
5	XQ4.5-117	XYQ3C.Z-44	Spacer	4
6	XQ4.5-118	GB/T893.1	Circlip for hole 62	4
7	XQ4.5-119	GB/T283	single row roller bearing 42206E	4
8	XQ4.5-120	XQ4.5.Z-20	Idler gear	2
9	XQ4.5-121	XYQ3C.Z-11	Duplex gear	1
10	XQ4.5-122	GB/T893.1	Circlip for hole 47	2
11	XQ4.5-123	GB/T276	Deep groove ball bearing 105	4
12	XQ4.5-124	XYQ3C.Z-8	Shaft sleeve	1
13	XQ4.5-125	XYQ3C.Z-7	sleeve	1
14	XQ4.5-126	XQ4.5.Z-3	Duplex gear	1
15	XQ4.5-127	XYQ3C.Z-10	Supporting plate(1)	1
16	XQ4.5-128	XYQ3C.Z-9	Supporting plate (2)	1
17	XQ4.5-129	GB/T3452.1	O ring 24.3×2.65	1
18	XQ4.5-130	XQ4.5.Z-8	Bearing cap	1
19	XQ4.5-37	GB/T1152	Straight hydraulic grease nipple M8×1	2
20	XQ4.5-111	GB/T70	Hexagon socket head cap screw M6×16-8.8	5
21	XQ4.5-22	GB/T70	Hexagon socket head cap screw M8×20-8.8	6
22	XQ4.5-133	XQ4.5.Z-9	Bottom plate	1
23	XQ4.5-134	GB/T278	Deep groove ball bearing with dust cover 60205	1
24	XQ4.5-135	XYQ3C.Z-16	Supporting plate (3)	1
25	XQ4.5-136		Clutch gear assembly	1
26	XQ4.5-137	GB/T309	Needle 4×25.8	27
27	XQ4.5-138	XQ4.5.Z-11	Inner gear sleeve	1
28	XQ4.5-139	XQ4.5.Z-10	Spline gear	1
29	XQ4.5-140	XQ4.5.Z-4	Shifting gear	1
30	XQ4.5-141	GB/T309	Needle 4×19.8	29
31	XQ4.5-142	XQ4.5.Z-7	Power input shaft	1
32	XQ4.5-143	GB/T276	Deep groove ball bearing 210	1
33	XQ4.5-144	XYQ3C.Z-36	Position spacer	1

8.8 Safety door assembly and parts list (Fig.8-8, Table 8-8)

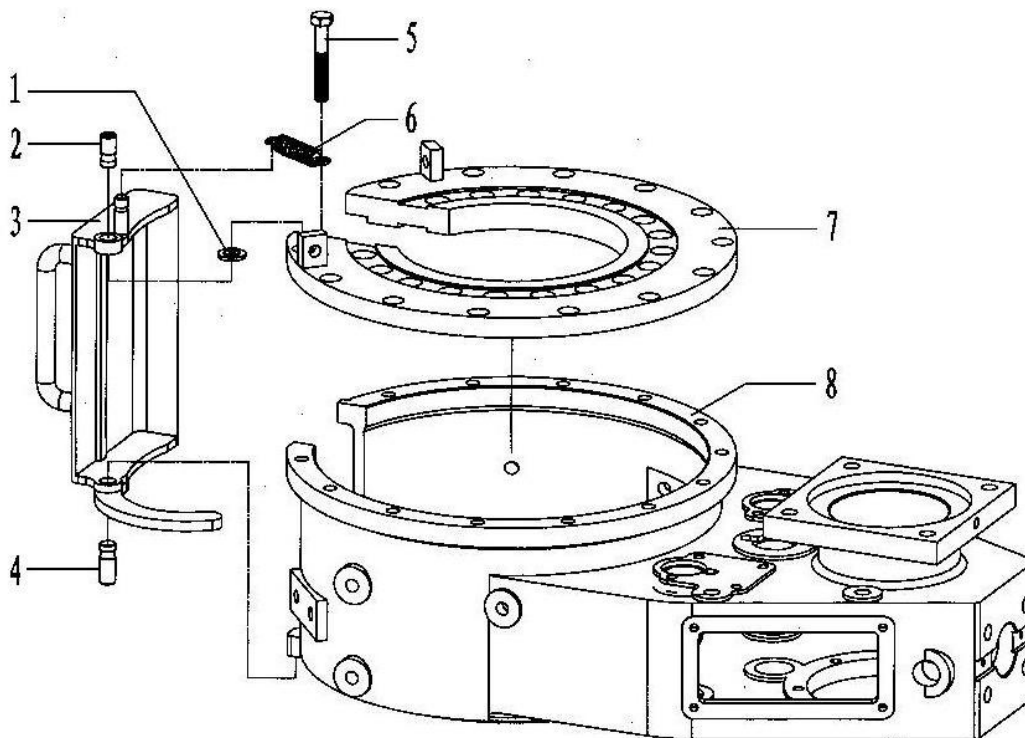


Fig.8-8

Table 8-8

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-150	XQ4.5.Z.3-3	Washer	1
2	XQ4.5-151	XQ4.5.Z.3-2	Door shaft (upper)	1
3	XQ4.5-152	XQ4.5.Z.3.1	Safety door body	1
4	XQ4.5-153	XQ4.5.Z.3-4	Door shaft (lower)	1
5	XQ4.5-154	GB/T5781	Hexagonal head bolt M10×65	1
6	XQ4.5-155	XQ4.5.Z.3-1	Tension spring (Φ2×Φ12×15×53)	1
7	XQ4.5-50	XQ4.5.Z-13	Tong head cover	1
8	XQ4.5-16	XQ4.5.Z-1	Shell	1

8.9 Backup tong and parts list(Fig.8-9,Table 8-9)

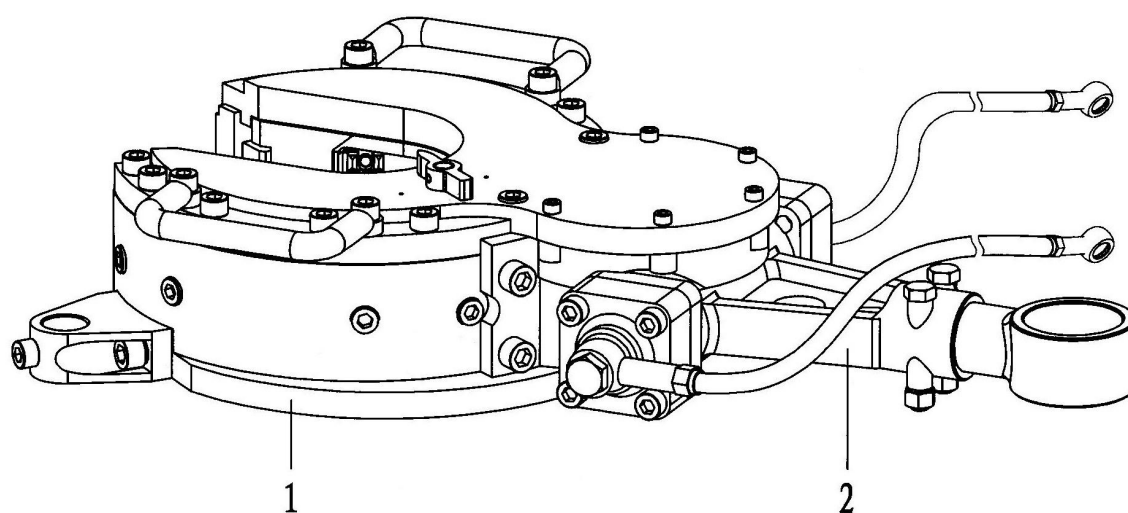


Fig.8-9

Table 8-9 Backup tong parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-160		Backup tong head assembly	1
2	XQ4.5-161		Backup tong tail assembly	1

8.10 Backup tong head assembly and parts list(Fig.8-10,Table 8-10)

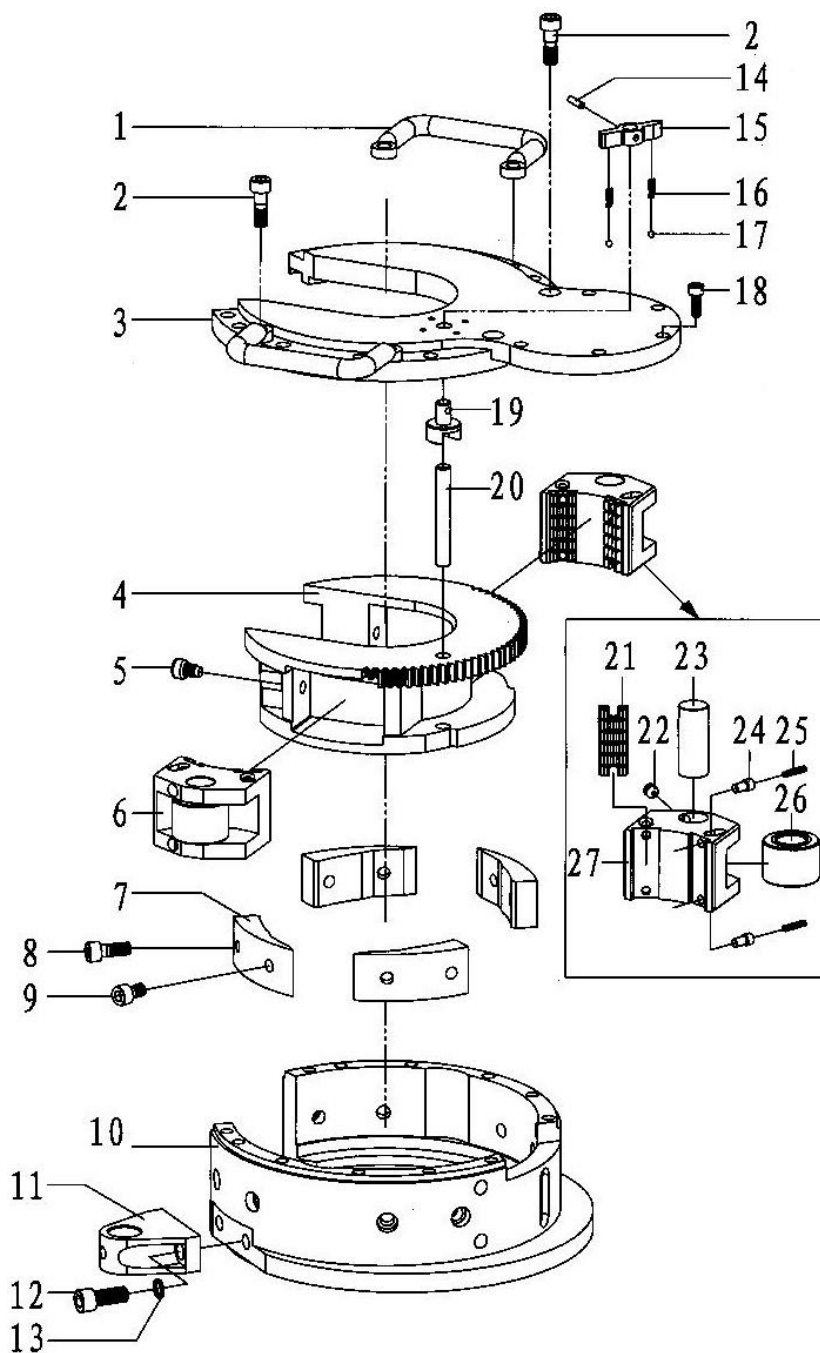


Fig.8-10

Table 8-10 Backup tong head assembly parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-36	XYQ3C.Z-37	Rear handle	2
2	XQ4.5-19	GB/T70	Hexagon socket head cap screw M10×30-8.8	16
3	XQ4.5-163	XYQ3C.B-1	Backup head cover	1
4	XQ4.5-164	XQ4.5.B-1	Retaining pin	
5	XQ4.5-53	XYQ3C.Z.1-16	Retaining screw	2
6	XQ4.5-165		Jaw plate assembly (1)	2
	XQ4.5-166		Jaw plate assembly (2)	2
	XQ4.5-167		Jaw plate assembly (3)	2
7	XQ4.5-168	XQ4.5.B-7	Backup tong ramp	4
8	XQ4.5-169	GB/T70	Hexagon socket head cap screw M10×25-8.8	6
9	XQ4.5-58	GB/T70	Hexagon socket head cap screw M10×16-8.8	6
10	XQ4.5-170	XQ4.5.B-4	Backup tong head body	1
11	XQ4.5-171	XQ4.5.B-5	Backup tong front support seat	2
12	XQ4.5-26	GB/T93	Spring washer 12	4
13	XQ4.5-43	GB/T70	Hexagon socket head cap screw M12×30-8.8	4
14	XQ4.5-172	GB/T119	Cylindrical pin 5×20	1
15	XQ4.5-173	XYQ3C.B-2	Backup tong reset knob	1
16	XQ4.5-174	XYQ3C.B-10	Spring	2
17	XQ4.5-175	GB/T308	Steel ball Φ5	2
18	XQ4.5-111	GB/T70	Hexagon socket head cap screw M6×16-8.8	5
19	XQ4.5-176	XYQ3C.B-3	Backup tong reset knob shaft	1
20	XQ4.5-177	XYQ3C.B-4	Retaining pin	1
21	XQ4.5-59	XQ4.5.Z.1-4(1)	Die (1)	8
	XQ4.5-60	XQ4.5.Z.1-4(2)	Die (2)	8
22	XQ4.5-61	GB/T78	Hexagon socket set screws with cone poin M10×12	4
23	XQ4.5-62	XYQ6B.Z-40	Roller shaft	4
24	XQ4.5-63	XYQ6B.Z-38	Jaw stopper	16
25	XQ4.5-64	XYQ3B.Z.1-18	Spring	16
26	XQ4.5-65	XQ4.5.Z.1-6	Jaw set roller	4
27	XQ4.5-178	XQ4.5.B-6(1)	Jaw set (1)	2
	XQ4.5-179	XQ4.5.B-6(2)	Jaw set (2)	2
	XQ4.5-180	XQ4.5.B-6(3)	Jaw set (3)	2

8.11Backup tong tail and parts list(Fig.8-11,Table 8-11)

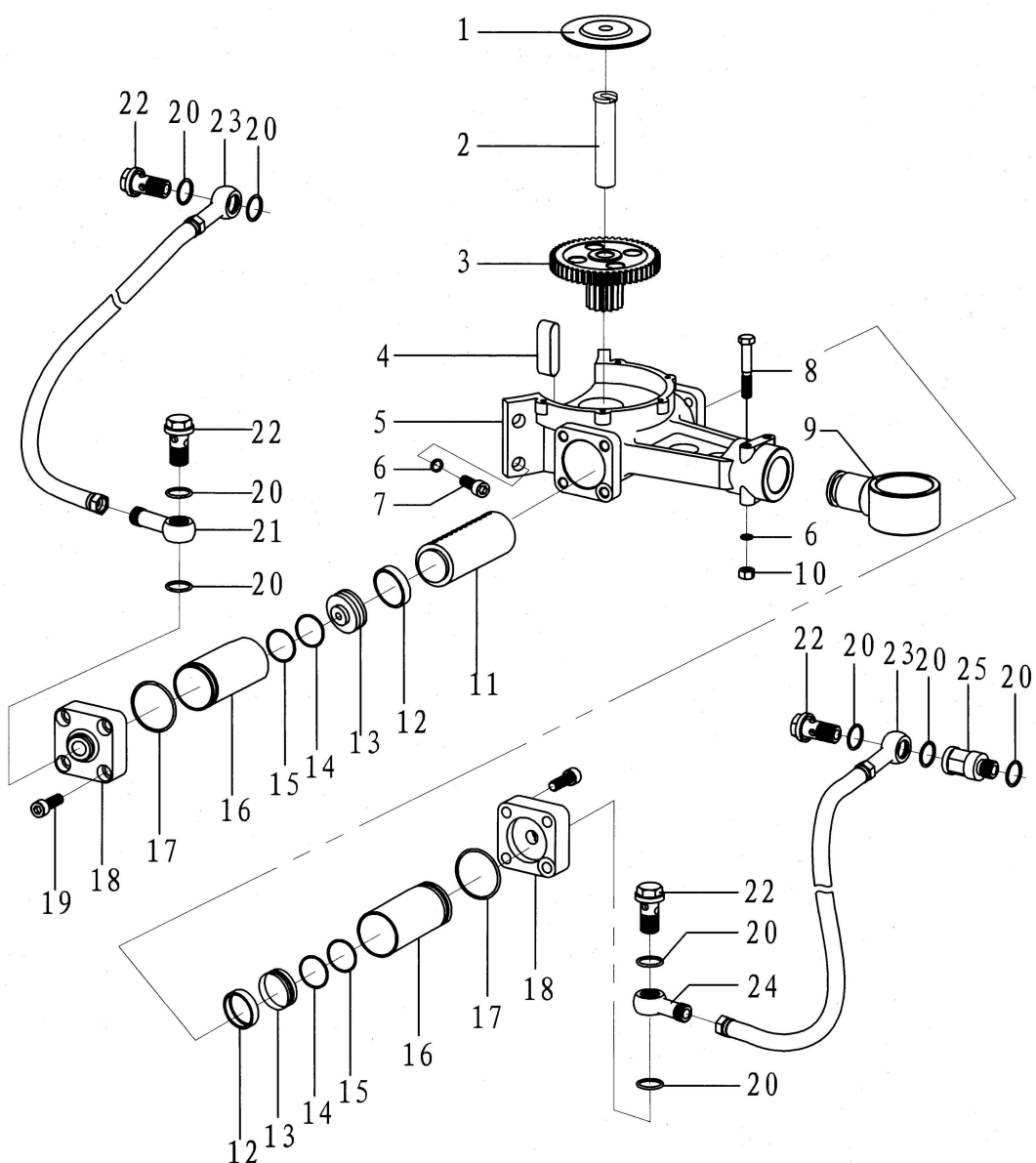


Fig.8-11

Table 8-11 Backup tong tail (single) parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-198	XQ4.5.B-9	Gear cover	1
2	XQ4.5-199	XQ4.5.B-2	Rotation shaft	1
3	XQ4.5-201	XYQ3C.B-5	Duplicate gear	1
4	XQ4.5-202	GB/T1096	Parallel key16×50	1
5	XQ4.5-203	XQ4.5.B-10	Tong tail oil cylinder	1
6	XQ4.5-26	GB/T93	Standard spring washer 12	6
7	XQ4.5-43	GB/T70	Hexagon socket head cap screw M12×30-8.8	4
8	XQ4.5-214	GB/T5782	Hexagonal head bolt M12×75×30-8.8	2
9	XQ4.5-215	XQ4.5.B-3	Tail seat	1
10	XQ4.5-216	GB/T6170	Hex nutM12	2
11	XQ4.5-213	XYQ3C.B-9E	Rack plunger	1
12	XQ4.5-212	XYQ3C.B-25B	Supportring	2
13	XQ4.5-211	XYQ3C.B-23C	Piston	2
14	XQ4.5-210	GB1235-76	Retainer ring A45×1.5	2
15	XQ4.5-209	GB1235-76	O ring 45×3.1	2
16	XQ4.5-208	XYQ3C.B-8D	Cylinder sleeve	2
17	XQ4.5-207	GB1235-76	O ring 55×3.1	2
18	XQ4.5-206	XYQ3C.B-20B	Cylinder cover	2
19	XQ4.5-204	GB/T70	Hexagon socket head cap screw M10×40-8.8	8
20	XQ4.5-218	GB1235-76	O ring 22×2.4	9
21	XQ4.5-205	XYQ3B.B-11	Adapter (2)	1
22	XQ4.5-219	XYQ3C.B-21	Oil bolt	4
23	XQ4.5-270		Hose 8II-600 (M18×1.5/Φ18 ball)	2
24	XQ4.5-217	XYQ3B.B-10	Adapter(1)	1
25	XQ4.5-271	XYQ3C.B-22	Longer adapter	1

8.12 Gear shifting and parts list(Fig.8-12,Table 8-12)

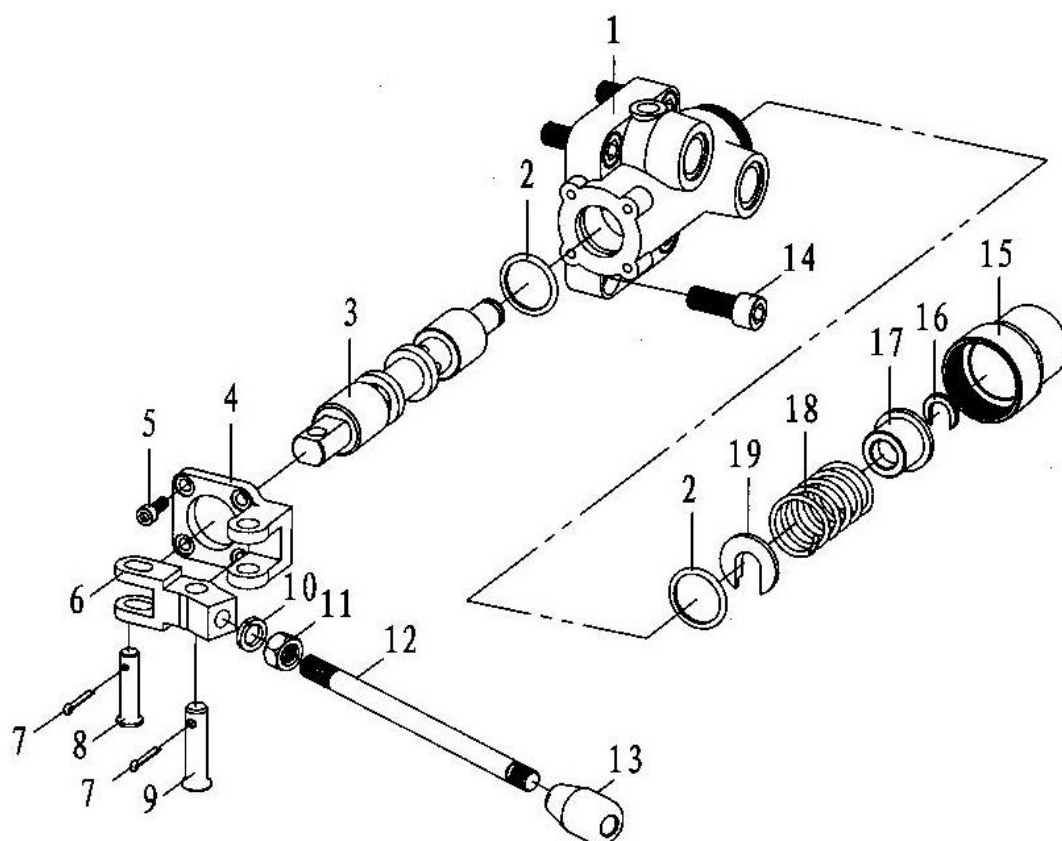


Fig.8-12

Table 8-12 Gear shifting parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-221	XYQ3B.Z.5-1	Valve body	1
2	XQ4.5-222	GB1235-76	O ring 36×3.5	2
3	XQ4.5-223	XYQ3B.Z.5.1	Combination valve core	1
4	XQ4.5-224	XYQ3B.Z.5-7	supporting seat	1
5	XQ4.5-111	GB/T70	Hexagon socket head cap screw M6×16	4
6	XQ4.5-225	XYQ3B.Z.5-8	Shifting fork	1
7	XQ4.5-226	GB/T91	Cotter pin 3.2×20	2
8	XQ4.5-227	GB/T882	Pin shaft B10×40	1
9	XQ4.5-228	GB/T882	Pin shaft B12×45	1
10	XQ4.5-26	GB/T93	Spring washer 12	1
11	XQ4.5-216	GB/T6170	Hexagon nut M12	1
12	XQ4.5-229	XYQ3B.Z.5-9	Control lever	4
13	XQ4.5-230	XYQ3B.Z.5-10	Hand shank	1
14	XQ4.5-231	GB/T70	Hexagon socket head cap screw M12×35	4
15	XQ4.5-232	XYQ3B.Z.5-2	Valve tail seat	1
16	XQ4.5-233	XYQ3B.Z.5-6	Fiche	1
17	XQ4.5-234	XYQ3B.Z.5-5	Spring seat (2)	1
18	XQ4.5-235	XYQ3B.Z.5-4	Spring	1
19	XQ4.5-236	XYQ3B.Z.5-3	Spring seat (1)	1

8.13 Front guide pole and parts list (Fig.8-13, Table 8-13)

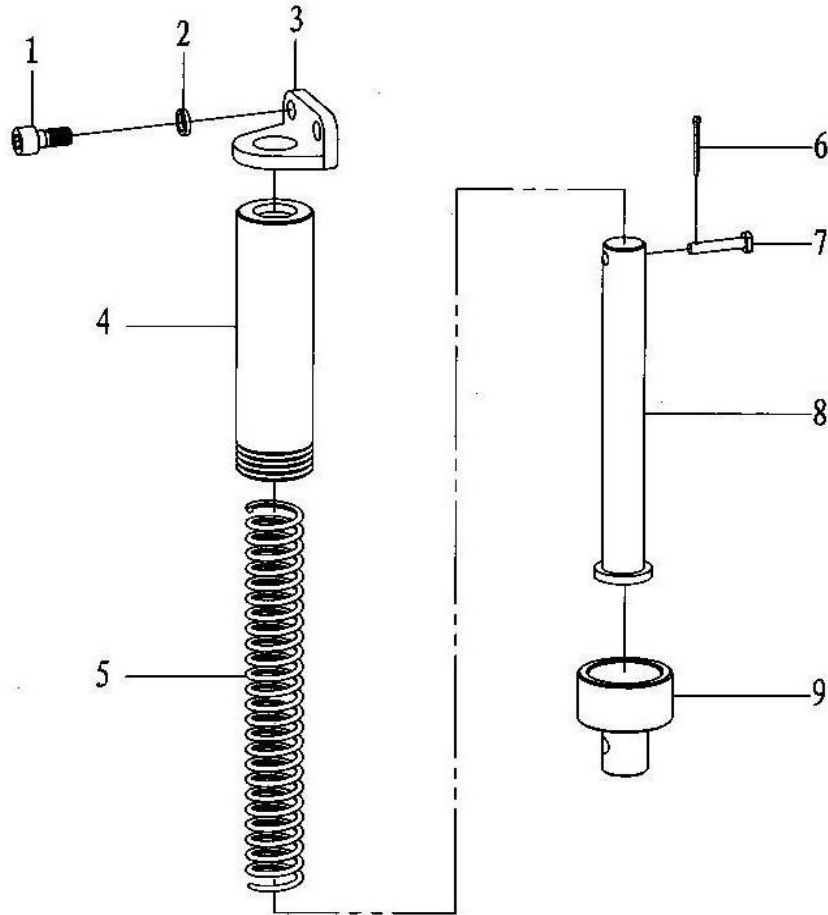


Fig.8-13

Table 8-13 Front guide pole parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-33	GB/T70	Hexagon socket head cap screw M10×20-8.8	4
2	XQ4.5-103	GB/T93	Spring washer 10	4
3	XQ4.5-238	XYQ3C.QD-6	Master tong front seat	2
4	XQ4.5-239	XYQ3C.QD-2.0	Front guide pole sleeve assy.	2
5	XQ4.5-240	XYQ3C.QD-3	Spring	2
6	XQ4.5-241	GB/T91	Cotter pin 2.5×20	2
7	XQ4.5-242	XYQ3C.QD-5	Pin shaft	2
8	XQ4.5-243	XYQ3C.QD-4	Front guide pole	2
9	XQ4.5-244	XYQ3C.QD-1	Front guide pole seat	2

8.14Rear guide pole and parts list(Fig.8-14,Table 8-14)

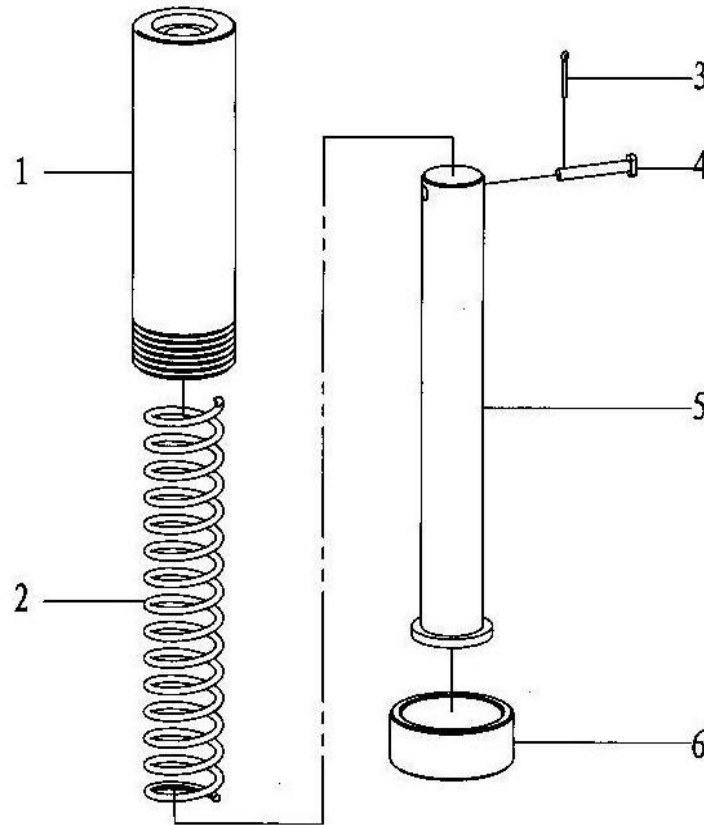


Fig.8-14

Table 8-14 Rear guide pole parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-248	XYQ3C.HD-2.0	Rear guide pole sleeve assy.	1
2	XQ4.5-249	XYQ3C.HD-3	Spring	1
3	XQ4.5-250	GB/T91	Cotter pin 2.5×30	1
4	XQ4.5-251	XYQ3C.HD-5	Pin shaft	1
5	XQ4.5-252	XYQ3C.HD-4	Rear guide pole	1
6	XQ4.5-253	XYQ3C.HD-1	Rear guide pole seat	1

8.15 Spring hanger assembly and parts list(Fig.8-15,Table 8-15)

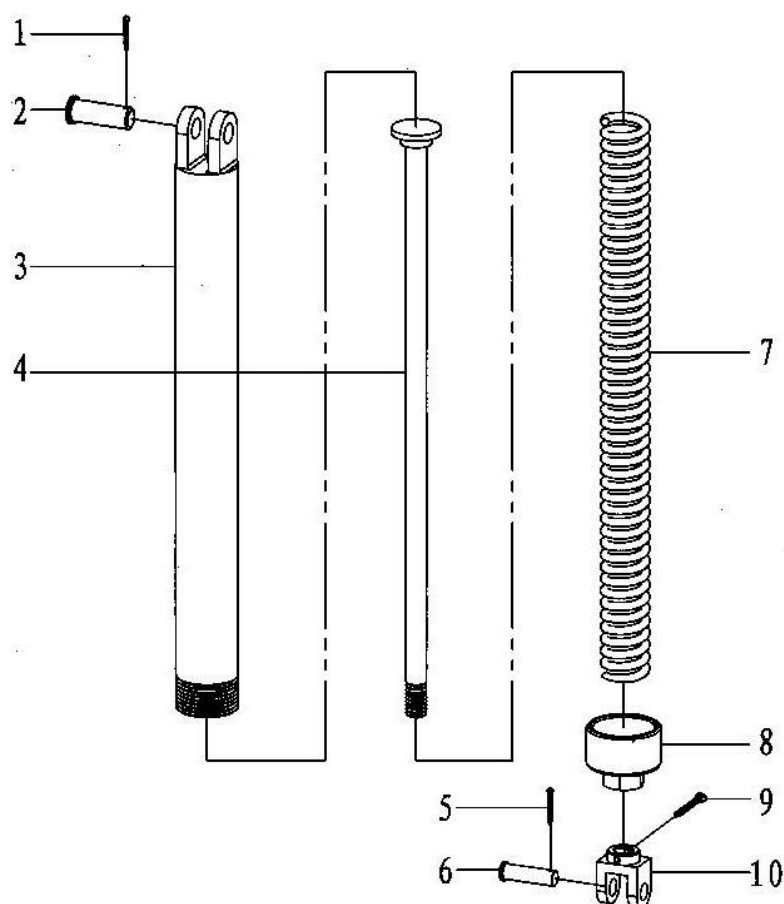


Fig.8-15

Table 8-15 Spring hanger assembly parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-42	GB/T91	Cotter pin 4×30	1
2	XQ4.5-257	GB/T882	Pin shaft B20×60	1
3	XQ4.5-258	XYQ3C.DT.2	Hanger body assy.	1
4	XQ4.5-259	XYQ3C.DT.1	Hanger assembly	1
5	XQ4.5-260	GB/T91	Cotter pin 3.2×26	1
6	XQ4.5-261	GB/T882	Pin shaft B16×55	1
7	XQ4.5-262	XYQ3C.DT-3	Big bucket spring	1
8	XQ4.5-263	XYQ3C.DT-2	End cap	1
9	XQ4.5-264	GB/T91	Cotter pin 5×50	1
10	XQ4.5-265	XYQ3C.DT-1	Hanger ring	1

9.Easily Damaged Parts

Easily Damaged Parts list

Item	P/N	Parts number	Description	Qty.
1	XQ4.5-31	GB1235-76	O ring 18×2.4	2
2	XQ4.5-37	GB/T1152	Straight hydraulic grease nipple M8×1	5
3	XQ4.5-53	XYQ3C.Z.1-16	Retaining screw	1
4	XQ4.5-59	XQ4.5.Z.1-4 (1)	Die (1)	
5	XQ4.5-60	XQ4.5.Z.1-4 (2)	Die (2)	
6	XQ4.5-62	XYQ6B.Z-40	Roller shaft	4
7	XQ4.5-63	XYQ6B.Z-38	Jaw stopper	16
8	XQ4.5-65	XQ4.5.Z.1-6	Jaw set roller	4
9	XQ4.5-91	XYQ3C-2	Centralizing roller	30
10	XQ4.5-92	XYQ3C-4	Centralizing roller shaft	30
11	XQ4.5-95	XQ4.5.Z-14	Upper bearing plate	1
12	XQ4.5-96	XQ4.5.Z-2	Lower bearing plate	1
13	XQ4.5-98	XQ4.5.Z-18	Reversing shaft	1
14	XQ4.5-88	XQ4.5.Z.4.1	Brake band	1
15	XQ4.5-129	GB/T3452.1	O ring 24.3×2.65	1
16	XQ4.5-137	GB/T309	Needle 4×25.8	27
17	XQ4.5-141	GB/T309	Needle 4×19.8	29
18	XQ4.5-218	GB1235-76	O ring 22×2.4	2
19	XQ4.5-207	GB1235-76	O ring 55×3.1	2
20	XQ4.5-209	GB1235-76	O ring 40×3.1	2
21	XQ4.5-222	GB1235-76	O ring 36×3.5	2

10.Trucking, Storage and After Service

10.1 Trucking

When you move hydraulic power tong, you should move it smoothly and keep it from wet, and don't put it upside to downside and also keep it from damage. When it is lifted, use steel wire rope with the diameter 12mm or bigger, and to keep it in balance. Don't incline and swing it too much, to keep it from attacking other things avoiding damaged.

10.2Storage

XQ89-3YC hydraulic power tong should be placed in where is no sunshine, prevent rain, wet proof, good airing and the environment temperature below 45 0c. Don't storage it in a muddy place or outdoors. Protect oil inlet and outlet well to prevent some sundries in. The storage period is general one year for new hydraulic power tong. It can be used after one-year storage but all the sealing parts and hoses must be changed.

10.3 Unpacking

Check the appearance of hydraulic power tong and check and accept it as packing list.

10.4 After Service

Our company has special professional service team and customer service Internet.

10.5Service promise

Reply in Time, Maintenance and Repairing in Work Site, free service.