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MODEL XQ29/1.8B HYDRAULIC SUCKER ROD TONG OPERATION MANUAL



YANCHENG TEDA DRILLING AND PRODUCTION EQUIPMENT CO.,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 RID OF.

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1. Summary

Model XQ29/1.8B Hydraulic power tong is an opening type power tong, which is used to make up and break out sucker rod's joint casing thread in well service. It has following features:

- The master tong is driven by low speed large torque hydraulic oil motor, control valve matches oil motor directly, its structure is simple, compact and portable.
- The new hydraulic backup tong and the master tong form a combined tong, operate the control valve on the master tong, the backup tong will automatically clip or simultaneously loosen the sucker rod joint.
- The method that both master tong and backup tong use are inner curved roller climbing and bi-direction clipping mechanism. It just needs to change the direction of knob on master tong and backup tong when clipping.
- Change dies of different sizes, it can clip sucker rod's joint or tubing of corresponding specification.
- The tong has two speeds. It works with high efficiency when jerking and spinning at low speed or high speed.

2. Technical Parameter

● Application range	Sucker Rod CYG16, 19, 22, 25, 29 Tubing OD 48-60 mm (5/8"~1 1/8")
● High gear rated torque	0.7kN.m (500ft.lbs)
● Low gear rated torque	1.8 kN.m (1300ft.lbs)
● Maximum speed at high gear	104RPM
● Maximum speed at low gear	40RPM
● Opening dimension of Tong head	63mm (2.5")
● Overall dimension of Combined Tong(L×W×H)	543×334×404mm (21.4"×13.1"×15.9")
● Weight	105kg (230lbs)
● Rated system pressure	10MPa (1450PSI)
● Maximum oil supply	65L/min (17GPM)

3. Installation

- 1) **Hanging.** Connect mechanical lift(1.8DT.0) and master tong's suspension rod. Hang the power tong on the master of work over rig. The suspension pulley should be above the ground more than 15m. Under free hanging, power tong head's center is about 0.5m above the well center. Hanging height is the best when die pieces face sucker rod's square section under the coupling. Adjusting the distance between master tong and backup tong so that die pieces face sucker rod' square section above the coupling.
- 2) **Adjustment.** Adjust the screw(1.8.Z-33and1.8.Z-46) so that power tong keep horizontal. If it is not horizontal, the clipping will be in failure.
- 3) Other end should be tied to on the back guide arm seat(1.8.Z-32)of the power tong. The back guy should be able to bear one ton loads and be opposite to the operator and keep vertical with power tong. Put up back guy in case there is an emergency in clipping sucker rod or tubing. It is also for the safety of the operator who usually stands beside the operation handle.
- 4) **Pipe line connection.** Please see illustration (see Fig. 9.1). Port "P" connects oil supply hose while port "O" connects oil return hose. The nominal diameters of the oil supply hose and the oil return hose should not be less than 20mm.

4 .Hydraulic Circuit

As shown in the drawing 1, control valve (3) control the changing of direction of the oil motor and at the same time it controls the changing of direction of backup tong. Rack plunger oil cylinder(2) of backup tong is used to drive backup tong to clip rod string. Oil motor(1) is used to drive mater tong head to make up or break our rod or tubing string. Pressure gauge(4) shows systematic pressure and it shows the torque of power tong indirectly at the same time. Pressure and torque has corresponding relation shown in Drawing 2. Line A in the drawing shows low speed torque valve while line B stands for high speed torque valve.

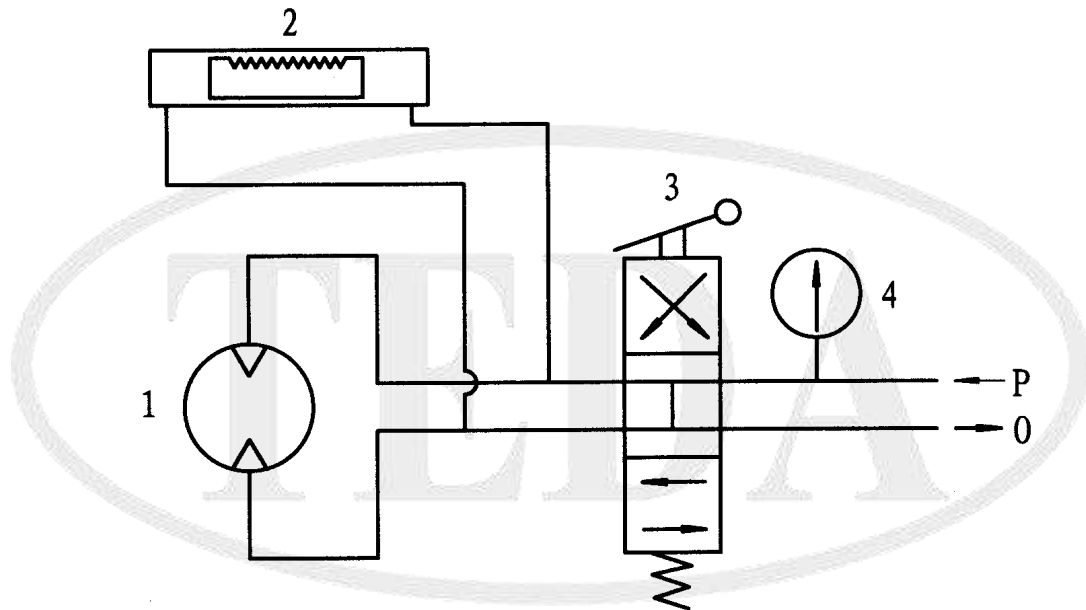


Fig.1

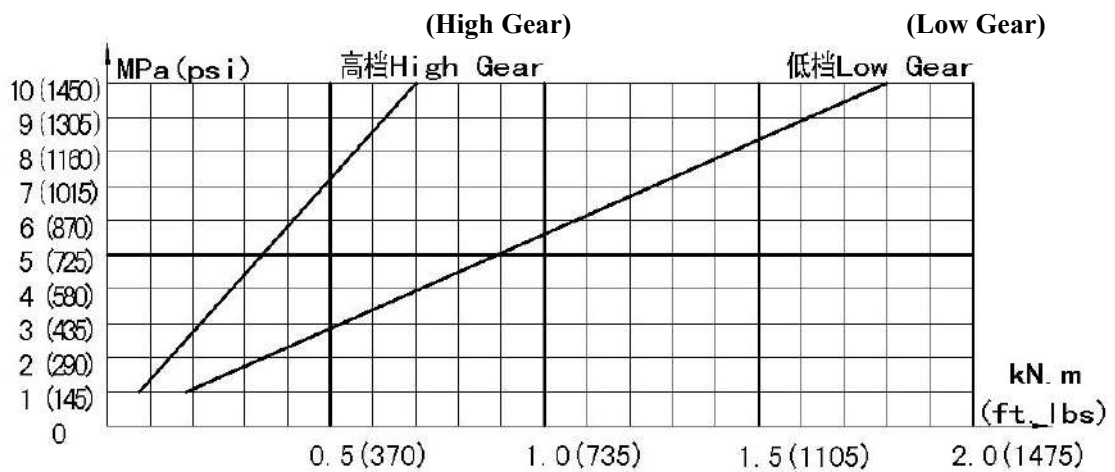


Fig.2

5. Operation

1) Operation of shifting

Operation control valve to make the power tong rotate slightly. Press shift fork , it engages high speed. Pull shift fork up, it engages low speed. Shift must be carried out when power tong rotates in low speed avoiding damaging gears.

2) Make up

When the opening of master tong and backup tong's head align properly, turn the rest knob (1.8.Z.1-16) on power tong and reset knob (1.8.B-2) on backup tong to the direction of makeup. Push power tong to suck rod or tubing string. When master tong and jaw set of backup tong face the square section of joint or tubing, it is ready for making up. When makeup is finished, operate power tong to rotate in reverse direction until the opening of master tong and backup tong align properly. Pull power tong away from rod or tubing string, then makeup is over.

3) Break out

When the opening of master tong and backup tong align properly, turn reset knob(1.8.Z.1-16) on master tong and reset knob(1.8.B-2) on the backup tong to the direction of breakout. Push power tong to sucker rod string. When master tong and jaw set of backup tong face the square section of joint, it is ready for breaking out. When breakout is finished, operate power tong rotate in reverse direction until the opening of master tong and backup tong head align properly. Pull power tong away from rod string, then breakout is over.

4) Change Die Pieces

Push the jaw sets (1.8.Z.1-2)on master tong and backup tong to the center of tong head. Die pieces expose, takedown the retaining pin(1.8.Z.1-5) .It is ready to take out die pieces and change them.

5) Selection of Jaw Plate

Jaw plate identification	16	19-22	25	29	48	60
Applicable scope	CYG16	CYG19-22	CYG25	CYG29	Oil pipeΦ48	CouplingΦ60

6. Maintenance and Lubrication

●After every transportation, it is necessary to wash master tong and backup tong with kerosene or diesel oil and inject grease to oil cups (see part no(1.8.Z-16)) of machine body, jaw set and jaw set bracket on master tong and backup tong, the surface of open gears.

Every three months in work, remove the cover plate(1.8.Z-45) and inject lubrication grease to gears' surfaces.

●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.

●Hydraulic oil selected:

(1) Low solidifying point hydraulic oil YC-N46, application ambient temperature range: -20 ~ +40°C.

(2) Waterproof hydraulic oil YB-N46,application ambient temperature range: -10 ~ +40℃

(3) Ordinary hydraulic oil YA-N46, application ambient temperature range: 0 ~ +40℃.

Users can take hydraulic oil, lubricating grease and lubricating oil by themselves in accordance with local condition.

7.Parts easy to be worn

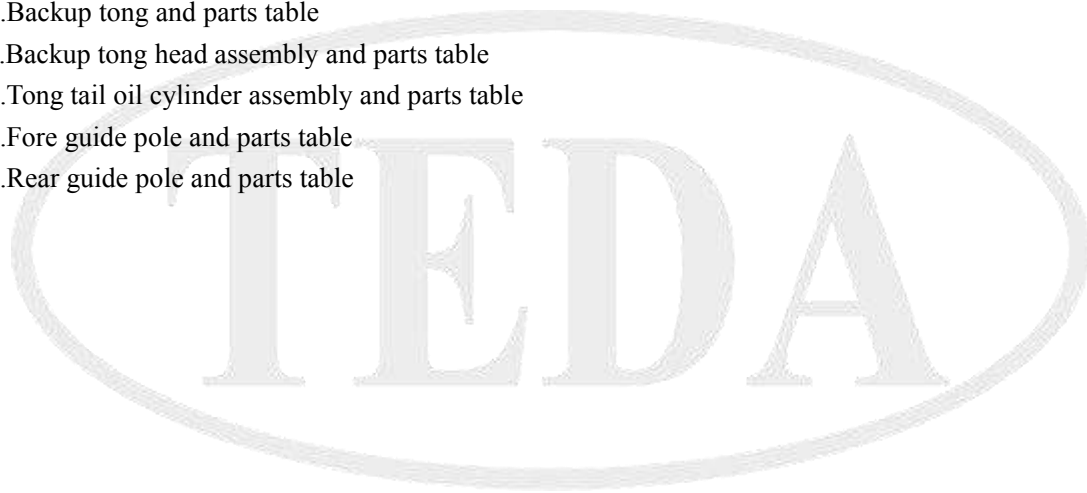
NO.	Purchase number	Part number	Part name
1	1.8.Z-82	XYQ1.8.Z-37	Friction disc
2	1.8.Z-83	XYQ1.8.Z-1A	Braking disc
3	1.8.Z.5	XYQ1.8.Z.5	Brake plate assembly
4	1.8B-5	XQ1.8B.Z.1-1	Jaw set (or die)
5	1.8.Z-37	XYQ1.8.Z-22A	Upper retaining roller shaft
6	1.8.Z-7	XYQ1.8.Z-5	Retaining roller shaft
7	1.8.B-13	GB1235-76	O -ring35×3.5
8	1.8.B-15	GB1235-76	O -ring44×3.5
9	1.8.B-39	GB1235-76	O-ring22×2.4

8. Troubles and Troubleshooting

Troubles	Cause analysis	Remedies
Master tong slips	1.Die pieces chose is not proper. 2.Die pieces'recess is filled with hard articles. 3.Die pieces are worn. 4.Brake torque of tong head is too small. 5.Tong is not horizontal.	Change corresponding die pieces. Clear hard articles in die pieces' recess. Change new die pieces. Regulate brake shrink spring slightly tight. Adjust tong horizontal.
Backup tong can't clip sucker rod or tubing.	Reset knob's direction is wrong except for cause1,2,3,5 mentioned above.	Check reset knob and turn it to right direction except for remedies mentioned above.
Master or backup tong's openings can't align properly.	Retaining pin or set pin is outside reset knob or knob when resetting.	Turn reset knob 180 degree to realign openings.
Engagement is not positive and easy to disengage.	Lock strength is too weak.	Add adjusting washer strengthen pressure effort of spring .
Jaw set do not extend.	Brake disc is worn. Brake strength is too weak.	Change brake disc.

9. Illustration and parts list

- 9.1.Assembly and parts table
- 9.2.Master tong and parts table
- 9.3.Shell accessory and parts table
- 9.4.Tong head assembly and parts table
- 9.5.Braking and centralizing mechanism and parts table
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- 9.14.Rear guide pole and parts table



9.1 Assembly and parts list(Fig.3,Table 1)

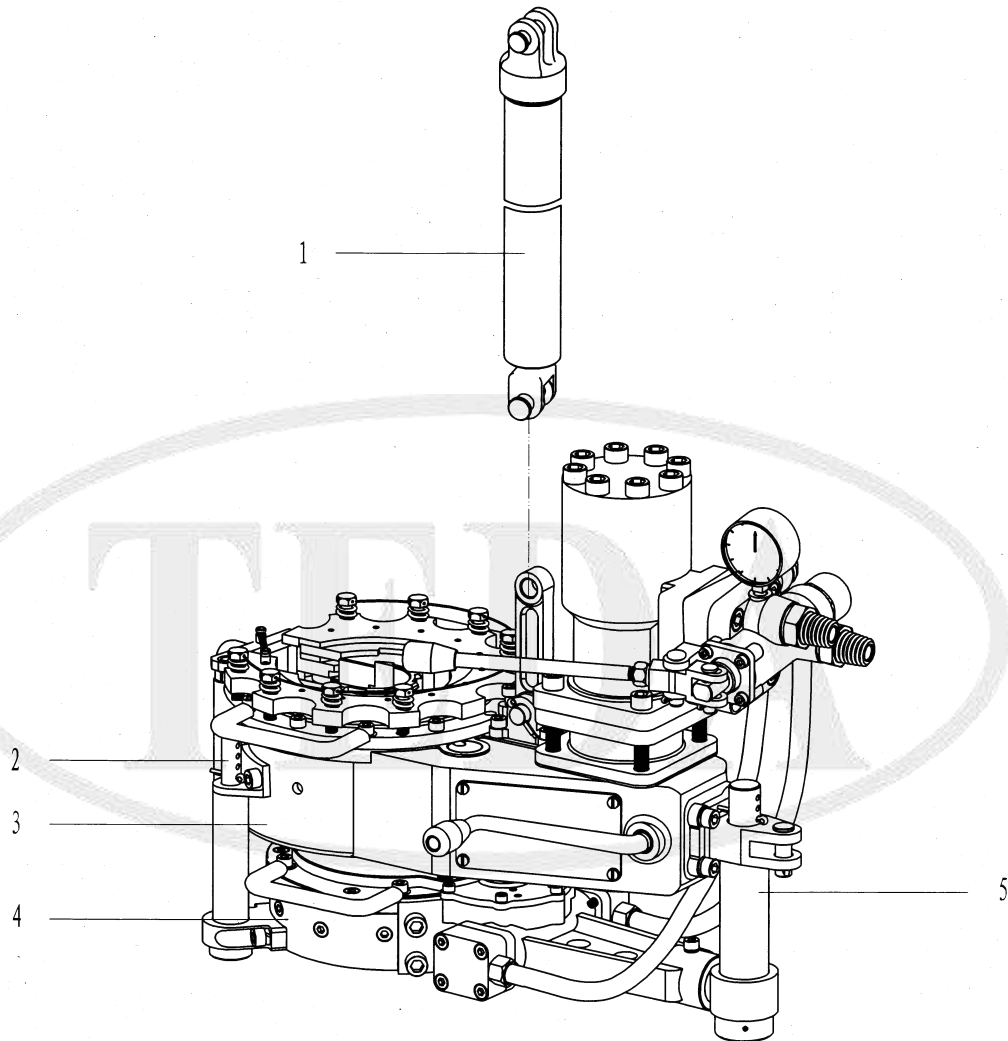


Fig. 3 Assembly

Table 1 Assembly parts list

Item	P/N	Part number	Part name	QTY
1	1.8.DT.0	XYQ1.8.DT.0	Lift assembly	1
2	1.8.QD.0	XYQ1.8.QD.0	Fore guide rod assembly	2
3	1.8B-1	XQ1.8B.Z.0	Master tong	1
4	1.8B-2	XQ1.8B.B.0	Backup tong	2
5	1.8.HD.0	XYQ1.8.HD.0	Rear guide pole	1

9.2 Master tong and parts list (Fig.4,Table 2)

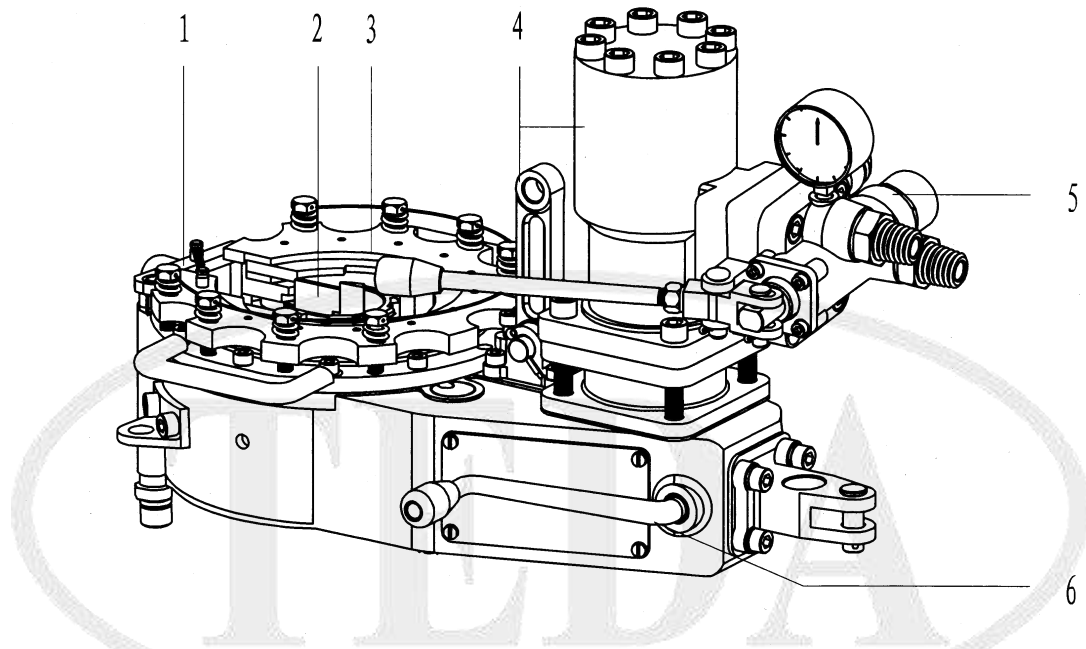


Fig. 4 Master tong

Table 2 Master tong parts list

Item	P/N	Part number	Part name	QTY
1	1.8.Z-78	XYQ1.8.Z.4 (1A)	Safety door assembly	1
2	1.8B-3	XQ1.8B.Z.1	Tong head assembly	1
3	1.8.Z-79		Braking and centralizing mechanism	1
4	1.8.Z-69		Shell and accessory	1
5	1.8.Z-71	XYQ3C.Z.5	Hydraulic hand control valve	1
6	1.8.Z-26	XYQ1.8.Z.3	Shifting gear assembly	1

9.3 Shell accessory and parts list (Fig 5, Table 3)

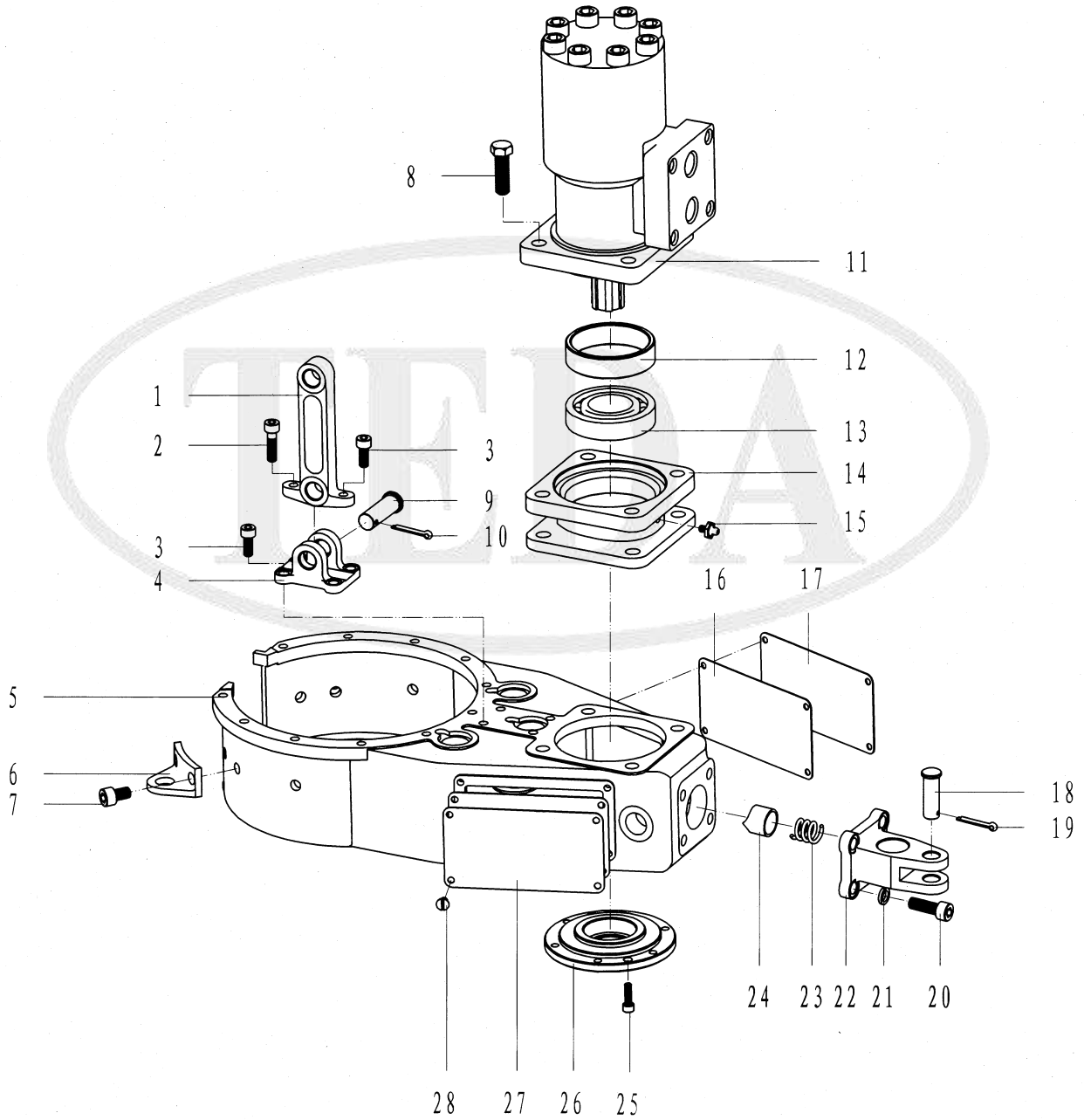


Fig.5 Shell and accessory

Table 3 Shell and accessory parts list

Item	P/N	Part number	Part name	QTY
1	1.8.Z-48	XYQ1.8.Z-27	Hanger rod	1
2	1.8.B-33	GB/T70.1	Hexagon socket head cap screw M8×25-8.8	1
3	1.8.Z-46	GB/T70.1	Hexagon socket head cap screw M8×20-8.8	5
4	1.8.Z-49	XYQ1.8.Z-28	Hanging seat	1
5	1.8.Z-11	XYQ1.8.Z-7 (2A)	Shell	1
6	1.8.B-44	XYQ1.8.B-15	Upper support seat	2
7	1.8.B-32	GB/T70.1	Hexagon socket head cap screw M10×16-8.8	4
8	1.8.Z-84	GB/T70.1	Hexagon socket head cap screw M12×80-8.8	4
9	1.8.Z-35	XYQ1.8.Z-21	Pin shaft	1
10	1.8.Z-34	GB/T91	Cotter pin4×30	1
11	1.8.Z-51		Cycloid hydraulic motor BM3-250	1
12	1.8.Z-53	XYQ1.8.Z-30	Motor sleeve	1
13	1.8.Z-54	GB/T276	Single row deep groove ball bearing 6208	1
14	1.8.Z-52	XYQ1.8.Z-29	Motor connecting seat	1
15	1.8.Z-80	GB/T1152	Straight hydraulic grease nipple M8	1
16	1.8.Z-45	XYQ1.8.Z-26	Hole cover	2
17	1.8.Z-67	XYQ1.8.Z-34	Name plate	1
18	1.8.Z-33	XYQ1.8.Z-20	Tail rope pin	1
19	1.8.Z-81	GB/T91	Cotter pin3×25	1
20	1.8.Z-31	GB/T70.1	Hexagon socket head cap screw M10×30-8.8	4
21	1.8.Z-30	GB/T93	Standraded spring washer10	4
22	1.8.Z-32	XYQ1.8.Z-19	Rear guide pole seat	1
23	1.8.Z-29	XYQ3C.Z-21	Spring	1
24	1.8.Z-28	XYQ6B.Z-17	Slide	1
25	1.8.Z-9	GB/T65	Hexagon socket head cap screw M6×16-8.8	6
26	1.8.Z-21	XYQ6B.Z-15	Bottom cover	1
27	1.8.Z-73	XYQ1.8.Z-35	Pressure and torque corresponding plate	1
28	1.8.Z-44	GB/T65	Slotted cheese head screws M6×10-5.8	8

9.4 Tong head assembly and parts list (Fig. 6, Table 4)

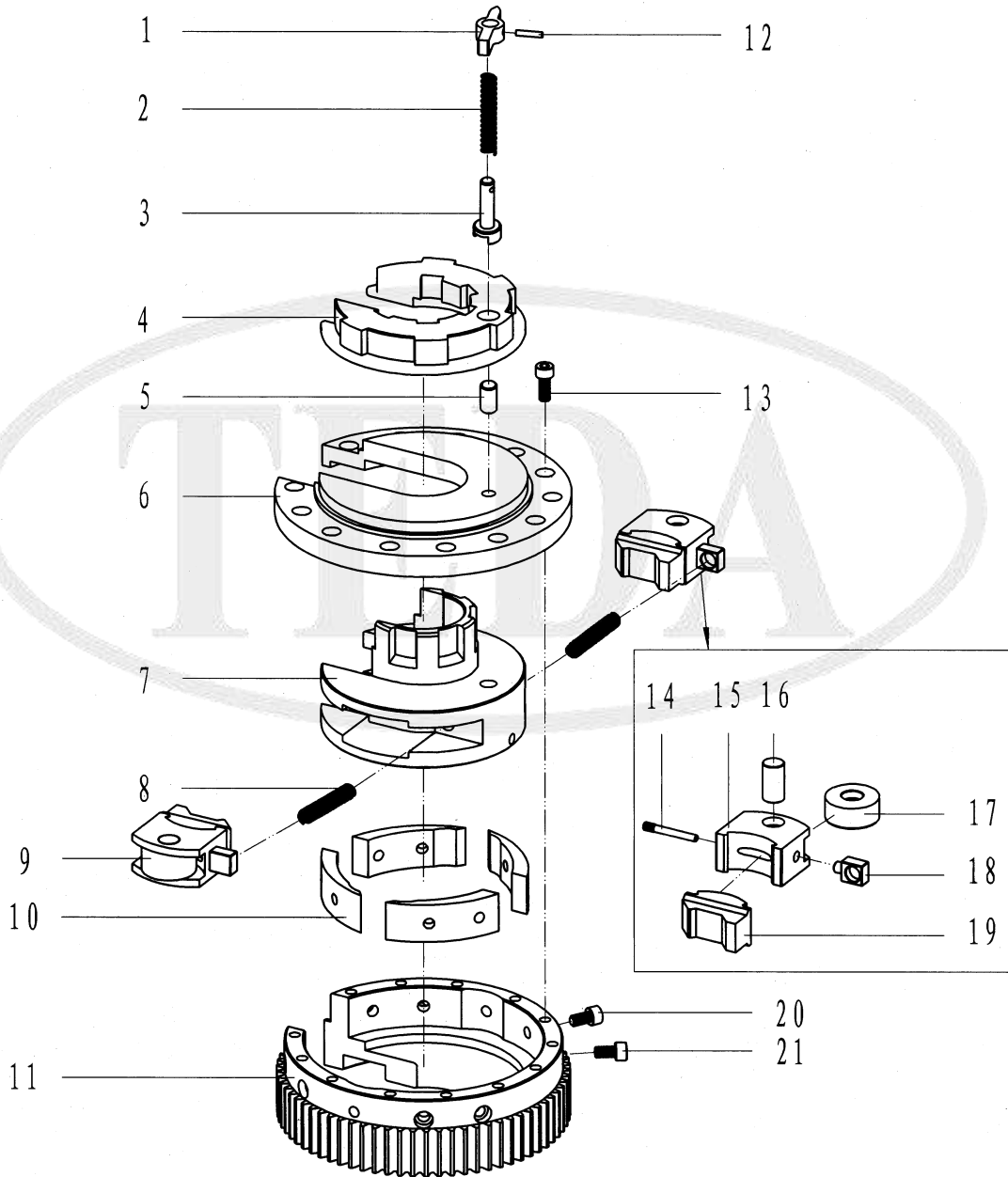


Fig.6 Tong head assembly

Table 4 Head assembly parts list

Item	P/N	Part number	Part name	QTY
1	1.8.Z.1-16	XYQ1.8.Z.1-15	Konb	1
2	1.8.Z.1-15	XYQ1.8.Z.1-14	Spring	1
3	1.8.Z.1-14	XYQ1.8.Z.1-13	Konb shaft	1
4	1.8.Z.1-17	XYQ1.8.Z-36	Spline connection plate	1
5	1.8.Z.1-13	XYQ1.8.Z.1-12A	Retaining pin	1
6	1.8.Z.1-12	XYQ1.8.Z.1-11A	Open gear cover	1
7	1.8.Z.1-1	XYQ1.8.Z.1-1A	Jaw bracket	1
8	1.8.Z.1-8	XYQ1.8.Z.1-8	Spring	2
9	1.8B-4		Jaw assembly	2
10	1.8.Z.1-10	XYQ1.8.Z.1-9	Ramp	4
11	1.8.Z.1-11	XYQ1.8.Z.1-10A	Open gear	1
12	1.8.DT-4	GB/T119	Cylindricadl pin 4×20	1
13	1.8.Z-46	GB/T70.1	Hexagon socket head cap screwsM8×20-8.8	13
14	1.8.Z.1-5	XYQ1.8.Z.1-5	Retaining pin	2
15	1.8.Z.1-2	XYQ1.8.Z.1-2	Jaw body	2
16	1.8.Z.1-3	XYQ1.8.Z.1-3	Roller shaft	2
17	1.8.Z.1-4	XYQ1.8.Z.1-4	Roller	2
18	1.8.Z.1-7	XYQ1.8.Z.1-7	Spring seat	2
19	1.8B-5	XQ1.8B.Z.1-1	Jaw set (or die)	2
20	1.8.Z.1-18	GB/T70.1	Hexagon socket head cap screwsM8×14-8.8	4
21	1.8.Z.1-9	GB/T70.1	Hexagon socket head cap screwsM8×16-8.8	4

9.5 Braking and centralizing mechanism and parts list (Fig.7,Table 5)

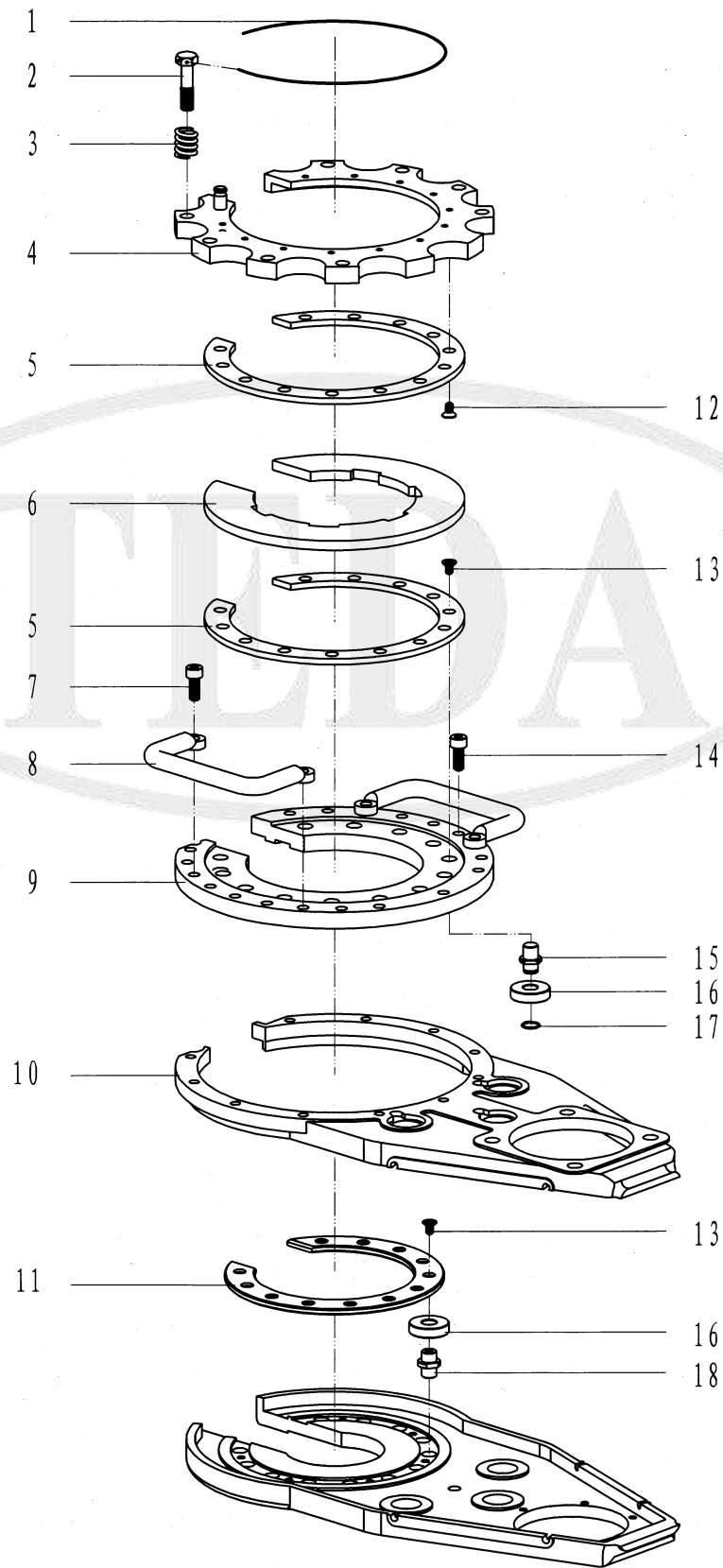


Fig. 7 Braking and centralizing mechanism

Table 5 Braking and centralizing mechanism parts list

Item	P/N	Part number	Part name	QTY
1	1.8.Z-70		Steel wire2×700	1
2	1.8.Z-85	GB/T32.2	Hexagon bolts with slot on head M10×45-8.8	8
3	1.8.Z-29	XYQ3C.Z-21	Spring	8
4	1.8.Z.5	XYQ1.8.Z.5	Brake disc assembly	1
5	1.8.Z-82	XYQ1.8.Z-37	Friction disc	2
6	1.8.Z-83	XYQ1.8.Z-1A	Brake plate	1
7	1.8.B-33	GB/T70.1	Hexagon socket head cap screwsM8×25-8.8	4
8	1.8.Z-40	XYQ1.8.Z-24	Tong head handle	2
9	1.8.Z-39	XYQ1.8.Z-23 (2A)	Tong head cover	1
10	1.8.Z-11	XYQ1.8.Z-7 (2A)	Shell	1
11	1.8.Z-4	XYQ1.8.Z-3	Supporting plate	1
12	1.8.Z.1-72	GB/T68	Cross recessed countersunk flat head screw M5×8-5.8	13
13	1.8.Z-5	GB/T68	Cross recessed countersunk flat head screw M5×10-5.8	25
14	1.8.Z-46	GB/T70.1	Hexagon socket head cap screws M8×20-8.8	7
15	1.8.Z-37	XYQ1.8.Z-22A	Upper centralizing roller shaft	13
16	1.8.Z-3	XYQ1.8.Z-2	Centralizing roller	25
17	1.8.Z-36	GB/T894.1	Circlip for shaft 12	13
18	1.8.Z-7	XYQ1.8.Z-5	Centralizing roller shaft	12

9.6 Transmission mechanism and parts list (Fig.8, Table 6)

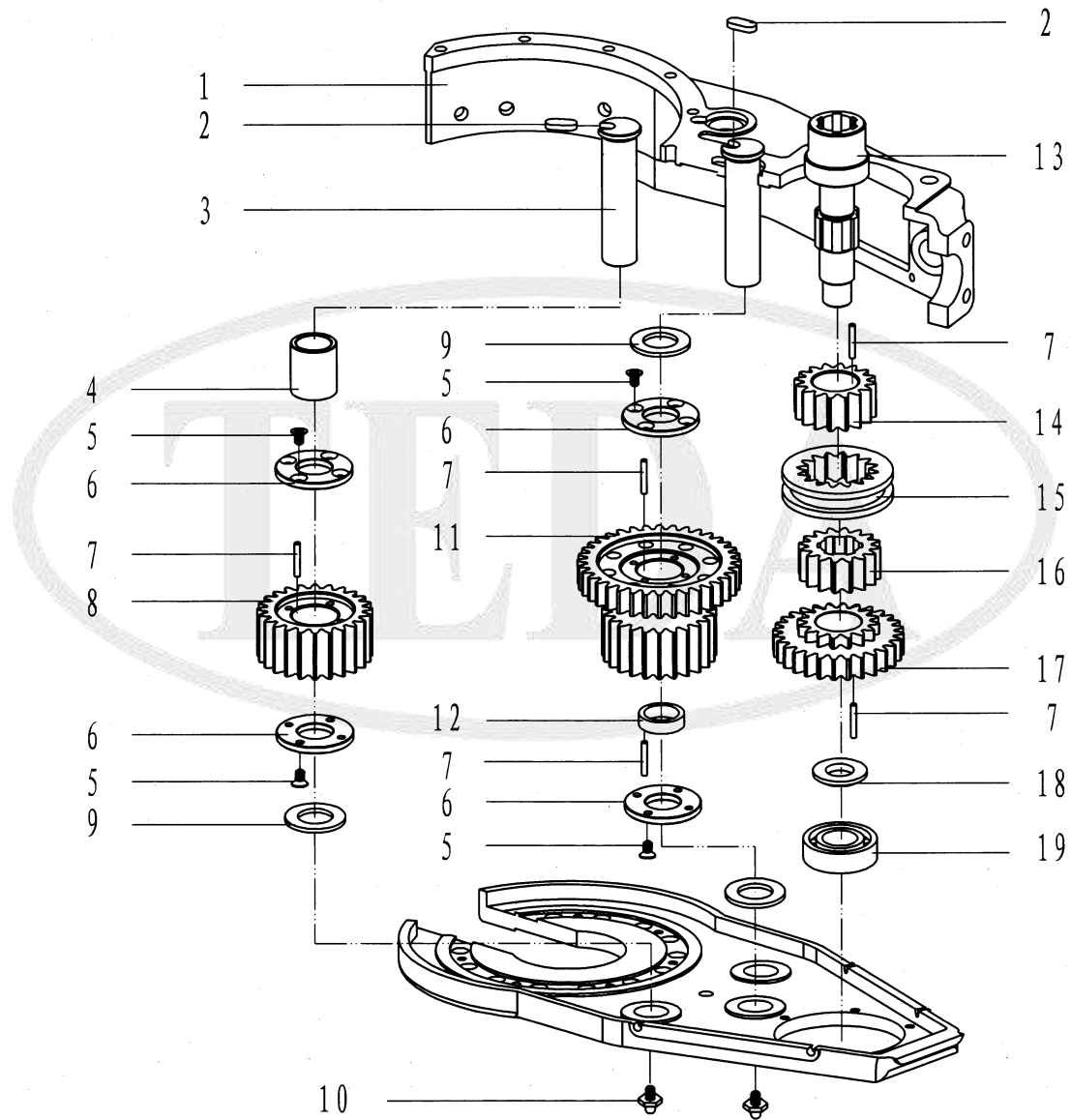


Fig. 8 Transmission mechanism

Table 6 Transmission mechanism parts list

Item	P/N	Part number	Part name	QTY
1	1.8.Z-11	XYQ1.8.Z-7 (2A)	Shell	1
2	1.8.Z-43	XYQ1.8.Z-25	Key	3
3	1.8.Z-15	XYQ1.8.Z-10	Shaft	3
4	1.8.Z-57	XYQ1.8.Z-32	Sleeve	2
5	1.8.Z-5	GB/T68	cross recessed countersunk head screwM5×10-5.8	24
6	1.8.Z-58	XYQ1.8.Z-33	Needle cover	6
7	1.8.Z-13	GB/T309	Needle 4×25.8	132
8	1.8.Z-56	XYQ1.8.Z-31	Idle gear	2
9	1.8.Z-22	XYQ1.8.Z-16	Washer	4
10	1.8.Z-16	GB/T1152	Straight hydraulic grease nipples M6	3
11	1.8.Z-12	XYQ1.8.Z-8	Duplex Gear	1
12	1.8.Z-14	XYQ1.8.Z-9	Spacer ring	1
13	1.8.Z-25	XYQ1.8.Z-18	Power input shaft	1
14	1.8.Z-17	XYQ1.8.Z-11	Shifting gear	1
15	1.8.Z-18	XYQ1.8.Z-12	Inner gear sleeve	1
16	1.8.Z-20	XYQ1.8.Z-14	Spline gear	1
17	1.8.Z-19	XYQ1.8.Z.2	Clutching Gear Assembly	1
18	1.8.Z-23	XYQ1.8.Z-17	Support plate	1
19	1.8.Z-24	GB/T276	Single row deep groove ball bearings 6204	1

9.7 Hand Control Valve and parts list (Fig.9,Table 7)

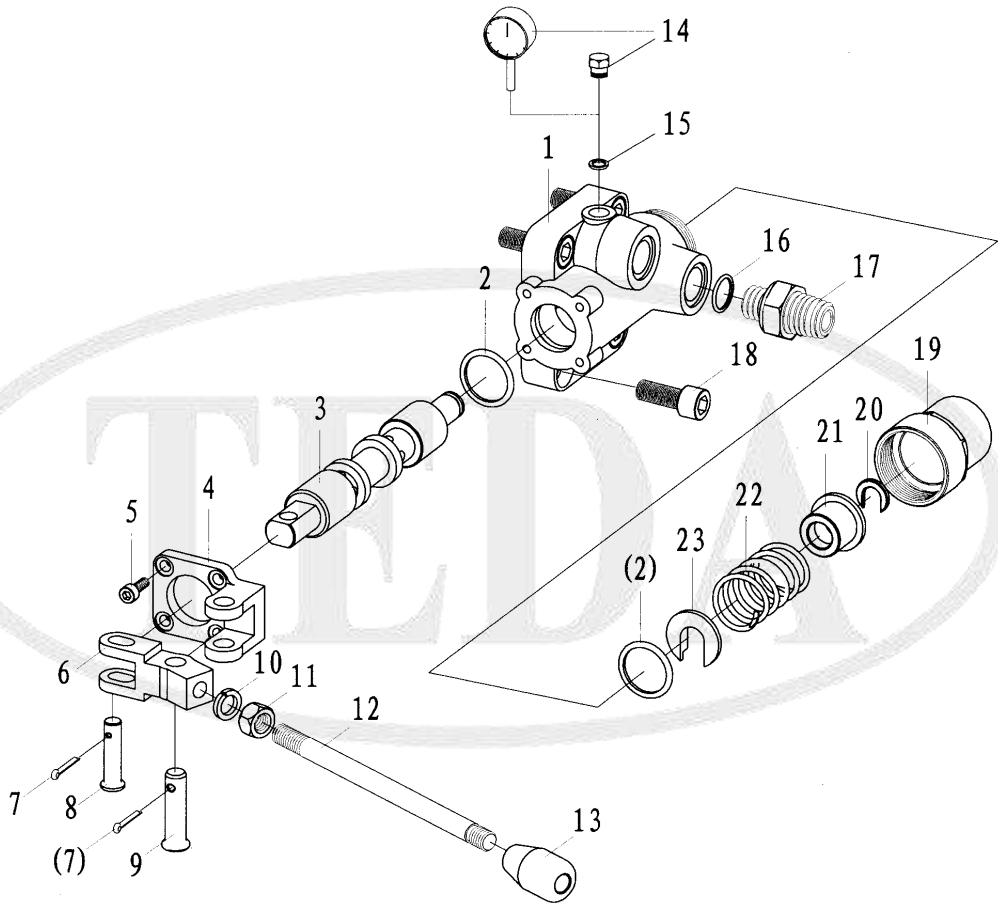


Fig.9 Hand Control Valve

Table 7 Hand Control Valve parts list

Item	P/N	Part number	Part name	QTY
1	1.8.Z-55-10	XYQ3C.Z.5-1	Valve Body	1
2	1.8.Z-55-8	GB1235-76	O-Ring36×3.5	2
3	1.8.Z-55-7	XYQ3C.Z.5.1	Combination Valve Core	1
4	1.8.Z-55-6	XYQ3C.Z.5-7	Support Seat	1
5	1.8.Z-9	GB/T70	Hexagon Socket Head ScrewM6×16	4
6	1.8.Z-55-5	XYQ3C.Z.5-8A	Fork	1
7	1.8.DT-9	GB/T91	Cotter Pin3.2×20	2
8	1.8.Z-55-2	GB/T882	Pin ShaftB10×40	1
9	1.8.Z-55-1	GB/T882	Pin ShaftB12×45	1
10	1.8.B-18	GB/T93	Spring Washer 12	1
11	1.8.Z-55-4	GB/T6170	Hexagon NutM12	1
12	1.8.Z-55-3	XYQ3C.Z.5-9	Control Lever	1
13	1.8.Z.3-10	XYQ3C.Z.5-10	Ball Knob	1
14	1.8.Z-55-16	XYQ3C.Z.5-12	Hex head plug	1
	1.8.Z-47		Pressure Gage0~16MPa	1
15	1.8.Z-55-17	XYQ3C.Z.5-18	Copper Washer	1
16	1.8.Z-59	GB1235-76	O-Ring26×2.4	2
17	1.8.Z-60	XYQ3C.Z-24	Tail Connector	2
18	1.8.Z-55-9	GB/T70	Hexagon Socket Head Screw M12×35	4
19	1.8.Z-55-15	XYQ3C.Z.5-2	Valve Tail Seat	1
20	1.8.Z-55-14	XYQ3C.Z.5-6	Restricting Ring	1
21	1.8.Z-55-13	XYQ3C.Z.5-5	Spring Seat(2)	1
22	1.8.Z-55-12	XYQ3C.Z.5-4	Spring	1
23	1.8.Z-55-11	XYQ3C.Z.5-3	Spring Seat(1)	1

9.8 Shifting mechanism assembly and parts list (Fig.10,Table 8)

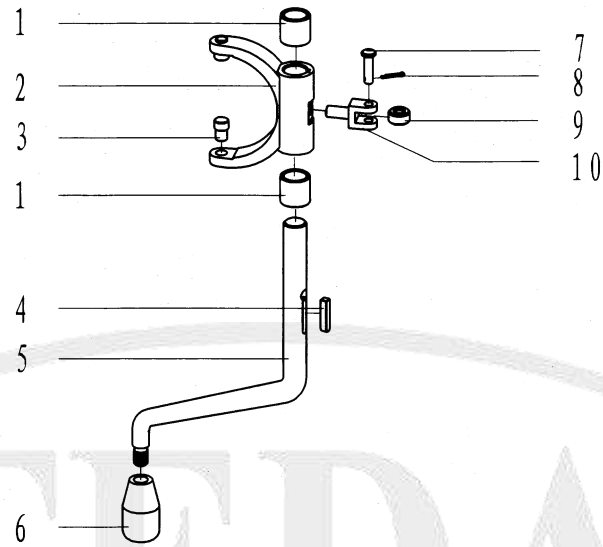


Fig.10 Shifting mechanism assembly

Table 8 Shifting mechanism assembly parts list

Item	P/N	Part number	Part name	QTY
1	1.8.Z.3-1	XYQ1.8.Z.3-1	Sleeve	2
2	1.8.Z.3-2	XYQ1.8.Z.3-2	Shift Fork	1
3	1.8.Z.3-9	XYQ1.8.Z.3-5	Sliding Block	2
4	1.8.Z.3-7	XYQ1.8.Z.3-3	Key	1
5	1.8.Z.3-8	XYQ1.8.Z.3-4	Shift Fork Shaft	1
6	1.8.Z.3-10	XYQ3C.Z.5-10	Ball knob	1
7	1.8.Z.3-4	XYQ3C.Z.6-4	Roller Shaft	1
8	1.8.Z.3-5	GB/T91	Cotter Pin 2×10	1
9	1.8.Z.3-3	XYQ3C.Z.6-3	Roller	1
10	1.8.Z.3-6	XYQ3C.Z.6-5	Roller seat	1

9.9 Safety door assembly and parts list (Fig.11, Table 9)

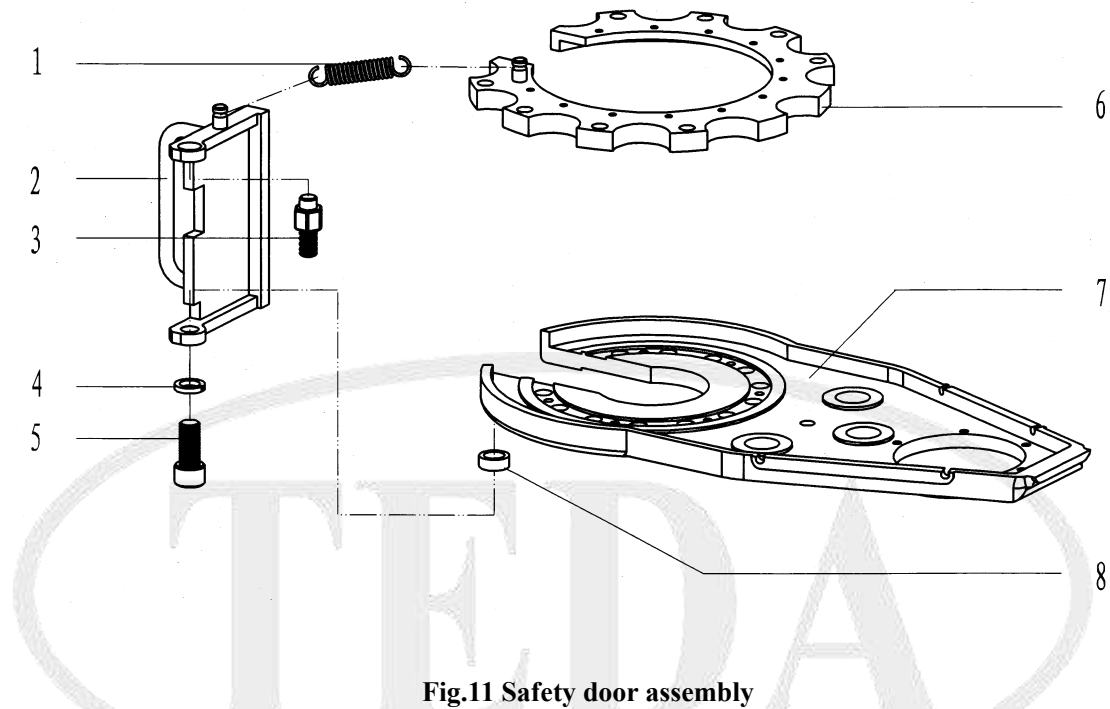


Fig.11 Safety door assembly

Table 9 Safety door assembly parts list

Item	P/N	Part number	Part name	QTY
1	1.8.Z-74		Pulling spring($\Phi 2.5 \times \Phi 15 \times 65$)	1
2	1.8.Z.4.1	XYQ1.8.Z.4(1A).1	Safety door	1
3	1.8.Z. 4-4	XYQ1.8.Z.4(1A)-4	Pin shaft(2)	1
4	1.8.Z-75	GB/T859	Standard spring washer 14	1
5	1.8.Z.4-3	XYQ1.8.Z.4(1A)-3	Pin shaft(1)	1
6	1.8.Z.5	XYQ1.8.Z.5	Braking plate assembly	1
7	1.8.Z-11	XYQ1.8.Z-7(2A)	Shell	1
8	1.8.Z.4-2	XYQ1.8.Z.4(1A)-2	Shaft seelve	1

9.10 Backup tong and parts list (Fig.12, Table 10)

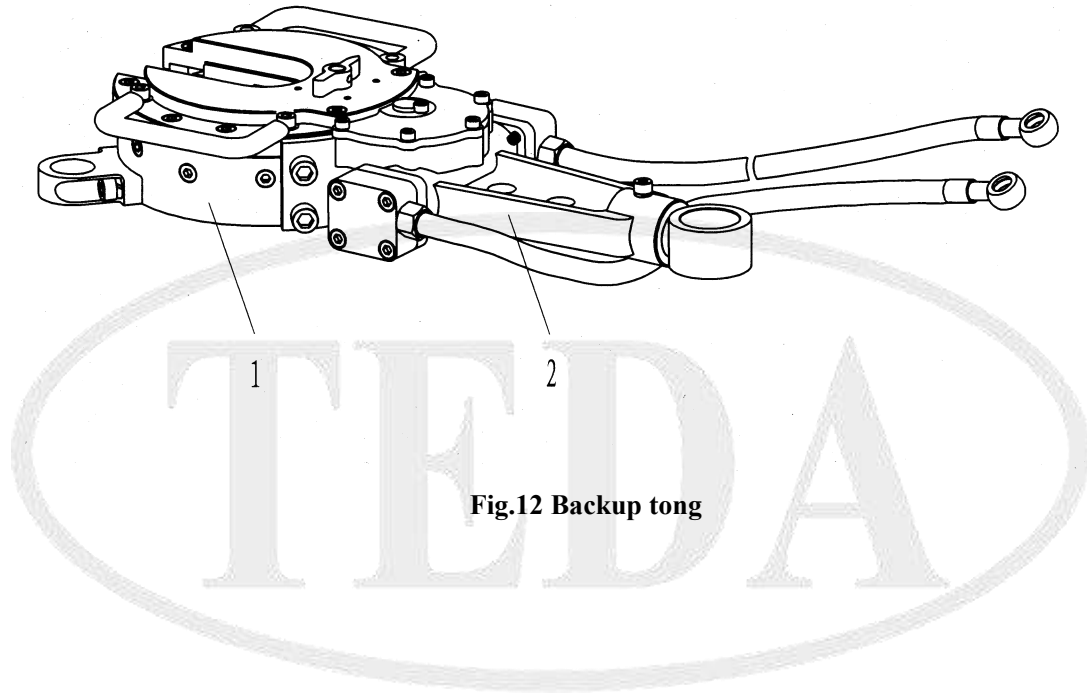


Fig.12 Backup tong

Table 10 Backup tong parts list

Item	P/N	Part number	Part name	QTY
1	1.8B-6		Backup tong head	1
2	1.8.B-46		Tong tail oil cylinder assembly	1

9.11 Backup tong head assembly and parts list (Fig.13, Table 11)

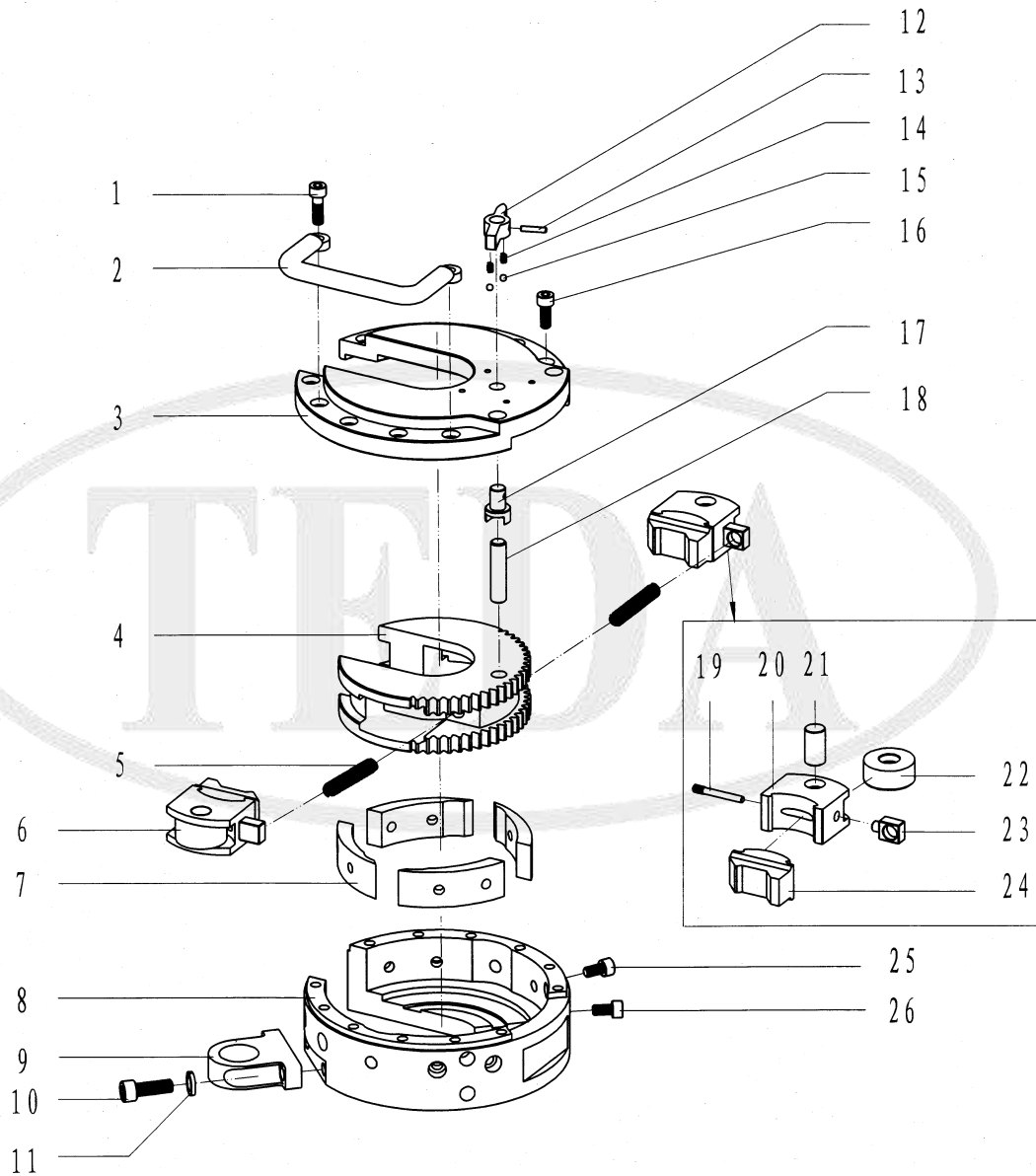


Fig.13 Backup head assembly

Table 11 Backup head assembly parts list

Item	P/N	Part number	Part name	QTY
1	1.8.B-33	GB/T70.1	Hexagon socket head cap screw M8×25-8.8	4
2	1.8.Z-40	XYQ1.8.Z-24	Tong head handle	2
3	1.8.B-5	XYQ1.8.B-02	Backup tong head cover	1
4	1.8B-7	XQ1.8B.B-1	Jaw set bracket	1
5	1.8.Z.1-8	XYQ1.8.Z.1-8	Spring	2
6	1.8B-4		Jaw set assembly	2
7	1.8.Z.1-10	XYQ1.8.Z.1-9	Ramp	4
8	1.8B-8	XQ1.8B.B-2	Backup tong head body	1
9	1.8.B-31	XYQ1.8.B-12	Backup tong front seat	2
10	1.8.Z-31	GB/T70.1	Hexagon socket head cap screw M10×30-8.8	4
11	1.8.Z-30	GB/T93	Standard spring washer 10	4
12	1.8.B-2	XYQ3C.B-2	Backup tong reset knob	1
13	1.8.B-1	GB/T119	Cylindrical pin 4×18	1
14	1.8.B-43	XYQ3C.B-10	Spring	2
15	1.8.B-42	GB/T308	Steel ball Φ4.5	2
16	1.8.Z-46	GB/T70.1	Hexagon socket head cap screw M8×20-8.8	8
17	1.8.B-3	XYQ1.8.B-01	Knob shaft	1
18	1.8.Z.1-20	XYQ1.8.Z.1-12	Retaining pin	1
19	1.8.Z.1-5	XYQ1.8.Z.1-5	Stop pin	2
20	1.8.Z.1-2	XYQ1.8.Z.1-2	Jaw set body	2
21	1.8.Z.1-3	XYQ1.8.Z.1-3	Roller shaft	2
22	1.8.Z.1-4	XYQ1.8.Z.1-4	Roller	2
23	1.8.Z.1-7	XYQ1.8.Z.1-7	Spring seat	2
24	1.8B-5	XQ1.8B.Z.1-1	Jaw set (or die)	2
25	1.8.Z.1-18	GB/T70.1	Hexagon socket head cap screw M8×14-8.8	4
26	1.8.Z.1-9	GB/T70.1	Hexagon socket head cap screw M8×16-8.8	4

9.12 Tong tail oil cylinder assembly and parts list(Fig.14, Table 12)

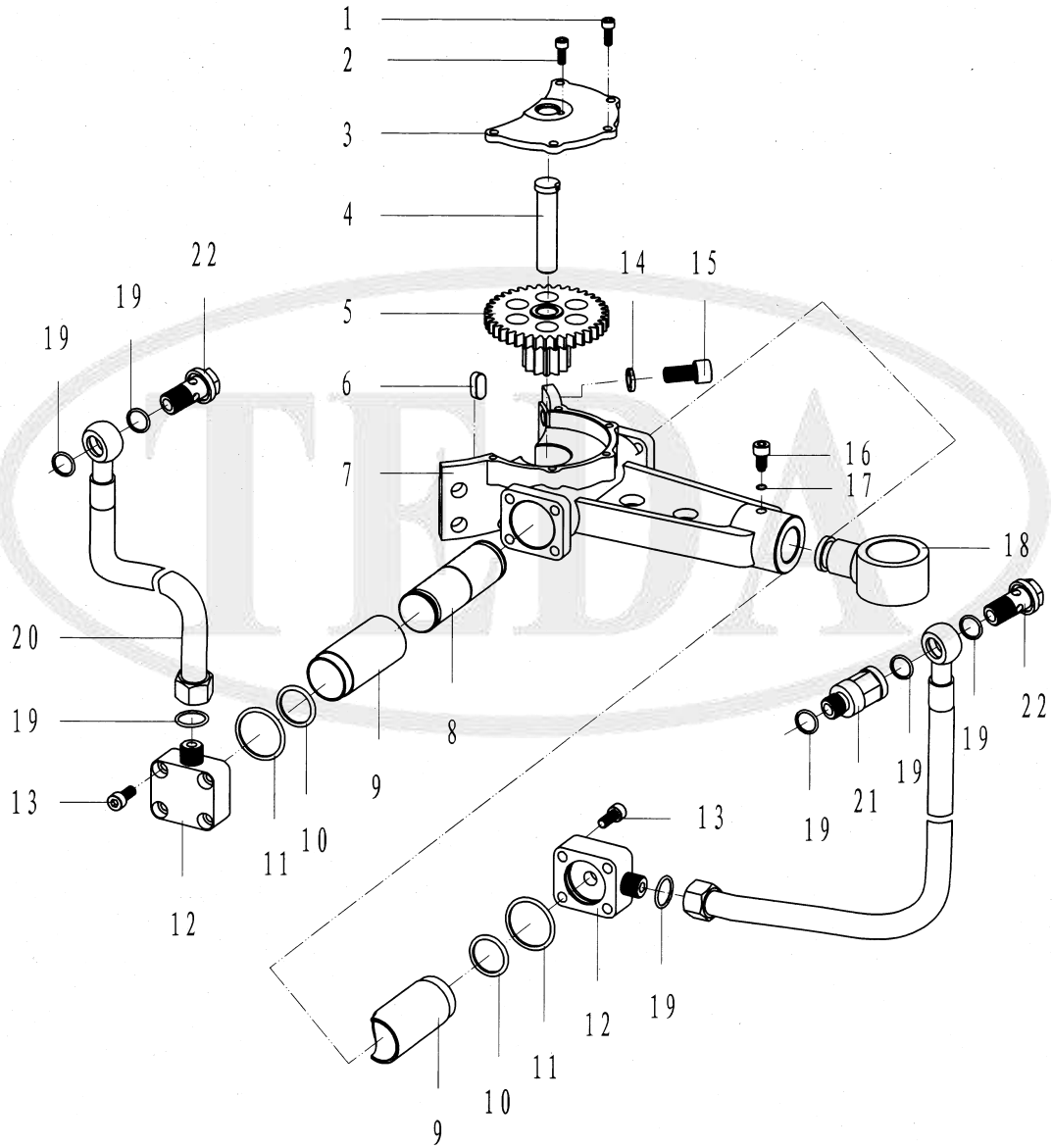


Fig.14 Tong tail oil cylinder assembly

Table 12 Tong tail oil cylinder assembly parts list

Item	P/N	Part number	Part name	QTY
1	1.8.Z-9	GB/T70.1	Hexagon socket head cap screws M6×16-8.8	5
2	1.8.B-7	GB/T70.1	Hexagon socket head cap screws M6×10-8.8	1
3	1.8.B-9	XYQ1.8.B-05	Gear cover	1
4	1.8.B-6	XYQ1.8.B-03	Shift shaft	1
5	1.8.B-8	XYQ1.8.B-04	Duplex gear	1
6	1.8.B-47	GB/T1096	Key 12×28	1
7	1.8.B-11	XYQ1.8.B-07A	Tong tail oil cylinder	1
8	1.8.B-12	XYQ1.8.B-08A	Rack plunger	1
9	1.8.B-10	XYQ1.8.B-06	Cylinder liner	2
10	1.8.B-13	GB1235-76	O-Ring 35×3.5	2
11	1.8.B-15	GB1235-76	O-Ring 44×3.5	2
12	1.8.B-14	XYQ1.8.B-09	Cylinder cover	2
13	1.8.B-33	GB/T70.1	Hexagon socket head cap screws M8×25-8.8	8
14	1.8.B-18	GB/T93	Standrad spring washer 12	4
15	1.8.B-17	GB/T70.1	Hexagon socket head cap screws M12×25-8.8	4
16	1.8.B-40	XYQ1.8.B-13	Stop pin	1
17	1.8.B-48	GB/T93	Standrad spring washer 8	4
18	1.8.B-41	XYQ1.8.B-14	Backup tong tail	1
19	1.8.B-39	GB1235-76	O-Ring 22×2.4	7
20	1.8.B-50		Hose 8 II -500 (M18×1.5/Φ18 ball)	2
21	1.8.B-51	XYQ3C.B-22	Longer adapter	1
22	1.8.B-52	XYQ3C.B-21 (1)	Oil bolt	2

9.13 Fore guide pole and parts list (Fig.15, Table 13)

9.14 Rear guide pole and parts list (Fig.16, Table 14)

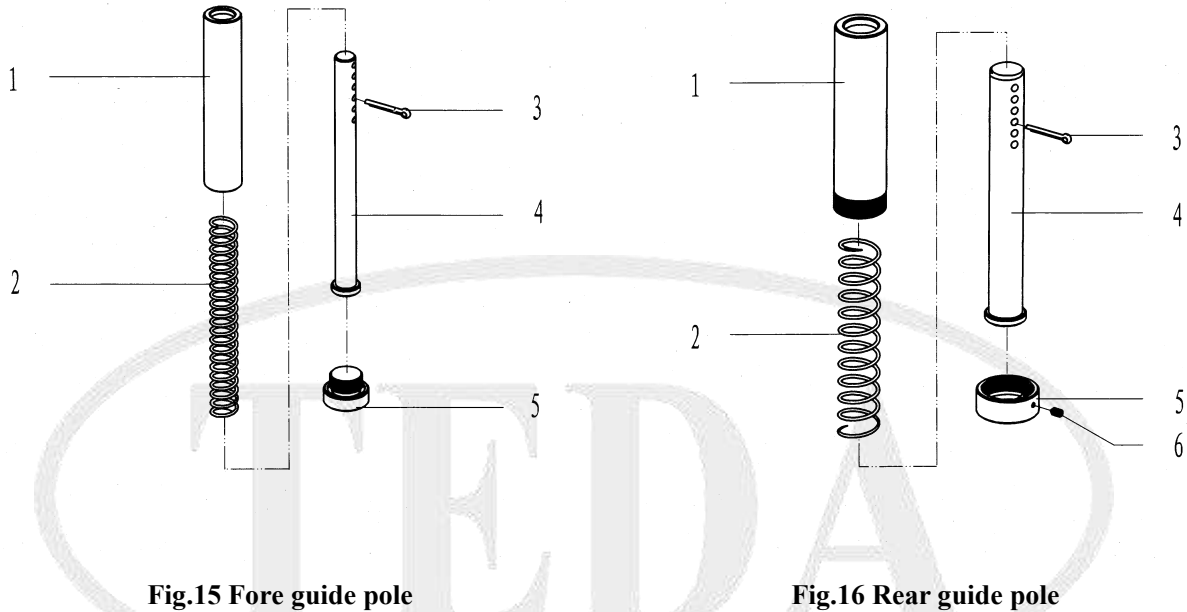


Table 13 Front guide pole parts list

Item	P/N	Part number	Part name	QTY
1	1.8.QD-5	XYQ1.8.QD-4	Fore guide rod sleeve	2
2	1.8.QD-4	XYQ1.8.QD-3	Spring	2
3	1.8.QD-2	GB/T91	Cotter 4×20	2
4	1.8.QD-3	XYQ1.8.QD-2	Fore guide rod	2
5	1.8.QD-1	XYQ1.8.QD-1	Fore guide rod seat	2

Table 14 Rear guide pole parts list

Item	P/N	Part number	Part name	QTY
1	1.8.HD-5	XYQ1.8.HD.1	Back guide rod sleeve	1
2	1.8.HD-4	XYQ1.8.HD-3	Spring	1
3	1.8.HD-2	GB/T91	Cotter 5×35	1
4	1.8.HD-3	XYQ1.8.HD-2	Back guide rod	1
5	1.8.HD-1	XYQ1.8.HD-1	End cover	1
6	1.8.HD-6	GB/T71	Slotted cone end fastening screw M6×10	1

9.15 Lift assembly and parts list (Fig.17, Table 15)

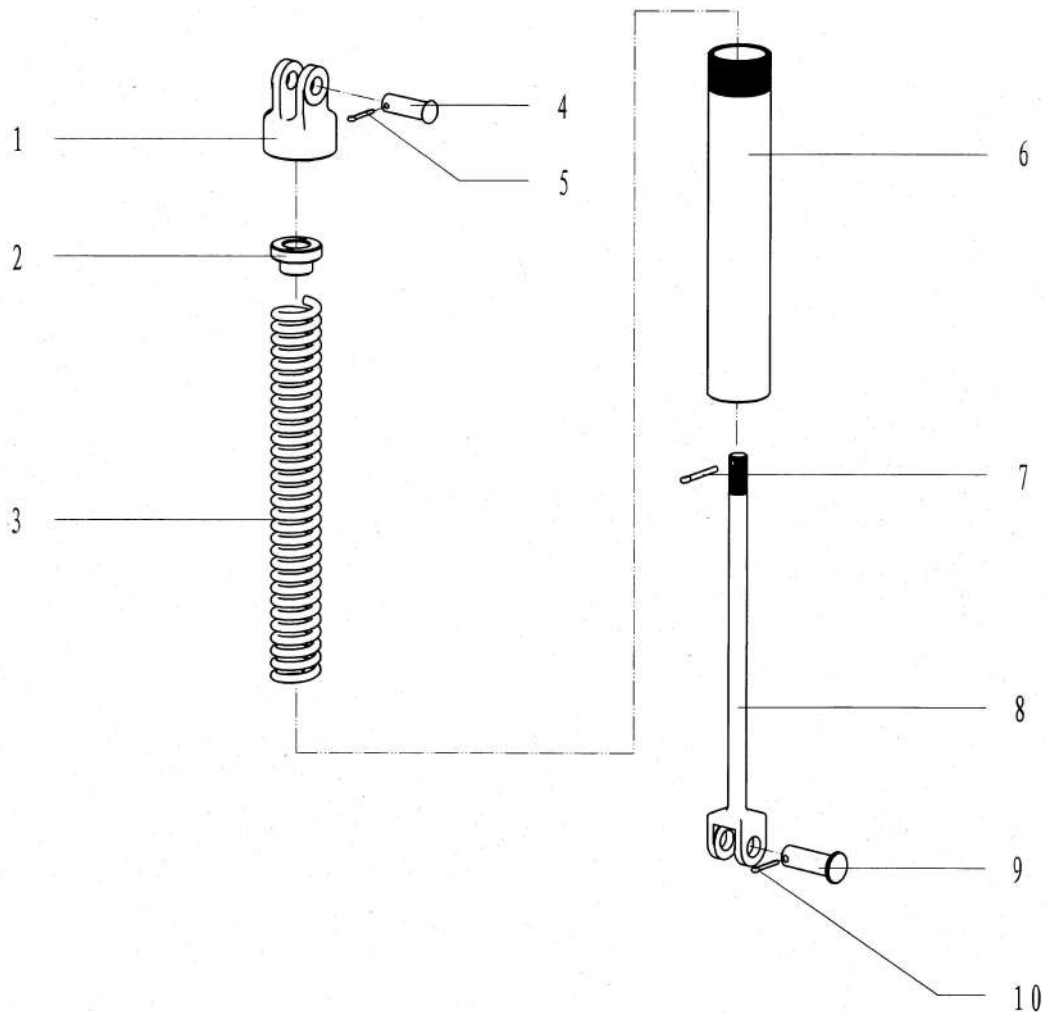


Fig.17 Lift assembly

Table 15 Lift assembly parts list

Item	P/N	Part number	Part name	QTY
1	1.8.DT-2	XYQ1.8.DT-1	Lifting lug	1
2	1.8.DT-3	XYQ1.8.DT-2	Spring seat	1
3	1.8.DT-6	XYQ1.8.DT-3	Spring	1
4	1.8.DT-1	GB/T882	Pin shaft B14×40	1
5	1.8.DT-9	GB/T91	Cotter pin 3.2×20	2
6	1.8.DT-5	XYQ1.8.DT.1	Lift	1
7	1.8.DT-4	GB/T119	Cylindrical pin4×20	1
8	1.8.DT-7	XYQ1.8.DT.2	Hanger rod	1
9	1.8.DT-8	GB/T882	Pin shaftB16×45	1

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.

10.2 Storage

XYQ3C 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.

SERVICE PROMISE: Reply in Time, Main tenance and Repairing in Work Site, free service.

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