

Tuwei 图伟®



TWQ-VA Pipe Cutting Machine

User's Manual

Familiar yourself with this Manual prior to operation.



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I .Major applications and scope

This machine is applicable for cutting of seamless steel tubing, galvanized pipes and plastic-lining pipes to facilitate the installation of pipes. It's an ideal tool for construction industry and pipeline construction sectors.

II .Technological Parameters

Max. diameter allowed for pipes to be cut.....	219mm
Min. diameter allowed for pipes to be cut.....	57mm
Max. wall thickness allowed for pipes to be cut.....	6mm
Stroke of oil cylinder.....	100mm
Capacity of oil tank.....	350ml
Cutter force	5880kg
Speed.....	23rpm
Electric motor	550W
Outside packing dimensions (W×D×H)	630mm×600mm×740mm
Net weight.....	70kg

III.Precautions

1. You are required to familiar yourself with structure of machine, functions of various handles as well as the driving and lubrication system through reading the Manual prior to operation.
2. Before starting the machine, you shall add oil as instructed in the Manual, check whether the hydraulic cylinder has been filled with oil (20# oil in the summer and 10 # oil in the winter) and whether the rated voltage and frequency of the machine coinciding with the power supply.
3. Earthing and fuse are required in the electric system.
4. Never run the machine overload.

IV.Driving System

As for major moving unit of this machine, the reduction motor directly drives the main shaft to rotate the cutter, contributing to the minimum loss of mechanical power. The feeding movement is realized by manual hydraulic system.

V. Major Parts

1. Rocker arm 2. Safety cover 3. Cutting blade 4. Long axle 5. Cover of oil box 6. Oil box 7. Pump body 8. Roller 9. Axle for roller 10. Handle 11. Reduction motor 12. Switch 13. Frame 14. Oil cylinder nut 15. Relief valve handle 16. Oil cylinder 17. Oil cylinder base 18. Vitta tie

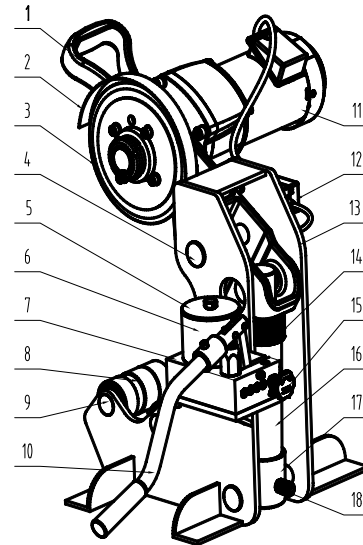


Fig.1

VI. Electric System

The electric system of this machine consists of an electric motor, a switch and cables. Operate the switch to power on/off the machine. An electric motor is the only load. The power supply shall agree with the requirements of motor. Sound earthing of ground wire (black) is required prior to starting the machine.

VII. Operation and Adjustment

1. Let the machine run idle to check whether it's normal.
2. Place one end of the steel tubes on the roller and place another end of the steel tubes on the bracket, adjust the four bolts of bracket to vary two ends of tube keep parallel. Push the tube with a hand to check whether it moves or not. If it moves, vary the right-and-left position of bracket to fix the tubes and roller keep parallel, the steel tube being vertical to the cutting blade until the tubes never escape. (refer to Fig. 2-F ig.3).

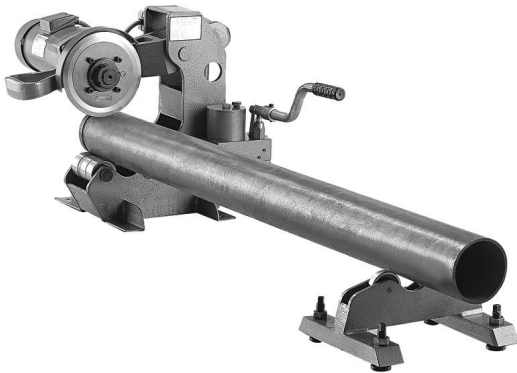


Fig.3

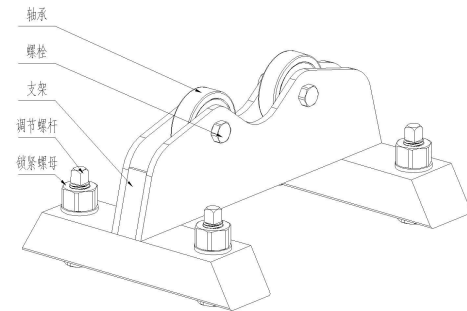


Fig.2

3. At the beginning of operation, you shall tighten the relief valve of the oil pump and hold the rocker handle (refer to Fig. 4) push down emphatically to allow the blade approach the tube quickly, then turn the handle (refer to Fig. 5) to allow the blade cut the tube slowly. The steel tube shall be rotated at least one turn for each applying of pressure. When the tube is going to be cut off, stop turning the handle and let the blade rotate for several cycles by itself. The tube will break automatically.



Fig.5

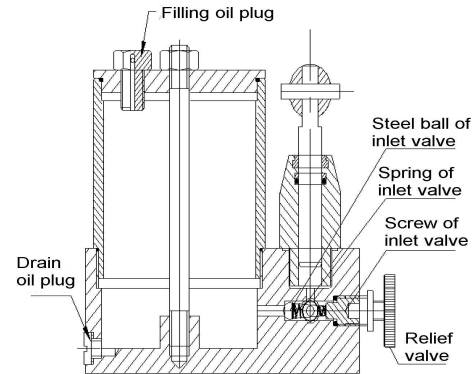


Fig.4

4. After the cut has been cut off, open the relief valve (see fig. 4) to let the cutting blade return its original high position.
5. For the replacement of cutting blade, you shall first loosen 4 M8 screws followed by removing the old blade and replacing with new one. Finally tighten the 4 M8 screws. Never loosen the round nut(refer to Fig. 6- Fig. 7).

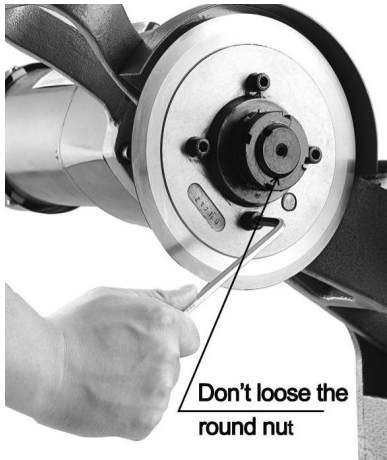


Fig.6



Fig.7

·VIII. Maintenance

1. Check whether the moving units and the machine can work normally or not. Check whether the hydraulic is sufficient. If not, fill it. After each use, clean the working surface and coat it with anti-rust oil . Add lubrication grease to all the joints of moving units.
2. Use hydraulic oil of proper brand number as instructed in the Manual. Remove all the dusts near the filler aperture before adding oil.

·IX Troubleshooting

Problem	Causes	Solutions
No pressure in the oil cylinder. No action resulted from turning the handle.	1. Insufficient hydraulic oil.	Add hydraulic oil
	2. Dirt oil blocks the suction hole.	Replace the hydraulic oil ,clean the strainer

	3. Leakage occurs to the fitting surface of inlet valve	Remove the screws and spring. Knock the small steel balls lightly to force out the air-tight surface.
The piston will move forward when the handle is forced downward, but it will return when the handle is released.	1. Dirt oil blocks the hole.	Replace the hydraulic oil
	2. Leakage occurs to the fitting surface of outlet check valve	Remove the screws and spring. Knock the small steel balls lightly to force out the air-tight surface.
	3. Leakage occurs to other position	Trace the problem and reinstall.
Insufficient oil cylinder pressure	The spring of safety valve breaks down	Replace the safety valve.
The tube escapes	1. Improper direction and height of bracket.	Vary the direction and height of bracket.

· X Fig.2 Pipe Cutting Machine Component and Parts Form

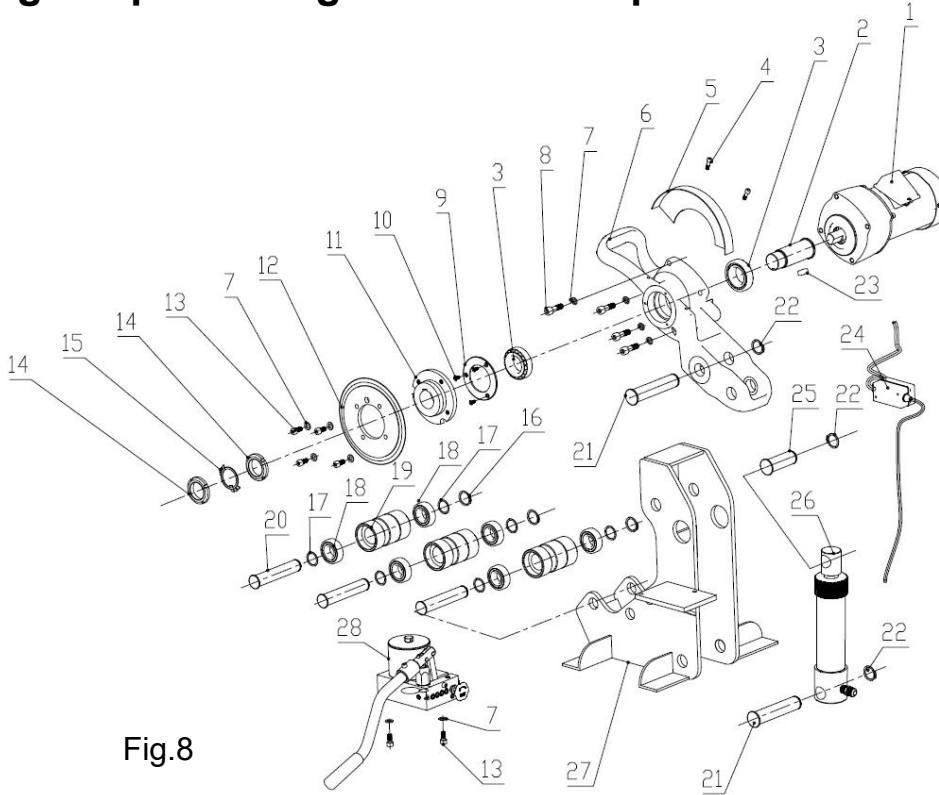


Fig.8

(1)、TWQ-V's Component and Parts Form(Fig.8)

S/N	Code name	Name	Qty	Material
1		550W Reduction motor	1	
2	TWQ5-01-004	Main shaft	1	40Cr
3	GB/T297-1994	Bearing 32008	2	
4	GB/T70.1-2000	Hexagonal screw M5×10	2	
5	TWQ5-01-005	Safety cover	1	Jointing assembled
6	TWQ5-01-003	Rock arm	1	HT200
7	GB/T93	Spring washer Φ8	10	
8	GB/T870.1-2000	Hexagonal screw M8×45	4	
9	TWQ5-01-006	Dustproof cover	1	45#
10	GB/T68	Slotting bolt M5×8	3	
11	TWQ/3-01-013	Cutting blade cover	1	45#
12	TWQ/3-01-014	Cutting blade	1	Tool steel
13	GB/T70.1-2000	Hexagonal screw M8×20	6	
14	GB/T812-1988	Circinal nut M36×1.5	2	
15	GB/T858-1988	Limit spring washer 36	1	
16	GB/T894.2-1986	Clamp spring 25	3	

17	TWQ/3-01-018	Roller washer	6	
18	GB/T276-1994	Bearing 62005	6	
19	TWQ5-01-001	Roller	3	45#
20	TWQ/3-01-007	Axle of roller	3	45#
21	TWQ/3-01-002	Long axle	2	45#
22	GB/T894.2-1986	Clamp spring 28		
23	GB/T1096-2003	Flat key 12×25	1	
24		Switch	1	
25	TWG5-01-002	Short axle	1	45#
26	TWQ/5-04-000	Oil cylinder system	1	Assembly
27	TWQ/5-02-1	Frame		Jointing assembled
28	TWQ/5-03-000	Oil pump system	1	Assembly

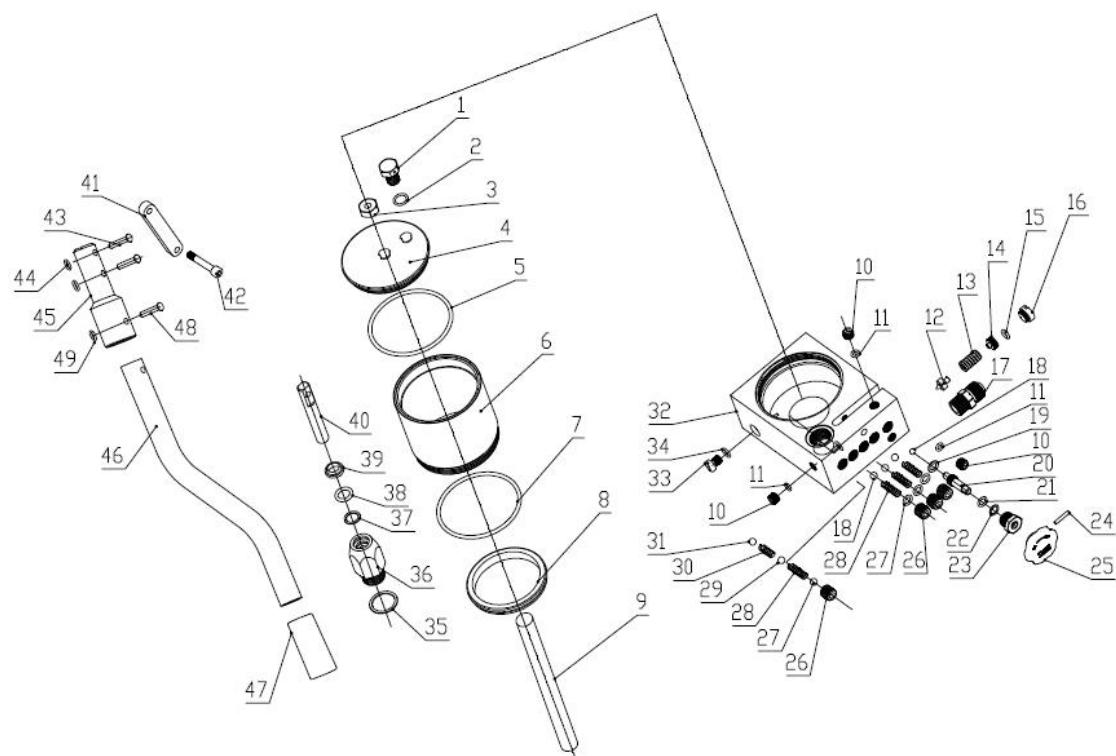


Fig.9

(2)、TWQ-V ' s the parts diagram of oil pump system(Fig.9)

S/N	Code name	Name	Qty	Interchangeability
1	TWG/2-02-003	Filler plug	1	45#
2	GB1235-76	O-type seal $\Phi 12 \times 1.9$	1	Buna-N rubber
3	GB14-86	Nut M10	1	
4	TWQ/3-03-010	Oil box cover	1	45#
5	GB1235-76	O-type seal $\Phi 80 \times 1.9$	1	Buna-N rubber
6	TWQ/5-03-002	Oil box	1	45#
7	GB1235-76	O-type seal $\Phi 85 \times 3.1$	1	Buna-N rubber
8	TWQ/5-03-003	Filter loop	1	
9	GB901-88	Screw M10 \times 120	1	
10	JB/ZQ446-1997	Plug 2G1/8"	3	HPb59-1
11	GB1235-76	O-type seal $\Phi 8 \times 1.8$	3	Buna-N rubber
12	TWG/2-02-026	Concial valve	1	Spring steel
13	TWG/2-02-025	Safety valve spring	1	65Mn
14	TWG/2-02-023	Saftey valve bolt	1	45#
15	GB1235-76	O-type seal $\Phi 11 \times 2.2$	1	Buna-N rubber
16	TWG/2-02-024	Safety bulkhead	1	45#

17		Vitta tie connection	1	
18	GB308-84	Steel ballΦ6	4	
19		Copper washer(2)	1	Purple-copper
20	TWG/2-02-019②	Relief valve screw	1	45#
21	GB1235-76	O-type sealΦ11×1.9	1	Buna-N rubber
22		Washer(2)	1	PTFE
23	TWG/2-02-019①	Relief nut	1	45#
24	GB879.2-2000	Spring pinΦ3	1	
25	TWG/2-02-019③	Relief valve handle	1	Aluminum alloy
26	TWG/2-02-002	Bolt	4	45#
27	GB1235-76	O-type sealΦ12×2.4	4	Buna-N rubber
28	TWG/2-03-004	Flown spring	4	65Mn
29	GB308-84	Steel ballΦ8	1	
30	TWG/2-02-001	Suction spring	1	65Mn
31	GB308-84	Steel ballΦ5	2	
32	TWQ/5-03-001	Pump body	2	45#
33	TWG/2-02-004	Fuel drain plug	1	45#
34	GB1235-76	O-type sealΦ10×1.9	1	Buna-N rubber
35	TWG/2-02-011	Copper washer(1)	1	Purple-copper

36	TWG/2-02-010	Hexagonal sleeve	1	45#
37		Washer(1)	1	PTFE
38	GB1235-76	O-type sealΦ16×2.4	4	
39		Dustproof ring	4	Buna-N rubber
40	TWG/2-02-007	Small piston rod	1	45#
41	TWG/2-02-009	Connection board	1	Q235
42	GB/T70-85	Inner-hexagonal bolt M6×35	2	
43	GB/T882-1986	Pin shaft Φ6×25	2	
44		Shaft circlip Φ5	2	
45	TWG/2-02-016	Handle seat	1	45#
46	TWG/2-02-005	Handle	1	Steel pipe Φ22
47		Handle sleeve	1	
48		Pin roll Φ8x36.5	1	
49		Shaft circlip Φ6	1	

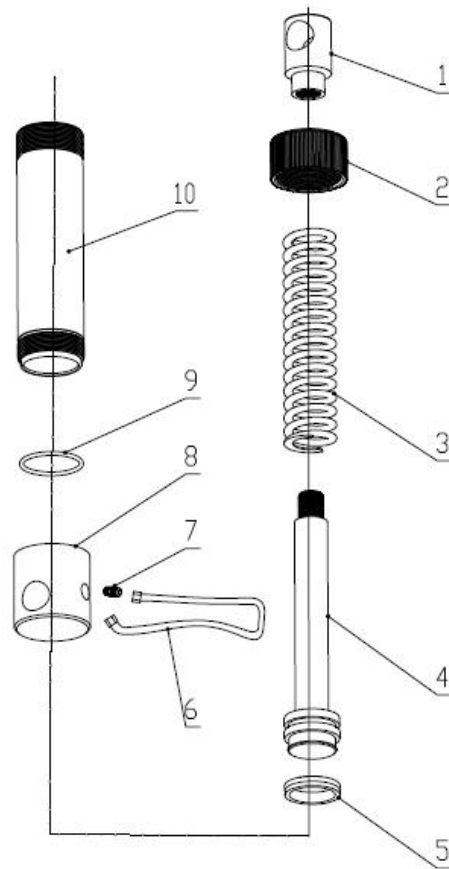


Fig.10

(3) TWQ-V ' s the parts diagram of oil Cylinder system(Fig.10)

S/N	Code name	Name	Qty	Interchangeability
1	TWQ/5-03-004	Piston rod connection	1	45#
2	TWQ/5-03-003	Oil cylinder nut	1	45#
3	TWQ/5-03-006	Flat spring	1	65Mn
4	TWQ/5-03-005	Big piston rod	1	45#
5	Q/213249-77	Y-type seal D50	1	Buna-N rubber
6		Oil pipe	1	
7	GB/T3755.1-1983	Oil pipe connection	1	
8	TWQ/5-03-001	Oil cylinder base	1	45#
9	GB1235-76	O-type seal $\Phi 60 \times 3.5$	1	Buna-N rubber
10	TWQ/5-03-002	Big oil cylinder	1	$\Phi 50$ Oil cylinder pipe

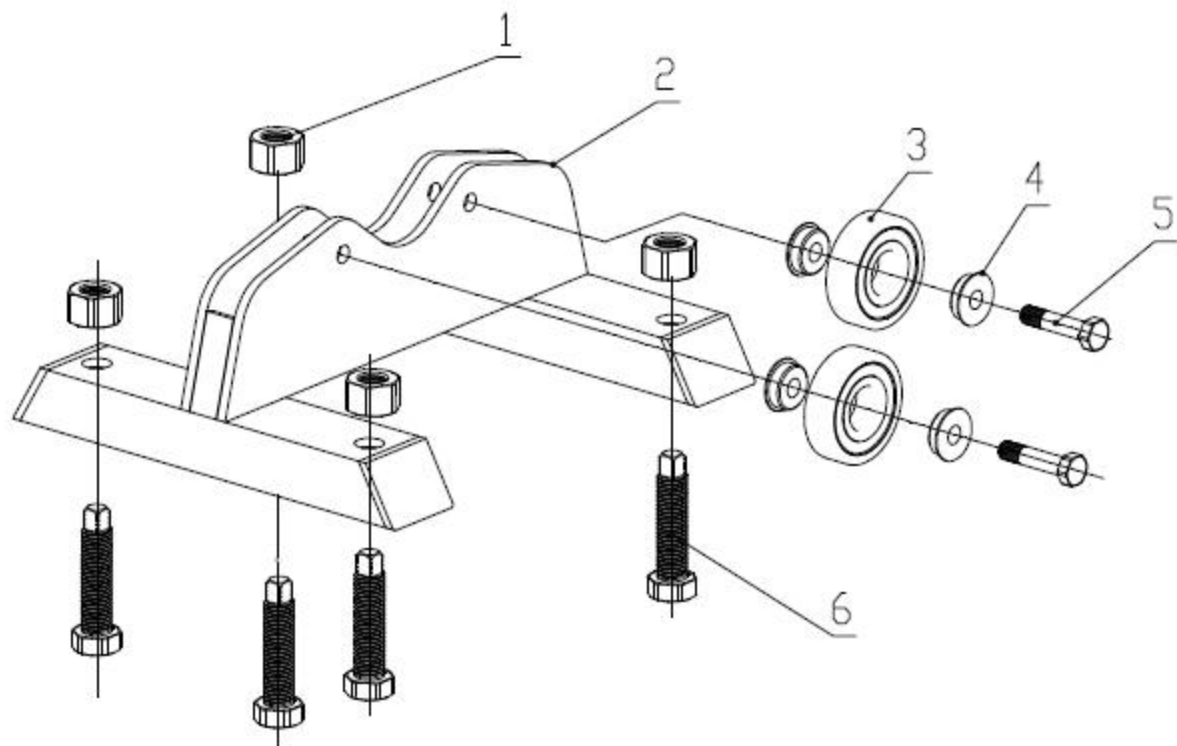


Fig.11

(4) .TWQ- V ' s the parts diagram of Hi-support(Fig.11)

S/N	Code name	Name	Qty	Interchangeability
1	GB/T 6170-2000	Hexagonal screw cap M16	4	
2	TWQ/5-05-01	Hi-support	1	Jointing assembled
3	GB/T276-1994	Bearing 6305	2	
4	TWQ/2-05-006	Bearing retainer ring	4	45#
5	GB/T 5780-2000	Outer-hexagonal bolt M10×30	2	
6	TWQ/5-05-02	Adjust bolt M16×80	4	45#

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