

TUWEI®

ROLL GROOVING MACHINE

CE

TWG-9A MANUAL



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I, MAJOR applications and scope

This machine is applicable for grooving 1"-8" steel pipes, galvanized pipes, plastic-lining pipes and stainless steel pipes etc, to facilitate the mounting of circular pipe clamps. It's an ideal tool for construction industry and pipeline construction sectors.

II, Technological Parameters

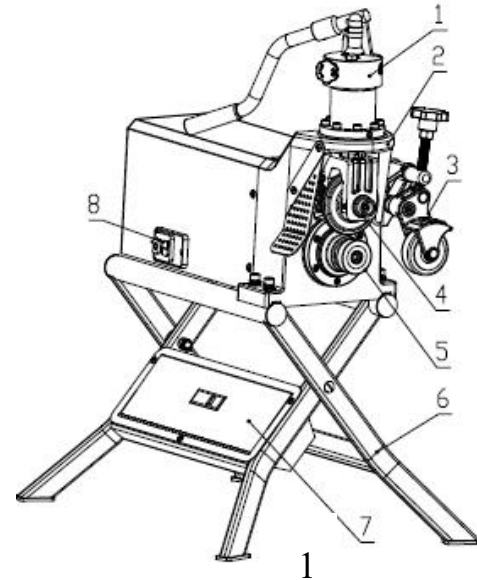
Max. diameter allowed for pipes to be channeled.....	219mm
Min. diameter allowed for pipes to be channeled.....	33mm
Max. wall thickness allowed for pipes to be channeled.....	8mm
Max. working pressure	2760 kg
Max. oil cylinder pressure	25 Mpa
Capacity of oil tank.....	76mL
S p e e d	2 3 r p m
Electric motor	Single phase/3 phase

Overall dimensions.....720mm×520mm×930mm

Gross weight83.5kg

III, Major Parts:

- 1.Oil pump、2.United head、 3.Guide wheel unit、
- 4.Pinch roller part、 5..Knurl wheels、 6.Carriage、
- 7.Tool box、 8.Switch



IV. Driving System:

The major moving unit of this machine consists of a rotating spindle directly driven by a reduction motor, resulting in a reduced loss of mechanic

power.

The feeding movement is realized by manual

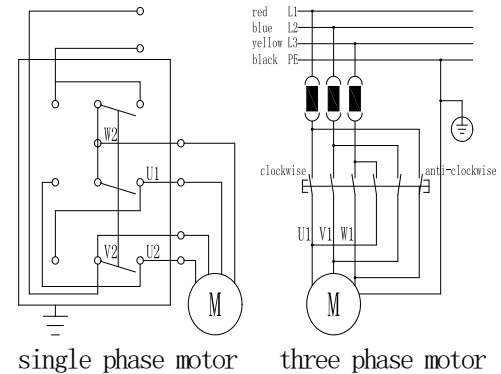


Fig. 2

V. Electric System:

Electric Circuit Diagram

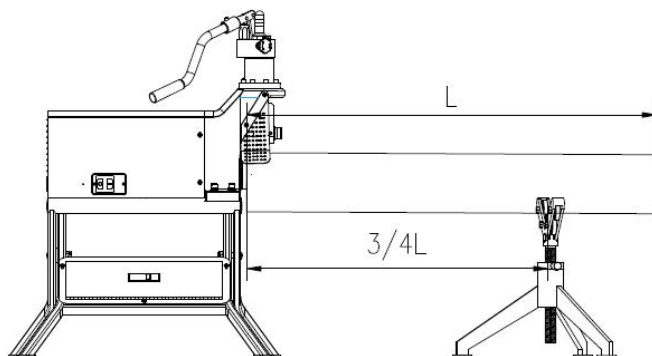
Consist of an electric motor, a clockwise/anti-clockwise switch and cables. Turning clockwise, anti-clockwise and stop are cont

-rolled by the switch. 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.

VI. Operations and Adjustments :

1. Switch on and check if the machine is running ok without loading;
2. Please use correct sized pinch rollers and knurl wheel;
3. Like Image 3, put the pipe stand onto the 3/4 position. Make the pipe is under 1-2 degree under horizontal. Check if the pipe go away from the machine, if so adjust the pipe left or right a little until the pipe don't slip away.

o



3

4. Tighten the relieve valve handle (image6 part 2). Press the handle , make the pipe forwarding down , Siwitch on the machine when top pinch roller contacting with the pipe.And then press the handle slowly,make the pinch roller press into the steel pipe.

5. Adjust the depth. 。 At first release the limit nut,measure and get the depth of the first groove.After confirming the first groove is standard please make the top lock nut contacting with the limit nut so the depth is confirmed.;



image4



image5

5. Fill and change the hydraulic oil. When hydraulic oil is not enough users need to fill in more hydraulic oil.As image 6,At first wipe the dust and make the pump clean.And then turn off the

oil plug to fill in the new oil. (please release the valve 2 when filling oil).If needed please remove all the dirty oil through release the plug 3.

6.Remove the oil pump.If need to reove the oil pump unit from the machine head please make the pinch roller unit (image1 part4) at the bottom position.Release the screws (image9) between the piston and pinch roller frame. And then remove the 6 screws of the pump body.(image7) , then the oil pump unit can be removed from the machine head.

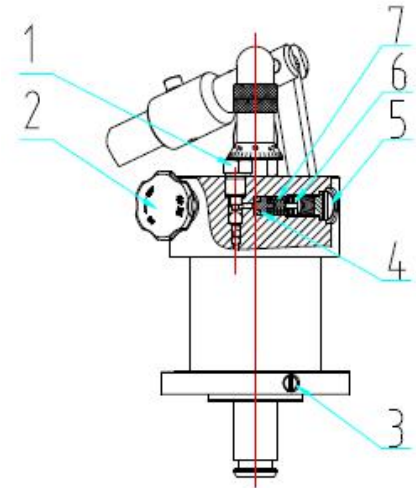


image6

7. Remove the pinch roller frame. At first remove the 2 screws (image9), and then remove 8 screws (image8) .

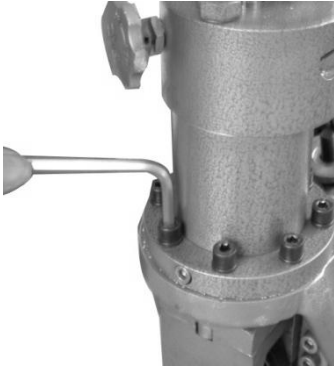


image7

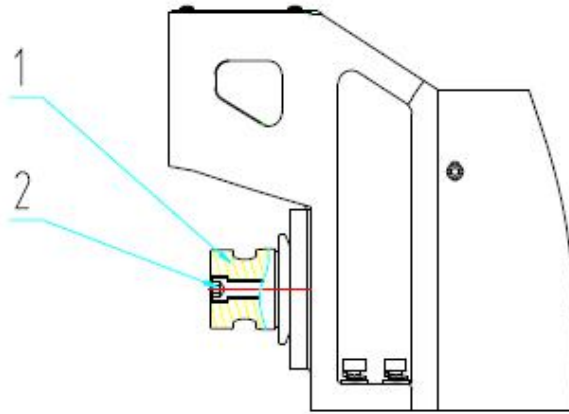


image8



image9

8. Change pinch roller。 Make the pinch frame back to top position. Remove the screw from the side of pinch roller frame (image 1 part 4), hold the pinch roller to avoid it fall to the ground. Pull out the shaft of pinch roller. Change the new pinch roller then.
9. Change the knurl wheel. Use correct sized pinch roller and knurl hwheel (As diagram 1)。 Change the knurl wheels as image 10, remove bolt 2, then take off the knurl wheel 1, put the new knurl wheel, then tighten the bolt 2 (small sized knurl wheel is fixed by screws



10. If groove over $\varnothing 89$ steel pipe please use the guide wheel unit. As image10.

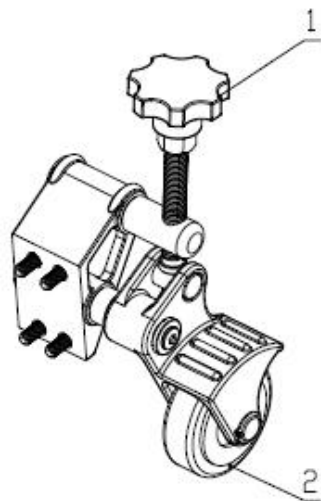


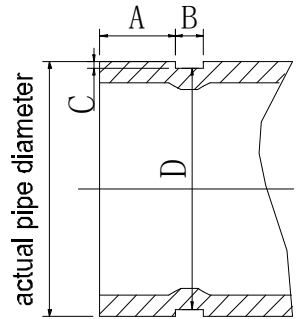
image10

Groove standard Diagram 1

Model Of pinch roller	Model of knurl wheel	Nominal Pipe Dia.(inch)	Actual Pipe Dia.(mm)	A±0.5 (mm)	B±0.5 (mm)	C± 0.5 (mm)	Diameter of Groove Bottom	
							Max.(mm)	Min.(mm)
Pinch Roller 33/48	Knurl shaft 33/48	1"	33.7	15.88	7.14	1.65	30.23	29.85
		1 1/4"	42.4	15.88	7.14	1.65	38.99	38.61
		1 1/2"	48.3	15.88	7.14	1.65	45.09	44.70
Pinch Roller 57/168	Knurl shaft 57/168	2"	60.3	15.88	8.74	1.65	57.15	56.77
		2-1/2"	76.1	15.88	8.74	1.98	72.26	71.80
		3"	88.9	15.88	8.74	1.98	84.94	84.48
		4"	108.0	15.88	8.74	2.11	103.73	103.22
		4"	114.3	15.88	8.74	2.11	110.08	109.57
		5"	133.0	15.88	8.74	2.11	129.13	128.62
		5"	139.7	15.88	8.74	2.11	135.48	134.97

		6"	159.0	15.88	8.74	2.16	153.21	152.45
		6"	165.1	15.88	8.74	2.16	160.78	160.22
		6"	168.3	15.88	8.74	2.16	163.96	163.40
Pinch Roller 219/325	Knurl shaft 219/325	8"	219.1	19.05	11.91	2.34	214.40	213.76
		10"	273.0	19.05	11.91	2.39	268.28	267.59
		12"	323.9	19.05	11.91	2.77	318.29	317.53

Diagram 1



size of the channel

1. **VII、Precautions:** 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).
3. The grease nozzle in front of the pinch roller shaft shall be lubricated each shift. Remove all the dusts near the filler aperture before adding oil.
4. Earthing and fuse are required in the circuit. The motor shall be properly wired. Never run the machine overload.
5. The pinch roller and knurl wheel shall be selected properly in line with **Form1** to ensure the channeling result.
6. Any steel pipe shall have smooth ends and surface by grinding before being channeled. Otherwise bur may occur to the pipe, the machine's service life will be significantly shortened, and leakage may occur to the pipeline.
7. During servicing of grooving machine, lubrication grease shall be adhered to needle bearing before re-assembly.
8. In case of steel pipes of large diameter to be channeled, fix the four feet of machine and the three feet of bracket to the ground by screws.

VIII、 Troubleshooting

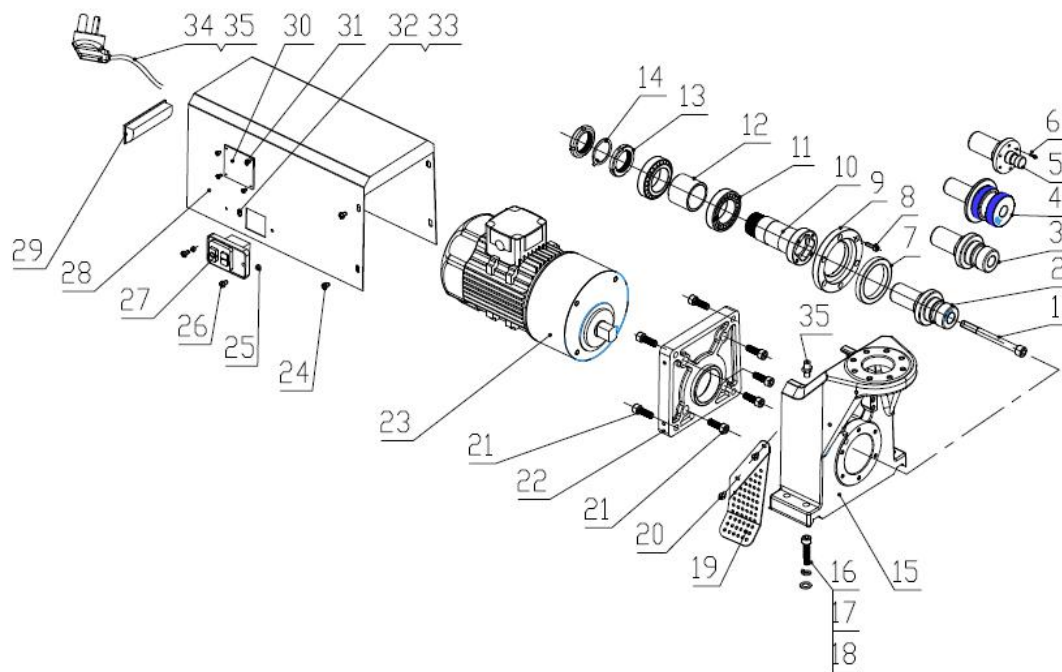
Problem	Causes	Solutions
No pressure in the oil cylinder. No action resulted from turning the handle.	1. Insufficient hydraulic oil.	Add hydraulic oil.
	2. Dirt oil blocks the hole.	Replace the hydraulic oil, clean the oil net.
	3. Leakage occurs to the check valve	Remove the screws and spring. Knock the small steel balls lightly to force out the airtight 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 check valve	Remove the screws and spring. Knock the small steel balls lightly to force out the airtight surface.
	3. Leakage occurs to other position	Trace the problem and correct.
Insufficient oil cylinder pressure	The spring of safety valve breaks down	Replace the safety valve (See Fig. 5).

The pipe escapes	1. Improper direction and height of bracket.	Vary the direction and height of bracket.
	2. Improper direction of steel pipe	Toggle the clock-wise / anti-clockwise switch to change the rotation direction of spindle
	3. Rough end face of steel pipe	Grind the end face.

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Exploded drawing

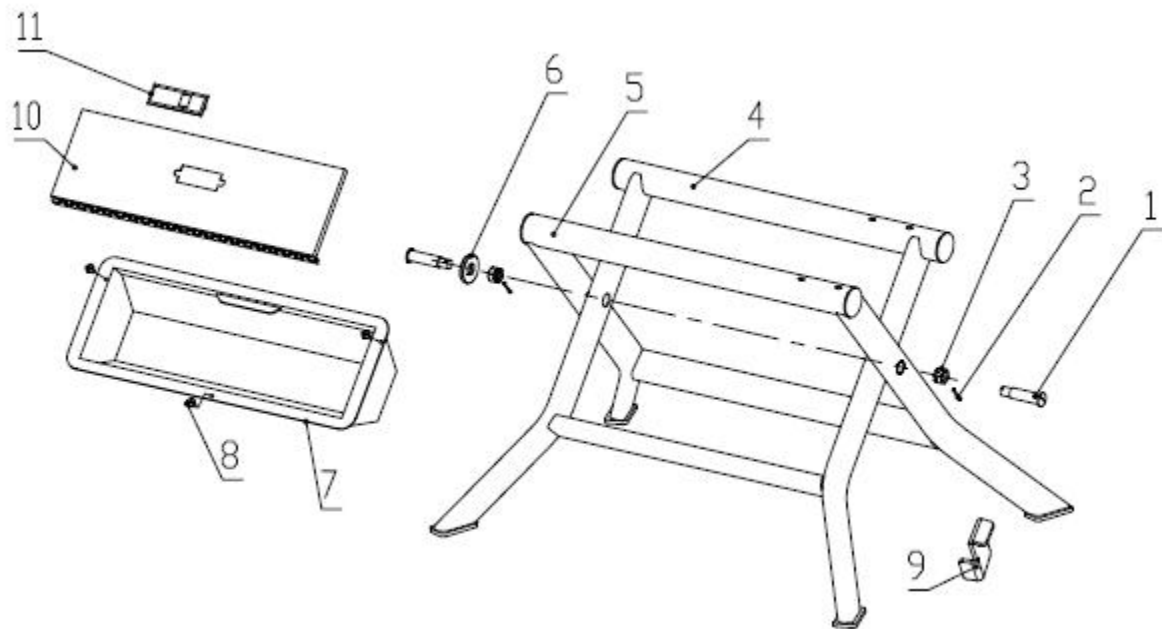
1. United component



No.	Code	Description	Q'ty	Drawing number
1	03.01.14.012	Knurl wheel lock screw	1	TWG/9-02-009
2	03.01.14.002	(57-89) knurl wheel	1	TWG/9-02-001-02
3	03.01.14.003	(108-168) knurl wheel	1	TWG/9-02-001-03
4	03.01.14.004	(219) knurl wheel	1	TWG/9-02-001-04
5	03.01.14.001	(33-48) knurl wheel	1	TWG/9-02-001-01
6	05.06.004	screwM5x16	4	GB70-85
7	05.16.033	Sealing W65 85	1	GB13871-1992
8	05.06.014	screwM6x25	6	GB70-85
9	03.01.14.005	Fore cover	1	TWG/9-02-002
10	03.01.14.007	Main shaft	1	TWG/9-02-004
11	05.01.007	Bearing 32010	2	GB/T297-1994
12	03.01.14.006	Bush of main shaft	1	TWG/9-02-003
13	05.10.023	Nut M45x1.5	2	GB812-88
14	05.10.024	Washer ϕ 45	1	GB95-85
15	03.01.14.009	United head	1	TWG/9-02-006
16	05.06.028	screwM10x30	4	GB70-85
17	05.11.004	Flat washer ϕ 10	4	GB95-85
18	05.11.010	spring washer ϕ 10	4	GB/T93-1987

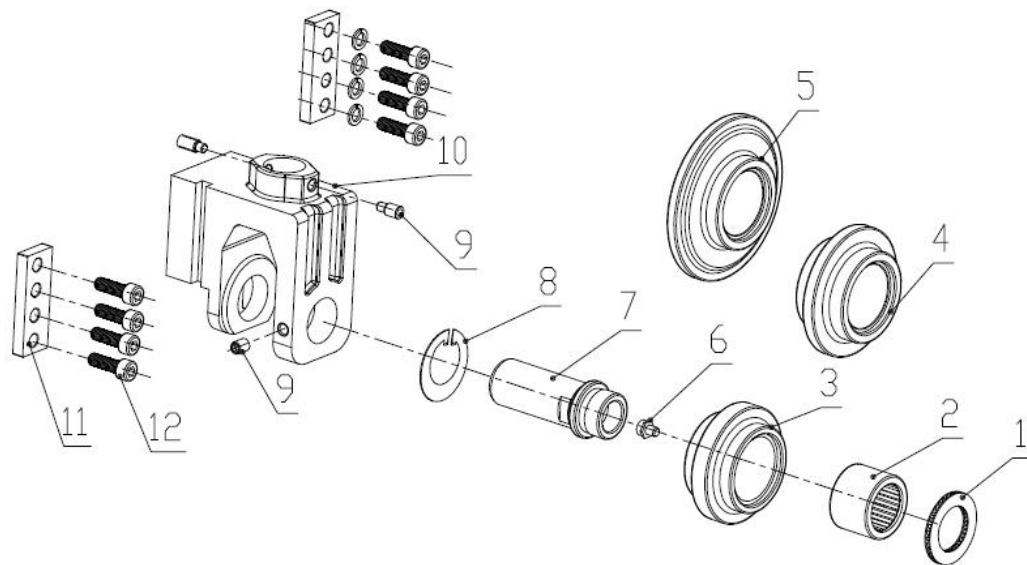
No.	Code	Description	Q'ty	Drawing number
19	03.01.14.011	Safe cover of united head	1	TWG/9-02-008
20	05.08.015	Screw M5x6	2	GB/818 -85
21	05.06.027	Screw M10x25	8	GB70-85
22	03.01.14.008	Rear cover	1	TWG/9-02-005
23	06.01.021	Motor	1	GV-24-750
24	05.08.018	screwM6x8	4	GB/818 -85
25	05.10.002	nutM4	2	GB/T6170-2000
26	05.08.014	screwM4x16	2	GB/T818-2000
27	05.04.001	switch (10A)	1	LC3-10-B
28	03.01.14.010	Safe cover of motor	1	TWG/9-02-007
29	05.16.011	Handle	1	
30	05.02.008	nameplate	1	
31	05.16.041	Copper rivet ϕ 2x4	4	
32	05.04.056	Ground wiring mark	1	
33	05.08.010	Screw M4x4	1	
33	05.04.035	Joint PG11	1	
35	05.05.018	Plug	1	

2. Carriage component



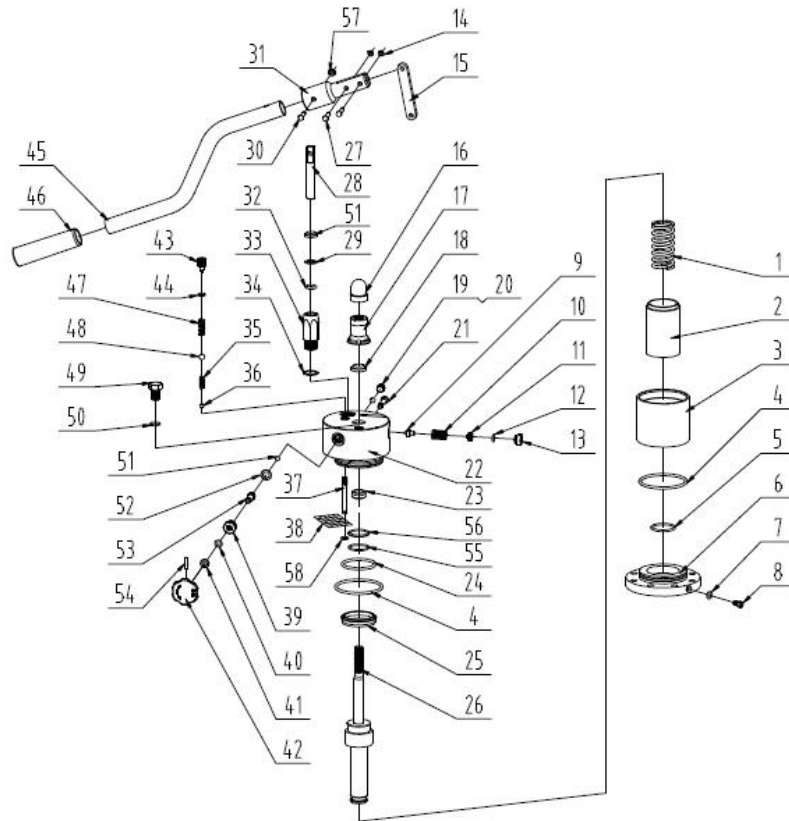
No.	Code	Description	Q'ty	Drawing number
1	03.01.14.032	Rotating pin	2	TWG/9-05-004
2	05.16.046	Cotter 1.8x25	2	GB91
3	05.16.033	Nut M12	2	GB9457-88
4	03.01.14.029	Inside casing	1	TWG/9-05-002
5	03.01.14.029	Outside casing	1	TWG/9-05-001
6	03.01.14.031	bush	1	TWG/9-05-003
7	03.01.14.034	Tool box	1	TWG/9-06-001
8	05.08.018	Screw M6x8	4	GB/818 -85
9	03.01.14.033	Fixing bracket	1	TWG/9-05-005
10	03.01.14.034	Tool box gate	1	TWG/9-06-002
11	05.16.053	Locker of tool box	1	

3. Pinch roller component



No.	Code	Description	Q'ty	Drawing number
1	05.01.037	plane bearing889106	3	GB/TS801-1994
2	05.01.032	Bearing RNA6905	3	
3	03.01.14.014	219 pinch roller	1	TWG/9-03-002-01
4	03.01.14.015	57-168 pinch roller	1	TWG/9-03-002-02
5	03.01.14.016	33-48 pinch roller	1	TWG/9-03-002-03
6	05.16.040	Oil cup M10x1	1	GB/T7940.1-1995
7	03.01.14.013	pinch roller shaft	1	TWG/9-03-001
8	05.13.012	Washer φ42	3	GB893.1-86
9	05.09.007	Screw M8X15	3	GB/T79-2000
10	03.01.14.017	pinch roller holder	1	TWG/9-03-003
11	03.01.10.020	Guide rail	2	TWG/5-03-009
12	05.06.021	screwM8X20	8	GB/T70.1-2000

4 Oil Pump unit



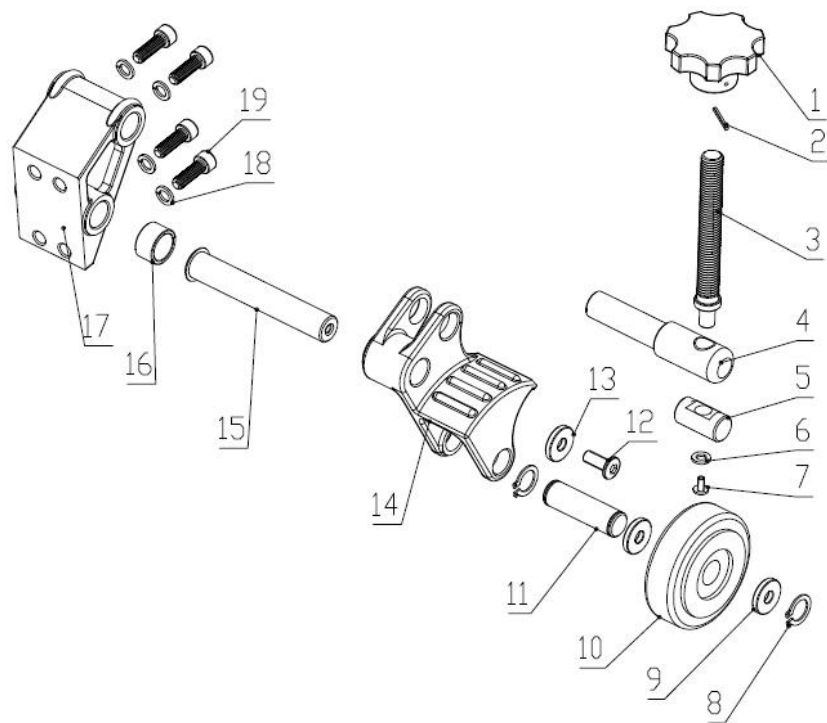
No.	Code	Description	Q'ty	Drawing number
1	04.02.060	Spring	1	TWG/5-02-006
2	04.02.057	Piston Cylinder Sleeve	1	TWG/5-02-004
3	04.02.055	Oil Tank	1	TWG/5-02-002
4	04.03.029	O- ring D70X3.1O- ring	2	GB3452.1-92
5	04.03.018	O- ring D31X3.5	1	GB3452.1-92
6	04.02.056	Pump Seat	1	TWG/5-02-003
7	04.03.006	O-ring D9X1.9	1	GB3452.1-92
8	05.06.009	Hexagonal round screw M6×8	1	GB/T70.1-2000
9	04.02.019	Cone valve	1	TWG/2-02-026
10	04.02.018	Flat Spring	1	TWG/2-02-025
11	04.02.016	Safety Valve Screw	1	TWG/2-02-023
12	04.03.012	O-ring D15X1.9	1	GB3452.1-92
13	04.02.017	Safety Valve Cover	1	TWG/2-02-024
14	05.13.001	Split washer φ5	2	
15	03.01.01.021	Junction plate	1	TWG/2-02-009
16	03.01.10.010	Limit locked nut	1	TWG/5-02-008
17	03.01.10.009	Back nut	1	TWG/5-02-007

No.	Code	Description	Q'ty	Drawing number
18	04.03.002	Dustproof Ring D22×d14x5	1	
19	04.02.083	G1/8" -28 Screw	2	TWQ/5-03-009
20	04.03.069	Steel Ball φ6	3	GB3452.1-92
21	05.06.014	Hexagonal Screw M6×25	1	GB/T70.1-2000
22	04.02.054	Pump body	1	TWG/5-02-001
23	04.03.039	Y-Seal Ring D22×d14×5	1	
24	04.03.025	O-Ring D50X3.5	1	GB3452.1-92
25	04.03.043	Y-Seal Ring D40Xd32X10	1	
26	04.02.059	Limited Piston Rod	1	TWG/5-02-005(168)
27	03.01.03.014	Pin Roll φ6×25.5	2	TWG/2B-02-012
28	04.02.062	Small Piston Rod	1	TWG/5-02-010
29	04.03.060	PTFE Mat φ14xφ10x1	2	
30	03.01.03.015	Pin Rollφ8×36	1	TWG/2B-02-013
31	03.01.03.016	Handle Seat	1	TWG/2B-02-016
32	04.03.011	Fluoro Rubber O-Ring φ14×2.4	2	GB3452.1-92
33	04.02.061	Hexagonal	1	TWG/5-02-009

No.	Code	Description	Q'ty	Drawing number
34	04.03.057	Copper Gasket φ24xφ18×1.5	1	
35	04.02.001	Compression Spring	1	TWG/2-02-001
36	04.03.068	Steel Ball φ5	1	GB308-89
37	04.02.063	Fuel Sucking Pipe	1	TWG/5-02-011
38	10.08.017	Filter Screen	1	
39	04.02.010	Pressure Relief Valve	1	TWG/2-02-019-01
40	04.03.007	O-Ring D11X1.9	1	GB3452.1-92
41	04.03.059	PTFE Mat φ10.8xφ8.2x1.2	1	TWG/2-02-027
42	04.02.012	Pressure Relief Valve Handle	1	TWG2-02-019-03
43	04.02.002	Pump Screw	1	TWG/2-02-002
44	04.03.071	Steel Ball φ9.525	1	GB308-89
45	03.01.01.020	Handle	1	TWG/2-02-005
46	05.16.001	Handle Grip	1	
47	04.02.020	Oil outlet valve Spring	1	TWG/2A-02-003
48	04.03.070	Steel Ball φ8	1	GB308-89

No.	Code	Description	Q'ty	Drawing number
49	04.02.030	Screw	1	TWG/2B-02-015
50	04.03.012	O-Ring D15X1.9	1	GB3452.1-92
51	04.03.052	O-Ring D8X1.9	1	GB3452.1-92
52	04.02.011	Pressure Relief Valve Copper mat ϕ 12x ϕ 8x1	1	TWG/2-02-018
53	05.14.002	Pressure Relief Valve Screw	1	TWG/2-02-019-02
54	04.02.063	elastic cylindrical pin ϕ 3x20	1	GB/T879.1-2000
55	04.03.062	O-Ring D18x2.4	1	GB3452.1-92
56	05.13.002	PTFE Mat ϕ 18.x ϕ 14x1.2	1	TWG/5-02-013
57	04.03.005	Split Washer ϕ 6	1	
58	04.03.062	O-Ring D8 x1.9	1	GB3452.1-92

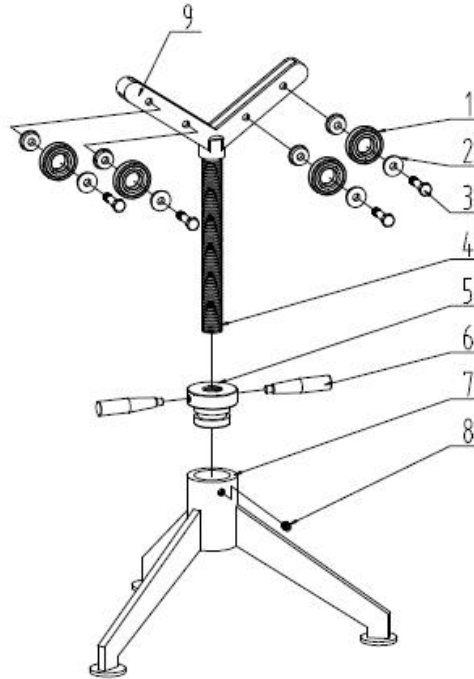
5. Guide wheel unit



No.	Code	Description	Q'ty	Drawing number
1	05.16.008	Handle M14x63	1	
2	05.14.003	Pin ϕ 3x30	1	
3	03.01.14.018	Screw rod	1	TWG9-04-001
4	03.01.14.019	Support shaft	1	TWG9-04-002
5	03.01.14.020	Rotation axis	1	TWG9-04-003
6		Washer ϕ 5	1	
7	05.08.012	Screw M4x8	1	GB/T818-2000
8	05.13.005	Washer ϕ 17	2	
9	03.01.14.022	Bushing	2	TWG9-04-005
10	03.01.10.036	Guid wheel	1	TWG/5-06-00
11	03.01.14.024	Shaft of guide wheel	1	TWG9-04-006
12	05.06.012	Screw M6x16	1	GB70-85
13	03.01.14.021	Ring	1	TWG9-04-004
14	03.01.14.028	Wheel frame	1	TWG9-04-010
15	03.01.14.026	Support shaft of wheel frame	1	TWG9-04-008
16	03.01.14.025	Bushing of guide wheel frame	1	TWG9-04-007

No.	Code	Description	Q'ty	Drawing number
17	03.01.14.027	Base of wheel	1	TWG9-04-009
18	05.11.009	spring washer $\phi 8$	4	GB93-87
19	05.06.021	Screw M8x20	4	GB70-85

6.Pipe stand unit



No.	Code	Description	Q'ty	Drawing number
1	05.01.027	Ball 6205RS	4	GB276-94
2	03.01.01.033	End ring	8	TWG/2-05-006
3	05.07.005	Bolt M10×30	4	GB5781-2000
4	02.01.09.030	Screw rod (219)	1	TWG/5-05-002
5	03.01.01.031	Adjusting nut	1	TWG/2-05-004
6	03.01.01.030	Handle	2	TWG/2-05-003
7	03.01.10.025	Base (57-219)	1	TWG/5-05-001B
8	05.08.006	Screw M8×16	1	GB819.1-2000
9	02.01.05.011	bracket (G3)	1	TWG/3-05-005

1. Our company reserves the authority of changing the products and specification, if any alteration we don't inform specially.
2. Difference between the picture and the object, please be subject to the object.

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