

# Operating Instructions & Safety Manual



# Wire Rope Winch Manual

**Rated Capacities**  
**0.8 through to 5.4 tonnes**

**Note: Operator must read and fully understand the operating instructions before using this product.**

Products supplied comply with the essential health & safety requirements of the Machinery Directive 2006/42/EC, the Supply of Machinery (Safety) Regulations 2008 and the Health & Safety at Work etc Act 1974 section 6.



# Safety Information

## OPERATING PROCEDURES

The GT Viper Wire Rope Winch is a highly efficient type of hoist which is safe and durable in service.

It has three main capacities;

- Lifting.
- Pulling.
- Tensioning.

Compared with other older chain type pulling hoists, it is more widely used and more flexible when working.

According to the length of the suitable rope, it can be used for linear and nonlinear lifting, pulling and tensioning. With special attachments, such as fixed or moveable pulley blocks, not only can it change the operating position and move the load conveniently, but also the capacity of the machine can be multiplied. For heavy duty work, several machines can be used in parallel.

The GT Viper Wire Rope Winch is different from other hoists. Technically designed, it's main properties are aluminium moulded case; stylish in appearance; durable in service and has the advantage of high safety coefficients; its core axle (fore grip jaws) are suitable designed, well-made and electro galvanised. It has a long lasting operating life, the wire is made of special high quality steel, it has the properties of higher pulling forces and a more durable rope wear. Thus our machines are highly praised by the users, all around the world.



**For your safety and correct operation, please carefully read the manual before use.**

## SPECIFICATIONS

The machines are widely used in the following applications:

- **FACTORIES** / To install or translocate apparatus.
- **MINES** / To organise or recover pit props.
- **CONSTRUCTION SITES** / To work on the walls of high buildings or a floating crane without any scaffolding.
- **RAILWAY BUILDINGS** / To adjust or remove rails, to dig tunnels or culverts.
- **BUILDING BRIDGES** / To lay bridge frames or maintain bridge piers.
- **IRRIGATION CONSTRUCTION** / To install or maintain irrigation projects.
- **ELECTRIC POWER CONSTRUCTION** / To install or erect towers, anchors or high tensile cables.
- **TRANSPORTATION** / To load or unload heavy, bulky goods. To remove from danger vehicles in the field; to save vehicles or remove obstacles on the road.
- **NAVIGATION** / Regularly used as attachments on ships.
- **AGRICULTURE** / To remove obstacles from farm machinery and save livestock in special conditions.
- **FORESTRY** / In felling trees, the machine can be used to pull down trees.
- **MILITARY ENGINEERING** / To translocate cannons to the shade, to build temporary simple suspension or floating bridges, or to install other military engineering projects.
- **CIVILLIAN PURPOSE** / To lift or lower any household articles in high buildings or to demolish old houses.

When you better understand the features and principles of our product, you will find even wider applications for it's use.

# Safety Information

## OPERATING PRINCIPLES

The GT Viper Wire Rope winch is operated by acting the forward handle or the backward handle manually so as to obtain the rectilinear pulling force equal to the load through the lever principle with a minimum manual force applied. This helps in all environments of lifting, pulling and tensioning.

Pulling the forward handle or the backward handle to and fro will drive the parallelogram clamping mechanism of the front and back jaw-blocks inside the machine to make a “clamping-related” move alternatively. The wire rope, between the upper grip jaw and the lower grip jaw, forms an “R” mouth. The clamping state still remains in force because of the action of the pre-tension spring. Thanks to the friction on the interface and the pulling force of the load, the frame of parallelogram clamping mechanism always inclines backward in the direction of the load and tends to clamp the rope a step further. With the aid of the other connecting levers, the front and back jaw blocks make themselves clamp the stressed wire rope and thus travel and slip to another pair of upper and lower grip jaws and cause the load to lift or lower.

Compared with other older iron-case hoists, our machine has a completely different structural design, and it's advantages are as follows:

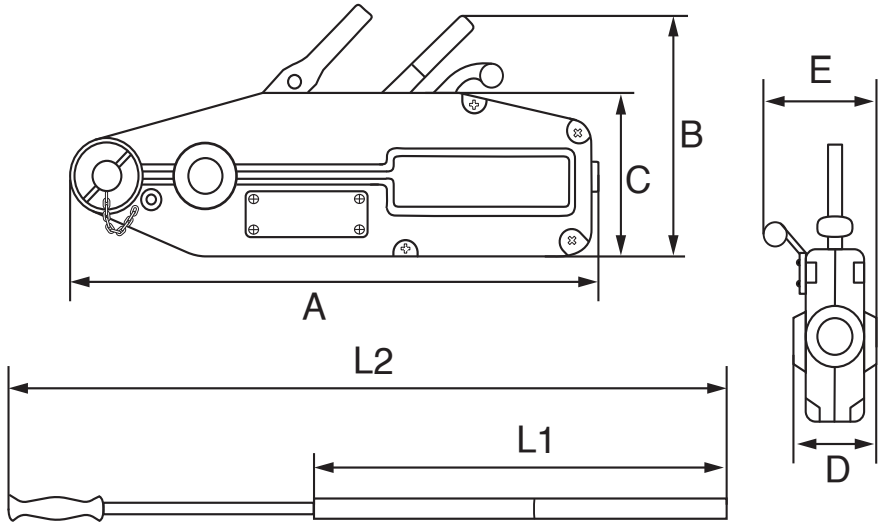
- It's independent pre-tension springs work alternately, this makes the distance shorter, the mechanical rate higher and causes less wear on the wire rope.
- The grip jaw, made of alloy steel and hot-worked, has a reliable and durable clamping force and can operate well continually.
- As the construction inside the machine is properly designed, the machine has excellent properties for working well and ensuring easy maintenance.
- When the load is overrated or the tensioning too violent, the safety bolt on the forward handle will immediately break, thus protecting the machine from further damage.

## OPERATING METHOD

1. Rope reeving: Hold the machine in one hand, with it's head downward, and push the relaxed handle. Having finished, push the relaxed handle downward by hand to allow the grip jaws to clamp the rope. When pulling the forward handle to and fro, the rope inlet or outlet shows that the unit works normally. Then start operation.
2. Anchoring: Fixed axis are to be used to anchor the rope around it. The other tip of the rope is tied to loads or masts. There is a relax-proof tunnel on the fixed axis. After the fixed axis is inserted into the machine case, it must be turned twice. Start operation until the second tunnel is obstructed. Let the rope tip expose above the fixed axis, so as to ensure the rope will travel correctly.
3. Operating: Let a hook, hook the load and operate as follows:
  - To lift a load (or push a load forward) or tension it: Push the forward handle.
  - To lower a load (or pull a load backward): Pull the backward handle.
  - To stop working: Not pulling the handle will stop the load at an arbitrary position, whether lifting or lowering it.
4. Drawing rope: After finishing your work, first push the release handle, then open the grip jaws and draw the rope out. Erase the dirt on the rope and wind it orderly onto the reel cross.

Press down the release handle so as not to keep the grip jaws always in an open state, thus to reduce the spring force of the tensioning spring.

# Specifications



Product Code	Rope Dia mm	A mm	B mm	C mm	D mm	E mm	L1 mm	L2 mm	Weight kgs
VWRW0.8	8.3	426	235	168	60	64	-	800	6
VWRW1.6	11	545	280	190	72	97	800	1200	11
VWRW3.2	16	660	325	230	91	116	800	1200	22
VWRW5.4	20	932	420	300	155	152	880	1350	57

Product Code	Lifting Capacity kgs	Pulling Capacity kgs	Rope Dia mm	Forward Handpower N	Forward Travel mm	Wire rope Safety Factor	Max Travelling Load kgs
VWRW0.8	800	1,250	8.3	343	≥52	5	1,200
VWRW1.6	1,600	2,500	11	441	≥55	5	2,400
VWRW3.2	3,200	5,000	16	441	≥28	5	4,000
VWRW5.4	5,400	8,400	20	745	≥30	5	8,000

# Safety Information

## PRECAUTIONS & MAINTENANCE

1. Before use, you must inspect all the tightened screws and check that they are secure. Pull all the handles and see if they are in order, if operating together and without any unusual noises or blocking, activate the release handle, reeve and clean the suitable rope. Do not let twisted, cracked and part-broken rope in. Now operate handles again and see if the machine can travel normally.
2. Never do the following during operation:
  - Never pull other handles at the same time. Never pull the release handle after the load is lifted.
  - Never use another self-made extended lever tube to save on hand power.
  - Never pull the handle violently to break the safety bolt. If this happens, the correct replacements must be provided by GT.
  - Never stand on the load or beside it when operating (except when working on a floating crane).
  - Never use the rope itself as a loop around the load. The load must be hung on a hook.
  - when lifting a load, never let the load swing or float around in the air.

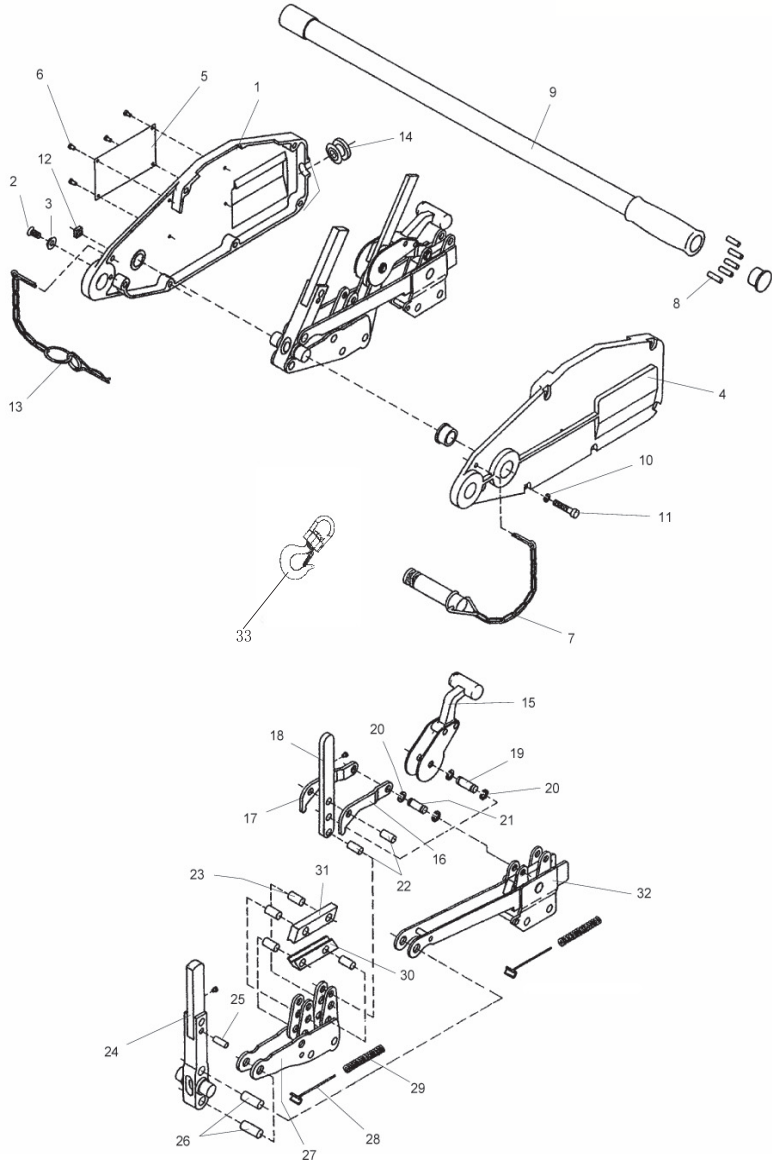
Ensure that the rope inlet and outlet is not obstructed, when the unit works. Jamming, gagging and twisting must be prevented. Eradicate any mud or dirt on the rope.

3. When the original rope diameter of the working rope reduces by 10%, it must be replaced with a new one provided by GT. The old one may be used for other purposes. The mixed use of various wire rope is not allowed.
4. To make parts yourself, or to re-machine and re-use the jaws is prohibited. The replacements must be provided by GT. After replacing correctly, a test of 1.25 times that of rated capacity must be made. Resume the operation only when the test-travel is no less than 500mm.
5. Never reeve the rope from the head of the machine. Our machine only allows the rope lip in the tail to support the load. The direction of the hook must not be reversed. These practices are very dangerous and will cause the machine to work abnormally.
6. The anchored object should have enough power to support the load so that it will not cause an accident.
7. When the machine is used to lift a floating crane, the total load should be decreased by one-third of the machine pulling force. Always ensure the worker operating on the crane is fully protected.
8. If muddy water or other dirt has penetrated into the machine, use clean water to clean it. Disassemble the body to rinse once more if necessary. Reassemble the body carefully and correctly, and then lubricated it with a calcium based grease. Maintenance must be made twice every year in ordinary conditions.

## SAFETY INSTRUCTIONS

- The equipment should only be operated and maintained by a competent person.
- Do not exceed the rated capacity of the product.
- Do not use this product for the lifting or transporting of personnel.
- Do not use undue effort to operate the product other than that which can be applied manually.
- Periodically, in particular after frequent use or at least annually, and in accordance with European Safety Regulations, the product must be returned to a recognised and competent lifting equipment service and repair centre for maintenance and repair.
- Do not leave suspended loads unattended.

# Spare Parts Drawing 800kgs



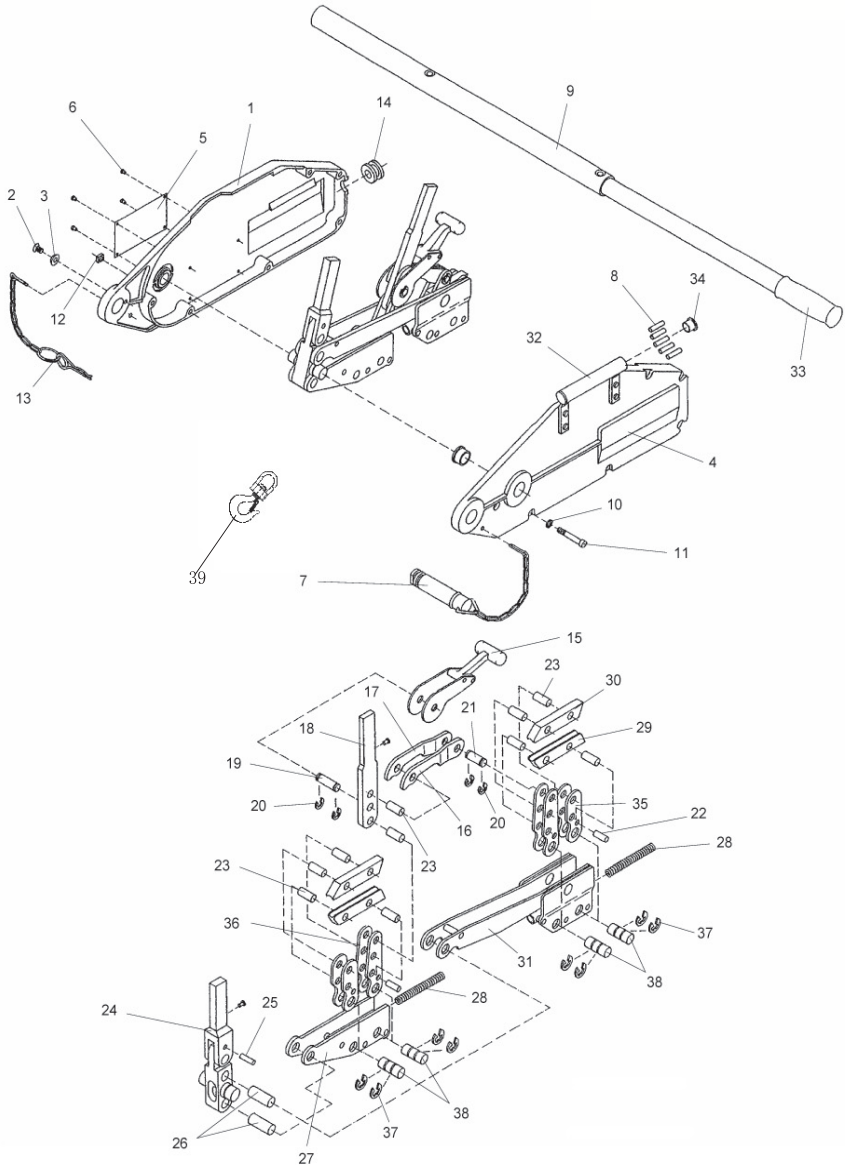
# Spare Parts List

## 800kgs

Fig. No.	Description
1.	Case Right Assembly
2.	Cylindric Head Tapping Screw
3.	Washer
4.	Case Left Assembly
5.	Name Plate
6.	Rivet
7.	Fastening Bolt Assembly
8.	Shearing Bolt
9.	Action Lever Assembly
10.	Retaining Ring
11.	Cylindric Head Screw
12.	Nut with Square
13.	Spring Cotter Assembly
14.	Guide Sleeve of Cable
15.	Opening Lever for Clamps Assembly
16.	Push Lever Left
17.	Push Lever Right
18.	Action Lever Backwards
19.	Bolt
20.	Lock Washer
21.	Bolt
22.	Bolt

Fig. No.	Description
23.	Thrust Bolt
24.	Action Lever Forward Assembly
25.	Shearing Bolt
26.	Axle
27.	Front Slide Assembly
28.	Spring Guide
29.	Spring
30.	Clamp Under
31.	Clamp Upper
32.	Back Slide Assembly
33.	Swivel Hook

# Spare Parts Drawing 1600kgs





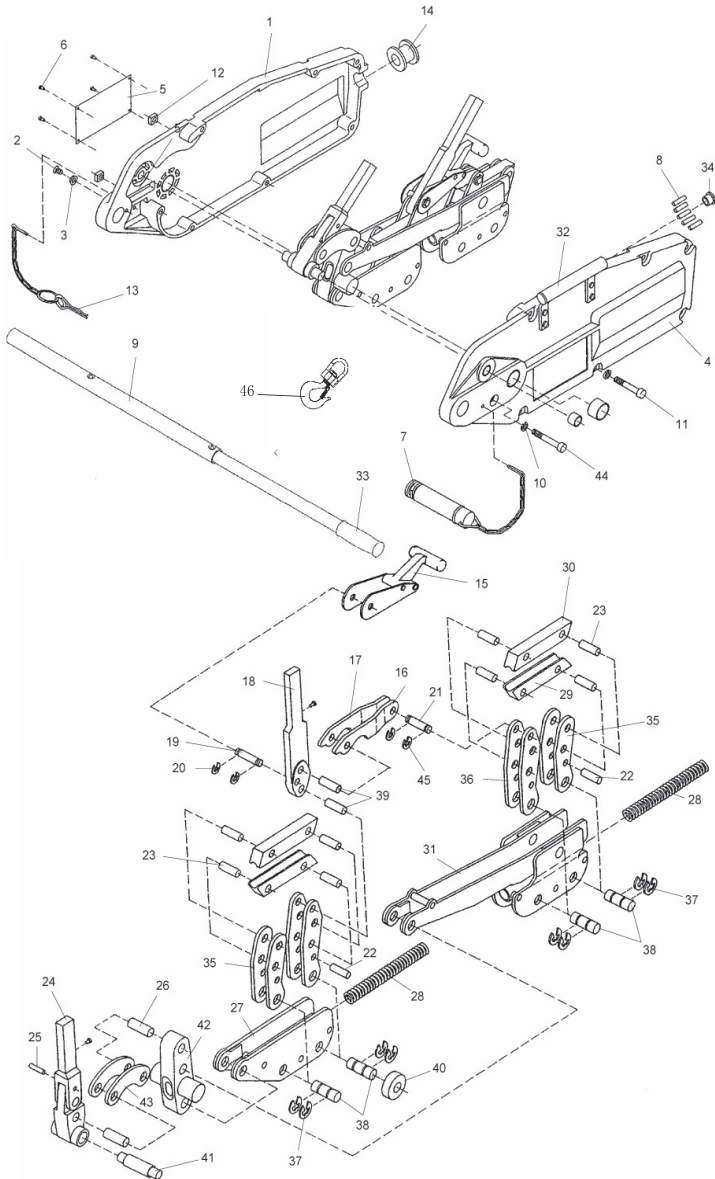
# Spare Parts List

## 1600kgs

Fig. No.	Description
1.	Case Right Assembly
2.	Cylindric Head Tapping Screw
3.	Washer
4.	Case Left Assembly
5.	Name Plate
6.	Rivet
7.	Fastening Bolt Assembly
8.	Shearing Bolt
9.	Telescopic Action Lever Assembly
10.	Retaining Ring
11.	Cylindric Head Screw
12.	Nut with Square
13.	Spring Cotter Assembly
14.	Guide Sleeve of Cable
15.	Opening Lever for Clamps Assembly
16.	Push Lever Left
17.	Push Lever Right
18.	Action Lever Backwards
19.	Bolt
20.	Lock Washer
21.	Bolt
22.	Spring Bolt

Fig. No.	Description
23.	Thrust Bolt
24.	Action Lever Forward Assembly
25.	Shearing Bolt
26.	Axle
27.	Front Slide
28.	Spring
29.	Clamp Under
30.	Clamp Upper
31.	Back Slide Assembly
32.	Handgrip Assembly
33.	Rubber Hand Grip
34.	Cap
35.	Lever for Clamp, Short
36.	Lever for Clamp, Long
37.	Lock Washer
38.	Bearing Bolt
39.	Swivel Hook

# Spare Parts Drawing 3200kgs



# Spare Parts List

## 3200kgs

Fig. No.	Description
1.	Case Right Assembly
2.	Cylindric Head Tapping Screw
3.	Washer
4.	Case Left Assembly
5.	Name Plate
6.	Rivet
7.	Fastening Bolt Assembly
8.	Shearing Bolt
9.	Telescopic Action Lever Assembly
10.	Retaining Ring
11.	Cylindric Head Screw
12.	Nut with Square
13.	Spring Cotter Assembly
14.	Guide Sleeve of Cable
15.	Opening Lever for Clamps Assembly
16.	Push Lever Left
17.	Push Lever Right
18.	Action Lever Backwards
19.	Bolt
20.	Lock Washer
21.	Bolt
22.	Spring Bolt
23.	Thrust Bolt

Fig. No.	Description
24.	Action Lever Forward Assembly
25.	Shearing Bolt
26.	Axle
27.	Front Slide
28.	Spring
29.	Clamp Under
30.	Clamp Upper
31.	Back Slide Assembly
32.	Handgrip Assembly
33.	Rubber Hand Grip
34.	Cap
35.	Lever for Clamp, Short
36.	Lever for Clamp, Long
37.	Lock Washer
38.	Bearing Bolt
39.	Bolt
40.	Roll
41.	Bolt
42.	Centering Shaft
43.	Intermediate Actuating Lever
44.	Cylindric Head Screw
45.	Lock Washer
46.	Swivel Hook

# Spare Parts List & Drawing

## 5400kgs

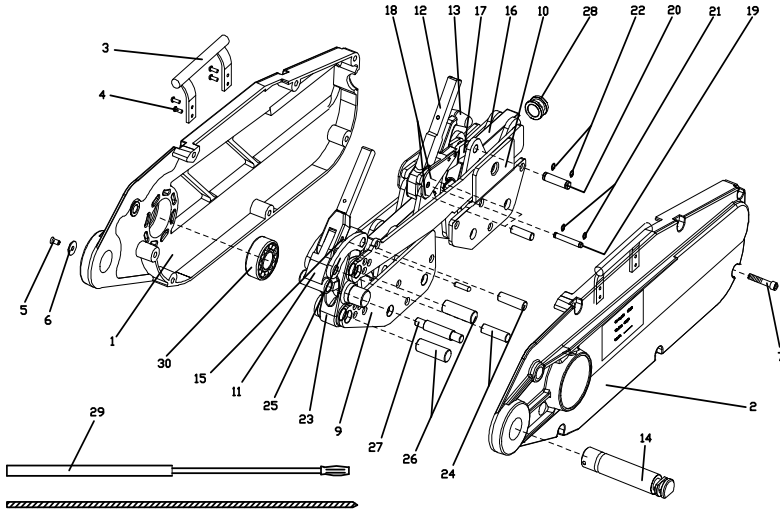


Fig. No.	Description
1.	Left Side Plate
2.	Right Side Plate
3.	Handle
4.	Rivet
5.	Hex Washer
6.	Spring Washer
7.	Hex Bolt
8.	Hex Nut
9.	Front Jaw Block
10.	Back Jaw Block
11.	Relaxed Connecting Rod Axle
12.	Forward Handle
13.	Relaxed Handle
14.	Fixed Axle
15.	Safety Pin

Fig. No.	Description
16.	Upper Grip Jaw
17.	Connecting Rod
18.	2nd Pin
19.	3rd Pin
20.	4th Pin
21.	Pushing
22.	Pushing
23.	Shake Rod
24.	5th Pin
25.	Connecting Rod
26.	Crank Axle
27.	Stay Pin
28.	Guide Tube of Wire Rope
29.	Tube Handle
30.	Bearing