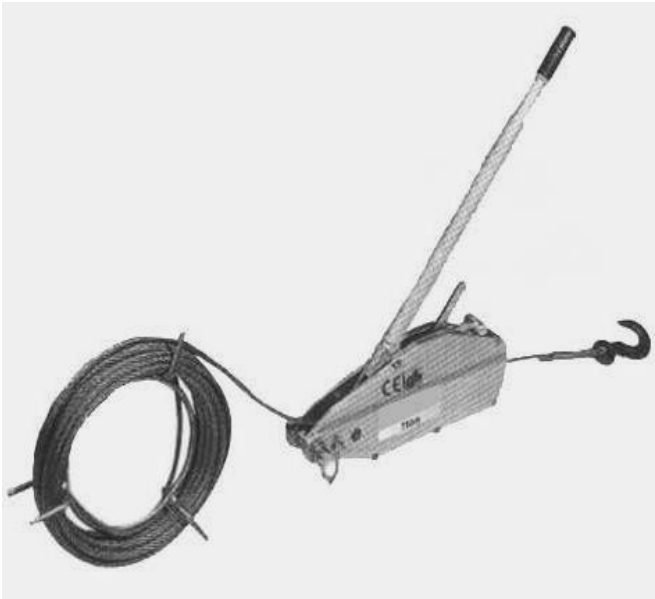
Instruction Manual

GRIP PULLER

Model: HGP08, HGP16, HGP32



Note: Owner/Operator must read and understand this instruction manual before using the grip puller.

HGP series grip puller is a kind of hoist of new style and with high efficiency, safe and durable in service. It has three main prominent capacities: lifting, pulling and tensioning. Compared with other old chain-type pulling hoist, it is more widely used and more suitable in working. According to the length of the suitable rope, it can be used for linear and unlinear lifting, pulling and tensioning. With special attachments, such as fixed or movable pulley blocks, not only can it change the operating position and move the load continently, but also the capacity of the machine can be multiplied. To heavy duty, several machines can be used in parallel.

HGP series grip puller is quite different from other hoists. Being technically designed, its prominent properties are: as its case is molded with aluminum, it is fine in appearance, durable in service and of the advantage of high safe coefficient; as its core axle (for grip jaws) is properly designed, well-made and electroplated with zinc, it has a longer operating life; as its suitable rope is made of a kind of high-qualitative steel rope, it has the property of higher pulling force, unbroken and less rope wear. Thus our machines are highly praised by the users, both at home and abroad. Read the manual first, and then you will be able to use them conveniently and fulfill your work safely and perfectly.

1. Scope of Applications

HGP series grip pullers are widely used in the following:

In factories: To install or to translocate apparatus

In mines: To disorganize or to recover pit props

On construction: To work on the walls of high buildings in a floating crane without any scaffolding.

In railway building: To adjust or remove rails; to dig tunnels or culverts.

In building bridges: To lay bridge frames or maintain bridge piers.

In irrigation construction: To install or maintain irrigation projects.

In electric power construction: To install or erect towers, or tension cables.

In transportation: To load or unload heavy or bulky goods, to get rid of danger for vehicles in the fields, to save vehicles, or to remove obstacles on the road.

In navigation: Always used as attachments on ships.

In agriculture: To remove obstacles from the farm machinery, and to save living stocks in special conditions.

In forestry: In felling trees, use the machine to pull down the trees.

In military engineering: To translocate the cannons to the shade, to build the temporary simple suspension bridges or floating bridges or to install other military engineering projects.

For civilian purpose: To lift or lower any household articles in high buildings or demolish the old civilian houses.

In city construction: To lay water pipes, install light apparatus, or to erect electric poles, etc.

Along with the increase of the knowledge of the features and the principles of our product, you will operate it in wider applications.

2. Principles of Work

HGP series grip puller 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 lever principle with less manual force and so to perform the work of lifting, pulling and tensioning. (Refer to Fig. 1.)

Pulling the forward handle or the backward handle to and fro will drive the parallelogram champing mechanism of the front and back jaw-blocks inside the machine to make “Clamping-relaxed” moving alternately. Then the wire rope between the upper grip jaw and the lower grip jaw forms an “R” mouth. The clamping state still remains in it because of the action of the pretension spring. Thanks to the friction on the interface and the pulling force of the lad, the frame of parallelogram clamping mechanism always inclines backward in the direction of the load and intends to clamp the rope a step farther. By the aid of the other connecting levers, the front and the 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 old model iron-case hoists, our machine has a completely different structure design, and its advantages display as following:

Its independent pretension spring works well alternately and makes the travel shorter, the machine rate higher and the wire rope less wear.

The grip jaw, made of alloy steel and hot-worked, has a reliable and durable clamping force and can operate well continually.

As the construct inside the machine is properly designed, the

machine has the excellent property in working and maintaining.
When the load is over-rated or the pulling is violent, the safety bolt on the forward handle will break simultaneously and so the machine is well protected.

3. Operating Method

3.1 ***Rope receiving:*** Hold the machine in one hand, with its head downward, and push the relaxed handle. After hearing a noise click, the grip jaws open and the clean wire rope can be reeved to a designed length. Having finished it, push the relaxed handle downward by hand to allow 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.

3.2 ***Anchoring:*** Fixed axis is to be used to anchor the rope around it. The other tip of the rope is tied to load 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 to travel normally.

3.3 ***Operating:*** Let a hook hooks the load an operate as following:
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 to pull the handle will stop the load at arbitrary position, whether lifting or lowering it. (Refer to Fig.2)

3.4 ***Drawing rope:*** After finishing work, first push the relaxed handle, then open the grip jaws and draw the rope out. Erase the dirt on the rope and wind it orderly on to the reel cross.

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

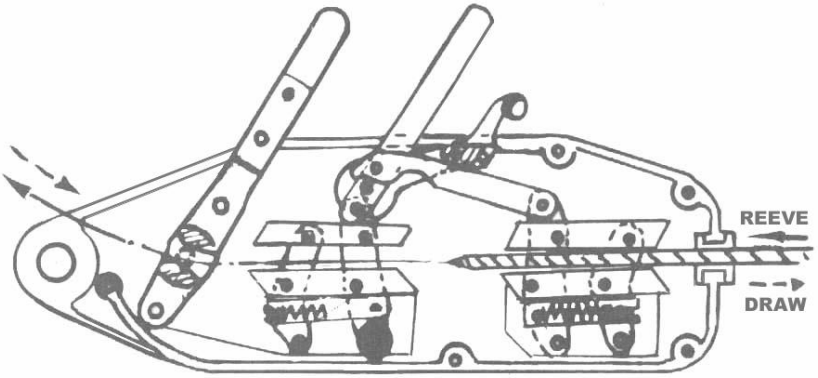


Fig.1 Rope Reeving and Rope Receiving: Push the relaxed handle to front direction by hand so as to insert its tip into the step formed on the top inner wall of the casing.

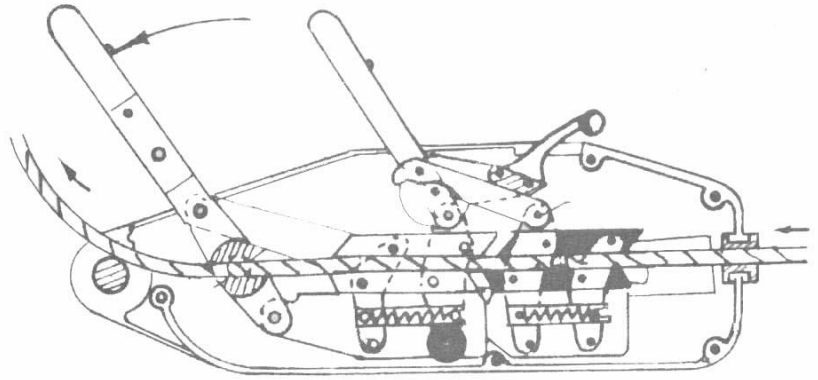


Fig.2A To Lift a Load (or Pull a Load Forward): Pull the handle forward the black clamping the white relaxed.

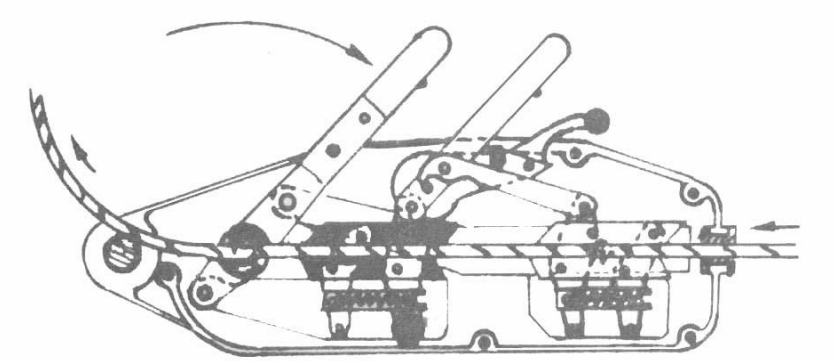


Fig.2B To Lift a Load (or Pull a Load Forward): Pull the handle backward, the black clamping, the white relaxed.

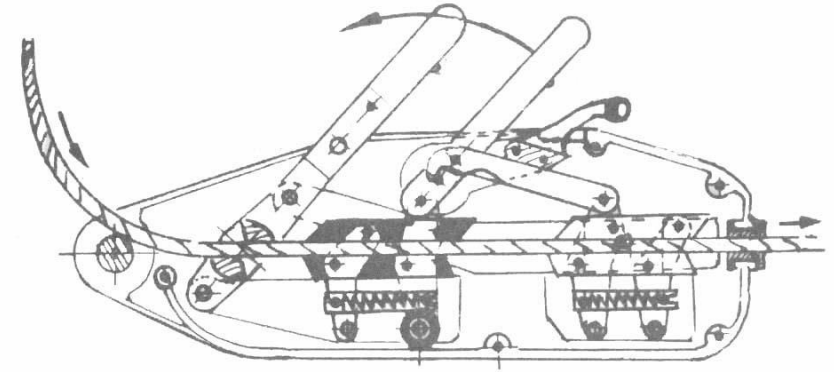


Fig.2C To Lower a Load (or Pull a Load Backward): Pull the handle forward, the black clamping, the white relaxed.

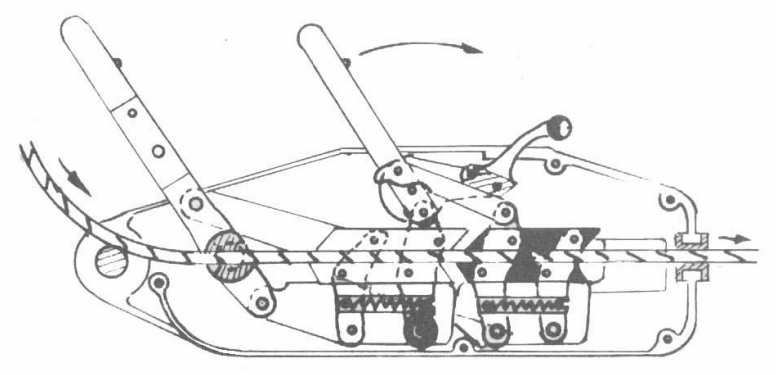


Fig.2D To Lower a Load (or Pull a Load Backward): Pull the handle backward, the black clamping, the white relaxed.

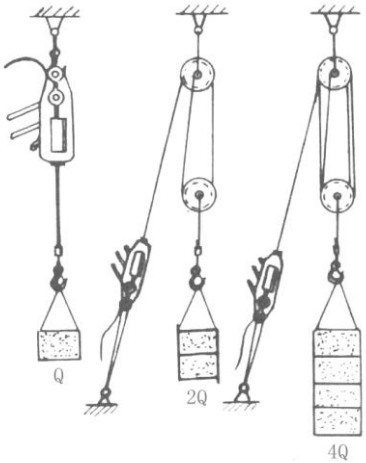


Fig.3 Its capacity may be increased by using moveable pulley blocks.

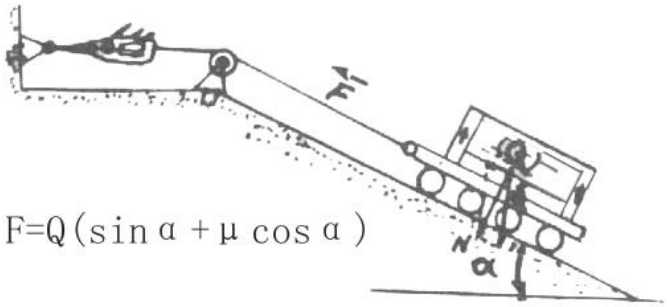


Fig.4 Unlinear Pulling

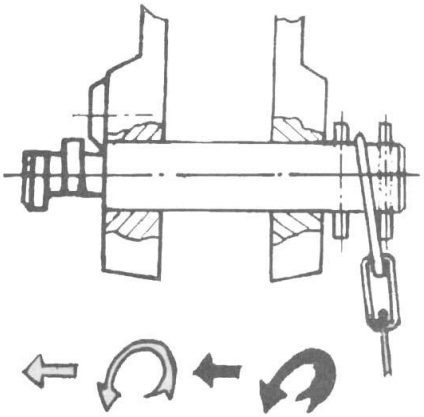


Fig. 5 Turn and push the fixed axis twice and let it enter the second tunnel.

4. Precautions in Use and Maintenance

4.1 Before use, you must inspect all the tightened screws and see if they are secured. Pull all the handles and see if they are in order. If operating coordinatively and without unusual noise or blocking,

act relaxed handle, reeve the clean and suitable rope. Don't let the twisting, cracked and part-broken rope in. In the end, operate handles again and see if the machine can travel normally.

4.2 Never do such things during operating:

Never pull other handles at the same time. Never pull relaxed handle after the load is lifted.

Never use other self-made extended lever tube to save hand power.

Never pull the handle violently to break the safety bolt. If this happens, the replacements must be provided by our factory only.

Never stand on the load or beside it when operating (except 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 floating 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. Erase the mud or dirt on the rope.

4.3 When the original rope diameter of the working length reduces by 10%, it must be replaced with a new one provided by our factory only. The old one may be used for other purposes. The mixed use of various wire ropes is not allowed.

4.4 To make parts by yourself or to remaking and reuse the jaws are inhibitory. The replacements must be provided by our factory. After replacing properly. A test of 1.25 times that of rated capacity must be made. Resume the operation only when the text-travel is no less than 500mm.

4.5 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 reversely used. All these are very dangerous and will cause the machine to work abnormally.

4.6 The anchored object should have enough power to support the load and will not cause an accident.

4.7 When the machine is used to lift a floating crane, the total load should decrease 1/3 of the pulling force the machine has. Besides the worker operating on to crane must be safely protected.

4.8 If muddy water or other dirt has penetrated into the machine, use clean water to clear it. Disassemble the body to rinse once more if necessary. Reassemble the body carefully and properly, and then lubricate it with calcium base grease. Maintenance must be made 2 times every year in ordinary condition.

5. HGP series grip puller Specification & Parts List

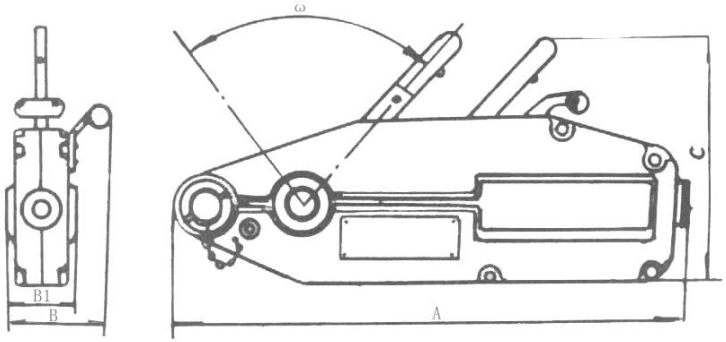
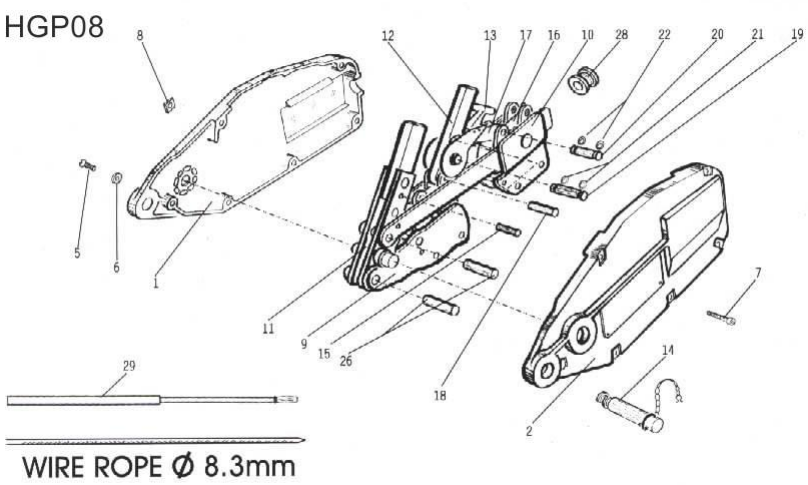


Fig. 6 Overall Size of HGP Series Grip Puller

Item \ Model	HGP08	HGP16	HGP32
Rated Capacity (kg)	800	1600	3200
Hand Effort (kg)	28	41	44
Rated Forward Travel (mm)	⩾52	⩾55	⩾28
Level Length (mm)	740	1120	1120
Pulling Angle of Forward Level (°)	77	81	111
Wire Rope Diameter (mm)	8.3	11	16
Wire Safety Factor Load Capacity	5	5	5
Max. Traveling Load Capacity (kg)	1250	2000	4000
Net Work (kg)	6	11	22
Overall Size (LxB1xH)	428x65x230	545x97x260	660x116x320
Standard Length of Rope (mm)	20	20	20



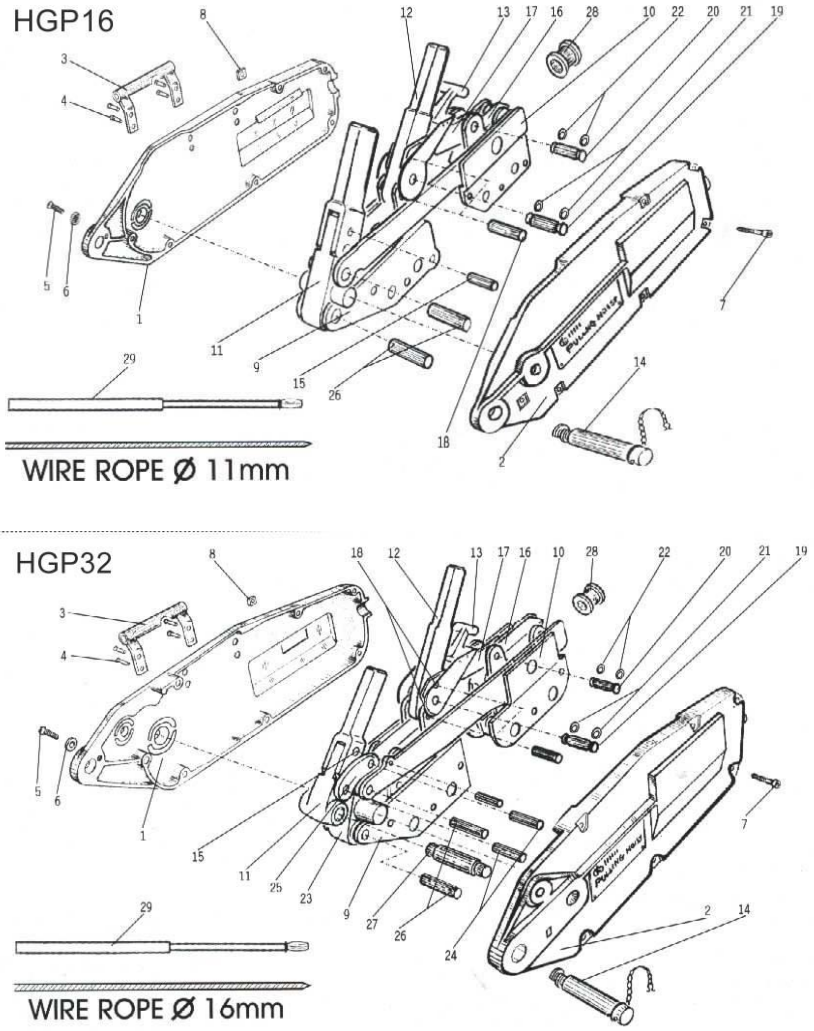


Fig. 7 Exploded Fig. of HGP Series Grip Puller

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