



The "Lantan" group of companies LLC.

HYDRAULIC PNEUMATIC GUN FOR SPEARFISHING

GIRS - - «TITAN»

USER MANUAL

The «Girs Titan» hydropneumatic gun is designed for spearfishing. It is made of titanium, stainless steel and high-quality polymers, is highly reliable, accurate and easy to use. Ergonomic handle with a large safety bracket provides a minimal angle of recoil tossing to increase the accuracy. Not a firearm.

Distinctive feature:

- double loading to increase the shot power
- ability to stop loading and continue it at any time
- in "1+1=3" version — ability to assemble three guns of different lengths
- no corrosion of metal parts, even in a seawater.
- ergonomic handle to minimize recoil tossing

TECHNICAL PARAMETERS

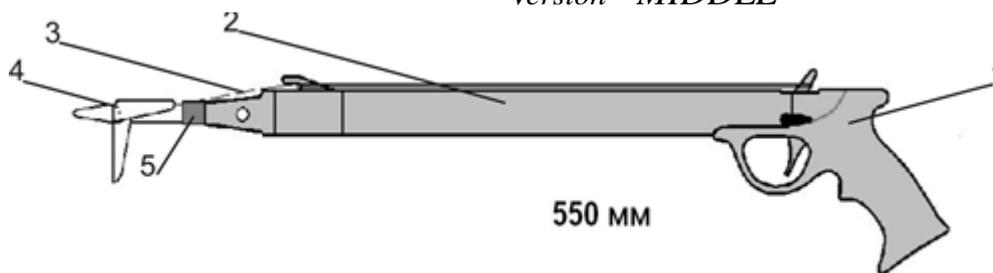
<i>Parameter</i>	<i>Version "SHORT"</i>	<i>Version "MIDDLE"</i>	<i>Version "COMBI 1+1=3"</i>
Length, mm	390	550	750
Weight, kg	0.45	0.60	0.90
Loading force, kgf	Up to 50		
Real strike distance, m	Up to 1.5	Up to 3	Up to 5
Maximal distance of the harpoon flight, m	Up to 8	Up to 12	Up to 20
Initial harpoon speed at 24/37 kgf loading force, m/s	-	33/40 m/s	-

CONTENT

<i>Item</i>	<i>Version "SHORT"</i>	<i>Version "MIDDLE"</i>	<i>Version "COMBI 1+1=3"</i>
Handle	1	1	1
Short (145 mm) receiver	1	-	1
Long (310 mm) receiver	-	1	1
240-mm harpoon assembled	1	-	1
400-mm harpoon assembled	-	1	1
600-mm harpoon assembled	-	-	1

Spare tip	1	1	1
Loading pad	1	1	1
User manual	1	1	1
Spare parts kit:			
-pump handle –spare loading pad	1	1	1
-spearshaft assembled with bushing and plug that form a pump;	1 (240 mm)	1 (400 mm)	1 (600 mm)
- harpoon sealings;	10	10	10
- trigger valve cuff;	1	1	1
- harpoon sliding sleeve.	2	2	2

Version "MIDDLE"



Version "COMBI 1+1=3"

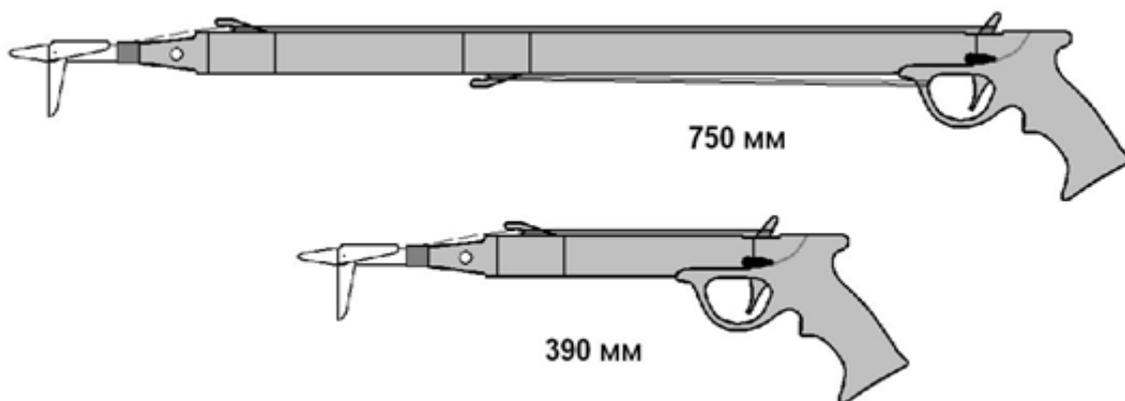


Figure 1.

1-handle, 2-receiver, 3-line, 4-harpoon, 5-sliding sleeve

The gun consists of a handle with a trigger/release mechanism, one or two replaceable receivers and a harpoon with a sliding sleeve on it, to which the line is attached.

THE SPEARGUN CONSTRUCTION

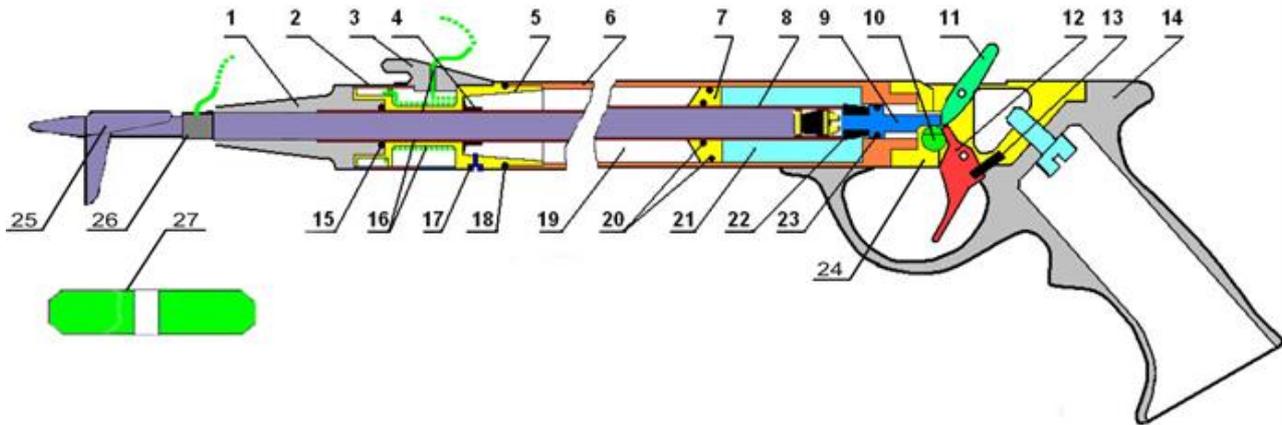


Figure 2.

1-cone, 2-coil lid, 3-bead, 4-valve, 5-coil,
 6-receiver, 7-piston, 8 — barrel, 9-trigger valve, 10-safety, 11-line releaser, 12-trigger 13 - trigger spring, 14-handle, 15-seal, 16-line, 17-deflation screw, 18-sealing, 19-compressed air, 20 - piston seal, 21-water, 22-cuff, 23-seal, 24-release mechanism body, 25 - harpoon, 26 -sliding sleeve, 27-loading pad.

The piston 7 divides the receiver into a part 19 filled with compressed air and a part 21 containing (after charging) water under the same pressure. When shooting, the air is not expended, it works just as pneumoaccumulator.

In the handle placed: trigger 12, line releaser 11, trigger valve 9 and safety/ shot power controller 10. When the release mechanism is cocked (see Fig. 2), the trigger valve locks the barrel 8 and prevents water from the cavity 21 to pass into the barrel. After pressing the trigger, trigger valve under the pressure of water in the cavity 21 moves back, and the water enters the barrel, vigorously pushing the harpoon out of it. At the same time, the line 16 reeled between the line releaser 11 and the bead 3 is automatically released.

The harpoon 24 consists of spearhead with rotating petals, spearshaft and a shank with a rubber seal. The harpoon is connected to the line through a sliding sleeve to increase the stability of its flight. The shape and location of the handle provides a small angle of tossing when shooting, which also improves the accuracy of the gun.

The length of the line is easily adjustable with the coil cover 2.

In “1+1=3” version (including two receivers), you may assemble three spearguns having different length.

LOADING

Loading can be performed only after filling of barrel with water.

To load, cock the line releaser 11 and safe the gun (arm of the safety 10 up). Reel up the line loop by loop between the bead and line releaser. Insert the harpoon’s shank into the cone 1, and its tip – into the hole of the loading pad 27 (Fig.3). Enter the harpoon into the barrel until it stops (the force depends on pressure in the receiver). Loading can be stopped at any time and resumed after a rest or from a more comfortable position, because the harpoon has no reverse. This makes loading easier and helps to increase significantly the loading force.

SHOOTING

Immediately before the shot, turn the safety to the “fire” position ("strong shot" position) and smoothly press the trigger. Line is released automatically when shooting.

INCREASING OF THE SHOT POWER

The shot power depends on pressure in the receiver. But the shot can be enhanced without additional air pumping. To do this, remove the harpoon after loading and enter it at once.

SHOT WEAKENING

When hunting in the rocks, shooting at close range, bad visibility or unloading the gun, etc., you may reduce the shot power. To do this, press the knob 10 on the right side until it clicks. If you need to return the gun to normal (strong) shot, move the safety/shot power controller 10 to its original position by pushing to its left.

UNLOADING

To unload the speargun in the water, remove the harpoon from barrel and make a shot. If unloading out of water, remove the harpoon from barrel, direct the speargun to the safe area, better in «weak shot» position, and make a shot.

ADJUSTING THE LENGTH OF THE LINE

Line should be stretched without slack, so it securely holds itself and prevents the harpoon to slip out from the barrel. Therefore, its length should be adjusted. To do this, loosen the cone 1 (you can use a harpoon as a lever) and turn the lid 2 to the required number of full revolutions, then tighten the cone. Consider a slight lengthening of the line after wetting. The reserve of line in the coil is 1-1.5 m. Keep in mind that too stretched line may cause too large force at the trigger, so try to minimize it.

REPLACING OF THE RECEIVER (for "COMBI 1+1=3" version only).

The length of the gun can be changed depending on hunting conditions, especially on water transparency. To replace the receiver,

- cock the line releaser
- put the safety/shot power controller 10 in "weak shot" position to prevent distortion of the trigger valve
- unscrew the receiver from the handle
- remove trigger valve from the rear of the receiver
- insert trigger valve into the housing
- screw the other receiver into the housing. **CAUTION! AVOID DAMAGING OF THE THREAD!**

CONNECTING OF RECEIVERS (for "COMBI 1+1=3" version only).

To increase the length of the gun to 750 mm, receivers should be connected together. **Connect a long receiver to the handle** and attach a short one to its end.

To connect the receivers,

- unscrew the cone from the long (connected to the handle) receiver
- screw the short receiver into the vacant socket. **Make sure** that the o-ring 15 (Fig.2) at the place.
- adjust the line length at any receiver
- deploy the extra bead down
- reel up the extra line of other receiver between the handle's safety bracket and the bead (see Fig.1), adjusting the line length.

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ATTENTION! The pressure in the short receiver should be slightly higher than in the long one. Otherwise, the section of the barrel, which falls on the front receiver, will not fully participate in loading that will not allow to provide full loading.

REPLACING OF THE HARPOON SEAL

To replace the worn harpoon seal, cut off the old one and install the spare seal wide side back.

DEFLATION OF THE RECEIVER

To deflate the receiver, remove the cone 1 and cover 2 and unscrew the screw 17 for 1-2 revolutions. **CAUTION! Keep the gun barrel up! Oil splashing!**

INFLATING OF THE RECEIVER

The stock gun is inflated to approx. 25 Bar. To inflate the receiver,

- twist out the cone 1
- cock the line releaser 11
- push the knob of the safety/shot power controller 10 at the right side to click (the "weak shot" position) to prevent distortion of the valve 9
- unscrew the receiver from the handle and remove the valve 9 (see Fig.Two)
- screw the bushing 2 with the harpoon inserted into it onto the male thread. **The harpoon sealing must be pre-lubricated with any grease**
- screw the plug 6 from the spare parts kit as shown at Fig. 3.
- Now the gun barrel and harpoon form the pump.
- Pump the air into receiver to the required pressure. To increase the loading force by 10 kgf, make about 50 strokes with the pump piston (spare harpoon).

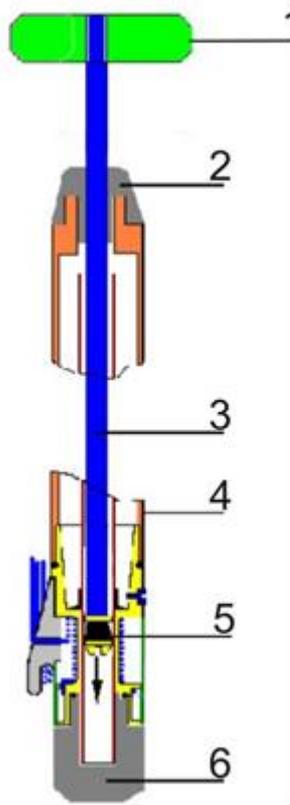


Figure 3 – 1-handle, 2-bushing, 3-pump piston (spare harpoon), 4-receiver, 5-harpoon sealing, 6-plug.

Note for "COMBI 1+1=3" version: to speed up pumping of short receiver, you can pump it in conjunction with a long one (short ahead), using a long harpoon as a piston. Similarly, to speed up the process of pumping of a long receiver, you can pump it in conjunction with the short one (long ahead).

SAFETY RULES AND OPERATING

Handling of the speargun must comply the General rules of weapons handling.

STRICTLY PROHIBITED:

- **Never** aim the gun at people, even without the harpoon in the barrel.
- **Never** unload the gun by harpoon shooting in the air. In this case, the harpoon tumbles and may fly not where you think. Unpredictable ricochet and reaction of the stretched line can lead to injury of the shooter and people around; besides, the harpoon deformation is possible.

IT SHOULD BE BORNE IN MIND:

- Even without a harpoon in the barrel, the gun may shoot with high-pressure water which may cause injury.
- Taking a gun even without a harpoon in the barrel, make sure that it is not cocked. For this, put the safety/shot power controller in "weak shot" position, direct the speargun in the safe area and press the trigger.
- Before any maintenance operations, unload the gun.

- When loading, exclude the possibility of harming people in the vicinity.
- Load the gun only with the loading pad! Using random items may result in injury! During the hunt, the pad is fixed on the hand with a rubber loop.
- Do not load the gun in very dirty water to avoid abrasive particles impact on barrel.

#	Fault	Reason	Method of correction
1	The gun is easy to charge, the shot too weak	1. Strong wear of the harpoon sealing 2. Low pressure in the receiver.	1. Replace the harpoon sealing 2. If the shot is still weak, pump up the receiver to required pressure
2	The gun charging force is normal, but the shot too weak	Small wear of the harpoon sealing	Replace the harpoon sealing
3	After loading, the harpoon slowly moves out of the gun (not slips out, but is pushed out)	Foreign objects (mud, sand, seaweeds) in the trigger valve	Unscrew the receiver from the handle, clean the trigger valve. To do this, unscrew the receiver from handle and remove the trigger valve from the rear of the receiver (see "Replacing of the receiver").

RULES FOR CARE AND STORAGE

- With proper operation, the stock pressure of air is enough for several years of intensive operation, or more than 3,000 shots.
- The gun requires no washing even after using in sea water.
- The gun needs no lubrication, except for the lubrication of the harpoon shank when pumping the receiver.
- Unlimited long-term storage under pressure is possible. No need to deflate the receiver.
- Check the line condition. If necessary, replace the damaged area using the spare line on the coil.
- Replace the harpoon seal before start of the season.

MANUFACTURER'S WARRANTY

The warranty period of the speargun is 12 months from the date of sale.

ACCEPTANCE CERTIFICATE

Packing date _____

Quality controller _____

Seal

CONTACTS FOR COMMUNICATION

- <http://girs-titan.ru>
- e-mail: secretary@girs.ru

HAVE A GOOD LUCK WHEN SPEARFISHING!