

LACING TOOL # _____

VISUAL INSPECTION CONDITION REPORT

Pneumatic Lacing Tool & Case

Customer: _____

CHECK : **OUT** Date : _____ **IN** Date : _____

STORE LOCATION : _____

Item	Number of items	Item name	Checked OUT	Checked IN	Remarks
1	1	Lacing Tool #			
2	1	Case			
3	1	Documentation (9 pages)			

This equipment has had and “in service” inspection and found to have no obvious defects:

Checked out:

Checked in:

Name

Name

Signature

Signature

Remarks : _____

Dear Customer :

- **On receipt of this equipment, please check all equipment has been received, ensure your site staff read and understand the operating, maintenance and safety information, and use the equipment in a safe manner.**
- **Responsibility for safe operation of the equipment, and safety of your staff is to your care.**
- **At the conclusion of the use of the equipment, please clean the equipment, repack it for transportation and return to Maccaferri.**
- **Please advise if there are any missing parts. All equipment usage to be in accordance with Maccaferri’s Hire Agreement. You will be charged for any damaged or missing components.**

LACING TOOL

WARNING!

Any alterations to this hire equipment may prove dangerous to the operator and will be in breach of the Equipment Hire Agreement



Service must be performed only by an authorised Maccaferri service organisation. Please contact Maccaferri (0800 60 60 20) for return of this equipment for servicing if it is found to be faulty.

This documentation is also available on our website
www.maccaferri.co.nz

LACING TOOL

CAUTION
SAFETY GLASSES
MUST BE WORN
AT ALL TIMES



LACING TOOL

OPERATING INSTRUCTIONS



LUBRICATION

1. The Lacing Tool is designed for long, trouble-free service with little or no air line lubrication. (If an in-line lubricator is used, it should be set at the minimum rate of flow.)
2. Excess oil in the tool will attract dirt and the adhesive material used in collating the fasteners, thus preventing smooth operation. If lubrication is utilised, always use a good grade of 5W non-detergent oil, or oil specifically manufactured for air tools.

FILTER AND REGULATOR

1. The air line should always contain a filter and regulator unit to provide the tool with a constant flow of clean, dry air. If moisture and contaminants are allowed to enter the tool, the tool's serviceable life will be decreased.
2. The regulator should be set at between 90 and 100 psi (6,12 and 6,81 bar) **NEVER** operate this tool beyond 105 psi (7.51 bar).

TIPS ON EXTENDING TOOL LIFE

The serviceable life of the Lacing Tool can be extended greatly by using the following guidelines :

1. Always use fastener rings that are recommended by Maccaferri, as there are standard strength and coating requirements, to meet specifications. Never replace worn or broken parts with anything other than genuine parts provided by Maccaferri NZ Ltd.
2. Keep your Lacing Tool clean and dry. Always use clean, dry air and never exceed the recommended air pressure noted above.
3. Use of this tool at minimum air pressure required for the work at hand, will greatly extend the life of the Lacing Tool.
4. Exercise caution not to drop the Lacing Tool. Tools dropping onto the floor, or ground is a primary reason for parts replacement.

TROUBLE SHOOTING



TOOL JAMS

1. The most common reason for jamming problems in the Lacing Tool is operator error. Because of the tool's long stroke, the trigger must be pulled completely to the rear to ensure positive functioning of the valve. If the tool is "short cycled", the feed mechanism will return forward prematurely in an attempt to pick up a second ring. This will most likely cause a jam each time.
2. Remove remaining rings from magazine. **Point tool away from yourself and others**, and cycle tool slowly. This should force jammed ring(s) out of jaw mechanism.
3. If procedure "2" does not clear the tool, **disconnect the air supply** and lay tool on a clean flat surface and remove set screw from rear of magazine at feeder arm bracket. Remove jaw bolts and nuts, and pull magazine and pusher assembly from tool, jammed rings are now exposed and may be removed from the Lacing Tool. Reassemble in reverse order.

FEEDING PROBLEMS

1. If rings do not feed smoothly down the magazine, check pusher spring for proper tension. When properly adjusted, the pusher and spring should not extend more than one or two inches (51mm) past the end of the magazine. If the magazine is covered with dirt from field use, clean the magazine and apply a light coat of oil.
2. When rings feed properly on the magazine but do not feed into the jaws without spitting out the sides of the tool, or if the rings sit in the jaw grooves on an angle, check jaws to insure freedom of movement. With the jaws void of rings, the vertical movement should be approximately 150" (3.81mm). The nuts on the jaw bolts should be snug, but never, over tightened. On occasion, a 010" shim may be required under the magazine. This will enable the feeder blade to slide freely against the magazine shoe.
3. After considerable use or several jams, the fingers on the pusher may show signs of spreading. This may cause the pusher to "hang up" on the magazine, with little or no pressure behind the rings. The last few rings in the strip fingers can be squeezed back into proper position or the pusher should be replaced.

NEVER USE LOOSE RINGS IN THE LACING TOOL.

RING DOES NOT CLOSE COMPLETELY

- 1. Check air pressure. Line pressure at the tool should be between 90 and 100 psi (6.12 – 6.81 bar). The tool should never be operated at pressures exceeding 105 psi (7.15 bar). An air line of 3/8” (9.5 mm) or larger should be used with the Lacing Tool. Air lines in excess of 100” (30.5 m) in length can cause air volume deficiencies at the tool which will prevent normal operation.**
- 2. Check for foreign debris in the jaw area. This is especially true in the area between the side plates and rollers. Remove particles of rock, excess sand or broken pieces of rings.**
- 3. The jaws may be worn from extended use with high tensile fasteners. Check the “land “between the receiving grooves of the jaws, if the land is worn excessively, replace the jaw(s).**
- 4. When the tool is used in construction applications, light oil should be applied on a regular basis to the jaw bushings and rollers, Unlubricated and/or corroded jaw bushings may cause the tool to function poorly.**

TOOL LEAKS AIR OR IS SLUGGISH

- 1. If tool is leaking air in the throttle area, see “Throttle Valve Adjustment” section.**
- 2. Should the tool leak air in both the triggered and rest positions, a damaged piston “O” ring may be the cause. Once the piston “O “ring has been replaced, tilt the front of the tool to one side to allow the piston and “O” ring to pass the notch on the cylinder liner. If this procedure is not followed the “O” ring may be damaged during reassembly.**
- 3. In the event the rear throttle valve screw is turned in too far, the tool will operate slowly or in a sluggish manner. This screw controls the amount of rear exhaust. When properly adjusted, two or three threads should be exposed once the nut and washer are in place.**

LACING TOOL

SAFETY INSTRUCTIONS



WARNING !

1. **NEVER** operate or work in the vicinity of a tool in use without hearing protection and eye protection that conforms to specifications and provides protection against flying particles both from the **FRONT** and **SIDE** should always be worn by the operator and others in the work area when loading, operating, is required to guard against flying fasteners and debris, which could cause severe eye injury. The employer and/or user must ensure that proper eye protection is worn. Eye protection equipment must conform to the requirements of the relevant NZ Safety Standards and provide frontal and side protection.

WARNING !

2. **NEVER** assume the tool is empty. Check the magazine.

WARNING !

3. **NEVER** engage in horseplay with the tool. **IT IS NOT A TOY.**

WARNING !

4. **NEVER** point the tool at anyone or yourself, even if you think it is empty or disconnected.

WARNING !

5. **NEVER** operate the tool unless it is in contact with the work piece.

WARNING !

6. **NEVER** tamper with, disable or remove the safety device.

WARNING !

7. **NEVER** leave the work area for any extended period of time **WITHOUT DISCONNECTING** the tool from the air line.

WARNING !

8. **NEVER** attempt to clear a jam without disconnecting the tool from the air line and removing the remaining fasteners from the tool.

WARNING !

9. **NEVER** allow the air pressure to exceed the maximum marketed on the tool. Check the air pressure gauge at least twice daily, Do not operate with bottled air or bolted gases.

WARNING !

10. **NEVER** operate a dirty tool. Clean the tool at least daily and lubricate if required.

WARNING !

11. In case of a tool malfunction :

- Disconnect from air line immediately and remove all fasteners from magazine.
- **NEVER** re-connect air line until the tool is thoroughly repaired and inspected.
- **NEVER** set aside a malfunctioning tool without tagging the air inlet or tuning it over to the man responsible for its repair.

WARNING !

12. **NEVER** carry the tool with the trigger depressed.

WARNING !

13. **NEVER** clamp the trigger in a locked operating position.

WARNING !

14. **NEVER** load the tool with either the trigger or the safety depressed.

WARNING !

15. **NEVER** use parts or fasteners other than those specifically recommended by Maccaferri for use in the tool.

WARNING !

16. **NEVER** attempt to modify the tool in any way.

WARNING !

17. For detailed information on the tool installation, maintenance and loading instructions, refer to the tool manual.

WARNING !

18. Treat the tool with respect and it will perform safely and reliably for you.

WARNING !

19. **KEEP FINGERS CLEAR OF ALL MOVING PARTS OF THE TOOL**
(particularly jaw components)

FASTENING SYSTEM GALMAC & STAINLESS STEEL RINGS

Pneumatic Lacing Tool

Maccaferri pneumatic lacing tools have been developed for use with gabions, Reno mattresses, Terramesh and double twist wire mesh. They offer an approved alternative to standard hand lacing methods as detailed in ASTM A975 - 97.

Operation

The Maccaferri tools are designed to operate with standard air compressors that meet the following requirements:

- Air compressor with regulator set at 100 to 105 psi (690 to 720 kPa). Never operate above 115 psi (795 kPa).
- Minimum delivery of 10 CFM and air tank capacity of at least 48 ltr
- Air line should contain a regulator with filter unit, have a diameter of 10mm and a maximum length of 30m

Excess oil attracts dirt and therefore the tool should be kept clean and dry during use. A wipe down and light spray with a good non-detergent oil after use should ensure the smooth operation of the tool.

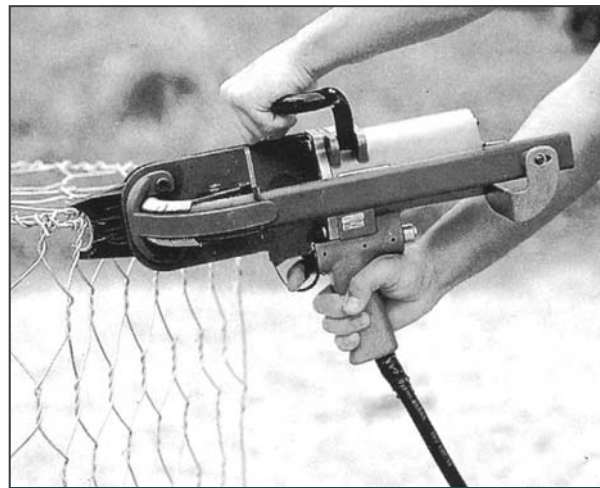


Figure 1

Ring Fasteners

Lacing operations can be achieved by using the tool shown in Fig.1. Two types of rings are available to meet the strength and durability requirements of the wire mesh used:

1. Galmac coated wire mesh Products

Zinc-5%Aluminium mischmetal alloy coated rings having the following specification can be used instead of Galmac lacing wire:

- diameter: 3.00 mm, [ASTM A975, Table 1](#)
- tensile strength: 1380-1660 MPa, [ASTM A764, Table 2, Class 1](#)
- coating thickness: 244g/m², [ASTM A764, Table 7, Class 3](#)

2. Galmac/PVC coated wire mesh Products

Stainless steel rings having the following specification can be used instead of Galmac/PVC lacing wire:

- diameter: 3.00 mm, [ASTM A975, Table 1](#)
- tensile strength: 1530-1745 MPa, [ASTM A313, Table 5](#)
- stainless steel grade, Type 302, [ASTM A313, Table 1](#)

Installation

To meet the minimum strength requirements of wire mesh connections as specified in ASTM A975 - 97 the rings shall be spaced 10-12cm apart as shown in figure 3.

The number of rings used is dependent on the mesh size and type of work. For continuity of the joints and to meet the wire mesh connection requirement the rings shall be used as shown in Table 1.

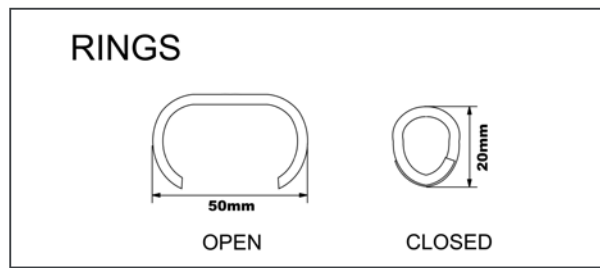


Figure 2

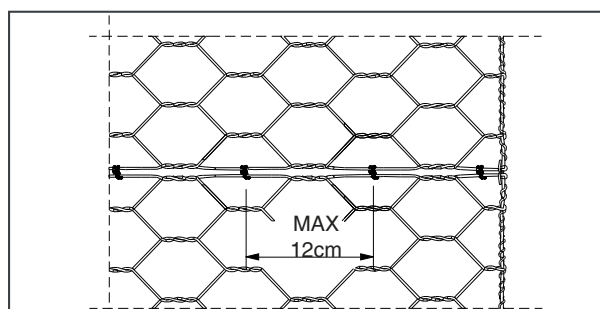


Figure 3

1. Table of Suggested number of rings

Height m	GABIONS			RENO MATTRESSES		
	1.00 with diaphragms	1.00 without diaphragms	0.50 with diaphragms	0.17	0.23	0.30
Number of rings/m ³	35—45	25—35	55—65	16—18	18—20	20—22
Number of rings/m ²						

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 Quality System AS/NZS ISO 9001:2000

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