

**MANDATORY**

**1. Applicability**

Engine affected

Engine model	Production period / Serial number
Atom80	All engines with internal pulse line (IPL)

**2. Reason**

In rare cases, there was a drop in power from maximum rpm after a few seconds at full throttle. The circumstances that lead to this problem are mainly the atmospheric ones, such as the low temperature below 5° C and, at the same time, also the humidity with values above 80%.

The reason that causes this power drop at full rpm is the air fuel mixture too lean / poor: in fact, the cold weather conditions described lead to an increase in air density. Consequently, to maintain the correct AFR (Air Fuel Ratio) also the fuel flow rate should increase at high rpm. In the WG8 carburettor there is only one Jet, the Low Screw: even by increasing the fuel flow by acting on the screw L, the flow rate will be negligible at high revs.

To ensure the correct fuel flow at maximum rpm, the Pulse Line has been optimized to boost the carburetor pump in all conditions.

**3. Compliance**

- Immediately, on undelivered engines.
- Before next flight, on the engine affected to avoid unusual engine operating behavior.

**4. Subject**

Instructions to modify the Pulse Line from internal (IPL) to external (EPL).

The EPL solution ensures maximum flow of the WG8 diaphragm pump in every weather condition and intense cold, when the membrane is more rigid and less performing. The transformation from IPL to EPL system is recommended on every Atom80. The EPL system ensure the stability of the pump system for longer periods: in this way, when the performance of the membrane deteriorates due to aging, the risk of having a limited flow rate at high rpm, decrease.

**5. Labor time**

Estimated labor: 60-80 minutes to transform the engine from IPL to EPL.

**6. Mass data**

Change of weight: +27 grams from IPL to EPL.

# SERVICE BULLETIN – ATOM80

Update of the carburettor pulse-line system



## 7. References

In addition to this technical information refer to current issue of:

- Engine user Manual
- Illustrated Parts Catalog

## 8. Material

Price and availability will be provided on request by VITTORAZI authorized dealer or Service Centers. Material requirement per engine:

<i>Code / Art.</i>	<i>Quant.</i>	<i>Description</i>	<i>Cost of the material FOB</i>
AGG2019003	1	Kit external pulse line Atom 80	Free upgrade for engines affected

## 9. Rework of parts

To modify the Pulse Line from internal (IPL) to external (EPL): drill the crankcase and the carburetor membrane cover. Both operations are to be carried out with suitable equipment and by qualified personnel.

## 10. Special tooling

Drill press.

## 11. Warning, caution, more attention

- Fuel line installation. A long fuel line, wrong fuel filters, incorrect or defective primer bulb, air intake in the fuel line, incorrect position of the fuel tank and other, add worse operating conditions to the diaphragm carburettor, and a low flow rate of the pump as a result.

- Vittorazi engines are approved with fuel that complies with the EU regulation UNI EN 228. Fuel 95 RON contain a maximum percentage of ethanol of 5% in volume. The use of inappropriate fuels (with higher Ethanol percentages and / or with lower RON) makes the engines leaner, therefore the problem of the power drop could happen also in normal atmospheric conditions. In addition, as specified in the Walbro carburettor manuals: membranes, rubbers and carburettor seals can tolerate a maximum percentage of alcohol typical of European gasoline (5% ethanol, 3% methanol and 10% MTBE octane enhancer).

- Use of the Vittorazi approved propeller. A wrong propeller could be the reason for an incorrect coupling with the engine, therefore as a certain consequence a different AFR is obtained. The problem of power loss could also be enabled by a wrong propeller.

## 12. Accomplishment and Test Run

The work must be implemented and confirmed by at least one of the following persons:

- VITTORAZI MOTORS representatives;
- VITTORAZI MOTORS authorized Distributors, Service Centre, Aircraft manufacture.

At the end of the work to ensure the correct operation of the service a ground test is required and then a further approval in flight.

## **SERVICE BULLETIN – ATOM80**

*Update of the carburettor pulse-line system*




If the described power drop problem is present even after updating to EPL, a carburettor calibration check may be necessary. Another unlikely but possible condition is the obstruction - clogging of this carburetor model, difficult to restore even with ultrasonic cleaner. In both cases we ask you to contact your dealer for an inspection of the carburetor.

### ***13. Inquires***

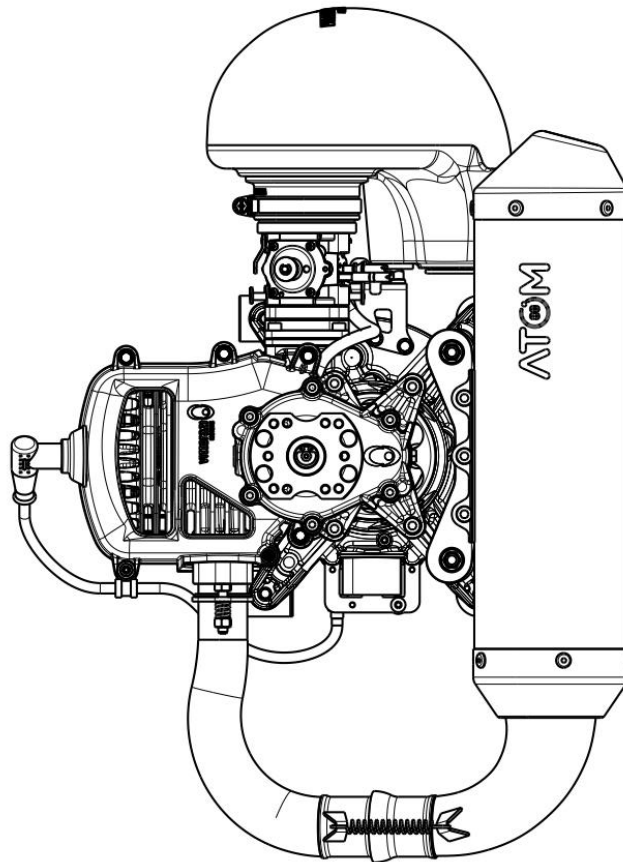
Inquiries regarding this Service Bulletin should be sent to the VITTORAZI authorized Distributors, Service Centre, Aircraft manufacture of your area. A list of all VITTORAZI representatives is provided on the Vittorazi website ([vittorazi.com](http://vittorazi.com)).









**SERVICE BULLETIN – ATOM80**  
*Update of the carburettor pulse-line system*

1P04-0020\_01 - External pulse line upgrade kit

 Vittorazi Motors  
 Via Marche 1 - 62010 Morrovalle (MC) - Italy  
 Tel./Fax +39.0733.866595 Email: info@vittorazi.com

CODE: AGG20190003



COMPONENTS	Q.TY	COMPONENTS	Q.TY
	1		1
	1		2
	1		2
	1		
	1		

**NOT FOR SALE**

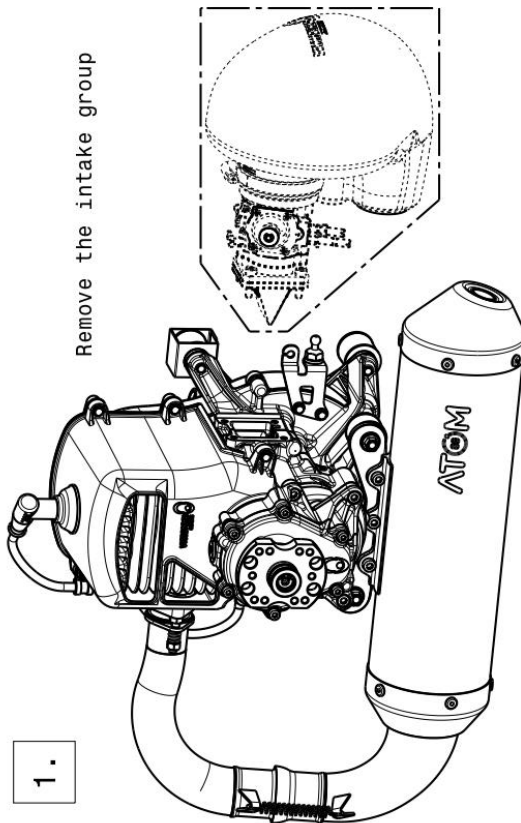
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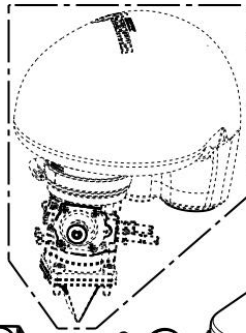


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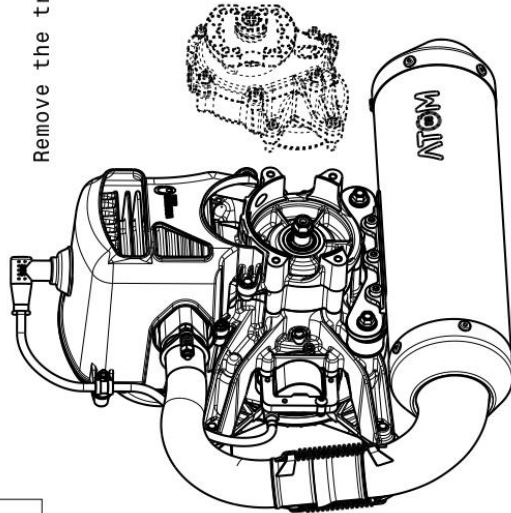
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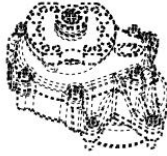
Remove the intake group



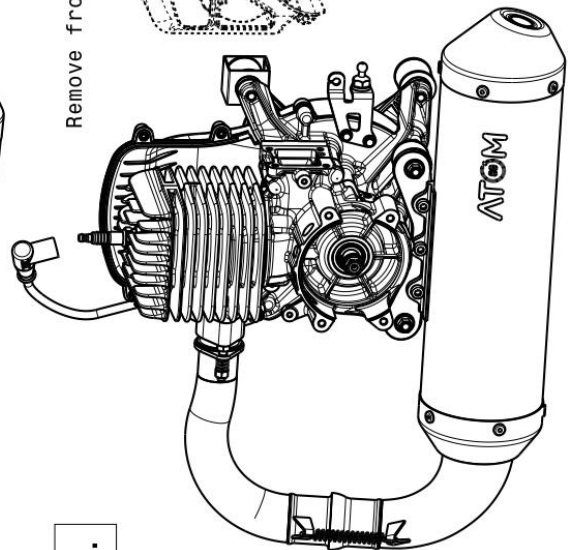
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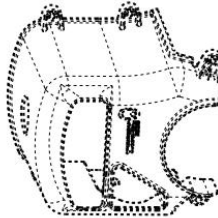
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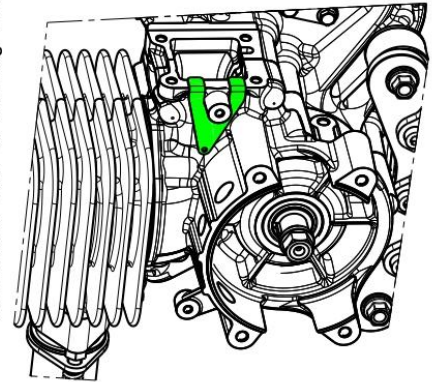
3.



Remove front conveyor



4.



Position the drilling tool as indicated



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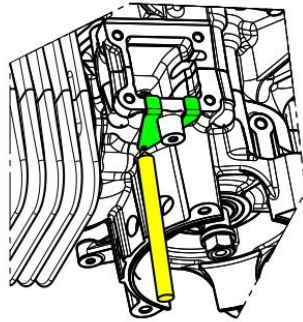
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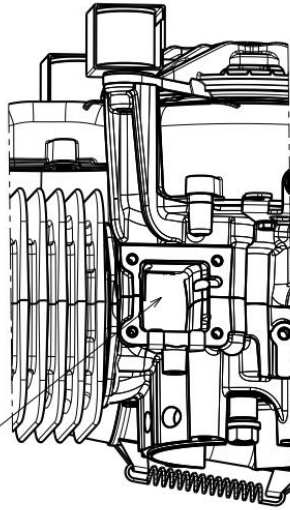
5.

Mark the position of the hole with a graver



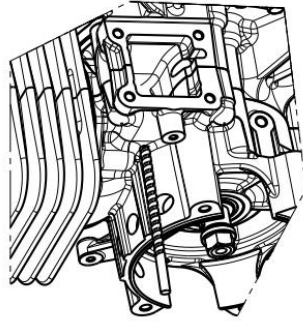
6.

Insert paper to collect the chips



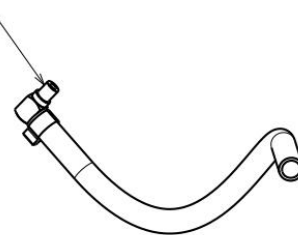
7.

Drill with the bit provided in kit Ø4.6



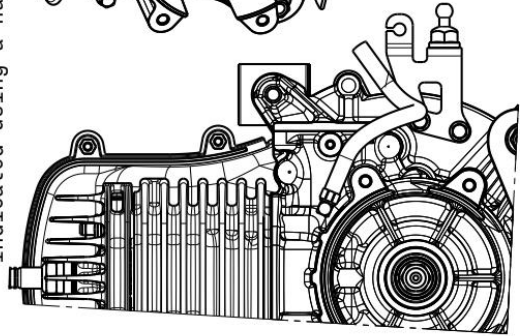
8.

Add loctite 638



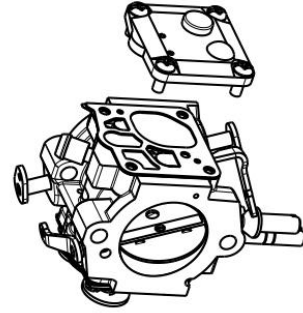
9.

Assemble the fitting + tube as indicated using a hammer.



10.

Remove the carburetor cover



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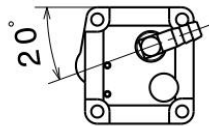


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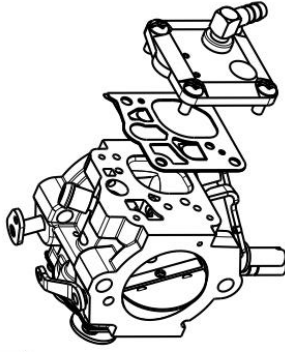
**11.** Drill the cover using the bit provided in the kit of  $\varnothing 4.6$



**12.** Assemble the fitting with Loctite 638

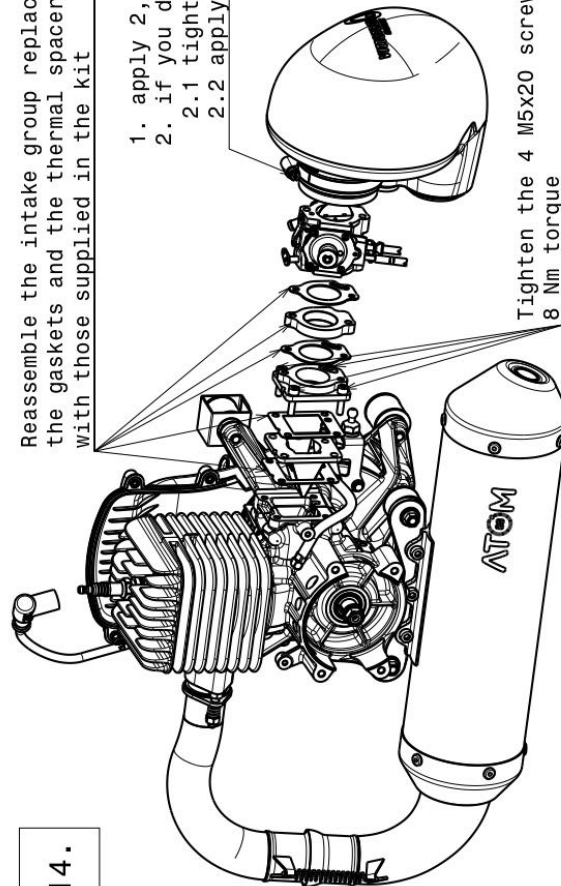


**13.** Replace the cover



**14.**

Reassemble the intake group replacing the gaskets and the thermal spacer with those supplied in the kit

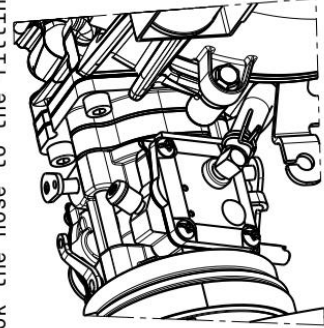


1. apply 2,5 Nm torque
2. if you don't have a torque wrench
  - 2.1 tighten the hose clamp until it start squeezing the rubber
  - 2.2 apply 1 and  $\frac{1}{2}$  more complete turns

Tighten the 4 M5x20 screws with 8 Nm torque

Hook the hose to the fitting as shown

**15.**



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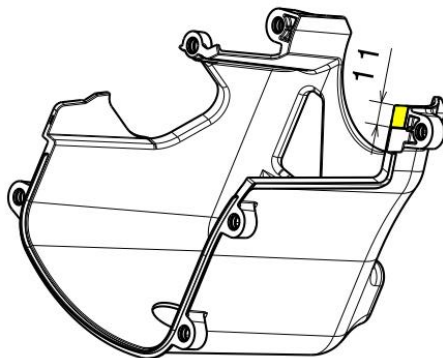
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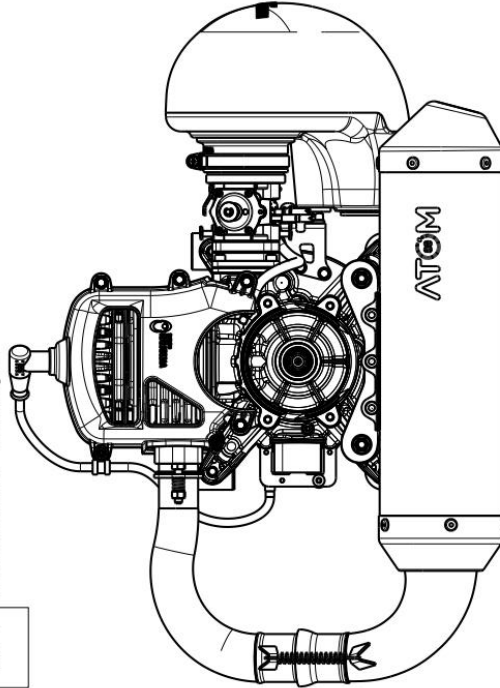
16.

cut the conveyor as shown in the figure

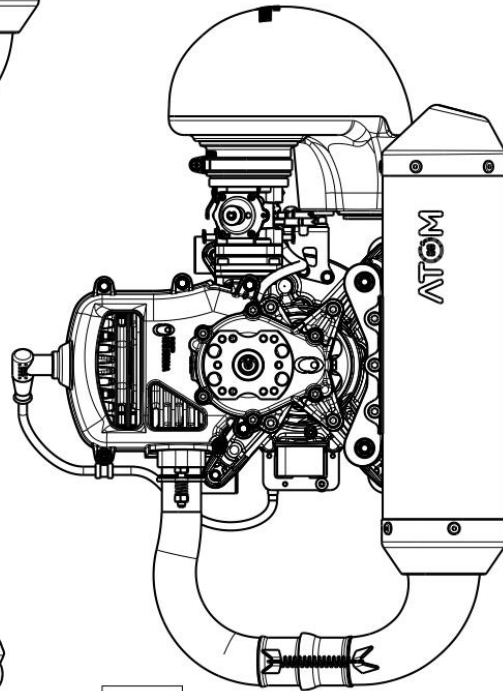


17.

Reassemble conveyor



18.



Reassemble the transmission unit:  
- Tighten the 4 M6x25 screws with 10 Nm torque