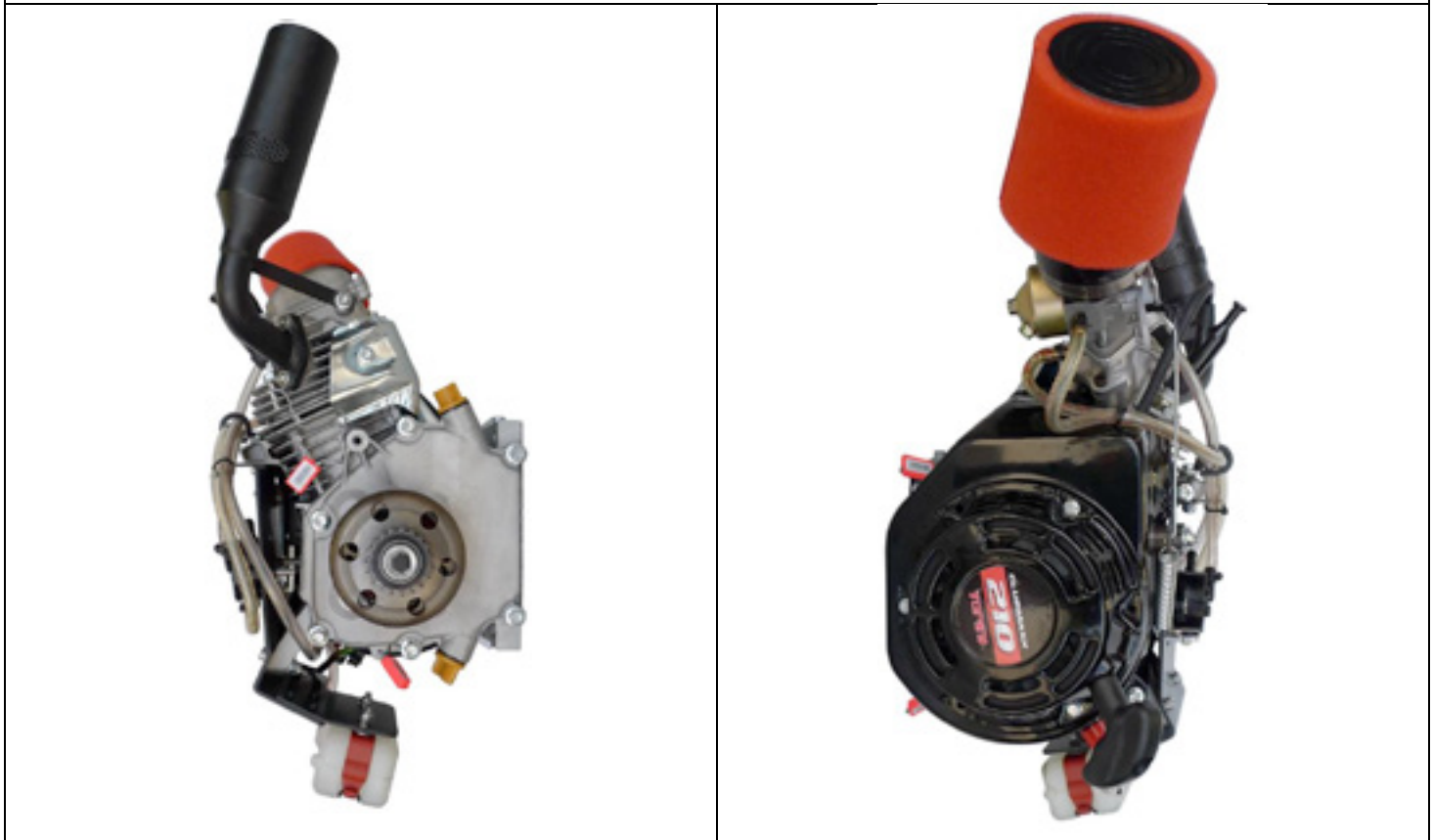


## NATIONAL HOMOLOGATION FORM KARTING ENGINE

<i>Manufacturer</i>	<b>TORINI MOTOR CO., LTD.</b>
<i>Make</i>	<b>TORINI</b>
<i>Model</i>	<b>CLUBMAXX 210 (TC210)</b>
<i>Validity of the homologation</i>	<b>6 years</b>
<i>Number of pages</i>	<b>34</b>

*This Homologation Form reproduces descriptions, illustrations and dimensions of the engine at the time that Karting Australia conducted the homologation. The height of the complete engine on all photographs must be as a minimum 7 cm.*



**PHOTO OF DRIVE SIDE OF ENGINE**

**PHOTO OF OPPOSITE SIDE OF ENGINE**

### Signature and Stamp of Karting Australia



**Les Allen**  
**National Technical Commissioner**  
**14 November 2017**



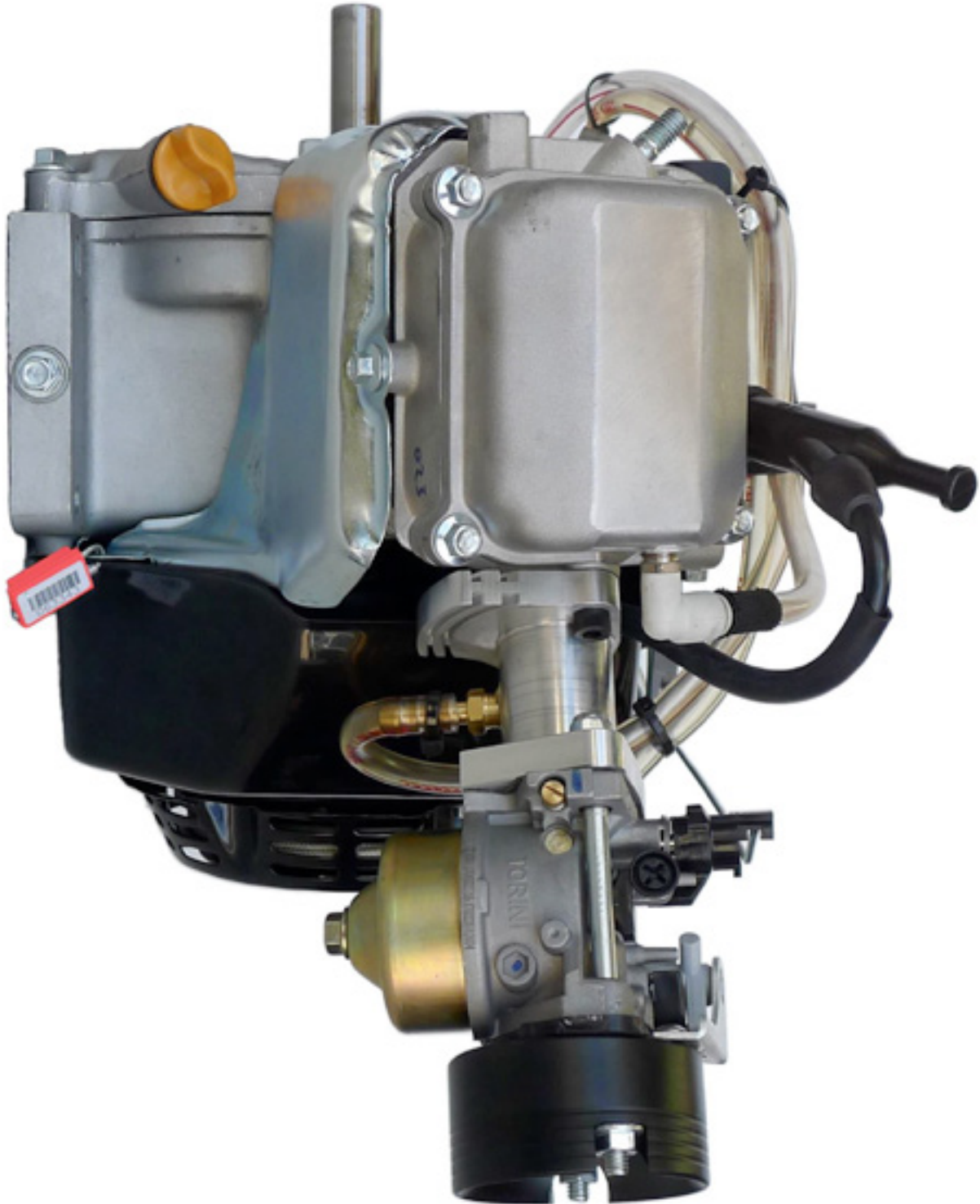
**PHOTO OF DRIVE SIDE OF THE COMPLETE ENGINE**



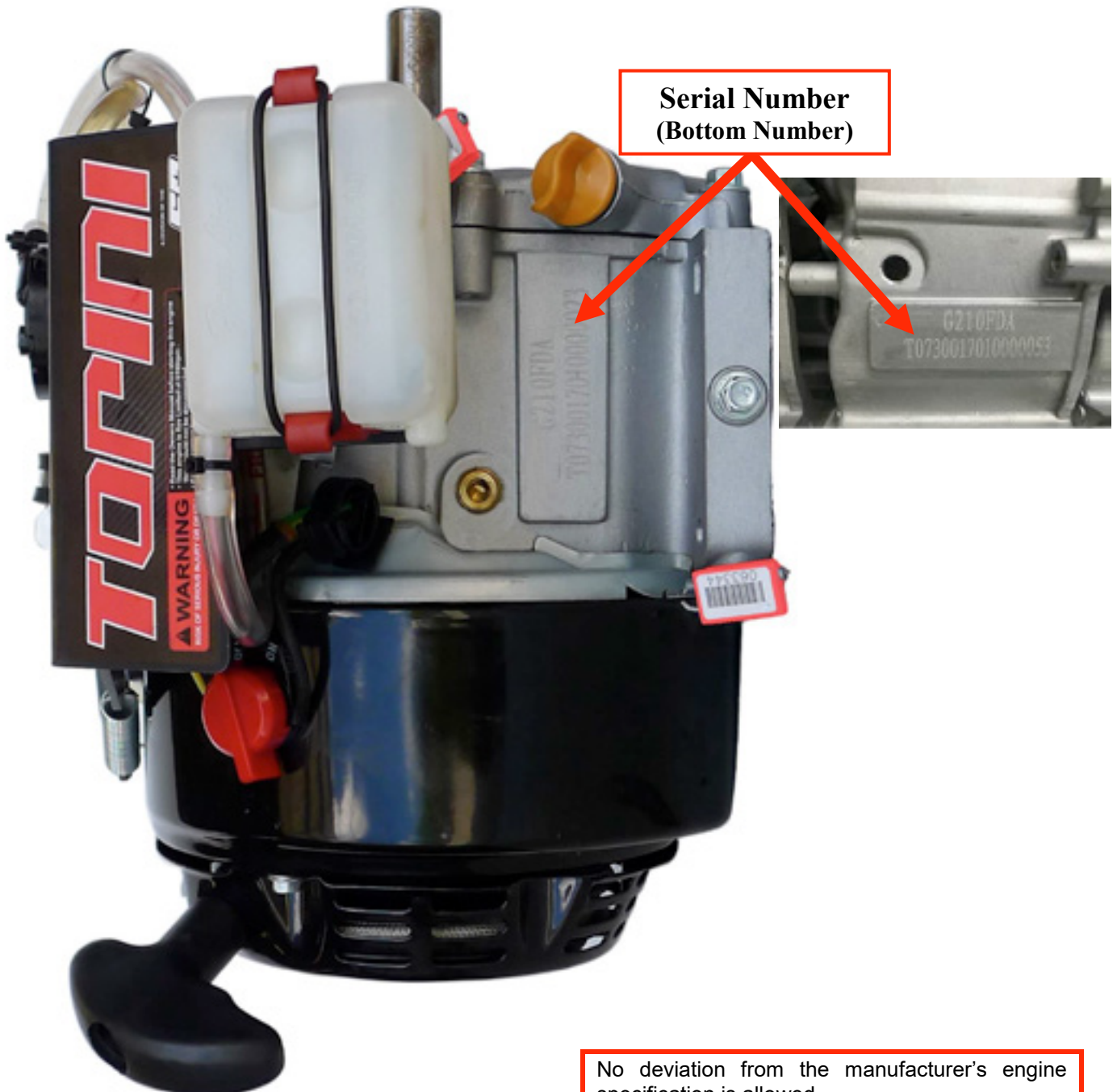
**PHOTO OF OPPOSITE DRIVE SIDE OF THE COMPLETE ENGINE**



**PHOTO OF THE REAR OF THE COMPLETE ENGINE**



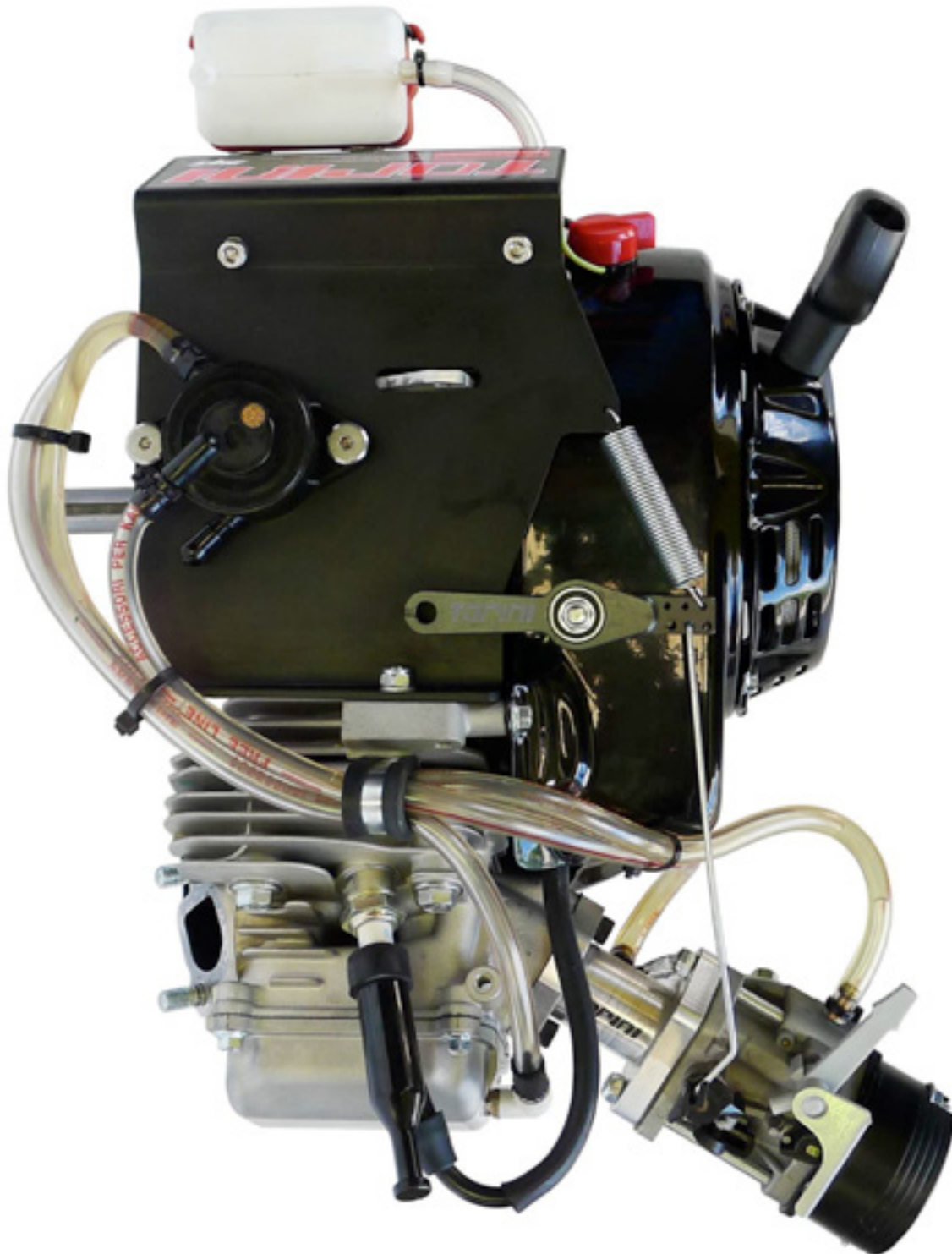
**PHOTO OF THE FRONT OF THE COMPLETE ENGINE**



No deviation from the manufacturer's engine specification is allowed.

All components must remain OEM. **The engine serial number must be visible at all times** and must comply with the Australian Homologation records.

**PHOTO OF THE COMPLETE ENGINE TAKEN FROM ABOVE**



**PHOTO OF THE COMPLETE ENGINE TAKEN FROM BELOW**



**TECHNICAL INFORMATION**

A	CHARACTERISTICS	
<i>The number of decimal places must be 2 or comply with the relevant tolerance.</i>		<i>Tolerances &amp; remarks</i>
<b>Cylinder</b>		
<i>Volume of cylinder</i>	<b>211.66CC</b>	--
<i>Original bore</i>	<b>70.000mm</b>	--
<i>Theoretical maximum bore</i>	<b>70.165mm</b>	--
<i>Original Stroke</i>	<b>55mm</b>	--
<i>Number of transfer ducts, cylinder/sump</i>	<b>n/a</b>	--
<i>Number of exhaust ports / ducts</i>	<b>n/a</b>	--
<i>Volume of the combustion chamber</i>		minimum
<i>Volume of the combustion chamber in the cylinder head</i>		minimum
<b>Crankshaft</b>		
<i>Number of bearings</i>		
<i>Diameter of bearings</i>		
<i>Minimum weight of crankshaft</i>	<b>1750g</b>	minimum
<i>All parts represented on page 17 photo</i>		
<b>Balance shaft</b>		
<i>Minimum weight of balance shaft</i>	<b>n/a</b>	minimum
<i>Percentage of balancing</i>	<b>n/a</b>	minimum
<b>Connecting rod</b>		
<i>Connecting rod centreline</i>	<b>84.5mm</b>	±0.5mm
<i>Diameter of big end</i>	<b>30.25mm</b>	±0.02mm
<i>Diameter of small end</i>	<b>18.002</b>	
<i>Min. weight of the connecting rod &amp; cap (with bolts)</i>	<b>110g</b>	minimum



<b>Piston</b>		
Number of piston rings	<b>3</b>	
Min. weight of the bare piston	<b>145g</b>	minimum
<b>Gudgeon pin</b>		
Diameter	<b>18mm</b>	
Length	<b>54mm</b>	±0.5mm
Minimum weight	<b>45g</b>	Minimum
<b>Clutch</b>		
Minimum weight	<b>0.97Kg</b>	minimum
Of all the parts represented on the page 18 technical drawing		

B	OPENING ANGLES	
Of the inlet (main transfer ports)	<b>n/a</b>	
Of the inlet (secondary transfer ports, for 5 transfer ducts engine)	<b>n/a</b>	
Of the exhaust	<b>n/a</b>	
Of the boosters	<b>n/a</b>	

C	MATERIAL	
Cylinder head	<b><u>YL113 GB/T15115-1994</u></b>	
Cylinder	<b><u>ADC12</u></b>	
Cylinder wall	<b><u>CAST IRON</u></b>	
Sump	<b><u>ADC12</u></b>	
Crankshaft	<b><u>40CR GB/T3077-199</u></b>	
Connecting rod	<b><u>BILLET 7075 T6</u></b>	
Piston	<b><u>ZL109 GBT/T 1173-1995</u></b>	

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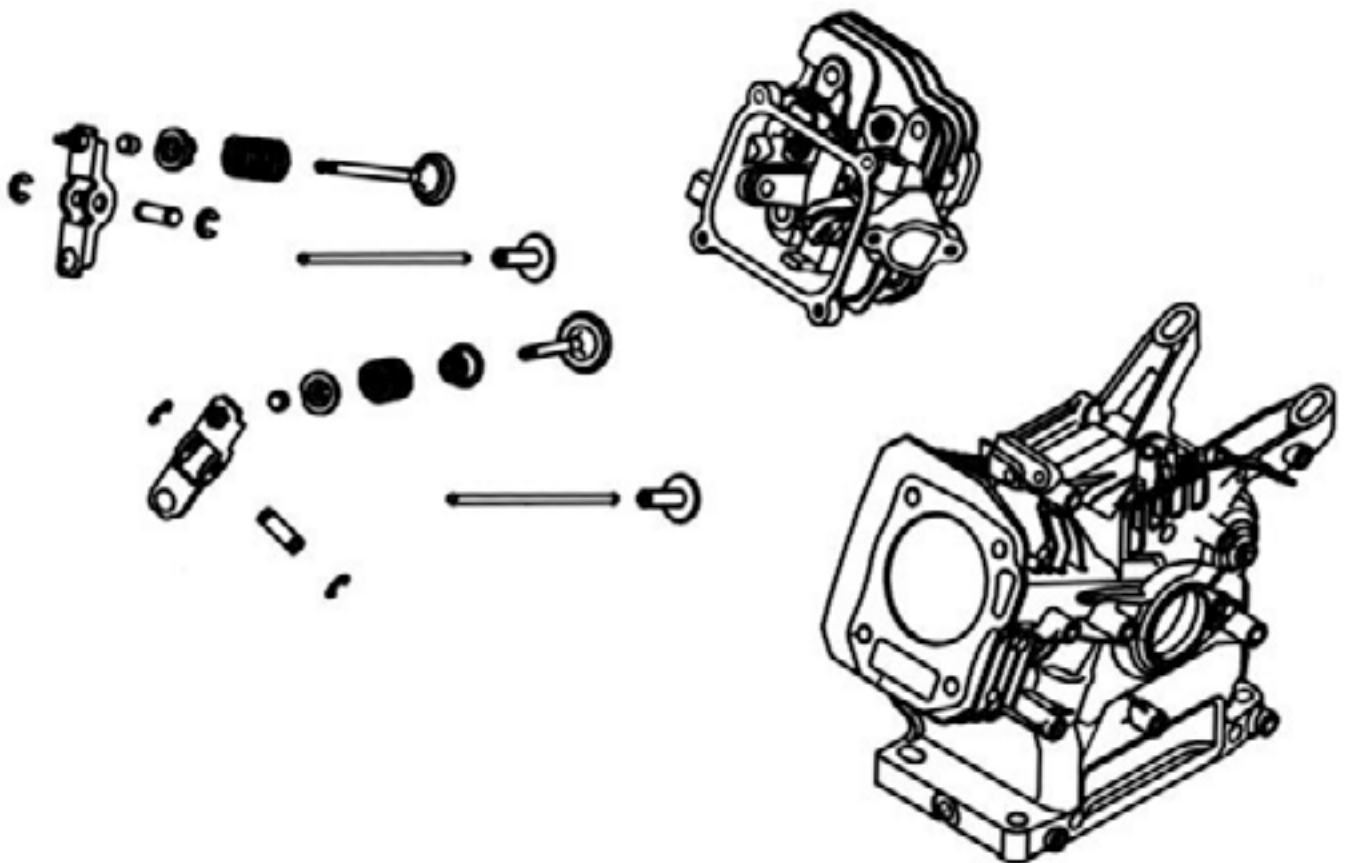
**Attention: ALL THE ENGINE PARTS MUST BE ORIGINAL BY TORINI MOTOR CO., LTD.**

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D	<i>PHOTOS, DRAWINGS &amp; GRAPHS</i>
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**D.1 CYLINDER UNIT**

*EXPLODED DRAWING OF THE CYLINDER, CYLINDER HEAD AND EXHAUST MANIFOLD UNIT*

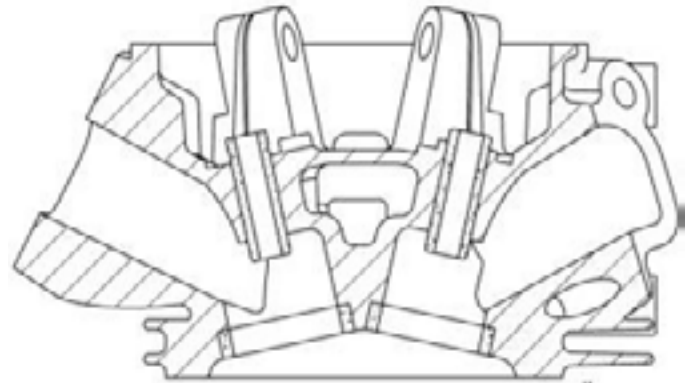
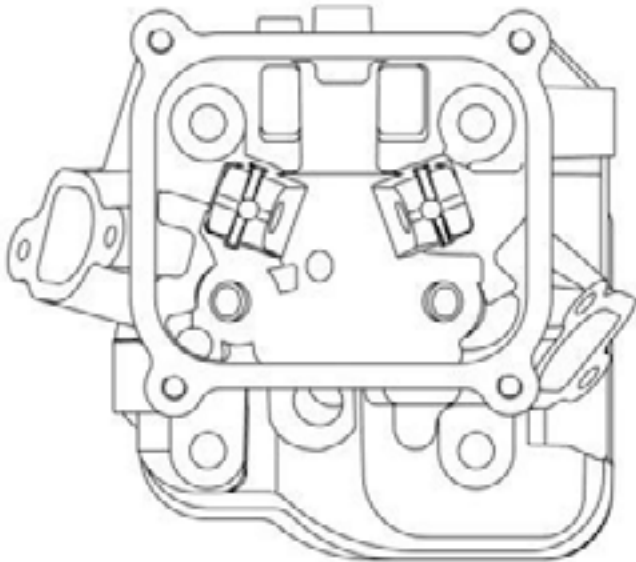


<b><i>Without screws or gaskets.</i></b>	<b><i>The aim of the exploded drawings is to identify the principles, the functioning and the whole mechanical unit</i></b>
--	---



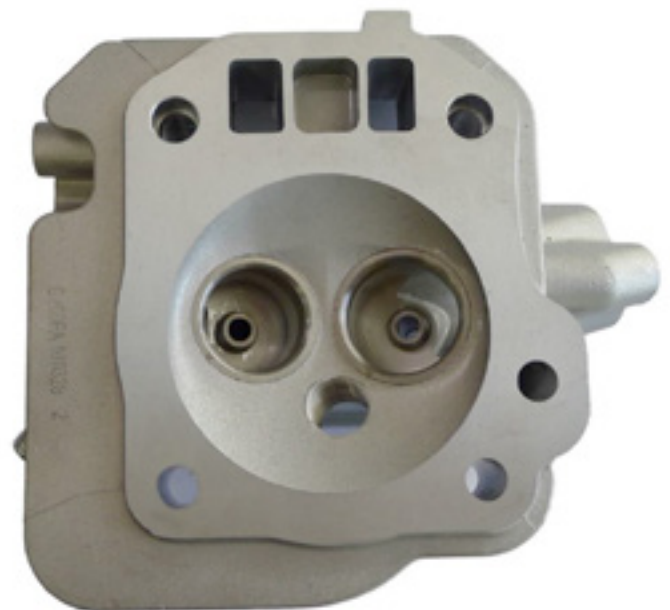
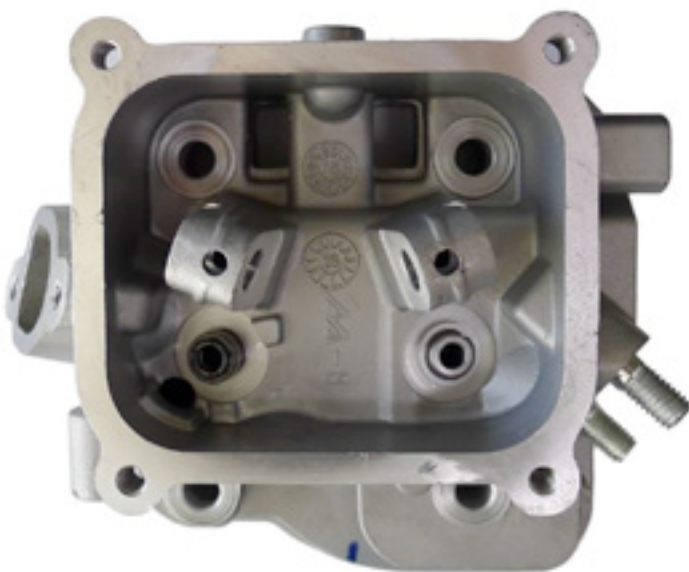
... Section D.1

*DRAWING OF THE CYLINDER HEAD AND OF THE COMBUSTION CHAMBER without dimensions*



*PHOTO OF THE CYLINDER HEAD*

*PHOTO OF THE COMBUSTION CHAMBER IN THE CYLINDER HEAD*



... Section D.1

*PHOTO OF THE CYLINDER FROM ABOVE*



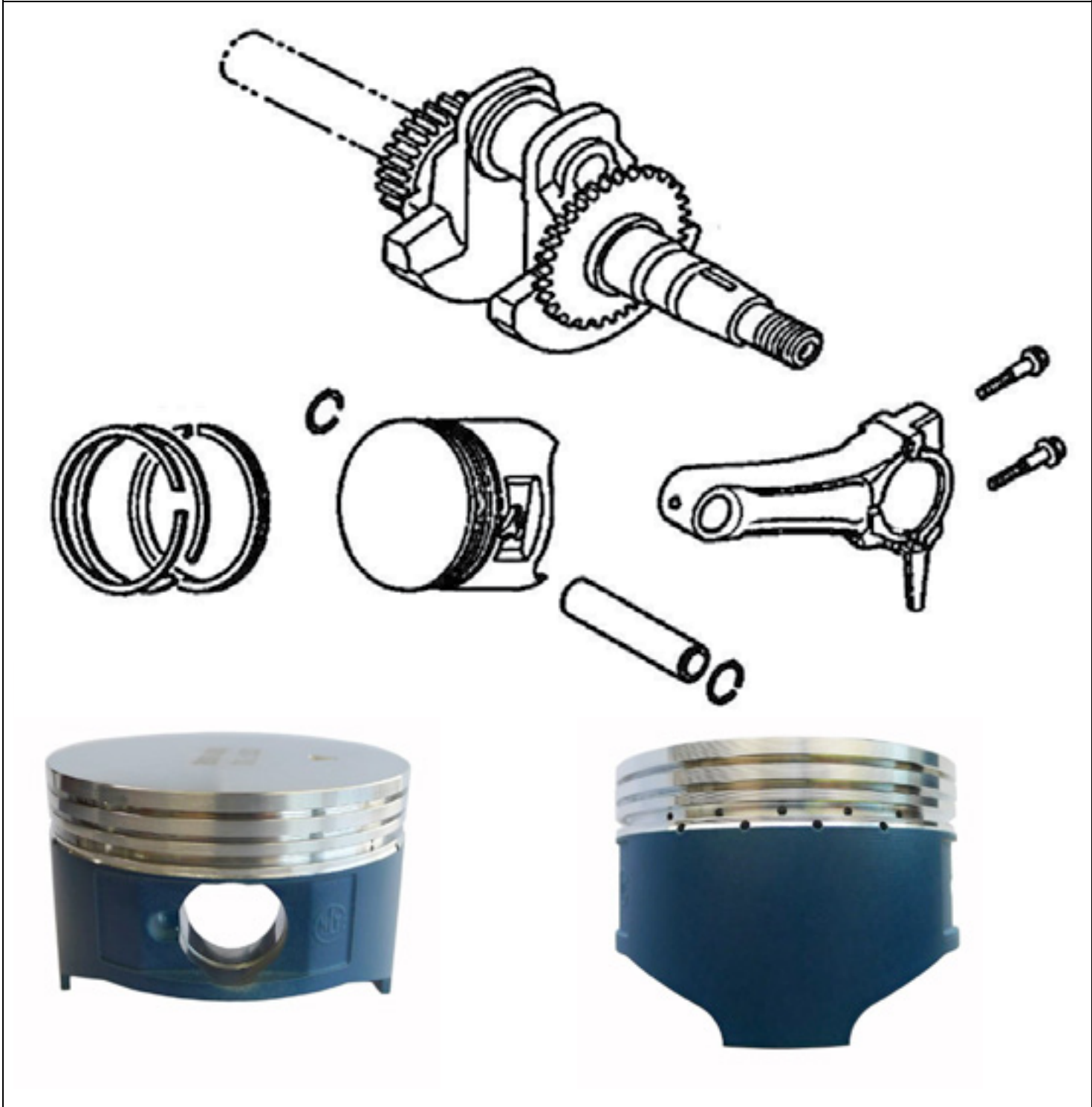
*PHOTO OF THE CYLINDER FROM RH SIDE*



... Section D.2

**D.2 CONROD, CRANKCASE, CRANKSHAFT & PISTON**



*EXPLODED DRAWING OF THE PISTON, CRANKSHAFT, CONNECTING ROD AND CRANKCASE*



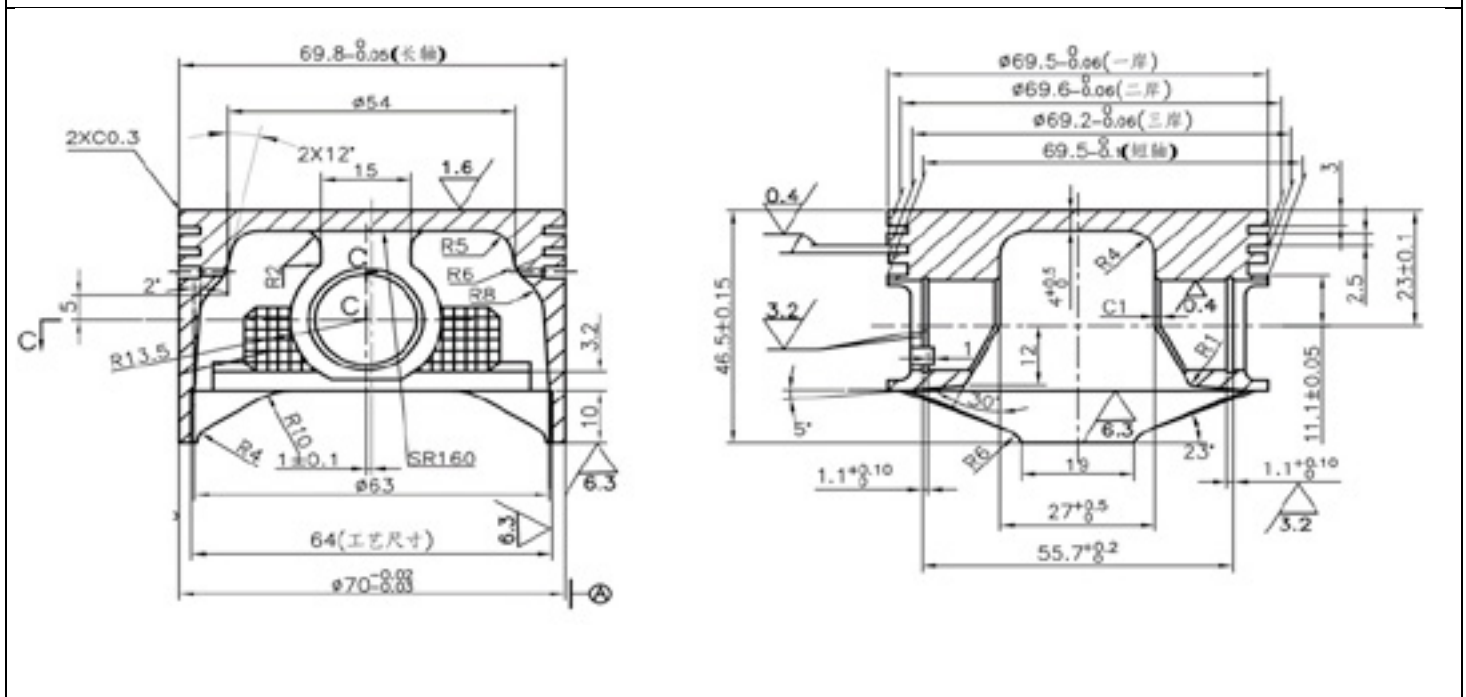
*Without screws or gaskets.*

*The aim of the exploded drawings is to identify the principles, the functioning and the whole mechanical unit*

...Section D.2

<p>PHOTO OF THE CRANKSHAFT &amp; CONROD</p>	<p>PHOTO OF THE CONROD Bare Rod Part Number: <b>TC2505</b> Conrod assy. with cap &amp; bolts, Part Number: <b>TC25005</b></p>
	

DRAWING OF THE PISTON (MAIN DIMENSIONS incl. tolerances)



**...Section D.2**

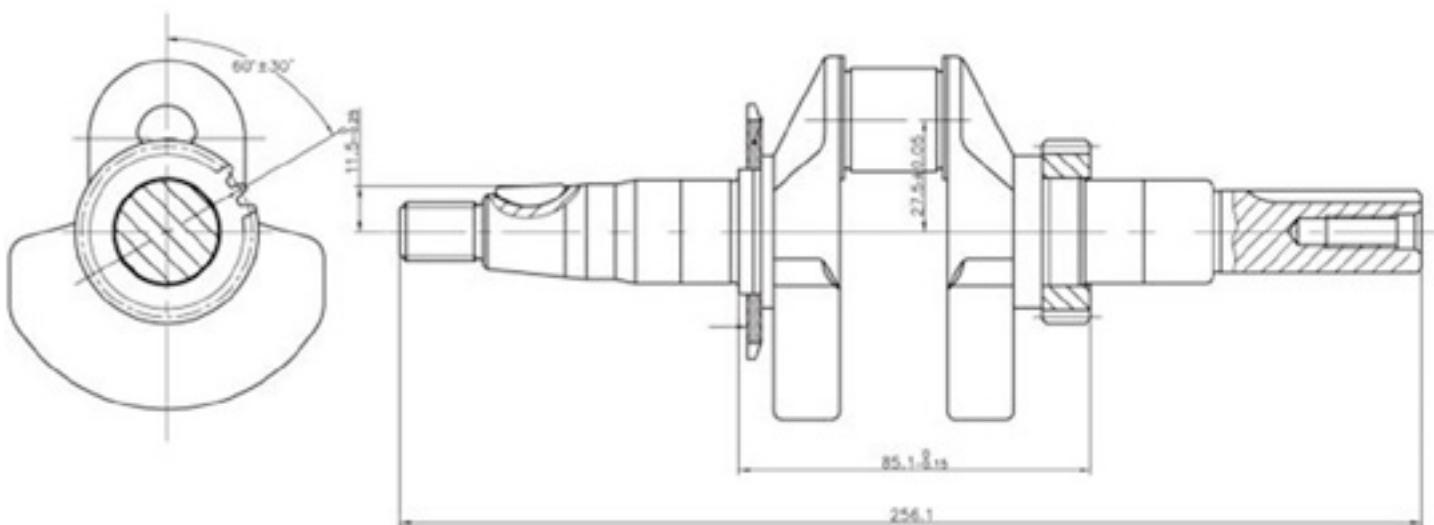
*PHOTO OF THE INSIDE OF THE RH CRANKCASE*



*PHOTO OF THE INSIDE OF THE LH CRANKCASE*

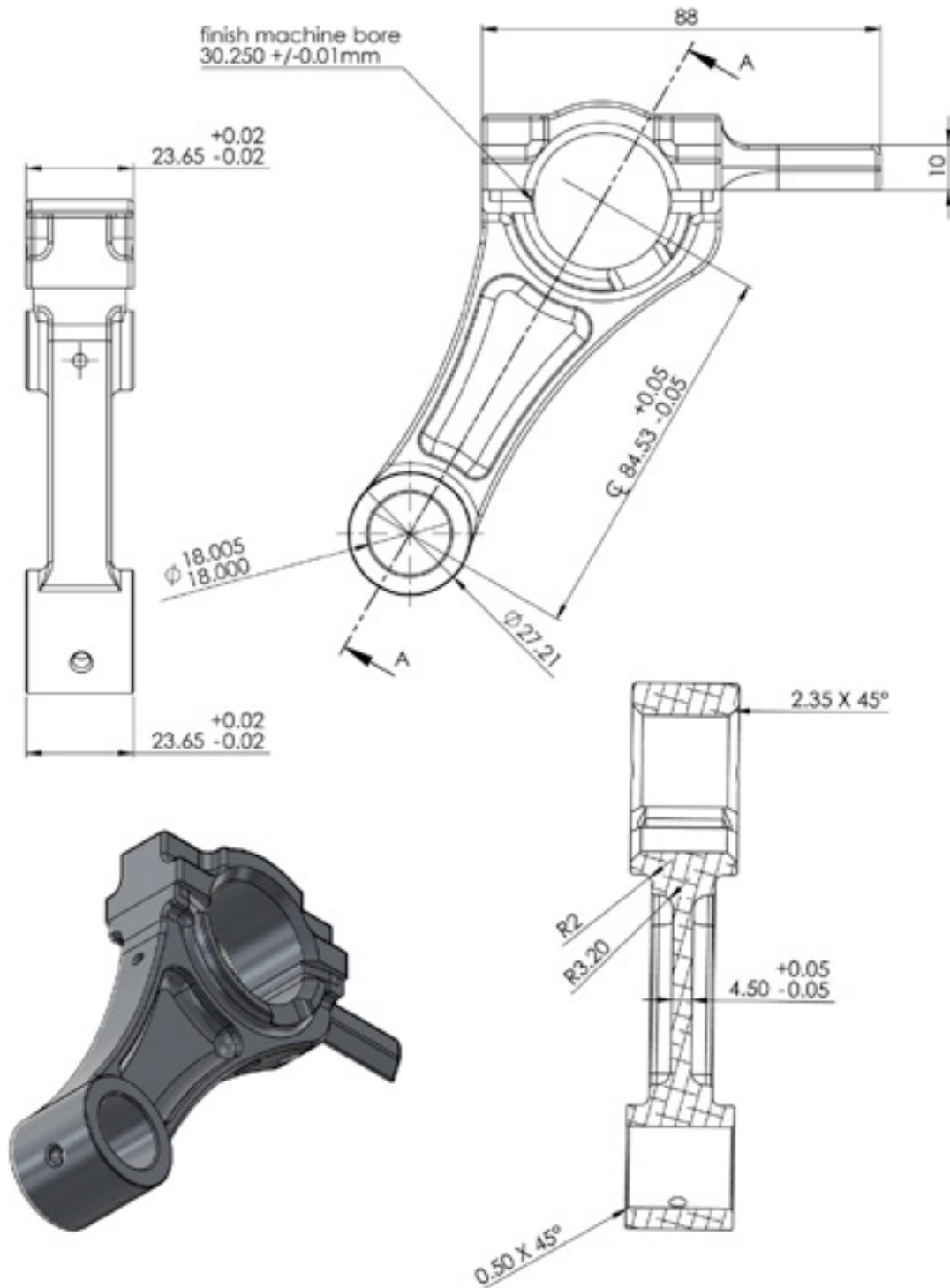


*DRAWING OF THE CRANKSHAFT - CON ROD UNIT (DIMENSIONS incl. tolerances, big & small ends thickness, crank mass thickness & diameter )*





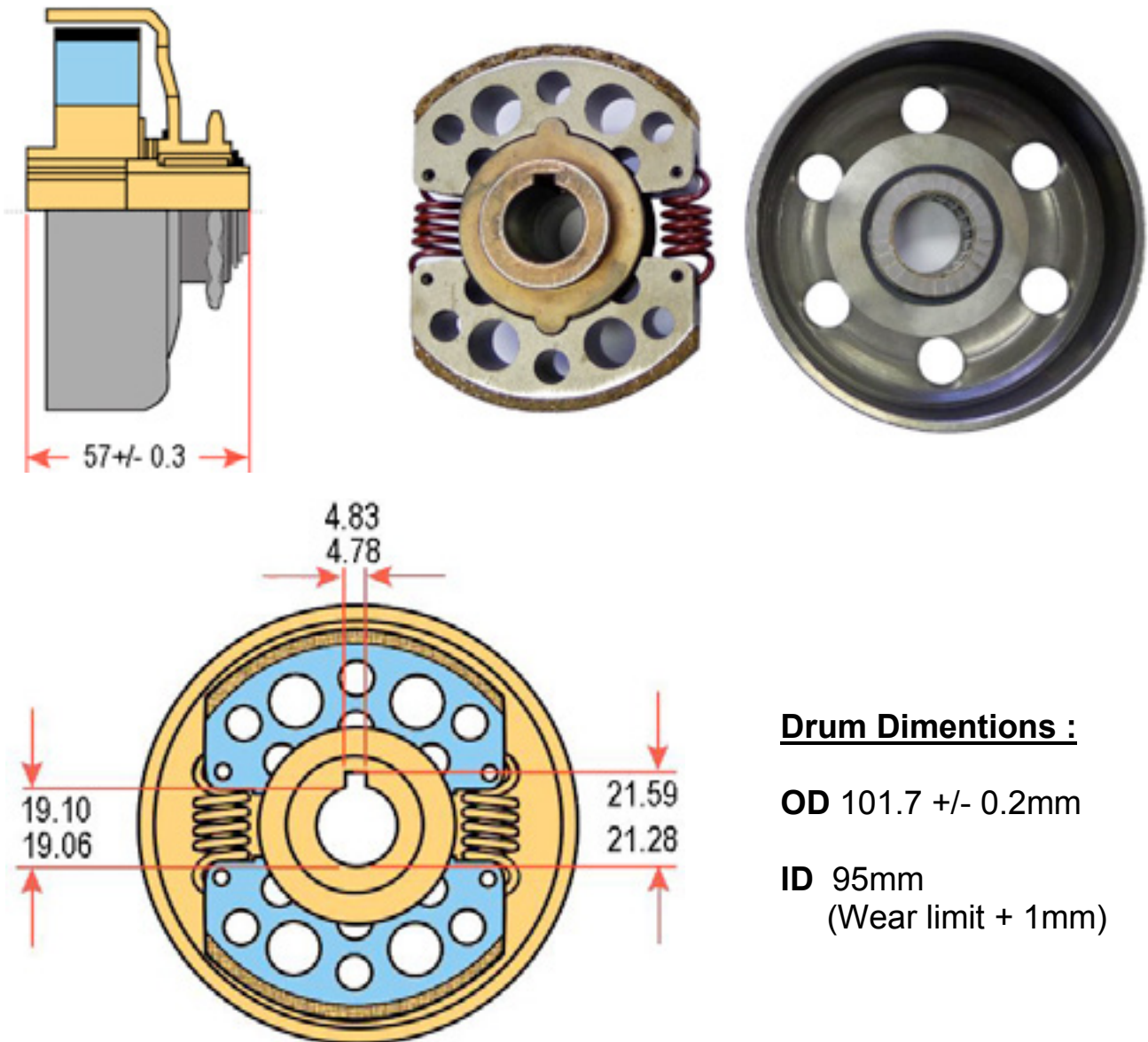
*DRAWING OF CON ROD UNIT (DIMENSIONS incl. tolerances, big & small ends thickness, crank mass thickness & diameter)*



**D.4 CLUTCH**

TECHNICAL DRAWING (exploded view) OF THE CLUTCH ASSEMBLY

**TC-GEL19219 NORAM Clutch**



**Drum Dimentions :**

**OD** 101.7 +/- 0.2mm

**ID** 95mm  
(Wear limit + 1mm)

*The aim of the exploded drawings is to identify the principles, the functioning and the whole mechanical unit*

## D.5 EXHAUST SYSTEM

PHOTO OF THE EXHAUST MANIFOLD



PHOTO OF THE EXHAUST



For surface protection, this muffler is has been coated with high temprature paint. Over time it will burn off.

To prevent corrosion damage, periodic reapplication using a similar high temprature paint (commonly available at most auto stores) is highly reccomended.

... Section D.5

*TECHNICAL DESCRIPTIONS  
OF THE EXHAUST (Art. 8.9.3 of HR)*

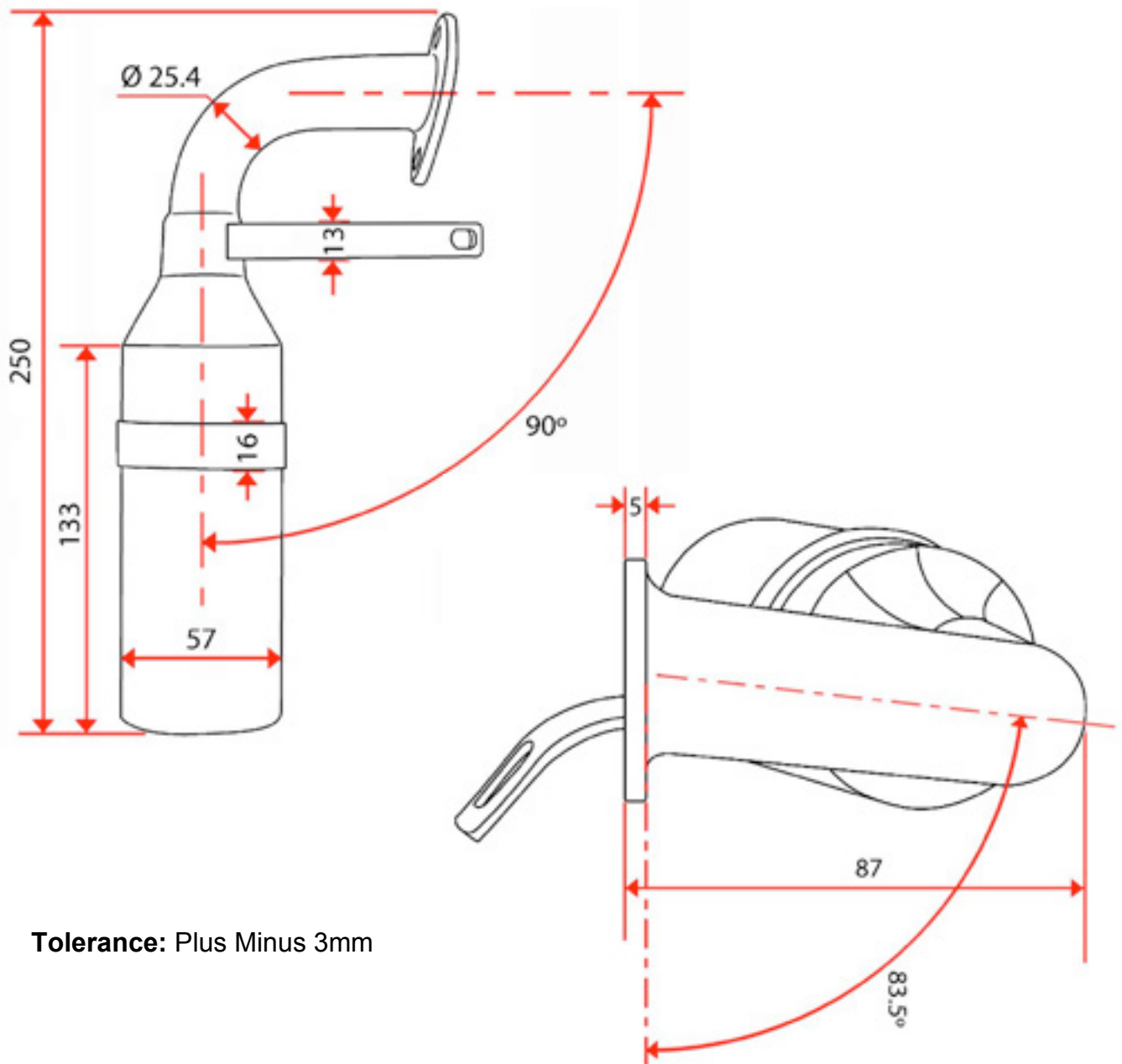
Weight in g

**620**

*Minimum*

**TECHNICAL DRAWING**

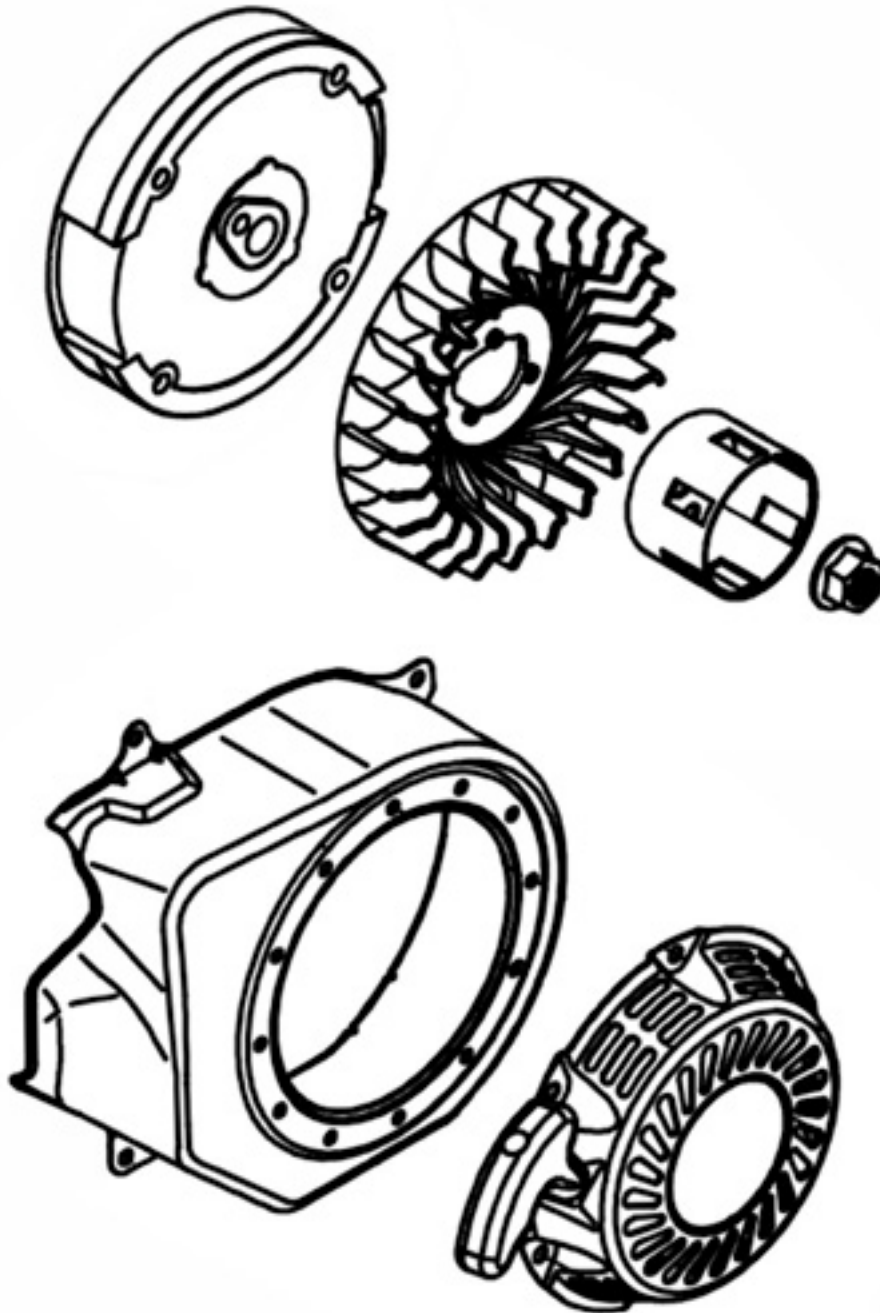
*It must include all the information necessary to build this exhaust.*



**Tolerance:** Plus Minus 3mm

**D.6 STARTER**

*EXPLODED DRAWING OF THE STARTING UNIT AND OF ITS HOUSING  
(Recoil start only)*

**RECOIL START SYSTEM**

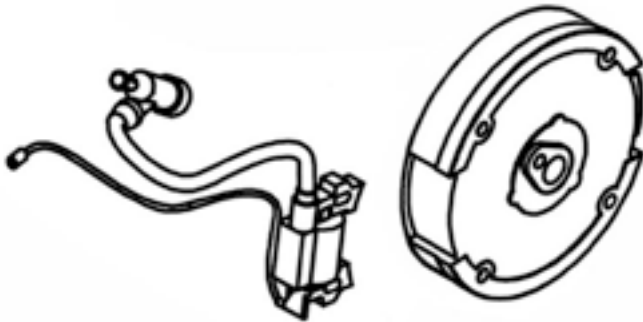
***Without screws or gaskets.***

***The aim of the exploded drawings is to identify the principles, the functioning and the whole mechanical unit***

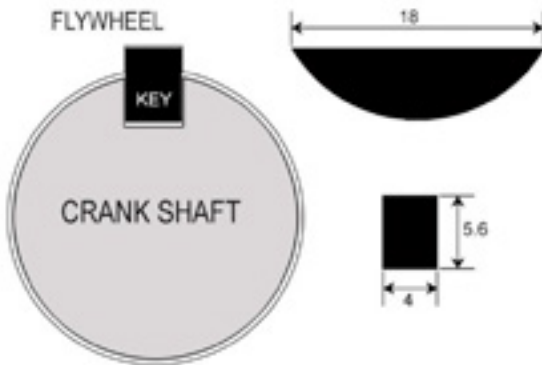
**D.8 ELECTRICAL SYSTEM**

*IGNITION SYSTEM*

*ADVANCE CURVE GRAPHS*



- **25° BTDC Fixed**
- **Rev Limited**
- **Max RPM 6100**



**Rev Limited Coil Part Number : TCRL6100**

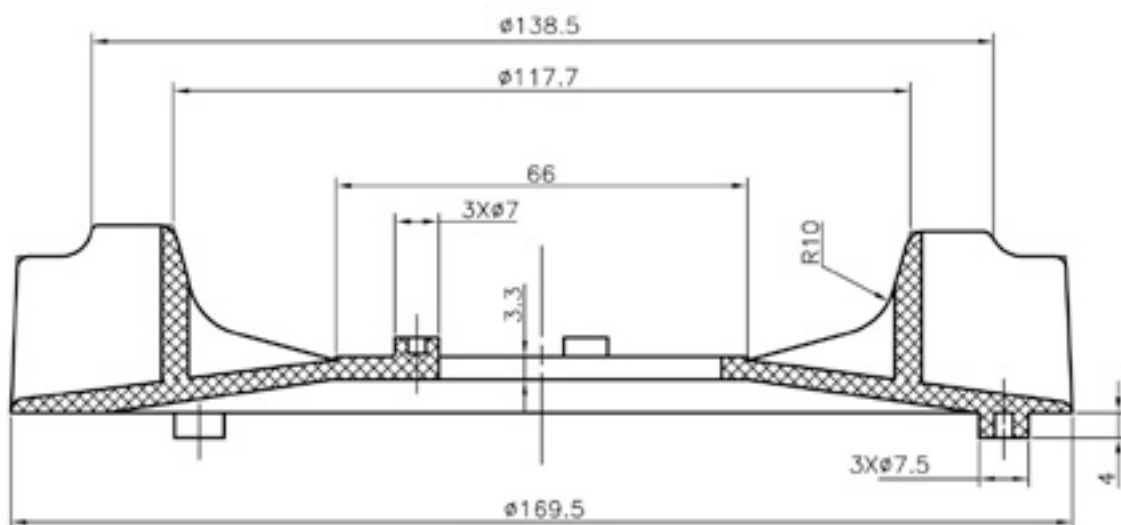
<i>Ignition homologation No.</i>															
<i>Ignition homologation No.</i>															
<i>Ignition homologation No.</i>															
<i>Ignition homologation No.</i>															
Code															
Tr/min	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000	14000	
° adv															

**COOLING SYSTEM**

*FAN FORCED AIR COOLING*

*FAN DESCRIPTION*

- Number of fan blades: **24**
- Minimum fan wheel weight: **0.11kg**
- Minimum flywheel weight: **2.48kg**
- Outside Blade Diameter: **169.5mm**
- Outside Body Diameter: **170mm**
- Minimum blade height: **29mm**



**CARBURATION**

## CARBURATION

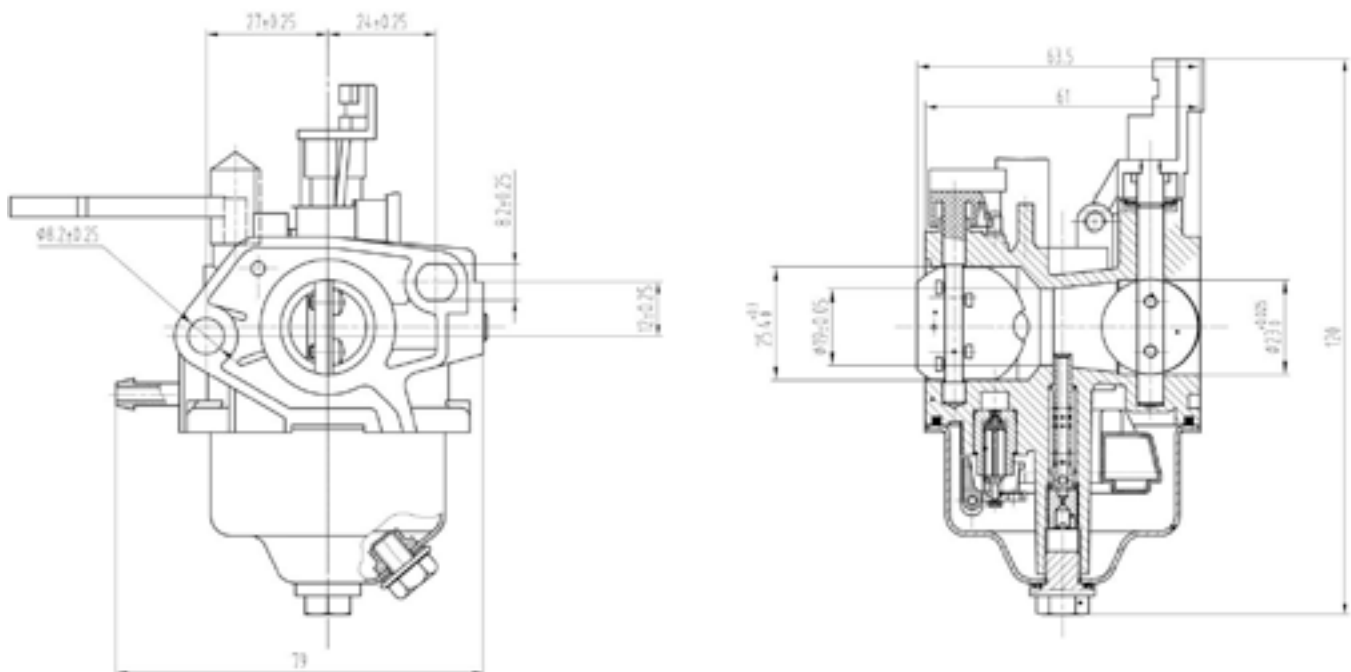
**CARBURETOR DESCRIPTION - (Type 1)**

 Manufacturer: **TORINI**

 Description: **Butterfly Carburettor, 19mm Venturi**

 Part Number : **TC25SEK**

Matching Inlet manifold : TC21046



No deviation from the manufacturer's engine specification is allowed.

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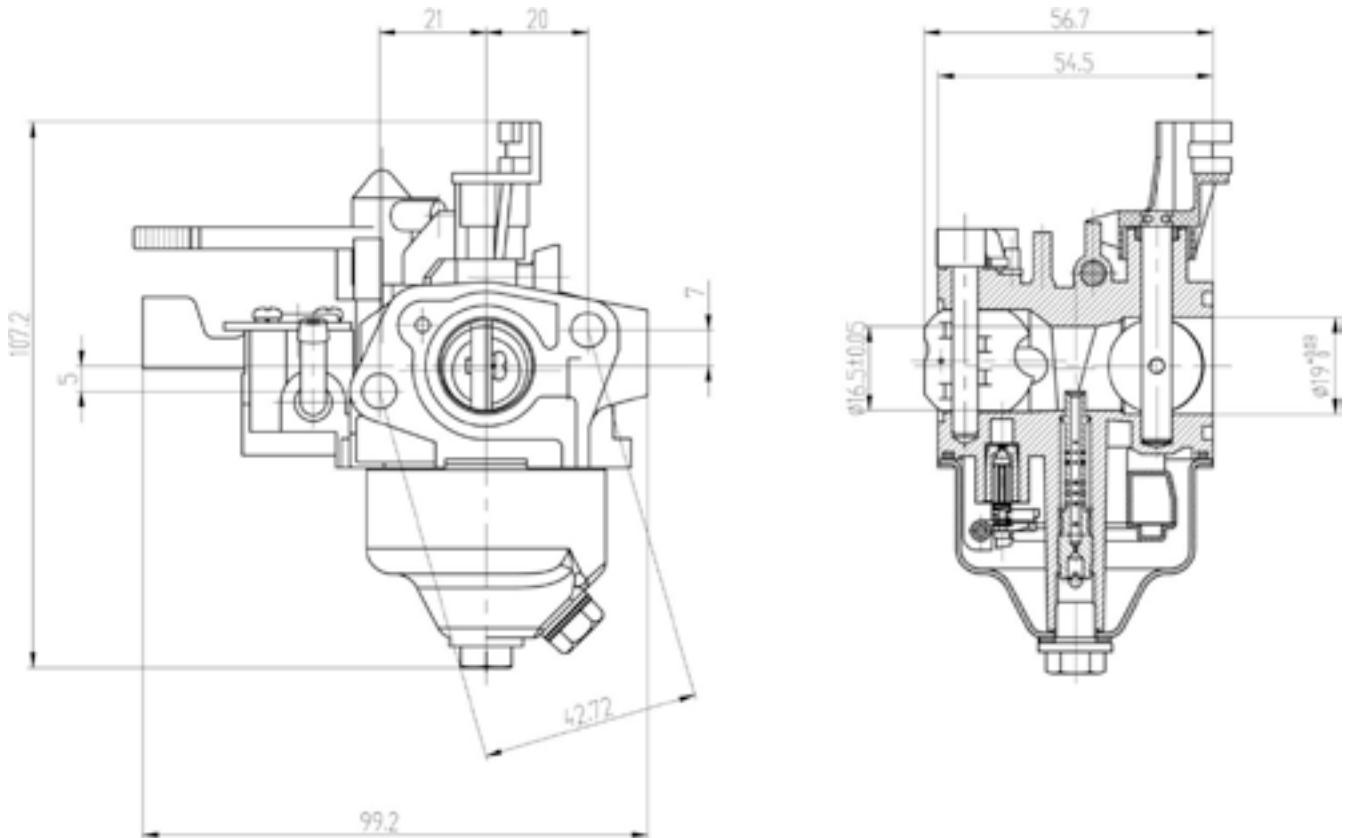
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**CARBURETOR DESCRIPTION – (Type 2)**

 Manufacturer: **TORINI**      Description: **Butterfly Carburettor, 16.5mm Venturi**

 Part Number : **TC25TECK**      Matching Inlet manifold : TC21045


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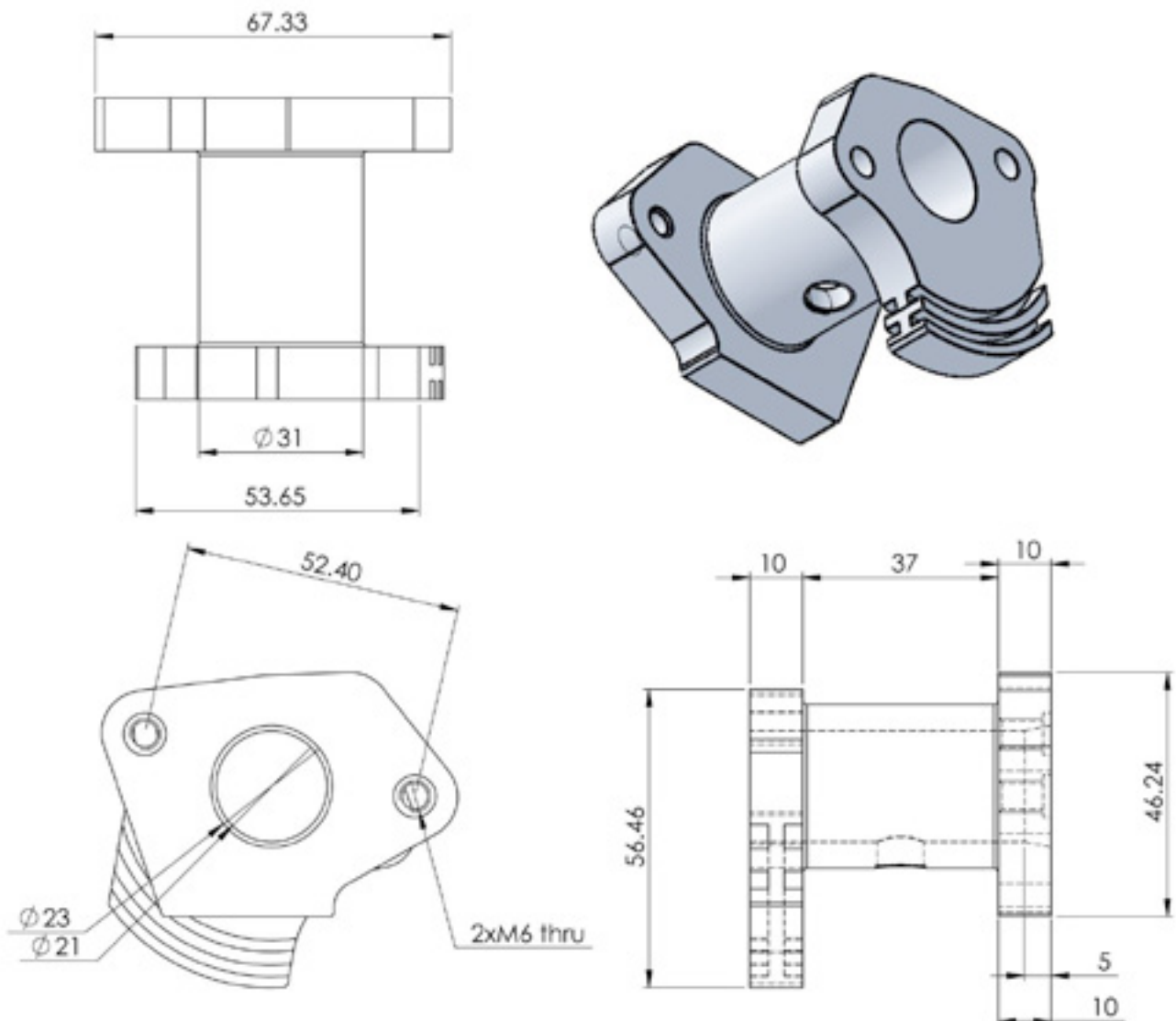
**MANIFOLD**

*INLET MANIFOLD'S*

*INLET MANIFOLD DESCRIPTION (Type 1)*

Manufacturer: **TORINI** Part Number: **TC21046** Description: **Inlet manifold**

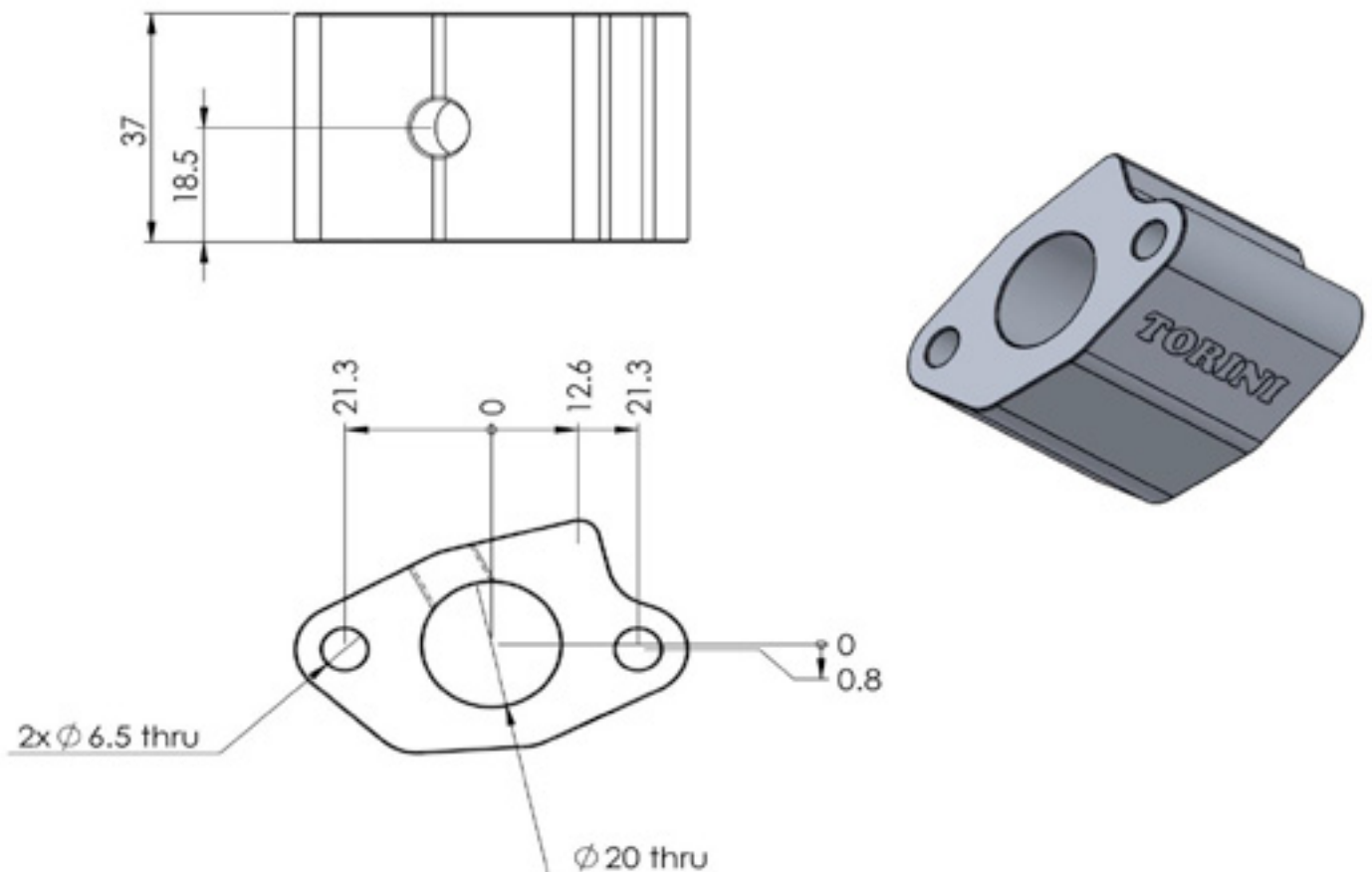
Matching Carburettor : **TC25SECK**



*INLET MANIFOLD DESCRIPTION (Type 2)*

Manufacturer: **TORINI** Part Number: **TC21045** Description: **Inlet manifold**

Matching Carburettor : **TC25TECK**



No deviation from the manufacturer's engine specification is allowed.

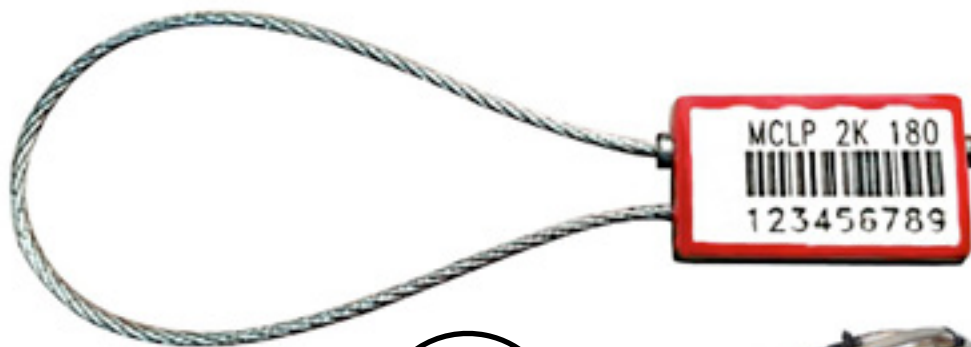
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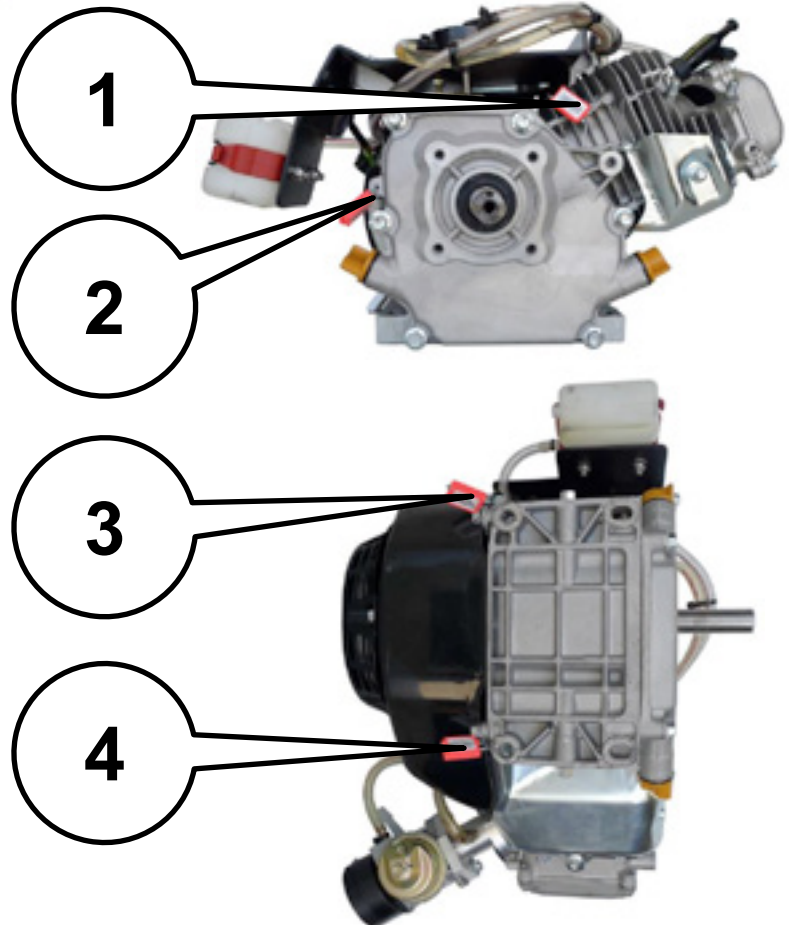
**Engine Seals****TAMPER-EVIDENT CABLE SEALS****Engine Seals (Anti-Tamper)**

Manufacturer: **TORINI**    Part No: **TCSEAL**    Description: **RACE ENGINE SEAL (Anti-tamper)**  
**Red / White 800mm**



Engine Seals : **Qty 4**

1. **Head to Crankcase**
2. **Side Cover to Crankcase**
3. **Cowel to Crankcase (front)**
4. **Cowel to Crankcase (rear)**



Tampering with the seal/s is not permitted.

**Should the seal/s be tampered with, or any of the seals be broken, the engine is no longer eligible for Competition.**

**Engine Lubrication**

**ENGINE OIL TYPES**

*Engine Oil*

Description: **TORINI 4s RUN-IN ENGINE OIL 1L**

Part No: **TRO10301**



**Attention:**

- **Run-In Period = 3 hours**

The initial start up of a new engine is critical to its performance and life expectancy.

How well the rings seal can make all the difference in engine performance.

**Warning:** Torini Race Oil must not be used to run engines in.

Description: **TORINI 4s RACE ENGINE OIL 1L**

Part No: **TRO1000**



**Designed for:**

- **Air cooled**
- **High performance**
- **Splash lubricated**
- **4 Stroke engines**
- ✓ **Friction modified**
- ✓ **Anti foam**

**Only Torini Engine Oils must be used in the Engine.**

**Engine Base Plate****ENGINE MOUNTING****Engine Adaptor Plate**

Manufacturer: **TORINI** Part No: **TC25000** Description: **ENGINE MOUNT ADAPTOR PLATE**

Function: The Engine Mount Adaptor Plate is provided pre-drilled to suit multiple kart and engine mounts. The plate is part of the engine assembly, it provides structural integrity to the crankcase under high load conditions. The plate also maintains a forward angle on the motor to ensure adequate lubrication is maintained under race conditions.



***Air Filtration***

**AIR FILTER SYSTEM**

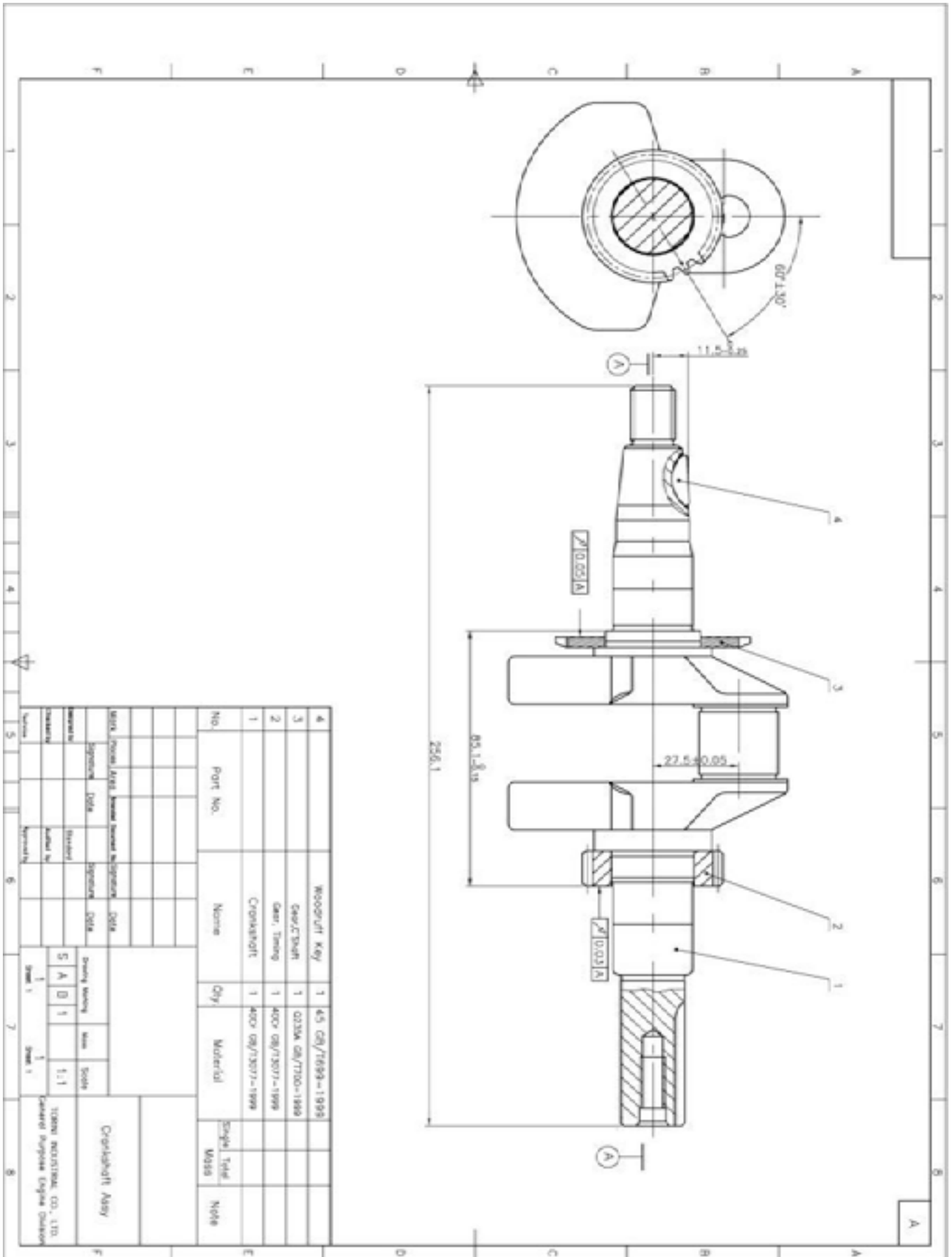
***Air Filter***

Manufacturer: **TORINI**      Part No: **TC25042**      Description: **RACE AIR FILTER**



Manufacturer: **TORINI**      Part No: **TC25043**      Description: **FOAM PRE FILTER**







## Cam Shaft Description

### Inlet Cam :

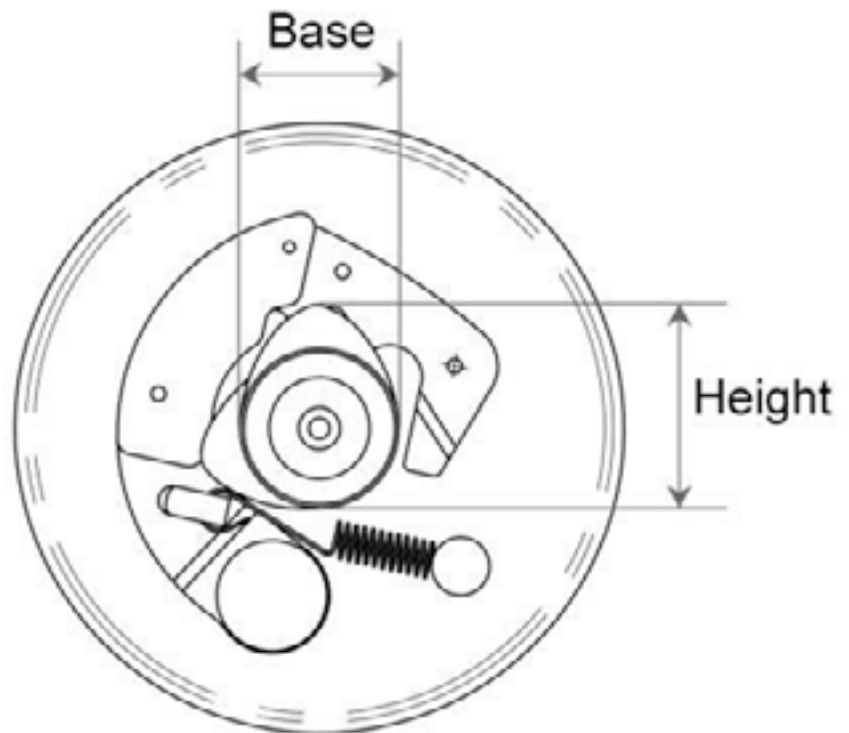
Base : **22.05**

Height : **27.70**

### Exhaust Cam :

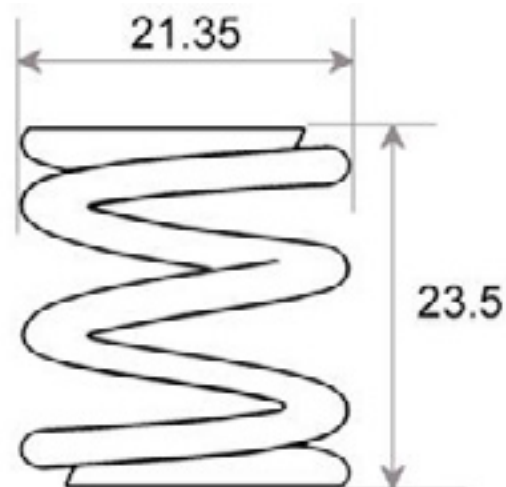
Base : **22.10**

Height : **27.70**



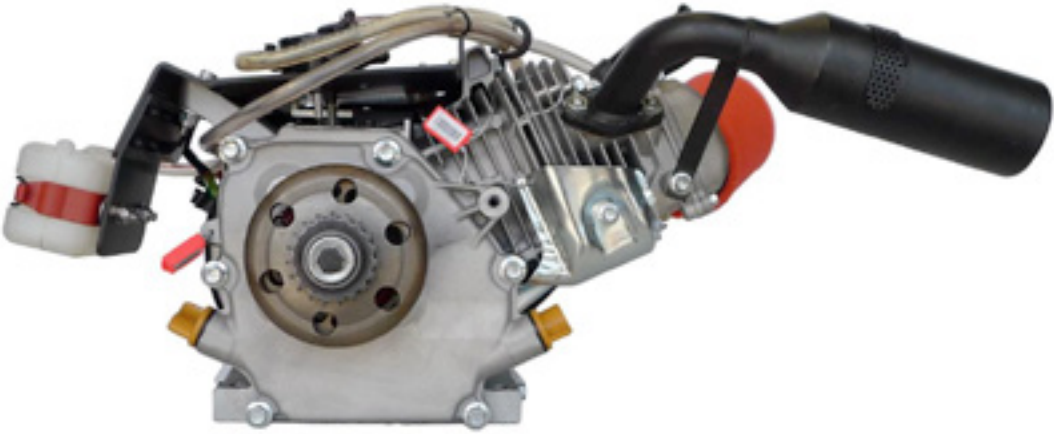
## Valve Spring Description

- **18 Lbs Valve Springs**
- **2 Active Coils**



○ WIRE DIAMETER 2.625

## 1-1 Product Specifications

Engine model	<b>TC210</b>
Image	
Engine type	Single cylinder, 4-Stroke, Forced Air Cooling, OHV25°
Bore × stroke (mm)	70 × 55
Displacement (cc)	211.66
Engine oil capacity (L)	0.55
Idle speed (r/min)	1800±150
Max permissible engine speed	6100 RPM
Starting mode	Recoil
Lubrication mode	Splash
Cooling system	Forced air cooling
Stopping mode	Grounding
Fuel	Premium Unleaded
PTO shaft rotation	Counterclockwise (seen from the end of output shaft)
Ignition system	T.C.I. Rev Limited 6100 RPM
Carburetor (Option 1)	P23
Carburetor (Option 2)	P19

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