





NATIONAL HOMOLOGATION FORM KARTING ENGINE

Manufacturer	AUSTECH INDUSTRIES PTY. LTD.
Make	TORINI
Model	CLUBMAXX 210 (TC210)
Validity of the homologation	6 years
Number of pages	48

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

Homologated 14 November 2017



Les Allen National Technical Commissioner Rehomologated August 2023



Kelvin O'Reilly Chief Executive Officer Updated February 2024



1







PHOTO OF DRIVE SIDE OF THE COMPLETE ENGINE

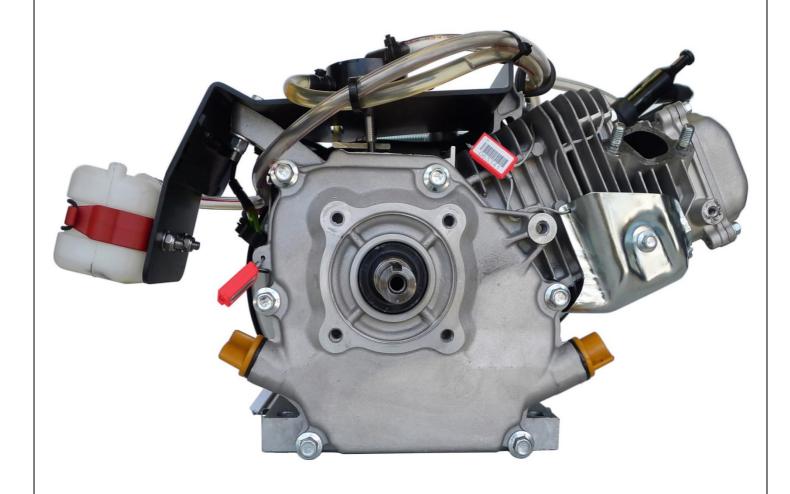








PHOTO OF OPPOSITE DRIVE SIDE OF THE COMPLETE ENGINE

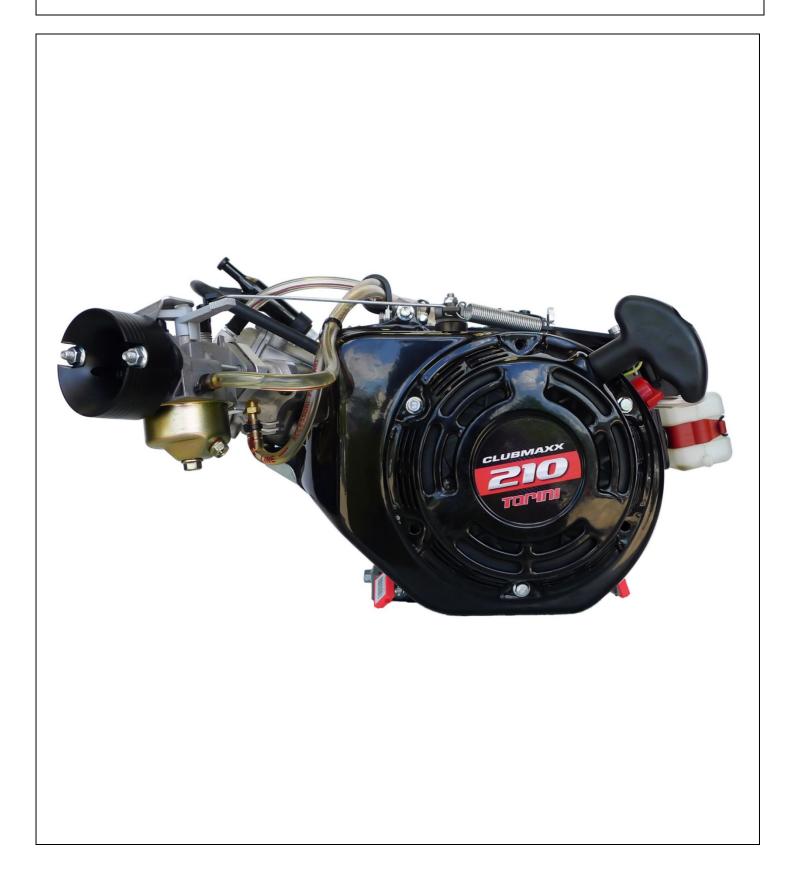








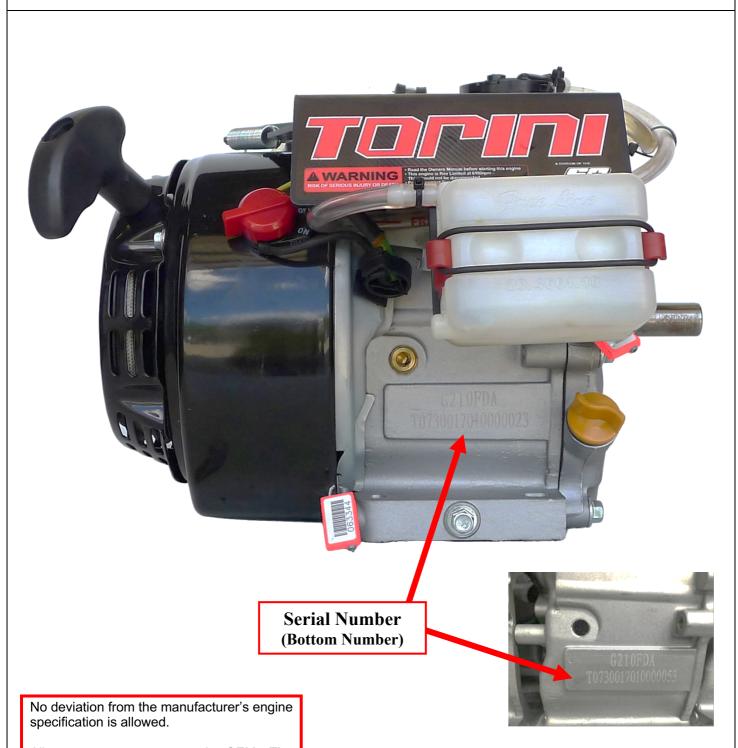
PHOTO OF THE REAR OF THE COMPLETE ENGINE







PHOTO OF THE FRONT OF THE COMPLETE ENGINE



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

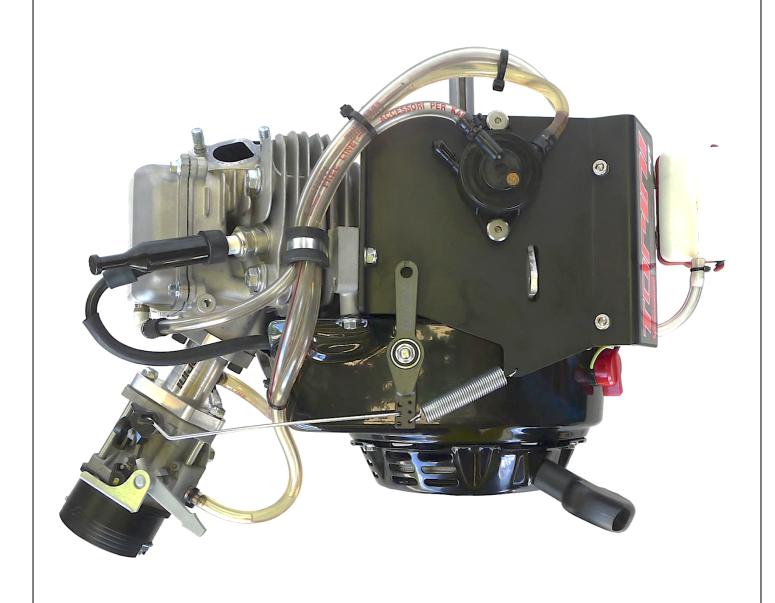








PHOTO OF THE COMPLETE ENGINE TAKEN FROM BELOW







Engine Seals

TAMPER-EVIDENT CABLE SEALS

Engine Seals (Anti-Tamper)

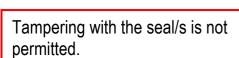
Manafacturer: TORINI Part No: TCSEAL Description: RACE ENGINE SEAL (Anti-tamper)

Red / White 800mm

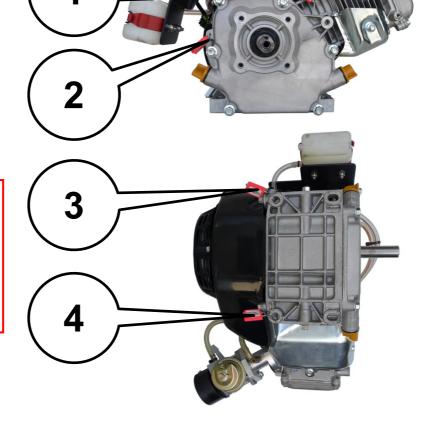
Engine Seals: Qty 4



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



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









TECHNICAL INFORMATION

Α	CHARACTERISTICS		
The nu	mber of decimal places must be 2 or comply with the relevant tolerance.	Tolera	ances & remarks
	Cylinder		
Volur	ne of cylinder	211.66CC	
	nal bore	70.000mm	
	ritical maximum bore	70.165mm	
Origii	55mm		
Numi	ber of transfer ducts, cylinder/sump	n/a	
Numl	ber of exhaust ports / ducts	n/a	
Volur	ne of the combustion chamber		minimum
Volur	ne of the combustion chamber in the cylinder head		minimum
	Crankshaft		
Numi	ber of bearings		
Diam	eter of bearings		
Minin	num weight of crankshaft	1750g	minimum
All par	ts represented on page 17 photo		
	Balance shaft		
Minin	num weight of balance shaft	n/a	minimum
Perce	entage of balancing	n/a	minimum
	Connecting rod		
Conn	necting rod centreline	84.5mm	±0.5mm
Diam	eter of big end	30.25mm	±0.02mm
Diam	eter of small end	18.002	
Min.	weight of the connecting rod & cap (with bolts)	110g	minimum
	- , , , , , , , , , , , , , , , , , , ,		





109H REHOMOLOGATED 3 AUGUST 2023

Piston		
Number of piston rings	3	
Min. weight of the bare piston	145g	minimum
Gudgeon pin		
Diameter	18mm	
Length	54mm	±0.5mm
Minimum weight	45g	Minimum
Clutch		
Minimum weight	0.97Kg	minimum
Of all the parts represented on the page18 technical drawing		

В	OPENING ANGLES								
Of the	Of the inlet (main transfer ports) n/a								
Of the	Of the inlet (secondary transfer ports, for 5 transfer ducts engine) n/a								
Of the	e exhaust	n/a							
Of the	e boosters	n/a							

С		MATERIAL
Cylind	der head	YL113 GB/T15115-1994
Cylind	der	ADC12
Cylind	der wall	<u>CAST IRON</u>
Sump)	ADC12
Crank	kshaft	40CR GB/T3077-199
Conn	ecting rod	BILLET 7075 T6
Pistor	า	ZL109 GBT/T 1173-1995

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.

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

Neither engines nor accessories can be modified. By this we mean any shape, content or function changes which may differ from what previously conceived. Furthermore, this includes any addition and /or removal of material and /or parts from the engine set-up package unless provided by this regulation. No ceramic component coatings.







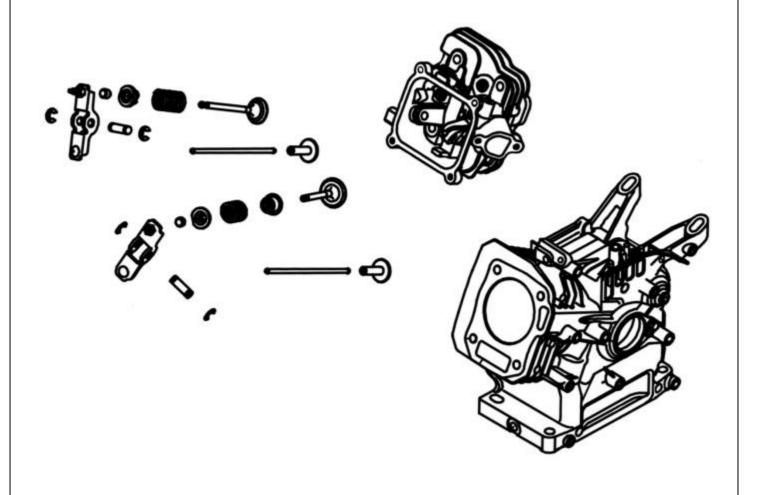
109H REHOMOLOGATED 3 AUGUST 2023

D

PHOTOS, DRAWINGS & GRAPHS

D.1 CYLINDER UNIT

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



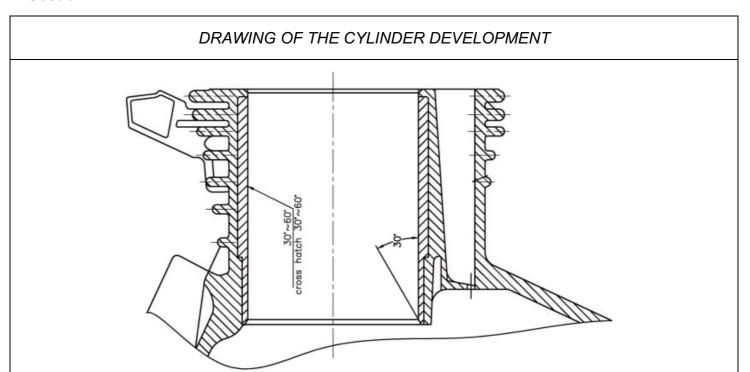
Without screws or gaskets.

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









Indicate on the drawing:

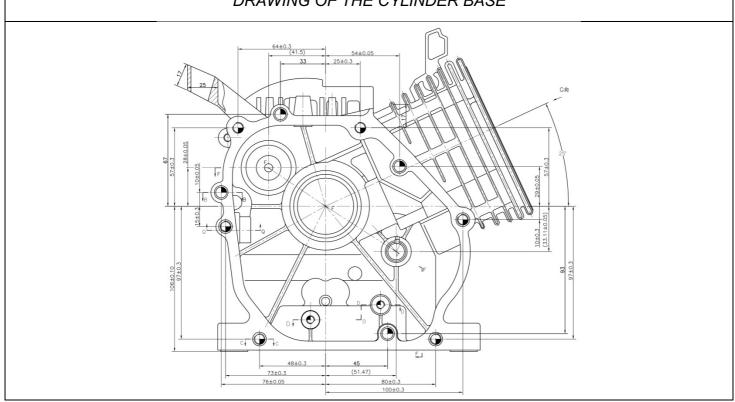
B1/B2 = minimum thickness of the inlet (transferts) ribs.

A1/A2/A... = maximum inlet width measured at the chord.

E1/E2 = minimum thickness of the exhaust rib (if existing).

C1/C2/C... = maximum exhaust width measured at the chord.

DRAWING OF THE CYLINDER BASE

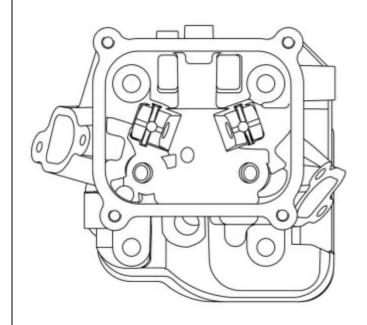








DRAWING OF THE CYLINDER HEAD AND OF THE COMBUSTION CHAMBER without dimensions



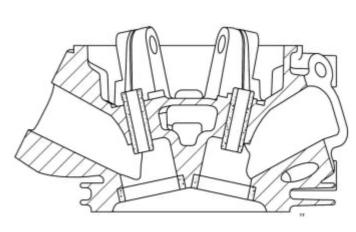
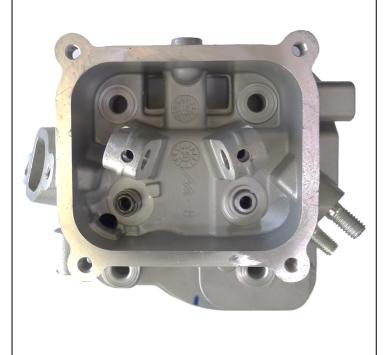


PHOTO OF THE CYLINDER HEAD

PHOTO OF THE COMBUSTION CHAMBER IN THE CYLINDER HEAD





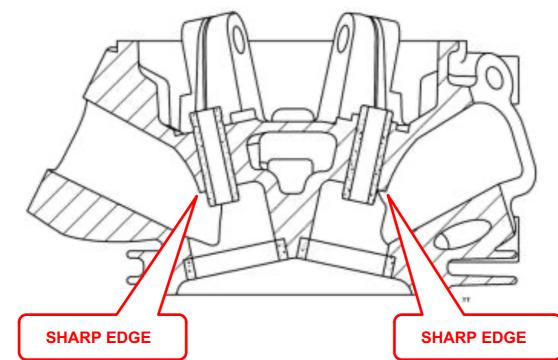


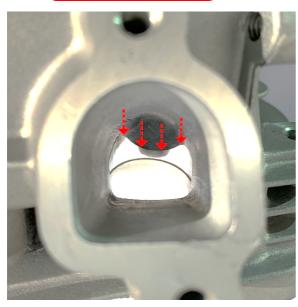


DRAWING OF THE CYLINDER HEAD AND OF THE COMBUSTION CHAMBER without dimensions

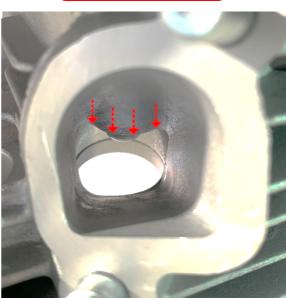
Scrutineer's Note: Head Port Checks - Visual Check

Both Inlet and Exhaust Ports are factory standard.
There should be no evidence of porting. Look for sharp edge.









EXHAUST SIDE





PHOTO OF THE ROCKER ARM



Scrutineer's Note: Rocker Arms - Measure

Both Inlet and Exhaust rocker arms at the same dimentions. Rocker arms can be measured with valve cover removed.

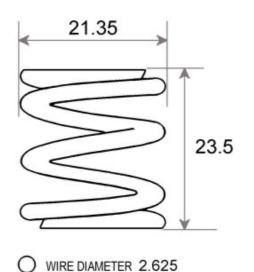
PHOTO OF THE VALVE SPRING

Note: Both valve springs are the same dimentions



Scrutineer's Note: Valve Springs – **Measure**

Both Inlet and Exhaust springs are the same dimentions. Wire diameter can be measured with valve cover removed



15



PHOTO OF THE CYLINDER FROM ABOVE



PHOTO OF THE CYLINDER FROM RH SIDE





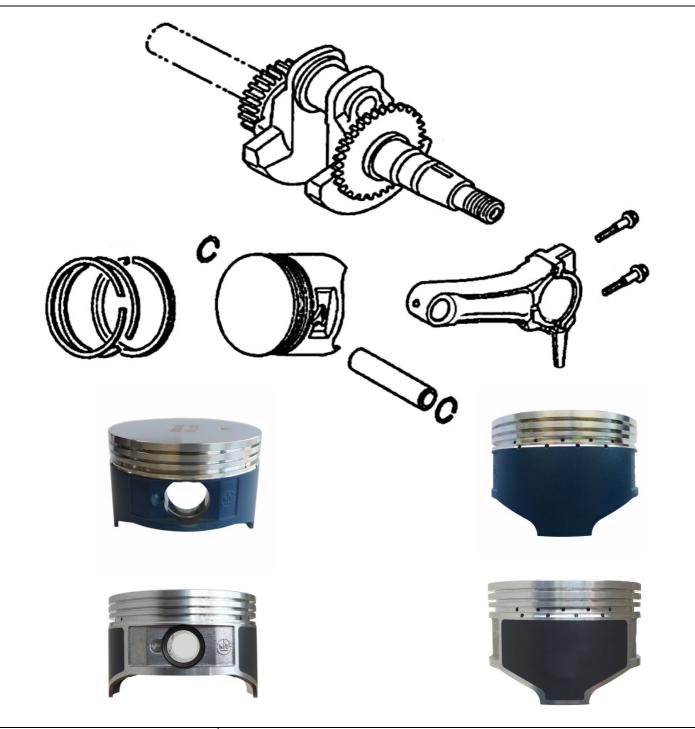


109H REHOMOLOGATED 3 AUGUST 2023

... Section

D.2 CONROD, CRANKCASE, CAMSHAFT, 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





PHOTO OF THE CAMSHAFT

Camshaft Description

Inlet Cam:

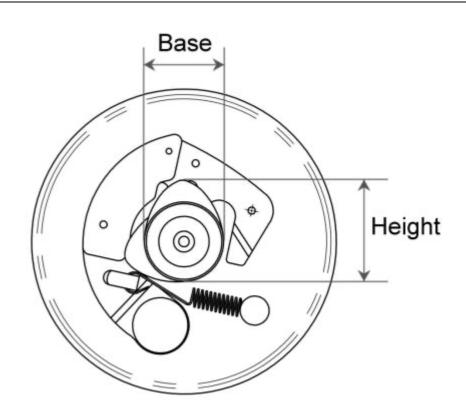
Base: 22.05

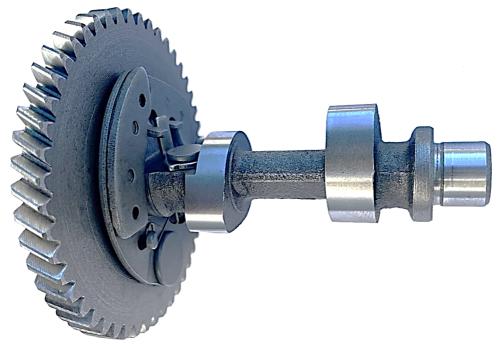
Height: 27.70

Exhaust Cam:

Base: 22.10

Height: 27.70



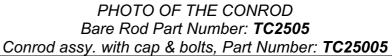




109H REHOMOLOGATED 3 AUGUST 2023

...Section

PHOTO OF THE CRANKSHAFT & CONROD







DRAWING OF THE PISTON (MAIN DIMENSIONS incl. tolerances)

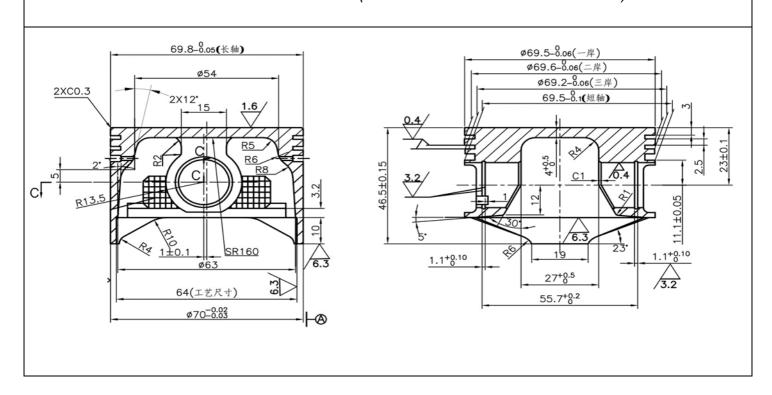








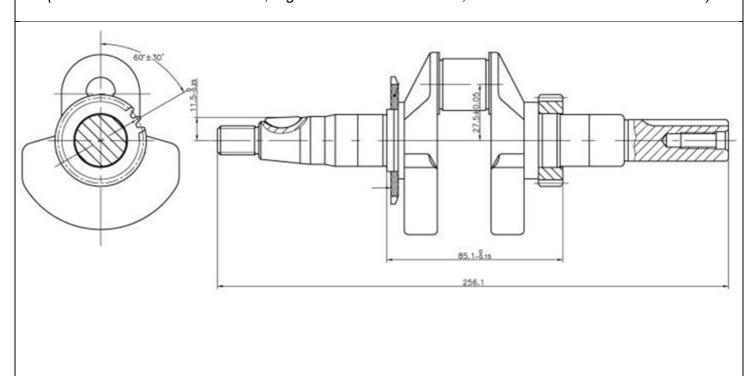
PHOTO OF THE INSIDE OF THE RH CRANKCASE

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)



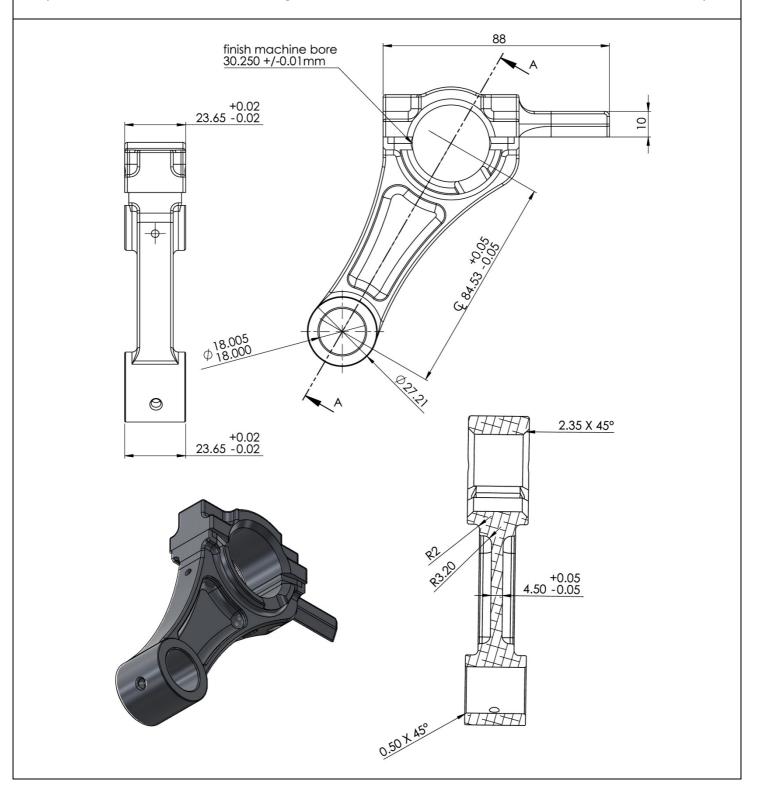






109H REHOMOLOGATED 3 AUGUST 2023

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





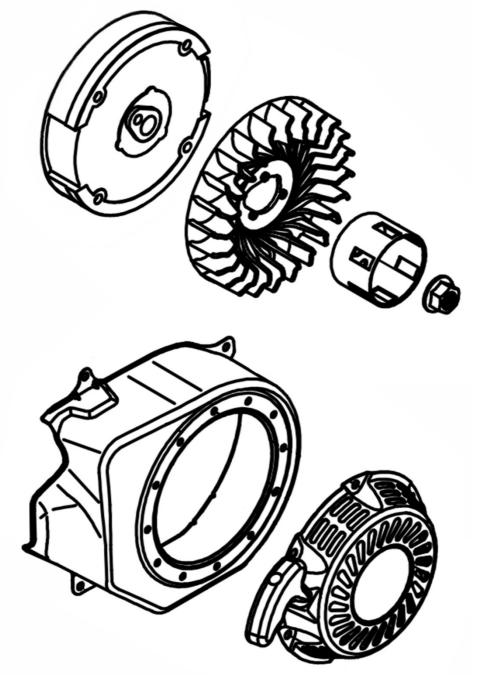




STARTER

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

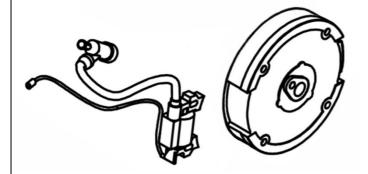




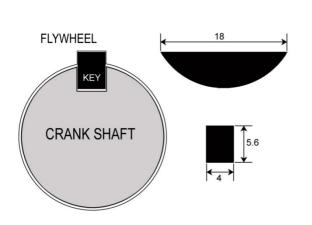
ELECTRICAL SYSTEM

IGNITION SYSTEM

ADVANCE CURVE GRAPHS



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





Rev Limited Coil Part Number: TCRL6100

Ignition homologation No.														
Ignition homologation No.														
Ignition homologation No.														
Ignition homologation No.														
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

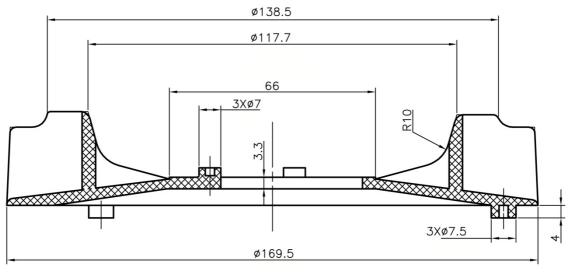
• Outside Blade Diameter: 169.5mm

• Outside Body Diameter: 170mm

• Minimum blade height: 29mm







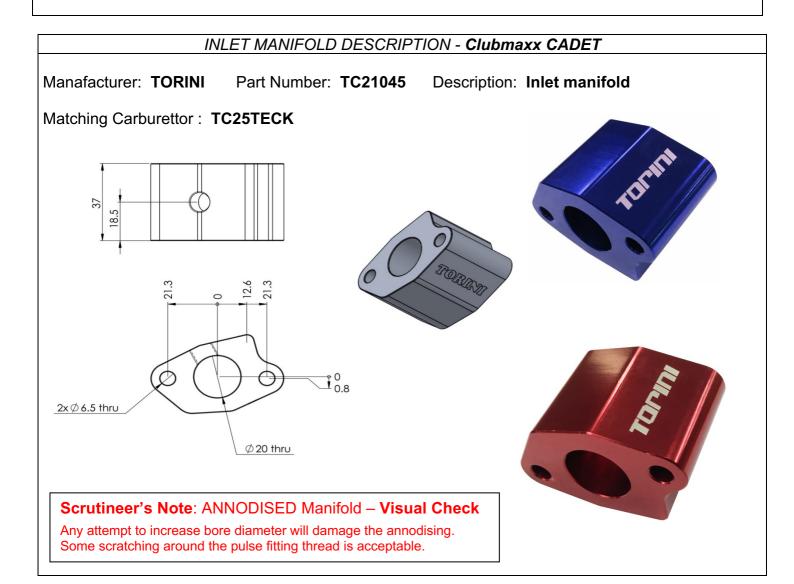






MANIFOLD

INLET MANIFOLD's



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.

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

Neither engines nor accessories can be modified. By this we mean any shape, content or function changes which may differ from what previously conceived. Furthermore, this includes any addition and /or removal of material and /or parts from the engine set-up package unless provided by this regulation. No ceramic component coatings.





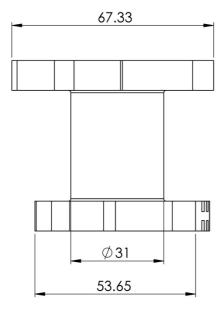


MANIFOLD

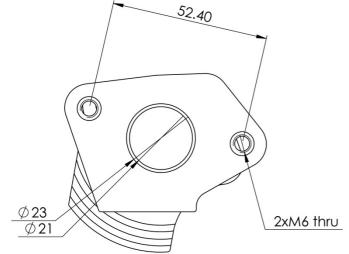
INLET MANIFOLD DESCRIPTION - Clubmaxx JUNIOR / SENIOR

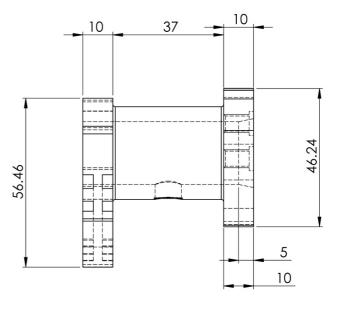
Manafacturer: TORINI Part Number: TC21046 Description: Inlet manifold

Matching Carburettor: TC25SECK









Scrutineer's Note: ANNODISED Manifold - Visual Check

Modification to increase bore diameter will remove the annodising. Some scratching around the pulse fitting thread is acceptable.



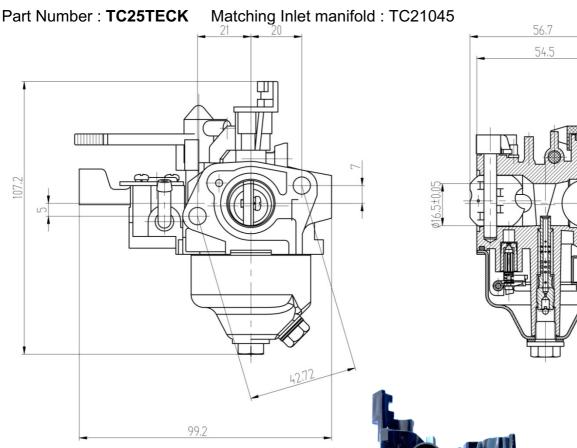


CARBURATION

CARBURATION

CARBURETOR DESCRIPTION – Clubmaxx CADET

Manufacturer: TORINI Description: Butterfly Carburettor, 16.5mm Venturi



Jet Kit - Clubmaxx Cadet

Part No: TC25079 (Supplied with below jet sizes)





Main Jet sizes : **88 > 97**





Pilot Jet sizes : **40, 43, 45**





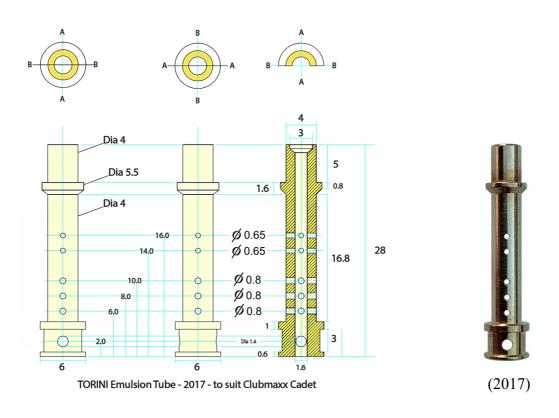




CARBURATION

TECHNICAL DRAWING of EMULSION TUBE for Clubmaxx CADET

Emulsion Tube - Clubmaxx CADET



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

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.

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

Neither engines nor accessories can be modified. By this we mean any shape, content or function changes which may differ from what previously conceived. Furthermore, this includes any addition and /or removal of material and /or parts from the engine set-up package unless provided by this regulation. No ceramic component coatings.



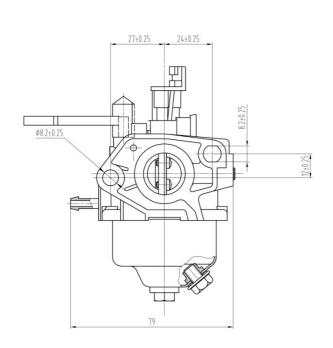


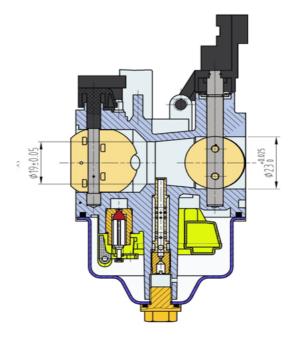
109H REHOMOLOGATED 3 AUGUST 2023

CARBURETOR DESCRIPTION - Clubmaxx JUNIOR / SENIOR

Manufacturer: TORINI Description: Butterfly Carburettor, 19mm Venturi

Part Number: TC25SECK / TC25048 (Matching Inlet manifold: TC21046)





NEW: Laser Etched Logo



Original: Cast logo



The 2023 model carburettor is manufactured with a laser etched Torini Logo. Both the Original and the New Carburettors are permitted for use.

There is no performance difference between them, it is simply the external cast/laser etched markings.

Jet Kit - Clubmaxx (Junior & Senior)

Part No: TC25079 (Supplied with below jet sizes)





Main Jet sizes : **88 > 97**



Pilot Jet sizes : **40, 43, 45**



Emulsion Tubes
Clubmaxx
Junior / Senior



(2017)

) (01/09/2021)

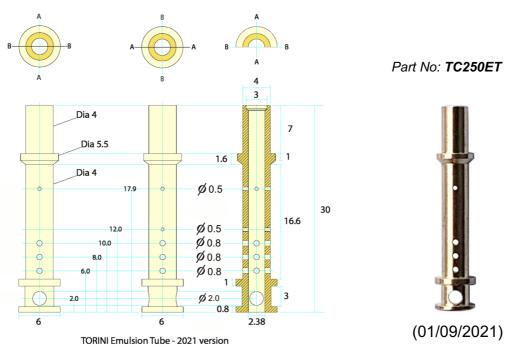


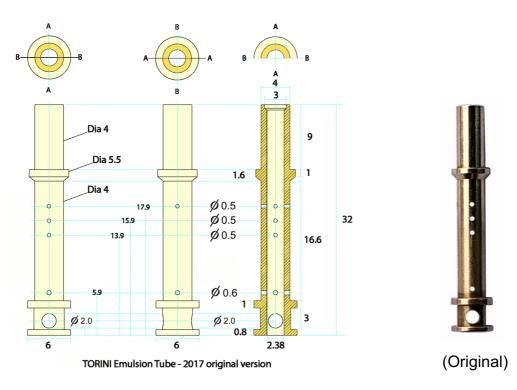


CARBURATION

TECHNICAL DRAWING of EMULSION TUBE - Clubmaxx JUNIOR / SENIOR

Emulsion Tube (Clubmaxx Junior / Senior)











AIR FILTRATION

AIR FILTER SYSTEM

Description: RACE AIR FILTER

Manafacturer: TORINI Part No: TC25057



Description: **FOAM PRE FILTER**

Manafacturer: TORINI Part No: TC25058



NOTE: Air Filter Oil must be applied to both the Main element and the pre filter. Failure to oil the filters will cause ingress of dirt, leading to engine failure.

Description: RACE AIR FILTER

Manufacturer: TORINI Part No: NLA



NOTE: Air Filter Oil must be applied to both the Main element and the pre filter. Failure to oil the filters will cause ingress of dirt, leading to engine failure.

Description: **FOAM PRE FILTER**

Manufacturer: TORINI Part No: NLA







AIR FILTRATION

Air Filter - Wet Weather Kit

Wet Weather Kit Part No: TC25050



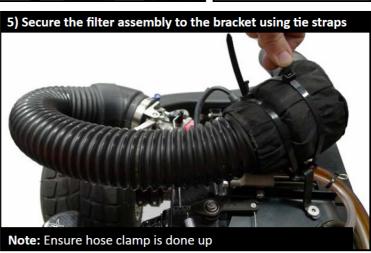
- SNORKEL WITH BUILT IN FOAM FILTER ELEMENT
- WATER REPELLENT FILTER SOCK
- MOUNTING BRACKET
- HOSE CLAMP
- TIE STRAPS (2)











notice.







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

Weight in g 620~660 Minimum

TECHNICAL DRAWING

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

EXHAUST SYSTEM

PHOTO OF THE EXHAUST MANIFOLD



PHOTO OF THE EXHAUST



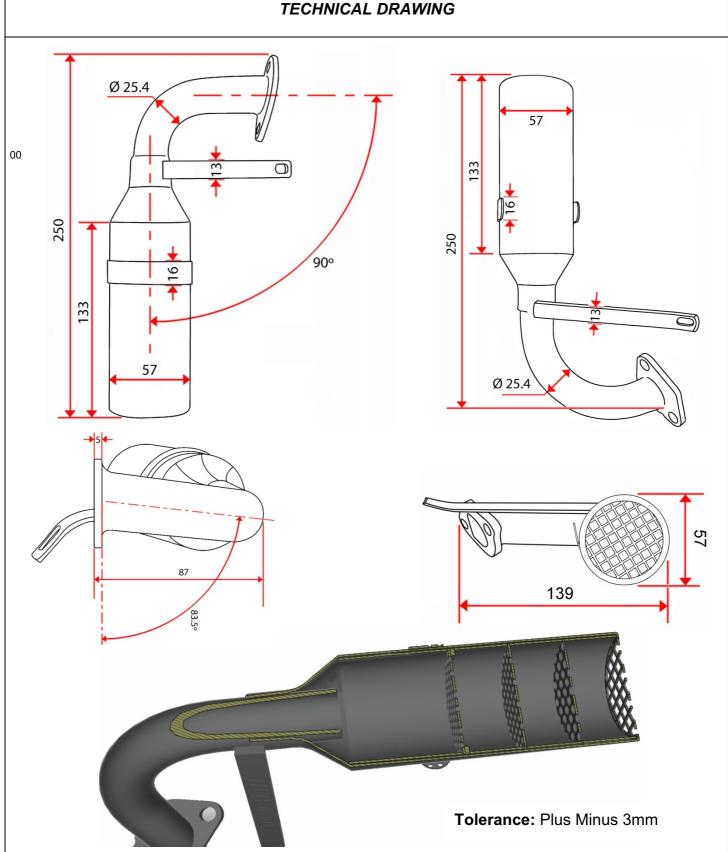






109H **REHOMOLOGATED 3 AUGUST 2023**

EXHAUST SYSTEM





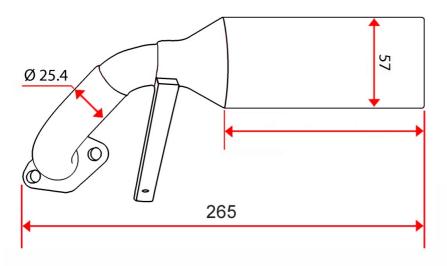


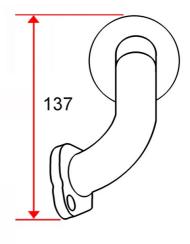
EXHAUST SYSTEM

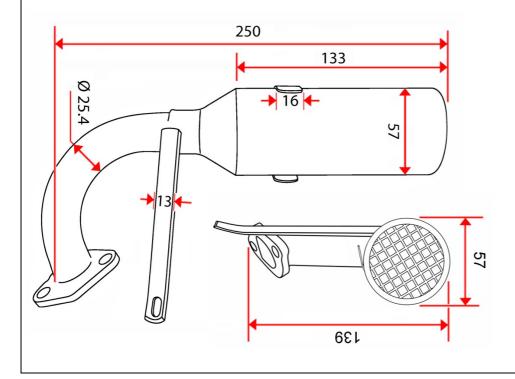
The exhaust system is designed to:

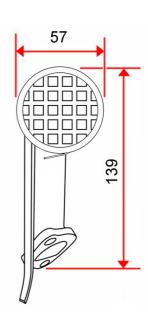
- Direct hot gas away from the vehicle and its operator
- Attenuate the noise output from the engine

Tolerance: Plus Minus 3mm









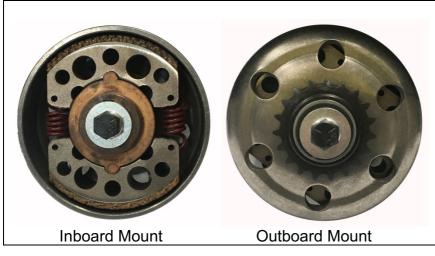




CLUTCH

CLUTCH SELECTION

Identification Page Type: Centrifical Clutch Full metal shoe (2) Manafacturer: NORAM Part Number: TC-GE20219 Scope Clubmaxx Cadet Clubmaxx Jnr. & Snr.

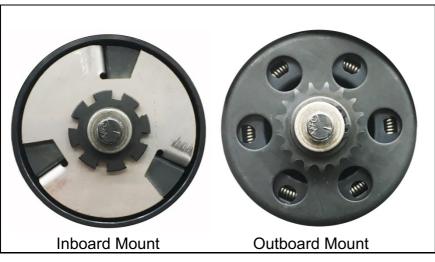


Type: Centrifical Clutch Friction shoe (2) Manafacturer: NORAM

Part Number: TC-GEL19219

Scope

- Clubmaxx Cadet
- Clubmaxx Jnr. & Snr.



Type: Centrifical Clutch Full metal, shoe (6)

Manafacturer: TORINI

Part Number: TC2300

Scope

- Clubmaxx Cadet
- Clubmaxx Jnr. & Snr.

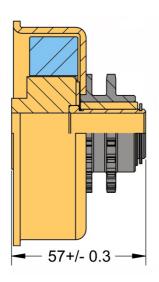




CLUTCH

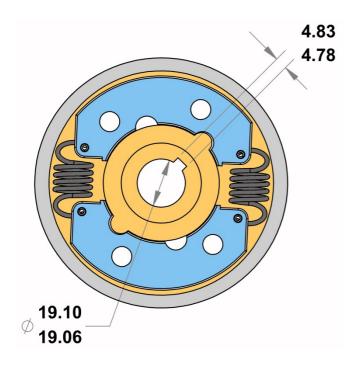
TECHNICAL DRAWING (exploded view) OF THE CLUTCH ASSEMBLY

TCGE20219 NORAM Clutch









Drum Dimentions:

OD 93.5 +/- 0.2mm

ID 89mm (Wear limit + 1mm)

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

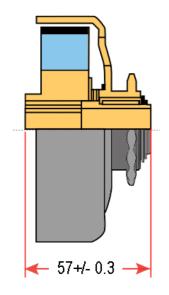




CLUTCH

TECHNICAL DRAWING (exploded view) OF THE CLUTCH ASSEMBLY

TC-GEL19219 NORAM Clutch

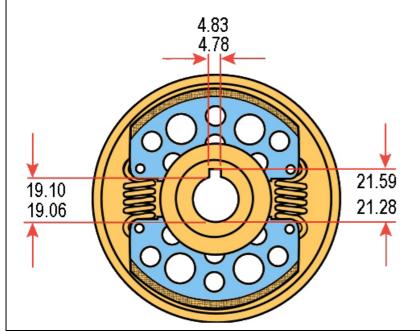








Sprocket Variants: T17, T18, T19, Y20, T21



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

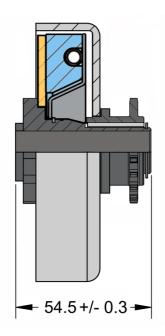




CLUTCH

TECHNICAL DRAWING (exploded view) OF THE CLUTCH ASSEMBLY

TC2300 TORINI Clutch

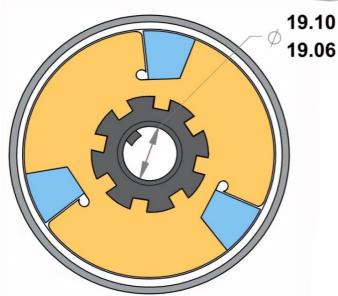








Sprocket Variants: T17, T18, T19, Y20, T21



Drum Dimentions:

OD 107. +/- 0.2mm

ID 101mm (Wear limit + 1mm)









CHAIN GUARD

PHOTOS OF THE CHAIN GUARD ASSEMBLY

TC25080 Chain Guard - TC210 Jnior / Seinor



TC22582 Cadet Class – Safety Guard

Polycarbonate Safety Guard



NOTE: for use where the manner of engine mounting leaves unrestricted access to the the clutch & drive sprocket.









ENGING 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 assemably, it provides structual integerty to the crankcase under high load conditions. The plate also maintains a forward angle on the motor to ensure adaquate lubrication is maintained under race conditions.











ENGING BASE PLATE

Additional Hole Positions

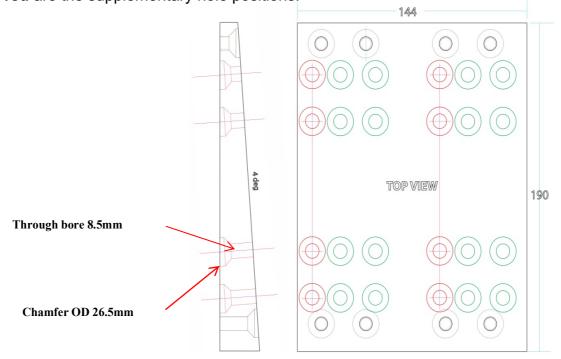
Part No: **TC25000** Manufacturer: TORINI Description: ADDITIONAL HOLE POSITIONS

Rational: Allows for additional holes to be machined in order to mount an engine to frame

- Provides additional mounting option, (which would otherwise be unmanageable).
- Caution: The possible negative effects of increased engine off set are: Reduced performance, Higher vibration, Increased risk of metal fatigue.

Where no other mounting soloution exists, additional mounting holes can be machined in the engine base plate as shown below.

- This should only be done as a last resort due to the risk of increased vibration.
- Shown in **red** are the supplementary hole positions.



Note:

Ensure holes are machined at the correct angle.

Scrutineer's Note: Engine Base Plate - Visual Check

Additinoal holes are permited, as highlighted below in red.







109H REHOMOLOGATED 3 AUGUST 2023

ENGING BASE PLATE

PHOTO OF APPROVED ENGING MOUNTS

Scrutineer's Note: Factory Approved Third Party Engine Mounts
These Engine Mounts are approved for use without the TC25000 Adaptor Plate.

a) The Odenthal 8 degree 4-cycle EZ Set slider mount





b) The CRG038N Small Offset Mount & CRG038M Large Offset Mount

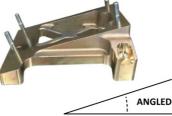






LARGE OFFSET ENGINE MOUNT P/N: CRG038M











109H REHOMOLOGATED 3 AUGUST 2023

ENGINE BASE PLATE

PHOTO OF APPROVED ENGINE MOUNTS

Scrutineer's Note: Approved Engine Mounts

These Engine Mounts are approved for use without the TC25000 Adaptor Plate.



c) Torine Engine Adaptor Plate

Manufacturer : **DPE Kart Technology**

Part No : EMSLT4S Description : 4S ADAPTOR PLATE

- The adaptor plate is an integrial part of the engine assembly.
- It provides structural integrity to the crankcase under high load conditions.
- It also maintains a forward angle on the motor to ensure adequate lubrication.





NOTE: It is Not permitted to use the engine without an Approved Adaptor Plate, or in its place an approved third party engine mount, that delivers the requisite ridgidness to maintain crankcase integrity under high load conditions as well as sufficient forward angle to ensure adaquate lubrication.







Scrutineer's Note: Approved Engine Mounts

These Engine Mounts are approved for use without the TC25000 Adaptor Plate.



d) Torini Engine Adaptor Plate

Manufacturer : **DPE Kart Technology**

Part No : TC25100 Description : 4S ADAPTOR PLATE

- The adaptor plate is an integrial part of the engine assembly.
- It provides structural integrity to the crankcase under high load conditions.
- It also maintains a forward angle on the motor to ensure adequate lubrication.



NOTE: It is Not permitted to use the engine without an Approved Adaptor Plate, or in its place an approved third party engine mount, that delivers the requisite ridgidness to maintain crankcase integrity under high load conditions as well as sufficient forward angle to ensure adaquate lubrication.





Engine Lubrication

ENGINE OIL

At all times, no less than 400ml of Torini 4s Racing Engine Oil must be retained in the Engine and be capable of being drained from the Engine for the purpose of determining compliance with the homologation.

Engine Oil Types

TORINI 4s RUN-IN ENGINE OIL 1L

1 Litre Part No: TRO1031



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.

TORINI 4s RACING ENGINE OIL

500ml Part No: TRO500

4L Part No: TRO4000

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.





P19 (Cadet)

Product Specifications TC210 Clubmaxx Engine model **Image** Spark Plug NGK - BPR6ES Engine type Single cylinder, 4-Stroke, Forced Air Cooling, OHV25° **Head Gasket** 1.28 +/- .25 Uncompressed (Compressed 1.1 +/-0.1) Bore × stroke (mm) 70 × 55 Displacement (cc) 211.66 Engine oil capacity (L) 0.5 Idle speed (r/min) 1800±150 Max permissable engine speed 6100 RPM Recoil Starting mode Splash Lubrication mode Cooling system Forced air cooling Stopping mode Grounding Fuel Premium Unleaded PTO shaft rotation Counterclockwise (seen from the end of output shaft) T.C.I. Rev Limited 6100 RPM Ignition system P23 Carburetor (Option 1)

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.

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

Neither engines nor accessories can be modified. By this we mean any shape, content or function changes which may differ from what previously conceived. Furthermore, this includes any addition and /or removal of material and /or parts from the engine set-up package unless provided by this regulation. No ceramic component coatings.

Carburetor (Option 2)







UPDATE LOG

Date	Section	Page
3 August 2023	New Laser Etched Image of Torini Butterfly Carburettor	29
3 August 2023	TC-GEL 19219 NORAM Clutch Sprocket Variants Added	38
3 August 2023	Torini TC2300 Clutch Sprocket Variants Added	39
1 January 2024	Torini Engine Adaptor Plate	44
20 February 2024	Torini Engine Adapter Plate	45