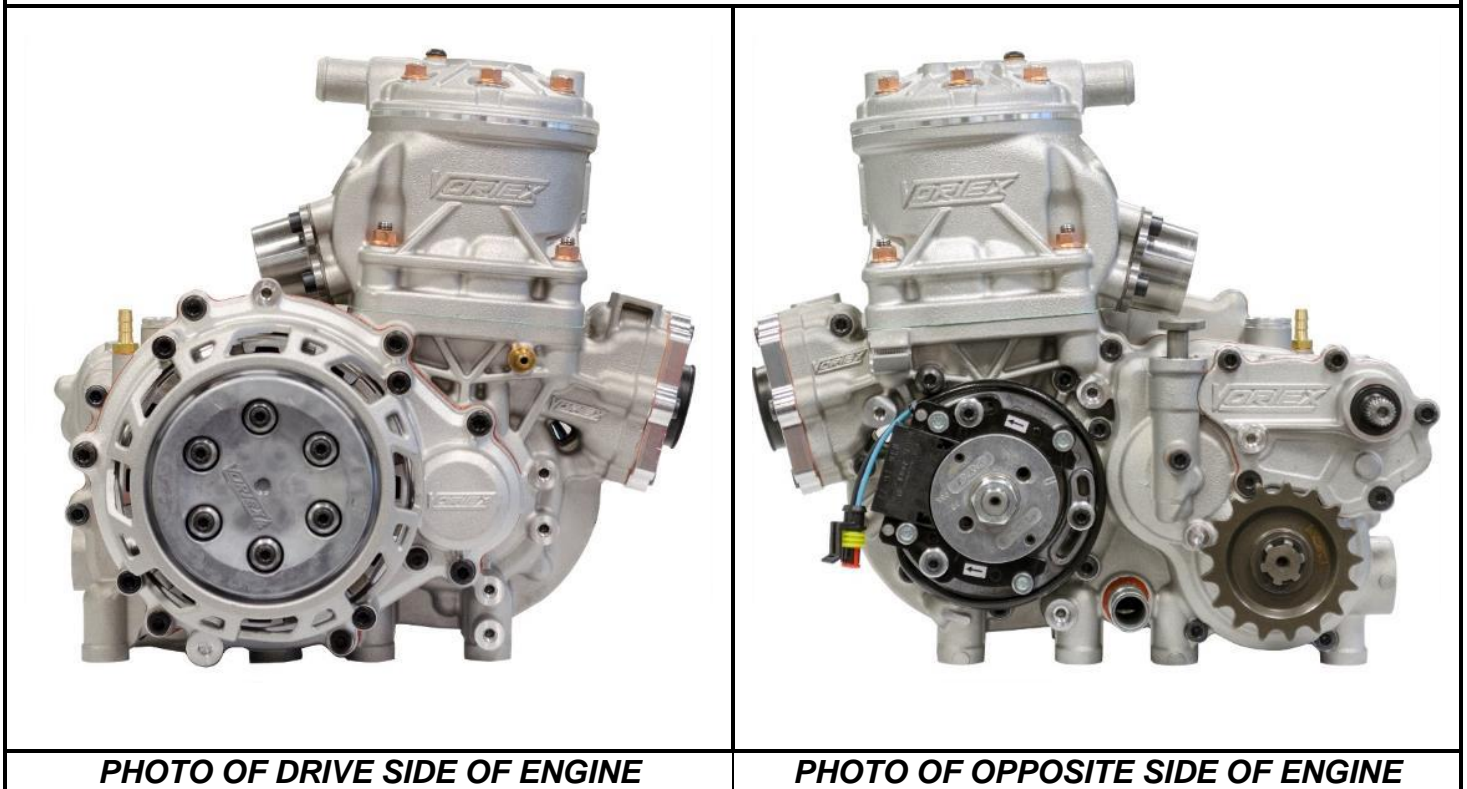


NATIONAL HOMOLOGATION FORM
KARTING ENGINE

Manufacturer	OTK KART GROUP S.R.L.
Make	VORTEX
Model	ROK SHIFTER
Validity of the homologation	6 years
Number of pages	30

This Homologation Form reproduces descriptions, illustrations, and dimensions of the Vortex SHIFTER ROK engine.



Signature and Stamp of Karting Australia



K O'Reilly

K O'Reilly
Chief Executive Officer
7 October 2022

PHOTO OF DRIVE SIDE OF THE COMPLETE ENGINE



PHOTO OF OPPOSITE DRIVE SIDE OF THE COMPLETE ENGINE

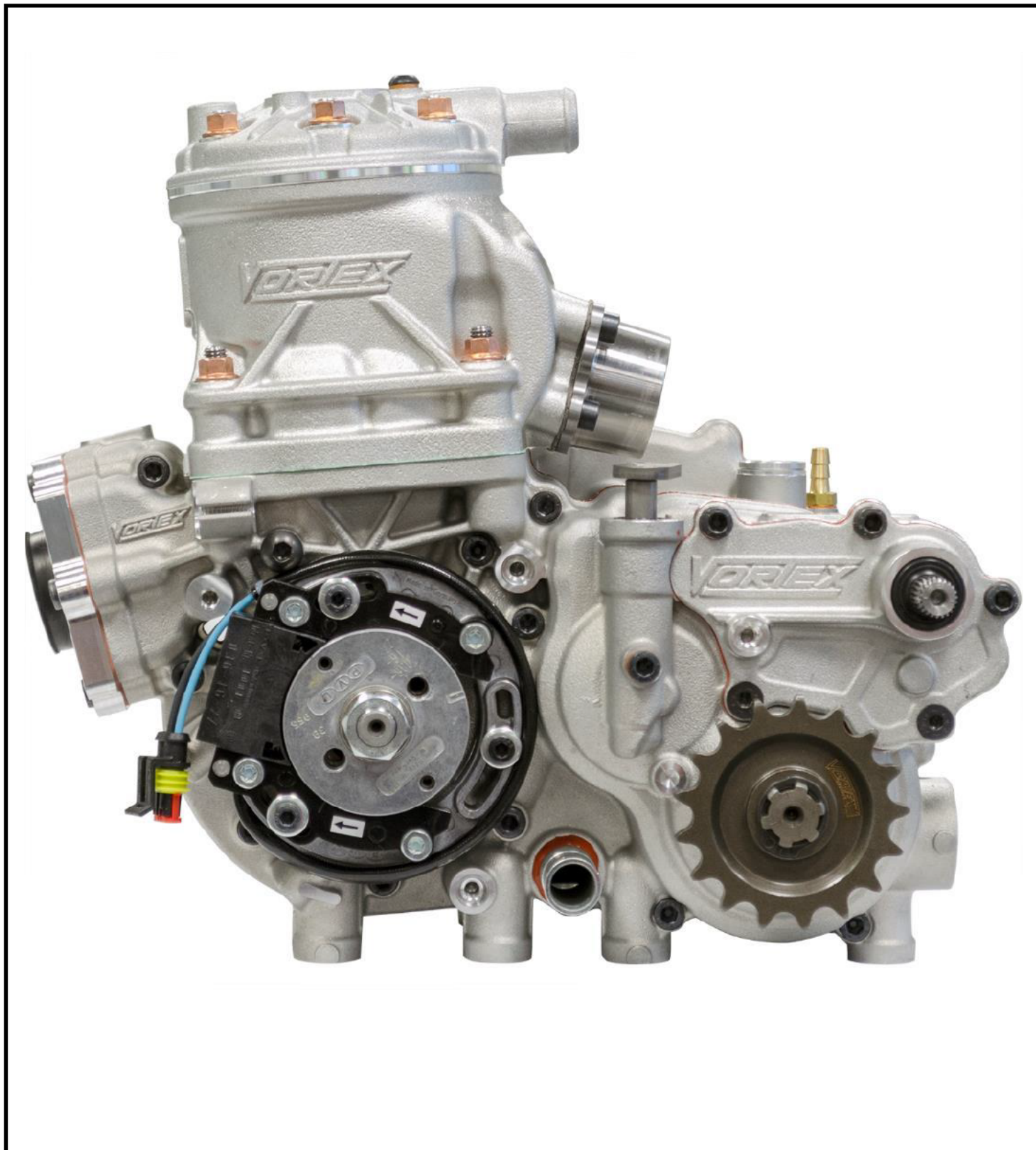


PHOTO OF THE REAR OF THE COMPLETE ENGINE



PHOTO OF THE FRONT OF THE COMPLETE ENGINE

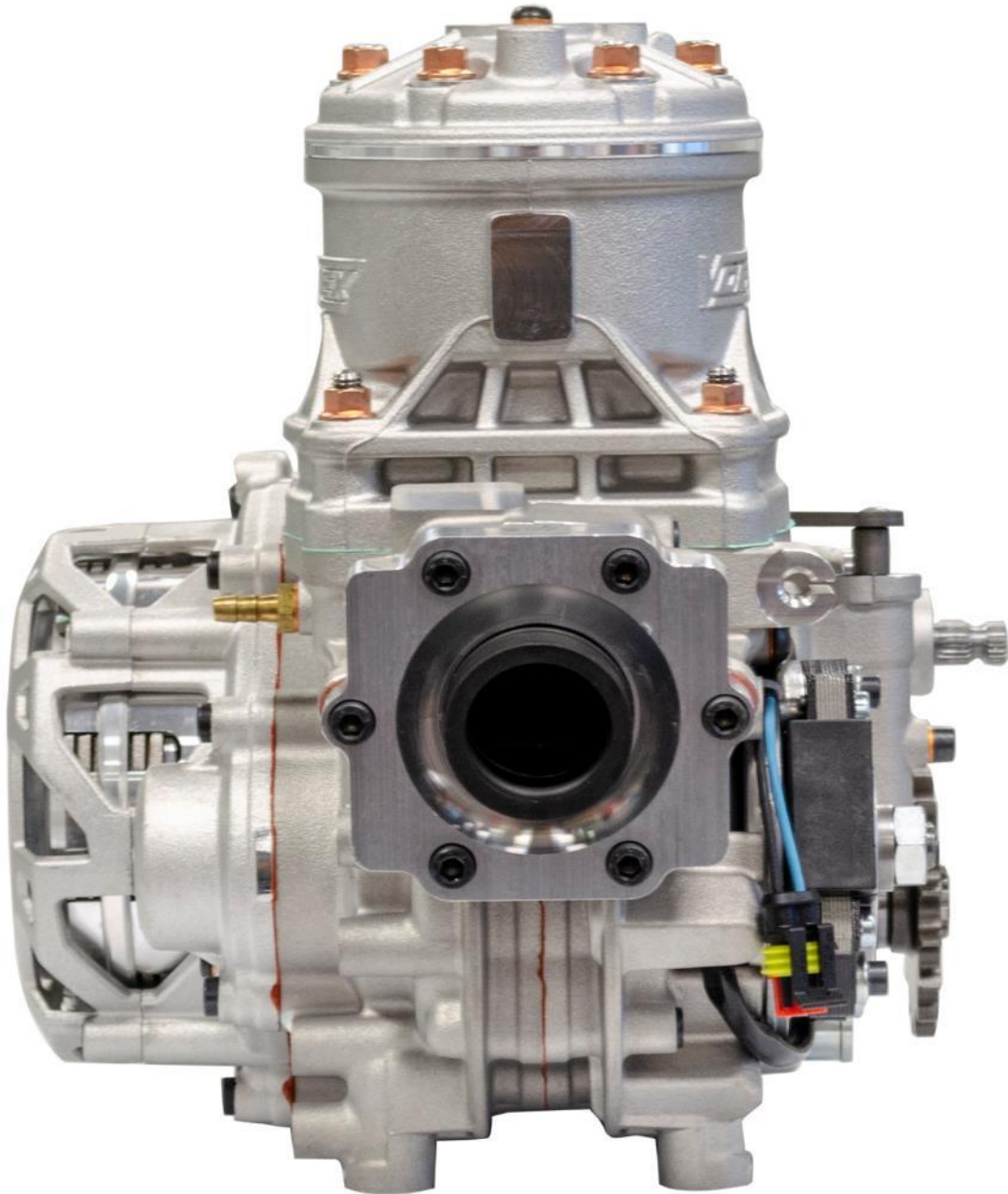


PHOTO OF THE COMPLETE ENGINE TAKEN FROM ABOVE

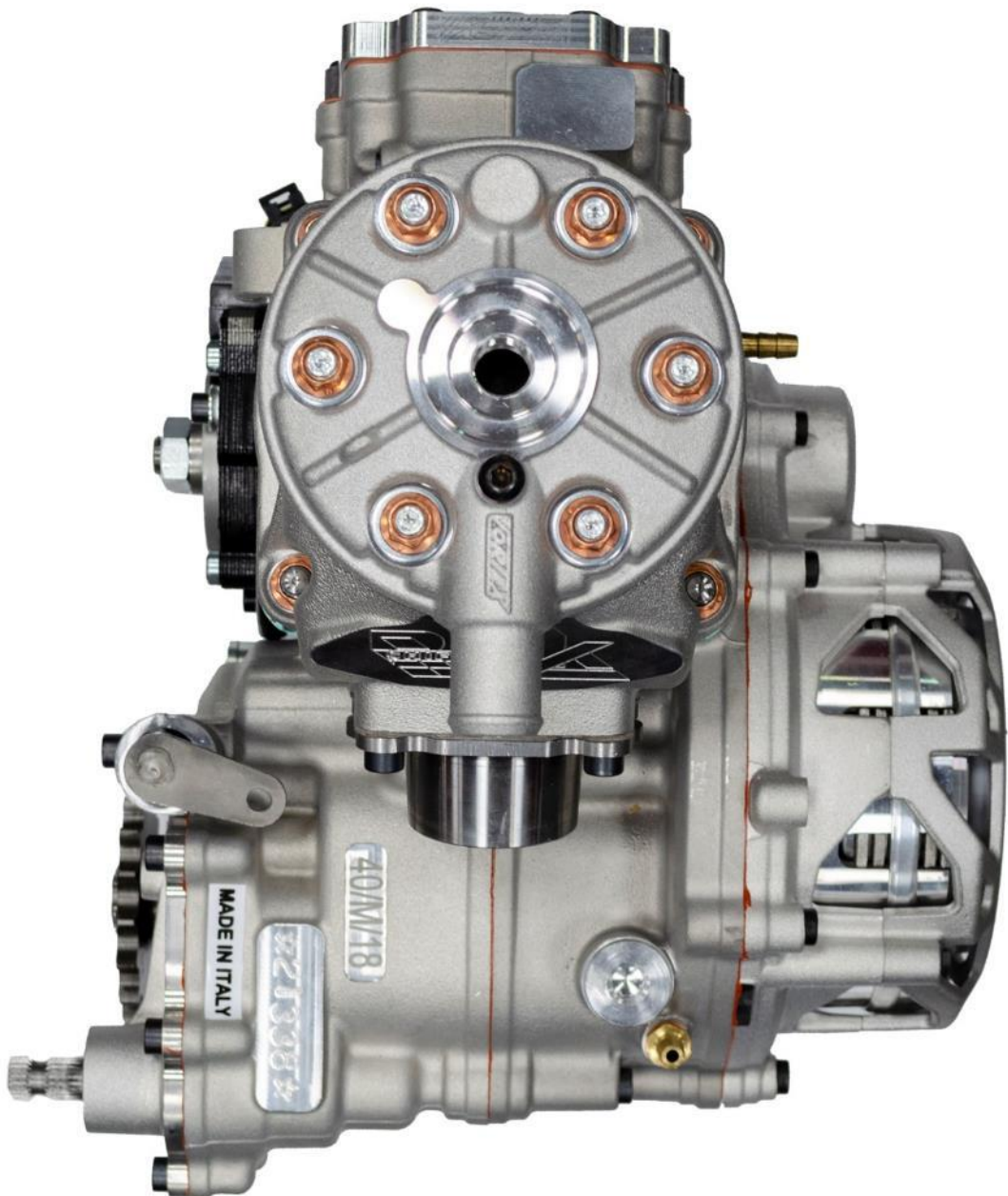
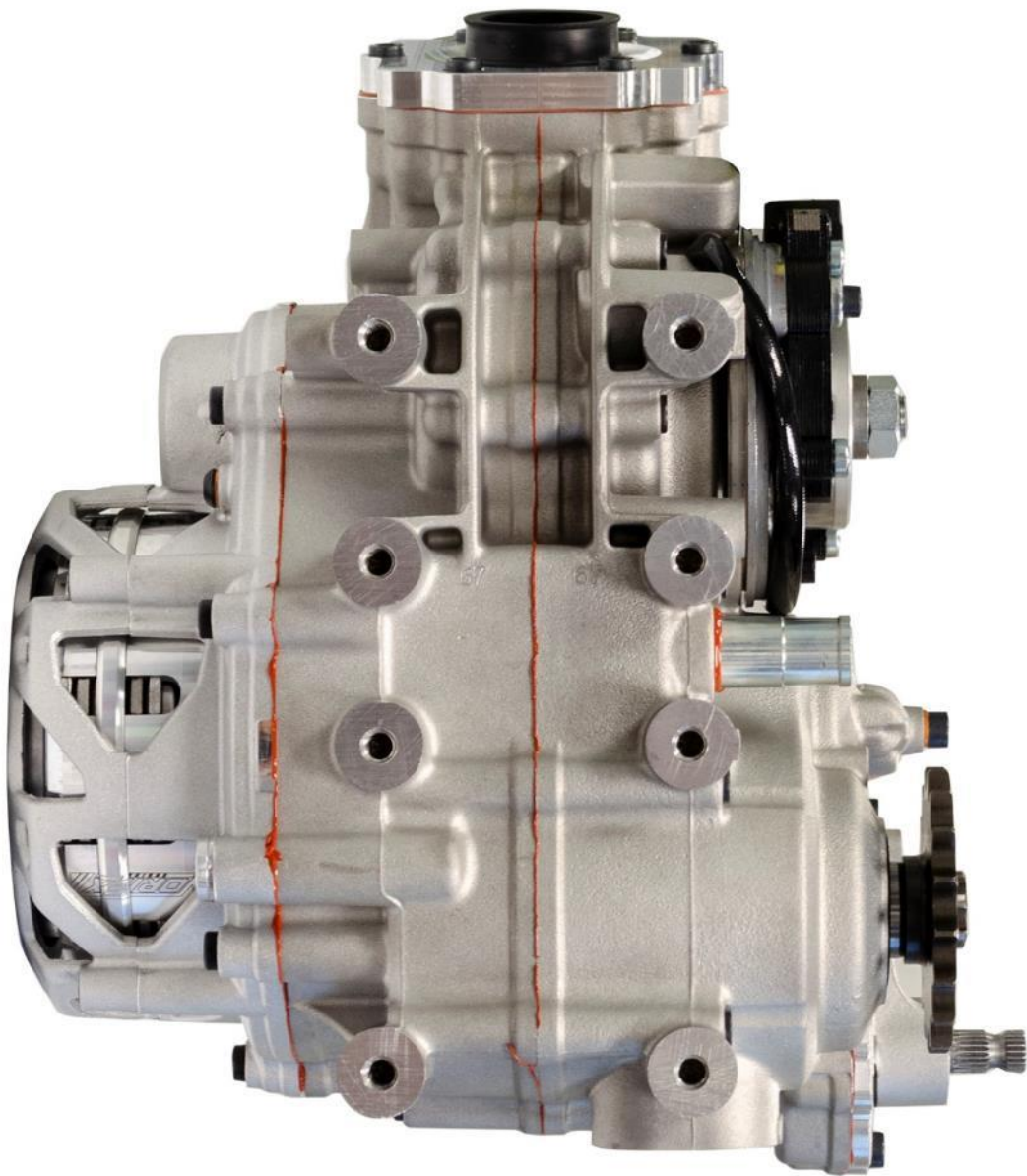


PHOTO OF THE COMPLETE ENGINE TAKEN FROM BELOW





SHIFTER ROK 2022

TECHNICAL INFORMATION AND CHARACTERISTICS

ALESAGGIO ORIGINALE	ORIGINAL BORE	ALESAGE D'ORIGINE	53,90 mm
ALESAGGIO MASSIMO	MAX ALLOWED BORE	ALESAGE MAXIMUM	54,08 mm
CORSA	STROKE	COURSE	54,5 mm +/- 0,2 mm
CILINDRATA ORIGINALE	ORIGINAL DISPLACEMENT	CAPACITE' D'ORIGINE	124,360 cc
CILINDRATA MASSIMA	MAXIMUM DISPLACEMENT	CAPACITE' D'ORIGINE MAXIMUM	126 cc
INTERASSE BIELLA	CONROD C-TO-C DISTANCE	ENTRAXE DE LE BIELLE	110 mm +/- 0,2 mm
PESO DELLA BIELLA	WEIGHT OF CONROD	POID DE LA BIELLE	130 g +/- 2 g

CYLINDER DEVELOPEMENT AND DISTRIBUTION

SCARICO	EXHAUST PORT	ECHAPPEMENT	196° MAX
BOOSTER	BOOSTER	BOOSTER	180° MAX
TRAVASI PRINCIPALI	MAIN TRANSFER	TRANSFERES PRINCIPAL	126° ±1.5°
TRAVASI SECONDARI	SECONDARY TRANSFER	TRANSFERES SECONDAIRES	126° ±1.5°

Check of the Distribution as described in the Rok Cup Technical Regulations 2021 art. 8

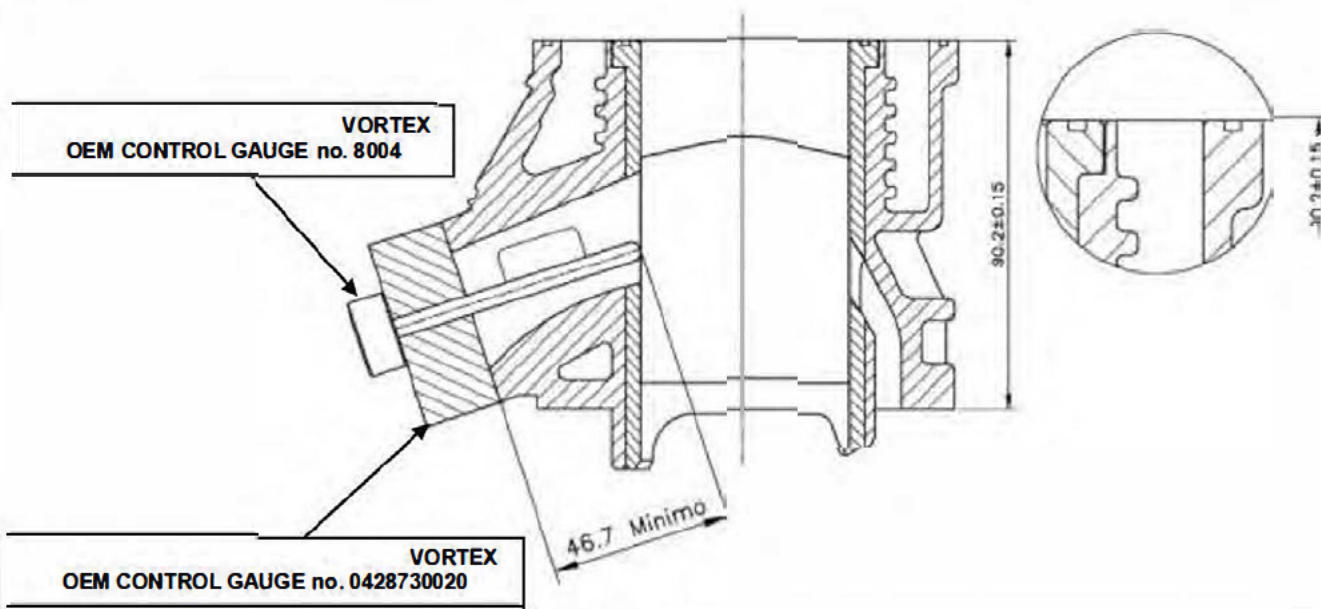


ATTENTION

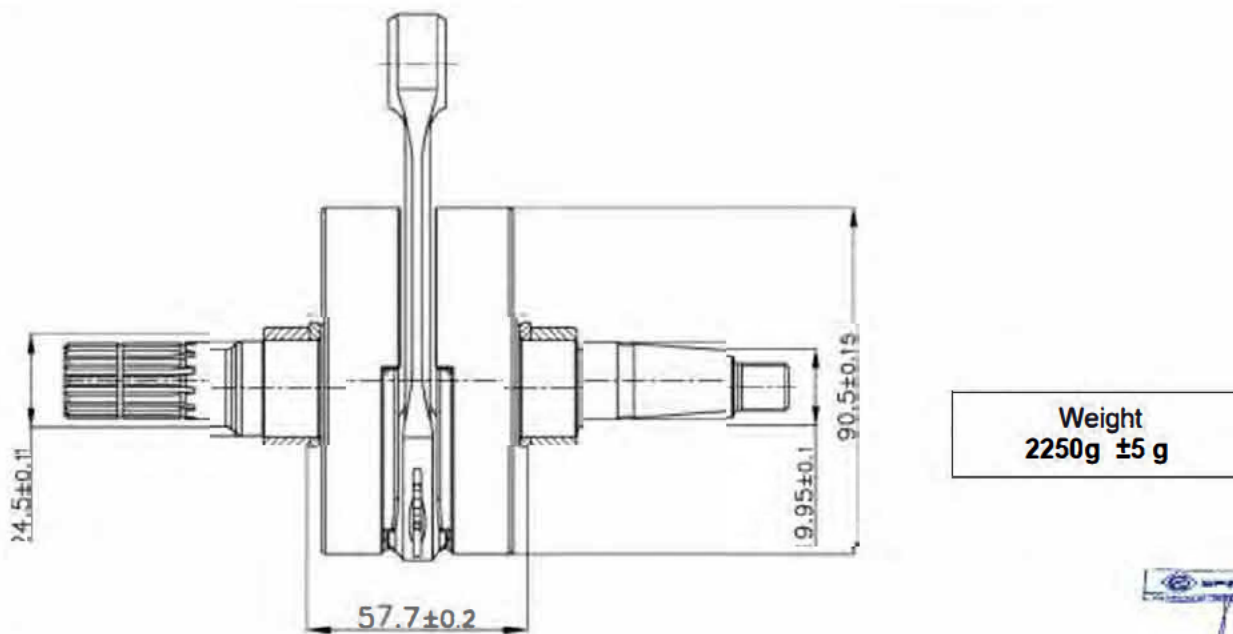
ALL THE ENGINE PARTS MUST BE ORIGINAL BY VORTEX ROK.

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CYLINDER SECTION



CRANKSHAFT - CONROD - CRANKSHAFT COUPLING AXIS



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SHIFTER ROK 2022

CRANK PIN



Weight
111g ±1g



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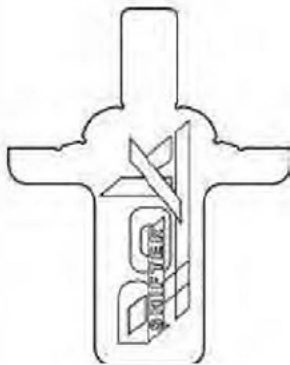
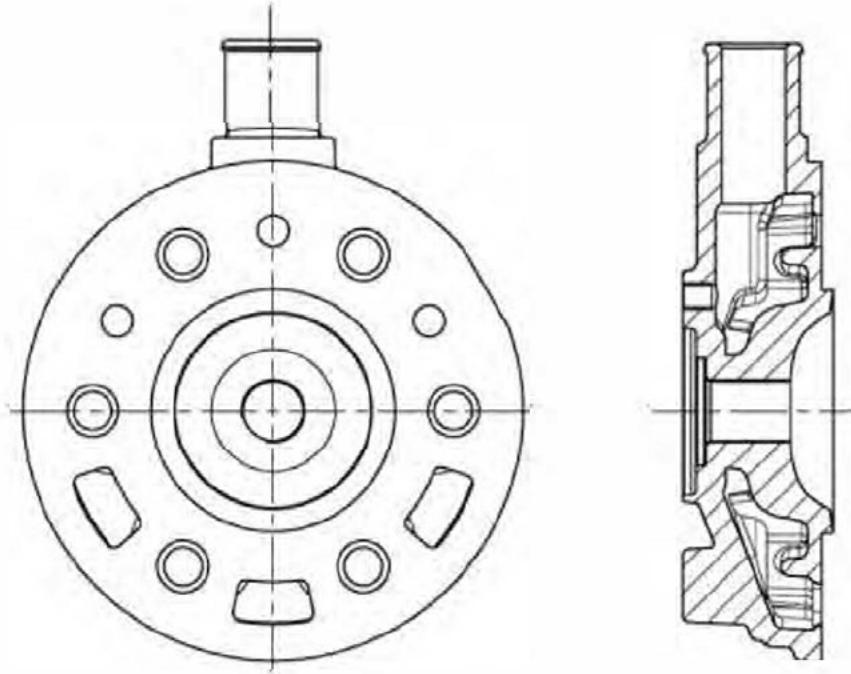
SHIFTER ROK 2022

CYLINDERHEAD AND COMBUSTION CHAMBER

Combustion Chamber Volume: measured as described in the Rok Cup Technical Regulation 2021 art. 7 and 7.1

SQUISH THICKNESS - SQUISH

: 1,15 mm MIN.



**TEMPLATE FOR CHECKING THE
COMBUSTION CHAMBER PROFILE**

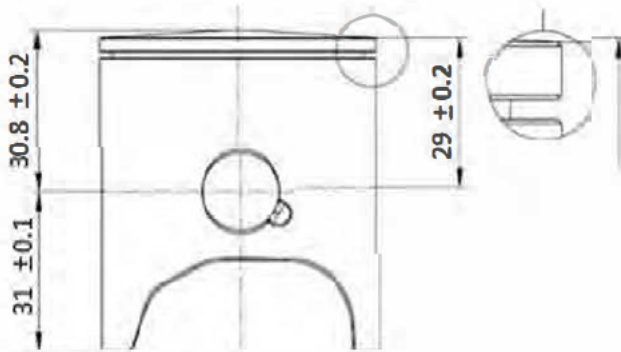


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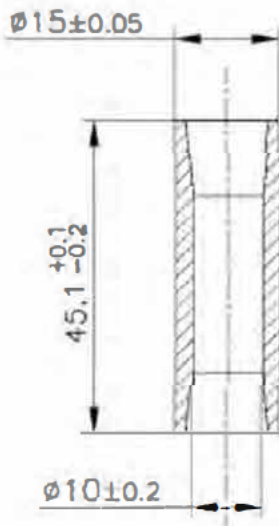
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PISTON



Weight
120 g +/- 3g

PISTON PIN



Weight
30g Min

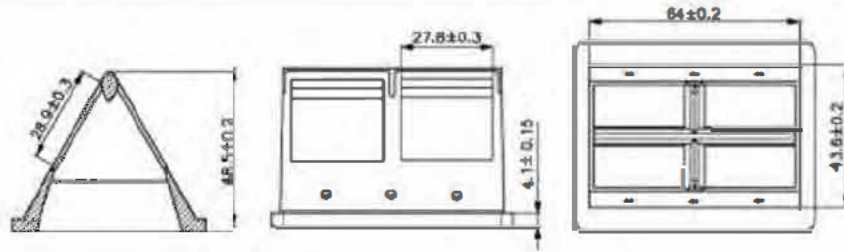


ATTENTION

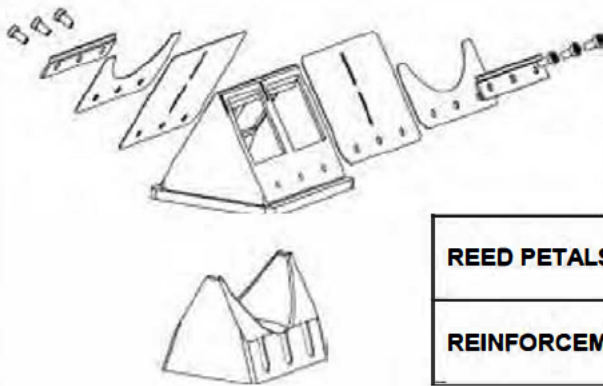
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DRAWING OF REED BLOCK



DRAWING OF REED VALVE COVER



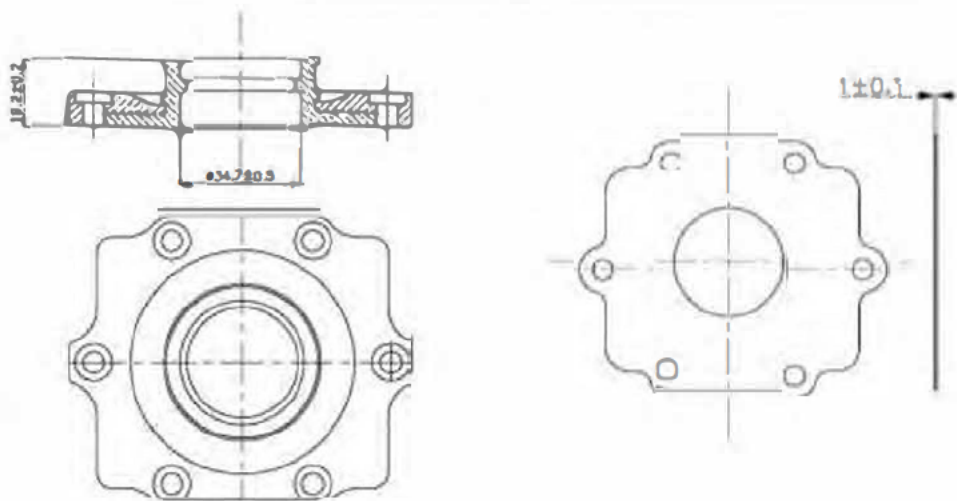
REED PETALS MINIMUM THICKNESS

0.31mm

REINFORCEMENT (STOPPER) MINIMUM THICKNESS

0.24mm

DRAWING OF REED BLOCK COVER AND GASKET



ATTENTION

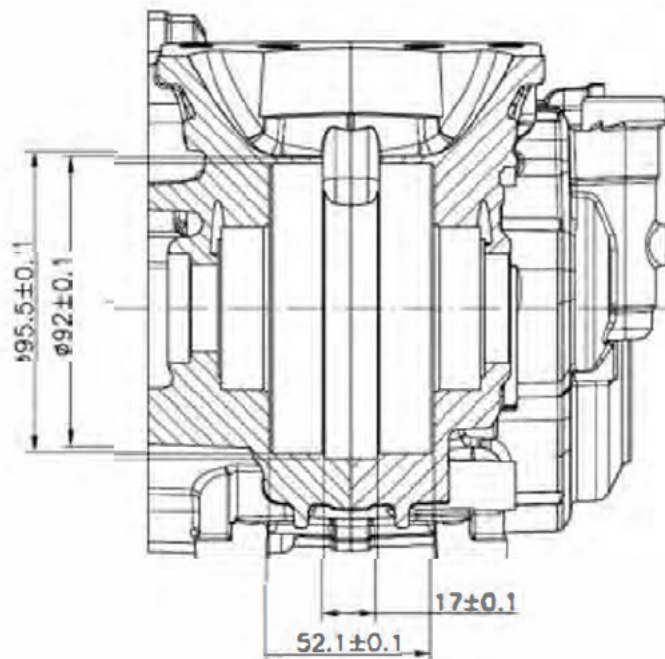
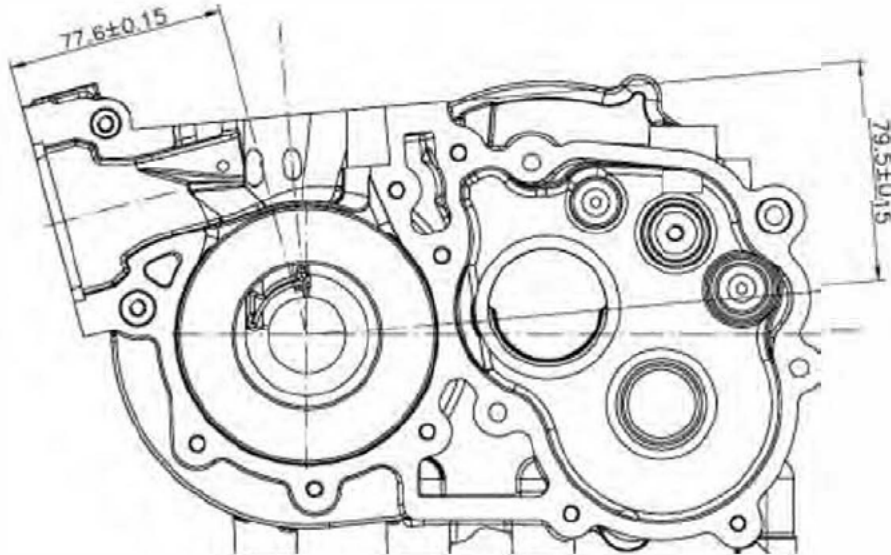
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SHIFTER ROK 2022

CRANKCASE



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SHIFTER ROK 2022

GEARBOX			
Primary coupling			<u>Z17/67</u>
Gearbox ratios			
Gear	Primary shaft	Secondary shaft	Reading of values obtained after three engine revs
1 st	<u>13</u>	<u>33</u>	<u>108.2°</u>
2 nd	<u>16</u>	<u>29</u>	<u>151.2°</u>
3 rd	<u>16</u>	<u>24</u>	<u>183.1°</u>
4 th	<u>18</u>	<u>22</u>	<u>224.2°</u>
5 th	<u>22</u>	<u>23</u>	<u>262.1°</u>
6 th	<u>27</u>	<u>25</u>	<u>296.0°</u>

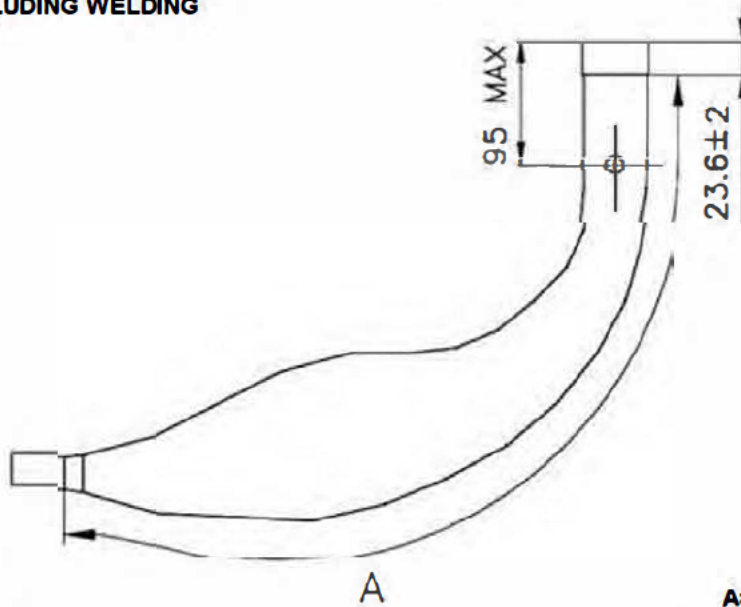
ON DECISION OF THE STEWARDS, IT WILL BE AUTHORISED TO INTERCHANGE ENTRANTS' IGNITION SYSTEMS FOR THE SYSTEMS SUPPLIED BY THE ORGANISERS (SAME HOMOLOGATED MODELS)



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EXHAUST MUFFLER

DIMENSION OF COLLECTOR INCLUDING WELDING



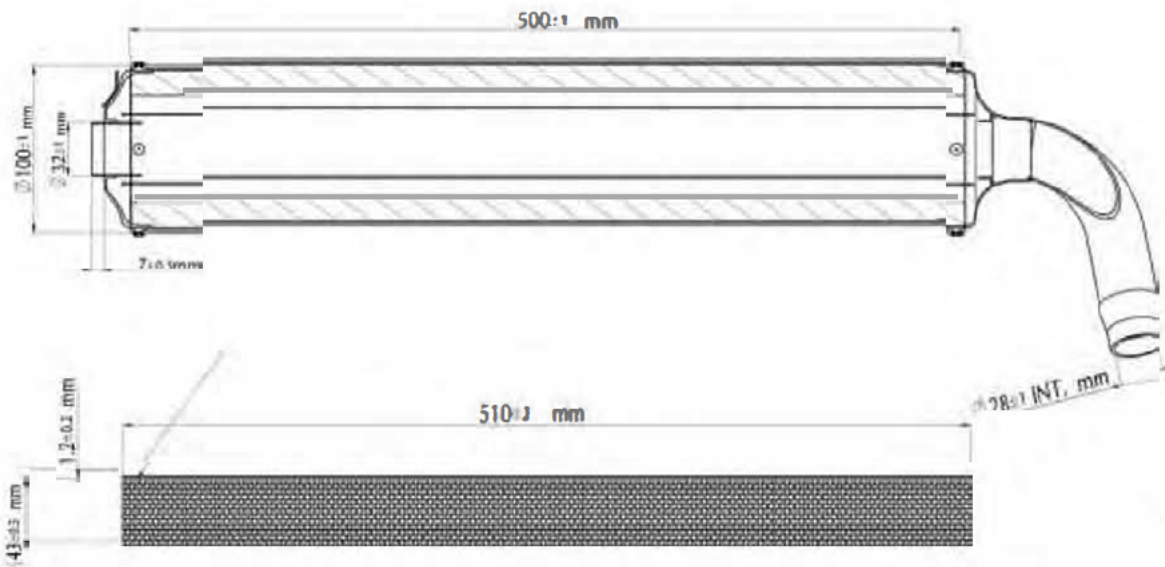
EXTERNAL CHORD READING

A=765 mm +/- 5mm

WEIGHT

1.505 g. ± 5%

SILENCER AND COMPONENTS



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SILENCER	BENT PIPE	EXHAUST GASKET

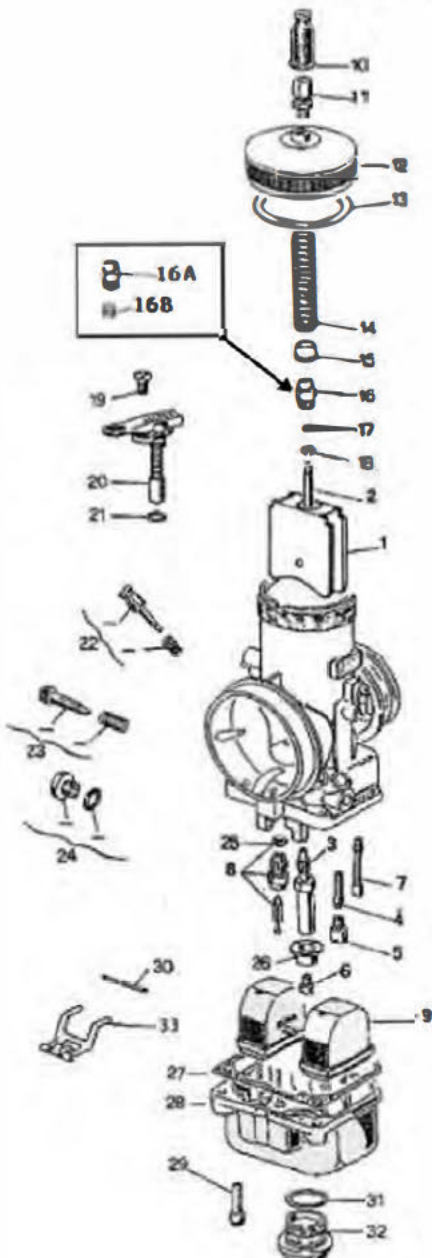
EXHAUST MANIFOLD

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CARBURETTOR AND COMPONENTS

DELL'ORTO VSHH 30



- | | |
|------------------------------------|--------------------------------|
| 1. GUILLOTINE | THROTTLE VALVE |
| 2. AIGUILLE | MIXTURE NEEDLE |
| 3. PULVERISATEUR | SPRAY NOZZLE |
| 4. EMULSEUR MINIMUM | IDLE DIFFUSER |
| 5. GICLÉUR MINIMUM | IDLE JET |
| 6. GICLÉUR MAXIMUM | HIGH SPEED JET |
| 7. GICLÉUR DÉMARRAGE | STARTER JET |
| 8. POINTEAU | NEEDLE VALVE |
| 9. FLOTTEUR 4 gr x 2 | FLOATER 4 gr x 2 |
| 10. MANCHON | CAP |
| 11. VIS DE TENSION | WIRE SCREW |
| 12. COUVERCLE DU CORPS | BODY COVER |
| 13. JOINT COUVERCLE DE CHAMBRE | COVER GASKET |
| 14. RESSORT DE RAPPEL GUILLOTINE | THROTTLE VALVE RETURN SPRING |
| 15. ASSIETTE GUIDE RESSORT | SPRING GUIDE PLATE |
| 16. NIPPLO VALVE GAZ 16A e 16B | MIXTURE VALVE NIPPLE 16A e 16B |
| 17. RONDELLE | WASHER |
| 18. ARRÊT DE L'AIGUILLE | MIXTURE NEEDLE STOP |
| 19. VIS DU DISPOSITIF DE DÉMARRAGE | STARTER FIXING SCREW |
| 20. DISPOSITIF DE DÉMARRAGE | CHOKE |
| 21. JOINT DISPOSITIF DÉMARRAGE | STARTER GASKET |
| 22. KIT VIS DE REGLAGE DE L'AIR | KIT AIR ADJUSTMENT SCREW |
| 23. KIT VIS DE REGLAGE GUILLOTINE | KIT MIXTURE VALVE ADJUSTMENT |
| 24. BOUCHON FILTRE A ESSENCE | FUEL FILTER PLUG |
| 25. JOINT DU POINTEAU | NEEDLE VALVE GASKET |
| 26. ASSIETTE | PLATE |
| 27. JOINT DE LA CUVE | FLOAT VALVE GASKET |
| 28. CUVE | FLOAT CHAMBER |
| 29. VIS FIXAGE DE LA CUVE | FLOAT CHAMBER SCREW |
| 30. AXE | PIN |
| 31. JOINT DU BOUCHON DE CUVE | FLOAT CHAMBER PLUG GASKET |
| 32. BOUCHON DE LA CUVE | FLOAT CHAMBER PLUG |
| 33. BALANCIER | FLOAT LEVER |

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DELL'ORTO FUEL PUMP. COD. 11023



The OEM Dell 'Orto fuel pump and components as supplied by Vortex must be used.

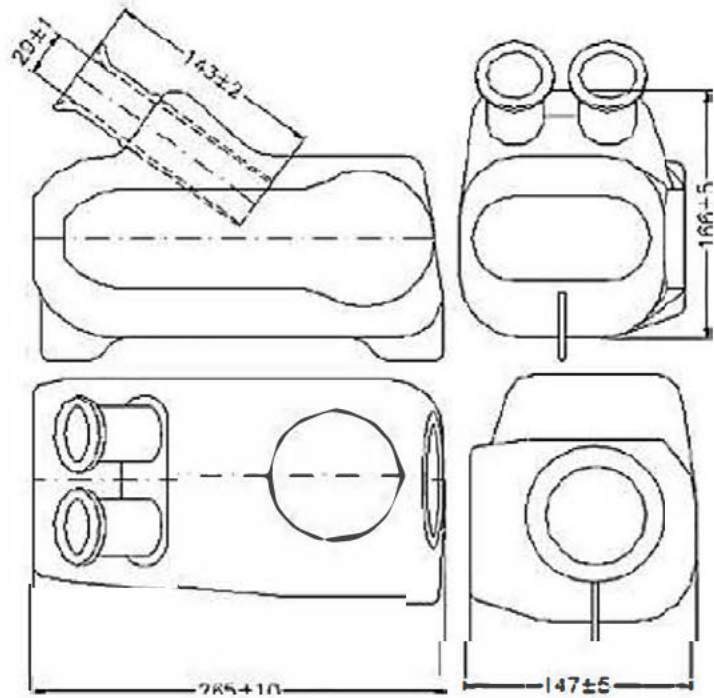
- The fuel pump must be mounted to the engine.
- It is permitted to use one (1) only fuel filter that may be mounted between the fuel tank and fuel pump.
- Only the fuel outlet pipe is permitted to be used.
- The use of the return fuel pipe to the fuel tank is not permitted.



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IGNITION PVL

OPTION 1



105 458 036-IG-27



105 458 54/A/18

IGNITION SELETTA

OPTION 2



USE OF SOLELY OEM MARKED COIL, STATOR AND ROTOR WILL BE ALLOWED, AS MENTIONED IN THE ABOVE PICTURES.

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PICTURE AND MARKIN OF CONROD



PICTURE AND MARKING OF CRANKSHAFT



CRANK PIN

OPTION 1



OPTION 2



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PICTURE AND MARKING OF EXHAUST MUFFLER

IMPORTANT

DURING EXAMINATION, ON THE EXHAUST IT MUST BE INDICATED THE IDENTIFICATION LOGO ROK SHIFTER.



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PHOTO DU CARTER (CÔTÉ JOINT)

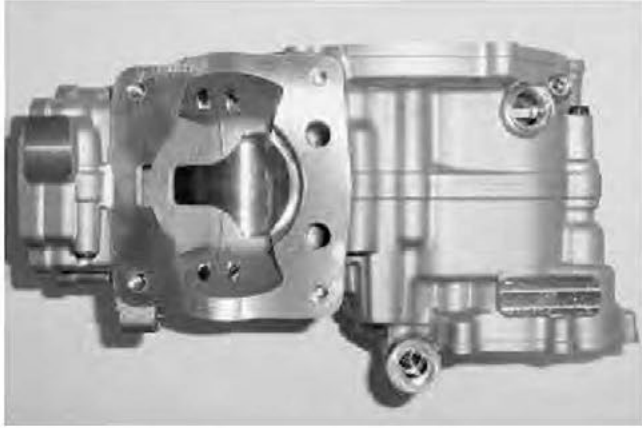


PHOTO D'UNE PARTIE INTÉRIEURE DU CARTER



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PICTURE OF REED BLOCK COVER AND GASKET



PICTURE OF REED VALVE COVER



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PICTURES AND MARKING OF THE REEDS



CARBON FIBER REED PETALS MUST BE BOTH, MANDATORY, ORIGINAL AND BRANDED OTK AS SHOWN IN THE PICTURE.



DETAIL PHOTO OF THE CRANKSHAFT OIL SEAL POSITION



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Appendix A to the Vortex Rok – Shifter Engine Homologation

OEM means: Original Engine Manufacturer (Vortex) or an organization that makes component parts used by and supplied by Vortex for exclusive use in the Rok-Shifter Engine.

The following notes are additional to the details contained in these homologation documents for the **Vortex Rok - Shifter Engine** (the “**Engine**”) and are to be read in conjunction with the specifications and details contained therein; they form part of the Homologation Documents for the Engine.

The Engine must always be used and presented in strict conformity with the specifications detailed in the homologation documents. All engines must be imported into Australia by Kingarth Pty Ltd (Patrizicorse). Engine numbers will be recorded. **Unless otherwise expressly permitted by Karting Australia, the Engine must use only Vortex OEM parts in accordance with this Homologation Document.**

Neither the Engine nor any of its ancillary components may be modified other than in accordance with the Karting Australia Rules and these homologation documents. Any removal, addition or polishing of material is strictly forbidden. Sandblasting, glass bead blasting, vapor blasting, wet blasting, liquid honing, peening, acid etching, spark eroding and/or any other method of metal removal or displacement is strictly forbidden.

The use of thermal barrier coatings/ceramic coatings on or in the Engine/Engine components and on or in exhaust components is prohibited.

The use of anti-friction coatings on or in the Engine/Engine components other than OEM pistons is prohibited.

UNLESS IN THE KARTING AUSTRALIA RULES AND/OR THESE HOMOLOGATION DOCUMENTS, IT SAYS THAT YOU CAN DO SOMETHING TO THE ENGINE OR ANY OF ITS COMPONENTS, THEN YOU CANNOT.

1. Carburetor

- a. Dell’Orto VSH 30.
- b. The only allowed changes to the Dell’Orto VSH 30 carburetor are the High speed jet, needle clip position, needle valve (allowed options), Emulsion tube (allowed options) and inner pilot jets (allowed options). No other change or modification is allowed.
- c. All jets must be original Dell’Orto jets.
- d. Stamped numbers on parts DO NOT guarantee the accuracy of the part.
- e. Allowed Dell’Orto VSH 30 Set Up options:
 - i. Slide: #40
 - ii. Needle: K98
 - iii. Outer pilot: #60
 - iv. Inner pilot: B45-B46-B47-B48-B49-B50
 - v. Emulsion tube: DP268 – DP267 or DQ268 ONLY
 - vi. Floats: 4gm as supplied standard
 - vii. Maximum venturi size: 30mm
 - viii. Needle Valve 250 or Needle Valve 300

2. Cooling System

- a. Cooling system make, size and model are Non-OEM.

