MINI ROK TECHNICAL SPECIFICATION

PREAMBLE

The following are the Technical Specifications for the Vortex Mini Rok engine, as approved by Karting NSW.

This engine is approved for use in the following classes.

- Novice (with a 16mm exhaust manifold restrictor as listed in Rule Book Section C.2.3)
- Rookies

Attention: ALL THE ENGINE PARTS MUST BE ORIGINAL BY VORTEX ROK.

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.

Unless otherwise specified, the engines must be original in all their components according to the attached drawings and diagrams.

- Any removal, addition or polishing of material is strictly forbidden.
- Sandblasting, glass bead blasting, peening, acid etching, spark eroding and/or any other method of metal removal or displacement is prohibited.

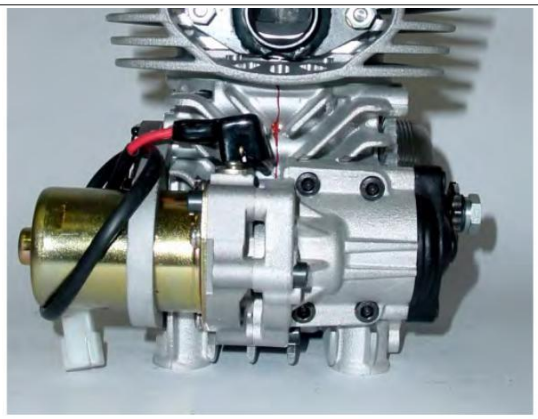
ANY ALTERATIONS / MODIFICATIONS ARE STRICTLY PROHIBITED EXCEPT AS SPECIFICALLY AUTHORISED WITHIN THESE SPECIFICATIONS.

IF THESE SPECIFICATIONS DO NOT SAY YOU CAN MAKE A MODIFICATION, THEN YOU CANNOT.

ENGINE IDENTIFICATION

This Identification Sheet reproduces descriptions, illustrations and dimensions of the MINI ROK engine.

FOTO DEL MOTORE LATO SUPERIORE
PICTURE ENGINE UPPER SIDE



BASE CILINDRO
CYLINDER BASE

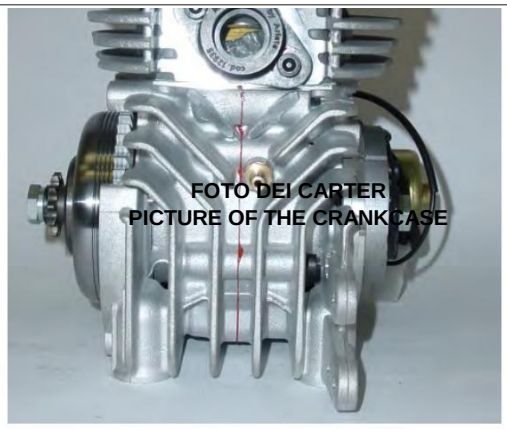
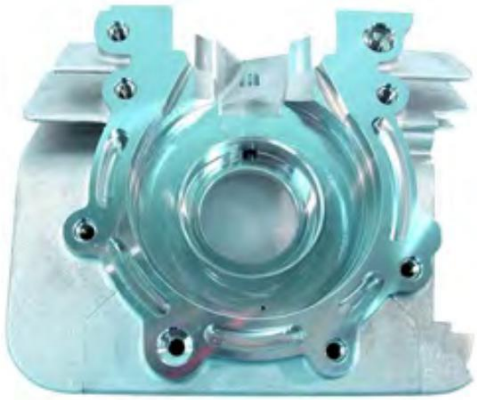


FOTO DEI CARTER
PICTURE OF THE CRANKCASE

FOTO DEL MOTORE LATO INFERIORE
PICTURE ENGINE LOWER SIDE

	
TESTA E CAMERA DI COMBUSTIONE **CYLINDERHEAD AND COMBUSTION CHAMBER**	
	
FOTO INTERNA DEL CARTER **INTERIOR PICTURE OF THE CRANKCASE**	
	

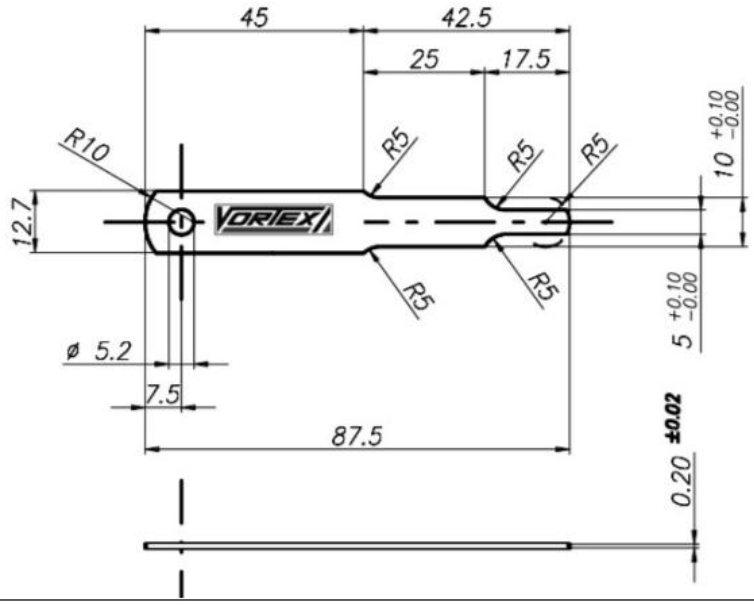
GENERAL TECHNICAL SPECIFICATIONS

A - CHARACTERISTICS		
The number of decimal places must be 2 or comply with the relevant tolerance.		*Tolerances & remarks*
Cylinder		
Max displacement	**60 cc.**	
Max allowed bore	**42.10mm**	
Stroke	**43.00 mm**	±0.10mm
Admission system in the cylinder	**Piston Port**	
Cooling system	**Air cooling**	
Carburettor:	**DELL'ORTO PHBG 18 BS**	
Number of transfers	**2**	
Shape of exhaust transfer	**At 4 angles**	
Cylinder head Volume with Vortex CC check tool WA050	**6.8 cc**	Minimum
Crankshaft		
Number of bearings	**2**	--
Diameter of bearings	**47mm**	±0.05mm
Weight of crankshaft with Conrod	**1311g**	±10.0g
Crankpin (Big End)		
Diameter	**18mm**	±0.05mm
Length	**40.6mm**	±0.05mm
I.D.	**6mm**	±0.05mm
Weight of crankpin	**71g**	±1.0g
Connecting rod		
Connecting rod centreline	**90mm**	±0.20mm
Diameter of big end	**24.02mm**	±0.05mm
Diameter of small end	**16mm**	±0.05mm
Weight of the connecting rod	**94g**	±10.0g
Piston		
Number of piston rings	**1**	-
Weight of the piston	**63g**	±5.0g
Squish minimum measurement (use 2.0 mm solder)	**0.8mm**	Minimum

Gudgeon pin		
Diameter	**12mm**	±0.01mm
Length	**34mm**	±-0.20mm
Minimum weight	**15g**	Minimum
I.D.	**8mm**	±0.10mm
Clutch		
Minimum weight	**815g**	±15.0g
Engine Sprockets Option Only	**Z10-Z11**	
B - OPENING ANGLES		
Of the inlet	**142°**	±2°
Of the transfer ports	**116°**	±2°
Of the exhaust	**154°**	±2°
C - MATERIAL		
Cylinder head	**AL-SI**	
Cylinder	**AL-SI/ CI**	
Cylinder wall	**CI**	
Sump	**AL/SI**	
Crankshaft	**ACIER NI-CR-MO**	
Connecting rod	**ACIER NI-CR-MO**	
Piston	**AL/SI**	

CYLINDER

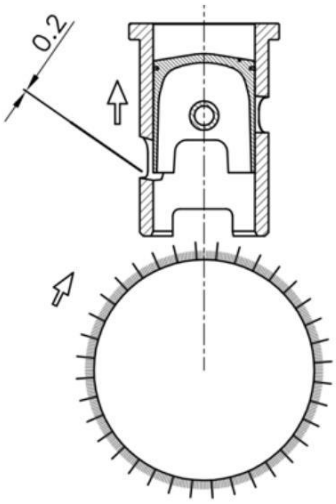
OPENING ANGLES measured with a thickness gauge of 0,20 mm having width of 5 mm and degrees wheel with 200 mm diameter.



L'angolo di scarico deve essere misurato con uno spessore da 0,20 mm, avente larghezza 5 mm. (come disegno di fianco)

The exhaust angular reading must be measured with a 0,20 mm thick and 5 mm wide wedge. (see drawing beside).

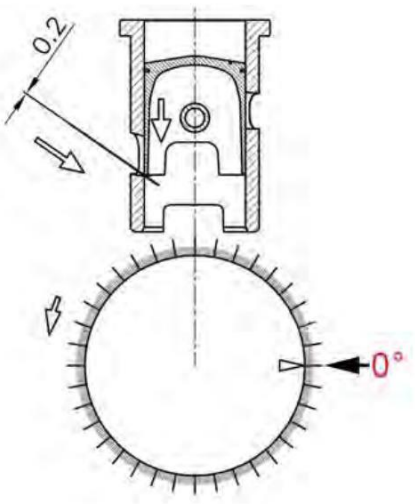
OPENING ANGLE ADMISSION / EXHAUST



1

RUOTARE IN SENSO ORARIO PER ALZARE IL PISTONE E PERMETTERE L'INSERIMENTO DELLO SPESSIMETRO CONTRO LO SPIGOLO INFERIORE DELL'ASPIRAZIONE

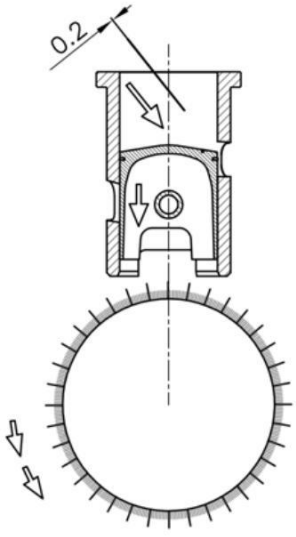
TURN CLOCKWISE AND LIFT THE PISTON TO ALLOW THE INSERTION OF THE FEELER GAUGE AGAINST THE LOWER EXHAUST EDGE



2

RUOTARE IN SENSO ANTIORARIO PER ABBASSARE IL PISTONE FINO AD INCONTRARE LO SPESSIMETRO APPOGGIATO ALLO SPIGOLO DELL'ASPIRAZIONEIN QUESTA FASE SETTARE LA POSIZIONE DI 0°

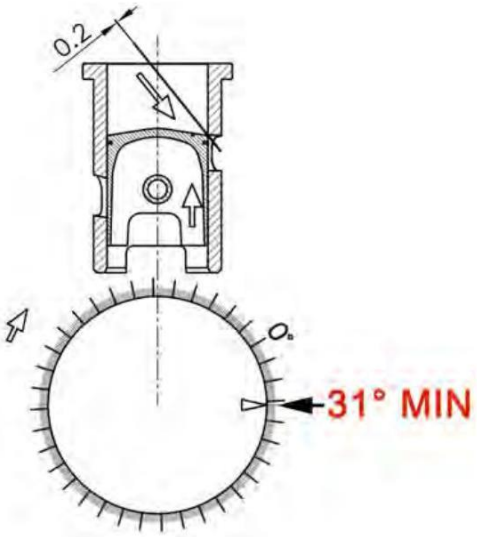
TURN COUNTERCLOCKWISE AND LOWER THE PISTON UNTIL IT MEETS THE GAUGE RESTING AT THE EXHAUST EDGE , AT THIS STAGE SET THE SCALE ON THE POSITION OF 0 DEGREES



3

LIBERARE LO SPESSIMETRO QUINDI RUOTANDO IN SENSO ANTIORARIO ABBASSARE IL PISTONE PER PERMETTERE L'INSERIMENTO DELLO SPESSIMETRO SOTTO LO SPIGOLO SUPERIORE DELLO SCARICO

RELEASE THE FEELER GAUGE AND TURNING COUNTERCLOCKWISE LOWER THE PISTON TO ALLOW THE INSERTION OF THE FEELER UNDER THE UPPER EDGE OF THE EXHAUST

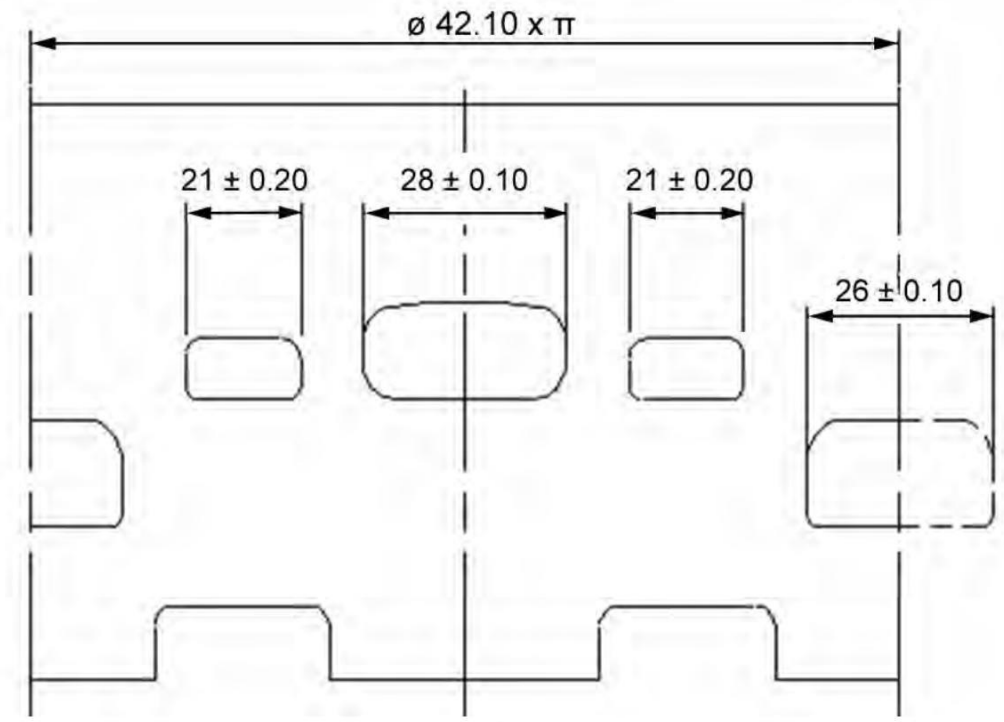


4

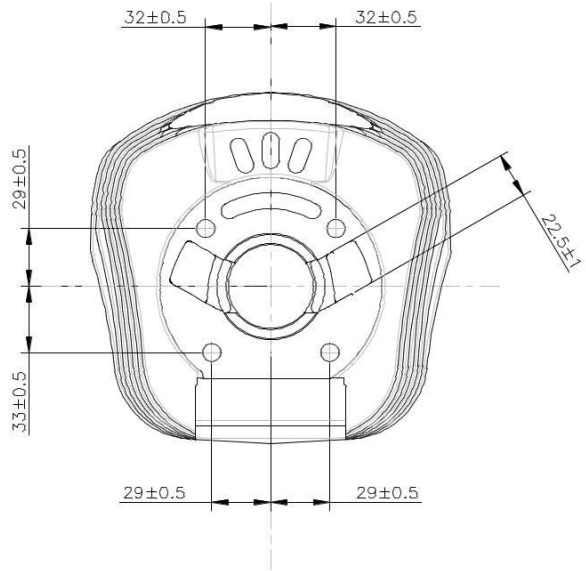
RUOTANDO IN SENSO CONTRARIO ALZARE IL PISTONE FINO AD INCONTRARE LO SPESSIMETRO APPOGGIATO ALLO SPIGOLO DELLO SCARICO E CONTROLLARE CHE L'ANGOLO DI SPOSTAMENTO NON SIA INFERIORE A 31°

TURN CLOCKWISETO LIFT THE PISTON UNTIL IT MEETS THE FEELER GAUGE RESTING AT THE EXHAUST EDGE. AT THIS STAGE CHECK THAT THE EDGE OF DISPLACEMENTS OF THE VERNIER MATCH NOT LESS THAN 31 DEGREES

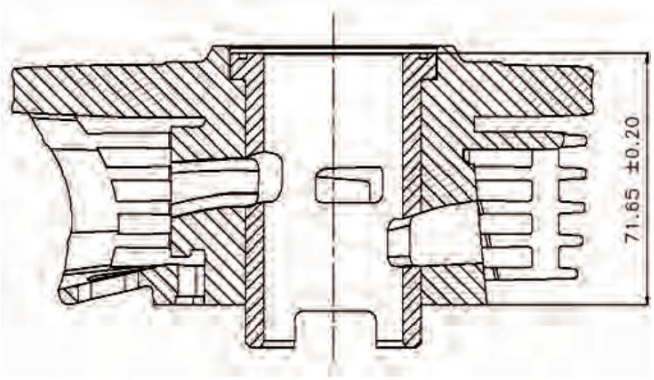
CYLINDER DEVELOPEMENT



DRAWING OF CYLINDER BASE

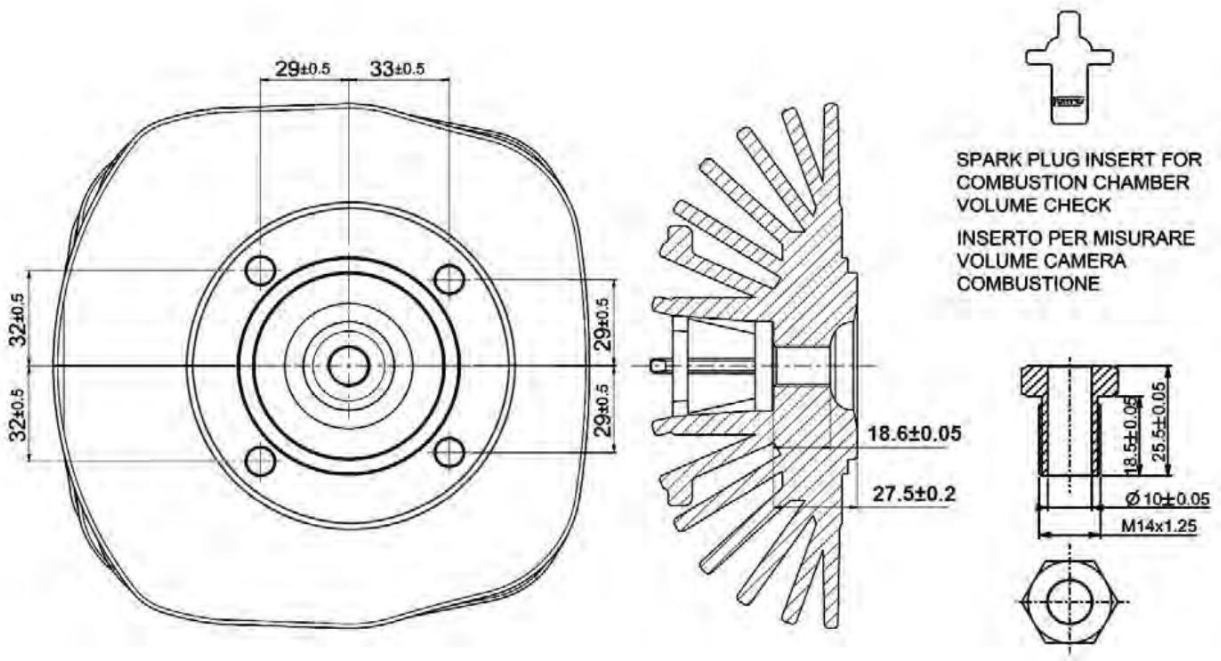


CYLINDER SECTION



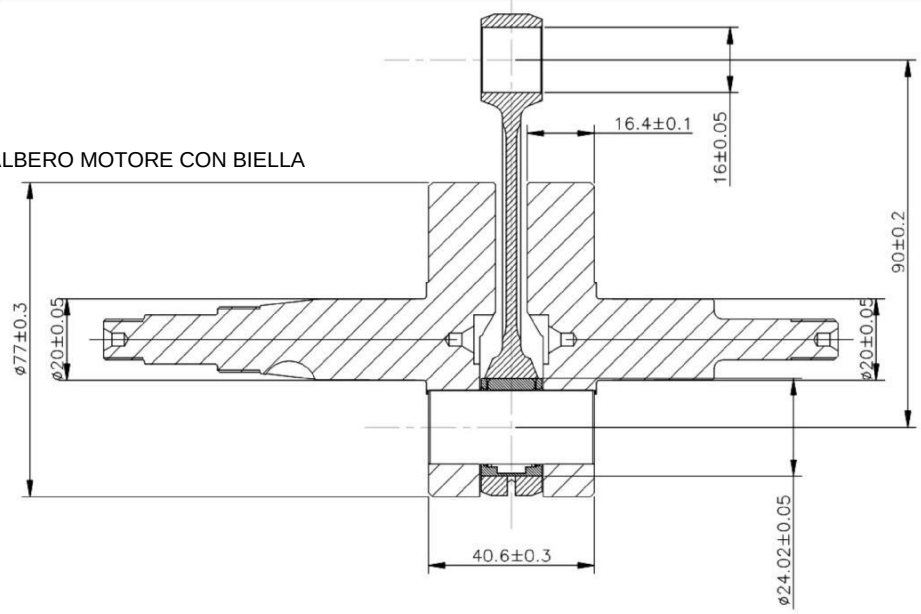
CYLINDER HEAD

DRAWING OF CYLINDER HEAD AND COMBUSTION CHAMBER



CRANKSHAFT

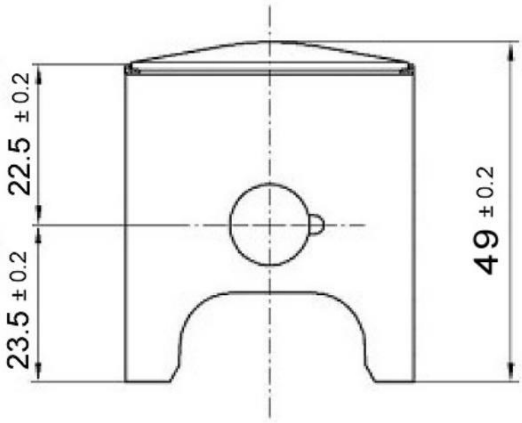
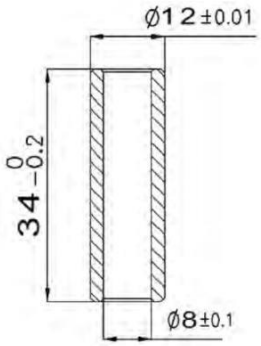
PESO ALBERO MOTORE CON BIELLA



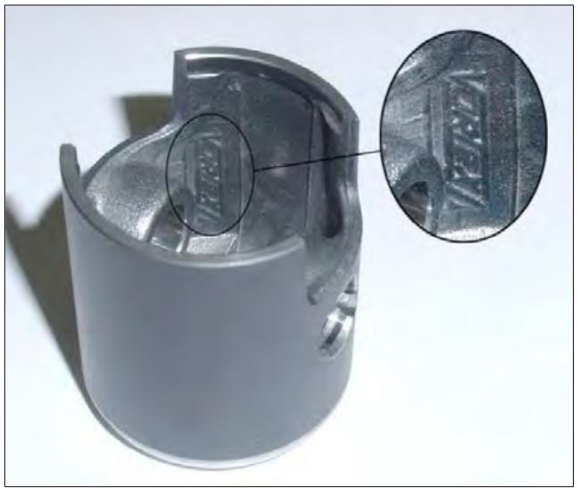
CRANKSHAFT WEIGHT WITH CONROD

1311 gr.± 10gr

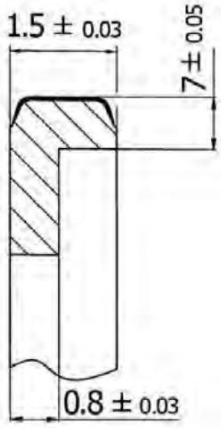
MINI ROK TECHNICAL SPECIFICATION

PISTON	PISTON PIN
 PESO DEL PISTONE WEIGHT OF PISTON **63 gr** +/- 5 gr	 PESO SPINOTTO PISTON PIN WEIGHT **15 gr Min**

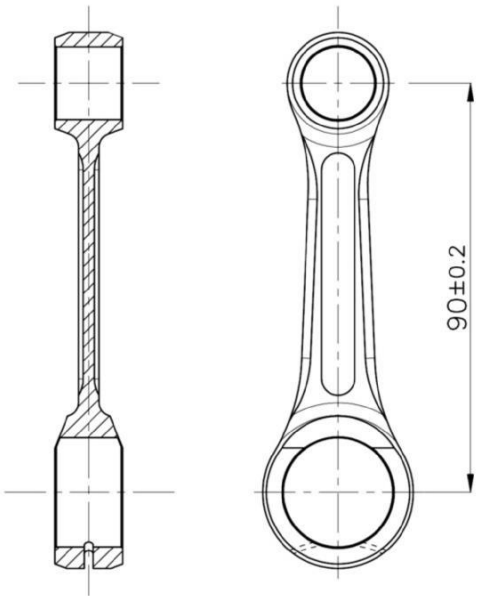
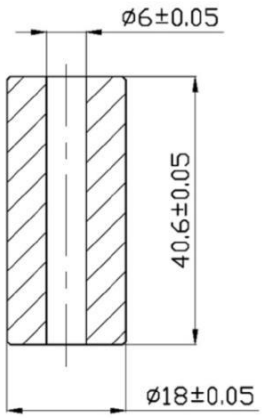
Mandatory to have the brand VORTEX cast piston as shown in the picture



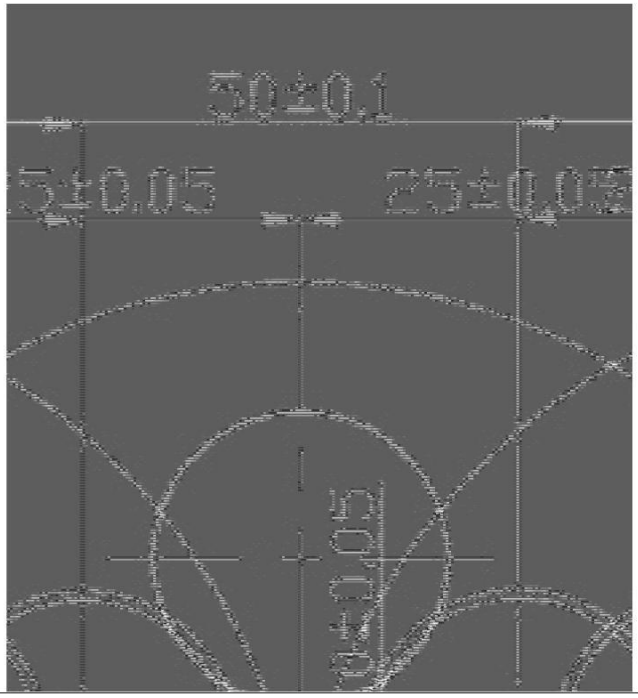
Dettaglio segmento pistone
Piston Ring detail



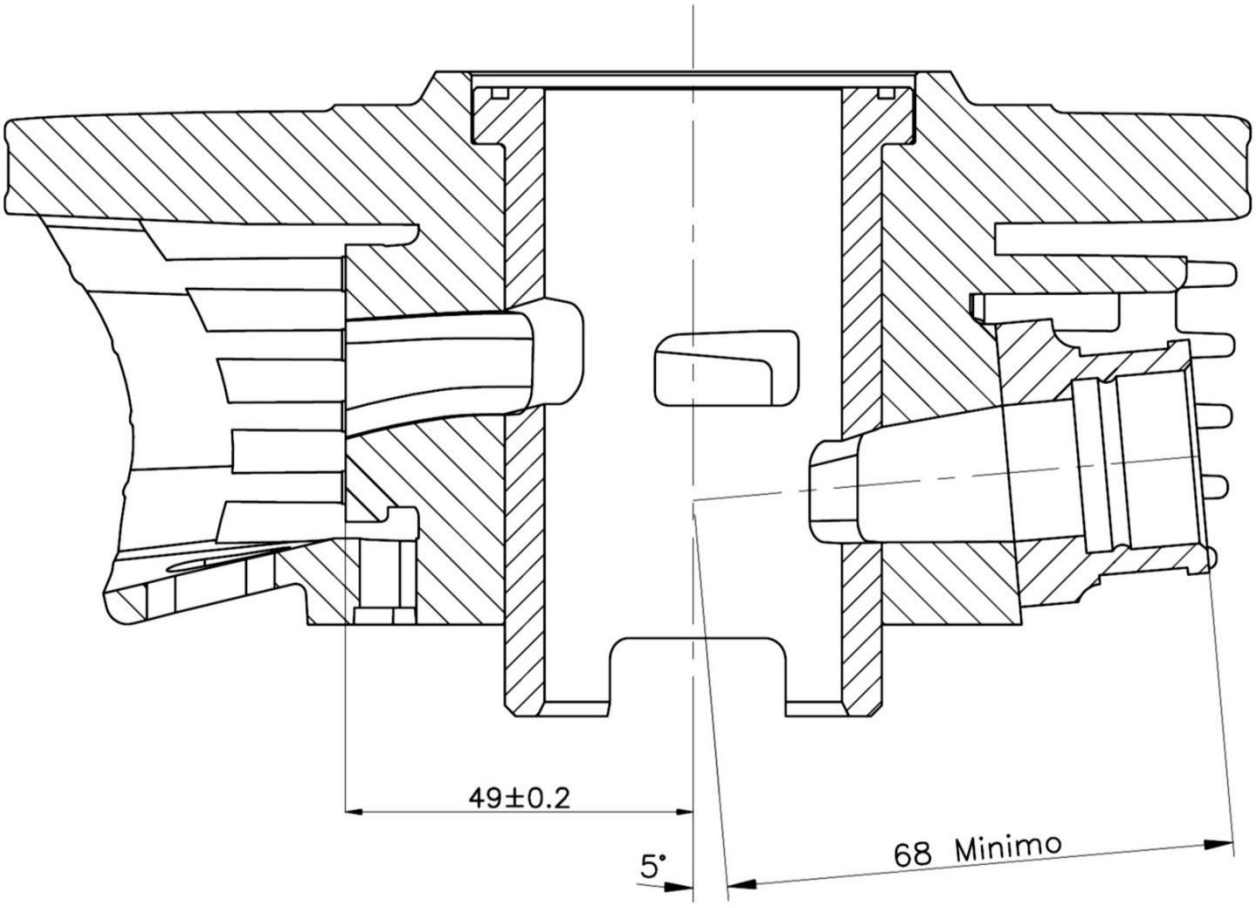
MINI ROK TECHNICAL SPECIFICATION

CONROD	CRANKSHFT PIN
	
PESO DELLA BIELLA WEIGHT OF CONROD **94gr**. +/- 10gr	PESO DELL'ASSE DI ACCOPPIAMENTO WEIGHT OF CRANKSHAFT CRANKPIN **71gr**. +/- 1gr
FOTO DELLA BIELLA Lato DX **PICTURE OF COROD Right Side**	**FOTO DELLA BIELLA Lato SX** **PICTURE OF CONROD Left Side**
	

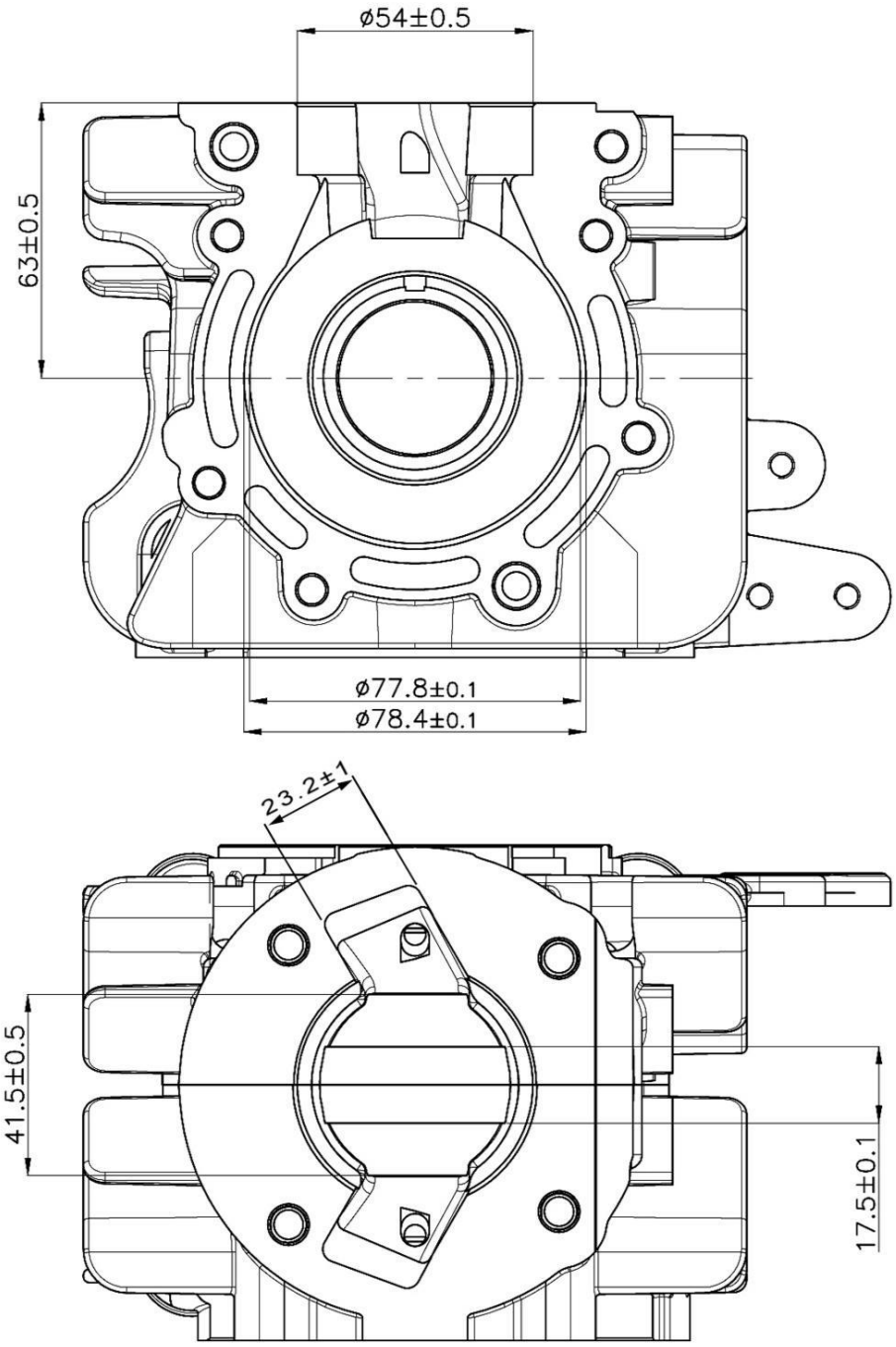
PICTURE OF CRANKSHAFT WITH THE BALANCER



MINIMUM DISTANCE OF THE CARBURETTOR SUPPORTING PLATE FROM THE CYLINDER AXLE



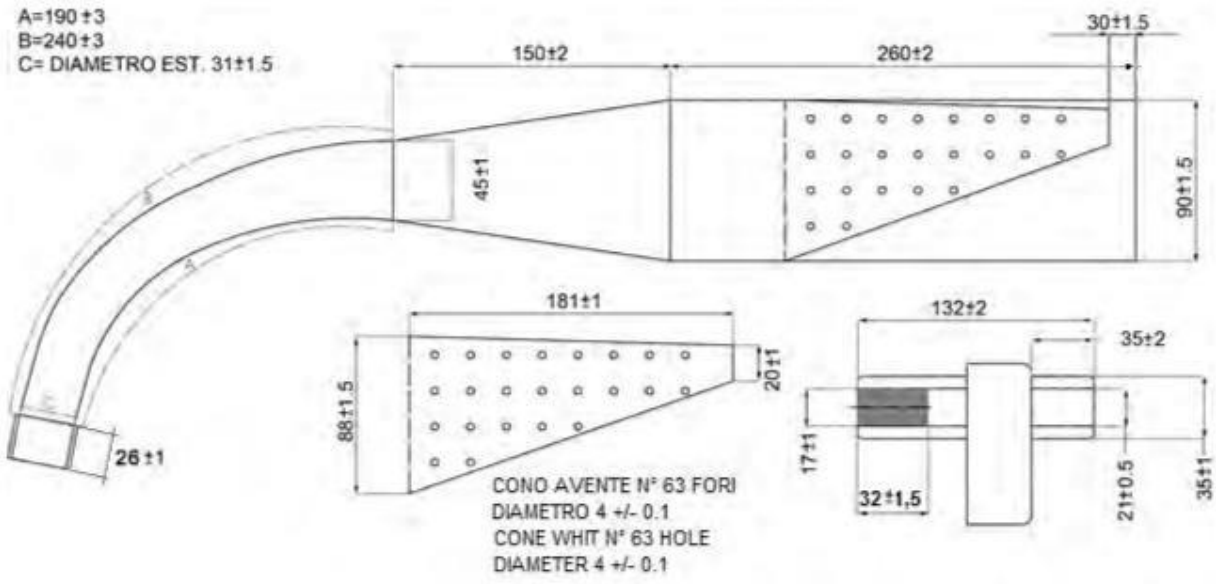
VISTA INTERNA DEL CARTER
INTERIOR VIEW OF THE CRANKCASE



MINI ROK TECHNICAL SPECIFICATION

MARMITTA
EXHAUST MUFFLER

MISURA COLLETTORE COMPRESA SALDATURA
DIMENSION OF COLLECTOR INCLUDING WELDING



Peso Marmitta **1.372 g. +/- 5%**
Exhaust Weight

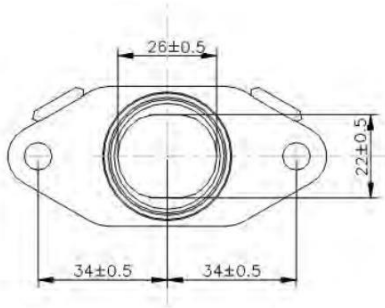
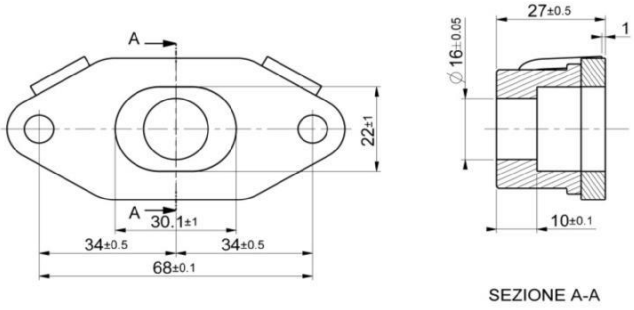
ROOKIE EXHAUST MANIFOLD	**NOVICE EXHAUST MANIFOLD**
	
GUARNIZIONE SCARICO 1,5 +/- 0,5 EXHAUST GASKET 1,5 +/- 0,5	GUARNIZIONE SCARICO 1,5 +/- 0,5 EXHAUST GASKET 1,5 +/- 0,5

FOTO ACCENSIONE SELETTRA
PICTURES OF SELETTRA IGNITION

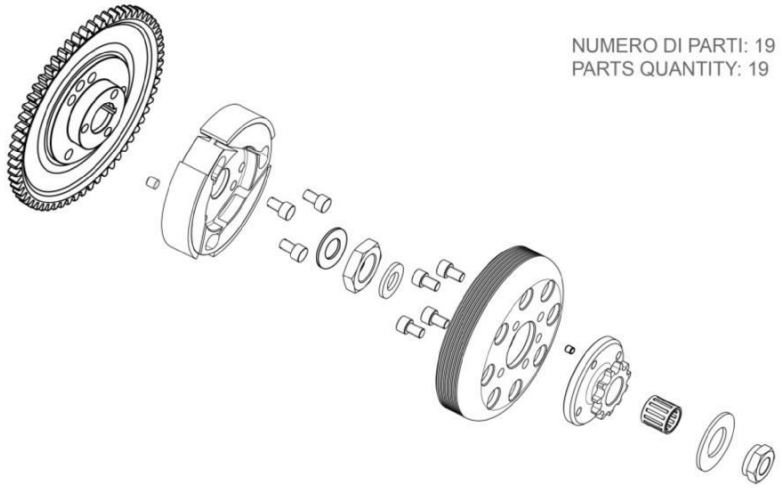
Cod. PVL 401 222

IMPORTANTE – IMPORTANT

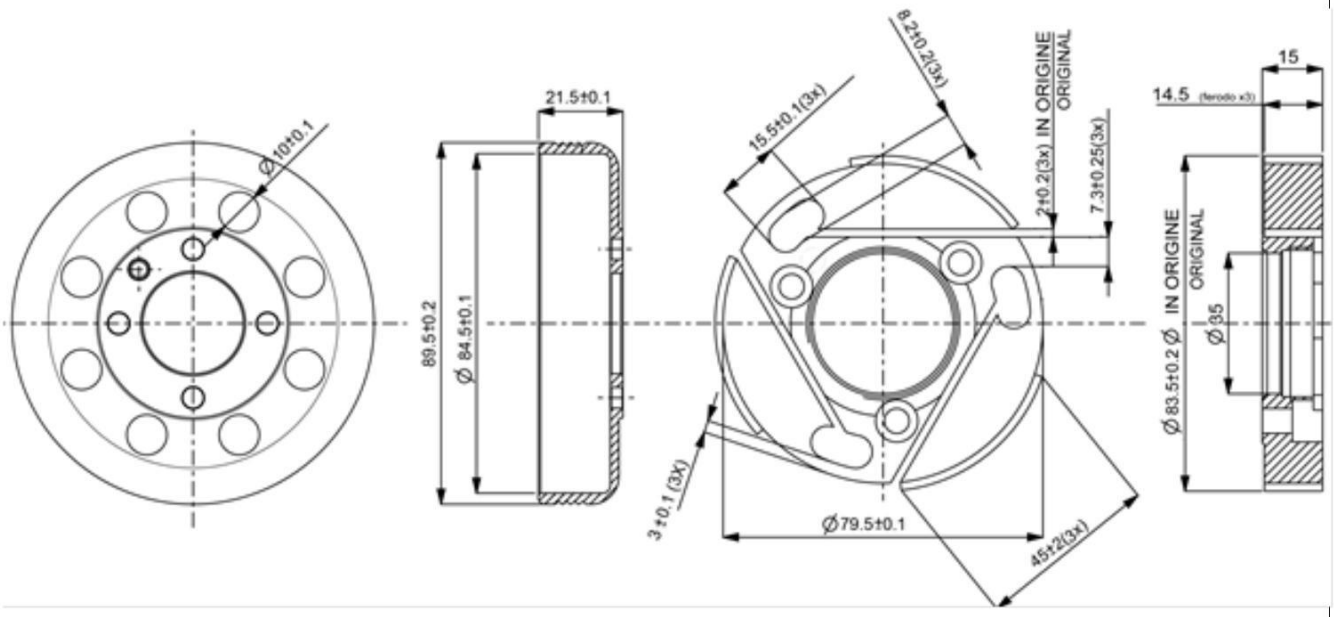
LA BATTERIA UTILIZZATA PER L'AVVIAMENTO DEL MOTORE DEVE ESSERE FISSATA SALDAMENTE SUL TELAIO.

FOR SECURITY REASONS, THE BATTERY SHOULD BE SECURELY MOUNTED TO THE CHASSIS FRAME WITH THE SPECIFIC BATTERY HOLDER.

ROTORE FRIZIONE COMPLETO CON INGRANAGGIO AVVIAMENTO
COMPLETE CLUTCH ROTOR WITH STARTING GEAR

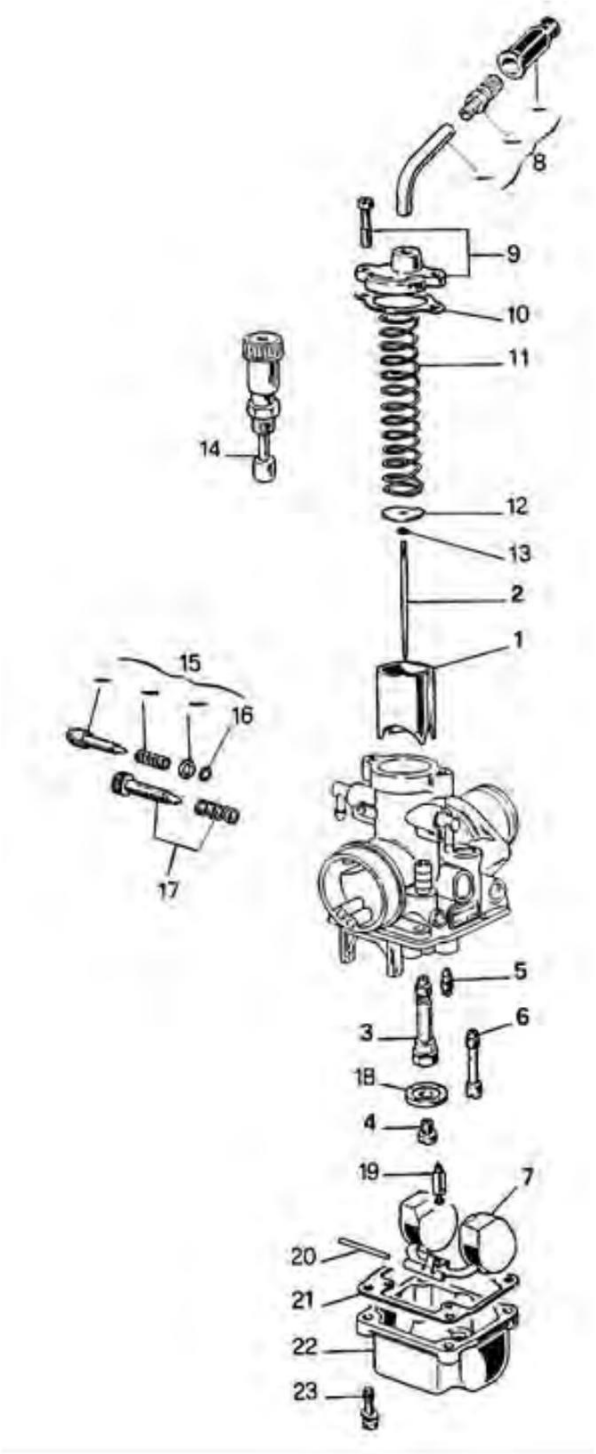


CAMPANA E ROTORE
HOUSING AND ROTOR



PESO DEL ROTORE FRIZIONE COMPLETO CON INGRANAGGIO AVVIAMENTO WEIGHT OF COMPL. CLUTCH ROTOR WITH STARTING GEAR:	815g +/- 15g
REGIME DI ATTACCO (MASSIMO) VERIFICABILE IN OGNI MOMENTO DELLA MANIFESTAZIONE ENGAGEMENT SPEED (MAXIMUM) CAN BE VERIFIED IN EVERY MOMENT OF THE EVENT	4000RPM
PESO DEL ROTORE FRIZIONE WEIGHT OF CLUTCH ROTOR	345 gr +/- 15gr
PESO DELLA CAMPANA WEIGHT OF CLUTCH HOUSING	178 +/-10gr
PESO TOTALE DEL GRUPPO ROTORE E CAMPANA FRIZIONE TOTAL WEIGHT OF CLUTCH ROTOR AND HOUSING	523 gr +/- 25gr

CARBURATORE DELL'ORTO PHBG 18 BS E COMPONENTI
CARBURETTOR DELL'ORTO PHBG 18 BS AND COMPONENTS



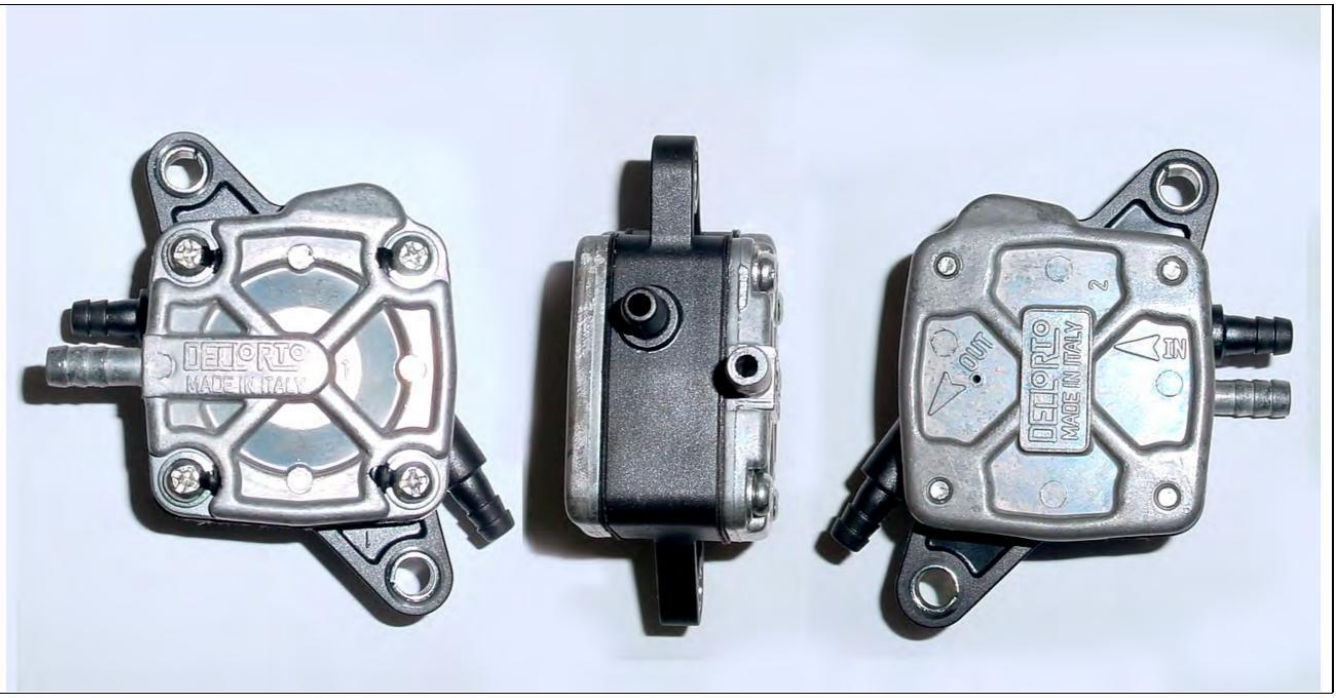
COMPONENTI

1--- VALVOLA GAS 40X64
2--- SPILLO CONICO W 23
3--- POLVERIZZATORE AN 266
4--- GETTO MASSIMO
5--- GETTO MINIMO 50
6--- GETTO AVVIAMENTO 60
7--- GALLEGGIANTE gr.4
8--- KIT TUBETTO 90°
9--- KIT COPERCHIO CAMERA MISCELA
10--- GUARNIZIONE COPERCHIO CAMERA MISCELA
11--- MOLLA RICHIAMO VALVOLA GAS
12--- PIASTRINA RITEGNO FERMAGLIO SPILLO CONICO
13--- FERMAGLIO SPILLO CONICO
14--- DISPOSITIVO AVVIAMENTO
15--- KIT VITE REGOLAZIONE MISCELA MINIMO
16--- GUARNIZIONE VITE REGOLAZIONE MISCELA MINIMO
17--- KIT VITE REGOLAZIONE VALVOLA GAS
18--- FONDELLO
19--- SPILLO CHIUSURA BENZINA
20--- PERNO GALLEGGIANTE
21--- GUARNIZIONE VASCHETTA
22--- VASCHETTA
23--- VITE FISSAGGIO VASCHETTA

COMPONENTS

1--- GAS VALVE 40X64
2--- CONICAL NEEDLE W23
3--- SPRAY NOZZLE AN266
4--- JET MAX.
5--- JET MIN. 50
6--- STARTING JET 60
7--- FLOAT 4 gr.
8--- TUBE 90° KIT
9--- CHAMBER MIXTURE COVER KIT
10--- CHAMBER MIXTURE COVER GASKET
11--- GAS VALVE SPRING
12--- CONICAL NEEDLE FASTENER FIX PLATE
13--- CONICAL NEEDLE FASTENER
14--- STARTING DEVICE
15--- ADJUSTMENT MINIMUM SCREW KIT
16--- ADJUSTMENT MINIMUM SCREW GASKET
17--- ADJUSTMENT GAS VALVE SCREW KIT
18--- BOTTOM
19--- GAS NEEDLE CLOSING
20--- FLOAT PEG
21--- FLOAT CHAMBER GASKET
22--- FLOAT CHAMBER
23--- FLOAT CHAMBER FIXING SCREW

POMPA BENZINA DELL'ORTO
DELL'ORTO FUEL PUMP



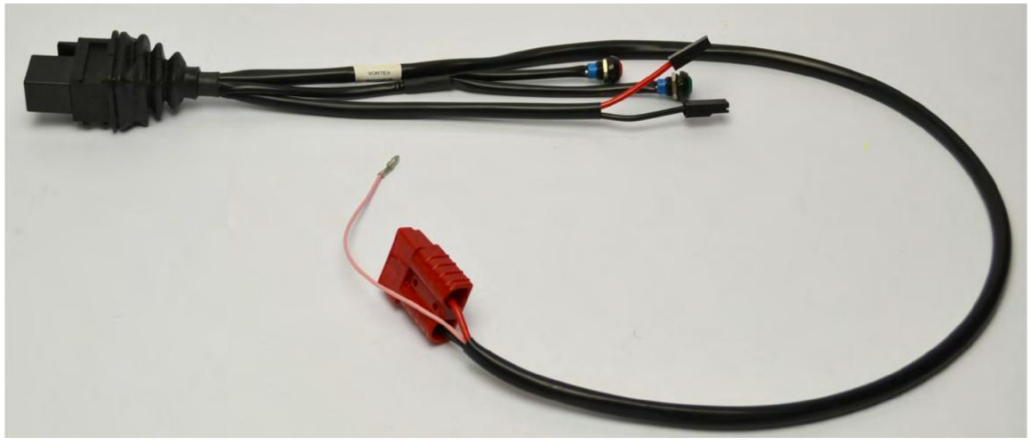
a. Any mechanical, manual or electronic system as well as any other kind of device is forbidden. Concerning the fuel supply, the only system admitted includes atmospheric pressure. It means that it is allowed to employ 1 (one) pneumatic "fuel pump", located between tank and carburettor: the "pump" must always be **ORIGINAL**.

b. It is forbidden to employ any other kind of spigot, calibrated junction or similar devices between the supply and the return/collection, on the fuel pipes.

c. It is admitted to employ pipes only. A plastic "Y" can be installed in the fuel line between the fuel pump and fuel inlet to the carburettor to facilitate the installation of a return line to the fuel tank. The "Y" must have the same inside diameters for all 3 connections.

d. Between tank and fuel pump it is allowed to mount **only 1 (one)** fuel filter.

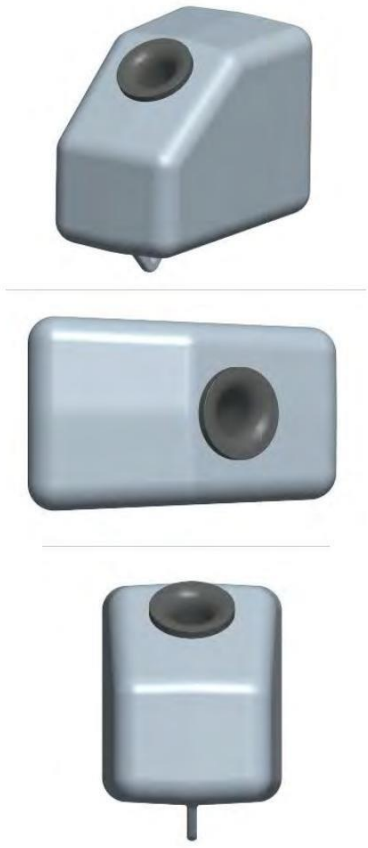
CABLAGGIO AVVIAMENTO
STARTER WIRING



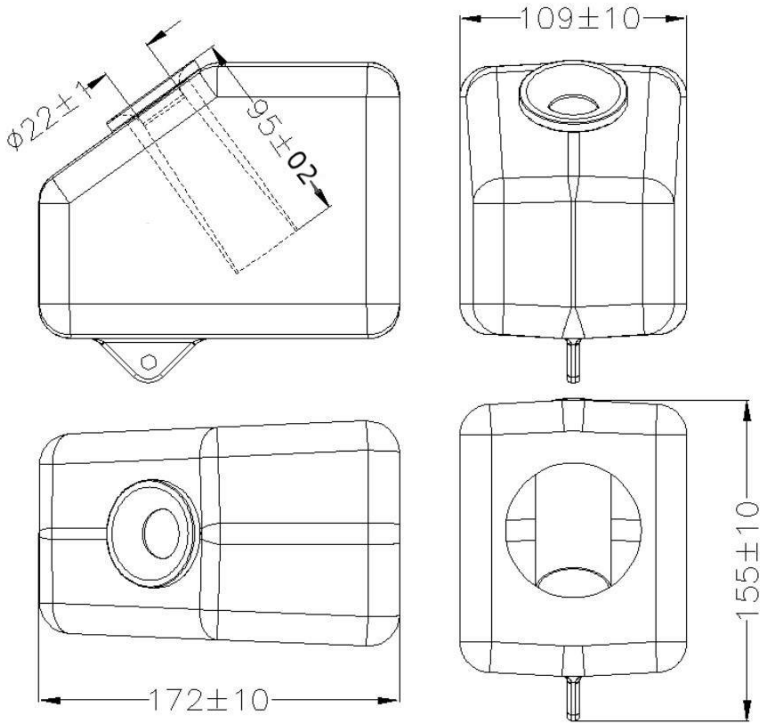
E' obbligatorio che il motore si accenda e si spenga con il sistema di avviamento on board.
I commissari tecnici potranno verificare il sistema di accensione e spegnimento in qualsiasi momento.

Engines shall be mandatory switched on and off by means of on-board starting system.
Technical officials / stewards may check the on-off on-board system anytime.

FILTRO D'ASPIRAZIONE
INLET SILENCER

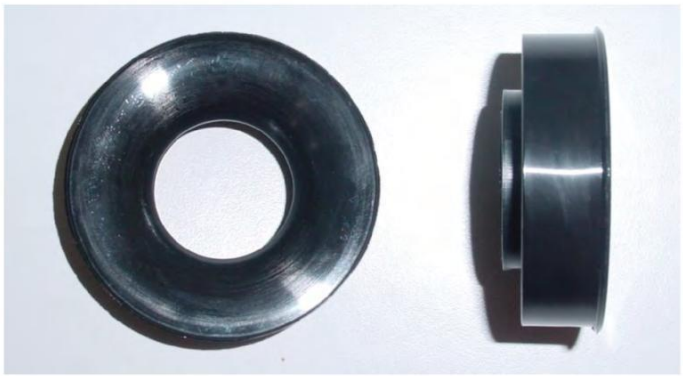


MARCHIATO "VORTEX"
"VORTEX "MARKED



RACCORDO FISSAGGIO FILTRO-CARBURATORE
CONNECTOR FIXING FILTER-CARBURETOR

IN MATERIALE PLASTICO - IN PLASTIC MATERIAL



Carburettor Chamber Mixture Cover - Update January 2020

Either screw or twist style may be distributed and in use