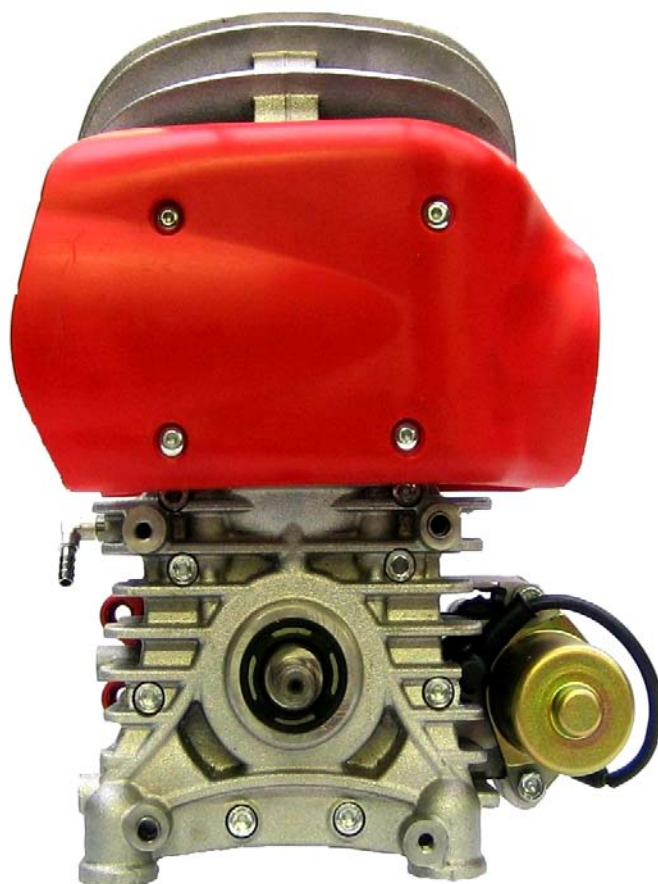


X60AC - 60cc Air Cooled Engine

Manufacturer	X125
Make	X125
Model	X60
Pages 25	

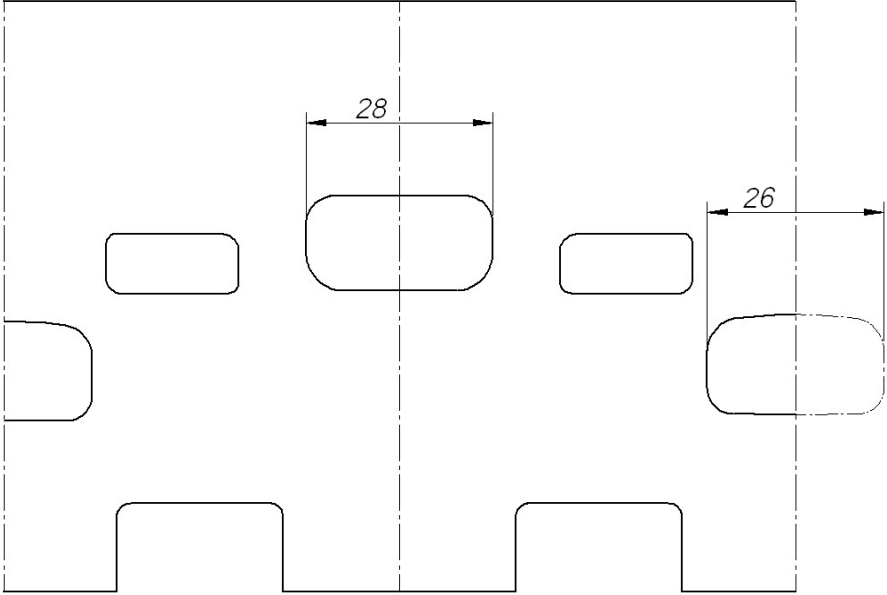
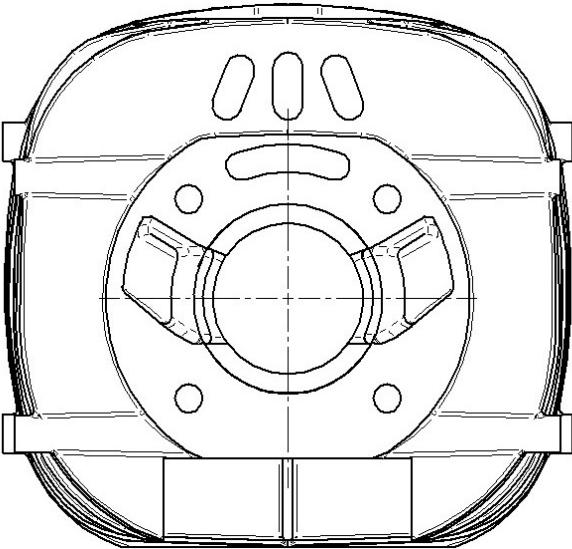
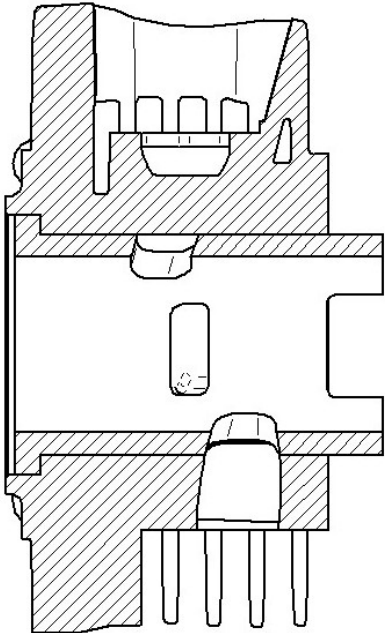


TECHNICAL INFORMATION

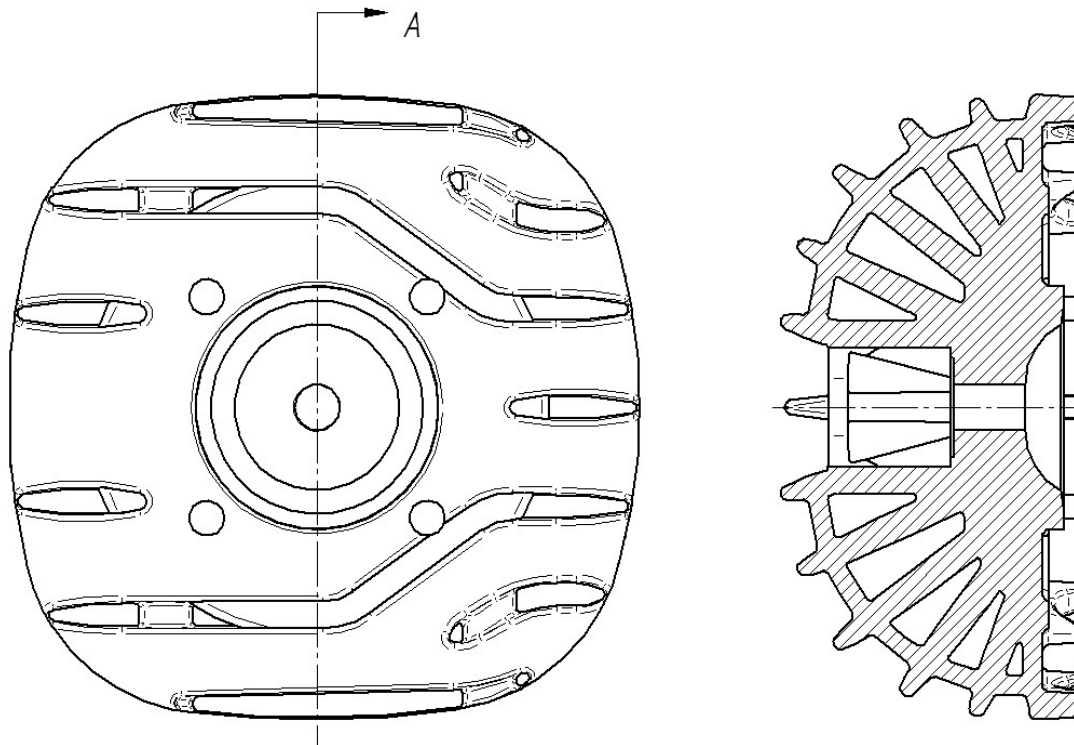
A	CHARACTERISTICS	
		Tolerances
Maximum Displacement	60cc	
Maximum Bore	42,1mm	
Stroke	43mm	+/- 0,10 mm.
Admission System	Piston Port	
Cooling System	Air	
Option Carburetor - Tillotson HW-31A	Specifications to be provided in document	
Option Carburetor - Dellorto PHBG 18 BS, BS E and BS ET	18mm., Tray-type, non-electronic type, maximum system with mechanical adjustment of the mixture by means of a conical pin, system of the idle with jet and mixture or air adjustment screw, with valid national homologation.	
Number of Exhaust Ports/Ducts	2	
Shape of Exhaust Port	With 4 Corners	
Width of Exhaust Port	28,00 mm.	+/- 0,10 mm.
Width of Intake Port	26,00 mm.	+/- 0,10 mm.
Total Height of Piston	49mm	+/- 0,25 mm
Piston Weight	65g. (minimum 57g.)	(+/- 10% of total weight)
Weight of Crankshaft including connecting rod, excluding piston	1315g.	(+/- 3% of total weight)
Shape of the Combustion Chamber	Spherical - Can be verified with template provided by manufacturer	
Pinion	Z11	
Volume of Combustion Chamber	6,8cc min. - Can be verified with insert (as per procedure)	
Clutch: Unique design, the same for all starter crowns also in non-magnetic material with the exception of escotic and noble materials.	Weight of Complete Clutch: 800g. min. Weight of Clutch Hub: 345 +/- 15g. Internal Diameter of Clutch Drum: 85mm max <i>Clutch Dimensions</i> are unique and dimensions are the same for all on page 10	

B	OPENING ANGLES (Measured with a thickness gauge of 0.20mm having a width of 10mm)	
		Tolerances
Of Admission	142°	+/- 2°
Of Drain	154°	+/- 2°

C	MATERIAL The partsof the engine in aluminum alloy must be made exclusively by casting or die-casting. It is advisable to make the engine parts from solid
Cylinder	In aluminum alloy with internal cast iron barrel with the exception of chrome plating, nikasil and treatments with exotic materials.

DRAWING OF CYLINDER DEVELOPMENT	
 The drawing shows a net layout for a cylinder. It consists of a central rectangular section with rounded ends, flanked by two smaller rectangular sections. A dimension line indicates a width of 28 for the central section, and another dimension line indicates a width of 26 for the flanking sections. The entire net is enclosed within a dashed rectangular border.	
DRAWING OF CYLINDER BASE	CYLINDER SECTION VIEW
 The drawing shows a top-down view of the cylinder base. It features a central circular area with a cross-shaped internal structure. Surrounding this central area are several cooling fins and mounting points. The base is shown with a flange and a central shaft.	 The drawing shows a cross-section of the cylinder. It illustrates the internal components, including the piston and connecting rod, and the cooling fins. The section view shows the internal structure of the cylinder and the base, with hatching used to indicate different materials or sections.

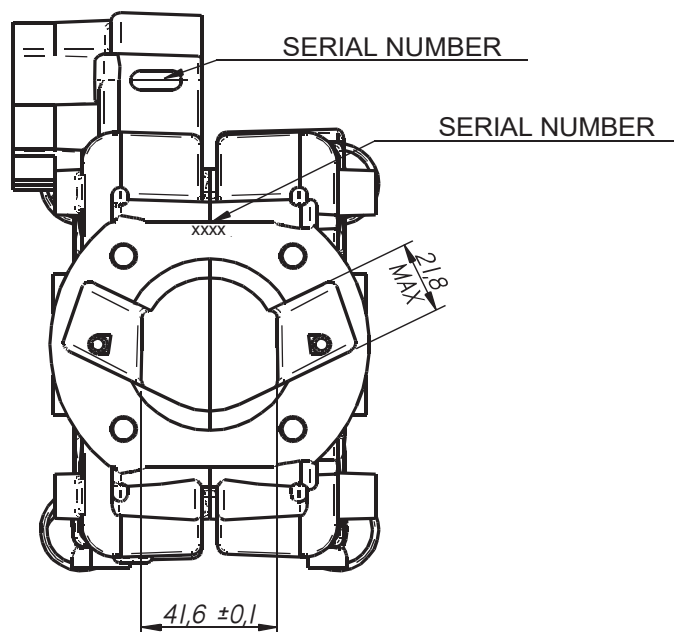
DRAWING OF OF CYLINDER HEAD AND COMBUSTION CHAMBER



SEZIONE A-A

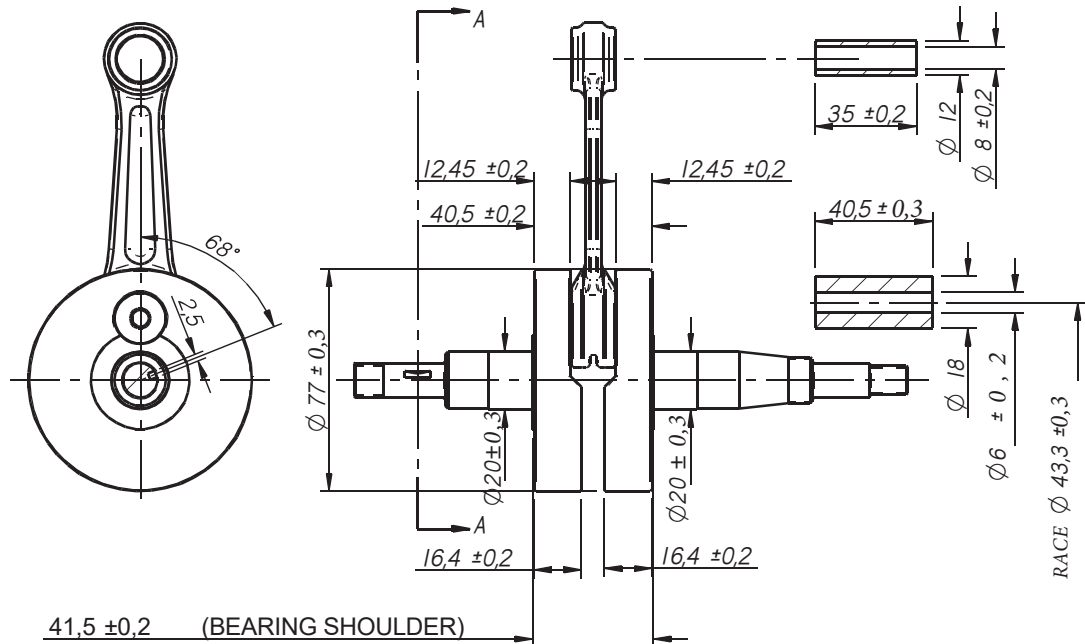
SQUISH MIN.= 0.635 mm
(measured with 1.6 mm solder)

CYLINDER BASE



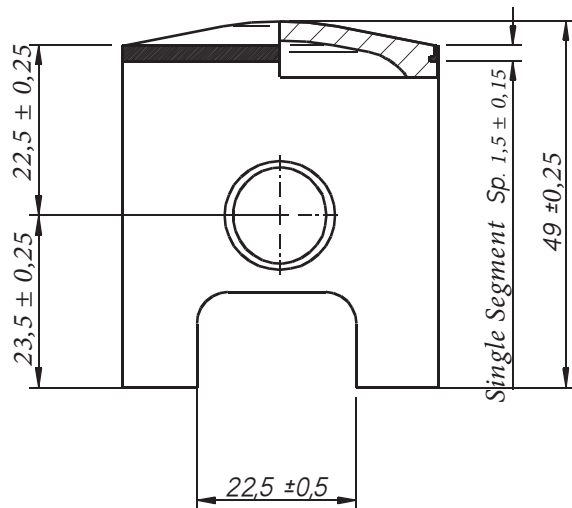
IT IS FORBIDDEN TO PLACE SPACERS OR GASKETS BETWEEN THE TWO CRANKCASE HALVES

CRANKSHAFT



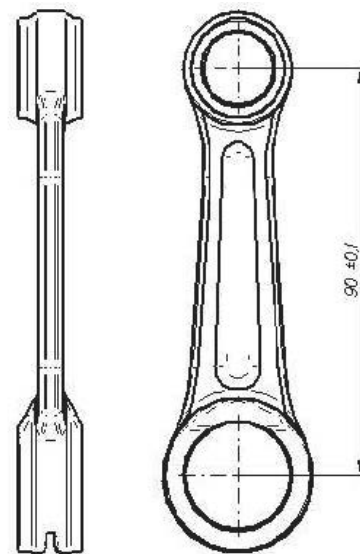
MATERIAL = STEEL
 COMPLETE WEIGHT = 1330 g +/- 30g.
 PIN WEIGHT = 15 g MIN.

PISTON



PISTON MATERIAL = ALUMINUM
 SEGMENT MATERIAL = CAST IRON
 WEIGHT = 57 gr. MIN

ROD



SMALL END CAGE = 18X24X15
 ROD HEAD CAGE = 12X16X17,5
 MATERIAL = STEEL - WEIGHT 89 gr.+/-10g

PHOTO OF THE CRANKSHAFT HIGHLIGHTING MASSES FOR BALANCING



CONNECTING ROD Right side

CONNECTING ROD Left side



PHOTO OF THE REAR SIDE OF THE ENGINE

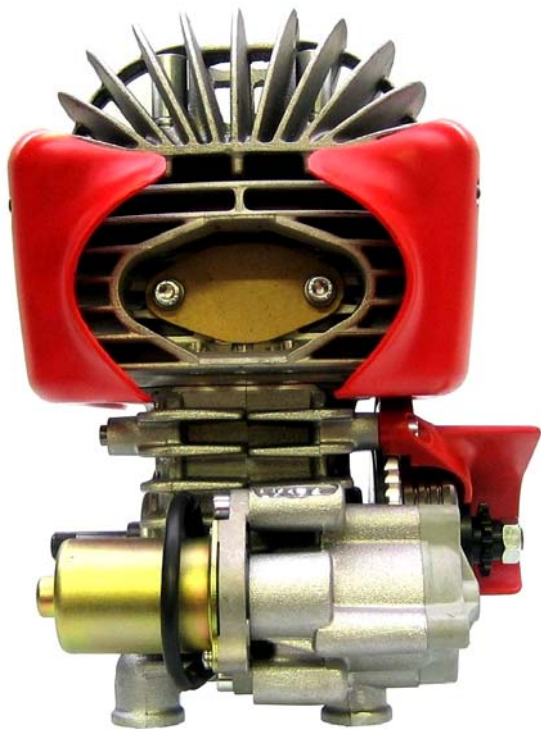
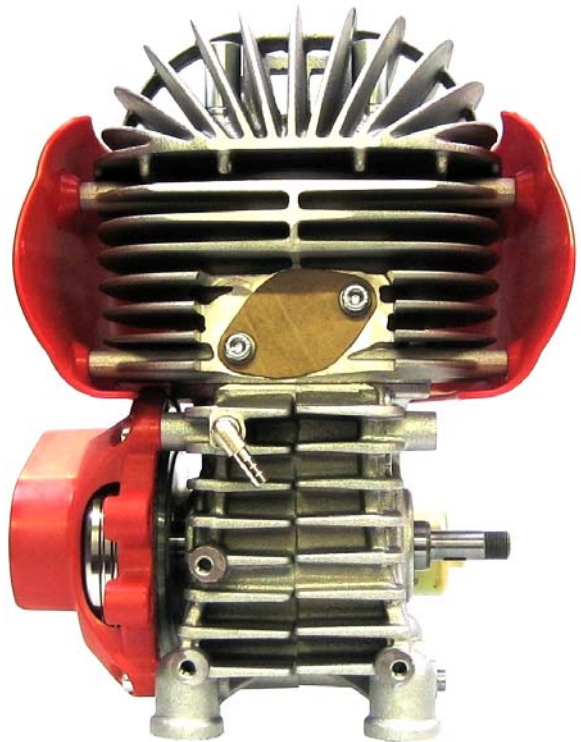


PHOTO OF THE FRONT SIDE OF THE ENGINE



PICTURE OF THE ENGINE TOP



PICTURE OF THE ENGINE BOTTOM

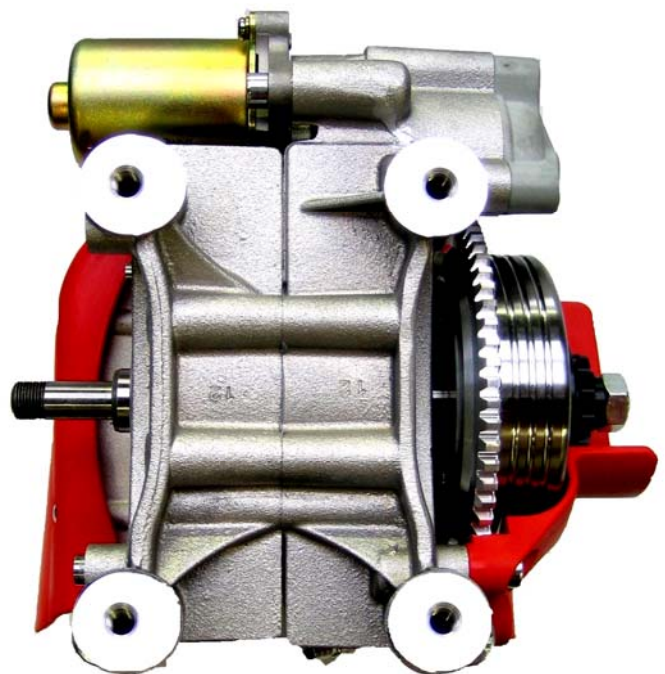
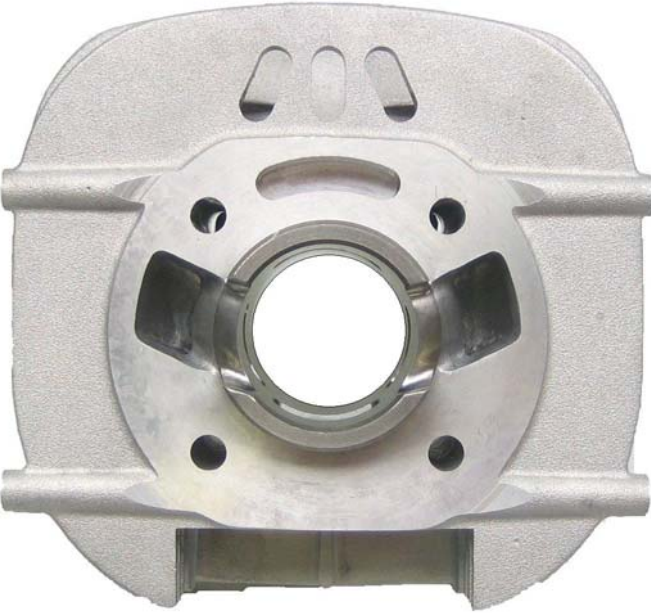
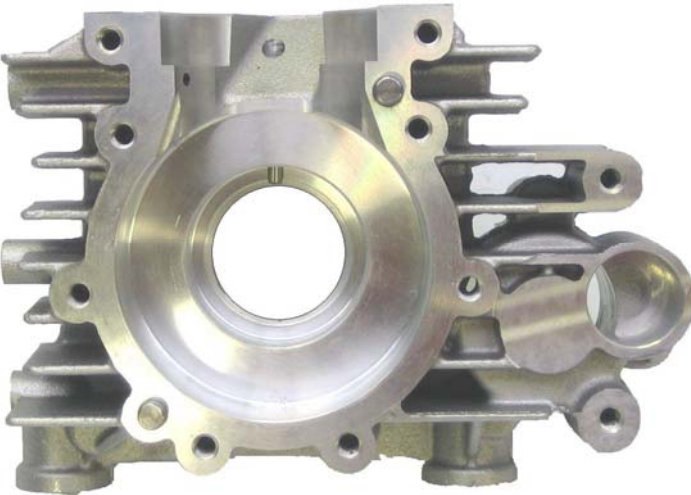
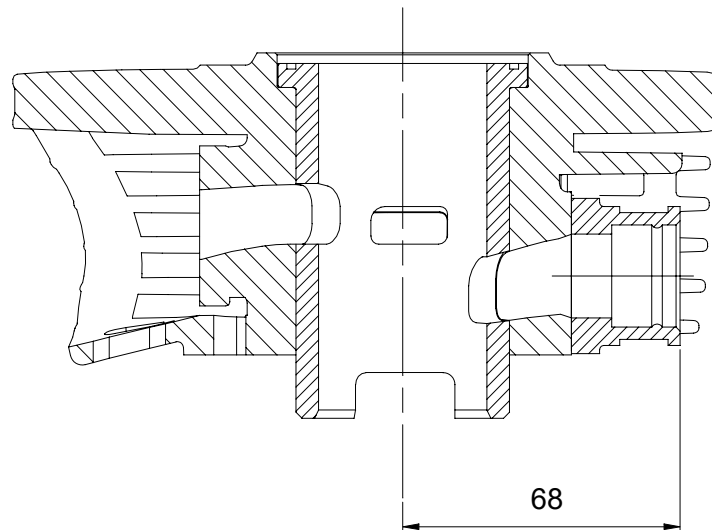
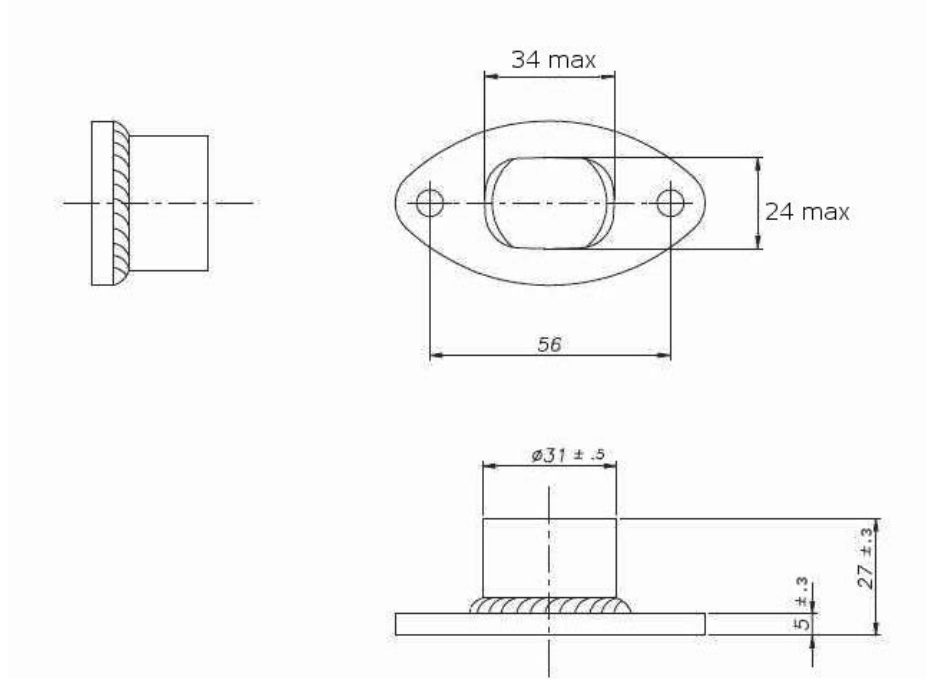


PHOTO OF THE CYLINDER BOTTOM	PHOTO OF THE COMBUSTION CHAMBER
	
PHOTO OF THE LH INTERNAL CASING	PHOTO OF THE RH INTERNAL CASING
	

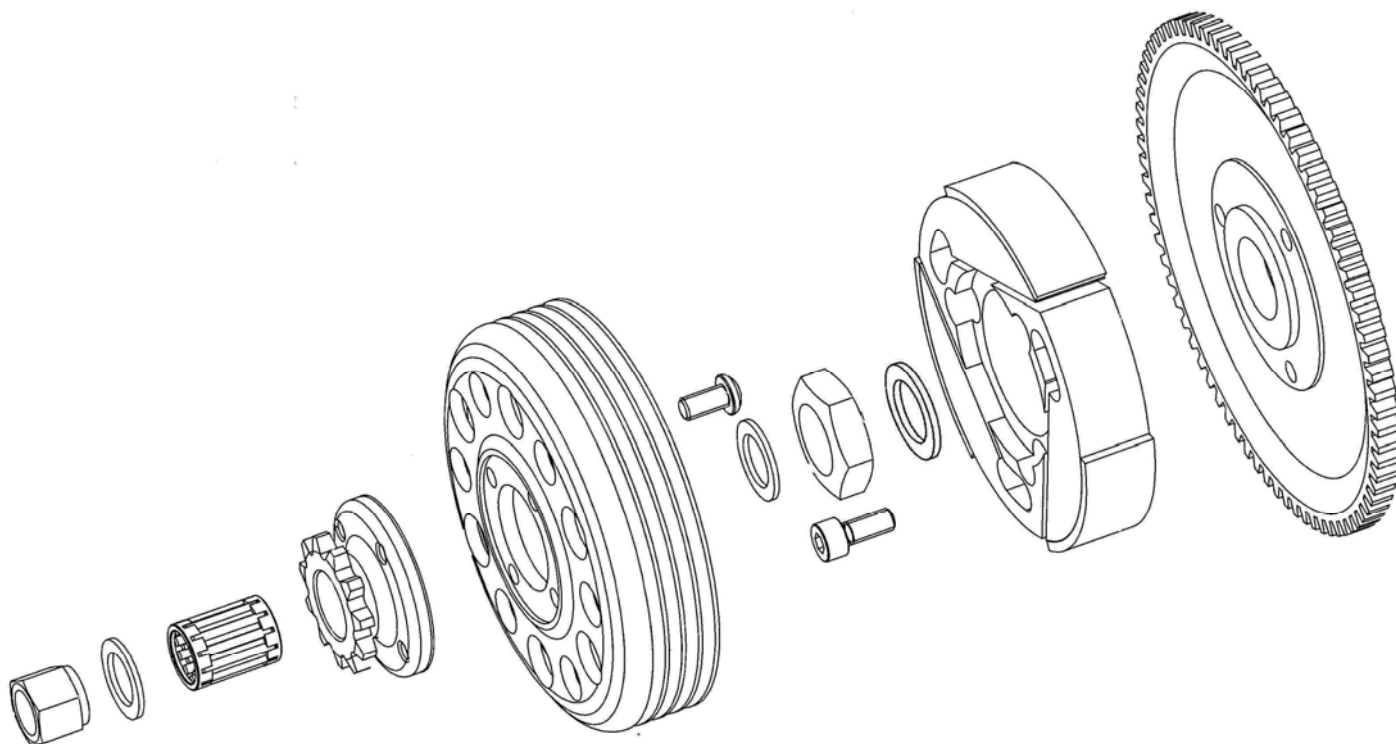
**MINIMUM DISTANCE OF THE CARBURETOR SUPPORT SURFACE FROM THE
AXIS OF THE CYLINDER**

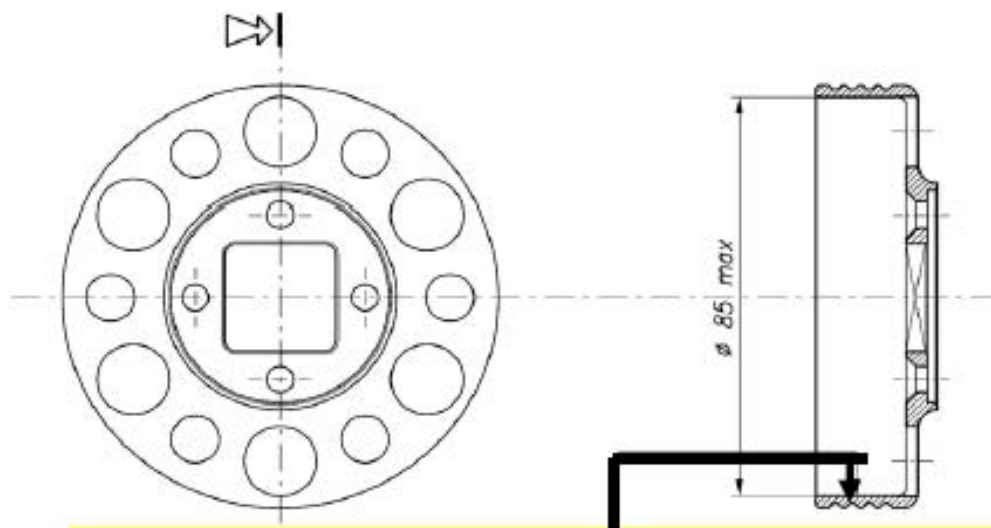
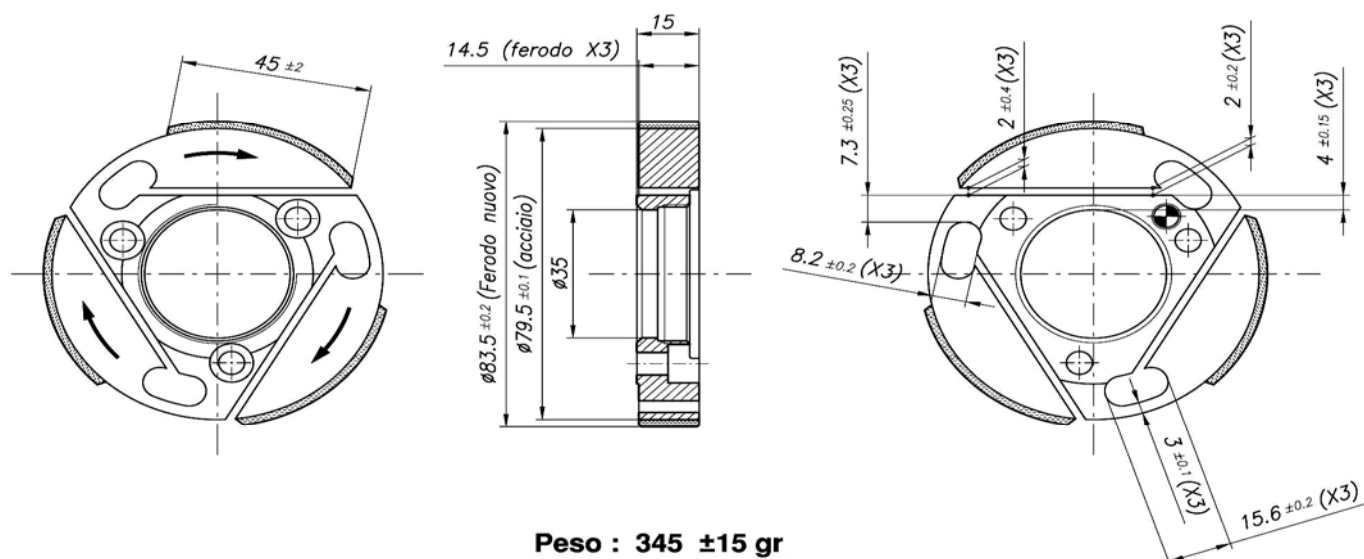


**Dessin du collecteur d'échappement (dimensions principales avec tolérances) /
Drawing of exhaust manifold (main dimensions with tolerances)**

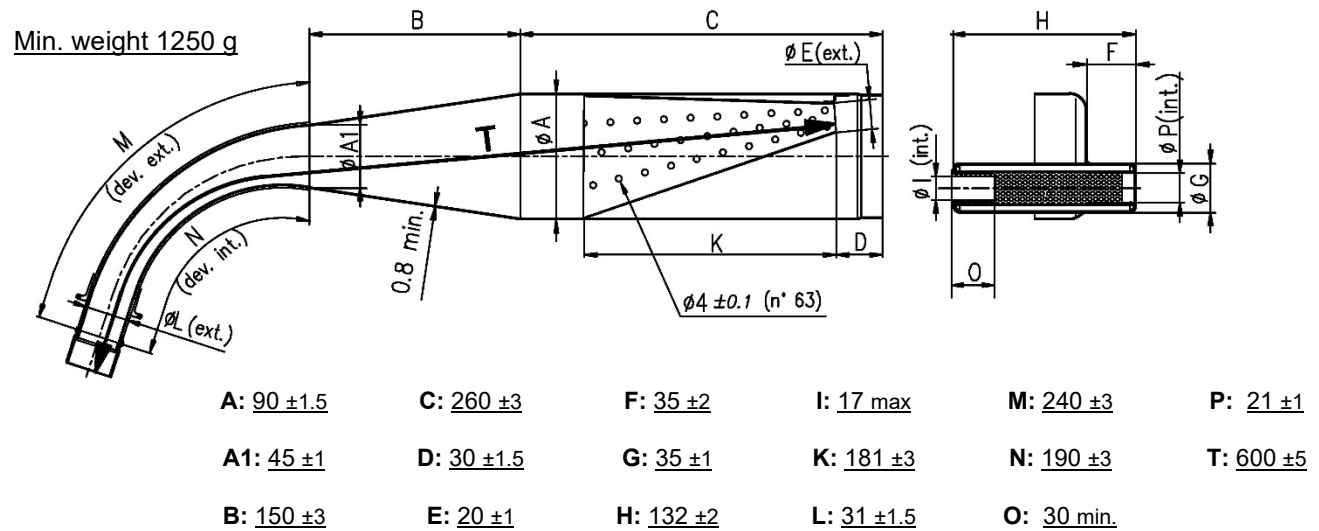


EXPLODED VIEW OF THE CLUTCH AND ITS COMPONENTS



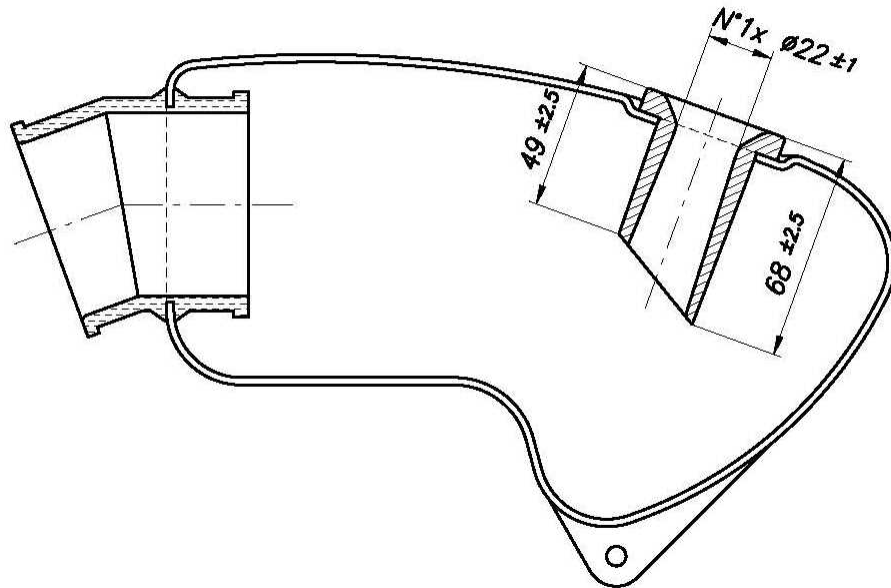


EXHAUST MUFFLER VIEW AND DIMENSIONS



INLET SILENCER

(CSAI OMOLOGATION N° 01/SA/14)



FICHE D'HOMOLOGATION / HOMOLOGATION FORM

005-SI-19



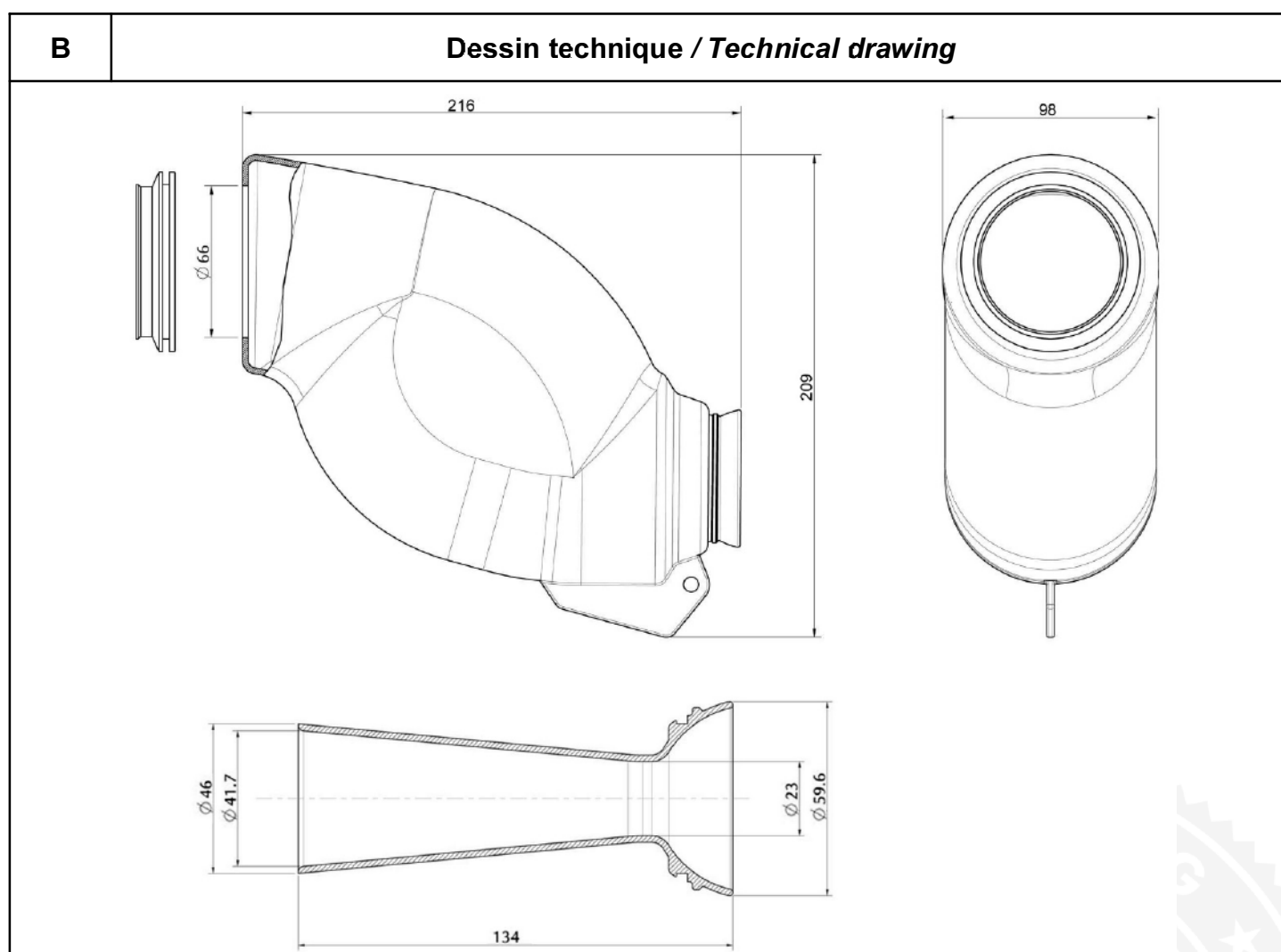
COMMISSION
INTERNATIONALE
DE KARTING - FIA



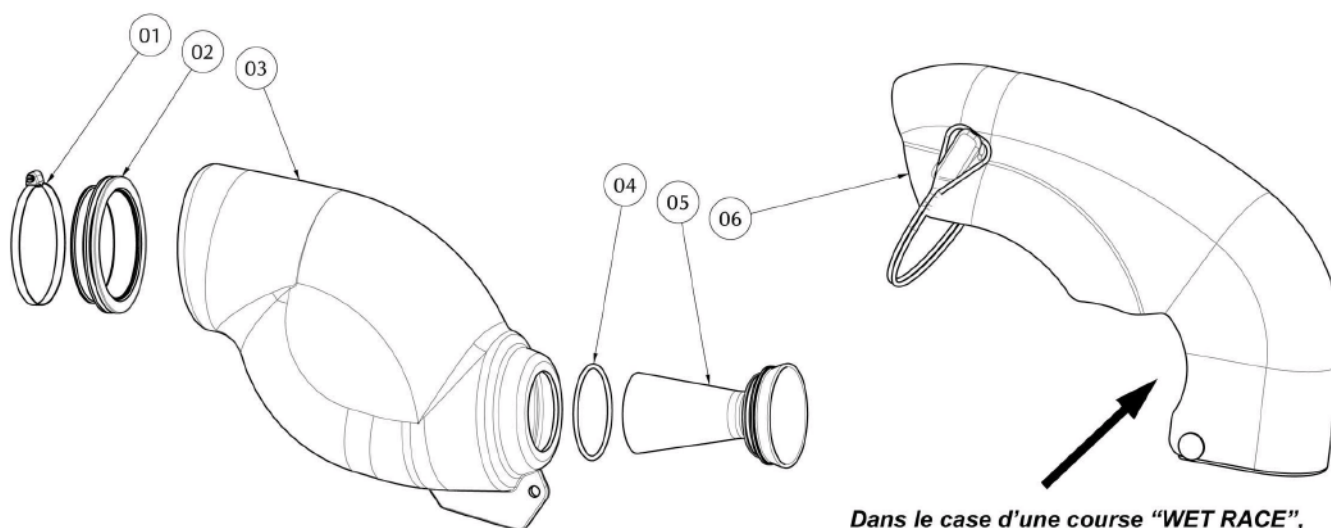
SILENCIEUX D'ASPIRATION / INTAKE SILENCER MINI

Constructeur / <i>Manufacturer</i>	Righetti Ridolfi Spa
Marque / <i>Make</i>	Righetti Ridolfi
Modèle / <i>Model</i>	Alien
Catégorie / <i>Categorie</i>	Group 3
Durée de l'homologation / <i>Validity of the Homologation</i>	2 ans / 2 years
Nombre de pages / <i>Number of pages</i>	3
La présente Fiche d'Homologation reproduit descriptions, illustrations et dimensions du silencieux d'aspiration au moment de l'homologation CIK-FIA.	<i>This Homologation Form reproduces descriptions, illustrations and dimensions of the intake silencer at the moment of the CIK-FIA homologation.</i>
	
Photo de l'avant / <i>Photo of the front</i>	Photo de côté / <i>Photo of the side</i>
Signature et tampon de l'ASN / <i>Signature and stamp of the ASN</i>	Signature et tampon de la CIK-FIA / <i>Signature and stamp of the CIK-FIA</i>
	

A	Descriptions techniques / <i>Technical descriptions</i>		
	Volume / <i>Volume</i>	1890 cm ³	max. 2000 cm ³
	Matériau / <i>Material</i>	PP	
	Ouvertures d'admission d'air / <i>Air intake openings</i>	1	
	Longueur du conduit d'admission / <i>Length of the inlet duct</i>	134 mm	min. 90 mm
	Diamètre de conduit d'admission / <i>Diameter of inlet duct</i>	23 mm	max. 23 mm



C

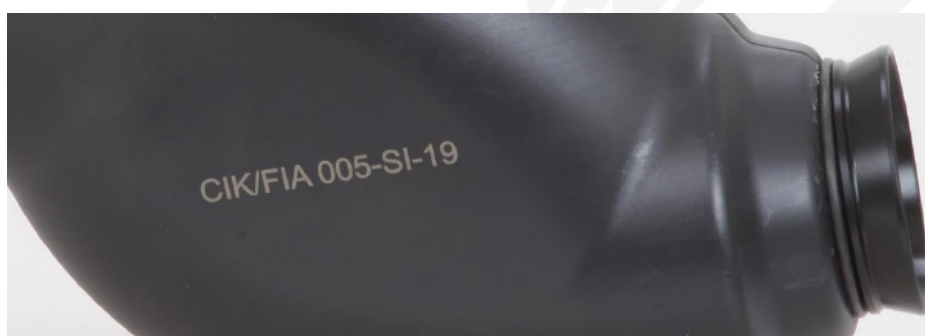
Dessin technique explosé / Exploded technical drawing

*Dans le case d'une course "WET RACE",
le choix du kit de couverture
homologue sera laissé à
l'appréciation du conducteur.*

*In the case of a "WET RACE" the choice
of the homologated cover kit will be left
to the appreciation of the driver.*

N°	Désignation / Designation	Référence catalogue / Catalogue reference number
01	Collier de serrage / Clamp	KE089
02	Manchon a caoutchouc / Rubber bush	KE105
03	Boîtes à air / Airbox	ZZKE100
04	O-ring / O-ring	KE104
05	Orifice d'admission d'air / Air intake duct	KE106
06	Couverture pluie / Rain cover	KE108

D

**Photo du marquage et numéro d'homologation /
Photo of marking and homologation number**

*Le marquage et le numéro d'homologation doivent rester clairement visibles en permanence. /
The marking and the homologation number must remain clearly visible permanently.*

CARBURETOR

NOTE: Dellorto PHGB 18 and Tillotson HW-31A are optional carburetors

Tillotson HW-31A

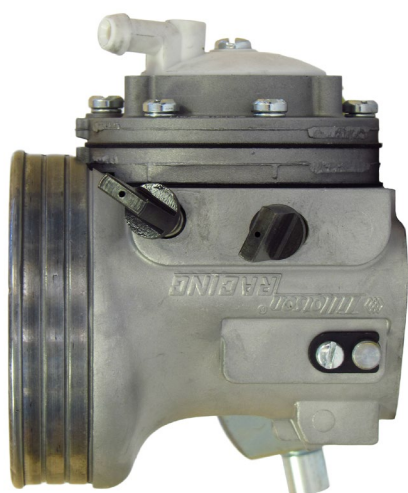


PHOTO OF ADJUSTING SIDE

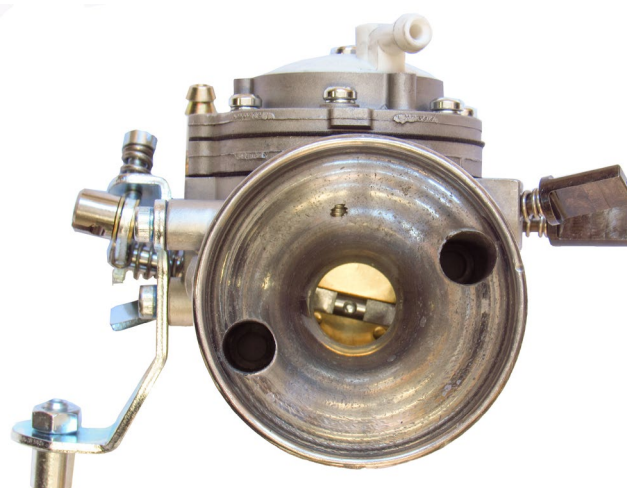
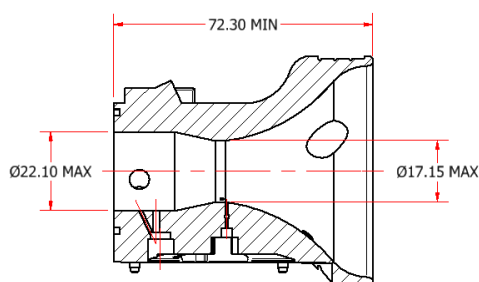
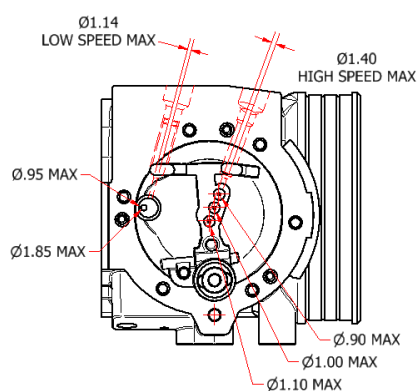


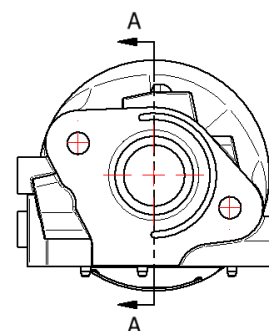
PHOTO OF INLET SIDE

Manufacturer	TILLOTSON LTD.
Make	TILLOTSON
Model	HW-31A

SECTION VIEW

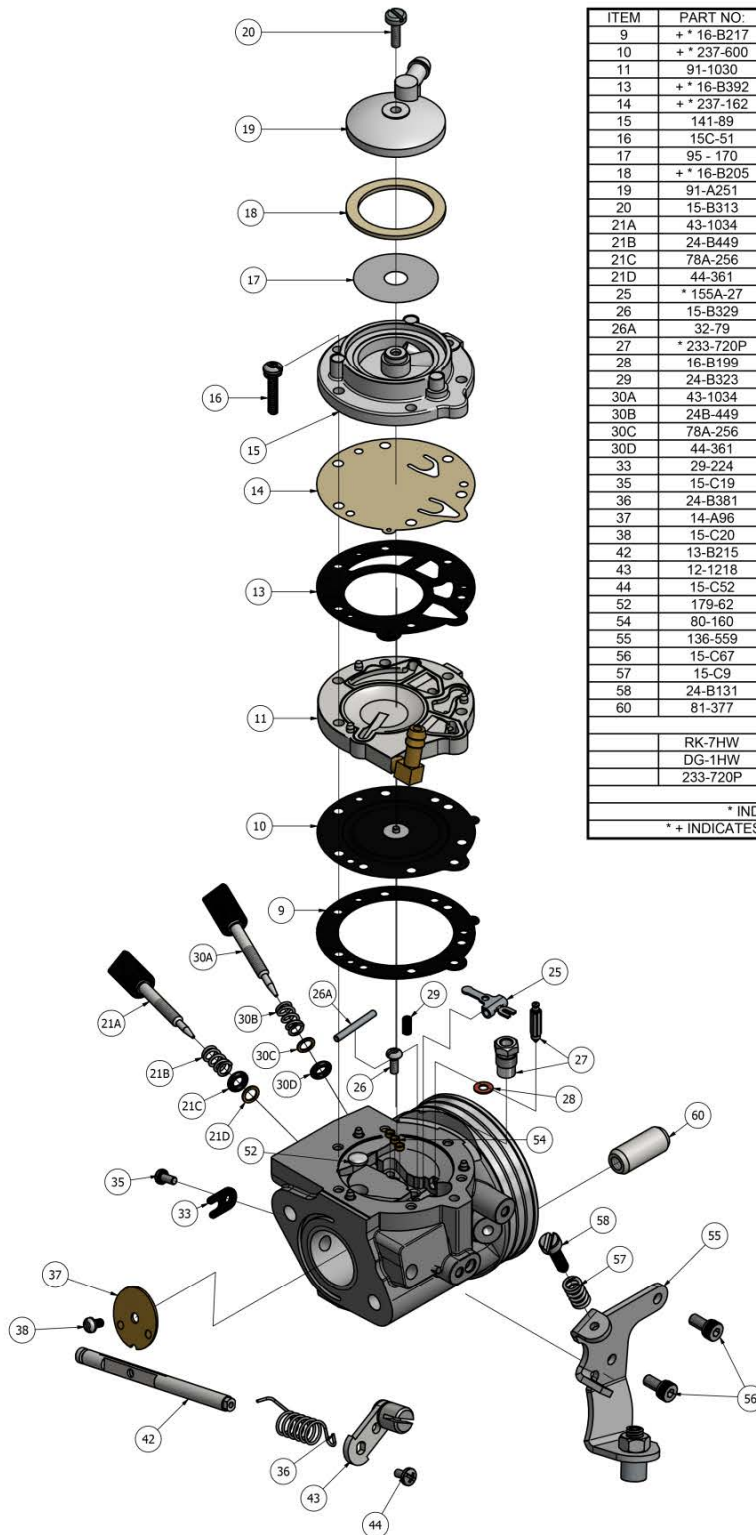


SECTION A-A



CARBURETOR DESCRIPTION AND SKETCH OF PARTS

HW-31A



ITEM	PART NO.	DESCRIPTION	QTY
9	+ * 16-B217	DIAPHRAGM GASKET	1
10	+ * 237-600	DIAPHRAGM	1
11	91-1030	DIAPHRAGM COVER	1
13	+ * 16-B392	FUEL PUMP GASKET	1
14	+ * 237-162	FUEL PUMP DIAPHRAGM	1
15	141-89	FUEL PUMP BODY	1
16	15C-51	FUEL PUMP BODY SCREW	6
17	95 - 170	FUEL STRAINER SCREEN	1
18	+ * 16-B205	FUEL STRAINER COVER GASKET	1
19	91-A251	FUEL STRAINER COVER	1
20	15-B313	FUEL STRAINER COVER RETAINING SCREW	1
21A	43-1034	IDLE MIXTURE SCREW	1
21B	24-B449	IDLE MIXTURE SCREW SPRING	1
21C	78A-256	IDLE MIXTURE SCREW WASHER	1
21D	44-361	IDLE MIXTURE SCREW PACKING	1
25	* 155A-27	INLET CONTROL LEVER	1
26	15-B329	FULCRUM LEVER SCREW	1
26A	32-79	FULCRUM LEVER PIN	1
27	* 233-720P	INLET NEEDLE & SEAT SET	1
28	16-B199	INLET SEAT GASKET	1
29	24-B323	INLET TENSION SPRING	1
30A	43-1034	HIGH SPEED MIXTURE SCREW	1
30B	24B-449	HIGH SPEED MIXTURE SCREW SPRING	1
30C	78A-256	HIGH SPEED MIXTURE SCREW WASHER	1
30D	44-361	HIGH SPEED MIXTURE SCREW PACKING	1
33	29-224	THROTTLE SHAFT CLIP	1
35	15-C19	THROTTLE SHAFT CLIP RETAINING SCREW	1
36	24-B381	THROTTLE RETURN SPRING	1
37	14-A96	THROTTLE SHUTTER	1
38	15-C20	THROTTLE SHUTTER SCREW	1
42	13-B215	THROTTLE SHAFT	1
43	12-1218	THROTTLE LEVER ASSEMBLY	1
44	15-C52	THROTTLE LEVER RETAINING SCREW	1
52	179-62	WELCH PLUG	1
54	80-160	MAIN PLUG	3
55	136-559	CABLE BRACKET	1
56	15-C67	CABLE BRACKET RETAINING SCREW	2
57	15-C9	LIMITER SCREW	2
58	24-B131	LIMITER SPRING	2
60	81-377	CARBURETOR MOUNTING NUT	2
	RK-7HW	REPAIR KIT	
	DG-1HW	DIAPHRAGM & GASKET (STANDARD)	
	233-720P	INLET NEEDLE & SEAT SET	
* INDICATES CONTENTS OF REPAIR KIT			
* + INDICATES CONTENTS OF DIAPHRAGM & GASKET SET			



Clash Industrial Estate - Tralee - Ireland
www.tillotson-racing.com

PARTS OF CARBURETTOR

**REF.9 - P. N°16-B217
DIAPHRAGM GASKET**



Thickness = 0.5 ± 0.1 mm

**PUMP DIAPHRAGM GASKET
REF.13 - P. N° 16-B392**



Thickness = 0.8 ± 0.1 mm

**REF.10 - P. N°237-600
DIAPHRAGM**



Thickness = 0.13 ± 0.07 mm

**Plastic or Synthetic
Fiber Approved**



Thickness = 0.30 mm max

**REF.11 - P. N° 91-1031
DIAPHRAGM COVER**



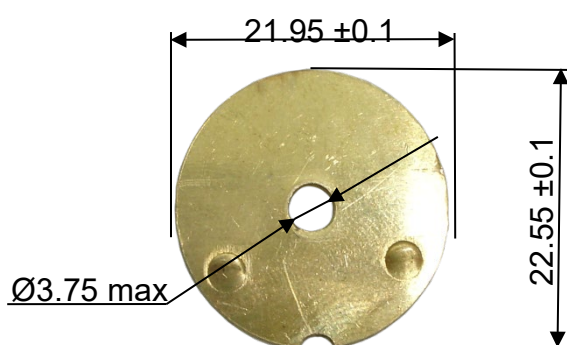
Thickness = 6.75 ± 0.15 mm

**REF.15 - P. N° 141-89
PUMP COVER**



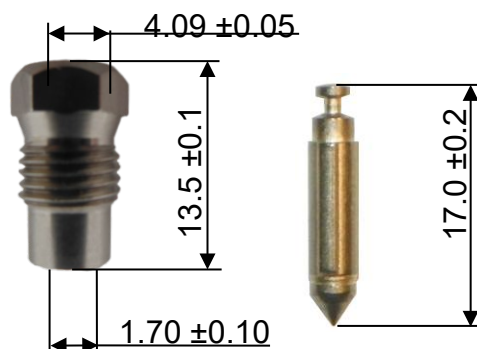
Thickness = 12.5 ± 0.15 mm

REF.37 - P. N° 14-A96
THROTTLE SHUTTER



Thickness = 0.81 ± 0.1 mm

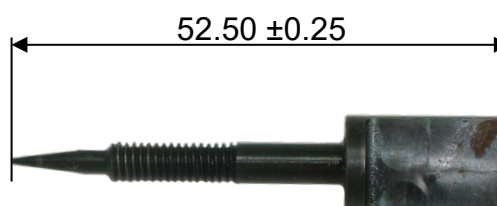
REF.27 - P. N° 233-720P
SEAT + NEEDLE



REF.21A - P. N° 43-1034
NEEDLE LOW SPEED



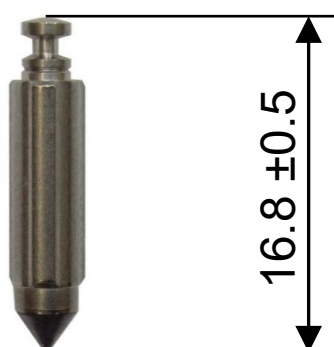
REF.30A - P. N° 43-1034
NEEDLE HIGH SPEED



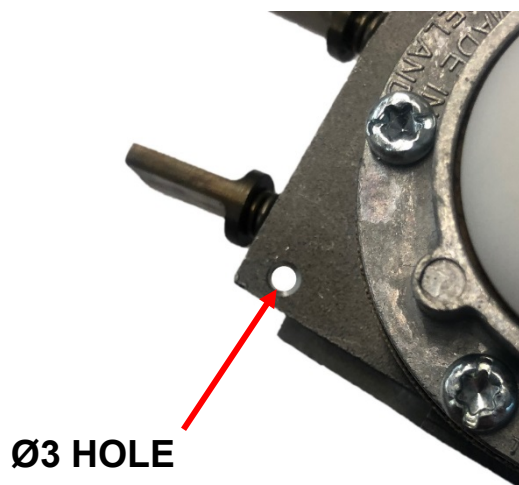
NEEDLE FUEL ALTERNATIVE

HOLE FOR CARBURETTOR SEALING

REF.27 - P. N° 233-720P

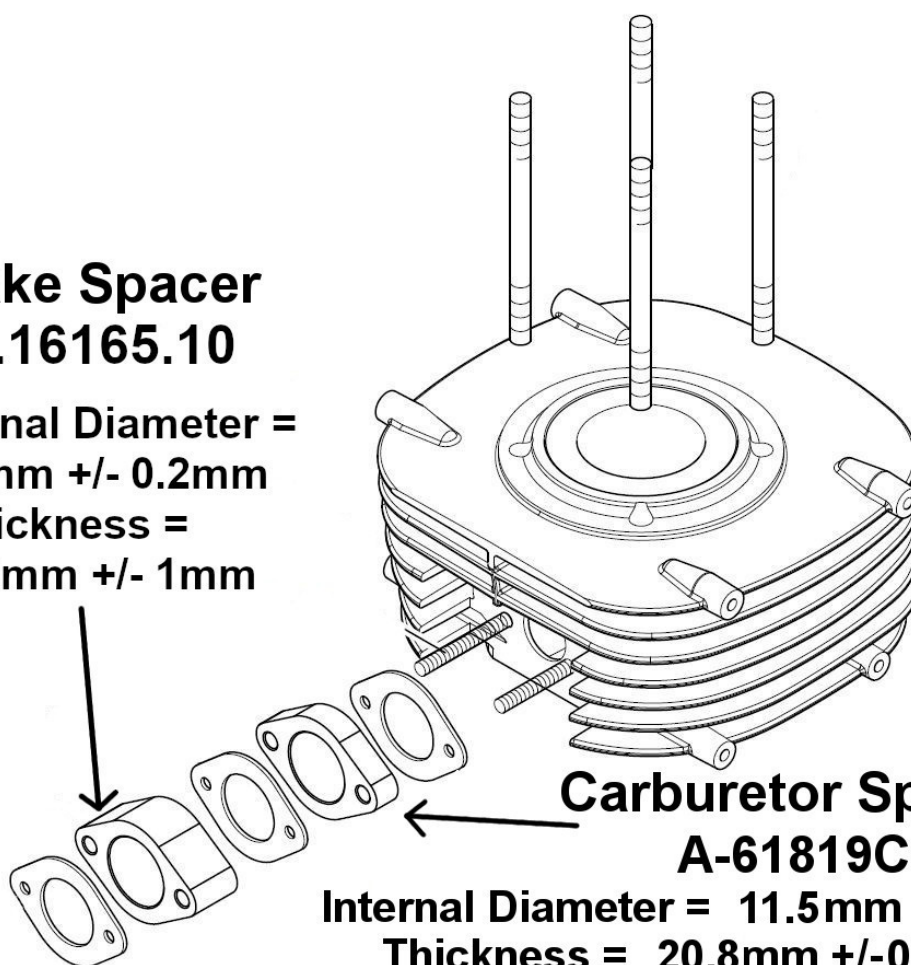


The carburettor can have this hole for sealing.



Intake Spacer 20.16165.10

**Internal Diameter =
27mm +/- 0.2mm
Thickness =
20.5mm +/- 1mm**



Carburetor Spacer A-61819C

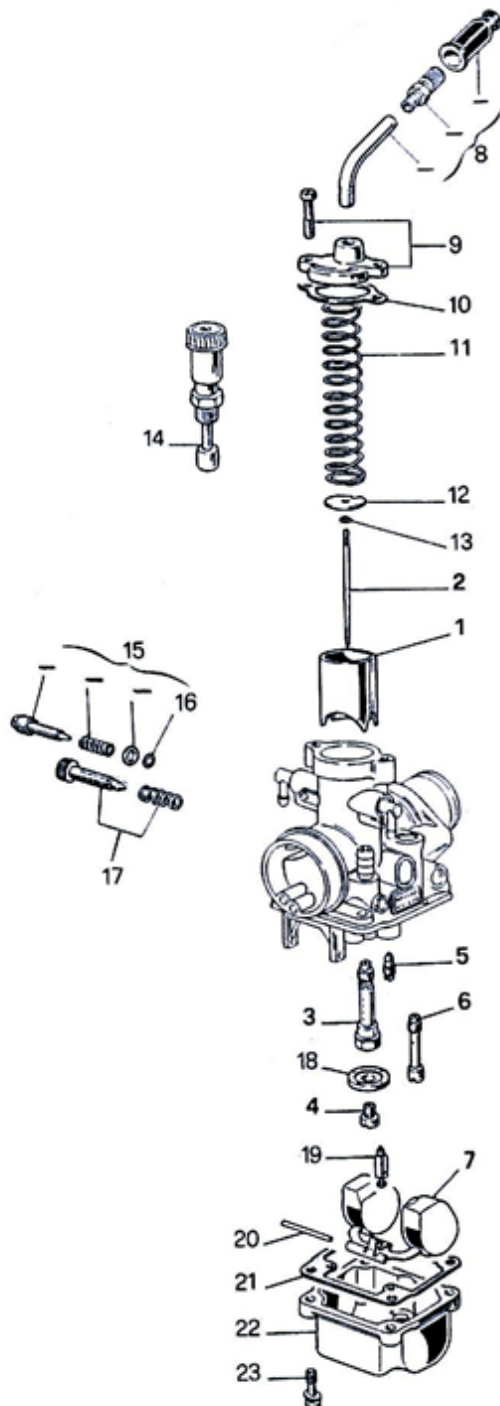
**Internal Diameter = 11.5mm +/-0.2mm
Thickness = 20.8mm +/-0.2mm**

Intake Spacer 20.16165.10 Photos





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



**UNICA TARATURA CONSENTITA
ONLY ALLOWED SETTING**

Valvola gas 40 – gas valve 40	
Spillo conico W23 – misture needle W23	
Polverizzatore AN264, AN266 or AV262 – spray nozzle AN264, AN266 or AV262	
Getto max – high speed jet - LIBERO - FREE - OPEN	
Getto minimo – idle jet 60	
Getto emulsionatore 60 – idle jet 60	

**POMPA BENZINA DELL'ORTO
DELL'ORTO FUEL PUMP**

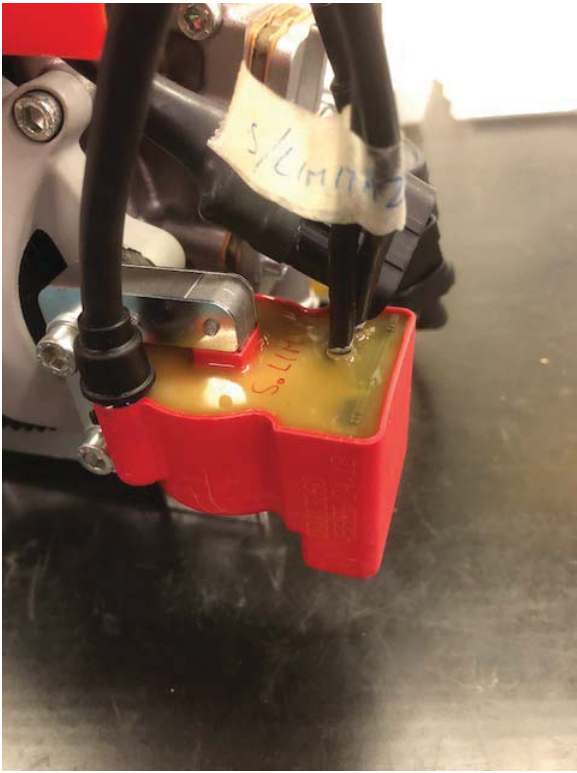
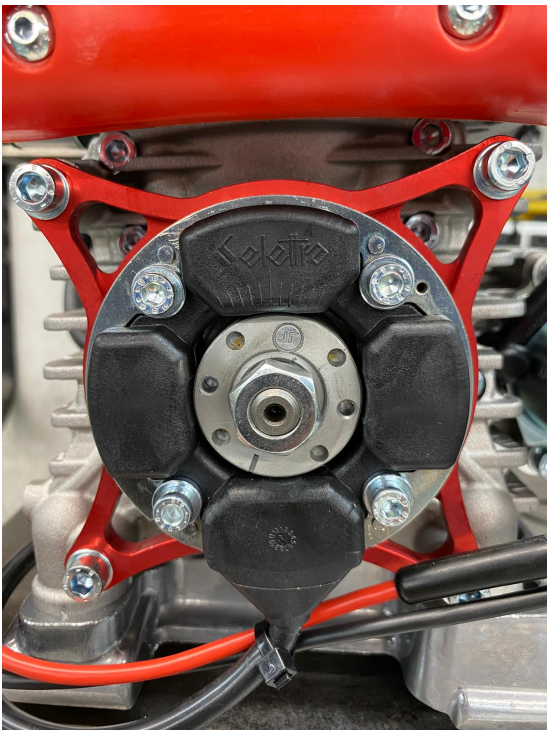


cod. 11023

**E' PROIBITO MONTARE QUALSIASI TIPO DI RUBINETTO, RACCORDO CALIBRATO O ALTRO DISPOSITIVO TRA ALIMENTAZIONE E RITORNO/RECUPERO, SUI TUBI DEL CARBURANTE.
E' PERTANTO AMMESSO L'IMPIEGO DEI SOLI TUBI.
È CONSENTITO MONTARE SOLTANTO (N°1) UN FILTRO CARBURANTE TRA SERBATOIO E POMPA CARBURANTE.**

**IT IS FORBIDDEN TO EMPLOY ANY OTHER KIND OF SPIGOT, JUNCTION, OR SIMILAR DEVICES BETWEEN THE SUPPLY AND THE RETRN/COLLECTION, ON THE FUEL PIPES.
IT IS ADMITTED TO EMPLOY PIPES, ONLY.
IT IS ALLOWED TO MOUNT ONLY N° 1 (ONE) FUEL FILTER BETWEEN TANK AND FUEL PUMP.**

SUPPLEMENTAL PHOTO

COIL 	STATOR 
WIRING HARNESS  40.13690.00	BATTERY & SUPPORT  Battery is a non-tech item