Homologation N°

112H/RH

NATIONAL HOMOLOGATION FORM

ENGINE

Manufacturer	**BRP-POWERTRAIN GMBH & CO KG**
Make	**ROTAX**
Model	**125 JUNIOR MAX**
Validity of the homologation	**6 years**
Number of pages	**25 Plus Appendix A**

This Homologation Form reproduces descriptions, illustrations and dimensions of the engine at the time that Karting Australia conducted the homologation.

PHOTO OF DRIVE SIDE OF ENGINE

PHOTO OF OPPOSITE SIDE OF ENGINE

Signature and stamp of Karting Australia

National Technical Commissioner
20 March 2023

PHOTO OF DRIVE SIDE OF THE COMPLETE ENGINE

PHOTO OF OPPOSITE DRIVE SIDE OF THE COMPLETE ENGINE

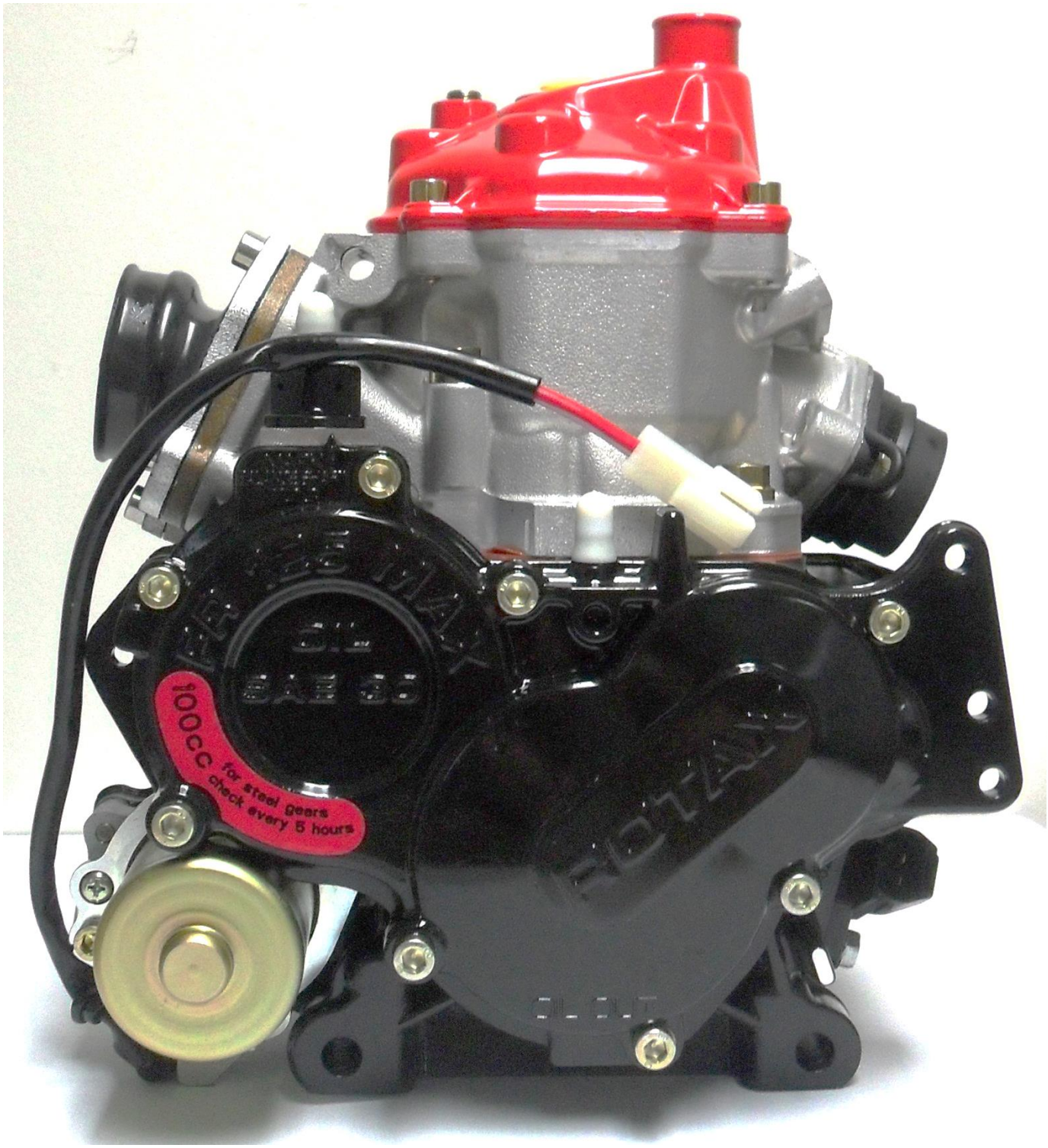
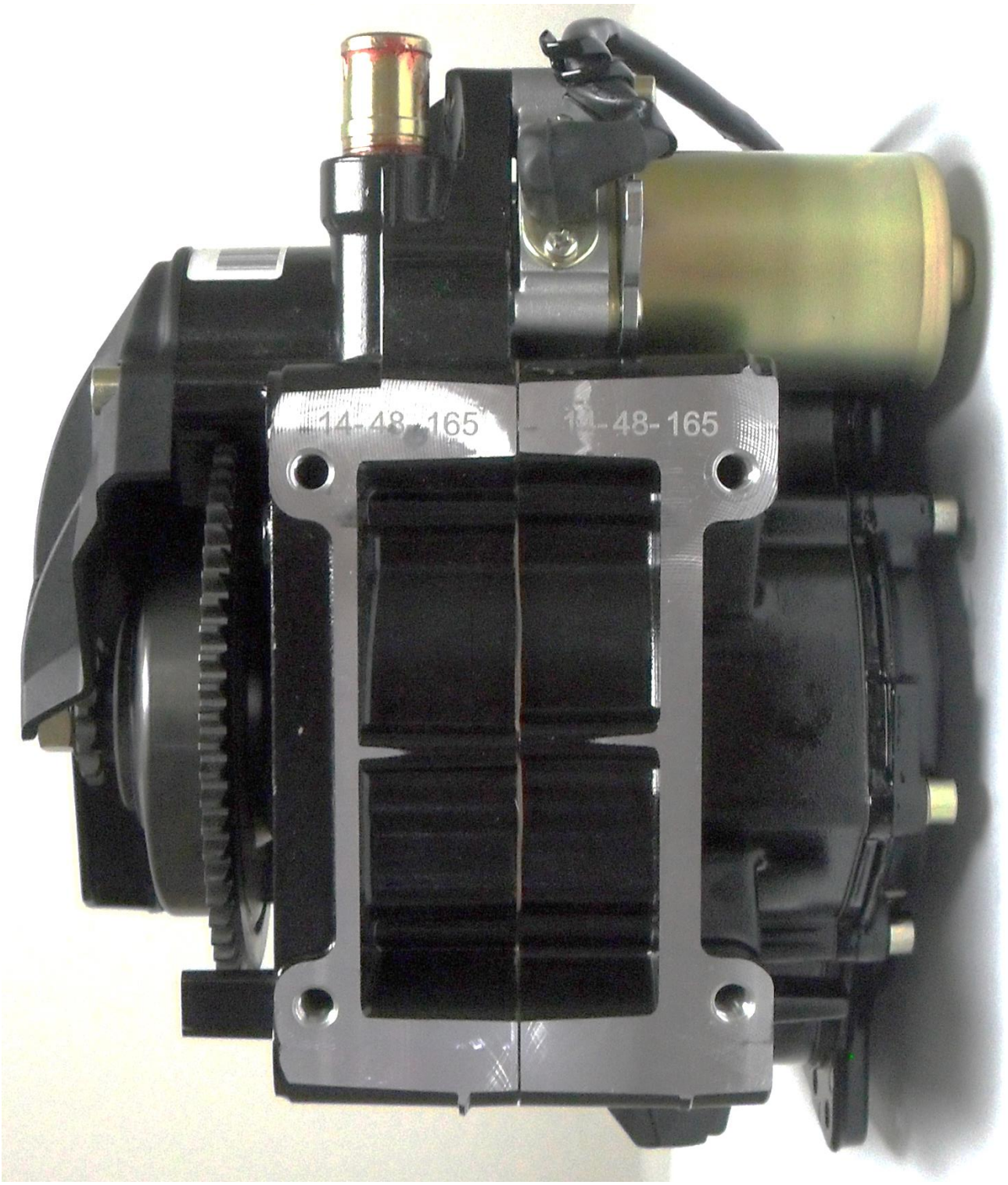


PHOTO OF THE REAR OF THE COMPLETE ENGINE

PHOTO OF THE FRONT OF THE COMPLETE ENGINE

PHOTO OF THE COMPLETE ENGINE TAKEN FROM ABOVE

PHOTO OF THE COMPLETE ENGINE TAKEN FROM BELOW



TECHNICAL INFORMATION

A *CHARACTERISTICS*

The number of decimal places must be 2 or comply with the relevant tolerance.		*Tolerances & remarks*
Cylinder		
Volume of cylinder	**125cm³**	≤125cm³
Original bore	**54mm**	--
Theoritical maximum bore	**54.08mm**	--
Original Stroke	**54.5mm**	--
Number of transfer ducts, cylinder/sump	**5 / 3**	--
Number of exhaust ports / ducts	**1**	--
Volume of the combustion chamber	**8.9cm³**	minimum
Volume of the combustion chamber in the cylinder head	**11.6cm³**	minimum
Crankshaft		
Number of bearings	**2**	--
Diameter of bearings	**30MM**	±0.1mm
Minimum weight of crankshaft	**2200 g**	minimum
All parts represented on page 17 photo		
Balance Shaft		
Minimum weight of balance shaft	**255g**	minimum
Percentage of balancing	**TBA %**	minimum
Connecting Sod		
Connecting rod centreline	**100mm**	±0.2mm
Diameter of big end	**26mm**	±0.05mm
Diameter of small end	**19mm**	±0.05mm
Min. weight of the connecting rod	**100g**	minimum
Piston		
Number of piston rings	**1**	
Min. weight of the bare piston	**125g**	minimum
Gudgeon Pin		
Diameter	**15mm**	±0.05mm
Length	**45.6mm**	±0.15mm
Minimum weight	**32.1g**	Minimum
Clutch		
Minimum weight	**1000g**	minimum
Of all the parts represented on the page 21 technical drawing		

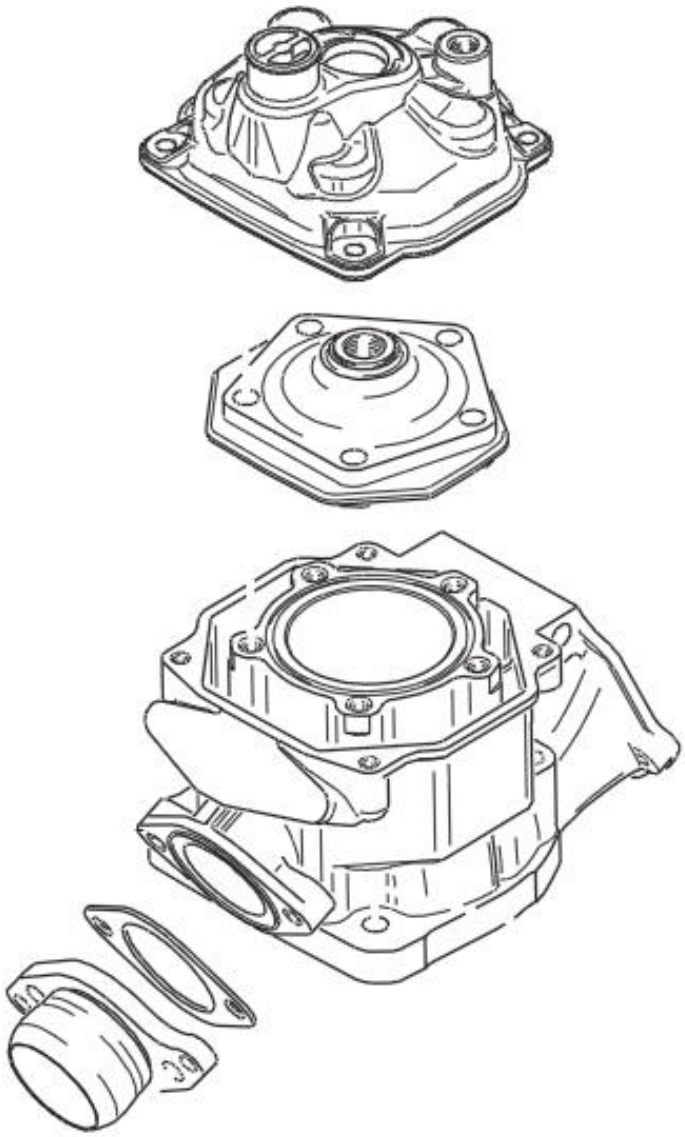
B	*OPENING ANGLES*	
Of the inlet (main transfer ports)	**119.5°**	**±2°**
Of the inlet (secondary transfer ports, for 5 transfer ducts engine)	**120°**	**±2°**
Of the exhaust	**178°**	**±2°**
Of the boosters	**118°**	**±2°**

* Angular reading by inserting a 0.2 x 5mm gauge.

C	*MATERIAL*
Cylinder head	**ALUMINIUM**
Cylinder	**ALUMINIUM**
Cylinder wall	**GILNISIL COATED**
Sump	**ALUMINIUM**
Crankshaft	**STEEL**
Connecting rod	**STEEL-ALLOY**
Piston	**ALUMINIUM**

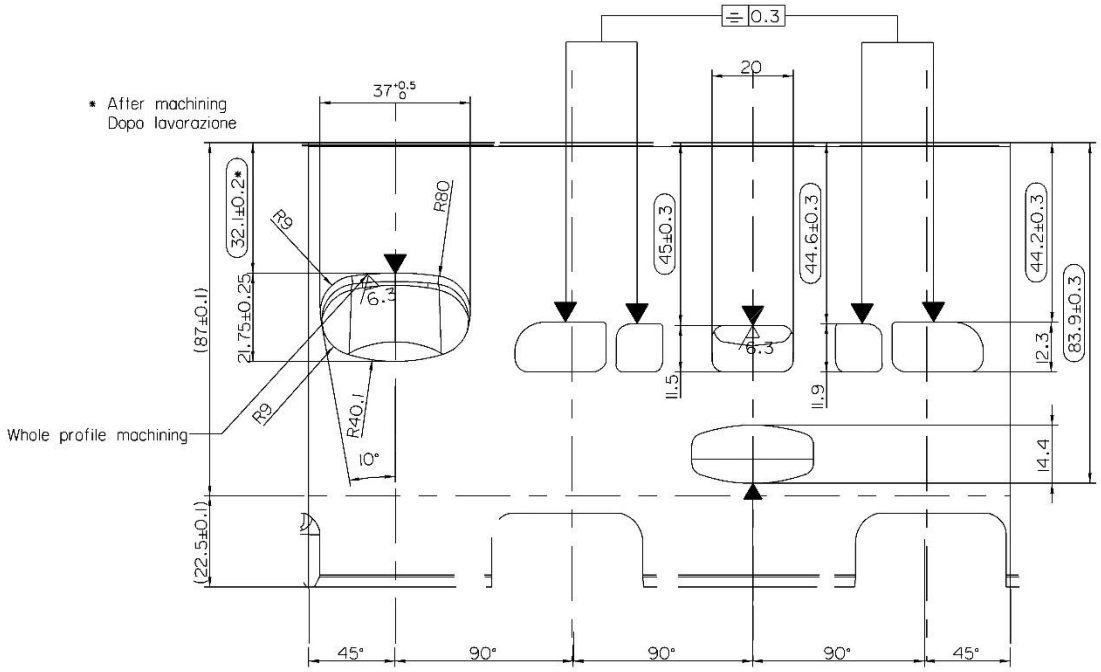
D.1 *CYLINDER UNIT*

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***

DRAWING OF THE CYLINDER DEVELOPMENT



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 without dimensions

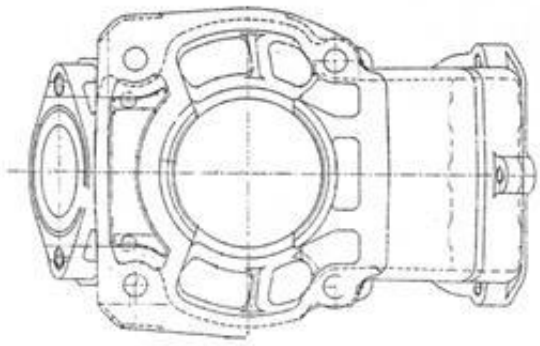
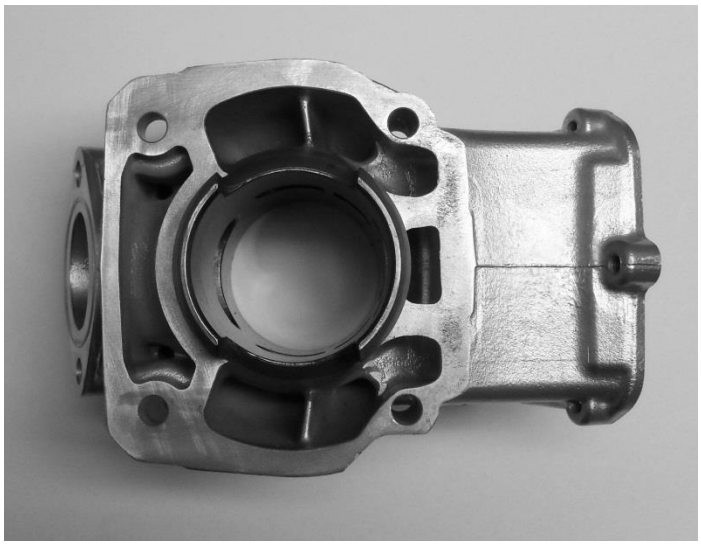


PHOTO OF THE CYLINDER BASE



… Section D.1

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

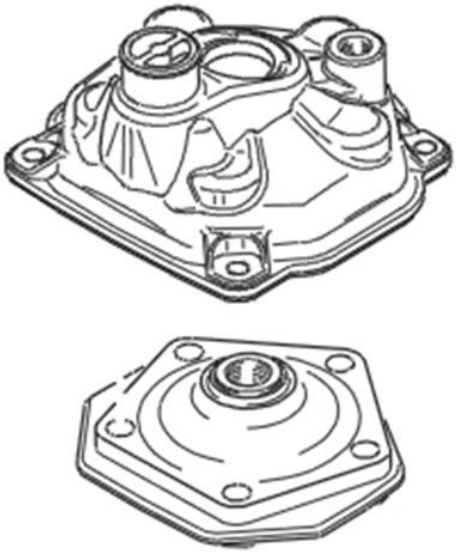


PHOTO OF THE CYLINDER HEAD	*PHOTO OF THE COMBUSTION CHAMBER IN THE CYLINDER HEAD*
	

VERTICAL CROSS SECTION VIEW OF CYLINDER WITH LINER, without dimensions

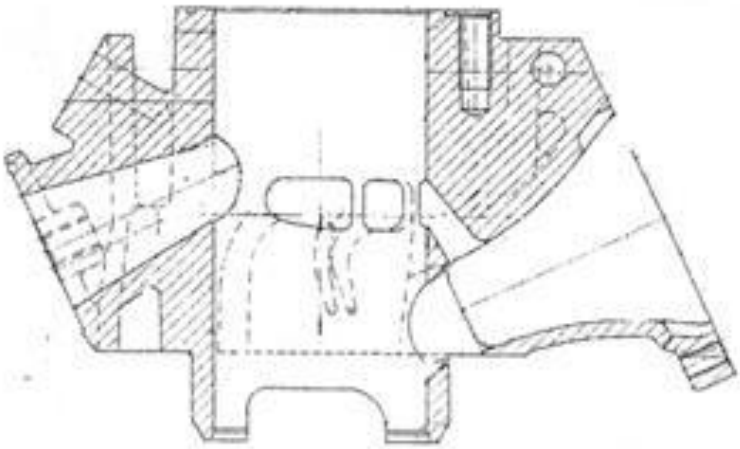
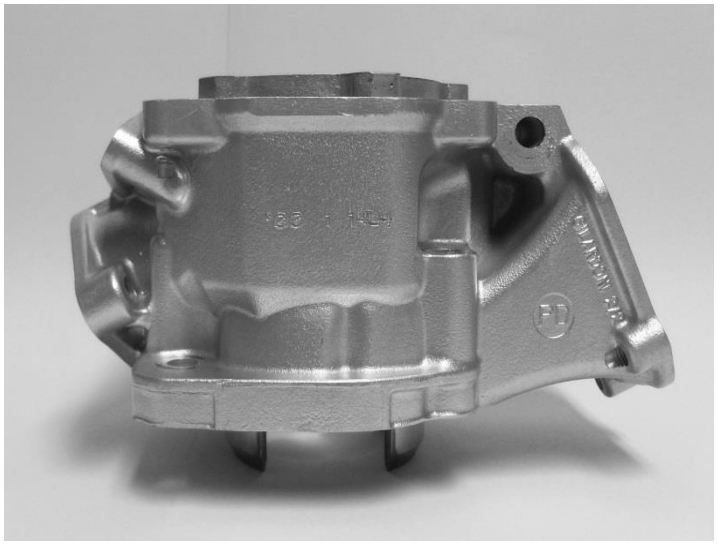
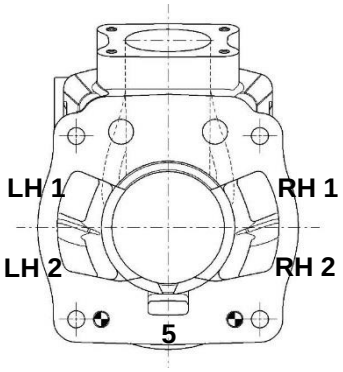
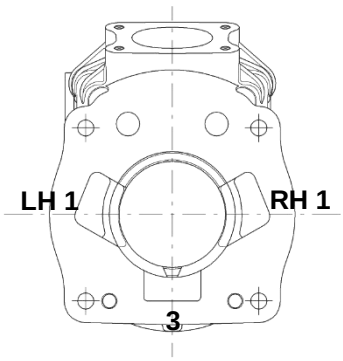


PHOTO OF THE CYLINDER FROM ABOVE

PHOTO OF THE CYLINDER FROM RH SIDE

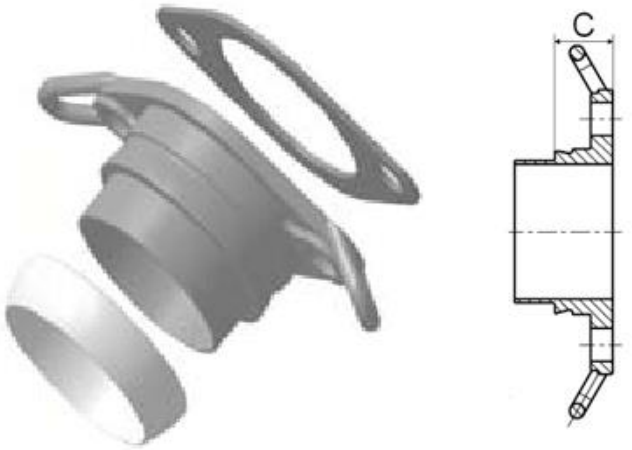
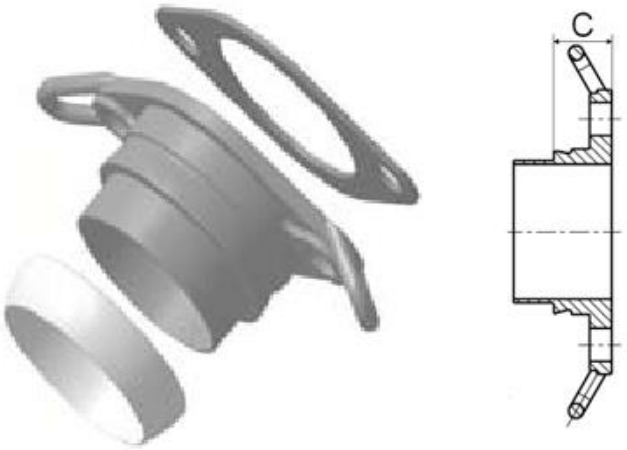


... Section D.1

TRANSFER DUCTS VOLUME			
Transfer position on 5-transfer cylinder	*Transfer position on 3-transfer cylinder*	*TRANSFER No.*	*VOLUME in cm^3*
		*Transfer No. 1 LH*	--.-- +/- 5 %
		Transfer No. 2 LH	--.-- +/- 5 %
		Transfer No. 3 or 5	--.-- +/- 8 %
		Transfer No. 2 RH	--.-- +/- 5 %
		Transfer No. 1 RH	--.-- +/- 5 %

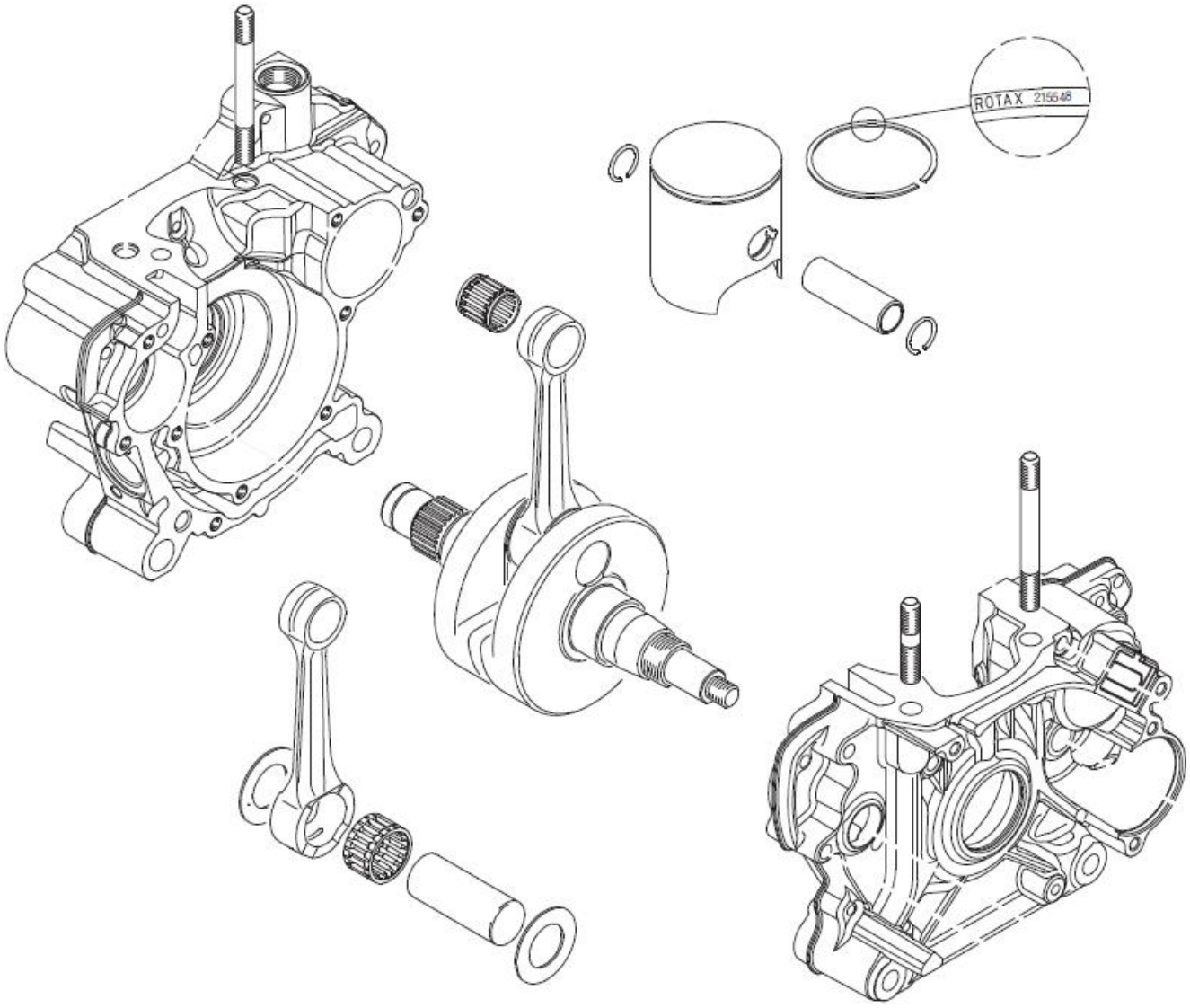
EXHAUST DUCT LENGTH		
	ANGLE α *in* **°**	**Minimum** *in* **mm**
	--° +/-1°	-- mm
The L min. dimension will be the result of the value taken on the reference engine minus 5 mm.		

INTERNAL PROFILE OF THE EXHAUST DUCT
Templates of the internal dimensions of the exhaust duct: gasket plane of the manifold.

FRONT VIEW DRAWING – with dimensions	
Minimum template	*Maximum template*
	
Measurement ‘C’ must be minimum 15.5mm	Measurement ‘C’ must me maximum 16.5mm

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

EXPLODED DRAWING OF THE PISTON, CRANKSHAFT, CONNECTING ROD AND CRANKCASES UNIT (exploded crankshaft)



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

PHOTO OF THE CRANKSHAFT & CONROD	*PHOTO OF THE CONROD*
	

DRAWING OF THE PISTON

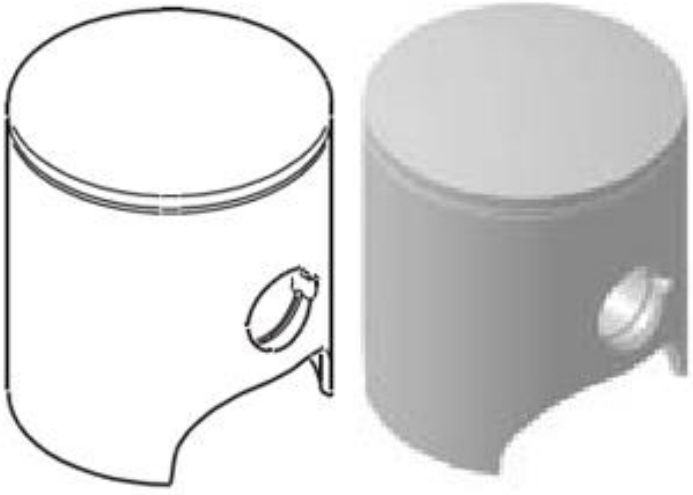
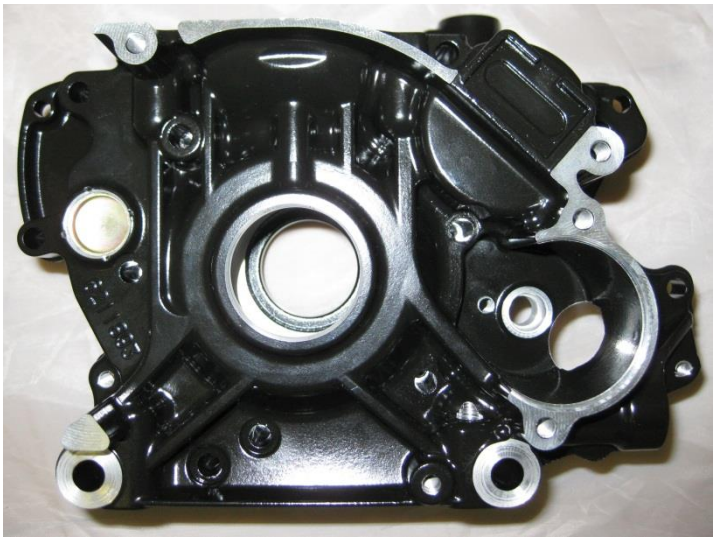
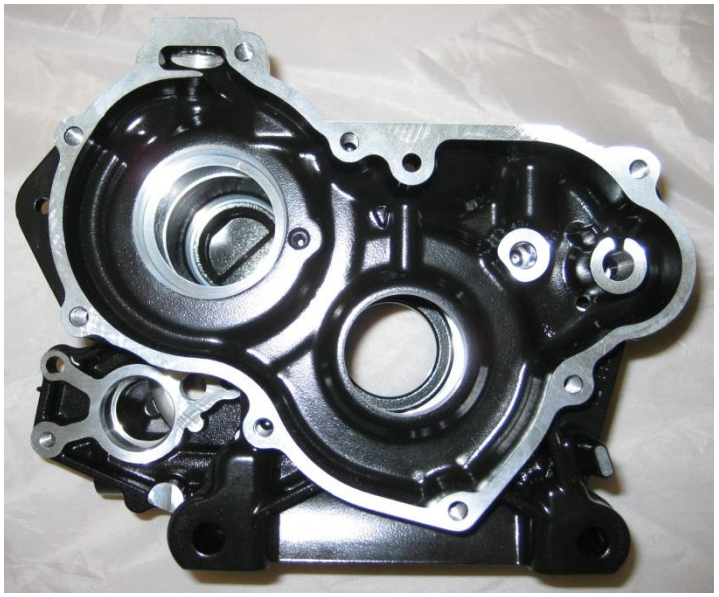
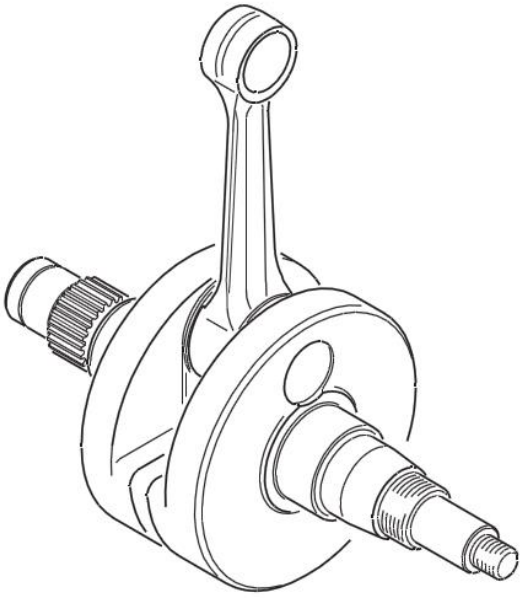
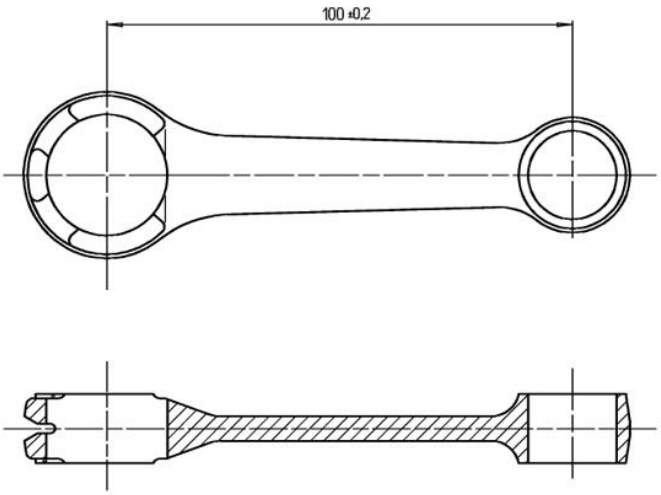


PHOTO OF THE INSIDE OF THE RH CRANKCASE	*PHOTO OF THE INSIDE OF THE LH CRANKCASE*
	

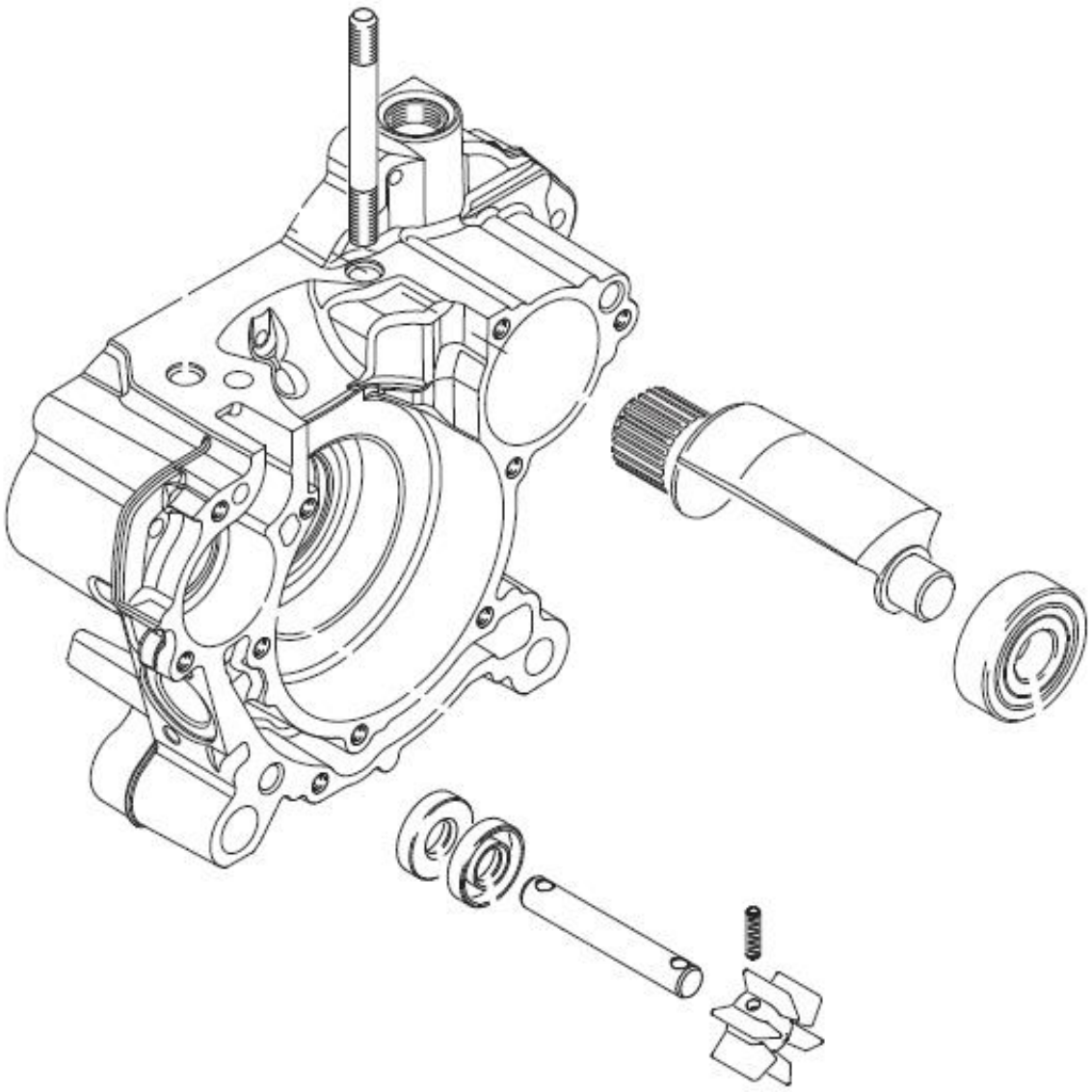
DRAWING OF THE CRANKSHAFT - CON ROD UNIT (DIMENSIONS incl. tolerances, big & small ends thickness, crank mass thickness & diameter)



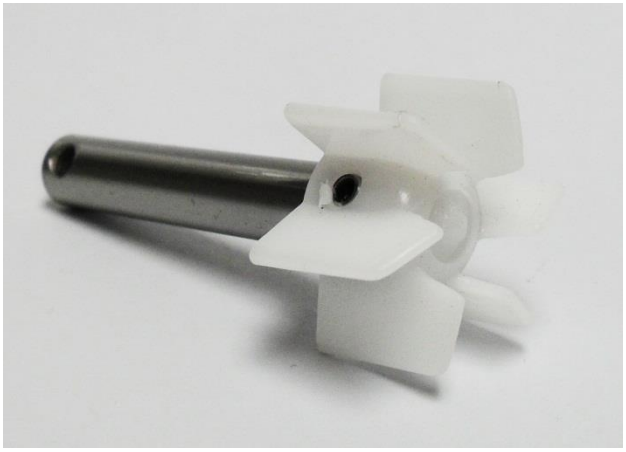


D.3 *BALANCE SHAFT & WATER PUMP*

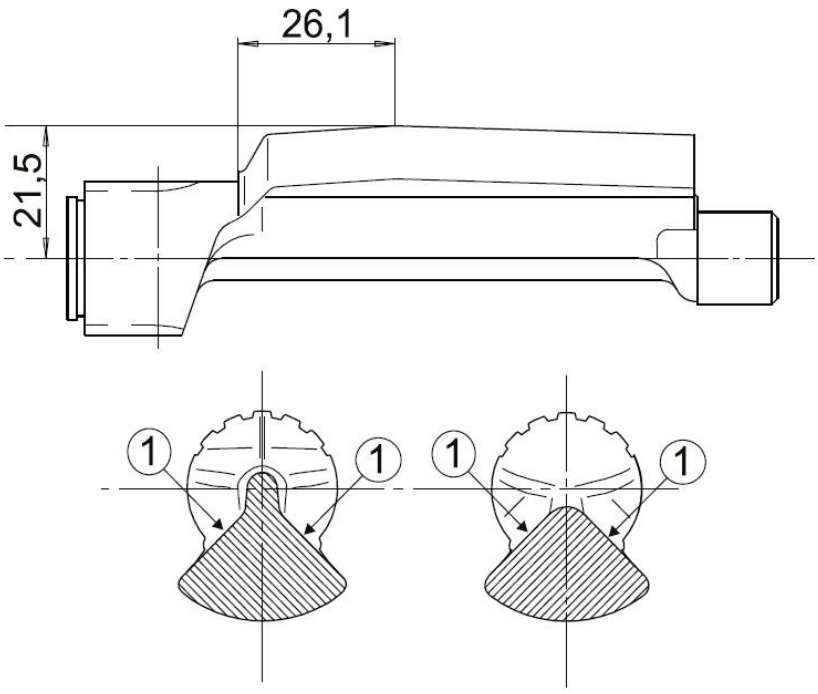
EXPLODED DRAWING OF THE BALANCE SHAFT, WATER PUMP INCLUDING HOUSING



Without screws or gaskets.	***The aim of the exploded drawings is to identify the principles, the functioning and the whole mechanical unit***

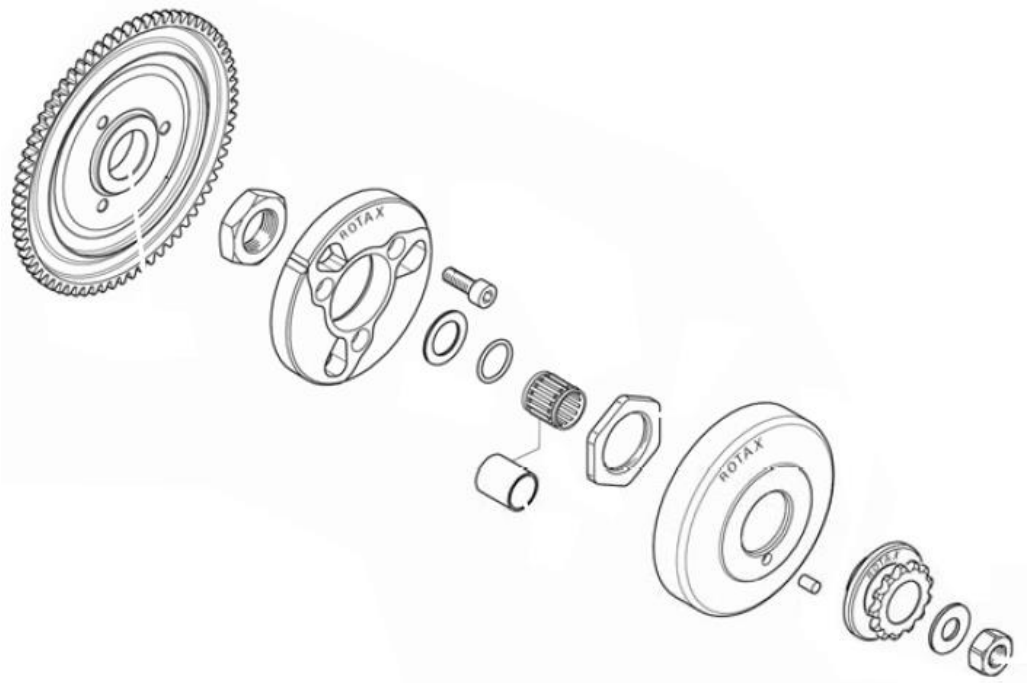
PHOTO OF THE BALANCE SHAFT	*PHOTO OF THE WATER PUMP IMPELLER*
	

DRAWING OF THE BALANCE SHAFT
(DIMENSIONS incl. tolerances)

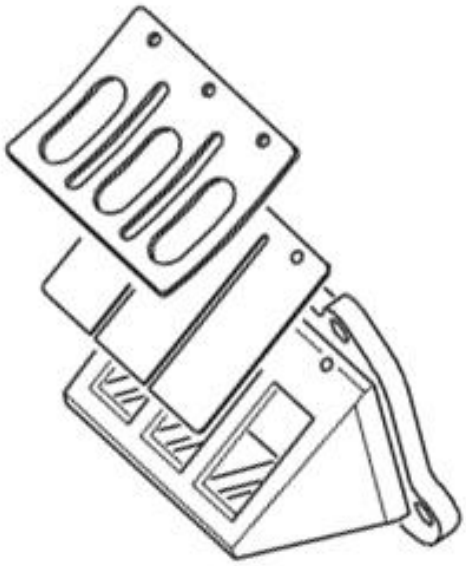


D.4 *REED VALVE & CLUTCH*

TECHNICAL DRAWING (exploded view) OF THE CLUTCH ASSEMBLY

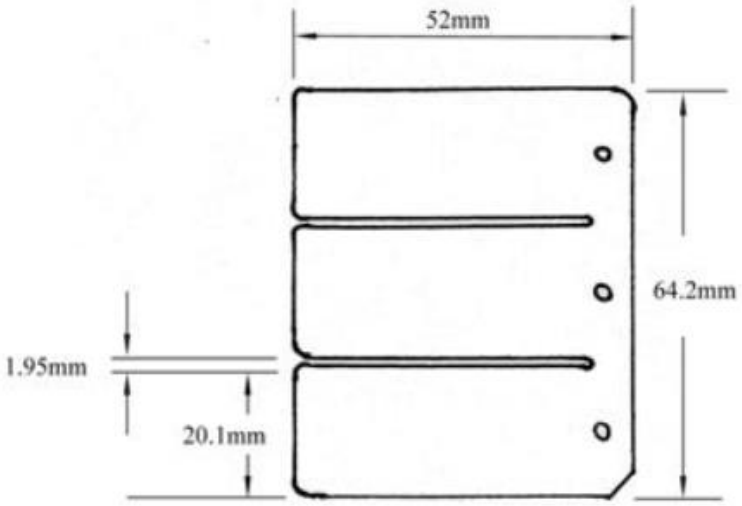


TECHNICAL DRAWING (exploded view) OF THE REED VALVE



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

DRAWING OF THE REED VALVE
*(DIMENSIONS incl. **tolerances**)*



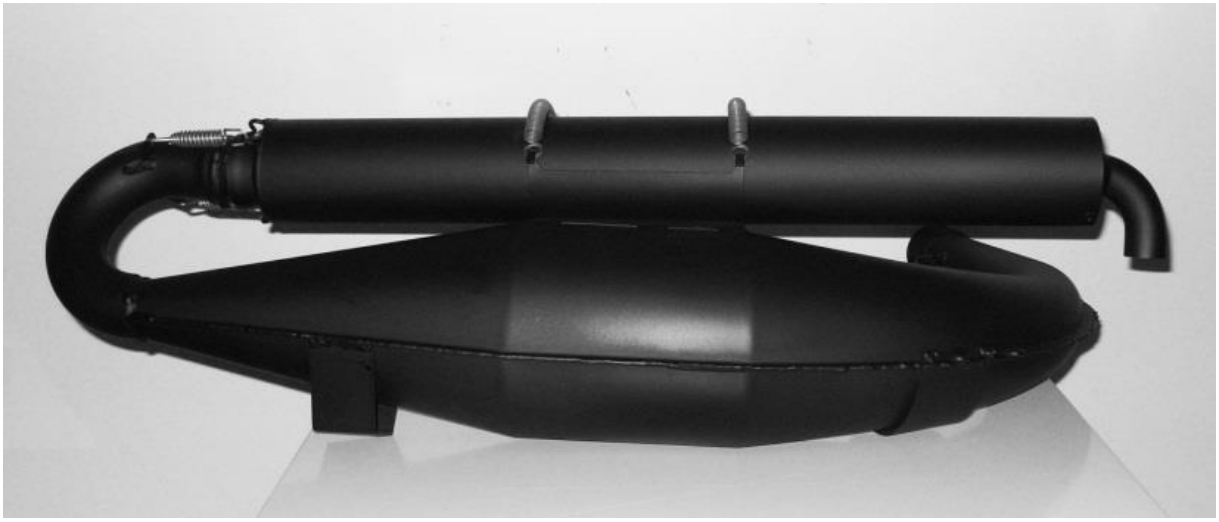
DRAWING OF THE REED VALVE COVER
(only basic engine)

D.5 *EXHAUST SYSTEM*

PHOTO OF THE EXHAUST MANIFOLD

Maximum inner diameter of exhaust socket is:-
- 37.5mm (125 Junior Max)

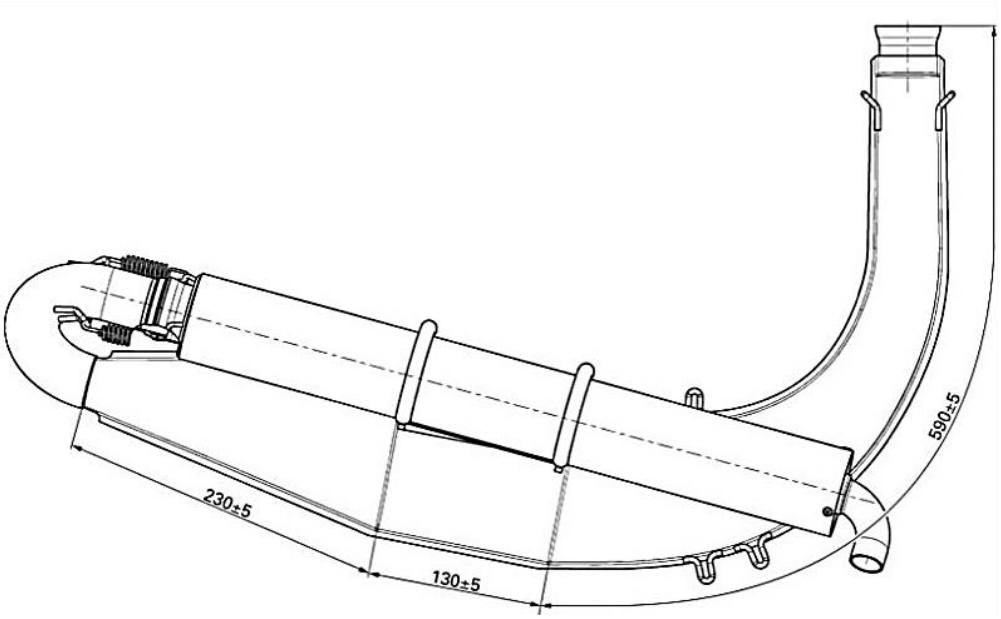
PHOTO OF THE EXHAUST



Exhaust for 125 Junior Max

TECHNICAL DESCRIPTIONS OF THE EXHAUST (Art. 8.9.3 of HR)		
Weight in g	- **125 JUNIOR MAX: 4000G**	*Minimum*

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

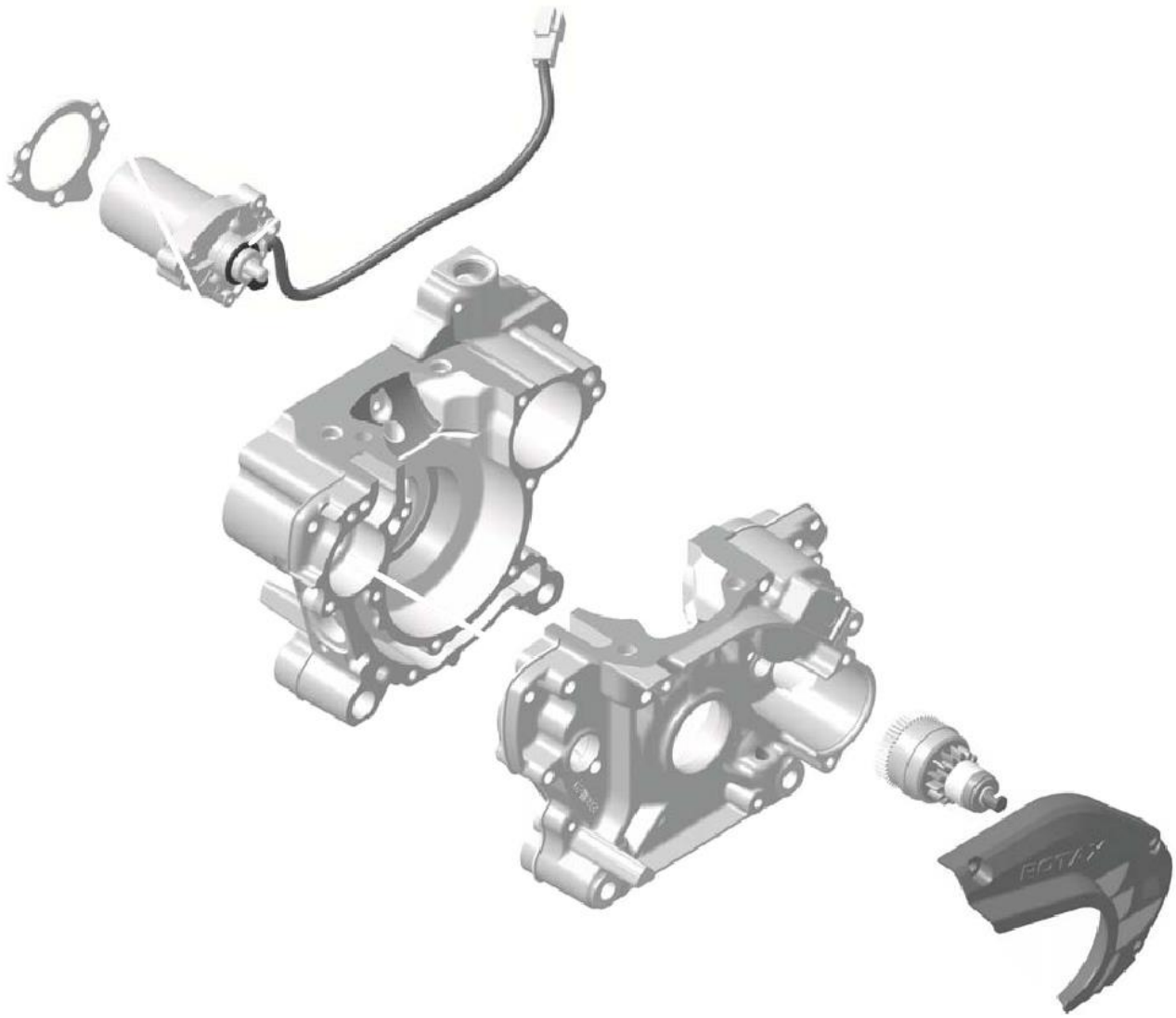


The only legal Isolation matting for 125 Junior Max is:

ROTAX part number 297982	Measurement	Tolerance
New size minimum	480 x 270 mm	+10 mm -10 mm
New weight	207 Gram	+31 Gram -31 Gram
Used weight (old)	245 Gram	+105 Gram -105 Gram

D.6 *STARTER*

EXPLODED DRAWING OF THE STARTING UNIT AND OF ITS HOUSING



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

Ignition homologation No.					Dellorto Ignition System									
Ignition homologation No.					Ignition Coil is labelled with two stickers ‘’**BRP 666820**’’ & ‘‘**NIG0105**’’									
Ignition homologation No.					Electronic box is labelled with sticker ‘‘**666813, 125 Junior MAX evo**’’									
Code					***F125 --/M/18***					*Color yellow*				
Tr/min	*1000*	*2000*	*3000*	*4000*	*5000*	*6000*	*7000*	*8000*	*9000*	*10000*	*11000*	*12000*	*13000*	*14000*
° adv														