

HOMOLOGATION OF KART ENGINE

Category	MSA Cadet
Manufacturer	IAME
Model	Parilla Gazelle 60cc U.K.
Valid From	09 May 2013
Number of pages of main fiche	15

This Homologation Form reproduces descriptions, illustrations and dimensions of the engine at the moment of the MSA Homologation. This document may be supplemented by official amendment. This document must be read in conjunction with the appropriate Class Regulations.



Photo of drive side of engine



Photo of opposite side of engine

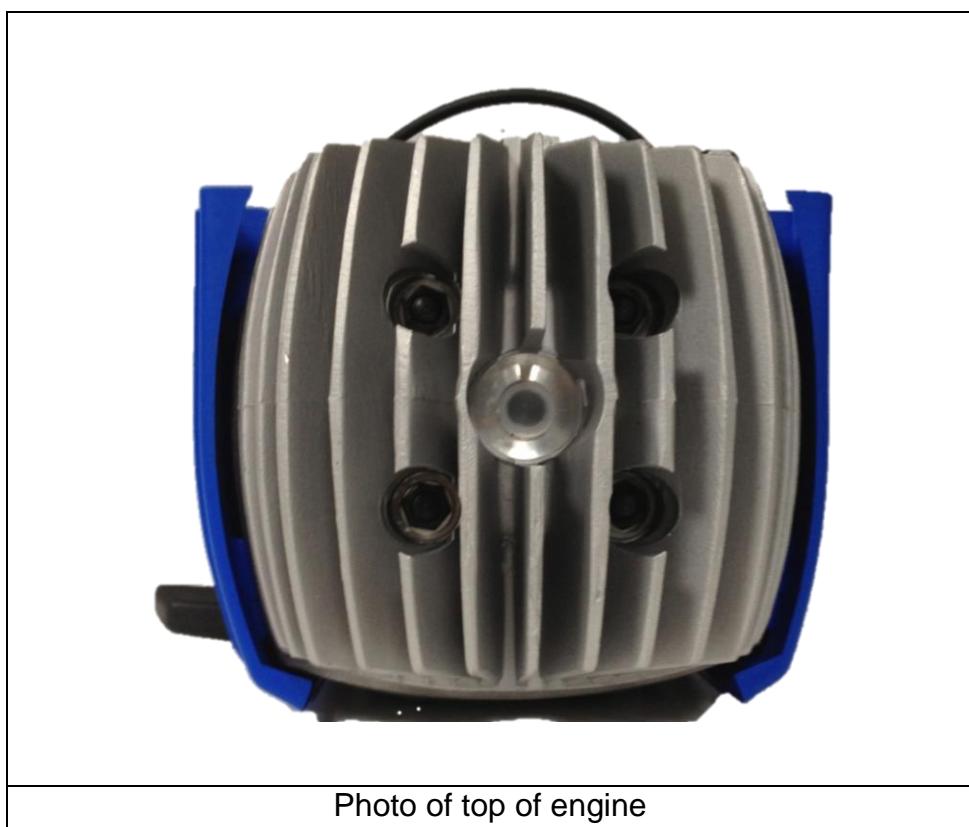
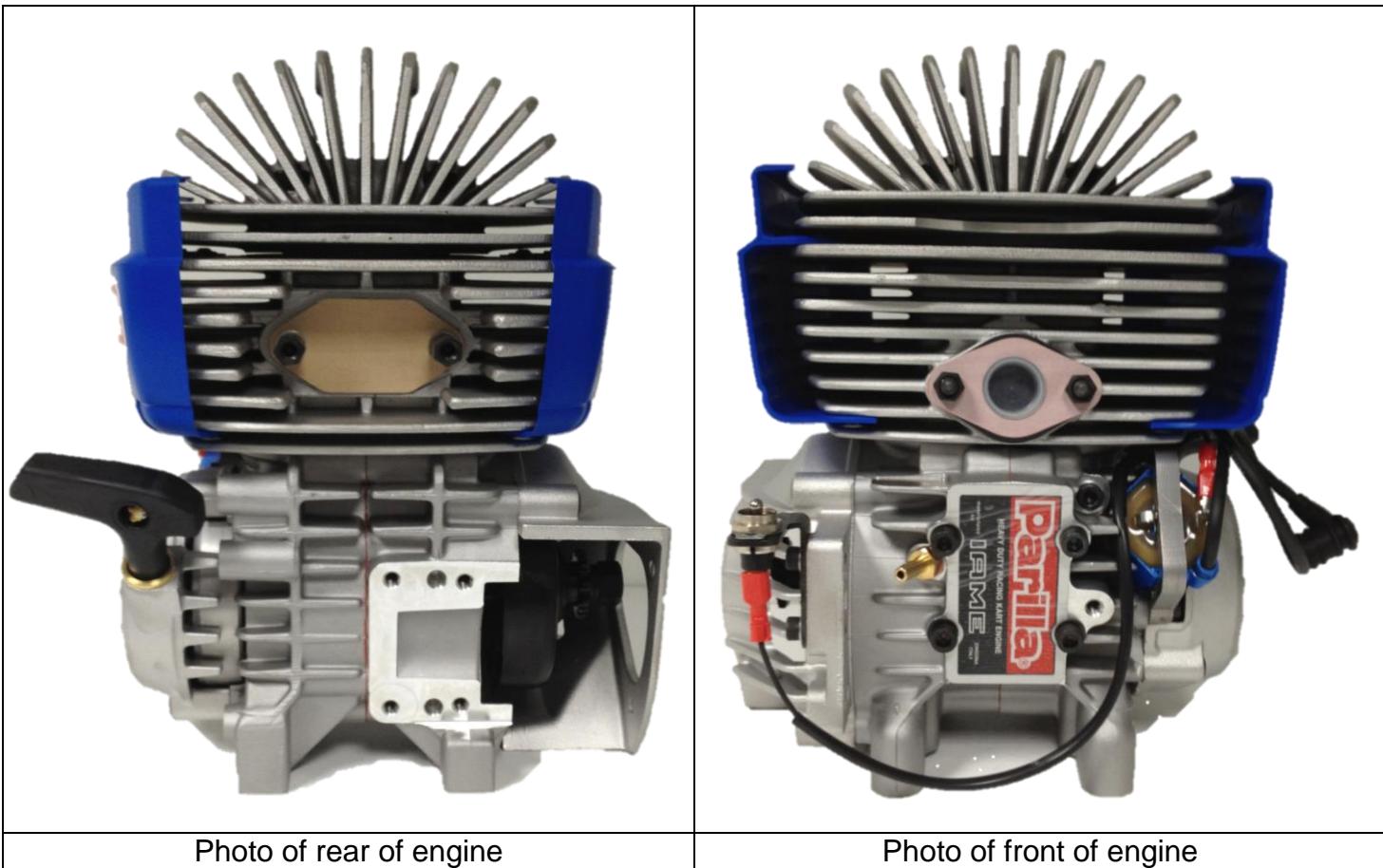
SIGNATURE AND STAMP OF THE MSA

Date: 09 May 2013

Signed by: John Ryan

Position: MSA Technical Executive

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LIST OF APPENDICES

No.	Type	Description	Pg No.	Date
1	Supplement	Carburettor	16	09 May 2013
2	Amendment	2014 Cylinder & Starter Updates	21	06 February 2014

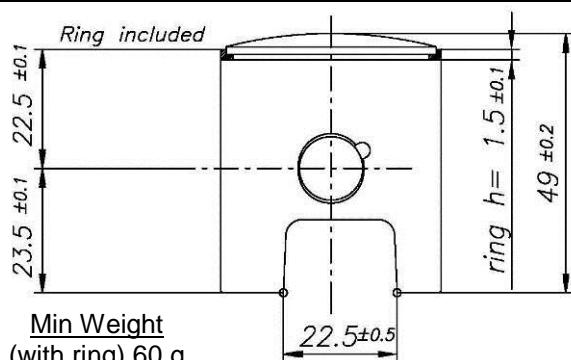
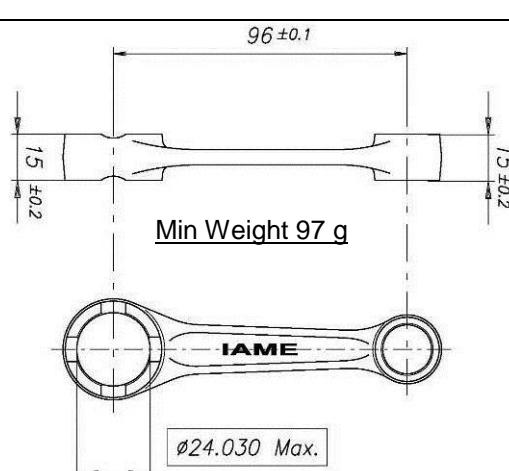
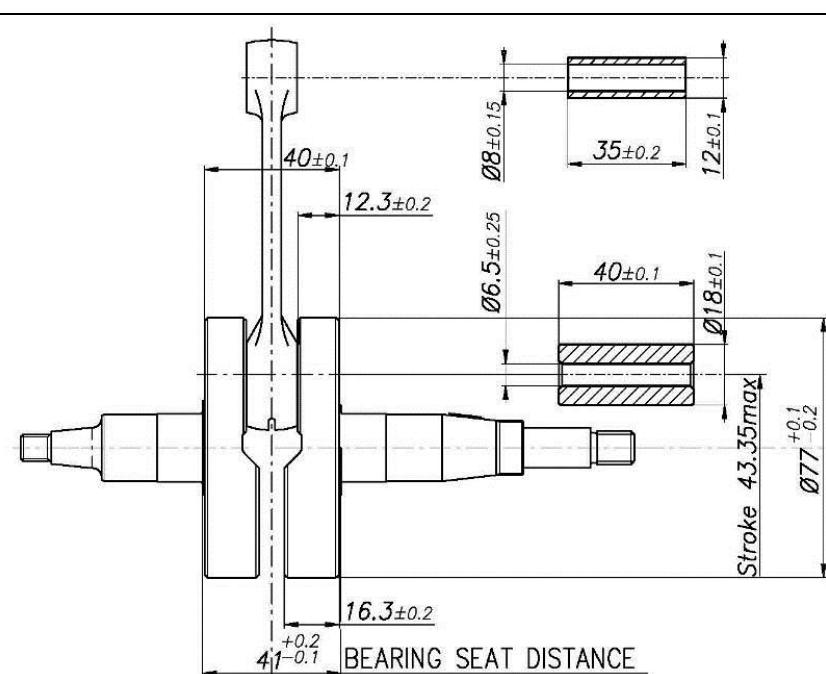
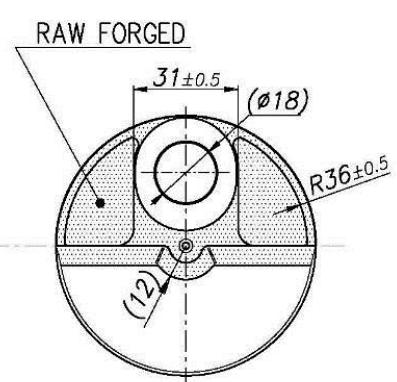
Last updated: 06 February 2014

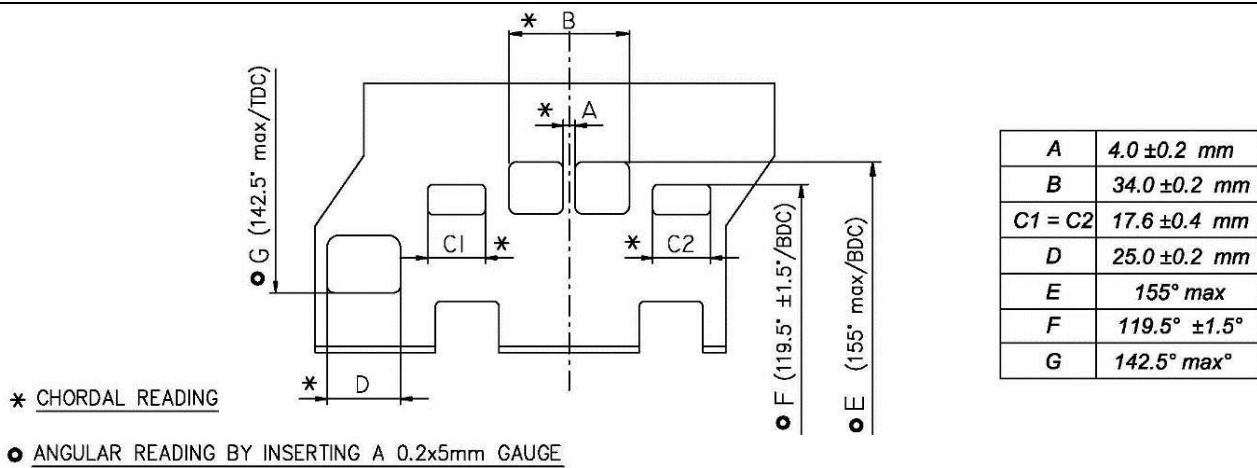
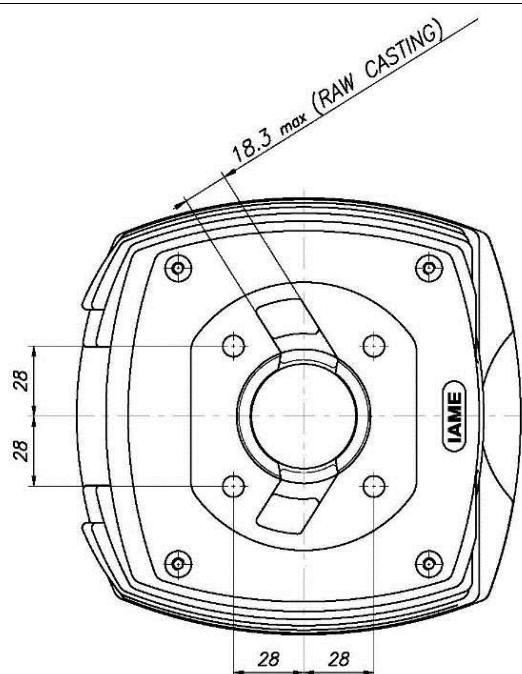
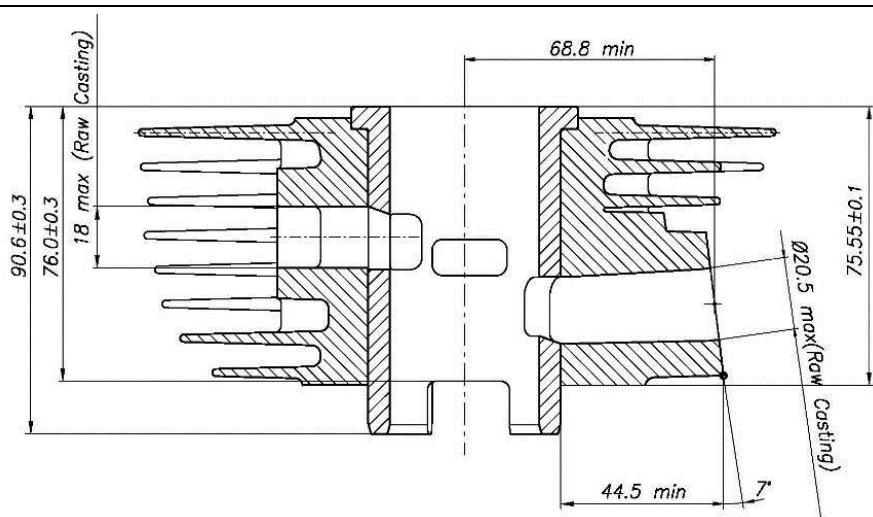
TECHNICAL INFORMATION



1.0 FEATURES

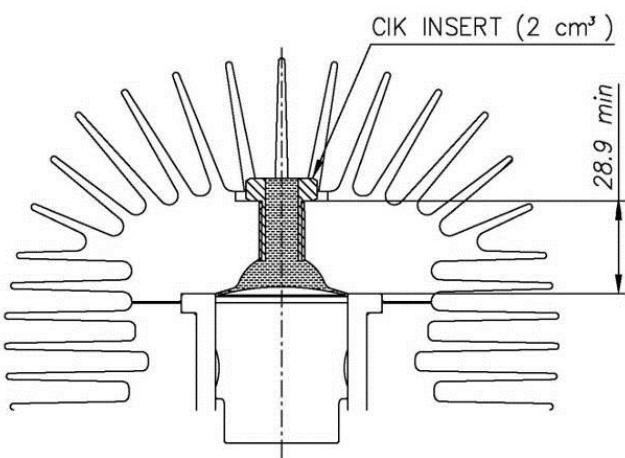
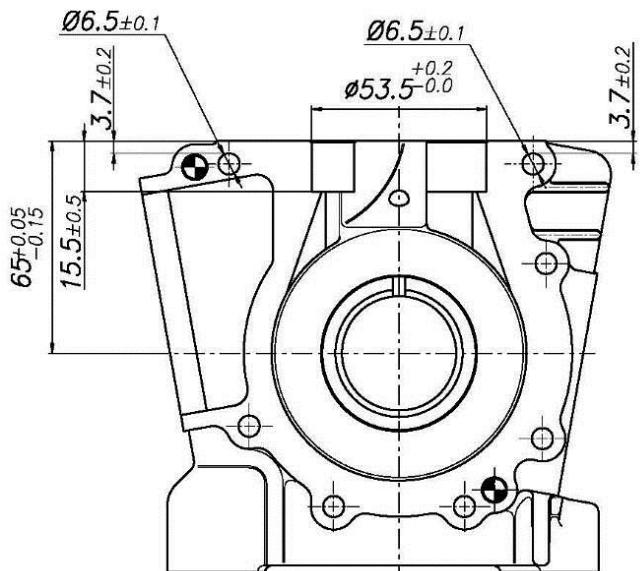
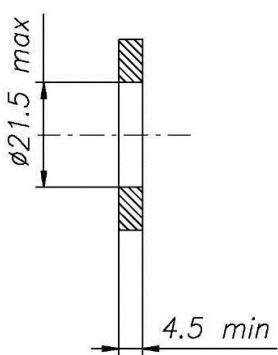
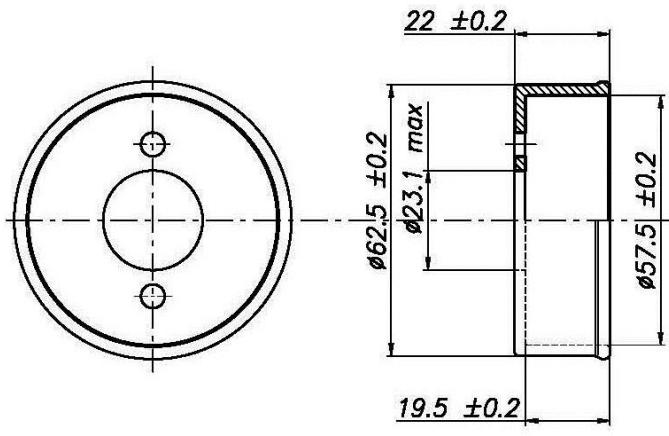
Cylinder volume	60.00 cm ³ max.	Bore	41.80 mm
Max. theoretical bore	41.97 mm	Stroke	43.35 mm max.
Cooling system	Air	Inlet system	Piston valve
Number of carburettors	1	Tillotson Carburettor	HL 394A Ø16mm
Cylinder/crankcase transfers	2	Number of piston rings	1
Inlet/exhaust ports	1 / 2	Combustion chamber shape	Spherical
Crankshaft ball-bearing diameter	20x47x14	Big end conrod ball-bearing diameter	18x24x15
Distance between Conrod centers	96 mm	Small end conrod ball-bearing diameter	12x16x16
Selettra ignition	Code A-61953-C		

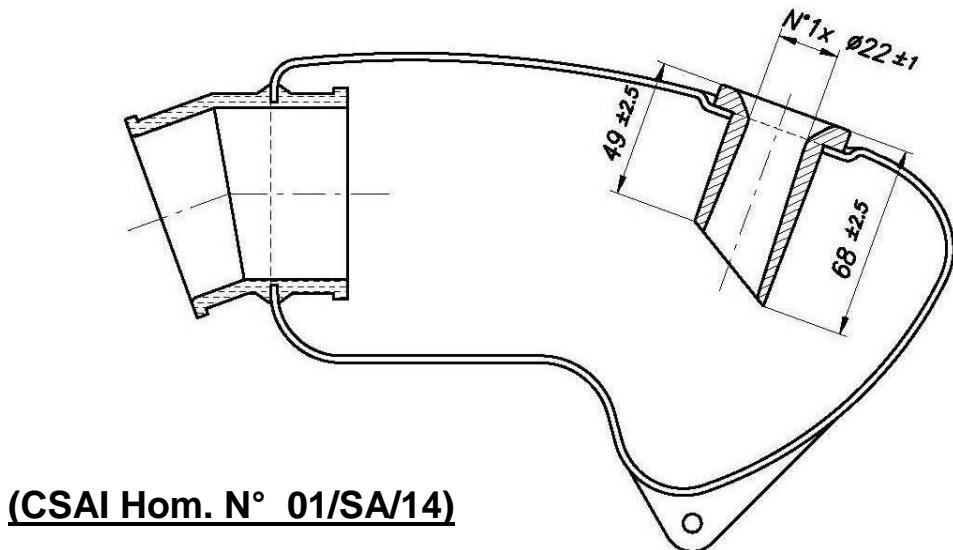
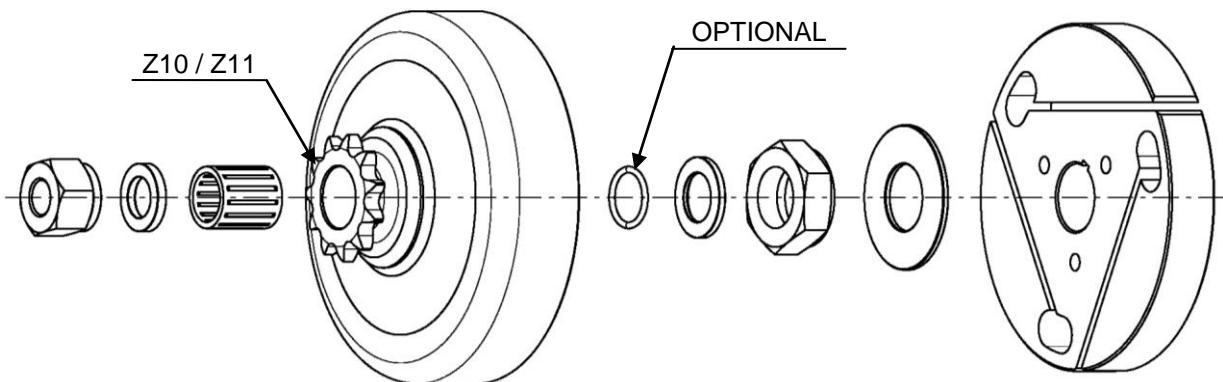
2.0 DESCRIPTION OF THE MATERIAL		3.0 PISTON
Conrod material	Steel	
Crankshaft material	Steel	
Head material	Aluminium	
Cylinder material	Aluminium	
Liner material	Cast Iron	3.1 DISTANCE BETWEEN CONROD CENTERS
Crankcase material	Aluminium	
Piston material	Aluminium	
Piston rings material	Cast Iron	
Exhaust muffler material	Sheet-steel	
Ball-bearings	6204 type	
3.2 CRANKSHAFT		
		Piston pin min. weight: 15.5g
		Complete Crankshaft min. weight: 1280 g

4.0 CYLINDER DEVELOPMENT**4.1 CYLINDER BASE VIEW****4.2 CYLINDER CROSS SECTION VIEW**

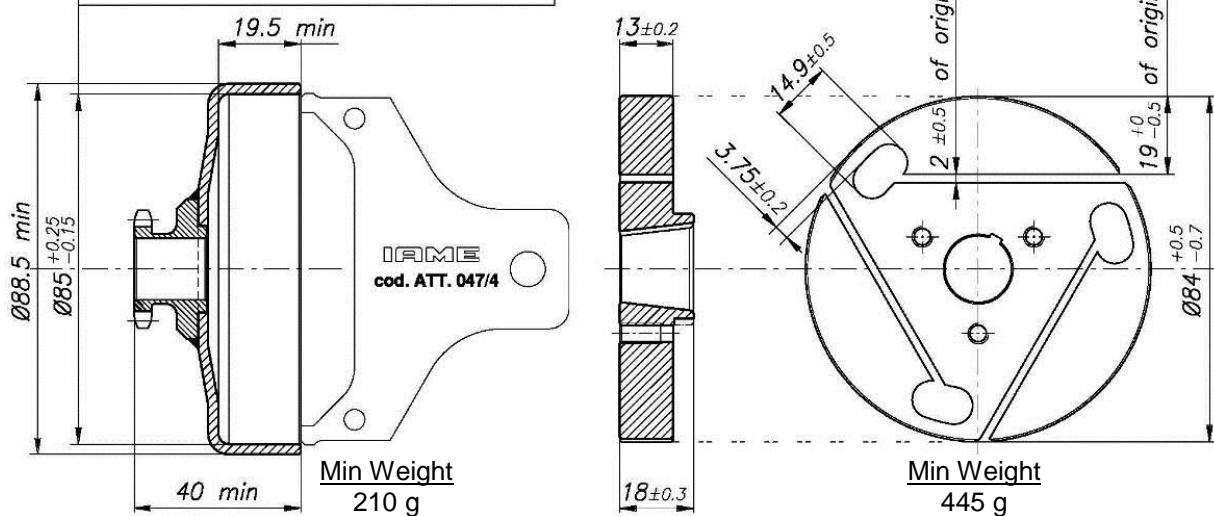
5.0 COMBUSTION CHAMBER VIEW**COMBUSTION CHAMBER VOLUME = 6.1 cm³ min.****SQUISH MIN.= 0.50 mm (measured with Ø 1.6mm TIN)**

Combustion chamber volume in the cylinder head (with Volumeter and CIK insert):

7.4 cm³ min**6.0 CRANKCASE INSIDE VIEW****7.0 CARBURETTOR FITTINGS**Thermal SpacerInlet silencer flange

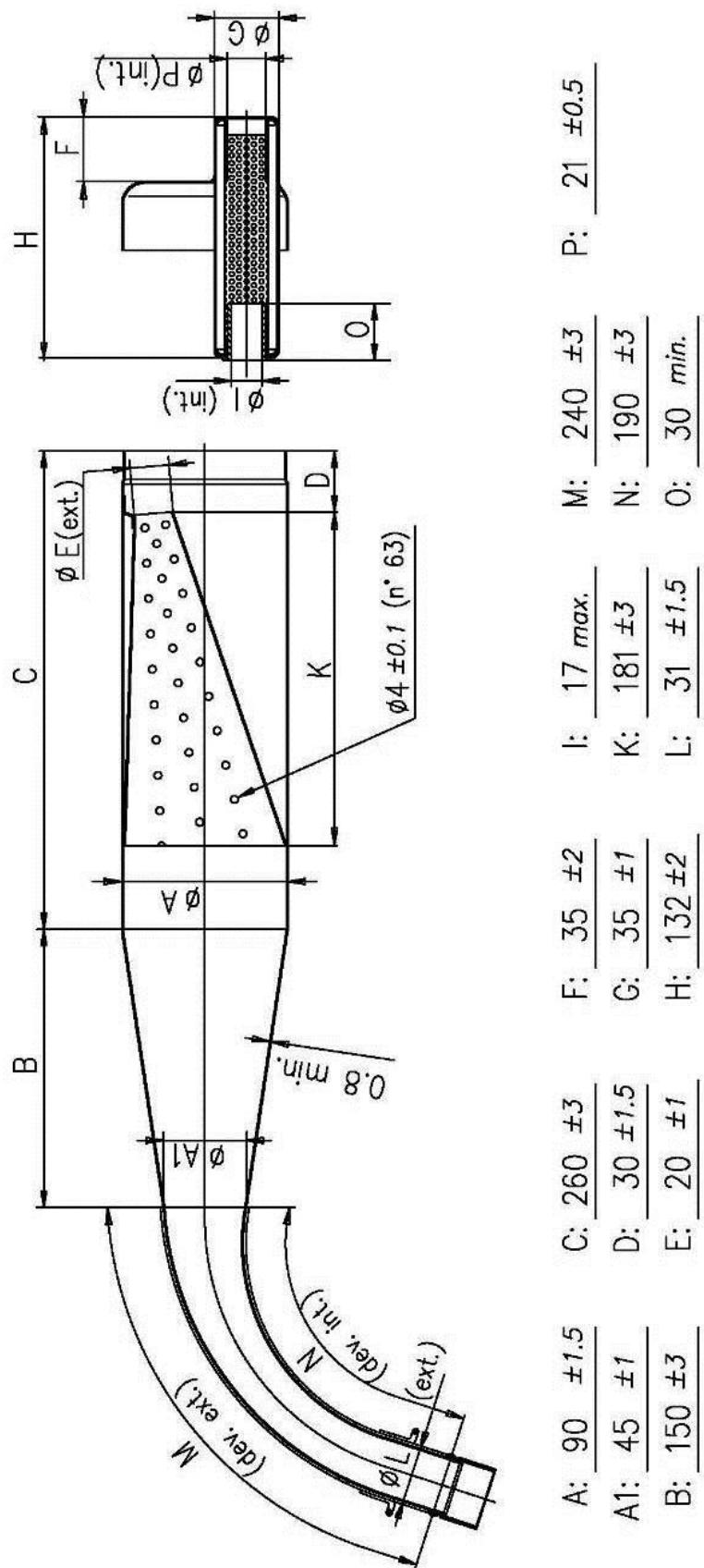
8.0 ASSEMBLY OF INLET SILENCER**9.0 CLUTCH**

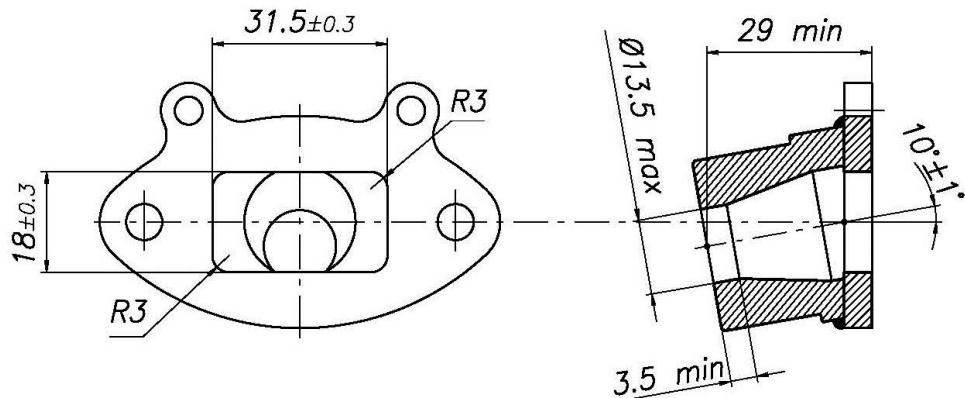
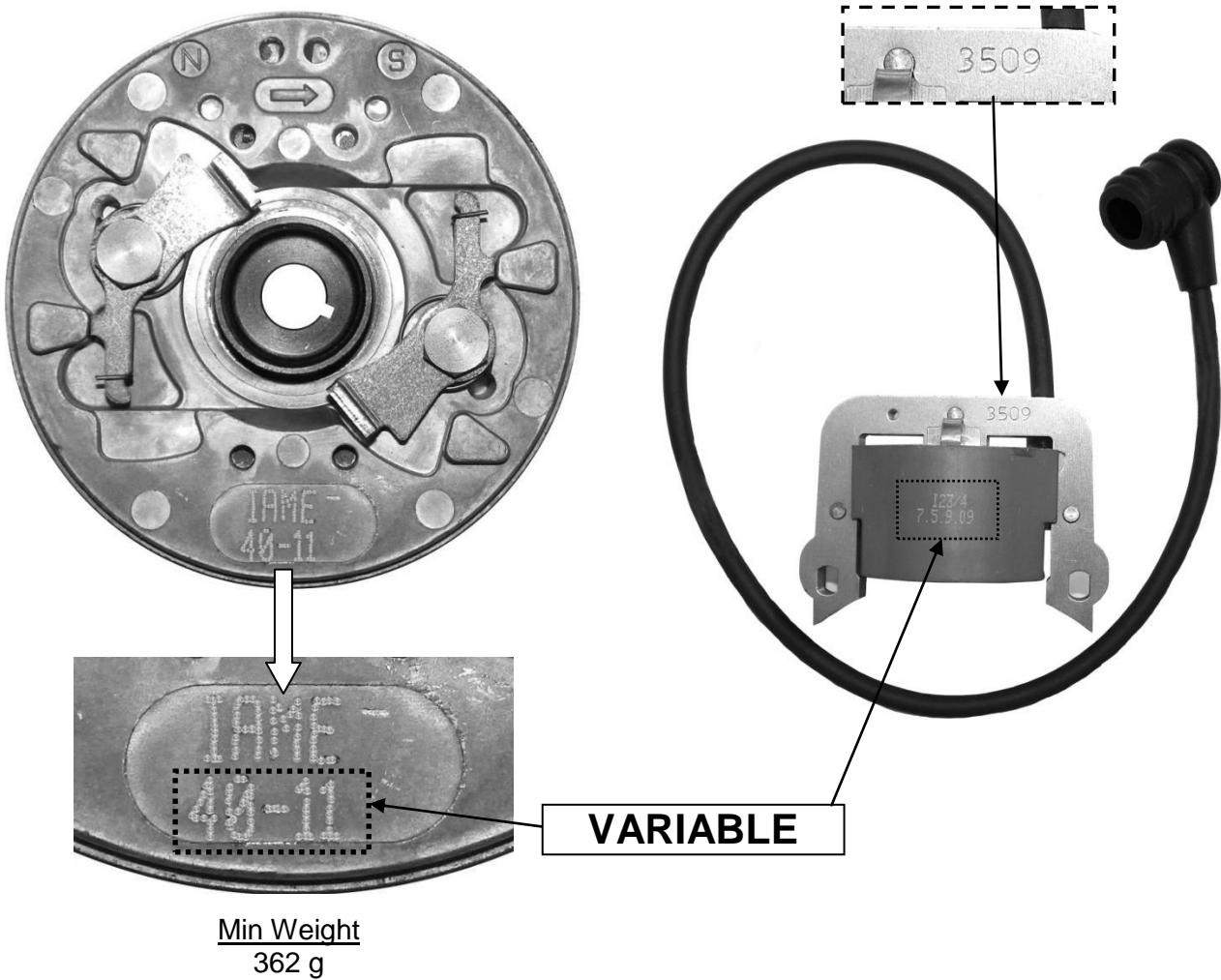
The template "N.P." must be used in multiple directions.
In case it happen that in a direction "PASS" and another,
"DO NOT PASS", the clutch drum is considered regular.

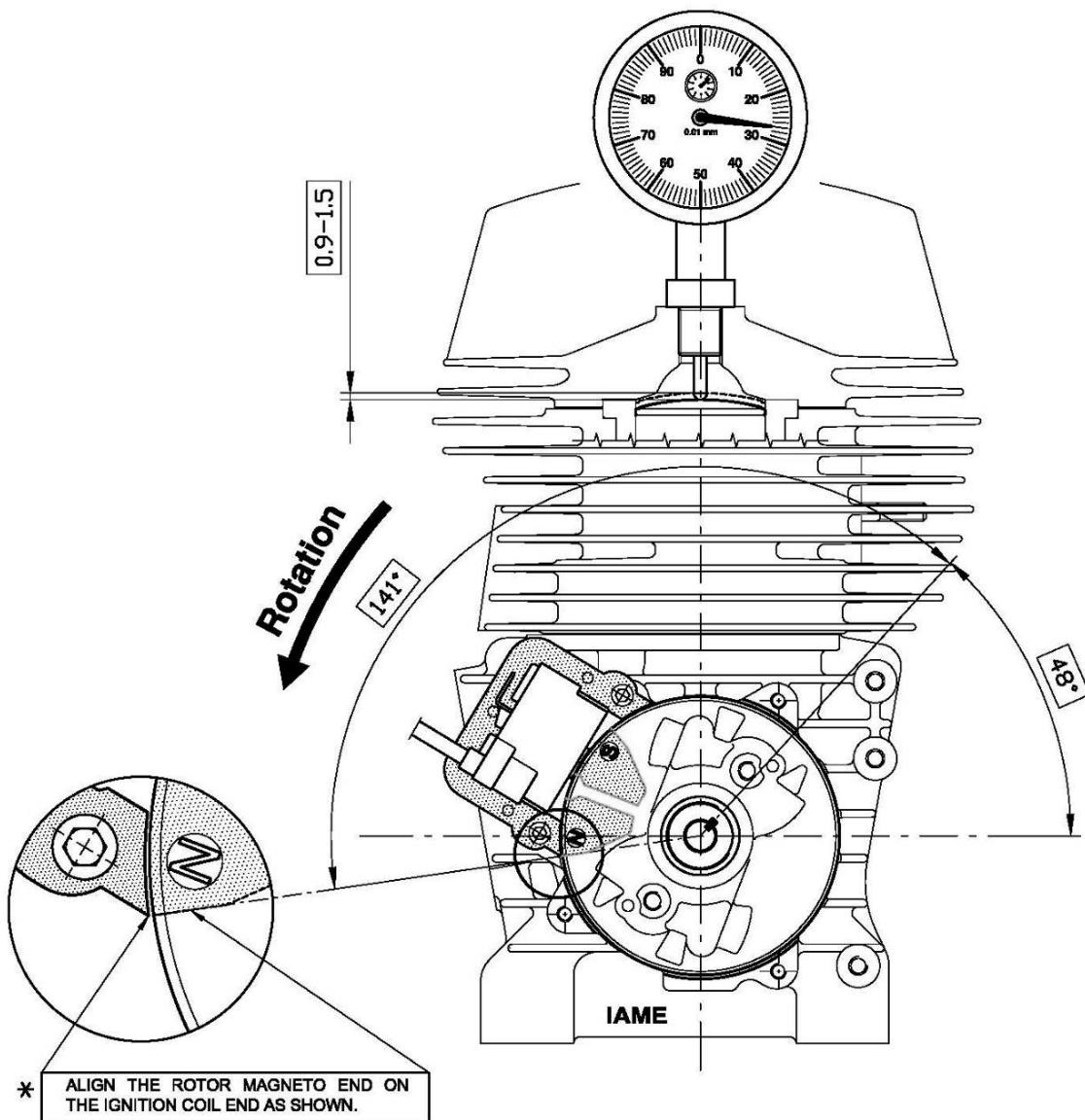
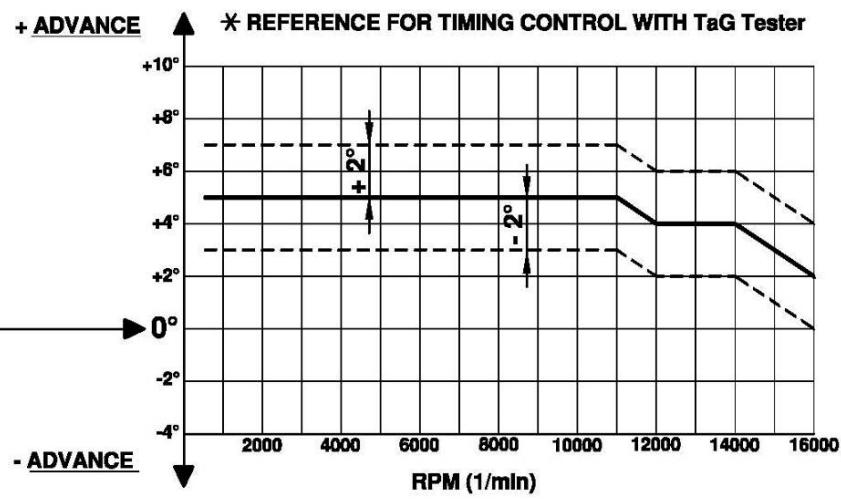


10.0 EXHAUST MUFFLER

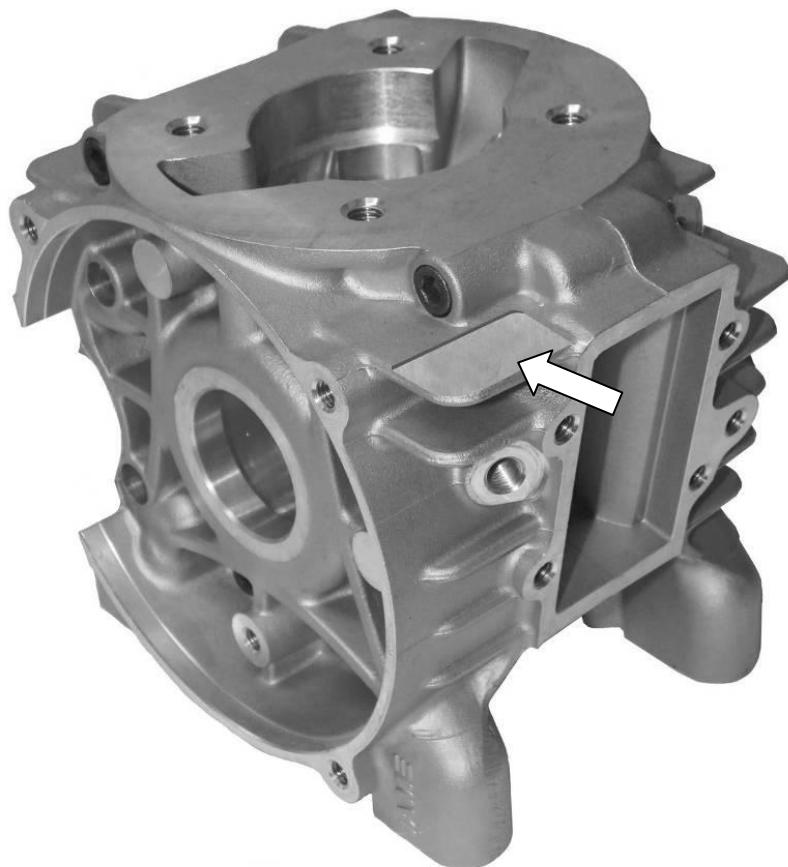
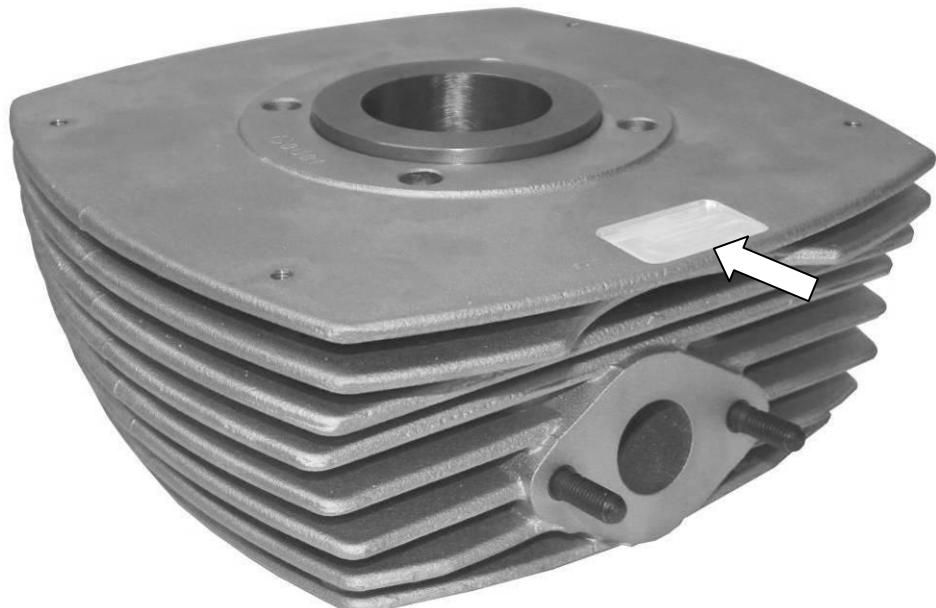
Min. weight:
1250 g

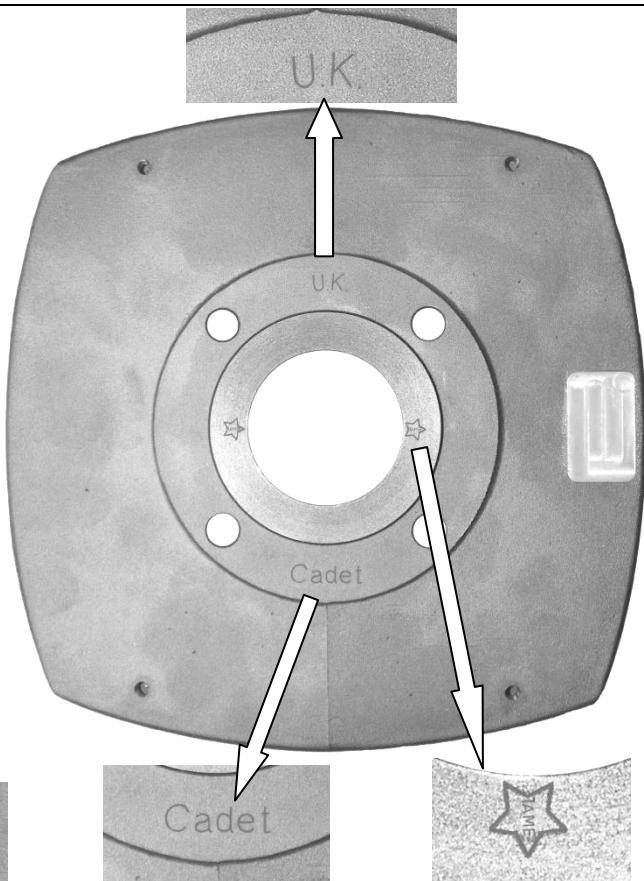
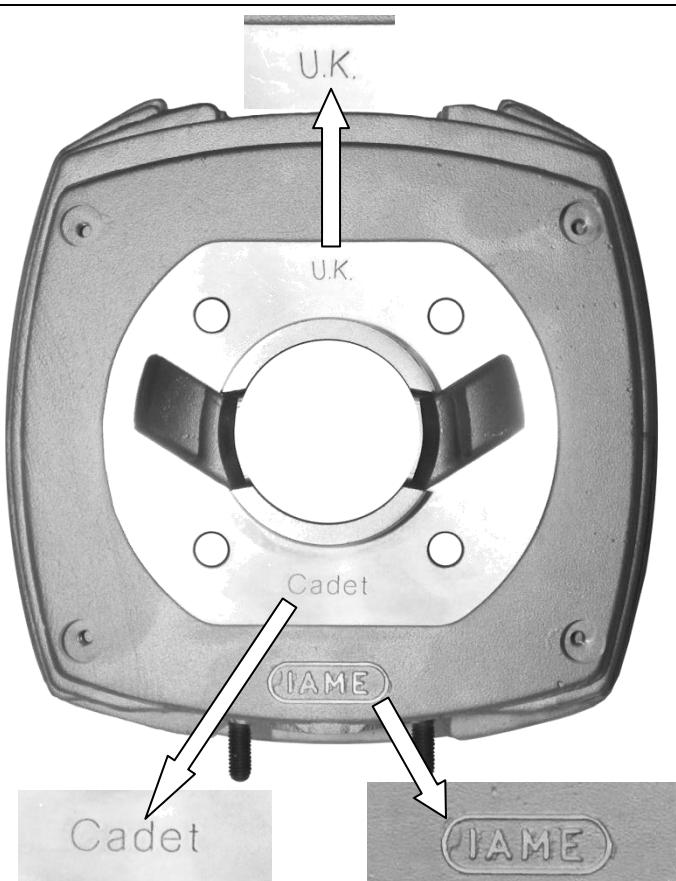
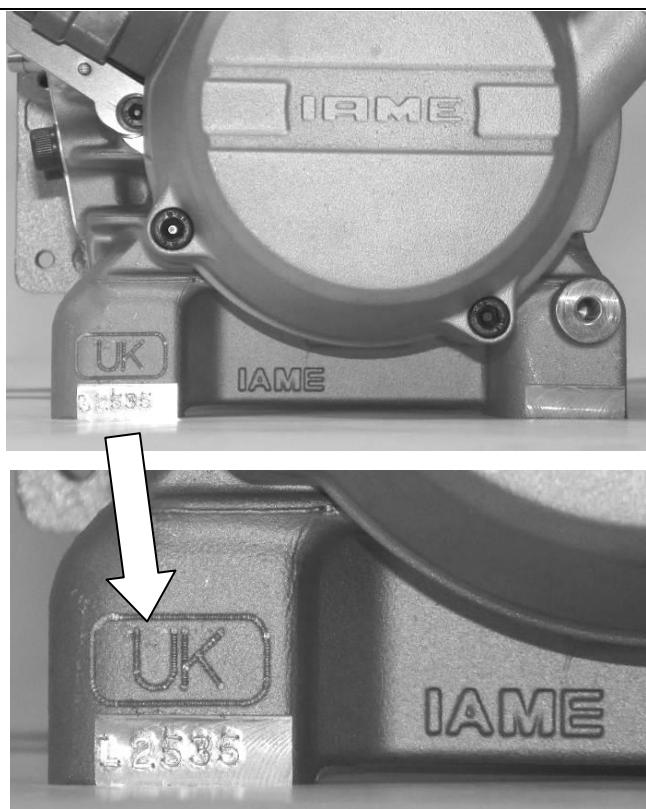
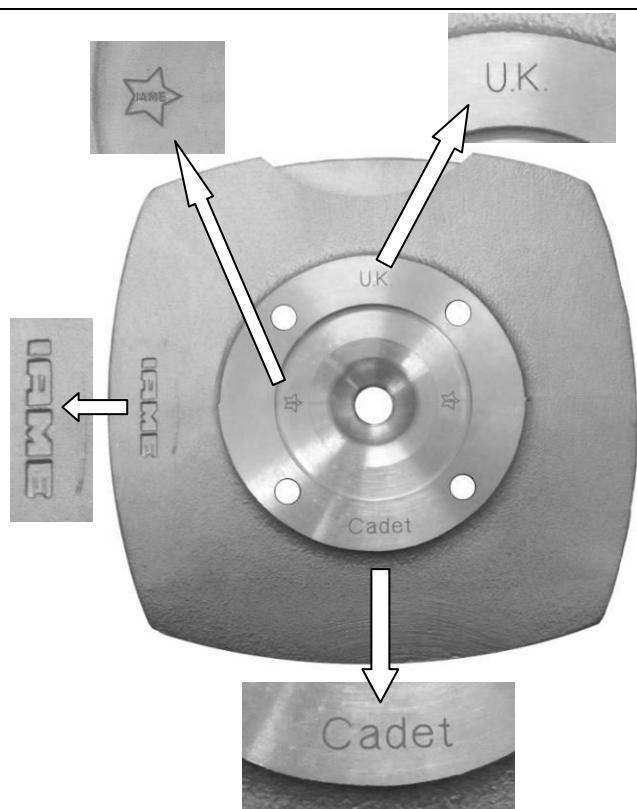


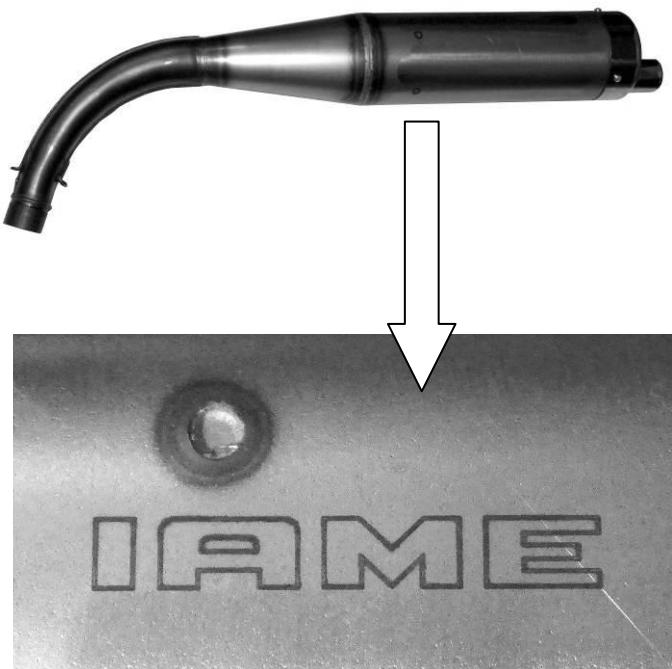
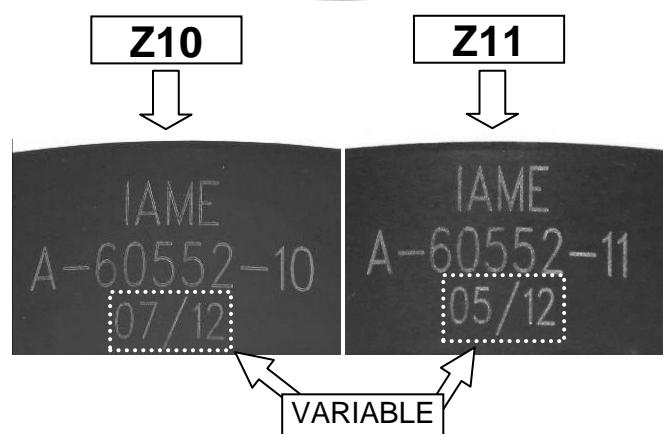
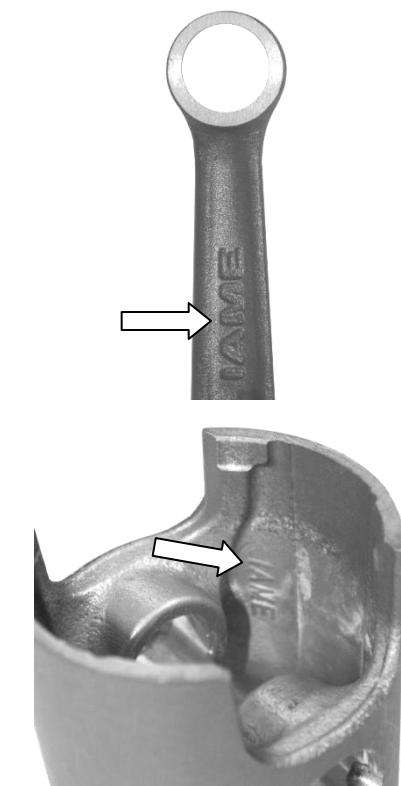
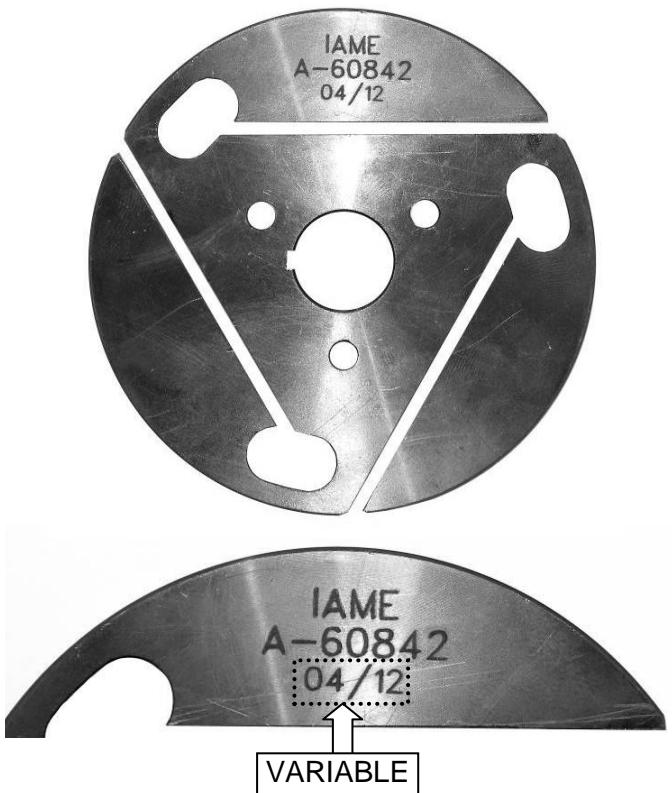
10.1 EXHAUST MANIFOLD**11.0 IGNITION & IDENTIFICATION MARKINGS**

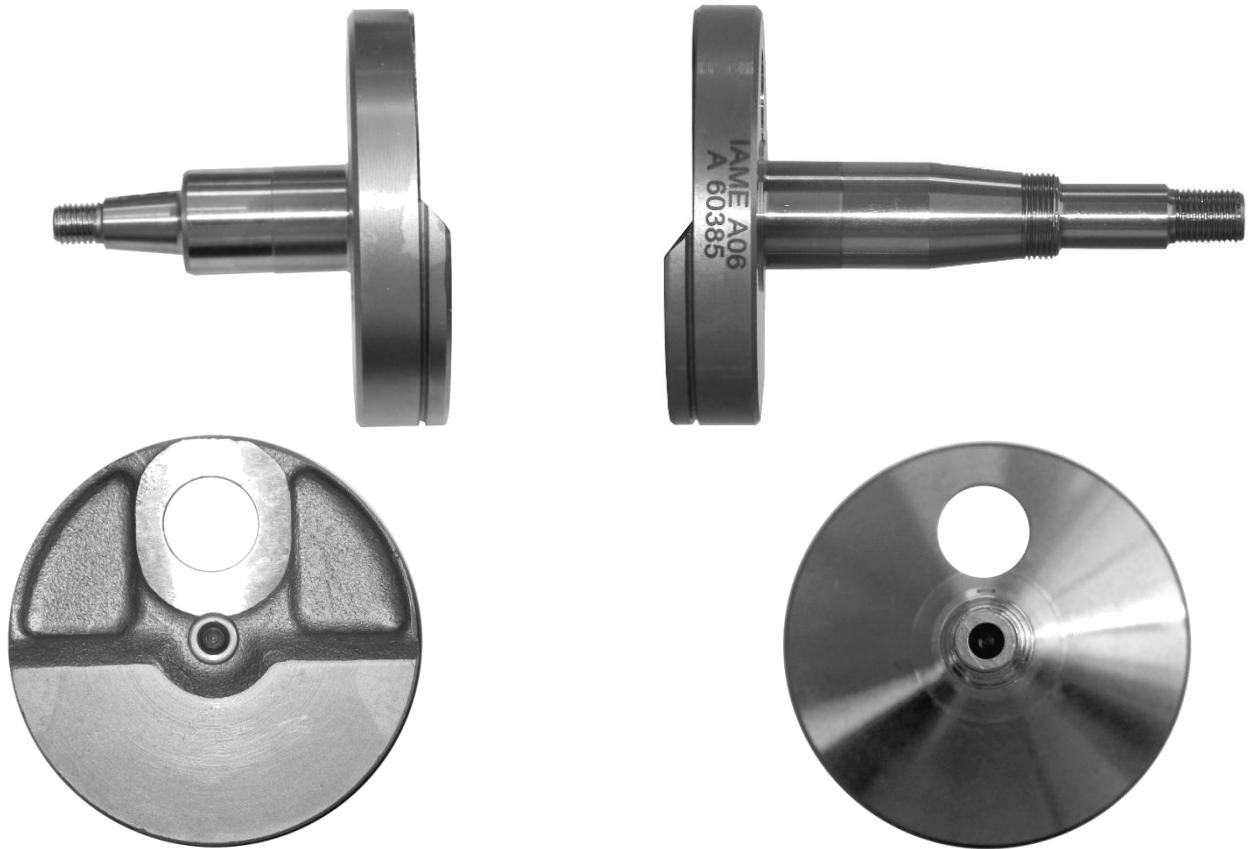
11.1 SCHEME FOR ADVANCE CONTROL**ADVANCE CURVE GRAPHS**

12.0 STICKER APPLICATION AREA



12.1 CYLINDER IDENTIFICATION MARKING**12.2 CRANKCASE IDENTIFICATION MARKING****12.3 HEAD IDENTIFICATION MARKING**

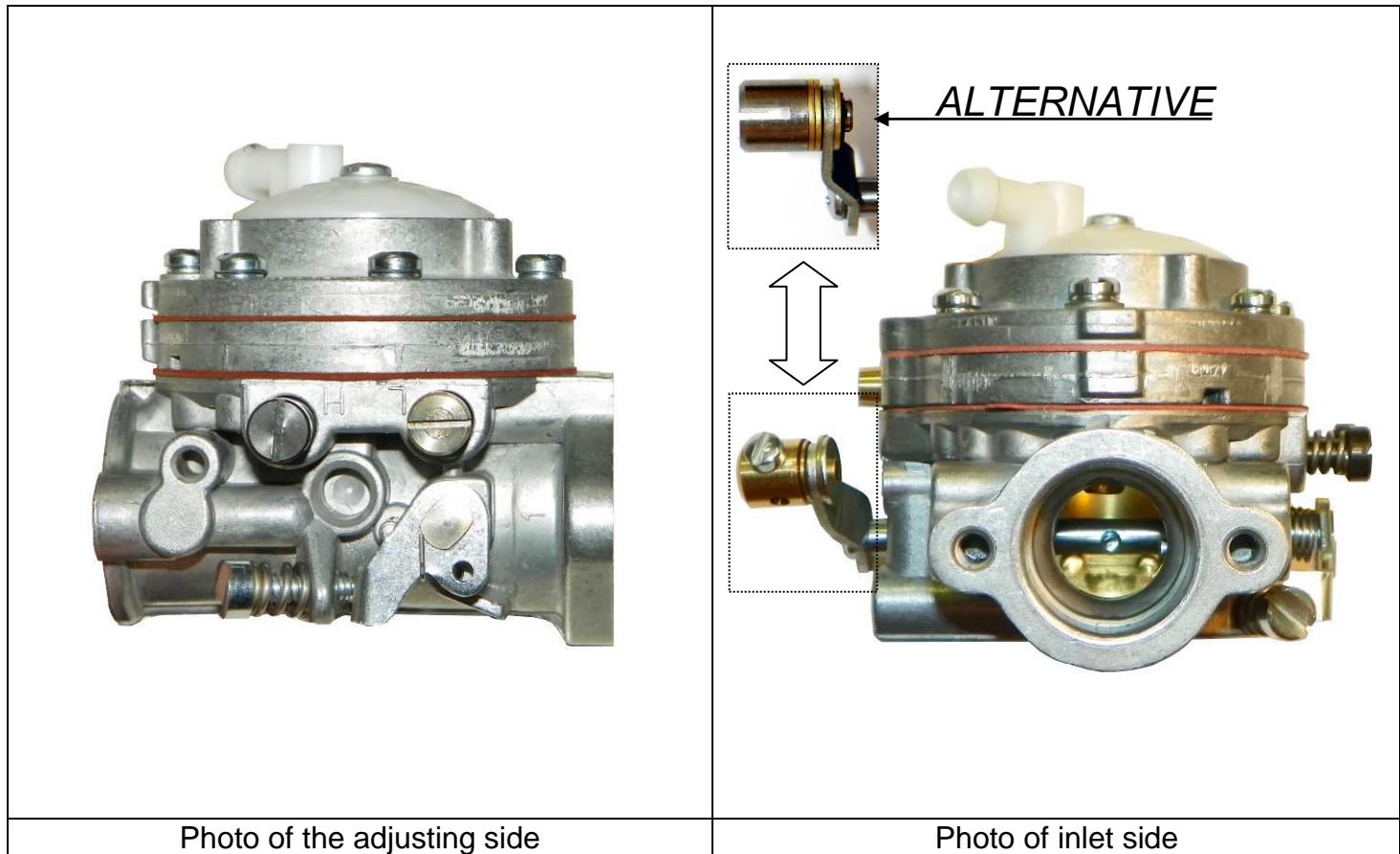
12.4 EXHAUST IDENTIFICATION MARKING**12.5 CONROD / PISTON ID MARKING****12.6 CLUTCH HUB IDENTIFICATION MARKING****12.7 CLUTCH DRUM ID MARKING**

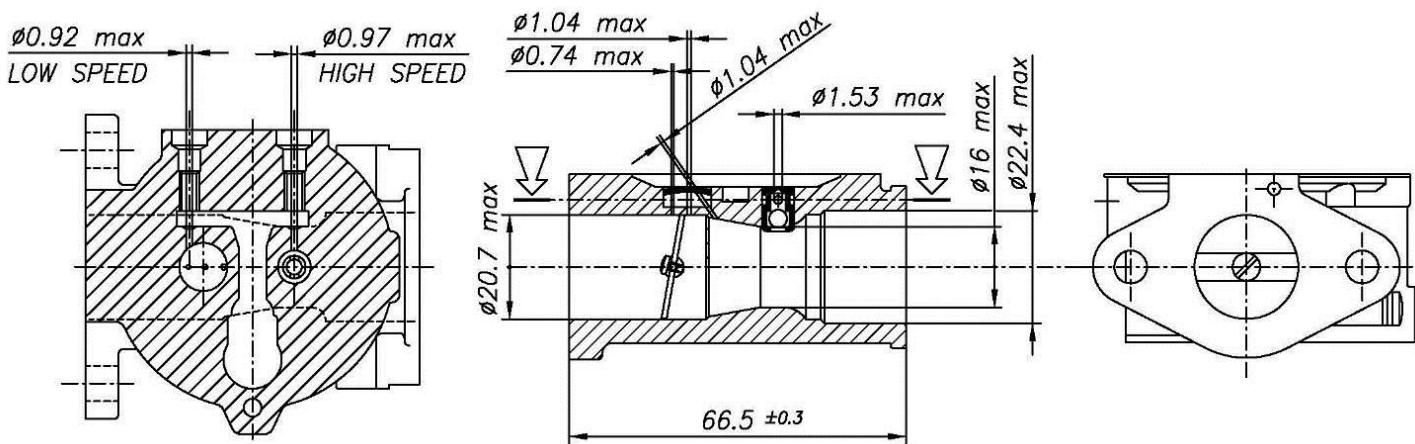
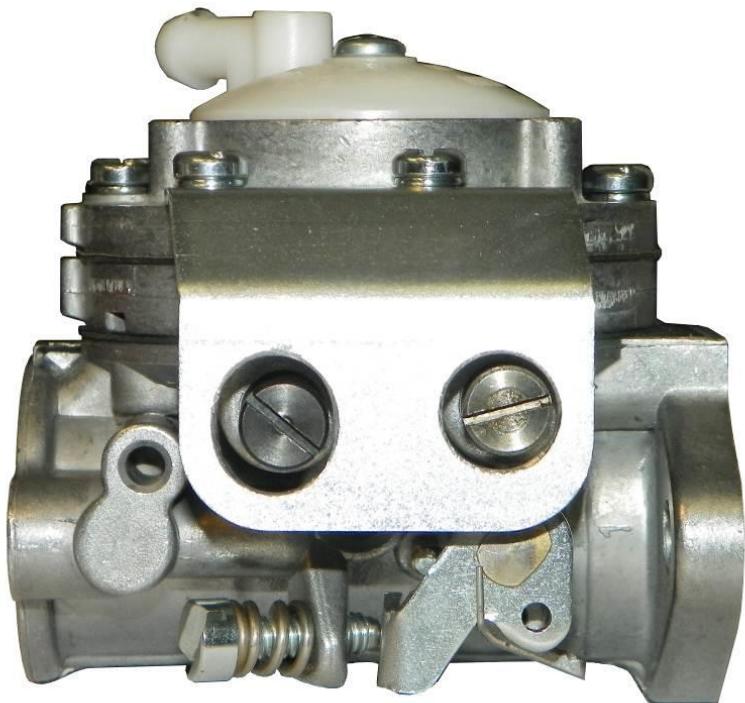
13.0 CRANKSHAFT PHOTOS**13.1 CRANKSHAFT ID MARKINGS****13.2 DETAIL OF COMPLETE CRANKSHAFT**

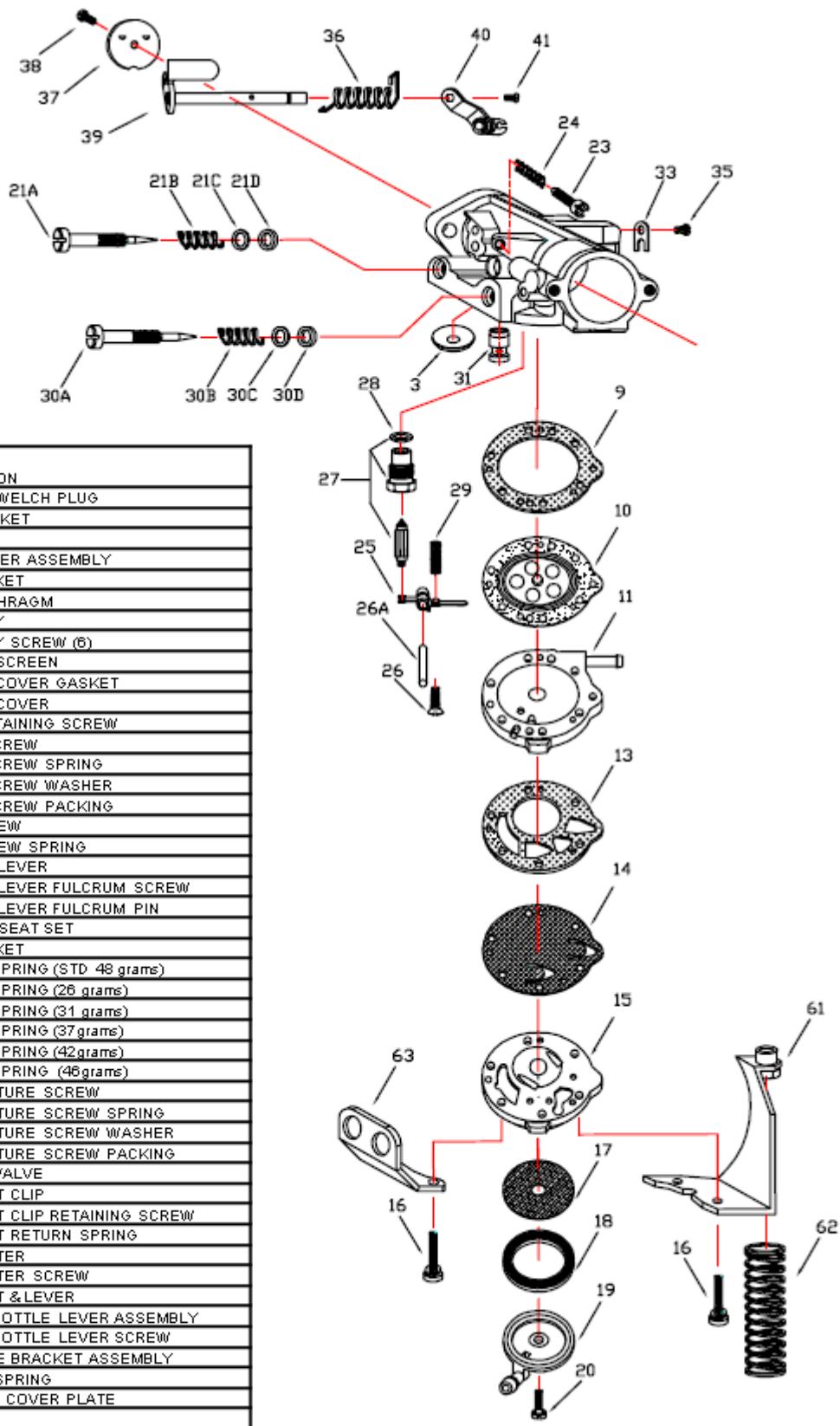
Appendix 1**HOMOLOGATION OF KART ENGINE – SUPPLEMENT
CARBURETTOR**

Category	MSA Cadet
Manufacturer	Tillotson Ltd.
Model	HL 394A
Valid From	09 May 2013
Number of pages	5

This Homologation Form reproduces descriptions, illustrations and dimensions of the carburettor at the moment of the MSA Homologation. This document may be supplemented by official amendment. This document must be read in conjunction with the appropriate Class Regulations.

**SIGNATURE AND STAMP OF THE MSA**Date: **09 May 2013**Signed by: **John Ryan**Position: **MSA Technical Executive***Any reproduction must be authorised by the MSA*

1.0 SECTION VIEW**2.0 GUARD SCREW PLATE**

3.0 CARBURETTOR DESCRIPTION AND SKETCH OF PARTS

REF:	PART NO:	PART DESCRIPTION
3	179-55	BODY CHANNEL WELCH PLUG
9	16B-406	DIAPHRAGM GASKET
10	237-600	DIAPHRAGM
11	91-1018	DIAPHRAGM COVER ASSEMBLY
13	16B-407	FUEL PUMP GASKET
14	237-214	FUEL PUMP DIAPHRAGM
15	141-55	FUEL PUMP BODY
16	15C-51	FUEL PUMP BODY SCREW (6)
17	95-170	FUEL STRAINER SCREEN
18	16B-205	FUEL STRAINER COVER GASKET
19	91A-251	FUEL STRAINER COVER
20	16B-313	FUEL COVER RETAINING SCREW
21A	43-388	IDLE MIXTURE SCREW
21B	24B-449	IDLE MIXTURE SCREW SPRING
21C	78A-256	IDLE MIXTURE SCREW WASHER
21D	44-270	IDLE MIXTURE SCREW PACKING
23	15C-9	IDLE SPEED SCREW
24	24B-131	IDLE SPEED SCREW SPRING
25	155A-27	INLET CONTROL LEVER
26	15B-329	INLET CONTROL LEVER FULCRUM SCREW
26A	32-79	INLET CONTROL LEVER FULCRUM PIN
27	233-706 P	INLET NEEDLE & SEAT SET
28	16B-199	INLET SEAT GASKET
29	24B-345	INLET TENSION SPRING (STD 48 grams)
29A	24-B223	INLET TENSION SPRING (26 grams)
29B	24-C296	INLET TENSION SPRING (31 grams)
29C	24-B299	INLET TENSION SPRING (37 grams)
29D	24-C298	INLET TENSION SPRING (42 grams)
29E	24-C297	INLET TENSION SPRING (46 grams)
30A	43-401	HIGH SPEED MIXTURE SCREW
30B	24B-449	HIGH SPEED MIXTURE SCREW SPRING
30C	78A-256	HIGH SPEED MIXTURE SCREW WASHER
30D	44-270	HIGH SPEED MIXTURE SCREW PACKING
31	363-501	NOZZLE CHECK VALVE
33	29-218	THROTTLE SHAFT CLIP
35	15C-18	THROTTLE SHAFT CLIP RETAINING SCREW
36	24B-291	THROTTLE SHAFT RETURN SPRING
37	14A-34	THROTTLE SHUTTER
38	15C-29	THROTTLE SHUTTER SCREW
39	13-2136	THROTTLE SHAFT & LEVER
40	12-1219	SECONDARY THROTTLE LEVER ASSEMBLY
41	15-C-52	SECONDARY THROTTLE LEVER SCREW
61	136-561	THROTTLE CABLE BRACKET ASSEMBLY
62	24-C-334	CABLE RETURN SPRING
63	136-A-52	MIXTURE SCREW COVER PLATE
RK-126HL		FULL REPAIR KIT
DG-6HL		DIAPHRAGM & GASKET SET

4.0 PARTS OF CARBURETTOR

*REF.9 - P. N° 16B-406
DIAPHRAGM GASKET (ORANGE COLOUR)*



Thickness = 0.55 ± 0.1 mm

*REF.13 - P. N° 16B-407
FUEL PUMP GASKET (ORANGE COLOUR)*



Thickness = 0.8 ± 0.1 mm

*REF.10 - P. N° 237-600
DIAPHRAGM*



Thickness = 0.13 ± 0.07 mm

*REF.14 - P. N° 237-214
FUEL PUMP DIAPHRAGM*



Thickness = 0.08 ± 0.063 mm

*REF.11 - P. N° 91-1018
DIAPHRAGM COVER ASSEMBLY*

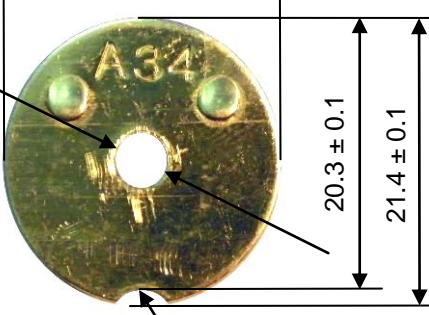
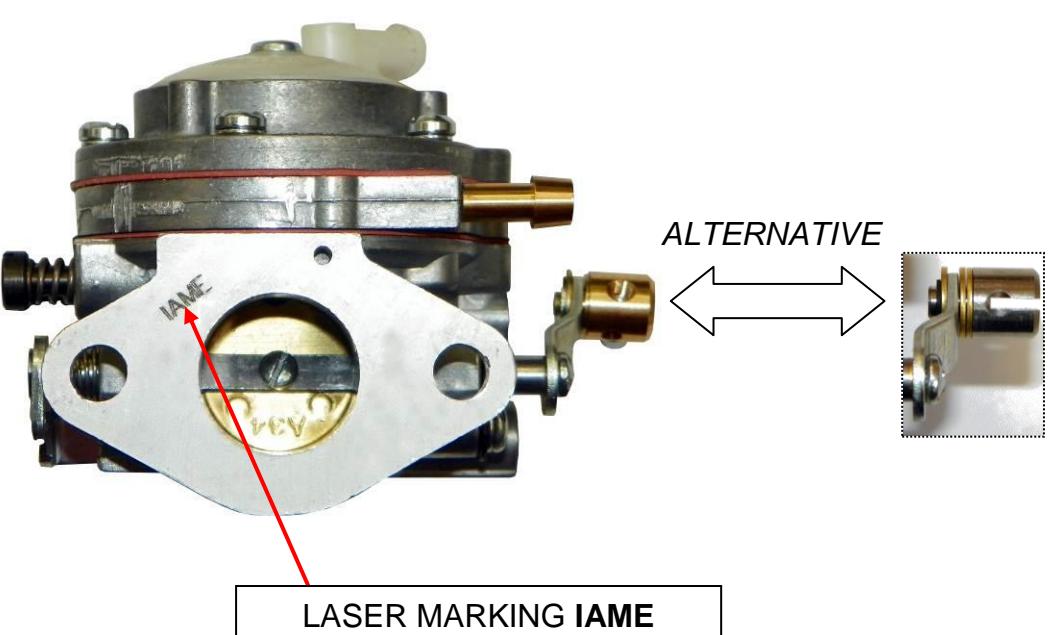


Thickness = 6.75 ± 0.15 mm

*REF.15 - P. N° 141-55
FUEL PUMP BODY*



Thickness = 12.5 ± 0.15 mm

<p>REF.37 - P. N° 14A-34 THROTTLE SHUTTER</p>  <p>$\varnothing 3.8 \pm 0.1$</p> <p>20.55 ± 0.1</p> <p>20.3 ± 0.1</p> <p>21.4 ± 0.1</p> <p>$R2.5 \pm 0.1$</p> <p>Thickness = 0.8 ± 0.1 mm</p>	<p>REF.27 - P. N° 233-706P INLET NEEDLE & SEAT SET</p>  <p>4.09 ± 0.05</p> <p>16.4 ± 0.1</p> <p>1.66 ± 0.05</p> <p>2.45 ± 0.1</p>
<p>REF.30A - P. N° 43-401 HIGH SPEED MIXTURE SCREW</p>  <p>33.09 ± 0.25</p>	<p>REF.21A - P. N° 43-388 IDLE MIXTURE SCREW</p>  <p>33.09 ± 0.25</p>
<p>5.0 MARKINGS</p>	
 <p>LASER MARKING IAME</p> <p>ALTERNATIVE</p>	

Appendix 2
HOMOLOGATION OF KART ENGINE – AMENDMENT

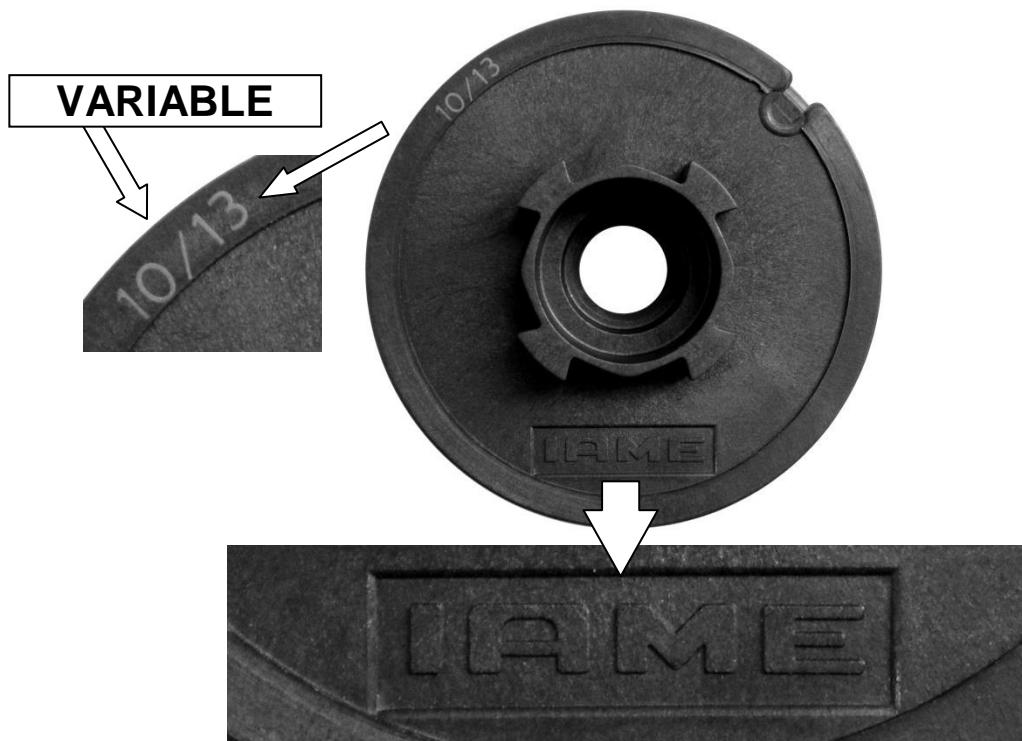
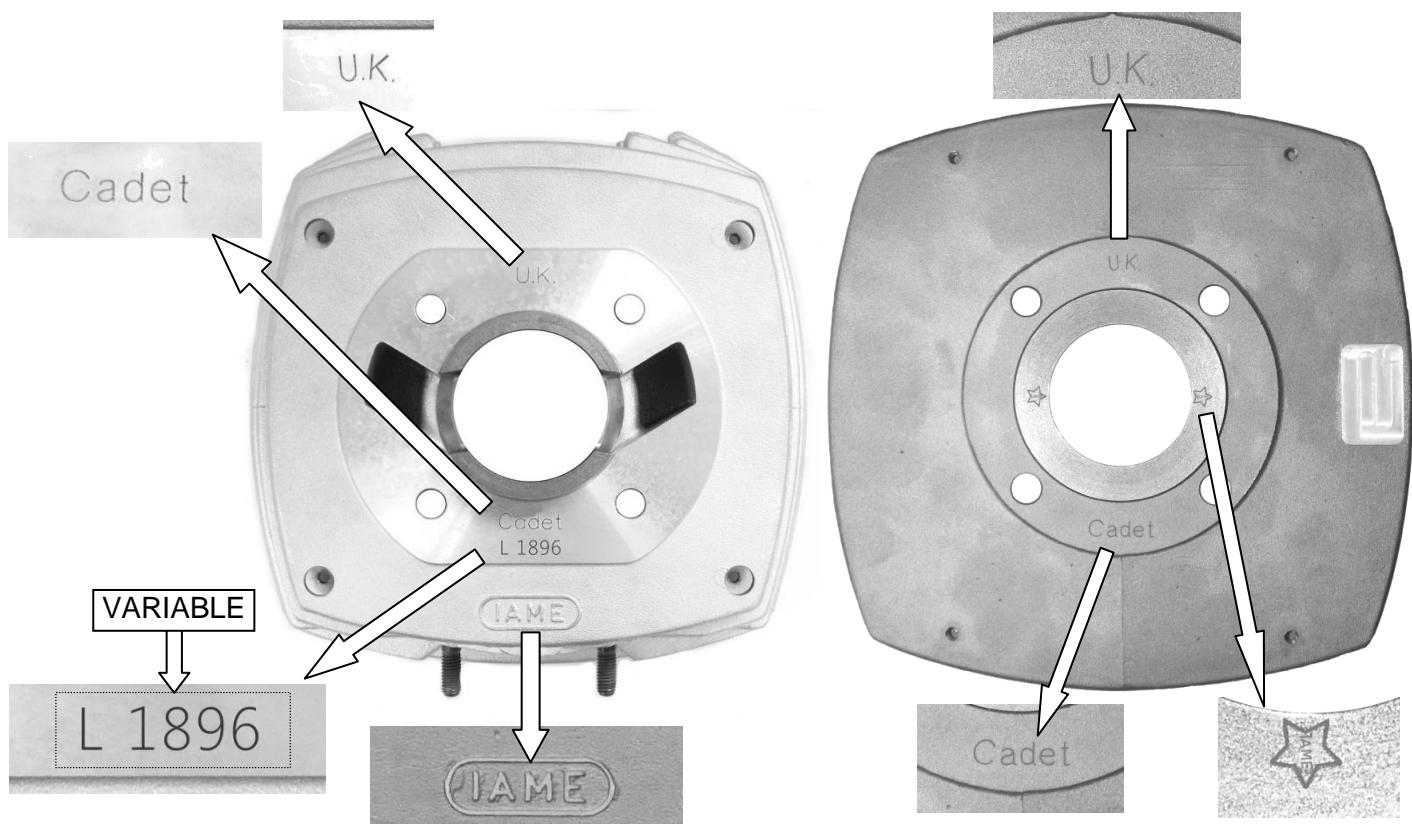
<i>Category</i>	MSA Cadet
<i>Manufacturer</i>	IAME
<i>Model</i>	Parilla Gazelle 60cc U.K.
<i>Valid From</i>	01 January 2014
<i>Number of pages</i>	3

2014 CYLINDER & STARTER UPDATES

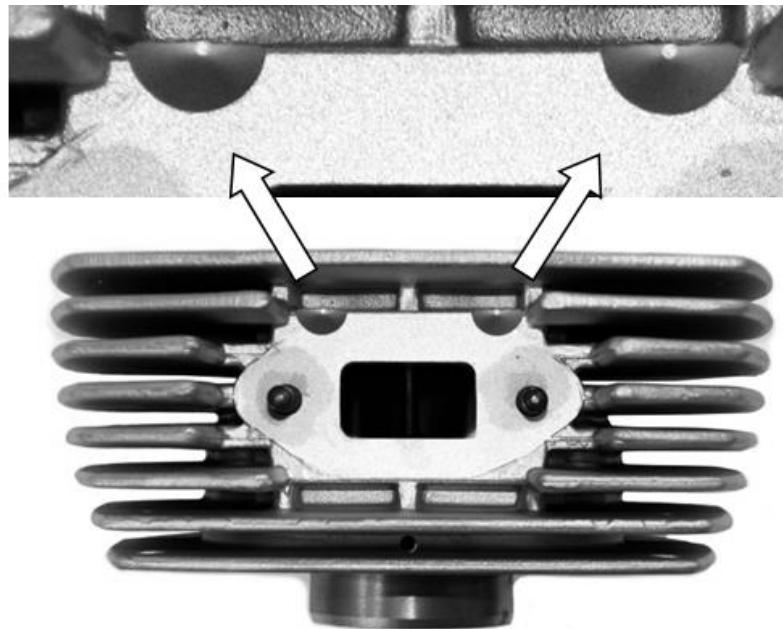
11.0 IGNITION & IDENTIFICATION MARKING

Aluminium ignition pawls



11.2 PULLEY IDENTIFICATION MARKINGS**12.1 CYLINDER IDENTIFICATION MARKING**

12.1.1 SUPPLEMENTARY CYLINDER MACHINING



END

SIGNATURE AND STAMP OF THE MSA



Date: 06 February 2014

Signed by: Joe Hickerton

Position: MSA Technical Administrator