

**HOMOLOGATION OF KART ENGINE**

Category	<b>MSA Cadet</b>
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.*

**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*



Photo of rear of engine



Photo of front of engine

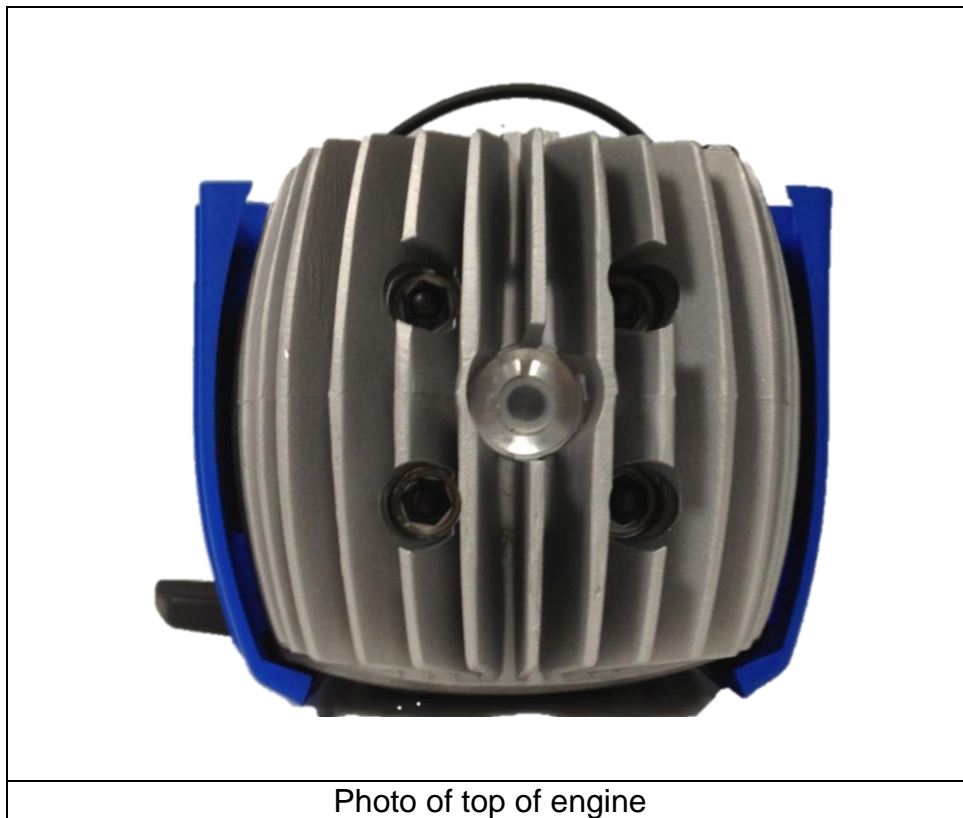


Photo of top of engine

## LIST OF APPENDICES

No.	Type	Description	Pg No.	Date
<a href="#">1</a>	Supplement	Carburettor (cancelled – see Appendix 6)	16	09 May 2013
<a href="#">2</a>	Amendment	2014 Cylinder & Starter Updates	21	06 February 2014
<a href="#">3</a>	Variant	Alternative clutch components & cylinder	24	01 January 2017
<a href="#">4</a>	Variant	Alternative rotor & airbox manifold	26	01 January 2018
<a href="#">5</a>	Variant	New logo markings	28	01 January 2019
<a href="#">6</a>	Variant	Alternative pulley	31	01 January 2021
<a href="#">7</a>	Supplement	Carburettor	32	01 March 2021
<a href="#">8</a>	Amendment	New exhaust restrictor	37	01 March 2021
<a href="#">9</a>	Variant	Thermal spacers	38	01 March 2021
<a href="#">10</a>	Erratum	New exhaust restrictor	39	01 March 2021

Last updated: 01 February 2021

## TECHNICAL INFORMATION

I A M E

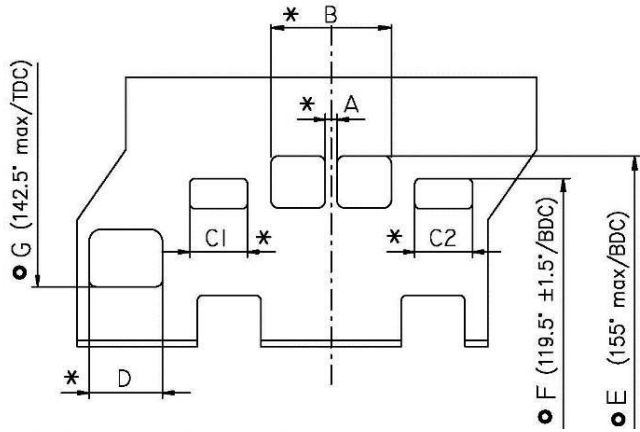
**Parilla GAZELLE 60cc – UK**

## 1.0 FEATURES

Cylinder volume	60.00 cm <sup>3</sup> 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 carburetors	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		

<b>2.0 DESCRIPTION OF THE MATERIAL</b>		<b>3.0 PISTON</b>
Conrod material	Steel	<p>Min Weight (with ring) 60 g</p>
Crankshaft material	Steel	
Head material	Aluminium	
Cylinder material	Aluminium	
Liner material	Cast Iron	<b>3.1 DISTANCE BETWEEN CONROD CENTERS</b>
Crankcase material	Aluminium	<p>Min Weight 97 g</p> <p>IAME</p> <p>Ø24.030 Max.</p>
Piston material	Aluminium	
Piston rings material	Cast Iron	
Exhaust muffler material	Sheet-steel	
Ball-bearings	6204 type	
<b>3.2 CRANKSHAFT</b>		
		<p>Piston pin min. weight: 15.5g</p> <p>RAW FORGED</p> <p>Complete Crankshaft min. weight: 1280 g</p>

**4.0 CYLINDER DEVELOPMENT**

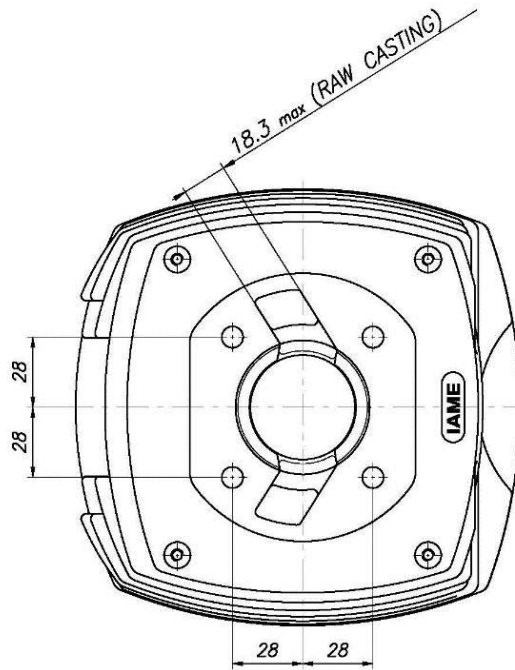


A	4.0 ±0.2 mm
B	34.0 ±0.2 mm
C1 = C2	17.6 ±0.4 mm
D	25.0 ±0.2 mm
E	155° max
F	119.5° ±1.5°
G	142.5° max°

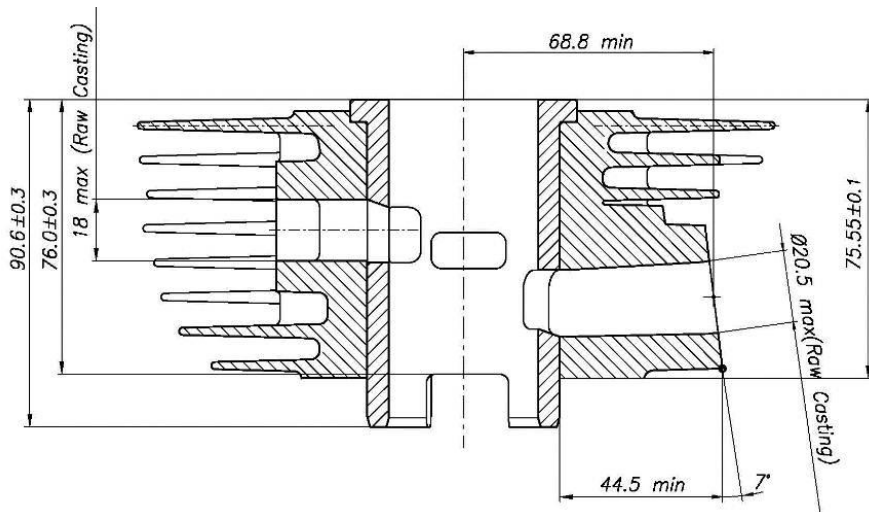
\* CHORDAL READING

● ANGULAR READING BY INSERTING A 0.2x5mm GAUGE

**4.1 CYLINDER BASE VIEW**



**4.2 CYLINDER CROSS SECTION VIEW**

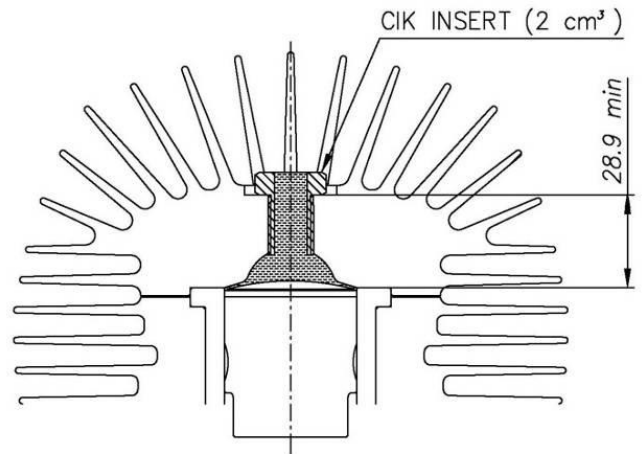


**5.0 COMBUSTION CHAMBER VIEW**

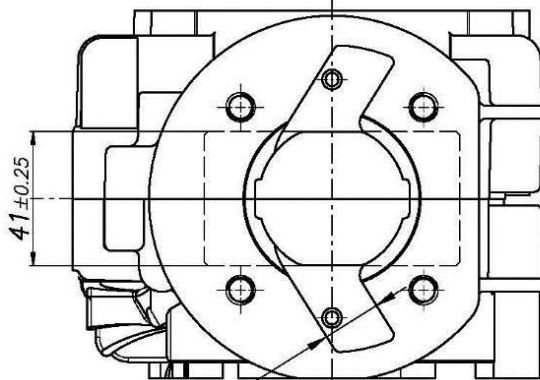
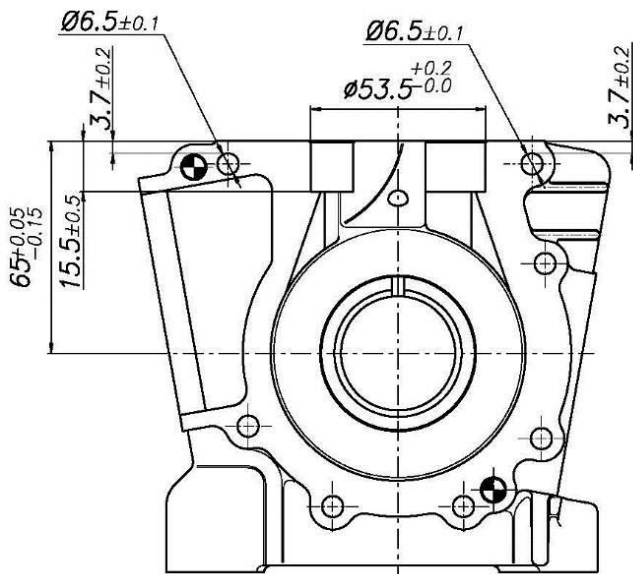
**COMBUSTION CHAMBER VOLUME = 6.1 cm<sup>3</sup> min.**

**SQUISH MIN.= 0.50 mm (measured with Ø1.6mm TIN)**

Combustion chamber volume in the cylinder head (with Volumeter and CIK insert):  
**7.4 cm<sup>3</sup> min**



**6.0 CRANKCASE INSIDE VIEW**

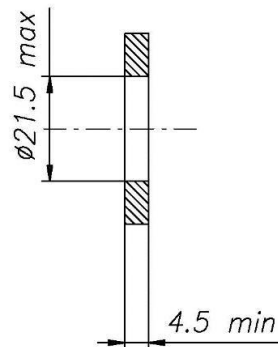


18.3 max  
(RAW CASTING)

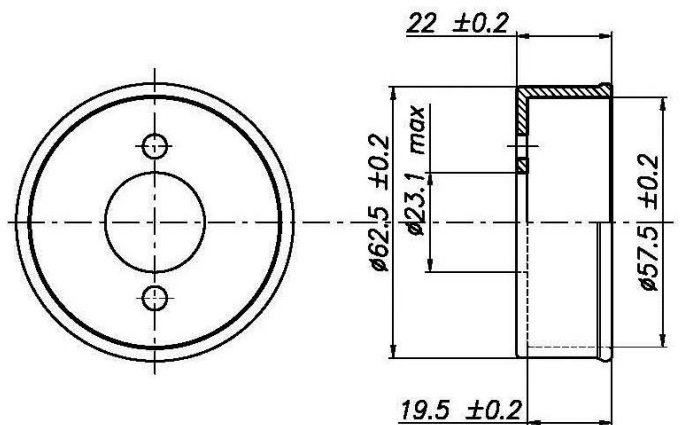
**7.0 CARBURETTOR FITTINGS**

**See Appendix 9**

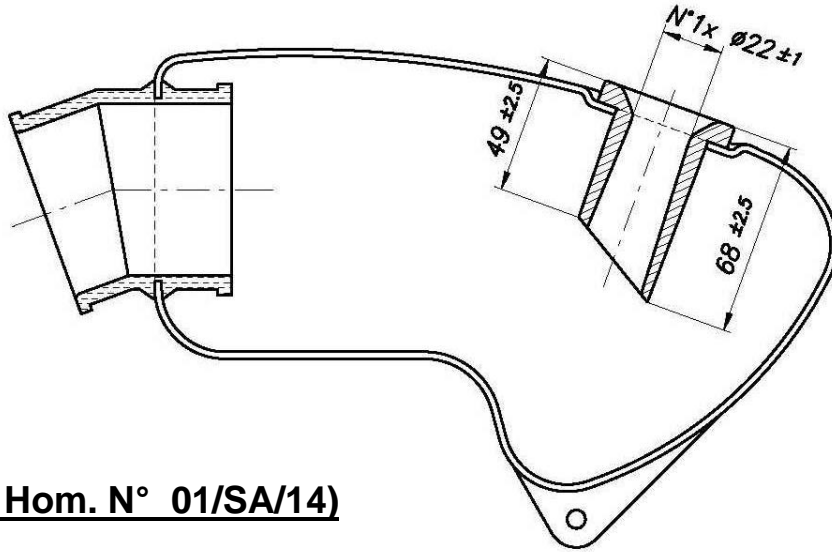
**Thermal Spacer**



**Inlet silencer flange**

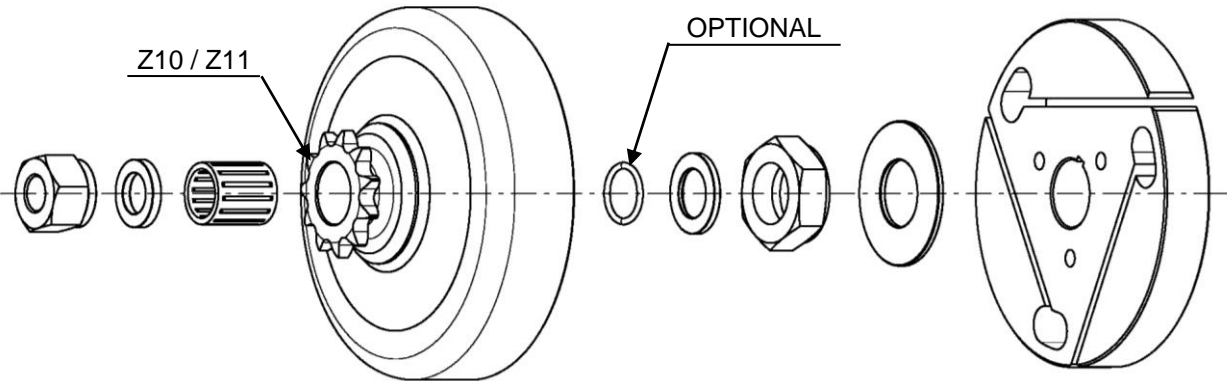


**8.0 ASSEMBLY OF INLET SILENCER**

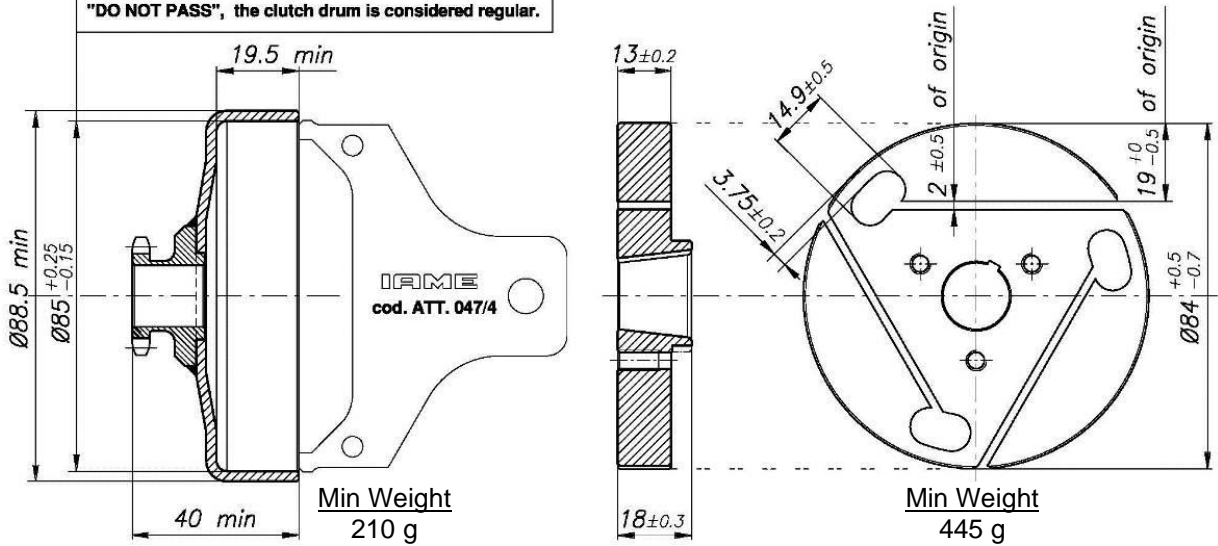


**(CSAI Hom. N° 01/SA/14)**

**9.0 CLUTCH**



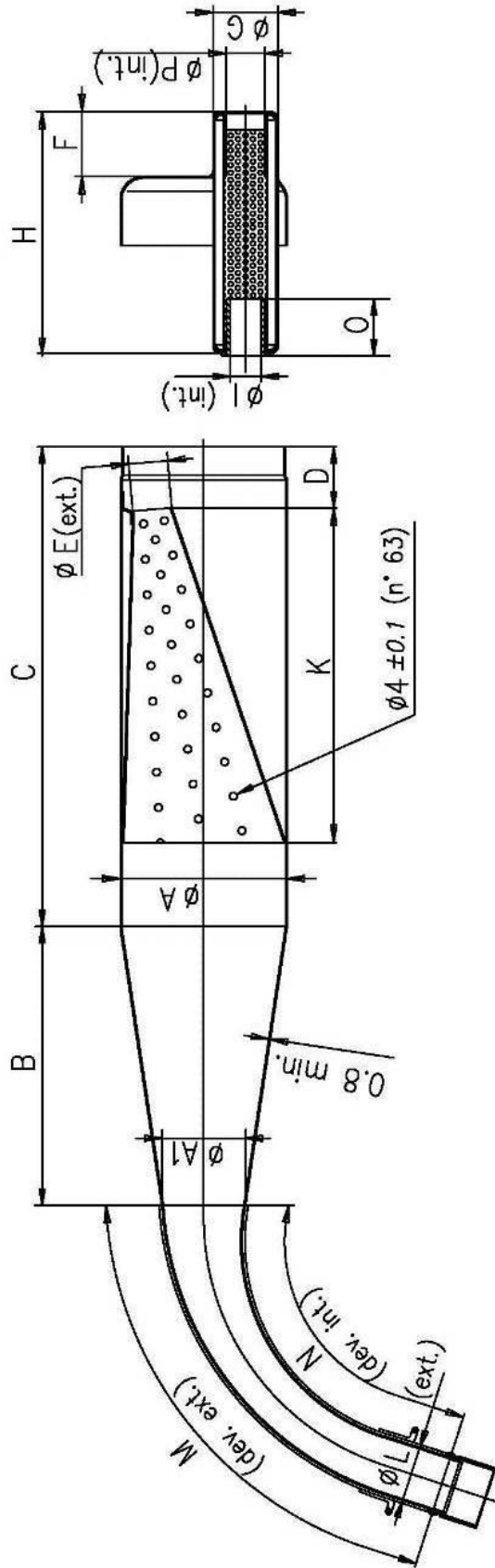
The template "N.P." must be used in multiple directions.  
In case it happen that in a direction "PASS" and another,  
"DO NOT PASS", the clutch drum is considered regular.





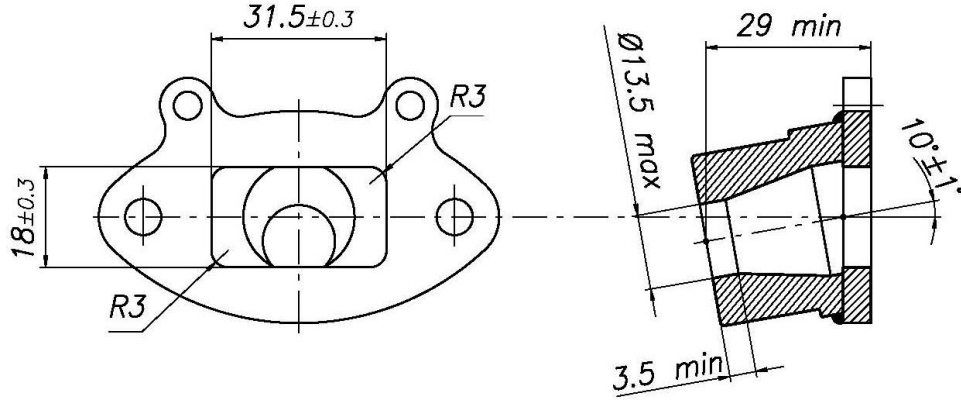
**10.0 EXHAUST MUFFLER**

Min. weight:  
1250 g

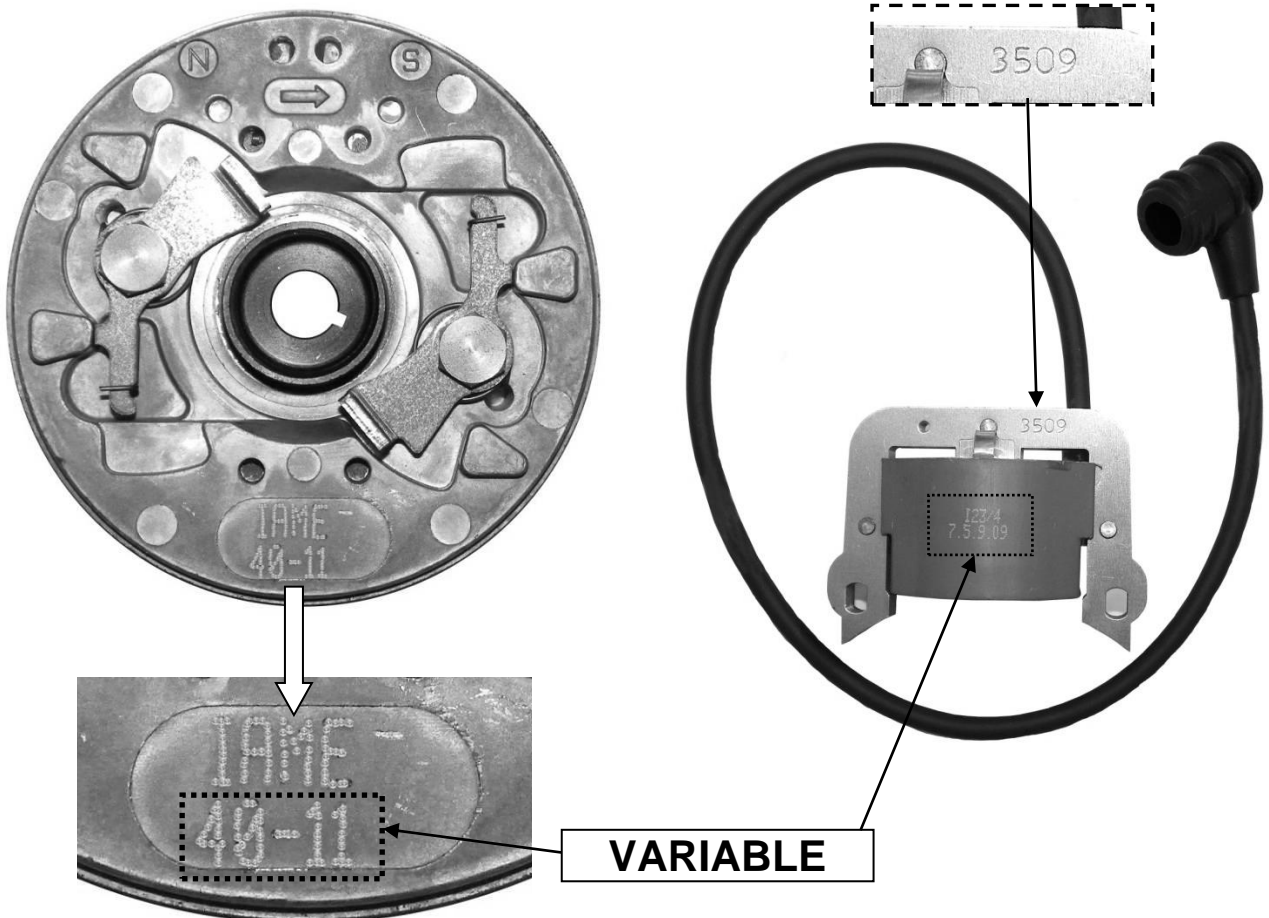


A: 90 ±1.5	C: 260 ±3	F: 35 ±2	I: 17 max.	M: 240 ±3	P: 21 ±0.5
A1: 45 ±1	D: 30 ±1.5	G: 35 ±1	K: 181 ±3	N: 190 ±3	
B: 150 ±3	E: 20 ±1	H: 132 ±2	L: 31 ±1.5	O: 30 min.	

10.1 EXHAUST MANIFOLD **See Appendix 10**

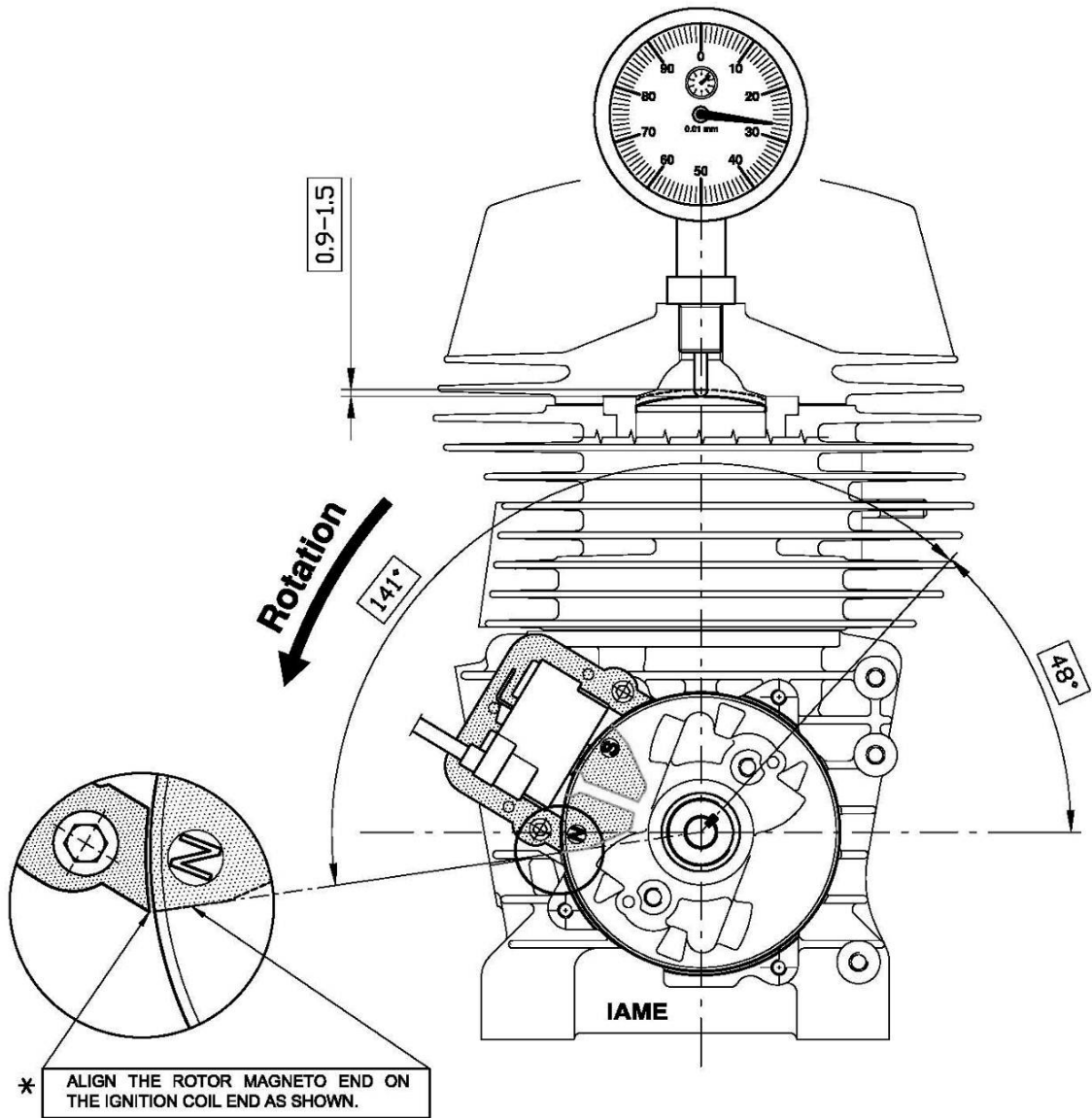


11.0 IGNITION & IDENTIFICATION MARKINGS

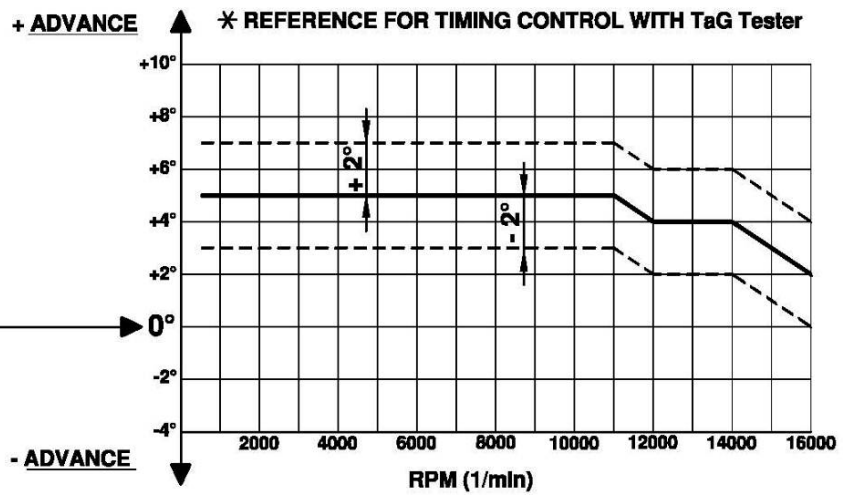


Min Weight  
362 g

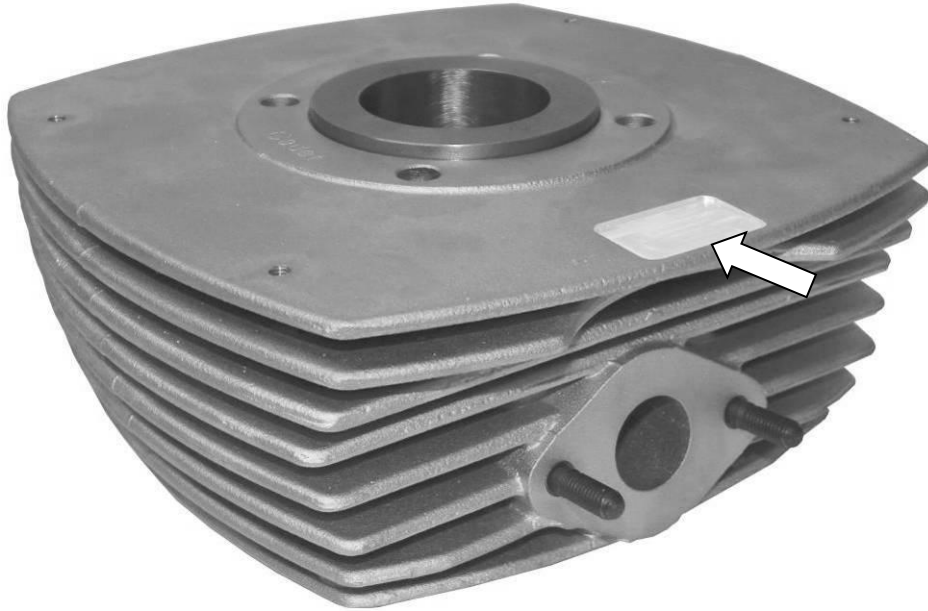
### 11.1 SCHEME FOR ADVANCE CONTROL



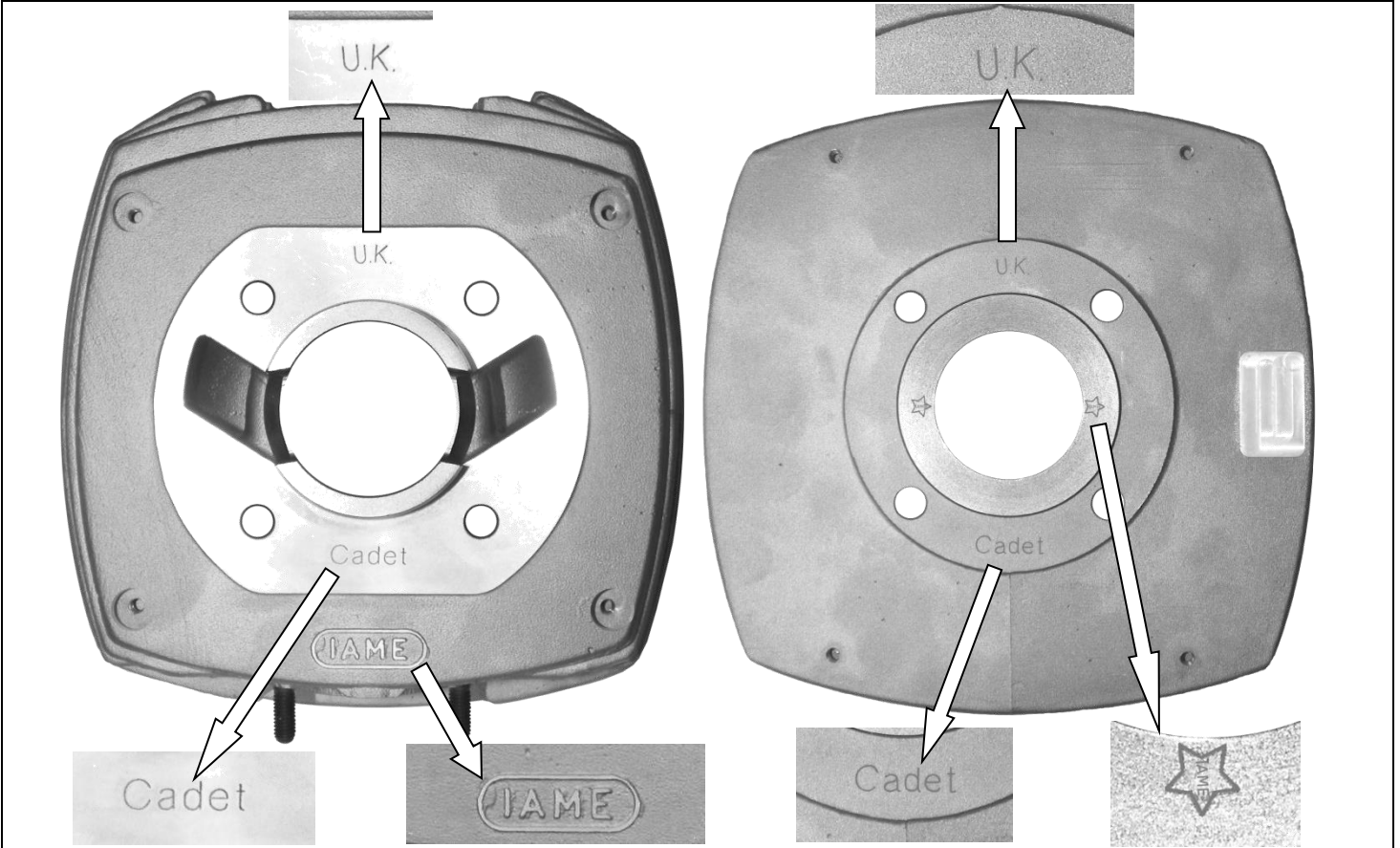
**ADVANCE CURVE GRAPHS**



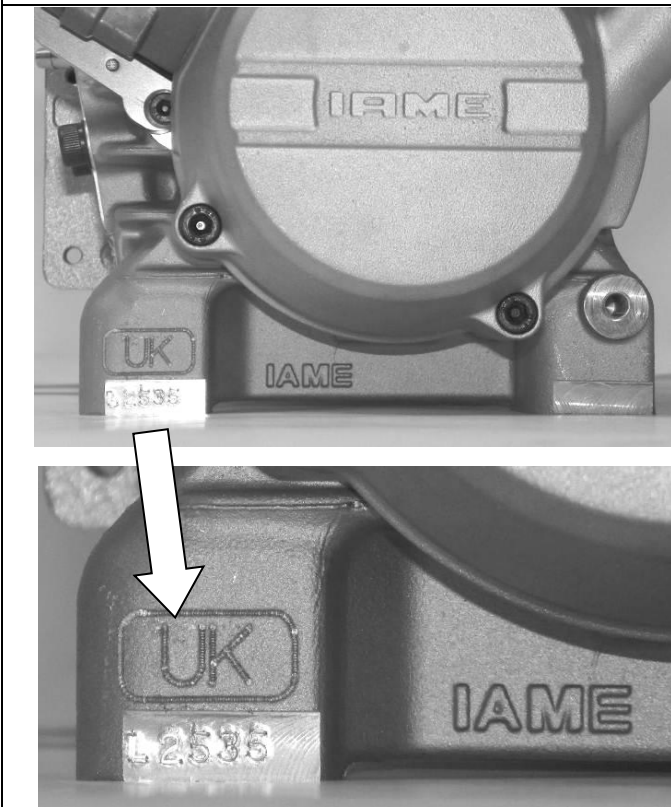
## 12.0 STICKER APPLICATION AREA



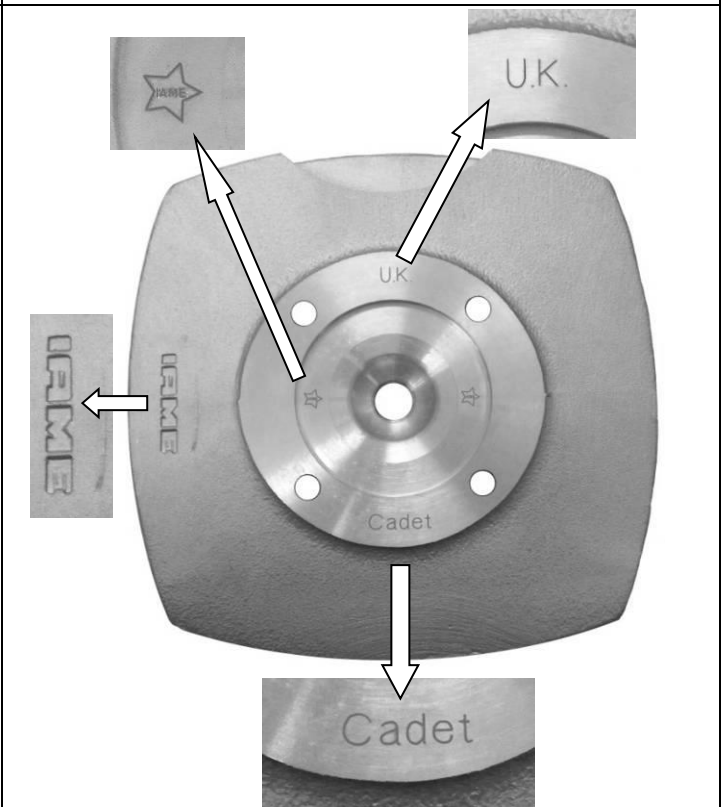
### 12.1 CYLINDER IDENTIFICATION MARKING



### 12.2 CRANKCASE IDENTIFICATION MARKING

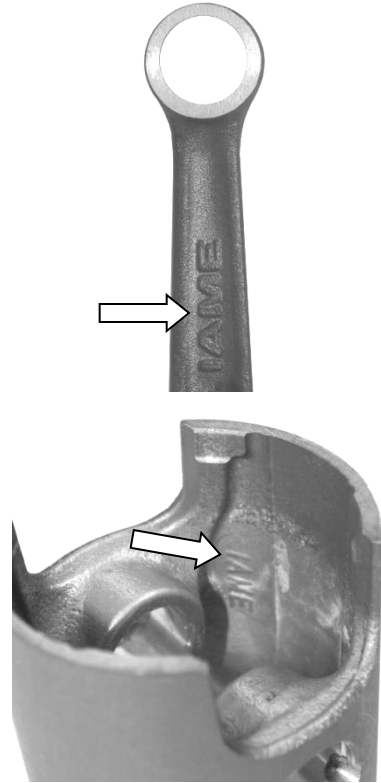


### 12.3 HEAD IDENTIFICATION MARKING



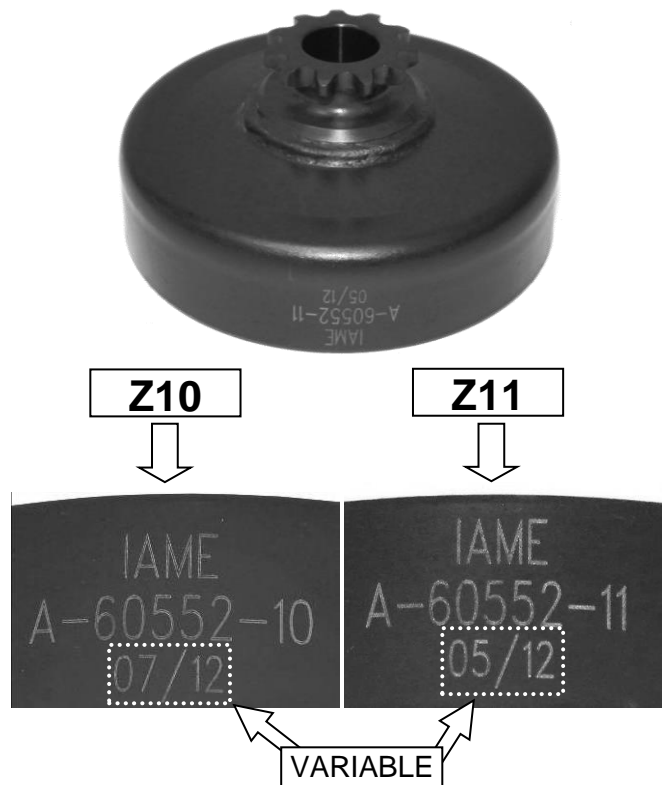
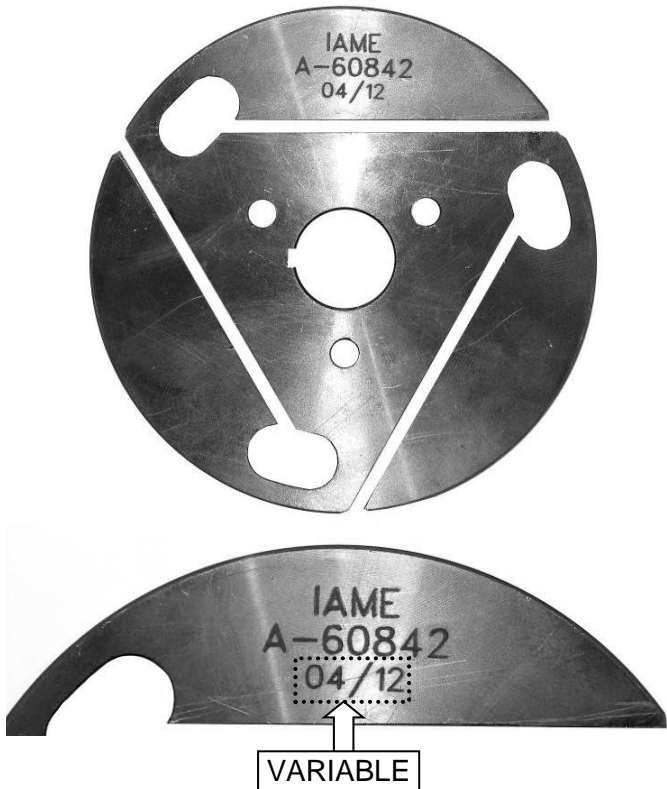
12.4 EXHAUST IDENTIFICATION MARKING

12.5 CONROD / PISTON ID MARKING

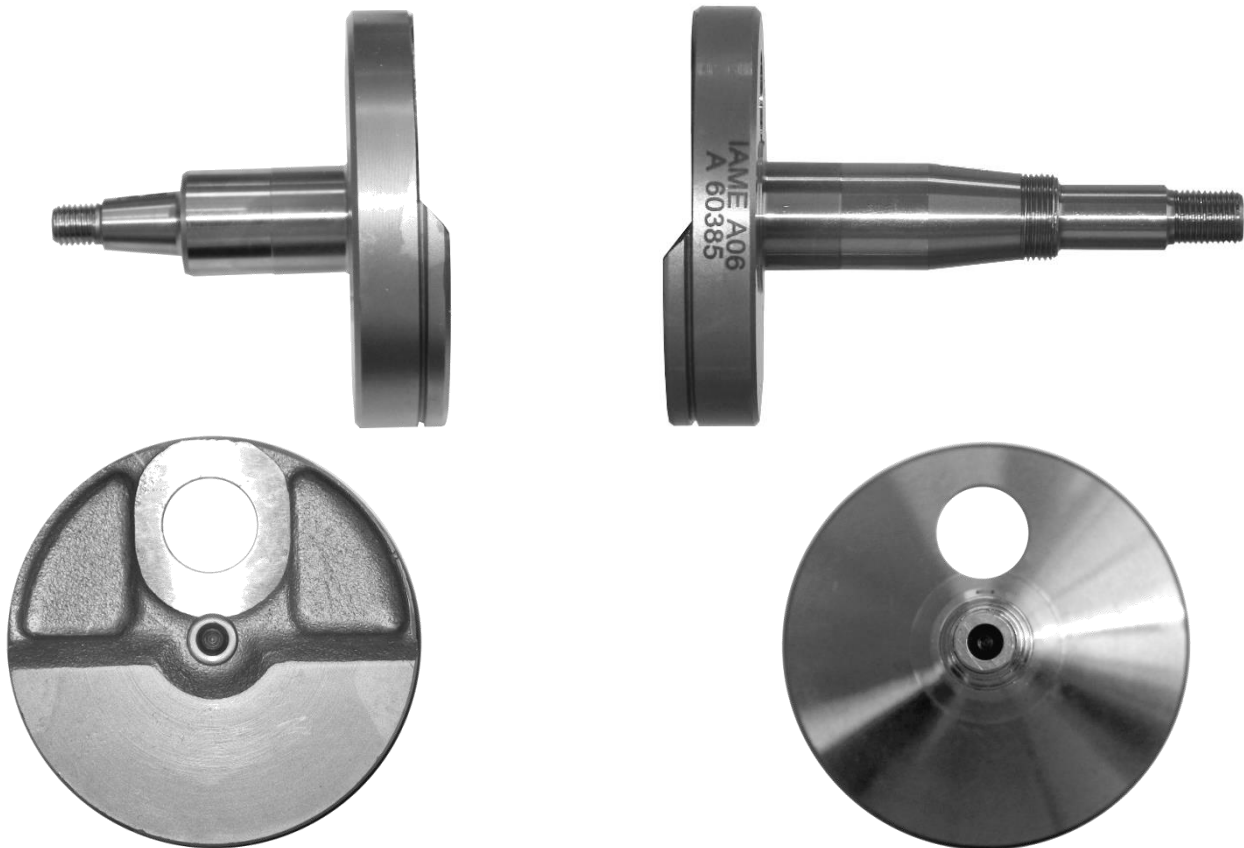


12.6 CLUTCH HUB IDENTIFICATION MARKING

12.7 CLUTCH DRUM ID MARKING



### 13.0 CRANKSHAFT PHOTOS



### 13.1 CRANKSHAFT ID MARKINGS

### 13.2 DETAIL OF COMPLETE CRANKSHAFT

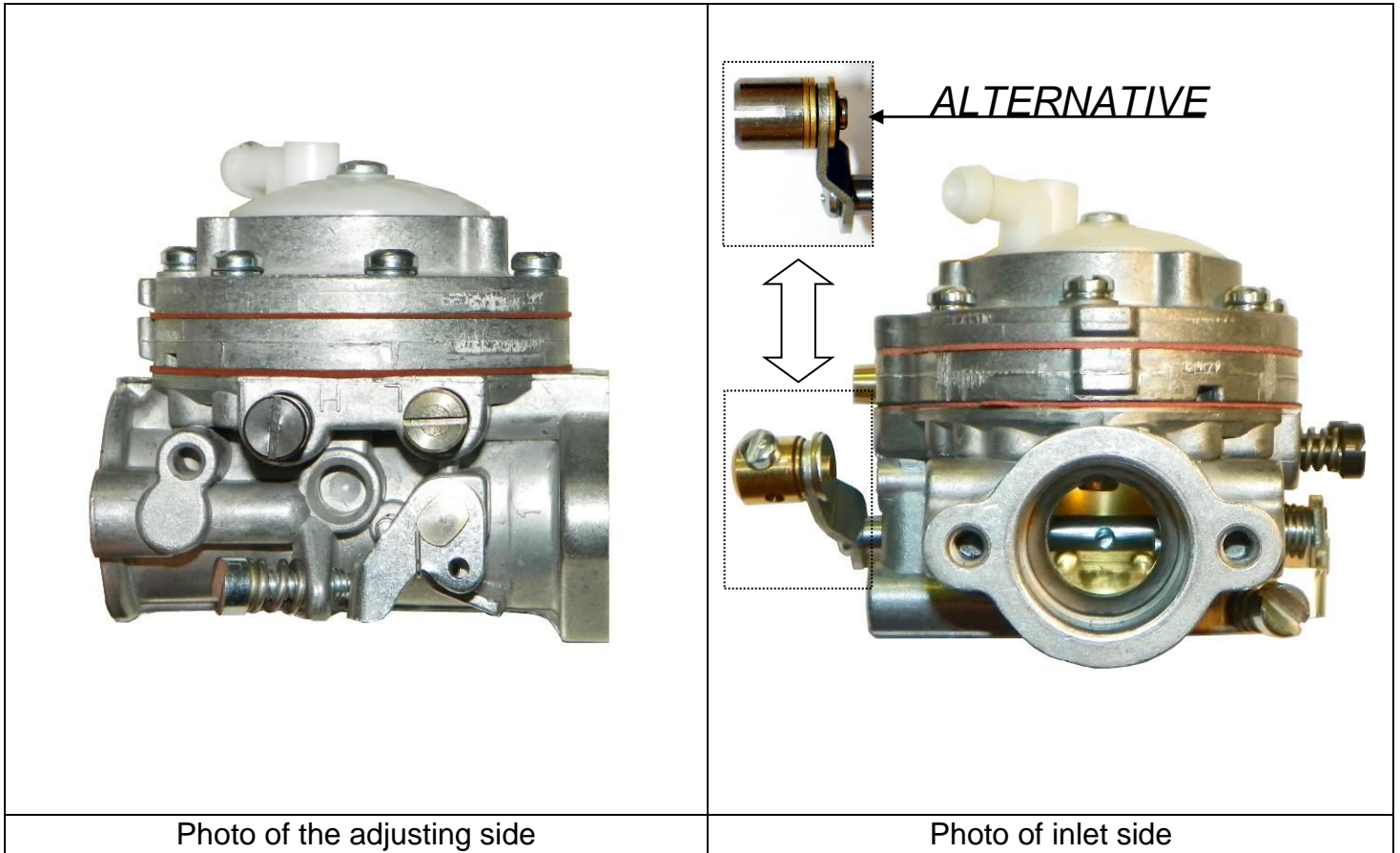



**Appendix 1**  
**HOMOLOGATION OF KART ENGINE – SUPPLEMENT**  
**CARBURETTOR**

See Appendix 7

Category	<b>MSA Cadet</b>
Manufacturer	Tillotson Ltd.
Model	HL 394A
Valid From	09 May 2013
Number of pages	

*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.*

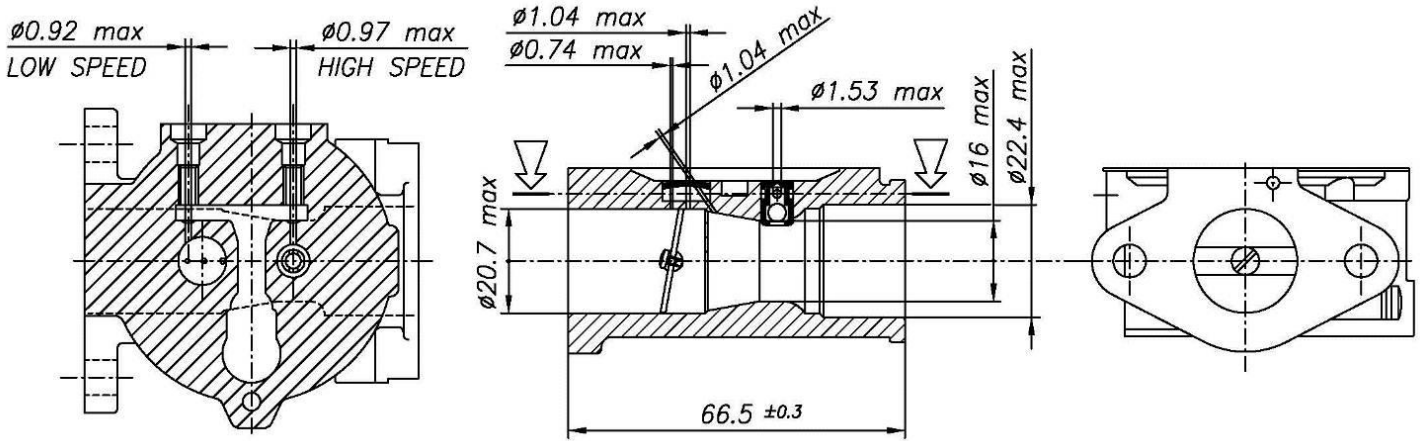


<b>SIGNATURE AND STAMP OF THE MSA</b>	
	Date: <b>09 May 2013</b> Signed by: <b>John Ryan</b> Position: <b>MSA Technical Executive</b>

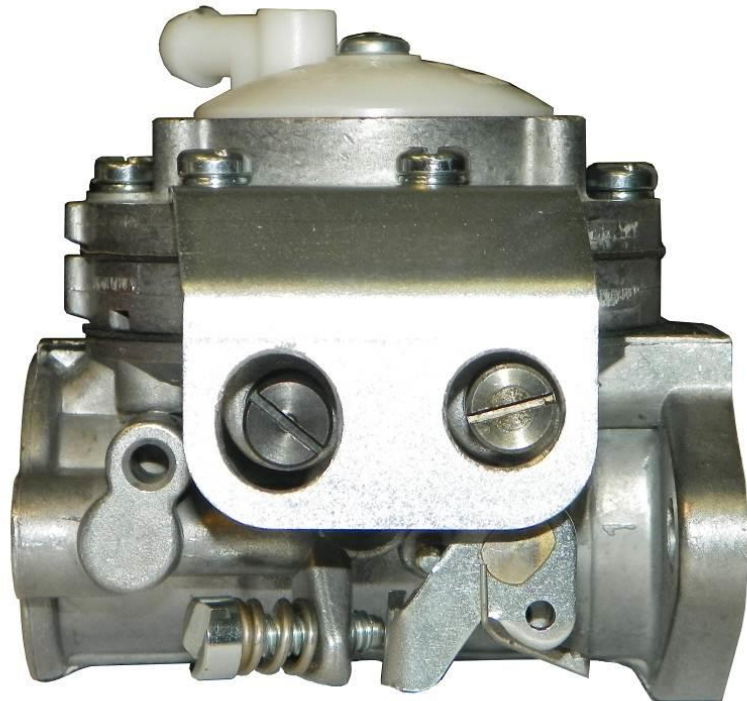
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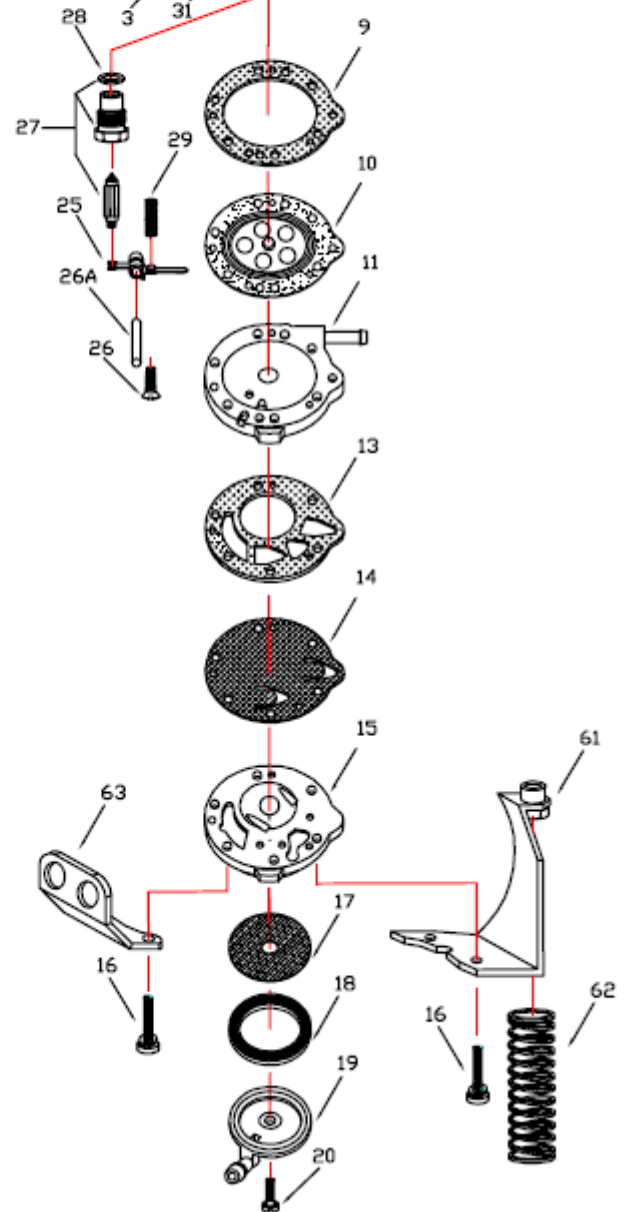
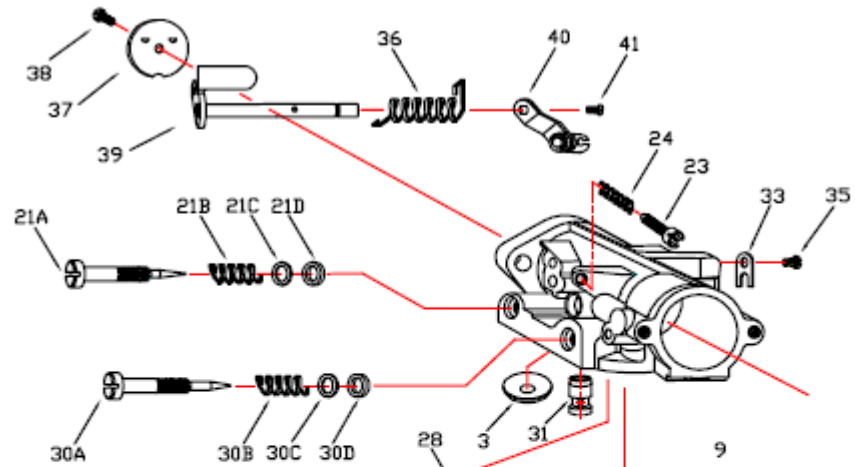
**1.0 SECTION VIEW**



**2.0 GUARD SCREW PLATE**



**3.0 CARBURETTOR DESCRIPTION AND SKETCH OF PARTS**

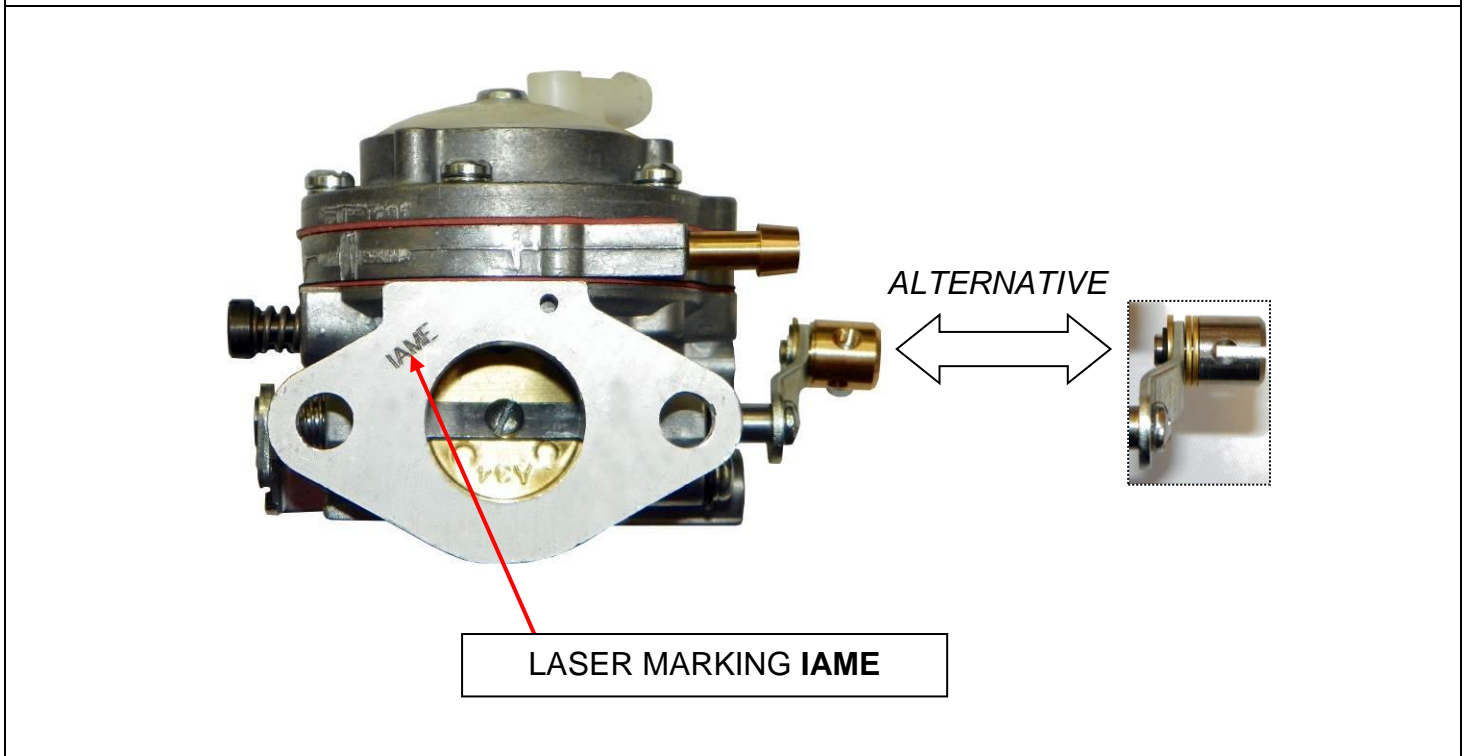


REF:	PART NO:	PART DESCRIPTION
3	179-55	BODY CHANNEL WELCH PLUG
9	16B-406	DIAPHRAGM GASKET
10	237-600	DIAPHRAGM
11	91-1018	DIAPHRAGM COVER ASSEMBLY
13	16B-407	FUEL PUMP GASKET
14	237-214	FUEL PUMP DIAPHRAGM
15	141-55	FUEL PUMP BODY
16	15C-51	FUEL PUMP BODY SCREW (6)
17	95-170	FUEL STRAINER SCREEN
18	16B-205	FUEL STRAINER COVER GASKET
19	91A-251	FUEL STRAINER COVER
20	15B-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-B323	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	136-581	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 =  $0.55 \pm 0.1$  mmREF.13 - P. N° 16B-407  
FUEL PUMP GASKET (ORANGE COLOUR)Thickness =  $0.8 \pm 0.1$  mmREF.10 - P. N° 237-600  
DIAPHRAGMThickness =  $0.13 \pm 0.07$  mmREF.14 - P. N° 237-214  
FUEL PUMP DIAPHRAGMThickness =  $0.08 \pm 0.063$  mmREF.11 - P. N° 91-1018  
DIAPHRAGM COVER ASSEMBLYThickness =  $6.75 \pm 0.15$  mmREF.15 - P. N° 141-55  
FUEL PUMP BODYThickness =  $12.5 \pm 0.15$  mm

<p>REF.37 - P. N° 14A-34 THROTTLE SHUTTER</p> <p>Thickness = <math>0.8 \pm 0.1</math> mm</p>	<p>REF.27 - P. N° 233-706P INLET NEEDLE &amp; SEAT SET</p>
<p>REF.30A - P. N° 43-401 HIGH SPEED MIXTURE SCREW</p>	<p>REF.21A - P. N° 43-388 IDLE MIXTURE SCREW</p>

**5.0 MARKINGS**



**Appendix 2****HOMOLOGATION OF KART ENGINE – AMENDMENT**

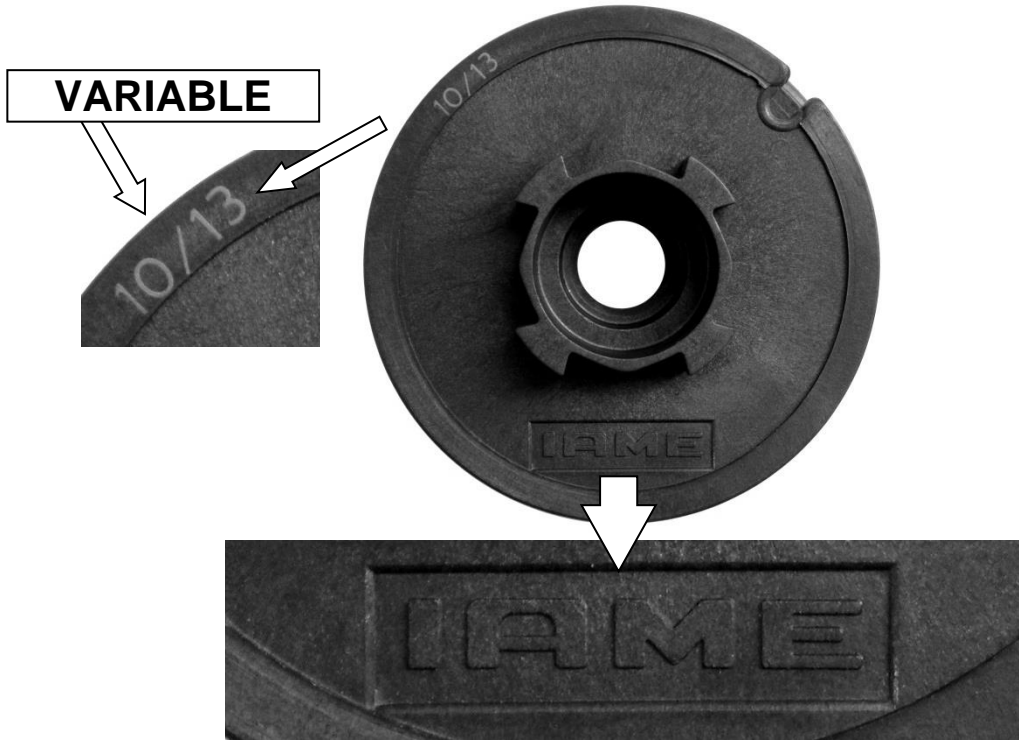
<i>Category</i>	<b>MSA Cadet</b>
<i>Manufacturer</i>	IAME
<i>Model</i>	Parilla Gazelle 60cc U.K.
<i>Valid From</i>	01 January 2014
<i>Number of pages</i>	3

**2014 CYLINDER & STARTER UPDATES****11.0 IGNITION & IDENTIFICATION MARKING**

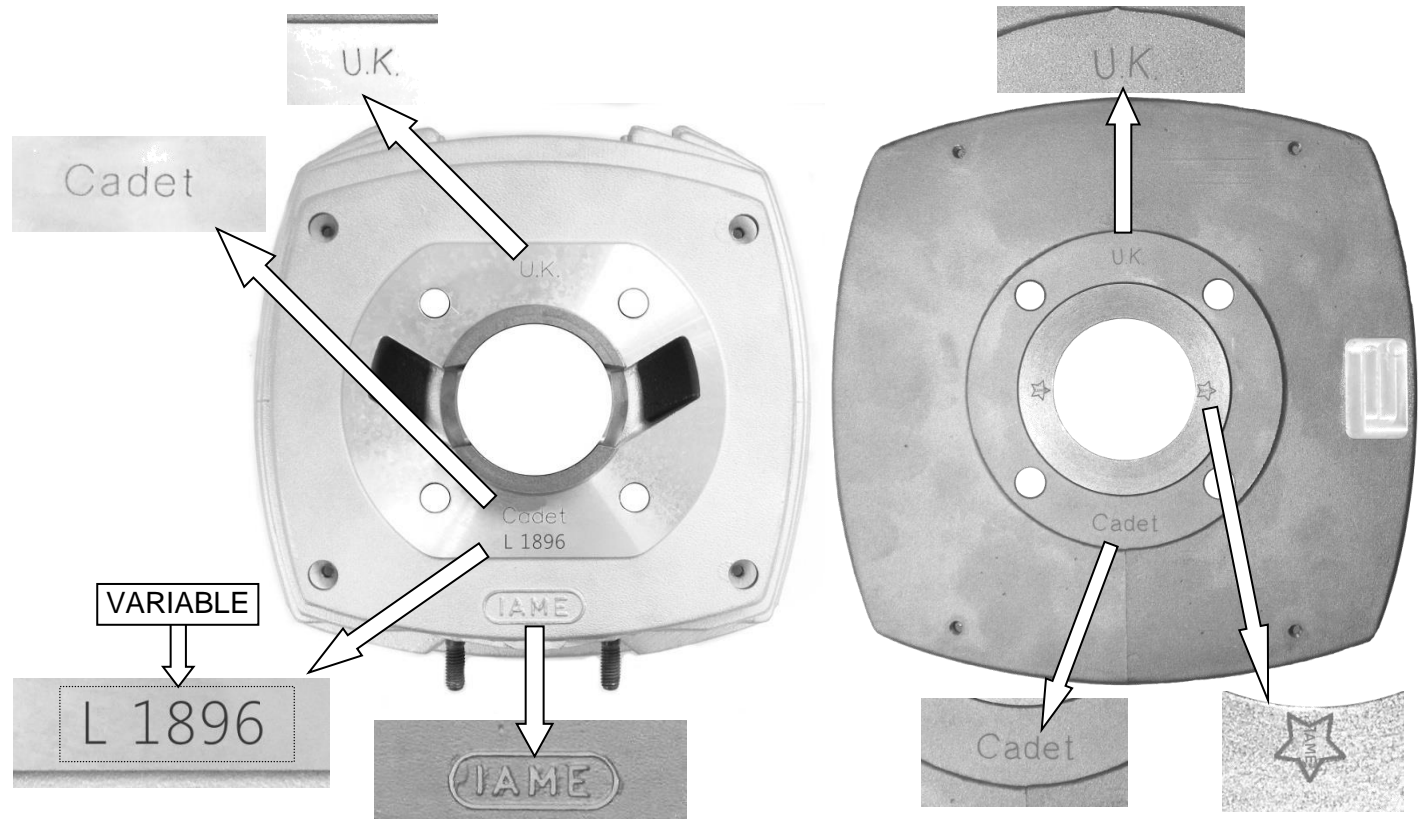
Aluminium ignition pawls



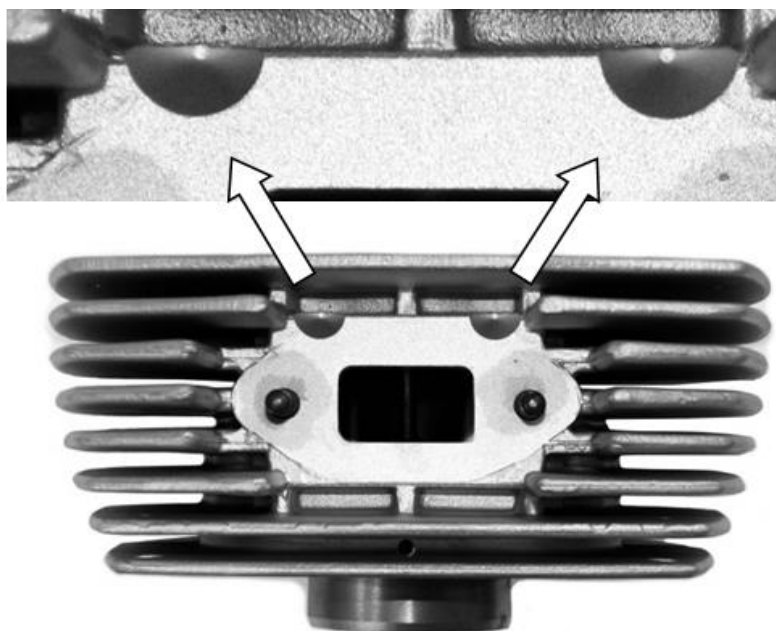
### 11.2 PULLEY IDENTIFICATION MARKINGS



### 12.1 CYLINDER IDENTIFICATION MARKING



**12.1.1 SUPPLEMENTARY CYLINDER MACHINING**



**END**

**SIGNATURE AND STAMP OF THE MSA**

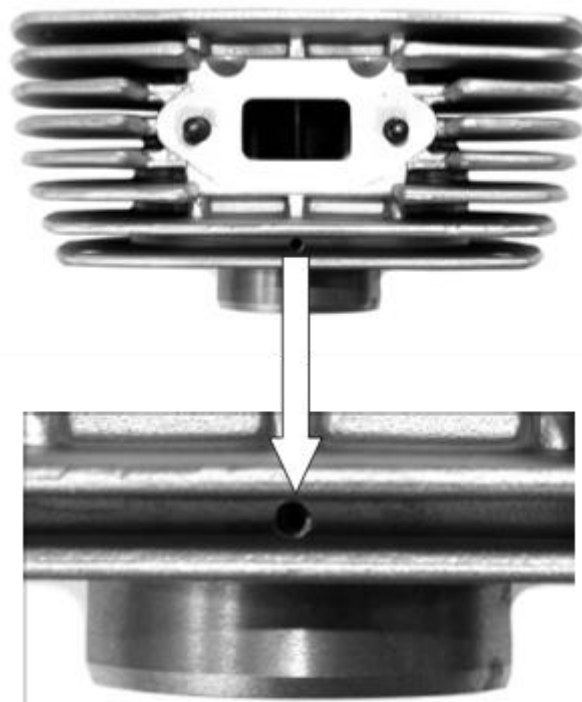
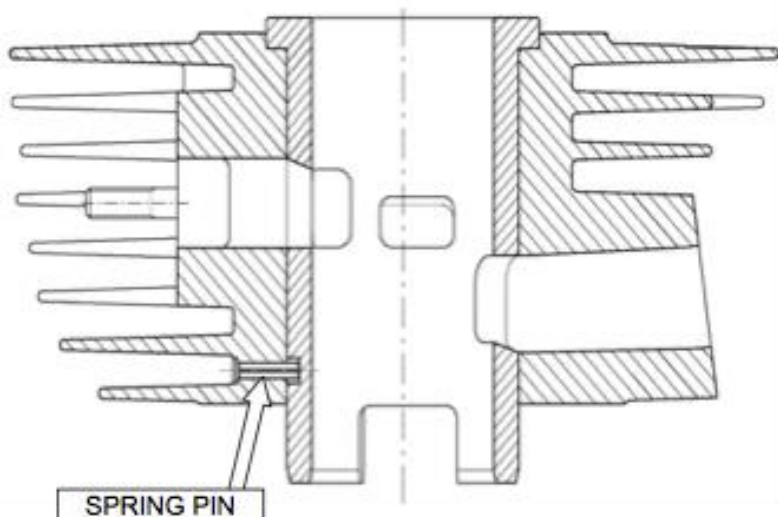
Date: **06 February 2014**

Signed by: **Joe Hickerton**

Position: **MSA Technical Administrator**

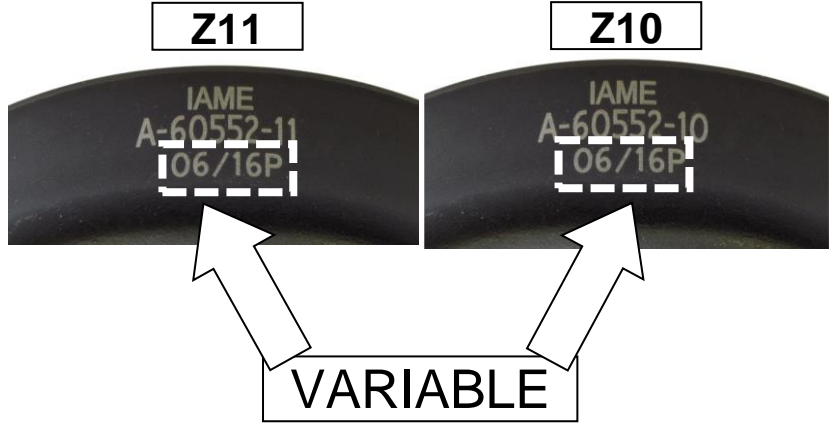
**Appendix 3****HOMOLOGATION OF KART ENGINE – VARIANT**

<i>Category</i>	<b>MSA Cadet</b>
<i>Manufacturer</i>	IAME
<i>Model</i>	Parilla Gazelle 60cc U.K.
<i>Valid From</i>	01 January 2017
<i>Number of pages</i>	2

**ALTERNATIVE CLUTCH COMPONENTS & CYLINDER****4.2 CYLINDER CROSS SECTION VIEW & PHOTOS**



**9.1 ALTERNATIVE CLUTCH DRUM**



**9.2 ALTERNATIVE CLUTCH COVER**



**END**

**SIGNATURE AND STAMP OF THE MSA**

Date: **01 January 2017**

Signed by: **Joe Hickerton**

Position: **MSA Technical Administrator**

## Appendix 4

## HOMOLOGATION OF KART ENGINE – VARIANT

Category	MSA Cadet
Manufacturer	IAME
Model	Parilla Gazelle 60cc U.K.
Valid From	01 January 2018
Number of pages	2

## ALTERNATIVE ROTOR &amp; AIRBOX MANIFOLD

## 11.0 ALTERNATIVE IGNITION ROTOR



**7.1 AIRBOX MANIFOLD**

Alternative blue anodised manifold, all other details remain unchanged.









**END****SIGNATURE AND STAMP OF THE MSA**Date: **01 January 2018**Signed by: **Joe Hickerton**Position: **MSA Technical Administrator**

**Appendix 5**
**HOMOLOGATION OF KART ENGINE – VARIANT**

<i>Category</i>	<b>Cadet</b>
<i>Manufacturer</i>	IAME
<i>Model</i>	Parilla Gazelle 60cc U.K.
<i>Valid From</i>	01 January 2018
<i>Number of pages</i>	3

**NEW LOGO MARKINGS**

(note previous logo markings remain valid)

<b>CYLINDER HEAD</b>	<b>CYLINDER</b>
 <p style="text-align: center;"><b>NEW LOGO</b></p> 	 <p style="text-align: center;"><b>NEW LOGO</b></p> 
<b>CRANKCASE – TRANSMISSION SIDE</b>	<b>CRANKCASE – IGNITION SIDE</b>
 <p style="text-align: center;"><b>NEW LOGO</b></p> 	 <p style="text-align: center;"><b>NEW LOGO</b></p> 

RECOIL COVER



NEW LOGO



CLUTCH COVER



NEW LOGO



INLET SILENCER



NEW LOGO



EXHAUST



NEW LOGO



**OTHERS**

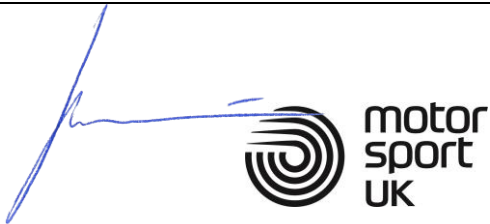
Other components of the engine that were previously marked (laser or punching) with the logo or "IAME", may now be marked with the new logo or "IAME" as below:



*or*



*or*

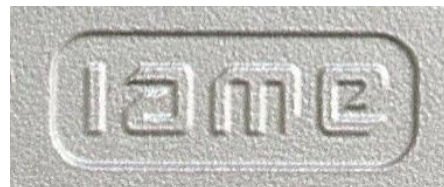
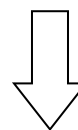
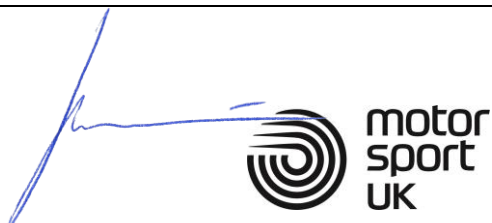
**END****SIGNATURE AND STAMP**Date: **01 January 2019**Signed by: **Joe Hickerton**Position: **Technical Manager**

**Appendix 6**
**HOMOLOGATION OF KART ENGINE – VARIANT**

Category	Cadet
Manufacturer	IAME
Model	Parilla Gazelle 60cc U.K.
Valid From	01 January 2021
Number of pages	1

**ALTERNATIVE PULLEY**
**11.2 PULLEY & IDENTIFICATION MARKINGS**

VARIABLE


**Aluminium type**

**SIGNATURE AND STAMP**


 Date: **01 January 2021**

 Signed by: **Joe Hickerton**

 Position: **Technical Manager**

**Appendix 7**  
**HOMOLOGATION OF KART ENGINE – SUPPLEMENT**  
**CARBURETTOR**

*This Appendix full replaces Appendix 1*

<i>Category</i>	<b>Cadet</b>
<i>Manufacturer</i>	Tillotson Ltd.
<i>Model</i>	HW-47A
<i>Valid From</i>	01 March 2021
<i>Number of pages</i>	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.*

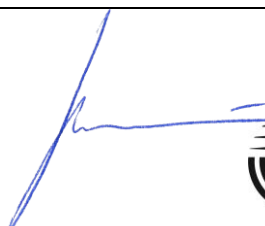



Photo of the adjusting side



Photo of inlet side

**SIGNATURE AND STAMP**



**motor  
sport  
UK**

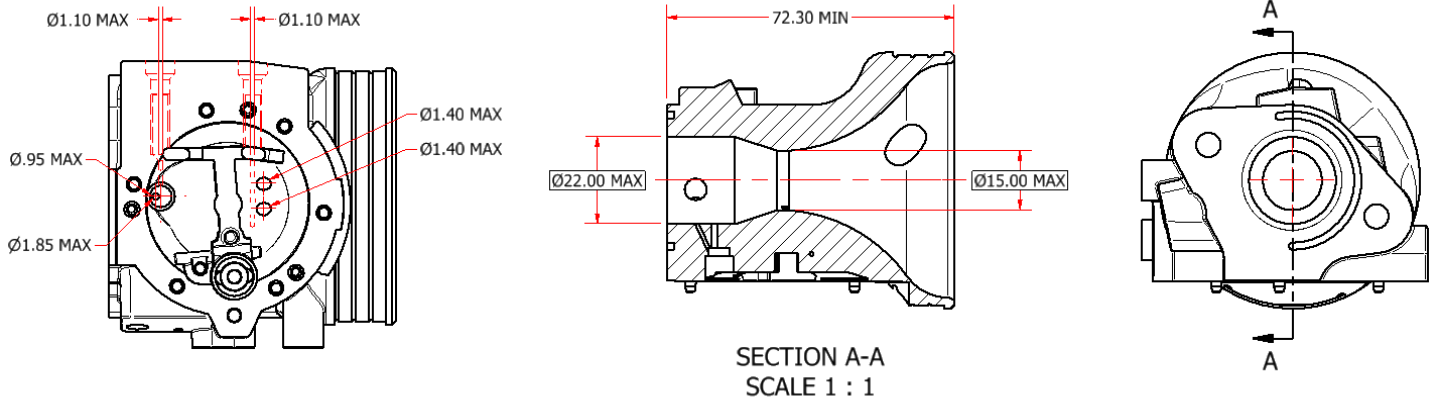
Date: **01 January 2021**

Signed by: **Joe Hickerton**

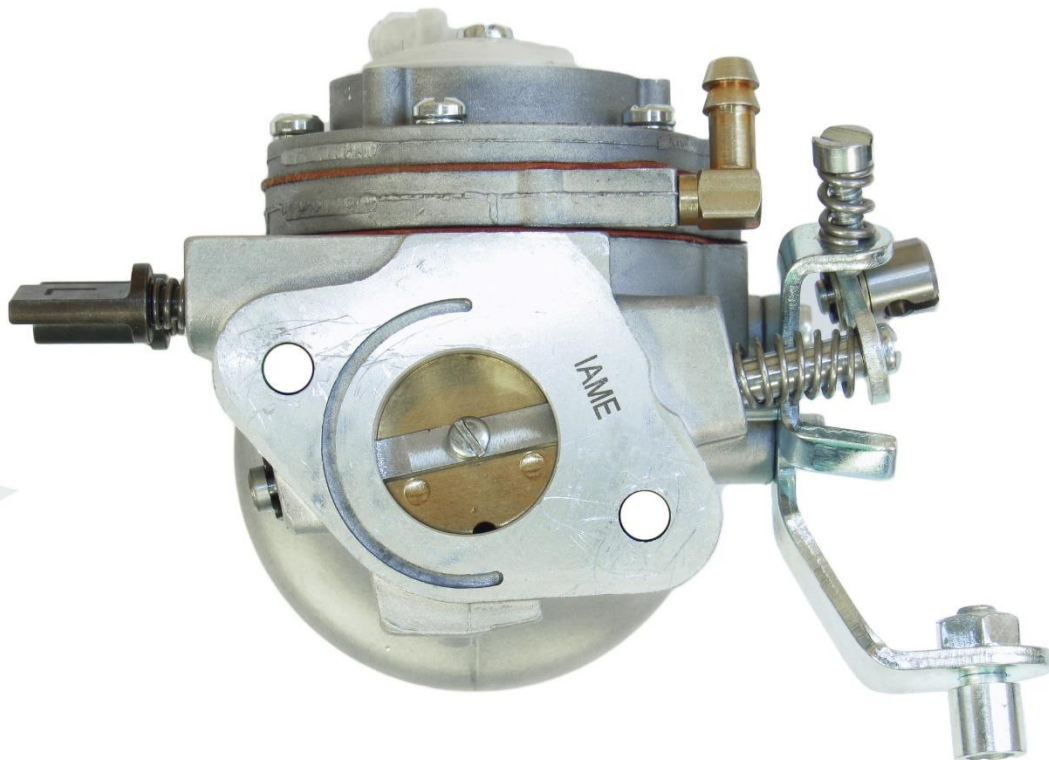
Position: **Technical Manager**

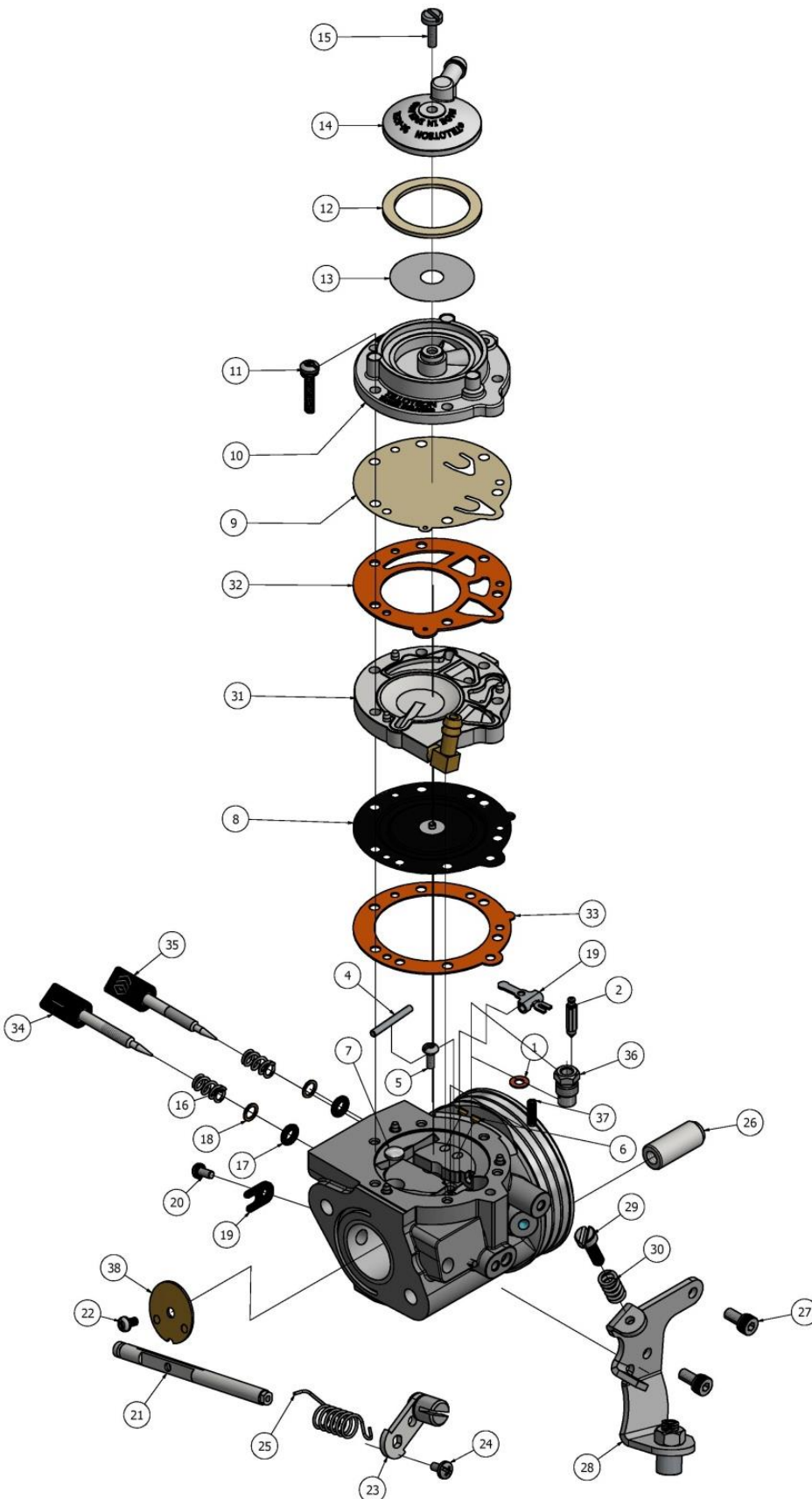


## 1.0 SECTION VIEW



## 2.0 MARKING



**3.0 CARBURETTOR DESCRIPTION AND SKETCH OF PARTS**


ITEM QTY	PART NUMBER	DESCRIPTION	ITEM QTY	PART NUMBER	DESCRIPTION	ITEM QTY	PART NUMBER	DESCRIPTION					
1	1	16-B199	+	*	INLET SEAT GASKET	31	1	91-1031	METERING COVER ASSEMBLY				
2	1	34-216	+	+	INLET NEEDLE	32	1	16-B407	+	+	FUEL PUMP GASKET (ORANGE)		
3	1	155-A27	+	+	INLET CONTROL LEVER	33	1	16-B406	+	+	DIAPHRAGM GASKET (ORANGE)		
4	1	32-79	FULCRUM LEVER PIN	19	1	29-224	THRUSTLE SHAFT CLIP	34	1	43-1046	8-32 UNC ADJUSTMENT SCREW L		
5	1	15-B329	FULCRUM LEVER SCREW	20	1	15-C19	4-40 UNC SCREW	35	1	43-1045	M4 X 0.5 ADJUSTMENT SCREW H		
6	2	80-160	BRASS PLUG	21	1	13-B215	THRUSTLE SHAFT	36	1	36-A42	+	+	INLET SEAT
7	1	179-62	WELCH PLUG	22	1	15-C20	4-40 UNC SCREW	37	1	24-C297	INLET TENSION SPRING #6g		
8	1	237-600	+	+	DIAPHRAGM ASSEMBLY	23	1	12-1218	THRUSTLE LEVER ASSEMBLY	38	1	14-A137	THRUSTLE SHUTTER
9	1	237-162	+	+	FUEL PUMP DIAPHRAGM	24	1	15-C52	4-40 UNC SCREW				
10	1	141-89	FUEL PUMP BODY	25	1	24-B381	THRUSTLE RETURN SPRING			*			REPAIR KIT CONTENTS
11	6	15-C51	6 - 32 UNC SCREW WITH L/W	26	2	81-377	CARBURETTOR MOUNTING NUT	+					DIAPHRAGM & GASKET KIT CONTENTS
12	1	16-B205	+	+	FUEL STRAINER COVER GASKET	27	2	15-C67	M4 X 0.7 SOCKET CAP SCREW				REPAIR KIT
13	1	95 - 170	FUEL STRAINER SCREEN	28	1	136-A51	CABLE BRACKET						DG-KIT
14	1	91-A251	FUEL STRAINER COVER	29	1	15-C9	LIMITER SCREW						DG-KIT
15	1	15-B313	5-40 UNC SCREW	30	1	24-B131	SPEED CREW SPRING						

**4.0 PARTS OF CARBURETTOR**

*REF.33 - P. N°16-B406*  
 DIAPHRAGM GASKET (ORANGE COLOR)



Thickness =  $0.5 \pm 0.1$  mm

*REF.32 - P. N° 16-B407*  
 PUMP DIAPHRAGM GASKET (ORANGE COLOR)



Thickness =  $0.8 \pm 0.1$  mm

*REF.8 - P. N° 237-600*  
 DIAPHRAGM



Thickness =  $0.13 \pm 0.07$  mm

*REF.9 - P. N°237-162*  
 PUMP DIAPHRAGM



Thickness =  $0.10 \pm 0.063$  mm

*REF.31 - P. N° 91-1031*  
 DIAPHRAGM COVER

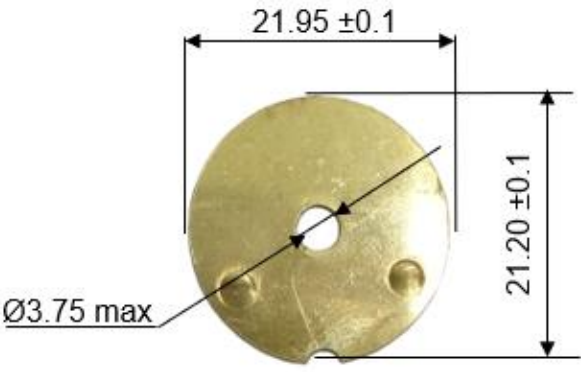
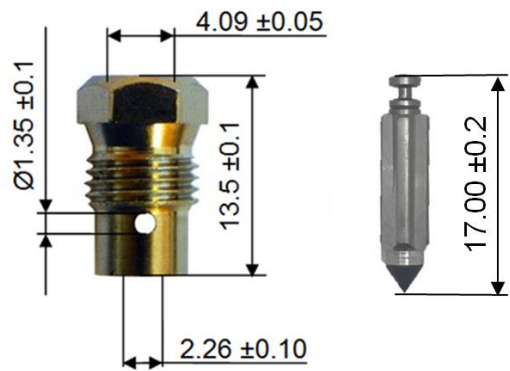
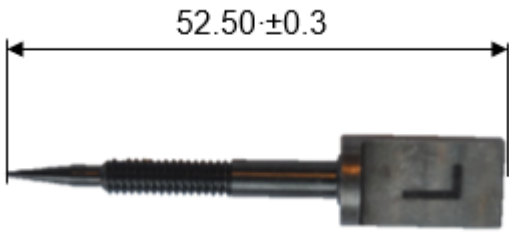
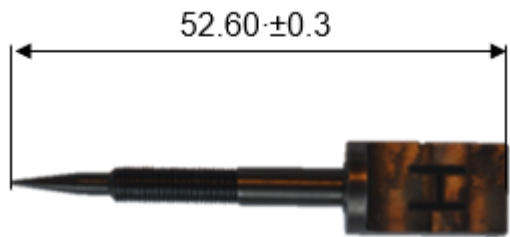


Thickness =  $6.75 \pm 0.15$  mm

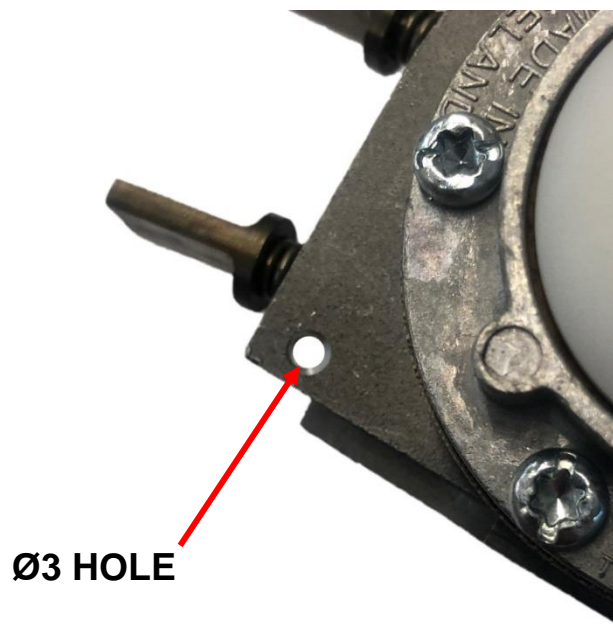
*REF.10 - P. N° 141-89*  
 PUMP COVER



Thickness =  $12.5 \pm 0.15$  mm

<p><i>REF.38 - P. N° 14-A137 THROTTLE SHUTTER</i></p>  <p>Thickness = 0.81 ± 0.1 mm</p>	<p><i>REF.36 / 2 - P. N° 36-A42 / 34-216 SEAT + NEEDLE</i></p> 
<p><i>REF.34 - P. N° 43-1046 NEEDLE LOW SPEED</i></p> 	<p><i>REF.35 - P. N° 43-1045 NEEDLE HIGH SPEED</i></p> 

**THE CARBURETTOR MAY HAVE THIS HOLE FOR SEALING**



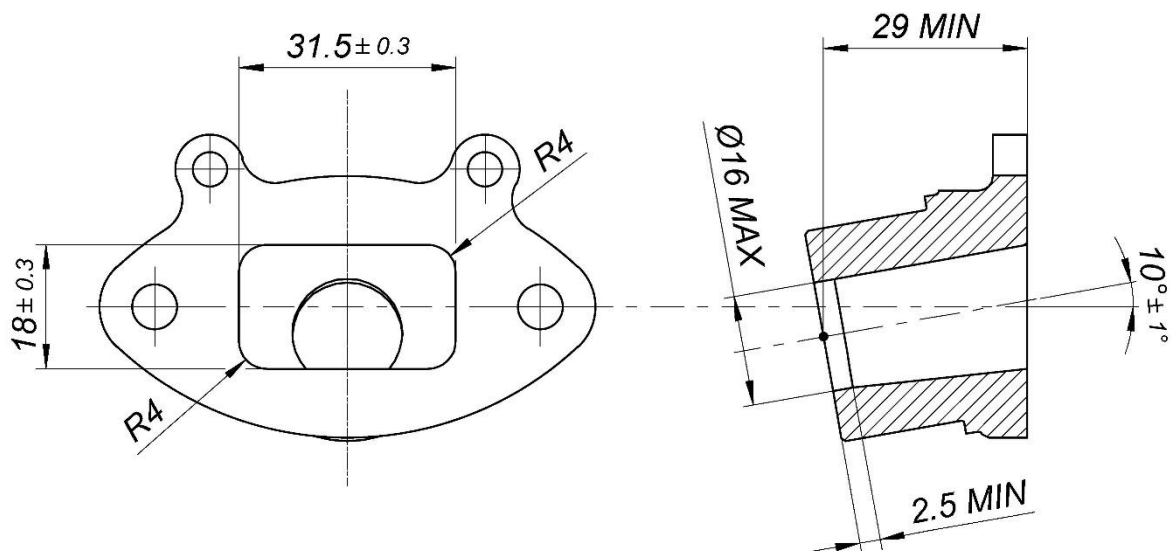
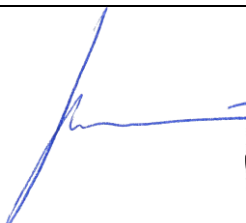

**ENDS**

**Appendix 8**
**HOMOLOGATION OF KART ENGINE – AMENDMENT**

*This Appendix fully replaces the relevant section of the main fiche*

Category	<b>Cadet</b>
Manufacturer	IAME
Model	Parilla Gazelle 60cc U.K
Valid From	01 March 2021
Number of pages	1

See Appendix 10

**NEW EXHAUST RESTRICTOR**
**10.1 EXHAUST MANIFOLD**

**SIGNATURE AND STAMP**



 Date: **01 January 2021**

 Signed by: **Joe Hickerton**

 Position: **Technical Manager**

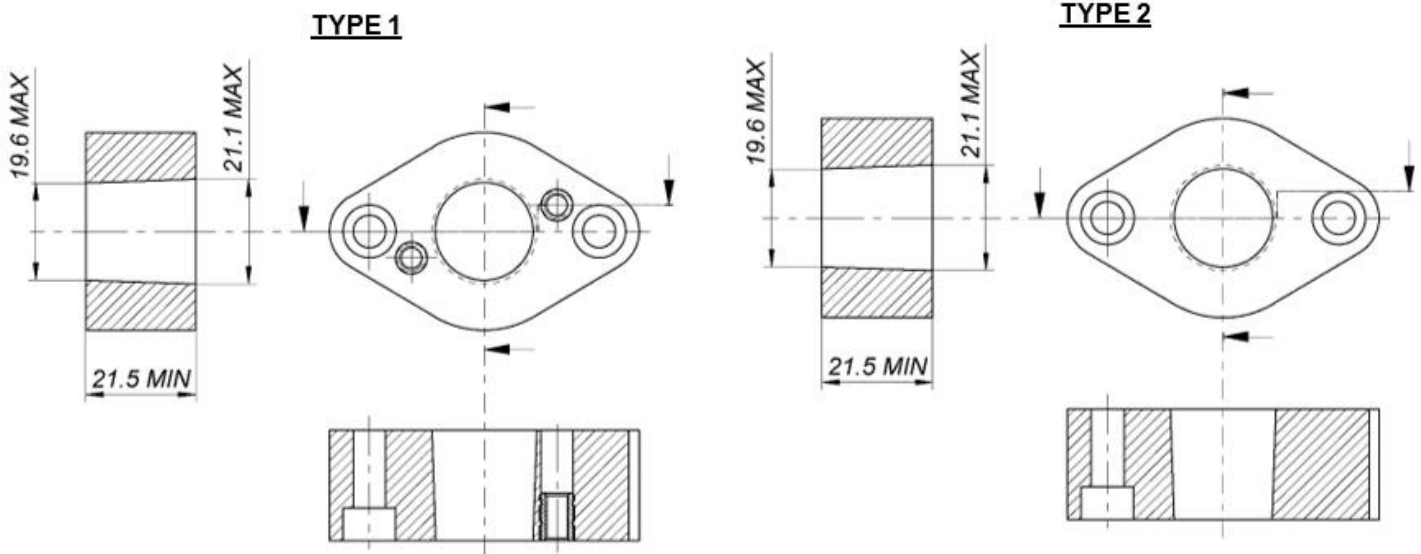
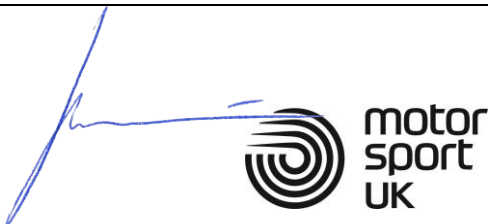
**Appendix 9**
**HOMOLOGATION OF KART ENGINE – AMENDMENT**

*This Appendix fully replaces the relevant section of the main fiche*

Category	<b>Cadet</b>
Manufacturer	IAME
Model	Parilla Gazelle 60cc U.K.
Valid From	01 March 2021
Number of pages	1

**THERMAL SPACERS**
**7.0 CARBURETTOR FITTINGS**

For use with the HW-47A carburettor


**SIGNATURE AND STAMP**


 Date: **01 January 2021**

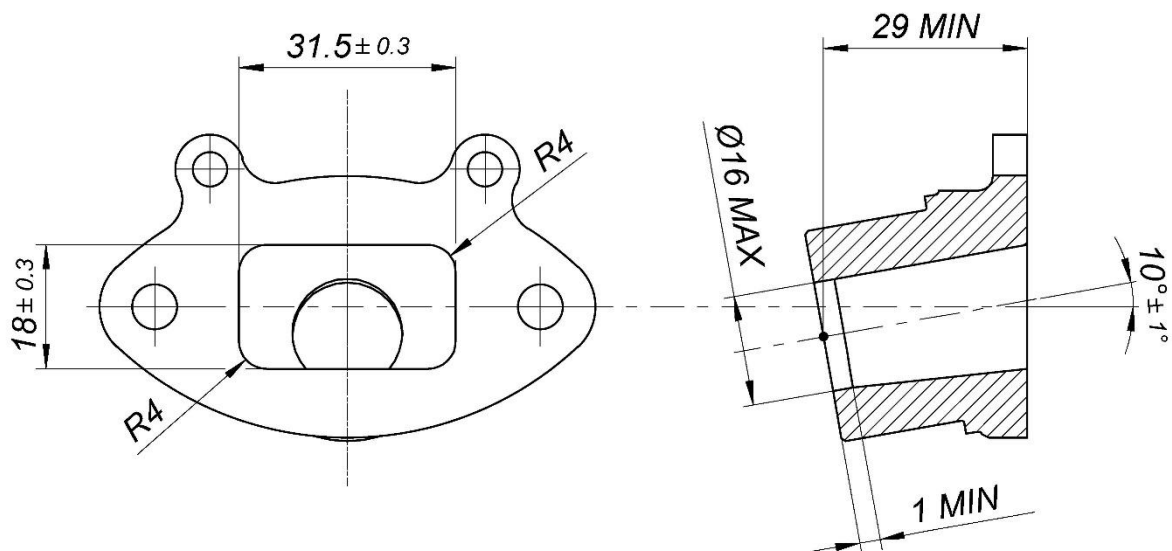
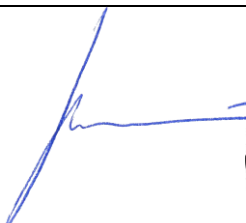

 Signed by: **Joe Hickerton**

 Position: **Technical Manager**

**Appendix 10**
**HOMOLOGATION OF KART ENGINE – ERRATUM**

*This Appendix fully replaces Appendix 8 and the relevant section of the main fiche*

Category	<b>Cadet</b>
Manufacturer	IAME
Model	Parilla Gazelle 60cc U.K.
Valid From	01 March 2021
Number of pages	1

**NEW EXHAUST RESTRICTOR**
**10.1 EXHAUST MANIFOLD**

**SIGNATURE AND STAMP**



 Date: **01 February 2021**

 Signed by: **Joe Hickerton**

 Position: **Technical Manager**