Homologation N°

05/ENG/14

MOTOR SPORTS ASSOCIATION UNITED KINGDOM MSA

HOMOLOGATION OF KART ENGINE

Category	**IAME X30 JUNIOR & SENIOR**
Manufacturer	IAME
Model	X30 125cc RL TaG - UK
Valid From	01 January 2014
Number of pages	20

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	
MSA	Date: **18 December 2013** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Any reproduction must be authorised by the MSA

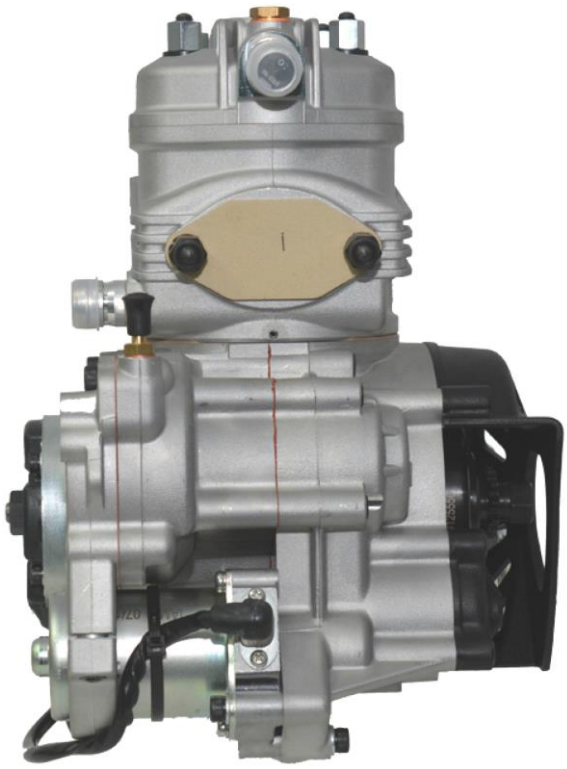


Photo of rear of engine

Photo of front of engine

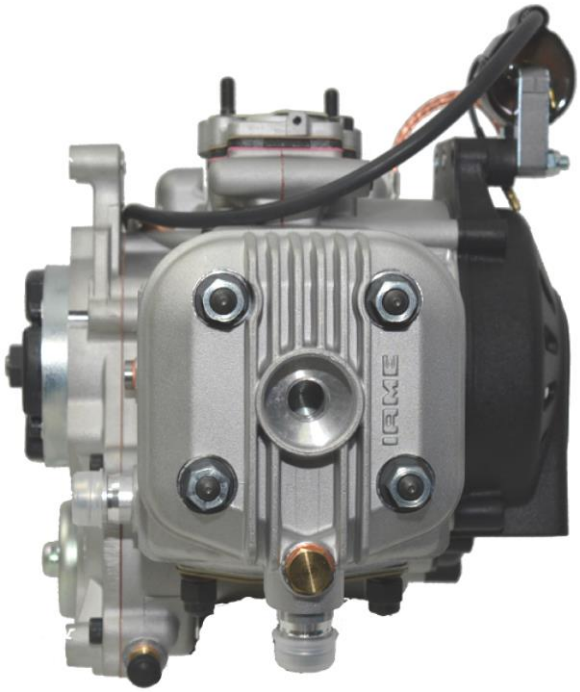


Photo of top of engine

LIST OF APPENDICES

Last updated: 24 September 2015

Homologation N°

05/ENG/14

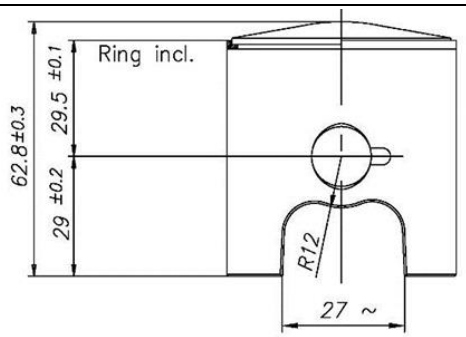
MOTOR SPORTS ASSOCIATION UNITED KINGDOM MSA

X30 BY IAME 125cc RL TaG - UK

1.0 FEATURES			
Cylinder volume	123.67 cm³	Bore	54 mm
Max. theoretical bore	54.28 mm	Stroke	54 mm max.
Cooling system	Water	Inlet system	Reed valve
Tillotson Carburettor	HW-27A Ø27mm	Number of piston rings	1
Cylinder/crankcase transfers	3	Inlet/exhaust ports	3
Combustion chamber shape	Spherical	Distance between Conrod centers	102 mm
Small end conrod ball-bearing diameter	14x18x17.5	Big end conrod ball-bearing diameter	20x26x15
Crankshaft ball-bearing diameter	30x62x16	Selettra ignition	Digital
RPM limiter	Yes	Generator for battery charging	Yes
Balancing shaft	Yes	Electric starter	Yes

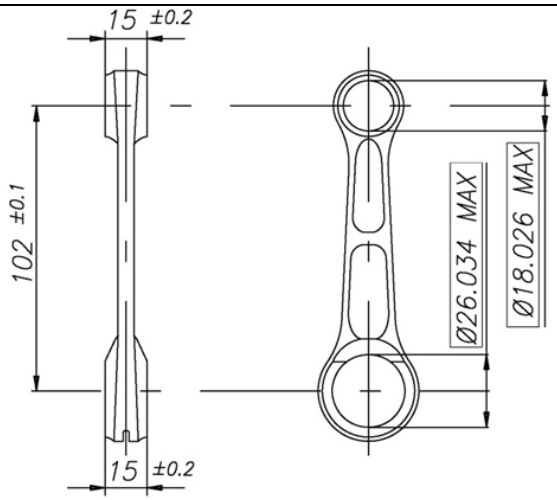
2.0 MATERIAL	
Conrod material	Steel
Crankshaft material	Steel
Balancing shaft material	Steel
Gears material	Steel
Starter ring material	Steel
Head material	Aluminium
Cylinder material	Aluiminium
Liner material	Iron
Crankcase material	Aluiminium
Piston material	Aluminium
Piston rings material	Iron
Exhaust muffler material	Sheet-steel
Ball-bearings	6206 type

3.0 PISTON



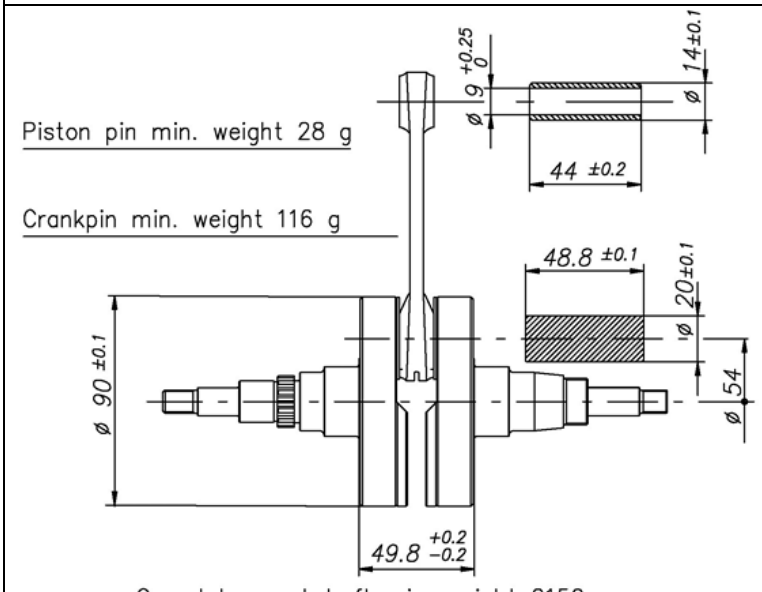
Piston min. weight (ring incl.) 128 g

3.1 DISTANCE BETWEEN CONROD CENTERS



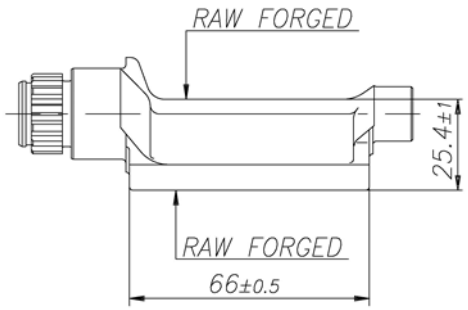
Min. weight 110 g

3.2 CRANKSHAFT



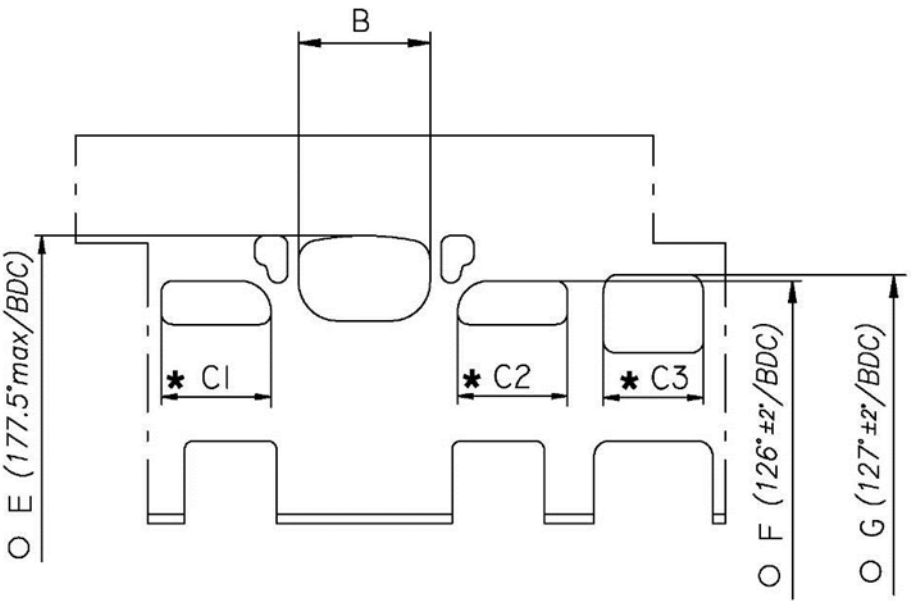
Complete crankshaft min. weight 2150 g

3.3 BALANCING SHAFT



Min. weight 315 g

4.0 CYLINDER DEVELOPMENT

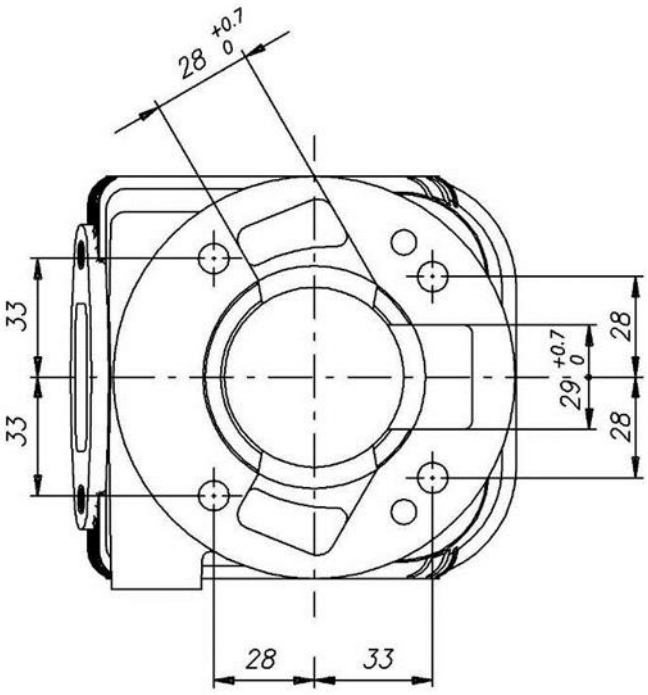


B	≤ 36.5 mm
C1 = C2	≤ 30 mm
C3	≤ 28.5 mm
E	177.5° max
F	126° ± 2°
G	127° ± 2°

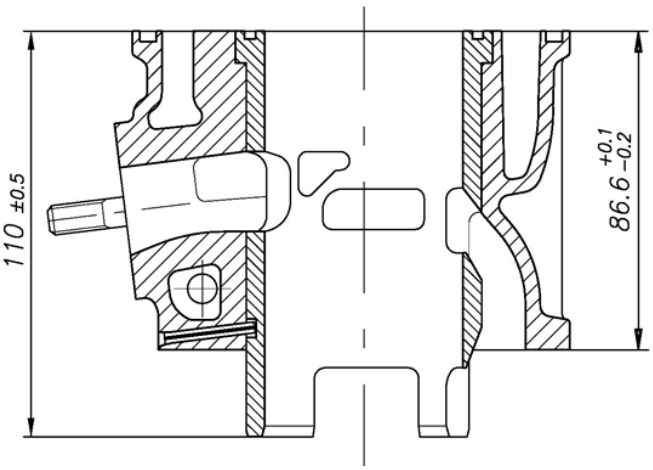
* *CHORDAL READING*

O *ANGULAR READING BY INSERTING A 0.2X5 mm GAUGE*

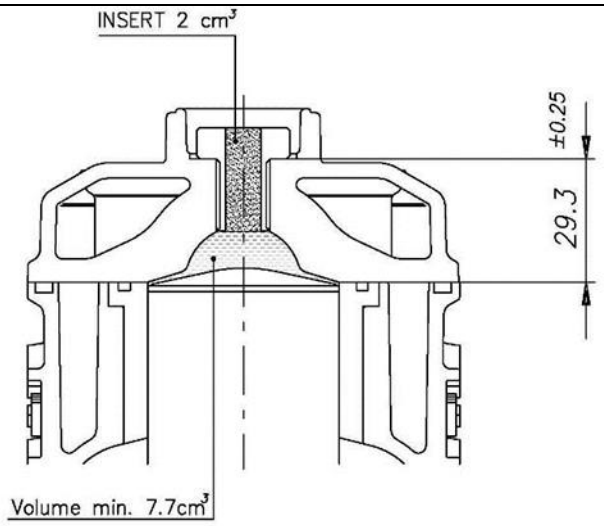
4.1 CYLINDER BASE VIEW



4.2 CYLINDER CROSS-SECTION VIEW



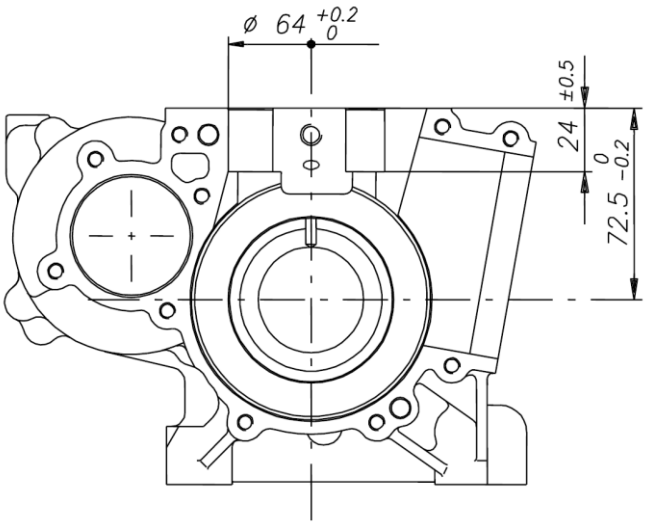
5.0 COMBUSTION CHAMBER VIEW



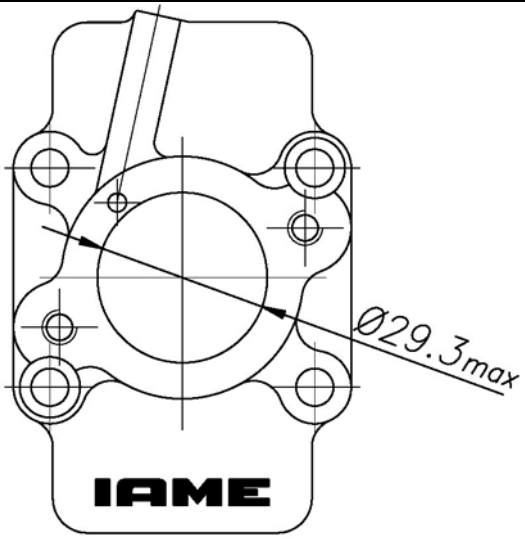
COMBUSTION CHAMBER VOLUME TOT. = 9.7 cm^3 min.

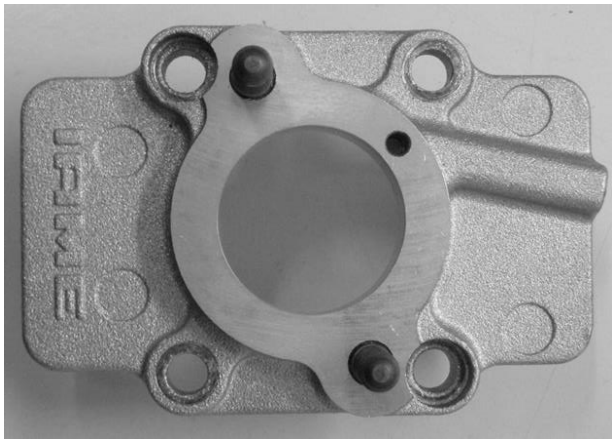
SQUISH MIN.= 0.90 mm (measured with Ø1.6mm TIN)

6.0 CRANKCASE INSIDE VIEW

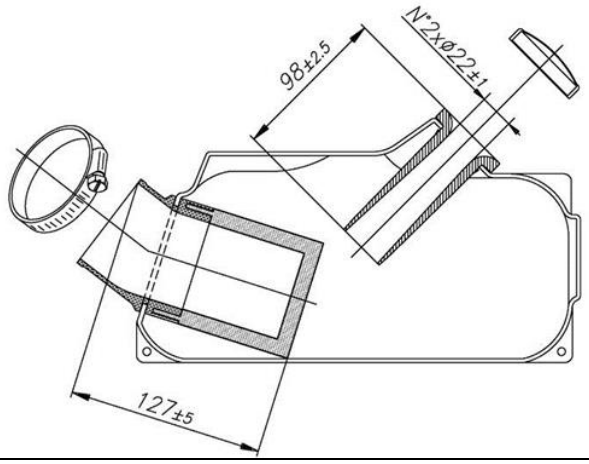


7.0 INLET CONVEYOR DIMENSIONS & IDENTIFICATION MARKING

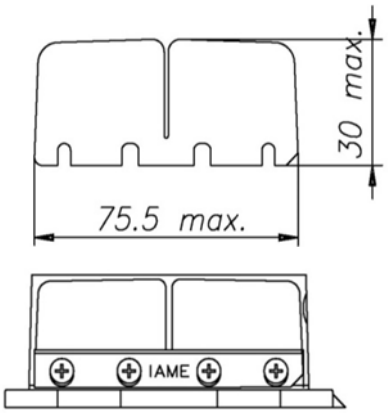




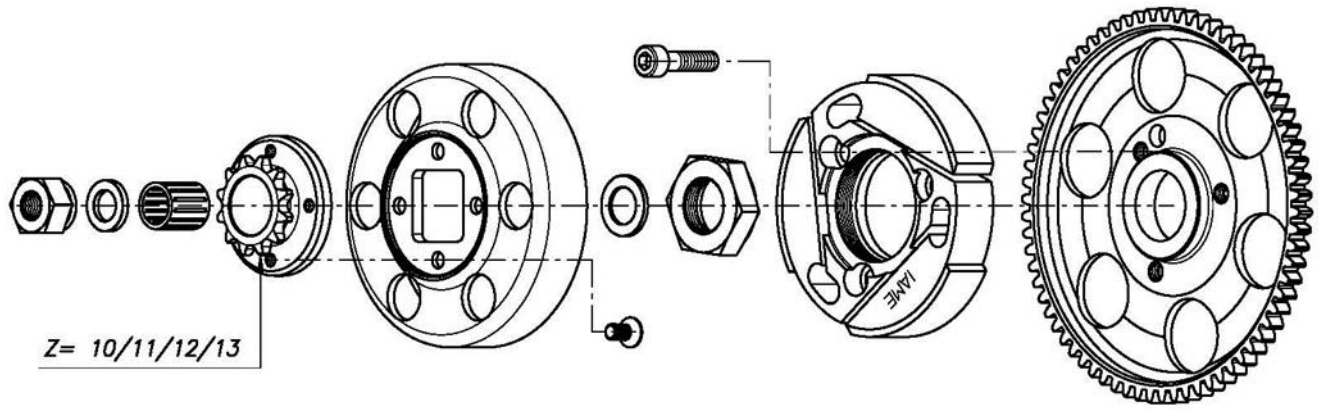
7.1 INLET SILENCER

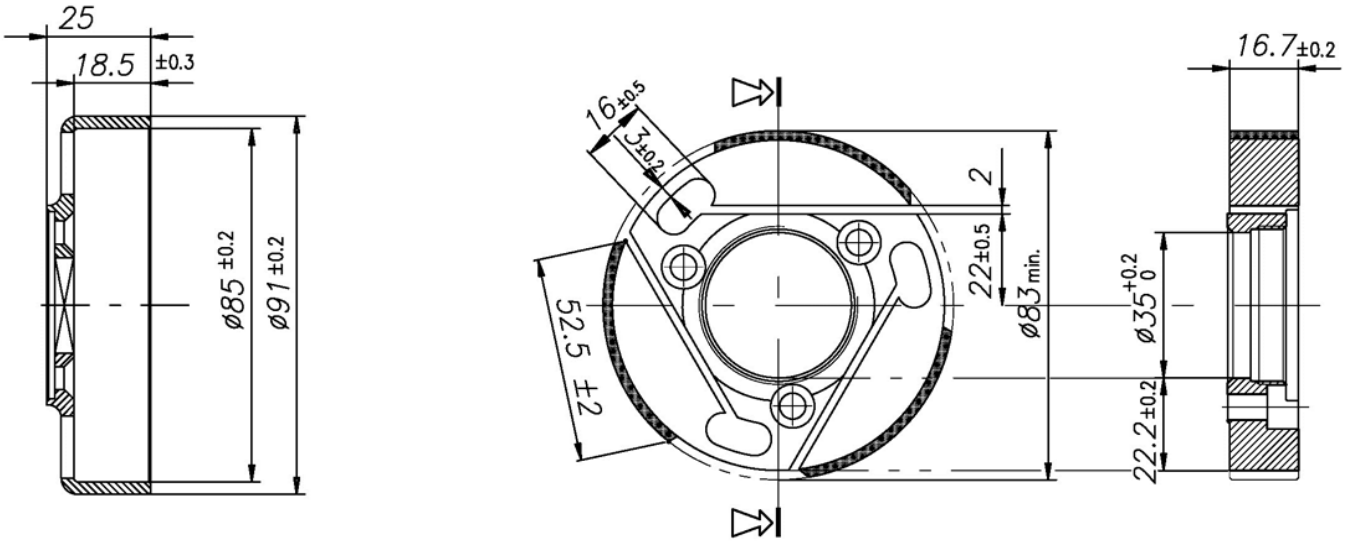


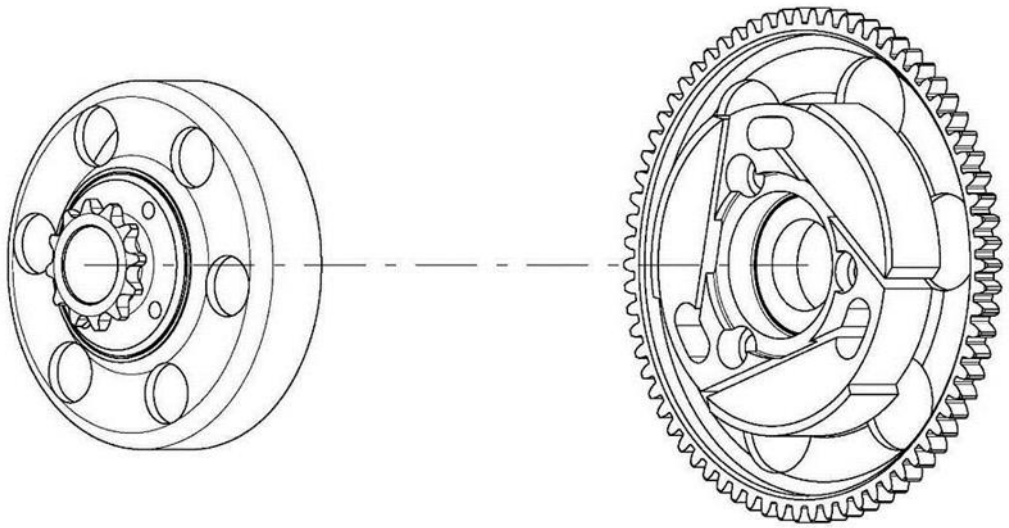
7.2 REED DIMENSIONS



8.0 CLUTCH



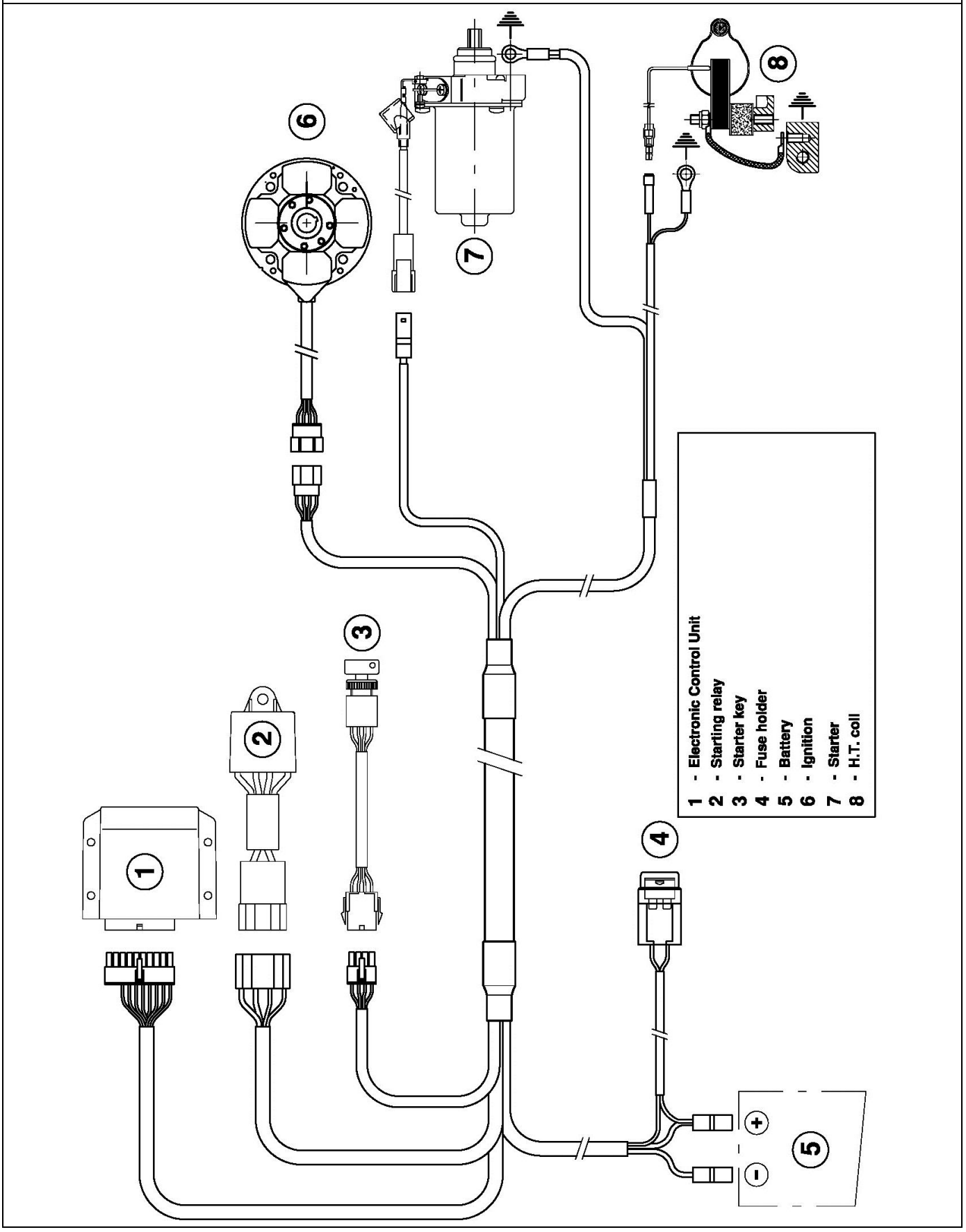




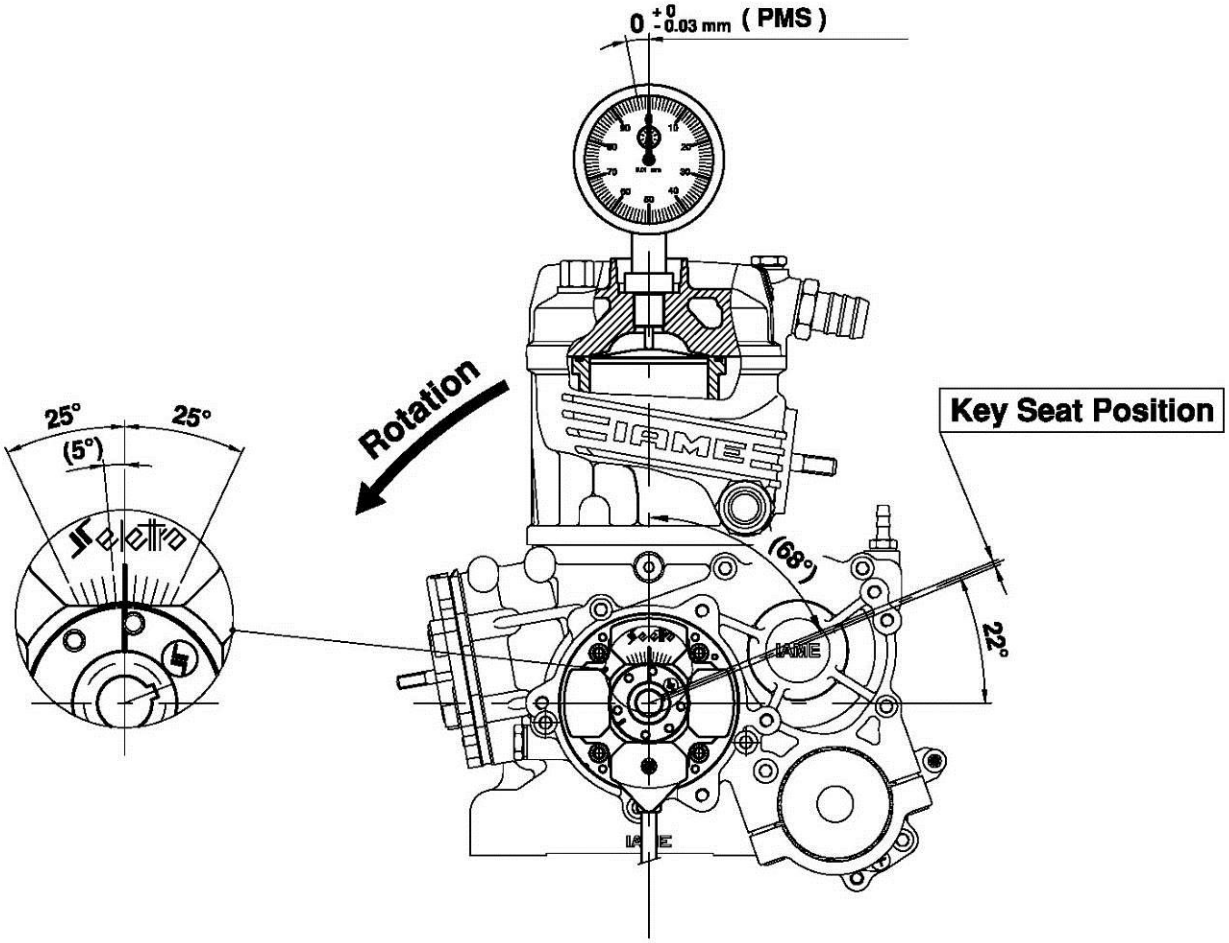
Min. weight 300 g

Min. weight 680 g

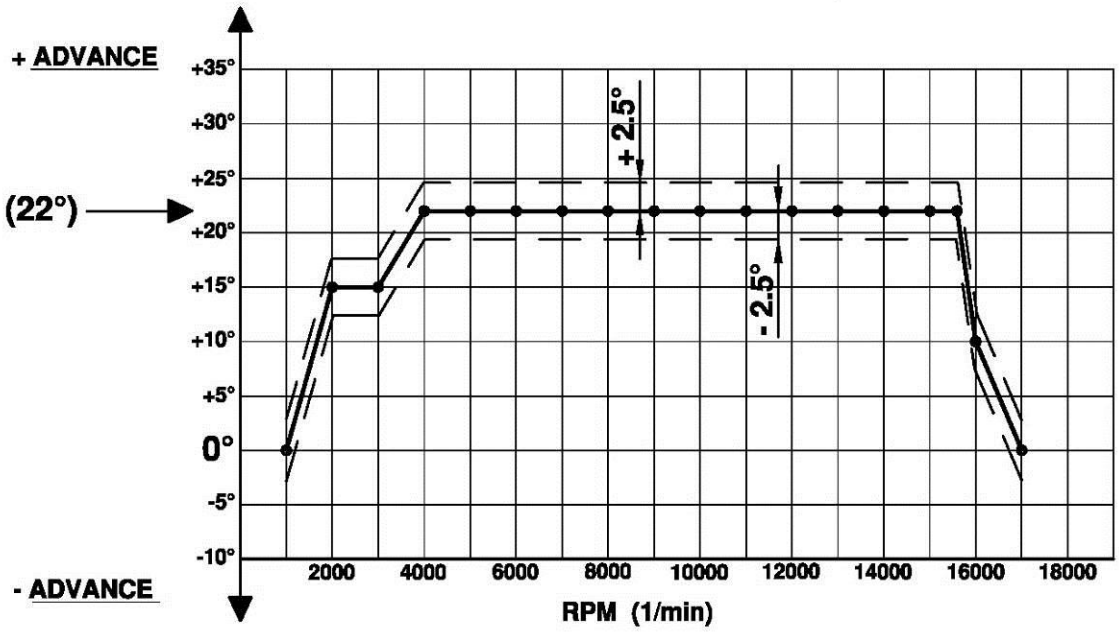
9.0 WIRING DIAGRAM



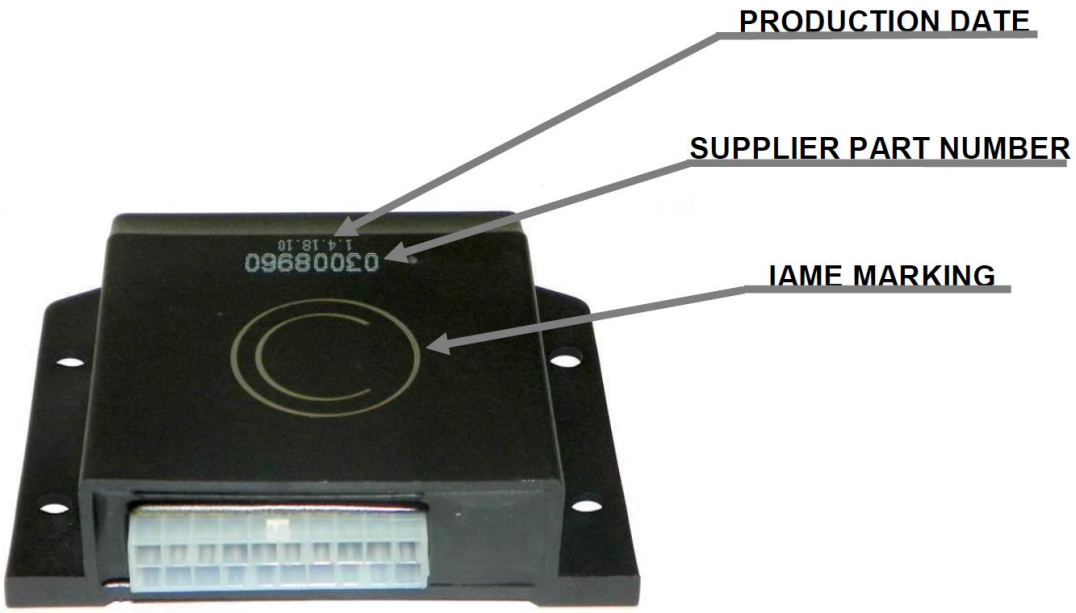
10.0 SCHEME FOR ADVANCE CONTROL



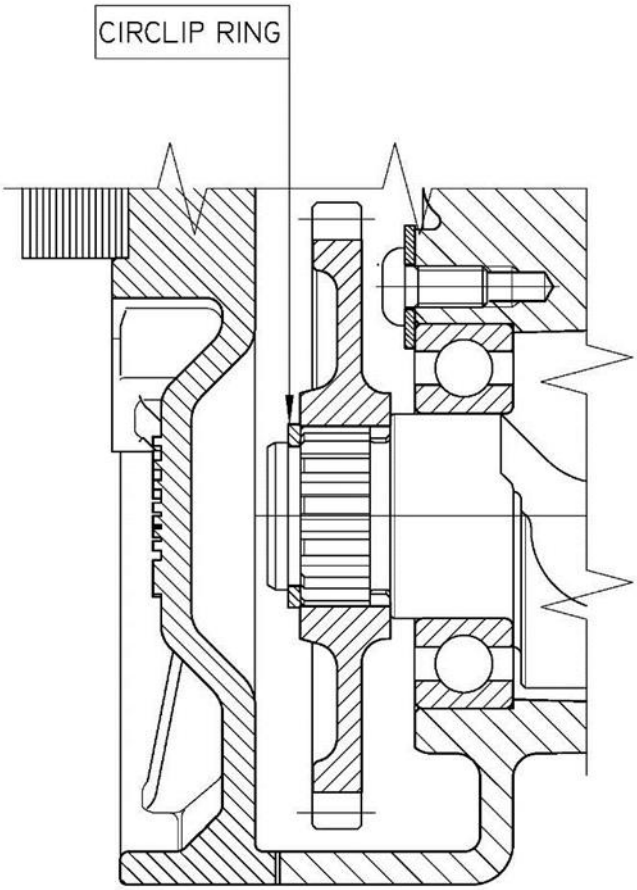
ADVANCE CURVE GRAPHS



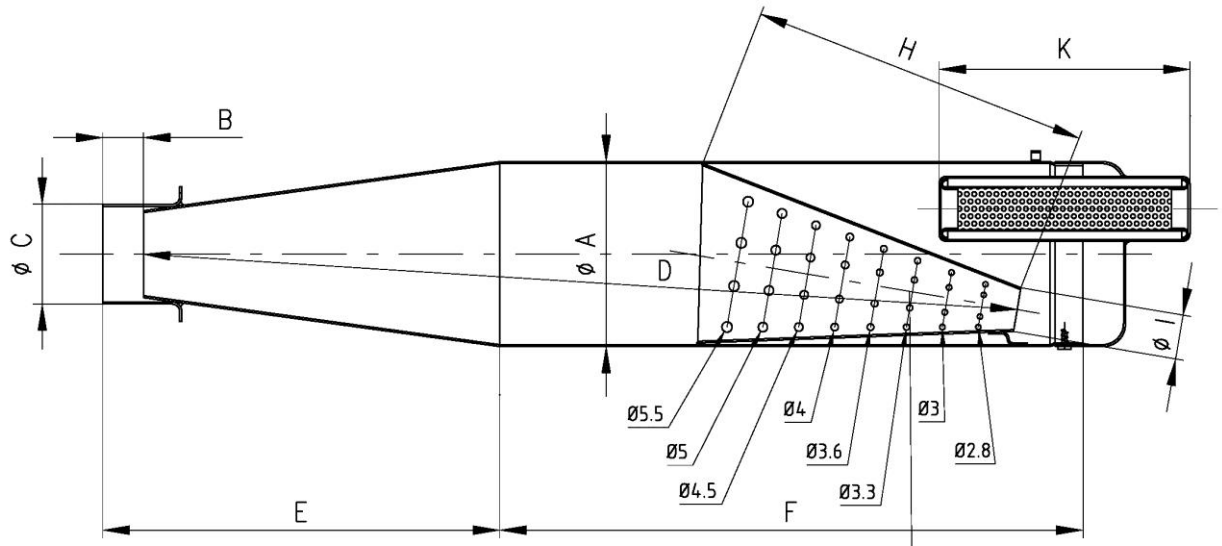
11.0 ELECTRONIC BOX



12.0 GEAR FIXING



13.0 EXHAUST MUFFLER

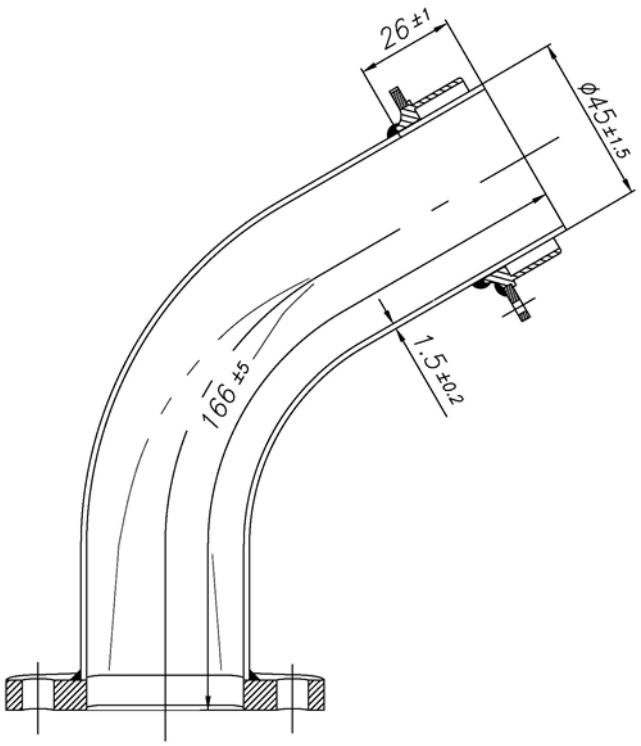


N° 8 ROWS OF HOLES. THE ROWS ARE COMPOSED OF N°8 HOLES, FOR A TOT OF 64 HOLES. THE HOLES HAVE A TOLLERANCE OF ±0.2

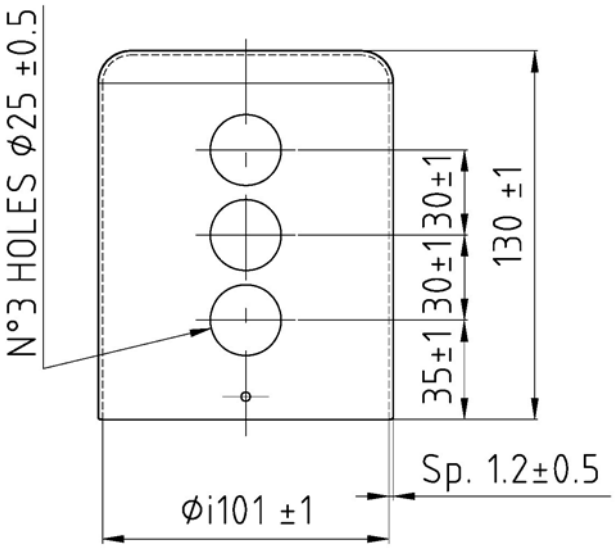
A: 100 ±1 øext.	D: 485 ±5	H: 180 ±5
B: 22 ±1	E: 218 ±5	I: 24 ±2 øext.
C: 54 ±1 øext.	F: 315 ±3	K: 130 ±3

Min. weight 1.39 kg

13.1 EXHAUST HEADER DIMENSIONS



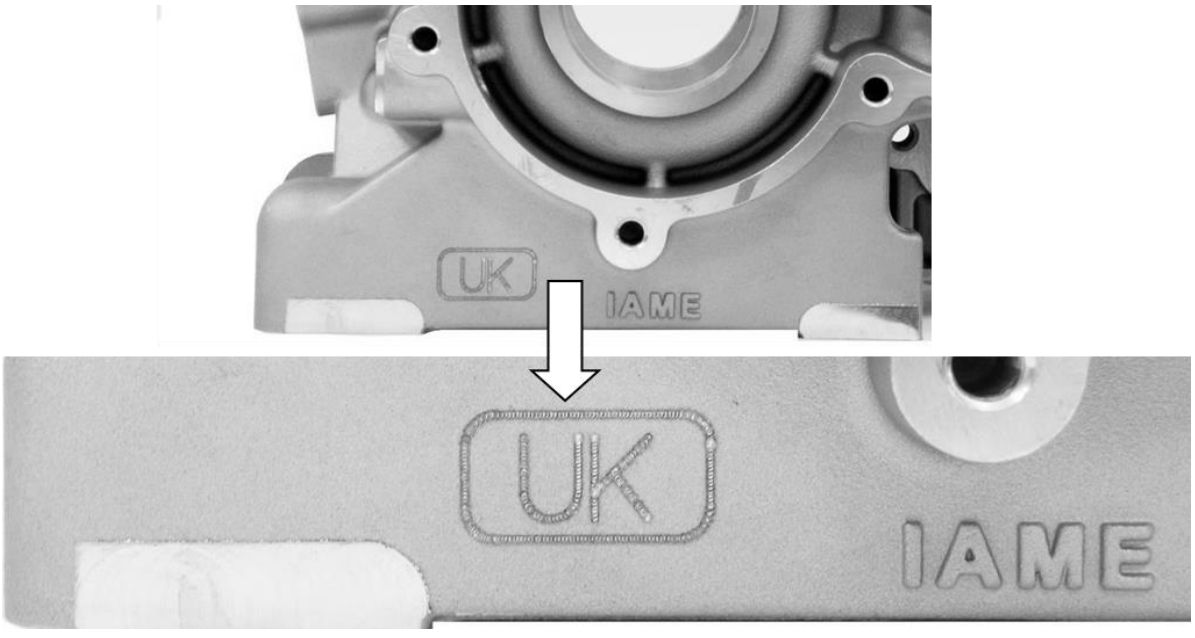
13.2 EXHAUST END CAN DIMENSIONS



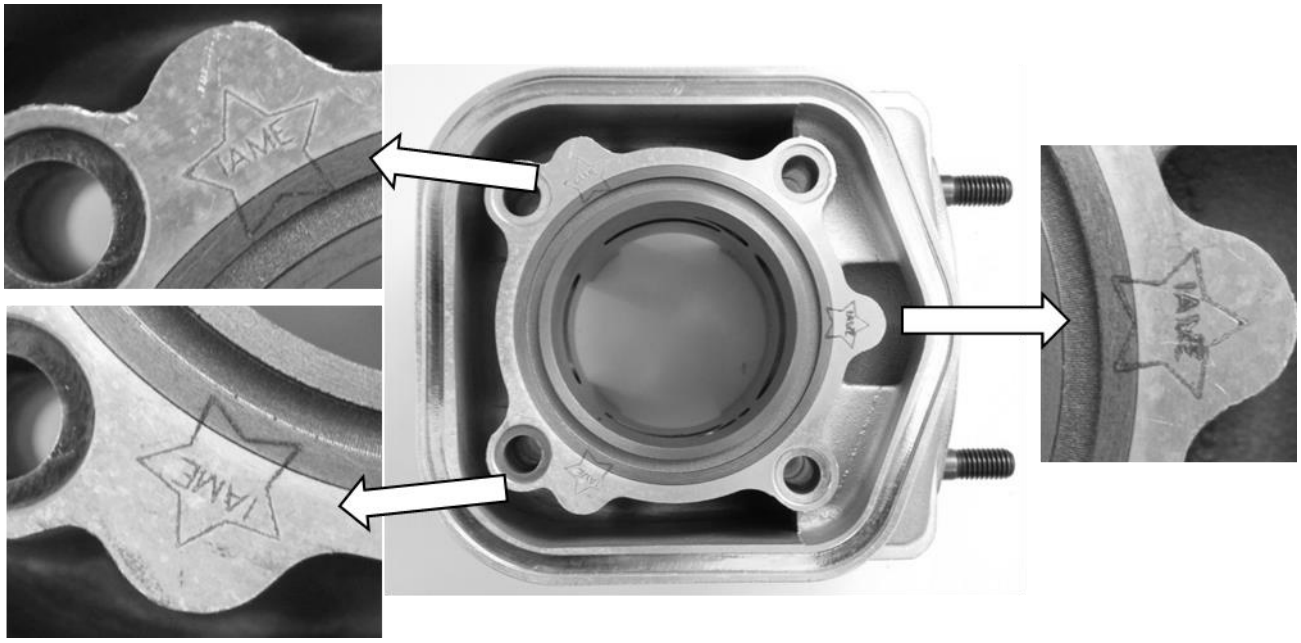
14.0 STICKER APPLICATION AREA

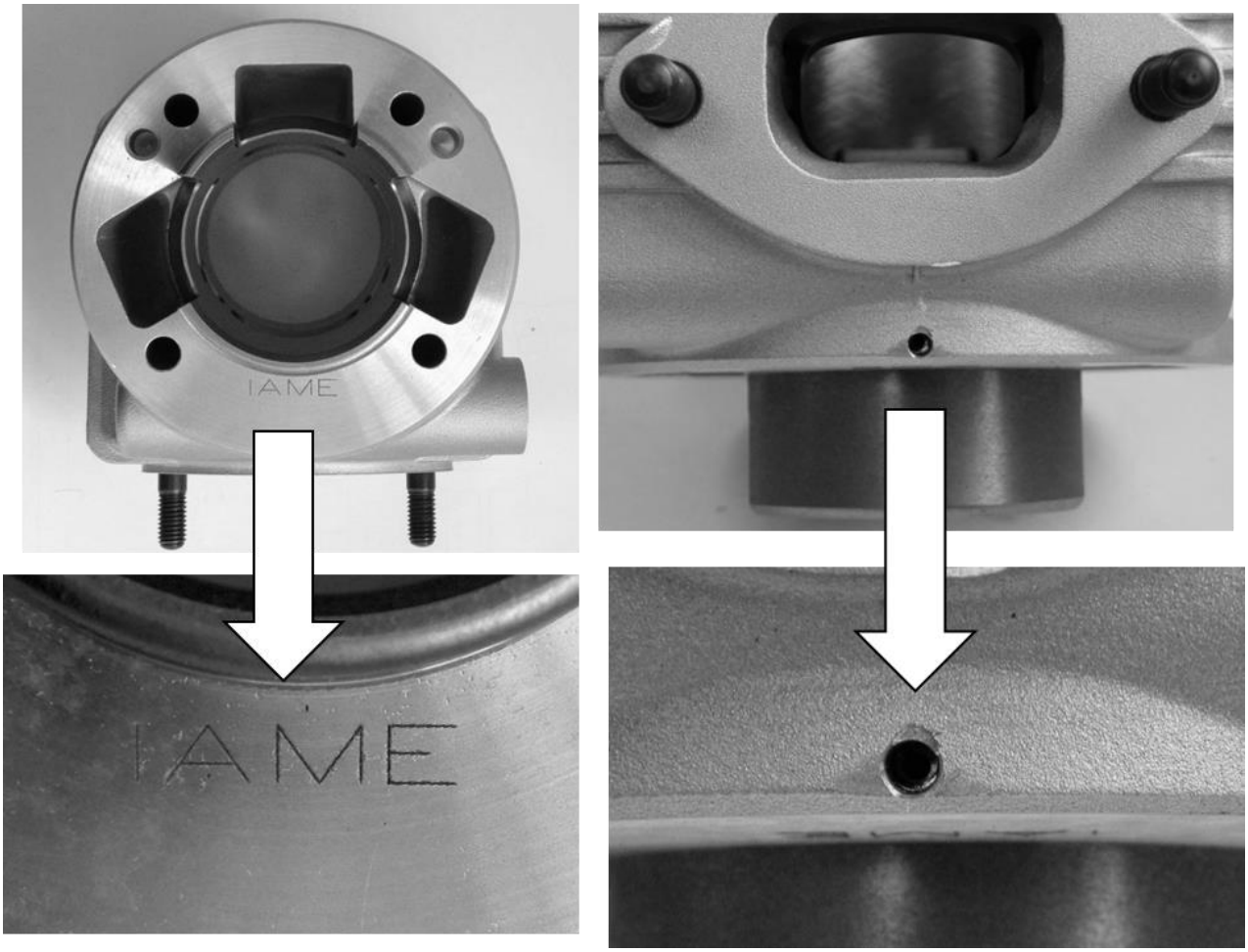
ALTERNATIVE AREA

14.1 CRANKCASE IDENTIFICATION MARKING

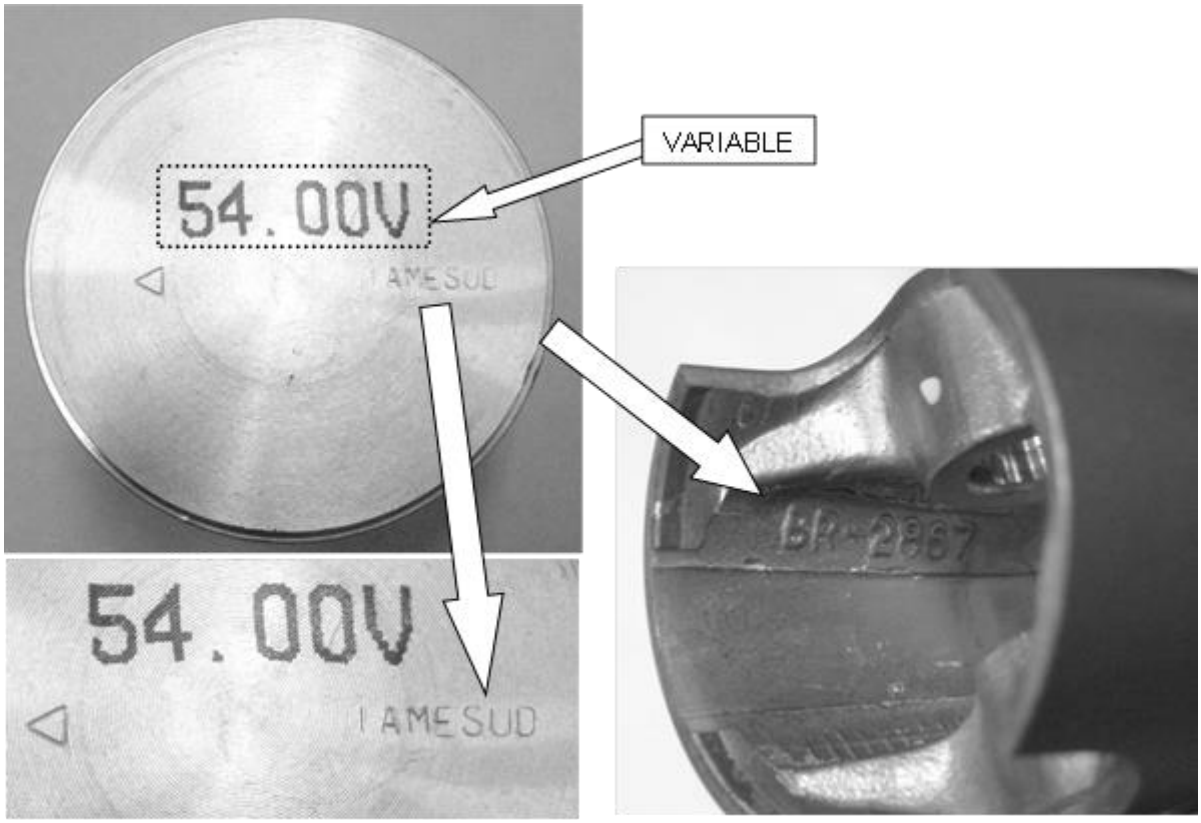


14.2 CYLINDER IDENTIFICATION MARKING

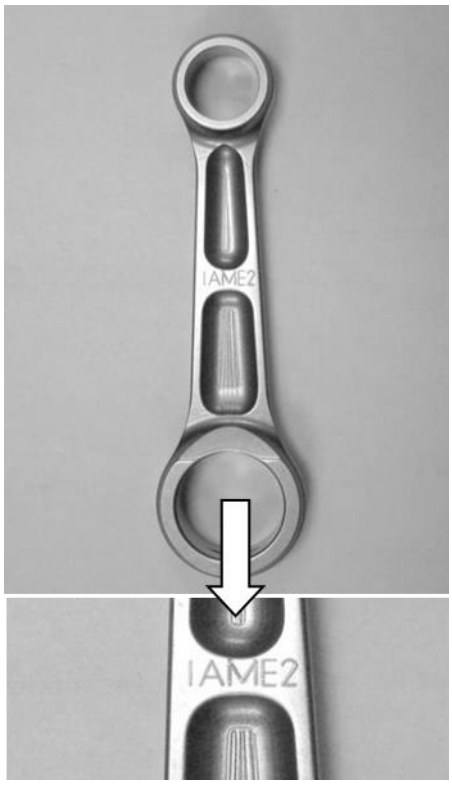




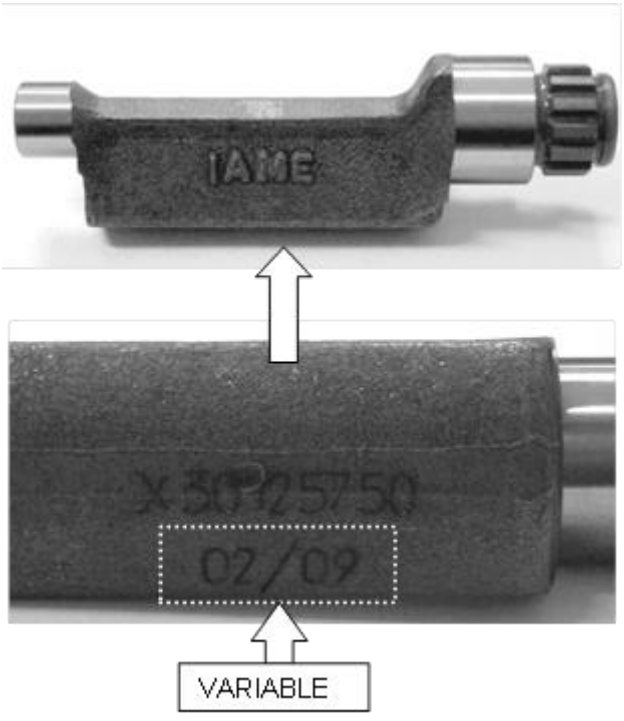
14.3 PISTON IDENTIFICATION MARKING



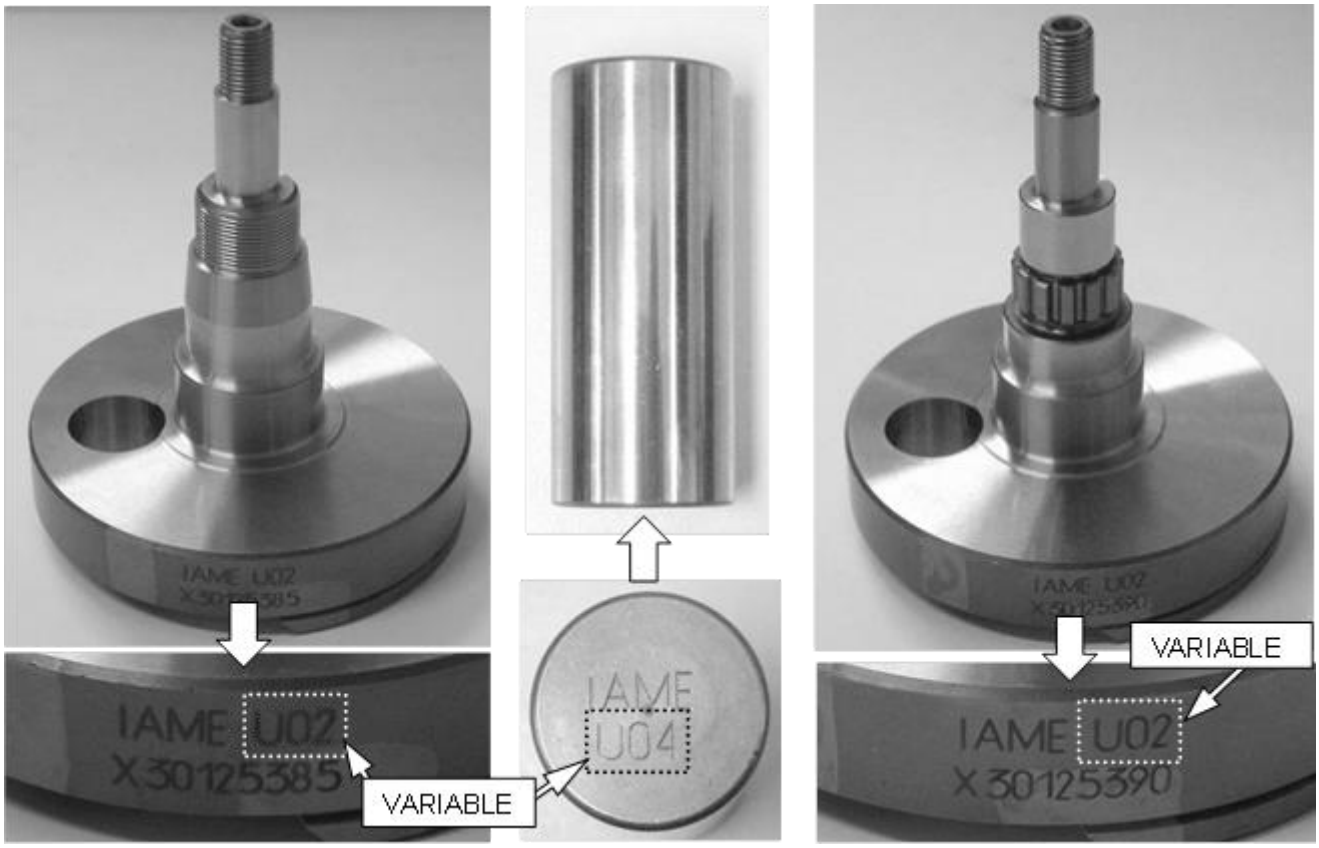
14.4 CONROD IDENTIFICATION MARKING



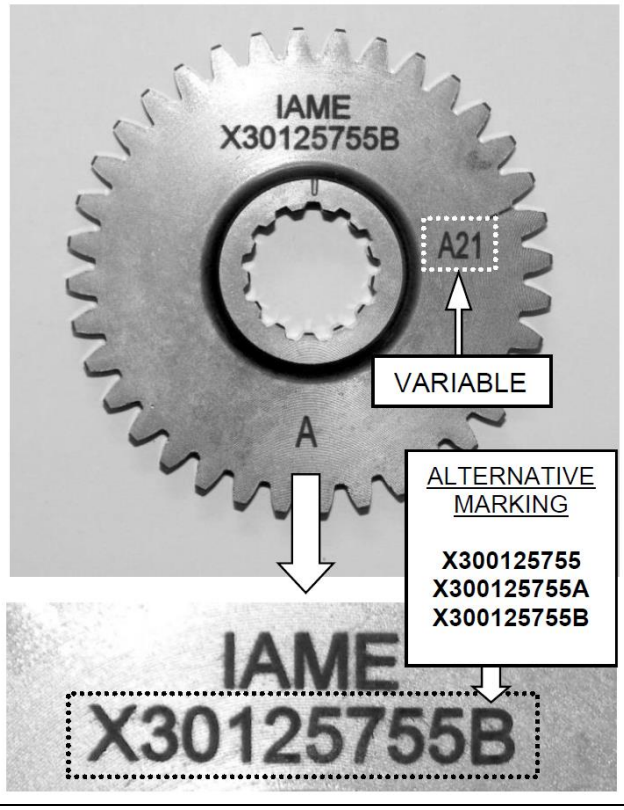
14.5 BALANCING SHAFT ID MARKING



14.6 CRANKSHAFT IDENTIFICATION MARKING

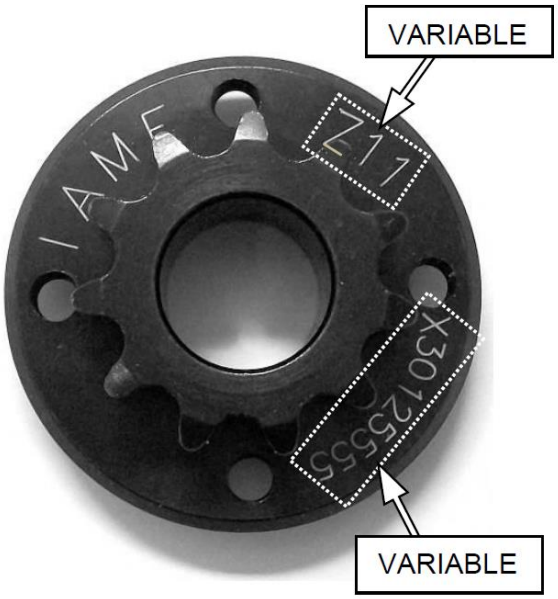


14.7 GEAR COMMAND BALANCING SHAFT IDENTIFICATION MARKING



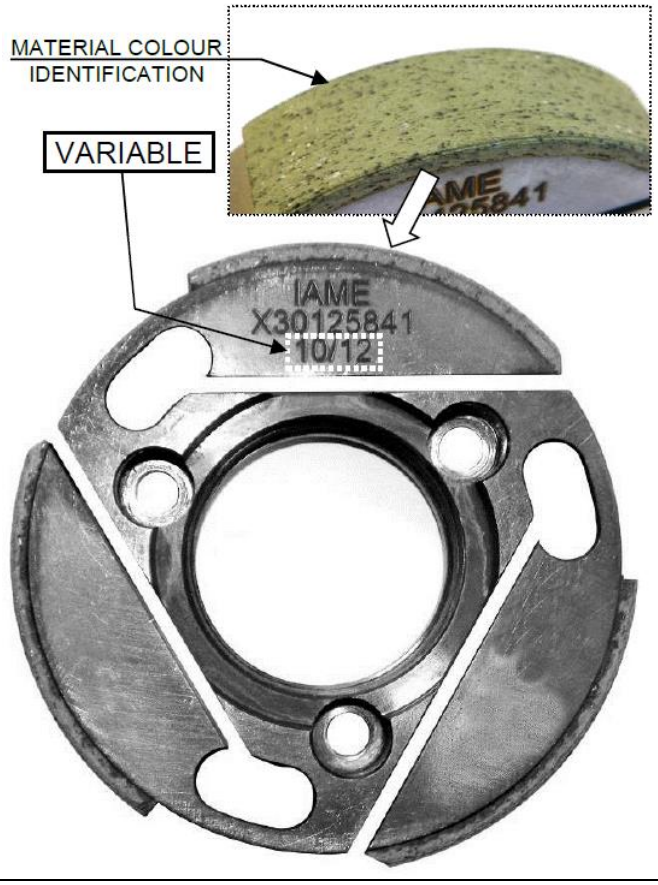
14.8 STARTER RING ID MARKING

14.9 SPROCKET ID MARKING

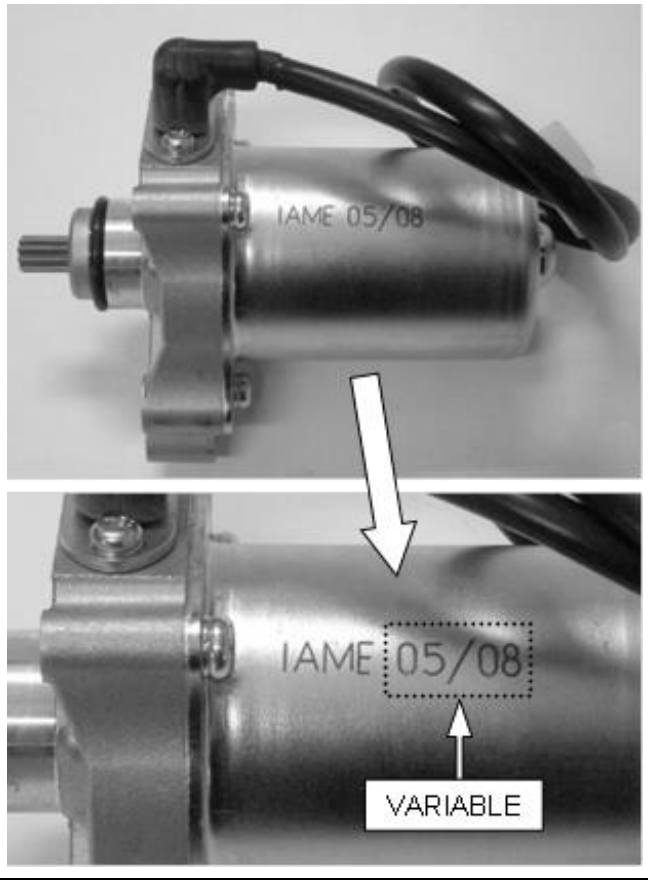


14.10 CLUTCH DRUM ID MARKING

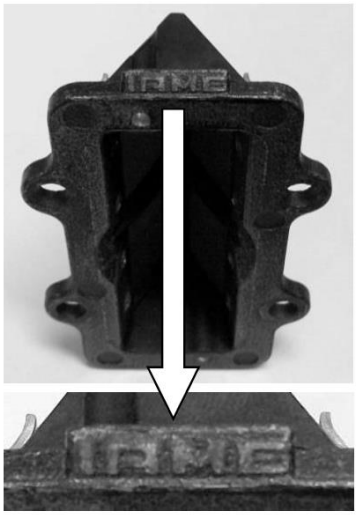
14.11 CLUTCH BODY ID MARKING

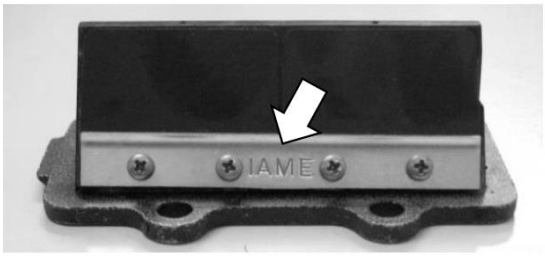


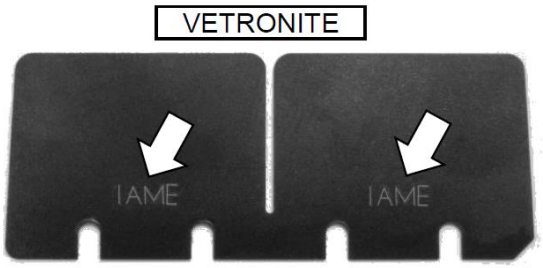
14.12 STARTER IDENTIFICATION MARKING

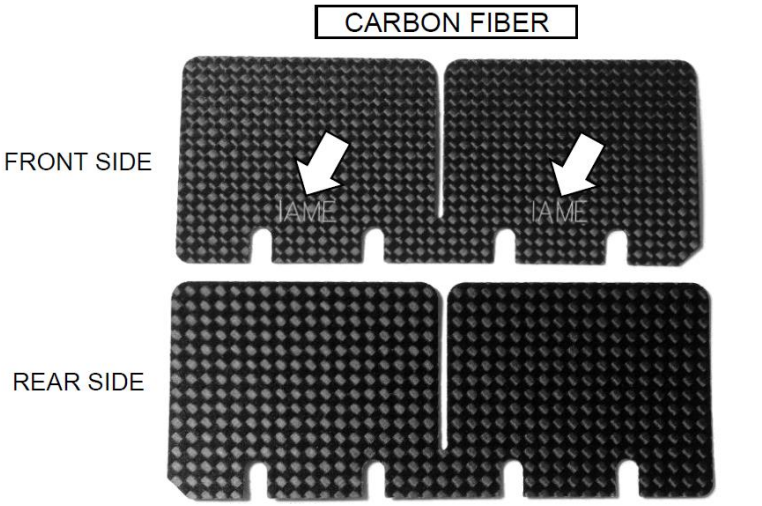


14.13 REED GROUP & PETAL IDENTIFICATION MARKING

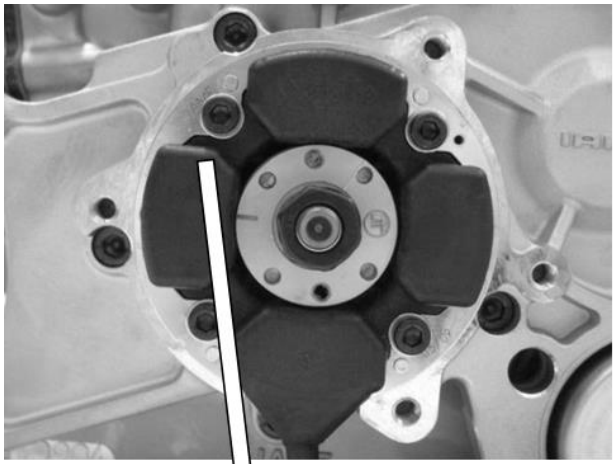


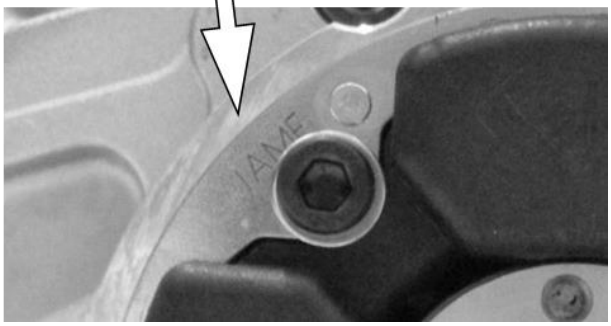




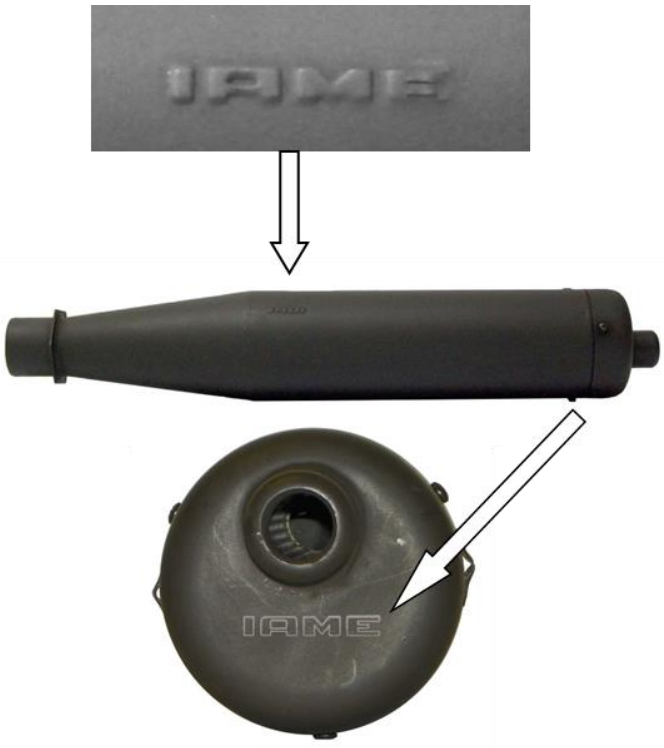


14.14 STATOR IDENTIFICATION MARKING



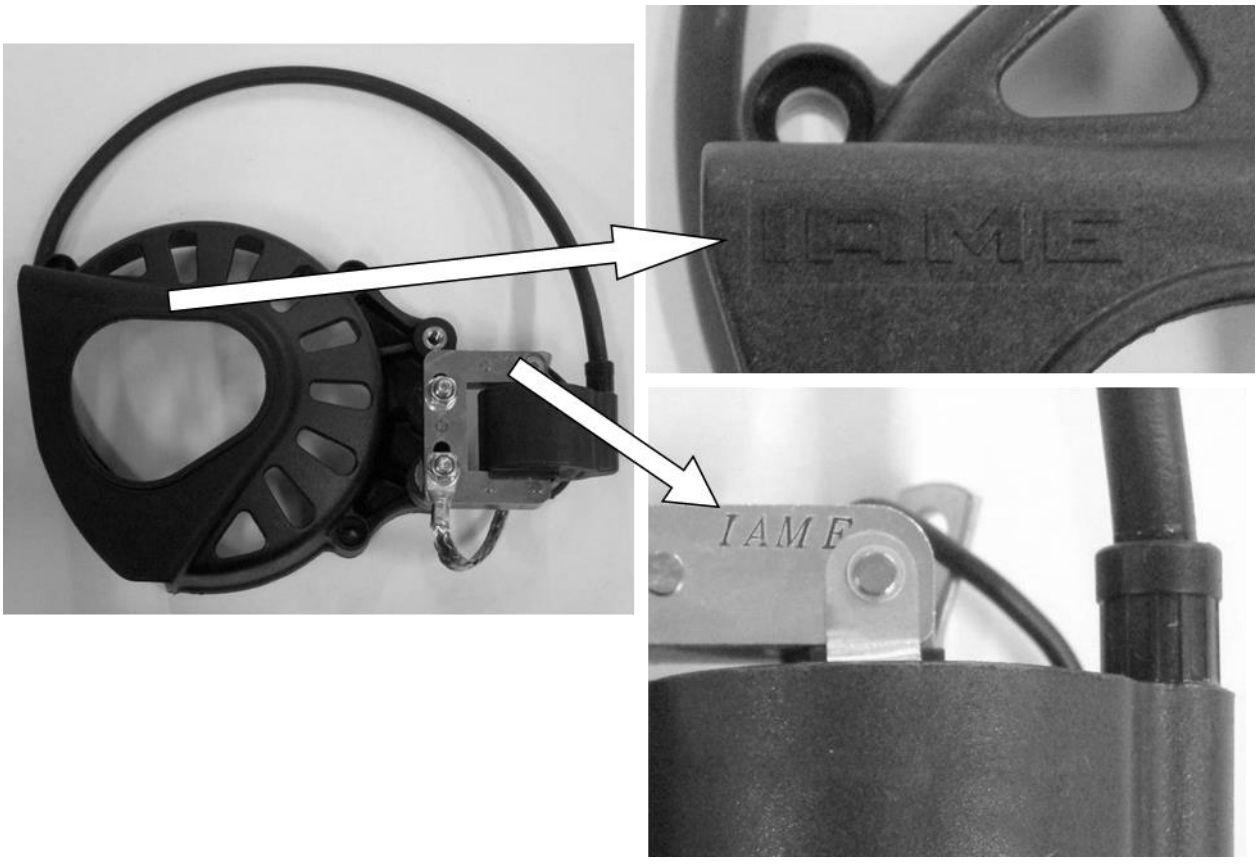


14.15 EXHAUST IDENTIFICATION MARKING

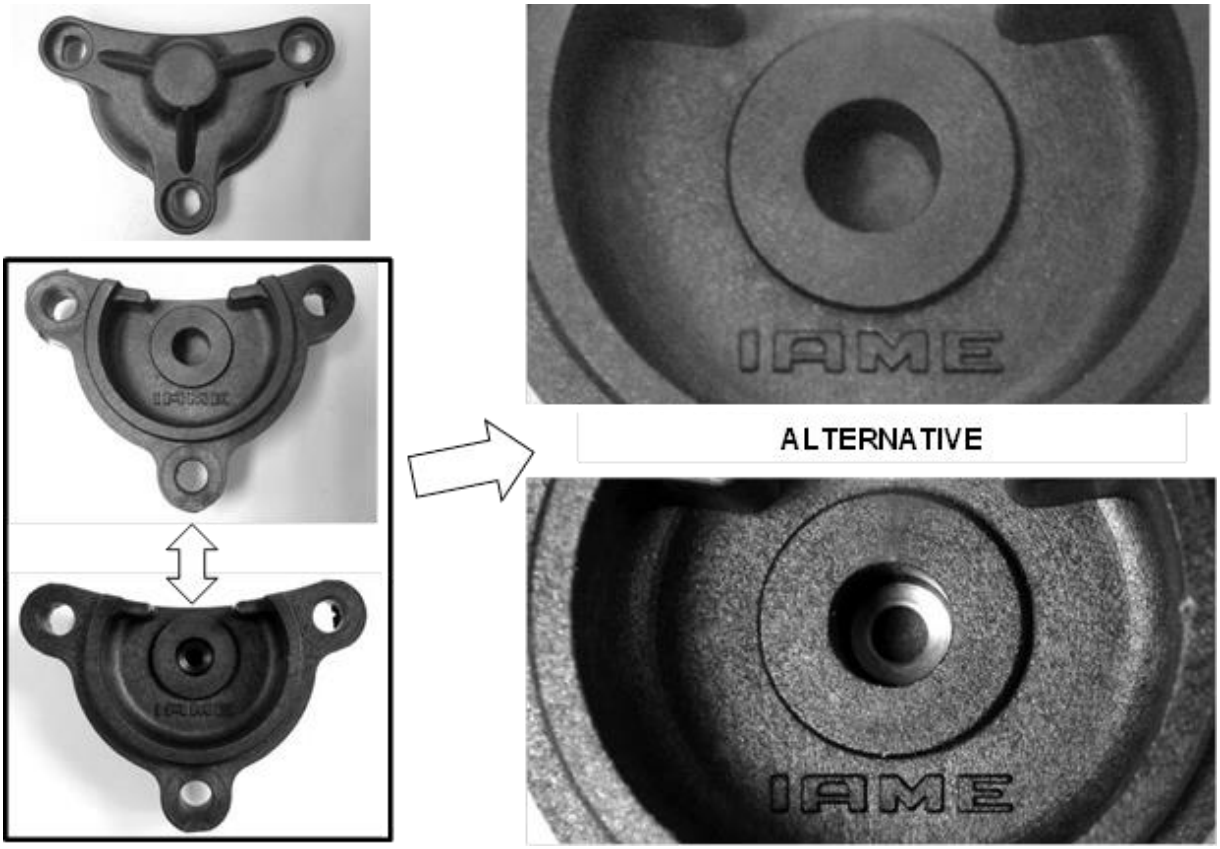


14.16 EXHAUST HEADER ID MARKING

14.17 CLUTCH COVER & H.T. COIL IDENTIFICATION MARKING



14.18 BENDIX COVER IDENTIFICATION MARKING



14.19 EXHAUST END CAN IDENTIFICATION MARKING

END

Appendix 1

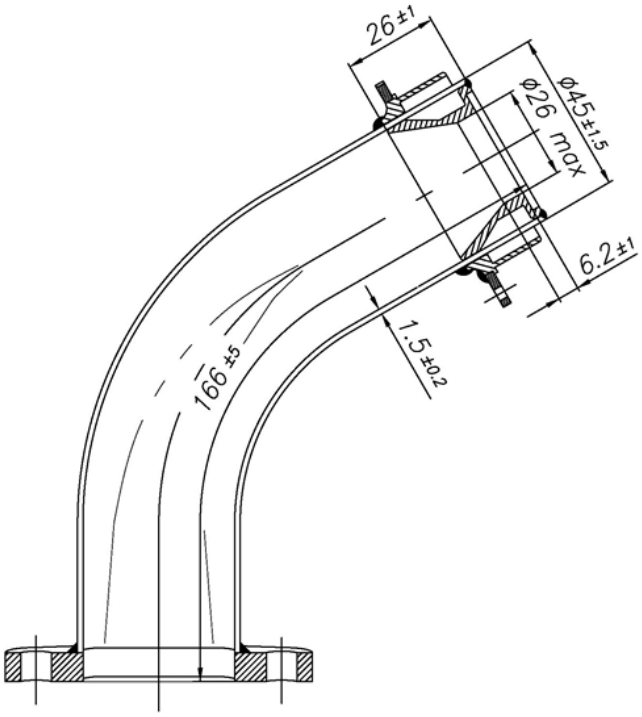
HOMOLOGATION OF KART ENGINE – SUPPLEMENT JUNIOR

Category	**IAME X30 JUNIOR**
Manufacturer	IAME
Model	X30 125cc RL TaG - UK
Valid From	01 January 2014
Number of pages	2

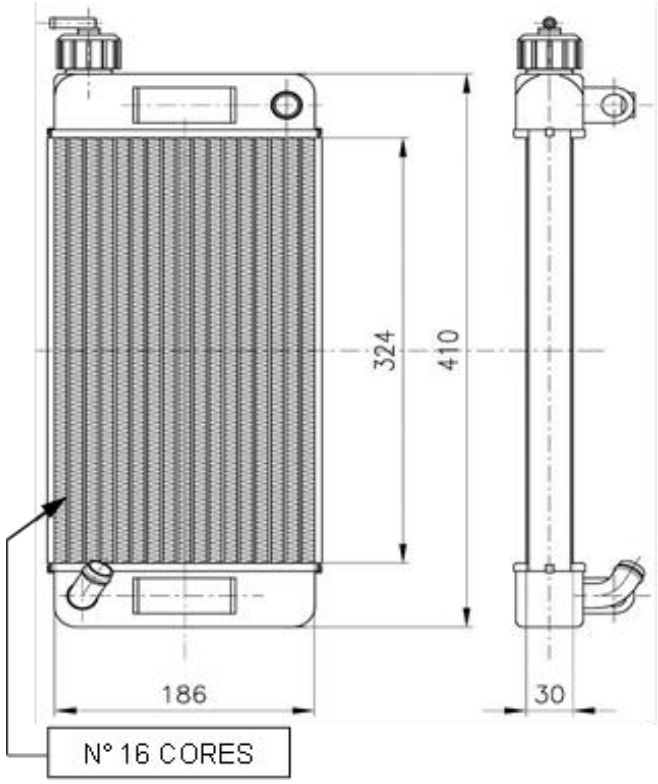
SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **18 December 2013** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

TECHNICAL INFORMATION

All parts of the preceding **IAME X30** engine fiche are applicable and remain unchanged with the exception and/or addition of the following points:

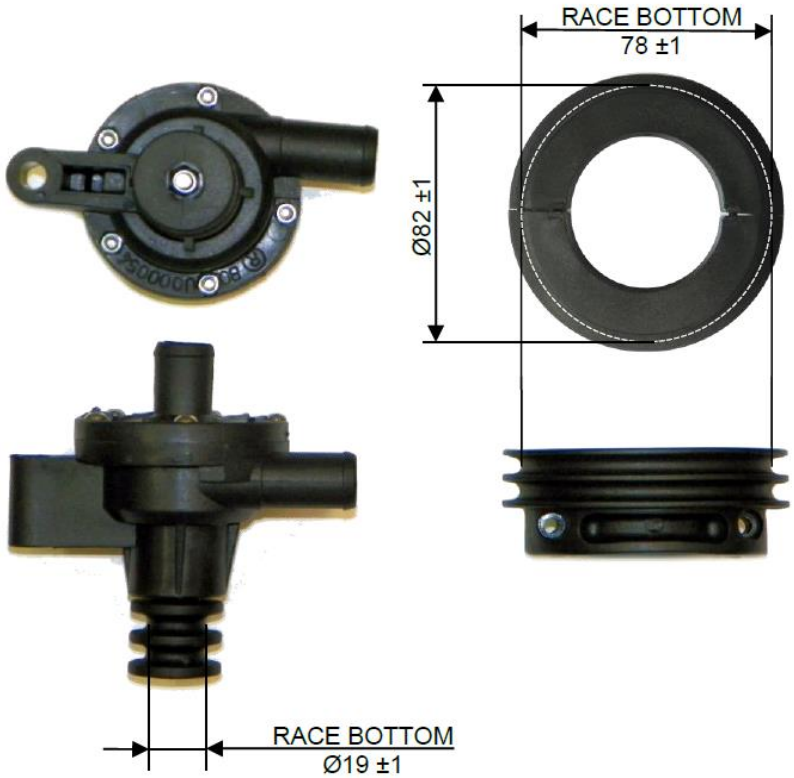
13.1 EXHAUST HEADER DIMENSIONS	**14.20 EXHAUST HEADER WITH JUNIOR RESTRICTOR ID MARKING**
	 Note: Silver finish for Junior

15.0 RADIATOR DESCRIPTION



15.1 RADIATOR PHOTOGRAPHS

16.0 WATER PUMP GROUP



16.1 THERMOSTAT ID MARKING

END

Appendix 2

HOMOLOGATION OF KART ENGINE – SUPPLEMENT CARBURETTOR

Category	**IAME X30 JUNIOR & SENIOR**
Manufacturer	Tillotson Ltd.
Model	HW-27A
Valid From	01 January 2014
Number of pages	5

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 adjusting side

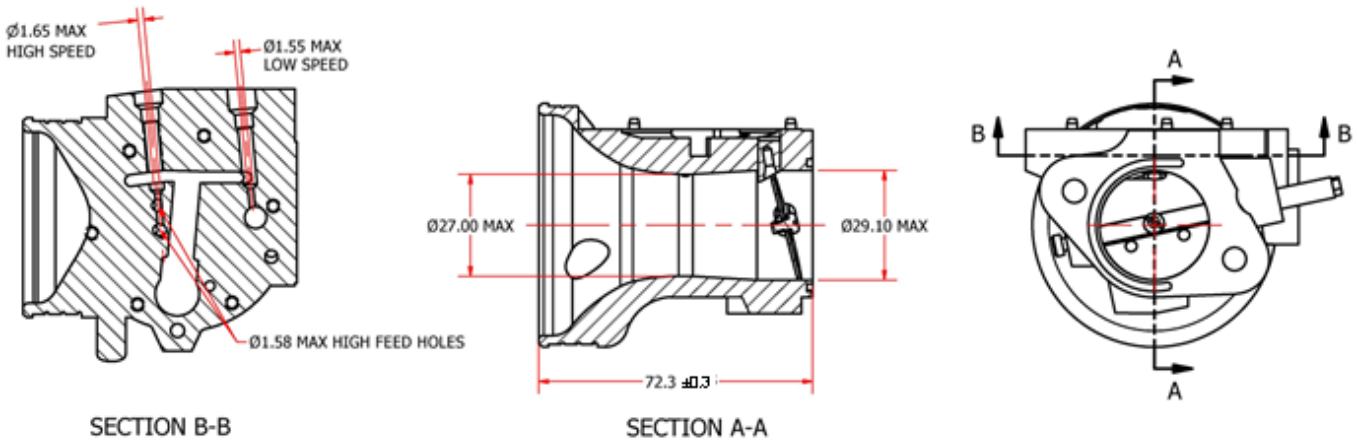
Photo of inlet side

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **18 December 2013** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

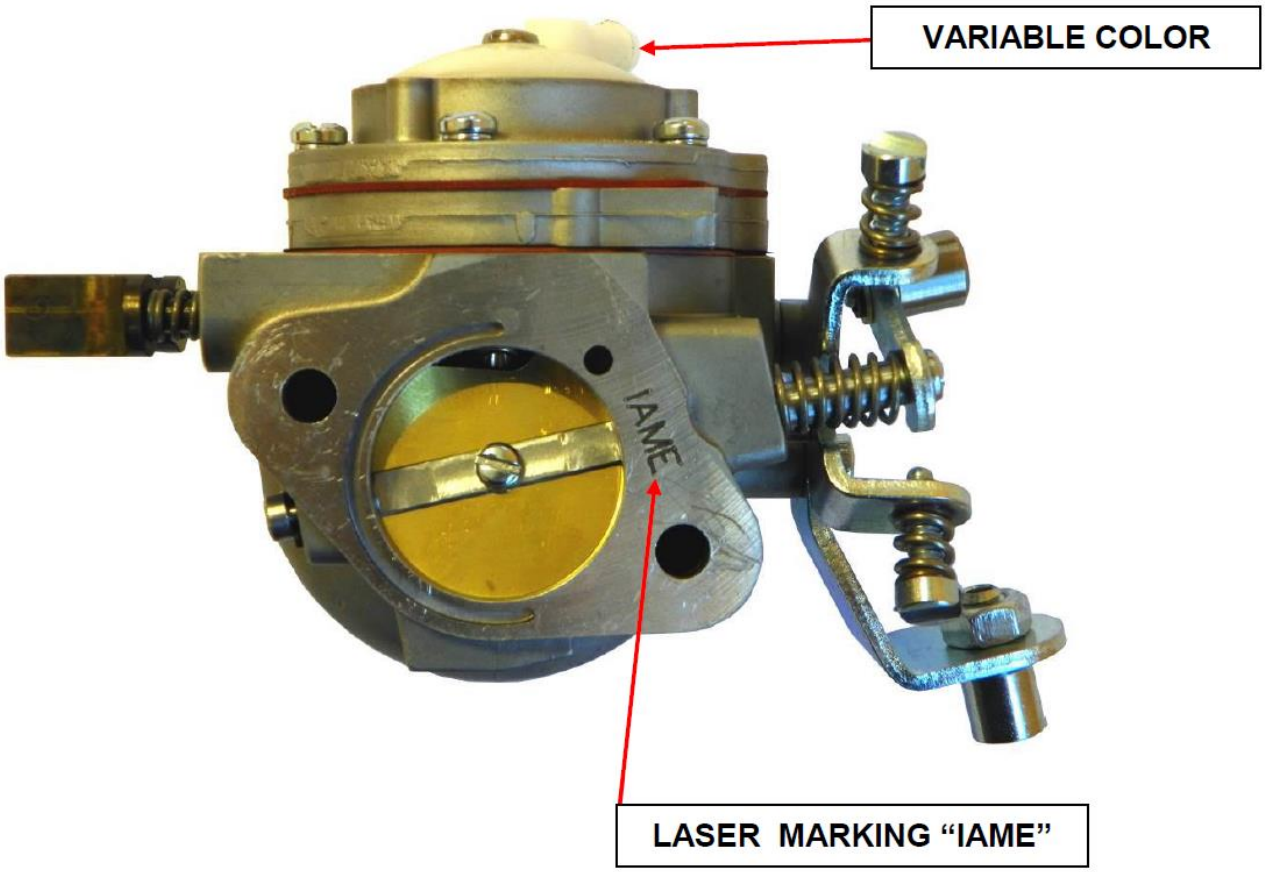
Any reproduction must be authorised by the MSA

TECHNICAL INFORMATION

C1.0 SECTION VIEW

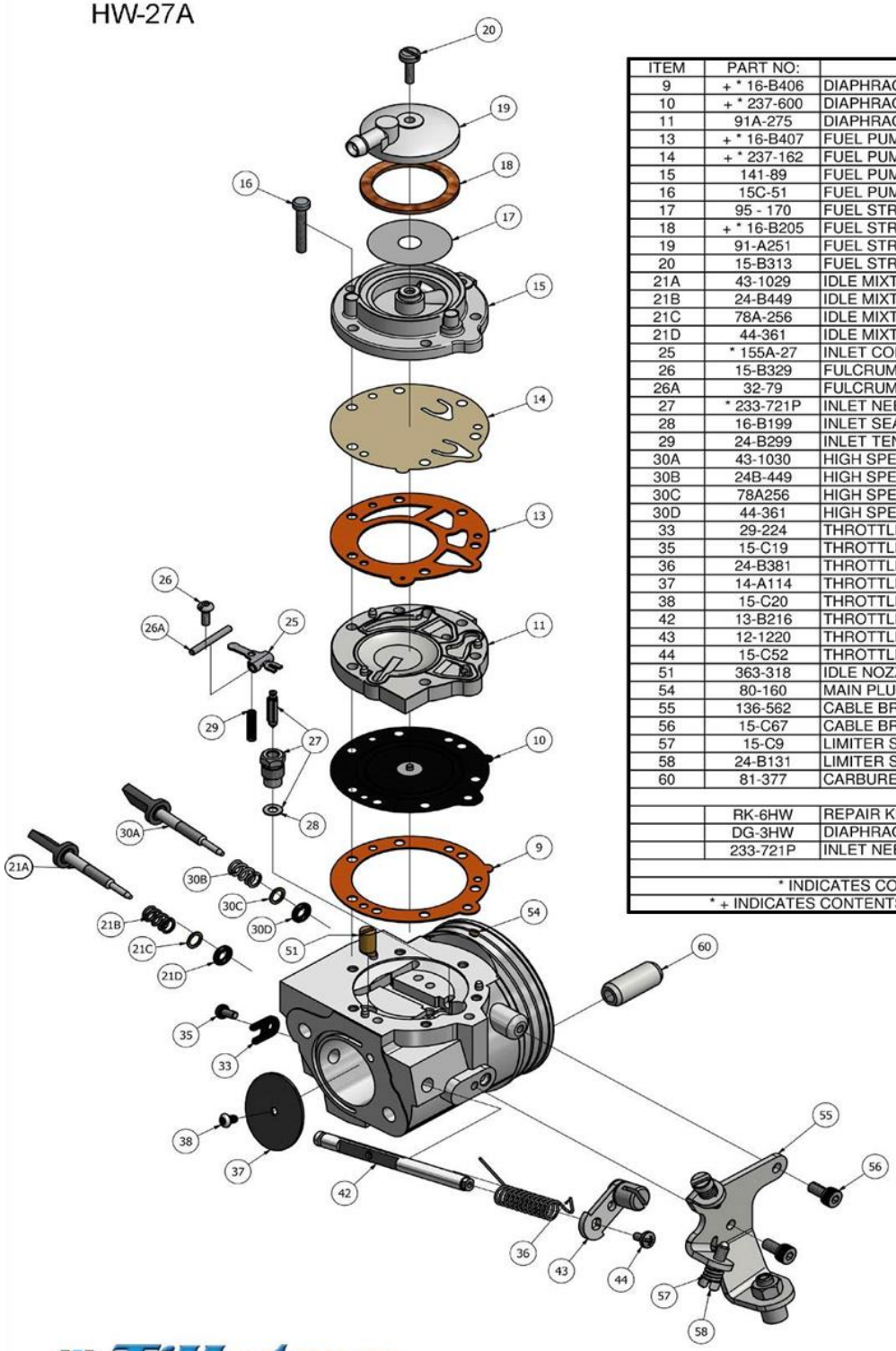


C2.0 CARBURETTOR MARKING



C3.0 SECTION VIEW

HW-27A



ITEM	PART NO:	DESCRIPTION	QTY
9	+ * 16-B406	DIAPHRAGM GASKET (ORANGE)	1
10	+ * 237-600	DIAPHRAGM	1
11	91A-275	DIAPHRAGM COVER	1
13	+ * 16-B407	FUEL PUMP GASKET (ORANGE)	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	43-1029	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	* 233-721P	INLET NEEDLE & SEAT SET	1
28	16-B199	INLET SEAT GASKET	1
29	24-B299	INLET TENSION SPRING	1
30A	43-1030	HIGH SPEED MIXTURE SCREW	1
30B	24B-449	HIGH SPEED MIXTURE SCREW SPRING	1
30C	78A256	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-A114	THROTTLE SHUTTER	1
38	15-C20	THROTTLE SHUTTER SCREW	1
42	13-B216	THROTTLE SHAFT	1
43	12-1220	THROTTLE LEVER ASSEMBLY	1
44	15-C52	THROTTLE LEVER RETAINING SCREW	1
51	363-318	IDLE NOZZLE	1
54	80-160	MAIN PLUG	2
55	136-562	CABLE BRAKET	1
56	15-C67	CABLE BRACKET RETAINING SCREW	2
57	15-C9	LIMITER SCREW	2
58	24-B131	LIMITER SPRING	2
60	81-377	CARBURETTOR MOUNTING NUT	2
	RK-6HW	REPAIR KIT	
	DG-3HW	DIAPHRAGM & GASKET (STANDARD)	
	233-721P	INLET NEEDLE & SEAT SET	
* INDICATES CONTENTS OF REPAIR KIT			
* + INDICATES CONTENTS OF DIAPHRAGM & GASKET SET			

Tillotson RACING
Clash Industrial Estate - Tralee - Ireland
www.tillotson-racing,com

IAME

C4.0 CARBURETTOR COMPONENTS

REF.9 - P. N°16-B406
DIAPHRAGM GASKET (ORANGE COLOR)

Thickness = 0.5 ±0.1 mm

REF.13 - P. N° 16-B407
PUMP DIAPHRAGM GASKET (ORANGE COLOR)

Thickness = 0.8 ±0.1 mm

REF.10 - P. N°237-600
DIAPHRAGM

Thickness = 0.13 ±0.07 mm

REF.14 - P. N°237-162
PUMP DIAPHRAGM

Thickness = 0.10 ±0.063 mm

REF.11 - P. N° 91-A275
DIAPHRAGM COVER

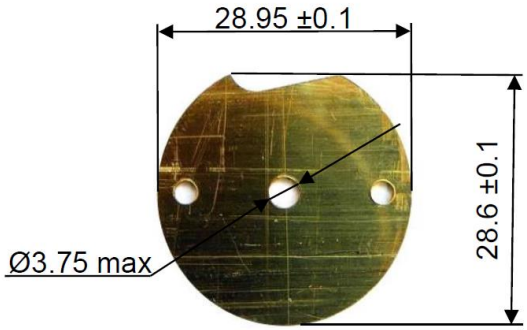
Thickness = 6.75 ±0.15 mm

REF.15 - P. N° 141-89
PUMP COVER

Thickness = 12.5 ±0.15 mm

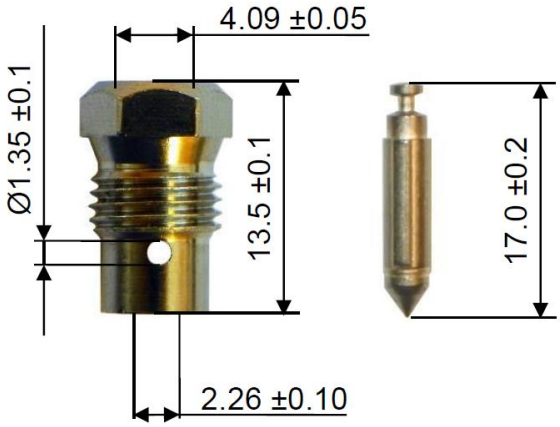
C4.0 CARBURETTOR COMPONENTS (continued)

REF.37 - P. N° 14-A114
THROTTLE SHUTTER

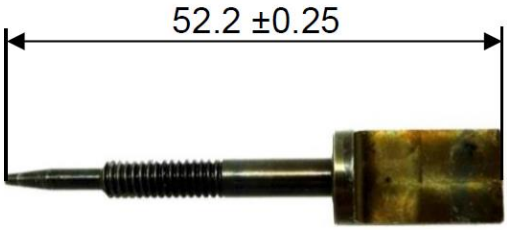


Thickness = 0.81 ±0.1 mm

REF.27 - P. N° 233-721P
SEAT + NEEDLE



REF.30A - P. N° 43-1030
NEEDLE HIGH SPEED



REF.21A - P. N° 43-1029
NEEDLE LOW SPEED

END

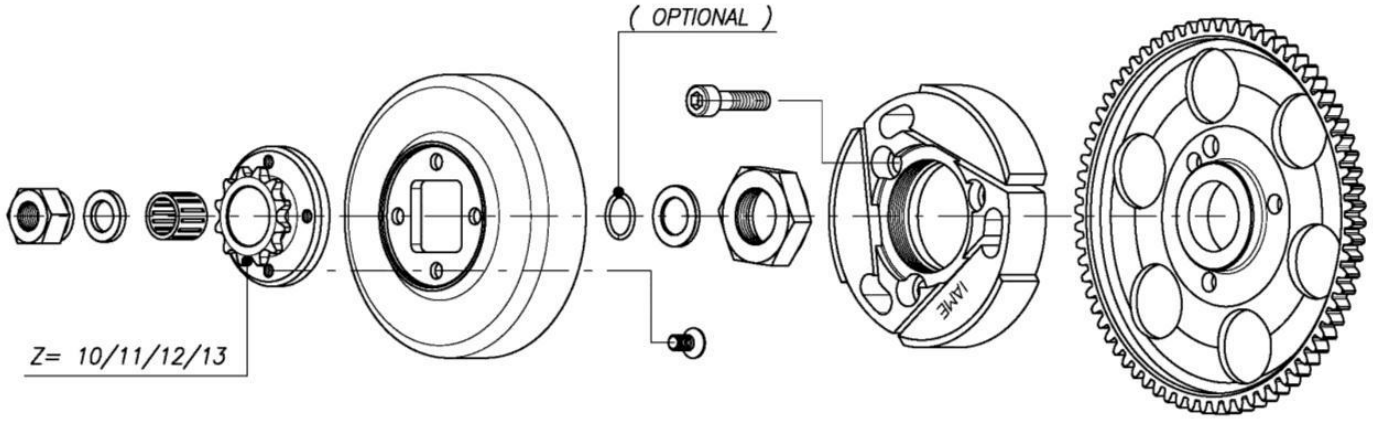
Appendix 3

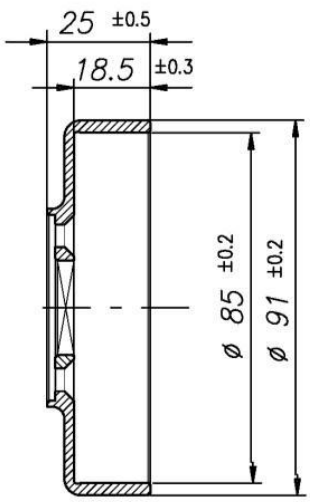
HOMOLOGATION OF KART ENGINE – VARIANT

Category	**IAME X30 JUNIOR & SENIOR**
Manufacturer	IAME
Model	X30 125cc RL TAG – UK
Valid From	01 January 2015
Number of pages	2

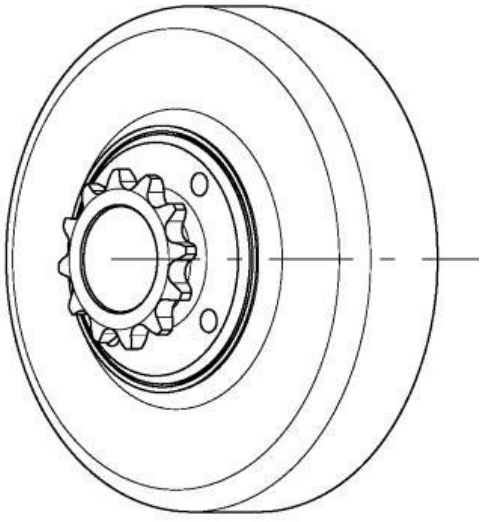
ALTERNATIVE SOLID CLUTCH DRUM

8.0 CLUTCH





Min. weight 225 g



Min. weight 300 g

14.10 CLUTCH DRUM ID MARKING

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **09 October 2014** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 4

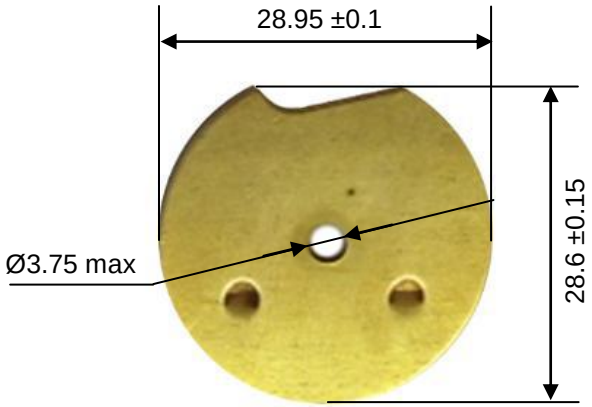
HOMOLOGATION OF KART ENGINE – VARIANT CARBURETTOR

Category	**IAME X30 JUNIOR & SENIOR**
Manufacturer	Tillotson Ltd
Model	HW-27A
Valid From	01 January 2015
Number of pages	1

ALTERNATIVE THROTTLE SHUTTER

C4.0 CARBURETTOR COMPONENTS

REF.37 - P. N° 14-A114
THROTTLE SHUTTER



Thickness = 0.81 ±0.1 mm

END

SIGNATURE AND STAMP OF THE MSA	
	Date: **14 October 2014** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

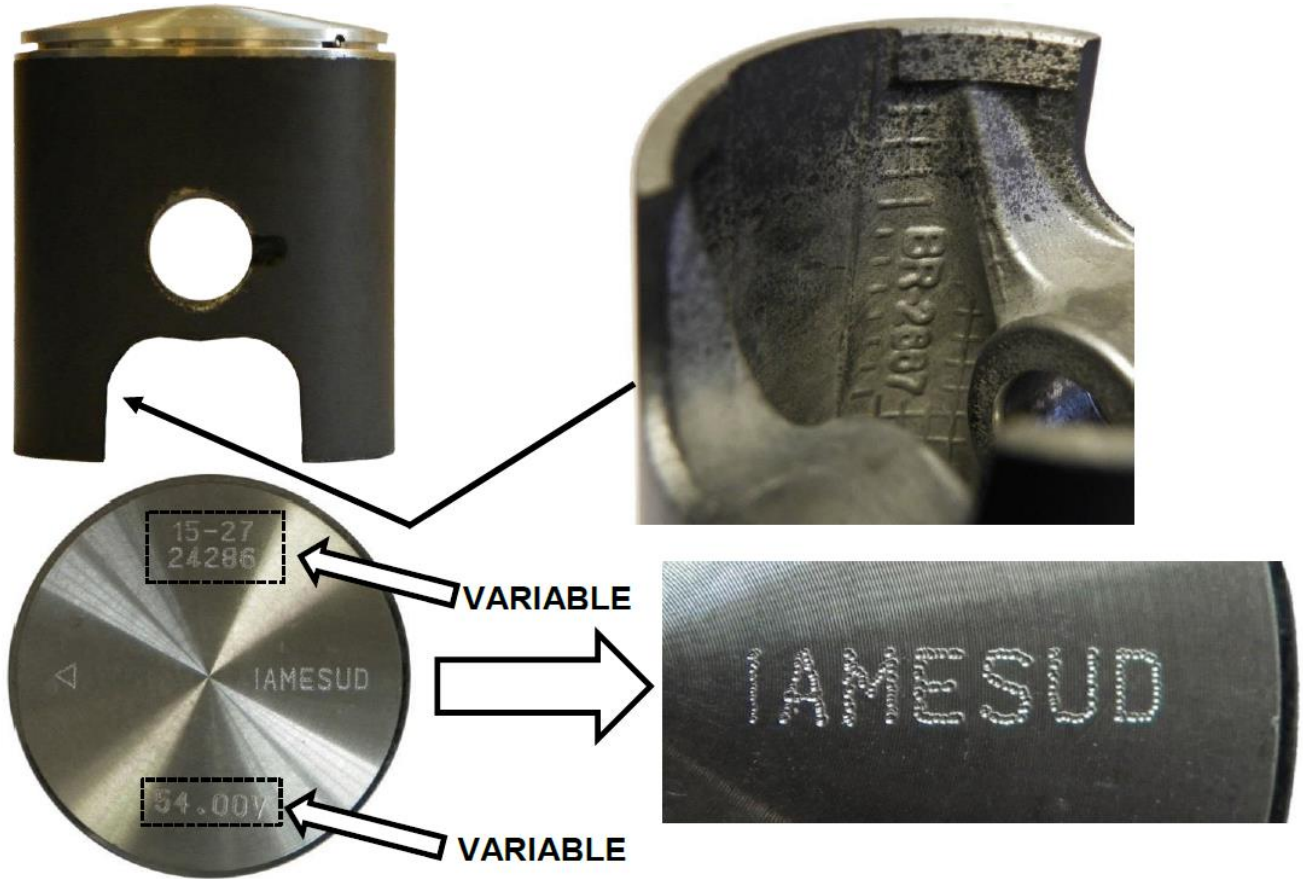
Appendix 5

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**IAME X30 JUNIOR & SENIOR**
Manufacturer	IAME
Model	X30 125cc RL TAG – UK
Valid From	01 January 2016
Number of pages	1

ALTERNATIVE PISTON MARKINGS

14.3 PISTON IDENTIFICATION MARKING



END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **24 September 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

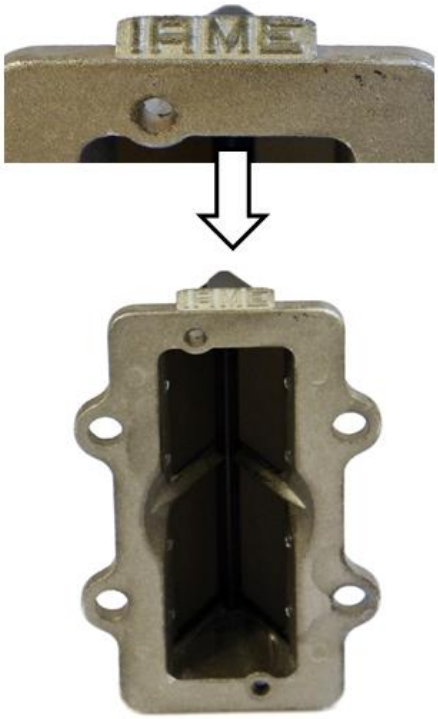
Appendix 6

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**IAME X30 JUNIOR & SENIOR**
Manufacturer	IAME
Model	X30 125cc RL TAG – UK
Valid From	01 January 2016
Number of pages	1

ALTERNATIVE REED VALVE MARKINGS

14.13 REED GROUP & PETAL IDENTIFICATION MARKING



Note: Petal identification markings remain unchanged.

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **24 September 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 7

HOMOLOGATION OF KART ENGINE – VARIANT

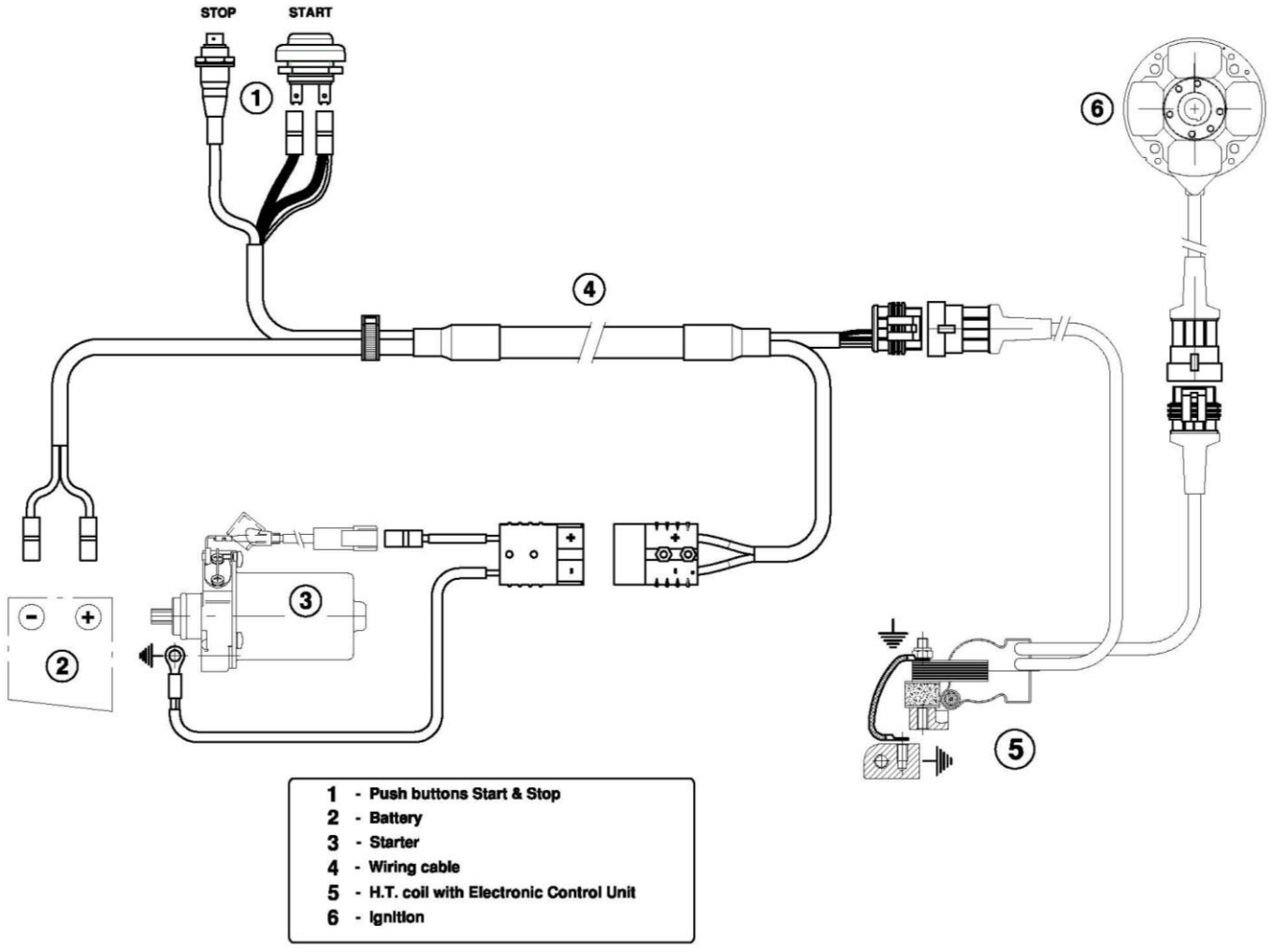
SUBJECT TO FURTHER CLARIFICATION

Category	**IAME X30 JUNIOR & SENIOR**
Manufacturer	IAME
Model	X30 125cc RL TAG – UK
Valid From	01 January 2016
Number of pages	2

ALTERNATIVE IGNITION & WIRING LOOM

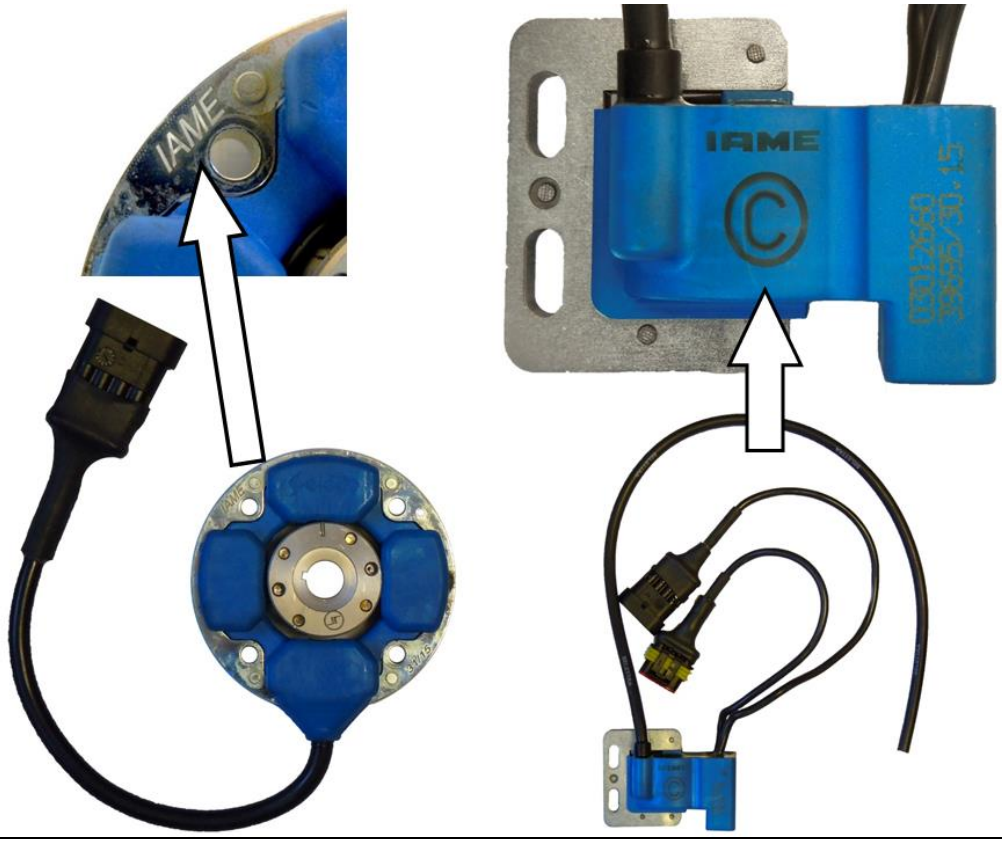
9.0 WIRING DIAGRAM

SELETTRA ALTERNATIVE DIGITAL "S" IGNITION



9.1 PHOTO OF COMPLETE WIRING LOOM

9.2 PHOTO OF IGNITION WITH MARKING



END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **24 September 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 8

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**IAME X30 JUNIOR & SENIOR**
Manufacturer	IAME
Model	X30 125cc RL TAG – UK
Valid From	01 January 2016
Number of pages	1

ALTERNATIVE PUSH BUTTONS – START & STOP

9.1 PUSH BUTTONS – START & STOP

Note: To replace the key switch on the original wiring loom.

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **24 September 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

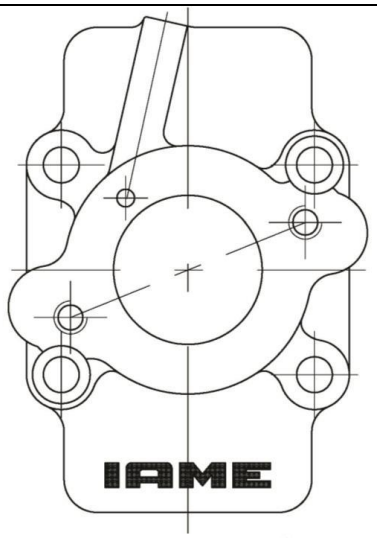
Appendix 9

HOMOLOGATION OF KART ENGINE – VARIANT

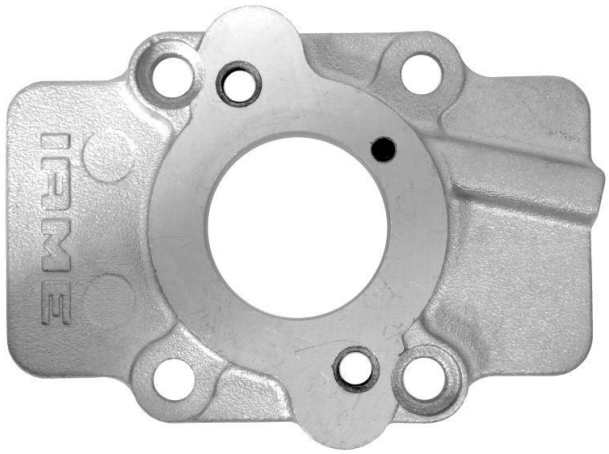
Category	**IAME X30 JUNIOR & SENIOR**
Manufacturer	IAME
Model	X30 125cc RL TAG – UK
Valid From	01 January 2016
Number of pages	1

ALTERNATIVE INLET CONVEYOR

7.0 INLET CONVEYOR DIMENSIONS & IDENTIFICATION MARKING



Note: Opening diameter remains unchanged (29.3mm max.)



END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **24 September 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 10

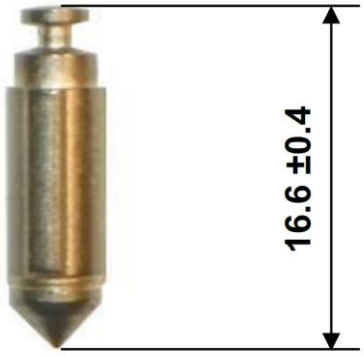
HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**IAME X30 JUNIOR & SENIOR**
Manufacturer	IAME
Model	X30 125cc RL TAG – UK
Valid From	01 January 2016
Number of pages	1

FUEL NEEDLE MEASUREMENT

C4.0 CARBURETTOR COMPONENTS

Note: This replaces the measurement on page 27 of the original fiche



END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **24 September 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**