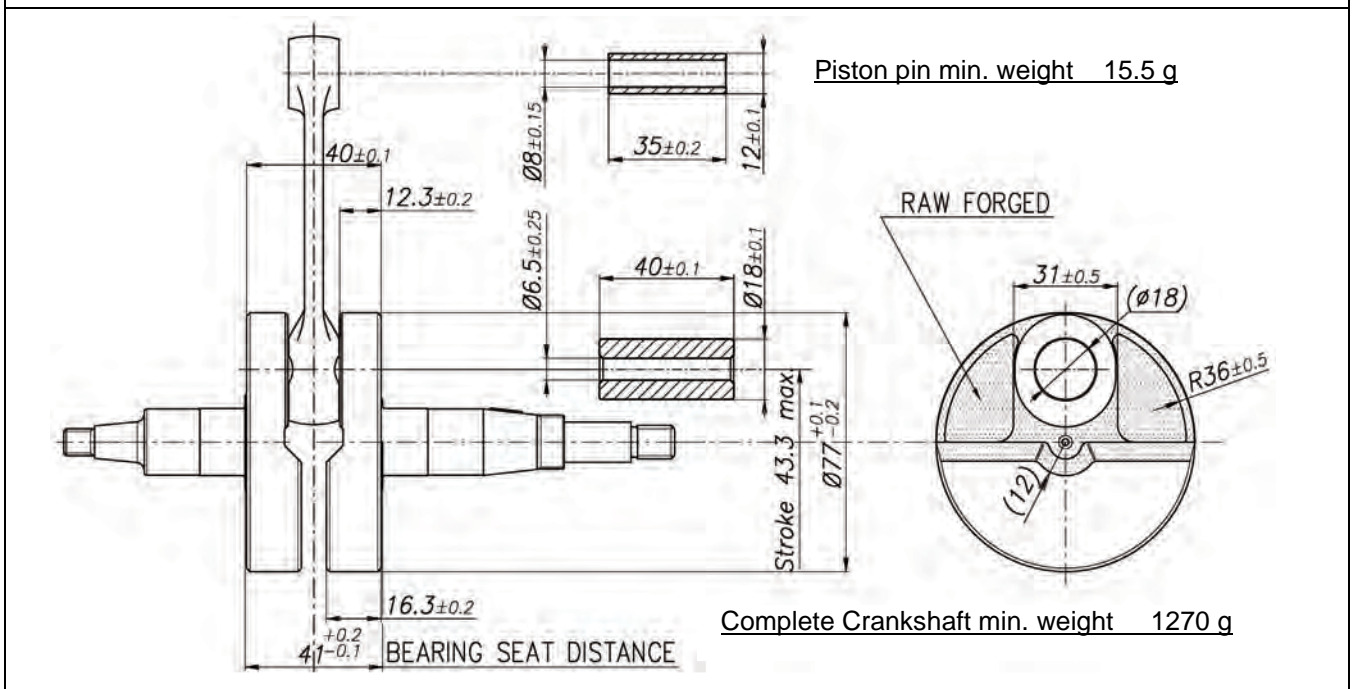


# NORSWIFT 60cc - N

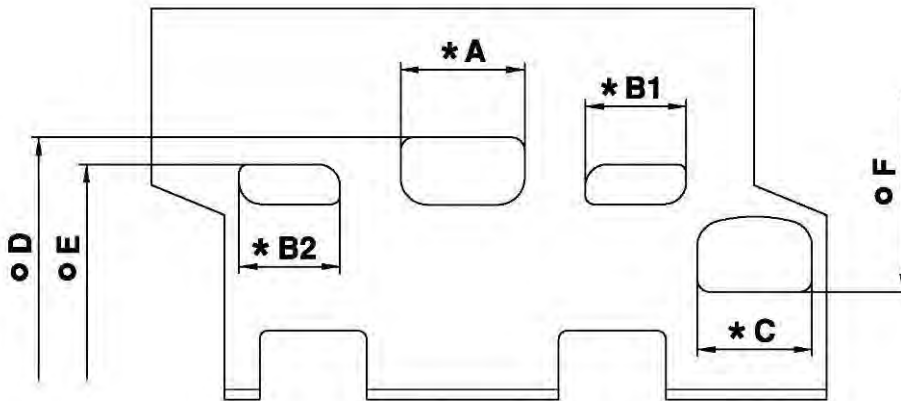
		FEATURES	
		Cylinder volume	59.42 cm <sup>3</sup> (60.00 cm <sup>3</sup> max.)
		Bore	41.80 mm
		Max. theoretical bore	42.00 mm
		Stroke	43.30 mm max.
		Cooling system	Air
		Inlet system	Piston Port
		Number of carbs	1
Tillotson Carburettors HW -	47A Ø15mm (CADETTI CLASS) 34B Ø17mm (MINI CLASS)	Transfers n. cylinder/crankcase	2 / 2
Number of piston rings	1	Inlet / exhaust ports number	1 / 1
Big end conrod ball-bearing diam.	18x24x15	Combustion chamber shape	Spherical
Crankshaft ball-bearing diam.	20x47x14	Selettra ignition	Cod. A-61959N (lim. 12.000 rpm CADETTI CLASS) Cod. A-61959R (lim. 13.500 rpm MINI CLASS)
Small end conrod ball-bearing diam.	12x16x16	Distance between conrod centres	88 mm

DESCRIPTION OF THE MATERIAL		PISTON
Conrod material	Steel	<p>Min Weight (ring incl.) 60 g</p>
Crankshaft material	Steel	
Head material	Aluminium	
Cylinder material	Aluminium	
Liner material	Cast Iron	
Crankcase material	Aluminium	<p>Min. Weight 80 g</p>
Piston material	Aluminium	
Piston rings material	Cast Iron	
Exhaust muffler material	Sheet-steel	
Ball-bearings	6204 type	

### CRANKSHAFT



# CYLINDER DEVELOPMENT

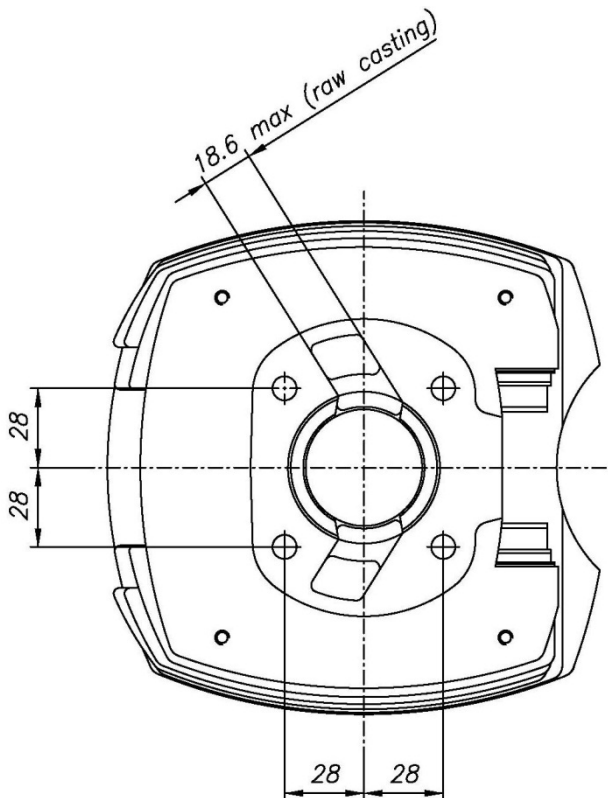


A	≤ 28.5 mm
B1 = B2	≤ 22.3 mm
C	≤ 26.5 mm
D	155.5° ±1°
E	115.5° ±2°
F	143.5° ±1°

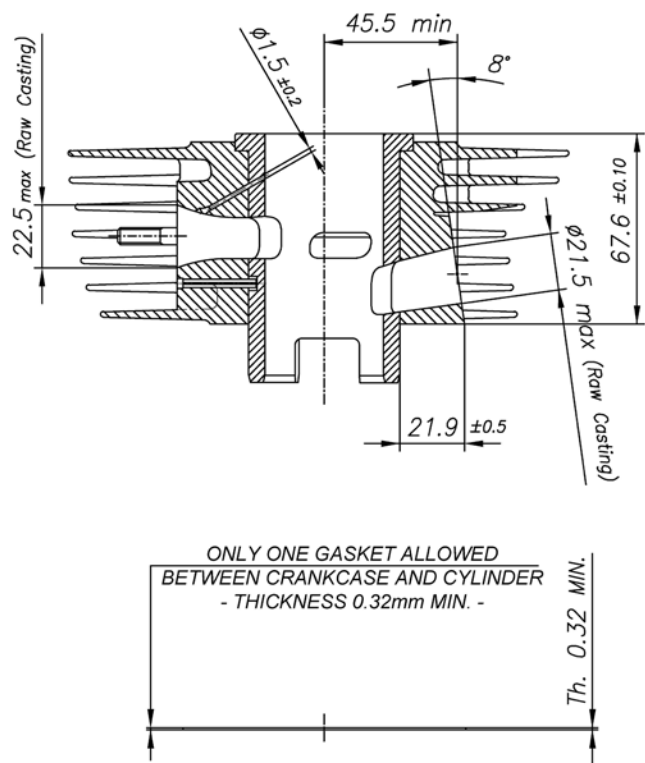
\* CHORDAL READING

o ANGULAR READING BY INSERT A 0.2x5 mm GAUGE

## CYLINDER BASE VIEW



## CYLINDER CROSS SECTION VIEW



The permitted gasket thickness to use = 0.4mm and 0.5mm

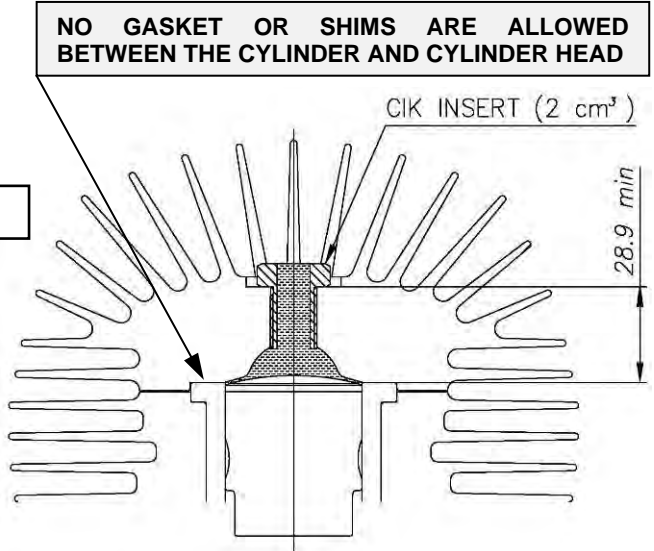
## COMBUSTION CHAMBER VIEW

**COMBUSTION CHAMBER VOLUME = 6.03cm<sup>3</sup> min.**

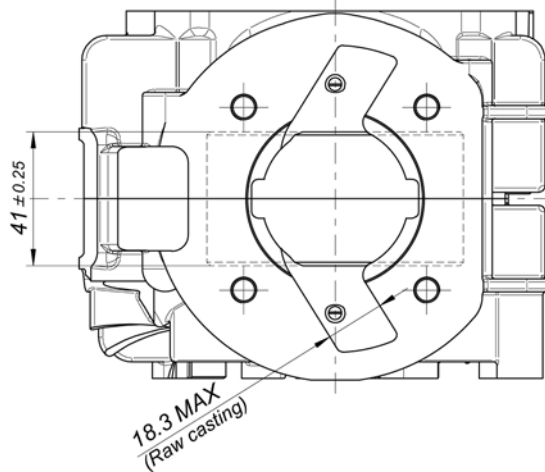
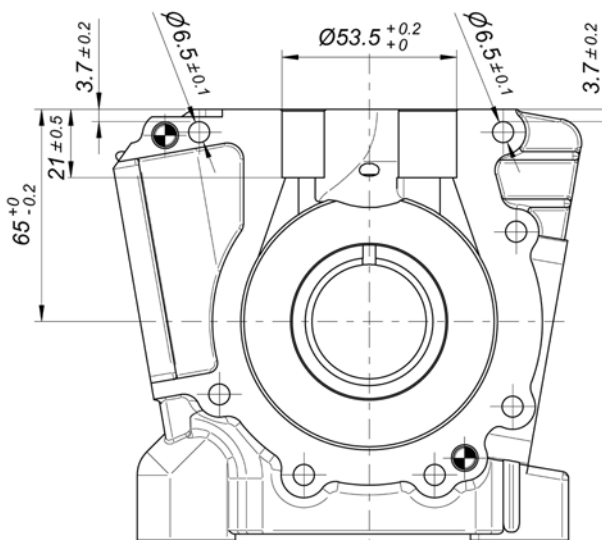
**SQUISH MIN.= 0.6 mm (measured with Ø1.5mm TIN)**

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

*7.4 cm<sup>3</sup> min*

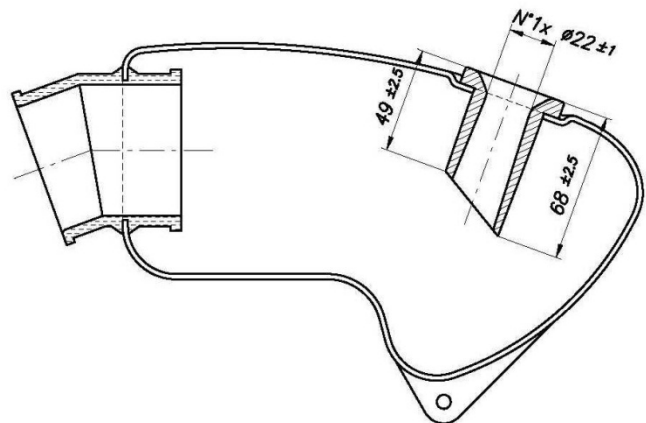


## CRANKCASE INSIDE VIEW

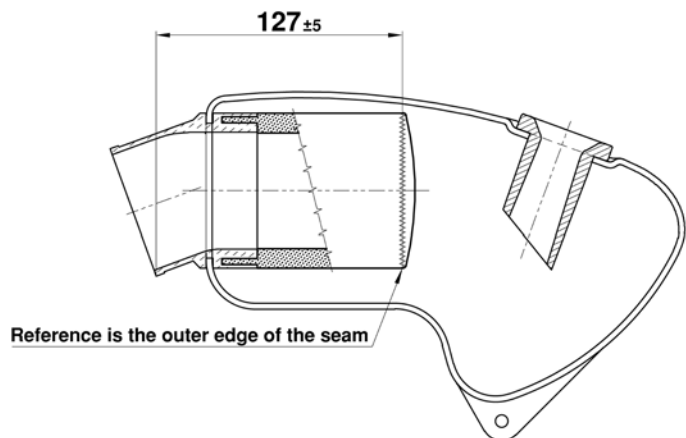


## INLET SILENCER

**(CSAI Hom. N° 01/SA/14)**



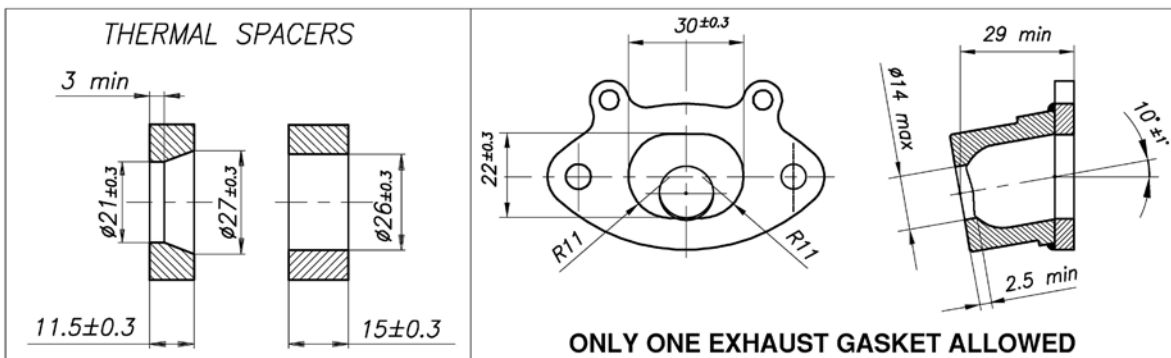
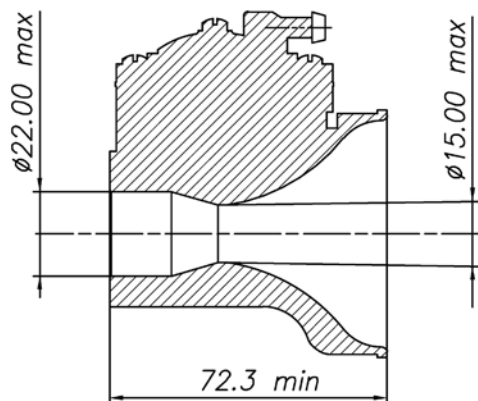
**IN ALTERNATIVE (OPTIONAL)**



CARBURETTORS, INLET SILENCER SUPPORTS AND EXHAUST MANIFOLDS  
FOR "MINI" VERSION AND "CADETTI" VERSION

**CADETTI Class**

Tillotson HW-47A



**MINI Class**

Tillotson HW-34B

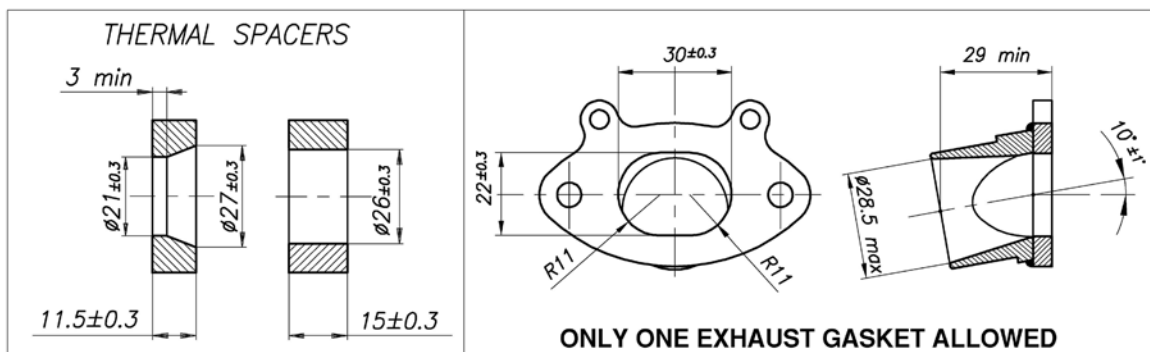
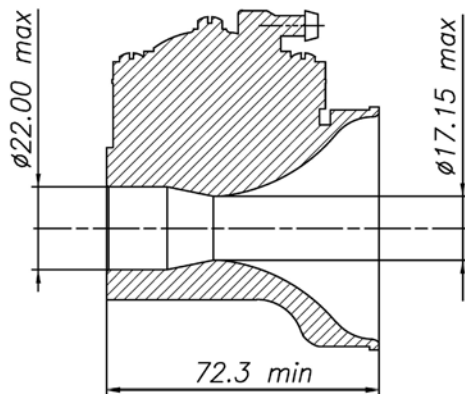
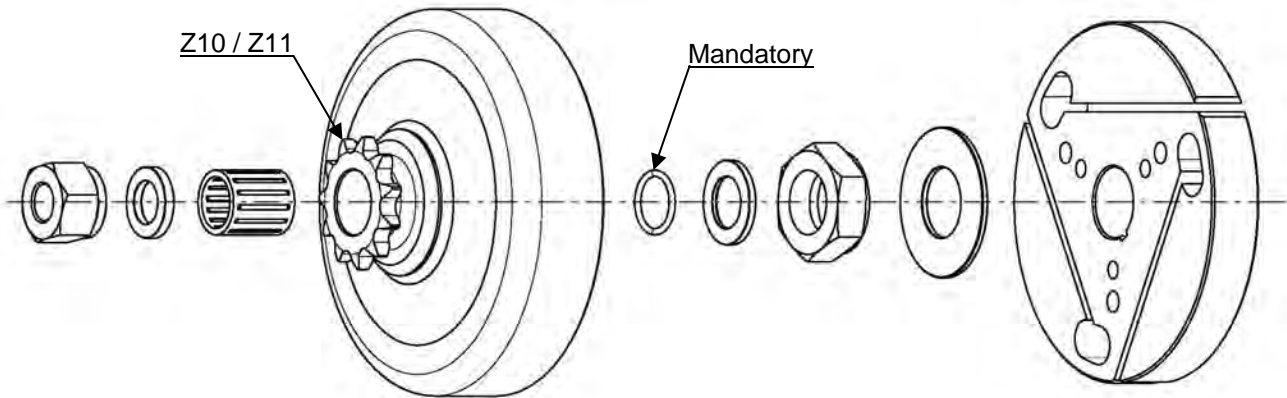


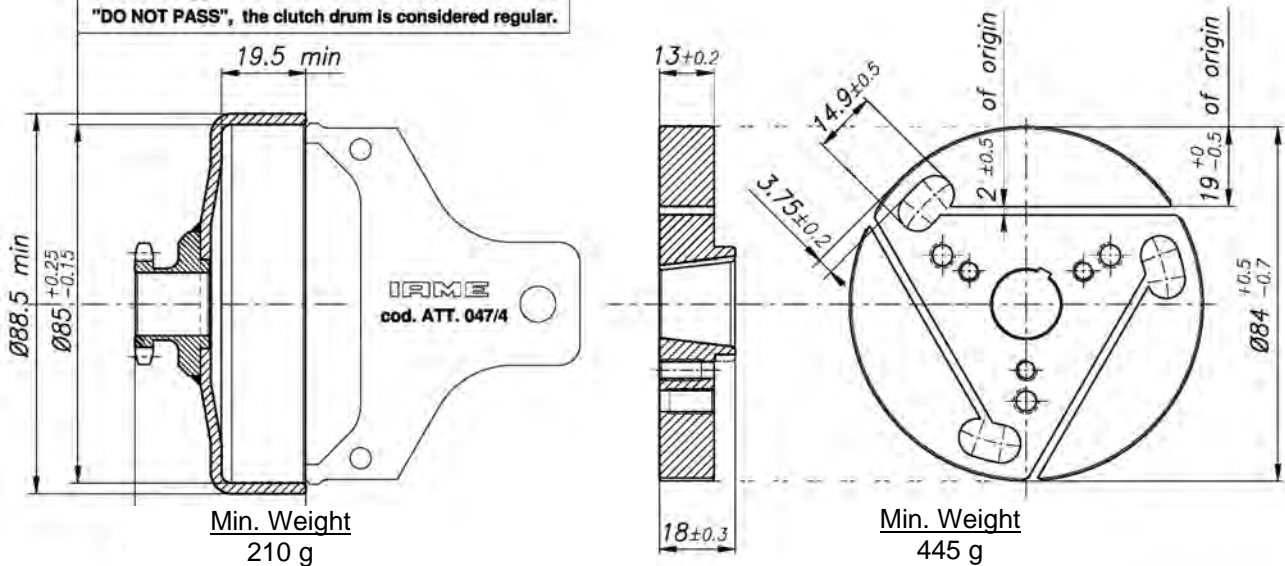
PHOTO IDENTIFICATION MARKING SPONGE FILTER (OPTIONAL)



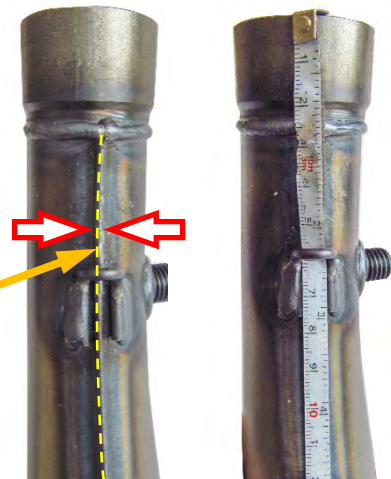
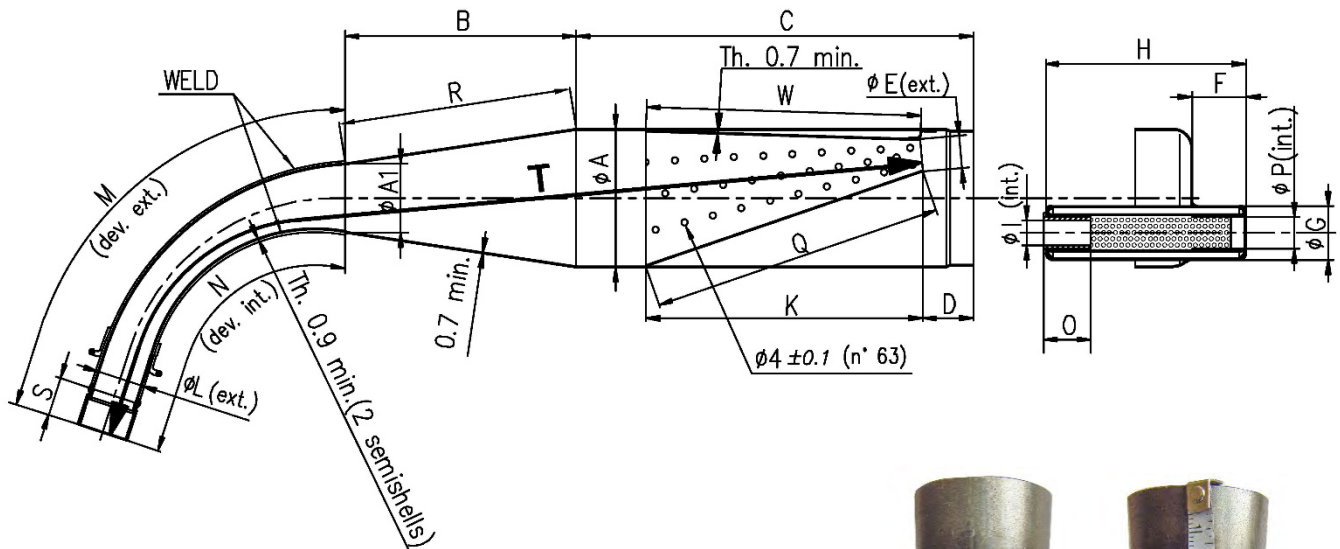
DESCRIPTION OF THE CLUTCH



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.



## EXHAUST VIEW AND DIMENSIONS (with and without embossed logo)



The tape must follow the centerline of the weld at all points

Min. weight 1.250 g

<b>ØA:</b> <u>90 ±1.5 Øext.</u>	<b>D:</b> <u>30 ±2</u>	<b>H:</b> <u>132 ±2</u>	<b>M:</b> <u>265 ±3</u>	<b>R:</b> <u>152 ±3</u>	<b>T:</b> <u>601 ±3</u>
<b>ØA1:</b> <u>45 ±1 Øext.</u>	<b>ØE:</b> <u>20 ±1 Øext.</u>	<b>ØI:</b> <u>17 max Øint.</u>	<b>N:</b> <u>215 ±3</u>	<b>S:</b> <u>25 ±1</u>	
<b>B:</b> <u>150 ±3</u>	<b>F:</b> <u>35 ±2</u>	<b>K:</b> <u>181 ±3</u>	<b>O:</b> <u>30 min.</u>	<b>Q:</b> <u>192 ±3</u>	
<b>C:</b> <u>260 ±3</u>	<b>ØG:</b> <u>35 ±1 Øext.</u>	<b>ØL:</b> <u>31 ±1.5 Øext.</u>	<b>ØP:</b> <u>21 ±1 Øint.</u>	<b>W:</b> <u>181 ±3</u>	

### ATTENTION:

The dimensions “**M**”, “**N**” and “**T**” must be taken by steel tape measure 6mm wide.

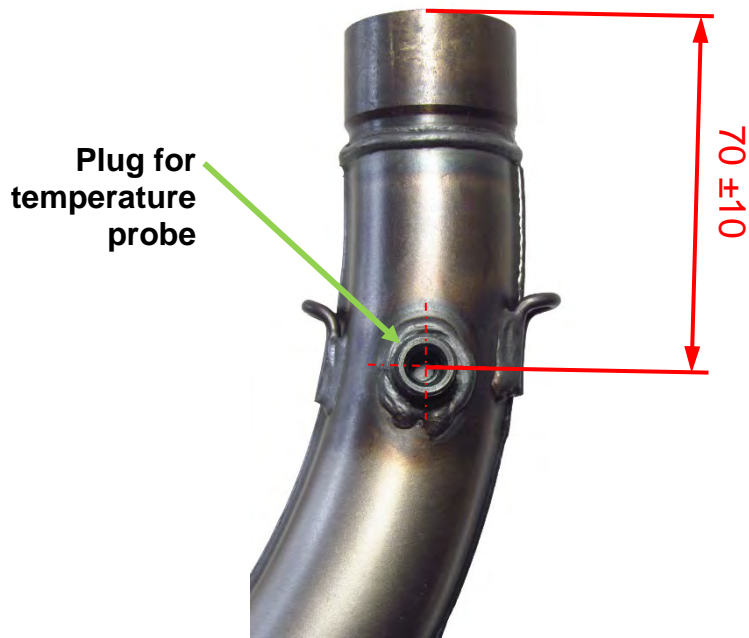
The dimensions “**M**” and “**N**” must be taken on the weld centerline.

The dimensions “**Q**” and “**W**” must be taken by steel tape measure 12mm wide

ALTERNATIVE EXHAUST with embossed logo



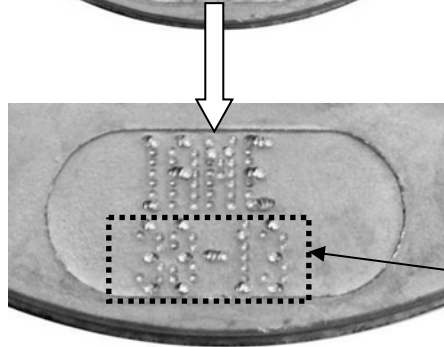
MARKING



# IGNITION PHOTO IDENTIFICATION MARKING



Min Weight  
362 g

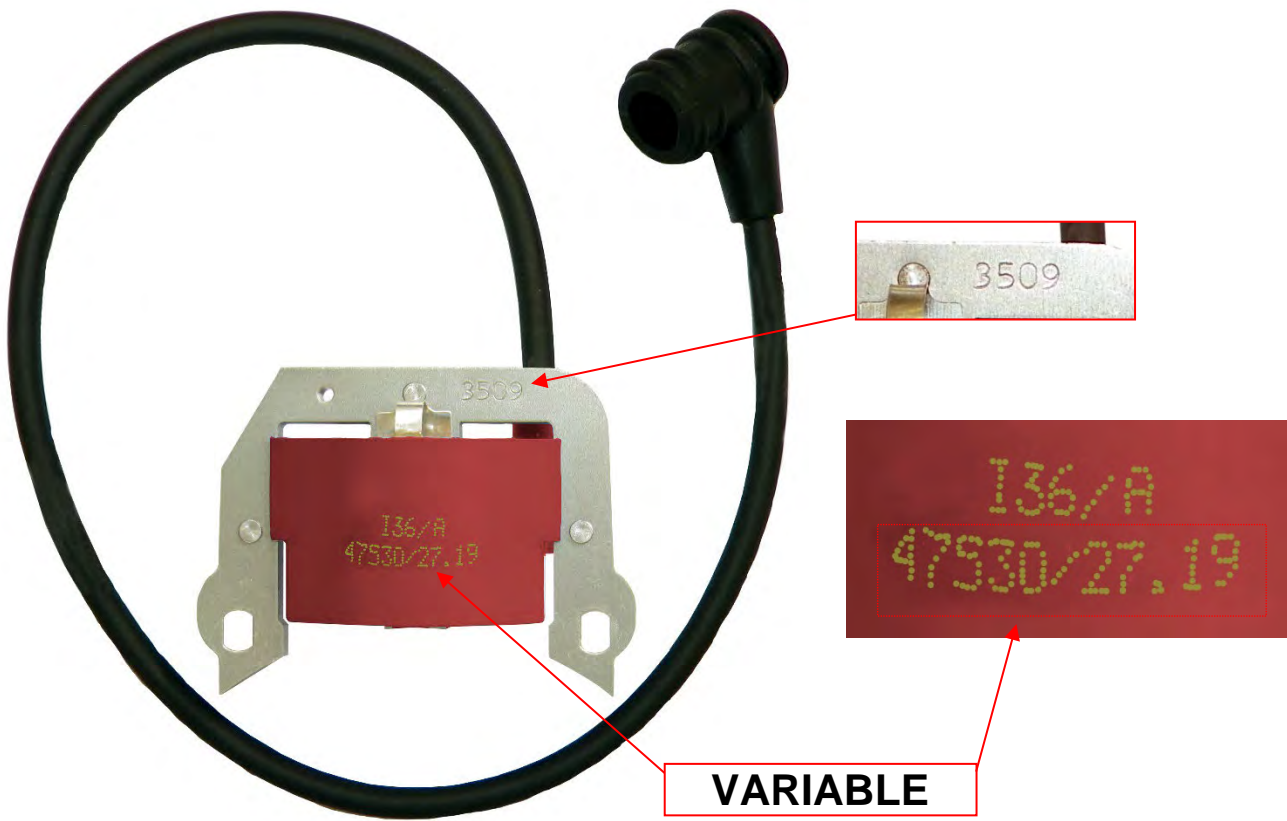


**VARIABLE**

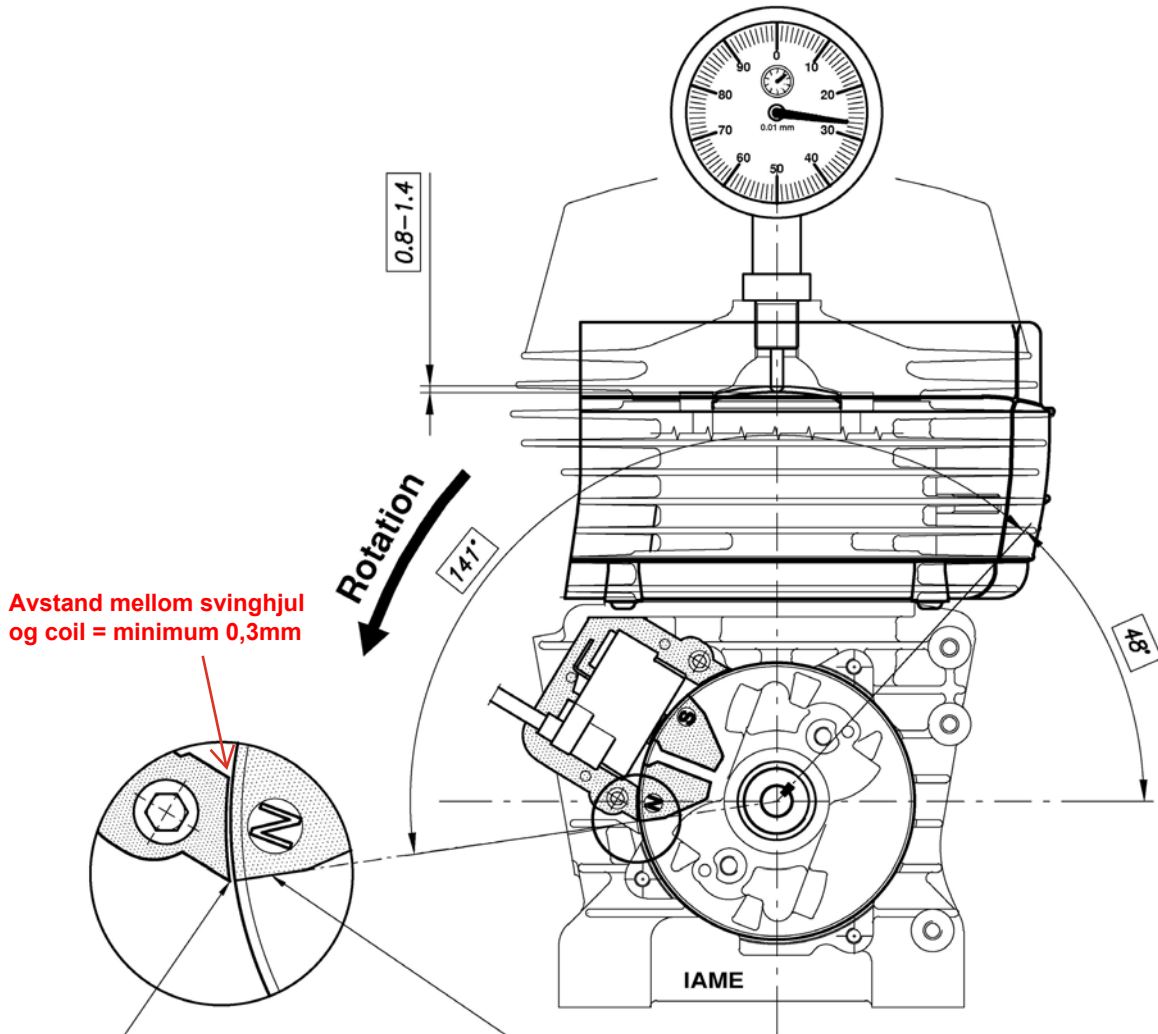
CADETTI CLASS - H.T. COIL PHOTO IDENTIFICATION MARKING – cod. A-61959N



MINI CLASS - H.T. COIL PHOTO IDENTIFICATION MARKING – cod. A-61959R

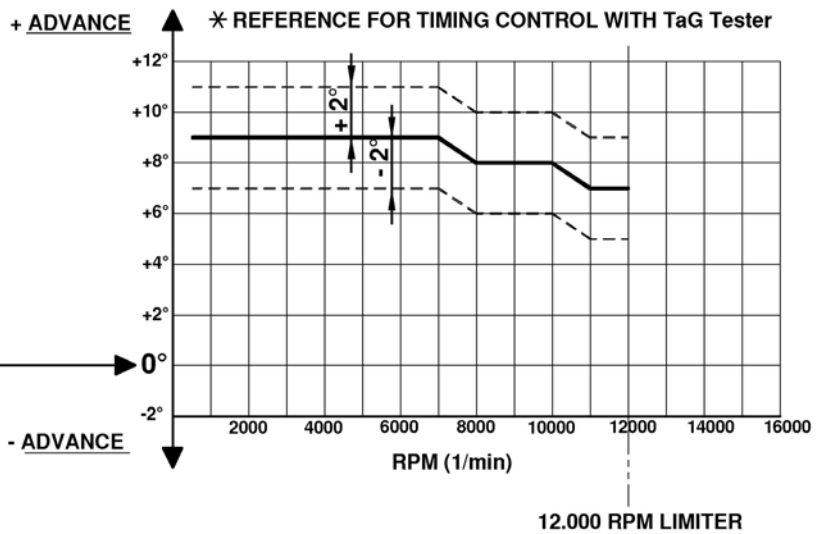


# SCHEME FOR ADVANCE CONTROL – CADETTI CLASS

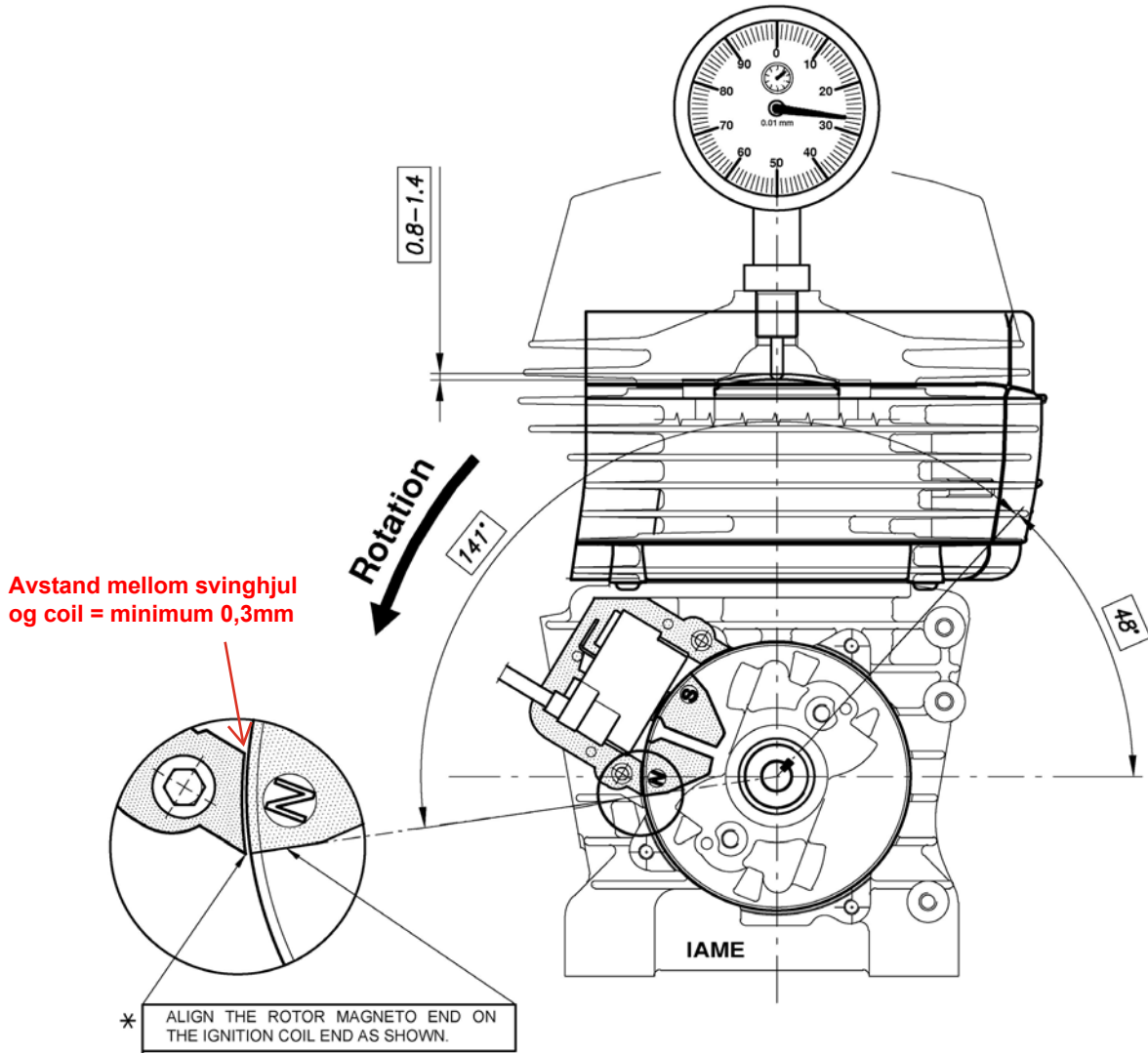


\* ALIGN THE ROTOR MAGNETO END ON THE IGNITION COIL END AS SHOWN.

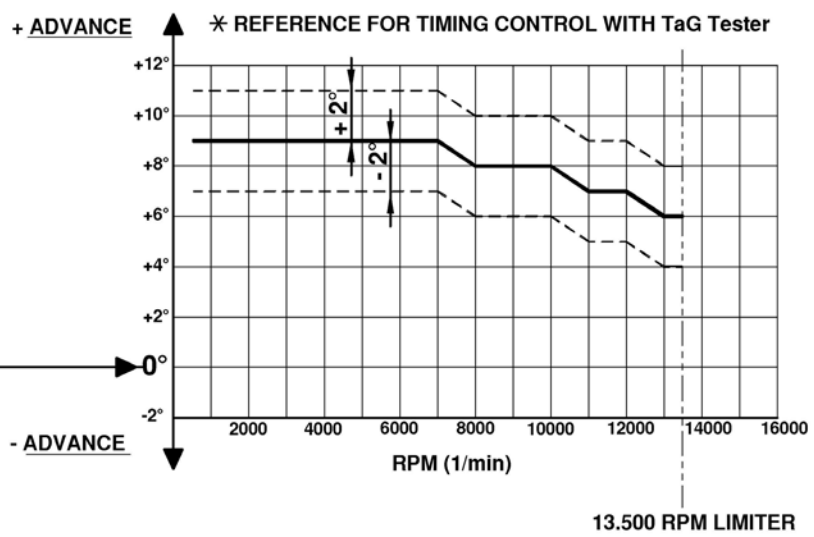
## ADVANCE CURVE GRAPHS



# SCHEME FOR ADVANCE CONTROL – MINI CLASS



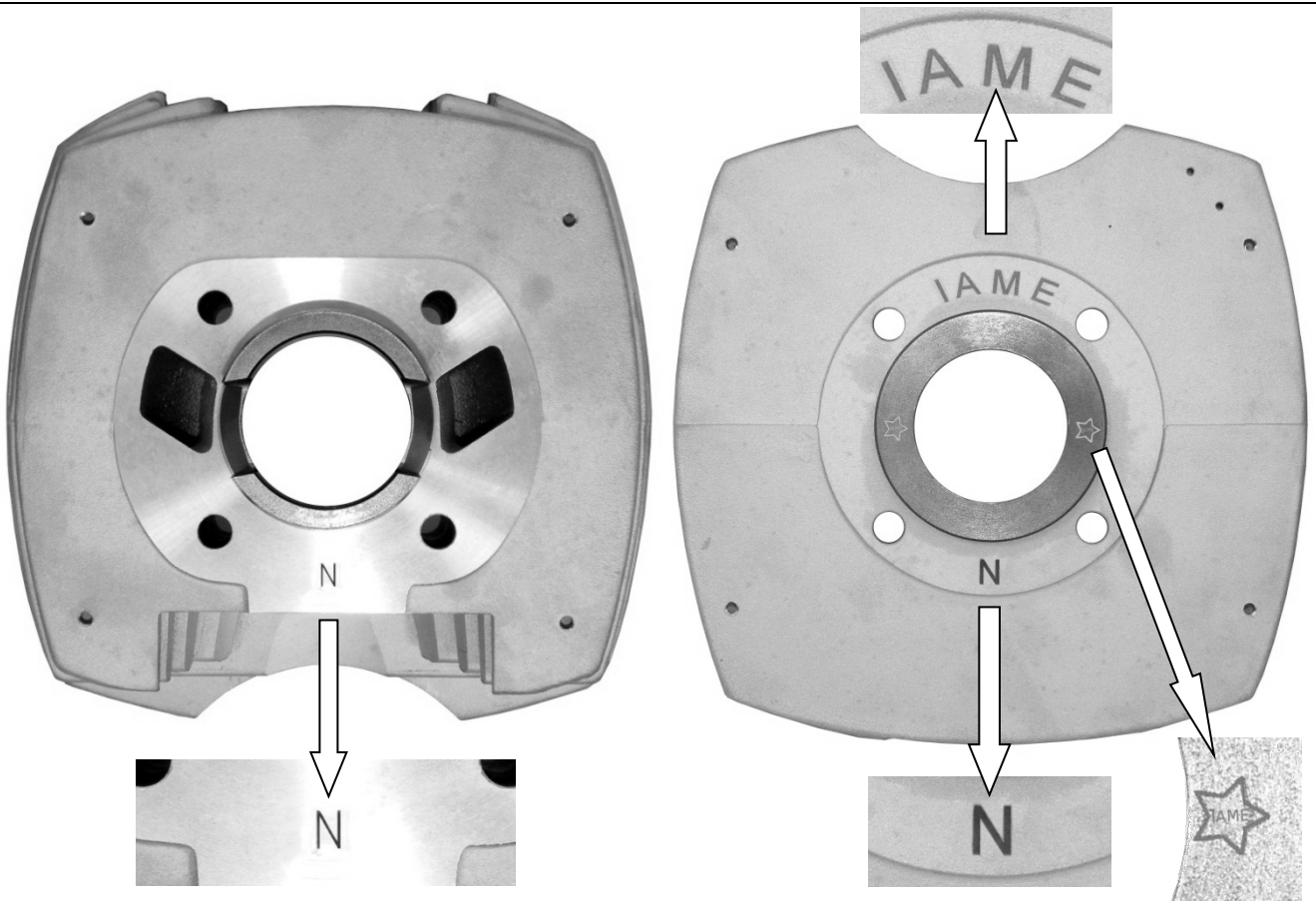
## ADVANCE CURVE GRAPHS



CHECKING DIMENSIONS OF IGNITION-CRANKSHAFT CONNECTION

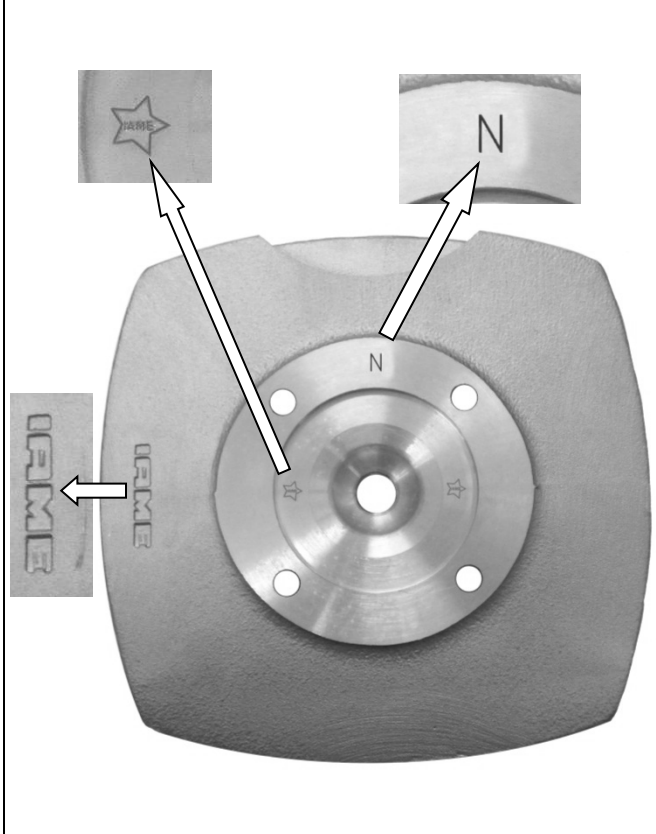
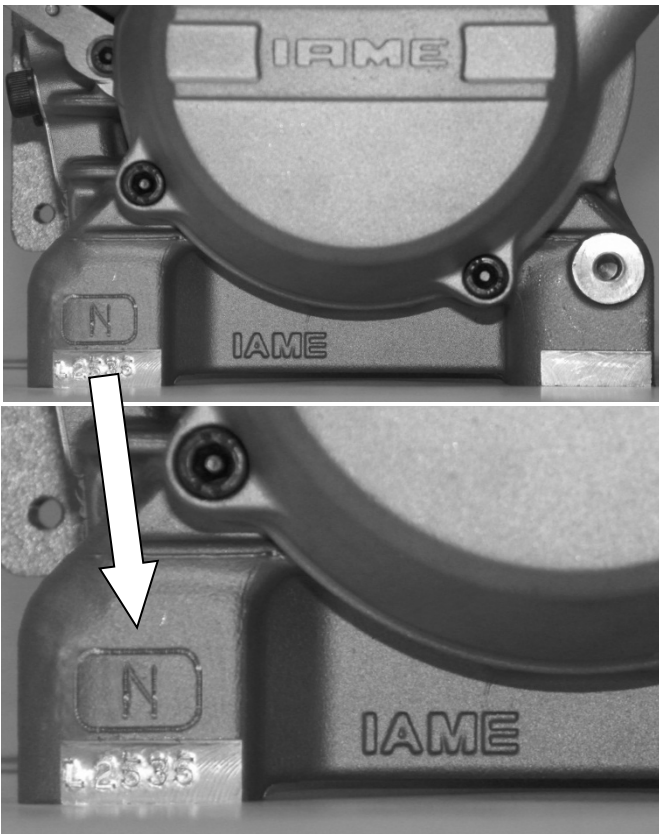


## CYLINDER IDENTIFICATION MARKING



## CRANKCASE IDENTIFICATION MARKING

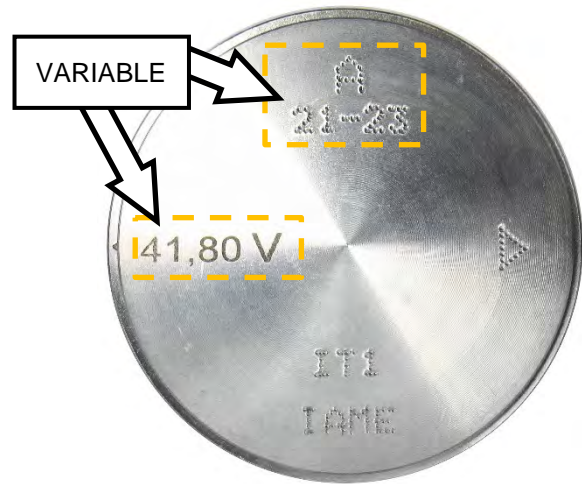
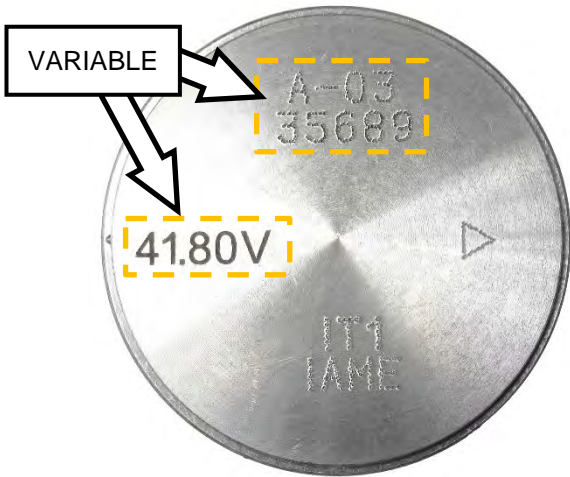
## HEAD IDENTIFICATION MARKING



**"IT1" PISTON TYPES IDENTIFICATION**  
(dimensions and weight are the same for both types)

CURRENT

ALTERNATIVE



EXHAUST without embossed logo



CONROD IDENTIFICATION MARKINGS



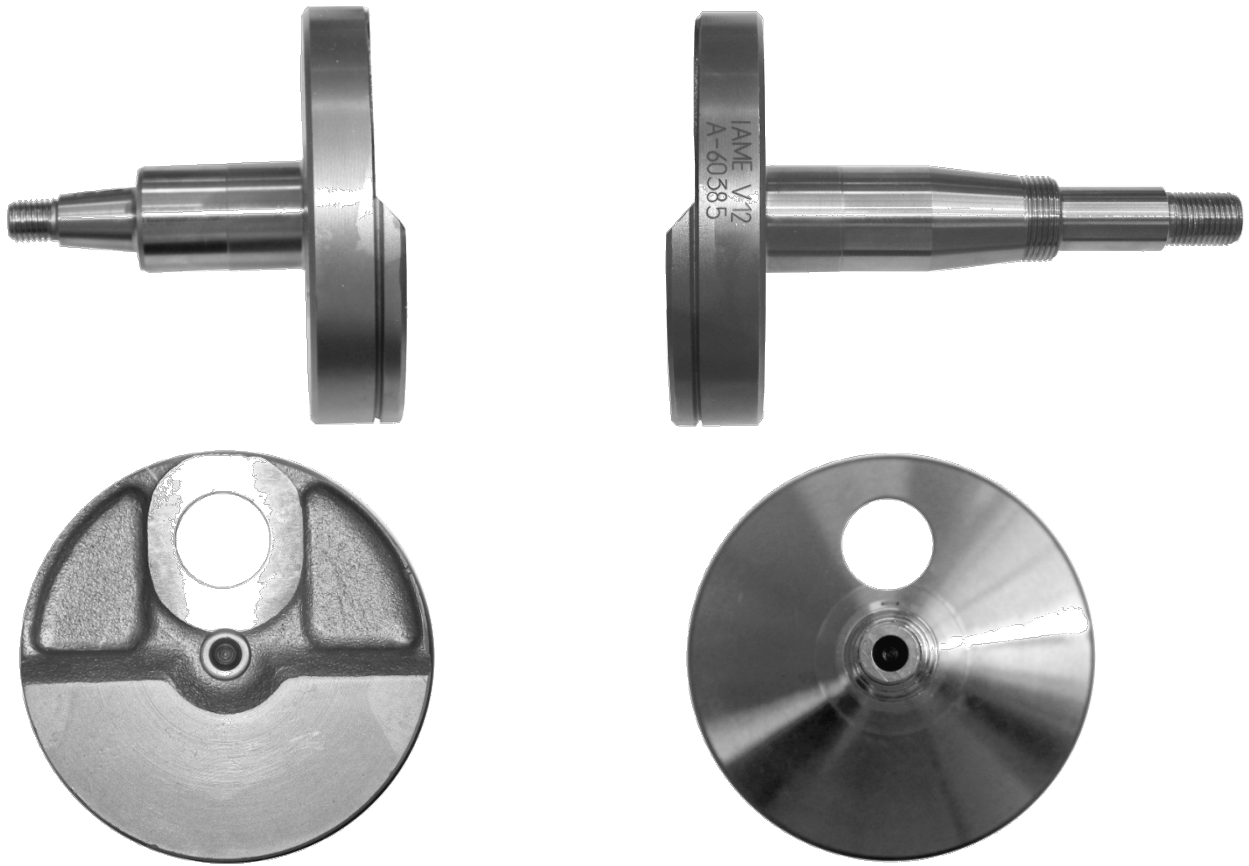
CLUTCH HUB IDENTIFICATION MARKING



CLUTCH DRUM IDENTIFICATION MARKING

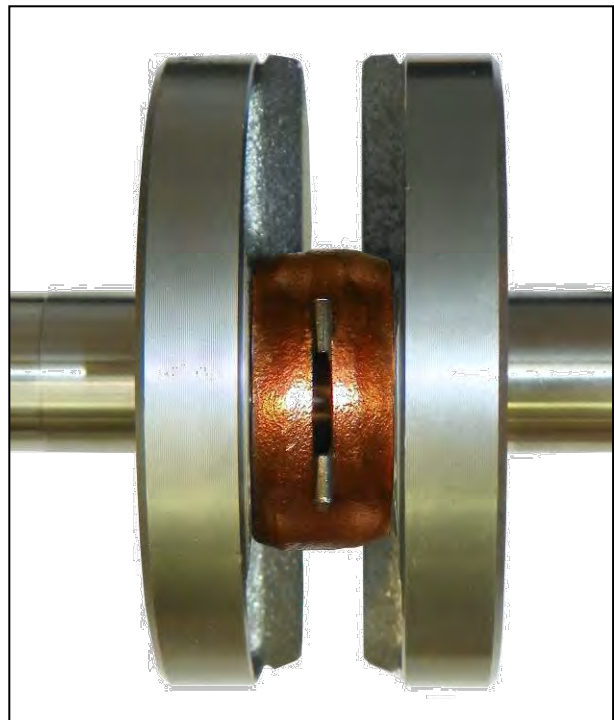


# CRANKSHAFT PHOTOS



## CRANKSHAFT IDENTIFICATION MARKING

## COMPLETE CRANKSHAFT DETAIL



BALL BEARING TYPES IDENTIFICATION MARKING



PHOTO IDENTIFICATION OF CONROD – TYPES ALTERNATIVE

TYPE 1



TYPE 2



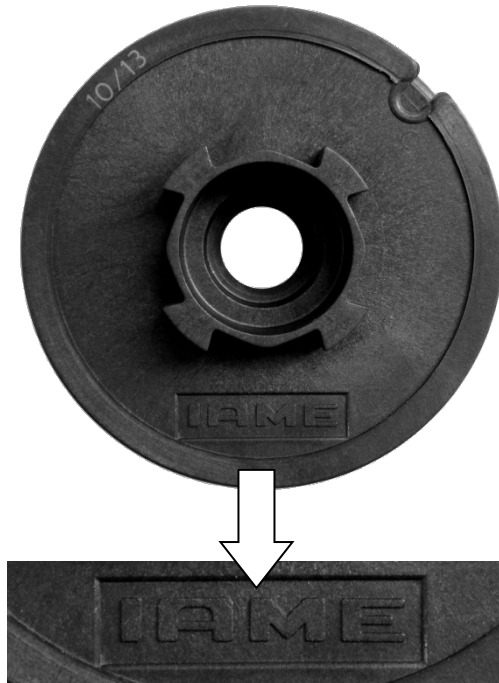
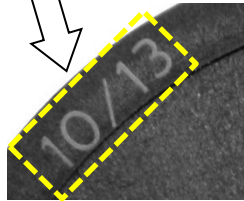
TYPE 3



PHOTO IDENTIFICATION OF PULLEY – TYPES ALTERNATIVE

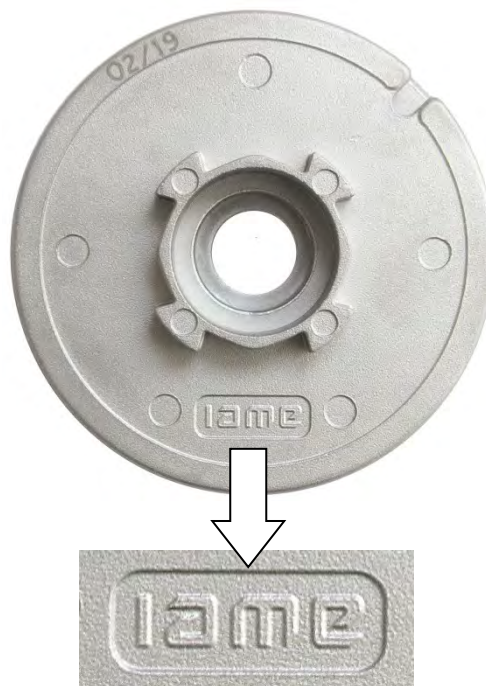
TYPE 1 – PLASTIC

VARIABLE



TYPE 2 - ALUMINUM

VARIABLE



# ALTERNATIVE IGNITION ROTOR

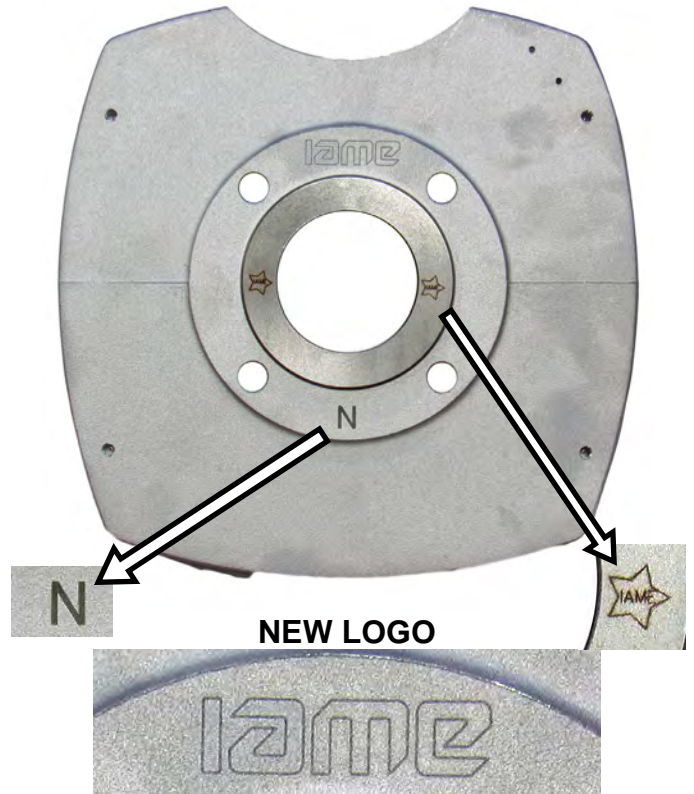
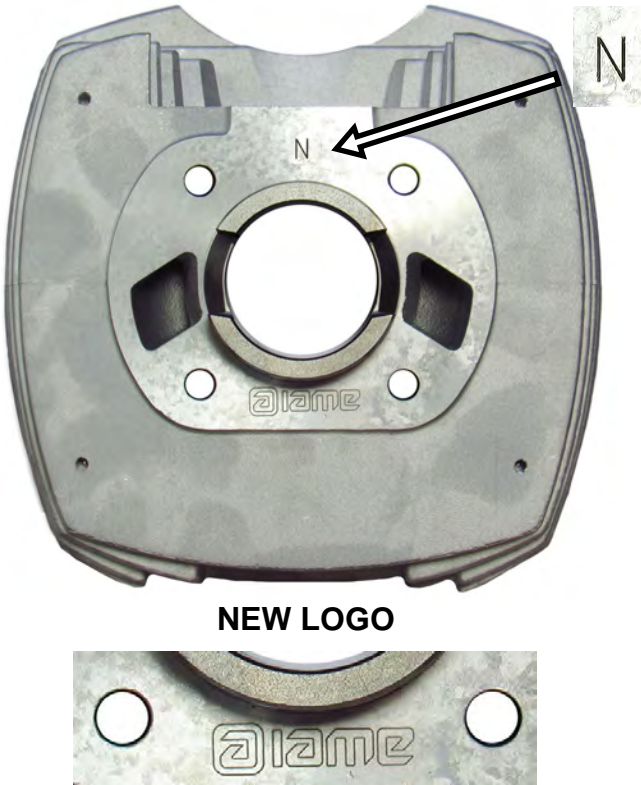
TYPE 1

TYPE 2

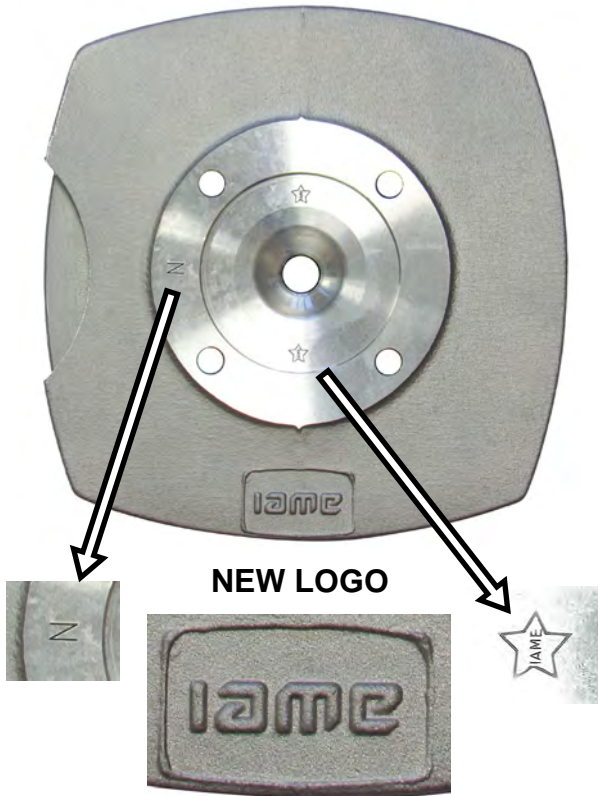


**PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"**

CYLINDER



CYLINDER HEAD



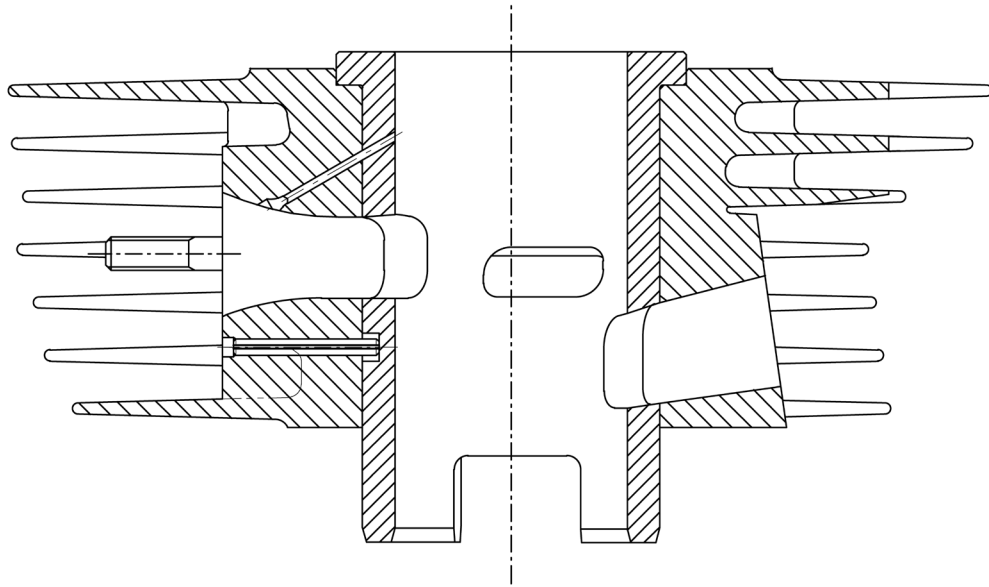
INLET FILTER



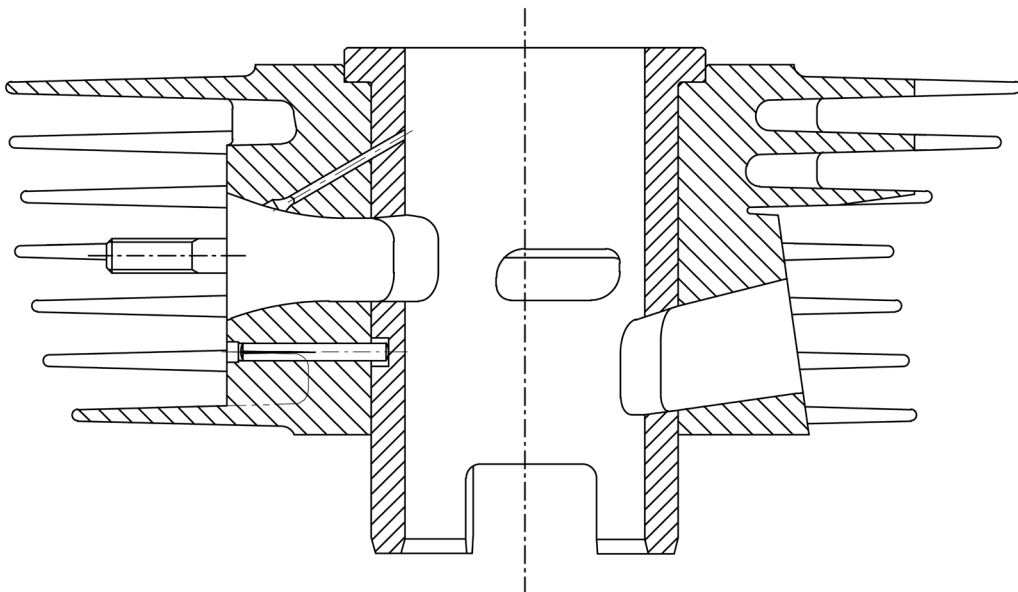
# FROM 2025 ON

## CYLINDER CROSS SECTION – ALTERNATIVE CYLINDER LINER LOCK PIN

CURRENT PIN (SPRING PIN)



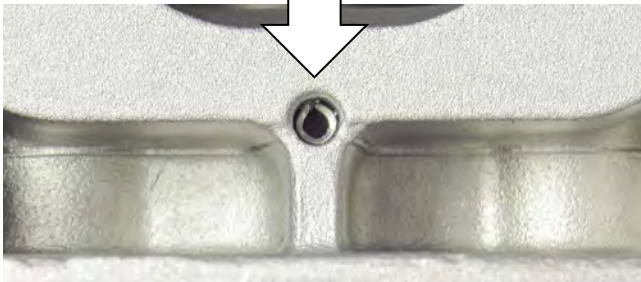
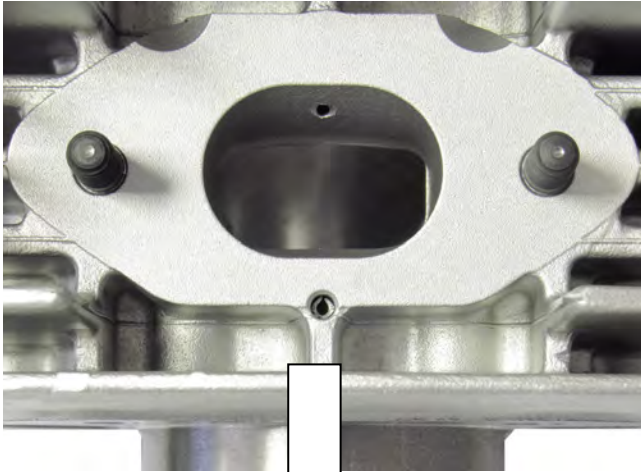
ALTERNATIVE PIN (GROOVED PIN)



**FROM 2025 ON**

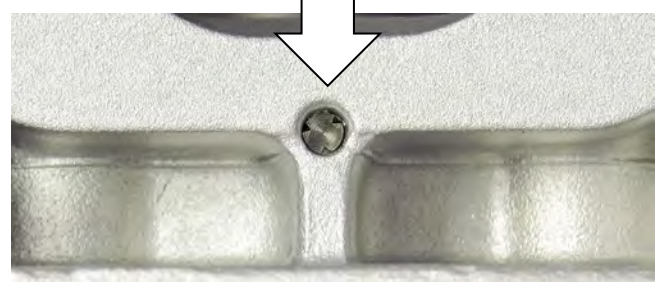
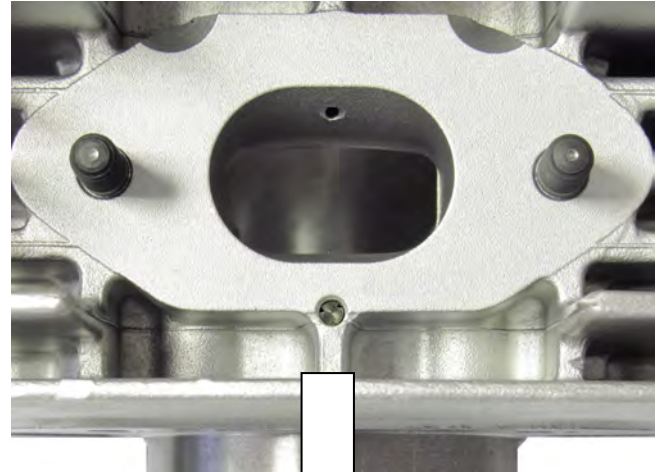
**CYLINDER IDENTIFICATION – ALTERNATIVE CYLINDER LINER LOCK PIN**

**CURRENT PIN**



**SPRING PIN**

**ALTERNATIVE PIN**



**GROOVED PIN**

**PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"**

**SEMICARTER IGNITION SIDE**



**NEW LOGO**



**SEMICARTER TRANSMISSION SIDE**



**NEW LOGO**



COMPONENTS WITH ALTERNATIVE NEW LOGO "IAME"

RECOIL COVER



NEW LOGO



CLUTCH COVER



NEW LOGO



EXHAUST without embossed logo



NEW LOGO



**THE OTHER COMPONENTS OF ENGINE THAT ARE MARKED (LASER OR PUNCHING) UNTIL TODAY WITH LOGO OR WRITTEN "IAME"**

I A M E

or

**IAME**

**NOW COULD BE MARKED WITH NEW LOGO "IAME"**

IAME

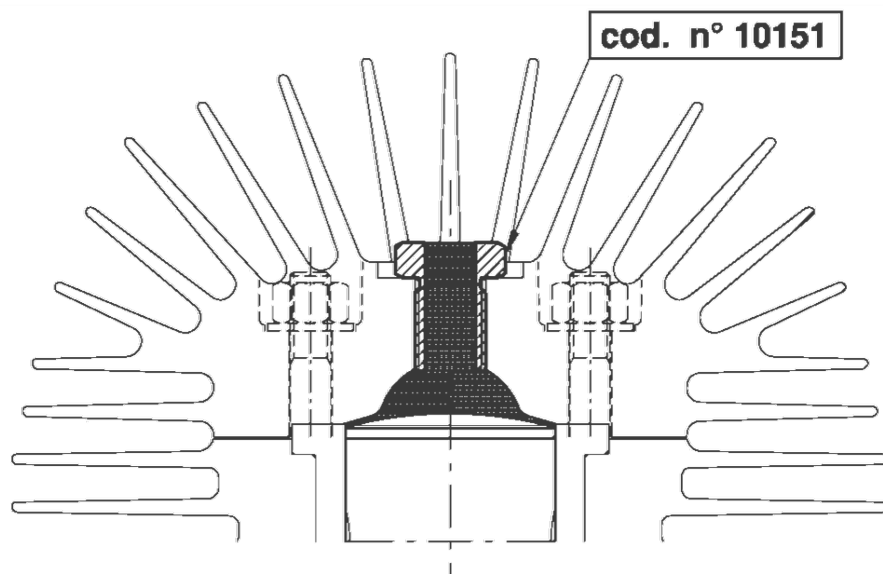
or

IAME

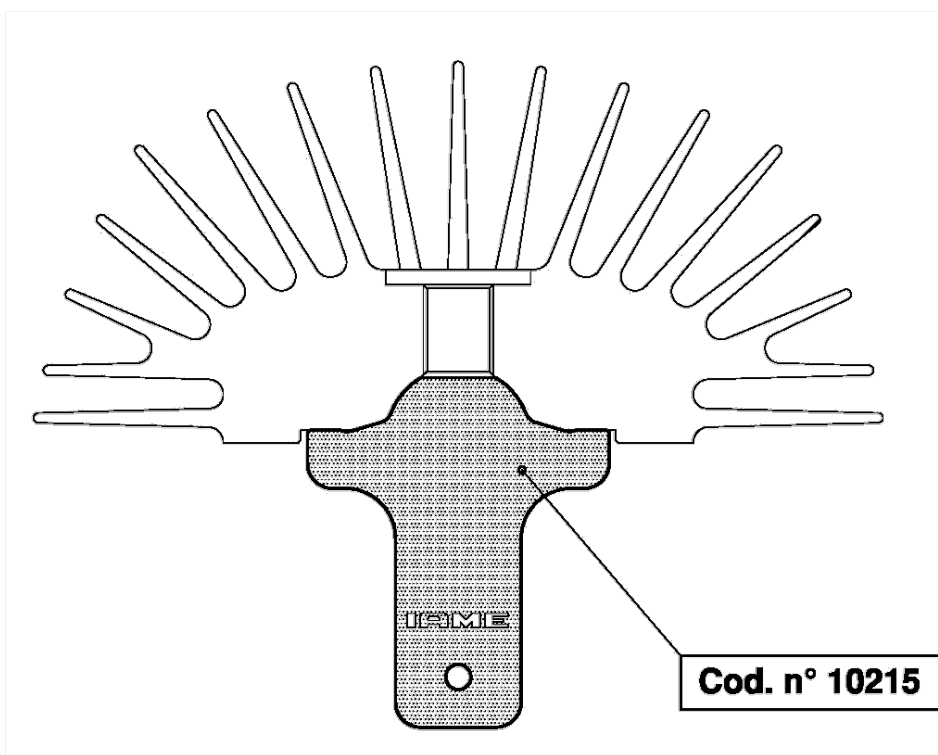
or

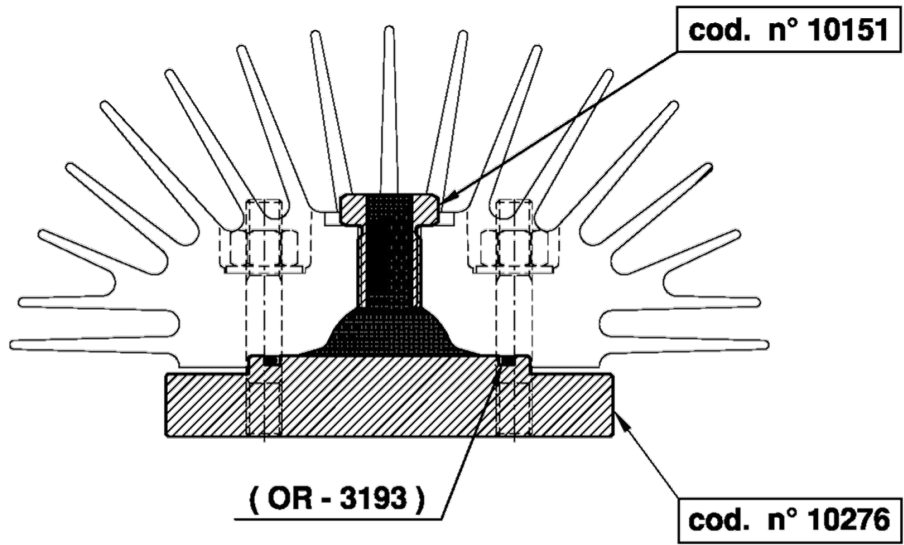
IAME

## CHECKING TOOLS



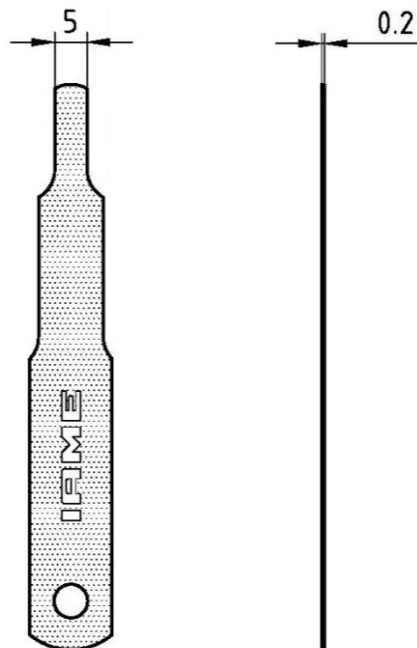
**WITH PISTON AT T.D.C. + INSERT**

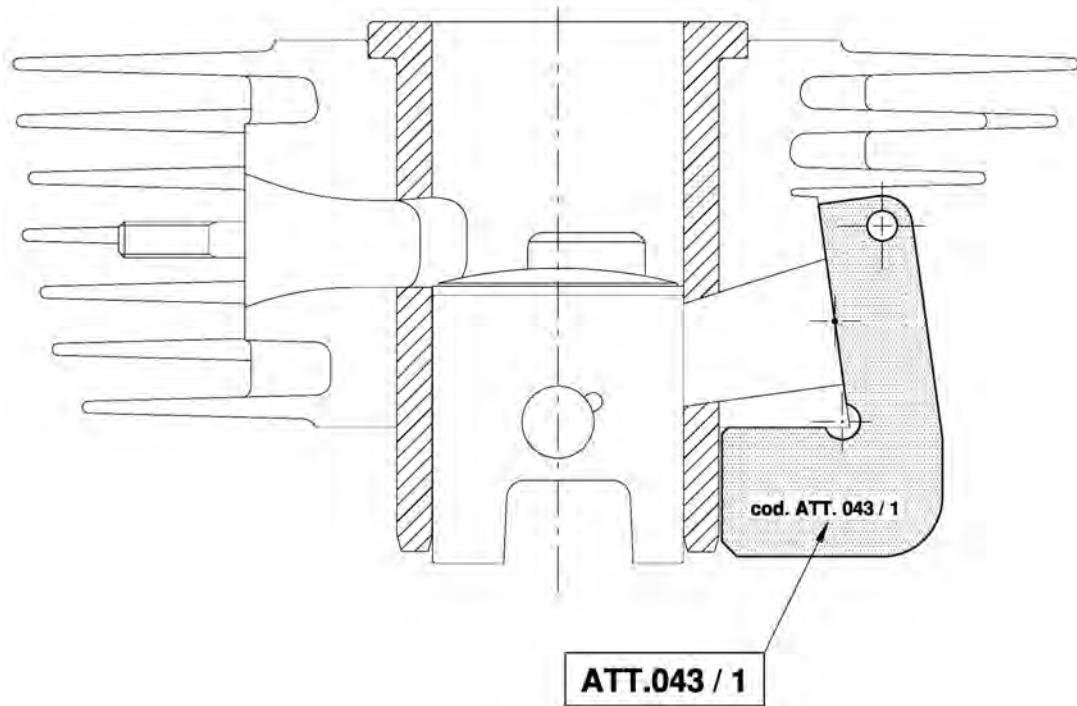




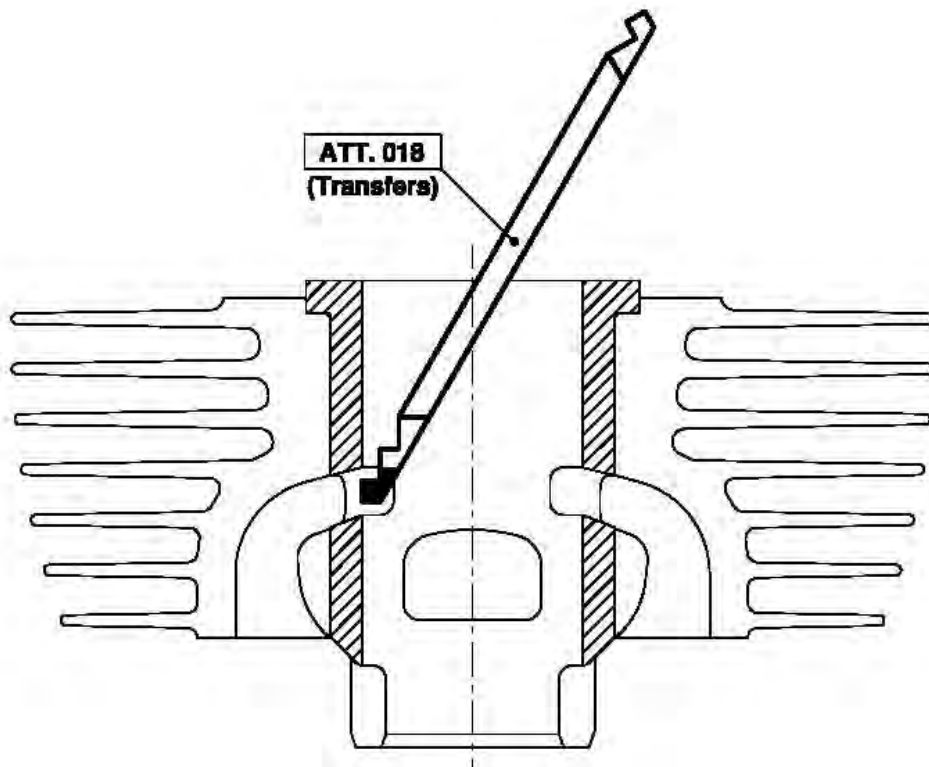
**WITH VOLUMETER + INSERT**

**TOOL IAME Cod. 10194**

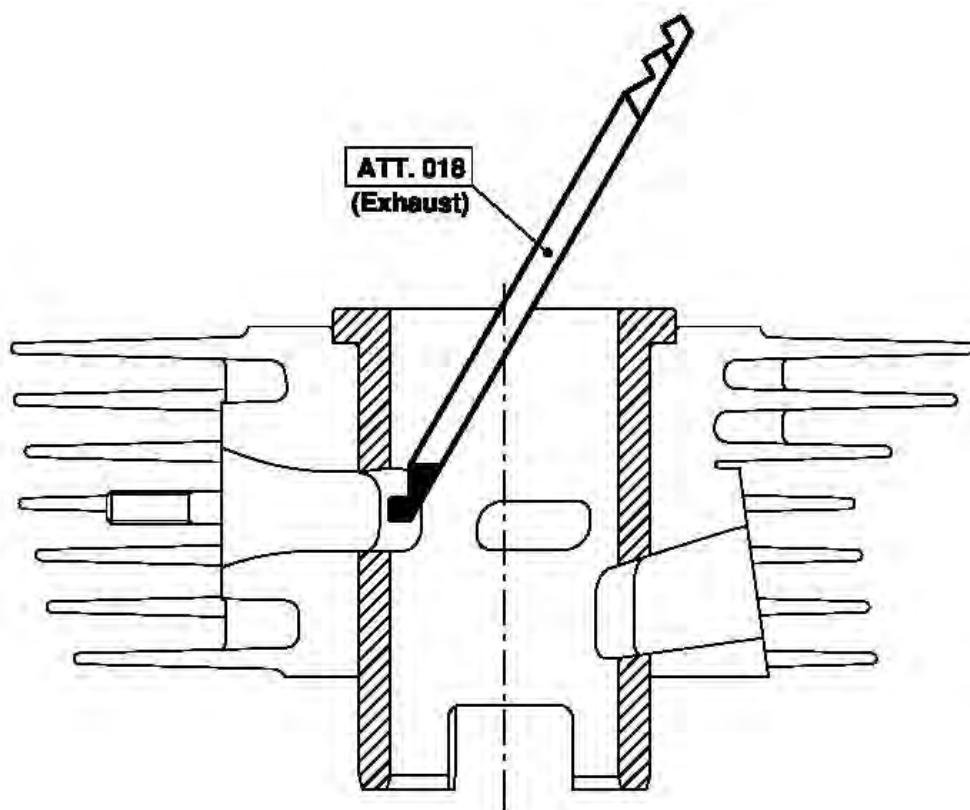
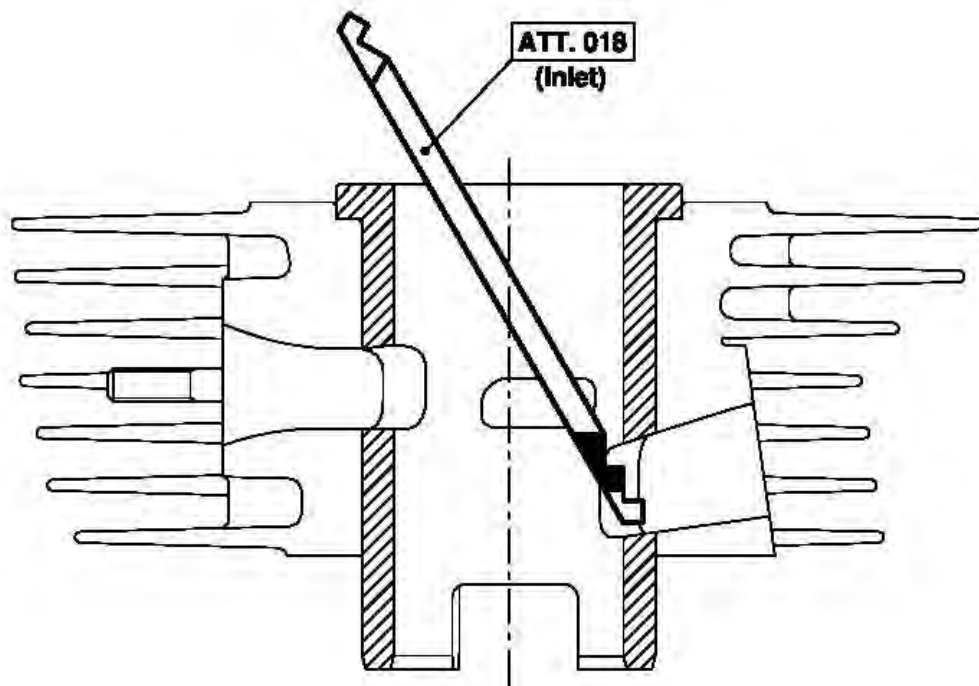




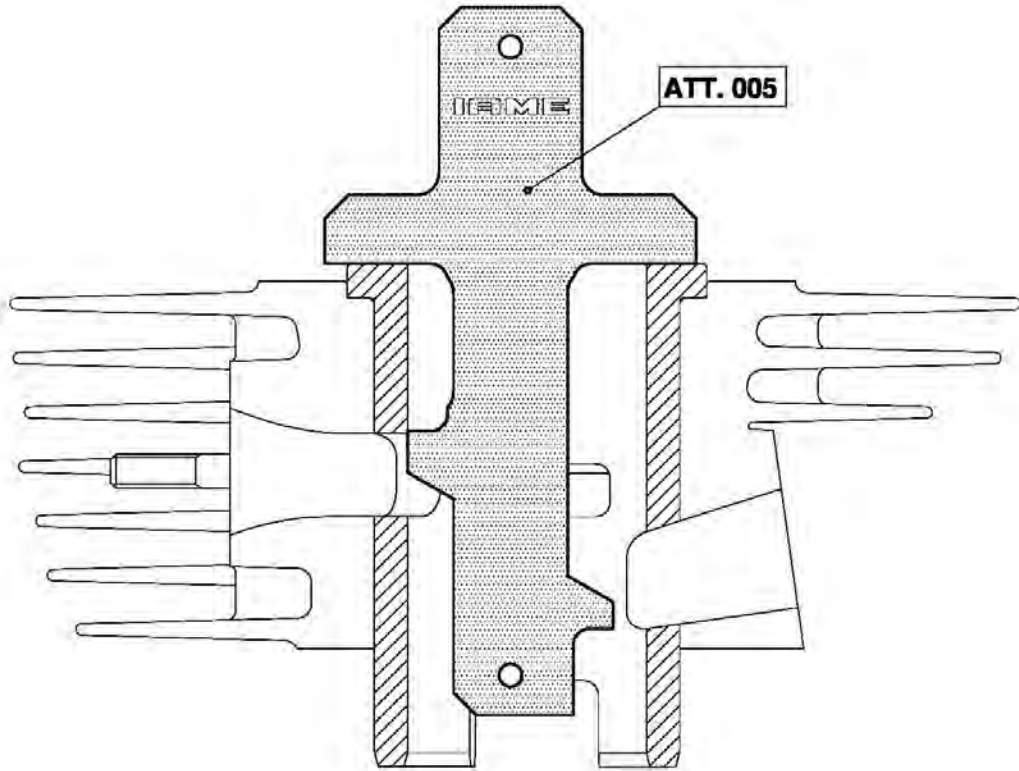
**CHECK THAT THE GAUGE DOESN'T TOUCH THE LINER**



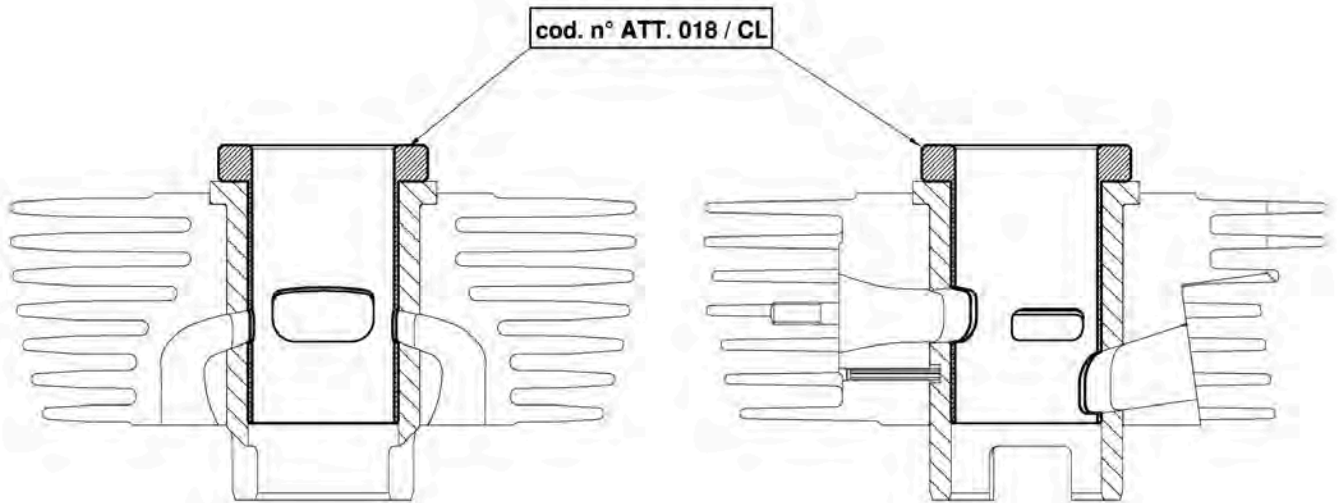
**CHECK THAT THE TOOL DOES NOT ENTER INTO THE TRANSFERS DUCT.**



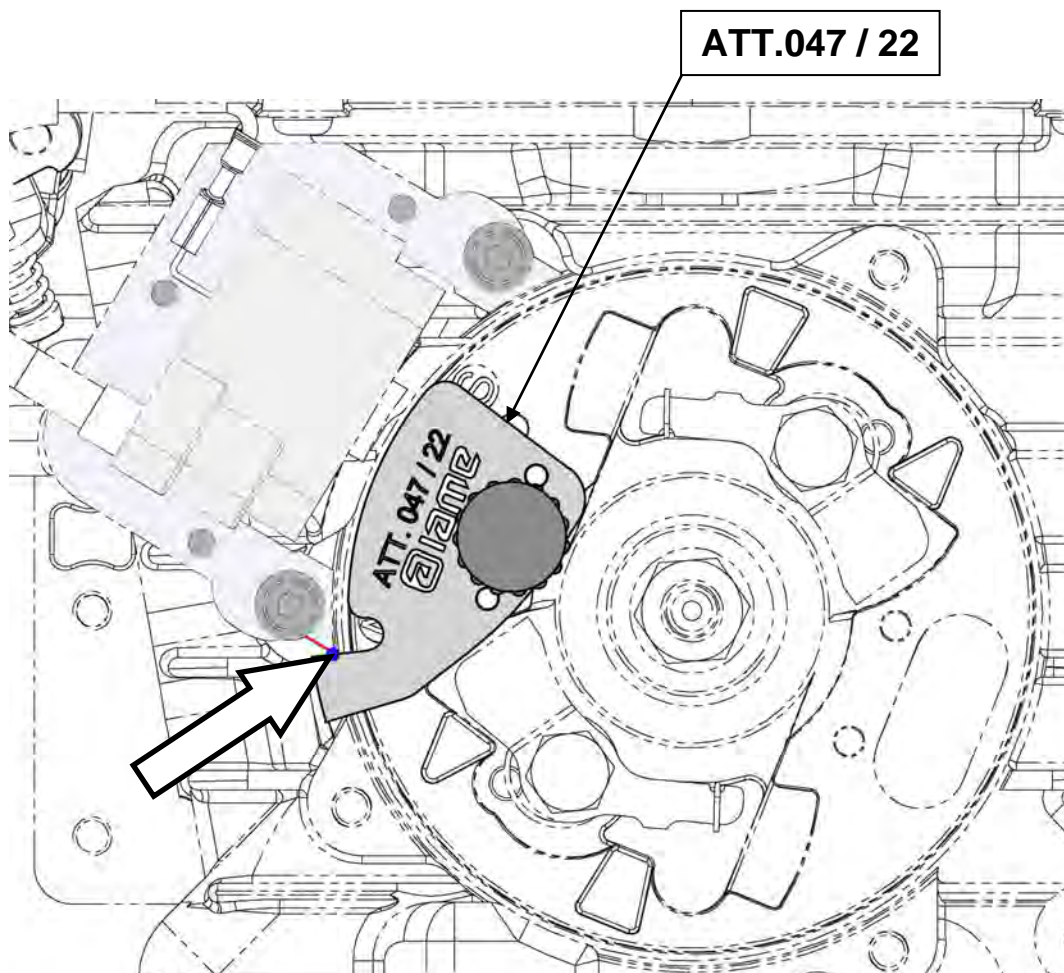
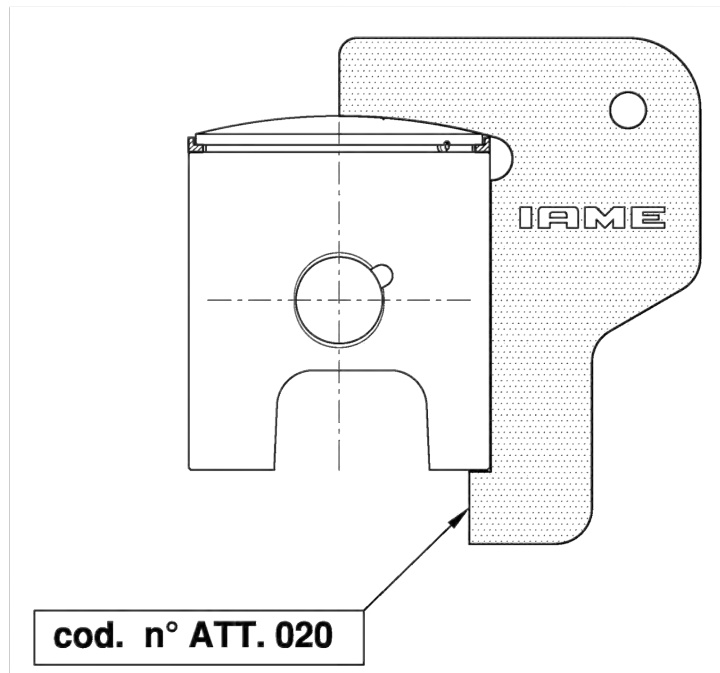
**CHECK THAT THE TOOL DOES NOT ENTER INTO THE INLET AND EXHAUST PORTS.**



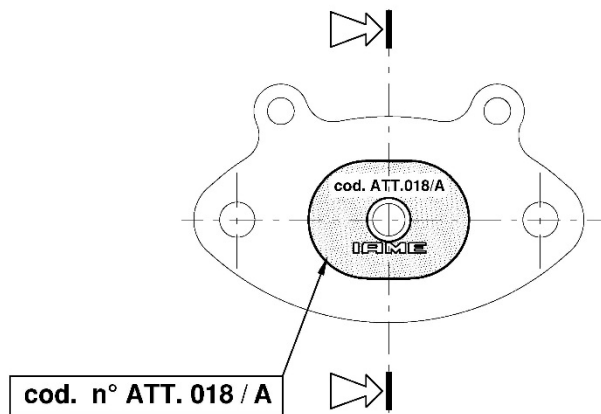
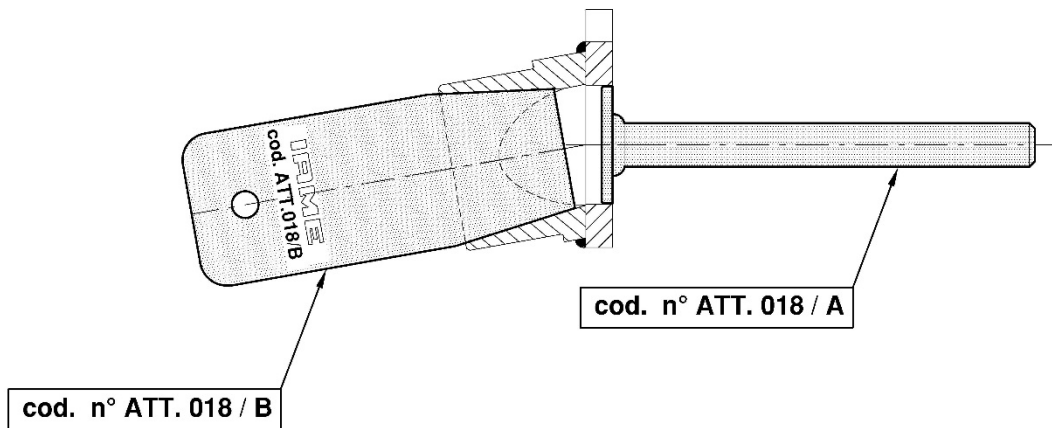
**CHECK THAT THE TOOL DOES NOT ENTER INTO THE EXHAUST AND INLET PORTS**



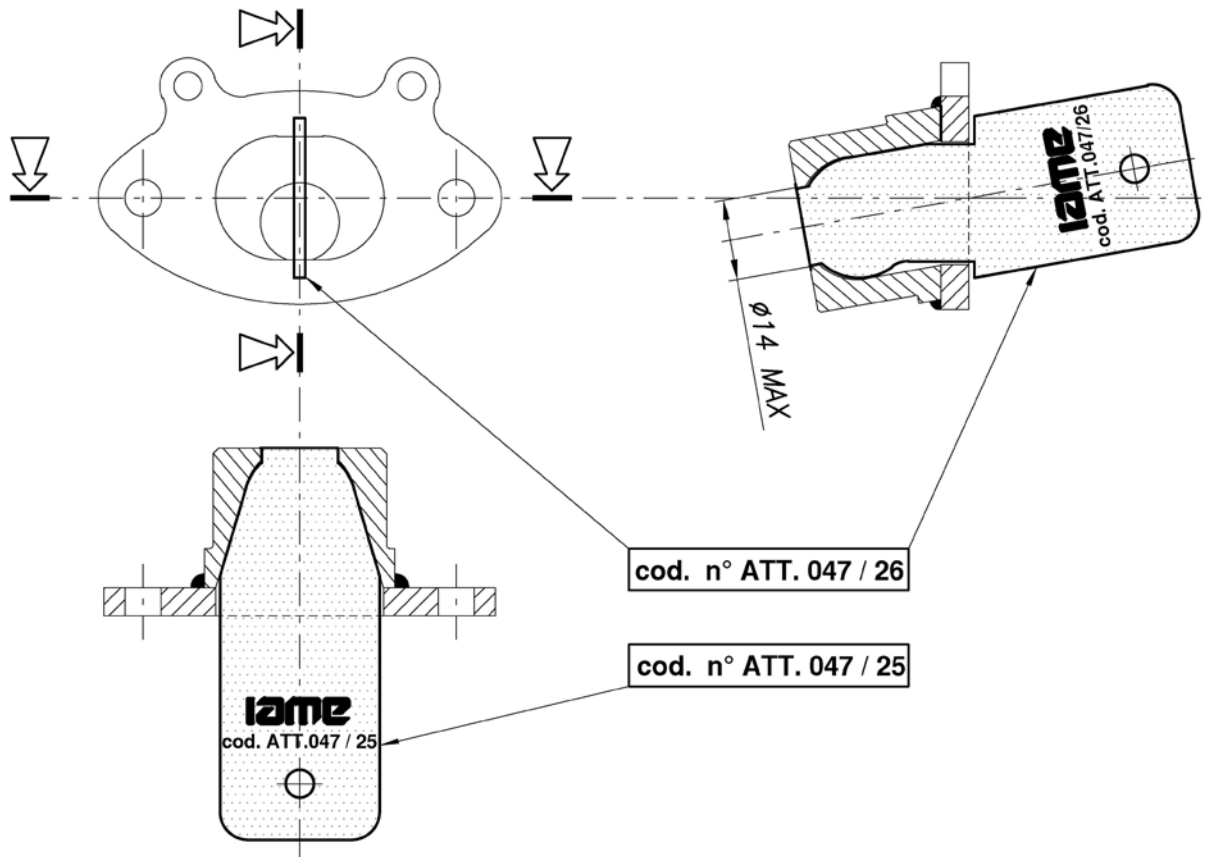
**VISUAL CHECK OF PORTS**



**CHECK THE CORRECT ALIGNMENT OF THE IGNITION ROTOR**

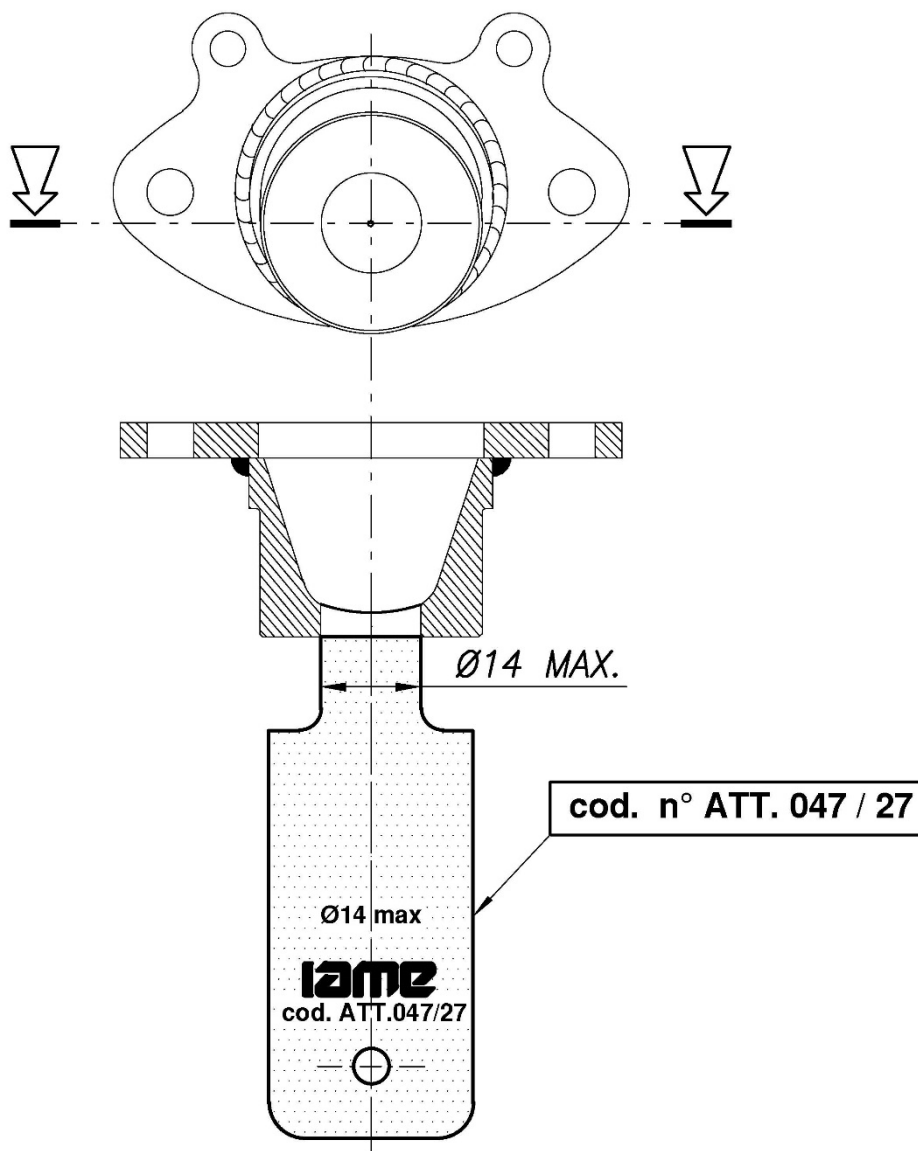


**CHECK THAT THE TOOL MUST BE THE SAME SHAPE OF THE EXHAUST  
MANIFOLD.  
(MINI CLASS)**

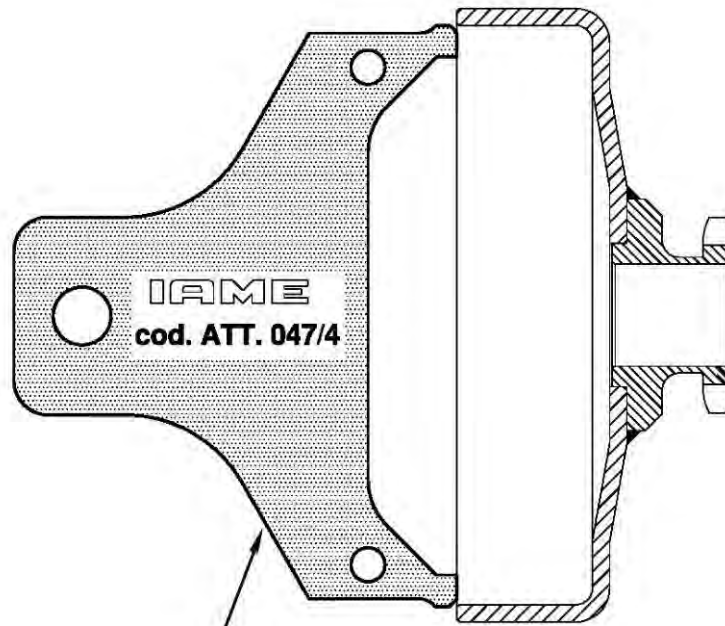


**CHECK THAT THE TOOL MUST BE THE SAME SHAPE OF THE EXHAUST  
RESTRICTOR Ø14 MAX.  
(CADETTI CLASS)**

**Important note: The exhaust restrictor must be securely fastened to the cylinder head in such a way that it cannot come loose while driving.**

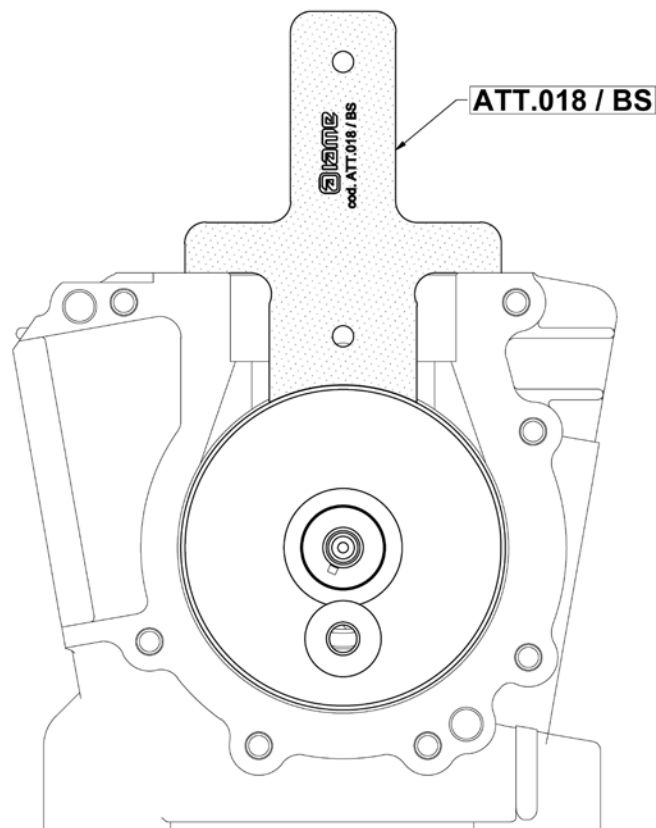


**CHECK THAT THE TOOL DOES NOT ENTER INTO THE EXHAUST  
RESTRICTOR.  
(CADETTI CLASS)**

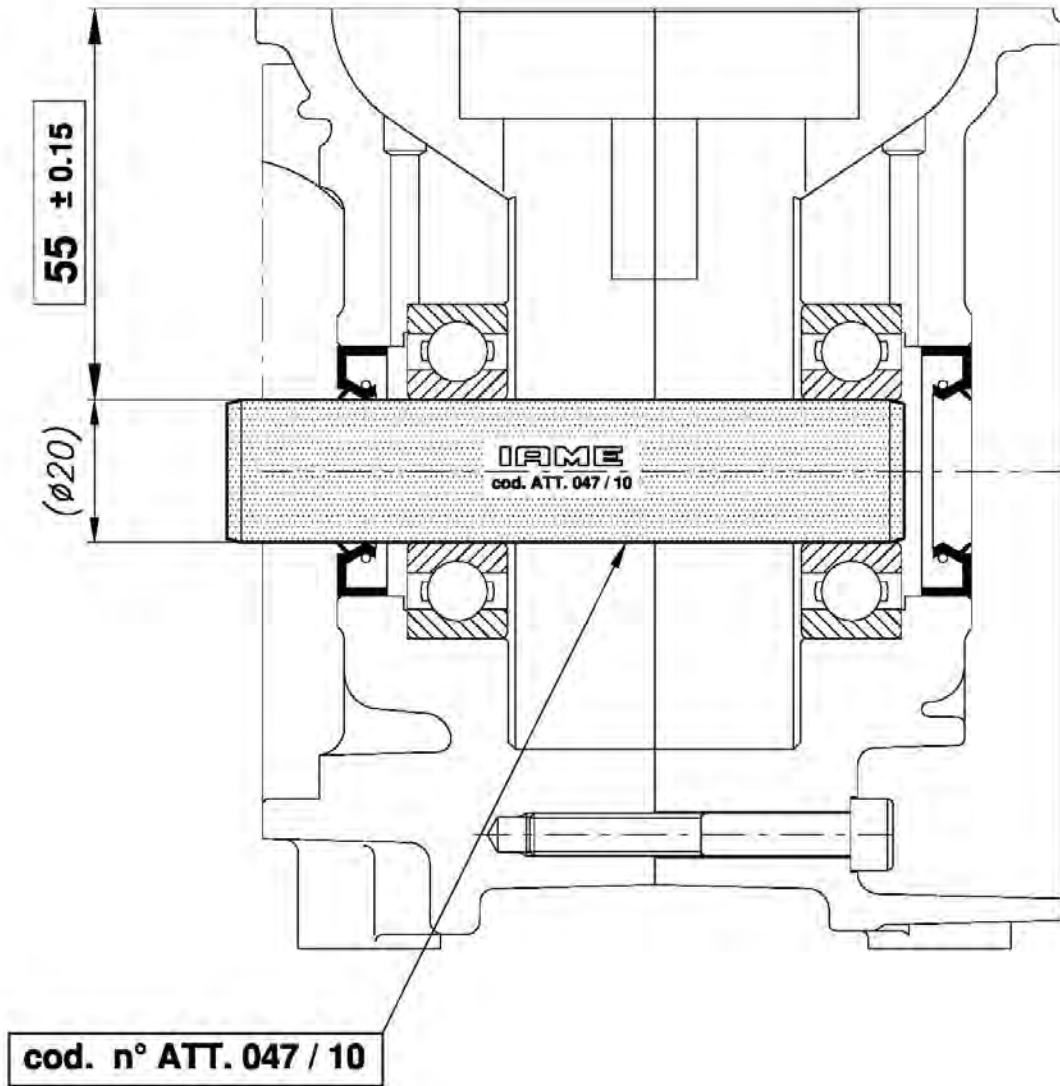


cod. n° ATT. 047 / 4

**CHECK THAT THE TOOL DOES NOT ENTER INTO THE CLUTCH DRUM IN PERPENDICULAR POSITION RESPECT AT THE CLUTCH DRUM AXIS.**

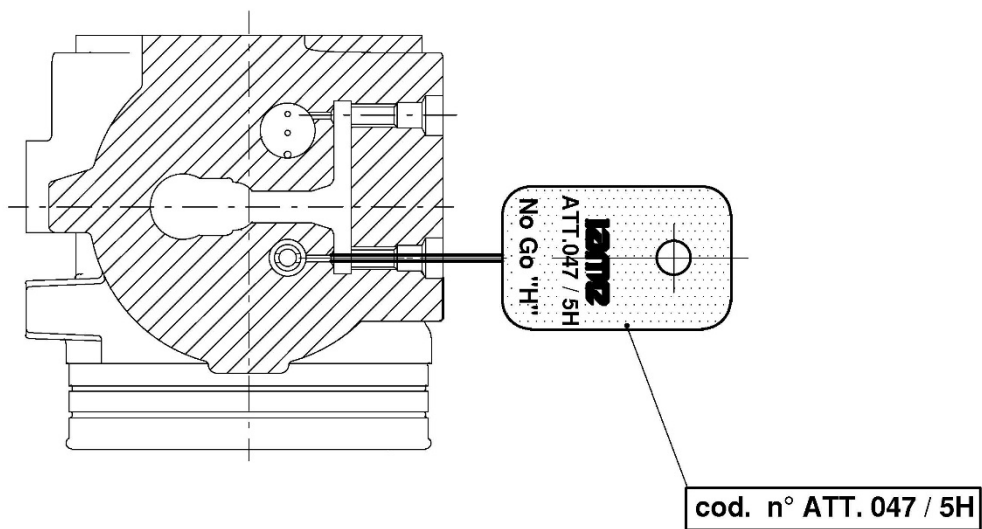
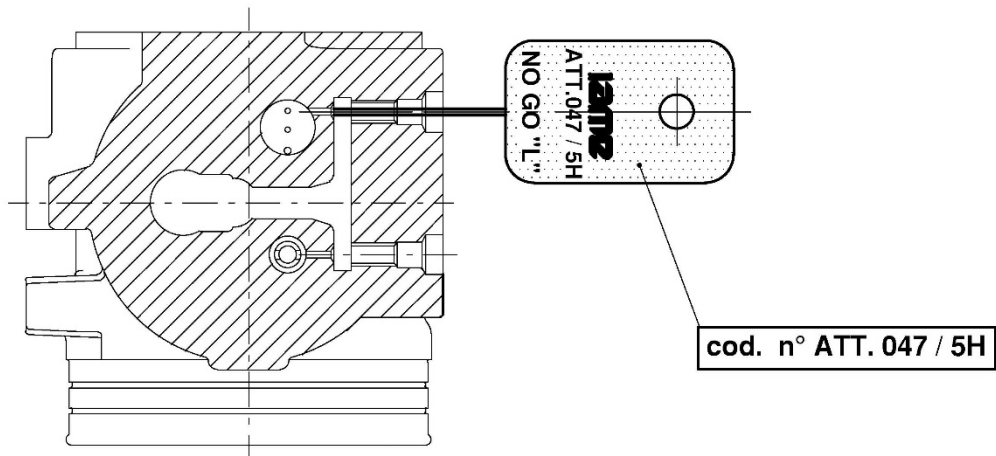


**VISUAL CHECKING OF CRANKCASE PLANE HEIGHT**

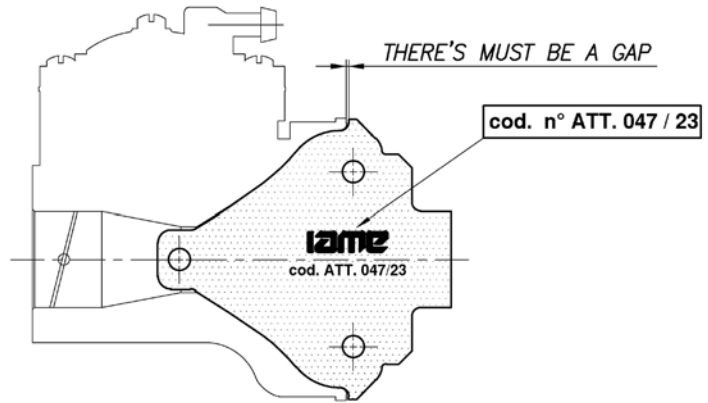


### CHECKING DIMENSIONS OF CRANKCASE PLANE HEIGHT

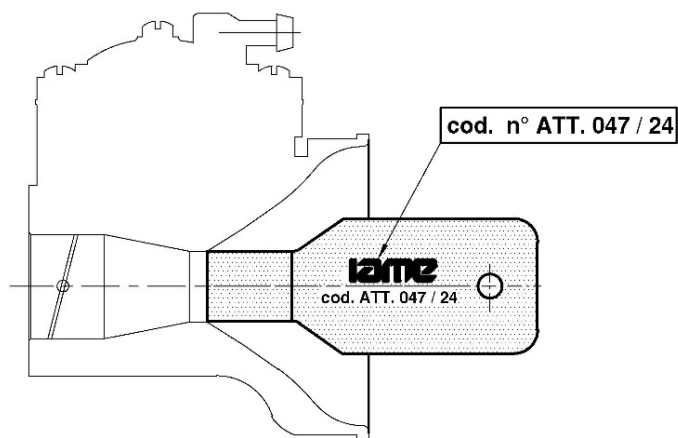
## CHECKING TOOLS FOR CARBURETTOR TILLOTSON HW-47A



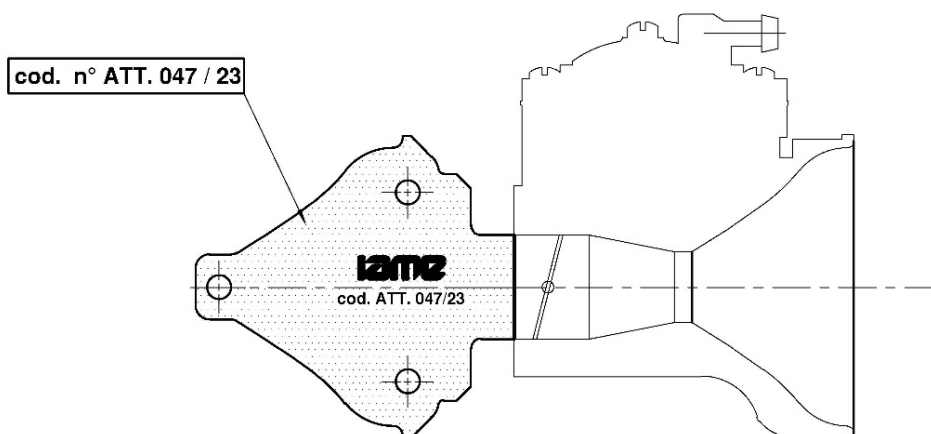
**CHECK THAT THE SPIKES DOES NOT ENTER INTO THE HOLES.**



**CHECK THAT THE TOOL MUST BE THE SAME SHAPE OF THE INLET CARBURETTOR.**

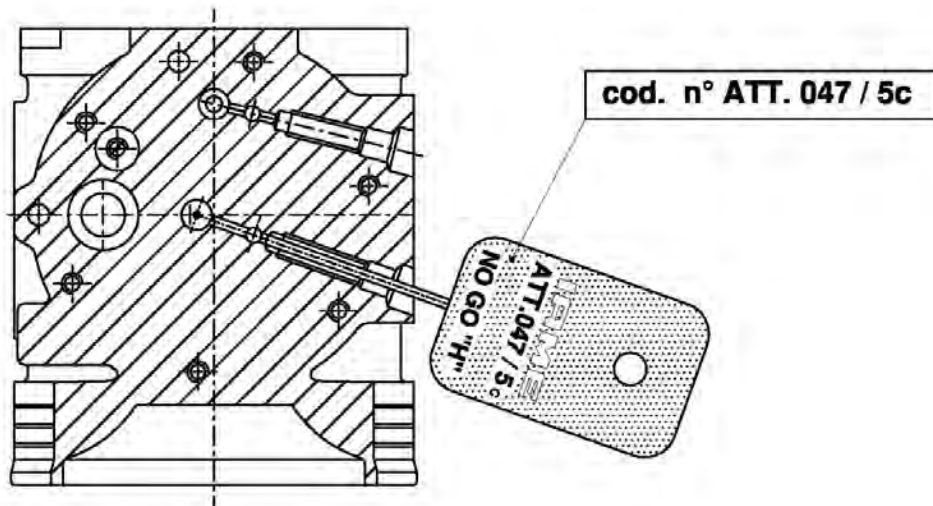
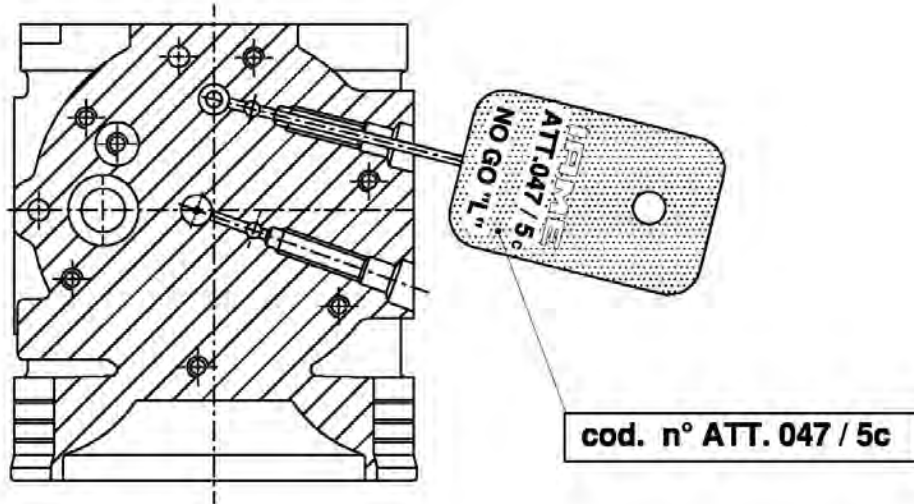


**CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT INLET OF CARBURETTOR.**

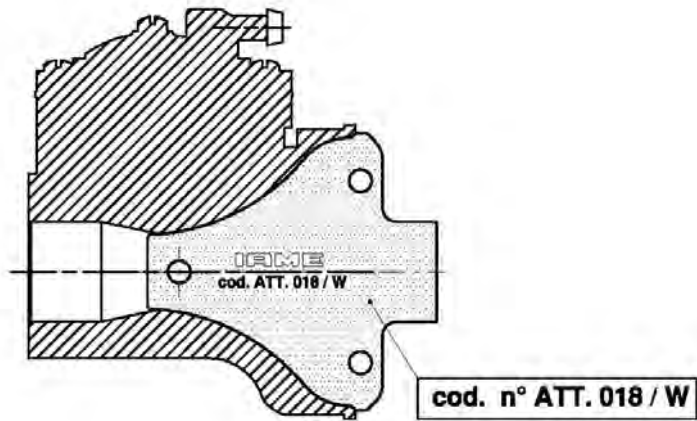


**CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT INLET OF CARBURETTOR.**

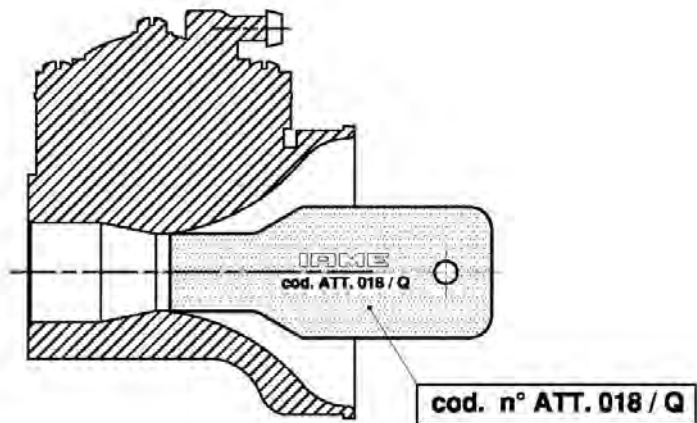
## CHECKING TOOLS FOR CARBURETTOR TILLOTSON HW-34B



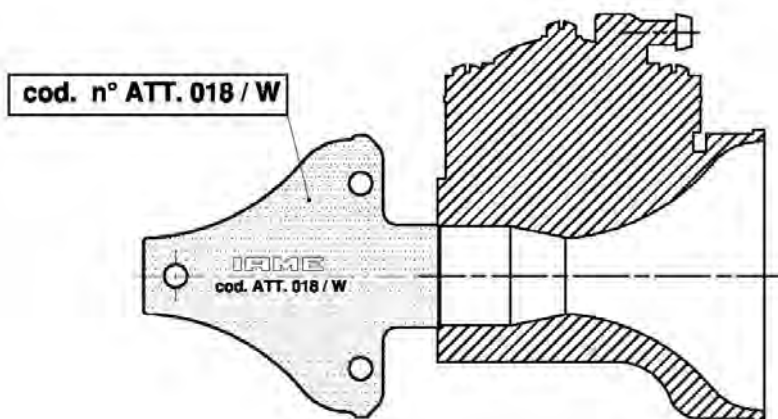
**CHECK THAT THE SPIKES DOES NOT ENTER INTO THE HOLES.**



**CHECK THAT THE TOOL MUST BE THE SAME SHAPE OF THE INLET CARBURETTOR.**

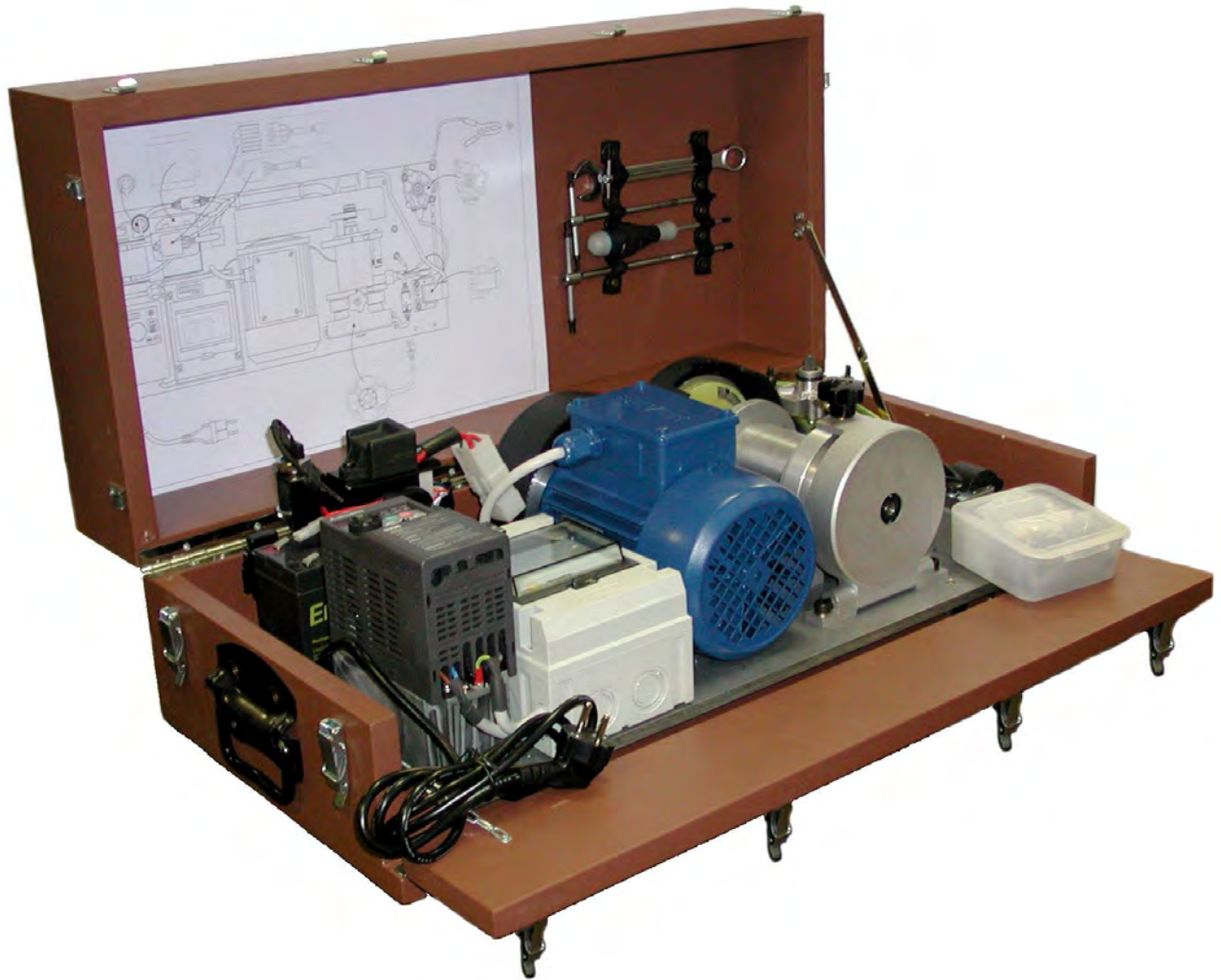


**CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT INLET OF CARBURETTOR.**



**CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT OUTLET OF CARBURETTOR.**

## IGNITION BENCH TESTER





**CARBURETTOR**  
**Tillotson HW-47A**



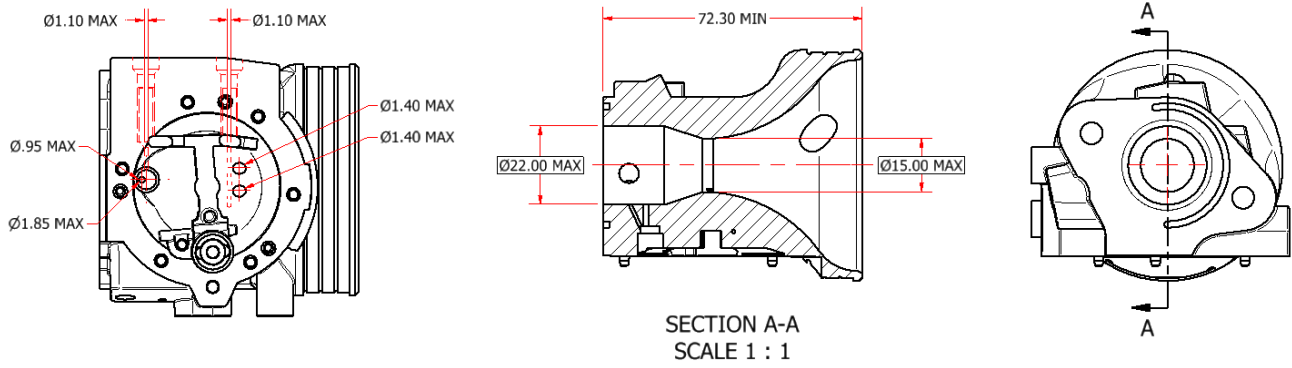
PHOTO OF ADJUSTING SIDE



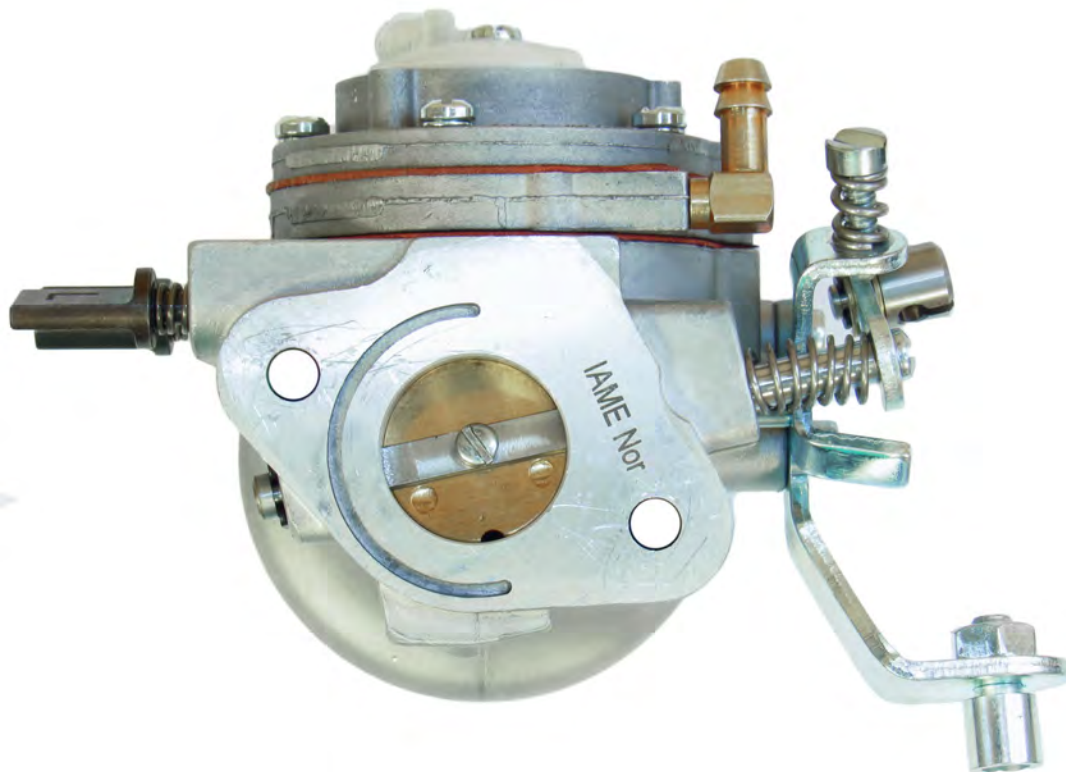
PHOTO OF INLET SIDE

Manufacturer	<b>TILLOTSON LTD.</b>
Make	<b>TILLOTSON</b>
Model	<b>HW-47A</b>


## SECTION VIEW



## MARKING

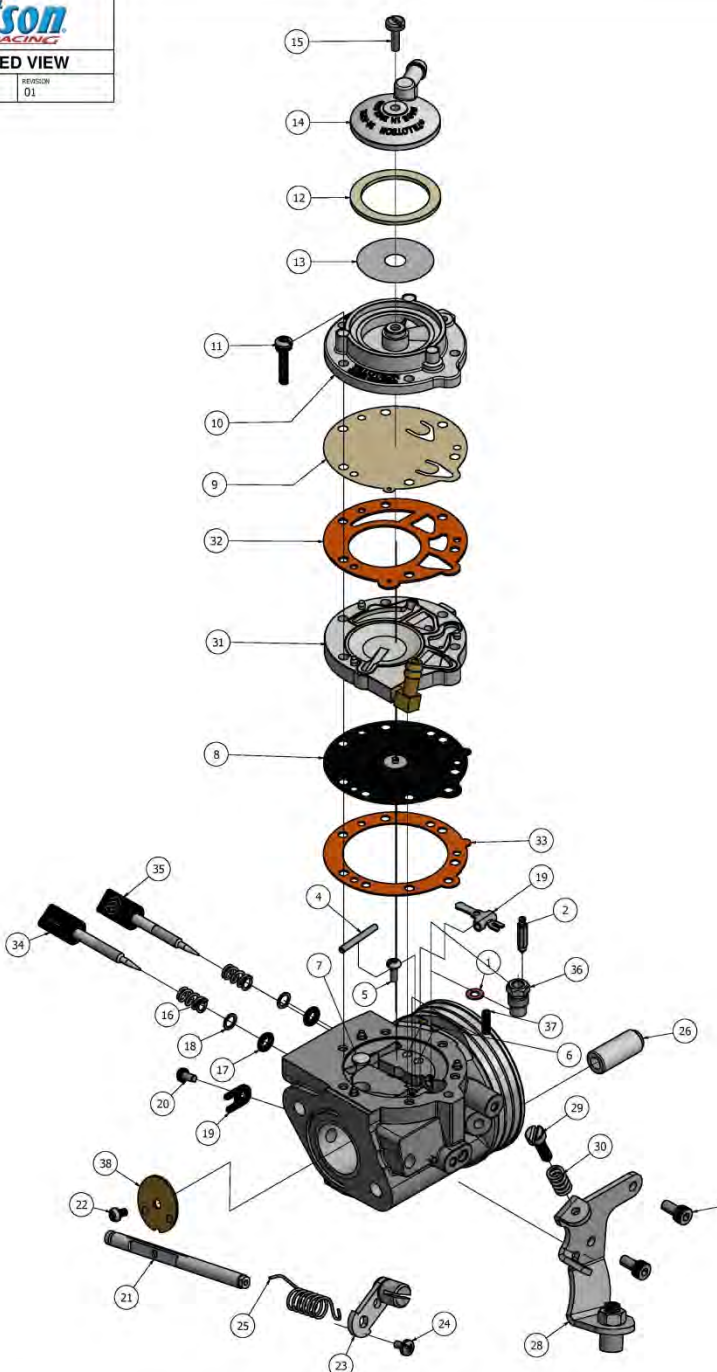


# CARBURETTOR DESCRIPTION AND SKETCH OF PARTS



**HW-47A EXPLODED VIEW**

DATE	DRAWN BY	REVISION
05/02/2020	P.B	01



ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	16-B199	++ INLET SEAT GASKET	16	2	24-B449	ADJUSTMENT SCREW SPRING	31	1	91-1031	METERING COVER ASSEMBLY
2	1	34-215	+ INLET NEEDLE	17	2	44-361	ADJUSTMENT SCREW O-RING	32	1	16-B407	++ FUEL PUMP GASKET (ORANGE)
3	1	155-A27	+ INLET CONTROL LEVER	18	2	78A-256	ADJUSTMENT SCREW WASHER	33	1	16-B406	++ DIAPHRAGM GASKET (ORANGE)
4	1	32-79	FULCRUM LEVER PIN	19	1	29-224	THROTTLE 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	THROTTLE 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 46g
8	1	237-600	++ DIAPHRAGM ASSEMBLY	23	1	12-1218	THROTTLE LEVER ASSEMBLY	38	1	14-A137	THROTTLE 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	THROTTLE 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				
13	1	95 - 170	FUEL STRAINER SCREEN	28	1	136-A51	CABLE BRACKET				
14	1	91-A251	FUEL STRAINER COVER	29	1	15-C9	LIMITER SCREW			RK-6HW	REPAIR KIT
15	1	15-B313	5-40 UNC SCREW	30	1	24-B131	SPEED CREW SPRING			DG-3HW	DG KIT

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)



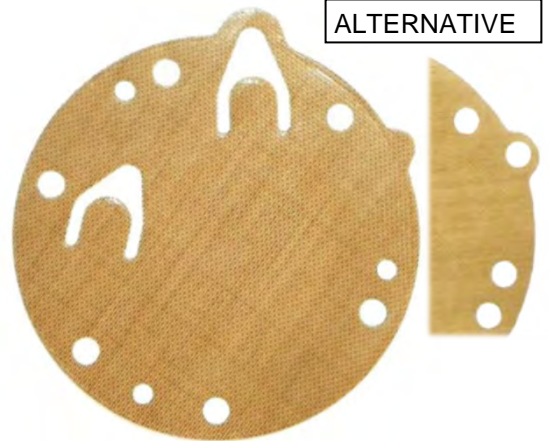
Thickness =  $0.8 \pm 0.1$  mm

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



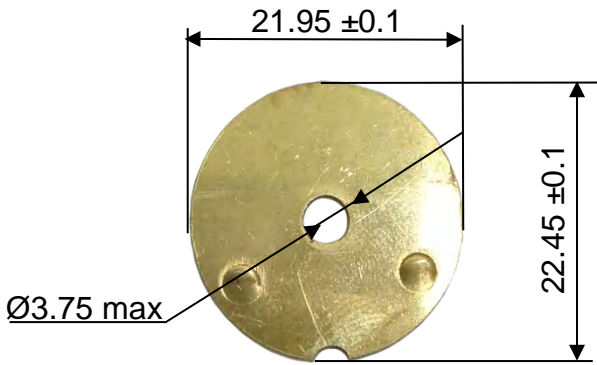
Thickness =  $6.75 \pm 0.15$  mm

REF.10 - P. N° 141-89  
PUMP COVER



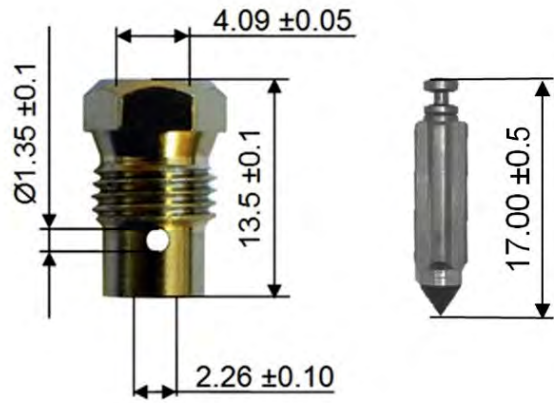
Thickness =  $12.5 \pm 0.15$  mm

REF.38 - P. N° 14-A137  
THROTTLE SHUTTER

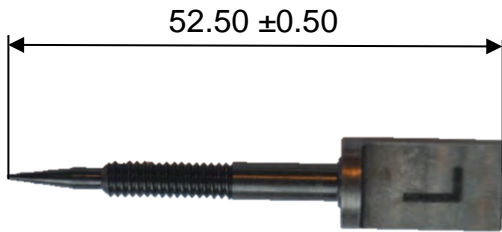


Thickness =  $0.81 \pm 0.1$  mm

REF.36 / 2 - P. N° 36-A42 / 34-216  
SEAT + NEEDLE



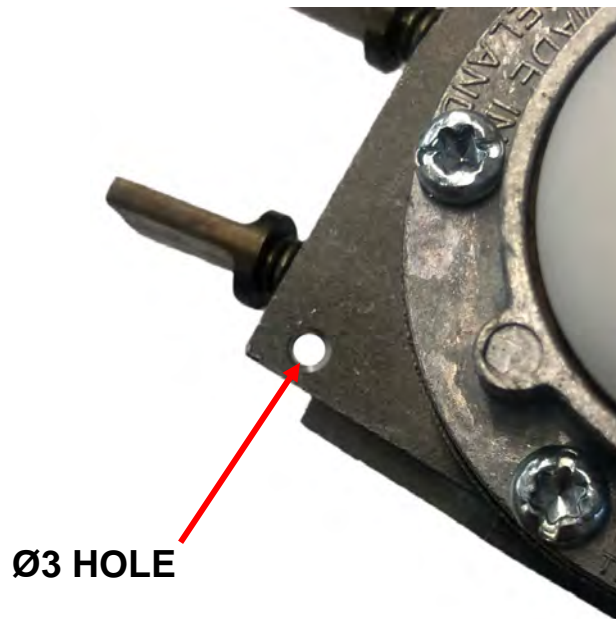
REF.34 - P. N° 43-1046  
NEEDLE LOW SPEED



REF.35 - P. N° 43-1045  
NEEDLE HIGH SPEED



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



**CARBURETTOR**  
**Tillotson HW-34B**



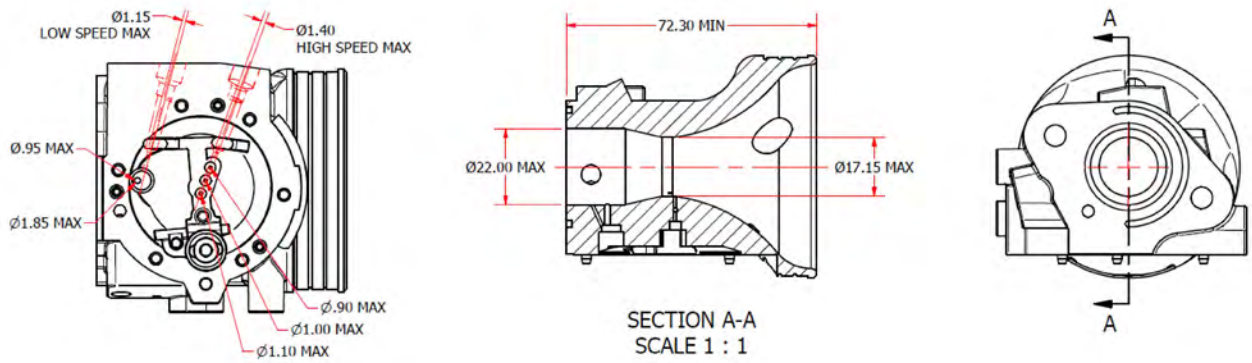
PHOTO OF ADJUSTING SIDE



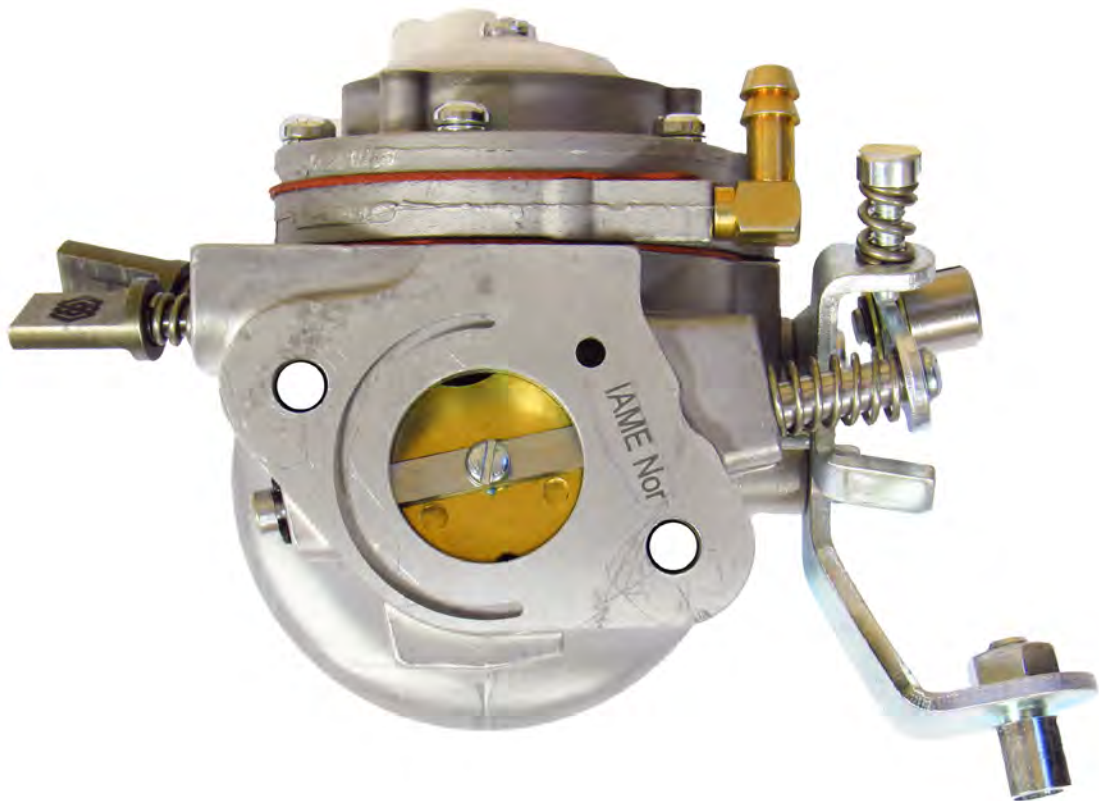
PHOTO OF INLET SIDE

Manufacturer	TILLOTSON LTD.
Make	TILLOTSON
Model	HW-34B


## SECTION VIEW



## MARKING

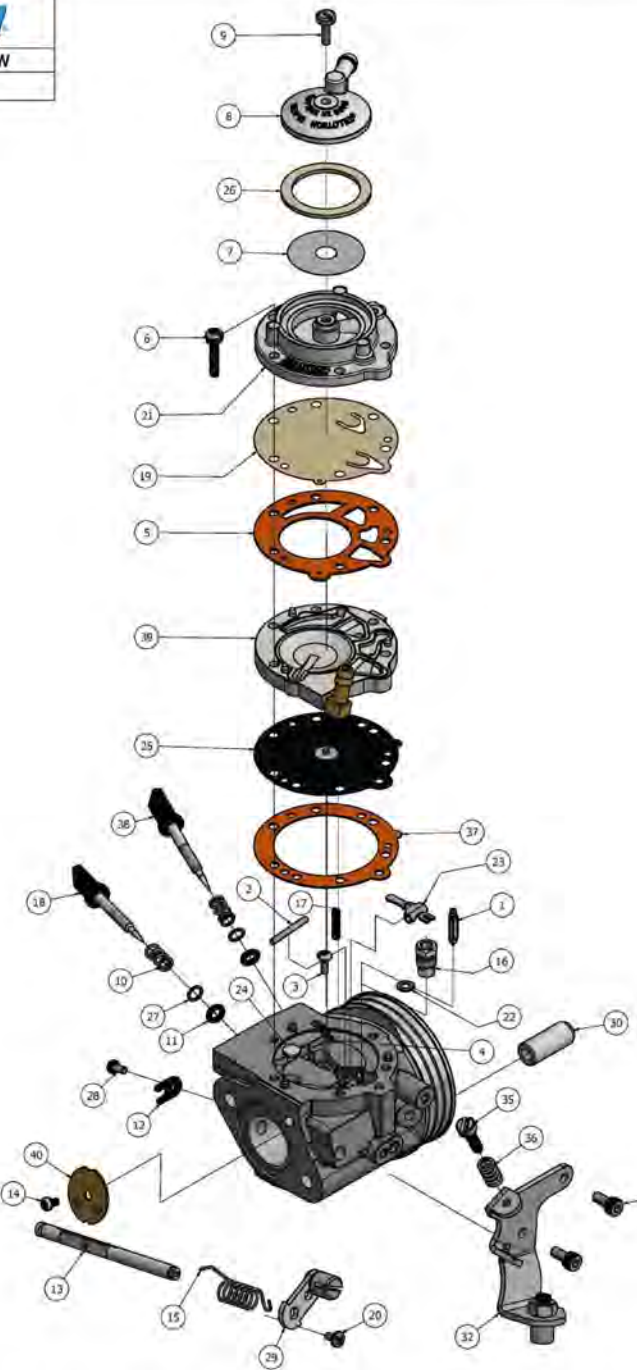


# CARBURETTOR DESCRIPTION AND SKETCH OF PARTS



**HW-34B EXPLODED VIEW**

REV. 25/10/2019	DRAWN BY P.B	ISSUE 00
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ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	34-216	+ INLET NEEDLE	16	1	36-A42	+ INLET SEAT	31	2	15-C67	M4 X 0.7 SOCKET CAP SCREW
2	1	32-79	FULCRUM LEVER PIN	17	1	24-C298	INLET TENSION SPRING 42g	32	1	136-A51	CABLE BRACKET
3	1	15-B129	FULCRUM LEVER SCREW	18	1	43-1046	8-32 UNC ADJUSTMENT SCREW L	35	1	15-C9	LIMITER SCREW
4	3	80-160	BRASS PLUG	19	1	237-162	+* FUEL PUMP DIAPHRAGM	36	1	24-B131	SPEED CREW SPRING
5	1	16-B407	+* FUEL PUMP GASKET (ORANGE)	20	1	15-C52	4-40 UNC SCREW	37	1	16-B406	+* DIAPHRAGM GASKET (ORANGE)
6	6	15-C51	6 - 32 UNC SCREW WITH L/W	21	1	141-89	FUEL PUMP BODY	38	1	43-1045	M4 X 0.5 ADJUSTMENT SCREW H
7	1	95 - 170	FUEL STRAINER SCREEN	22	1	16-B199	+* INLET SEAT GASKET	39	1	91-1031	METERING COVER ASSEMBLY
8	1	91-A251	FUEL STRAINER COVER	23	1	155-A27	+ INLET CONTROL LEVER	40	1	14-A135	THROTTLE SHUTTER
9	1	15-B313	5-40 UNC SCREW	24	1	176-62	WELCH PLUG				
10	2	24-B449	ADJUSTMENT SCREW SPRING	25	1	237-600	+* DIAPHRAGM ASSEMBLY				
11	2	44-361	ADJUSTMENT SCREW O-RING	26	1	16-B005	+* FUEL STRAINER COVER GASKET			*	REPAIR KIT CONTENTS
12	1	29-224	THROTTLE SHAFT CLIP	27	2	78A-256	ADJUSTMENT SCREW WASHER			*	DIAPHRAGM & GASKET KIT CONTENTS
13	1	13-B215	THROTTLE SHAFT	28	1	15-C19	4-40 UNC SCREW				
14	1	15-C20	4-40 UNC SCREW	29	1	12-1218	THROTTLE LEVER ASSEMBLY			RK-6HW	REPAIR KIT
15	1	24-B381	THROTTLE RETURN SPRING	30	2	81-377	CARBURETTOR MOUNTING NUT			DG-3HW	DIAPHRAGM & GASKET KIT

PARTS OF CARBURETTOR

REF.37 - P. N°16-B406  
DIAPHRAGM GASKET (ORANGE COLOR)



Thickness =  $0.5 \pm 0.1$  mm

REF.5 - P. N° 16-B407  
PUMP DIAPHRAGM GASKET (ORANGE COLOR)



Thickness =  $0.8 \pm 0.1$  mm

REF.25 - P. N°237-600  
DIAPHRAGM



Thickness =  $0.13 \pm 0.07$  mm

REF.19 - P. N°237-162  
PUMP DIAPHRAGM



ALTERNATIVE

Thickness =  $0.10 \pm 0.063$  mm

REF.39 - P. N° 91-1031  
DIAPHRAGM COVER



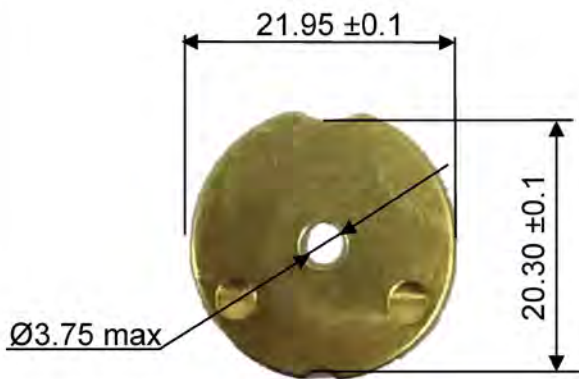
Thickness =  $6.75 \pm 0.15$  mm

REF.21 - P. N° 141-89  
PUMP COVER



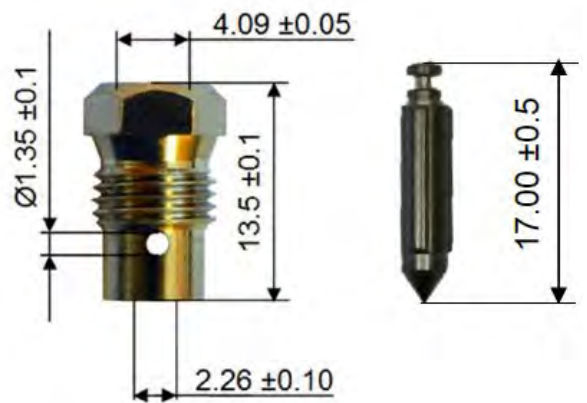
Thickness =  $12.5 \pm 0.15$  mm

REF.40 - P. N° 14-A135  
THROTTLE SHUTTER



Thickness =  $0.81 \pm 0.1$  mm

REF.16 / 1 - P. N° 233-721P  
SEAT P.N° 34-A42 + NEEDLE P.N° 34-216



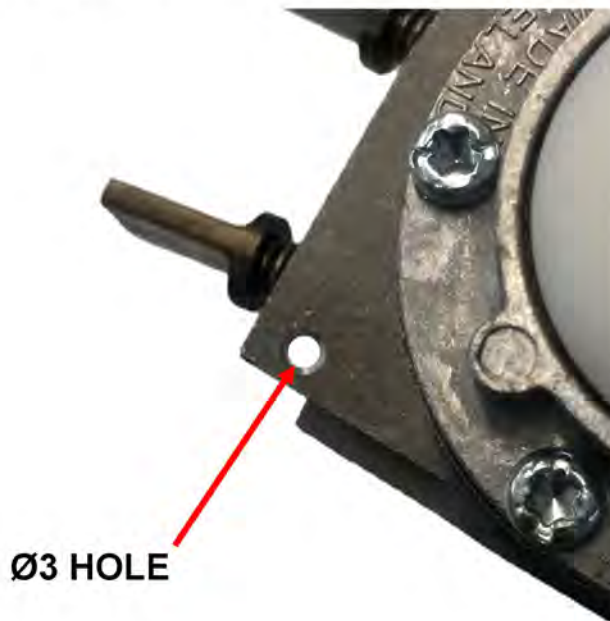
REF.18 - P. N° 43-1046  
NEEDLE LOW SPEED



REF.38 - P. N° 43-1045  
NEEDLE HIGH SPEED



**The carburettor can have this hole for sealing.**



## 1. TECHNICAL CONTROLS / SCRUTINEERING

1.1 The technical forms are the main comparison reference for Scrutineers. In case of doubts on the engine parts conformity, the comparison with the sample engine will be the definitive probating element. In case of extremely controversial events, the Stewards can decree the delivery of the concerned parts, duly sealed, to IAME Spa, which will proceed with an accurate inspection at the factory. A report from IAME Spa will then be given to the Stewards that will then take a decision on future action.

1.2 The engine technical inspection is performed by the technical scrutineer. The technical scrutineer has the right to inspect any part to the point that it can no longer be employed. If this is the event, the inspected part found in compliance with the regulations will be replaced to the driver at no cost. Any part found as not in compliance with the regulations, will not be refunded.

1.3 It is the duty of every Entrant to prove to the Scrutineers and to the Stewards that his kart integrally complies with the Regulations throughout the event

1.4 The Scrutineer, following a decision of the Stewards has the right to impound any part of the Engine including but not limited to carburetor, exhaust, electronic ignition and petrol at his discretion. Should this be the case the parts impounded will be replaced with new original manufactured parts at the expense of the Entrant / Driver (At IAME Official Recommended Retail Price List)

## 2. ENGINE IAME Norswift 60cc

2.1 Only the IAME Norswift 60cc engine, original and strictly compliant with the manufacturer's data sheet (Technical characteristics, dimensions, weights, diagrams with the tolerances prescribed by the manufacturer) is permitted.

2.2 The pictures on the original homologation forms are also valid to identify the engine and the spare parts.

2.3 Any modification or addition to the engine and its accessories, unless expressly authorised, is prohibited. IAME considers as modifications any action modifying the initial appearance and dimensions of an original part.

2.4 Any modification and/or installation resulting in the modification of a dimension and/or its possibility of control is strictly prohibited. Polishing, sanding, trimming or adjustments are not allowed.

2.5 No heat treatment or surface treatment is allowed. The competitor is responsible for the conformity of his own equipment.

2.6 Engines must be supplied with their original serial number. No modification, improvement, polishing, addition or deletion of material to any part of the engine is permitted.

2.7 Each internal or external part of the engine must be installed in its original position and function according to the original design specifications.

2.8 The tolerances indicated on the tech form are necessary to provide all machining, assembly and settling tolerances. Nevertheless, the competitor is absolutely not authorized to intervene on the engine, even if the characteristic dimensions after his intervention remain within the prescribed tolerances.

2.9 The tolerances indicated on the homologation form are necessary to understand all machining, assembly and settling tolerances. Any preparation is prohibited: the maximum and minimum values allowed, and the volume of the combustion chamber must be measured in accordance with the technical regulations of FIA Karting.

2.10 Diagrams and volume chart: Refer to engine data sheet

### **3. CYLINDER HEAD**

#### **3.1 Strictly original**

3.2 The body of the spark plug clamped to the cylinder head must not protrude from the upper part of the dome of the combustion chamber.

3.3 The minimum squish value must be in accordance with the engine tech form. The Squish Control will be carried out with a Ø 1.5mm tin/lead wire, according to the method described in appendix 12 of the international technical regulations.

3.4 The original IAME gauge n. 10215 is the reference for checking the conformity of the cylinder head profile. The shape of the gauge should match the profile of the dome, the squish area and the joint plane.

### **4. CYLINDER**

4.1 Strictly original and supplied with the original safety pin and IAME markings.

4.2 Polishing, sanding, trimming or adjustments are not allowed. Only reboring is allowed. In case of doubt, the shape and the height of the transfers must be compared to the cylinder of the standard engine. No heat treatment or surface treatment is allowed

4.3 Adjustment of the diagram is permitted only by means of cylinder base gasket replacement. The number of cylinder base gaskets is not limited. Only original gaskets are allowed.

4.4 Gaskets between cylinder and cylinder head are not permitted. In addition to measuring the opening angles, the original IAME gauge cod. ATT-005 is the reference for checking the distance between the upper edge of the ports and the cylinder head plane.

### **5. CRANKCASE, CRANKSHAFT, CONNECTING ROD, CRANK PIN**

5.1 Only original parts are allowed, without any modification.

5.2 Crankcase/crankshaft oil seals must be installed correctly with the hollow side inboard of the crankcase and not filled with any material. Under no circumstances can they be modified.

### **6. BEARINGS**

6.1 Strictly original: (6204 TN9/C4) crankshaft ball bearings.

6.2 Ball bearings with angular contacts are prohibited.

6.3 Only bearings with steel balls and rings are permitted. (Ceramic prohibited).

6.4 Bearings which do not have the correct and clearly visible classification number as described in the regulations are expressly prohibited.

6.5 The bearings must be fitted with the balls visible from inside the housing.

6.6 In order to obtain the correct axial play, the use of spacers behind the bearings is permitted.

6.7 All internal engine parts must be original from the Manufacturer, in the same number supplied by the Manufacturer and fitted in the prescribed position.

## **7. PISTON, PISTON RING AND PIN**

7.1 Strictly original without any modification, and in accordance with the engine tech form.

## **8. CARBURETTOR**

8.1 All carburettor spacers and gaskets are mandatory and must comply and in the same order as shown on the tech form.

8.2 If in doubt, the carburettor should be compared to the sample carburettor.

## **9. INLET SILENCER**

9.1 Strictly original inlet silencer, as supplied with the engine (same brand, same model, same reference).

9.2 The intake trumpets must have an internal diameter of 23mm maximum.

9.3 Protective grilles are optional.

9.4 The rubber sleeve connecting the intake silencer to the carburettor is mandatory. It must be installed and conform to the tech form.

9.5 The sponge filter element, if used, must be intact.

9.6 Any injection and/or spray system is prohibited.

## **10. CLUTCH**

10.1 The engine is supplied with a dry centrifugal clutch system.

10.2 Any intervention aimed at prolonging the slip of the clutch hub beyond the prescribed limit is strictly prohibited.

10.3 The centrifugal clutch must engage at 4,500 rpm maximum, moving the kart with the Driver on board and in race conditions.

10.4 The clutch should be fully engaged at 6,500 RPM maximum in any condition.

10.5 This measurement can possibly be checked with appropriate instruments.

10.6 Each Driver is responsible for the state of wear of the clutch and the cleaning of clutch and drum

10.7 The proper operation of the clutch can be checked at any time during the event, and even after each phase.

10.8 The UniLog clutch control system produced by Unipro can be used. In this case, the Competitor/Driver must be supplied with the cable/bracket kit while the instrument is supplied in use by the Promoter.

## **11. IGNITION**

11.1 Original ignition only, coil without any modification.

11.2 The coil need to have the 3mm clearance like it say in the Tech form.

11.3 No modification on the engine where the Coil is mounted.

## **12. SPARK PLUG AND SPARK PLUG CAP**

12.1 Only NGK B8EG - B9EG - B10EG – BR8EG - BR9EG - BR10EG – BR8EIX – BR9EIX – BR10EIX are authorized, strictly original without any modification.

12.2 The spark plug must be installed with its original gasket.

12.3 The porcelain must not protrude beyond the body of the spark plug and the length of the spark plug base must be 18.5 mm maximum. (Appendix 7 of the CIK/FIA technical regulations).

12.4 Only original spark plug caps.

## **13. EXHAUST SYSTEM**

13.1 Only the original exhaust muffler is authorized as delivered with the engine and must be kept in accordance with the tech form, therefore no modification of structure or dimensions is authorized.

13.2 The exhaust manifold must comply with the tech form at any time.

13.3 The use of one original exhaust gasket is mandatory.

13.4 The complete sealing of the exhaust gases between the cylinder and the exhaust manifold must be guaranteed at all times. The exhaust gas sealing check can be carried out at any time through to the occlusion of the outlet hole of the exhaust manifold, the filling of the exhaust manifold with liquid through the exhaust port and checking for leaks.

13.5 The proper sealing of the exhaust system is a responsibility of the Driver.

Important note for Cadetti: The exhaust restrictor must be securely fastened to the cylinder head in a manner that ensures it cannot loosen or detach during operation. Both nuts must be properly tightened. This may be verified by a scrutineer either on the starting grid or after the race.

13.6 Exhaust temperature sensors are not permitted.

## 14. SPROCKETS

14.1 Original IAME Norswift. Z10 or Z11 drums only.

14.2 The drum need to have marking A-60552N-xx. The N is for safety reason and to use without the N model can be dangerous.