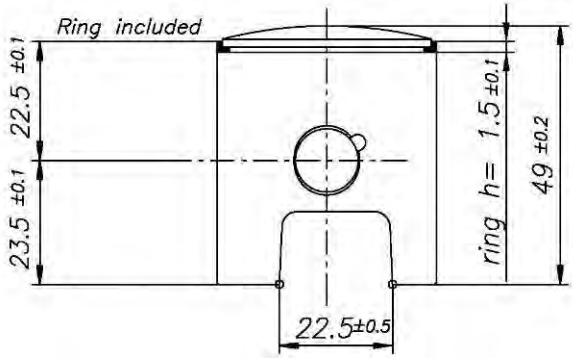
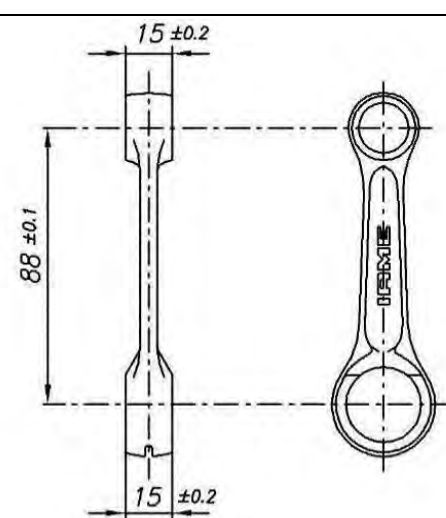


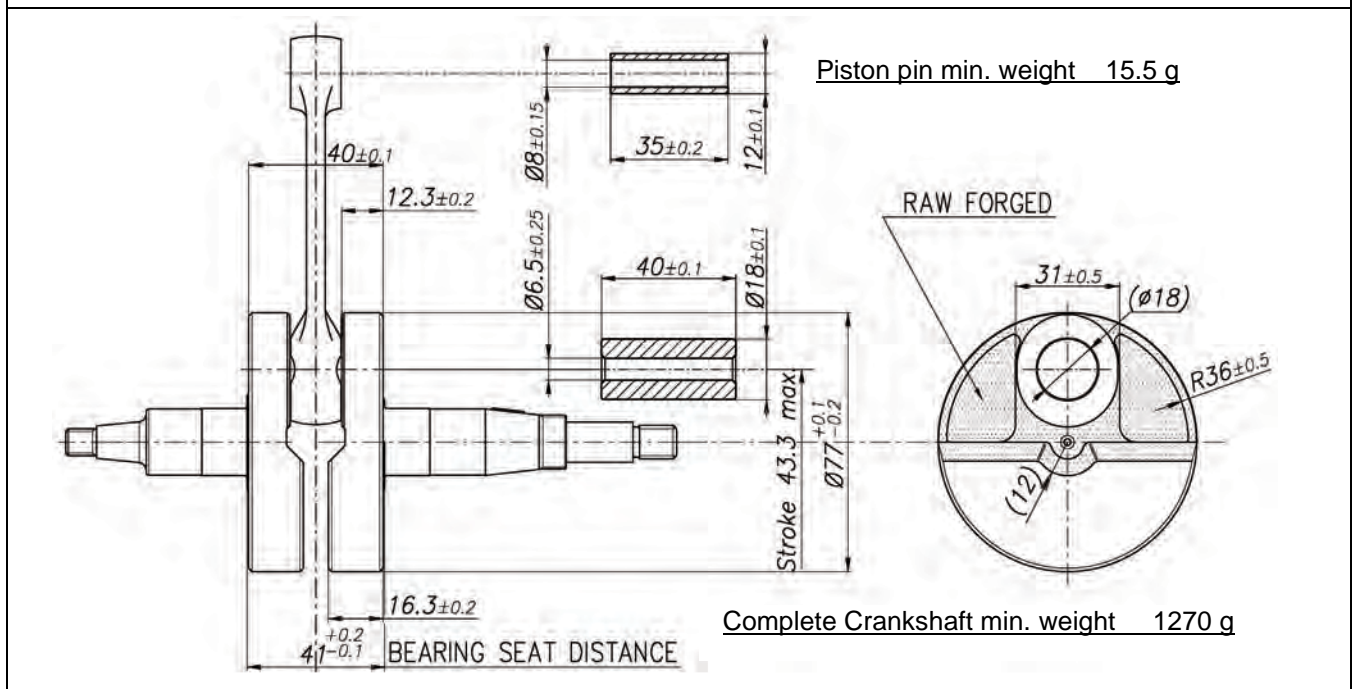
NORSWIFT 60cc - N

(NORWAY)

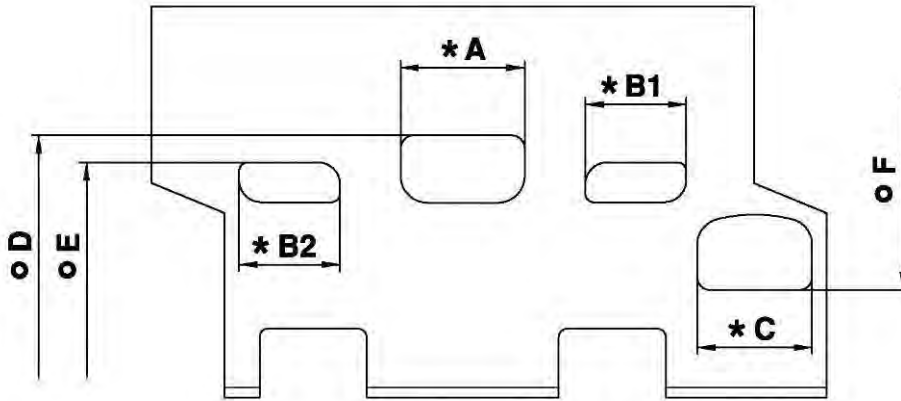
		FEATURES	
		Cylinder volume	59.42 cm ³ (60.00 cm ³ max.)
		Bore	41.80 mm
		Max. theoretical bore	42.00 mm
		Stroke	43.30 mm max.
		Cooling system	Air
		Inlet system	Piston Port
		Number of carbs	1
Tillotson Carburettors HW -	47A Ø15mm (CADETTI CLASS) 34B Ø17mm (MINI CLASS)	Transfers n. cylinder/crankcase	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		DISTANCE BETWEEN CONROD CENTERS
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

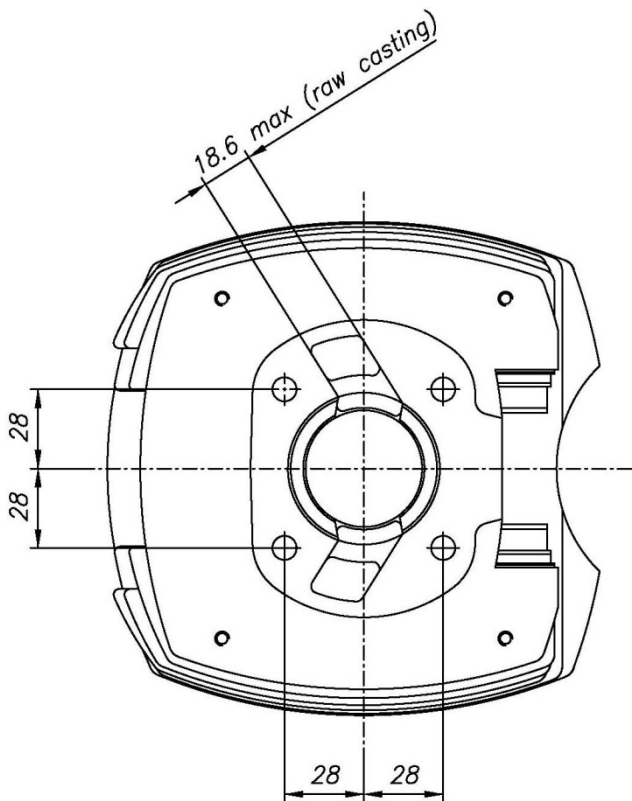


A	≤ 28.5 mm
B1 = B2	≤ 22.3 mm
C	≤ 26.5 mm
D	155.5° ± 1°
E	115.5° ± 2°
F	143.5° ± 1°

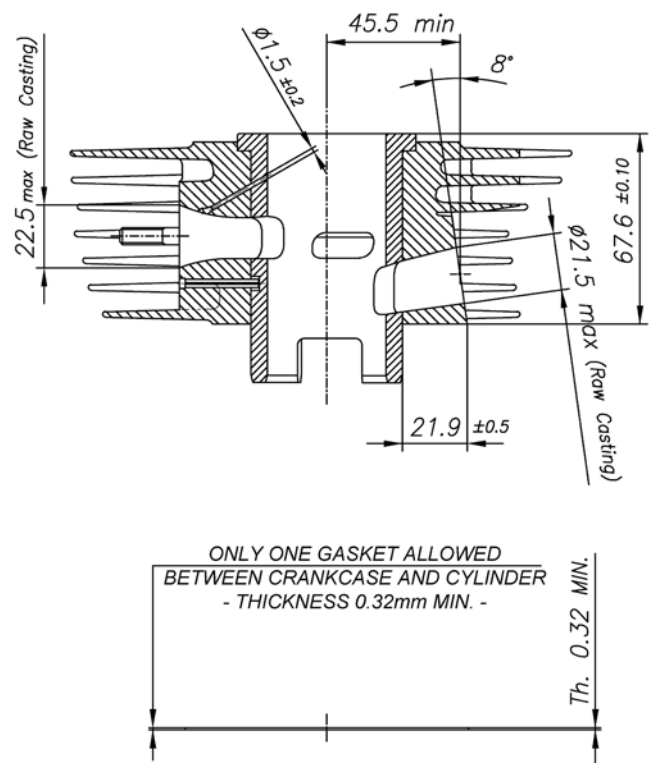
* CHORDAL READING

o ANGULAR READING BY INSERT A 0.2x5 mm GAUGE

CYLINDER BASE VIEW



CYLINDER CROSS SECTION VIEW



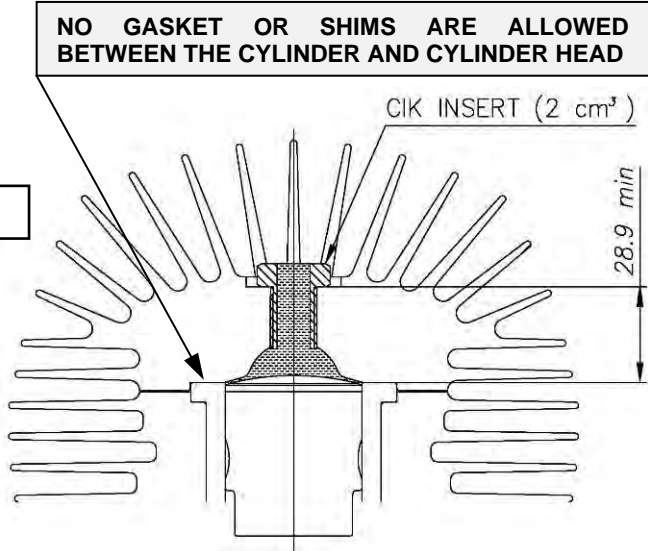
COMBUSTION CHAMBER VIEW

COMBUSTION CHAMBER VOLUME = 6.03cm³ min.

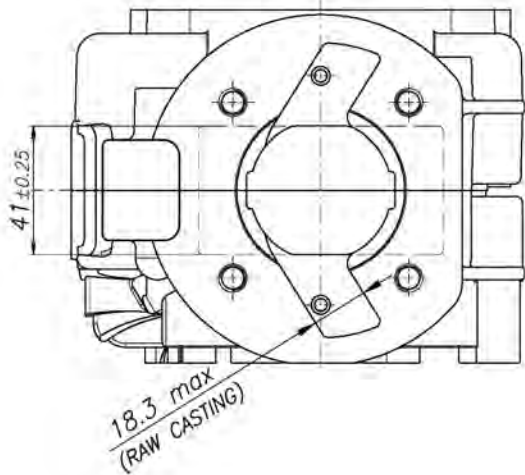
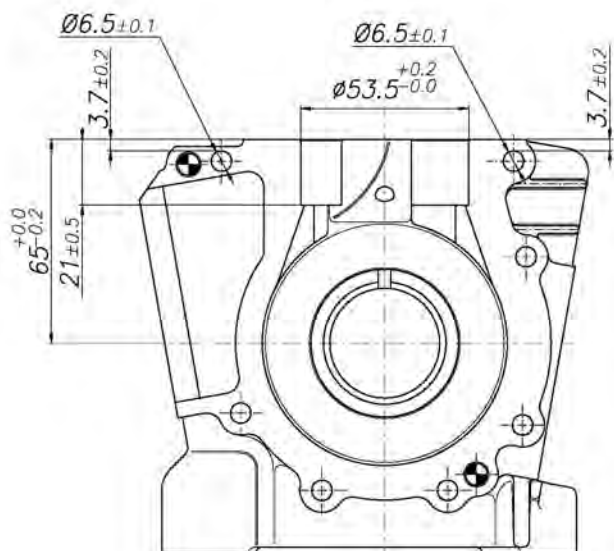
SQUISH MIN.= 0.6 mm (measured with Ø1.5mm TIN)

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

7.4 cm³ min

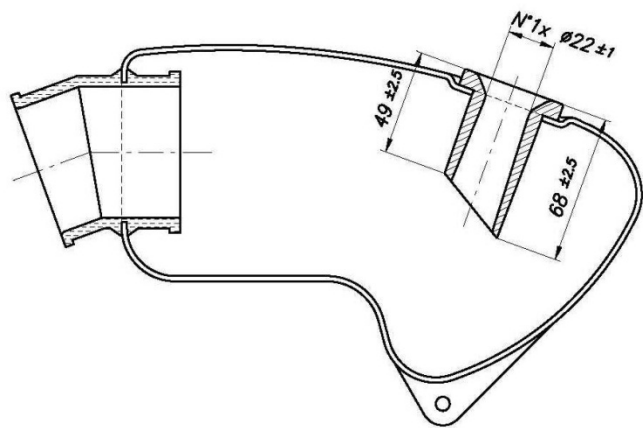


CRANKCASE INSIDE VIEW

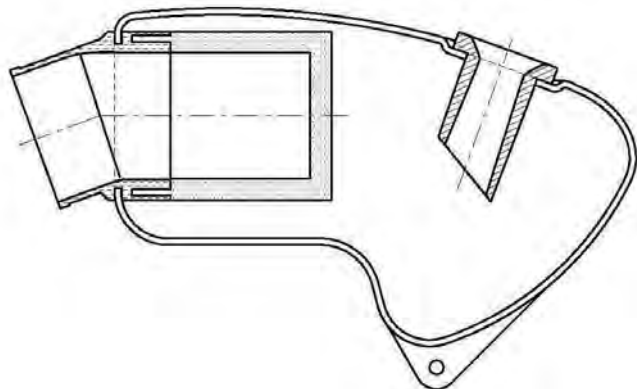


INLET SILENCER

(CSAI Hom. N° 01/SA/14)



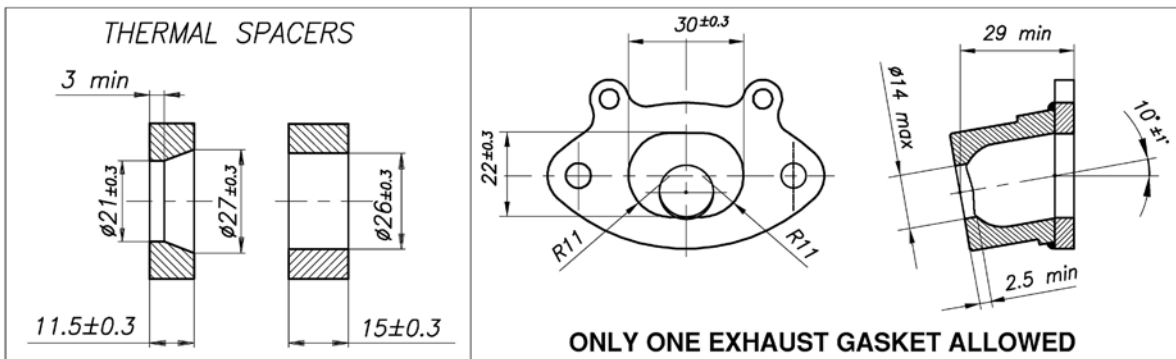
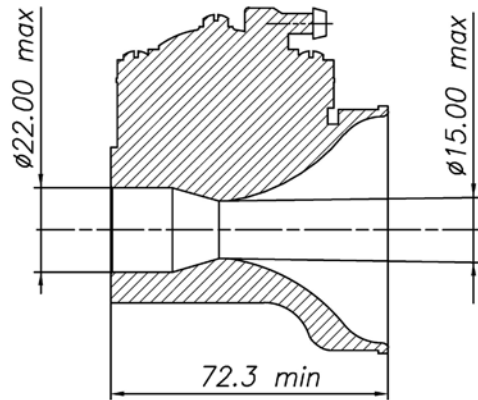
IN ALTERNATIVE (OPTIONAL)



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

CADETTI Class

Tillotson HW-47A



MINI Class

Tillotson HW-34B

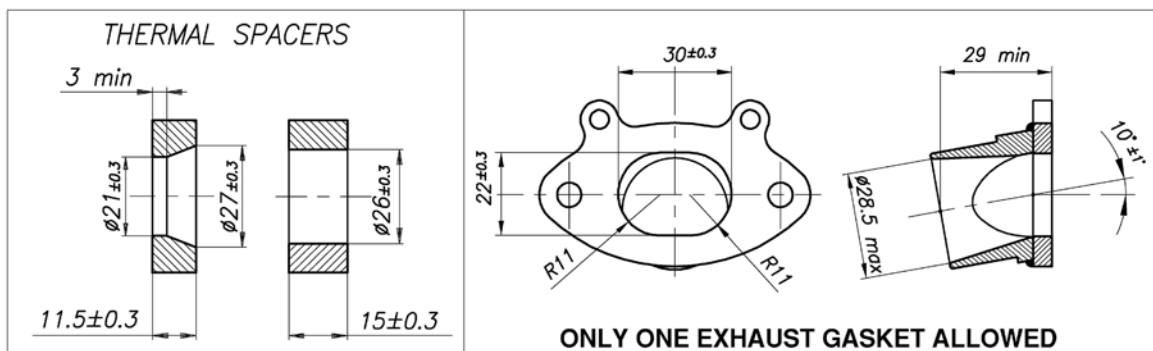
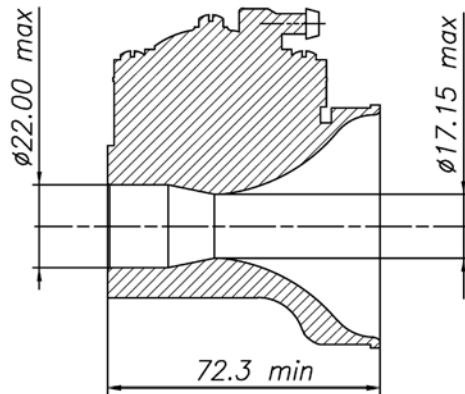
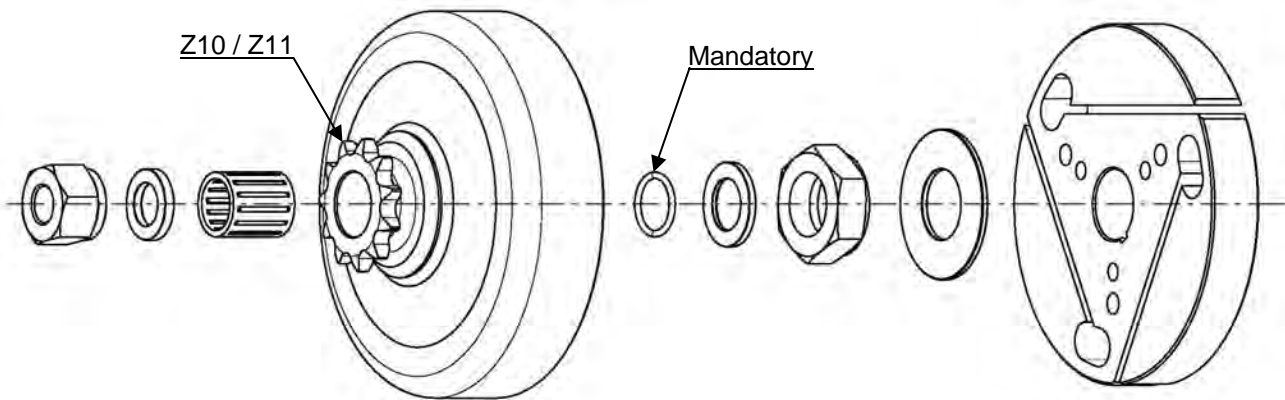


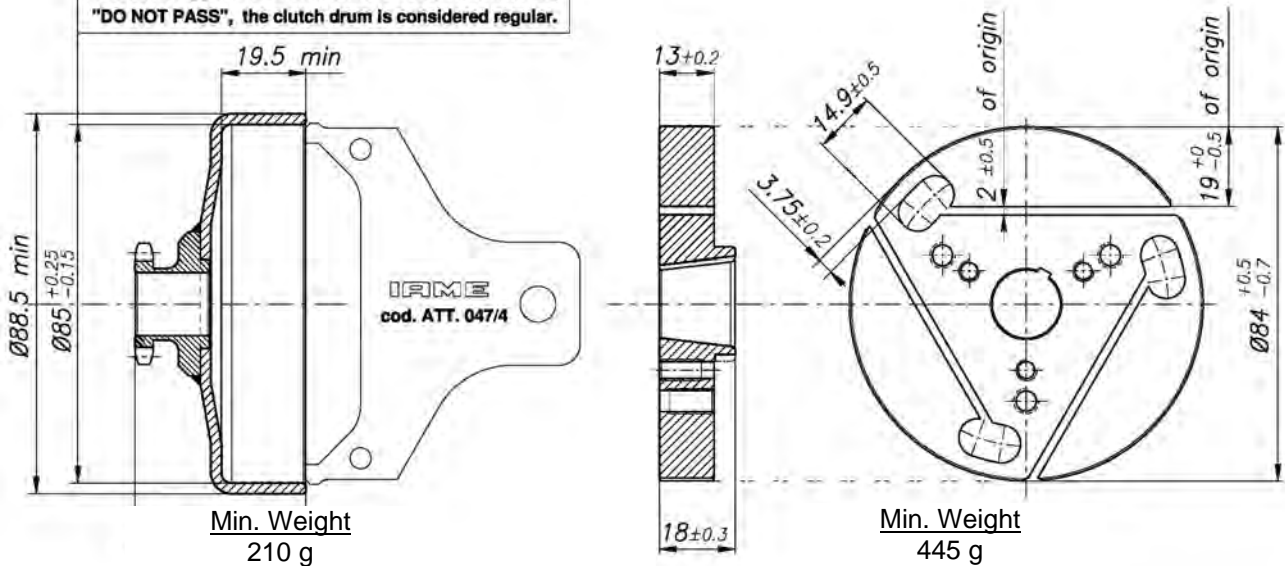
PHOTO IDENTIFICATION MARKING SPONGE FILTER (OPTIONAL)



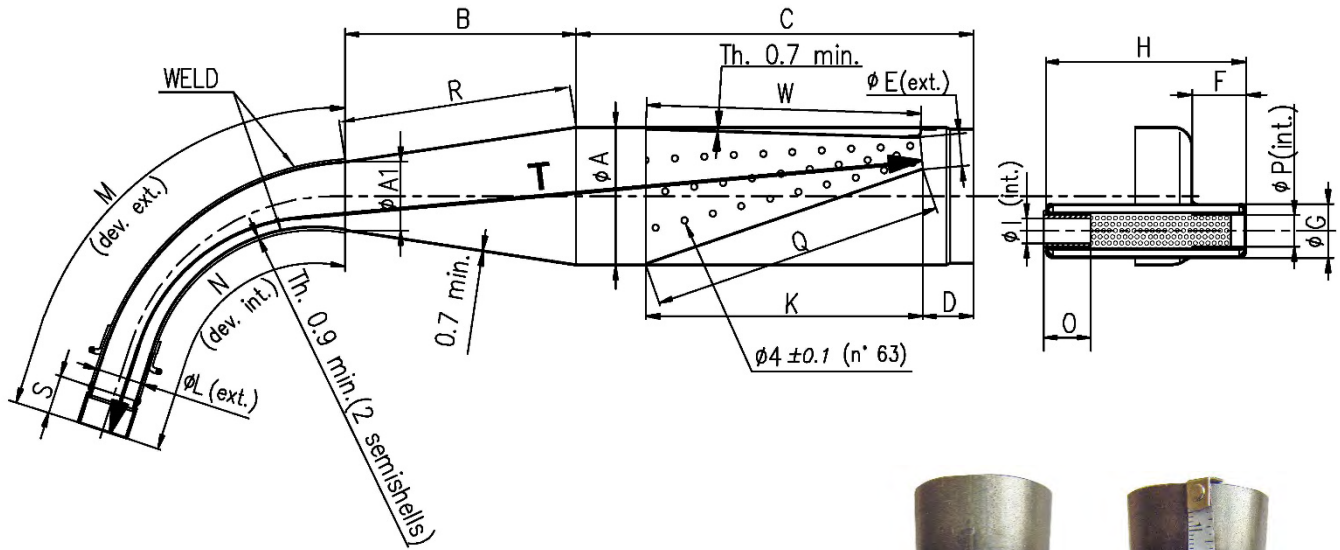
DESCRIPTION OF THE CLUTCH



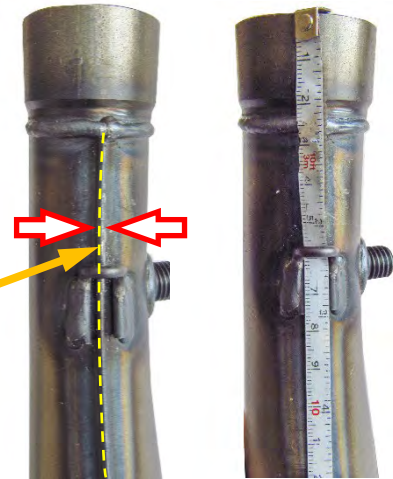
The template "N.P." must be used in multiple directions.
In case it happen that in a direction "PASS" and another,
"DO NOT PASS", the clutch drum is considered regular.



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

ØA: $90 \pm 1.5 \text{ } \varnothing \text{ext.}$	D: 30 ± 2	H: 132 ± 2	M: 265 ± 3	R: 152 ± 3	T: 601 ± 3
ØA1: $45 \pm 1 \text{ } \varnothing \text{ext.}$	ØE: $20 \pm 1 \text{ } \varnothing \text{ext.}$	ØI: $17 \text{ max } \varnothing \text{int.}$	N: 215 ± 3	S: 25 ± 1	
B: 150 ± 3	F: 35 ± 2	K: 181 ± 3	O: 30 min.	Q: 192 ± 3	
C: 260 ± 3	ØG: $35 \pm 1 \text{ } \varnothing \text{ext.}$	ØL: $31 \pm 1.5 \text{ } \varnothing \text{ext.}$	ØP: $21 \pm 1 \text{ } \varnothing \text{int.}$	W: 181 ± 3	

ATTENTION:

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

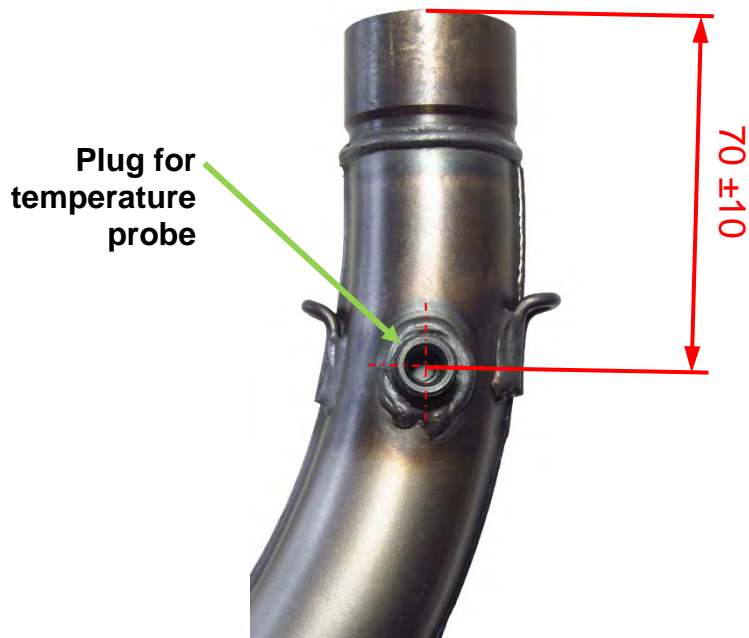
The dimensions “**M**” and “**N**” must be taken on the weld centerline.

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

ALTERNATIVE EXHAUST with embossed logo



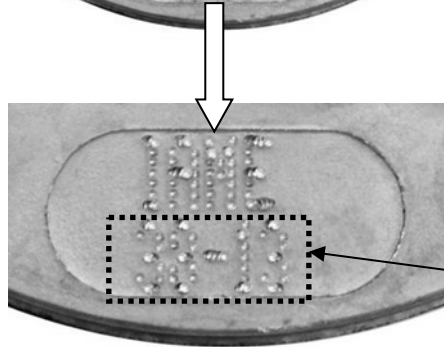
MARKING



IGNITION PHOTO IDENTIFICATION MARKING

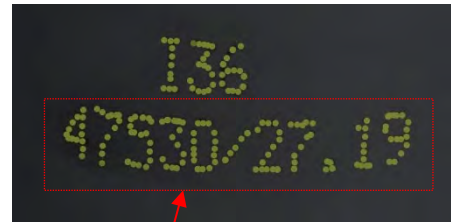
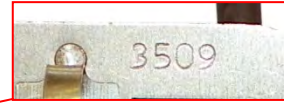
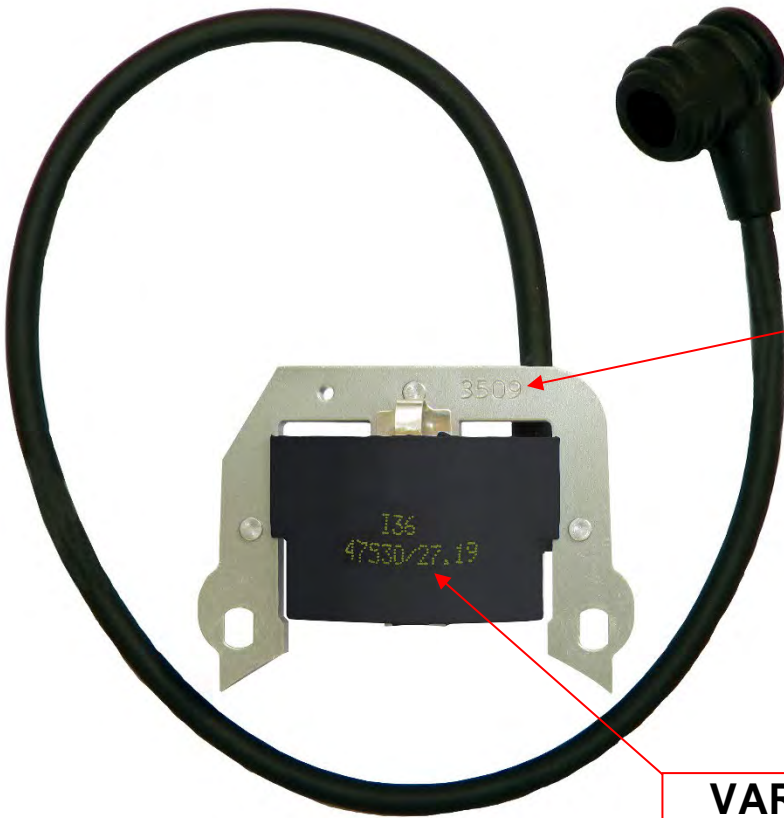


Min Weight
362 g



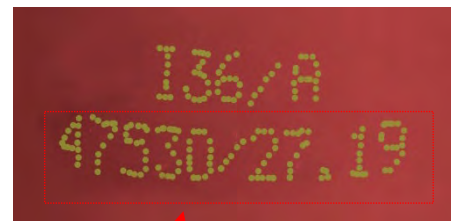
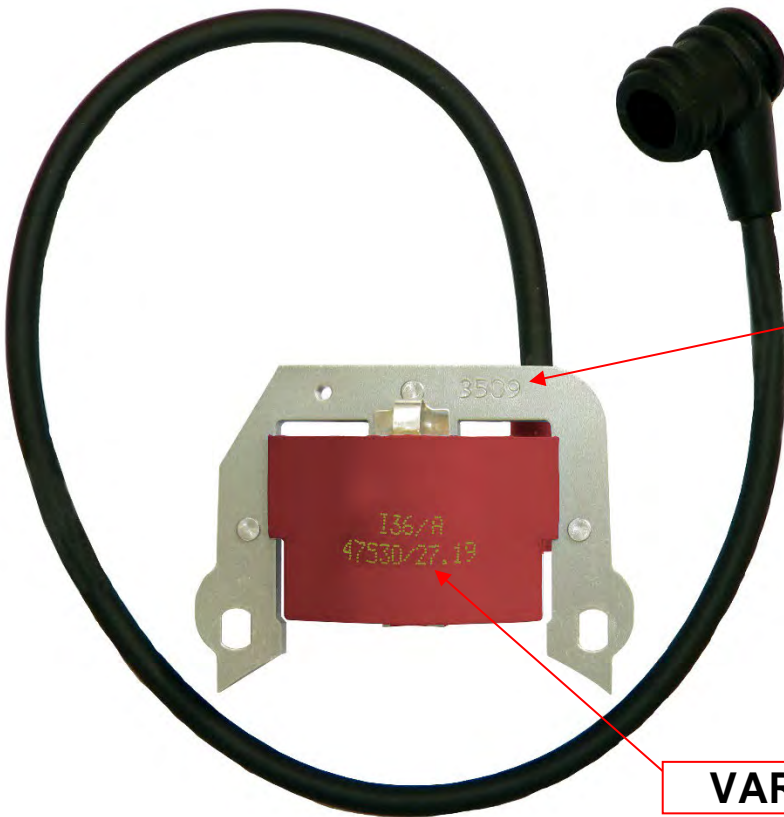
VARIABLE

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



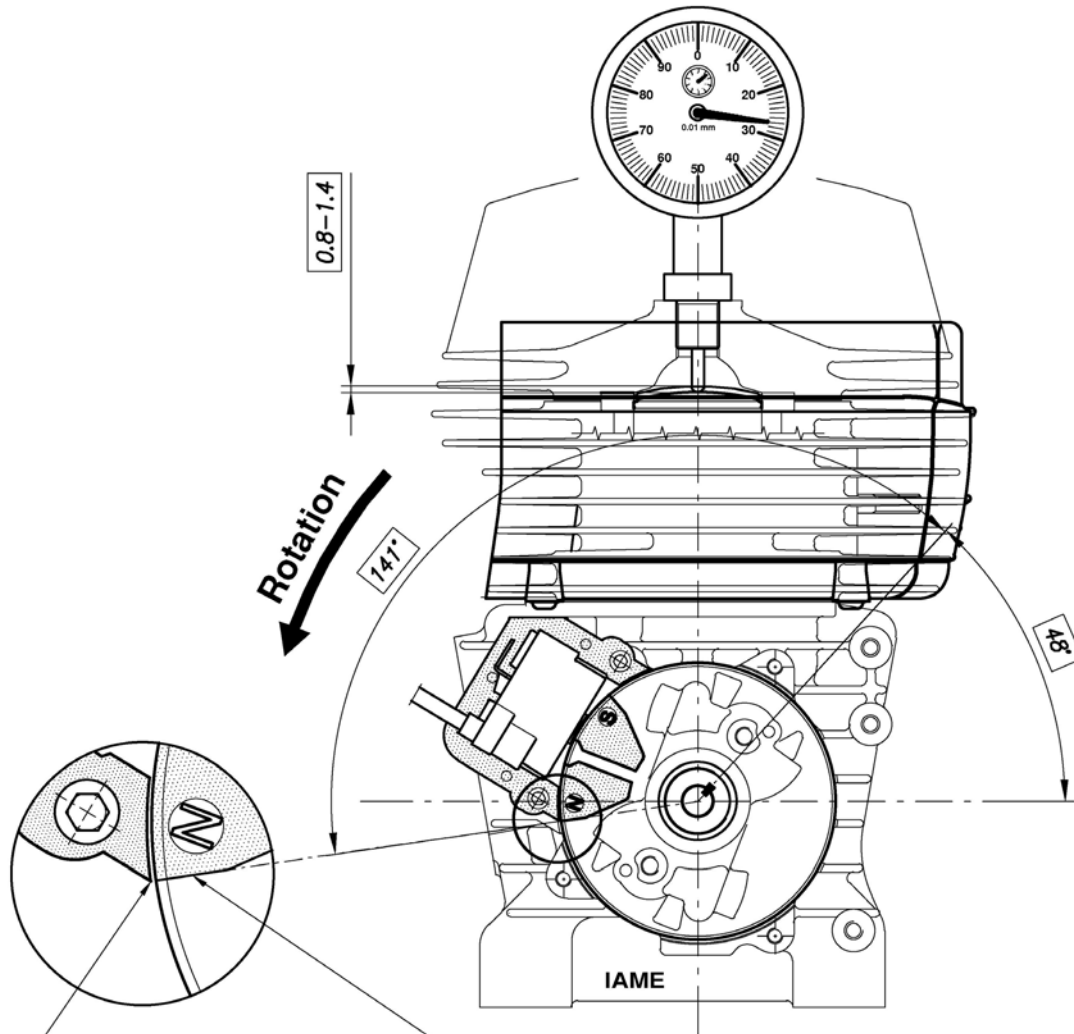
VARIABLE

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



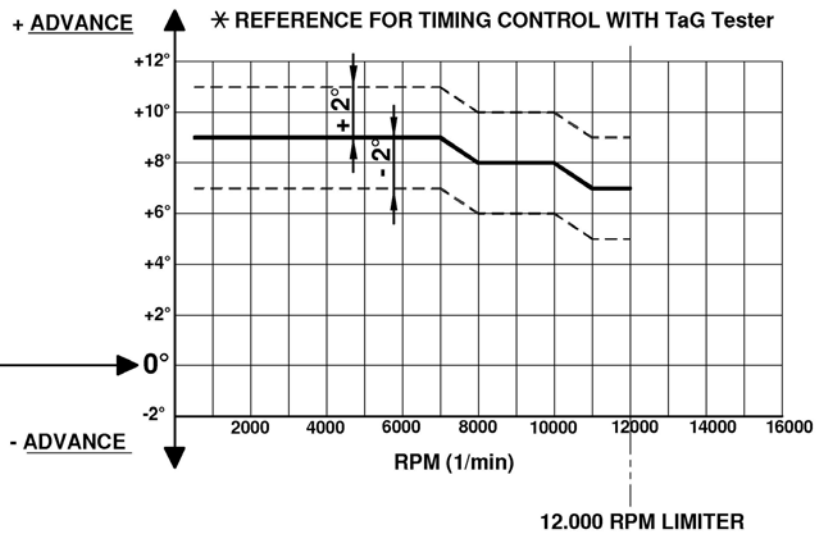
VARIABLE

SCHEME FOR ADVANCE CONTROL – CADETTI CLASS

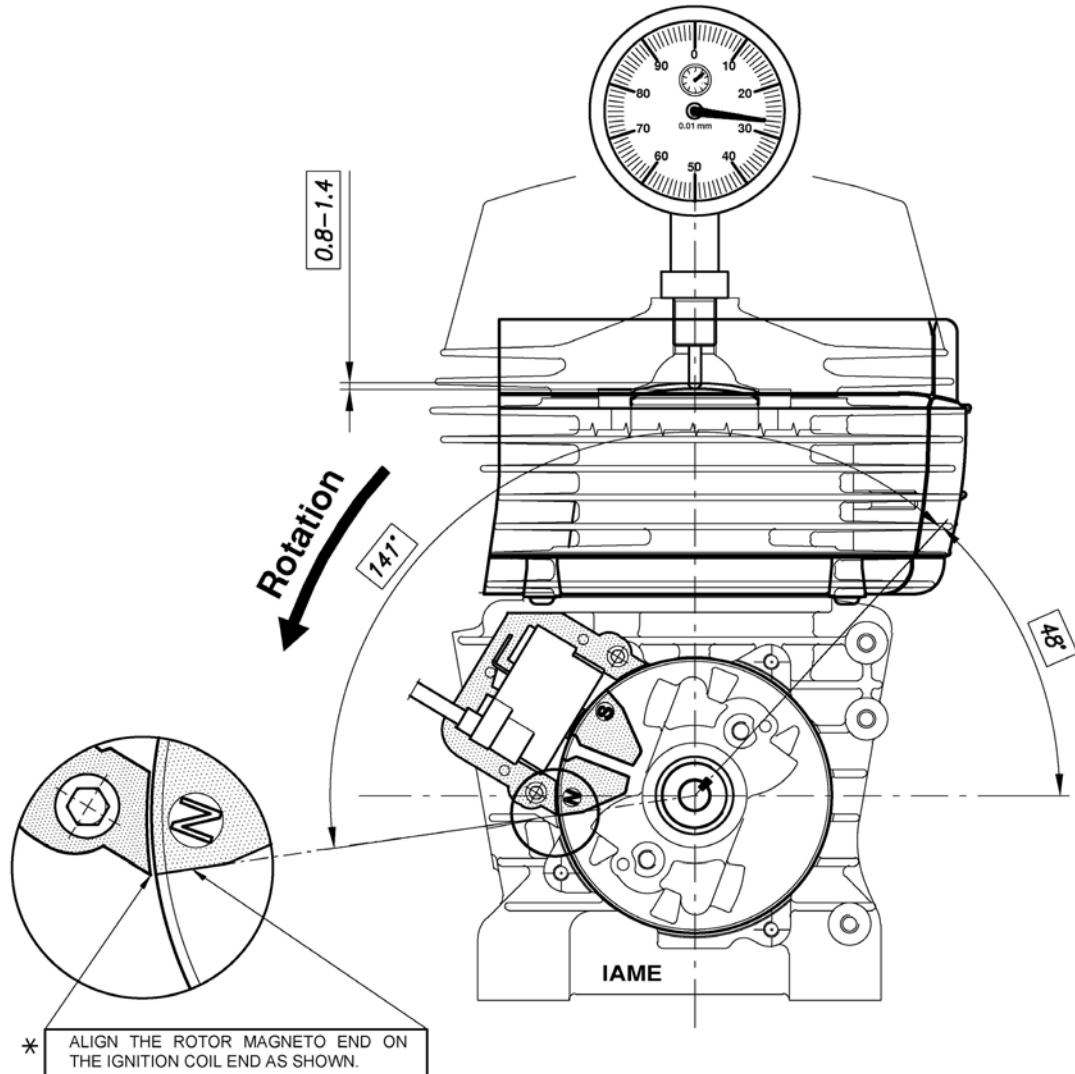


* ALIGN THE ROTOR MAGNETO END ON THE IGNITION COIL END AS SHOWN.

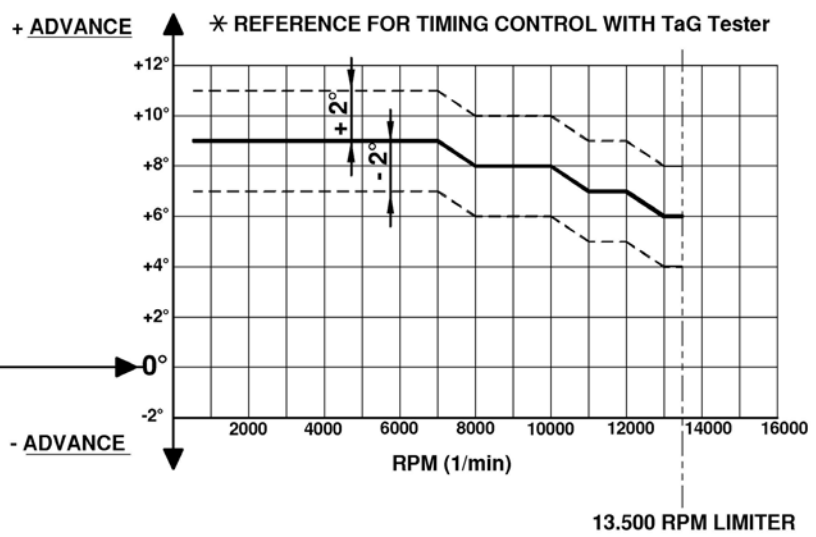
ADVANCE CURVE GRAPHS



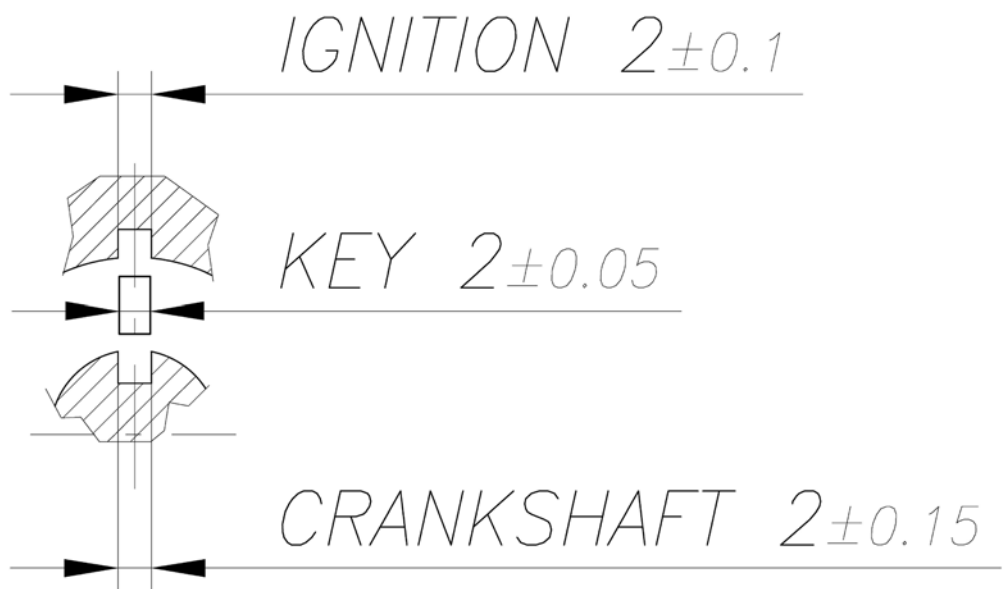
SCHEME FOR ADVANCE CONTROL – MINI CLASS



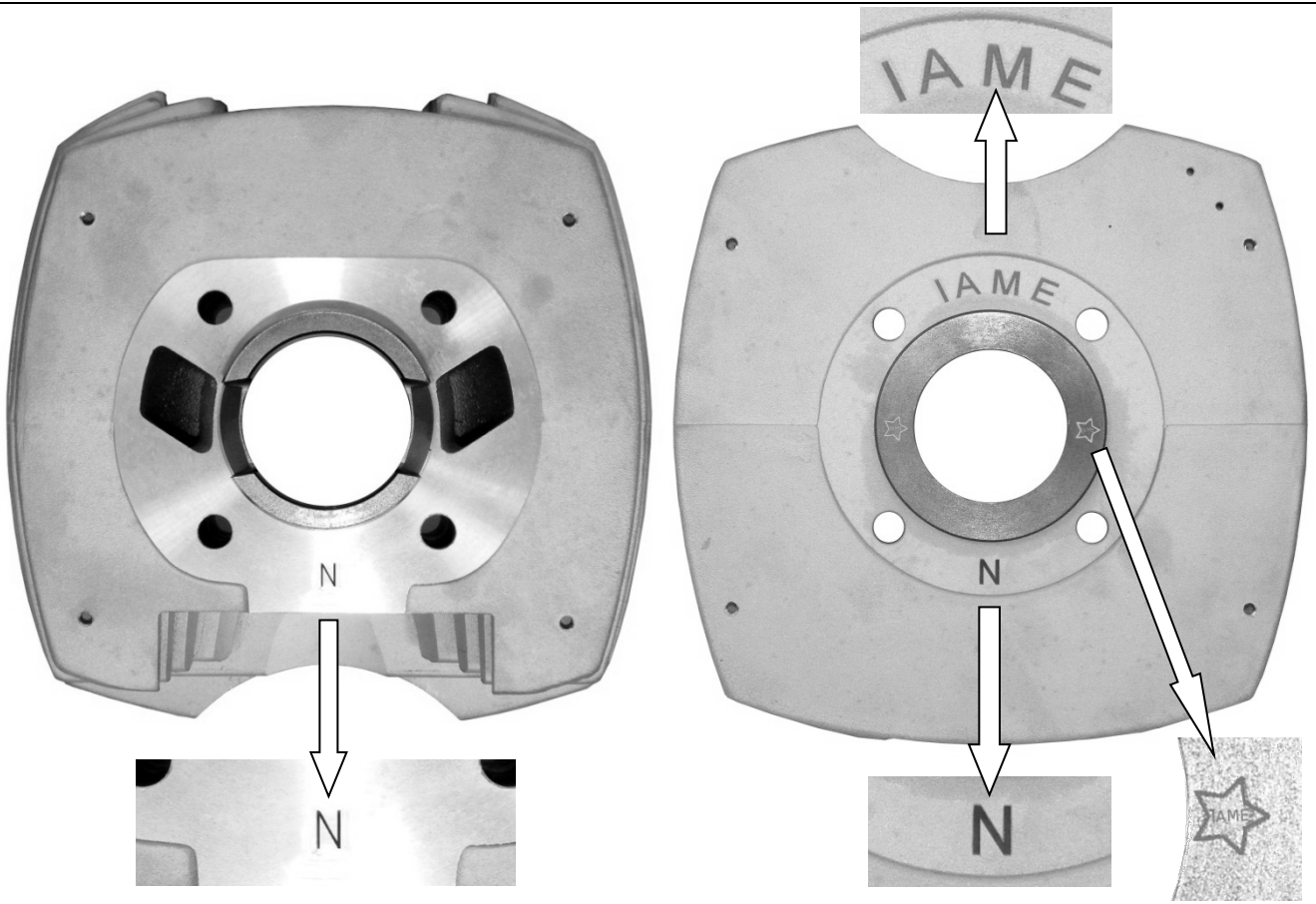
ADVANCE CURVE GRAPHS



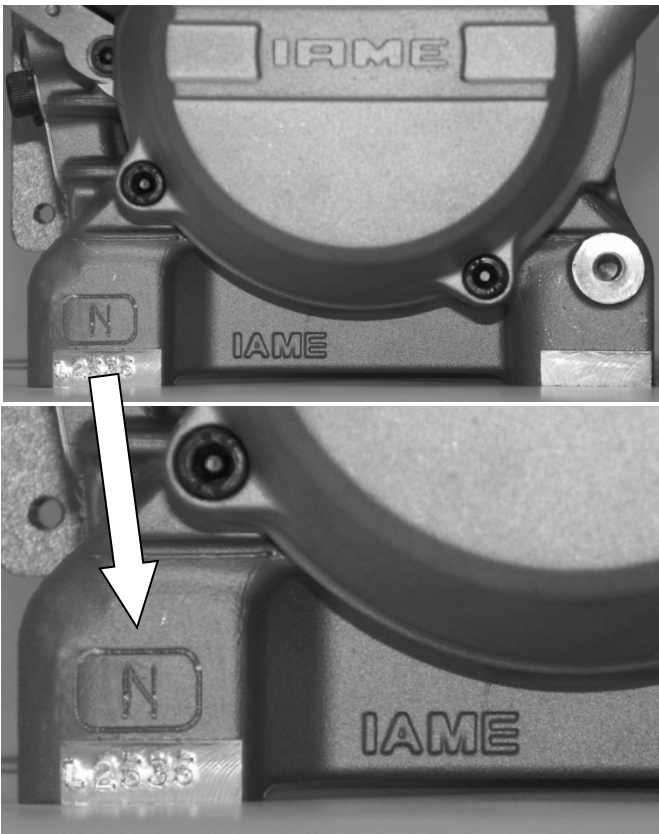
CHECKING DIMENSIONS OF IGNITION-CRANKSHAFT CONNECTION



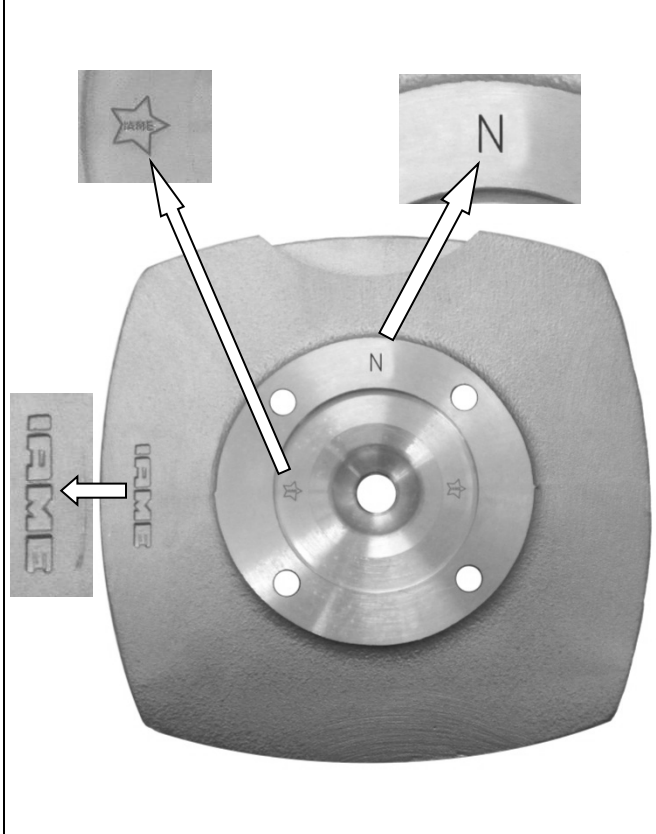
CYLINDER IDENTIFICATION MARKING



CRANKCASE IDENTIFICATION MARKING



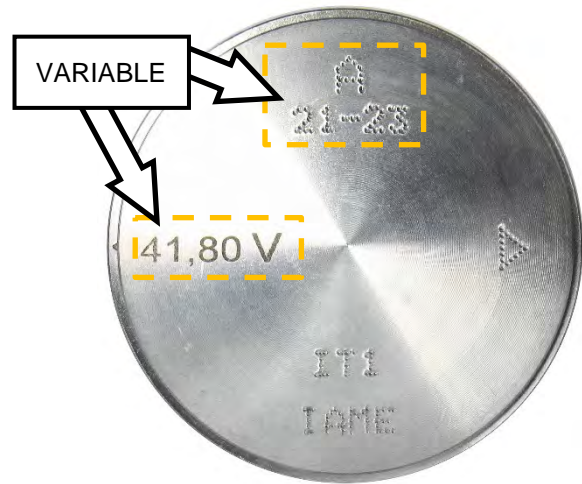
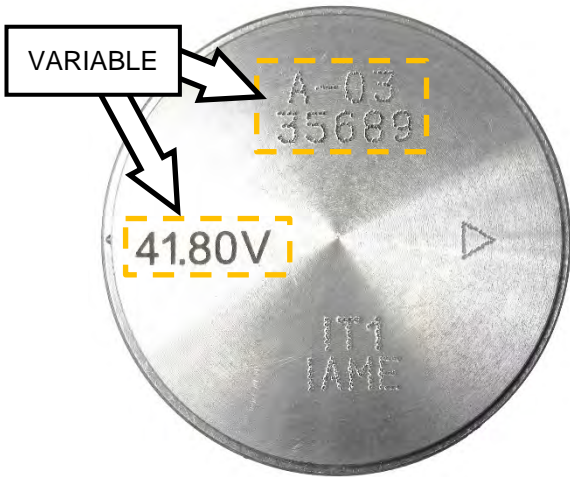
HEAD IDENTIFICATION MARKING



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

CURRENT

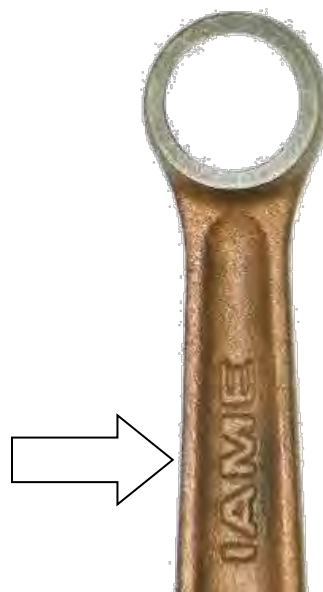
ALTERNATIVE



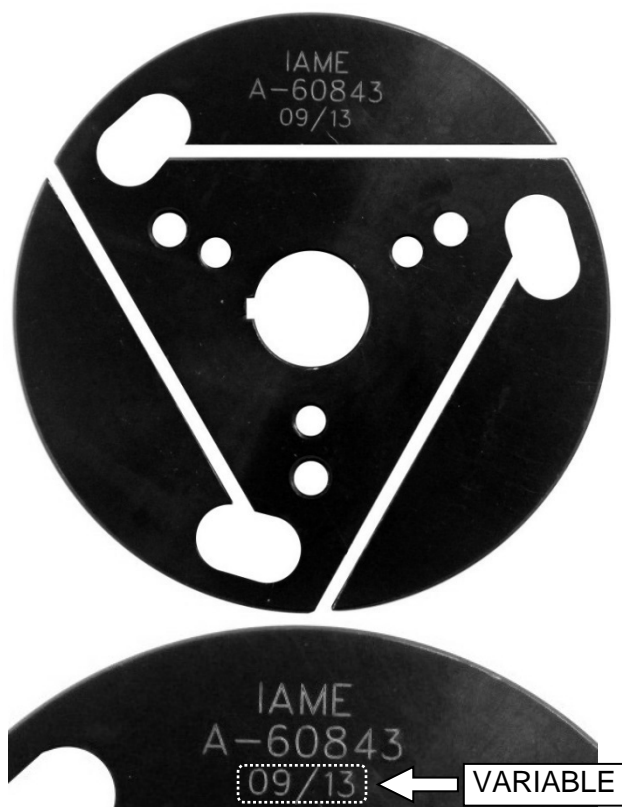
EXHAUST without embossed logo



CONROD IDENTIFICATION MARKINGS



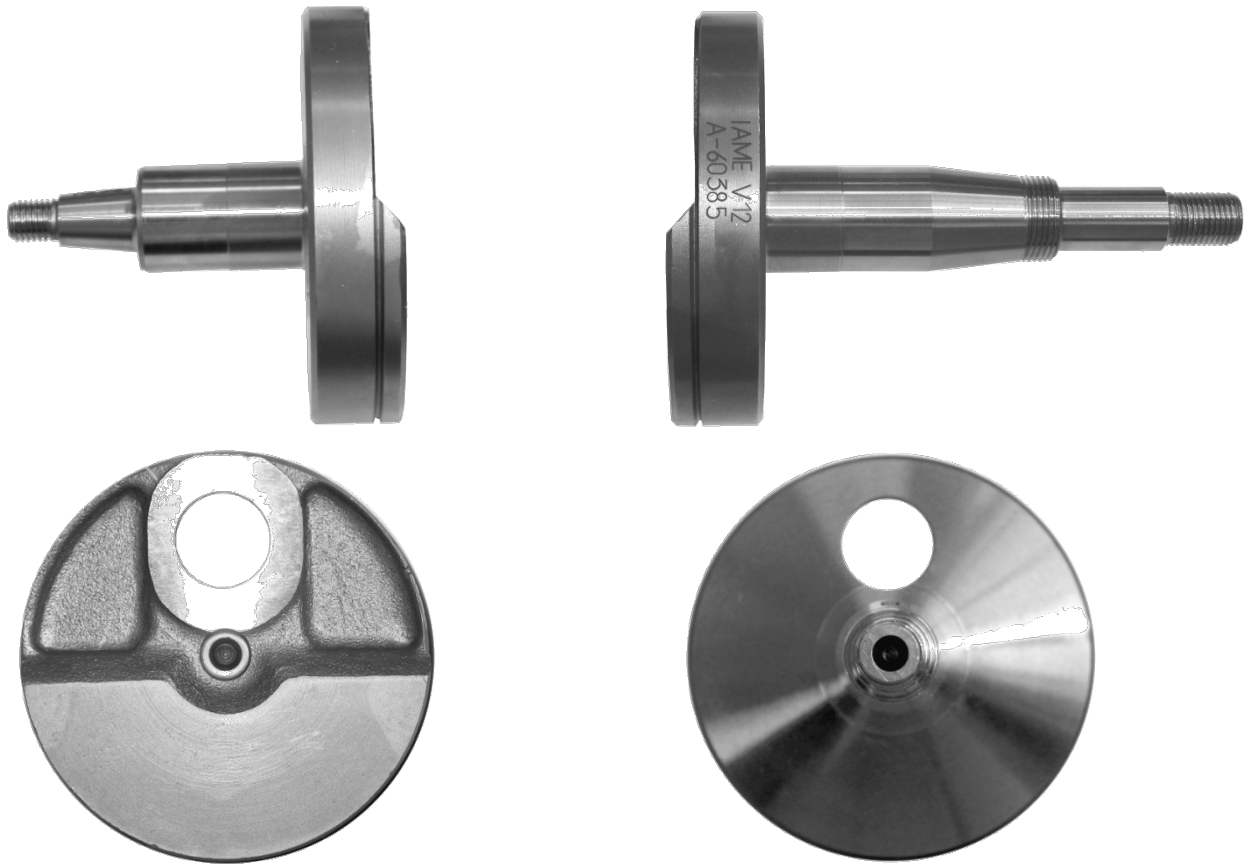
CLUTCH HUB IDENTIFICATION MARKING



CLUTCH DRUM IDENTIFICATION MARKING

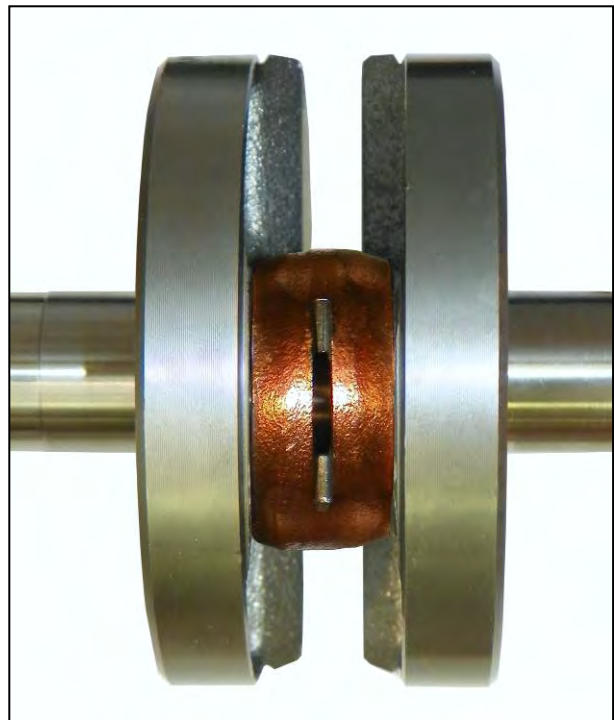


CRANKSHAFT PHOTOS



CRANKSHAFT IDENTIFICATION MARKING

COMPLETE CRANKSHAFT DETAIL



BALL BEARING TYPES IDENTIFICATION MARKING



PHOTO IDENTIFICATION OF CONROD – TYPES ALTERNATIVE

TYPE 1



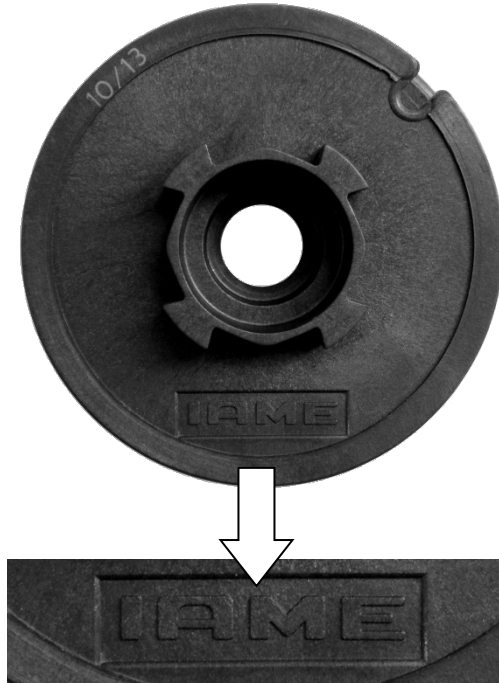
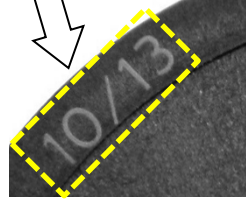
TYPE 2



PHOTO IDENTIFICATION OF PULLEY – TYPES ALTERNATIVE

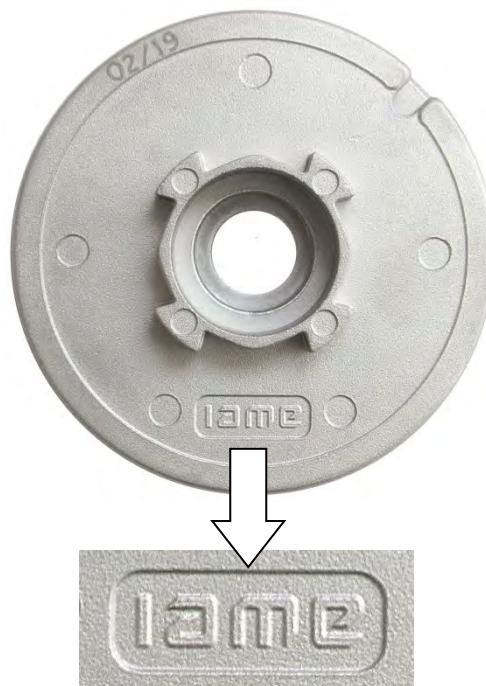
TYPE 1 – PLASTIC

VARIABLE



TYPE 2 - ALUMINUM

VARIABLE



ALTERNATIVE IGNITION ROTOR

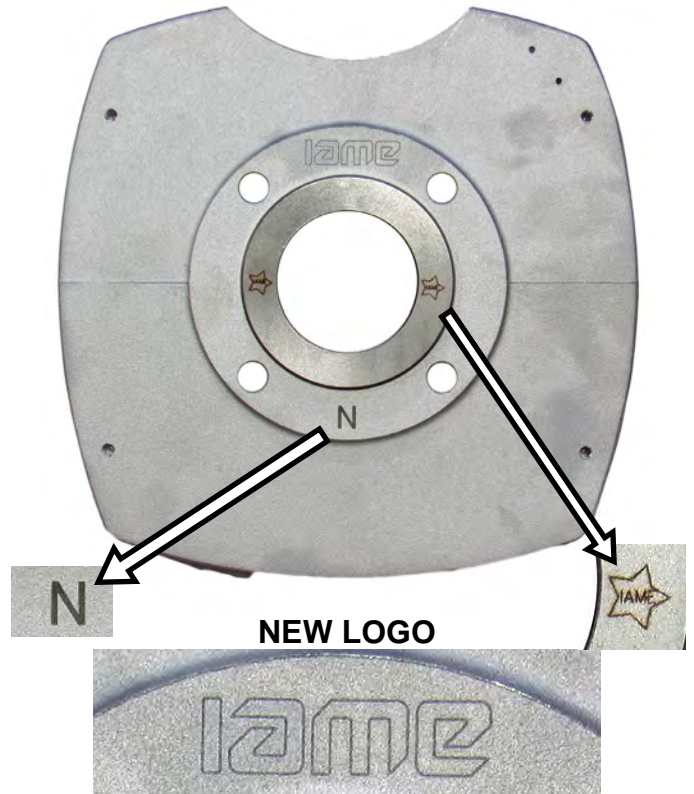
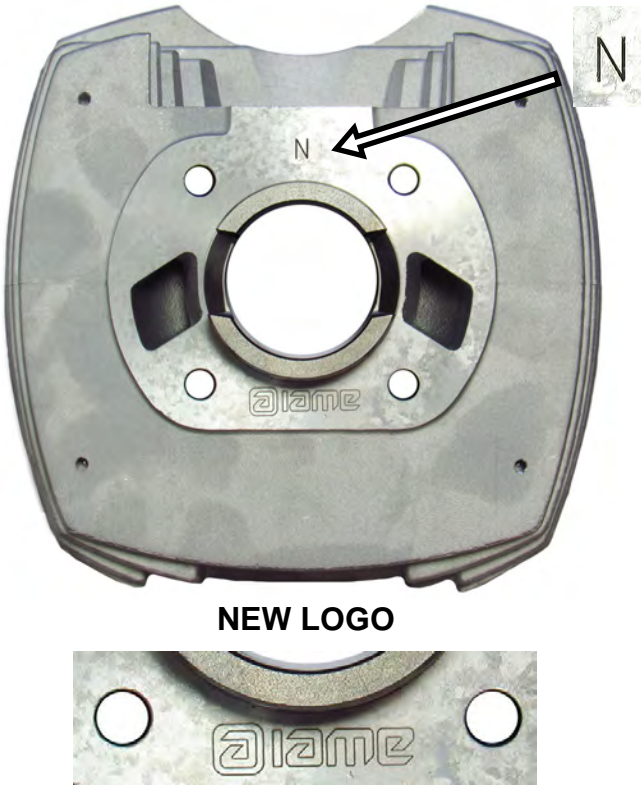
TYPE 1

TYPE 2



PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"

CYLINDER



CYLINDER HEAD



INLET FILTER



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"

I a m e

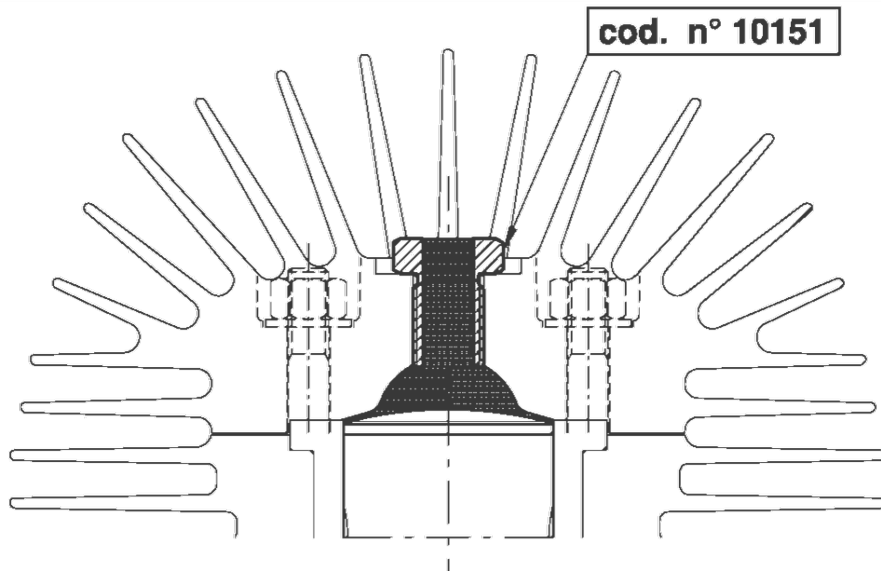
or

ⓐ I a m e

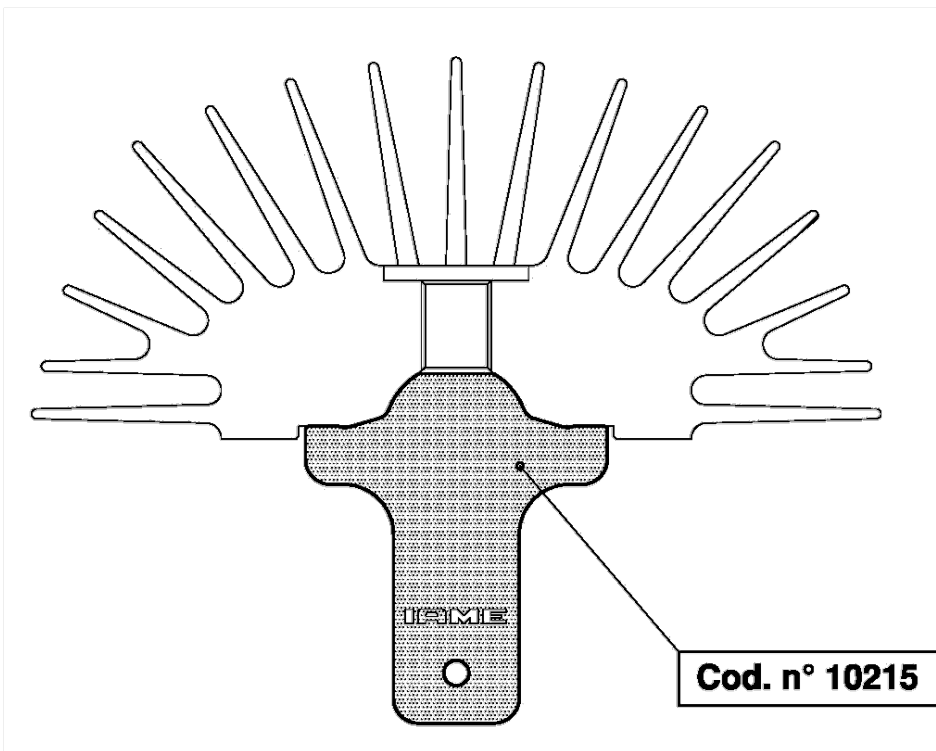
or

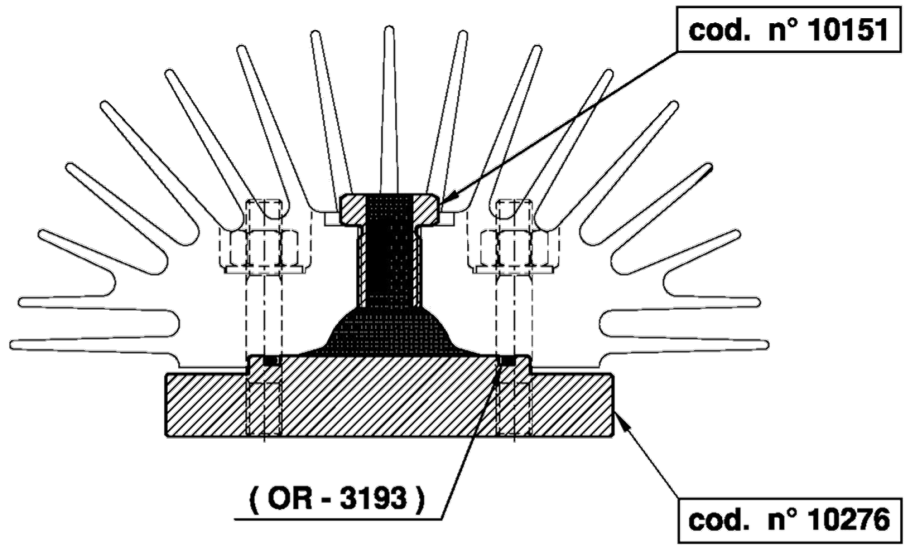
ⓐ

CHECKING TOOLS



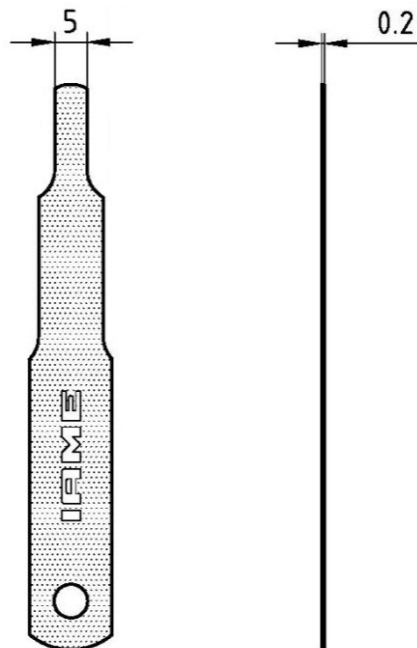
WITH PISTON AT T.D.C. + INSERT

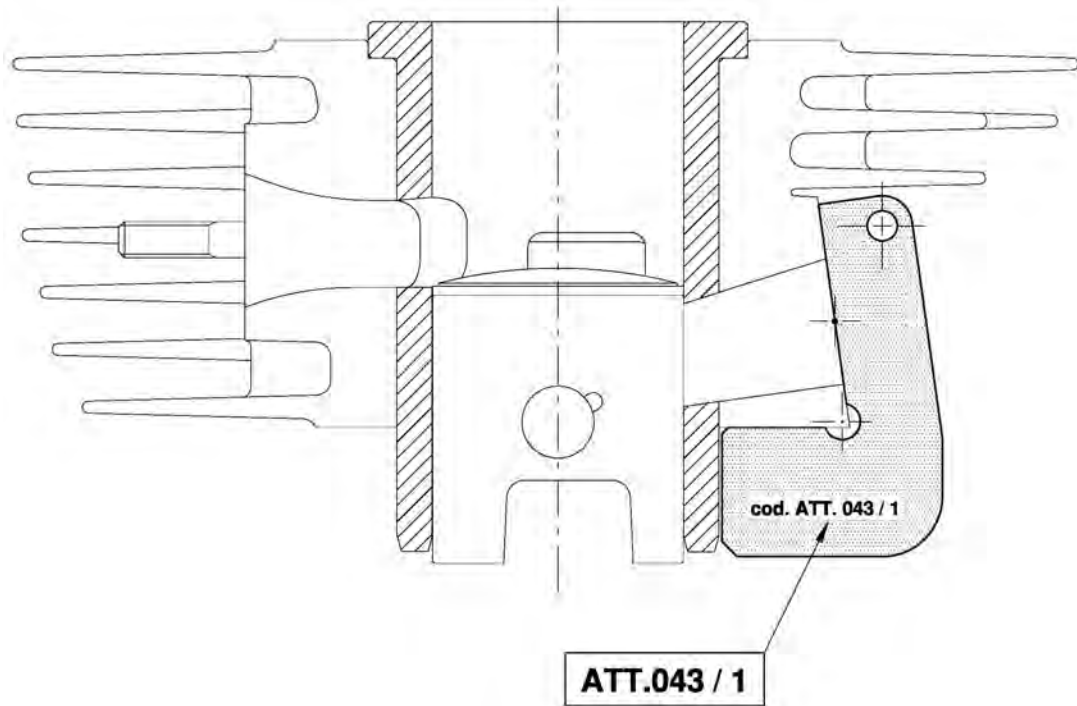




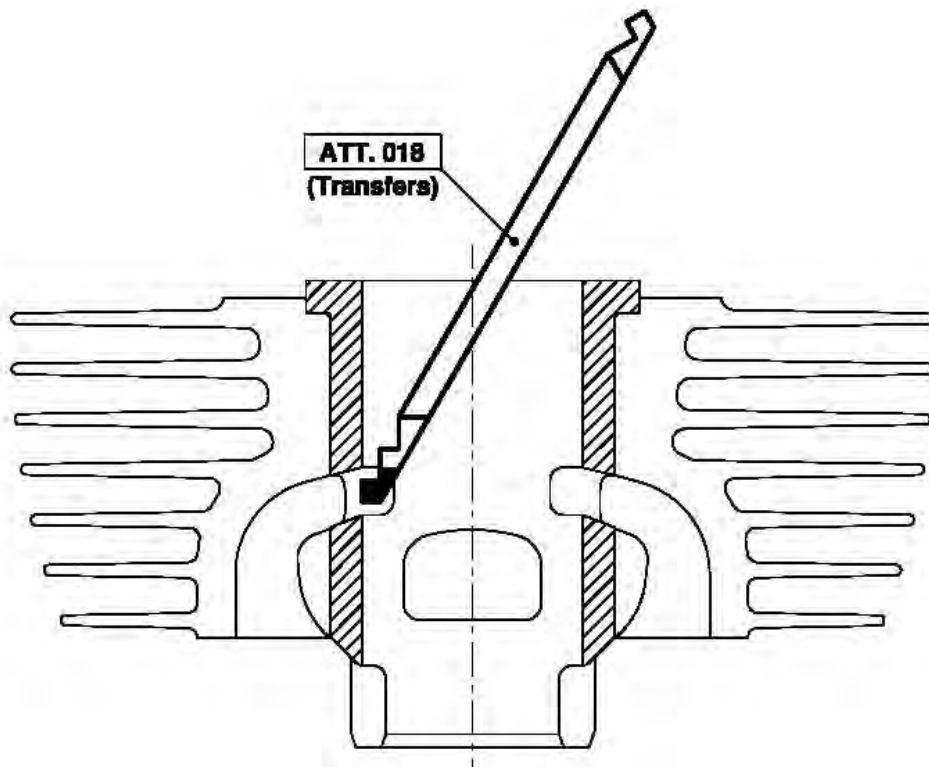
WITH VOLUMETER + INSERT

TOOL IAME Cod. 10194

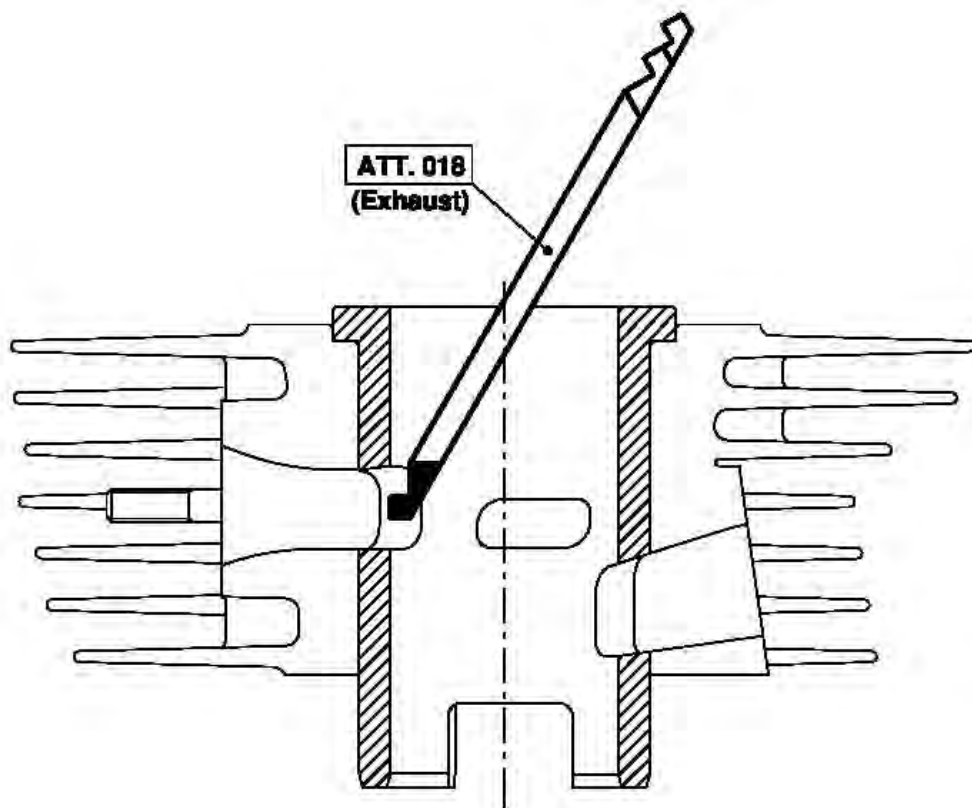
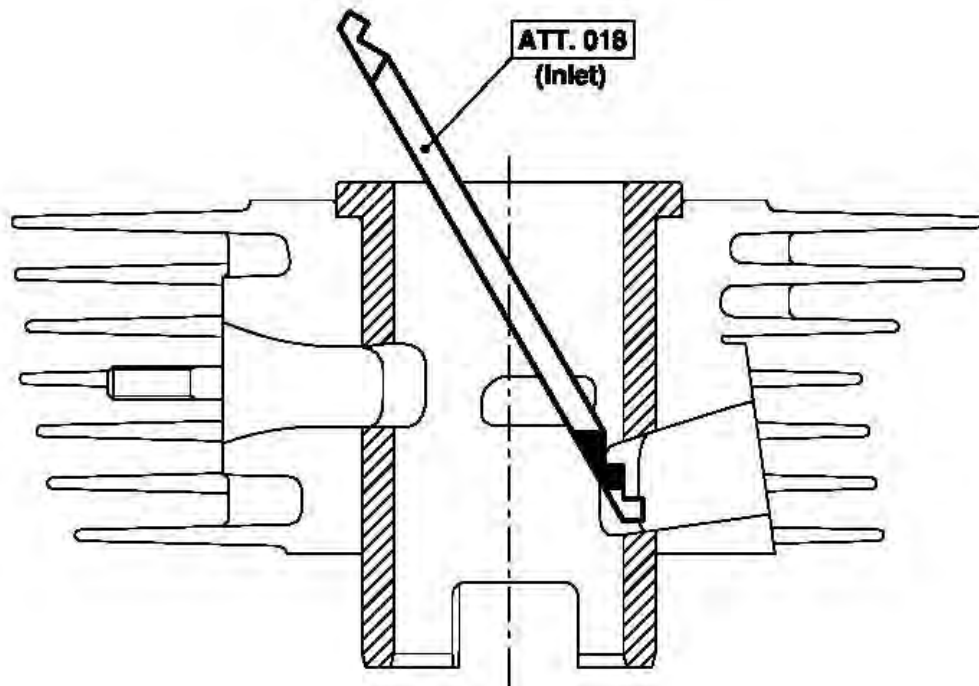




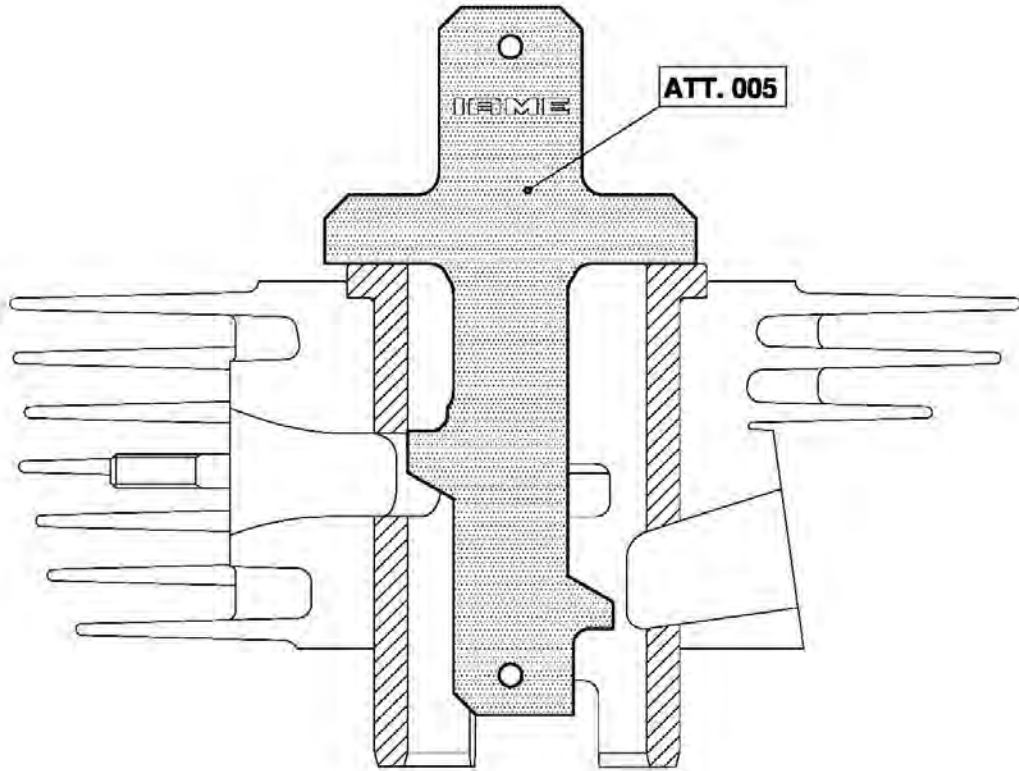
CHECK THAT THE GAUGE DOESN'T TOUCH THE LINER



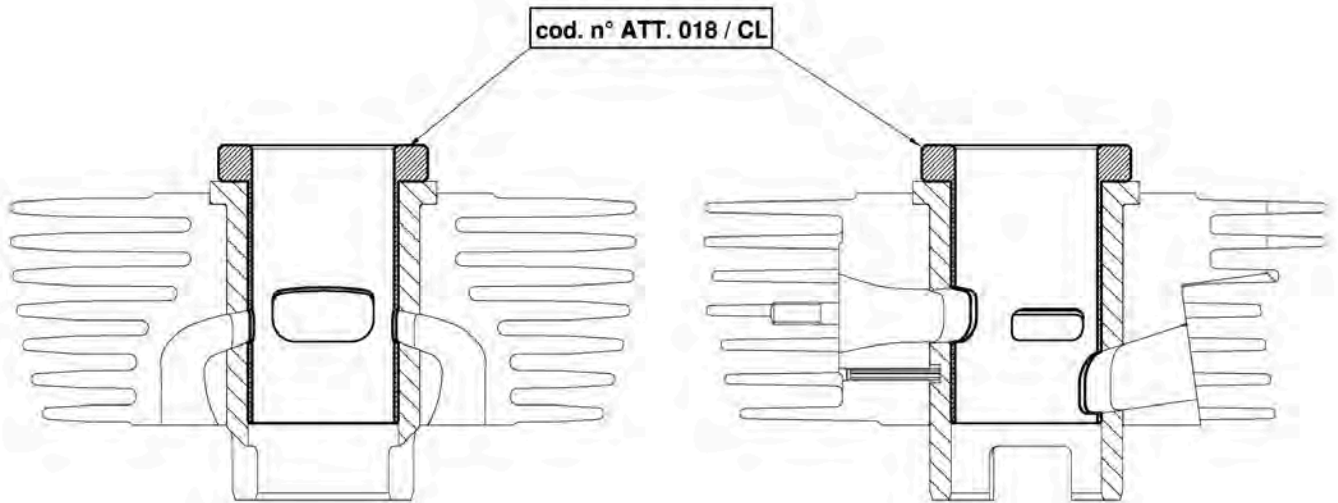
CHECK THAT THE TOOL DOES NOT ENTER INTO THE TRANSFERS DUCT.



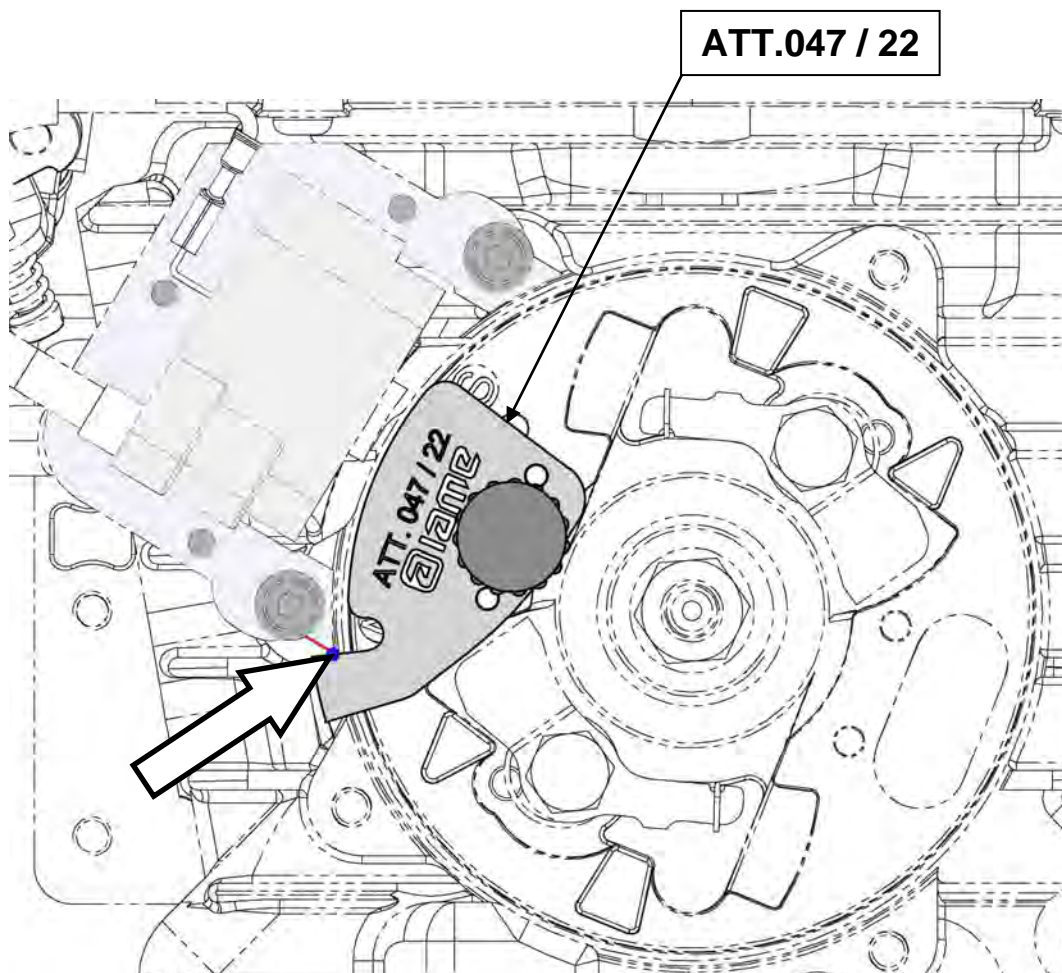
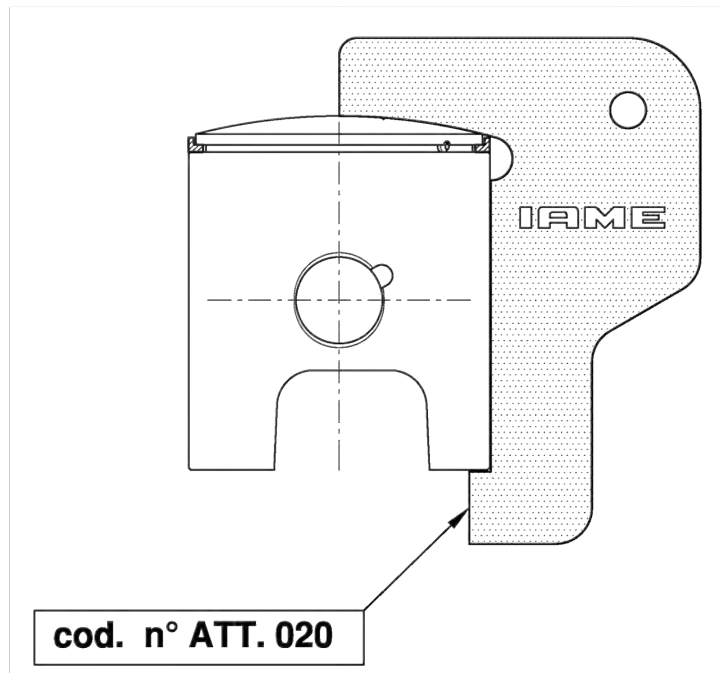
CHECK THAT THE TOOL DOES NOT ENTER INTO THE INLET AND EXHAUST PORTS.



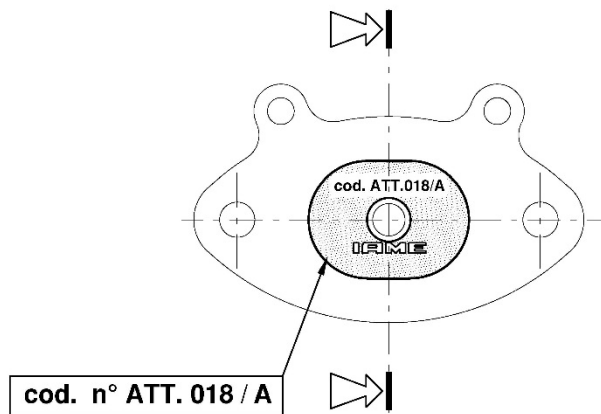
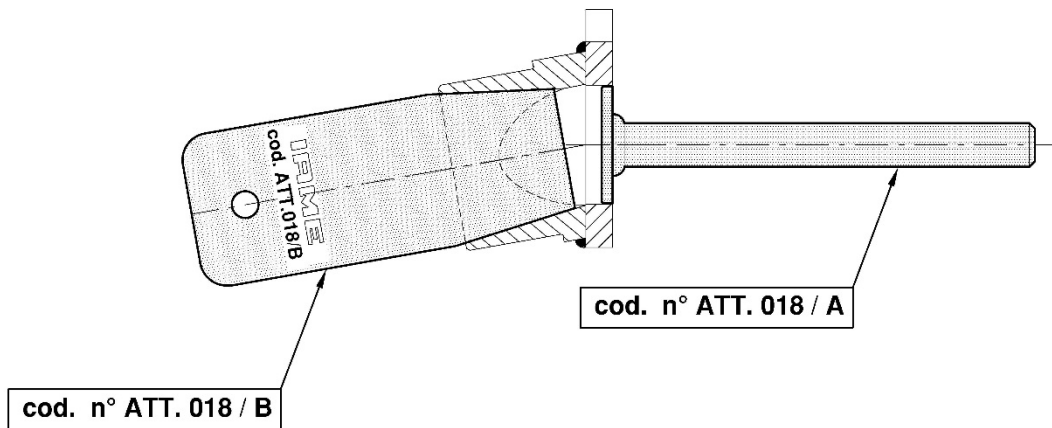
CHECK THAT THE TOOL DOES NOT ENTER INTO THE EXHAUST AND INLET PORTS



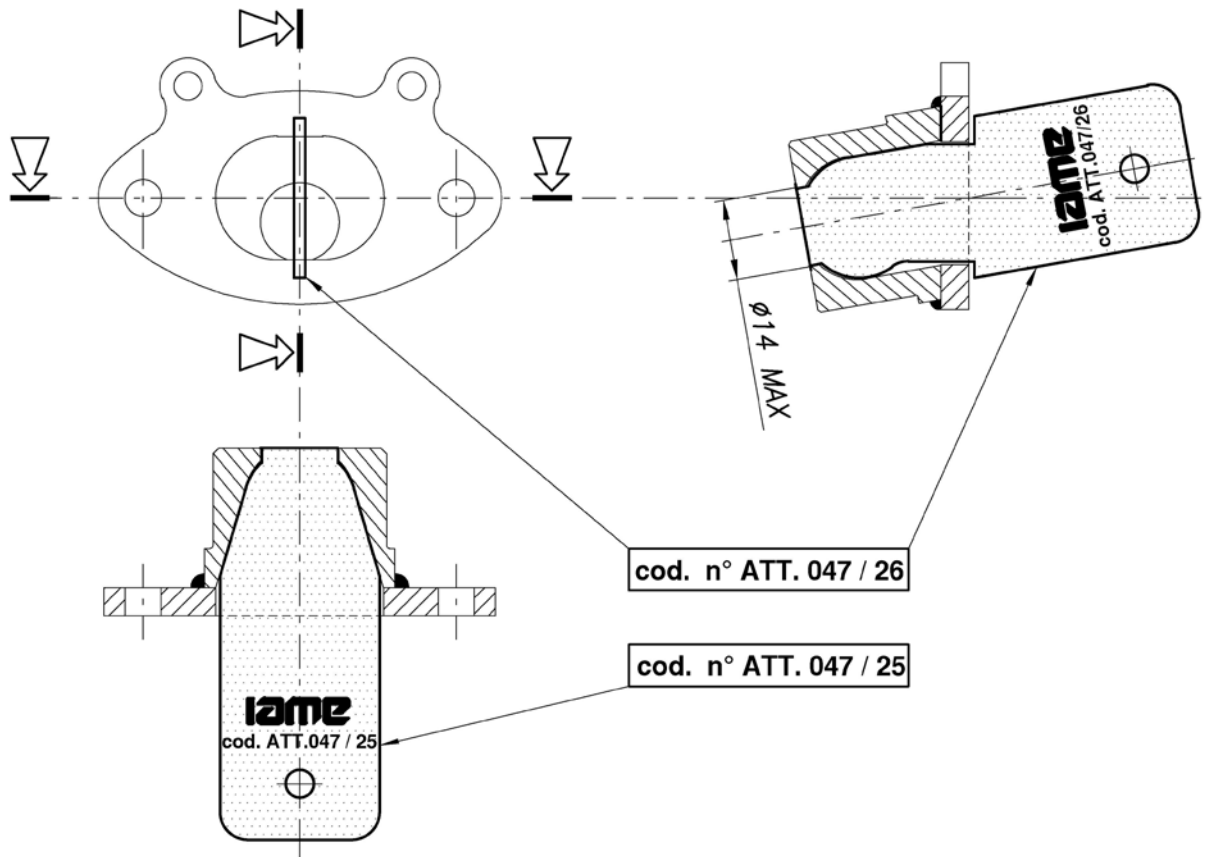
VISUAL CHECK OF PORTS



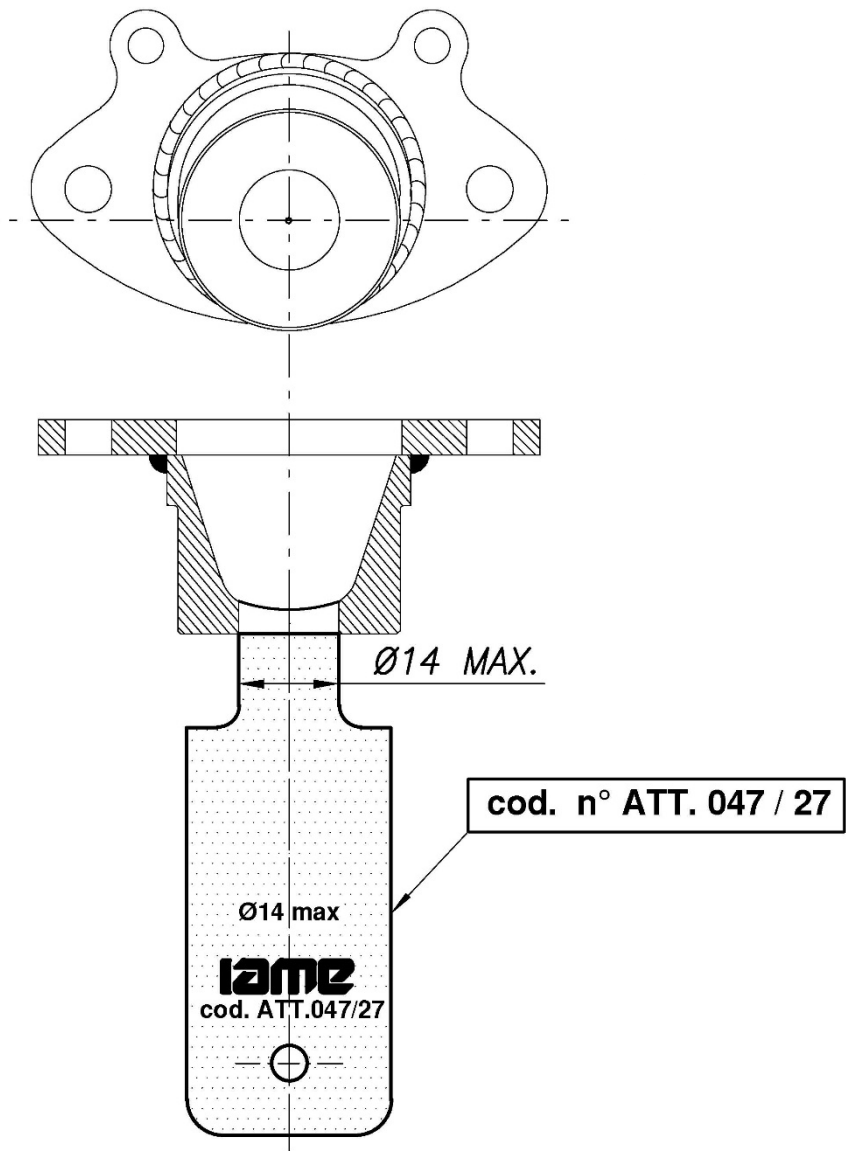
CHECK THE CORRECT ALIGNMENT OF THE IGNITION ROTOR



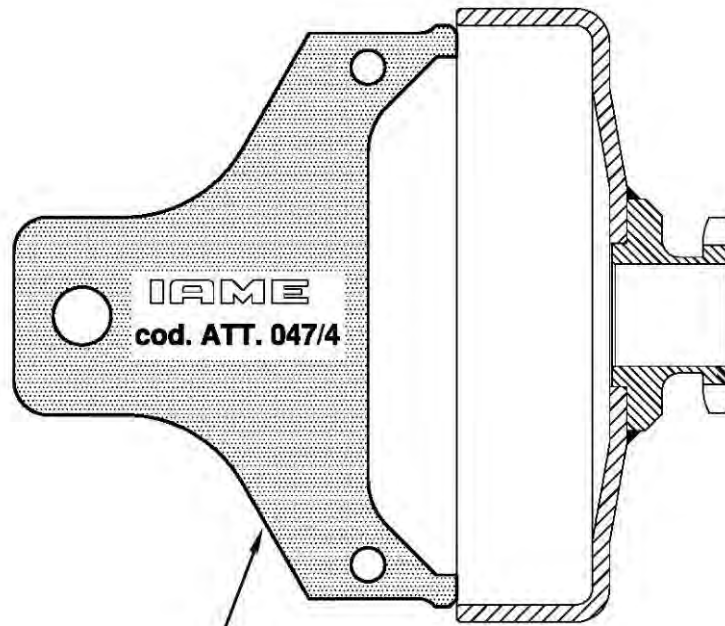
**CHECK THAT THE TOOL MUST BE THE SAME SHAPE OF THE EXHAUST
MANIFOLD.
(MINI CLASS)**



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

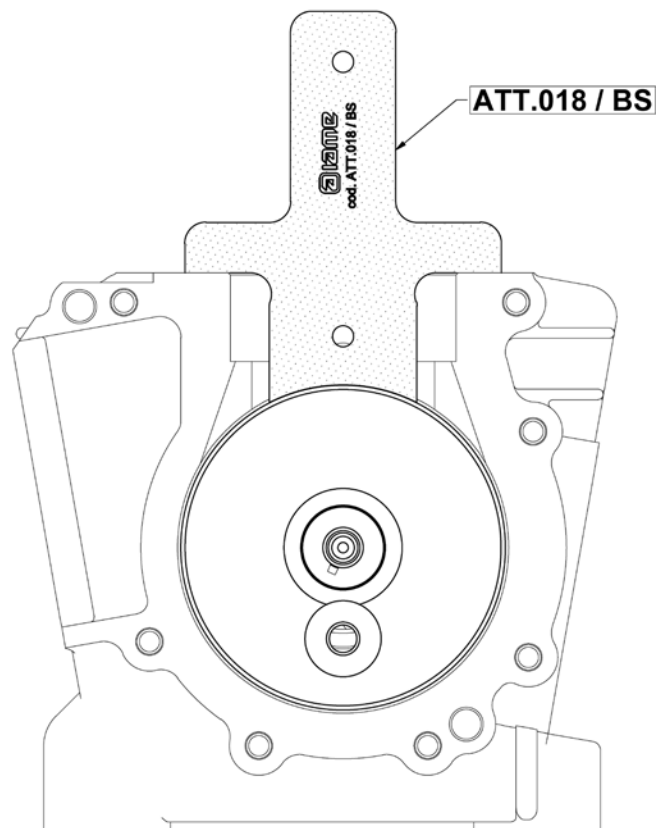


**CHECK THAT THE TOOL DOES NOT ENTER INTO THE EXHAUST
RESTRICTOR.
(CADETTI CLASS)**

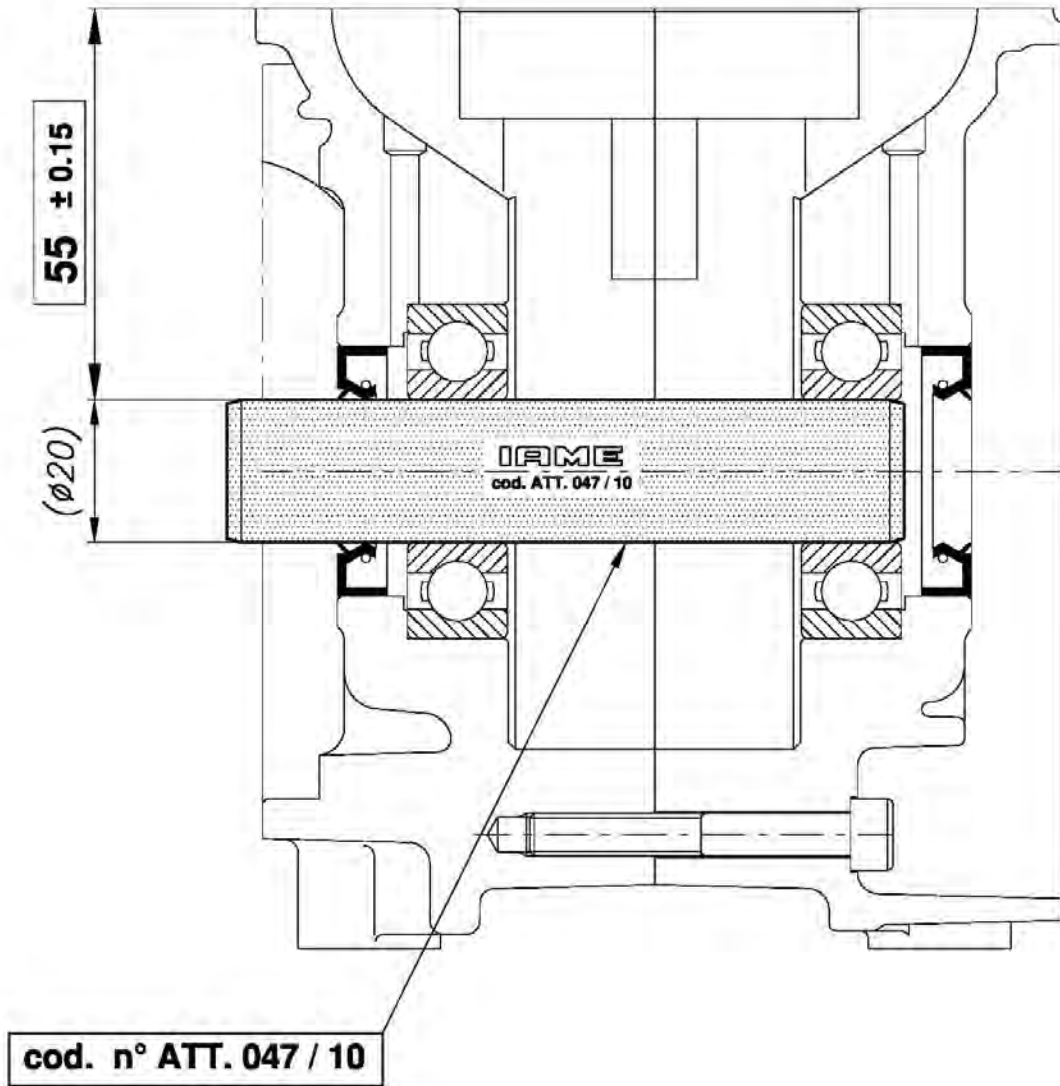


cod. n° ATT. 047 / 4

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

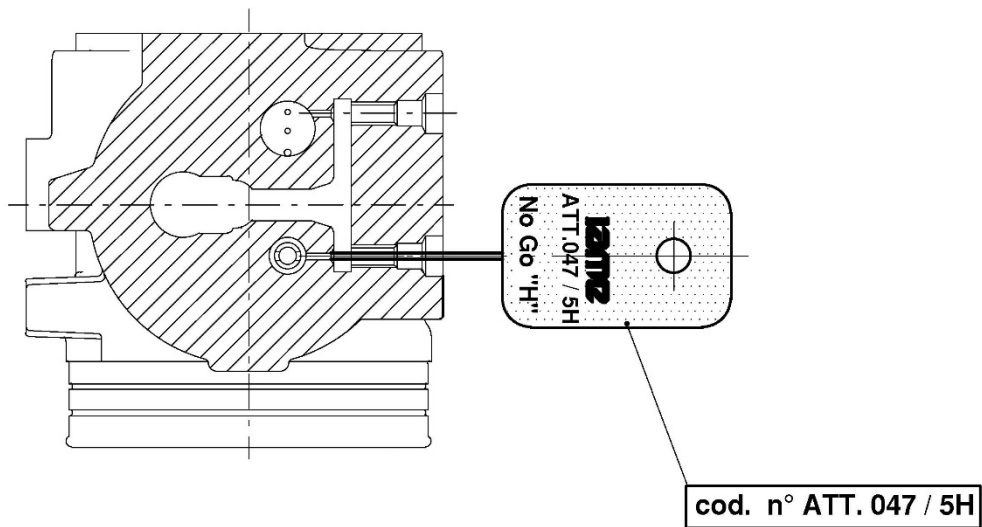
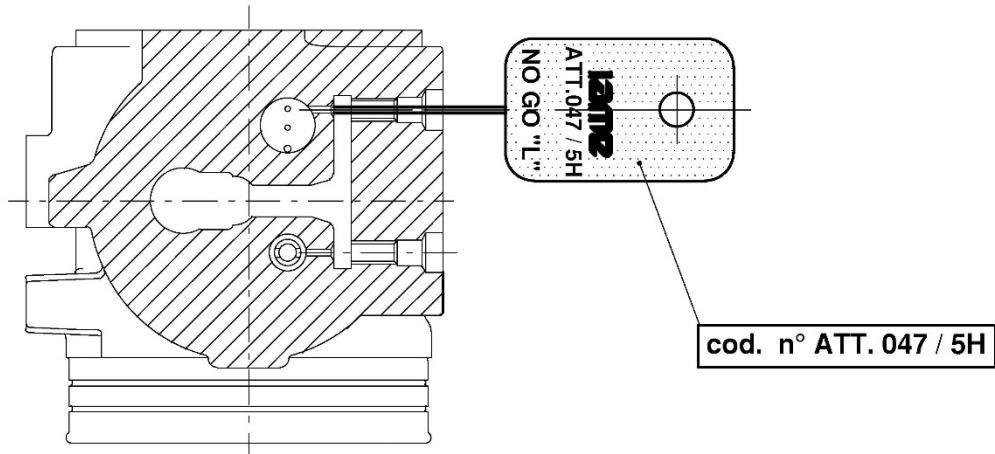


VISUAL CHECKING OF CRANKCASE PLANE HEIGHT

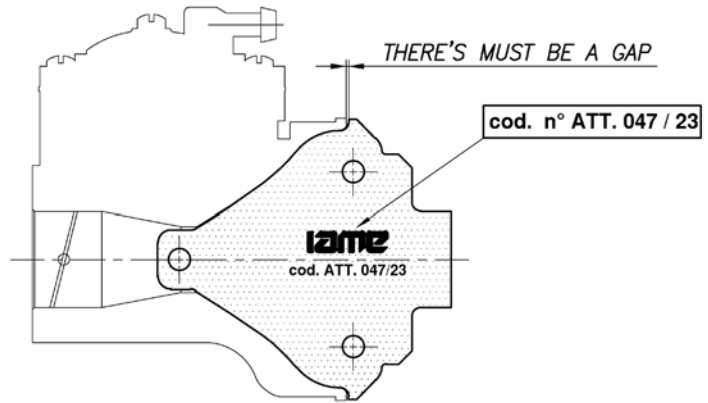


CHECKING DIMENSIONS OF CRANKCASE PLANE HEIGHT

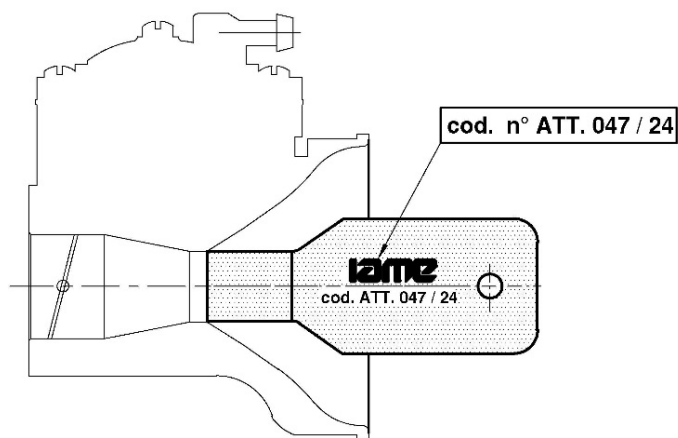
CHECKING TOOLS FOR CARBURETTOR TILLOTSON HW-47A



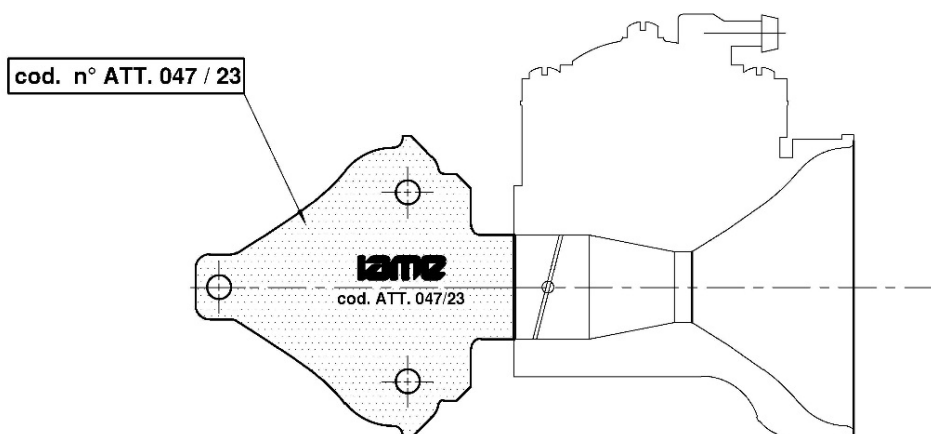
CHECK THAT THE SPIKES DOES NOT ENTER INTO THE HOLES.



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

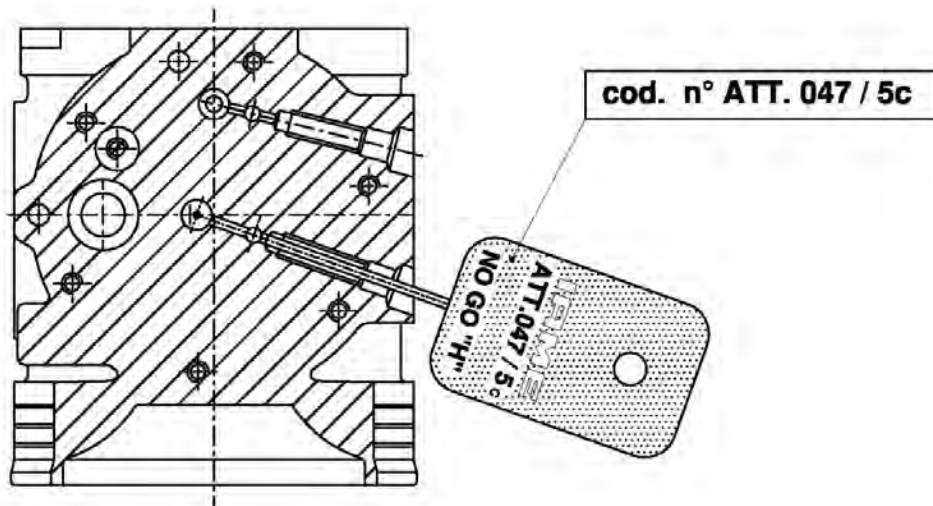
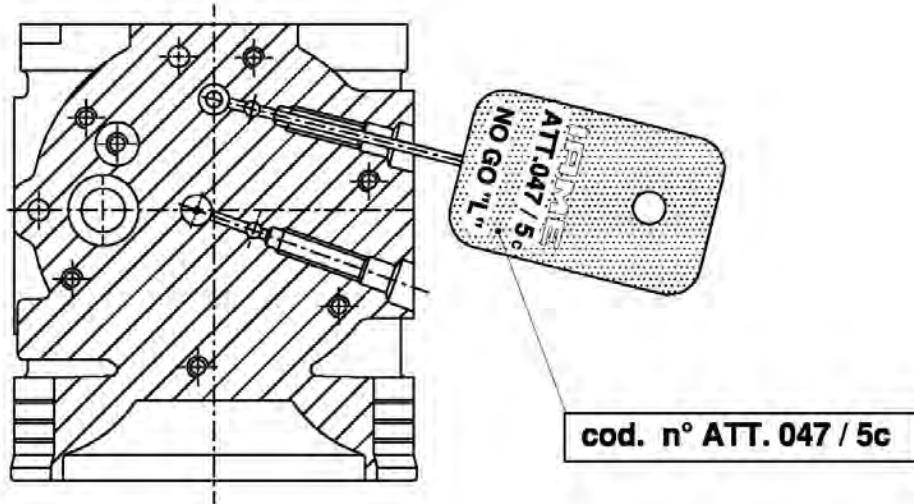


CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT INLET OF CARBURETTOR.

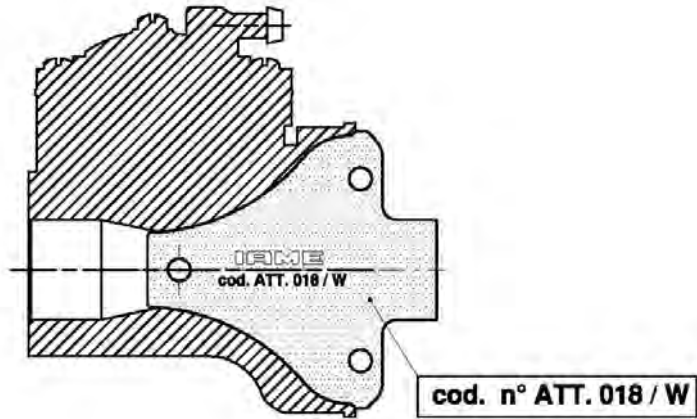


CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT INLET OF CARBURETTOR.

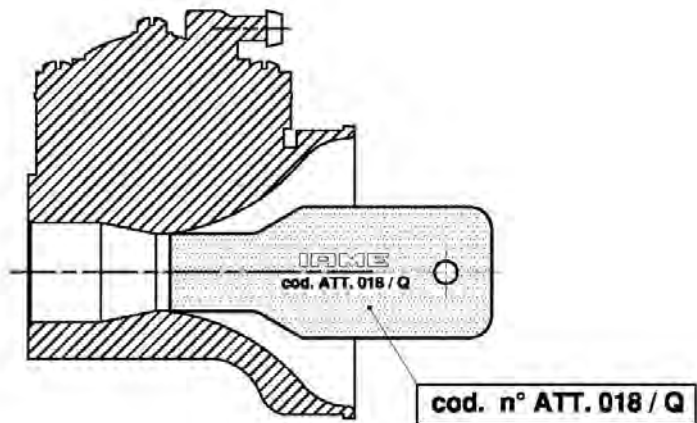
CHECKING TOOLS FOR CARBURETTOR TILLOTSON HW-34B



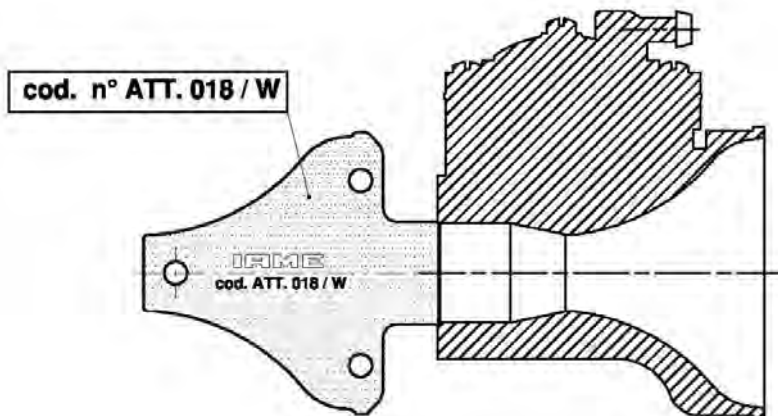
CHECK THAT THE SPIKES DOES NOT ENTER INTO THE HOLES.



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

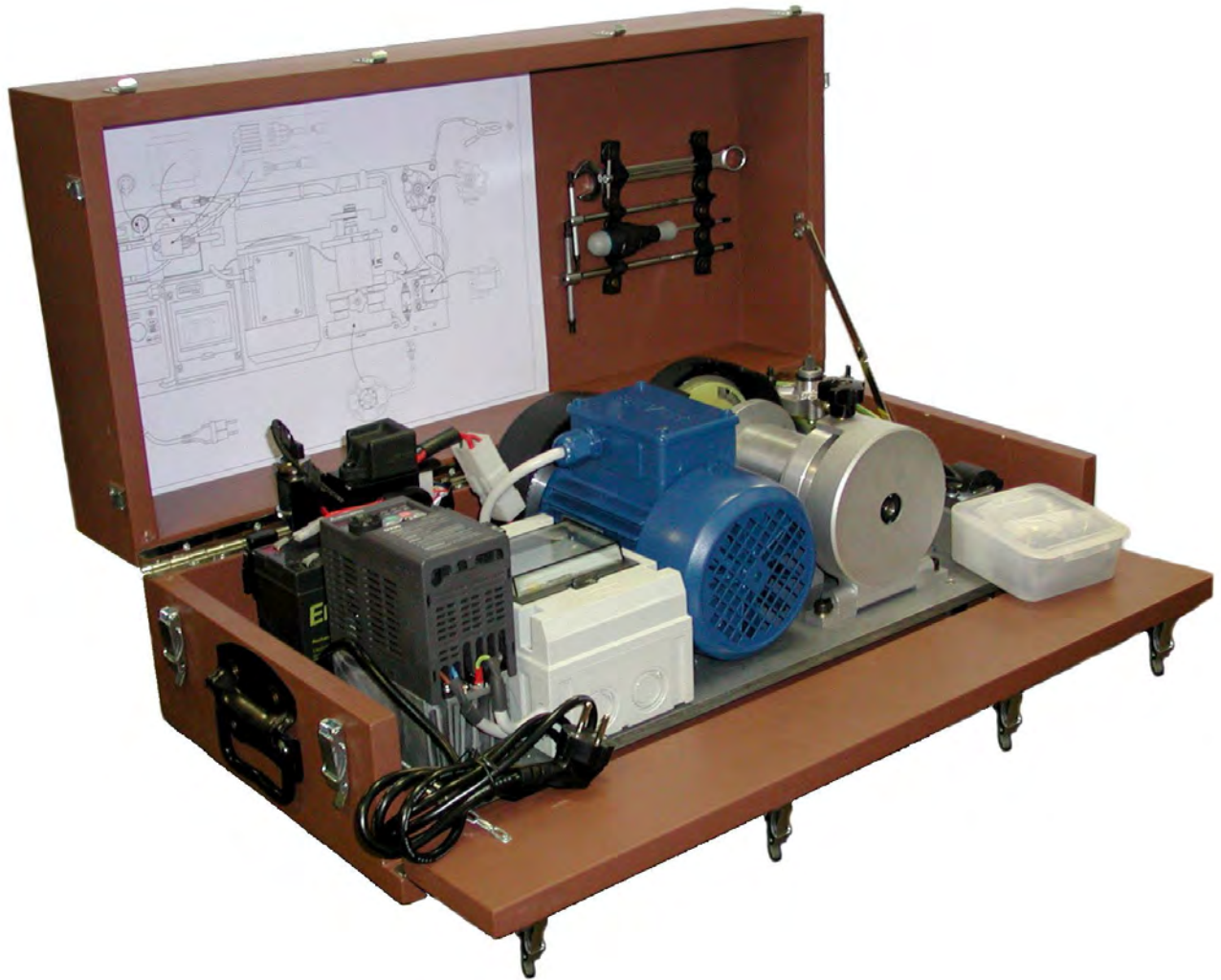


CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT INLET OF CARBURETTOR.



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

IGNITION BENCH TESTER





CARBURETTOR
Tillotson HW-47A



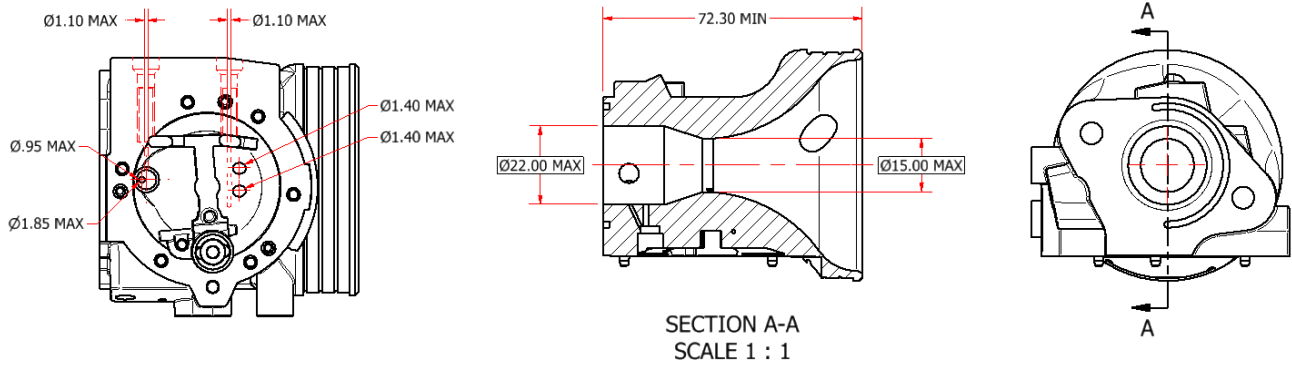
PHOTO OF ADJUSTING SIDE



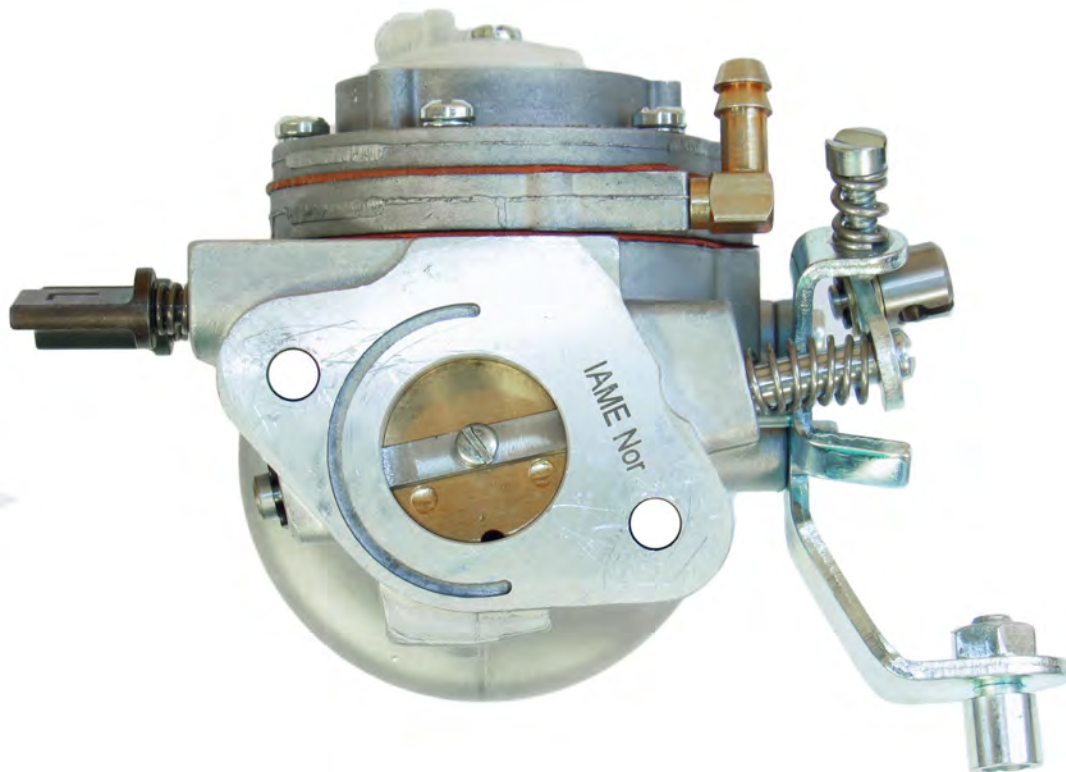
PHOTO OF INLET SIDE

Manufacturer	TILLOTSON LTD.
Make	TILLOTSON
Model	HW-47A


SECTION VIEW



MARKING

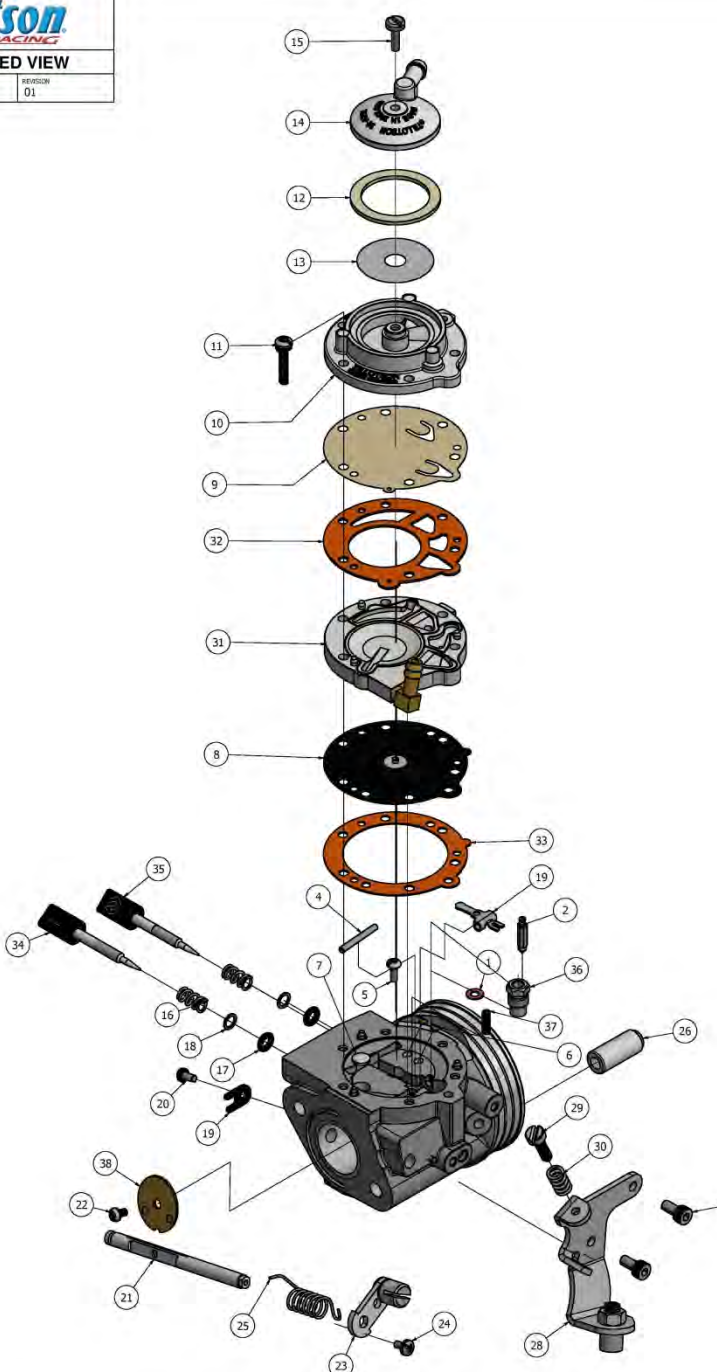


CARBURETTOR DESCRIPTION AND SKETCH OF PARTS



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			RK-6HW	REPAIR KIT
14	1	91-A251	FUEL STRAINER COVER	29	1	15-C9	LIMITER SCREW			DG-3HW	DG KIT
15	1	15-B313	5-40 UNC SCREW	30	1	24-B131	SPEED CREW SPRING				

PARTS OF CARBURETTOR

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



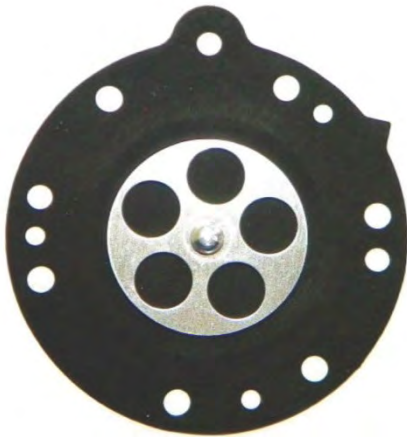
Thickness = 0.5 ± 0.1 mm

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



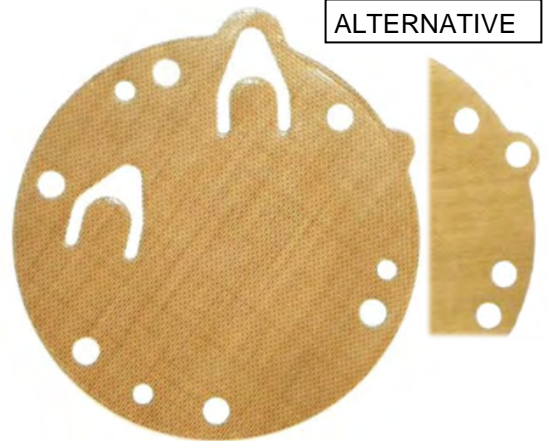
Thickness = 0.8 ± 0.1 mm

REF.8 - P. N°237-600
DIAPHRAGM



Thickness = 0.13 ± 0.07 mm

REF.9 - P. N°237-162
PUMP DIAPHRAGM



ALTERNATIVE

Thickness = 0.10 ± 0.063 mm

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



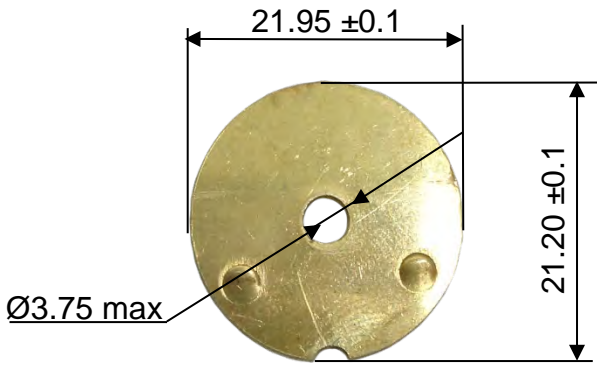
Thickness = 6.75 ± 0.15 mm

REF.10 - P. N° 141-89
PUMP COVER



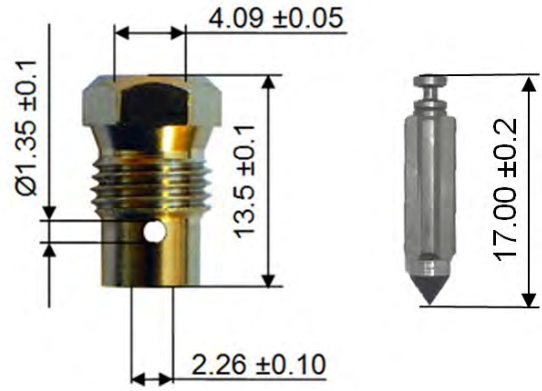
Thickness = 12.5 ± 0.15 mm

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

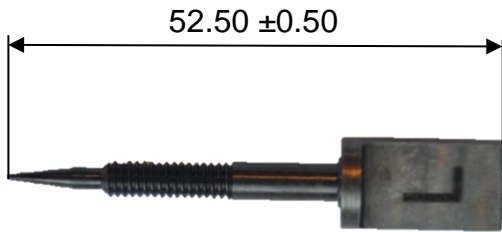


Thickness = 0.81 ± 0.1 mm

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



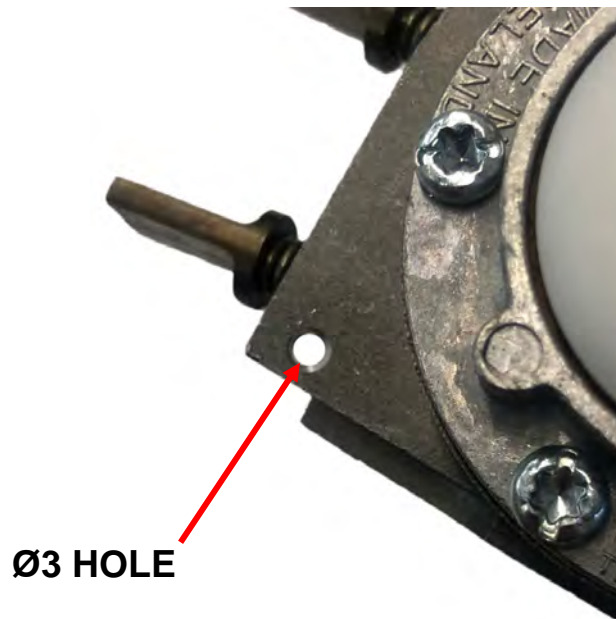
REF.34 - P. N° 43-1046
NEEDLE LOW SPEED



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



THE CARBURETTOR CAN HAVE THIS HOLE FOR SEALING



CARBURETTOR
Tillotson HW-34B



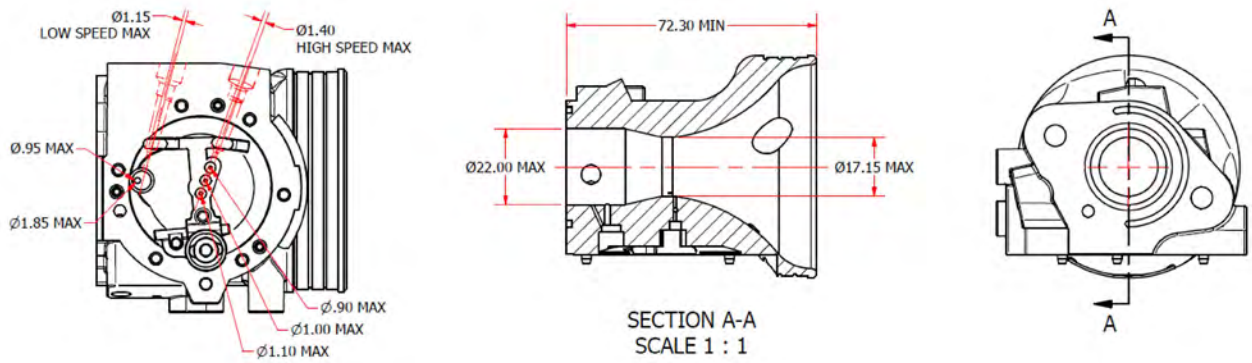
PHOTO OF ADJUSTING SIDE



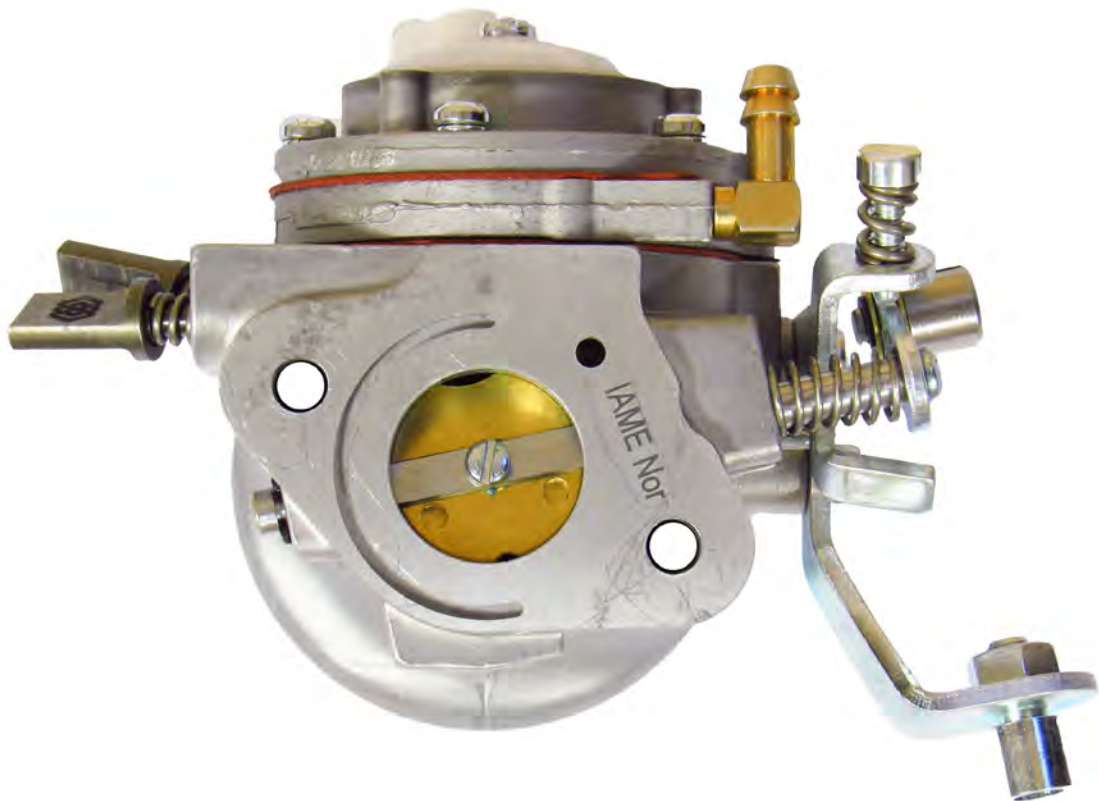
PHOTO OF INLET SIDE

Manufacturer	TILLOTSON LTD.
Make	TILLOTSON
Model	HW-34B


SECTION VIEW



MARKING

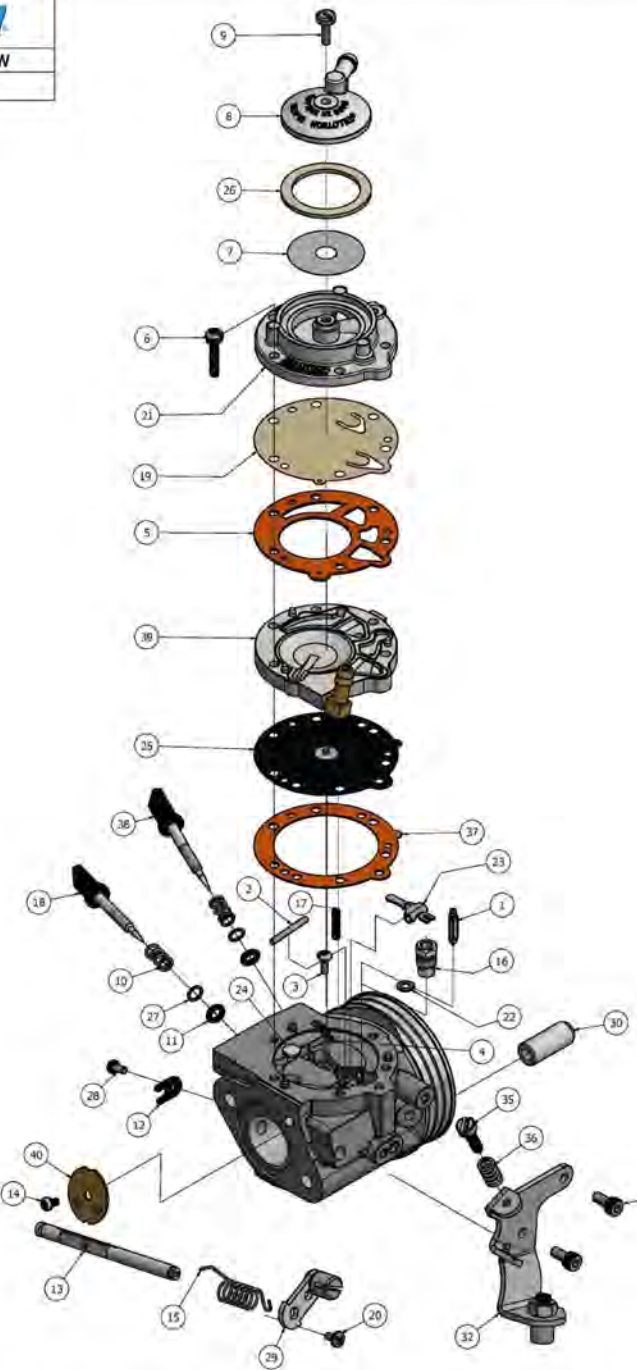


CARBURETTOR DESCRIPTION AND SKETCH OF PARTS



HW-34B EXPLODED VIEW

REV. 25/10/2019	DRAWN BY P.B	ISSUED 00
-----------------	--------------	-----------



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	89-160	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-B095	+* 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			RK-6HW	REPAIR KIT
14	1	15-C20	4-40 UNC SCREW	29	1	12-1218	THROTTLE LEVER ASSEMBLY			DG-3HW	DIAPHRAGM & GASKET KIT
15	1	24-B381	THROTTLE RETURN SPRING	30	2	81-377	CARBURETTOR MOUNTING NUT				

PARTS OF CARBURETTOR

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



Thickness = 0.5 ± 0.1 mm

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



Thickness = 0.8 ± 0.1 mm

REF.25 - P. N°237-600
DIAPHRAGM



Thickness = 0.13 ± 0.07 mm

REF.19 - P. N°237-162
PUMP DIAPHRAGM



Thickness = 0.10 ± 0.063 mm

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



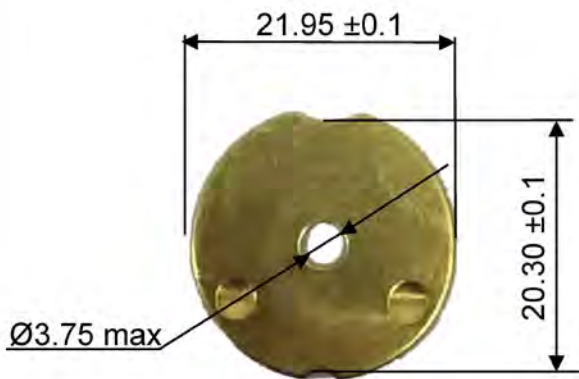
Thickness = 6.75 ± 0.15 mm

REF.21 - P. N° 141-89
PUMP COVER



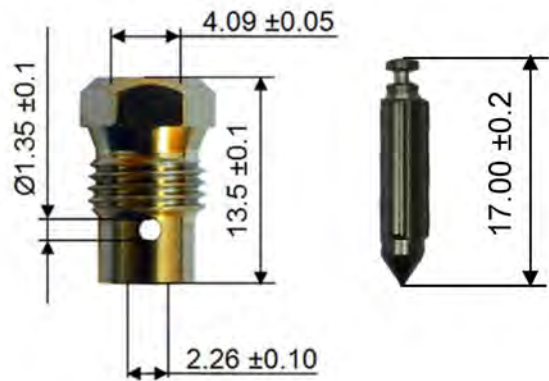
Thickness = 12.5 ± 0.15 mm

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



Thickness = 0.81 ± 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.

