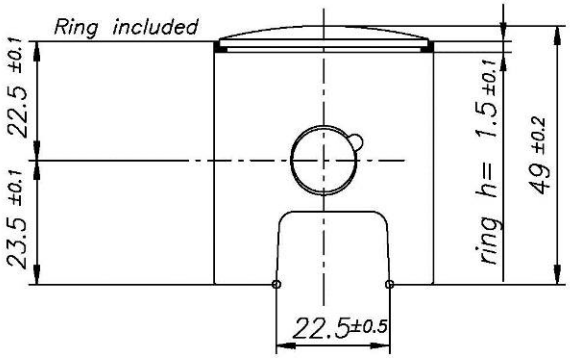
NORSWIFT 60cc – N
(NORWAY)



		FEATURES	
		Cylinder volume	59.42 cm³ (60.00 cm³ 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

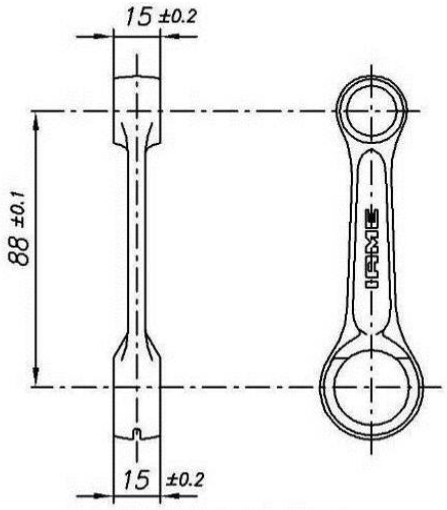
DESCRIPTION OF THE MATERIAL	
Conrod material	Steel
Crankshaft material	Steel
Head material	Aluminium
Cylinder material	Aluminium
Liner material	Cast Iron
Crankcase material	Aluminium
Piston material	Aluminium
Piston rings material	Cast Iron
Exhaust muffler material	Sheet-steel
Ball-bearings	6204 type

PISTON



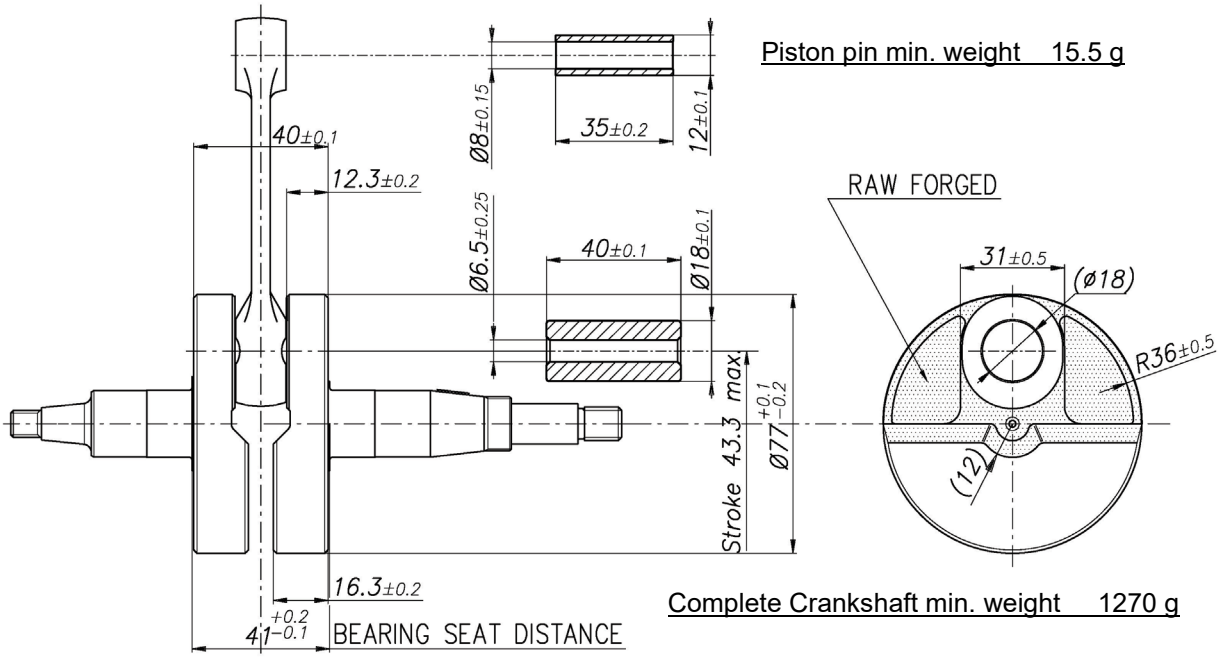
Min Weight (ring incl.) 60 g

DISTANCE BETWEEN CONROD CENTERS



Min. Weight 80 g

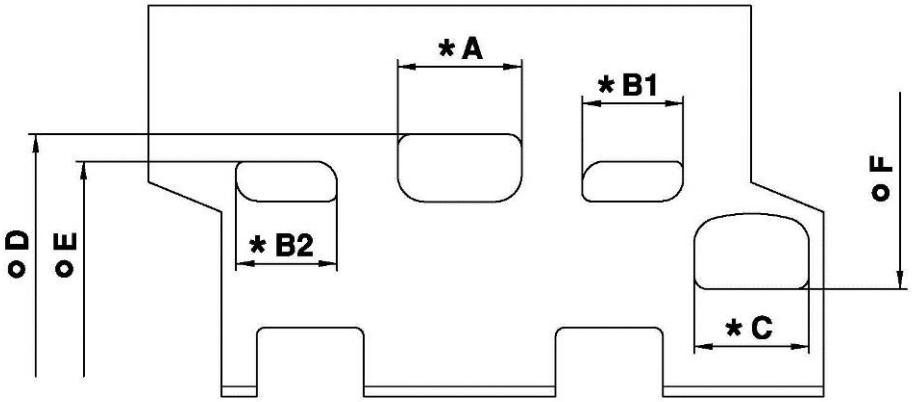
CRANKSHAFT



Piston pin min. weight 15.5 g

Complete Crankshaft min. weight 1270 g

CYLINDER DEVELOPMENT

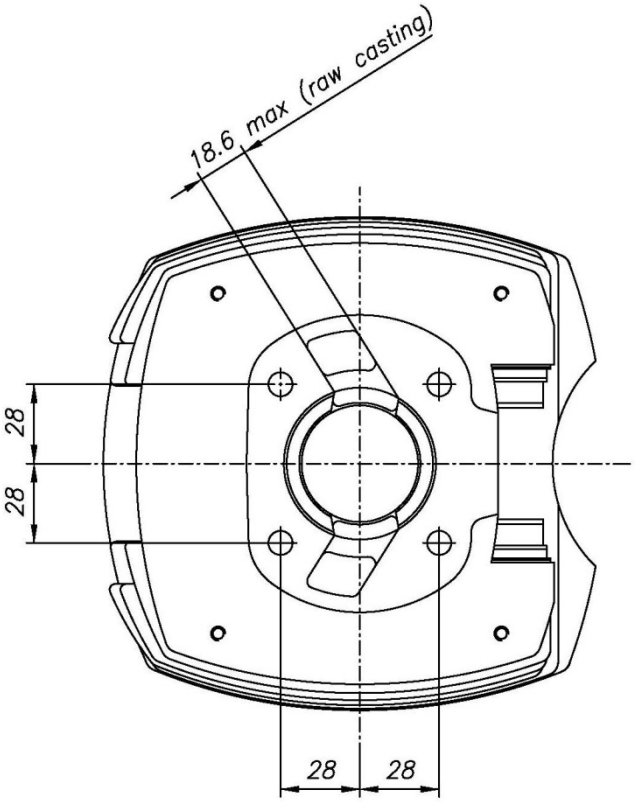


A	≤ 28.5 mm
B1 = B2	≤ 22.3 mm
C	≤ 26.5 mm
D	155.5° ±1°
E	115.5° ±2°
F	143.5° ±1°

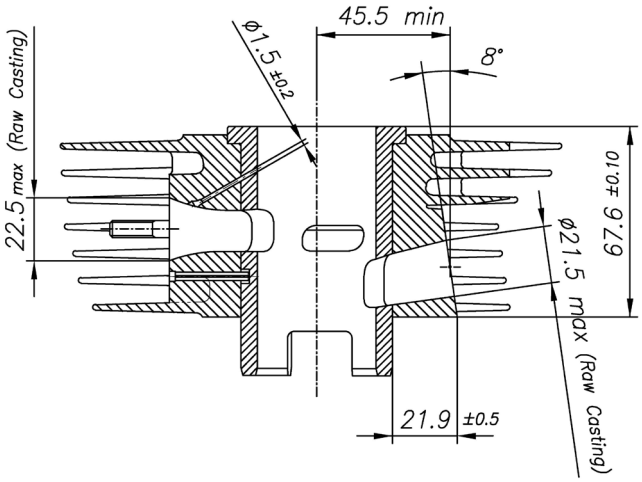
* CHORDAL READING

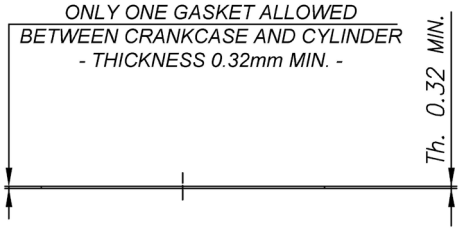
o ANGULAR READING BY INSERT A 0.2x5 mm GAUGE

CYLINDER BASE VIEW



CYLINDER CROSS SECTION VIEW





COMBUSTION CHAMBER VIEW

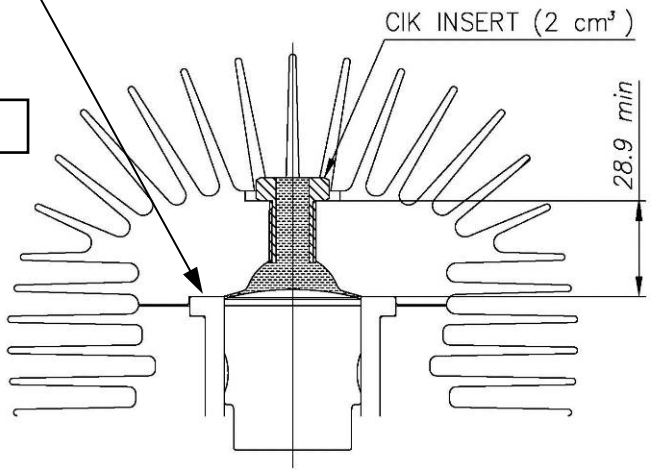
COMBUSTION CHAMBER VOLUME = 6.03cm³ min.

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

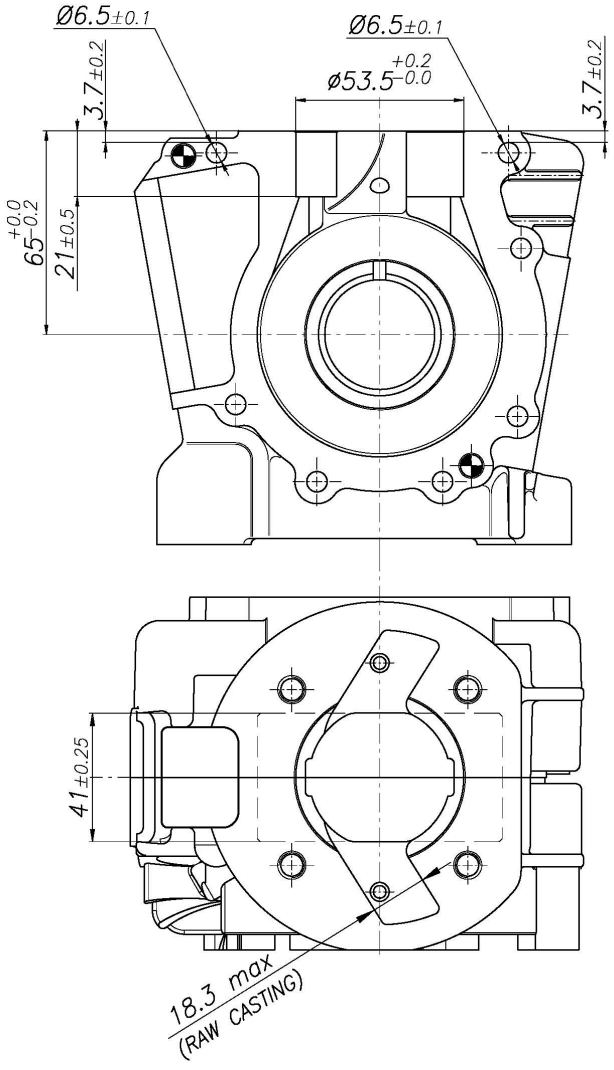
Combustion chamber volume in the cylinder head (with Volumeter and CIK insert):

7.4 cm³ min

NO GASKET OR SHIMS ARE ALLOWED BETWEEN THE CYLINDER AND CYLINDER HEAD

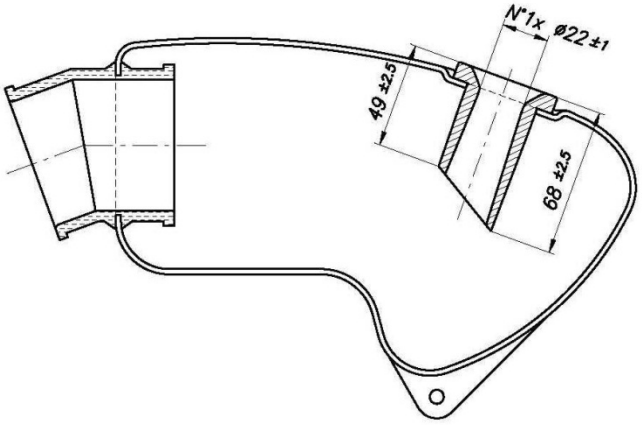


CRANKCASE INSIDE VIEW

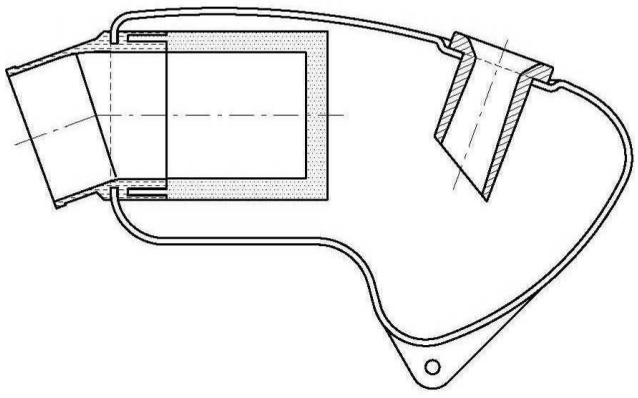


INLET SILENCER

(CSAI Hom. N° 01/SA/14)

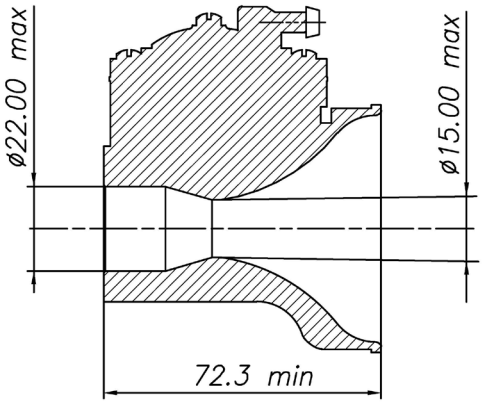


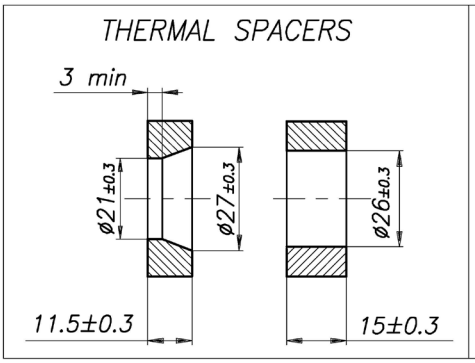
IN ALTERNATIVE (OPTIONAL)

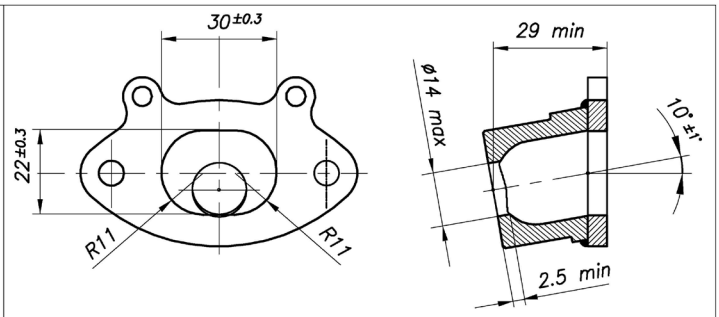


CADETTI Class

Tillotson HW–47A



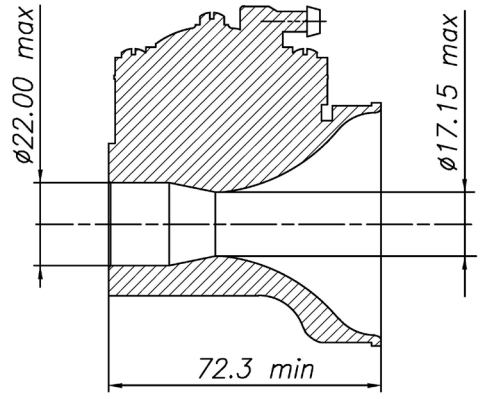


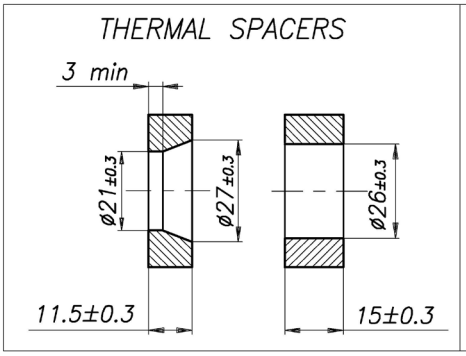


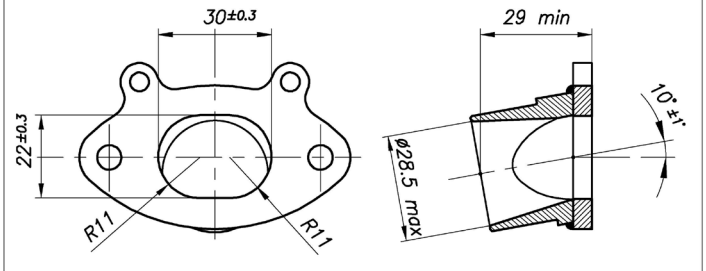
ONLY ONE EXHAUST GASKET ALLOWED

MINI Class

Tillotson HW–34B





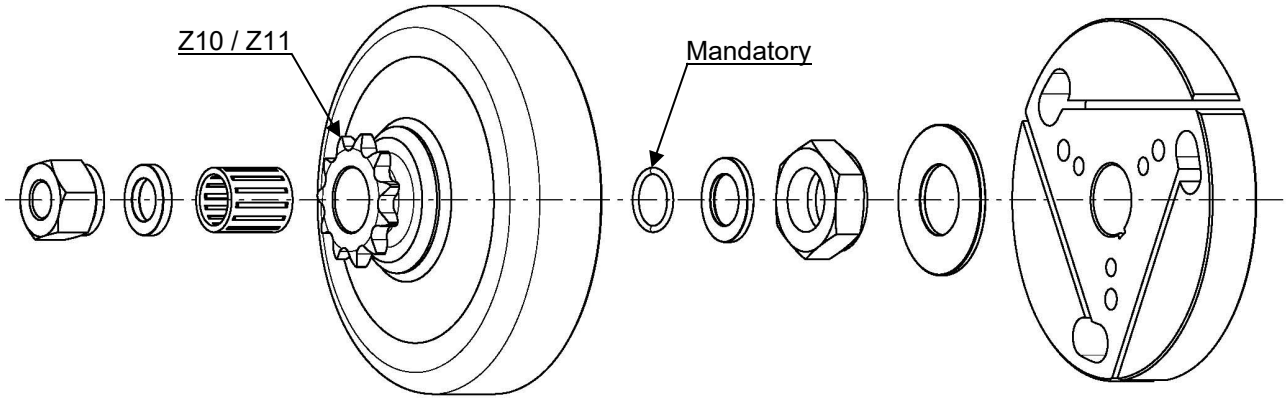


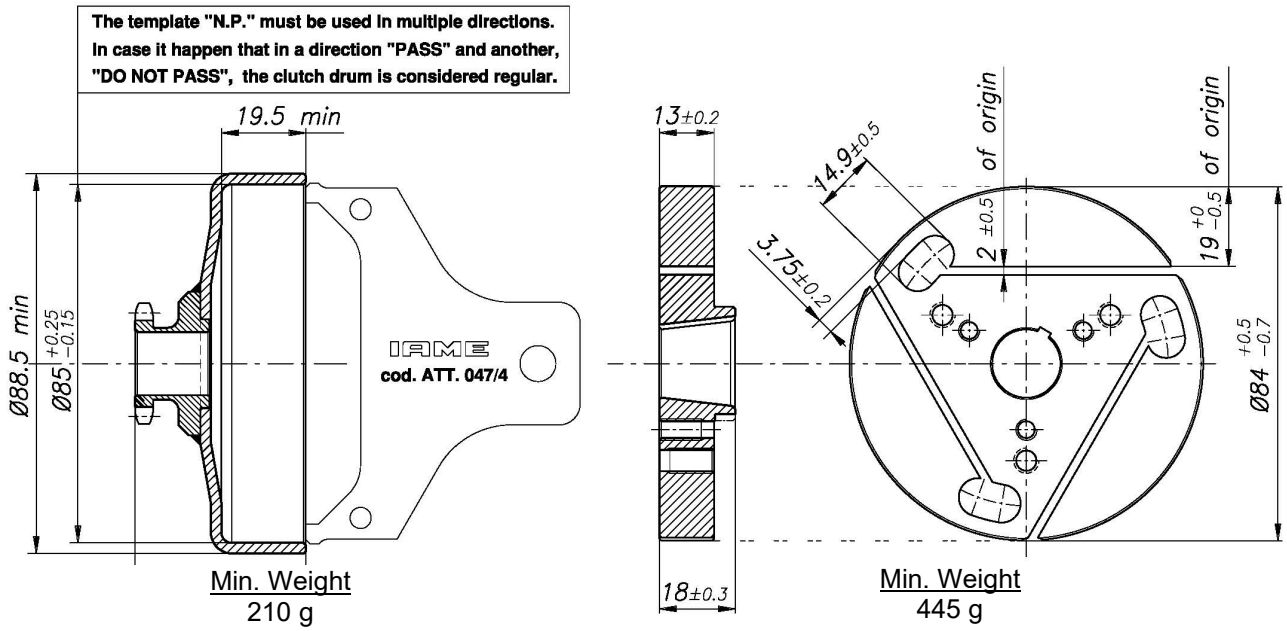
ONLY ONE EXHAUST GASKET ALLOWED

PHOTO IDENTIFICATION MARKING SPONGE FILTER (OPTIONAL)



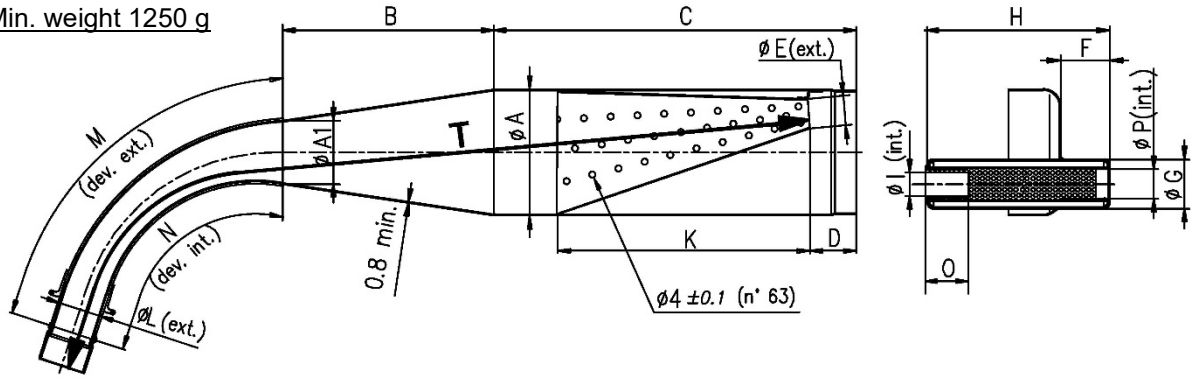
DESCRIPTION OF THE CLUTCH





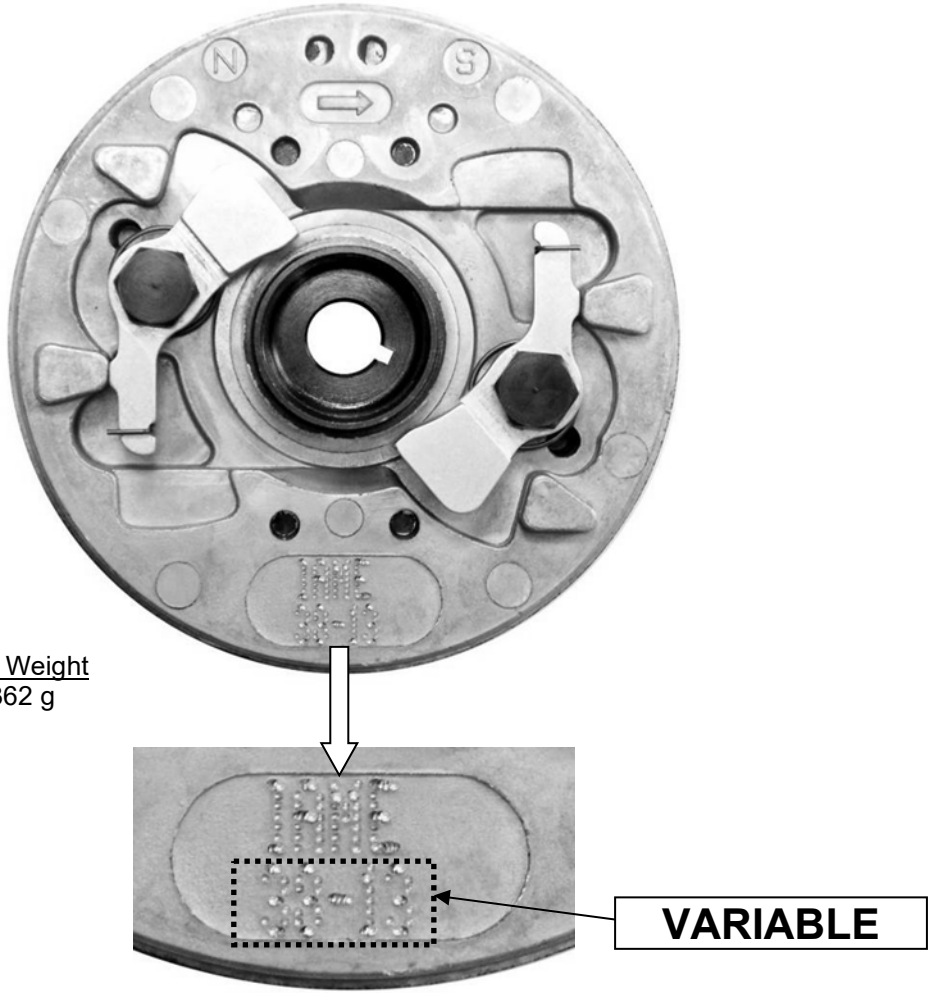
EXHAUST MUFFLER VIEW AND DIMENSIONS

Min. weight 1250 g



A: 90 ±1.5	**C:** 260 ±3	**F:** 35 ±2	**I:** 17 max	**M:** 240 ±3	**P:** 21 ±1
A1: 45 ±1	**D:** 30 ±1.5	**G:** 35 ±1	**K:** 181 ±3	**N:** 190 ±3	**T:** 600 ±5
B: 150 ±3	**E:** 20 ±1	**H:** 132 ±2	**L:** 31 ±1.5	**O:** 30 min.	

IGNITION PHOTO IDENTIFICATION MARKING

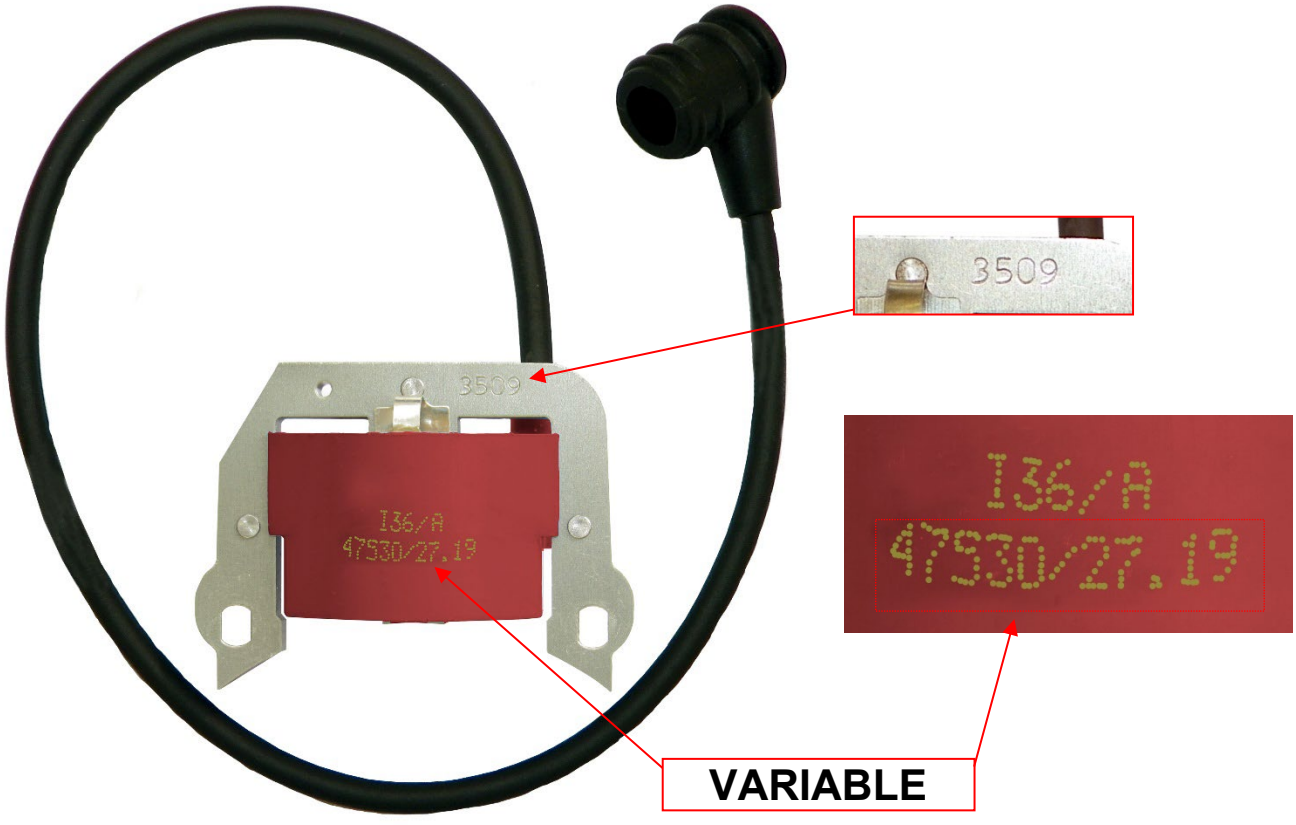


Min Weight
362 g

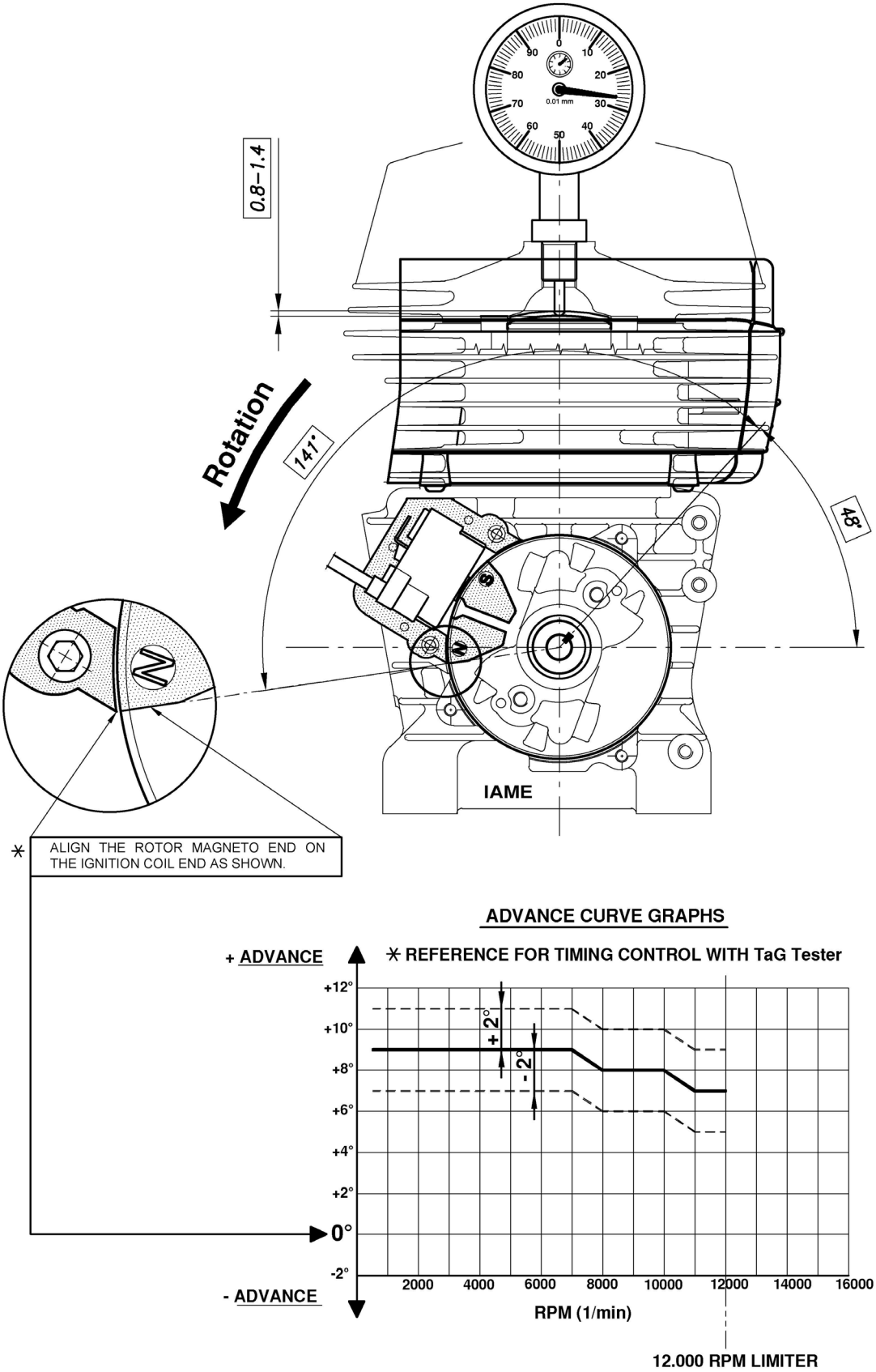
CADETTI CLASS - H.T. COIL PHOTO IDENTIFICATION MARKING – cod. A-61959N



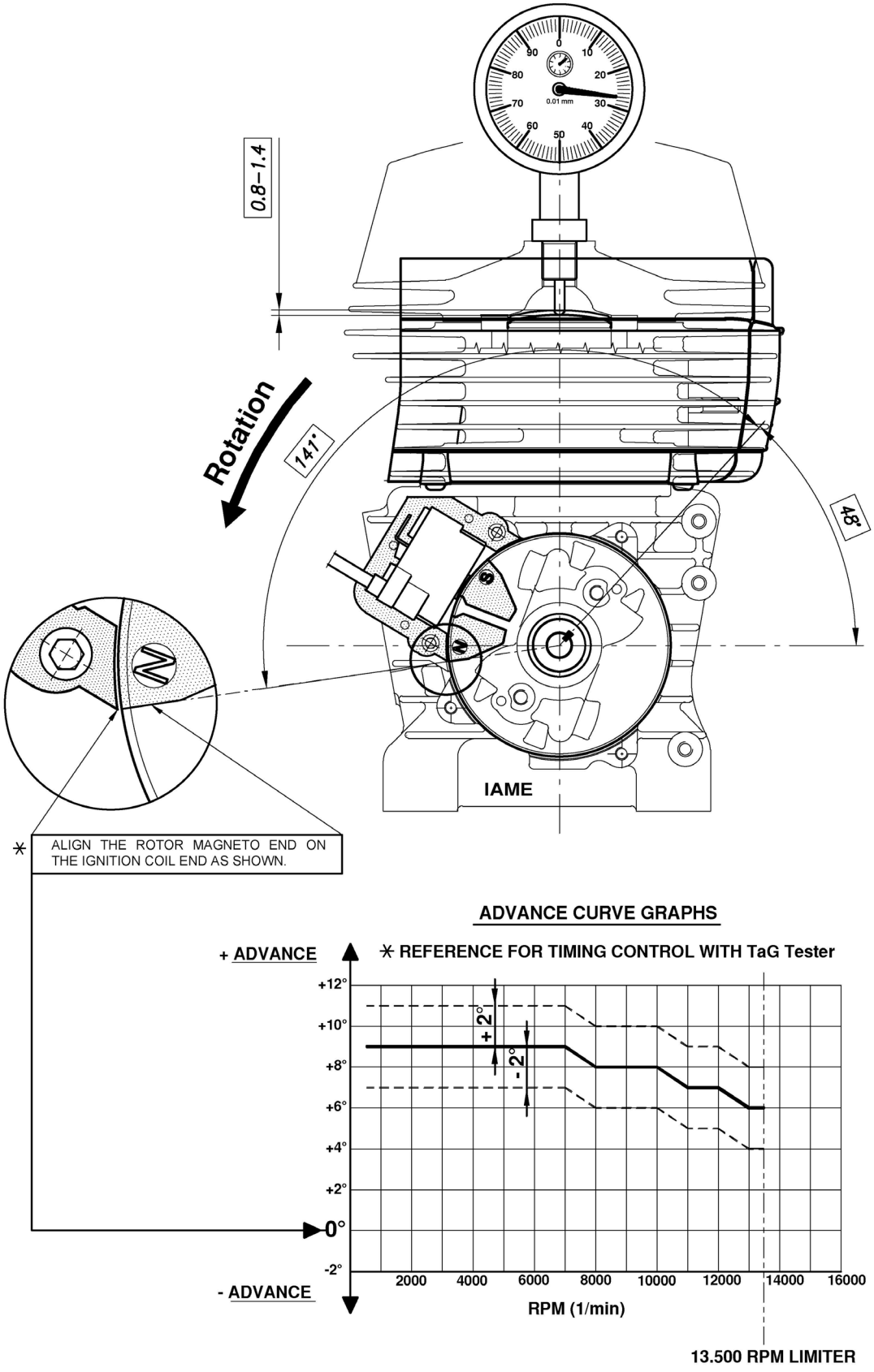
MINI CLASS - H.T. COIL PHOTO IDENTIFICATION MARKING – cod. A-61959R



SCHEME FOR ADVANCE CONTROL – CADETTI CLASS

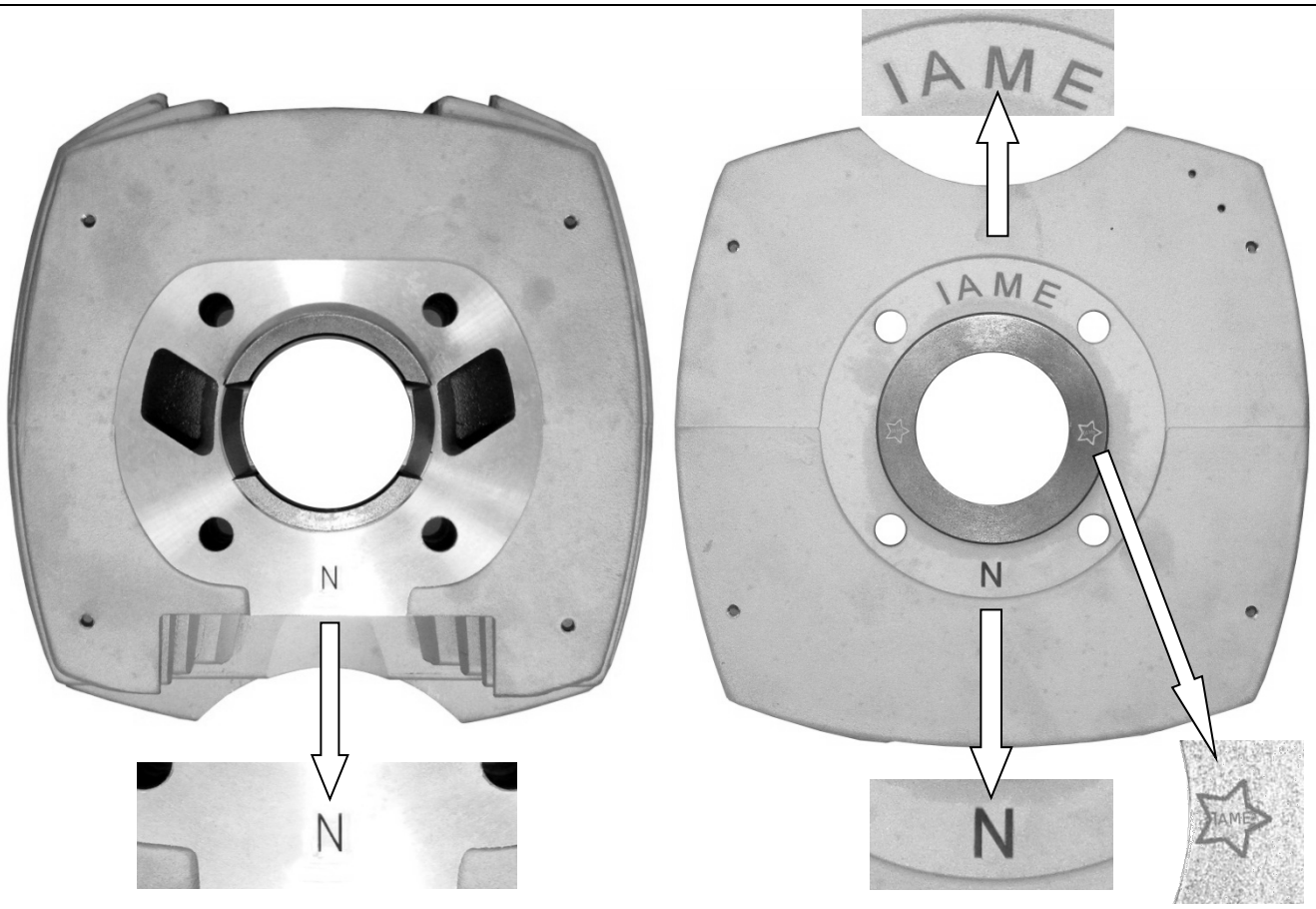


SCHEME FOR ADVANCE CONTROL – MINI CLASS

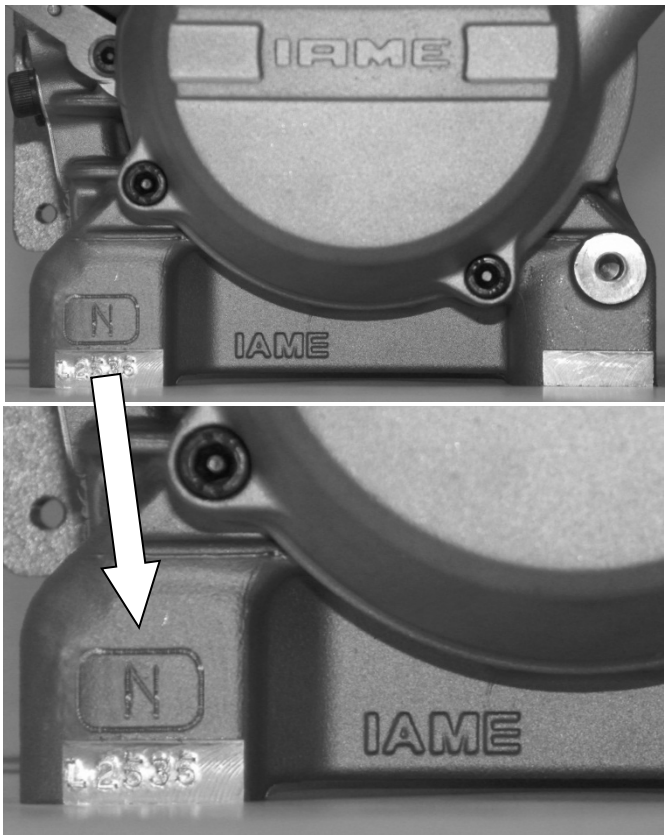



IGNITION 2±0.1
KEY 2±0.05
CRANKSHAFT 2±0.15

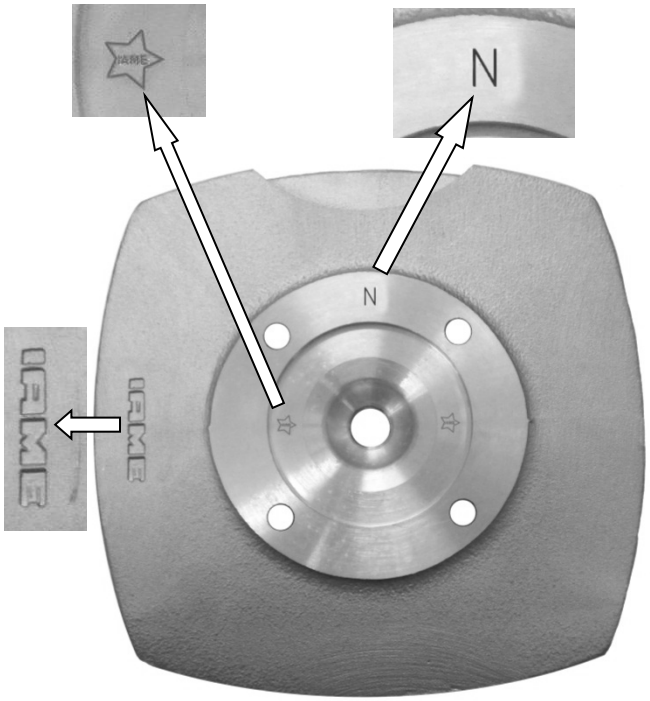
CYLINDER IDENTIFICATION MARKING

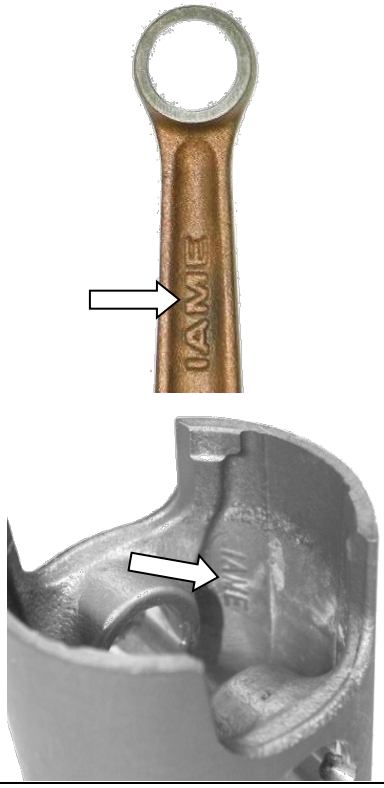
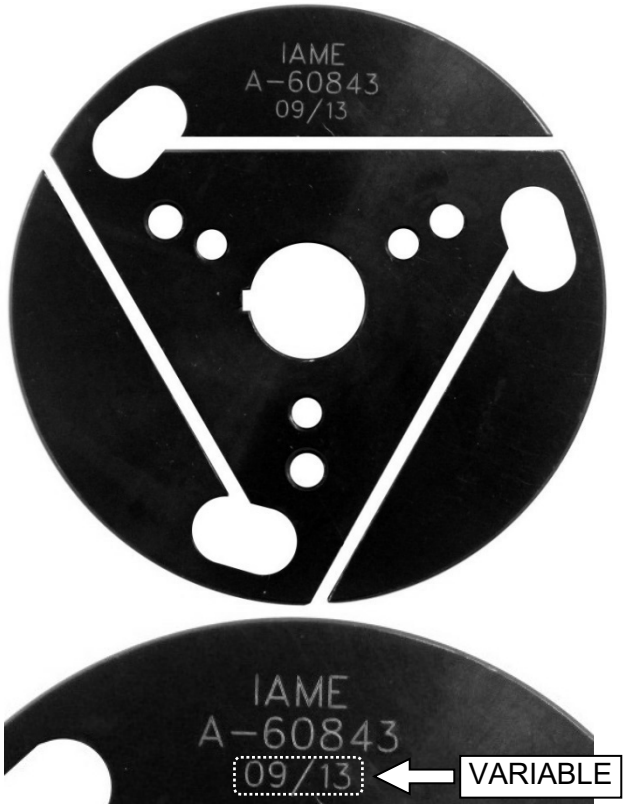


CRANKCASE IDENTIFICATION MARKING



HEAD IDENTIFICATION MARKING

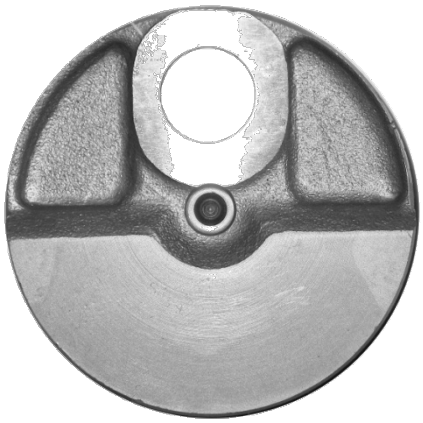


EXHAUST IDENTIFICATION MARKING	CONROD / PISTON IDENTIFICATION MARKINGS
	
CLUTCH HUB IDENTIFICATION MARKING	**CLUTCH DRUM IDENTIFICATION MARKING**
	

CRANKSHAFT PHOTOS



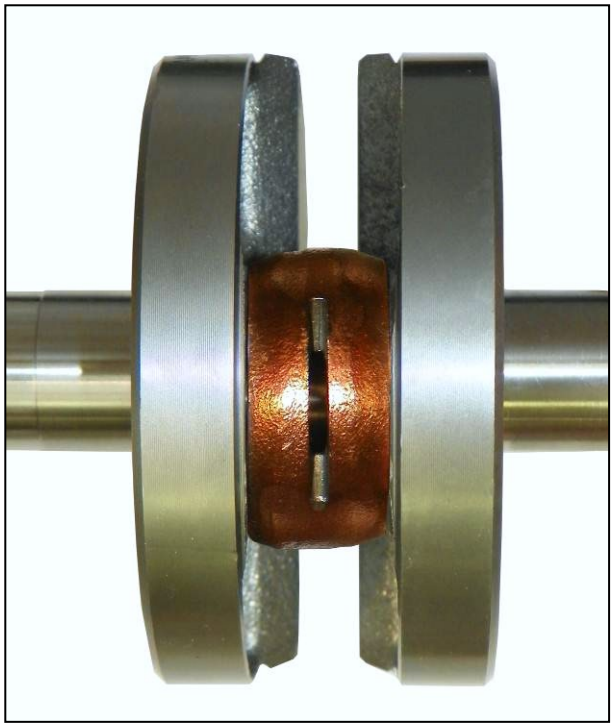






CRANKSHAFT IDENTIFICATION MARKING	COMPLETE CRANKSHAFT DETAIL





BALL BEARING IDENTIFICATION MARKING



PHOTO IDENTIFICATION OF CONROD – TYPES ALTERNATIVE

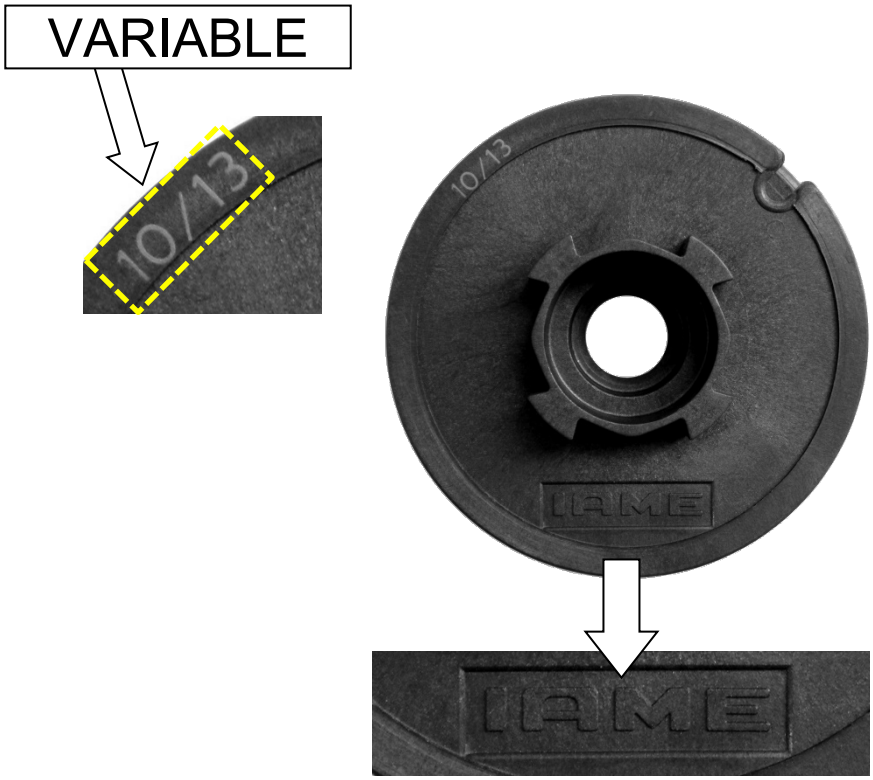
TYPE 1



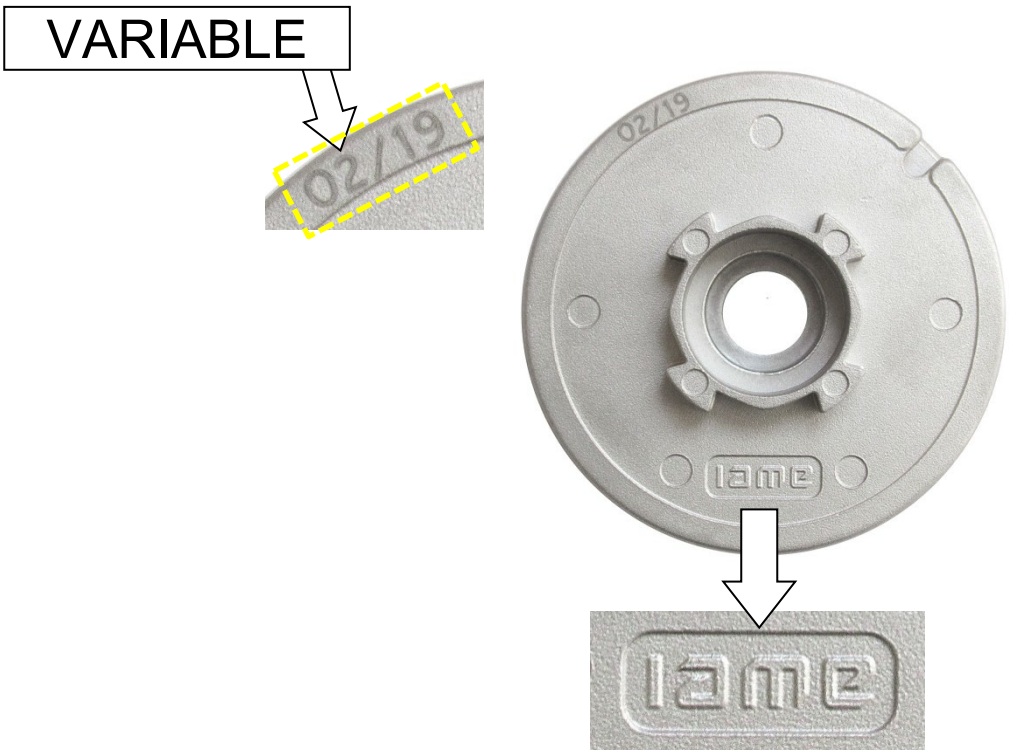
TYPE 2

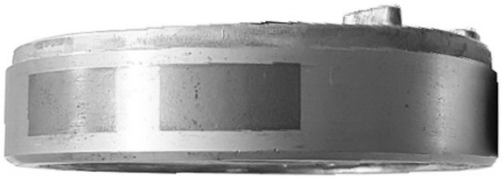
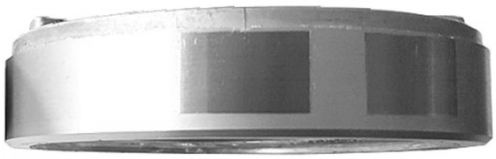


TYPE 1 - PLASTIC



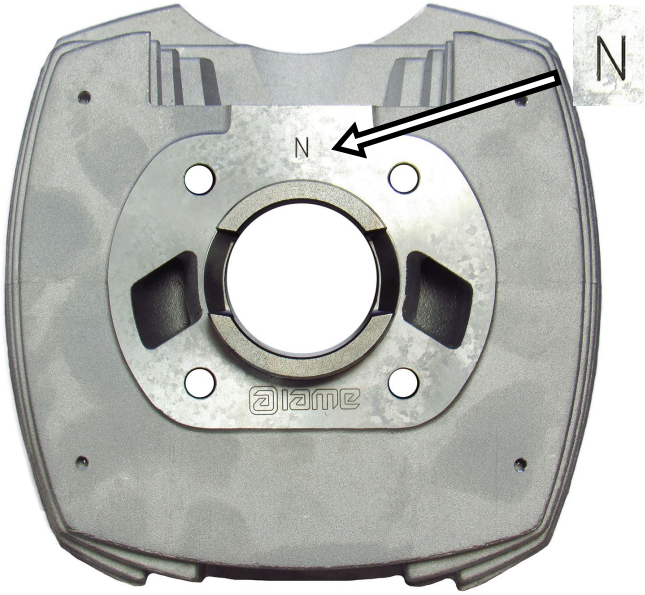
TYPE 2 - ALUMINUM



ALTERNATIVE IGNITION ROTOR	
TYPE 1	TYPE 2
	
	
	

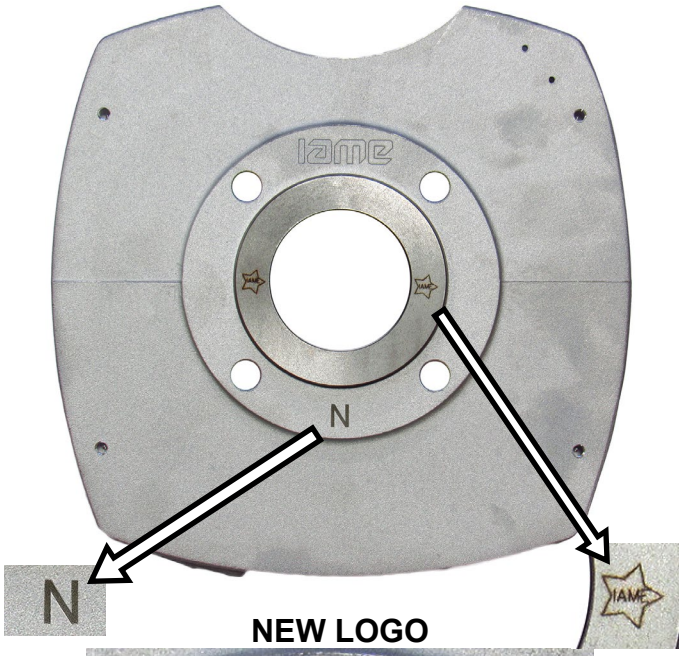
PARTICULARS WITH ALTERNATIVE NEW LOGO “IAME”

CYLINDER



NEW LOGO

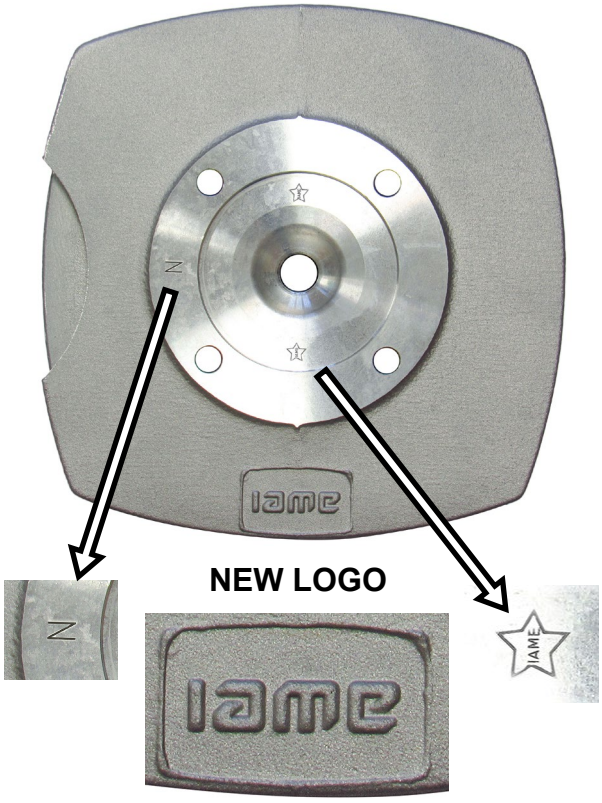




NEW LOGO



CYLINDER HEAD



NEW LOGO

INLET FILTER

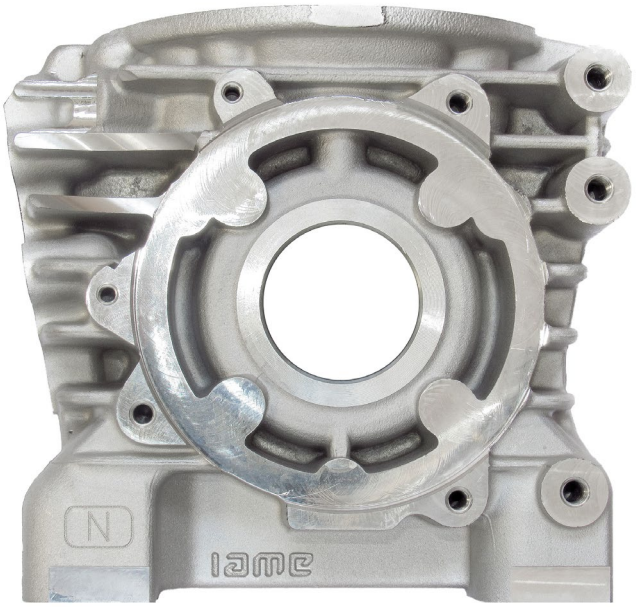


NEW LOGO



PARTICULARS WITH ALTERNATIVE NEW LOGO “IAME”

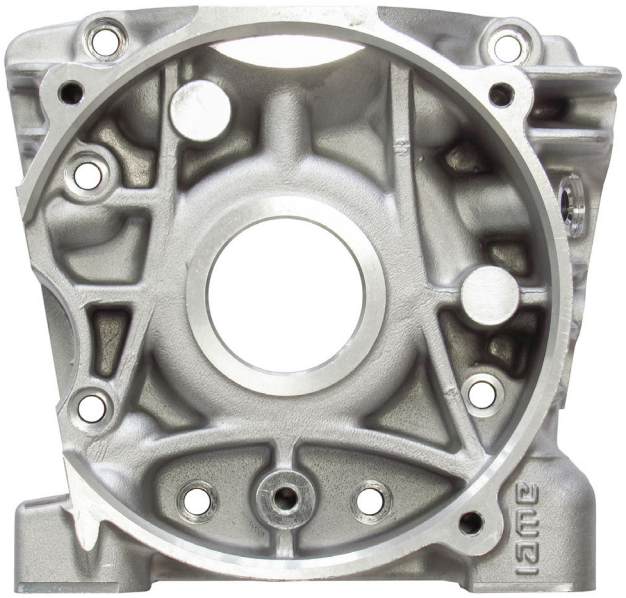
SEMICARTER IGNITION SIDE



NEW LOGO



SEMICARTER TRANSMISSION SIDE



NEW LOGO



COMPONENTS WITH ALTERNATIVE NEW LOGO “IAME”	
RECOIL COVER	CLUTCH COVER
 **NEW LOGO** 	 **NEW LOGO** 
EXHAUST	
 **NEW LOGO** 	

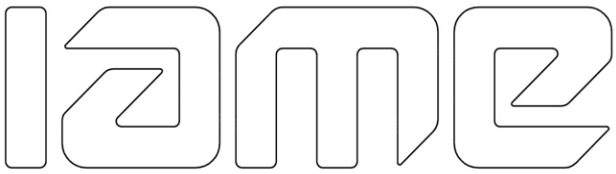
THE OTHER COMPONENTS OF ENGINE THAT ARE MARKED (LASER OR PUNCHING) UNTIL TODAY WITH LOGO OR WRITTEN “IAME”



or

IAME

NOW COULD BE MARKED WITH NEW LOGO “IAME”



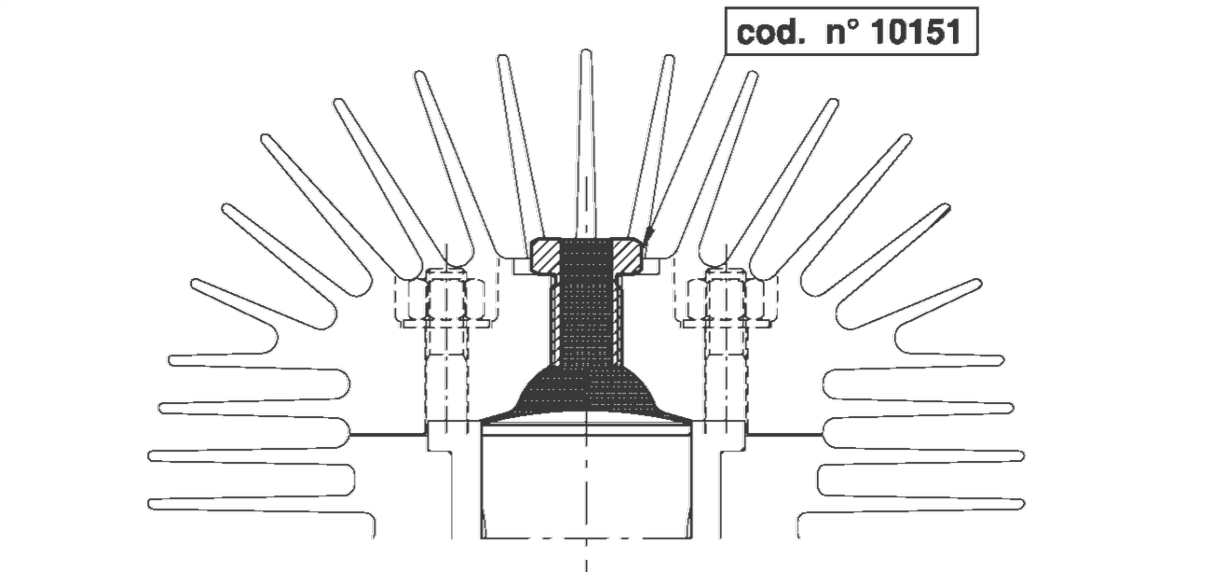
or



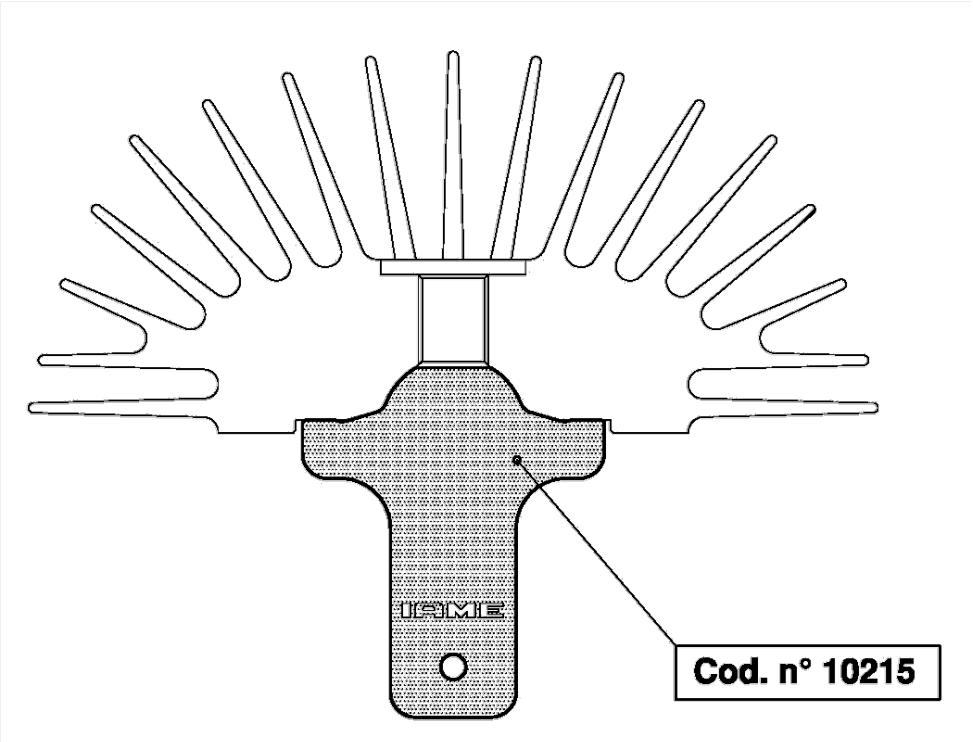
or

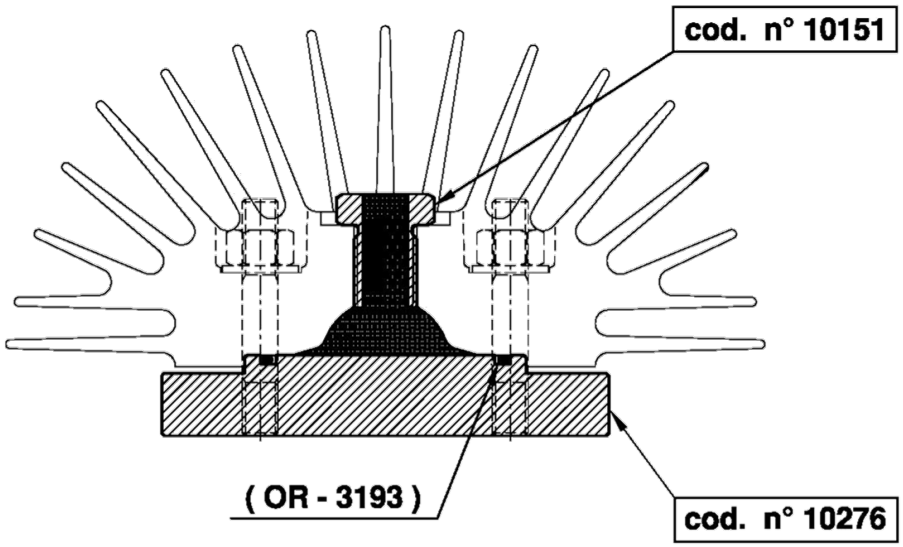


CHECKING TOOLS



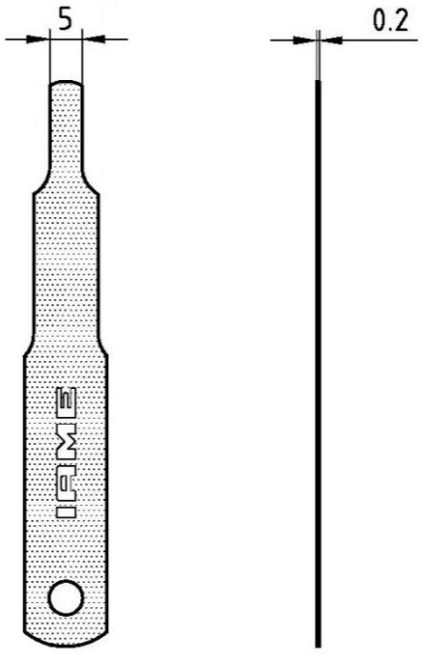
WITH PISTON AT T.D.C. + INSERT

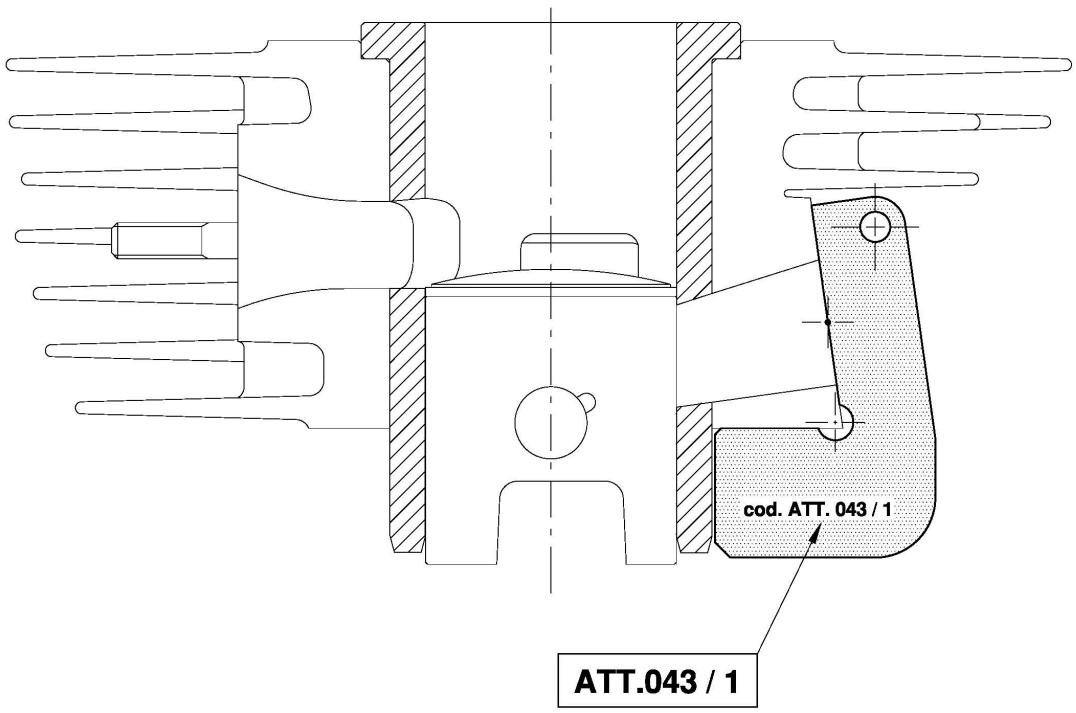




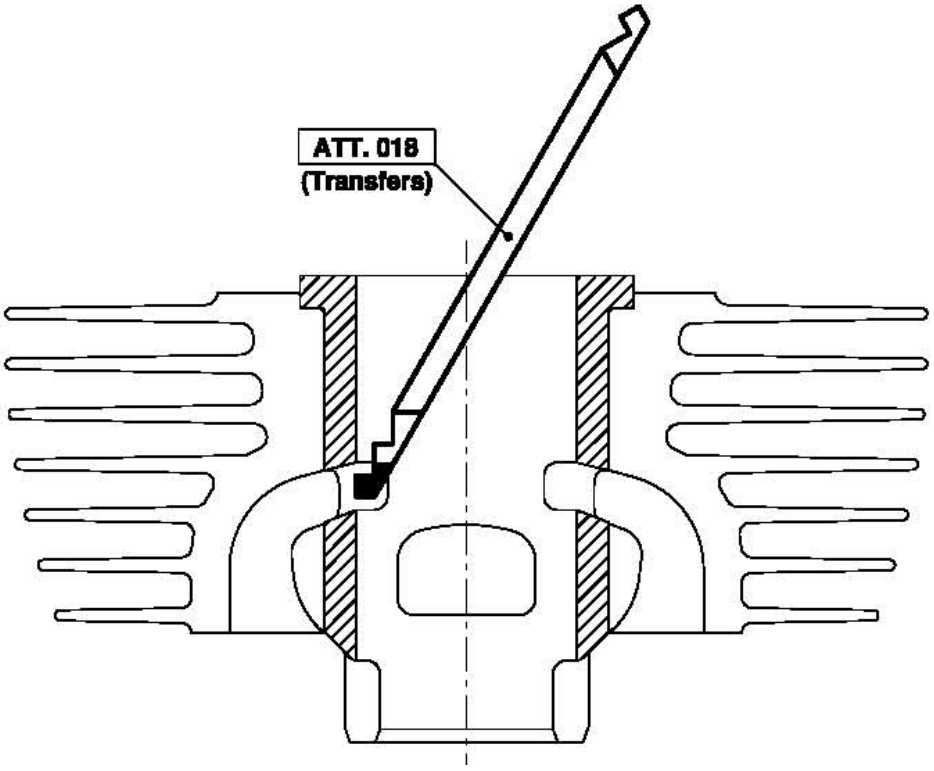
WITH VOLUMETER + INSERT

TOOL IAME Cod. 10194

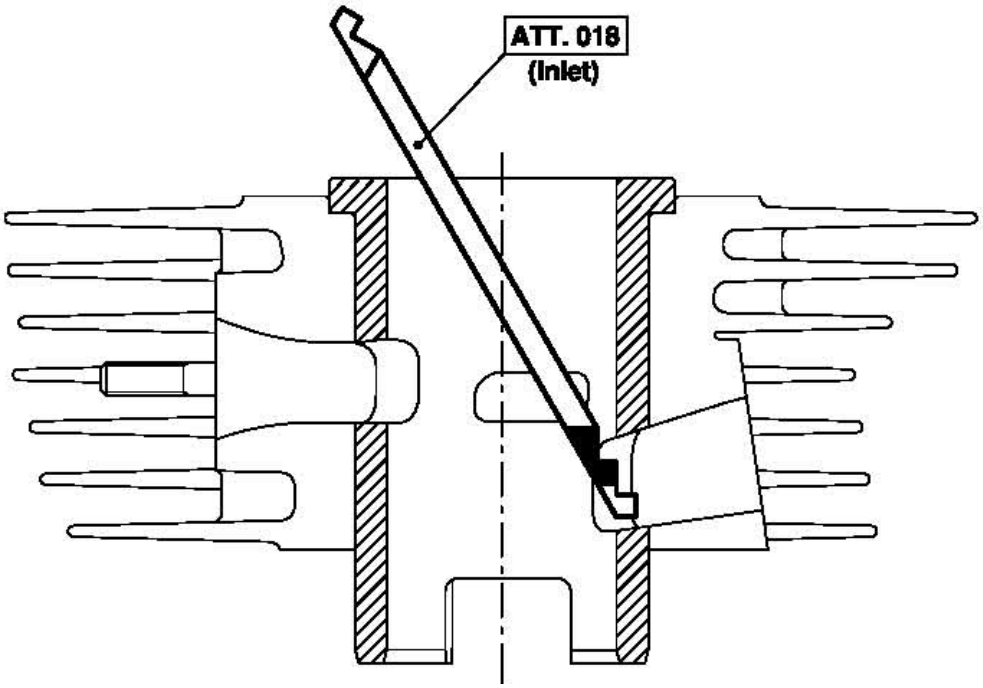


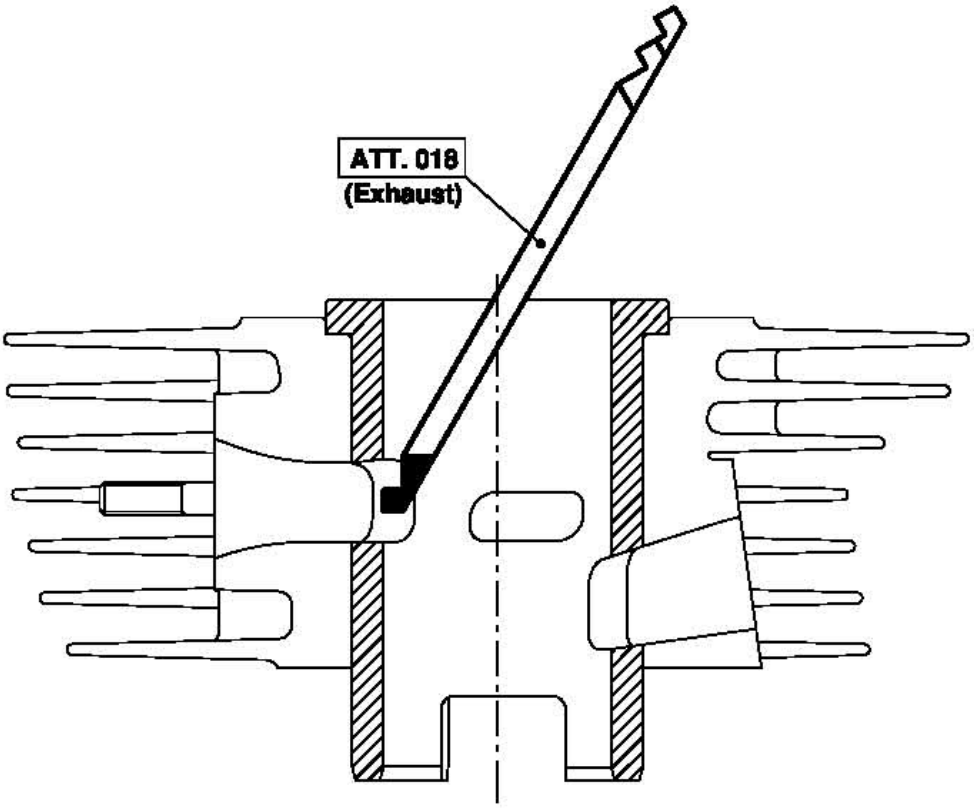


CHECK THAT THE GAUGE DOESN'T TOUCH THE LINER

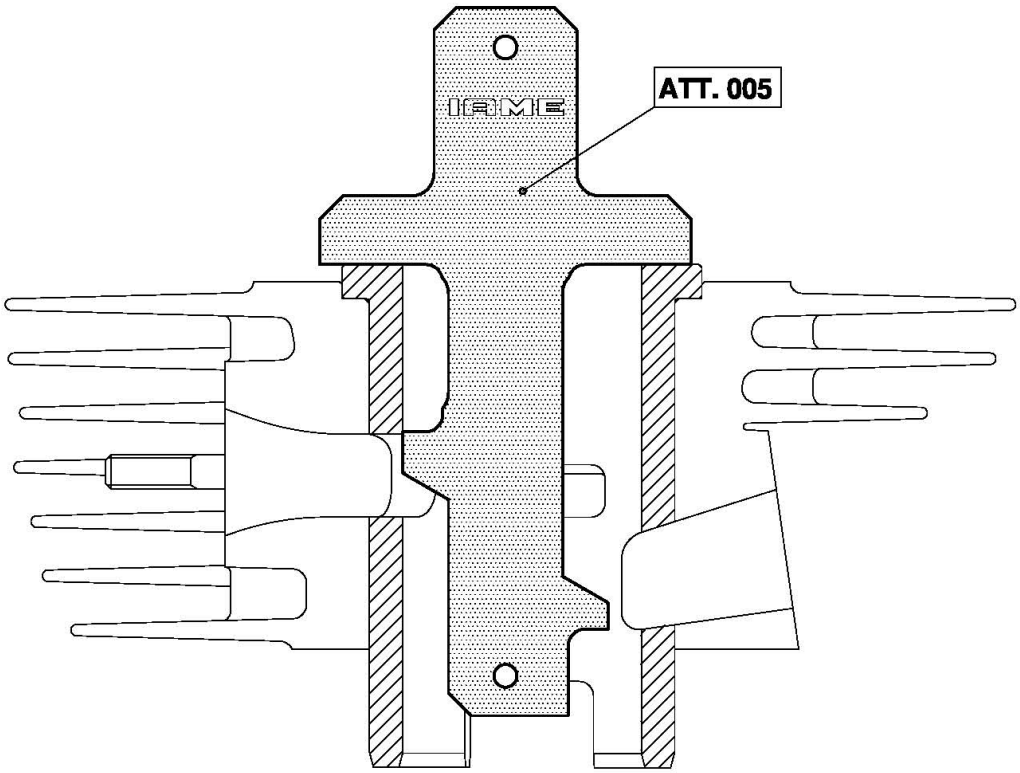


CHECK THAT THE TOOL DOES NOT ENTER INTO THE TRANSFERS DUCT.

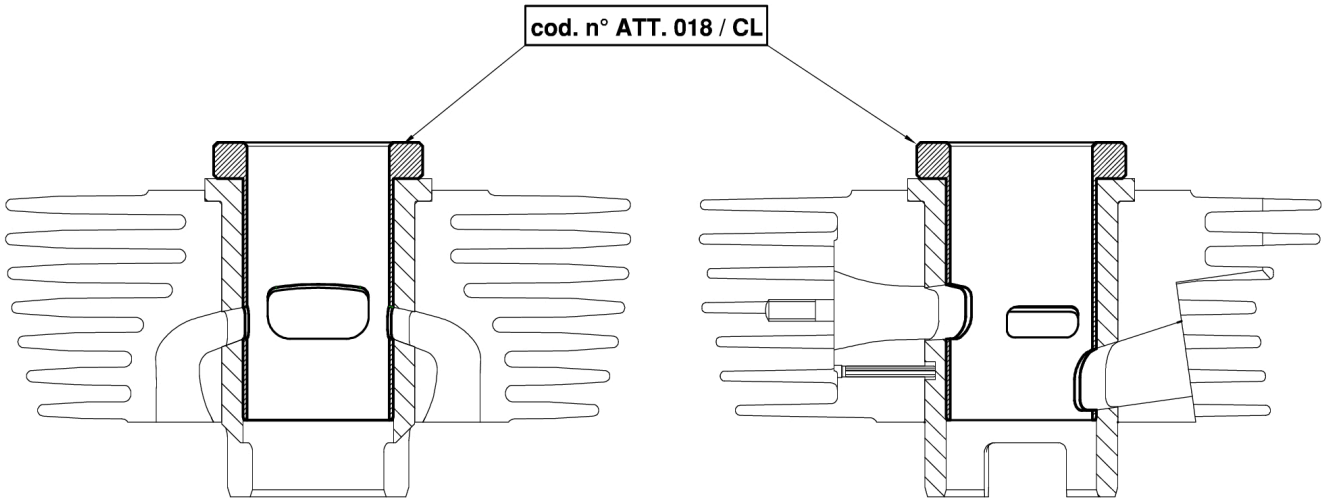




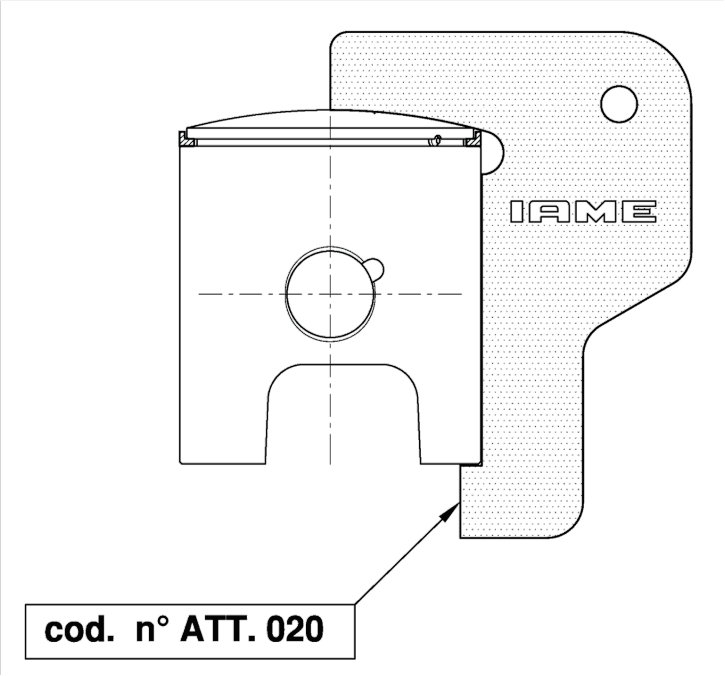
CHECK THAT THE TOOL DOES NOT ENTER INTO THE INLET AND EXHAUST PORTS.

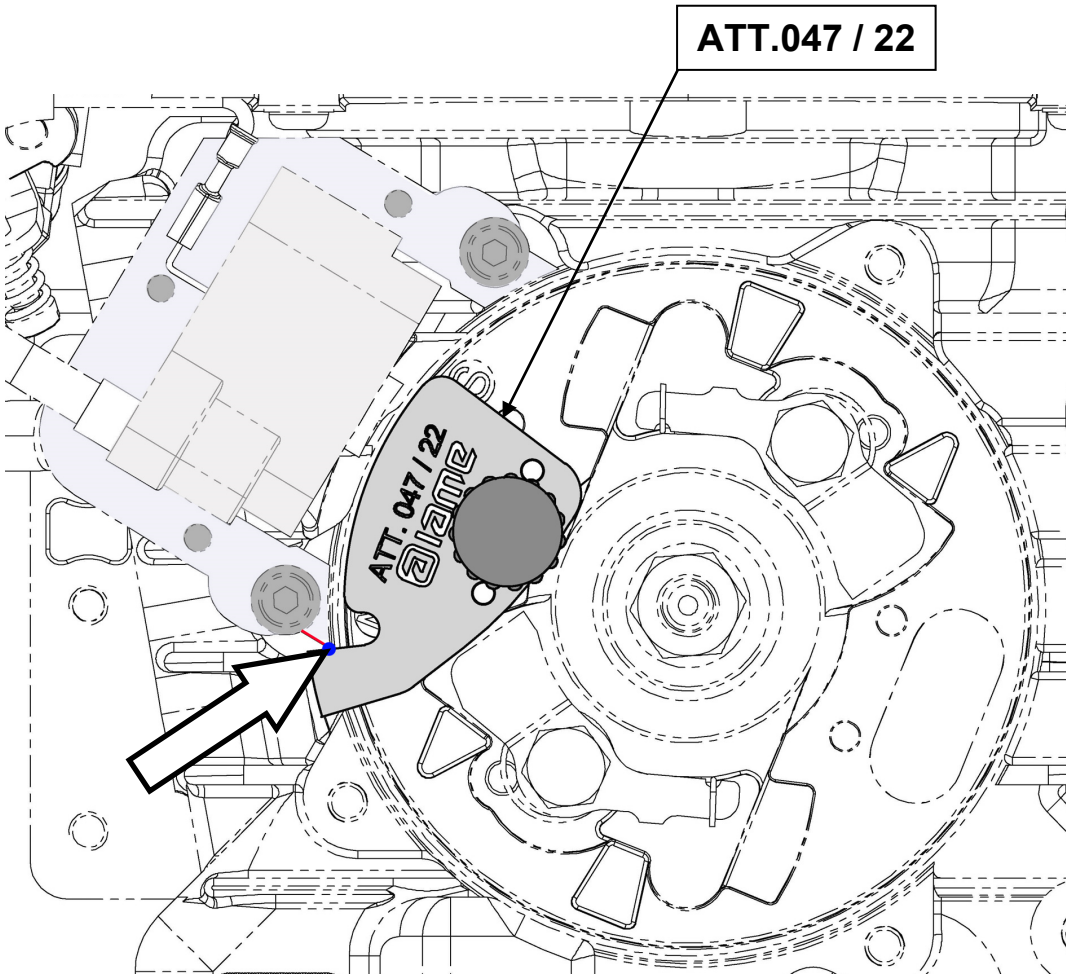


CHECK THAT THE TOOL DOES NOT ENTER INTO THE EXHAUST AND INLET PORTS

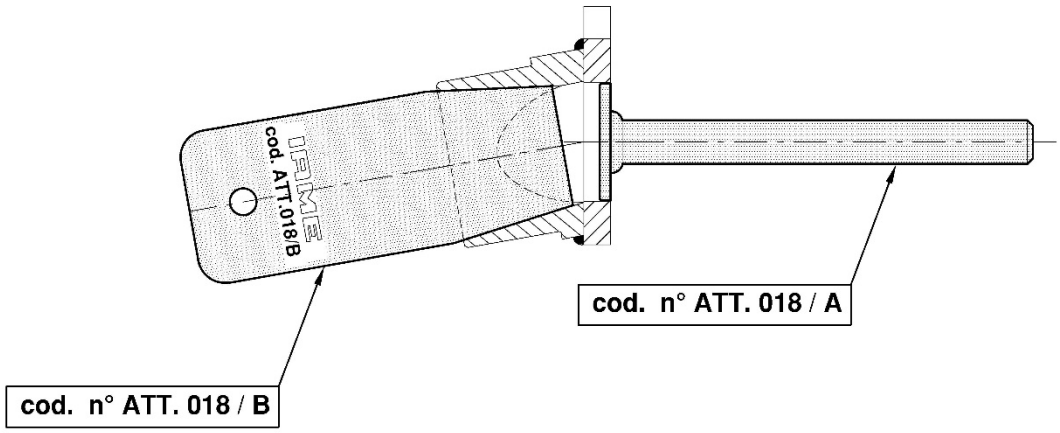


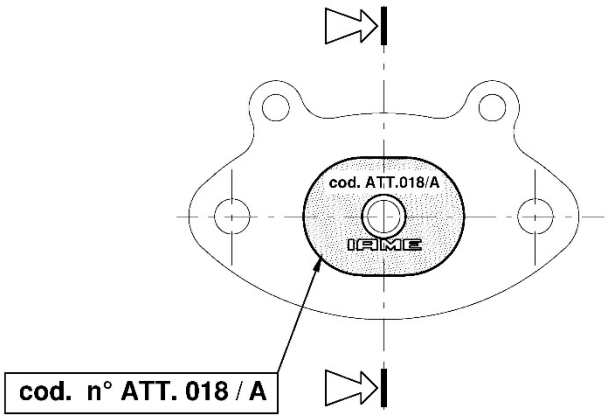
VISUAL CHECK OF PORTS



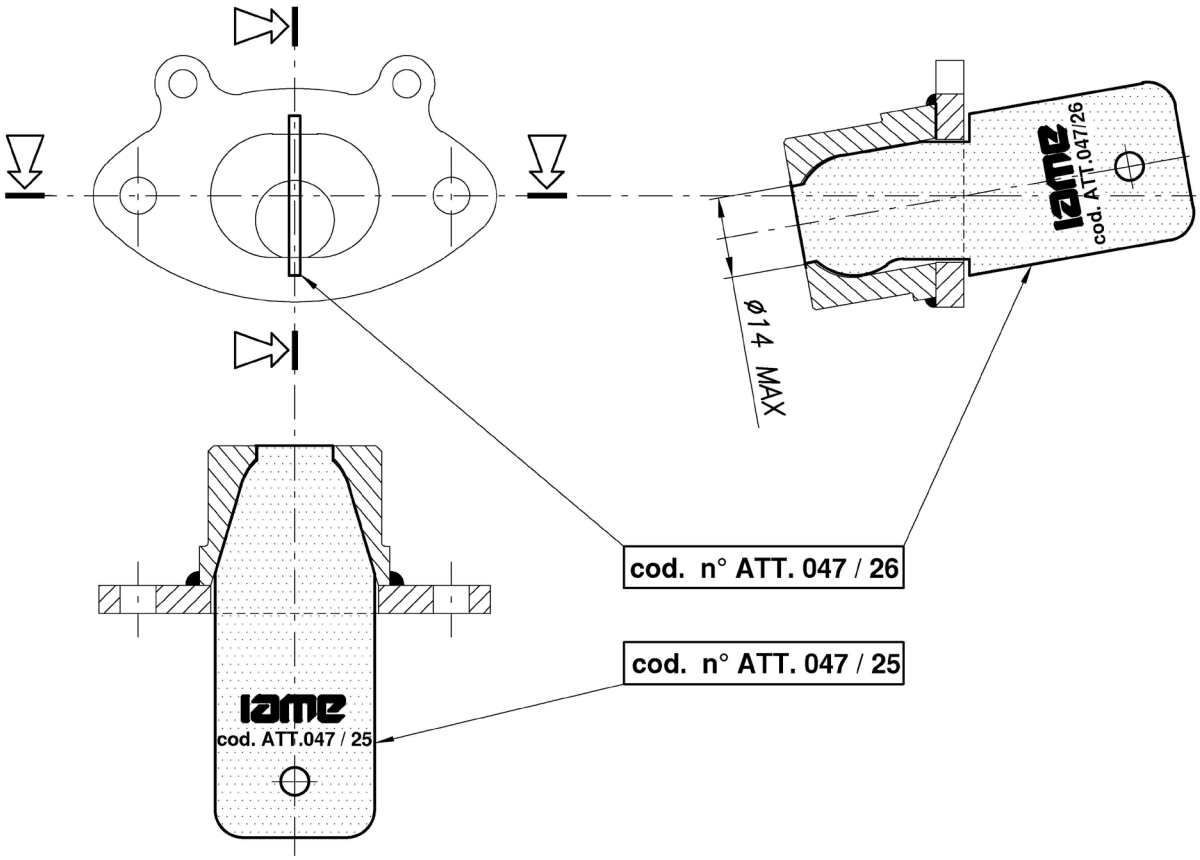


CHECK THE CORRECT ALIGNMENT OF THE IGNITION ROTOR

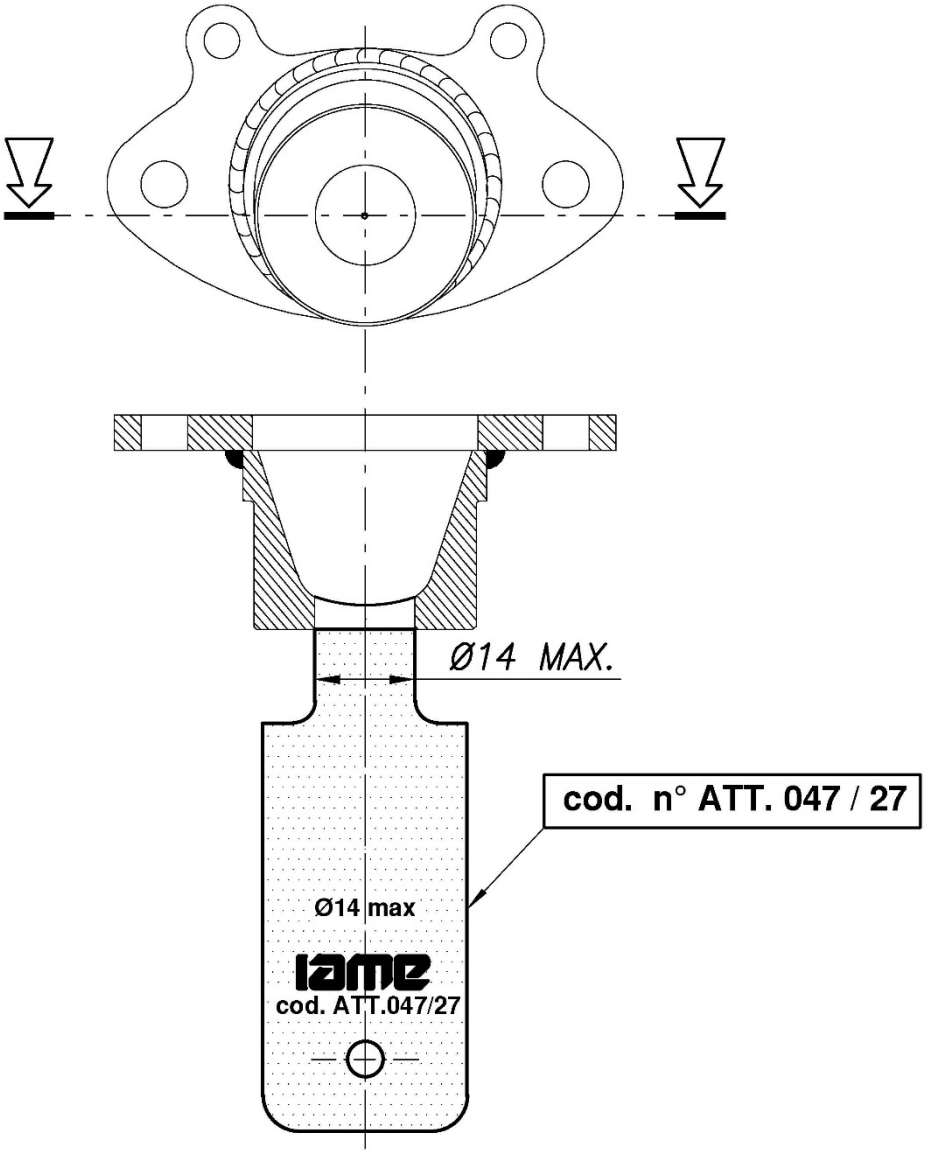




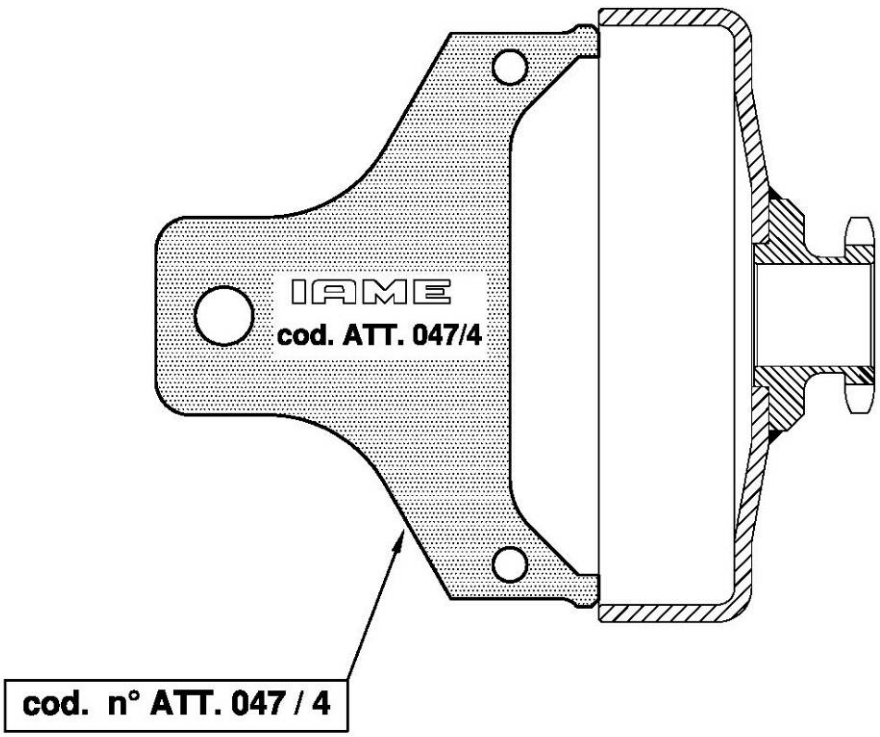
CHECK THAT THE TOOL MUST BE THE SAME SHAPE OF THE EXHAUST MANIFOLD.
(MINI CLASS)



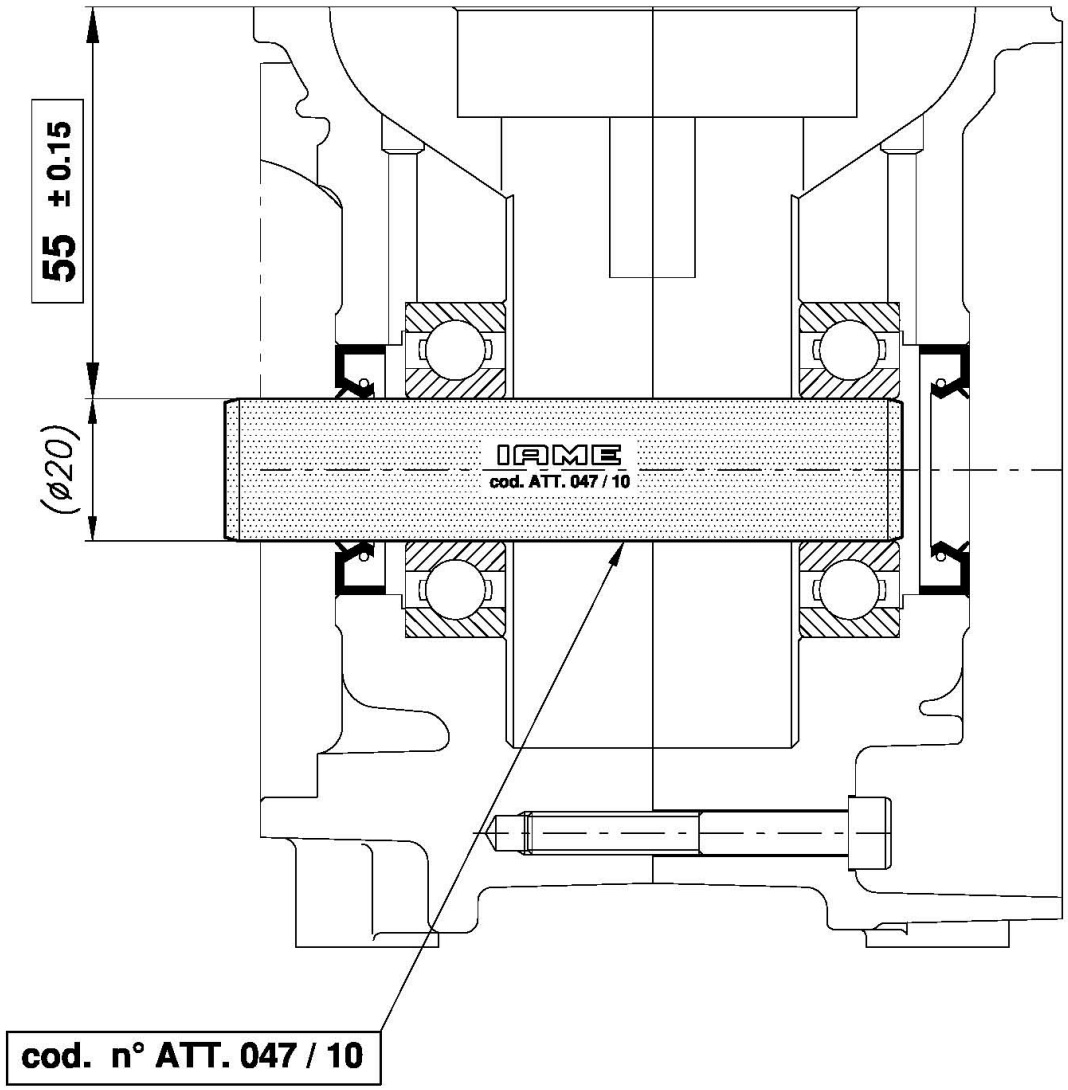
CHECK THAT THE TOOL MUST BE THE SAME SHAPE OF THE EXHAUST RESTRICTOR Ø14 MAX.
(CADETTI CLASS)



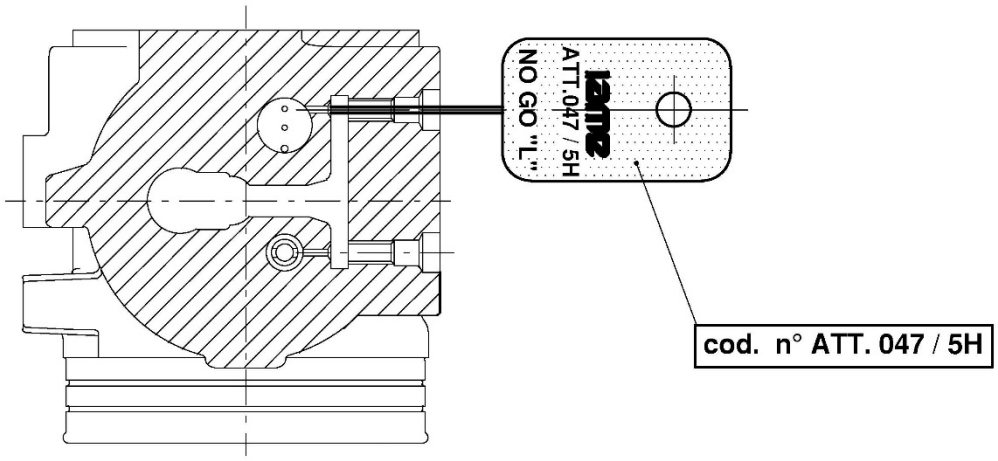
CHECK THAT THE TOOL DOES NOT ENTER INTO THE EXHAUST RESTRICTOR.
(CADETTI CLASS)

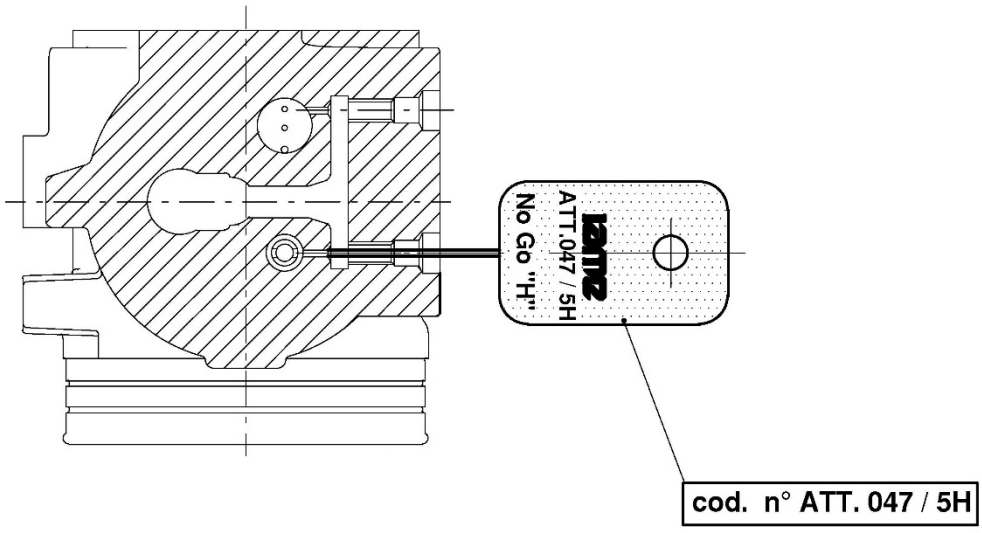


CHECK THAT THE TOOL DOES NOT ENTER INTO THE CLUTCH DRUM IN PERPENDICULAR POSITION RESPECT AT THE CLUTCH DRUM AXIS.

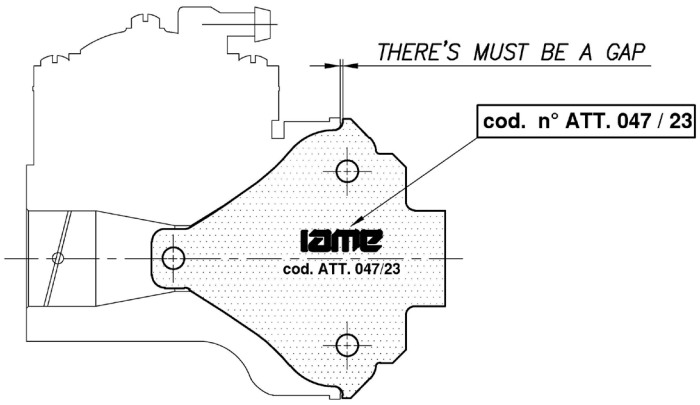

55 ± 0.15
(ø20)
IAME
cod. ATT. 047 / 10
cod. n° ATT. 047 / 10

CHECKING TOOLS FOR CARBURETTOR TILLOTSON HW-47A

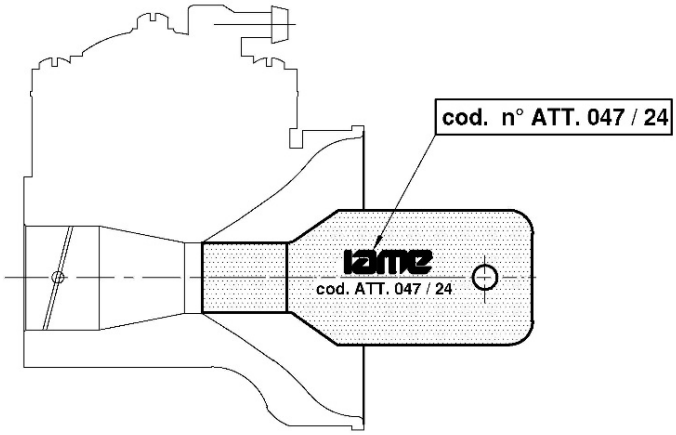




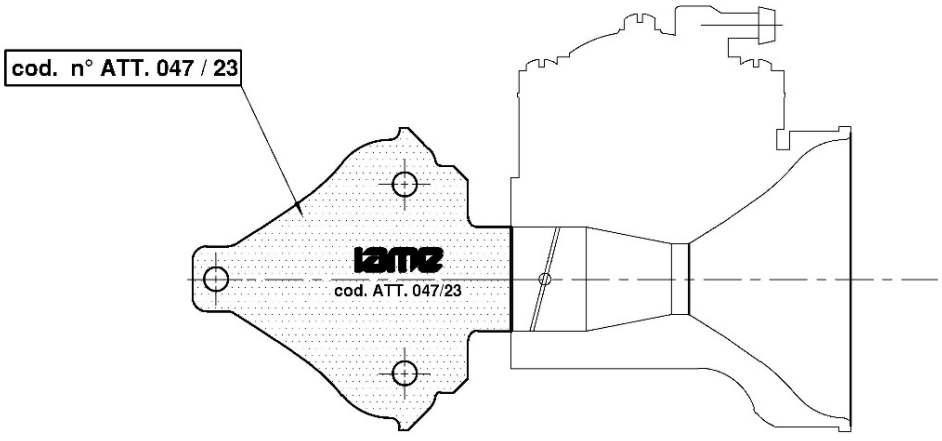
CHECK THAT THE SPIKES DOES NOT ENTER INTO THE HOLES.



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

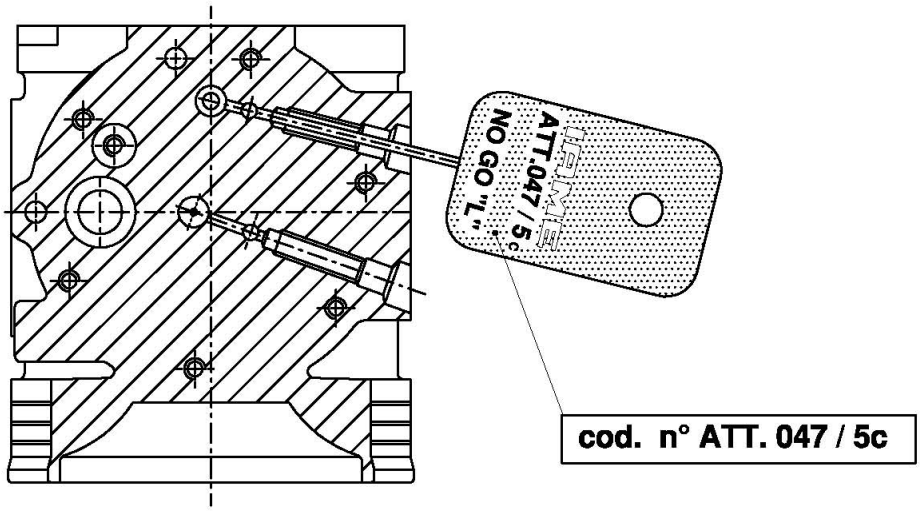


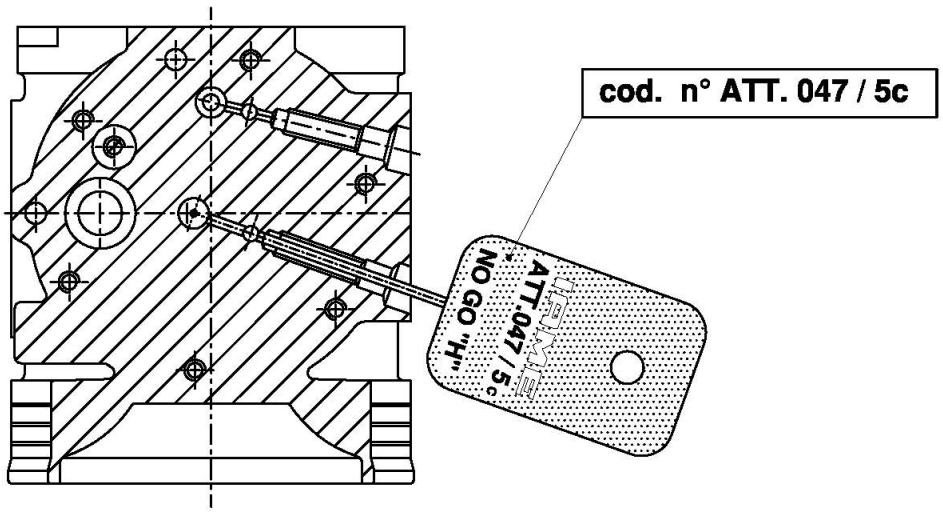
CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT INLET OF CARBURETTOR.



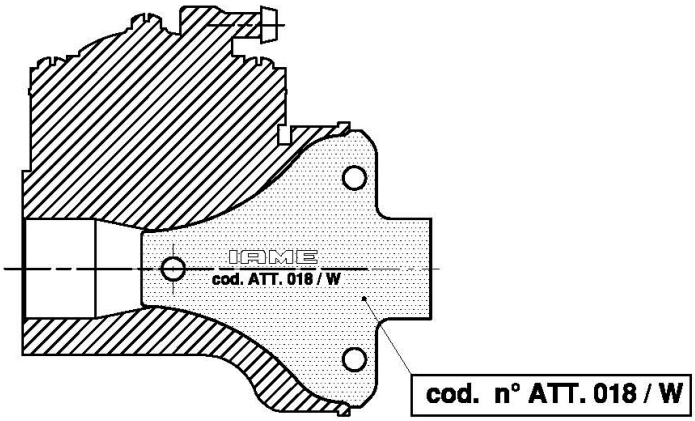
CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT INLET OF CARBURETTOR.

CHECKING TOOLS FOR CARBURETTOR TILLOTSON HW-34B

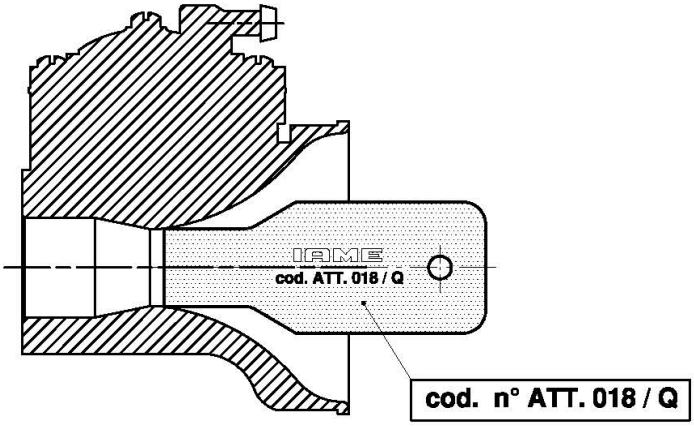




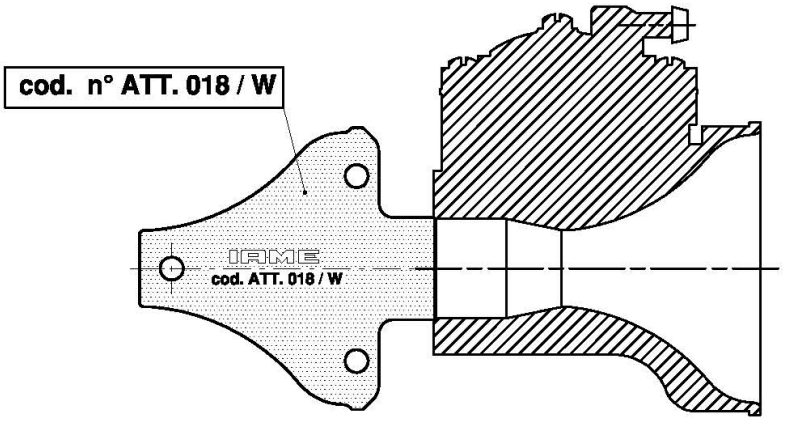
CHECK THAT THE SPIKES DOES NOT ENTER INTO THE HOLES.



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



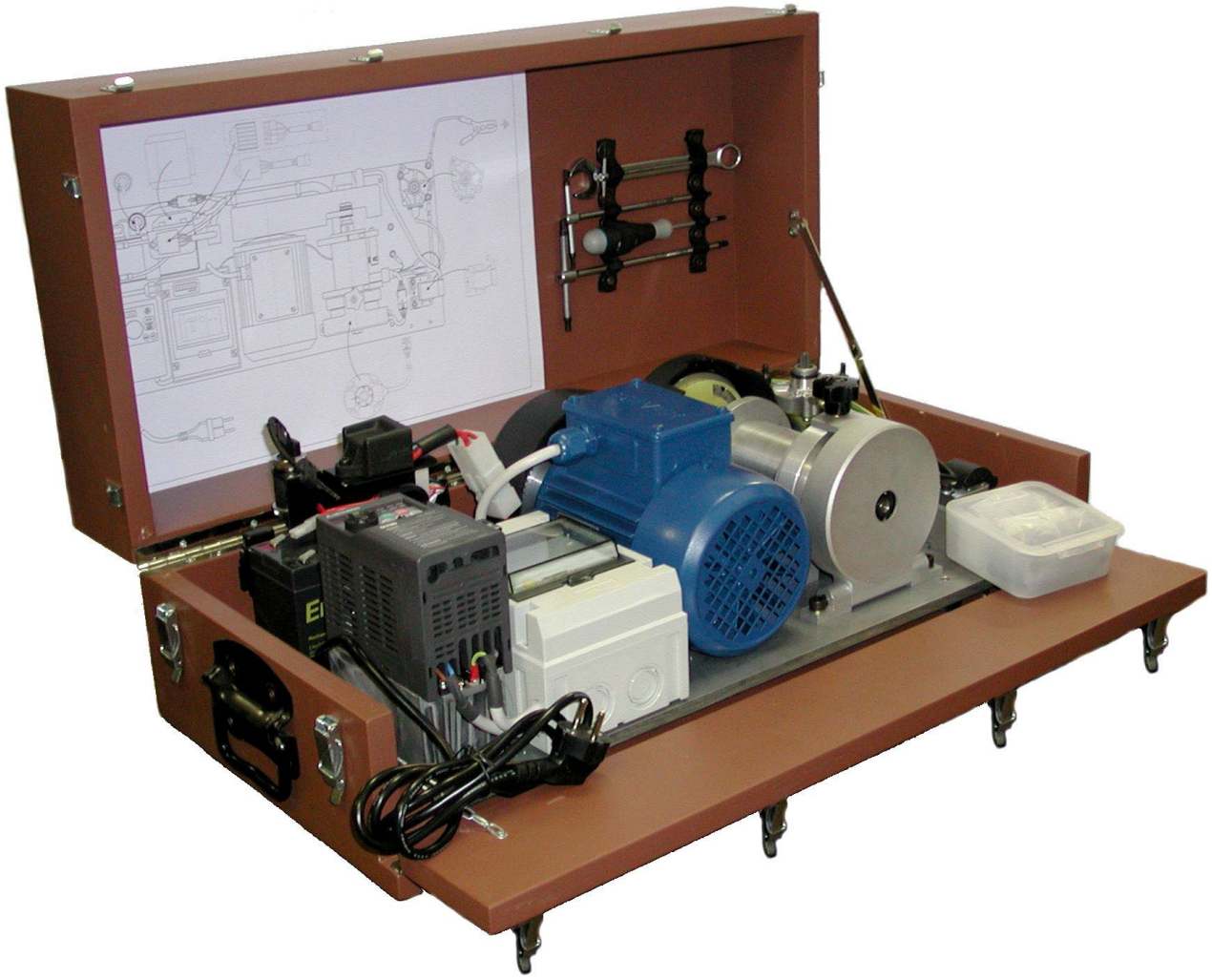
CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT INLET OF CARBURETTOR.



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

IGNITION BENCH TESTER

(Toleranse på tester: +100 rpm/min)



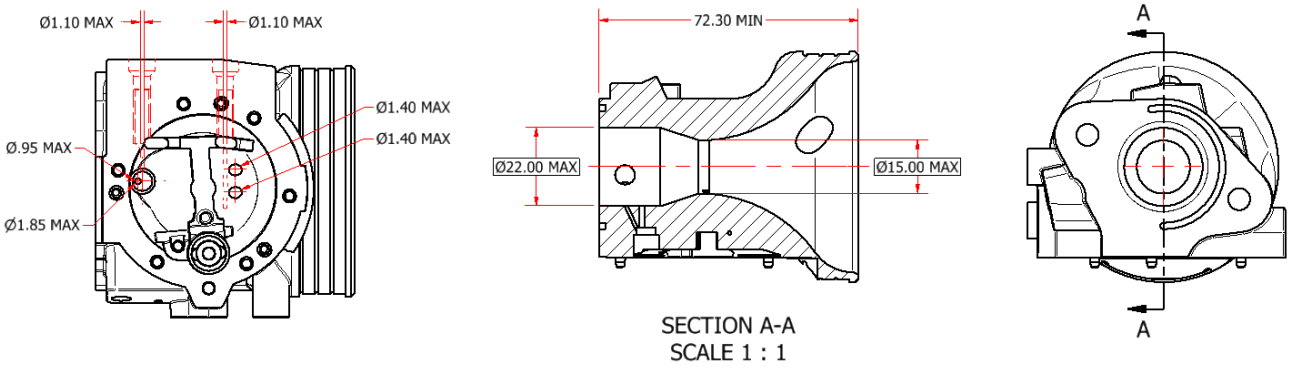
CARBURETTOR

Tillotson HW-47A

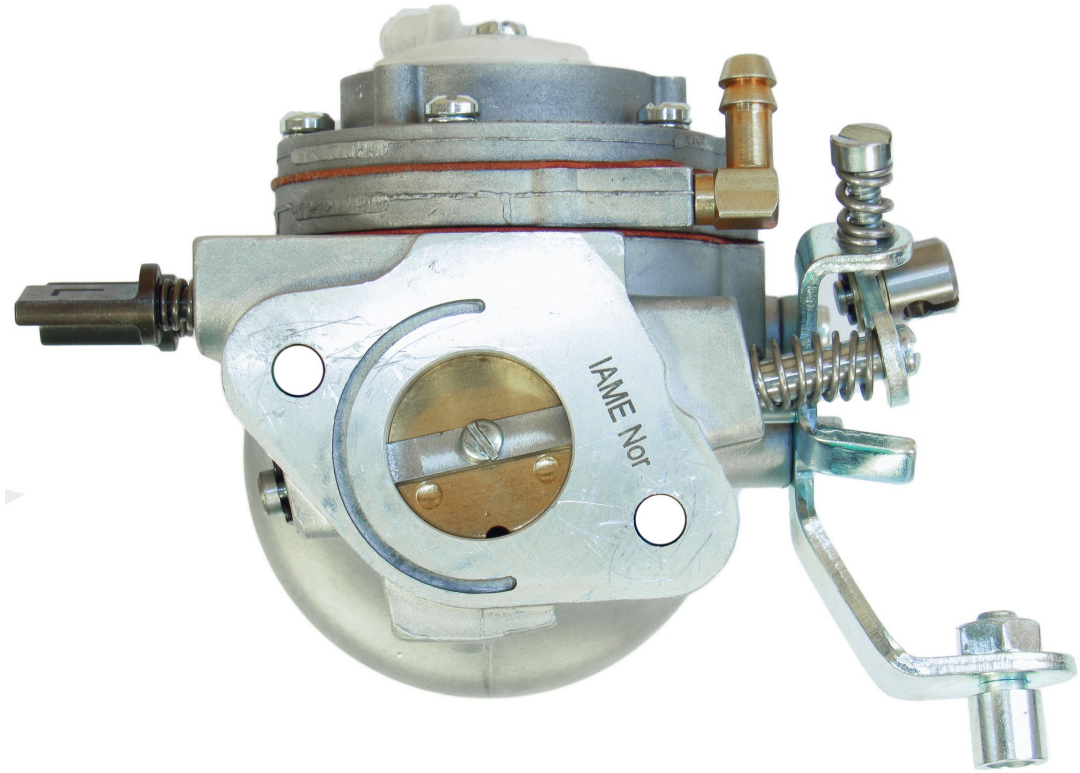
	
PHOTO OF ADJUSTING SIDE	PHOTO OF INLET SIDE

Manufacturer	**TILLOTSON LTD.**
Make	**TILLOTSON**
Model	**HW-47A**

SECTION VIEW



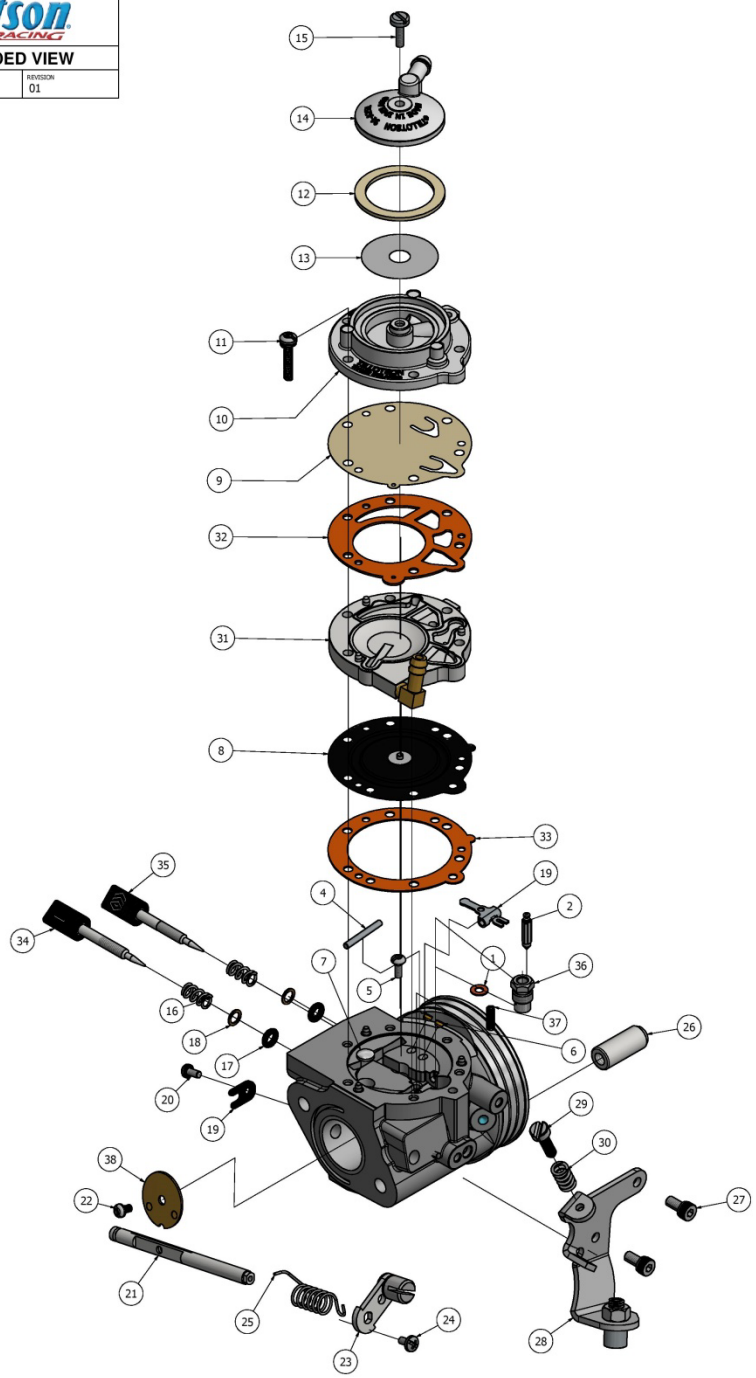
MARKING



Tillotson RACING

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	34-216	+ 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)



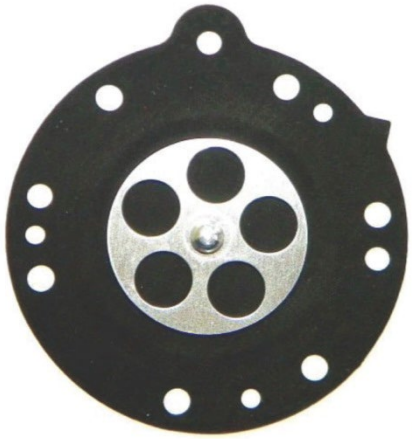
Thickness = 0.5 ±0.1 mm

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



Thickness = 0.10 ±0.063 mm

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



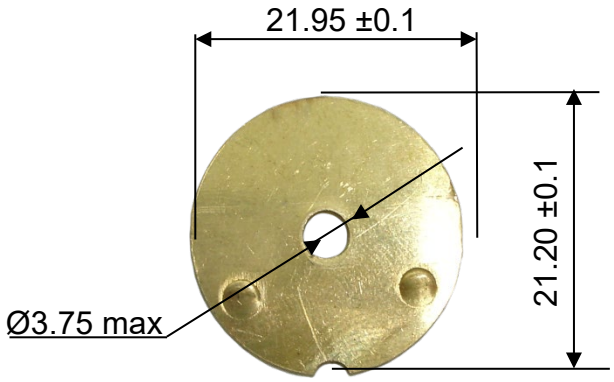
Thickness = 6.75 ±0.15 mm

REF.10 - P. N° 141-89
PUMP COVER



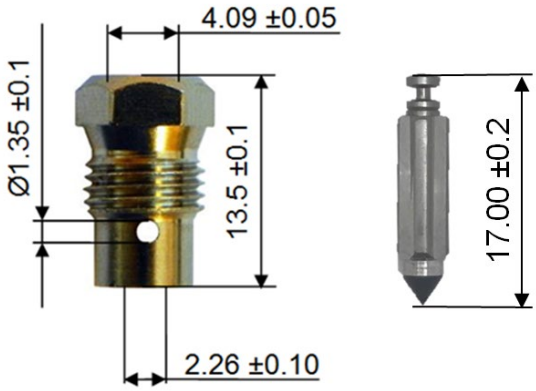
Thickness = 12.5 ±0.15 mm

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

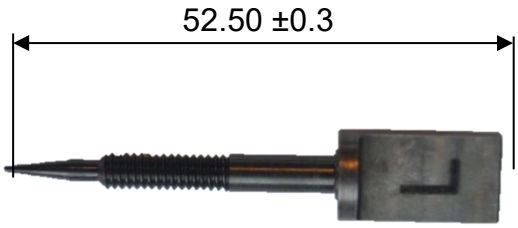


Thickness = 0.81 ±0.1 mm

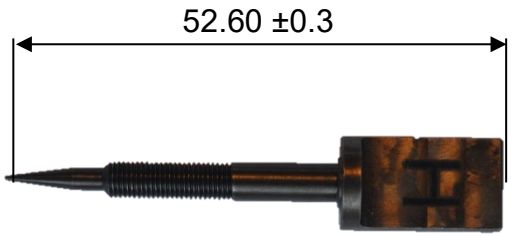
REF.36 / 2 - P. N° 36-A42 / 34-216
SEAT + NEEDLE



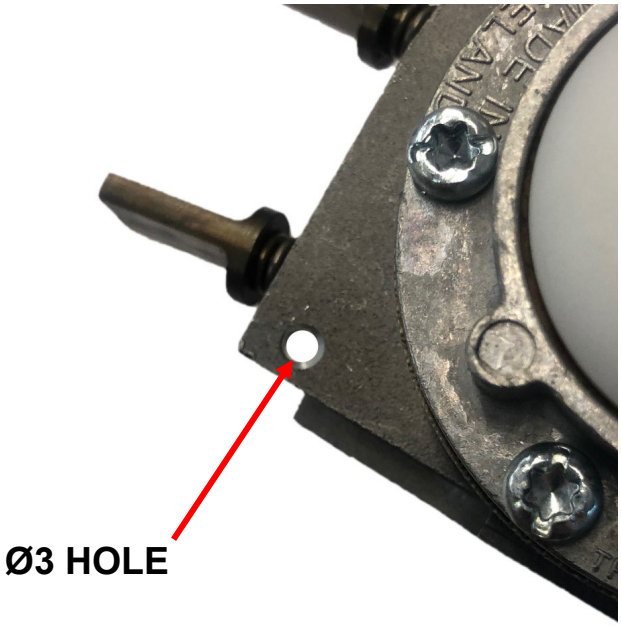
REF.34 - P. N° 43-1046
NEEDLE LOW SPEED



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

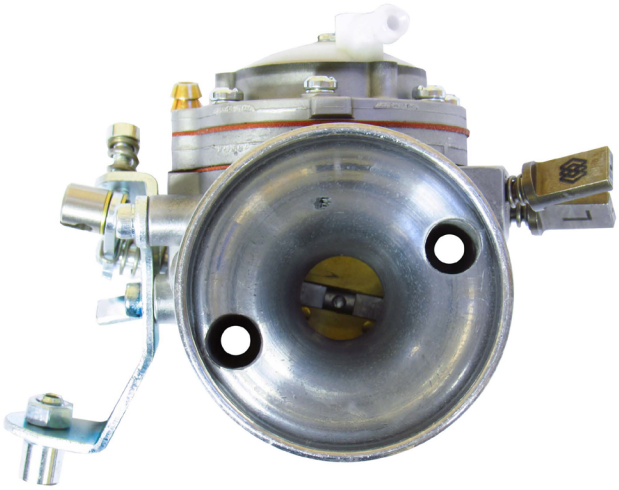


THE CARBURETTOR CAN HAVE THIS HOLE FOR SEALING



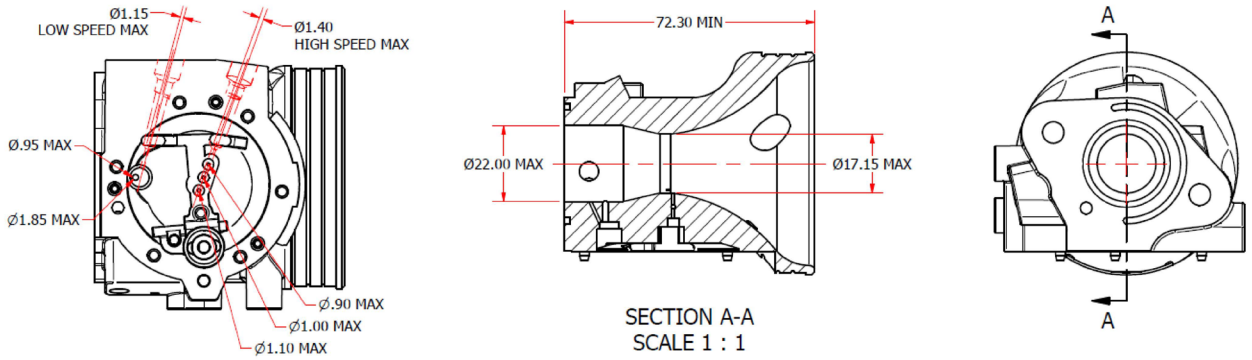
CARBURETTOR

Tillotson HW-34B

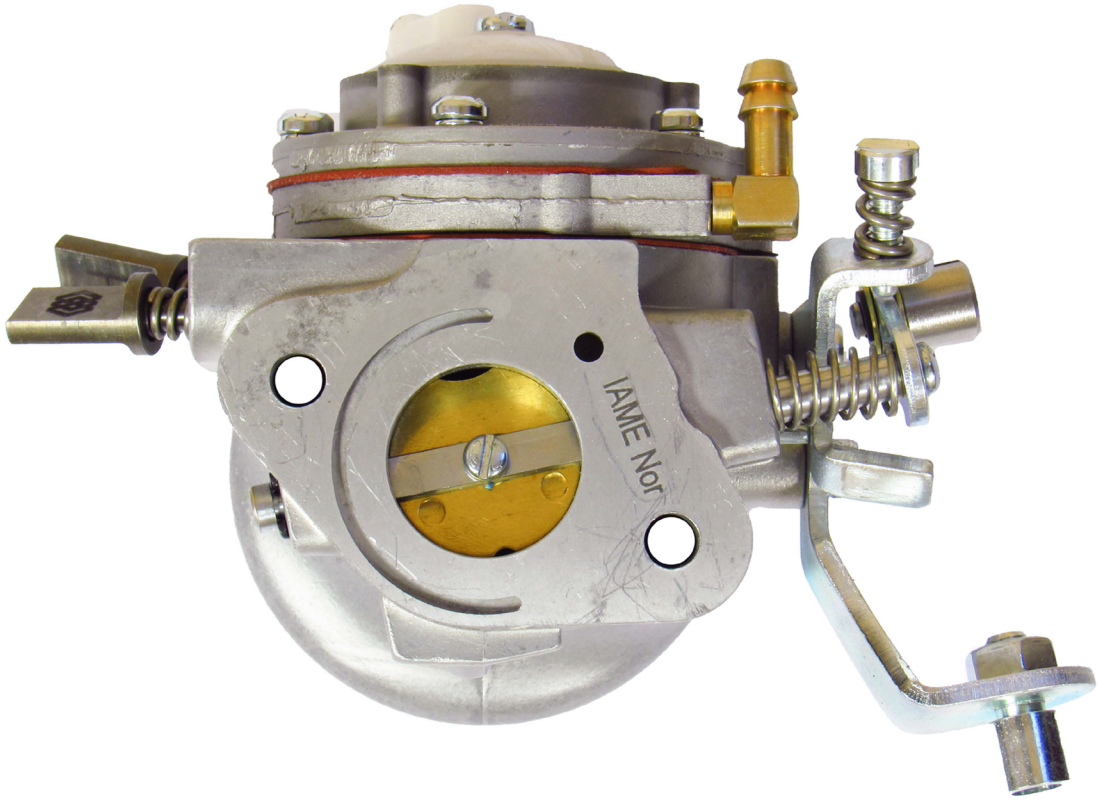
	
PHOTO OF ADJUSTING SIDE	PHOTO OF INLET SIDE

Manufacturer	**TILLOTSON LTD.**
Make	**TILLOTSON**
Model	**HW-34B**

SECTION VIEW



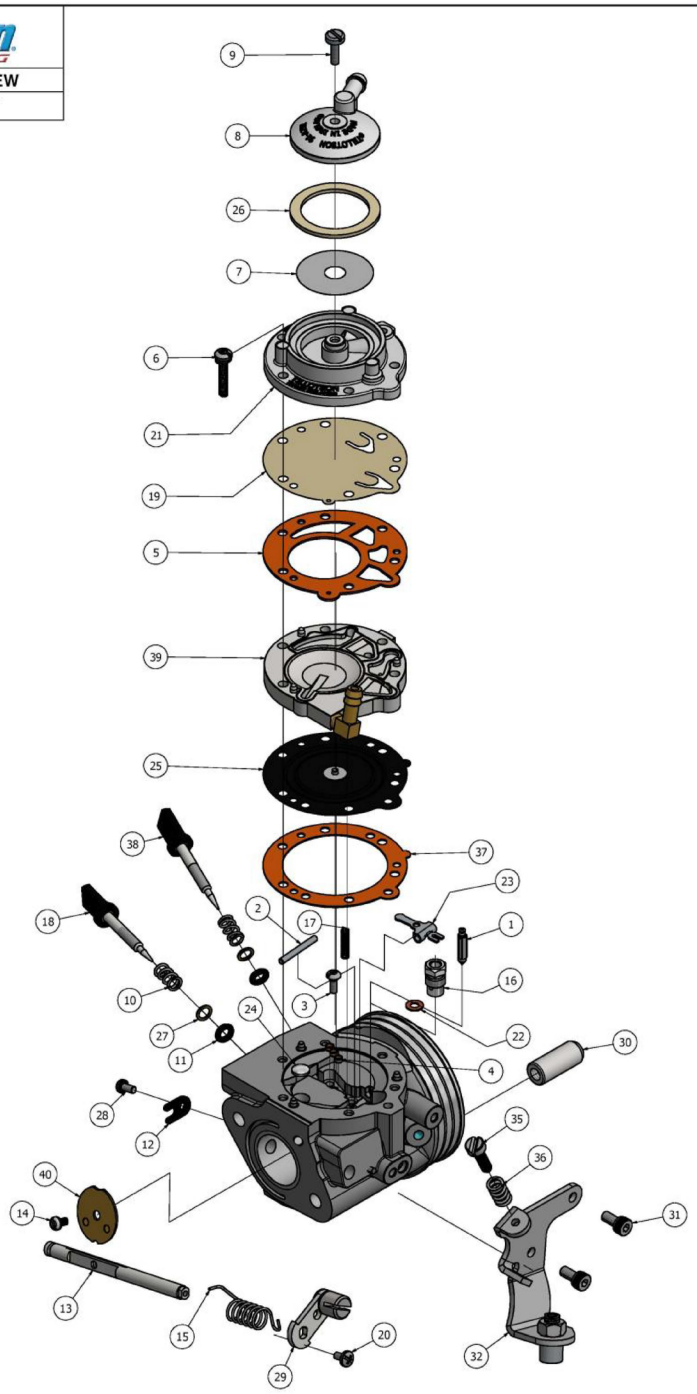
MARKING



Tillotson RACING

HW-34B EXPLODED VIEW

DATE	DRAWN BY	REVISION
25/10/2019	P.B	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-B329	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	179-62	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-B205	+* 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 ±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



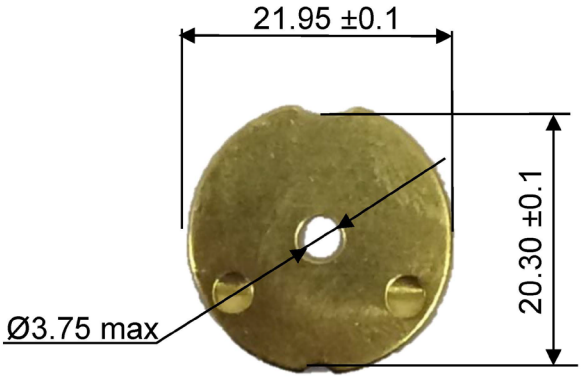
Thickness = 6.75 ±0.15 mm

REF.21 - P. N° 141-89
PUMP COVER



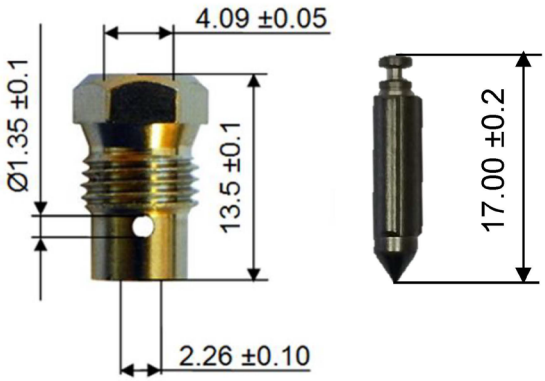
Thickness = 12.5 ±0.15 mm

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

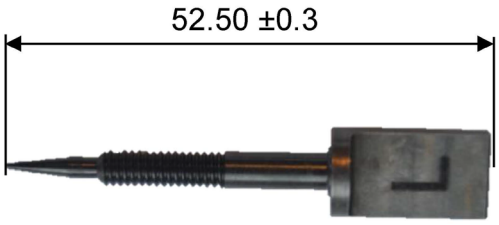


Thickness = 0.81 ±0.1 mm

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.

