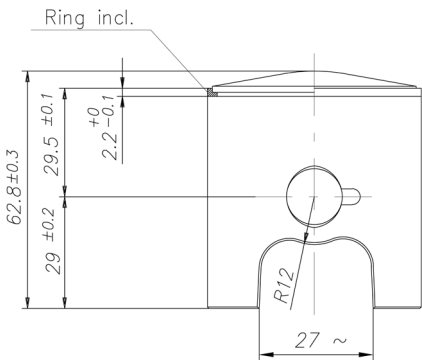
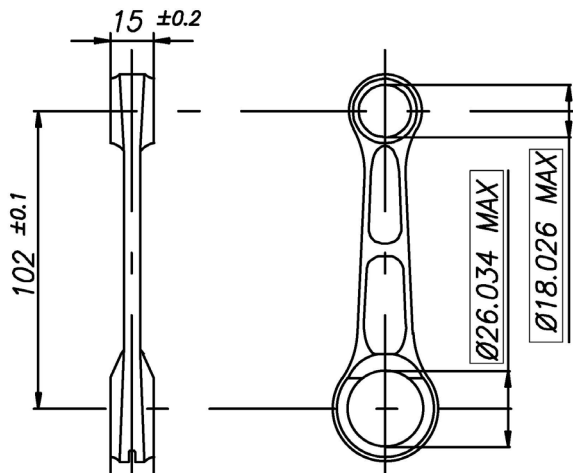
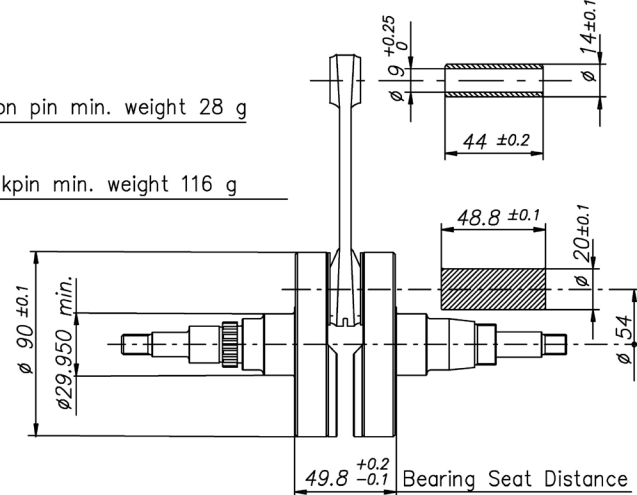
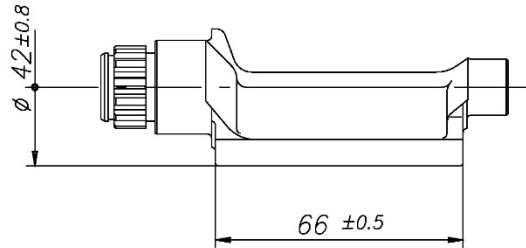
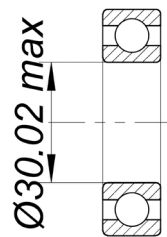
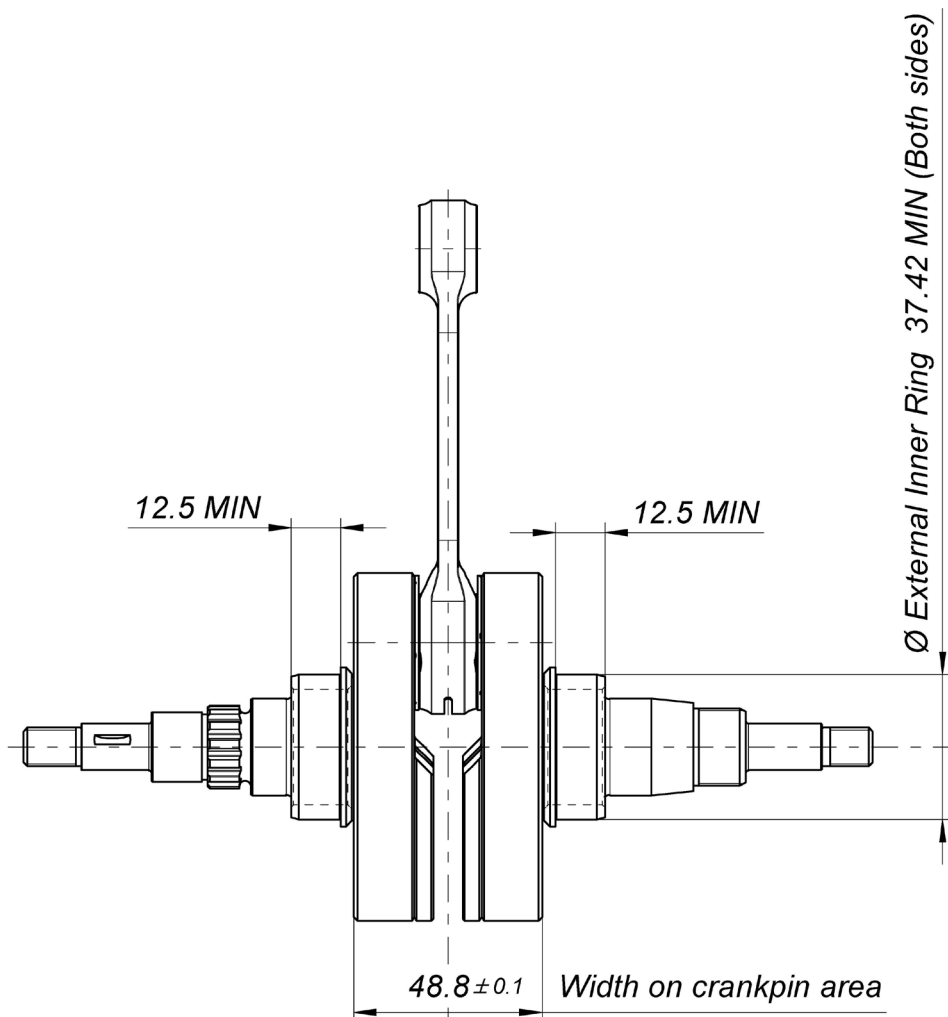


X30 125cc RL USA TAG

		FEATURES	
		Cylinder volume	123.67 cm ³
		Bore	54 mm
		Max. bore	54.35 mm
		Stroke	54 mm max.
		Cooling system	Water
		Inlet system	Reed valve
Carburettor	Tillotson HW-27A (Venturi Ø27 mm)	Cylinder / crankcase transfers n°	3
Number of piston rings	1	Inlet / exhaust ports number	3
Big end conr. bearing diam.	20x26x15	Combustion chamber shape	Spherical
Crankshaft bearing diam.	30x62x16	Selettra ignition	Digital "S"
Small end conr. bearing diam.	14x18x17.5	RPM limiter	Yes
Distance between conrod centers	102 mm	Centrifugal Dry Clutch	Yes
Balancing shaft	Yes	Electric starter	Yes

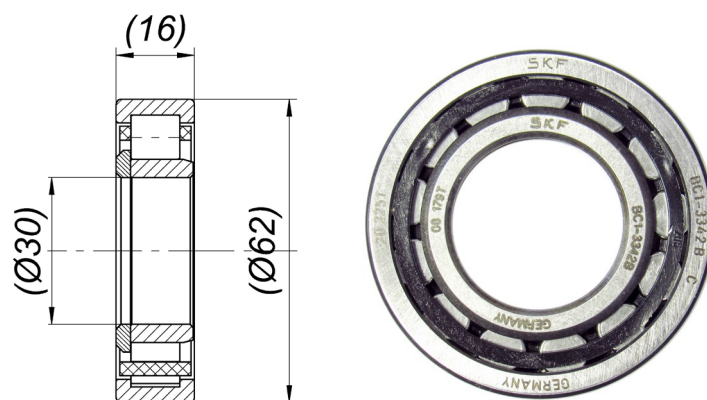
DESCRIPTION OF THE MATERIAL		PISTON	
Conrod material	Steel	 <p>Piston min. weight (ring incl.) 128 g</p>	
Crankshaft material	Steel		
Balancing shaft material	Steel		
Gears material	Steel		
Starter ring material	Steel		
Head material	Aluminium		DISTANCE BETWEEN CONROD CENTERS
Cylinder material	Aluminium	 <p>Min. weight 110 g</p>	
Liner material	Cast iron		
Crankcase material	Aluminium		
Piston material	Aluminium		
Piston rings material	Cast iron		
Exhaust muffler material	Sheet-steel		
Ball-bearings	6206 type		
CRANKSHAFT			BALANCING SHAFT
 <p>Piston pin min. weight 28 g</p> <p>Crankpin min. weight 116 g</p> <p>Complete crankshaft min. weight 2150 g</p>			 <p>Min. weight 315 g</p>
		CRANKSHAFT BEARINGS	
		 <p>Ø30.02 max</p>	

DIMENSIONS OF ALTERNATIVE CRANKSHAFT WITH ROLLER MAIN BEARINGS

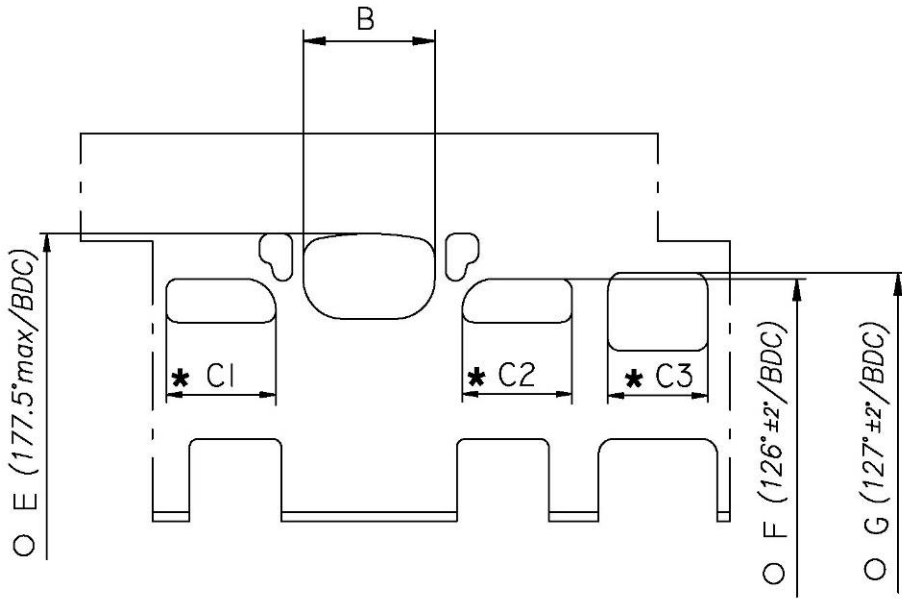


Crankshaft complete min. Weight 2220 g

MAIN ROLLER BEARING



CYLINDER DEVELOPMENT

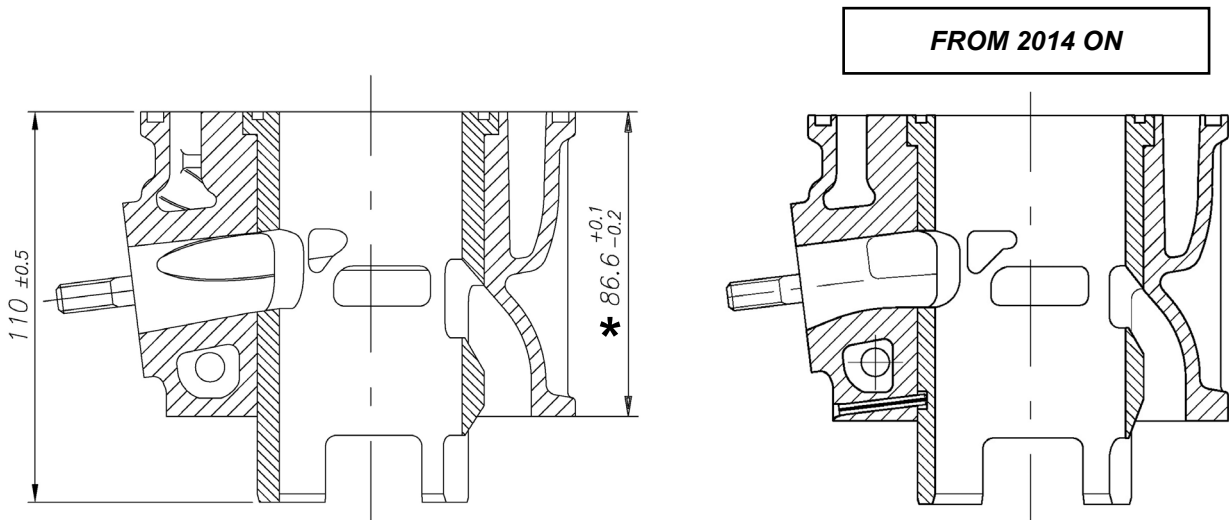


B	≤ 36.5 mm
C1 = C2	≤ 30 mm
C3	≤ 28.5 mm
E	177.5° max
F	126° ± 2°
G	127° ± 2°

* **CHORDAL READING**

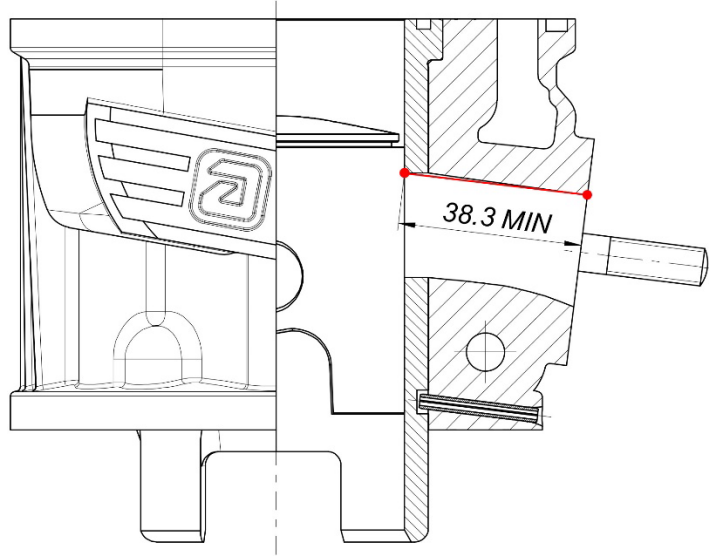
○ **ANGULAR READING BY INSERTING A 0.2x5 mm GAUGE**

CYLINDER CROSS SECTION VIEW (without or with pin)

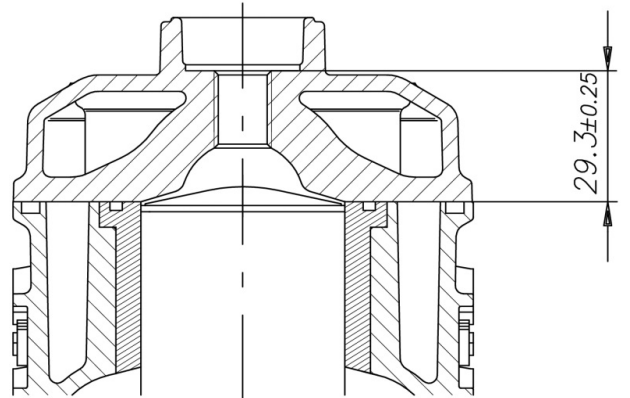


* from the base plane of the cylinder to the top plane of the liner

DISTANCE FROM EXHAUST FLANGE TO PISTON

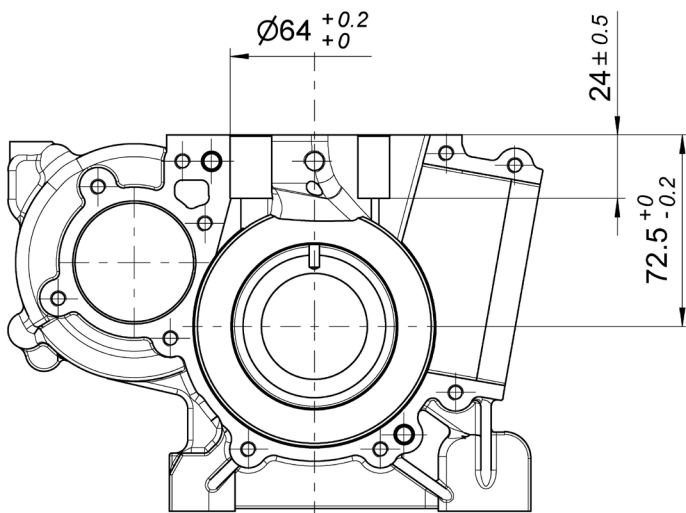


CYLINDER BASE VIEW

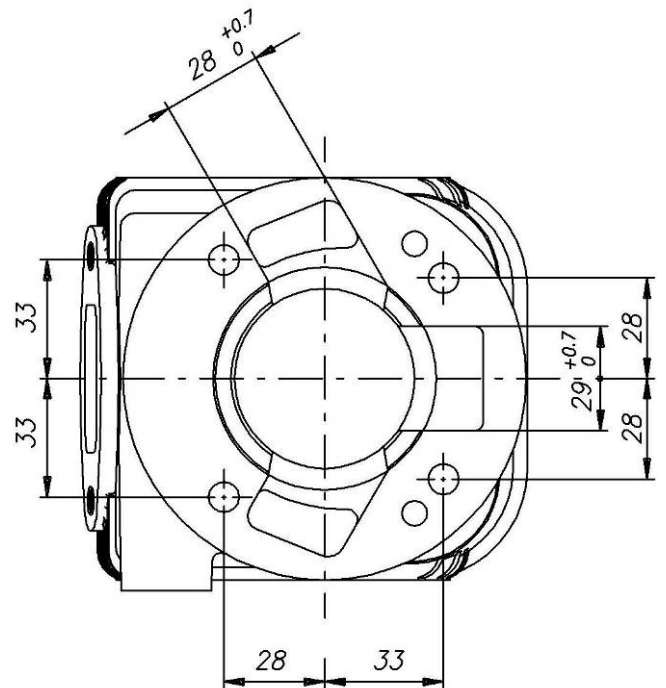


SQUISH MIN. = 0.0354" (0.9 mm)
 (measured with 0.0625" (1/16") / Ø1.6mm solder)

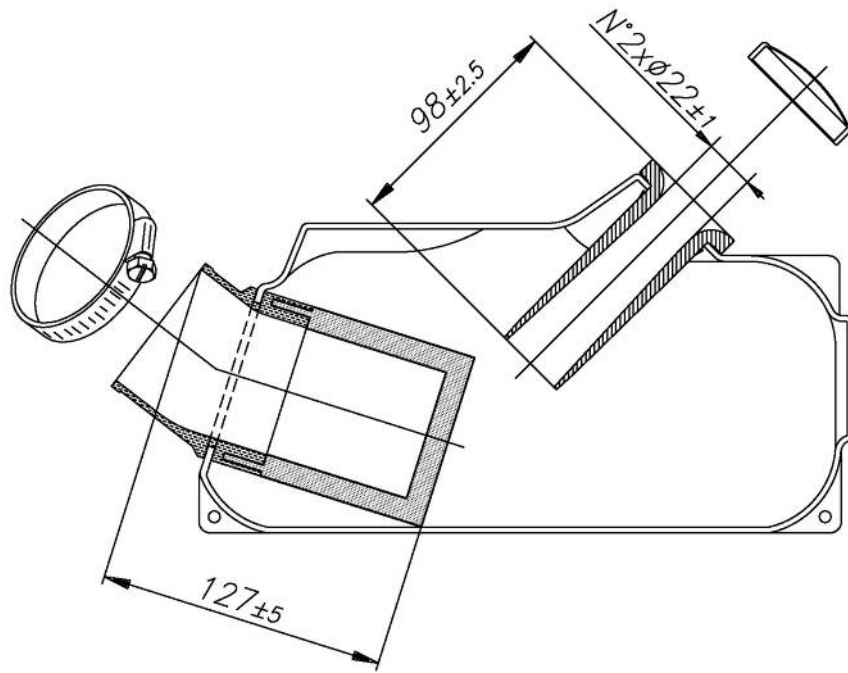
CRANKCASE INSIDE VIEW



CYLINDER BASE VIEW



INLET SILENCER – DRAWING

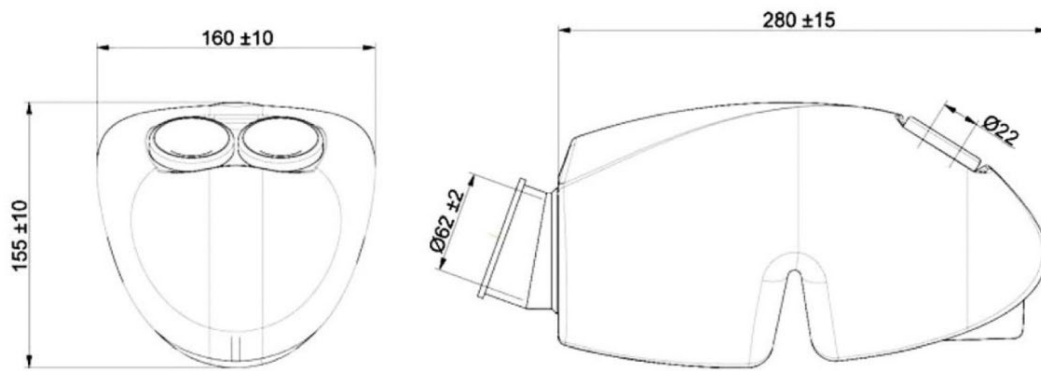


WITH MANIFOLD SPONGE OF AIR FILTER

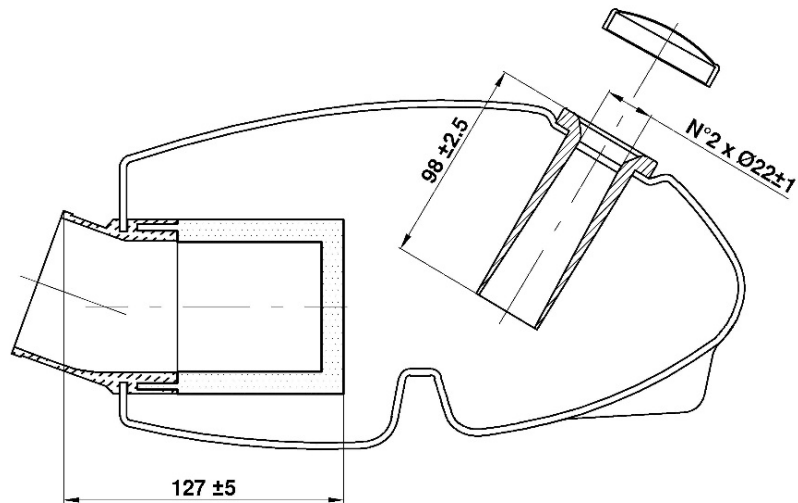
INLET SILENCER - PHOTO



ALTERNATIVE INLET SILENCER – DRAWING



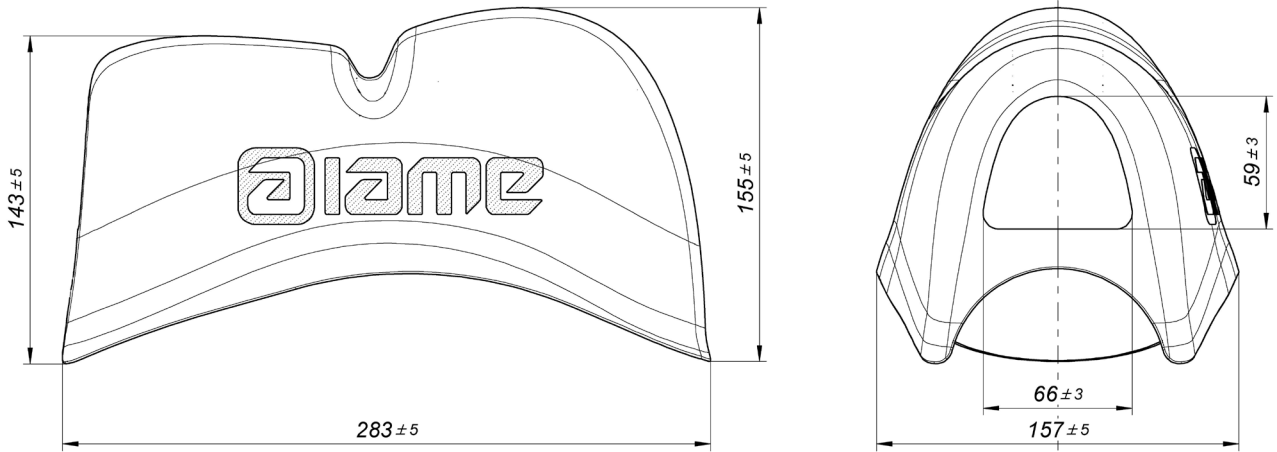
WITH MANIFOLD SPONGE OF AIR FILTER



ALTERNATIVE INLET SILENCER - PHOTO



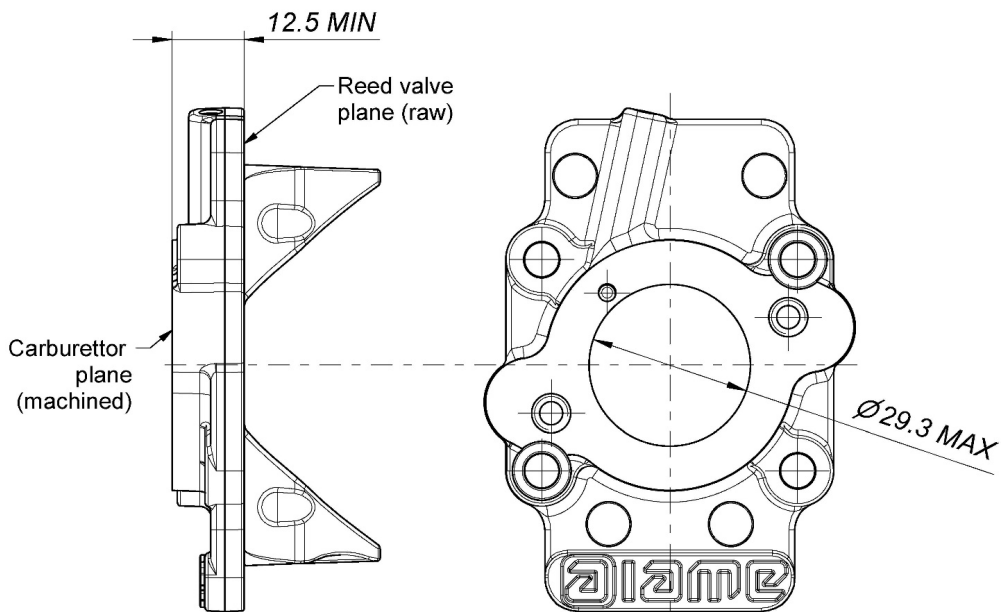
RAIN COVER FOR ALTERNATIVE INLET SILENCER – DRAWING



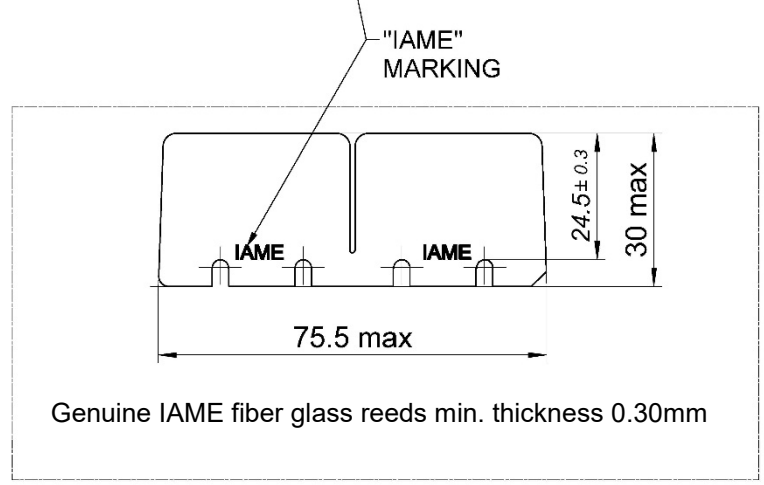
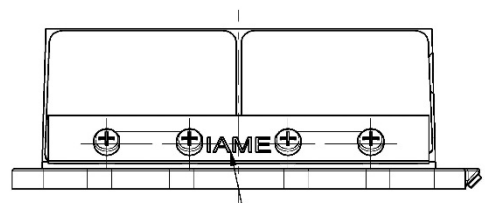
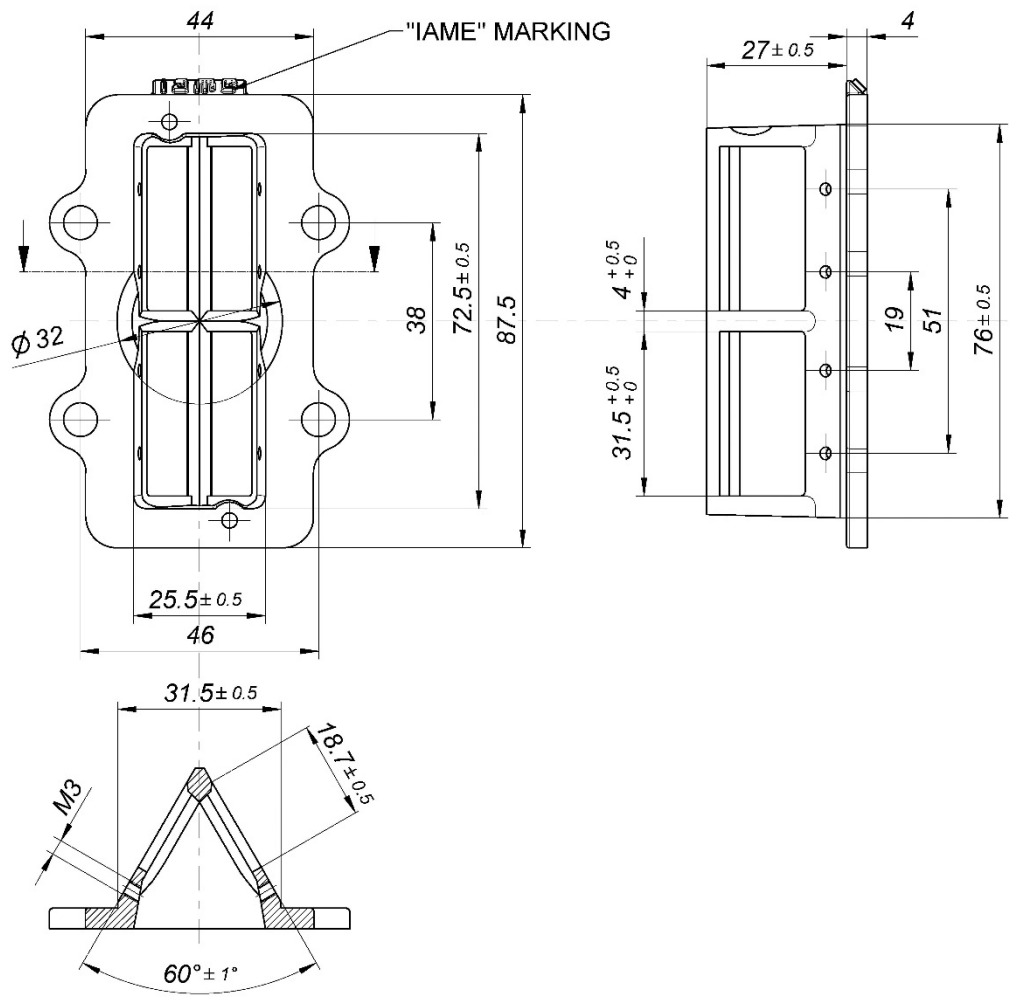
RAIN COVER FOR ALTERNATIVE INLET SILENCER - PHOTO



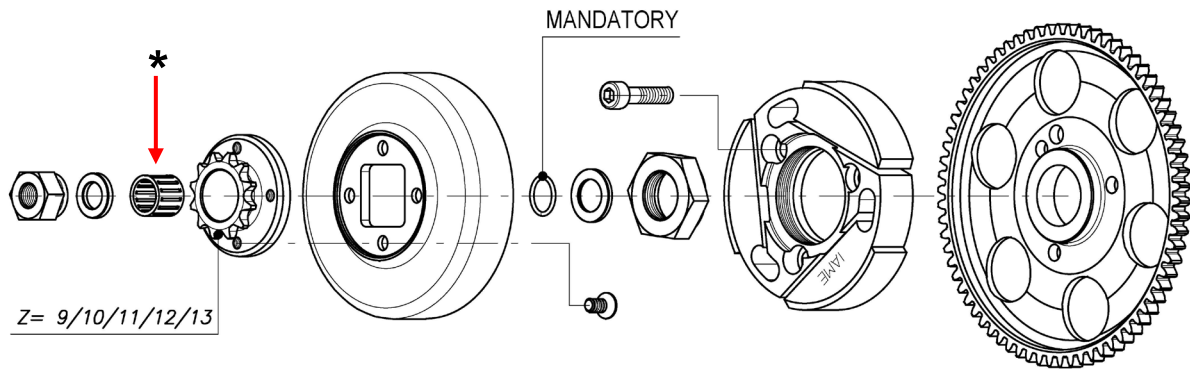
INLET CONVEYOR DIMENSIONS



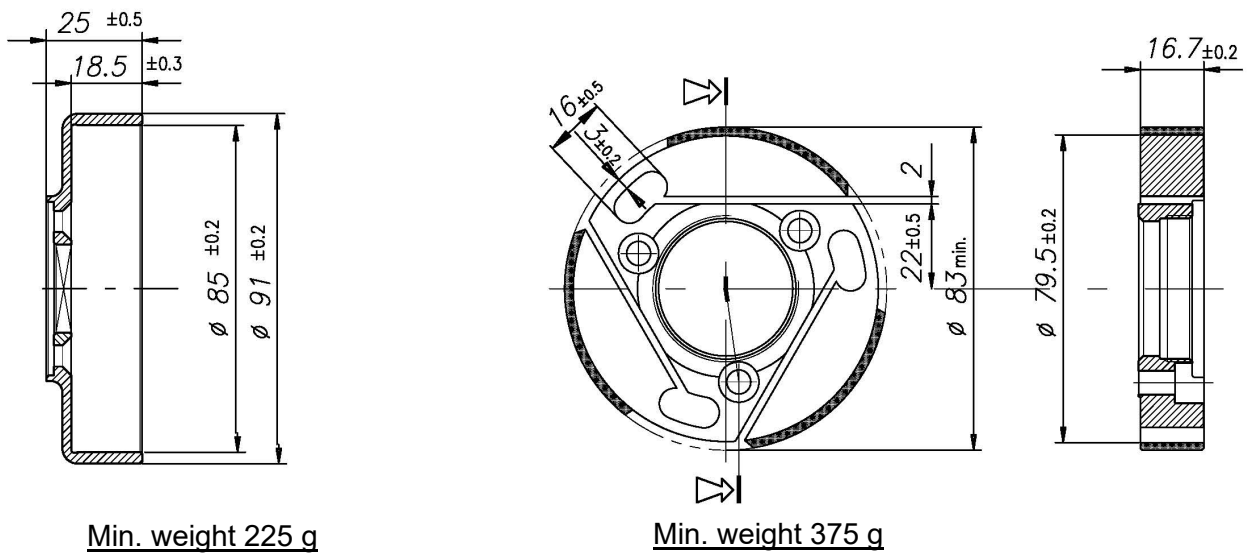
REED VALVE - DIMENSIONS AND MARKING



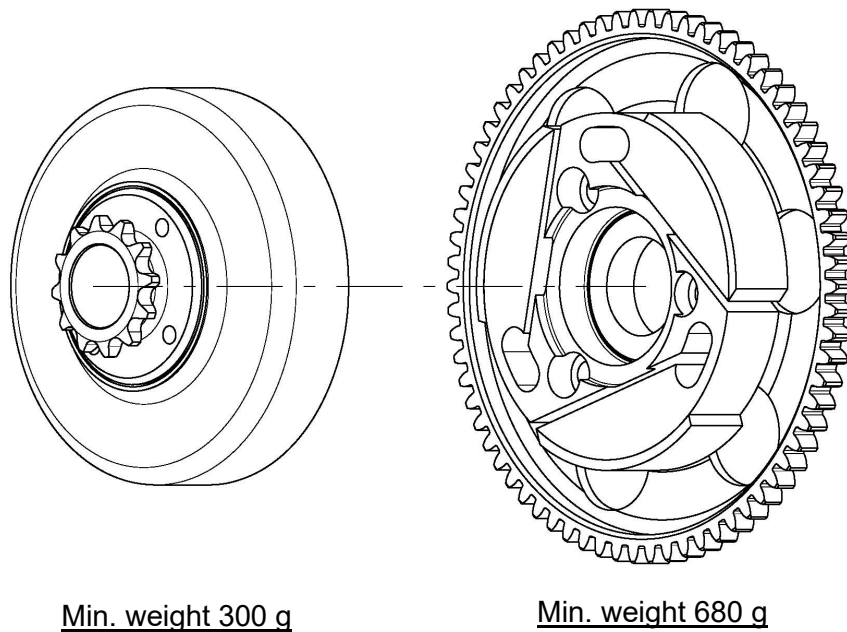
DESCRIPTION OF THE CLUTCH



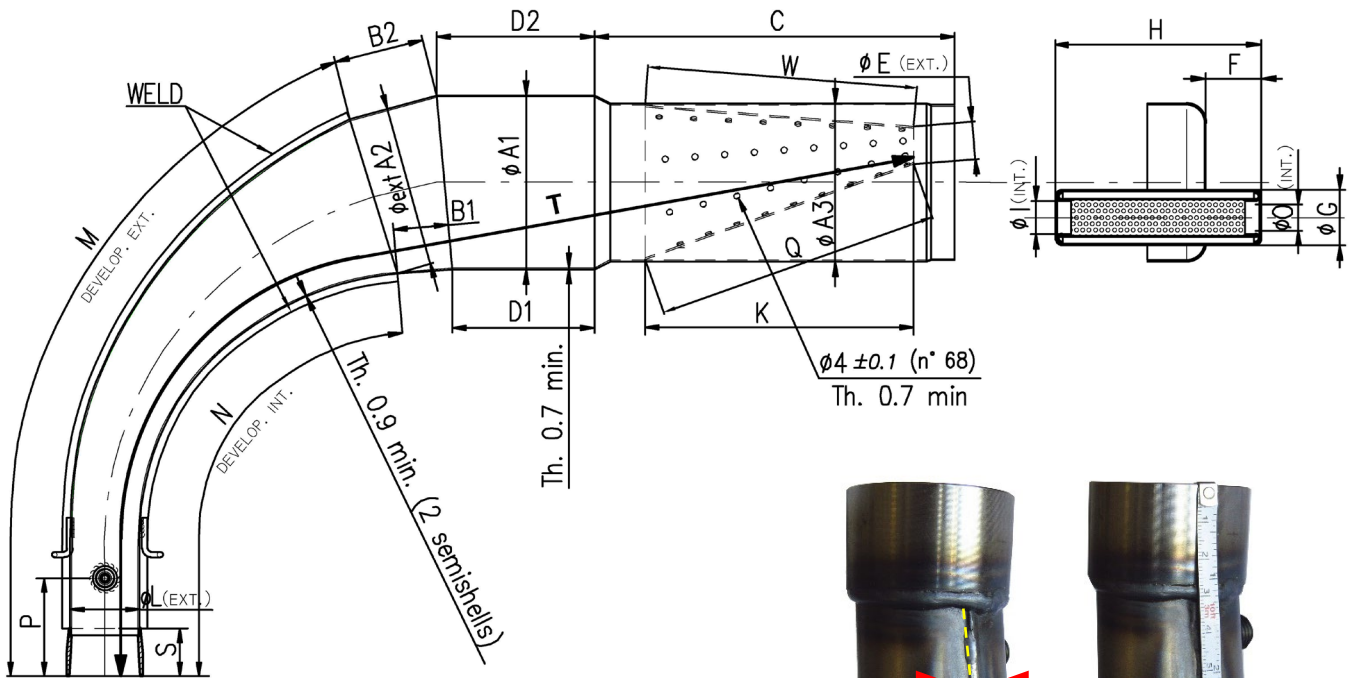
* When using the Z9, the roller cage is replaced by a bronze bushing, pressed into the sprocket



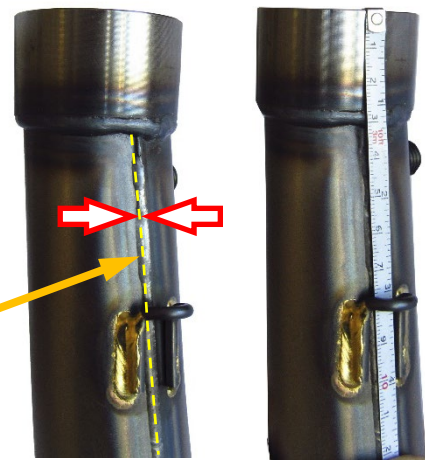
DESCRIPTION OF THE CLUTCH



SENIOR EXHAUST MUFFLER VIEW AND DIMENSIONS



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



Min. weight 1.780 g

ØA1: 110 ±1.5 Øext.	B2: 60 ±3	ØE: 23.5 ±2 Øext.	ØI: 21 ±1 Øint.	N: 341 ±3	T: 690 ±3
ØA2: 102 ±1.5 Øext.	C: 219 ±3	F: 36 ±2	K: 170 ±3	ØO: 21 ±1 Øint.	W: 170 ±3
ØA3: 100 ±1.5 Øext.	D1: 90 ±3	ØG: 35 ±1 Øext.	ØL: 42.5 ±1.5 Øext.	P: 50 ±10	Q: 182 ±3
B1: 60 ±3	D2: 109 ±3	H: 132 ±3	M: 439 ±3	S: 29 ±1.5	

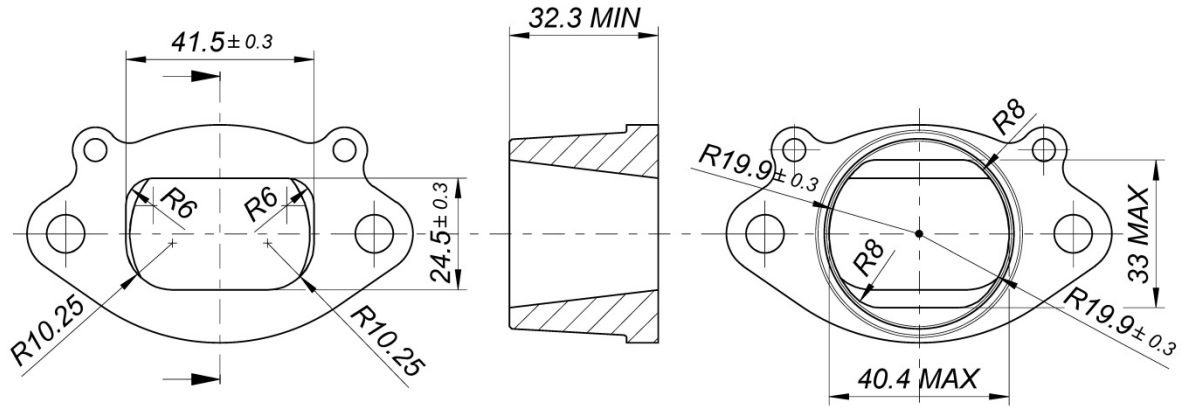
ATTENTION:

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

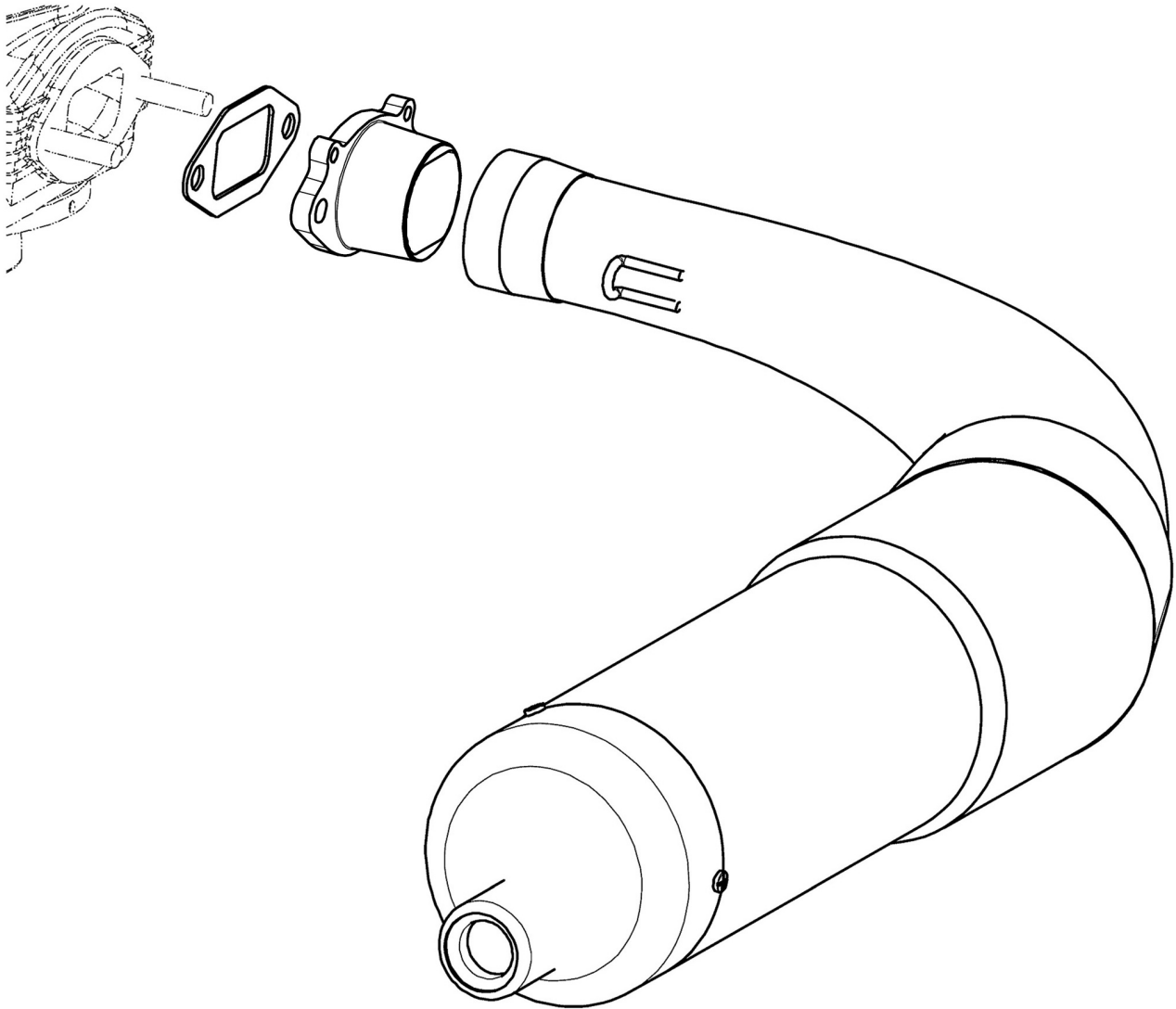
The dimensions “**M**” and “**N**” must be taken on the weld centerline.

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

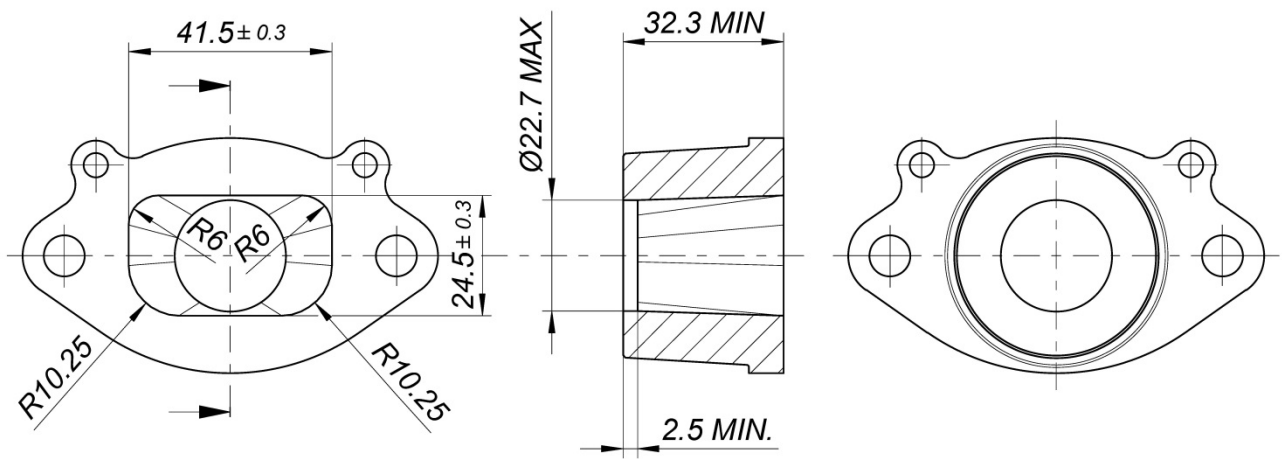
SENIOR EXHAUST FITTING



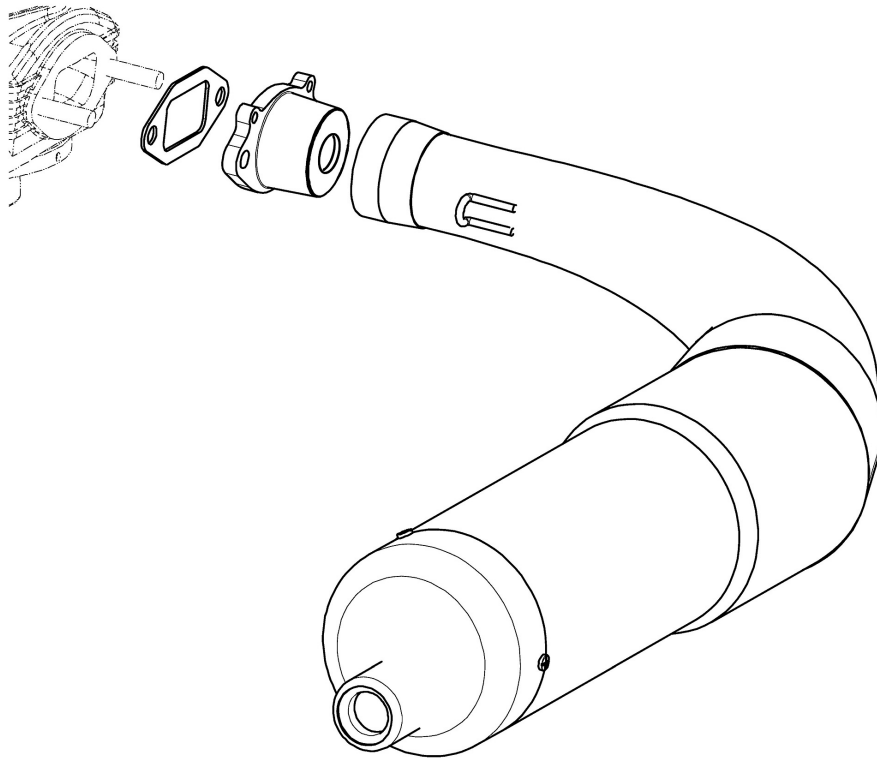
SENIOR MUFFLER INSTALLATION



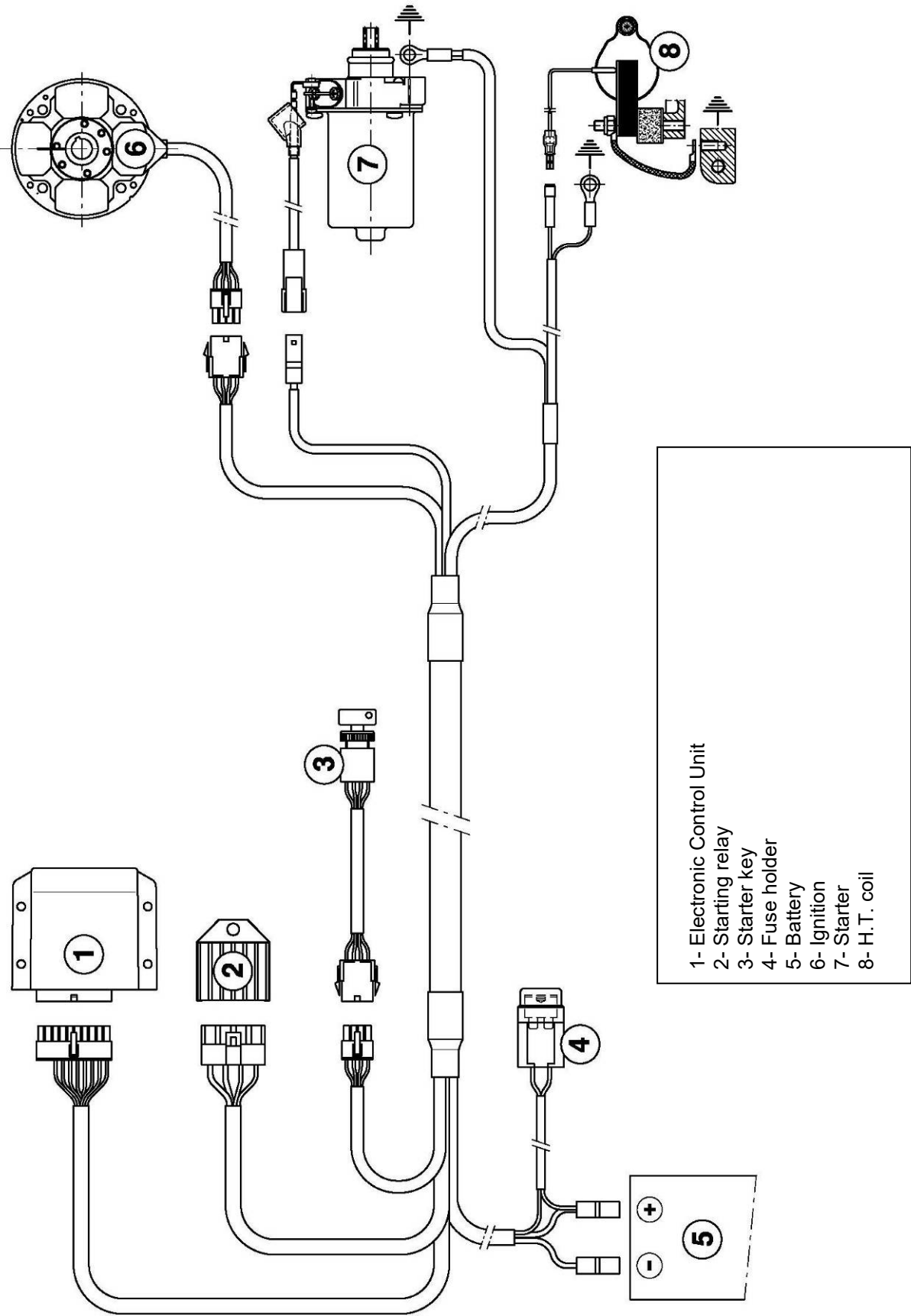
JUNIOR EXHAUST FITTING



JUNIOR MUFFLER INSTALLATION

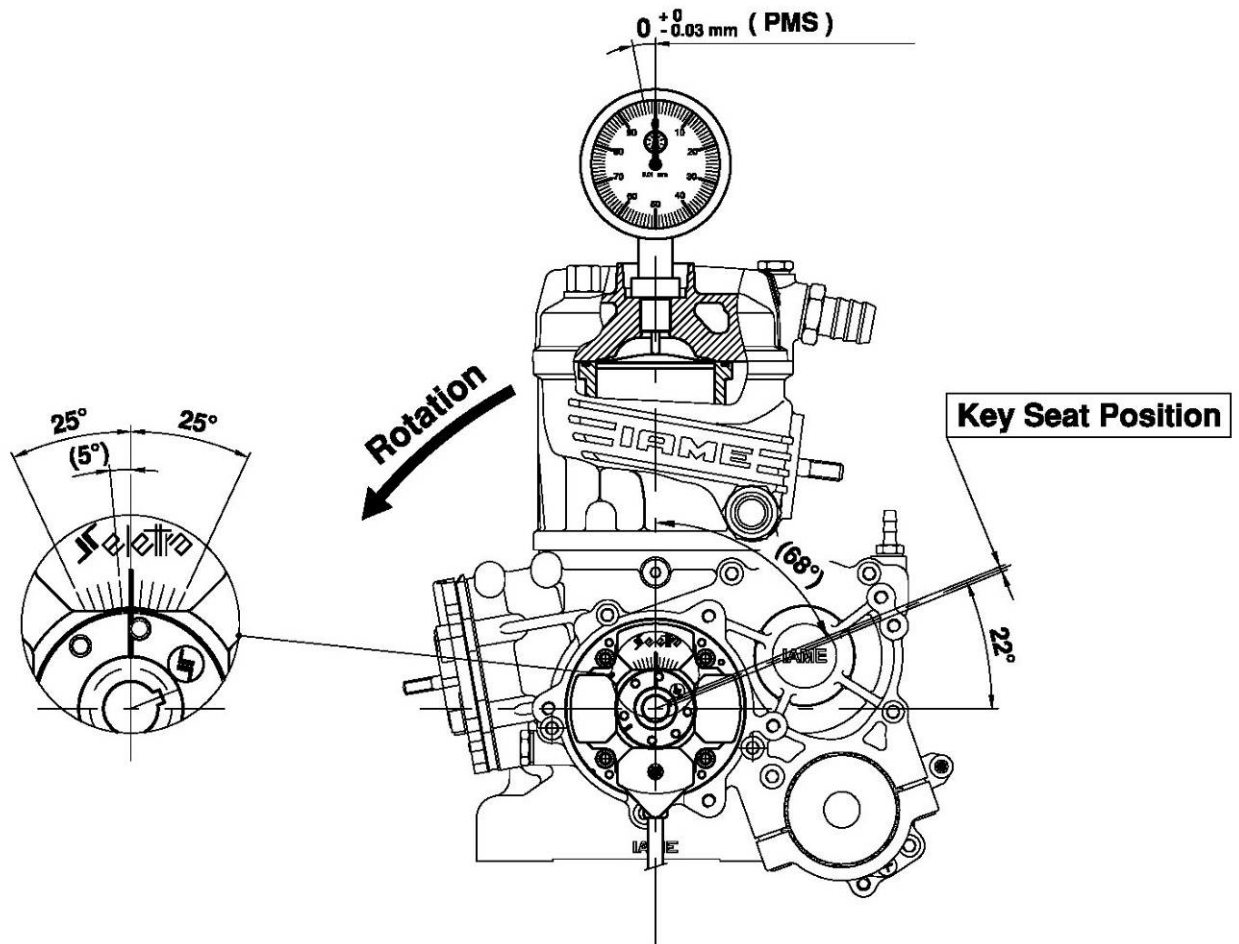


WIRING DIAGRAM (SELETTRA DIGITAL "K" IGNITION)

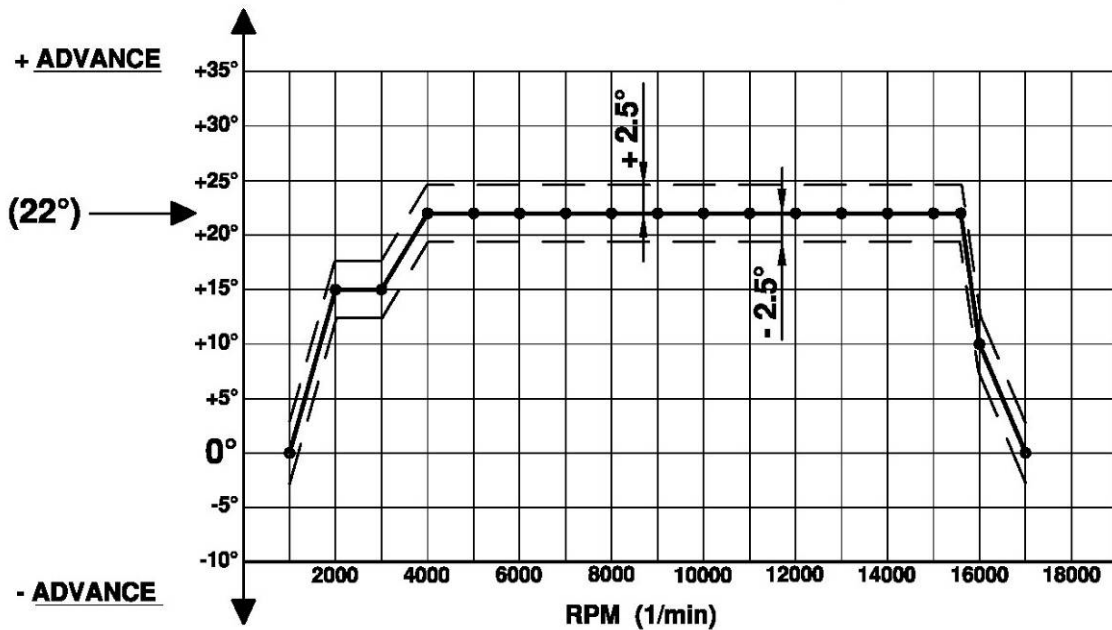


- 1- Electronic Control Unit
- 2- Starting relay
- 3- Starter key
- 4- Fuse holder
- 5- Battery
- 6- Ignition
- 7- Starter
- 8- H.T. coil

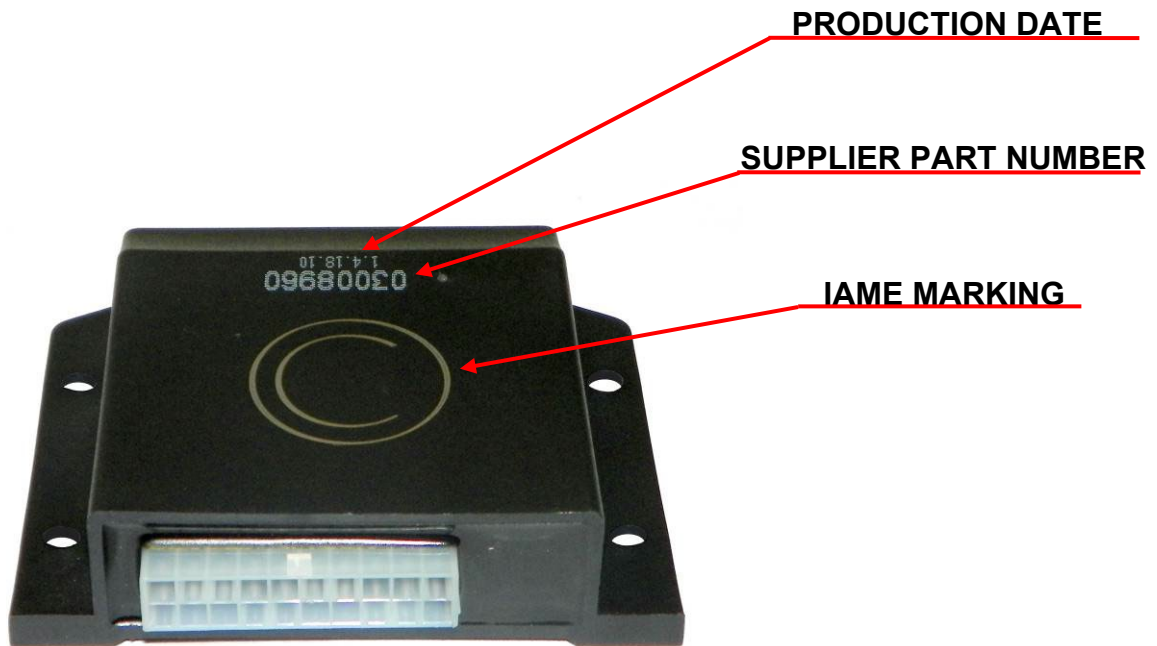
SCHEME FOR ADVANCE CONTROL SELETTRA DIGITAL "K" IGNITION



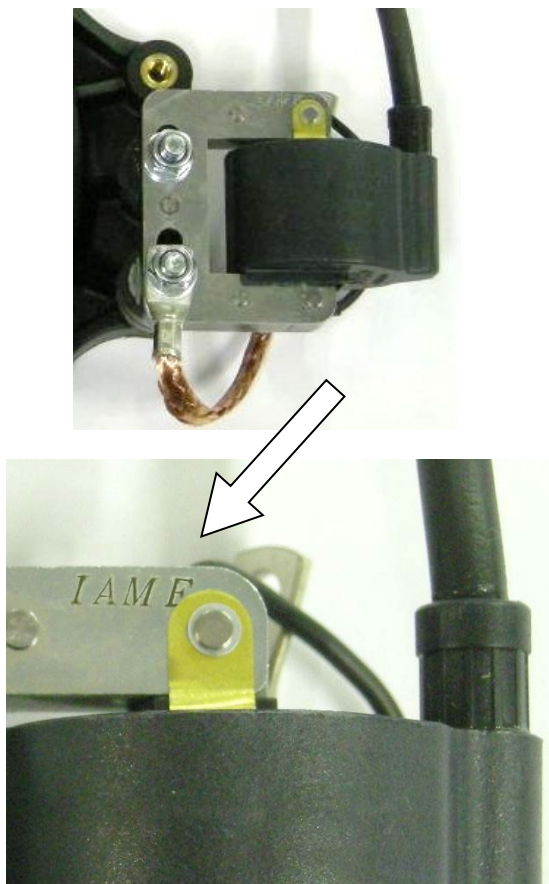
ADVANCE CURVE GRAPHS



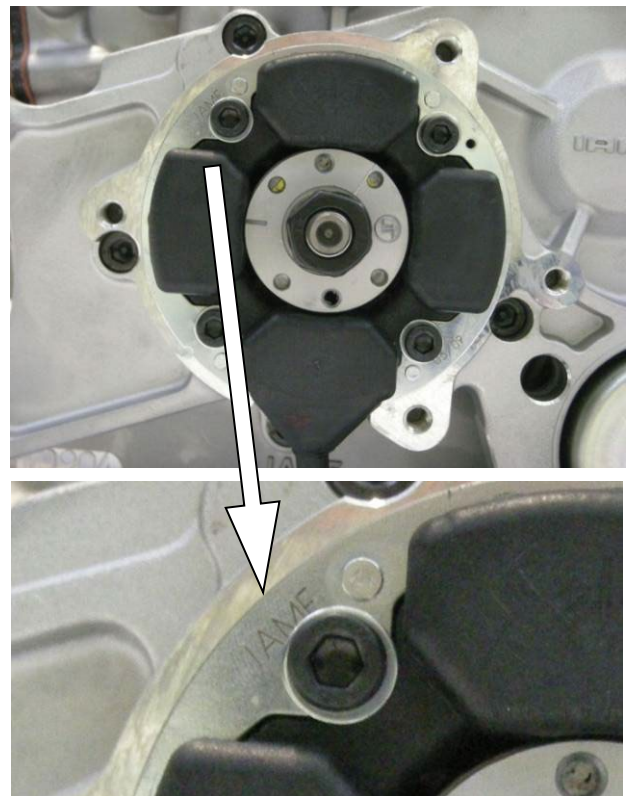
ELECTRONIC BOX MARKING



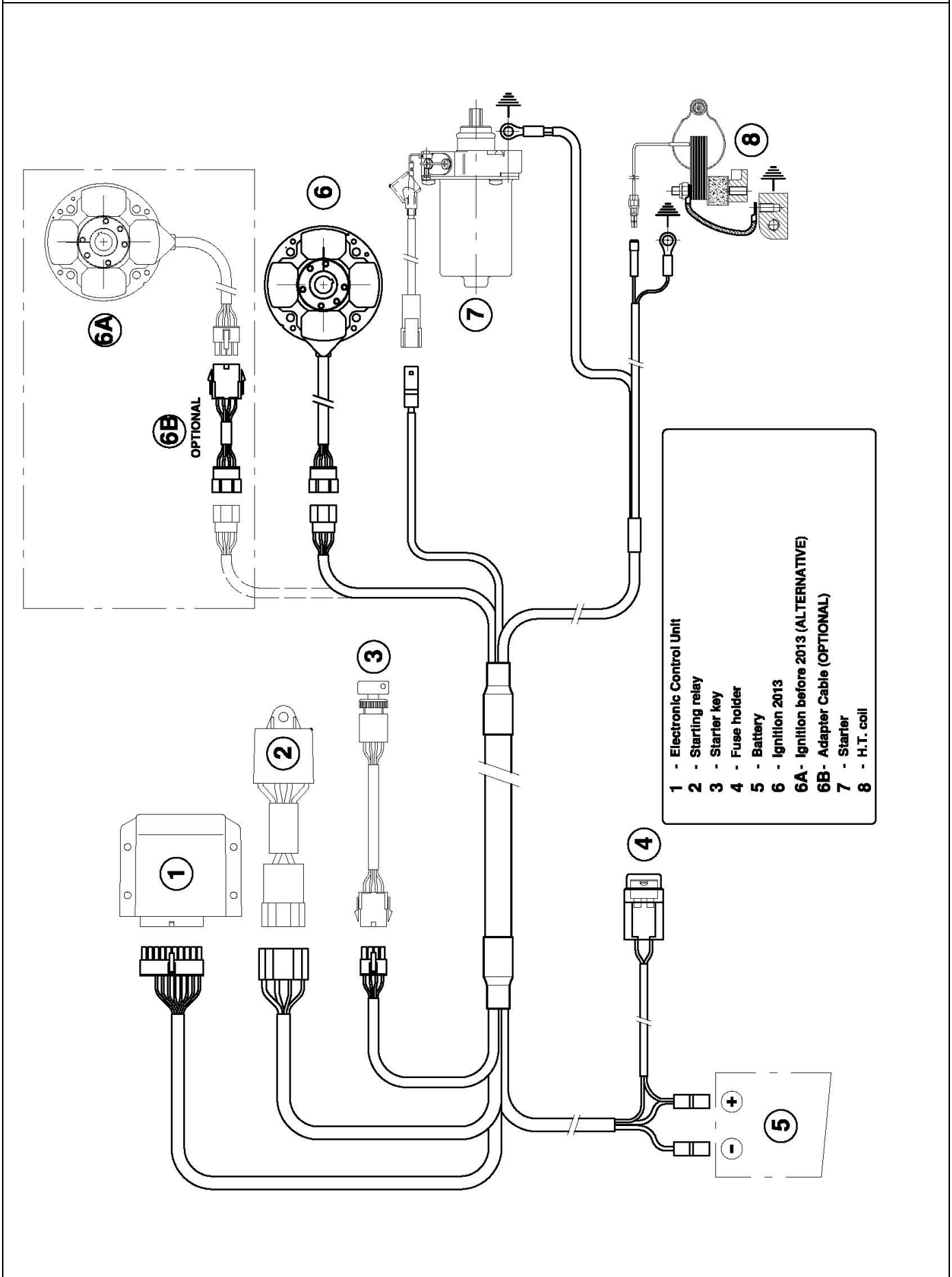
H.T. COIL IDENTIFICATION MARKING



STATOR IDENTIFICATION MARKING



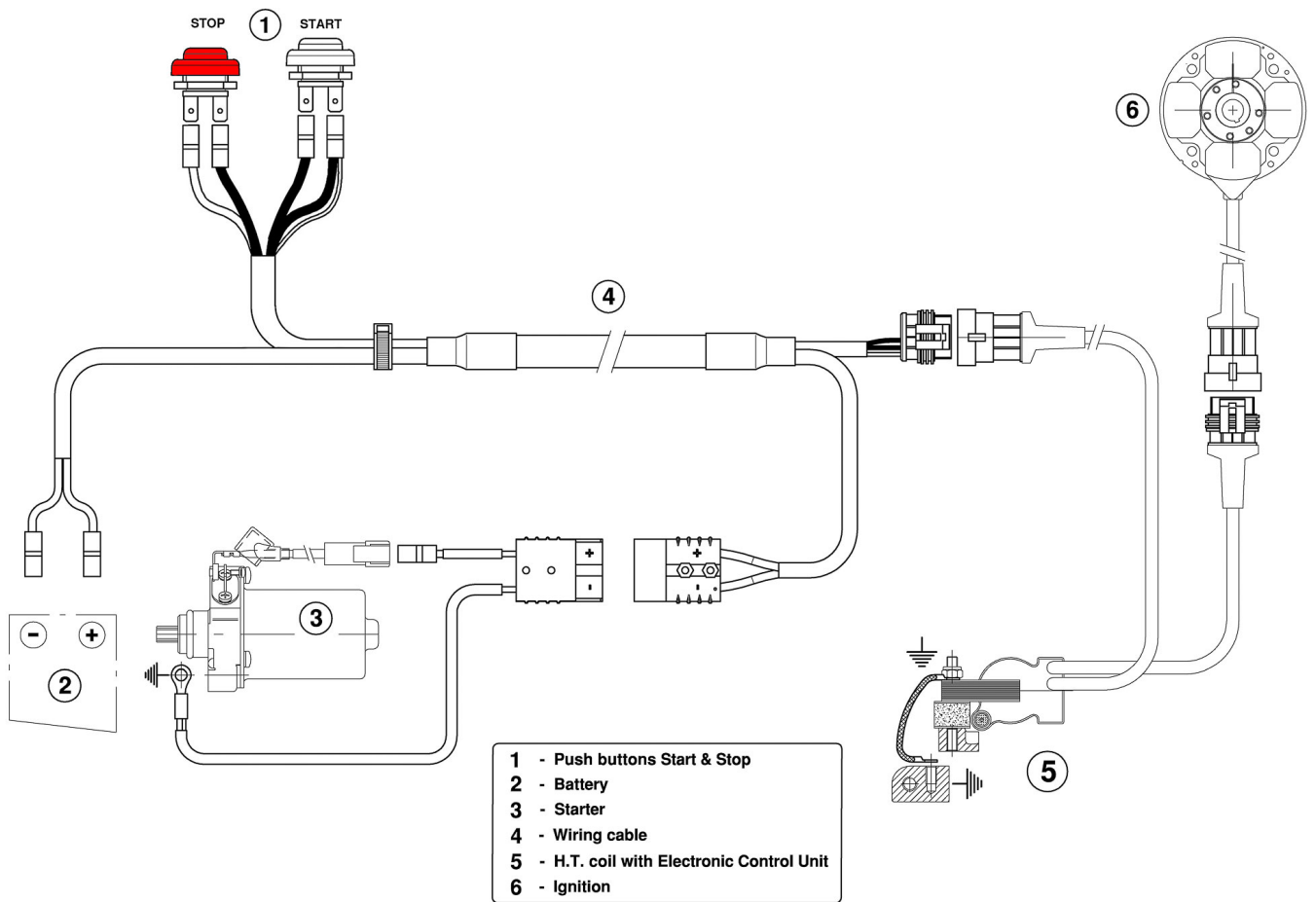
WIRING DIAGRAM (SELETTRA DIGITAL "K" IGNITION 2013)



IGNITION STATOR FASTENING COMPONENTS MAIN DIMENSIONS



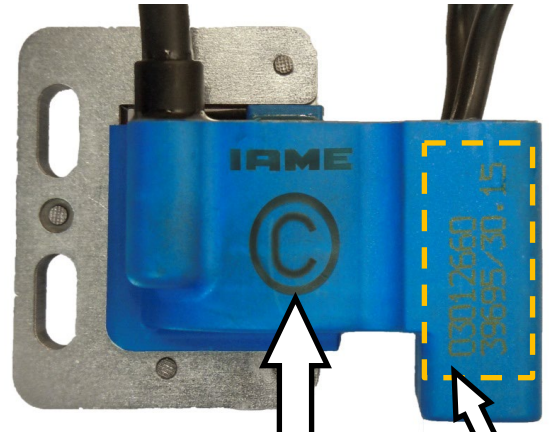
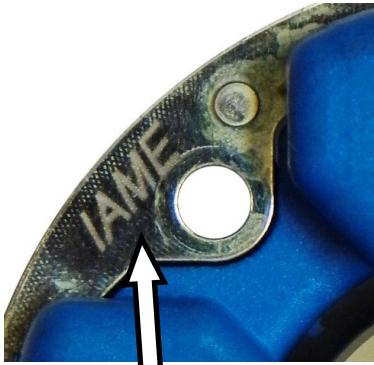
ALTERNATIVE WIRING LOOM DIAGRAM - SELETTRA DIGITAL "S"



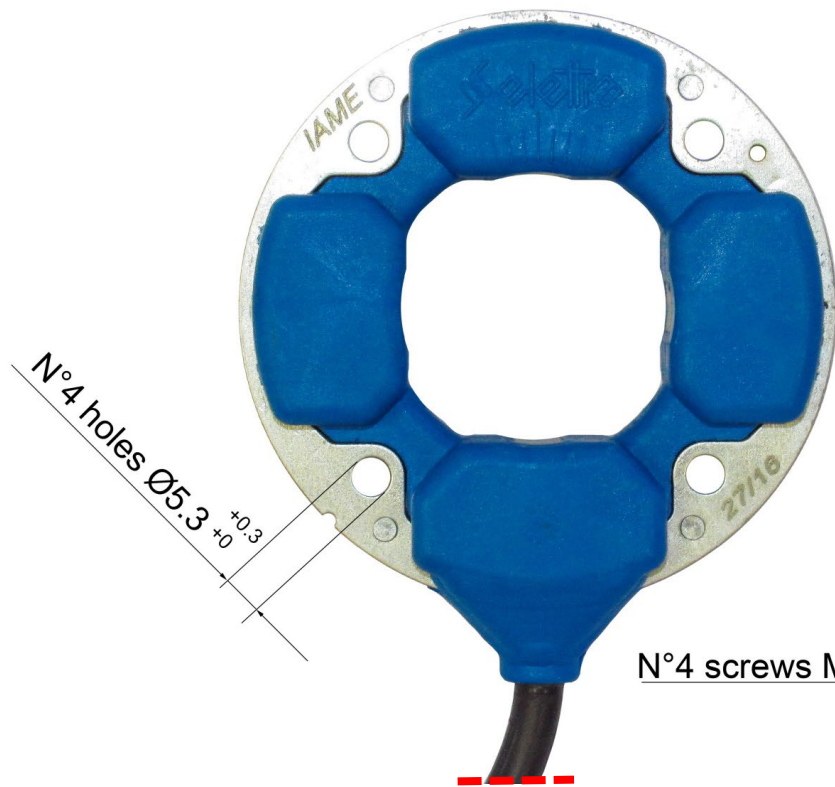
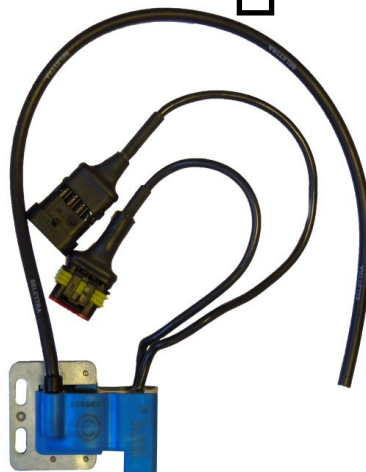
ALTERNATIVE WIRING LOOM - SELETTRA DIGITAL "S"



ALTERNATIVE IGNITION COMPONENTS AND STATOR FASTENING
SELETTRA DIGITAL "S"



VARIABLE

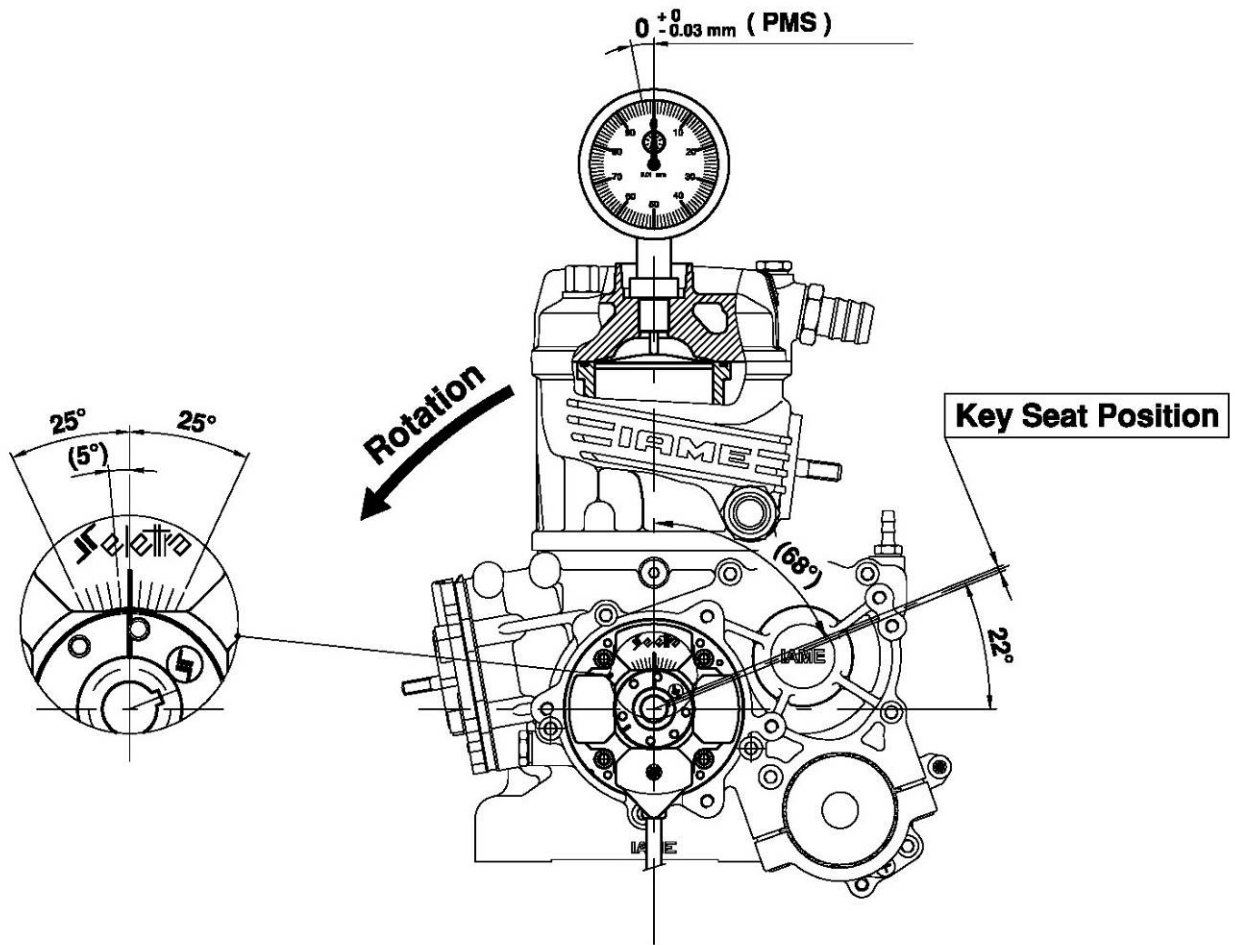


N°4 holes $\varnothing 5.3^{+0.3}_{+0}$

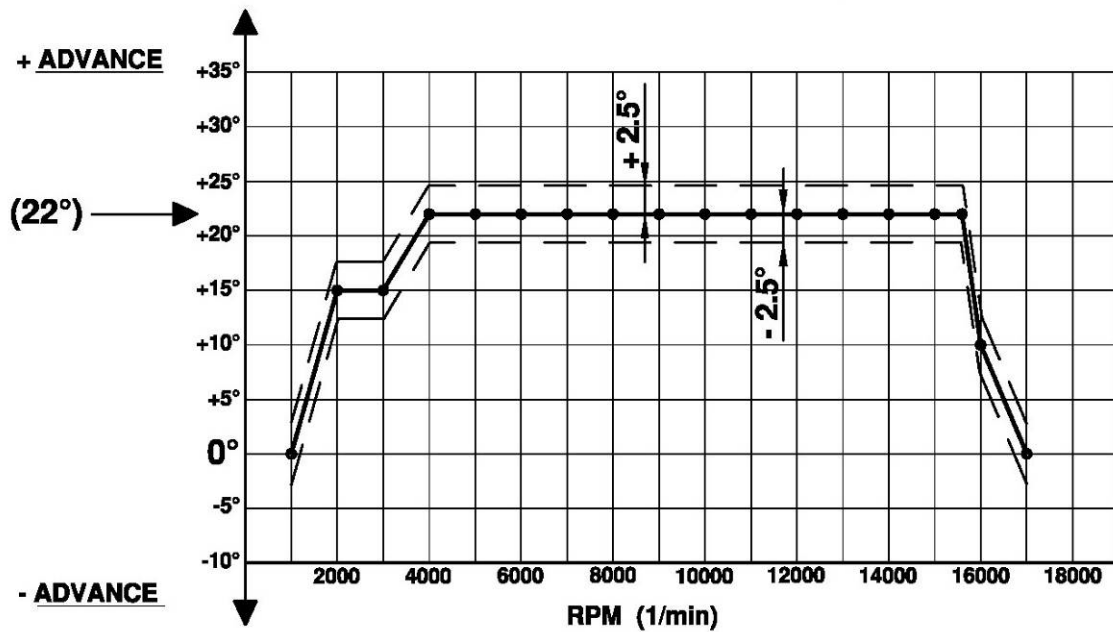


N°4 screws M5 - $\varnothing 5^{-0.25}_0$

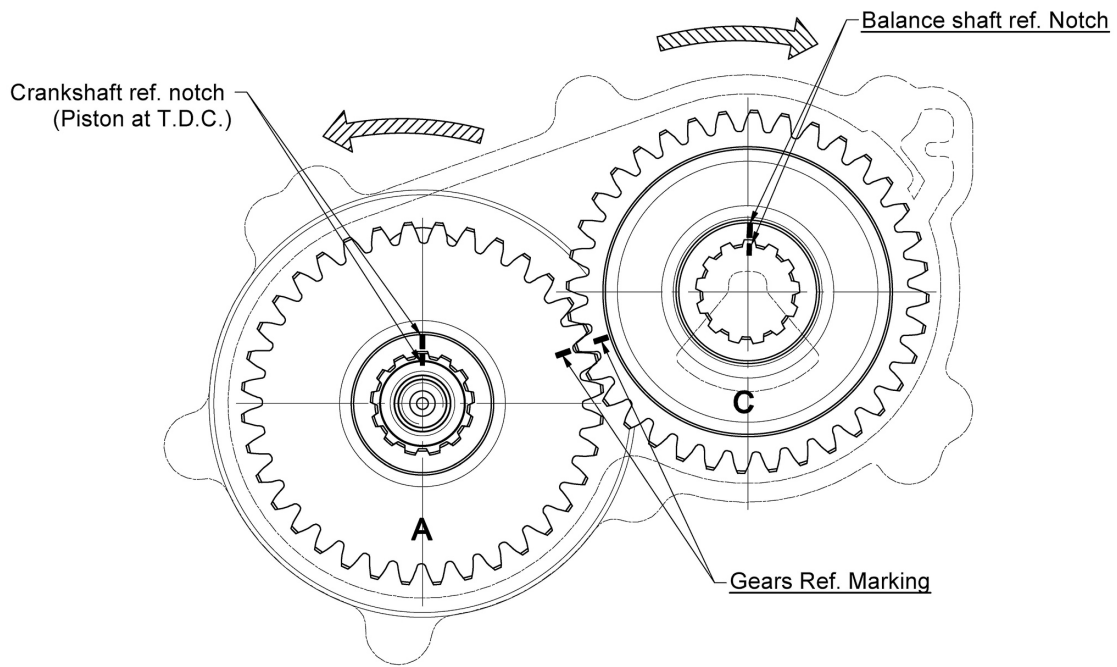
SCHEME FOR ADVANCE CONTROL SELETTA DIGITAL "S"



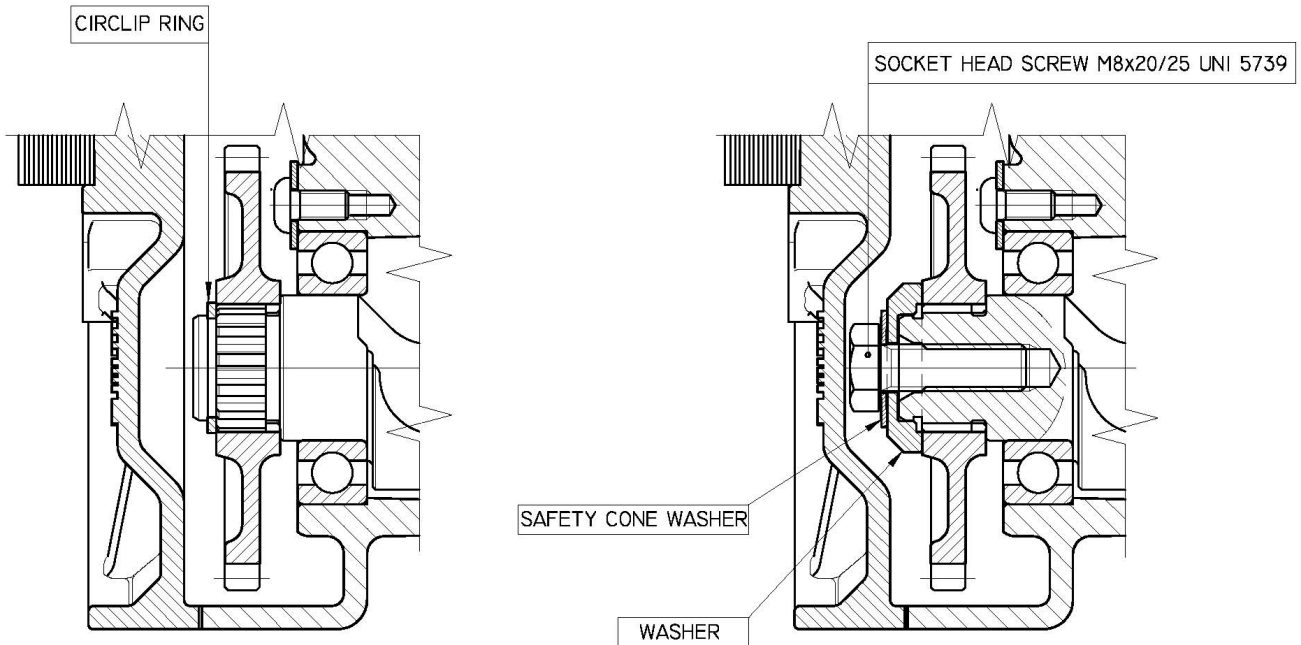
ADVANCE CURVE GRAPHS



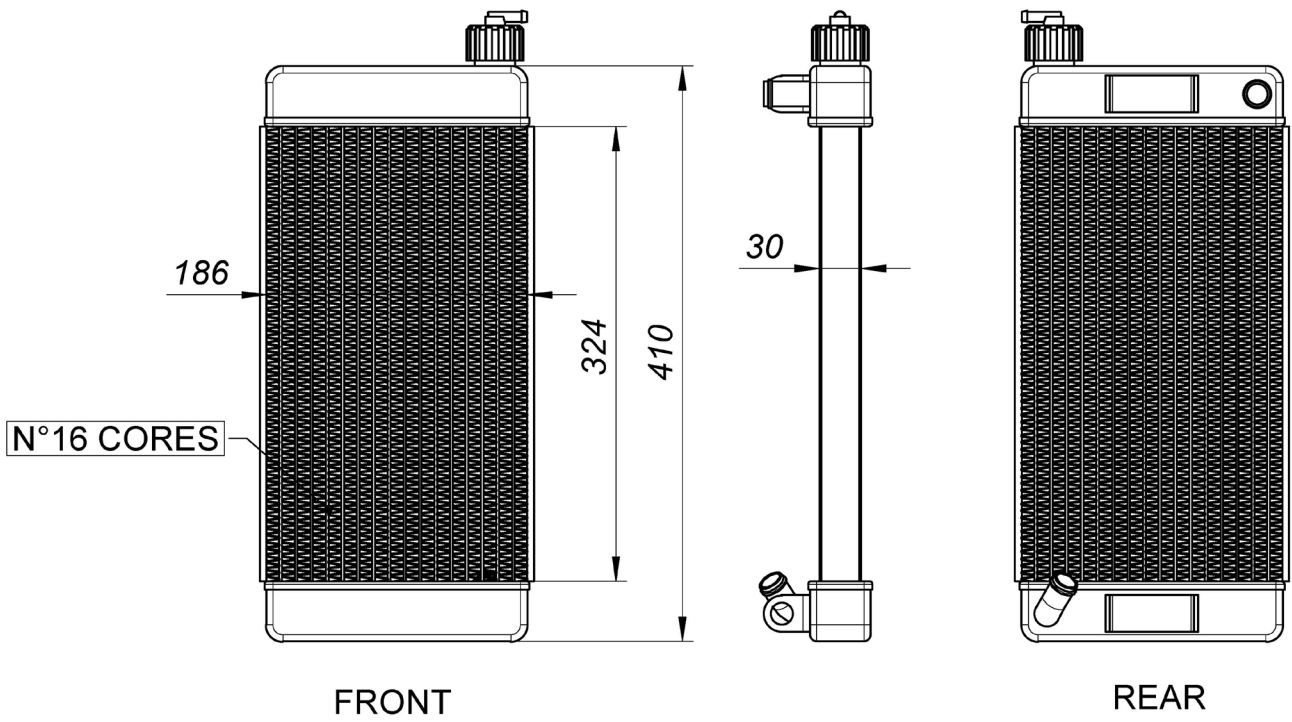
BALANCER SHAFT GEAR TIMING SCHEME



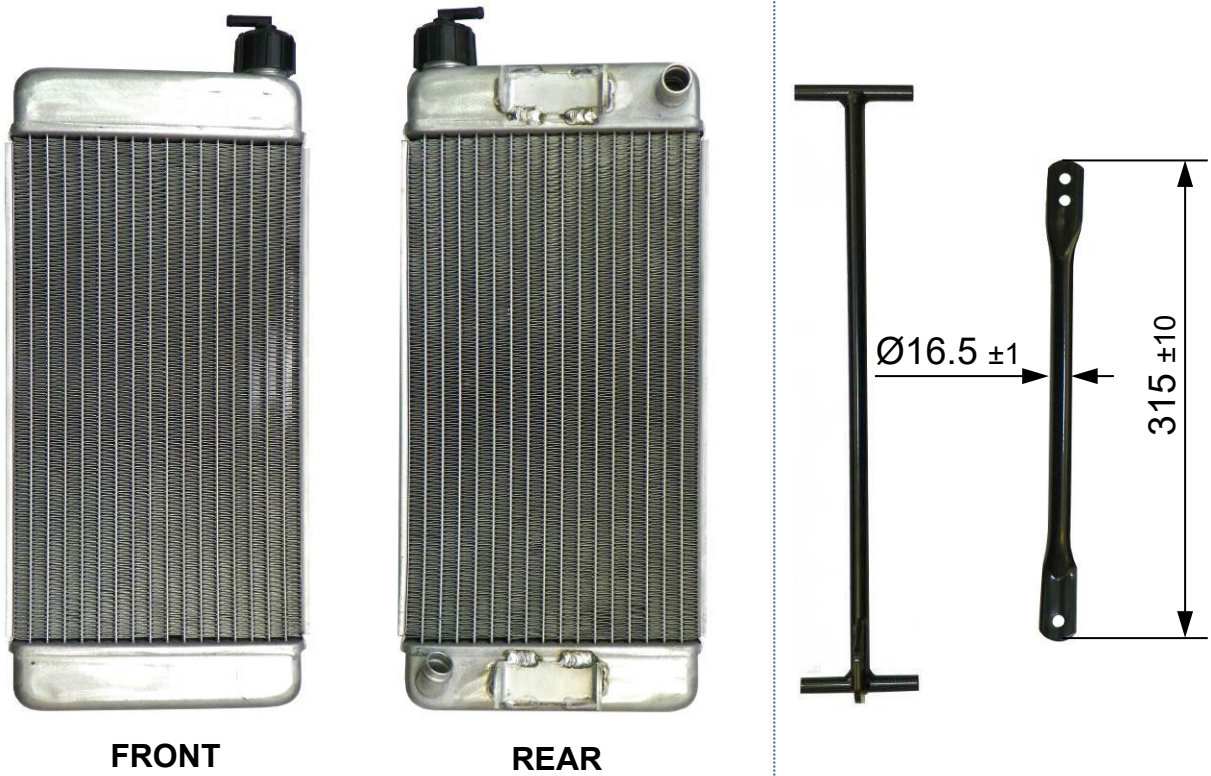
GEAR ALTERNATIVE FIXING



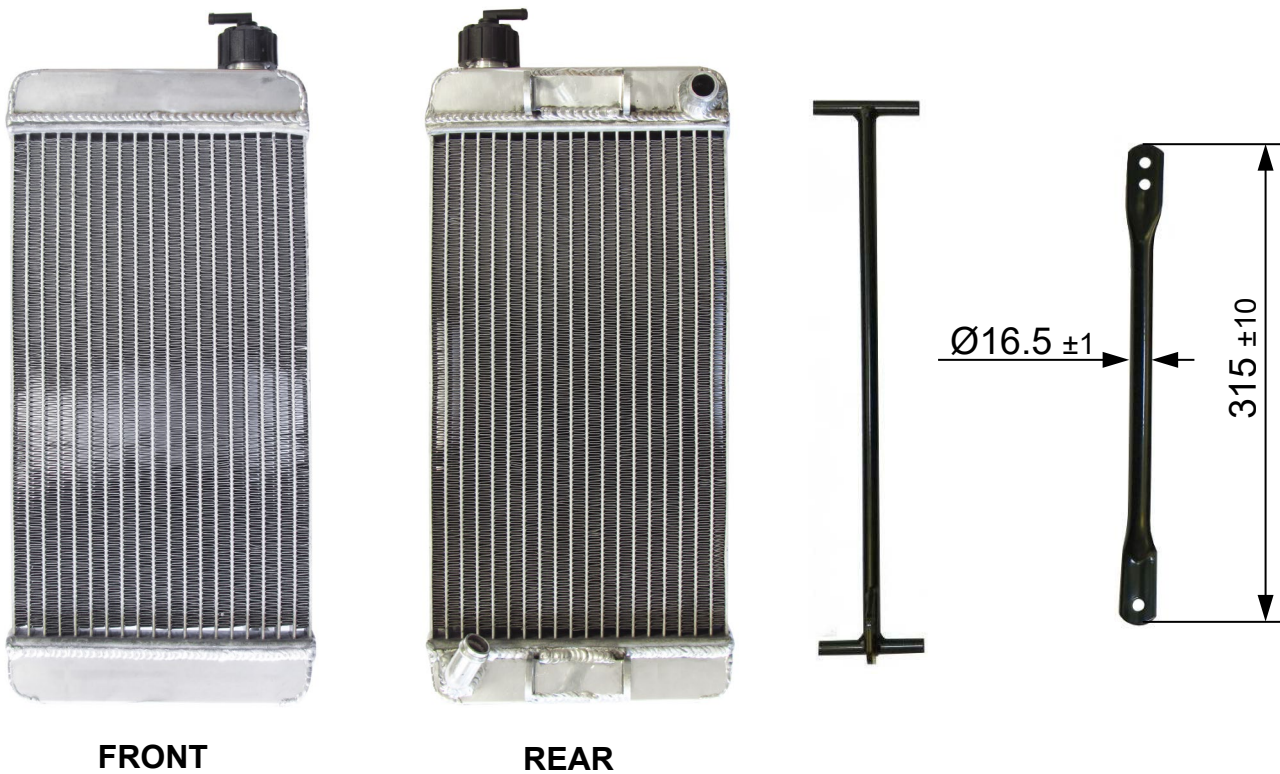
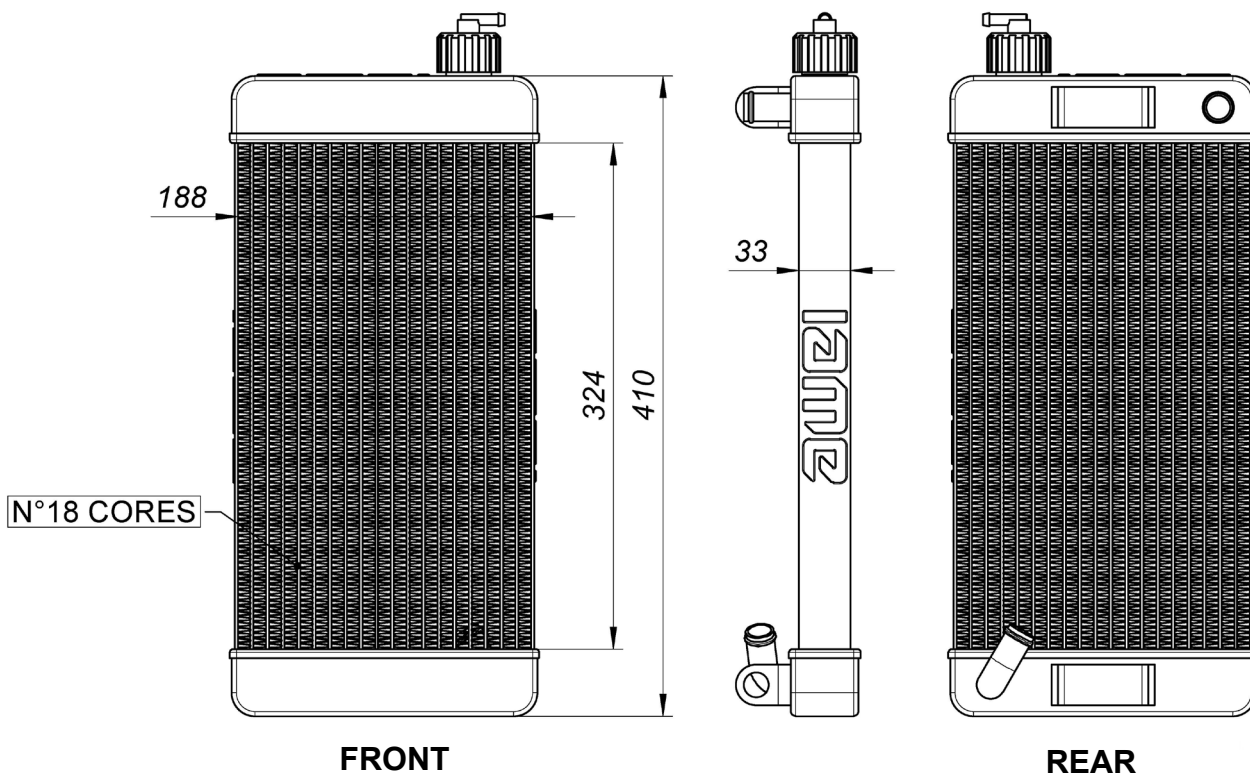
RADIATOR DESCRIPTION AND SKETCH OF PARTS



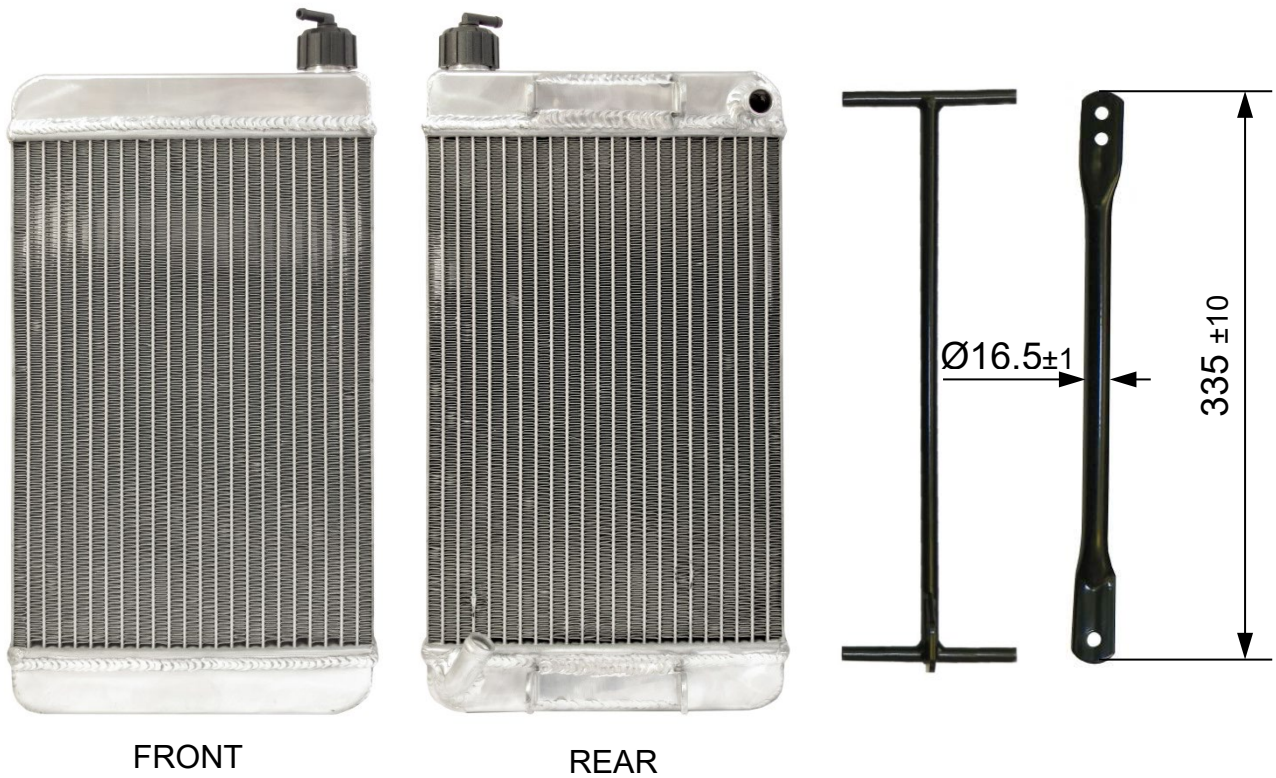
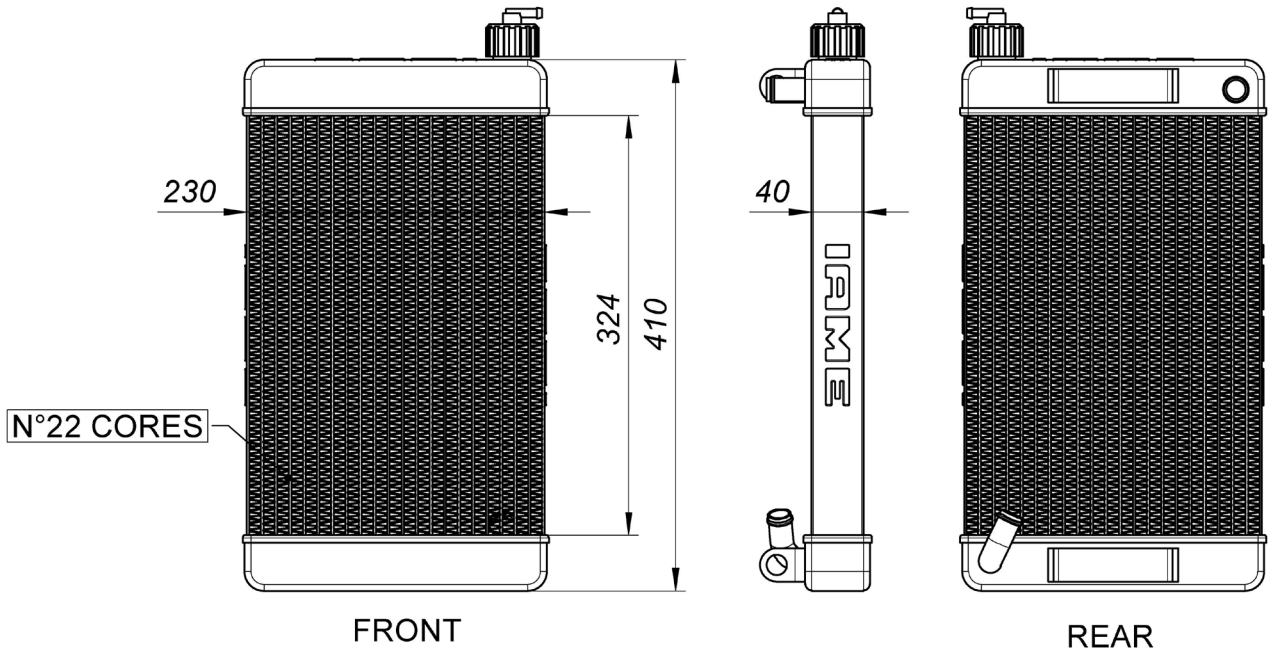
PAINTED AND NOT PAINTED



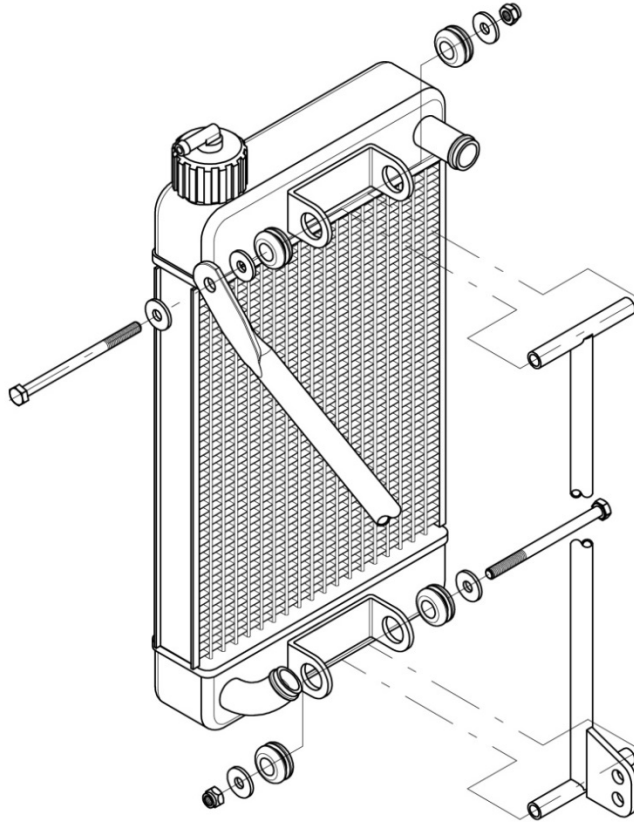
RADIATOR ALTERNATIVE DESCRIPTION AND SKETCH



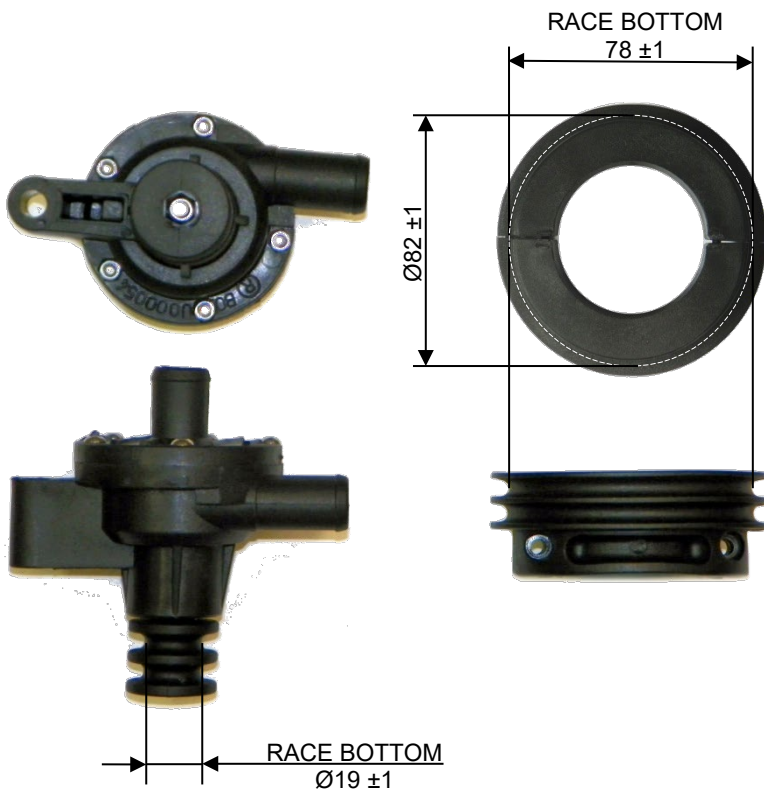
RADIATOR ALTERNATIVE SKETCH AND PHOTOS IDENTIFICATION COMPONENTS



RADIATOR AND ITS SUPPORTS



WATER PUMP GROUP



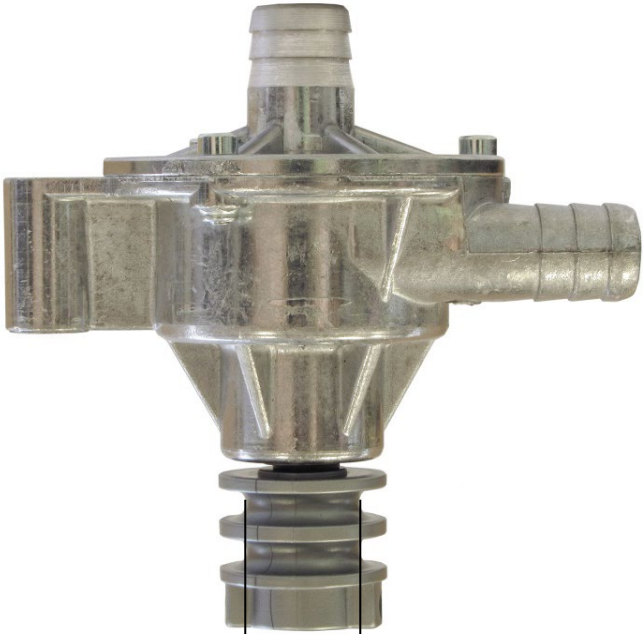
THERMOSTAT



ALTERNATIVE



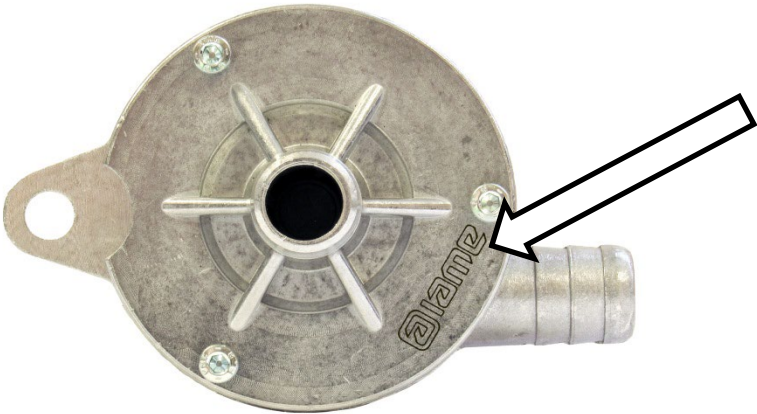
ALTERNATIVE WATER PUMP & PULLEY



RACE BOTTOM $\varnothing 20 \pm 1$



RACE BOTTOM $\varnothing 82.5 \pm 1$



ALTERNATIVE RADIATOR SUPPORT



PISTON IDENTIFICATION MARKING

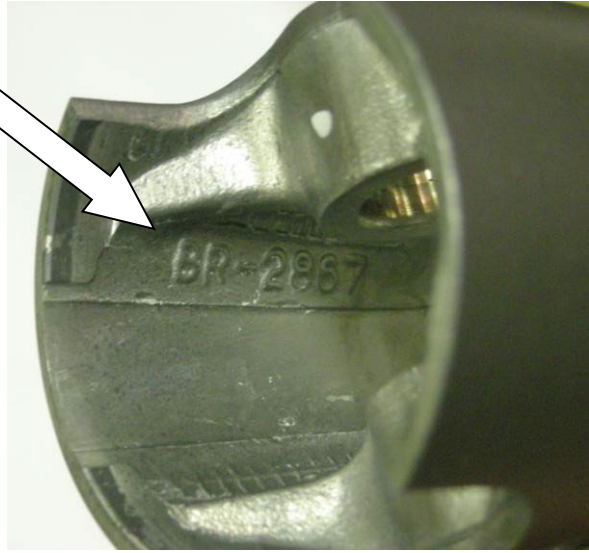
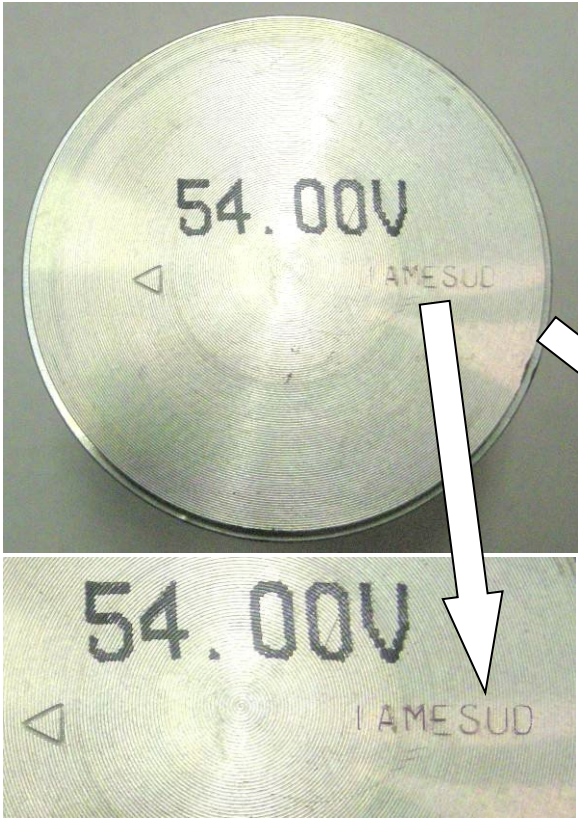
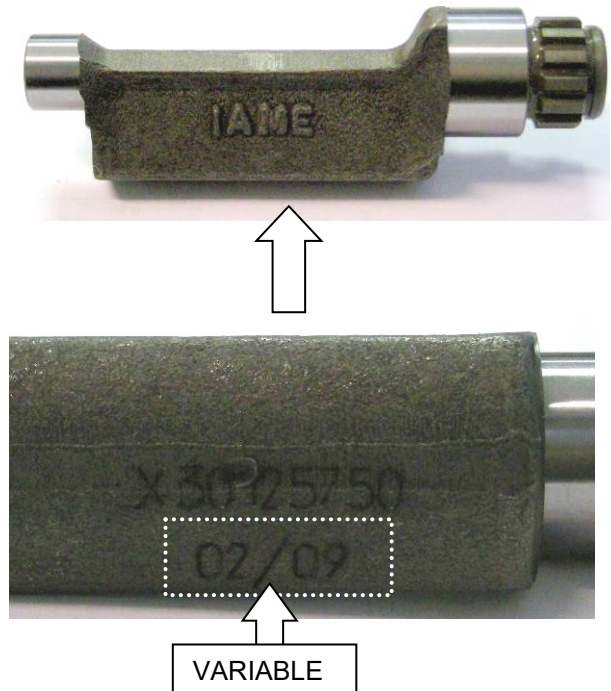
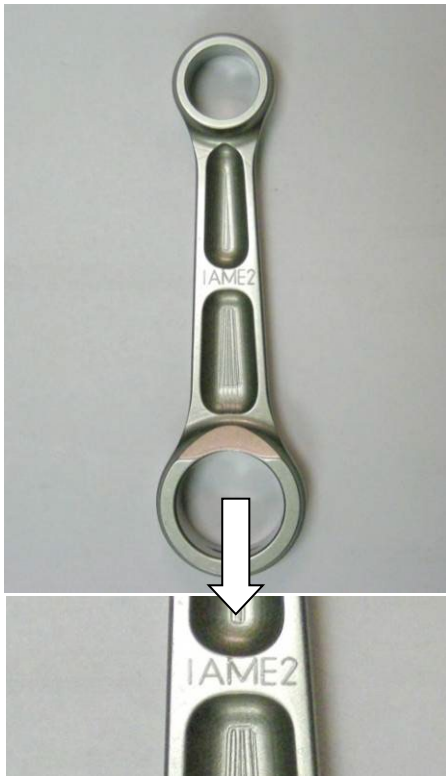
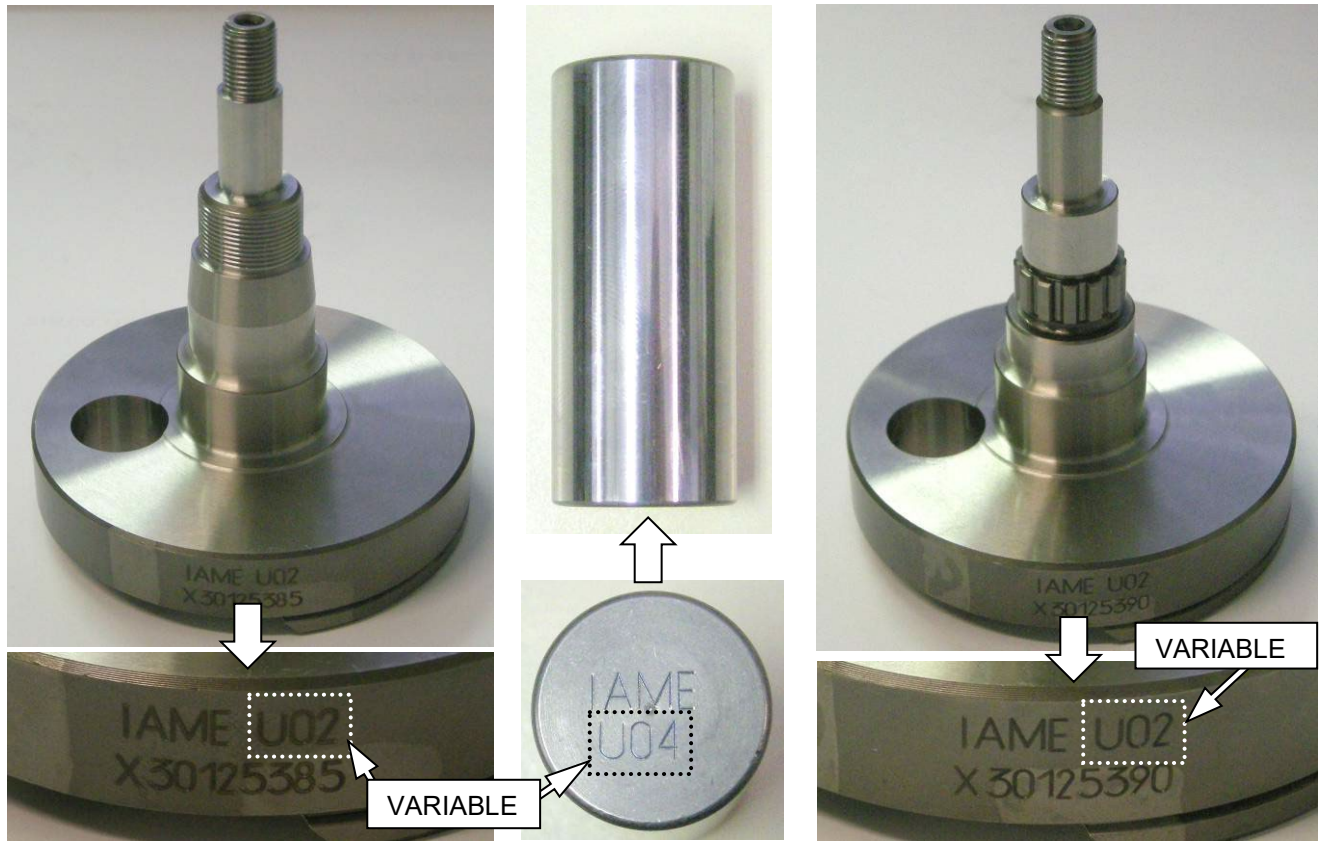


PHOTO IDENTIFICATION CONROD

IDENTIFICATION BALANCING SHAFT MARKING

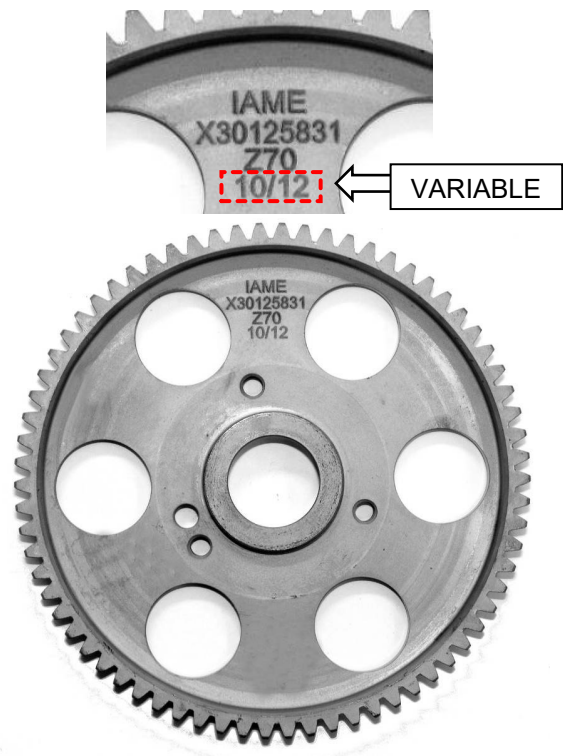
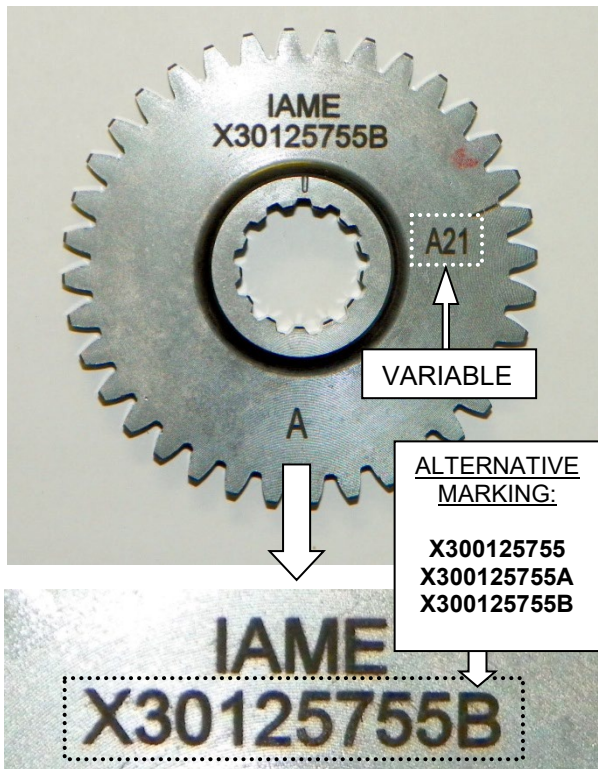


CRANKSHAFT IDENTIFICATION MARKING

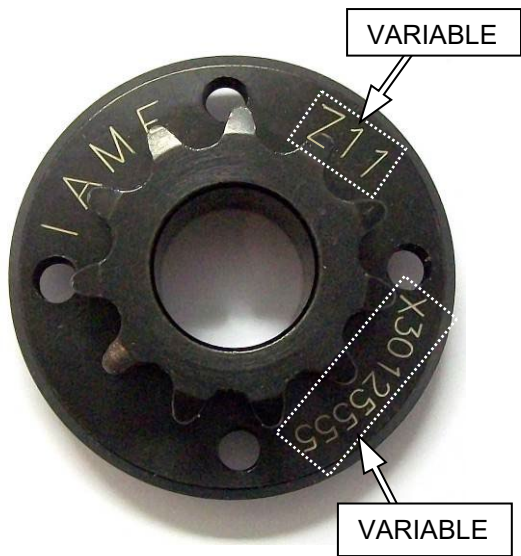


GEAR COMMAND BALANCING SHAFT IDENTIFICATION MARKING

STARTER RING IDENTIFICATION MARKING



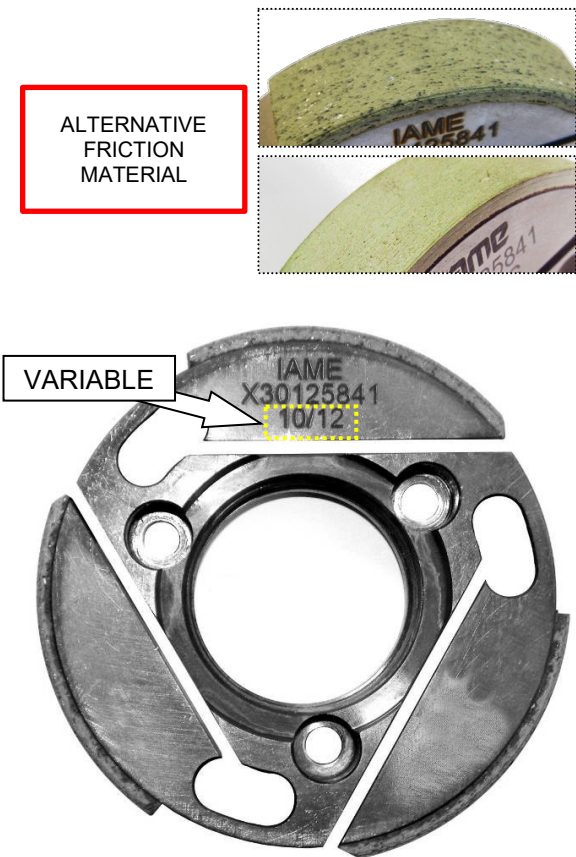
SPROCKET IDENTIFICATION MARKING



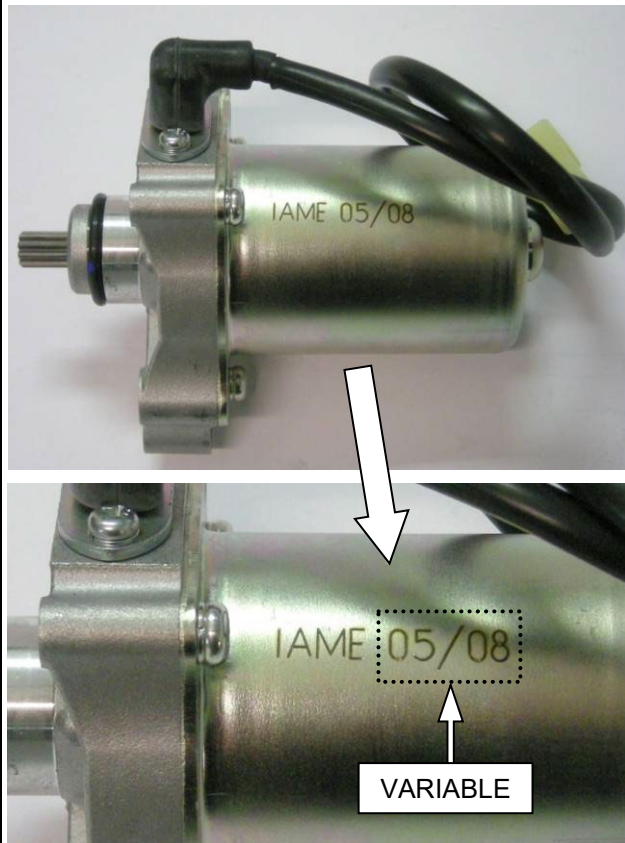
CLUTCH DRUM IDENTIFICATION MARKING



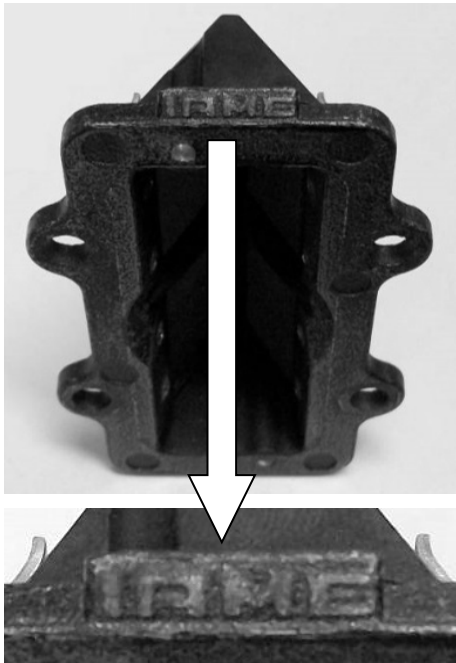
CLUTCH BODY IDENTIFICATION MARKING



STARTER IDENTIFICATION MARKING



REED GROUP & PETALS IDENTIFICATION MARKING



FIBER GLASS

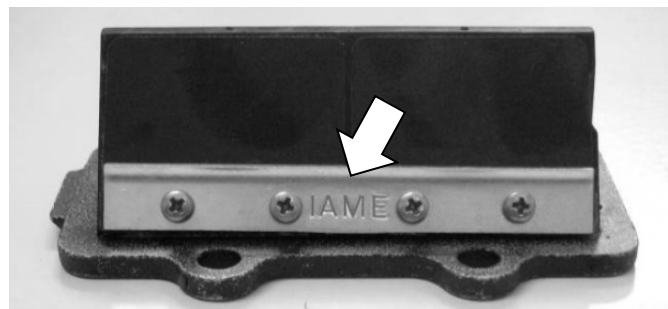
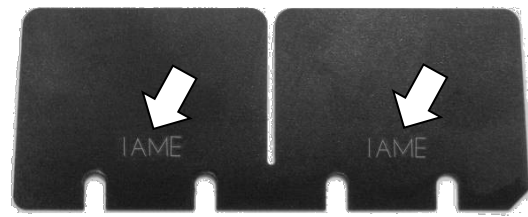
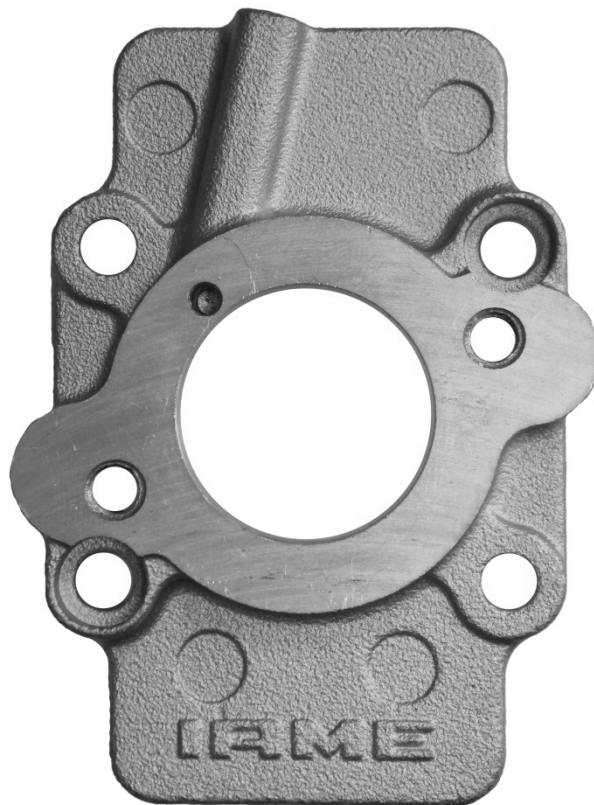
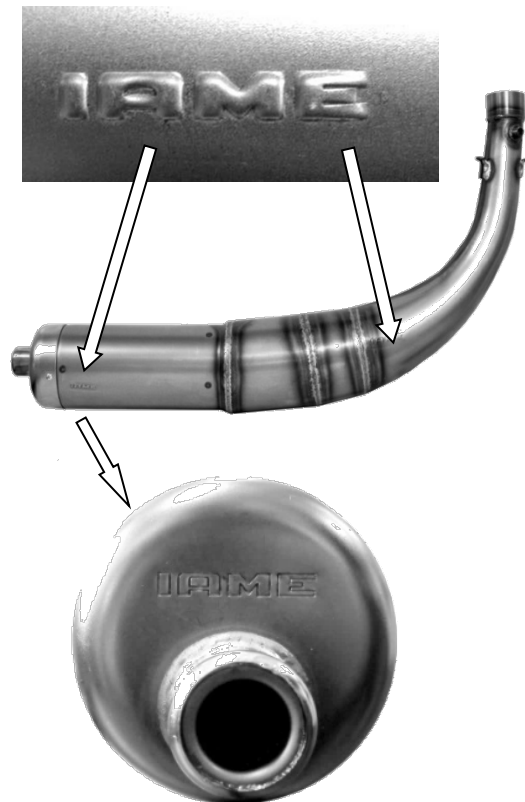


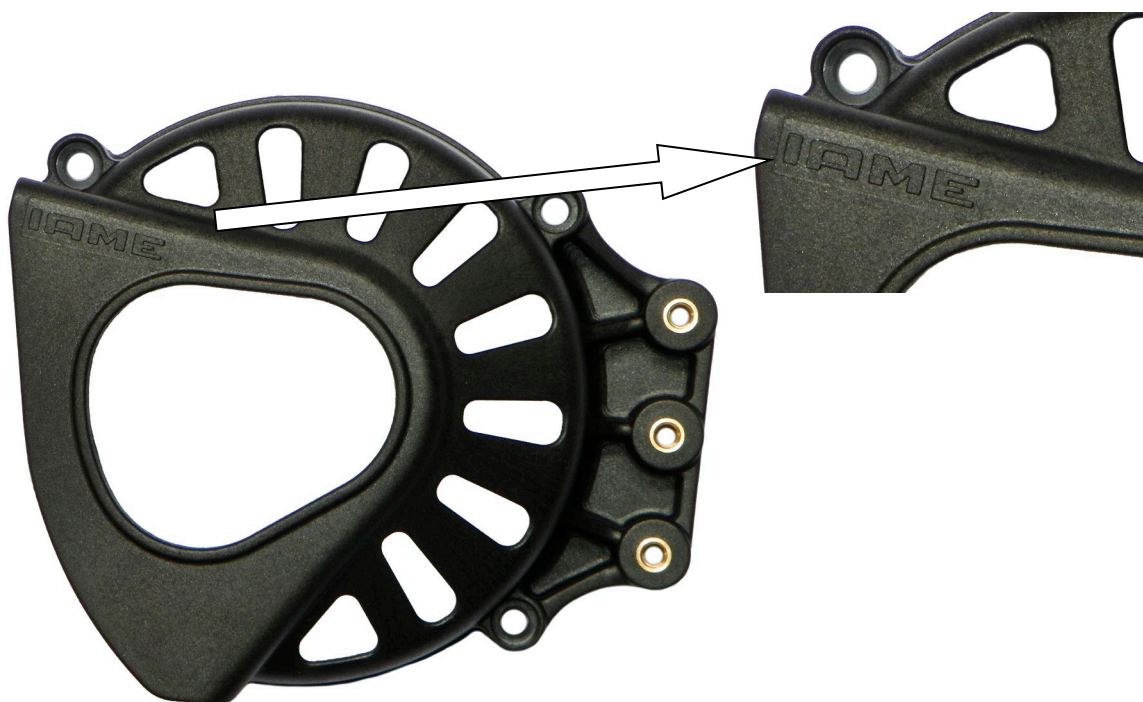
PHOTO IDENTIFICATION CARBURETOR INLET CONVEYOR



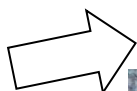
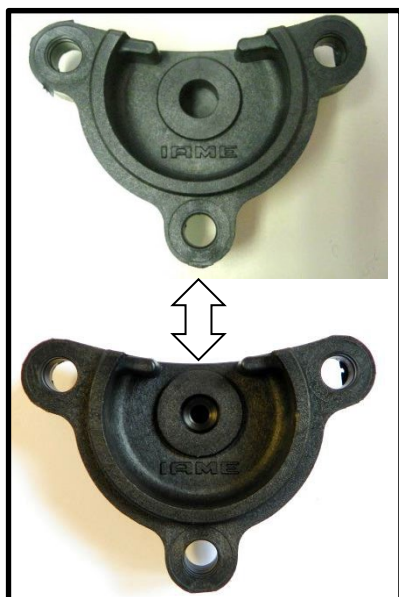
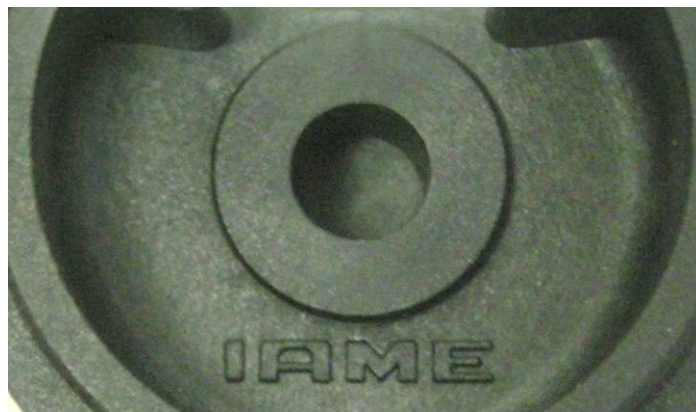
EXHAUST SILENCER IDENTIFICATION MARKING



CLUTCH COVER IDENTIFICATION MARKING



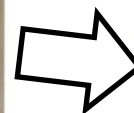
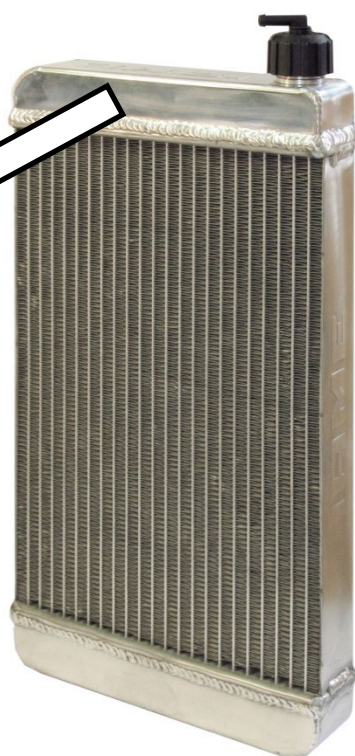
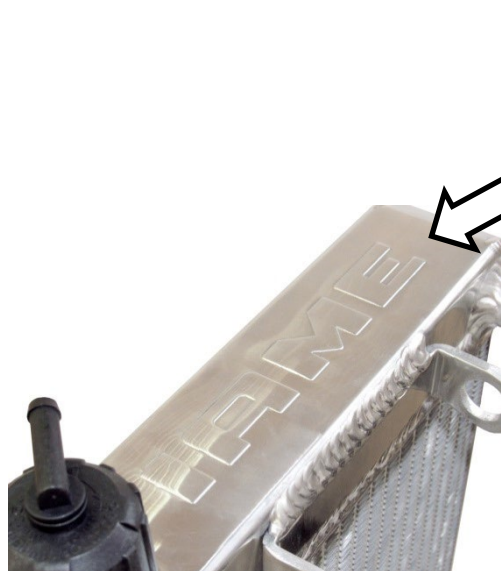
BENDIX COVER IDENTIFICATION MARKING



ALTERNATIVE

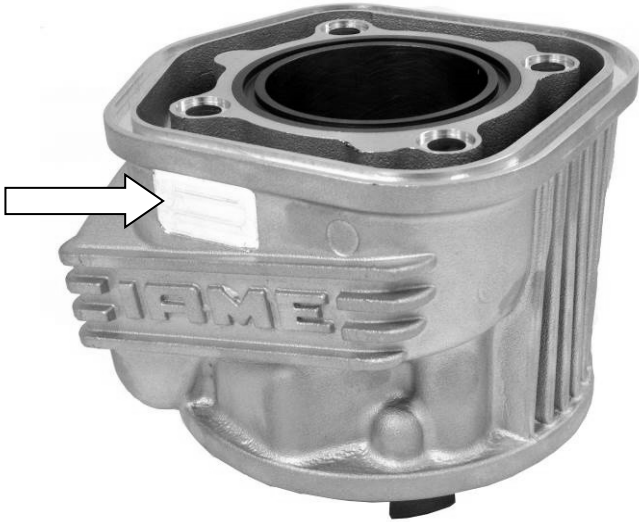


ALTERNATIVE RADIATOR IAME IDENTIFICATION MARKING

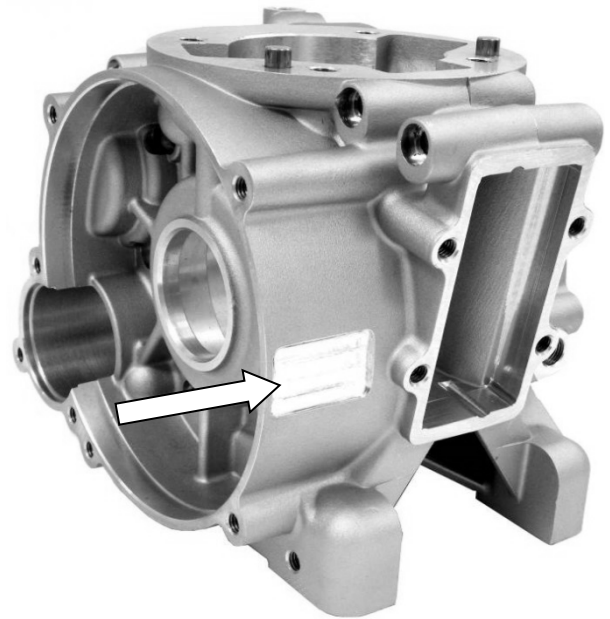


FROM 2014 ON

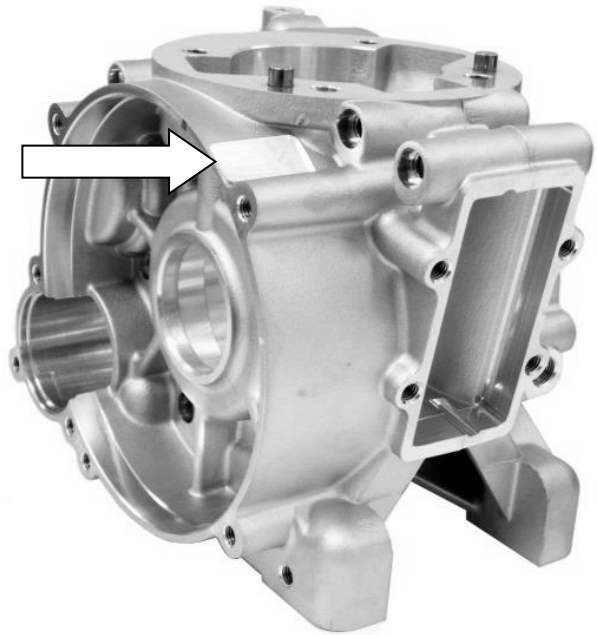
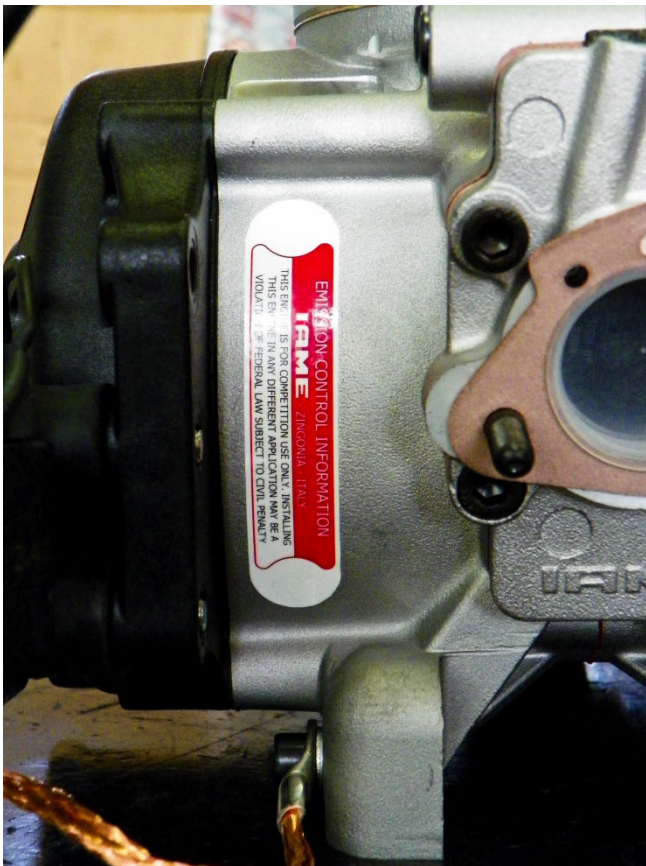
STICKER APPLICATION AREA



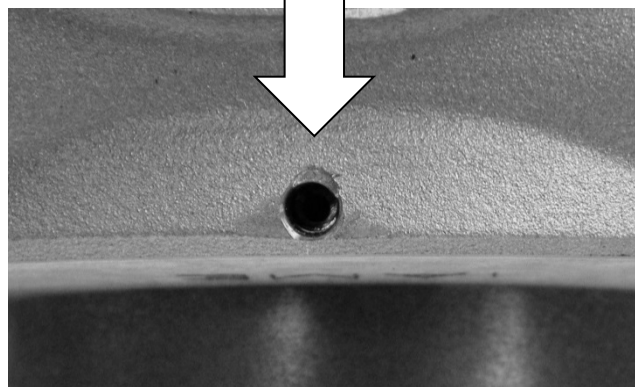
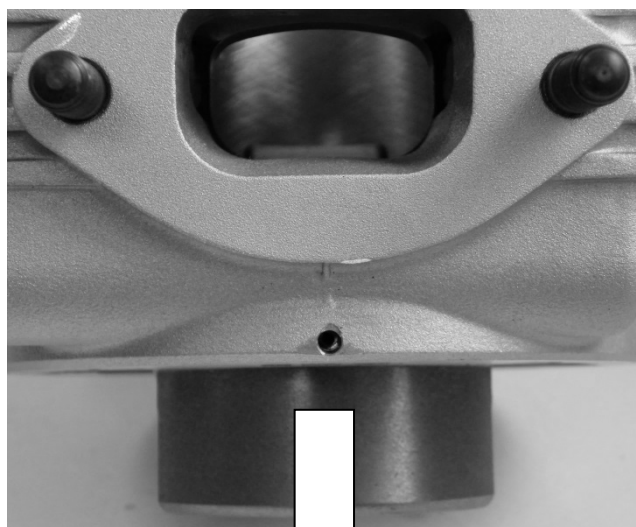
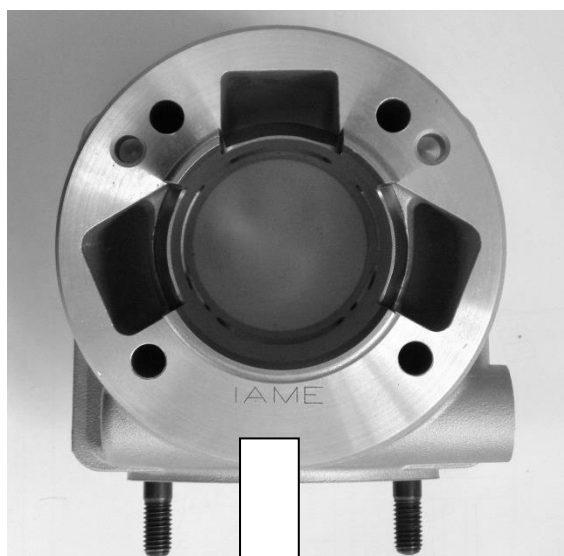
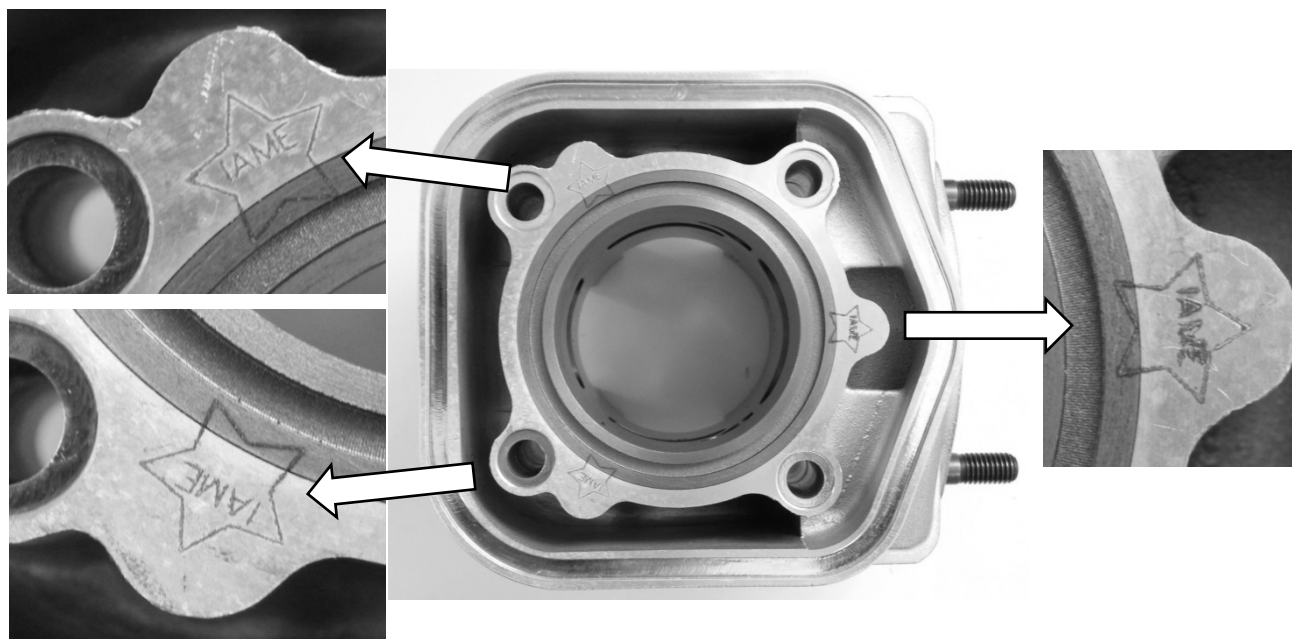
ENGINE STICKER "USA"



ALTERNATIVE AREA

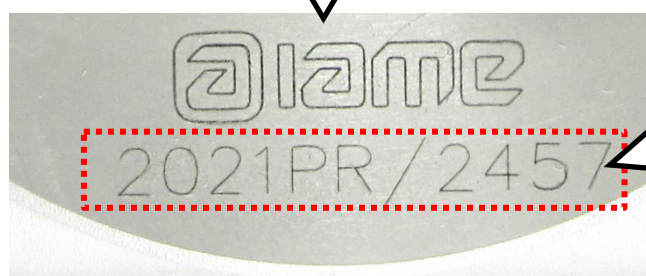
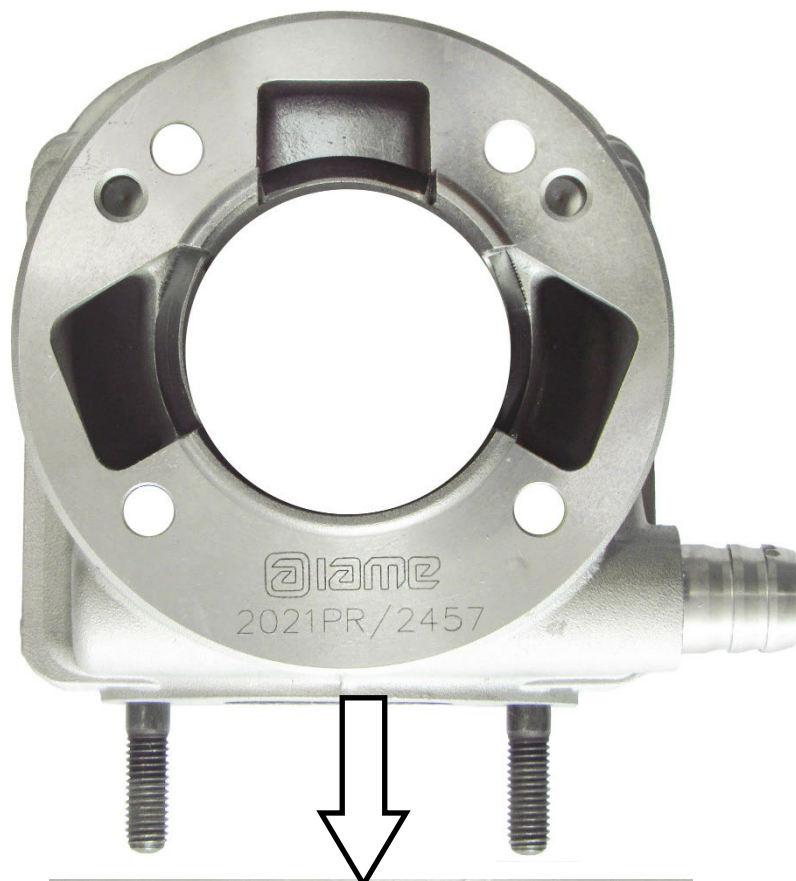


CYLINDER IDENTIFICATION MARKING



CYLINDER BASE ALTERNATIVE MARKING

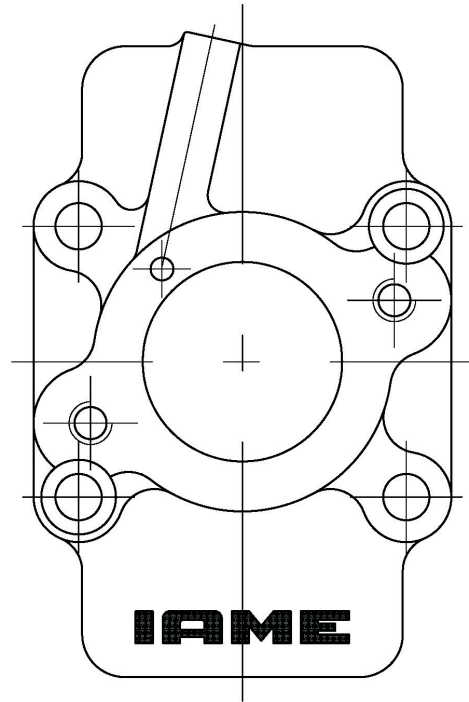
ALTERNATIVE



VARIABLE

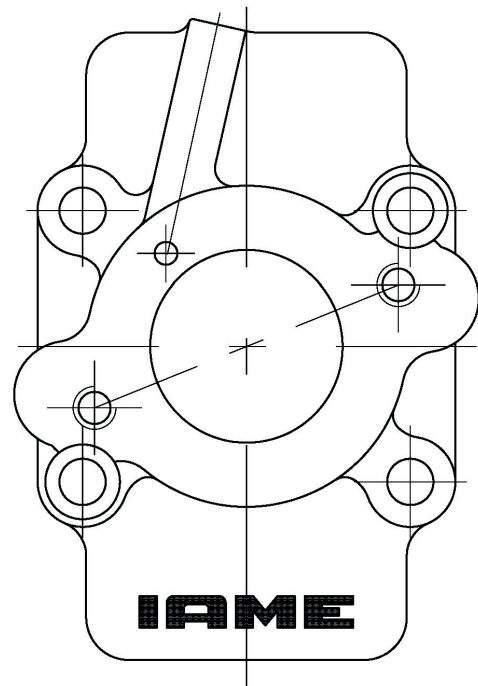
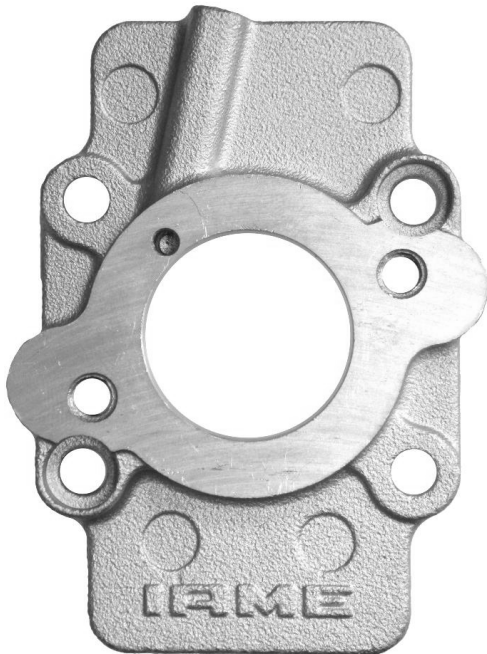
PHOTO IDENTIFICATION CARBURETTOR INLET CONVEYOR

Old version - while stocks last

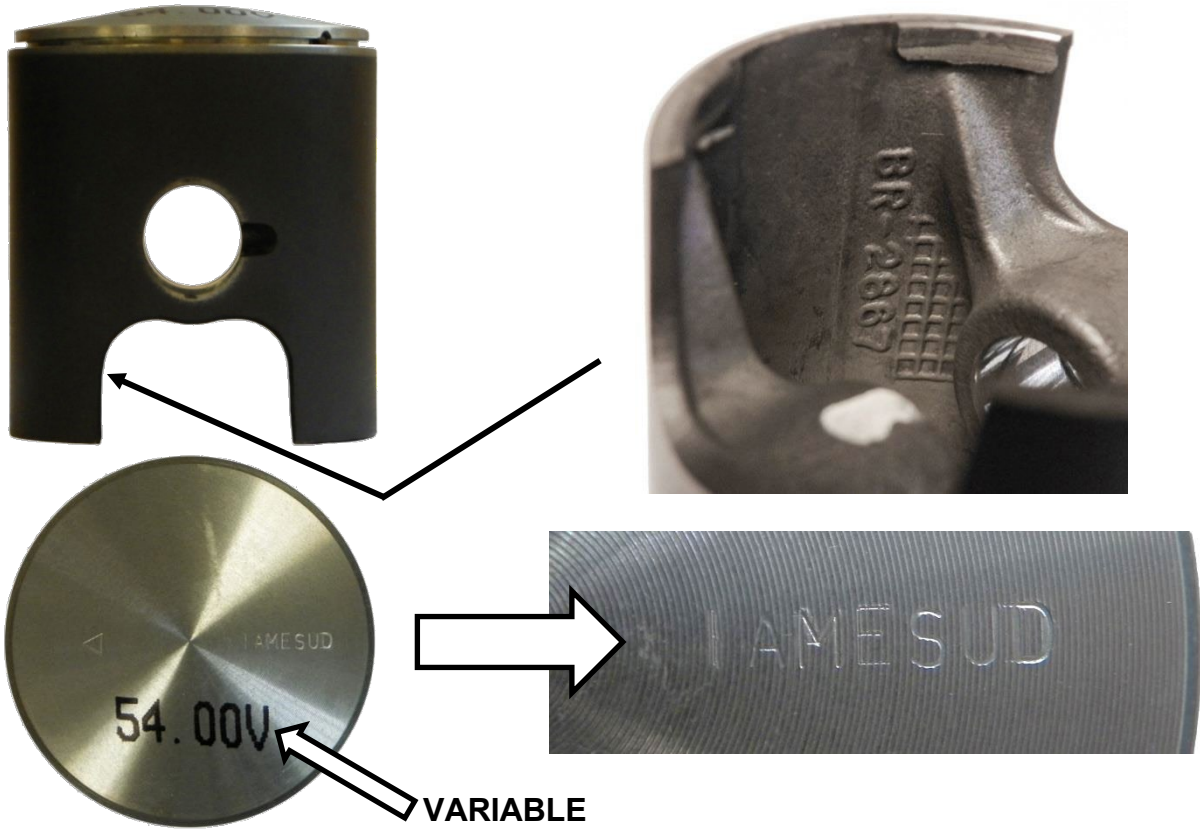


IN ALTERNATIVE

New version



ACTUAL PISTON



ALTERNATIVE PISTON

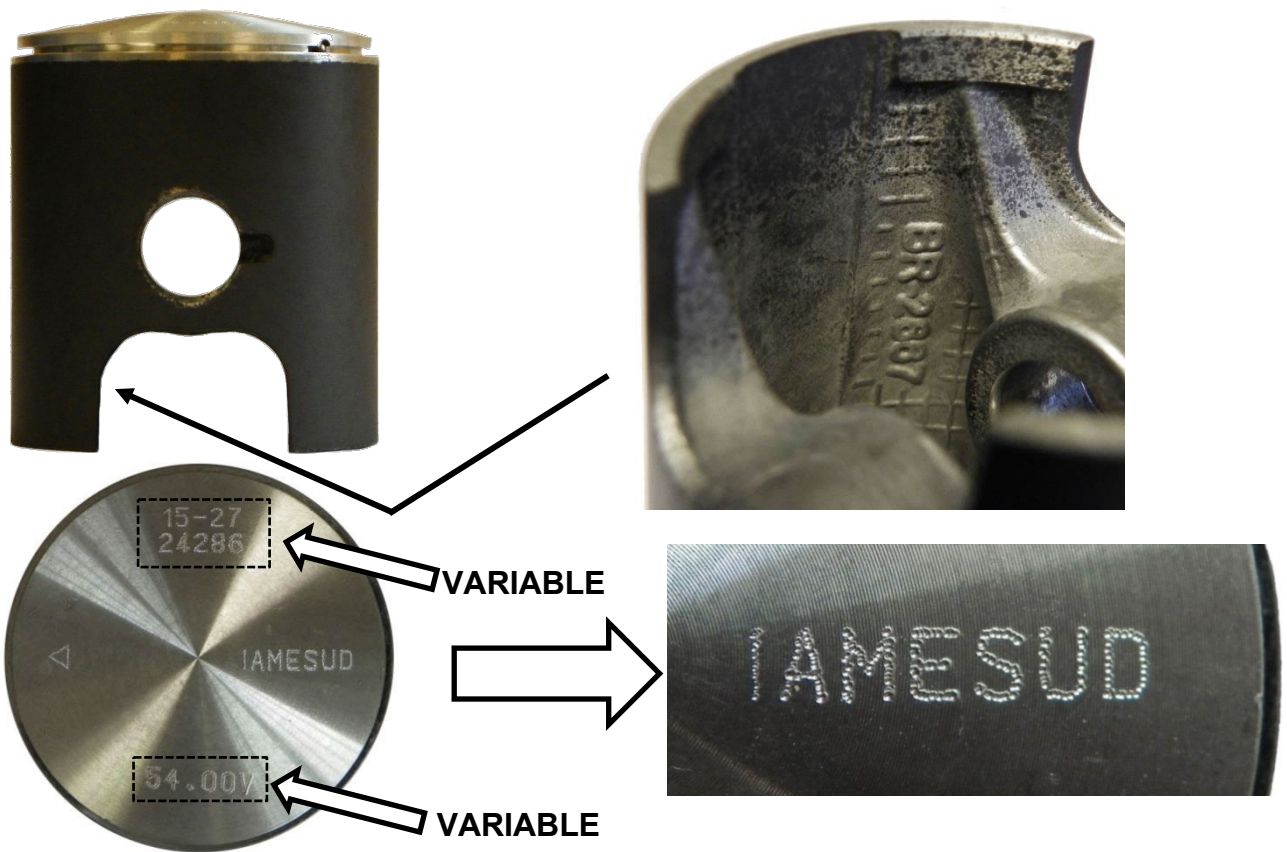
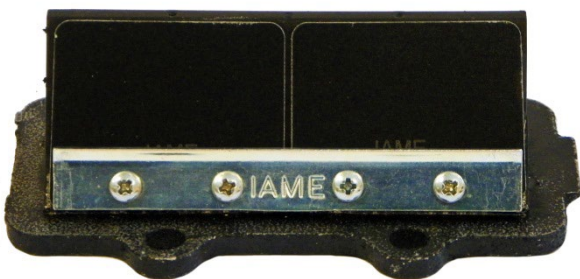
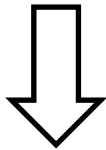
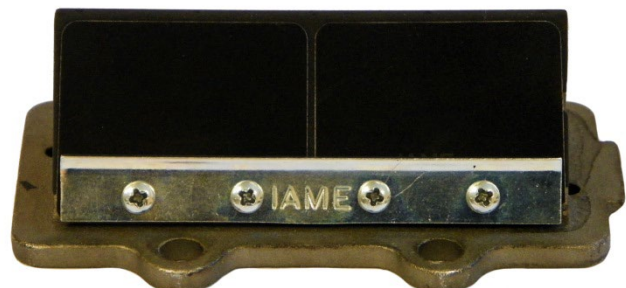
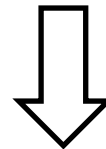


PHOTO IDENTIFICATION REED GROUP

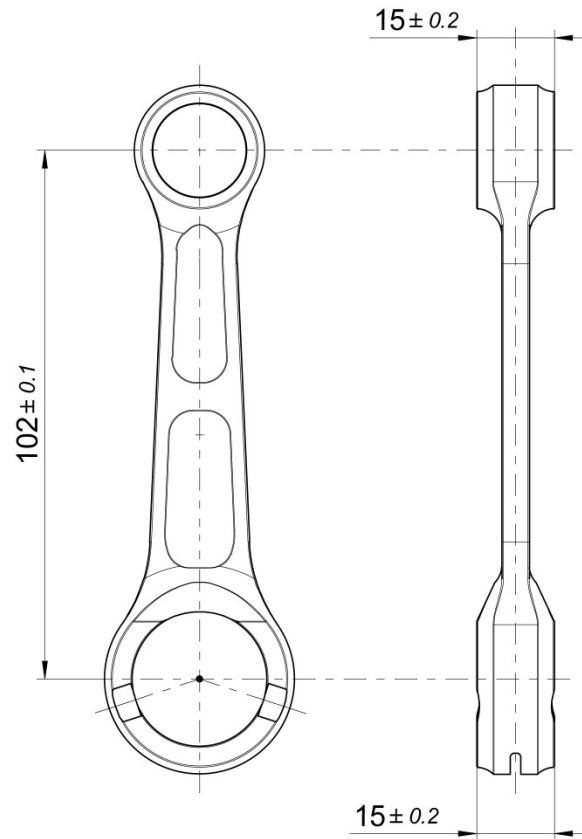
CURRENT VERSION



ALTERNATIVE VERSION



ALTERNATIVE CONROD



BOTH TYPES OF CONROD CAN BE USED WITH BOTH TYPES OF WASHERS (IN COUPLE)

PHOTO OF THE CONROD BOTH SIDE – ALTERNATIVE

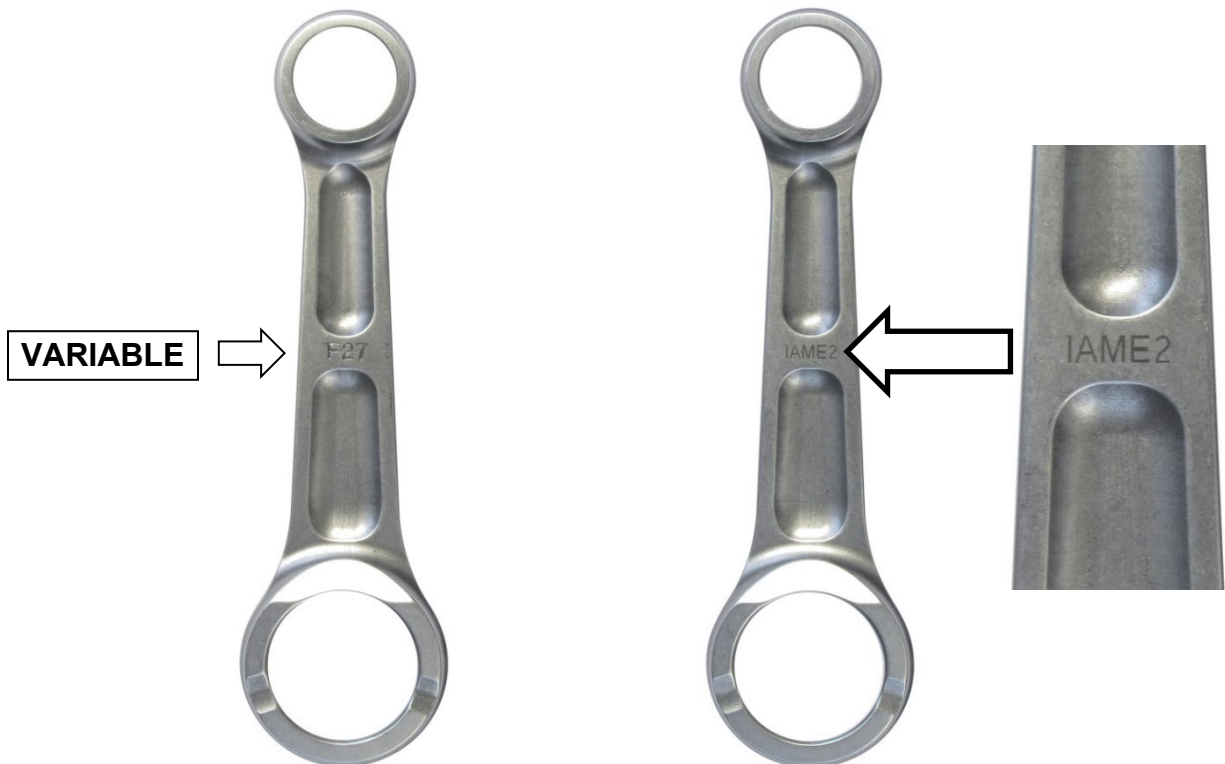


PHOTO IDENTIFICATION OF SMALL END CONROD BEARING – TYPES ALTERNATIVE

TYPE 1



TYPE 2



PHOTO IDENTIFICATION OF SILVER CONROD WASHER – TYPES ALTERNATIVE




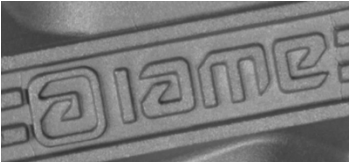
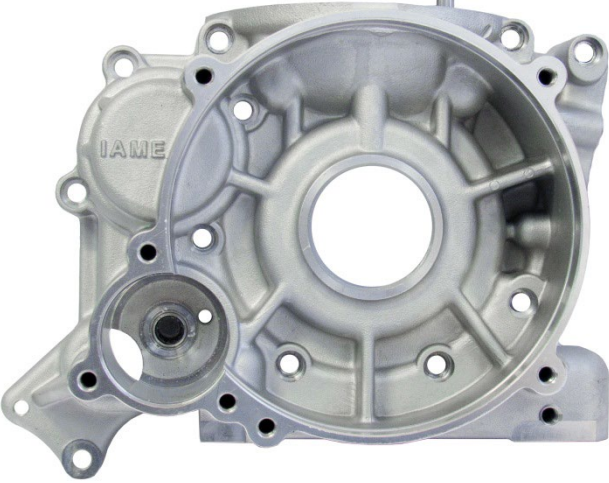
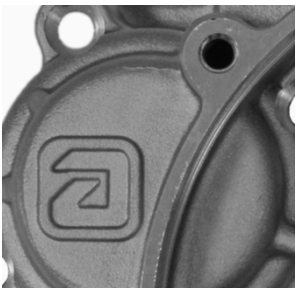
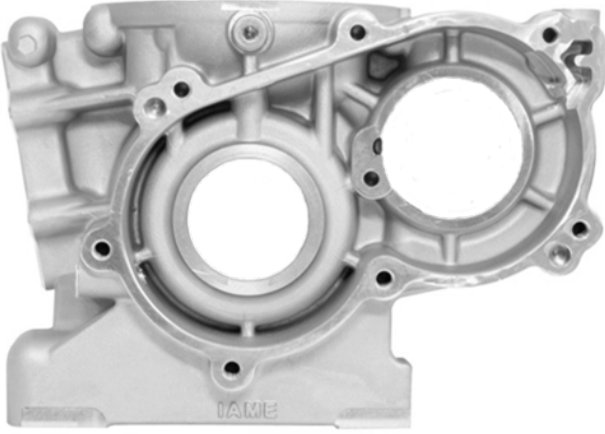
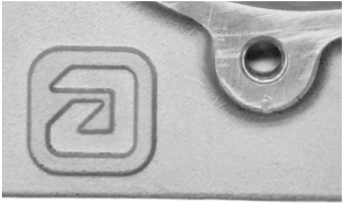
TYPE 1



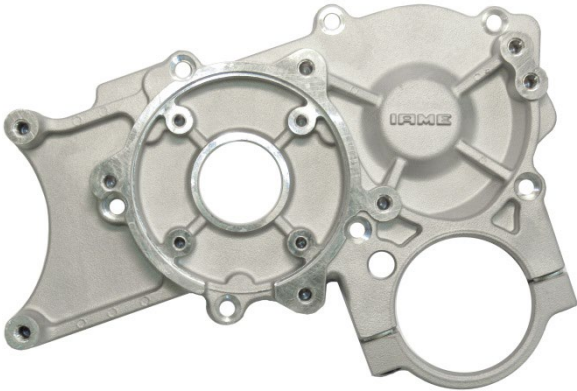
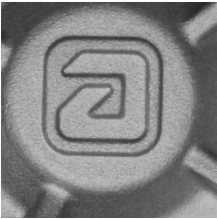




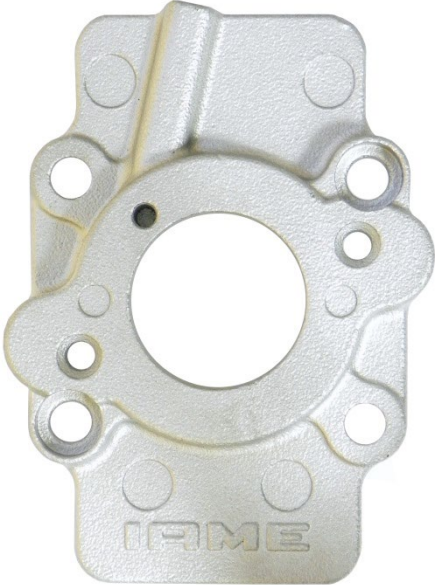

TYPE 2







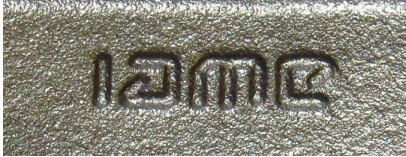

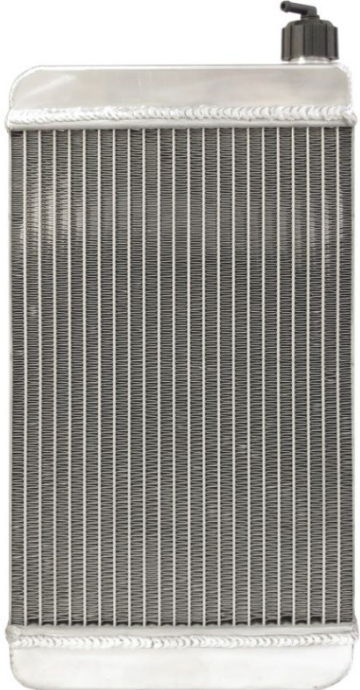

PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"

CYLINDER HEAD	CYLINDER
 <p data-bbox="368 842 549 875">NEW LOGO</p> 	 <p data-bbox="1086 819 1267 853">NEW LOGO</p> 
SEMICARTER TRASMISSION SIDE	SEMICARTER IGNITION SIDE
 <p data-bbox="368 1671 549 1704">NEW LOGO</p> 	 <p data-bbox="1086 1671 1267 1704">NEW LOGO</p> 

PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"

IGNITION COVER	CLUTCH COVER
 <p data-bbox="363 763 555 797">NEW LOGO</p> 	 <p data-bbox="1086 853 1270 887">NEW LOGO</p> 
REED GROUP	CARBURETTOR INLET CONVEYOR
 <p data-bbox="368 1384 552 1417">NEW LOGO</p> 	 <p data-bbox="1086 1816 1270 1850">NEW LOGO</p> 

PARTICULARS WITH ALTERNATIVE NEW LOGO "IAME"

EXHAUST SILENCER	BALANCING SHAFT
 <p data-bbox="528 405 711 439">NEW LOGO</p>   <p data-bbox="284 725 467 759">NEW LOGO</p> 	<p data-bbox="1007 443 1190 477">NEW LOGO</p>  
RADIATOR	
	<p data-bbox="746 1621 930 1655">NEW LOGO</p> 

THE OTHERS 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

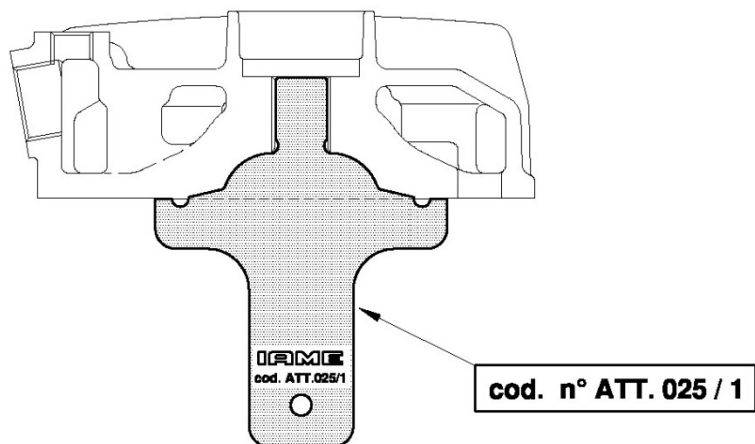
or

ⓐ I a m e

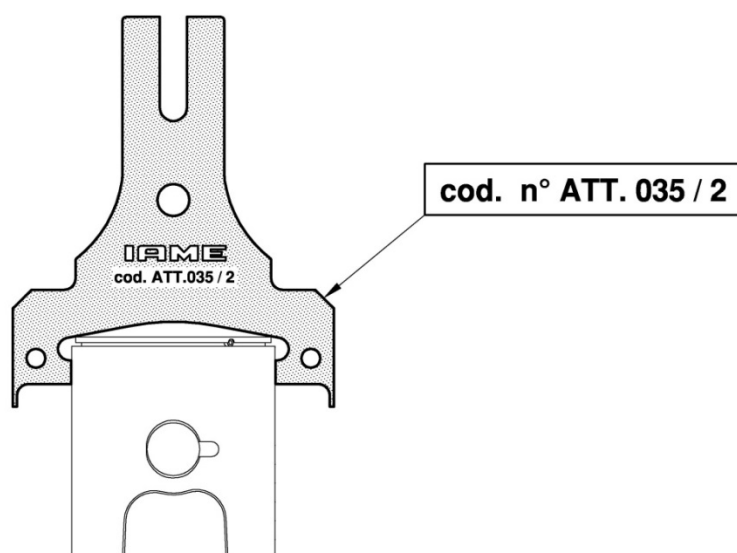
or

ⓐ

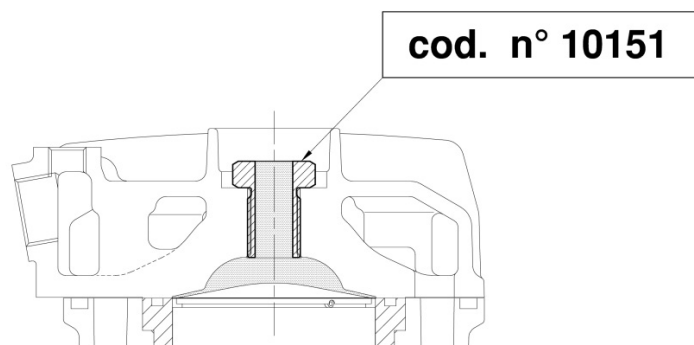
CHECKING THE SHAPE OF THE COMBUSTION CHAMBER



CONTROL OF THE PISTON DOME

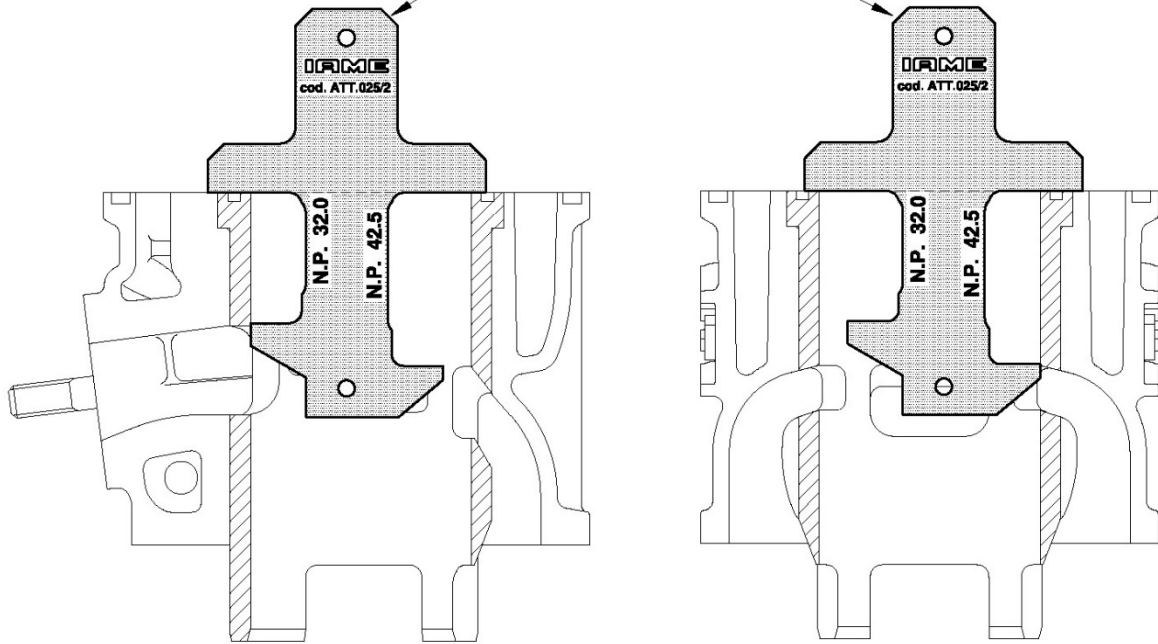


CONTROL OF THE VOLUME OF THE COMBUSTION CHAMBER



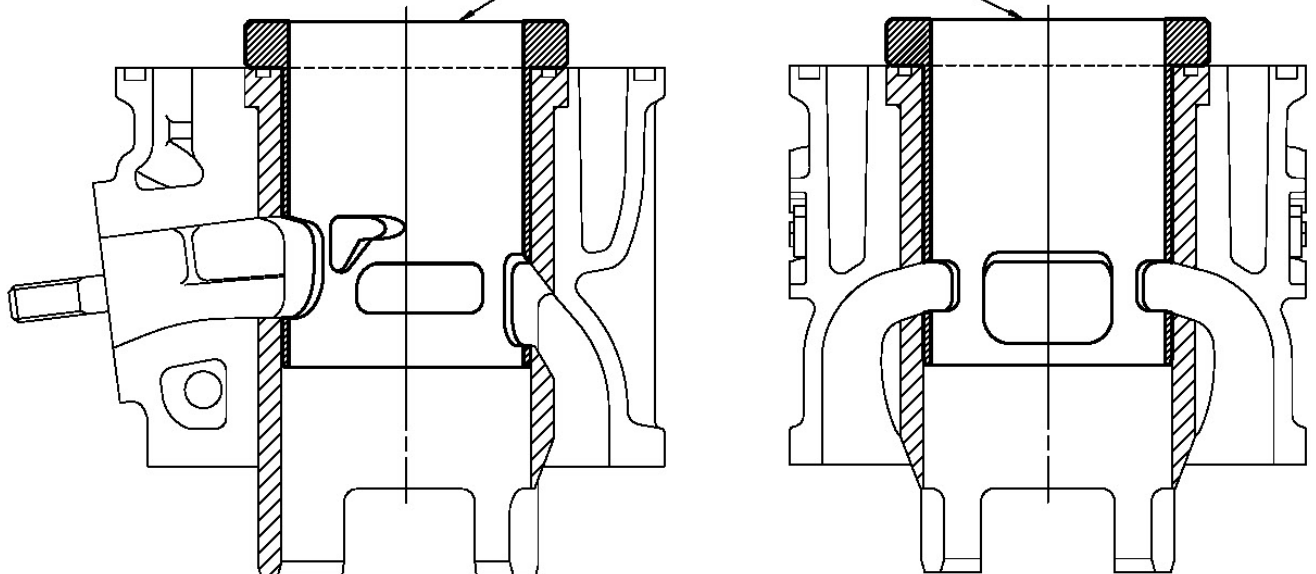
CYLINDER CHECK
CHECK OF EXHAUST DUCT AND LATERAL TRANSFERS

cod. n° ATT. 025 / 2

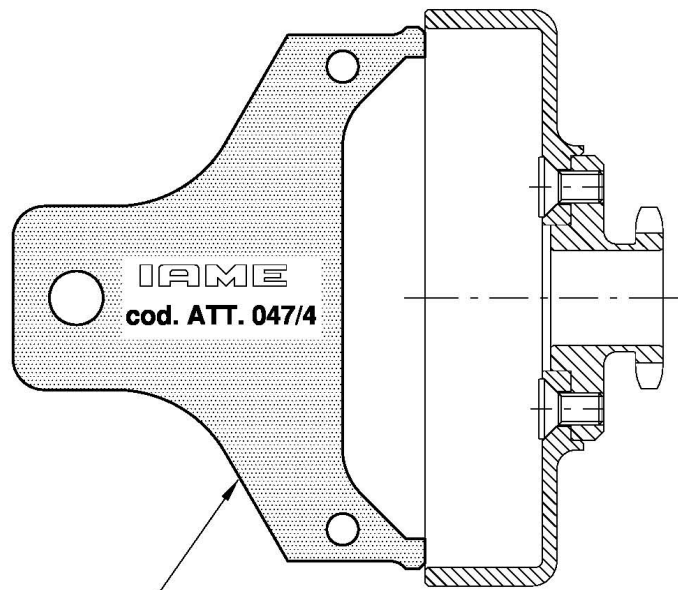


CYLINDER LINER DUCTS AND TRANSFERS CHECK TOOL

cod. n° ATT. 035 / 1



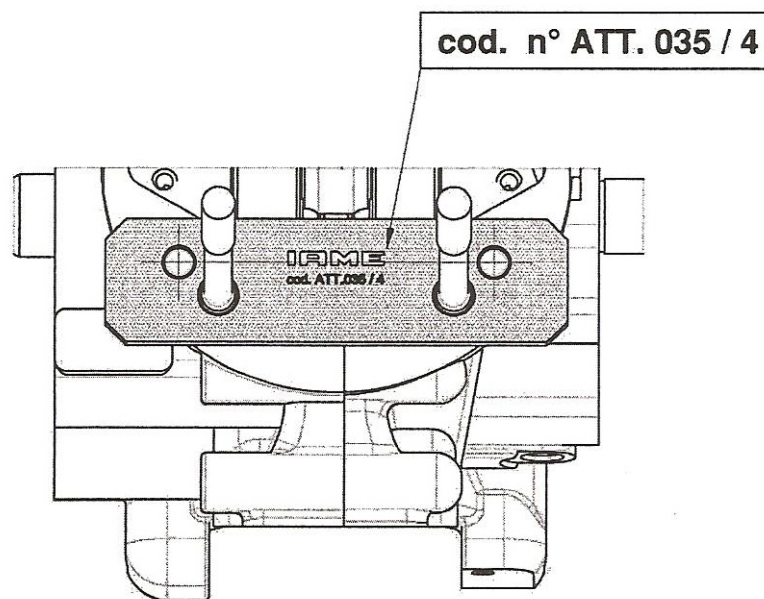
CLUTCH DRUM CHECK TOOL



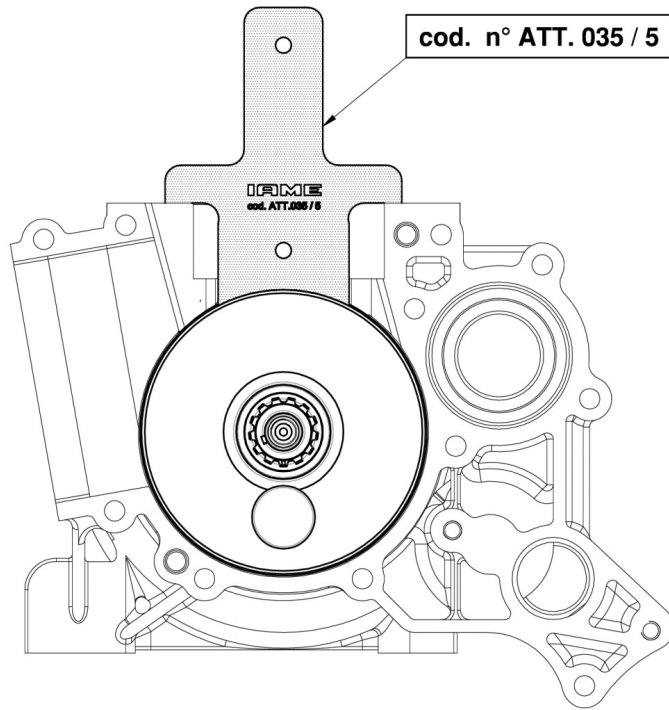
cod. n° ATT. 047 / 4

CRANKCASE CHECK TOOLS

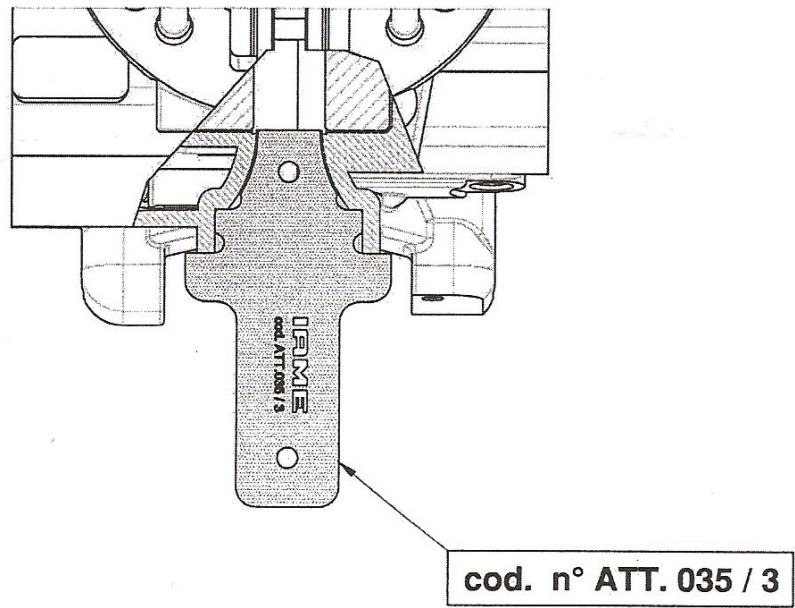
CHECKING THE DISTANCE BETWEEN THE CILYNDER PINS



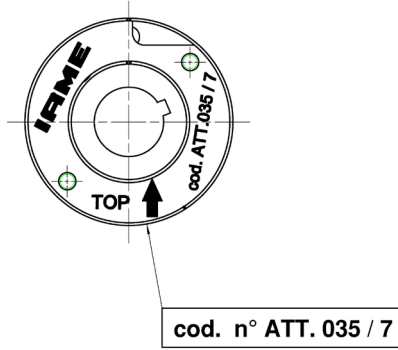
CONTROL OF THE HEIGHT OF THE JOINT PLANE



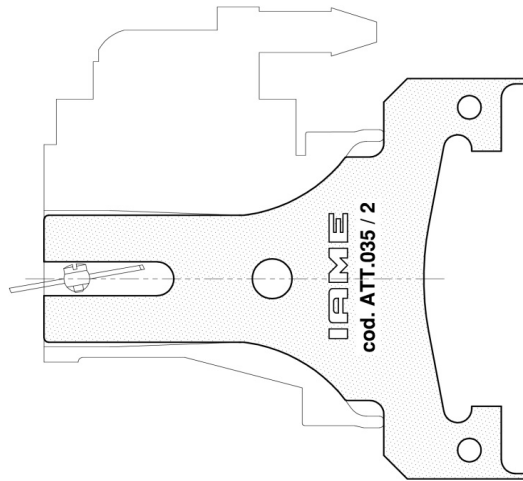
CHECKING OF THE REEDS VALVE SEAL PLANE



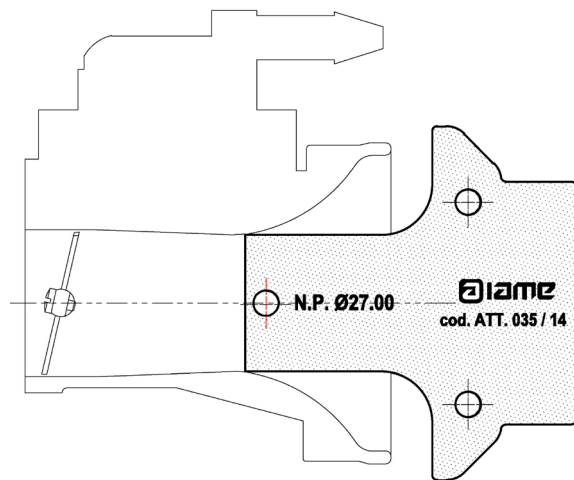
CONTROL OF THE POSITION OF SELETTA DIGITAL "S" PHASE MARKING



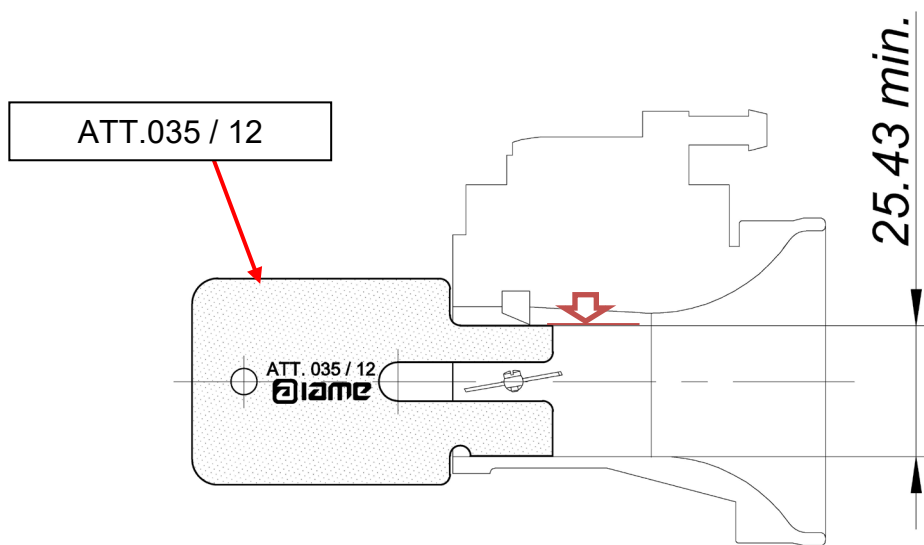
VENTURI SHAPE CONTROL OF TILLOTSON HW-27A CARBURETTOR



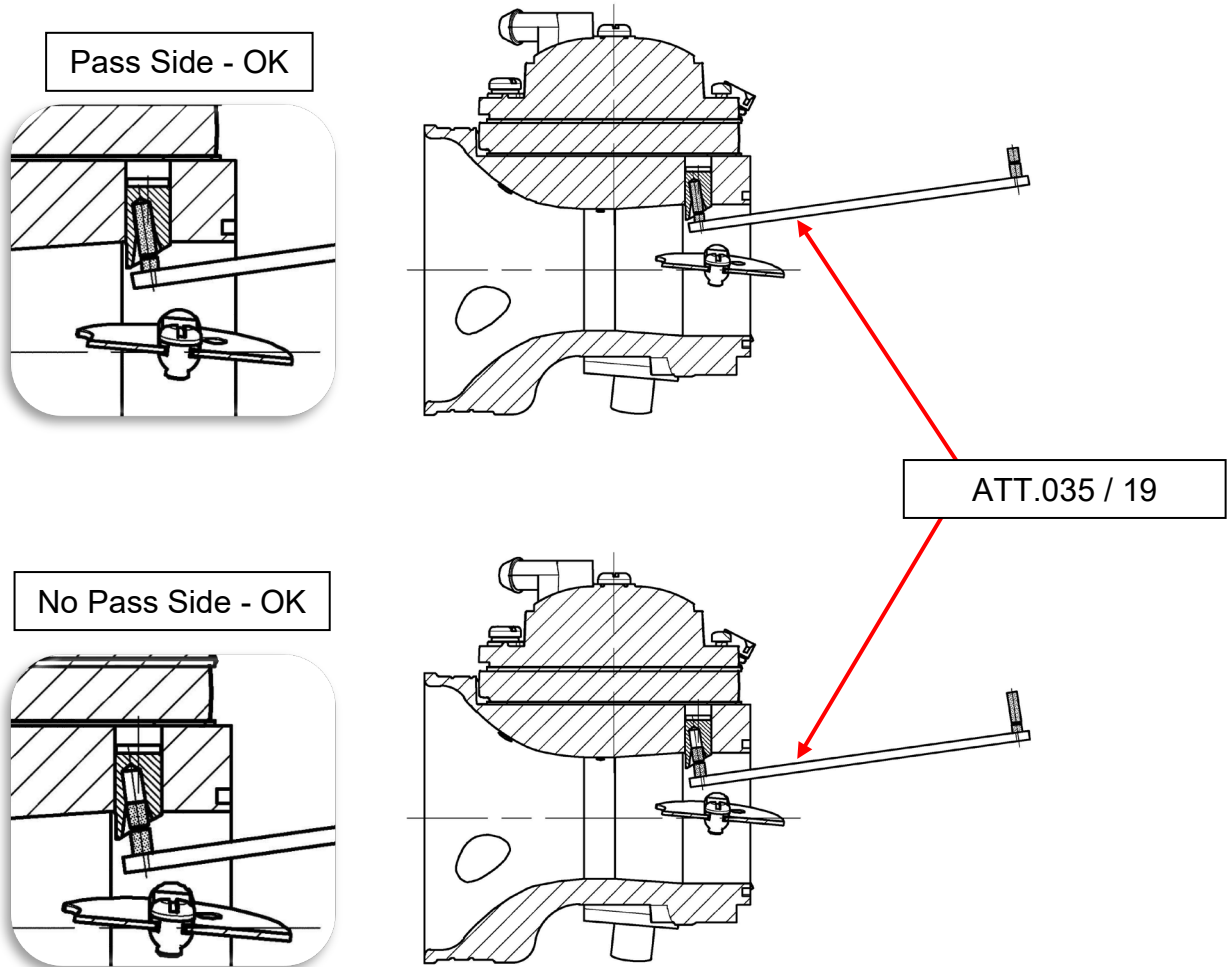
CHECK THAT THE TOOL DOES NOT ENTER INTO THE VENTURE DUCT INLET OF
TILLOTSON HW-27A CARBURETTOR.



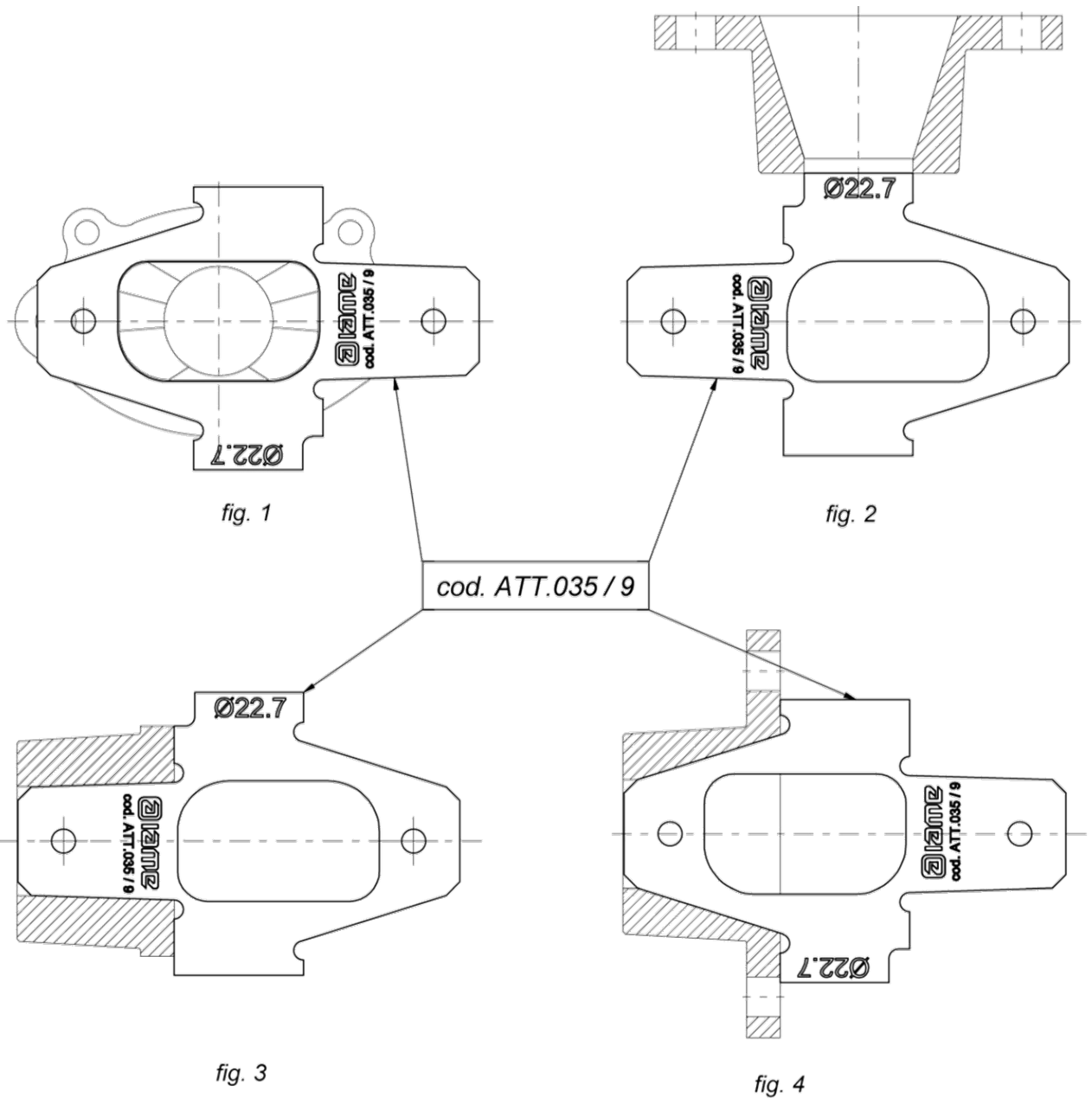
CHECK THE MINIMUM HIGHT OF ATOMIZER – GO IF IT'S OK



CHECK HOLE OF ATOMIZER



**“NO GO” GAUGE & PROFILE CHECKING TOOL
EXHAUST MANIFOLD WITH RESTRICTOR Ø22.7mm**



Scrutineer's are supplied with a "No Go" Gauge & Profile Checking Tool that is manufactured by IAME. They are to be used as indicated herein.

- 1. CHECK THAT THE NO-GO GAUGE DOES NOT ENTER INTO THE EXHAUST RESTRICTOR.
(fig.2)**
- 2. CHECK THAT THE TOOL MATCHES THE SHAPE OF THE EXHAUST MANIFOLD.
(fig.1,3 and 4)**



CARBURETTOR
Tillotson HW-27A



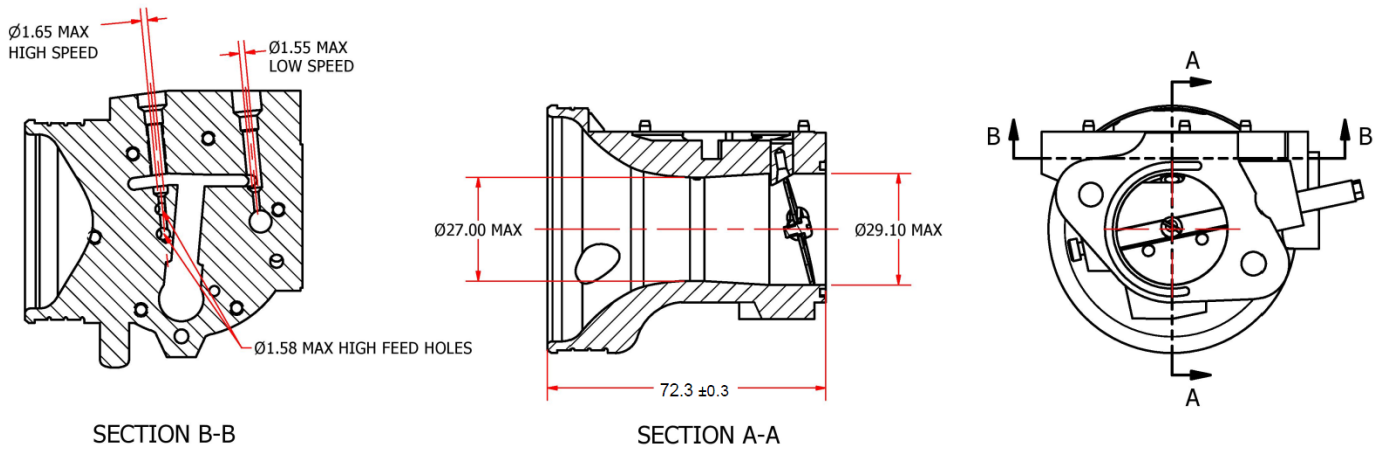
PHOTO OF ADJUSTING SIDE



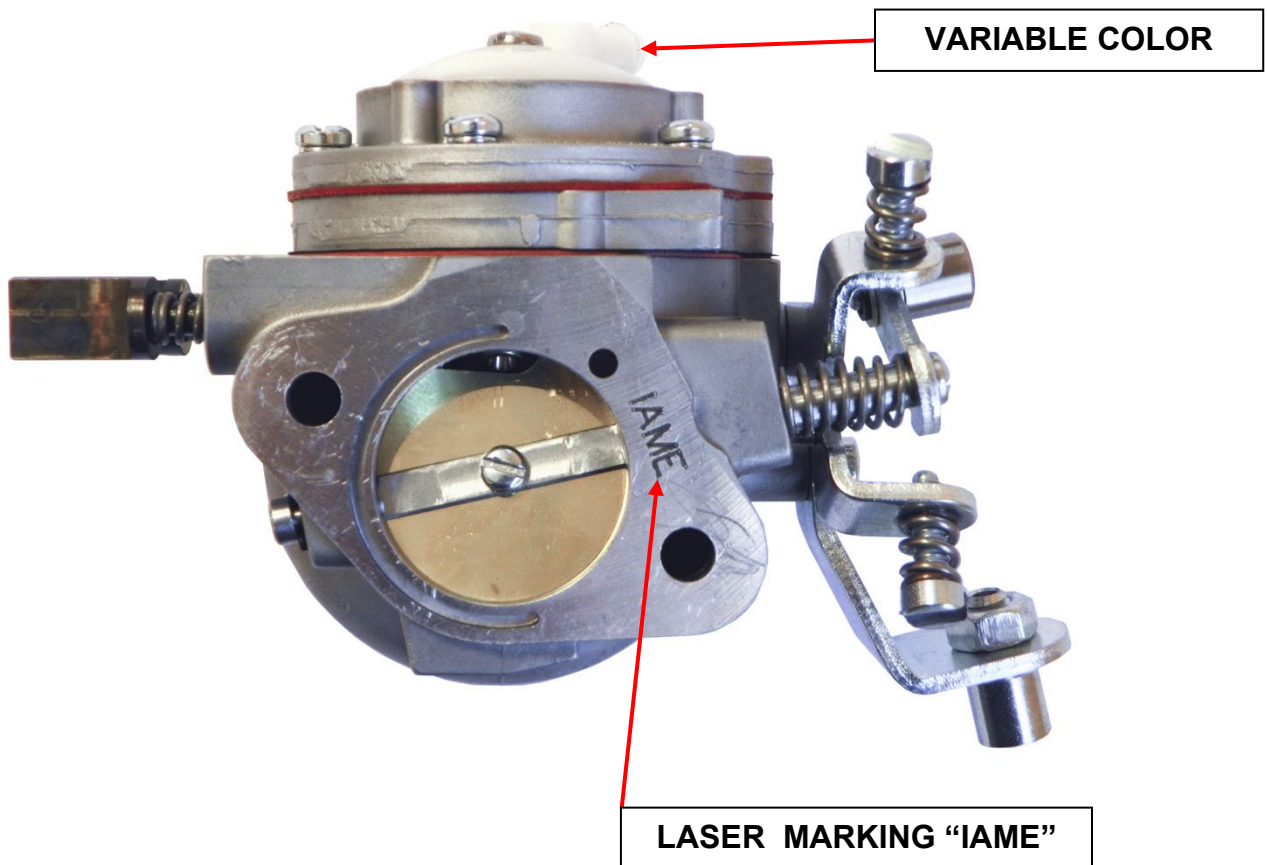
PHOTO OF INLET SIDE

Manufacturer	TILLOTSON LTD.
Make	TILLOTSON
Model	HW-27A

SECTION VIEW

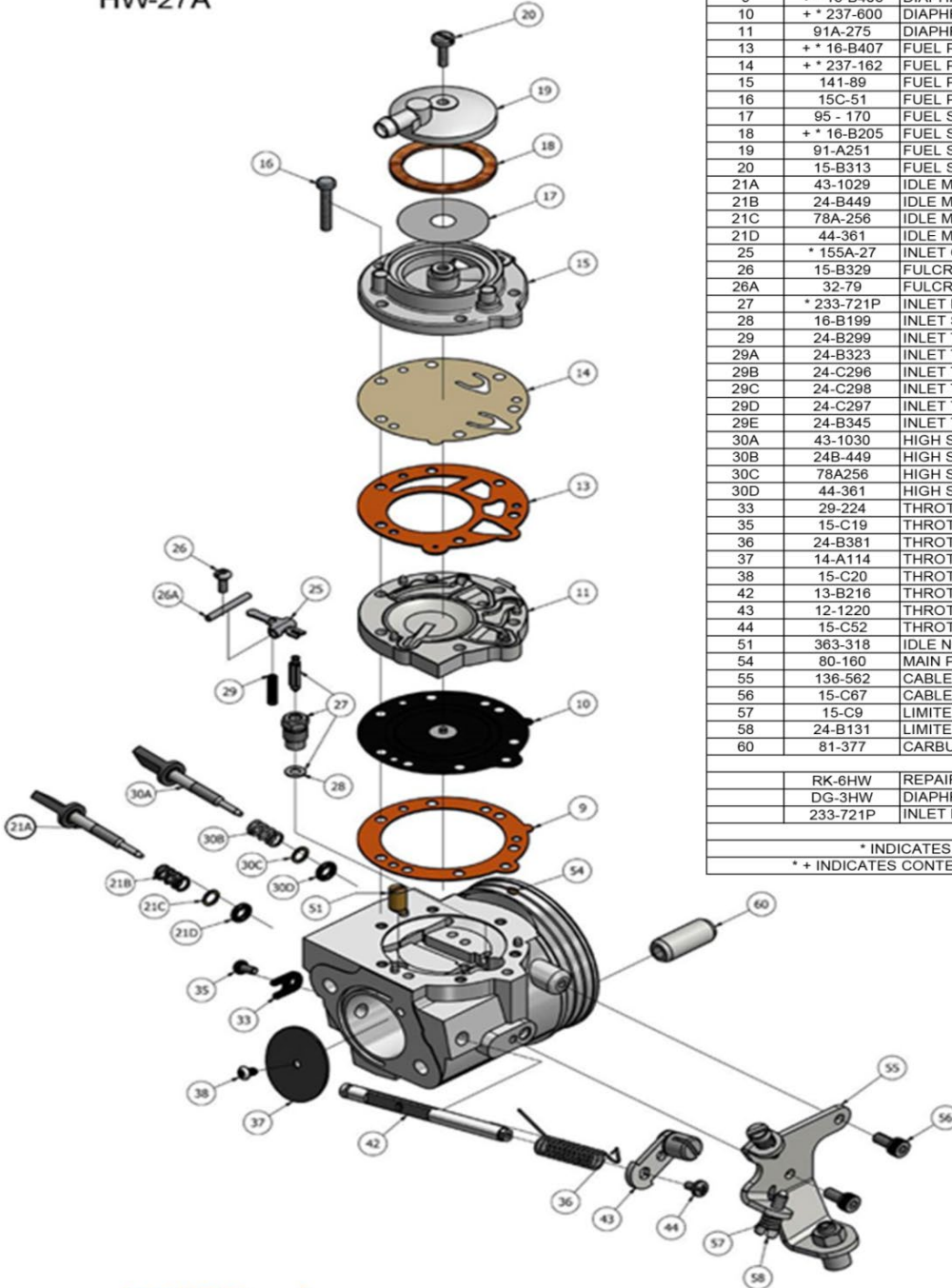


MARKING



CARBURETTOR DESCRIPTION AND SKETCH OF PARTS

HW-27A



ITEM	PART NO:	DESCRIPTION	QTY
9	+ * 16-B406	DIAPHRAGM GASKET (ORANGE)	1
10	+ * 237-600	DIAPHRAGM	1
11	91A-275	DIAPHRAGM COVER	1
13	+ * 16-B407	FUEL PUMP GASKET (ORANGE)	1
14	+ * 237-162	FUEL PUMP DIAPHRAGM	1
15	141-89	FUEL PUMP BODY	1
16	15C-51	FUEL PUMP BODY SCREW	6
17	95 - 170	FUEL STRAINER SCREEN	1
18	+ * 16-B205	FUEL STRAINER COVER GASKET	1
19	91-A251	FUEL STRAINER COVER	1
20	15-B313	FUEL STRAINER COVER RETAINING SCREW	1
21A	43-1029	IDLE MIXTURE SCREW	1
21B	24-B449	IDLE MIXTURE SCREW SPRING	1
21C	78A-256	IDLE MIXTURE SCREW WASHER	1
21D	44-361	IDLE MIXTURE SCREW PACKING	1
25	* 155A-27	INLET CONTROL LEVER	1
26	15-B329	FULCRUM LEVER SCREW	1
26A	32-79	FULCRUM LEVER PIN	1
27	* 233-721P	INLET NEEDLE & SEAT SET	1
28	16-B199	INLET SEAT GASKET	1
29	24-B299	INLET TENSION SPRING (STD 37 grams)	1
29A	24-B323	INLET TENSION SPRING (26 grams)	1
29B	24-C296	INLET TENSION SPRING (31 grams)	1
29C	24-C298	INLET TENSION SPRING (42 grams)	1
29D	24-C297	INLET TENSION SPRING (46 grams)	1
29E	24-B345	INLET TENSION SPRING (48 grams)	1
30A	43-1030	HIGH SPEED MIXTURE SCREW	1
30B	24B-449	HIGH SPEED MIXTURE SCREW SPRING	1
30C	78A256	HIGH SPEED MIXTURE SCREW WASHER	1
30D	44-361	HIGH SPEED MIXTURE SCREW PACKING	1
33	29-224	THROTTLE SHAFT CLIP	1
35	15-C19	THROTTLE SHAFT CLIP RETAINING SCREW	1
36	24-B381	THROTTLE RETURN SPRING	1
37	14-A114	THROTTLE SHUTTER	1
38	15-C20	THROTTLE SHUTTER SCREW	1
42	13-B216	THROTTLE SHAFT	1
43	12-1220	THROTTLE LEVER ASSEMBLY	1
44	15-C52	THROTTLE LEVER RETAINING SCREW	1
51	363-318	IDLE NOZZLE	1
54	80-160	MAIN PLUG	2
55	136-562	CABLE BRACKET	1
56	15-C67	CABLE BRACKET RETAINING SCREW	2
57	15-C9	LIMITER SCREW	2
58	24-B131	LIMITER SPRING	2
60	81-377	CARBURETTOR MOUNTING NUT	2
RK-6HW		REPAIR KIT	
DG-3HW		DIAPHRAGM & GASKET (STANDARD)	
233-721P		INLET NEEDLE & SEAT SET	
* INDICATES CONTENTS OF REPAIR KIT			
* + INDICATES CONTENTS OF DIAPHRAGM & GASKET SET			



Clash Industrial Estate - Tralee - Ireland
www.tillotson-racing.com

PARTS OF CARBURETTOR

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



Thickness = 0.5 ± 0.1 mm

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



Thickness = 0.8 ± 0.1 mm

REF.10 - P. N°237-600
DIAPHRAGM



Thickness = 0.13 ± 0.07 mm

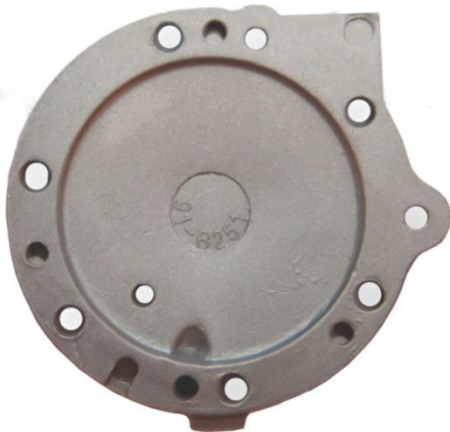
REF.14 - P. N°237-162
PUMP DIAPHRAGM

ALTERNATIVE



Thickness = 0.10 ± 0.063 mm

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

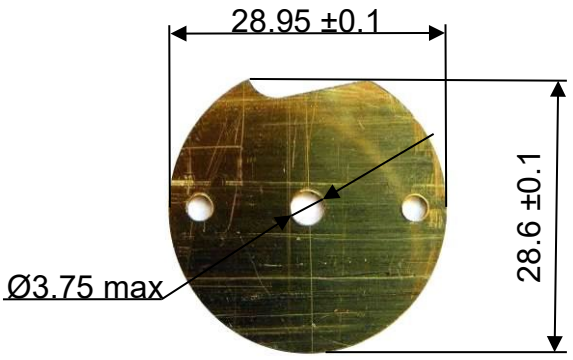
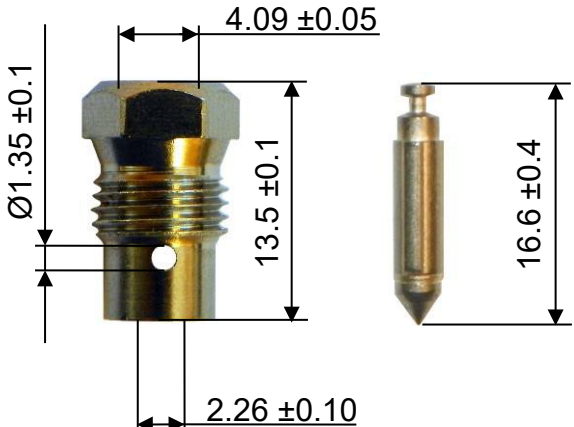
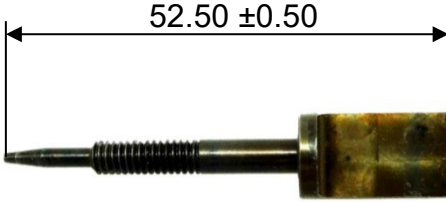
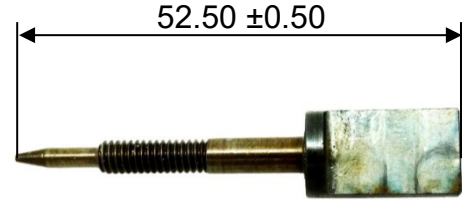
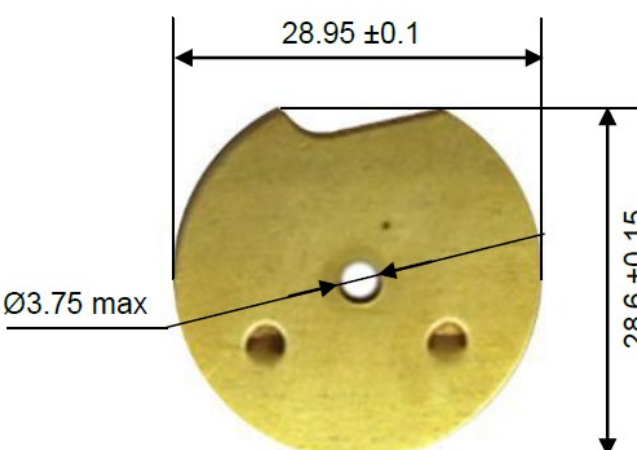



Thickness = 6.75 ± 0.15 mm

REF.15 - P. N° 141-89
PUMP COVER



Thickness = 12.5 ± 0.15 mm

<p>REF.37 - P. N° 14-A114 THROTTLE SHUTTER</p>  <p>Thickness = 0.81 ± 0.1 mm</p>	<p>REF.27 - P. N° 233-721P SEAT + NEEDLE</p> 
<p>REF.21A - P. N° 43-1029 NEEDLE LOW SPEED</p> 	<p>REF.30A - P. N° 43-1030 NEEDLE HIGH SPEED</p> 
<p>ALTERNATIVE THROTTLE SHUTTER REF. 37 - P. N° 14-A114 (made from production tooling)</p>	<p>ALTERNATIVE FUEL NEEDLE</p>
 <p>Thickness = 0.81 ± 0.1 mm</p>	<p>REF.27 - P. N° 233-721P</p> 

HOLE FOR CARBURETTOR SEALING

The carburettor can have this hole for sealing.

