KARTING NEW SOUTH WALES
EST 1987

KARTING NSW

Engine Technical Specification

PRD FIREBALL

Revision: 2.0 Date: 01/11/2024

PREAMBLE

This document provides the Technical Specification for the PRD Fireball engine, as approved by Karting NSW.

This engine is approved for use in the classes as defined in the KNSW Rule Book.

Unless otherwise specified below, the engine must be original in all components according to the PRD Fireball specifications. Neither the engine nor any of its ancillary components may be modified other than in accordance with the KNSW Rule Book and this Technical Specification.

The General Technical Specification contains the manufacturer's engine specification and must be read in conjunction with the Compliance Specification which defines additional specifications as approved by KNSW.

The engine must always be presented and used in conformity with this Technical Specification and the KNSW Rule Book.

ANY ALTERATIONS / MODIFICATIONS ARE STRICTLY PROHIBITED EXCEPT AS SPECIFICALLY AUTHORISED WITHIN THESE SPECIFICATIONS.

IF THESE SPECIFICATIONS DO NOT SAY YOU CAN MAKE A MODIFICATION, THEN YOU CANNOT.

KNSW Homologation No: KNSW-006-24

ENGINE			
Manufacturer	St George Kart Centre Wholesale Pty Ltd	Category	Including but not limited to TaG, TaG Restricted, Open
Make	PRD	Homologation Period	From 2024
Model, Type	FIREBALL	Pages	30

This homologation sheet reproduces description, illustrations and dimensions of the engine at the time of the KNSW Homologation. All motors must be manufactured within these dimensions

ENGINE PHOTO - DRIVE SIDE

ENGINE PHOTO - OPPOSITE SIDE

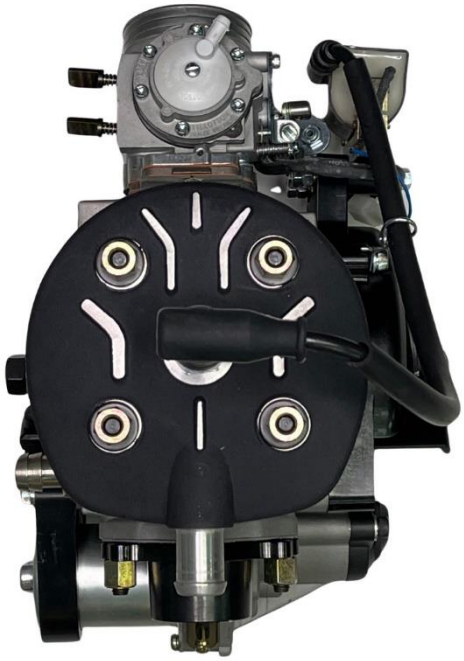
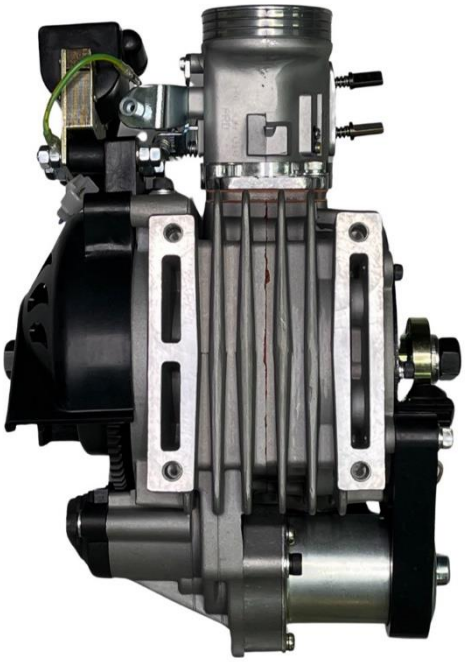
AUTHORISED BY KNSW

Approved by G. Abbott

KNSW State Technical Officer

1st November 2024

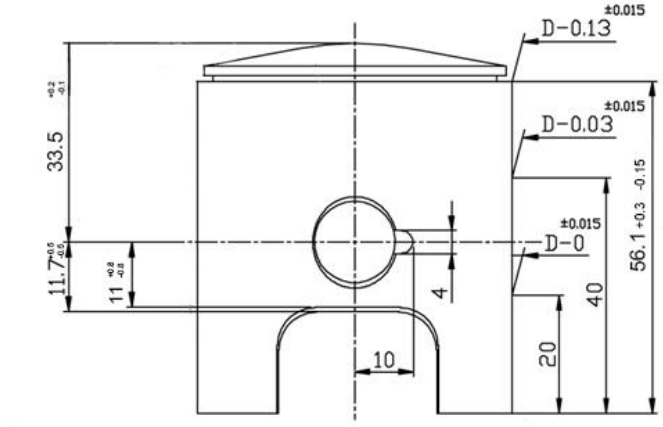
KNSW Homologation No: KNSW-006-24

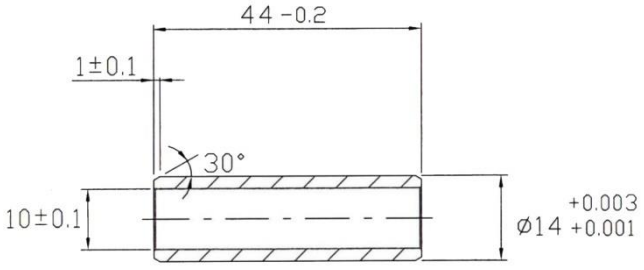
PHOTO OF THE ENGINE FROM THE BACK	PHOTO OF THE ENGINE FROM THE FRONT
	
PHOTO OF THE ENGINE FROM ABOVE	PHOTO OF THE ENGINE FROM BELOW
	

TECHNICAL INFORMATION			
Characteristics		***Materials***	
Cylinder volume	123.15cm³	Cylinder wall	IRON
Bore	53.90mm	Cylinder	ALLOY
max. bore	54.40mm	**Cylinder head**	ALLOY
Stroke	54mm	Crankcase / sump	ALLOY
Cooling system	Water	**Connecting rod**	IRON
Air admission system	Reed		
Nº of carburation systems	1	***Tolerances***	
Nº of transfer ports in the cylinder	3	Opening angles	+ / - 3 degrees
Nº of exhaust ports	3	Combustion chamber volume	Min 10cc
Shape of combustion chamber	Spherical	Squish Measurement	0.8mm Minimum
Volume of the combustion chamber	10cc Minimum	Stroke [+/- 0.1mm]	+ / - 0.1
		Length between axis of connecting rod [+/- 0.1mm]	= / - 0.1
Length between of the axis of connecting rod	Pre 2018 – 100mm Post 2018 – 102mm	***Dimensions on machined surfaces***	
Ignition make	PVL & PRD	< 25mm [+/- 0.5mm]	
Ignition model	PVL 590 221 & 500 222, PRD Easystart	25-60mm [+/- 0.8mm]	
		> 60mm [+/- 1.5mm]	
		Dimensions on rough cast surface	
		< 25mm [+/- 1mm]	
		25-60mm [+/- 1.5mm]	

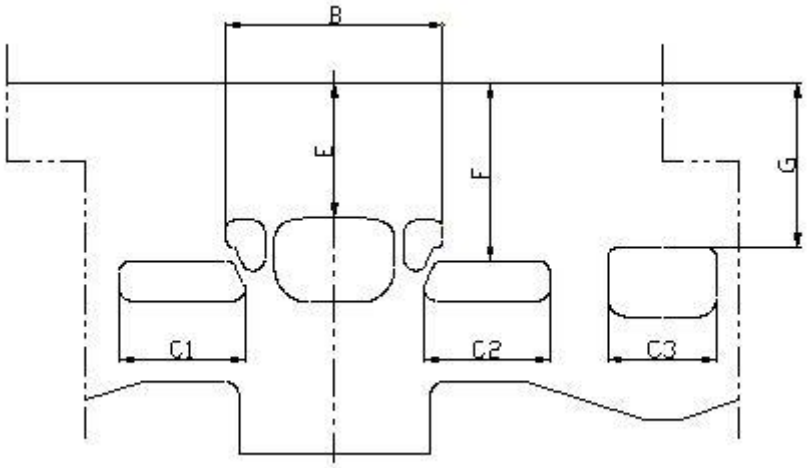
KNSW Homologation No: KNSW-006-24

TECHNICAL INFORMATION	
E – piston	EXHAUST AND INLET TIMING READING LINES
Nº of piston rings	1
Overall length	62.8 + / - 0.2
Min weight of the bare piston.	130 grams
F – Piston Pin	
material	IRON
Length	44mm - 0.20
Inside diameter	10 + / - 0.1
Outside diameter	14mm +0.001 + 0.003



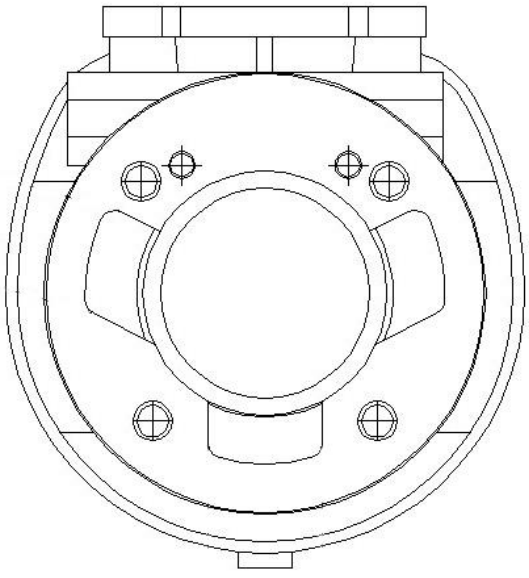


DRAWING OF CYLINDER DEVELOPMENT

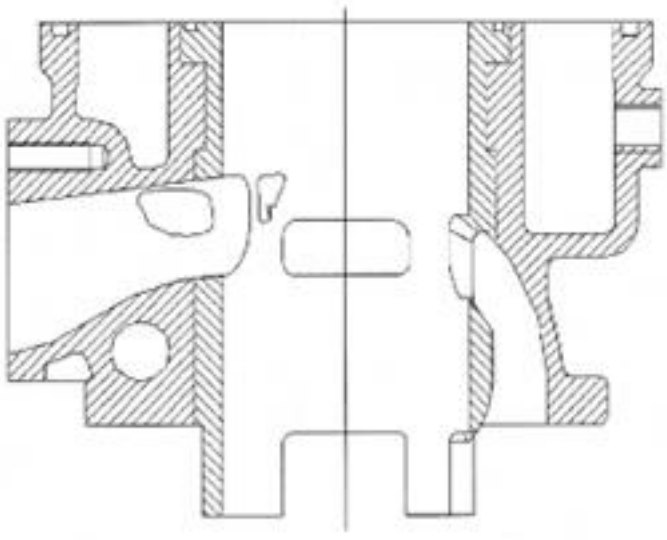


Chord reading	
B	65.3 + - 0.2
C1=C2	26 + - 0.2
C3	29.4 + - 0.2
Angular reading by inserting a 0.2mm gauge	
E	33.8 min
F	44 + - 0.2
G	43.5 + - 0.2

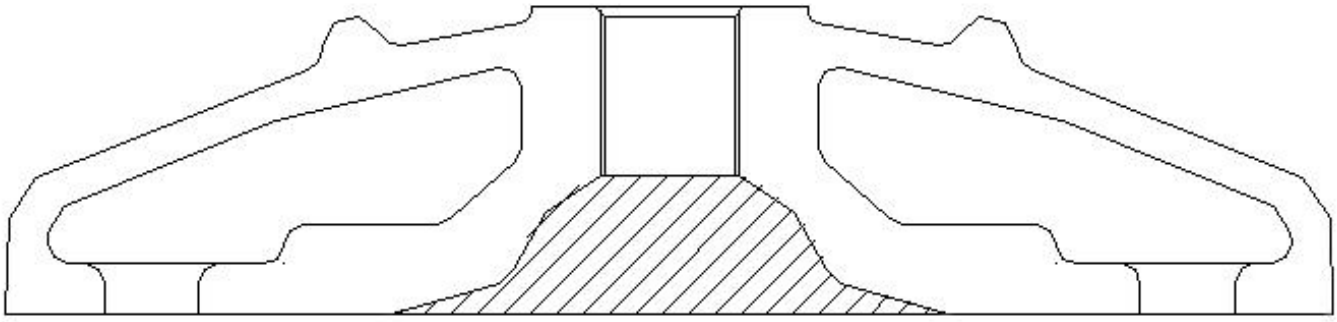
DRAWING OF THE BASE OF THE CYLINDER



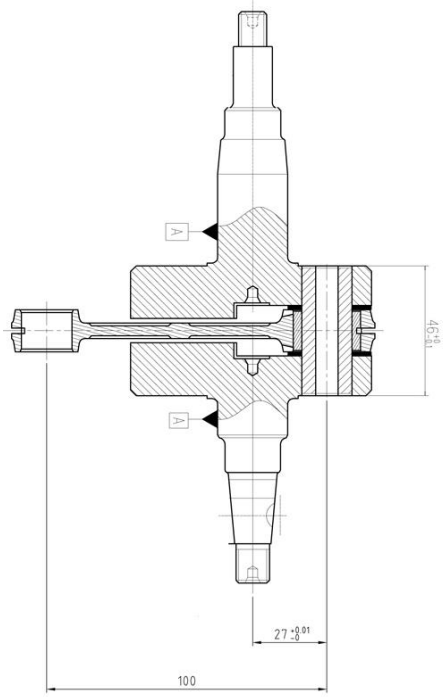
DRAWING OF CYLINDER SECTION



DRAWING OF THE COMBUSTION CHAMBER AND CYLINDERHEAD

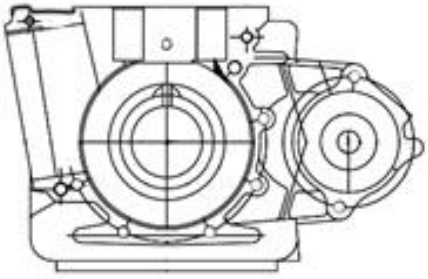


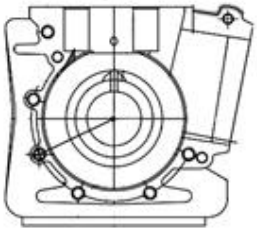
DRAWING OF THE CRANKSHAFT

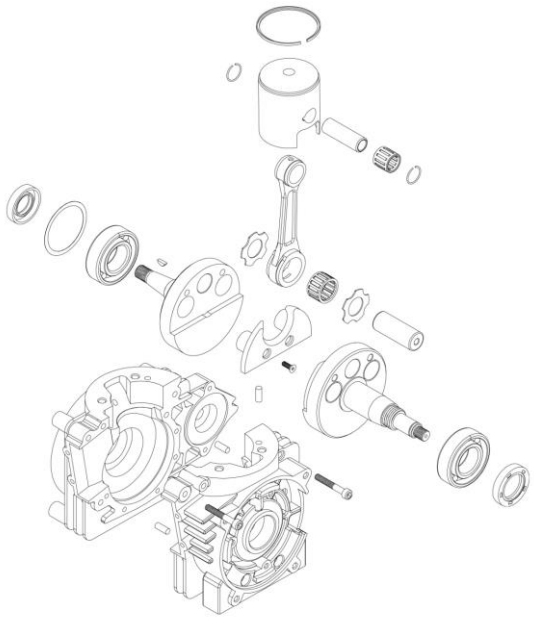


PRE 2018 – 18MM CRANK PIN
PRE 2018 1880 grams

DRAWING OF THE INTERIOR OF THE SUMP







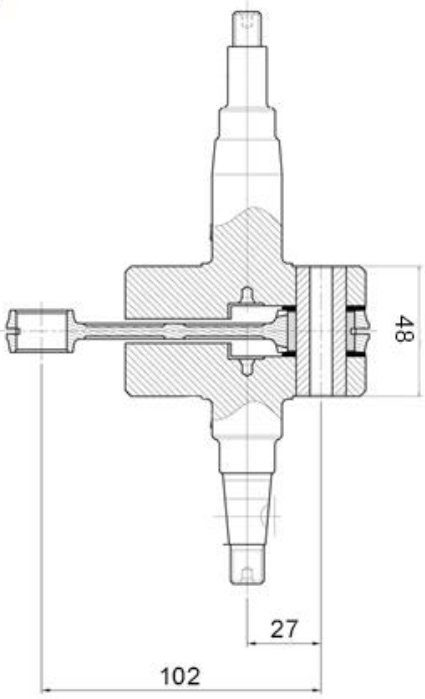
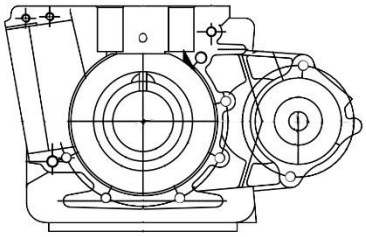
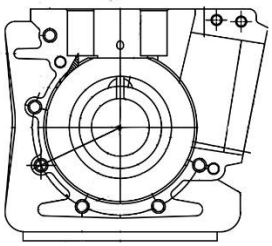
DRAWING OF THE CRANKSHAFT	DRAWING OF THE INTERIOR OF THE SUMP
 POST 2018 – 20MM CRANK PIN POST 2018 Minimum Weight 2020 grams	  POST 2018 – SUIT 20MM CRANK PIN

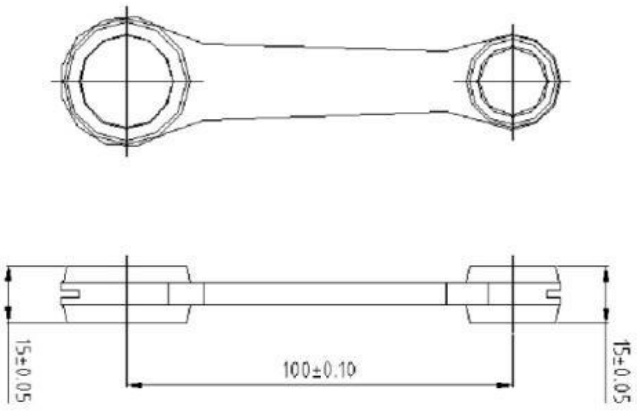
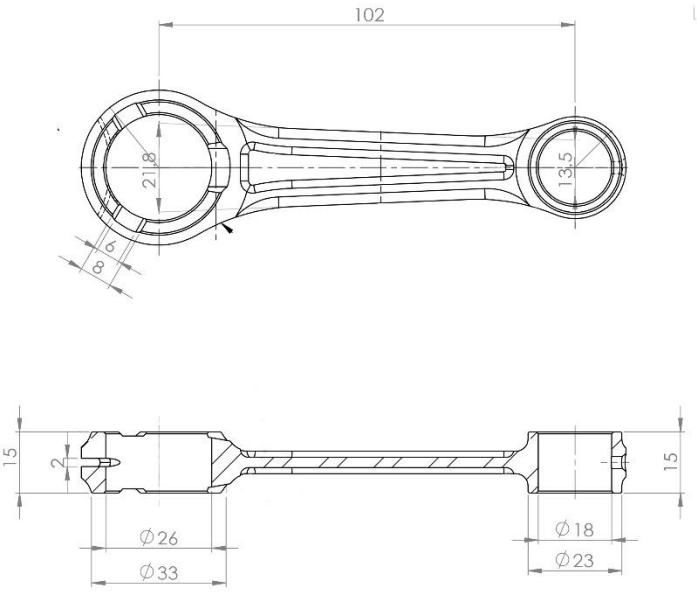
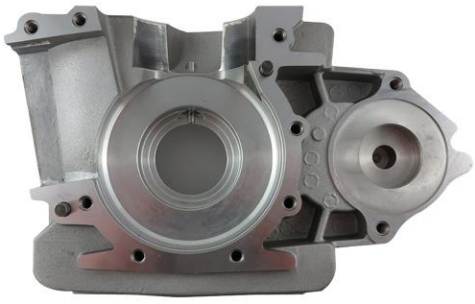
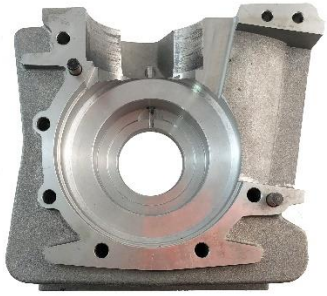
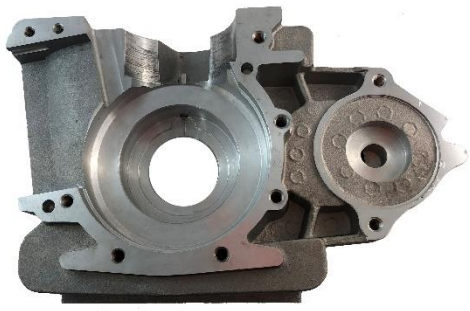
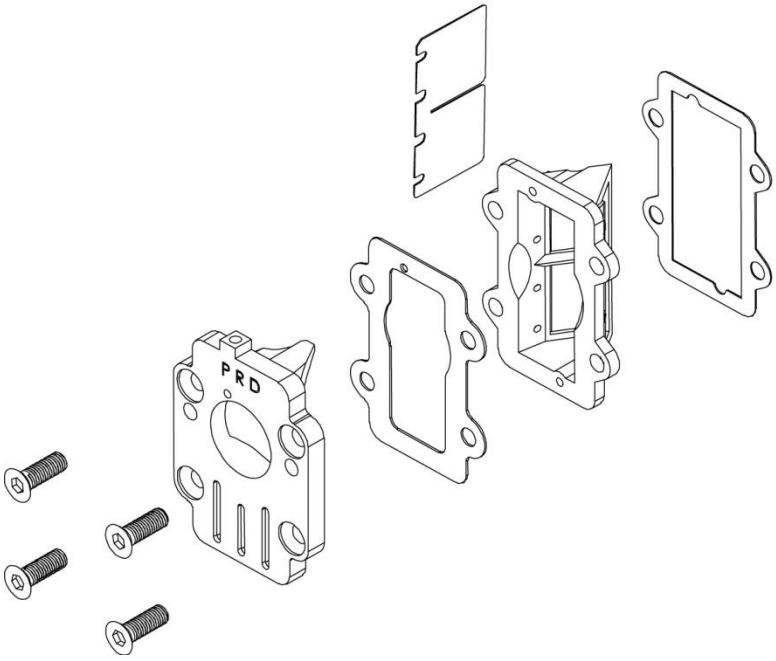
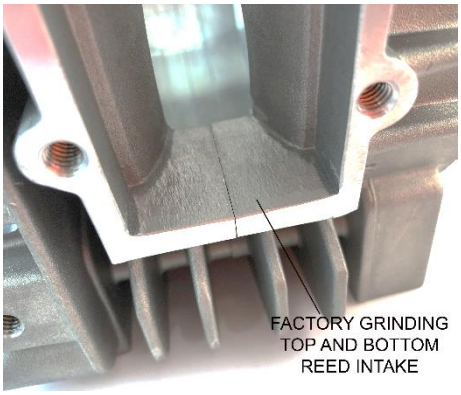
PHOTO OF THE CONROD	PHOTO OF THE CONROD
 PRE 2018	 POST 2018
DRAWING OF THE CONROD	DRAWING OF THE CONROD
 PRE 2018 MIN WEIGHT 118 GRAMS	 POST 2018 MIN WEIGHT 113 GRAMS

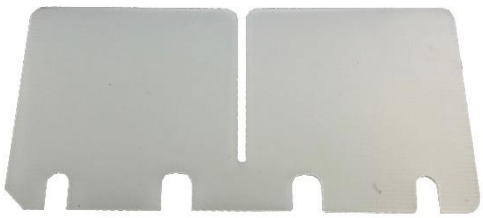
PHOTO OF THE BASE OF THE CYLINDER	PHOTO OF THE BASE OF THE CYLINDER
	
PHOTO OF THE TOP OF THE CYLINDER HEAD	PHOTO OF THE COMBUSTION CHAMBER
	

PHOTO OF CRANKCASE – GASKET FACE	PHOTO OF CRANKCASE – GASKET FACE
 PRE 2018 – SUIT 18MM CRANK	 POST 2018 – SUIT 20MM CRANK
PHOTO OF CRANKCASE – INTERIOR (HORIZONTAL VIEW)	PHOTO OF CRANKCASE – INTERIOR (HORIZONTAL VIEW)
  PRE 2018 – SUIT 18MM CRANK	  POST 2018 – SUIT 20MM CRANK

REED INTAKE ASSEMBLY

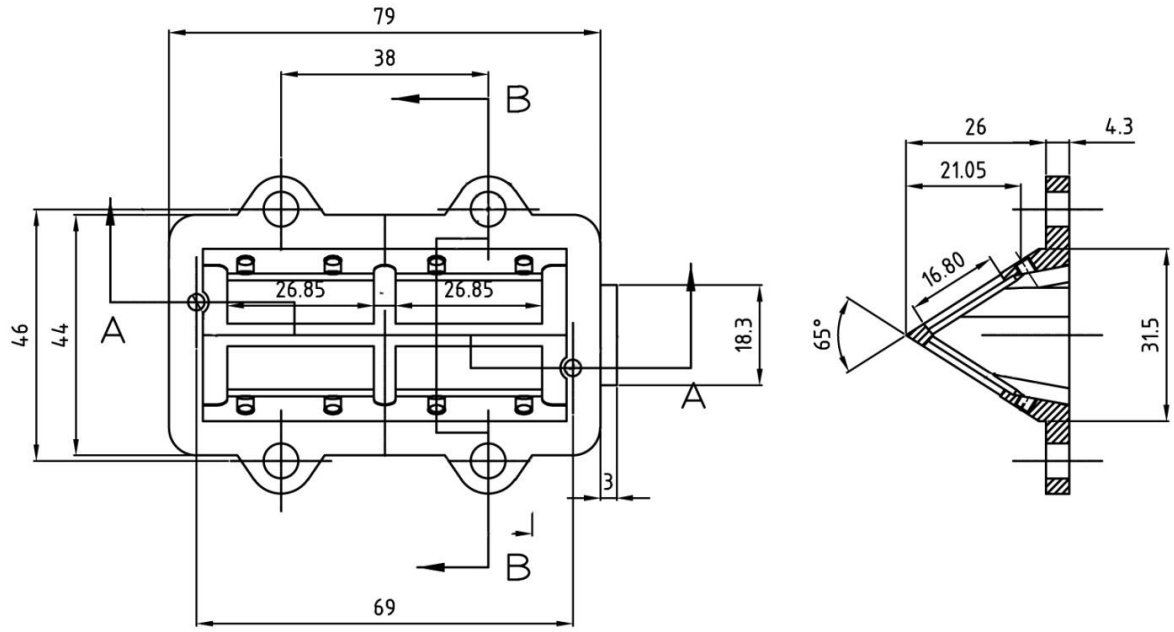






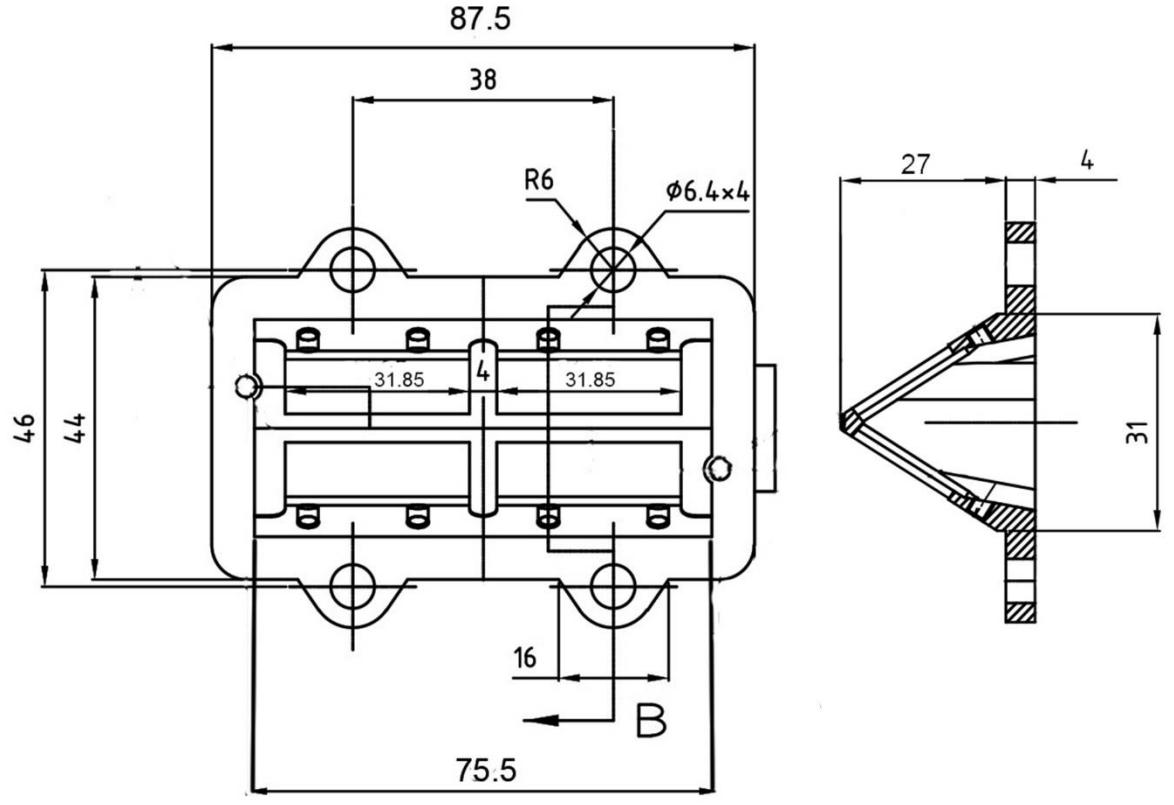
PRE 2018 – REED BLOCK

DRAWING OF THE REED BLOCK



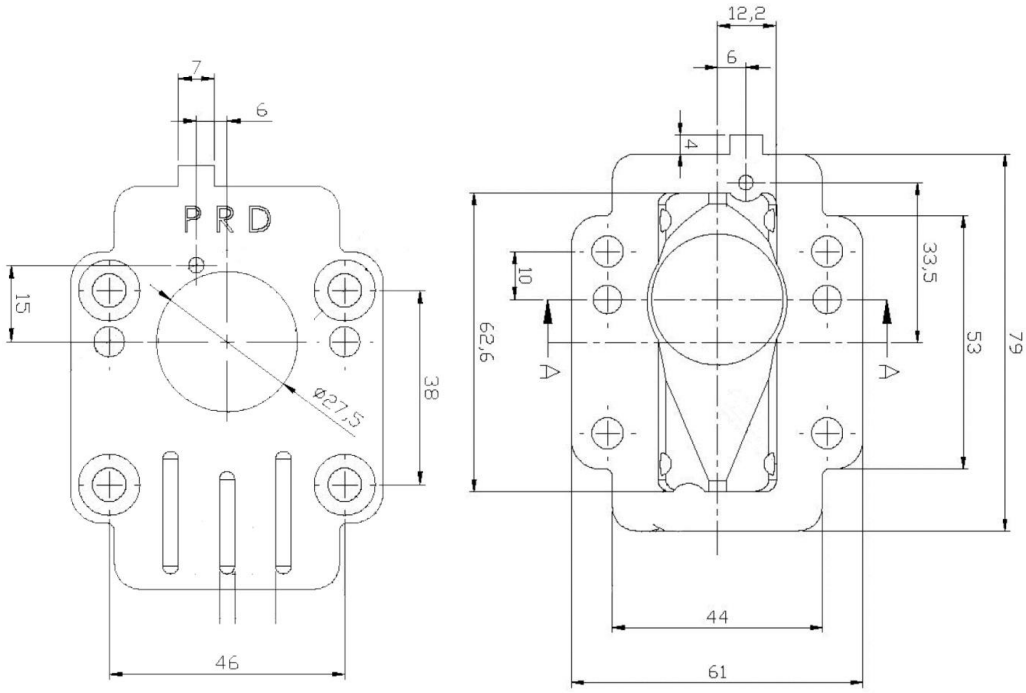
PRE 2018

DRAWING OF THE REED BLOCK



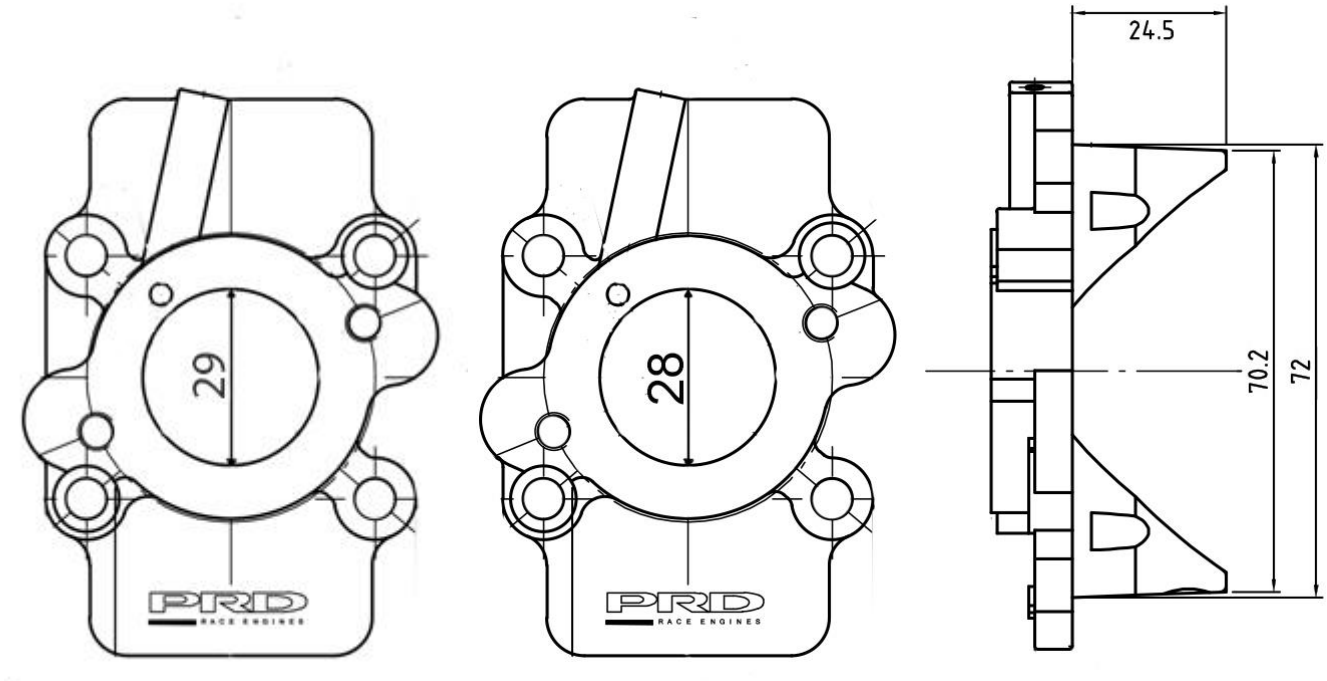
POST 2018

DRAWING OF THE REED MANIFOLD



PRE 2018

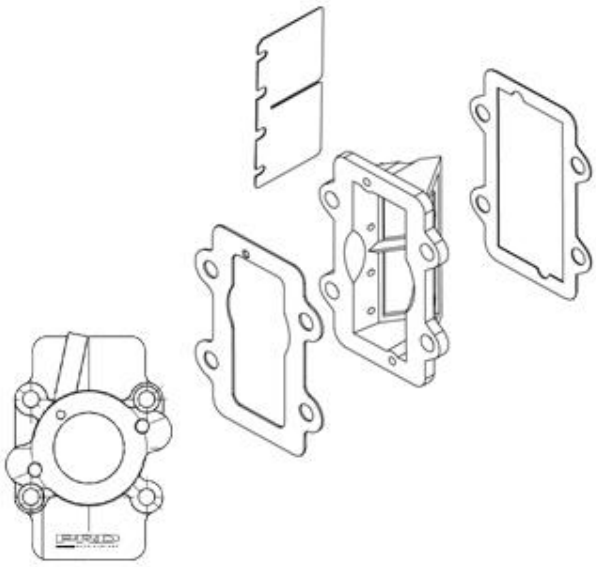
DRAWING OF THE REED MANIFOLD

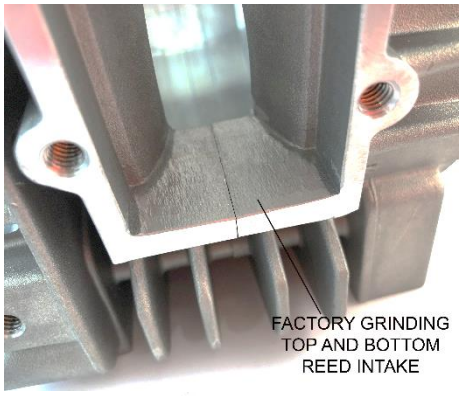


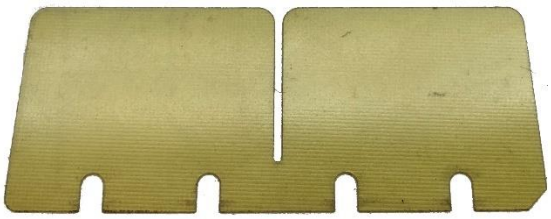
29mm POST 2024

28mm 2018-2024

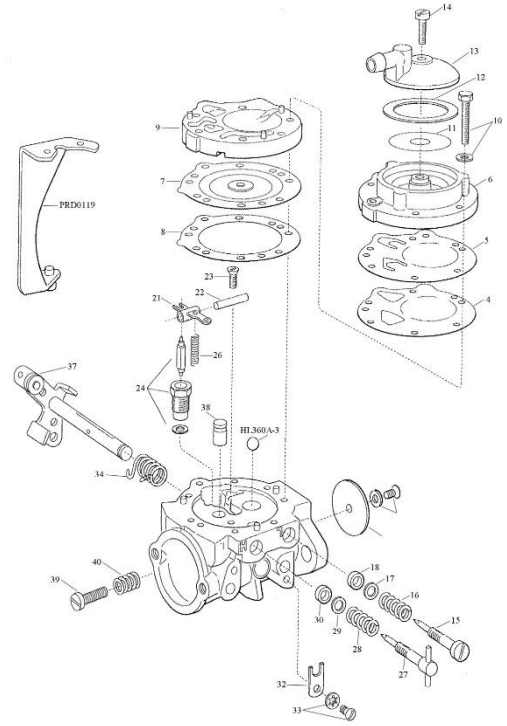
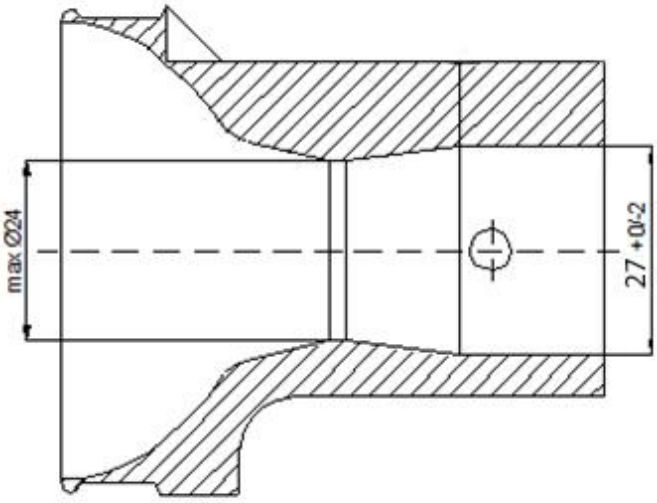
REED INTAKE ASSEMBLY



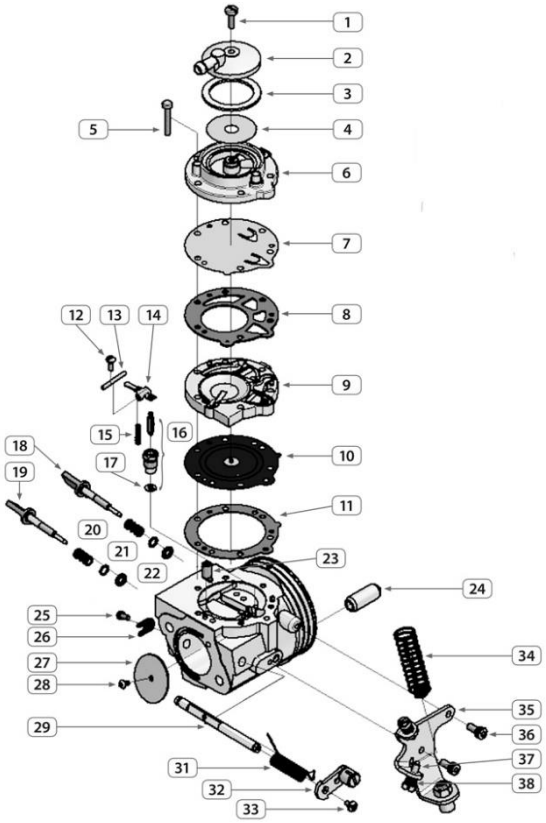




MUST BE OEM. CARBON PETEL
POST 2018 – LARGE REED BLOCK

CARBURETTOR	
 TILLOTSON HL360A – PRE 2024	
PHOTO OF CARBURETTOR	DRAWING OF THE CROSS SECTION
 HL-360A	

CARBURETTOR



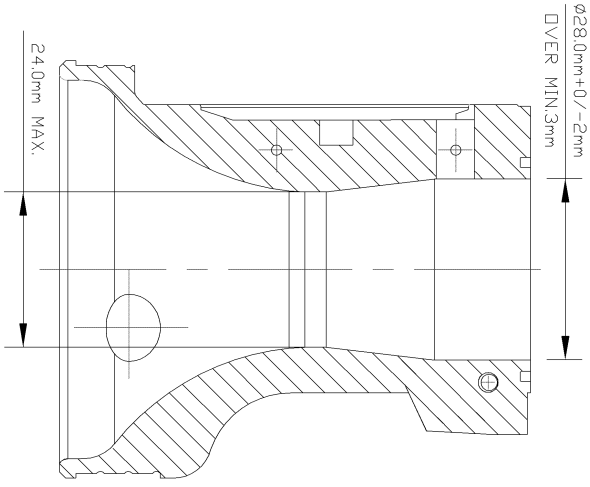
Tillotson HW 30A PRD

SPEC 2 DUMP TUBE WITH ATOMISER HOLES

PHOTO OF CARBURETTOR

MARKED HW 30A PRD

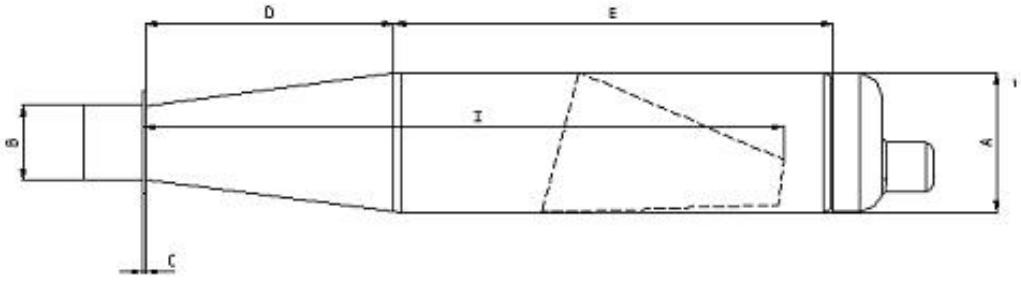
DRAWING OF THE CROSS SECTION



DRAWING OF SILENCER AND COMPONENTS

PRE 2024
FLEX LENGTH IS FREE

PRD9037/95A PRE 2024
SILVER OR BLACK PIPE PERMITTED.



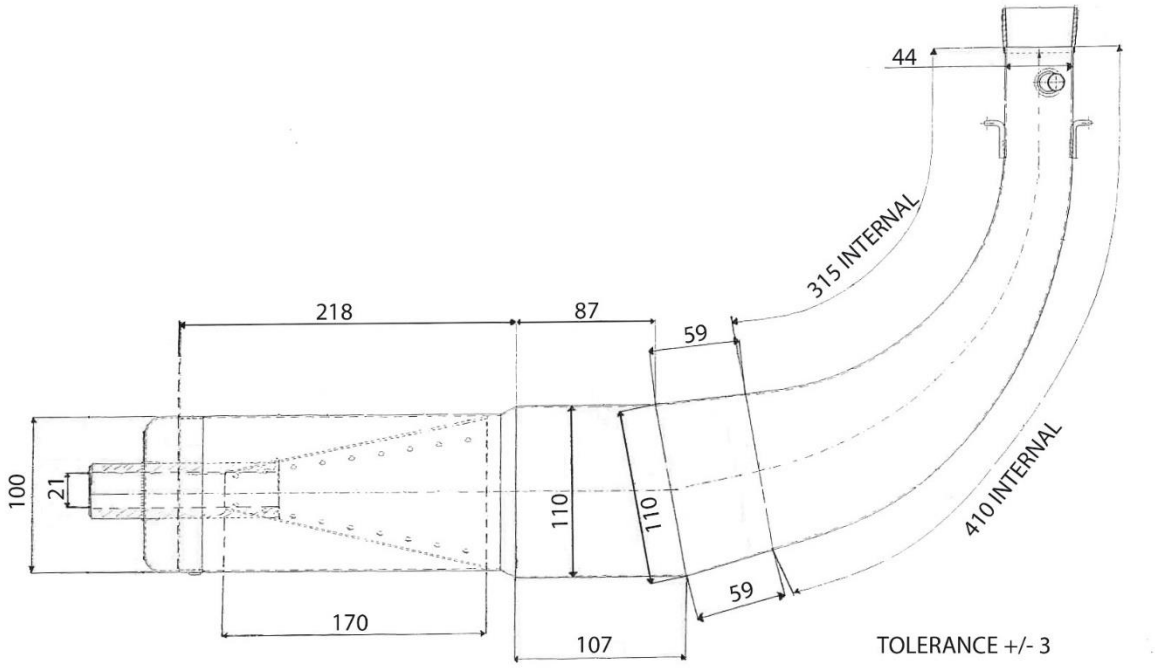
Measurements:

A: **100mm**, B: **54mm**, C: **3mm**, D: **170mm**, E: **315mm**, F: **170mm**, G: **21mm**,H: **135mm**
I: **455m**

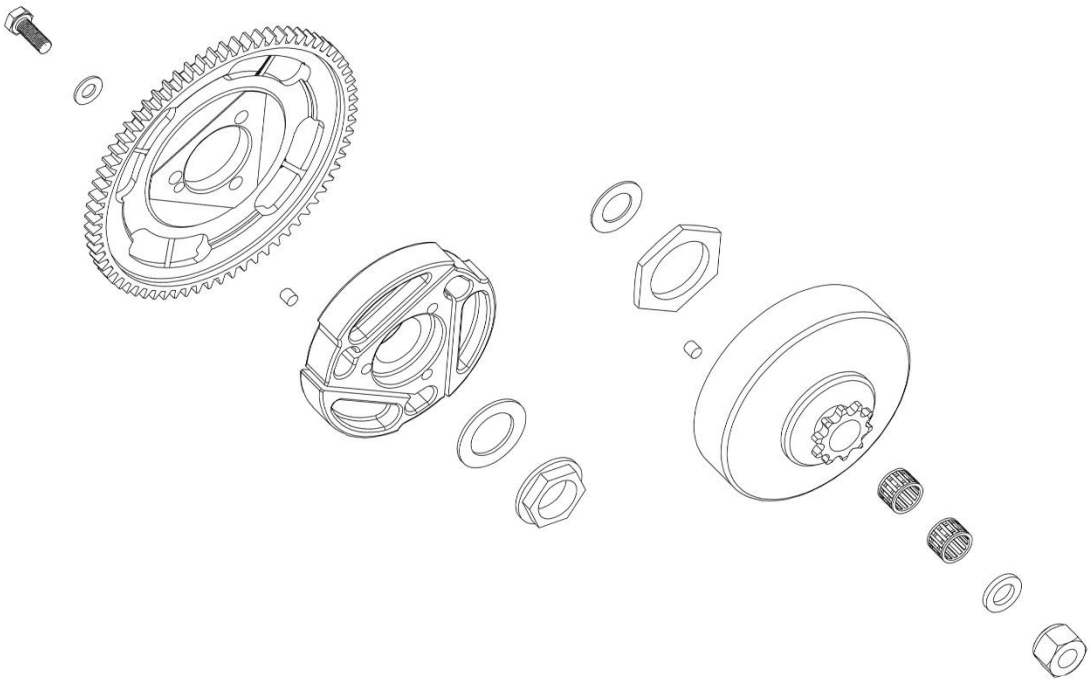
±1.00 mm ON ALL MESSUREMENTS

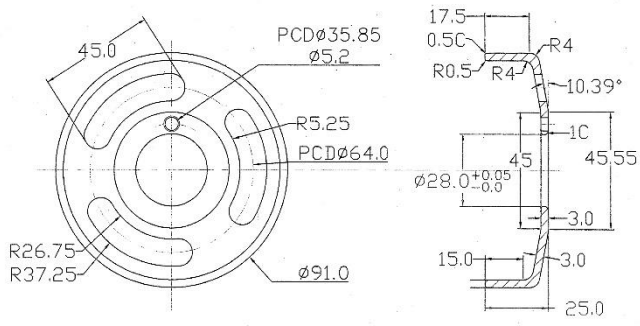
STRAIGHT MUFFLER – PRD9037/95A

DRAWING OF SILENCER AND COMPONENTS

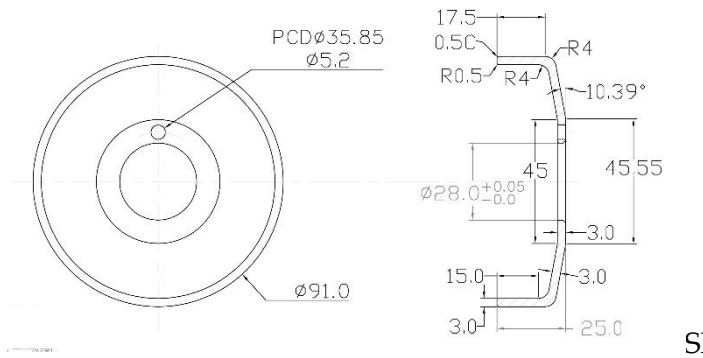


CLUTCH SKETCH OF PARTS



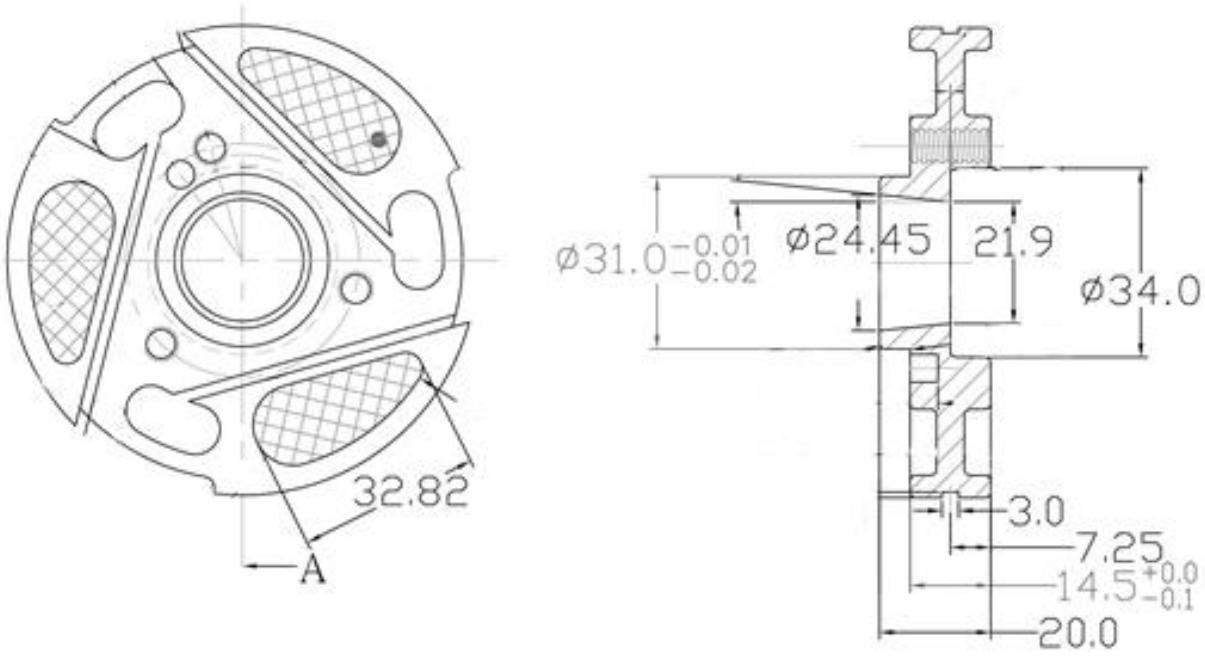


SPEC 1 DRUM

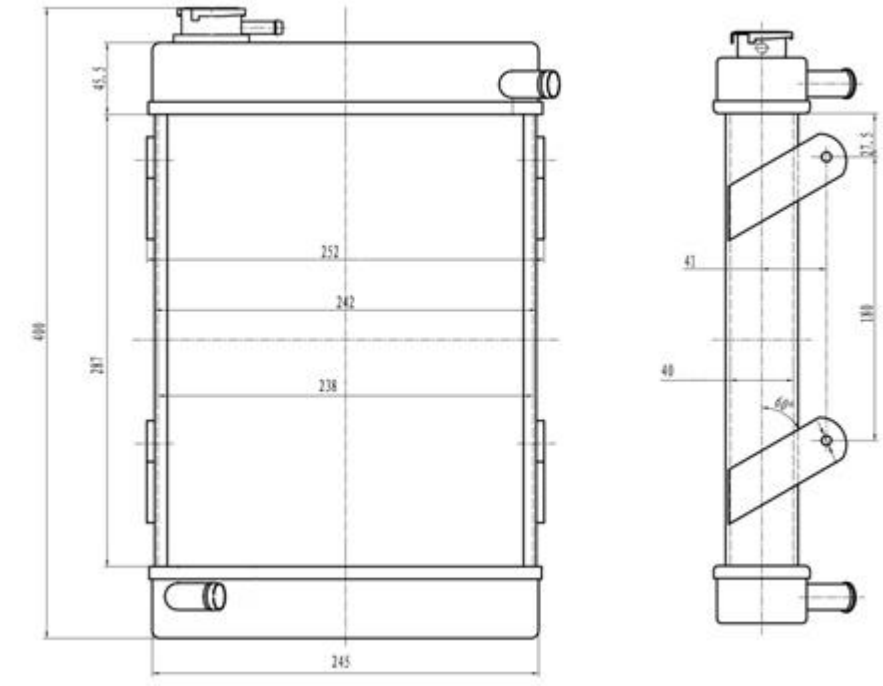


SPEC 2 DRUM NO HOLES

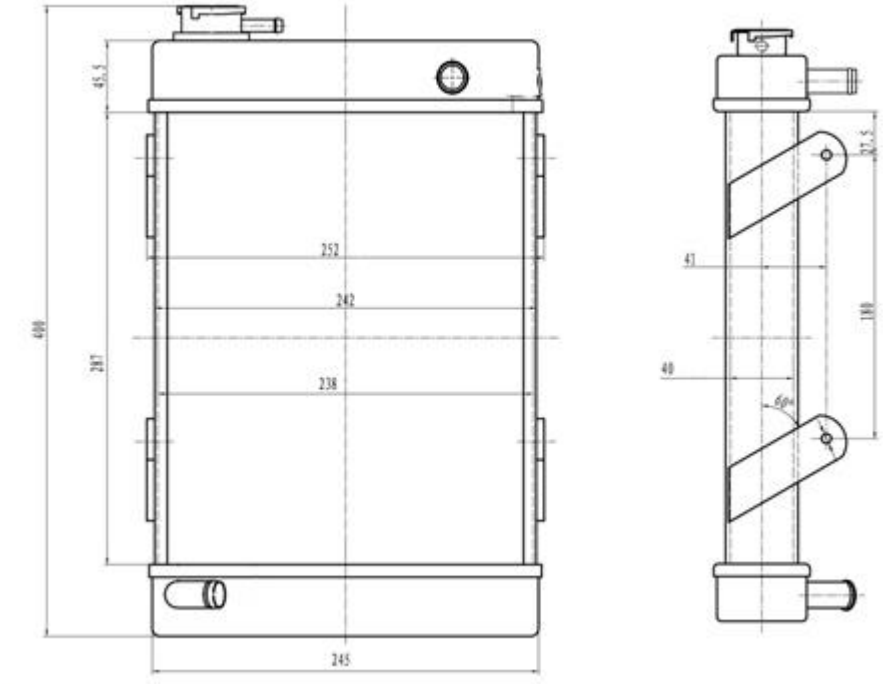
PHOTO OF THE CLUTCH CENTRE



RADIATOR DESCRIPTION AND SKETCH OF PARTS

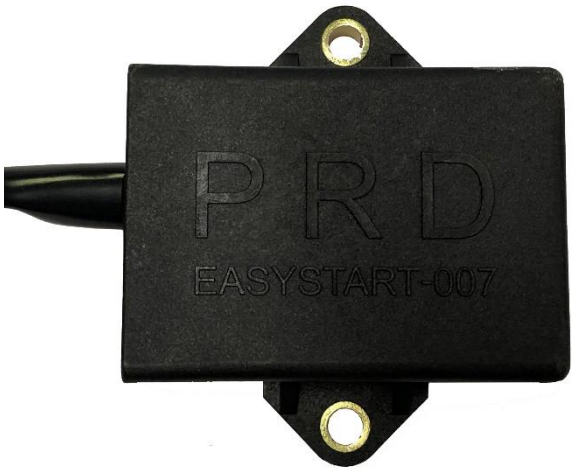


SPEC 1

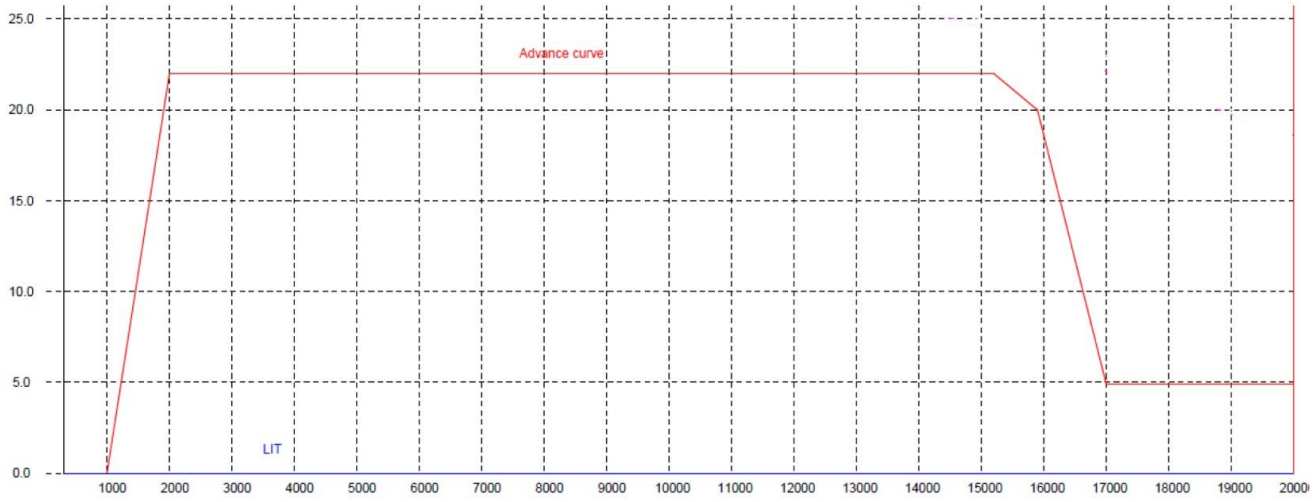


SPEC 2 STRAIGHT TOP WATER FITTING

IGNITON	
	
PVL GREEN COIL 590 221	PVL RED COIL 500 222
	
PRD PVL STATOR	PRD PVL ROTOR

IGNITION	
 PRD EASY START CRANK SENSOR WITH IGNITION PLATE	  PRD EASY START COIL
 PRD EASY START ROTOR	 PRD EASY START CDI MODULE 007

IGNITION SYSTEM ADVANCE CURVE

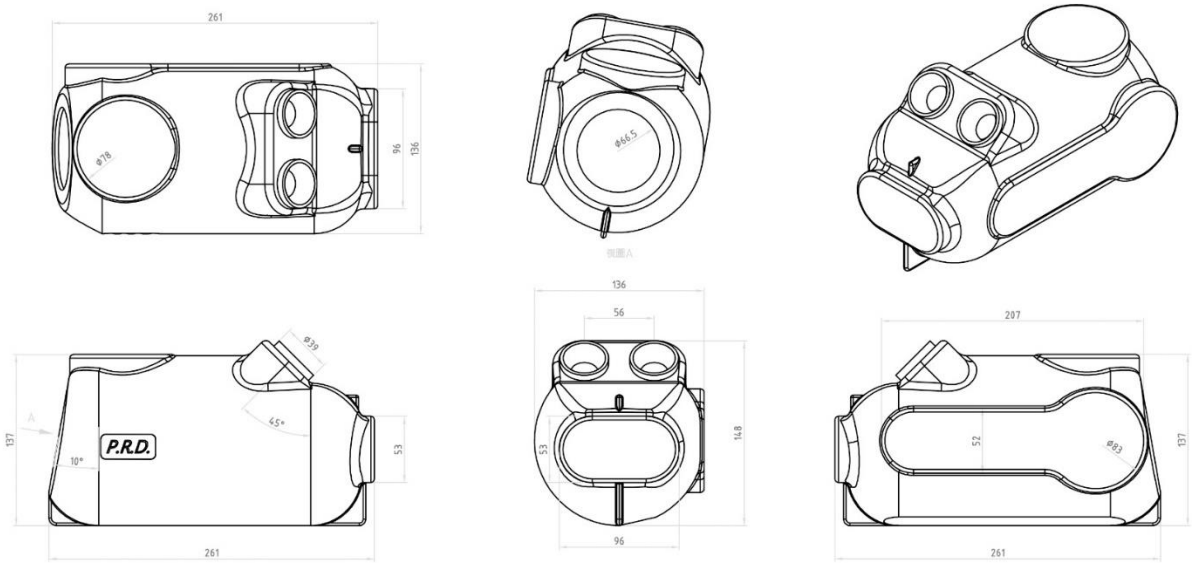


Ignition Coil No.	PVL 590 221 & 500 222
Ignition Stator No.	PVL 1045
Ignition Rotor No.	PVL 500 990
Ignition Plug Cap No.	PVL 401 222
Or PRD Easy Start Ignition	PRD0073ES19

Tr/ min	*1000*	*2000*	*3000*	*4000*	*5000*	*6000*	*7000*	*8000*	*10000*	*12000*	*14000*	*15200*	*15900*	*17000*
° adv	*0*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*20*	*5*

ADJUSTMENT OF IGNITION TIMING IS PERMITTED.

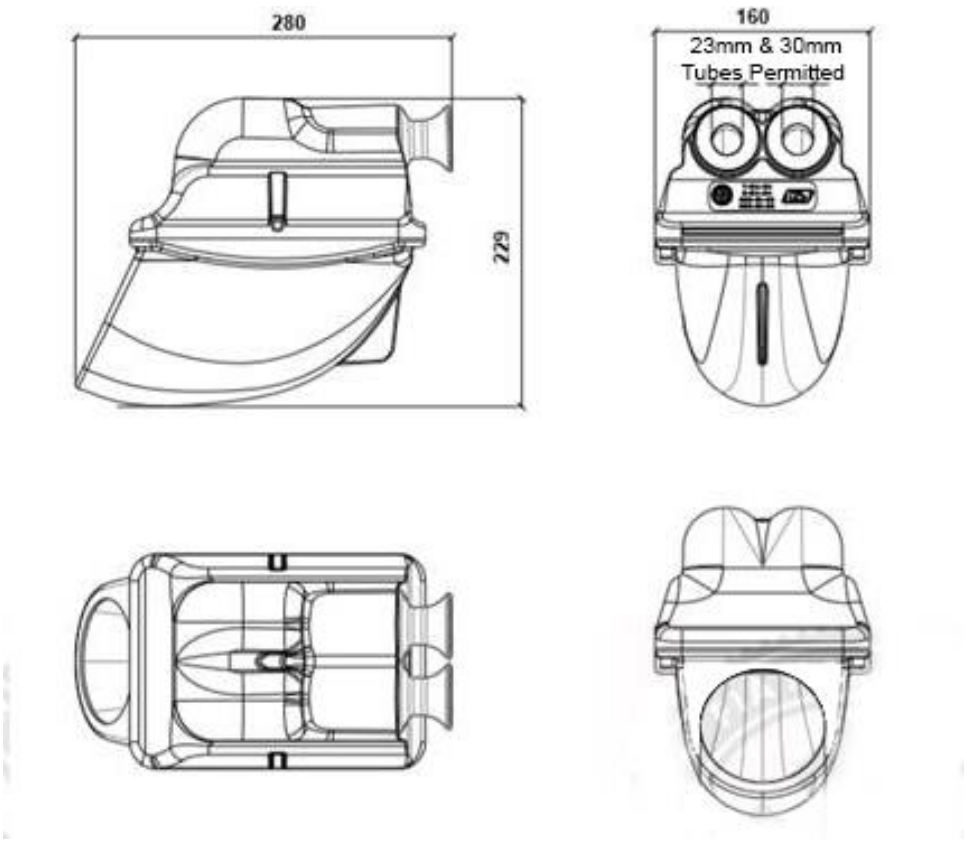
AIRBOX
 
Red & Yellow Dirt Filter approved for bitumen and dirt racing. Air Filter oil is permitted to be used. Type of rain cover is free.

AIR FILTER	AIR BOX
	

AIRBOX

Red & Yellow Dirt Filter approved for bitumen and dirt racing. Air Filter oil is permitted to be used.

AIR FILTER TAR	AIR FILTER DIRT



Blocking of one airbox hole is permitted.
Fitting of an airbox mounting bracket is permitted.
Type of rain cover is free.

CARBURETTOR CHECKING TOOL

CARBURETTOR CHECKING TOOL

Non- Technical Items

None Techical Items for the PRD Galaxy include:

Seals, O Rings, Circlips, Fasteners, Washers, Water Hoses, Hose Clamps, Water Pump, Water Pump Pulley, Water Pump Drive Belt, Radiator Brackets, Radiator Overflow Bottle, Thermostats, Switches, Bearings, Exhaust Springs, Airbox Rain Cover.