

FICHE HOMOLOGATION MOTEUR KART SUBARU KX-21

MOTOR KART SUBARU KX-21 HOMOLOGATION FORM

1 Informations générales :

1.1 Créateur SUBARU Karting

1.2 Fabricant

1.3 Marque et modèle

1.4 Cylindrée

1.5 Photos

OF COURSE SARL

FUJI HEAVY INDUSTRIES
LTD
SUBARU Sports Kart Engine
KX-21

211 cm³

A



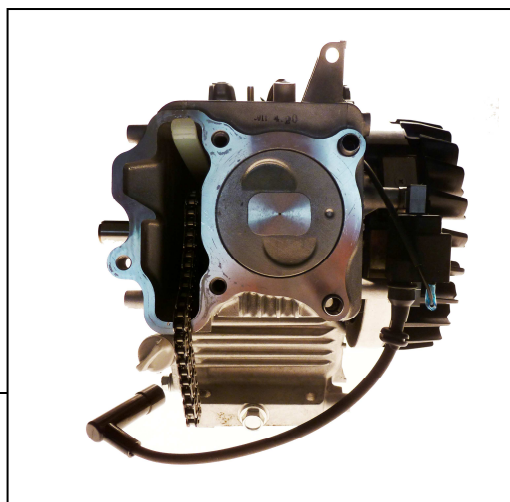
C



B



D



E



F



G



2. Dates of engine

See also drawings 1-5

2.1 Cycle:

4-stroke (4 -temps)

2.2 Number of cylinders:

1

2.3 Min. total volume of combustion
chambre:

21,60 cm³

2.4 Maximum compression ratio:

10.0

2.5 Minimum height of cylinder Block:

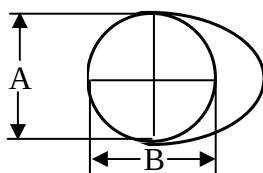
100,00 mm (measured from crankshaft center axle
to cylinder head gasket surface)

2.6 Material Cylinder block:

Aluminium

2.8	Sleeves	a)	YES
		c) Material: (fonte)	cast iron sleeve
2.9	Capacity per cylinder:	a) Max. permitted capacity per cylinder:	211 cm ³
	b) Bore (alésage): 67.0 mm	c) Maximum permitted bore:	67,019 mm
		d) Maximum stroke:	60 mm
2.10	Piston(s)		
	a) material: Alum alloy (aluminium)	b) Number of rings (segments): 3	
	c) Minimum weight of the complete piston, including pin, clips, rings:		190 g
	d) Distance from gudgeon pin center line to highest point of piston:		36,00 +/- 0,1 mm
	e) Distance from gudgeon pin center line to edge of rotor contour:		40,00 +/- 0,1 mm
	f) Distance (+/-) between the top of the piston at TDC and gasket plane of the cylinderblock:		0,1 +/- 0,2 mm
	g) minimum piston groove volume:		0,4 cc +/- 0,2 cc
2.11	Connection Rod-mat (bielle)		
	a) material: Aluminium	b) Big end type:	diagonally divided
	c) Interior diameter of big end (without bearings):		30,1 mm +/- 1 %
	d) length between the axes:		68,50 mm +/- 0,05 mm
	e) minimum weight:		138 g
2.12	Crankshaft (villebrequin)		
		a) Type of manufacture:	Moulded
		b) Material:	Steel alloy
		c) Number of crankshaft-bearings:	2
		d) Type of crankshaft-bearings:	Radial
		e) Ext. diameter of crankshaft-bearings:	100 mm +/- 1 %
		f) Bearings caps material:	/
		g) Minimum weight of the bare crankshaft	1918 g with 2 tooth gear press fitted(timing ,governor)
	Tolerance: +/- 1%		
	<i>Pressed governor drive gear can be removed !</i>		

2.13	Flywheel (volant moteur)	a) Material:	Steel
		b) Minimum weight of flywheel	2400 g
2.14	Cylinder head (culasse)	a) Material:	Aluminium
		b) Minimum height:	64,50 mm
		c) where measured:	From sealing – to sealing surface
2.15	Thickness of lightened cylinder head gasket (joint de culasse):		0,20 +/- 0,05 mm
2.16	Camshaft (arbre à came)	a) Number: 1	b) Location: high
		b) Driving system:	(Timing chain system)
		c) chain length :	281,7/284,9 mm
		d) Diameter of camshaft :	84,00mm +/- 2 %
		f) Type of valve operation:	chain-driven overhead cam and overhead valve construction, with a single cam
		g) Cam dimensions	A= 24 mm +/- 1 %
			B= 29 mm +/- 1 %



2.18 Inlet (soupape d'admission)

a)	Material of the manifold:	Steel
b)	Number of manifold elements:	1
c)	Number of valves per cylinder:	1
d)	Maximum diameter of the valves head:	28,50 mm.
e)	Diameter of the valve stem:	- 5,45 /- 0,5 mm
f)	Interior cooling of valve	NO
g)	Length of the valve:	67,80mm. +-1 %
h)	Minimum weight of valve:	27 g.
i)	Type of valve springs:	Coil spring
k)	Number of springs per valve:	1
l)	Exterior diameter/ max length of springs:	21, 50 +- 1 mm. / 27,40 mm.
m)	Number of spring coils:	5
n)	Diameter of spring wire:	2,30 mm + - 0,1 mm.
o)	Valve spring washer :	1
p)	Valve spring washer thickness	1,00 mm +- 0.05 mm

2.19 Exhaust (soupape échappement)

a)	Material of the manifold:	Steel
b)	Number of manifold elements:	1
c)	Diameter of the outlet manifold:	22 mm. +- 1 %
d)	Number of valves per cylinder:	1
e)	Maximum diameter of the valves head:	26,50 mm.
f)	Diameter of the valves stem	- 5,4 /-0,5 mm
g)	Interior cooling of valve	NO
h)	Length of the valve:	67,60 mm. +- 1 %
i)	Minimum weight of valve:	26 g.
k)	Type of valve springs	Coil spring (ressort hélicoïdal)
l)	Number of springs per valve (nbre ressort par soupape)	1
m)	Exterior diameter/ max length of springs:	21, 50 +- 1 mm. /27,40 mm.

- | | |
|---|----------------------------|
| n) Number of spring coils:(spire) | 5 |
| o) Diameter of spring wire: (spire) | 2,30 mm + - 0,1 mm. |
| p) Valve spring washer (rondelle de ressort de soupape) | 1 |
| q) Valve spring washer thickness (rondelle de ressort de soupape) | 1,00 mm +- 0.05 mm |

3. Carburettor (carburateur)

- | | |
|--|--|
| a) Number: 1 | b) Type: side draft fixed venturi (butterfly) |
| c) Mark and model: MIKUNI (American Corporation) | |
| d) Number of throttles / slides per carburettor: 1 | |
| e) Max diameter of flange hole of carburettor exit point: 22 mm | |
| f) Max diameter of the venturi at the narrowest point: 17 mm | |
| g) Main Jet (gicleur principal) : | 83.8 |
| h) Pilot Jet (gicleur de reprise) : | 41.3 |

- 3.1 Intake silencer / air filter (filtre à air): a) material: **Plastic/paper**
- b) Dimensions: see drawing page 5 (9)

4. Electrical equipment (équipement électrique)

- | | |
|-------------------------------------|--|
| b) Voltage: 12 V | a) Starting system: Recoil type |
| c) Capacity of battery: / AH | |
| d) Generator: NO | Type: / |

- 4.1 Ignition system (système allumage) a) type: **Transistorized magneto**
- b) Number of plugs per cylinder: **1** Number of distributors: **0**
- d) Number of coils: **1**
- e) Number of contact breakers: **0** f) Number of condensers: **0**

5. Engine cooling (refroidissement)

- | | |
|-----------------------------|----------------------------------|
| a) Type : | Forced air cooling system |
| b) Maximum capacity cooler: | / |
| c) | |

6. Lubrification

- | | |
|-------------|----------------------------------|
| a) System : | Splash lubrication system |
|-------------|----------------------------------|

b) Number of oil pumps: **0** c) Material of the sump: **/**

7. Clutch (embrayage) a) Type: NORAM **Centrifugal clutch**

b) Drive system: **Mechanic**

c) Number of centrifugal weights: **2 shoes**

d) Max. exterior diameter of the shoes: **106 mm +/- 1 mm**

8. Ratios of engine: permanent **Permanent**

Ratio: **NO**

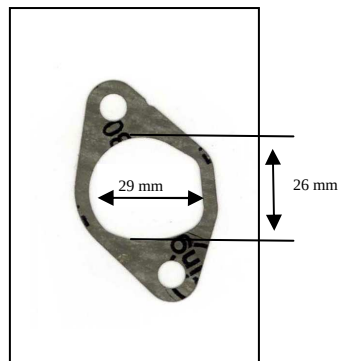
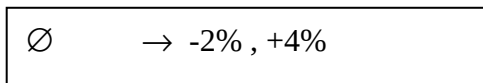
Number of teeth:

9. Gearbox (boite a air) **1**

11. Drawings (dessin)

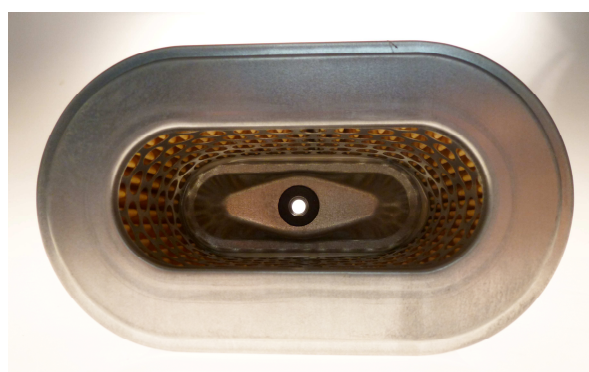
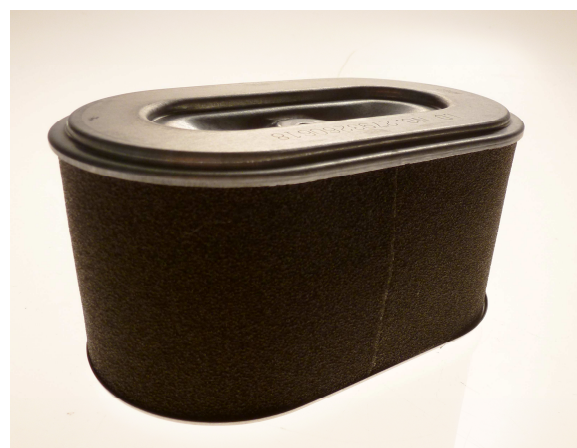
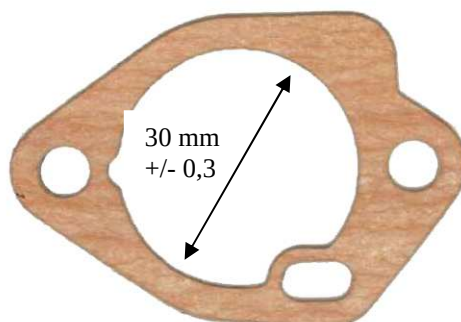
1)

Cylinder head inlet orifices on manifold side (tolerances on dimensions (joint d'admission) : (-2%,+4%)

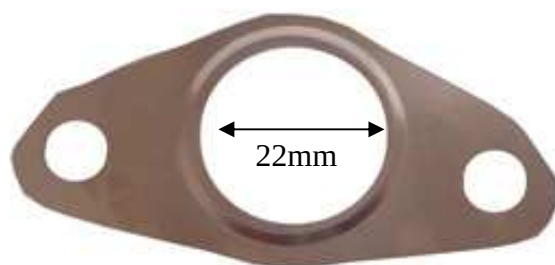


4) Intake silencer (silencieux d'admission)

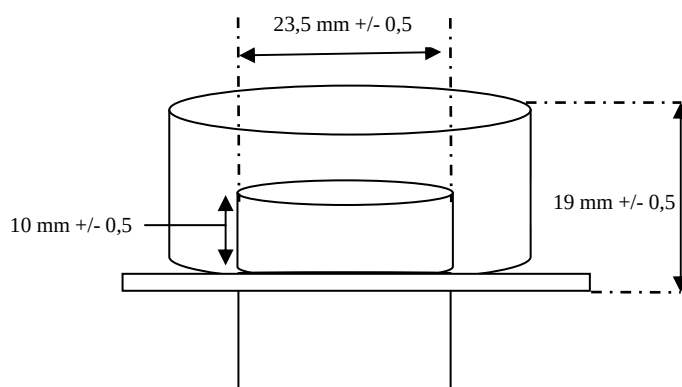




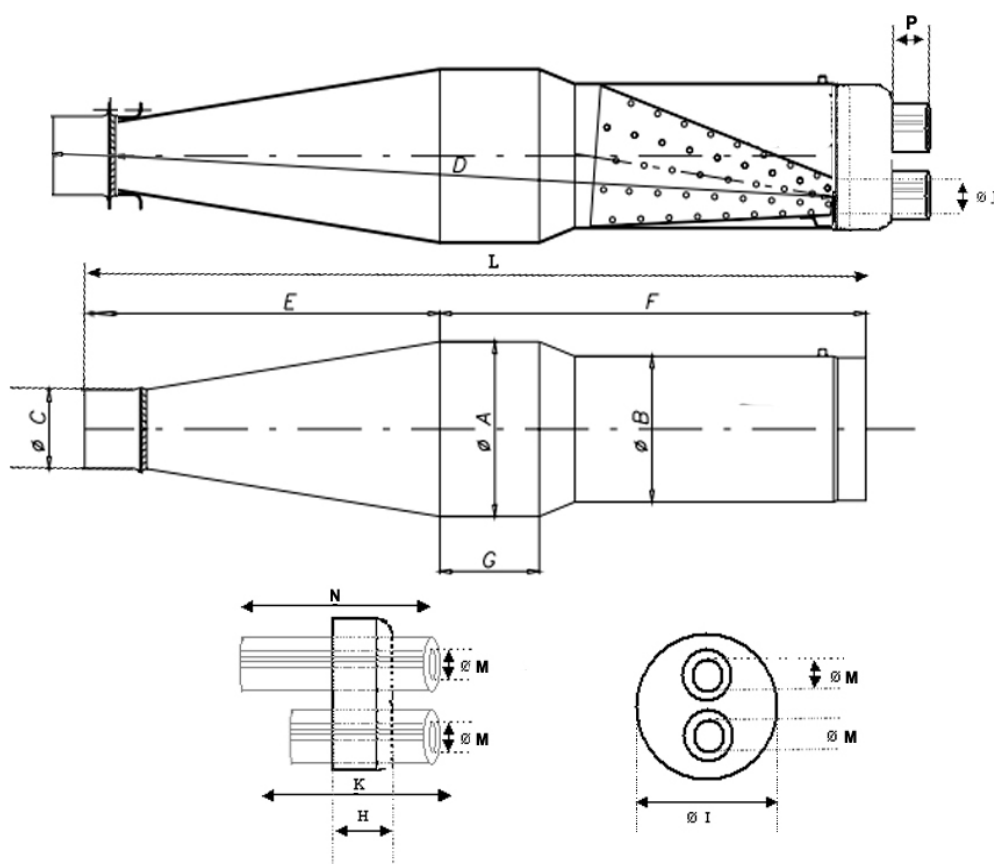
Cylinder head exhaust orifices on manifold
(pipe échappement)
(tolerances on dimensions : (-2%, 4%))



Ø 27,5 mm +/- 0,5



5) Muffler: (échappement)



Ø A : 107,50 mm
Ø B : 100 mm
Ø C : 45,5 mm +/- 0,5
D : 40,00 mm +/- 0,5

E : 22,5 mm +/- 0,5
F : 20,5 mm +/- 0,5
Ø G : 4,00 mm +/- 0,5
H : 36,5 mm +/- 0,3 mm

Ø I : 101,0 mm +/- 3,5 mm
Ø J : 43,00 +/- 0,5
K : 84,5 mm +/- 0,3 mm
L : 43 mm +/- 0,5

Ø M : 21 mm +/- 0,2 mm
Ø N : 132 mm +/- 0,5 mm
P : 39,5 mm +/- 0,5

12. Mesure épaisseur
culasse (64.50 mm +/-
0.05 mm)

