



2005 AKA MANUAL

ADDENDUM No. 11

Issued: 15 April 2005

To be implemented immediately

Chapter 52 – ARC A1 EVOLUTION CLASS

ARC A1 Evolution Class has been sanctioned by the National Karting Council. The specifications have been provided by the AKA for the conduct of this class

Technical specifications: A1 Technical Regulations attached.

Pam Arnett
Executive Member
Australian Karting Association

EXPERIMENTAL CLASS

Experimental Classes have been sanctioned by the National Karting Council.
The following specifications have been provided by the AKA for the conduct of this class as non-championship events/series.

CHAPTER 52 ARC A1 EVOLUTION CLASS

52.01 Engine: ARC A1. Yamaha KT100J.

- (a) **This section covers the ARC A1 series engines. Any alterations / modifications are strictly prohibited except as specifically authorised within these rules.**
- (b) **The KT 100 J series engine, Must conform to chapter 36 .As specified by the AKA any alterations/modifications are strictly prohibited except as specifically authorised within these rules.**

52.02 Tyres

- 1 No modifications permitted, tyre treatment is illegal (refer rule 23.03)
- 2 **Dry Weather Tyres** Dunlop SL1 (1 set + 1 replacement tyre / meeting)
- 3 **Wet Weather Tyres** Dunlop KT6SLW1 (1 set + 1 replacement tyres / meeting)
- 4 Refer chapter 23, for AKA contracted prices

52.03 Braking

Front wheel brakes are not permitted. Refer Rule 25.07 (iv).

52.04 Fuel:

Refer Rule 25.14. Fuel, as run, to comply to test under Rule 22.01.

52.05 Weight:

- (a) **Junior A1 Evolution Light - 120 Kg**
- (b) **Junior A1 Evolution Heavy- 140 Kg**
- (c) **Senior A1 Evolution- Light- 140Kg**
- (d) **Senior A1 Evolution- Heavy- 160Kg**
MAXIMUM KART WEIGHT FOR A1 Evolution HEAVY CLASS - 88 kgs.
(Kart as raced and prior to Class weight measuring.) (Refer Rule 25.23 (b)).

52.06 External Modifications:

External modifications, which do not in any way affect a performance gain, are legal.

52.07 Internal Additions:

No additional material may be added except in the case of engine repairs and shall only restore engine or components to original specifications. The cylinder may NOT be repaired in any of the port or passage as cast areas.

- (1) The use of thermal barrier coatings / ceramic coatings on or in the engine / engine components and on or in exhaust components is prohibited.
- (2) The use of anti friction coatings on or in the engine / engine components is prohibited.

52.08 Legal Additions:

Shall be limited to the following: Chain guard, motor mount, carburettor return springs, extension of carburettor jet needles, third bearing and adaptor, temperature gauge and tachometer.

52.09 Clutch:

Dry centrifugal clutch – using genuine components only. Whilst on level ground the kart (with driver) must start to move under its own power, when the engine speed reaches 3000rpm or less.

52.10 **Non-Tech Items:**
Refer Rule 25.25.

52.11 **Displacement:**

The maximum bore and stroke are:-

Engine	Bore	Stroke
ARC A1	53.10 mm	46.13 mm

52.12 **Exhaust, Intake and Transfer Ports:**
Cylinder and liner

1. All ports in the liner to be “as machined” condition NO grinding is permitted.
2. All passages must remain in as cast condition; sandblasting, glass beading, peening, etc. are NOT a substitute for “as cast” condition.

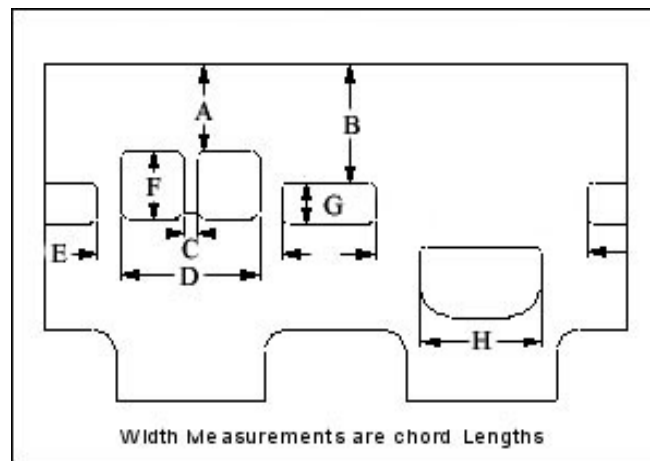


DIAGRAM IS FOR DIMENSIONAL REFERENCE ONLY

CODE	DIMENSION	CODE	DIMENSION
A	N/A	E	23.60 mm max
B	N/A	F	17.87 mm max
C	3.70 mm min	G	11.80 mm max
D	36.30 mm max	H	34.10 mm max

52.13 **Engine Compliance**
Refer to Rule 26.04

52.14 **Cylinder Head:**

- 1 Must be original ARC casting.
- 2 The welding and remachining of the Combustion area, gasket face and spark plug surface is allowable.
- 3 The combustion chamber style is required to have a squish band and chamber which are visually concentric to the spark plug.
- 4 The combustion chamber volume shall be a minimum of 13cc. Ref R26.01
- 5 The combustion chamber/squish area shall not protrude beyond the gasket sealing face of the cylinder head

- The spark plug thread may be repaired but must remain visually concentric with squish and bowl

52.15 **Piston:**

- Piston must be AKA approved ARC (forged or cast) and stock in appearance.
- Approved aftermarket pistons form 2000 include YAMAHA, KSI, KSI MK II, JDP/Vertex and Strike.
- Bottom of piston should be 90 degrees to sides. It is permissible to notch the piston to allow the removal of circlip. The piston skirt length may be machined, providing it conforms to the current specifications as laid down in these rules.

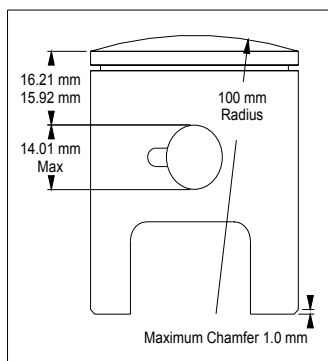


DIAGRAM IS FOR DIMENSIONAL REFERENCE ONLY

52.16 **Gudgeon Pin:**

Refer rule 25.25 – non tech items

52.17 **Connecting Rod:**

- Connecting rod must be O.E.M ARC.
 - Minimum/Maximum rod length, centre to centre 99.87mm – 100.13mm.
 - Conrod alignment may be either top or bottom.
- Bearings and spacers are non-tech items.

52.18 **Crankshaft:**

Must be of original engine manufacturer.

- Crank Pin to be standard pin 18mm with end plugs.
- Crank Pin length 44.80mm min, 45.00mm max
- Crank Pin bore diameter measurement: 10.25 mm min, 10.45 mm max.
- Crank Shaft outside diameter measurement: 86.60mm min., 87.25mm max.

Note: If the crank assembly is outside the min/max dimensions, then disassemble engine to inspect further. Crankshaft width (measured across shoulder for the main bearings) to be 45.59 mm min.

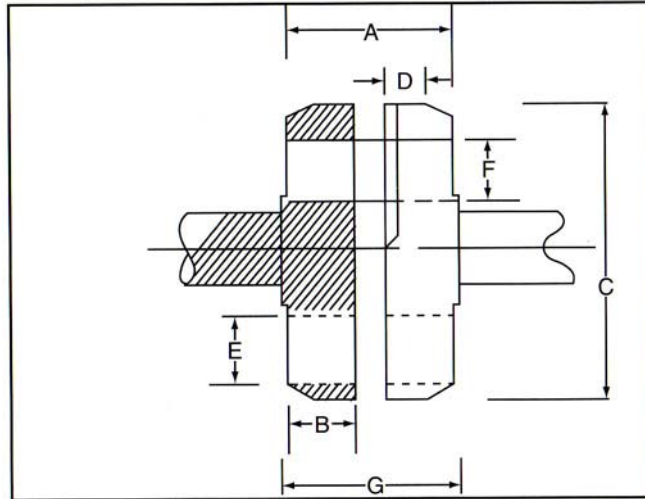


DIAGRAM IS FOR DIMENSIONAL REFERENCE ONLY

CODE	DIMENSION mm	CODE	DIMENSION mm
A	44.5 min	E	22.0 +/- .15
B	17.5 +/- .1	F	Crankpin 18.0
C	86.60min - 87.25max	G	45.59 min
D	10.8 min		

52.19 Crankcase:

The crankcase ports will remain as cast. The minimum chordal distance measured with a vernier calliper across the widest section of the transfer ports shall be 97.5mm minimum. (Refer diagram below).

NOTE: Existing crankcases that are narrow may be spaced with a thicker gasket.

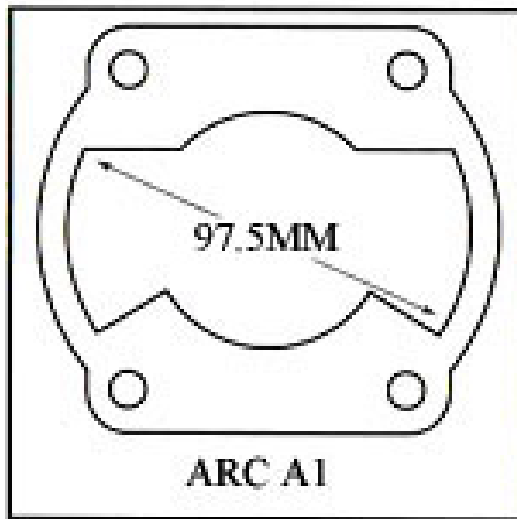


DIAGRAM IS FOR DIMENSIONAL REFERENCE ONLY

52.20 **Ignition:**

- a) Ignition must be that supplied by the original engine manufacturer, which is approved by the AKA. Any optional unit must be approved and registered with the AKA for this class. The use of the following AKA approved TCI module is permissible:
YAMAHA, VICTA, ATOM, DELTA/WEI SHIEH, PRD, PRD with coil.,OPPRAMA
No modifications or repairs to any of the listed AKA approved modules is permitted. The fitting of a PRD ignition coil and a PRD ignition rotor (flywheel) is permissible.
- b) Ignition timing may be adjusted by the removal of the locating key or part thereof and/or by the ignition plate.
- c) All engines must rotate in a clockwise direction when viewed from the drive side.
- d) Ignition/rotor cover is optional.

52.21 **Carburettor:**

Refer to Rule 25.26

52.22 **Pressurised Fuel Systems:**

Fuel pump or pressurised fuel systems are forbidden. Squeeze type pump between fuel tank and carburettor is permitted.

52.23 **Phenolic Spacer:**

To remain as moulded by ARC Factory and conform to diagram below. Drilling of the phenolic spacer mounting holes permitted. Sealing face may be re-faced.

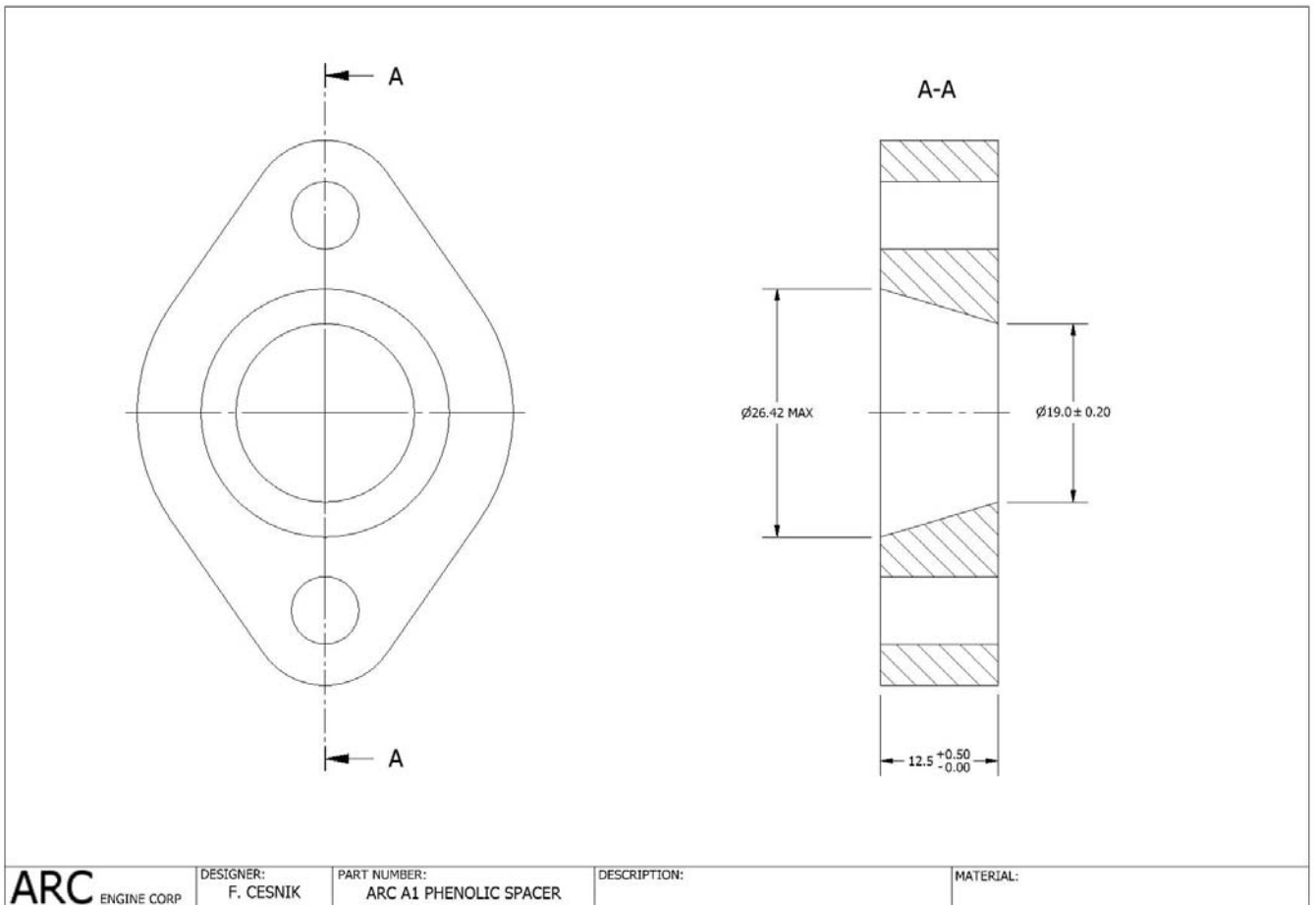


DIAGRAM IS FOR DIMENSIONAL REFERENCE ONLY

52.24 Exhaust Muffler:

Must be Control Exhaust Muffler AKA 14. Refer Rule 25.26 for technical specification.

52.25 Exhaust Header Pipe:

Refer to rule 25.08 for exhaust pipe header.
Refer to Rule 25.09 (8) for exhaust probe.

52.26 Exhaust Header Studs:

Must remain in their original position.

52.27 Internal Parts:

Must be finished as per ARC Factory specifications.