

# 7107414

tarmac rally - race

Toyota 4A-GE 20v VVT-i

I-4cyl 1.6L 20v DOHC (DT/DT)



**intake**                      **exhaust**

**camshaft data:**

lash ramp	: 0.20mm	0.20mm
duration @ 0.1mm	: 275°	275°
duration @ 1.0mm	: 246°	246°
valve lift	: 10.00mm	10.00mm
cam lift	:	
lobe angle	: 106°	106°
timing @ 1.0mm	: 17° / 49°	49° / 17°
valve lift @ TDC	: 2.85mm	2.85mm

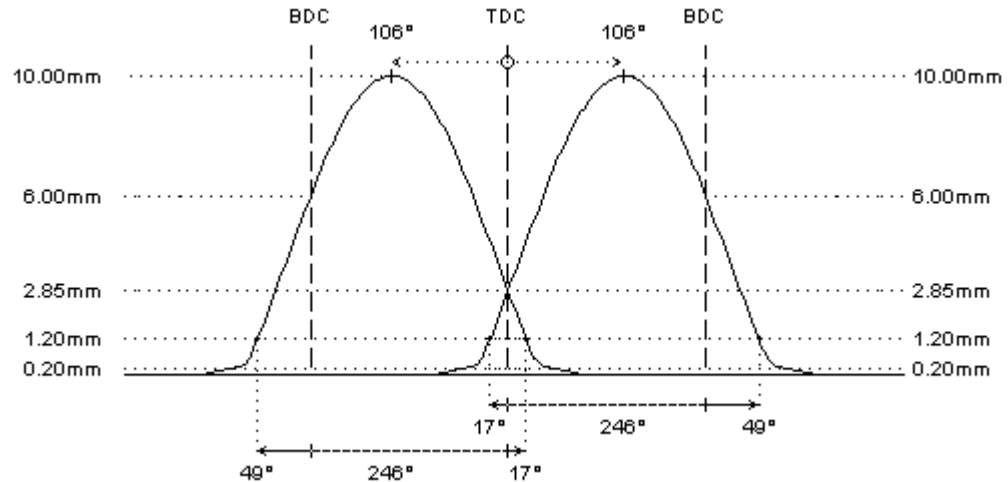
**parts setup:**

cam wheels :	:	:
follower	: O.E.M.	: O.E.M.
valve lash	: O.E.M.	: O.E.M.
valve	: O.E.M.	: O.E.M.
valve locks	: O.E.M.	: O.E.M.
upper retainer	: <b>99367</b>	: <b>99367</b>
lower retainer	: O.E.M.	: O.E.M.
exterior spring	: <b>PAC-S90013</b>	: <b>PAC-S90013</b>
interior spring	:	:

fitted load / length	: 20kg @ 35.3mm	: 20kg @ 35.3mm
max. load / lift	: 65kg @ 11.5mm	: 65kg @ 11.5mm

**REMARKS :**

# machining of cylinder head required



**REMARKS :**

- # FOR COMPETITION APPLICATIONS ONLY. Following details must be verified:
  - the camshafts must turn smooth in the cylinderhead, provide free travel by machining where needed
  - distance between valve seal and retainer at full lift must be 0.6mm at least
  - minimum valve spring travel of 1.0mm at full lift must be provided
  - distance between valve and piston 1.0mm (pref. 1.5mm). check 5-15° before TDC on exhaust, and after TDC on intake
- # Valve lift and timing data are illustrated on a locked centerline. The VANOS system changes the centerlines and therefore the timing data and lift on TDC.
  - The centerline and TDC data should not be used when installing the camshaft with full cam intake retard (disengaged VANOS system)!!! WRONG INSTALLATION WILL CAUSE THE VALVES TO HIT THE PISTONS!!!
  - We insist to install the VANOS camshaft(s) in such way that the distance between valves and piston is at least 1mm at full advance of the intake (or full retard at the exhaust)
- # ONLY for use in competition engines with independent engine management (throttle position sensor) or carburetors