

# 4603024

turbo conversion

Opel X20XEV big block ecotec (1.8-2.0-2.2L)

I-4cyl 2.0L 16v DOHC (DTH/DTH)



### intake

### exhaust

#### camshaft data:

lash ramp	: 0.20mm	0.20mm
duration @ 0.1mm	: 282°	257°
duration @ 1.0mm	: 244°	220°
valve lift	: 11.50mm	10.00mm
cam lift	:	
lobe angle	: 110°	120°
timing @ 1.0mm	: 12° / 52°	50° / -10°
valve lift @ TDC	: 2.70mm	0.50mm

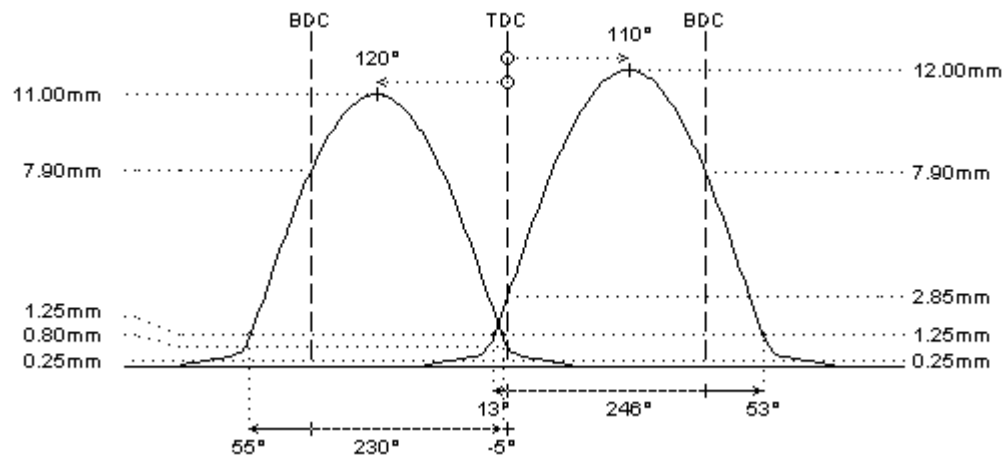
#### parts setup:

cam wheels :	: <b>CTOPK01</b>	: <b>CTOPK01</b>
follower	: <b>CC004</b>	: <b>CC004</b>
valve lash	: <b>TS101</b>	: <b>TS101</b>
valve	: O.E.M.	: O.E.M.
valve locks	: O.E.M.	: O.E.M.
upper retainer	: <b>99145/s</b>	: <b>99145/s</b>
lower retainer	: <b>remove</b>	: <b>remove</b>
exterior spring	: <b>PAC-E92009</b>	: <b>PAC-E92009</b>
interior spring	: <b>PAC-I92009</b>	: <b>PAC-I92009</b>

fitted load / length	: 35kg @ 33.0mm	: 35kg @ 33.0mm
max. load / lift	: 97kg @ 12.5mm	: 97kg @ 12.5mm

#### REMARKS :

# replace OEM lower retainer to obtain a correct installation / fitted length (currently not available)



#### REMARKS :

- # - camshafts for use in 1.8-2.0-2.2L long block 'ecotec' engines
- # valve clearance is to be adjusted using mechanical lash caps. these can have different shapes according the application:
  - plates available in different diameters and thickness
  - cups for different valve stem diameters. these center on either tappet or valve stem
  - other specific shapes available on request
- # 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
- # ONLY for use in competition engines with independent engine management (throttle position sensor) or carburettors
- # for TURBO conversion (atmospheric to turbo)