Tolerances

HPC manufactured gears are circular involute gears that conform to BS 4582 Part 1 Fig 1 DIN867. *The manufacturing tolerances for these gears are given in the tables below.*
Please note: *These tolerances do not apply for any gears not manufactured by HPC such as the plastic moulded ranges.*

Gears	
General tolerances	±0,15 mm
Bore-size	H8
Nominal outside Ø	+0 / -0,15 mm
Surface roughness	Ra 3,2
Squareness	js11

Gearing	General	Delrin
PCD (nominal) Ø	-0,15 mm	-
Backlash (nominal)	-0,11 mm	-
TCE Ø10 TO Ø60	0,04 mm	0,05 mm
TCE Ø61 to Ø125	0,06 mm	0,07 mm
TCE Ø126 to Ø300	0,08 mm	0,08 mm

Note: *The total composite error (TCE) is the total size of the variation in central distance between a gear and a reference gear.*

Fixing
Keyway* JS9

*Note: * Keyways are not aligned on the gearing axis as standard. On request, the keyways can be aligned: ± 0.6*

Nominal distance between centres

HPC gears are machined to have a backlash of between 0.07mm and 0.3mm depending on the module. ***The distance between centres when assembling the gears should be the nominal distance between centres -0/+0.05mm.***

$$\text{Nominal distance between centres} = \frac{\text{PCD Ø gear A} + \text{PCD Ø gear B}}{2}$$