



# CRANKSHAFT PULLEY QUALITY STATEMENT



**250+ REFERENCES COVERING 13,000+ VEHICLES FROM 1980-2023**

ALFA ROMEO, AUDI, BMW, CHEVROLET, CHRYSLER, CITROËN, DACIA, DAEWOO, DAIHATSU, DS, FIAT, FORD, FORD USA, HONDA, HYUNDAI, IVECO, JAGUAR, JEEP, KIA, LANCIA, LAND ROVER, LEXUS, MAN, MAZDA, MERCEDES-BENZ, MG, MINI, MITSUBISHI, NISSAN, OPEL, PEUGEOT, RENAULT, ROVER, SAAB, SEAT, SKODA, SUBARU, SUZUKI, TALBOT, TOYOTA, VAUXHALL, VOLVO, VW



[www.bgautomotive.co.uk](http://www.bgautomotive.co.uk)



# BGA's CRANKSHAFT PULLEY RANGE.

250 References Fitting in excess of 13,000+ vehicle models covering all makes.



## QUALITY PROMISE

BGA uses **OE (original equipment)** parameters and tolerances as the mandatory **MINIMUM** requirements to pass our quality controls – meaning that our components can and will often surpass OE.

### Quality Certificates

4BG GROUP:



Block Exemption



ISO9001:2015



IATF 16949:2016

### 3 Year Guarantee

BGA offer a 3-year warranty on all products to back up the quality statement.

Mechanics will always endure full satisfaction and peace of mind while fitting BGA high quality parts and components.

### Heritage

BGA emerged as the aftermarket division of the 4BG Group, a leading OE Gasket and Engine component manufacturer formed in 1929 producing more than 128 million components annually.



# BGA'S CRANKSHAFT PULLEY QUALITY TESTING

Tested to match or surpass OEM quality.



The machine pictured has been custom built by BGA's R&D team since the launch of our TVD's and updated over the years. This bespoke machine has the following features:

- Temperature controlled cabinet [heater/cooled directly on the parts independently].
- Measurement of the rubber spring rate over a range of deflected movement [ $5 > 20^\circ \pm$ ] using compression/tensile load cells directly mounted to each TVD.
- Construction endurance of the rubber profile/elastomer bonding [750k > 1 million cycles].
- Endurance of the radial/axial bearings [design and development] TVD developed beyond the OEM design to improve longevity.



## OE PULLEY FOLLOWING TESTING

This image demonstrates the importance of the spring construction/elastomer bonding and knowing how poor designs influence function and longevity. What you can see is the bonding to the spring I/D delaminating, which reduces torsional torque, increases uncontrolled movement in a radial direction, as well as increasing bearing wear.



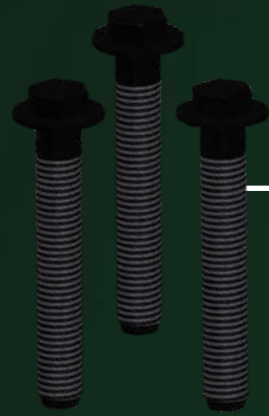
## COORDINATE MEASURING MACHINE

Prior to endurance testing, the TVD's are subjected to a range of dimensional measurements to ensure OE specification is met. This includes the bearing in both diameter and finish.

Once endurance testing is complete, this range of measurements are retaken with degradation of the wear interface evaluated to ensure important factors like bearing wear don't influence the controlled movement of the spring.

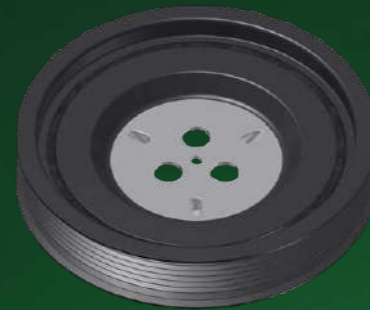
# MORE QUALITY TESTING:

A deeper dive into the crucial elements of pulley testing.

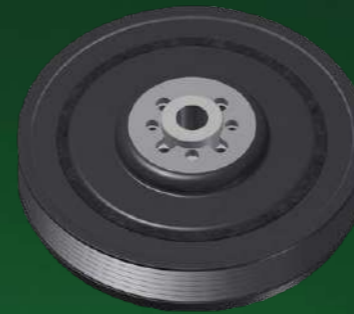


## MOUNTING BOLTS

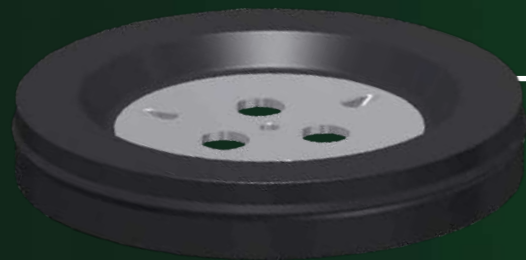
Included in BGA Pulley Kits, as they are TTY, they must be replaced whenever the pulley is removed.



## HARMONIC



## DE-COUPLED



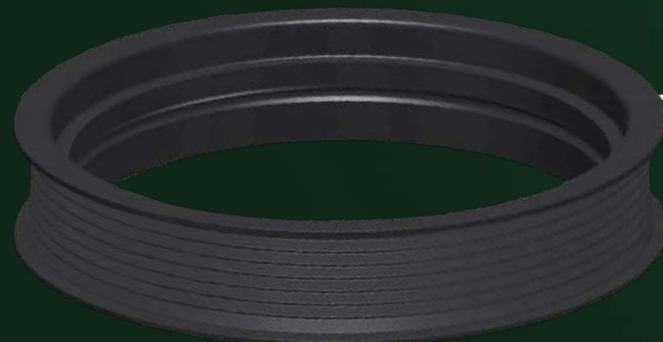
## MOUNTING AND BEARING SURFACE

Machined under strict tolerances to ensure a smooth surface is produced and control any concentricity which could lead to excessive noise, vibration and increased belt wear.



## HARMONIC BALANCERS

A press fit or injected rubber ring to absorb vibration from the crankshaft.



## OUTER HARMONIC RING

This acts as a counter weight to the pulley which also incorporates the Drive Belt ribs. The number of ribs is dependent on the load requirements from the belt. The greater the load, the more ribs required to handle the load.

## THRUST RING

Controls the axial movement of the pulley during moments of acceleration and deceleration.

## OUTER PULLEY

Material can be made from press formed and machined steel or cast and machined aluminium.



## TEFLON BEARING

Made from self-lubricating metal that provides smooth movement to the pulleys outer diameter when under load.



## RUBBER SPRING

The rubber spring acts as a damper to absorb torsional energy from the crankshaft, as well as functioning as a spring to control the pulleys load during acceleration and deceleration.

BGA rubber springs contain natural, polymer and AMC mix's used based on the OE specification and is endurance tested to exceed the life span of the OE equivalent.

## ROTATIONAL LIMITER BOLTS & COVERS

The purpose of these bolts is to control the movement of the outer pulley when under load.

The cover is there to stop any contamination that may prevent the movement of the pulley, which must be left on during installation.



**DP0834K** - Fits popular CITROEN Jumper, FIAT Ducato, FORD Transit, PEUGEOT Boxer Models.



# MUST STOCK REFERENCES:

Identified by BGA's Product Management team.



**DP0936K** - Fits popular BMW 1 Series, 3 Series, 5 Series, X1, X3 Models from 2004-2015.



**DP5940** - Fits popular MINI, Clubman, Clubvan, Countryman, Coupe, Paceman / Toyota Auris, Avensis, RAV, VERSO.



**DP0202** - Fits popular AUDI A4, A5, A6, A7, A8, Q5, Q7 / VW Phaeton, Toureg.



**DP0835K** - Fits popular FORD Transit Models from 2006-2018.



**DP1202K** - Fits popular Mercedes, Nissan, Renault, Vauxhall Models.



**DP0374K** - Fits popular BMW 1, 3, 5 Series, X3.



**DP1018K** - Fits popular BMW 3, 5, 6, 7 Series, X3, X5, X6.



**DP5930** - Fits popular BMW 1/2 Series, X1, Mini Models.





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