

COSWORTH

Duratec Engine Components



2006 Catalogue

Cosworth has been modifying Ford four cylinder engines since 1959. The tradition continues with the Ford/Mazda Duratec. The Duratec engine is available worldwide and offered in a variety of platforms such as the Ford Focus and the Mazda 3 and 6. Available in several displacements, the lightweight Duratec is the perfect platform for performance modifications. Recognizing the potential, Cosworth has developed a complete performance upgrade system for the Ford Focus equipped with the Duratec (2.3L USA) known as the d-Power range. The d-Power range has been engineered for installation in affordable stages that produce impressive power gains at each level. In addition to the range of engineered performance systems, a complete list of performance components for engine builders is available. Ranging from forged connecting rods and pistons to complete, assembled performance engines, Cosworth Engine Components are engineered for maximum reliable power and are the perfect complement for your race or replica car application

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Crate Engines

Crate Engines

Perfect for use in race, kit, and replica cars, Cosworth Duratec HP crate engines comes in a variety of specifications in both 2.0L and 2.3L displacements. Depending on the specification, all engines are hand assembled by Cosworth's highly trained engine builders using new components throughout before being tested on Cosworth's own engine dynamometer test cells.

Please refer to the specification sheets to see what is included in the price and what options can be selected to meet your exacting requirements.



Part #	Component Detail
YD8135	2.0 Cosworth Duratec HP195 (Full Engine Assembly)
YD8124	2.0 Cosworth Duratec HP220 (Full Engine Assembly)
YD8125	2.0 Cosworth Duratec HP250 (Full Engine Assembly)
YD8109	2.3 Cosworth Duratec HP200 (Long Engine Assembly)
YD8078	2.3 Cosworth Duratec HP200 (Full Engine Assembly)
YD8126	2.3 Cosworth Duratec HP220 (Full Engine Assembly)
YD8079	2.3 Cosworth Duratec HP240 (Full Engine Assembly)
YD8077	2.3 Cosworth Duratec HP250 (Long Engine Assembly)
YD8080	2.3 Cosworth Duratec HP250 (Full Engine Assembly)
YD8127	2.0 Cosworth Duratec HP270 (Full Engine Assembly)
YD8106	2.3 Cosworth Duratec HP300 (Full Engine Assembly)

DURATEC PERFORMANCE CRATE ENGINES

Duratec HP	2.0 Litre					2.3 Litre				
	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP
195	220	250	200	220	240	250	250	270	300	
Full Engine YD8135	Full Engine YD8124	Full Engine YD8125	Long Engine YD8109	Full Engine YD8078	Full Engine YD8126	Long Engine YD8077	Full Engine YD8080	Full Engine YD8127	Full Engine YD8106	

Part No ▶

Description ▼

BASE ENGINE

●	Ford 2,0 (EU) Duratec Short-block Engine - New
●	Ford 2,0 Duratec Short-block Engine - New
●	Ford 2,3 Duratec Short-block Engine - New

CRANKSHAFT/PISTONS/RODS

●	2,0 Standard Pistons & Connecting Rods
○	2,0 Forged Pistons (CR 12:1) & Forged Connecting Rods
●	2,3 Forged Pistons (CR 13:1)incl Gudgeon pin and clips
○	2,3 Forged Pistons (CR 12:1)incl Gudgeon pin and clips
○	2,3 Forged Pistons (CR 13:1) incl Gudgeon pin and clips
○ ³	Cosworth Piston Ring Pack
○	2,0 Forged Connecting Rod Kit
○	2,3 Forged Connecting Rod Kit
●	2,0 Big End bearings
●	2,3 Big End bearings
○	2,0 Big End bearings (VP2)
○	2,3 Big End bearings (VP2)
●	Standard 2,0 Crankshaft
○	Standard 2,3 Crankshaft
○	2,0 Billet Crankshaft
○	2,3 Billet Crankshaft
●	2,0 Main bearings
●	2,3 Main bearings

FUEL SYSTEM

●	High Flow Fuel injectors
●	Large Capacity Fuel Rail

¹ Must be specified with Cosworth forged connecting rods (Pt No. KK3471)

² Must be specified with Cosworth forged connecting rods (Pt No. KK3470)

³ Only compatible with Cosworth forged Duratec pistons

⁴ Must be specified with Cosworth forged pistons according to application

Standard
 Option
 Not Applicable

DURATEC PERFORMANCE CRATE ENGINES

Duratec HP	2.0 Litre					2.3 Litre				
	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP
195	220	250	200	220	240	250	250	270	300	
Full Engine YD8135	Full Engine YD8124	Full Engine YD8125	Long Engine YD8109	Full Engine YD8078	Full Engine YD8126	Long Engine YD8077	Full Engine YD8080	Full Engine YD8127	Full Engine YD8106	

Part No ▶

Description ▼

CYLINDER HEAD/VALVETRAIN

●	Cosworth Level 1 Fast Road Inlet Camshaft
●	Cosworth Level 1 Fast Road/Race Exhaust Camshaft
●	Cosworth Level 2 Race Inlet Camshaft
●	Cosworth Level 2 Race Exhaust Camshaft
●	Cosworth Level 3 Race Inlet Camshaft
●	Cosworth Ultra Race Inlet Camshaft
●	Cosworth Ultra Race Exhaust Camshaft
●	Cam Friction Washer
●	Inlet Valve (Standard Size)
●	Exhaust Valve (Standard Size)
●	Turbulator Inlet Valve (33.5mm)
●	Exhaust Valve (28.3mm)
●	Race Valve spring
●	Ultra Race Valve spring
●	Cosworth Cylinder Head Assembly
●	Cosworth d-Power 3 Cylinder Head
●	Cosworth Ultra-Race Cylinder Head
●	Cylinder Head Gasket
●	Head Bolts
○	Heavy Duty Head Bolts

LUBRICATION SYSTEM

●	Oil Filter Housing Kit
●	Modeen Oil cooler Adaptor
●	High Flow Oil Pump
●	Oil Filter
●	Wet Sump
○	Wet Sump Baffle Kit
○	Dry Sump kit

⁵ Recommended for high cornering forces. Only compatible with wet sump assembly (Pt No. PR7019)

Standard
 Option
 Not Applicable

DURATEC PERFORMANCE CRATE ENGINES

2.0 Litre			2.3 Litre					
Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	
195	220	250	200	220	240	250	300	
Full Engine YD8135	Full Engine YD8124	Full Engine YD8125	Full Engine YD8078	Full Engine YD8126	Full Engine YD8079	Full Engine YD8080	Full Engine YD8106	

Part No ►

Description

COOLANT SYSTEM								
Water Pump	●	●	●	●	●	●	●	●
Thermostat (82 deg C) & Housing	●	●	●	●	●	●	●	●
Thermostat (70 deg C) & Housing	●	●	●	●	●	●	●	●
INDUCTION SYSTEM								
Cosworth d-Power Inlet Manifold (short trumpet)	○	○	●	●	●	●	●	●
Cosworth d-Power Inlet Manifold (long trumpet)	●	●	●	●	●	●	●	●
Cosworth d-Power 67mm Billet Throttle Body	●	○	●	●	●	●	●	●
Cosworth Roller Barrel Throttle Assembly	●	●	●	●	●	●	●	●
Cosworth Roller Barrel Throttle Fit Kit	●	●	●	●	●	●	●	●
Cosworth Oversize Roller Barrel Throttle Assembly	●	●	●	●	●	●	●	●
Cosworth Roller Barrel Throttle Fit Kit	●	●	●	●	●	●	●	●
Trumpet Set	●	●	●	●	●	●	●	●
Carbon Fibre Airbox, and foam Air Filter	●	●	●	●	●	●	●	●
Throttle Cable Bracket	●	●	●	●	●	●	●	●
Throttle Position Sensor	●	●	●	●	●	●	●	●
EXHAUST SYSTEM								
Exhaust Gasket	●	●	●	●	●	●	●	●
Exhaust manifold (Suitable for C170 Focus)	○	○	○	○	○	○	○	○
Exhaust Flex-Pipe (Suitable for C170 Focus)	○	○	○	○	○	○	○	○
ELECTRICAL SYSTEM								
Starter Motor	●	●	●	●	●	●	●	●
Ignition Coil	●	●	●	●	●	●	●	●
Spark Plug (Temp 7)	●	●	●	●	●	●	●	●
Loom Kit	○	○	○	○	○	○	○	○
ECU (flashed with base calibration)	○	○	○	○	○	○	○	○
Calibration Interface Kit	○	○ ⁶	○ ⁶	○ ⁶	○ ⁶	○ ⁶	○ ⁶	○ ⁶

⁶ Includes interface cable and software to alter calibration from a personal computer
 ● Standard
 ○ Option
 ■ Not Applicable

DURATEC PERFORMANCE CRATE ENGINES

2.0 Litre			2.3 Litre					
Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	Duratec HP	
195	220	250	200	220	240	250	300	
Full Engine YD8135	Full Engine YD8124	Full Engine YD8125	Full Engine YD8078	Full Engine YD8126	Full Engine YD8079	Full Engine YD8080	Full Engine YD8106	

Part No ►

Description

AUXILIARY DRIVE								
Alternator (40 Amp)	●	●	●	●	●	●	●	●
Lightweight Upper Alternator Bracket	●	●	○	●	●	○ ⁷	●	●
Lightweight Lower Alternator Bracket	●	●	○	●	●	○	●	●
Alternator Pulley (64mm)	●	●	○	●	●	○	●	●
Standard Crankshaft Pulley	●	●	●	●	●	●	●	●
Underdrive Crankshaft Pulley & Trigger Disk (Use with billet Auxiliary drive belt tensioner assembly)	○	○ ⁸	○	○ ⁹	○ ⁹	○ ⁹	○ ⁹	○ ⁹
Accessory Drive Belt (1260mm)	●	●	●	●	●	●	●	●
Accessory Drive Belt (1295mm)	●	●	●	●	●	●	●	●
Accessory Drive Belt(1310mm)	●	●	○	●	●	●	●	●
Accessory Drive Belt (1320mm)	●	●	○	●	●	●	●	●
MISCELLANEOUS								
Lightweight Flywheel	○	○	○	○	○	○	○	○
Clutch	○	○	○	○	○	○	○	○
Spigot Bearing	●	●	●	●	●	●	●	●
Heavy Duty Flywheel Bolt Set	○	○	○	○	○	○	○	○
Cam Cover Baffle Kit	○	○	○	○	○	○	○	○
Engine Lifting Eye (Front)	●	●	●	●	●	●	●	●
Engine Lifting Eye (Rear)	●	●	●	●	●	●	●	●
Power By Cosworth Carbon Coil Cover Incl Fitting Kit	●	●	●	●	●	●	●	●
ENGINE ASSEMBLY AND TEST								
Cosworth Assembled	●	●	●	●	●	●	●	●
Engine Hot Test	●	●	●	●	●	●	●	●
Full Engine Break-in & Performance Test	○	○	○	○	○	○	○	○
Dispatch Kit	●	●	●	●	●	●	●	●

⁷ Also requires alternator brackets (Pt Nos YD0397, YD0161), alternator pulley (Pt No. YD0310), tensioner assembly (Pt No. PR6628) and accessory belt (Pt No. PR7024)⁸ Requires billet crankshaft (Pt No. TBA) and shorter accessory drive belt (Pt No. PR7177)⁹ Requires billet crankshaft (Pt No. YD0253) and shorter accessory drive belt (Pt No. PR7177)
 ● Standard
 ○ Option
 ■ Not Applicable

focus performance



d-power

Level 1

The Cosworth d-Power Level 1 kit for the 2.3L Duratec powered Focus includes our cast aluminium inlet manifold, cold air intake along with a re-flash of the vehicle's ECU. The cold air intake kit, constructed from 3.25" aluminium tube, features a re-usable, cleanable air filter. The intake manifold is cast from aluminium and is engineered to flow more than the factory manifold. The Cosworth Manifold features internal velocity stacks or trumpets to help maintain air flow at low RPM insuring there is no loss in low rpm performance. Level One also includes a re-flash of the vehicle's ECU. The computer re-flash is required to "tune" the engine, adding more fuel to compensate for the additional airflow provided by the Cold Air intake and Cosworth intake manifold. The

RPM limiter is also raised from 6750RPM to 7100RPM to take advantage of the engines enhanced breathing ability. Level one will add 27 horsepower to an otherwise stock engine. All quoted power levels are measured at the crankshaft.

Part #	Component Detail
KK3279	Kit 1 - For Vehicles with Manual Transmission
KK3280	Kit 1 - For Vehicles with Automatic transmission Kit includes cold air intake, Power by Cosworth Intake Manifold, vehicle ECU reflash Installation hardware and instructions, and Power By Cosworth vehicle badge



d-power

Level 2

The Cosworth d-power level 2 system for the 2.3L Duratec Focus has been engineered to work in conjunction with our Level 1 system. The kit includes a larger than stock, 67mm throttle body, high performance camshafts and our high flow exhaust manifold. A re-flash of the vehicle's ECU is also included to "tune" the engine and maximize power. The d-Power Kit 2 when combined with Kit 1 will give the engine strong mid-range and top end power, perfect for track day events. Complete instructions are also included. Add one of our high flow exhaust systems for maximum performance. Available for both manual and automatic cars. All quoted power levels are measured at the crankshaft.

Part #	Component Detail
KK3281	Kit 2 - For Vehicles with Manual transmission
KK3282	Kit 2 - For Vehicles with Automatic transmission Kit includes High flow exhaust manifold, 67mm throttle body, stage 2 camshaft set hardware, instructions and vehicle ECU reflash *Note: Kit 1 is a prerequisite for Kit 2

Level 3

d-power

The Cosworth d-Power Level 3 kit for the 2.3L Duratec powered Focus includes a new, modified cylinder head with larger intake and exhaust ports, reshaped combustion chamber, heavy duty valve springs, Cosworth forged connecting rods, Cosworth forged pistons, Level 3 camshafts and high flow fuel injectors. Kit 3 is engineered to work in conjunction with Kit 1. Estimated power output is in excess of 240 hp.



Part #	Component Detail
KK3283	Kit 3 - For Vehicles with Manual Transmission Kit includes High Flow cylinder head, Forged Pistons, Forged Connecting rods High flow fuel injectors, Level 3 Camshafts, Throttle Body and ECU re-flash. *Note: Kit 1 is the only prerequisite for Kit 3. Upgrades from Kit 2 should use Kit 4 to achieve the same result.
KK3285	Kit 4 - For Vehicles with Manual Transmission Includes High-Flow Cylinder Head, Forged Pistons, Forged Connecting Rods, High-Flow Injectors and ECU eflash. Kit includes everything required to upgrade from a Kit 2 specification

Performance components



Cold Air Intake

The Cosworth Cold Air Intake has been engineered for the Duratec powered C170 Focus (2.0L and 2.3L) to maintain correct fuelling throughout the entire rpm range to insure maximum performance. Constructed from 3.25" mandrel bent aluminium tubing for maximum air flow with a cotton-gauze cleanable air filter. Kit includes everything needed for installation with complete instructions. Finished in powder coated Cosworth Blue



Part #	Component Detail
YD8061	Cold Air Intake for Vehicles with Manual Transmission
YD8062	Cold Air Intake for Vehicles with Automatic Transmission Kit includes complete 3.25" alloy tubing, hose clamps, coupling hoses and High flow reusable air filter
PR6573	Universal Cone Air Filter Element 3¼



2.3 Inlet Manifold Assembly

The Cosworth Duratec inlet manifold has been engineered for maximum airflow while maintaining strong, low rpm torque. Designed for the North American C170 Ford Focus, the manifold is cast in a lightweight aluminium alloy and can be used for custom and turbo applications. Kit includes all required mounting hardware.

Part #	Component Detail
KK3240	Duratec Inlet Manifold 2.3L Cast aluminum intake manifold includes all required mounting hardware



67mm Throttle Body

Designed for use with the Cosworth Duratec Intake Manifold, the Cosworth 67mm Throttle Body allows maximum airflow and performance. Engineered with a 4130 chrome-molly throttle shaft supported by sealed bearings for heavy duty use and an ultra thin throttle plate with dual return springs for smooth operation. Anodized in Cosworth Blue.

Part #	Component Detail
KK8023	67MM Throttle Body-Duratec

Barrel Throttle

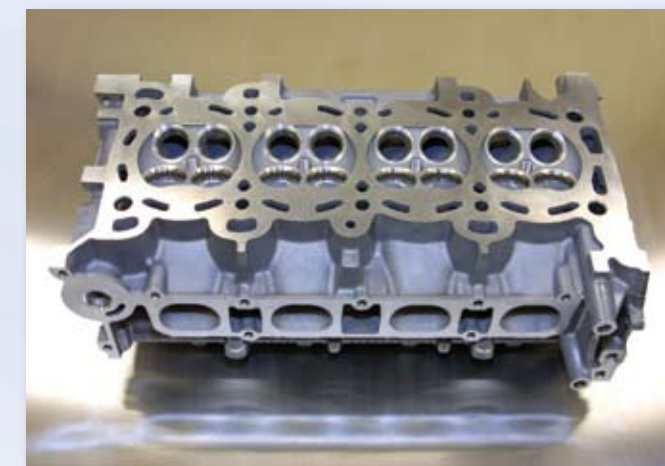
For maximum power and performance, Cosworth has developed barrel throttles with an integrated manifold for the Duratec engine. This F1 style throttle provides complete control with unrestricted flow at full throttle. Cast from heat treated aluminium with CNC machined barrels supported by sealed bearings. Designed to be used with Cosworth's own carbon fibre Airbox and Free-flow Air Filter Element.



Part #	Component Detail
KK3563	Barrel Throttle incl Fit Kit (Standard & Race Head)
YD8070	Barrel Throttle only (Standard & Race Head)
KK3561	Barrel Throttle fit kit only (Standard & Race Head)
KK3702	Barrel Throttle incl Fit Kit (Ultra Race Head)
YD8113	Barrel Throttle only (Ultra Race Head)
KK3562	Barrel Throttle fit kit only (Ultra Race Head)
KK3450	Fuel rail kit With injectors 260hp spec
KK3599	Barrel Throttle Air Box Kit Incl Filter (All variants)
PR6874	Barrel Throttle Air Filter Element (Service Part)

Cylinder Heads

Cosworth is able to offer a variety of cylinder heads depending on the level of performance desired



Part #	Component Detail
YD8145	Fully assembled Fast Road head (with YD0222/YD0173 Cams)
YD8146	Fully assembled Race Head (with YD0223/YD0182 Cams)
YD8108	Fully assembled Ultra Race Head (with YD0636/YD0486 Cams)
YD8054	Unassembled Fast Road Head
YD8031	Unassembled Race Head
YD8105	Unassembled Ultra Race Head
PR6304	Head Gasket (Service Part)
KK3451	Head Bolt Kit (Standard) (Service Part)
PR6065	Single Head Bolt (Standard) (10 off per engine) (Service Part)
PR7115	Head Stud Kit (incl. studs, washers, nuts & lubricant) (Heavy Duty) (Service Part)



High Performance Valve Springs

Required installation on specified camshafts, Cosworth valve springs are compatible with the original light weight retainers, keepers and valve stem seals. A selection of related valve train components are also available.

(See Service Parts)

Part #	Component Detail
KK3459	Cosworth Heavy Duty Valve Spring Set Max lift: 11.5mm, 9,000rpm, Single tapered type
KK3472	Cosworth Heavy Duty Valve Spring Set Max lift: 12.5mm, 9,000rpm, Single tapered type
YD0093	Single Heavy Duty Spring (11.5mm lift)
YD0481	Single Heavy Duty Spring (12.5mm lift)



Camshafts

Cosworth camshafts are ground in-house from new chill cast blanks. Available in a selection of profiles for various applications and horsepower levels. Cosworth Duratec camshafts are optimised for maximum usable power across the entire rpm range. Each camshaft design has been validated with hours of testing on Duratec engines as well as rig testing to ensure valve train compatibility and reliability.

Part #	Component Detail
YD0222	Cosworth Fast Road inlet Cam (200hp)-7200RPM 255 Duration / 9.5mm lift / 114ATDC
YD0173	Cosworth Fast Road exhaust Cam (200hp/240hp) 255 Duration / 9.5mm lift / 113BTDC Requires valve spring upgrade for operation above 7200rpm
YD0223	Cosworth Race inlet cam (260+hp)-9000RPM 282 Duration / 11.3mm lift / 111ATDC Requires valve spring upgrade
YD0224	Cosworth Race inlet cam (240+hp)- 9000RPM 282 Duration / 11.3mm lift / 101ATDC Requires valve spring upgrade
YD0182	Cosworth Race exhaust cam (260+hp) 262 Duration / 9.95mm lift / 103BTDC Requires valve spring upgrade
YD0341	Cosworth Ultra Race Inlet Camshaft standard journals (270+)
YD0263	Cosworth Ultra Race Exhaust Camshaft standard journals (270+)
YD0636	Cosworth Ultra Race Inlet Camshaft Tool Steel (300) Ultra race head only
YD0486	Cosworth Ultra Race Exhaust Camshaft Tool Steel (300) Ultra race head only
YJ0092	Friction Washer (all camshafts) (Service Part)
KK3457	Camshaft Bolt Set (2 off PR6732) (Service Part)
PR6667	Camshaft Sprocket (all camshafts) (Service Part)
PR6732	Camshaft Sprocket Bolt (all camshafts) (Service Part)

Exhaust Manifold

The Cosworth high-flow exhaust manifold is a must for maximum performance. Constructed from 1 7/8" mandrel bent tubing with merged 2 1/2" collector and heavy-duty flanges. Designed for the North American Duratec powered C170 Focus but can also be used for custom applications. Finished in a heat/corrosion resistant ceramic aluminium coating.



Part #	Component Detail
YD8006	Duratec Race Header 1.7/8" Primary 4-1 style
PR6302	Exhaust Manifold – Head Gasket (Service Part)

Exhaust Manifold Flex Pipe

The Cosworth High Flow Flex pipe is used to connect the exhaust manifold to the back section of the exhaust system. Constructed in 2 1/2" mandrel bent tubing with heavy duty flanges and finished in a heat/corrosion resistant ceramic aluminium coating.



Part #	Component Detail
YD8020	Exhaust Manifold Flex Pipe (Manual Transmission)
YD8021	Exhaust Manifold Flex Pipe (Automatic Transmission)
PR7288	Exhaust Manifold – Flex Pipe Gasket (Service Part)

Cosworth High Flow Exhaust Systems

Cosworth GT Spec, Race Exhaust. Designed for track use and manufactured from 2.5" light weight mandrel bent stainless steel tubing with robotically welded joints. Features flanged construction for ease of installation and high temperature sound absorption material for long lasting performance. With 3.5" polished stainless steel tip with embossed "Power By Cosworth" logo finishing up the system. Includes everything to install the system behind the flex pipe, including gaskets and hardware. Produces a deep sporty sound and can be installed on its own or as part of the entire Cosworth d-Power Duratec Performance system. For race use only!



Part #	Component Detail
CT8009	High Flow "Race" Exhaust System - ZX3/ZX5 2003-2005 2.5" mandrel bent T409 Stainless Steel Exhaust system. Includes all required parts to complete the installation from the Flex pipe back



Forged Pistons

Cosworth Pistons are manufactured entirely in house at our Northampton UK facility. Produced from 4032 alloy, the Cosworth Duratec piston features a unique, light-weight skirt profile along with valve relief pockets. Available for both the 2.3L and 2.0L Duratec and both 12:1 and 13:1 compression ratios. Kit includes four pistons with pins, pin clips and piston ring set.

Part #	Component Detail
KK3460	12:1 CR Set of 4 pistons, incl ring pack (2.3 only)
KK3467	12:1 CR Set of 4 pistons, no rings (2.3 only)
KK3703	13:1 CR Set of 4 pistons, incl ring pack (2.3 only)
KK3699	13:1 CR Set of 4 pistons, no rings (2.3 only)
KK3706	12:1 CR Set of 4 pistons, incl ring pack (2.0 only)
KK TBD	13:1 CR Set of 4 pistons, incl ring pack (2.0 only)
KK3527	12:1 CR Set of 4 pistons, no rings (2.0 only)
KK TBD	13:1 CR Set of 4 pistons, no rings (2.0 only)
YD0200	Single 12:1 Piston, no pin, no clips (2.3 only)
YD0280	Single 12:1 Piston, no pin, no clips (2.0 only)
YD0347	Single 13:1 Piston, no pin, no clips (2.3 only)
YD0394	Single 13:1 Piston, no pin, no clips (2.0 only)
YD0602	Single Gudgeon Pin (all variants)
PP2720	Pin retaining clips (2 off per piston, all variants)
KK3468	Cosworth Ring Pack (4 pistons)



Carbon Fibre Coil Cover

The perfect complement to your engine bay, the Cosworth Carbon Fibre coil cover installs over your existing cam cover, hiding your ignition coils and wires providing a clean modern look. Features a CNC machined "Power By Cosworth" badge.

Part #	Component Detail
KK3545	Carbon Fibre Coil Cover including Fit kit

Crankshafts



Part #	Component Detail
YD0253	2.3 Billet Crankshaft
KK3456	2.3 Standard Crankshaft (No balance shaft)
KK3704	2.0 Standard Crankshaft
KK3484	2.3 Balance Shaft Delete Kit

Engine Bearings

Available exclusively from Cosworth, VP2C Tri-metal Connecting Rod Bearings designed specifically for the Duratec 2.3L engine. VP2C Rod Bearings are engineered for ultra-high performance use and proven in our F1 and other race engines. Additionally, OE specification main bearings are available.



Part #	Component Detail
KK3479	Rod Bearing Set (std), 2.3
KK3531	Heavy Duty Rod Bearing Set, 2.3, VP2C Material
KK3481	Main Bearing Set (std), 2.3
PR6708	Single Standard Rod Bearing Shell (8 off/engine) (2.3 only)
YD0350	Single Heavy Duty Rod Bearing Shell (8 off/engine) (2.3 only)
PR7014	Single Standard Main bearing Upper (4 off/engine) (2.3 only)
PR7015	Single Standard Main bearing Centre (1 off/engine) (2.3 only)
PR7016	Single Standard Main bearing Lower (5 off/engine) (2.3 only)
KK3705	Standard Rod Bearing Set (1.8/2.0 only)
KK3483	Heavy Duty Rod Bearing Set, 2.0, VP2C Material
KK3482	Standard Main bearing Set (1.8/2.0 only)
PR7517	Single Standard Rod Bearing Shell (8 off/engine) (1.8/2.0 only)
PR5726	Single Heavy Duty Rod Bearing Shell (8 off/engine) (1.8/2.0 only)
PR5717	Single Standard Main bearing Upper (4 off/engine) (1.8/2.0 only)
PR5720	Single Standard Main bearing Centre (1 off/engine) (1.8/2.0 only)
PR5723	Single Standard Main bearing Lower (5 off/engine) (1.8/2.0 only)



Forged Connecting Rods

Cosworth Duratec connecting rods are forged from 4130 Chrome Molly and feature a strong but light-weight profile. Total weight is reduced by 45 grams per connecting rod (2.3L). Heavy duty rods bolt are included. These rods are engineered to withstand high rpm and horsepower applications. Bushed for a floating pin. A selection of rod bearings are also available.

Part #	Component Detail
KK3470	Cosworth Forged Connecting Rod set 2.3L
KK3471	Cosworth Forged Connecting Rod set 2.0L
YD8004	Single Rod (2.3 only)
YD8068	Single Rod (2.0 only)
PR7159	Single Rod Bolt (Heavy Duty) (Cosworth Rods only) (Service Part)

Fuel System

Cosworth offers 2 fuel rail kits depending upon the engine's ultimate performance. The first stage fuel rail and injector assembly is able to deliver correct fuelling up to around 200bhp. Above this, the Stage 2 fuel rail assembly should be used for extreme performance applications. The Stage 2 fuel rail has been tested up to 300bhp without any fuel flow issues. Use of these fuel rails may need an up-rated fuel pump and pressure regulator to operate correctly.



Part #	Component Detail
KK3450	Fuel Rail kit with high-flow Injectors
PR6880	Fuel Rail Manifold only
PR6647	Single Injector 310g/min. (4 off/engine)
PR6779	Injector Retainers (4 off/engine)
PR6593	Fuel Rail kit with standard injectors
PR6654	Single Injector 194g/min. (4 off/engine)

Cooling System

An efficient cooling system is essential in maintaining the engine's performance under all operating conditions. Although the complete system will depend upon the individual installation, it is vital that the water pump and thermostat are working as designed. These should be checked frequently for correct operation if the engine is to be installed with no coolant temperature gauge.

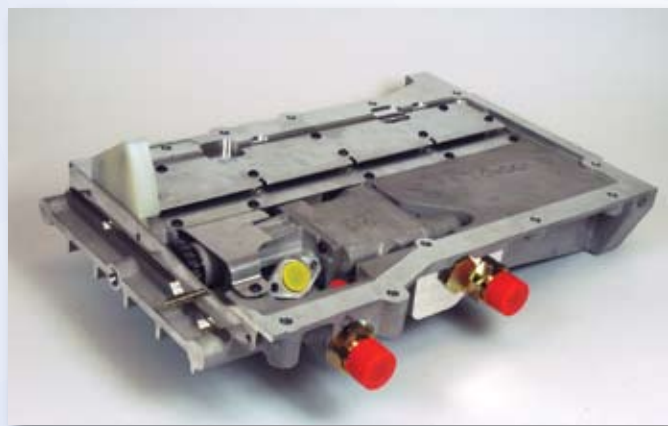


Part #	Component Detail
PR6738	Water Pump (229 litres/min.)
PR6739	Water Pump Pulley
PR6595	Thermostat & Housing (82° C)
YD8100	Water Outlet Elbow

Lubrication Parts

Cosworth's dry sump is cast in a high strength aluminium alloy and features either a 2 stage or 3 stage internally mounted scavenge pump. Driven by an internal drive chain, this arrangement reduces the amount of plumbing associated with an external pump arrangement. Cosworth's dry sump has been engineered to be suitable for both longitudinal and transverse engine installations.

With high and ultra-high performance applications, there is a lot of heat rejected to the oil system. The oil therefore needs to be cooled to keep the engine operating at its peak performance. Cosworth offers an oil cooler kit, which is designed to cool the oil as it flows through the oil filter. The



kit includes the water to oil heat exchanger and a new oil filter housing designed to replace the standard component.

Part #	Component Detail
YD8140	Dry Sump Kit - 2 stage scavenge (Ford Transmission compatible)
YD8107	Dry Sump Kit - 3 stage scavenge (Ford Transmission compatible)
PR7019	Standard Wet Sump
KK3487	Internal Baffle Kit for Standard Wet Sump
PR6513	Standard Oil Pressure Pump
PR7167	High Flow Oil Pressure Pump
PR6630	Modeen Oil Cooler
PR6631	Oil Cooler Bolt (1 off/engine)
KK3488	Camshaft Cover Breather baffle kit
PR6719	Oil Filter (Service Part)



Part #	Component Detail
PR6590	Flywheel
PR6993	Clutch
PR7166	Quaife Limited Slip Differential for MTX75

Transmission

In many Ford vehicles the Duratec engine is mated to the MTX75 gearbox. In order to maximise traction from the driving wheels Cosworth would recommend the use of a limited-slip differential for all of its performance engines. The Quaife unit is a well proven unit in the Focus RS and has been used in Cosworth's own development cars to good effect.



Electrical

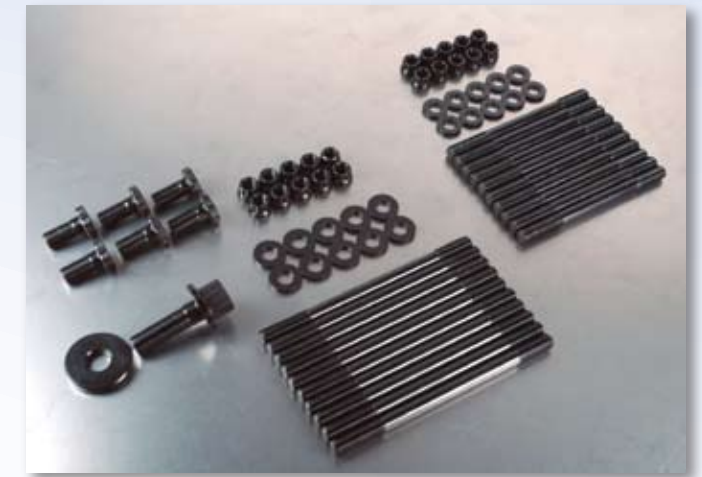
The standard Duratec engine employs a coil-on-plug type ignition system for optimum efficiency and this arrangement is used throughout Cosworth's range of Performance Duratec engines. Cosworth is able to offer its own engine wiring loom that has been designed to be suitable for its whole range of Duratec crate engines. The loom is compatible with the MBE ECU which if bought at the same time as a Cosworth crate engine will come pre-loaded with the base engine map, to allow the engine to be fired up for the first time. Cosworth also offers an ECU interface kit, which has all of the hardware and PC software needed to access and modify the engine map in the ECU. This allows the customer to optimise the engine's performance, according to their own specific installation.

Important: The engine's map is critical to its performance and if set incorrectly may result in damage occurring. Once the engine is installed in each new application it should be re-mapped by a competent person. Where Cosworth provides a base engine map pre-loaded in the ECU, the map has been derived from Cosworth's dynamometer testing under very specific environmental temperatures and pressures and should not be construed as being suitable for all operating conditions and vehicle installations. The base map does however ease the first engine fire up after being installed and provides a good starting point from which the engine map can be optimised.

Part #	Component Detail
PR6783	Starter Motor
PR6932	Alternator
YD0310	Alternator Pulley
YD0397	Lightweight Alternator bracket (Upper)
YD0161	Lightweight Alternator bracket (Lower)
PR6084	Spark Plug (Cold Range) (Service Part)
PR6323	Ignition Coil (Service Part)
YD8097	Ignition Coil Loom (Service Part)
KK3558	Crate Engine Wiring Loom Kit incl (Ignition Coil Loom)
YD0387	Crate Engine ECU (No calibration)
KK3559	Calibration Interface Kit (Hardware and software for PC)

Part #	Size	Part #	Size	Part #	Size	Part #	Size	Part #	Size
PR6518	3.000	PR6525	3.162	PR6532	3.302	PR6539	3.442	PR6546	3.582
PR6519	3.025	PR6526	3.182	PR6533	3.322	PR6540	3.462	PR6547	3.602
PR6520	3.050	PR6527	3.202	PR6534	3.342	PR6541	3.482	PR6548	3.625
PR6521	3.075	PR6528	3.222	PR6535	3.362	PR6542	3.502	PR6549	3.650
PR6522	3.100	PR6529	3.242	PR6536	3.382	PR6543	3.522	PR6550	3.675
PR6523	3.122	PR6530	3.262	PR6537	3.402	PR6544	3.542	PR6551	3.700
PR6524	3.142	PR6531	3.282	PR6538	3.422	PR6545	3.562	PR6552	3.725

Heavy Duty Fasteners



Part #	Component Detail
KK3451	Standard Head Stud Kit (10 off PR6065)
KK3457	Standard Camshaft Bolt Kit (2 off PR6732)
PR6065	Standard Head Bolts (10 off/engine)
PR6732	Standard Camshaft Sprocket Bolt (2 off/engine)
PR6571	Standard Front Pulley Bolt (1 off per engine)
PR6597	Standard Flywheel Bolt (6 off per engine)
PR7115	Heavy Duty Head Stud Kit
PR7116	Heavy Duty Main Stud Kit
PR7117	Heavy Duty Flywheel Bolt Set
PR7118	Heavy Duty Front Pulley Bolt

Service Parts

For maximum performance and reliability, valve train components should be replaced when any cylinder head work is carried out. We keep these hard to find parts in stock. In addition, a full range of graded cam buckets are available allowing correct valve lash to be set.



Part #	Component Detail
KK3452	Top Retainer Kits (16 off PR6188)
KK3453	Cotter Kit (32 off PR6189)
KK3455	Inlet Valve Seal Kit (8 off PR6191)
KK3454	Exhaust Valve Seal Kit (8 off PR6190)
PR6698	Standard Inlet Valve
PR6699	Standard Exhaust Valve
PR6084	Spark Plug
PR6719	Oil Filter (Service Part)
PR6302	Exhaust Manifold Gasket
PR6304	Cylinder Head Gasket
YJ0092	Camshaft Friction Washers
PR6518-52	Graded Tappet Buckets (See table on page 20)