

# NITRON™



AUTOMOTIVE SUSPENSION





Nitron aim to provide the highest quality automotive suspension through a combination of innovation, uncompromising quality and attention to detail.

Nitron will always represent excellent value delivered through outstanding levels of customer service.



**Guy Evans**

CEO, NITRON RACING SYSTEMS LTD.

NITRON HAS OVER A DECADE OF SUCCESS, CELEBRATING PRESTIGIOUS RACE WINS AND LAP RECORDS AROUND THE WORLD. DESIGNED, DEVELOPED AND MANUFACTURED IN THE UK, NITRON'S WORLDWIDE HEADQUARTERS ARE BASED IN ENGLAND'S PRESTIGIOUS 'MOTORSPORT VALLEY', OXFORDSHIRE.





## ENGINEERED IN THE UK

Every Nitron product is designed, developed and manufactured in the UK, using the very latest technology and cutting edge production techniques.

With extraordinary attention to detailed design, combined with proven engineering principles, Nitron shocks are designed to provide you with the very best in performance, reliability and style.

## GLOBAL SERVICE

Nitron is dedicated to providing the very highest levels of customer service wherever a customer may be.

With service centres all over the world, the maintenance and service support of your Nitron shock can be guaranteed.

Nitron's production lines in the UK, USA, Japan and Malaysia afford the ability to manufacture hand built customer specific products in addition to their full service capabilities. All service centres are factory trained to rebuild and modify Nitron products to your exact requirements.

## TESTED AROUND THE WORLD

Nitron products are in use in virtually every country in the world. This has enabled extensive testing in a wide variety of environments, both on and off road, from deserts to race-circuits and mountain trails to the Nurburgring.

Every product is built to the highest standards to ensure years of reliable, tailored use - whatever your requirement.



for a full list of Nitron dealers please visit:  
[www.nitron.co.uk](http://www.nitron.co.uk)

## NTR-R3 Coilover Kit



40 or 46mm, 3-Way Adjustable, 14 or 16mm Piston Rod.  
Hose or Piggyback Reservoir.

## NTR-R3 Strut Kit



40 or 46mm, 3-Way Adjustable, 14, 16 or 22mm Piston Rod.  
Hose or Piggyback Reservoir.

## NSS Street Series Kit



38mm, 2-Way Comined Adjustable,  
14mm Piston Rod. Internal Reservoir.

## CUSTOM Dampers



40 or 46mm, 2 or 3-Way Adjustable, 14 or 16mm  
Piston Rod. Internal, Hose or Piggyback Reservoir.

## NTR-R1 Coilover Kit



40 or 46mm, 2-Way Comined Adjustable,  
14 or 16mm Piston Rod. Internal Reservoir.

## NTR-R1 Strut Kit



40 or 46mm, 2-Way Comined Adjustable,  
14, 16 or 22mm Piston Rod. Internal Reservoir.

## NTR Classic Series Kit



40 or 46mm, 2-Way Combined Adjustable,  
14 or 16mm Piston Rod. Internal Reservoir.

## SPRINGS & Helper Springs



Full range of metric 60mm ID and imperial  
2.25 inch ID race and helper springs

## OEM Coilover Kit



40 or 46mm, 2 or 3-Way Adjustable, 14 or 16mm Piston Rod.  
Internal, Hose or Piggyback Reservoir.

## OEM Strut Kit



40 or 46mm, 2 or 3-Way Adjustable, 14, 16 or 22mm  
Piston Rod. Internal, Hose or Piggyback Reservoir.

## ADJUSTABLE Drop-Links



Nitron adjustable drop-links are available in a  
range of sizes to suit most applications.

## WISHBONE Bearing Kits



The Nitron wishbone bearing kit replaces all the inner rubber  
bushes with 15mm Teflon-lined spherical bearings.

# UNIQUE Technology

Every Nitron shock is built using the ultimate in quality precision components, each of which has undergone an extensive and rigorous design and development program to ensure optimum performance.

Nitron shocks are designed using a modular system which allows maximum flexibility throughout the development of each application. Each individual component is machined to exacting standards and individually inspected by trained technicians as part of a strict quality control process.

**Double piston technology ensures unparalleled strut rigidity and consistant geometry**

Modular screwed together design using highest specification materials.



Through extensive testing of all new materials, finishes and processes and by combining technologies unique to Nitron, every shock is built to outperform and outlast its competitors, be it on the road or the track.

Only by maintaining these high standards can Nitron ensure that customers experience the very ultimate suspension available.

Double acting PU scraper for oil seal protection in the most demanding environments.



46mm Piston Design.

Independent rebound adjustment.

Silicone chrome spring with unique 'FLEXaLITE' coating for long life.

Progressive cellular bumpstop.



Induction hardened and super polished hard chrome plated piston rod with highest scratch resistance available.

Fully floating aluminium separator piston between gas and oil with super low friction Teflon banding.

Nitron Camber/Castor adjustment top plates are uniquely designed and ultra lightweight.

Nitron struts fitted with a hose feature the 720 degree bi-axis swivel - developed in-house to make installation even easier.



High precision tubes with the smoothest bores ensures the most consistent damping and long life.



Independent high and low speed compression adjustment offers ultra high precision control over damping characteristics.

**MODEL SHOWN:** Subaru Impreza NTR R3 Front Strut



SVA Imports UK Time Attack Mitsubishi Evo.



Team Schirmer VLN BMW.



Roger Clark Motorsport Subaru Impreza image courtesy of Steve Jackman.

# NTR-R3

## NTR-R3 Strut Kit

The NTR R3 strut system sets the standard for ultimate performance with a design that offers drivers and engineers unparalleled damping control.

3-Way independent damping adjustment. By incorporating our class leading large diameter piston and ultra-strong piston rod, the R3 system demonstrates outstanding levels of performance, damping control and adjustment. Piggyback or remotely mounted reservoir allows quick and simple independent adjustment of rebound and fast and slow compression damping. The large range of adjustment and quality of feedback allows

the experienced driver to exploit the full potential of their car. The R3 is a proven race winner and lap record holder across a wide spectrum of international motorsport formulas.

The high-grade materials and finishes protect against corrosion whilst reducing weight. Every R3 kit is custom built, sprung and fully serviceable.



PIGGYBACK/HOSE Reservoir type	Compression High- 16 clicks	Nitrogen Gas Charged
Independent Adjustment 3way	Compression Low-26 clicks	40 or 46mm Piston Design
14/16/22mm Piston Rod	Rebound 24 clicks	Preload Adjuster

Nitron shocks fitted with a hose feature the 720 degree bi-axis swivel - developed in-house to make installation even easier.



# NTR-R1

## NTR-R1 Strut Kit

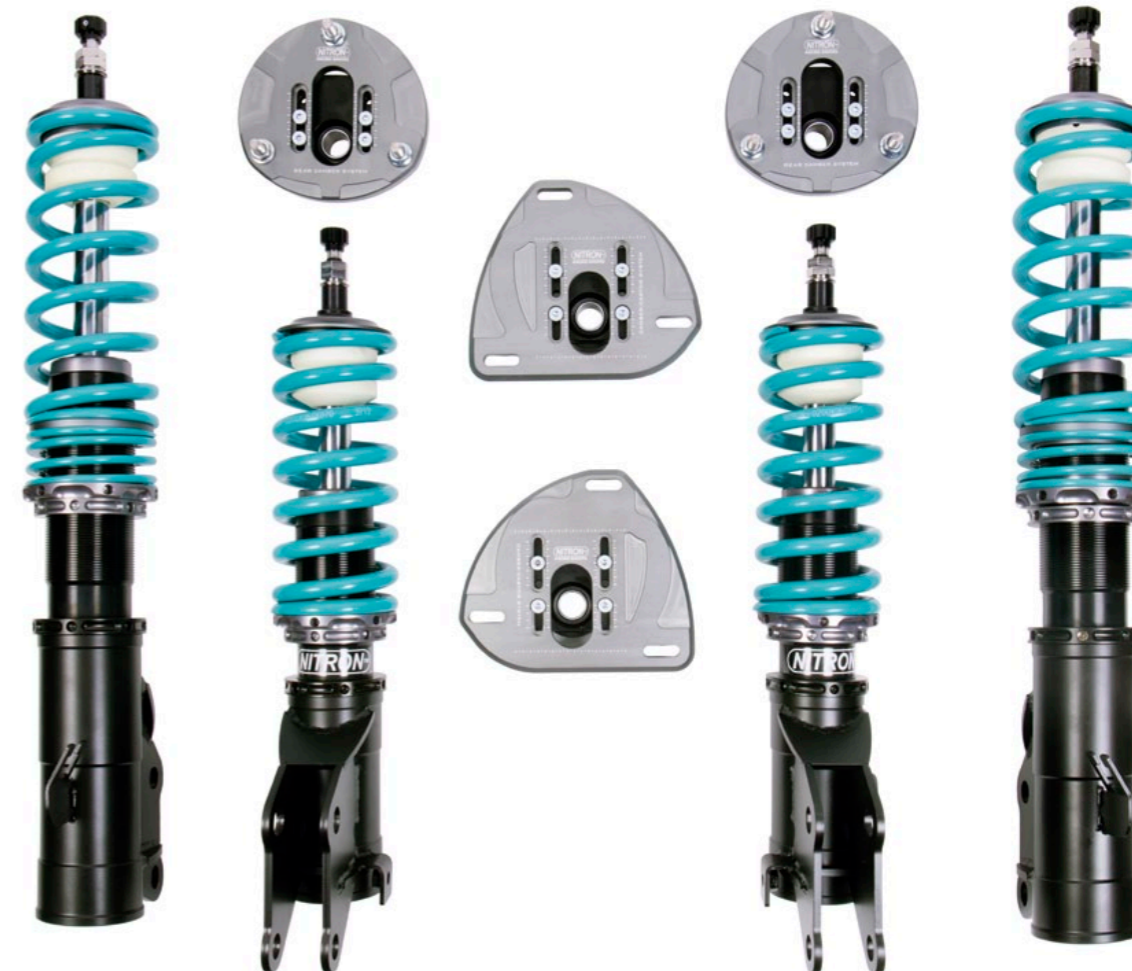
The NTR R1 strut system offers unrivalled performance and value with a design that gives drivers a wide range of effective, easy to use damping control.

2-Way combined damping adjustment. Developed from our full race suspension and sharing many components with the R3 system, the R1 offers exceptional performance, reliability and value for both road and track use. Widely praised by drivers around the world and respected for out-performing considerably more expensive suspension kits.

R1 kits provides uncompromising quality, reliability and

performance without the need for a remote canister. Fade-resistant and hand built with ultra-low friction components, the R1 shock is made to last on the road and track.

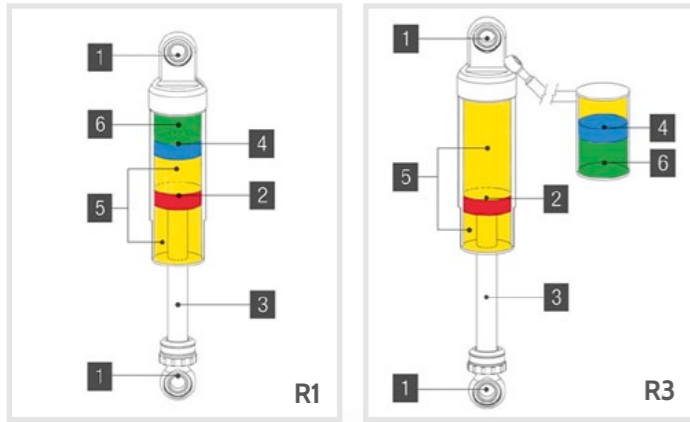
The high-grade materials and finishes protect against corrosion whilst reducing weight. Every R1 kit is custom built, sprung and fully serviceable.



INTERNAL Reservoir type	Preload Adjuster	Combined Adjustment 2way
Combined 24 clicks	40 or 46mm Piston Design	
Nitrogen Gas Charged	14/16/22mm Piston Rod	



# UNIQUE Technology

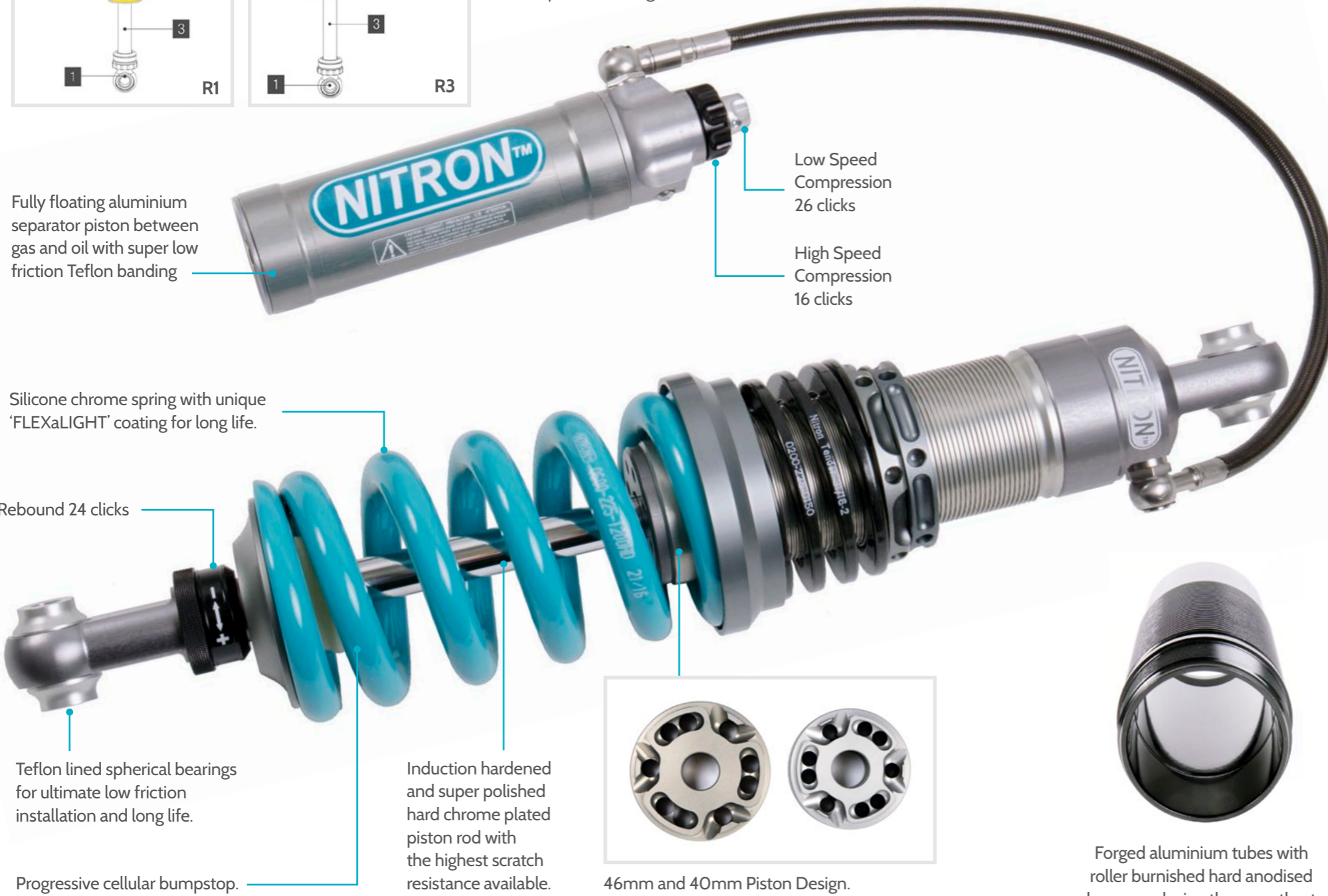


## Basic Damper Design

1. End Eye / Top Mount
2. Damper Piston & Shim Stack
3. Shaft / Rod
4. Floating / Separator Piston
5. Suspension Oil
6. Compressed Nitrogen Gas



Nitron shocks fitted with a hose feature the 720 degree bi-axis swivel - developed in-house to make installation even easier.



Fully floating aluminium separator piston between gas and oil with super low friction Teflon banding

Low Speed Compression  
26 clicks

High Speed Compression  
16 clicks

Silicone chrome spring with unique 'FLEXaLIGHT' coating for long life.

Rebound 24 clicks

Teflon lined spherical bearings for ultimate low friction installation and long life.

Progressive cellular bumpstop.

Induction hardened and super polished hard chrome plated piston rod with the highest scratch resistance available.



46mm and 40mm Piston Design.



Forged aluminium tubes with roller burnished hard anodised bores producing the smoothest tubes and most consistent damping and long life.



Simply Sports Cars Lotus - Bathurst 12 Hour 2015.



Caterham R500 Superlight.



Elemental RPI.

**MODEL SHOWN:** Lotus Exige NTR R3 46mm Rear Damper

# NTR-R3

## NTR-R3 Coilover Kit

The NTR R3 coil-over system sets the standard for ultimate performance with a design that offers drivers and engineers unparalleled damping control.

3-Way independent damping adjustment. By incorporating our class leading large diameter piston and ultra-strong piston rod, the R3 system demonstrates outstanding levels of performance, damping control and adjustment. Piggyback or remotely mounted reservoir allows quick and simple independent adjustment of rebound and fast and slow compression damping. The large range of adjustment and quality of feedback allows the

experienced driver to fully exploit the full potential of their car. The R3 is a proven race winner and lap record holder across a wide spectrum of international motorsport formulas.

The high-grade materials and finishes protect against corrosion whilst reducing weight. Every R3 kit is custom built, sprung and fully serviceable.



PIGGYBACK/HOSE Reservoir type

Compression High- 16 clicks		Nitrogen Gas Charged		Independent Adjustment	3way
Compression Low-26 clicks		40 or 46mm Piston Design		14 or 16mm Piston Rod	
Rebound 24 clicks		Preload Adjuster		Full Alloy Body	

Nitron shocks fitted with a hose feature the 720 degree bi-axis swivel - developed in-house to make installation even easier.



# NTR-R1

## NTR-R1 Coilover Kit

The NTR R1 coil-over system offers unrivalled performance and value with a design that gives drivers a wide range of effective, easy to use damping control.

2-Way combined damping adjustment. Developed from our full race suspension and sharing many components with the R3 system, the R1 offers exceptional performance, reliability and value for both road and track use. Widely praised by drivers around the world and respected for out-performing considerably more expensive suspension kits.

R1 kits provides uncompromising quality, reliability and performance without the need for a remote canister. Fade-resistant and hand built with ultra-low friction components, the R1 shock is made to last on the road and track.

The high-grade materials and finishes protect against corrosion whilst reducing weight. Every R1 kit is custom built, sprung and fully serviceable.



INTERNAL Reservoir type	Preload Adjuster	
Combined Adjustment	2way	Combined 24 clicks
40 or 46mm Piston Design		Nitrogen Gas Charged
Full Alloy Body		14 or 16mm Piston Rod



Precision bearing spacers supplied as required.





**OEM Coilover Kit**  
 As fitted to the Lotus Exige V6 Cup



**OEM Strut Kit**  
 As fitted to the MINI JCW Challenge Edition



Lotus Exige V6 Cup dampers.



Lotus Exige V6 Cup.

## OEM Manufacturing & Supply

Aside from producing specialist low volume production units and custom damper designs, Nitron has a wealth of experience in mass-producing high quality suspension for supply direct to vehicle manufacturers. With clients including MINI, Lotus Cars, Nissan and Elemental Cars, Nitron have also supplied suspension packages for race series around the globe for MINI Challenge, Lotus, Kawasaki and Triumph to name but a few.

Nitron have the experience and capability to undertake research and development, prototype production right through to full OEM scale production and operate to ISO accreditation standards.



MINI JCW Challenge Edition.



MINI JCW Challenge Edition.



# CUSTOM Dampers



With over a decade of experience, Nitron have honed the ability to design and prototype unique and custom specification shocks with unprecedented speed and value. Together, our designers, engineers and production teams have a successful history of servicing a wide range of clients and specialist industries. An enviable reputation has grown as manufacturers, teams and individuals turn to Nitron for their custom solution. Nitron have the capability and flexibility to manufacture unique one-off vehicle kits through to supplying race series and international OEM production.

Nitron offer a full range of globally accessible services including design, testing and production.

Contact us to discover how Nitron can work for you.



### Piston Size

Nitron offer our shocks with two piston size options. The 40mm or 46mm piston which is the largest piston available on race shocks giving the very best performance lap after lap.



### Top-Cap Style\*



### End-Eye Style\*



### Reservoirs\*

As well as the hose mounted reservoir, Nitron also offer several types of piggyback reservoir options.



### Adjustment

Nitron offer all custom shocks with either 1,2 or 3 way adjustment.



\*Only a small selection is shown. Many more styles and sizes are available.

## NSS Street Series Kit

Our NSS (Nitron Street Series) range is now well established as a high performance, exceptional value suspension package.

Designed and developed by Nitron, the lightweight dampers use gas mono-tube technology. This means that they offer a distinct performance advantage over the many twin-tube based products on the market in this price bracket with significantly reduced weight, impressive performance and increased fade resistance.

The Street Series kit has one combined damping adjuster that alters both bump and rebound damping. The shocks are billet machined from lightweight aluminium and come with spherical bearing ends and Nitron's proven low friction sealing system.

As a more road orientated kit, the Nitron Street Series are valved and sprung accordingly to give optimal body control without any undue harshness. For customers using their car predominantly for track days, Nitron would still recommend the renowned NTR range of shocks due to their increased control and fade resistance.

The sporting spring rates are supplied, but custom spring rates can be retro-fitted with any standard 2.25" race coil.



## NTR Classic Series Kit

The NTR Classic Series offers the same levels of performance, value and wide range of effective, easy to use damping control associated with the NTR range, but within a period style classic steel body.

2-Way combined damping adjustment. Developed from our full race suspension and sharing many internal components with the R3 system, the NTR Classic Series kits provides uncompromising quality, reliability and performance without the need for a remote canister. Fade-resistant and hand built with ultra-low friction components, the Classic shock is made to last on the road and track.

The high-grade steel components are protected against corrosion by plating in black zinc. Every Classic Series kit is custom built, sprung and fully serviceable.



## SPRINGS & HELPERS

Nitron offer a comprehensive range of race specification 2.25" and 60mm internal diameter main springs. By using ultimate quality chrome silicone steel and high precision manufacturing techniques, all Nitron springs are designed to ensure that optimum travel, high performance and rate consistency is achieved.

To achieve an optimised and efficient suspension set-up, it is just as important to ensure that the correct type of helper springs are employed where required. With this in mind we are also pleased to offer a range of helper springs made to our own designs.

All Nitron springs are finished with the unique and highly durable FLEXaLIGHT coating for an impressive long life finish.



## ADJUSTABLE DROP-LINKS

Installation of the correct length drop-links is a crucial part of many race suspension set-ups. Designed and manufactured to typically high standards and employing lightweight alloy components where possible, Nitron drop-links are available in a range of sizes to suit most applications.

## LOTUS WISHBONE BEARING KITS

Standard cars come with a rubber/metal combination bush, which isolates noise well and is usually the only option for a manufacturer. However, when it comes to freedom of rotation and accurate location of the wishbone ends under load, it leaves a lot to be desired.

The Nitron wishbone bearing kit replaces all the inner rubber bushes with 15mm Teflon-lined spherical bearings. On either side of the bearing is a spacer machined from 7075-T6 hard anodised aluminium. These spacers have an 'O' ring seal placed on them before they are inserted into the bearing.

There is no need to tighten these into a particular position like rubber bushes and, as they are fully sealed, they will not require any maintenance.

The kit comprises of 14 shorter and 2 longer bearing assemblies for the front end of the rear lower wishbones.



## SHOCK SERVICING & DEVELOPMENT

Nitron shocks are built to perform and to last, manufactured from the best possible materials to withstand years of environmental attack. However, as with every high-performance component on a vehicle, some level of servicing is recommended to maintain its best performance.

Nitron's service is unlike many others, with every shock being returned in an 'as new' technical condition. Nitron replace all the critical components, fluids, gas, seals and bushes. Every race shock is also checked and calibrated on a dynamometer to ensure that it performs to the same exacting standards as it did when it first left the factory.

Approved service centres are strategically located around the world to ensure that your shock never has to travel far to be maintained.



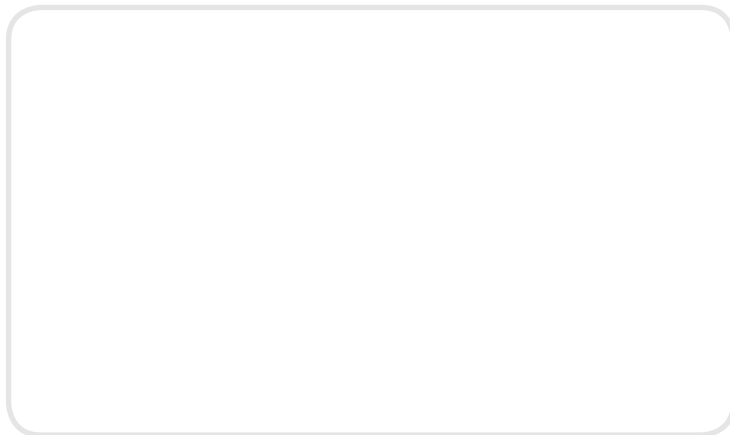
Every shock is also marked with a unique identity – so no matter where in the world it is serviced, our engineers have access to data that provides the unique and precise specifications required.

Winning races in a modern and highly competitive series requires a perfectly setup machine and many Nitron service

centres have a dedicated team on hand to work directly with racers to develop custom valving characteristics and form an integral part of any serious racing campaign. Contact your local service centre to discover how you can receive track-side assistance and bespoke development consultation.



VLN Ford Fiesta image courtesy of Nürburgring Bridge to Gantry.



ENGINEERED IN THE UK

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

Nitron Racing Systems Ltd. | Unit 20 | Avenue One | Station Lane | Witney | Oxfordshire | OX28 4XZ | United Kingdom

 +44 (0) 1993 849 449 |  [sales@nitron.co.uk](mailto:sales@nitron.co.uk) |  [www.nitron.co.uk](http://www.nitron.co.uk)