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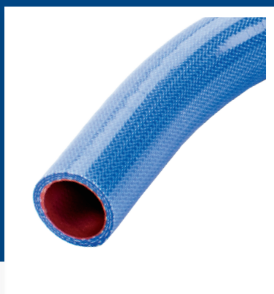
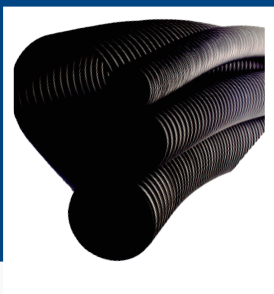
PRODUCTS BROCHURE





Fenner | Air & Fluid Handling

ENGINEERED IN BRITAIN

PART OF A GLOBAL MANUFACTURING GROUP WITH A MISSION TO DESIGN, DEVELOP AND DELIVER INNOVATIVE POLYMER PRODUCTS, THAT PROVIDE SUSTAINABLE VALUE FOR OUR STAKEHOLDERS

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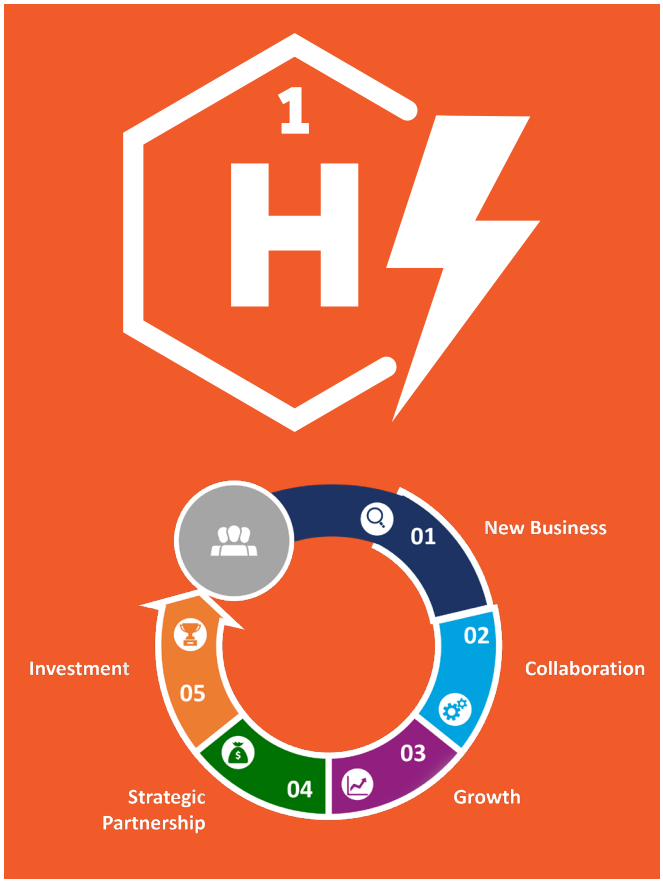
Index

An Engineering Solution Provider

Offering advanced silicone and organic rubber products for air & fluid handling, used in a wide range of diverse industries.



NEXT GENERATION HOSES

Working with our customers to ensure that our hoses are suitable for the next generation of Engines, Fenner have designed and manufactured hoses specifically for use on Hydrogen & Electric Vehicle engines.

Leveraging our extensive experience and knowledge within both Silicone & Organic EPDM rubber hoses our New Product Introduction team (NPI) have collaborated closely with several development partners to design and manufacture hoses for the next generation of engines.

STRATEGIC PARTNERS

We develop long term strategic partnerships with our customers. Preferring to build a two way relationship through collaboration and knowledge sharing to better understand requirements which in turn helps us to provide a more tailored product and service.

We Meet the Most Rigorous Standards in the World

James Dawson products are fully compliant with the highest global On and Off Highway specification requirements.

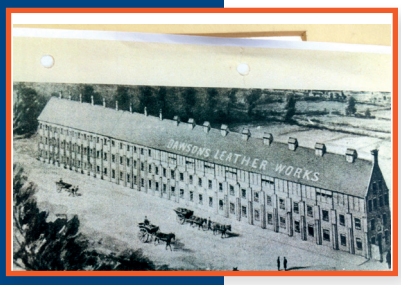
ACCREDITED TO ISO 14001 AND ISO 9001

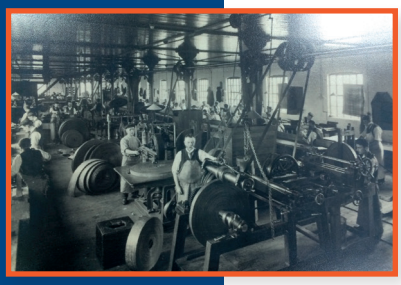
In-house engineering, along with inhouse rapid prototype for tooling and test parts assures a seamless integration of products to the end user.

Over 50 years of expertise

In design and manufacturing of silicone and organic rubber hoses used for air & fluid handling, we work with global OEMS to provide a tailored service for our valued customers.

James Dawson was founded in 1865 in Lincoln, UK





1865

James Dawson originally set up a business making leather boots and moved on to make leather belting for local agricultural machinery.

1914

Moulded endless V Belts were developed for large horse power machinery and this department aided the companys growth and survival in the tough times after the war, when many local business' closed.

1970

The introduction of new silicone rubber products, in particular the manufacture of silicone rubber hose for commercial and passenger transport further diversified product ranges and aided the company growth.

1978

James Dawson & Son Ltd joined the Fenner Group becoming the "Special Belting Division"

2003

James Dawson opened a factory in Shanghai, China known as Dawson Polymer Products.

2006

By this time, James Dawson had developed such a highly successful and diverse product range that sub divisions were created, such as Fenner Precision who focused on the precision belting range.

2018

Fenner Group is bought by Michelin for approximately £1.3billion and incorporated into their High Tech Materials Division.

2023

James Dawson continues to manufacture and export world class hoses and ducting from our Lincoln site.

World Class Technical Centre

Utilising the latest equipment allows our technical team to vigorously test each new hose variant to ensure performance.

DYNAMIC TEST RIG

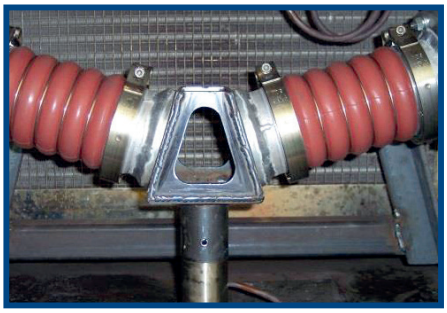
- Simulate internal and external heat from –50°C to 300°C
  (option to set internal and external temperature to different settings)
- Simulate adapter displacement up to +/- 25mm
- Simulate static and dynamic pressure (up to 5 bar)
- Simulate radial movement during testing
  (real live application for example vibrations / pulsation)
- Various test cycles can be programmed to simulate real life application

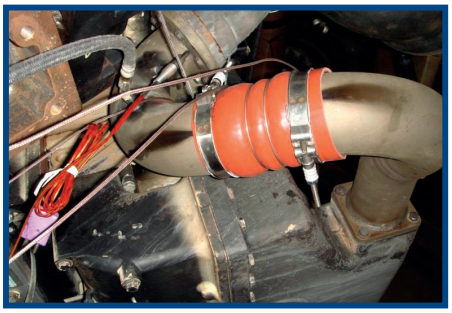
CLAMP PRESSURE TESTING

- Test rig in order to measure clamp pressure
- Identify potential leak points
- Dynamic load or static load can be applied
- Mobile equipment (can be uses at customer side)

Business Sectors

- **Construction**
- **Agriculture**
- **Marine**
- **Hydrogen Vehicles**
- **Electric Vehicles**
- **Mining**
- **Diesel Engine**
- **Power Generation**
- **OEM On Highway** (Truck and Bus)
- **Specialist Vehicles & Applications**





OUR RANGE OF SILICONE, FLUOROSILICONE & FLUOROCARBON

SILICONE

- Wide Operating Temperature Range: -60°C to +260°C
- Resistant to UV, Ozone & General Weathering
- Retains Flexibility Throughout Lifetime

FLUOROSILICONE

- Wide Operating Temperature -40°c to +230°C
- Resistant to UV, Ozone and General Weathering
- Good flexibility retention
- Good oil and fuel resistance

FLUOROCARBON (VITON)

- Extremely Specialised Organic Polymer
- Excellent Resistance to Heat and Chemicals
- Heat Resistant up to 275°C / 527°F
- Liner for High Temperature & Chemical Resistance
- Commonly Used in Emission Control & Oil Drain Systems

CHARGE AIR COOLANT HOSE CA Series

Silicone charge air coolant hoses are primarily used within turbo charger applications inside diesel engines. Designed for high temperature and pressure applications with Stainless Steel restraining rings to reduce swell and increase hoop strength. Fluorocarbon liner available for increased petrochemical combustion residue resistance.

FEATURES & BENEFITS

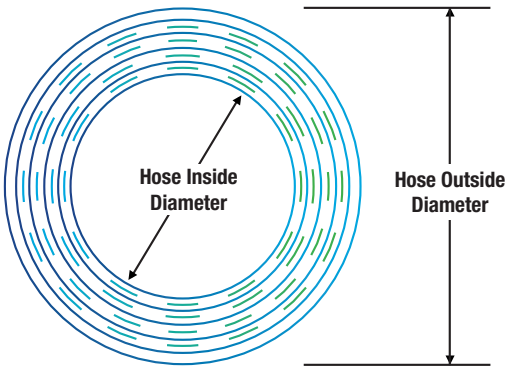
- 4 ply silicone polyester or aramid reinforced configuration
- Convolutions increase flexibility in high vibration situations
- Recommended for temperatures: -65ºF to +500ºF (-53.9ºC to +260ºC)
- Combines high performance and cost effectiveness
- UV and ozone resistant

TURBO HOSE TH Series

Silicone Turbo Hoses are primarily used within turbo charger applications inside diesel engines, offering longer lengths for a lower pressure environment with an additional fluorocarbon liner available for increased petrochemical combustion residue resistance.

FEATURES & BENEFITS

- 4 ply silicone aramid reinforced configuration
- Cost effective for a wide variety of turbocharger applications
- Provides excellent resistance for high temperature applications
- Recommended for temperatures: -65ºF to +500ºF (-53.9ºC to +260ºC)
  Note: Heat shield available, ask for further details
- Resistant to minor oil splash and petrochemical exposure, UV and ozone

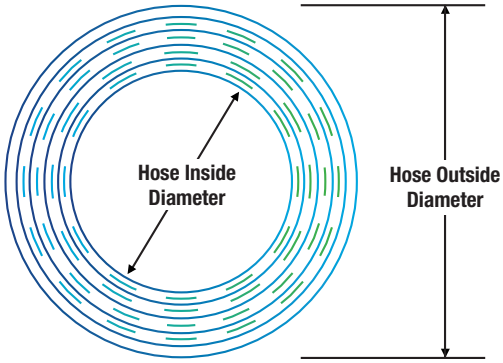


4 PLY COOLANT HOSE ST Series

Silicone coolant hoses are used to transport coolant within diesel engines. Engineered to provide the maximum performance capabilities whilst extending service life for reduced maintenance. Available with an Aramid reinforcement for higher temperature applications and additional plies available for higher pressure applications

FEATURES & BENEFITS

- Configuration: 4 Ply silicone polyester-reinforced
- Recommended for temperatures: -65ºF to 350ºF (-54ºC to +175ºC)
- Resistant to: electrochemical degradation, UV and ozone
- Available in larger diameters above 6” (152.40mm)
- Available colours: blue outer & blue inner or blue outer & red inner



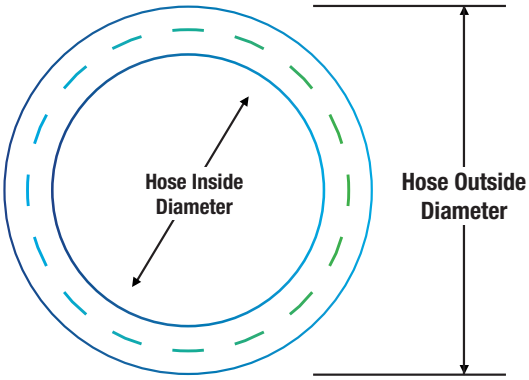
Meets and exceeds all performance and physical characteristics of SAE J20 R1, SAE J20 R1 H.T. Class A, TMC RP303B Grade I and Grade II, Mil Spec A-A-52426 and various heavy-duty OEM requirements.

HEATER HOSE EX Series

Heater hoses are used to transport coolant within diesel engines when the situation requires lower pressures and longer lengths than standard applications. Available in Single braided or Knit polyester reinforcement with heavy wall configurations for high pressure applications.

FEATURES & BENEFITS

- High burst strength and excellent heat resistance
- Recommended for temperatures: -65ºF to +350ºF (-53.9ºC to +176.6ºC)
- Aramid configuration available for temperatures up to +500ºF (+260ºC)
- Resistant to coolants, cold leaks, cracking, peeling, aging & ozone
- Meets and exceeds all performance and physical characteristics of SAE J20 R3, Class A
- Colours: Blue (also available with red inner)



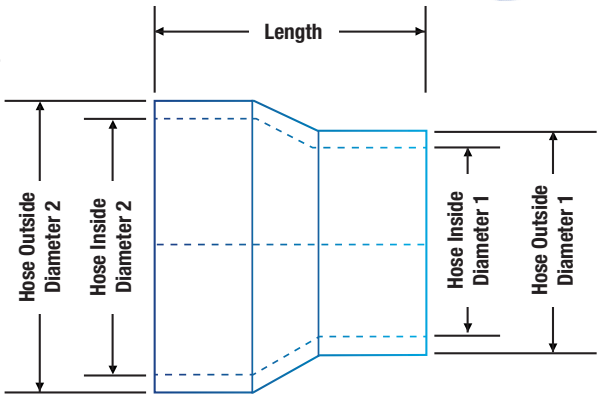
STEPPED HOSE SR Series

Utilised to transport different liquids and gasses internally within diesel engines whilst compensating for changes in spigot diameters. Constructed from 4 ply silicone with a polyester reinforcement with additional plies available for higher pressure applications and an Aramid reinforced hose for higher temperature applications.

FEATURES & BENEFITS

- Recommended for temperatures: -65ºF to 350ºF (-54ºC to +175ºC)
- Resistant to: electrochemical degradation, UV and ozone
- Available colours: blue outer & blue inner or blue outer & red inner

Meets and exceeds all performance and physical characteristics of SAE J20 R1, SAE J20 R1 H.T. Class A, TMC RP303B Grade I and Grade II, Mil Spec A-A-52426 and various heavy-duty OEM requirements.

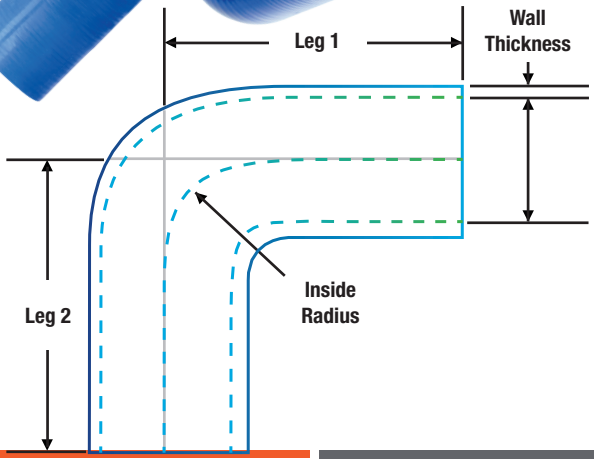


ELBOW HOSE EL9 Series

Used to transport a variety of liquids and gasses within diesel engines. Utilising a 4 ply silicone polyester reinforced configuration to provide strength and flexibility with an additional internal silicone liner to create a barrier to isolate transported medium.

FEATURES & BENEFITS

- Custom ply configurations available to meet flexibility and burst requirements
- Recommended for temperatures: -65ºF to +350ºF (-53.9ºC to +176.6ºC)
- UV and ozone resistant
- Meets and exceeds all performance and physical characteristics of SAE J20 R1, SAE J20 R1 H.T. Class A, TMC RP303B Grade I and Grade II, Mil Spec A-A-52426 and various heavy-duty OEM requirements.



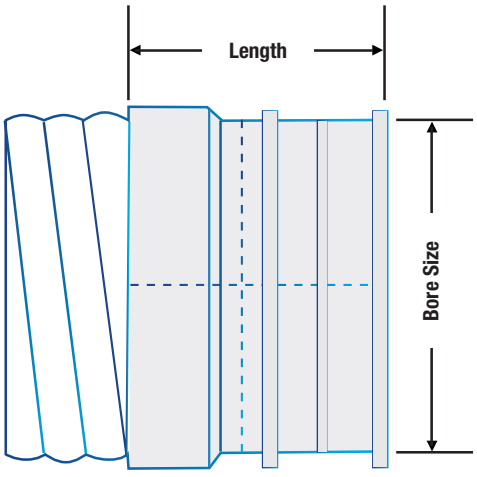
THERMOPLASTIC DUCTING TPE 400 STD

Constructed from recyclable thermoplastic elastomer (TPE) our range of ducting offers excellent standards of flexibility and durability with high resistance to ozone, weathering and engine compartment oil and fuel splashing.

Primarily used for heating , ventilation , air conditioning (HVAC) applications. Available in a variety of sizes starting at 25mm diameter (1”) to 152mm (6”) diameter. Constructed using single Ply thermoplastic ducting supported on polymer-coated semispring steel helix.

FEATURES & BENEFITS

- Recommended for temperatures: -40°F to 175°F (-40°C to +135°C)
- Resistant to: Vibration & flex fatigue, oil & fuel splashes, ozone & general weathering
- Also available: Injection moulded cuffs and other integral features on request
- Smooth bore for improved airflow



All hoses are 10 metres long. May be cut to length

OUR RANGE OF EPDM, PVC NITRILE, NEOPRENE & NEOTEX

EPDM

- Reinforced or Un-Reinforced (Subject to Operating Pressure)
- Fibre alignment Giving Optimum Hoop Strength and Burst Resistance
- Wide Temperature Range. From -40°C to +125°C (-40°F to 257°F)
- Hoses Meet Requirements of SAEJ20 R4 Class E
- Capability of Moulded-on Spouts and Moulded Inserts

PVC NITRILE

- Utilised for applications where excellent resistance towards oil, fuel and acid is required
- Wide Temperature Range from -40oC to +100oC (-40oF to 212oF)

NEOPRENE

- For use in dirty air and oil applications
- Good chemical stability and maintains flexibility over a wide range of temperatures -40°C to +110°C (-40oF to 230oF)
- Supplied in either 70° or 80° Shore A hardness

NEOTEX

For use in dirty air and oil applications

- Good chemical stability and maintains flexibility over a wide range of temperatures 40°C to +120°C (-40°F to 248°F)
- Supplied in 80° Shore A hardness

ORGANIC ONE - PIECE SOLUTION

Manufactured using EPDM, Pvc Nitrile, Neoprene or Neotex, James Dawsons organic hoses are hand built to specification by our highly skilled staff.

ONE-PIECE HOSE

Our distinctive compound allows us to replace formed metal pipework, short rubber cuffs and clips with a single one-piece hose, reducing both parts inventory and potential leak points.

- Reduces potential leak points
- Cost effective
- Lower parts inventory
- Potential weight reduction

LEGGED HOSE

The method of manufacture involved in producing the legged hose results in a single homogeneous unit.

HOSES WITH INSERTS

Hoses can be produced with inserts ranging from drainage nuts, radiator caps and brass adaptors for sensor units to fluid and air flow indicators.

LARGE BORE SHAPED & COMPLEX HOSES

Current manufacture allows production of hoses with inside diameter of up to 356mm (14”).

NeoTeX

The Versatile Neoprene Hose

NeoTex is a versatile Fibre Reinforced Neoprene allowing for higher pressure and vacuum resistance without need for metal reinforcement over neoprene hose. Suitable for clean and dirty air, plus oil applications, its cellulose fibre-reinforced construction provides up to 8 bar positive pressure 50mm diameter.

FEATURES & BENEFITS

- Increased dilation resistance. Up to 8 bar positive pressure (50mm bore)
- Unique compound. Cellulose fibre-reinforced neoprene
- Multi-Industry applications. Suitable for clean and dirty air, plus oil applications
- One-piece solution. Adaptable to fit any shape or space
- Link capabilities. Add connections without compromising integrity
- Wide Temperature Range. From -40°C to +120°C (-40°F to 248°F)

Certified: SAE-J20 International Standard, Class C

AD BLUE

Our engineered Ad Blue hoses utilise Peroxide cured EPDM to transfer Ad-Blue in and out of the tank.

FEATURES & BENEFITS

- Zinc, Calcium, and sulphur free Peroxide cured EPDM compound for Adblue applications
- One piece solution to fit any shape or space
- Wide temperature range -40°C to +150°C (-40°F to +302°F)
- Certified to SAEJ20R4 Class D3
- Add connections without compromising integrity

MADE IN BRITAIN

Fenner PRECISION POLYMERS
A MICHELIN GROUP COMPANY

At Fenner Precision Polymers, A Michelin Group Company, we are proud to keep your business in motion. As a supplier of critical components and engineered solutions for conveying, motion control and power transmission applications, our trusted brands are recognized globally for providing unique solutions that solve complex problems and build sustainable growth. We strive to partner closely with you so we can always provide expert-level support and powerful results that keep our world moving forward.

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