



Transportation Hose Products OVERVIEW



Transportation Hose Products



High Pressure Automotive Hose

OVERVIEW

The Goodyear Tire & Rubber Company is positioned at the forefront of product development of many hoses used in today's automotive, heavy-duty truck, off-road, and recreational vehicles. The keys to this development has been understanding and responding to the needs of our customers.



Goodyear Engineered Products Division produces all major types of vehicular hose: EOC, TOC, Fuel, Heater, A/C, Brake, and Power Steering

The products referenced herein are the foundation of 50 years of product development, many used to formalize specifications for **SAE**, **ASTM** and **DIN**.

If your needs extend beyond our present product base, we can work with you to design and validate a hose to meet your particular needs.



Transportation Hose Products



Product Line

- **AC Hose Products**

- Goodyear Transportation Hose is a leader in the development of refrigerant hoses designed to meet the varying needs of Air Conditioning systems on a variety of vehicles. Our Galaxy™ and DB Flex™ hoses provide world-class permeation resistance and moisture ingress characteristics.

- **Air Brake Hose**

- The combination of outstanding reinforcements and compounding provide the basis of our SAE J1402A Air Brake Hose construction. Goodyear Air Brake hose can be found on most major US truck and trailer brands, providing long life and excellent durability.

- **Vacuum Brake Hose**

- Goodyear offers straight and formed vacuum brake hoses and assemblies. Assemblies including associated fittings, clips and hardware can be quoted quickly, with fast turn-around of initial prototypes.



Transportation Hose Products



Product Line

•Hydraulic Brake Hose

Goodyear worked jointly with key automotive manufacturers and the DOT to develop the first hydraulic brake hose. Since then, Goodyear has continued to develop hoses which provide exceptional performance in fatigue life, moisture ingress resistance and low volumetric expansion.

•Power Steering Hose

The evolution of power steering systems has resulted in a broad product line., with each hose meeting specific system characteristics. We offer all of these hoses, meeting SAE J188, J189, J191, J2050, and J2076

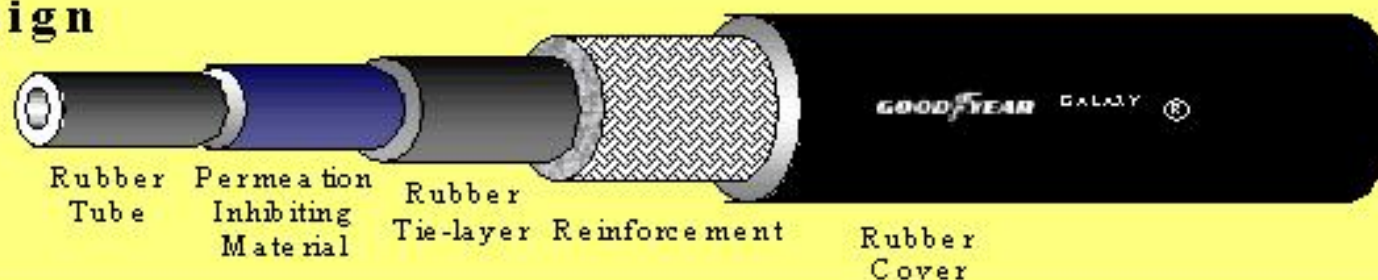


AIR CONDITIONING HOSE

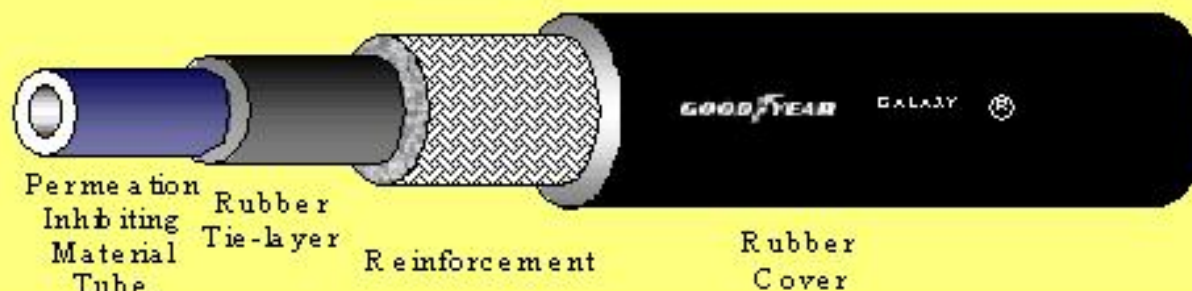
Goodyear manufactures all three main types of refrigerant hose for vehicle applications

Goodyear Air Conditioning Hose Construction Types

Barrier Design



Veneer Design



All-Rubber Design





Air Conditioning Hose

Goodyear A/C Hose constructions offer properties to meet a variety of operating conditions, with hoses to provide optimum permeation resistance, moisture ingress or noise abatement properties.

The following chart shows the evolution of our most popular constructions, in response to an ever-increasing environmental consciousness.

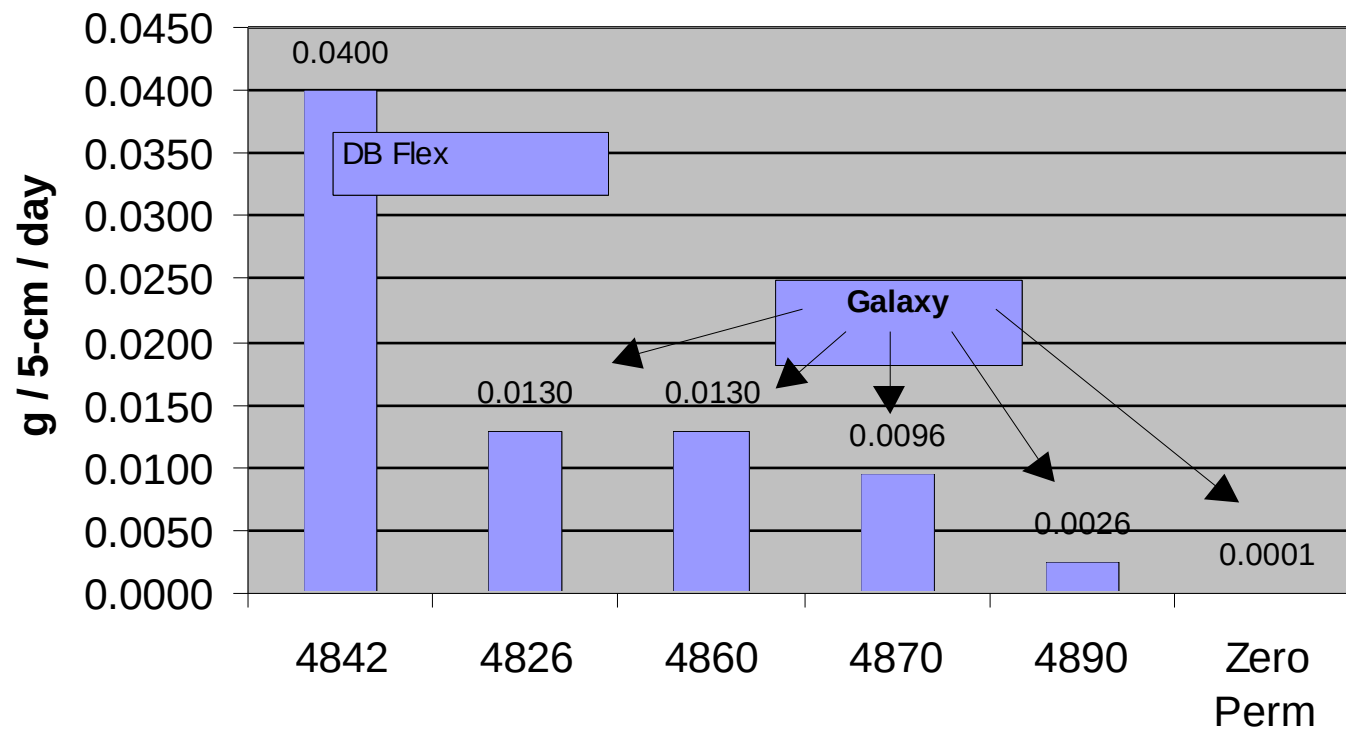


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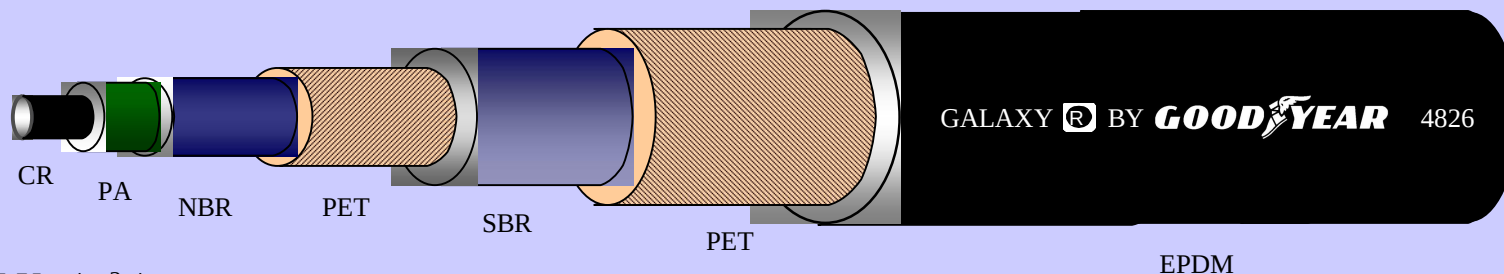


AC Hose Performance

Permeation Comparison 13/32" (10mm) hose



Galaxy™ 4826



Permeation: 1.77 Kg /m² / year

Moisture Ingression: 0.056 g / cm² / yr

Temperature Range -40°F to 257° F (-40°C / 125°C)

Features

- + Two Polyester spiral barrier hose
- + J51 A II Outside Diameters
- +Compatible with
 - +R-12 / R134a refrigerants
 - + Mineral oil / PAG's
- + Dimensionally Stable
- + Flexible -- Easy to Route

Meets SAE J2064 TYPE C Class II

DASH	SIZE		INSIDE DIAMETER				OUTSIDE DIAMETER				WEIGHT	
			INCH		mm		INCH		MM			
	INCH	mm	min	max	min	max	min	max	min	max	lbs/ft	kg/m
-6	5/16	8	0.307	0.337	7.8	8.6	0.719	0.781	18.3	19.8	0.20	0.30
-8	13/32	10	0.401	0.436	10.2	11.1	0.875	0.937	22.2	23.8	0.28	0.42
-10	1/2	13	0.490	0.535	12.4	13.6	0.969	1.031	24.6	26.2	0.33	0.49
-12	5/8	16	0.615	0.660	15.6	16.8	1.094	1.156	27.8	29.4	0.38	0.57



Transportation Hose Products

Galaxy™ 4842 All-Rubber Hose



Permeation: 7.7 Kg / m² / yr

Moisture Ingression: 0.007 g / cm² / yr

Temperature Range

-40°F to 275° F (-40°C / 135°C)

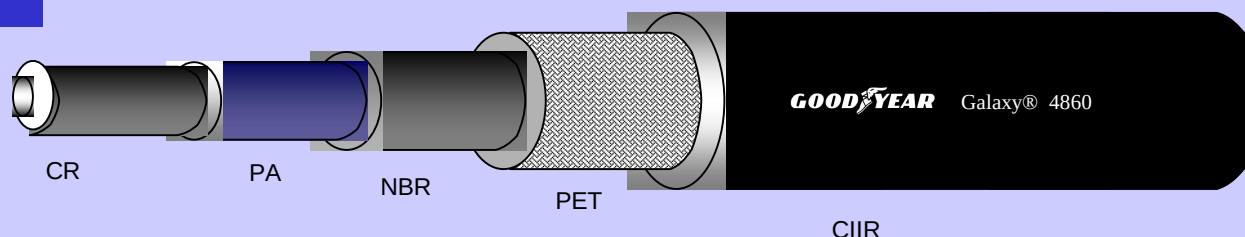
Features

- S Single braid rubber hose)
- S Reduces noise and vibration
- S Excellent Moisture Resistance
- S Meets GM 10013C and Delphi SD2-254 specifications (5/8 & 3/4)
- S Meets Renault 32-02-017G specifications (13/32 & 5/8) and Ford S95UW-19B591-AA (5/8)
- S Compatible with:
 - i R134a Refrigerants & PAG oil

Meets SAE J2064 Type A Class II

DASH	SIZE		INSIDE DIAMETER				OUTSIDE DIAMETER				WEIGHT	
			INCH		mm		INCH		MM			
	INCH	mm	min	max	min	max	min	max	min	max	lbs/ft	kg/m
-10	13/32	10	0.398	0.429	10.1	10.9	0.846	0.906	21.5	23.0	0.24	0.36
-12	5/8	16	0.620	0.660	15.7	16.8	1.035	1.078	26.3	27.4	0.28	0.42
-14	3/4"	19	0.745	0.785	18.9	19.9	1.230	1.270	31.2	32.2	0.42	0.62

Galaxy™ 4860



Permeation: 2.3 Kg / m² / yr

Moisture Ingression: 0.038 g / cm² / yr

Temperature Range

40⁰ C to +135⁰ C (-40⁰ F to +275⁰ F)

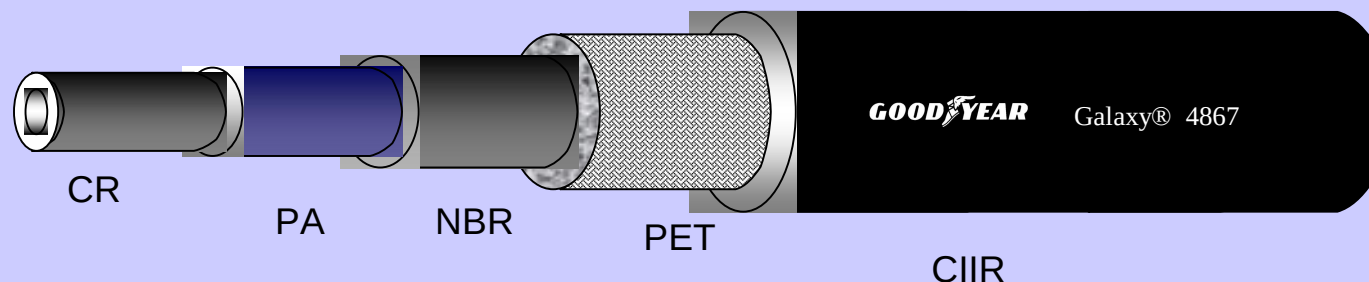
Features

- Single Braid "Reduced Diameter" Barrier Hose
- Light Weight and Flexible
- Meets Many Global OE Specifications
- Compatible with:
 - R12/R134a Refrigerants
 - Mineral Oils / PAG's

Meets SAE J2064 Type C Class I

DASH	SIZE		INSIDE DIAMETER				OUTSIDE DIAMETER				WEIGHT	
			INCH		mm		INCH		MM			
	INCH	mm	min	max	min	max	min	max	min	max	lbs/ft	kg/m
-6	5/16	8	0.309	0.339	7.9	8.6	0.560	0.600	14.2	15.2	0.09	0.13
-8	13/32	10	0.410	0.440	10.2	11.2	0.660	0.700	16.8	17.8	0.12	0.18
-10	1/2	13	0.490	0.530	12.5	13.5	0.745	0.785	18.9	19.9	0.13	0.19
-12	5/8	16	0.615	0.655	15.6	16.6	0.910	0.950	23.1	24.1	0.20	0.30

Galaxy™ 4867



Features

Permeation : 1.1 Kg /m² / yr

Moisture Ingression: XXX g / cm²/ y

Temperature Range

-22°F to 257° F (-30°C / 125°C)

- S Single Braid Barrier Hose
- S Used in Heavy Truck & Agricultural Vehicle Applications
- S Excellent Moisture Resistance
- S Compatible with:
 - i R12 / R134a Refrigerants
 - i Mineral oils / PAG's

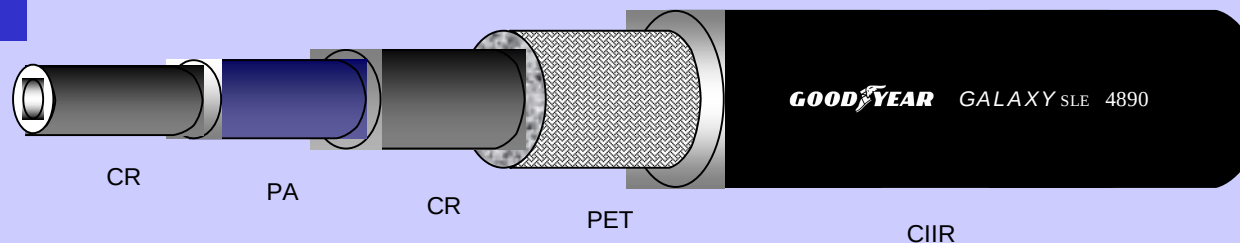
Meets SAE J2064 Type C Class I

DASH	SIZE		INSIDE DIAMETER				OUTSIDE DIAMETER				WEIGHT	
			INCH		mm		INCH		MM			
	INCH	mm	min	max	min	max	min	max	min	max	lbs/ft	kg/m
-14	3/4	19	0.745	0.785	18.9	19.9	1.105	1.145	28.1	29.1	0.26	0.39



Transportation Hose Products

Galaxy™ 4890 SLE



Permeation: 0.60 Kg / m²/ yr

Moisture Ingression: 0.03 g / cm² /yr

Temperature Range

40° C to +135° C (-40° F to +275° F)

Features

- : Significant reduction in Permeation
- : Dimensionally equivalent to Goodyear 4860 hose
- : Improved Butyl cover provides significant reduction in moisture ingress
- : Incorporates an improved Poly-amide barrier between two elastomeric layers
- : Compatible with R134A and most refrigerant blends and compressor lubricants

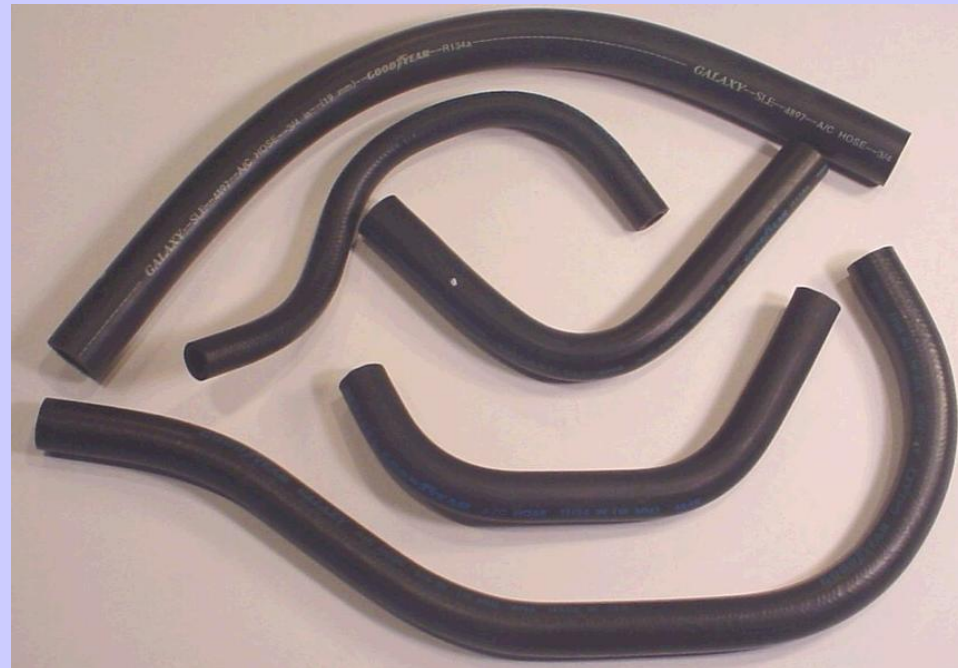
Meets SAE J2064 Type C Class I

DASH	SIZE		INSIDE DIAMETER				OUTSIDE DIAMETER				WEIGHT	
			INCH		mm		INCH		MM			
	INCH	mm	min	max	min	max	min	max	min	max	lbs/ft	kg/m
-6	5/16	8	0.309	0.339	7.9	8.6	0.560	0.600	14.2	15.2	0.09	0.13
-8	13/32	10	0.410	0.440	10.2	11.2	0.660	0.700	16.8	17.8	0.12	0.18
-10	1/2	13	0.490	0.530	12.5	13.5	0.745	0.785	18.9	19.9	0.13	0.19
-12	5/8	16	0.615	0.655	15.6	16.6	0.910	0.950	23.1	24.1	0.20	0.30
-14	3/4"	19	0.745	0.785	18.9	19.9	1.060	1.100	26.9	27.9	0.23	0.34

Formed A/C Hose

Goodyear can manufacture factory-formed A/C hoses in order to handle many of the unique hose routing situations common in today's tight under-hood environment.

Provide us with your formed hose coordinates and we will quote a hose to meet your needs.





Transportation Hose Products

Galaxy™ ZERO Perm

Galaxy™ for Alternate Refrigerants

The next generation of hose to meet tomorrow's Global Environmental requirements are currently under development.



AIR BRAKE HOSE

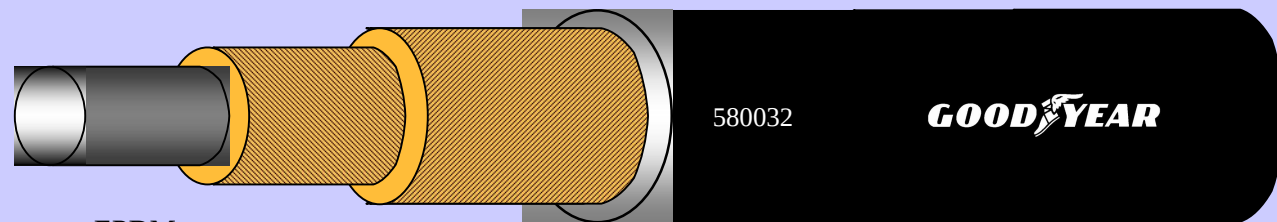
Sold through approved couplers



Transportation Hose Products



SAE J1402 Air Brake Hose



EPDM

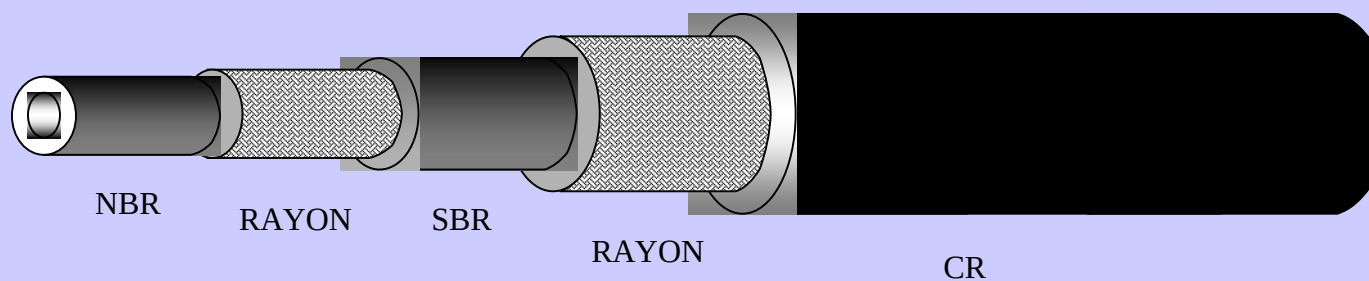
PET

EPDM

Features

- S 2 -Spiral Polyester Reinforcement
- S Meets DOT FMVSS-106 Requirements
- S Temperature Range -40°F to +200°F

SIZE	INSIDE DIAMETER				OUTSIDE DIAMETER				WEIGHT	
	INCH		mm		INCH		MM		lbs/ft	kg/m
	min	max	min	max	min	max	min	max		
1/4	0.227	0.273	5.8	6.9	0.594	0.656	15.1	16.7	0.13	0.19
3/8	0.352	0.398	8.9	10.1	0.719	0.781	18.3	19.8	0.17	0.25
1/2	0.469	0.531	11.9	13.5	0.844	0.906	21.4	23.0	0.21	0.35

SAE J1402 - Low Temp**Features**

- Meets MIL-H-3992 Type 1 Class 1
- Temperature -65°F - 200°F (-54°C - 93°C)

NOM SIZE	ID		OD		WEIGHT		MIN BURST	
	mm	in	mm	in	Lbs/ft	Kg/m	PSI	BAR
3/8"	9.12 - 9.93	.359 - .391	18.26 - 19.84	.719 - .781	.178	.265	900	61



VACUUM BRAKE HOSE

Goodyear manufactures both straight
and formed hose to meet many
stringent applications



Transportation Hose Products

SAE J1403 Vacuum Brake Hose



Features

- s EPDM construction with single polyester or Rayon spiral reinforcement.
- s Validated to SAE J1403 & FMVSS106 specifications
- s Temperature Range: -40 F to 275 F (-40 °C to 135 °C)
- s Available as a formed or straight product with a smooth cover finish
and with or without an expansion. Low Push-on Force hose also available.

SIZE	INSIDE DIAMETER				OUTSIDE DIAMETER				MIN BURST	
	INCH		mm		INCH		mm		psi	BAR
	min	max	min	max	min	max	min	max		
11/32	0.330	0.370	8.4	9.4	0.660	0.720	16.8	18.3	350	24
15/32	0.450	0.500	11.4	12.6	0.780	0.840	19.8	21.3	350	24
1/2	0.470	0.520	12.10	13.30	0.810	0.870	20.60	22.10	350	24

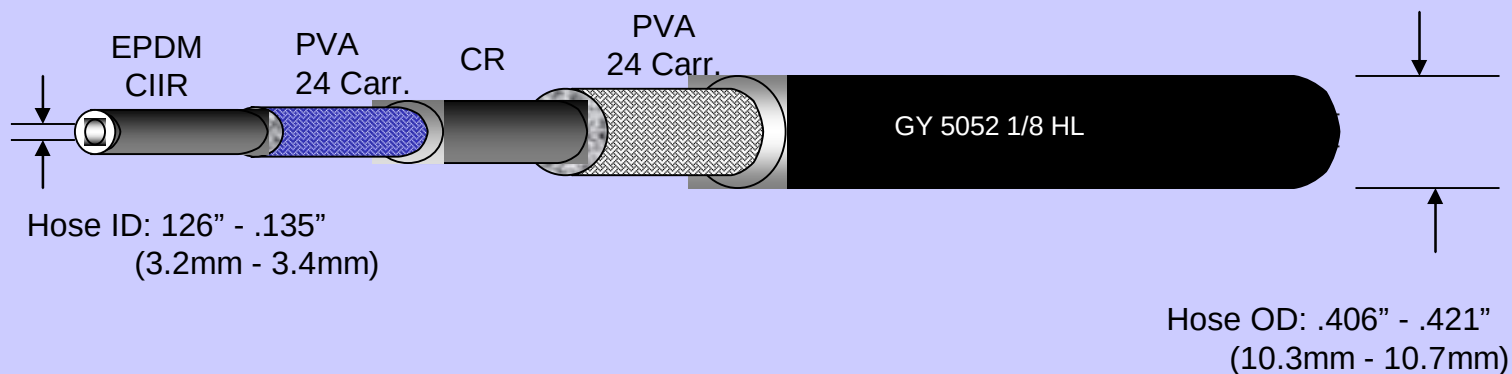


HYDRAULIC BRAKE HOSE

Goodyear sells hose only to certified
brake hose couplers

Hydraulic Brake Hose

GY 5052

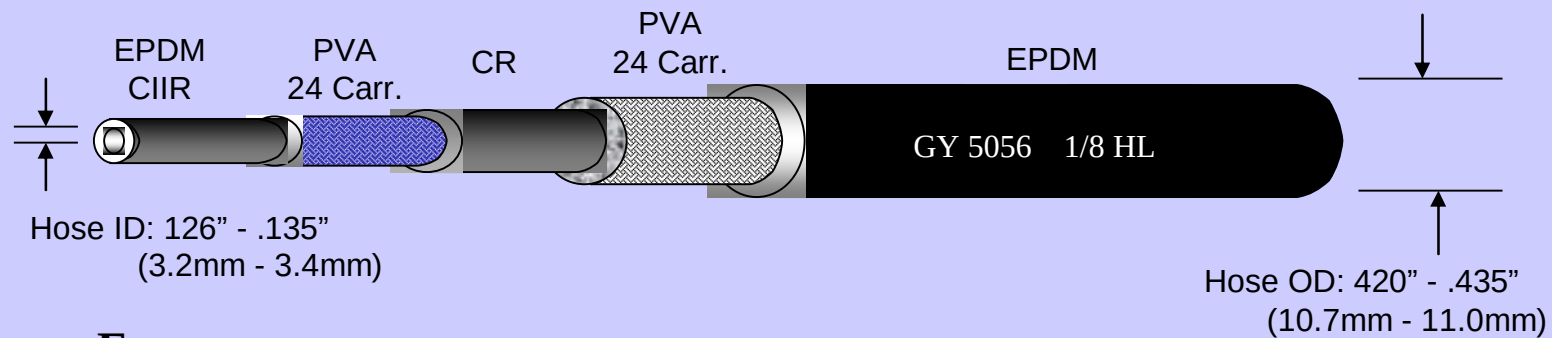


Features

- s Reduced hose size 10.5mm O.D.
- s Two braid PVA reinforced hose
- s Meets FMVSS-106, SAE J1401, MS-EA70, and ESA-M96D4-A
- s Temperature Range -50° C to 121°C
- s Compatible with DOT 3, DOT 4 and most non-petroleum based brake fluids
- s Low Volumetric Expansion
- s Excellent moisture resistance
- s Excellent Fatigue Life
- s Superior weather resistance cover material

Hydraulic Brake Hose

GY 5056



Features

- s Two braid PVA reinforced hose
- s Meets FMVSS-106, SAE J1401 and ESA-M96D4-A
- s Complies with Military Standard MIL-H-13719 E
- s Temperature Range -50° C to 121°C
- s Compatible with DOT 3, DOT 4 and most non-petroleum based brake fluids
- s Excellent moisture resistance
- s Superior weather resistance cover material



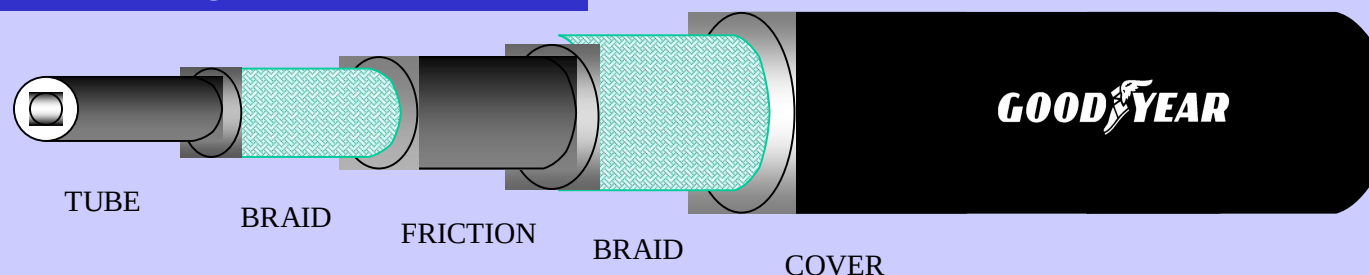
POWER STEERING HOSE

Sold through couplers of OE and
aftermarket hose



Transportation Hose Products

Power Steering Hose



AVAILABLE SPECIFICATIONS

- SAE J188** High Volumetric Expansion Type - Pressure Power Steering Hose
 Type I 3-8 cc/ft
 Type II 8-17 cc/ft
- SAE J189** Power Steering Return Hose
- SAE J191** Low Volumetric Expansion Type - Pressure Power Steering Hose
- SAE J2050** High Temperature/ High Pressure - Pressure Power Steering Hose

SPECIFICATION	INSIDE DIAMETER				OUTSIDE DIAMETER				WEIGHT	
	INCH		mm		INCH		mm		lbs/ft	kg/m
	min	max	min	max	min	max	min	max		
SAEJ188 TYPE I	0.365	0.398	9.27	10.11	0.750	0.813	19.05	20.65	0.204	0.303
SAEJ188 TYPE II	0.359	0.398	9.12	10.11	0.750	0.813	19.05	20.65	0.192	0.286
SAEJ189*	0.344	0.390	8.74	9.91	0.625	0.688	15.88	17.48		
SAEJ191	0.240	0.270	6.10	6.99	0.552	0.592	14.02	15.04	0.107	0.159
SAEJ2050	0.370	0.405	9.40	10.30	0.680	0.730	17.27	18.54	0.144	0.214
* Spiral Construction										