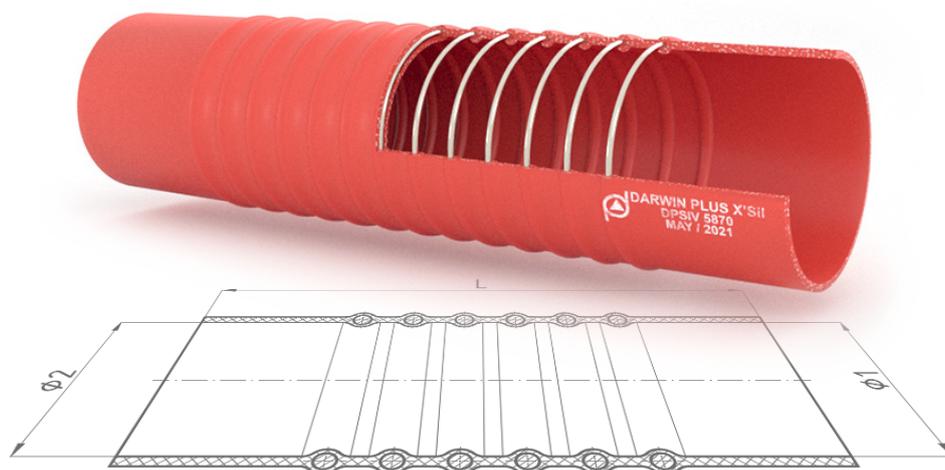


CATALOG

SILICONE & RUBBER HOSES

DARWIN PLUS



A  *ShreeGee* Product

2021

SHREEGEE WARRANTY

Darwin Plus guarantees the compliance of hoses/sleeves with the requirements of international and Russian standards, provided that the consumer observes the conditions of transportation, storage, installation and operation established in this Technical Specification. Upon the expiry of the guaranteed storage period, the use of hoses is considered acceptable, provided that their properties indicated in the SGH 1801 Specification are preserved. If the requirements are met, the consumer makes a decision concerning the possibility of their application. The decision shall be documented officially with an act or report.

DARWIN PLUS products are hereby guaranteed to be free from defects in materials, construction (if designed by the ShreeGee factory) and workmanship at the time of delivery, and are guaranteed to comply with production specifications or agreed specifications. The warranty for DARWIN PLUS products is valid for one year or 100,000 km of run, provided that they are properly installed by a qualified technician using special tools and subject to the installation instructions. The maintenance intervals indicated by the equipment manufacturer are only binding for the period of the warranty period specified above. In all warranty cases, an analysis of the respective DARWIN PLUS products shall be carried out.

The above analysis is based on the following criteria:

Analysis of defective products;
Engineering assessment and examination results; Installation conditions;
Operating conditions;

Recommendations applicable to original equipment.

The warranty does not cover the following cases:

- Failure to comply with the transportation and storage conditions;

- A defect resulting from natural wear and tear of the product;
- Installation in a non-professional workshop;
- Installation without modern equipment and appropriate tools;
- Installation, maintenance and replacement in violation of the instructions for the original products;
- Operation in improper conditions (changes in the vehicle design, participation in races, etc.);
- Contamination of the product with foreign inclusions or materials, aggressive liquids, etc.
- Failure not caused by our products;
- Use of counterfeit products;



Packaging: In accordance with the logistic sheet, DARWIN PLUS hoses are supplied in the package that protects them against deformation, damage and loss during transportation. In addition, fuel hoses are protected with plugs and individual package in order to avoid the contamination of internal surfaces. By agreement with the consumer, another type of the package and container is allowed, which ensures the use of mechanical means during the performance of loading and unloading operations.

Packaged hoses can be transported by all means of transportation in closed vehicles subject to the transportation rules applicable to each type of vehicle.

Storage: Hoses shall be stored in closed rooms at a temperature from 0 °C to +25 °C on racks in a packed form or on the floor in containers under conditions that exclude their deformation and

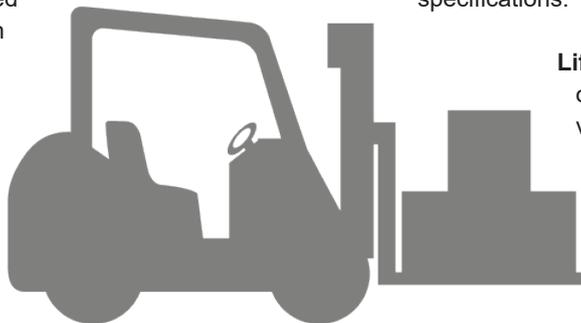
PACKAGING, TRANSPORTATION AND STORAGE

damage. It is unacceptable to expose rubber goods to direct sunlight, oil, gasoline, kerosene, acids, alkalis, and gases harmful to rubber goods (VMQ, FS, FK, EPDM, AEM, NBR, NR, NE, polyurethane and HNBR).

In the case of storage of hoses at a sub-freezing temperature, some rubber goods become rigid; such goods shall be kept before testing or assembly at a temperature of (20-5) °C for at least 24 hours so that they could take their original shape.

Storage period: Maximum 5 years* based on standard storage specifications.

Lifetime: In accordance with standards or instructions of the equipment/ vehicle manufacturer.



***The warranty is only valid if the storage, installation and operating conditions are complied with in accordance with the technical standards**

SILICONE & RUBBER HOSES. CLASSIFICATION

SILICONE HOSES TYPES



DPSL



DPSI и DPSII



DPSIR



DPSIH



DPSIS и DPSIV



DPSLV



DPBL и DPBI



SG



DPEL, DPAL DPNL



DPEI, DPEII, DPAI, DPAII, DPNI, DPNII



DPEIH, DPAIH DPNIH



DPEIS, DPAIS и DPNIS
DPEIV, DPAIV и DPNIV



DPHI



SGB

RUBBER HOSES TYPES

1. DARWIN PLUS SILICONE HOSES

Multilayer silicone rubber.

Reinforcement with two or three layers of polyester fabric; Silicone hoses are resistant to coolants, ozone, climatic influences, sunlight and extreme ambient temperatures.

Specification:

Working medium: coolant, air, exhaust gases, air with oil vapors.

Design:

Material: Silicone based rubber compound.

Blue compound for the temperature range from -50 to 130 °C.

Red compound for the temperature range from -50 to 200 °C.

Working pressure: 2 atm (max. burst 7 atm).

Reinforcement: Polyester.

No. of layers: 2-4 (depends on the inner diameter).

Surface: Glossy / Nylon Finish.



ADVANTAGES:

- Preservation of the physical dimensions of the product with multiple temperature drops.
- Elasticity that ensures a tight and even fit of parts to clamps and connecting surfaces. Over the course of time, rubber hardening and cracking do not occur, the tightness and joints of the products are preserved, the working fluid does not flow out, and foreign medium does not enter the system.
- Durability and economy, the operating costs of silicone rubber goods are lower and the service life is longer than in case of similar rubber goods, which harden and crack after a few years.
- Strength, high wear resistance by virtue of the characteristics of the materials used and the production process in which the adhesion of silicone rubber to the reinforcing fabric occurs.
- Resistance to the effects of solar radiation, aggressive chemicals, coolant fluids, antifreeze agent, ozone and other gases, as well as oil vapors.
- Easy to install and replace.

Types of DARWIN PLUS silicone hoses:

- DPSL silicone angle hose
- DPSI & DPSII silicone straight radiator hose
- DPSIR straight silicone hose with reinforcement rings
- DPSIH straight silicone damper hoses
- DPSIS straight corrugated silicone hoses reinforced with steel spring
- DPSLS angle corrugated silicone hoses with spring
- DPBLS Silicone branch hoses

DARWIN PLUS Silicone hoses meets requirements of standards:

- ASTM D2000 (Standard Classification System for Rubber Products in Automotive Applications)
- SAEJ20 (This SAE Standard covers reinforced and flexible hoses intended for use in water and ethylene glycol-based engine-coolant system applications)
- GOST 28860-90 (Russian standard operating in Russia and CIS countries) (Rubbers and latexes)
- GOST 14680-79 (Russian standard operating in Russia and CIS countries) (Heat-resistant synthetic rubber) GOST 10362-76 (Russian standard operating in Russia and CIS countries) (Rubber hoses)
- TC SGHX'Sil 1801 (ShreeGee technical conditions)

LABELING OF STANDARD SILICONE SERIES OF HOSES DPSSL/DPSI

DARWIN PLUS DPSSL 5770

DARWIN PLUS – Trademark ←

DPSSL – Type of silicone hose ←

- DP - DARWIN PLUS
- S - Silicone based rubber compound.
- I - Straight.
- L - Angle.

- DPSSL - Angle hoses 90° 45° & 135°.
- DPSI - Straight hoses 500 & 1000 mm.
- DPSII - Straight hoses 1500, 2000, 2500 & 3000 mm.
- DPSIR - Straight hoses with 2 to 10 reinforcement rings.
- DPSIH - Damper hoses.
- DPSIS - Straight hoses with SS spring in hose wall.
- DPSIV - Straight hoses with SS spring inside hose.
- DPSSLV - Angle hoses with SS spring inside hose.
- DPBLS - Hoses with branch.

5770 - the article corresponds to the size 70x70x150;
 Ø inlet (mm) x Ø outlet (mm) x length (mm) ←

2. RUBBER EPDM, AEM, NBR & HNBR HOSES



Black rubber hoses and hoses for cooling and heating in the automotive and agricultural industries DARWIN PLUS "DARWIN PLUS" are made from a high-quality rubber compound based on EPDM, AEM, NBR and HNBR rubber, depending on the operating temperature and the operating medium.

The outer casing of the hoses is resistant to coolant fluids, ozone, climatic effects, sunlight, and ambient temperature.

Specification:

Working medium: Coolant, air, hot air with oil vapors, oil, motor oils, mineral oils, diesel fuel & gasoline.

Marking (as per compound)	Application	Working medium	Working temperature
DPE (EPDM)	cooling and heating systems	Coolant and air	from -40 to +120 °C (for short duration up to +150 °C)
DPA (AEM)	crankcase ventilation system, gas exhaust system	Oils, hot air with oil vapors	from -30 to +150 °C (for short duration up to +175 °C)
DPN (NBR)	crankcase ventilation system, gas exhaust system	Engine oils, mineral oils and fuels	from -40 to +100 °C (for short duration up to +120 °C)
DPHR (HNBR)	power system (fuel lines, exhaust pipes and charge air systems)	Diesel fuel, gasoline and oils	from -40 to +150 °C (for short duration up to +160 °C)

The material properties of AEM, NBR and HNBR oil-petrol resistant rubbers provided for reference only. For an accurate selection of material, please contact our specialists info@shreegeeimpex.com

DESIGN

The material properties of AEM, NBR and HNBR oil-petrol resistant rubbers provided for reference only. For an accurate selection of material, please contact our specialists: info@shreegeeimpex.com

Material: Rubber compound based on

- EPDM (Ethylene Propylene Diene Monomer rubber)
- AEM (Ethylene Acrylic rubber)
- NBR (Nitrile-butadiene Rubber)
- HNBR (Hydrogenated Nitrile Butadiene Rubber)

Working pressure 0,4 MPa (for diameters up to Ø 40 mm), 0,2MPa (for diameters more than Ø 40 mm).

The maximum value of the negative pressure of the working medium upto 0,01 MPa.

Burst pressure pb: 2 x Working pressure.

Reinforcement - Polyester thread.

Wall thickness from 4 to 7mm depending on inner diameter and working pressure.

Surface: Glossy finish, Matte finish, Color black.

ADVANTAGES

- Highly elastic rubber (hardness range from 40 to 90 Shore A)
- The increased thickness prevents cold water leakage and curing at low temperatures Heat resistance
- Resistant to coolants, ozone and surrounding environment.

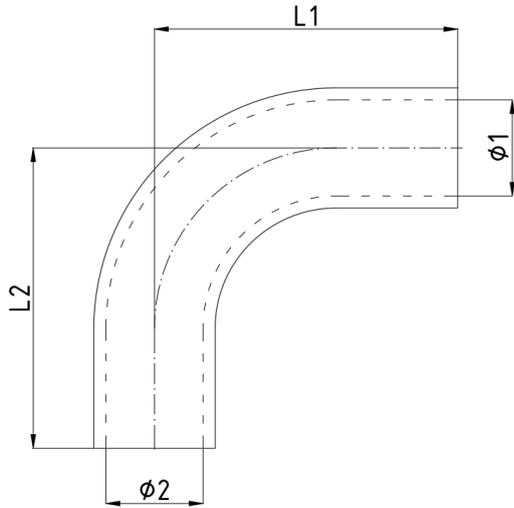
Types of DARWIN PLUS rubber EPDM, AEM, NBR & HNBR hoses:

- DARWIN PLUS DPEL, DPAL & DPNL angle hoses 45°, 90° & 135°.
- DARWIN PLUS DPEI ,DPEII,DPAI,DPAII,DPNI & DPNIi straight rubber hoses.
- DARWIN PLUS DPEIH,DPAIH & DPNIH rubber damper hoses.
- DARWIN PLUS DPEIS,DPAIS & DPNIS straight corrugsted hoses with spring (corrugated hoses).

DARWIN PLUS rubber hoses are manufactured as per below mentioned standards:

- ASTM D2000(Standard Classification System for Rubber Products in Automotive Applications);
- SAE J20 (This SAE Standard covers reinforced and flexible hoses intended for use in water and ethylene glycol-based engine-coolant system applications);
- SAE J30(This SAE standard covers fuel, oil, or emission hose for use in coupled and uncoupled applications, for use with gasoline, oil, diesel fuel, lubrication oil, or the vapors present in either the fuel system or in the crankcase of internal combustion engines in mobile or stationary applications.)
- GOST 10362-76 (Russian standard operating in Russia and CIS countries) (Rubber hoses);
- TC SGBH 1801 & TC SGFOH 1801(Internal technical norms of ShreeGee for rubber & oil-fuel resistant hoses).

LABELLING* OF HOSES DARWIN PLUS SERIES DPEL/DPEI



DARWIN PLUS **DPEL** **5770**

DARWIN PLUS – Trademark

DPEL - Type of hose

- E – based rubber compound ;
- l – straight;
- L– angle;

- DPEL – Angle hoses 90° 45° & 135°;
- DPEI – Straight hoses 500 & 1000 mm;
- DPEII – Straight hoses 1500, 2000, 2500 & 3000;
- DPEIH – Damper hoses;
- DPEIS, DPAIS, DPNIS - Straight hoses with SS spring in hose wall.
- DPEIV, DPAIV и DPNIV - Straight hoses with SS spring inside hose.

5770 - the number corresponds to the size 70x70x135
Ø inlet (mm) x Ø outlet (mm) x length (mm).

DPEL



DPEI



DPEII



DPEIH



*After the verification of the drawing with the number / name of the hose from the customer, the product is marked in accordance verified drawing.

SERIES DARWIN PLUS SGB FOR OE

DARWIN PLUS hoses based on EPDM, AEM, NBR & HNBR rubber used for original equipments/industrial equipments (OE) of terrain vehicles and agricultural machinery manufactured by Russian and foreign companies:

Our design department with highly qualified specialists creates in the shortest possible time a production development and preparation project, including the design of hoses, selection and creation of rubber compounds that fully comply with the customer's technical requirements and standards for the production of the desired product.

DARWIN PLUS SGB series hoses made of compound based on EPDM, AEM, NBR and HNBR rubbers are manufactured in accordance with TC SGBH 1801 & TC SGFOH 1801 (Technical specifications of the Shreejee for black and oil-resistant hoses as well as technical specifications and design documentation agreed with the customer.

Application:

For trucks, buses and tractors. In the cooling system, heating & supply systems.

The hoses are intended for the OE of trucks, buses and agricultural machinery. The hoses are used in the radiator, intercooler (CAC), cooling and heating system, gas exhaust system (in the air filter), in the exhaust gas neutralizer, in the engine, in the crankcase ventilation system, in the supply system (fuel pipes, exhaust pipes and charge air systems).

Specification:

- Working medium: coolant, hot air, air, exhaust fumes, oils, gasoline and fuel.
- Burst pressure pb: 3 x Working pressure.
- t working from -50 °C to +150 °C.
- **Reinforcement:**
 1. Polyester thread
 2. Meta Aramid thread
 3. Cotton thread Glassfiber.
- **Surface:**
 1. Gloss finish
 2. Matt finish.

Material: Compound based EPDM, AEM, NBR & HNBR rubbers.

EPDM based compoud	for a temperature range from -50 to 120/150°C
AEM based compoud	for a temperature range from -40 to 150°C
NBR based compoud	for a temperature range from -40 to 120°C
HNBR based compoud	for a temperature range from -45 to 160°C



DARWIN PLUS SGB DPL X'EPDM

DARWIN PLUS - Trademark

SGB 01- Hose number for OE

DPL - Type of hose

- DPL - Angle hose
- DPS - Hose with more than one bend
- DPI - Straight hose

X'EPDM - material marking

- X'EPDM - EPDM based compound for temperature upto 120/150°C;
- X'AOR - AEM based compound for temperature upto 150°C;
- X'NBR - NBR based compound for temperature upto 120°C;
- X'HNBR - HNBR based compound for temperature upto 160°C;

*After the verification of the drawing with the number / name of the hose from the customer, the product is marked in accordance verified drawing

SIGN OF HOSE / SLEEVE FAILURE

Modern vehicles have a very small engine room (underhood space). At the same time, the cooling system hoses can be of almost any shape and size. They carry the coolant fluid through the equipment under the hood and are made up of three parts: tube, braiding, and coating. While the basic design of the hoses has remained relatively unchanged over the course of years, the materials from which they are made have improved significantly. Thanks to these improvements, hose life duration is much longer than before. Yet the harsh conditions in which they have to operate inevitably take their toll on them. Even the best quality hoses will wear out over time.

BE SURE TO CHECK THE HOSES FOR THE PRESENCE OF BENDS

When inspecting the coolant fluid hose for damage, make sure it is not bent or touching hot or moving engine parts or sharp edges. Bends can result in reduced coolant fluid flow and cause engine overheating. The sharp edge can eventually cut or rub the hose causing the coolant fluid to leak.

HOW TO DETECT A FAULTY HOSE?

How to inspect and diagnose the failure of an automotive cooling system hose? Below are some general instructions that should be taken into account before starting the hose test.

Let us look at some examples. Measure the hose temperature using an infrared thermometer. If you turn on the interior heater, the temperature of the supply and return hoses of the heater should be approximately the same. If not, it may be time for a repair. If the upper engine radiator hose becomes hot before the engine reaches the operating temperature, this means that the thermostat does not close completely or even remains permanently open. If this hose does not heat up at all, the thermostat is blocked. In both cases, the thermostat shall be replaced immediately.



ADDITIONAL TIP:

Checking the hose temperature can show if the hose cooling system is operating properly!

	 SIGNS	 CAUSE	 SOLUTION
1. Electrochemical degradation: Main cause of hose damage	Use your thumb and forefinger to squeeze the hose near the connectors (electrochemical degradation first strikes the hose at the distance of two inches from the end). If the ends are soft and porous, or if there are any gaps or grooves inside the hose, it is likely that the hose is being exposed to the effects of electrochemical degradation.	In the cooling system, electrical charges are distributed that occur between components made of different metals. These electrical charges will have an effect on the hose tube and create small cracks in it and weaken it.	<i>Replace the damaged hose immediately. The best way to avoid a failure related to electrochemical degradation is the use of a hose that can withstand it. DARWIN PLUS hoses of series X'Sil is the best protection against electrochemical degradation.</i>
2. Thermal damage	Slight swelling is one of the signs of internal damage. Coarseness of the coating along with gloss and cracks indicate external damage	Engine heating, low coolant levels and/or sudden temperature drops also contribute to destructive failure.	<i>Replace with a DARWIN PLUS hose of series X'Sil. Hoses of series X'Sil are developed specifically to withstand the destructive failure caused by the effects of high temperatures up to 250 °C.</i>

	 SIGNS	 CAUSE	 SOLUTION
3. Oil contamination	The hose becomes soft or spongy to the touch. Obvious signs of swelling and bloating appear.	The oil chemically affects the rubber base of the hose and weakens the molecular bonds. This causes the hose to soften, swell and delaminate, which results in hose failure.	<i>Replace the hose and eliminate the source of oil ingress. Should this not be possible, change hose routing or replace the hose with a DARWIN PLUS hose of DPEI/DPEL series (AEM rubber) or of X'AOR series oil-resistant hoses</i>
4. Leakage	Moisture, drops or leaks of the coolant fluid near the clamps and connectors or on the hose itself. Air leakage from the connections of the intake manifold to cylinder heads, hoses and turbochargers and compressor	Loose clamp tightening or damaged hose or connector	<i>Tighten the adjustable clamps after a short test run period. Or use spring-loaded clamps that automatically adjust tightening as the cooling system heats up or cools down. Brass and cast iron piping components adhere over time to common rubber compounds, which reduces the chance of leaks, as does the use of sealants and cohesive gels. DARWIN PLUS uses materials that are less prone to deformation under compression. Tighten connections if necessary, replace gaskets and connecting hoses.</i>
5. Mechanical damage	The outer coating of the hose is scuffed or damaged.	Mechanical damage is caused by the friction of the hose against engine parts or any other objects located near the hose.	<i>Replace the hose. If the hose is on or close to a sharp edge, or if it is located near a high temperature source, try taking one of the following steps:</i> <ol style="list-style-type: none"> 1. Repeatedly lay the hose or replace/ repair the hose laying trays. 2. Twist the hose slightly at both attachment points to guide it away from the contact surface. 3. Wrap a protection sleeve around the new hose at the point of contact. Avoid using a product with a long slot taken from an old hose, as this will adversely affect the overall system temperature.
6. Ozone damage	Thin, parallel cracks in the outer coating, usually at hose bends.	The increased ozone concentration caused by emissions affects the coupling agents of some rubber compounds. The resulting micro-cracks allow contaminants to enter the hose and destroy it from within.	<i>Replace with a DARWIN PLUS hose of series DPEL/DPEI. This series is made of ozone resistant EPDM rubber.</i>
7. Quality non-compliance	Differs in color, errors in labeling, for instance: wrong brand name DARWIN PLUS.	Product counterfeiting.	<i>Have you found counterfeit DARWIN PLUS branded products? Please inform us about this by email info@shreegeempex.com</i>

RECOMMENDATIONS AND WARNINGS

If leakage occurs at the hose attachment point, tighten the clamps. This may be all there is to it.

As a last resort, plain water or water containing antifreeze agent can be added (in cooling systems, a mixture of 1/2 antifreeze agent and 1/2 water is usually used). Do not open the radiator cap or loosen the radiator hose clamps when the engine is warm or hot. The thermal fluid may spray out and cause burns

Dispose of the used thermal fluid properly. You can bring it to an automobile repair shop or auto parts store for further recycling/disposal. Do not pour the coolant fluid down a sink or waste water disposal system.

Installation and operating instructions

Before installation, the hoses shall be free of possible dirt, dust, grease, etc.; if necessary, treat the hoses in the working medium in accordance with the installation instructions.

When dismantling the hoses and replacing them with the new ones, the metal parts paired with them shall be cleaned of grease and contamination.

Instructions on the replacement of radiator hoses

- Old radiator hoses or bad clamps can cause the coolant fluid to leak from the system, which in turn may lead to overheating and expensive repairs. It is advisable to periodically check the hose connections in the cooling system. When the engine is turned off and cold, press each hose. If you feel crunching or crackling, it means that the hose is old and needs to be replaced.



- Wait for the engine to cool down at least 20 minutes before starting any work on the cooling system.

- Find the hood release lever, which is usually located under the dashboard, and open the hood. Determine which radiator hose is leaking. In most cases, they are located in the front part of the vehicle.

- Make sure both ends of the hose are easily accessible before starting the replacement process, inasmuch as on some vehicles the hoses are tightly hidden, and it may be best to leave such repairs to the discretion of the professional. Buy an antifreeze agent and matching hose for the radiator of your vehicle in advance. Radiator hoses are not interchangeable. They come in specific shapes and sizes for each specific vehicle model.

- Place a large, wide container under the radiator to drain the antifreeze agent from the vehicle cooling system.



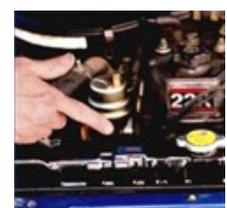
- As a rule, the radiator hoses are fixed to the engine with two hose clamps. Use a screwdriver to loosen the clamps on the fixed ends of the radiator hose to be replaced.

- Remove the radiator hose by twisting and pulling it where it is connected to the radiator and engine. Remove the clamps from the old radiator hose and put them on the new hose. If you cannot remove the hose by hand, use a knife or cutter to cut the hose. Check the fastening of the clamps at the ends of the new hose. If the hose is wet, tighten the fixture stronger or replace the old clamps with the new ones.

- The fastening of the hose clamps to the hoses shall be strong enough so that the hose cannot twist or move.

- Fill the radiator with the coolant fluid in a 50/50 ratio with a mixture of water and antifreeze agent. Run the engine so that the cooling system could start operating. Let the engine operate until the upper and lower radiator hoses become warm. (this means that the thermostat is open and the coolant fluid flows through the entire cooling system of the vehicle). Heating the cooling system removes air bubbles from the system. Add the coolant fluid to the radiator to the required level. Check for leaks, carry out an inspection around the clamps. Tighten the radiator clamps again if moisture is present in the radiator. Close the radiator cap, close the hood.

- Check the coolant fluid level after the run.



PHYSICAL PROPERTIES OF DIFFERENT RUBBERS
E - Excellent, G - Good, F - Satisfactory, P - Poor.

Properties	NBR	EPDM	CR	SILICONE	FKM	NR	SBR	PU	HNBR	FVMQ	IIR	Aflas
Abrasion resistance	G	G	G	P	G	E	E	E	G	P	G	G
Resistance to acids	F	G	F	F	E	F	F	P	E	F	G	E
Chemical resistance	F	E	F	G	E	F	F	F	G	E	E	E
Cold resistance	G	G	F	E	P	G	G	G	G	G	G	P
Compression resistance set	G	G	F	G	E	G	G	F	G	G	F	G
Dynamic properties	G	G	F	P	G	E	E	E	G	P	F	G
Electrical properties	F	G	F	E	F	G	G	F	F	E	G	E
Elongation	G	G	G	F	F	F	F	F	G	F	G	F
Flame resistance	P	P	G	F	E	P	P	P	P	G	P	E
Heat resistance	G	G	G	E	E	F	F	F	E	E	G	E
Permeability	G	G	G	P	G	F	F	G	G	P	E	G
Oil resistance	E	P	F	F	E	P	P	G	E	G	P	E
Ozone resistance	P	E	G	E	E	P	P	E	G	E	G	E
Tear resistance	F	G	F	P	F	G	G	G	F	P	G	P
Tensile strength	G	G	G	P	G	E	E	E	E	F	G	G
Water resistance	G	E	F	G	F	G	G	P	E	F	G	G

The material properties of rubber are for reference only.

For the precise selection of material, please contact our specialists info@shreegeempex.com

CHEMICAL RESISTANCE OF SILICONE RUBBERS

No	Working medium	Testing 7 days at °C	Result*	No	Working medium	Testing 7 days at °C	Result*
1	Acetamide	150	A	37	Methanol	65	B
2	Acetone	20	B	38	Methylen chloride	20	C
3	Aniline	100	A	39	Mineral oil ASTM No. 1	150	A
4	Petrol	20	B	40	Mineral oil ASTM No. 3	150	B
5	Brake fluid AT	100	A	41	Mineral oil SEA 10	150	A
6	Butanol	117	B	42	Mineral oil SEA 20	150	A
7	Butylacetate	20	B	43	Mineral oil SEA 30	150	A
8	Calcium hydroxide, (saturated)	20	A	44	Motor oil viscose static	150	A
9	Chlorobenzene	20	B	45	Sodium 20%	20	A
10	Cloroform	20	C	46	Soda 50%	20	A
11	Clophene	150	A	47	Nitrobenzene	20	A
12	Vapour up to 2,5 atu	138	A	48	Oleic acid	150	C
13	Diphenyl	150	B	49	Olive oil	150	A
14	Diesel oil	20	B	50	Perchlor	20	C
15	Dinamo oil	150	B	51	Petroleum ether	20	C
16	Mineral oil	20	B	52	Petroleum	20	B
17	Acetic acid	20	A	53	Phenol	60	A
18	Hydrofluor acid 5%	20	C	54	Phosphoric acid 30%	20	A
19	Gear oil DTE BB	150	A	55	Pyridine	20	B
20	Gear oil DTE HH	150	A	56	Regulator oil	150	C
21	Gear oil DTE extra heavy	150	A	57	Castor oil	150	A
22	Gear oil Type SEA 90	150	A	58	Hydrochlorid acid 10%	20	A
23	Prestone	20	A	59	Nitric acid concentrated	20	C
24	Glycerin	100	A	60	Nitric acid	20	B
25	Hexa ethoxydisiloxane	20	B	61	Sulfuric acid, concentrated	20	C
26	High pressure compressor oil	150	A	62	Sulfuric acid, 10%	20	A
27	Isopropyl alcohol	82	B	63	Shock absorber oil	20	A
28	Potassium 20%	20	A	64	Styrol	20	B
29	Potassium hydroxide 50%	20	A	65	Turbentine oil	20	B
30	Potassium permanganate solution	20	A	66	Toluene	20	B
31	Carbolineum	20	A	67	Transformer oil	150	B
32	Cooking salt solution 10%	20	A	68	Tri	20	C
33	Carbon tetrachloride	20	B	69	Tri glycol	20	A
34	Compressor oil, light	150	A	70	Vaseline	150	A
35	Ball bearing fat	150	A	71	Water	100	A
36	Linseed oil	100	A				

* As per table: **A - Excellent resistance, B - Conditional resistance, C - Poor resistance.**

The material properties of rubber are for reference only.

For the precise selection of material, please contact our specialists info@shreegeeimpex.com

CHEMICAL RESISTANCE OF RUBBERS COMPOUNDS

Type	Designation	Rubbers	High resistance to substances:	Low resistance to substances:
Silicone	VMQ, MQ, PVMQ	Silicone rubber	<ul style="list-style-type: none"> - Engine oils and gear oils (mineral oils) - Diluted saline solutions - Temperate water - Dry heat - Ozone, weather conditions 	<ul style="list-style-type: none"> - Concentrated acids and alkalis - Superheated steam over + 120 ° C - Petroleum oils and fuels - Ketones
	FKM, FPM, VITON	Fluoroelastomer	<ul style="list-style-type: none"> - Petroleum products - Fuel and mixture with methyl or ethylene alcohols - Diesel or mixtures with biodiesel - Mineral oils and greases - Silicone oils and greases - Strong vacuum - Ozone, weather conditions and high temperature air - Strong acids 	<ul style="list-style-type: none"> - Ketones - Low molecular weight acids (formic and acetic acid) - Superheated steam - Low molecular weight ethers and esters - Phosphate ester hydraulic fluids - Skydrol (R)
EPDM	EPDM	Ethylene propylene diene rubber	<ul style="list-style-type: none"> - Alcohols - Automotive Brake Fluid - Ketones - Diluted acids and bases - Silicone oils and greases - Steam up to +200 °C, - Water, - Phosphate Ester Hydraulic Fluids - Skydrol (R) - Ozone, Wear & tear and Weather conditions. 	<ul style="list-style-type: none"> - Aliphatic and aromatic hydrocarbons - Diester greases - Halogenated solvents - Petroleum oils and greases
AEM	AEM, VAMAC	Ethylene Acrylic rubber	<ul style="list-style-type: none"> - Ozone, weather conditions and hot air - Automatic transmission fluids - Power steering fluids & Water 	<ul style="list-style-type: none"> - Fuel - Ketones - Automotive Brake Fluid
NBR	NBR	Nitrile Butadiene Rubber	<ul style="list-style-type: none"> - Petroleum oils and fuels - Aliphatic hydrocarbons - Vegetable oils - Silicone oils and lubricants - Ethylene glycol - Diluted acids - Water up to + 100 °C 	<ul style="list-style-type: none"> - Aromatic hydrocarbons - Automotive brake fluids - Chlorinated hydrocarbons - Ketones - Simple & complex Esters - Hydraulic fluids based on phosphoric acid esters - Skydrol (R) - Strong acids Ozone, weather conditions and sunlight
HNBR	HNBR	Hydrogenated Nitrile Butadiene Rubber	<ul style="list-style-type: none"> - Petroleum oils and greases - Aliphatic hydrocarbons, - Vegetable oils - Silicone oils and greases, - Ethylene glycol - Diluted acids, bases and saline solutions - Water & steam up to + 150 °C 	<ul style="list-style-type: none"> - Chlorinated hydrocarbons - Ketones - Simple & complex Esters - Strong acids

The material properties of rubber are for reference only.

For the precise selection of material, please contact our specialists info@shreegeempex.com

DARWIN PLUS RUBBER PRODUCTS



V-BELTS

- CLASSICAL SECTION
- NARROW SECTION
- BANDED BELTS
- HEXAGONAL BELTS
- VARIATOR BELTS
- RIBBED (POLY) BELTS



HOSES

- RADIATOR AND INTERCOOLER (CAC) HOSES
- FUEL SYSTEM HOSES
- HOSES FOR OIL MEDIUM
- AIR HOSES

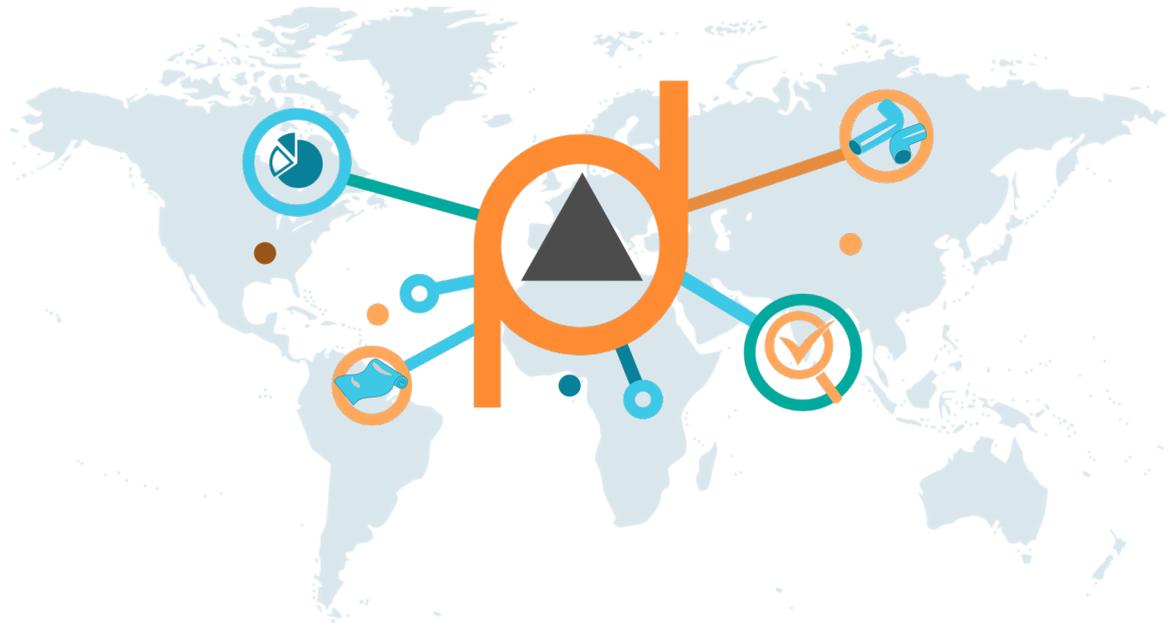


RUBBER MOLDED PARTS

- MOLDED HOSES
- OIL & FUEL RESISTANT MOLDED PARTS
- O-RINGS, SHOCK ABSORBERS, VALVES, BUSHINGS, ETC.
- METAL BONDED RUBBER PARTS



The information shown in the catalog is for information purposes only. The manufacturer **DAWRIN PLUS ShreeGee impex pvt ltd.** reserves the exclusive right to make any changes to the structure, design and specification, change components in the manufactured products at any time without prior warning to improve the quality of products and ensure the further development of the production process. January 18, 2021



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