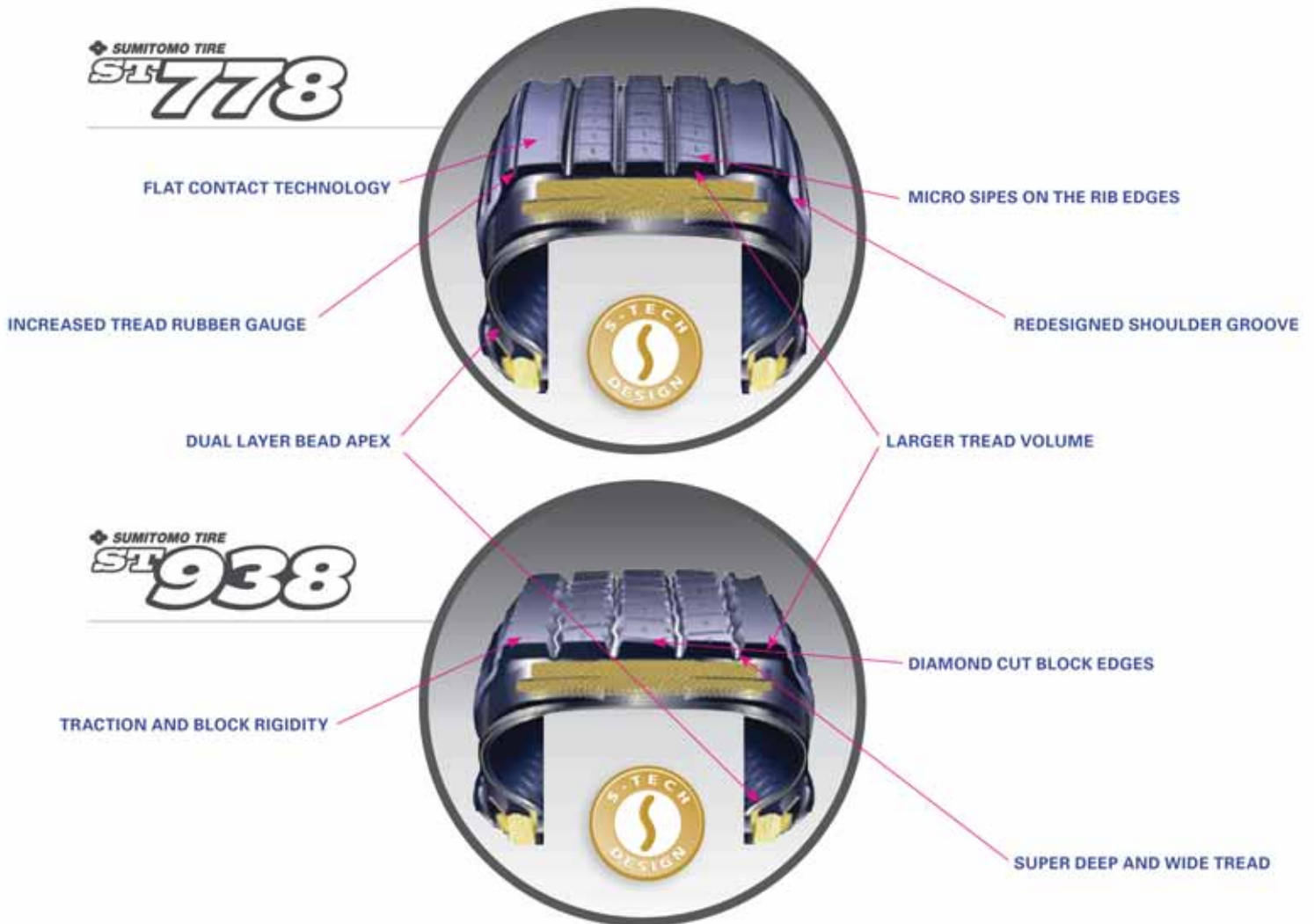


Engineering

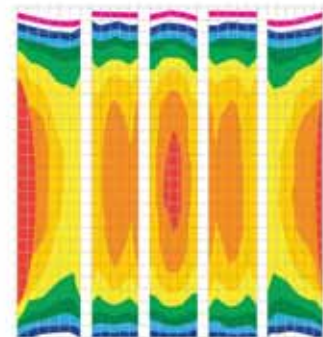
S-Tech Design

S-Tech Design is a collection of the best technical features Sumitomo has to offer in the new medium truck lines. Based on the S-shaped sipes in the ribs of the new ST778, S-Tech Design represents much more. It is the optimal combination of specific features in each line working together for maximum performance and durability.



Flat Contact Technology

Sumitomo's sophisticated new technology minimizes irregular wear by controlling the contact pressure in the tire footprint. Flat Contact Technology delivers uniform contact pressure from shoulder to shoulder. The contact length of the shoulder rib in the tire footprint is almost equal to that of the center rib, meaning that the contact patch is kept square while in contact with the ground. This leads to a uniform contact pressure distribution and significant resistance to irregular wear.



ST778

The ST778 shows a more uniform and stable shape in the light green area.

Tire Maintenance

Recommendations For Long Tire Life

Inspect tire conditions regularly. Look for signs of sidewall bulges, cracking, cuts and stone retention in grooves. If you have a question or concern, consult your Sumitomo Tire dealer.

Tire Replacement

By Department of Transportation regulations, any trailer or drive axle tire is to be removed from service when there are only 2/32nds of tread left (or 4/32nds on steer axle tires) in any tread groove. Sumitomo advises that, as a rule of thumb, tires should be removed at 4/32nds remaining tread to allow better casing recovery for retreading.

Proper Tire Inflation

It is advisable to check all tire inflation pressures before each trip, or at least weekly. The best time to obtain accurate readings is when tires are cool to the touch, before any distance is traveled. Consult the air pressure guidelines in this book, refer to the tire sidewall, or pressure charts from the Tire and Rim Association. When speeds are constantly above 70 m.p.h., it is recommended to use maximum air pressure for good wear and performance. For safety and ease of checking air pressure, metal flow-through valve caps should be used.

Tire Rotation

Because of vehicle specifications (wheelbase, horsepower, gears, suspension) and terrain, most tires used on drive axles wear faster on the rear drive axle than on the front drive axle. By cross rotating rear axle tires to front axle, and front axle tires moved to rear axle position, wear can be equally controlled on all drive positions, resulting in longer miles in service.

Practice Good Driving Habits

- Avoid fast starts and sudden stops.
- Avoid using only trailer brakes to slow vehicle.
- Avoid potholes and debris (safely).
- Curb locations.
- Speed limit.

Determining Correct Tire Pressure

A tire requires proper air pressure to adequately carry the load placed on it. The tires also provide traction for braking and steering. Since the loaded vehicle weight determines tire inflation pressure, all tire manufacturers offer a load/inflation table to help determine the proper pressure.

These tables reflect values taken from the Tire and Rim Association. In general, use these steps to determine correct air pressure:

1. Always check air pressure when ambient temperature is cold.
2. Confirm if tire will be used in a single or dual wheel position.
3. In either case, determine the total weight that is allowed on the axle. In the case of a STEER axle (using two tires) divide the value by two.
4. Compare this value with the following load inflation table, and use the corresponding air pressure.

Also consider operating speeds. Many tire manufacturers recommend maximum speeds for various tire applications. Consult your Sumitomo representative if you have questions.

The SPEED SYMBOL indicates the speed that the tire can carry a load corresponding to its load index under normal service conditions suggested by Sumitomo.

The LOAD INDEX is a code which reflects the maximum load a tire can carry at the speed indicated by its SPEED SYMBOL, based on the service application suggested by Sumitomo.

Sumitomo Safety

Truck Tire Warnings!

Important: Be sure to read this safety information. Make sure that everyone who services tires or vehicles in your outlet has read and understands these warnings.

SERIOUS INJURY OR DEATH CAN RESULT FROM FAILURE TO FOLLOW SAFETY WARNINGS.

No matter how well any tire is constructed, punctures, impact damage, improper inflation, improper maintenance or service factors may cause serious tire failure creating a risk of property damage and serious or fatal injury to you and/or your customer.

Encourage your customers to examine their tires frequently for snags, bulges, excessive treadwear, separations or cuts. If such conditions appear, advise them to demount the tire, use the spare, and see you immediately. If you spot any of the above conditions, bring them to the customer's attention immediately. For safety, comply with the following warnings.

Tire and rim servicing can be dangerous and must be done only by trained personnel using proper tools and procedures. Failure to read and comply with all procedures may result in serious injury or death to you or others.

Re-inflation of any type of tire/rim assembly that has been operated in a run-flat or underinflation condition (80% or less of recommended pressure), can result in serious injury or death. The tire may be damaged on the inside and can explode while you are adding air. The rim parts may be worn, damaged or dislodged and can explosively separate.

Use of starting fluid, ether, gasoline or any other flammable material to lubricate, seal or seat the beads of a tubeless tire can cause the tire to explode or can cause the explosive separation of the tire/rim assembly resulting in serious injury or death. The use of any flammable material during tire servicing is absolutely prohibited.

Any inflated tire mounted on a rim contains explosive energy. The use of damaged, mismatched or improperly assembled tire/rim parts can cause the assembly to burst apart with explosive force. If you are struck by an exploding tire, rim part or the air blast, you can be seriously injured or killed.

Re-assembly and the inflation of mismatched parts can result in serious injury or death. Just because parts come in together does not mean that they belong together. Check for proper matching on all rim parts before putting any parts together.

Mismatching tire and rim diameters is dangerous. A mismatched tire and rim assembly may explode and can result in serious injury or death. This warning applies to 14", 14.5", 16" and 16.5" tires and rims as well as other similarly mismatched size combinations. Never assemble a tire and rim unless you have positively identified and correctly matched the parts.

If the tire is 20% below the recommended operating pressure it must be considered flat. The tire must be removed, dismounted and inspected for punctures or other damage.

Mounting And Demounting

A tire cannot perform properly unless it is mounted properly on the correct size rim or wheel. The following are general instructions for demounting and mounting tube-type and tubeless tires. For detailed instructions on mounting and demounting truck tires on particular types of rims and wheels, refer to the instructions of the rim and wheel manufacturer or the Rubber Manufacturer Association (RMA) wall charts.

1. SELECTION OF PROPER COMPONENTS AND MATERIALS:

- All tires must be mounted with the proper tube and flap (if required) and rim or wheel as indicated in the application data books.
- Make certain that rim/wheel components are properly matched and of the correct dimensions for the tire.
- Always fit new tube in a new mounting. Since the tube will exhibit growth in size through normal use, an old tube used in a new mounting increases the possibility of tube creasing and chafing, possibly resulting in failure.

- Always install a new flap in a new mounting. A flap through extended use becomes hard and brittle. After limited time, it will develop a set to match the tire and rim in which it is fitted. Therefore, it will not exactly match a tire/rim combination. See Section Five for flap recommendations.
- Always install new valve cores, and metal or hard plastic valve caps containing plastic or rubber seals. On tubeless truck tire valve stems, replace the rubber grommet. For tires requiring 'O' Rings, be sure to install a new one at every tire change.
- Always use a safety device such as an inflation cage or other OSHA approved device when inflating. Never stand over tire or in front of a tire when inflating. Always use a clip on valve chuck with hose extension and stand to the side when inflating.

2. TIRE AND RIM LUBRICATION:

It is essential that an approved vegetable oil base soap solution tire lubricant be used for mounting of tubeless and tube-type tires. The lubricant serves the following purposes:

- Minimize the possibility of damage to the tire beads from the mounting tools.
- Eases the insertion of the tire onto the rim by lubricating all contacting surfaces.
- Assists proper bead seating (tire/rim centering) and helps prevent eccentric mountings.

A. TUBELESS TIRES - Apply lubricant to all surfaces of the bead area of the tire. When applying lubricant to the rim, lubricate the entire rim surface from flange to flange.

B. TUBE-TYPE TIRES - Apply clean lubricant to all portions of the tire bead area and the exposed portion of the flap using sufficient but sparing quantities of lubricant. Also lubricate the entire rim surface. Avoid using excessive amounts of lubricant which can become trapped between the tire and tube can result in tube damage and rapid air loss.

CAUTION: It is important that tire lubricant be clean and free of dirt, sand, metal shavings or other hard particles. The particles may lodge between the tube and the flap edges resulting in splits in the tube. The following practice is recommended:

- Use a fresh supply of tire lubricant each day, drawing from a clean supply and placing the lubricant in a clean portable container.
- Provide a cover for the portable container and/or other means to prevent contamination of the lubricant when not in use.

We suggest the following method, which has proven to be successful in minimizing contamination and preventing excess lubricant from entering the tire casing: Provide a special cover for the portable container which has a funnel-like device attached. The small opening of the funnel should be sized so that when a swab is inserted through the opening into the reserve of lubricant and then withdrawn, the swab is compressed, removing excess lubricant. This allows the cover to be left in place providing added protection. A mesh false bottom in the container is a further safeguard against contaminants. The tire should be mounted and inflated promptly before lubricant dries.

3. PREPARATION OF WHEELS, RIMS AND TIRES:

Never weld or apply heat to a rim or wheel on which a tire is mounted.

- Always wear safety goggles or face shields when buffing or grinding rims or wheels.
- Inspect wheel/rim assemblies for cracks, distortion, deforming of flanges, side rings, lock rings, etc. Using a file and/or emery cloth, smooth all burrs, welds, dents, etc. that are present on the tire side of the rim. Inspect the condition of bolt holes on the wheels.
- Remove rust with a wire brush and apply rust inhibiting paint.
- Remove any accumulation of rubber or grease which might be stuck to the tire, being careful not to damage it. Wipe the beads down with a dry rag.
- Make sure there is no water, dirt, or foreign material inside the tire before inserting the tube.



Load Inflation Table

Legend: D = Dual
S = Single

	PSI	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135
8.25R15	S		2780	2930	3080	3200	3340	3470	3590	3750 (F)	3860	3970	4080 (G)			
	D		2700	2810	2930	3040	3150	3260	3360	3525 (F)	3635	3745	3860 (G)			
10.00R15	S		3780	3980	4170	4370	4540 (F)	4715	4890	5070 (G)	5270	5470	5675 (H)			
	D		3660	3830	3980	4130	4300 (F)	4470	4640	4805 (G)	4990	5175	5355 (H)			
9R17.5	S					3200	3340	3470	3590	3750 (F)	3860	3970	4080 (G)	4190	4300	4410 (H)
	D					3040	3150	3260	3360	3525 (F)	3635	3745	3860 (G)	3970	4080	4190 (H)
10R17.5	S					3860 (E)	4005	4150	4300 (F)	4235	4390	4540 (G)				
	D					3640 (E)	3785	3930	4080 (F)	4470	4640	4805 (G)				
11R17.5	S					4370	4540 (F)	4715	4890	5070 (G)	5270	5470	5675 (H)			
	D					4130	4300 (F)	4470	4640	4805 (G)	4990	5175	5355 (H)			
8R19.5	S		2540	2680	2835 (D)	2955	3075	3195 (E)	3305	3415	3525 (F)					
	D		2460	2570	2680 (D)	2785	2890	3000 (E)	3100	3200	3305 (F)					
8.25R20	S		3370	3560	3730	3890	4080 (E)	4235	4390	4540 (F)	4675	4810	4940 (G)			
	D		3270	3410	3550	3690	3860 (E)	4005	4150	4300 (F)	4425	4550	4675 (G)			
9.00R20	S		4080 (D)	4280	4480	4675 (E)	4850	5025	5205 (F)	5360	5515	5675 (G)				
	D		3860 (D)	4045	4230	4410 (E)	4585	4760	4940 (F)	5080	5220	5355 (G)				
10.00R20	S		4530	4770	4990	5220	5510 (F)	5730	5950	6175 (G)	6320	6465	6610 (H)			
	D		4380	4580	4760	4950	5205 (F)	5415	5625	5840 (G)	5895	5950	6005 (H)			
11.00R20	S		4940	5200	5450	5690	6005	6205	6405	6610	6870	7130	7390			
	D		4780	4990	5190	5390	5675	5785	5895	6005	6265	6525	6780			
12.00R20	S		5620	5920	6200	6480	6740	7160 (G)	7380	7600	7830 (H)	8050	8270 (J)			
	D		5440	5680	5910	6140	6360	6610 (G)	6790	6970	7160 (H)	7390	7610 (J)			
13/80R20	S						7085	7340	7570	7815	8045 (J)					
14/80R20	S						7595	7860	8110	8365	8610	8850	9095 (J)			
11.00R22	S		5240	5520	5790	6040	6395 (F)	6650	6910	7160 (G)	7380	7600	7830 (H)			
	D		5080	5300	5520	5730	5840 (F)	6095	6350	6610 (G)	6790	6970	7160 (H)			
11.00R24	S		5570	5860	6140	6420	6780	7060	7340	7610 (G)	7830	8050	8270 (H)			
	D		5390	5630	5860	6090	6175	6430	6690	6940 (G)	7160	7380	7610 (H)			
9R22.5	S		3370	3560	3730	3890	4080 (E)	4235	4390	4540 (F)	4675	4810	4940 (G)			
	D		3270	3410	3550	3690	3860 (E)	4005	4150	4300 (F)	4425	4550	4675 (G)			
10R22.5	S		4080	4280	4480	4675 (E)	4850	5025	5205 (F)	5360	5515	5675 (G)				
	D		3860	4045	4230	4410 (E)	4585	4760	4940 (F)	5075	5210	5355 (G)				
11R22.5	S		4530	4770	4990	5220	5510 (F)	5730	5950	6175 (G)	6320	6465	6610 (H)			
	D		4380	4580	4760	4950	5205 (F)	5415	5625	5840 (G)	5895	5950	6005 (H)			
12R22.5	S		4940	5200	5450	5690	6005 (F)	6205	6405	6610 (G)	6870	7130	7390 (H)			
	D		4780	4990	5190	5390	5675 (F)	5785	5895	6005 (G)	6265	6525	6780 (H)			
11R24.5	S		4820	5070	5310	5550	5840 (F)	6095	6350	6610 (G)	6790	6970	7160 (H)			
	D		4660	4870	5070	5260	5510 (F)	5675	5840	6005 (G)	6205	6405	6610 (H)			
215/75R17.5	S			3375	3540	3695	3860	4010	4065	4225	4385	4545	4705	4805 (H)		
	D			3200	3350	3500	3650	3800	3840	3995	4145	4295	4445	4540 (H)		
235/75R17.5	S				4200	4410	4615	4820	5025	5225	5420	5620	5810	6005 (J)		
	D				3970	4170	4365	4555	4745	4935	5125	5310	5495	5675 (J)		
225/70R19.5	S	2755	2895	3040	3195 (E)	3315	3450	3640 (F)	3715	3845	3970 (G)					
	D	2600	2720	2860	3000 (E)	3115	3245	3415 (F)	3490	3615	3750 (G)					
245/70R19.5	S				3640	3740	3890	4080 (F)	4190	4335	4540	4620	4805 (H)			
	D				3415	3515	3655	3860 (F)	3940	4075	4300	4345	4540 (H)			
245/75R22.5	S		3470	3645	3860	3975	4140	4300	4455	4610	4675 (G)					
	D		3160	3315	3525	3615	3765	3970	4055	4195	4300 (G)					
255/70R22.5	S				4190	4370	4550	4675	4895	5065	5205 (G)	5400	5510 (H)			
	D				3970	4110	4275	4410	4455	4610	4675 (G)	4915	5070 (H)			
275/70R22.5	S				4920	5160	5400	5645	5880	6130	6355	7000 (H)				
	D				4590	4815	5040	5270	5490	5720	5940	6395 (H)				
295/75R22.5	S		4500	4725	4940	5155	5370	5510 (F)	5780	5980	6175 (G)	6370	6610 (H)			
	D		4095	4300	4540	4690	4885	5070 (F)	5260	5440	5675 (G)	5795	6005 (H)			
315/80R22.5	S				6175	6415	6670	6940 (G)	7190	7440	7610 (H)	7920	8270 (J)			
	D				5675	5840	6070	6395 (G)	6545	6770	6940 (H)	7210	7610 (J)			
385/65R22.5	S		6380	6720	6940	7350	7650	8050	8230	8510	8820	9050	9370 (J)			
425/65R22.5	S		7590	7990	8270	8740	9100	9370	9790	10100	10500 (J)	10700	11400 (L)			
445/65R22.5	S		8230	8660	9090	9480	9870	10200 (J)	10600	11000	11400	11700	12300 (L)			
285/75R24.5	S		4545	4770	4940	5210	5420	5675 (F)	5835	6040	6175 (G)	6400	6780 (H)			
	D		4135	4340	4540	4740	4930	5205 (F)	5310	5495	5675 (G)	5860	6175 (H)			