ORTHODONTIC PLIERS USER'S GUIDE

In order to ensure the reliable, long-term functionality and the validity of the warranty for the product as intended by its manufacturer, please read this guide carefully and follow its instructions. Your purchased orthodontic pliers are made of the hardest corrosion-resistant chrome-vanadium steel currently available. As the result of the joint construction, manufacturing precision, supervision of the operational steps, the very detailed documentation of the whole manufacturing process and the final functional inspection, hopefully you will be satisfied with our product for a long time. However, for this, the below mentioned instructions must be observed.

1. The orthodontic pliers listed in the product list are Class I medical devices, strictly intended for use in orthodontic treatment only. Target users: qualified orthodontic professionals, i.e. orthodontists, orthodontic assistants, who have theoretical and practical knowledge of the use of orthodontic products. Purpose-built pliers are best suited for specific tasks, although some universal pliers can be used for multiple tasks. However, it is necessary to know the capacity of each pliers to avoid overloading. In general, all pliers should be used only for the operation for which they are intended, and the doctor should check that they work properly before each use, as he or she is responsible for the consequences of a faulty tool.
2. Each pliers have an individual serial number. The first character section of the reference number plus the number engraved into the ends of the stems clearly identify the given pliers (e.g. SD158 51G). This identification system can also help you to trace your pliers.
3. The pliers don't need any kind of everyday maintenance besides cleaning and the lubrication of the joint. However, cutters and other pliers that have sharp edges must be inspected before every use, because using worn or chipped edges require extra force to be applied, which overloads the insert and the cutting surface on the wire (the wire end) won't be precise. If re-sharpening is needed, the pliers must be sent back to Savaria-Dent Kft, where we do the re-sharpening for a fee. **Any kind of repair done by a third party makes the warranty void.**
4. The two main danger that can damage the pliers are overload and corrosion. Even the mechanically best base materials have their limits; as the effect of multiple overload, the fine tips and edges may break. Since as the last step of our manufacturing process, all the pliers have gone through functional and hardness inspection, we can firmly declare that the breakage of the fine tips are caused either by dropping on the floor or by significant overload, and is not a warranty issue. (Capacity of the pliers are engraved into their stems too.) Yet if you think that the breakage wasn't caused by your fault, please send back the pliers together with the broken piece if possible, and we investigate the cause of the breakage. *The question of corrosion is unfolded more in the „Sterilization" section.*
5. If possible, the instruments should be kept dry. The body, the screw, the washers, the soldered carbide insert and the soldering materials are all made of materials with different corrosion potential. Because of this, in humid, aggressive circumstances galvanic cell may be formed, what can lead to the occurence of yellowis-brownish stains caused by the migration of ferrum. Actually these stains are only aesthetical defects, not affecting the pliers' mechanical properties, and can be easily removed with the scouring side of a sponge.
6. Before drying the pliers it is practical to wipe them dry with a hygroscopic material (e.g. paper towel), because this way the liquid drops can be soaked up, thus the dissolved materials in the drops would not subside on the surface of the pliers. Following this, the next step should be the complete drying with compressed air.
7. It is recommended to regularly lubricate the pliers' rotating (joint) part and the screw's axis part with one-one drop of turbine oil. This helps to achieve a long lifespan with easy opening and without play. However, excessive lubrication should be avoided, because during sterilization the heat makes the oil dissolve which may create a yellowish plaque on the surfaces. This may also be removed with a sponge, but it can be made easier with isopropyl-alcohol. Do not use mineral oils or silicone, because they prevent the penetration of the sterilizing steam into the thin gaps (e.g. the joint), and might facilitate the formation of bacteria-cultures. Use paraffin that can vaporize, or white oil, or oil used for the lubrication of turbines instead.
8. During the first use, and after longer periods of no use, sometimes the pliers open not so smoothly, but they get loosen up by „breaking in" the joint. As for the new pliers, because of their very precise assembly, their openability is affected by the temperature, so they open harder when they are cold. The oil in the joint that has got thickened during a longer period of no use worsens openability as well.
9. The ultrasonic method is the most effective way to clean the pliers, by using the proper cleaning solutions, the attached contaminations can be removed even from the hidden spots by it. However one must look after the edges, because in many cases the interaction of the ultrasound and the solution might damage the edges, therefore we stipulate that the ultrasonic cleaning of **cutters** cause the voidance of warranty. The cutters, but naturally all the other pliers can be cleaned by brush (e.g. toothbrush) and halogen-free detergent (e.g. dish soaps) along with running water rinse. We don't recommend using metal sponges or brass wire brushes. During the cleaning method, open and close the pliers at least five times in the cleaning solution and during the rinse under running water, to get the joint cleaned better.
10. The carbide inserts are made of very hard, abrasion-resistant, but very rigid materials, and their edges and tips might break when snapped together or when fell down on the hard floor. Therefore the pliers should be stored on the racks or storages designed for this purpose, if possible.
11. When transporting the pliers, please use a bag or box designed for this purpose to prevent them from colliding with each other.
12. When used as intended, there is no side effects arising from direct contact with the devices. The base material doesn't contain nickel, however its chrome content is 14-15%, which in very rare cases can cause allergic reaction, but its not even closely as frequent as nickel allergy.
13. In order to ensure the long, trouble-free, „pleasant" use, if the „play" of the joint prevented the pliers from fulfilling their function, please send the pliers back to us for re-assembly and re-sharpening. Although we perform these corrections for a fee, your pliers will regain their full value again.

The user is responsible for checking the equipment before each use. If you notice any breakage, cracks or functional deterioration, do not continue to use the device, please contact the manufacturer.
Our devices are not supplied in sterile condition and should be sterilised before first use.

Reuse instructions for reusable non-sterile orthodontic appliances: To ensure reusability, appliances should be sterilized per orthodontic treatment according to the instructions below.

Cleaning, disinfection and sterilisation, as well as compliance with the sterilisation requirements of the country in which the device is used, are the responsibility and competence of the user doctor!
Always clean the pliers thoroughly before sterilisation and disinfection as described in section 9.
After sterilisation, before the pliers are put away, it is advisable to check them for any edge damage or other abnormalities. Individual packaging is recommended.

Sterilization:

Dry heat sterilization on max. 185°: the pliers won't yet damage on 185°, however there might be very slight goldish discolouration occuring on them. This discolouration can be wiped off with a sponge and in no way affects the pliers' functionality. Using the dry heat sterilization method a very lot can lead to 1-2 HRC hardness loss of the pliers, thus rather use steam-sterilization, if possible.
Steam sterilization: any sterilization units can be used, but the user must be sure the water used is distilled, and must observe the prescriptions of Section 7 regarding lubrication. It is practical to perform the sterilization with the pliers packaged individually.
Gas-sterilization: it is allowed to use, and this method is the least dangerous to pliers
Ultrasonic sterilization: it is not recommended as it can lead to the loss of warranty for the cutters and pliers with inserts.
Cold sterilization is FORBIDDEN, because most of the chemicals given for this purpose clearly cause corrosion because of their high concentration, long impact time and the very agressive, combined active agents; and this leads to the loss of warranty and the damage of the carbide inserts and their edges especially.

Warranty:

The warranty period for the pliers is 5 years from the date of purchase. During this period Savaria-Dent undertakes to repair or exchange faulty pliers free of charge, in case the cause of damaging has arised due to material or manufacturing fault. Re-sharpenings and the exchange of worn out parts are not covered by warranty, however can only be done by the manufacturer (see Section 3).
The pliers to be sent back with warranty problems had to be sterilized beforehand and returned to our company in a ziplock bag together with the product data sheet or its copy.

For our internal investigation procedure performed according to our applied Quality Management System, please describe the noticed failure and its cause in writing. In the case of breakage, please also put the
broken down part into the bag, if possible.

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Order Code	Orthodontic pliers trade name and specification.
SD 1000	**Ligature and Wire Cutter** Pliers for cutting ligature wires and medium-sized orthodontic wires. Maximum capacity: 0.022"
SD 1004	**Ligature Cutter** Pliers for cutting the ligature wire that runs alongside the brackets and between the "wings" of the bracket. Maximum capacity: 0.014" soft wire.
SD 1007	**Wire Cutter** Pliers for cutting medium to large orthodontic wires. Maximum capacity: 0.028"
SD 1010	**Heavy Cutter** Pliers for cutting orthodontic wires. Maximum capacity: 1.1mm.
SD 1016/022	**Distal Safety** Pliers for cutting the orthodontic wires behind the tubes, eased by the curved jaw design. The cutted piece of wire is retained. Maximum capacity: 0.022"
SD 1016/028	**Distal Safety** Pliers for cutting the orthodontic wires behind the tubes, eased by the curved jaw design. The cutted piece of wire is retained. Maximum capacity: 0.028"
SD 104	**Step** Pliers used to form a step of different sizes into orhodontic wires. Maximum capacity: 0.019" x 0.022" Size range: 0.4mm - 0.9mm. For steel wires.
SD 105	**Step Double** Pliers used to form a step of different sizes into orhodontic wires. Maximum capacity: 0.019" x 0.022" Size range: 0.4mm - 0.9mm. For steel wires.
SD 110	**Angulation** Pliers used to form a special "Z" shape in orthodontic wires. For the use inside the mouth, both UR and UL pliers are recommended. For extraoral use, a single UR or UL type of pliers is sufficient. Maximum capacity: 0.019" x 0.022" Size range: 6°-18°. For steel wires.
SD 130	**Hook Crimping** Pliers used to attach various types of hooks to the wire.
SD 130/C	**Hook Crimping Curved** Pliers used to attach various types of hooks to the wire. Because of the curved jaws, it is easier to attach the hook to the arch section at the premolar and molar teeth.
SD 135	**Crimping** Pliers used to clamp stops on the arch to prevent the slipping of the wire.
SD 139	**Bird Beak** The pliers are used for bending orthodontic arches. Due to its short jaws, it has a large leverage, so the wire is squeezed with great force. Due to its strong construction, bending thicker wires and arches requires less force, but only bend wire with a maximum thickness of 0.7 mm Hard wire with the tapered part at the tip. It is an ideal bending tool for caps, labial-type bends.
SD 139/G	**Bird Beak Groove** The pliers are used for bending orthodontic arches. Due to its short jaws, it has a large leverage, so the wire is squeezed with great force. Due to its strong construction, bending thicker wires and arches requires less force, but only bend wire with a maximum thickness of 0.7 mm Hard wire with the tapered part at the tip. It is an ideal bending tool for caps, labial-type bends.
SD 140	**Light Wire** Used for bending various loops, helixes into orthodontic wires. Maximum capacity: 0.019" x 0.022"
SD 140/S	**Light Wire Short** Used for bending various loops, helixes into orthodontic wires. Maximum capacity: 0.019" x 0.022"
SD 150	**Jarabak** Used for bending various loops, helixes into orthodontic wires. Maximum capacity: 0.019" x 0.022"
SD 155	**Lingual Arch Placing Curved** Pliers for insertion of palatal arches and lingual arches into tubes. For arches made of Ø 0,9mm wires.
SD 158 B	**Weingart Basic** Thin, serrated-tipped pliers with curved jaws for gripping, removing and inserting a wide variety of orthodontic appliances. A typical application is the insertion or extraction of the ends of orthodontic wires into tubes.
SD 158 F	**Weingart Fine** Thin, serrated-tipped pliers with curved jaws for gripping, removing and inserting a wide variety of orthodontic appliances. A typical application is the insertion or extraction of the ends of orthodontic wires into tubes.
SD 158 M	**Weingart Medium** Thin, serrated-tipped pliers with curved jaws for gripping, removing and inserting a wide variety of orthodontic appliances. A typical application is the insertion or extraction of the ends of orthodontic wires into tubes.
SD 158 T	**Weingart Technical** Thin, serrated-tipped pliers with curved jaws for gripping, removing and inserting a wide variety of orthodontic appliances. A typical application is the insertion or extraction of the ends of orthodontic wires into tubes.
SD 158 XF	**Weingart Extra Fine** Thin, serrated-tipped pliers with curved jaws for gripping, removing and inserting a wide variety of orthodontic appliances. A typical application is the insertion or extraction of the ends of orthodontic wires into tubes.
SD 159	**Lingual Arch Placing Straight** Pliers for insertion of palatal arches and lingual arches into tubes. For arches made of Ø 0,9mm wires.
SD 160	**Weingart Ling** Thin, serrated-tipped pliers with curved jaws for gripping, removing and inserting a wide variety of orthodontic appliances. A typical application is the insertion or extraction of the ends of orthodontic wires into tubes.
SD 200/C/L/F	**Aderer Curved Left Fine** Pliers with a reducing and "stop" function for orthodontic wires. Capacity: max 0.016”
SD 200/C/L/XF	**Aderer Curved Left Extra Fine** Pliers with a reducing and "stop" function for orthodontic wires. Capacity: max 0.014”
SD 200/C/L/M	**Aderer Curved Left Medium** Pliers with a reducing and "stop" function for orthodontic wires. Capacity: max 0.028”
SD 200/C/R/M	**Aderer Curved Right Medium** Pliers with a reducing and "stop" function for orthodontic wires. Capacity: max 0.028”
SD 200/C/R/F	**Aderer Curved Right Fine** Pliers with a reducing and "stop" function for orthodontic wires. Capacity: max 0.016”
SD 200/C/R/XF	**Aderer Curved Right Extra Fine** Pliers with a reducing and "stop" function for orthodontic wires. Capacity: max 0.014”
SD 200/F	**Aderer Fine** Pliers with a reducing and "stop" function for orthodontic wires. Capacity: max 0.016”
SD 200/M	**Aderer Medium** Pliers with a reducing and "stop" function for orthodontic wires. Capacity: max 0.028”
SD 200/T	**Aderer Technical** Pliers with a reducing and "stop" function for orthodontic wires. Pliers designed for dental laboratory use.
SD 200/XF	**Aderer Extra Fine** Pliers with a reducing and "stop" function for orthodontic wires. Capacity: max 0.014”
SD 201	**Aderer Double** Pliers with a reducing and "stop" function for orthodontic wires. For bending Gable and To-in.
SD 204	**De La Rosa Triple** Pliers used for bending a straigt wire. Size variations: 0.016”; 0.017”; 0.018”; 0.019”; 0.022
SD 221	**V-Stop Triple** Pliers with a reducing and "stop" function for orthodontic wires. Maximum capacity: 0.019” x 0.022” For steel wires.
SD 230	**Nance** Pliers mainly used to make loops. Its stepped design makes it easier to bend different sizes of loops with symmetrical uniformity. Parallel gripping between jaws greatly helps to avoid unwanted torque. The rounding of the tops of the steps helps to bend the loops more accurately and smoothly, while the gradual increase in their width affects the flexibility of the loops.
SD 313	**Helix** Pliers used for bending various loops, helixes into orthodontic wires. For steel wires.
SD 314	**Young** Pliers used for bending various loops, helixes into orthodontic wires. For steel wires.
SD 314/T	**Young Technical** Pliers used for bending various loops, helixes into orthodontic wires. For steel wires.
SD 345	**Bracket Remover** Pliers for removing metal and ceramic brackets.
SD 345 E	**Bracket Remover Extended Curved** Pliers for removing metal and ceramic brackets. With curved tip.
SD 346	**Bracket Remover with Pad** Pliers for removing metal and ceramic brackets. Support with plastic insert.
SD 347/N	**Band Remover Normal** Orthodontic band remover pliers. The chewing surface of the tooth should be supported by the plastic tipped half of the pliers while the other half of the pliers can easily access the bottom of the ring to move it upwards.
SD 347/R	**Band Remover Reduced** Orthodontic band remover pliers. The chewing surface of the tooth should be supported by the plastic tipped half of the pliers while the other half of the pliers can easily access the bottom of the ring to move it upwards.
SD 347/E	**Band Remover Extend** Orthodontic band remover pliers. The chewing surface of the tooth should be supported by the plastic tipped half of the pliers while the other half of the pliers can easily access the bottom of the ring to move it upwards.
SD 410	**Lingual Arch Forming** Pliers for forming the end of palatal arches (made of Ø 0,9mm wire) to be inserted into a tube.
SD 505	**Adams** Pliers used for bending various loops, helixes into orthodontic wires. For steel wires.
SD 562	**Flat Plier** Pliers used for bending various loops, helixes into orthodontic wires. For steel wires.
SD 710	**Lingual I.** Pliers designed for inserting thin orthodontic wires (0.012" - 0.014") into a tube.
SD 720	**Lingual II.** Pliers designed for inserting thin orthodontic wires (0.012" - 0.014") into a tube.
SD 758	**Lingual Weingart** Thin, serrated-tipped pliers with curved jaws for gripping, removing and inserting a wide variety of orthodontic appliances. A typical application is the insertion or extraction of the ends of orthodontic wires into tubes.
SD 750/L	**Bond Remover Left** Pliers used to remove excess glue after bonding the bracket or band.
SD 750/R	**Bond Remover Right** Pliers used to remove excess glue after bonding the bracket or band.
SD 805	**Torquing** Pliers used to correct the torque of the wire with the accompanying key.
SD 805/K	**Torquing Key** Key for the Torquing pliers.
SD 811	**Tweed** Used for curve shaping. It is also the most commonly used pliers for checking and adjusting torque in curved sections, and is also often used to make steps and first-order bends.
SD 811/L	**Tweed Long** Used for curve shaping. It is also the most commonly used pliers for checking and adjusting torque in curved sections, and is also often used to make steps and first-order bends.
SD 812	**Tweed Double** Used for curve shaping. It is also the most commonly used pliers for checking and adjusting torque in curved sections, and is also often used to make steps and first-order bends.
SD 900/1	**Penguin 1mm** Used to activate S-Garian arch. It also allows activation without removing the arch. 1mm expansion.
SD 900/2	**Penguin 2mm** Used to activate S-Garian arch. It also allows activation without removing the arch. 2mm expansion.
SD 900/3	**Penguin 3mm** Used to activate S-Garian arch. It also allows activation without removing the arch. 3mm expansion.