GENERAL NOTES ON PINION TRANSMISSION SYSTEMS

RUNNING IN THE TRANSMISSION	The running of a Pinion transmission gets better and better during the first 1000 km. Also, the running-in period may be significantly shorter depending on the type of rider. The surfaces of various parts become smooth and all components adjust to one another ideally. A transmission always has the basic property of giving the impression that it runs less smoothly in the high gears. This is due to the transmission ratio in the transmission, and it is just a perceived effect. In actual fact, a Pinion transmission runs with silky smoothness in all gears. A slight difference in the smooth-running properties between individual gears depends on the particular seal friction. The seal friction varies, firstly, as a result of production and, secondly, depending on the formation of the lubrication film. However, during riding, this minimum level of friction can be disregarded.
TRANSMISSION CARE	Clean your transmission from the outside using soap solution and a moist cloth. Bicycle care products or protection sprays can also be used. If you use high-pressure cleaners, please keep a minimum distance of 50 cm from the transmission. From time to time, grease the inside of the gear shift box with lubricating grease that does not have any gumming properties. IMPORTANT: never retighten the special screws on the housing. These have been screwed in at the factory to the correct torque and then locked. This is the only way to guarantee that the transmission will remain leak-tight on a continuous basis.
RANGE OF APPLICATIONS	Pinion transmissions are used all over the world – under almost any conditions, no matter how challenging. They have proven their enduring strength in numerous round-the-world rides. Ice cold temperatures at the Arctic Circle of -15°C and below, or riding in sweltering desert heat at more than +60°C do not represent any problem for the transmission. Leak-tightness of the transmission is also no problem in the thin air of high altitudes. Occasionally riding through rivers or streams is not a critical problem either. Simply make sure that the inside of the gear shift box is well greased.
EFFICIENCY	The efficiency depends to a significant extent on the load situation (input torque, rotation speed, etc.), which means it is not possible to apply one single figure to this. Consequently, specific efficiency values quoted by other gear shift manufacturers should be taken with a pinch of salt. In contrast to a hub gear shift with (usually) three sequentially selected planetary stages, the Pinion only has two gear stages which are each optimised to deliver maximum efficiency. The straight chain/belt run means there are no efficiency losses, in contrast to the situation with chain gear shifts. What this means is that Pinion is centrally positioned in terms of efficiency between a high-quality hub gear shift and a new, perfectly adjusted derailleur gear shift running with a straight chainline. If a derailleur gear shift is dirty or worn and the chain is running at an angle then in most cases the efficiency of a Pinion transmission will be higher.

Pinion and many thousands of cyclists have gathered important experience in using the transmissions over the past five years. We would like to share this experience with you in order to ensure trouble-free satisfaction. In many cases, you yourself or your local specialist workshop will be able to resolve a problem without needing to send the transmission back to us.

Here, you will find the most important insights into the topics of noise, gear shift behaviour, derailleur cables, toothed belts and much else besides. The table below is intended to help you to locate and correct the cause of a malfunction.

WHAT TO DO IF ...

TOPIC	MALFUNCTION	CAUSE	RECTIFICATION	REMARKS
DISRUPTIVE NOISES IMPORTANT NOTE: Pinion transmissions run smoothly and without disruptive noises. If noises occur and the transmission changes gear correctly, this means the noises are not coming from the transmission but must have another cause. Please search for the cause elsewhere on the entire bicycle.	**Grinding noises**	These noises are often caused by using a tooth belt.	I. Vary the belt tension. Often, the belt is too tight. II. Belt line is not correct. Often, it is helpful to change the rear spacer set so the belt moves 1 mm further towards the inside or outside.	Grinding or creaking noises **cannot come from the transmission itself**. Often, the causes are to be found in the immediate vicinity of the transmission. But sometimes, quite far away from it. Your specialist workshop will be all too aware of the troublesome points on your bicycle, and will be able to help you.
	Creaking noises	The cause is not in the transmission but in the area around it. In most cases, it is not even in the vicinity of the transmission but on the pedals, in the saddle or close to the handlebars. Your specialist workshop will know all about these troublesome points.	I. Check the fitting sleeves. Remove the transmission from the frame of the bicycle. Clean and grease the fitting sleeves and contact points. II. The crank arms should be mounted with grease and set to the correct torque on the input shaft. III. Check all add-on parts that might be causing noises.	
	Buzzing or humming	The chainline or belt line is not correct. When running at an angle, this gives rise to noises that sound as if they come from the transmission.	Set the chainline or belt line as precisely as possible.	Please comply with the instructions from the belt manufacturer.
	Cracking noises	Screw connections of driver components may have come loose.	I. Check all screw connections of the driveline with a torque wrench: screws of the cranks, the spider, the chain sprockets, the freewheel and the pedals. II. Alternate and repeated tightening of the radial crank screws on each crank arm. III. Apply "medium-firm" screw locking compound to certain screws based on the screw connection regulations (see user manual)	**CAUTION:** Do not turn the Pinion housing screws under any circumstances. Screws and/or seals could be damaged and oil could leak out.
	Slight "clicking" in 7th and 13th gears	In transmissions up to model year 2014, there is a selector dog in both these gear stages which causes this noise during freewheeling.	The noise is not a defect, but a principle of the design. If required, it is possible to upgrade to the latest transmission version.	If your transmission is still one of the first generation, we can offer you an upgrade to the latest transmission generation including a complete overall, for which a payment is required. If you decide to do this, we request that you contact your specialist workshop.

TOPIC	MALFUNCTION	CAUSE	RECTIFICATION	REMARKS
DIFFICULT SHIFTS IN THE TRANSMISSION	**Increased force is required to turn the gear shifter.**	Worn or incorrect derailleur cables, outer sleeves or end caps.	I. Only use derailleur cables with a maximum diameter of 1.2 mm. Exclusively use derailleur cable outer sleeves. Do not use brake cable sleeves or hydraulic lines. II. Exclusively use plastic end caps, never metal ones. III. Check the routing of the cable on the rotary shifter and in the selector box on the transmission for wear and that it is guided correctly. It is essential for frayed derailleur cables to be renewed. IV. Do not use curved angle pieces on the rotary shifter.	Pinion offers two variants of transmission pulling cable helix. From 2015 onwards, exclusively "universal transmission pulling cable helices" have been fitted. These offer the advantage that standard derailleur cables can be used. A special derailleur cable is required for the first generation transmission pulling cable helix, and is available as a spare part. All installation instructions can be found in the owner's manual or viewed in comprehensive service videos at: www.pinion.eu
CONTINUOUSLY CHANGING BELT TENSION	**The toothed belt has different levels of tension during one rotation.**	The belt pulley is not mounted centrally on the spider. If the chain ring screws do not have the correct diameter, it is possible for the belt pulley to slip out of the centre.	Chain ring screws with an outer diameter of 10 mm must be used.	
SPORADIC GEAR SLIPPING	**While pedalling, you feel a small jolt and hear a loud single click.**	The selectable freewheels in the transmission are selectively activated or deactivated during the gear shift procedure. In extremely rare cases, it is possible for a freewheel dog to fail to engage correctly, and then only engage with the next tooth after the crank has completed a few rotations.	Sporadic slipping into the next tooth engagement position is possible in very rare cases; the selector dog will then reliably engage in the next tooth. The strength and durability of the transmission is not endangered by this.	

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