

# Instructions for Use

VGK-X / VGK-XS



EN



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Use the *Final Checklist* on page 29 to check the essential installation points

# 1 Introduction

## 1.1 Intended purpose

The VGK-X/VGK-XS is intended to be solely used in lower extremity prosthetic limbs as a prosthetic knee joint to assist ambulation and activities of daily living. The product can be used for uni- or bilateral amputation. The VGK-X/VGK-XS is compatible with osseointegration, however, permission **MUST** be obtained from the manufacturer prior to use with osseointegration. Permission for use with osseointegration is considered on a case-by-case basis.

## 1.2 Technology

The VGK-X/VGK-XS is a **Fluidic Processor Knee (FPK)**, which uses fluidic sensors to respond to changes in gait in real-time, by adjusting motion resistance within a single step.

## 1.3 Recommended user profile

The VGK-X/VGK-XS is recommended for prosthetic users typically of mobility classes 1-4\*\*. The VGK-X/VGK-XS is suited for users with transfemoral amputation, knee disarticulation, or hip disarticulation. The user's body weight can be up to 80 kg for VGK-X, and up to 60 kg for VGK-XS.

\*\* Users with significant comorbidity must be carefully monitored in the rehabilitation period to ascertain the suitability of the device for their needs.

## 1.4 Installation and adjustments

The VGK-X/VGK-XS must be installed by a Certified Prosthetic/Orthotist (CP or CPO) to make sure the alignment and control settings are adjusted safely. The user may adjust the controls under the guidance of their CPO. The CPO must assess whether the user is able to adjust the knee joint safely. There are special instructions with regards to use in a wet environment that must be passed to the user by the CPO.

## 1.5 Compatibility

The VGK-X/VGK-XS is always supplied with an adapter to be used at the proximal connection of the knee joint. The proximal adapter for VGK-X/VGK-XS must be supplied by Orthomobility. Once the proximal adapter has been installed on VGK-X/VGK-XS, the knee is compatible with the full complement of prosthetic components, energy-storing feet, hydraulic ankles, hip components, shock absorbers.

## 1.6 Lifetime of the device

In compliance with the EU Medical Device Regulations, Orthomobility has defined a maximum usage period of **5 Years + 3 months for VGK-X/VGK-XS**. The rate at which the device is used will vary between patients, but this limit puts a practical, manageable, and measurable limit on its use. The additional “3 months” have been added to allow time for shipping and replacement limb fitting.

VGK-X/VGK-XS must not be used after the maximum usage period. The **usage period starts on the date of shipment by the distributor** and this date appears on the product label. If the shipping date is not known, the date of invoice will be used. Please contact the distributor if the start date is not available.

## 1.7 Identification of the device

A VGK-X/VGK-XS unit may be identified with the serial number that is engraved on the product. The product model is identified through colour coding, as shown in **Fig 1.1**.

## 1.8 Normal use (note stairs)

The VGK-X/VGK-XS has been developed for ambulation and ordinary mobility use: walking, sitting, kneeling, and occasional wetting by rain or tap water. The use of handrails or bannisters is recommended when descending downstairs. Normal use also includes cycling if the product has been ordered with a cycling function. NOTE: to set up the knee for cycling requires a special procedure to be followed.



**Fig 1.1:** Location of serial number and identification of product model

## 1.9 Contact with water

The VGK-X/VGK-XS is suitable for occasional use in water up to a depth of 1.5 m. However, the knee joint has no buoyancy in water. There is also a risk of snagging on plants or objects.

If the knee joint is to be used in wet environments more frequently than once a month, this requires the manufacturer's prior agreement such that a care and maintenance program can be discussed. The manufacturer may limit the use of the knee joint in wet environments if a care and maintenance program is not followed. Also note the instructions in **Section 6**.

## 1.10 Expectation management

Please advise the user that this device is designed to offer a functionality that is compatible with a high level of safety. The high level of safety is likely to elevate their expectations of their ability, and consequently your patient may find limits in the performance of the device. When such an event happens, they are asked to record the circumstances and report the event back to their CPO.

## 1.11 Irregular and extreme use

Irregular and extreme use may occasionally be required and this should be agreed with the manufacturer beforehand. Such use may involve water and dirt, mechanical shock and forceful use. Whereas these may be considered as part of intended use, it will be required that written permission is sought from the manufacturer so that such irregular use can be risk assessed, supported, or denied on grounds of risk. A considered permission/denial/support programme will be discussed on request. Use of the product in a sauna is excluded. Avoid sand entering the knee.

### 1.11.1 Extreme temperature

The VGK-X/VGK-XS has been designed for a stable performance over a range of temperatures. The use in very low temperatures (sub-zero) may cause some stiffening in the yield action of the joint, which could cause an imbalance during hands-free slope and stairs descent. In this instance, it is advised to first try using it close to a handrail. In elevated temperatures (40 degrees plus), the VGK-X/VGK-XS maintains its performance fairly well.

### 1.11.2 Extreme device settings

The VGK-X/VGK-XS permits a high level of resistance in yield. The device has been designed to contain hydraulic pressures that arise during normal use, including leg-over-leg stair descent. However, when significant weight is placed on the leg, the *device is **not** intended to be loaded in flexion in a 'locked' mode.*



## 1.12 Body weight and additional load

The VGK-X has been designed to allow for a patient body weight of 80 kg and these persons, at this maximum body weight, to carry not more than 15 kg of additional load on a daily basis.

VGK-XS is limited to 60 kg body weight and these users must not carry more than 10 kg on a daily basis.

## 1.13 Prevention of overheating

Do not use in the sauna because the heat may damage the metal surfaces. When used intensively, allow heat to escape via the frame by avoiding use of cosmetic foam covers.

## 1.14 Wear and tear

As with any device with mechanical elements, mechanical wear and tear will eventually occur, and the user and CPO are required to see that regular inspections and maintenance are carried out. Fair wear and tear includes the possible formation of corrosion due to regular wet use, especially in salt and chlorinated water, and urine. Cleaning with fresh water may reduce the impact of salt and chlorinated water. Fair wear and tear falls outside the standard scope of warranty.

## 1.15 Storage

The VGK-X/VGK-XS must be stored in an extended position.

## 2 Alignment

### 2.1 General alignment

The alignment of the knee joint must follow the straight hip-knee-ankle line. The 'Ankle' refers to where the natural ankle would be, that is between  $\frac{1}{4}$  and  $\frac{1}{3}$  of the foot length. Ideally the knee axis should be 10 mm behind the hip-ankle line (see [Fig 2.1](#)).

### 2.2 Leg length

To help the user easily initiate the swing release, the prosthesis length must be assessed as a LEVEL pelvis, or no more than 10 mm shorter. **DO CHECK THE LEG LENGTH.**

### 2.3 Socket flexion

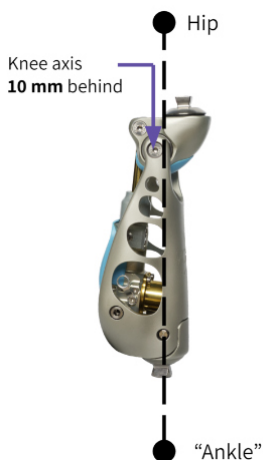
A vertical hip-knee-ankle line must be maintained as well as possible, even if initial hip flexion is required in the socket. This may be achieved by moving the socket and foot forward relative to the knee joint, and letting the user exercise a small amount of hip extension to maintain extension of the knee (see [Fig 2.2](#)).

### 2.4 Foot alignment

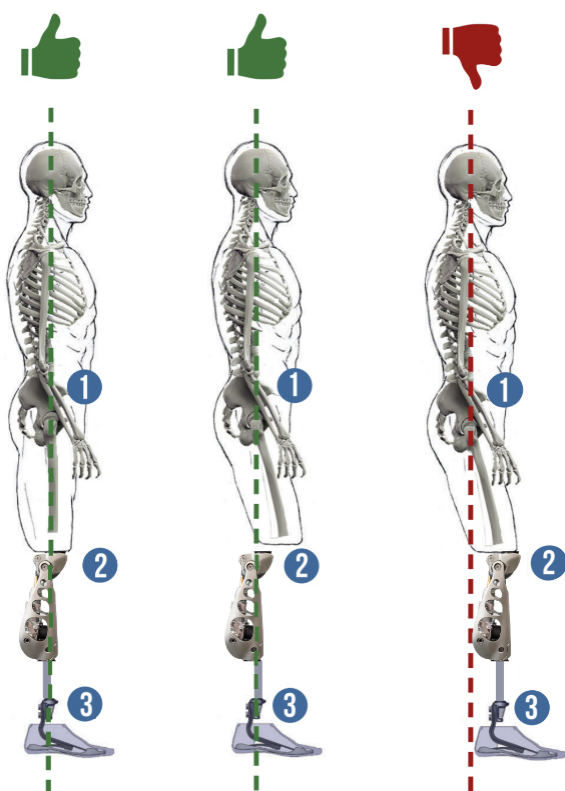
The VGK-X/VGK-XS requires a toe load in late stance to release into swing. Too much dorsiflexion of the foot may make it difficult to release the knee into swing if there is insufficient forefoot loading. Equally, an unusually high heel on the shoe will reduce the effective length of the foot and therefore may cause difficulty for swing release.

### 2.5 Kneeling

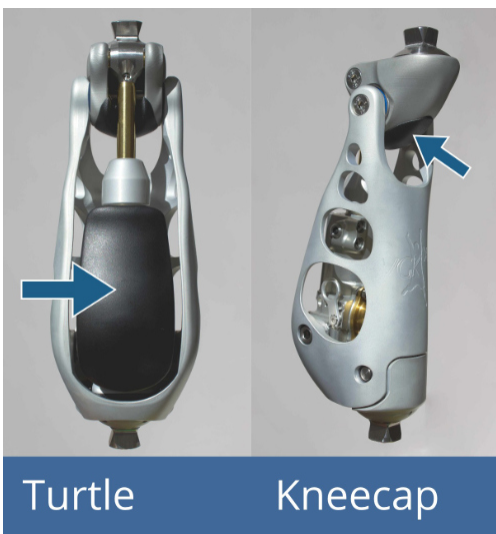
Maximum knee flexion may cause the socket (or tube) to touch the frame of the knee, or the hydraulic unit inside. The socket is allowed to rest on the frame. The hydraulic has been designed to take the forces of kneeling or squatting provided that the contact is made in the correct region. The following rules **MUST BE** followed to ensure safe kneeling on the hydraulic:



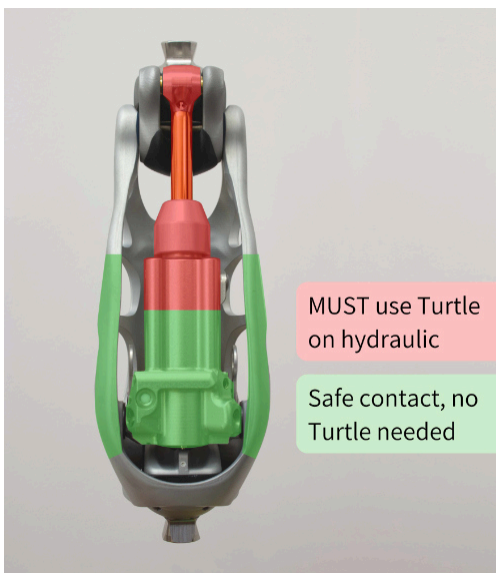
**Fig 2.1:** Alignment of VGK-X/XS



**Fig 2.2:** A vertical hip-knee-ankle line is the preferred alignment. A posteriorly placed hip/greater trochanter is liable to make swing release more difficult.



**Fig 2.3:** There are two rubber parts that support safe and comfortable kneeling, the Turtle and the Kneecap.



**Fig 2.4:** Ensuring safe contact with the socket, tube, or adapters.

1. It is permissible to kneel on the hydraulic provided the socket/tube comes into contact with the green regions, as indicated in **Fig 2.4**.
2. If the socket/tube rests on the red regions in **Fig 2.4**, the Turtle (see **Fig 2.3**) **MUST** be attached onto the hydraulic at all times. The Turtle assists in bringing the contact point into the green region. Be aware that in some cases, when the socket is quite wide at the end, the Turtle may still be insufficient to ensure safe contact. In this case you can glue material on the back of the rigid section of the Turtle. **DO make sure that eventually the contact point is in the green region in Fig 2.4.**

## 2.6 Installing the proximal adapter

The VGK-X/VGK-XS must have a proximal adapter installed on top to act as an interface for other prosthetic components (see **Fig 2.5(C)**). The proximal adapter must be provided by Orthomobility and be compatible with VGK-X/VGK-XS. Examples of proximal adapters are shown in **Fig 2.5(E)**.

The connection between VGK-X/VGK-XS and the adapter is two threads that have been clamped together by means of expanding the thread on the adapter. This is an adhesive-free solution so that rotational alignment of the adapter is possible. Therefore, please refrain from putting Loctite or other adhesive substances on the threads.

The proximal adapter is **ONLY** intended for adjusting the rotational alignment of the knee joint. Ensure that the gap between the top of the VGK-X/VGK-XS and the proximal adapter does not exceed 1 mm (see **Fig 2.5(C-D)**).

Install the proximal adapter as follows:

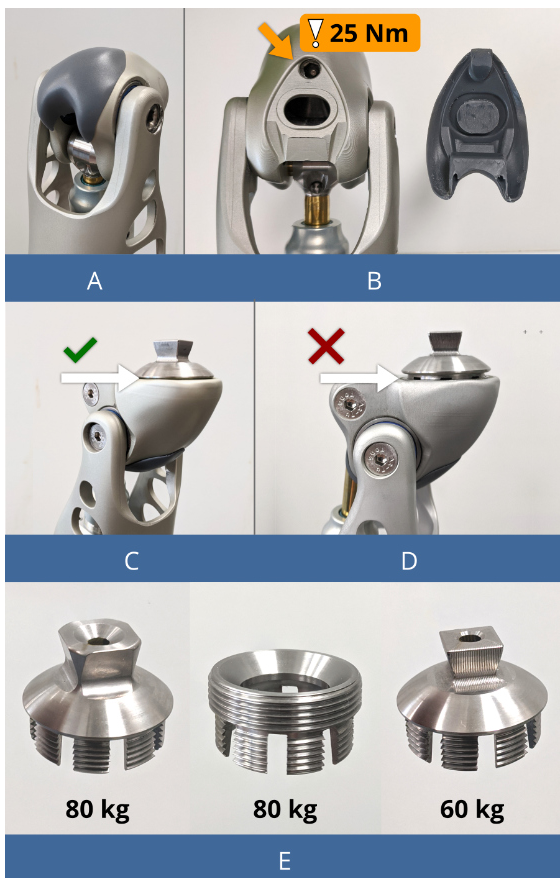
1. Remove the Kneecap from VGK-X/VGK-XS by unhooking it at the back (see **Fig 2.5(A)**).
2. With the Kneecap removed, a 5 mm HEX screw should be visible on the underside of the Kneecap (see **Fig 2.5(B)**). Unwind this screw.
3. Screw the proximal adapter fully into the top of VGK-X/VGK-XS. For the first fitting of VGK-X/VGK-XS, align the adapter straight. Tighten the screw by hand for first careful assessment ONLY.
4. When the alignment appears suitable, ENSURE that the gap between the proximal adapter and the VGK-X/XS is less than 1 mm. Then, DO torque the screw to **25 Nm** USING A TORQUE WRENCH.

Replace the Kneecap.

## 2.7 Rotational alignment of proximal adapter

The proximal adapter has been designed to allow rotational (re-)alignment. To change the rotational alignment, the threads of the adapter and VGK-X/VGK-XS must be loosened. Follow these steps:

1. Remove the Kneecap from VGK-X/VGK-XS by unhooking it at the back (see **Fig 2.5(A)**).
2. With the Kneecap removed, a 5 mm HEX screw should be visible on the underside of the Kneecap (see **Fig 2.5(B)**). Unwind this torqued-up screw to free the adapter.
3. Rotate the adapter as required, ensuring that the gap between the proximal adapter and the VGK-X/XS stays less than 1 mm.
4. Tighten the screw with a 5 mm HEX and torque it to **25 Nm** USING A TORQUE WRENCH.
5. Replace the Kneecap.



**Fig 2.5:** (A) The Kneecap is removed by putting the knee in full flexion, so that it can be unhooked from the back (B) Removing the Kneecap exposes the screw, operated by a 5 mm Hex. (C) The proximal adapter is screwed on the top of the VGK-X/VGK-XS, such that the gap is less than 1 mm. (D) The proximal adapter must not display a gap of more than 1 mm. (E) Examples of the proximal adapters for the 80 kg and the 60 kg systems.

## 2.8 Installing the distal pyramid

The VGK-X/VGK-XS must have a distal adapter installed on the bottom to act as an interface for other prosthetic components. The distal adapter must be provided by Orthomobility and be compatible with VGK-X/VGK-XS.

The instructions make reference to the steps shown in **Fig 2.6**.



# 2.8.1 Initial installation

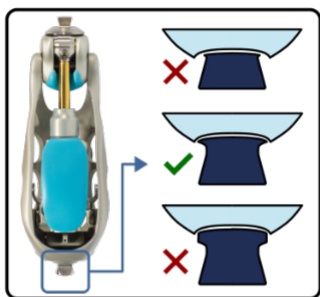
Step 1	<b>Fig 2.6 (A)</b>	The VGK-X/XS is provided with a distal pyramid. There is a distal adapter for the 80 kg VGK-X system, distinguishable by a flat pyramid top. There is also a distal adapter for the 60 kg VGK-XS system, distinguishable by a rounded pyramid top.
Step 2	<b>Fig 2.6 (B)</b>	The distal pyramid has 4 slots on the screw thread. To help align the pyramid correctly there are two dots engraved on the pyramid. Make sure that the two dots face the front and the back (respectively) of the knee joint. This will ensure that the screws are oriented perpendicular to the flat faces of the slot.
Step 3	<b>Fig 2.6 (C)</b>	<p>Wind the distal pyramid onto the bottom of the VGK-X/XS until the pyramid is about flush with the bottom of the VGK-X/XS. <b>Allow a step of less than 0.5 mm</b> between the pyramid and the bottom of the VGK-X/XS.</p> <p>Now rotate the pyramid so that it is square with the VGK-X/XS <b>and</b> that the engraved dots (described in step 2) face the front and the back of the VGK-X/XS. This will ensure that the two screws at the bottom of the VGK-X/XS can press on these flat faces to set the rotational alignment.</p> <p>It is <b>very important</b> to install the distal pyramid in the correct orientation to avoid damaging the product.</p>
Step 4	<b>Fig 2.6 (D)</b>	Wind in one screw as shown in the image. Note that at some point, winding in the screw rotates the distal pyramid. Adjust the screw until the distal pyramid is square with the frame.
Step 5	<b>Fig 2.6 (E)</b>	<p>Secure the initial rotational alignment by winding in the other screw, as shown in the image. Notice that with both screws dialed in, the pyramid can no longer rotate.</p> <p>If the alignment of the distal pyramid is already satisfactory at this stage, follow the instructions in <b>Section 2.8.3 “Securing the rotational alignment”</b> to finish.</p>



A



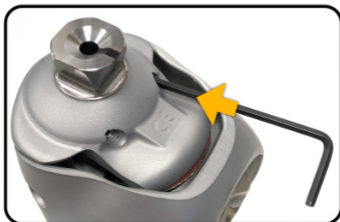
B



C



D



E

**Fig 2.6:** (A)-(J) Instructions for installing and adjusting the distal adapter. See Sections “Installing the distal pyramid” and “Rotational alignment of distal pyramid” for further explanation.



F



G & H



I



J

*Fig 2.6 (continued)*

## 2.8.2 Rotational alignment of distal pyramid

The distal pyramid has been designed to allow rotational (re-)alignment, when rotation of other components is not possible. There are two screws at the back of the distal pyramid that work together to set the rotation. Follow these steps to change the rotation:

Step 1		Loosen two adjacent pyramid set screws of the external component that is attached to the distal end of the VGK-X/XS (e.g. the foot or a tube).
Step 2	<b>Fig 2.6 (F-H)</b>	<p>For <i>external</i> rotation of the pyramid, dial out the <i>lateral</i> screw first and then dial in the medial screw.</p> <p>For <i>internal</i> rotation of the pyramid, dial out the <i>medial</i> screw first and then dial in the lateral screw.</p>
Step 3	<b>Fig 2.6 (I)</b>	<p>Before reattaching the external components, check that the rotational alignment screws sit underneath the surface. With more extreme rotations of the distal pyramid, one of the rotational alignment screws may stick out as shown in the image.</p> <p>To avoid one of the rotational alignment screws sticking out, replace the screw with a shorter version, provided with the product.</p>

## 2.8.3 Securing the rotational alignment

See **Fig 2.6 (J)**. **One screw at a time**, unwind the screw and put a drop of medium strength thread sealant (such as Loctite 222) on the screw. Torque the screw to **1 Nm**.

# 3 Controls

## 3.1 Swing release

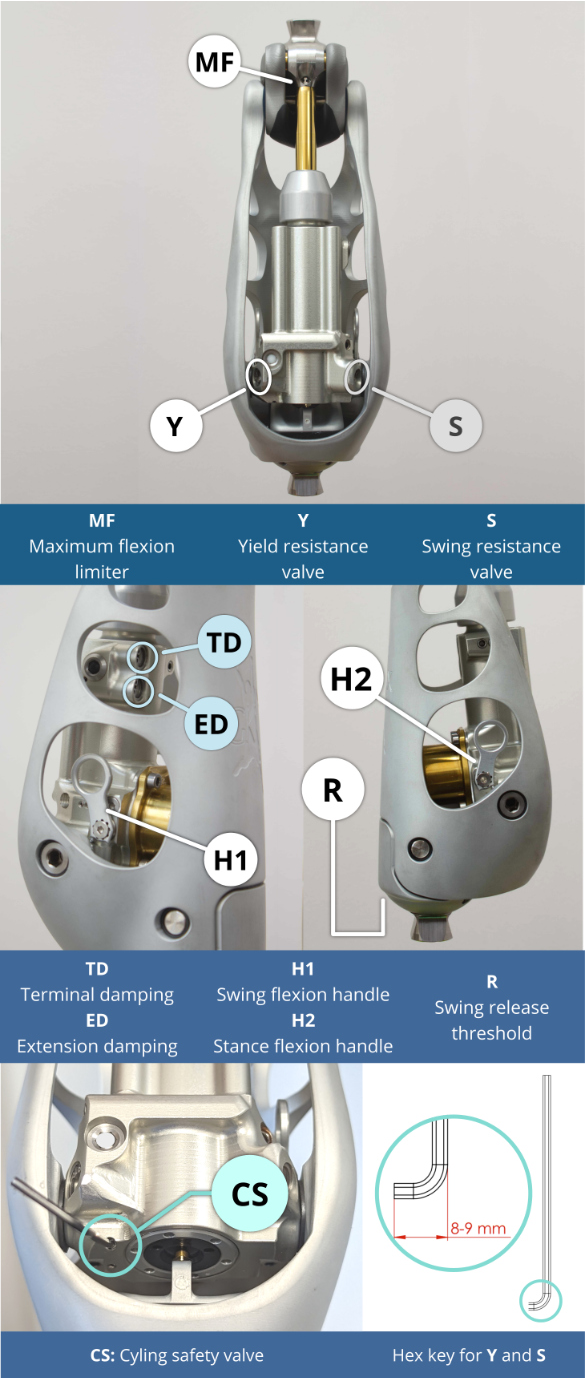
### 3.1.1 Setting swing release threshold

The VGK-X/VGK-XS relies on the presence of knee extension and toe-load for swing-phase release. This condition is natural in terminal stance. For most users this switching behaviour is set to be as light as possible. For bilateral amputees, the transition may need to be more deliberate to secure standing balance. If the threshold for switching to swing-phase must be increased, the Swing Release Threshold, **R** in [Fig 3.1](#), is turned clockwise using a 2 mm Hex key.

The VGK-X/VGK-XS senses toe load by a slight swivelling action of the distal knee section. There is a spring system in the distal knee, which for safety allows the distal knee to be biased to the stance-phase position. When weight is placed on the forefoot, the distal knee can overcome the spring tension and swivel into the swing-initiation position. Therefore the more the spring is preloaded (by clockwise turning **R** in [Fig 3.1](#)), the higher the toe-load must be to cross the threshold for swing initiation. There is only a limited range of adding pre-load!

### 3.1.2 Conditions for swing release

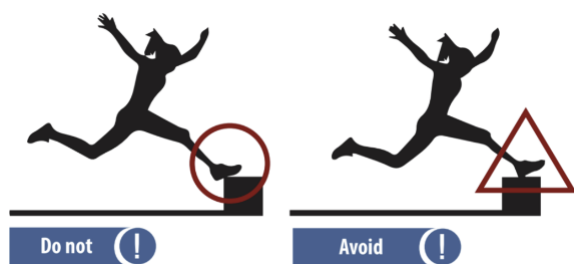
The knee joint will release into the swing phase when there is a hyperextension moment, immediately followed by a high knee flexion moment. Using the knee joint in a forceful way can, in exceptional circumstances, lead to an unintended release into the swing phase. An example of such non-recommended use is attempting to land hard on the mid-foot onto a curb or step (see [Fig 3.3](#)). This user-induced failmode is unlikely to happen in ordinary walking. User confidence in the VGK-X/VGK-XS should not be lost, provided the usual behaviour continues after such an incident or event of exceptional use.



**Fig 3.1:** Locations of controls for clinical adjustments



**Fig 3.2:** Positions for handle *H1*, positions for handle *H2*, and location of swing release adjustment, *R*



**Fig 3.3:** Avoiding unintentional swing release

## 3.2 Stance Flexion Handle

The use of yield resistance (stance resistance) is set using the stance flexion handle, H2 in Fig 3.1. See Fig 3.2 for possible positions of handle H2.

Position	Description
W	Stairs mode. Stance resistance compatible with ordinary walking, including stairs and slopes (adjustable)
U	Ultra high stance resistance
C *	Cycle mode, which is a free mode with safety catch for when the piston exceeds a threshold speed (threshold is adjustable)

*\* Position C is only available in VGK-X/XS **with** cycling function*

## 3.3 Swing Flexion Handle

See Fig 3.2 for possible positions of the swing flexion handle, H1 in Fig 3.1. The handle provides a swing flexion lock with the handle in position L. With the handle in position F, the swing-phase is free, which is compatible with ordinary walking.



### 3.4 Use cases for handle positions

The following table gives suggestions for how the different stance and swing handles can be used:

		Swing Flexion Handle	
		Position F	Position L
Stance Flexion Handle	Position W	Ordinary walking including stairs and slopes.	The knee won't release into swing but still allows controlled bending under weight bearing. Useful when navigating a long uneven slope.
	Position U	The knee won't bend in the stance phase but can still release into the swing phase. Useful when standing for a long time but taking a few steps, for example working in the kitchen, or playing golf.	The knee will not bend at all. Useful when walking in very adverse conditions (e.g. very windy) when the user just wants the leg to stay straight.
	Position C *	Cycling with an adjustable safety catch. When the safety catch kicks in, the stance resistance is a bit higher than the resistance in Position W. <b>The cycling mode is not suitable for walking.</b>	

\* Position C is only available in VGK-X/XS **with** cycling function

# 4 Adjustments

## 4.1 Adjusting the stairs mode

See **Fig 3.1** and **Fig 3.2**. The stairs mode is selected by positioning the stance flexion handle (H2) in **position W**. The rate of knee flexion in stance can be adjusted with the Yield Resistance Valve, Y. Use a shortened 2 mm hex key to turn the valve anticlockwise for faster knee flexion, or clockwise for slower knee flexion. For convenience, a shortened 2 mm hex key is provided with the product. The dimensions in **Fig 3.1** show how far to grind back a standard hex key in case the key provided is lost.

To get the right setting for the user, allow them to descend from the last step of a stairs and adjust the valve until it is comfortable. Then adjust the valve further as required to accommodate more steps being taken in sequence.

DO take note that the resistance in stumble recovery = the resistance in stance mode. Therefore it is recommended to keep the stance mode resistance as high as is comfortable.

## 4.2 Ultra high resistance mode

See **Fig 3.1** and **Fig 3.2**. The ultra high resistance mode is selected by positioning the stance flexion handle (H2) in **position U**. This mode effectively blocks the yielding, but allows free swing (as long as the walking speed is not too high). For this reason, this mode is NOT A FULL LOCK. The user can still release the knee into the swing phase.

## 4.3 Adjusting the cycle mode

See **Fig 3.1** and **Fig 3.2**. The cycle mode is selected by positioning the stance flexion handle (H2) in **position C**. In this mode, there is a safety catch that kicks in when the knee flexion speed crosses a threshold.

The factory setting of the cycling function is ultra-safe! In this factory setting, the cycling function may not work for the user. Use the Cycling Safety Valve (CS in **Fig 3.1**) to lower the safety threshold, therefore permitting higher cycling speeds.

### 4.3.1 Bench testing cycle mode

Bench test the prosthesis to become familiar with the cycling settings. Turn the stance flexion handle to cycling mode and observe that in the factory setting, the knee does not bend easily. This is because the safety valve activates almost immediately. To turn the safety valve off, dial in the Cycling Safety Valve (CS in [Fig 3.1](#)) fully. Now the safety valve is effectively off and the knee should bend very easily irrespective of the flexion speed. By incrementally winding the Cycling Safety Valve screw anticlockwise again, a setting can be found where slow flexion movement is easy but fast movement incurs resistance. This is the basis for the VGK-X/VGK-XS to differentiate between the slow cycling movement that is to be permitted, and fast movement that may occur if the patient tries to walk on the knee and it has accidentally been left in the “cycling mode”.

### 4.3.2 Clinical set up of cycle mode

For clinical set-up, first select the cycling mode and turn off the safety valve (by dialling in the Cycling Safety Valve, CS in [Fig 3.1](#), fully). Now, let the user cycle and incrementally dial out the safety valve until the safety feature applies itself during cycling. Agree with the user how much to reduce the sensitivity of the safety feature, where if they simulated a collapse, they would still feel confident afterwards walking on it. Naturally, if faster cycling is required, there is less safety available in walking!



**Fig 4.1:** Adjustment of the maximum knee flexion

## 4.4 Swing phase adjustments

### 4.4.1 Maximum knee flexion limitation in swing

Reducing the maximum permissible knee flexion creates more forward drive of the knee. This is the MAIN control for swing phase adjustments.

The Knee Flexion Limiter (MF in Fig 3.1) is operated with a 0.8 mm diameter tool. The valve is factory set with maximum knee flexion. To reduce the maximum permitted knee flexion, the valve is turned as in Fig 4.1. This valve may require up to 120 turns across its full range. The total range between maximum and minimum is 120 swivel turns. DO RESPECT THE VALVE LIMITS. It is essential that you count the number of swivel turns in order to get a reproducible setting. Default factory setting is turned fully left. The adjustment is quite slow, so it is recommended to first turn the valve 40 strokes and assess the changes with the patient. Then repeat with another 40 strokes and re-assess. This way an optimum can be point.

*Note: Unfortunately there is currently no other indication of the current setting than counting, making the adjustment process a bit tricky. However, any other technical implementation of this setting would require more weight and/or volume to the VGK-X/VGK-XS.*

### 4.4.2 Nominal swing phase resistance

If there is insufficient forward drive of the shin, even after adjusting the maximum knee flexion, the swing resistance can be increased. The Swing Resistance Valve (S in Fig 3.1) is operable using a shortened 2 mm hex key (see Fig 3.1 for dimensions).

### 4.4.3 Terminal impact damping

The damping characteristics at terminal swing are adjustable with the two damping adjustment valves (TD and ED in Fig 3.1). The factory setting leaves both valves fully open and they can be closed to increase the damping (i.e. more extension resistance). If more damping is required, experiment with adjustments of the ED and TD valves. Understand that the ED valve acts before TD during extension.

# 5 Finishing check points

## 5.1 Essential movement in mechanism

An essential part of the VGK-X/VGK-XS mechanism is the slight swivelling motion in the distal knee section. The small gap between the distal knee section and the main frame must remain free of cosmeses, glue, dust particles, wedges, or anything else that could inhibit the movement. Warn the user against ingress of objects between moving parts and recommend a quarterly visual inspection. In case of doubt, a planned inspection by the clinician is recommended.

## 5.2 Cosmetic cover

When using a cover, regularly inspect the knee in case anything has fallen into the knee, to prevent damage between moving parts. Also ensure that the cover does not inhibit the essential movement described in **Section 5.1**.

## 5.3 Final checklist

Use this checklist to finalise the set-up of the VGK-X/XS:

- Proximal adapter torque **25 Nm**?
- Set screws (for distal adapter) secured with **1 Nm + low-strength Loctite**?
- Set screws (for distal adapter) under the surface? (See **Fig 2.6(I)**)
- Kneecap in place?
- Socket contact in safe position? (Use the Turtle if required, see **Fig 2.4**)
- Knee axis aligned **10 mm** behind Hip-Knee-Ankle?
- Is the pelvic level with contralateral side, or less than 10 mm shorter?

## 6 Care and maintenance

Regular inspection of the knee is recommended to prevent damage from accidental ingress of dirt and other foreign objects. Cleaning is mandatory if the device is exposed to a corrosive wet environment, such as salt or chlorine water, sand or urine. In this case, thoroughly hose down the knee joint with tap water and leave to dry. Any corrosion and subsequent damage is fair wear and tear.

If surface corrosion becomes visible, the user must inform their CPO so that an assessment can be made as to whether this could affect structural strength. This is particularly important when corrosion becomes noticeable in the form of lines that could indicate the onset of cracks. If in doubt, do not use the device and contact the manufacturer for advice.

The CPO must advise the user not to use the knee joint if it starts to malfunction. The user must inform their CPO of suspected device malfunction.

There is a risk of finger trapping between moving parts. Keep hands away from moving parts when bending the knee.

Please refer to [www.orthomobility.com](http://www.orthomobility.com) for more specific maintenance instructions

## 7 Product disposal

Product disposal is covered on the website:  
[www.orthomobility.com/disposal/](http://www.orthomobility.com/disposal/)

## 8 Warranty

Orthomobility Ltd. provides a time-based warranty against defects in materials and workmanship in accordance with terms and conditions of sale, and only when bought from approved suppliers. Defects arising from irregular and extreme use, and fair wear and tear are subject to the manufacturer's discretion. REGULAR/ PLANNED WET ENVIRONMENT USE requires the manufacturer's AGREEMENT. As the use of a prosthetic device includes inherent risks, the manufacturer limits

the liability arising from the use of the VGK-X/VGK-XS to that liability directly arising from a malfunction of the device, due to faulty materials and/or workmanship and excludes any other special, incidental or consequential damages. There is no implied warranty for corrosion-related breakdown following regular use in a wet and corrosive environment, where this has not been mitigated by thorough cleaning. For full details see Terms and Conditions on invoice.

## 9 Liability

The manufacturer liability for the use of the VGK-X/VGK-XS is limited to faults that occur from a malfunction of the device, caused by faulty materials and/or workmanship and exclude incidental damage due to misuse. The manufacturer cannot take liability for continued use of a known malfunctioning device. For full details please refer to the Terms and Conditions provided on the invoice.

## 10 Reporting of a serious incident

VGK-X/VGK-XS is a low-risk, Class I medical device. In the unlikely event of a serious incident in relation to the device, the incident should be reported to the manufacturer (Orthomobility Ltd.) and the competent authority of the Member State in which the user and/or patient is established.

## 11 Declaration of conformity



The VGK-X/VGK-XS and its variations made by Orthomobility Ltd, Reg 5143375 conform to the Medical Device Regulation 2017/745. See [www.orthomobility.com](http://www.orthomobility.com) for the full declaration of conformity.



VGK-X/VGK-XS and its variations made by Orthomobility Ltd, Reg 5143375 conform to the UK Medical Devices Regulations 2002. See [www.orthomobility.com](http://www.orthomobility.com) for the full declarations of conformity.

# 12 Manufacturer details

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Instructions for Use VGK-X/XS

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