**Mlnarik Organ, s.r.o.**
Cerhenska 9
29001 Sokolec
Czech Republic

organ
MLNARIK

# Kinetic Organ Keyboard: User Manual

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# 1 Overview

The Kinetic Organ Keyboard is a novel mechanical-sensing keyboard that emulates the physical response of traditional mechanical pipe-organ action. Mechanical pipe organs have a unique tactile feel due to not only Druckpunkt (touch point) but also the inertia of the moving parts. While many organ keyboards focus on Drukpunt effect, they lack the inertial resistance that gives mechanical organs their characteristic feel. The inertial resistance is exactly the thing that makes the Kinetic Organ Keyboard unique.
The keyboard combines traditional design principles (keys moving on pivots) with modern materials and techniques. Each key features a lever arm fitted with small weight to provide inertial resistance similar to that of a mechanical organ action.
There is also an adjustable Druckpunkt (touch point) simulated magnetically: it creates a reproducible force profile that mimics the pressure point found in mechanical organ actions. The combination of weighted lever arm and magnetic Druckpunkt leads to a highly realistic tactile experience, closely resembling the feel of a mechanical pipe organ.
Key motion is detected by Hall sensors and translated into velocity-sensitive MIDI messages, enabling seamless integration with modern virtual pipe-organ software.
The construction supports installation into organ stacks (multiple manuals) and complies with common German and British pipe-organ mounting and spacing standards.

# 2 Features

- 61 keys (5 octaves)
- Dimensions: 890 mm (length) × 355 mm (width) × 85 mm (height)
- Weight: 7.3 kg
- 4 levels of kinetic feeling (lever arm weight). The level is selected prior to delivery and is not user-adjustable; changing the kinetic feel after delivery requires replacing all lever arms.
- Adjustable magnetic Druckpunkt (touch point) with a high range (approximately 70-160 g).
- Adjustable key travel: 9-11 mm
- Wooden key cores with acrylic covers.
- Rigid frame construction with aluminum profiles.
- Hall sensor-based key sensing with high-resolution velocity detection. Supplied together with the HALL-SCANNER64 module.
- Fine adjustment of sideways key spacing to ensure optimal alignment.
- Enough space for installing piston buttons on rails below the keyboard.

# 3 Keyboard adjustments and individual key removal

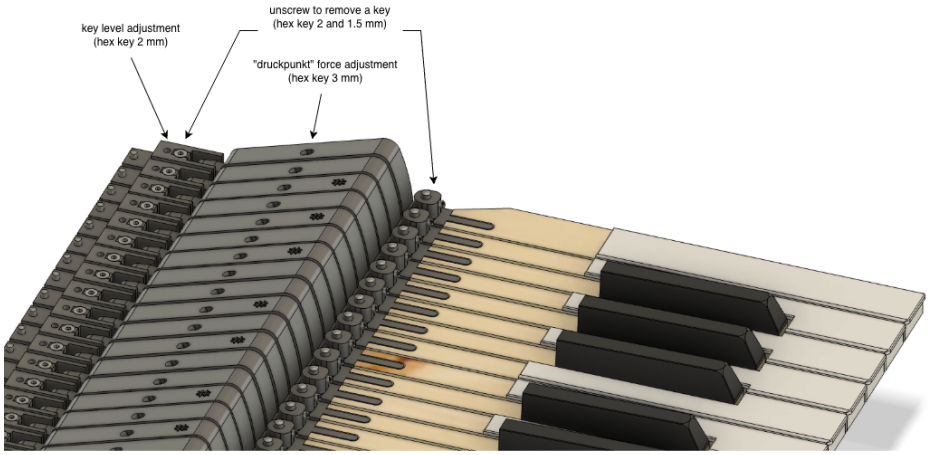


Figure 1: Important adjustment and key removal points

All adjustments are conveniently made from the top of the keyboard. The individual key level is adjusted by a screw located at the rear of the keyboard. The screw is a bit hidden, accessible through a small hole in a plastic cover using a 2 mm hex key. Adjustment is very fine and does not affect Druckpunkt force.
The magnetic Druckpunkt is adjusted by a screw located inside the lever arm. It is accessible through a dedicated hole in the key frame. Use a 3 mm hex key. When adjusting the Druckpunkt, it is recommended to use a force gauge to measure the actual force at the key. Be careful when adjusting the Druckpunkt, always make small adjustments and check the resulting force after each adjustment. The screw can potentially be turned all the way out, which will cause the screw to fall out of the lever arm. If this happens, the key must be removed and the screw with the magnet must be reinstalled.
If needed, individual keys can be removed for maintenance or replacement. To remove a key, remove the plastic cover at the rear of the keyboard and a locking ring. Then the key can be lifted from the steel pivots. The key comes away together with the lever arm. The lever arm can also be easily detached from the key by pushing out the small shaft. When reinstalling the key, tighten the screw gently.

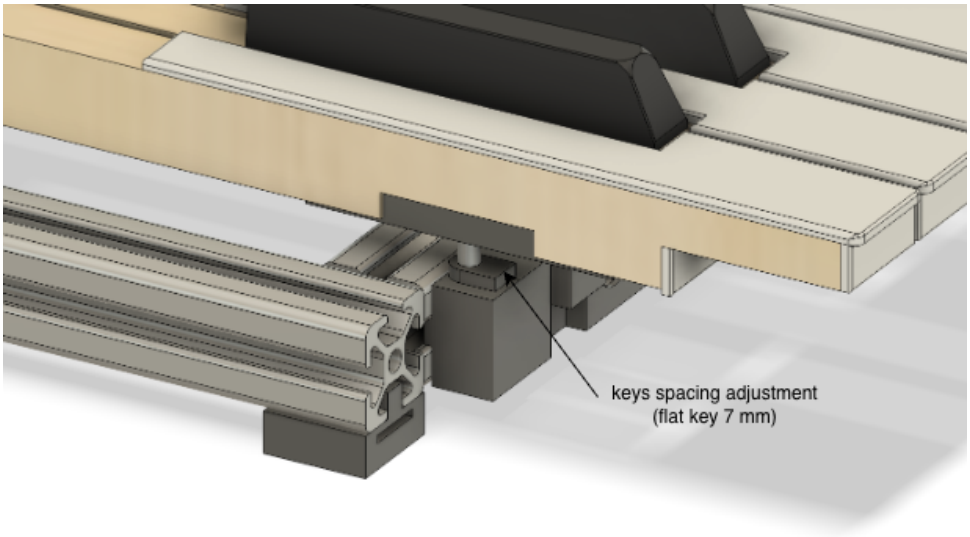


Figure 2: Front pin eccentric housing

Occasionally, it is possible to adjust sideways key spacing (gaps between the keys). This is commonly not needed, but after a key replacement it may happen that the key is not perfectly aligned with the neighboring keys. The sideways key spacing can be adjusted by gently turning the plastic front pin eccentric housing. Turning the housing (use a 7 mm flat key) will move the key sideways. Be very careful during this.

## 4 Maintenance

The keyboard requires minimal maintenance. It is completely lube-free. However, soft materials such as felt may settle or compress over time. Occasionally it may be necessary to adjust the key level and Druckpunkt. For stacked installations, ensure the keyboard stack can be easily disassembled: each manual should be removable to allow occasional adjustment of the manual underneath.
After long-term use, the key pin bushings and felts may wear out. In this case, they must be replaced.

## 5 Important Safety and Care Instructions

This keyboard is designed for indoor use only. Do not expose it to direct sunlight for extended periods, as prolonged UV exposure may cause degradation of plastic components, leading to discoloration, brittleness, or structural damage.

# 6 Drawings

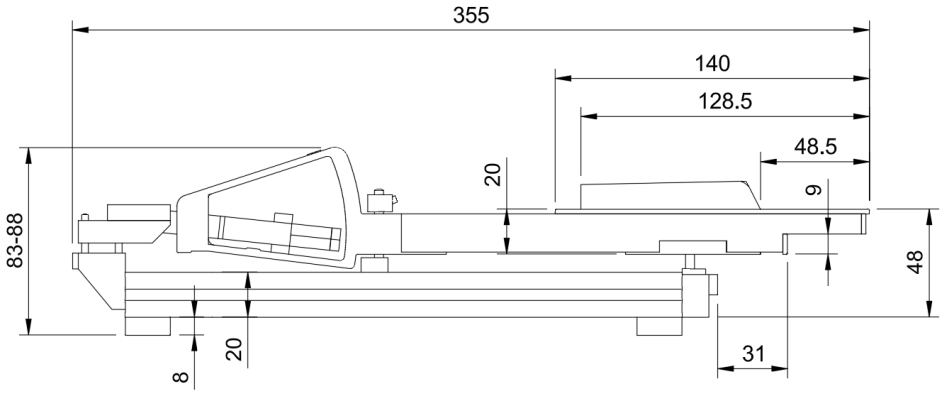


Figure 3: Side view of the keyboard (dimensions in mm)

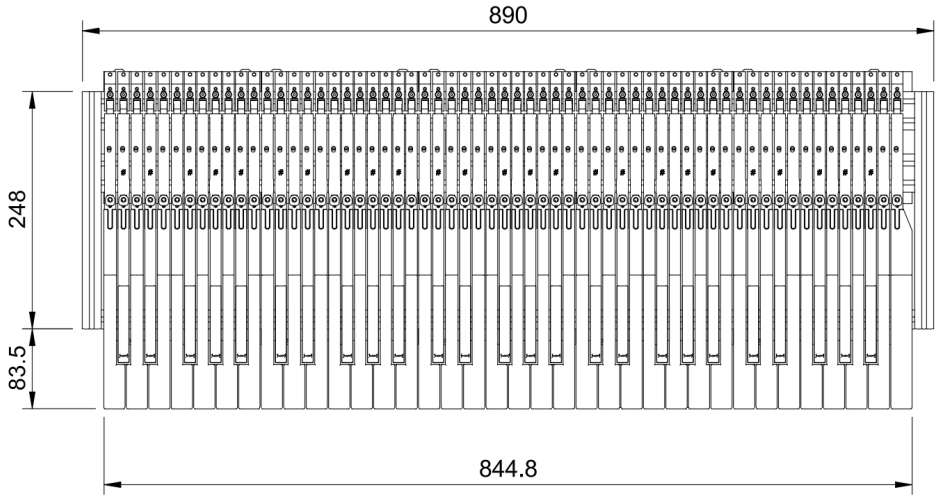


Figure 4: Top view of the keyboard (dimensions in mm)

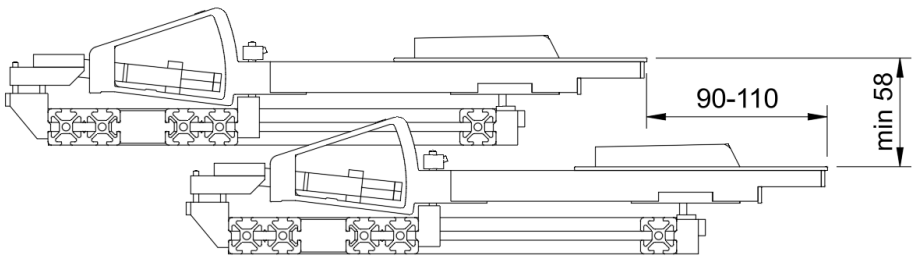


Figure 5: Keyboards in a stack (dimensions in mm)