

HYPOXICO K2 HIGH FLOW SYSTEM



WHY ALTITUDE TRAINING?

Traditionally, individuals have taken month long trips or moved to moderate altitude in order to gain the benefits of living in a hypoxic (oxygen reduced) environment. Altitude training improves physical performance by enhancing muscle function and the transport and use of oxygen by the body. However, for most individuals living at altitude job and normal family life. Today, through the use of Hypoxico's patented technology, you can obtain the benefits of altitude without the need to leave the comforts of home. These systems allow for the delivery of hypoxic environment in three different forms, each providing its own physical benefits for enhanced oxygen delivery by the body:

- 1) **Prolonged Passive Exposures:** Stimulate the production of the hormone erythropoietin (EPO) while simultaneously improving breathing economy and the ability to tolerate lactate.
- 2) **Short Passive Exposure:** Improve breathing economy and the ability to buffer lactate.
- 3) **Short Training Exposures:** Improves muscular endurance and increases fitness through intensified aerobic and anaerobic training sessions. Training under intermittent hypoxic also prepares an individual best for competition or hiking at altitude by improving breathing economy, and the ability to stay saturated with oxygen while working hard at altitude.

Why Hypoxic Training?

- Increase Endurance & Stamina
- Pre-Acclimate to Altitude at Sea-level
- Stimulate Metabolism
- Improve Recovery
- Reduce training load during rehabilitation
- Increase Speed & Power
- Elevate VO2 Max & Lactate Threshold

K2 HIGH-FLOW

THE STANDARD in Altitude Training Equipment!

In our quest to provide the very best equipment available in the market, Hypoxico has developed the K2 high-flow hypoxic equipment. As safety is paramount, the systems' high air flow rates are designed to remove the risk of a dangerous atmosphere being created. In addition Hypoxico's K2 systems supply a properly mixed atmosphere providing consistent O2 levels throughout the chamber. Oxygen levels are monitored with visual alarm indications, and shutdown is automatic if a hazardous situation occurs.

Each K2 system is fully automatic, requiring no activity whatsoever by staff. The intelligent control system delivers rapid achievement of altitude, and precise control of oxygen levels to **0.1%** within the design range, from 9% to 20.9%.

The air supplied is very dry - typically 10 to 15% RH. This dry air counteracts the high humidity generated during exercise, usually resulting in comfortable humidity levels without the need for dehumidification.

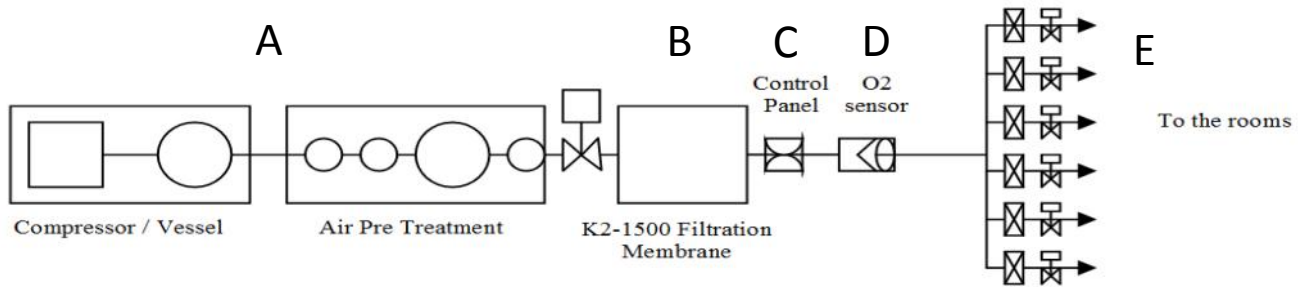


| K2 Model | Flow Rate | Number of Users Supported |
|----------------|---------------------------|---------------------------|
| K2-750 | 750 liters / min | 1-3 |
| K2-1000 | 1,000 liters / min | Up to 5 |
| K2-1500 | 1,500 liters / min | Up to 7 |
| K2-2000 | 2,000 liters / min | Up to 10 |
| K2-3000 | 3,000 liters / min | Up to 15 |

K2 HIGH-FLOW

Component Flow Chart and Description

There are several components which make up a Hypoxico K2 Hypoxic system. Below is a description of each.



A. K2 AIR COMPRESSOR

The largest component of the K2 system and the driving force behind it is the Kaeser branded rotary screw air compressor. Kaeser is the premier compressor company in the world, providing the highest quality, greatest dependability, and low-noise production. The placement of the compressor can be to your choosing, distance from compressor to the altitude room is of no concern.



Our compressors incorporate a refrigerated air-drying system to ensure excess moisture is depleted from the air prior to reaching the filtration system. This dryer will generate enough moisture to require a drainage line from the compressor. Our compressor supplier will facilitate the startup of your compressor, but the placement, electrical and plumbing work must be completed by your contractors.

B. K2 HYPOXICO SYSTEM

At the core of the K2 Hypoxico system is our patented hypoxic filter which is capable of providing large volumes of low O₂ air. The K2 filtration system is approximately 6.5'H X 3'W X 1.5'D and is floor mounted. Our K2 systems come to the job site pre-plumbed requiring minimal work by a trained plumbing professional, additionally, the filtration system requires no direct electrical hookup.



K2 HIGH-FLOW

Component Flow Chart and Description Continued

C. TOUCH-SCREEN CONTROL PANEL

The Hypoxico control panel's key element is the touch screen display. Features Include:

- Schedule System Start up/ Shut Down
- Adjust Simulated Altitudes
- Monitor Altitude and Elevation levels (O₂ levels of environment)
- Smart phone remote control & viewing capabilities
- Maintenance tracking
- Safety features



D. OXYGEN SENSOR

The Hypoxico supplied Oxygen monitor is wall mounted within the altitude room. The monitor must also have a CAT5 connection between it and the Hypoxico Control panel. All monitors are 3 wire 24VDC powered and transmits continuous O₂ concentration data via 4-20mA signal to remote PLC. O₂ monitor relays are used to activate local horns and strobes or, with built-in hysteresis, used for process control.



E. MUFFLER SYSTEM

To silence the immense amount of Hypoxic air entering your hypoxic room, we will design a muffler system specifically for you. When the muffler is installed, the air entering the room is virtually silent.



UNSURPASSED CONTROL

C. TOUCH SCREEN CONTROL

7 Day pre-programmed timer allows the unit to be set to come on and off at different intervals.

System Running Indicator will be provided to show when the system is running. Whilst the system is running hypoxic air will always be flowing into the chamber.

Altitude Display. A digital display of %O₂ and calculated altitude in meters can be displayed simultaneously via the oxygen sensor that continuously shows the O₂ as a % and the control panel which can be toggled between simulated altitude in meters and actual %O₂.

Display Accuracy. The control system maintains the oxygen level in the space within a resolution of 0.1%. The altitude meter equivalent will be displayed calibrated to the 0.1% changes in O₂

Safety Lock Out. We will provide two levels of safety lock out:

Level 1 to enable operation down to 15% O₂

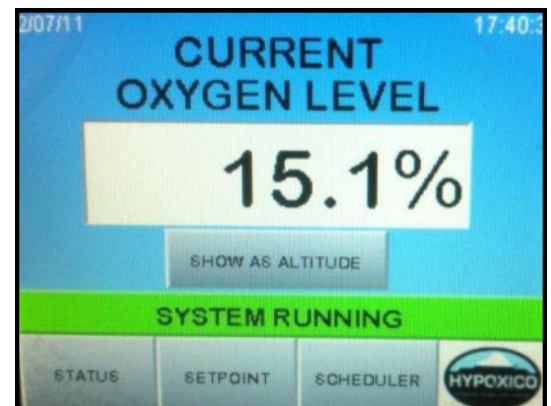
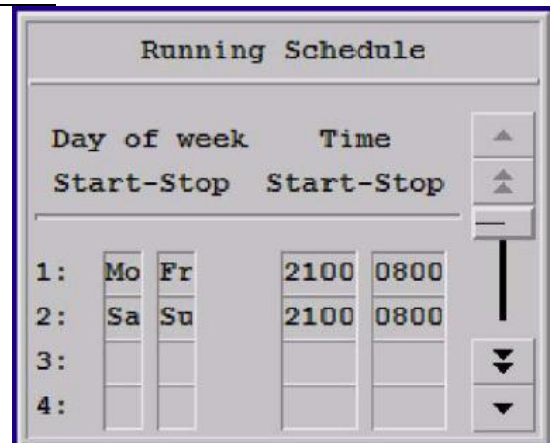
Level 2 in order to operate below 15% O₂, down to a minimum level of 11% O₂, beyond which the system will not be allowed to operate.

Intelligent Control. The desired oxygen level is input onto the touch screen panel and the unit then calculates the fastest possible time to reach the desired O₂ level.

Increased Flow rate. When the desired O₂ level is reached an increased flow rate is delivered to ensure CO₂ and odours are flushed from the room.

Multi stage Oxygen Delivery. The unit is set up to deliver multiple levels of oxygen, selected by advanced electric solenoid valves controlled by a microprocessor fed by the sensor.

Remote viewing. The control system can be connected to the internet for viewing or control anywhere around the world.



SAFETY FEATURES

ACCURATE O₂ MONITORING

Safety is the number one factor with our systems. The following built in safety features ensure safe operation.

- The system is fail safe to avoid %O₂ values falling below 0.5% of set point
- We use a stable zirconium oxide sensor that rarely requires calibration. Other systems use standard concentration oxygen cells that requires regular calibration.
- Changing barometric pressure changes or changes in temperature and humidity do not affect the zirconium oxide cell.
- The response time is within 5 seconds of any change in O₂
- The O₂ sensor is highly accurate. Performance repeatability is within $\pm 1\%$ of reading.
- There are no zero or span point to adjust, thus avoiding user error.
- The systems O₂ cell has a life span of well over 8 years of continuous operation.
- The O₂ monitor incorporates a special electronic circuit that continuously monitors sensor operation. With the addition of the alarm relay option, any cell degradation or complete failure will immediately be detected. This smart circuit alerts the user to sensor faults and other electrical problems that may interrupt surveillance through the standard mA signal output signal or through the optional fault relay option.
- In the event of the fault relay option being activated or no mA signal sent from the O₂ sensor, or in case the room drops below the alarm level set point (13% by default) the following message will be displayed.
When this message is displayed, no user input is allowed until the room O₂ has returned to a safe level
- The safety override system will deliver 20.9% O₂ (ambient air) to the room.
- The hypoxic generator is hardwired to deliver a minimum low O₂ level. In your case this will be 10% (a lower %O₂ is required to achieve a room level of 11% O₂). In the event of a complete system failure, hypoxic air will never be delivered lower than 10%. The system can be adjusted by an authorised service agent to delivery a different lower level if required.

ROOM REQUIREMENTS

HEATING & AIR CONDITIONING

The air conditioning for any altitude room must be of a "split" type, preferably with no ducts. An example of this is a Mitsubishi Mr. Slim. There are several different sizes of this style of A/C and we will recommend the BTU requirements for the room.

The HVAC contractor will take into consideration the number of users and volume of the room among other factors. The A/C system must be installed by a licensed HVAC contractor.

Heating can be electric, or under-floor, but cannot involve vented air into the altitude room.

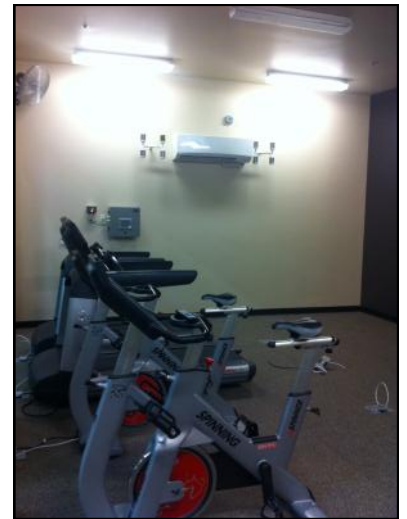
If there are ducts installed in the room which is going to be used for Hypoxic training for heating or A/C systems that are no longer used should be blocked off and sealed by an HVAC engineer.

LIGHTING

Which lights are used is a critical decision. Lights must be able to be sealed or have the ability to be sealed.

DOOR

The door is the largest 'hole' in an altitude room. It is essential to ensure it is sealed very well top to bottom. If a single door is used, a sweep on the bottom and door can be used to seal the bottom while draft sealant can be used around the remaining frame. A sure way to seal a door is by using an air lock system which traps the ambient air from entering the altitude room.



ELECTRICAL OUTLETS

Although small, the outlets are a common place where the environment can leak. If placed on the wall or in the floor, we must ensure they are sealed.

FLOOR

The flooring can be made of many materials, the best being concrete. If floors are constructed of floating unsealed wood, the flooring must have a sealant placed on the surface to ensure all leakage points are closed.

CEILING

If installing a custom room, you must use a solid ceiling type. Drop ceilings cannot be used as they allow large leakage levels.

CONTROL PANEL WIRING

Hypoxico's installer will mount the panel in a mutually agreed upon location. If desired for aesthetic reasons, the cables can be installed in advance such that they are hidden.

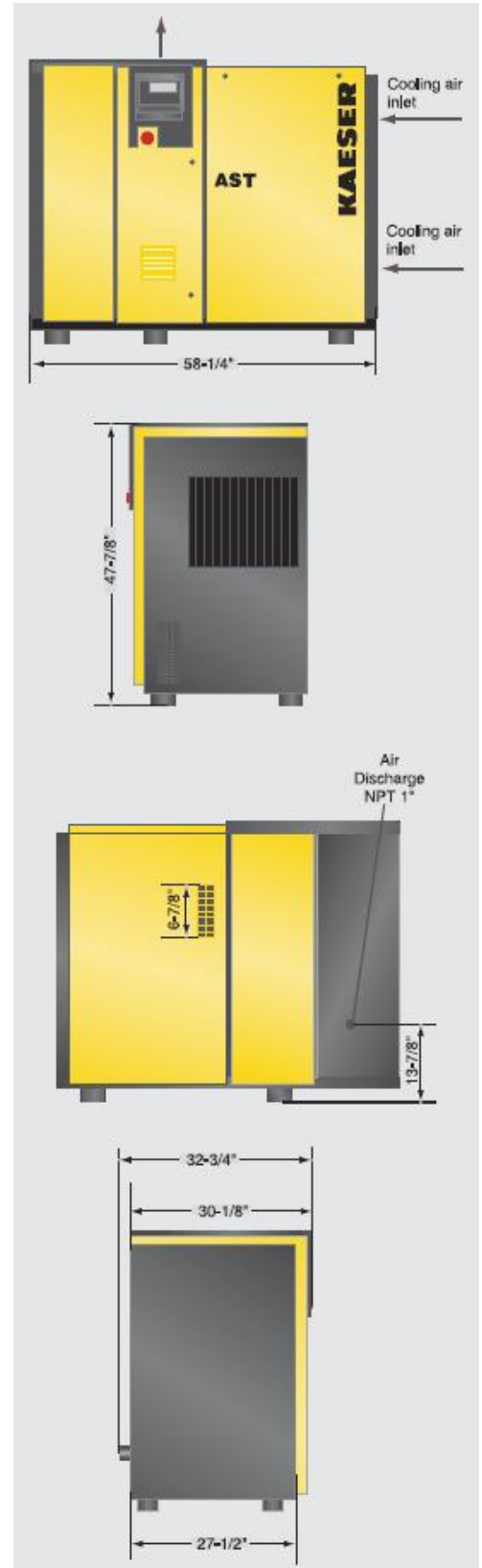
COMPRESSOR

The Power Behind the K2-2000!



Chosen for their high standard of quality, the Kaeser compressor flawlessly delivers 120 psi air to our K2 filtration system. This compressor can be placed anywhere you would like, from 5' to 500' from the room! Apart from being reasonably clean, the environmental operating limits are:

Temperature: 40°F - 90°F



K2-2000/1500

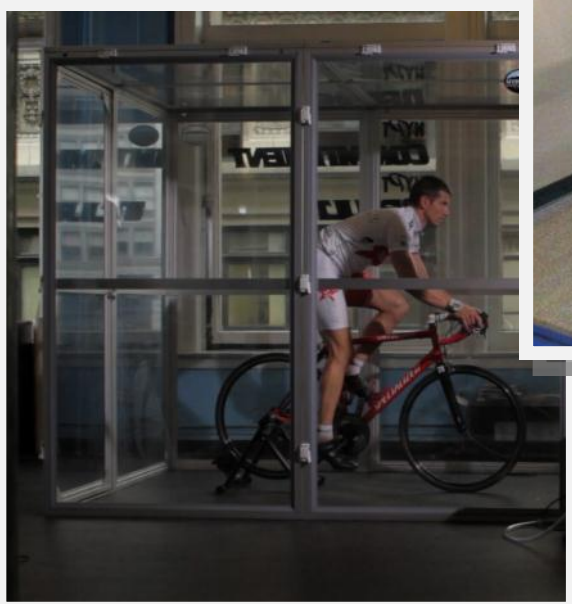
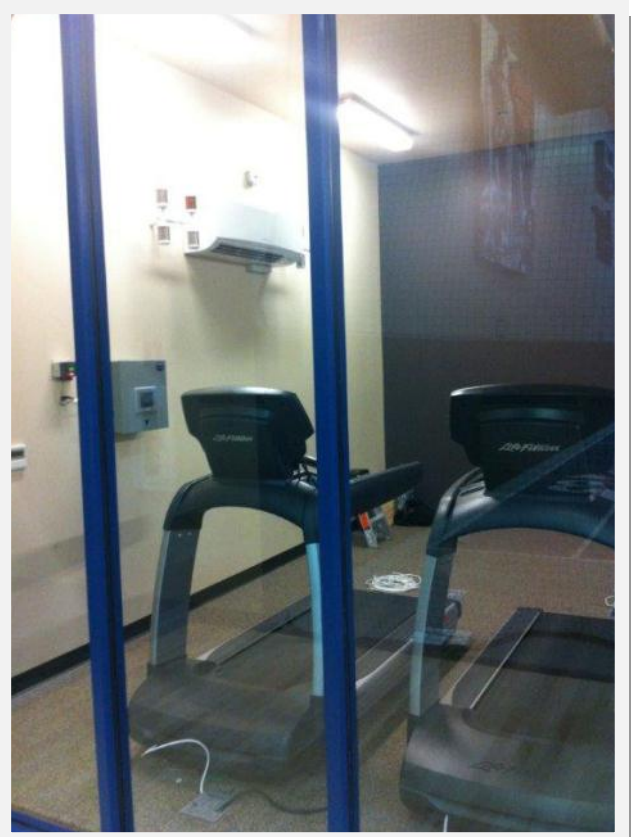
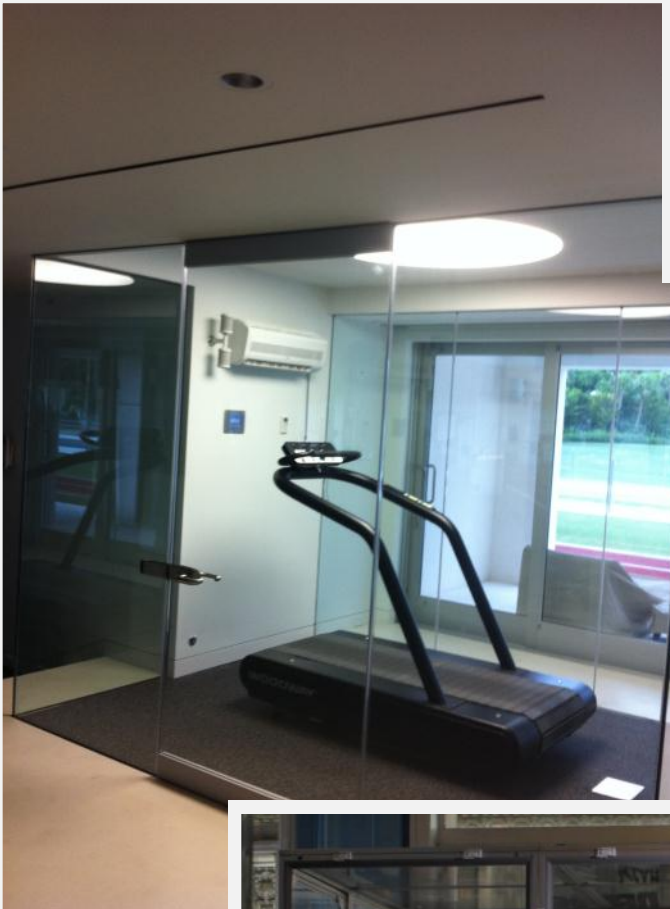
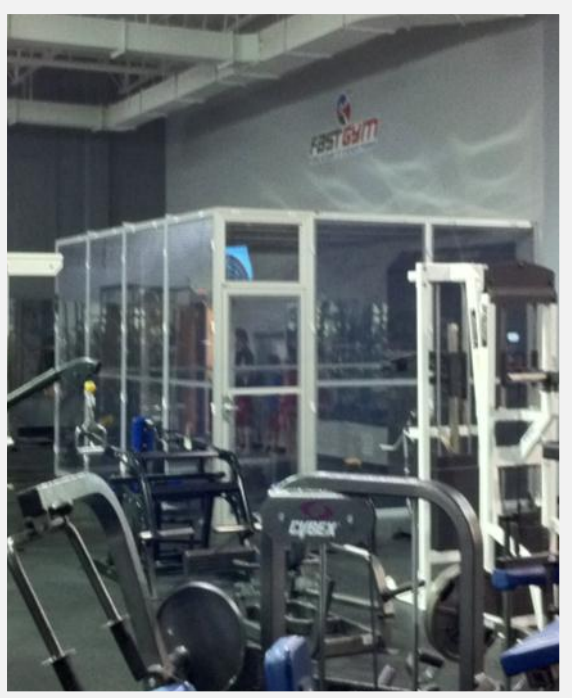
The Heart of the K2 system



Contained within a single floor mounted system, the K2-2000 provides up to 2,000 lpm of fresh Hypoxic atmosphere to individuals training.

The K2 filtration system is approximately 6.5'H X 3'W X 1.5'D and is floor mounted.

INSTALLATIONS



TESTIMONALS

One of the biggest joys we have at Hypoxico is hearing from our customers. We'd love share just a few of the ones we've gotten

WELLNESS

"In a short amount of time, my BP has dropped to a normal level without prescription drugs. This is a person that carries 228lbs of lean mass and should not meet the standard median average. My fatigue has lessened quite a bit. Resting heart rate has dropped almost 10%. My kidney panel numbers show me as NOT being in any stage of renal failure. This has happened twice before with one of these times using my Hypoxico unit. I've removed 3/4 of the medication and I feel much better. Also, my BP has gone down lower than what a first stage medication could not do. The medication could only get me to the 130's / 90's.

Lastly, I am sleeping deeper and more soundly than before altitude sleeping. This only a couple weeks and the outcome is huge. Thank you Hypoxico!" - Eric Monroe, California

ACCLIMITAZIATION

"I was successful on Kili and so was my wife. We had a great time and zero altitude symptoms— even ate a candy bar right on top while there were some people around puking their guts out. Not us, thanks to Hypoxico!" J.Y. - Georgia

ATHELTIC IMPROVEMENTS

"I can really tell a difference now that I've been on the Hypoxico system for over a month. I had the best results ever on my Kinetics trainer yesterday while doing my Vision Quest Race Day Video. My average speed was 23.9 mph, before Hypoxico 22.4 mph was my best ever. Thanks a bunch, Hypoxico is the real deal!" - Dwayne O. Texas

"I'm a category 2, 45-year old female cyclist, and also an exercise physiologist. I purchased a Hypoxico air chamber over four years ago because was I interested in the effects it may have on hemoglobin levels and performance. Since purchasing the Hypoxico system, my hemoglobin levels have increased and my race results have increasingly improved each year. I currently hold several records on hill climbs in Oregon and I hold the record on Mt Shasta in northern California. I believe that my improved performances, in part, can be attributed to sleeping at altitude most of the year. This past summer, I raced Mt Evans in Idaho Springs, Colorado. Mt Evans is the highest paved road in the United States. The race starts at 7,540 feet and finishes at

14,264 feet. The climb is 27.4 miles in length. Five weeks prior to the race, I slept and did some training at high altitude. I spent 12-14 hours each day at high altitude during these five weeks. I won the women's race overall beating the top women's pro rider by 30 seconds and set a new course record for the women's 45+ field by 17 minutes. Racing Mt Evans was one of my best and surprisingly comfortable efforts. I experienced no symptoms of altitude mountain sickness. As an exercise physiologist, I was surprised (and pleased) at how effective the Hypoxico system was in helping me prepare to race at high altitude while living close to sea level." Jenny Slawta - Washington

ORDERING IS EASY!

If you have any questions, please don't hesitate to contact us directly at
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