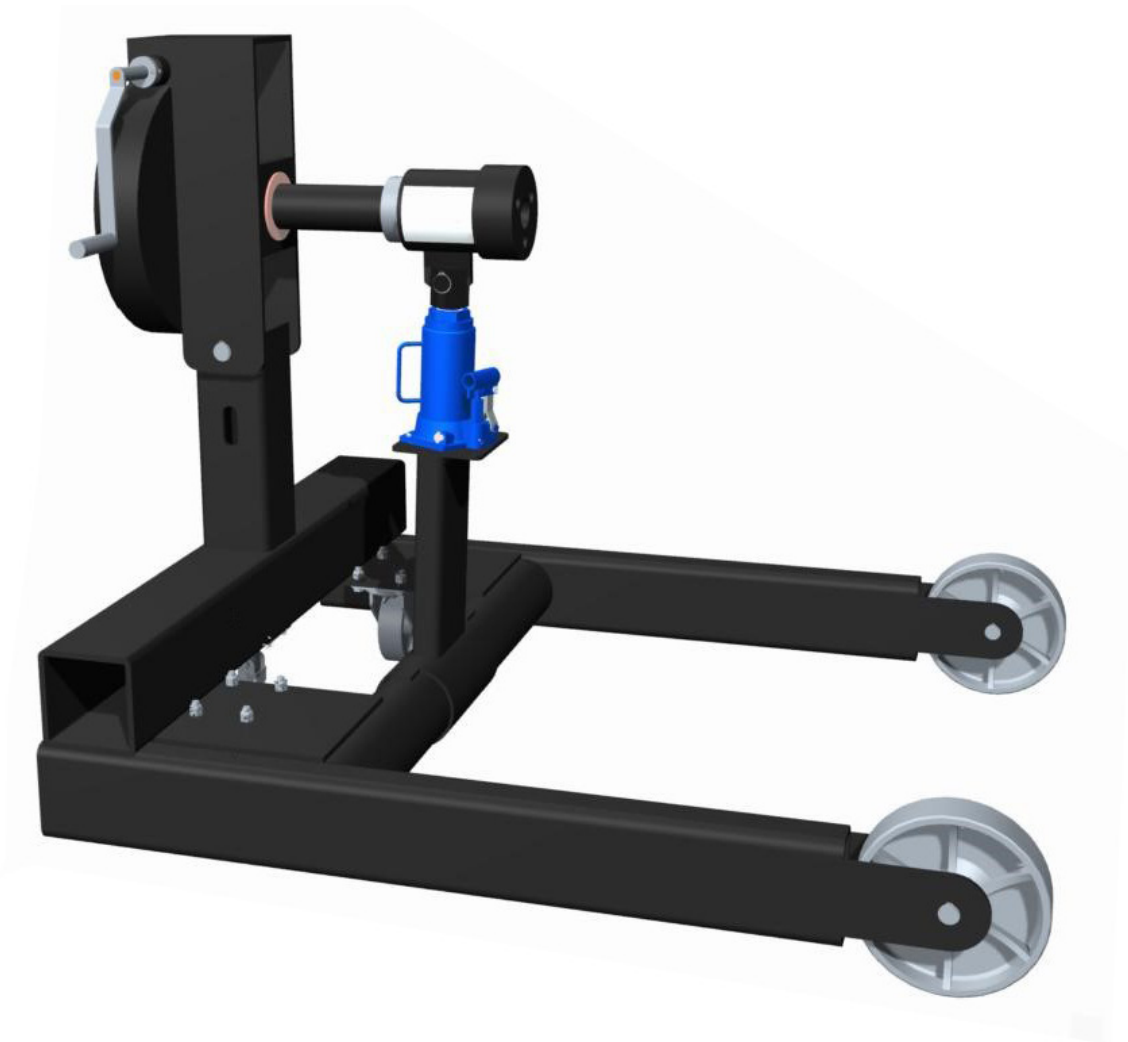


KL30230 REVOLVING ENGINE STAND

OPERATING INSTRUCTIONS



CE



WARNING: READ INSTRUCTIONS COMPLETELY PRIOR TO USE

INTRODUCTION:

This manual contains information to help you learn about the safe and proper use of the K-Line® Revolving Engine Stand. K-Line® Industries, Inc. cannot anticipate all conceivable or unique situations. The instructions and warnings included in this manual are not necessarily all-inclusive. You must make sure all conditions and procedures do not jeopardize your personal safety.

The K-Line® Revolving Engine Stand is a manually operated engine stand, designed to facilitate service of an engine through lifting and/or rotation of the engine.

DISCLAIMER: All information, images, and specifications contained in this manual are based on the latest information available at the time of publication. K-Line® reserves the right to make changes at any time without notifying any person or organization of such revisions or changes. K-Line® is not liable for incidental or consequential damages (including lost profits) in connection with the furnishing, performance, or use of this material.

INTENDED USES:

- Supporting an engine for service
- Rotating an engine to facilitate ergonomic servicing
- Lifting an engine to provide swing clearance for rotation

SAFETY PRECAUTIONS:



WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION: Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Before using the K-Line® Revolving Engine Stand, read, understand, and follow the safety precautions and operating instructions outlined in this manual. This equipment must be operated by qualified personnel. The operator must be familiar with the lifting and service of engines, safe lifting practices and the dangers involved in manipulating and servicing engines.

PERSONAL PROTECTION/IMPORTANT INFORMATION

! WARNING



Read the Manual: To avoid personal injury, carefully read and understand all instructions before attempting to operate any equipment or tools. Do not operate or work on a machine unless you read and understand the instructions and warnings in this and all other applicable manuals.



Eye & Face Protection: To avoid eye injury, always wear protective glasses or face shield that meets ANSI Z87+ Standards. Make sure no one can be injured by flying objects or debris when using tools or working on a component.



Fire/Smoking Hazard: Clean up all leaked or spilled fluids immediately. Oil, fuel, or cleaning fluid leaked or spilled onto any hot surfaces or electrical components can cause a fire, resulting in personal injury or death.

HAZARD AVOIDANCE

! WARNING



Inspect Equipment: Inspect prior to each use for dents, cracks, bends, or worn parts. If damage is found, discontinue use until inspected and released by an approved inspector at the dealership.



Crushing Hazard: The K-Line® Engine Stand is very heavy. Specific weights are detailed in this manual. Use caution when moving the stand.



Pinch Point Hazard: Personal injury can result from improper use of this tool and supporting of the load. Keep body parts clear of moving parts when lifting or rotating.

PERSONAL PROTECTION/IMPORTANT INFORMATION

! WARNING



Slip & Fall Hazard: Personal injury can result from slips or falls. DO NOT leave tools or components laying around the work area. Clean up all spilled fluids immediately. Use caution when walking around the stand.

HAZARD AVOIDANCE

! WARNING



Additional Crushing Hazard: Personal injury or death can result from improper use of this tool and supporting of the load. Make sure the K-Line Engine Stand is used only on a flat, dry, level, and hard surface. Do not work beneath any supported

PROHIBITED ACTION

WARNING



To avoid serious or fatal injury, only use the K-Line® Engine Stand for its intended purpose, which is holding, rotating, and lifting engines within the WLL and requirements detailed in this manual and on equipment labels.



Do not modify the K-Line® Engine Stand in any way by welding, heating, drilling, machining, or grinding.



To avoid serious or fatal injury, do not exceed the Working Load Limit (WLL) of any K-Line® Engine Stand component.



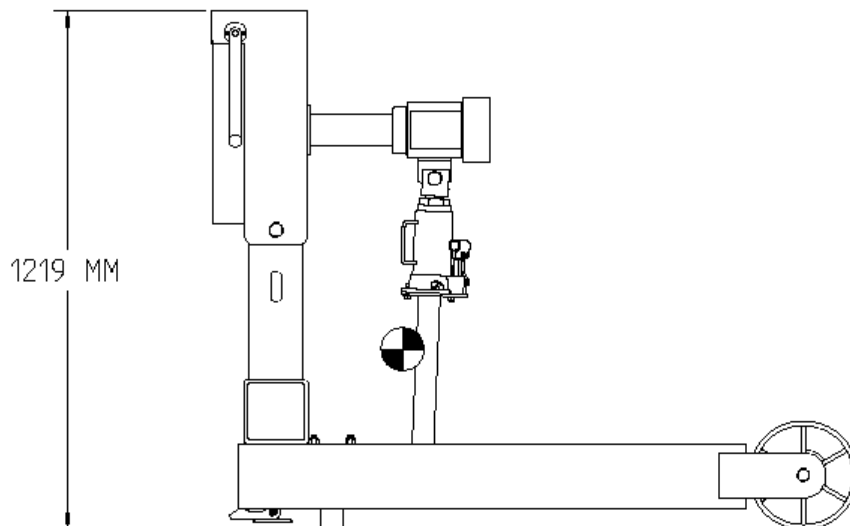
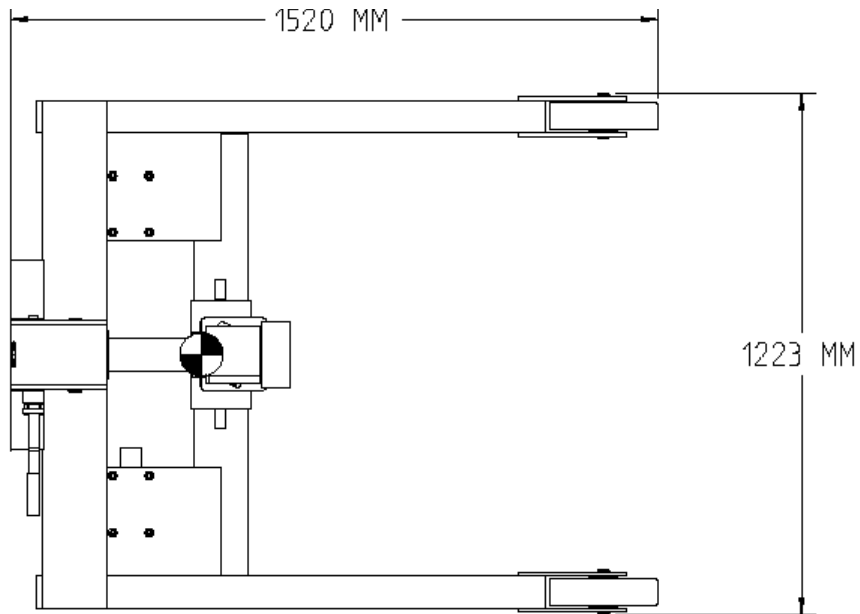
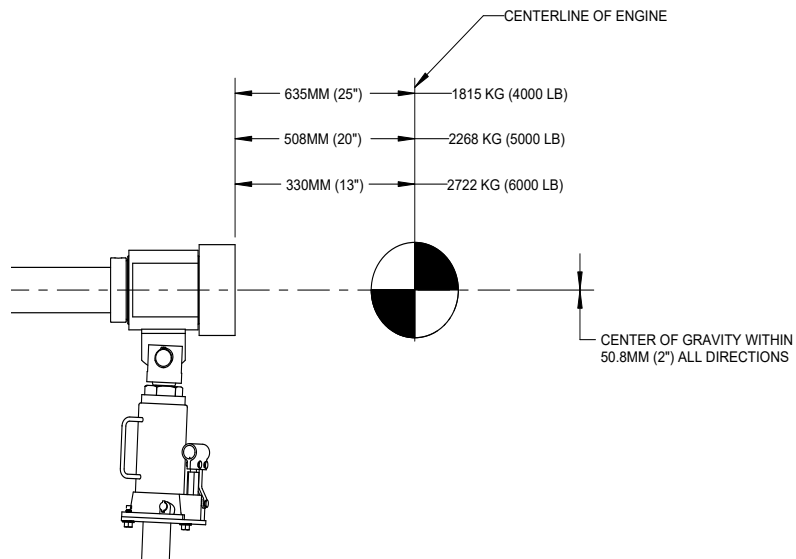
To avoid serious or fatal injury due to load instability, do not use the K-Line® Engine Stand on unstable surfaces or aboard a vessel or vehicle of any kind.

ADDITIONAL WARNINGS:

1. Keep all body members clear of the engine and stand during use. Unavoidable pinch, crush, and entanglement points exist in the assembly.
2. Do not wear loose clothing or jewelry as they can be caught in stand components.
3. Do not use the stand if there are bent, broken, cracked, or damaged components (including label).
4. Exercise extreme caution during mounting of engine, as the engine could shift unexpectedly on its supports.
5. Exercise caution when walking around the engine stand. Potential trip hazards exist due to the frame structure.
6. Check mounting of the engine before use. Only use adapter plates and mounting bolts specified for use with the engine and stand, rated for the weight of the engine.

PRODUCT DATA:

- Rated capacity: 2722 kg (6,000 lb)
- Full 360° rotation capability
- Maximum output torque rating: 1356 N-m (12,000 in.-lbs.)
- Stand weight including supplied adapter plates: approximately 400kg (882 lb)
- Lifting stroke at mounting hub surface – 305mm (12")
- Angle of mounting hub surface – level to 35° inclined



ENVIRONMENTAL REQUIREMENTS

- Temperature
-23°C to 93°C (-10°F to 200°F)
- Humidity
Use in any humidity condition is permissible
- Wind Effects
Wind gusts in the work area must be below 32 kph (20 mph) during use to avoid excessive horizontal forces on the engine which can result in loss of stability

EMISSIONS

- Noise
Under 56 dB

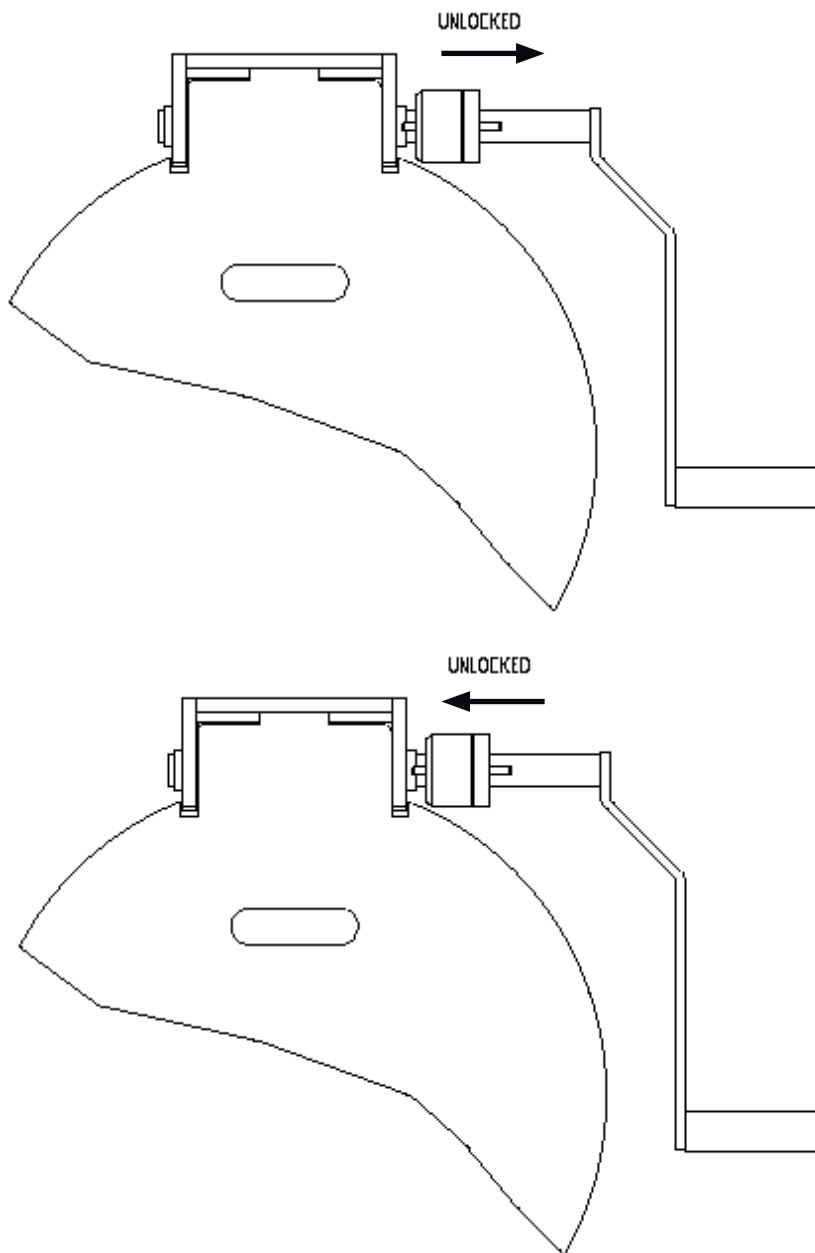
OPERATING INSTRUCTIONS:

SETUP

1. Ensure engine is within the capacity of the stand.
2. Select an appropriate engine adapter for the engine needing service. Ensure that the adapter will keep the center of mass of the engine within 50.8mm (2") of the axis of the stand.
3. Torque socket head cap screws attaching the adapter to the stand to 135 N-m (100 ft-lb).
4. Use manufacturer's recommended lifting points and a suitable hoist or lifting device to lift the engine.
5. Use the selected adapter to mount the engine to the stand. Ensure adapter's bolts are tightened to the required torque values.
6. Slowly set weight of engine onto stand.
7. Remove lifting devices from engine.

ROTATING

1. Ensure all workers and tools are clear of the engine.
2. Firmly grasp the crank handle and slide the lock collar to unlock the handle. A magnet in the collar will retain it in the unlocked position during use.
3. Rotate the crank handle to rotate the engine into the desired position.
4. When rotation is complete, turn handle to align the lock collar's pins with the holes in the frame. Slide the lock collar to lock the handle.



LIFTING/LOWERING

1. To lift, tighten the jack release valve (hand tight) and use the provided handle to pump the jack to the desired height.
2. Rotate the engine to the desired position as outlined in the section above.
3. Lower the engine to the lowest possible position by carefully opening the jack release valve to achieve the desired height, and re-tightening the jack release valve.

EMERGENCY INSTRUCTIONS

Stand contains some combustible petroleum products. Engines are likely to contain significant amounts of flammable liquids and vapors. In case of fire, use a class ABC dry chemical or class BC CO2 fire extinguisher.

DO NOT ATTEMPT TO USE WATER TO EXTINGUISH FIRE.

MAINTENANCE

MAINTENANCE SCHEDULE

- Clean worm and gear of dirty/excess grease and reapply molybdenum disulfide grease every year (occasional use) or every 6 months (heavy use)
- Use ISO VG 100 (SAE 30 wt.) non-detergent oil to lubricate the bushings every 6 months (occasional use) or every 2 months (heavy use)
- Check oil level on hydraulic jack monthly. Lower the jack piston and remove the filler plug. Oil should be just below the filler hole. Fill as needed with good quality hydraulic oil.

END-OF-LIFE INSTRUCTIONS

The K-Line® Revolving Engine Stand is designed to provide a long life of service. If the need arises to decommission a stand, contact K-Line® customer service for scrap/disposal instructions for your location.

STORAGE REQUIREMENTS

Store upright in a cool, dry location. If storing for more than 3 months, clean and wipe unpainted surfaces with light oil to protect against corrosion. Remove gear cover and coat mating surfaces of worm and gear with a generous amount of molybdenum disulfide grease. Take care not to contaminate bushings with grease. Replace gear cover.

After long-term storage, re-oil all bushings with ISO VG 100 (SAE 30 wt.) non-detergent oil. Remove gear cover and wipe off dirty or excess grease from worm and gear. Reapply grease as needed. Replace gear cover.

Declaration of Conformity

Name of Manufacturer	K-Line Industries, Inc.
Contact Information of the Manufacturer	315 Garden Ave. Holland, MI, USA 49424 tel: 1-800-824-5546 fax: 1-800-528-9138 email: cservice@klineind.com www.klineind.com
Trade Name, Model Number, and Serial Number of the Tool (where applicable)	4430230 – Revolving Engine Stand
Description of the Tool	This tool is used to support and rotate an engine for service

K-Line Industries hereby declares, in accordance with the following Directive(s):

2006/42/EC – Machinery Directive

That this product meets the Essential Health and Safety Requirements mandated by the aforementioned directive(s) through conformance with the following Documents:

EN 12100-1:2003 +A1:2009 – Safety of Machinery

EN 12100-2:2003 +A1:2009 – Safety of Machinery

CEO  (Caleb Doezeema)

Director of Business Development  (Ryan Dokter)

Date of Certification: 11/2/2018



INDUSTRIES, INC.

315 Garden Avenue • Holland, MI 49424 • Ph: (616) 396-3564 • Fax: (616) 396-8974 • www.klineind.com

NOTES

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**FOR PRODUCT INFORMATION OR
TO PURCHASE REPLACEMENT PARTS
CONTACT K-LINE CUSTOMER SERVICE AT
1-800-824-KLINE (5546)
CSERVICE@KLINEIND.COM
KLINEINDUSTRIES.COM**