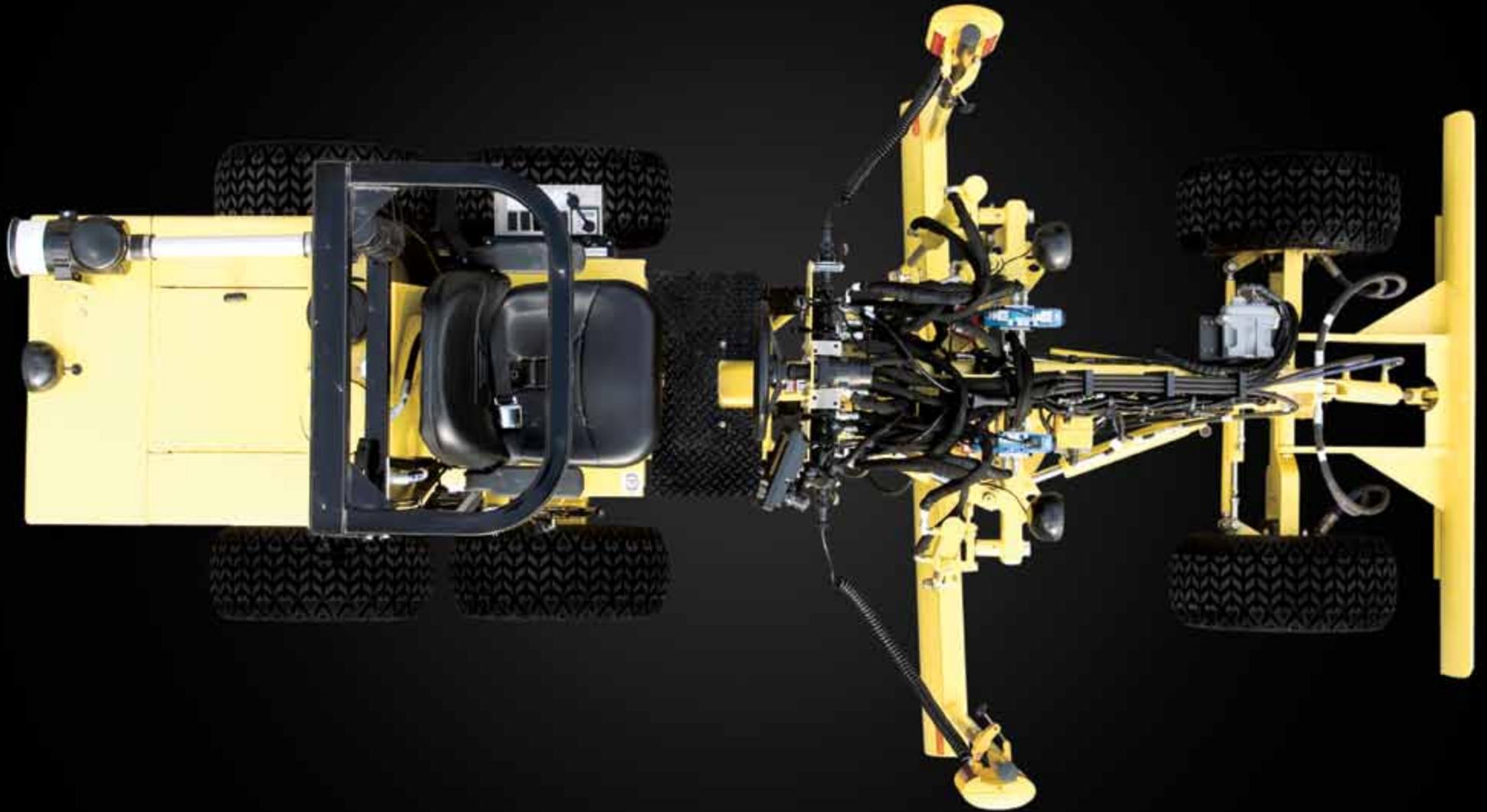


# Laser Grader®

Product Info



# A PRECISE FINISH GRADE IN A FRACTION OF THE TIME



# Contents

General Overview 02-03

Application 04-05

Specification 06-07

Transport 08

Trimble® Control 09



# General Overview



Mini Grader

## History of Laser-Grader®

In 1976 the Mini-Grader© was first designed and built by Leo Paradis. Over the next few years there were numerous engineering and mechanical improvements.



Leo Paradis



First Laser Grader

The Laser-Grader® was first used in New England and later expanded throughout the U.S.A. and Canada to laser-grade tennis courts, ice rinks, athletic fields, and floors for commercial and industrial buildings.

As the Laser-Grader® expanded to various construction sites and more people became familiar with machine, there was increasing pressure to put this machine into production. In 1987, Precision Mfg. was incorporated with Leo Paradis as president, and the first sale of a Laser-Grader® took place.

Laser-Grader® Manufacturing was founded in 2003. In October 2003, P Ronci Machine Company, a family owned business who has been manufacturing production machinery since 1937, acquired Precision Manufacturing and began producing the Laser-Grader®.

Today, Laser-Grader® Manufacturing has presence in over 15 countries worldwide and is a leading manufacturer of precise finish compact motor graders.

Laser-Grader® Manufacturing is focused on providing unmatched precision to the construction market, directly resulting in increased productivity and profitability. The concept of "Laser-Grading" will reduce prep time, labour, and materials on fine grading jobs. The Laser-Grader®, equipped with a Trimble® Grade Control Package and one operator, can eliminate the use of stakes, grade rods, and the continuous checking of the finished grade.

The Laser-Grader® was first observed in Sweden by Cleveland Land Services in 2009. Once CLS witnessed the speed and accuracy of the Laser-Grader® installing the final grit layer to a full size synthetic football pitch, the company was convinced that this machine should be in its line up. Not long after that trip, and after further research into Laser-Grader® and it's full capabilities, CLS purchased its first machine.

In September 2011 CLS Laser-Grader® UK was formed and confirmed as the sole UK distributor for Laser-Grader® machines.

## A PRECISE FINISH GRADE IN A FRACTION OF THE TIME

Today's construction standards call for close tolerances. Designers and Clients alike, expect the tolerances to be achieved with a laser-guided system. Technology for precise grading is now available and affordable, and as a result, laser controlled grading is become a requirement in sub-surface preparation.

If accuracy is a requirement, the Laser-Grader®, equipped with a Trimble® Grade Control Package, has no equal.

The Laser-Grader® measures 3.5m long, 1.2m wide and 2.2m high, and comes with a 1.8m moldboard and 1.5m front pusher blade. It fits through a 1.5m doorway and can fine-grade a gravel sub-grade of 2,323m<sup>2</sup> a day in enclosed spaces. In open areas, the Laser-Grader® can grade more than 4,646m<sup>2</sup> in a day.

Its hydrostatic transmission and six-wheel drive system combine for higher pushing power at slower travel speeds, making the Laser-Grader® suited for close grading above pile and between columns, footings and utility trenches.

The Laser-Grader® uses automated laser level technology and comes equipped with proportional valves.

It provides an electronic signal, which is picked up by a target sensor(s) mounted on the grader's moldboard. A remote display is set above the grader's hydraulic controls and wired to the target sensor(s). This display determines whether the blade is high, low, or on target for the predetermined grade. Laser Grader also can use a Sonic Tracing to follow a string line, curb or existing grade.



# Application

Laser Grading is the only practical way to prepare sub-grade for the following applications:

Slab on Grade

Concrete Floors

Roads and Car Parks

SUD's Systems

Driveways & Footpaths

Indoor Sports Arenas

Athletic Fields

Cricket Squares & Wickets

Football Pitches

Rugby Pitches

Tennis Courts

Running Tracks

Equestrian Arenas

Any area requiring precision material grading



01 Concrete Floor or Pad Preparation

## 01 Concrete Floor or Pad Preparation

The Laser-Grader® was designed with the building slab in mind. Typically, when commercial buildings are constructed, the site work is started, but the steel walls and roof often seem to move a little faster than the preparation of the sub-grade, resulting in limited access for a larger motor grader to get inside the building. The Laser-Grader® will fine grade to +/- 3mm accuracy when using 18mm processed material (or smaller), making it one of the most accurate finishing tools on the market today. Since your X & Y Axis will be precise, this will allow you to focus on the Z axis.

This tolerance will not only result in uniformity throughout the concrete pour, but will also save on the concrete.



02 Tennis Courts and Tracks

## 02 Tennis Courts and Tracks

The Laser-Grader® is ideal for close tolerance grading, which makes it the right technology for grading tennis courts and running tracks. It is perfect for fine grading all of the layers for clay, fast-dry, and asphalt tennis courts. Clay and fast-dry courts must have the gravel base as precise as possible so the following layer of stone dust ("fines") and the layer of fast-dry will each have a uniform depth. It is much easier to maintain the correct degree of slope for the courts if each layer has been laser-graded.



03 Sports Fields (natural & synthetic)

Both asphalt tennis courts and running tracks benefit from laser-grading in the same way. A properly laser-graded sub-surface will enable the paver to put down an even layer of asphalt. This will reduce the chance of cracks, puddles and wavy lane lines. The smoother and more uniform the surface of the tennis court or track, the less chance of injury to the athletes.

03 Sports Fields (natural & synthetic)

The Laser-Grader® Model 106 is perfectly suited for renovations and new construction of both synthetic and natural grass sports fields. The Laser-Grader® will operate to a high precision at all levels ranging from



04 Equestrian Arenas

school and local club sports fields to the professional sports team venues. Laser grading is the answer to many of the problems associated with non-uniformity, uneven surfaces and drainage issues. The Laser-Grader® is suitable for a variety of different playing fields including football, rugby, cricket, hockey, golf and bowling greens. This list is not exhaustive if your sport needs an accurately laid surface the Laser-Grader® will not let you down.

04 Equestrian Arenas

Equestrian arenas and riding rings require precise finish grading to ensure separation between the footing and the subsurface material. The Laser-Grader® can be set to grade

off each layer of the desired plane or planes in the arena. If the plans call for a uniform 50 or 75mm of material, the transmitter can be raised to ensure the exact slopes will be maintained, as well as the exact desired amount of material in between the footing and the base.

The Laser-Grader® is also ideal for contractors who provide arena maintenance and fine grading services. Over time a great deal of the footing is pushed to the outside of the arena exposing the base material and disrupting the drainage achieved by the precise slope at the site. The Laser-Grader® is regularly used for routine grading maintenance of both indoor and outdoor riding arenas.

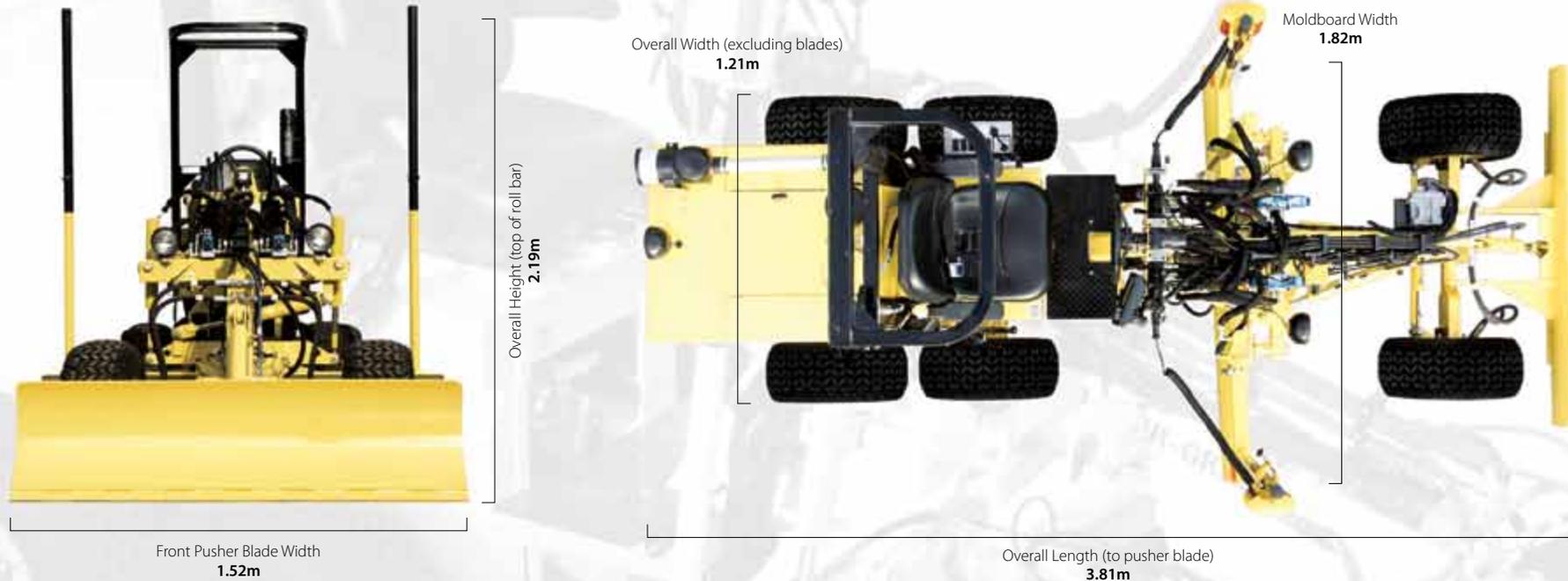
Laser-Grader® will accurately grade an area four times quicker than a conventional tractor with laser drag-box.



Exclusive to Cleveland Land Services

# Specification

Overall Length (to front blade)	<b>3.81m</b>	Weight	<b>1500kg</b>
Overall Width (excluding blades)	<b>1.21m</b>	Outside Turning Radius	<b>2.74m</b>
Overall Height (top of roll bar)	<b>2.19m</b>	Inside Turning Radius	<b>1.52m</b>
Front Pusher Blade Width	<b>1.52m</b>	Infinitely Variable Speed	<b>0-10mph</b>
Moldboard Width	<b>1.82m</b>	Engine Kubota Diesel D1105 Liquid(Cooled 61 Cubic Inch)	<b>3Cyl / 22.5HP</b>
Moldboard Height	<b>0.30m</b>		



## Model 106-P

The Model 106-P is a manually driven and controlled compact motor grader. The machine is powered by a 22.5HP Kubota Engine, and has a hydrostatic transmission. The 106-P is a 6 wheel drive machine that is fully articulated and offers a front pusher blade for knocking down piles and wind rows. The moldboard functions include left and right manual raise and lower, side shift and blade rotation.

The machine is available in both open centre and closed centre (Proportionally timed or proportional) hydraulic configurations. The machine can fit through a 1.52m opening making it suitable for grading inside of commercial buildings, and has an outside turning radius of 2.74m.

## Main Features:

- 01 Kubota Diesel D1105 3Cyl. / 22.5HP & gravity hydraulic tank
- 02 Heavy duty hydraulic pump and battery isolator
- 03 Robust - simple engine management and controls
- 04 Easy reach lever controls
- 05 Flame-cut walking arms, providing stability
- 06 Moldboard rotation, side shift and lift
- 07 ROPS certified roll-bar
- 08 Adjustable bucket seat
- 09 Neutral safety switch
- 10 Front pusher blade
- 11 6-wheel drive via hydraulic motors
- 12 Low dB fully CE certified



# Transportation



Laser-Grader® is tough enough to tackle the most challenging tasks, but light enough to mount on the back of a trailer or store inside a commercial vehicle. This makes Laser-Grader® the perfect grading solution for a one man operation.

- ▶ Compact and space efficient design allows you to load and secure in minutes.
- ▶ Infinitely variable speed through heavy duty hydraulic transmission allows you to load / unload Laser-Grader® quickly.
- ▶ Integrally fixed lashing points ensure that you can safely strap down and secure Laser-Grader® for transportation.
- ▶ The compact design of the Laser-Grader® allows it to be craned into otherwise inaccessible locations.
- ▶ Smaller and lighter than it's big brother, but more than capable of completing accurate fine grading in a fraction of the time.





# Trimble GCS900 Grade Control Systems

## GCS900 Grade Control Systems

The Trimble GCS900 Grade Control System allows the operator to achieve finished grade to millimetre accuracy with fewer passes. Used on the Laser-Grader, it is ideal for pitch construction, fine grading for concrete pours and slab placement, and commercial site preparation requiring the highest accuracy. By maintaining tight tolerances every time, GCS900 results in higher quality work delivered to the client. Finished grade materials can be placed more accurately and in a shorter time period, keeping the material costs to a minimum and realizing better profits. Performing grading smarter, faster and more profitably is critical to success in today's highly competitive construction industry. From laser or sonic-based through to full 3D configurations, the GCS900 Grade Control System is easy to use, fully upgradeable, and flexible enough to meet a wide range of application and jobsite requirements.

## Trimble CB450 control box

Designed for use in harsh construction environments, the Trimble CB450 Control Box gives the operator a full colour graphical display for easy viewing and guidance to grade. The CB450 offers the following key features:

- ▶ 4.3" full colour LCD display with adjustable backlight controls
- ▶ Audible tones for real-time grade guidance or warnings and alerts
- ▶ Four LED light bars to provide grade guidance at a glance

## Trimble Sonic Tracers

The Trimble ST400 Sonic Tracer mounted to the Laser-Grader pole blade uses a physical reference such as curb and gutter, stringline, existing or previous pass as an elevation reference. Using a sonic tracer, the system can match curves and accurately get to grade in fewer passes. This reduces operator fatigue, saves material and reduces the need for grade checkers.

## Trimble Laser Receivers

The Trimble LR410 Laser Receiver is fully linear and has smooth corrections the full length of the receiver. It is mounted to a mast on the blade and connected to the machine hydraulics to control lift to an accuracy of 3-6 millimetres. In auto mode, the system uses the LR410 grade information to automatically move the blade up or down to the on grade position.



CLS Laser-Grader are working in partnership with Korec to supply Trimble construction solutions





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