



CrystalMaster™ Pro 12 shown with optional 12" discs

CrystalMaster™
PRO 12

INSTRUCTION MANUAL

For Models C5505190 (115V) C5505290 (220/230V)

IMPORTANT SAFETY INSTRUCTIONS READ ALL INSTRUCTIONS

FOR PERSONAL SAFETY THIS MACHINE MUST BE PROPERLY GROUNDED

The power cord of this machine is equipped with a three-prong (grounding) plug which mates with a standard three-prong (grounding) wall receptacle to minimize the possibility of electrical shock hazard. Where a standard two-prong wall receptacle is encountered, it is the personal responsibility and obligation of the customer to have it replaced with a properly grounded three-prong wall receptacle.

DO NOT, UNDER ANY CIRCUMSTANCES, CUT OR REMOVE THE THIRD (GROUND) PRONG FROM THE POWER CORD. INTERNATIONAL VOLTAGE PLUG AND RECEPTACLE WILL VARY.

Always unplug your machine before cleaning or making any repairs. (NOTE: We strongly recommend that you return the unit to the factory for repair.) **USE ONLY IDENTICAL REPLACEMENT PARTS TO REPAIR THIS MACHINE. CALL CRYSTALITE FOR ORDERING INFORMATION.**

SAVE THESE INSTRUCTIONS



CRYSTALITE CORPORATION

8400 Green Meadows Dr. • Lewis Center, OH 43035 USA
1.740.548.4855 1.800.777.2894 Fax: 1.740.548.5673
<http://www.crystalite.com>

1 YEAR WARRANTY

WHAT WE WILL DO

This warranty is extended by CRYSTALITE CORPORATION to the original purchaser and to any succeeding owner. If your CrystalMaster™ Pro 12 machine fails for any reason (other than abuse or misuse) within 1 year from the date of invoice, we will repair the product without charge for parts or labor.

HOW TO OBTAIN SERVICE

If you have any problem with your CrystalMaster™ Pro 12 machine, call the

CRYSTALITE CORPORATION for a return authorization number. Pack the machine carefully and return it postpaid to CRYSTALITE. We will repair your machine as quickly as possible and return it to you postpaid. To validate your warranty, please complete and return your warranty card.

WHAT IS NOT COVERED

This warranty does not cover wear of diamond discs or laps.



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CONTENTS

Model No. C5505190 (115v):

1. One CrystalMaster™ Pro 12 machine
2. One C5305000 12" blank precision ground plate
3. One instruction manual and warranty card

Model No. C5505290 (220/230v):

This machine includes the same items as the 115V machine, but has been modified for 220/230 voltage requirements. For international orders please specify the country this machine will be used in.

CrystalMaster™ Pro 12 Companion Kit - Model No. C5505081 (for both machines)

INCLUDES:

1. One 12" 180 mesh magnetic backed Dot Disc™ disc
2. One 12" 400 mesh magnetic backed disc
3. One 12" 220 mesh magnetic backed resin disc
4. One 12" 1800 mesh magnetic backed resin polishing disc
5. One recirculating pump
6. One 12" pre-polish Crystalpad™ pad (magnetic backed)
7. One 12" final polish Crystalpad™ pad (magnetic backed)
8. One 12" Polypad™ pad (magnetic backed)

ABOUT YOUR MACHINE

For lapidary, hand-beveling and cold-glass working

Diamond grinding is the fastest and most economical way to grind glass or stone. Because it is so much faster than any other method, it pays for itself in a very short time.

Magnetic Holder

The optional magnetic backed diamond grinding and polishing pads are mounted to an 1/8" steel plate. The plate has a 1/2" center hole which locates it on the magnetic holder. It takes only seconds to change plates. Since there is no center screw, the entire grinding surface is usable.

Direct Drive

The CrystalMaster Pro 12 machine is the only 12" lap that is direct drive. It does not rely on belts or pulleys. Instead it employs a huge 1/3 HP motor. This motor is extremely strong; and even under heavy continuous production use, it will not lose speed.

Machine Speed

The maximum cutting rate for diamonds (grinding glass) occurs between 3000 and 6000 ft/min. The motor turns at 0 - 1725 RPM which produces a cutting speed of 3375 ft/min. This keeps the speed of the disc as slow as possible for polishing and

yet stays above the minimum recommended grinding speed. The CrystalMaster Pro 12 machine turns at a higher speed than competing 12" machines. Grinding at slower speeds is not recommended because it reduces diamond life and increases cutting time.

Grinding and Polishing

For rough grinding, an 80 or 100 grit pad is best, and for smoothing, a 400 or 600 grit. The 80 and 400 are the most popular combination on this size machine. The medium for polishing glass on flat laps has changed considerably in the last few years. For pre-polish, the new resin-bonded diamond pads are used almost exclusively. For final polish, the use of optical-grade polyester felt has replaced the wool. Cerium oxide is used with the polyester.

Accessories

Crystalite stocks a very large choice of diamond discs and polishing pads.

Available submersible pumps:

115v Pump	C5510110
220/230v Pump	C5510130
Pump tube & fitting	C5510210

Using a recirculating pump to spray industrial glass grinding coolant on diamonds will improve their life by 10-15% and improve cutting speed.



1. Magnetic Disc Holder

Grinding or polishing discs are held in place magnetically. This unique mounting arrangement allows use of the total grinding surface, and it takes only seconds to change discs.

2. Motor

An industrial grade; high-torque 1/3 HP ball bearing motor allows very heavy loading without slowing. It can be used on either 115 volts or 230 volts and is totally enclosed to protect against corrosion.

3. Splash Guard

Consists of four permanently anchored polypropylene brushes. This unique arrangement stops coolant spray that comes off the disc. Long work pieces pass right through the bristles. This does not effect the ability of the brush to stop the spray.

4 Coolant System

Plumbing includes an adjustable goose neck, ball valve, compression fitting and a

5/8" x 8' drain line. It can be used with either a recirculating pump or city water supply. The flexible spout makes it easy to direct a heavy stream of coolant to any area of the grinding disc.

5. Pump Receptacle

The on/off switch in the front energizes both the motor and this receptacle. Therefore, when the machine is turned on or off, the coolant pump is as well.

6. Housing

This 3/16" thick, molded, polyethylene part is an exceptionally tough material which will not rust. The catch basin is sloped toward the drain which eliminates any residue build-up.

7. Base

A heavy 3/16" steel plate is the chassis to which everything is mounted.

OPERATING TIPS

By changing to the appropriate disc/lap, your machine can serve as a rougher, finisher or polisher. Your machine has been designed to use a variety of Crystalite products depending on your individual technique or desired results.

Companion Kit

1. Use the 12" - 180 diamond mesh Dot Disc™ disc for roughing. The magnetic back design allows you to work with the full face of the disc and will handle larger work pieces.
2. Then use the 12" - 400 mesh disc followed by the 2 resin discs depending on the desired degree of polish. Always use water with these discs and with the 180 mesh disc.
3. Next use 14,000 diamond compound with either the final polish Crystalpad™ pad (preferred) or the Polypad™ pad. Be sure to charge the pad and use Crystalube™ extender fluid to lubricate your pad. DO NOT USE WATER.
4. For final polish use 50,000 diamond compound on the Polypad™ pad with Crystalube™ extender fluid. DO NOT USE WATER.
5. For a soft, flexible polishing action during this last step, the 8" PSA backed foam pad can be mounted on the Master Lap™ lap. Then mount either the Crystalpad™ pad or the Polypad™ pad on the foam pad.

SPECIFICATIONS

Drive Shaft	
Mounting (Steel Discs Only)	Magnetic Hub with 1/2" Centering Pin
Rotation	Counter Clockwise
Type	Direct Drive
Motor	
Power	1/3 HP
Voltage @ 50 to 60 Hz	115V or 230V
Current @ 115V	3.5A
@230V	1.7A
Speed @ 60 Hz	0 - 1725 RPM
@ 50Hz	0 - 1725 RPM
Breakdown Torque	70 oz-ft
Type	Direct Current
Bearings	Sealed Ball Bearings
Manufacturer	A O Smith
Machine	
Weight	45 lbs.
Size	19" x 20 1/2" x 9 1/2" High including plumbing