

JUNE 2020

Specializing in Glass Cutting and Scoring Machinery



Cat. No. CRL2

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INTRODUCTION

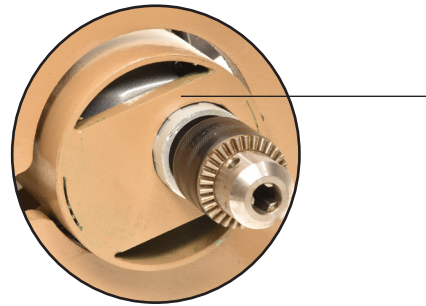
The new design Model TRI-DR provides linear shaft ways coupled with UHMW machined slides. This provides a smooth and accurate slide action along with precise control upon raising or lowering the drill body. The older style was prone to binding issues especially if dropped or turned over in service vehicles. Further enhancements included - 1400 rpm motor, the addition of a lower drill body alignment plate, and a carry/tote handle for the in-field technician.

DESIGN ENHANCEMENTS

Easy Carry/Tote Handle
Unique to PST Tripod Drill



Lower Fixed Alignment Plate
Unique to PST Tripod Drill



Upper & Lower Blocks
Fabrication from Machined UHMW
Low Friction/No Rust Design
High Accuracy Rigid Design



Linkage - DU Bushings
Easy Action Movement

Ergonomic Style Handle



Dual - Ceramic Coated Linear Shafts
Low Friction/No Rust Design

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FEATURES & SPECIFICATIONS

1. Power requirements 110 volt , 60 Hz, 6 Amps
1. Heavy duty motor with a 1/2" ball bearing supported chuck to eliminate wobble.
2. Variable speed adjustment 0 - 1400 rpm for all types of straight shaft glass drills.
3. Maximum drill size - 6 inch diameter.
4. Provided "Drill Depth Stop Knob" (F) sets the desired drill depth. Initial drill depth is slightly less than the thickness of the glass, stopping within a fraction of an inch of the bottom surface, so that the last little bit may be drilled slowly to reduce chipping of glass. This is extremely important in drilling mirror glass, since the chipping of the paint and silver on the back can cause clam-shelling.
4. Self-drilling design eliminates the need for application of pressure by the operator.
5. Low friction / no rust - ceramic coated linear shaft ways coupled with UHMW machined sliders. Recommended maintenance is to wipe down shafts with soft cloth after use.
6. Non-skid rubber feet are concave on the bottom to work with the weight of the machine to form a suction with the working surface, thus adding stability and minimizing vibration.
7. Carrying / tote handle can also add stability during drilling operations in difficult working locations.

IMPORTANT NOTES

A Ground Fault Circuit Interrupter, must be used in conjunction with this machine to protect against electric shock. Always wear protective safety gear. Never operate the drill near hazardous or flammable fumes. Eye protection is necessary within drilling operation.

TRANSPORTING

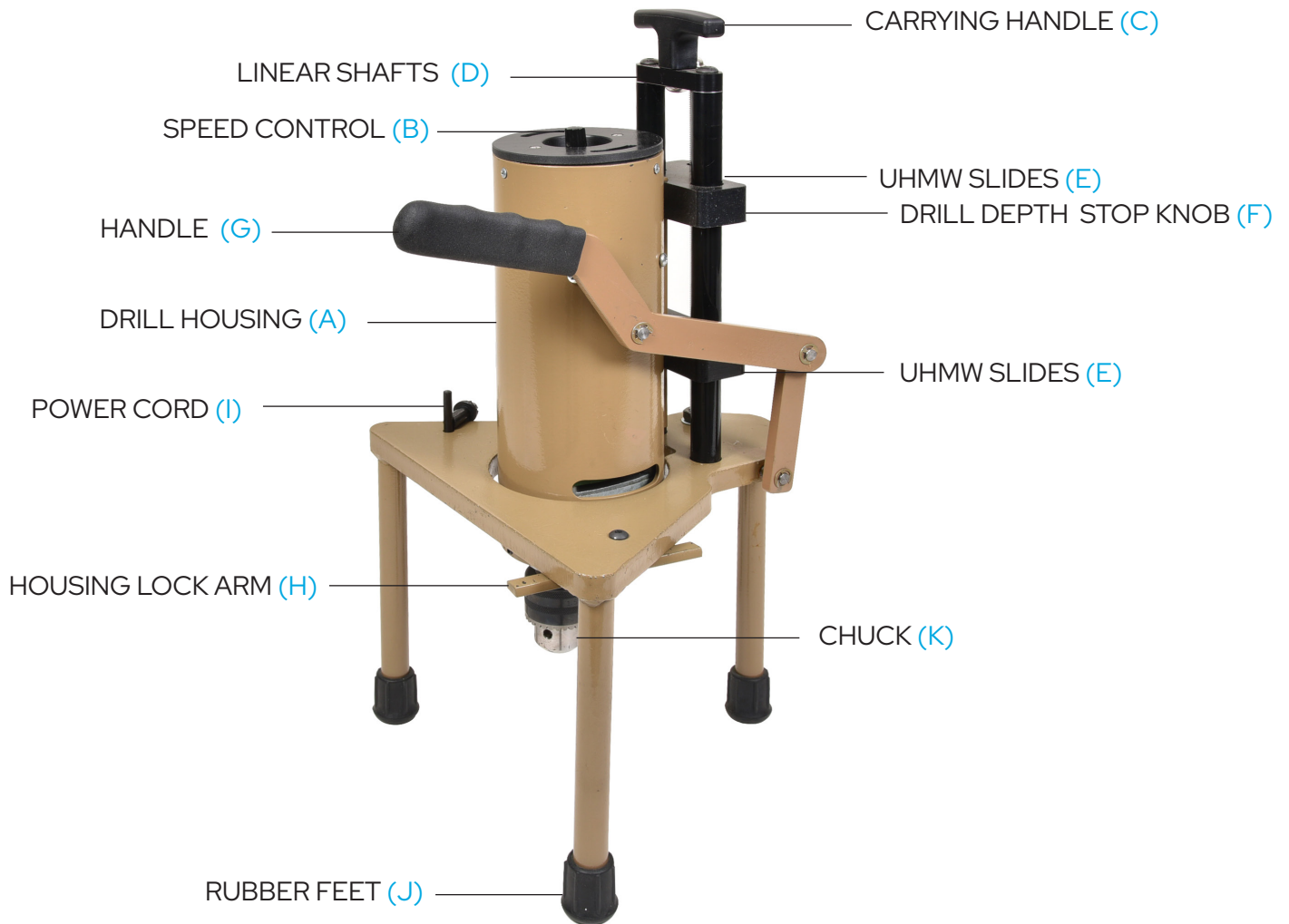
One cause of premature drill motor failure is the presence of carbide grain entering the motor housing. After use it is recommended wiping the tube drill and feet after use and prior to transport in the open.

Secure the Drill Housing (A) in the up position for safe transport. Upon lifting with Handle (G) turn the Housing Stop Arm (H) clockwise to secure in place the Drill Housing (A).

It is recommended to place tripod in upward position (on its feet) within service vehicle truck bed. The tripod drill should be tied off to eliminate falling over during transit.

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PART LISTING - GLASS DRILL MACHINE



A. Drilling Housing

E. UHMW Slides

I. Power Cord

B. Speed Control

F. Drill Depth Stop Knob

J. Rubber Feet

C. Carrying Handle

G. Handle

K. Chuck

D. Linear Shafts

H. Housing Lock Arm

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OPERATING INSTRUCTIONS

ELECTRICAL VOLTAGE 110 VOLT / 6 amps

CAUTION: This machine is equipped with a 3-wire grounded cord. Never attempt to alter the plug by cutting off the grounding tip. Always be sure that the cord is plugged into a grounded outlet. If you use a ground adapter, make sure that the green wire from the adapter is connected to the center cover screw on the outlet.

SPEED CONTROL

The speed control knob (B) provides variable control from 0 to 1400 rpm. Simply dial in the desired RPM range suitable for the drill bit and subject material. Turning the knob clockwise will increase speed; each 90 degree turn increases speed roughly 500 RPM.

RECOMMENDED DRILL SPEEDS

Drill tool manufacturer's specify RPM range for optimum drill results. In general a smaller diameter tools will operate at higher RPM and large diameter tools operate at reduced RPM. Coolant is recommended for all drill operations to eliminate heat and extend tool life. Refer to the chart below for general guidelines regarding drill type and recommended operating speeds.

PRISMATIC CARBIDE DRILLS

1/8" to 5/16" (3.2 to 8 mm) 500-600 rpm

3/8" to 1/2" (9.5 to 13 mm) 400-500 rpm

SPEARPOINT CARBIDE DRILLS

1/8" to 3/8" (3.2 to 9.5 mm) 400 - 800 rpm

1/2" (13 mm) 200 - 400 rpm

DIAMOND DRILLS

		Plated AG and EDD Series	PD, PDT, DCD, HBT, 1002, 1003
1/8" - 1/2"	3 - 13 mm	1600 - 2000 rpm	2500 - 3000 rpm
9/16" - 1"	14 - 25 mm	1400 - 1600 rpm	2000 - 2500 rpm
1-1/8" - 2"	28 - 51 mm	1100 - 1400 rpm	1600 - 2000 rpm
2-1/8" - 3"	54 - 76 mm	900 - 1100 rpm	1200 - 1600 rpm
3-1/4" - 4"	82 - 102 mm	700 - 900 rpm	800 - 1200 rpm
4-1/2" +	114 mm +	500 - 700 rpm	500 - 800 rpm

Note: In the case > 1400 is recommended speed, the max drill speed provided is acceptable however drill time is increased.

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DRILL DEPTH ADJUSTMENT

Upon drilling glass and mirror sheet or plate it is recommended to drill slowly the last fraction of an inch to avoid chipping upon exiting. The PST Tripod Drill is provided with an adjustable Drill Depth Stop Knob (F).

INITIAL DEPTH

1. Install desired drill bit and place on a flat surface. (Chuck key Provided)
2. Lift upward on Handle (G), rotate Lock Arm (H) to release and lower Drill Housing (A).
3. Turn Drill Depth Knob (F) clockwise enough to insure drill bit tip touches flat surface.
4. Turn counter clockwise until firmly against Slide (E).
5. Lift Handle (G) then turn Drill Depth Knob (F) counter clockwise one revolution - 360 degrees

At this point the drill tip should be elevated 1/16" above flat surface. This "Initial Drill Depth" is the distance the drill bit will stop short of drilling through the glass median.

6. Drill glass medium until Initial Drill Depth has been obtained.

FINAL DEPTH

8. Raise Handle (G) slightly then turn Depth Knob (F) clockwise to lower to desired final depth. Commonly the final depth is 1/4" below glass lower surface or approximately 5-6 revolutions clockwise.

DRILLING TIPS

The weight of the Drill Motor Housing (A) gliding downward on the linear shafts will supply sufficient weight to the drill to cause it to drill smoothly through the remaining glass.

Momentarily raising and lowering the drill every 10-15 seconds will allow coolant mixture to enter the core groove during drilling and extend drill life.

We suggest that pressure not be applied to the handle (G) when a tube drill is used. This may produce excessive resistance to the rotation of the drill motor, causing it to burn out.

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DRILLING INSTRUCTIONS

Prismatic and Spearpoint Drills

Prismatic and Spearpoint Drills are used for drilling small holes in glass. Place the glass on four or five thicknesses of corrugated cardboard to protect the work surface. Secure the drill in the chuck and lower the drill housing until the tip of the drill touches the glass surface. Set the initial drill depth adjustment as instructed on page 6. Motor speeds should be approximately 400 to 600 rpm (less than half of maximum) as detailed on page 5. As the drill travels through the glass, keep it lubricated by constantly squirting turpentine on it. A slight downward pressure on the top of the housing will increase the drilling speed. Set the Final drill depth to be 1/4" to 3/8" (6 to 8 mm) past the bottom surface of the glass when using Spearpoint and Prismatic Drills. The turpentine can be cleaned with a glass cleaner.

Drilling with Diamond, Steel, and Brass Tube Drills

Diamond, Steel, and Brass Tube Drills up to 6" (152 mm) in diameter may be used for drilling larger holes. Before drilling, prepare a surface with several layers of corrugated cardboard. Lay out the location to be drilled on the glass.

Refer to page 6 on instructions to set initial drill depth.

When drilling a single switch or duplex outlet, a 2" (51 mm) tube drill is recommended. Drill two adjacent holes end to end. Create a reservoir around the layout hole to contain the lubricating slurry or coolant/water mix. The easiest and most effective way to do this is with Wood Sash Putty rolled into a thick rope and connecting the ends to form a ring or reservoir one inch larger than the hole diameter.

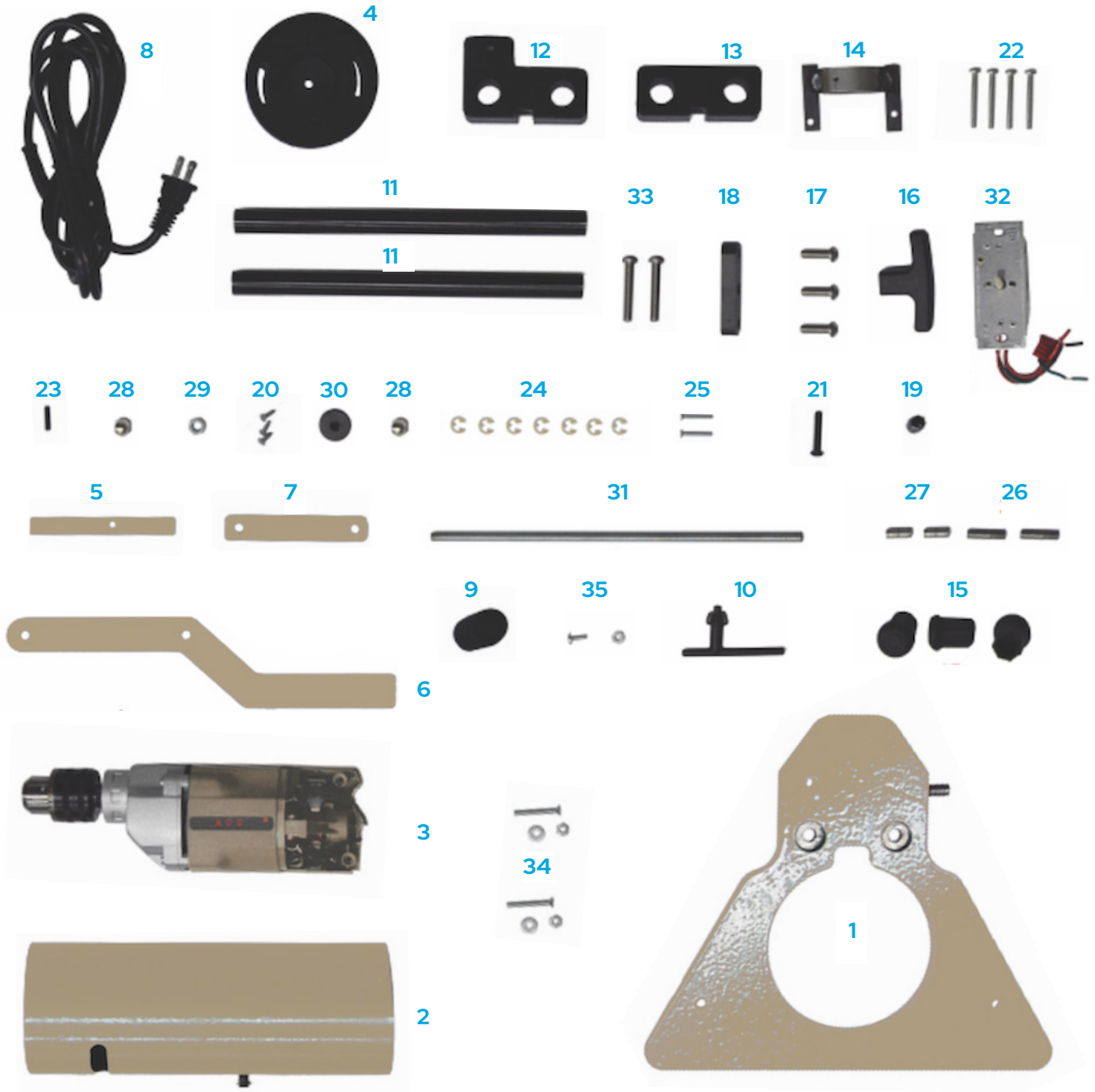
A slurry consisting of Silicon Carbide Grain with water is recommended for Brass and Steel Tube Drills. Fill the reservoir 1/8" in depth of Silicon Carbide then add water and mix to yield a slurry. The friction between the grain and the tip of the Tube Drill will produce the necessary cutting action. When drilling with a Diamond Tube Drill, use a solution of Diamond Tool Coolant and water mixed 50 parts to 1 part coolant). NEVER use silicon carbide grain with a diamond tube drill.

Use maximum drill speed when drilling holes with Brass or Steel Tube Drills. Lower the drill housing (A) until the edge of the drill rests on the surface of the glass, then turn on the switch (B). Steady the machine with your other hand to keep it from moving out of position. Once the drilling has been started, the machine will automatically drill to the initial set depth without the aid of manual pressure. Once completed reset depth for final depth and drill at a reduced RPM to avoid chipping.

To drill an opening for a duplex outlet, drill two adjoining holes. After drilling the first hole, replace the cut circle of glass and fill the gap with putty to keep the reservoir intact. Be aware that an oversized cover plate will be necessary when using this method. Remove the putty completely then rinse the glass of all carbide grain with clear water. It is essential that the glass be thoroughly rinsed before the final cleaning to eliminate friction between the wiping cloth and the carbide grain.

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REPLACEMENT PARTS



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PART NUMBER LIST

PART#	CAT. NO.	DESCRIPTION	QTY REQ
1	DR101	Base with Three Legs	1
2	DR102	Drill Motor Housing	1
3	DR103	Drill Motor Assembly, 120V/60 Hz	1
4	DR104	Drill Housing Cap	1
5	DR115	Stop Arm for Housing	1
6	DR106	Lift Arm, Long	1
7	DR107	Lift Arm, Short	1
8	DR108	Cord Set 18-3 Grounded, 8 ft., 110V	1
9	DR109	Hand Grip	1
10	DR110	Chuck Key	1
11	DR111	Linear ceramic Coated Shaft	2
12	DR112	UHMW Slide - Upper	1
13	DR113	UHMW Slide - Lower	1
14	DR114	Alignment Collar	1
15	DR115	Rubber Feet	3
16	DR116	Carry/Tote Handle	1
17	DR117	Shaft/Handle Bolts	3
18	DR118	Shaft Bracket - Upper	1
19	DR119	Speed Control Knob	1
20	DR120	Top Cap Philip Screws #6 x 1/2"	3
21	DR121	Bolt 1/4"-20NC x 1-1/2	1
22	DR122	Alignment Screws	4
23	DR123	Collar Set Screw #10	1
24	DR124	DU Bushings	4
25	DR125	Philips #6-32NC x 1"	2
26	DR136	Lift Arm Pivot Pins - Long	2
27	DR137	Lift Arm Pivot Pin - Short	1
28	DR128	Acorn Nut, 5/16"	2
29	DR129	5/16" Nut	1
30	DR127	Depth Adjustment Knob	1
31	DR131	Depth Adjusting Rod	1
32	DR132	Speed Control Switch	1
33	DR133	Lower Shaft Bolts 1/4" -20	2
34	DR134	Collar Screws	2
35	DR135	Grnd Wire screw / nut 10-24	1
40	DR140	Replacement Motor Brushes, Pair	1 pr

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LIMITED WARRANTY AND LIABILITY

C.R. Laurence Co., Inc. (“CRL”) warrants products of its manufacture to be free from defects in materials and workmanship in normal use for 12 months from the date of shipment (unless a shorter period is provided elsewhere in this document). CRL’s obligation and buyer’s exclusive remedy shall be limited to repair or replacement, at CRL’s sole option, of defective parts within the warranty period, provided buyer gives CRL immediate written notice of such alleged defects, and, if requested by CRL, returns the defective parts to CRL’s factory prepaid by buyer for CRL’s inspection. The warranties contained herein are in lieu of any other warranty, expressed or implied, including any warranty of merchantability or fitness for purpose. CRL shall in no event be liable for consequential damages. Warranties hereunder shall not apply to any equipment that has been damaged by misuse, neglect, accident, or failure to perform maintenance. This warranty shall be null and void (1) if the machine is used in a manner contrary to instructions or after malfunction is noticed; (2) if the buyer does not honor terms of payment; (3) if the machine is modified or altered; (4) if the machine has been damaged by forces beyond the control of the customer or CRL, i.e. Acts of God.

EQUIPMENT RESOLD BY CRL

In the case of equipment furnished by CRL but not of CRL’s manufacture, CRL’s liability to buyer hereunder is limited to such warranty as the manufacturer makes to CRL, but in no case greater than 12 months from date of shipment by CRL.

LIMITATION OF LIABILITY

CRL’s sole remedy shall be repair or replacement of defective product. In no event shall CRL be liable for any other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to persons or property or any other incidental or consequential loss) or punitive damages. The refund or replacement shall constitute the limit of CRL’s liability and obligation for any material defect or defect in workmanship.

DISPUTE RESOLUTION

Any dispute between the customer and CRL shall be settled by arbitration between the parties. Under the rules of the American Arbitration Association, Chicago, Illinois such arbitration shall take place in Chicago within 90 days after a request for arbitration has been filed by one of the parties. Both parties irrevocably consent to jurisdiction in Cook County, Illinois.

LAW

All contract and other claims (whether based on contract, tort, equity, treaty, or code) with respect to the products sold, and all claims with respect to the operation and use of the products, shall be governed by and construed in accordance with the laws of the state of Illinois. The sales contract shall not be governed by the United Nations Convention on contracts for the International Sales of Goods.

INVALIDITY OF PROVISIONS

If any provisions of these terms and conditions are held to be invalid, illegal or unenforceable, the remaining provisions of these terms and conditions shall not in any way be affected or impaired.