Mini-Lathe Dream Cutter

User Guide

Risks and Safety

"Feel the need…For speed" (but take it slow and steady)

The *Mini-Lathe Dream Cutter* **is a new invention** and a departure from traditional machining techniques. Although well tested, unforeseen risk factors still may apply under certain conditions. Therefore the product handling and operation should be considered as if this were an **experimental tool design**, just as the Air Force considers the latest high tech fighter jet. ***Use this Dream Cutter tool only if the operator accepts and assumes all risks. A high level of awareness and skill is needed to to reduce risk of injury or damage.***

Adhere to the manufactures recommended operation and safety procedures of the host equipment (lathe), and apply with Dream Cutter guidance with prudence. Operating this equipment requires maintaining concentration and common sense.

By developing acute awareness of the equipment state and condition, you will be able to avoid problems. Also check twice for obstructions and assure clearances for operator and tool paths to reduce risk and obtain the best work results.

CAUTION!

eXperimental Tool

USE WITH CARE

The Dream Cutter web site at http://www.dreamcutter.com facilitates communication with Dream Cutter customers and each other.

As the Dream Cutter product is adopted by the industry and consumers additional best practices and techniques from experienced machinists will emerge on the Dream Cutter web site forum or other established media outlets. These and other advancements developed by Dream Cutter will be referenced in the latest version of the documentation. Check the web site often for updates as this product matures.

In addition to risks inherit with the host equipment, the Dream Cutter operator must consider the risk and skill associated with operating the additional axis of tool path sweep. The operator controls the compound pivot sweep with his hands. Therefore particular risks associated with the *Dream Cutter* include inadvertent strikes with the lathe chuck or part. Practice and test to develop skills before critical work.

Also be aware the *Mini-Lathe Dream Cutter* incorporates shearable installation bolts. This allows for a rigid fastening, yet in the event of a powerful strike to the tool will separate from the host lathe mount (lathe cross-slide) to reduce equipment damage. *Over tightening the installation bolts may weaken them enough to shear under normal operation.*

Operator Safety Checklist

- Review host lathe equipment operators manual(s)
- Eye and face protection for operator & any observers.
- Ensure there is sufficient room for safe and flexible operator movement.
- Any observers must stay a safe distance from operator and dangerous equipment.
- No loose clothing, gloves, or accessories on operator
- Check the Dream Cutter installation and ensure that it is rigidly and properly secured to the host.
- Adjust Dream Cutter pivot alignment and tighten all mechanism adjustments to sufficient rigidity & desired movement resistance.
- Check cutting tool condition, alignment and secure. holder anchoring.
- Always check to see there are no inserted or loose tools when ready to operate lathe.
- *Double check chuck, part and Dream Cutter tool path clearances before switching on the lathe.*
- **HABIT: Before you hit the power button, touch or adjust your safety glasses or face shield to verify its on.**
- Cutting debris (swarf) is very sharp and hot. Maintain host lathe shields. Use a hand tool to clear swarf and tool tip "weld-ons".

Theory of Operation

The *Mini-Lathe Dream Cutter* is an alternative to the compound rest that affords the operator *two additional axis of radial tool control.*

The *Dream Cutter* equipped lathe can also turn and face a convex ball or concave dish in a single operation in addition to accomplish common turning and facing operations. This opens a whole new dimension of machining technique and exciting new curve forms.

The *Dream Cutter's Compound Radial Machining* (CRM) action that allows for back cutting so the radius can approach 180° and to round the neck or lip of the part.
Refer to Figure 1. and the demonstration of this technique at ***http://dreamcutter.com***

Reference the Features section of this guide and Figures 4 & 5 to understand the purpose of the various adjustment knobs and control levers.

In its standard configuration (fig. 2), the *Mini-Lathe Dream Cutter* permits clearance under the chuck of most mini-lathes installed with a 3" chuck up to the point where the chuck jaws protrude from the diameter of the chuck body.

To accommodate stock beyond these dimensions, the stock must be sufficiently extended to allow the cream cutter to machine without obstructing the chuck or *transform the Dream Cutter* to its the optimal assembly configuration.

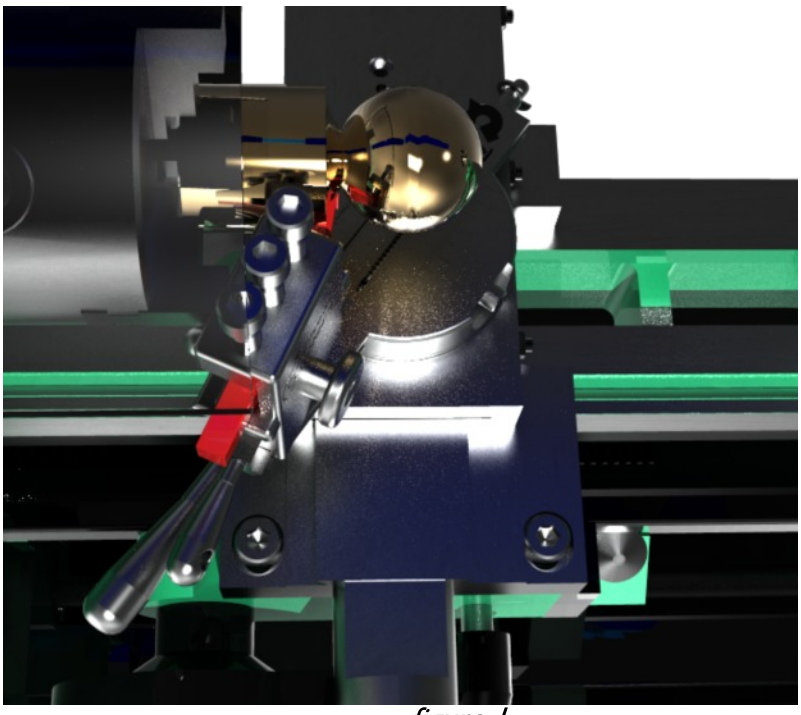


figure 1.

figure 2.

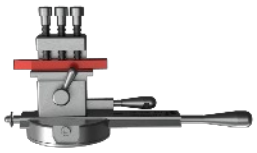


figure 3.

The *Dream Cutter* various assembly configurations increases its versatility and accessibility.

To gain more reach towards the chuck, primary lead-screw & control knob assembly reversed (fig. 3) and the adjustable tool holder may be swiveled around.

This is suitable for larger diameter stock as it allows for the closest reach to the chuck face without extending the *Dream Cutter* under the chuck.

Why it works:

The *Dream Cutter* gauge's dead center indicator is the primary radius center. When the compound pivot tool path crosses this point, the cut is to the primary radius. This happens only when the tool holder and rail are aligned and flush. All other compound radial actions, cut to a smaller, inside radius determined by the compound offset. Cuts will be shallower on the peripheral range of the arc. A complete perimeter of a hemisphere can be cut by plunging successive compound radial cuts to advance the perimeter of the primary cutting arc. *This action reduces tool loading, heat and breakage and improves surface finish. Finish radial "waviness" common with CNC radial operations is eliminated.* ***These are the fundamental advantages obtained when applying Compound Radial Machining (CRM)™ techniques with the Dream Cutter.***

Features & Controls

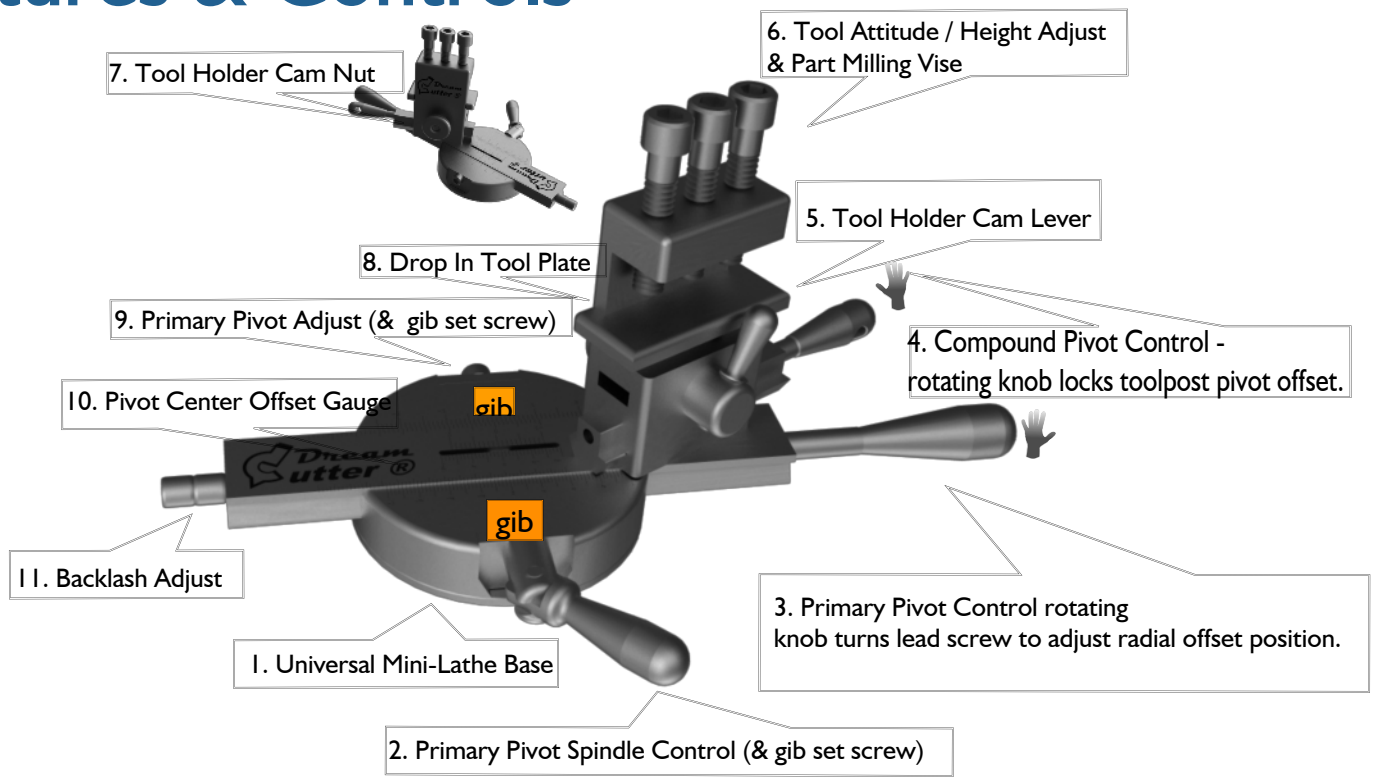


figure 4.

"Requirement #1: Make it agile and versatile"

1. Universal Mini-Lathe Base;
   - 1.1 Mounts to most mini-lathes with 2 flathead 6M bolts provided.
   - 1.2 Rotate Primary Pivot Control knob counter-clockwise to expose bolt installation hole. Align hole with compound installation hole in that saddle when mounting.
   - 1.3 Use Hex 4mm or 5/32" to tighten one side, then rotate body 180 and install and tighten the second bolt.. If installation slip occurs in your lathe, try the alternate 6mm bolts with the milled heads (accessory bag).
2. Pivot Control & Tool Rigidly:
   - 2.1 *All controls are made with positive locking dovetail* mated part joints which increase in rigidity with adjustment to the control. **Tightening controls increases rigidity and reduces flex.**
   - 2.2 Use **Primary Pivot Spindle Control** (Fig. 4, #2) to adjust *spindle friction* or fully tighten to lock compound to a particular angle. The clamping of the pivot hub increases rigidity body to the base.
   - 2.3 The Primary Pivot Spindle Control also adjusts rail rigidity & frictional force on primary pivot offset ways by pinning gib material to the rail. *The gibs are made of 1/4" sections of 3/32 brass rod.* The gib is wedged against the rail using the pivot adjust bolts. *Extra gibs in accessory bag.*
3. Primary Pivot Control:
   - 3.1 Twist to adjust pivot offset *before* operation.
   - 3.2 Use to control primary pivot cutting action (radial sweep) during operation.
   - 3.3 *Bores & Tapers:* rotate Primary Pivot Control Knob to advance tool post with lead screw *to plunge* tool during operations.
4. Compound Pivot Control:
   - 4.1 Twist to release & tighten tool holder pivot & offset. Positive clamping pivot hub also increases rigidity with torque.
   - 4.2 Radial Cutting: Use this lever to control compound pivot action during operation, to avoid corners or for back-cutting the neck.
5. Tool Holder Adjustments
   - 5.1 Cam (Fig. 4 #5) raises/lowers drop in tool plate +/-.25" Tighten Cam Nut (Fig.4 #7) to increase cam friction, loosen to release.
   - 5.2 Engaging cam 90° lifts tool plate *and* increases tool holder rigidity against compound pivot rail.
   - 5.3 Disengaging cam lever releases tool *and* compound tool rail.
   - 5.4 Optional drop-in *Tool Plate optimized for 3/8 tooling, flush against back puts point on center.*
   - 5.5 Use 2 of the 3 1/4" cap screws to position tool point attitude and tighten well to fix tool into place.
6. Backlash Adjust
   - 6.1 Use e-clip and one nut for extra versatility or reduce play with jam nut.
   - 6.2 Tool Attitude / Height Adjust & Part Milling Vise:
   - 6.3 Use 2 of the 3 bolts to secure your part or tool with Hex 3/16"
7. Position the Dream Cutter center to the work center along the axis of rotation with the lathe Y axis control and tool point (adjust/shim as necessary.
8. Before operating, hand rotate lathe chuck and look for possible obstructions.

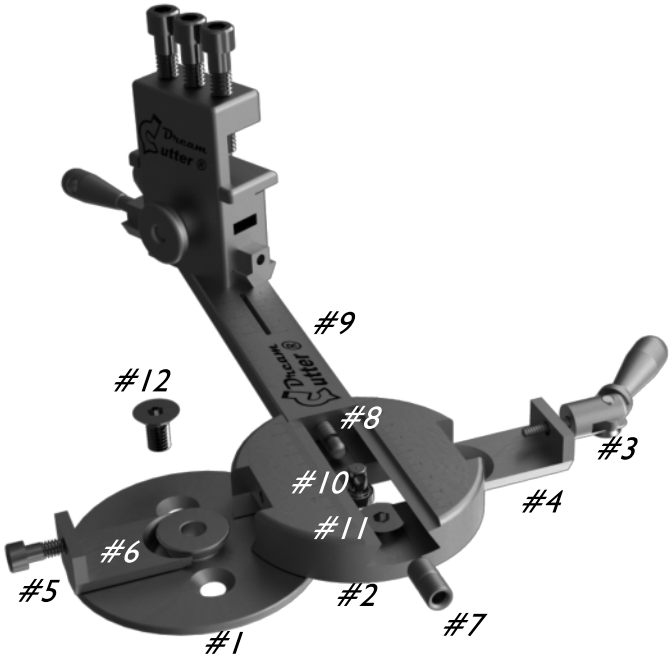


figure 5.

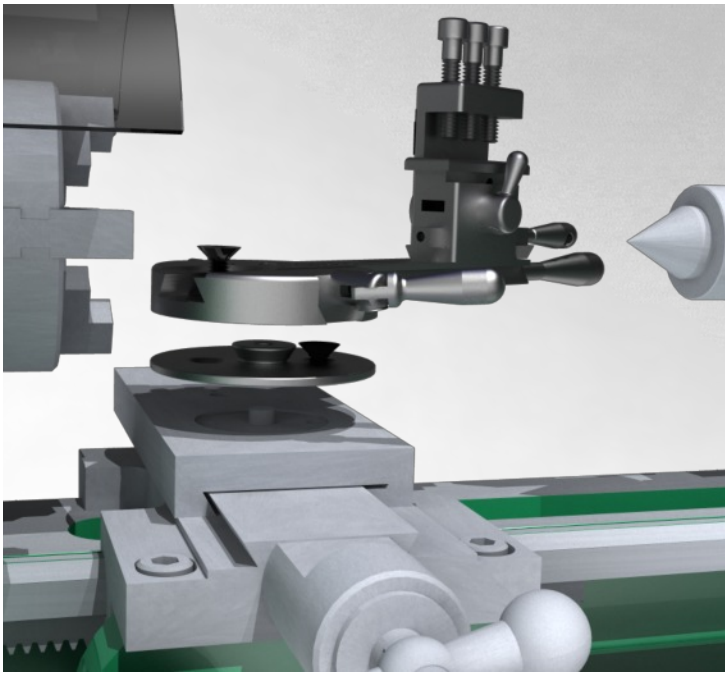


figure 6.

Assembly and Installation

"Requirement #1: Direct bolt on installation, No modification to the host lathe"

1. Remove the compound rest of your mini-lathe to expose the cross-slide (Y Axis) compound mount.
2. Unscrew and back out the primary pivot control (#3), loosening the captive spindle brake "shoe" (#4).
3. Remove backlash adjust nut/e-clip (#7) and back out lead-screw(#8) of the lead-nut (#10) just enough to move rail to expose install hole (#11) in main body.

Note we do not need to remove lead-nut from body. Note **lead nut is keyed** to underside slot in rail and may drop through body if leadscrew is fully unthreaded. Aligning lead-nut hole with rail slot will allow easy reinstallation.

4. Again, slide rail (#9) back to expose installation bolt hole in body. Sliding back more will expose rail ways gibs, and my require reinstallation. Refer to 2.2 of the Features section to understand the purpose. Its easy to replace gibs after installation, too.
5. Position Dream Cutter on lathe saddle compound mounting stud, rotate to align install bolt hole in base with one of the lathe compound installation holes..
6. Insert 6M flathead bolt, tighten well with 4mm allen key included.
7. Rotate body 180 degrees, to align second bolt hole and install the other 6mm & tighten.

- **Other Install Notes**: Certain mini-lathes do not have a dedicated compound mount, and just have T-Slots on the cross-slide. T-slots are very versatile and will allow the dream cutter to be mounted any number of ways. We recommend using T-Nuts with 6M threaded holes to accommodate the included shear-able installation bolts. If your cross-side is significantly different from the represented in fig 6, determine if the base can accommodate new holes to meet your lathe. Contact Dream Cutter support for advice.

Disassembly/Assembly :

- **Remove from lathe** by removing backlash nuts/e-clip from rail. Loosen Pivot Control Adjust knob ro relieve gib pressure against rail. Then back-out and rotate rail/toolpost to expose install bolt hole.
- Remove installation bolt, rotate 180 and unscrew the remaining to remove drea,m cutter from lathe.
- Tool post is removed by loosening the Cam Nut, then the Compound Pivot Control nob to release the captive dovetail. Now you should be able to slide the toolpost off the Compound Pivot Rail parts.
- To remove the universal base (#1) , loosen and remove #3 bolt and associated pivot shoe (#4) and slide base laterally from the body (#2) through the pivot adjust dovetail ways.
- Insert lead-nut back into the through the body center into the rail slot. Lead-nut is keyed and should align with lead-screw slot.

Setup & Alignment

Its easy to adjust the dream cutter for operation. Use this guide to setup and align the Dream Cutter for your needs.

1. Select tooling.

2. Determine and assemble *Dream Cutter* configuration that provides best access, desired radius and most rigidity

3. Adjust ways and pivot friction rigidity.

4. **Install and align tool height** and attitude.
   4.1 Facing Operations: align tool tip to part dead center. This includes any radial operation where the face and girth of part will be turned.
   4.2 Turning Operations: Align tool tip precisely to the axis of rotation
   4.3 Radial Operations need to also have the tool concentric axial aligned with the work face *center* of rotation. *See step 9*

5. **Set primary pivot offset** for desired radius (as desired) by twisting primary pivot control to advance or retract leads-screw & rail. Adjust pivot spindle control or gib to obtain easy travel with maximum rigidity.

6. **Compound radius pivot** off set by:
   6.1 Releasing tool holder cam lock lever
   6.2 Loosening compound pivot control and sliding tool holder to desired point.
   6.3 Re-anchoring the tool holder in position by installing tool and securing tool and tightening compound pivot control (twist).
   6.4 Use optional ¾ dovetail "square block" to fix tool holder in alignment with rail.

7. **Turning precise tapers** is easily accomplished by setting the desired angle between the work axis of rotation to the Dream Cutter primary pivot rail.
   7.1 The cutting tool point should be set perpendicular to the work surface. Set by loosening compound pivot control and rotating tool holder to desired angle and securing tight with 1/8" breaker bar. Don't over tighten.

8. **Lathe part milling** is setup by installing an end mill in your lathes chuck and installing the part to be machined in the tool holder "vice" by securely clamping the part with 2 of the three 1/4" bolts

9. **Concentric Axial Alignment aligns** the tool with the primary pivot point, and the primary pivot point with the work axis and is used for radial operations.
   9.1 Adjust tension on compound to pivot controls to just permit firm but smooth movement. Rotate primary and compound pivots (flush with rail) so they are fully aligned and oriented to the center of the work piece face.
   9.2 Center tool in toolholder, with tool point over gauge center and height adjusted to dead center of the face. Secure the lathe cross-slide (Z-axis).

" Garbage in-garbage out. To succeed it needs to be easy to adjust, and stay adjusted"

Setup Checklist

Ensure reliable performance by performing these key steps before each operation

- Proper tool selection and condition:
  - Sharp, clean and fully intact.
  - For many operations a standard ¼- 3/8 index-able lathe tool with 60° cutting point on center works well. **3/8" tools center, when flush against the tool holder wall.**
- Tool secure and tip aligned in holder
- Tool aligned to work axis or center
- Pivot offset to desired radius.
- Dream Cutter gib & pivot rigidity
- Check LATHE ways rigidity and anchor travel as necessary. Anchoring unnecessary lathe ways travel can be helpful to maintain precise radius.

Machining Operations

"Performance Expectations: Its got to get the basic maneuvers right."

1. Square & Tapered Facing Operations
    - 1.1 Select and install appropriate size stock into lathe chuck. Depending on material, in general extend as much as possible however no more than 3x diameter of stock from chuck jaws.
    - 1.2 Assess work and chuck clearance and determine best Dream Cutter configuration that will allow the tool point to reach the ***center*** of the face of the work piece.
    - 1.3 Its often desirable in square facing to position the primary pivot (rail) at a 60° angle from work axis, and adjust compound pivot (tool holder) so that it is perpendicular to work face.
    - 1.4 Adjust all pivot and gib adjustments to ensure rigid operation. Tighten pivot points firmly to prevent movement.
    - *1.5* Advance lathe saddle *(Z-axis)* and "touch off" tool to perimeter of face. *If you are not going to also perform radial operations, its not necessary to center primary pivot point.*
    - 1.6 **Feed tapered cuts with primary pivot lead-screw.**
        - 1.6.1 Establish depth of cut with primary pivot lead-screw adjustment. Advance to cut very shallow at first and then adjust as material hardness and elasticity is experienced to cut more efficiently. Don't cut so aggressively that it torques the tool holder to pivots under brake, as your result will not be true. ***Always feed turning cuts towards the chuck.***
        - 1.6.2 Note a *applying a portable power driver to lead-screw* has been tested to achieve constant feed rates. With careful application it works, however *it is not recommended.*
    - 1.7 **Feed square cuts with lathe cross-slide** *(Y-axis)*
        - 1.7.1 Begin cut with lathe cross-slide control and decelerate as you advance to compensate for the reduction in the surface speed of cut as you approach center. *Don't cut past the center point or cut from the backside. Damage and injury may occur*.
    - 1.8 At center back tool off face with saddle or primary pivot lead-screw.
2. Square & Tapered Turning Operations
    - 2.1 Select and install appropriate size stock into lathe chuck. Depending on material, in general extend as much as necessary however beyond 3x diameter of stock from chuck jaws, tail-stock ort other axial support must be considered.
    - 2.2 Assess work and chuck clearance and determine best Dream Cutter configuration that will allow the tool point to reach the ***axis*** of the for the length of the work piece.
    - 2.3 **For square turning operations**
        - 2.3.1 Position the primary pivot (rail) at a 60° angle from work axis, and adjust compound pivot (tool holder) so that it is perpendicular to work axis of rotation.
        - 2.3.2 Adjust all pivot and gib adjustments to ensure rigid operation. Tighten pivot points.
        - 2.3.3 Advance lathe cross-slide *(Y-axis)* and "touch off" tool to perimeter of face.
        - 2.3.4 Advance feed with saddle (**Z-axis**) or automatic threading/feed. *Towards the chuck.*
    - 2.4 **For tapered turning operations**
        - 2.4.1 Position the primary pivot (rail) at the desired angle from work axis, and adjust compound pivot (tool holder) so that it is perpendicular to work axis oTighten down all pivots.
        - 2.4.2 Position the tool with the lathe saddle (**Z-axis**) tool position at the start taper, farthest from the lathe chuck with Dream Cutter primary pivot rail fully retracted.
        - 2.4.3 Advance lathe cross-slide *(Y-axis)* and "touch off" tool.
        - 2.4.4 Twisting the primary pivot control engages the lead-screw to cut along the desired angle. When the tool tip begins to plow too deep or you reach the end of the rail, the taper cut may be reestablished by advancing the lathe saddle (**Z-axis**) and retracting the rail.
    - 2.5 Advance feed very shallow at first and then adjust as material hardness and elasticity is experienced. Too aggressive a cut may cause the tool holder to shift under brake, affecting cut trueness.

Radial Operations

"Its not capability, its repeatability, repeatability, repeatability"

The Dream Cutter primary pivot point is the dead center indicator of the gauge & lead-nut. When the compound pivot tool path crosses this point, the cut the the primary radius. This happens when the tool holder and rail are aligned and flush. All other compound radial actions, cut to a smaller, inside radius determined by the compound offset distance. Compound radial cuts are very useful in removing material in advance of the final cut in radial operations because the machining process removes excess material gracefully allowing for the maximum cutting depth to be achieved. This action reduces tool loading, heat and breakage and improves surface finish. Finish radial "waviness" common with CNC radial operations is eliminated. These are the fundamental advantages with applying Compound Radial Machining (CRM)™ techniques.

3. Convex Radius; Sphere & Ball Cutting:
    - 3.1 Select and install appropriate size stock into lathe chuck. Depending on material, in general extend as much as possible however no more than 3x diameter of stock from chuck jaws.
    - 3.2 Assess work and chuck clearance and determine best Dream Cutter configuration that will allow the tool point to reach the *center of the face* of the work piece.
    - 3.3 Aligning the tool with the primary pivot point, and the primary pivot point with the work axis is essential for achieving a round round sphere.
        - 3.3.1 Adjust tension on compound to pivot control to increase pivot friction to where it is smooth in travel action, yet the friction is significant enough where only deliberate action induces movement.
        - 3.3.2 Rotate compound pivot until the tool holder is aligned with the rail.
        - 3.3.3 Install and adjust tool in the tool holder so the point directly over the primary pivot point dead center using a machinist square, and lightly secure the tool in place.
        - 3.3.4 Next adjust the lathe cross-slide (Z-axis) and rotate the Dream Cutter primary pivot so the dream cutter is either pointed the work center (or tail-stock center, less precise).
            - 3.3.4.1 Secure (or don't touch) the lathe cross-slide (Z-axis) once Dream Cutter is centered.
            - 3.3.4.2 Further adjust the tool holder so the cutting tool is at dead center height, shim tool as necessary. Rotate tool cam lift tool and firmly set the desired attitude (slope) by tightening 2 of the ¼ bolts using 3/16 Hex.
        - 3.3.5 With the Dream Cutter centered, you can rotate the primary and compound pivot to position the start of the cut.
            - 3.3.5.1 To make a sphere, start at dead center of the work face and begin to cut from center toward and around towards the lathe chuck.
            - *3.3.5.2* Allow the compound pivot to flex and adapt to the contour of the cut maintaining a steady resistance to cut shallow. **Maintain a firm grasp of the primary pivot and compound however be very careful not to enter the path of the lathe chuck, swarf, or work piece.** ***Be very aware and deliberate as you proceed to round the part. The compound pivot can break free from the cut and swing violently.***
            - 3.3.5.3 Once you pass 90° you will be able to reposition the tool with the compound pivot to reach the back side and cut a smaller radius to facilitate necking of the primary radius.
            - 3.3.5.4 Return the compound pivot to the primary radius and advance the cut towards the work axis and repeat to obtain the desired neck sphere.
            - **3.3.5.5** If you want a complete ball, its recommended to use a collet in the tail-stock of the desired diameter to secure the ball before you complete parting the neck.

Advanced Radial Operations

"Keep your eye on the ball and your head in the game"

3. Concave and Convex Radial Turning Techniques:
    - 3.1 Select and install appropriate size stock into lathe chuck. Depending on material, in general extend as much as possible however no more than 3x diameter of stock from chuck jaws.
    - 3.2 Assess work and chuck clearance and determine best Dream Cutter configuration that will allow the tool point to reach the *center of the face* of the work piece.
    - *3.3 Align the tool with the primary pivot point, and the primary pivot point with the work axis.*
        - 3.3.1 Adjust tension on compound to pivot control for smooth, deliberate action.
        - 3.3.2 Rotate compound pivot until the tool holder is aligned with the rail.
        - 3.3.3 Install and adjust tool in the tool holder so the point directly over the primary pivot point dead center using a machinist square, and lightly secure the tool in place.
        - 3.3.4 Next adjust the lathe cross-slide (Z-axis) and rotate the Dream Cutter primary pivot so the dream cutter is either pointed the work center (or tail-stock center, less precise).
            - Any further adjustment of lathe cross-slide once Dream Cutter is centered can be use to create offset (non-concentric) radial turnings.
            - 3.3.4.1 Again, adjust the tool holder so the cutting tool is at dead center height, shim tool as necessary. Rotate tool cam lift tool and firmly set the desired attitude (slope) by tightening two of the ¼ bolts using 3/16 Hex.
    - 3.4 *Keep the Dream Cutter centered* if you want *to maintain concentricity* with the work axis, otherwise the are many options to *create interesting formations that are not concentric*.
        - For *larger diameter features*, adjust the axis of concentricity distance from the work center of rotation with the *cross-slide (Z-axis)*.

        OR
        - For extended reach, deep boring, or *small features* use the Dream Cutter *primary pivot offset to ajust the axis of concentricity* distance from the work center of rotation, and the compound pivot offset to machine the radial feature.
4. Tips for machining non-concentric Shapes
    - 4.1 **Grooves** - Advance the tool tip from center to achieve concave effect.
    - 4.2 **Rim & Beads** - Advance the tool tip from center to achieve concave effect.
    - 4.3 **Torids** - Advance the tool tip from center to achieve concave effect, and follow through to achieve desired effect. If using cross-slide (Z-axis) to set axis of concentricity, you have the ability to fully back cut to near 180°.
5. **Ball and Socket** - Maintain centricity with the work axis start at dead center of the work face and begin to cut from center toward and around towards the lathe chuck.
    - 5.1 Retract the tool tip from center to achieve convex effect dimension to turn the ball.
    - 5.2 Advance the tool tip from center to achieve concave effect to turn the socket by adjusting the primary pivot offset.

Care and Maintenance

The Dream Cutter requires little maintenance, however with proper care this quality tool will last generations.
The Dream Cutters structural components are machined in steel, and the controls and hardware stainless steel. *It is recommended to replace hardware only with stainless or non-corrosive counterparts to prevent seizing.*

Oil and grease ways and mechanisms at the points identified in fig 7. before and after each use. Replace gib wire as necessary.

Wipe down any machining fluids, and machining debris after each use. Vacuum, blow or sweep out swarf and debris from the Dream Cutters dovetail ways.
Draw back the rail to expose the inside mechanism so that it can also be thoroughly cleaned. This is essential to perform after each use, especially if you are machine ferrous or corrosive materials.

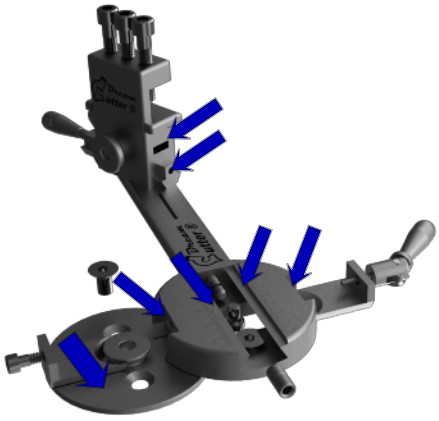


Fig. 7
Blue arrows represent oil points. A light grease is be applied to the surface of the universal base.

Troubleshooting

• Lead-screw binding: this is caused by the inside backlash collar being to tight against the rail. Back off ¼ turn and bind into the outer collar or e-clip, which can be used instead of the outer collar.

- Primary pivot rail travel binding in ways: The gibs may be too tight and clamping the rail ways. Back of the gib setscrews inside the same threaded hole as the Primary Pivot Adjust and Control bolts. Use 5/64 hex.

•Tool holder travel binding: The tool holder cam engages the toolplate *and* the compound pivot rail, check to be certain its disengaged.

- •Loosen the tool holder bolts with 3/16 hex, remove any tool and shims.
- •Loosen the tool holder cam adjust knob.
- •Lift out tool plate
- •Clear any debris from cam area, disassemble cam from tool holder if necessary.

•If its still stuck, fully unscrew compound control knob from compound pivot rail and try to slide off along rail. Be sure not apply pressure against the ways (do not bend or wrench) to prevent damage to tool holder ways or pivot spindle.

•If signs of rust affect mechanics, soak overnight in a light, penetrating oil and work mechanism loose gently. Only brass wire brush surface rust, do not grind or sand.

Warranty and Entitlement Information

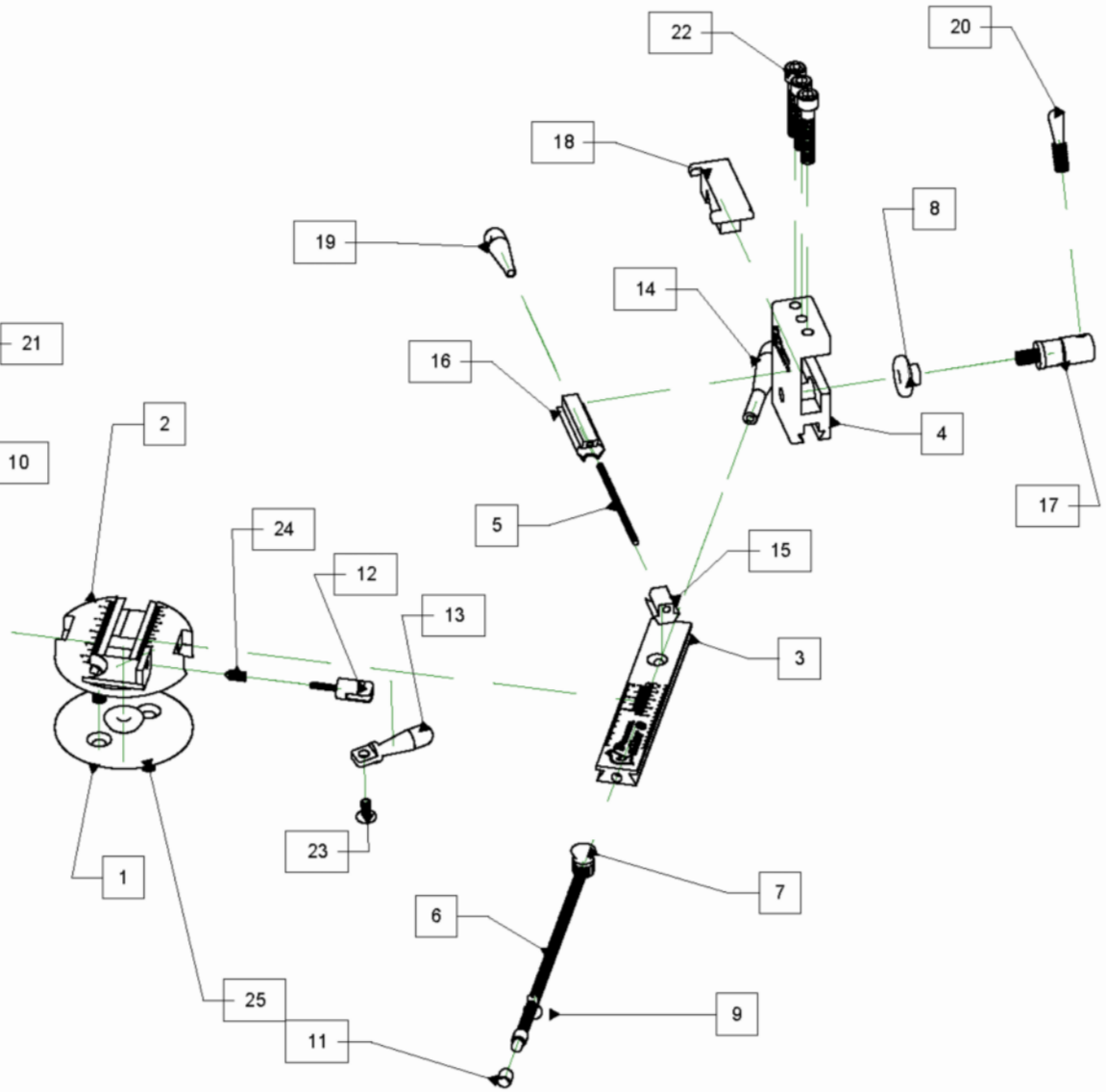
Register your product at http://www.dreamcutter.com. Your serial number:

_____

This serial is also etched on Dream Cutter primary pivot rail, under the tool holder.
If purchased direct from Dream Cutter unused, undamaged equipment can be returned or exchanged from 1 month from purchase. The Dream Cutter is warranted for manufacturing defects for 1 year from date of purchase. If return is necessary, customer bears all shipping cost to factory. The back cover explains how to obtain service.
The Dream Cutter instrument and the Compound Radial Machining techniques are based technology that is claimed by utility and method patent pending with the USTPO and international agencies.
This serial number entitles you to perpetually operate one instance of the *Dream Cutter* through out the period the technology is claimed. "Operating one instance" allows for licensed *Dream Cutter* enthusiast to use the equipment and also experiment with the technology and integrate the technology in projects.
All works or derivations of this technology must be licensed by Dream Cutter LLC to operate or be sold.
This serial number is transferable, however it should be re-registered with the *Dream Cutter* factory to be assigned to the new owner.
Contact Dream Cutter customer for licensing information or transfers.

Mini-Lathe Dream Cutter (MLDC) Assembly and Parts Diagram

Item	Qyty	Part Number	Description
1	1	MLDC01001	MLDC Pivot Base
2	1	MLDC01002	MLDC Pivot Body
3	1	MLDC01003	MLDC Primary Pivot Rail
4	1	MLDC01004	MLDC Tool Holder Body
5	1	MLDC01005	MLDC Tool Post Leadscrew
6	1	MLDC01006	MLDC Primary Leadscrew
7	1	MLDC01007	MLDC Rail Pivot Stud
8	1	MLDC01008	MLDC Toolholder Cam Adjust Knob
9	1	MLDC01009	MLDC Leadnut
10	2	MLDC01010	MLDC Pivot Yoke Shoe
11	2	MLDC01011	MLDC Leadscrew Backlash Adjust Nut
12	1	MLDC01012	MLDC Flip Lever Hinge & Stud
13	1	MLDC01013	MLDC Pivot Lever Knob
14	1	MLDC01014	MLDC Primry Pivot Control
15	1	MLDC01015	MLDC Tool Holder Pivot Rail Short
16	1	MLDC01016	MLDC Tool Holder Pivot Rail Long
17	1	MLDC01017	MLDC Tool Lift Cam
18	1	MLDC01018	MLDC Tool Support
19	1	MLDC01019	MLDC Tool Post Pivot Control Knob
20	1	MLDC01020	MLDC Toolholder Cam Lever
21	1	MLDC01021	MLDC Primary Pivot Adjust Screw
22	3	MLDC01022	MLDC Tool Clamp Capscrew
23	1	MLDC01023	MLDC Flip Lever Hinge Screw
24	2	MLDC01024	MLDC Gib Set Screw
25	2	MLDC01026	MLDC M6 Installation Screw



Customer Support

Dream Cutter's ultimate goal is your satisfaction with the Dream Cutter tool. Your *Dream Cutter* is fully warranted for parts and service for a full year from the date of purchase. Please contact us using any of the means below if you have any questions or service requests. Please obtain authorization from Customer Service and write the RMA # on the outside before returning or shipping any products for service. *The RMA# is critical for our tracking and package identification, therefore we cannot be held not be held responsible for any shipment, or any items received without a RMA #.*

Tel: (123) 456 7890
name@company.com
http://www.company.com

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http://www.company.com

Dream Cutter LLC
4876 Santa Monica Ave., #159
San Diego CA