

# Tools & Parts: Glassdance (1)

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#10 standard washers: stainless steel, brass, and nylon washers.

10-24 zinc plated coupling nuts — with  $\frac{5}{16}$  in. width across the flats — sawed in half and faced on a lathe.

Stainless steel 8-32  $\times \frac{1}{8}$  in. socket head set screws and one hex key wrench; for fastening inverted sprocket hubs against the aluminum tubes that I epoxied into the inner races of the ball bearing panel assemblies.

000-beveled Danco plumber washers.

Wood slivers for adjusting wobbling glasses. See: [Glassdance\\_Components\\_Manual-1.pdf](#), p. 3 and pp. 23–25.

12 collars + 4 collars (in a container inside the Glassdance case) = 16 extra stainless steel 10-24 Threaded Shaft Collars. Ruland Manufacturing Co. #TCL-3-24-SS. I machined the shaft collars with two flats to fit a  $\frac{1}{2}$  in. open end wrench. See: [Glassdance\\_Components\\_Manual-1.pdf](#), pp. 4–8, 11–14.

Stainless steel 10-24 nuts and #10  $\times$  1 in. stainless steel fender washers.

42 aluminum glass stems with machined  $\frac{7}{16}$ -14 threads and bonded aluminum sleeves with 0.490 in. OD. See: [Glassdance\\_MachiningTubes\\_Manual-3.pdf](#).

15 machined aluminum glass stem sleeves: 0.490 in. OD  $\times$  0.439 ID  $\times$  1.610 in.

2 aluminum tubes: 0.500 in. OD  $\times$  0.402 in. ID  $\times$   $3\frac{5}{32}$  in. (in blue layout fluid) for machining glass stem sleeves. McMaster-Carr #9056K65.



# Glassdance (2)

19 extra pan-head Phillips machine screw assemblies with painted fender washers and bonded nuts. Bonding Agent: Loctite #271.

- (1) 10-24  $\times$  5 in. *fully threaded* stainless steel machine screws.
- (2) #10  $\times$  1 in. stainless steel fender washers.
- (3) 10-24 stainless steel nuts.

In the foreground, two unpainted 10-24  $\times$  5 in. *fully threaded* stainless steel machine screws with bonded and rounded nuts for heads. I made these with standard threaded rods and nuts. A *safe* installation of the glasses with these machine screws does not require a Phillips screwdriver inside the glasses.

See: [Glassdance\\_Components\\_Manual-1.pdf](#), p. 8, 10, 13.

16 extra pan-head stainless steel Phillips machine screw assemblies with unpainted fender washers and bonded nuts.

One  $\frac{11}{16}$  in. short wrench for the  $\frac{7}{16}$ -14 aluminum Front Nuts.

One  $\frac{1}{2}$  in. short wrench for the machined 10-24 stainless steel Threaded Shaft Collars.

One  $\frac{5}{16}$  in. short wrench for the machined 10-24 zinc plated Back Nuts.

5 custom-made  $\frac{3}{32}$  in. ball-end hex screwdrivers with rosewood handles for:

- (1) 4-40  $\times$   $\frac{1}{2}$  in. steel Locknut Screws of the Locknuts.
- (2) 4-40  $\times$   $\frac{1}{4}$  in. stainless steel Clamp Screws of the Threaded Shaft Collars.

For instructions on how to use these tools, see [Glassdance\\_Components\\_Manual-1.pdf](#), p. 8, pp. 12–14.



# Glassdance (3)

51 extra washers, bonded with SureHold Super Glue: (1) stainless steel washers  $\frac{7}{16}$  in. (0.469) ID  $\times$  1 in. (0.922) ID  $\times$  0.051 thick,  
(2) neoprene washers  $\frac{1}{2}$  in. ID  $\times$   $1\frac{1}{16}$  in. OD  $\times$  0.108 in. thick.

51 extra  $\frac{7}{16}$ -14 aluminum Front Nuts,  $\frac{3}{8}$  in. thick.

45 Locknuts + 4 Locknuts (in a container inside the Glassdance case) = 49 extra  $\frac{7}{16}$ -14 aluminum Locknuts.

(1) Aluminum Front Nuts faced on a lathe to a thickness of  $\frac{1}{4}$  in.

(2) Assembled with two 4-40  $\times$   $\frac{1}{2}$  in. alloy steel socket head cap screws, called Locknut Screws.

*I invented this new kind of 'locknut' to eliminate the need for jam nuts.*

See: [Glassdance\\_Components\\_Manual-1.pdf](#), p. 5.

Dow-Corning #55 o-ring grease. See: [Glassdance\\_Components\\_Manual-1.pdf](#), p. 7.

Extra 4-40  $\times$   $\frac{1}{2}$  in. alloy steel socket head cap screws, manufactured by Holo-Krome.

Extra silicone liner tubes:  $\frac{1}{2}$  in. ID  $\times$   $\frac{3}{4}$  in. OD,  $\frac{1}{8}$  in. wall thickness. Lengths: 29 mm, 30 mm, 31 mm, and 32 mm.  
Packed in dry lubricant: Johnson's Baby Powder.

Flexible  $\frac{5}{8}$  in. motor to driveshaft coupling. Another spare located in the gearmotor soundproof double-box.

Assemblies: Idler sprockets with their hubs and socket head set screws inside the aluminum ball bearing tubes.  
For testing the fit and lubrication of silicone liner tubes and aluminum glass stem tubes.



# Glassdance (4)

Disassembled glass holder jig.

Lathe and vice jigs.

Extra idler sprockets.

Bull's eye leveling jig for lapping machine.

## *Diamond Glass Cutting Tools:*

¼ in. diamond core drill with inlet connection to a submersible aquarium water pump.

3 diamond coated countersinks.

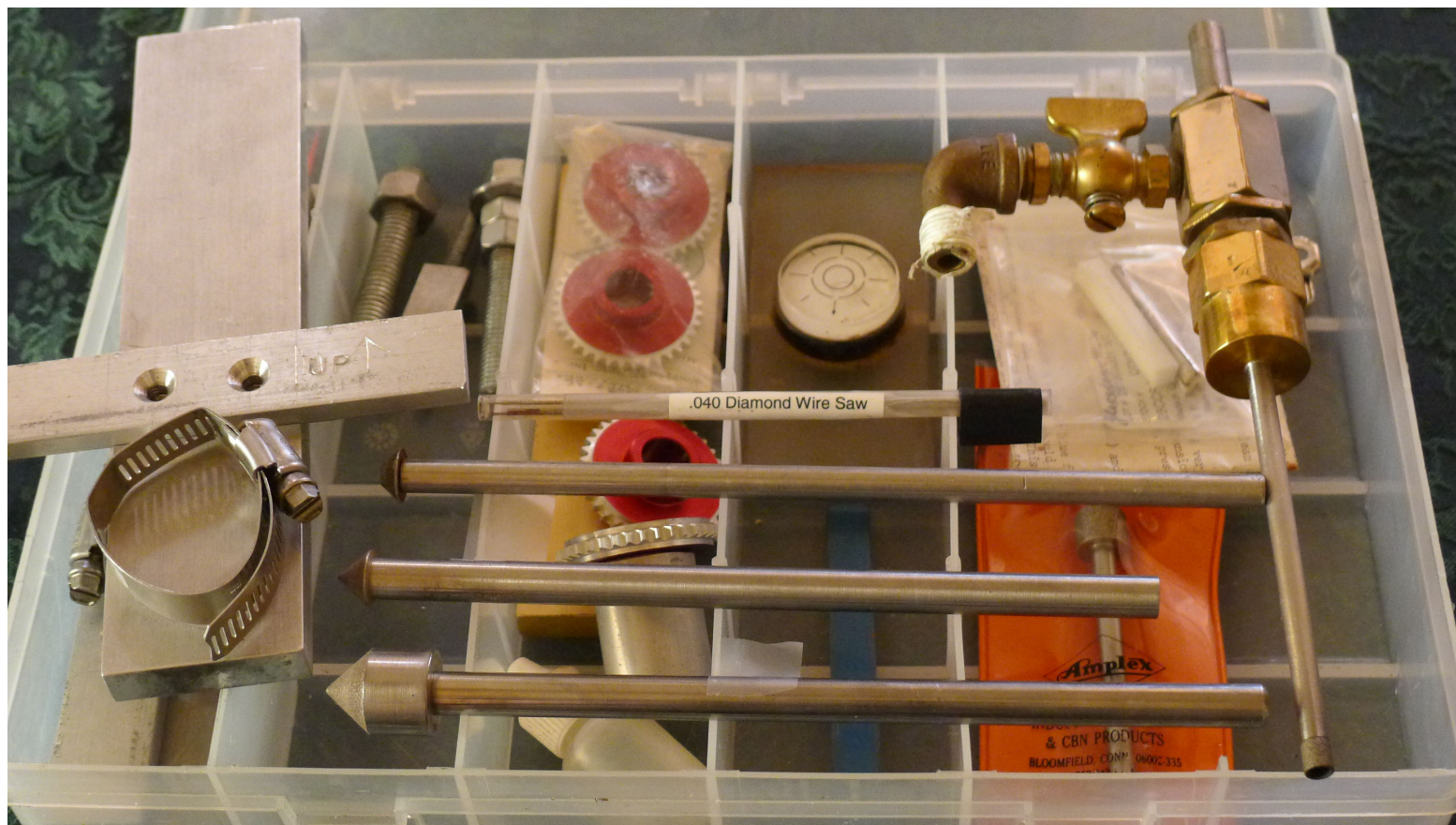
3 @ 0.040 in. diamond wire saws.

2 diamond coated files.

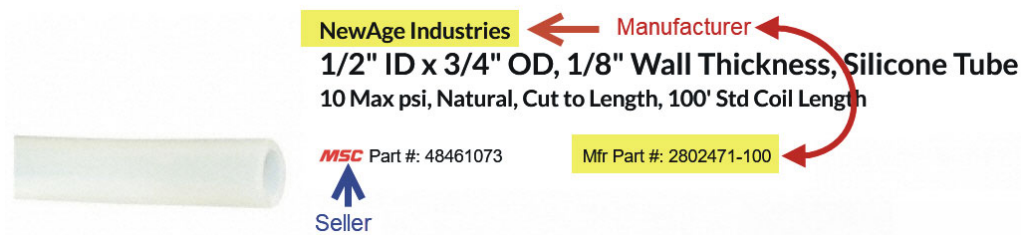
3 small diamond coated tools; not used.

Instructions and tools for splicing the blade of the Gryphon Corporation diamond band saw.

Extra white Teflon guides for the blade of the diamond band saw.



# Glassdance (5)



Hardness: 50 Shore A

The silicone liner tubes slide into the aluminum ball bearing tubes that hold the aluminum glass stems. In 2018, I replaced all the disintegrated rubber tubes with silicone tubes.



# Glassdance (6)

Two Spare Foam #5028 Bases.

For the Right Angle Gearmotor. Bodine Electric Company, Model Number 587.



# Glassdance (7)

## Mobil SHC 630 Gear Oil

**For the Right Angle Gearmotor. Bodine Electric Company, Old Model Number 587.**

**Use only Mobil SHC 630 Gear Oil. Do not overfill!** Fill only to the drain hole, which is located  $1\frac{5}{16}$  in. from the bottom of the gearbox. The drain hole has a metal screw plug and neoprene washer. Allow excess gear oil to flow out before replacing plug and washer. Excessive hydraulic pressure from too much oil can destroy the motor.

See: [Glassdance\\_RightAngleGearmotor-and-Fans\\_Manual-2.pdf](#)

One syringe for adding small amounts of oil.

One vintage Coleman aluminum funnel for oil changes.

Also, once opened, the original Mobil SHC 630 1-quart plastic bottles are not resealable. They leak when placed in a horizontal position. I transferred the gearmotor oil into two resealable leakproof plastic containers.



# Glassdance (8)

## Machined Sasaki “Isabelle” Crystal Brandy Snifters

### *Unetched Snifters*

One box contains 23 glasses, and the other, 16 glasses. All glasses have been drilled, annealed, and fitted with threaded aluminum glass stems. All are in various stages of having been cut and ground.

See [Glassdance\\_Components\\_Manual-1.pdf](#), Section 4.

For many reasons, I did not initially mount them on the Glassdance. However, from this stock, I replaced two glasses; one in 1986 and the other in 2013. So, their full acoustical and musical potential has yet to be determined.



# Glassdance (9)

**Brand New Sasaki “Isabelle” Crystal Brandy Snifters**

*Unetched Snifters*

The large box on the bottom contains 32 glasses, and the small box on top, 16 glasses. All 48 glasses are in their original condition. They were contributed by Mr. Sasaki to the Chrysalis Foundation in 1985.

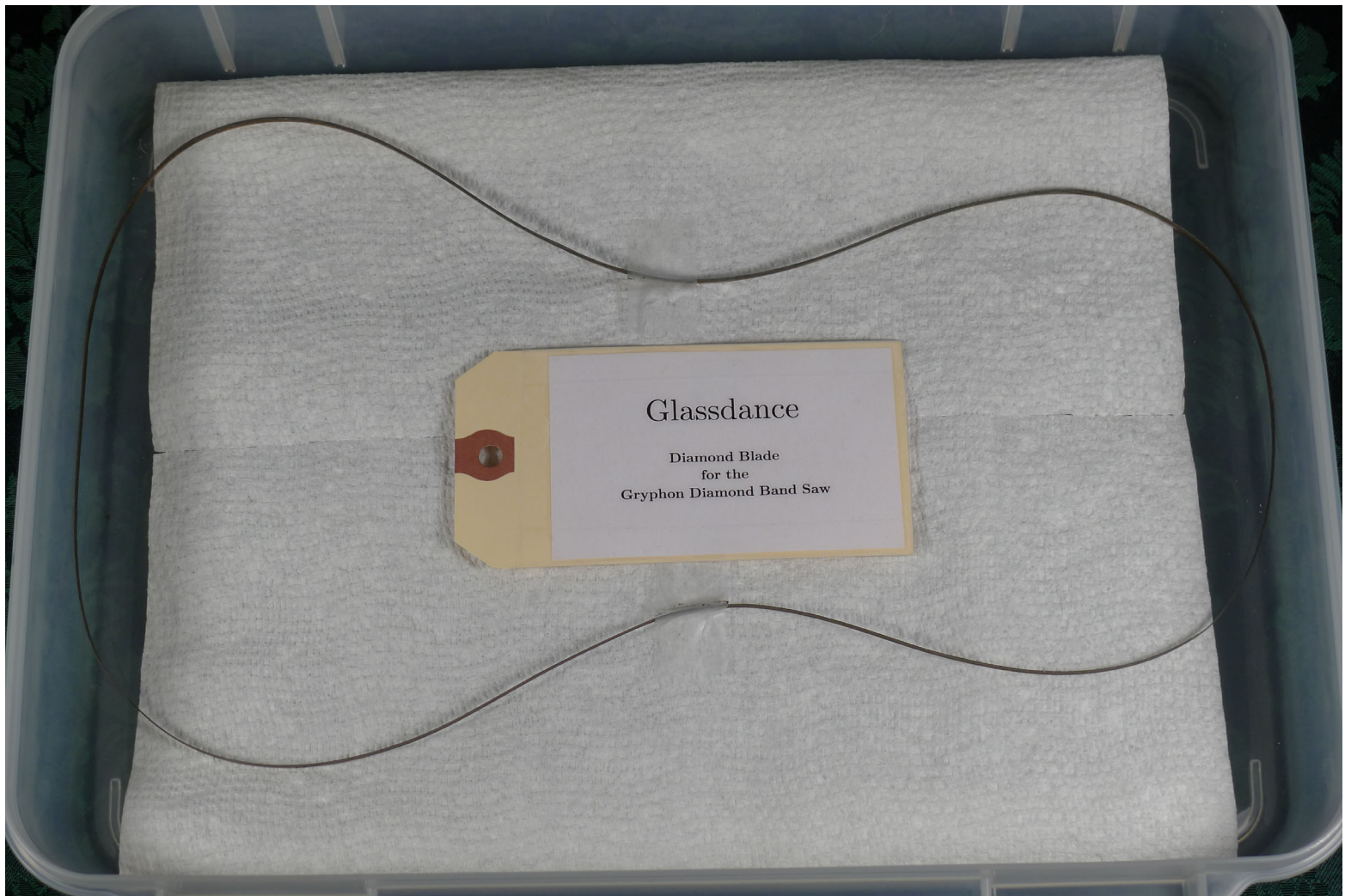


# Glassdance (10)

## Diamond Blade for the Gryphon Diamond Band Saw

See: [Glassdance\\_Components\\_Manual-1.pdf](#), p. 21.

See: <http://www.gryphoncorp.com/page/>



# Glassdance (11)

## Unused Vintage Axial Fans: Old Dayton #4C548

Three backup fans made in USA. Mount in any position. For quiet operation: Sleeve bearings, 1800 rpm, 55 cfm. (Installation instructions included.)

The current Chinese version of this fan — Dayton #4WT49 — comes with the following restriction: “Sleeve bearing units are horizontal shaft mount only.” I attribute this contrived, misleading, and bogus “sleeve bearing” limitation to a cheapened design, shoddy materials, and poor craftsmanship. The current state of intentionally dumbed-down products inspired me to find these three unused 4C548 backup fans online.

See: [Glassdance\\_Components\\_Manual-1.pdf](#), pp. 28–29

One current electrical cordset with improved socket connectors: Dayton #4YD79. (Temporary testing plug attached.)  
One unused vintage finger guard: Old Dayton #4C551.

For Glassdance installation, see: [Glassdance\\_RightAngleGearmotor-and-Fans\\_Manual-2.pdf](#)



# Glassdance (12)

## White Chamois Glove Leather

Two Boxes — 4 pcs/box

This chamois leather has the following description on eBay:

- (1) Natural Chamois Leather Car Cleaning Cloth Washing Absorbent Drying Shammy Towel.
- (2) Sold by an eBay company called Gets\_AutoParts. (See: pp. 20–21.)
- (3) Part #387488790490.

The best chamois leather for playing the Glassdance is white in color, which indicates that the leather contains only *tanning oils*, or does not contain *tanning dyes*. Dyes cause the gloves to slip and slide on the glass and, thereby, produce squeaking sounds. In contrast, white chamois finger gloves grip the glass. Although some chamois appears white in color, it may nevertheless include other slippery additives that can be very difficult, if not impossible, to remove. Because chamois is an organic material that contains many different substances, finding the right leather may require numerous experiments. After making the gloves, repeatedly soak the material in denatured alcohol and then air-dry it. This removes most of the tanning oils in the leather. Depending on the leather, curing with alcohol shrinks the gloves; so, for a comfortable fit, make them a little larger. Finally, play the glasses by regularly dipping the gloves in a container filled with denatured alcohol.

For instructions on how to make chamois finger gloves, see: [Glassdance\\_MakingChamoisFingerGloves\\_Manual-4.pdf](#).

Gloves that last a long time require thicknesses between 0.031–0.039 in., or 0.8–1.0 mm.

Secure each glove to the finger with two small diameter rubber bands.

See: [Glassdance\\_Components\\_Manual-1.pdf](#), p. 25, 30.



# Glassdance (13)

## Alcohol Trays and Lids

For the denatured alcohol, modified four acrylic trays with these original dimensions:  $H \times L \times W = 2 \text{ in.} \times 6 \text{ in.} \times 3 \text{ in.}$  Machined or reduced the height to approximately 1 in. Trays sold by Amazing Abby as a QuickSort Set.

Also, machined three cast acrylic tray lids designed to minimize evaporation and contamination.

The quotation below is from [Glassdance\\_Components\\_Manual-1.pdf](#), p. 25.

“Lead crystal glass is an extremely hard material. One cannot use conventional tungsten carbide tools to cut crystal glass; only diamond tools work. Due to this hardness, crystal glass has a very smooth surface that is difficult to play. To increase the friction, I have experimented with many materials and liquids. For me, the best combination is handmade chamois leather finger gloves dipped in denatured alcohol. After making the gloves, repeatedly soak the material in alcohol and then air-dry it. This removes most of the tanning oils in the leather. Play the glasses by regularly dipping the gloves in a container filled with denatured alcohol.”



# E-A-R™ ISODAMP™ C-1002

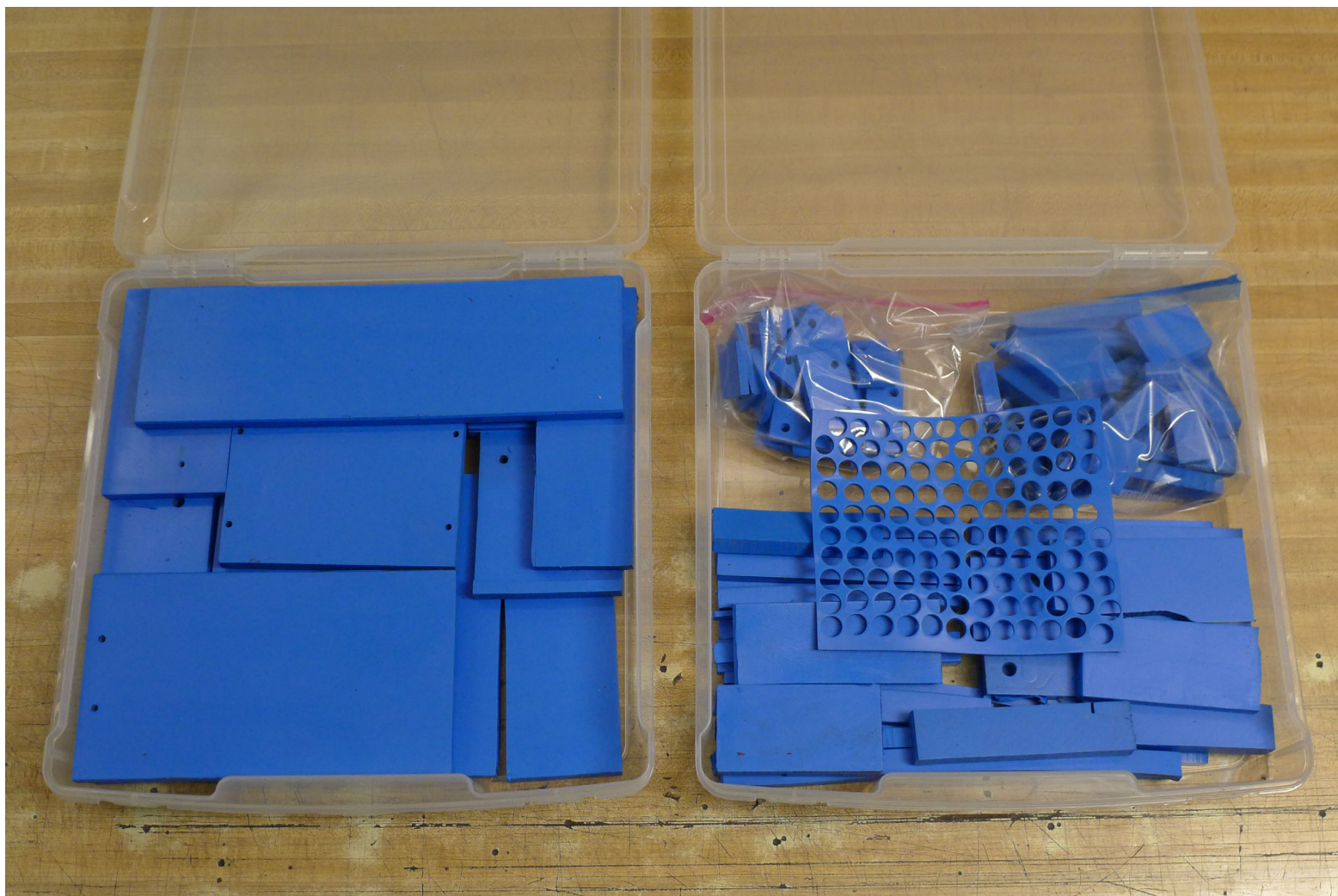
## Glassdance, Canons, and String Winder

### Two Boxes

E-A-R ISODAMP C-1002 is a thermoplastic material designed to absorb vibration and dampen — reduce or eliminate — structure-borne sound and noise.

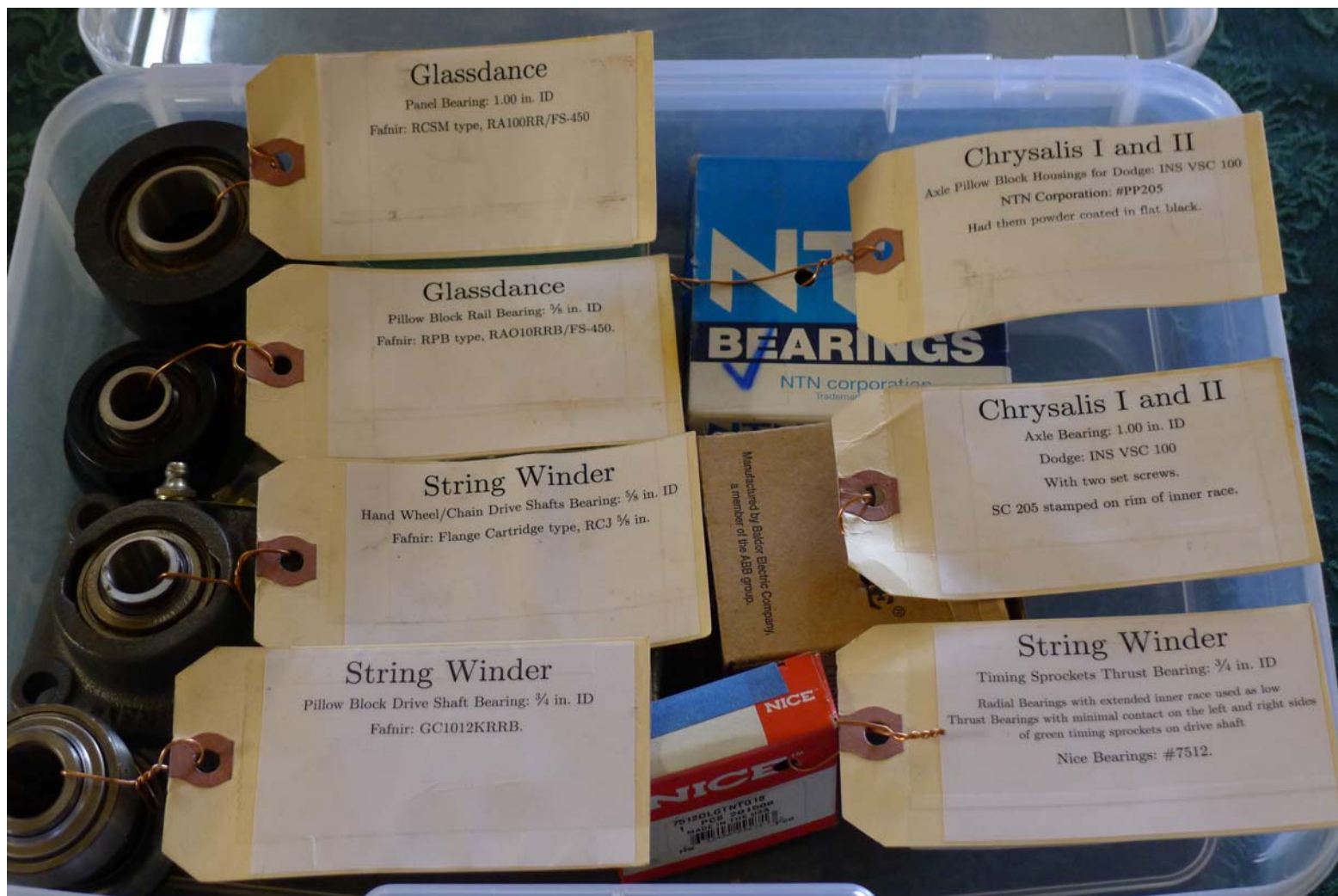
<https://www.rathbun.com/e-a-r/damping-isolation#1>

I also use this vibration damping material under the machinery mounts of my band saw, drill press, milling machine, and air compressor.



# Ball Bearings

## Chrysalises, Glassdance, and String Winder



# Instrument Building Jigs & Extra Parts (1) <sup>-16-</sup>

## Chrysalis II, Glassdance, Canons, Bass Marimba

Honduras rosewood spoke for Chrysalis II.

Glassdance aluminum stem roller to check the runout of Sasaki crystal brandy snifters. When used with a surface gauge, this tool enables a tuner to verify an even removal of material from the rims of the glasses.  
See [Glassdance\\_Components\\_Manual-1.pdf](#), p. 23.

Bass Canon and Harmonic/Melodic Canon jig for drilling aluminum plates.

One Chrysalis I soundboard spacer.

Chrysalis I and II jigs for drilling *blind pilot holes* into felt-covered brake pads; holes for #6 tapping screws  $\approx 0.315$  in. long.

Chrysalis I and II jig for grinding down thirteen  $\#6 \times \frac{3}{8}$  in. flat head brake pad tapping screws to a length of  $\approx 0.315$  in.

Bass Marimba saddle jig for drilling holes into the upper aluminum tube rails; holes used to attach nut plates.

Bass Marimba jig for drilling holes into steel nut plates. Nut plates also used to secure linear bearing support rail sections on the String Winder.

Not in photo:

Chrysalis I and II jigs for bending the ends of brass (gold powder coated) soundboard brackets to  $90^\circ$ .

One grey modified plastic tube used as a jig for filing a slot into a maple dowel on the stand of Chrysalis I.

Two Honduras rosewood spokes.

Two extra Chrysalis I aluminum caster blocks.



# Glassdance and Diamond Marimbas

One foam support — Part #5028 — for Glassdance motor base. Two more 5028 supports in Glassdance (6) box.

Six Diamond Marimba I (pernambuco bars) hose clamp assemblies.

Six Diamond Marimba II (Honduras rosewood bars) hose clamp assemblies.

Seven aluminum spacer blocks for Diamond Marimba I and II bars.

One Diamond Marimba I and II caster.

One round Diamond Marimba I and II bar lifter for replacing foam and double-stick tape without cutting Scünci cords.

Three Diamond Marimba I and II drilling jigs.

- (1) Delrin block drilling jig.
- (2) Aluminum bracket drilling jig.
- (3) T-square type terrace platform drilling jig for Delrin blocks and aluminum brackets.

Not in photo:

Sixteen wood spacer blocks for Diamond Marimba I and II bars.

One Diamond Marimba II aluminum pole block.



# W.M. Berg Catalogs (1)

## Glassdance & String Winder Components

Four small old catalogs with color pages.

As of — September 2019 — the sales department still accepts legacy part numbers.



# W.M. Berg Catalogs (2)

## Glassdance & String Winder Components

One large recent catalog with black and white pages.



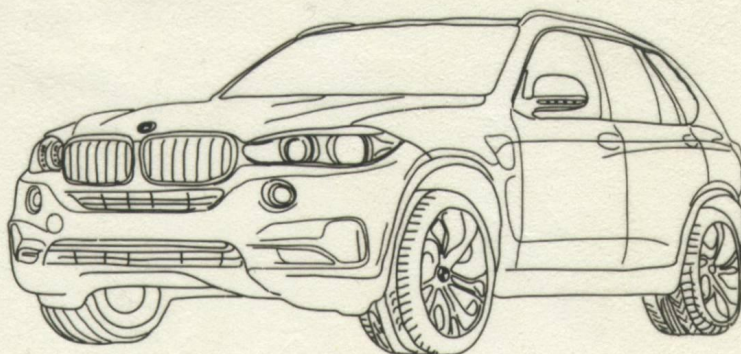
# Glassdance

Chinese text on White Chamois Glove Leather zip-lock bag.  
eBay Part #387488790490.



新势力精品

## 正宗麂皮



- ★本品采用优质真皮，先进工艺，精制而成！柔软精细，吸水力超强，不留水痕，兼备抛光功能，令车身保持闪亮生辉！
- ★广泛应用于高档轿车、飞机、眼镜镜头、精密仪器、显示器、金银首饰、家电家具、玻璃制品等领域！
- ★独具去污洁尘、不留痕迹、保护漆面、电镀、玻璃面、莹光屏等特点！
- ★用后温水洗净晾干，不宜暴晒，不宜油类，浓缩性洗涤剂浸洗！

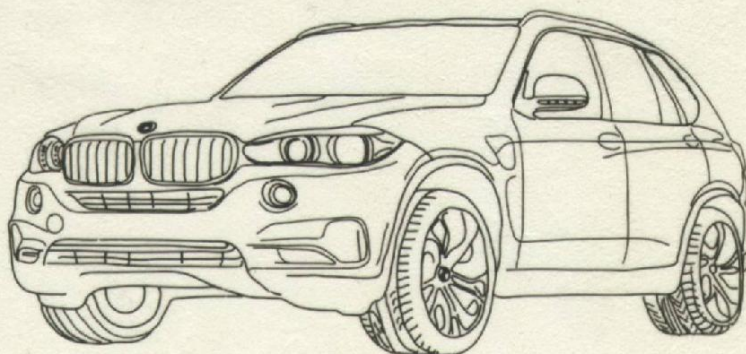
# Glassdance

English machine translation of Chinese text on White Chamois Glove Leather zip-lock bag.  
eBay Part #387488790490.



New force boutique

## Authentic suede



- ★This product is made of high-quality genuine leather and advanced technology! It is soft and fine, has super water absorption, does not leave water marks, and has a polishing function to keep the car body shiny!
- ★Widely used in high-end cars, airplanes, eyeglass lenses, precision instruments, displays, gold and silver jewelry, home appliances and furniture, glass products and other fields!
- ★Unique features of cleaning dirt and dust without leaving any traces, protecting paint, electroplating, glass, fluorescent screen, etc.!
- ★Wash with warm water and dry after use. Avoid exposure to the sun, oil, concentrated detergents, etc.!