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HAND TOOLS FOR PROFESSIONAL USE

FAVORITES OF 12-VOLT FABRICATORS, PROFILED BY MICAH SHEVELOFF

Professional car stereo and alarm installation has evolved to include such categories as video, navigation, and mobile office devices, and the required installation skills and related hand tools have come a long way since technicians began bolting 8-track players beneath steel dashboards some thirty years ago. Hand tools tell a lot about an installer, and we asked two experts to lay their personal favorites out on a table and talk about how they apply each tool to their daily trade.

MATT FIGLIOLA, AI DESIGN:

AI Design is located in Tuckahoe, NY, about 30-minutes outside of Manhattan. AI Design specializes in three categories offered to consumers: electronics, cosmetic enhancement and performance upgrades. Founder Matt Figliola operates a spotlessly clean facility, and although his installers are trained in the many facets of mobile installation, Figliola takes particular pride in the fine leather work that he delivers to his clients. "True craftsmen will find different uses for various tools in their shop," Figliola explained. "The more you use something, the more different applications occur to you along the way. It is an evolutionary process," said Figliola. Here, he comments on some of his favorites:

Cox pneumatic caulking gun: This gun is used to apply urethane adhesive that is too firm to squeeze out manually. Use of this tool can prevent serious hand injuries and ensure an even application of adhesive.

Hole-punch set: Purchased from an upholstery supply store, these punches are struck with a hammer to make perfectly round holes. I use either wood or a brass plate beneath the material I am working on, and the set is great for making holes in carpet, vinyl, leather, foam, cardboard and thin ABS plastic.

Metabo electric screwdriver: This is a neat little device I found recently, and I like it because it fits comfortably in



FIGLIOLA'S ARSENAL:

- 1 - COX PNEUMATIC CAULKING GUN
- 2 - HOLE-PUNCH SET
- 3 - METABO ELECTRIC SCREWDRIVER
- 4 - PNEUMATIC CUT-OFF SAW
- 5 - DE-BURRING TOOL
- 6 - MOLEX CRIMPERS
- 7 - VERNIER CALIPER
- 8 - 3M POLYGUN EC

your hand while leaving your finger to easily access the forward/reverse control. It's great for small-item disassembly. The batteries are rechargeable and the unit has enough torque for most applications.

Pneumatic cut-off saw: Acquired from Mac Tools, this rotary air saw has an articulating head that allows the user to manually adjust for the optimum cutting angle. In applications where I just gave up trying to work with a traditional cut-off saw, this adjustable version has been a winner.

De-burring tool: How many times have we all cut some form of metal stock, to be left with rough edges that require filing? I acquired this de-burring tool from a machine shop tool supplier, and I like that it has a floating head that does not ever cut into the metal stock while de-burring it. The cutting edges are replaceable, and the neck is adjustable for each application.

Molex crimper: These tools are for small-gauge wire and for Molex-brand pins and plugs (shown). I use the plugs to assemble switch panels that can be easily removed from the vehicle, and that can be completely assembled in the shop on the workbench, and then simply installed into the car and plugged in when completed.

Vernier caliper: This tool is used by machinists to make precise measurements; however, I use the Vernier caliper to transfer measurements from a dashboard to a piece of material on the workbench. As an example, I can measure the exact size of a radio opening on a dashboard, and then bring the tool over to a piece of ABS plastic and scratch or mark it quite effectively. Multiples of these tools can be used to measure several openings, eliminating the need to jump in and out of the car



TOOLS SPECIFIC TO LEATHER WORK

all day. It makes gaining precise measurements a fast and fluid process.

3M Polygon EC: If you would like to conquer the frustrations of using cheap hot glue that never sticks permanently, the 3M Polygon EC will be a welcome solution. There are several different glue sticks that 3M has designed to be used with this gun for adhering different types of material. You get more feed-volume due to the higher heat, and there are different heat ranges for various applications. The gun is built very well, and I purchased this one from Grainger.

TOOLS SPECIFIC TO LEATHER WORK

1) Body man's hammer: Designed specifically to shape and stretch sheet metal, I use this tool in a leather working capacity to smooth folds and flatten surfaces. The hammer has to be used gently in this application, but I find that it is quite effective.

2) Set of three wooden clay-working tools: When working with leather in an automotive application, it is often necessary to "persuade" the leather into narrow grooves, where I cannot gain access with my fingertips. I am always careful to keep the edges of these clay-working tools extremely clean and to treat them regularly with steel wool or fine sandpaper to be certain that they are always smooth. I

prefer wooden tools for this application (over plastic) because the plastic can begin to melt from heat caused by friction with the leather.

3) Looped-wire clay working tool: Another tool used to "persuade" leather into crevices. The polished wire is incredibly smooth, preventing any tearing of the leather material.

4) Bone folder: Originally designed to score paper, the bone folder is something I saw used by leather workers in Italy and Germany. Made from actual bone material, it is particularly useful when working with leather because it is so resistant to heat and leaves no mark on the leather surface. I found this one at an arts-and-crafts store.

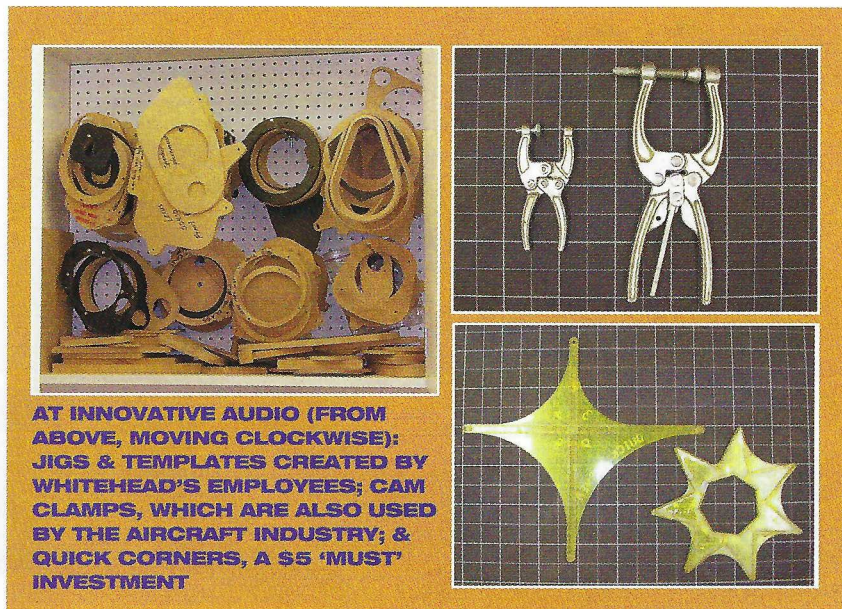
5) Modified spackling knife: In order to "persuade" leather into the smallest of openings, I modified a traditional spackling knife by radiusing the corners, easing the edges with a file, and polishing the surface to be chrome-smooth. There are no burrs anywhere on this tool, and I can carefully slide it along leather material without causing a tear.

6) Leather-covered body man's hammer: Also used to shape and smooth leather; however, in certain situations, I need to be able to strike the leather without leaving any mark on the material. For this application, the head of the hammer is covered with a soft piece of leather.



SCOTT WHITEHEAD, INNOVATIVE AUDIO:

Seattle-based Innovative Audio is another spotless facility with a welcoming showroom and a talented staff. Founder Scott Whitehead is always on the lookout for machinery that will either improve productivity or enable his crew to offer consumers a finished product that they simply can't get elsewhere. Innovative's installation facility is stocked with cupboards full of jigs and templates — little keys to success that represent hours of development time dedicated to vehicle-specific challenges. "The key for any custom shop seeking to create a sustainable financial model is to make the most of their intellectual property," Whitehead explained. "I reward my employees for creating time-saving jigs and templates that save us hours of labor on future jobs. We have an enormous library of them on hand now," he stated.



AT INNOVATIVE AUDIO (FROM ABOVE, MOVING CLOCKWISE): JIGS & TEMPLATES CREATED BY WHITEHEAD'S EMPLOYEES; CAM CLAMPS, WHICH ARE ALSO USED BY THE AIRCRAFT INDUSTRY; & QUICK CORNERS, A \$5 'MUST' INVESTMENT

Herewith, his comments on tools crucial to his business:

Quick Corners: This is a \$5 tool no installer should be without! Available at most woodworker supply houses; Quick Corners enables you to draw a perfect radius on any corner. The tool is designed to do both inside and outside corners, and it gets constant use in our shop.

Cam clamps: Another highly useful instrument, from the aircraft industry, cam clamps are used by us as versatile clamps for many applications in the shop. They are less bulky than a "C" clamp, and they lock and unlock very easily and quickly. They are capable of providing a fair amount of clamping tension, as well. We try to find them in aircraft surplus stores or at liquidations, but they are readily available from a handful of suppliers.

Upholstery stretching tool: Used to grab onto excess leather or

vinyl material so that it can be pulled or stretched into place.

Sabel block roller: Originally used for rolling laminates in the countertop industry, this tool is used by us to smooth out glue bumps beneath upholstery such as vinyl or leather. Because of the way it is shaped, you can generate quite a bit of pressure with this roller.

HVLP spray guns: HVLP stands for high volume low pressure; these guns are very common to the auto body business. We use them with the 3M TPS system where the paint goes into removable liners. It takes only a few minutes for clean-up — a process that used to take much longer. There are different tips available for the spray guns, the larger tips accommodating heavier applications such as primer, resins and gel coats. The finer tips are used for finish work such as painting.

Laser-guided temperature gauge: The obvious audio application for this point-and-shoot device is to measure the operating temperature of an amplifier heat sink, but we also use the tool to take the temperature of anything that requires a chemical process such as fiberglass or paint under the curing lamps. With fiberglass, we can be sure that we are not over- or under-catalyzing the mixture, and with paint we can check to be certain that we do



**1 — HVLP SPRAY GUN
2 — SABEL BLOCK ROLLER
3 — UPHOLSTERY STRETCHING TOOL
4 — LASER-GUIDED TEMPERATURE GAUGE**



not over-bake the finished items. With a range of a few feet or more and a digital readout, this has been a useful tool for us.

Japanese hand saws: These are very precise instruments, great for cutting trim parts and for other small tasks. They have a million uses around the shop, but do a much better job than “your father’s old hand saw.” Available from woodworking supply shops that import tools.

Digital calipers: These calipers are used to make precision measurements when a 1/16” error just won’t do. You can measure the diameter of a round hole, inside and outside dimensions, and the static length of virtually anything. These are precision tools that are reasonably affordable (about \$50) and add substantial-



UPPER LEFT, & MOVING CLOCKWISE:
AUTO-DARKENING WELDING HELMET;
JAPANESE HAND SAWS;
DIGITAL CALIPERS

ly to the quality of your work.

Auto-darkening welding helmet: Safety first out there! This amazing helmet adds to your ability to do precise work. The visor allows you to see exactly what you are doing until the moment it senses arc from any type of welder. It then darkens the lens to protect your eyes, and is adjustable to make certain it is best suited to each of the types of welding you might be doing.

It is clear that great installers do adapt the tools at their disposal, finding creative ways to solve problems safely and efficiently. Shop tools are the critical instruments that make the entire mobile electronics installation industry possible, and can often greatly affect efficiency and reliability — two pivotal components of a healthy and profitable operation.

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—AudioVideo International's Editors

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