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# Top 11 tools for a home solar DIYers must have

## Introduction

Solar DIYers wonder what this is? Wonder not, as you will get to know what this is and understand the necessary tools to design, install, and operate, in this article. Read through.

This is a concept of designing and putting up a solar system by oneself, lately common in the US. Of course, going solar has many pros both financial benefits and reliability advantages, among many others. There are homeowners in the United States who are already embracing solar as opposed to other forms of energy, and reaping the benefits. Yet, there is even more to discover on the solar energy system - DIYers idea.

The do-it-yourself solar installation enhances above mentioned benefits even more, how? A smaller portion-about 10 percent of the total solar installation cost (design, components purchase, labor cost) has to do with service provision while the larger cost is on the components of the system. That mean, you would need to hire experts to design and install the system for you. It is this small percentage of design and installation services the Solar DIYers systems focus on-whereby homeowners opt to provide themselves these services. Does this interest you?

The one important question is; what tools must one have, not just to do the project but rather successfully design, install and maintain their solar system? As you read the article, we unravel for you these tools, highlighting the importance of each of them and their functions.

## 1. Hammer

This is an essential tool in the installation of your solar system and its choice is as crucial. A hand fitting one is better selections since it offers nice, comfortable grip allowing you to not only work safely but also concentrate the force on the nails rather that the hammer itself. There can be no meaningful tool belt without a hammer irrespective of the work type. What matters is that type, as each specific job requires a specific hammer?

For DIY projects, hammers make the work simpler and thereby reducing strain. Strike shock and vibrations airing from hit force are adequately absorbed thanks to the patented IsoCore technology. The shock reduction in these types of hammers being up to four times, compared to wooden handle hammers. Fatigue from DIY projects is minimized largely. Framing hammers are

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particularly more powerful and come handy in nail driving for bigger works. A good hammer with smooth face would more preferable to others types, perhaps rougher, given the superb finishing offered on wooden works, and the little to non-abrasive nature which leaves even cemented and metallic material without paint damage and/or abrasion marks after the job.

In addition, the ringing effect is reduced to low levels with the choice of a hammer. The sound dampening insert on some of the best hammers available in most vendors in the US greatly reduce the ringing frequency. This way, a comfortable, safe work environment thrives. The size of your hammer is also one key factor, in relation to the size of work target. It is unnecessary to end up damaging surfaces on smaller jobs with bigger hammers when small suitable hammers are available.

With the right type and size of hammers, home solar DIY projects become much faster and safer.

## **2. Saws (handsaw, hacksaw & reciprocating saw)**

Having been used for many years in different niches, saws of different types have remained must tools for home solar DIYers. Development in technology and experienced over the many years support continuous improvement of the saw types making home projects easier and safer day by day.

Handsaws are inevitably important in the home solar DIYers owing to their application in cutting soft and hardwood, plywood and light plastics. Irrespective of the installation place whether rooftop or raised platforms, wood and soft plastic cutting handled with this saw.

Light plastics can still, be cut using hacksaws and not just that but also PVC and metals especially rooftop installations. It is one of the commonest hand saw in the United States and more suitable for cutting pipes and tubes. Their ability to cut through wood, metal, plastics with different material-specific blades is attributed not only to the varied ranges of tooth count but also contributed to by their portability and versatility. Available ranges in the market range from 18 to 32 per inch.

A reciprocating saw will allow you to cut tubes, wood, and plastics beneath walls and wood joints, thanks to their blade that allows quickly back and forth movements, cutting not just above but also nails. For demolition works, this saw plays handy, you cannot imagine!

## **3. Drills and Screws**

Drilling and screwing has evolved in the recent years, thanks to the introduction of cordless

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drills/drivers powered by batteries. Although ubiquitous, other people still prefer the coded types mainly the forgetful ones who may not remember to charge the batteries. This way they avoid the delays result from their weakness! Not to mention the practice, patience and few ropes of the trade required to have screws power-driven with speed and precision. Not to worry that much though because some of the power drills come with two batteries, allowing to use one as you recharge the other.

Look out for drills with safety precaution. The magnetic drive guide suffices but it is not for any Tom, Dick, and Harry! Technically, it allows for avoidance of finger heating with the magnet catching the screw when fumbled, as you hold the bit in operation.

With the right choice of a power drill, everything from drilling, sanding, and buffing is achievable. Its forward and reverse settings and variable speed trigger provide for drilling flexibility altering the bit spin speed with alterations on the pressure mounted on the trigger. It is also possible to operate at adjustable drilling and driving speeds by switching the high-low setting switch.

While drilling and driving, it is critical to put on safety glasses and other appropriate safety gear as you adhere to the manufacturer's instructions for use, maintenance, and safety.

#### **4. Self-locking measuring tape**

You will need to measure, and you will not always have someone close by to tell, Hey, hold there, that end for, Agree? A Self-locking measuring tape then becomes invaluable.

Are they just tapes? No, they come in different sizes with different properties that are need based, a self-locking one is necessary. In fact, if well searched, a suitable length, scale, but also durable tape is easy to find readily with most of the vendors. Made in the USA, three key types would be relevant in a home Solar DIY installation, namely- excellent short tapes for short jobs, diameter tapes and long ones for bigger sized projects.

While the short tapes are ideal for pipes and poles (rounded objects) measurement, the longer ones, with a manual and auto rewind are more suitable for lengthy measurements Short tapes are made with large, easy to read numbers, triple rivet end hook, positive lock, heavy duty spring and English scales that are appropriate for your installation in the USA.

You know, or at least have heard of the disappointing feeling of loss of time and material wastage after project failure due to errors in measuring! With the knowledge and perhaps skill of measuring and reading, you only lack the right tape. Equipped with this tool, you have an assurance of taking the right measurements throughout the installation.

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Get it hooked on your tool belt and you are good to go on top of the roof!

## 5. Ladder

How good, rather, how safe are you ladder? You must be reflecting on the ladder incidences you have read/heard! Not to mention those we see walking on crutches, and the ones who lost backbones - huh! Indeed, it is horrible the need of a good ladder and proper usage, if at all you are to go up safely!

The ladder will enable you climb up the roof and down, carrying with you tools, materials, and equipment including the solar panels. It is also necessary for the ladder to extend beyond the height of the roof (about three feet), so that you can hold onto with your hand as your move/work. The height of your ladder will depend on the height of the roof; story buildings may require extension ladders. In such cases, the joinery has to be top-notch to avoid increasing your risk of accident.

Next to factor is where and how to erect and incline the ladder. To ensure stability, select a well-leveled and compacted surface, which is non-slippery. Then, incline it on the correct angle for climbing safely. Remember to strap your ladder to the rooftop, to make it more stable and prevent it from unnecessary shifting.

When climbing up or down, it is crucial to maintain a three-point contact. This means that you hold with both hands and at least one foot. In many cases, this compromises your ease of moving with materials up and down. Thus, it will make sense to employ alternative means of carrying the modules up, say slings or other hoisting equipment.

## 6. Fall Arrester Safety harness, Roof guard restraint anchor

With the ladder safely erected as above, it is possible to move up and down without worries of injuries. You are a hazard and still likely to fall if you a trip/slide while on top of the roof. Why?-because you are not tied anywhere.

A specialized belt, known as safety harness for instance and readily available here in the United States offers a solution to this exposure in combination with an other means of personal fall arrest systems like the roof guard restraint anchor. To evade the risk of falling as space on the roof is exhausted with installation of more and more panels; it is advisable to use the personal fall arrest systems such as safety harness. This form of personal arrest system ensures that no matter the trip, slip you remain safely held as you are attached yourself the worst case would be to hang, which is a lesser evil than the injuries from that fall to the ground.

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As with the ladder, and any other gadget, proper usage is paramount. Know how to fasten whatever form of personal fall arrest system for maximum benefit. You may end up with the consequences despite being possession of the all relevant personal protective equipment.

## 7. Solar Panel Hanger

While still at patent stage in the United States, this tool is extremely necessary, for a home solar DIY project. It acts like a second set of hands. Fitters use the panel hunger for handling and alignment of the panels at the top of the roof. It eliminates the need for extra people on the roof. This tool plays in scenarios where you would require support with holding the panels or any gadget as you pick or work on something else.

Its design comes with adjustments to hold panels of different sizes at various positions what is required are adjusting to fit. It is available locally at the Solar company USA. You have the option of learning how to use including making adjustments either portrait or landscape to fit the panels. Other than the primary function of holding panels, the tool allow for accurate square determination which either aids the square fitting tools or serve as alternative in their absence. As a safety aspect, panel fall off is eliminated and not just that but tools hooked to the hangers are also safe from falling. Lest you forget the speed at you work is of course enhanced!

## 8. Cable cutters, pliers, and stripping tools

A home solar DIY installation cannot be complete without cutting and joining electrical wires. Given their different sizes and structure, different electrical are suitably cut by specialized tools in various methods. Above types of tools fall under one class of tools- cable cutters. They are applied in varied cutting scenarios based on the target type and part of cable. Pliers such as, lineman's and diagonals are suited for cutting wires just like the inner cutter of wire stripping tool. Wire strippers are important for stripping the insulation on cables hence, exposing the copper wire. Stripping tools vary in sizes, larger ones meant for stripping thick cables and slender ones stripped by much smaller stripping tools. Choice of both cable cutters and trippers is entirely dependent on the size and types of cables, which is also dependent on the project size. As critical as is the choice of the tool lies in the stripping and cutting techniques. Put in utmost caution so as not to end up cutting wires while stripping cables.

## 9. Multimeter

This one key tool whose use is instrumental to the installation process yet, requires proper knowledge, and even good skill to use, really. It is through using the gadget that voltage from the panels is measured. To a nonprofessional, this gadget tells whether the panels can generate the electricity required key tool indeed. Seek good knowledge before connecting

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diodes, here and there. One may ask «why?» Simple, connection errors due inadequate knowledge may damage your panel/s. Worse still; you may not be able to determine whether your panels were faulty from the onset! As such, you are likely to run into a loss-making affair. Be careful.

Apart from the volts (voltage), you may also want to measure the amps (current) generated by your panels. Good news is that it is possible to check both of them with one multimeter, and the process is almost similar and straightforward. Remember though, it requires understanding of what one is doing! If you know that you are weak in this subject, I would rather you consult widely. In that case, pay attention to voltage verses current measurements, dos, and don'ts.

## 10. Caulking Gun

A caulking gun is essential when it comes to refilling of drilled holes on roof tops. Crack sealing of any sort is sealed adequately using this tool. The caulk, a specialized sealant is made to fill those particular holes created through drilling. The caulking guns vary in types. It is necessary to select, just the suitable type that will be appropriate for your work. In our case, it is a do-it-yourself home solar installation project. So, what are the types? Examples include the ratchet rod caulk gun, smooth rod dripless caulk gun and electric caulk guns. In the United States for instance, ratchet rod caulk gun are well stocked in most workshops. You only require a knife to cut open the caulk cartridge and there you go! Sealing all the holes left by drilling on the roof top.

## 11. Angle finder

Your solar panels have to be in the right angle? if you are to receive maximum solar energy. The core purpose of the whole project is to tap the sun's energy and save on electricity. You cannot afford to lose some of it, at least not when considerable investment has been put in. The maximum angle of the panels is season dependent, and its set up has to take into consideration the different seasons. Through this tool, the difference in the height of the sun is indicated monthly. Solar noon (mid-day) is the time when the sun attains its optimum height every day. At this time of the day, the calculator on your tool will indicate the angle. For your solar panels to work efficiently, they must receive the required amount of sunlight. They need to face where they can get the sun at its maximum. Through the angle finder, will you be able to determine this.

## Conclusion

Above list is what I refer to as the top 11 must have tools for a home solar DIY installation though the list can be longer than that. If you are considering setting up a solar system at your

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home, yourself, then get to familiarize with and probably, own them. You cannot successfully complete the project without them.

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