Automotive Supplement to Locksmith Ledger International May 2016 **Servicing the 2016 Jeep Renegade**

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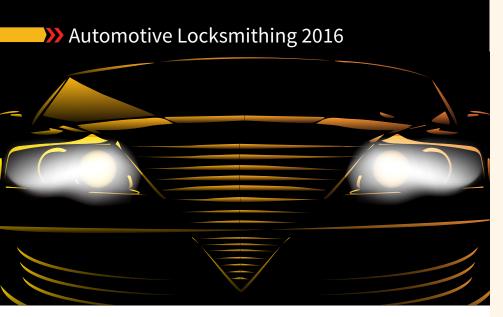
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2016 JEEP RENEGADE

From the locksmith's perspective, this brand new model is difficult to unlock with extremely odd door locks. At this time, programming a new key requires a dealer-level tool.

BY STEVE YOUNG

he Jeep Renegade (Photo 1) is the first Jeep vehicle to be built solely outside the United States. In the past, some Jeep vehicles were built both in the U.S. and overseas, with most of the offshore production going to other countries. In this case, the Renegade is built in Melfi, Italy, alongside its sister vehicle the Fiat 500X. The Renegade will be sold in North America, South Africa, Europe, and Brazil. The Jeep Renegade is basically a Fiat 500X reimagined by Jeep. Although all of the Renegades sold in North America will be four-wheel drive capable, a front-wheel drive only

version will be offered in other markets. The vehicle used in this



2. Because of the stiffener inside the air wedge, the Tech-Train air wedge can be inserted without using a lever to enlarge gap

article was the "Trailhawk" version which is 4WD only.

I am no stranger to Fiat products; the first new vehicle that I ever



3. Air wedge can be inflated to give a large enough gap between door & frame to insert the opening tool



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4. Long-reach rod inserted through the openinginto the i vehicle using the finish protector sleeve to keep the rod from touching the painted surfaces of the door and door frame



5. Inside view, tip used to lever the inside handle out, which will override the lock system and unlock the door



6. Lock secured into the door with a clamp assembly that can be accessed by removing the rubber plug on door edge



7. One of two lugs of the clamp assembly that secures door lock in the secured position



8. One of two lugs of the clamp assembly that secures the door lock in the retracted position where the lock can be removed



9. Door lock, removed

owned was a 1969 Fiat 850 Spider. One of the automotive magazines of the day said this of the Fiat 850 Spider: "At high speed on the highway, with the top down, it sounds like you have an engine chasing you, and you are struggling to stay ahead of it." After driving a Jeep Renegade for a few days, I can say that Fiats have definitely improved! I found the vehicle to be comfortable, quiet, and capable; but then again, I never took it off-road.

From the locksmith's perspective, I was not as well pleased. The vehicle is difficult to unlock, the door lock is one of the oddest locks that I have ever dealt with on a vehicle, and at this time, programming a new key requires a dealer-level tool. I did find the door lock relatively easy to pick and decode with the Lishi 2-in-1 pick, so once

a programming tool is available in the aftermarket, I look forward to making keys to the Renegade. First, let's discuss opening procedures for the Renegade.

UNLOCKING THE JEEP RENEGADE

Because the inside door handles on the front doors override the lock mechanism, I first considered an under-window tool. I was surprised to find that the seal at the base of the front windows on the Renegade was extremely tight. I tried my best to open a large enough gap for an under-window tool, but there was simply no way on my test vehicle. (I had tried before on a show vehicle at the Detroit Auto Show, and there was enough room on that car, but the fit on the production car was simply too tight.)

After eliminating the front doors, I tried an under-window tool on the rear doors. The fit on the rear doors is loose enough to insert the tool, but because the rear handles do not override, you would have to attack the mechanical lock rocker, and that was just too hard to do.

I finally settled for the Jiffy-Jak Vehicle Entry System. But as you will see later, the Lishi 2-in-1 pick did a great job in picking the driver side door lock, so I would be tempted to use that as a vehicle entry tool on the Renegade.

To begin, I inserted the LKM 227 Tech-Train air wedge between the door and the frame on the front door (Photo 2). Because of the plastic stiffener in the LKM 227, I was able to insert the air wedge without using the levers to open a gap. I was able to slide the air

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10. Two lugs on rear of plug must be aligned with the slots in lock housing to remove lock plug



11. Arrow shows the top of the retaining spring that holds the lock plug in place; notice the ramp that allows you to insert a tool more easily under the spring clip.



12. Spring clip removed from the lock



13. With clip removed and plug turned a quarter turn, pull the plug free of the housing



14. Lock plug contains seven tumblers in positions 2 – 8



15. All of the springs are located on one side of keyway

wedge into the gap between the door and the frame relatively easily. Once in place, I inflated the air wedge to give me a large enough gap to insert the tip of the long-reach rod with the rubber tip in place (Photo 3).

I then slid the finish protector sleeve into place so that the rod didn't touch any of the painted surfaces (Photo 4). If you don't have a finish protector sleeve, you can always use a flattened toilet paper tube to protect the edges of the door as you use the long-reach rod.

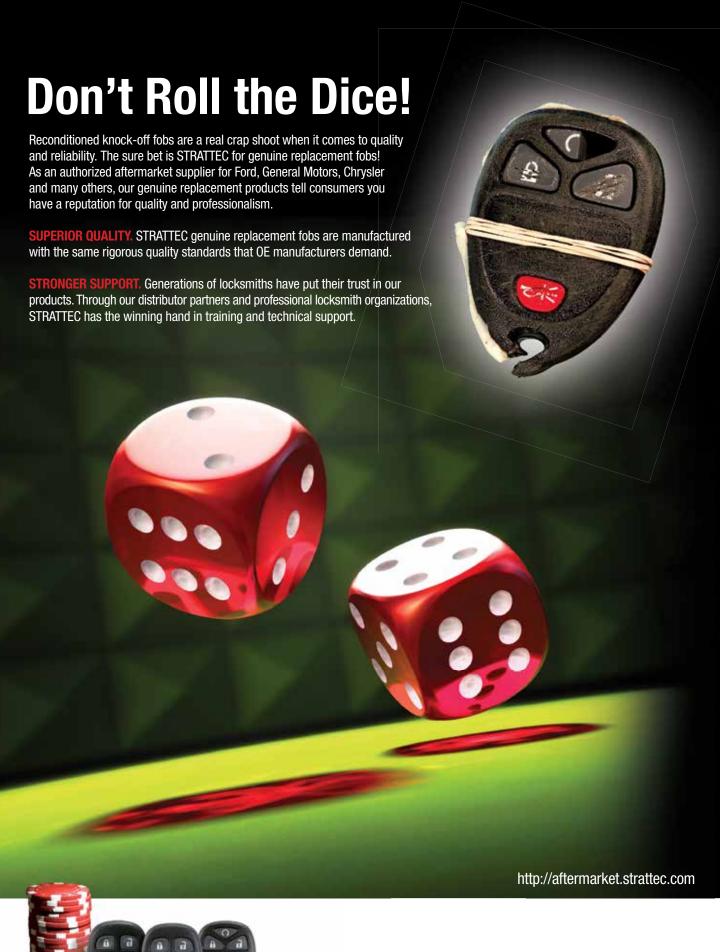
Once the tool was inside the vehicle, it was relatively easy to bring the tip down behind the inside door handle (Photo 5). Once the tip of the tool is behind the handle, I could lever the handle

out far enough to override the lock mechanism by rotating the handle on the tool. Although it is hard to see the handle from the outside, it is pretty easy to locate by feel. Once you have pulled the handle out an inch or so, the door should be unlocked; it is not necessary to pull the handle far enough to actually open the door. When you are sure that you have unlocked the door, you can remove the rod, deflate the air wedge and open the door in the normal fashion. If you open the door with the air wedge in place, the door will pop open, the air wedge and the tool will both fall free. I prefer to release the pressure on the door before opening it. It looks more professional that way.

REMOVING THE DOOR LOCK

On the Jeep Renegade, like many new vehicles, the door lock is held in the door by a single screw that can be accessed from the edge of the door (Photo 6). However, the lock retention mechanism is unlike any that I have seen before. In order to remove the lock, you will need to turn the #25 Torx® screw clockwise, as if you were tightening it, approximately 20 turns until it comes to a solid stop. At that point, you can pull the outside handle far enough to release the tabs that extend out from the lock housing, and pull the lock from the door.

The lock is held in place by two lugs that are controlled by the screw at the edge of the door. Photo 7 shows the lower lug in the





position that it would be in when the lock is secured in the door. Photo 8 shows the lower lug in the retracted position where the lock can be removed. (A second lug is located above the lock that works the same way, but I was not able to photograph both of them at the same time through the opening in the door.) "Loosening" the screw will move the lug into a slot on the lock housing that will secure the lock in place. "Tightening" the screw will retract the lugs and allow the lock to be removed from the door. Photo 9 shows the lock after it has been removed from the door.



16. Arrow points to portion of tumbler retainer visible inside one of the shear points on the plug (Shear points are intentional weak spots in the plug so that the plug will break rather than unlock the vehicle if it is force rotated)



19. Shutter components that are held in place by the face cap

DOOR LOCK DISASSEMBLY

At this point, we can disassemble the lock for service or to decode the lock to generate a key. The painted shell around the lock is held in place by several tabs around the base of the lock (Photo 10). I carefully removed the shell to make it easier to clamp the lock in a vise, and to prevent possible damage to the shell.

Also in Photo 10, notice the two lugs on the end of the lock plug and the two slots in the rear of the lock housing. In order to remove the plug from the housing, you will have to rotate the lock 90 degrees. If you do not have a working key for the lock, you will have to pick the lock or find some other way to make it turn before you can take it apart.

Other than the tailpiece interlocking with the lock housing, the only other retainer is a small spring-clip at the rear of the cylinder. This clip can be accessed from



17. Keychain-style bottle opener used to remove face cap from plug



20. Tumbler retainer now visible in cavity below face cap

both sides of the cylinder and there is even a small ramp cast into the lock housing to let you more easily get a tool under the clip for removal (Photo 11). Photo 12 shows the clip removed from the lock.

After removing the clip, you can insert a key and turn the plug a quarter turn. This will align the lugs on the rear of the plug with the slots in the lock housing so that you can pull the plug out of the housing (Photo 13). (It was at this point that I removed the shell around the lock to make the job easier.) As you pull the plug free of the housing, you do not have to worry about any of the tumblers falling out of the lock. As you will see shortly, the tumblers are held in place very well.

With the plug removed from the lock, we can see that it has seven tumblers, with three on one side of the keyway and four on the opposite side (Photo 14). There are eight positions in the system, and the



18. Face cap being lifted free of plug



21. Tumbler retainer removed from lock

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22. All 7 tumblers



23. Close-up of a tumbler from each side of the lock showing the number and letter stamps



24. SIP-22 Lishi tool in use to decode the lock after picking it



25. Chrysler "Micro Pod" tool



26. "Micro Pod" tool in use plugged into the OBD II port

door lock contains cuts 2 – 8. If you look closely at Photo 15, you will see that all of the springs are located on one side of the plug rather than half on one side and half on the other as in most locks. If you had the lock plug in your hand, you would also notice that the tumblers won't come out of their sockets no matter how hard you push on them. Both of these facts are related, and if you look closely at Photo 16 you will see why.

The arrow is pointing at a small portion of a metal retainer that runs the length of the keyway. The end of the retainer can only be seen by removing the face cap from the plug. This retainer must be removed in order to remove any of the tumblers, and once it is removed, all of the tumblers will fall out of the plug if you are not careful. You may also be able to see a number stamped on the side of the plug in ink. That number is the numeric portion of the key code, in this case 03599. The actual key code for this lock is DE03599.

The easiest way I found for removing the face cap, in such a way that it can be reused, was to use the type of bottle opener that goes on a keyring. The face cap is staked onto the plug in four places. In Photo 17, I'm using the bottle opener to carefully lift the face cap free of the plug. If you are careful, you'll be able to remove the face cap without damage as shown in Photo 18. Three small parts under the face cap can easily fall out. Photo 19 shows the shutter door, the shutter spring, and the brass pin that the shutter spring rides on. When you reassemble the lock, make sure that you position the curved lip of the shutter so that it is pointed down toward the lock.

In Photo 20, with the shutter components out of the way, you can see the end of the retainer where it

protrudes into the opening. Photo 21 shows the retainer as I remove it from the lock plug. Remember that when you pull the retainer out, all of the tumblers will fall out of the plug if you don't hold them in place. Photo 22 shows all seven of the tumblers removed from the lock. Notice the rectangular notch on the right side of each tumbler where the retainer rides.

Photo 23 shows a close-up of two tumblers. Each tumbler is stamped with both a letter and a number. The number indicates which side of the lock each tumbler is designed for. The tumblers that are stamped with a "1" are used for the odd numbered cuts. (3, 5, & 7, in this lock) The tumblers stamped with a "2" are used on the even numbered cuts. (2, 4, 6, & 8, in this lock) The depths are indicated by the letter stamped on each tumbler. A is a number 1 depth, B is a number 2 depth, C is a number 3 depth, and D is a number 4 depth.

USING THE LISHI 2-IN-1 PICK / DECODER

There is really no need to remove the tumblers unless you are re-keying the lock or replacing a damaged tumbler, since the code is stamped on the side of the lock plug. However, if you have the Lishi SIP-22 2-in-1 pick/ decoder, you don't even have to remove the lock from the door in order to decode the lock. Photo 24 shows the SIP-22 pick in use. I have picked the lock in the clockwise direction to make the scale easier to read. (Picking the lock in the counter-clockwise direction will unlock the vehicle.) You can see on the scale that the number 2 cut on the key is also a number 2 (B) depth.

I found the lock on this Renegade to be relatively easy to pick and I was able to easily decode the lock once it was picked. Remember

that there is no number one tumbler in the door lock, but it would be a simple matter to progress that single cut. I ran the last seven cuts through my fill program, Genericode-15 from Framon, and found only two possibilities for the first cut. Because the Jeep Renegade is a 2016 model, and was not listed in the current version, I ran it as a Fiat 500, which uses the same key blank and code series.

IGNITION LOCK

The vehicle that I had to work with had pushbutton start, so I did not have an ignition lock to work with for this article. However, the Renegade uses the same ignition lock as the Fiat 500. The lock uses an active retainer and can

be removed easily if you have a working key. The only problem that I have heard about for that ignition lock is that the poke-hole is small and hard to find. I plan to cover the Fiat 500 in a future article.

Most of the Renegades that I have seen are equipped with pushbutton start, and if I had to make a key to either type of vehicle, I would use the door lock to generate my key, so I doubt if you will have much call to remove an ignition lock.

PROGRAMMING THE RENEGADE

At the time I am writing this, whether you are programming a prox fob or a transponder key, you will need to use a dealer-level tool. I suspect that an aftermarket solution will become available soon, but for now

the only option that I know of is to use the Chrysler "Micro-Pod" tool shown in Photos 25 & 26. This tool works in conjunction with a laptop running the Chrysler software. In addition to the tool, you will also have to access the Chrysler system, so a software subscription is required in addition to the cost of the tool.

The tool shown here is connected to the laptop by way of a USB cable, but it can also be configured for wireless operation via Bluetooth. Personally, I see no reason to use the Bluetooth option. As I see it, that just adds another layer of things that can go wrong. And the Chrysler software has been plagued with problems ever since Fiat took over the company.







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2016 Auto Lock Guide from STRATTEC

Our list shows a brief description of STRATTEC key blanks for 2016 vehicle models. Unless otherwise specified, all car models are using high security, laser type keys.

BY GALE JOHNSON

2016 Cadillac CTS sedan

ach year Locksmith Ledger confers with representatives from STRATTEC Security Corp. to obtain the latest information on keys and locks for new car models. This reporter has participated in these meetings for more than a decade.

Topics for discussions with STRAT-TEC have varied widely over the course of the years. In earlier times laser (sidewinder) type keys were never mentioned. At that time the complete line of locks manufactured by STRATTEC consisted of flat type, edge cut keys. Every domestic car model contained mechanical ignition locks plus key-operated locks on left and right front passenger doors plus a lock on the trunk lid. The first domestic vehicle to introduce the word 'transponder' was the 1996 Ford Mustang.

A list of lock and key blanks for 2016 vehicle models offered by STRATTEC tells a completely different story. Keys for an overwhelming majority of 2016 vehicles in the STRATTEC 2016 catalog are laser type keys. Most passenger doors and trunk lids no longer contain keyoperated locks. Mechanical ignition lock systems on a large percentage of 2016 vehicle models have one

remaining mechanical vehicle lock designed to be used in an emergency in cases of electronic failure.

Changeover to electronic vehicle security is not a new phenomenon. It has been occurring slowly for the last decade. As vintage vehicles are scrapped, locksmiths will be asked to work more and more on vehicles which have keyless operating systems.

STRATTEC offers factory original transponder keys and fobs for past and present car models. The following list shows a brief description of STRATTEC key blanks for 2016 vehicles. Some 2016 models will be listed as Passive Entry, Passive Start (PEPS). Unless otherwise specified, all of the following car models are using high security, laser type keys.

GENERAL MOTORS VEHICLES

- 2016 Buick Encore models use STRATTEC flip keys: 5912555 (4 button) and 5912556 (5 button).
- 2016 Buick LaCrosse, Regal and Verano models may either use the same flip key blanks or may have PEPS as an option and require flip keys: 5912558 (4 button) or 5912559 (5 button). 2016 Buick Enclave continues with the 'Z' keyway: 693126

- 2016 Cadillac ATS, CTS, ELR, Escalade & Escalade ESV models all have PEPS security. Fobs are dealer only but the emergency key blade is STRATTEC 5922070.
- 2016 Cadillac SRX & XTS models also have PEPS security but a different emergency key blank is used. Fobs are dealer only but the emergency key blade is STRATTEC 5912534.
- 2016 Chevrolet Sonic models use flip keys: 5913598 (3 button), 5912543 (4 button) and 5912545 (5 button).
- 2016 Chevrolet Camaros are available with non-PEPS keys: 7013237 or 5928090. 2016 Camaro may have optional PEPS security: 5912543 (4 button) or 5912545 (5 button).
- 2016 Chevrolet Cruze models are available with a non-PEPS flip key: 7013237 or can have optional PEPS security: 5912543 (4 button) or 5912545 (5 button).
- 2016 Chevrolet Impala consumer models use PEPS security: 5912543 (4 button) or 5912545 (5 button).
 2016 Chevrolet Impala fleet models continue with the 'Z' keyway: 5903089.
- 2016 Chevrolet SS models have PEP security: 5921873 (5 button).
- 2016 Chevrolet Volt uses PEPS flip

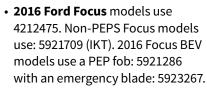
key: 5920167 (5 button).

- Chevrolet Trax models use a flip key: 5913597.
- 2016 Chevrolet Captiva uses a flat key: 7011685.
- 2016 Chevrolet & GMC high security laser keys are used on Tahoe/ Yukon, Suburban, Express/Savana, Colorado/Canyon, Silverado/Sierra & Equinox/Terrain . 2016 Express/ Savanna models use: 4225455. Silverado, Tahoe & Suburban use: 5924205 (sml hole). Sierra & Yukon use: 5924206 (sml hole). 2016 Equinox/Terrain models use either non-PEPS: 7013237 or PEPS security: 5912543 (4 button) or 5912545 (5 button). 2016 Chevrolet City Express Vans are rebadged Nissan vans using flat keys: 7003526. 2016 Traverse/ Acadia continue with 'Z' keyway:

FORD VEHICLES

Ford has a technology called Embrace. Basically as an owner approaches the vehicle, Embrace adds lighting which illuminates the door handle plus interior and exterior areas near the door. Fobs are also available as one-way or two-way transmitters. Two-way fobs can receive messages back from the vehicle to indicate whether remote engine starting or stopping

has been successful.



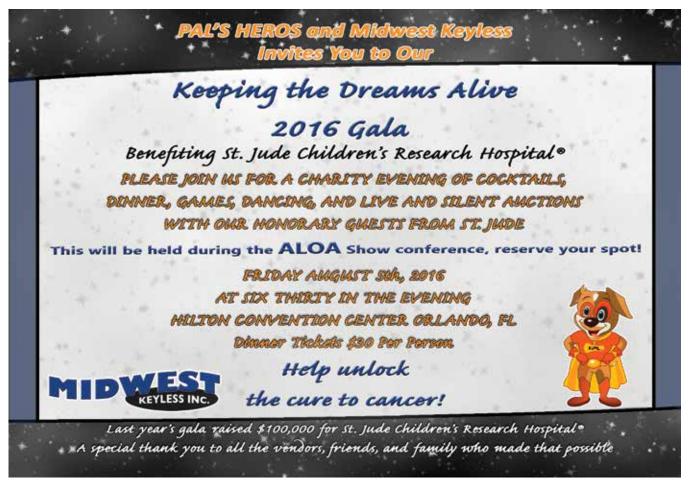
• 2016 C-Max models continue to



Interior view, 2016 Ford Fusion

use PEPS fob: 5919918 and emergency blade: 4212475. **2016 C-Max Energi** models use: 5923790 and an emergency blade of: 5923267.

• **2016 Fusion** models use either a mechanical key: 5923293 or a PEPS system: 5926060 (4 button). A wallet emergency key is: 4223891.



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- 2016 Ford Mustang wallet key: 4223891.
- 2016 Ford Taurus uses either a keyless IKT system: 5924326, 5912512 (4 button), 5921467 (5 button) or a PEPS system: 5921285 (4 button), 5921286 (5 button).
- 2016 Ford F150 models use optional PEPS security with: 5923667 (3 button), 5926057 (3 button/1 way) or 5926054 (5 button/2-way). The F150 emergency key blade is 4223891. 2016 F150 models may also use a non-PEPS static key system: 5923293 or flip keys: 5923667 (3 button) or 5923694 (4 button/2 way).
- 2016 Ford F250/350/450/550/650 models continue with the 8-cut flat key system: 5912560 (IKT) and 5913441 (IPATS).
- 2016 Ford Explorer and Taurus police vehicles (PPV) use: 597638 (flat key).
- 2016 Ford Flex uses either IKT fobs 5912560 (3 button), 5912512 (4 button), 5921467 (5 button) keys or PEPS fob: 5923896.
- **2016 Ford Edge** models use PEPS only: 5926060 (4 button), 5923896 (5 button).



2016 Ford Flex

- 2016 Ford Escape uses either an IKT system: 5922964 (4 button) or a PEPS system: 5923790 (5 button) and emergency key:
- 2016 Ford Explorer uses PEPS security: 5926060 (4 button), 5923896 (5 button), 4223891 (emergency wallet key).
- 2016 Ford Transit Vans use non transponder key: 5925988 or optional IKT system: 5925981 (3 button). 2016 Transit Connect vans use IKT laser keys: 5921707 (3 button), 5921709 (4 button)
- 2016 Lincoln MKC models use

- PEPS security: 5925315 (4 button), 5925313 (5 button) and a wallet emergency key: 4223891.
- 2016 Lincoln MKS and MKT models use PEPS security: 5921288 (5 button) and emergency key 5912345 (flat type).
- 2016 Lincoln MKX models use PEPS security: 5925315 (4 button), 5925213 (5 button).

For information on key blanks and fobs which may be available for models not mentioned in this article contact your local STRATTEC locksmith distributor or source: www.aftermarket.STRATTEC.com



For FREE info, visit www.locksmithledger.com/magazine & click on e-inquiry 347

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OUTFITTINGYour New Service Vehicle

Consider what tools, products and parts to stock, how to best organize your workspace, and how to use your service van as a rolling advertisement

BY JAMES HANNA

ervice vehicles are an important asset to every locksmith business. They allow you to take your entire shop anywhere your customers need you to be and give you the ability to go from jobsite to jobsite without having to restock products, parts or tools.

While you drive to each location, you are missing the opportunity to advertise basically for free if your vehicle doesn't have your business information on it.

This vehicle is an extension of you and your business. Showing up to a job in an unorganized, dirty, plain white van tells your customer that you don't care about your business and you don't care about them, their security or needs. They might not call you back or recommend anyone to you, or they may just recommend others steer clear. First impressions are extremely important in business.

These guidelines are mostly for newcomers to the locksmithing business who may need some assistance in deciding what to have in inventory and how to set up a service van. The ideas expressed here are based on my 17 years as a Locksmith/Business Owner.



Clean and simple: Burts Security Center

WHAT TO STOCK

Every business is different and what you should keep in stock depends on a number of factors:

- Population both in your immediate area as well as other areas you service:
- The most common lock and hardware brands, finishes and types that have been sold in your service area over the past 20 years or so;
- The most common lock and hardware brands, finishes and types that are being used right now; and
- The durability and life-span of the older and newer locks and hardware that you will encounter.

Larger populated areas may require you to stock a larger amount of product and parts while less populated areas may not need as much on hand. The brands, styles, keyways and finishes depend on what was and what is popular in your area. Finish and style preferences change from year to year, sometimes more often but keyways or brands tend to stay the same or similar. Some of you may need to stock more Weslock while others need more Weiser,

Emtek, Baldwin, Arrow or Schlage. It all depends on what is out there.

Parts may include brand-specific pin kits, tailpieces, cams, retainers, retainer caps, retainer springs, retainer pins, spindles, lever or knob return springs, screws, strikes, latches, bolts or other brand-specific parts such as Adams Rite cam plugs for push paddles, clutches for Simplex mechanical locks, replacement shackles for Master Lock padlocks and Jackson exit device rebuild kits.

Most locks made 20 years ago will perform longer than most locks made today. But eventually those older locks will fail, something will break and you will need a part for it that you don't have. Most of us will simply sell the customer a new lock but a lot of our customers would prefer to keep the same old, dirty, chipped finish lock they have had for years so you need to fix it. Knowing what your predecessors sold years ago will help you serve your current customers. Repair their lock and they will come back the next time.

You will see trends in new homes and businesses in your area that







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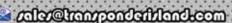




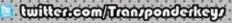












Automotive Locksmithing 2016

can help you decide which finishes or brands you should sell. Builders often buy and install based on price or on what their supplier is offering to them. The products may not be the best, cheapest or fanciest, but they are what that one or many builders may use on 10, 40 or more new homes or businesses. Once they have, those locks can become the trend.

ORGANIZATION & INTERIOR

I started my business out of the back seat of my Dodge Neon. My tools, pinning kit, keys, machines, etc. were stored in the trunk. I knelt in the back seat to rekey locks or make keys. My car opening tools were separated by type. The pinning kit always had enough pins and each pin size space contained the correctly sized pins, no spillover from other sizes, no pins placed back into the wrong spot. All key blanks were in their own boxes and my key machine was kept clean. A lot of customers watched me work and a large majority of them commented that they were surprised by my organization and cleanliness in such a small, cramped area. When I purchased my first van, I kept that same policy of organized cleanliness.

Your service vehicle, if large enough, should have a workbench that works for you. I custom built my first workbench so that it suited my needs:

- The correct height for a seated position, on a stool that was the right height for me, so my knees didn't hit anything and cause me to complain to myself later;
- An appropriate length and depth for the pinning kit, bench vise and key duplicator;
- Solid enough to support the force needed to properly stamp keys or pound out a roll pin.

The pinning kit was on the opposite end of the duplicator so as not to get brass shavings into it, the vise was between them and I



Loc-Doc's rolling billboard

had sections on the bench that held small boxes of followers, tweezers, other small tools and things I may need while rekeying.

Under the workbench is where I kept my seat while not in use and any tools that have cases such as a grinder or corded drill. My van came partially equipped with some Adrian Steel storage components, a divider with a door to protect me while driving and a thick floor mat.

One storage unit was modified to hold a deep cycle marine battery and a 1000 watt power inverter. The battery was professionally connected to my engine battery and alternator along with a solenoid to only trickle charge the marine battery. This prevented any overload to the vehicle but kept the marine battery charged.

I installed DC powered lights above my workbench and above each door. These lights were connected to the marine battery so not to drain the vehicle battery if I had to be at one spot for a long time. A service vehicle that you can't work in at night is not going to do anyone any good. One that won't start because you used your main battery to run your equipment definitely doesn't work.

The pre-installed drawer and storage sections came in very handy for:

- 1) Large and small tools
- 2) Parts such as cylinders, latches,

mortise cylinder spacers, tailpieces, etc.

- 3) New locks
- 4) Fishing pole stored on top of one of the larger units because you never know when you need some time away.

You may not need a pre-made set of storage components because you may be very handy at making them yourself but every service vehicle needs a storage solution that allows the user to stay organized. I'm not saying you have to label every drawer and door but you must know where everything is, how many of any given item you have at any given time and where you can store additional items if you add something to your inventory or tool selection.

The lack of an efficient layout inside your service vehicle may cause you to spend more time looking for that one part you know you have than you would if you had better organization.

Imagine yourself inside your service vehicle working. This is your new home. Homes generally have a triangular-shaped work area in the kitchen to increase productivity and reduce the amount of time wasted. The refrigerator, stove and sink are three important things used quite often in a kitchen. Your service vehicle should have a pinning kit (sink), duplicator (stove) and parts/product storage (refrigerator).

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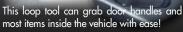
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Where do you want to be rekeying 2, 10 or 50 locks in one sitting? What needs to be within easy reach of that one spot? Where should your key blanks be? How far do you want to move to originate or copy keys from your rekeying station or how far from your code machine do you want your duplicator? Where is your IC Core capping press compared to your IC Core rekeying kit? Where should your key stamping block go in relation to both machines? Where should your KIK, Rim and Mortise cylinders be located so you can easily reach them? How far from your main spot are any tools or small parts you may need in the process of rekeying, generating or duplicating keys?

Once you have answered those questions, you can design your service vehicle work area, layout and organization needs. This will also be the time to determine how many and what types of work lights you will need. Don't forget 110VAC outlets for your drill, grinder, Dremel or other corded tool you may need to use while on a jobsite. One at the back door and one at the side door (if your vehicle has both) in addition to any on your inverter is generally enough. Make sure you have an easy way to turn the inverter on and off while still standing outside of the vehicle.

It's very efficient to have items that go together near each other. The more you have to move from your seated position or from one central location, the longer it will take you to finish each job. Your code machine cards (HPC 1200 type) should be within reach of your code machine without having to move your seat. Key blanks should be between your code machine and duplicator with a stamping block and stamps near both. Give away key rings or whatever you use to keep keys together should be nearby as well. Lock lubricant, followers, shims, tweezers, other rekeying tools and paper or cloth towels should be

within easy reach of your pinning kit.

Knobs, levers and deadbolts can be stored anywhere because no matter where you store those, you will likely have to move from your workbench to obtain them. If you open locked vehicles using car-opening tools, keep them along with probe lights, manuals and wedges near the back or side door within easy reach while you can stand outside. Every time you have to step into your vehicle to grab a tool, part or lock, it will cost you time and time is money.

KEY BLANKS

Some locksmiths prefer to have all of their key blanks on a peg board or slat wall inside of their service vehicle, while others use small drawers with dividers or even keep them inside of key blank boxes. Hanging your keys on a wall means you must secure them so they don't fall off when you turn corners. They also make a lot of noise so most people put them in boxes, labeling each box to identify which type is in them. Put the boxes in drawers and organize by type, keyway or part number depending upon which way you prefer to identify keys. Keep the most common keys in an easy to reach drawer close to your duplicator.

CYLINDERS

Almost every locksmith shop and vehicle should have mortise, rim and

key in knob/lever cylinders. Some of you may see a need to stock KIK padlock cylinders that are specific to standard keyways in their area. There will come a time when you have a customer who needs every lock on their building to use the same key, yet some of their locks have the wrong keyway. Sometimes you'll show up to a job and the lock isn't working and you find out the cylinder is completely worn out. It's simple to change most of these but only if you have them in stock and in the correct keyway. Which keyways? The ones that are most popular in your area. Right now most of the United States uses Schlage C, Kwikset, Weiser and Weslock keyways for the majority of their locks, although those are mainly residential. You may see a trend in other keyways, if so, stock cylinders for those as well.

LOCKS

The most common replacement locks we have seen are residential knobs and levers. People purchase them from hardware stores and home centers and expect them to last forever. They don't realize there is a high percentage of either plastic, cheap metals or a combination of both in most of those locks and they just don't last. The latches for these are generally very cheaply made and when they fail, they usually fail with the door shut so you will certainly need a replacement



Quality Lock hits the road



Sandy Springs Safe & Lock takes a stand against scammers

lock if not just a new latch.

Since most residential locks have adjustable backsets, the only two criteria you need in purchasing these are keyway and finish. At the very least, you want to rekey the new lock to their existing key or match the other lock finishes in their home.

If you do a lot of deadbolt installations, you need to have some in stock in varying finishes and either with replaceable cylinders to accommodate multiple keyways or just stock multiple keyways.

COMMERCIAL HARDWARE

Adams Rite, Von Duprin, Jackson, LCN, Norton, Kaba-Simplex, Kaba-Ilco, Don-Jo, Glynn-Johnson, Hager, KSP, DORMA, Schlage, Yale, Sargent, Corbin, Falcon, Dor-O-Matic, Arrow, Rixson, Pemko: Do these brands sound familiar? If not and you service the commercial industry, you better find out more about them. These brands and others are those that you will find in a commercial setting.

Most brands have standard products that you should stock or at least be able to obtain within a couple of days. While these brands focus more on the commercial industry and

generally have products that hold up to the high use and abuse the public will put to them, there are times when things break and you should have the right replacement product or part.

Which product and parts depend again on your area. Adams Rite latches, paddles, levers, strikes, screws and other parts are common for most states since, in my experience, most commercial door installers use inexpensive knock-offs that always fail at the wrong time. Door closer arms are a good place for people to show off their pull-up ability to their friends but they generally can't hold up to that type of use so they break. Combination lock chambers suddenly quit working or the clutch stops functioning. Door pivots wear out, mortise locks break, levers sag on many brands of locks and exit devices have parts that break due to use or abuse. These parts or replacement locks are something you may want to consider stocking in your service vehicle.

EXTERIOR

I have previously mentioned free advertising. Well it's not completely

free but it can pay for itself in a short time, after that it's free.

Your service vehicle is a moving billboard. Everywhere it goes so does your advertising. The more often it is seen the more likely people are to remember it and your business, that is if you have some important information upon its exterior:

- Your business name;
- Your business phone number;
- At least three services, but not more than five, that you do, do often and do very well such as:
 - -Transponder keys duplicated, added or replaced
 - -Other specialty automotive work
 - -Commercial services
 - -Residential services
 - -Safes sold, installed & serviced
 - -Access Control
 - -Deadbolt installation
 - -Security systems
 - -Security cameras
 - -Door and frame replacement
- Are you a member of any local organization such as the BBB or local builders association? ALOA member? Show your potential customers. If licensing and/or bonding is required in your area, show that you are licensed and bonded;
- 24 Hour Emergency Service if you have that available; and
- Anything else your business does that makes it stand out from your competition or something you feel is as or more important as the first 6.

Some people like to keep it simple while others will go all out. You can design the contents and layout yourself or have the company doing the installation assist you with that. Simple vinyl lettering on a standard van can cost \$400 to \$1000 while full color vinyl wraps can be upwards of \$2000. The type you choose depends on what you are trying to get across to your potential customers and your budget. Failing to utilize your service vehicle as a mobile billboard is detrimental to your business.

New Products from Keyline USA

GK100 chip with key

Cloning machines, micro series chips and pod keys to accommodate cloned chips greatly simplify transponder key duplication

BY GALE JOHNSON

ccording to the United States Department of Transportation, the average age of passenger cars and light trucks in operation in the United States in 2014 was 11.4 years. Another way of stating the same fact is that half of all cars and light trucks in operation were manufactured before 2005 and half of the vehicles on the road were manufactured after 2005. Therefore approximately 50 percent of locksmith calls for automotive lock work will involve cars made during the last 11 years.

Keys containing VATS electronic security were first used on the 1986 Chevrolet Corvette followed by 1996 Ford Mustangs which were the first to offer transponder security in a domestic vehicle. By 2005 the combination of a mechanical key blade plus added transponder security mounted in the keybow was commonplace on many foreign and domestic vehicles. This trend continues upward right to the present time.

Automotive keys with



GK 100 and GKM size comparison

transponders add another step to the duplication process. Keyline USA has developed several products to simplify transponder key duplication. In many cases transponder electronics can be cloned, or copied, from the owner's operating key and the information can be electronically installed on a new transponderequipped duplicate key.

Keyline USA has the 884 Decryptor Ultegra and the 884 Decryptor Mini machines which are designed for automotive transponder cloning. The 884 Decryptor Ultegra is a standalone

machine while the 884
Decryptor Mini
must be connected to an Android
smartphone or
tablet and requires
an internet connection. A Keyline USA
App can be downloade

App can be downloaded from the Google Play Store to operate the 884 Decryptor Mini.

Different types of transponders have been used by automotive manufacturers depending on the model and year. 884 Decryptors can clone Texas fixed code, Texas Crypto, Philips fixed code, first generation Philips Crypto, second generation Philips Crypto and Megamos fixed code transponders. Check with a Keyline USA locksmith dealer for exact models and years which can be cloned. Keyline USA offers a

special TK100 transponder which is used in conjunction with Keyline USA snap-in heads and horseshoe blade sections.

A Keyline USA Micro series of transponders has just been announced. Small dimension Micro series are designed to quickly and easily clone a wide range of automotive, motorbike and truck keys.

New Micro series chips are GK100 and GKM. A free software update is available for owners of 884 Decryptors for cloning the GK100

chip. GK100 chips can be used to clone Texas fixed (4C),

Texas Crypto (4D) and Philips Crypto (ID46) transponders.

GKM chips are used for cloning Megamos Fixed and Megamos Crypto (ID48) transponders. It is necessary to purchase a

TKM.Xtreme Kit in order to clone GKM chips. GKM and GK100 chips are batteryless, rewritable and must be used exclusively with Keyline 884 cloning machines.

A new generation of Keyline USA pod keys have also been introduced. The new universal transponder holder allows the use of original or compatible glass and carbon transponder chips. The transponder holder snaps into a square opening in the key head.



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