

2007 IS350 Driver Door latch actuator removal and motor replacement.
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My car's symptom was that the driver door didn't lock or unlock 90% of the time. The other three doors worked fine.

I'm writing these three DIYs to add clarity to the items specific to the 2007 IS250/350:

1. Removing two door trim panels for access.
2. Removing the lock actuator for repair.
3. Disassembling the actuator to replace the Mabuchi motor.

I suggest that you take your own photos at each step to aide during reassembly and so you can post a DIY to help others. I did not write up the reassembly process, only a few tips in [brackets].

Removing the main door trim panel:

Turn on ignition, open window, turn off ignition. Disconnect battery ground.

Remove the plastic cover behind the inside door handle by carefully prying it at the gap next to the lock knob, in the unlocked position. I used a popsicle stick.

This exposes a phillips screw, remove this screw.



Remove the window & lock switch panel; there is one pink arrow head clip at each end. Carefully pry between the switch plate and the door trim panel upwards. Work slowly and gently alternating front to rear, it will gradually lift up a little bit at a time until it's unsnapped.



Disconnect the two white electrical connectors at the window and lock switches.

Behind the switch plate opening is a steel bracket on an angle held by a hex bolt to the door steel. Remove the bolt using a 10 mm socket.

The main door panel is held to the door by serrated plastic pins along the bottom and sides, four on the bottom and two on each side.

The top of the panel is held with four steel edge clips along the window.

There is one large alignment pin at the forward top area, it's the beige pin near center of first picture, goes into the scratched hole rearward of the blue plastic sheet in second picture.



The eight serrated push pins must be pried horizontally.

Start at the bottom under the storage bin, there are two areas that you can grab easily (for the bin hinges I assume).

Pull outwards with a large force, but slowly. In other words, pull hard, but not far.

Work your way across the bottom then up the front and back, pulling the panel away from the door.

Now the panel is hanging by the four steel edge clips at the top, plus cables and wires.

Hold the bottom of the panel away from the door about six inches to disengage the alignment pin.

Lift the rearward end of the panel quickly and strongly upwards from the back to unseat the rear steel edge clip.

Keep moving forward to get all four.

Watch the tweeter speaker, you'll have to pull the panel bottom further inboard away from the door as you lift the last two steel edge clips out to avoid scratching the speaker housing against the window frame.

You can support the door trim panel on a milk crate, or just hold it for the next few steps.

Disconnect the two cables from the interior door handle and lock by unsnapping the round white barrel (lock cable) from the fork.

Then rotate the cable away from the panel and lift the steel ball on the end of the cable upwards to slide upwards out of the socket.

Repeat for the green cable end (door latch).

Disconnect the white electrical connector to the tweeter speaker.

The wire to the courtesy light at the rear bottom is the last item. It's designed to be connected and unconnected with the lamp removed from the door trim panel. The lamp has one plastic snap on the forward end and a hook feature on the rear end. From inside the panel, push this forward tab rearward to unlock it and rotate the lamp out. Now the grey connector is easy to remove from the lamp.

Set the trim panel aside.

Removing the door trim latch cover:

At the door rear face, remove the round rubber bumper using a phillips screw driver.

The cover has four push pins on the inboard side and two on the rear face. These press into the steel and slide into forks in the plastic cover. The white ones fit extremely tight to the steel, the green one not so tight.

The plastic cover can be removed two ways:

1. Brut force:

Pry the bottom pin loose by pulling inboard.

Slide the middle portion of the cover rearward then inboard to unseat the bushings (white in door photos) from the forks in the cover panel. The top has a green pin plus a snap to the window rear frame trim.

The green one came off with the cover panel, it fits in the forward direction and not so tight to the steel so it stayed on the cover.

2. Nicer method, reverse factory installation:

Skip ahead and to the part about removing the plastic sheet and get it loose.

The bottom three inboard pins must be pushed out from the inside because they are held really tight. I used a spade drill as a flat metal surface so as not to destroy my finger tips. The hole in the drill bit worked nicely to keep in centered on the push pin tip, but anything would work.



Removing the lock actuator for repair:

Reconnect the window & lock electrical connectors, so you can raise the window. Don't raise it yet.

Push the ignition switch twice without your foot on the brake.

Have your left hand ready to guide the window outwards (very gentle outwards pressure).

Use the driver window switch to raise the window.

Raise it slowly by several short switch pushes.

Your left hand is keeping the window from being scratched by the bare steel because you've removed the pretty felt wiper with the door panel. It does not tend to get near the sheet metal, but a little extra care avoids a scratch that lasts a lifetime.

Push the ignition once more to turn it off.

Remove the window & lock switch plate again.

[When the entire job is done, to reset the power windows auto feature: Lower window 1/2 way down from each door switch. Raise window and hold switch up for a few seconds more. The switch light should go from flashing to solid.]

On the outside door handle, remove the beauty cover that conceals the emergency key socket. The manual says to use the emergency key, but a popsicle stick works nicely.

Gently pry the emergency door key lock off, it's only held in place now by the aged rubber seal.

It has a horizontal steel rod about 4 inches long. Sorry the photo of the latch removed is poor, too many reflections.



Removing the key socket makes removing the latch mechanism easier, and the key socket is easy to remove and install.

When its time to reinstall the latch mechanism, having the key socket out is extremely helpful, maybe even required.

On the end of the door (called the jamb by many), remove the round black rubber grommet located at the same height as the outside door handle. Loosen the Torx screw that the rubber grommet hides. The screw will stay in place, it's held by a plastic clip to prevent you from dropping it inside the door.



Remove the white electrical connector in the round hole that goes to the latch mechanism.



Remove the rear half of the plastic sheet by pulling the butyl sealer away from the sheet metal and leaving it on the plastic sheet. Once you get started, keep it going by pulling on the plastic with one hand as you help the butyl unstick from the steel with the other hand. As you get it moving, help the wires and cables through their slots in the plastic sheet.



Remove the three Torx screws on the door rear face (jamb) holding the latch mechanism. Hold the latch from inside as you remove the last one.



Next you must manipulate the latch to get it out.

Move the latch down an inch to disengage the vertical rod from the outside door handle to the latch.

The rod just fits in a hole so don't worry, it's easy to get back in place.

[When you reinstall the repaired latch, after getting the latch in place, lower it 1-2" and raise it while guiding the rod into the yellow sleeve].

Move the latch back up to the original position keeping the rod disengaged.

This is done blindly by using your right hand to guide the rod away from the latch.

Rotate the front of the latch towards the car exterior such that the cables are pushed against the outboard sheet metal.

Use one hand to give the cables a nice round bend so as not to kink them, while using your other hand to move the latch.

By rotating the latch outboard and small up/down movement (< 1") it can be moved forward to the hole you're hands are using.

After I removed the latch a few times, I found that the less up/down movement the better.

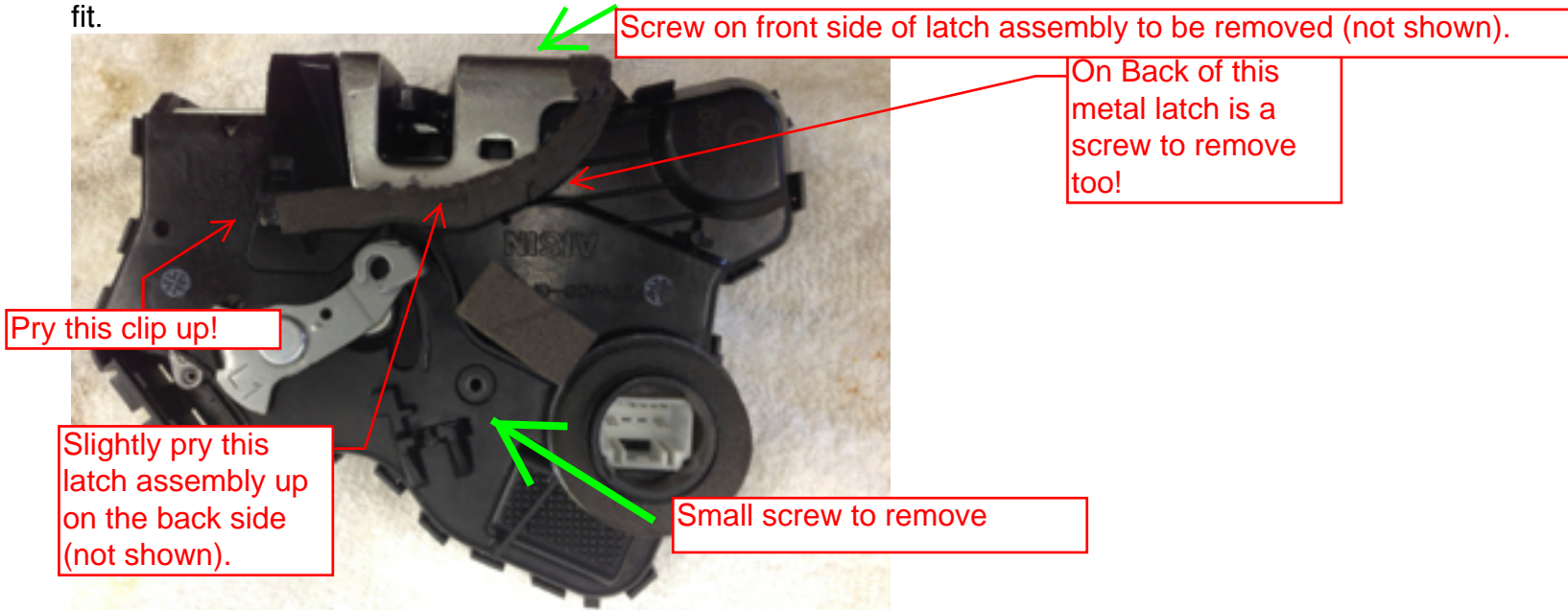
Keep at it, be patient and don't use extreme force, soon enough you'll find the magic combination of moves.

It only takes a half minute after you learn the method. The main trick is forcing the cables into the outer sheet metal.

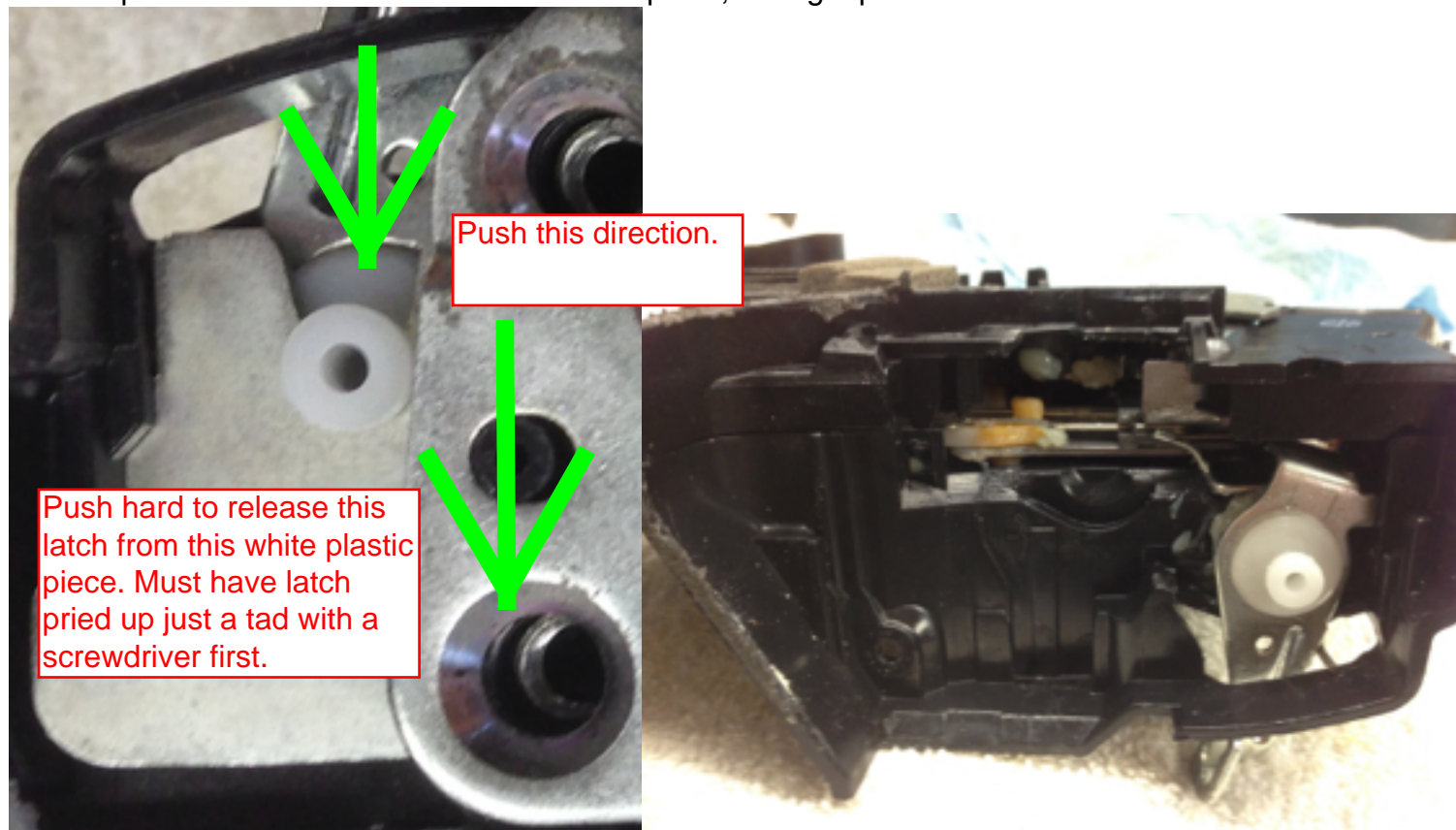
Disassembling the actuator to replace the Mabuchi motor:

Lift the green cable barrel out of the fork and the cylindrical end out of the steel lever.
Unsnap the small plastic cover at the end of the white cable. It is molded with the main piece merely as a cost savings.
This is called a 'living hinge'. Don't worry at all if you break the hinges, they are just for simplicity in the molding of the plastic parts.
There are three arrow head snap tabs that hold the cover on with or without the living hinge.
Lift the white cable end out of the fork and the steel rod zig-zag out of the steel lever.
Remove the tiny phillips screw in the middle of the inboard side. The larger two can stay.
Remove the plastic rain cover on the top of the mechanism. It unsnaps easily.
Remove the thin foam rubber seal along the steel to plastic seam. You're going to tear it, but try to keep it in as few pieces as possible.

If the latch is laying on a bench inboard side up (below photo), the mostly steel latch portion slides upwards in grooves, it's a tight fit.



There is also a steel fork in the latch that engages a ~4 mm diameter white plastic shaft. The left photo is the fork with the steel latch in place, the right photo shows the white shaft with latch removed.



After you start the steel latch upwards in the slots, pry the steel fork off the white plastic shaft. You can use pliers gently if needed.
After the shaft unsnaps, the latch will slide up and out of the main grooves.
It slides in the same direction as the fork at the white shaft. This is not obvious the first time.

Now for the 16 tiny snap tabs you've been worrying about all this time.
Hold the mechanism in your hands inboard side up.



Start at the upper left snap and use three pocket size flat screw drivers.
Insert screw driver #1 behind the tab at the bottom of it's "U" shape.
Don't pry it, just use the screw driver thickness to give the needed clearance.
Use screw driver #2 to separate the two main plastic housings very slightly.
Leave screw driver #2 in the starting position for the entire task to keep you from loosing ground.
Push screw driver #2 further into the mechanism as soon as you have enough tabs unsnapped to keep it from falling out.
With the first tab disengaged, move that screw driver (#1) to the next tab's "U" (CCW or lower in the photo).
Move screw driver #3 to the housing space between tabs #1 and #2.
Work slowly and carefully CCW around the entire housing.
I did this three times without breaking a single tab.
Don't rush the final separation of the housings, you want to keep as many spring loaded parts in place as you can.
If parts move during disassembly, use the photos to reassemble the inside parts.

The Mabuchi motor lifts out straight up. It's only held by two electrical terminals press fit into the motor.
The worm gear slides off easily.



10mm Flat Shaft, FC-280PC-22125 Door Lock Motor Fix Repair Actuator Toyota Lexus is the one to buy if you need "D" shaft (I used on my 2008 for all 4 doors). \$6.50 from zinky86 on ebay.

The Lexus motor has a "D" shaft and the eBay motor does not. A Dremel or file can remedy this difference.
The round portion of the shaft is 2mm; top to bottom of "D".
The flat horizontal portion of the "D" is 1.5mm.

The Mabuchi motor or entire latch actuator can be purchased several places:
Motor only on ebay for \$6.
The entire actuator from the dealer for \$325.
Used entire latch actuator from eBay for about \$175.
Aftermarket entire latch actuator from eBay for about \$125.

EBay seller 'zinky86' sells the motor and links to our Club Lexus forum in his ad.
The Mabuchi Motor specs on eBay:
Shaft: Round, 2mm diameter x 9.85mm length (you have to cut the "D" shape).
Canister: 24.2mm diameter (18.3mm on flat sides) x 30.5mm long
Overall Length: 45.0mm (Tip to Tail)

Be aware that rear locks have child safety switch and that adds a small wrinkle, but not much.
MAKE SURE that when you put your rear locks back that you line up your assembly with the plastic wishbone/fork shaped shaft that connects to your door handle (outer) or you end up using a pry bar to get the door cover off when the door doesn't open (Ask how I know).
When doing the rear locks, install the assembly (once repaired) cables first and upside down. Then work the cables (bend them a bunch!) through the short side (towards front) of the window frame as you twist the lock assembly back upright in the door as you seat it properly.
It took me 2 hours to do the front 2 locks, 1 hour to do the rear after I screwed up the latch install and had to redo and the last rear took 20 minutes, start to finish including motor install. It was easier pulling two at a time because I could compare for re-assembly.
Make sure the little levers on the assembly don't bind and that nothing moved during your motor install or you'll have to take them out again for repair (again, I know).
Don't forget to install the rain covers when you are done assembling the lock assembly prior to door install.
Good luck.

Additional photos:

