Installation Instructions LamboStyleDoors

(The instruction are to be used as a reference. Please repeat for both doors)

Pre installation check list:

- Battery disconnected

- Front bumper removed

- Front fender removed

- Vehicle must be accident free

- Vehicle must have inner fender cover

Preparations:

(Disassemble parts according to vehicle manufacturer specifications)

- Disassemble the door stopper.

- Disconnect the wire harness between chassis and door.

- Disassemble the door. For this remove the pin between the hinges.

- Modify the hinges at the A-pillar and on the door (please see enclosure "modifying the hinges").

- Extend the factory door wire harness with the enclosed wire harness extension kit.
(please see enclosure "wire harness extension").

- Modify the fender.
(please see enclosure "modifying the fender").

- Relocate the door lock vacuum case (when necessary).
(e.g. from the passenger's side inner fender to the engine compartment).

- Modify the windshield washer reservoir. (when necessary).
(please see enclosure "modifying the windshield washer reservoir").

Danger warnings

LSD Doors must be installed according to the provided vehicle specific instructions from LSD Doors and installation should be performed by an authorized dealer.

Always follow the latest accident prevention regulations, (not applicable for North America), for each step to prevent any serious bodily harm or injury.

Extending the factory wire harness must be completed according to the vehicle manufacturer‘s guidelines for cable repairs. When working with Share-data bus systems please take special care to correctly reroute the wires and not to damage the wire insulation/shielding, twist of the cables or interrupt any other systems, (check with the specifications of the vehicle manufacturer).

When modifying vehicles equipped with door side air bag systems, the functionality of the air bag system must be re-inspected through the vehicles authorized dealer.

During final door adjustments please make sure that the door closes and locks correct as oem specifications, (see original door close angles, lock and gapping positions etc.).

Please pay special attention while working in the operation area of the hinge system, (especially when working directly with the pivot mechanism or in the overall door operation zone).

All vehicle doors must be securely closed before setting vehicle into motion. Operating a vehicle with the doors open is strictly prohibited.

Supplied vertical lifting door warning decals must be placed on the vehicles front side windows, clearly visible from both inside and outside. Not placing decals on your vehicle might void your vehicle operating license, (not applicable for North America).

Do not install heavier speaker systems without first raising the pressure of the gas spring.

Please adjust the horizontal opening angle of the doors for maximum entrance space.

Please pay attention to your gas springs and make sure they open and maintain your door at the maximum opening angle under all operation vehicle conditions.

Make sure you empty the door pockets/storage compartments, so objects will not fall out once the door is raised and also not to offset the correct balance of the gas spring.

WARNING: Gas spring is under extreme pressure! Please make sure the snap rings are installed correctly and are snapped their respective guides.

! *Attention notice:*

An additional inside support handle must be installed to solve the issue of possible difficulty of griping the door, when raising and lowering your door from your seated position.

If there are white lights on your door, these must be made ineffective, e. g. taking of the bulb and bulb holder according to fig. 5.22 ECE-law no. 48.

After mounting the LSD hinge system you must reinstall your OEM inner fender covers to keep your LSD hinges free from debris and corrosion.

You must have an authorized workshop check that the central locking system (if equipped) is working properly.

You must have an authorized workshop check the functionality of all systems, switches and components, (including: loudspeakers, alarm system, CAN data bus systems, electric windows, crash-sensor, memory seat adjustment, mirror adjustment and heating, etc. if equipped).

While adjusting the door please take special care to position it in the matching door frame as not to cause any damages to paint etc.

In case any chassis modifications were performed, please use the supplied chassis glue, (if required for specific application), to seal any openings on the A-pillar or doors, (make sure panels are free from grease and dust before applying chassis glue for a superior water tight seal).

NOTE: please be aware your car might have different factory installed equipment from our tested R&D vehicle, in this case please contact your LSD dealer to order higher or lower power gas damper units, (an additional cost may apply).

Please note that the power of the gas dampers may fluctuate due to ambient temperature variations, the opening and closing forces may also differ according to damper manufacturers specifications, (warranty claims will only be honored if there's an internal defect or an error in production).

All LSD hinges come with a protective oil coating, please remove coating and then apply the included PSK spray for superior sealing of the finish.

If any body work is performed use Corrosion prevention methods according to the vehicle manufactures specifications.

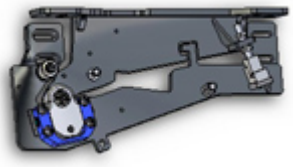
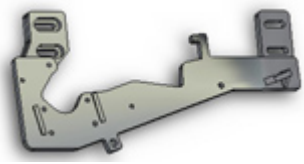
Updated installation instructions can be found on www.lsd-doors.com, (guide notes subject to change without notice).

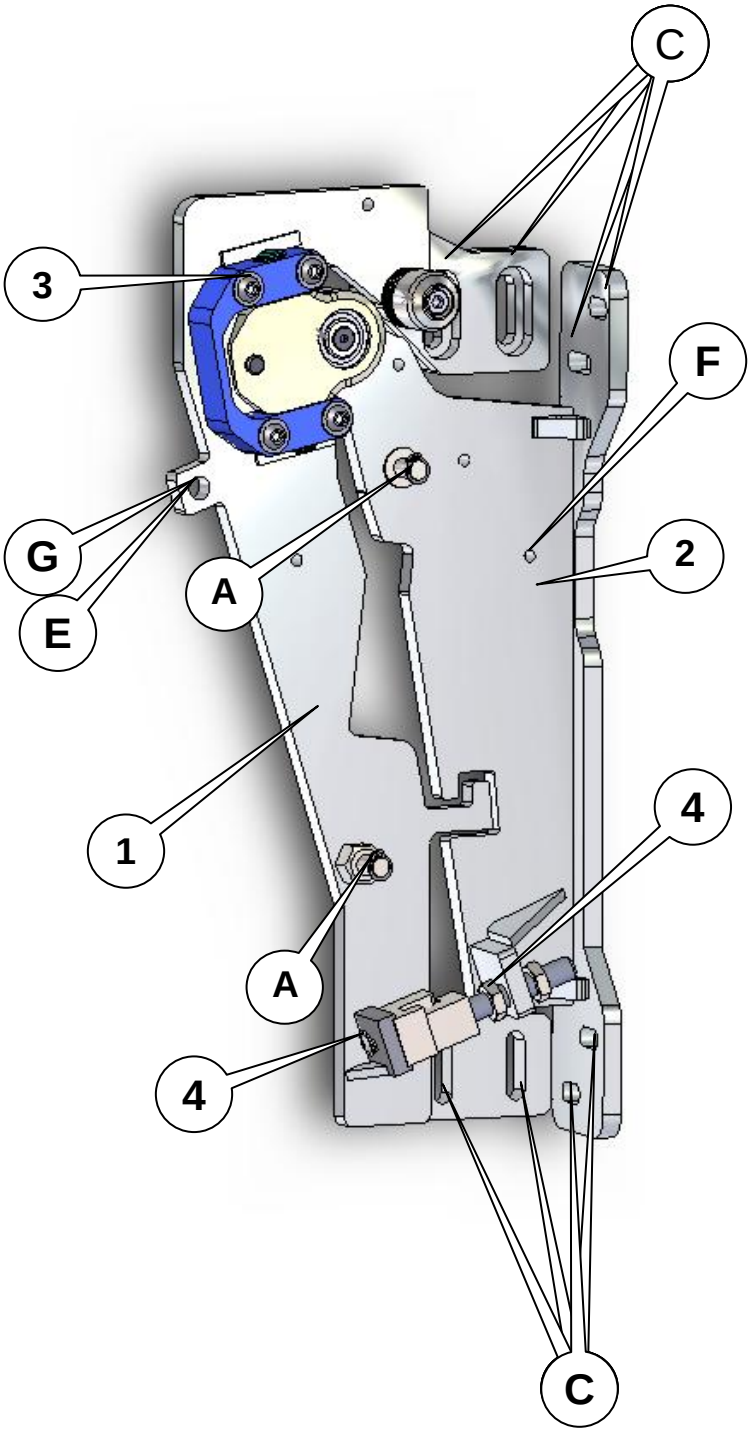
General installation instructions:

A second person makes the work much easier. Please instruct the second person before start working.

It is recommended to keep your LSD door hinges maintained on a regular basis for a lifetime of trouble free operation.

Hardware list *(per vehicle side)*

3x **A**	5X **B**	8x **C**	1x **D**
		M8x30	
Snap ring	*Cable ties*	*Serrated bolt*	*Rubber grommet 21mm*
1x **E**	3x **F**	1x **G**	1x **H**
		M8x100	
Distance spacer	*Cable clip*	*Hexagon bolt*	*Threaded rivet insert M8*
1x **I**	1x **J**	1x **K**	1x **L**
M8x80		No. 500... 2450 N	
Hexagon bolt	*Chassis glue*	Gas damper	*LSD door system*
1x **M**	1x **N**	2x **O**	1x **P**
			
LSD swing arm	*LSD ground plate*	*Flat washer 15x5,3*	*Wire cover plate*


C
3
F
G
A
2
E
1
4
A
4
C

1.) The original hinges on the chassis AND on the door (top & bottom) have to be modified. Use a punch to center-punch the appropriate holes, (as shown in photo). Repeat for all hinges. Photo to follow. Now cut off the OEM hinges on the chassis and door and grind smooth as shown in photos. Vehicle must be level and on level ground.

Removing hinge pins:

Top chassis hinge:

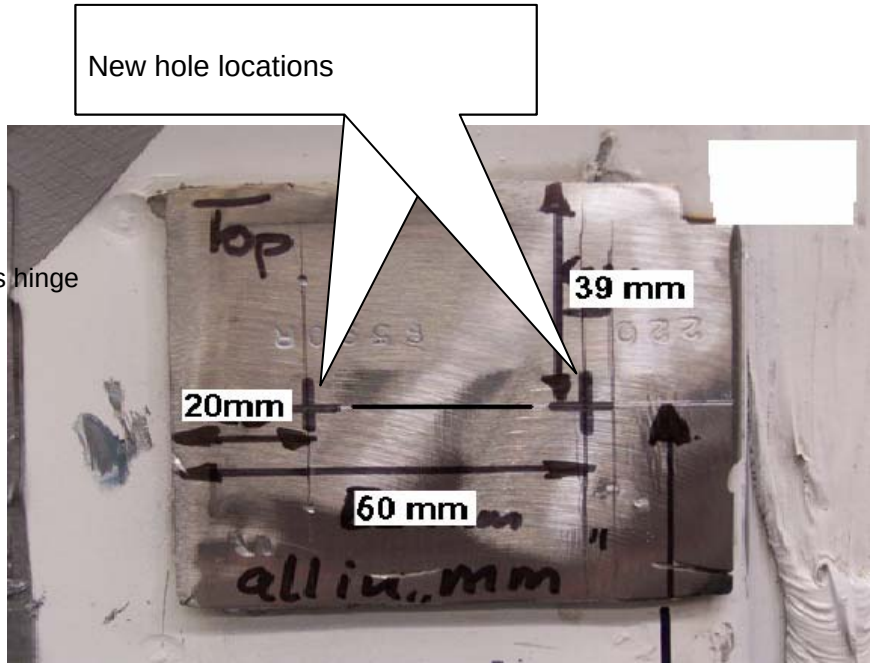
Cutting the hinge:

Bottom chassis hinge:

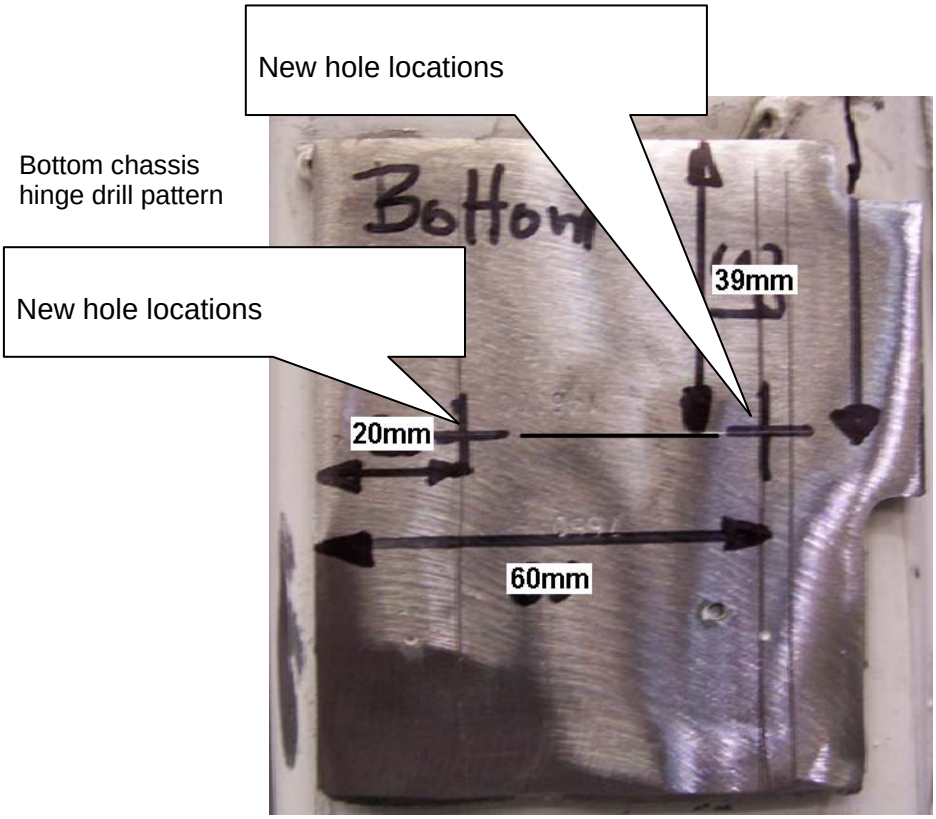
2.) Now you will need to create mounting points on the chassis for attaching the LSD chassis plate, the chassis hinges have to be drilled and tapped, (M8)(8mm), two (2) on each hinge, on the points shown in the picture, (use your center punched holes as a guide). NOTE: PRE HANG DOOR TO VEHICLE TO VERIFY HOLE LOCATIONS PRIOR TO DRILLING.

The top and bottom chassis hinges smooth

Top chassis hinge drill pattern



Bottom chassis hinge drill pattern



3.) The original hinges on the chassis AND on the door, (top & bottom) have to be modified. Cut off the OEM hinges on the chassis and door and grind smooth as shown in photos.

Cut flush with outer surface

Top door hinge:

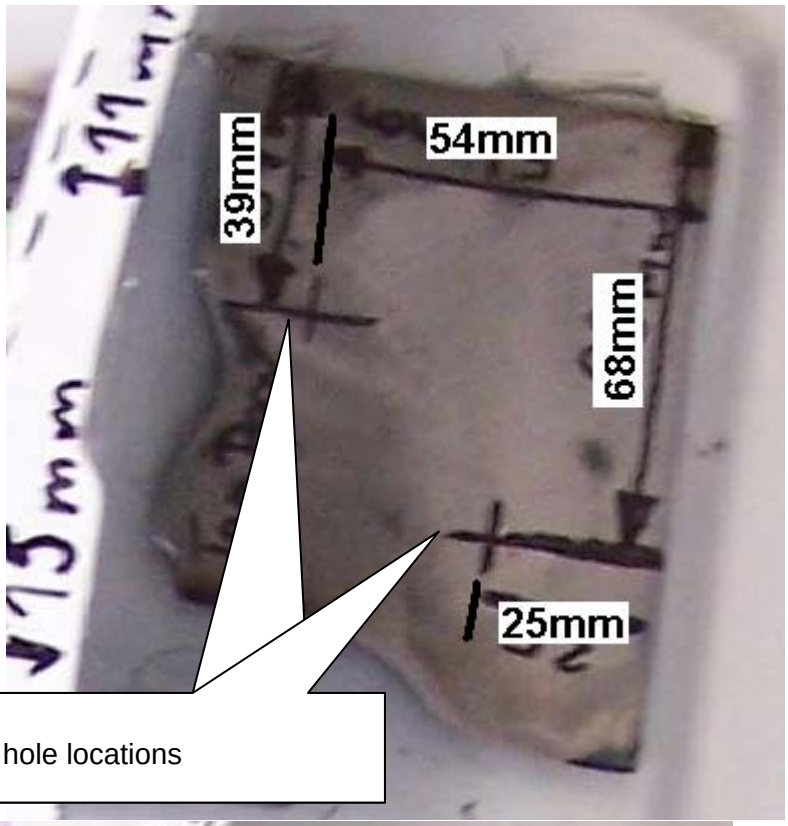
Door hinges:

Bottom door hinge:

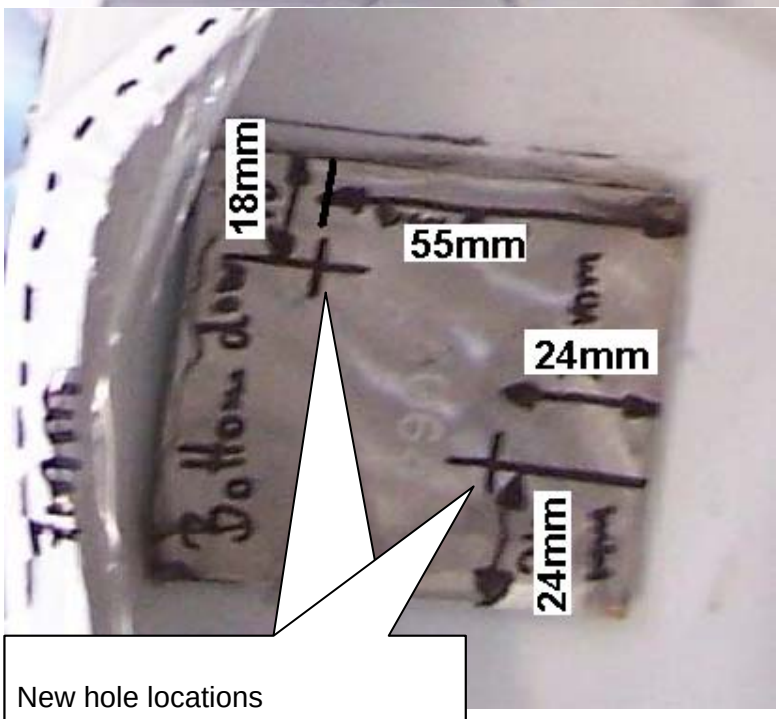
Cut flush with outer surface

4.) After grinding the hinge areas smooth, you will need to create mounting points on the chassis for attaching the LSD chassis plate, the chassis hinges have to be drilled and tapped,two (2) on each hinge, (M8)(8mm) on the points shown in the picture, (use your center punched holes as a guide). NOTE: PRE HANG DOOR TO VEHICLE TO VERIFY HOLE LOCATIONS PRIOR TO DRILLING.

Grind flush with outer surface

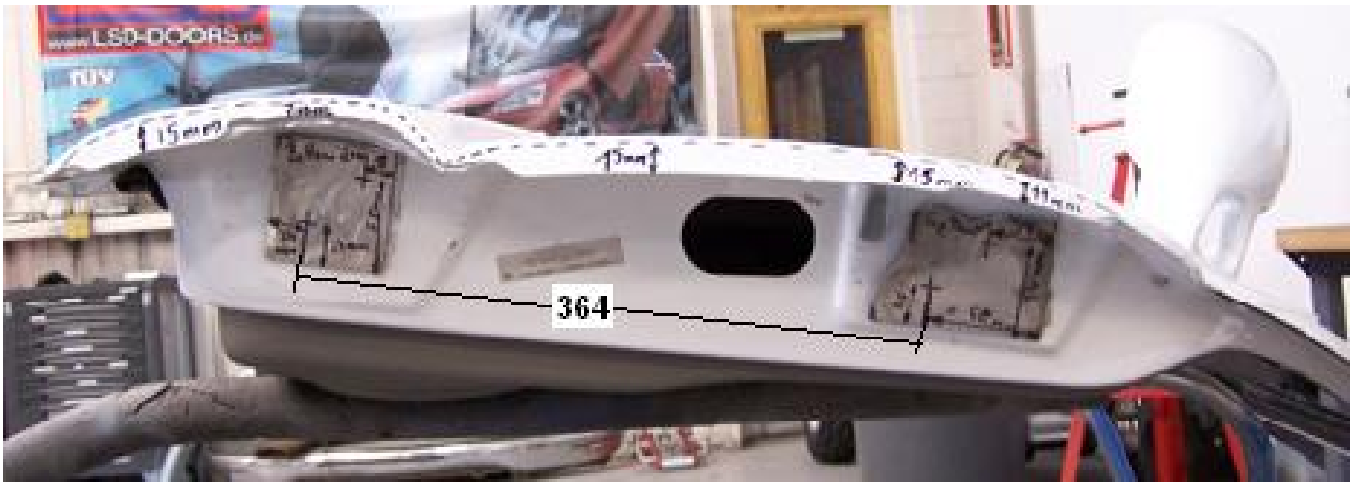


New hole locations



New hole locations

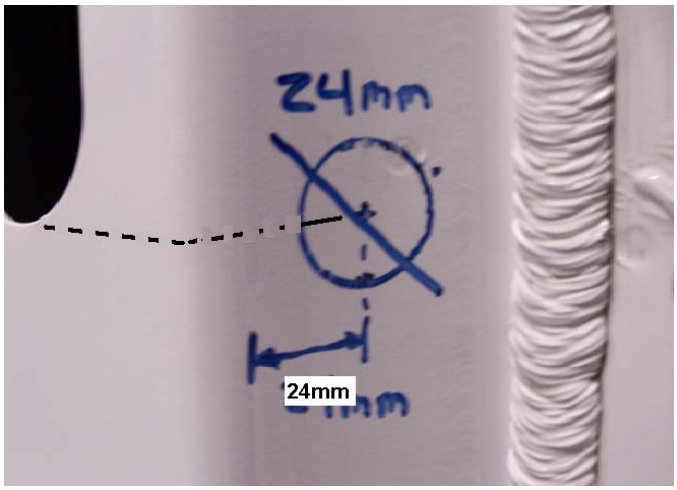
5.) Cut inner door flange according to dimensions shown.

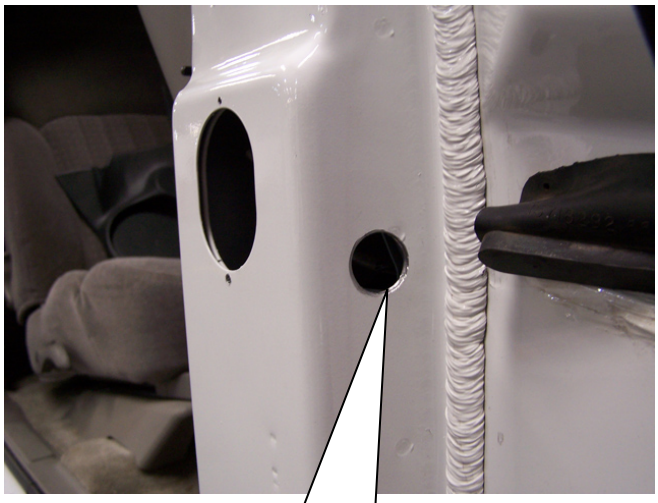


Door, shown with hinges ground smooth, holes tapped, flange removed.

(*A hinge re-installtion kit is available. Please contact your local dealer for more information)

6.) Create a lead-through hole, (Ø 21 mm / 0.8“), in the position shown in the picture to route the modified wire harness.





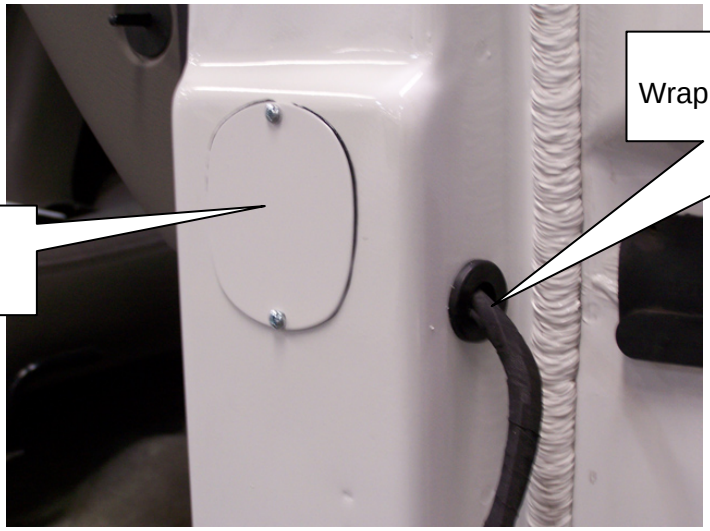
7.) To extend the wire harness on the chassis, please proceed as follows:
(Also see instructions named “wire harness extension“).

- First isolate a single wire.
- Extend wire on chassis.
- The extended wire needs to be pulled through the new wire harness lead-through hole and connected with the applicable wire on the appropriate end.

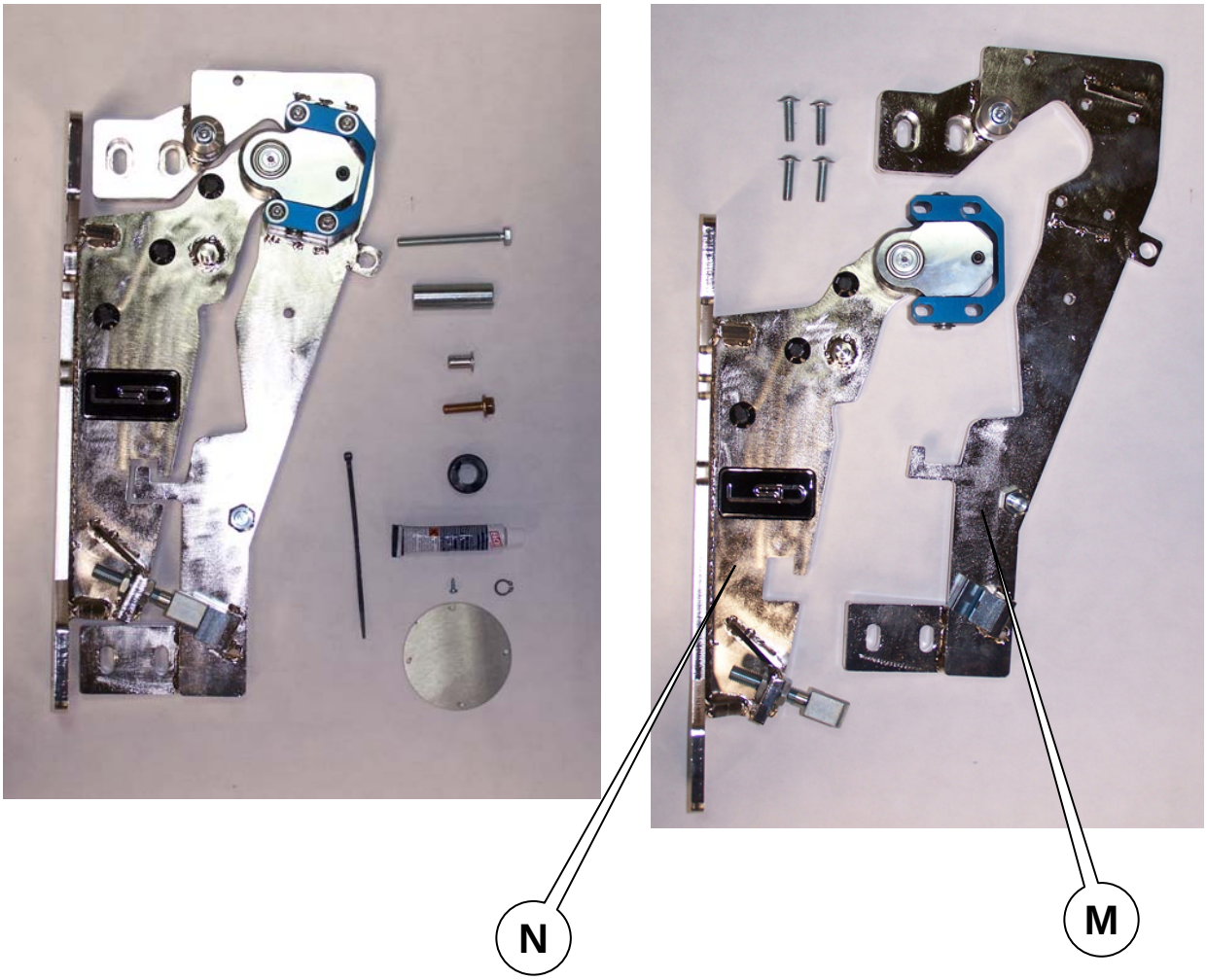
Repeat this procedure for every wire thereafter.

8.) After extending the wire harness, (this will be a good time to make sure all electrical connections are working), please route it as shown in the picture and fully wrap it with the supplied insulation tape.

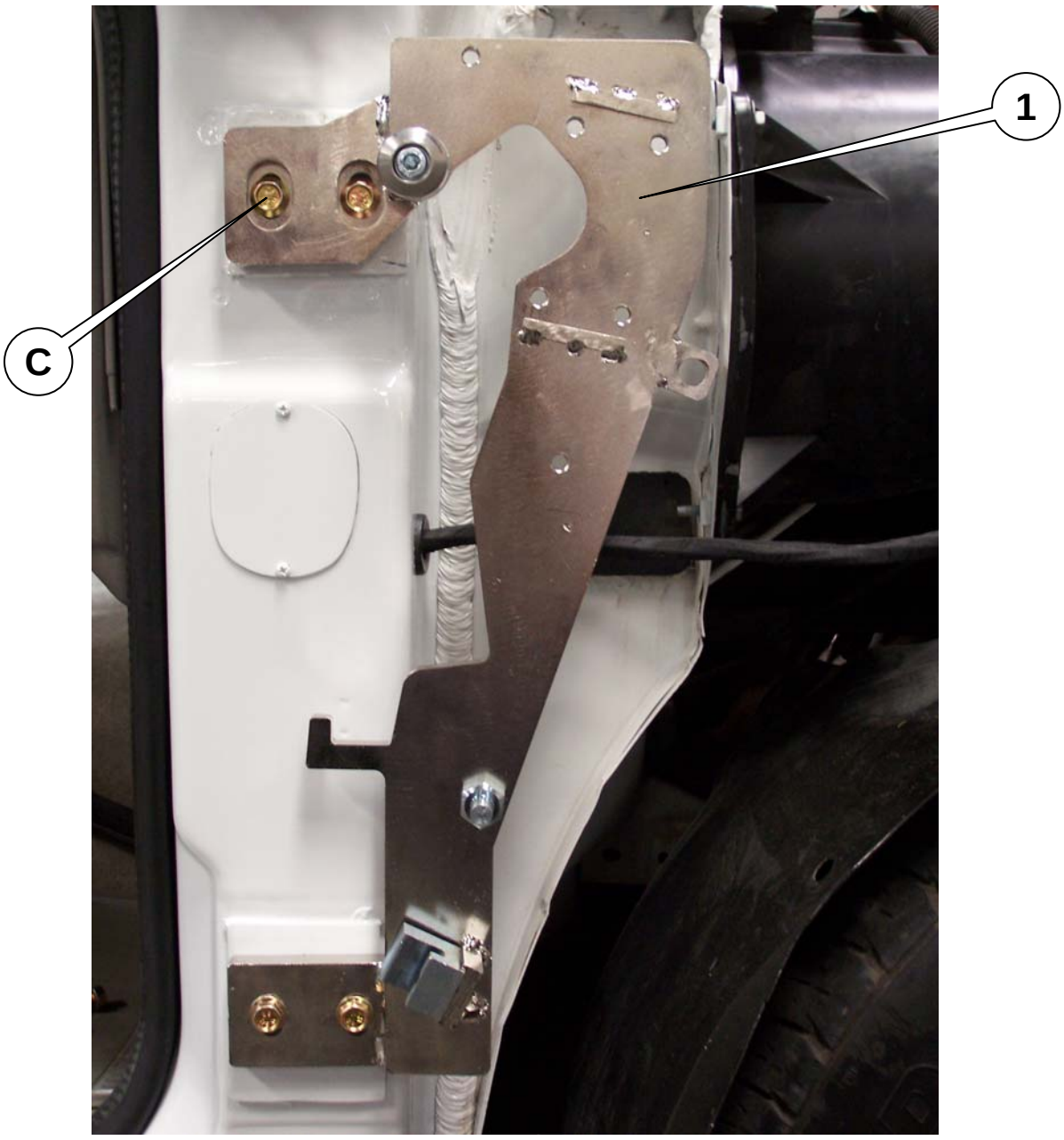
Note: Place all wires together and wrap them tight as possible, (please use the photo as a reference). Now the original wire harness lead through the newly created hole and the original hole can be covered with the supplied wire cover plate, (via the self tapping screws), and sealed with the chassis glue.



9.) Disassemble the swing arm, **(M)** off the chassis plate, **(N)** by loosening the 4 supplied Allen bolts.
Your LSD assembly may look different to the one shown below



10.) Mount Ground plate to chassis. Center all 4 bolt locations for maximum adjustment. **(1, C)**

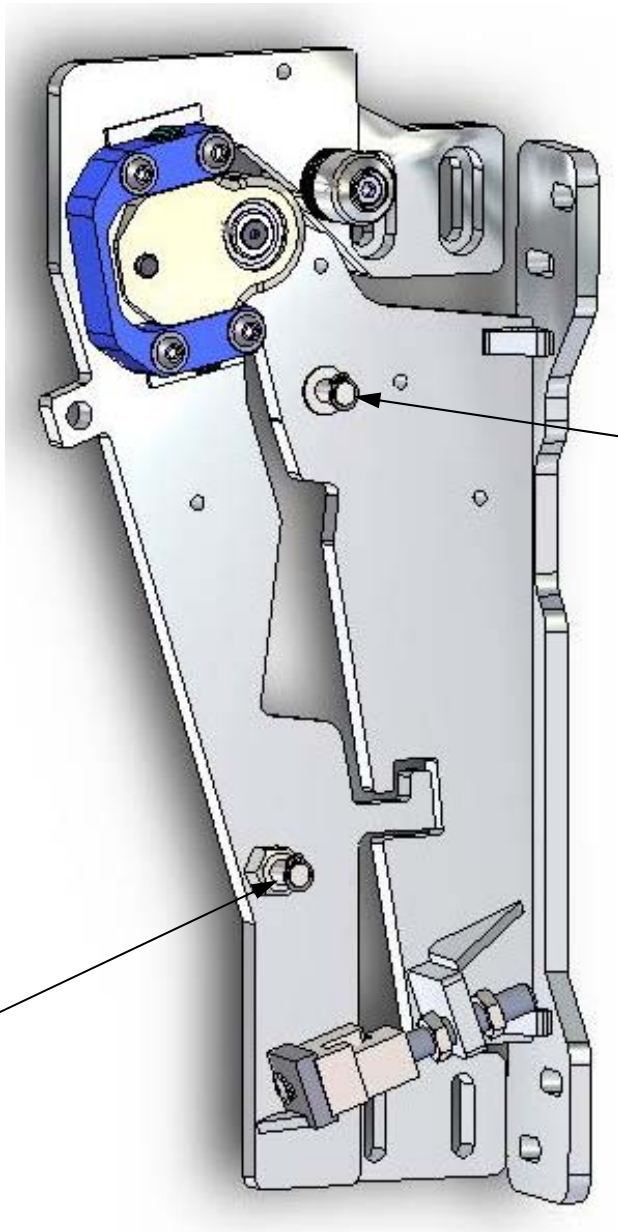


11.) Mount Swing arm to door. Center all 4 bolt locations for maximum adjustment. **(2,C)**

MOUNTING THE GAS DAMPER (after correct gap distance has been established)

IMPORTANT NOTE:

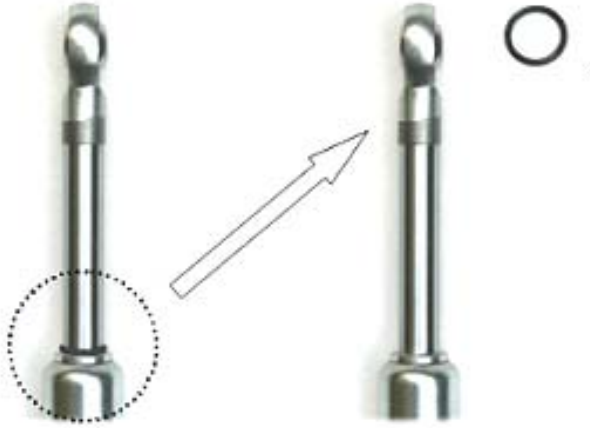
- **PRIOR TO MOUNTING THE GAS DAMPER AT ITS RESPECTIVE MOUNTING POINTS, WE HIGHLY RECOMMEND USING AN ANTI-RUST LUBRICANT, WIPING DOWN THE MOUNT POINTS TO PREVENT RUSTING.**
- **KEEPING THE MOUTNING POINTS LUBRICATED, ENHANCES THE LONGEVITY OF THE LSD DOOR SYSTEM TO WORKING PROPERLY**

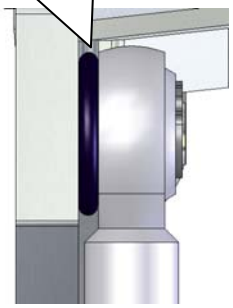


12.) Hang in the gas damper **(M** on the fitting point of the swing arm. Secure it with the supplied security ring, by means of needle-nosed pliers.

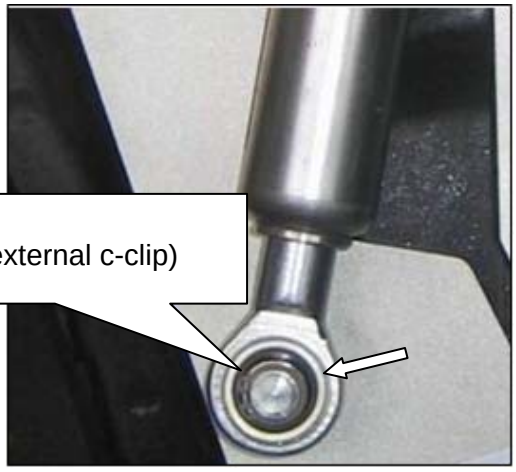
Use the security ring carefully.

13.) The rubber (o-ring), located on top of gas spring, has to be moved between the LSD chassis plate and top ball joint of the gas spring.





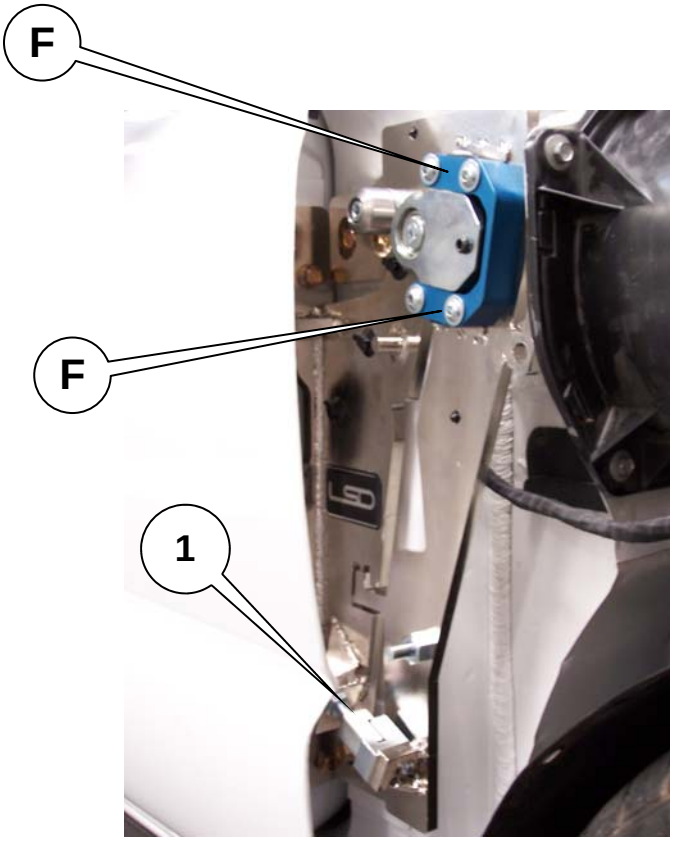
The gas damper marking must be visible



14.) Carefully pivot the door up and hang in the gas damper **(M)** at the fitting point of the chassis plate. Secure it also with the supplied security ring.

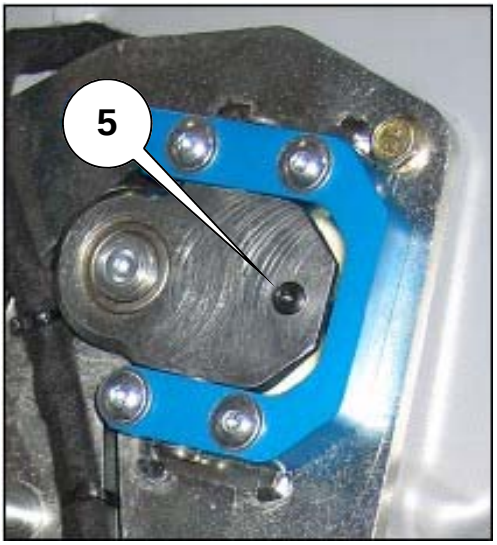
***Danger**: Gas damper has enormous pressure! Please pay attention that the security rings are correctly installed and positioned in the foreseen guiding!*

15.) With some assistance, position door in place on the chassis. Using the four (4) Allen head bolts, center all 4 bolt locations for maximum adjustment. Adjust the door with the combination of the Allen bolts and the lower magic stick. Door must be centered on the latch and seal properly to the chassis frame.



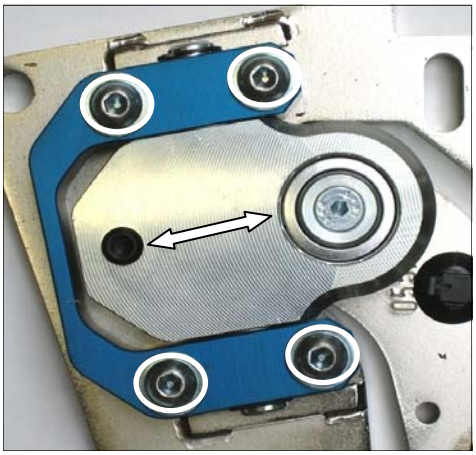
Only if required

Carefully reopen the door and adjust the horizontal opening angle with the limiting adjustment screw **(5)**. Consider the fender distance. Then lock adjustment screw **(5)** again.



Place the door back on the car and close the door completely.

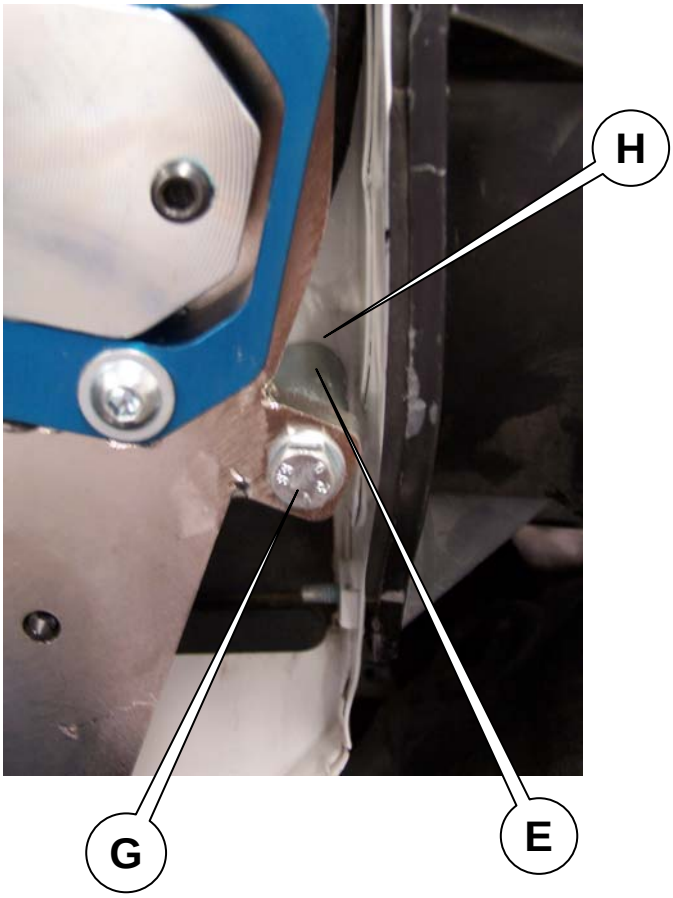
TIP/ADVISE: Use the screw (1) as a point to guide the front of door in the correct position



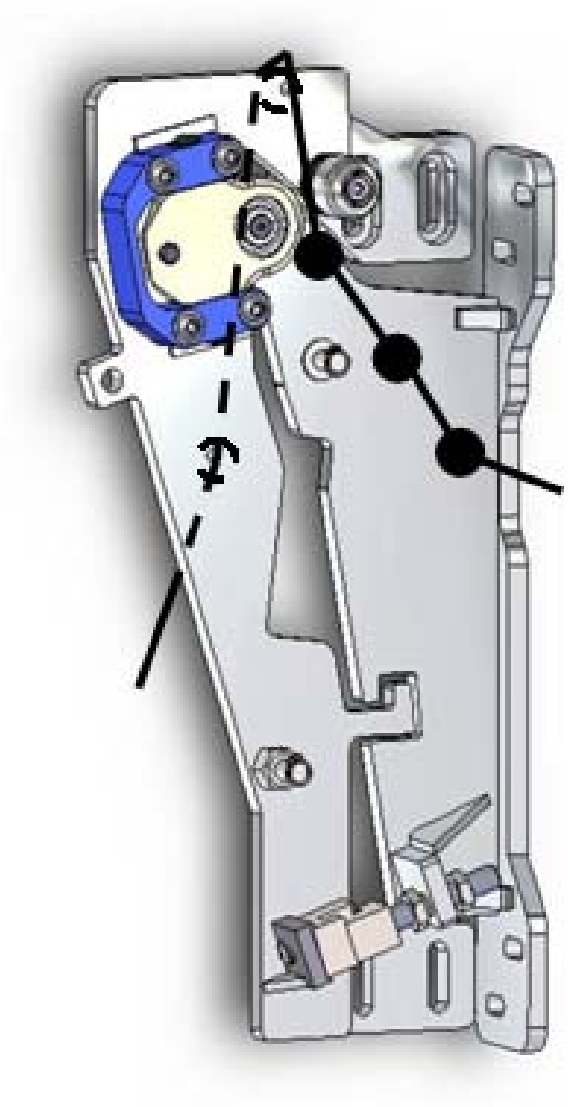
16.) After attaching the swing arm to the chassis plate with the 4 included Allen bolts and adjust the door via moving the swing arm to chassis plate adjustable connection mount with horizontal door gap adjuster, magic stick, **(1)** in the left or right direction until gap measurement is like original.

On completion: torque the 4 Allen bolts 20 ft-lb (27Nm)

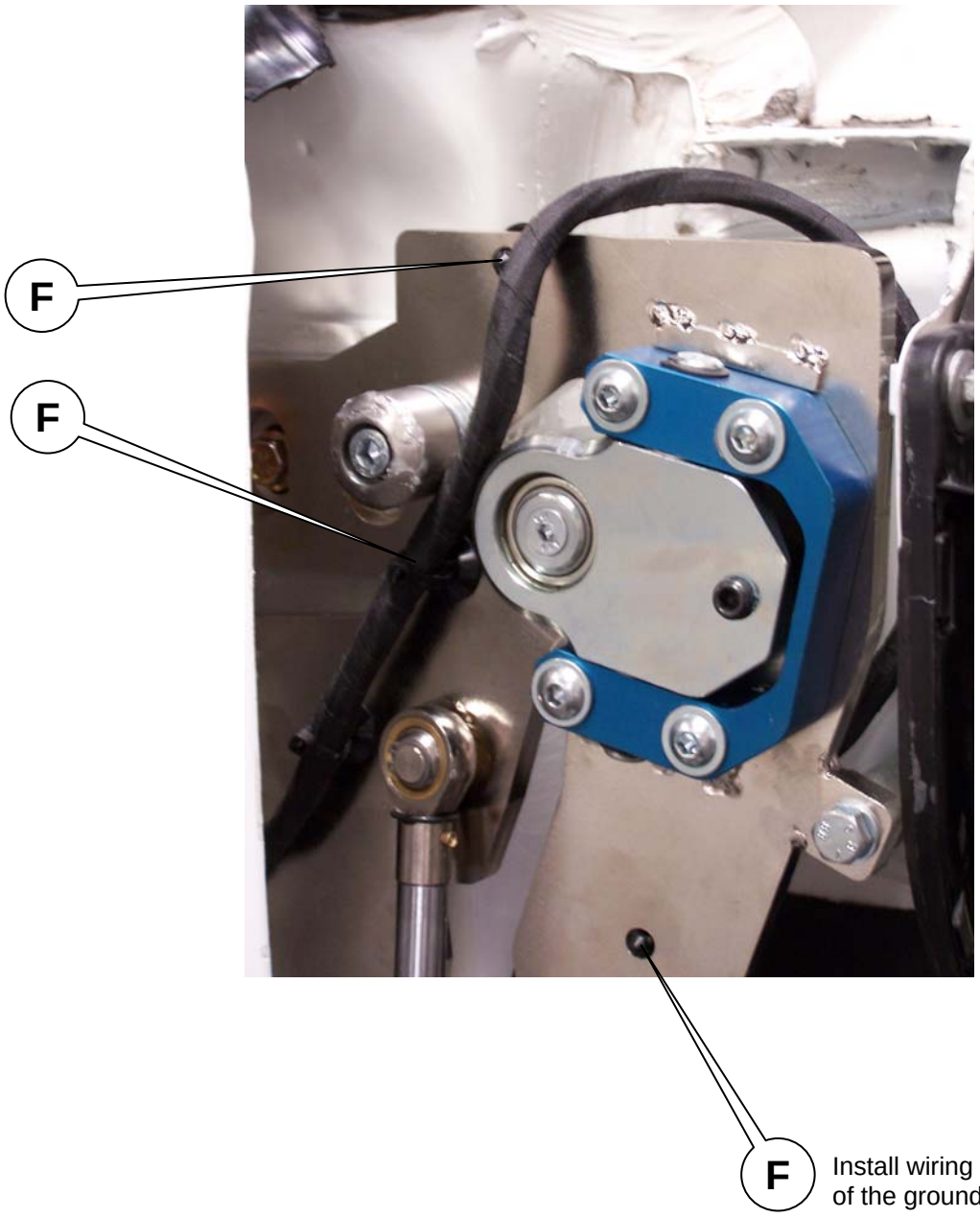
17.) Using the forward Ground plate mount, match drill into fender chassis using a 3/8” drill. Measure the distance between the rear of the ground plate and the chassis. Cut spacer to measured dimension. Install threaded rivet inset into chassis. Install spacer and bolt.



18.) Install wiring with three (3) tie downs in the front, and two (2) in the rear of the ground plate.



19.) Install wiring as shown. Note, the loop/play, this is for the upward swing of the door.



Install wiring as shown. Wiring is run on the rear of the ground plate

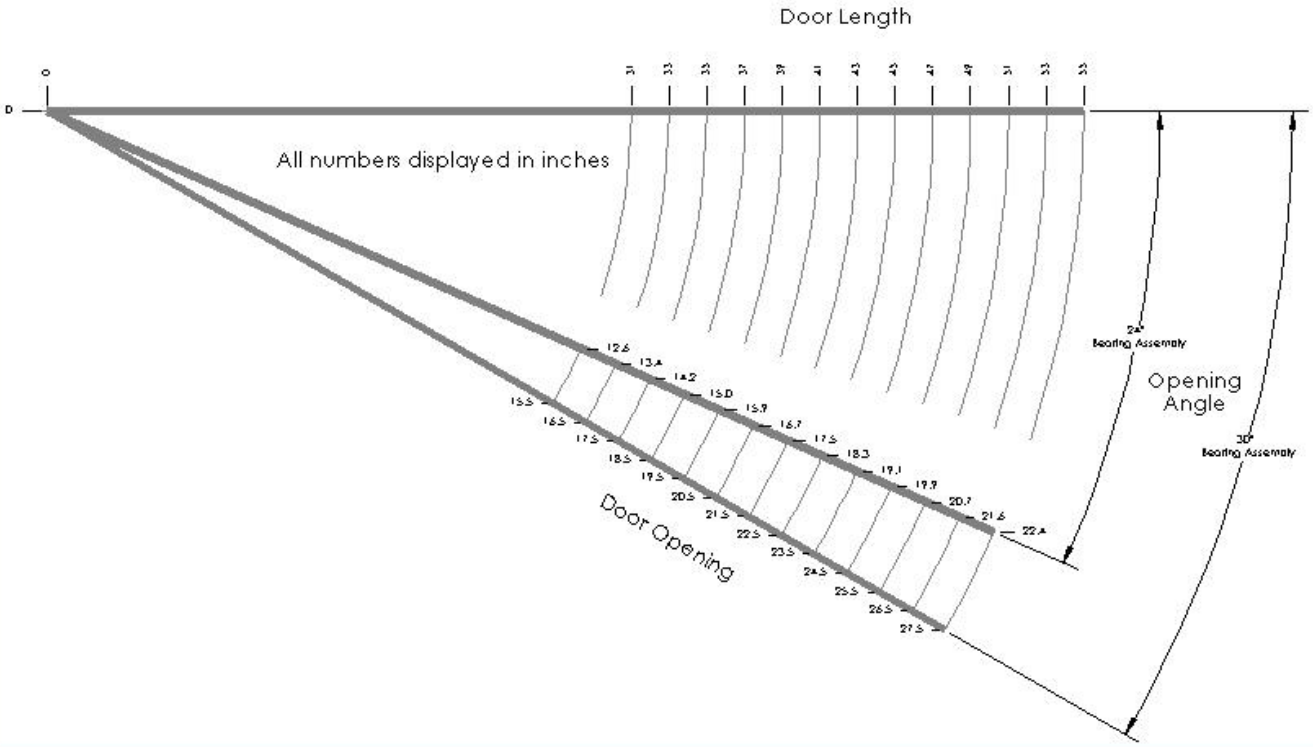
METRIC TO INCH CONVERSION TABLE

mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
0.01	4E-04	0.41	0.016	0.81	0.032	21	0.827	61	2.402
0.02	8E-04	0.42	0.017	0.82	0.032	22	0.866	62	2.441
0.01	0.001	0.43	0.017	0.83	0.033	23	0.906	63	2.48
,04	0.002	0.44	0.017	0.84	0.033	24	0.945	64	2.52
0.05	0.002	0.45	0.018	0.85	0.033	25	0.984	65	2.559
,06	0.002	0.46	0.018	0.86	0.034	26	1.024	66	2.598
0.07	0.003	0.47	0.019	0.87	0.034	27	1.063	67	2.638
,08	0.003	0.48	0.019	0.88	0.035	28	1.102	68	2.677
,09	0.004	0.49	0.019	0.89	0.035	29	1.142	69	2.717
0.1	0.004	0.5	0.02	0.9	0.035	30	1.181	70	2.756
0.11	0.004	0.51	0.02	0.91	0.036	31	1.22	71	2.795
0.12	0.005	0.52	0.02	0.92	0.036	32	1.26	72	2.835
0.13	0.005	0.53	0.021	0.93	0.037	33	1.299	73	2.874
0.14	0.006	0.54	0.021	0.94	0.037	34	1.339	74	2.913
0.15	0.006	0.55	0.022	0.95	0.037	35	1.378	75	2.953
0.16	0.006	0.56	0.022	0.96	0.038	36	1.417	76	2.992
0.17	0.007	0.57	0.022	0.97	0.038	37	1.457	77	3.031
0.18	0.007	0.58	0.023	0.98	0.039	38	1.496	78	3.071
0.19	0.007	0.59	0.023	0.99	0.039	39	1.535	79	3.11
0.2	0.008	0.6	0.024	1	0.039	40	1.575	80	3.15
0.21	0.008	0.61	0.024	1	0.039	41	1.614	81	3.189
0.22	0.009	0.62	0.024	2	0.079	42	1.654	82	3.228
0.23	0.009	0.63	0.025	3	0.118	43	1.693	83	3.268
0.24	0.009	0.64	0.025	4	0.157	44	1.732	84	3.307
0.25	0.01	0.65	0.026	5	0.197	45	1.772	85	3.346
0.26	0.01	0.66	0.026	6	0.236	46	1.811	86	3.386
0.27	0.011	0.67	0.026	7	0.276	47	1.85	87	3.425
0.28	0.011	0.68	0.027	8	0.315	48	1.89	88	3.465
0.29	0.011	0.69	0.027	9	0.354	49	1.929	89	3.504
0.3	0.012	0.7	0.028	10	0.394	50	1.969	90	3.543
0.31	0.012	0.71	0.028	11	0.433	51	2.008	91	3.583
0.32	0.013	0.72	0.028	12	0.472	52	2.047	92	3.622
0.33	0.013	0.73	0.029	13	0.512	53	2.087	93	3.661
0.34	0.013	0.74	0.029	14	0.551	54	2.126	94	3.701
0.35	0.014	0.75	0.03	15	0.591	55	2.165	95	3.74
0.36	0.014	0.76	0.03	16	0.63	56	2.205	96	3.78
0.37	0.015	0.77	0.03	17	0.669	57	2.244	97	3.819
0.38	0.015	0.78	0.031	18	0.709	58	2.283	98	3.858
0.39	0.015	0.79	0.031	19	0.748	59	2.323	99	3.898
0.4	0.016	0.8	0.032	20	0.787	60	2.362	100	3.937

LSD Door opening chart for 24 and 30 degree bearing assemblies.

NOTE: Depending on how the angle adjustment screw is set on the bearing assembly dimensions can vary up to 2 inches.

To convert from millimeters to inches divide mm by 25.4 and inches to millimeters multiply by 25.4

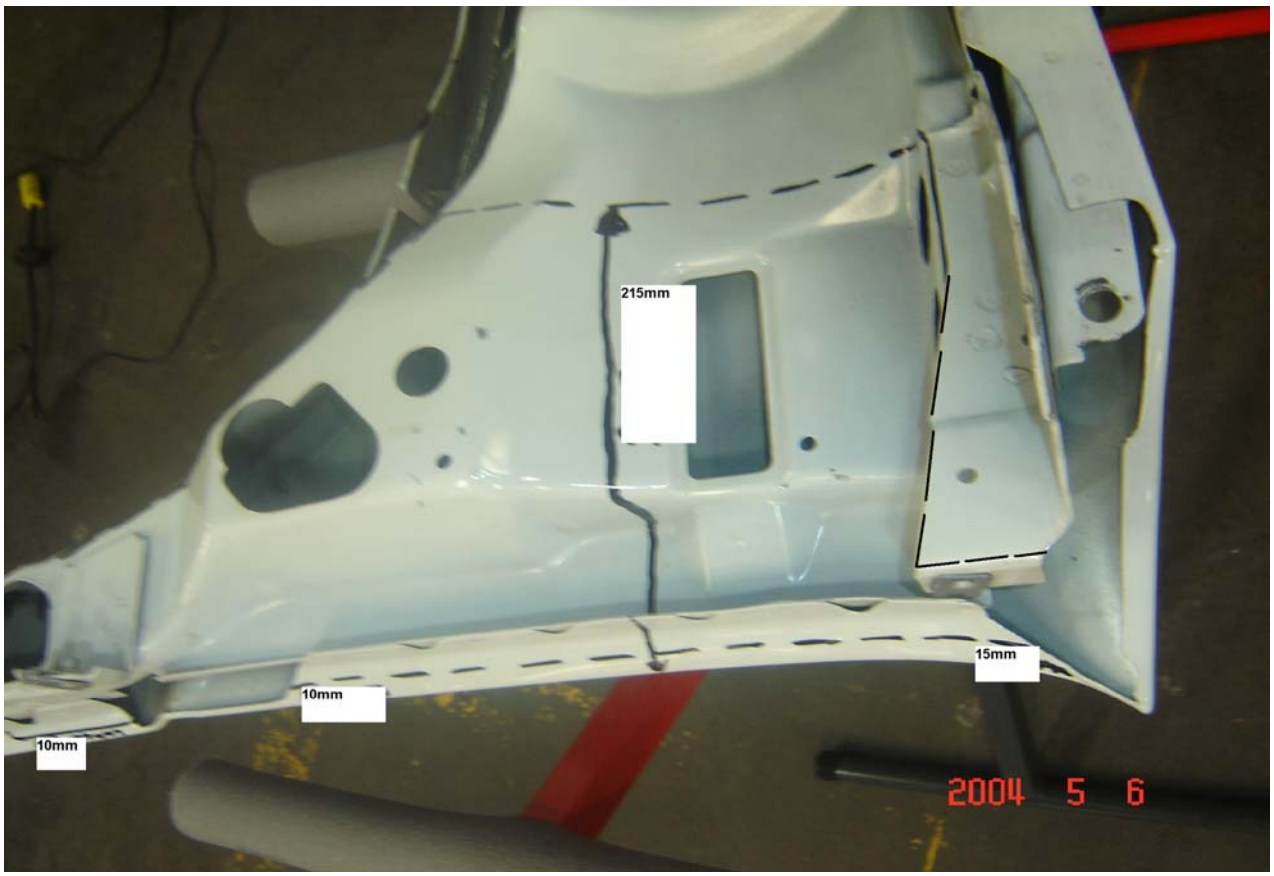


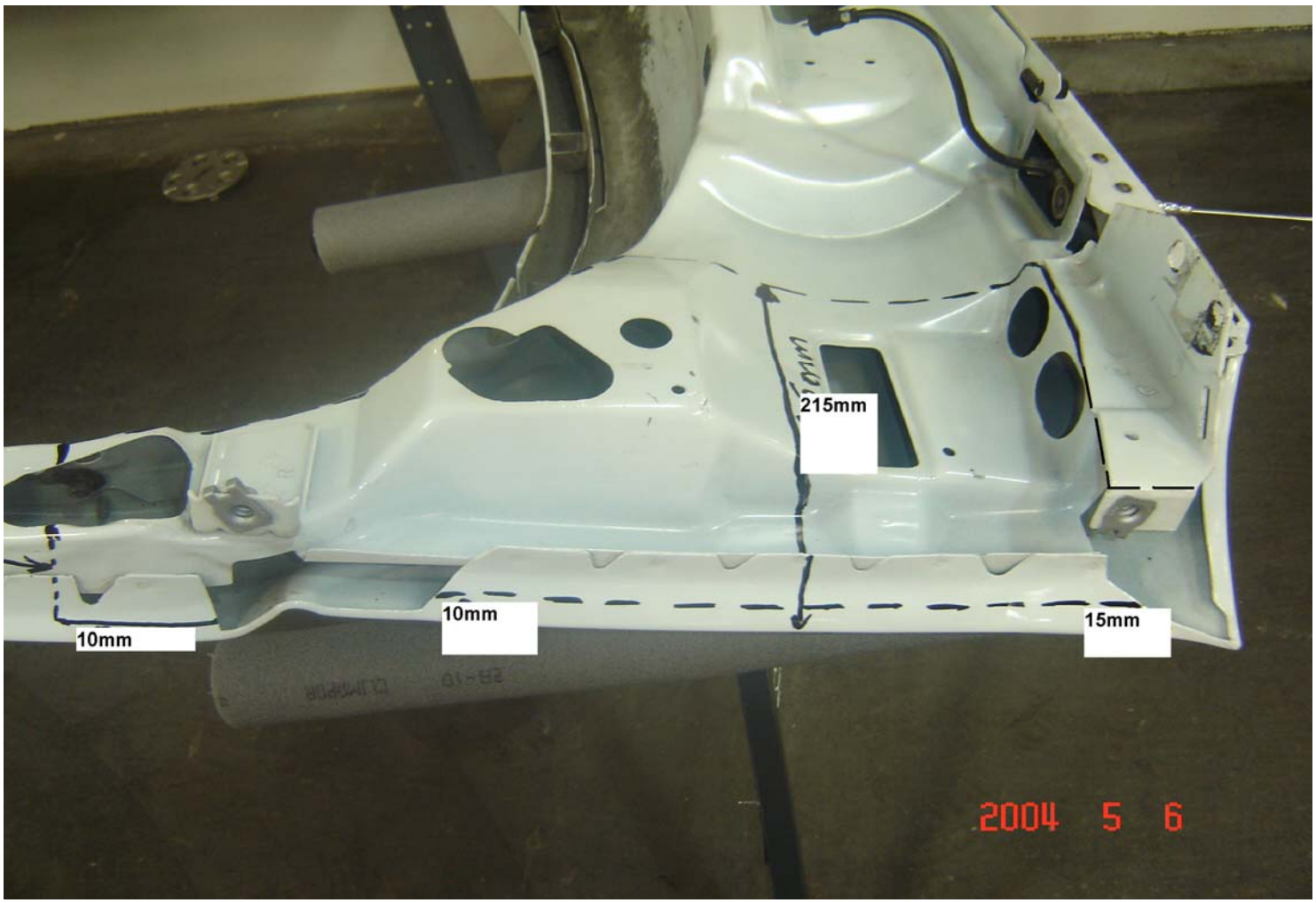
Modifying the fender, Chevrolet S10

Steps below are to be used as a reference. Please repeat for both fenders.

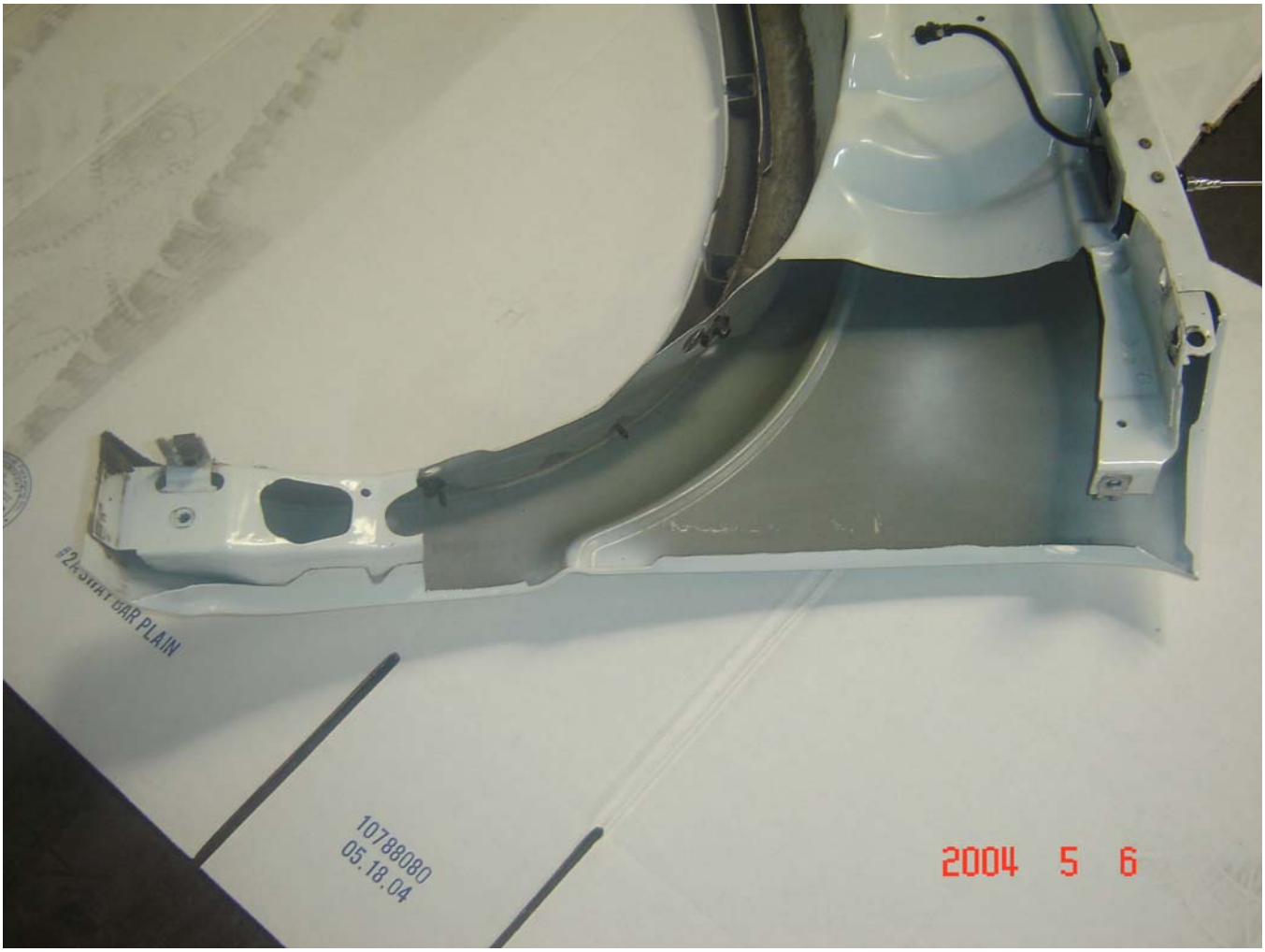
Recommended tool:

1.) Cut fender out to dimensions shown in the next few pictures:


215mm
15mm
10mm
10mm
2004 5 6


215mm
10mm
10mm
15mm
2004 5 6

2.) Fender shown is cut and the interior should be painted prior to reassembly.

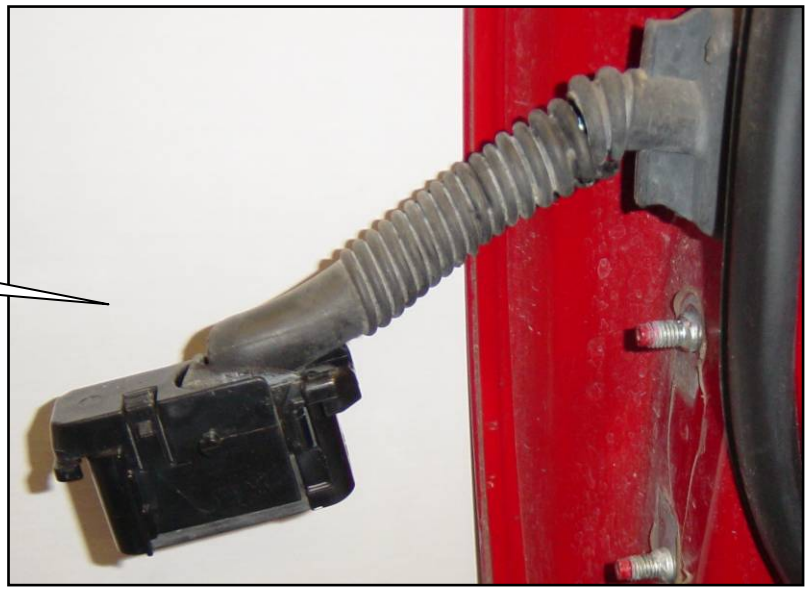


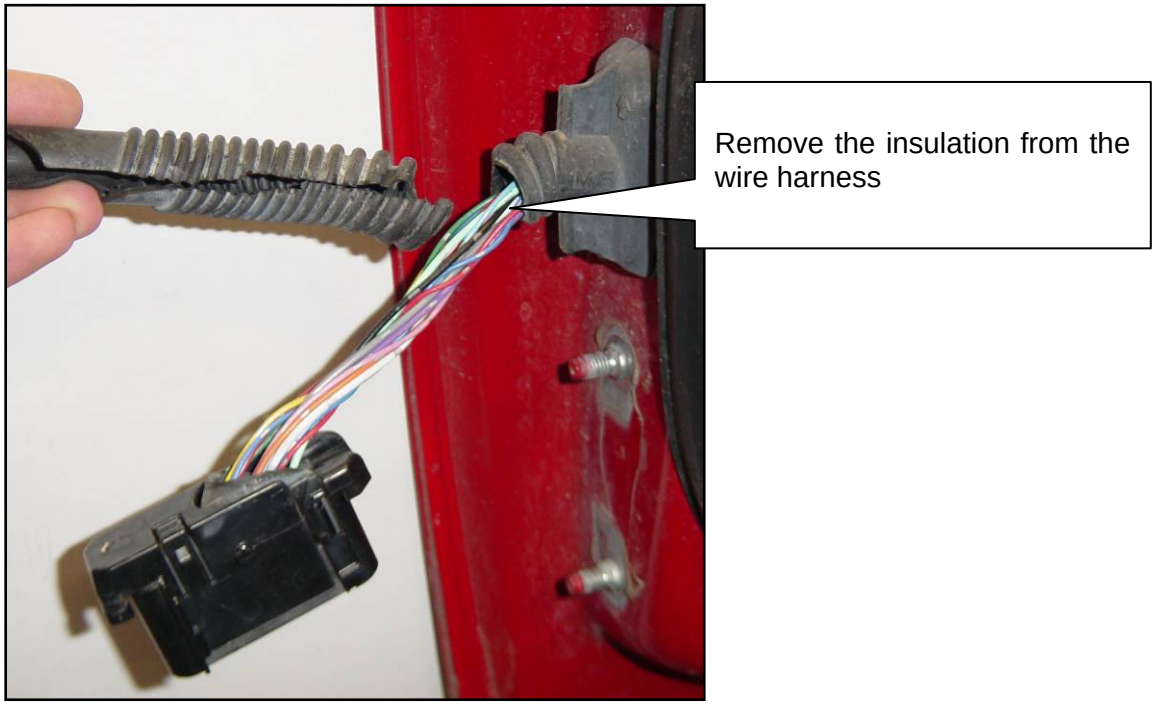
Extending the wire harness

(The instruction are to be used as a reference. Please repeat for both doors)

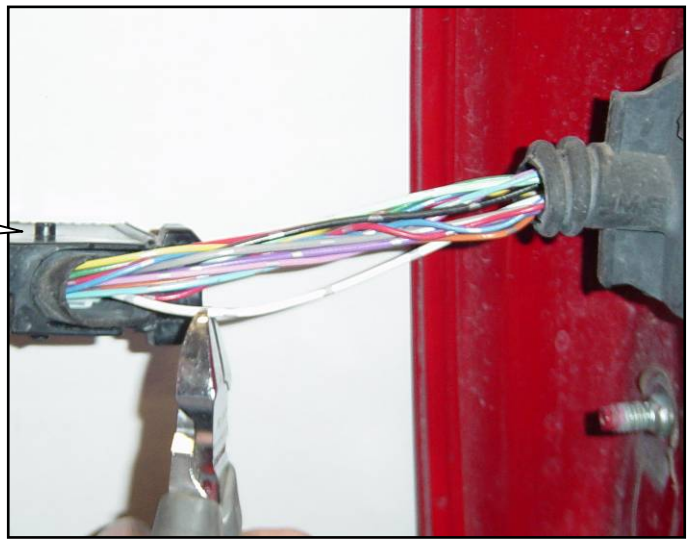
Example: Nissan 350Z
YOUR VEHICLE MAY LOOK DIFFERENT

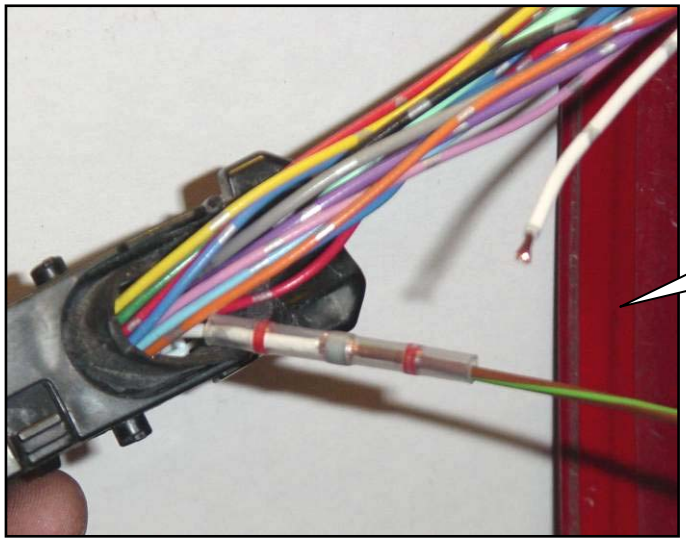
If your wiring does not have a connector between the door and the chassis, you may be required to remove the entire wire harness from the door prior to removing door, or prior to lengthening the harness.





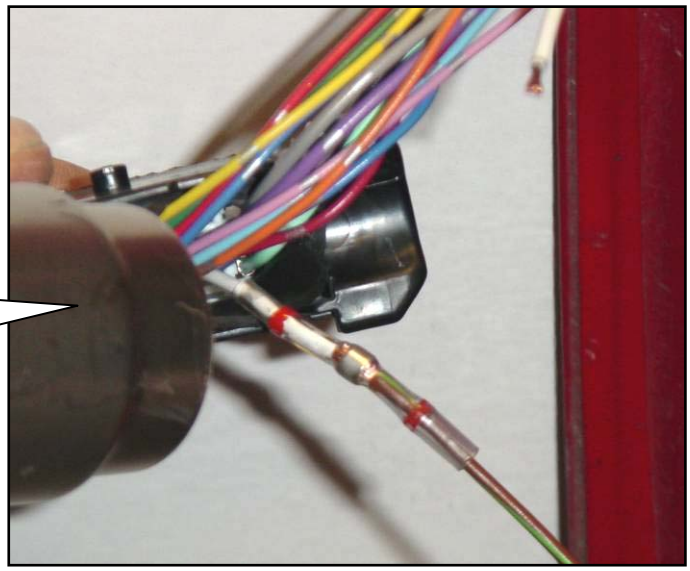
To avoid confusion please cut and insulate each wire off the wire harness separately.

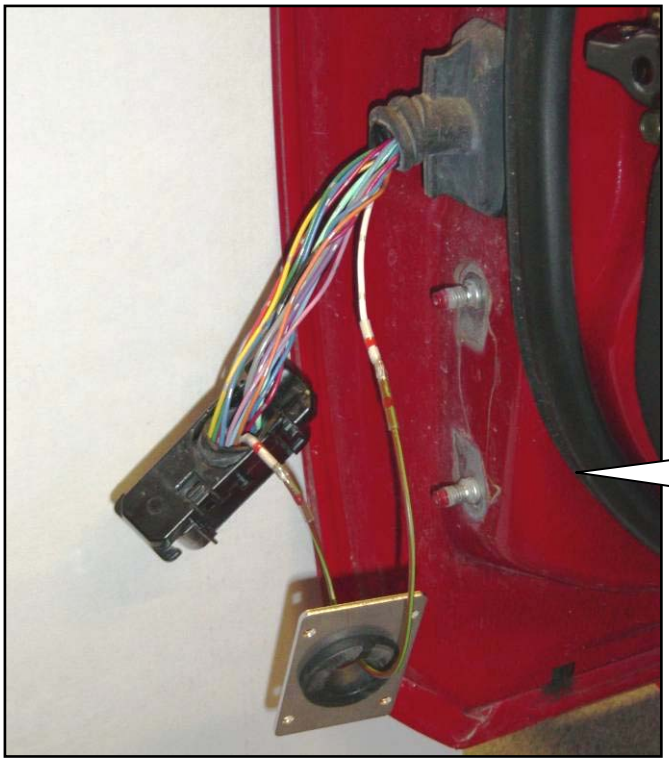




Now extend every wire with the supplied wire kit & shrinkable solder connectors.

Heat up the shrinkable solder connectors from outside to inside with a heat gun.

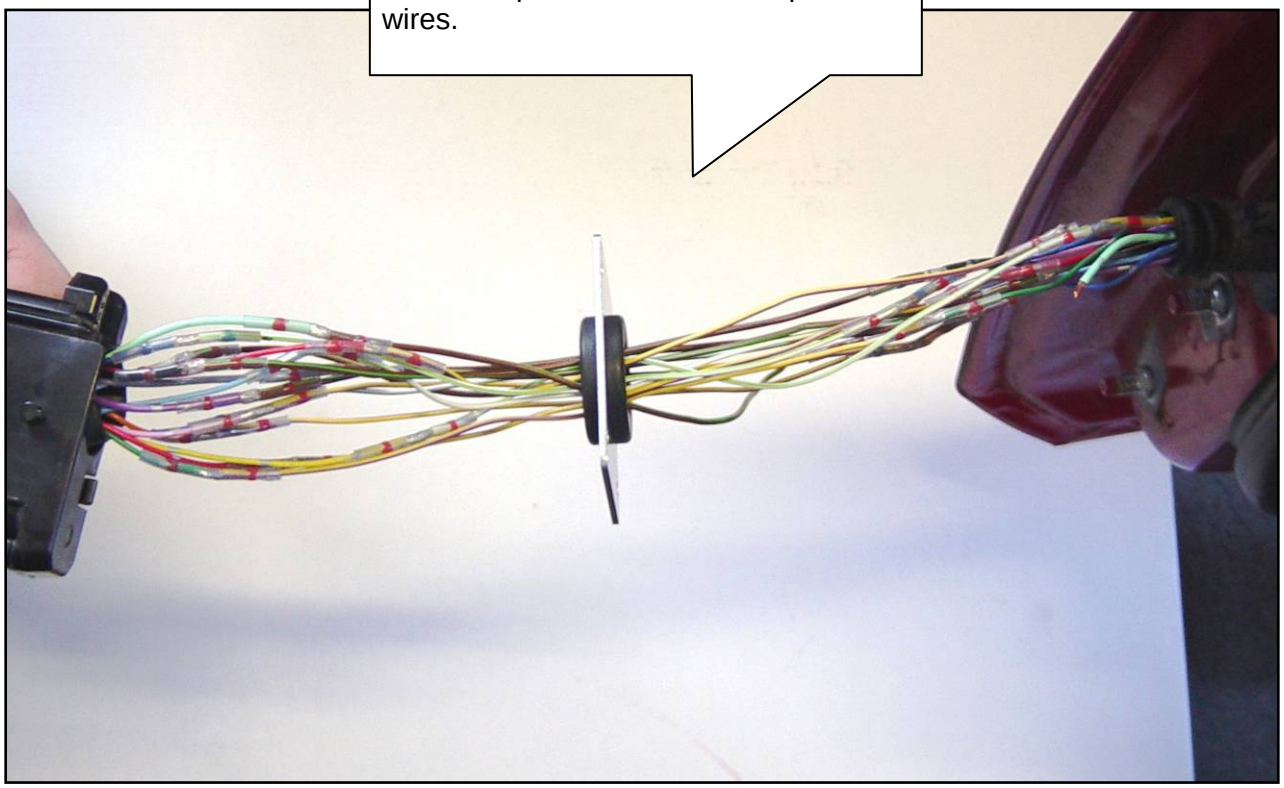


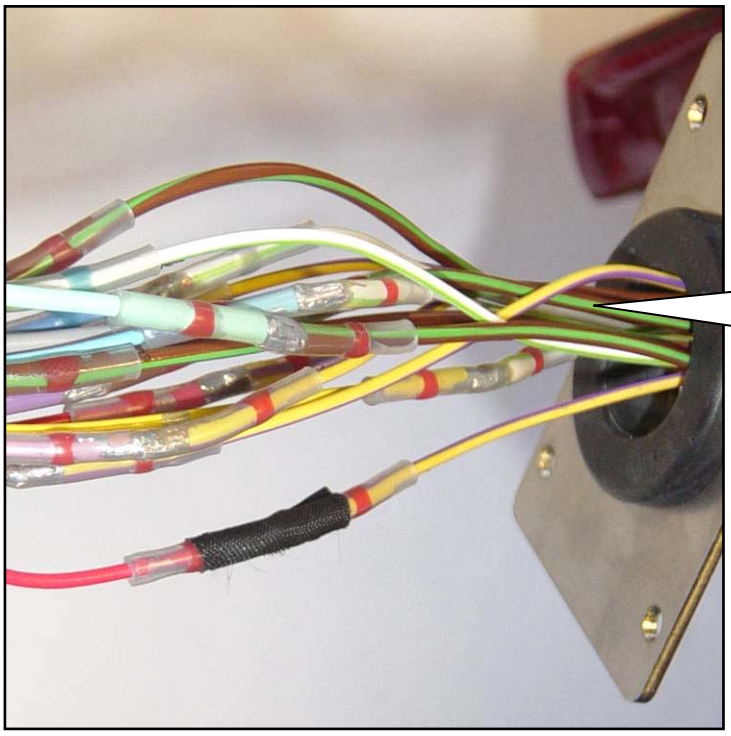


REFERENCE: Cover plates are not needed for every vehicle!

Now lead the wires through the cover plate and join the ends with the shrinkable connectors.

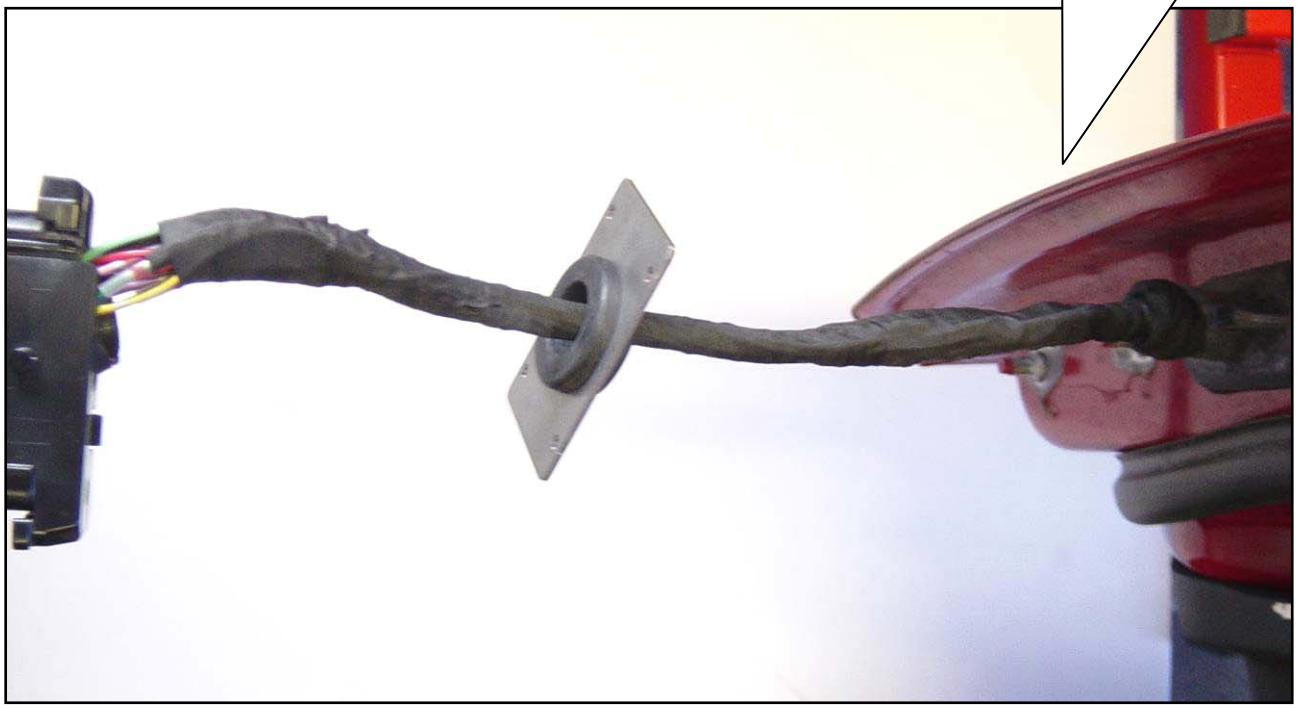
Please repeat the earlier steps to all wires.





The shrinkable connectors can now be wrapped with the supplied waterproof insulation tape.

Finally wrap the extended wire harness completely with the supplied waterproof insulation tape.



REFER BACK TO FINAL PORTION OF THE INSTALLATION FOR WIRE ROUTING

COMMON TROUBLESHOOTING QUESTIONS and ANSWERS

Q1: WHY DOES THE BOTTOM OF THE DOOR NOT SIT FLUSH, AT THE FRONT OR REAR?:

A1: LSD door hinges are engineered and designed to compensate for this issue. They are designed to be installed in the center location of all mounting slots. Some vehicles are different however; adjusting the location of the swing arm mounts on the door will fix this problem. Mounting the swing arm towards the interior of the door, top or bottom will move the door out; mounting the swing arm towards the exterior of the door will move the door in. In some cases, the mounting will be slightly different between top and bottom mounts.

Q2: WHY DO THE DOORS "SPRING" A-JAR WHEN OPENING THE DOOR?:

A2: LSD door hinges are engineered and designed to compensate for this issue. It is common on vehicles that the left and the right sides are not quite the same. When a door "springs" open there is a misalignment between the swing arm and the ground plate. This can be remedied by increasing the distance of the "third" point on the ground plate. The "third" point is usually located towards the front of the vehicle. Increasing the distance and angle of the ground plate to the vehicle will release any pressure and/or contact between the swing arm and the ground plate.

Q3: WHY DOES THE DOOR HITS/RUBS AGAINST THE FENDER WHEN OPENING?:

A3: LSD door hinges are engineered and designed to compensate for this issue. Attaching the LSD hinge in the center location of the slots and adjusting the magic stick such that the tuff lock is centered is the optimum desired installation. Making minor adjustments to the "MARA"/"C" profile, the "third" point, and/or the "Magic stick" should alleviate this problem.

Q4: WHY IS THE WIRING HARNESS TOO LARGE FOR THE ROUTE SHOWN IN THE INSTRUCTIONS?:

A4: LSD door hinges are engineered and designed to compensate for this issue. LSD wiring kits are designed for the MAXIMUM wires installed on vehicles. If additional wires are added or modified that are larger than original, wiring routing might have to be modified. Vehicle owners are responsible for this modified routing.

Q5: WHY DOESN'T THE GAS SPRING HOLD THE DOOR UP?:

A5: LSD door hinges are engineered and designed to compensate for original door weight, i.e. speakers and electronics. **NOTE:** As temperature fluctuates, the gas pressure in each shock increases or decreases. Example; in the heat, the gas pressure will expand, in the cold; it has a tendency to contract. Any modifications to the speakers or electronics may require a larger gas spring. Vehicle owners are required to purchase these larger gas springs from their local dealer. If you have not modified your door, your gas spring may be faulty. Vehicle owners are required to contact their local dealer for replacement(s).

Installation Notes:

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