



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.



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DEPARTMENT OF AUTOMOBILE ENGINEERING

COURSE NAME : 16AU0302 - RECENT TRENDS IN AUTOMOBILES

III YEAR / VI SEMESTER

Unit 4 – Comfort Systems

Topic : Power Windows



NEED FOR POWER WINDOWS





INTRODUCTION TO POWER WINDOWS

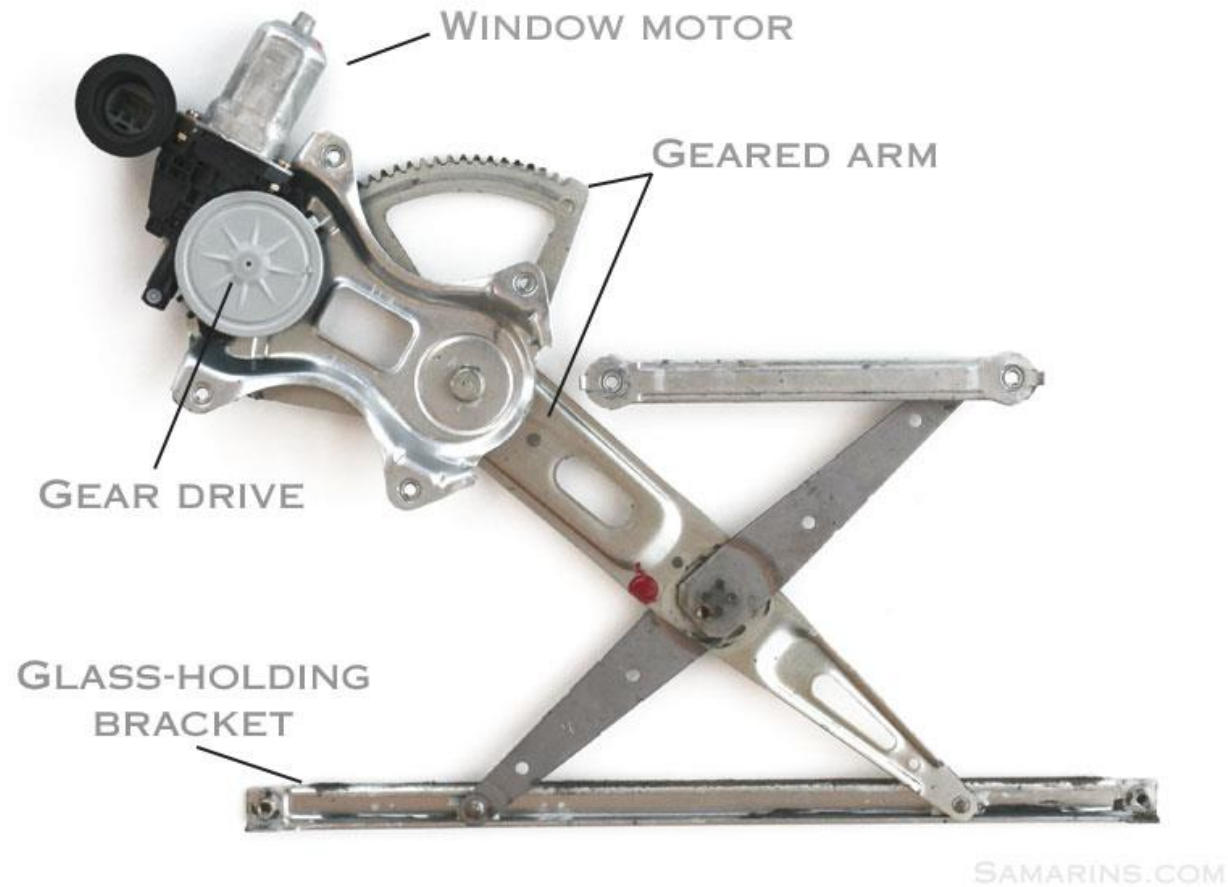


- Power windows or electric windows are automobile windows which can be raised and lowered by pressing a button or switch, as opposed to using a crank handle.
- Power windows were first introduced by Ford Motors in 1941.





ELEMENTS OF POWER WINDOWS





WORKING



- Power windows are controlled by switches and wires and are powered by battery or electricity.
- Power windows do not function if the ignition of the car is not turned on.
- Unlike the traditional windows, power windows do not have manual handles.
- They do not work manually.
- The basic power windows generally have control of all the four windows and can be controlled by the driver.



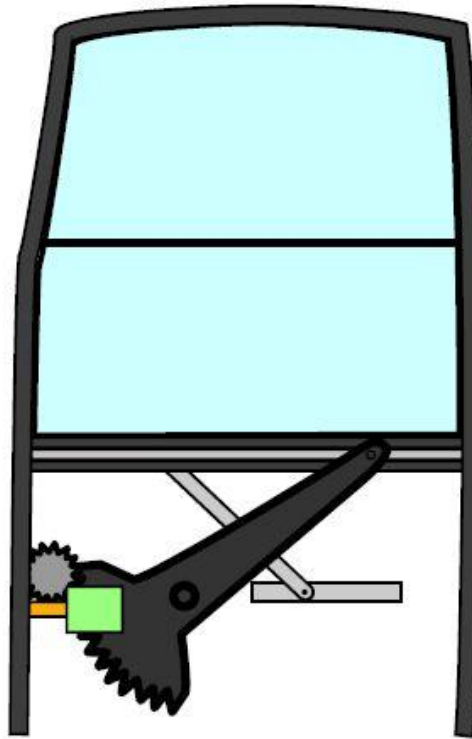
WORKING



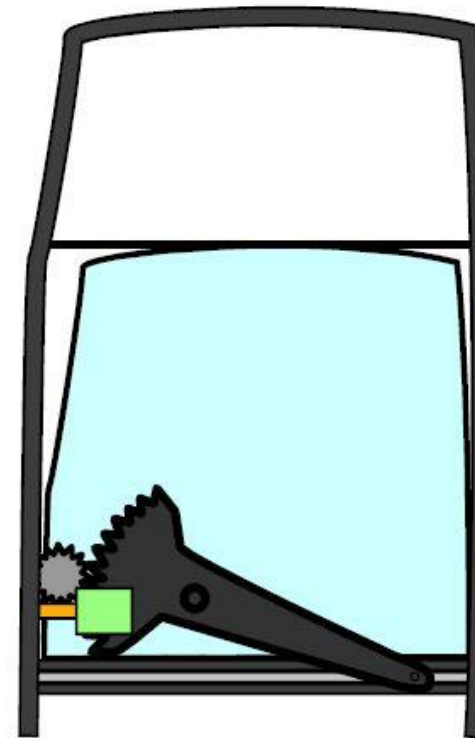
- The door on the driver's side is powered by an optimized 20-amp circuit breaker.
- The power from the circuit-breaker is transmitted to a contact point in the centre, where the wirings of all the four windows meet, through the window switch control panel.
- Then the two ends of the power contact is connected to the battery or electric motor and the vehicle ground.
- When a switch is pressed, one of the two ends gets disconnected from the vehicle ground and gets connected to the power point at the centre. This distributes the power to the rest of the windows.



Window closed



Window Opened





ADVANTAGES



- It allows the driver to control the windows with just the touch of his fingers.
- It allows people with hand injuries or other physical complications to easily operate the windows.
- Drivers can easily control the windows even while driving.
- The master power panel in the front also allows the driver to operate all the windows simultaneously, without leaving his seat.



Advantages of power windows and electronically adjustable mirrors



Convenience: Power windows and electronically adjustable mirrors offer unparalleled convenience for drivers and passengers. With the simple push of a button, power windows effortlessly open and close, eliminating the need for manual cranking.

Similarly, electronically adjustable mirrors allow drivers to optimize their viewing angles without the need to physically manipulate the mirror's position, enhancing overall ease of use.



Advantages of power windows and electronically adjustable mirrors



Efficiency: Compared to manual counterparts, power windows and electronically adjustable mirrors operate with greater speed and precision. This efficiency is especially advantageous during inclement weather conditions, where swift adjustments to windows and mirrors are crucial for maintaining visibility and safety on the road. Additionally, one-touch operation features found in many power window systems enable rapid opening or closing, saving time and effort for drivers and passengers alike.





Advantages of power windows and electronically adjustable mirrors



Safety: Power windows and electronically adjustable mirrors contribute to enhanced safety on the road by minimizing driver distractions. With intuitive controls and automated functionality, these technologies allow drivers to focus more attention on the task of driving, reducing the risk of accidents caused by manual adjustments. Electronically adjustable mirrors, in particular, help to eliminate blind spots and improve overall visibility, thereby promoting safer lane changes, parking maneuvers, and navigation through traffic.



Advantages of power windows and electronically adjustable mirrors



Accessibility: The accessibility features of power windows and electronically adjustable mirrors benefit drivers of all ages and physical abilities. Elderly individuals or those with mobility impairments find it easier to operate vehicles equipped with these technologies, as they eliminate the need for strenuous manual effort. Additionally, features such as memory settings in electronically adjustable mirrors allow multiple drivers to customize their preferred configurations, catering to individual comfort and convenience preferences.



Advantages of power windows and electronically adjustable mirrors



Versatility: Power windows and electronically adjustable mirrors offer greater versatility compared to their manual counterparts. For example, power windows often come with additional safety features such as child lock controls, preventing accidental operation by young passengers and enhancing overall child safety in vehicles. Similarly, electronically adjustable mirrors may include heating elements to prevent fogging or icing, ensuring clear visibility in adverse weather conditions, thereby enhancing overall driving comfort and safety.



REFERENCE



- <https://www.youtube.com/watch?v=PbUHP00pkWM&t=204s>



THANK YOU !!!