

Unit 2 Body Repair tools and shop equipments

Introduction - There are certain tools which the auto body technician uses daily. Such basic hand tools are generally stored and carried in a portable tool box. Most types of sheet metal damage will require the use of such basic tools are hammers, dolly blocks, body spoons, pick tools, pry bars and files. These tools come in many sizes and shapes, each serving a special purpose.

There are two types of body repairing done on the automobiles.

- 1 Major Body Repairs and,
- 2 Minor Body Repairs.

As per these types tools are also separated as per the type of the repairing.

Tools used for minor body repairing are as under:

- 1 Hammers
- 2 Dolly Blocks
- 3 Spoons
- 4 Pick Tools
- 5 Power Tools
- 6 Mechanical Wrenches
- 7 Files






Tools used for major body repairing are as under:



- 1 Measuring Instruments
- 2 Welder
- 3 Body & Frame Repair Tools
- 4 Body Pullers
- 5 Cutting Tools
- 6 Door Repair Stand
- 7 Heat Generators


Here is the classification of different types tools which are used in vehicle body repairing process.

| Name Of Tools | Types Of Tools | | | | | |
|---------------------|----------------------------|------------|------------------|-----------------------|----------------------|-----------|
| Hammers | Heavy Duty Roughing Hammer | Mallet | Finishing Hammer | Bumping Hammer | Magnetic Trim Hammer | Pick |
| Dolly Blocks | Heavy Duty Roughing | High Crown | Shrinking | All Purpose Heel Type | Low Crown | Rail Type |

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| Spoons | Heavy Duty Driving Spoon | Double end Heavy Duty Driving And Fender Beading Tool | High Crown Surfacing Spoon | Low Crown Surfacing Spoon | Quarter Panel Spoon | Edging Tool |
| Pick Tools | Chisel Bit Pick | Curved Finishing Punch | Short Curved Pick | Piercing Punch | Deep Throated Pick | Long Curved Pick |
| Power Tools | Air Compressors | Grinders | Sanders | Riveters | Hydraulic Jacks | Drills |
| Mechanical Wrenches | Spanners | Ring Spanners | Box Spanners | Pliers | Elankeys | Screw Drivers |
| Files | Long Blocking File | Short Blocking File | Special Contour File | - | - | - |
| Miscellaneous Tools | Polishers | Heming Tool | Clamping Tool | Suction Cups | - | - |
| Measuring Instruments | Wheel Base Gauge | Tram Tracking Gauge | Centering Gauge | Spindle Sheel Gauge | - | - |
| Body & Frame Repair Tools | Intermediate Type | Floor Type | Platform Type | Bench Type | - | - |
| Welder | Spot Welder | Gas Welder | Arc Welder | - | - | - |

| Sr. No | Name Of Tool | Type Of Tool | Function Of Tool |
|---|----------------------------|---|------------------|
| 1. | HAMMERS | | |
|  | Heavy Duty Roughing Hammer | It is used when great amount of force is required. | |
|  | Mallet | Mallet is used in situations where the technician does not wish to mar or otherwise damage metal surfaces. | |
|  | Finishing Hammer | The finishing hammer is used to follow up on the metal bumping or in other situations where only a light force is required to complete the operation. | |
|  | Bumping Hammer | The purpose of the bumping hammer when used in conjunction with the dolly block is to straighten the sheet metal to roughly its original shape. | |
|  | Magnetic Trim Hammer | The magnetic trim hammer is used for removing and replacing trim and upholstery. | |

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|  | <p>Combination Or Pick Type Hammer</p> | <p>This hammer is used when the two work are needed together. The hammering and the punching.</p> |
| <p>2.</p> | <p>DOLLY BLOCKS</p> | |
|  | <p>Heavy Duty Roughing</p> | <p>The heavy duty roughing block is used as a hammer to rough out shallow dents.</p> |
| | <p>High Crown</p> | <p>The high crown dolly block is designed for use in areas where the metal has a high crowned radius.</p> |
| | <p>Shrinking</p> | <p>The shrinking dolly block is a combination of high and low crown working surfaces and contains a number of contours to permit the shrinking of heated sheet metal.</p> |
| | <p>All Purpose Heel Type</p> | <p>It is used to reshape a crowned panel and at the same time straighten a right angle bend.</p> |
| | <p>Low Crown</p> | <p>It is useful in case of low crowned panels and also useful in the repair of the contoured metal.</p> |
| | <p>Rail Type</p> | <p>It consists, almost all of the needed crowns to repair the different panels.</p> |
| <p>3.</p> | <p>SPOONS</p> | |
| | <p>Heavy Duty Driving Spoon</p> | <p>The heavy duty driving spoon is designed for situations where a driving force is required to reshape damaged panel.</p> |
| | <p>Double end Heavy Duty Driving And Fender Beading Tool</p> | <p>It is used for straightening the reverse beads and flanges on fenders, quarter panels, and hoods.</p> |
| | <p>High Crown Surfacing Spoon</p> | <p>It is used for spring hammering operations.</p> |

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|  <p>Panel Beating Tools</p> | | Low Crown Surfacing Spoon | It is used in essentially on the low crown surfaces. |
| | | Quarter Panel Spoon | It is used to removing dents on quarter panels around the rear pillars and behind the construction; where it is difficult to reach with a dolly block |
| | | Edging Tool | It is used for straightening the outer edges of drip rails, trunk lids, and other areas where the outer panel is crimped around the inner panel. |
| 4. | PICK TOOLS | | |
| | | Chisel Bit Pick | This is used to raise low spots in situations where force is required over a broad area. |
| | | Curved Finishing Punch | It is used in hard-to-reach places where an offset blow is needed to raise small low spots. |
| | | Short Curved Pick | The purpose of this pick is to raise small low spots which are near the outer edge of a panel. |
| | | Piercing Punch | It is used in starting the access hole for other pick tools. |
| | | Deep Throated Pick | It is used for straightening metal on the center section of the outer door panels or in any area which requires penetrating the inner construction to reach the outer panel. |
| | | Long Curved Pick | It offers a grater reaching distance between panels. |
| 5. | POWER TOOLS | | |
| | | Air Compressor | It is used to compress the air and sent it back with high pressure flow to clean the vehicle body. |
| | | Grinder | It is used to smooth the vehicle body surface. |

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| | | Sander | It is used in body finish operations. |
| | | Riveter | It is used in the work of riveting. |
| | | Hydraulic Jack | It is used to pull the vehicle load with the use of fluid pressure without human high effort. |
| | | Drill | It is used to make holes in the vehicle body. |
| 6. | MECHANICAL WRENCHES | | The mechanical wrench set is necessary in order to remove and replace the bolted-on body sections, trim, and hardware. |
| 7. | FILES | | Files are used during the metal finishing operations. Without an assortment of file, the finishing touches could not be made on body repairs. |
| 8. | MISCELLANEOUS TOOLS | | The miscellaneous tools like suction cup are used to remove small dents. |
| 9. | MEASURING INSTRUMENTS | | It is used to measure the size and shapes before and after the body work has been done to correct the measurers. |
| 10. | WELDER | | It is used for welding purpose. |
| 11. | BODY & FRAME REPAIR TOOLS | | The different benches are used for vehicle aligning and for the floor area work. |
| 12. | BODY PULLERS | | It is used to make pull to straighten the panels. |
| 13. | CUTTING TOOLS | | They are used to cut the damaged portions of the vehicles. |
| 14. | DOOR REPAIR STAND | | It is used for door removal and mounting and panel replacement operations. |
| 15. | HEAT GENERATORS | | They are used to generate the heat to dry the cleaned and the straightened area. |