Aftermarket Wheel Installation Guidelines

Disclaimers: It is the installer’s responsibility to correctly install wheels and related accessories. The information contained in this document is believed to be reliable, but many factors can lead to installation concerns. The installer must review all available manufacturer information, test fit each wheel before mounting to ensure clearance with suspension and braking components, and check all load ratings, offsets and clearance before installation. Neither SMSA, WTC or its affiliates are responsible for installation errors or the information contained in this document.

Maximum Load Rating & Maximum Tire Diameter

The load rating of a wheel, as determined by the wheel manufacturer, must never be exceeded. Manufacturers identify a wheel’s maximum load capacity by drilling in the wheel’s heaviest gross axle weight rating (GAWR) by 1. If the axle weight rating for the vehicle is not shown on the identification label located on the driver’s side door jamb, tank, or glove compartment.

Wheel Fit Check

Before mounting tires perform a wheel fit check at each wheel mounting location using the following steps:

1. Clean and inspect all stud threads and mounting surface area.
2. Remove spring clip retainers, if applicable.
3. Check for a wheel on the hub and confirm that the wheel mounts to the mounting surface of the vehicle. The back side of the wheel must not touch or touch brake drum balancing weights, any brake caliper, suspension component, or obstructions. Removing drum balancing weights to solve brake fitment problems can result in vehicle vibration not remedied by an off-wheel balance wheel.

Possible Obstructions:

SPRING CUP RETAINERS ARE OFTEN OVERRUN AND REMOVED IN WHEEL INSTALLATION. IF OBSTRUCTIONS ARE NOT REMOVED, THEY WILL NOT LET THE WHEEL SIT FLUSH AGAINST THE MOUNTING_SURFACE. THIS WILL GIVE YOU A FALSE TORQUE READING WHICH COULD CAUSE THE FASTENERS TO BECOME LOOSE, CORRODED, AND MAY RESULT IN DAMAGE, SERIOUS INJURY OR DEATH.

In-Wheel Clearence

Wheel manufacturer warranties do not cover tire-to-rim clearance or tire-to-suspension clearances. These clearances must be checked before installing all the tires. On some “plus” applications raising and lowering may occur. The following procedures must be followed:

1. Mount one tire on a wheel intended for use on the front of vehicle.
2. Install the tire/wheel assembly on the front hub and check the tire and rim for proper alignment. Check that the beads and edges are seated and that the brake drum assembly together. DO NOT REMOVE THESE NUTS.
3. Install three fasteners finger tight and rotate the wheel to check caliper and suspension clearance and to feel for bent flanges or warps.
4. Pull the same check. This remaining three wheels on the vehicle, starting in the rear.

WARNING

Never modify the wheel. Spacers and adapters do not resolve fitment problems. Modification of the wheel or the use of spacers or adapters to resolve clearance or fitment problems could result in an unsafe condition.

Before Installation, make sure you have the Correct Fasteners, Wheel Locks and Center Caps Desgined Specifically for the Wheel and Application.

Center Caps: The basic types of center caps are either inserted from the back of the wheel or drilled from the front. For the type inserted from the back, always make sure the flange of the cap matches the wheel’s chamfer and is below the mounting surface of the wheel. If the center cap flange is higher than the mounting surface of the wheel, it will not let the wheel seat uniformly and give you a false torque reading and the fasteners may become loose.

Wheels and Tires and the tire and rim manufacturer book. There are several brands and types of tire mounting equipment available for mounting tires on aftermarket wheels, including rim clamp (also called center-post machine). To avoid scratching or damaging a wheel during mounting/demounting of tires, make sure the tire and rim manufacturer is properly aligned and all safety covers are used when metal-to-metal contact is made. Protective eyewear must also be used at all times during the mounting/demounting, installation and servicing of wheels, and related component.

The Tire manufacturer’s requirements and clearances must be met.

The tire may be labeled with a color dot (painted mark or imprint) next to the tire’s load and speed ratings, which indicate the tire should be run at that pressure. Using the tire with the lower load rating may result in tire failure. The tire must be at the outer edges of the tires. The “Thread pitch” for metric applications refers to the number of threads per inch, for metric applications, it is the distance between the threads in millimeters. The “k-factor” means the area on the tire where the load will be applied.

Clean and inspect all stud threads and mounting surfaces before installation. Threads must be lubricated, and must be free of corrosion, rust, burrs, fractures and damage. Always use new fasteners (lug nuts or lug bolts) when installing new wheels.

DO NOT REMOVE THESE NUTS.

Use Original Equipment Manufacturer’s torque specification. If it is not specified in the vehicle owner’s manual contact the vehicle manufacturer if the vehicle manufacturer does not provide a specification, check with the aftermarket wheel manufacturer for a specification. If neither the vehicle manufacturer nor the wheel manufacturer gives you the specification, the following may serve as a guideline for passenger cars and light trucks only.

Worst case scenario:

Do not allow a lug nut to bottom out on the stud or a shank or lug bolt to bottom out on the mounting surface. This is extremely dangerous due to the possible collapse condition of the wheel during combines, because the collapse force of the rim is not being applied directly to the vehicle. The collapsing force of the rim may cause the spring to move up and contact the wheel, causing the spring to come off the wheel. This can cause severe damage to the spring, the leaf and to the vehicle.

Never use fewer fasteners than the vehicle was designed for. If the vehicle has 5 studs or lug bolt holes, then use 5 fasteners.

During installation, gravity causes the wheel to sit up on the highest stud. If the wheel is clamped off-center, it can be dangerous and damaging to your wheels and tires and this is not allowed. Be sure the tire is balanced and alignment. Apply torque evenly by repeating the procedure.

Mount the new wheel and tire to the vehicle. This is done by applying pressure to the tire and rim manufacturer book. There are several brands and types of tire mounting equipment available for mounting tires on aftermarket wheels.