TIRE MAINTENANCE MANUAL

To The Owner/Operator

Off-the-road tires are expensive pieces of equipment

They are engineered and built with massive strength to support today's equipment. This equipment is carrying ever increasing heavier loads at higher speeds and over longer distances than ever before.

Years of research and development have resulted in tires that can offer long service lives under these conditions. High strength carcasses have been developed to offer more load carrying capacity. New, tougher, higher quality components have improved durability. Improved rubber technology has helped to improve carcass durability, tread wear and hazard resistance ability.

Still, there is a limit to the abuse and punishment any tire will take. Too many end up on a scrap pile because operators ignore common sense driving and operational practices. Others go out of service prematurely because they were not properly maintained.

This manual, based on long term, extensive OTR field experience and practice, is designed to provide the information needed to help achieve maximum service life for both the end user and the equipment manufacturer. If followed, these recommendations will also help lower ton mile or tonne kilometer costs, improve equipment productivity and promote operating profits.

This Booklet Applies To Earthmover Tires And Their Applications Only. It Does Not Apply To Other Tire Lines And Applications

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SECTION 1
Construction Features

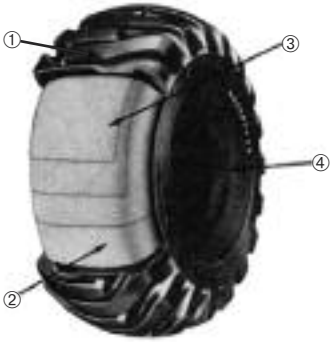


Fig. 1 Bias Tire

Fig. 1B Bias/Belted Tire

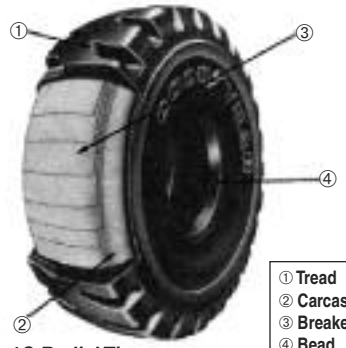


Fig. 1C Radial Tire

Basic Design

Earthmover tires are produced in three basic constructions:

- Bias
- Bias/Belted
- Radial

All share a common nomenclature.

Tread

The part of the tire in contact with the ground. It must provide traction, long wear and cut resistance. The tread depth and design vary based on site and application.

Carcass

Contains the inflation medium. The greater its strength, the greater the pressure it can hold. Bias and bias/belted tire carcasses use many angled plies of fabric to achieve strength. Radials have one ply of steel wire.

Breakers (Belts)

These are placed between the tread and carcass. They help to join these parts. They also distribute road shock to protect the carcass. In bias/belted and radial constructions, they control the diameter of the tire. They also impart superior tread impact and penetration resistance.

Bead

Bundles of high tensile steel wire. They anchor the tire to the rim. Bias and bias/belted tires may have several bead bundles. Radials have one large bead bundle.

Sidewalls

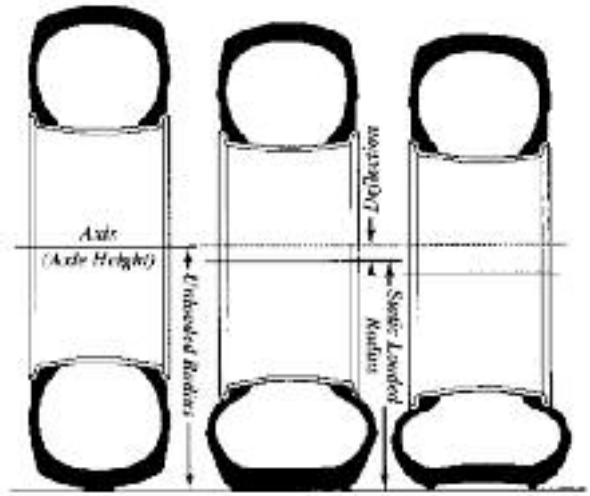
The protective rubber cover on the side of a tire. The rubber is compounded to flex without cracking. It also resists cuts and

forms a barrier to protect the carcass from the weather.

Inner Liner

A specially formulated rubber compound inside the tire that minimizes permeation. It works with the rim and O-ring to contain the inflation medium in tubeless designs.

Basic Factors Tire Maintenance



Deflection

Many people think that deflection describes the bulge at the bottom of a loaded tire. Actually, this bulge occurs as a result of deflection.

Deflection really describes the change in the tire's radius when a normal load is applied. The radius is measured from the center of the axle/hub to the ground (See Figure 2, above).

Unloaded Radius is measured with no weight on the tire. The tire is mounted on a rim and inflated to working pressure. The tire is stood and supported so the tread touches the ground. However, no load is applied (ie. not even the weight of the tire and rim).

Static Loaded Radius is measured with the weight of the vehicle and payload on the tire. Static means that the tire is standing still.

The deflection is the difference between the Unloaded Radius and Static Loaded Radius. This is the same distance that the axle lowers when the vehicle is fully loaded.

Deflection is extremely important. Engineers design tires to operate at a certain percentage of deflection. Operating with too much deflection reduces tire life.

Load and Pressure Relationship

Each tire is designed to carry a specific load at a specific inflation pressure. (Load/Inflation Tables are in the back of this book). When the tire is inflated to the correct

pressure for the load, deflection will be within design limits.

Loading a tire above the specified limit will result in overdeflection.

Inflating a tire above the specified limit will result in underdeflection.

⚠ WARNING

Overinflation and or overloading can lead to a tire explosion. This can lead to death, serious injury or property damage. Do not overinflate or overload OTR tires.

For a given tire size, inflation pressure determines how much load can be carried (the inflation medium can be air or nitrogen).

THE MOST IMPORTANT AND CRITICAL PART OF TIRE MAINTENANCE IS MAINTAINING PROPER INFLATION PRESSURE.

Loads

The inflation pressure carries the load. The tire's pressure capacity is determined by its carcass strength.

Carcass strength is indicated by a ply rating (PR) for bias and bias/belted tires. Symbol or Star Ratings are used to indicate radial tire strength (symbol and star mean the same thing).

Some Off-the-road tires are marked with Load Indexes and Speed Symbols. A Load Index is a numerical code associated with the maximum load a tire can carry at the speed indicated by the Speed Symbol under specified service conditions. A Speed Symbol indicates the maximum speed that the tire was designed to operate under specified service conditions. Some Earthmover Speed symbols are:

A2	5 mph	10 kmph
B	30 mph	50 kmph
E	43 mph	70 kmph

NOTE: none of the terms (PR, Symbol, Star, LISS) indicate the actual number of plies.

There are factors other than inflation pressure which affect tire load capacity. Larger tires (with larger internal air volumes) can carry higher loads at the same pressure.

Load capacity also varies with speed. The tire standards associations (T&RA, ETRTO and JATMA) publish tables of maximum loads at specified speeds. These tables correspond to:

- 30 MPH (50 KMPH) for scrapers, trucks.
- 25 MPH (40 KMPH) for graders.
- 5 MPH (10 KMPH) for dozers, loaders.
- Drive-away speeds for roading equipment.

Operators sometimes overload tires. They are willing to sacrifice tire performance for fewer trips or higher production (bigger loads).

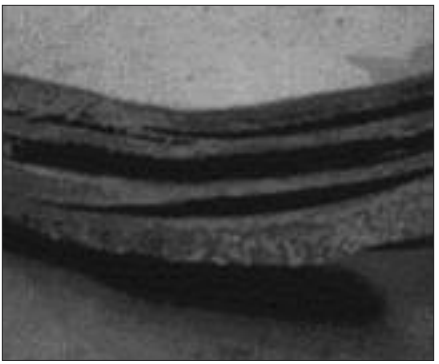


Fig. 3. Ply separation/fatigue due to overloading.

Even a slight, but constant, overload will result in reduced tire performance. This

leads directly to a higher cost per ton mile or kilometer.

Overloading may lead to premature tire failure. If inflation pressure is not adjusted to heavier loads, tires will become unserviceable due to:

- Tread and ply separation.
- Disintegration of the carcass and inner liner (fatigue).
- Radial sidewall cracking.
- Excessive bead chafing.

Overloads with the inflation adjusted to compensate may exceed the carcass strength. This will result in:

- Impact breaks and cuts.
- Rapid wear.
- Fabric fatigue (loss of nylon cord or steel cables strength).

Tires and Operating Conditions

Tires represent one of the major direct expenses in off-the-road (OTR) equipment operations.

Regular maintenance will help OTR tires last longer. Longer life translates directly to a lower cost per ton-mile.

Every OTR project should have a tire maintenance program. The program should be overseen by a team which includes members from:

- Project Management /Job Superintendent.
- Engineering Department Representative.
- Operations/Mining Department.
- Maintenance Department Representative.
- Tire Department Representative.

Tire company representatives can serve as a resource for the OTR tire team.

Project or Mine Manager and Job Superintendent Responsibilities

Successful tire cost management and control begins with top management.

Their involvement in the program will emphasize its importance. They are also in the best position to anticipate changes in tire requirements.

Changes often occur as a project progresses. For example, hauls may get longer. Higher speeds or heavier loads may be required to maintain production. These may require a change in tires or equipment used.

A keen, dedicated, cost conscious, tirewise manager or superintendent will be aware of these ongoing changes. Appropriate tires and equipment can then be ordered as needed.

Engineering Department Responsibilities

Haulroad design plays an important role in tire cost control. Both tire wear and hazard exposure can be minimized by proper design. This is especially true on larger projects where roads are used for a long time.

Layout and surface condition of the haulroad affect tire life.

Steep grades, sharp turns, poor superelevation increase tire slippage resulting in fast, abrasive tread wear.

Imbedded or loose rocks increase tread cutting, sidewall cutting, and impact break hazards. They often lead to speed restrictions which reduce production. Equipment breakdown and maintenance costs also increase.

Poor drainage leads to mud and chuck holes. These result in tire spinning, fast tread wear, cuts and increased vehicle fuel usage.

The cost of equipment and labor to maintain haulroads is significant. However, the cost of delays and tire and equipment repair is far greater.

Permanent haulroad criteria should be:

1) Maximum grade not to exceed 7%.

2) Road width to allow two trucks to pass without spillage. A two lane road should be 3.5 times the widest vehicle. A three lane road 5.0 times the widest vehicle.

3) Road crown, slope or crossfall as flat as possible and still drain. Typical road crown is 2%- 4% (2.5"-5.0" drop per 10' of lane width/6.4 cm-12.7 cm drop per 3.0 meters of lane width).

4) Curve radii as large as possible. Haulroads should be superelevated to correspond to vehicle travel speeds. Superelevation minimizes the variation in tire load while transversing a curve which may lead to longer tire life.

Vehicle travel speed affects the need for superelevation more than curve radius. Table 1 shows the effects of different speeds and radii on superelevation requirements.

TABLE 1

Vehicle Speed		Curve Radius		SuperElev
MPH	KPH	FT	M	Grade Reqd.
15	24	200	61	7.5%
30	48	200	61	30%
15	24	400	122	3.5%
30	48	400	122	15%

In actual practice, haulroad superelevation seldom exceeds 4-5%. This minimizes top dressing flow in rainy or wet operating conditions.

In addition, site size, topography and ground conditions often restrict curve radii.

Reduced speed on curves is the most practical way to minimize centrifugal side forces on tires.

The U.S.A. Department of the Interior publication, Design of Surface Mine Haulage Roads Bureau of Mines Information Circular 8758, contains additional information on mine/project haulage road design.

Operations Department Responsibilities

The people who operate equipment play a very key role in how well tires perform.

Driver/operator education should include more than how to drive. Drivers who learn and follow tire procedures to identify and avoid tire obstructions help reduce tire costs. These rules include:

1) Visually inspect all tires and perform hot inflation checks at the start of each shift.

2) Keep front windshield, headlights and rear view mirrors clean. This provides good visibility needed to avoid hazards.

3) Check to be sure rear axle rock ejectors are in place and working properly (Fig. 6). Remove rocks lodged between dual tires (Fig. 7).

Fig. 6.

Fig. 7.

4) Avoid waterholes/potholes as they could hide submerged tire hazards.

5) Never turn front steering axle tires when the vehicle is standing. This creates very high stress and sheer forces within the tires.

6) Keep off windrows. These are often present when haulroads are being graded.

7) Do not drive on the berm of the road. Obstructions are often present.

8) Do not drive over spillage. Spillage can damage tires. Report it so that it can be cleaned up (Fig. 8).

Fig. 8.

9) Do not drive or back over rocks at shovel or dump areas. (Fig. 9)

Fig. 9.

10) Do not spin tires. This includes jackrabbit starts and locked brake stops.

11) Reduce speed in areas where underfoot conditions continuously change. Conditions in shovel and dump areas change with each load. The condition of secondary roadways is unpredictable.

Conscientious Operation by Drivers

Careful drivers avoid road obstructions that cause cuts and impact breaks. They do not spin drive wheels and cause excessive tread wear.

Good drivers see that mechanical problems are corrected promptly. This includes correct front axle alignment, correct strut settings, no loose or broken springs and no grabbing brakes.

Good drivers regularly check for leaky grease fittings. Oil and grease can causes rapid deterioration of tires.

Good drivers check rims and flanges regularly. Bent, chipped, broken or improperly sized flanges strain the bead. Rust, oil or grease on rim assemblies leads to rubber deterioration which will lead to a shorter service life.

Fig. 10. This tire was worn smooth in 500 hours by spinning on abrasive material.

Check inflation pressures and request adjustment if needed.

Check tires for damage due to machine obstructions. Spring clips, fender bolts and other components may clear tires in normal service. Under unusual operating conditions, vehicle body movement may cause contact with tires. Cutting or abrasion can result. Dry, caked mud and wedged rocks are also tire hazards.

Fig. 11. Grease and oil are highly damaging to tires.

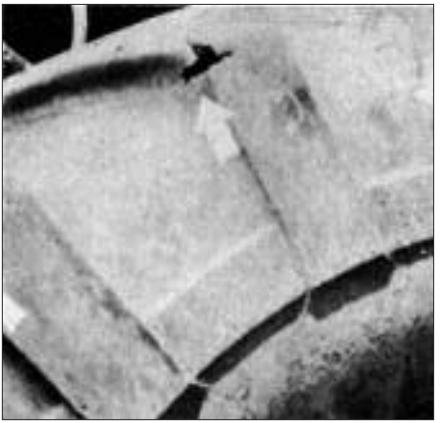


Fig. 12. A machine obstruction takes a bite out of this tire tread at each revolution.

In addition to these general guidelines, operators should develop good work habits. These will vary by the type of equipment and operation.

Shovel/Wheel Loader Operators

Control spillage and maintain a level working pad at loading areas.

1) Do not overload haulage trucks.

2) Properly center load in bed of truck. This distributes the load on the wheels correctly and reduces spillage. (Fig. 13)

Fig. 13. Correct truck payload positioning.

Fig. 13a. Incorrect truck payload positioning

3) Properly mate dragline, shovel or wheel loader to trucks being loaded. Excessive spillage is caused when loading equipment is too large for the truck (Fig. 13b). Loading different size trucks with the same shovel almost always creates spillage.

Fig. 13b. Loading equipment too large for truck.

4) Station a cleanup dozer at each loading area. Its responsibility is to immediately clear any spillage that does occur. It should also help keep the area as level as possible.

Loader/Dozer Operators

1) Travel slowly between work locations. Thick, heavy loader/dozer tires quickly generate internal heat. This heat dissipates slowly. Excess heat can result in tread separation.

2) Use ballast at recommended fill levels where recommended (See page 68 for additional discussion).

3) In load and carry operations, do not exceed tire's Work Capability Factor (WCF) (See page 65 for additional discussion).

4) Avoid tire spin. Use hydraulics to crowd into the bank or pile.

5) Use bucket to clear a path or level the surface. This will provide smooth, clean footing for the dozer and other vehicles.

6) Bucket should be wider than the outside-to-outside width of tires on front axle. This will prevent or minimize damage to the sidewalls. Loader wings should be added to help prevent tire damage.

Grader Operators

1) Patrol haulroads and clean up spillage. Main roads where haulage speeds are highest should get the most attention. Two graders should work roads where haulage vehicles are wider than a single grader blade.

2) Don't leave high windrows. They can cause damage to haulage truck tires. Tandem patrols help to reduce grader created windrows.

3) Create and maintain road crown to provide proper drainage.

4) Fill depressions and dips in the road. This will eliminate excessive tire deflection on high speed haulage vehicles.

Watertruck or Wagon Operators

Limit watering to control dust.

1) Do not overwater haulroads or work areas. This can lead to unnecessary cuts in tire treads and sidewalls.

   - Water acts as a lubricant for rubber.
   - Wet rubber cuts more easily than dry rubber.

2) Some watering benefits grading operations.

3) Excessive watering of hard packed, smooth surfaces is a safety hazard. Vehicle control/safety is reduced on a slick, wet road surface.

Scraper Operators

1) Avoid tire spinning during loading. If a scraper is not designed for self-loading, wait to be push loaded.

2) Dead stick loading minimizes tire spin. It is essential where ripped rock or rock/earth material is being loaded.

3) Avoid sharp turns.

Never make sharp turns while being push loaded.

Rear tires can be cut and destroyed by the blade of a push dozer. Use a straight not a curved blade on the push dozer.

4) Dump and spread slowly. Whenever possible, avoid driving over rocks in the fill or dump areas.

5) Check for and remove any rocks lodged between vehicle frame and between rear duals.

Tire Department Responsibilities

The most important item in a tire maintenance program is a sound, regular *inflation maintenance program*.

Inflation supports and carries the load. Inflation must be maintained as specified for the load and service condition.

Tires are designed and built to deflect in service.

Inflation pressures are established to assure tires deflect properly. The pressures required vary with the load, speed and type of service. When inflation pressure is too high or too low, the tire does not deflect within design limits. Tires deteriorate quickly under these conditions.

Generally, low speed off-the-road operations allow heavier loads at a given inflation. ***At high speeds, loads must be decreased.***

Recommended loads and inflations should always be the norm.

Overinflation

Overinflation results in high cord stress even when the tire isn't overloaded. Stress reduces resistance to loss of inflation from impacts. It also increases the risk of rock cutting. The problem is made worse by poorly maintained haulroads or spillage.

Figures 14 and 15 show typical overinflation damage.

Fig. 14. This break resulted from a severe blow while overinflated.

Fig. 15. Rapid air loss like this occurs frequently when tires are overinflated and suffer an impact.

Underinflation

An underinflated tire will deflect too much leading to excessive sidewall flexing.

Underinflation typically results in:

- Irregular or uneven tread wear.
- Sidewall radial cracks.
- Ply separation.
- Loose or broken cords inside the tire.
- Fabric carcass fatigue. (Fig. 16)
- Belt edge separation

Tires operated in soft soil or sand have lower inflation recommendations. Tires operated on paved or hard gravel surfaces have higher inflation recommendations.

In soft soil, the tire makes an impression. The impression cradles the tire and reduces excess deflection. Inflation can be reduced.

Tires operated on hard surfaces do not receive this support. They have to control deflection by inflation pressure. Higher pressures are required.

Indirect, but important, advantages of lower inflation pressures include:

- Better flotation.
- Better traction.
- Better resistance to cutting and impact breaks.

Fig. 16.

Fig. 17.

Loose or broken cords can result from severe underinflation.

Radial cracks indicate continuous underinflation and/or overload operation. (Fig. 17)

Continuous operation results in heat buildup in a tire. The hot air expands as a result of the increase in temperature. The tire's carcass restricts this expansion so pressure increases.

In normal off-the-road operation this does not cause deterioration. The pressure becomes stabilized when internal heating is balanced by external cooling.

NOTICE

Don't bleed hot OTR tires to correct buildup of air pressure.

Bleeding air pressure will result in dangerous underinflation. As the tire cools at the end of the day, inflation pressure will drop. The tire will be seriously underinflated at the start of the next shift or day.

Even if the tire is operated through the night, underinflation will occur. Cooler night air will cause the tire to run cooler. Inflation pressure will drop. The tire will suffer excessive deflection and flexing. Damage is inevitable.

Bleeding tire pressure actually begins a vicious cycle. Reduced pressure causes increased deflection and flexing. These generate heat. Pressure builds up again. The tire is bled to reduce pressure and the cycle repeats. It continues until a complete tire breakdown results.

Proper attention to tire inflation, loads and speeds is the best prevention of tire related problems. These factors need especially careful attention in hot weather.

Correct air pressure only when tires are at ambient temperatures.

Correct Tire Inflation:

1) Assures load carrying ability.
2) Avoids damage due to run-low or run-flat operation. Carcass fatigue, (tubeless) liner failure and radial cracks are the most common signs of damage.
3) Reduces tread separation due to overdeflection.
4) Reduces impact breaks, bruise damage, tread cuts and penetration.
5) Reduces irregular and rapid tread wear.

Incorrect Inflation

Underinflation results in irreversible damage such as:

1) Carcass fatigue.
2) Tubeless liner failure.
3) Tread, ply or bead area separation.

Overinflation can be as serious as underinflation:

1) Overinflation overstresses the tire carcass.
2) It reduces the tire's ability to envelope irregular objects in the travel path.
3) It causes a loss of traction.
4) It makes tires more vulnerable to spin cuts and shock load damage.
5) It reduces flotation in soft ground.
6) It produces a hard ride and vehicle vibration. This contributes to:

    - Payload spillage.
    - Poor vehicle handling.
    - Operator fatigue.

Proper Tire Inflation Procedures

Recommended inflation pressures are always based on a cold reading. A cold tire is one:

1) That has been idle at least 24 hours.
2) Has reached ambient temperatures.

Proper inflation for each wheel position should be determined. Ideally, this is based on actual tire loads determined by an on site weight study.

When actual wheel loads aren't known, tires should be inflated to the pressure recommended for the size and ply rating.

When checking cold inflation pressures the correct pressure is:

Cold pressure + 5 PSI (+.25 Bar), - 0 PSI.

Inflation pressure recommendations vary with the type of service. The type of service also determines the operating speeds:

- Haulage units (earthmoving, mining, logging, etc.): 30 MPH/50 KPH maximum speed.
- Dozer/loader units (shovels, mining cars, loaders, etc.): 5 MPH/10 KPH maximum speed.
- Road graders: 25 MPH/40 KPH maximum speed.

Special service conditions also impose speed limits based on tire load and construction. These special applications include compactor, sand, straddle carriers, driveaway and intermittent highway use.

Load and inflation tables for all types of service are in the back of this book.

Essential Parts of a Sound Inflation Maintenance Program

1) Cold inflation checks and adjustments should be made once a week. Hot checks should be made daily.

2) Never bleed air from a hot tire to correct pressure. Normal equipment operation causes inflation pressure to increase. A hot pressure increase up to 20% is acceptable.

   If excessive pressure is present, find and fix the cause. Bleeding air will result in serious underinflation and tire damage.

3) Record inflation pressure every time it is checked. Records provide information that can be used to detect problems and schedule preventive maintenance.

4) Accurate pressure gauges must be used. Service gauges must be calibrated with a master gauge once a week.

5) Before placing pressure gauge on valve:

   - Clean any dust, dirt, grease or other matter from tip of valve stem.
   - Press the valve core briefly and release a small quantity of air.

This cleaning procedure will help assure an accurate reading and prevent damage to the gauge.

6) Use a valve cap on every valve. It acts as the primary air seal. It also helps to prevent dirt, dust and water damage to the core.

7) Check spuds, stems and extensions. Be sure all joints are tight and secure to avoid leaks in service.

8) Use valve extensions or hosing for easy access for inflation checks.

9) Compressors:

   - Must have a minimum, capacity of 150 PSI (10.0 Bar).
   - Compressors must have water trap assemblies to prevent moisture inside tires.
   - Moisture can:
     - rust rim parts.
     - plug valve stems with rust from rims or ice crystals.
     - reduce pressure gauge life and accuracy.
     - complicate dismounting procedures.

10) Use a new, correctly sized O-ring each time a tire is changed. Use a new grommet on tubeless spuds.

11) Thoroughly clean rims and rim parts before mounting tires. Wire brush:

- bead seat areas.
- flanges.
- O-ring and lock-ring grooves.
- lock ring.

Bare metal must be painted or coated with rust inhibitor.

If necessary, sandblast components to bare metal and paint with rust preventative paint.

Clean components are easier to mount. They also allow a more thorough inspection for stress cracks, broken welds and other damage.

12) Store rim components in a dry area to prevent rust and corrosion.

- Separate components for storage (don't store assembled rims).
- Be sure components are properly matched before mounting tires.

13) The use of nitrogen inflation is recommended (See page 24).

- It reduces rim corrosion.
- It reduces the risk of auto-ignition (tire explosion) from an external heat source. These include: vehicle fires, hot brakes or lightening strikes.

To be effective, nitrogen must be used for all maintenance refills.

Hot Inflation Checks

When vehicles operate around the clock, cold inflation checks may not be possible.

A hot tire correction factor can be determined by experiment:

- Check as many tires as possible when cold.
- Check the same tires after four hours of normal operation.
- Determine the average difference in cold and hot inflation pressure.

This average difference should be added to the recommended inflation pressure for tires in constant operation.

A tire that shows a significant variation from the average pressure could have a problem. The vehicle should be stood down until the cause can be determined.

NOTE: Cold inflation checks should be done at every opportunity. These include holiday and weekend shutdowns or regular vehicle maintenance periods.

Matching of Duals

Tire assemblies operated as a dual pair must:

- Have the same outside diameter (Within variation listed below).
- Be from the same manufacturer.
- Be of the same type (industry code).
- Be of the same construction (both bias or both radials).

Bias and radial constructions must never be mixed on dual assemblies.

Tires on dual assemblies must match in size. If they do not, they will not carry equal shares of the load. The larger tire will carry a greater load. It will wear faster than its smaller partner. It will also suffer greater stress which makes it vulnerable to damage.

The smaller tire will also suffer irregular scuff wear. This will lead to early replacement.

In addition to fast wear, mismatching may result in axle breaks and difficult steering.

Maximum diameter variation for duals should be:

Tire Size	O.D. Difference (Inches/MM)
Through 8.25-20	0.25 Inch/7 mm.
9.00-20 through 21.00-35	0.5 Inch/13 mm.
24.00-35 through 33.00-51	0.75 Inch/19 mm.
36.00-51 and larger	1.00 Inch/25 mm.

Circumferential measurement is a more accurate guide for larger tires. The circumference is measured with a steel tape. For accuracy, tires must be measured mounted on rims and inflated.

Tire and Rim Association (T&RA)

This is an organization of technical representatives from all tire and rim equipment manufacturers. Its purpose is to set industry standards/guidelines.

Its work has prevented chaos in the sizes and types of equipment available. This makes rims, tubes, valves and other components widely interchangeable. It also gives equipment operators easy access to replacement parts and service.

The Association also establishes load and inflation recommendations. These are used by equipment manufacturers in the design of their machines.

The T&RA yearbook contains many references to load and inflation tables. These recommendations are based on the best engineering principles. They have been refined over years of actual field experience. Importantly, they are based on information gathered from the entire industry, not a single manufacturer.

European Tire and Rim Technical Organization (ETRTO)

Located in Brussels, Belgium, this group is very similar to the T&RA. It too sets standards and issues recommendations followed by industry suppliers. This results in common dimensional measurements and load/inflation relationships beneficial to equipment users.

ETRTO data are expressed in metric units. T&RA data are expressed in English and metric units. They are not necessarily identical.

ETRTO data are not formula conversions of English units. They are independent recommendations. They are based on engineering principles and field experience of the group's members. When available, ETRTO data are included in the load/inflation tables in this book. However, ETRTO standards do not exist for all sizes. Where a size is not covered, SI (System International) conversion formulas are used.

Japan Automobile Tyre Manufacturers Association (JATMA)

Located in Tokyo Japan this association is similar to T&RA AND ETRTO. It sets standards and issues recommendations that are followed by type and rim manufacturers. This results in common dimensional measurements and load/inflation relationships which benefit equipment manufacturers and end users. JATMA data is expressed in metric units. due to calculations and rounding the dimensions, loads and inflations of T&RA, ETRTO and JATMA may not be identical but are close. Use the standards/guidelines from the organization from your region of the world.

How To Calculate Loads and Load Distribution

Fig. 18. Scales set and ready for use.

The best method is to weigh the loaded machine one axle at a time.

When this is impractical, tire load can be estimated with the following formulas. They take into account vehicle designs that result in uneven load distribution on the axles.

To use the formulas, you need to know:

1) Empty weight per axle.
2) Weight of payload (estimated if necessary).
3) Measurements shown in Fig. 19.

In our formula:

A = Distance from front axle to center of payload in inches.
B = Distance from rear axle to center of payload in inches.
C = Wheelbase in inches.
F = Empty weight on front axle.
R = Empty weight on rear axle.

With this information, the load on each axle can be determined.

Load on rear axle = (A/C X payload) + R

Load on front axle = (B/C X payload) + F

For example, if:

A = 108"
B = 132"
C = 240"
F = 10,000 #
R = 8,000 #
Payload = 36,000#

then Rear Axle Load =

(A/C X Payload + R =
(108/240 X 36,000) + 8,000 =
(.45 X 36,000) + 8,000 =
16,200 + 8,000 = 24,200

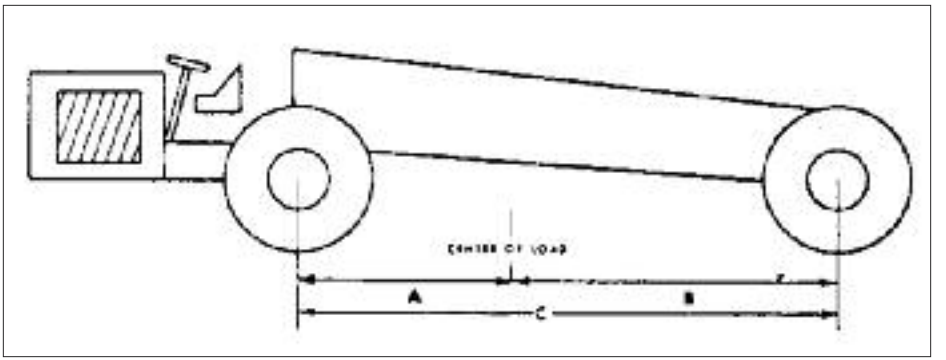


Fig. 19. Center of Load.

and Front Axle Load =

(B/C	X Payload	+	F =
(132/240	X 36,000)	+	10,000 =
(.55 X 36,000)		+	10,000 =
19,800		+	10,000 = 29,800

Our example also shows that the part of the load on each axle is a percentage of the wheelbase.

In our example, the distance from the center of the payload to the front axle is 45% of the wheelbase:

108/240 = .45 = 45%

This is the percentage of the load carried by the rear axle.

The distance from the center of the payload to the rear axle is 55% of the wheelbase:

132/240 = .55 = 55%

This is the percentage of the load carried by the front axle.

These percentages give us a ratio:

45:55 = 100.

This is important because it applies to any load in that vehicle. Thus, it allows us quickly to calculate the effects of lighter or heavier loads.

Load Distribution on Other Types of Carriers

The formula may be applied to all types of wheeled machines. Some slight changes in description may be needed, however.

For example, in a tractor/trailer combination:

The wheelbase is the distance from the pivot point to the rear axle.

To determine the weight distribution on the tractor:

The pivot point is the center of the load.

The load on the pivot point is the total payload on the tractor.

Burned Beads

⚠ WARNING

Burned beads are very dangerous. They can cause a sudden loss of air that can lead to death, serious injury or property damage. These have been reported more than an hour after a vehicle was parked.

Another risk is a loss of inflation long after the machine is parked. When the machine is shut down, cooling air does not circulate. The hot brake quickly transfers heat to the rim base. Air pressure builds and the bead becomes hot and weak. Eventually, an explosive, potentially dangerous rupture may occurs.

The air in an earthmover tire has extremely high energy when released suddenly. Since burned beads can lead to a sudden rupture, extreme caution must be exercised.

The machine should be parked outside, remote from all personnel.

DO NOT STAND NEAR A TIRE AND RIM ASSEMBLY WITH A HOT BRAKE.

Burned beads are usually caused by brake problems. Excessive braking or dragging brakes are the most common source.

Excessive braking can result in temperatures up to 500º F (246º C). This heat is transmitted through the brake drum to the rim. The rim heats the inside bead and burns it.

Temperature above 250º F (123º C) may reduces bead durability.

Burned beads can cause several kinds of tire failure.

The most common is a reduction in compressive fit between bead and rim. This causes a leak. If it does not produce a flat tire, it will result in underinflation. An underinflated tire will generate more heat. This will lead to ply separation and a loss of strength. Rapid air loss will occur. This most likely will be in the bead or lower sidewall.

Air wicking through the carcass is another problem bead condition. This causes pressure to build up within the carcass and a separation of tire components.

Fig. 20. Toe has been burned and chaffed due to burned bead.

Fig. 21. Rupture resulted from burned bead.

After the brake has cooled, the tire can be replaced.

Modern equipment design has made brake overheating rare.

Engine retarders are common. These slow the equipment without excessive braking. Proper training will assure that operators use this feature effectively.

Some machines use wheel coolants. These transfer heat from the bead area. Coolant must be checked regularly and maintained at proper levels.

Most burned bead problems occur with new equipment or new operators. Proper training and a conscious effort to avoid excessive braking can prevent most problems.

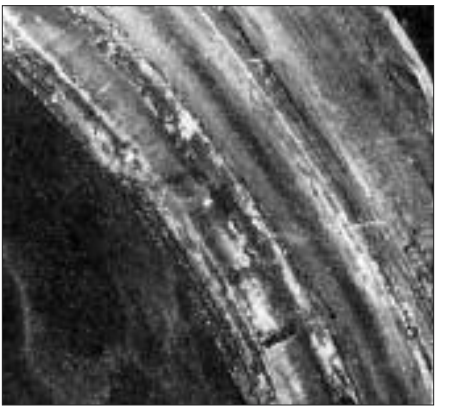


Fig. 22. Heal damage due to burned bead.

Repairs

Both tube-type and tubeless tires can be repaired. Regular inspection can detect repairable injuries before they become serious. Immediate attention may prevent extensive or costly damage.

Tread and sidewall cuts are a major source of off-the-road tire trouble. Tires should be checked at the start of each shift and during regular inflation checks. Cuts which extend to or into the belts or cord body must be repaired. The tire must be taken off for repair.

Shallow cuts in the tread can be treated without dismounting tires. Small rocks and dirt will get into these shallow cuts. If neglected, the rocks will gradually be pounded or drilled through the cord body.

Clean out cuts with an awl to remove any lodged in or embedded material. Use a sharp, small blade knife to cut a cone-shaped cavity. The cavity should extend to the bottom of the injury. Sides of the cavity should slant enough to prevent stones from wedging. Tires with cuts treated in this manner may continue in service and cut growth should be reduced.

All small cuts should be repaired when tires are removed for major cut repairs. Tires with very high hours (greater than 10,000) are not good repair candidates.

Tire repair may be possible, but may not be economical in older tires. The cost of the repair must be justified by the remaining service life.

Fig. 23 Deep tread rock cut – If left unattended will cause cut separation or cut through.

Fig. 25. Skiving reveals close-up of rock cut damage into working belt.

Fig 24. Deep tread rock cut – If left unattended will cause tread rock cut separation.

Recapping/Retreading

Both tube-type and tubeless tires can be recapped.

Recapped tubeless earthmover tires do not require a tube to return to service.

A good tire maintenance program will result in tire cost savings. It will also improve tire retreadability for future savings.

Some service conditions take too much life out of the carcass. Retreading should not be considered for tires operated:

- At high speeds.
- Overloaded.
- Underinflated.

Tires with very high hours (greater than 10,000) should not be retreaded.

The best recapping candidates are tires which had fast tread wear. This occurs at sites with steep grades or abrasive surfaces.

Handling and Storage of Tires, Tubes and Rims

Proper handling and storage will prevent damage to tubeless tires.

Unmounted tires should be shipped and stored vertically. Horizontal storage may compress the beads. This may make initial inflation difficult.

Some new tires are shipped banded to preserve their shape. Do not remove bands until tires are ready to mount.

Do not lift tires by the beads. Sharp hooks or forks cut and tear beads. In service, beads may leak at these lifting points.

Foreign material and moisture must be removed from the inside of the tire before mounting.

Rims

Tubeless rims are an important part of the air seal in a mounted tire. Do not distort or mutilate rim parts.

Never lift rims by valve holes.

Never drop, tumble or roll rim parts.

Use babbit or lead hammers sparingly during assembly. Sledge hammers can damage rim parts.

Store O-ring seals in a cool, dry place.

Lay flat. Do not stack other materials on O-rings.

Store valves in a clean, cool, dry place.

Tire and Tube Storage

Tires and tubes deteriorate rapidly if improperly stored.

Improper storage conditions include:

- Direct sunlight.
- Heat.
- Air in motion.
- Ozone.
- Gasoline and oil.
- Dust and dirt.
- Water or moisture inside tires.

Even short term storage should avoid exposure to these conditions.

Storage time should be minimized by using tires in the order received.

New Tires

1) Store indoors in a cool, dark, dry, draft free area. If tires must be stored outdoors, they should be covered. An opaque, waterproof tarpaulin is a good

cover. Water and moisture must be kept out of the tire.

If possible, mount on wheels and inflate to 10% of operating pressure. Store vertically. Cover with a tarpaulin.

2) Store away from electrical devices such as motors and switches. These are a source of ozone.

3) Do not store in rooms with or near gasoline or lubricants. Rubber absorbs vapors from these materials and they can cause deterioration.

4) Provide carbon dioxide fire extinguishers in tire storage areas.

Used Tires

1) Carefully clean and inspect tires before storage. Make necessary repairs before storage. Repairs to injuries which expose tire cord are especially important. Moisture can get into exposed cord.

2) Observe all storage rules listed for new tires.

Mounted Tires

1) If tires are stored on a machine, it should be blocked up. Air should be released to 10 psi (.7 bar) or less. If machine cannot be blocked up, check air pressure frequently. Maintain pressure at proper level.

2) Protect each tire with an opaque, waterproof cover.

3) Machines resting on tires should be moved once a month. This prevents deflection strain on only one part of the tire.

4) Do not use paint to preserve tires. If severe storage conditions are expected, consult tire supplier for recommendations.

Tubes

1) Store in original package until ready for use. Keep in a cool, dry, draft free area.

2) Used tubes must be removed from the tire. They must be completely deflated, cleaned and folded. Store in a cool, dry, draft free area.

SECTION II

Procedure for Changing Tires and Tubes

Changing Off-The-Road Tires

Replacement of off-the-road tires is a difficult job. They are often located in rough, hilly terrain. Most are used in remote geographical locations. Site conditions are usually far from ideal. Proper equipment may not be available.

The procedures in this section describe changing larger size tires. Both ideal and difficult conditions are covered.

The procedures are based on both field and shop experience. They are designed to make the change as easy as possible.

Nitrogen Inflation

Many original equipment manufacturers recommend nitrogen inflation. It helps to minimize the possibility of explosion due to excessive heat from external sources.

Typical sources are:

- Vehicle fires.
- Excessive braking.
- Dragging brakes.
- Welding on rims of mounted tires.
- Lightening strikes.

All these can cause the inside of the tire to ignite and burn.

⚠ WARNING

An explosion caused by tire auto-ignition is much more violent than other sudden air loss situations.

Serious injuries and death can result from such explosions.

Never weld on a rim of a mounted tire.

Inflating with nitrogen should be done only by trained personnel using proper equipment. This includes:

- ***An appropriate relief valve.***
- ***A pressure regulator set for no more than 20 PSI (1.5 Bar) over desired inflation.***
- ***A remote control clip-on chuck. This allows personnel to stand clear of tire/rim assembly during inflation.***

Proper inflation pressure for tires inflated with nitrogen is the same as for air.

Nitrogen tanks are pressurized to 2200 PSI (152 Bar).

Correct equipment must be used and proper safety precautions taken. Otherwise, an explosion or blowout of the tire/rim assembly could result. This can cause death, serious personal injury and property damage.

There are several other benefits to nitrogen inflation:

- It offers improved pressure retention
- It minimizes rim rust.

Tire Changing Equipment and Tools

Tire changing procedures vary with individual operators. Certain tools, however, are essential.

1) Heavy equipment jack.

2) Tire tools and irons. These include:

   - Several irons with dished or spoon shaped ends.
   - Crowbar.
   - Heavy duty rubber or wood mallet or lead or babbit hammer.

3) Wheel chucks.

4) Jack stands

5) Air compressor.

6) Service truck. In larger operations, a fully equipped truck can minimize down time. The truck should be equipped with:

   - A mounted hoist. The hoist should be strong enough to handle the largest tires.
   - An air compressor with a regulator. Models are available which operate off the truck engine or are self powered.
   - Large bore/super large bore inflating equipment. This minimizes inflation time.
   - Clip-on chucks with remote controls. These allow inflation from a safe distance.

Before performing any service on Off-The-Road tires, read and understand all safety precautions. Do not mount or demount tires without proper training.

GENERAL SAFETY INSTRUCTIONS

The following section of this Manual contains important safety information, including steps necessary to avoid accidents that may result in death, serious injury or property damage. Follow all procedures and safety instructions exactly. Wear proper personal protective equipment (PPE).

DEMOUNTING

PRECAUTION	REASON FOR PRECAUTION
Before removing any rim or wheel component (i.e., nuts or rim clamps): • Exhaust all air from a single tire. • Exhaust all air from both tires of a dual assembly.	A broken rim part under pressure can blow apart and cause fatal injury. If you remove lugs while tire is under pressure, the assembly may fly apart.
Remove valve core completely. This will assure all air is exhausted from tire. • Remove both cores from dual assembly. • Run a piece of wire through stem to be sure it's not plugged.	Foreign material may clog the valve stem during deflation. Ice may form as the air leaves the tire. This can clog the valve stem.
Always stand clear during deflation.	If the assembly bursts, the operator should be far away from the explosive force.
Use approved eye protection.	Protect eyes from dust and dirt when exhausting air from tires.

Use mechanical aids when removing heavy rim components.	This will help protect you from injury. A dropped flange can crush a hand or foot. Attempting to grab a falling flange or bead seat can cause serious injury.
Demounting tools apply high pressure to rim flanges when unseating tire beads.	If tool slips, it can fly with enough force to cause severe injury or death. Keep fingers clear. Always stand to one side when you apply pressure.

INSPECTION

PRECAUTION	REASON FOR PRECAUTION
Clean and repaint rims. This will stop corrosion. It will also make it easier to mount and check components.	Parts must be clean for proper fit. This is especially true of the gutter section which holds lock ring in position.
Clean dirt and rust from lock ring and gutter.	This is important to seat the lock ring properly.
Air inflation equipment should have a filter in the air line. Filter must be checked frequently to see that it works properly.	This will prevent moisture from entering the tire and prevent corrosion.
Check rim components for cracks Replace all components which are: • Cracked • Badly worn • Damaged • Severely rusted	Parts that are cracked, damaged or excessively rusted are weakened. Bent or repaired parts may not engage properly.
Use new component of same size and type. Replacement parts must not be cracked, broken or damaged.	This allows for proper fit and function.

Never, under any circumstances, attempt to rework, weld, heat, or braze any rim components that are cracked, broken or damaged.

Replace with parts that are not cracked, broken or damaged. Always use parts of the same size and type.

Heating may weaken a part. It may then be unable to withstand forces of inflation or operation. This can lead to an incident resulting in serious injury or death.

Be sure correct parts are being assembled.

Check the parts' distributor or manufacturer if you have any doubts.

Do not be careless or take chances.

Mismatched parts may appear to fit. When the tire is inflated they can fly apart with explosive force. This may lead to serious injury or death.

If you are not sure about proper mating of rim and wheel parts, consult an expert.

This may be the tire man who services your fleet. It may be your wheel distributor.

Don't reinflate a tire that has been run flat until you inspect:

- **Tire**
- **Tube**
- **Flap**
- **Rim and wheel assembly**

Double check:

- **Flange(s)**
- **Bead seat**
- **Lock ring**
- **O-ring**

Be sure they are secure in the gutter before inflation.

Stand clear of the tire while inflating.

Components can be damaged or dislocated when a tire is run flat or seriously underinflated. This can lead to an incident resulting in death or serious injury.

MOUNTING AND INFLATION

PRECAUTION	REASON FOR PRECAUTION
Don't hammer bead seat rings or other components while tire is inflated. You may tap the lock ring when inflation begins with a rubber or shot hammer to insure it is properly seated.	If parts are improperly installed they may fly apart with explosive force.
Double check to be sure all components are properly seated before inflating.	If parts are improperly installed they may fly apart with explosive force.
Inflate in a safety cage. Use safety chains or equivalent restraining devices during inflation.	Parts can fly apart with explosive force during inflation.
Don't inflate tire before all components are properly in place. Place in safety cage or use chain sling and inflate to approximately 5 PSI (.5 Bar). Recheck components for proper assembly. If assembly is not proper at approximately 5 PSI (.5Bar) completely deflate tire (both tube-type and tubeless) and start over. Inflation to recommended operating pressure should be done on the vehicle.	
Never hammer on a fully or partially inflated tire/rim assembly.	Properly matched and assembled components will seat without tapping. If a part is tapped, it or the tool can fly out with explosive force.
Never sit or stand in front of a tire and rim assembly that is being inflated. Use a clip-on chuck. Use inflation hose long enough to stand to side of tire. Do not stand in front or back of tire assembly.	Parts can fly apart with explosive force.

Follow tire and rim manufacturers' recommended procedures for: • Mounting • Demounting • Inflating • Deflating	Failure to do so can result in death or serious injury.
Don't hammer on rims or components with steel hammers. **If necessary to tap uninflated components together, use mallets with faces of:** • Rubber • Lead • Plastic • Brass	Steel hammers may damage components and cause improper fit.
Stand clear when using a steel cable or chain sling.	The cable or chain may break. If it does it can lash out and cause serious injury.
Never weld on a tire/rim assembly.	Heat from welding will cause a sudden rise in pressure. This may result in a powerful explosion. Deflated tires also can catch fire inside the chamber. Pressure will build up. An explosion may occur.
Mixing parts of one type rim with those of another is potentially dangerous. **Always check DOT chart or manufacturer for approval.**	Mismatched parts may appear to fit. When the tire is inflated they can fly apart with explosive force.

Never introduce a flammable substance into a tire before, during or after mounting.	This is unsafe and could result in: • Fire • Internal tire damage • Rim damage • Potentially dangerous vapors. Any of these conditions can cause death or serious personal injury during mounting and inflation.

OPERATION

PRECAUTION	REASON FOR PRECAUTION
Don't use undersized rims. Use recommended rim for tire. Check Goodyear catalogs for proper tire/rim matching.	Excessive overload can cause damage to the tire and rim assembly.
Don't overload or overinflate tire/rim assemblies. Check with your tire and rim manufacturer if special operating conditions are required.	Excessive overload due to undersized rims can cause damage to the tire and rim assembly.
Never run a vehicle on one tire of a dual assembly.	This will exceed the carrying capacity of the single tire and rim. Operating a vehicle in this manner can result in damage to rim and tire.
Never use a tube in a tubeless tire where the rim assembly is suspected of leaking.	Loss of air pressure warns you of a potential rim failure due to fatigue cracks or other fractures. This indicator is lost when tubes are used with leaking rims. Continued use may cause the rim to burst with explosive force.
Always inspect rims and wheels for damage during tire checks.	Early detection of rim damage or wear may prevent an accident.

Never modify a rim without approval from the manufacturer.

Never heat, weld or braze a rim.

Always remove the tire from the rim before service.

Modification or heating of the rim or one of its parts can weaken it. It may not withstand inflation or operation forces.

If vehicle wheels have been designed to contain wheel coolant, never operate vehicle without coolant.

Always use the mix and amount of coolant recommended by the manufacturer.

An explosion can occur when a tire is exposed to extreme temperatures from an external source. This can cause death, serious injury or property damage. Wheel coolant helps keep operating temperatures down. It must be used where recommended.

Don't let the brakes become overheated.

Avoid abuses that can overheat brakes. These include:

- **Dragging of brakes**
- **Speeding**
- **Poor brake adjustment**
- **Overloading**

An explosion can occur when a tire is exposed to extreme temperatures from external sources. This can cause death, serious personal injury or property damage.

Clear the area if excessive brake heat is suspected. Warnings include:

- **The smell of burning rubber**
- **The smell of hot brakes**

Wait at least one hour before approaching machine.

Carefully follow manufacturer's recommendations for:

- **Operating practices**
- **Use of retarders**
- **Brakes**
- **Brake maintenance**

The risk of explosion is greatest soon after the vehicle is stopped.

SERVICING TIRE AND RIM ON MACHINE

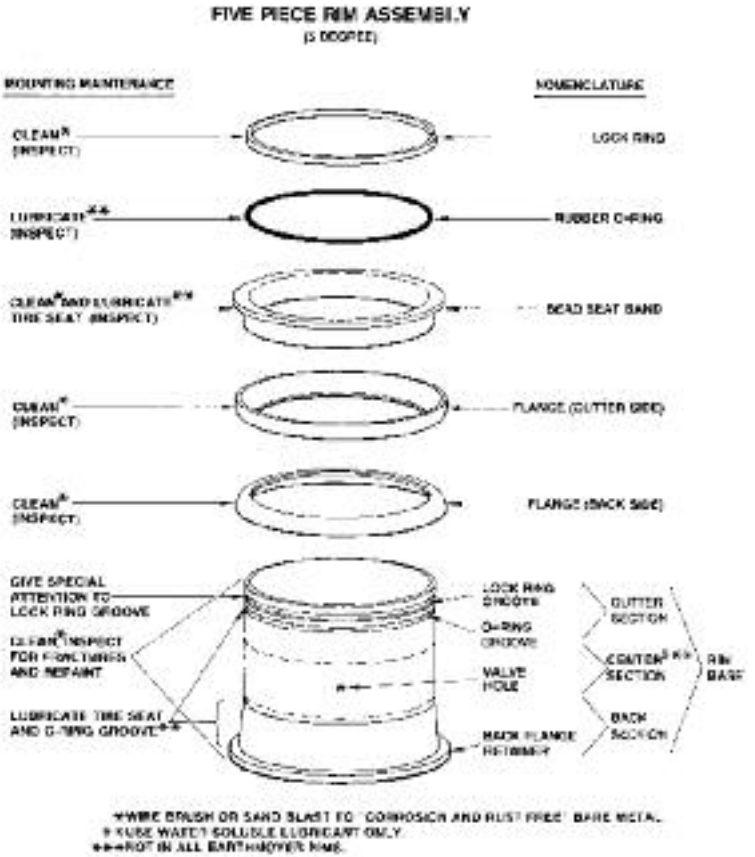
PRECAUTION	REASON FOR PRECAUTION
Block tire and wheel on opposite side of machine before placing jack in position.	Machine may shift and slip off jack. This can cause death or serious injury.
Put hardwood blocks under jack. Use blocks regardless of how hard or firm ground appears to be. Always crib up a vehicle with blocks or a jack stand	Machine may shift and slip off jack. This can cause death or serious injury.
Before loosening nuts or clamps, always secure a tire/rim assembly with: • A sling • Tire handler • Other support equipment Consult vehicle manufacturer for detailed instructions on removal of tire/rim assemblies.	Unsecured assemblies may fall when fasteners are removed.
Don't hammer to drive a tire and rim assembly over a cast spoke wheel. Deflate and examine to determine the reason for improper fit. Look for distortion or components not properly locked or seated.	Failure to fit can indicate distorted or incorrectly assembled components. In either case, the assembly could fly apart if hammered and cause death or serious injury.

Do not, under any circumstances, use any type of heat source on an inflated tire.

Welding or other heating of an inflated tire/rim assembly can cause an explosion. This can cause death, serious injury or property damage.

Welding or brazing a rim with a deflated tire can cause damage to the tire. When reinflated, the damaged tire could also explode.

Welding or brazing a rim with no tire is contrary to recommendations of rim manufacturers. It can cause a structural weakness in the rim. This can also lead to failure under inflation or service conditions.



*WIRE BRUSH OR SAND BLAST TO CORROSION AND RUST FREE BARE METAL.
** USE WATER SOLUBLE LUBRICANT ONLY.
***NOT IN ALL BANTAM/VEE RIMS.

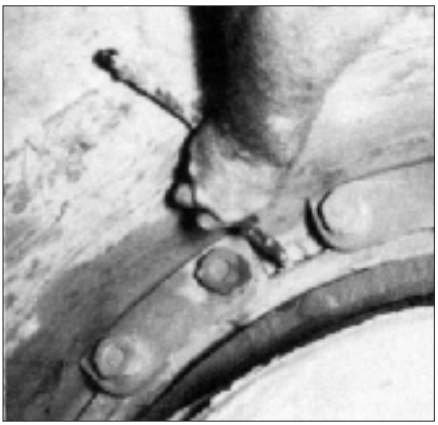
Demounting Procedures

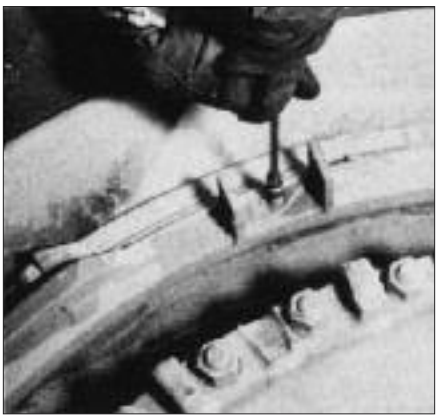
Before removing any rim or wheel component:

- Wear proper personal protective equipment (PPE)
- Remove the valve core.
- Exhaust all air from the tire.
- Run a piece of wire through the stem to be sure it is not plugged.

Exhaust air from both tires of a dual assembly before working on either.

Failure to follow this procedure may lead to death or serious injury.





Demounting Instructions

Semi Drop-Center Rims

Three Piece Type TG - TGD - TGF (Graders)

Read safety instructions (pages 26-35) before proceeding.

PROCEDURE REQUIRES:

- 2 Goose-necked bead unseating tools.
- Rubber lubricant.
- Rubber, plastic, lead or brass faced mallet.

Before removing any rim or wheel component:

- **Wear proper personal protective equipment (PPE)**
- **Remove the valve core.**
- **Exhaust all air from the tire.**
- **Run a piece of wire through the stem to be sure it is not plugged.**

Exhaust air from both tires of a dual assembly before working on either.

Photo 1

Photo 2

After complete deflation, place assembly on blocks with loose flange side up. Follow steps in order shown.

1. Drive goose-necked end of two tools between tire and flange. They should be about 2-feet (70 cm) apart. (Photo 1)

2a. Pry both tools outward and sideways through an arc of about 70º. (Photo 2)

2b. Leave one tool in position and move second about 5-inches (13 cm) beyond. Pry down and out as above.

2c. Repeat the process until the entire bead is unseated.

3. Stand on sidewall. Use foot to force flange down along rim base. Pry loose lock ring. (Photo 3)

4. Hold side of flange down with hooked end of tool. Grab and remove O-ring from O-ring groove. (Photo 4)

5. Remove side flange. (Photo 5)

6. Turn tire over.

7. Follow steps 1 and 2 to break tire loose from fixed flange side of rim.

8. Lift rim base from tire. (Photo 6)

Photo 3

Photo 5

Photo 4

Photo 6

Demounting Instructions

Single Piece Rims

(Graders and Small Front End Loaders)

Read safety instructions (pages 26-35) before proceeding.

PROCEDURE REQUIRES:

- 1 goose-neck bead unseating tool
- 3 tire irons
- Rubber lubricant

Photo 1

Before working on tire or rim:

- **Wear proper personal protective equipment (PPE)**
- **Remove the valve core.**
- **Exhaust all air from the tire.**
- **Run a piece of wire through the stem to be sure it is not plugged.**

Exhaust air from both tires of a dual assembly before working on either.

After complete deflation, place assembly on blocks with loose flange side up. Follow steps in order shown.

1. Stand on tire. Use goose-neck tool to break bead from wheel flange.
2. Lubricate top tire bead and top flange area on wheel.
3. Insert two tire irons close together under top bead. (Photo 1)
4. Hold one tire iron down in original position. Hold firmly so it does not fly up and strike you.

Photo 2

5. Work 2nd tire iron around wheel until bead is completely demounted. (Photo 2)
   - Use standing weight to help push bead into wheel well.
6. Stand tire/wheel assembly up.
   - Break bead from second wheel flange.
   - Lubricate near tire bead and back flange area on wheel.
   - Pull top of wheel out of tire as far as possible. Use foot on bottom of wheel to hold in cocked position. Tire bead should be in wheel well.
7. Force spoon of tire iron between bead and wheel flange. (Photo 3) Raise tire iron until it is straight up. Hold in position.


Photo 3

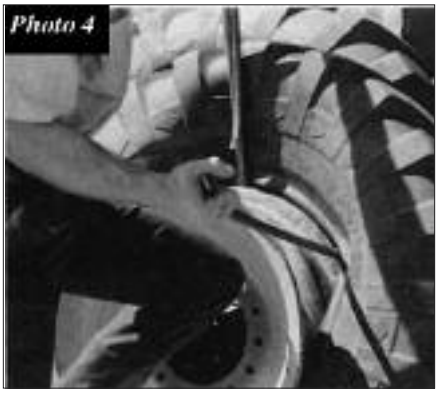


Photo 4

8. Position 2nd tire iron 12" to right of first iron.(Photo 4) Force spoon under bead and over wheel flange.
9. Rotate 2nd tire iron 90º. (Photo 5) Lift 2nd tire iron straight up.
10. Hold 1st and 2nd tire irons in one hand so they form a triangle. Position 3rd tire iron 12" to left of first iron. Rotate 3rd tire iron 90º to wheel. (Photo 6) Lift 3rd tire iron straight up.
11. Once bead is over flange, finish demounting with one tire iron.


Photo 5


Photo 6

Horizontal Demounting 25” - 49” Diameter Rims

Read safety instructions (pages 26-35) before proceeding.

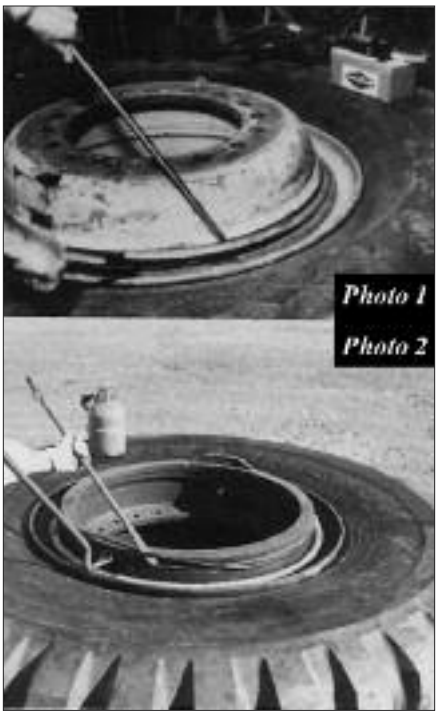
PROCEDURE REQUIRES:

- Hydraulic demounting tool
- 2 pry bars

Before removing any rim or wheel component:

- **Wear proper personal protective equipment (PPE)**
- **Remove the valve core.**
- **Exhaust all air from the tire.**
- **Run a piece of wire through the stem to be sure it is not plugged.**

Exhaust air from both tires of a dual assembly before working on either.



After complete deflation, place assembly on blocks with gutter side up. Follow steps in order shown.

1. Force pry bars under lock ring from opposite sides. They should be separated by about 10-inches. Push bars in opposite directions to pry lock ring out. (Photo1)

   NOTE: If lock ring cannot be removed, unseat bead with lock ring and O-ring in place.

2. Pry the beat seat band back. Insert a pry bar or screwdriver under O-ring and pull it from groove. (Photo 2)

   Cut through O-ring to be sure a new one will be used for remounting.

3. Place hook of hydraulic demounting tool into pry bar pocket. (A continuous lip is provided on some bases.) Adjust the ram adjusting screw so the tool will remain vertical under pressure. (Photo 3) In some cases, the pressure foot may have to be removed to assure a good fit.

Photo 3

Be sure tool is properly seated. If not properly seated it can fly off with great force. Always stand away from tool when it is under pressure.

4. Stand away from assembly and activate hydraulic pump to apply pressure. If necessary, release pressure and readjust ram adjusting screw. Depress flange 1/2" - 3/4" (13-19 mm). Use a screwdriver to slip a nut (or similar object) between flange and lip of beat seat.

Keep fingers clear at all times.

   Release pressure slowly. Check to make sure the nut (or other spacer) will not slip out. If not securely positioned, it can become a projectile and cause serious injury.

5. Move tool 2-feet around rim for second bite.

Do not use tool near flange butt weld. (Photo 4)

   Take additional bites at 2-foot intervals until bead is unseated.

6. Use hoist or pry bar to remove bead seat band. (Photo 5)

7. Remove flange.

8. Turn assembly over. Use procedure to unseat bead on back.

9. Use hoist to lift rim base from tire.

10. Remove back flange.

NOTE: When the bead is difficult to loosen, use two hydraulic demounting tools.

When using two tools, be careful not to bend flange or damage butt weld.

Also, work around the tire several times. Each time, make a slightly greater push. Block with larger objects.

Photo 4

Photo 5

Horizontal Demounting 51” and Larger HDT Rims

Read safety instructions (pages 26-35) before proceeding.

PROCEDURE REQUIRES:

- Hydraulic demounting tool
- 2 pry bars

Before removing any rim or wheel component:

- **Wear proper personal protective equipment (PPE)**
- **Remove the valve core.**
- **Exhaust all air from the tire.**
- **Run a piece of wire through the stem to be sure it is not plugged.**

Exhaust air from both tires of a dual assembly before working on either.

Photo 1

Photo 3

After complete deflation, place assembly on blocks with gutter side up. (Photo 1) Follow steps in order shown.

1. Stand inside rim. Use 2 pry bars and carefully remove lock ring. Start at split and work tools around the ring. (Photo 2 and Photo 3)

2. Insert a pry bar or screwdriver under O-ring and pull it from groove. (Photo 4)

   Cut through O-ring to be sure a new one will be used for remounting.

3. Start 30-degrees from flange butt weld. Place hooks of hydraulic demounting tool under bead seat band. Adjust the ram adjusting screw so the tool will remain vertical under pressure. (Photo 5)

Photo 2

Photo 4

Be sure tool is properly seated. If not properly seated it can fly off with great force. Always stand away from tool when it is under pressure to avoid risk of serious injury.

4. Stand away from assembly and activate hydraulic pump to apply pressure. If necessary, release pressure and readjust ram adjusting screw. Depress flange 3/4" -1" (19-25mm). Use a screwdriver to slip a nut (or similar object) between flange and lip of bead seat. (Photo 6)

Keep fingers clear at all times.

Release pressure slowly. Check to make sure the nut (or other spacer) will not slip out. If not securely positioned, it can become a projectile and may cause serious injury.

5. Move tool 2- to 3-feet (60-90 cm) around rim for second bite.

Do not use tool within 12" (30cm) of flange butt weld.

Take additional bites at 2- to 3-foot intervals until bead is unseated.

Stand clear when using a cable or chain sling. It can snap and lash out.

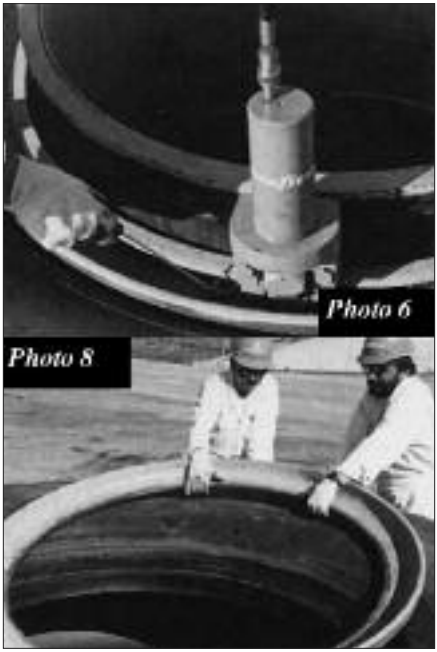
6. Use hoist or pry bar to remove bead seat band.

7. Remove flange.

8. Turn assembly over. Use procedure described to unseat bead on back.

9. Use hoist to lift rim base from tire (Photo 7)

10. Use hoist to lift and remove back flange. (Photo 8)



Vertical Demounting Tires on a Machine

Read safety instructions (pages 26-35) before proceeding.

PROCEDURE REQUIRES:

- Hydraulic demounting tool (Foot activated model is recommended – Photo 1)
- Pry bar

Before placing jack in position, block tire and wheel on other side of vehicle.

Always use hardwood blocks under jack, or steel stand.

Jack may slip. Always crib up vehicle with blocks, or stand.

Before removing any rim or wheel component:

- **Wear proper personal protective equipment (PPE).**
- **Remove the valve core. (Photo 1)**
- **Exhaust all air from the tire.**
- **Run a piece of wire through the stem to be sure it is not plugged.**

Exhaust air from both tires of a dual assembly before working on either.

Tire and wheel components are heavy. To avoid back and foot injuries, two people should lower components.

1. Place hook of hydraulic demounting tool into pry bar pocket. (A continuous lip is provided on some bases.) Adjust ram adjusting screw so tool will remain perpendicular to tire under pressure (Photo 2)

Be sure tool is properly seated. If not properly seated it can fly off with great force. Always stand away from tool when it is under pressure to avoid risk of death or serious injury.

2. Stand away from assembly and activate hydraulic pump to apply pressure. If necessary, release pressure and readjust ram adjusting screw. Depress flange 3/4" (19mm). Place end of pry bar between flange and lip of bead seat band.

Keep fingers clear at all times.

   Release pressure.

3. Move tool 2-feet around rim for second bite.

Do not use tool near flange butt weld.

   Take additional bites at 2-foot intervals until bead is unseated.

4. Use pry bar to remove lock ring. Start near split. (Photo 3)

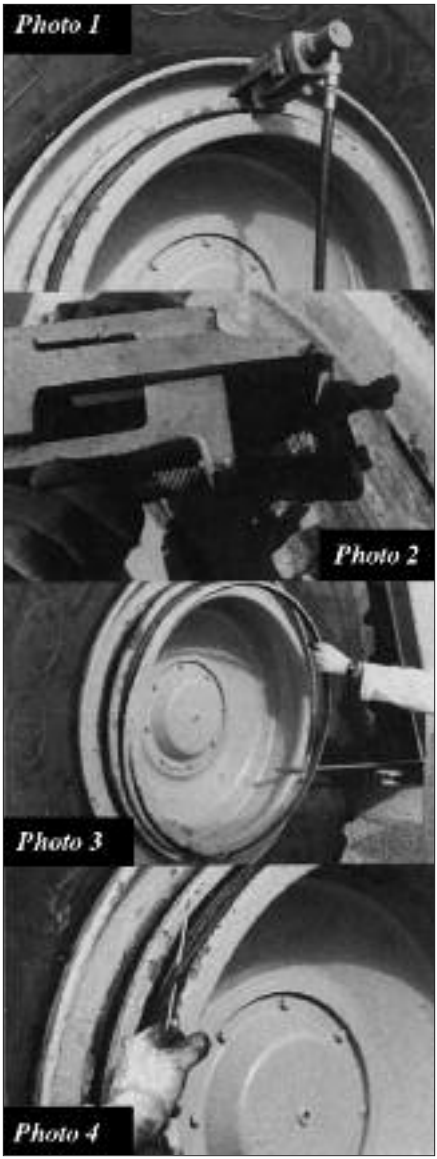
5. Insert a pry bar or screwdriver under O-ring and pull it from groove. (Photo4) Cut through O-ring to be sure a new one will be used for remounting.

6. Insert pry bar under flange and pry bead seat band loose. (Photo 5) Support band on thigh. With assistance, lower it to ground. Roll out of way. (Photo 6)

7. With assistance, remove flange. Carefully lower it to ground. Roll out of way.

8. Unseat back tire bead. Use hydraulic tool. If insufficient clearance, use shorty ram between vehicle frame and back flange. (Photo 7)

9. Use boom truck and sling or tire handler to remove tire.



Stand clear when using a cable or chain sling. It can snap and lash out.

10. With assistance, remove back flange.

Demounting Tube-Type Off-The-Road Tires

Read safety instructions (pages 26-35) before proceeding.

Before moving any rim or wheel component:

- **Wear proper personal protective equipment (PPE).**
- **Remove the valve core.**
- **Exhaust all air from the tire.**
- **Run a piece of wire through the stem to be sure it is not plugged.**

Exhaust air from both tires of a dual assembly before working on either.

1. Unseat beads as described for the size assembly involved.
2. Before removing tire from rim, be sure valve will clear gutter section.
3. Remove flap from tire. Use tool with a rounded end to pry out and away from beads.

NOTE: If necessary, use a tire spreader to spread the beads. A small auto jack can be used as a spreader.

4. Remove the tube. Be careful not to pull on valve stem or enlarge any areas of damage.

Inflation Procedures for Proper Mounting After Tire & Rim Assembly Has Been Placed on Machine

During mounting, all off-the-road tires must be inflated, deflated, and reinflated. This procedure has two purposes.

First, it helps assure that the beads are seated properly. Beads must seat against rim flanges and be in compression on tapered bead seats.

Second, it removes buckles and uneven stress from flaps and tubes.

Initial inflation varies with rim size:

- Grader tires inflate to 50 PSI (3.50 Bar)
- Less than 29" rim diameter tires inflate to 75 PSI (5.25 Bar)
- Larger than 29" rim diameter tires inflate to 90 PSI (6.25 Bar)

Failure to seat the beads can cause bead durability problems. In tubeless tires, it can also allow air leakage under the beads.

Air pressure is the only positive method to fully seat off-the-road tire beads. Operating a tire will not seat an improperly mounted tire. It will result in damage to the beads and shortened tire life.

Mounting Off-The-Road Tires
On Type T - TL - TLD - TGD and TGF Rims

(Tubeless-type. See page 60 for additional instructions for tube and flap insertion.)

Read safety instructions (pages 26-35) before proceeding.

1. Before mounting:

   - Clean all rim components. Remove rust and dirt. Lock ring and O-ring grooves must be clean and rust free for proper seating and seal. (Photo 1)
   - Inspect parts for damage. Replace all cracked, worn, damaged, or severely rusted components.
   - Paint or coat all parts with rust inhibitor.
   - Double check to be sure correct parts are being used.
   - Inspect inside of tire. Remove any foreign matter. Use compressed air to dry any moisture.

2. Install valve spud on rim. Tighten to proper torque.

3. Place rim on 4"-6" blocks (10-13 cm) or mounting stand. Fixed flange side must be down.

4. Lubricate bead seat area on rim and both tire beads with vegetable lubricant. Use only approved vegetable-based lubricants.

   - Lubricate from toe to GG ring on tire.

   - Lubricate moderately, but thoroughly.

5. Place tire over rim base.

6. Place side flange over rim base. (Photo 2)

   - Push down as far as possible.
   - Make sure flange does not bind on rim base.

7. Stand on flange to position it below both grooves in the rim base. Snap lock ring into (upper) lock ring groove. (Photo 3 –next page)

   - Be sure the embossed safety bulge on lock ring is up.

(continued on next page)

Photo 1

Photo 2

8. Lubricate O-ring with vegetable lubricant.

9. Lubricate entire O-ring groove area with vegetable lubricant.

10. Snap O-ring into place. Place on one side. Stretch like a rubber band. Seat on other side. (Photo 4)

    - Do not roll O-ring into place.
    - If necessary, push side flange down with hand tool to expose O-ring groove.

11. Check components for proper assembly.

NOTE: Lock rings must be fully seated in gutter around the flange.

12. Insert drive lugs as required.

13. Place assembly in safety cage. (Photo 5)

NOTE: If no cage is available, some other approved restraining device must be used during inflation. Inflation above 10% of recommended is to be done only after assembly is installed on the machine

    - Always stand away from the rim during inflation.

    - After pressure has reached 3 PSI (.5 Bar), check all around rim for proper component seating. If necessary, deflate tire and adjust components.

15. If assembly is ok, inflate to 50 PSI (3.5 Bar).

NOTE: Air inflation equipment should have a filter to remove moisture. This prevents corrosion inside the tire. Check filter frequently to be sure it functions properly.

16. Adjust to proper operating pressure

    Ballasted tires (liquid or dry filled) must first be seated with air.

    After seating, exhaust air and add ballast. (See pages 68-73 for additional information.)

Photo 3

Photo 4

Photo 5

Mounting Bias Off-The-Road Tires on EM Rims

(Tubeless-type. See page 60 for additional instructions for tube and flap insertion.)

Read safety instructions (pages 26-35) before proceeding.

1. Before mounting:
   - Clean all rim components. Remove rust and dirt. Lock ring and O-ring grooves must be clean and rust free for proper seating and seal. (Photo 1)
   - Inspect parts for damage. Replace all cracked, worn, damaged, or severely rusted components.
   - Paint or coat all parts with rust inhibitor.
   - Double check to be sure correct parts are being used.
   - Inspect inside of tire. Remove any foreign matter. Use compressed air to dry any moisture.
2. Place base on 4" - 6" blocks (10-13 cm) or mounting stand. Gutter side must be up.
3. Place back flange on base. (Photo 2)
4. Lubricate tire beads with vegetable lubricant.
   - Use only approved vegetable-based lubricants.
   - Lubricate from toe to GG ring on tire.
   - Lubricate moderately, but thoroughly.
5. Use tire hoist with sling or tire handler to lift tire. Place on rim. (Photo 3)

Stand clear when using a cable or chain sling. It can snap and lash out.

6. Depress tire bead area to ease assembly of next components. (Photo 4)

(Continued on next page)

Photo 1

Photo 2

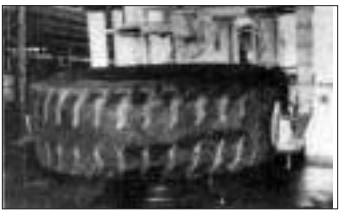


Photo 3

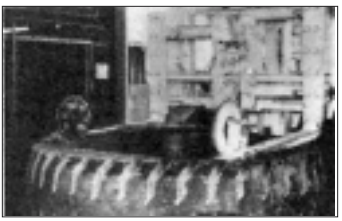


Photo 4

7. Place front flange over rim base. (Photo 5)

8. Place bead seat band on rim base.

   Be sure driver pockets in bead seat band and base are in line (if present).

   Band will bind if cocked even slightly. If it becomes wedged, DO NOT HAMMER INTO PLACE! Lift, and lower it correctly. If necessary, use a rubber, lead, plastic or brass-faced mallet and tap lightly upward. (Photo 6)

Photo 5

Photo 6

Typical Heavy Duty Driver Application

Align driver pockets in bead seat band and base.

Insert driving slug into driver pocket on base.

Make sure all parts are properly aligned before inflation.

View of final assembly.

9. Lubricate O-ring with vegetable lubricant.

10. Lubricate entire O-ring groove area with vegetable lubricant. (Photo 7)

11. Snap O-ring into place. Place on one side. Stretch like a rubber band. Seat on other side. (Photo 8)

12. Start the lock ring in the lock ring groove. Push or walk it into place. (Photo 9)

13. Place drive key in pockets as required.

14. Place assembly in safety cage.

NOTE: ***If no cage is available, some other approved restraining device must be used during inflation.***

- ***Always stand away from the rim during inflation.***

Photo 7

Photo 8

- After pressure has reached 5 PSI (.5 Bar), check all around rim for proper component seating. If necessary, deflate tire and adjust components.
- Inflation above 10% of recommended is to be done only after assembly is installed on the machine.

Do not inflate tires with 16 ply rating or less above 75 PSI (5.25 Bar).

15. If assembly is ok, inflate as follows:

- Tires less than 29" in diameter = 75 PSI (5.25 Bar)
- Tires 29" and larger in diameter = 90 PSI (6.25 Bar)

NOTE: Air inflation equipment should have a filter to remove moisture. This prevents corrosion inside the tire. Check filter frequently to be sure it functions properly.

16. Adjust to proper operating pressure.

Photo 9

Mounting Radial Off-The-Road Tires on EM Rims

Read safety instructions (pages 26-35) before proceeding.

1. Before mounting:
   - Clean all rim components. Remove rust and dirt. Lock ring and O-ring grooves must be clean and rust free for proper seating and seal. (Photo 1 and Photo 2)
   - Inspect parts for damage. Replace all cracked, worn, damaged, or severely rusted components.
   - Paint or coat all parts with rust inhibitor. (Photo 3)
   - Double check to be sure correct parts are being used.
   - Inspect inside of tire. Remove any foreign matter. Use compressed air to dry any moisture.

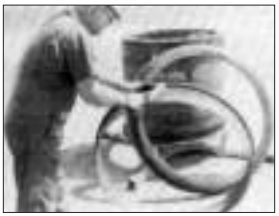


Photo 1

Photo 2

2. Place base on 4" - 6" blocks (10-13 cm) or mounting stand. Gutter side must be up.
3. Lubricate tire beads with vegetable lubricant. (Photo 4).
   - Use only approved vegetable-based lubricants.
   - Lubricate from toe to GG ring on tire.
   - Lubricate moderately, but thoroughly.
4. Lubricate the following areas on the rim:
   - Back rim base knurled area.
   - Front O-ring groove area.
5. Lubricate components: (Photo 5)
   - Bead seat band knurled area
   - O-ring

Photo 3

Photo 4

6. Place back flange on rim base.

7. Use cable sling or tire handler to lift tire. Place on rim. (Photo 6)

Stand clear when using a cable or chain sling. It can snap and lash out.

8. Depress tire bead area to ease assembly of next components (Photo 7–next page)

9. Place front flange over rim base.

10. Place bead seat band on rim base.

    Be sure driver pockets in bead seat band and base are in line (if present).

    Band will bind if cocked even slightly. If it becomes wedged, DO NOT HAMMER INTO PLACE! Lift, and lower it correctly. If necessary, use a rubber, lead, plastic or brass-faced mallet and tap lightly upward.

(Continued on next page)

Photo 5

Photo 6

Typical Heavy Duty Driver Application

Align driver pockets in bead seat band and base.

Insert driving slug into driver pocket on base.

Make sure all parts are properly aligned before inflation.

View of final assembly.

11. Snap O-ring into place. Place on one side. Stretch like a rubber band. Seat on other side.

12. Start the lock ring in the lock ring groove. Push or walk it into place. (Photo 8)

13. Place drive key in pockets as required.

NOTE: If tire is to be inflated horizontally, support rim above ground level. This allows bottom bead to pilot (self-center) onto bead seat taper.

If tire is to be inflated vertically, support both tread and rim during inflation. This prevents excessive bead to rim eccentricity.

14. Place assembly in safety cage.

NOTE: ***If no cage is available, some other approved restraining device must be used during inflation.***

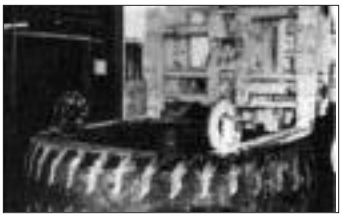


Photo 7

Photo 8

- ***Always stand away from the rim during inflation.***
- After pressure has reached 5 PSI (.5 Bar), check all around rim for proper component seating. (Photo 9) If necessary, deflate tire and adjust components.

15. Inflation above 10% of recommended is to be done only after assembly is installed on the machine.

- Tires 25" and larger in diameter = 90 PSI (6.25 Bar)
- If recommended operating pressure is higher than 90 PSI, inflate to operating pressure.

NOTE: Air inflation equipment should have a filter to remove moisture. This prevents corrosion inside the tire. Check filter frequently to be sure it functions properly.

Do not run tire until pressure has been adjusted to operating pressure.

Photo 9

Mounting Radial Off-The-Road Tires on Single Piece Rims

Read safety instructions (pages 26-35) before proceeding.

1. Before mounting:
   - Clean wheel. Use wire brush to remove rust and dirt.
   - Inspect wheel for damage. Do not use cracked, worn, damaged, or severely rusted wheels.
   - Paint or coat wheel with rust inhibitor.
   - Inspect inside of tire. Remove any foreign matter. Use compressed air to dry any moisture.
2. Attach a small C-clamp to wheel flange. This will keep bead from slipping around wheel flange during mounting. (Photo 1)

Photo 1

3. Lubricate wheel flanges, wheel well and tire bead with vegetable lubricant.
   - Use only approved vegetable-based lubricants.
   - Lubricate moderately, but thoroughly.
4. Hook tire bead over C-clamp. This prevents slippage.
5. Use tire iron to hook bead onto wheel. (Photos 2, this page, and 3, next page) Be sure bead is slipping into wheel well.
6. Place tire iron between top bead and wheel. Push down to force bead below wheel flange.
7. Place vice grips on wheel flange to hold top bead start position.
   - Be sure vice grips are firmly attached to wheel. (Photo 4)
   - Lubricate 2nd bead 90° on both sides of vice grips.
8. Start 90° on either side of vice grips. Walk iron around top bead to hook onto wheel.

(Continued on next page)

Photo 2

9. Place one tire iron across wheel. Use 2nd iron as lever to help hook final bead section onto wheel. (Photo 5)

10. Place assembly in safety cage.

NOTE: ***If no cage is available, some other approved restraining device must be used during inflation.***

- ***Always stand away from the wheel during inflation.***

Photo 3

Photo 4

- After pressure has reached 5 PSI (.5 Bar), check all around wheel for proper seating. If necessary, deflate tire and adjust fit.
- Inflation above 10% of recommended is to be done only after assembly is installed on the machine

11. If assembly is ok, inflate to working pressure

NOTE: Air inflation equipment should have a filter to remove moisture. This prevents corrosion inside the tire. Check filter frequently to be sure it functions properly.

Photo 5

Mounting Tires on a Machine

(Tubeless-type. See page 60 for additional instructions for tube and flap insertion.)

Read safety instructions (pages 26-35) before proceeding.

1. Before mounting:
   - Clean all rim components. Remove rust and dirt. Lock ring and O-ring grooves must be clean and rust free for proper seating and seal. (Photo 1)
   - Inspect parts for damage. Replace all cracked, worn, damaged, or severely rusted components.
   - Paint or coat all parts with rust inhibitor.
   - Double check to be sure correct parts are being used.
   - Inspect inside of tire. Remove any foreign matter. Used compressed air to dry any moisture.
2. Place back flange on rim base.
3. Lubricate tire beads with vegetable lubricant.
   - Use only approved vegetable-base lubricants.
   - Lubricate from toe to GG ring on tire.
   - Lubricate moderately, but thoroughly.
4. Use tire boom or tire handler to lift tire. Place on rim. (Photo 2)

Stand clear when using a cable or chain sling. It can snap and lash out.

5. Use boom to position front flange on base. (Photo 3–next page)

(Continued on next page)

Photo 1

Photo 2

6. Use boom to position bead seat band on rim base. (Photo 4)

   Be sure driver pockets in bead seat band and base are in line (if present).

   Band will bind if cocked even slightly. If it becomes wedged, DO NOT HAMMER INTO PLACE! Remove from rim and position it correctly. If necessary, use a rubber, lead, plastic or brass-faced mallet and tap lightly upward.

7. Lubricate O-ring with vegetable lubricant.

8. Use boom to hold rim components out of way while installing O-ring.

9. Lubricate entire O-ring groove area with vegetable lubricant.

10. Snap O-ring into place. Place on one side. Stretch like a rubber band. Seat on other side. (Photo 5)

11. Start the lock ring in the lock ring groove. Push or walk it into place. (Photo 6)

Photo 3

12. Place drive key in pockets as required.

13. ***An approved restraining device must be used during inflation.***

    - ***Always stand away from assembly during inflation.***
    - After pressure has reached 5 PSI (.5 Bar), check all around rim for proper component seating. If necessary, deflate tire and adjust components.

15. If assembly is ok, inflate as recommended.

NOTE: Air inflation equipment should have a filter to remove moisture. This prevents corrosion inside the tire. Check filter frequently to be sure it functions properly.

16. Adjust to proper operating pressure.

Photo 4

Photo 5

Photo 6

Typical Heavy Duty Driver Application

Align driver pockets in bead seat band and base.

Insert driving slug into driver pocket on base.

Make sure all parts are properly aligned before inflation.

View of final assembly.

Mounting Tube-Type Off-The-Highway Tires

Read safety instructions (pages 25-35) before proceeding.

Rim preparation and component installation procedures are the same as tubeless.

The tube is installed in tire before it is placed on the rim.

1. Inspect casing inside and out for breaks, bruises and nails.
   - Remove any foreign matter inside the tire.
   - Use compressed air to dry any moisture.
2. Stand tire vertically.
3. Place tube in casing.
   - Start at bottom.
   - Add air as tube is worked into tire. This will hold it in place and prevent wrinkles.
4. Insert flap.
   - Be sure it is properly centered.
   - Be sure it is free of wrinkles.
   - Rotate tire as the flap is worked in. Part being inserted is always at bottom.
   - If necessary, use a dry lubricant (such as soapstone) on flap and tube.
   - If necessary, use a spreader or car jack to spread beads.
5. ***When ready to inflate, place assembly in safety cage.***

NOTE: ***If no cage is available, some other approved restraining device must be used during inflation.***

- ***Always stand away from the rim during inflation.***
- After pressure has reached 5 PSI (.5 Bar), check all around rim for proper component seating. If necessary, deflate tire and adjust components.

Inflation above 10% of recommended is to be done only after assembly is installed on the machine.

Do not inflate tires with 16 ply rating or less above 75 PSI (5.25 Bar).

6. If assembly is ok, inflate as follows:
   - Tires less than 29" in diameter = 75 PSI (5.25 Bar)
   - Tires 29" and larger in diameter = 90 PSI (6.25 Bar)

NOTE: Air inflation equipment should have a filter to remove moisture. This prevents corrosion inside the tire. Check filter frequently to be sure it functions properly.

7. Completely deflate tire. This removes buckles and uneven stresses from tube and flap.
8. Reinflate to proper operating pressure.

SECTION III
Tire Selection for Expected Service Conditions

All off-the-road (OTR) tires are subject to the demands imposed by:

- heavy loads
- less than desirable operating conditions

All require:

- High carcass strength to hold the inflation pressure necessary to carry great loads and resist impact damage.
- Tread and sidewalls constructed rubber to help resist cuts and bruises.
- Tread patterns designed for high traction to help transmit high engine horsepower.
- Flotation capabilities in soft underfoot conditions.

Some operations, however, require different tire construction features for the job site conditions. For example, operations with long haulage cycles need more heat resistant tread. Sharp rock service demands extra tread depth to minimize cutting. Soft underfoot or muddy conditions call for better traction.

Unfortunately, improvements in one area of a tire's performance often result in compromise.

Increased tread depth typically results in reduced heat resistance. Heat is detrimental to tire life. Loads or speeds may have to be reduced to minimize heat generation. Otherwise, the tire may suffer structural damage and lose service life.

Similarly, improved traction is usually gained at the expense of tread wear. This occurs because tread volume decreases as tread elements are spaced further apart. The greater the spacing, the better the tire can dig in. But with less rubber on the ground, the tread wears faster.

To minimize compromises, Goodyear offers a variety of off-the-road-tires with choices of:

- tread design
- non-skid (tread) depth
- tread rubber compounds

for customers to select.

Tire Selection Criteria

There are four major areas to evaluate to determine the best tire for an earthmover:

- Will it fit?
- Will it carry the load?
- Will it work in the underfoot conditions?
- Does it meet TMPH/WCF requirements?

OTR equipment manufacturers supply technical data needed to determine tire loading. These include:

- Empty and loaded vehicle weight.
- Load distribution by axle.

Equipment manufacturers typically deliver their vehicles with a base tire. This base tire is suitable for standard loads and inflations. Users, however, typically want to carry larger loads to achieve maximum productivity. To carry heavier loads, larger or higher ply rated tires must be used.

Equipment manufacturers recommend optional tires sizes and ply ratings for different loading and operating conditions. However, other considerations can affect the tire choice.

Factors involved in tire selection include:

- Material density. The weight per cubic yard (cubic meter) varies greatly.
- Optional equipment can add substantial weight. It can also affect weight distribution.
- Equipment modifications can affect weight and its distribution. This is especially true of modifications by users.
- As equipment ages, it tends to become heavier when empty. Thus, empty weight and distribution will change over time.

Because of these factors, it is necessary to estimate the actual operational tire loads. An appropriate tire can then be selected using recommended load and inflation tables.

The Tire and Rim Association (T&RA) publishes suggested maximum inflation recommendations for OTR tires.

While it may be necessary to estimate wheel loads, actual load data is extremely desirable. This can be obtained through an on-site load study.

Goodyear has a sizeable history of tire load data for a wide range of equipment. This information is available to users to help in their selection of OTR tires.

Higher vs. Lower Inflation Pressure

Usually, you have two choices to carry a given load:

1) a smaller size tire with a higher ply rating and inflation pressure; or

2) a larger tire which will carry the load at a lower inflation pressure.

If possible, the tire with a lower inflation pressure should be selected. As a general rule, lower inflation pressure offers these advantages:

- Increased tread wear.
- Reduced cut and impact potential.
- Improved repairability.
- Improved retreadability.
- Reduced rim and wheel breakage.
- Reduced vehicle maintenance and repair costs.
- Less road maintenance required.

Remember, however, that inflation supports and carries the load. If the weight demands high inflation pressure, the use of lower inflation pressure is not an option.

Vehicle clearance must be considered.

Ton Mile Per Hour (TMPH/TKPH) Requirement

Tires on OTR vehicles generate and build-up heat. There is a definite relationship between the heat generated and:

- Load
- Speed
- Travel distance
- Improper inflation pressure

Excessive heat can lead to premature tire wear.

The TMPH formula calculates the rate of work tires can perform and stay within a safe temperature range.

Simply stated, the TMPH formula is:

Average Tire Load (short tons)
X Average Shift Speed (MPH)

Similarly, the Ton Kilometer Per Hour (TKPH) formula is:

Average Tire Load (metric tons)
X Average Shift Speed (KPH)

NOTE: Mines using computer dispatch systems must use Average Hourly Speed rather than average shift speed.

The Average Tire Load is calculated:

$$\frac{\text{Empty Tire Load + Loaded Tire Load}}{2}$$

The Average Tire Load must be obtained for tires on each axle of a vehicle.

The Average Shift Speed is found by:

$$\frac{\text{RTD X NTS}}{\text{HW}}$$

where RTD = Round Trip Distance
NTS = Number of Trips Per Shift
HW = Number of Hours Worked

The number of hours worked is the actual number of vehicle operation hours. It is calculated from the time the vehicle first moves until the shift finishes.

The formula gives a number called the **Job TMPH (TKPH).**

All Goodyear earthmover tires have a TMPH/TKPH rating. These ratings are available from any Goodyear OTR sales or service department.

The Job TMPH/TKPH must be known for each wheel position. Tire selection can then be based on:

- A size and ply rating which will not be overloaded.
- A type or design with a TMPH/TKPH rating equal to the job requirement.

Sample TMPH calculation:

Conditions:

- Empty vehicle tire load = 20,000 pounds (10.0 tons)
- Loaded vehicle tire load = 34,000 pounds (17.0 tons)
- Number of Hours Worked = 8.0 hours
- The shift hauls 15 loads
- Each haul is 9.0 miles, round trip.

Calculation:

Average Tire Load =

$$\frac{\text{10 Tons + 17 Tons}}{2}$$

Average Tire Load =

$$\frac{\text{27 Tons}}{2} = \text{13.5 Tons}$$

Average Shift Speed =

$$\frac{\text{9 Miles Per Trip X 15 Trips Per Shift}}{\text{8.0 Hours Worked Per Shift}}$$

Average Shift Speed =

$$\frac{135 \text{ Miles}}{8.0} = 16.9 \text{ MPH}$$

Job TMPH

13.5 Tons X 16.9 MPH = 228 TMPH

Conclusion:

To avoid heat problems tires must have a TMPH rating of 228 or higher.

If the tires on the machine are rated less than 228:

- reduce speed
- reduce load
- Change to tires with a higher TMPH rating

NOTE: Each tire position on the machine must be calculated and considered.

Formula Limitation:

Tests have shown that the TMPH formula does not apply:

- When tires are loaded 20% above their capacity.
- On hauls of more than 20 miles.

For haul lengths in excess of 20 miles one way, consult a Goodyear OTR representative.

Sample TKPH calculation:

Conditions:

- Empty vehicle tire load = 9,000 kilos (9.0 metric tons)
- Loaded vehicle tire load = 15,000 kilos (15.0 metric tons)
- Number of Hours Worked - 8.0 hours
- The shift hauls 15 loads.
- Each haul is 14 kilometers, round trip.

Calculation:

Average Tire Load =

$$\frac{9 \text{ Metric Tons} + 15 \text{ Metric Tons}}{2}$$

Average Tire Load =

$$\frac{24 \text{ Metric Tons}}{2} = 12 \text{ Metric Tons}$$

Average Shift Speed =

$$\frac{14 \text{ Kilometers Trip X } 15 \text{ Trips Per Shift}}{8.0 \text{ Hours Worked Per Shift}}$$

Average Shift Speed =

$$\frac{420 \text{ Kilometers}}{8.0} = 26.25 \text{ KPH}$$

Job TKPH

12.0 Tons X 26.25 KPH = 315 TKPH

NOTE: TKPH = TMPH X 1.46

Conclusion:

To avoid heat problems tires must have a TKPH rating of 315 or higher.

If the tires on the machine are rated less than 315:

- reduce speed
- reduce load
- Change to tires with a higher TKPH rating

NOTE: Each tire position on the machine must be calculated and considered.

Formula Limitation:

Tests have shown that the TKPH formula does not apply.

- When tires are loaded 20% above their capacity.
- On hauls of more than 32 kilometers.
- For haul lengths in excess of 32 kilometers one way, consult a Goodyear OTR representative.

The Work Capability Factor (WCF)

Goodyear dozer and loader tires are used in dig and load service. They are normally selected from the TRA 5 MPH/10 KPH tables. Tire heat build-up in this type of operation is not a factor.

Operators sometimes use loaders as transport machines. When the haul distance exceeds 50 feet (15 meters), the operation is termed load and carry. This type of service can involve speeds above 5 MPH (10 KPH). Longer hauls and rapid work cycles also are common.

Dozer and loader tires are thicker and stronger than other OTR designs. Heat will build up faster in these designs.

Tire heat build-up is a function of work the tire is doing.

The Work Capability Factor (WCF) provides a way to select tires that can handle the work.

All Goodyear dozer and loader tires have a WCF. These ratings are available from any Goodyear OTR sales or service department.

The formula to determine a machine's WCF requirement focuses on its front wheels. These carry substantially more weight.

The WCF formula is:

Average Tire Load (short tons)
X Maximum Average Speed (MPH)

Similarly, the Metric WCF formula is:

Average Tire Load (metric tons)
X Maximum Average Speed (KPH)

The Average Tire Load is calculated:

$$\frac{\text{Empty Tire Load + Loaded Tire Load}}{2}$$

Tire load data should be the actual loads, if possible. If these are not known, the manufacturer's specifications can be used.

The Maximum Average Speed is found by:

Round Trip Distance
X Maximum Cycles per Hour

Sample WCF calculation (English Units):

Conditions:

- Empty vehicle tire load = 15.0 tons
- Loaded vehicle tire load = 30.0 tons
- Maximum cycles per hour = 35
- Each haul is 800 feet (.152 miles), round trip.

Calculation:

Average Tire Load =

$$\frac{\text{15 Tons + 30 Tons}}{2}$$

Average Tire Load =

$$\frac{\text{45 Tons}}{2} = \text{22.5 Tons}$$

Max. Average Speed =

$$\frac{.15 \text{ Miles X } 35 \text{ Trips}}{1 \text{ Hour}}$$

5.25 MPH

WCF

22.5 Tons
X 5.25 MPH

119.7 = 120 WCF

Conclusion:

To avoid heat problems tires must have a WCF of 119 or higher.

If the tires on the machine are rated less than 120:

- reduce speed.
- reduce load.
- reduce number of cycles.
- Changes to tires with a higher WCF rating.

Formula Limitation:

Tests have shown that the WCF formula does not apply:

- When tires are loaded more than 15% above their rated capacity.
- On hauls of more than 2000 feet.

For haul lengths in excess of 2000 feet one way, consult a Goodyear OTR representative.

Sample WCF calculation (metric units):

Conditions:

- Empty vehicle tire load = 14.0 metric tons
- Loaded vehicle tire load = 28.0 metric tons
- Maximum cycles per hour = 35
- Each haul is 250 Meters (.25 kilometers), round trip.

Calculation:

Average Tire Load =

$$\frac{14 \text{ Metric Tons} + 28 \text{ Metric Tons}}{2}$$

Average Tire Load =

$$\frac{42 \text{ Metric Tons}}{2} = 21 \text{ Metric Tons}$$

Max. Average Speed =

$$\frac{.25 \text{ KM X } 35}{1 \text{ Hour}}$$

8.75 = KPH

WCF

21.0 Tons
X 8.75 KPH

183.75 = 184 WCF

Conclusion:

To avoid heat problems tires must have a WCF of 184 or higher.

If the tires on the machine are rated less than 184:

- reduce speed
- reduce load
- Change to tires with a higher WCF

Formula Limitation:

Tests have shown that the WCF formula does not apply:

- When tires are loaded more than 15% above their rated capacity.
- On hauls of more than 600 meters.

For haul length in excess of 600 meters one way, consult a Goodyear OTR representative.

WCF Field Applications

The WCF can be used to determine maximum speeds and cycles for tires. This can help operators adjust operating conditions for:

- Existing tires where changeover is impractical.
- New tires where size or equipment limitations restrict selection.

For example:

Conditions:

- Empty Front Tire Load = 30,000 pounds (15 tons)
- Loaded Front Tire Load = 60,000 pounds (30 tons)

$$\frac{15 \text{ tons} + 30 \text{ tons}}{2} =$$

$$\frac{45 \text{ tons}}{2} = 22.5 \text{ tons average load}$$

- One way haul length = 400 feet (800 feet round trip)
- Tire on loader: 33.25-35 (L-5) WCF = 115

To determine maximum speed use the formula:

$$\frac{115 \text{ WCF}}{22.5 \text{ tons}} = 5.11 \text{ MPH}$$

To determine maximum cycles per hour use the formula:

$$\frac{5.11 \text{ MPH X } 5280 \text{ Ft (mile)}}{800 \text{ Feet}} = \text{Cycles}$$

$$\frac{26908.8}{800} = 33.7 = 33 \text{ Cycles/Hour}$$

Job Conditions

Load capacity and TMPH/TKPH (or WCF) ratings tell whether a tire can handle the job. They are not the only tire selection criteria, however.

Other site and operational factors that have to be considered include:

1) Environmental conditions such as:
   - Heavy rain
   - Heavy snow
   - Wide ranges in ambient temperatures
2) Availability of capable, trained personnel.
3) Length of time the project will last.
   - Are permanent haul roads feasible?
   - Is a haul road maintenance program feasible?
4) Length of work day.
   - Daylight only operation provides visibility needed to avoid tire hazards.
   - One or two shift operation allows more tire cool-down time.

Goodyear earthmover tire sales engineers receive continuous training on tire applications. They can provide knowledgeable advice on tire selection.

Ballasted Tires

Increasing the load on the drive axle offers many advantages:

- Improved traction
- Increased drawbar pull
- Less slippage
- Less pressure loss
- Less tread wear
- Less bounce
- Less fuel consumption

The simplest way to add weight is to partially fill the tires with liquid.

No less than 75% of the tire's volume should be filled with liquid. A 100% fill can cause an unsafe pressure rise under load.

A solution of calcium chloride and water is recommended for liquid filling. It offers:

- Additional weight (up to 50% over plain water.
- It is not harmful to rubber.
- It is plentiful and low in cost.
- It is an effective antifreeze solution.

Special Considerations For Ballasted Tires

Before adding ballast, tires must be seated with air. Inflate:

- Grader tires = 50 PSI (3.5 Bar)
- Tires less than 29" in diameter = 75 PSI (5.25 Bar)
- Tires 29" and larger in diameter = 90 PSI (6.25 Bar)

After seating, exhaust air and add ballast. (See page 46 for additional information.)

Tubes filled with calcium chloride must be equipped with special sealed-in base valves. These prevent separation of the rubber valve base and valve metal.

Tubeless tires can be ballasted. Calcium chloride solution will not harm rims if a minimum of 75% fill is used.

A corrosion-proof gauge should be used to check inflation pressures.

The valve must be in the highest position when pressure is checked. This gives the most accurate reading.

Mixing the Calcium Chloride Solution

The amount of calcium chloride needed to prevent freezing varies with the temperature.

Sp. Gravity @ 62º F / 18º C	CaC12/Water Lbs/Gal	Kg/L	Freezes Below ºF	ºC
1.000	0.0	0.00	+32	0
1.050	0.7	.08	+21	-6
1.100	1.5	.18	+7	-14
1.150	2.3	.28	-10	-23
1.218	3.5	.42	-30	-34
1.250	4.2	.50	-42	-41

The tables on pages 70 - 73 show how much fill is needed for different sized tires. The solution strength will provide antifreeze protection to -30º F (-34º C). The total weight gain in the right column is important for tire loading calculations.

The amount of $CaCl_2$/Water needed for other sized tires can be easily calculated. The volume of the tire must be known. Then use the formula:

$$\frac{3/4 \text{ Vol. (in cu. in.)}}{269.6} = \text{Gal Water}$$

The 269.6 divisor is established by:

Volume of Gal. Water = 231 cu. in.
Swell Factor = 38.6 cu. in.

Vol of 1 Gal. H_2O + 3.5 Lbs. $CaCl_2$= 269.6 cu. in.

Swell factors will vary with the amount of $CaCl_2$ added. Other swell factors are available from any Goodyear OTR Sales or Service office.

Weight can be found by:

$$\begin{array}{r} \text{Weight of Water} = \text{Gal. X } 8.3 \\ + \quad \text{Weight of } CaCl_2 = \text{Gal. X } 3.5 \\ \hline \text{Ballast Weight} \end{array}$$

Liquid Ballast Tables

The following conditions apply;

1) One gallon water = 231 cu. in. = 8.35 pounds
2) Ca Cl_2 is added at 3.5 pounds per U.S. Gallon.
3) Quantities shown fill 75% of tire volume.
4) All quantities are rounded to nearest .5 Gallon, Liter, Pound or Kilogram.

SIZE	VOLUME DESIGN	H_2O Required CU. IN.	US Gal	$CaCl_2$ Liter	Req'd. Pounds	Kgs	Wt. Added Pounds	Kgs
15.5-25	SGL DL-2A	12761	35.5	134.5	124.5	56.5	419.0	190.0
15.5R25	GP-2B	15500	43.0	163.0	151.0	68.5	509.0	231.0
17.5-25	HRL D/L-3A	18872	52.5	198.5	184.0	83.5	619.5	281.0
17.5-25	SGL DL-2A	17973	50.0	189.5	175.0	79.5	590.0	267.5
17.5-25	SMO D/L-5B	15154	42.0	159.5	147.5	67.0	497.5	225.5
17.5-25	SMO D/L-5C	15154	42.0	159.5	147.5	67.0	497.5	225.5
17.5R25	AS 3A	17325	48.0	182.5	168.5	76.5	568.5	258.0
17.5R25	GP-2B	20236	56.5	213.0	197.0	89.5	664.5	301.5
17.5R25	RL-5K	17325	48.0	182.5	168.5	76.5	568.5	258.0
17.5R25	RL-5S	17325	48.0	182.5	168.5	76.5	568.5	258.0
17.5R25	SG 2B	17325	48.0	182.5	168.5	76.5	568.5	258.0
600/65R25	GP-3D	29568	82.5	311.5	288.0	130.5	970.5	440.0
20.5-25	HRL E/L-3A	27499	76.5	289.5	268.0	121.5	902.5	409.5
20.5-25	SGL EL-2A	27535	76.5	290.0	268.0	121.5	904.0	410.0
20.5-25	SXT LDR	22938	64.0	241.5	223.5	101.5	753.0	341.5
20.5R25	GP-4B AT	28875	80.5	304.0	281.0	127.5	948.0	430.0
20.5R25	RL-5K	26960	75.0	284.0	262.5	119.0	885.0	401.5
20.5R25	RT-3B	28875	80.5	304.0	281.0	127.5	948.0	430.0
650/65R25	GP-3D	34650	96.5	365.0	337.5	153.0	1137.5	516.0
23.5-25	HRL E/L-3A	39002	108.5	410.5	380.0	172.5	1280.5	581.0
23.5-25	SGL EL-2A	33564	93.5	353.5	327.0	148.5	1102.0	500.0
23.5-25	SHRL XT DL	33888	94.5	357.0	330.0	149.5	1112.5	504.5
23.5R25	GP-4B AT	41072	114.5	432.5	400.0	181.5	1348.0	611.5
23.5R25	RL-5K	37205	103.5	392.0	362.5	164.5	1221.5	554.0
23.5R25	RT-3B	40425	112.5	425.5	393.5	178.5	1327.0	602.0
750/65R25	GP-3D	51975	144.5	547.5	506.0	229.5	1706.0	774.0
23/90-25	SMO-5C	30839	86.0	324.5	300.5	136.5	1012.5	459.5
26.5-25	SHRL	43428	121.0	457.5	423.0	192.0	1425.5	646.5
26.5-25	SHRL DL	51559	143.5	543.0	502.0	227.5	1692.5	767.5
26.5-25	SM0 D/L-5C	40610	113.0	427.5	395.5	179.5	1333.0	604.5
26.5-25	SMO D/L-5D	40610	113.0	427.5	395.5	179.5	1333.0	604.5
26.5-25	SXT DL(HRL DL)	42804	119.0	451.0	417.0	189.0	1405.0	637.5
26.5R25	RL-5K HI-STAB	48780	135.5	513.5	475.0	215.5	1601.5	726.5
26.5R25	RT-3B	57750	160.5	608.0	562.5	255.0	1895.5	860.0
29.5-25	HRL D/L-3A	64884	180.5	683.5	632.0	286.5	2130.0	966.0
29.5-25	SHRL XT DL	63987	178.0	674.0	623.0	282.5	2100.5	953.0
29.5-25	SMO D/L-5A	61798	172.0	651.0	601.5	273.0	2028.5	920.0
29.5-25	SXT DL(HRL DL)	61798	172.0	651.0	601.5	273.0	2028.5	920.0
29.5-29	SHRL	71333	198.5	751.0	694.5	315.0	2341.5	1062.0
29.5-35	SHRL 8	74521	207.5	784.5	725.5	329.0	2446.0	1109.5

SIZE	VOLUME DESIGN	H_2O Required CU. IN.	US Gal	$CaCl_2$ Liter	Req'd. Pounds	Kgs	Wt. Added Pounds	Kgs
29.5R25	GP-2B	71079	197.5	748.5	692.0	314.0	2333.5	1058.5
29.5R25	RL-4K	75075	209.0	790.5	731.0	331.5	2464.5	1118.0
29.5R25	RL-4K HI-STABILITY	71749	199.5	755.5	698.5	317.0	2355.0	1068.0
29.5R25	RL-5K	63266	176.0	666.0	616.0	279.5	2077.0	942.0
29.5R25	RL-5K HI-STAB	62102	173.0	654.0	604.5	274.0	2038.5	924.5
875/65R29	GP-4D	75075	209.0	790.5	731.0	331.5	2464.5	1118.0
29.5R29	RL-5K	75075	209.0	790.5	731.0	331.5	2464.5	1118.0
33.25-29	SHRL 8	66528	185.0	700.5	648.0	294.0	2184.0	990.5
33.25-35	SHRL 8	50427	140.5	531.0	491.0	222.5	1655.5	751.0
33.25R29	RT- 3A	100993	281.0	1063.5	983.5	446.0	3315.0	1503.5
35/65-33	NDL D/L-5/15C	71933	200.0	757.5	700.5	317.5	2361.5	1071.0
35/65-33	NRL D/L-4A	89687	249.5	944.5	873.5	396.0	2944.0	1335.5
35/65-33	NRL D/L-5A	77285	215.0	814.0	752.5	341.5	2537.0	1151.0
35/65-33	NSM D/L-5B	71933	200.0	757.5	700.5	317.5	2361.5	1071.0
875/65R33	RL-4K HI-STABILITY	98175	273.0	1034.0	956.0	433.5	3222.5	1461.5
875/65R33	RL-5K HI-STAB	86625	241.0	912.0	843.5	382.5	2843.5	1290.0
37.25-35	SHRL 8	139409	388.0	1468.0	1357.5	616.0	4576.5	2076.0
37.25-35	SXT DL(HRL DL)	98106	273.0	1033.0	955.0	433.0	3220.5	1461.0
40.5/75R39	RT-3A+	179025	498.0	1885.0	1743.0	790.5	5876.5	2665.5
41.25/70-39	NRL D/L-5A	148100	412.0	1559.5	1442.0	654.0	4861.5	2205.0
45/65R39	RL-5K	173250	482.0	1824.5	1687.0	765.0	5687.0	2579.5
1150/65R39	RL-5K HI-STAB	170940	475.5	1800.0	1664.5	755.0	5611.5	2545.5
45/65-45	NDL D/L-5/15C	170524	474.5	1795.5	1660.5	753.0	5597.5	2539.0
45/65-45	NRL D/L-5A	180452	502.0	1900.5	1757.0	797.0	5923.5	2687.0
1150/65R45	RL-5K HI-STAB	190575	530.0	2007.0	1855.5	841.5	6256.0	2837.5
52/80-57	DRL 4/15C	340102	946.0	3581.5	3311.5	1502.0	11164.5	5064.0
52/80-57	HRL D/L-4G	340102	946.0	3581.5	3311.5	1502.0	11164.5	5064.0

EARTHMOVER TIRES

Bias Construction – Haulage Service

HRR-1A (E-1)

Hard Rock Rib tire for the steer axles. Three wide ribs help give a smooth ride and straight-ahead tracking while lateral tie bars and multiple breakers help stabilize the tread to reduce side slippage.

HRL-3A (E-3)

Elliptical lateral tread lugs and a stabilizing center bar help provide a sure-footed grip.

SRB-7A (E-7)

Our maximum flotation mobility tire. It has a wide face and even wearing rib tread design that is for use in soft, fine grain sand. It combines minimum sinkage, adequate traction, and minimizes heel-and-toe effect for enhanced performance in all wheel positions.

HRL-4B (E-4)

A 150 level tire for the most severe mine, quarry and construction work. The deep tread and massive center rib provide long wear in tough environments.

MRL-4B (E-4)

A 150 level all position tire for severe rock service operations where TMPH/TKPH is not excessive. The extra tread depth, relatively flat tread face, and a center riding rib help provide long wear.

EARTHMOVER TIRES

Bias Construction – Haulage & Scraper Service

HRL E/L-3A (E-3)

The wide base version of our popular HRL-3A provides excellent traction in both rough and soft underfoot conditions.

SGL E/L-2A (E-2)

Provides excellent traction in soft soil conditions. Tapered tread bars and an open center helps force mud and dirt out of the tread as the tire turns.

HRL-3F (E-3)

Provides high traction and mobility for a scraper tire. Its tapered tread bars are exceptionally effective in soft underfoot conditions. A grooved centerline provides more biting edges and helps resist heat build-up.

SHRL 8 (E-3)

Excellent traction in both rough and soft underfoot conditions. Nylon carcass and multiple breakers under the tread helps stand up to heavy off road hauling

SHRL (E-3)

Wide base tire helps provide excellent traction in both rough and soft underfoot conditions. Multiple breakers under the tread to help stand up to heavy off road hauling.

EARTHMOVER TIRES

Bias Construction – Dozer/Loader Service

SGL D/L-2A (L-2)

Provides excellent traction in soft soil conditions. Tapered tread bars and an open center help force mud and dirt out of the tread as the tire turns.

HRL D/L-3A (L-3)

Heavy tread lugs deliver good traction while extra tough, cut resistant shoulders help provide protection in rough environments.

SHRL D/L (L-3)

Angled lug tire for use on front end loaders and dozers. Heavy driving bars and extra tough cut resistant shoulders help provide protection against job site hazards.

SHRL XT DL (L-4)

Extra-tread tire with durable tread compounds. Heavy undertread and bold shoulder buttresses for enhanced durability in severe rock service.

NRL D/L-4A (L-4)

A general purpose low profile (65 aspect ratio) tire built to help wear, traction, and toughness. A 150 level tread depth provides long wear. Multiple steel belts result in a wider, flatter footprint that help extend tread life.

DRL 4/15C (L-4)

Half-trac design for severe operation. Steel breakers to aid cut resistance and toughness.

HRL D/L-4G (L-4)

Long wear provided by the massive lugs and tough tread. Enhanced cut and impact resistance from the steel breakers.

EARTHMOVER TIRES

Bias Construction – Dozer/Loader Service

NRL D/L-5A (L-5)

A general purpose low profile (65 aspect ratio) tire, built to help wear, traction, and toughness. A 250 level tread depth helps provide long wear in severe rock service applications. Multiple steel belts aid tread life.

NDL D/L-5/15C (L-5)

A deep tread, low profile (65 aspect ratio) tire for underground operations. A 250 level tread depth and a 15:1 solid to void ratio help provide extra long wear. Multiple steel belts under the tread help promote longer wear and increase penetration resistance.

SXT DL (L-5)

This is a 250 tread level tire for front end loaders. The wide flat tread helps provide excellent wear and stability. The extra thick sidewall helps resist cuts.

SMO D/L-5A, 5B,5C,5D (L-5S)

A 250 level smooth tread of Goodyear's ultra abrasion resistant compound helps deliver the maximum wear in severe underground operations.

NSM D/L-5B (L-5S)

A smooth tread low profile (65 aspect ratio) tire built to help deliver long wear and toughness in severe service operations. A 250 level tread depth and an abrasion resistant compound helps provide long wear. Multiple steel belts aid tread life.

EARTHMOVER TIRES

Bias Construction – Grader Service

RGB-1A (G-1)

An ideal tire for the front wheels of power graders and all wheels of drawn graders. Continuous ribs, deep tread grooves, and strong, stable construction help the operator make clean accurate blade cuts.

SGG-2A (G-2)

An all purpose tire for graders which must operate in many types of environments. Double-pitch, overlapping tread bars help provide enhance traction on soft surfaces.

SGL E/L-2A (G-2)

Excellent traction in soft soil conditions. Tapered tread bars and an open center help force mud and dirt out of the tread as the tire turns.

RKG-3A (G-3)

Massive lugs and thick sidewalls help give excellent performance and toughness in severe pioneering work. The tread lugs are angled for enhanced forward and back traction over rough or soft surfaces.

HRL E/L-3A (G-3)

Heavy tread lugs help deliver good traction while extra tough, cut resistant shoulders aid maximum protection in rough environments.

SHRL XT DL (L-4)

Extra-tread tire in a 23.5-25 size with a tough tread. Heavy under-tread and bold shoulder buttresses for enhanced toughness in severe rock service.

SXT DL (L-5)

Super-extra tread in a 235-25 size for motor graders. Wide flat tread helps provide excellent wear and mobility. Extra thick sidewall helps resist cuts.

EARTHMOVER TIRES

Bias Construction – Mine Service

SMO-5A, 5B, 5C, 5D (L-5S)

Smooth super extra tread for underground mine vehicles operating in severe environment. The extra thick sidewalls help resist cuts and snags.

UMS-3A

General purpose design for medium size underground mine equipment. Tire has a tough casing and helps provide excellent traction with a abrasion resistant tread.

SMO D/L-5A, 5-B, 5-C, 5-D (L-5S)

A 250 level smooth tread of Goodyear's ultra abrasion resistant compound helps delivers excellent wear in severe underground operations.

EARTHMOVER TIRES

Bias Construction – Port & Container Service

ELV-3A (IND 3)

Excellent tire with tough casing and thick sidewalls for general purpose applications.

ELV-4/5A (IND-4)

Enhanced wear in severe applications due to the unique tread design having a high solid to void ratio footprint. Triple tread construction for enhanced stability.

ELV-4B (IND-4)

Extra tread tire for long wear and low cost per hour of operation. Good traction in poor underfoot conditions provided by the massive lug design.

ELV-5D (IND-5)

Smooth extra tread for superior wear and to help maximum resistance and related loss of service life.

EARTHMOVER TIRES

Radial Construction – Scraper Service

RL-2+ (E-3+T)

Unique tire for use in both soft underfoot conditions and moderately severe operations. Provides good forward and lateral traction

RL-3 (E-3)

Standard 100 level tread depth helps in high speed operations in moderate to severe environments. Hefty shoulders help provide excellent forward traction.

RL-3J (E-3)

All purpose 100 level scraper tire with enhanced forward and lateral traction. Added sidewall cut protection provided by the extended sidewall buttressing.

RT-3A (E-3)

Unique geometric lug pattern helps provide even pressure distribution, increases mobility and optimizes traction and treadwear.

RT-3A+ (E-3+)

Wide lugs for smooth, vibration free ride. Buttressed shoulder lugs are self cleaning, helps extend treadlife and resist sidewall cutting.

EARTHMOVER TIRES

Radial Construction – ADT Service

GP-2B (E-3)

For articulated dumps, it offers superb traction and excellent mobility. A zig-zag center rib helps to deliver long tread life.

GP-3D (E-3T)

Centerline riding lugs offer good lateral traction, long wear and a smooth ride. 65 Series profile helps deliver high flotation, enhanced stability and reduced ground pressure.

TL-3A+ (L-3+)

Wide open lug pattern for enhanced traction and ride. Enhanced groove design for excellent self cleaning even in muddy conditions.

RL-2+ (E-3+T)

Unique tire for use in both soft underfoot conditions and moderately severe operations. Provides good forward and lateral traction

GP-4B AT (E-4)

Its non-directional tread design offers superb forward and backward traction along with enhanced mobility. A zig-zag center rib helps to deliver long tread life.

GP-4D (E-4)

The open face tread design and wide shoulder grooves are self cleaning for maximum traction. The interlocking lug design also helps enhance lateral traction.

EARTHMOVER TIRES

Radial Construction – Haulage Service

GP-2B (E-3)

Non-directional tread design helps provide excellent traction and mobility. Solid center rib offers improved ride.

RL-3 (E-3)

Standard 100 level tread depth helps resist heat build up in high speed operations. Hefty shoulders helps provide excellent forward traction

RL-3+ (E-3+)

A 125 level tire for high speed haulage operations in medium to severe rock conditions. Extra tread depth helps cut protection.

RL-3J (E-3)

An all purpose tire for bottom and end dumps, its tread design delivers excellent forward and lateral traction. A 100 level tire allows for high speed operations for enhanced productivity.

RL-4B (E-4)

This 150 level tire with a flat tread radius provides enhanced traction and treadwear in severe rock conditions. Sidewall protection aided by the advanced shoulder buttress.

RL-4H (E-4)

A 150 level haulage tire for moderate to severe rock conditions. The non-directional tread helps offer excellent treadwear.

RL-4J (E-4)

An all purpose 150 level high speed haulage tire. Extended sidewall reinforcement helps provide added cut protection. Enhanced forward and lateral traction.

RL-4L (E-4)

Enhanced 150 level on/off road traction tire with a high tear tough tread.

EARTHMOVER TIRES

Radial Construction – Haulage Service

RL-4M+ (E-4)

Aggressive extra deep tread tire for enhanced traction and long even wear. Buttressed shoulder lugs are self-cleaning and helps provide extended tread life and resist sidewall cutting. The submerged center rib enhances late life tread wear.

RT-4A (E-4)

This 150 level tire has a unique geometric lug pattern which helpfs provide even pressure distribution, increases mobility and optimizes traction and tread wear. This rugged tread design helps provide long, even wear. The buttressed shoulder lugs resist sidewall cutting.

RT-4A+ (E-4)

This open face tread design and wide shoulder grooves are self-cleaning for enhanced traction. The high tensile steel cord ply helps provides outstanding toughness and cut resistance.

EARTHMOVER TIRES

Radial Construction – Dozer/Loader Service

AS-3A (L-3)

This 100 level tire has multiple groove edges to help provide superior traction on all surfaces. Specially placed blades enhance traction on snow and ice.

GP-2B (L-3)

Its non-directional tread offers superb forward and backward traction along with excellent mobility. 100 level tire for use in high THPH applications. A zig-zag center rib helps to deliver long tread life.

RT-3B (L-3)

This 115 level tire has a large belt wire to help provide superior resistance to rock cuts and penetrations. Large shoulder grooves for excellent self cleaning and a wide tread width for enhanced traction and mobility.

EARTHMOVER TIRES

Radial Construction – Dozer/Loader Service

GP-3D (L-3)

Centerline riding lugs offer good lateral traction, long wear and a smooth ride. 65 Series profile helps deliver high flotation, improved stability and reduced ground pressure.

RL-2+ (L-3+)

A 125 level tire for loaders that operate in rough conditions. The thicker tread helps the tire wear longer and offer greater cut resistance than 100 level tires. Its non-directional tread helps deliver good forward and lateral traction.

TL-3A+ (L-3+)

Wide open lug pattern for enhanced traction and ride. Enhanced groove design for excellent self cleaning in the muddy conditions.

GP-4D (L-4)

The open face tread design and wide shoulder grooves are self cleaning for enhanced traction. The interlocking lug design helps increase lateral traction. High tensile steel cord ply helps to provide outstanding toughness and cut resistance.

RL-4K (L-4)

Extra tread 150 level tire for quarry operations. Excellent load and carry capability from the radial construction and tough tread.

RT-5C (L-5)

A non-directional heavy duty tire for abrasive operating conditions. The open face tread design and wide shoulder grooves are self cleaning for excellent traction.

EARTHMOVER TIRES

Radial construction - Loader/Underground Mine Service

RL-5K (L-5)

A 250 level tire for front end loaders that operate in very severe rock conditions above or below the ground. Wide shoulder slots provide enhanced traction.

SM-5A (L-5S)
RL-5S (L-5S)

A 250 level tire with a smooth tread design that helps reduce lug tearing. It is long wearing and excellent for hard rock quarry and underground mine service.

RL-5K 08/08 (L-5)

Super extra tread design for severe service. Steel belts help provide cut and impact resistance.

EARTHMOVER TIRES

Radial Construction – Mobile Crane Service

MC-1A (E-1)

Tread design optimizes treadwear and minimizes noise and vibration. Good for on/off highway application and for high speed service.

GP-2B (E-3)

Solid center rib offers enhanced ride and fuel economy. The non-directional tread design provides enhanced traction and mobility.

AT-2A (E-3)

On and off road design for mobile crane service. It combines lateral and circumferential grooves to help provide enhanced traction in both wet and dry conditions.

EARTHMOVER TIRES

Radial Construction – Grader Service

SG-2B (G-2)

The SG-2B is a 100 level grader tire with excellent traction and flotation on soft underfoot conditions. Radial carcass helps provide lower running temperatures and enhanced fuel economy.

AS-3A (G-3)

This 100 level tire has multiple groove edges to help provide superior traction on all surfaces. Specially placed blades enhance traction on snow and ice.

RT-3B (G-3)

This 115 level tire has a large belt wire for superior resistance to rock cuts and penetrations. Large shoulder grooves for excellent self cleaning and a wide tread width for enhanced traction and mobility.

RL-2F (G-2)

A 100 level tire for high speed operation in soft underfoot soil conditions. Directional tread is self cleaning and provides enhanced forward traction.

GP-2B (G-3)

This non-directional tread offers superb forward and backward traction along with enhanced mobility. A zig-zag center rib helps to deliver long tread life.

RL-2+ (G-3+)

A 125 level tire for graders that operate in rough conditions. The thicker tread helps wear longer and offer greater cut resistance than 100 level tires. The non-directional tread helps deliver good forward and lateral traction.

SECTION IV

Load and Inflations For Goodyear Off-the-Road Tires

Index:

LOAD LIMITS AT COLD INFLATION PRESSURES

5 MPH (10 KM/H) MAXIMUM SPEED COMPACTOR SERVICE

	PSI	45	50	55	60	65	70	75	80	85	90	95	100	105	110	125
BIAS	KPA	325	350	400	425	450	475	525	550	575	625	650	675	725	750	850
7.50-15NHS	**LBS**	**3460**	**3700**	**3900(6)**	**4100**	**4300**	**4500**	**4680**	**4860**	**5040**	**5200(10)**	**5380**	**5540**	**5700**	**5860(12)**	
	KG	1570	1680	1770(6)	1860	1950	2040	2120	2200	2290	2360(10)	2440	2510	2590	2650(12)	
6.00-16	**LBS**	**2300**	**2450**	**2600**	**2750**	**2900**	**3000**	**3100**	**3200(6)**	**3370**	**3500**	**3600**	**3700**	**3800**	**3820(8)**	**4200(10)**
	KG	1040	1110	1180	1250	1320	1360	1410	1450(6)	1530	1590	1630	1680	1720	1730(8)	1910(10)
7.50-16NHS	**LBS**	**3620**	**3860**	**4080(6)**	**4280**	**4500**	**4680(8)**	**4880**	**5080**	**5260**	**5440(10)**	**5600**	**5780**	**5940**	**6100(12)**	
	KG	1640	1750	1850(6)	1940	2040	2120(8)	2210	2300	2390	2470(10)	2540	2620	2690	2770(12)	

40 MPH (65 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	11	15	18	22	25	29	33	36							
BIAS	KPA	75	100	125	150	175	200	225	250							
9.00-15	**LBS**	**1050**	**1230**	**1430**	**1570**	**1710**	**1870**	**1980**	**2090**							
	KG	475	560	650	710	775	850	900	950							
9.00-16	**LBS**	**1100**	**1280**	**1480**	**1650**	**1760**	**1930**	**2090**	**2200**							
	KG	500	580	670	750	800	875	950	1000							
11.00-16	**LBS**	**1320**	**1570**	**1760**	**1980**	**2150**	**2340**	**2540**	**2680**							
	KG	600	710	800	900	975	1060	1150	1215							
16.00-16	**LBS**	**2600**	**3090**	**3530**	**3860**	**4300**	**4540**	**4940**	**5200**							
	KG	1180	1400	1600	1750	1950	2060	2240	2360							

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	11	15	18	22	25	29	33	36							
BIAS	KPA	75	100	125	150	175	200	225	250							
9.00-15	**LBS**	**1230**	**1480**	**1650**	**1870**	**2040**	**2200**	**2340**	**2470**							
	KG	560	670	750	850	925	1000	1060	1120							
9.00-16	**LBS**	**1280**	**1520**	**1760**	**1930**	**2090**	**2270**	**2470**	**2600**							
	KG	580	690	800	875	950	1030	1120	1180							
11.00-16	**LBS**	**1570**	**1870**	**2090**	**2340**	**2600**	**2760**	**3000**	**3310**							
	KG	710	850	950	1060	1180	1250	1360	1500							
16.00-16	**LBS**	**3090**	**3640**	**4080**	**4540**	**5070**	**5360**	**5840**	**6170**							
	KG	1400	1650	1850	2060	2300	2430	2650	2800							

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	11	15	18	22	25	29	33	36							
BIAS	KPA	75	100	125	150	175	200	225	250							
9.00-15	**LBS**	**1820**	**2150**	**2470**	**2680**	**3000**	**3200**	**3420**	**3640**							
	KG	825	975	1120	1215	1360	1450	1550	1650							
9.00-16	**LBS**	**1870**	**2200**	**2540**	**2830**	**3090**	**3310**	**3530**	**3860**							
	KG	850	1000	1150	1285	1400	1500	1600	1750							
11.00-16	**LBS**	**2270**	**2680**	**3090**	**3420**	**3750**	**4080**	**4300**	**4670**							
	KG	1030	1215	1400	1550	1700	1850	1950	2120							
16.00-16	**LBS**	**4410**	**5360**	**6010**	**6780**	**7390**	**8050**	**8540**	**9090**							
	KG	2000	2430	2725	3075	3350	3650	3875	4125							

LOAD LIMITS AT COLD INFLATION PRESSURES

5 MPH (10 KM/H) OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	80	98	102	105	109	112	116	120	123	127	131	134	138	141	145
RADIAL	KPA	550	675	700	725	750	775	800	825	850	875	900	925	950	975	1000
12.00R20NHS	LBS	9900*	11700	12000	12300	12800	12800	13200	13600**	13900	13900	14300	14800	15200***	15200	15700
	KG	4500*	5300	5450	5600	5800	5800	6000	6150**	6300	6300	6500	6700	6900***	6900	7100
	PSI	98	102	105	109	112	116	120	123	127	131	134	138	141		
BIAS	KPA	675	700	725	750	775	800	825	850	875	900	925	950	975		
7.50-20NHS	LBS	6000	6150	6400	6400▲	6600▲	6800▲	6800▲	6950▲	6950▲	7150▲	7400▲	7400▲	7600(16)▲		
	KG	2722	2790	2903	2903▲	2994▲	2994▲	3084▲	3153▲	3153▲	3243▲	3357▲	3357▲	3447(16)▲		
	PSI	73	76	80	83	87	91	94	98	102	105	109	112	116	120	149
BIAS	KPA	500	525	550	575	600	625	650	675	700	725	750	775	800	825	1025
9.50-20NHS	LBS	7150	7400	7600	7600	7850(12)	8050	8250	8550	8550(14)	8800	9100▲	9100▲	9350(16)▲		
	KG	3250	3350	3450	3450	3530(12)	3650	3750	3875	3875(14)	4000	4125▲	4125▲	4250(16)▲		
10.00-20ML	LBS	8050	8250	8550(12)	8800	8800	9100	9350(14)	9650	9900	9900	10200(16)▲				
	KG	3650	3750	3875(12)	4000	4000	4125	4250(14)	4375	4500	4500	4625(16)▲				
11.00-20NHS	LBS	8550	8800	9100(12)	9350	9350	9650	9900(14)	10200	10470	10750(16)					
	KG	3875	4000	4125(12)	4250	4250	4375	4500(14)	4625	4750	4875(16)					
12.00-20NHS	LBS	9900(12)	10200	10500	10700(14)	11000	11400	11700	12000(16)	12300	12300	12800▲	12800▲	13200▲	13600(20)▲	15200(28)▲
	KG	4500(12)	4625	4750	4875(14)	5000	5150	5300	5450(16)	5600	5600	5800▲	5800▲	6000▲	6150(20)▲	6900(28)▲

30 MPH50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	40	44	47	51	54	58	62	65	69	73					
BIAS	KPA	275	300	325	350	375	400	425	450	475	500					
10.00-20ML	LBS	3860	4080(10)	4300	4400	4680(12)	4800	4940	5200(14)	5360	5520(16)					
	KG	1750	1850(10)	1950	2000	2120(12)	2180	2240	2360(14)	2430	2500(16)					
12.00-20NHS	LBS	4800	5080	5360	5520	5840(14)	6000	6150	6400(16)							
	KG	2180	2300	2430	2500	2650(14)	2725	2800	2900(16)							

▲ Permafoam inflation or special rim required.

LOAD LIMITS AT COLD INFLATION PRESSURES

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD TRACTOR AND GRADER SERVICE

	PSI	**22**	**25**	**29**	**33**											
BIAS	KPA	150	175	200	225											
13.00-20TG	**LBS**	**3740**	**4080**	**4400**	**4680(10)**											
	KG	1700	1850	2000	2120(10)											

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD INDUSTRIAL TRACTOR SERVICE

	PSI	**26**	**29**	**32**	**36**	**41**	**44**	**48**	**51**	**54**						
BIAS	KPA	180	200	220	250	280	300	330	350	375						
10.5-20MPT	**LBS**	**2920**	**3020**	**3150**	**3550(6)**	**3780**	**3935(8)**	**3980**	**4365**	**4560(10)**						
	KG	1325	1370	1430	1610(6)	1715	1785(8)	1800	1980	2070(10)						
12.5-20MPT	**LBS**	**3460**	**3690**	**3890**	**4210**	**4495**	**4660(10)**	**4915**	**5070(12)**							
	KG	1570	1675	1765	1910	2040	2125(10)	2230	2300(12)							

50 MPH (80 KM/H) MAXIMUM SPEED OFF-THE-ROAD MINING AND LOGGING SERVICE

	PSI	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**		
BIAS	KPA	275	310	345	380	415	450	485	515	550	585	620	655	690		
14.00-20ML	**LBS**	**5620**	**6020**	**6400**	**6770(G)**	**7120**	**7470**	**7800(H)**	**8120**	**8430**	**8740(J)**	**9040**	**9320**	**9610(L)**		
	KG	2575	2725	2900	3075(G)	3250	3350	3550(H)	3650	3875	4000(J)	4125	4250	4375(L)		

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**			
BIAS	KPA	275	300	325	350	375	400	425	450	475	500	525	550			
14.00-20NHS	**LBS**	**6600(12)**	**6950**	**7400**	**7600**	**8050(16)**	**8250**	**8550**	**8800**	**9100(20)**	**9370**	**9650**	**9920(24)**			
	KG	3000(12)	3150	3350	3450	3650(16)	3750	3875	4000	4125(20)	4250	4375	4500(24)			

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**		**123**	
BIAS	KPA	475	500	525	550	575	600	625	650	675	700	725	750		850	
14.00-20NHS	**LBS**	**13200**	**13900**	**14300**	**14800**	**14800**	**15200**	**15700(18)**	**16100**	**16500**	**16500(20)**	**17100**	**17600▲**		**18700(24)▲**	
	KG	6000	6300	6500	6700	6700	6900	7100(18)	7300	7500	7500(20)	7750	8000▲		8500(24)▲	
	PSI	**44**	**47**	**51**	**54**											
	KPA	300	325	350	375											
13.00-20TG	**LBS**	**8550**	**8800**	**9350**	**9650(10)**											
	KG	3875	4000	4250	4375(10)											

40 MPH (65 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	**11**	**15**	**18**	**22**	**25**	**29**	**33**	**36**							
BIAS	KPA	75	100	125	150	175	200	225	250							
14.00-20	**LBS**	**2600**	**3090**	**3530**	**3970**	**4300**	**4670(10)**	**4940**	**5360(12)**							
	KPA	1180	1400	1600	1800	1950	2120(10)	2240	2430(12)							

▲ Permafoam inflation or special rim required.

LOAD LIMITS AT COLD INFLATION PRESSURES

55 MPH (90 KM/H) MAXIMUM SPEED HAULAGE SERVICE

	PSI	55	60	65	70	75	80	85	90	95	100	105	110	115		
RADIAL	KPA	375	400	450	475	525	550	575	625	650	700	725	750	800		
14.00R20/21	**LBS**	**6410**	**6860**	**7300**	**7720(G)**	**8120**	**8510**	**8890(H)**	**9260**	**9610**	**9960(J)**	**10300**	**10620**	**1960(L)**		
	KG	2900	3100	3300	3500(G)	3675	3850	4025(H)	4200	4350	4525(J)	4675	4825	4975(L)		
16.00R20/21	**LBS**	**8770**	**9390**	**9990**	**10560**	**11110**	**11650**	**12160**	**12660**	**13150**	**13630(L)**	**14090**	**14540(M)**			
	KG	3975	4250	4525	4800	5050	5275	5525	5750	5975	6175(L)	6400	6600(M)			

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD SERVICE

	PSI	65	69	73	76	80	83	87	91	94	98	102				
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700				
14.00R20/21	**LBS**	**8250**	**8550***	**8800**	**9100**	**9350**	**9650**	**10200**	**10500**	**10700**	**11000**	**11400****				
	KG	3750	3875*	4000	4125	4250	4375	4625	4750	4850	5000	5175**				
16.00R20/21	**LBS**	**10500**	**11000***	**11400**	**11700**	**12000**	**12300**	**12800**	**13200**	**13900**	**14300**	**14800****				
	KG	4750	5000*	5150	5300	5450	5600	5800	6000	6300	6500	6700**				

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SERVICE

	PSI	76	80	83	87	91	94	98	102	105	109	112	116	120		
RADIAL	KPA	525	550	575	600	625	650	675	700	725	750	775	800	825		
14.00R20/21	**LBS**	**13200**	**13600***	**14300**	**14800**	**15200**	**15700**	**16100**	**16500**	**17100**	**17100**	**17600**	**18200**	**18700****		
	KG	6000	6150*	6500	6700	6900	7100	7300	7500	7750	7750	8000	8250	8500**		
16.00R20/21	**LBS**	**17600**	**18200***	**18700**	**19300**	**19800**	**20400**	**21500**	**22000**	**22700**	**22700**	**23400**	**24000**	**24700****		
	KG	8000	8250*	8500	8750	9000	9250	9750	10000	10300	10300	10600	10900	11200**		

40 MPH (65 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	11	15	18	22	25	29	33	36							
BIAS	KPA	75	100	125	150	175	200	225	250							
16.00-20	**LBS**	**3530**	**4080**	**4670**	**5200**	**5680**	**6170**	**6610**	**7170**							
	KG	1600	1850	2120	2360	2575	2800	3000	3250							
24-20.5	**LBS**	**4940**	**5840**	**6780**	**7390**	**8270**	**8820**	**9370**	**10200**							
	KG	2240	2650	3075	3350	3750	4000	4250	4625							

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	11	15	18	22	25	29	33	36							
BIAS	KPA	75	100	125	150	175	200	225	250							
16.00-20	**LBS**	**4080**	**4940**	**5510**	**6170**	**6780**	**7380**	**7830**	**8270**							
	KG	1850	2240	2500	2800	3075	3350	3550	3750							
24-20.5	**LBS**	**6010**	**7170**	**8050**	**9090**	**9920**	**10750**	**11350**	**12350**							
	KG	2725	3250	3650	4125	4500	4875	5150	5600							

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	11	15	18	22	25	29	33	36							
BIAS	KPA	75	100	125	150	175	200	225	250							
16.00-20	**LBS**	**6010**	**7170**	**8050**	**9090**	**9920**	**10750**	**11350**	**12350**							
	KG	2725	3250	3650	4125	4500	4875	5150	5600							
24-20.5	**LBS**	**7830**	**9370**	**10750**	**12020**	**12790**	**13890**	**15210**	**16090**							
	KG	3530	4250	4875	5450	5800	6300	6900	7300							

LOAD LIMITS AT COLD INFLATION PRESSURES

55 MPH (90 KM/H) MAXIMUM SPEED HAULAGE SERVICE

	PSI	65	70	75	80	85	90	95	100	105	110	115				
RADIAL	KPA	450	480	520	550	590	620	660	690	720	760	790				
14.00R21	**LBS**	**7300**	**7830(G)**	**8250**	**8670**	**9090(H)**	**9460**	**9830**	**10200(J)**	**10470**	**10740**	**11000(L)**				
	KG	3310	3550(G)	3740	3930	4125(H)	4290	4460	4625(J)	4750	4880	5000(L)				
16.00R21	**LBS**	**9990**	**10560**	**11110**	**11650**	**12160**	**12660**	**13150**	**13900(L)**	**14350**	**14800(M)**					
	KG	4530	4790	5040	5280	5520	5740	5960	6300(L)	6500	6700(M)					

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	40	44	47	51	54	58	62	65	69	73	76	80	83		
BIAS	KPA	275	300	325	350	375	400	425	450	475	500	525	550	575		
16.00-21NHS	**LBS**	**8800**	**9350**	**9650(16)**	**10200**	**10500**	**11000(20)**									
	KG	4000	4250	4375(16)	4625	4750	5000(20)									
12.00-24NHS	**LBS**	**5520**	**5680**	**6000**	**6150**	**6600(14)**	**6800**	**6950**	**7150(16)**	**7390**	**7610**	**7830**	**8050(20)**			
	KG	2500	2575	2725	2800	3000(14)	3075	3150	3250(16)	3350	3450	3550	3650(20)			

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	69	73	76	80	83	87	91	94	98	102	105	109	112	116	120
BIAS	KPA	475	500	525	550	575	600	625	650	675	700	725	750	775	800	825
12.00-24NHS	**LBS**	**11000**	**11400**	**11700**	**12000**	**12300**	**12300**	**12800**	**13200**	**13600(16)**	**13600**	**13900**	**14300▲**	**14800▲**	**14800▲**	**15200(20)▲**
	KG	5000	5150	5300	5450	5600	5600	5800	6000	6150(16)	6150	6300	6500▲	6700▲	6700▲	6900(20)▲

40 MPH (65 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	11	15	18	22	25	29	33	36							
BIAS	KPA	75	100	125	150	175	200	225	250							
24-21	**LBS**	**4940**	**5840**	**6780**	**7390**	**8270**	**8820**	**9370**	**10200**							
	KG	2240	2650	3075	3350	3750	4000	4250	4625							
27.25-21	**LBS**	**6390**	**7610**	**8820**	**9650**	**10750**	**11350**	**12350**	**13230**							
	KG	2900	3450	4000	4375	4875	5150	5600	6000							

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	11	15	18	22	25	29	33	36							
BIAS	KPA	75	100	125	150	175	200	225	250							
24-21	**LBS**	**7830**	**9370**	**10750**	**12020**	**12790**	**13890**	**15210**	**16090(12)**							
	KG	3550	4250	4875	5450	5800	6300	6900	7300(12)							
27.25-21	**LBS**	**10200**	**12020**	**13890**	**15210**	**17090**	**18190**	**19290**	**20940**							
	KG	4625	5450	6300	6900	7750	8250	8750	9500							

▲ Permafoam inflation or special rim required.

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	65	69	73	76	80	83	87	91	94	98	102	105	109	112	116
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700	725	750	775	800
12.00R24NHS	**LBS**	**6400**	**6600***	**6950**	**7150**	**7400**	**7850**	**8050**	**8250**	**8550**	**8800**	**8800****	**9100**	**9350▲**	**9650▲**	**9900***▲**
	KG	2900	3000*	3150	3250	3350	3550	3650	3750	3875	4000	4000**	4125	4250▲	4375▲	4500***▲

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD TRACTOR AND GRADER SERVICE

	PSI	29	33	36	40	44	47	51	54							
RADIAL	KPA	200	225	250	275	300	325	350	375							
13.00R24TG	**LBS**	**4080**	**4400**	**4800**	**5200**	**5520**	**5840**	**6150**	**6600***							
	KG	1850	2000	2180	2360	2500	2650	2800	3000*							
	PSI	**18**	**22**	**25**	**29**	**33**	**36**	**40**								
BIAS	KPA	125	150	175	200	225	250	275								
12.00-24TG	**LBS**	**3200**	**3520(6)**	**3860**	**4180(8)**											
	KG	1450	1600(6)	1750	1900(8)											
13.00-24TG	**LBS**	**3740**	**4180(6)**	**4540(8)**	**4940**	**5200(10)**	**5520**	**5840(12)**								
	KG	1700	1900(6)	2060(8)	2240	2360(10)	2500	2650(12)								

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	76	80	83	87	91	94	98	102	105	109	112	116	120		131
RADIAL	KPA	525	550	575	600	625	650	675	700	725	750	775	800	825		900
12.00R24NHS	**LBS**	**10700**	**11400***	**11700**	**12000**	**12300**	**12800**	**13200**	**13600**	**13900**	**14300▲**	**14300▲**	**14800▲**	**15200**▲**		**16100***▲**
	KG	4875	5150*	5300	5450	5600	5800	6000	6150	6300	6500▲	6500▲	6700▲	6900**▲		7300***▲
	PSI	**36**	**40**	**44**	**47**	**51**										
BIAS	KPA	250	275	300	325	350										
12.00-24TG	**LBS**	**7400**	**7850**	**8050**	**8550(8)**											
	KG	3350	3550	3650	3875(8)											
	PSI	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**						
RADIAL	KPA	350	375	400	425	450	475	500	525	550						
13.00R24TG	**LBS**	**9350**	**9900**	**10500**	**11000**	**11400**	**12000**	**12300**	**12800**	**13200***						
	KG	4250	4500	4750	5000	5150	5450	5600	5800	6000*						
	PSI	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**	**87**		
BIAS	KPA	300	325	350	375	400	425	450	475	500	525	550	575	600		
13.00-24TG	**LBS**	**9350(8)**	**9900**	**10500**	**10700(10)**	**11400**	**11700**	**12000(12)**	**12300**	**12800**	**13200(14)**	**13600**	**13900**	**19300(16)**		
	KG	4250(8)	4500	4750	5000(10)	5150	5300	5600(12)	5600	5800	6000(14)	6150	6300	6500(16)		

▲ Permafoam inflation or special rim required.

LOAD LIMITS AT COLD INFLATION PRESSURES

55 MPH (90 KM/H) HIGHWAY SERVICE

	PSI	65	70	75	80	85	90	95	100	105	110	115		131		141
RADIAL	KPA	450	475	525	550	575	625	650	700	725	750	800		900		975
14.00R24	LBS	8150	8620	9070	9500	9930	10340	10730	11400(J)	11700	12000	12300(L)		13270(M)		13930(N)
(385/95R24)	KG	3700	3910	4110	4310	4500	4690	4870	5150(J)	5300	5450	5600(L)		6000(M)		6300(N)

50 MPH (80 KM/H) HIGHWAY SERVICE

	PSI	55	60	65	70	75	80	85	90	95	100					
BIAS	KPA	380	410	450	480	520	550	590	620	660	690					
14.00-24/25ML	LBS	7560	7960	8340	8820(H)	9070	9410	9920(J)	10090	10410	11000(L)					
	KG	3430	3610	3780	4000(H)	4110	4270	4500(J)	4580	4720	5000(L)					

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	51	54	58	62	65	69	73	76	80	83	87	91	94		
BIAS	KPA	350	375	400	425	450	475	500	525	550	575	600	625	650		
14.00-24/25NHS	LBS	8550	8800(16)	9350	9650	9900	10200(20)	10500	10700	11000(24)	11400	11700	12000	12300(28)		
	KG	3875	4000(16)	4250	4375	4500	4625(20)	4750	4875	5000(24)	5150	5300	5450	5600(28)		
	PSI	65	69	73	76	80	83	87	91	94	98	102	105	109	112	116
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700	725	750	775	800
14.00R24/25NHS	LBS	8800	9100*	9650	9900	10200	10500	11000	11400	11700	12000	12300**	12300	12800	13200	13600***
	KG	4000	4125*	4375	4500	4625	4750	5000	5150	5300	5450	5600**	5600	5800	6000	6150***

25 MPH (40 KM/H) MAXIMUM SPEED ROAD TRACTOR AND GRADER SERVICE

	PSI	22	25	29	33	36	40	44	47	51						
BIAS	KPA	150	175	200	225	250	275	300	325	350						
14.00-24TG	LBS	5080	5520	5840	6150(10)	6800(12)	7150	7600	7850	8050(16)						
	KG	2300	2500	2650	2800(10)	3075(12)	3250	3450	3550	3650(16)						
	PSI	29	33	36	40	44	47	51	54							
RADIAL	KPA	200	225	250	275	300	325	350	375							
14.00R24TG	LBS	4940	5360	5840	6150	6600	7150	7400	8050*							
	KG	2240	2430	2650	2800	3000	3250	3350	3650*							

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	76	80	83	87	91	94	98	102	105	109	112	116		123	141
BIAS	KPA	525	550	575	600	625	650	675	700	725	750	775	800		850	975
14.00-24/25NHS	LBS	15700	16100	16500	17100	17600	18200	18200	18700(20)	19300	19300	19800	20400		20900(24)	22700(28)▲
	KG	7100	7300	7500	7750	8000	8250	8250	8500(20)	8750	8750	9000	9250		9500(24)	10300(28)▲
	PSI	47	51	54	58	62	65	69	73	76	80					
BIAS	KPA	325	350	375	400	425	450	475	500	525	550					
14.00-24TG	LBS	12000	12300(10)	13200	13600	13900(12)	14300	14800	15200	15700	16100(16)					
	KG	5450	5600(10)	6000	6150	6300(12)	6500	6700	6900	7100	7300(16)					
	PSI	76	80	83	87	91	94	98	102	105	109	112	116	120		131
RADIAL	KPA	525	550	575	600	625	650	675	700	725	750	775	800	825		900
14.00R24/25NHS	LBS	14800	15200*	15700	16500	17100	17600	17600	18200	18700	19300	19800	20400	20900**		22000***▲
	KG	6700	6900*	7100	7500	7750	8000	8000	8250	8500	8750	9000	9250	9500**		10000***▲

▲ Permafoam inflation or special rim required.

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**								
BIAS	KPA	275	300	325	350	375	400	425								
16.00-24	**LBS**	**9650**	**10200(16)**	**10700**	**11000**	**11700**	**12000(20)**									
	KG	4375	4625(16)	4875	5000	5300	5450(20)									
18.00-24	**LBS**	**12300(16)**	**13200**	**13900**	**14300(20)**	**15200**	**15700**	**16100(24)**								
	KG	5600(16)	6000	6300	6500(20)	6900	7100	7300(24)								
	PSI	**29**	**33**	**36**												
BIAS	KPA	200	225	250												
20-24	**LBS**	**9370(12)**		**10750(14)**												
	KG	4250(12)		4875(14)												

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD TRACTOR AND GRADER SERVICE

	PSI	**22**	**25**	**29**	**33**	**36**	**40**	**44**								
BIAS	KPA	150	175	200	225	250	275	300								
16.00-24TG	**LBS**	**6600**	**7150**	**7600**	**8050(12)**	**8800**	**9350**	**9900(16)**								
	KG	3000	3250	3450	3650(12)	4000	4250	4500(16)								
	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**						
RADIAL	KPA	175	200	225	250	275	300	325	350	375						
16.00R24TG	**LBS**	**5680**	**6400**	**6950**	**7400**	**8050**	**8550**	**9100**	**9650**	**10200***						
	KG	2525	2900	3150	3250	3650	4875	4125	4375	4625*						

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**							
BIAS	KPA	300	325	350	375	400	425	450	475							
16.00-24TG	**LBS**	**14780**	**15700(12)**	**16100**	**17100**	**17600**	**18200(16)**	**18700**	**19300**							
	KG	6700	7100(12)	7300	7750	8000	8250(16)	8500	8750							

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**46**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**		**94**
BIAS	KPA	275	300	325	350	375	400	425	450	475	500	525	550	575		650
16.00-25	**LBS**	**9650**	**10200**	**10700**	**11000**	**11700**	**12000(20)**	**12300**	**12800**	**13200(24)**	**13900**	**14300**	**14300**	**14800(28)**		**16100(32)**
	KG	4375	4625	4875	5000	5300	5450(20)	5600	5800	6000(24)	6300	6500	6500	6700(28)		7300(32)
	PSI	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**				
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700				
16.00R25	**LBS**	**11400**	**12000***	**12300**	**12800**	**13200**	**13900**	**14300**	**14800**	**15200**	**15700**	**16100****				
	KG	5150	5450*	5600	5800	6000	6300	6500	6700	6900	7100	7300**				

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**		
BIAS	KPA	475	500	525	550	575	600	625	650	675	700	725	750	775	**Continued**	
16.00-25	**LBS**	**19300**	**19800**	**20400**	**21500(20)**	**22000**	**22000**	**22700**	**23400(24)**	**24000**	**24700**	**24700**	**25400(28)**	**26000**		
	KG	8750	9000	9250	9750(20)	10000	10000	10300	10600(24)	10900	11200	11200	11500(28)	11800		
	PSI	**116**	**120**	**123**	**127**	**131**	**134**	**138**	**141**	**145**	**149**					
	KPA	800	825	850	875	900	925	950	975	1000	1025					
	LBS	**26800**	**26800**	**27600**	**27600(32)**	**28300**	**29100**	**29100**	**30000(36)**	**30000**	**30900**			**32000(40)▲**		
	KG	12150	12150	12500	12500(32)	12850	13200	13200	13600(36)	13600	14000			14500(40)▲		
	PSI	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**	**116**	**120**		**131**
RADIAL	KPA	525	550	575	600	625	650	675	700	725	750	775	800	825		900
16.00R25	**LBS**	**19300**	**19800***	**20400**	**21500**	**22000**	**22700**	**23400**	**24000**	**24700**	**25400**	**26000**	**26800**	**26800****		**29100*****
	KG	8750	9000*	9250	9750	10000	10300	10600	10900	11200	11500	11800	12150	12150**		13200***

▲ Permafoam inflation or special rim required.

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**		**102**
BIAS	KPA	275	300	325	350	375	400	425	450	475	500	525	550	575		700
18.00-25	**LBS**	**12300(16)**	**13200**	**13900**	**14300(20)**	**15200**	**15700**	**16100(24)**	**16500**	**17100**	**17600(28)**	**18200**	**18700**	**19300(32)**		**21500(40)**
	KG	5600(16)	6000	6300	6500(20)	6900	7100	7300(24)	7500	7750	8000(28)	8250	8500	8750(32)		9750(40)
	PSI	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**				
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700				
18.00R25	**LBS**	**14800**	**15700***	**16100**	**16500**	**17100**	**17600**	**18200**	**18700**	**19300**	**19800**	**20400****				
	KG	6700	7100*	7300	7500	7750	8000	8250	8500	8750	9000	9250**				

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD TRACTOR AND GRADER SERVICE

	PSI	**25**	**29**	**33**	**36**											
BIAS	KPA	175	200	225	250											
18.00-25	**LBS**	**8550**	**9100(12)**	**9900**	**11000(16)**											
	KG	3875	4125(12)	4500	5000(16)											
	PSI	**36**	**40**	**44**	**47**	**51**										
RADIAL	KPA	250	275	300	325	350										
18.00R25	**LBS**	**9650**	**10500**	**11000**	**11700**	**12300***										
	KG	4375	4750	5000	5300	5600*										

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**		
BIAS	KPA	475	500	525	550	575	600	625	650	675	700	725	750	775	**Continued**	
18.00-25	**LBS**	**25400(20)**	**26000**	**26800**	**27600(24)**	**28300**	**29100**	**30000**	**30000(28)**	**30900**	**32000**	**32000**	**33100(32)**	**33100**		
	KG	11500(20)	11800	12150	12500(24)	12850	13200	13600	13600(28)	14000	14500	14500	15000(32)	15000		
	PSI	**116**	**120**	**123**	**127**	**131**	**134**	**138**								
	KPA	800	825	850	875	900	925	950								
	LBS	**34200**	**35300**	**35300(36)**	**36400**	**36400**	**37500**	**37500(40)**								
	KG	15500	16000	16000(36)	16500	16500	17000	17000(40)								
	PSI	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**	**116**	**120**		**131**
RADIAL	KPA	525	550	575	600	625	650	675	700	725	750	775	800	825		900
18.00R25	**LBS**	**24700**	**26000***	**26800**	**27600**	**28300**	**29100**	**30000**	**30900**	**32000**	**33100**	**33100**	**34200**	**35300****		**37500*****
	KG	11200	11800*	12150	12500	12850	13200	13600	14000	14500	15000	15000	15500	16000**		17000***

For 18.00-25 Sand Service loads and inflations see page 97

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**					
BIAS	KPA	275	300	325	350	375	400	425	450	475	500					
21.00-25	**LBS**	**16100**	**17100**	**17600**	**18700**	**19300(24)**	**19800**	**20900(28)**	**21500**	**22000**	**22700(32)**					
	KG	7300	7750	8000	8500	8750(24)	9000	9500(28)	9750	10000	10300(32)					
	PSI	**25**	**29**	**33**	**36**											
BIAS	KPA	175	200	225	250											
22-25	**LBS**	**7940(12)**			**9660(16)**											
	KG	3600(12)			4380(16)											
	PSI	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**				
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700				
21.0R25	**LBS**	**19800**	**20400***	**20900**	**22000**	**22700**	**23400**	**24000**	**25400**	**26000**	**26800**	**27600****				
	KG	9050	9250*	9500	10000	10300	10600	10900	11500	11800	12150	12500**				

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**116**	**120**	**123**	**127**	**131**	**134**	**138**	**141**	**145**	**149**	**152**				
BIAS	KPA	800	825	850	875	900	925	950	975	1000	1025	1050				
61X18.00-25	**LBS**	**33100**	**33100**	**34200**	**34200**	**35300**	**35300**	**36400**	**36400**	**37500**	**37500**	**38600(44)**				
	KG	15000	15000	15500	15500	16000	16000	16500	16500	17000	17000	17500(44)				
	PSI	**73**	**78**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**	**116**	**120**	
BIAS	KPA	500	525	550	575	600	625	650	675	700	725	750	775	800	825	
21.00-25	**LBS**	**33100(24)**	**34200**	**35300**	**36400(28)**	**37500**	**37500**	**38600(32)**	**39700**	**40800**	**41900(36)**	**43000**	**43000**	**44100**	**45400(40)**	
	KG	15000(24)	15500	16000	16500(28)	17000	17000	17500(32)	18000	18500	19000(36)	19500	19500	20000	20600(40)	
23/90-25	**LBS**		**29100**	**30000**	**30900**	**32000(30)**	**32000**	**33100**	**34200**	**35300(36)**						
	KG		13200	13600	14000	14500(30)	14500	15000	15500	16000(36)						
	PSI	**36**	**40**	**44**	**47**	**51**	**54**									
BIAS	KPA	250	275	300	325	350	375									
22-25	**LBS**	**13850**	**14600(12)**	**15350**	**16100**	**16850**	**17600(16)**									
	KG	6375	6700(12)	7025	7350	7675	8000(16)									
	PSI	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**	**116**	**120**		**131**	
RADIAL	KPA	550	575	600	625	650	675	700	725	750	775	800	825		900	
21.00R25	**LBS**	**33100***	**34200**	**35300**	**36400**	**37500**	**38600**	**39700**	**40800**	**41900**	**4300**	**44100**	**45400****		**48100*****	
	KG	15000*	15500	16000	16500	17000	17500	18000	18500	19000	19500	20000	20600**		21800***	

40 MPH (65 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	**11**	**15**	**18**	**22**	**25**	**29**	**33**	**36**
BIAS	KPA	75	100	125	150	175	200	225	250
1800-25	**LBS**	**4940**	**5840**	**6610**	**7390**	**8050**	**8820**	**9370**	**9920**
	KG	2240	2650	3000	3350	3650	4000	4250	4500
2100-25	**LBS**	**6390**	**7610**	**8540**	**9650**	**10470**	**11350**	**12020**	**12790**
	KG	2900	3450	3875	4375	4750	5150	5450	5800

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	40	44	47	51	54	58	62	65	69	73	76	80	83	87	91
BIAS	KPA	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625
18.00-33	**LBS**	**14300**	**15200**	**16100**	**16500**	**17600**	**18200**	**18700(24)**	**19300**	**19800**	**20400(28)**	**21500**	**22000**	**22700(32)**	**22700**	**23400(36)**
	KG	6500	6900	7300	7500	8000	8250	8500(24)	8750	9000	9250(28)	9750	10000	10300(32)	10300	10600(36)
21.00-35	**LBS**	**19300**	**19800**	**20900**	**22000**	**22700**	**24000**	**24700(28)**	**25400**	**26000**	**26800(32)**	**27600**	**28300(36)**			
	KG	8750	9000	9500	10000	10300	10900	11200(28)	11500	11800	12150(32)	12500	12850(36)			
	PSI	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**				
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700				
18.00R33	**LBS**	**17100**	**17600***	**18700**	**19300**	**19800**	**20400**	**21500**	**22000**	**22700**	**23400**	**24000****				
	KG	7750	8000*	8500	8750	9000	9250	9750	10000	10300	10600	10900**				
21.00R33	**LBS**	**22000**	**22700***	**24000**	**24700**	**25400**	**26000**	**27600**	**28300**	**29100**	**30000**	**30900****				
	KG	10000	10300*	10900	11200	11500	11800	12500	12850	13200	13600	14000**				
21.00R35	**LBS**	**22700**	**23400***	**24700**	**25400**	**26000**	**26800**	**28300**	**29100**	**30000**	**30900**	**32000****				
	KG	10300	10600*	11200	11500	11800	12150	12850	13200	13600	14000	14500**				

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	69	73	76	80	83	87	91	94	98	102	105	109		120	
BIAS	KPA	475	500	525	550	575	600	625	650	675	700	725	750		825	
18.00-33	**LBS**	**29100**	**30000**	**30900**	**32000(24)**	**33100**	**33100**	**34200**	**35300(28)**	**36400**	**36400**	**37500**	**38600(32)**		**40800(36)**	
	KG	13200	13600	14000	14500(24)	15000	15000	15500	16000(28)	16500	16500	17000	17500(32)		18600(36)	
21.00-35	**LBS**	**38600**	**39700**	**40800**	**41900**	**43000(28)**	**44100**	**45400**	**46700(32)**	**46700**	**48100**	**49400**	**50700(36)**		**53600(42)**	
	KG	17500	18000	18500	19000	19500(28)	20000	20600	21200(32)	21200	21800	22400	23000(36)		24000(42)	
	PSI	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**	**116**	**120**		**131**
RADIAL	KPA	525	550	575	600	625	650	675	700	725	750	775	800	825		900
18.00R33	**LBS**	**29100**	**30000***	**30900**	**32000**	**33100**	**34200**	**35300**	**36400**	**36400**	**37500**	**38600**	**39700**	**40800****		**43000*****
	KG	13200	13600*	14000	14500	15000	15500	16000	16500	16500	17000	17500	18000	18500**		19500***
21.00R33	**LBS**	**37500**	**38600***	**39700**	**40800**	**41900**	**43000**	**44100**	**45400**	**46700**	**48100**	**49400**	**50700**	**52000****		
	KG	17000	17500*	18000	18500	19000	19500	20000	20600	21200	21800	22400	23000	23600**		
21.00R35	**LBS**	**38600**	**39700***	**40800**	**41900**	**43000**	**44100**	**45400**	**46700**	**48100**	**49400**	**50700**	**52000**	**53600****		
	KG	17500	18000*	18500	19000	19500	20000	20600	21200	21800	22400	23000	23600	24300**		

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**		
BIAS	KPA	275	300	325	350	375	400	425	450	475	500	525	550	575		
24.00-35	**LBS**	**24700**	**26000**	**26800**	**28300**	**29100**	**30900(30)**	**32000**	**33100**	**34200(36)**	**34200**	**35300**	**36400**	**37500(42)**		
	KG	11200	11800	12150	12850	13200	14000(30)	14500	15000	15500(36)	15500	16000	16500	17000(42)		
	PSI	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**						
BIAS	KPA	450	475	500	525	550	575	600	625	650						
24.00-43	**LBS**	**36400**	**27500(36)**	**38600**	**39700**	**40800**	**41900(42)**	**43000**	**44100**	**45400(48)**						
	KG	16500	17000(36)	17500	18000	18500	19000(42)	19500	20000	20600(48)						
	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**		
BIAS	KPA	275	300	325	350	375	400	425	450	475	500	525	550	575		
18.00-49	**LBS**	**18200**	**19300**	**20400**	**20900**	**22000**	**22700**	**23400(24)**	**24700**	**25400**	**26000(28)**	**26800**	**27600**	**28300(32)**		
	KG	8250	8750	9250	9500	10000	10300	10600(24)	11200	11500	11800(28)	12150	12500	12850(32)		
21.00-49	**LBS**	**23400**	**24000**	**25400**	**26800**	**28700**	**29100**	**30000**	**30900**	**32000**	**33100(32)**	**34200**	**34200(36)**			
	KG	10600	10900	11500	12150	12500	13200	13600	14000	14500	15000(32)	15500	15500(36)			
	PSI	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**				
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700				
24.00R35	**LBS**	**29100**	**30000***	**30900**	**32000**	**34200**	**35300**	**36400**	**37500**	**38600**	**39700**	**40800****				
	KG	13200	13600*	14000	14500	15500	16000	16500	17000	17500	18000	18500**				

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**			
BIAS	KPA	475	500	525	550	575	600	625	650	675	700	725	750			
24.00-35	**LBS**	**49400**	**50700**	**52000(30)**	**53600**	**55100**	**56800**	**58400**	**58400(36)**	**60000**	**61500**	**64000**	**64000(42)**			
	KG	22400	23000	23600(30)	24300	25000	25750	26500	26500(36)	27250	28000	29000	29000(42)			
18.00-49	**LBS**	**37500**	**38600**	**39700**	**40800(24)**	**41900**	**41900**	**43000**	**44100(28)**	**45400**	**46700**	**46700**	**48100(32)**			
	KG	17000	17500	18000	18500(24)	19000	19000	19500	20000(28)	20600	21200	21200	21800(32)			
21.00-49	**LBS**	**46700**	**48100**	**49400**	**50700**	**52000**	**53600**	**55100**	**55100(32)**	**56800**	**58400**	**60000**	**60000(36)**			
	KG	21200	21800	22400	23000	23600	24300	25000	25000(32)	25750	26500	27250	27250(36)			
	PSI	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**	**116**	**120**		**131**
RADIAL	KPA	525	550	575	600	625	650	675	700	725	750	775	800	825		900
24.00R35	**LBS**	**48100**	**50700***	**53600**	**55100**	**56800**	**58400**	**60000**	**61500**	**64000**	**64000**	**66000**	**66000**	**68000****		**74000*****
	KG	21800	23000*	24300	25000	25750	26500	27250	28000	29000	29000	30000	30000	30750**		33600***

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	47	51	54	58	62	65	69	73	76	80	83	87	91	94	
BIAS	KPA	325	350	375	400	425	450	475	500	525	550	575	600	625	650	
24.00-49	**LBS**	**32000**	**34200**	**35300**	**36480(30)**	**37500**	**39700**	**40800(36)**	**41900**	**43000**	**44100**	**45400(42)**	**46700**	**48100**	**48100(48)**	
	KG	14500	15500	16000	16500(30)	17000	18000	18500(36)	19000	19500	20000	20600(42)	21200	21800	21800(48)	
27.00-49	**LBS**	**39700**	**41900**	**43000**	**45400**	**46700(36)**	**48100**	**49400**	**50700(42)**	**52000**	**53600**	**55100(48)**				
	KG	18000	19000	19500	20600	21200(36)	21800	22400	23000(42)	23600	24300	25000(48)				
	PSI	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**				
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700				
24.00R49	**LBS**	**34200**	**36400***	**37500**	**38600**	**40800**	**41900**	**43000**	**44100**	**45400**	**46700**	**48100****				
	KG	15500	16500*	17000	17500	18500	19000	19500	20000	20600	21200	21800**				
27.00R49	**LBS**	**43000**	**44100***	**45400**	**48100**	**49400**	**50700**	**52000**	**55100**	**56800**	**58400**	**60000****				
	KG	19500	20000*	20600	21800	22400	23000	23600	25000	25750	26500	27250**				

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	69	73	76	80	83	87	91	94	98	102	105	109	112	123	
BIAS	KPA	475	500	525	550	575	600	625	650	675	700	725	750	775	850	
24.00-49	**LBS**	**58400**	**60000**	**61500(30)**	**64000**	**66000**	**68000**	**69500**	**71500(36)**	**71500**	**74000**	**76000**	**76000(42)**		**82700(48)**	
	KG	26500	27250	28000(30)	29000	30000	30750	31500	32500(36)	32500	33500	34500	34500(42)		37500(48)	
27.00-49	**LBS**	**71500**	**74000**	**76000**	**78500**	**80500(36)**	**82500**	**85500**	**88000**	**88000(42)**	**91000**	**93500**	**93500**	**96500(48)**		
	KG	32500	33500	34500	35500	36500(36)	37500	38750	40000	40000(42)	41250	42500	42500	43750(48)		
	PSI	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**	**116**	**120**		
RADIAL	KPA	525	550	575	600	625	650	675	700	725	750	775	800	825		
24.00R49	**LBS**	**58400**	**60000***	**61500**	**64000**	**66000**	**68000**	**69500**	**71500**	**74000**	**76000**	**78500**	**80500**	**82500****		
	KG	26500	27250*	28000	29000	30000	30750	31500	32500	33500	34500	35500	36500	37500**		
27.00R49	**LBS**	**71500**	**74000***	**76000**	**78500**	**82500**	**85500**	**85500**	**88000**	**91000**	**93500**	**96500**	**99000**	**99000****		
	KG	32500	33500*	34500	35500	37500	38750	38750	40000	41250	42500	43750	45000	45000**		

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**		
BIAS	KPA	275	300	325	350	375	400	425	450	475	500	525	550	575		
30.00-51	**LBS**	**44100**	**46700**	**49400**	**50700**	**53600**	**55100**	**56800**	**60000**	**61500**	**64000(46)**	**64000**	**66000(52)**			
	KG	20000	21200	22400	23000	24300	25000	25750	27250	28000	29000(46)	29000	30000(52)			
33.00-51	**LBS**	**52000**	**53600**	**56800**	**60000**	**61500**	**64000**	**66000**	**69500**	**71500**	**74000(50)**	**76000**	**78500**	**78500(58)**		
	KG	23600	24300	25750	27250	28000	29000	30000	31500	32500	33500(50)	34500	35500	35500(58)		
	PSI	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**				
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700				
30.00R51	**LBS**	**52000**	**55100***	**56800**	**58400**	**61500**	**64000**	**66000**	**68000**	**69500**	**71500**	**74000****				
	KG	23600	25000*	25750	26500	28000	29000	30000	30750	31500	32500	33500**				
33.00R51	**LBS**	**60000**	**64000***	**66000**	**68000**	**71500**	**74000**	**76000**	**78500**	**80500**	**82500**	**85500****				
	KG	27250	29000*	30000	30750	32500	33500	34500	35500	36500	37500	38750**				

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**			
BIAS	KPA	475	500	525	550	575	600	625	650	675	700	725	750			
30.00-51	**LBS**	**88000**	**91000**	**93500**	**96500**	**99000**	**102000**	**104500**	**107500(46)**	**110000**	**113500**	**113500**	**117000(52)**			
	KG	40000	41250	42500	43750	45000	46250	47500	48750(46)	50000	51500	51500	53000(52)			
33.00-51	**LBS**	**104500**	**107500**	**110000**	**113500**	**117000**	**120000**	**120000**	**123500(50)**	**128000**	**128000**	**132500**	**135500(58)**			
	KG	47500	48750	50000	51500	53000	54500	54500	56000(50)	58000	58000	60000	61500(58)			
	PSI	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**	**116**	**120**		
RADIAL	KPA	525	550	575	600	625	650	675	700	725	750	775	800	825		
30.00R51	**LBS**	**88000**	**91000***	**93500**	**99000**	**100000**	**104500**	**107500**	**110000**	**113500**	**117000**	**120000**	**120000**	**123500****		
	KG	40000	41250*	42500	45000	46250	47500	48750	50000	51500	53000	54500	54500	56000**		
33.00R51	**LBS**	**102000**	**107500***	**110000**	**113500**	**117000**	**120000**	**123500**	**128000**	**132500**	**132500**	**139000**	**139000**	**143500****		
	KG	46250	48750*	50000	51500	53000	54500	56000	58000	60000	60000	63000	63000	65000**		

40 MPH (65 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	**11**	**15**	**18**	**22**	**25**	**29**	**33**	**36**							
BIAS	KPA	75	100	125	150	175	200	225	250							
36.00-51	**LBS**	**24700**	**29100**	**33100**	**37500**	**40800**	**44100**	**46700**	**50700**							
	KG	11200	13200	15000	17000	18500	20000	21200	23000							

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	40	44	47	51	54	58	62	65	69	73	76	80	83		
BIAS	KPA	275	300	325	350	375	400	425	450	475	500	525	550	575		
36.00-51	**LBS**	**61500**	**66000**	**69500**	**71500**	**76000(42)**	**78500**	**80500**	**82500(50)**	**85500**	**88000**	**91000(58)**				
	KG	28000	30000	31500	32500	34500(42)	35500	36500	37500(50)	38750	40000	41250(58)				
40.00-57	**LBS**	**80500**	**85500**	**88000**	**91000**	**96500**	**99000**	**102000**	**107500**	**110000(60)**	**113500**	**117000**	**120000(68)**			
	KG	36500	38750	40000	41250	43750	45000	46250	48750	50000(60)	51500	53000	54500(68)			
	PSI	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**		
RADIAL	KPA	450	475	500	525	550	575	600	625	650	675	700	725	750		
36.00R51	**LBS**	**74000**	**78500***	**80500**	**82500**	**85500**	**88000**	**91000**	**93500**	**96500**	**99000**	**102000****				
	KG	33500	35500*	36500	37500	38750	40000	41250	42500	43750	45000	46250**				
39/90R53	**LBS**	**74000**	**78500***	**80500**	**82500**	**85500**	**88000**	**91000**	**93500**	**96500**	**99000**	**102000****				
	KG	33500	35500*	36500	37500	38750	40000	41250	42500	43750	45000	46250**				
37.00R57	**LBS**	**82500**	**85500***	**88000**	**91000**	**96500**	**99000**	**102000**	**104500**	**107500**	**110000**	**113500****				
	KG	37500	38750*	40000	41250	43750	45000	46250	47500	48750	50000	51500**				
40.00R57	**LBS**	**93500**	**99000***	**102000**	**107500**	**110000**	**113500**	**117000**	**120000**	**123500**	**128000**	**132500****				
	KG	42500	45000*	46250	48750	50000	51500	53000	54500	56000	58000	60000**				
44/95R57	**LBS**	**96500**	**102000**	**104500**	**110000**	**113500**	**117000**	**120000**	**123500**	**128000**	**132500**	**135500****				
	KG	43750	46250	47500	50000	51500	53000	54500	56000	58000	60000	61500**				
45R57	**LBS**	**93500**	**99000***	**102000**	**107500**	**110000**	**113500**	**117000**	**120000**	**123500**	**128000**	**132500****	**135500**	**139000**		
	KG	42500	45000*	46250	48750	50000	51500	53000	54500	56000	58000	60000**	61500	63000		
46/90R57	**LBS**	**99000**	**104500***	**107500**	**113500**	**117000**	**120000**	**123500**	**128000**	**132500**	**135500**	**139000****				
	KG	45000	47500*	48750	51500	53000	54500	56000	58000	60000	61500	63000**				

5 MPH (10 KM/H) OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	69	73	76	80	83	87	91	94	98	102	105				
BIAS	KPA	475	500	525	550	575	600	625	650	675	700	725				
36.00-51	**LBS**	**128000(42)**	**128000**	**132500**	**139000**	**143500**	**143500(50)**	**147500**	**153000**	**156500(58)**						
	KG	58000(42)	58000	60000	63000	65000	65000(50)	67000	69000	71000(58)						
40.00-57	**LBS**	**161000**	**165500**	**171000**	**176500**	**182000**	**182000**	**187500**	**193000(60)**	**198500**	**204000**	**204000(68)**				
	KG	73000	75000	77500	80000	82500	82500	85000	87500(60)	90000	92500	92500(68)				
	PSI	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**	**116**	**120**		
RADIAL	KPA	525	550	575	600	625	650	675	700	725	750	775	800	825		
36.00R51	**LBS**	**123500**	**128000***	**132500**	**139000**	**143500**	**147500**	**152000**	**156500**	**161000**	**165500**	**165500**	**171000**	**176500****		
	KG	56000	58000*	60000	63000	65000	67000	69000	71000	73000	75000	75000	77500	80000**		
39/90R53	**LBS**	**123500**	**128000***	**132500**	**139000**	**143500**	**147500**	**152000**	**156500**	**161000**	**165500**	**165500**	**171000**	**176500****		
	KG	56000	58000*	60000	63000	65000	67000	69000	71000	73000	75000	75000	77500	80000**		
37.00R57	**LBS**	**132500**	**135500***	**139000**	**143500**	**147500**	**152000**	**156500**	**161000**	**165500**	**171000**	**176500**	**176500**	**182000****		
	KG	60000	61500*	63000	65000	67000	69000	71000	73000	75000	77500	80000	80000	82500**		
40.00R57	**LBS**	**161000**	**165500***	**171000**	**176500**	**182000**	**187500**	**193000**	**198500**	**204000**	**209400**	**215000**	**220500**	**220500****		
	KG	73000	75000*	77500	80000	82500	85000	87500	90000	92500	95000	97500	100000	100000**		
45R57	**LBS**	**161000**	**165500***	**171000**	**176500**	**182000**	**187500**	**193000**	**198500**	**204000**	**209400**	**215000**	**220500**	**220500****		
	KG	73000	75000*	77500	80000	82500	85000	87500	90000	92500	95000	97500	100000	100000**		
46/90R57	**LBS**	**165500**	**171000***	**176500**	**182000**	**187500**	**193000**	**198500**	**204000**	**209400**	**215000**	**220500**	**220500**	**227000****		
	KG	75000	77500*	80000	82500	85000	87500	90000	92500	95000	97500	100000	100000	103000**		

Consult manufacturer for operating recommentations.

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**					
BIAS	KPA	175	200	225	250	275	300	325	350	375	400					
15.5-25	**LBS**	**5680(8)**	**6150**	**6600**	**7150(12)**											
	KG	2575(8)	2800	3000	3250(12)											
17.5-25	**LBS**	**6800**	**7400**	**8050(12)**	**8550**	**8800**	**9350(16)**	**9900**	**10200**	**10700**	**11000(20)**					
	KG	3075	3350	3650(12)	3875	4000	4250(16)	4500	4625	4875	5000(20)					
	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
15.5R25	**LBS**	**6150**	**6600**	**6950**	**7400**	**7850***	**8050**	**8550**	**8800**	**9350**	**9650**	**9900****				
	KG	2800	3000	3150	3350	3550*	3650	3875	4000	4250	4375	4500**				

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD TRACTOR AND GRADER SERVICE

	PSI	**22**	**25**	**29**	**33**	**36**	**40**	**44**	**47**							
BIAS	KPA	150	175	200	225	250	275	300	325							
15.5-25	**LBS**	**4300(8)**	**4800(10)**	**5200**	**5520**	**5840(12)**										
	KG	1950(8)	2180(10)	2360	2580	2650(12)										
17.5-25	**LBS**	**5200**	**5680**	**6400(12)**	**6600(14)**	**6950**	**7400(16)**	**7850**	**8050(20)**							
	KG	2360	2575	2900(12)	3000(14)	3150	3350(16)	3550	3650(20)							
	PSI	**25**	**29**	**33**	**36**	**40**	**44**									
RADIAL	KPA	175	200	225	250	275	300									
15.5R25	**LBS**	**4400**	**4800**	**5200**	**5680**	**6150**	**6600***									
	KG	2000	2180	2360	2575	2800	3000*									

5 MPH (10KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**
BIAS	KPA	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575
15.5-25	**LBS**	**8800**	**9350(8)**	**9900**	**10500**	**10700(10)**	**11400**	**11700**	**12300(12)**							
	KG	4000	4250(8)	4500	4750	4875(10)	5150	5300	5600(12)							
17.5-25	**LBS**	**10500**	**11000**	**11700**	**12300**	**12800**	**13600(12)**	**13900**	**14800(14)**	**15200**	**15700**	**16100(16)**	**16500**	**17100**	**17600**	**18200(20)**
	KG	4750	5000	5300	5600	5800	6150(12)	6300	6700(14)	6900	7100	7300(16)	7500	7750	8000	8250(20)
	PSI	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	
RADIAL	KPA	200	225	250	275	300	325	350	375	400	425	450	475	500	525	continued
15.5R25	**LBS**	**6600**	**7150**	**7600**	**8250**	**8800**	**9350**	**9900**	**10500**	**11000**	**11400**	**12000**	**12300**	**12800***	**13600**	
	KG	3000	3250	3450	3750	4000	4250	4500	4750	5000	5150	5450	5600	5800*	6150	
	PSI	**80**	**83**	**87**	**91**	**94**										
	KPA	550	575	600	625	650										
	LBS	**13900**	**14300**	**14800**	**15200**	**15700****										
	KG	6300	6500	6700	6900	7100**										

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
17.5R25	**LBS**	**7400**	**7850**	**8250**	**8800**	**9100***	**9650**	**10200**	**10500**	**11000**	**11400**	**12000****				
	KG	3350	3550	3750	4000	4125*	4375	4625	4750	5000	5150	5450**				

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD ARTICULATE DUMP SERVICE

	PSI	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**				
RADIAL	KPA	200	225	250	275	300	325	350	375	400	425	450				
17.5R25	**LBS**	**6800**	**7400**	**8050**	**8550**	**9100***	**9650**	**10200**	**10700**	**11400**	**12000****	**12300**				
	KG	3075	3350	3650	3875	4125*	4375	4625	4875	5150	5450**	5600				

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD TRACTOR AND GRADER SERVICE

	PSI	**25**	**29**	**33**	**36**	**40**	**44**									
RADIAL	KPA	175	200	225	250	275	300									
17.5R25	**LBS**	**5200**	**5680**	**6400**	**6800**	**7400**	**8050***									
	KG	2360	2575	2900	3075	3350	3650*									

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	
BIAS	KPA	200	225	250	275	300	325	350	375	400	425	450	475	500	525	**continued**
17.5R25	**LBS**	**8050**	**8800**	**9350**	**10200**	**10700**	**11700**	**12300**	**12800**	**13200**	**13600**	**14300**	**14800**	**15700***	**16100**	
	KG	3650	4000	4250	4625	4850	5300	5600	5800	6000	6150	6500	6700	7100*	7300	
	PSI	**80**	**83**	**87**	**91**	**94**		**116**								
	KPA	550	575	600	625	650		800								
	LBS	**16500**	**17100**	**17600**	**18200**	**18700****		**22000*****								
	KG	7500	7750	8000	8250	8500**		10000***								

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
20.5R25	**LBS**	**9650**	**10500**	**11000**	**11700**	**12300***	**12800**	**13600**	**14300**	**14800**	**15200**	**16100****				
	KG	4375	4750	5000	5300	5600*	5800	6150	6500	6700	6900	7300**				

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD ARTICULATED DUMP SERVICE

	PSI	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**				
RADIAL	KPA	200	225	250	275	300	325	350	375	400	425	450				
20.5R25	**LBS**	**8800**	**9650**	**10500**	**11000**	**12000**	**12800***	**13200**	**13900**	**14800**	**15200**	**16100****				
	KG	4000	4375	4750	5000	5450	5800*	6000	6300	6700	6900	7300**				

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD TRACTOR AND GRADER SERVICE

	PSI	**25**	**29**	**33**	**36**	**40**	**44**									
RADIAL	KPA	175	200	225	250	275	300									
20.5R25	**LBS**	**6950**	**7600**	**8550**	**9100**	**9650**	**10200***									
	KG	3150	3450	3825	4125	4375	4625*									

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	
RADIAL	KPA	200	225	250	275	300	325	350	375	400	425	450	475	500	525	**continued**
20.5R25	**LBS**	**10500**	**11400**	**12300**	**13200**	**13900**	**14800**	**15700**	**16500**	**17600**	**18200**	**19300**	**19800**	**20900***	**21500**	
	KG	4750	5150	5600	6000	6300	6700	7100	7500	8000	8250	8750	9000	9500*	9750	
	PSI	**80**	**83**	**87**	**91**	**94**										
	KPA	550	575	600	625	650										
	LBS	**22000**	**22700**	**24000**	**24700**	**25400****										
	KG	10000	10300	10900	11200	11500**										

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**								
BIAS	KPA	175	200	225	250	275	300	325								
20.5-25	**LBS**	**9100**	**9900(12)**	**10700**	**11400**	**12000(16)**	**12800**	**13200(20)**								
	KG	4125	4500(12)	4875	5150	5450(16)	5800	6000(20)								

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD TRACTOR AND GRADER SERVICE

	PSI	**22**	**25**	**29**	**33**	**36**	**40**									
BIAS	KPA	150	175	200	225	250	275									
20.5-25	**LBS**	**6950**	**7850(12)**	**8250**	**8800(16)**	**9350**	**9900(20)**									
	KG	3150	3550(12)	3750	4000(16)	4250	4500(20)									

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**		
BIAS	KPA	225	250	275	300	325	350	375	400	425	450	475	500	525		
20.5-25	**LBS**	**13900**	**14800(12)**	**15700**	**16500**	**17100**	**18200(16)**	**18700**	**19300**	**20400**	**20900(20)**	**21500**	**22000**	**22700(24)**		
	KG	6300	6700(12)	7100	7500	7750	8250(16)	8500	8750	9250	9500(20)	9750	10000	10300(24)		

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	40	44	47	51	54	58	62	65	69	73	76				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
23.5R25	**LBS**	**12300**	**13200**	**14300**	**14800**	**15700***	**16500**	**17100**	**18200**	**18700**	**19800**	**20400****				
	KG	5600	6000	6500	6700	7100*	7500	7750	8250	8500	9000	9250**				

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD ARTICULATED DUMP SERVICE

	PSI	29	33	36	40	44	47	51	54	58	62	65				
RADIAL	KPA	200	225	250	275	300	325	350	375	400	425	450				
23.5R25	**LBS**	**11000**	**12000**	**13200**	**13900**	**14800**	**16100***	**16500**	**17600**	**18700**	**19300**	**20400****				
	KG	5000	5450	6000	6300	6700	7300*	7500	8000	8500	8750	9250**				

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD TRACTOR AND GRADER SERVICE

	PSI	25	29	33	36	40	44									
RADIAL	KPA	175	200	225	250	275	300									
23.5R25	**LBS**	**8800**	**9900**	**10700**	**11700**	**12300**	**13200***									
	KG	4000	4500	4875	5300	5600	6000*									

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	29	33	36	40	44	47	51	54	58	62	65	69	73	76	
RADIAL	KPA	200	225	250	275	300	325	350	375	400	425	450	475	500	525	**continued**
23.5R25	**LBS**	**13200**	**14300**	**15700**	**17100**	**18200**	**19300**	**20400**	**21500**	**22700**	**23400**	**24700**	**25400**	**26800***	**27600**	
	KG	6000	6500	7100	7750	8250	8750	9250	9750	10300	10600	11200	11500	12150*	12500	
	PSI	**80**	**83**	**87**	**91**	**94**										
	KPA	550	575	600	625	650										
	LBS	**28300**	**29100**	**30000**	**30900**	**32000****										
	KG	12850	13200	13600	14000	14500**										

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**	**51**							
BIAS	KPA	175	200	225	250	275	300	325	350							
23.5-25	**LBS**	**11700(12)**	**12800**	**13600(16)**	**14300**	**15200**	**16100(20)**	**17100**	**17600(24)**							
	KG	5300(12)	5800	6150(16)	6500	6900	7300(20)	7750	8000(24)							

25 MPH (40 KM/H) MAXIMUM SPEED OFF-THE-ROAD TRACTOR AND GRADER SERVICE

	PSI	**22**	**25**	**29**	**33**	**36**										
BIAS	KPA	150	175	200	225	250										
23.5-25	**LBS**	**8800(12)**	**9650**	**10500(16)**	**11400**	**12000(20)**										
	KG	4000(12)	4375	4750(16)	5150	5450(20)										

5 MPH (10 KM/H) MAXIMUM OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**		
BIAS	KPA	225	250	275	300	325	350	375	400	425	450	475	500	525	**continued**	
23.5-25	**LBS**	**17600(12)**	**18700**	**19800**	**20900(16)**	**22000**	**23400**	**24000(20)**	**24700**	**26000**	**26800**	**27600(24)**	**28300**	**29100**		
	KG	8000(12)	8500	9000	9500(16)	10000	10600	10900(20)	11200	11800	12150	12500(24)	12850	13200		
	PSI	**80**	**83**	**87**	**91**	**94**	**98**	**102**	**105**	**109**	**112**					
	KPA	550	575	600	625	650	675	700	725	750	775					
	LBS	**30000(28)**	**30900**	**32000**	**32000(32)**	**33100**	**34200**	**34200(36)**	**35300**	**36400**	**36400(40)**					
	KG	13600(28)	14000	14500	14500(32)	15000	15500	15500(36)	16000	16500	16500(40)					

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
26.5R25	**LBS**	**15700**	**16500**	**17600**	**18700**	**19800***	**20900**	**21500**	**22700**	**23400**	**24700**	**25400****				
	KG	7100	7500	8000	8500	9000*	9500	9750	10300	10600	11200	11500**				
	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**	**51**							
BIAS	KPA	175	200	225	250	275	300	325	350							
26.5-25	**LBS**	**14800**	**16100**	**17100**	**18200(20)**	**19300**	**20400(24)**	**20900(26)**	**22000(28)**							
	KG	6700	7300	7750	8250(20)	8750	9250(24)	9500(26)	10000(28)							

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD ARTICULATED DUMP SERVICE

	PSI	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**				
RADIAL	KPA	200	225	250	275	300	325	350	375	400	425	450				
26.5R25	**LBS**	**13900**	**15200**	**16500**	**17600**	**18700**	**19800***	**20900**	**22000**	**23400**	**24000**	**25400****				
	KG	6300	6900	7500	8000	8500	9000*	9500	10000	10600	10900	11500**				

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	
RADIAL	KPA	200	225	250	275	300	325	350	375	400	425	450	475	500	525	**continued**
26.5R25	**LBS**	**16500**	**18200**	**19800**	**20900**	**22700**	**24000**	**25400**	**26800**	**28300**	**29100**	**30900**	**32000**	**33100***	**34200**	
	KG	7500	8250	9000	9500	10300	10900	11500	12150	12850	13200	14000	14500	15000*	15500	
	PSI	**80**	**83**	**87**	**91**	**94**		**116**								
	KPA	550	575	600	625	650		800								
	LBS	**35300**	**36400**	**37500**	**39700**	**40800****		**46700*****								
	KG	16000	16500	17000	18000	18500**		21800***								
	PSI	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	
BIAS	KPA	225	250	275	300	325	350	375	400	425	450	475	500	525	550	
26.5-25	**LBS**	**22000(14)**	**24000**	**25400**	**26800**	**27600**	**29100(20)**	**30000**	**30900(24)**	**32000**	**33100(26)**	**34200(28)**	**35300**	**36400**	**37500(32)**	
	KG	10000(14)	10900	11500	12150	12500	13200(20)	13600	14000(24)	14500	15000(26)	15500(28)	16000	16500	17000(32)	

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	40	44	47	51	54	58	62	65	69	73	76				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
29.5R25	**LBS**	**18700**	**20400**	**21500**	**22700**	**24000***	**25400**	**26000**	**27600**	**28300**	**30000**	**30900****				
	KG	8500	9250	9750	10300	10900*	11500	11800	12500	12850	13600	14000**				
	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**					
BIAS	KPA	175	200	225	250	275	300	325	350	375	400					
29.5-25	**LBS**	**17600**	**19300**	**20400**	**22000(22)**	**23400**	**24000**	**25400(28)**	**26800**	**27600**	**29100(34)**					
	KG	8000	8750	9250	10000(22)	10600	10900	11500(28)	12150	12500	13200(34)					

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD ARTICULATED DUMP SERVICE

	PSI	29	33	36	40	44	47	51	54	58	62	65				
RADIAL	KPA	200	225	250	275	300	325	350	375	400	425	450				
29.5R25	**LBS**	**16500**	**18200**	**19800**	**20900**	**22700**	**24000***	**25400**	**26800**	**28300**	**29100**	**30900****				
	KG	7500	8250	9000	9500	10300	10900*	11500	12150	12850	13200	14000**				

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	58	62	65	69	73	76	80	83	87	91	94		116		
RADIAL	KPA	400	425	450	475	500	525	550	575	600	625	650		800		
29.5R25	**LBS**	**34200**	**35300**	**37500**	**38600**	**39700***	**41900**	**43000**	**44100**	**45400**	**46700**	**49400****		**56800*****		
	KG	15500	16000	17000	17500	18000*	19000	19500	20000	20600	21200	22400**		25750***		
	PSI	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**		
BIAS	KPA	225	250	275	300	325	350	375	400	425	450	475	500	525		
29.5-25	**LBS**	**26800**	**28300(16)**	**30000**	**32000**	**33100(22)**	**35300**	**36400**	**37500**	**38600(28)**	**40800**	**41900**	**43000**	**44100(34)**		
	KG	12150	12850(16)	13600	14500	15000(22)	16000	16500	17000	17500(28)	18500	19000	19500	20000(34)		

40 MPH (65 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	11	15	18	22	25	29	33	36							
BIAS	KPA	75	100	125	150	175	200	225	250							
29.5-25	**LBS**	**8540**	**10200**	**11680**	**12790**	**14330**	**15210**	**16530**	**17640**							
	KG	3875	4625	5300	5800	6500	6900	7500	8000							

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD SAND SERVICE

	PSI	11	15	18	22	25	29	33	36							
BIAS	KPA	75	100	125	150	175	200	225	250							
29.5-25	**LBS**	**10470**	**12350**	**13890**	**15650**	**17090**	**18190**	**19840**	**20940**							
	KG	4750	5600	6300	7100	7750	8250	9000	9500							

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
26.5R29	**LBS**	**16500**	**17600**	**18700**	**19800**	**20900***	**22000**	**23400**	**24000**	**25400**	**26000**	**27600****				
	KG	7500	8000	8500	9000	9500*	10000	10600	10900	11500	11800	12500**				
	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**					
BIAS	KPA	175	200	225	250	275	300	325	350	375	400					
26.5-29	**LBS**	**15700**	**17100**	**18200**	**19300**	**20400(22)**	**21500**	**22700(26)**								
	KG	7100	7750	8250	8750	9250(22)	9750	10300(26)								
29.5-29	**LBS**	**18700**	**20400**	**22000**	**23400(22)**	**24700**	**26000**	**26800(28)**	**28300**	**29100**	**30900(34)**					
	KG	8500	9250	10000	10600(22)	11200	11800	12150(28)	12850	13200	14000(34)					

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**				
RADIAL	KPA	400	425	450	475	500	525	550	575	600	625	650				
26.5R29	**LBS**	**30000**	**30900**	**33100**	**34200**	**35300***	**36400**	**38600**	**39700**	**40800**	**41900**	**43000****				
	KG	13600	14000	15000	15500	16000*	16500	17500	18000	18500	19000	19500**				
	PSI	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**		
BIAS	KPA	225	250	275	300	325	350	375	400	425	450	475	500	525		
26.5-29	**LBS**	**24000**	**25400**	**26800**	**28300**	**30000**	**30900**	**32000(22)**	**33100**	**34200**	**35300(26)**	**37500**	**38600**	**39700(30)**		
	KG	10900	11500	12150	12850	13600	14000	14500(22)	15000	15500	16000(26)	17000	17500	18000(30)		
29.5-29	**LBS**	**28300**	**30900**	**32000**	**34200**	**35300(22)**	**37500**	**38600**	**39700**	**41900(28)**	**43000**	**44100**	**45400**	**46700(34)**		
	KG	12850	14000	14500	15500	16000(22)	17000	17500	18000	19000(28)	19500	20000	20600	21200(34)		

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	40	44	47	51	54	58	62	65	69	73	76				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
29.5R29	**LBS**	**20400**	**21500**	**22700**	**24000**	**25400***	**26800**	**27600**	**29100**	**30000**	**32000**	**33100****				
	KG	9250	9750	10300	10900	11500*	12150	12500	13200	13600	14500	15000**				
33.25R29	**LBS**	**24700**	**26800**	**28300**	**30000**	**30900***	**33100**	**34200**	**36480**	**37500**	**38600**	**40800****				
	KG	11200	12150	12850	13600	14000*	15000	15500	16500	17000	17500	18500**				
	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**					
BIAS	KPA	175	200	225	250	275	300	325	350	375	400					
33.25-29	**LBS**	**22700**	**24700**	**26800**	**28300**	**30000(26)**	**30900**	**33100(32)**								
	KG	10300	11200	12150	12850	13600(26)	14000	15000(32)								
33.5-33	**LBS**	**25400**	**27600**	**29100**	**30900**	**33100**	**35300**	**36400(32)**	**38600**	**39700**	**40800(38)**					
	KG	11500	12500	13200	14000	15000	16000	16500(32)	17500	18000	18500(38)					
37.5-33	**LBS**	**30900**	**33100**	**35300**	**37500**	**39700(30)**	**41900**	**44100(36)**	**45500**	**48100**	**49400(42)**					
	KG	14000	15000	16000	17000	18000(30)	19000	20000(36)	20600	21800	22400(42)					

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	58	62	65	69	73	76	80	83	87	91	94				
RADIAL	KPA	400	425	450	475	500	525	550	575	600	625	650				
29.5R29	**LBS**	**36400**	**37500**	**39700**	**40800**	**43000***	**44100**	**45400**	**46700**	**49400**	**50700**	**52000****				
	KG	16500	17000	18000	18500	19500*	20000	20600	21200	22400	23000	23600**				
33.25R29	**LBS**	**44100**	**46700**	**48100**	**50700**	**52000***	**53600**	**56800**	**58400**	**60000**	**61500**	**64000****				
	KG	20000	21200	21800	23000	23600*	24300	25750	26500	27250	28000	29000**				
	PSI	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**					
BIAS	KPA	225	250	275	300	325	350	375	400	425	450					
33.25-29	**LBS**	**35300**	**37500**	**38600(20)**	**40800**	**43000**	**45400(26)**	**46700**	**48100**	**50700**	**52000(32)**					
	KG	16000	17000	17500(20)	18500	19500	20600(26)	21200	21800	23000	23600(32)					
	PSI	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**	**87**		
BIAS	KPA	300	325	350	375	400	425	450	475	500	525	550	575	600		
33.5-33	**LBS**	**45400**	**48100**	**49400**	**52000**	**53600**	**56800(32)**	**58400**	**60000**	**61500**	**64000(38)**	**66000**	**66000**	**68000(44)**		
	KG	20600	21800	22400	23600	24300	25750(32)	26500	27250	28000	29000(38)	30000	30000	30750(44)		
	PSI	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**		
BIAS	KPA	225	250	275	300	325	350	375	400	425	450	475	500	525		
37.5-33	**LBS**	**46700**	**49400**	**52000**	**55100**	**56800**	**60000**	**61500(30)**	**64000**	**68000**	**69500(36)**	**71500**	**74000**	**76000(42)**		
	KG	21200	22400	23600	25000	25750	27250	28000(30)	29000	30750	31500(36)	32500	33500	34500(42)		

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**
BIAS	KPA	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
29.5-35	**LBS**	**20400**	**22000**	**24000**	**25400**	**26800**	**28300**	**30000(28)**	**30900**	**32000**	**33100(34)**					
	KG	9250	10000	10900	11500	12150	12850	13600(28)	14000	14500	15000(34)					
33.25-35	**LBS**	**24700**	**26800**	**28300**	**30900**	**32000**	**34200**	**35300(32)**	**37500**	**38600**	**39700(38)**	**41900**	**43000**	**44100**	**45400**	**46700(50)**
	KG	11200	12150	12850	14000	14500	15500	16000(32)	17000	17500	18000(38)	19000	19500	20000	20600	21200(50)
	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
33.25R35	**LBS**	**26800**	**28300**	**30900**	**32000**	**34200***	**35300**	**37500**	**38600**	**40800**	**41900**	**44100****				
	KG	12150	12850	14000	14500	15500*	16000	17000	17500	18500	19000	20000**				

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**				
RADIAL	KPA	400	425	450	475	500	525	550	575	600	625	650				
33.25R35	**LBS**	**48100**	**50700**	**53600**	**55100**	**56800***	**58400**	**61500**	**64000**	**66000**	**68000**	**69500****				
	KG	21800	23000	24300	25000	25750*	26500	28000	29000	30000	30750	31500**				
	PSI	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**		**102**
BIAS	KPA	225	250	275	300	325	350	375	400	425	450	475	500	525		**700**
29.5-35	**LBS**	**30900**	**33100**	**35300**	**37500**	**38600**	**40800**	**41900**	**44100**	**45400(28)**	**46700**	**48100**	**49400**	**50700(34)**		
	KG	14000	15000	16000	17000	17500	18500	19000	20000	20600(28)	21200	21800	22400	23000(34)		
33.25-35	**LBS**	**37500**	**39700**	**41900(20)**	**44100**	**46700**	**49400(26)**	**50700**	**53600**	**55100**	**56800(32)**	**58400**	**60000**	**61500(38)**		**74000(50)**
	KG	17000	18000	19000(20)	20000	21200	22400(26)	23000	24300	25000	25750(32)	26500	27250	28000(38)		33500(50)

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	40	44	47	51	54	58	62	65	69	73	76				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
37.25R35	**LGS**	**32000**	**34200**	**36400**	**38600**	**40800***	**43000**	**45400**	**46700**	**49400**	**50700**	**52000****				
	KG	14500	15500	16500	17500	18500*	19500	20600	21200	22400	23000	23600**				
37.5R39	**LBS**	**35300**	**37500**	**39700**	**41900**	**44100***	**46700**	**48100**	**50700**	**52000**	**55100**	**56800****				
	KG	16000	17000	18000	19000	20000*	21200	21800	23000	23600	25000	25750**				
	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**		
BIAS	KPA	175	200	225	250	275	300	325	350	375	400	425	450	475		
37.25-35	**LBS**	**30000**	**32000**	**34200**	**36400**	**38600(30)**	**40800**	**43000(36)**	**44100**	**46800**	**48100(42)**					
	KG	13600	14500	15500	16500	17500(30)	18500	19500(36)	20000	21200	21800(42)					
37.5-39	**LBS**	**33100**	**35300**	**37500**	**40800**	**43000**	**45400**	**47000(36)**	**49400**	**50700**	**53600(44)**	**55100**	**56800**	**58400(52)**		
	KG	15000	16000	17000	18500	19500	20600	21200(36)	22400	23000	24300(44)	25000	25750	26500(52)		

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	58	62	65	69	73	76	80	83	87	91	94				
RADIAL	KPA	400	425	450	475	500	525	550	575	600	625	650				
37.25R35	**LBS**	**58400**	**60000**	**64000**	**66000**	**68000***	**71500**	**74000**	**76000**	**78500**	**80500**	**82500****				
	KG	26500	27250	29000	30000	30750*	32500	33500	34500	35500	36500	37500**				
37.5R39	**LBS**	**61500**	**66000**	**68000**	**71500**	**74000***	**76000**	**78500**	**82500**	**85500**	**88000**	**91000****				
	KG	28000	30000	30750	32500	33500*	34500	35500	37500	38750	40000	41250**				
	PSI	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**		
BIAS	KPA	225	250	275	300	325	350	375	400	425	450	475	500	525		
37.25-35	**LBS**	**45400**	**48100**	**50700**	**53600**	**56800**	**58400**	**61500(30)**	**64000**	**66000**	**68000(36)**	**69500**	**71500**	**74000(42)**		
	KG	20600	21800	23000	24300	25750	26500	28000(30)	29000	30000	30750(36)	31500	32500	33500(42)		
	PSI	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**
BIAS	KPA	300	325	350	375	400	425	450	475	500	525	550	575	600	625	650
37.5-39	**LBS**	**58400**	**61500**	**64000**	**68000**	**69500**	**71500**	**74000(36)**	**76000**	**78500**	**82500**	**82500(44)**	**85500**	**88000**	**91000**	**93500(52)**
	KG	26500	28000	29000	30750	31500	32500	33500(36)	34500	35500	37500	37500(44)	38750	40000	41250	42500(52)

LOAD LIMITS AT COLD INFLATION PRESSURES

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD HAULAGE SERVICE

	PSI	**40**	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**				
RADIAL	KPA	275	300	325	350	375	400	425	450	475	500	525				
40.5/75R39	**LBS**	**39700**	**41900**	**45400**	**48100**	**49400***	**52000**	**55100**	**56800**	**60000**	**61500**	**64000****				
	KG	18000	19000	20600	21800	22400*	23600	25000	25750	27250	28000	29000**				
	PSI	**25**	**29**	**33**	**36**	**40**	**44**	**47**	**51**	**54**	**58**					
BIAS	KPA	175	200	225	250	275	300	325	350	375	400					
37.5-51	**LBS**	**37500**	**39700**	**43000**	**45400**	**48100**	**50700**	**53600(36)**	**55100**	**58400**	**60000(44)**					
	KG	17000	18000	19500	20600	21800	23000	24300(36)	25000	26500	27250(44)					

5 MPH (10 KM/H) MAXIMUM SPEED OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**				
RADIAL	KPA	400	425	450	475	500	525	550	575	600	625	650				
40.5/75R39	**LBS**	**71500**	**74000**	**78500**	**80500**	**82500***	**88000**	**91000**	**93500**	**96500**	**99000**	**102000****				
	KG	32500	33500	35500	36500	37500*	40000	41250	42500	43750	45000	46250**				
	PSI	**44**	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**94**	**102**
BIAS	KPA	300	325	350	375	400	425	450	475	500	525	550	575	600	650	700
41.25/70-39	**LBS**	**64000**	**66000(34)**	**69500**	**71500**	**74000**	**78500**	**80500**	**82500(42)**	**85500**	**88000**	**91000**				
	KG	29000	30000(34)	31500	32500	33500	35500	36500	37500(42)	38750	40000	41250				
37.5-51	**LBS**	**66000**	**69500**	**74000**	**76000**	**78500**	**82500**	**85500(36)**	**88000**	**91000**	**93500**	**93500(44)**				
	KG	30000	31500	33500	34500	35500	37500	38750(36)	40000	41250	42500	42500(44)				
49/75-51	**LBS**	**107500**	**113500**	**117000**	**123500(40)**	**128000**	**132500**	**135500(48)**	**139000**	**143500(54)**	**147500**	**152000**	**156500(62)**	**161000**	**171000(68)**	**176500(74)**
	KG	48750	51500	53000	56000(40)	58000	60000	61500(48)	63000	65000(54)	67000	69000	71000(62)	73000	77500(68)	80000(74)
49.5-57	**LBS**	**128000**	**132500**	**139000**	**143500**	**152000(44)**	**156000**	**161000**	**165000**	**171000**	**176500**	**182000(60)**	**187500**	**187500**	**193000(68)**	
	KG	58000	60000	63000	65000	69000(44)	71000	73000	75000	77500	80000	82500(60)	85000	85000	87500(68)	
50/80-57	**LBS**	**128000**	**135500**	**139000**	**147500**	**152000(44)**	**156500**	**161000**	**165500**	**171000**	**176500**	**182000(60)**	**187500**	**193000**	**198500(68)**	
	KG	58000	61500	63000	67000	69000(44)	71000	73000	75000	77500	80000	82500(60)	85000	87500	90000(68)	
52/80-57	**LBS**	**135500**	**139000**	**147500**	**152000**	**161000(44)**	**165500**	**171000**	**176500**	**182000**	**187500**	**193000**	**198500**	**204000(68)**		
	KG	61500	63000	67000	69000	73000(44)	75000	77500	80000	82500	85000	87500	90000	92500(68)		

LOAD LIMITS AT COLD INFLATION PRESSURES

5 MPH (10 KM/H) MAXIMUM OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	58	62	65	69	73	76	80	83	87	91					
RADIAL	KPA	400	425	450	475	500	525	550	575	600	625					
25/55R25	**LBS**	**17600**	**18700**	**19300**	**20400***											
	KG	8000	8500	8750	9250*											
550/65R25	**LBS**	**16500**	**17600**	**18200**	**18700***	**19800**	**20400**	**20900**	**22000**	**22700**	**23400****					
(22/65R25)	KG	7500	8000	8250	8500*	9000	9250	9500	10000	10300	10600**					
600/65R25	**LBS**	**19300**	**19800**	**20900**	**21500***	**22700**	**23400**	**24000**	**24700**	**26000**	**26800****					
	KG	8750	9000	9500	9750*	10300	10600	10900	11200	11800	12150**					
25/65R25	**LBS**	**19800**	**20400**	**21500**	**22700***	**23400**	**24000**	**25400**	**26000**	**26800**	**27600****					
	KG	9000	9500	9750	10300*	10600	10900	11500	11800	12150	12500**					
650/65R25	**LBS**	**22000**	**23400**	**24000**	**25400***	**26000**	**26800**	**28300**	**29100**	**30000**	**30900****					
	KG	10000	10600	10900	11500*	11800	12150	12850	13200	13600	14000**					
750/65R25	**LBS**	**30000**	**30900**	**33100**	**34200***	**35300**	**36400**	**37500**	**38600**	**39700**	**41900****					
(30/65R25)	KG	13600	14000	15000	15500*	16000	16500	17000	17500	18000	19000**					
775/65R29	**LBS**	**33100**	**34200**	**35300**	**37500***	**38600**	**39700**	**40800**	**41900**	**44100**	**45400****					
(800/65R29)	KG	14500	15500	16000	17000*	17500	18000	18500	19000	20000	20600**					
30/65R29	**LBS**	**30900**	**32000**	**34200**	**35300***	**36400**	**37500**	**38600**	**39700**	**40800**	**41900****					
	KG	14000	14500	15500	16000*	16500	17000	17500	18000	18500	19000**					
875/65R29	**LBS**	**40800**	**43000**	**44100**	**46700***	**48100**	**49400**	**52000**	**53600**	**55100**	**56800****					
	KG	18500	19500	20000	21200*	21800	22400	23600	24300	25000	25750**					

30 MPH (50 KM/H) MAXIMUM SPEED OFF-THE-ROAD ARTICULATED DUMP SERVICE

	PSI	29	33	36	40	44	47	51	54	58	62	65	69	73		
RADIAL	KPA	200	225	250	275	300	325	350	375	400	425	450	475	500		
600/65R25	**LBS**	**8550**	**9350**	**10200**	**10700**	**11700**	**12300***	**12800**	**13600**	**14300**	**15200****					
	KG	3875	4250	4625	4875	5300	5600*	5800	6150	6500	6900**					
25/65R25	**LBS**	**8800**	**9650**	**10500**	**11000**	**12000**	**12800***	**13600**	**13900**	**14800**	**15700****					
	KG	4000	4375	4750	5000	5450	5800*	6150	6300	6700	7100**					
650/65R25	**LBS**	**9900**	**10700**	**11700**	**12300**	**13200**	**14300***	**15200**	**15700**	**16500**	**17600****					
	KG	4500	4875	5300	5600	6000	6500*	6900	7100	7500	8000**					
750/65R25	**LBS**	**13200**	**14300**	**15700**	**17100**	**18200**	**19300***	**20400**	**21500**	**22700**	**23400****					
(30/65R25)	KG	6000	6500	7100	7750	8250	8750*	9250	9750	10000	10600**					
30/65R29	**LBS**	**15700**	**17100**	**18200**	**19800**	**20900**	**22000***	**23400**	**24700**	**26000**	**27600****					
	KG	7100	7750	8250	9000	9500	10000*	10600	11200	11800	12500**					
775/65R29	**LBS**	**16100**	**17600**	**18700**	**20400**	**21500**	**22700***	**24000**	**25400**	**26800**	**28300****					
	KG	7300	8000	8500	9250	9750	10300*	10900	11500	12150	12850**					
875/65R29	**LBS**	**19300**	**20900**	**22700**	**24700**	**26000**	**27600***	**29100**	**30900**	**32000**	**34200****					
	KG	8750	9500	10300	11200	11800	12500*	13200	14000*	14500	15500**					

LOAD LIMITS AT COLD INFLATION PRESSURES

5 MPH (10 KM/H) MAXIMUM OFF-THE-ROAD SLOW SPEED SERVICE

	PSI	58	62	65	69	73	76	80	83	87	91	94				
RADIAL	KPA	400	425	450	475	500	525	550	575	600	625	650				
875/65R33	**LBS**	**43000**	**45400**	**46700**	**49400**	**50700***	**52000**	**55100**	**56800**	**58400**	**60000**	**61500****				
(35/65R33)	KG	19500	20600	21200	22400	23000*	23600	25000	25750	26500	27250	28000**				
45/65R39	**LBS**	**74000**	**76000**	**80500**	**82500**	**88000***	**91000**	**93500**	**96500**	**99000**	**102000**	**104500****				
	KG	33500	34500	36500	37500	40000*	41250	42500	43750	45000	46250	47500**				
45/65R45	**LBS**	**78500**	**82500**	**85500**	**88000**	**93500***	**96500**	**99000**	**102000**	**104500**	**110000**	**113500****				
(1150/65R45)	KG	35500	37500	38750	40000	42500*	43750	45000	46250	47500	50000	51500**				
	PSI	**47**	**51**	**54**	**58**	**62**	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**	**98**
BIAS	KPA	325	350	375	400	425	450	475	500	525	550	575	600	625	650	675
30/65-29	**LBS**	**28300**	**29100(20)**	**30900**	**32000(24)**											
	KG	12850	13200(20)	14000	14500(24)											
35/65-33	**LBS**	**39700**	**41900(24)**	**43000**	**44100**	**46700**	**48100(30)**	**49400**	**50700**	**52000(36)**	**53600**	**55100**	**56800**	**58400(42)**		
	KG	18000	19000(24)	19500	20000	21200	21800(30)	22400	23000	23600(36)	24300	25000	25750	26500(42)		
40/65-39	**LBS**	**52000**	**55100**	**56800**	**60000(30)**	**61500**	**64000**	**66000**	**68000(36)**							
	KG	23600	25000	25750	27250(30)	28000	29000	30000	30750(36)							
41.25/70-39	**LBS**	**66000(34)**	**69500**	**71500**	**74000**	**78500**	**80500**	**82500(42)**								
	KG	30000(34)	31500	32500	33500	35500	36500	37500(42)								
45/65-45	**LBS**	**71500**	**76000**	**78500**	**82500**	**85500(38)**	**88000**	**91000**	**93500**	**96500(46)**	**99000**	**102000**	**104500**	**104500**	**107500**	**110000(58)**
	KG	32500	34500	35500	37500	38750(38)	40000	41250	42500	43750(46)	45000	46250	47500	47500	48750	50000(58)
50/65-51	**LBS**	**93500**	**96500**	**102000**	**104500**	**107500**	**113500**	**117000(46)**	**120000**	**123500**	**128000**	**128000(54)**	**132500**	**135500**	**139000(62)**	
	KG	42500	43750	46250	47500	48750	51500	53000(46)	54500	56000	58000	58000(54)	60000	61500	63000(62)	
67-51	**LBS**	**156500**	**165500**	**171000**	**176500**	**187500**	**193000(54)**	**198500**	**204000**	**209500**	**215000**	**220500**	**227000**			
	KG	71000	75000	77500	80000	85000	87500(54)	90000	92500	95000	97500	100000	103000			

LOAD LIMITS AT COLD INFLATION PRESSURES

45 MPH (70 KM/H) REFERENCE SPEED, CRANE SERVICE

	PSI	65	69	73	76	80	83	87								
RADIAL	KPA	450	475	500	525	550	575	600								
650/55R25	**LBS**	**13200**	**13600**	**13900**	**14300**	**15200**	**15700**	**16100**								
	KG	6000	6150	6300	6500	6900	7100	7300								
	PSI	**65**	**69**	**73**	**76**	**80**	**83**	**87**	**91**	**94**						
RADIAL	KPA	450	475	500	525	550	575	600	625	650						
555/65R25	**LBS**	**10700**	**11000**	**11700**	**12000**	**12300**	**12800**	**13200**	**13600**	**13900(172E)**						
	KG	4875	5000	5300	5450	5600	5800	6000	6150	6300(172E)						
	PSI	**76**	**80**	**83**	**87**	**91**	**94**	**98**	**102**							
RADIAL	KPA	525	550	575	600	625	650	675	700							
445/80R25	**LBS**	**10500**	**11000**	**11400**	**11700**	**12000**	**12300**	**12800**	**13200(170E)**							
	KG	4750	5000	5180	5300	5400	5600	5800	6000(170E)							
525/80R25	**LBS**	**13600**	**14300**	**14800**	**15200**	**15700**	**16100**	**16500**	**17100(179E)**							
	KG	6150	6500	6700	6900	7100	7300	7500	7750(179E)							
605/80R25	**LBS**	**17600**	**18200**	**18700**	**19300**	**20400**	**20900**	**21500**	**22000(188E)**							
	KG	8000	8250	8500	8750	9250	9500	9750	10000(188E)							
	PSI	**105**	**109**	**112**	**116**	**120**	**123**	**127**	**131**		**141**					
RADIAL	KPA	725	750	775	800	825	850	875	900		975					
385/95R24,25	**LBS**	**11700**	**12000**		**12300(L)**				**13270(170E)(M)**		**13930(N)**					
	KG	5300	5450		5600(L)				**6000(170E)(M)**		**6300(N)**					
445/95R25	**LBS**	**13600**	**13900**	**14300**	**14800**	**14800**	**15200**	**15700**	**16100(177E) (J)**							
	KG	6150	6300	6500	6700	6700	6900	7100	7300(177E) (J)							

55 MPH (90 KM/H) REFERENCE SPEED, CRANE SERVICE

	PSI	65	70	75	80	85	90	95	100	105	110	115		131		141
RADIAL	KPA	450	475	525	550	575	625	650	700	725	750	800		900		975
385/95R24,25	**LBS**	**8150**	**8620**	**9070**	**9500**	**9930**	**10340**	**10730**	**11400(J)**	**11700**	**12000**	**12300(L)**		**13270(M)**		**13930(N)**
	KG	3700	3910	4110	4310	4500	4690	4870	5150(J)	5300	5450	5600(L)		**6000(M)**		**6300(N)**
445/95R25	**LBS**										**16100(177E) (J)**					
	KG										7300(177E) (J)					

LOAD LIMITS AT COLD INFLATION PRESSURES

5 MPH (10 KM/H) OFF-THE-ROAD UNDERGROUND MINE SERVICE

	PSI	95	100	105	110	115	120	125	130	135	140	145	150	▲	▲	▲	▲
BIAS	KPA	660	690	720	760	790	830	860	900	930	970	1000	1030	**PERMAFOAM INFLATION REQUIRED**			
27X9-10NHS	**LBS**	**4405**	**4540(12)**	**4675**	**4800**	**4930**	**5050**	**5175**	**5295**	**5415(16)**							
	KG	2000	2060(12)	2120	2175	2235	2290	2345	2400	2455(16)							
27X15-10NHS	**LBS**	**6515**	**6715**	**6905**	**7100**	**7285**	**7470**	**7650(20)**	**7825**	**8000**	**8175**	**8345**	**8510(24)**				
(15L-10)	KG	2955	3045	3130	3220	3305	3390	3470(20)	3550	3630	3710	3785	3860(24)				
24X12-12NHS	**LBS**	**5260**	**5420**	**5580**	**5740**	**5900**	**6050**	**6200**	**6350**	**6450**	**6600**	**6750**	**6900**		**7900(24)**		
	KG	2385	2460	2530	2605	2675	2745	2810	2880	2925	2995	3060	3130		3585(24)		
8.25-15NHS	**LBS**	**5605**	**5775**	**5940**	**6105**	**6265**	**6425**	**6580**	**6730**	**6880**	**7030(16)**				**8910(24)**		
	KG	2540	2620	2695	2770	2840	2915	2985	3055	3120	3190(16)				4040(24)		
36X11-15NHS	**LBS**	**7520**	**7750**	**7975**	**8195**	**8410(16)**	**8620**	**8830**	**9035**	**9235**	**9435**	**9630(20)**			**10750(24)**		
(10.00L-15)	KG	3410	3515	3615	3715	3815(16)	3910	4005	4100	4190	4280	4370(20)			4875(24)		
32X15-15NHS	**LBS**	**8350**	**8600**	**8850**	**9100**	**9300**	**9550**	**9800**	**10000(20)**	**10200**	**10500**	**10700**	**10900**	**11100(24)**			
(32X14.50-15)	KG	3790	3900	4015	4130	4220	4330	4445	4535(20)	4625	4765	4855	4945	5035(24)			
35X15-15NHS	**LBS**	**9415**	**9705**	**9985**	**10260**	**10530**	**10795**	**11055**	**11310(20)**	**11565**	**11815**	**12060**	**12300**		**13905(28)**	**14975(32)**	
(14.50L-15)	KG	4270	4400	4530	4655	4775	4895	5015	5130(20)	5245	5360	5470	5580		6305(28)	6795(32)	
38X16-15NHS	**LBS**	**11500**	**11810**	**12150**	**12485**	**12815**	**13140**	**13455**	**13770**	**14075**	**14380**	**14675**	**14970**	**15830(28)**		**17200(32)**	**19500(40)**
	KG	5215	5355	5510	5665	5810	5960	6105	6245	6385	6520	6655	6790	7180(28)		7800(32)	8845(40)

▲ALL INFLATION PRESSURES ABOVE 150 PSI REQUIRE PERMAFOAM INFLATION/FILL.

Above loads and inflatiaons are for tires only. Please consult your rim manufacturer for their approvals.

LOAD LIMITS AT COLD INFLATION PRESSURES

5 MPH (10 KM/H) OFF-THE-ROAD UNDERGROUND MINE SERVICE

	PSI	95	100	105	110	115	120	125	130	135	140	145	150	▲	▲	▲	▲
BIAS	KPA	660	690	720	760	790	830	860	900	930	970	1000	1030	**PERMAFOAM INFLATION REQUIRED**			
10.00-20NHS	**LBS**	**9350(14)**	**9650**	**9900**	**10200(16)**												
	KG	4250(14)	4375	4500	4625(16)												
42X13-20 NHS	**LBS**	**10500**	**10800**	**11100(16)**	**11500**	**11800**	**12100**	**12300**	**12600**	**12900(20)**	**13200**	**13500**	**13700**		**17000(32)**	**21600(48)**	
	KG	4765	4900	5035(16)	5215	5350	5490	5580	5715	5850(20)	5985	6125	6215		7710(32)	9800(48)	
12.00-20NHS	**LBS**	**11700**	**12000(16)**	**12300**	**12800**	**13200**	**13600(20)**	**13900**	**13900**	**14300**	**14800**	**15200(24)**	**15200**			**16500(28)**	
	KG	5300	5450(16)	5600	5800	6000	6150(20)	6300	6500	6500	6700	6900(24)	6900			7500(28)	
44X18-20NHS	**LBS**	**14300**	**14700**	**15200**	**15600**	**16000**	**16400**	**16800**	**17200**	**17600**	**17900**	**18300**	**18700**		**20100(32)**	**21500(36)**	**25500(48)**
	KG	6485	6670	6895	7075	7260	7440	7620	7800	7985	8120	8300	8480		9115(32)	9750(36)	11565(48)
14.00-20NHS	**LBS**	**16100**	**16600(20)**	**17100**	**17600**	**18200**	**18700(24)**	**18700**	**19300**	**19800**	**20400(28)**				**22000(32)**	**28300(48)**	
		7300	7500(20)	7750	8000	8250	8500(24)	8500	8750	9000	9250(28)				10000(32)	12850(48)	
50X20-20NHS	**LBS**	**22500**	**23200**	**23900**	**24500**	**25200**	**25800(28)**	**26400**	**27100**	**27700(32)**					**30000(36)**		
	KG	10200	10500	10800	11100	11400	11700(28)	12000	12300	12600(32)					13610(36)		
14.00-24NHS	**LBS**	**18200**	**18700(20)**	**19300**	**19800**	**20400**	**20900(24)**	**20900**	**21500**	**22000(28)**							
	KG	8250	8500(20)	8750	9000	9250	9500(24)	9500	9750	10000(28)							

▲ALL INFLATION PRESSURES ABOVE 150 PSI REQUIRE PERMAFOAM INFLATION/FILL.

Above loads and inflatiaons are for tires only. Please consult your rim manufacturer for their approvals.

LOAD LIMITS AT COLD INFLATION PRESSURES

5 MPH (10 KM/H) OFF-THE-ROAD UNDERGROUND MINE SERVICE

	PSI	105	109	112	116	120	123	127	131	134	138	141	145	149	▲	▲	▲
RADIAL	KPA	725	750	775	800	825	850	875	900	925	950	975	1000	1025			
36X11R15NHS	**LBS**	**8250**	**8550**	**8550**	**8800**	**9100**	**9350**	**9350**	**9650**	**9900**	**10200**	**10200**	**10500**	**10700**		**12500**	
	KG	3750	3875	3875	4000	4125	4250	4250	4375	4500	4625	4625	4750	4875		5675	
35X15R15NHS	**LBS**	**10200**	**10500**	**10700**	**11000**	**11400**	**11700**	**12000**	**12000**	**12300**	**12800**	**12800**	**13200**	**13200**		**18300**	
	KG	4625	4750	4875	5000	5150	5300	5450	5450	5600	5800	5800	6000	6000		8300	
12.00R20 NHS	**LBS**	**12300**	**12800**	**12800**	**13200**	**13600****	**13900**	**13900**	**14300**	**14800**	**15200*****	**15200**	**15700**	**16100**		**20000**	
	KG	5600	5800	5800	6000	6150**	6300	6300	6500	6700	6900***	6900	7100	7300		9075	
46X15R20NHS	**LBS**	**15200**	**15700**	**16100**	**16100*****	**16500**	**17100**	**17600**	**17600**	**18200**	**18700**	**18700**	**19300**	**19800**		**29700**	
	KG	6900	7100	7300	7300***	7500	7750	8000	8000	8250	8500	8500	8750	9000		13500	
46X18R20NHS	**LBS**	**16100**	**16500**	**16500**	**17100*****	**17600**	**18200**	**18200**	**18700**	**19300**	**19800**	**19800**	**20400**	**20900**		**31700**	
	KG	7300	7500	7500	7750***	8000	8250	8250	8500	8750	9000	9000	9250	9500		14400	
14.00R24NHS	**LBS**	**12300**	**12800**	**13200**	**13600*****												
	KG	5600	5800	6000	6150***												
17.5R25	**LBS**	**20400**	**20900**	**21500**	**22000*****												
	KG	9250	9500	9750	10000												

▲ ALL INFLATION PRESSURES ABOVE 150 PSI REQUIRE PERMAFOAM INFLATION/FILL.

Above loads and inflatiaons are for tires only. Please consult your rim manufacturer for their approvals.

DRIVE AWAY

LOAD AND INFLATION TABLES: ENGLISH
CONVENTIONAL SIZE TIRES
MAXIMUM SPEED — 30 MPH
(MINIMUM INFLATION PRESSURE – 25 PSI)

These Loads and Inflations are to be used for Drive Away Only. They cannot be used for jobsite roading.

DANGER – Operation of vehicles over the road, ignoring speed limitations and cooling requirements as noted below, can void tire warranty and induce premature tire failure!

TIRE LOAD LIMITS (POUNDS) AT VARIOUS COLD INFLATION PRESSURES — POUNDS PER SQUARE INCH (PSI)

Tire Size	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
12.00-20,21 NHS	2690	2990	3260	3540	3780	4020	4260	4480	4700	4900	5100	5300	5500	5680	5860	6050
12.00-24,25 NHS	3020	3360	3680	3980	4260	4540	4800	5040	5280	5520	5740	5960	6200	6400	6600	6800
13.00-24,25 NHS	3500	3880	4260	4600	4920	5240	5540	5820	6100	6400	6650	6900	7150	7400	7600	7850
14.00-20,21 NHS	3680	4100	4500	4860	5200	5540	5860	6150	6450	6750	7000	7300	7550	7800	8050	8300
14.00-24,25 NHS	4120	4580	5020	5420	5800	6200	6550	6850	7200	7500	7850	8150	8450	8700	9000	9250
16.00-21 NHS	4920	5460	5980	6450	6950	7350	7800	8200	8600	8950	9350	9700	10100	10400	10700	11100
16.00-25	5380	5980	6550	7100	7600	8050	8550	9000	9400	9850	10200	10600	11000	11400	11800	12100
18.00-25	6950	7750	8500	9150	9800	10400	11000	11600	12200	12700	13200	13700	14200	14700	15200	15700
18.00-33	8050	9000	9850	10600	11400	12100	12800	13500	14100	14700	15400	15900	16500	17100	17600	18200
18.00-49	10200	11400	12400	13400	14400	15300	16200	17000	17800	18600	19400	20200	20900	21600	22300	23000
21.00-25	8950	9950	10900	11800	12600	13400	14200	14900	15700	16400	17000	17700	18300	18900	19600	20200
21.00-35	10600	11800	12900	14000	15000	15900	16900	17700	18600	19400	20200	21000	21700	22500	23200	23900
21.00-49	12900	14300	15700	17000	18200	19300	20400	21500	22500	23500	24500	25400	26300	27200	28100	29000
24.00-25	11600	12900	14100	15200	16300	17400	18400	19300	20200	21100	22000	22900	23700	24500	25300	26000
24.00-29	12400	13800	15100	16300	17500	18600	19700	20700	21700	22600	23600	24500	25400	26200	27100	27900
24.00-35	13600	15100	16600	17900	19200	20400	21600	22700	23800	24800	25800	26800	27800	28800	29700	30600
24.00-43	15200	16900	18500	20000	21400	22700	24000	25300	26500	27700	28800	29900	31000	32100	33100	34100
24.00-49	16300	18100	19900	21500	23000	24500	25900	27200	28500	29800	31000	32200	33400	34500	35600	36700

For Service Notes – See next page.
Contact your Rim Supplier regarding information on Rim Strength.

BIAS - 30 MPH
ADD 10 PSI FOR RADIAL
English

DRIVE AWAY

LOAD AND INFLATION TABLES: ENGLISH
CONVENTIONAL SIZE TIRES
MAXIMUM SPEED — 30 MPH
(MINIMUM INFLATION PRESSURE – 25 PSI)

These Loads and Inflations are to be used for Drive Away Only. They cannot be used for jobsite roading.

DANGER – Operation of vehicles over the road, ignoring speed limitations and cooling requirements as noted below, can void tire warranty and induce premature tire failure!

TIRE LOAD LIMITS (POUNDS) AT VARIOUS COLD INFLATION PRESSURES — POUNDS PER SQUARE INCH (PSI)

Tire Size	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
27.00-33	16200	18100	19800	21400	22900	24400	25800	27100	28400	29700	30900	32100	33200	34400	35500	36600
27.00-49	20000	22200	24300	36300	28200	30000	31700	33300	34900	36500	38000	39400	40900	42300	43600	44900
30.00-51	24700	27500	30100	32500	34900	37100	39200	41300	43200	45200	47000	48800	50600	52300	54000	55600
33.00-51	28600	31900	34900	37700	40400	43000	45400	47800	50100	52300	54500	56500	58600	60500	62500	64500
36.00-51	34900	38800	42500	45900	49200	52300	55300	58200	61000	63500	65500	69000	71500	74000	76000	78500
40.00-57	44500	49600	54200	58600	63000	67000	70500	74500	78000	81500	84500	88000	91000	94000	97500	10000

Service Notes –

A. Regular Tread Tires
1. **Maximum Highway Speeds: Conventional tires – 30 MPH, Wide Base Tires – 20 MPH.**
2. **Stop for 30 minute cooling period after each 50 miles of driving or 2 hours of sustained operation, whichever comes first.**
3. **One hour minimum stop should be observed after each 4 hours of operation.**
4. **Where Conventional and Wide Base tires are mixed on vehicle, use guidelines specified for Wide Base tires.**

B. Extra Skid Depth and Special Compound Tires
1. **Vehicles equipped with extra skid depth tires are not to be driven in transit over the highway unless the proposed trip is reviewed and approved by the tire manufacturer.**

C. Instructions for Use of Drive-Away Table –
1. **Determine the load each tire will carry.**
2. **Using the table, select the inflation pressure shown for the tire load determined. This is the pressure required for drive-away service.**
3. **Tire ply rating is ignored when determining drive-away load and pressure conditions.**

BIAS - 30 MPH
ADD 10 PSI FOR RADIAL
English

Contact your Rim Supplier regarding information on Rim Strength.

DRIVE AWAY

LOAD AND INFLATION TABLES: ENGLISH
WIDE BASE SIZE TIRES
MAXIMUM SPEED — 20 MPH
(MINIMUM INFLATION PRESSURE – 26 PSI)

These Loads and Inflations are to be used for Drive Away Only. They cannot be used for jobsite roading.

DANGER – Operation of vehicles over the road, ignoring speed limitations and cooling requirements as noted below, can void tire warranty and induce premature tire failure!

TIRE LOAD LIMITS (POUNDS) AT VARIOUS COLD INFLATION PRESSURES — POUNDS PER SQUARE INCH (PSI)

Tire Size	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
15.5-25	3740	4160	4540	4920	5260	5600	5920	6250	6550	6800	7100	7400	7650	7900	8150	8400
17.5-25	4460	4960	5440	5880	6300	6700	7100	7450	7800	8150	8500	8800	9150	9450	9750	10000
20.5-25	5960	6650	7250	7850	8400	8950	9450	9950	10400	10900	11300	11800	12200	12600	13000	13400
23.5-25	7600	8450	9250	10000	10700	11400	12100	12700	13300	13900	14500	15000	15600	16100	16600	17100
26.5-25	9550	10600	11600	12600	13500	14300	15200	16000	16700	17500	18200	18900	19600	20200	20900	21500
26.5-29	10200	11400	12400	13400	14400	15300	16200	17000	17900	18700	19400	20200	20900	21600	22300	23000
29.5-25	11500	12800	14000	15200	16300	17300	18300	19200	20200	21000	21900	22800	23600	24400	25200	25900
29.5-29	12300	13700	14900	16200	17300	18400	19500	20500	21500	22400	23300	24200	25100	26000	26800	27600
29.5-35	13400	14900	16300	17600	18800	20000	21200	22300	23400	24400	25400	26400	27300	28300	29200	30100
33.25-29	15100	16800	18400	19900	21300	22700	24000	25200	26500	27600	28800	29900	30900	32000	33000	34000
33.25-35	16400	18200	20000	21600	23100	24600	26000	27400	28700	29900	31200	32400	33500	34700	35800	36900
33.5-33	16500	18400	20100	21700	23300	24800	26200	27500	28900	30100	31400	32600	33800	34900	36000	37100
33.5-39	17800	19800	21600	23400	25100	26700	28200	29700	31100	32500	33800	35100	36400	37600	38800	40000
37.25-35	19800	22000	24100	26000	27900	29600	31300	33000	34500	36100	37600	39000	40400	41800	43100	44400
37.5-33	19800	22100	24200	26100	28000	29800	31500	33100	34700	36200	37700	39200	40600	42000	43300	44700
37.5-39	21300	23700	25900	28000	30000	32000	33800	35600	37300	38900	40500	42100	43600	45100	46500	47900
37.5-51	24100	26800	29300	31700	34000	36100	38200	40200	41200	44000	45800	47600	49300	51000	52600	54200

Service Notes –

A. Regular Tread Tires
1. **Maximum Highway Speeds: Conventional tires – 30 MPH, Wide Base Tires – 20 MPH.**
2. **Stop for 30 minute cooling period after each 50 miles of driving or 2 hours of sustained operation, whichever comes first.**
3. **One hour minimum stop should be observed after each 4 hours of operation.**
4. **Where Conventional and Wide Base tires are mixed on vehicle, use guidelines specified for Wide Base tires.**

B. Extra Skid Depth and Special Compound Tires
1. **Vehicles equipped with extra skid depth tires are not to be driven in transit over the highway unless the proposed trip is reviewed and approved by the tire manufacturer.**

C. Instructions for Use of Drive-Away Table –
1. **Determine the load each tire will carry.**
2. **Using the table, select the inflation pressure shown for the tire load determined. This is the pressure required for drive-away service.**
3. **Tire ply rating is ignored when determining drive-away load and pressure conditions.**

BIAS - 20 MPH
ADD 10 PSI FOR RADIAL
English

Contact your Rim Supplier regarding information on Rim Strength.

DRIVE AWAY

LOAD AND INFLATION TABLES: METRIC CONVENTIONAL SIZE TIRES
MAXIMUM SPEED — 50 kph
(MINIMUM INFLATION PRESSURE – 1.75 BAR)

These Loads and Inflations are to be used for Drive Away Only. They cannot be used for jobsite roading.

DANGER – Operation of vehicles over the road, ignoring speed limitations and cooling requirements as noted below, can void tire warranty and induce premature tire failure!

TIRE LOAD LIMITS (KILOGRAMS) AT VARIOUS COLD INFLATION PRESSURES — BAR

Tire Size	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00
12.00-20,21 NHS	1215	1320	1400	1500	1600	1700	1750	1850	1900	2000	2060	2120	2180	2300	2360	2430	2430	2500	2575	2650	2725	2800
12.00-24,25 NHS	1400	1500	1600	1700	1800	1900	2000	2060	2180	2240	2300	2430	2500	2575	2650	2725	2800	2800	2900	3000	3075	3075
13.00-24,25 NHS	1600	1750	1850	2000	2060	2180	2300	2430	2500	2575	2750	2800	2900	3000	3075	3150	3250	3250	3350	3450	3550	3650
14.00-20,21 NHS	1700	1850	1950	2060	2180	2300	2430	2575	2650	2725	2800	2900	3000	3150	3250	3350	3350	3450	3550	3650	3750	3750
14.00-24,25 NHS	1900	2060	2180	2300	2430	2575	2725	2800	3000	3075	3150	3250	3350	3450	3550	3650	3750	3875	4000	4125	4125	4250
16.00-21 NHS	2240	2430	2575	2800	2900	3075	3250	3350	3550	3650	3750	3875	4000	4125	4250	4375	4500	4625	4750	4875	5000	5000
16.00-25	2430	2650	2900	3000	3250	3350	3550	3650	3875	4000	4125	4250	4375	4500	4625	4875	5000	5000	5150	5300	5450	5600
18.00-25	3150	3450	3650	3875	4125	4375	4625	4750	5000	5150	5300	5600	5800	5800	6000	6300	6300	6500	6700	6900	7100	7100
18.00-33	3650	4000	4250	4500	4875	5000	5300	5600	5800	6000	6150	6500	6700	6900	7100	7300	7500	7500	7750	8000	8250	8250
18.00-49	4625	5000	5450	5800	6150	6500	6700	7100	7300	7500	7750	8000	8500	8750	9000	9250	9500	9500	9750	10000	10300	10600
21.00-25	4125	4375	4750	5000	5300	5600	5800	6150	6300	6700	6900	7100	7300	7500	7750	8000	8250	8500	8500	8750	9000	9250
21.00-35	4875	5300	5600	6000	6300	6700	6900	7300	7500	7750	8250	8500	8750	9000	9250	9500	9750	10000	10300	10600	10600	10900
21.00-49	5800	6300	6900	7300	7750	8000	8500	8750	9250	9500	10000	10300	10600	10900	11200	11500	11800	12150	12500	12500	12850	13200
24.00-25	5300	5800	6150	6500	6900	7300	7500	8000	8250	8500	9000	9250	9500	9750	10000	10300	10600	10900	11200	11500	11800	11800
24.00-29	5600	6150	6500	6900	7300	7750	8250	8500	8750	9250	9500	9750	10300	10600	10900	11200	11500	11800	11800	12150	12500	12850
24.00-35	6150	6700	7300	7750	8000	8500	9000	9250	9750	10000	10600	10900	11200	11500	11800	12150	12500	12850	13200	13600	13600	14000
24.00-43	6900	7500	8000	8500	9000	9500	10000	10300	10900	11200	11800	12150	12500	12850	13200	13600	14000	14500	14500	15000	15500	15500
24.00-49	7500	8000	8750	9250	9750	10300	10600	11200	11800	12150	12500	12850	13200	13600	14000	14500	15000	15500	15500	16000	16500	17000

For Service Notes – See next page.
Contact your Rim Supplier regarding information on Rim Strength.

BIAS - 50 kph
ADD .75 BAR FOR RADIAL
Metric

DRIVE AWAY

LOAD AND INFLATION TABLES: METRIC CONVENTIONAL SIZE TIRES
MAXIMUM SPEED — 50 KPH
(MINIMUM INFLATION PRESSURE – 1.75 BAR)

These Loads and Inflations are to be used for Drive Away Only. They cannot be used for jobsite roading.

DANGER – Operation of vehicles over the road, ignoring speed limitations and cooling requirements as noted below, can void tire warranty and induce premature tire failure!

TIRE LOAD LIMITS (KILOGRAMS) AT VARIOUS COLD INFLATION PRESSURES — BAR

Tire Size	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00
27.00-33	7500	8000	8500	9250	9750	10300	10600	11200	11500	12150	12500	12850	13200	13600	14000	14500	15000	15500	15500	16000	16500	16500
27.00-49	9250	10000	10600	11200	11800	12500	13200	13600	14500	15000	15500	16000	16500	17000	17500	18000	18500	19000	19500	19500	20000	20600
30.00-51	11200	12150	13200	14000	14500	15500	16000	17000	17500	18500	19000	19500	20000	21200	21800	22400	22400	23000	23600	24300	25000	25750
33.00-51	13200	14000	15000	16000	17000	18000	19000	19500	20600	21200	21800	23000	23600	24300	25000	25750	26500	27250	27250	28000	29000	29000
36.00-51	16000	17500	18500	19500	20600	21800	23000	23600	25000	25750	26500	28000	29000	29000	30000	31500	32500	32500	33500	34500	35500	35500
40.00-57	20600	21800	23600	25000	26500	28000	29000	30750	31500	33500	34500	35500	36500	37500	38750	40000	41250	41250	42500	43750	45000	46250

Service Notes –

A. Regular Tread Tires
1. **Maximum Highway Speeds: Conventional tires – 50 kph, Wide Base Tires – 30 kph.**
2. **Stop for 30 minute cooling period after each 50 miles of driving or 2 hours of sustained operation, whichever comes first.**
3. **One hour minimum stop should be observed after each 4 hours of operation.**
4. **Where Conventional and Wide Base tires are mixed on vehicle, use guidelines specified for Wide Base tires.**

B. Extra Skid Depth and Special Compound Tires
1. **Vehicles equipped with extra skid depth tires are not to be driven in transit over the highway unless the proposed trip is reviewed and approved by the tire manufacturer.**

C. Instructions for Use of Drive-Away Table –
1. **Determine the load each tire will carry.**
2. **Using the table, select the inflation pressure shown for the tire load determined. This is the pressure required for drive-away service.**
3. **Tire ply rating is ignored when determining drive-away load and pressure conditions.**

BIAS - 50 MPH
ADD .75 BAR FOR RADIAL
Metric

Contact your Rim Supplier regarding information on Rim Strength.

DRIVE AWAY

LOAD AND INFLATION TABLES: METRIC
WIDE BASE SIZE TIRES
MAXIMUM SPEED — 32 MPH
(MINIMUM INFLATION PRESSURE – 1.75 BAR)

These Loads and Inflations are to be used for Drive Away Only. They cannot be used for jobsite roading.

DANGER – Operation of vehicles over the road, ignoring speed limitations and cooling requirements as noted below, can void tire warranty and induce premature tire failure!

TIRE LOAD LIMITS (KILOGRAMS) AT VARIOUS COLD INFLATION PRESSURES — BAR

Tire Size	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00
15.5-25	1700	1850	2000	2120	2240	2360	2430	2575	2650	2800	2900	3000	3075	3150	3250	3350	3450	3550	3650	3650	3750	3875
17.5-25	2060	2180	2360	2500	2650	2800	2900	3075	3150	3350	3450	3550	3650	3750	3875	4000	4125	4250	4250	4375	4500	4625
20.5-25	2725	3000	3150	3350	3550	3750	3875	4125	4250	4375	4625	4750	4875	5000	5150	5300	5450	5600	5800	5800	6000	6150
23.5-25	3450	3750	4000	4250	4500	4750	5000	5300	5450	5600	5800	6000	6300	6500	6700	6900	6900	7100	7300	7500	7750	7750
26.5-25	4375	4750	5000	5450	5600	6000	6300	6500	6900	7100	7300	7500	7750	8000	8250	8500	8750	9000	9250	9500	9750	9750
26.5-29	4625	5000	5450	5800	6150	6500	6700	7100	7300	7500	7750	8000	8500	8750	9000	9250	9250	9500	9750	10000	10300	10600
29.5-25	5300	5800	6150	6500	6900	7300	7500	8000	8250	8500	8750	9250	9500	9750	10000	10300	10600	10900	11200	11500	11500	11800
29.5-29	5600	6000	6500	6900	7300	7750	8000	8500	8750	9000	9500	9750	10000	10300	10600	10900	11200	11500	11800	12150	12500	12500
29.5-35	6150	6700	7100	7500	8000	8500	8750	9250	9500	10000	10300	10600	10900	11200	11500	11800	12150	12500	12850	13200	13600	13600
33.25-29	6900	7500	8000	8500	9000	9500	10000	10300	10900	11200	11500	12150	12500	12850	13200	13600	14000	14000	14500	15000	15000	15500
33.25-35	7500	8000	8750	9250	9750	10300	10900	11200	11800	12150	12500	13200	13600	14000	14500	14500	15000	15500	16000	16000	16500	17000
33.5-33	7500	8250	8750	9250	9750	10300	10900	11200	11800	12150	12850	13200	13600	14000	15000	14500	15000	15500	16000	16500	16500	17000
33.5-39	8250	8750	9500	10000	10600	11200	11800	12150	12850	13200	13600	14000	14500	15000	15500	16000	16500	16500	17000	17500	18000	18500
37.25-35	9000	9750	10600	11200	11800	12500	12850	13600	14000	14500	15000	15500	16000	17000	17000	17500	18000	18500	19000	19500	20000	20600
37.5-33	9000	9750	10600	11200	11800	12500	13200	13600	14000	14500	15000	16000	16500	16500	17000	17500	18000	18500	19000	19500	20000	20600
37.5-39	9750	10600	11200	12150	12850	13200	14000	14500	15000	16000	16500	17000	17500	18000	18500	19000	19500	20000	20600	21200	21200	21800
37.5-51	10900	11800	12850	13600	14500	15000	16000	16500	17000	18000	18500	19000	20000	20600	21200	21800	21800	22400	23000	23600	24300	25000

Service Notes –

A. Regular Tread Tires
1. **Maximum Highway Speeds: Conventional tires – 50 MPH, Wide Base Tires – 32 MPH.**
2. **Stop for 30 minute cooling period after each 80 miles of driving or 2 hours of sustained operation, whichever comes first.**
3. **One hour minimum stop should be observed after each 4 hours of operation.**
4. **Where Conventional and Wide Base tires are mixed on vehicle, use guidelines specified for Wide Base tires.**

B. Extra Skid Depth and Special Compound Tires
1. **Vehicles equipped with extra skid depth tires are not to be driven in transit over the highway unless the proposed trip is reviewed and approved by the tire manufacturer.**

C. Instructions for Use of Drive-Away Table –
1. **Determine the load each tire will carry.**
2. **Using the table, select the inflation pressure shown for the tire load determined. This is the pressure required for drive-away service.**
3. **Tire ply rating is ignored when determining drive-away load and pressure conditions.**

BIAS - 32 MPH
ADD .75 PSI FOR RADIAL
Metric

Contact your Rim Supplier regarding information on Rim Strength.

OFF-THE-ROAD TIRES

09/2008