

### Key Features

- Designed and manufactured in an ISO9001-certified facility in Statesville, North Carolina, USA.
- Heavy duty mobile generator system designed for prime power operation in rental, construction and special events applications.
- Generator is CSA certified for electrical equipment per C22.2, No. 14.

| Voltage Configuration | Frequency (Hz) | Power Factor | Prime Power Rating |     |             |
|-----------------------|----------------|--------------|--------------------|-----|-------------|
|                       |                |              | kVA                | kW  | Current (A) |
| 600/346V - 3Ø WYE     | 60             | 0.8          | N/A                | N/A | N/A         |
| 480/277V - 3Ø WYE     | 60             | 0.8          | 154                | 123 | 186         |
| 240/139V - 3Ø WYE     | 60             | 0.8          | 154                | 123 | 371         |
| 240/120V - 3Ø DELTA   | 60             | 0.8          | N/A                | N/A | N/A         |
| 208/120V - 3Ø WYE     | 60             | 0.8          | 148                | 118 | 411         |
| 240/120V - 1Ø ZIG ZAG | 60             | 1.0          | 104                | 104 | 433         |
| 400/230V - 3Ø WYE     | 50             | 0.8          | 132                | 106 | 191         |

\* Note: Not all listed voltages are available on standard product. Some voltages may require selection of optional features.

### **Skidbase and Enclosure**

- Package foundation is a heavy duty, oilfield-ready skidbase equipped with four-point tie downs.
- The skidbase is a fully bonded, Environmental Containment design, sized to contain at least 110% of total oil and fuel volume, to prevent any leakage of hazardous fluids from the package.
- Ducted air intakes ensure near-zero water ingress into the containment area, even during operation in the heaviest rain conditions.
- The enclosure is constructed from corrosion-resistant galvanealed steel and coated with a 13 stage powder paint process for long life even in harsh environments.
- The enclosure panels are fitted with sound-absorbing acoustical material to help reduce noise for quiet operation in noise sensitive applications such as concerts, events and nighttime construction.
- Wide opening access doors are side hinged, providing easy access to service and maintenance points and are equipped with recessed, pad-lockable handles and safety latches to hold doors open during servicing.
- Package is equipped with a center-point lifting eye for safe, well-balanced hoisting, designed with a 5 x safety factor for the weight of a fully fueled unit with running gear.

### **Diesel Engine**

- Heavy-duty Cummins diesel engine is emissions certified to EPA Tier 4-final standards and provides the optimum mix of performance and fuel economy.
- The Diesel Oxidation Catalyst (DOC) and Selective Catalyst Reduction (SCR) aftertreatment system meet the stringent NOx and particulate limits without the use of a Diesel Particulate Filter (DPF).
- Dual frequency capability allows operation at 50 hertz or 60 hertz with the flip of a switch.
- Electronically controlled engine provides isochronous frequency control and advanced diagnostic monitoring and protection.
- The engine generator assembly is mounted on fail-safe vibration isolators.
- Coolant and oil drains are piped to bulkhead fittings mounted on the enclosure and all filters and maintenance points are easily accessed for safe and easy servicing.
- Engines are globally supported by the engine OEM and Doosan Portable Power.

### **CoolBox+ Cooling System**

- Doosan's CoolBox+ cooling system brings cool air into the enclosure through ducted inlet panels to ensure low noise levels.
- Cooling air flows through the package by an engine-driven pusher fan which moves airflow from the inlet panels, across the powertrain and through the heat exchangers before being exhausted through the roof outlets in the discharge plenum.
- The engine driven fan is equipped with a clutch to allow the fan to operate at variable speeds to optimize cooling system performance and maintain internal enclosure temperature at a broad range of ambient temperatures and load conditions.
- The CoolBox+ solution maximizes performance to achieve the lowest noise levels and minimum water ingress within a compact footprint.
- Doosan generators provide performance at the full prime power rating at ambient temperatures up to 104°F (40°C) without derating.

### **Alternator**

- Marelli Motori alternators feature brushless excitation providing industry leading motor starting kVA and 300% overload capability.
- Mark V automatic voltage regulator provides precision control of voltage level and fast response to load changes.
- Class H insulation with upgraded environmental coating for ultimate resistance to high temperature and humidity.
- Three position Voltage Selector Switch (VSS) to easily configure the units for operation at most common voltages.

### **Control System**

- A complete array of operator-preferred analog gauges provide at-a-glance monitoring of vital engine and generator parameters.
- Solid state engine control module provides convenient, microprocessor-controlled startup at the push of a button and protects the generator system from an array of faults while providing the operator with indication of any faults on the LED display.
- Standard Run / Idle selector switch allows operators to start and warm up the generator at low engine speed to prevent excess engine wear when operating in cold climates.
- Engine Diagnostic Trouble Codes (DTCs) are displayed on the LCD screen, providing operators and technicians with a numeric and text explanation of the fault code, minimizing the need for expensive hand-held code scanners.

- Standard remote Auto Start / Stop capability via two wire, closed contact logic, allows for connection to automatic transfer switchgear and other remote starting devices.
- Industry-leading Voltage Selector Switch (VSS) protection feature prevents switching the VSS while generator is operating.
- Pad-lockable battery disconnect switch is mounted inside the enclosure.

### Power Connections

- All controls and connection points are grouped at the rear of the unit for safety and operator convenience.
- Power cables are connected at an oversized five lug (L1 L2 L3 N PE) terminal board capable of accepting bare end cable or terminated cables.
- Convenience receptacle panel includes individual branch circuit breakers.
- Optional camlock panel includes a panel mounted set of 400A female connectors to further expand connection capabilities.

### Fuel and DEF System

- Single fuel tank sized for 24 hour runtime at full load is mounted within the skid base, providing double wall protection.
- Fuel tank mounted low in frame and centered to ensure balanced lifting and low center of gravity.
- The fuel filler is located within the containment basin, minimizing possible spillage.
- Standard primary fuel / water separator and fine micron secondary fuel filter keep contaminants out of the system and increase reliability.
- The containment system features a three-inch drain plug for easy cleaning, and the fuel tank is equipped with a drain plug mounted behind the containment plug for easy cleaning.
- Leak-proof fuel vents eliminate the potential for fuel purge during out-of-level conditions during transport and load / unload.
- Low fuel shutdown ensures the engine will not lose prime if it runs out of fuel.
- Diesel Exhaust Fluid (DEF) tank sized for a minimum of 24 hour runtime.

### Running Gear

- Integrated running gear system mounts directly to generator skidbase providing an industry-best low center of gravity for safe, stable towing, on-road or off-road.
- Tandem axle torsion suspension with E-Z-Lube hub assemblies and electric brakes or optional hydraulic surge brakes.
- All models feature high quality, grommet-mount lighting and meet Federal Motor Vehicle Safety Standards for lighting and conspicuity.
- Trailer-to-vehicle connector is a 7-pole "RV"-style plug with a high quality, jacketed wiring harness.
- All units are equipped with a 3-inch pintle eye or optional 2-5/16" ball hitch, heavy duty safety chains and a high quality, heavy-duty jack stand.

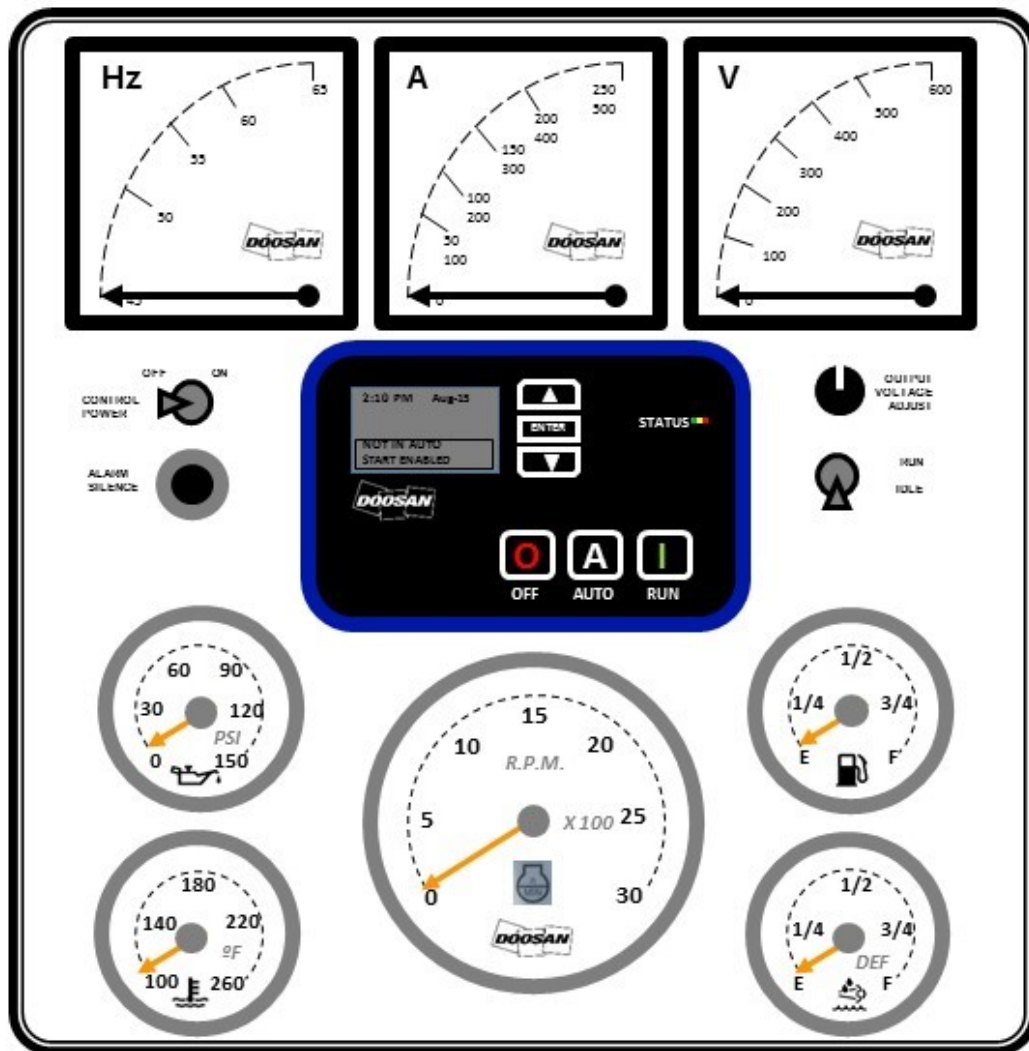
### Options

- Doosan models can be equipped with a broad array of optional equipment to meet the need of specific applications. Common selections include:
  - Cold start options including engine coolant heater, battery pad warmers, and heated crankcase breather systems
  - Three-way fuel valve for connection to a remote fuel tank
  - Battery charger
  - Automatic oil level maintainer
  - Running gear options including rear stabilizer jacks, drawbar-mounted tool box and spare tire.

### Warranty

- All models are covered by a comprehensive limited warranty:
  - Package: 1 year / 2000 hours
  - Cummins Engine: 1 year / unlimited hours or 2 years / 2000 hours
  - Marelli Alternator: 2 years / 4000 hours

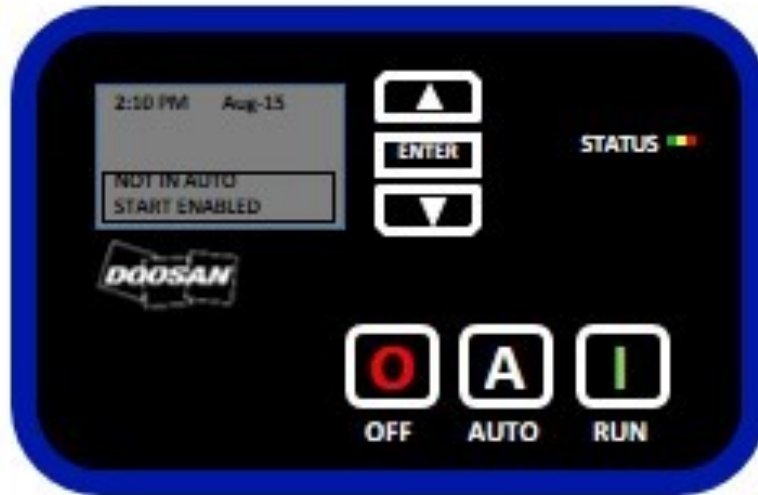
## Operator Panel



### Operator Panel Features

1. Tachometer: 0-3000 RPM scale
2. Oil Pressure: 0-150 PSI scale
3. Coolant Temperature: 100°-260°F scale
4. Fuel Level: E-1/4-1/2-3/4-F scale
5. Diesel Exhaust Fluid (DEF) Level: E-1/4-1/2-3/4-F scale
6. Control Power On / Off Switch
7. Alarm Silence Button (optional)
8. Voltage Adjustment Control
9. Run / Idle Control Switch
10. TG410 Controller
11. Frequency-meter: 45-65 Hz scale
12. AC Ammeter: Dual scale: 0-250A @ 480V / 0-500A @ 208V
13. AC Voltmeter: 0-600 V scale

## TG410 Automatic Start Stop Controller



## TG410 Genset Controller Features

## Functionality

- Automatic shutdowns and warnings
- Manual and remote autostart
- Engine speed adjustment
- Aftertreatment conditioning controls and status icons  
Auto / Force / Inhibit
- SAE J1939 electronic engine communication
- Engine Fault Code Annunciation  
SPN / FMI / OC
- 150 Event Fault Log
- Isolated RS 485 Modbus communication capable
- NFPA 110 Level 1 capable
- Maintenance counter
- Autostart on low battery capable
- Exerciser clock
- Automatic, inverse time delay overcurrent protection

## Form Factor

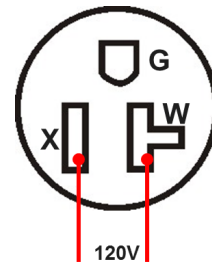
- 6-Button control
- 6-Line LCD Display with user adjustable contrast and temperature compensation from -4°F (-20°C) to 158°F (70°C)
- 1 Multicolor (Red/Yellow/Green) Status LED
- Front Gasket Seal for water ingress prevention to IP65 protection
- Conformal coated circuit board for protection against moisture and contaminants
- Rugged polycarbonate enclosure designed to survive extreme applications and abuse
- Controller functions in ambient conditions ranging from -40°F/C to 158°F (70°C)
- Meets or exceeds SAE J1113-11 with respect to electrical transients
- Meets or exceeds SAE J1455 with respect to vibration, thermal shock and cycling
- Meets or exceeds MIL-STD-461E with respect to electromagnetic compatibility
- Maximum 600V AC, true RMS sensing, +/- 1% full scale accuracy
- Current sensing, +/- 2% full scale accuracy

|   |   |
|---|---|
| <b>MANUAL RUN . . .</b><br><hr/> <b>Genset Current</b><br>A: 100 A<br>B: 100 A<br>C: 100 A          | <b>MANUAL RUN . . .</b><br><hr/> <b>Genset Voltage</b><br>A-B: 480.0V<br>B-C: 480.0V<br>C-A: 480.0V |
| <b>MANUAL RUN . . .</b><br><hr/> <b>Oil Pressure</b> 75.0 PSI<br><b>Fuel Level</b> 95.3%            | <b>MANUAL RUN . . .</b><br><hr/> <b>Engine Temp</b> 180.5 F<br><b>DEF Fluid Level</b> 90.5%         |
| <b>MANUAL RUN . . .</b><br><hr/> <b>Engine Speed</b> 1800.0RPM<br>Hold AUTO+ ▼ / ▲<br>To Adjust RPM | <b>MANUAL RUN . . .</b><br><hr/> <b>Regen Status</b> Auto<br>Hold ENTER for<br>3s to change         |
| <b>MANUAL RUN . . .</b><br><hr/> <b>Battery Voltage</b> 13.6 V<br><b>AC Frequency</b> 60.0 Hz       | <b>MANUAL RUN . . .</b><br><hr/> <b>Running Time</b> 8.3 Hours<br><b>Engine Hours</b> 250.7 Hours   |

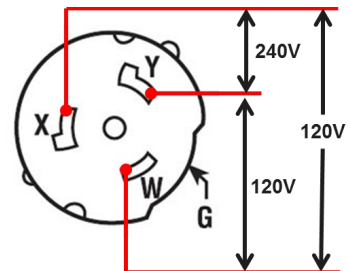
| Engine Data                                      |         |  |              |
|--|---------|--|--------------|
| Engine Manufacturer                              |         | Cummins  |              |
| Model Number                                     |         | QSB5-G12   |              |
| Prime Output @ 1800 RPM                          |         | 186 bhp  | 139 kWm      |
| Standby Output @ 1800 RPM                        |         | 206 bhp  | 154 kWm      |
| Prime Output @ 1500 RPM                          |         | 162 bhp  | 121 kWm      |
| Standby Output @ 1500 RPM                        |         | 180 bhp  | 134 kWm      |
| Engine Type                                      |         | Four Cycle, Inline   |              |
| Engine Control                                   |         | ECU  |              |
| Emissions Certification                          |         | EPA Tier 4 Final   |              |
| Number of Cylinders                              |         | 4  |              |
| Aspiration                                       |         | Turbocharged / Intercooled / cEGR                                    |              |
| Aftertreatment Technology                        |         | Diesel Oxidation Catalyst (DOC) / Selective Catalyst Reduction (SCR) |              |
| Bore × Stroke                                    |         | 4.21 x 4.88 in   | 107 x 124 mm |
| Displacement                                     |         | 275 in³  | 4.5 L        |
| Compression Ratio                                |         | 17.2:1   |              |
| Governor Type                                    |         | Isochronous  |              |
| Speed Regulation Accuracy                        |         | + / - 0.25% Steady State   |              |
| Single Step Load Acceptance                      |         | 100%   |              |
| Cooling System                                   |         | 50% Glycol / 50% Water   |              |
| Charging Alternator Output                       |         | 70A  |              |
| DC System Voltage                                |         | 24 V   |              |
| Battery Size / Output                            |         | 2 × Group 31 / 1000CCA   |              |
| Fluid Capacities                                 |         | Gal  | L            |
| Engine Crankcase Lubricant Capacity              |         | 2.8  | 10.6         |
| Cooling System Capacity                          |         | 7.1  | 26.9         |
| Usable Fuel Cell Capacity                        |         | 171.6  | 649.6        |
| Usable DEF Tank Capacity                         |         | 24   | 91           |
| 60Hz Fuel Consumption                            | Gal / h | L / h  | Runtime      |
| @ 25% Load                                       | 2.4     | 9.1  | 71.5         |
| @ 50% Load                                       | 4.4     | 16.7   | 39.0         |
| @ 75% Load                                       | 6.4     | 24.2   | 26.8         |
| @ 100% Load                                      | 8.7     | 32.9   | 19.7         |
| DEF Runtime                                      |         | >24  |              |
| Reference Conditions                             |         |  |              |
| Rated Ambient Temperature                        |         | -20°F—104°F  | -29°C—40°C   |
| Minimum Starting Temperature (Standard)          |         | 0°F  | -18°C        |
| Minimum Starting Temperature (w/ Cold Start Opt) |         | -20°F  | -29°C        |
| Maximum Altitude                                 |         |  |              |

| Alternator Data                  |  |      |
|----------------------------------|--|------|
| Alternator Manufacturer          | Marelli Motori                         |      |
| Alternator Model                 | MJB 225 LA4                            |      |
| Alternator Type                  | Four Pole Revolving Field              |      |
| Number of Leads                  | 12                                     |      |
| Insulation Class                 | H                                      |      |
| Winding Pitch                    | 2/3                                    |      |
| Voltage Connection Method        | Three Position Voltage Selector Switch |      |
| Excitation Method                | Brushless w/ Auxiliary Windings        |      |
| Voltage Regulator Model          | Mark V Analog                          |      |
| Voltage Regulation Accuracy      | +/-1%                                  |      |
| Maximum Unbalance Load           | 25%                                    |      |
| Total Harmonic Distortion (THD)  | <2% @ 0% Load                          |      |
| Telephone Influence Factor (TIF) | <50                                    |      |
| Motor Starting Capability        | 480V                                   | 600V |
| SkVA @ 20% Voltage Dip           | 170                                    | N/A  |
| SkVA @ 25% Voltage Dip           | 227                                    | N/A  |
| SkVA @ 30% Voltage Dip           | 291                                    | N/A  |
| SkVA @ 35% Voltage Dip           | 366                                    | N/A  |

| Power Connections                             |                  |
|---|------------------|
| Main Circuit Breaker Thermal Trip Rating      | 450 A            |
| Overcurrent Trip Setpoint (240V-1Ø)           | 437 A            |
| Overcurrent Trip Setpoint (208V-3Ø & 240V-3Ø) | 456 A            |
| Overcurrent Trip Setpoint (240V-3Ø Delta)     | N/A              |
| Overcurrent Trip Setpoint (480V-3Ø)           | 206 A            |
| Overcurrent Trip Setpoint (600V-3Ø)           | N/A              |
| 20A—125V GFCI Duplex (NEMA 5-20R) Receptacles | 2                |
| 50A—125/250V Temp Power (CS6369) Receptacles  | 3                |
| 400A-600V Camlock Connectors (Optional)       | 1 Set            |
| Terminal Board Maximum Cable Size (Bare Wire) | 2 × AWG 2—600MCM |
| Terminal Board Maximum Cable Lug Size         | 1/2 in (12.7 mm) |



**NEMA 5-20R  
Receptacle**



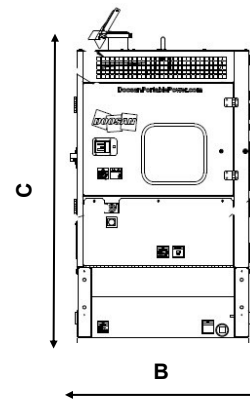
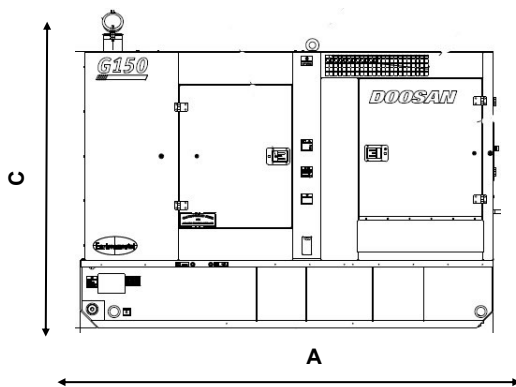
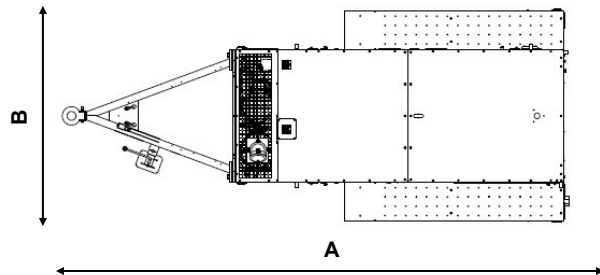
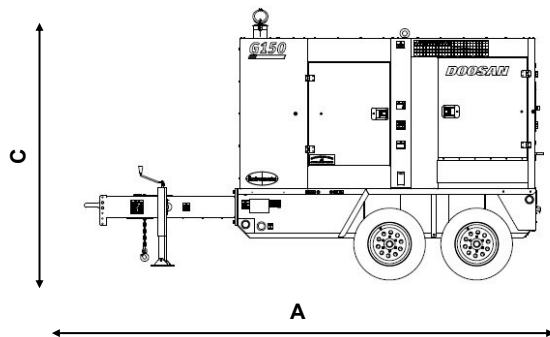
**CS6369 Receptacle**



| Running Gear                            | To 49CFR571 requirements                                   |  |         |  |
|---|--|--|---------|--|
| Gross Vehicle Weight Rating (GVWR)      | 7280 lb  |  | 3302 kg |  |
| Gross Axle Weight Rating (GAWR)         | 7723 lb  |  | 3503 kg |  |
| Configuration                           | Tandem Axle  |  |         |  |
| Suspension                              | Torsion  |  |         |  |
| Standard Brake System Configuration     | Electric   |  |         |  |
| Optional Brake System Configuration     | Hydraulic Surge  |  |         |  |
| Tires                                   | ST205/75D15, Bias Ply                                      |  |         |  |
| Wheels                                  | 15" x 6", 6 lug on 5.5" bolt circle                        |  |         |  |
| Track Width                             | 63 in  |  | 1600 mm |  |
| Lighting and Reflectors                 | Meets Federal/Canada Motor Vehicle Safety Standard 571.108 |  |         |  |
| Electrical Connection to Towing Vehicle | 7-Pole Round "RV" Blade Connector                          |  |         |  |
| Standard Trailer Coupling               | 3" (78 mm) Pintle Eye                                      |  |         |  |
| Optional Trailer Coupling               | 2-5/16-Inch Ball Coupler                                   |  |         |  |
| Hitch Height                            | 5-Position Adjustment 20 in—28 in                          |  |         |  |
| Safety Chains                           | 2 x 5/16" with slip hooks and safety latches               |  |         |  |
| Jack Stand Configuration                | Trunion Mount, 5000 lb Capacity                            |  |         |  |

| Package Data                       | With Running Gear |         | Skidmount |         |
|------------------------------------|-------------------|---------|-----------|---------|
| Length (A)                         | 169.9 in          | 4315 mm | 112.9 in  | 2868 mm |
| Width (B)                          | 71.3 in           | 1810 mm | 45.3 in   | 1150 mm |
| Height (C)                         | 94.9 in           | 2411 mm | 79 in     | 2007 mm |
| Weight (Shipping)                  | 5580lb            | 2531 kg | 4939 lb   | 2240 kg |
| Weight (Ready to Run)              | 6990 lb           | 3171 kg | 6349 lb   | 2879 kg |
| Sound Level @ 23ft (7m), 100% Load | 69 dB(A)          |         |           |         |


**DOOSAN**

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Due to continuous product improvement, specifications are subject to change without notice  
REV 11/2016

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