

QAS 25-45 ID T4F

Mobile Generator



Standard Scope of Supply

The Atlas Copco **QAS 25 & QAS 45 ID T4F** generators are prime power, multi-voltage, sound attenuated, mobile generators. They are powered by an Isuzu Tier 4 Final, liquid-cooled, four-cylinder diesel engine.

The units consist of an alternator, diesel engine, cooling system, electrical distribution and control systems - all enclosed within a sound attenuated enclosure fabricated from powder coated galvanized steel.

A broad range of undercarriage formats and options are available.

Special attention has been given to the overall product quality, user friendliness, ease of serviceability, and economical operation to ensure best in class total cost of ownership.

Available Models

QAS 25 ID

Multiple voltage – 25kVA prime power – Isuzu engine

QAS 45 ID

Multiple voltage – 45kVA prime power – Isuzu engine

Standard Features

- Compact, sound attenuated, corrosion resistant enclosure with single point lifting and 110% fluid containment
- Available as a skid mounted unit with forklift pockets, or on a single axle trailer
- Heavy Duty alternator with AREP excitation and marine grade protection
- DeepSea controller
- Single side servicing with long run filters and 500-hour service intervals
- Isuzu 4LE engine with DOC only after-treatment and limited 5-year warranty
- Identical enclosures and maintenance points between both models
- Emergency Stop
- Remote Start / Stop

Benefits

- Extremely durable and environmentally sensitive, designed to be used for everything from the oil patch to special event power
- Versatility, giving you the flexibility to match your machine to the correct application
- Start-up power for the most demanding sites with 300% overload starting capabilities
- Reliable and intuitive controls for ease of use and diagnostic capabilities
- Reduced total cost of ownership with easy access for mechanics
- Proven engine platform with high reliability, a simple maintenance free Diesel Oxidization Catalyst only after treatment
- Reduces stock of service kits and inventory of parts with rental ROI kept in mind
- External, recessed emergency stop for increased safety
- Allows connection as a critical back-up unit via a 2-wire dry contact connection in the distribution panel

Technical Data¹

| Performance | Units | QAS 25 ID | QAS 45 ID |
|--|-------------|---|-------------|
| Rated Prime Power @ 480V 3Ø | kW / kVA | 20/25 | 36/45 |
| Rated Standby Power @ 480V 3Ø | kW / kVA | 22/28 | 40/50 |
| 3Ø Power Factor | | 0.8 | |
| 3Ø Voltage In 480V Switch Position (Series Star w/Neutral) | V | 480Y/277 | |
| Amp Capacity @ 480V | A | 30 | 54 |
| 3Ø Voltage In 240-208V Switch Position (Parallel Star w/Neutral) | V | 240YY/139-208YY | |
| Rated Prime Power @ 240V 3Ø | kW / kVA | 20/25 | 36/45 |
| Amp Capacity @ 240V 3Ø | A | 60 | 108 |
| Rated Prime Power @ 208V 3Ø | kW / kVA | 18/23 | 36/45 |
| Amp Capacity @ 208V 3Ø | A | 63 | 125 |
| Rated Prime Power @ 240V 1Ø | kW / kVA | 13/13 | 22/22 |
| 1Ø Power Factor | | 1.0 | |
| 1Ø Voltage In 120-240V Switch Position (Zig-Zag) | V | 240/120 | |
| Amp Capacity @ 240V | A | 54 | 90 |
| Amp Capacity @ 120V | A | 54 x 2 | 90 x 2 |
| Alternator (4 Pole, 12 Wire) | Leroy Somer | LSA 40 M5 | LSA 42.3 S5 |
| Excitation system | | AREP (auxiliary winding) | |
| Digital Automatic Voltage Regulator (+/- 0.25%) | Leroy Somer | D350 | |
| Insulation | | Class H | |
| Frequency | Hz | 60 | |
| Main Breaker – Rated Current In | A | 63 | 125 |
| Power Distribution – Terminal Board | | 5 Wire (L1, L2, L3, N, Ground) | |
| Terminal Board Connections | | Bare Wire Terminals | |
| Maximum Terminal Cable Size | | 350MCM | |
| Convenience Receptacles ² | | 2 x NEMA 5-20R GFCI & 2 x 125/250V 50A CS6369 | |

| Engine | Units | QAS 25 ID | QAS 45 ID |
|---|------------|--------------|---------------------|
| Model | Isuzu | 4LE2T | 4LE2X |
| US EPA Tier | | Tier 4 Final | |
| Displacement | L | 2.2 | |
| Cylinders | # | 4 | |
| Continuous Engine Power Output | HP (kW) | 31.5 (23.5) | 59 (44) |
| Gross Engine Power Output | HP (kW) | 40 (30) | 66 (49) |
| Rated Speed | RPM | 1800 | |
| Engine Control | | ECU | |
| Aspiration | | Turbocharged | Turbo w/Intercooler |
| Engine oil capacity ³ | US Gal (L) | 1.9 (7.2) | |
| Engine coolant capacity | US Gal (L) | 3 (11.4) | 2.11 (8) |
| Maximum Ambient Temperature (@ Sea Level) ⁴ | °F (°C) | 122 (50) | |
| Minimum Starting Temperature | °F (°C) | 14 (-10) | |
| Electrical System (Negative Ground) | V | 12 | |
| Engine Alternator Output | A | 50 | |
| Battery Capacity (Cold Cranking Amps) | A | 685 | |
| Sound Pressure Level @ 23'(7 m) @ 75% Load ⁵ | dB(A) | 67 | |

| Fuel System | Units | QAS 25 ID | QAS 45 ID |
|---------------------------------------|---------------|---|--------------|
| Fuel Consumption @ 25% load | Gal/hr (L/hr) | 0.71 (2.69) | 1.22 (4.54) |
| Fuel Consumption @ 50% load | Gal/hr (L/hr) | 1.02 (3.86) | 1.83 (6.93) |
| Fuel Consumption @ 75% load | Gal/hr (L/hr) | 1.40 (5.30) | 2.15 (8.14) |
| Fuel Consumption @ 100% load | Gal/hr (L/hr) | 1.63 (6.17) | 2.76 (10.45) |
| Fuel Type | | Ultra-Low Sulfur Diesel ONLY ⁶ | |
| Fuel Tank Capacity | Gal (L) | 75 (284) | |
| Fuel Autonomy @ 75% load ⁷ | Hr | 48.2 | 31.4 |

¹ All ratings are at a reference condition of 0' altitude and 20°C (72°F)

² Please see receptacle voltage configuration in Power Distribution section on page #5

³ Engine oil to meet CJ-4 (low ash oil)

⁴ Please see "Derate Table" for altitude and temperature calculations on page #4

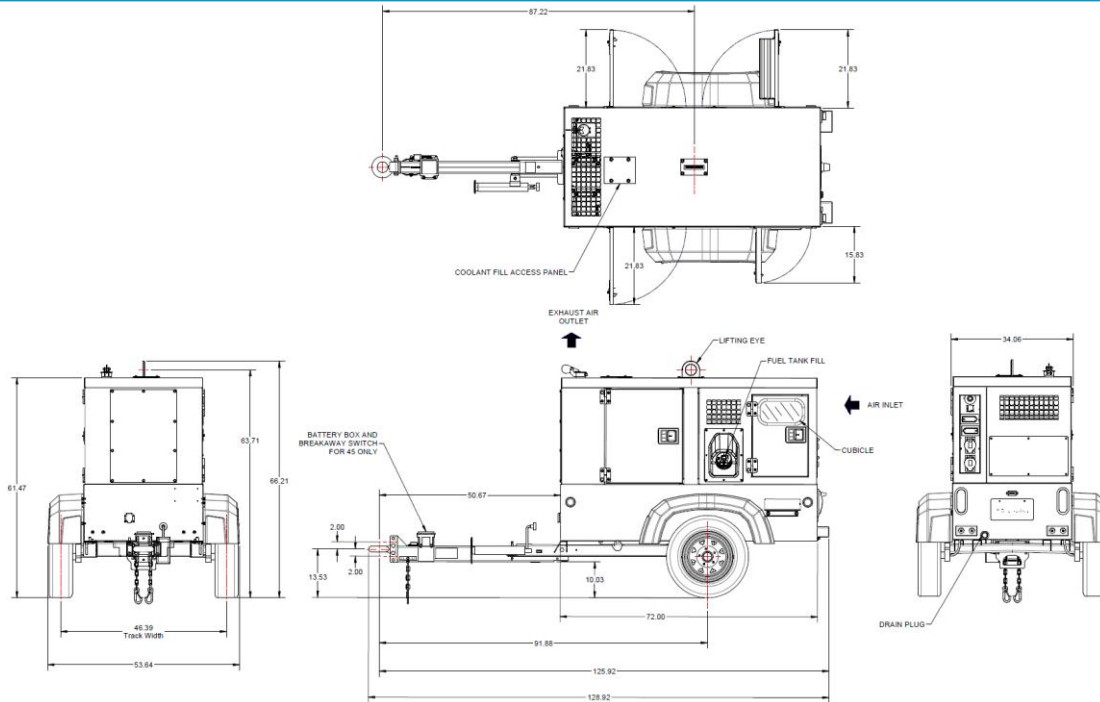
⁵ Measured in accordance with ISO 2151 under free field conditions @ 7m distance (23ft)

⁶ Engine and emissions require the use of Ultra Low Sulfur Diesel in accordance to ASTM-D975 Grade No. 1-D S15 & No. 2-D S15

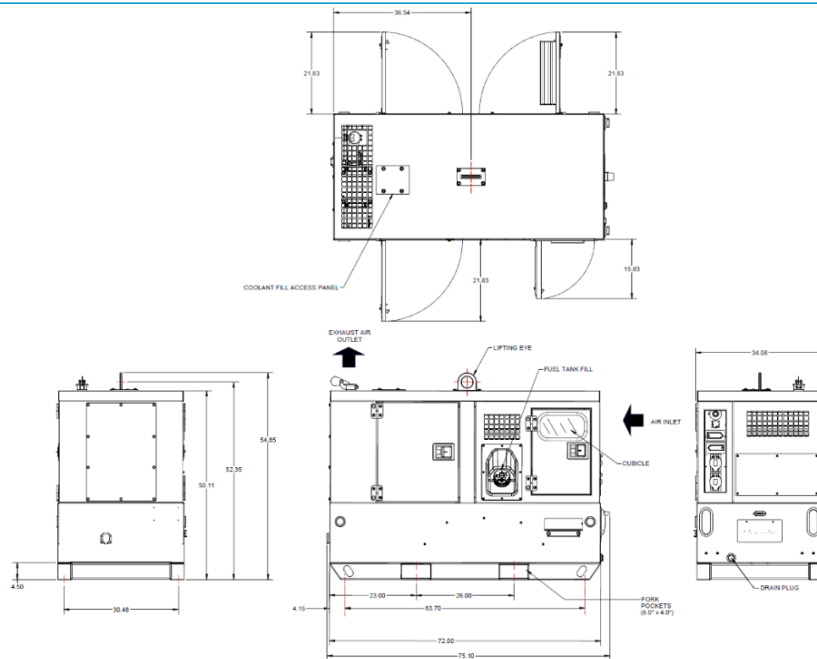
⁷ Based on 90% volume of fuel tank

Dimensions

Trailer Mounted



Skid Mounted



| Weight | Units | QAS 25 ID | QAS 45 ID |
|--|-----------|---------------|---------------|
| Trailer Mounted – Wet (ready to operate) | lbs. (kg) | 2,565 (1,163) | 2,785 (1,263) |
| Trailer Mounted – Dry | lbs. (kg) | 1,991 (903) | 2,220 (1,007) |
| GVWR | | 2,850 (1,170) | 2,850 (1,170) |
| Skid Mounted – Wet (ready to operate) | lbs. (kg) | 2,280 (1,034) | 2,500 (1,134) |
| Skid Mounted – Dry | lbs. (kg) | 1,706 (774) | 1,935 (878) |

Dimensions

| | | | |
|-----------------------------|--------|---------------|---------------|
| Trailer Mounted (L x W x H) | Inches | 129 x 54 x 66 | 129 x 54 x 66 |
| Skid Mounted (L x W x H) | Inches | 75 x 34 x 55 | 75 x 34 x 55 |

Principle Data

Alternator

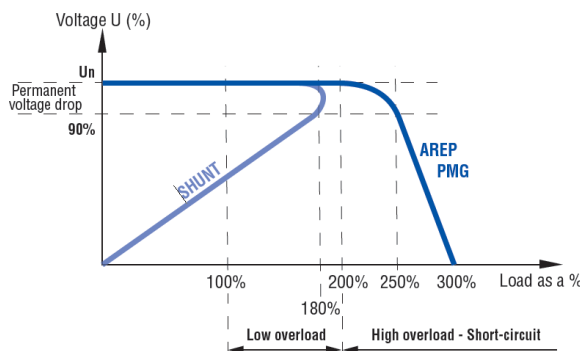
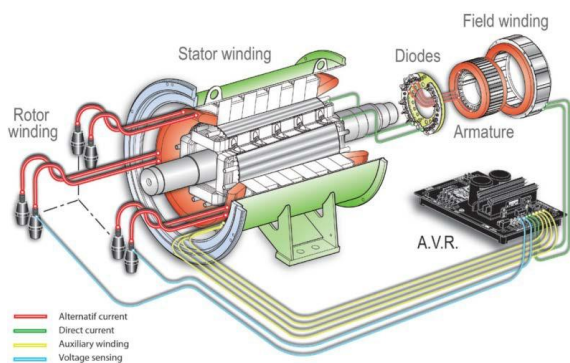
The Leroy Somer LSA alternators are designed for heavy duty continuous applications, with marine winding protection and AREP excitation system.

- AREP Excitation for superior motor starting capabilities
- Marine grade (relative humidity >95%) protection
- External multi-voltage selector switch (3 – position)
- 4 pole brushless design with single bearing, Class H insulation and IP23 rating
- Voltage regulation +/- 0.25%
- Full Load acceptance of prime power rating

The AREP system uses 2 independent auxiliary windings located in the main stator to send supply voltage to the AVR:

- The voltage delivered by the first auxiliary winding H1 is proportional to the alternator output voltage (shunt characteristic).
- The voltage delivered by the second auxiliary winding H3 is proportional to the current drawn by the alternator and is a function of the applied load (compound characteristic – booster effect).
- The resulting phase-to-phase voltage supplies power to the AVR.

This power supply to the AVR power circuit is independent of the voltage sensing measured on the alternator output terminals. Therefore, the excitation current delivered by the AVR to the alternator exciter is independent of any voltage distortions (harmonics) due to the load. The AREP system gives the alternator a high overload capacity (load impact or starting electric motors) and a short-circuit capability (300% - 10 s) in order to provide discriminating protection: the alternator with AREP excitation is shorter than the one with PMG excitation. It is particularly suitable for demanding applications.



Performance @ Altitude and High Ambient Conditions

When using at altitude and high ambient conditions the engine and alternator will de-rate as per charts below.

| QAS 25 | | Temperature °C (°F) | | | | | | | | | |
|-----------------|--------|---------------------|---------|---------|---------|---------|---------|---------|----------|----------|----------|
| Height m (Feet) | 0 (32) | 5 (41) | 10 (50) | 15 (59) | 20 (68) | 25 (77) | 30 (86) | 35 (95) | 40 (104) | 45 (113) | 50 (122) |
| 0 | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| 500 (1640) | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 97% | 94% |
| 1000 (3280) | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 97% | 94% |
| 1500 (4921) | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 99% | 97% | 94% | 91% |
| 2000 (6561) | 100% | 100% | 100% | 100% | 100% | 98% | 97% | 95% | 94% | 91% | 88% |
| 2500 (8202) | 100% | 100% | 100% | 100% | 100% | 95% | 94% | 92% | 91% | 88% | 86% |
| 3000 (9842) | 100% | 100% | 100% | 100% | 100% | 91% | 90% | 88% | 87% | 84% | 82% |
| 3500 (11,482) | 100% | 100% | 100% | 100% | 94% | 88% | 84% | 81% | 80% | 78% | 77% |
| 4000 (13,123) | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% |

| QAS 45 | | Temperature °C (°F) | | | | | | | | | |
|-----------------|--------|---------------------|---------|---------|---------|---------|---------|---------|----------|----------|----------|
| Height m (Feet) | 0 (32) | 5 (41) | 10 (50) | 15 (59) | 20 (68) | 25 (77) | 30 (86) | 35 (95) | 40 (104) | 45 (113) | 50 (122) |
| 0 | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 94% |
| 500 (1640) | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 97% | 94% |
| 1000 (3280) | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 97% | 94% |
| 1500 (4921) | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 99% | 97% | 94% | 91% |
| 2000 (6561) | 100% | 100% | 100% | 100% | 100% | 98% | 97% | 95% | 94% | 91% | 88% |
| 2500 (8202) | 95% | 95% | 95% | 95% | 95% | 95% | 94% | 92% | 91% | 88% | 86% |
| 3000 (9842) | 88% | 88% | 88% | 88% | 88% | 88% | 88% | 88% | 87% | 84% | 82% |
| 3500 (11,482) | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% |
| 4000 (13,123) | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% |

Power Distribution

The main power is connected from the alternator through a 3-position voltage selector switch to the main power cubicle. The cubicle incorporates all power distribution, controls, sensing and protection devices.

- ✓ 3 position Voltage Selector Switch (VSS)
- ✓ Current transformer x 3 (1 each leg)
- ✓ Single main breaker w/shunt trip
- ✓ Individual breakers for each receptacle
- ✓ Convenience receptacles located on outside of unit for easy access
- ✓ Terminal board for hard wiring
- ✓ Cam-Lock external quick connect (available as option)
- ✓ External emergency stop switch (recessed)
- ✓ Neutral bonded to Ground with a removable bonding link accessible in the control cubicle

Please refer to the chart below for power distribution and voltages. NOTE: All voltages below are subject to change, depending on set point of "Fine Voltage Adjustment" potentiometer and Voltage Selector Switch.

| | | 120V Receptacle NEMA 5-20R | 125/250V Receptacle CS6369 | Terminal Board |
|---------------------------|----------------------------------|-------------------------------|-------------------------------|----------------|
| Fine Voltage Adjustment * | Voltage Selector Switch Position | | | |
| | | 120V | 240/120V | |
| | | 139V | 240/139V | |
| | | 120V | 208/120V | |
| | | 139V | 240/139V | |

*All voltages are adjustable with the "Fine Voltage Adjustment" potentiometer located on the control panel. Therefore, voltage may be different then what is shown in the above table. All voltages should be verified before connection to the unit.

Convenience Receptacles



| Receptacle | Type |
|------------|--|
| X2, X3 | 120V - NEMA 5-20R GFCI (outlets) |
| X4, X5 | 125/250V - CS6369 (outlets) |
| X7 | 120V - NEMA 5-15P (shore power inlet for coolant heater and battery charger) |

Controller

The QAS25 and QAS45 comes equipped with a DeepSea 4520 control module. This is a fully diagnostic ECU controller with large 3" display, that is intuitive and easy to operate with all functions conveniently at your fingertips. The controller also manages the engine ECU operating system, and a number of safety warnings and shutdowns on various parameters (listed below).

The controller is powered by a main On/Off switch located next to unit.

DeepSea 4520 Controller Functionality:

Home Page (displayed while running, scrolling every 3 sec)

- ✓ Generator voltage (ph-ph)

Generator Page

- ✓ Generator voltage (ph-N)
- ✓ Generator voltage (ph-ph)
- ✓ Generator frequency

Load Page

- ✓ Generator current (A)
- ✓ Load ph-N (kW)
- ✓ Total load (kW)
- ✓ Load ph-N (kVA)
- ✓ Total Load (kVA)
- ✓ Load ph-N (kVAr)
- ✓ Total Load (kVAr)
- ✓ Power factor ph-N
- ✓ Power factor average
- ✓ Accumulated load (kWh, kVAh, kVArh)

Event Page

- ✓ Displays the last 50 events

Remote Start/Stop

- ✓ Automatic start/stop via 2-wire dry contact connection

Operational Buttons

- ✓ Start button
- ✓ Stop button
- ✓ Automatic mode (external remote start)
- ✓ Up/Down arrows

Info Page

- ✓ Model number
- ✓ USB identification number
- ✓ Configured engine type
- ✓ Module's date and time
- ✓ Scheduler setting

Engine Page

- ✓ Engine speed
- ✓ Oil pressure
- ✓ Coolant temperature
- ✓ Fuel level
- ✓ Engine battery voltage
- ✓ Engine run time
- ✓ Engine Maintenance due – Oil (if configured)
- ✓ Engine Maintenance due – Air (if configured)
- ✓ Engine Maintenance due – Fuel (if configured)

Engine DTC Page

- ✓ This page contains any active Diagnostic Trouble Codes that the engine ECU is currently generating. These alarms are conditions detected by the engine ECU and displayed on the DSE controller.



Engine

Isuzu 4LE2

Isuzu 4LE2 Tier 4 Final, turbo charged, intercooled (QAS 45 only), four-cylinder, liquid-cooled diesel engine provides ample power to operate the generator continuously at full-load.

Meets all US EPA, CARB and Environment Canada exhaust legislations with Tier 4 Final compliance. The engine utilizes a Diesel Oxidation Catalyst (DOC) to meet Tier 4 Final emissions. All functionality of the engine is controlled automatically on the DeepSea 4520 controller.

The engine has the capability to start the generator at 14°F (-10°C) with standard glow-plug aid. A 400W, 120V coolant heater comes as standard.

The 75-Gal (284L) fuel tank is sufficiently sized to operate the unit at full-load condition for long run times (see chart on page 2 for specifications).

The engine operates on a 12V negative ground electrical system with a 50A charging alternator.

The cooling system is suitably designed for continuous operation in ambient conditions up to 122°F (50°C), with canopy door closed.

Fuel System

A large 75 US Gal (284L) polyethylene (PE) fuel tank provides safe diesel storage while eliminating tank corrosion contaminants from being introduced to your fuel system. With integrated fuel water separator and filter, the system is designed to help maintain clean and trouble-free diesel supply to the engine for reliable trouble-free operation.

- ✓ Pad-lockable diesel fill cap
- ✓ Fuel / Water separator
- ✓ Inline priming pump (w/ filter)
- ✓ Fuel pre-filter
- ✓ Fuel supply pump (w/ strainer)
- ✓ Fuel level sensor
- ✓ Low fuel shut down feature (programmable level)

Scheduled maintenance

Standard equipped with filters sized and designed to allow 500-hour service intervals under normal operating conditions. Extended time between services reduces downtime and total cost of ownership of the unit over its lifetime.

500 Hour Service Interval:

- ✓ Air filter
- ✓ Oil filter
- ✓ Fuel filter
- ✓ Fuel / water separator

1000 Hour Service Interval:

- ✓ Air filter
- ✓ Oil filter
- ✓ Fuel filter
- ✓ Fuel / water separator
- ✓ V-Belt

NOTE: Site specific operating conditions such as; poor fuel quality and low load profile may require more frequent service intervals.

Enclosure & Frame

The generator enclosure is designed for extreme applications to provide superior performance and reliability.

The enclosure is fabricated from galvanized steel which is powder coated for corrosion resistance and tested for 1400+ hours. The enclosure and frame are fully sealed from the radiator to the back of the unit, providing a true 110% containment of all fluids.

- ✓ 16 Ga galvanized steel, zinc rich primed, powder coated enclosure, 1400+ hours salt spray tested
- ✓ Heavy duty, 1/8" thick structural steel base frame
- ✓ 110% fluid containment
- ✓ Larger 75-gallon, polyethylene fuel tank
- ✓ Convenient 2" NPT drain at rear of machine to clean out the containment frame
- ✓ Superior level of rain ingress protection and design features
- ✓ Pad-lockable doors and fuel cap
- ✓ Engine fluid plumbed to exterior of frame for ease of service
- ✓ Central lifting point
- ✓ Sound dampening material and design to allow quiet operation at 67 dB(A)

Undercarriage

The QAS 25 and QAS 45 are available with two undercarriage alternatives, providing utmost flexibility in installation, site handling or towing. Both the skid frame and the trailer mount the same way and can be interchanged for versatility.

Trailer:

- ✓ Single axle
- ✓ DOT/Federal MVSS 49CFR571 approved light package and 7 flat blade RV style plug
- ✓ Adjustable height pintle hitch (3" lunette)
- ✓ 15" Rims w/ ST205/75D15 Tires for trailer use
- ✓ Heavy Duty torsion axle rated at 2,500lbs w/brakes (option) and 2,700 w/o brakes (standard)
- ✓ 1/4" proof coil safety chains with 7/16"s-hook with safety latch
- ✓ Screw jack leveling, with pad foot, 2,000 lbs static capacity
- ✓ Single point lifting structure
- ✓ D-Ring Tie down points x4

Skid mounted:

- ✓ Sub-frame skid with integrated forklift pockets
- ✓ Heavy duty design for use in extreme conditions
- ✓ Frame is 1/4" wider than machine to reduce damage from forklifts
- ✓ Built-in locations for straps or chains to secure the unit for transport
- ✓ Single point lifting structure

Factory Options Available

- Electric brakes
- Hi-Leg Delta ready-to- use configuration (240/120V 3 ph) voltage selector switch position
- 2" or 2-5/16" ball hitches (shipped loose)
- Trailer stabilizer jacks
- Toolbox
- Spare Tire & mount
- Stabilizer jack
- Skid mount
- Cold start kit (CCV heater, 0W40 synthetic engine oil)
- Cold weather louver - Thermostatically controlled louvers for cold weather applications
- Wet Stack Preventer - Automated device that increases the engine's load based on load level
- Battery charger (12V, 6A)
- Solar charger (7W panel)
- Battery isolation switch (lockable)
- External fuel quick connects (3-way valve, located inside of enclosure for spill containment and protection)
- Camlock quick connections (5 x 400A)
- Fleetlink (Telematics system)
- RPM oil drain quickfit - Single point, easy access for pumping oil in and out of engine system

Manufacturing & Environmental Standards

The **QAS 25 & QAS 45 ID T4F** are manufactured following stringent ISO 9001 Quality Management requirements, and by a fully implemented Environmental Management & Occupational Health and Safety Systems fulfilling ISO 14001 & ISO 45001 requirements.



Attention has been given to ensure minimum negative impact to the environment.

The **QAS 25 & QAS 45 ID T4F** meets all current US EPA, CARB and Environment Canada exhaust and noise emission directives.



Supplied Documentation

The unit is delivered with documentation regarding:

- Hard copies of the Atlas Copco Operators Safety and Instruction Manual, Atlas Copco Parts Book, Isuzu Engine Manual and Parts book, in English as well as electronic copies available on request.
- Warranty Registration card for engine and Atlas Copco Generators (Units must be registered upon receipt).

Warranty Coverage

Standard Warranty Coverage: Please refer to Atlas Copco Warranty Statement for up-to-date warranty info.

Extended Warranty Programs: Programs are available; please contact your local sales representative for more info.