

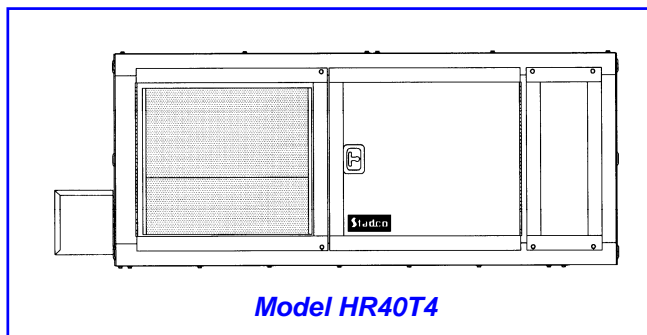
HR SERIES ENCLOSED GENERATORS FOR PRIVATE OPERATORS

GENSET RATINGS - 60Hz		Genset Model		
		HR30	HR40T4	
Sales Drawing No.		12293B	12986	
Spec. No.		HR3009	HR40T412	
1	Type: -T240/T480 Unit Output Rating (1) 12- Leads, 3-Phase 240/480V. WYE, 0.8PF	Intermittent	30 KW	38 KW
		Lt. Continuous	28 KW	37 KW
		Continuous	27 KW	36 KW
	Unit Max. Rated Current: (1) @ 0.8 PF.	Amps @ 240V	90	120
		Amps @ 480V	45	60
	A.C. Alternator Max. Capacity (2) 240/480V, 3-ph., 0.8 PF. WYE Connection	KW @ 125°C Rise	44	52
		Motor Starting Capability @ % Dip	125 SKVA	155 SKVA
% Efficiency - 0.8PF		35	35	
2	Type: -T208 Unit Output Rating (1) 12- Leads, 3-Phase 208V. WYE, 0.8PF	Intermittent	30 KW	38 KW
		Lt. Continuous	28 KW	37 KW
		Continuous	26 KW	36 KW
	Unit Max. Rated Current: @ 0.8 PF.	Amps @ 120V 1-phase, 1.0PF	250	333
		Amps @ 208V 3-phase, 0.8PF	104	138
	A.C. Alternator Max. Capacity (2) 208V. WYE Connection	KW @ 125°C Rise	40	48
		Motor Starting Capability @ % Dip	105 SKVA	122 SKVA
		% Efficiency - 0.8PF	30	35
		Amps @ 120V 1-phase, per leg	86.9	87.8
		Amps @ 120V 1-phase, per leg	279	333
3	Type: -SD240 Unit Output Rating (1) 4- Leads, 1-Phase 120/240V. 1-Ph., 1.0 PF.	Intermittent	29 KW	36.5 KW
		Lt. Continuous	27 KW	35 KW
		Continuous	25 KW	34 KW
	Unit Max. Rated Current	Amps @ 120V	242	304
		Amps @ 240V	121	152
	A.C. Alternator Max. Capacity (2) 120/240V, 1-Ph., 1.0 PF. Series/Parallel Connection	KW @ 125°C Rise	37.5	44
		% Efficiency - 1.0PF	85.2	86.2
		Amps @ 120V.	312	366

Completely packaged diesel generator systems. Purpose built specifically for under-slung mounting on passenger railcars.

Note:

1. "Unit Output Rating" refers to the rating of the engine/generator combination.
2. "A.C. Alternator Max Capacity" refers to the manufacturers rating of the alternator.



Note:

Genset ratings @ 60Hz.
 Standard 3-Ph Conn. -T240/480
 Optional 3-Ph Conn. -T208
 Optional 1-Ph Conn. -TD240
 Optional 1-Ph Conn. -SD240

Refer to price sheet #P41 for ordering information and a list of available accessories.

GENSET DATA		Genset Model	
		HR30	HR40T4
Engine Specifications			
Liquid cooled diesel engine with basic components.	Make	Deutz	Deutz
	Model	D2011L04o	TD2011L04o
	No. of Cylinders	4	4
	Liters / C.I.D.	3.11 / 190	3.6 / 221
	Max. HP @ 1800 RPM	47.2	63.4
Speed/Frequency regulation %(typical)		5	2
Battery Charging Alternator Volts/Amps		14V / 55A	14V / 55A
Fuel Consumption @ Contiuous rating	100% Load GPH	2.4	3.1
	50% Load GPH	1.2	1.5
Typical Cold Starting Capability w/ std. Battery & 15W-40 Lube Oil	without cold starting aid	(-10°C) (14°F)	(-10°C) (14°F)
	w/ starting aid	(-30°C) (-22°F)	(-30°C) (-22°F)
EPA Emissions Certification :		EPA 4I	EPA 4I
Routine Exhaust System Maintenance Required		No	No
Unit Specifications			
Recommended 12V Battery Capacity (CCA)		815	815
Recommended 12V Battery type: BCI#		31	31
Lube Oil Cahnge Interval		500 Hrs	500 Hrs
Average sound emission: @ full load with fan	dB(A) @ 1 Meter		
	dB(A) @ 7 Meters		
Approx. Unit Size w/o battery box (inches)	Frame Length	72.0"	72.0"
	Frame Width	30.0"	30.0"
	Height	30.1"	30.1"
Impact, Allowable Maximum		2.0G	2.0G
Approx. Unit Weight (Lbs.)		2000	2100

STANDARD EQUIPMENT		Genset Model	
		HR30	HR40T4
Engine Diesel			
Air cleaner dry type, dual element w/ restriction indicator		•	•
Water seperator filter w/ drain valve, loose		•	•
Oil & Fuel Filters -Spin on		•	•
Cold starting aid system	12V. Glow plugs	•	•
	12V Intake manifold Heater		
Fuel Transfer Pump - mechanical		•	•
Piston cooling - oil spray nozzles			
Muffler: critical level, remote w/ 10ft. Flex tubing		•	•
Steel Crankshaft / Camshaft		•	•
Closed Crankcase Ventilation System (PCV)		•	•
Run/Stop Solenoid 12V. Energized to Run		•	•
Governor - Mechanical for Gen-Duty; 5% droop		•	EMR2 (1)
12V. Starting system w/ battery charging alt.		•	•
Routine service points located on service side.		•	•

(1) EMR2 is an electronically controlled governor.

STANDARD EQUIPMENT		Genset Model	
		HR30	HR40T4
Cooling System			
Radiator	Heavy duty aluminum heat exchanger rated @ 150 psig.	•	•
Engine driven cooling fan		•	•
Coolant resevoir w/ visual level monotoring			
Filter assembly for cooling air inlet		•	•
AC Generator			
Brushless Alternator, direct coupled, 1-Brg.		•	•
12-lead reconnectable, (1-phase: 4-Lead)		•	•
Winding Insulation Class H, 125°C Rise		•	•
Electronic Voltage Regulation: 2.0%		•	•
AC/DC Remote Control Panel Kit #1761			
DC Control Functions			
Micro-processor controlled with toggle switch start and stop operation.		•	•
Safety engine protection for: Low oil press., Overheat, Overcrank, Overspeed and Starter lockout.		•	•
Temperature gauge, Service hourmeter, Panel C.B., Pilot lamps for Engine run, and DC Alt., Emergency stop master switch.		•	•
Dual control panels; Engine* and Remote.		•	•
* Interconnected dual control start/stop engine panel. Unit mounted.			
AC Control Functions			
Main load circuit breaker. Unit mounted and wired to power distribution box.		•	•
Panel C.B. and Voltmeter		•	•
Frame & Enclosure			
Welded steel frame with formed steel mounting plates on both ends.		•	•
Total enclosure w/ removable access panels, service access doors & air inlet panel.		•	•
Sound absorbing insulation		•	•
Exhaust & fuel connections outside to rear		•	•
Oil drain access hatch		•	•
Vibration isolating mounts and crash stops		•	•
Battery box & cables	Remote mountable	•	•
Miscellaneous			
Placards, nameplates, instructions & cautions		•	•
Operators/Parts manual		•	•
Installation instructions & diagrams		•	•
Factory test run & QA inspection - Load Ready		•	•
Finish paint:Industrial enamel, medium gray		•	•
Packaging for motor freight shipment		•	•

Unit Frame:

Welded tubular steel unit frame to support generator set and protective enclosure. Mounting points provided at both ends of main frame to accept customer supplied brackets for mounting unit to host railcar. Captive type vibration isolating mounts for engine. Bolt-on angle bracket providing a horizontal mounting surface is an available option.

Engine Protection Equipment:

Dual control panels are standard; one on the engine and a second main control panel for remote mounting. These control systems provide interconnected dual control of generator set functions. 6-Point engine protection system provides a comfortable level of protection against the most common events of engine failure.

Fuel System:

Dual fuel filter system: Primary water/dirt separator fuel filter with water drain provided for remote mounting. Secondary fine fuel filter is mounted on the engine. Wire braid fuel supply hoses. Fuel transfer pump is standard. Fuel connections provided on outside of enclosure.

AC Generator:

All brushless type alternators, Class H insulation (130°C rise), typically rated to operate at or below 105°C Continuous rating. This conservative sizing provides additional margin for nonlinear (unequal) phase loading. All popular voltages are available in both 1-phase and 3-phase currents. Solid state electronic voltage regulator (AVR) with 2-wire sensing. Low Radio Interference (RFI) due to brushless design and high quality voltage regulator (AVR).

AC/DC Electrical & Components:

All Components mounted into sealed metal enclosures, isolated from vibration. All wiring is Exane multi-stranded copper wire with cross-linked polyester 600 V. insulation. Wiring harness bundled with fiberglass loom material exclusively. Main load circuit breaker mounted on board, accessible from service door. Refer to Stadco control system flier #S121 for further details.

Generous sized distribution box located externally on back side of unit. Main AC power circuit leads wired to terminal block. AC/DC control circuits wired to terminal strips to receive Remote control wiring.

Control System, 2-Panel System:

Dual control stations are standard to provide interconnected unit control. Engine control station provides start/stop functions for engine servicing. Remote control station contains micro-processor controller and meters plus an interconnect terminal strip to accept control wiring from distribution box of the genset; shipped loose for in car mounting. Stadco control systems are completely prewired, installed and factory tested prior to shipment.

Sound Reduction System:

Unit totally enclosed with solid steel panels lined with thick sound absorbing material. Special "floating" mounts isolate engine vibration from frame to reduce secondary (in-car) vibration & noise. Engines selected for their low noise characteristics. Critical level high mass mufflers provided to reduce annoying exhaust pulsations to tolerable levels.

Marking Placards:

Includes placards for unit and control systems with operating instructions safety and cautionary statements.

Exhaust System:

Internal exhaust components wrapped with heat insulation blanket. Exhaust piping exits enclosure on the back side. Critical level high mass low noise muffler, for remote mounting.

Air Filters:

Cooling and air intake stream is filtered by a high capacity master filter equipped with a long life cleanable foam filter element. Combustion air filtered by a heavy duty dual-element combustion air cleaner, mounted internally. Easy service access provided.

Fire Safety Equipment:

Wiring insulation is high temp cross-linked polyester, 600 V, Amtrak Spec #323 approved, highly resistant to chafing & fire damage. Wiring loom is non-combustible fiberglass. Wire braided fuel & oil hoses provide extra fire protection. Internal exhaust components wrapped with heat insulation material to reduce surface temperatures.

Testing & Quality Assurance:

Each genset is individually factory load tested to confirm function and performance. Vital functions and results are documented. All engine adjustments are checked after test run.

RATING METHODS

- a. Climatic rating method: Standard SAE J1349 conditions of 80°F (27°C) ambient temp, 500 ft. altitude, 50% relative humidity. Duty at more severe conditions, ie; higher temp and/or higher altitude requires derating of unit output. Contact Stadco for specific derating values for the unit of your choice.
- b. **Resistance loads such as lights and heaters are considered Continuous loads for generator sizing purposes.**

WARRANTY:

Provisions of Stadco warranty policy statement D34 apply; a copy is available upon request.

UNIT DIMENSIONS: Refer to Stadco Sales drawing.

SERVICE POINTS: Refer to Stadco Sales drawing.

STANDARDS: Gen sets quoted herein meet the following standards:

- a. Electrical instrumentation: UL listed. Wiring & electrical system: NEMA Code.
- b. A.C. Alternator: NEMA MGI-22 and ISP 9002.
- c. Amtrak standards for electrical wiring.
- d. Stadco Quality Assurance inspection.

REGULATORY COMPLIANCE: Refer to individual unit specifications for EPA Certification Levels.

Stadco reserves the right to change product specifications at any time without incurring obligations.

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