

**MARK 5 SERIES ENCLOSED GENERATORS  
FOR COMMERCIAL OPERATORS**

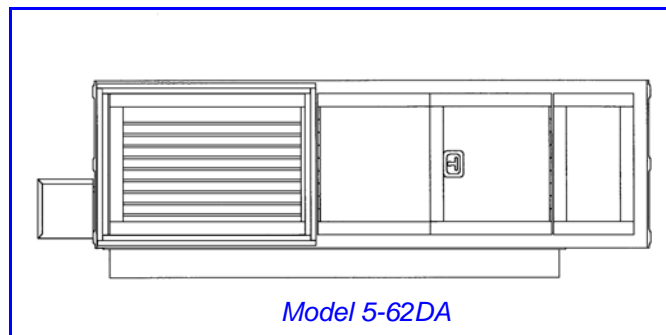
<b>GENSET RATINGS - 60Hz.</b>			<b>5-62DA</b>	<b>5-80DA</b>	<b>5-110DA</b>	<b>5-140DE</b>	<b>5-150DA</b>	<b>5-175DA</b>	<b>5-200DA</b>
Sales Drawing No.			12474	12821	12225	11734B	12226	12210B	12469
Spec. No.			562DA09	580DA09	5110DA09	5140DE09	5150DA09	5175DA09	5200DA09
1	<b>Type: -T240/T480</b> Unit Output Rating (1) 12- Leads, 3-Phase 240/480V. WYE, 0.8PF	Intermittent	62 KW	80 KW	110 KW	140 KW	150 KW	175 KW	191 KW
		Prime	58 KW	77 KW	105 KW	135 KW	150 KW	168 KW	175 KW
		Continuous	55 KW	72 KW	100 KW	130 KW	140 KW	160 KW	170 KW
	Unit Max. Rated Current: (1) @ 0.8 PF.	Amps @ 240V	186	240	330	420	450	N/A	N/A
		Amps @ 480V	93	120	165	210	225	263	287
	A.C. Alternator Max. Capacity (2) 240/480V, 3-ph., 0.8 PF. WYE Connection	KW @ 125°C Rise	75	83	117	165	165	204	204
		Motor Starting Capability @ 35% Dip	225 SKVA	270 SKVA	370 SKVA	450 SKVA	460 SKVA	640 SKVA	640 SKVA
% Efficiency - 0.8PF		92	91	91	93	93	93	93	
2	<b>Type: -T208</b> Unit Output Rating (1) 12- Leads, 3-Phase 208V. WYE, 0.8PF	Intermittent	62 KW	75 KW	105 KW	140 KW	145 KW	175 KW	188 KW
		Prime	55 KW	75 KW	100 KW	135 KW	140 KW	168 KW	175 KW
		Continuous	52 KW	70 KW	96 KW	130 KW	130 KW	160 KW	170 KW
	Unit Max. Rated Current: @ 0.8 PF.	Amps @ 208V	215	260	364	485	503	N/A	N/A
		KW @ 125°C Rise	67	75	105	145	145	190	190
	A.C. Alternator Max. Capacity (2) 208V, 3-ph., WYE Connection	Motor Starting Capability @ 35% Dip	170 SKVA	195 SKVA	290 SKVA	390 SKVA	390 SKVA	510 SKVA	510 SKVA
		% Efficiency - 0.8PF	90	90	90	92	92	93	93
3	<b>Type: -TD240</b> Unit Output Rating (1) 12- Leads, 3-Phase 240V. Delta Connection	Performance Similar to Type: -T208							

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

**Your best investment in railcar generator systems. Field proven quality, performance and service life.**

**Note:**

- "Unit Output Rating" refers to the rating of the engine/generator combination.
- "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 3-Ph Conn. -TD240

**Refer to price sheet #P23 for ordering information and a list of available accessories.**

<b>GENSET DATA</b>		5-62DA	5-80DE	5-110DA	5-140DE	5-150DA	5-175DA	5-200DA
		<b>Engine Specifications</b>						
Deutz diesel engine with basic components liquid cooled & turbocharged.	Model	BF4M2012	BF4M1013E	BF4M1013FC	BF6M1013EC	BF6M1013EC	BF6M1013FC	BF6M1013FCP
	No. of Cylinders	4	4	4	6	6	6	6
	Liters / C.I.D.	4.04 / 246	4.76 / 291	4.76 / 291	7.14 / 435	7.14 / 435	7.14 / 435	7.14 / 435
	Max. HP @ 1800 RPM	94	121	163.5	222	222	264	300
Speed/Frequency regulation % (typical)		5	5	5	5	5	0.5	0.5
Battery Charging Alternator								
Fuel Consumption @ Continuous rating	100% Load GPH	4.35	5.47	7.5	9.86	10.1	11.1	12.8
	50% Load GPH	2.18	2.84	3.9	5.12	5.3	5.8	6.4
Typical Cold Starting Capability w/ std. Battery & 15W-40 Lube Oil	without cold starting aid	(-10°C) (14°F)	(-10°C) (14°F)	(-10°C) (14°F)	(-10°C) (14°F)	(-10°C) (14°F)	(-10°C) (14°F)	(-10°C) (14°F)
	w/ starting aid	(-20°C) (-4°F)	(-20°C) (-4°F)	(-20°C) (-4°F)	(-20°C) (-4°F)	(-20°C) (-4°F)	(-20°C) (-4°F)	(-20°C) (-4°F)
Emissions Certification :		EPA 2	EPA 2	EPA 2	EPA 2	EPA 2	EPA 2	EPA 2
<b>Unit Specifications</b>								
Lube oil change interval		500 Hrs.	500 Hrs.	500 Hrs.	500 Hrs.	500 Hrs.	300 Hrs.	
Lube oil capacity: quarts(liters)*		15.3(14.5)	13.7(13.0)	13.7(13.0)	22.7(21.5)	22.7(21.5)	22.7(21.5)	
Recommended Fuel								
Recommended 12V Battery Capacity (CCA)		1100	2X1100	2X1100	2X1100	2X1100	2X1100	2X1100
Recommended 12V Battery type: BCI#		31	(2) 31	(2) 31	(2) 31	(2) 31	(2) 31	(2) 31
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	83	89.5	91	105	105	110	130
	Frame Width	32	36	34	36	38	38	38
	Height	30	32	32.2	32.2	32.2	32.2	32.5
Impact, Allowable Maximum		2.0G	2.0G	2.0G	2.0G	2.0G	2.0G	2.0G
Approx. Unit Weight (Lbs.)		2600	2800	3000	3700	3900	4200	4600

\* Lube oil quantity is only approximate. Fill to upper dipstick marking. Do not overfill.

<b>STANDARD EQUIPMENT</b>		5-62DA	5-80DE	5-110DA	5-140DE	5-150DA	5-175DA	5-200DA
		<b>Engine Diesel</b>						
Air cleaner dry type, dual element w/ restriction indicator		•	•	•	•	•	•	•
Air precleaner - Rotary type		•	•	•	•	•	•	•
Turbocharge air cooler: Air to Air				•	•	•	•	•
Water separator filter w/ drain valve, loose		•	•	•	•	dual	dual	dual
Oil & Fuel Filters -Spin on		•	•	•	•	•	•	•
Cold starting aid system, 12V		•	•	•	•	•	•	•
Fuel Transfer Pump - mechanical		•	•	•	•	•	•	•
Cylinder liners - wet replaceable			•	•	•	•	•	•
Piston cooling - oil spray nozzles		•	•	•	•	•	•	•
Gallery cooled pistons				•	•	•	•	•
Steel Crankshaft / Camshaft		•	•	•	•	•	•	•
Closed Crankcase Ventilation System (PCV)		•	•	•	•	•	•	•
Fuel injection pumps - individual plunger		•	•	•	•	•	•	•
Governor	Mechanical for gen duty 5%	•	•					
	Electronic 0.25%			•	•	•	•	•
12V. Starting system w/ battery charging alt.		•	•	•	•	•	•	•

Coolant system recharge pump	•	•	•	•	•	•
Filter assembly for cooling air inlet (washable)	•	•	•	•	•	•
<b>AC Generator</b>						
Brushless Alternator, direct coupled, 1-Brg.	•	•	•	•	•	•
Generator leads - 12-lead reconnectable	•	•	•	•	•	•
Winding Insulation Class H, 50°C Rise	•	•	•	•	•	•
Electronic Voltage Regulation: 1.5%	•	•	•	•	•	•
<b>Frame &amp; Enclosure</b>						
Welded steel frame with formed steel mounting plates on both ends.	•	•	•	•	•	•
Total enclosure w/ removable access panels, service access doors & louvered air inlet panel.	•	•	•	•	•	•
Sound absorbing insulation multi-layer	•	•	•	•	•	•
Exhaust & fuel connections outside to rear	•	•	•	•	•	•
Oil drain access hatch	•	•	•	•	•	•
Vibration isolating mounts and crash stops	•	•	•	•	•	•
Muffler, critical level, shipped loose	•	•	•	•	•	•
Battery box & cables, remote mountable	•	•	•	•	•	•
<b>Miscellaneous</b>						
Placards, nameplates, instructions & cautions	•	•	•	•	•	•
Operators/Parts manual	•	•	•	•	•	•
Installation instructions & diagrams	•	•	•	•	•	•
Fire heat detection / Shutdown system	•	•	•	•	•	•
Fire resistant fuel hoses, wiring & loom	•	•	•	•	•	•
Routine service points on curb side	•	•	•	•	•	•
Factory test run & QA inspection	•	•	•	•	•	•
Finish paint: Industrial enamel, medium gray	•	•	•	•	•	•
Packaging for motor freight shipment	•	•	•	•	•	•
<b>Standard Control Devices</b>						
Lube oil level switch	•	•	•	•	•	•
Cooling air flow sensor/shutdown switch	•	•	•	•	•	•

Engineered specifically for the passenger railcar industry. STADCO generator packages come completely ready to install. Wide range of control systems and optional accessories available.

Design objectives are: Affordability - Reliability - Efficiency - Convenient Operation - Serviceability - Simplified installation - Fire safety.

## **Reliability Features:**

### **UNIT FRAME & ENCLOSURE:**

Welded tubular steel unit frame supports generator set and protective enclosure. Steel plate mounting points provided at both ends of main frame to accept customer supplied brackets (or optional roll-out service track) for mounting unit to host railcar. Captive type vibration isolating mounts for generator set. Steel crash stops protect the isolating mounts in the event of coupling impact. All side/top panels and belly pan are removable for service access. Two service access doors provide convenient routine service access.

### **ENGINES:**

Dual fuel filter system: Primary water/dirt separator fuel filter with water drain for remote mounting. Secondary fine fuel filter mounted to unit frame. Wire braid fuel supply hoses. Fuel transfer pump. Fuel supply connections on outside rear of enclosure. Energized to run fuel solenoid designed to shut down in event of system failure. Redundant switchable fuel prefilters on 5-150/175.

Since their first installation in Stadco Railgens in 1996, Deutz 2012/1013 diesels have become known for their reliability and fault free operation. Stadco considers these engines the best available combination of features essential to railgen operation; premium quality, consistent performance, compactness, reliability & survivability, fuel economy, service life, service cost and nationwide service access. Operation at 1800 Rpm assures low engine noise levels and extensive service life.

### **COLD STARTING SYSTEM:**

Sealed pintle type 12 V. glow plugs mounted directly in combustion chambers. Operation is manually controlled from either control panel. 5-62DA uses a heater coil in the intake manifold, which is thermostatically controlled.

### **COMBUSTION AIR FILTERS:**

Dual element dry type heavy duty air cleaner with self-cleaning precleaner, mounted inboard. Rotary type centrifugal precleaner extends main filter cartridge life. Service access from curb side.

### **COOLING AIR STREAM FILTER:**

Cooling air intake stream is filtered by a high capacity master filter which filters out most air-borne dust and dirt. Dusty operating conditions require this filter system to keep the cooling system functioning normally. The long life cleanable foam filter element is quickly and easily accessible from curb side.

### **EXHAUST SYSTEM:**

Internal exhaust components wrapped with heat insulation blankets. Exhaust piping exits enclosure at rear. Critical quality high mass muffler, furnished with flex tailpipe for remote mounting.

### **COOLING SYSTEM:**

Positive forced air flow through interior of unit provides ambient temperature air supply to engine and generator cooling systems. Cooling air inlet separated from the hot air outlet to reduce unit heat recirculation.

**Purpose designed heavy duty welded aluminum heat-exchanger radiator with a pressure rating of 150 psig, five times stronger than a conventional core. So strong a core sample easily survived a drive-over by our pick-up truck. Elastometric mounts provide double isolation from engine vibration. May be cleaned with a high pressure washer.**

On board air-to-air charge air coolers on the 5-110DA, 5-140DE, 5-150DA, 5-175DA and 5-200DA models provide high output and best fuel economy while meeting EPA/CARB exhaust emissions regulations.

Dual cooling fans on 5-150DA, 5-175DA and 5-200DA models are thermostatically controlled to keep the engine at optimum operating temperature during light duty loads or cold atmospheric conditions. Cooling air flow sensing switch provides engine shutdown in case of loss of flow.

#### **AC GENERATOR:**

Totally brushless type alternators, Class H insulation (130°C rise), typically sized to operate at or below 105°C Continuous rating. Conservative sizing provides additional margin for nonlinear (unequal) phase loading. High efficiency performance with excellent motor starting capability.

Solid state Basler electronic voltage regulator (AVR) with 2-wire sensing, thermal protection and under frequency (UFRO) protection feature.

#### **AC/DC ELECTRICAL & COMPONENTS:**

All components mounted into sealed metal enclosures, isolated from vibration. All wiring is multi stranded copper wire with 600 V. rated insulation. Wiring harness bundled with fiberglass loom material exclusively.

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:**

Choice of several control systems are optionally available from Stadco. Control systems provide interconnected dual control. Also available with electrical interface kit only to accommodate third party control systems. Refer to Stadco bulletin #S121 for more product information. Standard engine control devices include; lube oil level SW, oil press SW, coolant temp SW, coolant level SW and air flow sensor SW.

#### **SOUND REDUCTION SYSTEM:**

Unit totally enclosed with solid steel panels lined with multi-layer high performance sound absorbing material to absorb engine noise and air intake sounds. All panels facing toward railcar are totally solid (without openings) for improved noise control.

Special tuned rubber "floating" mounts isolate engine vibration from frame to reduce secondary (in-car) vibration & noise. Engines are selected for their low noise characteristics. Critical quality high mass mufflers provided to reduce annoying exhaust pulsations to tolerable levels.

Optional secondary vibration isolating mounting system available for further vibration and noise reduction.

#### **MARKING PLACARDS:**

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

#### **FIRE SAFETY EQUIPMENT:**

- \* Primary fuel filter (with drain) located outside enclosure.
- \* Fuel supply hoses are wire reinforced to provide fire resistance and prevent failures due to chafing or cutting.
- \* Fire heat detection devices mounted internally around frame perimeter; connected with engine shut down system: on 5-62DA & up.
- \* Wiring insulation is fire resistant irradiated Polyolefin, 600 V, Amtrak Spec #323 approved, highly resistant to chafing & fire damage. Noncombustible fiberglass loom.
- \* Internal exhaust components wrapped with heat insulation material to reduce surface temperature.

#### **TESTING & QUALITY ASSURANCE:**

Each gen set is individually factory load tested in confirm function and performance. Vital functions and results are documented. All engine adjustments are check after test run.

#### **SIMPLIFIED INSTALLATION:**

Completely packaged product, designed to simplify the on-site installation procedure. All operating connections brought to outside. Steel plated ends of the main frame serve as mounting points. Installation Instructions provided.

#### **SERVICEABILITY:**

Easy routine and periodic servicing access. All routine service points and engine control panel are accessible from the (2) main service doors. Air cleaner and electrical device boxes also accessible from curb side.

Easy-to-keep-clean design. Designed with a minimum of joints and connections to minimize potential for leaks. Lube oil drains directly down through an access hatch in the belly pan. Cooling air stream filter system is designed to minimize interior dirt build up and extend radiator cleaning intervals.

Optional available Roll Out service track system provides unrestricted access for major service.

Comprehensive Operators Instruction Manual and trouble shooting charts included to facilitate easier self servicing. Call 1-800-377-2120 for Stadco service advise.

#### **SERVICE STATEMENT:**

Stadco's parent company has been a full service industrial engine distributor since 1963. We provide full spectrum repair parts and service backup directly from our own facilities. Our experienced staff has the produce knowledge to help diagnose problems and keep Stadco generators running. On site service is also available.

We stock a comprehensive amount of engine repair parts and critical generator unit components at our own facility to provide next day parts delivery to anywhere in the USA if necessary.

#### **OPTIONAL EQUIPMENT:**

- Control system - AC/DC. Refer to sales spec sheet S121 & Price list P23 for details.
- Other accessories Refer to Price list P23.

### 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.

### GENERAL INFORMATION

#### **PERFORMANCE RATINGS:**

- a. All Stadco generator sets are individually load tested and certified by Stadco to deliver advertised performance under climatic operating conditions of SAE J1349 standards.
- b. **POWER RATING:** Conforms to SAE J1349 climatic conditions of 80°F (27°C) ambient temp, 500 ft. altitude, 50% relative humidity.
- c. **Resistance loads such as lights and heaters are considered Continuous loads for generator sizing purposes.**

**UNIT SIZING BULLETINS:** Request: #11316 "Unit Sizing Data".  
#11317 "Climatic Derating Factors".

#### **WARRANTY:**

Provisions of Stadco warranty policy statement D31.1 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.
- b. A.C. Alternator: NEMA MGI-22 and ISP 9002.
- c. Electrical system & wiring: NEMA code / Amtrack code.
- d. NFPA 130
- e. Stadco Quality Assurance inspection.

**REGULATORY COMPLIANCE:** EPA and CARB certification for engine exhaust emissions.

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

#### ***STADCO PRODUCTS DIVISION***

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