

1200ekW UNUSED CATERPILLAR 3512B (OFFSHORE & ONSHORE)



GENERATOR

Kato Engineering - AC Generators (Alternators), Motor-Generator Sets and Controls

Kato Engineering (Mankato, MN: US) designs and manufactures AC generators (alternators), motor-generator sets and controls for prime, standby and peak-shaving power. Our generators are purchased by OEMs or end users who package them with an engine or turbine. Kato makes standard and configurable designs as well as designs and manufactures to unique customer requirements.

Concentrating on the 200kW to 18MW range, Kato generators are used in a variety of applications, including oil and gas, mining, manufacturing, transportation, co-generation, computers and telecommunications. We have an 80-year tradition of design and manufacturing excellence and innovations:

- Kato was an early user of vacuum-pressure impregnation for coil protection
- Kato was a pioneer in the use of split bearings on rotor shafts
- Kato was an early user of permanent magnet excitation
- Kato was one of the first generator manufacturers to use brushless excitation
- Kato is a preferred supplier to the US Navy, with hundreds of generators on board

Kato's ruggedly constructed generators have survived the harshest environments, and our commitment to meeting customer needs has made the Kato name synonymous with dependable power generation worldwide.

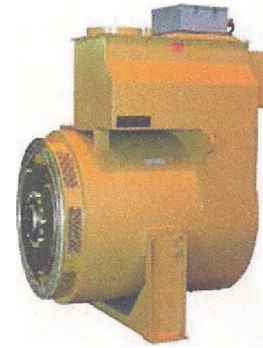
Turbine generator applications

Kato Engineering turbine generators are designed for efficiency and durability for use in demanding industrial and oil and gas applications. They operate with extremely low levels of vibration, can be easily sound-attenuated and require minimal maintenance.

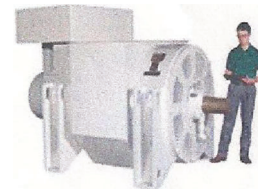
For high efficiency, Kato turbine generators are constructed with special magnetic steel. The turbine designs also emphasize reduction of losses from friction and windage. An extremely stiff construction and special bearings help meet low vibration requirements. Kato Engineering also has a pair of state-of-the-industry seismic test bases and monitoring equipment to ensure low vibration levels. Sleeve bearings and a circulating oil system boost Kato turbine generator reliability. In hazardous locations, Kato can meet Class 1, Division 2 or Zone 2 per North America or European (ATEX) standards. For petroleum applications, Kato Engineering can meet API 546 standards.

Diesel and gas engine applications

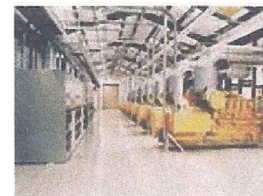
From continuous power for data centers and ore mines to emergency backup power in hospitals to peak shaving and cogeneration plants at major universities, factories and cities. Kato Engineering is helping meet this demand with reliable generators for diesel and gas engines. Nowhere is Kato reliability appreciated more than in the remote communities where engine-generator sets with Kato generators are the sole



Kato traction alternators are the premier choice for mine-haul trucks.



Kato's new generators for steam and gas turbine applications combine high-power density and high performance with an economical price.



In Manassas, Virginia (USA) eight Kato generators

source of electrical power. Alaskan villages, Pacific islands and isolated towns in the deserts of the Middle East all survive their difficult environments thanks to Kato generators.

Oil and gas applications

In the oil and gas industry, the conditions are tough and the stakes are high. That is why this industry needs reliable equipment backed by years of experience. Used in exploration, drilling, transportation and production, Kato generators are among the most reliable in the world. They have been proving it day after day since the 1950s in land and offshore oil and gas applications around the globe.

Traction alternators

Kato traction alternators are the premiere choice for mine-haul trucks and locomotive applications. These traction alternators provide high voltage rectified dc power to run traction motors, which turn the vehicle's wheels. Built smaller and lighter, Kato's traction alternators help reduce vehicle payload. But rugged construction and superior insulation ensure they can handle bumpy, grimy conditions as well as the thermal cycling caused by the constant acceleration and deceleration mine haul trucks and locomotives must endure.

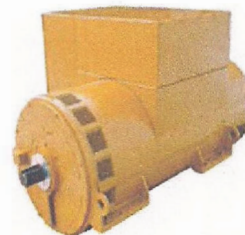
Marine applications

Kato's marine applications run the gamut from standby units for critical shipboard power to supplying complete vessel power, from power for commercial ships to power for the US Navy and other naval vessels. Kato shipboard generators can feature high-shock bearings and a rugged frame to absorb and dissipate the sea's punishing forces.

Investing in the future

To continue to meet customers' demand for up-to-date designs, of the highest quality, at the lowest cost and with the shortest manufacturing time, we have installed state-of-the-art equipment in our factory. This equipment includes the latest design tools, precision machining equipment and state-of-the-art coil manufacturing machines. We continue to invest in our employees and with new equipment and products to meet the world's power needs.

coupled to CAT diesel engines provide 12MW of utility power (Caterpillar photo).



In order to meet the petroleum drilling contractor's demand for more power, Kato Engineering has introduced a new 2,500kVA generator.



Kato Engineering has generators on dozens of US Navy ships, including destroyers, frigates and carriers, as well as on many other supply, surveillance and command vessels (US Navy photo).



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LAFAYETTE POWER SYSTEMS

Generator Specifications

Spec. No: 6P6-2900

Model: 6P6-2900

***** Specifications *****

Poles	6
Excitation:	PMG
Pitch:	0.75
Connection:	Wye
Max Overspeed (60 sec)	125%
Number of Bearings	Two
Number of Leads	Six
Number of Terminals	Four

***** Ratings *****

Power	1200 EkW Kato
K.V.A.	1500
P.f.	0.8
Voltage-L.L.	600 V
Voltage-L.N.	346 V
Current-L.L.	1443 A
Frequency	60 Hz
Speed	1200 RPM

***** Efficiency and Heat Dissipation *****

(As per NEMA and IEC at 95 °C)

Load PU	Kilowatts	Efficiency	Heat Rejection
0.25	300.0	90.8%	103743 BTU/hr
0.50	600.0	94.5%	119184 BTU/hr
0.75	900.0	95.6%	141375 BTU/hr
1.00	1200.0	95.9%	175099 BTU/hr

***** Temperature & Insulation Data *****

Ambient Temperature	40 °C
Temperature Rise	80 °C
Insulation Class	F (155 °C)
Insulation Resistance	100 Megaohms
(as shipped)	(at 40 °C)

***** Fault Currents *****

Instantaneous 3-Ø symmetrical fault current	9623 Amps
Instantaneous L-N symmetrical fault current	13122 Amps
Instantaneous L-L symmetrical fault current	9259 Amps

***** Exciter Armature Data *****

(at full load, 0.8 p.f.)	
Voltage	123.0 V
Current	66.0 A

***** Time Constants *****

OC Transient - Direct Axis	T ^{DO}	3.046 Sec
SC Transient - Direct Axis	T ^D	0.492 Sec
OC Subtransient - Direct Axis	T ^{DO}	0.030 Sec
SC Subtransient - Direct Axis	T ^D	0.025 Sec
OC Subtransient - Quadrature Axis	T ^{QO}	0.015 Sec
SC Subtransient - Quadrature Axis	T ^Q	0.002 Sec
Armature SC	TA	0.043 Sec

***** Resistances *****

Base Impedence	0.240 ohms
Stator (at 25 °C)	0.001 ohms
Field (at 25 °C)	1.36 ohms
Zero Sequence R0	0.00 ohms
Positive Sequence R1	0.00 ohms
Short Circuit Ratio	0.92

***** Reactances *****

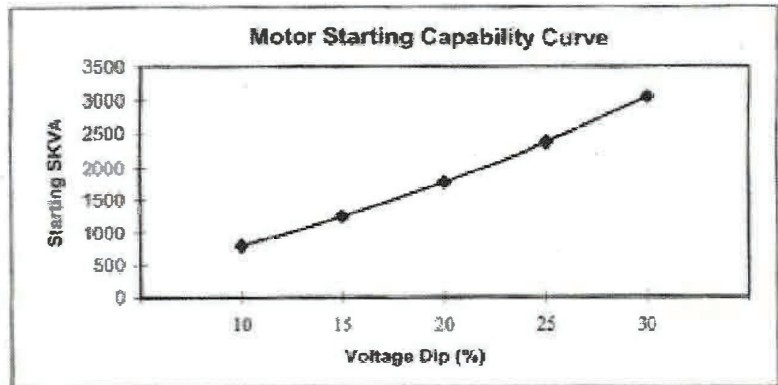
		Saturated		Unsaturated	
		Per Unit	Ohms	Per Unit	Ohms
Subtransient - Direct Axis	X ^D	0.150	0.0	0.180	0.0
Subtransient - Quadrature Axis	X ^Q	0.090	0.0	0.110	0.0
Transient - Direct Axis	X ^D	0.190	0.0	0.210	0.1
Transient - Quadrature Axis	X ^Q	0.700	0.2	0.760	0.2
Synchronous - Direct Axis	XD	1.090	0.3	1.250	0.3
Synchronous - Quadrature Axis	XQ	0.700	0.2	0.760	0.2
Negative Sequence	X2	0.120	0.0	0.140	0.0
Zero Sequence	X0	0.060	0.0	0.070	0.0

Spec. No: 6P6-2900

Model: 6P6-2900

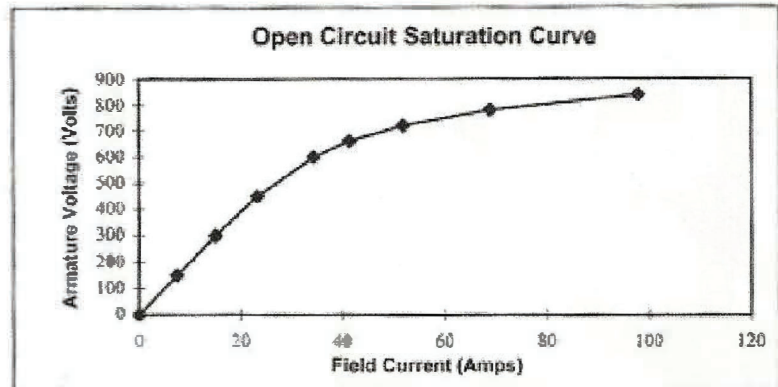
***** Motor Starting Capability Data *****

Voltage Dip (%)	Starting SKVA
10	791
15	1256
20	1779
25	2372
30	3050



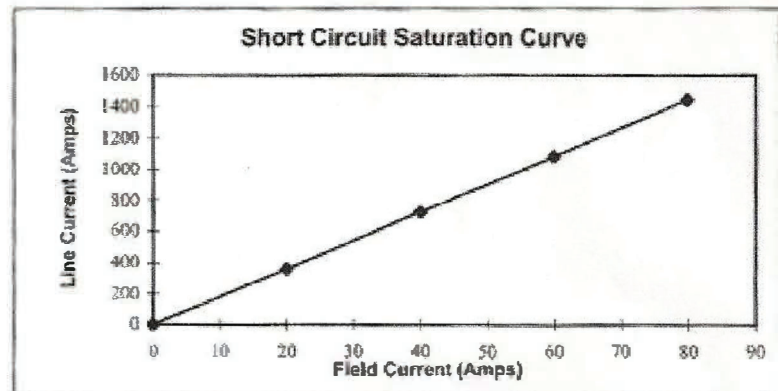
***** Open Circuit Saturation Data *****

Field Current (Amps)	Armature Voltage (Volts)
0.0	0
7.5	150
15.1	300
23.3	450
34.3	600
41.3	660
51.8	720
68.8	780
97.8	840



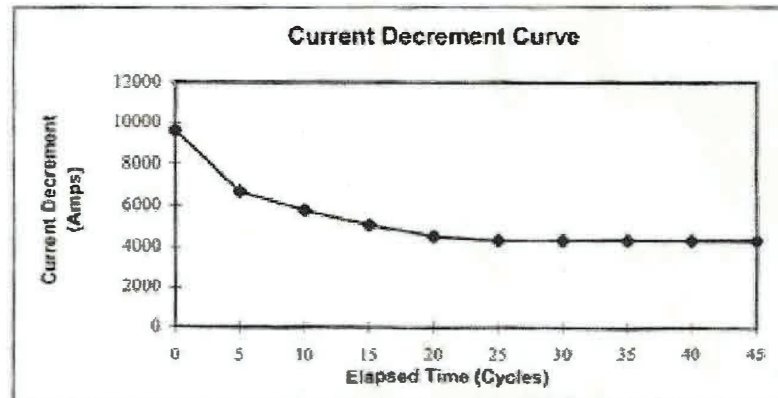
***** Short Circuit Saturation Data *****

Field Current (Amps)	Line Current (Amps)
0.0	0.0
19.9	360.9
39.9	721.7
59.8	1082.6
79.8	1443.4



***** Current Decrement Data *****

Elapsed Time (Cycles)	Current Decrement (Amps)
0	9623
5	6696
10	5797
15	5096
20	4512
25	4330
30	4330
35	4330
40	4330
45	4330





Sales and Service Detail



Arrangement No: 232-2502

Mfg Model & Year: 3512B 2009

Prod Family: ZN 3500/C175 Engines

Sims Prod Family: 63 Marine Engines

Source Facility: 88 Lafayette Plant

Principle Work:

Build Date: 18Sep2008

Ship Date: 28Oct2008

Sales Date: None

Delivery Date: None

Selling Dir: R410

Owner Cts:

Specifications

OK-5494

Application

AS SHIPPED BREAKDOWN**JUNE 14, 2011**For Help Desk Phone Numbers Click [here](#)

Part Number: 2322502

Description: ENGINE AR-BASIC

Change Level: 11

<u>Reference Number</u>	<u>Qty</u>	<u>Add Remove</u>	<u>Description</u>	<u>Service Ind.</u>	<u>Set Type Note</u>	<u>BreakDown</u>
2P9864	0012		PAINT	N	PTS-LIST P	BreakDown...
2W9726	0001		PUMP GP-WATER	N	PTS-LIST K	BreakDown...
4P5426	0001		HOUSING GP-FRONT	N	PTS-LIST F	BreakDown...
4W1529	0001		COVER GP	N	PTS-LIST G	BreakDown...
4W5892	0001		COOLER GP-ENG O	N	PTS-LIST K	BreakDown...
6L4502	0001		PROD MARKING SYS	N	PTS-LIST P	BreakDown...
7C9784	0001		GAUGE GP-O LEVEL	N	PTS-LIST H	BreakDown...
7C9938	0001		PAN GP-OIL	N	PTS-LIST H	BreakDown...
7E6872	0001		LIFTING GP	N	PTS-LIST E	BreakDown...
7N4851	0001		FLYWHEEL GP	N	PTS-LIST G	BreakDown...
7W3813	0001		SEAL GP-CSHFT	N	PTS-LIST D	BreakDown...
7W9741	0001		FILTER GP-FUEL	N	PTS-LIST M	BreakDown...
8N0339	0001		DAMPER GP	N	PTS-LIST F	BreakDown...
8N6151	0001		PUMP GP-F TFR	N	PTS-LIST M	BreakDown...
8N6152	0001		PUMP GP-ENG OIL	N	PTS-LIST J	BreakDown...
8N7103	0001		CRANKSHAFT GP	N	PTS-LIST D	BreakDown...
8N7643	0001		REGULATOR GP -C	N	PTS-LIST K	BreakDown...
8N7717	0001		TANK GP-EXP -B	N	PTS-LIST K	BreakDown...
8N8993	0001		CONNECTION GP -H	N	PTS-LIST K	BreakDown...
9Y8175	0001		PUMP GP-WATER	N	PTS-LIST K	BreakDown...
1010831	0008		COVER GP-V MECH	N	PTS-LIST E	BreakDown...
1011269	0001		HOUSING GP-FLY	N	PTS-LIST G	BreakDown...
1070278	0001		COVER GP	N	PTS-LIST F	BreakDown...
1077196	0001		AFTERCOOLER GP-C	N	PTS-LIST L	BreakDown...
1124921	0001		FILTER GP-OIL -A	N	PTS-LIST J	BreakDown...
1125010	0001		LINES GP-TURBO O	N	PTS-LIST J	BreakDown...
1126033	0001		FILLER GP-OIL	N	PTS-LIST J	BreakDown...
1143376	0001		LINES GP-WATER	N	PTS-LIST K	BreakDown...
1169870	0001		LINES GP-WATER	N	PTS-LIST K	BreakDown...
1229281	0001		GEAR GP-FRONT	N	PTS-LIST F	BreakDown...
1248395	0001		GEAR GP-REAR	N	PTS-LIST G	BreakDown...
1295488	0001		MANIFOLD GP-EXH	N	PTS-LIST L	BreakDown...
1402666	0001		LINES GP-WATER	N	PTS-LIST K	BreakDown...
1419284	0001		LINES GP-WATER	N	PTS-LIST K	BreakDown...
1438727	0001		CAMSHAFT GP-SGL	N	PTS-LIST D	BreakDown...
1440726	0012		PUMP GP-F INJ -G	N	PTS-LIST M	BreakDown...
1442884	0001		LINES GP-AIR	N	PTS-LIST L	BreakDown...
1457995	0001		TURBO GP	N	PTS-LIST L	BreakDown...
1791511	0001		DRIVE GP-ACC	N	PTS-LIST F	BreakDown...
2202677	0001		CONT GP-MTG& -C	N	PTS-LIST S	BreakDown...
2249869	0012		MECHANISM GP-V-B	N	PTS-LIST E	BreakDown...

As Shipped Breakdown

2348723	0001	LINES GP-F INJ-A	N	PTS-LIST M	BreakDown...
2356314	0001	ELECTRONICS GP	N	PTS-LIST S	BreakDown...
2406651	0001	BLOCK GP-CYL	N	PTS-LIST D	<u>BreakDown...</u>
2426277	0001	LINES GP-ENG OIL	N	PTS-LIST J	BreakDown...
2474693	0001	COVER GP	N	PTS-LIST D	BreakDown...
2474695	0001	BREATHER GP	N	PTS-LIST J	<u>BreakDown...</u>
2816139	0012	PISTON GP-ROD&	N	PTS-LIST D	BreakDown...
2993521	0012	HEAD GP-CYL -B	N	PTS-LIST E	BreakDown...
3171701	0001	SHIELD GP-EXH	N	PTS-LIST L	<u>BreakDown...</u>
3213848	0001	SHIELD GP-EXH	N	PTS-LIST L	<u>BreakDown...</u>

Total Parts: 51

Caterpillar Confidential: **Green**

Content Owner: Shane Gilles

Web Master(s): PSG Web Based Systems Support

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