marathon®

SERVICE PROCEDURE

Estimating Heat Rejection of Standard Marathon Catalog MAGNAPLUS® and MAGNAMAX$^{DVR®}$ Model Generators in BTUs Per Hour

One kilowatt hour (kWH) is equal to 3415 BTUs. For all intents and purposes, with the exception of windage and friction losses, which are lumped together as fan losses, efficiency losses in a generator are heat losses.

To calculate generator losses in kW:

$$\textbf{Generator Losses } kW_L = \frac{kW}{PU\ Eff.} - kW$$

Where: kW_L = Generator Losses in kW
kW = Rated full load kW of the generator, or any given partial kW loading on the unit.
Eff = Full load generator efficiency, or efficiency at any given partial kW loading of the unit.
PU = Per Unit - Percent or any ratio expressed in decimal form.

Approximate Generator Heat Rejection in BTUs Per Hour = (kW_L – kW Fan Losses) x 3415

MAGNAPLUS® FRAME SIZE	kW FAN LOSS 60 Hz	kW FAN LOSS 50 Hz	MAGNAMAX$^{DVR®}$ FRAME SIZE	kW FAN LOSS 60 Hz	kW FAN LOSS 50 Hz
281 - 287	0.190	0.098	431 - 433	1.550	1.140
361 - 363	1.576	1.154	570 - 574	4.211	2.542
431 - 433	1.430	1.159	740 - 744	11.650	7.520

Note:
For generators with specially designed fans, please consult with the factory for fan loss data.