

# Miller Cycle Gas Engine

**Environmental, Economical and Space all-round saving  
Suitable for Cogeneration Package.**

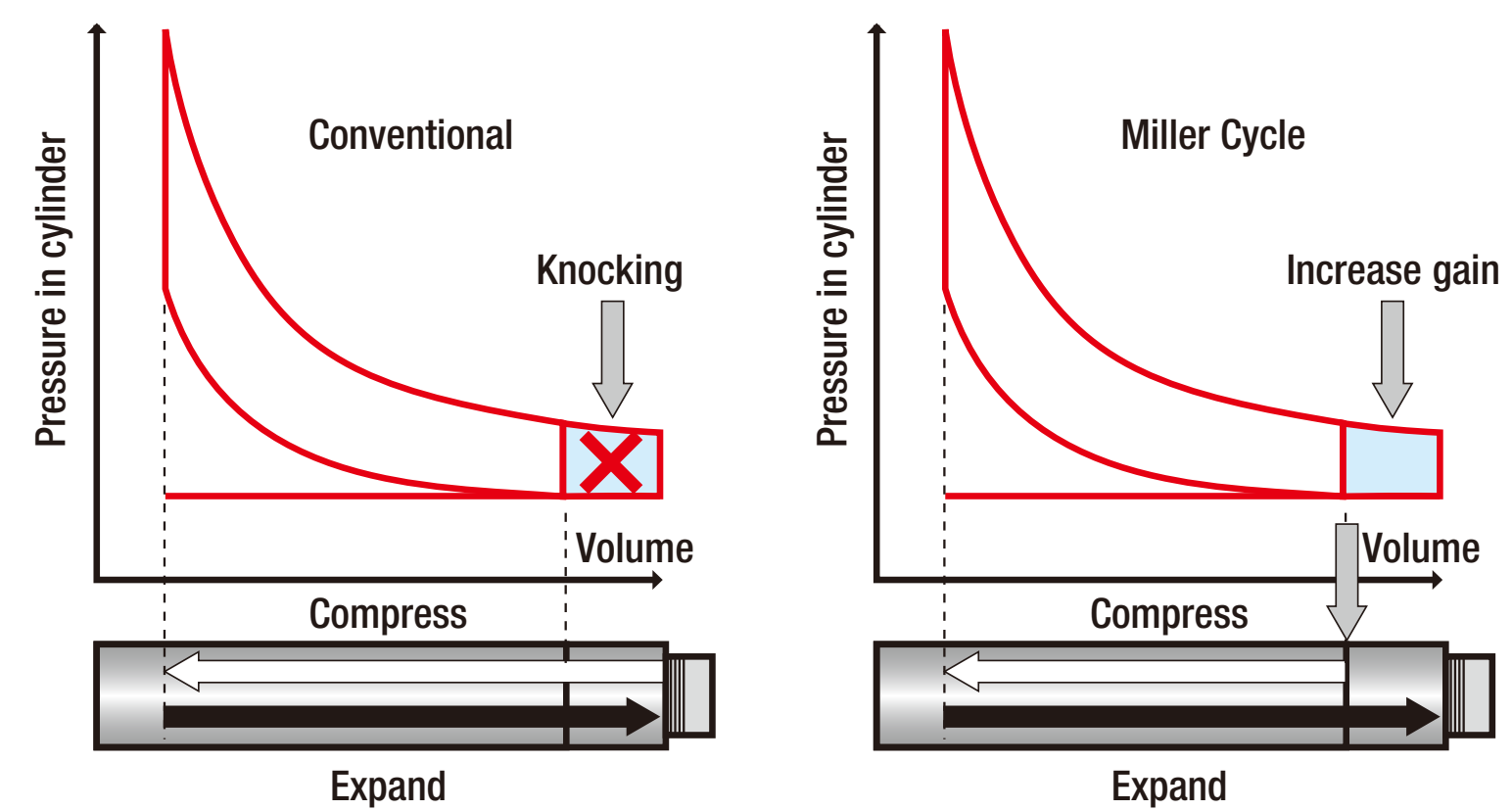


- High power is pursued, and an output improvement about 10% is achieved (GS12R and GS16R models).
- The highest power generation efficiency in the world (41.7%) is achieved (GS16R2/1000kW model).

## Features of a high power Miller Cycle Gas Engine

- 1. High power generation efficiency**  
The highest power generation efficiency in the world (41.7%) is achieved (GS16R2).
- 2. New development of high efficiency turbocharger**  
The efficient turbocharger is installed.  
It makes the high boost pressure by a small quantity of exhaust energy.
- 3. Electronic air/fuel ratio control**  
The differential pressure control of the pre-chamber combustion gas and the control of air/fuel ratio of the main chamber are electronic formula.  
Thus best combustion control is achieved.

## Basic concept of Miller Cycle



## Main Specifications

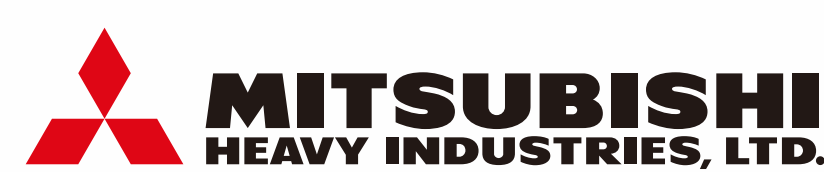
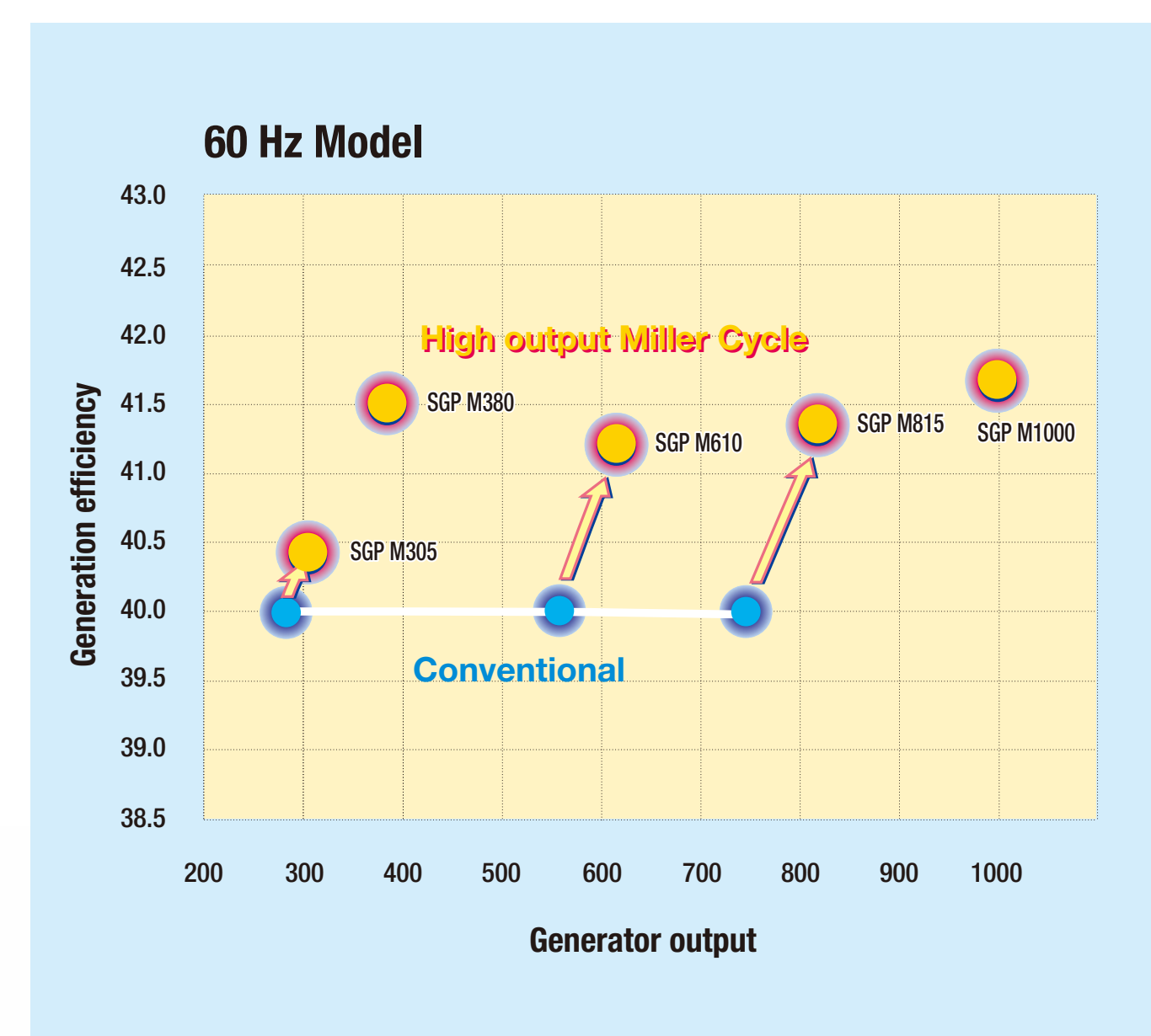
### ■ 50Hz

Item	Unit	SGP M315-S	SGP M315-W	SGP M320-S	SGP M320-W	SGP M700-S	SGP M700-W	SGP M930-S	SGP M930-W	
Engine	Model	GS6R2-PTK		GS6R-PTK		GS12R-PTK		GS16R-PTK		
	Generation efficiency	41.6		39.0		40.0		40.0		
Generator output	kW	315		320		700		930		
Heat recovery	Hot water supply	MJ/h	503.2	912.2	496.6	1007.7	1154.0	2119.7	1533.2	2796.5
	Steam supply	kg/h	172	—	197	—	388	—	491	—
Total efficiency	%	76.0	75.1	74.7	73.1	73.9	73.7	73.2	73.5	

### ■ 60Hz

Item	Unit	SGP M305-S	SGP M305-W	SGP M380-S	SGP M380-W	SGP M610-S	SGP M610-W	SGP M815-S	SGP M815-W	SGP M1000-S	SGP M1000-W	
Engine	Model	GS6R-PTK		GS6R2-PTK		GS12R-PTK		GS16R-PTK		GS16R2-PTK		
	Generation efficiency	40.4		41.5		41.2		41.4		41.7		
Generator output	kW	305		380		610		815		1000		
Heat recovery	Hot water supply	MJ/h	486.2	908.2	610.0	1190.0	966.5	1823.5	1287.4	2394.4	1213.8	2681.8
	Steam supply	kg/h	183	—	215	—	347	—	437	—	628	—
Total efficiency	%	75.2	73.8	76.4	77.6	75.7	75.4	75.1	75.2	74.1	72.8	

## High efficiency / High output



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