

# Diesel & Gas Turbine **WORLDWIDE**

DEDICATED TO ENGINE ROOM PRODUCTS, TECHNOLOGIES & NEWS



## **2010 Mechanical Drive Order Survey**

Power Generation • Marine Propulsion • Oil & Gas • Rail Traction

## MECHANICAL DRIVE RECIPROCATING ENGINE ORDERS, January – December 2009

Output Range (MW)	Units Ordered	Total Engine Output (MW)	Speed Range (r/min)			Fuel		Western Europe	Eastern Europe, Russia & CIS	Middle East	Far East	Southeast Asia & Australia	Central Asia	North Africa	Central, West East & South Africa	North America	Central America & Caribbean	South America
			300 to 600	720 to 1000	Above 1000	Liquid Fuel	Natural Gas											
0.5 to 1.0	2104	1320	0	2	2102	2165	139	448	0	6	118	88	2	3	10	1422	0	7
1.01 to 2.0	1232	1607	0	5	1227	391	641	151	10	5	85	12	9	0	0	939	0	21
2.01 to 3.5	117	306	0	28	89	18	96	15	6	0	1	4	3	9	0	77	0	2
3.51 to 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.01 to 7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51 & above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totals</b>	<b>3453</b>	<b>3233</b>	<b>0</b>	<b>35</b>	<b>3418</b>	<b>2574</b>	<b>876</b>	<b>614</b>	<b>16</b>	<b>11</b>	<b>204</b>	<b>104</b>	<b>14</b>	<b>12</b>	<b>10</b>	<b>2438</b>	<b>0</b>	<b>30</b>

## 2010 Mechanical Drive Order Survey

A review of reciprocating engine, gas turbine and steam turbine orders for mechanical drive applications

The 2010 *Diesel & Gas Turbine Worldwide* Mechanical Drive Order Survey introduces a major change to the structure, analysis and reporting of our annual survey. Beginning in 2010, we are now providing regular calendar-year reporting, January through December, versus the previous June to May reports. The change is in response to strong input from many of the companies that provide the data which makes up each of our surveys.

*Diesel & Gas Turbine Worldwide* has changed to calendar-year reporting structure for all our annual surveys, including the Power Generation Order Survey and the Marine Propulsion Order Survey. In doing so, the hope is the data will align with typical reporting sources for a more accurate reflection of year-over-year sales. As much reporting like this is done on an annual basis throughout the world, our three surveys now reflect that as well.

*Diesel & Gas Turbine Worldwide's* Mechanical Drive Order Survey is the third of three surveys designed to provide details on the markets of reciprocating engines, gas turbines and steam turbines used in power generation, marine propulsion and mechanical drive applications.

We divide the data into three reports in order to provide a more in-depth look at each market segment. The Power Generation Order Survey examines reciprocating engines, steam turbines and gas turbines for power generation service. The Marine

Propulsion Order Survey examines mechanical drive, auxiliary and diesel-electric marine propulsion systems. The Mechanical Drive Order Survey is devoted to engine orders for mechanical drive applications including pumps, compressors, oil exploration machinery, off-highway equipment and other industrial applications.

Each survey is available at [www.diesलगasturbine.com](http://www.diesलगasturbine.com).

### Procedures

The Mechanical Drive Order Survey includes drivers beginning at 0.5 MW. New orders are broken into reciprocating engine, gas turbine and steam turbine orders.

Fuel types are simplified to reflect only liquid versus gaseous fuels. Liquid fuel, as reported in this survey, can be any form of diesel oil.

Data in the survey was provided by participating OEMs. An accompanying table identifies those companies that participated in the 2010 survey. Every effort is made to make this survey as complete and comprehensive as possible and would not have the level of detail it contains without the generous support of the participating companies.

It is important to note that the data in this survey does not represent units shipped, but only the total orders received during calendar-year 2009.

For reference, the geographic breakdown that was presented to the participating companies along with the survey forms is included in this report.

### Overview

The change in reporting period makes year-to-year comparison impossible, but certain observations can be made.

Mechanical drive data echoed the results of the power generation order survey and the marine propulsion order survey — markets were down considerably. Factors well beyond the control of the industries touched by this survey once again played an influential role.

But like the power generation and marine industries, optimism is growing.

Rig counts were up in June. Baker Hughes reported that the worldwide rig count for June 2010 was 2859, up 109 from the 2750 counted in May 2010. While June 2010 is not the high-water mark for the year (February recorded 2982 rigs), year-to-year comparisons reveal that June 2010 rig counts were up 872 from the 1987 counted in June 2009. Good news for the oil and gas industry, which represents a large piece of the mechanical drive market.

Consumer confidence is on the rise, which could bode well for reciprocating engine orders in rail traction applications. As spending declined during the recession, so did the need for new locomotives. Increased consumer confidence and Caterpillar's recent announcement to purchase EMD could produce increased unit sales for next year's report.

As the economy continues its recovery, the demand for fossil fuel will

## MECHANICAL DRIVE GAS TURBINE ORDERS, January – December 2009

Output Range (MW)	Units Ordered	Total Engine Output (MW)	Fuel		Western Europe	Eastern Europe, Russia & CIS	Middle East	Far East	Southeast Asia & Australia	Central Asia	North Africa	Central, West, East & South Africa	North America	Central America & Caribbean	South America
			Liquid Fuel	Natural Gas											
1.0 to 2.0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0
2.01 to 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51 to 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.01 to 7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51 to 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10.01 to 15	5	62	0	5	0	0	0	0	0	0	4	1	0	0	0
15.01 to 20	16	257	0	16	0	16	0	0	0	0	0	0	0	0	0
20.01 to 30	51	1391	0	51	1	21	5	11	0	2	11	0	0	0	0
30.01 to 60	69	2208	0	69	0	24	0	26	15	4	0	0	0	0	0
60.01 to 120	6	517	0	6	0	0	0	0	6	0	0	0	0	0	0
120.01 to 180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180.01 & above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totals</b>	<b>148</b>	<b>4436</b>	<b>1</b>	<b>147</b>	<b>1</b>	<b>61</b>	<b>5</b>	<b>38</b>	<b>21</b>	<b>6</b>	<b>15</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>

continue to increase. An increase in demand will influence exploration activity, despite the immediate impact events in the Gulf of Mexico have had. The need for fossil fuel will last much longer than the memory span or political careers of those currently influencing offshore exploration and drilling.

The industrial pump market was recently quantified as a US\$36 billion industry. Analysts have begun to proclaim that the pump market has reached its plateau and recovery is under way. Speculations have been made for positive sales and new orders for the industrial pump market in 2010. More good news for the mechanical drive market, which has considerable ties to the industrial pump industry.

### Reciprocating Engines

Total reported reciprocating engine orders were 3453 units. This number is down sharply from the previous 12-month reporting period (June 2008 to May 2009), which reported 5345. Units rated 0.5 to 1 MW accounted for 60% of the total engines

reported, followed by 1.01 to 2 MW output engines with roughly 35%.

Engine operating speed remained consistent with years past, with most falling above 1000 r/min (98%).

There were more liquid-fueled engines reported than natural gas engines — 74% and 18%, respectively.

Geographic breakdown shows 70% of the total units reported were in North America. Second was Western Europe with 18%, followed by the Far East, which claimed 6%.

### Gas Turbine

Gas turbine orders accounted for 148 units, with a total power output of 4436 MW. Units in the output range of 30.1 to 60 MW represent 46% of the total, followed by units in the output range of 20.1 to 30 MW, which accounted for 34% of the units ordered.

Eastern Europe, Russia and CIS proved to be the top geographic location for mechanical drive gas turbines, accounting for 41% of the orders. Rounding out the top three geographic locations is the Far East with 25% of the

orders, followed by Southeast Asia & Australia, which accounted for 14%.

### Steam Turbines

Steam Turbine orders totaled 484 units, with nearly equal distribution between output ranges of 0.0 to 1 MW and 1.01 to 5 MW. Total output for the 484 reported units is 582 MW.

Condensing and noncondensing steam turbines divided the total almost equally, with noncondensing steam turbines reporting 20 more units than condensing steam turbines (252 and 232, respectively). Two units were classed as extraction.

Western Europe claimed the top geographic location with 26% of the total units ordered. The Middle East received 18% of the total steam turbine orders, followed by Southeast Asia & Australia, which accounted for 17%.

### Annual Surveys

On behalf of *Diesel & Gas Turbine Worldwide*, thank you to all contributors for your continued participation in the annual survey process. It is

## MECHANICAL DRIVE STEAM TURBINES ORDERS, January – December 2009

Output Range (MW)	Units Ordered	Total Engine Output (MW)	Steam Turbine Types					Western Europe	Eastern Europe, Russia & CIS	Middle East	Far East	Southeast Asia & Australia	Central Asia	North Africa	Central, West, East & South Africa	North America	Central America & Caribbean	South America
			Condensing	Non-condensing	Reheat	Extraction	Induction											
0.0 to 1.0	258	63	28	230	0	0	0	45	6	48	35	35	20	5	3	32	15	14
1.01 to 5.0	221	458	201	20	0	0	0	79	12	42	15	45	0	2	12	13	0	1
5.01 to 10	3	27	1	2	0	0	0	0	2	0	1	0	0	0	0	0	0	0
10.01 to 30	2	34	2	0	0	2	0	0	0	1	1	0	0	0	0	0	0	0
30.01 to 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60.01 to 120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120.01 & above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totals</b>	<b>484</b>	<b>582</b>	<b>232</b>	<b>252</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>124</b>	<b>20</b>	<b>91</b>	<b>52</b>	<b>80</b>	<b>20</b>	<b>7</b>	<b>15</b>	<b>45</b>	<b>15</b>	<b>15</b>

