

TYPE 1500 3G

Hydraulic Servo Governor

The Regulateurs Europa 1500 series governor is designed specifically for high power medium speed and large bore slow speed diesel engines.

A centrifugal flyweight design, with a two-stage, high stiffness, backlash free hydraulic servomechanism, this governor provides the best possible control on engines that have a fuel pump control system with high stiction forces.

A booster unit can be supplied for application where minimal starting air consumption is required.



TYPE 1500 3G Hydraulic Servo Governor

FEATURES

- Proven design
- Special servomechanism to give best possible control on pumps with large stiction forces
- One module with 3 different work outputs all within the same frame size
- Speed setting options by synchronising motor, pneumatic and lever
- Work capacity of up to 250ft.lbf. (337 joules)
- Self contained oil supply
- Droop adjustment
- Common base mounting
- Output shaft either side
- Output shaft both sides

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SPECIFICATION

Input Speed Ranges

Range 1: 230 - 1150 rev/min
either direction
Range 2: 195 - 960 r/min
either direction
Range 3: 160 - 800 r/min
either direction

Output Shaft Movement

40° (maximum) with 24° or greater to be used from No Load to Full Load

Power to Drive Governor

(at 1000 r/min. Governor Drive Speed)
120 ft lbf Work Output 1.0 hp (0.75 kW)
Input Torque 5.3 lbf ft (7.2 Nm)

200 ft lbf Work Output 1.25 hp (1.0 kW)
Input Torque 6.6 lbf ft (9.0 Nm)

250 ft lbf Work Output 1.5 hp (1.2 kW)
Input Torque 7.9 lbf ft (10.7 Nm)

Output Shaft Dimensions

1 1/8 in nominal diameter, 48 SAE serrations, standard both sides of governor.

Drive Shaft Dimensions

1 1/8 in nominal diameter, 48 SAE serrations standard. Alternatively, 5/8 in nominal diameter with 3/16 in x 3/16 in key.

Base Dimensions

250mm Square with four fixing holes 14mm diameter at 220mm centres.

Rotation

Either clockwise or counter clockwise.

Speed Droop

Adjustable via external access from 0-100 r/min for 60% of the shaft travel.

Stabilisation

Hydraulic system having non-linear characteristics giving high temporary droop at the set point of stability. The degree of damping introduced by the stabilisation system can be adjusted to suit the prime mover characteristics.

Speed Setting Options

Lever - (normally supplied by engine builder) on projecting speed setting shaft 1/2 in. nominal diameter, 36 SAE serrations.
Handwheel - Mounted on top of governor casing.
Synchronising Motor - operating voltages: 24, 110 and 220/240 volts ac/dc. Nominal rate of change of speed 0.25% per second.

Pneumatic - Standard Pressure Ranges

3-15 lbf/in² (0.21-1.05 bar)
5-45 lbf/in² (0.35-3.10 bar)
5-90 lbf/in² (0.35-6.20 bar)
10-60 lbf/in² (0.70-4.13 bar)

Speed Indication - Up to three microswitches to give indication of selected speeds.

Shutdown Options

Manual - By pushbutton on top of governor.
Electric - solenoid energise to run or to stop: Operating voltages 24, 110 and 200 volts dc
Pneumatic Pressurized to Run or to Stop - Standard pressure range: 50-150 lbf/in² (3.4-10.3 bar).
Low Oil Pressure - Responds to low oil pressure of prime mover. Two adjustable ranges 25-50 lbf/in² (1.75-3.4 bar) & 40.5-81.2 lbf/in² (2.75-5.5 bar)

Weight

(Basic governor, lever speed setting model)
225 lbf (100 kg)

Fuel Limitation Options

Manual - External dial adjustable over the full range of governor output.
Boost Pressure - Standard pressure ranges:
0-20 lbf/in (0-1.38 bar)
0-30 lbf/in (0-2.07 bar)
0-45 lbf/in (0-3.10 bar)
Set Speed - Limitation of governor output via internal linkage acting from the speed setting mechanism.
Actual Speed - By reduction of set speed for marine propulsion prime movers with fixed pitch propeller or suction dredger pump drive.

Load Control Options

Hydraulic - A spool valve controls an oil flow to and from the governor, dependant upon the deviation from a predetermined speed/governor position characteristic. The response characteristics may be adjusted by the supply pressure regulator within the governor. The oil supply may be obtained from the governor self contained system or from an external source.

ELECTRIC - An L.V.D.T. (Linear Variable Differential Transformer) within the governor provides a signal dependent upon the deviation from a predetermined speed/governor position characteristic.

NOTE: The load control and fuel characteristics may be controlled by more than one variable e.g. speed setting and boost pressure. The mechanism is so arranged that the engine will be controlled in a stable manner even if turbocharger failure occurs.

Regulateurs Europa

Port Lane, Colchester, Essex CO1 2NX, England
Telephone: +44 (0) 1206 799 556
Email: sales@regulateurseuropa.com
Website: www.regulateurseuropa.com

Regulateurs Europa BV

1e Energieweg 8, 9301 LK, Roden, Netherlands.
Telephone: +31 (0) 5050 198 88
Email: sales@regulateurs-europa.com
Website: www.regulateurseuropa.com

