

# Gen V eWG50 ProGate50



The Gen-V WG50 ProGate50 external electronic wastegate is a cost effective, high performing 50mm external wastegate. The Gen-V provides extensive user configurability, world leading extended thermal performance, fatigue resistance and best in class flow performance for optimum control and longevity.

- Liquid cooling provision
- Strap type V-band clamps
- User adjustable actuator position
- Modular actuator design
- Full Electronic control

### Mechanical Data

Valve diameter	50mm (1.969in)
Mass	WG50 1680kg (3.703lbs)
Actuator linearity	1.02% of full lift (BFSL)
Set pressure accuracy	+/- 0.5 psi of base pressure
Safe working pressure max.	85 psi / 585 kPa / 5.9 bar
Actuator life	550k cycles @ 150°C (302 °F) ambient 800k cycles @ 80°C (176 °F) ambient
Port fittings type	Liquid Cooling: 2x 1/8" NPT

### Thermal Data

Max. thermal stress (non-cooled)*	>45min @ 1250°C EGT continuous
Max. thermal stress (h2O cooled)*	>24hr @ 1250°C EGT continuous
Max. ambient/compartament temp.	260°C / 500°F
Max. actuator temp.	150°C / 302°F

### Electrical Data

Sensor Operating voltage	5V±0.5V
Outputs	<ul style="list-style-type: none"> <li>• Analog 0-5V</li> <li>• Pulse Width Modulated signal</li> </ul>
Operating Temperature	-40 °C to 150 °C (-40 °F to 302 °F)
Sensor Supply Current	21mA
PWM Frequency	220-268 Hz

### Temp Sensor Data

Accuracy	±2.7°C	
Voltage offset at 0°C	2630mV	
Gain	-13.6mV/°C	
<b>Deg C (Deg F)</b>	<b>Rev A Temp</b>	<b>Rev B Temp</b>
	<b>Sensor Output</b>	<b>Sensor Output</b>
	<b>(mV)</b>	<b>(mV)</b>
0 °C (32 °F)	500	2630
150 °C (302 °F)	2000	538

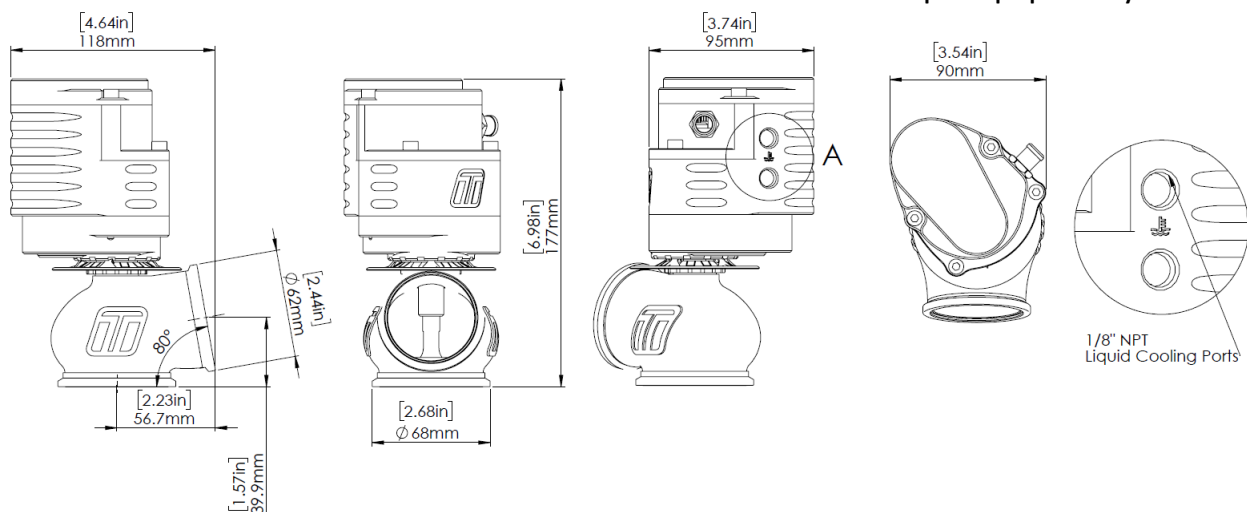
### Position Sensor Data

Position	Target Voltage (V)	Duty Cycle (Rev B)
100%	0.20-0.60V	~16%
0%	4.40-4.80V	~84%

### Connection Data

Red 22AWG	5V
Black 22AWG	0V
White 22AWG	Valve position
Blue 22AWG (Rev B Only)	*Unfiltered Signal (Position Output)
Yellow 22AWG (Orange Rev A)	Sensor Temperature
Red 14AWG	Motor A (positive closed)
Black 14AWG	Motor B (positive open)

**\*Note: The Blue (unfiltered position signal) is not required for use & is for development purposes only.**



\*Continual source of minimum 1250°C exhaust gas, with no cool down periods for at least 30minutes and no external air cooling on actuator, this is a destructive test that an ICE engine cannot support. Contact tech support for further information.

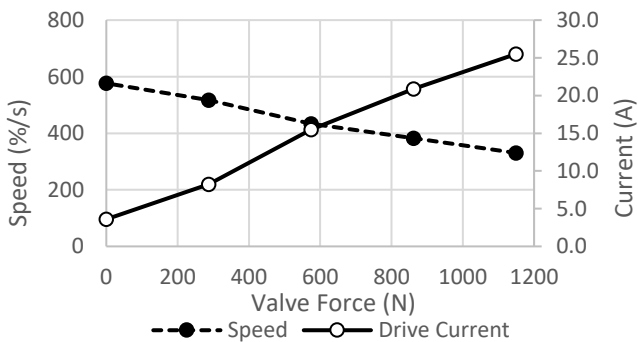
## Material Data

Beryllium (Be)	0%
Main Body	High temp 347 SS
Actuator housing	6061 T6 anodised Al.
Valve Guide	Nitronic 60
Valve	EV8 w/ proprietary plating
V-Band	Heat treated 431 SS w/ 18-8 nut
Weld Flanges	304 Stainless Steel

## Motor Data

Wire Size	14AWG
Direction	Red wire positive closed
Stall Current**	60A
Hold Current	0A (Short motor wire for braking)
Max Force @stall	4085N
Max Force @power	2042N
Speed (Opening)	598%/s

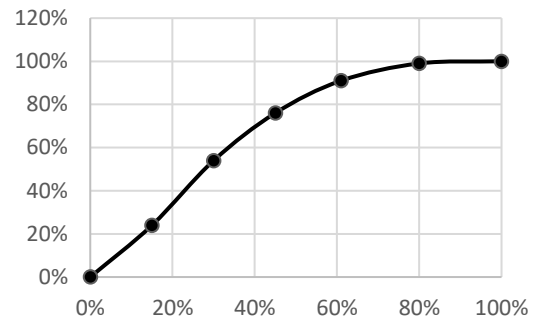
### Speed Vs Force



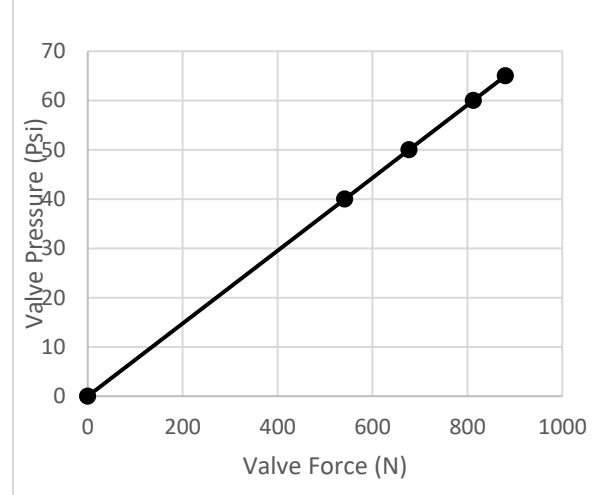
## Flow Characteristics

Max. Flow	241.6 CFM/6.81m3/min @1psidP
Flow Linearity	-18% of full lift (BFSL)

### Flow Linearity



### Valve Force Vs Exhaust Pressure

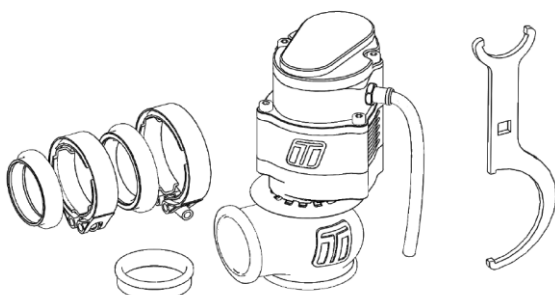


## Water Cooling

Temperature Range	-40 to 120degC / -40 to 248degF
Pressure Range	0 to 100psi / 0 to 689kPa / 0 to 6.9 Bar
Coolant Safe	Yes

## Included in the Box

- Wastegate unit
- SS316 Valve seat
- Inlet V-Band
- Inlet SS304 weld flange
- Outlet V-Band
- Outlet SS304 weld flange
- Collar tool (master/slave)
- Sticker
- Instruction card



## Order Data

TS-0554-1502	Gen-V eWG50 ProGate 50 Electronic Black
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## Accessories

TS-0554-3001	WG50 Valve Seat
TS-0554-3002	WG50 Valve and Guide set
TS-0554-3003	WG50 Inlet V-Band
TS-0554-3004	WG50 Outlet V-Band
TS-0502-3001	WG50 Stainless Inlet Weld Flange
TS-0502-3002	WG50 Stainless Outlet Weld Flange
TS-0502-3007	W50 Alloy Inlet Weld Flange
TS-0502-3008	W50 Alloy Outlet Weld Flange
TS-0550-3013	54mm Actuator Collar Tool

Refer to catalogue for further accessories

## Install Req.

Inlet Pipe	Suits 50.8mm/2.00" OD
Outlet Pipe	Suits 50.8mm/2.00" OD
Water Port Tube Min. ID	6mm / 0.236" (Recommended -4 AN Fitting)

\*\* High amperage for prolonged periods will damage the motor, keep high Amperage operation to short bursts.

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