



**TOYO
BRUSHLESS**

DIESEL GENERATORS

TKV&TG
Series

Powered by
Kubota

High Performance and Long Life

Made in
JAPAN



 **TOYO DENKI INDUSTRIAL CO., LTD.**

TOYO BRUSHLESS

Diesel Generators

Features

High Performance

TOYO GENERATOR SET gives full play to good Performance under such bad conditions as a high temperature or a high humidity.

Easy Operation

TOYO GENERATOR SET equips an integrated operation panel, so operations are very easy and has a construction switch is easy to get a generating power.

TKV, TG GENERATOR SET fitting out fusesless circuit breaker needs no troublesome fuse exchange.

Engine

Light-weight & compact KUBOTA engines with high performance ensure clean exhaust gas, low noise level & low fuel consumption.

AVR-System

TOYO efficient AVR system keeps output voltage within 1.5% of the rated voltage from no load to full load at load power factor of 1.0 sudden load changes have been the main cause of damage to conventional AVR's.

TOYO TKV, TG series generators are equipped with AVR system which resists such damage.

The system also features easy motor starting (for refrigerators air-conditioner, etc.) and prevents damage from overloading.

Automatic Safety Shut Down Devices

- High water temperature
- Low lubricating oil pressure

Easy Maintenance

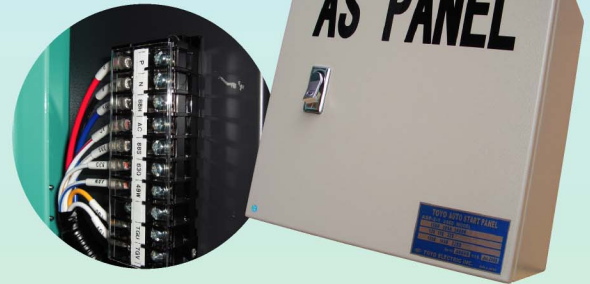
TOYO ALTERNATOR requires no maintenance like machine inspection or brush exchange over a long time because of brushless construction switch doesn't have carbon brushes & slip rings at all. TOYO GENERATOR SET is free from radio interference and spark outbreak according to brushes contact, breakdown do to carbon dust.

Wide door & Easy maintenance



Optional Equipment

Automatic Start Panel



- Auto start / Auto stop system
- Over-speed / Low-speed protection
- Start at mains Low / High voltage and stop at normal voltage.

How to work with AS

Commercial Electricity Source	Generator
Electricity OFF	Auto Start
High Voltage (+20%)	Auto Start
Low Voltage (-20%)	Auto Start
Electricity ON	Stop and Waiting

Protection (Generator) Over-speed / Low-speed.

Automatic Mains Failure Panel

An automatic wall-mounted mains failure back-up switching device is available as an option with TKV & TG genset's. In the event of a power blackout, the device automatically starts the genset's engine and then transfers the load to the genset's. After mains recovery, the device transfers the load back to the mains and stops the engine.

Characteristics

- Auto charging system
- Auto maintenance running
- Over-speed protection
- Start at mains Low/High Voltage and Stop at Normal Voltage



Type-BS (Sound-proof type)



Type-PC (Open canopy type)

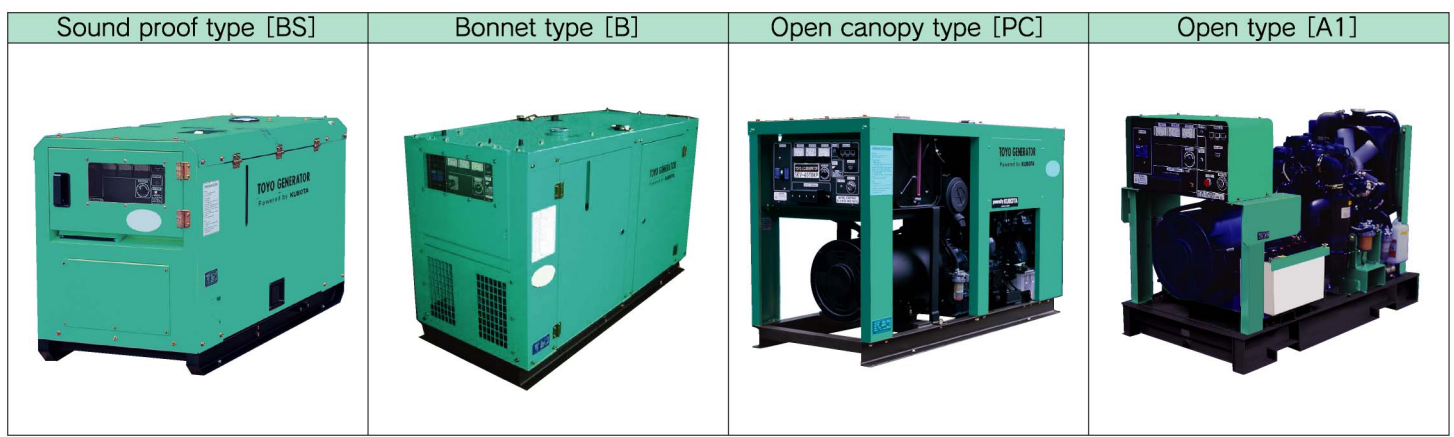


2Pole, Single-phase

Model		TKV-6.5S		TKV-7.5S		TKV-11S		TKV-15S		TKV-20S			
Frequency		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz		
Generator	Output (kW)	Stand-by 5.6	6.6	6.5	7.5	9.7	11.5	13.7	15.8	17.8	21.1		
		Prime 5.0	6.0	5.6	6.6	8.4	10.0	12.0	14.0	16.0	18.8		
	Type	Revolving-field type AC Generator (Brushless)											
	Excitation	Brushless, self-excitation											
	Rated speed (min ⁻¹)	3000	3600	3000	3600	3000	3600	3000	3600	3000	3600		
	wire	2 (4) wire											
	Voltage	200, 220, 230, 240, (110 / 220, 120 / 240) V required											
	Power factor	1.0											
	Class of insulation	F-class (both starter & roter)											
	Type of coupling	Direct coupling (single bearing)											
Voltage regulation system	Condenser				AVR								
Voltage regulation	±5.0%				±1.5%								
Engine	Model (KUBOTA)	Z482				D722		D1005		V1305			
	Type	Vertical. Water-cooled. 4-Cycle Diesel											
	Cylinders	2				3		3		4			
	Displacement (ℓ)	0.479											
	Rated output	kW	6.8	8.1	6.8	8.1	10.3	12.2	14.5	16.8	19.4	22.4	
		PS	9.3	11.0	9.3	11.0	14.0	16.6	19.7	22.8	26.4	30.5	
	Fuel consumption [at full (70%) load]ℓ/h	2.2(1.5)	2.7(1.9)	2.2(1.5)	2.7(1.9)	3.1(2.2)	4.1(2.9)	4.5(3.2)	5.6(3.9)	5.9(4.1)	7.4(5.2)		
	Fuel tank capacity (ℓ)	20				20		20		40		40	
	Starting system	Electric - 12V DC											
	Automatic safety shut down	Low oil pressure / High water temperature											
Set	Sound level [at 7m] Type-BS	66dB	68dB	66dB	68dB	64dB	68dB	66dB	68dB	67dB	69dB		
	weight (approx) (kg)	BS (Sound proof type)	236		250		290		410		530		
		PC (Open canopy)	210		225		240		345		440		

2Pole, Three-phase

Model		TKV-9T		TKV-14T		TKV-20T		TKV-27T		
Frequency		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	
Generator	Output (kVA)	Stand-by 8.3	9.6	12.4	14.7	17.6	20.3	23.5	27.0	
		Prime 7.2	8.5	10.8	12.7	15.2	17.6	20.3	23.5	
	Type	Revolving-field type AC Generator (Brushless)								
	Excitation	Brushless, self-excitation								
	Rated speed (min ⁻¹)	3000	3600	3000	3600	3000	3600	3000	3600	
	wire	4 wire								
	Voltage	AC 200~480 V required								
	Power factor	0.8								
	Class of insulation	F-class (both starter & roter)								
	Type of coupling	Direct coupling (single bearing)								
Voltage regulation system	AVR									
Voltage regulation	±1.5%									
Engine	Model (KUBOTA)	Z482		D722		D1005		V1305		
	Type	Vertical. Water-cooled. 4-Cycle Diesel								
	Cylinders	2		3		3		4		
	Displacement (ℓ)	0.479								
	Rated output	kW	6.8	8.1	10.3	12.2	14.5	16.8	19.4	22.4
		PS	9.3	11.0	14.0	16.6	19.7	22.8	26.4	30.5
	Fuel consumption [at full (70%) load]ℓ/h	2.2(1.5)	2.7(1.9)	3.1(2.2)	4.1(2.9)	4.5(3.2)	5.6(3.9)	5.9(4.1)	7.4(5.2)	
	Fuel tank capacity (ℓ)	20		20		40		40		
	Starting system	Electric - 12V DC								
	Automatic safety shut down	Low oil pressure / High water temperature								
Set	Sound level [at 7m] Type-BS	66dB	68dB	64dB	68dB	66dB	68dB	67dB	69dB	
	weight (approx) (kg)	BS (Sound proof type)	250		290		415		530	
		PC (Open canopy)	225		240		345		440	



4Pole, Single-phase

Model		TG-7S		TG-12S		TG-14S		TG-21S		TG-30S		
Frequency		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	
Generator	Output (kW)	Stand-by	6.5	7.3	9.8	11.7	11.5	14.5	16.4	21.0	26.1	30.0
		Prime	5.5	6.6	8.8	10.6	10.8	13.5	15.6	20.0	23.8	27.3
	Type	Revolving-field type AC Generator (Brushless)										
	Excitation	Brushless, self-excitation										
	Rated speed (min ⁻¹)	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	
	wire	2 (4) wire										
	Voltage	200, 220, 230, 240, (110 / 220, 120 / 240) V required										
	Power factor	1.0										
	Class of insulation	F-class (both starter & roter)										
	Type of coupling	Direct coupling (single bearing)										
Voltage regulation system	AVR											
Voltage regulation	±1.5%											
Engine	Model (KUBOTA)		D1005		V1505		D1703		V2203		V3300	
	Type		Vertical, Water-cooled, 4-Cycle Diesel									
	Cylinders		3		4		3		4		4	
	Displacement (ℓ)		1.001		1.498		1.647		2.197		3.318	
	Rated output	kW	7.2	8.7	11.1	13.4	13.6	16.5	18.4	23.7	27.0	32.3
		PS	9.8	11.8	15.1	18.2	18.5	22.4	25.0	32.2	36.8	43.9
	Fuel consumption [at full (70%) load] ℓ/h		2.2(1.5)	2.6(1.8)	3.3(2.3)	4.0(2.8)	3.9(2.7)	4.8(3.4)	5.4(3.8)	6.9(4.8)	7.7(5.4)	9.1(6.4)
	Fuel tank capacity (ℓ)		40		40		40		40		60	
	Starting system		Electric - 12V DC									
	Automatic safety shut down		Low oil pressure / High water temperature									
Set	Sound level [at 7m] Type-BS		59dB	62dB	60dB	63dB	63dB	64dB	63dB	66dB	66dB	67dB
	weight (approx) (kg)	BS (Sound proof type)	390		510		570		610		875	
		B (Bonnet type)	350		450		490		570		785	
		PC (Open canopy type)	300		430		485		545		695	
		A1 (Open type)	280		400		410		465		640	

4Pole, Three-phase

Model		TG-10T		TG-15T		TG-19T		TG-28T		TG-40T		TG-47T		
Frequency		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	
Generator	Output (kVA)	Stand-by	8.5	9.5	13.0	15.5	15.0	18.5	22.0	27.5	33.5	39.0	39.2	47.5
		Prime	7.2	8.7	11.5	14.0	13.5	17.0	20.0	25.0	30.5	35.0	35.6	43.1
	Type	Revolving-field type AC Generator (Brushless)												
	Excitation	Brushless, self-excitation												
	Rated speed (min ⁻¹)	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800	
	wire	4 wire												
	Voltage	AC 200~480 V required												
	Power factor	0.8												
	Class of insulation	F-class (both starter & roter)												
	Type of coupling	Direct coupling (single bearing)												
Voltage regulation system	AVR													
Voltage regulation	±1.5%													
Engine	Model (KUBOTA)		D1005		V1505		D1703		V2203		V3300		V3300T	
	Type		Vertical, Water-cooled, 4-Cycle Diesel											
	Cylinders		3		4		3		4		4		4	
	Displacement (ℓ)		1.001		1.498		1.647		2.197		3.318		3.318	
	Rated output	kW	7.2	8.7	11.1	13.4	13.6	16.5	18.4	23.7	26.8	32.3	31.6	38.9
		PS	9.8	11.8	15.1	18.2	18.5	22.4	25.0	32.2	36.4	43.9	43.0	52.9
	Fuel consumption [at full (70%) load] ℓ/h		2.2(1.5)	2.6(1.8)	3.3(2.3)	4.0(2.8)	3.9(2.7)	4.8(3.4)	5.4(3.8)	6.9(4.8)	7.7(5.4)	9.1(6.4)	8.9(6.2)	10.8(7.6)
	Fuel tank capacity (ℓ)		40		40		40		40		60		60	
	Starting system		Electric - 12V DC											
	Automatic safety shut down		Low oil pressure / High water temperature											
Set	Sound level [at 7m] Type-BS		59dB	62dB	60dB	63dB	60dB	64dB	63dB	66dB	66dB	67dB	65dB	66dB
	weight (approx) (kg)	BS (Sound proof type)	390		510		570		610		875		900	
		B (Bonnet type)	350		450		490		570		785		810	
		PC (Open canopy type)	300		430		485		544		695		740	
		A1 (Open type)	280		400		410		465		640		670	

DIMENSIONS 2Pole, Single-phase/Three-phase Unit=mm

Construction	Open canopy type[PC]				Sound proof type[BS]			
Single-phase	TKV-6.5S/TKV-7.5S	TKV-11S	TKV-15S	TKV-20S	TKV-6.5S/TKV-7.5S	TKV-11S	TKV-15S	TKV-20S
Three-phase	TKV-9T	TKV-14T	TKV-20T	TKV-27T	TKV-9T	TKV-14T	TKV-20T	TKV-27T
L	850	1000	1200	1250	1050	1250	1450	1600
W	620	620	650	650	600	640	720	720
H	690* (820)	690* (820)	850	850	690	690	870	870

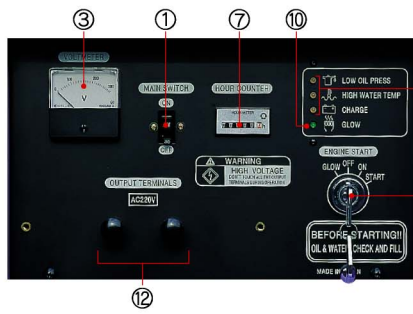
※with Muffler

DIMENSIONS 4Pole, Single-phase/Three-phase Unit=mm

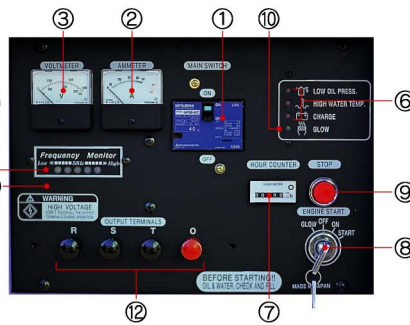
Construction	Bonnet type[B]						Sound proof type[BS]					
	Open canopy type[PC]						Open type[A1]					
	Bonnet type[B]						Sound proof type[BS]					
Single-phase	TG-7S	TG-12S	TG-14S	TG-21S	TG-30S	—	TG-7S	TG-12S	TG-14S	TG-21S	TG-30S	—
Three-phase	TG-10T	TG-15T	TG-19T	TG-28T	TG-40T	TG-47T	TG-10T	TG-15T	TG-19T	TG-28T	TG-40T	TG-47T
L	1200	1250	1250	1400	1650	1650	1400	1500	1500	1750	2100	2100
W	650	650	680	680	700	730	700	700	700	700	800	800
H	840	840	900	900	1000	1000	830	830	900	900	980	980
	Open canopy type[PC]						Open type[A1]					
Single-phase	TG-7S	TG-12S	TG-14S	TG-21S	TG-30S	—	TG-7S	TG-12S	TG-14S	TG-21S	TG-30S	—
Three-phase	TG-10T	TG-15T	TG-19T	TG-28T	TG-40T	TG-47	TG-10T	TG-15T	TG-19T	TG-28T	TG-40T	TG-47T
L	1200	1250	1250	1400	1650	1650	1100	1200	1200	1350	1550	1600
W	650	650	680	680	700	730	650	650	650	650	650	650
H	840	840	900	900	1000	1000	1040	1040	1040	1040	1215	1285

CONTROL PANEL

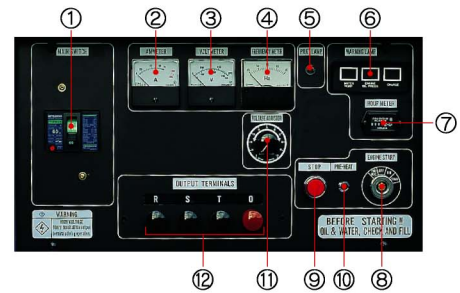
TKV-6.5S / 7.5S / 11S / 9T / 14T



TKV-15S / 20S / 20T / 27T
TG-7S / 12S / 10T / 15T



TG-14S / 21S / 30S
TG-19T / 28T / 40T / 47T



- ① Main Switch ② AC Ammeter ③ AC Voltmeter ④ Frequency Meter or monitor ⑤ Pilot Lamp ⑥ Warning Lamps
⑦ Hour Meter (Counter) ⑧ Engine Start Switch ⑨ Engine Stop Switch ⑩ Pre-heat Lamp ⑪ Voltage Adjuster ⑫ Output Terminals

Accessories

Parts	Model	6.5S / 7.5S / 11S	15S / 20S / 7S / 12S	14S / 21S	30S	9T / 14T	20T / 27T / 10T / 15T	19T / 28T	40T / 47T
Main switch		S	S	S	S	S	S	S	S
AC Ammeter		O	S	S	S	O	S	S	S
AC Voltmeter		S	S	S	S	S	S	S	S
Frequency meter		O	O	S	S	O	O	S	S
Frequency monitor		O	S	O	O	O	S	O	O
Pilot lamp		N	N	S	S	N	N	S	S
High water temperature lamp		S	S	S	S	S	S	S	S
Low lub. oil pressure lamp		S	S	S	S	S	S	S	S
Charge lamp		S	S	S	S	S	S	S	S
Hour meter(counter)		S	S	S	S	S	S	S	S
Engine stop switch		N	S	S	S	N	S	S	S
Pre-heat lamp(glow)		S	S	S	S	S	S	S	S
Voltage adjuster		N	O	S	S	N	O	S	S
Output terminals		S	S	S	S	S	S	S	S
Ammeter selector switch		N	N	N	N	N	N	O	O
Voltmeter selector switch		N	N	N	N	N	N	O	O
Wheel		S	S	S	N	S	S	S	N
High water temperature meter		N	N	N	N	N	N	N	N
Low lub. oil pressure meter		N	N	N	N	N	N	N	N
Tachometer		N	N	N	N	N	N	N	N

S Standard O Option N Not Available

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