


**WACKER  
NEUSON**
*all it takes!*

## 2017 T4F Mobile Generator Sizing Guide

Wacker Neuson Mobile (Tow) Diesel Gens	Main Brkr	POWER 240V 480V 3 phase 0.8 pf		POWER 208V 3 phase 0.8 pf		Motors: Inductive 3 phs, 0.8 pf 3 x Hots (L-L-L) AMPS				POWER Motor Start 240V & 480V 30% V-dip	Heaters & Events: Resistive 3-4 wire, 3 phs, 1.0 pf 3 x Hots (L-L-L or 3 x L-N) Balanced Load					Job Trailers & Tools: 1 phs, 1.0 pf 2 x Hots (L-L or 2 x L-N) Zig-Zag				POWER Motor Start 240V 30% V-dip
		AMPS	kW	kVA	kW	kVA	(Lo-WYE)		(HI-WYE)		kVA	(Lo-WYE) 120/208 V	POWER 120/208V kW=kVA	AMPS (Lo-WYE) 139/240 V	AMPS (HI-WYE) 277/480 V	POWER 240V/480V kW=kVA	AMPS		POWER (Zig-Zag) kW=kVA	kVA
							208 V	240 V	460 V	480 V							L1 - L3 240 V	2 x L-N 120 V		
G14 Prime	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	2 x 56	13.5	16.2	
G14 Std-By		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	59	2 x 59	14.2		
G25 Prime	70	19.5	24.4	16.7	20.9	58	58	29	29	68	54	19.5	47	23	19.5	67	2 x 67	16.1	40	
G25 Std-By		21.4	26.8	18.4	23.0	64	64	32	32		60	21.4	51	26	21.4	67	2 x 67	16.1		
G50 Prime	175	38	48	33	41	114	114	57	57	134	106	38	91	46	38	133	2 x 133	32	80	
G50 Std-By		42	53	36	45	125	125	63	63		116	42	100	50	42	133	2 x 133	32		
G70 Prime	210	58	72	50	63	174	174	87	87	202	161	58	139	70	58	183	2 x 183	44	110	
G70 Std-By		63	79	55	69	191	191	96	96		177	63	153	77	63	183	2 x 183	44		
G100 Prime	250	80	100	69	86	240	240	120	120	280	222	80	192	96	80	250	2 x 250	60	150	
G100 Std-By		88	110	76	95	264	264	132	132		244	88	211	106	88	250	2 x 250	60		
G130 Prime	384	104	120	90	113	313	313	156	156	336	289	104	249	125	104	291	2 x 291	70	175	
G130 Std-By		114	132	99	124	344	344	172	172		318	114	274	138	114	291	2 x 291	70		
G150 Prime	400	121	151	105	131	364	364	182	182	423	336	121	290	146	121	316	2 x 316	76	190	
G150 Std-By		130	166	115	144	400	400	200	200		370	130	319	160	130	316	2 x 316	76		
G180 Prime	500	143	179	124	155	430	430	215	215	501	397	143	343	172	143	358	2 x 425	86	215	
G180 Std-By		157	197	136	170	473	473	237	237		437	157	377	189	157	358	2 x 425	86		
																<----1 Phs, Unbalanced Low Wye (No Zig-Zag)---->				
																L1 - L3 208V & 240V AMPS	POWER 208V or 240V kW	2 x (L - N) 120V & 139V 2x AMPS	POWER 120V or 139V kW	
G230 Prime	700	184	230	159	199	553	553	277	277	644	511	184	441	221	184	553	115 or 132	2x 553	132 or 154	
G230 Std-By		202	253	175	219	608	608	305	305		562	202	485	243	202	608	126 or 146	2x 608	146 or 169	
G320 Prime	1000	256	320	222	277	769	769	384	384	896	711	256	614	308	256	769	160 or 184	2x 769	184 or 214	
G320 Std-By		269	336	232	290	806	806	402	402		745	269	643	323	269	806	167 or 193	2x 806	193 or 224	

1 & 3 phs, Motor Run & Start (code G) data.

WN Model = direct start, with 30% or less Volt Dip

Motor Starting Code Letters

Motor HP	Run kW	Run kVA	Start kVA	Gen Model	30% Load (kVA)	80% Load (kVA)
1.0	1.1	1.3	13	G14	4.1	10.8
2.0	1.9	2.2	19	G25	14.4	19.5
3.0	2.9	3.2	25	G25	14.4	19.5
5.0	4.6	5.2	35	G25	14.4	19.5
7.5	6.7	7.5	48	G25	14.4	19.5
10	8.8	9.8	62	G25	14.4	19.5
15	13.2	14.7	88	G50	14.4	38.4
20	16.7	18.6	112	G50	14.4	38.4

Motor HP	Run kW	Run kVA	Start kVA	Gen Model	30% Load (kVA)	80% Load (kVA)
25	21	23	139	G70	45	58
30	25	28	166	G70	45	58
40	33	37	221	G100	45	80
50	44	48	276	G100	45	80
60	50	55	336	G130	45	104
75	64	71	419	G150	45	121
100	85	94	552	G230	69	184
125	108	119	698	G320	96	256

Code Letter	Max Locked Rotor kVA per HP
A	0 - 3.15
B	3.15 - 3.55
C	3.55 - 4.00
D	4.00 - 4.50
E	4.50 - 5.00
F	5.00 - 5.60
G	5.60 - 6.30
H	6.30 - 7.10
J	7.10 - 8.00

NOTES:

- \* Std-By rating = 60 mins before O.C. Fault
- \* Main Breaker sized to 240V, 0.8 pf Amps.
- ECM: Over Current set at 240V & 480V ratings
- + 208V - 379V = 240V Amp rating.
- + 380V - 480V = 480V Amp rating.
- \* 3 phs kW used to calc. Amps for 3 phs, 1.0 pf Resistive loads. (i.e. 3 phs Elect. Heaters).
- \* G230 & G320 have a 2 position stator config connection board = High or Low WYE
- + ECM Amp Settings allow unbalanced 1 phs loads L1-L3 and L1-N + L3-N
- \* **Best practice: Load gens between 30% kVA & 80% kVA values (see motor table) to avoid wet stacking engine OR Over Current Fault.**

Best practice is to load generator between 30% load value & 80% Prime load values.

Values in RED are below 30% load value which may lead to engine Wet Stacking issues.

30% load value is from highest Power model with same engine displacement (i.e. all 4.5L models = G150 value)

Sizing above 80% Prime load value may cause Over Current Faults if additional loading occurs later.

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Wacker Neuson Model	G14	G25	G50	G70	G100	G130	G150	G180	G230	G320
Power, Prime (kW)	13.5	19.5	38	58	80	104	121	143	184	256
Sound @ 23' (7 m) Prime (dBA)	65	65	67.7	69.2	69.4	69.6	73.0	70.5	73.5	80.3
Engine Manufacturer	Kubota	Isuzu	Isuzu	Cummins	Cummins	Cummins	Cummins	Cummins	Cummins	Cummins
Engine Model	D1703-ME3BG	4LE2T	4LE2X	QSB5-G10	QSB5-G11	QSB5-G11	QSB5-G12	QSB7-G8	QSB7-G9	QSL9-G9
Hp, Max @ 1800 (Turbo, Cooler)	24.3 (N)	40 (T)	66 (T,CAC)	124 (T)	169 (T)	169 (T)	206 (T)	241 (T,CAC)	314 (T,CAC)	433 (T,CAC)
Displacement: Liters, (# Cyls.)	1.7 (3)	2.2 (4)	2.2 (4)	4.5 (4)	4.5 (4)	4.5 (4)	4.5 (4)	6.7 (6)	6.7 (6)	8.9 (6)
EPA Tier & Technology	T4i Flex em, idi	T4F ecm, egr,doc,edi	T4F ecm, egr,doc,edi	T4F ecm, egr,doc,edi, SCR w-DEF	T4F ecm, egr,doc,edi, SCR w-DEF	T4F ecm, egr,doc,edi, SCR w-DEF	T4F ecm, egr,doc,edi, SCR w-DEF	T4F ecm, egr,doc,edi, SCR w-DEF	T4F ecm, egr,doc,edi, SCR w-DEF	T4F ecm, egr,doc,edi, SCR w-DEF
EPA Family # (2017 DOM)	CKBXL02.2FCC	HSZXL02.2ZTB	HSZXL02.2ZTB	HCEXL04.5AAJ	HCEXL04.5AAJ	HCEXL04.5AAJ	HCEXL04.5AAJ	HCEXL06.7AAL	HCEXL06.7AAL	HCEXL08.9AAL
Fuel Use: 100% Prime (gph)	1.34	1.8	3.0	4.4	5.8	7.2	8.8	10.4	13.6	19.1
Fuel tank: Usable Vol. (gals)	21.4	50.7	72.9	173.8	173.8	173.8	173.8	284.2	355.5	380.4
Run hours (to Low Fuel Fault)										
25% (Best Practice = 30+%)	38.0	80.0	68.9	125.5	82.3	82.7	72.4	88.8	75.1	63.4
50% of Prime rating (Hrs)	24.6	56.1	48.3	75.0	53.3	45.7	39.5	50.7	47.3	36.9
75% of Prime rating (Hrs)	19.5	37.4	32.2	51.2	38.8	32.8	27.1	35.5	33.9	25.7
100% of Prime rating (Hrs)	16.0	28.2	24.3	39.6	30.1	24.1	19.8	27.3	26.1	19.9
DEF: 100% of Prime (Hrs)	NA	NA	NA	46.7	31.4	28.5	23.4	86.6	65.9	56
DEF: Usable Vol. (gals)	NA	NA	NA	8.2	8.2	8.2	8.2	35.6	35.6	35.6

### Generator Sizing: Rules of Thumb & Tips

- 30% Minimum Load Rule:** 30+% of Generator Engine Prime rating prevents engine "Wet Stacking" issues.  
View Engine load "real time" on controller screen & add heaters or lights to reach 30+% load  
Calculation Example: **45 kVA (36 kW)** is 30% minimum load (0.3 x 151 kVA) for the G150  
NOTE: The G150 is the highest Hp rating for the Cummins QSB5 4.5L engine.  
**Therefore...45 kVA (36 kW) min. load applies to the G70, G100, & G130 models as well.**
- 80% Maximum Recommended Load Rule:** Average Load = 80% or less of Generator Prime rating.  
This leaves room for unplanned additional loads and helps avoid an Over Current Fault from occurring.  
i.e. **121 kVA (97 kW)** is 80% maximum recommended load (0.8 x 151 kVA) for the G150.
- For **Multiple Motor Loads**...Start motors one at a time, largest to smallest.  
This will reduce the Motor Starting Surge load and thus reduce the Size of Generator required.
- For **very High Starting Surge** Motor loads..consider using a **Variable Frequency Drive (VFD)**.  
A VFD may reduce surge to 15% - 36%. i.e. 75 hp motor (coded G) = 419 sKVA direct start = a G150.  
A VFD reduces surge to 150 sKVA = G100! Money saved on a G100 is more than cost of the VFD.
- Consider an **External Fuel Tank** instead of a larger generator with a large fuel tank. Ask about external fuel tank hose **Quick Connects and a 3 Way Fuel Valve**. This is an Option on G25 - G320 models.  
OR ask about a larger **Extended Run Tank** Option available on G25 & G50 models.



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