BRIGGS&STRATTON ENERGY SOLUTIONS

QUICK REFERENCE GUIDE

Typical Liquid-Propane (LP) Gas (Vapor) Installation

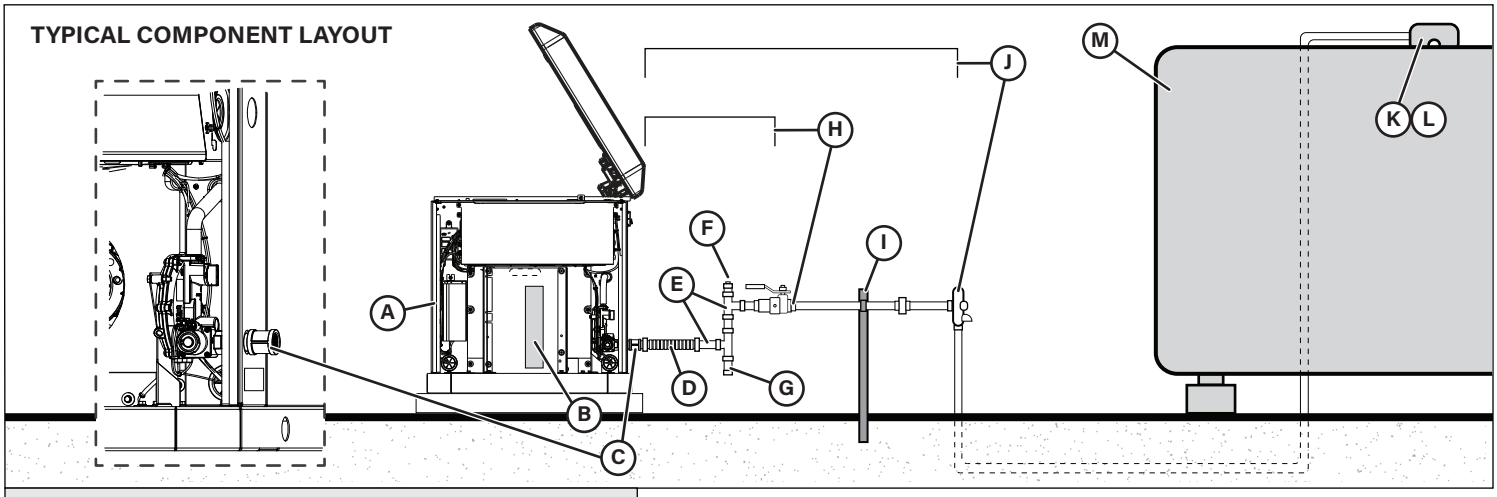
Illustration of components connecting a LP fuel tank to a Briggs & Stratton® PowerProtect™ standby generator.

Last Updated: 2025-12

IMPORTANT:

NOT ALL FUEL PIPING AND STEPS SHOWN. CONSULT *"GENERAL INFORMATION"* AND *"FUEL INSTALLATION PLAN"* SECTIONS IN THE INSTALLATION AND OPERATOR'S MANUALS FOR FULL GUIDANCE.

TYPICAL COMPONENT LAYOUT



KEY:

- **A** PowerProtect® Standby Generator
- **B** Fuel data decal
- **C** Fuel pipe nipple and coupling
- **D** Flexible fuel line (shipped loose)
- **E** Steel hard piping with double-T
- **F** Manometer Test Port
- **G** Sediment Trap (drip leg)
- **H** Full port shutoff with test port (within 6 ft from generator)
- **I** Reinforcing rod with clamp
- **J** Secondary fuel pressure regulator (minimum of 5 ft of piping after regulator before connecting to the generator is required)
- **K** Manual shutoff valve
- **L** Primary fuel pressure regulator
- **M** Fuel tank (sized large enough to provide required BTU/MJ for generator operating at FULL LOAD)

All items field supplied, excluding fuel pipe coupling and flexible fuel line
*LP fuel pressure must be **11 to 14 in WC** (Water Column; 279 to 356 mm)*

LIQUID PROPANE - FUEL CONSUMPTION

BTU/hr = ft³/hr x 2,500
Megajoules/hr = m³/hr x 93.15

		13kW	18kW	22kW	26kW
FULL LOAD	ft³/hr (m³/hr)	103 (3.0)	124 (3.6)	147 (4.3)	171 (4.9)
	gal/hr (L/hr)	2.9 (10.7)	3.5 (12.8)	4.1 (15.3)	4.7 (17.7)
	BTU/hr (MJ/hr)	258,000 (280)	310,000 (327)	368,000 (388)	427,000 (450)
HALF LOAD (1/2)	ft³/hr (m³/hr)	62 (1.8)	77 (2.2)	87 (2.5)	94 (2.7)
	gal/hr (L/hr)	1.7 (6.4)	2.2 (8.0)	2.4 (9.0)	2.6 (9.7)
	BTU/hr (MJ/hr)	154,000 (170)	193,000 (204)	217,000 (229)	235,000 (248)

LIQUID PROPANE - FUEL VAPORIZATION RATE CHARTS*

*BTU per hour Withdrawl - percentage of fuel (*values gathered from Flagro USA, Inc.® resource)*

	Temp °F	Temp °C	10%	20%	30%	40%	50%	60%	70%	80%	Temp °F	Temp °C
500 GALLON TANK	90°	32°	523,250	659,750	864,500	1,001,000	1,162,500	1,296,750	1,456,000	1,638,000	90°	32°
	80°	27°	465,920	614,250	773,500	910,000	1,055,600	1,183,000	1,351,350	1,487,850	80°	27°
	70°	21°	418,600	559,650	682,500	819,000	966,500	1,087,350	1,214,850	1,351,350	70°	21°
	60°	16°	374,920	486,850	605,150	728,000	841,750	910,000	1,078,350	1,192,100	60°	16°
	50°	10°	327,600	432,250	532,350	637,000	737,100	841,750	941,850	1,023,750	50°	10°
	40°	4°	273,000	364,000	455,000	546,000	637,000	728,000	805,350	841,750	40°	4°
	30°	-1°	227,500	304,850	373,100	455,000	523,250	609,700	682,500	750,750	30°	-1°
	20°	-10°	182,000	236,600	304,850	364,000	395,850	477,750	532,350	614,250	20°	-10°
	10°	-12°	135,500	182,000	227,500	273,000	295,750	364,000	386,750	455,000	10°	-12°
	0°	-18°	91,000	113,750	154,700	182,000	204,750	236,000	259,350	295,750	0°	-18°
	-10°	-23°	45,000	59,150	77,350	91,000	100,100	113,750	136,500	150,150	-10°	-23°
	-20°	-27°	22,750	29,125	38,250	45,150	50,000	56,250	68,200	75,100	-20°	-27°
1,000 GALLON TANK	90°	32°	1,055,600	1,342,250	1,615,250	1,911,000	2,184,000	2,457,000	2,730,000	3,003,000	90°	32°
	80°	27°	964,600	1,219,400	1,478,750	1,729,000	1,979,250	2,283,600	2,502,500	2,730,000	80°	27°
	70°	21°	864,500	1,092,000	1,319,500	1,547,000	1,774,500	2,002,000	2,229,500	2,457,050	70°	21°
	60°	16°	773,500	978,250	1,183,000	1,525,000	1,592,500	1,797,250	2,002,000	2,206,750	60°	16°
	50°	10°	682,500	855,400	1,023,750	1,325,000	1,378,750	1,569,750	1,751,750	1,933,750	50°	10°
	40°	4°	582,400	728,000	887,250	1,150,000	1,183,000	1,342,250	1,501,500	1,660,750	40°	4°
	30°	-1°	491,400	523,250	728,000	864,500	1,001,000	1,128,400	1,251,250	1,387,750	30°	-1°
	20°	-10°	391,300	477,350	491,500	682,500	796,250	896,350	1,000,100	1,092,000	20°	-10°
	10°	-12°	291,200	364,000	432,250	523,250	591,500	673,400	750,750	819,000	10°	-12°
	0°	-18°	200,200	236,600	295,750	341,250	395,850	455,000	500,500	546,000	0°	-18°
	-10°	-23°	109,200	127,400	145,600	182,000	204,750	227,500	250,250	273,000	-10°	-23°
	-20°	-27°	50,000	64,200	72,350	90,250	101,300	112,250	122,150	135,250	-20°	-27°

LIQUID PROPANE - FUEL PIPE SIZING

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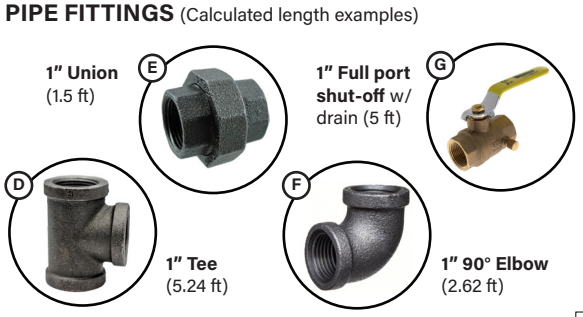
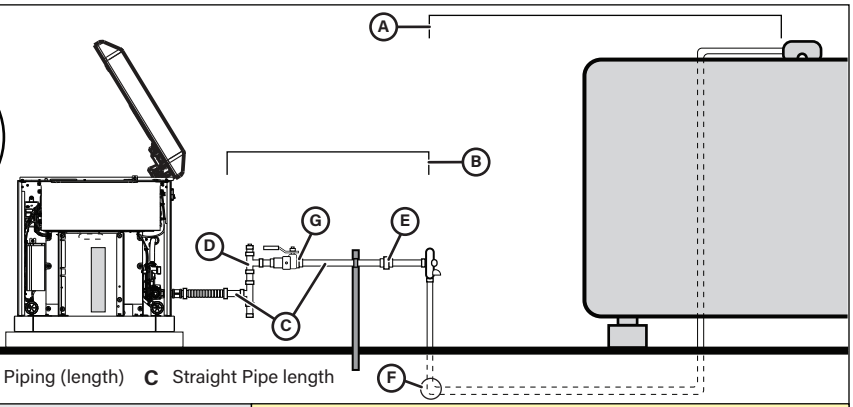
PIPE FITTINGS (Calculated length examples)





A First Stage Regulator Piping (length) **B** Second Stage Regulator Piping (length) **C** Straight Pipe length

Fuel Pipe Sizing Calculation:

Straight Pipe + Fittings = Total Length

Briggs & Stratton ***Fuel Theory*** training course:
"As a rule of thumb- ***add 5.0 feet per fitting.****"*
(total length from first stage regulator to generator, ends at flex line)

First Stage Regulator Piping

Nominal:	Pipe Size (inch) 1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
Length (feet)	Capacity of BTU per Gas per Hour								
	Inlet Pressure:		10.0 psi	Pressure Drop:		3.0 psi	Specific Gravity:		1.50
10	5,890,000	12,300,000	23,200,000	47,600,000	71,300,000	137,000,000	219,000,000	387,000,000	789,000,000
20	4,050,000	8,460,000	15,900,000	32,700,000	49,000,000	94,400,000	150,000,000	266,000,000	543,000,000
30	3,250,000	6,790,000	12,800,000	26,300,000	39,400,000	75,800,000	121,000,000	214,000,000	436,000,000
40	2,780,000	5,810,000	11,000,000	22,500,000	33,700,000	64,900,000	103,000,000	183,000,000	373,000,000
50	2,460,000	5,150,000	9,710,000	19,900,000	29,900,000	57,500,000	91,600,000	162,000,000	330,000,000
60	2,230,000	4,670,000	8,790,000	18,100,000	27,100,000	52,100,000	83,000,000	147,000,000	299,000,000
70	2,050,000	4,300,000	8,090,000	16,600,000	24,900,000	47,900,000	76,400,000	135,000,000	275,000,000
80	1,910,000	4,000,000	7,530,000	15,500,000	23,200,000	44,600,000	71,100,000	126,000,000	256,000,000
90	1,790,000	3,750,000	7,060,000	14,500,000	21,700,000	41,800,000	66,700,000	118,000,000	240,000,000
100	1,690,000	3,540,000	6,670,000	13,700,000	20,500,000	39,500,000	63,000,000	111,000,000	227,000,000
125	1,500,000	3,140,000	5,910,000	12,100,000	18,200,000	35,000,000	55,800,000	98,700,000	201,000,000
150	1,360,000	2,840,000	5,360,000	11,000,000	16,500,000	31,700,000	50,600,000	89,400,000	182,000,000
175	1,250,000	2,620,000	4,930,000	10,100,000	15,200,000	29,200,000	46,500,000	82,300,000	167,800,000
200	1,160,000	2,430,000	4,580,000	9,410,000	14,100,000	27,200,000	43,300,000	76,500,000	156,100,000
250	1,030,000	2,160,000	4,060,000	8,340,000	12,500,000	24,100,000	38,400,000	67,800,000	138,400,000
300	935,000	1,950,000	3,680,000	7,560,000	11,300,000	21,800,000	34,800,000	61,500,000	125,400,000

Second Stage Regulator Piping

Nominal:	Pipe Size (inch) 1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
Length (feet)	Capacity of BTU per Gas per Hour								
	Inlet Pressure:		10.0 psi	Pressure Drop:		3.0 psi	Specific Gravity:		1.50
10	275,000	567,000	1,071,000	2,205,000	3,307,000	6,221,000	10,140,000	17,990,000	35,710,000
20	189,000	393,000	732,000	1,496,000	2,299,000	4,331,000	7,046,000	12,510,000	25,520,000
30	152,000	315,000	590,000	1,212,000	1,858,000	3,465,000	5,695,000	10,110,000	20,620,000
40	129,000	267,000	504,000	1,039,000	1,559,000	2,992,000	4,778,000	8,481,000	17,300,000
50	114,000	237,000	448,000	913,000	1,417,000	2,646,000	4,343,000	7,708,000	15,730,000
60	103,000	217,000	409,000	834,000	1,275,000	2,394,000	3,908,000	6,936,000	14,150,000
80	89,000	185,000	346,000	724,000	1,088,000	2,047,000	3,329,000	5,908,000	12,050,000
100	78,000	162,000	307,000	630,000	976,000	1,811,000	2,991,000	5,309,000	10,830,000
125	69,000	146,000	275,000	567,000	866,000	1,606,000	2,654,000	4,711,000	9,613,000
150	63,000	132,000	252,000	511,000	787,000	1,496,000	2,412,000	4,281,000	8,736,000
200	54,000	112,000	209,000	439,000	665,000	1,282,000	2,083,000	3,618,000	7,382,000
250	48,000	100,000	185,000	390,000	590,000	1,138,000	1,808,000	3,210,000	6,549,000
300	43,000	90,000	168,000	353,000	534,000	1,030,000	1,637,000	2,905,000	5,927,000
350	40,000	83,000	155,000	325,000	491,000	947,000	1,505,000	2,671,000	5,450,000
400	37,000	77,000	144,000	303,000	458,000	887,000	1,404,000	2,492,000	5,084,000