PEXALGAS® GAS PIPING SYSTEM

Job Name _____
Location _____
Engineer _____
Contractor _____
Tag _____ **PO#** _____

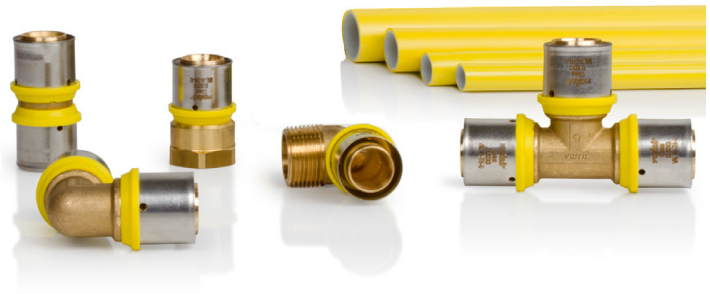
Certifications/Listings/Approvals

Jones Stephens Gas Piping System complies with the following codes:

- 2021, 2018, 2015, 2012 and 2009 International Fuel Gas Code® (IFGC)
- 2021, 2018, 2015, 2012 and 2009 International Residential Code® (IRC)
- 2021, 2018, 2015, 2012 and 2009 Uniform Plumbing Code® (UPC)

Jones Stephens Gas Piping System complies with the following standards as certified by the ICC-ES PMG-1588 certificate:

- ASTM F1281-2017 - Standard Specification for Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene (PEX-AL-PEX) Pressure Pipe
- ISO17484 - Specification for Multilayer pipe systems for indoor gas installations
- AS 4176.8-2010 Metal-Plastic Multilayer Pipes and Brass Fittings for Conveying Combustible Gases in Systems in Pressure up to 5 bar.



Features

The characteristics of the PEXALGAS® pipes make this product highly reliable and extremely easy to install.

Durability and mechanical strength
The mechanical characteristics of the PEXALGAS® pipes are such that the bursting pressure at room temperature (in relation to the pipe diameter) is more than 100 bar.

Smoothness of the inner layer
The extreme smoothness of the inner surface (roughness of Ra 275 µ in - 7 µm) significantly reduces pressure losses.

Flexibility and shape stability
The combination of crosslinked polyethylene and aluminum offers excellent flexibility features in bending. The PEXALGAS® pipe can be bent manually up to the 32 mm (1" eq.) diameter, with curvature radii of up to 2.5 times the diameter. The excellence of the PEXALGAS® pipes resides also in its extraordinary shape stability: once bent and installed, it maintains the configuration over time, allowing a reduction of the number of anchoring clips needed.

Thermal expansion
Thermal expansion is about 8 times lower than that of plastic pipes and is comparable to that of metal pipes. For instance, a 30 ft PEXALGAS® pipe subjected to a 90°F temperature difference will expand by approximately 0.46 in.

Lightweight
The pipes are extremely lightweight compared to metal pipes: the weight is 1/3 compared to that of a corresponding copper pipe, 1/10 compared to that of a corresponding steel pipe and 1/2 compared to corresponding regular CSST pipes.

Vibration reduction and acoustic insulation
Crosslinked polyethylene is very elastic and it absorbs vibrations, therefore it offers excellent resistance to movements and a good acoustic insulation.

Oxygen and gas barrier
The butt-welded aluminum layer represents a permanent oxygen and gas barrier, which aids in the avoidance of permeability of the oxygen from outside to inside and of the permeability of the gas from the inside to the outside at the same time.

Ecology
PEXALGAS® is manufactured with fully recyclable materials, and produced with energy-efficient processes in order to decrease impact on the environment and adopt "Green Building" sustainability principles.

Eq. = closest US equivalent fitting size

Technical Data

FEATURES	VALUES
Material	Crosslinked polyethylene internal layer PEX-B, internal bonding layer, intermediate aluminum layer, external bonding layer crosslinked polyethylene external layer PEX-B
Color	Yellow RAL 1023
Dimensions	16-32 mm (Eq. 3/8"- 1")
Application	Gas supply - Natural gas and Propane
Fittings	PEXALGAS® crimp fittings
Minimum Operating Temperature	-40°F (-40°C)
Maximum Operating Temperature	140°F (60°C)
Density at 73.4°F (23°C)	> 59.3 lb/ft³ (crosslinked polyethylene)
Softening Temperature	275°F (135°C)
Thermal Expansion Coefficient	0.00017 in / ft * °F (0.026 mm/m * °C)
Thermal conductivity at 68°F (20°F)	0.24 - 0.30 BTU/h·ft·°F (0.42 - 0.52 W/m-K)
Internal Roughness	Ra 275 µ in - 7 µm
Oxygen Permeability	0 oz/gal
Hallogen Levels	Halogen-free

PEXALGAS® Gas Pipe Features (diameters from 16 to 32 mm - Eq. 3/8" to 1")

FEATURES	UNIT				
External Diameter	[mm]	16 mm (Eq. 3/8")	20mm (Eq. 1/2")	26mm (Eq. 3/4")	32mm (Eq. 1")
Thickness	[mm]	2	2	3	3
Internal Diameter	[mm]	12	16	20	26
Weight	[lbs/ft]	7.60/100	10.48/100	19.22/100	26.21/100

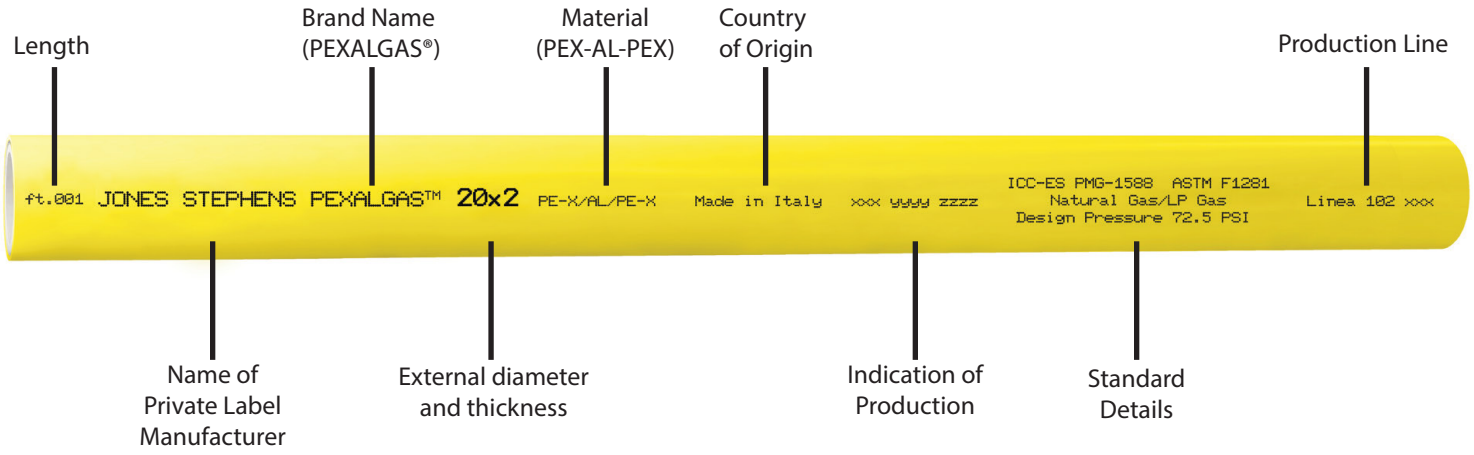
Brass Press Fittings For PEXALGAS®

DIAMETER	PEXALGAS® PRESSING TOOL	MANUAL PEXALGAS® PRESS TOOL
16 mm x 2 mm (Eq. 3/8")	PCJ16	PMC16202632
20 mm x 2 mm (Eq. 1/2")	PCJ20	PMC16202632
26 mm x 3 mm (Eq. 3/4")	PCJ26	PMC16202632
32 mm x 3 mm (Eq. 1")	PCJ32	PMC16202632

Eq. = closest US equivalent fitting size

Markings

The marking of the PEXALGAS® pipes contains all the information required by current regulations as well as all the data necessary to trace the product.



Sizing Tables

Jones Stephens sizing tables reflect the real pressure drop of the pipe and fittings. Sizing must be done in accordance with NFPA 54 (National Fuel Gas Code), using both the PIPE and the FITTINGS sizing tables: using the pressure losses from both the PIPE and the FITTINGS sizing tables allows a more accurate sizing of the system for your installation.

Natural Gas <2psi

Working Conditions		
Natural gas	-	-
Inlet Pressure	6" WC	-
Pressure drop	0.300	WC [inch]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft³/h]			
5	97	206	370	737
10	67	142	254	506
15	54	114	204	407
20	46	97	175	348
25	41	86	155	308
30	37	78	140	279
40	31	67	120	239
50	28	59	107	212
60	25	54	97	192
70	23	49	89	177
80	22	46	83	164
90	20	43	78	154
100	19	41	73	146
150	15	33	59	117
200	13	28	50	100
250	12	25	45	89
300	11	23	40	80
350	10	21	37	74
400	9	19	35	69
450	8	18	32	65
500	8	17	31	61

Natural Gas <2psi

Working Conditions		
Natural gas	-	-
Inlet Pressure	6-7" WC	-
Pressure drop	0.500	WC [inch]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft³/h]			
5	128	272	488	971
10	88	187	335	668
15	71	150	269	536
20	60	128	231	459
25	54	114	204	407
30	48	103	185	368
40	41	88	158	315
50	37	78	140	279
60	33	71	127	253
70	31	65	117	233
80	29	61	109	217
90	27	57	102	203
100	25	54	97	192
150	20	43	78	154
200	17	37	66	132
250	15	33	59	117
300	14	30	53	106
350	13	27	49	98
400	12	25	46	91
450	11	24	43	85
500	11	23	40	80

Natural Gas <2psi

Working Conditions		
Natural gas	-	-
Inlet Pressure	8" WC	-
Pressure drop	3.000	WC [inch]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft³/h]			
5	337	717	1287	2560
10	232	492	884	1760
15	186	395	710	1413
20	159	338	608	1209
25	141	300	539	1072
30	128	272	488	971
40	109	233	418	831
50	97	206	370	737
60	88	187	335	668
70	81	172	309	614
80	75	160	287	571
90	71	150	269	536
100	67	142	254	506
150	54	114	204	407
200	46	97	175	348
250	41	86	155	308
300	37	78	140	279
350	34	72	129	257
400	31	67	120	239
450	30	63	113	224
500	28	59	107	212

Natural Gas <2psi

Working Conditions		
Natural gas	-	-
Inlet Pressure	12-14" WC	-
Pressure drop	6.000	WC [inch]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft³/h]			
5	490	1043	1872	3725
10	337	717	1287	2560
15	271	575	1033	2056
20	232	492	884	1760
25	205	436	784	1560
30	186	395	710	1413
40	159	338	608	1209
50	141	300	539	1072
60	128	272	488	971
70	118	250	449	894
80	109	233	418	831
90	103	218	392	780
100	97	206	370	737
150	78	166	297	592
200	67	142	254	506
250	59	126	226	449
300	54	114	204	407
350	49	105	188	374
400	46	97	175	348
450	43	91	164	327
500	41	86	155	308

Natural Gas 2psi - 1psi

Working Conditions		
Natural gas	-	-
Inlet Pressure	2.000	[Psi]
Pressure Drop	1.000	[Psi]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft³/h]			
5	1180	2510	4506	8968
10	811	1725	3097	6164
15	651	1385	2487	4950
20	557	1186	2129	4236
25	494	1051	1887	3754
30	448	952	1709	3402
40	383	815	1463	2912
50	340	722	1297	2580
60	308	654	1175	2338
70	283	602	1081	2151
80	263	560	1006	2001
90	247	525	943	1878
100	233	496	891	1774
150	187	399	716	1424
200	160	341	612	1219
250	142	302	543	1080
300	129	274	492	979
350	118	252	453	901
400	110	234	421	838
450	103	220	395	786
500	98	208	373	742

Natural Gas 5psi - 3.5psi

Working Conditions		
Natural gas	-	-
Inlet Pressure	5.000	[Psi]
Pressure Drop	3.500	[Psi]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Natural Gas [ft³/h]			
5	2457	5225	9381	18670
10	1688	3591	6448	12832
15	1356	2884	5178	10304
20	1160	2468	4431	8819
25	1029	2187	3928	7816
30	932	1982	3559	7082
40	798	1696	3046	6061
50	707	1503	2699	5372
60	640	1362	2446	4867
70	589	1253	2250	4478
80	548	1166	2093	4166
90	514	1094	1964	3909
100	486	1033	1855	3692
150	390	830	1490	2965
200	334	710	1275	2538
250	296	629	1130	2249
300	268	570	1024	2038
350	247	525	942	1875
400	229	488	876	1744
450	215	458	822	1636
500	203	433	777	1546

LP Gas (Propane) <2psi

Working Conditions		
Propane	-	-
Inlet Pressure	11	WC [inch]
Pressure Drop	0.500	WC [inch]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Propane [ft³/h]			
5	208	443	795	1583
10	143	304	547	1088
15	115	244	439	874
20	98	209	376	748
25	87	185	333	663
30	79	168	302	600
40	68	144	258	514
50	60	127	229	455
60	54	115	207	413
70	50	106	191	380
80	46	99	177	353
90	44	93	167	331
100	41	88	157	313
150	33	70	126	251
200	28	60	108	215
250	25	53	96	191
300	23	48	87	173
350	21	44	80	159
400	19	41	74	148
450	18	39	70	139
500	17	37	66	131

LP Gas (Propane) 2psi -1 psi

Working Conditions		
Propane	-	-
Inlet Pressure	2.000	[Psi]
Pressure Drop	1.000	[Psi]

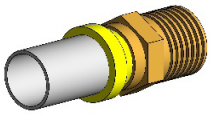
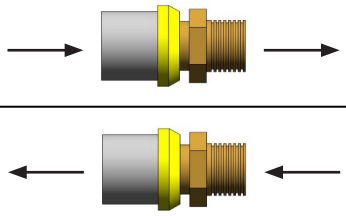
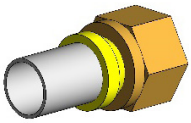
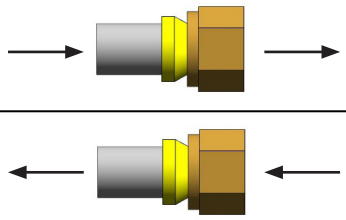
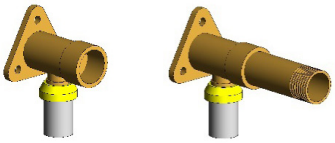
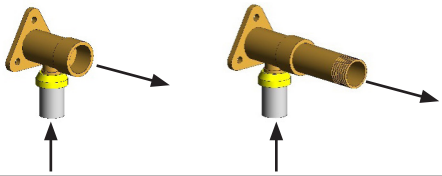
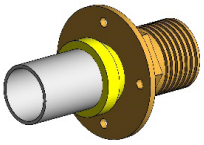
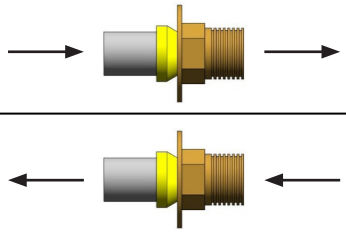
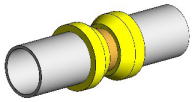
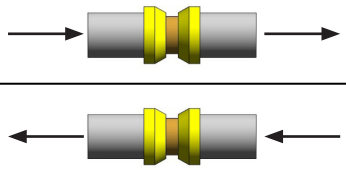
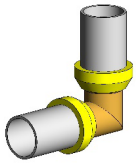
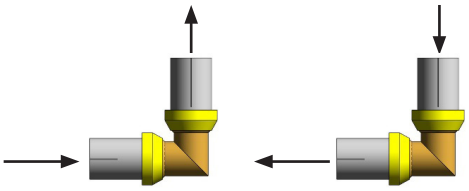
Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Propane [ft³/h]			
5	1915	4072	7312	14551
10	1316	2799	5025	10001
15	1057	2247	4035	8031
20	904	1924	3454	6873
25	802	1705	3061	6092
30	726	1545	2774	5520
40	622	1322	2374	4724
50	551	1172	2104	4187
60	499	1062	1906	3794
70	459	977	1754	3490
80	427	909	1631	3247
90	401	853	1531	3046
100	379	805	1446	2878
150	304	647	1161	2311
200	260	553	994	1978
250	231	491	881	1753
300	209	444	798	1588
350	192	409	734	1461
400	179	380	683	1359
450	168	357	641	1275
500	159	337	605	1205

LP Gas (Propane) 5psi -3.5 psi

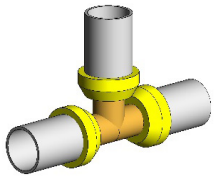
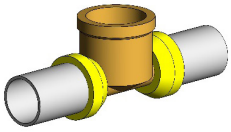
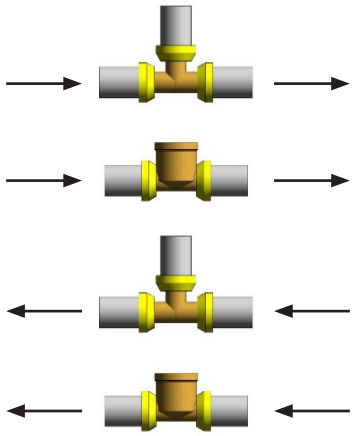
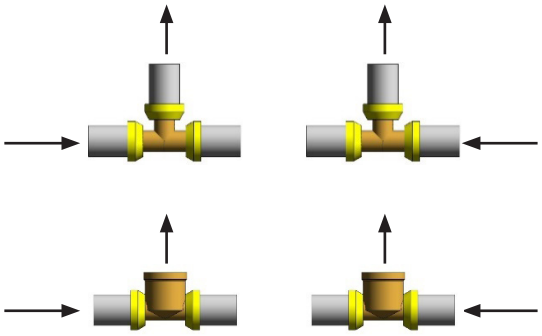
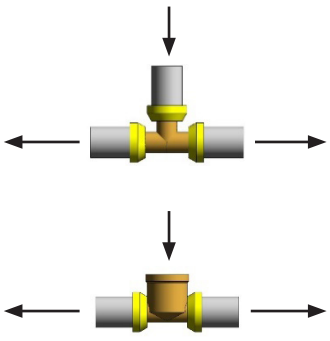
Working Conditions		
Propane	-	-
Inlet Pressure	5.000	[Psi]
Pressure Drop	3.500	[Psi]

Imperial diam.	3/8"	1/2"	3/4"	1"
Pipe [mm]	16	20	26	32
Length [ft]	Flow Rate Propane [ft³/h]			
5	3986	8477	15221	30292
10	2740	5826	10462	20820
15	2200	4679	8401	16719
20	1883	4004	7190	14309
25	1669	3549	6373	12682
30	1512	3216	5774	11491
40	1294	2752	4942	9835
50	1147	2439	4380	8716
60	1039	2210	3968	7898
70	956	2033	3651	7266
80	889	1892	3396	6759
90	835	1775	3187	6342
100	788	1677	3010	5991
150	633	1346	2417	4811
200	542	1152	2069	4117
250	480	1021	1834	3649
300	435	925	1661	3306
350	400	851	1528	3042
400	372	792	1422	2830
450	349	743	1334	2655
500	330	702	1260	2508

FITTINGS PRESSURE LOSSES IN EQUIVALENT PIPE LENGTH (ft)

FITTING	FLOWRATE DIRECTION	VALUE
NPT Male Couplings 		3.28
NPT Female Couplings 		3.28
Wingback Elbows 		3.28
Floor/Wall Mountings 		3.28
Couplings 		1.03
Crimp & NPT Elbows 		2.26

FITTINGS PRESSURE LOSSES IN EQUIVALENT PIPE LENGTH (ft)

FITTING	FLOWRATE DIRECTION	VALUE
Crimp & NPT tees  		**1.64**
		**4.51**
		**4.92**