

CLOVER

燃气燃烧器 Gas Burner

◆产品概述 Products Summarization

BT系列燃烧器是采用当今世界先进的燃烧技术，参照EN676标准和国家标准制造的机电一体化全自动燃气燃烧器，广泛用于蒸汽锅炉、热水锅炉、导热油炉、直燃式溴化锂空调机组、热发生器及其它工业加热、烘干炉设备。

The BT series burners; the Mechanical & Electrical Integration gas burners which extensive use the steam boilers, heating water boilers, heat conducting oil stove, direct-fired generator, lithium bromide air-conditioning plant and other industrial heating and parch stove equipments; are designed by advanced combustion technology in the world and consult the EN676 Standard and the national interrelated standard.

◆性能特点 Performance feature

- 强制通风一体式
- 全自动操作
- 手动一段火/二段火转换开关
- 燃气泄漏自动检测（选配），双重电磁阀组（单段为单阀）
- 燃气压力保护，保证燃气超高压及超低压时停止燃烧器的运行
- 最低空气压力开关，保证当无足够的助燃空气时停止燃烧器的运行
- 点火前对炉膛进行预吹扫
- 安全的火焰监测系统
- 燃烧器停机时，伺服马达自动关闭风门（单段为手动调节风门）
- 伺服马达带动可变凸轮控制一段火和二段火进风量的风门挡板和燃料量的燃气蝶阀（平滑及比例式带此功能）
- 燃烧器壳体与燃烧筒较链连接，安装、调试及保养方便
- 燃烧器机体轻巧，安装简易，用户只需接通电源及气源即可使用
- 运转噪音声小，烟气排放符合环保要求
- 可适用不同类别的燃气

◆IP40电气保护等级

*AI-in-one Blower.

*Auto-operation

*Manual switch for one stage/two stage

*Gas auto-leakage(option) double solenoid valve (single valve for one stage)

*Protect for the gas pressure ensure to stop burner running when the gas pressure is too high or too low.

*Protect for the air pressure ensure to stop burner running when the air pressure is too low.

*Sweep the tube before ignition.

*Safety flame monitors system.

*The servo motor will close the air gate when stop the burner. (manual adjust the air-gate for one stage)

*The servo motor moves the cam to control the air gate and the gas butterfly valve which adjusting the consumption of the air and gas. (For Modulating & Sliding series)

*Convenient for the installation, commissioning and maintenance because the gemel connection between the burners body and tube

*The burner is easy to install for the portable body. The client just connects the power supply and gas supply then can start the burner.

◆操作模式 Operation

*Can suitable different kind of fuel gas.

BT...GF collocate Electric One-Off made is IP40.

BT...GRF HI-LOW with servo motor
BT...G S/M Sliding/Modulating with servo motor

手动风门-单段火
伺服马达控制-两段火
伺服马达控制-平滑/比例调节式

◆单段 One-Stage



技术数据 / Technical data

型号 Model	最大输出 Output max.		最小输出 Output min.		供气压力 Gas pressure gas mbar	电源 Power supply V	马达 Motor KW	包装尺寸 Packing Size L×P×H mm	重量 weight Kg
	KW	Kcal/h×10 ³	KW	Kcal/h×10 ³					
BT3GF	41.9	3.6	16.3	1.4	20-200	230V/50Hz	0.09	490×300×320	12
BT6GF	56.3	5	30.6	2.5	20-200		0.11	490×300×320	12
BT11GF	99	8.5	48.8	4.2	20-200		0.11	490×300×320	13
BT17GF	168	14.5	69	6	20-200		0.15	570×455×340	15
BT20GF	200	17.2	50	5	20-200		0.37	840×530×450	28
BT30GF	300	25.9	60	5.2	20-200		0.37	940×540×450	42.5
BT35GF	358	30.9	90	7.8	20-200	380V/50Hz	0.37	990×540×450	43
BT50GF	596	50	169	14.6	30-300		0.37	900×650×450	75.5
BT60GF	738	60	248	21.5	30-300		1.1	1000×760×550	106

◆两段 Two-Stage



技术数据 / Technical data

型号 Model	最大输出 Output max.		最小输出 Output min.		供气压力 Gas pressure gas mbar	电源 Power supply V	马达 Motor KW	包装尺寸 Packing Size L×P×H mm	重量 weight Kg
	KW	Kcal/h×10 ³	KW	Kcal/h×10 ³					
BT17GRF	168	14.5	69	6	20-200	230V/50Hz	0.15	580×460×340	15
BT20GRF	200	17.2	50	5	20-200		0.37	840×530×450	27
BT30GRF	300	25.9	60	5.2	20-200		0.37	940×540×450	43
BT35GRF	358	30.9	90	7.8	20-200		0.37	990×540×450	46
BT40GRF	425	36.6	185	16	30-300		0.37	900×650×450	76
BT60GRF	738	63.6	248	21.4	30-300		1.1	1000×760×550	108
BT100GRF	995	85.8	280	24	30-300	380V/50Hz	1.1	1000×760×550	110
BT120GRF	1200	103.5	350	30	30-300		1.5	1050×850×580	120
BT150GRF	1428	123	414	35.7	30-300		2.2	1150×850×650	144
BT200GRF	2000	175	490	42	40-300		3.0	1400×1080×800	306
BT250GRF	2500	220	590	50.9	40-300		7.5	1400×1080×800	310
BT300GRF	2982	257	657	57	40-300		7.5	1500×1080×800	324
BT350GRF	3500	300	924	80	40-300		7.5	1500×1080×800	330
BT400GRF	3950	340	924	80	40-300		9.0	1500×1080×800	350

◆平滑/比例式 Sliding/Modulating



技术数据 / Technical data

型号 Model	最大输出 Output max.		最小输出 Output min.		供气压力 Gas pressure gas	电源 Power supply	马达 Motor	包装尺寸 Packing Size	重量 weight
	KW	Kcal/h×10 ⁴	KW	Kcal/h×10 ⁴					
BT17G S/M	168	14.5	50	5	20-200	230V/50Hz	0.15	570×465×340	18
BT35G S/M	340	30	60	6	20-200		0.37	990×550×450	50
BT40G S/M	425	36.5	185	16	20-300		0.37	900×650×450	80
BT60G S/M	738	63.5	248	21.4	30-300	380V/50Hz	1.1	1000×760×550	118
BT100G S/M	995	85	280	24	30-300		1.1	1000×760×550	120
BT120G S/M	1200	105	350	30	30-300		1.5	1050×850×580	130
BT150G S/M	1428	123	414	35.7	30-300		2.2	1150×850×650	154
BT200G S/M	2000	172.5	490	42.2	40-300		3.0	1400×1080×800	320
BT250G S/M	2500	215.5	590	50.8	40-300		7.5	1400×1080×800	330
BT350G S/M	3500	300	924	79.7	40-300		7.5	1500×1080×800	340
BT400G S/M	3800	327	924	79.7	40-300		9.0	1500×1080×800	360

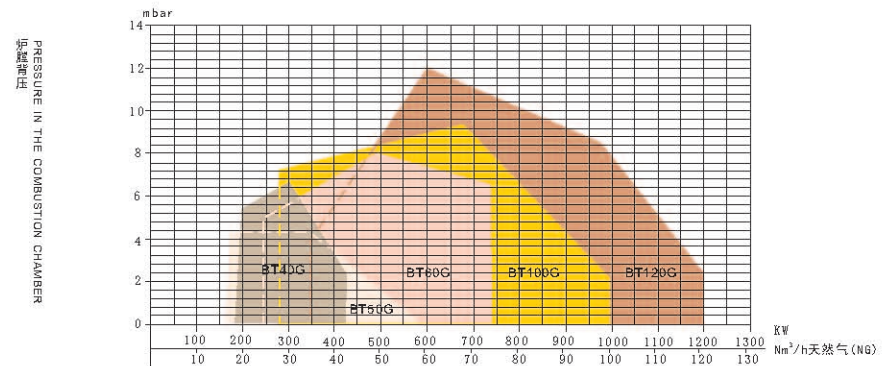
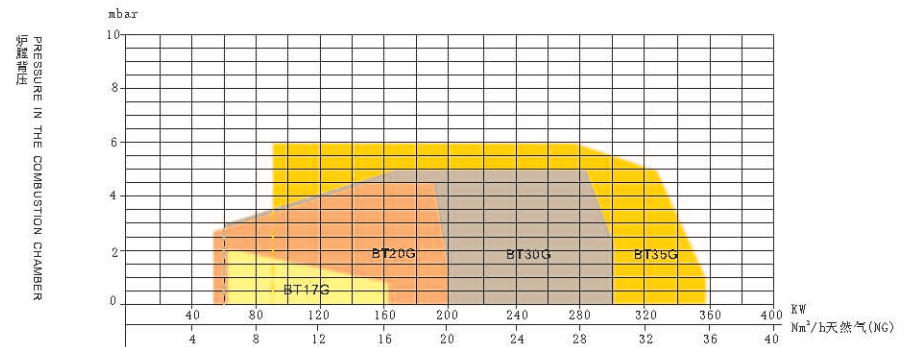
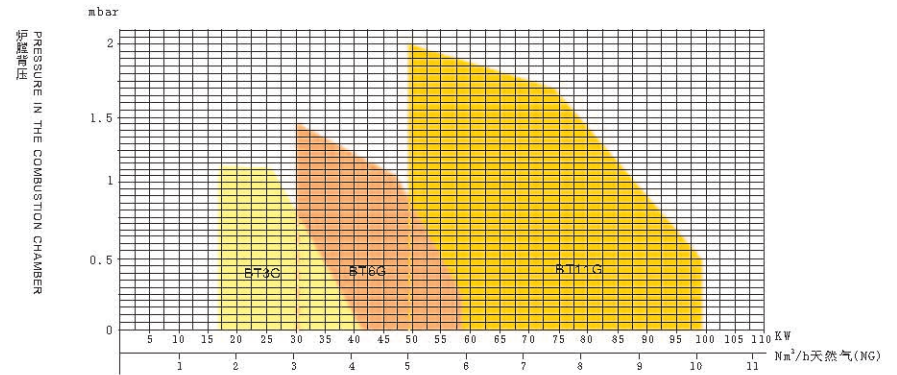


技术数据 / Technical data

型号 Model	最大输出 Output max.		最小输出 Output min.		供气压力 Gas pressure gas	电源 Power supply	马达 Motor	包装尺寸 Packing Size	重量 weight
	KW	Kcal/h×10 ⁴	KW	Kcal/h×10 ⁴					
BT450G S/M	4000	345	550	48	40-500	380/50Hz	9	1700×1100×850	228
BT550G S/M	5400	465	600	52	50-500		13.5	1800×1250×850	230
BT650G S/M	7400	638	800	69	100-500		18.5	2200×1300×1300	330
BT1000G S/M	10500	905	1000	86	100-500		22	2200×1300×1300	335

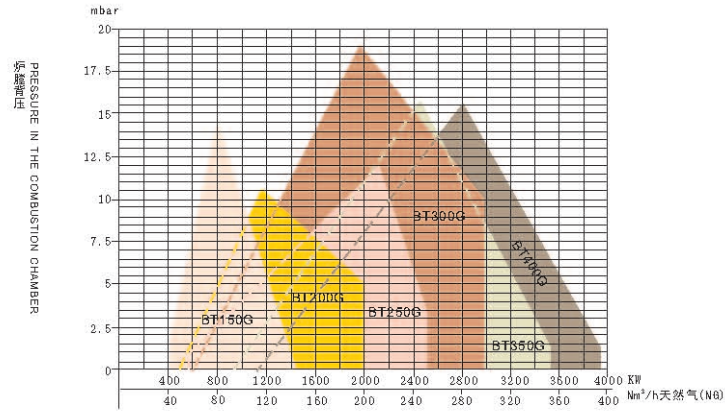
注：平滑式：采用伺服马达及可变凸轮以供微调比例蝶阀系统。 Sliding: the servo motor moves the cam to control the butterfly valve.
比例调节型号：配有数码设定点及实时数值显示的PID调节控制器。 Modulating: install PID adjusting controller with digital display.
Fuel: Natural Gas (L.C.V 8570kcal/Nm³) 燃料：天然气
LPG (L.C.V 22260kcal/Nm³) 燃料：液化气

◆单/两段式工作范围 One/two stage curve diagram

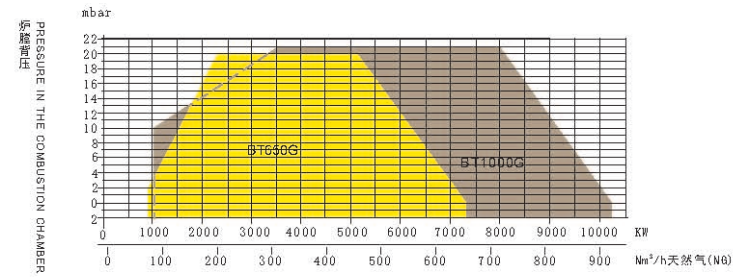
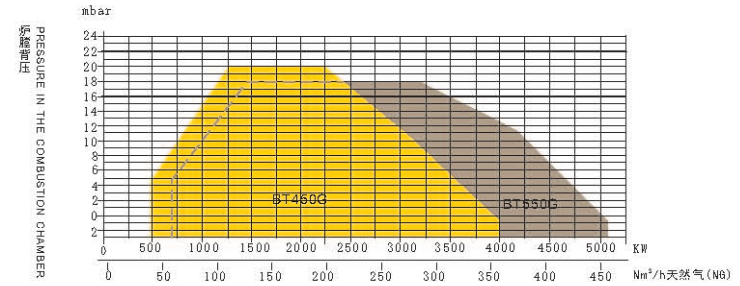
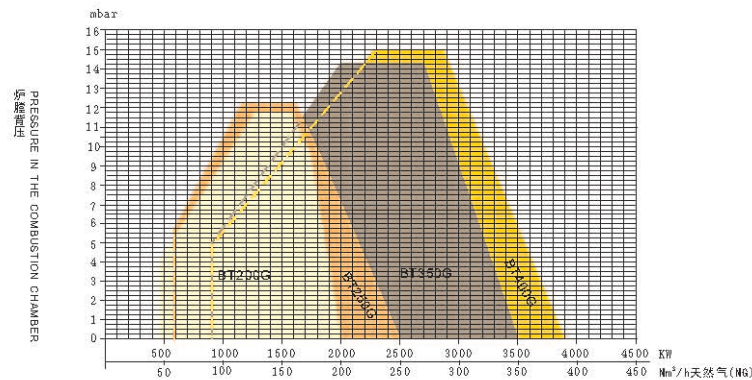
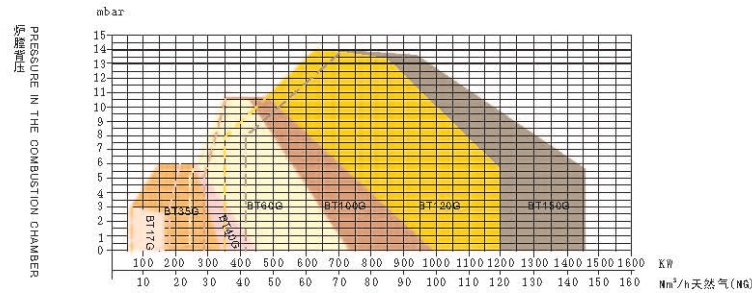


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◆单/两段式工作范围 One/two stage curve diagram

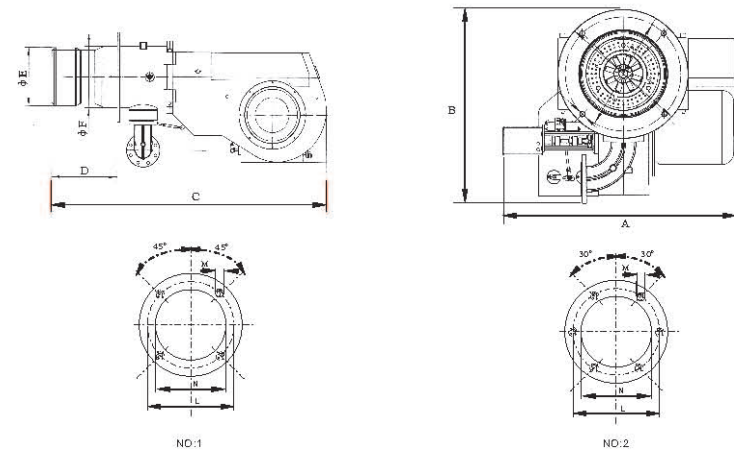


◆平滑/比例式工作范围 Sliding/Modulating curve diagram



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◆整体尺寸 Overall dimensions

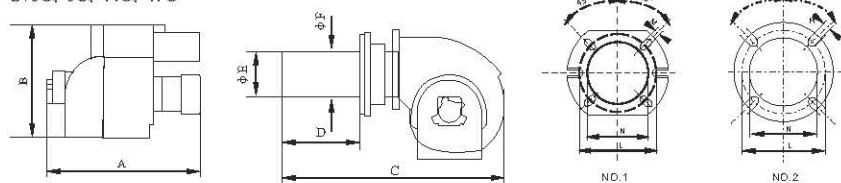


型号 Model	A 宽 Width mm	B 高 Height mm	C 长 Length mm	D 筒长 Length of blast tube mm	E 头 Head diameter mm	F 筒 Cylindrical diameter mm	L L安装孔尺寸 mm The size between the installation holes	N mm	M	NO.
BT450GS/M	962	740	1540	335	290	320	400	330	M16	1
BT550GS/M	965	780	1660	399	350	380	480	390	M16	1
BT650GS/M	1125	1075	1645	430	480	470	550	500	M16	2
BT1000GS/M	1230	1094	1670	430	480	470	550	500	M16	2

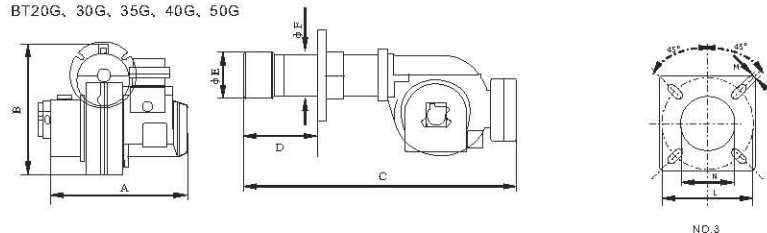
*N值为炉壁开口 *N means the size of the hole on the chamber.

◆整体尺寸 Overall dimensions

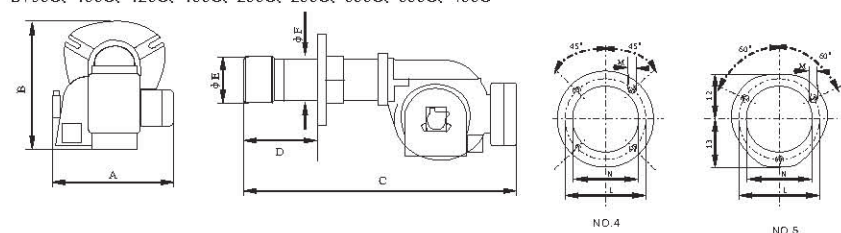
BT3G、6G、11G、17G



BT20G、30G、35G、40G、50G



BT60G、100G、120G、150G、200G、250G、300G、350G、400G



型号 Model	A 宽 mm	B 高 mm	C 长 mm	D 筒长 mm	E 头 mm	F 筒 mm	L安装孔尺寸 mm The size between the installation holes		N Φmm	M	NO.
							最小min	最大max			
BT3G	245	270	410	50-105	90	90	130	155	95	M8	1
BT6G	245	271.5	410	50-105	90	90	130	155	100	M8	1
BT11G	245	271.5	475	90-150	108	90	130	155	120	M8	1
BT17G	350	350	650	80-200	108	95	130	155	120	M8	2
BT20G	475	365	740	120-280	135	114	170	206	140	M10	3
BT30G	475	365	835	170-300	135	135	200	244	145	M12	3
BT35G	475	365	925	130-350	155	135	200	244	165	M12	3
BT40G	470	397	1100	150-330	155	135	200	244	165	M12	3
BT50G	475	397	1150	150-350	155	135	200	244	165	M12	3
*BT60G	560	485	1270	170-400	205	160	233	276	190	M12	4
*BT100G	560	485	1330	240-460	230	160	233	276	190	M12	4
*BT120G	590	500	1400	220-440	270	195	276	220	M16	4	
*BT150G	655	587	1500	220-440	270	195	276	220	M16	4	
*BT200G	830	730	1850	300-600	320	220	339	240	M16	4	
*BT250G	875	730	1850	300-600	320	220	339	240	M16	4	
BT250TG	875	730	1850	275-450	356	275	480	510	390	M20	5
BT300G	875	757	1850	275-450	356	275	480	510	390	M20	5
BT350G	880	757	1850	275-450	356	275	480	510	390	M20	5
BT400G	880	760	1850	275-450	356	275	480	510	390	M20	5

N值为炉膛开口 N'means the size of the hole in the chamber.

*当燃烧头E值大于N'值时, 如果该锅炉没有炉门的情况下, 请开大于燃烧头E'的值, 并且需要增加一块过度安装法兰来联接, 详情请咨询销售办公室。

When'E'is greater than'N' besides without furnace door on this boiler, please open the hole'N'greater than 'E'and need one extravagant flange to install the burner.

Contact sell office if need any more details.

◆燃煤气燃烧器 Coal gas burner



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型号 Model	控制方式 Control type	燃气流量 Consumption Nm ³ /h		输出 Output ×10 ⁴ Kcal		功率 power KW		燃气热值 Calorific value Kcal/Nm ³	燃气压力 Gas pressure mmH ₂ O	电源 Power supply V	电机功率 Motor power KW
		最少 min	最大 max	最少 min	最大 max	最少 min	最大 max				
BT11TGF	单段 One-stage	10	23	4.1	9.3	48	109	3500	250	230V 50Hz	0.11
BT17TGF		15	36	5.9	12.9	69	150	3500	250	230V 50Hz	0.15
BT30TGF		21	45	8.7	18	101	208.8	3500	250	230V 50Hz	0.37
BT40TGF		33	70	16	27.5	186	320	3500	250	380V 50Hz	0.37
BT60TGF	39	99	15.8	40	184	465	3500	250	380V 50Hz	1.1	
BT30TGRF	双段 Two-stage	21	45	8.7	18	101	208.8	3500	250	230V 50Hz	0.37
BT35TGRF		27	60	11	24	128	279	3500	250	230V 50Hz	0.37
BT40TGRF		33	70	16	27.5	186	320	3500	250	380V 50Hz	0.37
BT60TGRF		39	99	15.8	40	184	465	3500	250	380V 50Hz	1.1
BT100TGRF		75	160	30.6	65	355	755	3500	150	380V 50Hz	1.1
BT150TGRF		137	300	56.3	125	653	1451	3500	150	380V 50Hz	2.2
BT250TGRF		151	500	61.6	203.6	715	2362	3500	150	380V 50Hz	7.5

*燃烧器实际出力与炉膛背压以及燃气成份、热值、管道压力有关系;

The actual output of the burner are related to the pressure to the wall of the boiler, element of the fuel, calorific value and the pressure of the pipe.

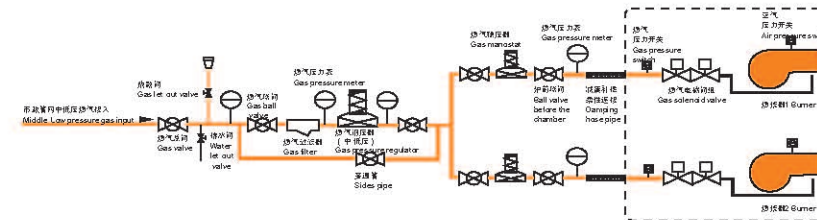
可提供更低热值、更低燃气压力以及各种燃料、各种控制方式的燃气燃烧器, Can supply lower calorific value, lower gas pressure and kinds of fuels gas burners.

此表格仅作参考, 不详细请咨询销售办公室。 This table just for your reference, please contact sell office if need more details.

◆燃气燃烧器供应参考图例 Gas burner drawing

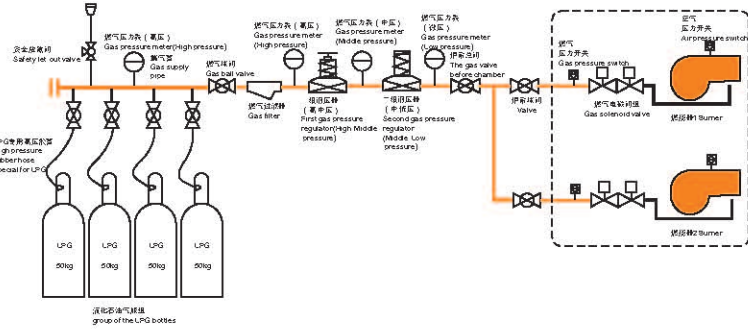
市政燃气(低压管网)供气系统
Municipal Low pressure gas supply system (low pressure gas pipeline)

(适用于中小型燃气燃烧器, 使用中一低压调压器或稳压器)
Suitable for middle-smaller model gas burner



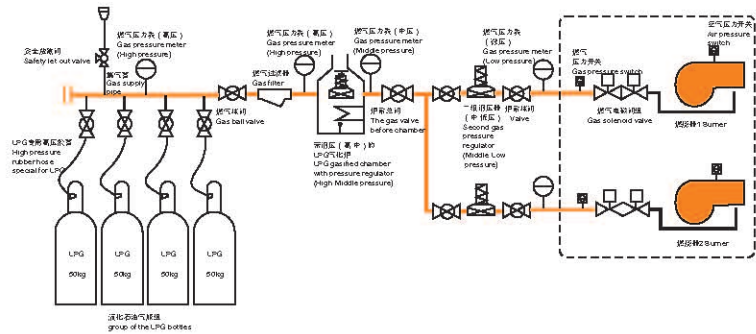
LPG液化石油气瓶组直接供气系统
The group of LPG bottles supply the fuel directly system

(适用于小型燃气燃烧器, 使用高、中压+中-低压两级调压器)
Suitable for smaller model gas burner, two grade pressure regulator of High-Low pressure & Middle-Low pressure.



LPG液化石油气瓶组气化供气系统
The group of the LPG bottles gasifying supply fuel system

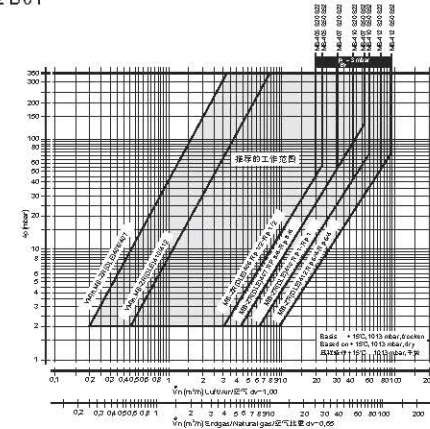
(带一级调压的气化炉+二级调压器的中小型气化站工艺)
With first grad pressure regulating gasification furnace+second grad pressure regulating SMB gasification



- 说明 Remarks:
- 1)上述系统仅供参考, 实际系统应由有资质的设计单位和燃气公司进行设计和施工安装, 并由当地燃气公司或主管机构负责开通供气。
The above system drawing just for your reference, the actual supply system should be designed and installed by credible fuel company, and the fuel supply should be putted into operation by local fuel company or responsible organization.
 - 2)用户安装该系统应遵守当地安全规范, 系统中各部件应使用燃气专用部件, 并注意各部件的使用压力应符合使用要求并有一定安全裕量。
The client install the fuel pipeline system should comply with the local safety regulation. Each parts of this system should use the special gas components. And the parts working pressure should agree with the use demands.
 - 3)为保证该供气系统可靠, 压力表应尽可能靠近实际压力, 尤其是调压器气入口应取用压力表。
In order to ensure the installation direct viewing and make the pressure meter close to the actual pressure as far as possible, especially for the gas input of the gas burner should use more manometer.
 - 4)应保证充足的燃气流量和适当的压力, 必须保证该燃烧器的燃气压力不低于该燃气燃烧器的最高承压能力。在寒冷地区应用时应取一定的防止燃气冷却水结冰等预防措施。
Ensure the enough gas consumption and suitable pressure that to ensure the supply gas pressure less than the max. pressure of the solenoid valve in the final use, should defend the low temperature to prevent the gas condense water strong.

燃气阀组在已调节状态下的体积流量-压力表-特征线, 带有精密过滤器
The volume consumption-pressure meter-feature drawing under the condition of the gas valve adjusting, with precision filter

MB-ZRD (LE) 405-412 B01



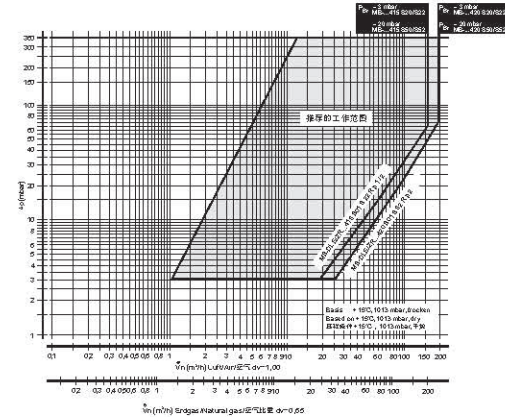
$$f = \sqrt{\frac{\text{Dichte Luft}}{\text{Dichte des verwendeten Gases}}}$$

Spec. weight air / 空气比重
Spec. weight of gas used / 所用燃气比重

气体种类	比重 [kg/m³]	dv	F
天然气	0.81	0.65	1.24
城市煤气	0.58	0.47	1.48
液化气	2.08	1.67	0.77
空气	1.24	1.00	1.00

Verwendetes Gasgas used / 所用燃气的燃气 / Luft/Luft 空气 X f

MB-ZRD (LE) 415-420 B01



$$f = \sqrt{\frac{\text{Dichte Luft}}{\text{Dichte des verwendeten Gases}}}$$

Spec. weight air / 空气比重
Spec. weight of gas used / 所用燃气比重

气体种类	比重 [kg/m³]	dv	F
天然气	0.81	0.65	1.24
城市煤气	0.58	0.47	1.48
液化气	2.08	1.67	0.77
空气	1.24	1.00	1.00

Verwendetes Gasgas used / 所用燃气的燃气 / Luft/Luft 空气 X f