400MJ AUTO DUAL STAGE REGULATOR (6060543)

DESCRIPTION

Double-stage low-pressure regulator

2 stage LPG regulator. Includes plastic bracket and screws to fit. Model 528B.

Often used for domestic houses connected to 2 x 45kg LPG cylinders.

HOW IT WORKS

LPG gas enters the regulator through a pigtail from a gas cylinder. The gas enters the regulator at a pressure of about 700kPa to 1300kPa from a 45kg cylinder. The actual pressure depends on the ambient temperature, how full the cylinder is and the volume of the gas cylinder. The first stage of the regulator reduces the pressure to about 70kPa (no matter what the entering pressure was) and then the second stage reduces the temperature again to a nominal 2.75kPa.

AUTO CHANGEOVER

2 cylinders and 2 pigtails must always be connected. Both cylinders should be turned on. The cylinder that the white dial is pointing to is the cylinder in use – it will be green when on and in use. When this indicator turns red, it means the cylinder is empty and should be replaced. When this happens, there is no pause in gas usage as the internal valve has automatically switched over and is pulling gas from the other cylinder. The dial can now be manually turned to point to the cylinder that is in use and the indicator will turn green again.

The regulator should be checked regularly (monthly – depending on usage) so that when the red indicator is observed, the gas bottle can be replaced quickly to ensure both bottles are not run empty.

ADJUSTING PRESSURE

The outlet pressure of the second stage can be adjusted from about 2.6kPa to 3.2kPa depending on the flow rate. To adjust the pressure, unscrew the plastic cap and use a large flat head screwdriver, turn the knob accordingly for more or less pressure.

TESTING OUTLET PRESSURE

A test point can be connected to the outlet of the regulator to check the pressure. To test, ensure the line has no leaks, turn all appliances on, or at least 10% of the regulator capacity (40MJ flow for the 400MJ regulator) and connect a manometer to the test point to ensure the pressure is 2.75kPa.

SAFETY PRESSURE RELIEF VALVE

Bromic regulators are approved to UL144. According to section 15.3, we have a type 2 pressure relief valve instead of an OPSO. This relieves pressure through the vent, so the pressure downstream doesn't exceed 14kPa.

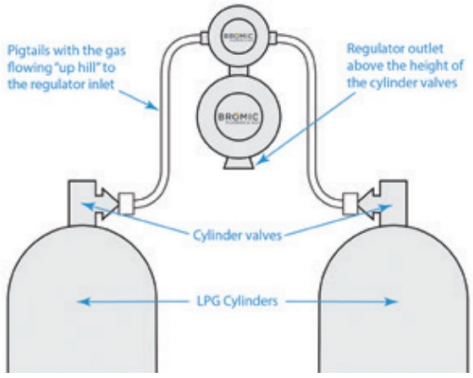

Figure 1. Two cylinders and pigtails connected via manual changeover valve

SPECIFICATIONS

- Gas type: Propane
- Model: 6060543 (528B)
- Capacity: 400 Mj/hr (8.7 kg/hr propane)
- Outlet pressure: 2.8 kPa (28 mbar)
- Inlet Pressure (Max.): 1750 kPa (17.5 bar)
- Operating temperature: -20°C to +50°C
- Body: Die cast Zinc alloy/ painted
- Diaphragm: Approved NBR (fabric reinforced)
- Inlet connection: 7/16" Inv Flare F
- Outlet connection: 1/2" NPT F
- Warranty: 1 year replacement warranty

WARNING

- Leaking gas can cause fires or explosions.
- Only licensed gas fitters should work on gas systems
- Inspect gas systems regularly.
- Replace regulators every 10 years or sooner, depending on the condition of the regulator.

IMPORTANT SAFETY INFORMATION

1. All Bromic regulators shall be installed or serviced by a licensed Gas Fitter. All Bromic regulators shall be installed in accordance with AS5601 and comply with any local amendments to the installation standard.
2. It is the responsibility of the sellers, installation and maintenance personnel and the end user to be aware of and in compliance with all the applicable standards, codes of practice, regulations and laws.
3. Always destroy damaged or worn regulators, pipes and parts so they cannot be reused.
4. Bromic regulators must be routinely inspected and replaced after 10 years of use. Regulators that are exposed to extreme heat, cold or other severe environmental conditions must be inspected and replaced more often as dictated by their condition and performance.

REGULATOR INSTALLATION GUIDELINES

1. Blow out all the lines before installing the regulator. If foreign matter should become embedded in the regulator seat, it could cause high lockup pressure. The rising pressure could activate the pressure relief device inside the regulator. Make sure the lines to the regulator are free from all foreign matter.
2. Connect the two pigtail ends (7/16" Inverted flare) to each of the regulator inlets, with the other end of the pigtails connected to the cylinder valves. Connect the regulator outlet to system service piping.
3. The regulator should be installed with the 2nd stage vent directed downward and /or under a covering to protect it from the ingress of rainwater.
4. Before turning on any gas at the cylinder, make certain that any valves at the appliance are fully closed.
5. Check each joint and connection for gas leaks by using an adequate leak detection method.

COMPATIBLE PRODUCTS

Product	SKU	Description	Where does it fit
Pigtail	6HPT0450	Rubber 7/16" I/Flare x POL 450mm	Into regulator inlets
	6HPT0650	Rubber 7/16" I/Flare x POL 650mm	
	6LCC270450FLA	SS 7/16" I/Flare x Type 27 450mm	
	6LCC270600FLA	SS 7/16" I/Flare x Type 27 600mm	
	6SFN0300	SS 7/16" I/Flare x POL 300mm	
	6SFN0450	SS 7/16" I/Flare x POL 450mm	
	6SFN0600	SS 7/16" I/Flare x POL 600mm	
	6SHW0450	SS 7/16" I/Flare x POL H/Wheel 450mm	
	6SHW0600	SS 7/16" I/Flare x POL H/Wheel 600mm	
	6360510	Copper 7/16" I/Flare x POL 450mm	
	6360511	Copper 7/16" I/Flare x POL 600mm	
Bracket	6060993	Plastic bracket w/ screws (as supplied in kit)	Screwed into back of regulator to mount/ screw onto wall
	6060992	Metal bracket (doesn't include screws)	
Weather kit	9999585	Includes metal cover for regulator, snap hook, split link, 1.6m long chain, 2x brackets for mounting	Screwed onto wall
Adaptor	none		
Test point adaptors	6160674	½" BSP M x ½" SAE M & nut adaptor	In regulator outlet
	6160676	½" BSPT M x ¾" SAE F & nut. Brass	
Drain kit	6060920	½" BSPP F inlet and outlet. Includes ball valve	Doesn't fit directly on regulator outlet
Compliance plate	9999950	Used in NSW to record regulator and installation details	Screwed onto wall next to regulator

KITS AVAILABLE

Product number	Description	Pigtail/s	Extra items
6060506	Reg Auto C/Over 400Mj C/W Bracket+ 2SS 450 Pigtail	6SHW0450 - SS, 450mm, 7/16" inv flare	
6060545	Reg Auto C/Over 400Mj c/w Bracket + 2 C/Pigtail	6360510 – copper, 450mm, 7/16" inv flare	
6060549	400Mj Auto Regulator Kit with 600mm Pigtails	6360511 – copper, 600mm, 7/16" inv flare	
6060550	Reg Auto C/Over 400Mj Brkt 2x C/Pigtail 3/4UNF Adp	6360510 – copper, 450mm, 7/16" inv flare	6060992 – metal bracket 6160674 – ½" BSP M x ½" SAE M & nut adaptor
6060553	Reg Kit 400Mj Auto + SS Pigtail+ Weather Kit (NZ)	6SHW0600 - SS, 600mm, 7/16" inv flare	9999585 – weather kit
6060561	400mj/hr AutoRegulator Kit/Metal brkt/copper Ptail	6360510 – copper, 450mm, 7/16" inv flare	6060992 – metal bracket
6060602	Reg Auto LPG 400Mj 600 SS Pigtail w/ Metal Brkt	6SHW0600 - SS, 600mm, 7/16" inv flare	6060992 – metal bracket

SAFETY DEVICES

Protection device in case of overpressure

The overpressure value (14 kPa), which is accepted by the UL standard 144/ AS 1596, in case of working problems or anomalies, is controlled by a safety device consisting of a flow limiter working together with a safety valve. This device keeps the over-pressure value widely lower than the value expected by the standard without releasing high quantities, of propane gas into the atmosphere through the vent hole.

Protection device in case of an excess flow

The "excess flow" device assembled into the regulator operates (at 140% of the guaranteed flow rate) by limiting the gas flow (to 50 Mj/hr) in the event of a sudden increase in the desired flow, as in the case of a hose rupture or accidental disconnect from the outlet of the regulator while in use.

CHANGEOVER OPERATION

The automatic changeover ensures continuous gas flow by automatically changing the gas withdrawal from the exhausted "service" cylinder to the full "reserve" cylinder. The full-empty indicator assembled into the changeover handle indicates the exhaustion status of the "service" cylinder. The indicator colour changes from green to red, when the "service" cylinder is exhausted. The rotation of the automatic changeover handle to the full "reserve" cylinder restores the green colour on the indicator.

HOW TO ACCURATELY CHECK WHICH CYLINDER IS EMPTY

Connect both pigtails to both cylinders. Turn off one cylinder with the cylinder valve and point the indicator to the open cylinder. If the indicator is red and there is no pressure at the outlet, the cylinder is empty. Common mistake: both cylinders are turned on, indicator shows red but there is still pressure at the outlet – this is due to the auto changeover valve taking gas from the other cylinder.

FAQS

What standard are the regulators approved to? Bromic regulators are approved to UL144. They comply with AS/NZS 1596, Section 5.5.8 of AS/NZS 1596 says "Regulators shall comply with UL144..."

Is the regulator AGA approved? Bromic's dual stage regulators do not have AGA approval, but instead has UL144 approval which comply with AS/NZS 1596, Section 5.5.8 of AS/NZS 1596 says "Regulators shall comply with UL144". The UL Report File is under MH12419. This is the location of the approval https://productiq.ulprospector.com/en/profile/3662835/yksr.mh12419?term=YKSR&page=1

Does this regulator have an OPSO? No, Bromic regulators are approved to UL144. According to section 15.3, we have a type 2 pressure relief valve instead of an OPSO. This relieves pressure through the vent, so the pressure downstream doesn't exceed 14kPa.

Does this regulator have an UPSO? No.

Do I have to have both gas bottles open? To operate the auto changeover, both are open. To use it like a manual changeover, the reserve cylinder can be turned off (will have to be turned on when the first cylinder runs out). Both cylinders need to be connected to the regulator via pigtails at all times.

Does the vent have a threaded connection? Yes, 3/8" NPT F.

Can they be installed horizontally or vertically? No, they must be installed with the vent facing down as per the manual.

Where were these regulators manufactured? In Italy, by Cavagna.

END TECHNICAL DATA SHEET