



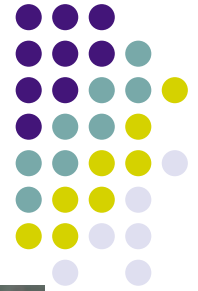
LPG APPLIED TECHNOLOGY FOR SEISMIC HAZARD

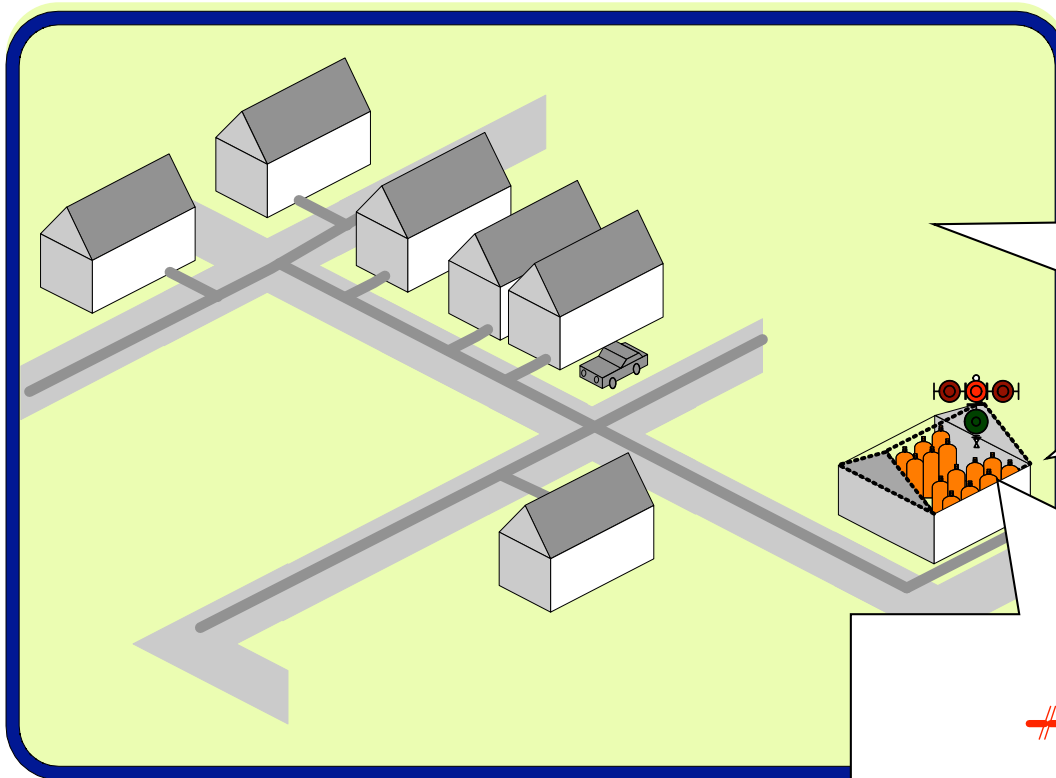
 **ITO KOKI CO., LTD.**

Earthquake Disasters

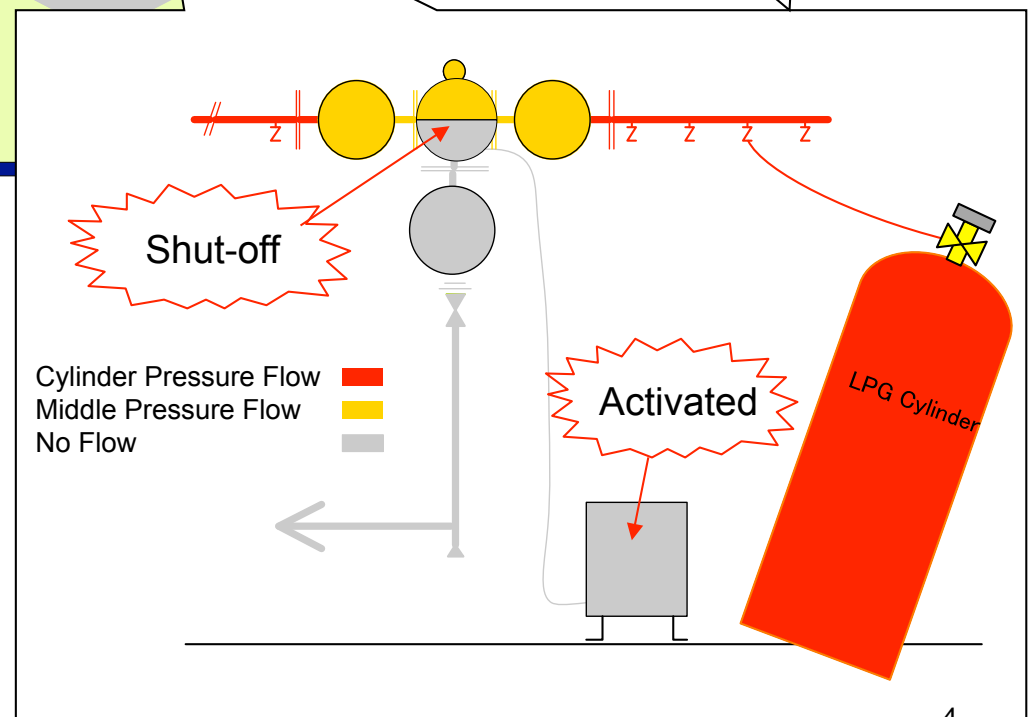
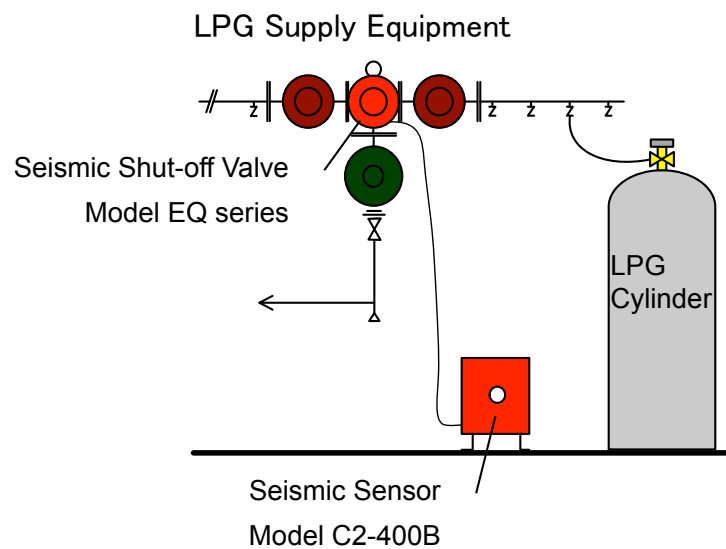
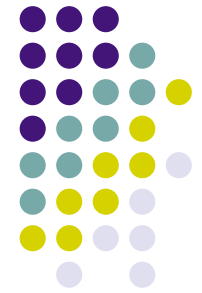


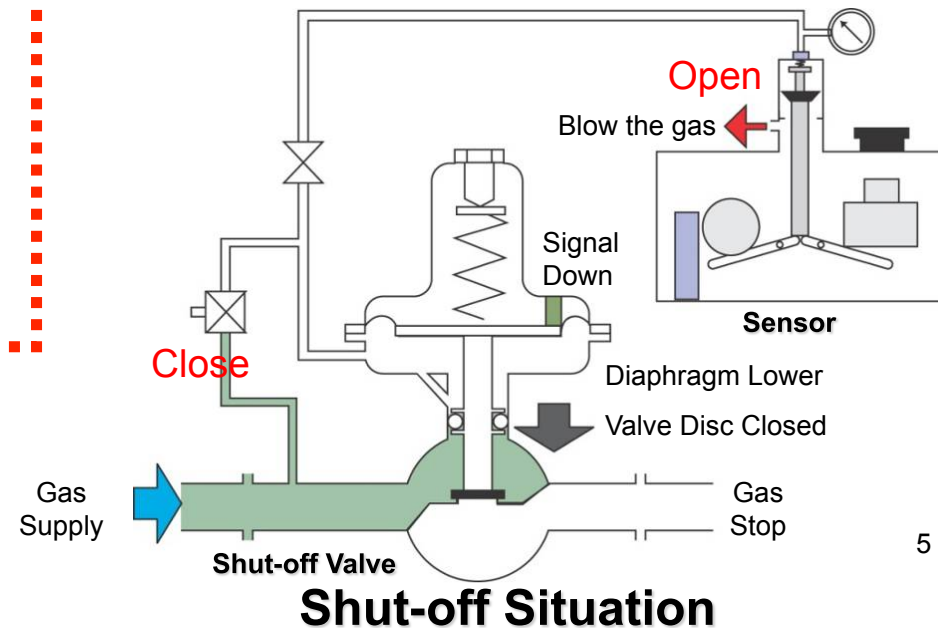
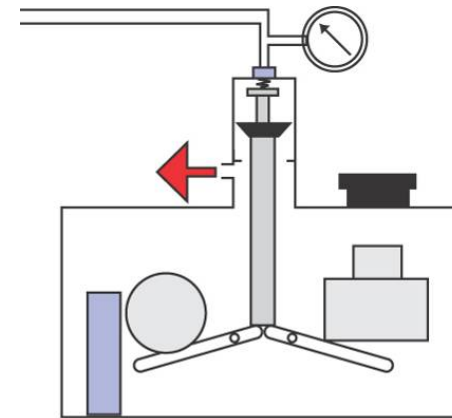
Can You Begin to Imagine?



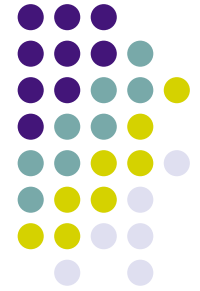


**Shut-off gas supply
in LPG cylinder house**





Example of Installation



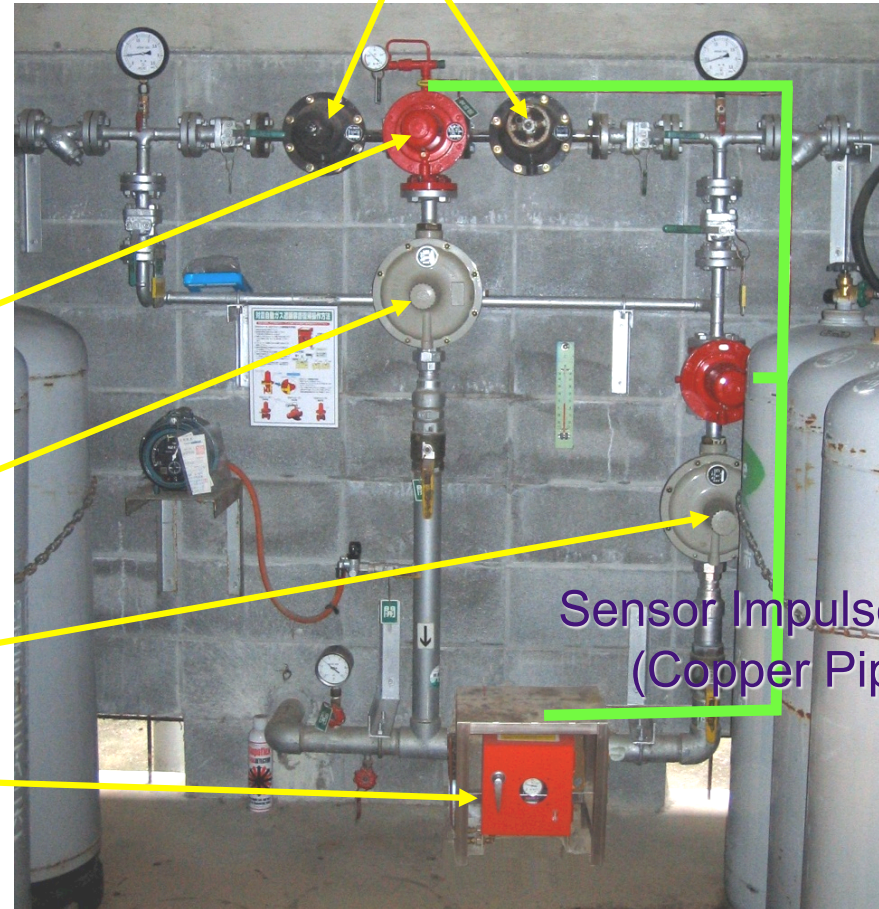
Automatic Changeover
First-stage Regulators
Model AX-160-0

Seismic Shut-off Valve
Model (Left)EQT-20 (Right)EQH-25

Second-stage Regulator
Model GL-70-2

Single-stage Regulator
Model GL-70-1

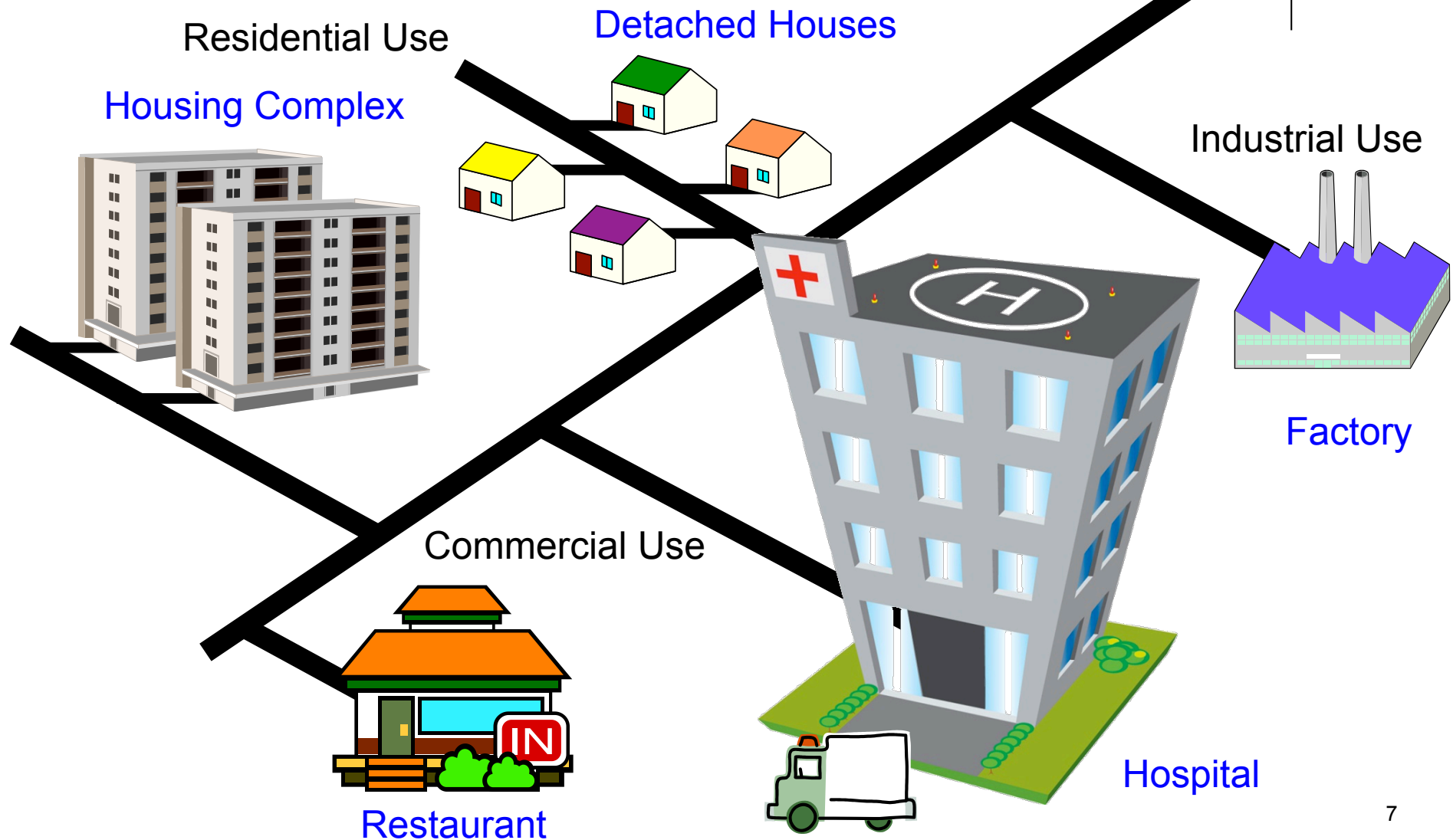
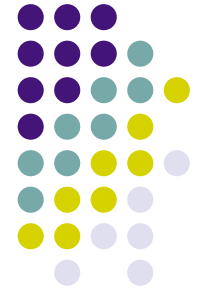
Seismic sensor
Model C2-400B



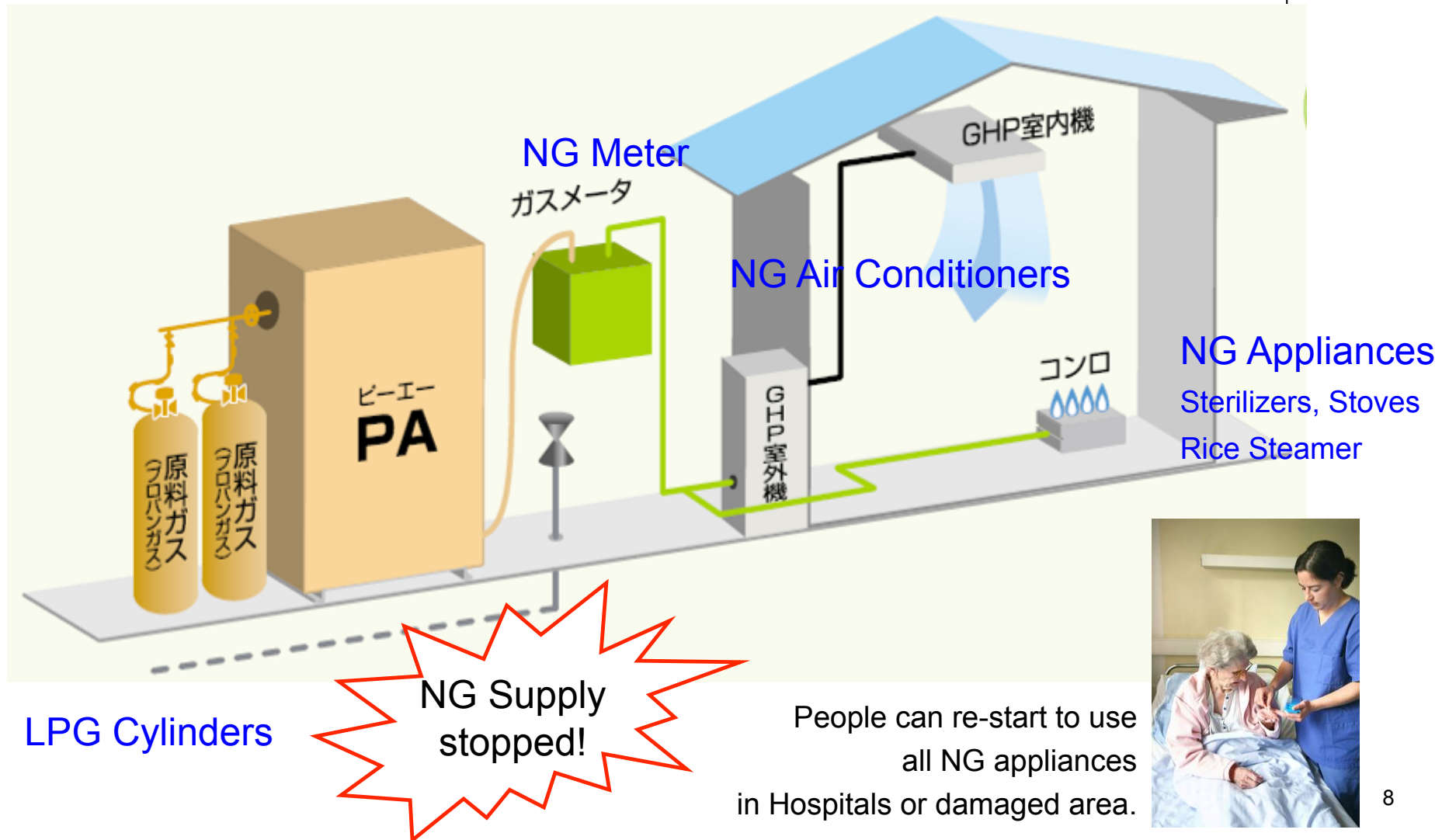
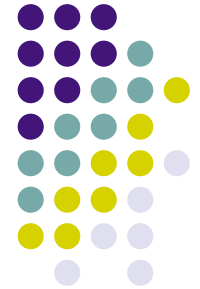
Sensor Impulse Line
(Copper Pipe)

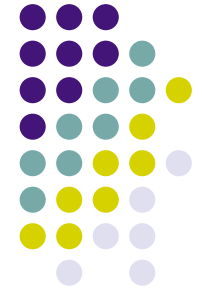
Bypass method

City Gas Grid in JAPAN



Example of Installation

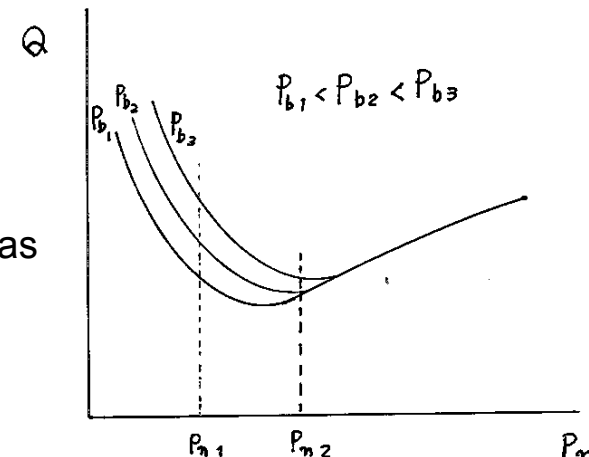
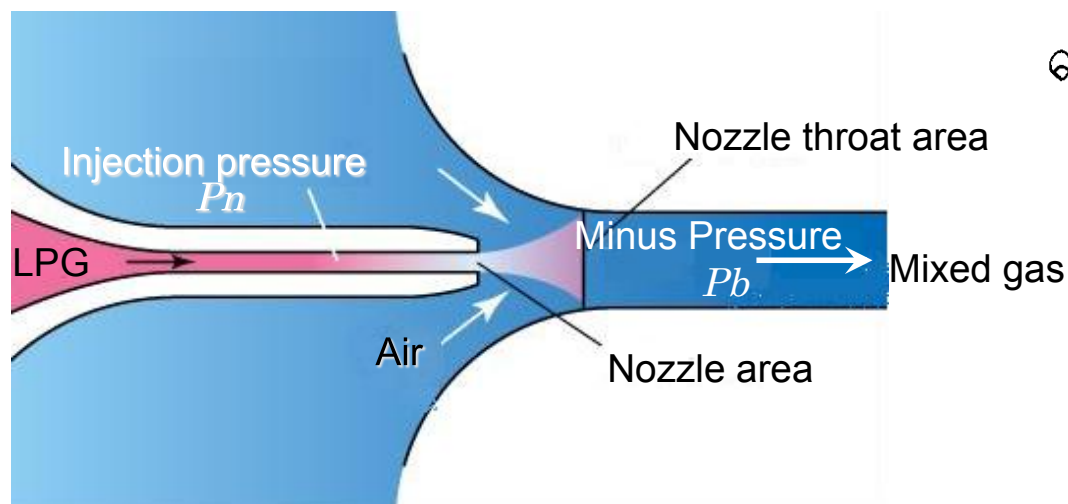




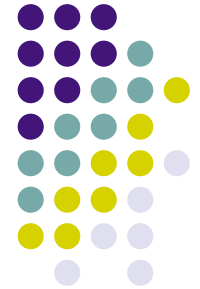
Gas Physical Properties

Gas Type	City Gas 13A NG	LPG 95% C^3H^8	PA-13A
Specific Gravity	0.655	1.55	1.333~1.337 (1.318~1.354)
Gross Calorific Value MJ/m ³ N	46.1	101	61.9~62.6 (60.9~63.6)
Wobbe index W.I.	56.96 (52.7~57.8)	82.47	53.6~54.1 (53.1~54.6)
Maximum Combustion Potential MCP, Cm/S	46.0 (35~47)	39.0	40.9~41.0 (40.8~1.0)

Structure of the Venturi Mixer



Structure of the transportable propane air mixer

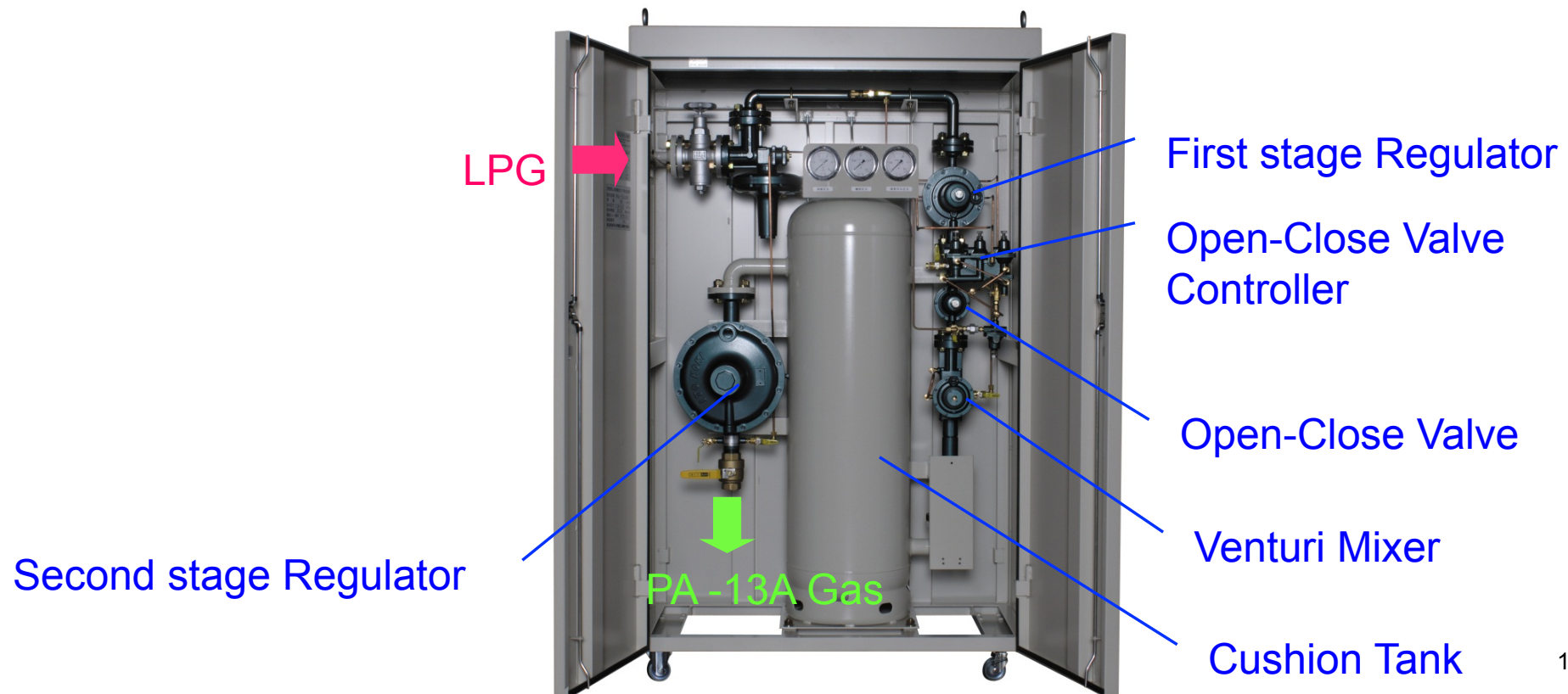


Raw material gas ⇒ Shut-off valve ⇒ First stage Regulator ⇒
Open-Close Valve ⇒ Venturi mixer ⇒ Cushion Tank ⇒ Low-pressure governor ⇒

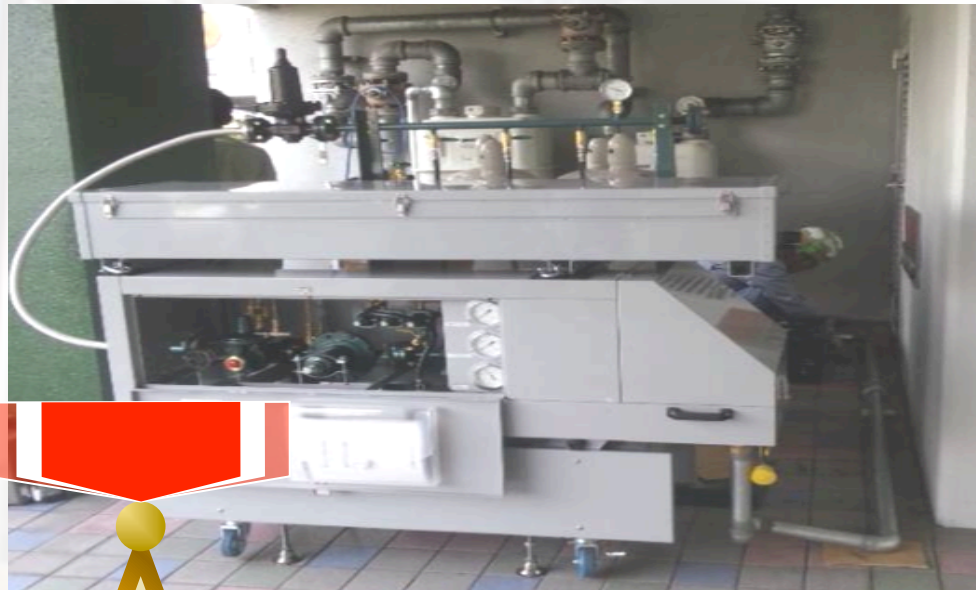
Open-Close Valve Controller

Air valve

OPSO /UPSO controller
Safety valve



Past use of the transportable propane air mixer



2008
Technical
Grand Prize
Awarded
by Japan Gas
Association