

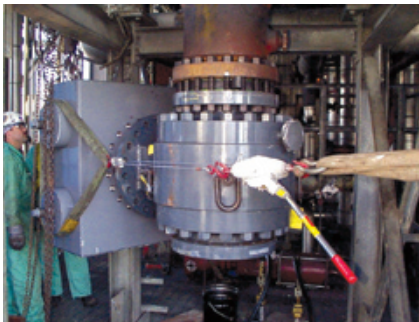
## Blackwater/Graywater, Oxygen and Lockhopper Valves

MOGAS has worked with the leading licensor of the gasification process globally to develop trim and coating technology to increase the operational reliability of critical isolation valves.

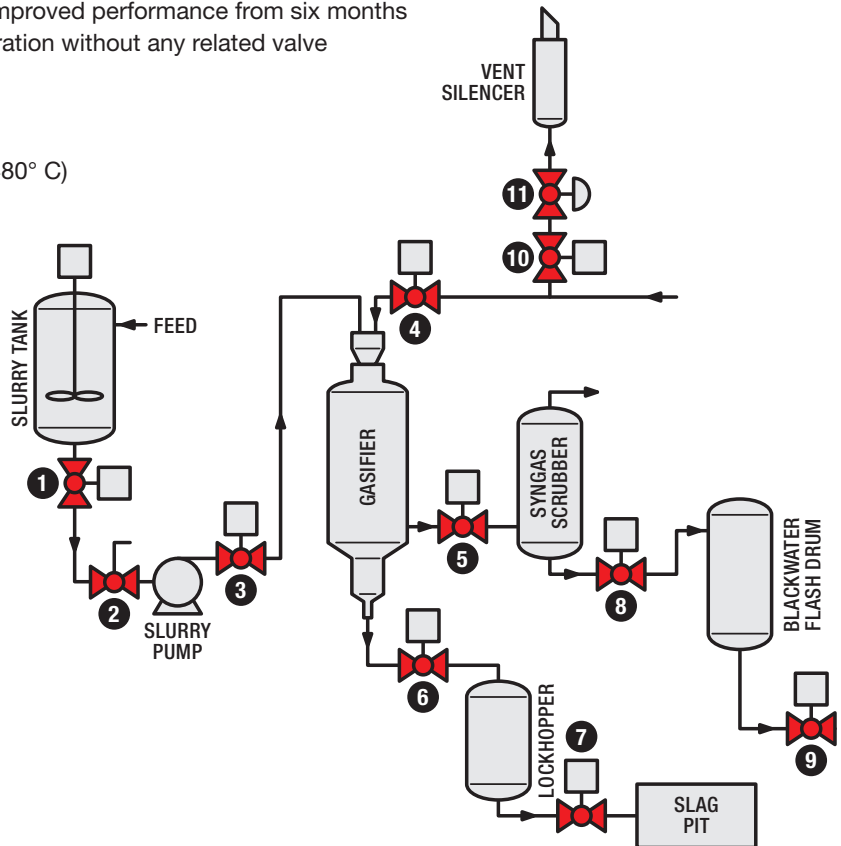
MOGAS' most recent achievement was to extend the lockhopper valve system for de-slugging operations. This achievement improved performance from six months to five years with over 50,000 cycles of operation without any related valve or actuator failures.

### Typical operating conditions are:

- High temperature (500 – 900° F / 260 – 480° C)
- Fine & coarse slag service
- High cycle
- Erosive conditions
- Temperature cycling
- Flashing water service
- Chloride corrosion
- High pressure oxygen service



*This 16-inch 600 ASME class valve was installed for 550° F at 1095 psig (290° C at 75 bar g) lockhopper isolation service. Several of these valves withstood over 50,000 cycles.*



### Valve Specification

Valve Number	Valve Description	Temperature Range		Pressure Range		Pipe Size		Recommended Model				
		deg F	deg C	psig	bar g	inches	dn	CA-1AS	CA-DRI	RSVP	RotaryTech	FlexStream
1	Slurry Tank EBU	500 – 900	260 – 480	100 – 200	5 – 15	6 – 10	150 – 250	—	●	—	—	—
2	Feed Slurry Pump Isolation	100 – 300	40 – 150	100 – 200	5 – 15	6 – 10	150 – 250	—	●	—	—	—
3	Gasifier Isolation	100 – 300	40 – 150	900 – 1200	60 – 85	6 – 10	150 – 250	—	●	—	—	—
4	Oxygen Feed Isolation	100 – 200	40 – 100	900 – 1200	60 – 85	4 – 8	100 – 200	●	—	—	—	—
5	Course Slag Lockhopper Isolation	150 – 650	60 – 350	900 – 1200	60 – 85	6 – 12	150 – 300	●	—	—	—	—
6	Lockhopper Drum Inlet	400 – 600	200 – 320	900 – 1200	60 – 85	12 – 24	300 – 600	●	—	—	—	—
7	Lockhopper Drum Outlet	400 – 600	200 – 320	900 – 1200	60 – 85	12 – 24	300 – 600	●	—	—	—	—
8	LCV Letdown Isolation	100 – 300	40 – 150	100 – 200	5 – 15	4 – 10	100 – 250	●	—	—	—	—
9	Blackwater Flash Drum Isolation	150 – 650	60 – 350	900 – 1200	60 – 85	4 – 10	100 – 250	●	—	—	—	—
10	Oxygen Depressurizing Valve	100 – 200	40 – 100	900 – 1200	60 – 85	4 – 8	100 – 200	●	—	—	—	—
11	Oxygen Depressurizing Isolation	100 – 200	40 – 100	900 – 1200	60 – 85	4 – 8	100 – 200	—	—	—	—	●