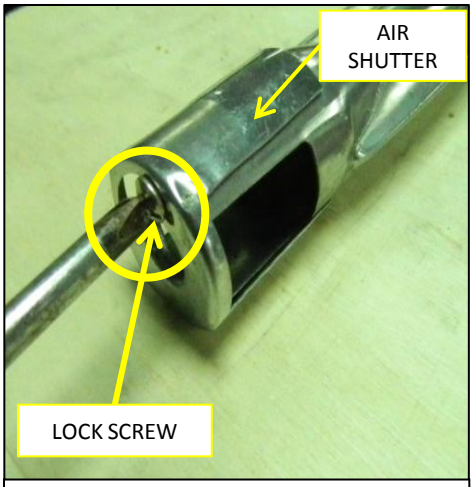
TROUBLESHOOTING GUIDE:

PROBLEM	Possible Cause	Remedy
LIFTING BURNER FLAMES is a condition where flames lift and blow off the burner ports. It can be noisy as well as inefficient.	Excessive primary air can cause flames to lift and blow-off the burner ports. Any factor which reduces burning speed promotes lifting flames. Also, any factor which increases flow velocity from ports contributes to lifting flames. Overrating of burners is also a cause.	The normal cure for lifting flames is the reduction of primary air input to the burner. Gradually close the burner's air shutter until the problem does not occur.
FLASHBACK is a condition where gas ignites within the burner.	Any factor which increases burning speed tends to promote flashback, and any factor decreasing flow velocity from the ports will contribute to flashback. Flashback is more prevalent with faster burning gases. Natural gas is relatively slow burning gas hence flashback is less likely.	Reducing primary air is the usual cure for flashback. Gradually close the burner's air shutter until the problem does not occur.
EXTINCTION POP is a tiny explosion or popping sound that is usually instantaneous although it can occur several seconds after the burner has been turned off. This is merely flashback with a popping sound occurring when a burner is turned off.	What happens is that primary air continues to flow into the burner even though the gas jet has been cut off and does not inject air. The mixture in the burner changes from the normal operating mixture to all air and flow rate through the ports falls off toward zero. Under these conditions, it is possible for the flame speed to exceed flow velocity at some instant and flashback may occur.	Reducing primary air input will reduce the flashback and extinction pop tendency. Gradually close the burner's air shutter until the problem does not occur.
FLAME ROLL-OUT is a condition where flames roll out of the combustion chamber openings when the burner is turned ON. The gas in the burner mixer may be ignited, producing a flashback. Flame rollout is actually a variation of floating flames, with flames reaching for air outside the combustion chamber.	The basic cause is a lack of combustion air. This lack of air may be due to overrating of burners, poor draft or blockage of flueways.	Increase primary air input. Gradually open the burner's air shutter until the problem is solved.

BURNER AIR SUPPLY ADJUSTMENT:

1. Turn-off the pilot.
2. Shut-off the main isolation valve and follow the lock-out/tag-out procedure.
3. Remove the burner.
4. Loosen the lock screw of the air shutter, until the air shutter can be moved. Use 2.5mm allen key or "+" screwdriver.
5. Gradually adjust the air shutter by increasing or decreasing the opening.
6. Re-install the burner and turn it ON to check the flame. Adjust the air shutter opening until the flame is bluish in color.
7. Tighten the lock screw after the air shutter has been set.



U-BURNER'S AIR SHUTTER