# Asphalt Pit Installs “Linkage-Less Controls” on Process Boiler and Main Kiln

***Expected Payback – Less than Six Months***

With the technical support of Yorkland Controls Ltd, Dynamic Mechanical of Elmira Ontario installed burner parallel positioning control systems at an Asphalt producing site in the Kitchener -Waterloo area. Two different types of systems were installed to take advantage of the energy savings benefits of the “Linkage-less” Controls, and as well improve reliability and overall range on the burners.

The expected results for the upgrade include,

1) **Increased fuel savings.** By replacing the mechanical linkages with direct mount servos, more accurate tuning of the burner throughout the combustion range can be achieved.
2) **Increased reliability.** By achieving a higher turndown which reduces cycling, wear and tear and nuisance lockouts are also reduced.
3**) Increased production.** With greater range on the burners, and less downtime on both boiler and kiln, the plant is expecting to have a significant increase in production capacity.
4) **Decrease in emission**. In both the boiler and Kiln, the burners were tuned to maximum efficiency, while maintaining CO levels well below 100ppm.

Taking into account the expected fuels savings and Union Gas incentives for the project, the expected payback period is less than 6 months.

The Honeywell ControLinks was installed on a Heatec 3MMBTU Boiler with a Powerflame burner. This boiler is used to heat #600 heat transfer oil which is used throughout the process. Since this oil is used to heat the tar reservoirs used in the asphalt, it is critical that this boiler operate flawlessly 24 hours a day throughout the production season (May through October).

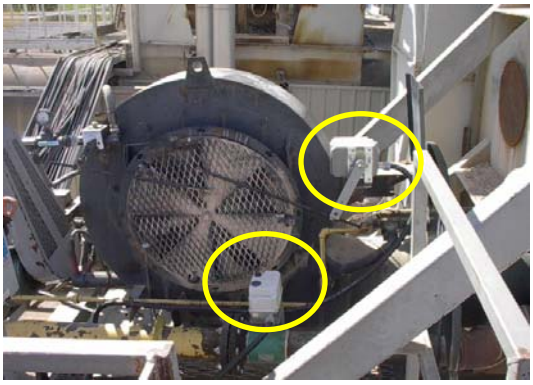
A modulating valve was installed to replace a Hi/Lo style valve that was originally on the boiler. Once the new controls were installed, the burner was tuned to maximum efficiency throughout the combustion range, and a higher turn down was achieved.

The Fireye Nexus parallel positioning controller was installed on the main kiln used for the asphalt production. The kiln has a Hauck 100 MMBTU gas fired gun style burner, designed for this application. The NEXUS system was chosen for this burner since the Fireye NEMA 4 servo motors with high torque ratings are well suited for the outdoor mounting on the burner and air damper. These motors will be able to withstand all the weather factors, as well as the dust exposure that is inevitable in an open pit environment.

Contact Yorkland Controls at 1-877-733-3833 for additional information on this case study.

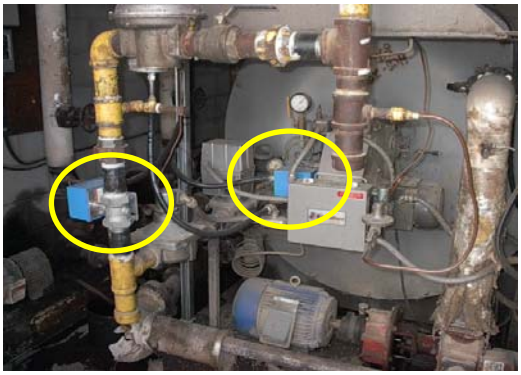
Pictures of the installation follow:

Front view of the main control panel (Fireye Nexus PPC-5000 ) for the Asphalt Kiln burner with the Fireye Nexus Display.



Close up view of the burner on the main Kiln, with new Fireye direct mount servo motor on the gas valve bottom center, and a separate servo for the combustion air on the center right.

Side view of the Asphalt Kiln with the burner on the middle left.



Front view of the burner on the boiler heating #600 heat transfer oil. The new Honeywell ControLinks direct mount servos can be seen on the gas valve on center left (blue), and on the combustion air center of photo (blue). These servos are connected to a ControLinks controller in a separate panel to the left of the boiler.