NEG Oxy-fuel Combustion(NOFC™)Technology

- Combustion system made by glass manufacturer -

Nippon Electric Glass

NEG was the pioneer company in Japan to successfully introduce oxygen-combustion technology (NOFC™:NEG Oxy-Fuel Combustion)to glass melting furnaces. By utilizing NOFC™ technology, which has been accumulated through more than 30 years of experience, NEG contributes to the reduction of fuel consumption and CO_2 emissions.

Benefits of Oxy-Fuel Combustion

- **Improved Combustion Efficiency**
  :Reduces fuel consumption approximately 50%, (reduction of 50% fuel CO_2).
- **Increased Flame Temperature**
  :Increases flame temperature by approximately 800K, ensuring efficient combustion.
- **Reduced Exhaust Gas Emissions**
  :Reduces exhaust gas emissions by up to 50%, reducing environmental impact.
- **Reduced Nitrogen Oxides (NOx) Emissions**:Reduces NOx emissions significantly.

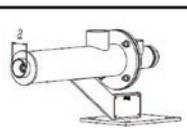
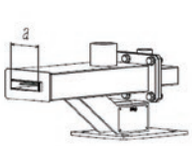
Features and Benefits of NOFC™ Burners

- High luminosity and high flame radiation
- Easy to maintain
- Wide range lineup: 50kW - 2500kW
- Wide turndown ratio (3:1)
- Improved heat distribution with wide flame (Type-R)
- Good flame stability (Type-C)

Type-C

Type-R

Burner Lineup

Model		Firing Range Turndown ratio(3:1)	Unit	Burner Type	Burner Block
Type-C	C25	97～291	kW		
	C50	194～582			
	C100	388～1,163			
	C150	582～1,764			
Type-R	R12	46～139	kW		
	R20	77～232			
	R40	155～465			
	R60	234～696			
	R80	310～930			
	R220	853～2,560			

NEG Electric Melting Technology(NEMT™)

- Electrode equipments made by glass manufacturer -

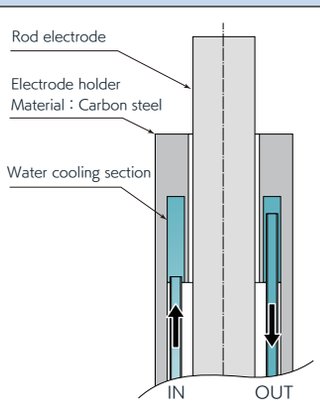
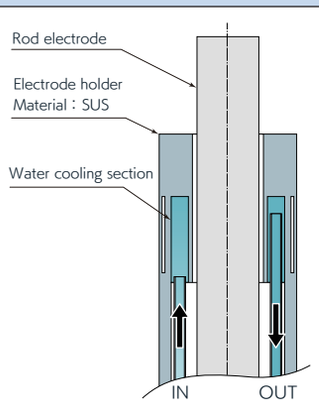
Nippon Electric Glass

NEG Electric Melting Technology (NEMT™) has been developed with over 60 years of experience in direct electric heating of glass.
This advanced technology enables environmentally friendly electric melting, offering high efficiency, high quality, long lifetime, and energy savings.

Benefits of NEMT™

- **Long life**:The robust holder head design prevents coolant leakage, ensuring a extreme long life of equipment.
- **High safety**:The option to monitor the holder head temperature enables early detection of any electrode abnormalities, ensuring a safe operation.
- **Versatility**: Three types of electrode diameters are available - 2 inches, 3 inches and 4 inches, providing flexibility for different application needs.
- **Minimal downtime**: Our electrode block is designed to minimize troubles during electrode push-up, saving working time and minimizing downtime.
- **Excellent isolation**: NEMT™ electrode holder offers superior isolation, ensuring safety during operation and preventing electrical trouble.

Experience the benefits of our NEMT™ Electrode Equipment and achieve efficient and sustainable electric melting for your applications.

Type	Rod electrode	Rod electrode (Low heat loss type)
Water cooling structure	 Cross-sectional view of water cooling section	 Cross-sectional view of water cooling section

NEG Combustion Control System

- Control System by glass manufacturer -

Nippon Electric Glass

NEG Combustion Control System provides optimal furnace heating conditions for various glass materials by using NEG's highly efficient and reliable combustion control technology. Our innovative system continuously monitors and adjusts furnace temperature, fuel flow, and heat fluctuations in real time to maintain optimal combustion conditions at all times.

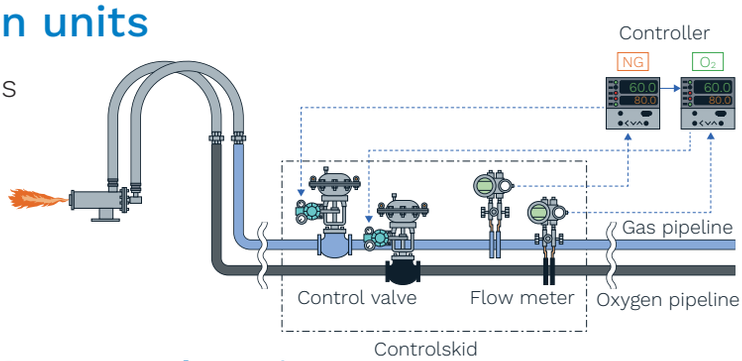
Benefits of NEG Combustion Control System

- Stable and safe combustion process
- Energy savings and CO_2 emissions reduction
- Customizable for various glass materials and furnaces
- Contributes to optimal productivity through real-time monitoring and adjustments
- Ensures reliable and efficient operation

Upgrade your glass melting furnace with NEG Combustion Control System and experience improved efficiency and enhanced control over your combustion process.

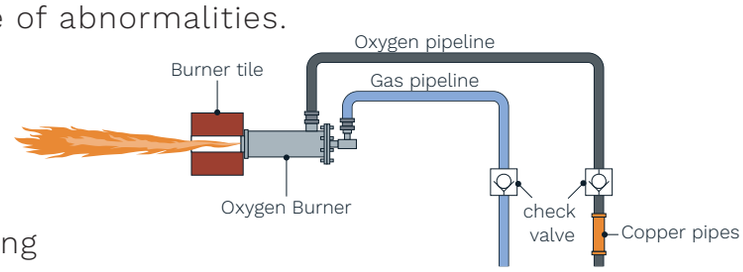
Advanced Gas-oxygen combustion units

- Individual burner gas and oxygen flow rates are measured and controlled.
- Automatic control of gas-oxygen ratio
- Safe and controlled automatic slow-up and slow-down sequence



Multipule safety devices for Gas-Oxy combustion

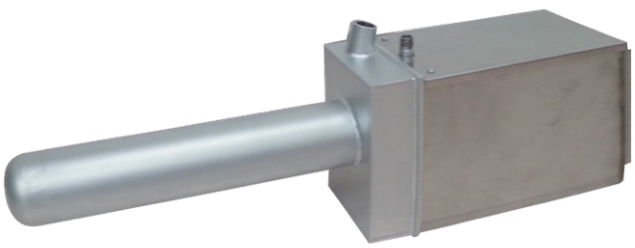
- An emergency shut down system that monitors the gas and oxygen ratio, flow rate, pressure etc. to initiate a shutdown in case of abnormalities.
- Check valves installed on individual oxygen and gas piping to prevent abnormal firing in the piping
- Special fire prevention devices designed to stop the spread of internal abnormal firing



Furnace monitoring equipment

- Furnace monitoring equipment made by glass manufacturer -

Nippon Electric Glass



ITV* equipment

*ITV:Industrial Television

Monitoring the inside of a high-temperature glass melting furnace using ordinary cameras can be challenging.
However, by installing our advanced furnace monitoring equipment, real-time monitoring of furnace conditions and processes becomes possible. This helps safe operation of the furnace and stable glass melting processes.

Features of our Furnace Monitoring Equipment

- Utilizes a lens tube system for a lightweight and compact design.
- Compact and lightweight equipment allows for easy installation
  (Size : Approx. 180×180×600mm, Weight : Approx. 20kg)
- High-quality images captured by a CCD camera and relay lens provide clear and detailed monitoring.
- Easy to maintain contributing to stability of the furnace condition.
- Our equipment has been successfully adopted in almost all of NEG's furnaces
  (Proven track record of use at a maximum furnace atmosphere temperature of 1,700° C)

Installation of ITV equipment

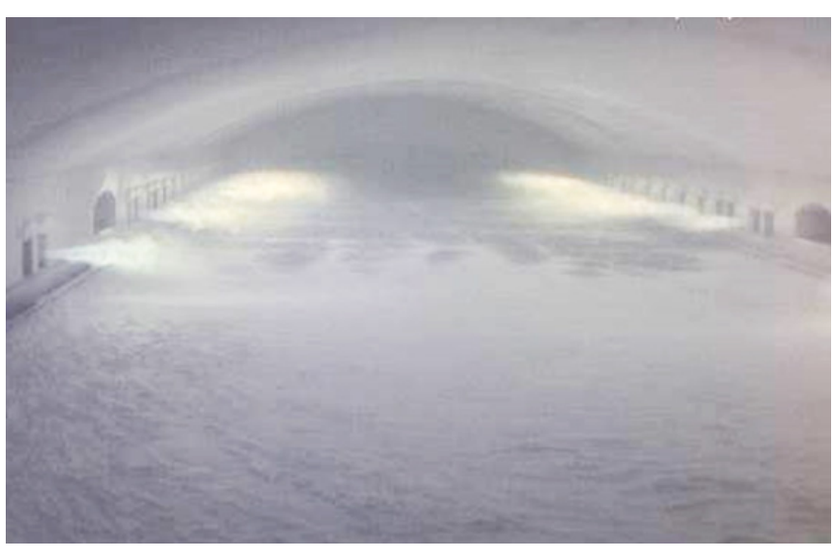


Image of inside of furnace