













Table 1. Tabulated MTI Hydrogen Gas Furnaces

No	Model	Working Tube Dia.	Heating Rate	Working Temperature	Features	Item Image
1	GSL-1500X-50HG	50 O.D x 38 I.D x 700 Length (mm)	Max: 10°C/min	Max: 1500°C (< 1 hr) Cont: 1400°C	It is a compact hydrogen tube furnace for heat treatment of oxidation-sensitive materials up to 1500 °C. The 50 mm OD processing tube is made of pure alumina. A Honeywell hydrogen leak detector and a solenoid valve are used to cut off the hydrogen source and heating elements once H ₂ leak is detected. Flange fixtures, quartz tube covers, and double layer steel furnace casing are installed to provide additional safety protection in case of emergency. The furnace is also compatible with all kinds of inert gasses as well as oxygen. The precision temperature controller provides customers to set up their own programmable heating profiles with up to 30 temperature segments.	
2	GSL-1700X-S60HG	54 mm (I.D) x 60 mm (O.D) x 790 mm length.	Max: 10°C/min (5°C/min is recommended to avoid thermal-shocking the alumina tube)	Max: 1700°C (< 1 hr) Cont: 1600°C	GSL-1700X-S60HG tube furnace is designed for processing material under hydrogen gas up to 1700°C safely. The 60 mm OD processing tube is made of pure alumina, and one hydrogen gas detector is included for cutting off hydrogen gas via a built-in solenoid valve immediately upon detection of hydrogen gas leaks. The furnace can be used with all kinds of inert gasses and oxygen gas as well. The precision temperature controller provides up to 30 programmable segments for the heating profile.	
3	OTF-1200X-S5-H2	130mm O.D x 120mm I.D x 750mm L	Max: 10°C/min	Max: 1100°C (< 1 hr) Cont: 1000°C	It is a single zone hydrogen tube furnace for the heat treatment of oxidation-sensitive materials up to 1100 °C. The 5” processing tube is made of high-quality fused silica. The hydrogen detecting system comes with a Honeywell hydrogen gas detector, two solenoid valves, and an alarm siren. In case H ₂ leak is detected, the special design automatically activates the siren, cuts off the hydrogen source, shuts down the power, and purges nitrogen. It can also avoid air backflow if a power outage happens. Flange fixtures, full quartz tube covers, and double-layer steel furnace casing are installed to provide additional	

					safety protection in case of emergency. The furnace is also compatible with all kinds of inert gasses as well as oxygen. The precision temperature controller provides customers to set up their own programmable heating profiles with up to 30 temperature segments.	
4	OTF-1200X-60HG	OD 60 x ID 52 x Length 1000 (mm)	Max: 20°C/min	Max: 1100°C (< 1 hr) Cont: 1000°C	OTF-1200X-60HG is a safe hydrogen tube furnaces The processing tube is made of high quality Ni-based superalloy which never cracks and broken at flowing Hydrogen gas. One 3M hydrogen detector is included which will shut down Hydrogen gas generator and gas inlet valve immediately once detecting hydrogen gas leaking. The tube furnace is designed for processing material under hydrogen gas up to 1100°C safely. Also, the furnace can be used for all kind of inert gasses and oxygen gas up to 30 PSI. The precision temperature controller is 30 segment programmable.	
5	OTF-1200X-II-H2	-	Max: 20°C/min	Max: 1200°C (< 1 hr) Cont: 100-1100°C	OTF-1200X-II-H2 is a compact hydrogen tube furnace for the heat treatment of oxidation-sensitive materials. The two heating zones provides a temperature gradient or a wide range of temperature uniformity. Flange fixtures and quartz tube covers are installed to provide additional safety protection in case of emergency. A Honeywell hydrogen leak detector is applied to trigger the close of the hydrogen inlet valve and the power cutoff of heating elements immediately once hydrogen leak is detected.	
6	OTF-1500X-III-H2	OD 80mm x ID 72mm x Length 1200mm	$\leq 10^{\circ}\text{C}/\text{min}$ ($\leq 5^{\circ}\text{C}/\text{min}$ is recommended)	Max: 1500°C Cont: 1400°C	OTF-1500X-III-H2 is a safe hydrogen tube furnace. The processing tube is made of high quality Ni-based superalloy which never cracks and broken at flowing Hydrogen gas. Two hydrogen detectors are included which will shut down Hydrogen gas generator and gas inlet valve immediately once detecting hydrogen gas leaking. The tube furnace is designed for processing material under hydrogen gas up to 1500°C safely. The precision temperature controller is 30 segment programmable.	

7	KSL-1200X-H2	Heated chamber: 400x400x400 mm	Max: 20°C/min	Max: 1200°C	KSL-1200X-H2 is a box furnace designed for material synthesis under hydrogen up to 1200 °C. The furnace consists of five heated sides with better uniform temperature zone, and Kathal Fe-Cr-Al alloy heating elements with a heating chamber of 16"x 16"x16", as well as a vacuum-sealed steel case with water cooling jacket and automatic H2 burning system. It is an ideal tool for preparing new materials which require a reduced atmosphere, such as phosphorous and Ti alloy, and also heat treating materials under all kind of gas: inert gas and oxygen or non-flammable mixing gas.	
8	KSL-1700X-H2	Heating chamber: 8"x8"x8"	Max: 5°C/min	Max: 1650°C	KSL1700X-H2 is designed for material synthesis under dry hydrogen up to 1650°C. The furnace consists of high-quality alumina fiber bricks and Mo alloy heating elements with a heating chamber of 8" x 8" x 8", as well as a vacuum-sealed steel case with a water cooling jacket and an automatic H2 burning system. It is an ideal tool for preparing new materials that require a reducing atmosphere, such as phosphorous and Ti alloy.	
9	KSL-1700X-HG	Heating chamber: 8"x8"x8"	Max: 5°C/min	Max:1650 °C (1 hr) Cont: 300-1600 °C	KSL-1700X-HG is a Hybrid box furnace for both of hydrogen treatment up to 1650 °C. The furnace consists of high-quality alumina fiber bricks and Mo alloy heating elements with a heating chamber of 8"x 8"x8", and an automatic H2 burning system. It is an ideal tool for preparing new materials that require Inert gas and reducing atmosphere.	
10	KSL-1700X-H2	Heating chamber: 8"x8"x8"	Max:5°C / min	Max:1650 °C (1 hr) Cont: 1600 °C	KSL1700X-H2 is CE certified box furnace designed for material synthesis under dry hydrogen or inert gas (Ar and He) up to 1650 °C. The furnace consists of high-quality alumina fiber bricks and Mo alloy heating elements with a heating chamber of 8"x 8"x8", as well as a vacuum-sealed steel case with water cooling jacket and automatic H2 burning system. It is an ideal tool for preparing new materials which require reducing atmosphere, such as phosphorous and Ti alloy and also heat treating materials under inert gas.	

11	KSL-1600X-H4	Heating chamber: 16"x16"x16"	Max:5°C / min	Max:1650 °C (<1 hr) Cont: 1600 °C	KSL-1600X-H4 is a large box furnace designed for material synthesis under hydrogen or inert gas atmosphere up to 1650 °C with chamber dimension of 16"x 16"x16". The furnace consists of high-quality alumina fiber bricks and three sides heating by Mo-alloy coil with a vacuum-sealed steel case with a water cooling jacket and automatic H ₂ burning system. It is an ideal tool for preparing new materials that require a reduced atmosphere, such as phosphorous and Ti alloy, and also heat treating materials under inert gas.	
12	EQ-XCD-H2-LD	-	-	-	Honeywell XCD Sensepoint Gas Detector features a status LED, operation, and programmable fault relay. Alarm relay set to low alarm 10.0ppm of hydrogen. For use with fire and security alarm systems and suitable for protecting lab safety during hydrogen furnace running. It can also provide comprehensive monitoring of flammable, toxic and Oxygen gas hazards in potentially explosive atmospheres.	
13	GSL-1500X-50HG-AM	50 mm OD	Max: 10 °C/min	Max: 1500 °C (< 1 hr) Cont: 1400 °C	GSL-1500X-50HG-AM is a fully-automated compact hydrogen tube furnace for the heat treatment of oxidation-sensitive materials up to 1500°C. The 50 mm OD processing tube is made of pure alumina. The flammable exhaust burning module automatically ignites, detects, and controls the hydrogen gas flow. A Honeywell hydrogen leak detector is used to cut off the hydrogen source and heating elements once the H ₂ leak is detected. Flange fixtures, quartz tube covers, and double-layer steel furnace casing are installed to provide additional safety protection in case of emergency. The furnace equipped with a wifi route enables the user to remotely control the entire process in a safe manner. The furnace is also compatible with all kinds of inert gasses as well as oxygen. The precision temperature controller provides customers to set up their own programmable heating profiles with up to 30 temperature segments.	