

# INSTALLATION AND MAINTENANCE INSTRUCTIONS

## UNI-DISC™ FINE BUBBLE DIFFUSER

PART# 130050 - Ref. R180002



### **HANDLE WITH CARE.**

DO NOT TOUCH THE POROUS CERAMIC WITHOUT GLOVES.  
AVOID PHYSICAL SHOCK, WHICH CAN DAMAGE THE POROUS CERAMIC BODY.  
DO NOT CONTAMINATE WITH DIRT, OIL OR GREASE.



# Refractron

Responsive. Innovative. Ceramics.

# UNI-DISC™ FINE BUBBLE DIFFUSER

PART# 130050 - Ref. R180002

## 1- INSTALLATION:

Do not handle ceramic part without gloves. Do not remove cardboard/ plastic cover packaging until the diffuser is completely installed and threaded in place.

1. Before to install, recommended tight down for bolt assembly to 10-12 ft lbs.
2. To avoid bubble coalescence, install the diffuser with the fitting at the bottom and do not obstruct the surface with protective screens, piping or other objects.
3. Use Teflon tape on the threaded inlet casting before installation.
4. The threaded coupling is the bottom of the unit.
5. Thread on the diffuser and tighten down to 10-12 ft. lbs.
6. Remove protective packaging prior to start up.

## 2- OPERATION:

1. Pressurize the diffuser only when submerged.
2. Turn the gas on.
3. Slowly increase flow to the desired level.
4. There will be a small delay before the diffuser responds to flow adjustments, especially if the diffuser has filled with water.
5. A column of uniform bubbles should appear.
6. Check for leaks (larger bubbles) at the seals and on the bottom of the diffuser.
7. The porous Uni-Disc™ is meant to operate at pressures of 11.0-21.0 inches of water (excluding submergence pressure)

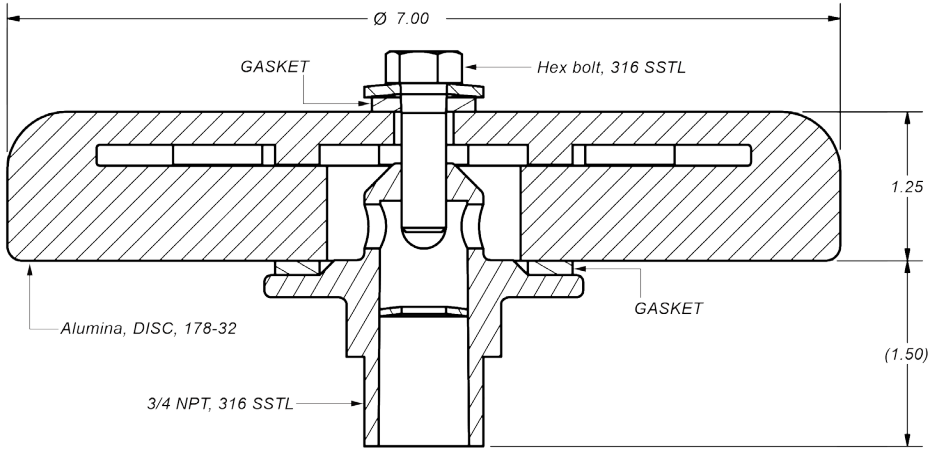
NOTE: For best disc uniformity operate the disc at the highest pressure for about a minute or so then reduce to the desired flow.

## 3- MAINTENANCE AND CARE:

1. The only maintenance required may be periodic cleaning to maintain an even bubble pattern over the full surface of the diffuser if the diffuser is clogged.
2. When taken out of service, diffusers should be cleaned and stored dry. See warnings.

#### 4- DISASSEMBLY & REASSEMBLY OF UNI-DISC™ DIFFUSER & SPARES:

Refer to Dwg # R180002



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#### 5- TYPICAL METHODS OF CLEANING:

1. General cleaning:  
Hose down with a jet of water to remove slime and loose deposits.
2. Ultrasonic Bath:  
Using commercial ultrasonic cleaning equipment.

#### 6- SAFETY PRECAUTIONS:

**DO NOT** exceed 25 psi differential pressure across the ceramic diffuser.

Oil, grease and other hydrocarbons when combined with oxygen or ozone, become highly combustible and should never be near and around the oxygen or ozone supply, piping or valves.

## 7- SPECIFICATIONS UNI-DISC™:

Grade: UD 30

Pore size: 30 micron nominal

Bubble size: less than 2 mm

Gas Inlet: 3/4" NPT

Recommended Flow Rate: 0.3-1.65 scfm <sup>(1)</sup>

Torque bolt: 10-12 ft lbs.

## 8- ALUMINA MATERIAL PROPERTIES <sup>(2)</sup>:

MATERIAL PROPERTIES AND CHARACTERISTICS	TEST METHOD	AF
Color		LIGHT GRAY
Chemistry (wt%)	ICP & EDS	
SiC		-
SiO <sub>2</sub>		8
Al <sub>2</sub> O <sub>3</sub>		87
Other		5
Density (g/cm <sup>3</sup> )	ASTM C-373	2.1
Modulus of Rupture 3 pt. MOR (MPa)		
RT	ASTM C-583	26
400 °C	ASTM C-583	26
800 °C	ASTM C-583	23
1200 °C	ASTM C-583	-
Porosity (%)	Based on Bulk Density	43
Coefficient of Thermal Exp. x10 <sup>-6</sup> (RT-500 °C)	ASTM C-372	8.8
Maximum Material Use Limit (°C)		800
Thermal Shock Resistance		Good

(1) Recommended flow rates are guidelines only. Each application may be different.

(2) Typical values are not intended to be used as a specification. Contact with Refractron for application suitability.

## QUESTIONS OR INFORMATION CONTACT:

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