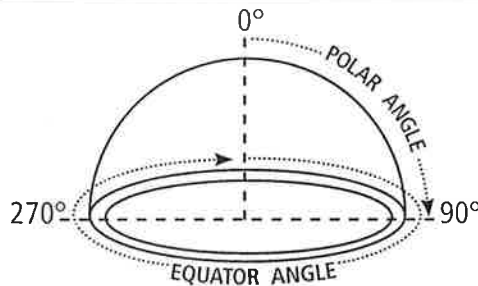
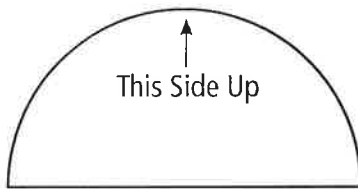


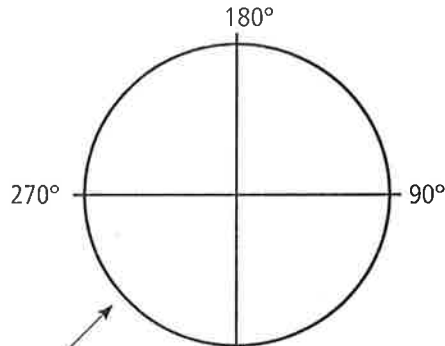
Drill Hole Instruction Sheet



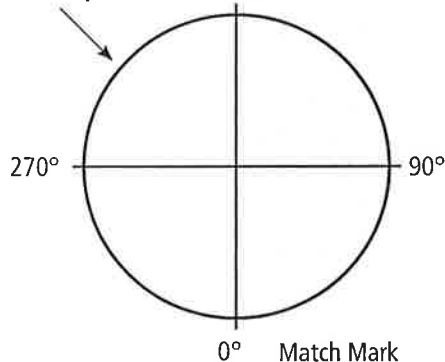
When measuring for holes,
orient hemispheres as shown.



Measure along the Polar and
Equator angles to determine the
exact location of all holes to be
drilled in each glass sphere.
Record all necessary information
in the grids below.



Top view of
hemispheres



TOP HEMISPHERE

Hole Number	A	B	C	D	E	F	G	H
Equator Angle	0°							
Polar Angle	25°							
Hole Type	1							

BOTTOM HEMISPHERE

Hole Number	1	2	3	4	5	6	7	8
Equator Angle	0°							
Polar Angle	30°							
Hole Type	3							

Customer: MBARI, Mark Chaffey Date: 12/5/2014

Revision: _____

Sales Order: Quote # 4067 Ship Date: _____ Quantity: 16 Size: 17"

Recommended Polar Angle for Penetrators for Hard Hat Clearance			
13" SRO 30	17" H 30	17" HR N.A.	17" SR 25

Typical Vacuum Port Positions	
13" IH	E=180 P=45, top hemi, per B-500-3
17" IH	E=0 P=25, top hemi, per B-500-7
TR-6001	E=135 P=25, per B-210-428

Hole Type	Standard Applications	Drill Diameter
1	Vacuum Port, 3/16"	.203"
2	XT/TR Transducer	.281"
3	Bulkhead, 7/16"	.453"
4	Single Pin Penetrator	.156"

Special Applications		
5		
6		
7		

NOTE: — All customer supplied penetrators must have 1 3/8" stems and be furnished with dummy plugs and mounting hardware.
— When shipping penetrators to Teledyne Benthos, please reference purchase order number and/or sales order number.