



SEA-BIRD ELECTRONICS, INC.

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SBE P/N 90085

DATE	SYM	REVISION RECORD	AUTH	DR	CHK
01.99	A	Added bitmap, Reformatted	MJ		
9.03	B	Added PN 30458	CB	KLP	
1.08	C	Add drawing 67027	CB	CB	

SBE Customer Installed TC Duct Kit

KIT CONTENTS

SBE P/N	Manufacturer P/N	Primary SBE Application	QTY
23012C	2" long Thermistor guard	With T-duct installed, replaces current probe guard	1
23226	Thermistor duct, no. 2	Conductivity duct	1
23337	Pump air release plug	Installed in Y-fitting (30387)	1
23698.1	Low viscous T-duct	T-Duct	1
30364	Mach screw, 2-56 x 1/4 PH nylon	Secures T-duct to probe guard	2
30382	Tygon tube, 1/4 ID, 1/32 wall	Fits 23226 duct to 23698 duct	1/2"
30383	Tygon tube, 1/4 ID, 1/8 wall	Fits 23226 C-duct to Cell, bottom end	1/4"
30384	Tygon tube, 7/16 ID, 1/16 wall	Connects Coupling and C-Duct to cell	3", 1"
30387	Y-Fitting tube	Fits to top of plumbing, with air bleed installed	1
30388	Tygon tube, 1/4 ID, 1/2 wall	Main plumbing tube.	4'
30389	Cable tie. 4" Richo	Secures plumbing to Y-fitting and coupling	20
30458	Cable Tie, 15" Richco Wit-50L	Secure Y-fitting to CTD	2
30579	Tygon tube, 3/8" ID x 1/2" OD	Oxygen Sensor Plenum Adapter	6"
30814	Morrison seal, .026 hole, .24 OD	Morrison seal for T-Duct (23698)	1

APPLICATIONS:

Top Air Bleed Valve

SBE P/N	Part Description	Primary SBE Application	QTY
23337	Pump Air Release Plug	Air Bleed for Y-Fitting	1
30387	Tube, 1/2" Y-Fitting	Top connection for plumbing	1
30388	Vinyl tubing, 3/4" x 1/2"	Main Plumbing tube	≈ 3"

- Air release (23337) installs into the single end of the Y-fitting (30387) such that flat side of air bleed faces out, and concave side faces the "Y".
- Slide about a 3-4" length of heavy tubing (30388) over the air bleed side. This will be the top of your plumbing arrangement.

Conductivity cell Duct Assembly

SBE P/N	Part Description	Primary SBE Application	QTY
23226	Thermistor Duct, No. 2	Conductivity Duct	1
30382	Tygon Tube, 1/4ID x 1/32 wall	Spare Temp/Cond Connector tubing	1 piece
30383	Tygon Tube, 1/4ID x 1/8 wall	Spare C-Duct fitting tube	1 piece
30384	Tygon Tubing, 3/4" x 1/2"	Used with C-Duct fitting tube	≈ 1"

- Use ≈ 3/16" length of thicker tubing (30383) as a base for the C-Duct fitting.
- Install ≈ 1-1/2" length of conductivity cell tubing (30384) onto this piece.
- Install assembly onto c-duct on the side that changes diameters. Push it all the way down.
- C-Duct installs into bottom end of cell with this seal assembly.
- Slip ≈ 1" length of the thinnest tubing (30382) over other end of C-Duct.
- This will allow a good seal between the C-duct and the T-duct.

SBE DRAWING: 41223, 67027

TITLE: Inertia-Balanced Plumbing Configuration

Sea-Bird Electronics Procedure

PROCEDURE NUMBER: 67051

TITLE: SBE Customer Installed TC Duct Assembly

REVISION: C

EFFECTIVE DATE: 01/29/2008

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Thermistor Duct Assembly

SBE P/N	Part Description	Primary SBE Application	QTY
23698	Low Viscous T-Duct	Temperature Duct	1
30364	Mach screw, 2-56 x 1/4 PH NY	Secures T-Duct to Temp Probe Guard	2
30814	Morrison Seal, .026 hole	T-Duct Morrison seal, installed in T-Duct	1

1. Lubricate Morrison seal with a silicon-based lubricant, such as "Parker Super-O."
2. Press Morrison seal all the way into barbed end of T-Duct (23998).
3. There is an open hole only on one side of the Morrison seal. Insert seal this end first.
4. It must go all the way in, past the side holes.
5. Fit Temperature Probe Duct assembly into probe guard (231012C) such that the screw holes in the duct base line up with the holes on the guard.

Temperature and Conductivity Flow Duct Installation

1. Very carefully slide whole assembly over temperature probe, and screw it back tight.
2. Fit side opening of probe duct assembly onto 23226 duct with the tubing (30382) on the duct.
3. Carefully line up Temperature and Conductivity sensors into their mount bracket, and slide conductivity sensor down onto its duct.
 - a. Make sure you don't let the duct bend as you press cell into it.
 - b. It is easy to crack a cell if the duct is not properly aligned.

Replacement sensor plumbing

SBE P/N	Part Description	Primary SBE Application	QTY
30384	Tygon tube, 7/16 ID, 1/16 wall	Connects Coupling and C-Duct to cell	3", 1"
30388	Vinyl tubing, 3/4" x 1/2"	Main Plumbing tube	4 ft
30389	Cable tie, 4"	Secure plumbing to fittings	12

1. If you are using a tube support, follow tube support instructions for connection of cell.
2. If you are not using a tube support, connect plumbing to cell with the coupler as follows.
 - a. Connect ≈ 2" length of 30384 tubing to one end of the coupler.
 - b. Connect coupler first to heavy tubing (30388) and second to top end of the cell.
3. Use the 30388 heavy tubing to form a flowing path through each sensor ducting system.
4. Use the small cable ties (30389) to make a good connection at tubing/sensor interface points.
5. Refer to the included diagram for an idea of how to plumb a standard CTD.
6. *Please not that we do not generally use any pump flow exhaust tubing.*

SBE DRAWING: 41223, 67027

TITLE: Inertia-Balanced Plumbing Configuration

Sea-Bird Electronics Procedure

PROCEDURE NUMBER: **67051**

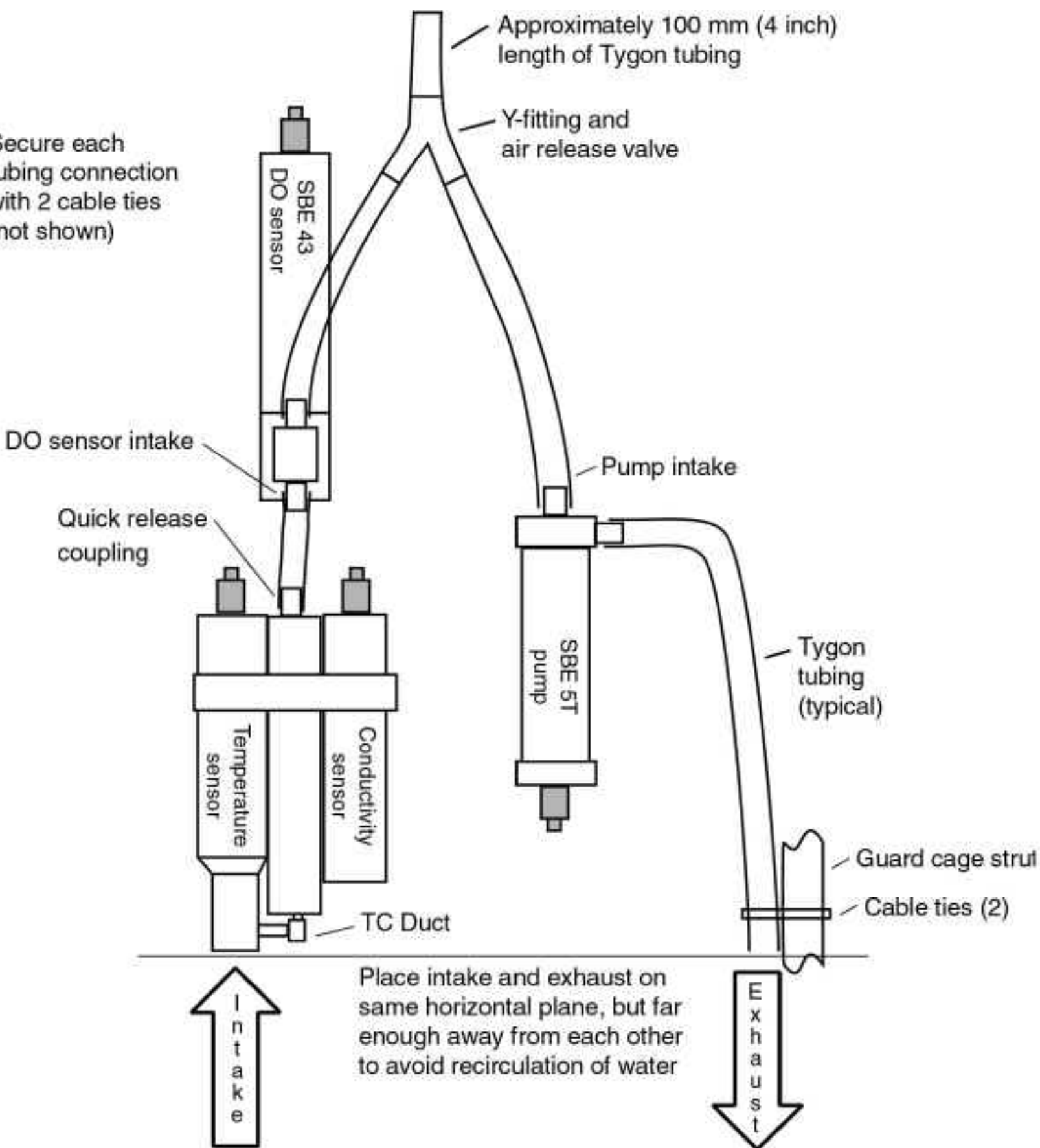
TITLE: **SBE Customer Installed TC Duct Assembly**

REVISION: **C**

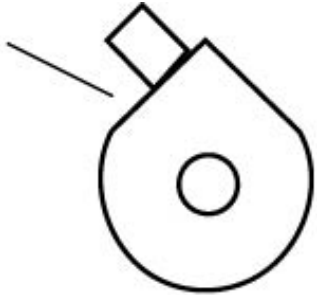
EFFECTIVE DATE: **01/29/2008**

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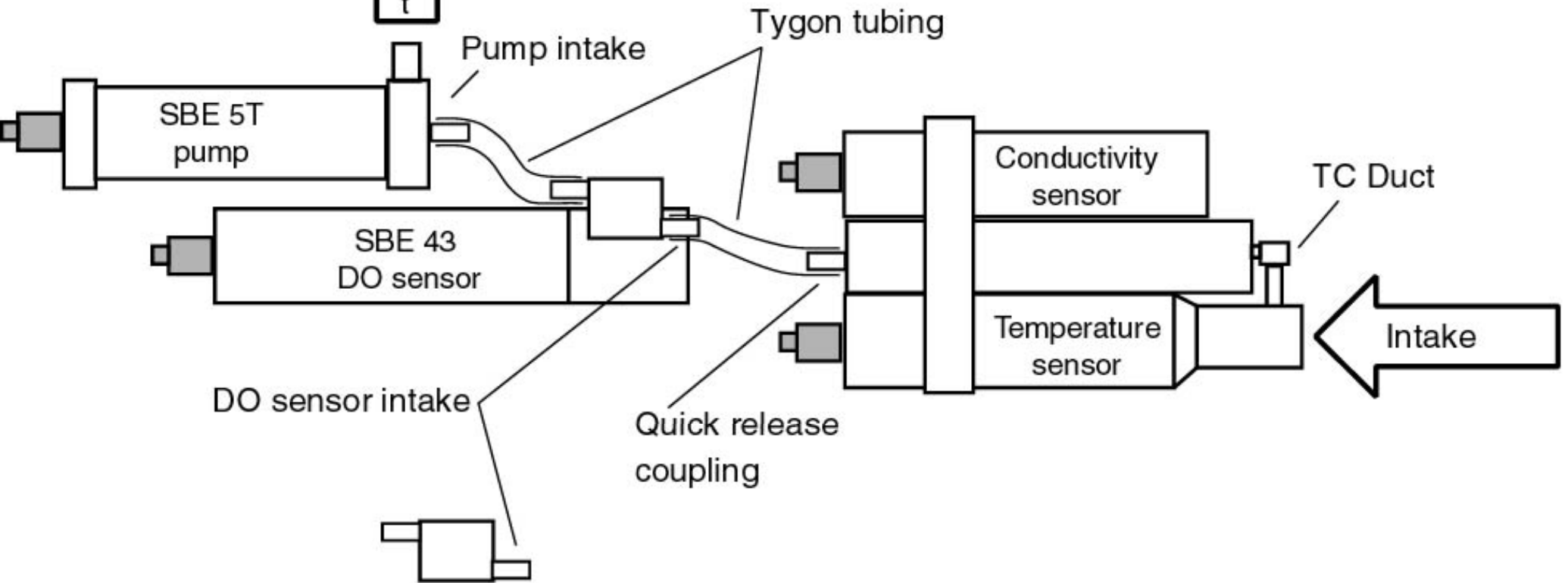
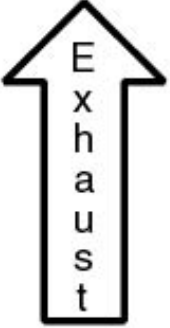
Secure each tubing connection with 2 cable ties (not shown)



Place pump exhaust above intake and DO sensor, with exhaust outlet 'corner' up

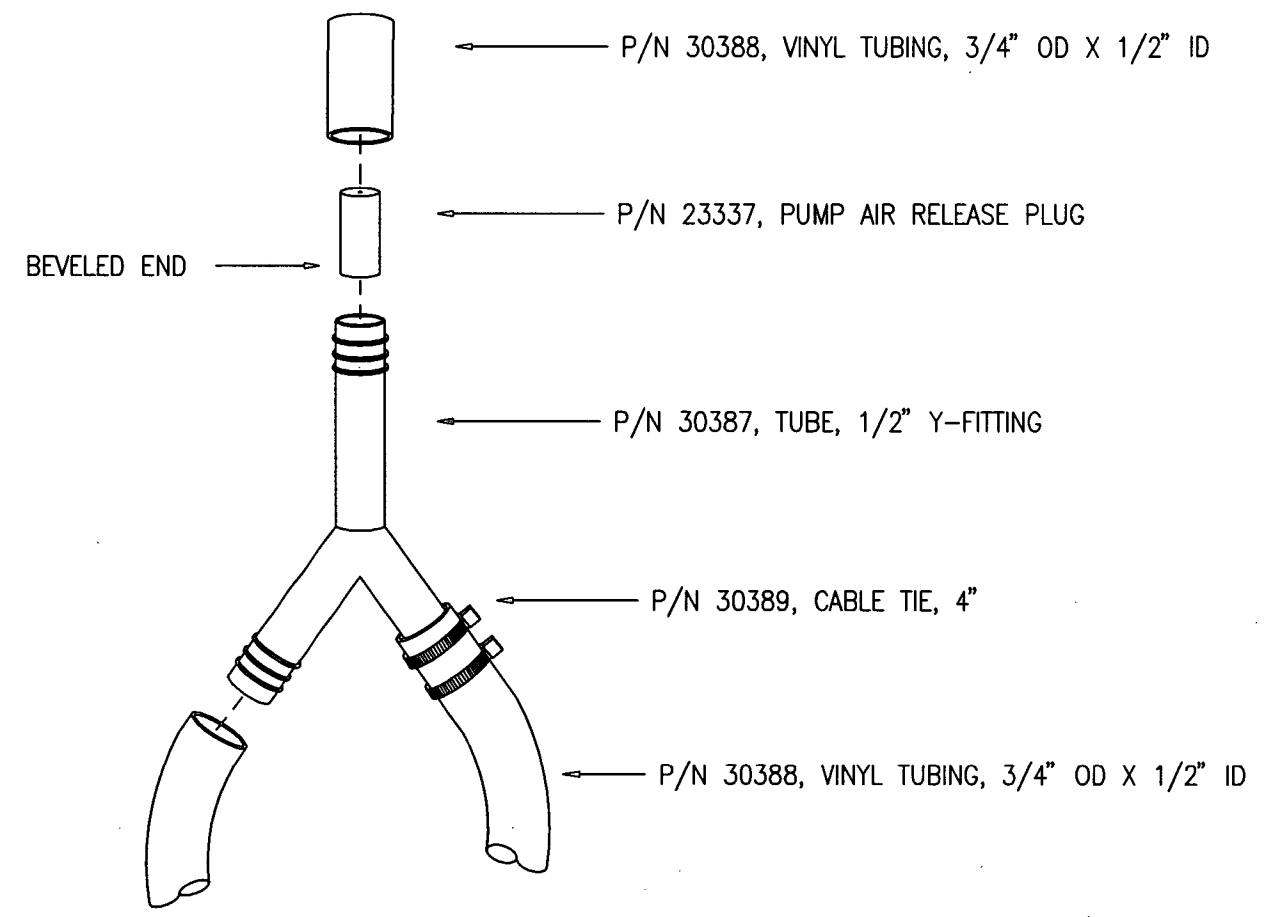
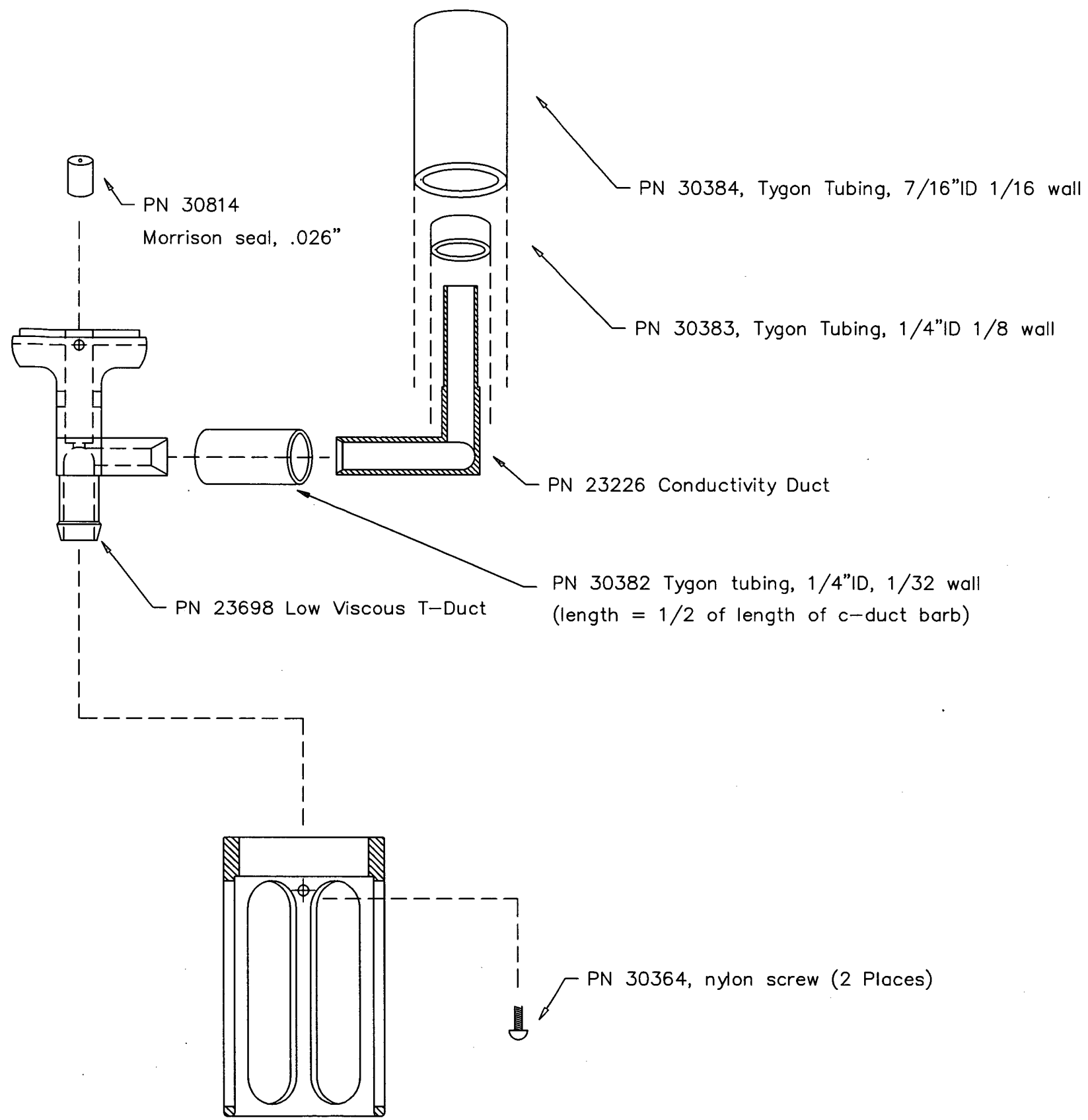


Secure each tubing connection with 2 cable ties (not shown)



Place DO sensor with exhaust above intake, oriented as shown ($\pm 45^\circ$)

DATE	SYM	REVISION RECORD	AUTH.	DR.	CK.



TOLERANCES	SEA-BIRD ELECTRONICS, INC				
FRACTIONAL	P/N 90151	SCALE N.T.S.	DRAWN BY MJ		
DECIMAL	TITLE TC Duct Kit Assembly				
ANGULAR	DATE 02.16.99	DRAWING NUMBER 67027	REV		