RANDOLPH AUSTIN COMPANY

www.RandolphAustin.com

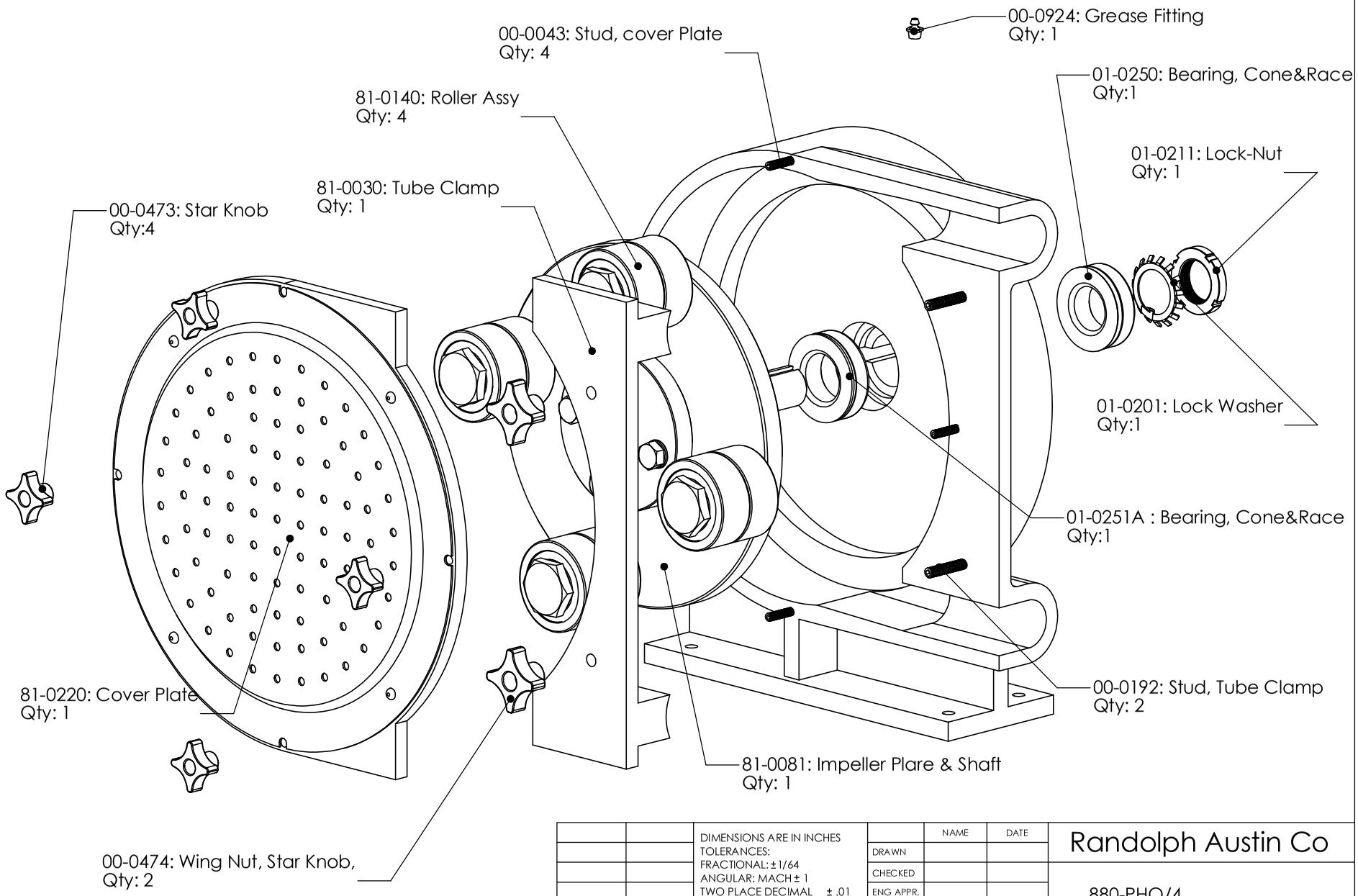
Operations Manual

Pump Series: **880**

Model #880-PHO
#880-PH4

- Machined aluminum housing
- 1.25 " Dia. Shaft
- Tubing Sizes:
  - ¾ " ID X 1 ¼ " OD
  - 1" ID x 1 ½ " OD
- Pedestal Mount

Randolph Austin Company
2119 FM 1626
Manchaca, Texas 78652
(512) 282-1590



NEXT ASSY	USED ON
APPLICATION	

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: ±1/64
ANGULAR: MACH ± 1
TWO PLACE DECIMAL ± .01
THREE PLACE DECIMAL ± .005

MATERIAL --

FINISH --

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

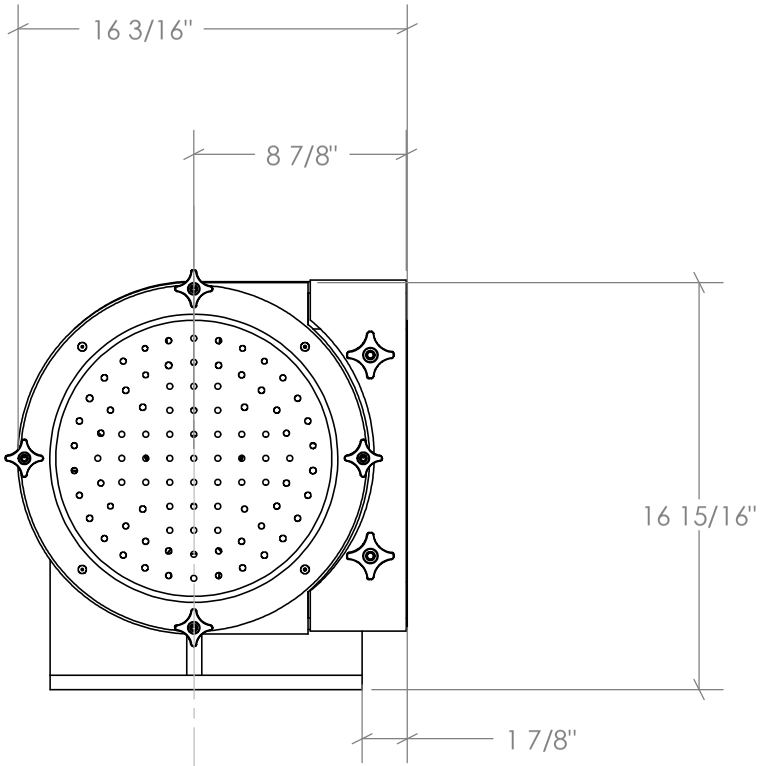
COMMENTS:

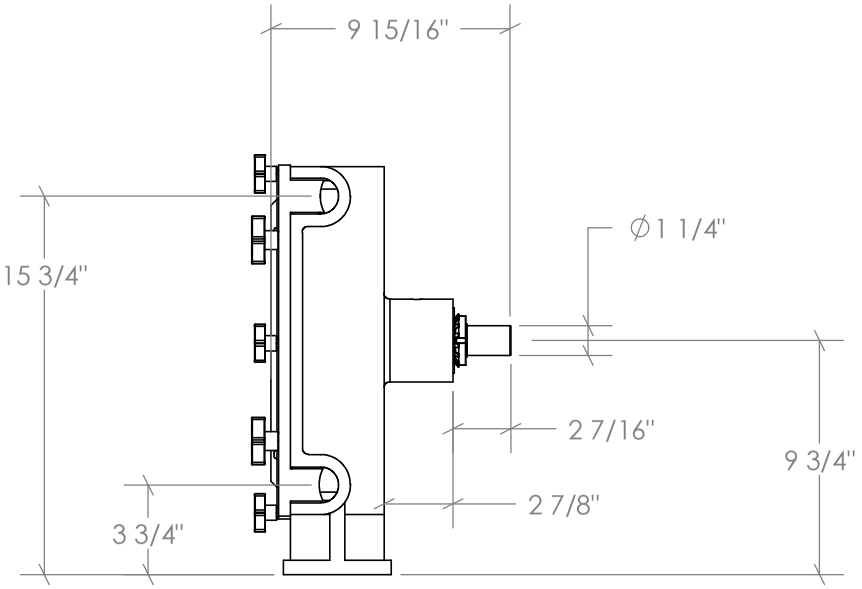
Randolph Austin Co

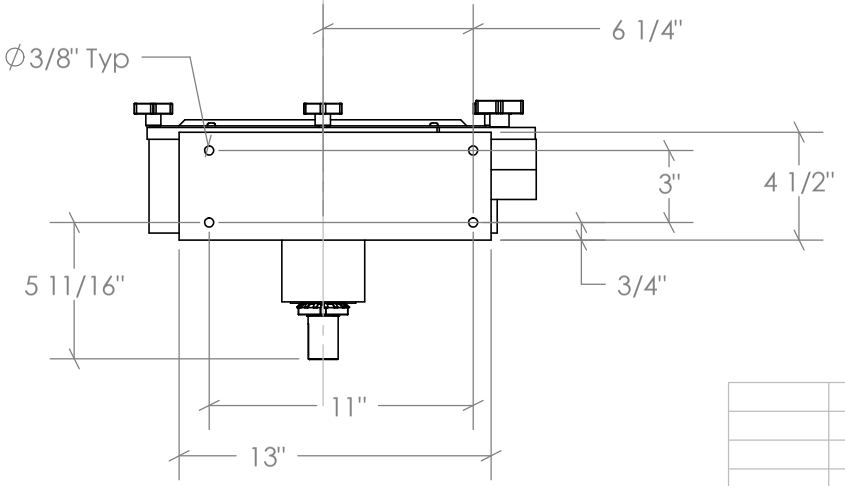
880-PHO/4
4 Impeller Roller Pump Head
Exploded Parts Diagram

SIZE	DWG. NO.	REV.
A	800-PHO/4	
SCALE:1:1	WEIGHT:	SHEET 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED







NEXT ASSY	USED ON
APPLICATION	

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ± 1/64
ANGULAR: MACH ± 1
TWO PLACE DECIMAL ± .01
THREE PLACE DECIMAL ± .005

MATERIAL --

FINISH --

DO NOT SCALE DRAWING

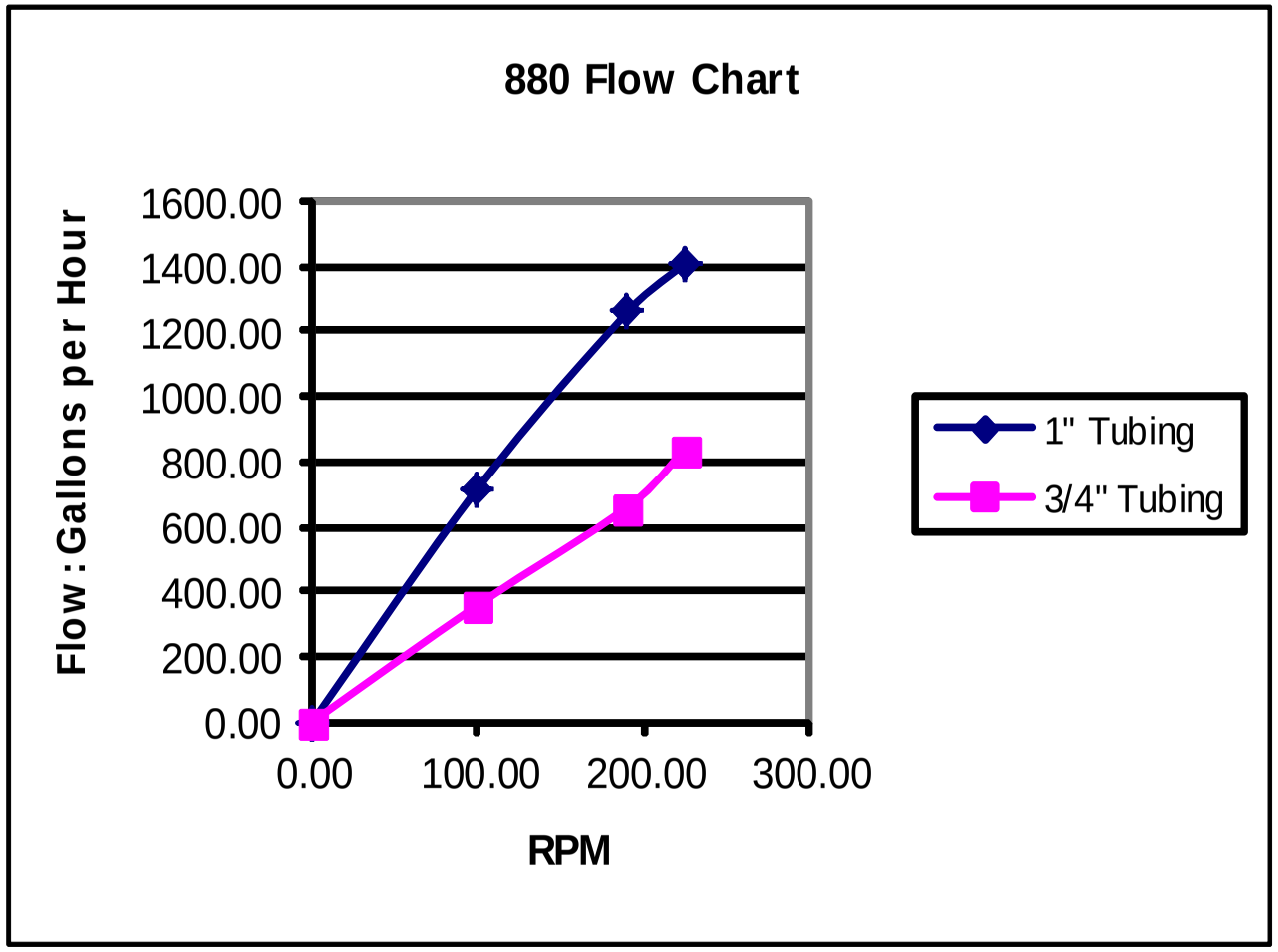
	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Randolph Austin Co

880-PHO
Mounting Dimensions

SIZE	DWG. NO.	REV.
A	880-PHO/MD	
SCALE:1:1	WEIGHT:	SHEET 1 OF 2



UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCES ARE:			CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE
FRACTIONS	DECIMALS	ANGLES	APPROVALS / DATE
MILLIMETERS:			DRAWN
N/A	±.1	±1.0°	CHECKED
INCHES:			RESP ENG
±1/64	±.005	±1.0°	MFG ENG
MATERIAL			QUAL ENG
FINISH			
NEXT ASSY	USED ON		
APPLICATION	DO NOT SCALE DRAWING		

Randolph Austin Company
PO 988 2119 FM 1626 MANCHACA TX.

SIZE	DWG. NO.	REV.
A	880 assembly for mour	
SCALE	CAD FILE:	SHEET OF

Randolph Austin Company
2119 FM 1626 – P.O. Box 988
Manchaca, TX 78652

General Recommendations:
Gear Reducer, Part Numbers: #03-0308, 03-0307, 03-0309, & 03-0310

1. The gear reducers are shipped form the factory with lubricant, unless otherwise specified.
2. At all times it is recommended that the breather plug be kept clean. Should the breather become blocked, pressure will build in the gear housing and can result in oil leakage through the seals.
3. It is recommended, that after the first month of service, all oil be drained from the gearbox, and replaced with new oil. *(See Recommended Oil Grades)*
4. The gearbox is filled with extreme pressure lubricants, which protect the teeth in the event of oil thinning due to temperature rises or high pressure due to accidental overloads. These oils are liable to for form sludge after continuous service and therefore it recommended that they be changed after 1,500 hours of operation, or more often as conditions may dictate.
5. The *Recommended Oil Grades* are for normal operating conditions of duty and ambient temperature. High Ambient Temperature causes the oil to thin out thereby reducing its' protective qualities. In such instances, it may be necessary to use a heavier grade than shown. Conversely, low temperatures may require a lighter grade of lubricant. A general guideline for selection of a lubricant is that the pour point of the oil must be less than the lowest ambient temperatures to be encountered.

Recommended Oil Grades

Castrol	Shell	Exxon	Texaco	Mobil Oil	BP	Gulf Oil
Alpha SP220	Shell Omala 220	Spartan EP220	Meropa 220	Mobilgear 630	BP Energol GR-XP220	Gulf EP Lubricant HD220

Oil Quantity

Mounting Position	Standard Floor	14 Ounces (.414 Liter)
Mounting Position	Vertical, Shaft Down	20 Ounces (.591 Liter)

General Characteristics of Randolph Austin Tubing Materials

Cilran™ is made from a thermoplastic elastomer that possesses exceptional chemical resistance to acids and bases. **Cilran**™ has low gas permeability; good flex fatigue resistance and meets USP Class VI specifications. Ideal for use in many laboratory applications, it may be used in place of silicone for some applications. **Cilran**™ is translucent white in color.

Povinal™ is a polyvinyl alcohol based tubing which is excellent for use in applications with aliphatic, aromatic and chlorinated hydrocarbon solvents. **Povinal**™ has good flex fatigue resistance and is suitable for many industrial applications. It may be used as a substitute for fluroelastomer polymers in some applications. Not recommended for use with water or solutions containing concentrations of water. Pump tubing is teal in color. Transfer tubing is amber.

Vytex™ is a clear flexible polyvinyl tubing ideal for general-purpose usage in applications with dilute aqueous solutions (both acids and alkali's), and for food and beverage usage. Strong acid solutions may be used with **Vytex**™ for short intervals, but should be flushed with water after use. The smooth surface allows for easy flushing and cleanup for food and beverage applications. **Vytex**™ is a durable, high flex tubing with a Shore "A" durometer of 60 allowing a long life expectancy for continuous flexing where peristaltic pumps are used.

Prothane II™ is transparent, aqua blue, polyester polyurethane tubing that exhibits excellent abrasion resistance, has good low temperature properties and is resistant to ozone and oxidation. **Prothane II**™ exhibits an excellent resilience to continuous flexing and impacting experienced in peristaltic pumps. Along with these exceptional features **Prothane II**™ exhibits good hydrolic stability, good oil and fuel resistance, and high tensile and tear strength. **Prothane II**™ is resistant to diesel fuel, kerosene, motor oil, mild solvents, aromatic hydrocarbons, gasoline, and concentrated acid and alkaline solutions.

E-D Plex™ is multi-purpose tubing that is ideally suited for applications that range from transferring paint, ink, acids, and bases. Some oil and hydrocarbons will work with **E-D Plex**™, but should be tested before use. Combining the environmental resistance of EPDM with the chemical resistance of chloropreme, **E-D Plex**™ possesses similar elastomeric performance found in more expensive vulcanized rubber, while still maintaining high flex fatigue resistance. **E-D Plex**™ has been proven very successful in peristaltic pump applications where continuous flexing is required.

Randolph Austin Company
Tubing Chemical Resistance Chart

Code indicates the percentage weight gain or loss after 24 hours immersion in the fluid.
(B) Best = 1-4%, (G) Good = 5-10%, (F) Fair = 11- 15%, (P) Poor = 16%+

The data contained herein are based on tests conducted on representative samples and are considered accurate. The results should indicate liquids that could be used with the tubing. However no guarantee is given or implied regarding the application of this data to the safe use of the tubing. It is suggested that the purchaser conduct tests to determine if this material is suited to this application.

	Cilran™	ED-Plex™	Povinal ™	Prothane II ™	Vytex™
Aqueous Solutions					
Water	B	B	P	B	B
Sodium Chloride (Saturated)	B	B	F	B	B
Aluminum Sulfate	B	B	P	B	B
Acids & Bases					
Sulphuric Acid (66° Be)	B	B	P	G	B
Acetic Acid, Glacial	B	P	P	P	F
Hydrochloric Acid (30° Be)	B	B	P	P	G
Nitric Acid (40° Be)	B	B	P	P	G
Sodium Hydroxide (50% sol.)	B	B	P	B	B
Ammonia Hydroxide	B	B	P	B	B
Aliphatic Hydrocarbons					
Diesel Fuel	P	P	B	G	G
Naptha	P	P	B	G	G
Mineral Oil	P	P	B	G	B
Aromatic Hydrocarbons					
Toluene	P	P	B	P	P
Xylene	P	P	B	P	G
Chlorinated Solvents					
Trichloroethylene	P	P	B	P	P
Carbon Tetrachloride	P	P	B	P	P
Methylene Chloride	P	P	B	P	P
Ketones					
Acetone	B	B	F	P	P
Methyl Ethyl Ketone (MEK)	G	G	F	P	P
Esters					
Amyl Acetate	P	B	F	P	P
Butyl Acetate	P	B	F	P	P
Ethyl Acetate	P	F	F	P	P
Alcohol					
Butyl Alcohol	G	G	P	G	B
Isoproply Alcohol	G	B	F	B	B
Methyl Alcohol	B	B	F	G	B
Ethyl Alcohol (90%)	B	B	G	G	G
Glycol					
Ethylene Glycol	B	B	G	B	B
Glycerine	B	B	G	B	B
Vegetable Oil					
Safflower Oil	B	B	B	B	G

8-Mar-01

(800)-531-5263 - (512)-282-1590 – Fax (512)-280-0678

HOW TUBING IS INSERTED IN THE PUMP

1. Turn power off. Open the cover plate and tube clamp. Remove existing tubing by manually turning rollers while gently tugging on the tubing.
2. Clean any debris from pump race way and tube clamp with a clean rag or paper towel. A light detergent spray can be used as well. Avoid the use of solvents such as acetone as they will have an adverse effect on the paint.
3. Thread tubing back into pump. Start at the top of the pump and manually move the rollers so that they start occluding the tubing. Care should be taken to avoid pinching fingers with rollers. Align the tubing so that is in the center of the raceway.
4. Add lubricant. Close pump cover. Tighten tubing clamp to ensure the tubing is not fed through the pump.

Pump Series	**Tubing Size**
250	.062” (1/16”) ID X .187” (3/16”) OD
250	.125” (1/8”) ID X .250” (1/4”) OD
300	.250” (1/4”) ID X .437” (7/16”) OD
400	.250” (1/4”) ID X .437” (7/16”) OD
500	.187” (3/16”) ID X .375” (3/8”) OD
500	.250” (1/4”) ID X .437” (7/16”) OD
610,615,620, & 630	.375” (3/8”) ID X .625” (5/8”) OD
610,615,620, & 630	.500” (1/2”) ID x .750” (3/4”) OD
750	.625” (5/8”) ID X .937” (15/16”) OD
750	.750” (3/4”) ID X 1.062” (1 1/16”) OD
780	.750” (3/4”) ID X 1.062” (1 1/16”) OD
880	.750” (3/4”) ID X 1.25” (1 1/4”) OD
880	1.00” (1.00”) X 1.50” (1 ½”) OD