# SEELEVEL ANNIHILATOR

## Tank Truck Level Gauge





**MODEL 806-B / 806-Bi MANUAL** 

Includes version 2.03 software information

# **GARNET SEELEVEL ANNIHILATOR**M

### Tank Truck Level Gauge

### MODEL 806-B / 806-Bi

Includes version 2.03 software information

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### **CHAPTER 1 - OVERVIEW**

ongratulations on purchasing the Garnet Instruments Model 806-B or 806-Bi SEELEVEL ANNIHILATOR ™ Level Gauge for Tank Trucks. The ANNIHILATOR™ is a highly advanced device for liquid level measurement in transport applications. It is designed for reliable, accurate level measurement of non flammable liquids such as water, sewage, sludge, and many chemicals. The liquid level is determined by sensing the position of a magnetic float using a series of reed switches arranged in a vertical sensing bar. This technology has no moving parts except for the float, and can operate over a range of product temperatures from -40 °C to +90 °C (-40 °F to +194 °F).

The ANNIHILATOR™ has been designed to withstand the vibration and shock encountered in mobile applications. The 806-B has a weatherproof display enclosure for mounting outside of the cab of the truck, and the 806-Bi has a very compact sized display enclosure for mounting inside the truck cab. Both operate from 12 volt power, and use the same sender bar in the tank, which is weatherproof and able to withstand steaming temperatures.

The ANNIHILATOR™ can display in any units, such as inches of level, barrels, gallons, or cubic metres of volume. The display has four alarm outputs which can be used to warn of impending overfills or to shut down loading of the truck in an overfill or empty tank situation.

The 817-USB Truck Gauge Programmer is used to program the Annihilator to read the desired calibration units, and to set the alarm points. It is designed to be easily operated by people unfamiliar with electronics or computers.

### **CHAPTER 2 - NEW FEATURES OF THE ANNIHILATOR**

The 806-B (Revision B) version of the Annihilator uses upgraded hardware and software to provide a number of enhancements over the earlier 806 and 806A series.

- 1. The display is multi-compartment, one display can accept up to three sender bars. The compartment number is displayed on the right hand LEDs and a push button is used to select the compartment. The number of compartments actually used in a given application can be programmed into the display so that only those compartments can be selected.
- 2. The display can be programmed directly with the 817-USB Truck Gauge Programmer, no adapter is needed.
- 3. One of the four alarms can function as an automatic self resetting alarm for high level warning. When the alarm is activated by a high level, it can be bypassed (silenced) by pressing the alarm button. When the tank is emptied, the alarm is re-activated for the next time the tank is filled. The status of the bypass is shown on the display.
- 4. The number of compartments, the current compartment number, the LED brightness (806-Bi) and the automatic alarm bypass reset status are retained even if power is removed, so the gauge will return to the same point of operation when power is restored.
- A remote transmitter connection can be used to connect to a SeeLevel Access.
- 6. The 806-Bi in-cab version has adjustable LED brightness for comfortable viewing in all lighting conditions.
- 7. Version 2.03 has upgraded software so that tank numbers from 4 to 9 can be displayed. This can be used in applications where there are more than 3 compartments being monitored by more than one display.

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### **How the Gauge Works**

The Annihilator gauge consists of a sender bar, a donut shaped float, interconnect wiring, and a display. The sender bar is mounted vertically in the tank with the float sliding up and down around it in accordance with the fluid level. The sender bar sends the fluid level information via two wires to the display, which shows the level in appropriate units and operates the alarms. One display can monitor up to three compartments.

The float contains magnets which activate reed switches inside the stainless steel sender bar to indicate the level of the fluid. The activated switches are detected by the microprocessor at the top of the bar. A pair of wires (one signal and one ground) carry power from the display to operate the sender bar, and also carry the level information signal from the bar to the display. The power level on the signal wire is very low, so there is no danger of sparking or shock from this wire, and short circuits will not cause any damage. The signal from the bar is coded so that it is not affected by most electrical noise, moisture, or corrosion. If the signal is too badly degraded due to poor wiring, the system shuts down rather than showing an incorrect reading.

The display converts the level information to volume according to the calibration programmed into it with the 817-USB Truck Gauge Programmer. The calibration can be in inches or volumetric units such as cubic metres or barrels. The display also contains alarms that can be programmed to operate at specific tank levels and can be used to operate external devices. The in-cab display is enclosed in a compact plastic box which can be easily mounted anywhere in the truck cab, and the outside display is durable enough to withstand weather and indirect road spray. The tank level and compartment number is shown on a large LED (Light Emitting Diode) display which gives good all around visibility. The entire gauge operates from 12 volt truck power, consuming about 1/8 of an amp.

### **Multi Compartment Operation**

One display can have up to 3 sender bars connected (one bar per compartment), which is equivalent to 3 separate displays, except that you can only see one level and have one set of alarms at a time. This allows cost and space savings on the truck or trailer.

The compartment number is shown on the right side of the display, for example, C2 indicates compartment number 2. If the display has been programmed for only one compartment, then the compartment number is not shown.

Each compartment has its own volume and alarm calibration, so the compartments can be completely different in size and shape. When the compartment is changed, the volume display and alarms will change according to the calibration and tank level for the new compartment. If the self resetting alarm has been bypassed, that information is retained for each compartment, even if the compartment is changed or power is turned off.

To change which compartment the display is showing, press the **COMP** button on the right side of the display. Each time the button is pressed, the display will show the next compartment number. The display can also be configured to display compartment 1 with a trailing zero. In this case, only single compartment operation is possible. If the power to the system is turned off, the display retains the compartment number, so that when the power is turned on again, the same compartment will be shown.

Version 2.03 allows the display to show compartments 4 to 9. For example, if an application has 7 compartments, then three displays would be used. The first display would show compartments 1, 2, and 3. The second display would show 4, 5, and 6. The third display would show 7. This makes it much easier for the operator to keep track of which compartment is being monitored.

### **Multi Calibration Operation**

By connecting together 2 or 3 compartment wires on the display, it is possible to have different calibrations for the same tank, for example, gallons and barrels. In this case, instead of indicating compartments, the right display indicates which calibration is selected. Each calibration could have its own alarms as well.

### **Alarm Operation**

Each compartment has 4 alarms which can be set with the 817-USB programmer to turn on or off at any point in the tank. Alarms 1 and 2 are general purpose alarms which can be used for high or low level warnings or for controlling pumps or valves. If Alarm 4 is not used, then Alarm 3 can also be used as a general purpose alarm. These alarms can be programmed to be off below the set point and on above it, or they can be on below the set point and off above it. This allows the devices being controlled to turn on or off as the tank level rises or falls.

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Alarm 4 is a dedicated high level warning alarm that turns on when the tank level rises past the set point. Normally a warning light or horn is connected to this alarm output. When the alarm is on, pressing the **ALARM BYPASS** button on the left side of the display will turn off (bypass) the warning. When the alarm is bypassed, the decimal points on the compartment indicator digits will light up. Pressing the alarm button when the alarm is off has no effect. Once the alarm has been turned off (bypassed), it will remain off until the tank level drops below the Alarm 3 set point, then rises again above the Alarm 4 set point. Alarm 3 is normally set close to the bottom of the tank and is used to clear the bypass. This automatic system protects against the operator forgetting to turn the alarm back on for the next time the truck is loaded. The bypass indicator (compartment decimal points) serves to notify the operator that the alarm has been bypassed.

Each compartment has its own set of alarms and its own bypass memory. The bypass is retained for each compartment even if the compartment is changed or the gauge is turned off and on.

WARNING: The use of alarm points is entirely at the owner's risk due to the nature of connecting external horns or lights, the reliability of external horns or lights, and the reliability of the power source and wiring required to operate them.

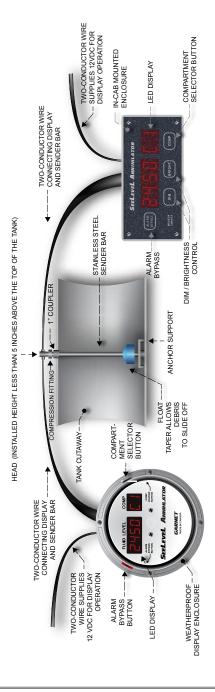
### **Display Brightness (806-Bi only)**

The 806-Bi (in-cab model) has three brightness levels for the LED display to allow comfortable viewing in all lighting conditions. To increase the display brightness, press the **BRIGHT** button. Each time the button is pressed, the brightness is increased. When the maximum brightness has been reached, pressing the **BRIGHT** button has no effect. Similarly, to decrease display brightness, press the **DIM** button. The brightness level is retained in memory even if the gauge is turned off and on.

### **Installation Overview**

Installation of the gauge consists of cutting a hole in the top of each tank compartment and welding in a 1 inch coupler, and welding an anchor assembly to the bottom of the tank. The sender bar is cut to length, the end is sealed, and it is inserted from the top of the tank and fastened at the top with a compression fitting. The display is mounted at a convenient point on the truck or in the cab, and the wiring is run between the bar and the display. 12 volt power is brought into the display, any alarms are wired up, and the display is programmed with volume and alarm information. The bar can be removed later for service by disconnecting the wires, unscrewing the compression fitting, and pulling it out.

### **GENERAL MECHANICAL ASSEMBLY**



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### **CHAPTER 4 - UNIQUE FEATURES**

The Annihilator gauge has been designed for maximum ease of installation and servicing, and for best operational features. The anchor at the bottom of the tank provides a shock mount for the float, and holds the float in place if the sender bar is removed so no tank entry is required for bar replacement. If the new bar is cut to the same length as the old, no re-calibration is required.

The float is molded from polyethylene for high chemical resistance, good esthetic appearance, and high durability due to the "give" in the plastic. The light weight of the polyethylene allows the float size to be minimized while allowing it to float on the lowest density products.

The sender bar has no moving parts and is completely filled with potting material to enhance reliability. The use of a digital rather than analog sensing technique ensures high accuracy with no drift or degradation. To accommodate different tank sizes, the bar is simply cut to length with a hacksaw, and the cut end sealed with a cap to prevent moisture or product contamination. This way only one size needs to be stocked, and a perfect fit is ensured. The sender bar top is very low in profile to satisfy rollover requirements; the maximum height is less than 4 inches above the top of the tank so that it will not protrude above the spillway.

The outside (806-B) display enclosure is waterproof, and the internal circuitry is also protected against moisture by a coating. The small size of all of the display enclosures also makes it easy to find an appropriate mounting location.

The use of an on-site programmer eliminates downtime waiting for factory calibration parts, and allows easy reprogramming should the need arise. The entire display, including decimal point, is completely programmable to whatever units are desired. In addition to numbers, the letters F, U, L, and E can be programmed to provide displays such as FULL, E, etc.

### CHAPTER 5 - SENDER BAR LIMITS OF RESISTIVITY

The temperature of the product being transported should be limited to approximately +90°C (+194°F). Damage to the float and sender bar can occur if this value is exceeded.

The tube used in the manufacturing of the sender bar is seamed 302/304 stainless steel. Seamless 316 stainless steel is optionally available. It should be noted that certain corrosive products, as well as high concentrations of acid products, may attack the stainless steel and cause perforations to develop. It is the operator's responsibility to determine the products compatibility with the sender bar.

# WARNING: Perforation of the sender bar or heat damage is not warrantable.

The Loctite products used to secure the end cap can be attacked by certain chemicals as well. For reference, a chemical resistance chart from Loctite showing product compatibility with various chemicals can be found on the following pages.

The 680 retaining compound we specify is similar to Loctite #592, 567, 565, 569, 545, 580, 571, 242, 577, 572, 542, 565, 545, 243. If you require more information, please call the Loctite Corporation, in Canada, 1-800-263-5043, in USA, 1-800-562-8483.

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### FLUID COMPATIBILITY CHART

# for metal threaded fittings sealed with Loctite Sealants LIQUIDS, SOLUTIONS & SUSPENSIONS

	Bagasse Fibers	Chlorobenzene Dry •	Ferrous Chloride	Ion Exclusion Glycol	Nickel Chloride
LEGEND:	Barium Acetate	Chloroform Dry	Ferrous Oxalate	Irish Moss Slurry	Nickel Cyanida
All Loctite Anaerobic Sealants are	Barium Carbonate	Chloroform Dry  Chloroformate Methyl	Ferrous Sulfate10%	Iron Ore Taconite	Nickel Cyanide Nickel Fluoborate
Compatible Including #242, 243, 542, 545, 565, 567, 569, 571, 572, 577, 580, 592	Barium Chloride	Chlorosulfonic Acid	Ferrous Sulfate (Sat)	Iron Ovide	Nickel Ore Fines
577 500 503	Barium Hydroxide	Chrome Acid Cleaning	Fertilizer Sol	Iron Oxide	Nickel Plating Bright
577, 580, 592 + Use Loctite #270, 271™, 277, 554	Barium Sulfate	Chrome Liquor	Flotation Concentrates •	Isohutvraldehyde •	Nickel Sulfate
■ Not Recommended	Battery Acid	Chrome Plating Bath	Fluoride Salts  Fluorine, Gaseous or Liquid	Isooctane	Nickel Sulfate
□ <10% (same as •)	Battery Diffuser Juice	Chromic Acid 10%	Fluorine, Gaseous or Liquid	Isopropyl Alcohol	Nitrate Sol
>10% (same ast)	Bauxite (See Alumina)	Chromic Acid 50% (cold)	Fluorolube	Isocyanate Resin	Nitration Acid(s)
* <5% (same as •)	Bentonite • Benzaldehyde	Chromic Acid 50% (hot)	Fluosilic Acid	Isopropyl Acetate	Nitric Acid
>5% (same as †)  • Use Loctite* #242* , 243, 290, 565	Benzaldehyde	Chromium Acetate	Flux Soldering •	Isopropyl Ether	Nitric Acid10%
◆ Use Loctite #242", 243, 290, 565	Benzene	Chromium Chloride	Fly Ash Dry	Itaconic Acid	Nitric Acid 20% †
	Benzene Hexachloride	Chromium Sulfate	Fly Ash Dry • Foam Latex Mix		Nitric Acid Anhydrous
Abrasive Coolant	Benzene in Hydrochloric Acid €	Classifier	Foamite	Jet Fuels	Nitric Acid Fuming
Acetaldehyde	Benzoic Acid	Clay	Formaldehyde (cold)	Jeweler's Rouge	Nitro Aryl Sulfonic Acid
Acetate Solvents	Benzotriazole	Coal Slurry	Formaldehyde (hot) †	Jig Table Slurry	Nitrobenezene-Dry
Acetimide  Acetic Acid	Beryllium Sulfate	Coal Tar	Formic Acid (Dil cold)		Nitrocellulose
Acetic Acid	Bicarbonate Liquor	Cobalt Chloride	Formic Acid (Dil hot) †	Kaolin-China Clay §	Nitrofurane
Acetic Acid	Bilge Lines  Bleach Liquor	Copper Ammonium Formate	Formic Acid (cold)	Kelp Slurry	Nitroguanidine
Acetic Acid - glacial	Bleach Liquor	Copper Chloride	Formic Acid (hot) +	Kerosene	Nitroparamns-Dry
Acetic Anhydride	Bleached Pulps	Copper Cyanide	Freon § † Fuel Oil	Kerosene Chlorinated	Nitrosyl Chloride
Acetyl Chloride  Acetylene (Liquid Phase)	Borax § Liquors	Copper Liquor	Fuel Oil	Ketone	Norite Carbon
Acetyl Chloride	Boric Acid	Copper Naphthenate	Fuming Nitric Red	Lacquer Thinner	Nuchar
Acetylene (Liquid Phase)	Brake Fluids   Brine Chlorinated	Copper Plating, Acid Process  Copper Plating, Alk. Process	Fuming Sulfuric	Lacquer Ininner	Oakite § Compound
Acid Clay   Acrylic Acid	Brine Cold	Copper Plating, Alk. Process	Furfural	Lactic Acid	Oli Consent
Acrylonitrile	Bromine Solution †	Copper Sulfate	ruriurai	Latex-Natural	Oil, Creosote
Activated Alumina	Putadiono •	Corundum	Gallic Acid	Latex-Synthetic	Oil Fuel
Activated Carbon	Butadiene	Crossoto	Gallium Sulfato	Latex Synthetic Raw	Oil, Fuel
Activated Cilica		Creosote	Gallic Acid * Gallium Sulfate  Gasoline-Acid Wash	Laundry Wash Water	Oil Soluble
Alcohol-Allyl	Rutul Amina	Cvanide Solution	Gasoline-Alk. Wash	Laundry Rleach	Oleic Acid hot
Alcohol-Allyl Alcohol-Amyl	Butyl Amine Butyl Cellosolve §	Cyanide Solution   Cyanuric Chloride	Gasoline Aviation	Laundry Bleach	Oleic Acid, rold
Alcohol-Benzyl	Butyl Chloride	Cyclohexane	Gasoline Copper Chloride	Laundry Blue	Oil, Soluble Oleic Acid, hot Oleic Acid, cold Ore Fines-Flotation.
Alcohol-Butyl	Butyl Chloride	Cylinder Oils	Gasoline Copper Chloride  Gasoline Ethyl	Lead Arsenate	Ore Puln
Alcohol-Ethyl	Butyl Lactate	Cymruei Oils	Gasoline Motor	Lead Oxide	Organic Duos
Alcohol-Etnyl	Butyral Resin	De-Ionized Water	Gasoline Motor	Lead Oxide	Ore Pulp Organic Dyes Oxalic Acid cold Ozone, wet
Alcohol-Hexyl	Butyraldehyde	De-Ionized Water  De-Ionized Water Low	Gasoline White	Lignin Extract	Ozone wet
Alcohol-Isopropyl	Butyric Acid	Conductivity	Gluconic Acid	Lime Slaked	Ozone, wet
Alcohol Mothul	butyric Acid	Detergents	Glue-Animal Gelatin	Lime Sulfur Mix	Paint-Linseed Base
Alcohol-Methyl	Cadmium Chloride	Detergents	Clue Discount delatin	Liquid Ion Exchange	Paint-Linseed base
Alum-Ammonium	Cadmium Chloride	Developer, priotographic	Glue-Plywood • Glutamic Acid • Glycerine Lye-Brine •	Liquid ion exchange	Paint-Water Base Paint-Remover-Sol. Type
Alum-Chrome	Cadmium Sulfate	Dextrin	Character Live Dalace	Lithium Chloride	Paint-Remover-soi, Type
Alum-Potassium	Calcium Acetate	Diammonium Phosphate	Glycerol		Paint-Vehicles
Alum-Sodium	Calcium Risulfate	Diamylamine	Glycerol	Ludox	Paper Poard Mill Waste
Alumina	Calcium Carbonate	Diatomaceaus Earth Slurry	Glycine Hydrochloride	Lye	Paper Board Mill Waste
Aluminum Acetate	Calcium Chlorate	Diazo Acetate	Glycol Amine	Machine Coating Color●	Paper Pulp
Aluminum Acetate	Calcium Chloride	Dibutyl Phthalate	Glycolic Acid	Magnesite Slurry	Paper Pulp
Aluminum Bifluoride	Calcium Chloride Brine	Dichlorophonol	Glycolic Acid	Magnesite sturry	Paper Pulp with Pup
Aluminum Chloride	Calcium Citrate	Dichlorophenol   Dichloro Ethyl Ether	Glýoxal  Gold Chloride	Magnesite	Paper Pulp with Amun
Aluminum Sulfate	Calcium Ferrocyanide	Diction Carly Later	Gold Cyanide	Magnorlum Carbonato A	
Ammonia Anhydrous	Calcium Formato	Dicyandamide  Dielectric Fluid	Granodine	Magnesium Chloride  Magnesium Hydroxide	Paper Pulp Chlorinated
Ammonia Solutions	Calcium Formate  Calcium Hydroxide	Diester Lubricants	Granodine  Grape Pomace Graphite	Magnesium Hudrovido	Paper Groundwood
Ammonium Bisulfite	Calcium Lactate	Diethyl Ether Dry	Grease Lubricating	Magnesium Sulfate	Paper Bag
Ammonium Borate	Calcium Nitrate	Diethyl Sulfate	Groop Coop	Maleic Acid •	Paper Rag Paper Stocks, fine
Ammonium Bromide	Calcium Phosphate	Diethylamine	Green Soap	Maleic Acid  Maleic Anhydride	Paradichlorobenezene
Ammonium Carbonate	Calcium Silicate	Diethylene Glycol	Grit Steel	Manganese Chloride	Paraffin Molten
Ammonium Chloride	Calcium Sulfamate	Diglycolic Acid	Gritty Water	Manganese Sulfate	Paraffin Oil
Ammonium Chromate	Calcium Sulfate	Dimethyl Formamide	Groundwood Stock	Melamine Resin	Paraffin Oil Paraformaldehyde
Ammonium Fluoride	Calcium Sulfite	Dimethyl Sulfoxide	GRS Latex	Monthol •	Pectin Solution Acid
Ammonium Fluorosilicate	Camphor		Gum Paste	Menthol	Pentachlorethane
Ammonium Formate	Carbitol	Dioxidene	Gum Paste • Gum Turpentine	Mercuric Chloride	Pentachlorethane
Ammonium Hydroxide	Carbolic Acid (phenol)	Dioxidene	Gypsum	Mercuric Nitrate	Perchlorethylene (Dry)
Ammonium Hyposulfite	Carbon Bisulfide	Dinhenyl •	оурлан	Mercury •	Perchloric Acid
Ammonium lodide	Carbon Black	Diphenyl  Distilled Water (Industrial)	Halane Sol Halogen Tin Plating	Mercury Dry	Perchloric Acid
Ammonium Molybdate	Carbon Black  Carbon Tetrachloride	Dowtherm §	Halogen Tip Plating	Methane	Permanganic Acid
Ammonium Nitrate	Carbonic Acid	Drying Oil	Halowax §	Methane   Methyl Alcohol	Persulfuric Acid
		,			
Ammonium Oxalate	Carbowax §	Dust-Flue (Drv)	Harvel-Trans Oil	Methyl Acetate	Petroleum Ether
Ammonium Oxalate  Ammonium Persulfate	Carbowax §  Carboxymethyl Cellulose	Dust-Flue (Dry) Dye Liquors	Heptane	Methyl Acetate	Petroleum Ether Petroleum Jelly
Ammonium Persulfate  Ammonium Phosphate	Carbowax §  Carboxymethyl Cellulose	Dye Liquors	Heptane  Hexachlorobenzene	Methyl Bromide  Methyl Carbitol	Petroleum Jelly Phenol Formaldehyde Resins
Ammonium Persulfate  Ammonium Phosphate  Ammonium Picrate	Carbowax §  Carboxymethyl Cellulose  Carnauba Wax	Dye Liquors	Heptane	Methyl Bromide  Methyl Carbitol  Methyl Callosolve 8	Petroleum Jelly Phenol Formaldehyde Resins
Ammonium Persulfate  Ammonium Phosphate  Ammonium Picrate  Ammonium Sulfate	Carbowax §	Emery - Slurry	Hexachlorobenzene  Hexadiene  Hexamethylene Tetramine	Methyl Bromide  Methyl Carbitol  Methyl Callosolve 8	Petroleum Jelly Phenol Formaldehyde Resins
Ammonium Persulfate	Carbowax §	Dye Liquors	Hexachlorobenzene  Hexadiene  Hexamethylene Tetramine	Methyl Bromide  Methyl Carbitol  Methyl Callosolve 8	Petroleum Jelly Phenol Formaldehyde Resins
Ammonium Persulfate	Carbowax § Carboxymethyl Cellulose Caraauba Wax Casein Casein Water Paint Cellte Cellosolve §	Dye Liquors	Hexachlorobenzene  Hexadiene  Hexamethylene Tetramine	Methyl Bromide	Petroleum Jelly Phenol Formaldehyde Resins
Ammonium Persulfate  Ammonium Phosphate  Ammonium Picrate  Ammonium Sulfate  Ammonium Sulfate Scrubber  Ammonium Sulfate  Ammonium Sulfate  Ammonium Sulfate	Carbowax § Carboxymethyl Cellulose Carnauba Wax Casein Casein Water Paint Cellule Cellosolve § Cellulose Puln	Emery - Slurry Emulsified Oils Enamel Frit Slip Esters General Ethyl Acetate	Heptane	Methyl Bromide	Petroleum Jelly Phenol Formaldehyde Resins
Ammonium Persulfate  Ammonium Phosphate  Ammonium Picrate  Ammonium Sulfate  Ammonium Sulfate Scrubber  Ammonium Sulfate  Ammonium Sulfate  Ammonium Sulfate	Carbowax § Carboxymethyl Cellulose Carnauba Wax Casein Casein Celle Celluose Pulp Cellulose Pulp Celluose Santhate	Emery - Slurry Emulsified Olls Enamel Firt Slip Esters General Ethyl Acetate Ethyl Alcohol	Heptane Hexachlorobenzene Hexachlorobenzene Hexamethylene Tetramine Hexame Hydrazine Hydrazine Hydrate Hydromic Acid.	Methyl Bromide  Methyl Carbitol Methyl Cellosolve §  Methyl Chloride Methyl Ethyl Ketone Methyl Isobutyl Ketone Methyl Lactate Methyl Carage	Petroleum Jelly Phenol Formaldehyde Resins
Ammonium Persulfate Ammonium Phosphate Ammonium Plcrate Ammonium Sulfate Scrubber Ammonium Sulfate Scrubber Ammonium Sulfate Ammonium Sulfate Ammonium Sulfate Ammonium Sulfate Ammonium Thiocyanate Ammonium Acetate Ammoni	Carbowax §. Carboxymethyl Cellulose Carboxymethyl Cellulose Carenauba Wax Casein Casein Casein Cellte Cellulose Cellte Cellulose Pulp Cellulose Santhate Cement DryAlf Blown	Dye Liquors  Emery - Slurry  Emulsified Oils  Enamel Frit Slip  Esters General  Ethyl Accate  Ethyl Alcohol  Ethyl Almine	Heptane Hexachlorobenzene Hexadiene Hexadiene Hexamethylene Tetramine Hexane Hydrazine Hydrazine Hydrobromic Acid Utdrobromic Acid	Methyl Bromide  Methyl Carbitol Methyl Cellosolve §  Methyl Chloride Methyl Ethyl Ketone Methyl Isobutyl Ketone Methyl Lactate Methyl Carage	Petroleum Jelly Phenol Formaldehyde Resins Phenol Sulfonic Acid
Ammonium Persulfate Ammonium Phosphate Ammonium Plorate Ammonium Suffate Scrubber Ammonium Suffate Scrubber Ammonium Suffate Ammonium Thiocyanate Ammonium Thiocyanate Amyl Acetate Amyl Amine Amyl Chloride Amyl Chloride	Carbowax § Carboxymethyl Cellulose Carauba Wax Casein Casein Water Paint Cellice Cellosolve § Cellulose Pulp Cellulose Vanthate Cement DrylAir Blown Cement Dryl (III)	Dye Liquors  Emery - Slurry  Emulsified Oils  Enamel Frit Silp  Esters General  Ethyl Acetate  Ethyl Alcohol  Ethyl Amine  Ethyl Amine	Heptane	Methyl Bromide Methyl Caribtol Methyl Cellosolve 5 Methyl Chloride Methyl Ethyl Ketone Methyl Ethyl Ketone Methyl Lactate Methyl Jactate Methyl Jactate Methyl Aurone Methyl Methyl Methyl	Petroleum Jelly Phenol Formaldehyde Resins Phenol Sulfonic Acid Phenolic Glue Phloroglucinol Phosphate Ester Phosphatic Sand Phosphoric Acid 85% hot Phosphoric Acid 85% cold Phosphoric Acid 85% cold
Ammonium Persulfate — Ammonium Phosphate — Ammonium Picrate — Ammonium Sulfate — Ammonium Sulfate Scrubber • Ammonium Sulfate Scrubber • Ammonium Thiocyanate — Amyl Acetate — Amyl Amine — Amyl Chloride — Amyl Chloride —	Carbowax § Carboxymethyl Cellulose Carauba Wax Casein Casein Water Paint Cellice Cellosolve § Cellulose Pulp Cellulose Vanthate Cement DrylAir Blown Cement Dryl (III)	Dye Liquors  Emery - Slurry  Emulsified Oils  Enamel Firt Slip  Esters General  Ethyl Alcohol  Ethyl Alcohol  Ethyl Bromide  Ethyl Bromide  Ethyl Bromide	Heptane Hexachlorobenzene Hexadiene Hexamethylene Tetramine Hexane Hydrazine Hydrazine Hydrazine Hydratobromic Acid Hydrochloric Acid Hydrocyanic Acid Hydrocyanic Acid	Methyl Bromide Methyl Caribtol Methyl Cellosolve 5 Methyl Chloride Methyl Ethyl Ketone Methyl Ethyl Ketone Methyl Lactate Methyl Jactate Methyl Jactate Methyl Aurone Methyl Methyl Methyl	Petroleum Jelly Phenol Formaldehyde Resins Phenol Sulfonic Acid Phenolic Glue Phloroglucinol Phosphate Ester Phosphatic Sand Phosphoric Acid 85% hot Phosphoric Acid 85% cold Phosphoric Acid 85% cold Phosphoric Acid 85% cold Phosphoric Acid 50% hot Phosphoric Acid 50% hot Phosphoric Acid 50% cold
Ammonium Persulfate	Carbowax § Carboxymethyl Cellulose Carauba Wax Casein Casein Water Paint Celle. § Cellosobe § Cellulose Purhate Cellulose Purhate Cellulose Coment Duy/Air Blown Cement Duy/Air Blown Cement Slurry Ceramic Flow	Dye Liquors	Heptane Hexachlorobenzene	Methyl Bromide Methyl Cellosolve S. Methyl Cellosolve S. Methyl Cellosolve S. Methyl Cellosolve S. Methyl Ethyl Ketone Methyl Ethyl Ketone Methyl Lactate Methyl Lactate Methyl India Methyl Me	Petroleum Jelly Phenol Formaldehyde Resins s Phenol Suffonic Acid. Phenolic Glue Phloroglucinol Phosphate Ester Phosphatic Sand Phosphotic Acid 85% hot Phosphotic Acid 85% cold Phosphotic Acid 50% hot Phosphotic Acid 50% cold
Ammonium Persulfate — Ammonium Phosphate — Ammonium Picrate — Ammonium Sulfate — Ammonium Thiocyanate — Amyl Acate — Amyl Chioride — Amyl Chioride — Aniline Dyes — Anilin	Carbowax § Carboxymethyl Cellulose Carauba Wax Casein Casein Casein Water Paint Cellosolve § Cellulose Pulp Cellulose Pulp Cellulose Carantae Cement Dryl Air Blown Cement Slurry Ceramic Enamel	Dye Liquors	Heptane Hexachlorobenzene. Hexadiene Hexamethylene Tetramine Hexamethylene Tetramine Hydrazine Hydrazine Hydrazine Hydrazine Hydrothloric Acid Hydrothloric Acid Hydroflouric	Methyl Bromide Methyl Cellosolve 5 Methyl Cellosolve 5 Methyl Cellosolve 6 Methyl Ethyl Ethyl Ethyl Ethyl Ethyl Ethyl Ethyl Ethyl Metone Methyl Iactate Methylene Chloride Methylene Chloride Mineral Spirits Chloride Mineral Spirits Chloride Monorchicaretic Acid	Petroleum Jelly Phenol Formaldehyde Resins 9 Phenol Suffonic Acid. Phenolic Glue Phloroglucinol Phosphate Ester Phosphatic Sand By Shot Phosphoric Acid 85% hot Phosphoric Acid 85% hot Phosphoric Acid 95% hot Phosphoric Acid 10% hot
Ammonium Persulfate — Ammonium Phosphate — Ammonium Picrate — Ammonium Picrate — Ammonium Sulfate — Ammonium Choirde — Ammonium Choirde — Amiliane — Amilian	Carbowax § Carboxymethyl Cellulose Carauba Wax Casein Casein Casein Water Paint Cellosolve § Cellulose Pulp Cellulose Pulp Cellulose Carantae Cement Dryl Air Blown Cement Slurry Ceramic Enamel	Dye Liquors	Heptane Hexachlorobenzene. Hexadiene Hexamethylene Tetramine Hexamethylene Tetramine Hydrazine Hydrazine Hydrazine Hydrazine Hydrothloric Acid Hydrothloric Acid Hydroflouric	Methyl Bromide Methyl Cellosolve 5 Methyl Cellosolve 5 Methyl Cellosolve 6 Methyl Ethyl Ethyl Ethyl Ethyl Ethyl Ethyl Ethyl Ethyl Metone Methyl Iactate Methylene Chloride Methylene Chloride Mineral Spirits Chloride Mineral Spirits Chloride Monorchicaretic Acid	Petroleum Jelly Phenol Formaldehyde Resins 9 Phenol Suffonic Acid. Phenolic Glue Phloroglucinol Phosphate Ester Phosphatic Sand By Shot Phosphoric Acid 85% hot Phosphoric Acid 85% hot Phosphoric Acid 95% hot Phosphoric Acid 10% hot
Ammonium Persulfate —  Ammonium Phosphate —  Ammonium Picrate —  Ammonium Sidate Crubber •  Ammonium Sulfate Scrubber •  Ammonium Sulfate Scrubber •  Ammonium Sulfate Scrubber •  Ammonium Thiocyanate —  Amyl Acetate —  Amyl Acetate —  Amyl Chloride —  Aniline —  Arnyl Chloride —  Aniline —  Annyl Chloride —  Aniline —  Andering Bath —  Antichor Solution —  Antimory Add Salts —   Antimory Add Salts —	Carbowax § . Carbowax § . Carawys Hellulose — Carawys Water Paint — Castein — Chalic — Chalic — Chalic — Chalic — Chalic — Chalic — Castein — Chalic — Chalic — Chalic — Chalic — Castein — Ca	Oye Liquors	Heptane Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexamethylene Tetramine Hexamethylene Tetramine Hydrazine Hydrazine Hydrazine Hydrazine Hydrazine Hydrazine Acid Diydrocyanic Acid Hydrogen Peroude (dil Hydrogen Peroude (con) Hydrogonic Sod Hydrogenia (con) Hydrogonic Sod Hydrogenia (con) Hydrogenia Peroude (con) Hydrogenia Peroude (con) Hydrogenia Sod Hydrogenia Peroude (con) Hydrogenia Sod H	Methyl Bromide Methyl Cellosolve 5 Methyl Cellosolve 5 Methyl Cellosolve 6 Methyl Ethyl Ethyl Ethyl Ethyl Ethyl Ethyl Ethyl Ethyl Metone Methyl Iactate Methylene Chloride Methylene Chloride Mineral Spirits Chloride Mineral Spirits Chloride Monorchicaretic Acid	Petroleum Jelly Phenol Formaldehyde Resins Phenol Suffonic Acid. Phenolic Glue Phloroglucinol Phosphate Ester Phosphate Ester Phosphate Sand 50% hot Phosphoric Acid 55% cold Phosphoric Acid 55% hot Phosphoric Acid 55%
Ammonium Persulfate —  Ammonium Phosphate —  Ammonium Picrate —  Ammonium Sidate Crubber •  Ammonium Sulfate Scrubber •  Ammonium Sulfate Scrubber •  Ammonium Sulfate Scrubber •  Ammonium Thiocyanate —  Amyl Acetate —  Amyl Acetate —  Amyl Chloride —  Aniline —  Arnyl Chloride —  Aniline —  Annyl Chloride —  Aniline —  Andering Bath —  Antichor Solution —  Antimory Add Salts —   Antimory Add Salts —	Carbowax § . Carbowax § . Caranaba Wax Caranaba Wax Casien Water Paint Cellico Cellicove § . Cellusove § . Cellusove for . Cerlo Covide . Cernent Slurry . Ceramic Fearmel . Certic Covide . Chalk . Chalk . Chalk . Chalk . Cellusove for . Certic Covide . Chalk . Chalk . Cellusove for . C	Ope Liquors	Heptane Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hydrazine Hydrazine Hydrazine Hydrazine Hydrachlorobenik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorobenzene Hydrochloro	Methyl Komide Methyl Komide Methyl Carbitol Methyl Cellosolve § Methyl Chloride Methyl Chloride Methyl Kotone Methyl Kotone Methyl Kotone Methyl Kotone Methyl Kotone Methyl Kotone Methyl Gange Methyl	Petroleum Jelly Phenol Formaldehyde Resins Phenol Sulfonic Acid. Phenolic Glue Philoroglucinol Philoroglucinol Phosphatic Sand Phosphatic Sand Phosphatic Sand Phosphatic Sand Phosphatic Acid 85% hot — Phosphotic Acid 85% hot — Phosphotic Acid 55% hot — Phosphotic Acid 55% hot — Phosphotic Acid 55% cold Phosphotic Acid 55% cold Phosphotic Acid 55% cold Phosphotic Acid 15% hot — Ph
Ammonium Persulfate — Ammonium Phosphate — Ammonium Picrate — Ammonium Picrate — Ammonium Picrate — Ammonium Siditale Scrubber — Ammonium Siditale — Ammonium Siditale — Ammonium Siditale — Ammonium Thiocyanate — Amyl Amine — — — — — — — — — — — — — — — — — — —	Carbowax § . Carbowax § . Caranaba Wax Caranaba Wax Casien Water Paint Cellico Cellicove § . Cellusove § . Cellusove for . Cerlo Covide . Cernent Slurry . Ceramic Fearmel . Certic Covide . Chalk . Chalk . Chalk . Chalk . Cellusove for . Certic Covide . Chalk . Chalk . Cellusove for . C	Oye Liquors	Heptane Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hydrazine Hydrazine Hydrazine Hydrazine Hydrachlorobenik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorobenzene Hydrochloro	Methyl Kromide Methyl Carlitol 4 Methyl Carlitol 5 Methyl Cellosolve 5 Methyl Cellosolve 5 Methyl Klyt Kstone Methyl Lithyl Kstone Methyl Soburyl Kstone Methyl Soburyl Kstone Methyl Soburyl Kstone Methyl Soburyl Methyl Methyl Methylamine ande Mineral Spirits Monchloracetic Acid Monochloracetic Acid Modpholine Mod Mod Nato Sol.	Petroleum Jelly Phenol Formaldehyde Resins Phenol Sulfonic Acid. Phenolic Glue Philoroglucinol Philoroglucinol Phosphatic Sand Phosphatic Sand Phosphatic Sand Phosphatic Sand Phosphatic Acid 85% hot — Phosphotic Acid 85% hot — Phosphotic Acid 55% hot — Phosphotic Acid 55% hot — Phosphotic Acid 55% cold Phosphotic Acid 55% cold Phosphotic Acid 55% cold Phosphotic Acid 15% hot — Ph
Ammonium Persulfate — Ammonium Persulfate — Ammonium Persulfate — Ammonium Rodate — Ammonium Suffate Scrubber — Ammonium Suffate Scrubber — Ammonium Suffate Scrubber — Ammonium Suffate — Ammonium Thiocyanate — Ammonium Thiocyanate — Amyl Chloride — Aniline — Amyl Chloride — Aniline — A	Carbowax 5	Oye Liquors	Heptane Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hydrazine Hydrazine Hydrazine Hydrazine Hydrachlorobenik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorik Acid Hydrochlorobenzene Hydrochloro	Methyl Bromide Methyl Carlbod 9 Methyl Callbod 9 Methyl Callbod 9 Methyl Kethol 9 Methyl Kyth Ketone Methyl Hyd Ketone Methyl Hyd Methyl Ethyl Ketone Methyl Isobutyl Ketone Methyl Met	Petroleum Jelly Phenol Formaldehyde Resins Phenol Sulfonic Acid. Phenolic Glue Philoroglucinol Philoroglucinol Phosphatic Sand Phosphatic Sand Phosphatic Sand Phosphatic Sand Phosphatic Acid 85% hot — Phosphotic Acid 85% hot — Phosphotic Acid 55% hot — Phosphotic Acid 55% hot — Phosphotic Acid 55% cold Phosphotic Acid 55% cold Phosphotic Acid 55% cold Phosphotic Acid 15% hot — Ph
Ammonium Pesulfate — Ammonium Phosphate — Ammonium Picrate — Ammonium Picrate — Ammonium Sidate crubber — Ammonium Sidate crubber — Ammonium Sidate crubber — Ammonium Thiopanate — Amyl Amine — Amyl Amine — Amyl Amine — Andiline Dyes — Andidriang Bath — Andicting Bath —	Carbowax 5	Oye Liquors	Heptane Hexachlorobertzene Hexachlorobertzene Hexachlorobertzene Hexachlorobertzene Hexachlorobertzene Hexachlorobertzene Hexachlorobertzene Heydrazine Hydrazine Hydrazine Hydrachlorobertzene Hydrachlorober	Methyl Kromide Methyl Carlbiol Methyl Carlbiol Methyl Cellosolve 5 Methyl Clollosolve 5 Methyl Chloride Methyl Chloride Methyl Loburyl Ketone Methyl Isoburyl Ketone Methyl Isoburyl Ketone Methyl Isoburyl Ketone Methylarine Met	Petroleum Jelly Petroleum Jelly Phenol Formaldehyde Resins Phenol Sulfonic Acid. Phenolic Cilue Phosphoric Cilue Phosphoric Acid 85% bot — Phosphoric Acid 95% bot — Phosphoric Acid 95% bot — Phosphoric Acid 95% bot — Phosphoric Acid 10% bot — Phosphoric Sol — Phosp
Ammonium Persulfate — Ammonium Persulfate — Ammonium Picophate — Ammonium Picotate — Ammonium Picotate — Ammonium Sulfate Scrubber — Ammonium Sulfate Scrubber — Ammonium Sulfate — Ammonium Sulfate — Ammonium Sulfate — Ammonium Thiocyanate — Amy Choloride — Aniline — Aniline Dyes — Aniline Dyes — Anodoring Bath — Anodoring Bath — Antimony Add Salts — Antimony Oxide — Antitoxidant Gaoline — Aqua Regia — Aqua Regia — Aqua Regia — Ammonium — Ammonium Picota — Antimony Add Salts — Antimony Oxide — Antimonium Picotate — Oxide — O	Carbowax 5. Carbowax 5. Carboymetryl Cellulose	Oye Liquors  Enney - Slury  Emulaified Obt  Eaters General  Ethyl Acctate  Ethyl Acctate  Ethyl Acctate  Ethyl Accide  Ethyl Cellosolve Slury 5  Ethyl Cellosolve Slury 5  Ethyl Commate  Ethyl Commate  Ethyl Commate  Ethyl Commate  Ethyl Commate  Ethyle Commate  Ethylene Dibromide  Ethylene Obtrodide  Ethylene Obtrodide  Ethylene Gycol  Ethylene Gycol  Ethylene Gycol  Ethylene Gycol  Ethylene Gycol	Heptane Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Hexachlorobenzene Acid Dehydrocyanic Dehydrocyanic Dehydrocyanic Dehydrocyanic Acid Dehydrocyanic Dehydrocyanic Acid Dehydrocyanic	Methyl Bromide Methyl Carlbidol S. Methyl Carlbidol S. Methyl Cellosobe S. Methyl Cellosobe S. Methyl Ethyl Ketone Methyl Hobuyl Ketone Methyl Isobuyl Ketone Methyl Isobuyl Ketone Methyl Isobuyl Ketone Methyl Isobuyl Ketone Methyl Me	Petroleum Jelly Petroleum Jelly Phenol Formáldehyde Resins Phenol Sufforic Acid Phenol Sufforic Acid Phosphate Sate Phosphate Sate Phosphate Sate Phosphate Sate Phosphot Acid S9% hot Phosphot Acid S9% hot Phosphot Acid S9% hot Phosphot Acid S9% hot Phosphot Acid S9% cold Phosphot Acid Phosphot Phosphot Acid Phosphot Acid Phosphot Acid Phosphot Phosphot Phosphot Phosphot Phospho
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Ammonium Pesulfate — Ammonium Pesulfate — Ammonium Picrate — Ammonium Picrate — Ammonium Picrate — Ammonium Sidrate Scrubber — Ammonium Sidrate Scrubber — Ammonium Sidrate — Ammonium Sidrate — Ammonium Sidrate — Ammonium Thocyanate — Amyl Amine — Amyl Amine — Angline Dyes — Andidraig Bath — Bath	Carbowax 5. Carbowax 5. Carboymetryl Cellulose Carboymetryl Cellulose Carboymetry Cellulose Carboymetry Cellulose Carboymetry Cellulose Sanchate Cement Dylar, Blown Cement Grout Cement Dylar, Blown Cement Grout Cement Ceme	Dye Liquors	Heptane Hesachloroberuene Hesachloroberuene Hesachloroberuene Hesachloroberuene Hesachloroberuene Hesachloroberuene Hesachloroberuene Hydrazine Hy	Methyl Kromide Methyl Carlbiol 9 Methyl Carlbiol 9 Methyl Cellosobe 9 Methyl Cellosobe 9 Methyl Klytone Methyl Klytone Methyl Klytone Methyl Klytone Methyl Kobunyl Ketone Methyl Isobunyl Ketone Methyl Isobunyl Ketone Methyl Isobunyl Ketone Methyl Isobunyl Methyl Methy	Petroleum Jelly Petroleum Jelly Phenol Formáldehyde Resins Phenol Sufforic Acid Phenol Sufforic Acid Phosphate Sate Phosphate Sate Phosphate Sate Phosphate Sate Phosphot Acid S9% hot Phosphot Acid S9% hot Phosphot Acid S9% hot Phosphot Acid S9% hot Phosphot Acid S9% cold Phosphot Acid Phosphot Phosphot Acid Phosphot Acid Phosphot Acid Phosphot Phosphot Phosphot Phosphot Phospho
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Ammonium Persulfate — Ammonium Persulfate — Ammonium Phosphate — Ammonium Piccate — Ammonium Piccate — Ammonium Suffate Scrubber — Ammonium Suffate Scrubber — Ammonium Suffate — Ammonium Suffate — Ammonium Suffate — Ammonium Thiocyanate — Amyl Chloride — Amyl Chloride — Aniline Dyee — Aniline Dyee — Aniline Dyee — Aniline Dyee — Aniline Oye — Aniline Oye — Antimony Oxide — Antimonium Oxide —	Carbowax 5. Carbowax 5. Carbownetryl Cellulose Carbownetryl Cellulose Carbownetry Cellulose Casel Water Paint Casel Casel Water Paint Cellucose 5. Cellulose Sanchate Cement Drylar Blown Cement Cloud Cement Coult Cement Cem	Oye Liquors Emey - Slury Emulatified Oits Ester Seneral Estey Secate Estyl Accate Estyl Accate Estyl Secate Estyl	Heptane Henachicobenzene Henachicobenzen	Methyl Bromide Methyl Carlbol 9 Methyl Carlbol 9 Methyl Cellosobe 5 Methyl Kethy Ketone Methyl Brome Methyl Hobutyl Ketone Methyl Isobutyl Ketone Methyl Isobutyl Ketone Methyl Lockate Methyl Lockate Methyl Lockate Methylene Chloride Mineral Spirits Methylene Chloride Mineral Spirits Methylene Chloride Morpholio cetic Acid Morpholio Methylene Chloride Morpholio Methylene Chloride Morpholio Methylene Meth	Petroleum Jelly Petroleum Jelly Phenol Formáldehyde Resins Phenol Sufforic Acid Phenol Sufforic Acid Phosphate Sate Phosphate Sate Phosphate Sate Phosphate Sate Phosphot Acid S9% hot Phosphot Acid S9% hot Phosphot Acid S9% hot Phosphot Acid S9% hot Phosphot Acid S9% cold Phosphot Acid Phosphot Phosphot Acid Phosphot Acid Phosphot Acid Phosphot Phosphot Phosphot Phosphot Phospho

Loctite product numbers in red are worldwide or application-specific products

(This is a list of chemical stability only. It does not constitute approval for use in the processing of food, drugs, cosmetics, pharmaceuticals, and ingestible chemicals. J Lottite sealants are not recommended for use in pure oxygen or chlorine environments or in conjunction with strong oxidizing agents, an explosive reaction can result.



The "Flexible Solutions", Specialists



LEGEND:

• All Loctité Anaerobic Sealants are Compatible including #242, 243, 540, 545, 565, 567, 569, 571, 572, 577, 580, 592

• Use Loctité #270, 271\*\*, 277, 554

□ Lottité #242\*, 243, 290, 555

• Use Loctité #242\*, 243, 290, 555

Plating Sol. as follows: Brass Cvanide..... Bronze-Cyanide ........... Chromium & Cadmium Cyanide ...... Cobalt Acid Gold Cyanide ..... Iron-Acid ..... Lead-Fluoro .... Nickel Bright ... Silver-Cyanide ...... Tin-Acid ..... Tin Alk. Barrel .....

Iin Alk Barrel
Zinc Add
Zinc Alk Cyanide
Polyacytonitris Burry
Polypentek
Polysulfide Liquor
Polysulfide Liquor
Polyvinyl Acetate Slurry
Polyorinyl Acetate Slurry
Potash
Potassium Acetate
Potassium Acetate
Potassium Acetate
Potassium Carborate
Potassium Carborate
Potassium Carborate
Potassium Carborate
Potassium Carborate
Potassium Chloride Sol

Potassium Chromate ..... Potassium Cyanide Sol... Potassium Dichromate ... Potassium Ferricyanide .... Potassium Hydroxide ..... Potassium Iodide .....

Potassium Hydroxode
Potassium Hydroxode
Potassium Silicate
Potassium Sulfate
Proppil Romide
Proppil

Rag Stock Bleached..... Rare Earth Salts ...... Rayon Acid Water .....

Rayon Spin Bath ...... Rayon Spin Bath spent ......



### FLUID COMPATIBILITY CHART

### for metal threaded fittings sealed with Loctite Sealants

### LIQUIDS, SOLUTIONS & SUSPENSIONS

Road Oil	Sodium Sulfate	Toluene
Road Oil	Sodium Sulfide	p-Toluene Sulfonic Acid
Roccal	Sodium Sulfite	
Rosin-Wood	Sodium Sulfhydrate	Trichloracetic Acid
Rosin in Alcohol	Sodium Thiocyanate	Trichlorethane 1.1.1
Rosin Size	Sodium Thiosulfate	Trichlorethylene
Rubber Latex	Sodium Tungstate	Trichlorethylene-Dry
-	Sodium Xanthate	Tricresyl Phosphate
Safrol	Solox-Denat, Ethanol	Triethanolamine
Salt Alkaline	Soluble Oil	Triethylene Glycol
		Trietriyierie Giycoi
Salt Electrolytic	Solvent Naphthas	Trioxane
Salt Refrg	Sorbic Acid	Trioxane
Sand-Air Blown Slurry	Sour Gasoline	Turpentine
Sand-Air Phosphatic	Soybean Sludge-Acid	
Sea Coal •	Spensol Solution	UCON § Lube
Sea Coal  Sea Water	Stannic Chloride	UCON § Lube Udylite Bath-Nickel
Selenium Chloride	Starch	Undecylenic Acid
Seguestrone	Starch Base	Unichrome Sol. Alk
Sewage	Stearic Acid	Uranium Salts Uranyl Nitrate Uranyl Sulfate
Chollac	Steep Water	Uranul Nitrato
Chower Water	Sterilization Steam	Uranul Sulfato
Cilian Cal	Stillage Distillers	Urea Ammonia Liquor
Silica Gel	Stillage Distillers	orea Ammonia Liquor
Silica Ground	Stoddard Solvent	
Silicone Tetrachloride	Styrene	Vacuum to 100 Micron
Silicone Fluids	Styrene Butadiene Latex	Vacuum below 100 Micr
Silver Cyanide	Sulfamic Acid	Vacuum Oil
Silver lodide-Aqu •	Sulfan-Sulfuric Anhydride	Vanadium Pentoxide
Silver Nitrate	Sulfathiazole	Slurry
Size Emulsion	Sulfite Liquor	Varnish Varsol-Naphtha Solv
Skelly Solve E, L	Sulfite Stock	Varsol-Naphtha Solv
Slate to 400 Mesh	Sulfonated Oils	Versene §
Soap Lye	Sulfones	Vinyl Acetate Dry or
Soap Solutions (Stearates)•	Sulfonic Acids	Chloride Manager
Soap Stone Air Blown	Sulfonyl Chloride	Chloride Monomer Vinyl Chloride Latex Emul
	Sulfority Chloride	Vinyi Chionde Latex Emul
Soda Pulp	Sulfur Slurry	Vinyl Resin Slurry
Sodium Acetate	Sulfur Solution	Viscose Vortex-Hydroclone
Sodium Acid Fluoride	in Carbon Disulfide	Vortex-Hydroclone
Sodium Aluminate	Sulphuric Acid 0-7% +	
Sodium Arsenate	Sulphuric Acid 7-40% †	Water-Acid - Below pH7
Sodium Benzene Sulfonate	Sulphuric Acid 40-75% †	Water pH7 to 8
Sodium Bichromate	Sulphuric Acid 75-95%	Water Alkaline - Over pH8
Sodium Bisulfite	Sulphuric Acid 95-100%	Water Mine Water
Sodium Bromide	Sulphurous Acid +	Water Potable
Sodium Carbonate	Sulfuryl Chloride	Water River
Sodium Chlorate	Surfactants	Water Sandy Water "White" - low pH
Sodium Chlorite	Surfactants  Synthetic Latex	Water "White" I low pH
Sodium Cyanide	Synthetic Latex	Water White - low pri
Sodium Cyanide	T 1 F1 -	Water "White" - high pH
Sodium Ferricyanide	Taconite - Fines	Wax Wax Chlorinated
Sodium Formate •	Talc - Slurry •  Tankage - Slurry •	wax Chiorinated
Sodium Glutamate	Tankage - Slurry	Wax Emulsions
Sodium Hydrogen Sulfate	Tannic Acid (cold) †	Weed Killer Dibromide
Sodium Hydrosulfite	Tamin	Weisberg Sulfate Plating
Sodium Hydrosulfide	Tar & Tar Oil	Wood ground pulp
Sodium Hydrochloride	Tartaric Acid	Wort Lines
Sodium Hydroxide	Television Chemicals	
Sodium Hydro. 20% cold	Tergitol §	X-Ray Developing Bath
Sodium Hydro. 20% hot	Ternineol	Xylene
odium Hydro. 50% cold†	Terpineol	Aya
Sodium Hydro. 50% cold Sodium Hydro. 50% hot	Totrahudrofuran	Zelan
Cadinar Hoday 70% and	T-titth	7U
Sodium Hydro. 70% cold†	Tetranitromethane	Zeolite Water
Sodium Hydro. 70% hot	Textile Dyeing	Zinc Acetate
Sodium Hypochlorite	Textile Finishing Oil ●	Zinc Bromide
Sodium Lignosulfonate	Textile Printing Oil	Zinc Chloride
Sodium Metasilicate	Thiocyanic Acid	Zinc Cvanide-Alk
Sodium Molten •	Thioglycollic Acid	Zinc Fines Slurry
Sodium Nitrate	Thionyl Chloride	Zinc Flux Paste
Sodium Nitrite-Nitrate	Thiophosphoryl Chloride	Zinc Galvanizing
Sodium Perborate	Thiourea	Zinc Hydrosulfite
Sodium Peroxide	Thorium Nitrate	Zinc Oxide in Water
Sodium Persulfate	Thumol -	Zinc Oxide in Water Zinc Oxide in Oil
Codium Phonebate Mana	Thymol  Tin Tetrachlorida	Zinc Oxide III OII
Sodium Phosphate-Mono	IIn Ietracniorida	Zinc Sulfate
Sodium Phosphate-Tri •	Tinning Sol. DuPont	Zincolate
Sodium Potassium Chloride	Titania Paper Coating●	Zirconyl Nitrate
Sodium Salicylate	Titanium Oxide Slurry	Zirconyl Sulfate
Sodium Sesquicarbonate	Titanium Oxy Sulfate	•
Sodium Silicate	Titanium Sulfate	
Sodium Silcofluoride	Titanium Tetrachloride	

ACIO & AIRAII VAPOUIS	•
Air	•
Amine	,
Ammonia	
Butane	•
Butadiene Gas/Liquid	•
Butvlene Gas/Liquid	۰
By-Product Gas (Dry)	
by 110ddct dd3 (b1)	1
Carbon Dioxide	
Carbon Disulfide	•
Carbon Monoxide	,
Chloride Dry	
Chloride Dry	
Chlorine Dry	•
Chlorine Wet	
Coke-oven Gas-cold	۰
Coke-oven Gas-hot †	
Cyanogen Chloride	
Cyanogen Gas	1
Cyanogen Gas	•
Ethane	,
Ether-see Diethyl Ether	
Ethylono	ì
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Etnylene Oxide	,
Freon § (11-12-21-22) †	
Freon § (11-12-21-22) +	
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Furnace Gas hot † Furnace Gas cold †	•
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Producer Gas 50 PSI .... Propane ...... Propylene .....

Sultur moxice c. Sulfuric Acid Vap

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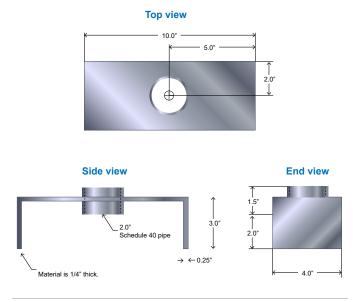
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### **CHAPTER 6 - INSTALLATION GUIDE**

- Pick a spot in the tank for the sender bar(s) to be mounted. It should be as close to the middle of the tank compartment as possible. Make sure that the float will not contact any baffles or other obstructions in the tank. It is preferable if the float can be accessed from the hatch, to make any future service work easier. For this reason **do not** mount the float behind a baffle where it can't be reached from the hatch.
- 2. Drill or cut a hole in the top of the tank to mount a 1" NPT coupler (not provided). Weld the top coupler in place.
- 3. Slide the compression fitting over the sender bar, threads facing down, and insert the bar through the coupler and align it vertically in the tank. Determine how much material needs to be cut off the bottom of the bar. The bar should be mounted between 1" and 1.5" off the bottom of the tank to allow for tank expansion and contraction. Cut the bar with a hack saw and trim exposed circuit board with a sharp knife. Do not use a disk type cutoff saw since the heat generated will short circuit the internal circuit board.
- **Ensure that the compression fitting is on the bar** and clean the end of the bar and the inside of the end cap with Loctite 7070 Cleaner. Spray Loctite T7471 Primer onto both the end of the bar and the inside of the end cap. Allow the primer to dry for a few minutes. Apply a bead of Loctite 680 Retaining Compound around the bottom of the tube and around the top of the end cap. Insert the cap onto the end of the tube with a turning motion. To remove entrapped air, place the end on the floor and rock the bar until excess air has escaped. Heat the end cap modestly with a butane torch or an electric heat gun until the end cap is guite hot to touch (but not over boiling). Keep the end cap in position by gently clamping the bar in a vise with the end against a solid object. Avoid setting the end cap against a cold floor, as this will slow the curing process. Reheat the end cap after 10 or 15 minutes with the cap restrained in position to allow curing to continue. The curing time should be about an hour. The Loctite must be set before the tank is put into service. Bar failure due to a leaking end cap is NOT covered by warranty. Note that a kit with all the required Loctite products is available from Garnet. For further details on the Loctite products see Technical Service Bulletin #17 on our web site.
- 5. Make up an anchor by cutting a 4" X 16" piece of 1/4" thick material. Bend each end down at 90 degrees (see the diagram below), so the resulting flat piece is about 4" X 10" inches with

3" sides. Drill a hole to insert a 2" ID schedule 40 pipe in the center of the plate, weld tube to plate. Insert the bar into the tank and slide the anchor assembly over the sensor bar with the "**U**" facing down. Align the sensor bar vertically and weld the anchor in place to the bottom of the tank. Pull the sensor bar up a bit and slide the float (cone side up) over the bar. Lower the bar back into the anchor.



6. Tighten the base of the compression fitting into the coupler. Lift the bar 2 inches off the bottom of the tank, and tighten down the compression fitting nut. Raise and lower the float a few inches to set the bottom reading.

### FOR THE OUTSIDE (806-B) DISPLAY FOLLOW THESE STEPS:

- 7. Pick a spot for the display. It should be easy to see and out of direct road spray and protected from driving rain. Mount the display enclosure using the mounting flange holes, being certain to shim the enclosure away from the mounting surface with the spacers provided to allow water drainage. Broken display enclosures caused by water freezing behind the enclosure are NOT covered by warranty.
- 8. Route the sender bar wires together to the display, a cord is recommended, which will fit into a brass ¼" NPT fitting or a good strain relief that is water tight, you will install it in the bottom half of the Betts housing. Water leaks are a threat to the system, be sure to vent the Betts housing by drilling another hole in the bottom using one of two methods:

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- a. If the readout is being housed in a box for weather protection, you may simply drill a 1/8 inch hole beside the brass fitting as near vertical as possible.
- b. If the readout is exposed to the elements, install another 1/4" NPT brass fitting with a 3-4 inch piece of 1/4" Synflex extending out of the fitting with a 45 degree slice at the termination point to prevent a sucking action in the airstream.
- 9. Inspect the head cap with the display circuitry for casting flash, and lightly sand or scrape off any casting protrusions. Make sure that there is grease on the rubber O-ring.

### FOR THE inside (806-Bi) DISPLAY FOLLOW THESE STEPS:

- 10. Pick a spot for the display. Make sure that the display is visible from the driver's seat and from the door. Make up a bracket to hold the box in position and mount the box, but leave the front panel off. The front panel is held on by the four small Phillips screws in the corners. **DO NOT** remove the two larger Robertson screws.
- 11. Route the sender bar wires together in a protective jacket to the display in the truck cab, drill an entry hole for the wires to enter the back of the box and connect as listed below in the chart.
- 12. When you are ready to fasten on the front panel with the four Phillips screws in the corners, remember that the screws are small so **do not** over tighten them. The screws are in soft plastic so they do not need to be really tight to keep from backing out.

### FOR BOTH DISPLAY TYPES FOLLOW THESE STEPS:

At the display, use the terminal blocks to connect the wiring according to this table.

TERMINAL	CONNECTION
GND	Truck ground and <b>BLACK</b> bar wire(s)
+12V	12 volt ignition power source (fused: see below) *
COMP 1	YELLOW wire from comp #1 bar
COMP 2	YELLOW wire - comp #2 bar (if used)
COMP 3	YELLOW wire - comp #3 bar (if used)
ALARM 1	External device controlled by alarm 1
ALARM 2	External device controlled by alarm 2
ALARM 3	External device or reset point for Alarm 4 **
ALARM 4	Warning light or horn **
REMOTE	For connecting to 828
COMP BUT	Compartment button switch
ALRM BUT	Alarm bypass button switch

**<sup>\*</sup>NOTE:** Connect +12 Vdc power source via a minimum 1-amp fuse.

### For version 2.03

TERMINAL	CONNECTION
COMP 1	YELLOW wire from comp #1, #4, or #7 bar
COMP 2	<b>YELLOW</b> wire from #2, #5, or #8 bar (if used)
COMP 3	<b>YELLOW</b> wire from comp #3, #6, or #9 bar (if used)

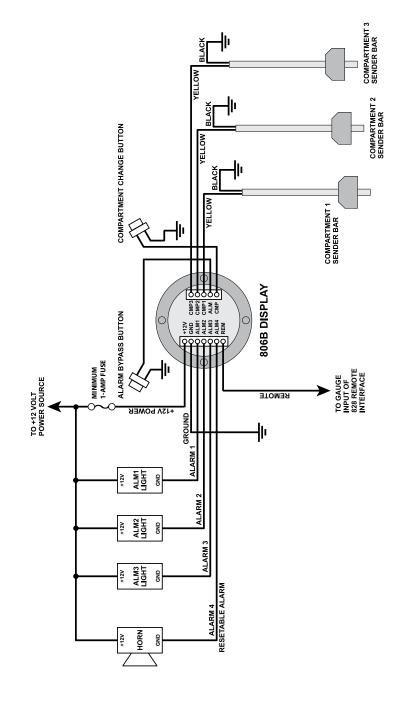
- 13. You may want to put a switch in the power line to shut off the display if the light from the LED's would be annoying at night. It is recommended that this switch be located in the dashboard.
- 14. Note that the alarms provide a circuit connection to ground when they turn on. If the alarm load is more than 1-amp, a relay should be used to prevent damage to the alarm outputs.

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<sup>\*\*</sup>NOTE: Alarm 3 can behave the same way as Alarm 1 and 2, or Alarm 3 can be used as the reset point for Alarm 4.

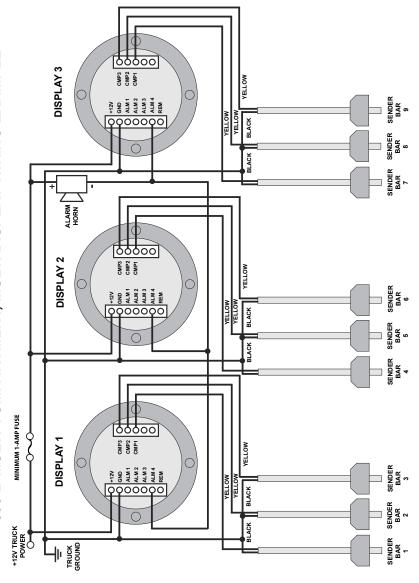
- 15. The other terminals on the Compartment button switch and the Alarm button switch should be connected to ground.
- 16. If the display is powered up before the sender bar is connected, it will read "**no S**" indicating that it is not receiving a signal from the sender bar. If the wiring to the bar is shorted to ground, the display will read "**Shrt**".
- 17. Program the gauge as directed in the programming section. To determine the bottom reading of the gauge, measure from the bottom of the tank to the seam in the middle of the straight vertical part of the float. Make sure the float is resting on the anchor when this measurement is done. Do **NOT** set the gauge to read "0" at the bottom since this will not result in a correct reading when the float is actually floating on the product. In addition, if the gauge ever goes below "0" due to tank expansion, it will read some nonsensical value since this region has not been programmed.
- 18. From the inside, seal all wire entries into the display enclosure with RTV silicon rubber. Make sure that the RTV fully surrounds the wire where it goes though the fitting.
- 19. Close up the display by attaching the front panel. The 806-B will snap on while the 806-Bi cover needs to be screwed on.
- 20. Verify gauge operation by lifting the float.

# 806-B WIRING DIAGRAM-THREE COMPARTMENT WITH ALARM INDICATORS, **ALARM HORN, AND REMOTE SERIAL INTERFACE CONNECTION**



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# 806-B MULTI COMPARTMENT, MULTI DISPLAY WIRING EXAMPLE



IT ALSO SHOWS ALARM 4 FROM ALL DISPLAYS CONNECTED TO A COMMON ALARM HORN. THIS EXAMPLE SHOWS 9 COMPARTMENTS CONNECTED TO 3 OUTSIDE DISPLAYS.

### CHAPTER 7 - DISPLAY PROGRAMMING INSTRUCTIONS

The 806 Annihilator provides a very interactive programming experience. When the programming plug is connected to the gauge, the gauge display will show "**prog**" within a second. Do not start programming the gauge until "**prog**" is shown. When the programming plug is removed, the display will show "**donE**" for a couple of seconds.

### Notes:

- 1. 12 Vdc power must be applied to the gauge display in order to program it.
- 2. The bar must be connected and operating in order to set the bottom reading on the gauge.
- 3. Each compartment must be programmed separately. To program a given compartment, use the **COMPARTMENT** button on the back of the 806-B display to select the compartment to be programmed, as shown on the right hand side of the display. Use the **COMP** button on the front of the 806-Bi display. The programmer must be unplugged from the display when changing compartments.
- 4. To make the 806-B display read in inches, press the INCH button on the back of the display. To make the 806-Bi display read in inches, press the DIM and BRIGHT buttons at the same time.
- 5. There are three compartment terminal blocks but four possible compartment modes. The **COMP** button switches through the four modes, C-1, C-2, C-3 and C-1 with a trailing zero.
- 6. Version 2.03 has 10 possible compartment modes, C-1 through C-9, and C-1 with a trailing zero.

### Program the Annihilator for the number of compartments:

- 1. The display is capable of working with one, two, or three sender bars. It must be programmed for the number of sender bars used, otherwise it will attempt to show unused compartments, or will not show used compartments.
- 2. Version 2.03 must be programmed to reflect both the number of sender bars and the number of displays in the application.
- 3. The 817-USB programmer is not needed for this programming. No programming is possible or required for the sender bars.
- 4. Connect 12 volt power to the display, but do not connect any sender bars. The display should show "**no S**".

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- 5. Press and hold the INCH button (806-B) or the DIM and BRIGHT buttons (806-Bi). After about 5 seconds, the display will enter the "program number of compartments" mode by showing "P no. C1", "P no. C2", "P no. C3", or "PTr0 C1" depending on what is currently programmed (1, 2, 3 compartments, or 1 with trailing zero). Release the button(s) at this point. Version 2.03 will show from "Pno C1" to "Pno C9", or "PTro C1"
- 6. Press the **COMPARTMENT** button to change the right hand number to the correct number of compartments. Do this within 5 seconds or the display will exit the programming mode. For version 2.03, see the following table to select the correct number of compartments for a display.
- 7. When the display shows the correct number of compartments, do not press any button for 5 seconds. The display will then show "Stor C1", "Stor C2", "Stor C3", or "Stor O" indicating that 1, 2, 3 compartments or the trailing zero has been stored. The display will then return to normal operating mode. For version 2.03, the display will show "Stor C1" to "Stor C9" or "Stor O".
- 8. Test the display by repeatedly pressing the **COMPARTMENT** button. The compartment number should go 1-2-3-1-2-3 etc. for a three compartment system, 1-2-1-2 etc for a two compartment system. If only one compartment is used, then the compartment number is not shown or a "0" is shown for the trailing zero mode and the **COMPARTMENT** button has no effect.
- 9. For version 2.03, the compartment number will go 1-2-3-1-2-3 for display 1, 4-5-6-4-5-6 for display 2, or 7-8-9-7-8-9 for display 3. If only one compartment is used and the trailing zero mode is not selected, then the compartment number is not shown on display 1. However, if display 2 is programmed for one compartment, it will show "C4", similarly, if display 3 is programmed for one compartment, it will show "C7".
- 10. The number of compartments can be reprogrammed at any time if required. The display must show "**no S**" on the selected compartment to be able to enter the programming mode.

### 806 Multi Compartment Display Programming and Wiring Guide

Number of compartments	Display 1 programming	Display 1 wiring	Display 2 programming	Display 2 wiring	Display 3 programming	Display 3 wiring
1 with trailing zero	PTr0 C1	Sender bar 1 to COMP 1	Not Applicable	Not Applicable	Not Applicable	Not Applicable
1	P no.C1	Sender bar 1 to COMP 1	Not Applicable	Not Applicable	Not Applicable	Not Applicable
2	P no.C2	Sender bar 1 to COMP 1 Sender bar 2 to COMP 2	Not Applicable	Not Applicable	Not Applicable	Not Applicable
3	P no.C3	Sender bar 1 to COMP 1 Sender bar 2 to COMP 2 Sender bar 3 to COMP 3	Not Applicable	Not Applicable	Not Applicable	Not Applicable
4	P no.C1	Sender bar 1 to COMP 1	P no.C4	Sender bar 4 to COMP 1	Not Applicable	Not Applicable
5	P no.C2	Sender bar 1 to COMP 1 Sender bar 2 to COMP 2	P no.C5	Sender bar 4 to COMP 1 Sender bar 5 to COMP 2	Not Applicable	Not Applicable
6	P no.C3	Sender bar 1 to COMP 1 Sender bar 2 to COMP 2 Sender bar 3 to COMP 3	P no.C6	Sender bar 4 to COMP 1 Sender bar 5 to COMP 2 Sender bar 6 to COMP 3	Not Applicable	Not Applicable
7	P no.C1	Sender bar 1 to COMP 1	P no.C4	Sender bar 4 to COMP 1	P no.C7	Sender bar 7 to COMP 1
8	P no.C2	Sender bar 1 to COMP 1 Sender bar 2 to COMP 2	P no.C5	Sender bar 4 to COMP 1 Sender bar 5 to COMP 2	P no.C8	Sender bar 7 to COMP 1 Sender bar 8 to COMP 2
9	P no.C3	Sender bar 1 to COMP 1 Sender bar 2 to COMP 2 Sender bar 3 to COMP 3	P no.C6	Sender bar 4 to COMP 1 Sender bar 5 to COMP 2 Sender bar 6 to COMP 3	P no.C9	Sender bar 7 to COMP 1 Sender bar 8 to COMP 2 Sender bar 9 to COMP 3

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### Program the Annihilator gauge display into inches:

- 1. Turn on the programmer.
- 2. Make sure the inch mode is correct.
- 3. Select a memory location with **MEM LOC**.
- 4. Press the **INCH MEM (SHIFT 1)** button to put inches into the memory. If the inches are already in memory from a previous calibration, it is not necessary to do it again, but make sure that they are the correct inches (1/4").
- 5. To program the alarm points, determine the level that they should be set at and whether they should be start up or shut down. The start up mode turns the alarm on as the tank level rises past the alarm point (i.e., the alarm is on at the top of the tank, and off at the bottom). The shut down mode turns the alarm off as the tank level rises past the alarm point (i.e., the alarm is on at the bottom of the tank, and off at the top).
- 6. If the automatic alarm is to be used, program Alarm 4 as shut down at the point where the horn is to come on, and program Alarm 3 as shut down a few inches above where the float will sit at the bottom of the tank. The automatic alarm is a special output so that even though Alarm 4 is programmed as shut down, the horn will be turned on when the level rises above the Alarm 4 point, and then will turn off when the alarm is silenced. When the fluid level goes below the Alarm 3 point, the alarm will be re-armed so it will sound the next time the level goes above Alarm 4.
- 7. To set Alarm 1, use the INCHES buttons to obtain the desired set point on the CALIBRATION display, then press the ALARM SHUT DN or SHIFT-ALARM ST UP button followed by the 1 button. When the operation is complete, repeat this procedure for the other alarms, pressing 2, 3, and then 4 after the ALARM button. If an alarm is not used it does not need to be programmed.
- 8. Make sure that the wires from the sender bar are connected to the gauge display, and plug the programmer plug into the gauge display. Press the BAR button. The INCHES display should show some inch reading, if it shows "no S" or "No FL" check the wiring.
- Measure the distance from the bottom of the tank to the middle of the float, this is the bottom reading. Use the OFFSET buttons to obtain this reading on the CALIBRATION display. NOTE: The calibration offset is carried over when memory locations are changed.

- 10. Press the **PROG** button to transfer the calibration to the gauge.
- 11. When the operation is complete, unplug the programmer from the gauge and verify gauge operation.

### Copy one Annihilator gauge display to another:

- 1. Turn on the programmer.
- 2. Make sure the inch mode is correct (1/4").
- 3. Select a memory location with **MEM LOC**.
- Plug the programmer plug into the gauge display to be copied from. Press the COPY button to copy the gauge calibration into memory.
- 5. When the operation is complete, unplug the programmer plug from the first gauge and plug it into the gauge display to be copied to. Press the **PROG** button to transfer the calibration to the second gauge.
- 6. When the operation is complete, unplug the programmer from the gauge and verify gauge operation.

# Program an Annihilator gauge display from a table of calibration values:

- 1. Obtain a table of inches versus volume
- 2. Turn on the programmer.
- 3. Make sure the inch mode is correct (1/4").
- 4. Select a memory location with **MEM LOC**.
- Press the CLEAR MEM button to erase any previous calibration.
- 6. Starting at the 0 inch value of volume calibration, use the 0 to 9, decimal, E, F, L, U, or BL buttons on the keypad to enter the calibration. Press the ENTER button to store the value in memory. When ENTER is pressed, the inches will go to the next value. If you make a mistake, use the BACK button to erase the entry, or if ENTER has already been pressed, use INCHES ↓ to go back to that inch value and re-enter the correct value. If more than 4 numbers are entered the previous ones will scroll off the left of the display. If ENTER is pressed before any numbers, nothing will happen.
- 7. After the table has been entered, use the **INCHES** buttons to review the table to make sure it is correct. If a calibration value is incorrect, simply re-enter it and press **ENTER**.

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8. Continue with the same procedure as in Program the gauge display into inches from step 5. When setting the bottom reading, use the calibration table to look up the volume corresponding to the distance to the middle of the float. Use the **OFFSET** buttons to obtain this reading on the CALIBRATION display.

# Program an Annihilator gauge display from a table stored in memory:

- 1. Turn on the programmer.
- 2. Make sure the inch mode is correct (1/4").
- 3. Select the desired memory location with **MEM LOC**.
- 4. Continue with the same procedure as in **Program the gauge display into inches** from step 5. When setting the bottom reading, use the calibration table to look up the volume corresponding to the distance to the middle of the float. Use the **OFFSET** buttons to obtain this reading on the CALIBRATION display.

# Programming the alarms to use the automatic self resetting alarm for high level warning:

- 1. To use this alarm, the warning device (light or horn) must be connected to Alarm 4.
- 2. Turn on the programmer. Make sure you have the correct volume calibration showing in the Calibration Display.
- 3. 3. For this application, alarm 4 is the warning point and alarm 3 is the tank empty point. Alarm 4 must be higher than alarm 3. Both of the alarms are programmed as shutdown. Note that even though Alarm 4 is programmed as shut down, the alarm will turn on as the tank level rises past the alarm set point.
- 4. Select the point in the tank where the warning should turn on. Use the **INCHES** buttons to obtain the desired set point on the CALIBRATION display.
- 5. Then press the **ALARM SHUT DN** button followed by the 4 button. This programs alarm **4** as a shutdown with the warning value.
- 6. Select a point in the tank which is a few inches off the bottom. The product level must go below this point when unloading, but once the tank has been even partially filled the product level should be above this point. Use the **INCHES** buttons to obtain this point on the Calibration Display.

- 7. Then press the **ALARM SHUT DN** button followed by the 3 button. This programs alarm 3 as a shutdown with the tank empty value. When the product level drops below this point the warning bypass is reset.
- 8. This completes the alarm programming. Alarms 1 and 2 are not used for the automatic self resetting alarm for high level warning. Program the gauge according to the appropriate instructions above.

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### CHAPTER 8 - TROUBLESHOOTING GUIDE

There are only 4 serviceable components in the gauge: the float, the sender bar, the interconnecting wire, and the display.

If the float is sunk, the display will read the bottom tank reading all the time. If the float is partially sunk, the reading may rise and then fall as the tank is filled. If the float is lost from the bar, or if the float magnets are all damaged or lost, the bar will output a 0.0 inch signal which will be displayed as "**FLot**" indicating that the float is missing or not working.

If the wires are cut or the sender bar is dead, the display will read "**no S**" indicating that it is not receiving a signal from the sender bar. If the wiring to the sender bar is shorted to ground, it will show "**Shrt**". In rare cases a shorted sender bar could cause a short circuit reading, disconnecting the yellow wire at the sender bar will change the display reading to "**no S**" in this case.

If the display reads erratically, check for water inside the display, and for a poor end cap seal. If the display is receiving a corrupted or inadequate signal it will show "**Err**" indicating an error in the bar signal.

If the display shows "**Prob**" at all times, it indicates an internal memory corruption of the number of compartments. Try reprogramming the number of compartments, if this fixes the problem then no further action is needed. If not, then the display will need to be serviced.

### To test a sender bar:

- 1. Connect the bar to a display that is known to be operational. Program the display to inches, or hold down the inch button on the back of the display.
- By running a float up and down the bar you should see the inch numbers on the display rise and fall. If it shows "no S" or "Err" or "Shrt" the bar needs to be replaced.

### To test a display:

1. Connect the display to a bar that is known to be good. Run the float up and down on the bar to see if the display responds properly.

- 2. If the display shows some strange reading it may need reprogramming. Copy the existing programming into an unused memory on the 817-USB (just in case) and then program the display in inches or a known good program. The display should show "prog" within a second of plugging in the 817 plug, if not it is bad. After the 817 plug is removed the display readings should match the readings on the 817 calibration display, if they do not then the display is bad.
- 3. If only the alarms do not work then copy the calibration into the 817-USB to check if the alarms are programmed. If they are programmed then connect the sender bar to the display. Connect the positive lead of an ohm meter to the alarm terminal, and the negative lead of the ohm meter to the ground terminal. Run the float up and down on the bar to test the alarms.

The software version can be displayed on an 806-B by pressing both the **INCH** button and **COMPARTMENT** button for 5 seconds when "**No S**" is shown. The software version can also be displayed on an 806-Bi by pressing the **DIM** button, **BRIGHT** button and **COMPARTMENT** button for 5 seconds when "**No S**" is displayed. The code revision number will be displayed until the buttons are released, for example "**Cod2.02**" or "**Cod 2.03**".

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### **CHAPTER 9 - SPECIFICATIONS**

806-T SENDER BAR			
Resolution	6 mm (1/4")		
Accuracy	+/- 0.5 cm (+/-0.2")		
Bar construction	304 stainless steel tube, 25 mm (1") dia 316 seamless stainless steel (optional upgrade) Fitting: 25 mm (1") NPT male compression fitting Update (sample) rate: 56 mS (milliseconds)		
Enclosure material	PBT plastic, Lid: polycarbonate		
Maximum tank height	Tank height up to 221 cm (87")		
Product temperature range	-40°C to +90°C (-40°F to +194°F)		
Power	Powered by 12 Vdc truck power through the display		
Alarm output range	1 amp at 15 Vdc		
Input power	10-15 Vdc, 180 mA max. (minimum 1-amp fuse)		
Float material	Medium density polyethylene. Stainless steel float available (optional upgrade).		
Float size	Cylindrical, 178 mm (7") in diameter, 114 mm (41/2") high.		
Float buoyancy	Sinks 25 mm (1") in water.		
806-B DISPLAY			
Material	Enclosure: PBT plastic, Lid: polycarbonate		
Size	Enclosure size: 152 mm (6") in dia x 70 mm (2 3/4") deep		
Display type	0.56" red LED, 4 volume digit, 2 compartment digits		
External power	Powered by 12 Vdc truck power		
Ambient temperature range	-40°C to +60°C (-40°F to +140°F) ambient		
806-Bi DISPLAY			
Material	Enclosure: ABS plastic		
Size	127 mm wide x 64 mm high (5"x 21/2") x 43 mm (1 2/3") deep		
Display type	0.56" red LED, 4 volume digit, 2 compartment digits		
External power	Powered by 12 Vdc truck power		
Ambient temperature range	-40°C to +60°C (-40°F to +140°F) ambient		
SAFETY INFORMATION			
Compliance and	CAN ICES-001(A)/NMB-001(A)		
Certifications	This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.		
	Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.		
	This product can expose you to chemicals including Nickel and Lead, which are known to the State of California to cause cancer, and lead which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov		
	Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.		

### CHAPTER 10 - SERVICE AND WARRANTY INFORMATION

Find warranty claim process information refer to our support page on our website:

### www.garnetinstruments.com/support/

### DISCLAIMER OF WARRANTY ON HARDWARE

Garnet Instruments warrants equipment manufactured by Garnet to be free from defects in material and workmanship under normal use and service for a period of three years from the date of sale from Garnet or an Authorized Dealer. The warranty period will start from the date of purchase or installation as indicated on the warranty card. Under these warranties, Garnet shall be responsible only for actual loss or damage suffered and then only to the extent of Garnet's invoiced price of the product. Garnet shall not be liable in any case for labor charges for indirect, special, or consequential damages. Garnet shall not be liable in any case for the removal and/or reinstallation of defective Garnet equipment. These warranties shall not apply to any defects or other damages to any Garnet equipment that has been altered or tampered with by anyone other than Garnet factory representatives. In all cases, Garnet will warrant only Garnet products which are being used for applications acceptable to Garnet and within the technical specifications of the particular product. In addition, Garnet will warrant only those products which have been installed and maintained according to Garnet factory specifications.

### LIMITATION ON WARRANTIES

These warranties are the only warranties, expressed or implied, upon which products are sold by Garnet and Garnet makes no warranty of merchantability or fitness for any particular purpose in respect to the products sold. Garnet products or parts thereof assumed to be defective by the purchaser within the stipulated warranty period should be returned to the seller, local distributor, or directly to Garnet for evaluation and service. Whenever direct factory evaluation, service or replacement is necessary, the customer must first, by either letter or phone, obtain a Returned Material Authorization (RMA) from Garnet Instruments directly. No material may be returned to Garnet without an RMA number assigned to it or without proper factory authorization. Any returns must be returned freight prepaid to: Garnet Instruments, 286 Kaska Road, Sherwood Park, Alberta, T8A 4G7. Returned warranted items will be repaired or replaced at the discretion of Garnet Instruments. Any Garnet items under the Garnet Warranty Policy that are deemed irreparable by Garnet Instruments will be replaced at no charge or a credit will be issued for that item subject to the customer's request.

If you do have a warranty claim or if the equipment needs to be serviced, contact the installation dealer. If you do need to contact Garnet, we can be reached as follows:

### CANADA

Garnet Instruments 286 Kaska Road Sherwood Park, AB T8A 4G7 CANADA

email: info@garnetinstruments.com

### **UNITED STATES**

Garnet US Inc. 5360 Old Granbury Road Granbury, TX 76049

USA

email: infous@garnetinstruments.com

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