

Valley Crafts ROTOLIFT BATTERY POWERED



INSTRUCTION MANUAL

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A. Operating Instructions

NOTE: IT IS RECOMMENDED THAT ALL OPERATORS FAMILIARIZE THEMSELVES WITH THE MACHINE AND DEVELOP SAFE WORKING HABITS.

1. **IMPORTANT!** Remove solid plug on hydraulic reservoir and install breather cap (included in the Power Pak) for proper air venting.
2. Install battery with the negative pole on the left hand side (do not allow ground wire to come in contact with any other wires or a short will occur).
3. Loosen rotator straps in the following way. A) Depress “finger release” on ratchet and fold handle open. B) Pull strap through ratchet just far enough to unhook metal ring from T-bar at the end of the rotating arm. C) Perform this on both ratchets.
4. Move the Roto-Lift forward, straddling the drum, and center the rotating arms to the drum using the “up/down” switch on the control box panel.
5. After arms are centered on drum, push unit forward the rest of the way so the drum touches the rear of the rotating arms.
6. Pull both straps around the front of the drum and hook the metal ring onto the T’bar on the end of the rotating arms.
7. By depressing the “finger release” on the ratchet and returning it to the original position, you may now ratchet the straps tight around the drum.
8. With **BOTH** straps tight, raise the drum by using the “up” function switch.
9. To dump, raise the drum to the desired height and rotate the switch on the control box panel the direction you want the drum to dump.

B. Safety Instructions

1. When transporting a load, it is recommended that the attachment is lowered as close to the floor as possible to reduce the chances of accidents during transport.
2. Do not leave load suspended for an extended period of time or premature wear to the lifting cylinder will occur.
3. Maximum lifting capacity is 800 pounds.

C. Maintenance Information

1. Use 12 Volt deep-cycle batteries Group 24 only.
2. Check hydraulic fluid every 40 hours or before using the machine after long set-aside periods. Three quarts of hydraulic fluid is sufficient to operate the system properly. Do no overfill. Use Dexron automatic transmission fluid only!
3. The lifting chain should be oiled periodically as needed. This is best accomplished by lowering the backplate completely and spraying lubricant onto the chain.
4. Check nylon straps occasionally for wear and replace as necessary.

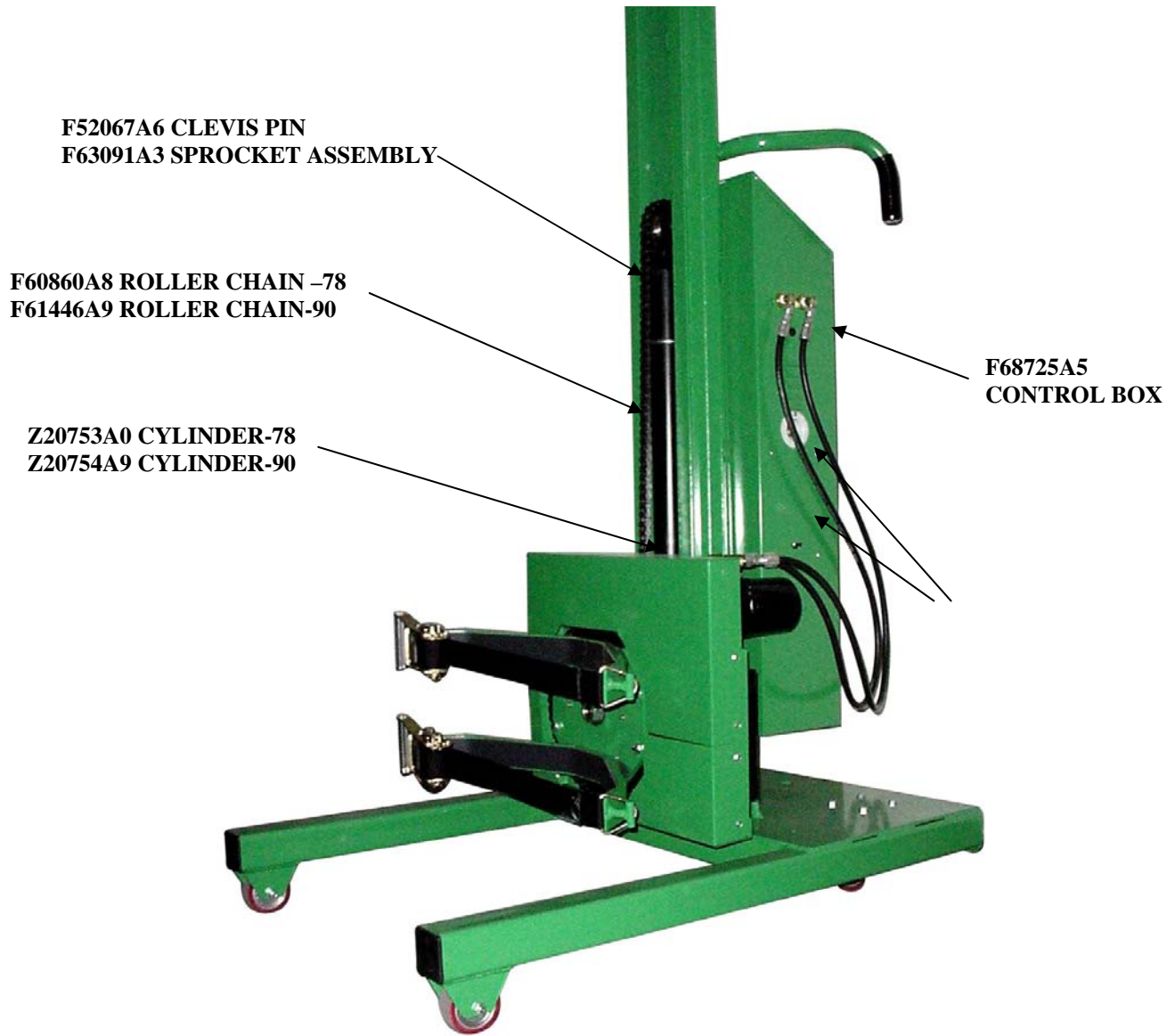
E. Battery Charging Instructions

1. Read charger operating instruction manual before charging.
2. Plug a grounded extension cord into built-in receptacle in Control Box and plug into outlet.
3. The Roto Lift is charged automatically, and can be left unattended while charging.
4. When re-charging is accomplished, unplug extension cord from Control Box.

NOTES:

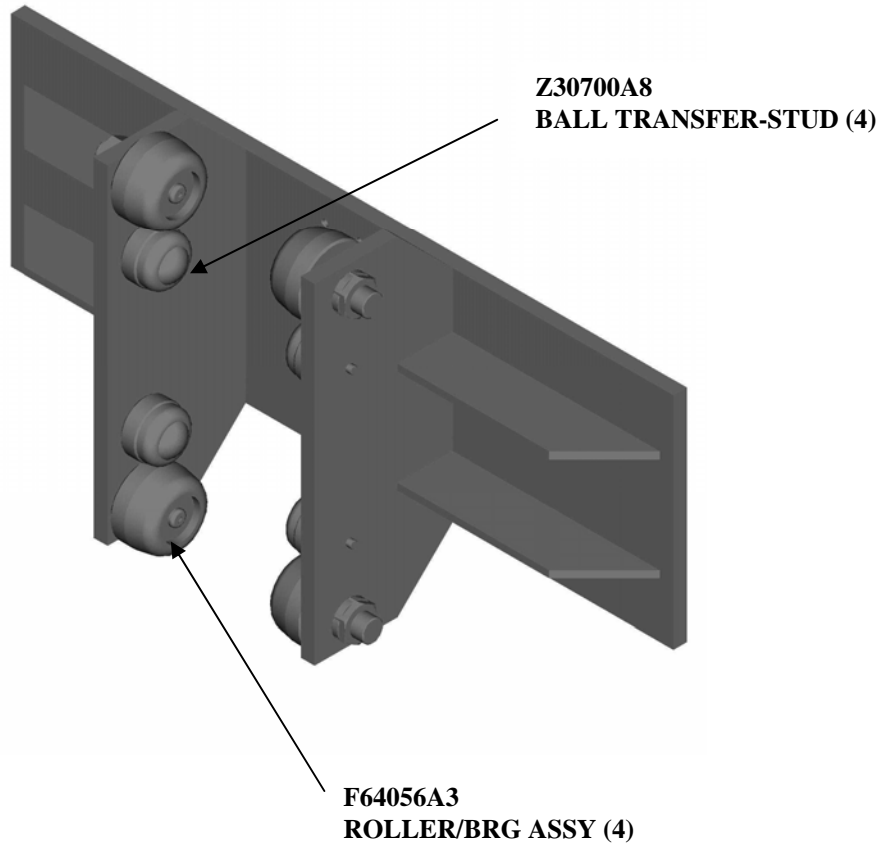
- A. Generally, batteries will require equal charging to work time (ex. One hour of machine use = one hour of re-charging time).
- B. It is not recommended that alternate charging devices be used.
- C. To extend battery life, it is recommended that the batteries occasionally experience a full discharge. Doing this prevents the battery from developing a “memory” for lesser charge.
- D. **CAUTION!** To avoid shock or burn, **NEVER** touch the unit while recharging.

PARTS BREAKDOWN
F88565C7 ROTOLIFT-78
F88566C6 ROTOLIFT-90

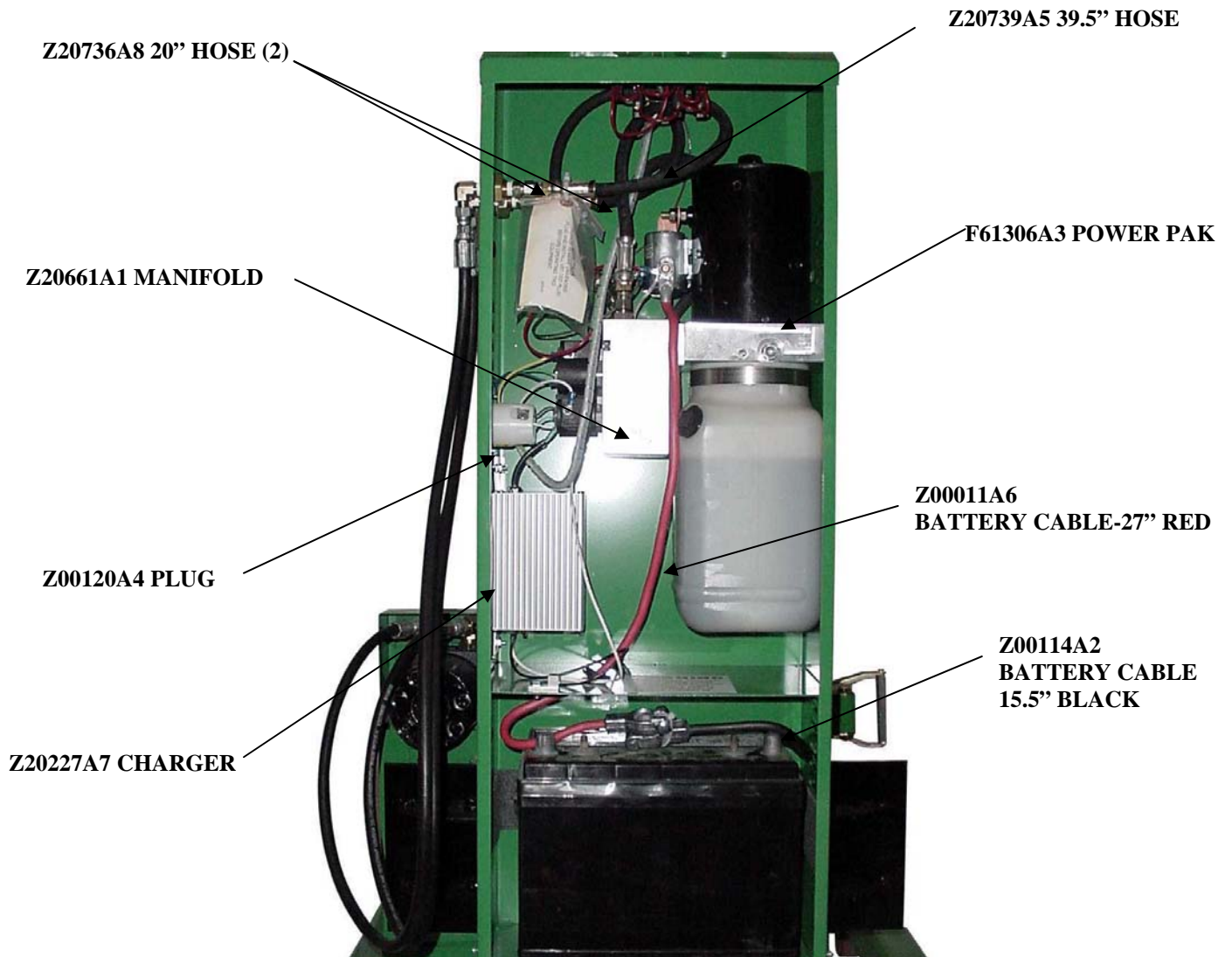


Z30155A9 3" WHL (2)

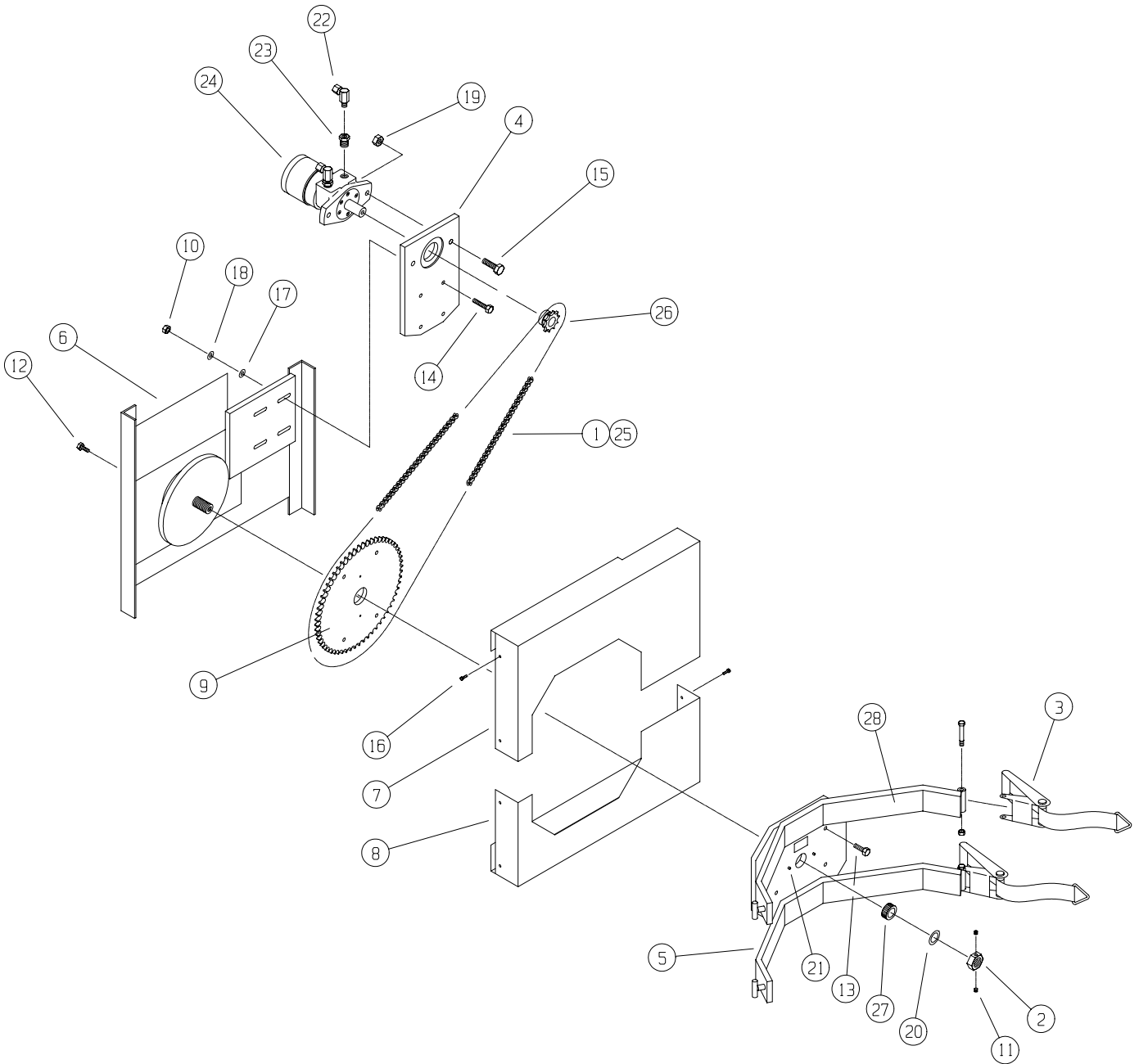
BACKPLATE ASSEMBLY
F64367A4



CONTROL BOX ASSY
F68725A5



PARTS BREAKDOWN
FRONT SECTION ASSEMBLY
F62848B1



FRONT SECTION ASSEMBLY PARTS LIST

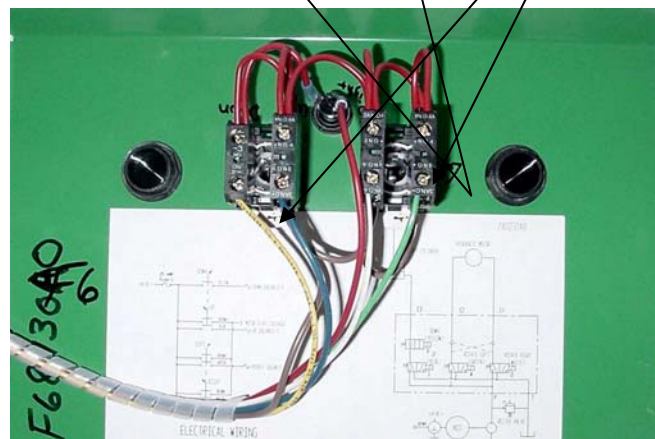
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	F30214A4	CHAIN-ROLLER	1
2	F52527A0	NUT-LOCK 1-1/4	1
3	F62980A9	RATCHET ASSY	2
4	F70072C7	MNT-MOTOR	1
5	F72629C1	FRT SECT WLDMT	1
6	F72630C8	BACK SECT WLDMT	1
7	F72648C8	GUARD-CHAIN TOP	1
8	F72649C7	GUARD-CHAIN BTM	1
9	F72650B5	SPROCKET-LARGE	1
10	Z10026A8	NUT-HEX JAM 3/8-16ZP	2
11	Z10090A9	S-SHS 5/16-18X3/8	2
12	Z10122A1	S-HHC 5/16-18X3/4	2
13	Z10132A9	S-HHC 3/8-16X1	4
14	Z10134A7	S-HHC 3/8-16X1-1/2	2
15	Z10148A1	S-HHC 1/2-13X1-1/2	2
16	Z10166A8	#10-24X1/2	4
17	Z10202A4	WASHER-3/8 FLAT	4
18	Z10214A0	WASHER-3/8 LOCK	8
19	Z10393A3	NUT-LOCK 1/2-14	2
20	Z10430A5	BUSH-MACH 1X14GAX2	1
21	Z10627A7	ZERK-GREASE .188	2
22	Z20701A3	FTG 90 6801-6-10 NOW	2
24	Z20656A6	MOTOR-HYD	1
25	Z30059A6	LINK-CONN SPT/CLIP	1
26	Z30400A2	SPROCKET-SM W/SHS	1
27	Z30420A8	BRG-TAPER ROLL 1" BORE	1
28	Z50037A1	RUBBER PAD	4.17'

TOP PANEL CONTROL BOX
F68731A9



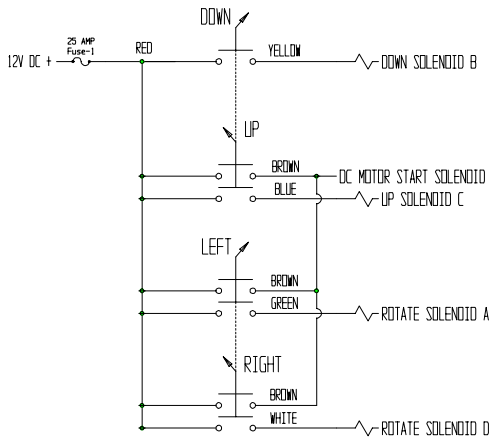
Z00523A7 (2)
3-POSITION SWITCH

Z00524A6
CONTACT BLOCK N/O

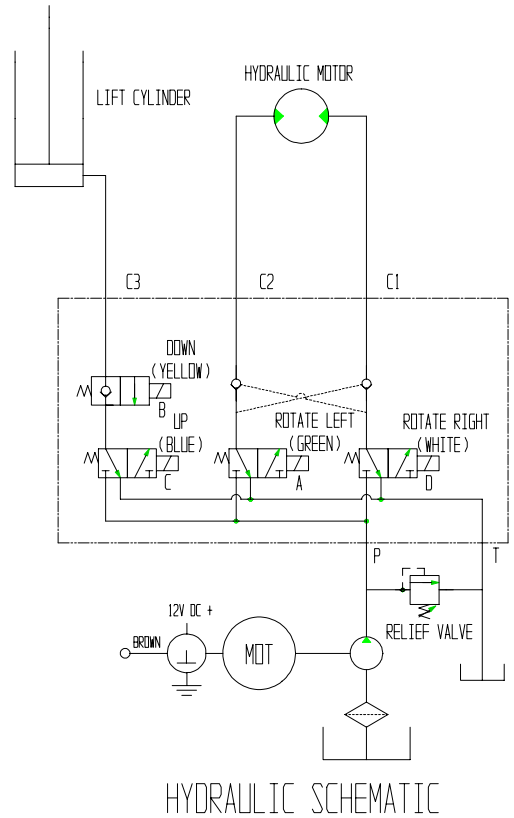


F68727A3
WIRE HARNESS

HYDRAULIC/ELECTRICAL SCHEMATIC



ELECTRICAL WIRING



HYDRAULIC SCHEMATIC

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Batteries won't charge	<p>Not using Deep Cycle Batteries</p> <p>Faulty Battery(s)</p> <p>Not following recharging directions</p> <p>Improper grounding/wiring</p>	<p>Acquire a 12 Volt Deep Cycle Battery (Group 24)</p> <p>Load test Batteries to ensure it is good</p> <p>Refer to Battery Charging Instructions (Page 4)</p> <p>Tighten Charger mounting bolts and check wiring</p>
Unit not functioning	<p>Low/Dead Batteries</p> <p>Improper grounding</p> <p>Damaged or loose wiring</p> <p>Bad Switches</p>	<p>Recharge Batteries</p> <p>Check Motor & Battery wire connections. Tighten if necessary</p> <p>Check wiring to switches in Control Box. Re-attach loose connections.</p> <p>Call factory for replacement</p>

Warranty & Limitation of Liability

Valley Craft products are warranted for a period of one (1) year from date of shipment from Valley Craft's plant to be free from defects in material and workmanship under correct use, normal operating and proper application. However, parts of other than Valley Craft manufacture are subject ONLY to the original manufacturer's warranty. Valley Craft's obligation under warranty shall be limited to repair or exchange, at Valley Craft's option, FOB origin factory, of any Valley Craft product or part which proves to be defective as provided herein. Valley Craft reserves the right to either inspect the product at Buyer's location, or require it to be returned to the factory for inspection. The warranty contained herein does not extend to goods damaged, or subject to accident, abuse or misuse after shipment from Valley Craft's factory, nor to goods altered or repaired by anyone other than an authorized Valley Craft representative.

Buyer or user shall not alter, modify or use a Valley Craft product for anything other than its intended function. Valley Craft shall not in any way be responsible for the consequences of any such alteration, modification or misuse.

VALLEY CRAFT MAKES NO EXPRESS WARRANTIES OTHER THAN THOSE WHICH ARE SPECIFICALLY DESCRIBED HEREIN. Any description of the goods sold hereunder, including any references to Buyer's specifications and any descriptions in catalogs, circulars and other written material published by Valley Craft, is for the sole purpose of identifying such goods and shall not create an express warranty that the goods shall conform to such descriptions.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY STATES VALLEY CRAFT'S ENTIRE AND EXCLUSIVE LIABILITY, AND BUYER'S EXCLUSIVE REMEDY FOR ANY CLAIM FOR DAMAGES IN CONNECTION WITH VALLEY CRAFT PRODUCTS, THEIR DESIGN, SUITABILITY FOR USE, INSTALLATION OR OPERATION OR FOR ANY CLAIMED DEFECTS. VALLEY CRAFT WILL IN NO EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, NOR FOR ANY SUM IN EXCESS OF THE PRICE RECEIVED FOR THE GOODS FOR WHICH LIABILITY IS CLAIMED.

Technical Assistance/Warranty Procedure

What's Covered:

- Parts and Labor to correct manufacturer's defect within one year of purchase.
- Freight Cost

What's Not:

- Normal wear items (seal kits, bearings, tires, etc.)

What Voids the Warranty:

- Dirt/Grime that directly causes malfunction of product
 - Abuse (i.e. Overloading, damaged, not properly maintained, etc.)
 - Product altered by customer
- *See "Items not Under Warranty" below for items that have the warranty voided.

Items Under Warranty (less than one year old):

- Warranty replacement parts are provided only when the problem can be identified with near certainty. If not, the customer will return item to Valley Craft, freight collect, for troubleshooting and/or repair. When repaired, product will be returned to customer, freight prepaid. Otherwise, customer may call local authorized service technician for assistance. Under this arrangement, replacement parts will be sent at no charge but labor costs will NOT be covered.

Items NOT Under Warranty (greater than one year old or *having warranty voided):

- Customer will return item to Valley Craft, freight prepaid, for troubleshooting and/or repair. Valley Craft will call customer with \$\$ estimate of parts and labor for approval before repairing. Product will be returned to customer, freight collect.

Or

- Customer may call local authorized service technician for repairs at their own expense.

Z4008 1A7

DEXRON III AND MERCON

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

DEXRON III AND MERCON AUTOMATIC TRANSMISSION FLUID

MSDS Code: ATFC0051

Revised: 02-Aug-2000

"DEXRON" is a registered trademark of General Motors Corp.

"MERCON" is a registered trademark of Ford Motor Company.

Conoco Blend Code: 6682

MANUFACTURER/DISTRIBUTOR

Conoco Inc.
P.O. Box 2197
Houston, TX 77252

PHONE NUMBERS

Product Information: 1-281-293-5550

Transport Emergency: CHEMTREC 1-800-424-9300 (U.S. & Canada)
703-527-3887 (elsewhere; call collect)

Medical Emergency: 1-800-342-5119 or 281-493-2767

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	%
Highly refined base oils	>70
Proprietary Additives	<30

If oil mist is generated, exposure limits apply. (See Section 8.)

3. HAZARDS IDENTIFICATION

--- EMERGENCY OVERVIEW ---

APPEARANCE / ODOR

Red liquid / mild petroleum hydrocarbon odor.

OSHA REGULATORY STATUS

This material is classified as nonhazardous under OSHA Regulations.

HMIS RATING

Health: 1; Flammability: 1; Reactivity: 0

Potential Health Effects

Primary Route of Entry: Skin

The product, as with many petroleum products, may cause minor skin, eye, and lung irritation, but good hygienic practices can minimize these effects.

Normal use of this product does not result in generation of an oil mist. However if an oil mist is generated, overexposure can cause

minor and reversible irritation to the eyes, skin, and especially the lungs. Proper personal protective equipment and sufficient ventilation can provide adequate protection.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

4. FIRST AID MEASURES

Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin Contact

Wash skin thoroughly with soap and water. If irritation develops and persists, consult a physician.

Eye Contact

In case of contact, immediately flush eyes with plenty of water at least 15 minutes. Call a physician.

Ingestion

Material poses an aspiration hazard. If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration.

Notes to Physicians

Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400 mL water and mix thoroughly. Administer 5 mL/kg, or 350 mL for an average adult.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point (minimum) : 351 F (177 C)
(typical) : 356 F (180 C)
Method : COC

NFPA Classification : Class **IIIB** Combustible Liquid.
NFPA Rating : Health 0; Flammability 1; Reactivity 0

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water may be used to flush spills away from exposures.

Products of combustion may contain carbon monoxide, carbon dioxide, **and** other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

6. ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Remove source of heat, sparks, and flame.

Initial Containment

Dike spill. Prevent material from entering sewers, waterways, or low areas.

Spill Clean Up

Recover free liquid for reuse or reclamation. Soak up with sawdust, sand, oil dry or other absorbent material.

7. HANDLING AND STORAGE

Handling (Personnel)

Avoid breathing vapors or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Wash contaminated clothing prior to reuse.

Handling (Physical Aspects)

Close container after each use. Do not pressurize, cut, weld, braze, solder, grind, or drill on or near full or empty container. Empty container retains residue (liquid and/or vapor) and may explode in heat of a fire.

Storage

Store in accordance with National Fire Protection Association recommendations. Store in a cool, dry place. Store away from heat, sparks and flames, oxidizers. Close container after each use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

VENTILATION

Normal shop ventilation.

Personal Protective Equipment

RESPIRATORY PROTECTION

None normally required except in emergencies or when conditions cause excessive airborne levels of mists or vapors. Select appropriate NIOSH-approved respiratory protective equipment when exposed to sprays or mists. Proper respirator selection should be determined by adequately trained personnel **and** based on the contaminant(s), the degree of potential exposure, **and** published respirator protection factors.

PROTECTIVE GLOVES

Should be worn when the potential exists for prolonged or repeated skin contact. NBR or neoprene recommended.

EYE PROTECTION

Safety glasses with side shields.

OTHER PROTECTIVE EQUIPMENT

Coveralls with long sleeves if splashing is probable.

Applicable Exposure Limits

If oil mist is generated, exposure limits apply.

PEL (OSHA) : 5 mg/m³, 8 Hr. TWA

TLV (ACGIH) : 5 mg/m³, 8 Hr. TWA, STEL 10 mg/m³

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point : 650-950 F (343-510 C).

Vapor Pressure : Nil.

Vapor Density : >1 (Air=1.0)

% Volatiles : Nil.

Evaporation Rate : Nil.

Solubility in Water : Insoluble.

Odor : Petroleum Hydrocarbon (mild).

Form : Liquid.

Color : Red.

Specific Gravity : 0.86-0.87 @ 60 F (16 C).

Pounds per Gallon : 7.2 @ 60 F (16 C)

10. STABILITY AND REACTIVITY

Chemical Stability

Stable.

Conditions to Avoid

Heat, sparks, and flames.

Incompatibility with Other Materials

Incompatible or can react with oxidizers.

Decomposition

Normal combustion forms carbon dioxide; incomplete combustion may produce carbon monoxide.

Polymerization

Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Animal Data

Mouse skin painting studies have shown that highly solvent-refined petroleum distillates similar to ingredients in this product have not caused skin tumors.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

No specific aquatic data available for this product.

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system.

Container Disposal

Empty drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All other containers should be disposed of in an environmentally safe manner.

14. TRANSPORTATION INFORMATION

Shipping Information

DOT: Not regulated.
ICAO/IMO: Not restricted.

15. REGULATORY INFORMATION

U.S. Federal Regulations

OSHA HAZARD DETERMINATION (29 CFR 1910.1200)

Under normal conditions of use, this material is not known to be hazardous as defined by OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA/SUPERFUND (40 CFR 302)

Not applicable; this material is covered by the CERCLA petroleum exclusion.

SARA, TITLE III, 302/304 (40 CFR 355)

This material is not known to contain extremely hazardous Substances.

SARA, TITLE III, 311/312 (40 CFR 370)

Acute : No
Chronic : No
Fire : No
Reactivity : No
Pressure : No

SARA, TITLE III, 313 (40 CFR 372)

This material is not known to contain any chemical(s) at a level of 1.0% or greater (0.1% for carcinogens) on the list of Toxic Chemicals and subject to release reporting requirements.

TSCA (40 CFR 710)

Material and/or components are listed in the TSCA Inventory of Chemical Substances (40 CFR 710).

RCRA (40 CFR 261)

This material has been evaluated for RCRA characteristics **and** does not meet hazardous waste criteria if discarded in its purchased form. Because of product use, transformation, mixing, processing, etc., which may render the resulting material hazardous, it is the product user's responsibility to determine at the time of disposal whether the material meets RCRA hazardous waste criteria.

CLEAN WATER ACT (40 CFR 116.4a)

The material contains the following ingredient(s) which is considered hazardous if spilled into navigable waters and therefore reportable to the National Response Center (1-800-424-8802).

Ingredient : Petroleum Hydrocarbons.
Reportable Quantity : Film or sheen upon or discoloration of any water surface.

State Regulations (U.S.)

CALIFORNIA "PROP 65"

The material contains ingredient(s) known to the State of California to cause cancer, birth defects, or other reproductive harm. Read **and** follow all label directions.

Ingredient	: Benzene	(CAS # 71-43-2)	<0.0001%
Ingredient	: Aniline	(CAS # 62-53-3)	<0.0001%
Ingredient	: o-Toluidine	(CAS # 95-53-4)	<0.0001%
Ingredient	: Ethyl acrylate	(CAS # 140-88-5)	<0.03%

PENNSYLVANIA WORKER & COMMUNITY RIGHT TO KNOW ACT

This material is not known to contain any ingredient(s) subject to the Act.

Canadian Regulations

This is not a WHMIS Controlled Product.

16. OTHER INFORMATION

NOTE: This product or any other hydrocarbon-based lubricant should not be used in non-diaphragm compressors that produce "breathing air" unless the outlet is monitored continuously for carbon monoxide. These lubricants can produce carbon monoxide when subjected to high temperatures.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : MSDS Coordinator
Address : Conoco Inc.
> : PO Box 2197
> : Houston, TX 77252
Telephone : 1-281-293-5550
Web Site : www.conoco.com

Indicates updated section.

End of MSDS

Material Safety Data Sheet

SUPER-STA GREASE

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

SUPER-STA Grease

MSDS Code: GREC0290

Revised: 05-Oct-2000

"SUPER-STA" is a registered trademark of Conoco.

Grade: No. 1, No. 2

Conoco Base Codes: 9029, 9030

MANUFACTURER/DISTRIBUTOR

Conoco Inc.

PO Box 2197

Houston, TX 77252

PHONE NUMBERS

Product Information : 1-281-293-5550

Transport Emergency : 1-800-424-9300 or
1-703-527-3887 (call collect)

Medical Emergency : 1-800-342-5119 or 1-281-493-2767

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	%
Highly Solvent-Refined Base Oils		>85
Lithium Stearate Soap	7620-77-1	<10
Zinc Compound		0-1
Proprietary Additives		<10

3. HAZARDS IDENTIFICATION

--- EMERGENCY OVERVIEW ---

APPEARANCE / ODOR

Amber solid / mild petroleum hydrocarbon odor.

OSHA REGULATORY STATUS

This material is not known to be hazardous as defined under OSHA regulations.

HMIS RATING

Health: 1; Flammability: 1; Reactivity: 0

Potential Health Effects

Primary Route of Entry: Skin

The product, as with many petroleum products, may cause minor skin, eye, and lung irritation, but good hygienic practices can minimize these effects.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

4. FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

Wipe off excess with towel. Wash skin thoroughly with soap and water. If irritation develops and persists, consult a physician.

If injected under the skin, necrosis could occur. See physician.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

Notes to Physicians

Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400 mL water and mix thoroughly. Administer 5 mL/kg, or 350 mL for an average adult.

High velocity injection under the skin can cause a bloodless puncture wound and result in necrosis. Immediate attention by a surgical specialist is recommended.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : 500 F (260 C) (Base Oil)
Method : Cleveland Open Cup - COC.
Autoignition : Not Available
NFPA Classification : Class IIIB Combustible Liquid.
NFPA Rating : Health 0; Flammability 1; Reactivity 0.

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water may be used to flush spills away from exposures.

Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

6. ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Spill Clean Up

Recover undamaged and minimally contaminated material for reuse and reclamation. Soak up with sawdust, sand, oil dry or other absorbent material. Shovel or sweep up.

7. HANDLING AND STORAGE

Handling (Personnel)

Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Wash contaminated clothing prior to reuse.

Handling (Physical Aspects)

Close container after each use. Do not pressurize, cut, weld, braze, solder, grind, or drill on or near full or empty container. Empty container retains residue (liquid and/or vapor) and may explode in heat of a fire.

Storage

Store in accordance with National Fire Protection Association recommendations. Store away from oxidizers, heat, sparks and flames.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

VENTILATION

Normal shop ventilation.

Personal Protective Equipment

RESPIRATORY PROTECTION

None normally required except under unusual circumstances such as described under fire fighting measures.

PROTECTIVE GLOVES

Should be worn when the potential exists for prolonged or repeated skin contact. NBR or neoprene recommended.

EYE PROTECTION

Safety glasses with side shields.

OTHER PRECAUTIONS

Avoid prolonged skin contact by practicing good personal hygiene and laundering contaminated clothing.

Exposure Limits

PEL (OSHA) : None Established
TLV (ACGIH) : None Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point : Not Applicable
Vapor Pressure : Nil
Vapor Density : >1 (Air=1.0)
% Volatiles : Nil
Evaporation Rate : Nil
Solubility in Water : Insoluble
Odor : Petroleum Hydrocarbon (mild).
Form : Solid.
Color : Amber.
Specific Gravity : Not Available
Density : 7.1-7.2 lb/gal @ 60 F (16 C)

10. STABILITY AND REACTIVITY

Chemical Stability

Stable.

Conditions to Avoid

Heat, sparks, and flames.

Incompatibility with Other Materials

Incompatible or can react with strong oxidizers.

Decomposition

Normal combustion forms carbon dioxide; incomplete combustion may produce carbon monoxide.

Polymerization

Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Animal Data

Mouse skin painting studies have shown that highly refined petroleum lube base oils similar to ingredients in this product have not caused skin tumors.

Animal skin exposure studies show high concentrations of zinc organic phosphates cause testicular atrophy, but this effect appears related to stress from the chemical causing severe skin

irritation. Low concentrations of the zinc component, as occurs in lubricant products, would be unlikely to cause testicular damage.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

No specific aquatic data available for this product.

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Incinerate material in accordance with Federal, State/Provincial and Local requirements. Do not flush to surface water or sanitary sewer system.

Container Disposal

Empty drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All other containers should be disposed of in an environmentally safe manner.

14. TRANSPORTATION INFORMATION

Shipping Information

DOT: Not regulated.
ICAO/IMO: Not restricted.
Canada: Not regulated.

15. 15. REGULATORY INFORMATION

U.S. Federal Regulations

OSHA HAZARD DETERMINATION

This material is not known to be hazardous as defined by OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA/SUPERFUND

Not applicable; this material is covered by the CERCLA petroleum exclusion.

SARA, TITLE III, 302/304

This material is not known to contain extremely hazardous substances.

SARA, TITLE III, 311/312

Acute : No
Chronic : No
Fire : No
Reactivity : No
Pressure : No

SARA, TITLE III, 313

This material contains the following chemical(s) at a level of 1.0% or greater (0.1% for carcinogens) on the list of Toxic Chemicals and is subject to toxic chemical release reporting requirements:

Toxic Chemical : Zinc Compound.
CAS Number : Not available.

TSCA

Material and/or components are listed in the TSCA Inventory of Chemical Substances (40 CFR 710).

RCRA

This material has been evaluated for RCRA characteristics and does not meet hazardous waste criteria if discarded in its purchased form. Because of product use, transformation, mixing, processing, etc., which may render the resulting material hazardous, it is the

product user's responsibility to determine at the time of disposal whether the material meets RCRA hazardous waste criteria.

CLEAN WATER ACT

The material contains the following ingredient(s) which is considered hazardous if spilled into navigable waters and therefore reportable to the National Response Center (1-800-424-8802).

Ingredient : Petroleum Hydrocarbons.
Reportable Quantity : Film or sheen upon or discoloration of any water surface.

State Regulations (U.S.)

CALIFORNIA "PROP 65"

This material is not known to contain any ingredient(s) subject to the Act.

PENNSYLVANIA WORKER & COMMUNITY RIGHT TO KNOW ACT

This material may contain the following ingredient(s) subject to the Pennsylvania Worker and Community Right to Know Hazardous Substances List.

Ingredient : Zinc Compound.
CAS Number : Not available.
Category : Environmental Hazardous Substance.

Canadian Regulations

This is not a WHMIS Controlled Product.

16. OTHER INFORMATION

Sales Office Numbers:

Australia	India
Office Manager	Tel: 91-80-227 7462/7463
Office Hours 8 a.m.-5 p.m.	Fax: 91-80-221 5513
Monday-Friday (excluding holidays)	
Tel: 61-7-5452 9900	
Fax: 61-7-5452 9999	
Malaysia	Mexico
Tel: 60-3-202 5233	Tel: 0-1-800-709-1200
Fax: 60-3-202 5266	Fax: 52-5-722-1455
Singapore	Thailand
Tel: 65-536 0010	Tel: 66-2-955-0195
Fax: 65-536 0012	Fax: 66-2-955-0190
Other	
Tel: 281-293-5768	
Fax: 281-293-2287	

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : MSDS Coordinator
Address : Conoco Inc.
> : PO Box 2197
> : Houston, TX 77252
Telephone : 1-281-293-5550

Indicates updated section.

End of MSDS