



Operators Manual

Hose Reel II

P.S. 1145-
Jun 14/05

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Warranty Policies & Claim Procedures

DRYAIR Inc. (referred to within as DRYAIR) warrants its new, unused equipment to be free of defects in material and workmanship at the time of delivery to the first retail purchaser.

Warranty Policies

Basic warranty policy

- DRYAIR will repair or replace, at its option, without charge, any defective part of the equipment for a period of twelve (12) months from delivery to the first retail purchaser, F.O.B St. Brieux, SK, Canada or Bowling Green, Ohio, USA.
- Mileage is not covered. Any parts that are covered by an extended warranty published by DRYAIR are an exception to the Basic Warranty policy and are to be warranted as per the details of the Extended Warranty Policy.
- Labor is covered as per DRYAIR flat labor rate.
- The Warranty Policy, terms and conditions, may change from time to time without prior notice.
- Warranty terms and conditions are transferable in the event of the sale to a second owner.
- Replacement parts will be warranted for 90 days from the repair date. Bill of sale must accompany the warranty claim.

Extended warranty policy

Water heater heat exchanger

- An extended warranty is available on the heat exchanger unit of the water heater assembly. The available warranty for a part, under the extended warranty policy, is prorated by 20% per year.
- (Shipment date is the date to be used for the commencement of the warranty period).
- Coverage schedule
 - Year 1 - 100%
 - Year 2 - 80%
 - Year 3 - 60%
 - Year 4 - 40%
 - Year 5 - 20%

Exceptions to the warranty policies

- Under no circumstance shall the owner be entitled to recover costs for incidental, special or consequential damages such as, but not limited to: loss of profit or revenue, other commercial losses, inconvenience and/or replacement equipment rental cost.
- Maintenance, repair or service items not related to warrantable defects.
- Loss or damage during shipping.
- Failure resulting from lack of or improper maintenance.
- Damage caused by operator abuse, negligence or improper operation.
- Damage resulting from improper voltage supply.
- Damage from improper installation. Installation done by other than the manufacturer.
- Non-defective items replaced at the request of the customer.
- Damage due to accidents.
- Damage resulting from improper fuel supply (i.e. pressure or contamination).
- Damage resulting from cracked or broken lines occurring during transport.
- Damage resulting from use of inadequate or improper fluids (i.e.. glycol or oil).

Owners obligations

- It is the responsibility of the owner, at the owner's expense, to transport the equipment to the service facility of an authorized DRYAIR distributor/dealer or alternately to reimburse the distributor/dealer, for any traveling expenses incurred in fulfilling this warranty.
- The terms of this Warranty Policy are subject to provincial and state legislation. DRYAIR reserves the right to make modifications in accordance with provincial and state legislation without prior notice or obligation.
- It is the responsibility of the owner to read, understand and implement the maintenance, safety and operational guidelines as laid out in the Operation and Maintenance Guide.
- All parts to be tagged with warranty claim number and shipped prepaid to DRYAIR within 30 days.

Manufacturer obligations

- DRYAIR reserves the right to continually improve and/or change the product's parts or specifications at any time without notice or obligation.
- The terms of this Warranty Policy are subject to provincial and state legislation. DRYAIR reserves the right to make modifications in accordance with provincial and state legislation without prior notice or obligation.

Warranty Claim Procedure

- All warranty credits must be processed with the DRYAIR Warranty Claim Form.
- All warranty parts, unless otherwise specified, are to be returned to DRYAIR along with a completed Warranty Claim Form.

Note: Prior to returning warranty parts, please call for an authorization number and shipping instructions from the Warranty Department in Canada.

- Location of Warranty Depots

USA	Canada
DRYAIR Inc.	DRYAIR Inc.
1095 N. Main Street	606 Highway Drive
Bowling Green, OH	Box 126
43402	St. Brieux, SK
Ph. 1 (866) 354-8546	S0K 3V0
	Ph. 1 (888) 750-1700

- Each warranty claim should only refer to one Serial or Production Schedule numbered unit.
- Warranty parts are to be tagged with warranty claim number.
- When claiming for warranty labour, the allowable warranty labour rate will be \$45.00/hour. The factory reserves the right to adjust the number of hours claimed where deemed necessary.
- The factory may at times specify allowable labour for certain warranty procedures.
- Mileage and travel time, to and from the customer are not eligible for warranty credit.
- Freight charges for warranty parts are not eligible for warranty credit.
- Labour flat rates for component changes
 - Electrical components - .5 hour
 - Plumbing components - 1 hour
 - Electric motor changes - 1 hour

Note: Other labour charges will be at the discretion of DRYAIR.

Safety Concerns

General Safety Guidelines

- Make certain that the operator reads and understands all the information in this manual.
- All unauthorized people must be kept away from the equipment when in operation.
- Maintain instructional and safety decals. Replace damaged decals.
- All guards must be in place when the equipment is in operation.

Water Heater Module

CAUTION! The water heater is a heating appliance.

- When dealing with any heating appliance, observe all posted warnings and cautions.
- Keep children and pets away from all piping and fuel accessories.
- The water heater housing panels must be kept closed when the system is operating. This prevents drafts from affecting water heater operation.

Heat Transfer Fluid

Follow the following precautions and measures when working with “heat transfer fluid” (“DOWFROST* HTF” & “BOSS CHILL PG”).

Fluid handling precautions

- Ventilation Good general ventilation should be sufficient for most conditions.
- Respiratory protection . No respiratory protection should be needed.
- Skin protection For brief contact, no precautions other than clean body-covering clothing should be needed.
..... Use impervious gloves when prolonged or frequently repeated contact should occur.
- Eye Protection Use safety glasses.

First aid measures

- Eyes Flush eyes with plenty of water.
- Skin Wash off in flowing water or shower.
- Ingestion Induce vomiting if large amounts are ingested.
..... Consult medical personnel.
- Inhalation Remove to fresh air if effects occur.
..... Consult a physician.
- Note to physician No specific antidote.
..... Supportive care.
..... Treatment based on judgment of the physician in response to reactions of the patient.

For complete “heat transfer fluid” information, refer to the Material Safety Data Sheets for “Dowfrost HTF” & “Boss Chill PG” on the following page.

6. ACCIDENTAL RELEASE MEASURE (See Section 15 for Regulatory Information)

PROTECT PEOPLE: Isolate area.

PROTECT THE ENVIRONMENT: Contain liquid to prevent contamination of soil, surface water or ground water.

CLEANUP: For small spills, clean up with absorbent material. Collect material in suitable and properly labeled open containers. For large spills, dike and pump into suitable and properly labeled containers.

7. HANDLING AND STORAGE

HANDLING: Product handled hot may require additional ventilation or local exhaust. Product on surfaces can cause slippery conditions.

STORAGE: Keep containers tightly closed when not in use. Store in stainless steel, aluminum, Plasteel 3066 lined containers or 316 stainless steel. Store below 121°C, 250° F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below exposure guidelines.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION: Use safety glasses. Safety glasses should be sufficient for most operations; however, for misty operations wear chemical goggles.

SKIN PROTECTION: For brief contact, no precautions other than clean body-covering clothing should be needed. Use impervious gloves when prolonged or frequently repeated contact could occur.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiration protection is required for certain operations, use an approved air-purifying respirator. In misty atmospheres, use an approved mist respirator.

EXPOSURE GUIDELINE(S): Propylene glycol: AIHA WEEL is 50 ppm total, 10 mg/m3 aerosol only.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless liquid
ODOR: Odorless
VAPOR PRESSURE: 0.08 mmHg @ 20°C, 68°F
VAPOR DENSITY: 2.62
BOILING POINT: 370°F, 188°C
SOLUBILITY IN WATER: Complete
SPECIFIC GRAVITY: 1.038 @ 20/20°C, 68°F

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

CONDITIONS TO AVOID: Avoid temperatures above 121°C/250°F. Product can decompose at elevated temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: When available oxygen is limited, as in a fire or heated to very high temperatures by hot wire or plate, carbon monoxide and other hazardous compounds such as aldehydes might be generated.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in section 1)

SKIN: the LD50 for skin absorption in rabbits is greater than 10,000 mg/kg.

INGESTION: The oral LD50 for Female rats is about 20,000-34,000mg/kg.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): Results of in vitro (test tube) mutagenicity tests have been negative. Results of mutagenicity tests in animals have been negative.

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL FATE

MOVEMENT AND PARTITIONING: Based largely or completely on information for similar material(s), i.e. propylene glycol. Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3). Log octanol/water partition coefficient (log Pow) is -0.92. Henry's Law Constant (H) is 1.2E-8 atm.m3/mole.

DEGRADATION AND PERSISTENCE: Based largely or completely on information for similar material(s), i.e. propylene glycol. Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD greater than 40%). Biodegradation is expected to be achieved in a secondary waste-water treatment plant. 5-Day biochemical oxygen demand (BOD5) is 1.16 p/p. 20-Day biochemical oxygen demand (BOD20) is 1.45 p/p. Theoretical oxygen demand (ThOD) is calculated to be 1.68 p/p. Inhibitory concentration (IC50) in OECD Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is greater than 1gm/L. Degradation is expected in the atmospheric environment within minutes to hours.

ECOTOXICITY: Based largely or completely on information for similar material(s), i.e. propylene glycol. Material is practically non-toxic to aquatic organisms on an acute basis (LC50 greater than 100 mg/L in most sensitive species).

Acute LC50 for fathead minnow (*Pimephales promelas*) is 46500-54900 mg/L.

Acute LC50 for guppy (*Poecilia reticulata*) is greater than 10000 mg/L.

Acute LC50 for water flea *Daphnia magna* is 4850-34400 mg/L.

Acute LC50 for rainbow trout (*Oncorhynchus mykiss*) is 44 ml/L (about 44000 mg/L).

13. DISPOSAL CONSIDERATION (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESS OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information on Ingredients).

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator or waste water treatment system.

As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Centre at 800-258-2436 or 989-832-1556 for further details.

14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORT:

This product is not regulated by D.O.T. when shipped domestically by land

CANADIAN TDG INFORMATION:

For TDG regulatory information, if required, consult transportation regulations, product shipping papers, or your Dow representative.

15. REGULATORY INFORMATION (Not meant to be all-inclusive—selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specified information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

U.S. REGULATION

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: Not to have met any hazard category.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

REGULATORY INFORMATION:

CHEMICAL NAME	CAS NUMBER	LIST
1, 2-PROPANEDIOL	00057-55-6	PA1

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD:

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CANADIAN REGULATIONS

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) classification for this product is: This product is not a "Controlled Product" under WHMIS.

16. OTHER INFORMATION

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	0
Flammability	1
Reactivity	0

MSDS STATUS: Revised Section 16.

* or ® Indicates a Trademark of The Dow Chemical Company

The Information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult The Dow Chemical Company For Further Information.

Material Safety Data Sheet

DOWFROST* HEAT TRANSFER FLUID

MSDS

Canadian Centre for Occupational Health and Safety

Issue: 05/09/2002

Received: 09/10/2003

MATERIAL SAFETY DATA

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT NAME: DOWFROST* HEAT TRANSFER FLUID
MSDS#: 1376
EFFECTIVE DATE: 05/09/2002
COMPANY IDENTIFICATION: The Dow Chemical Company
..... Midland, MI 48674
EMERGENCY TELEPHONE NUMBER: 24-HOUR EMERGENCY TELEPHONE NUMBER: (989)636-4400
..... Customer Information Number: 1-800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Propylene glycol	CAS# 000057-55-6	> 99%
Demineralized water	CAS# 007732-18-5	< 5%
Dipotassium hydrogen phosphate	CAS#007758-11-4	< 5%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Colorless, liquid, mild odor. No significant hazards for emergency response are known.
POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological information and additional information about potential health effects.)

EFFECTS OF SINGLE ACUTE OVEREXPOSURE

INHALATION: At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of upper respiratory tract (nose and throat).
EYE CONTACT: May cause slight temporary eye irritation. Corneal injury is unlikely.
SKIN CONTACT: Prolonged contact is essentially nonirritating to skin. Repeated contact may cause flaking and softening of skin.
SKIN ABSORPTION: Prolonged skin contact is unlikely to result in absorption of harmful amounts.
SWALLOWING: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts

POTENTIAL ENVIRONMENTAL EFFECTS (See Section 12 for Ecological Information)

4. FIRST AID

INHALATION: Move person to fresh air; if effects occur, consult a physician.
EYE: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effect occur, consult a physician, preferably an ophthalmologist.
SKIN: Wash skin with plenty of water
INGESTION: No emergency medical treatment necessary.
NOTE TO PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the condition of the patient.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES (Refer to section 9, PHYSICAL AND CHEMICAL PROPERTIES)

EXTINGUISHING MEDIA: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

FIRE FIGHTING PROCEDURES: Keep people away. Isolate fire area and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from a protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire-fighting clothing (including fire-fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Liquid mist of this product can burn. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.

HAZARDOUS COMBUSTION PRODUCTS: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

6. ACCIDENTAL RELEASE MEASURE

SMALL SPILLS: Absorb with materials such as: cat litter, sawdust, vermiculite, Zorb-all. Collect in suitable and properly labeled containers.

LARGE SPILLS: Dike area to contain spill. Recover spilled material if possible. See Section 13, Disposal Considerations for additional information.

PERSONAL PRECAUTIONS: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

ENVIRONMENTAL PRECAUTIONS: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. HANDLING AND STORAGE

HANDLING

GENERAL HANDLING: See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

OTHER PRECAUTIONS: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

STORAGE: 121°C (250° F). Do not store in: galvanized steel.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE LIMITS

COMPONENT	EXPOSURE LIMITS	SKIN FORM
Propylene glycol	10mg/m3 TWA8 AIHA WEEL 50 ppm TWA8 AIHA WEEL	Aerosol Total Particulate fume

In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

PERSONAL PROTECTION

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline.

PROTECTION: When respiratory protection is required for certain operations, use an approved air-purifying respirator. In dusty or misty atmospheres, use an approved particulate respirator.

EYE PROTECTION: Use safety glasses.

OTHER PROTECTIVE EQUIPMENT: No precautions other than body-covering clothing should be needed. Use gloves chemically resistant to this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
APPEARANCE: Colorless
ODOR: Mild
FLASH POINT - Closed Cup: 102°C 216°F Tag closed cup ASTM D 56 (Propylene glycol)
FLAMMABLE LIMITS IN AIR: Lower 2.6%(V) 100°C (Propylene glycol)
Upper 12.5%(V) 130°C (Propylene glycol)
AUTOIGNITION TEMP: 416°C 780°F
VAPOR PRESSURE: 0.7 mmHg @ 20°C, 68°F
BOILING POINT (760 mmHg): 162°C 323°F
VAPOR DENSITY (air=1): 2.6
SPECIFIC GRAVITY (H2O=1): 1.05 20°C/20°C
FREEZING POINT: <=-51°C <=-60°F
MELTING POINT: *Not applicable (for liquids)*
SOLUBILITY IN WATER (by weight): 100% 20°C
pH: 9-11 (5% solution in water)
EVAPORATION RATE (Butyl Acetate=1): 0.07
PERCENT VOLATILES: 98 Wt%

10. STABILITY AND REACTIVITY

STABILITY/INSTABILITY: Thermally stable at recommended temperatures and pressures.

CONDITIONS TO AVOID: Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

INCOMPATIBLE MATERIALS: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

THERMAL DECOMPOSITION: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers.

HAZARDOUS POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Peroral: Rat; female; LD50 = 20300 mg/kg

Percutaneous: Based on information for a similar material:

Rabbit; LD50 = > 10000 mg/kg

DEVELOPMENT TOXICITY: Contains component(s) which did not cause birth defects or any fetal effects in lab animals., The component(s) is/are:, Propylene glycol.

REPRODUCTIVE TOXICITY: Contains component(s) which did not interfere with reproduction in animal studies., Contains component(s) which did not interfere with fertility in animal studies., The component(s) is/are:, Propylene glycol.

CHRONIC TOXICITY AND CARCINOGENICITY: Similar formulations did not cause cancer in laboratory animals.

GENETIC TOXICOLOGY:

In Vitro: In Vitro mutagenicity studies were negative.

In Vivo: Mutagenicity studies in animals were negative for component(s) tested

SIGNIFICANT DATA WITH POSSIBLE RELEVANCE TO HUMANS: In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE: Based largely or completely on information for: Propylene glycol. Material is readily biodegradable.

Passes OECD test(s) for ready biodegradability. Degradation is expected in the atmospheric environment within minutes to hours.

ECOTOXICITY: Based largely or completely on information for: Propylene glycol. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 . 100mg/L in most sensitive species tested).

FURTHER INFORMATION: Based largely or completely on information for: Propylene glycol. Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Potential for mobility in soil is very high (Koc between 0 and 50).

13. DISPOSAL CONSIDERATION (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESS OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information on Ingredients). FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator or other thermal destructive device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Centre at 1-800-258-2436 or 0-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. TRANSPORT INFORMATION

NON-BULK Proper Shipping Name: NOT REGULATED

BULK Proper Shipping Name: NOT REGULATED

The information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transportation organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION (Not meant to be all-inclusive—selected regulations represented)

FEDERAL/NATIONAL

OSHS Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right To Know Act) Section 313
To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right To Know Act) Section 302
To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right To Know Act) Section 311 & 312

Delayed (Chronic) Health Hazard: NO

Fire Hazard: NO

Immediate (Acute) Health Hazard: NO

Reactive Hazard: NO

Sudden Release of pressure Hazard: NO

Toxic Substance Control Act (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from EINECS inventory requirements.

STATE/LOCAL

Pennsylvania (Worker and Community Right To Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

COMPONENT	CAS#	AMOUNT
Propylene glycol	57-55-6	96.0000 %

Pennsylvania (Worker and Community Right To Know Act): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

California SCAQMD Rule 443.1 (South Coast Air Quality Management District Rule 443.1, Labeling of Material Containing Organic Solvents).

VOC: Vapor pressure 0.66 mmHg @ 20°C
1002 g/l VOC
1030 g/l less water and less exempted solvents

This section provides selected regulatory information on this product including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

16. OTHER INFORMATION

ADDITIONAL INFORMATION

Additional information on this and other Dow products may be obtained by visiting our web page at www.dow.com. Additional information on this product may be obtained by calling Dow's Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada).

HAZARD RATING SYSTEM

NFPA rating for this product are: H - 0 F - 0 R - 0

The ratings are part of a specific hazard communication program and should be disregarded where individuals are not trained in the use of this hazard rating system. You should be familiar with the hazard communication programs applicable to your workplace.

RECOMMENDED USES AND RESTRICTIONS

Intended as a heat transfer fluid for closed-loop systems.

Dow recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with Dow's Stated use, please contact Dow's Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada) for more information.

REVISION

Version: 4.1
Revision: 05/09/2002

Most recent revision(s) are noted by the bold, double bars in the left-hand margin throughout this document.

LEGEND

Bacteria/NA	Non Acclimated Bacteria
F	Fire
H	Health
IHG	Industrial Hygiene Guidelines
N/A	Not available
NFPA	National Fire Protection Association
O	Oxidizer
R	Reactivity
TS	Trade secret
VOL/VOL	Volume/Volume
W	Water reactive
W/W	Weight/Weight

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Introduction

DANGER! WARNING!

Operating Features

Danger! It is very important that you read and understand this manual before operating the reel! Failure to follow the procedures and cautions in this manual could lead to injury or possible death!

The DRYAIR hose reel's primary purpose is dispense and collect fluid circulation hose on job sites...primarily with respect to ground thaw and/ or concrete cure operations.

The hose reel includes the following controls

- Spool directional and power controls
- Spool rotational speed (RPM)
- Two methods of spool rotation activation... both are "hands-off".
 - Momentary foot switch – a default setting when in the "load" position.
 - Auto-feed switch – a default setting when in the "unload" position.
- The drive is always engaged and braking controls are automatic. Therefore, there are no brakes to engage or disengage



hose reel overview

Drive Features & Power Requirements

- The reel can be run off a 115VAC, 15 amp circuit.

Required Wire Guage / Feet	
AWG 14	0 - 100
AWG 12	100 - 200
AWG 10	200 -

- Reel RPM and directional control is handled through a variable speed/soft-start AC motor control adjustable frequency drive. The variable frequency drive is a phase converter...1 to 3 phase.
- The reel motor is a 1 HP 3-phase continuous duty electric motor.
- Drive and motor protection against inertial forces is provided by an adjustable torque-limiter clutch located between the motor/gear box and the reel spool. The torque limiter clutch provides quick braking action (less than half a revolution with a loaded reel at full rpm [20 RPM]) and a smooth interface between the spool's high inertial forces and unit's drive components.

Reel Capacities

- The Model HR 6000 Hose Reel is designed to carry up to 6000 feet of 3/4" hose (3/4" I.D. x 1.125"O.D.). 6000 or 3000 hose packages are available.

Transportation & Storage

- The reel can be transported by common carrier. The reel can be loaded using a forklift (accessible from all 4 sides). Slings can also be used.
- A transport trailer, specifically designed for the reel, is also available.
- As the reel is remote and not connected to the heating system, it can be stored out of the way or off the site when it is not needed.
- A tarp cover is provided to ensure weather and UV protection for the fluid circulation hose.

Setup/Operation

DANGER! WARNING!

Danger! It is very important that you read and understand this section before operating the hose reel! Failure to follow the procedures and cautions in this manual could lead to injury or possible death!

The DRYAIR hose reel has two methods (modes) of activation. There are also several controls that are factory set, and normally do not require adjustment.

Manual Controls

The Hose Reel has an automated “UNLOAD/LOAD” actuated controller, a manual method of controlling the spool rotational speed (RPM) and a general ON/OFF switch.

Spool Direction Controller

The toggle switch (1-1) controls the main power to the hose reel. The hose reel controller defaults to the “Mode 1 - UNLOAD” upon powering up and engaging the “auto-feed control”. By connecting the foot switch, the controller switches to the “Mode 2 -LOAD” and loads hose by depressing the foot switch which is momentary (will only operate when depressed).

Mode 1 - UNLOAD

Mode 2 - LOAD

Mode 1 - “UNLOAD”

- When the switch is toggled to the “ON” position, reel activation will automatically default to the “auto-feed control”
- To use the “auto-feed control”, pull the roller forward to activate the reel and feed out enough hose that the hose can be passed under the roller.
- Reel activation will now be automatic and the reel will “unload” the hose. When the hose is pulled in a direction away from the reel, the hose will ride on the roller and cause the auto-feed arm to lift. When the auto-feed arm lifts, an attached plunger disengages from a limit switch (internal) which, in turn, activates the reel.

Caution! When NOT operating the reel, put the toggle switch in the “Off” position to prevent accidental activation and possible injury. When the hose reel is to be left unsupervised, the power cord should be unplugged from the power supply.

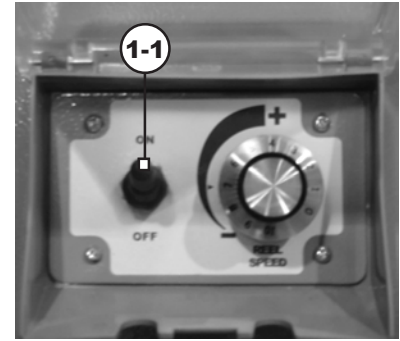
Mode 2 - “LOAD”

- When the switch is toggled to “ON” position and the foot switch connected to the hose reel, the reel will “load” the hose.
- The foot switch is momentary and will only operate when it is depressed.
- In the “LOAD” mode, the hose path **should** pass above the auto-feed mechanism roller.
- The hose must be directed manually into position on the hose reel.

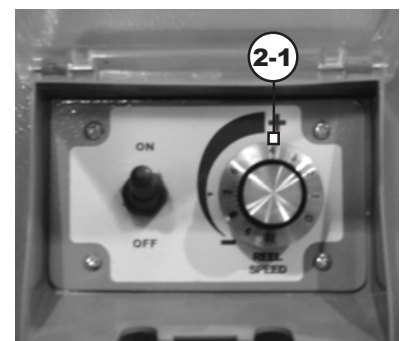
Caution! Take care not to allow your hands, feet or clothing to become trapped by any of the reel’s moving mechanisms.

Spool Rotational Speed

- The adjustment knob (2-1) controls the reel R.P.M. Turning clockwise towards the “+” sign to increase the RPM of the reel. Turn counter-clockwise towards the “-” sign to decrease the R.P.M.
- Range - 0 – 20 R.P.M.
- RPM adjustment is required to ensure the operator maintain good control of the hose reel operation.
- **In Mode 1 - “UNLOAD”** - Set the reel RPM to a rate that prevents the auto-feed mechanism from galloping. The reel RPM should be set at a rate that allows the operator to maintain tension on the hose and, therefore, keep the auto-feed mechanism arm in a lifted position.
- **In Mode 2 - “LOAD”**- Set the reel RPM to a rate that allows the operator to maintain good control of the loading process.



1 - ON/OFF switch



2 - RPM controller

Automatic Controls & Settings

Altivar 11 - AC Drive

This section deals with Altivar 11 - AC Drive general information and specific Dryair settings only.

For complete specifications, operating information and Troubleshooting, refer to the “ALTIVAR 11 Adjustable Speed Drive Controllers Start-up Guide” manual included in the manual case (located behind the access panel).

DANGER! HAZARDOUS VOLTAGE

Precautions

Electric shock will result in death or serious injury.

- Read and understand the “ALTIVAR 11 Adjustable Speed Drive Controllers Start-up Guide” before installing or operating the ALTIVAR 11 drive controllers. Installation, adjustment, repair, and maintenance **must** be performed by qualified personnel.
- The user is responsible for conforming to all applicable code requirements with respect to grounding all equipment.
- Many parts in this drive controller, including printed wiring boards, operate at line voltage. **DO NOT TOUCH.** Use only electrically insulated tools.
- **DO NOT** touch unshielded components or terminal strip screw connections with voltage present.
- **DO NOT** short across terminals PA and PC or across the DC capacitors.
- Install and close all covers before applying power or starting and stopping the drive controller.
- Before servicing the drive controller:
 - Disconnect all power.
 - Place a “DO NOT TURN ON” label on the drive controller disconnect.
 - Lock the disconnect in the open position.
- Disconnect all power including external control power that may be present servicing the drive controller. **WAIT 15 MINUTES** for the DC bus capacitors to discharge. Then follow the DC bus voltage measurement procedure beginning on page 5 of the “ALTIVAR 11 Adjustable Speed Drive Controllers Start-up Guide” to verify that the DC voltage is less than 45 Vdc. The drive controller LEDs are not accurate indicators of the absence of DC bus voltage.



3 – Altivar 11 AC Drive

General information

Operating features of the Altivar 11-AC Drive includes:

- Ability to catch a spinning load after a supply break or on a start command for smooth take-up of a rotating machine.
- Dynamic braking possible, even for high inertia and unbalanced load applications.
- Optimal management of the motor due to flux vector control: 150% of the nominal current of the drive during 60 seconds with a 1:20 speed ratio.

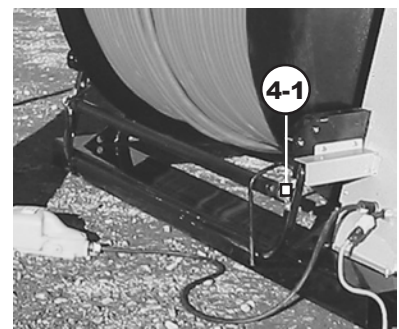
Setup-Operation

The drive controller is factory set to the parameters required for optimal performance and minimal down time. The Altivar 11 drive factory default settings are embedded in the drive controllers main board (EPROM). No power or activity for prolonged periods of time will not affect the set parameters and therefore reprogramming the controller is not required.

See “Maintenance - Altivar 11 AC Driver, Auto/Manual Resets” section in the operators manual for auto and/or manual reset procedures.

Auto-feed Control

- The auto-feed control (4-1) is factory set.
- If the setting has changed or the control is not activating properly, the plunger setting needs to be checked:
See “Maintenance - Auto-feed Control” section of the operators manual for plunger adjustment procedure.



4 - auto-feed control

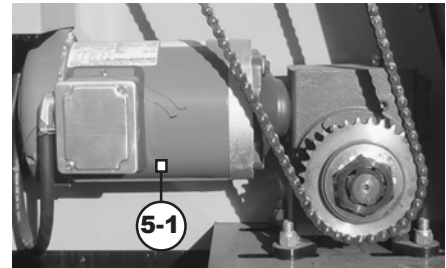
Mechanical Drive Components

Access to the internal mechanical drive components is through the access door. This door must be removed.

Electric Motor (5-1)

- The electric motor used to drive the reel is manufactured by Marathon Electric.
- No regular maintenance is required.
- Make sure that, during operation or storage, the motor is not in prolonged contact with moisture.
- Refer to the chart “Table 1- Electric motor features & data”, below for motor data.

Note: This motor has no built-in thermal protection. Thermal protection is provided by the “ALTIVAR 11 Drive Controller”.



5 - Marathon electric motor

Table 1 - Electric motor features & data

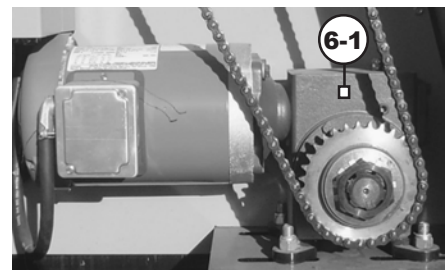
Product Feature			
Model Number:	56T17F5310	Phase:	3
Catalog Number:	G527	Volts:	208-230/460
Product Type:	SQ CAGE IND RUN	Insulation Class:	B
Enclosure:	TEFC	F.L. Amps:	3.4-3.6/1.8
Frame:	56C	Duty:	CONTINUOUS
HP/KW:	1	Service Factor:	1.15
Frequency (HZ):	60	F.L. Eff.:	77
Speed (RPM):	1800	Bearing:	BALL/BALL
Mounting:	ROUND	Thermal Protection:	NONE
Motor Wt.:	26		

Mechanical Information			
Shaft Material:	STANDARD	Hazardous Location:	NONE
Enclosure:	TEFC	Mounting:	ROUND
Frame:	56C	Electrical Type:	STANDARD
Frame Material:	Rolled Steel	Spaceheaters:	NONE
Shaft:	T	Orientation:	Horizontal
Grease:	STANDARD	Conduit Assembly:	F1

Gear Box (6-1)

Gear box specifications

- HUB CITY - Series 260, Model 264 (FR-56C-70)
- Worm gear speed reducer
- 60:1 gear reduction
- 5/8" input shaft size
- 1 1/8" output shaft



6 - Hub City gear box

CAUTION

Do not operate the unit without ensuring it contains the correct amount of oil. Do not overfill or underfill with oil. Injury to personnel, unit, or other equipment may result.

Oil should be changed with greater frequency if unit is used in severe environment (dusty or high humidity).

WARNING

Oil, housing, and other components can reach high temperatures during operation, and can cause severe burns. Use extreme care when removing lubrication plugs and vents while servicing the unit.

See “Maintenance - Gear Box” section of the operators manual for Hub City Gear Box oil filling procedures, service & maintenance.

Torque Limiter Clutch (7-1)

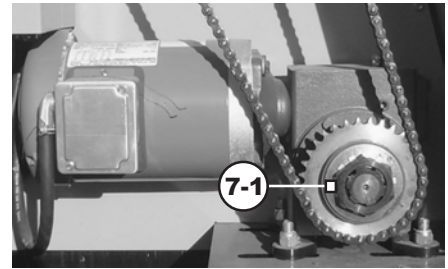
- The Torque limiter protects the drive line from damage due to overload conditions. The driven center member slips on non-asbestos friction discs during overload situations in the drive line.
- Torque Ratings
GLI Model 350 w/ two springs
 - minimum: 60 lb.-ft.
 - maximum: 190 lb.-ft.

Please note that the torque ratings are estimates. Actual torque capacity may vary significantly depending on many factors. Field conditions such as oil, humidity, water and temperature as well as the frequency and duration of slippage all affect torque capacity.

- Although the torque limiter clutch is factory (Dryair) set, periodic adjustment may be required. It is recommended the torque setting of the clutch be checked twice per season (see "Maintenance" section). With prolonged use, the two friction disks, located on either side of the A-plate sprocket, will eventually show wear.
- It is important that the torque limiter clutch is adjusted properly. If the clutch slips too easily, the spool will take too long to stop and hose will pile up on the reel. If the clutch does not slip at all, the protection on the Altivar drive will take over and the spool will again take too long to stop.

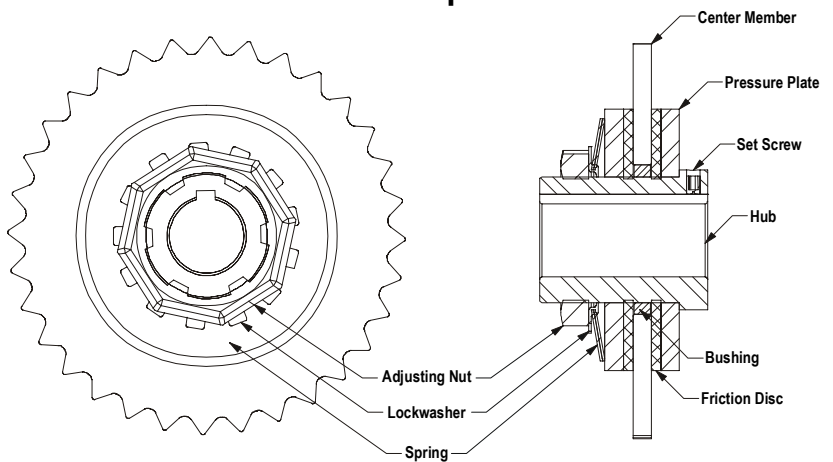
Note: A visual check may be required to confirm whether it is the clutch that is slipping or whether it is the Altivar drive that is automatically adjusting in an overload situation.

See "Maintenance - Torque limiter adjustment" of the operators manual for proper Torque adjustment and Run-in procedure.



7 - torque limiter clutch

Model 350 Torque Limiter



Maintenance

DANGER! HAZARDOUS VOLTAGE!

Danger! It is very important that you read and understand this section before operating the hose reel! Failure to follow the procedures and cautions in this manual could lead to injury or possible death!

Altivar 11 - AC Drive

This section deals with Altivar 11 - AC Drive general information and specific Dryair settings only.

For complete specifications, operating information and Troubleshooting, refer to “ALTIVAR 11 Adjustable Speed Drive Controllers Start-up Guide” manual included in the manual case (located behind the access panel).

Precautions

Electric shock will result in death or serious injury.

- Read and understand the “ALTIVAR 11 Adjustable Speed Drive Controllers Start-up Guide” before installing or operating the ALTIVAR 11 drive controllers. Installation, adjustment, repair, and maintenance must be performed by qualified personnel.
- The user is responsible for conforming to all applicable code requirements with respect to grounding all equipment.
- Many parts in this drive controller, including printed wiring boards, operate at line voltage. **DO NOT TOUCH.** Use only electrically insulated tools.
- **DO NOT** touch unshielded components or terminal strip screw connections with voltage present.
- **DO NOT** short across terminals PA and PC or across the DC capacitors.
- Install and close all covers before applying power or starting and stopping the drive controller.
- Before servicing the drive controller:
 - Disconnect all power.
 - Place a “DO NOT TURN ON” label on the drive controller disconnect.
 - Lock the disconnect in the open position.
- Disconnect all power including external control power that may be present servicing the drive controller. **WAIT 15 MINUTES** for the DC bus capacitors to discharge. Then follow the DC bus voltage measurement procedure beginning on page 5 of the “ALTIVAR 11 Adjustable Speed Drive Controllers Start-up Guide” to verify that the DC voltage is less than 45 Vdc. The drive controller LEDs are not accurate indicators of the absence of DC bus voltage.



2 – Altivar 11 AC Drive

Auto Resets

The drive controller is factory set and will reload its factory default settings each time the AC line is connected. It will also automatically start when recovering from a series of different faults.

Manual Resets

If a fault occurs due to a prolonged overload, overvoltage, undervoltage or phase failure, the control must be manually restarted. The control can be restarted by:

- 1) Disconnect AC power and wait for at least **30 seconds** for drive controller to power down.
- 2) Reconnect the AC power. This will re-initiate the factory default settings.

Auto-feed Control

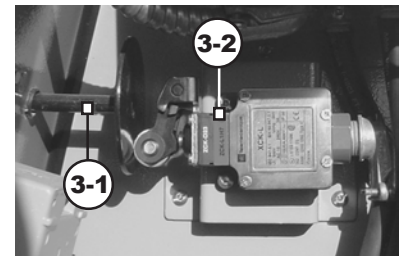
- The auto-feed control is factory set and may require some minor adjustment.
- If the setting has changed or the control is not activating properly, the plunger setting needs to be checked. An example of a situation requiring a check of the plunger setting would be when the toggle switch is placed in the “ON” position (with the foot switch disconnected) and the reel engages without the auto-feed control mechanism being lifted.

Note: Before servicing the “Auto-feed control”, disconnect all power and lock the disconnect in the open position.

- Access to the internal auto-feed components is through the access door (2-1). This door must be removed.
- First, visually check that the auto-feed control switch (3-2) is still properly positioned and has not come loose.
- Then, with the “auto-feed control” in rest position, check that the plunger (3-1) stop plate is in contact and closing out the switch.
- Normal operation - when the switch is in the depressed position, power is “off”. When the switch is in the extended position, power is “on”.
- The plunger stop plate must make enough contact with the switch arm that the switch is in the “off” position.
- Adjustment that causes the plunger stop plate to move past the ideal “stop” position, and apply force to the switch will eventually lead to component damage.



2 - access door



3 - auto-feed switch and plunger

Electric Motor

- The electric motor used to drive the reel is a Marathon.
- No regular maintenance is required.
- Make sure that the motor is not in prolonged contact with moisture during operation or storage.

Note: This motor has no built-in thermal protection. Thermal protection is provided by the “ALTIVAR II Drive Controller”.

Gear Box Maintenance & Operation

DANGER! WARNING!

Oil, housing, and other components can reach high temperatures during operation, and can cause severe burns. Use extreme care when removing lubrication plugs and vents while servicing the unit.

- Do not operate the unit without making sure it contains the correct amount of oil. Do not overfill or underfill with oil, or injury to personnel, unit, or other equipment may result.
- For proper operation in subzero conditions, it is mandatory that the following oil be used:
“Spartan EP 320 industrial gear oil”
...any other gear oil will void warranty!

Oil Filling Procedure

- Remove Fill and Breather Plug.
- Clean threads on the removed plugs and the plug holes with degreaser.
- Fill gear box with the recommended lubricant (see above) to a level near the center line of the uppermost horizontal shaft or until lubricant comes out of the oil level plug hole.
- Install plugs secure in gear case.

Break-In Period

After the first 100 hours of operation, drain out initial oil, flush out the gear case with an approved non-flammable, non-toxic solvent, such as Whitmore’s Flushing Oil (#06802030) or Medallion Flushing Oil Kosher (#06812010), and refill. Therefore, oil should be changed at least every 2500 operating hours or every 6 months - whichever occurs first.

Note: Oil should be changed with greater frequency if unit is used in severe environments (dust or high humidity).

Torque Limiter Adjustment

- Although the torque limiter clutch is factory (Dryair) set, periodic adjustment may be required. It is recommended the torque setting of the clutch be checked twice a season. With prolonged use, the two friction disks, located on either side of the A-plate sprocket, will eventually show wear.
- It is important that the torque limiter clutch is adjusted properly. If the clutch slips too easily, the spool will take too long to stop and hose will pile up on the reel. If the clutch does not slip at all, the protection on the Altivar 11 drive will take over and the spool will again take too long to stop.

Note: A visual check may be required to confirm whether it is the clutch that is slipping or whether it is the Altivar 11 drive that is automatically adjusting in an overload situation.

- Check that the clutch is adjusted properly with the following procedure:

Physical check

- With no power being applied to the reel, grip the edge of the spool plate and apply full upward force, making sure that you are lifting with your legs and not your back.
- You should be able to cause the clutch to just slip with full lifting force.
- If the clutch does not slip or slips too easily, refer to the “torque adjust procedure”, below.

Torque adjust procedure

- Insure that the adjusting nut is in a finger tight position.
- If the adjustment nut is tighter than finger tight, loosen and complete previous step.
- Match mark the adjusting nut with the hub. Using a torque wrench tighten the adjusting nut to 50ft*lb.

After the break-away torque is set, bend the tabs of the lock washer over the hex flats of the adjusting nut.

Note: The torque limiter clutch nut requires a reasonable amount of force to adjust. Use a torque wrench that provides you with at least 18” of leverage.

Run-in procedure

- If the torque limiter has been taken apart and reassembled or friction disks have been changed, it is recommended that the clutch be “run in” by “slipping” the center member (sprocket).
- Insure that the adjusting nut is in a finger tight position.
- Match mark the adjusting nut and hub. Advance the adjusting nut ¼ turn from finger tight.
- Slip the torque limiter sprocket for 8 minutes at full RPM.
- Refer back to the “Torque adjust procedure” for final readjustment.



4 - torque limiter adjustment

Model 350 Torque Limiter

