Lubrication Recommendations

Carefully follow lubrication instructions on warning tags and installation manuals furnished with the drive. Nameplates indicate a lubricant designation of 7G or 8G for worm drives (dependent on ambient temperature) — 7G is standard. For helical primary lubrication recommendations, refer to "Helical Primaries" paragraphs.

Lubricants listed in this manual are typical ONLY and should not be construed as exclusive recommendations. Refer to your lubricant supplier for additional lubricants meeting the indicated specifications.

Petroleum Based Lubricants

R & O GEAR LUBRICANTS (Table 1) — Industrial type petroleum based rust and oxidation inhibited (R & O) gear lubricants are the most common and readily available general purpose gear lubricants. Refer to Factory for ambient temperatures not shown.

CAUTION: PETROLEUM BASED LUBRICANTS & BRONZE GEARING — Do not use Extreme Pressure (EP) lubricants or lubricants with anti-wear additives or lubricant formulations including sulfur, phosphorus, chlorine, lead derivatives, graphite or molybdenum disulfides in Omnibox gear drives. Some lubricants in Table 1 may contain anti-wear additives.

WARNING: EP LUBRICANTS IN FOOD PROCESSING INDUSTRY — EP lubricants may contain toxic substances and should not be used in the food processing industry without the lubricant manufacturers' approval. Lubricants which meet USDA "H1" classification are suitable for food processing applications.

Synthetic Lubricants

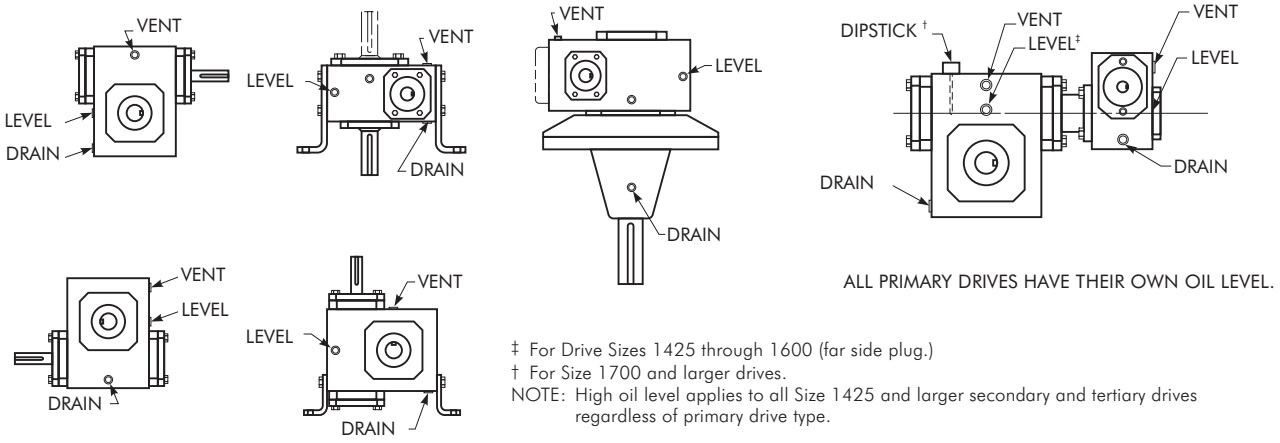
Synthetic lubricants of the polyalphaolefin (PAO) type are recommended for cold climate operation, high temperature applications, extended temperature range (all season) operation and/or extended lubricant change intervals. The recommended PAO type synthetic lubricant for the ambient temperature range of –10°F to 105°F (–23°C to 41°C) is Mobil SHC 634. Refer to Factory for ambient temperatures outside of this range.

WARNING: SYNTHETIC LUBRICANTS IN FOOD PROCESSING INDUSTRY — Synthetic lubricants may contain toxic substances and should not be used in the food processing industry without the lubricant manufacturers' approval. Lubricants which meet USDA "H1" classification are suitable for food processing applications.

TABLE 1 — Typical Petroleum Based R & O Lubricant Recommendations

Manufacturer	Lubricant	
	30° to100°F (–1° to 38°C) Ambient Temperatures AGMA 7 Compounded	50° to 125°F (10° to 52°C) Ambient Temperature AGMA 8 Compounded
Amoco Oil Company	Worm Gear Oil	Cylinder Oil 680
Chevron USA, Inc.	Cylinder 460X	Cylinder Oil 680X
Exxon Company USA	Cylesstic TK-460	Cylesstic TK-680
Gulf Oil Co.	Senate 460	Senate 680D
Mobil Oil Corp.	6000W Super ★	Extra Hecia Super Cylinder Oil
Shell Oil Co.	Valvata Oil J460	Valvata Oil J680
Sun Oil Co.	Gear Oil 7C	Gear Oil 8C
Texaco	Honor Cylinder Oil	650T Cylinder Oil
Union Oil Co. of California	Steaval A	Worm Gear Lube 140

★ Standard Falk™ filled lubricant for drive Sizes 1133 thru 1600 unless otherwise specified.



‡ For Drive Sizes 1425 through 1600 (far side plug.)
† For Size 1700 and larger drives.
NOTE: High oil level applies to all Size 1425 and larger secondary and tertiary drives regardless of primary drive type.

Figure 1 — Worm drive mounting positions and vent plug, level, and drain locations

TABLE 2 — Oil Capacities – (Ounces)●

Mounting Position	Drive Size													
	1133	1154	1175	1206	1238	1262	1300	1325	1425	1525	1600	1700	1800	11000
Worm Over (WO)	8	12	16	24	28	48	60	80	132	200	312	560	768	1152
Worm Under (WU)	8	12	16	24	28	48	60	88	128	216	328	524	820	1280
Vertical Output (WX)	8	12	16	24	28	48	60	80	128	216	320	332	460	640
Vertical Input (WJ)	8	12	16	24	28	48	60	80	128	216	325	584	800	1200
Extended Shaft (WR)	...	...	...	...	...	...	...	128	192	272	432	640	1008	1632
Worm Over on Secondary Drive of Double Reduction	...	...	...	...	...	...	...	192	308	320	485	805	1144	1716

● 16 Oz. = 1 pint, 2 pints = 1 quart, 4 quarts = 1 gallon, 1 gallon = 128 oz = 231 cu. in.

Oil Levels — Worm Drives

Sizes 1133 thru 1600 are furnished filled with oil determined by the drive mounting position required. **Sizes 1700 thru 11000 are furnished without oil.** Refer to Table 2 for approximate quantities of oil by mounting position for all sizes. Refer to Figure 1 for mounting positions and plug locations.

The standard lubricant provided by Factory is suitable to operate in an ambient temperature range of 30°F to 100°F (–1°C to 38°C). If the ambient temperature will be outside the range for the lubricant supplied from Factory, drain and refill the drive with the proper viscosity lubricant prior to start-up. Always check for proper oil level after filling and prior to start-up.

Oil capacities vary with model and mounting position. When proper oil level is reached, oil should be at the bottom edge of level plug hole. DO NOT OVERFILL. Primary and secondary stages of double and triple reduction drives use separate oil sumps and must be filled/checked independently.

Lubricant Changes

OIL ANALYSIS REPORT — Checking oil condition at regular intervals is recommended. Inspect vent plug often to insure it is clean and functioning. In the absence of more specific limits, the guidelines listed below may be used to indicate when to change oil:

1. Water content is greater than 0.05% (500 ppm).
2. Iron content exceeds 150 ppm.
3. Silicon (dust/dirt) exceeds 25 ppm.
4. Viscosity changes more than 15%.
5. Oil temperature; drive operating under load.
6. Lubricant type.
7. Operating conditions; shock, loading, etc.

PETROLEUM LUBRICANTS — For normal operating conditions, change gear oils every six months or 2500 operating hours, whichever occurs first. If the drive is operated in an area where temperatures vary with the seasons, change the oil viscosity grade to suit the temperature, refer to Table 1. For ambient temperatures not shown, consult Factory. Lubricant suppliers can test oil from the drive periodically and recommend economical change schedules.

SYNTHETIC LUBRICANTS — Synthetic lube change intervals can be extended to 6000 operating hours or two years, whichever occurs first, depending on operating temperatures and lubricant contamination. Laboratory analysis is recommended for optimum lubricant life and drive performance. Change lube with change in ambient temperature, if required.

Special Lubrication Requirements

All drive assemblies are designed to operate using a specific oil level. This provides adequate lubrication to all internal components based on a specific assumed mounting arrangement. The mounting positions assumed by Factory are given in Table 3. If a drive size 1175 thru 11000 is to be mounted in a position not listed in Table 3, or is to be run at sustained input speeds less than 900 RPM, it must be stated on order. The drive will be modified to suit required mounting and speed specifications.

TABLE 3 — Factory Assumed Mounting Positions

Mounting Position	Drive Styles ■
Worm Over	Single Reduction Double Reduction Worm-Worm Double Reduction Helical-Worm
Worm Under	Single Reduction Double Reduction Worm-Worm
Vertical Output	Single Reduction Double Reduction Worm-Worm Double Reduction Helical-Worm
Vertical Input	Single Reduction Double Reduction Wom-Worm Double Reduction Helical-Worm

■ Includes all drives to be mounted with accessories.

PRESSURE EQUALIZING SYSTEM — Stainless steel drives and drives with the Pressure Equalizing System are furnished filled with synthetic oil from the Factory. Venting of these drives is not required. The drives can be operated as supplied from the Factory.

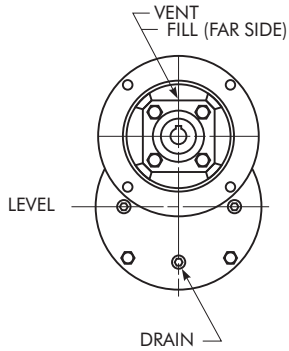
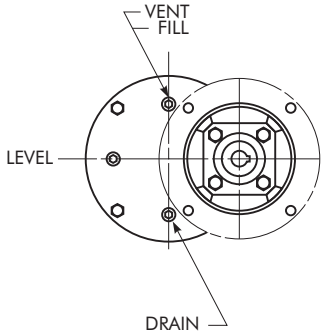
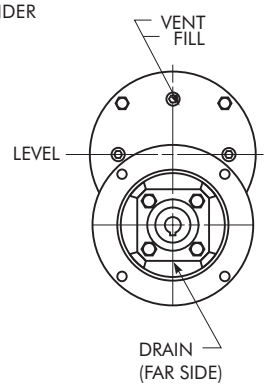
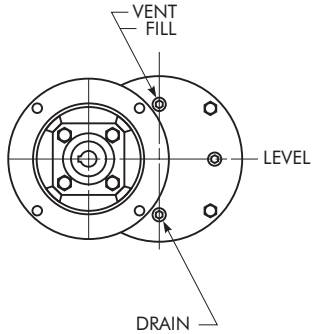
HELICAL PRIMARIES — Helical primaries of Sizes 1133 thru 1600 are furnished filled with oil determined by the drive mounting position required. Refer to Table 4 for appropriate quantities of oil by mounting position. Refer to Table 4 for vent, level, and drain plug locations.

Helical primaries of Sizes 1700 thru 11000 are furnished without oil. For lubrication recommendations and requirements of the helical primary drives for Sizes 1700 thru 11000, refer to 4000J Model C Owner's Manual, 378-101.

Consult Factory for all helical primary vertical shaft mounting positions.

Rexnord Industries, LLC, 3001 W. Canal St., Milwaukee, WI 53208-4200
Telephone: 513-455-5030 Fax: 414-937-4359
www.rexnord.com

TABLE 4 — Helical Primary Drive Oil Capacities (Ounces) & Plug Locations ♦

Mounting Position	Drive Size		
	1	2	3
	10	14	14
	10	14	14
INPUT UNDER 	10	14	14
	10	14	14

♦ Drive Sizes 1, 2, and 3 are furnished filled with oil for input over mounting position. Consult Factory for vertical shaft mounting, tilted drives, or any mounting position not shown above. The "input under" mounting position is not recommended due to the possibility of leakage from the high speed shaft seals.

TABLE 5 — Greases for Grease Lubricated Bearings 0° to 200°F (–18° to 93° C)

Manufacturer	Lubricant
Amoco Oil Co. BP Oil Co. Chevron U.S.A., Inc. Citgo Petroleum Corp.	Amolith Grease No. 2 Energrease LS-EP2 Industrial Grease Medium Premium Lithium Grease No. 2
Conoco, Inc. Exxon Company, U.S.A. Houghton Int., Inc. Imperial Oil Ltd.	EP Conolith Grease No. 2 Unirex N2 Cosmolube 2 Unirex N2L
Kendall Refining Co. Keystone Lubricants Lyondell Petrochemical (ARCO) Mobil Oil Corp.	Multi-Purpose Lithium Grease L421 Zeniplex 2 Litholine H EP 2 Grease Mobilith 22
Mobil Oil Corp. Petro-Canada Products Phillips 66 Co. Shell Oil Co.	Mobilith SHC 460 * Multipurpose EP2 Philube Blue EP Alvania Grease 2
Shell Canada Ltd. Sun Oil Co. Texaco Lubricants Unocal 76 (East & West) Valvoline Oil Co.	Alvania Grease 2 Ultra Prestige EP2 Premium RB Grease Unoba EP2 Multilube Lithium EP Grease

* High performance synthetic alternate.

Bearing Greases

Some Omnibox drives utilize grease lubricated bearings. Whenever changing oil in the drive (at least every six months), grease the bearings, WITH HAND GREASE GUN, using one of the NLGI #2 greases listed in Table 5. Regrease these bearings as part of the standard maintenance program. Before mounting a drive, note the location of all bearing grease fittings and grease labels for future maintenance reference. Note that some fittings may be above the oil level line and others below. If a grease fitting will become inaccessible after drive is installed, replace the fitting with a pipe extension and a fitting so that the grease fitting will be in an accessible location after the drive is installed.

Always remove the purge plug (when provided) when greasing bearings so that the old grease can escape. Pump grease into bearing cage until it appears at the plug. Wipe off purged grease and replace the plug after greasing bearings.

Some of the greases listed in Table 5 may contain toxic substances and should not be used in the food processing industry without the grease manufacturers' approval. A grease that meets the USDA "H1" classification is suitable for food processing applications.

Stored & Inactive Drives

Each drive is protected with rust preventative that will protect parts against rust for a period of six months in an indoor dry shelter.

SIZES 1133 THRU 1600 — If a drive is to be stored, or is inactive after installation beyond the above periods, drain oil from housing and spray all internal parts with a rust preventative oil that is soluble in lubricating oil or add "Motorstor" ™ vapor phase rust inhibitor at the rate of one ounce per cubic foot of internal drive space (or 5% of sump capacity) and rotate the shafts several times by hand. Before operating, drives which have been stored or inactive must be filled to the proper level with oil meeting the specifications given in this manual. Refer to Manual 128-014 for "Start-Up After Storage" instructions.

Periodically inspect stored or inactive gear drives and spray or add rust inhibitor every six months, or more often if necessary. Indoor dry storage is recommended.

Drives ordered for extended storage can be treated at the Factory with a special preservative and sealed to rust-proof parts for periods longer than those cited previously.

Material Safety Data

Standard oil for drive sizes 1133 thru 1600 is Grade 7G. These drives will be furnished with Mobil 600W Super Cylinder oil unless otherwise specified. Material Safety Data Sheets for this product are available directly from Mobil Oil Corporation at:

Products & Technology Department
3225 Gallows Road
Fairfax, VA 22037
Phone: (800) 662-4525 or Phone: (703) 849-3265

For Material Safety Data Sheets pertaining to other products used in the manufacture of the Falk™ Omnibox, contact:

Rexnord Industries, LLC
3001 W. Canal Street
Milwaukee, WI 53208-4200
Phone: (414) 342-3131, Ext. 4371 or Ext. 4372.

Rexnord Industries, LLC, 3001 W. Canal St., Milwaukee, WI 53208-4200
Telephone: 513-455-5030 Fax: 414-937-4359
www.rexnord.com