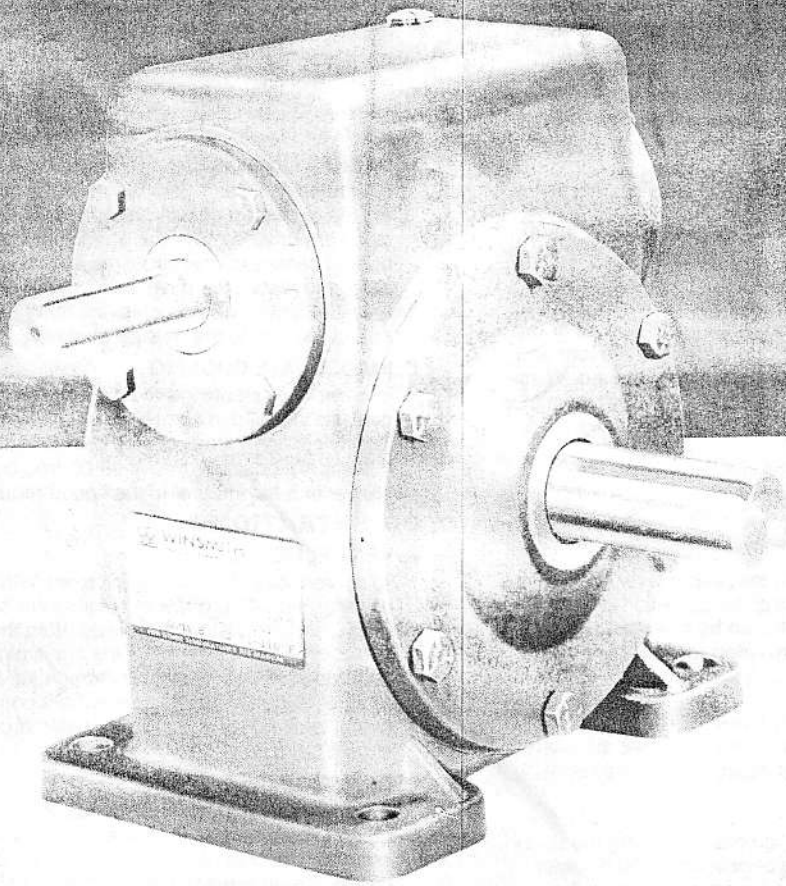


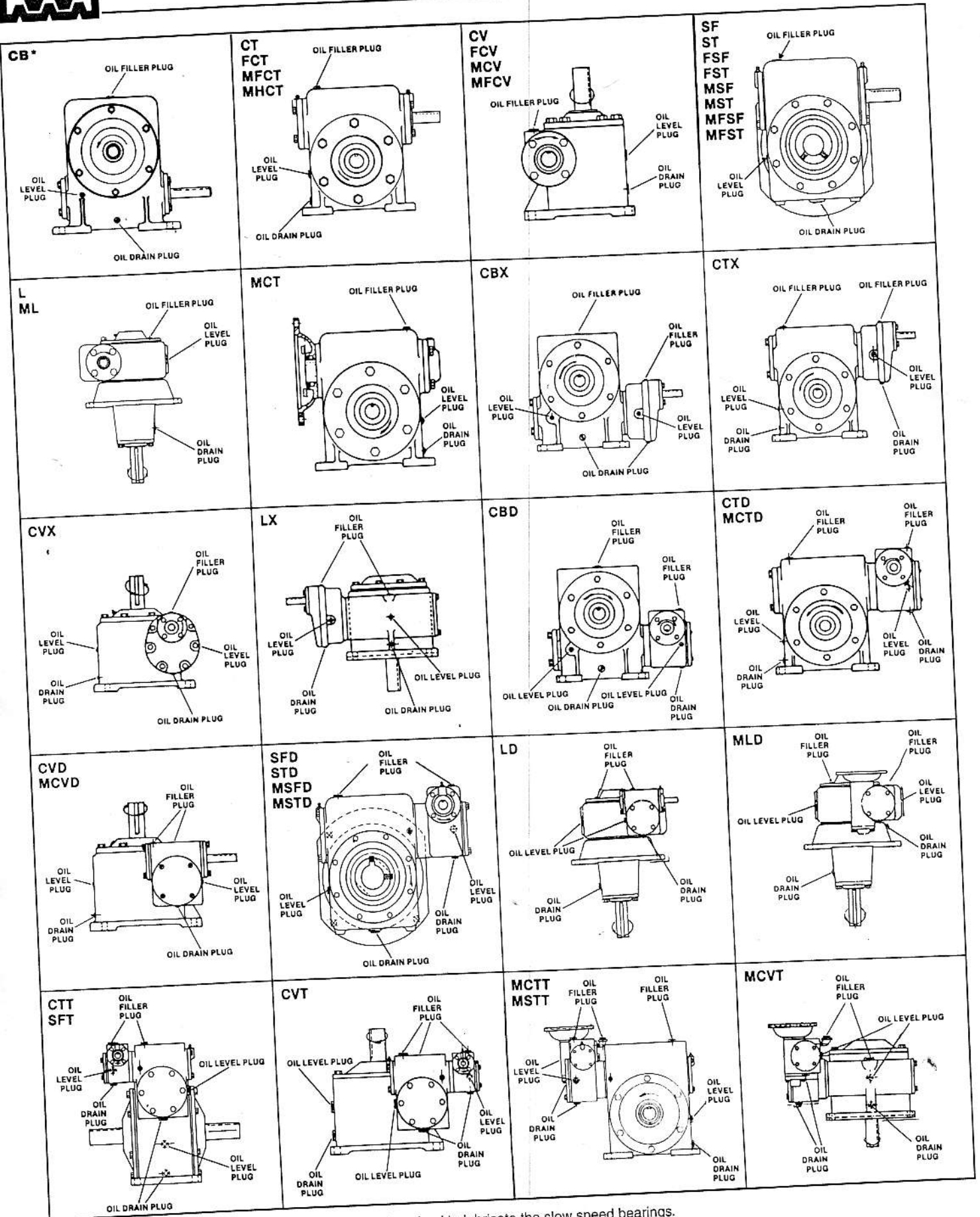
WINSMITH
PEERLESS-WINSMITH, INC.

C-LINE WORM GEAR SPEED REDUCERS



Installation, Operation, and Lubrication Instructions

This Engineering Service Bulletin is designed to enable users to obtain the best possible performance from their WINSMITH® Speed Reducers.



*For input speeds below 1160 RPM, the oil level must be raised to lubricate the slow speed bearings.



C-LINE

INSTALLATION, OPERATION AND LUBRICATION INSTRUCTIONS

Lubricants

Worm Gear Reducers

For special applications that involve severe ambient temperature extremes or a seasonal oil requirement, WINSMITH, based on extensive testing and field experience, recommends the use of Mobil SHC synthetic lubricants.

Ambient Temperature	-30 to 15°F	16 to 50°F	51 to 95°F	51 to 95°F	96 to 131°F	96 to 131°F
Final Stage Worm Speed*	up to 2000 FPM	up to 2000 FPM	up to 450 FPM	above 450 FPM	up to 450 FPM	above 450 FPM
ISO Viscosity Grade	220	460	680	460	680	460*
AGMA Lubricant No.	5 S**	#7 Compounded***	#8 Compounded***	#7 Compounded***	8 S**	7 S**

Mobil	SHC 630	600W Super Cylinder	Extra Hecla Super	600W Super Cylinder	SHC 636	SHC 634
American Lubricants	SHC-90W	AGMA #7 Gear Oil	AGMA #8 Gear Oil	AGMA #7 Gear Oil	N/A	N/A
Castrol	Tribol 800/220	Tribol 1105-7C	Tribol 1105-8C	Tribol 1105-7C	Tribol 800/680	Tribol 800/460
Chevron	Tegra 220	Cylinder Oil W460	Cylinder Oil W680	Cylinder Oil W460	Tegra 680	Tegra 460
Conoco	Syncon R & O 220	Inca Oil 460	Inca Oil 680	Inca Oil 460	N/A	Syncon R & O 460
Exxon (Esso)	Teresstic SHP 220	Spartan EP 460	Spartan EP 680	Spartan EP 460	Teresstic SHP 680	Teresstic SHP 460
Fiske Brothers	SPO-MG	SPO-277	SPO-288	SPO-277	N/A	N/A
Shell	Omala RL 220	Valvata J 460	Valvata J 680	Valvata J 460	Omala RL 680	Omala RL 460
Texaco	Pinnacle 220	Vanguard 460	Vanguard 680	Vanguard 460	Pinnacle 680	Pinnacle 460

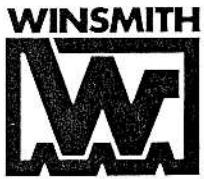
**synthetic oil

***3% to 10% fatty or synthetic oils or mild EP additives

Lubricant selections are provided by the lubricant manufacturer based on AGMA recommended viscosity grades. Viscosity grades are based on Lubrication Standard ANSI/AGMA 9005-D94.

*The sliding velocity in feet per minute (FPM) for standard ratios is determined by multiplying the speed of the worm in RPM by the factor from the following table. For selecting the proper lubricant, use the speed of the worm in the final stage (input RPM divided by the first stage ratio).

Nominal Ratio	Unit Size														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5	0.276	0.377	0.414	0.475	0.506	0.582	—	—	—	—	—	—	—	—	—
7.5	0.217	0.276	0.282	0.414	0.425	0.552	0.613	0.590	0.828	0.846	0.846	0.981	—	—	—
10	0.265	0.270	0.273	0.344	0.353	0.540	0.470	0.504	0.613	0.642	0.642	0.828	0.778	0.981	0.992
15	0.210	0.265	0.299	0.398	0.341	0.531	0.577	0.414	0.796	0.928	0.928	0.933	0.744	0.662	0.781
20	0.263	0.264	0.297	0.331	0.313	0.400	0.445	0.406	0.577	0.540	0.540	0.796	0.611	0.933	0.936
25	0.244	0.263	0.247	0.265	0.363	0.569	0.398	0.388	0.531	0.920	0.920	0.663	0.796	0.926	0.928
30	0.208	0.263	0.263	0.394	0.338	0.525	0.569	0.538	0.788	0.594	0.594	0.790	0.857	0.857	0.750
40	0.262	0.262	0.295	0.328	0.308	0.394	0.438	0.438	0.569	0.595	0.595	0.788	0.594	0.920	0.921
50	0.289	0.246	0.230	0.263	0.290	0.386	0.394	0.463	0.525	0.569	0.569	0.657	0.788	0.919	0.919
60	0.207	0.262	0.246	0.257	0.278	0.524	0.386	0.394	0.463	0.525	0.525	0.593	0.918	0.788	0.919



*Богор смазочного материала
предоставляется производителем
смазочных масел, основанная
на АГМА, рекомендованная марка
вязкости.*

*Марке вязкости основана на смазочном
стандарте ANSI / АГМА 9005-D94*

*Скорость в минуту (FPM) по стандарту
пропорции, предоставляется. Увеличением скорости
первая в RPM фактора из след. таблицы
Применяется герметичная передача в косозубой передаче*

выбор смазочного материала