

**Date: February 2019**

**Note: Products listed in this bulletin are typical lubricants. Rj Link International Inc. does not recommend any specific manufacturer's oil for use in our gearboxes.**

**CAUTION: USE OF OIL ADDITIVES IS STRICTLY PROHIBITED EXCEPT BY PRIOR WRITTEN AUTHORIZATION .**

**CAUTION: SOME EXTREME PRESSURE (EP) ADDITIVES ARE CORROSIVE TO COPPER, BRASS, BRONZE, AND/OR ALUMINUM. IF THE OIL WILL COME INTO CONTACT WITH THESE METALS (e.g. heat exchangers), CONSULT YOUR OIL MANUFACTURER TO VERIFY THAT THE EP ADDITIVES WILL NOT DAMAGE THE SYSTEM COMPONENTS.**

The following lubrication viscosities listed are guidelines. All values listed are AGMA lubricant numbers.

	<b>Ambient Temperature</b>			
	-40°F to +14°F -40°C to -10°C	14°F to 50°F -10°C to +10°C	50°F to 95°F 10°C to 35°C	95°F and above 35°C and above
<b>Speed Reducers</b>	3S	3S	5	6
<b>Speed Increaseers</b>	1S	2S	2	2
<b>Transfer Cases</b>	Input <2300 2S Input >2300 1S	Input <2300 3S Input >2300 2S	Input <2300 5 Input >2300 3	Input <2300 6 Input >2300 4

**NOTES:**

- 1) The pour point of the lubricant must be at least 9°F (5°C) below the minimum ambient temperature. If the ambient temperature approaches the pour point, oil sump heaters may be required to facilitate starting and ensure proper lubrication

Petroleum R&O oils:

The standard oil recommendation is a petroleum based rust and oxidation inhibited gear oil. These are oils that have been formulated to include chemical additives which provide system rust protection and oil oxidation resistance. Acceptable R&O oils are listed in Table 1. Maximum sump temperature for these oils is 203°F (95°C). If a unit's sump temperature exceeds this value, an oil cooler and/or synthetic lubricant will need to be used.

**TABLE 1**

<b>AGMA Viscosity Grade</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>ISO Viscosity Grade</b>	32	46	68	100	150
<b>Viscosity @ 104°F (40°C) (cSt)</b>	28.8-35.2	41.4-50.6	61.2-74.8	90-110	135-165
<b>Manufacturer</b>	<b>Lubricant</b>	<b>Lubricant</b>	<b>Lubricant</b>	<b>Lubricant</b>	<b>Lubricant</b>
Chevron	Machine Oil R&O 32	Machine Oil R&O 46	Machine Oil R&O 68	Mach. Oil R&O 100	Mach. Oil R&O 150
Citgo	Pacemaker 32	Pacemaker 46	Pacemaker 68	Pacemaker 100	Pacemaker 150
Conoco	Hydroclear 32	Hydroclear 46	Hydroclear 68	Hydroclear 100	Hydroclear 150
Mobil	DTE Light	DTE Medium	DTE Heavy Medium	DTE Heavy	DTE Extra Heavy
Shell	Hydraulic 32	Hydraulic 46	Hydraulic 68	Hydraulic 100	Hydraulic 150
Texaco	Regal R&O 32	Regal R&O 46	Regal R&O 68	Regal R&O 100	Regal R&O 150
<b>AGMA Viscosity Grade</b>	<b>5</b>	<b>6</b>			
<b>ISO Viscosity Grade</b>	220	320			
<b>Viscosity @ 104°F (40°C) (cSt)</b>	198-242	288-352			
<b>Manufacturer</b>	<b>Lubricant</b>	<b>Lubricant</b>			
Chevron	Machine Oil AW 220	Machine Oil AW 320			
Citgo	Pacemaker 220	Pacemaker 320			
Conoco	Hydroclear 220	Hydroclear 320			
Mobil	DTE BB	DTE AA			
Shell	Morlina 220	Morlina 320			
Texaco	Regal R&O 220	Regal R&O 320			

### Synthetic gear lubricants:

Synthetic oils differ from petroleum based liquids in that they are not found in nature, but are manufactured chemically with special properties to enhance performance or accommodate severe operating conditions. In general, synthetic oils have the advantage of being stable over a wider range of operating temperatures, having a higher viscosity index, and in some cases having greater load carrying capacity and better lubricity. Acceptable synthetic oils are listed in Table 2. Maximum sump temperature for synthetic oils is 225°F (107°C). If the unit's sump exceeds this temperature, an oil cooler will need to be added to the system.

**TABLE 2**

<b>AGMA Viscosity Grade</b>	<b>0S</b>	<b>1S</b>	<b>2S</b>	<b>3S</b>	<b>4S</b>
<b>ISO Viscosity Grade</b>	32	46	68	100	150
<b>Viscosity @ 104°F (40°C) (cSt)</b>	28.8-35.2	41.4-50.6	61.2-74.8	90-110	135-165
<b>Manufacturer</b>	<b>Lubricant</b>	<b>Lubricant</b>	<b>Lubricant</b>	<b>Lubricant</b>	<b>Lubricant</b>
Chevron	Tegra Compressor 32	-----	Tegra Compressor 68	Tegra Compressor 100	Tegra Compressor 150
Conoco	Syncon 32	Syncon 46	Syncon 68	Syncon 100	-----
Mobil	SHC 624	SHC 525	SHC 626	SHC 627	SHC 629
Pennzoil	-----	-----	-----	-----	-----
Texaco	Pinnacle 32	Pinnacle 46	Pinnacle 68	Pinnacle 100	Pinnacle 150

### Extreme Pressure Lubricants:

These lubricants are petroleum or synthetic based liquids with chemical additives such as sulfur-phosphorus which produce a protective film to provide anti-scuffing properties. EP Lubricants may be used instead of the R&O lubricants ***providing there is no copper, brass, or bronze components that will be damaged by the additives in the oil.*** Items such as spray nozzles, heat exchangers, labyrinth seals, or some bearings may be significantly damaged by some EP oils. Items such as bronze shift forks, however, will not be significantly damaged by the EP additives. Consult your oil manufacturer before using EP oil.