



UET Mixers Inc.
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XCEL Series of Turbine Mixers

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Recommended Bolting Torques

1. Tightening Torques

Use the values specified in the following table for fastening motors, units, and accessories to their mounting surfaces with SAE Grade 5 non-lubricated fasteners. If the tightening torque exceeds the capacity of the torque wrench, use a torque multiplier.

Thread Dia-UNC (in)	Painted Metal to Painted Metal (lb-in)	Painted Metal to Concrete (lb-in)
.250-20	90	70
.314-18	185	145
.375-16	330	255
.500-13	825	640
.625-11	1,640	1,280
.750-10	2,940	2,290
.875-9	4,560	3,750
1.000-8	6,800	5,600
1.125-7	8,900	7,000
1.250-7	12,600	10,000
1.375-6	16,500	13,000
1.500-6	22,100	17,500



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Bulletin 05-170
 1/16/2012
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Lubrication of Mixer Drive Size 1100-1500

1. Pump Lubrication

Lubrication System – The standard vertical output drive is equipped with an external pump and components mounted on the low speed end of the drive. The system is composed of an electric motor (230/460 volt, 3 phase) driven gear pump, oil filter, flow indicator with switch and internal distribution network with relief valve (fixed at 30 psi). The system provides lubricant to all upper bearings and gear meshes. Lubrication system must be in operation when drive is in operation.

System Electrical – Provide 3 phase electrical power for the pump motor, 230 or 460 volt, and wire the motor for correct rotation as indicated by the rotation arrow. The flow indicator is provided for warning/control with a single pole, double throw electrical switch rate at 14A, 125V/7A, 250V maximum. The flow indicator switch must be included with the prime mover control circuitry to prevent unit operation without the lubrication system. Refer to the supplementary instructions provide with the lubrication system components for more information.

2. Unit Lubrication

Read and carry out all instructions on lubrication plate and heed all warning tags. Determine the output rpm and minimum and maximum temperatures in which the drive will operate. Find the AGMA lubricant number from the following chart.

	Ambient Temperature	AGMA No.	Viscosity @ 104 °F	
			SSU	cSt
Output RPM 80 and above	+15° to +60°F	4	626-765	135-165
	+50° to +125°F	5	918-1122	198-242
Output RPM below 80	+15° to +60°F	4	626-765	135-165
	+50° to +125°F	6	1335-1632	288-352

Select an R&O oil from the table below which corresponds to the AGMA lubricant number previously determined. Lubricants listed in this manual are typical products only and should not be construed as exclusive recommendations. All mineral oil (R&O) lubricants must have a minimum viscosity index of 90.

AGMA Viscosity Grade	4	5	6
ISO viscosity Grade	150	220	320
Viscosity at 104° F	626-765	918-1122	1335-1632
SSU	135-165	198-242	288-352
cSt			
Manufacturer	Lubricant	Lubricant	Lubricant
Amoco Oil Co.	Ind. Oil # 150	Ind. Oil # 220	Ind. Oil # 320
Ashland Oil, Inc.	100H ISO 150	100H ISO 220	100H ISO 320
BP Oil Co.	Turbinol T-150	Energol HL 220	Energol HL 320
Chevron U.S.A., Inc.	AW Machine Oil 150	AW Machine Oil 220	AW Machine Oil 320
Citgo Petroleum Corp.	Citgo Pacemaker 150	Citgo Pacemaker 220	Citgo Pacemaker 320
Conoco Inc.	Dectol R&O Oil 150	Dectol R&O Oil 220	Dectol R&O Oil 320
Exxon Company, U.S.A.	Terresstic 150	Terresstic 220	Terresstic 320
E.F. Houghton & Co.	Hydro-Drive HP 750	Hydro-Drive HP 1000	...
Imperial Oil Ltd.	Teresso 150	Teresso N 220	Teresso N 320
Lyondell Petrochemical(ARCO)	Duro 150	Duro 220	Duro 320
Mobil Oil Corp.	DTE Oil Extra Heavy	DTE Oil BB	DTE Oil AA
Petro-Canada Products	Harmony 150 or 150D	Harmony 220	Harmony 320
Phillips 66 Co.	Magnus Oil 150	Magnus Oil 220	Magnus Oil 320
Shell Oil Co.	Morlina 150	Morlina 220	Morlina 320
Shell Canada Limited	Tellus 150	Tellus 220	Tellus 320
Texaco Inc.	Regal Oil R&O 150	Regal Oil R&O 220	Regal Oil R&O 320



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Lubrication of Mixer Drive Size 1100-1500

Be aware that the speed reducer housing temperature will range between 130 to 180°F during normal operation using the oils listed above. If your reducer surpasses 180°F, there may be cause for concern.

If the unit is operated in an area where the temperatures vary with the season, change the oil viscosity to suit the season. For cold weather operation, use light oil that will circulate freely at all times. The pour point of the oil should at least be 9°F less than the minimum external temperature encountered. During hot weather, use a high viscosity oil that will not thin out and low its lubricating qualities.

3. Approximate Oil Capacities

Unit Size	Gallons
1100	10
1200	15
1300	25
1400	30
1500	45

4. Grease Lubricated Bearings

The lower low speed shaft bearings are grease lubricated. The bearings should be greased with a NLGL #2 bearing grease selected from the following table.

Manufacturer	Lubricant
Amoca Oil Co.	Amolith Grease No.2
Ashland Oil Co., Inc.	Multilube Lithium EP Grease
BP Oil Co.	Energrease LS-EP2
Chevron U.S.A., Inc.	Industrial Grease Medium
Citgo Petroleum Corp.	Premium Lithium Grease
Conoco Inc.	EP Conolith Grease No. 2
Exxon Company, U.S.A	Unirex N2
E.F. Houghton & Co.	Cosmolube 2
Imperial Oil Ltd.	Unirex N2L
Kendall Refining Co.	Multi-Purpose Lithium Grease L-421
Keystone Div. Pennwalt Corp.	Zeniplex-2
Lyondell Petrochemical (ARCO)	Litholine H EP 2 Grease
Mobil Oil Corp.	Mobilith 22
Petro-Canada Products	Multipurpose EP2
Phillips 66 Co.	Philube Blue EP
Shell Oil Co.	Alvania Grease 2
Shell Canada Limited	Alvania Grease 2
Sun Oil Co.	Ultra Prestige EP2
Texaco Inc.	Premium RB Grease
Unacol 76 (East & West)	Unoba EP2

Mixer Size	Re-greasing Capacity (oz.)
1100	12
1200	12
1300	24
1400	30
1500	60

The greases listed above are recommended for a temperature range between 0°F and 200°F.

5. Grease Purged Seals:

The high speed shaft and upper low speed shaft seal cages are furnished with grease purged seals which minimize the entry of taconite and other abrasive dusts into the unit. Utilize one of the recommended greases from the able above. Normally, drives are shipped without grease in the seal housing cavity.