CT/GT CONVERSION INSTRUCTIONS

Your CT/GT conversion kit is provided with the components listed below. All other part numbers listed throughout this supplement directly correspond to the ***CT agitator manual*** and represent the existing components of your agitator.

CTD open tank unit conversions require only the replacement of the existing low speed coupling with a new coupling. New internal shaft fasteners and metric external coupling mounting fasteners are also supplied. Refer *only* to items **(CV07, CV08, CV09, CV10, CV11, CV12, & CV13)** in *Figure 1C*.

CTP, CTA, CTNS, and CTN pedestal unit conversions not only require the replacement of the low speed coupling as noted above, but also a special fastener set to mount the new GT drive onto the existing CT pedestal. Hole spacers **(CV03)** are fitted into the existing CT pedestal gear drive mounting holes and the new GT drive is secured with fasteners **(CV01, CV02, CV04, CV05, CV06)**. Refer to *Figure 1C*.

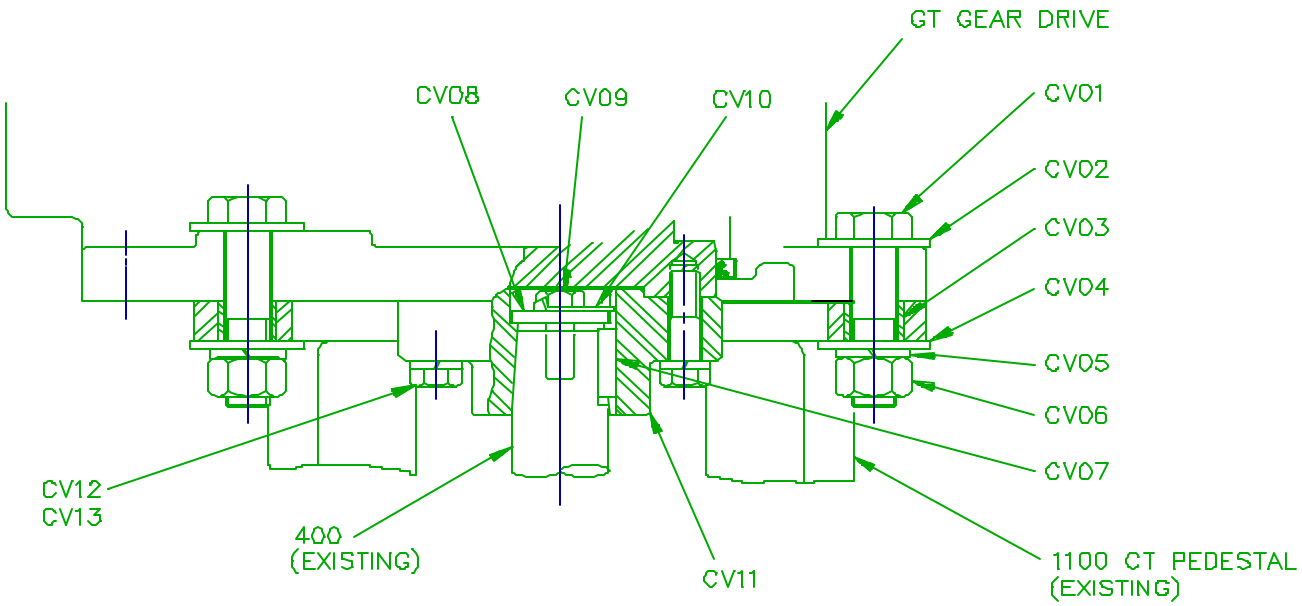

Figure 1C: Conversion Kit Installation

(See detailed part list descriptions, next page)

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CONVERSION KIT FASTENERS

Part #	Description
CV01	Bolt, M20 x 2.50 x 90mm, Qty. 3 M20 x 2.50 x 100mm, Qty. 1
CV02	Flatwasher, Qty. 4
CV03	Hole Spacer, Qty. 4
CV04	Flatwasher, Qty. 4
CV05	Spring Lockwasher, Qty. 4
CV06	Hex Nut, Qty. 4
CV07	Key, Qty. 1
CV08	Washer, Qty. 1
CV09	Shaft Bolt, ½"-13 x 1.50, Qty. 1
CV10	Locking Tab, Qty. 1
CV11	Coupling, Qty. 1
CV12	Bolt, M12 x 1.75 x 60mm, Qty. 6
CV13	Lockwasher, Qty. 6

Upon receipt, check the contents of the kit with the above list prior to discarding any packaging materials.

10 degree angle mounted model CT agitator drives may be replaced by GT agitator drives, however, a special oil dipstick (not provided with this standard conversion kit) is required. Consult factory for assistance. Installation of the new GT gear drive must be done with the unit vertical.

CONVERSION INSTRUCTIONS - Section 1, CT Drive Removal: Refer to your **CT** agitator IOM manual, ***Lubrication & Maintenance, Gear Drive Disassembly*** section for more detailed gear drive removal instructions and illustrations.

1. Lock out power and disconnect electrical service to the motor.

2. For **CTD open tank or CTP pedestal units**, block the extension shaft **(400)** securely in place. Loosen and remove coupling bolts **(305)**.

   For **CTA stuffing box units**, remove handhole covers **(1102)**. Depressurize vessel and remove hex adjusting nuts **(1301)**, gland clamps **(1304)**, and split packing gland **(1312)**. Loosen hex nuts **(1306)** and hex bolts **(1309)**. Lower extension shaft **(400)** by loosening coupling bolts **(305)**. Lower shaft evenly until the shaft is supported by the shaft drop collar **(1203)**. The shaft should drop approximately 3/4 inch (19mm). Remove coupling bolts **(305)**.

CT/GT CONVERSION INSTRUCTIONS

For **CTNS single mechanical seal units**, remove handhole covers **(1102)**. Depressurize and ventilate vessel. Depressurize mechanical seal. Clean the portion of the agitator extension shaft **(400)** between the low speed coupling **(304)** and the cartridge mechanical seal **(1400)**. Install centering clips **(1413)**. Loosen seal sleeve setscrews **(1407)**. Lower extension shaft by loosening coupling bolts **(305)**. Lower evenly until the shaft is supported by the shaft drop collar **(1203)**. The shaft should drop approximately 3/4 inch (19mm). Remove coupling bolts **(305)**.

For **CTN double mechanical seal units**, remove handhole covers **(1102)**. Depressurize and ventilate vessel. Depressurize mechanical seal and mechanical seal lubricator. Remove seal lubricant lines and plug ports. Clean the portion of the agitator extension shaft **(400)** between the existing tapered shaft low speed coupling **(304)** and the cartridge mechanical seal **(1500)**. Install three centering clips **(1516)**. Loosen seal sleeve setscrews **(1506)**. Lower extension shaft by loosening the coupling bolts **(305)**. Lower evenly until the shaft is supported by the shaft drop collar **(1203)**. The shaft should drop approximately 3/4 inch (19mm). Remove coupling bolts **(305)**.

3. Remove gear drive mounting bolts **(1105)** and remove CT gear drive **(200)**.

4. To remove existing tapered shaft coupling half **(304)**, bend down the corners of locking tab **(302)** and remove shaft bolt **(301)**. Lift out coupling washer **(303)**. Tap coupling half with mallet, or apply a puller, to separate the coupling from the shaft.

CONVERSION INSTRUCTIONS - Section 2, GT Drive Installation: Refer to your **GT** agitator IOM manual, ***Installation, Agitator Installation*** section for more detailed gear drive installation instructions and illustrations.

1. Clean the extension shaft and the low speed coupling bore and make sure that both surfaces are free from burrs or nicks. Slide the new coupling half **(CV11)** onto the tapered shaft end until both seat firmly against each other. Place key **(CV07)** into the coupling keyway and make sure it slides freely and is fully bottomed in the keyway. If key does not slide freely in keyway, remove key and inspect key and keyway for damage.

   NOTE: Do not apply lubricant or anti-seize compound to coupling taper. Shaft and coupling tapers must be clean and dry.

   Install internal coupling washer, bolt, and locking tab **(CV08, CV09 & CV10)**. Torque 1/2" bolts to 56 ftlb, 76Nm. Bend corners of locking tab up around the head of the shaft bolt.

CT/GT CONVERSION INSTRUCTIONS

2. For the **D-style open tank unit**, lift and suspend the GT gear drive assembly over the extension shaft coupling half **(CV11)** close enough to allow installation of new coupling bolts and lockwashers. Install two coupling bolts **(CV12, CV13)** at 180°. Tighten bolts to engage the tenon and pull the low speed shaft of the gear drive to the coupling face. Remove blocking and install the remaining coupling bolts and lockwashers, refer to *Figure 1C, page 1*. Torque M12 bolts to 48 ftlb, 66 Nm. Lower the agitator drive assembly onto the support structure. The gear drive assembly **must be level within 1/4°**. If shimming is required, use full width shims under the agitator drive housing to provide a solid joint for bolting the agitator drive assembly to the support structure. Lubricate and install the agitator drive mounting bolts (supplied by customer) and torque to the appropriate value shown in the ***GT agitator manual***.

   For the **P-style pedestal unit**, lift and suspend the GT gear drive assembly over the extension shaft coupling half **(CV11)** close enough to allow installation of new coupling bolts and lockwashers. Install two coupling bolts **(CV12, CV13)** at 180°. Tighten bolts to engage the tenon and pull the low speed shaft of the gear drive to the coupling face. Remove blocking and install the remaining coupling bolts and lockwashers. Torque M12 bolts to 48 ftlb, 66 Nm. Lower the agitator drive onto the existing drive support pedestal **(1100)**. Insert hole spacer **(CV03)** into each drive mounting hole in the pedestal as shown in *Figure 1C, page 1*. Lubricate and install each new agitator drive mounting bolt, flatwashers, lockwasher and hex nut **(CV01, CV02, CV04, CV05, & CV06)**. Torque M20 bolts to 238 ftlb, 323 Nm.

   For the **A-style stuffing box unit**, lift GT gear drive assembly and lower onto existing drive support pedestal **(1100)**. Insert hole spacer **(CV03)** into each drive mounting hole in the pedestal as shown in *Figure 1C, page 1*. Lubricate and install each new agitator drive mounting bolt, flatwashers, lockwasher and hex nut **(CV01, CV02, CV04, CV05, & CV06)**. Torque M20 bolts to 238 ftlb, 323 Nm. Be certain hex nuts **(1306)** and hex bolts **(1309)** have been loosened. Install two coupling bolts **(CV12, CV13)** at 180°. Tighten bolts to engage the tenon and pull the coupling face to the low speed shaft of the gear drive. Install remaining coupling bolts and lockwashers and torque M12 bolts to 48 ftlb, 66 Nm. Install split packing gland **(1312)** and gland clamps **(1304)**. Retain with hex adjusting nuts **(1301)** and tighten to center packing housing **(1314)** on the agitator extension shaft. Split packing gland must be square with the packing housing. Tighten hex nuts **(1306)** and hex bolts **(1309)**. Torque 1/2" bolts to 56 ftlb, 76Nm. Let the packing sit for five or ten minutes so that it can cold flow and adjust to the gland pressure. Loosen the hex adjusting nuts, then finger tighten. After starting the unit, adjust the packing by tightening the hex adjusting nuts one flat at a time, allowing 15 minutes between each take-up for the packing to reseat itself. Repeat these adjustments at 15 minute intervals until the desired leakage is obtained. Do not over tighten.

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For the **NS-style single mechanical seal unit**, lift GT gear drive assembly and lower onto existing drive support pedestal **(1100)**. Insert hole spacer **(CV03)** into each drive mounting hole in the pedestal as shown in *Figure 1C, page 1*. Lubricate and install each new agitator drive mounting bolt, flatwashers, lockwasher and hex nut **(CV01, CV02, CV04, CV05, & CV06)**. Torque M20 bolts to 238 ftlb, 323 Nm. Loosen cartridge seal mounting bolts **(1418)** to allow cartridge seal to float with agitator extension shaft **(400)**. Install two coupling bolts **(CV12, CV13)** at 180°. Tighten bolts to engage the tenon and pull the coupling face to the low speed shaft of the gear drive. Install remaining coupling bolts and lockwashers and torque M12 bolts to 48 ftlb, 66 Nm. Realign the cartridge mechanical seal to the shaft by tightening the cartridge seal mounting bolts. Tighten seal sleeve setscrews **(1407)**. Remove centering clips **(1413)** . Save clips for future seal changes.

For the **N-style double mechanical seal unit**, lift GT gear drive assembly and lower onto existing drive support pedestal **(1100)**. Insert hole spacer **(CV03)** into each drive mounting hole in the pedestal as shown in *Figure 1C, page 1*. Lubricate and install each new agitator drive mounting bolt, flatwashers, lockwasher and hex nut **(CV01, CV02, CV04, CV05, & CV06)**. Torque M20 bolts to 238 ftlb, 323 Nm. Loosen cartridge seal mounting bolts **(1523)** to allow cartridge seal to float with agitator extension shaft **(400)**. Install two coupling bolts **(CV12, CV13)** at 180°. Tighten bolts to engage the tenon and pull the coupling face to the low speed shaft of the gear drive. Install remaining coupling bolts and lockwashers and torque M12 bolts to 48 ftlb, 66 Nm. Realign the cartridge mechanical seal to the shaft by tightening the cartridge mounting bolts. Tighten exposed seal sleeve setscrews **(1506)**. Remove centering clips **(1516)**. Save clips for future seal changes. Tighten remaining seal sleeve setscrews **(1506)** that were obscured by the retaining clip cap screws **(1515)**. Re-connect lubricant lines. Charge system with lubricant and pressure test. Refer to ***CTN agitator manual*** for mechanical seal lubrication instructions.

3. Install handhole covers **(1102)** as required for pedestal units.