

DESCRIPTION 1:	Pump Screw Archimedes Overhaul	FREQUENCY:	
LOCATION:		STD JOB ID:	

Scope
Remove Archimedes pump from site, install rotable spare assembly and complete overhaul of removed Archimedes
pump, gearbox and motor as per task lists below.
DEFEDENCES
REFERENCES  OEM Manuals:
RITZ Archimedean Screw Installation & Maintenance Manual
Installation and Parts Replacement Manual for Dodge® Motorised Torque-Arm II Speed Reducers – MTA2-
MTA8 C-Faced Coupling
Requirements
**50 Tonne Crane required**
Remove pump and install rotable spare assembly.
Complete overhaul of removed pump, gearbox and motor as per the task lists.
Minor repairs and/or additional replacements other than already documented can be undertaken in the Overhaul,
however, request to be submitted to Urban Utilities for approval before proceeding.  Use CHE168 to submit any relevant information regarding the overhaul.
Ose CHE 100 to submit any relevant information regarding the overnaul.
Removal of Pump and Installation of Spare
**50 Tonne Crane required**
Remove pump from channel.
Install rotable pump assembly on site.
Verify straightness using straight edge of the gearbox in situ.
Pump bearings – verify oil level in the oil container.
Send removed pump assembly for overhaul.

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TASK LISTS
Overhaul
Pump Pump
Unit: RITZ Archimedean screw pump
Remove pump from channel. **50 Tonne Crane required**
Pressure blast trough and screw.
Strip and clean components
**Take photographs of before and after abrasive blast**
Abrasive blast and assess corrosion damage to all steel work.
Assess damage to steel work and contact Urban Utilities maintenance delivery manager if repair work is required.
Dye pen shaft stubs and inspect for wear and trueness
NDT welds on the screw for crack indications
Measure the clearance between the auger and the trough within tolerance – 4-10mm clearance as per OEM.
TIR measurement of the pump shaft within tolerance, max 0.03mm
Measure shaft bearing area roundness and taper refer to bearing catalogue for tolerances
**Take photographs of before and after application of protective coating**
Apply 2 coats of a ceramic based coating to manufacturers specification.
Replace top and bottom bearings, like for like or equivalent.
Replace coupling to gearbox
Provide measurement and inspection results to UU.

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Gearbox	
Unit: Dodge MTA II Reducer	
Overhaul gearbox based on OEM manuals and tolerances, contact Dodge for information	
Only use genuine parts for service kits	
<u> </u>	
Check housing for corrosion, touch-up as required	
Measure bearing housing roundness and taper refer to bearing catalogue for tolerance.	
Replace bearings and seals using genuine parts	
Measure shaft roundness and taper refer to bearing catalogue for tolerance	
Measure TIR shaft and within tolerance as per OEM manual	
Measure gear backlash within tolerance as per OEM manual  Replace oil with manufacturer recommended and ensure correct oil level	
** Required gearbox oil level at site mounting angle as per diagram**  ROD OIL LEVEL  Inspect condition of oil breather (diaphragm type)	
Tie rod must be square to the gearbox – follow the Dodge alignment procedure in the manual	
Provide measurement and inspection results to UU	
Motor	
Unit: ABB IE2 3 phase motor	
Perform megger test within tolerance <1M $\Omega$	
Replace motor coupling  Check shaft TIR at the coupling – max 0.03mm	
Provide measurement and inspection results to UU	
Return overhauled pump as a spare.	
Use CHE168 to submit completion of work.	

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