



CIVILMART

Ultra Clear

Wastewater Treatment Systems

OWNER'S MANUAL

**Ultra Clear Domestic Systems
ST8 and ST10 models**



CONTENTS

FOREWORD	4
DESCRIPTION & FUNCTION	4
INTENDED USE	5
SERVICING REQUIREMENTS	6
BASIC OPERATING INSTRUCTIONS	6
TROUBLE SHOOTING	6
LANDSCAPING	8
DESLUDGING REQUIREMENTS	8
SAFETY INFORMATION	8
SPREADING OF HYDRAULIC LOADS	8
RESPONSIBILITY	8
RECOMMENDED PRODUCT USAGE FOR ULTRA CLEAR AWTS	9
IRRIGATION/DISPOSAL AREA	9
NSW HEALTH AND LOCAL GOVERNMENT REQUIREMENTS	9
MAINTENANCE RECORD	10
WARRANTY — ULTRA CLEAR DOMESTIC MODELS	12
COMMISSIONING CERTIFICATE	13
OWNER'S WARRANTY CARD	14
SERVICE MANUAL	16
LOCAL COUNCIL AWTS SERVICE REPORT	20
ULTRA CLEAR ST8 MODEL — PLUMBER'S INSTALLATION MANUAL	22
ULTRA CLEAR ST10 MODEL — PLUMBER'S INSTALLATION MANUAL	24
ULTRA CLEAR ST8 MODEL — SPECIFICATIONS	26
ULTRA CLEAR ST10 MODEL — SPECIFICATIONS	28
PUMP OUT INFORMATION SHEET	30
MAINTENANCE FACT SHEET	32

FOREWORD

The Ultra Clear single tank domestic aerated wastewater treatment systems, Models ST10 and ST8, have been designed to meet NSW Health Guidelines and Australian Standard AS1546.3:2017.

The Ultra Clear single tank systems have been designed to provide full access to all chambers, allowing ease of maintenance and servicing which ensures the efficient functioning of your system.

This handbook will provide information on the function of your ULTRA CLEAR Aerated Wastewater Treatment System (AWTS). Your authorised service technician will be able to help further if you have any queries.

DESCRIPTION & FUNCTION

Primary Treatment

Sewage from the dwelling flows into the primary treatment tank. Wastewater and solids are treated through sedimentation and anaerobic digestion, with the lighter materials of oils and fats floating to the surface to form a crust. Anaerobic bacteria digest and reduce the organic load or Biochemical Oxygen Demand (BOD₅).

Aerobic Treatment

Settled wastewater from the primary chambers flows into the first aeration chamber overflowing into the second aeration chamber, with media pack fixed below water level. Oxygen is supplied to the liquid through four air diffusers and microbes attach to two media packs, producing an aerobic state which reduces the organic load and nitrifies ammonia.

Sludge Return

The settling sludge in the sedimentation chamber is returned to the primary inlet of septic chamber.

Clarifier/Settling Chamber

After aeration the wastewater overflows into the clarifier/settling chamber. Suspended solids are allowed to settle under quiescent conditions. Settled particles referred to as sludge, return automatically to primary chamber inlet by sludge return. This method aids with de-nitrification and provides a constant flow of food supply, which supports the treatment process during limited usage.

Disinfection

Water flows through a regulated chlorination device to the disinfection chamber, removing final pathogens before flowing into the pump chamber. Chlorinated water flows into the disinfection chamber, providing a minimum of 300 litres contact time prior to pump cycle. Any remaining solids settle in base of settling chamber to be removed during regular maintenance by venturi device

Effluent Disposal

Treated effluent is automatically pumped to disposal area using a minimum 10 metre head pump, with a pump out cycle of greater than 120 litres. The maintenance of filters and irrigation sprinklers is the responsibility of the owner or tenant of property.

Air Supply

Air is supplied to the aeration chamber by a Nitto LA80B or equivalent air blower. This produces a nominal 80 litres/minute air flow at 1320mm water depth, providing air to the manifold which is regulated using taps to the four air diffusers and venturi air lift devices.

Electrical Control Unit

The system is fitted with an Electrical Control Unit incorporating an alarm panel for internal use in dwelling, e.g. laundry or strobe light for external use. A green light is constant on panel to indicate power to system. If a fault occurs with the system both audio and visual warnings indicate fault. The audio alarm will mute for 24 hours when pressed or swiped.

Operation

All drainage and electrical supply to be connected to unit by licensed contractors. Landscaping must be completed by the owner to comply with local Council requirements. The system operates automatically. Any adjustments to system to be carried out by authorised technicians.

General

Power consumption to run system is similar to an average household refrigerator.

INTENDED USE

The system is intended for the treatment of all domestic wastewater for up to 10 persons per household for Model ST10 and up to 8 persons per household for Model ST8. All household wastewater is recycled by treatment using anaerobic and aerobic bacteria, with a final disinfectant agent. Safe, clean, treated effluent is automatically irrigated onto lawns and gardens or pumped to subsurface disposal area, according to government regulations.

SERVICING REQUIREMENTS

The system must be serviced every 3 months as required by Health Department and local Councils. The owner is required to ensure maintenance with an authorised service agent to retain full warranty benefits. If system is in an enclosure, a working gateway must be provided. Ensure all manholes on tank and electrical box are clear of foreign objects. **Strictly no bark chips or aggregate on tank.**

At each service, the technician will take water samples, sludge readings, make adjustments where required, replenish chlorine, and report to governing bodies.

BASIC OPERATING INSTRUCTIONS

1. Ensure system is serviced every 3 months by approved service technician.
2. Use correct products as per manual.
3. Respond to alarms as indicated in manual.
4. Do not disconnect power supply to system.
5. The alarm plate has a green POWER light to show there is power and the system is working normally.

TROUBLE SHOOTING

No POWER LIGHT

- If green POWER light is not lit, and there is no general power failure to the home, contact your service technician.

Low Air Alarm red AIR led will flash and audible alarm sound

- Press alarm mute button, the alarm will reset and sound again in 24 hours.
- Contact your authorised service technician.
- The air blower is not operating. Repairs may need to be carried out, e.g. chamber block kit, piston or blower replacement

High Water Alarm red WATER led will flash and audible alarm sound

- Press alarm mute button, the alarm will reset and sound again in 24 hours.
- Especially after mowing or work being carried out in the yard, make the following checks.
- Ensure irrigation taps are turned on.
- If filter is installed, ensure it is clean. Turn off pump at control box by disconnecting irrigation

pump plug, to avoid being sprayed with water. Remember to turn pump on when filter is cleaned.

- Check sprinkler outlets for any blockages.
- Check irrigation line for kinks.
- If irrigation line, etc. are OK, phone your authorised service technician.
- High water alarm can indicate pump failure, technician to repair or replace.

Bad Odours from System

- Wrong products being used, or system overload with overuse.
- Check products used. Especially avoid any disinfectants, bleaches or antiseptics and overuse of laundry powders and fabric softeners.
- Ensure washing loads are spread over the day.

Bad Odours from Sprinklers

- The air blower may not be working to its full capacity, causing low aeration.
- Contact your authorised service technician.

Blocked Drainage Lines

- Blocked drainage lines from house to the system are plumbing problems.
- Check drainage line at inspection opening to clear.
- Contact your local plumber or drainer if necessary.

Electrical

- After power black outs or electrical storms it is advisable to check meter box to ensure all circuit breakers are on.
- All electrical wiring from system to meter box and to alarm panel is the responsibility of the electrician, and is not covered by our warranty.
- There is a 15 amp fast blow fuse to protect the pumps. Should the fuse holder amp be lit, the fuse is open circuit. A spare fuse is supplied under the controller enclosure cover, together with photos of correctly terminated cabling to the control unit and alarm plate
- The alarm panel has three leds. Under normal operating conditions, the green power led will light. High water alarm will activate the red water led and the audible alarm will sound to attract attention. If air blower fails the red air led will be activated and the audible alarm will sound to attract attention.
- Silence alarm by pressing or swiping the MUTE button on the alarm panel.
- If problem is not rectified within 24 hours, the led will be activated again with the audible alarm. Silence alarm by pressing or swiping the MUTE button.
- Contact your authorised service technician if any alarms occur.

LANDSCAPING

Ensure drainage is away from system at all times. Do not make gardens that create a pooling effect around tanks. Warranty does not cover storm water damage.

DESLUDGING REQUIREMENTS

Service technicians check sludge accumulation levels at each service. You will be advised on your service form when a full desludge of primary chamber is required. Sludge build up depends upon the number of persons in the household and upon product usage. Time varies between 3 to 8 years. The owner is responsible for the full pump out cost, to be carried out by an approved contractor.

SAFETY INFORMATION

To ensure no damage to system and safety of occupants, lids and manhole covers should not be removed other than by authorised service technicians. The electrical wiring must be carried out by licensed electricians. Installation of system to be carried out by licensed plumbers. For safety of service technicians, avoid trees or shrubs larger than two metres in close proximity to tanks. In accordance with government requirements, avoid contact with effluent.

SPREADING OF HYDRAULIC LOADS

Avoid use of bath, washing machine and dishwasher at the same time. Spread washing loads during the week where possible.

RESPONSIBILITY

1. The owner is required to enter into a maintenance agreement with an authorised service provider.
2. The owner of the system is responsible for the operation and maintenance of the system, by following owner's manual instructions, to provide the best effluent possible, in accordance with NSW Health Department guidelines.
3. Top of tank to be kept clear of all materials.
4. Keep gardens, shrubs, etc clear of tank lid.
5. Ensure safe and clear access for service technician to tank.

RECOMMENDED PRODUCT USAGE FOR ULTRA CLEAR AWTS

Washing Powders & Liquids

Avoid powders with added bleaches and whiteners. The bleach is harmful to the system. No laundry powders or liquids with added softeners. Use recommended dosage or less, too much may cause odour.

Fabric Softeners

Better not used. Coats bacteria and prevents effective treatment of waste water.

Products Not to Be Used

Antibacterial solutions, bleaches, toilet cleansers, products with ammonia.

Aerated systems, like all sewage treatment/disposal systems, are biological, so that if a product kills bacteria in the house, it will kill the bacteria that carry out the sewage treatment.

Recommended Products

We recommend the use of products that are environmentally friendly and safe for use in septic tanks.

IRRIGATION/DISPOSAL AREA

Irrigation supplied by Ultra Clear is intended as a starter pack only, and is not covered by warranty. It is the owner's responsibility to install irrigation as required by Council and to maintain irrigation.

NSW HEALTH AND LOCAL GOVERNMENT REQUIREMENTS

1. Follow your local Council requirements.
2. System to be installed in accordance to plans submitted to Council.
3. System is not to be operated until approved by local council, including landscaping requirements.
4. Disposal of irrigated effluent is to remain on your property, with no run off to adjoining properties, drains, gutters, etc., in compliance with government regulations.
5. No fruit or vegetables to be irrigated with the effluent.
6. A continuous maintenance agreement must be held.

MAINTENANCE RECORD

	PHONE	DETAILS
Service Technician		
Plumber		
Electrician		
INSTALLATION	DATE	DETAILS
Year 1		
Maintenance payment		
Service One		
Service Two		
Service Three		
Service Four		
Year 2		
Maintenance payment		
Service One		
Service Two		
Service Three		
Service Four		
Repairs		
Year 3		
Maintenance payment		
Service One		
Service Two		
Service Three		
Repairs		

Year 4		
Maintenance payment		
Service One		
Service Two		
Service Three		
Service Four		
Repairs/Desludge		
Year 5		
Maintenance payment		
Service One		
Service Two		
Service Three		
Service Four		
Repairs/Desludge		
NOTES		

Ultra Clear

Wastewater Treatment Systems

WARRANTY

Ultra Clear Domestic Models ST8
and ST10

CONCRETE TANKS - 15 YEARS

Warranty commencing on installation date

ALL MECHANICAL AND ELECTRICAL PARTS, INTERNAL PARTITIONS - 2 YEARS

Including air blower, irrigation pump, control box, alarm panel,
internal partitions and internal pipework

- warranty commencing on installation date
- 1st year includes parts and labour
- 2nd year includes **PARTS ONLY**

NOTE: This warranty is subject to a continuous service agreement being held with Ultra Clear Wastewater Treatment Systems or authorised agents, to ensure proper maintenance of the system. Also subject to installation in accordance with our Plumber's & Electrical Installation Manuals.

STATEMENT OF SERVICE LIFE

All fittings, fasteners and components of the Ultra Clear AWTS other than pumps and motors and electrical are of noncorroding material and designed to function reliably with a MINIMUM SERVICE LIFE OF 15 YEARS.

All mechanical and electrical parts have a MINIMUM SERVICE LIFE OF 5 YEARS.

Phone: (02) 4871 2156
Email: hlt.sales@civilmart.com.au
www.ultraclear.com.au

Ultra Clear

Wastewater Treatment Systems

COMMISSIONING CERTIFICATE

DATE SYSTEM MODEL

CUSTOMER'S NAME

SITE ADDRESS

COUNCIL

<input type="checkbox"/> IRRIGATION PUMP Type: Bianco B42A or equivalent INSTALLED	<input type="checkbox"/> BLOWER Type: Nitto 80 Litre MMLA80 or equivalent INSTALLED
<input type="checkbox"/> ELECTRICAL CHECKED	<input type="checkbox"/> CHLORINE INSTALLED
<input type="checkbox"/> IRRIGATION INSTALLED to manufacturer's specifications (NOTE: extra Council requirements for irrigation to be completed by owner.)	<input type="checkbox"/> SYSTEM OPERATING

COMMENTS

- Extra irrigation requirements by owner
- The system installed at the above address complies with the design and conditions of accreditation as specified by NSW Health
- All components of the system are operational at time of commissioning

Phone: (02) 4871 2156
Email: hlt.sales@civilmart.com.au
www.ultraclear.com.au

Ultra Clear
Wastewater Treatment Systems

OWNER'S WARRANTY CARD

PLEASE COMPLETE THIS CARD AND
RETURN TO SERVICE AGENT FOR WARRANTY

INSTALLATION DATE

MODEL NO

OWNER'S NAME

ADDRESS

PHONE (H) PHONE (M)

COUNCIL

USUAL NUMBER OF OCCUPANTS

ADULTS CHILDREN

Phone: (02) 4871 2156
Email: hlt.sales@civilmart.com.au
www.ultraclear.com.au



SERVICE MANUAL

Introduction

The aim of servicing is to keep the system running efficiently at all times, and to maintain function in accordance with all government requirements. This will usually require interaction with the occupant, to ensure correct product usage. This service manual is to be used following practical training by Precast Civil Industries Pty Ltd trading as Highland Tanks Pty Ltd and Ultra Clear Wastewater Treatment Systems. Technicians are to interact with customers in a friendly and courteous manner at all times.

Tools & Equipment

1. Lifting hooks for manhole covers
2. Multi grips for general purpose
3. Sludge stick
4. Dip stick with hook on one end
5. Turbidity test tube
6. Free chlorine and PH test kits
7. Phillips head and flat head screw drivers
8. Carry bucket
9. Chlorine in small covered container
10. DO (dissolved oxygen) meter if required

Extra Equipment

1. 10 litre bucket with gauze scoop
2. Kerosene
3. Insect spray
4. Sludge pump
5. Sludge pump hoses and connections
6. Garden hose on reel
7. Quick flow submersible pump

Safety

1. Hepatitis vaccinations required
2. Avoid breathing chlorine fumes
3. Keep chlorine tablets enclosed at all times. Ensure no contact of chlorine tablets with oil, as this mix is volatile
4. Always ensure manhole covers are in place and secure when you are not at system
5. Keep children off concrete tanks while servicing. If this is a problem ask the occupant to supervise children
6. Ensure electrical box cover is secure before leaving site
7. Wear appropriate clothing, i.e. work boots, protective gloves, sun protection

Normal Functioning

1. Air valves allow flow of air to diffusers; adjust valve to regulate air flow
2. All air valves are adjustable and are to be regulated as per visual inspection, to allow adjustment of air flow to diffusers, sludge return & scum skimmer
3. Air bubbles & water flow in sludge return and scum skimmer indicate normal function
4. Visual inspection of air flow in aeration chamber indicates normal function of air blower
5. Engage pump float to check irrigation pump is operating normally
6. To check low air alarm, turn off blower to engage alarm, wait 2 minutes for activation. Do not remove air blower pressure switch tube. Visual alarm on control box on tank and alarm panel inside house.
7. To check high water alarm, remove high water air tube. Check if high water alarm is activated

Servicing

1. Servicing to be done quarterly, as per contract with customer
2. Prior to service make any phone calls as required by occupants as detailed in run sheet, to ensure access to property and dogs restrained where necessary. Address any other notes listed on run sheet
3. Advise occupant of your presence when first entering the property
4. Close all gates, etc. when entering and leaving the property
5. A Service Report Form must be completed for each service in triplicate – owner, Council and file copy; fill in customer details using run sheet on Service Form

Maintenance Service

1. Remove manhole covers
2. Prior to putting on gloves, use dip to remove water sample from pump chamber
3. Take chlorine residual reading
4. Use dip to remove water sample from settling chamber
5. Take PH reading
6. Put on gloves
7. Use turbidity tube and dip to take water sample from aerobic chamber two and check clarity and odour of water
8. Use turbidity tube and dip to take water sample from disinfection chamber and check clarity and odour of water
9. Use sludge stick to clear any build up to inlet of primary tank if required

10. Take sludge build up reading in second primary chamber through inspection opening
11. Take sludge reading in aerobic chamber & settling chambers
12. Record readings from second primary tank and settling chamber
13. If there is a build up in settling chamber increase return flow slightly & stir base of chamber
14. Turn sludge return tap in pump chamber on slowly for approximately 10 seconds or until return water clears; then close tap
15. Adjust scum return if required and air lines using ball taps
16. Replenish chlorine and note quantity
17. Record chlorine residual & PH readings
18. Adjust chlorine adjustment cap if required to raise or lower residual readings
19. Clean irrigation filter if applicable
20. Engage irrigation pump to inspect irrigation line and inform customer if repairs are required
21. Check land application area for conformity to NSW Health and local council requirements
22. Clean air filter on air blower and ensure blower is operating
23. Secure system lids and cover
24. Complete service form
25. Specify if wrong products are being used. Suggest alternative products to use
26. Leave copy of service report for owner unless run sheet advises otherwise

Low Water Clarity

1. Generally caused by too much or incorrect laundry detergent being used. Also very soapy water indicates too much laundry detergent is being used per wash
2. If water clarity is low and smelling this may be from fabric softeners
3. If water is brown and frothy in aerobic chambers, this is generally caused by antibiotics but after settling chambers, water clarity is generally clear. Nothing can be done to improve this until use of antibiotics is ceased
4. If water is stained in colour a reddish or brown this could be caused by hair dyes and will not necessarily affect the performance of the system. Chlorine residual level may need to be increased
5. Disinfectants and antiseptics may decrease water clarity. This is indicated by dead bacteria scum build up in settling chamber. The scum return will not remove this during normal operation as the scum forms on the outer perimeters first. To remove this use gauze scoop and bucket and return to primary tank. If there is too much scum build up use sludge pump.

This will need to be rectified with the owner as soon as possible. Discuss product usage with owner. If the resident is not at home advise office. These products damage system by lowering bio mass which will increase BOD and SS

System Smelling

1. Odour can be caused by wrong product usage. Check products with owner
2. If system has been unused for a period of time but still running, e.g. occupants on holiday, system may smell if over used on return for first 1 to 2 days of use
3. Blower failure will cause odour at sprinkler head, indicated by alarm. After repairs to blower, odour will dissipate within 12 to 48 hours
4. Irrigation water in pump chamber smelling but not aeration chamber smelling is due to build up of sludge in pump/disinfection chamber. Remove with pump

High Water Levels

1. Check high water alarm float is operational. Use spare float to test

Low Air Pressure in System

1. With no alarm activated can be caused by faulty valves in air blower
2. Replace chamber block kit or pistons in blower if necessary

Low Air Alarm

1. Usually diaphragm broken in air blower or worn piston in Nitto air blower. Replace chamber block kit or piston

High Water Alarm

1. Irrigation blockage
2. Stuck float control
3. Failed pump

Desludge of Septic Chamber

1. Sludge build up is checked at each service
2. When levels rise to between 80cm and 100cm a full desludge of the primary tank is required or as required by governing bodies
3. Sludge build up depends upon the number of people using the system and product usage. Time varies between 3 and 10 years
4. Note on comment section on service form when a full desludge is required

LOCAL COUNCIL AWTS SERVICE REPORT

Owner's Name

Local Council

Installation Address

System Brand & Model

Domestic Commercial

Date of service Date of last service

Next service due

Has the ULTRA CLEAR AWTS been serviced in accordance with the manufacturer's/supplier's requirements and using the service sheet? Yes No

If "No" why?

ULTRA CLEAR AWTS functioning correctly? Yes No

If "No" why?

According to sludge-judge or other methodology is de-sludging needed? Yes No

If "Yes" what action is recommended?

Offensive odours? Yes No

If "Yes" what action is recommended?

Alarms tested and functional? Yes No

If not "functional" what action is recommended?

Final Effluent Quality

Tested? Yes No

Disinfected? Yes No

Chlorine tablets remaining? Yes No

Quality? Satisfactory Unsatisfactory

On what evidence is this judgment made? If "Unsatisfactory" what action was recommended?

Land Application Area

Surface ponding? Yes No

Run off? Yes No

Excess plant growth? Yes No

Effluent leaving premises? Yes No

High risk areas contaminated?* Yes No * Patio, play areas, BBQ, etc

Operating satisfactorily? Yes No

Overall Condition of ULTRA CLEAR AWTS? Excellent Good Fair Poor

Comments / Action Recommended / Repairs Needed / Repairs Performed:

Has the owner / occupier taken recommended actions? Yes No

Service Agent

Contact Details

Signature

Date

MODEL ST8

8 Person Single Tank System

PLUMBER'S INSTALLATION MANUAL

- Excavation of hole to drawing specifications, allowing 50-100mm above ground level as shown. Lid depth 75mm.
- Tank must be installed in hole on level base using minimum 50mm depth of 5-10mm blue metal aggregate or metal dust, with no rocks protruding over surface area.**
- Connect drainage to tank.
- Backfill Tank. Note: Use of mechanical compaction methods may damage tank structure and void warranty.
- Half fill tank with water to prevent lifting of tank.
- It is the plumber's or owner's responsibility to provide all weather access for delivery truck to the excavated hole. **Ensure access is free of power lines and overhanging trees.**
- Location of tank—avoid storm water run off areas.
- When backfilling tank do not use fill containing large rocks, rubble or foreign matter. Any damage to tanks, e.g. large rocks or machinery damage, during backfilling, is the responsibility of the contractor and/or owner.
- Tank must be backfilled to a minimum 200mm from top of lid around the entire tank.**
- Any damage to tanks due to incorrect installation is the responsibility of the contractor and/or owner and is not covered by warranty.
- Additional downward force may be required in areas of high water table.
Note: Professional advice should be sought in areas where a high water table is a concern. Particular care should be taken if installing tanks during wet conditions as this may affect the ground water table.
- It is recommended to pour concrete collar around tank base using approximately 2.4 cubic metres of concrete to prevent lifting of tank in saturated ground.
- Ensure the tank lid (or where risers are utilised) they are fully sealed on the rim of the tank, with epoxy cement. Make sure that there is no rocking or movement when a weight is applied at any point around the circumference of the tank lid.

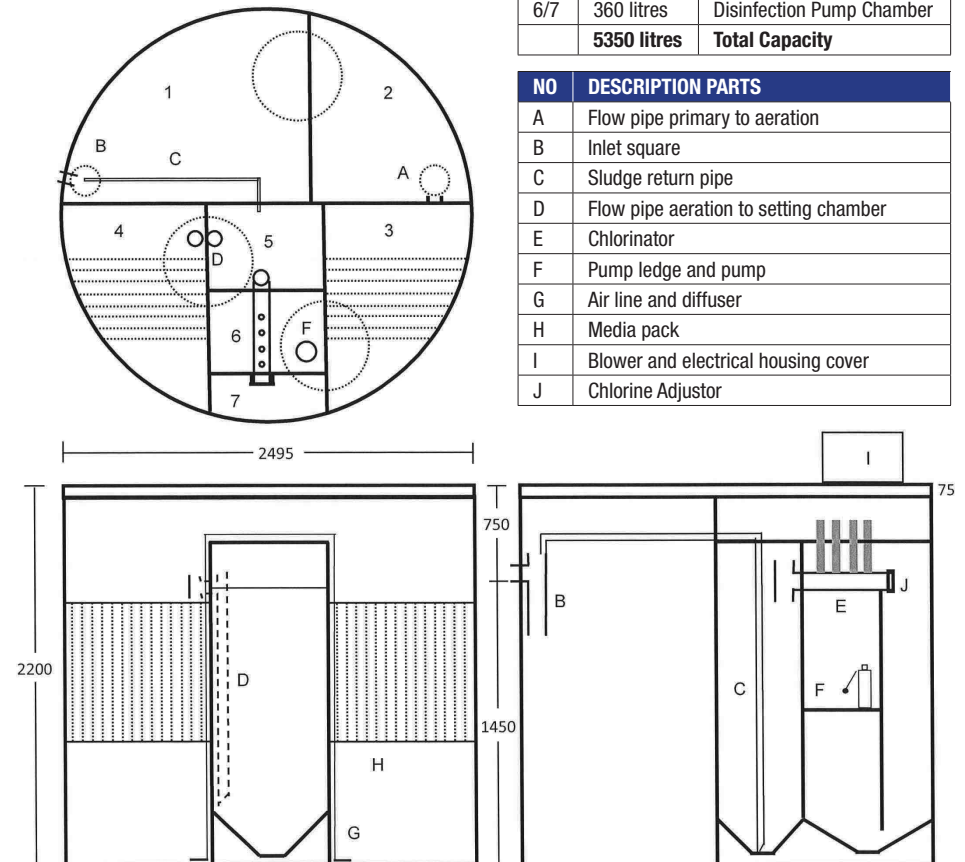
MODEL ST8

8 Person Single Tank System

SPECIFICATIONS

NO	CAPACITY	DESCRIPTION
1	1570 litres	Primary Chamber 1
2	780 litres	Primary Chamber 2
3	1120 litres	Aerobic Chamber 1
4	1120 litres	Aerobic Chamber 2
5	400 litres	Setting Chamber
6/7	360 litres	Disinfection Pump Chamber
	5350 litres	Total Capacity

NO	DESCRIPTION PARTS
A	Flow pipe primary to aeration
B	Inlet square
C	Sludge return pipe
D	Flow pipe aeration to setting chamber
E	Chlorinator
F	Pump ledge and pump
G	Air line and diffuser
H	Media pack
I	Blower and electrical housing cover
J	Chlorine Adjustor



All Septic Tanks & Collection Wells are manufactured to comply with Australian Standards AS/NZS 1546.1:2008.
All internal and sundries supplied by Ultra Clear Wastewater Treatment Systems.

MODEL ST10

10 Person Single Tank System

PLUMBER'S INSTALLATION MANUAL

- Excavation of hole to drawing specifications, allowing 50-100mm above ground level as shown. Lid depth 75mm.
- Tank must be installed in hole on level base using minimum 50mm depth of 5-10mm blue metal aggregate or metal dust, with no rocks protruding over surface area.**
- Connect drainage to tank.
- Backfill Tank. Note: Use of mechanical compaction methods may damage tank structure and void warranty.
- Half fill tank with water to prevent lifting of tank.
- It is the plumber's or owner's responsibility to provide all weather access for delivery truck to the excavated hole. **Ensure access is free of power lines and overhanging trees.**
- Location of tank—avoid storm water run off areas.
- When backfilling tank do not use fill containing large rocks, rubble or foreign matter. Any damage to tanks, e.g. large rocks or machinery damage, during backfilling, is the responsibility of the contractor and/or owner.
- Tank must be backfilled to a minimum 200mm from top of lid around the entire tank.**
- Any damage to tanks due to incorrect installation is the responsibility of the contractor and/or owner and is not covered by warranty.
- Additional downward force may be required in areas of high water table.
Note: Professional advice should be sought in areas where a high water table is a concern. Particular care should be taken if installing tanks during wet conditions as this may affect the ground water table.
- It is recommended to pour concrete collar around tank base using approximately 2 cubic metres of concrete to prevent lifting of tank in saturated ground.
- Ensure the tank lid (or where risers are utilised) they are fully sealed on the rim of the tank, with epoxy cement. Make sure that there is no rocking or movement when a weight is applied at any point around the circumference of the tank lid.

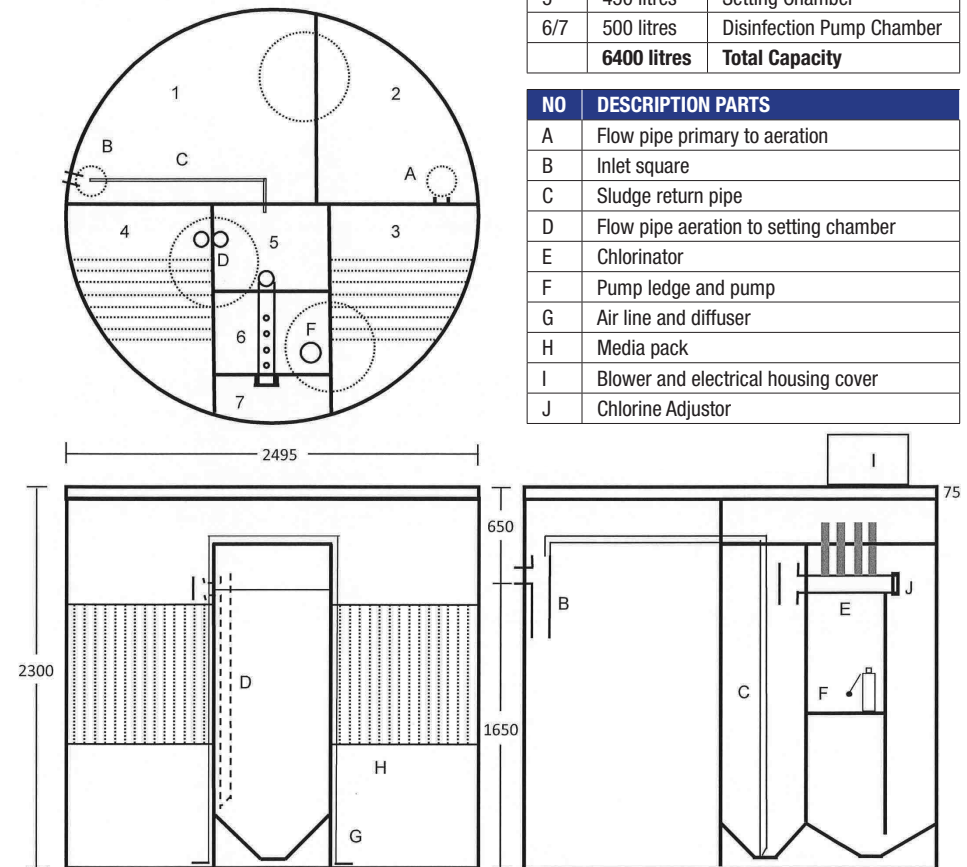
MODEL ST10

10 Person Single Tank System

SPECIFICATIONS

NO	CAPACITY	DESCRIPTION
1	1850 litres	Primary Chamber 1
2	1050 litres	Primary Chamber 2
3	1275 litres	Aerobic Chamber 1
4	1275 litres	Aerobic Chamber 2
5	450 litres	Setting Chamber
6/7	500 litres	Disinfection Pump Chamber
	6400 litres	Total Capacity

NO	DESCRIPTION PARTS
A	Flow pipe primary to aeration
B	Inlet square
C	Sludge return pipe
D	Flow pipe aeration to setting chamber
E	Chlorinator
F	Pump ledge and pump
G	Air line and diffuser
H	Media pack
I	Blower and electrical housing cover
J	Chlorine Adjustor



ST10 tall shown with overall height 2300mm. For ST10 standard refer to equivalent ST8 height dimensions.
All Septic Tanks & Collection Wells are manufactured to comply with Australian Standards AS/NZS 1546.1:2008. All internal and sundries supplied by Ultra Clear Wastewater Treatment Systems.

ULTRA CLEAR ST8 MODEL SPECIFICATIONS

MODEL	ST8 SINGLE TANK 8 PERSON SYSTEM Suitable to deal with WC's and all wastewater on residential premises up to 1,200 litres per day AS 1546.3:2017
COLLECTION WELL	6200 litre capacity reinforced concrete tank manufactured by Civilmart or other suitable manufacturer
SEPTIC CHAMBER	2350 litre total capacity (excluding baffle volume); 1570 litre primary chamber one; 780 litre primary chamber two
TREATMENT CHAMBERS	3000 litre total capacity (excluding baffle volume); 1120 litre aerobic chamber one; 1120 litre aerobic chamber two; 400 litre settling chamber; 360 litre disinfection & pump chamber A greater than 1,000 litre free board in treatment & primary chambers.
BAFFLES	Steel fibre or mesh reinforced concrete baffles Fixed in place with two part mega epoxy Manufactured by Highland Concrete Tanks or other suitable manufacturer Primary chambers — single baffle between primary chambers Treatment chamber — <ul style="list-style-type: none"> • main baffle between primary & treatment to lid • settling & disinfection pump chamber walls extend 310mm above water levels.
LIDS	Tank lid constructed of 75mm thick reinforced concrete 2530mm diameter with 3 x 150mm inspection openings and caps 3 access manholes and lids situated to allow access to all chambers
AEROBIC CHAMBER 1	First treatment chamber using aerobic bacteria, containing one media pack and two air diffusers.
AEROBIC CHAMBER 2	Second treatment chamber using aerobic bacteria, containing one media pack and two air diffusers.
SETTLING CHAMBER	Solids settle to bottom of chamber to be picked up by venturi operated sludge return and returned to primary inlet of septic chamber. Scum skimmer to return floatable matter to aerobic chamber one.
CHLORINATOR	Effluent flows through 100mm sewer pipe at a controlled rate, where the water passes through the chlorine inside the three to four chlorinator tubes, through flow slots, controlled by end cap for disinfection strength. The chlorinator is situated above the water level of the disinfection chamber. Trichloroisocyanuric acid is the disinfectant agent used, with 25 tablets in each tube, to be regulated by service technician.

DISINFECTION CHAMBER	Disinfection chamber allows a retention time of greater than 30 minutes where chlorine destroys any final bacteria not previously removed.
PUMP CHAMBER	Treated effluent is contained until water levels rise and activate irrigation pump for automatic disposal onto irrigation area.
AIR LINES	15mm Class 15 Pressure Pipe PVC connecting lines between air diffusers, situated at four points at bottom of tank, controlled by 15mm ball valve taps
DIFFUSERS	20mm x 150mm nylon micro air diffusers, to diffuse air into aerobic chambers one and two
SLUDGE RETURN	25mm PVC pipe situated in sediment chamber
SCUM RETURN	20mm PVC pipe situated in sediment chamber
MEDIA	2 packs of Bio-Blok 200 Item No. 852200-825 or similar .23 cubic metre with total surface area of 92 square metres, to contain bacteria growth in both aerobic chambers
MEDIA FIXINGS	Stainless steel brackets and pins are fixed at top and bottom of media pack with seal'n'flex or mega epoxy to provide free flow of air diffused water.
BRACKETS	Plastic brackets and non-corrosive steel pins to hold pipe work in place.
FLOAT SWITCH	15mm pipe fixed in pump chamber to activate float switch when water level is high
CONCRETE BOX	Situated on top of tank to house blower and electrical control unit
ELECTRICAL CONTROL UNIT	Electrical control unit is mounted inside cover box. Licensed electrician to connect mains power to electrical control unit.
ALARM PANEL	Mounted in house by licensed electrician in visible location. Provides audible and visible indication of electrical, blower or pump failure. With 24 hour reset muting device.
AIR BLOWER	Nitto MMLA80 or other 80 litre air pump producing a nominal 80 litres air per minute. Located in cover box on top of tank.
IRRIGATION PUMP	Minimum 10 metre head submersible irrigation pump with automatic pump control. 70 to 130 litre variable water flow cycle dependent on flow adjustment. Located in pump chamber.

ULTRA CLEAR ST10 MODEL SPECIFICATIONS

MODEL	ST10 SINGLE TANK 10 PERSON SYSTEM Suitable to deal with WC's and all wastewater on residential premises up to 1,500 litres per day AS 1546.3:2017
COLLECTION WELL	7300 litre capacity reinforced concrete tank manufactured by Civilmart or other suitable manufacturer
SEPTIC CHAMBER	2900 litre total capacity (excluding baffle volume) 1850 litre primary chamber one 1050 litre primary chamber two
TREATMENT CHAMBERS	3500 litre total capacity (excluding baffle volume) 1275 litre aerobic chamber one 1275 litre aerobic chamber two 450 litre settling chamber 500 litre disinfection & pump chamber A greater than 1,000 litre free board in treatment & primary chambers
BAFFLES	Steel fibre or mesh reinforced concrete baffles Fixed in place with two part mega epoxy Manufactured by Highland Concrete Tanks or other suitable manufacturer Primary chambers — single baffle between primary chambers Treatment chambers — <ul style="list-style-type: none"> • main baffle between primary and treatment to lid • settling & disinfection pump chamber walls extend 310mm above water levels
LIDS	Tank lid constructed of 75mm thick reinforced concrete 2530mm diameter with 3 x 150mm inspection openings and caps 3 access manholes and lids situated to allow access to all chambers
AEROBIC CHAMBER 1	First treatment chamber using aerobic bacteria, containing one media pack and two air diffusers.
AEROBIC CHAMBER 2	Second treatment chamber using aerobic bacteria, containing one media pack and two air diffuser.
SETTLING CHAMBER	Solids settle to bottom of chamber to be picked up by venturi operated sludge return and returned to primary inlet of septic chamber. Scum skimmer to return floatable matter to aerobic chamber one.

CHLORINATOR	Effluent flows through 100mm sewer pipe at a controlled rate, where the water passes through the chlorine inside the three to four chlorinator tubes, through flow slots, controlled by end cap for disinfection strength. The chlorinator is situated above the water level of the disinfection chamber. Trichloroisocyanuric acid is the disinfectant agent used, with 25 tablets in each tube, to be regulated by service technician.
DISINFECTION CHAMBER	Disinfection chamber allows a retention time of greater than 30 minutes where chlorine destroys any final bacteria not previously removed
PUMP CHAMBER	Treated effluent is contained until water levels rise and activate irrigation pump for automatic disposal onto irrigation area
AIR LINES	15mm Class 15 Pressure Pipe PVC connecting lines between air diffusers, situated at four points at bottom of tank, controlled by 15mm ball valve taps
DIFFUSERS	20mm x 150mm nylon micro air diffusers, to diffuse air into aerobic chambers one and two
SLUDGE RETURN	25mm PVC pipe situated in sediment chamber
SCUM RETURN	20mm PVC pipe situated in sediment chamber
MEDIA	2 packs of Bio-Blok 200 Item No. 852200-825 or similar .23 cubic metre with total surface area of 92 square metres, to contain bacteria growth in both aerobic chambers
MEDIA FIXINGS	Stainless steel brackets and pins are fixed at top and bottom of media pack with seal'n'flex or mega epoxy to provide free flow of air diffused water
BRACKETS	Plastic brackets and non-corrosive steel pins to hold pipe work in place
FLOAT SWITCH	15mm pipe fixed in pump chamber to activate float switch when water level is high
CONCRETE BOX	Situated on top of tank to house blower and electrical control unit
ELECTRICAL CONTROL UNIT	Electrical control unit is mounted inside cover box. Licensed electrician to connect mains power to electrical control unit
ALARM PANEL	Mounted in house by licensed electrician in visible location. Provides audible and visible indication of electrical, blower or pump failure. With 24 hour reset muting device.
AIR BLOWER	Nitto MMLA80 or other 80 litre air pump producing a nominal 80 litres air per minute. Located in cover box on top of tank.
IRRIGATION PUMP	Minimum 10 metre head submersible irrigation pump with automatic pump control. 70 to 130 litre variable water flow cycle dependent on flow adjustment. Located in pump chamber.

PUMP OUT INFORMATION SHEET

Desludging Requirements

Ultra Clear Wastewater Treatment Systems service technicians check sludge accumulation levels at each service. This is noted on your service report at Septic Sludge at Outlet, in centimetres. You will be advised on the Comments section of your service form when a full desludge of primary chamber is required. Sludge build up depends upon the number of persons in the household and upon product usage. Time varies between 3 to 8 years. The owner is responsible for the full pump out cost, to be carried out by an approved contractor.

A pump out of the septic tank/chamber is required when there is a build up of sludge over 50% capacity of the tank/chamber. When the sludge reading is at 80 cm a pump out is required, in accordance with NSW Health regulations.

We recommend pump out to be carried out within 6 to 12 months of notification to prevent cross over of sludge to the treatment chambers.

Ultra Clear does not provide full pump out services.

After pump out – half fill tank with approximately 4,000 litre of water.

Contact your local Council for contractors or search online 'Septic Tank Cleaning Services'.

Septic Tank Cleaning Services



MAINTENANCE FACT SHEET

1. Responsibilities and Legal Requirements (for customer — general information only)

In the interest of the owner and the public, certain requirements are imposed by Councils with regard to the installation of sewage treatment systems.

The following information is provided as a guide only. (Please refer to the conditions of approval given to you by your local council.

- a. The owner of the plant is entirely responsible for the operation and maintenance of the system.
- b. The existence of the service contract does not transfer the responsibility from the owner to the supplier or its agent.
- c. No fruit or salad vegetables growing on the property shall be irrigated with effluent from the system.
- d. There shall be no irrigated water run-off from the allotment to the adjoining properties, public places or reserves.
- e. The owner shall enter into a service contract with the manufacturer, distributor or their agents or any firm or contractor considered to be competent by the local council for servicing of the systems quarterly intervals (during warranty period to be Ultra Clear approved to maintain warranty).
- f. The yard or garden areas of the allotment are turfed and/or landscaped to the satisfaction of council, for irrigation purposes.

Detailed conditions of installation are stated on the approvals given by your council. Please read them carefully and ask for advice should it be necessary.

2. Warranty Policy

The proper operation of the Ultra Clear system depends upon the hydraulic and organic loadings the system was designed for and the life of the micro-organisms inside the system.

Ultra Clear or its associated agents and service providers are NOT responsible for the in-field operation of a system other than the engineering, mechanical and structural workings of the system itself.

Incorrect use and overloading of the system can only be remedied by the user of the system.

All Ultra Clear systems include appropriate warranties provided by suppliers of equipment. Equipment is warranted against defective materials and workmanship under normal use and service for periods specified.

The warranty is limited to the repair or replacement of any item that proves to be defective during the warranty period.

Repair charges will apply if the equipment has been disassembled by unauthorized persons, subjected to external damage, improperly wired or flooded.

3. Your Co-Operation Please – General Topics

a. Access

For maintenance purposes, please ensure that trouble free access is available to the system, including to all manholes on lid and to the control box. Tank surface must not be covered by any materials including soil, plants, bark, etc. at any time. This is a requirement of the regulating bodies. Overhanging branches from trees, shrubs, etc. must be kept trimmed to allow free access.

b. Water Damage & Infiltration

All ground water to be channeled away from tanks, to prevent damage to electrical equipment.

c. Plumbing Problems

Blockages in the drainage lines from the dwelling to the system is a plumbing problem. If your household fittings are not draining away, please check the inlet to the system for blockages. Usually the lines can be cleared at the INLET point by inserting a rod down the inlet pipe. Should this not be possible, please call your local plumber or drainer. Odour in bathrooms can occur from floor waste evaporating dry. Pour water down floor waste to refill floor trap.

d. Change of Ownership

To enable servicing to continue the system, please advise your service provider when you sell your property.

e. Pump Outs

The gradual accumulation of non-biodegradable materials in the system will necessitate a de-sludge depending on individual usage. Frequency depends upon product & volume usage. Your service provider will advise on the service report when a pump out is required. By regulation, pump outs can only be carried out by council approved contractors. The owner is responsible for this cost.

f. Repairs/Spare Parts

Repairs to system are to be carried out by your approved service technician.

ULTRA CLEAR

Customer Service Centre

Manufactured by Civilmart Mittagong

(02) 4871 2156 | hlt.sales@civilmart.com.au

civilmart.com.au



CIVILMART

Ultra Clear

Wastewater Treatment Systems