



Chromagen Australia
Scope of Installation Works (Hot Water)

Effective: 1st Oct 2020

Section A. Pumped Split Systems
(Ground Mounted Tank / Roof mounted Collector)

Scope of works for Solar Hot water Installation:

All installation components must be in accordance with AS3500, AS3100, AS3498, AS2712, AS1170.2 complying with all legislated Federal, State and local Government requirements.

IMPORTANT NOTES:

- **Safe and clear access is required for all works.**
- **Fall protection is the responsibility of the customer.**
The below is required for each according installation:



Single Storey
Pitched Roof (up to 25°C)
Guard Rail Protection Required



Double Storey
Pitched Roof (up to 25°C)
Platform Edge Protection Required



Double and Three Storey
Flat Roof
Roof Access Hatch Required

- **For solar hot water installs, stage 1 must be completed after the roof cladding has been installed and prior to any internal plastering/cladding is installed. This is to allow access through the frame for copper runs and sensor cabling.**
- **Additional site visits due to access restriction and / or site not being ready will incur rebooking fees**

WARNING: Not all roof types/materials are suitable for Solar Hot Water installations. Systems cannot be installed on slate or sites where asbestos may be present and disturbed.

Stage 1 of 2 – Pumped (Split) Systems (Collector Fit off / Copper runs)

1. Fit off (Plonk on) definition of works provided (A0095 – Flat plate / A1095 – Evac Tubes)

- a. Installation of collector(s) on the roof of the premises as per manufacturer's instructions;
- b. **Applicable to VIC & NSW only:** Penetration of pipe work (hot and cold pipes) through the roof using a minimum of 1m of copper per penetration (1m from Collector connection to end of tail) with appropriate sealing methods to ensure water tight seal;
- c. **Applicable to VIC & NSW only:** Insulation of all pipes in accordance with requirements of Australian Standards – currently AS/NZ 3500.4;
- d. Installation of hot sensor to upper corner of solar collector and penetration of roof for hot sensor lead using appropriate sealing methods to ensure water tight seal;
- e. Leave sensor lead bundled and taped to copper tail in roof space for later fit off (by others);
- f. In frost prone areas (if supplied as part of installation), install frost valve;
- g. Check sealing of all roof penetrations;
- h. Check all connections; and test;
- i. Remove all rubbish from install from site.

Builder requirement:

- Completed roof surface cladding
- Provision of suitable fall protection safety equipment

2. Collector Flow and Returns definition of works provided (A0006 - Flat Plate 18m / A0024 Flat Plate – 28m / A0106 - Evac Tubes 18m)

- a. As per plonk on definition plus
 - b. Installation of all pipes in accordance with requirements of Australian Standards – currently AS/NZ 3500.4;
 - c. Collector sensor lead run to wall penetration point at tank location, care taken to ensure sensor lead does not come into direct contact with flow or return lines and is out of harm's way;
 - d. Insulation of copper flow and return lines run and suitably clipped from Collector to wall penetration point at tank location as per standards in force, currently AS3500. Maximum included distance is 9m (A0006 & A0106) and 14m (A0006) each way (18m or 28m combined flow & return) additional distance will be charged separately as per schedule;
 - e. Copper tail of 200mm out from frame to allow for connection to tank after brickwork is completed;
 - f. Collector sensor lead coiled and taped to tail ready for connection to controller at stage 2;

Builder requirement:

- Completion of framework prior to internal cladding

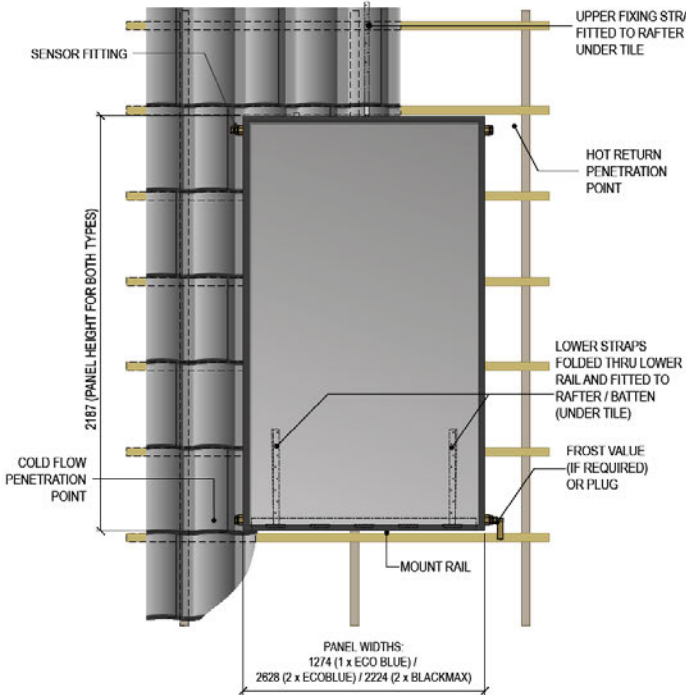
3. Collector installation only (A0002)

- a. Installation of collector(s) on the roof of the premises as per manufacturer's instructions; and
- b. Sensor cable and extension joined and run to tank location;
- c. Remove all rubbish from install from site.

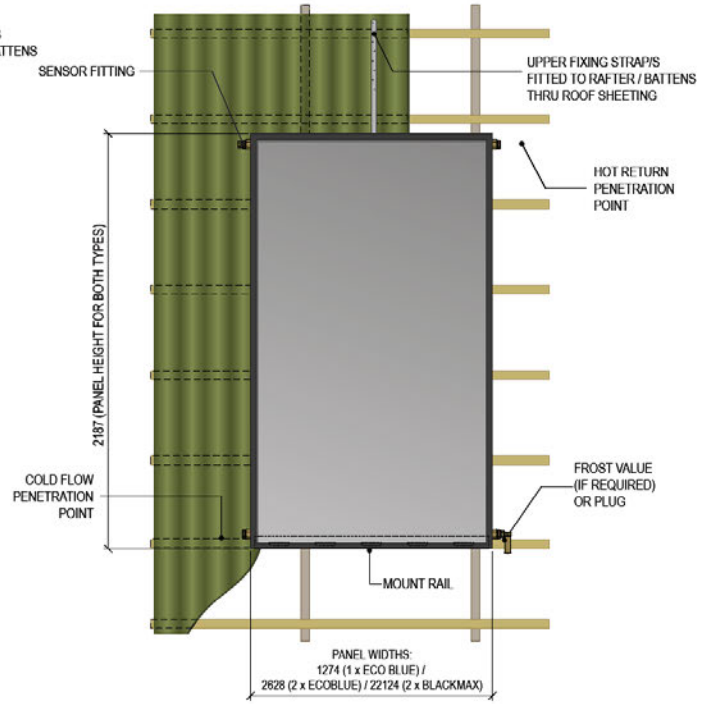
Builder requirement:

- Completed roof surface cladding
- Provision of suitable fall protection safety equipment

Flat Plate Installation Diagram

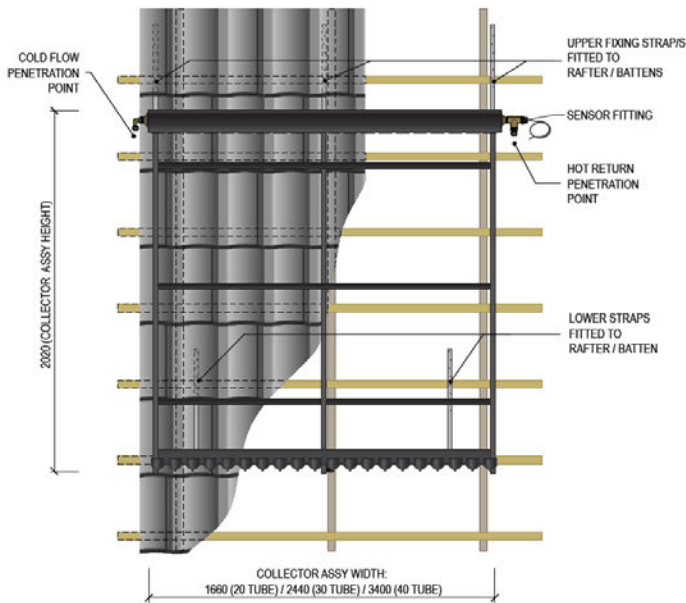


Collector Mounting - Tiled Roof

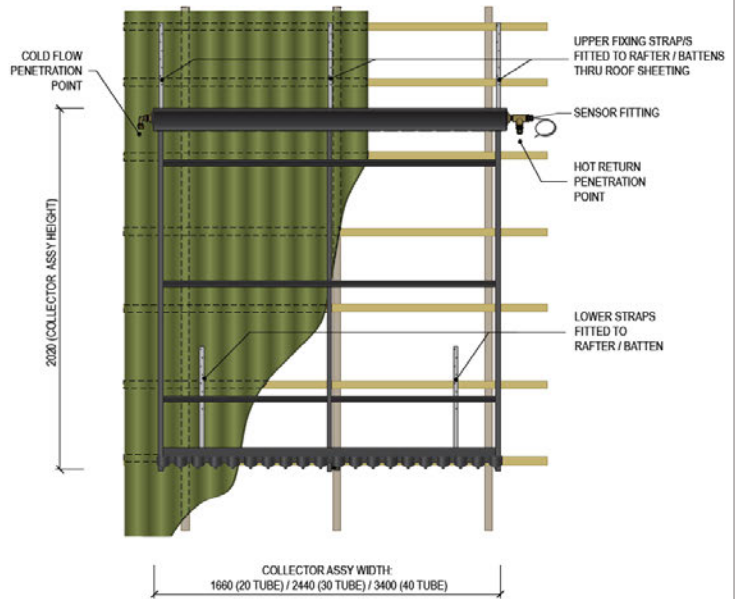


Collector Mounting - Tin/Metal Roof

Evacuated Tube Installation Diagram



Collector Mounting - Tiled Roof



Collector Mounting - Tin/Metal Roof

Stage 2 of 2 – Pumped (Split) Systems (Fit off of tank)

1. Installation of tank with gas boost (Stage 2 gas) (A0064)

- a. Installation of tank on approved tank base (supplied by customer or purchased through Chromagen);
 - b. Connection of cold-water inlet with approved duo (isolation and non-return) valve;
 - c. Installation of cold expansion valve (Where required as supplied by customer or purchased through Chromagen);
 - d. Installation of pump station kit (may already be attached to tank in some systems);
 - e. Installation of non-return valve between cold water inlet to tank and cold-water feed to tempering valve;
 - f. Connection of flow line to of pump station assembly;
 - g. Connection of return line to centre socket of tank;
 - h. Connection between tank hot outlet and gas booster inlet connection;
 - i. Connection between booster hot outlet and tempering valve (supplied by customer or purchased through Chromagen);
 - j. Connection of single tempering valve (only if purchased through Chromagen) otherwise connection to cold and house to be done by others;
 - k. Connection of gas supply to gas booster and test for leaks with soapy water and manometer;
 - l. Bleed all air from system using internal hot water tap (or at tempering valve outlet if unable to get access);
 - m. Plug in solar controller to external waterproof double GPO supplied by builder and energise controller/pump;
 - n. Check controller for indications of operation (i.e. no warning lights, only green pump light on);
 - o. Check controller after 5 minutes to ensure pump turns off correctly;
 - p. Close all hot water taps and plug gas booster into external waterproof double GPO to energise;
 - q. Turn on hot water tap (or open tempering valve outlet if unable to get access) to test for gas booster ignition;
 - r. Run hot water for 2 minutes to ensure system is operating correctly and flush pipes;
 - s. Check filters in gas booster and tempering valve to remove and debris that may have been in pipes;
 - t. Run hot water again to ensure system is operating correctly;
 - u. Set tempering valve to 50 degrees as required (internal access required to complete);
 - v. Completion and submission of all required documentation to meet Local, State and Federal government requirements; and
 - w. Remove all rubbish from install from site.

Builder requirement:

- Provision of suitable mounting base (where not purchased through Chromagen)
- Provision of cold expansion valve (where applicable and not purchased through Chromagen)
- Tempering valve (where not purchased through Chromagen)
- Provision of Double 10amp 240V power GPO as per the rough in specification
- Provision of suitable discharge point for PTR drainage
- Provision of 20mm gas line within 1 metre of the hot water system location (Gas boost systems only)

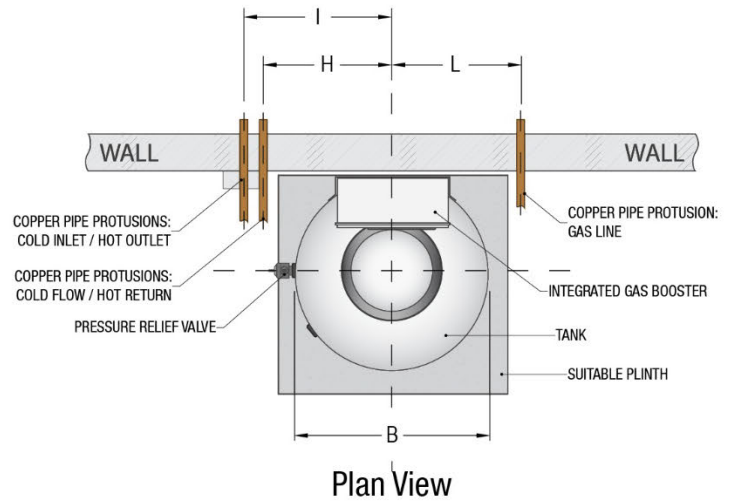
2. Installation of tank with electric boost (Stage 2 electric) (A4064)

- a. Installation of tank on approved tank base (supplied by customer or purchased through Chromagen);
 - b. Connection of cold-water inlet with approved duo (isolation and non-return) valve;
 - c. Installation of cold expansion valve (Where required as supplied by customer or purchased through Chromagen);
 - d. Installation of pump station kit (may already be attached to tank in some systems);
 - e. Installation of non-return valve between cold water inlet to tank and cold-water feed to tempering valve;
 - f. Connection of flow line to of pump station assembly;
 - g. Connection of return line to centre socket of tank;
 - h. Connection between tank hot outlet and tempering valve (supplied by customer or purchased through Chromagen);
 - i. Connection of single tempering valve (only if purchased through Chromagen) otherwise connection to cold and house to be done by others;
 - j. Connection of electrical supply to thermostat in accordance with AS3100 (performed by builders' electrician, do not energise until step 'o');
 - k. Bleed all air from system using internal hot water tap (or at tempering valve outlet if unable to get access);
 - l. Plug in solar controller to external waterproof GPO supplied by builder and energise controller/pump;
 - m. Check controller for indications of operation (i.e. no warning lights, only green pump light on);
 - n. Check controller after 5 minutes to ensure pump turns off correctly;
 - o. Close all hot water taps and energise thermostat;
 - p. Calibrate thermostat to match water temperature and set for 60 degrees once done;
 - q. Run hot water for 2 minutes to flush pipes;
 - r. Check filters in tempering valve to remove and debris that may have been in pipes;
 - s. Run hot water again to ensure system is operating correctly;
 - t. Set tempering valve to 50 degrees as required;
 - u. Completion and submission of all required documentation to meet Local, State and Federal government requirements; and
 - v. Remove all rubbish from install from site.

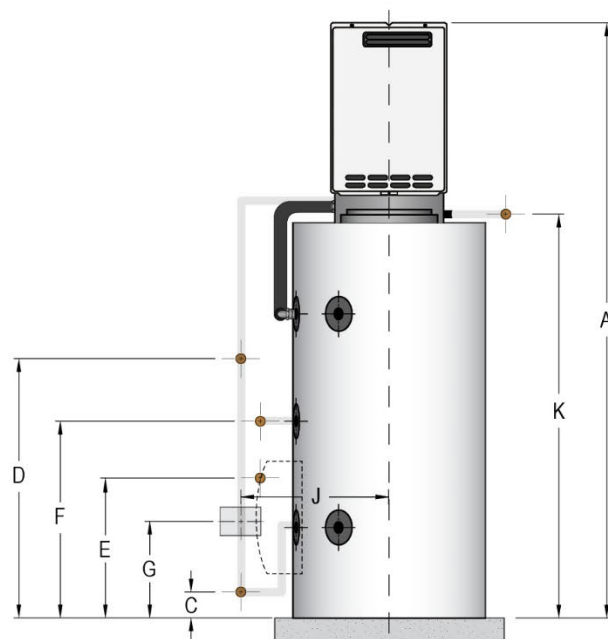
Builder requirement:

- Provision of suitable mounting base (where not purchased through Chromagen)
- Provision of cold expansion valve (where applicable and not purchased through Chromagen)
- Tempering valve (where not purchased through Chromagen)
- Provision of Double 10amp 240V power GPO as per the rough in specification
- Provision of suitable discharge point for PTR drainage
- Provision of 20 amp dedicated electrical circuit to the hot water system location (electric boost systems only)

System Rough In Diagram 150L / 200L (Integrated Gas)



Plan View



Front Elevation

SPECIAL NOTES

- All plumbing connections must be done by a licensed plumber and in accordance with local authority regulations.
- Under no circumstances can plastic pipe be used for higher temperature solar water heater plumbing
- The cold water inlet, cold flow and hot return lines require an approved isolating non-return valve.
- In some locations, regulations require a pressure relief valve be fitted to the cold water supply.
- Pressure relief value must be plumbed to appropriate waste drain
- All hot water pipes must be insulated

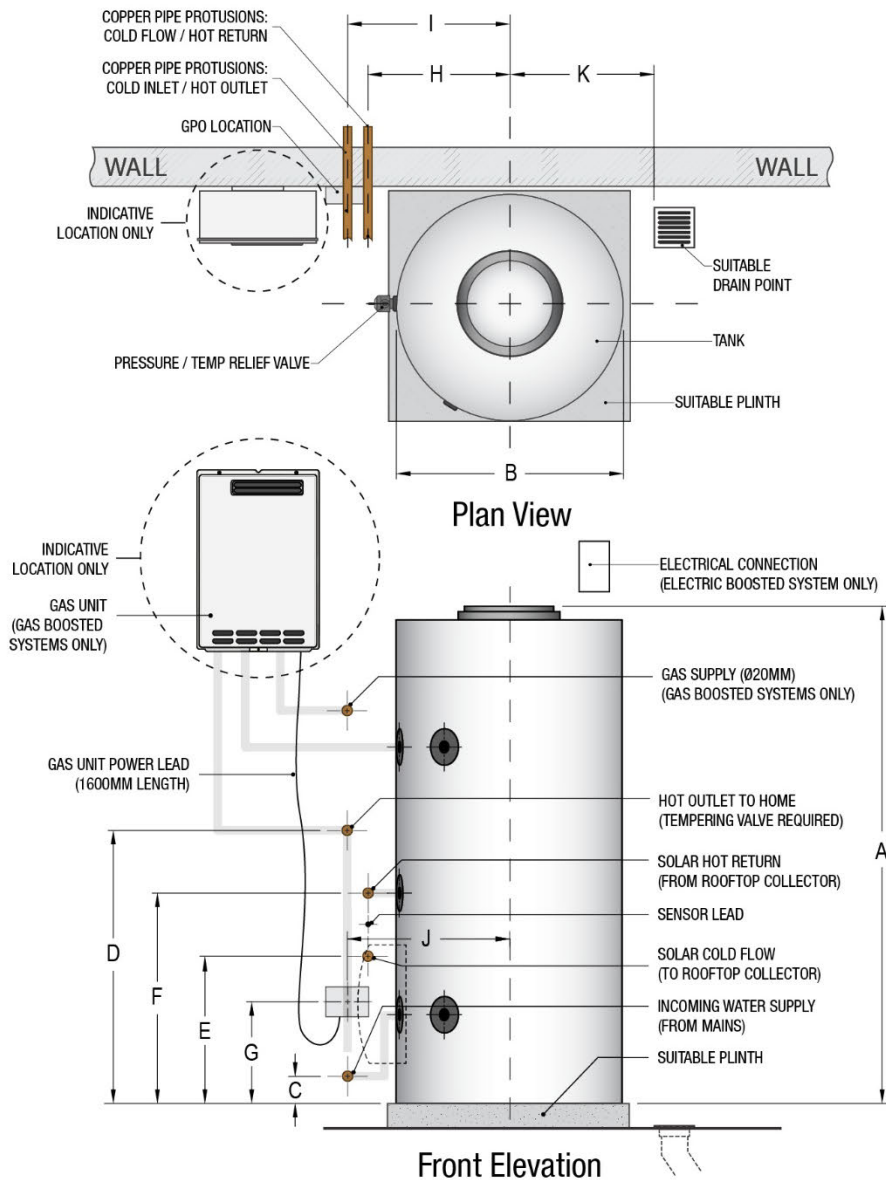
Specifications

		150L	200L
A	Overall system height	1675mm	1870mm
B	Tank diameter	585mm	585mm
C	15mm cold water inlet wall penetration (from base of tank)	80mm	80mm
D	15mm hot water outlet wall penetration (from base of tank)	638mm	770mm
E	15mm collector cold flow wall penetration (from base of tank)	472mm	455mm
F	15mm collector hot return line wall penetration (from base of tank)	578mm	611mm
G	GPO position (from base of tank)	300mm	300mm
H	Collector cold flow / collector hot return wall penetrations (left of tank centreline)	400mm	400mm
I	Cold water inlet / hot water outlet wall penetrations (left of tank centreline)	460mm	460mm
J	GPO position (left of tank centreline)	460mm	460mm
K	20mm gas line wall penetration (from base of tank)	1058mm	1255mm
L	20mm gas line wall penetration (right of tank centreline)	420mm	400mm
Weight	System Weight (Empty)	80kg	95kg

Note: Vertical measurements taken from base of tank. Extra allowance may be required to accommodate plinth height.

System Rough In Diagram

150L / 200L / 300L (Gas / Electric)



SPECIAL NOTES

- All plumbing connections must be done by a licensed plumber and in accordance with local authority regulations.
- Under no circumstances can plastic pipe be used for higher temperature solar water heater plumbing
- The cold water inlet, cold flow and hot return lines require an approved isolating non-return valve.
- In some locations, regulations require a pressure relief valve be fitted to the cold water supply.
- Pressure relief valve must be plumbed to appropriate waste drain
- All hot water pipes must be insulated

Specifications		150L	200L	300L
A	Overall tank height	1043mm	1241mm	1434mm
B	Tank diameter	585mm	585mm	651mm
C	15mm cold water inlet pipe protusion	80mm	80mm	80mm
D	15mm hot water outlet pipe protusion	638mm	770mm	805mm
E	15mm collector cold flow pipe protusion	472mm	455mm	435mm
F	15mm collector hot return line pipe protusion	578mm	611mm	620mm
G	GPO position	300mm	300mm	300mm
H	Collector cold flow / collector hot return wall penetrations (left of tank centreline)	400mm	400mm	420mm
I	Cold water inlet / hot water outlet wall penetrations (left of tank centreline)	460mm	460mm	480mm
J	GPO position (left of tank centreline)	460mm	460mm	480mm
K	Minimum distance for drainage point (right of tank centreline)	420mm	420mm	420mm
Weight	Kilograms (empty)	50kg	65kg	91kg

Note: Vertical measurements taken from base of tank. Extra allowance may be required to accommodate plinth height.

A note regarding Service and Maintenance

As per building and gas regulations any installation of a hot water system (particularly those with a gas component) must be suitably accessible for ongoing service and maintenance.

As such it is important that a suitable means of access is available at all times for trained professionals to gain access to allow servicing.



Permanent Ladder
(Commercial Application)



Internal Roof Access Hatch
(Residential Application)

Images for example only