Stainless Metal Craft (Aust) Pty Ltd Product Appraisal Report TWA 1001



Stainless Steel Boat Shaped Passive Grease Arrestor

GT-1 - 1000L

GT-1.5 - 1500L

GT-2 - 2000L

GT-3 - 3000L

GT-4 - 4000L

GT-5 - 5000L

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Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak body of the Australian urban water industry. Its 30 members and 31 associate members provide water and wastewater services to approximately 16 million Australians and to many of our largest industrial and commercial enterprises. WSAA membership also includes two members and one associate member from New Zealand.

Urban water service providers have a critical role in ensuring that Australians have access to adequate and high quality water services. As Australia's population continues to grow, with most of this growth occurring in cities, that role becomes increasingly important.

WSAA's vision is for Australian urban water utilities to be valued as leaders in the innovative, sustainable and cost effective delivery of water services. WSAA strives to achieve this vision by promoting knowledge sharing, networking and cooperation amongst members. WSAA identifies emerging issues and develops industry-wide responses. WSAA is the national voice of the urban water industry, speaking to government, the broader water sector and the Australian community.

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1. Executive Summary

Stainless Metal Craft (Aust) Pty Ltd was originally formed in 1962 as Stain-Craft Pty ltd and has delivered projects worth over \$450 Million since that time.

The scope of this appraisal covers passive grease arrestors manufactured from Stainless Steel manufactured to comply with AS/NZS 1554.6:1994 Model Numbers GT-1, GT-1.5, GT-2, Gt-3, Gt-4 and Gt-5. The passive grease arrestors have a capacity of 1000L to 5000L and are designed for above ground applications.

The WSAA product appraisal network accepts system (ISO 9001) and product certification by a Certification Body at the manufacturing site of strategic products to appropriate Australian or internationally recognised standards. The Certification Body shall have relevant accreditation by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) or by an equivalent international accreditation system recognised by JAS-ANZ.

The manufacturer Stainless Metal Craft (Aust) Pty Ltd is ISO9001:2008 certified by NCS International Certification License 14444-02 expiring on the 30th April 2010.

It is a requirement that an effluent retention test be conducted on a Passive Grease Arrestor in the prescribed product range within 2 years of the publication of this report. The report is to be updated as the information is received and reviewed by the WSAA Member Network.

It is recommended that WSAA Members and Associates, subject to any specific requirements of the Member or Associate, accept or authorise the Stainless Metal Craft (Aust) Pty Ltd product range as detailed in this report for use in sewer networks provided design, installation, acceptance testing and commissioning are in accordance with relevant WSAA Codes, WSAA Member Integrated Codes, and the manufacturer's requirements.

2. Company Overview

Stainless Metal Craft (Aust) Pty Ltd was originally formed in 1962 as Stain-Craft Pty ltd and has delivered projects worth over \$450 Million since that time. Currently employing 52 staff the manufacturing facility is located in a 3200 sqm factory in Emu Plains NSW. The company is ISO9001:2008 certified.

3. Scope of this Appraisal

The scope of this appraisal covers passive grease arrestors manufactured from Stainless Steel manufactured to comply with AS/NZS 1554.6:1994 Model Numbers GT-1, GT-1.5, GT-2, Gt-3, Gt-4 and Gt-5. The passive grease arrestors have a capacity of 1000L to 5000L and are designed for above ground applications.

The product design is of Boat Shape.

An overview of the product range is described in the following table:

	GT-1	GT-1.5	GT-2	GT-3	GT-4	GT-5
Material of Construction	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Placement	Above Ground	Above Ground	Above Ground	Above Ground	Above Ground	Above Ground
Dry Weight	245Kg	295Kg	335Kg	410Kg	490Kg	560Kg
Number of Side Wall Ribs	N/A	N/A	N/A	N/A	N/A	N/A
External Dimensions						
Length mm	1752	1852	2152	2652	3152	3687
Width mm	1126	1356	1356	1406	1640	1640
Depth mm (Shallow)	1043	1193	1243	1393	1299	1369
Depth mm (Deep)	1443	1593	1743	1843	1649	1689
Internal Dimensions						
Length mm	1600	1700	2000	2500	3000	3535
Width mm	974	1204	1204	1254	1488	1488
Depth mm (Shallow)	1039	1189	1239	1389	1295	1365
Depth mm (Deep)	1439	1589	1739	1839	1645	1685
Colour	Natural	Natural	Natural	Natural	Natural	Natural

4. Appraisal Criteria

This Appraisal Report has been compared against the requirements of the WSAA Specification WSA PS – 800 Passive Grease Arrestors.

5. Quality Assurance Requirements

The WSAA product appraisal network accepts system (ISO 9001) and product certification by a Certification Body at the manufacturing site of strategic products to appropriate Australian or internationally recognised standards. The Certification Body shall have relevant accreditation by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) or by an equivalent international accreditation system recognised by JAS-ANZ.

The manufacturer Stainless Metal Craft (Aust) Pty Ltd is ISO9001:2008 certified by NCS International Certification License 14444-02 expiring on the 30th April 2010.

6. Compliance to the Appraisal Criteria

6.1. Materials of Construction

Fully welded Stainless Steel construction to comply with AS/NZS 1554.6: 1994 on a full Stainless Steel frame.

Lids or Access Covers with lock down device are constructed from Stainless Steel and are designed for above ground application only. (gasket seal under lids is durofoam) Platforms, Stairs and Handrail are of fully welded stainless steel construction to comply to AS 1657-1992.

6.2. Access Covers and Lids

Lids are constructed from 2 mm Thick Stainless Steel and are designed for above ground application only. Each lid has a clear opening of 450×600 mm in size. There are three lids on the 1000, 1500, 2000, 3000 Litre Models (Double Lids are situated at the deep end of the boat shaped arrestor for access for cleaning) There are four lids on the 4000 and 5000 Litre Models.

Each lid weighs 14 kg, which is shown on a laser etched plate welded to each lid. For servicing the lids are opened by releasing the hand tightened lock down device and should be completely removed for ease of cleaning. When cleaning has been completed, put lid back in place and tighten lock down device.

6.3. Internal Surface Coating

No internal coatings are required for this range of products

6.4. Venting

All of models of Stainless Steel above ground Grease Arrestors, which have gas tight sealed lids have a 100mm vent connection, which is located 190mm (to the centre line) above the water level on each model. In some instances, where Grease Arrestors are supplied with lids that are not sealed, and are located in a mechanically vented plant room, they are supplied without a vent connection welded to the arrestor.

7. Performance Requirements

7.1. Effluent Retention Test

The effluent retention test as required by WSA PS800 had not been completed at the report date. This test has been referred as a Future Works item (Part 16)

8. Applicability

The Stainless Metal Craft range of products are used as waste water pre-treatment devices. The products are fitted to commercial sink outlets, dishwashers, floor drains, etc to allow the separation of Fats Oils and Grease from culinary effluent produced by commercial operations.

The product range appraised by this report are suitable for use in the following applications:

Bakery BBQ/Charcoal Chicken shop Fish Shop

Butcher Fresh Chicken Shop Hospital Kitchen Café Caterers Restaurant

Canteen Delicatessen
Coffee Shop Fast food outlet

9. Specifications and Drawings

The product specifications and drawings are included in Appendix A.

10. Installation Requirements

10.1. General

The Stainless Steel above ground Grease Arrestor should, as a minimum, be placed level on a reinforced concrete slab as attached structural details.

Feet should be fixed by Hilti Brand HVU Chemical Anchor with a Stainless Steel HAS-R Rod assembly or similar.

Where practical, the Grease Trap should be installed in an area where there is good access for cleaning. There should be enough roof space for removal of quick release lids for cleaning and also for a measuring device (to measure grease, oil and solids layers). The roof space above the Grease Trap should be a minimum of the depth at the deep end of the trap for the access. There should also be a minimum of two meters clear work area space at the Inlet and Outlet end of the Trap to allow for connections and servicing.

A hose cock must be installed within five metres of the Grease Trap and a backflow prevention device must be fitted on the inlet side of the hose cock. The grease trap is supplied with 101.6 mm Diameter Spigot for the Inlet, Outlet and Vent Connections (Except for the 5000 Litre Model which has a 152.4 mm Diameter Inlet and Outlet) The Spigot connections should be connected to the drainage pipes and vent pipes with Plumbquick , Crevet or similar approved connectors. Alternatively if the Grease Trap is supplied with Stainless Steel Table E Flanges , then appropriate matching Flanges should be used on all connection points and bolted together with Stainless Steel Bolts.

The inlet end connection is at the shallow end of the tank and is branched into 2 entry points, in case of any surge in waste discharge. The discharge will hit the baffle and the solids will settle to the bottom of the tank. Grease will float to the top after it has cooled .

The Outlet Pipe should be connected to a discharge pipe which is at 90 Degrees to the arrestor wall as shown on our Drawings. There is a Water Level indicator plate weld fixed on the Outlet end of Trap to indicate the water level of the Grease Trap. The licenced plumber must ensure the Outlet pipe invert level is connected to the indicated water level height.

The Ventilation Pipe must be connected and shall extend upwards as a vertical vent to open air above roof level - refer to AS/NZS 3500.

Stairs and Platform

Using an appropriate method align cleats on platform with cleats on grease trap and bolt together with stainless steel bolts supplied.

11. Product Maintenance

Regular cleaning will help reduce odours and prolong the life of the arrestor. Lack of maintenance will cause the arrestor to become inefficient due to the grease accumulating on the surface and will eventually lead to blockages in the sanitary drainage and sewerage system, water utilities will determine the frequency of cleaning by measuring the thickness of grease and sludge with a sludge judge,

Do not clean the arrestor yourself - the Arrestor must be cleaned by a approved EPA licensed liquid waste transporter,

The grease trap should be completely pumped out and the inside walls scraped and hosed down properly during the cleaning operation,

Other items of regular maintenance should include:

Check to ensure that all drainage and trap vents are in good repair

Check the lids are in good order and seal properly, The lids are fitted with a Durafoam Gasket which must be replaced every two years or as necessary, This Gasket is Tesa Durafoam 60009GY and is available from Blackwoods Ltd,

Never add any cleaning agents or substances which may effect the contents of the arrestor causing undue corrosion,

Nothing should be added to the Grease Trap that would compromise sewer integrity.

12. Identification

Compliance plates are Laser Etched and are constructed from 2 mm Stainless Steel and are weld fixed on top cover on platform side,

Sample Compliance Plate is shown below



13. Warranty/Life Expectancy

The above ground Stainless Steel Grease Arrestor Trap, including Stainless Steel Frame, is covered for a Warranty period of five years, The only component not covered by this warranty is the Durafoam Gasket which is underneath the removable lids - this should be replaced every two years or as necessary.

14. Outcomes of WSAA Network Review

14.1. Are internal coatings required for any of the product range?

Answer - Coatings are not required.

14.2. Please provide a statement regarding venting of the product range.

Answer – Statement has incorporated in the report.

15. WSAA Member and Field Reports

At the time of publication a WSAA member field report was not available and this item has been referred as a future works and referenced in part 16 Future Works.

16. Future Works

16.1. It is a requirement that an effluent retention test be conducted on a Passive Grease Arrestor in the prescribed product range within 2 years of the publication of this report. The report is to be updated as the information is received and reviewed by the WSAA Member Network.

17. Discussion

Examination of all of the submitted documented material provides an expectation that the products described here in sourced and distributed by Stainless Metal Craft (Aust) Pty Ltd are 'fit for purpose' in the applications described in this report subject to future works items.

18. Report Recommendation

It is recommended that WSAA Members and Associates, subject to any specific requirements of the Member or Associate, accept or authorise the Stainless Metal Craft (Aust) Pty Ltd product range as detailed in this report for use in sewer networks provided design, installation, acceptance testing and commissioning are in accordance with relevant WSAA Codes, WSAA Member Integrated Codes, and the manufacturer's requirements.

19. Disclaimer

This Appraisal Report is issued by the Water Services Association of Australia Ld. on the understanding that :

- a) This appraisal applies to the product(s) as submitted. Any changes to the product(s) either minor or major shall void this appraisal.
- b) To maintain the recommendations of this appraisal any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the appraisal report and appropriate action. Appraisals and their recommendations will be the subject of continuous review dependent upon the satisfactory performance of products.
- c) WSAA reserves the right to undertake random audits of product manufacture and installation. Where products fail to maintain appraised performance requirements the appraisal and its recommendations may be modified and reissued. Appraisal reports will be reviewed and reissued at regular intervals not exceeding five (5) years.
- d) The following information explains a number of very important limits on your ability to rely on the information in this Product Appraisal Report. Please read it carefully and take it into account when considering the contents of this Product Appraisal Report
- e) Any inquiries regarding this report should be directed to the Appraisal Project Manager, Grant Leslie, Phone: 02 9221 5966 E-mail grant.leslie@wsaa.asn.au

19.1. <u>Issue of Report</u>

This Product Appraisal Report (Report) has been published and/or prepared by the Water Services Association of Australia, Inc and nominated Project Manager and peer group of technical specialists (the Publishers).

The Report has been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Report (the Recipients).

By accepting this Report, the Recipient acknowledges and represents to the Publisher[s] and each person involved in the preparation of the Report that the Recipient has understood and accepted the terms of this Disclaimer.

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Recipients should also independently verify and assess the appropriateness of any recommendation in the Report, especially given that any recommendation will not take into account a Recipient's particular needs or circumstances.

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The Publisher[s] do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Report, or the accuracy, completeness or reasonableness of any recommendation in this Report.

Appendix A Product Specifications

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PRODUCT SPECIFICATION

WSA PS - 800 PASSIVE GREASE ARRESTORS

800.1 SCOPE

This specification is intended to provide a technical specification for the appraisal of passive grease arrestors in either an in ground or above ground application.

800.2 REQUIREMENTS

In the absence of a specific standard for Passive Grease Arrestors, relevant sections of the following standards will apply:

- The Passive Grease Arrestor must comply with the principals of the following Australian Standards
 - a. AS 5200 2005 Procedures for certification of plumbing and drainage products.
 - b. AS 3500:2003 Plumbing and Drainage
 - AS/NZ 4494:1998 Discharge of commercial and industrial liquid waste to sewer – General performance requirements.
- Steel reinforced concrete Passive Grease Arrestors, constructed in-situ must comply with AS3735:2001 Concrete structures for retaining liquids. Written conformation from a suitably qualified engineer must accompany the application.
- Steel reinforced pre-cast Passive Grease Arrestors must comply with the relevant parts
 of section 6 of AS/NZS 1546.1:1998 On-site domestic waste water treatment units –
 Septic Tanks. Written conformation from a suitably qualified engineer must
 accompany the application.
- 4. Passive Grease Arrestors manufactured from other materials shall be proven to be equivalent to, or not less than, a vessel of similar capacity manufactured from that other material in accordance with the requirements of the relevant sections of AS/NZS 1546.1:1998 On-site domestic waste water treatment units Septic Tanks. A suitably qualified professional person shall provide written confirmation that the design for each Arrestor product type complies with the appropriate requirements shall be designed and manufactured to a criteria that will permit the structural integrity and characteristics of the installed vessel to be directly compared with.
- Passive Grease Arrestors in locations where they are exposed to pedestrian or vehicular traffic shall be capable of being provided with access covers to the appropriate load carrying classification in accordance with AS 3996-2006 (Access covers and grates).
 - a. Where an Arrestor is installed in a location where the access cover may be exposed to collected surface water or stormwater, the cover shall provide a water-tight seal in accordance with Clause 4.2.3 of the standard.

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- b. Where an Arrestor is installed in a confined or poorly ventilated location, such as within a building, the cover shall provide a gas-tight seal in accordance with Clause 4.2.4 of the standard.
- A suitably qualified professional person shall provide written confirmation that the design for each access cover product type complies with the appropriate requirements
- Interior surfaces of concrete and concrete fibre grease arrestors are to be coated so
 that the arrestor is protected from corrosion/erosion by the greasy waste contents
 and mechanical damage during cleaning. The coating must have a minimum 5 year
 warranty.

800.3 PERFORMANCE REQUIREMENTS

The Passive Grease Arrestor must be able to retain its nominal volume for a period of not less than 1 hour.

TEST

A 1000lt Passive Grease Arrestor is to be, correctly orientated and installed (either in a test site or a customer site) and filled to its working capacity with clean and clear water. Water containing a coloured dye is to be pumped into the Arrestor via the Arrestor inlet at the maximum nominal flow rate. The time period from the start of the test to the break through of coloured dye from the outlet of the Arrestor shall be equivalent to or exceed 1 hour.

Alternate methods of determining this requirement will be considered by the Product Appraisal Committee as part of an appraisal application.

The test shall be supervised by a member of the WSAA Waste Water Source Management Network or a person nominated by the network. A test report shall be prepared by the supervising member and included in the appraisal report.

800.4 FORMAT OF THE APPLICATION AND SUPPORTING INFORMATION

The appraisal application is to be presented in both hard and soft copy. The hard copy should be loose leaf and 2 hole punched. The soft copy should be on either a USB storage device or CD in files that are no larger than 2MB in size.

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Your application should address the following in the order shown below:

1. Introduction

- a. An overview of the manufacturer and or distributor
- b. Overview of the product

2. Quality control

- a. Quality Management System Certification
- b. Evidence of conformance with the requirements (800.2) of this Specification
- c. Any additional approvals
- d. Any additional testing programmes and results.

3. Applicability

- a. Waste water generation activity applicable to the product
- b. Provide a product schedule of all products in the range (e.g. 100lt to 5000lt), which includes sizing, maximum nominal flow rate (litres/sec), dry weight and operational weight (kg) of each model.

4. Specifications and Drawings

- a. Detailed scale drawings of all components of the product in sufficient detail to permit accurate determination of all relevant volumes, internal/external diameters and air spaces, pipe connections, arrangement and dimensions of internal baffles, partitions, screens or filters and any other component essential to the operation of the product. All drawings are to be in millimetres
- Materials of construction, Dimensions, and weight of the access covers to be used are to be provided.
- Detailed of the products venting arrangements, including means of connection, type and material of vent piping and vent layout.
- d. Details on the products backflow prevention specifications
- e. Pump discharge specifications including pump curves, manufacturers details and pump warranty (if required)
- f. Provision for inflow and outflow sampling points

5. Installation Requirements

- a. Details of the installation requirements for the product range is to be supplied, including, but not limited to product handling,
- b. Location guidance for installations,
- c. Details on any building code requirements
- d. Drainage diagram for connection to sewer
- e. Full details of the excavation and backfill requirements for in-ground applications.
- f. Any non-standard installation applications.
- g. Access covers

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- 6. Operation and Maintenance
 - a. Housekeeping procedures
 - b. Maintenance schedule detailing all maintenance procedures and frequency
 - c. Cleaning procedures (the minimum requirements shall include the removal, by pumping, all liquid and the removal of all solids from the internal surfaces of the arrestor, such that at its completion the arrestor will be returned to its normal functioning state)

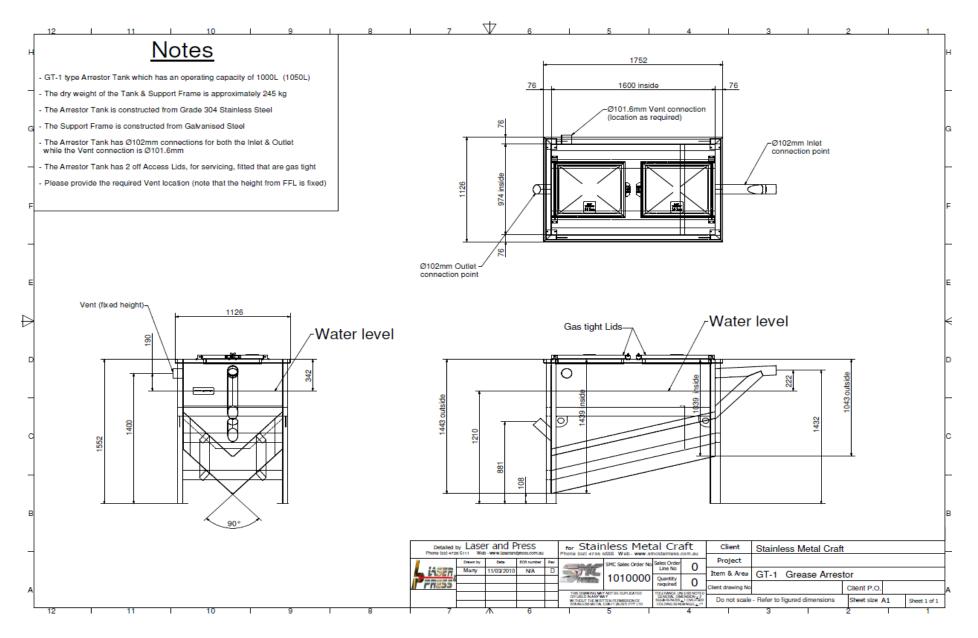
7. Identification

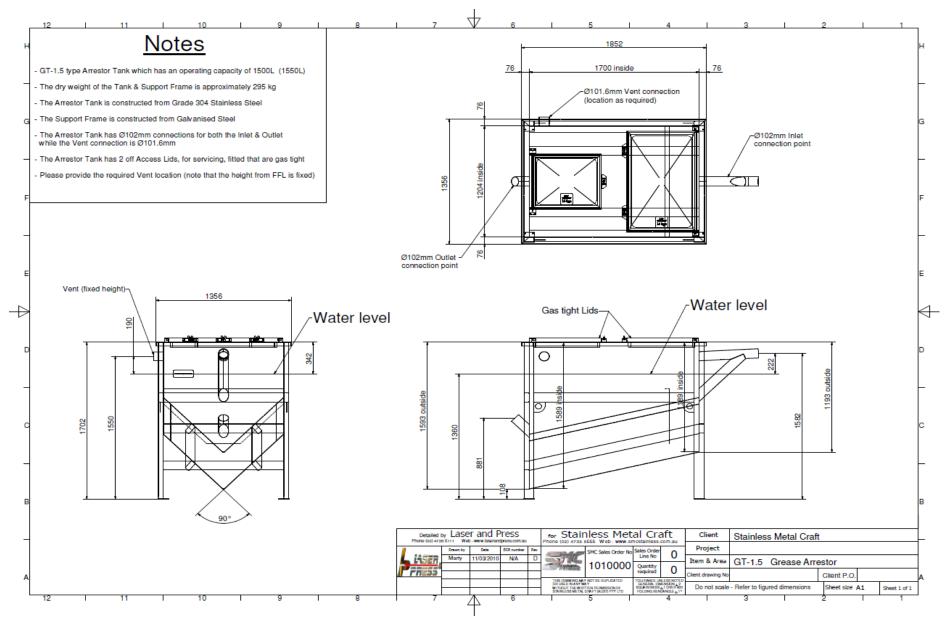
- a. Compliance Plate A compliance plate must be fitted to each unit, constructed of a robust and durable material, placed in a location where it will remain visible after installation and legible for the life of the unit. The compliance plate must be fitted before leaving the factory and must contain the following information:
 - i. Brand or Manufacturers name
 - ii. Contact phone number of the manufacturer
 - iii. Generic title
 - iv. Nominal operating volume in litres
 - v. Serial Number
 - vi. WSAA Appraisal Number
 - vii. Date of Manufacture
 - viii. Rating per day
- b. Access Covers are to have the following:
 - i. Material of construction
 - ii. Dimension
 - iii. Weight. Each access cover must have the weight of the cover displayed. The information must be permanently attached such that each number is no smaller than 100mm in height.
- 8. Warranty
 - a. The product is to have a warranty of a minimum of 5 years

Documentary evidence of all aspects of this technical specification will be required to be provided for consideration by the WSAA product appraisal committee. The product appraisal committee is made up of technical experts drawn from WSAA members.

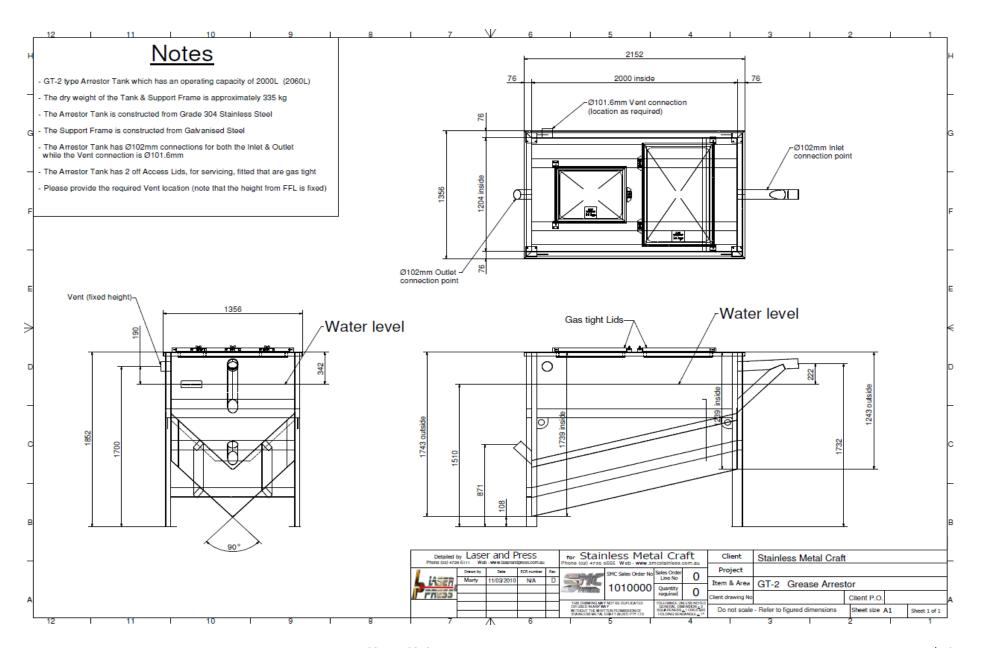
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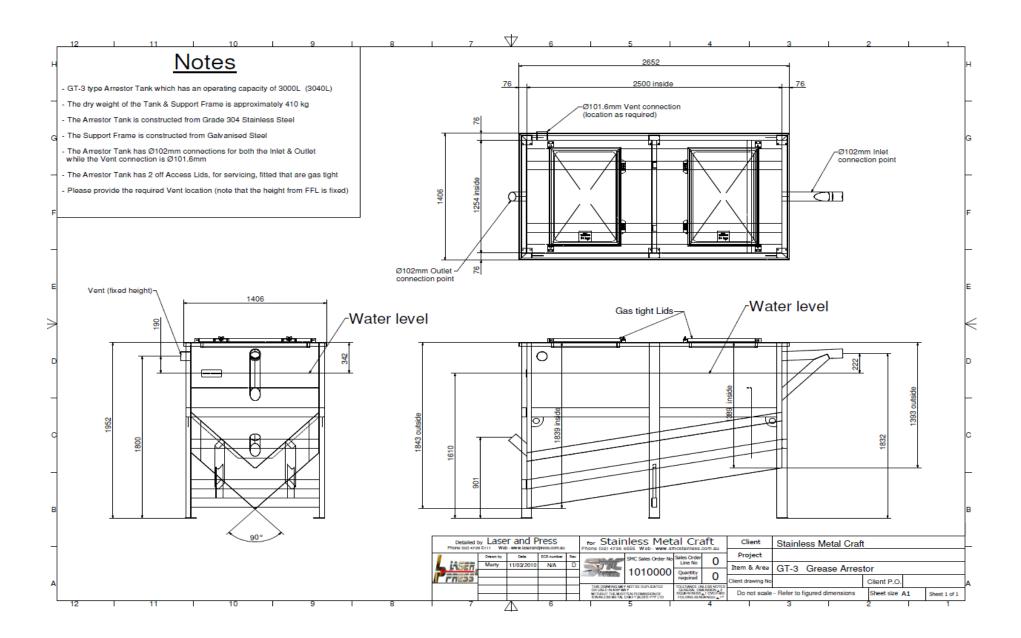
Appendix B Standard Drawings

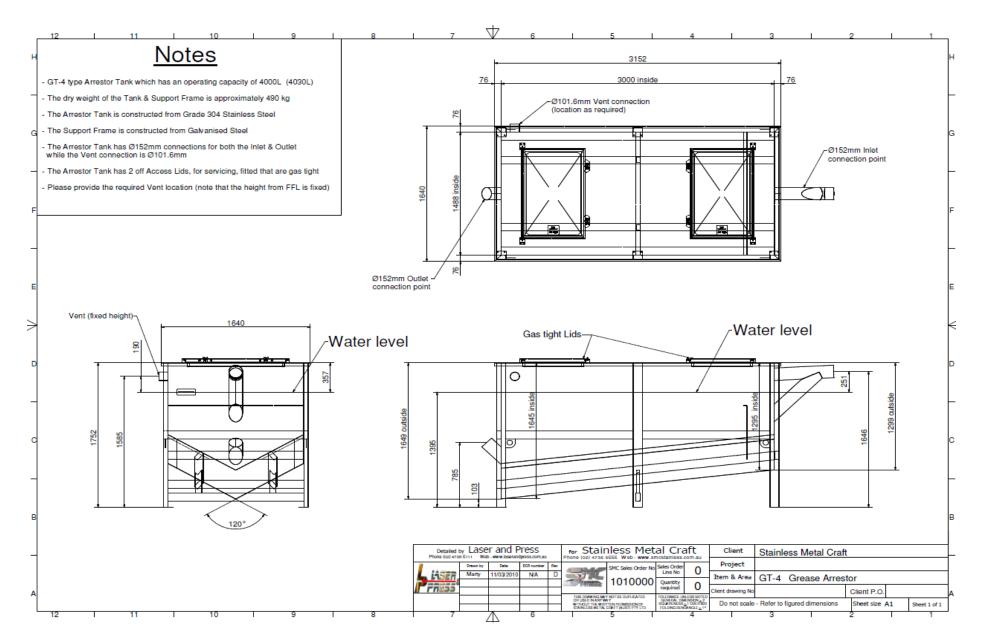


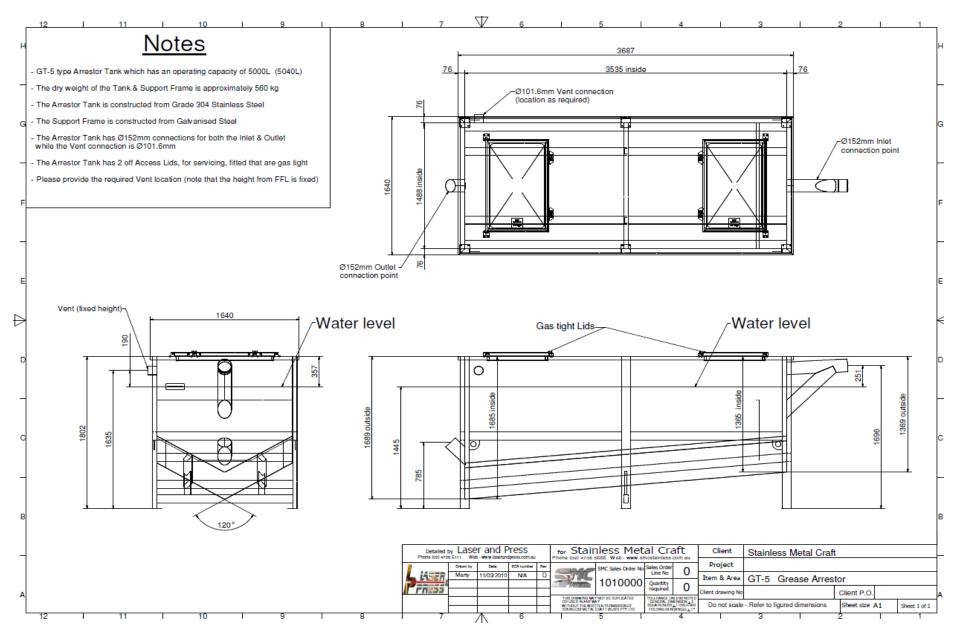


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Appendix C Engineers Reports

Appendix D Supplier Contacts

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