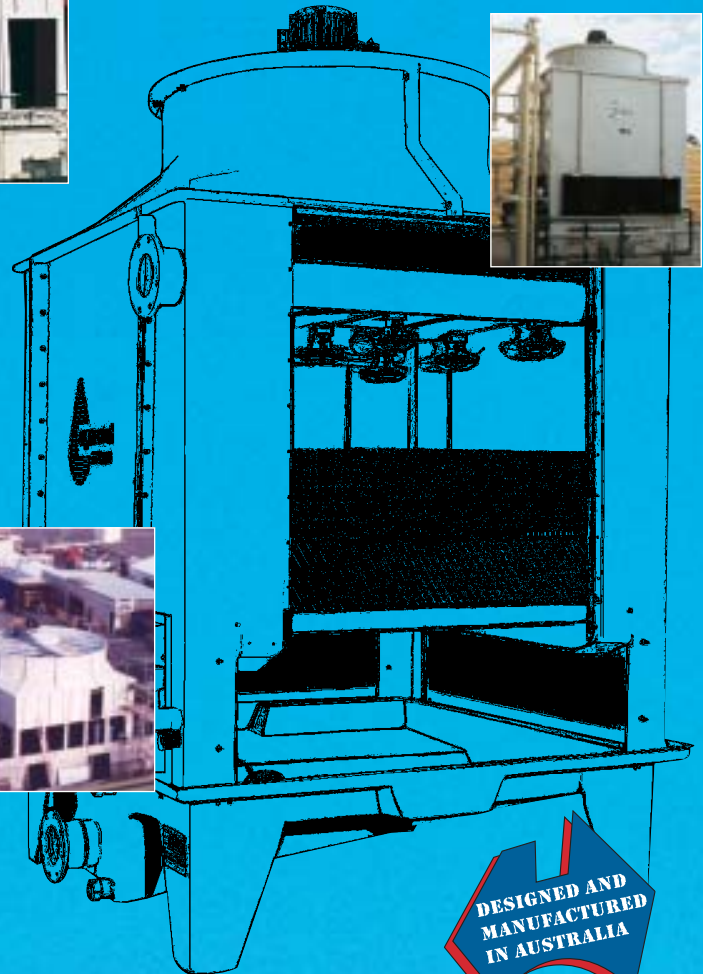




MSS Cooling Towers



DESIGNED AND
MANUFACTURED
IN AUSTRALIA

- ▶ Superior thermal performance with ease of maintenance
- ▶ Modular design for flexibility
- ▶ Shell designed to last the life of the plant
- ▶ Designed to meet requirements of AS/NZS3666
- ▶ Available in low noise and super low noise



Member Cooling Tower Institute

Designed with environmental cleanliness in mind

The Aqua-Cool MSS Cooling Tower range is a result of exhaustive product development by our engineering team over an extensive period of time. Today, the range is a well respected and proven brand in cooling tower technology.

Prior to development, our engineering team studied what cooling towers were available overseas, with the intention of manufacturing an overseas product locally. After studying what was available in Europe, Japan and the United States, it was felt that no individual manufacturer addressed the areas of access, ease and simplicity of cleaning and low maintenance cost through the use of non-corrosive materials in wetted areas. We also wanted a cooling tower that would meet the environmental standards of the future, including low noise and lower power requirements.

At that time, the advent of Australian Standard AS 3666-1989 helped convince us of the need to design our own towers with this standard in mind. Hence, we developed and manufactured the MSS range of cooling towers from the ground up.

Wide, full height access panels, easy to remove anti-splash louvres, smooth gel coat interior finish, rounded basin corners, efficient drift eliminators are just some of the features of the MSS range that take environmental cleanliness and AS 3666 (NZS 366), both in spirit and in fact.

The range has been exported overseas. The MSS design raised the perception of FRP cooling towers to a new quality level, which continues to set the benchmark in Australia.



▲ **Two hospital applications: in Brisbane, Queensland and in Singapore (bottom photo)**



▲ **Eliminators are easy to access**



Proven products, technologies and low operating noise levels

Our fill design is the time proven crossfluted configuration which has been widely used since the early 1970s. The bonded structural joints of the honeycomb design and the consistent uniformity of the surface of the glue joints assure maximum structural integrity.

MSS: world class cooling towers

Our MSS cooling towers were developed to meet the extremes of Australian climatic conditions. We designed them to be very rugged and extremely robust.

Many years of field proven applications in Australia in applications like power stations, steel mills, chemical plants, food processing, and mining have helped achieve international acceptance. Our towers are now used in Southeast Asia, New Zealand and the Pacific.

Australian and overseas applications now include use in airports, hospitals, office towers, shopping centres, educational institutions as well as a host of industrial applications in food manufacturing and processing.

Continuous product evaluation and development have allowed us to extend the range to cover the

Quality: A difference you can trust

We have set procedures that are strictly adhered to in the design and manufacture of our MSS range of cooling towers. These procedures have been set down,

Our eliminators far exceed the standard set by AS 3666 for drift loss. This has been confirmed through independent verification by third party experts tested to AS 4180.1



▲ *We manufacture all our patterns and moulds in-house*

Our cooling towers are powered by motors which are very energy efficient. These motors are rated for outdoor use, and very suitable for moist air extremes found in cooling tower applications. Our low noise and super low noise models are designed to meet the most stringent environmental noise standards.



▲ *Large MSS cooling towers installed in an overseas dairy*



◀ *We test out towers regularly. This test is for drift loss to AS 4180.1*

gamut of the smaller factory assemble units used in industrial applications to the larger field-erected models.

with control points for our engineers to check on quality.

All our towers are thermally guaranteed to perform in their selected field environment.

Our mission is to produce only the best towers that conform to AS 3666. We only use the best raw materials and we always aim to exceed our customers' expectations.

Features and benefits of the MSS range of cooling towers

A - Fibreglass interior for easy cleaning. The internal surfaces of the tower including basin, cased wall and the fan cylinder are moulded gelcoat. This gives a glasslike finish to help ensure that cleaning is quick and easy.

Even such items such as fill support are extruded fibreglass or stainless steel.

B - Five year warranty on fibreglass shell.

UV-stabilised materials are designed for constant water contact, sun, hot/cold air temperature extremes. Thick wall sections assure structural integrity and long service life.

C - Access panel and anti-splash louvres are easy to remove.

D - Low operating costs due to the MSS cooling towers' efficient design. For example, fan cylinder inlet and large fill plan area keep internal static down, ensuring low operational power consumption. Motors are rated to IP56 for outdoor, moist air extremes found in cooling tower applications.

E - Superior air inlet louvres help prevent "splash out". Louvres are removable for access to basin for cleaning purposes and also prevent larger air-borne debris from entering the system. The air inlet louvres are constructed of corrosion resistant PVC. and they completely enclose the basin.

With the reduction of sunlight into the cold water basin, the potential for algae growth is substantially reduced, helping keep water treatment and maintenance costs to a minimum.

F - The installation of the piping for the range is greatly simplified. With single water inlet connection on the side of the tower casing, there is no unsightly pipe extending above the unit.

In addition, the water distribution system is pressurised—eliminating the need for balancing valves as required in piping crossflow (gravity feed) cooling towers.

G - Attractive aesthetic design. Careful attention is paid to the external appearance of our towers, recognising that most installations are highly visible. The unit's clean, orderly design fit into almost any manufacturing, industrial or air conditioning location. Optional custom colours are also available!

H - Structural tower base is suitable for mounting and bolting down and is rated for various earthquake and wind loading zones.

I - The water distribution system is PVC and is easy to inspect and, if required, the laterals can be removed for cleaning. With positive threaded nozzles, no problems will be encountered with these being dislodged due to poor maintenance and ensure that high pressure surges do not displace the nozzle. Low inlet pressure is all that is required for efficient water coverage.

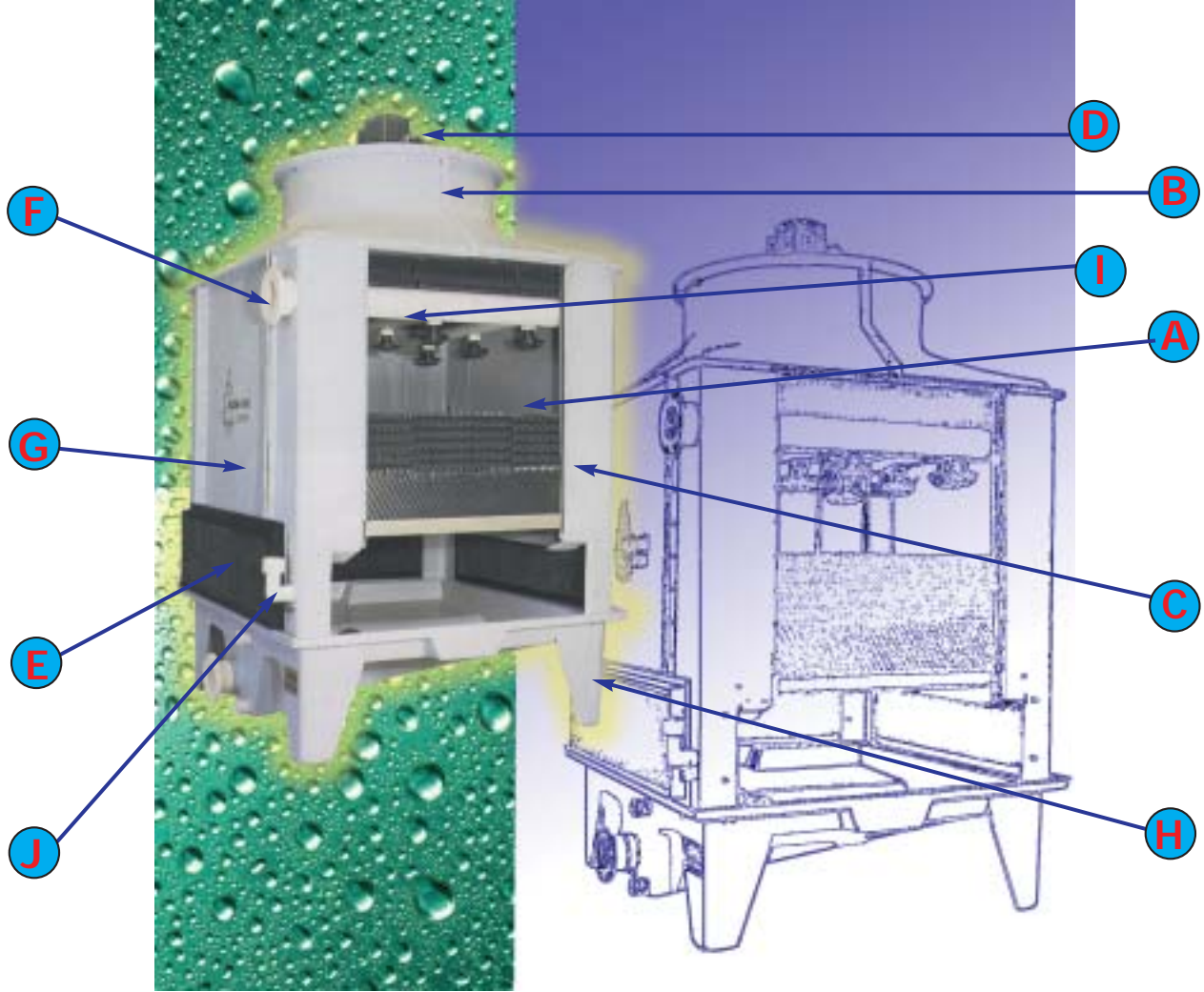
J - External quick fill. All MSS cooling towers have an external tundish for a quick fill.



▲ *The moulded gelcoat interior of our towers make them easy to keep clean. The basin is accessed easily.*



▲ *Access panels and anti-splash louvres are easy to remove. Note the fixings the minimum number of fixings.*



More features and benefits

► **Designed around the Australian and New Zealand Standard.** The MSS range of cooling towers were designed and built to conform to AS/NZS 3666 and has independent government verification of compliance to this standard.

► **On-going maintenance costs are reduced.**

► **Basin edges are rounded** and graded to drain, to ensure easy cleaning.

► **High efficiency fans and blades.** The MSS range utilises all aluminium or fibreglass low noise fans, with low kilowatt requirement. All of the models are furnished with adjustable pitch blades.

► **Mechanical equipment.** Where they are utilised, mechanical components, such as bearings and belts are designed for heavy and continuous industrial duty to assure long life. All belt drive units are supplied with extended lubrication lines as standard. Gearbox drives are available as an optional feature.

► **Thermal guarantee.** All Aqua-Cool products are thermally guaranteed to perform in their selected field environment. Selection of our MSS cooling towers range is based on many years of extensive field experience.

► **Eliminators.** Constructed from PVC, the efficient drift eliminators remove entrained water droplets from the air stream to limit drift rate to less than **0.001%** (confirmed by tests to AS 4180.1).

With the advantage of efficient drift eliminators, our towers can be installed near sensitive areas. The eliminators are light and easy to remove. Eliminator shape and structural integrity is maintained due to the utilisation of a unique end cap design.

► **High efficiency fill,** with low pressure drop, ensures optimum performance. The fill is situated above the water basin. When the tower is not operating, the fill drains and is left generally dry. With many crossflow towers, part of the fill remains continuously underwater, even during periods when not operating. Fill comes in sections that are easy to handle and clean.



► **Basin is easily accessible** for cleaning, no need for personnel to enter confined space to clean basin, or remove fill or eliminators for access.

► **Positive thread nozzles** are easy to remove for cleaning. Eliminators are not disturbed during routine maintenance and cleaning.

► **Water loss minimised.** Uniquely engineered drift eliminators and air inlet louvres combine to save water and maintain dry area around cell.

► **Easy site installation.** The plan area requirements of the range are generally less than that needed by comparable crossflow cooling towers. The efficient counterflow design which introduces air from all four sides provides greater heat transfer within a given plan area—minimising space requirements. Units can be transported either partially factory-assembled or for full site assembly.

► **Interior protected from sunlight.** *Interior areas are protected from exposure to direct sunlight. This helps prevent algae growth and on-going maintenance problems.*



Choose the right tower on your computer

We offer our customers a program to help them choose the optimum tower for their specific duty. Developed in-house, our software allows the user to highlight the two closest models that will be able to match the duty requirements entered into the program.



Designed for easy site assembly

MSS tower sections have been designed for easy on-site assembly. Sections are easy to transport, including moving through lifts and through tight areas.

Where required, basins and fan cylinders can be modified into smaller sections for difficult access situations.



▲ *MSS Towers are designed for easy transport and site assembly* ►



Large industrial towers

We also offer an extensive range of special purpose designed towers for dirty water industrial or power station requirements.



▲ *Large MSS cooling tower in a dairy application (top) and process plant right.*



Meeting Standards

MSS modular towers are designed and constructed to meet the following standards:

AS/NZS 3666.1-1995 Air-Handling and Water Systems of Buildings - Microbial Control.

AS 4180.1 Drift Test.

AS 1170 Part 2 - 1989 SAA Loading Code - Wind Loads.

AS 1470-1986 Health and Safety at Work - Principles and Practices.

AS 1657-1985 SAA Code for Fixed Platforms, Walkways, Stairways and Ladders.

AS 3500-1900 Australian Plumbing Code.

CTI STD-136 Polyvinyl chloride and chlorinated polyvinyl chloride materials used for film and splash fills, louvres and drift eliminators.

Performance test codes which can be applied to MSS modular towers include:

CTI - ATC 105

BS 4485 Part 2 1988

ASMEPTC ?????

Fibreglass engineering capabilities

Our expertise in fibreglass design and manufacturing has seen us involved in diverse projects. Some unusual ones include the construction of fibreglass storage tanks for holding sulphuric acid (in temperatures up to 95°C) and a

30 m diameter fibreglass dome in an odour control plant. The dome was self supporting and built in 27 sections, with each one weighing 600 kg.



▲ Installing a 30 m self-supporting fibreglass dome for odour control plant.

Optional Accessories

The following are accessories to the MSS range of cooling towers:

Two-speed Motors. Fan motors are available in two speed options for additional capacity or reduced power consumption.

Gear Box. As an optional feature, gear boxes can be fitted to larger models.

High Temperature Fill. Fill can be supplied in CPVC materials which are capable of continuous operation at up to 74° C.

Balance Line Connections are available for multi-cell configurations.

Stainless Steel. Stainless steel hardware, mechanical supports and fan guards can be supplied, if required in lieu of our standard hot dipped galvanised constructions.

Sump Heaters.

These are also available as an optional feature.

External Colour.

Different colour finishes are available, if required, to match any architectural requirement.

Vibration Isolation can be offered to conform to any standard.

Super Low Noise. Models are available to suit all applications.

Ladders, Safety and Perimeter Handrails are available when required. These and other safety items may be required by government or industry standards on certain sites. Installation would be done at the site.



▲ MSS series cooling towers designed for use in heavy industrial and mining applications.

MSS Series A Cooling Towers Quick Selection Chart

Temperature

Hot Water °C	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	37.0	38.0	38.0	38.0	38.0
Cold Water °C	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	32.0	33.0	30.0	31.0	32.0
Wet Bulb °C	19.0	20.0	21.0	22.0	23.0	24.0	25.0	25.5	26.0	27.0	28.0	27.0	27.0	27.0

Models

Flow Rate L/S

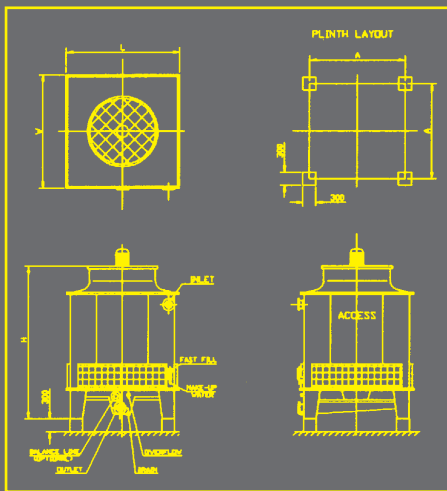
MSE 2	2.9	2.7	2.6	2.4	2.2	2.0	1.7	1.6	1.5	2.2	2.3	1.1	1.5	1.9
MSE 4	6.8	6.3	5.9	5.5	5.0	4.5	4.0	3.7	3.4	5.0	5.2	2.5	3.4	4.5
MSS 008A	5.7	5.4	5.0	4.7	4.3	3.9	3.5	3.2	3.0	4.3	4.5	2.2	3.0	3.9
MSS 010A	7.1	6.7	6.3	5.9	5.4	4.9	4.3	4.1	3.7	5.4	5.7	2.8	3.7	4.8
MSS 016A	10.9	10.3	9.7	9.0	8.3	7.5	6.7	6.2	5.7	8.3	8.7	4.2	5.7	7.4
MSS 021A	13.5	12.8	12.0	11.1	10.3	9.3	8.3	7.7	7.1	10.3	10.7	5.3	7.1	9.2
MSS 025A	17.8	16.9	15.8	14.7	13.6	12.3	10.9	10.2	9.4	13.7	14.2	7.0	9.3	12.2
MSS 031A	19.4	18.4	17.3	16.1	14.8	13.4	11.9	11.2	10.2	14.9	15.5	7.6	10.2	13.2
MSS 035A	21.6	20.5	19.2	17.9	16.4	14.9	13.2	12.4	11.4	16.6	17.2	8.4	11.3	14.7
MSS 041A	24.1	22.8	21.4	19.9	18.3	16.6	14.7	13.8	12.7	18.4	19.2	9.4	12.6	16.4
MSS 045A	29.5	27.9	26.1	24.3	22.4	20.3	18.0	16.9	15.5	22.5	23.5	11.5	15.4	20.1
MSS 051A	32.4	30.6	28.7	26.7	24.6	22.3	19.8	18.6	17.0	24.8	25.8	12.6	16.9	22.0
MSS 055A	34.8	32.9	30.9	28.8	26.5	24.0	21.3	20.0	18.3	26.6	27.7	13.6	18.2	23.7
MSS 061A	36.6	34.6	32.5	30.2	27.8	25.2	22.4	21.0	19.2	28.0	29.1	14.3	19.1	24.9
MSS 063A	38.9	36.8	34.6	32.3	29.8	27.2	24.3	22.7	21.1	30.1	31.3	15.9	21.0	27.0
MSS 066A	42.3	40.0	37.7	35.1	32.4	29.5	26.4	24.7	22.9	32.7	34.0	17.3	22.8	29.4
MSS 068A	46.5	44.0	41.4	38.6	35.6	32.4	29.0	27.1	25.1	35.9	37.3	18.9	25.0	32.2
MSS 091A	55.8	44.0	41.4	38.6	35.6	32.4	29.0	27.1	25.1	35.9	37.3	18.9	25.0	32.2
MSS 094A	62.5	59.1	55.6	51.8	47.8	43.6	38.9	36.4	33.8	48.3	50.2	25.4	36.8	43.3
MSS 100A	70.3	65.9	61.4	56.6	51.6	46.2	40.3	37.1	33.8	55.5	57.9	27.8	37.6	49.3
MSS 111A	69.6	65.8	61.9	57.7	53.2	48.5	43.3	40.5	37.6	53.7	55.9	28.3	37.4	48.2
MSS 120A	75.9	71.7	67.5	62.9	57.9	52.7	47.2	44.1	40.9	58.5	60.9	30.7	40.7	52.4
MSS 121A	80.7	79.3	71.6	66.6	55.6	49.3	46.3	42.4	42.4	61.7	64.3	31.5	42.2	55.0
MSS 131A	87.8	83.0	77.9	72.5	66.7	60.5	53.7	50.4	46.2	67.2	69.6	34.3	45.9	59.8
MSS 141A	95.8	90.6	85.1	79.2	72.8	66.0	58.6	55.0	50.4	73.3	76.3	37.4	50.1	65.3
MSS 151A	98.7	93.3	87.6	81.5	75.0	68.0	60.3	56.6	51.9	75.5	78.6	38.5	51.6	67.2
MSS 155A	96.9	91.8	86.4	80.5	74.4	67.8	60.6	56.7	52.7	75.0	78.1	39.8	52.5	67.5
MSS 165A	110.1	104.2	97.7	91.0	83.7	75.9	67.4	63.2	57.9	84.3	87.7	43.0	57.6	75.0
MSS 170A	108.6	102.8	96.7	90.1	83.3	75.9	67.7	63.4	58.9	84.0	87.3	44.3	58.6	75.4
MSS 175A	119.7	113.2	106.2	98.9	91.0	82.5	73.2	68.7	62.9	91.6	95.4	46.7	62.6	81.6
MSS 195A	131.0	123.9	116.3	108.2	99.6	90.3	80.1	75.2	68.9	100.3	104.4	51.1	68.5	89.3
MSS 215A	147.0	131.9	123.8	115.2	106.0	96.1	85.3	80.0	73.3	106.7	111.1	54.4	72.9	95.0
MSS 225A	147.0	139.1	130.5	121.4	111.7	101.3	89.9	84.3	77.3	112.5	117.1	57.4	76.9	100.2

To select model, enter the table at the appropriate design conditions and select the model corresponding to a flow rate equal to or greater than the design flow rate.

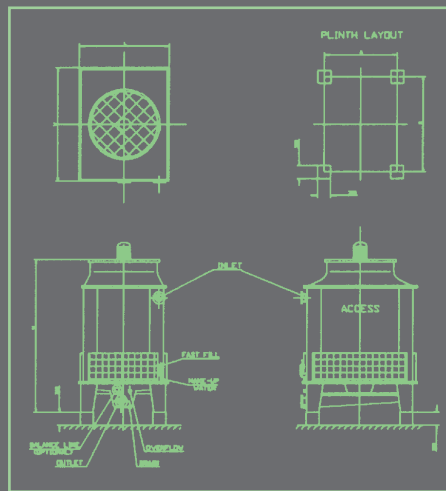
MSS Series A Cooling Towers Engineering Data

Tower Model MSS	Length L mm	Width W mm	Height H mm	Fan Dia mm	Airflow m ³ /HR	Motor Rating kW	Full Load Current Amps	Inlet Diameter mm	Shipping Weight kg	Operating Weight kg	Plinth Details A mm B mm	
008A	1125	612	2485	560	7650	0.37	1.1	80	145	360	715	-
010A	1125	1125	2485	700	9750	0.55	1.5	80	155	370	715	-
016A	1430	1430	2380	800	14900	0.75	1.9	80	265	605	1020	-
021A	1430	1430	2565	1000	18850	1.5	4.2	80	265	605	1020	-
025A	1740	1740	3070	1000	24550	1.5	4.2	100	250	910	1325	-
031A	1740	1740	3070	1000	23250	1.5	4.2	100	360	950	1325	-
035A	1740	1740	3070	1000	26300	2.2	4.9	100	385	925	1325	-
041A	2075	2075	3355	1250	32700	1.5	2.0	100	550	1200	1680	-
045A	2075	2075	3355	1250	40950	3.0	3.0	150	600	1290	1680	-
051A	2075	2075	3355	1250	41900	4.0	8.6	150	650	1370	1680	-
055A	2075	2075	3550	1250	42350	4.0	8.6	150	730	1490	1680	-
061A	2075	2075	3550	1530	45100	4.0	8.6	150	750	1510	1680	-
063A	2650	2075	3535	1530	47450	3.0	7.3	150	720	2175	1680	2220
066A	2650	2075	3535	1530	52050	4.0	8.6	150	720	2175	1680	2220
068A	2650	2075	3535	1530	57700	5.5	11.4	150	720	2175	1680	2220
065A	2650	2075	3400	1530	54400	4.0	8.6	150	850	2600	2220	2220
070A	2650	2650	3400	1530	62500	4.0	8.6	150	900	2750	2220	2220
080A	2650	2650	3545	1530	62200	4.0	8.6	150	960	2900	2220	2220
085A	2650	2650	3545	1530	68950	5.5	11.4	150	960	2900	2220	2220
091A	2650	2650	3545	1800	72600	5.5	16.6	150	1040	3000	2220	2220
094A	2650	2650	4020	1800	76900	7.5	11.3	150	1190	3150	2220	2220
100A	3252	2650	4115	1700	92500	7.5	14.4	200	1100	3250	2860	2220
111A	3252	2650	4115	1700	87000	7.5	14.4	200	1250	3500	2860	2220
120A	3252	2650	4115	1700	95500	11.0	20.7	200	1250	3500	2860	2220
095A	3252	3252	3860	1800	71455	4.0	12.2	200	1100	3250	2860	2860
101A	3252	3252	3860	1800	91600	5.5	16.0	200	1250	3700	2860	2860
110A	3252	3252	3860	1800	87550	5.5	16.0	200	1250	3700	2860	2860
115A	3252	3252	4105	2400	107350	5.5	10.7	200	1300	3650	2860	2860
121A	3252	3252	4100	2400	113050	7.5	14.4	200	1300	3650	2860	2860
131A	3252	3252	4100	2400	106150	7.5	14.4	200	1400	3900	2860	2860
141A	3252	3252	4450	2400	117400	11.0	19.6	200	1500	400	2860	2860
155A	3892	3252	4455	2400	117900	7.5	13.9	200	1400	3900	3460	2860
170A	3892	3252	4455	2400	117900	11.0	19.6	200	1400	3900	3460	2860
151A	3892	3892	4560	2400	134000	7.5	14.4	200	1450	5050	3460	3260
165A	3892	3892	4560	2400	151700	11.0	20.7	200	1450	5050	3460	3460
175A	3892	3892	4560	2400	143350	11.0	20.7	250	1700	5500	3460	3460
195A	3892	3892	4560	2400	158500	15.0	28.1	250	1700	5500	3460	3460
215A	3892	3892	4560	2400	169700	18.5	33.9	250	1760	5550	3460	3460
225A	3892	3892	5260	2400	165000	18.5	33.9	250	1820	5710	3460	3460

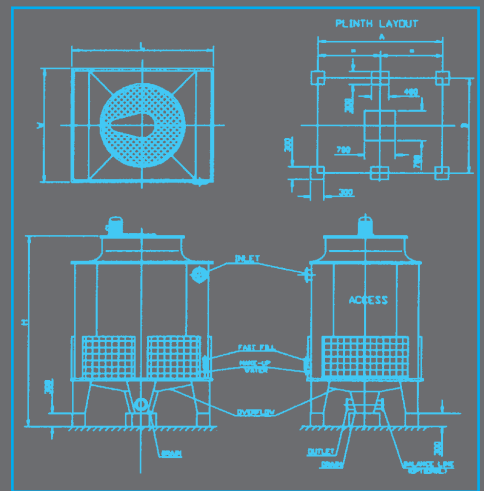
Tower Model	Length L mm	Width W mm	Height H mm	Fan Dia mm	Airflow m3/HR	Motor Rating kW	Full Load Current Amps	Inlet Diameter mm	Shipping Weight kg	Operating Weight kg	Plinth Details	
MSS											A mm	B mm
235A	4542	3892	5245	2400	187550	18.5	33.3	250	2485	7120	4050	3460
241A	4542	3892	5245	2400	184250	18.5	33.3	250	2485	7120	4050	3460
255A	4542	3892	5245	2400	189600	22.0	38.2	250	2485	7120	4050	3460
240A	4542	4542	5460	3050	221600	15.0	28.1	250	2620	7250	4050	4050
275A	4542	4542	5460	3050	222100	18.5	33.9	250	2920	7750	4050	4050
260A	4542	4542	5410	3050	207250	15.0	27.0	250	2920	7750	4050	4050
295A	4542	4542	5410	3050	222950	22.0	38.2	250	2920	7750	4050	4050
310A	4542	5140	5460	3050	250500	22.0	38.2	250	3020	7950	4050	4050
330A	5140	5140	5460	4270	295000	18.5	33.9	250	3280	8520	4650	4650
390A	5140	5140	5460	4270	305800	30.0	52.0	250	3570	8810	4650	4650
420A	5140	5140	5515	4270	302550	30.0	52.0	250	3570	8810	4650	4650
435A	5140	6383	6280	4270	384000	30.0	52.0	250	3780	9000	4650	5730
470A	5140	6383	6280	4270	359000	30.0	52.0	250	3960	9070	4650	5730
485A	5140	6383	5515	4270	383960	37.0	66.0	250	3960	9070	4650	5730
505A	5140	6383	5515	4270	365560	37.0	66.0	250	3960	9070	4650	5730
540A	5140	6383	5515	4270	389450	45.0	78.6	250	3960	9070	4650	5730
585A	6383	6383	5445	4870	442050	37.0	66.0	250	4500	10000	5826	5826
615A	6383	6383	5445	4870	419400	37.0	66.0	250	4500	10000	5826	5826
645A	6383	6383	5445	4870	447900	145.0	79.0	250	4500	10000	5826	5826
690A	6383	6383	5445	4870	476500	55.0	97.0	250	4500	10000	5826	5826
770A	7566	7566	5240	6705	568350	37.0	66.0	300	5900	13800	-	-
790A	7566	7566	5240	6705	535050	37.0	66.0	300	5900	13800	-	-
810A	7566	7566	5240	6705	596850	45.0	79.0	300	6000	13900	-	-
830A	7566	7566	5240	6705	576550	45.0	79.0	300	6500	14900	-	-
890A	7566	7566	5240	6705	612800	55.0	95.0	300	6500	14900	-	-
955A	7566	7566	5240	6705	664150	75.0	123.0	300	6500	14900	-	-



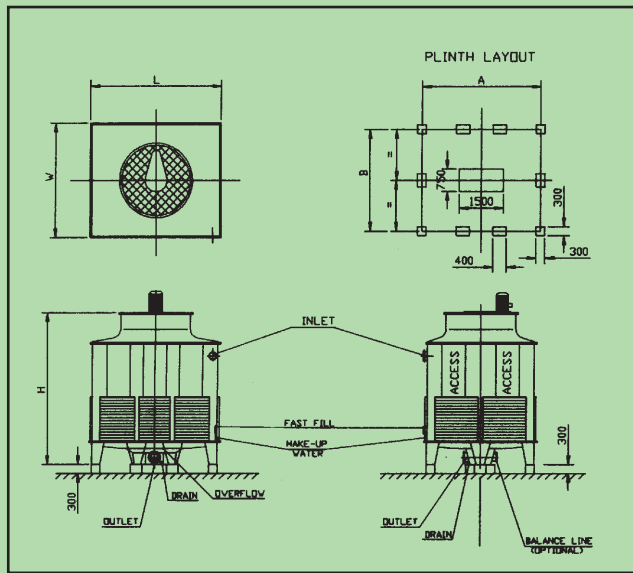
▲ MSS 008A - MSS 094A



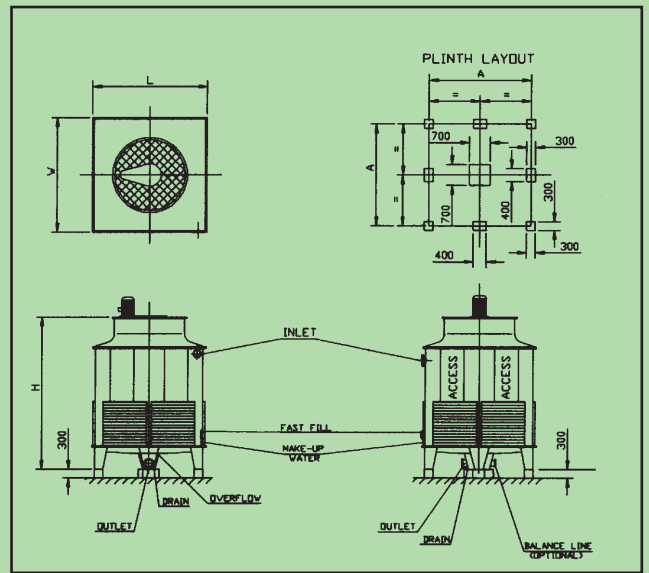
▲ MSS 063A, 066A 068A



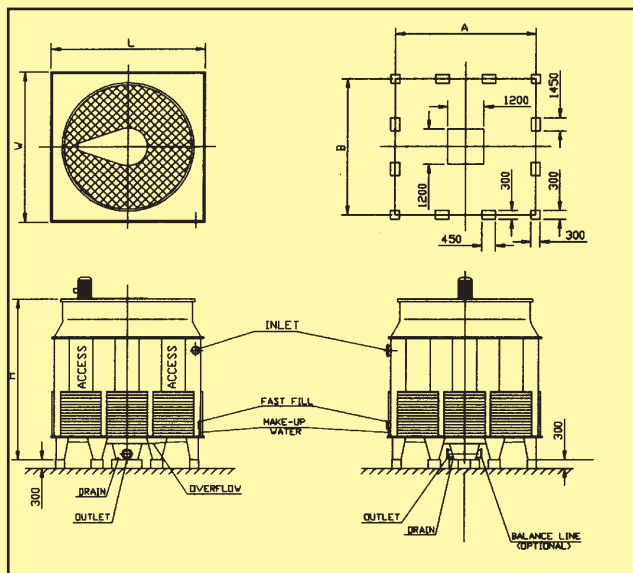
▲ MSS 100A, 111A, 120A, 155A, 170A



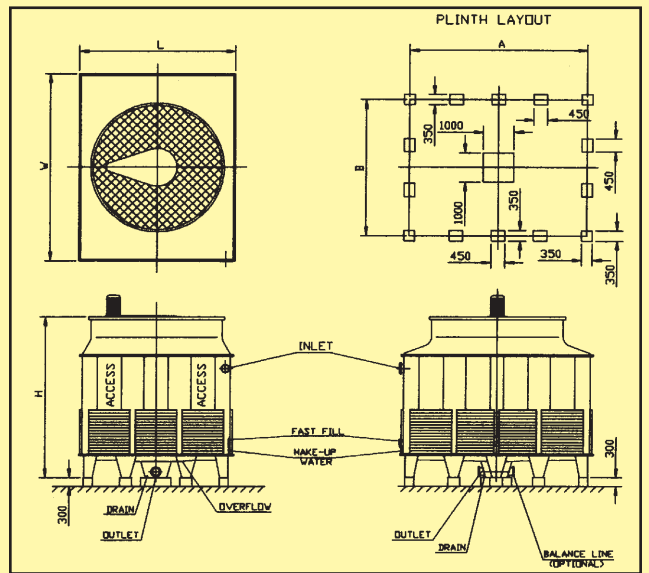
▲ MSS 235A, 241A, 251A



▲ MSS 121A - MSS 225A



▲ MSS 240A - MSS 420A

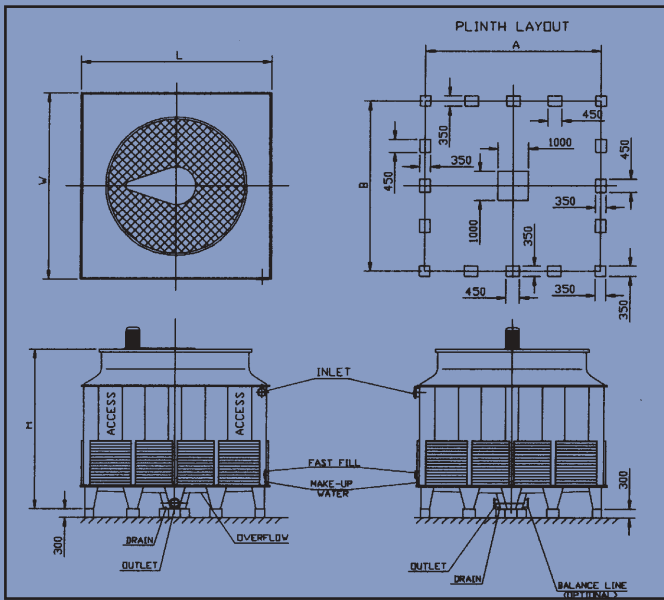


▲ MSS 435A - MSS 540A

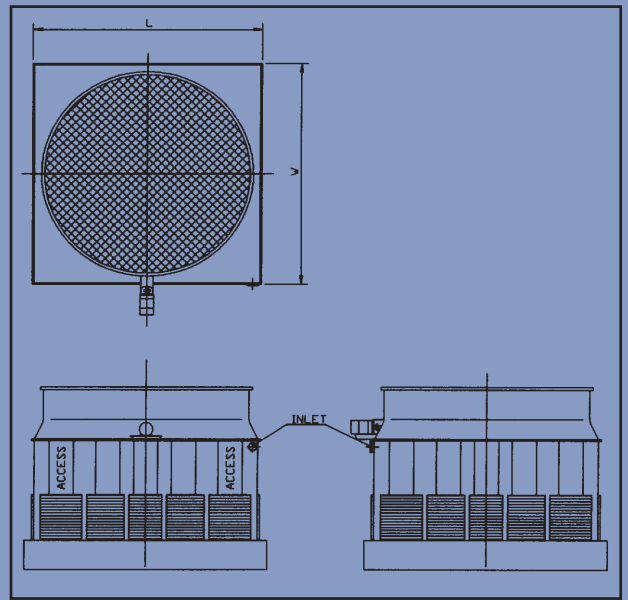


▲ Checking dimensional correctness

◀ Testing drift loss to AS 4180.1



▲ MSS 585A - MSS 690A



▲ MSS 770A - MSS 955A



▲ Aqua-Cool tower used

◀ Another.. caption

Evapco Connection

In 1984, the manufacturing license for the Evapco Inc. product range was started in Australia and New Zealand by Guy Waters. In 1995, When Guy joined the Aqua-Cool Towers team, it was no surprise that the Evapco manufacturing license also moved to Aqua Cool Towers.

Aqua-Cool Towers using Evapco thermal technology, incorporated the patented "thermal-pak" coil design into the FRP casing to produce the MEC and MFC ranges of evaporative condensers and evaporative fluid coolers.

Evapco Inc. celebrated its 25th anniversary in 2001. Started in 1975 by Bill Kahlert and Wilson Bradley, the company quickly established itself in the refrigeration market, manufacturing only evaporative condensers. Within a couple of years and with market demand a major driving force, Evapco began the manufacture of open cooling towers.

Evapco's leadership in product design and quality continues today in it's state-of-the-art Research Centre located in Taneytown, Maryland. The 40,000 square foot facility is among the largest and most advanced of its type in the HVAC and refrigeration industries.

The laboratories contain an ice testing facility and both highside and lowside ammonia refrigeration laboratories capable of testing evaporative condensers, with capacities of up to 700 tons and low temperature evaporators. It also houses several additional environmental laboratories that are primarily used for testing tooling towers up to 1200 tons.

The first laboratory has seen a further two laboratories added specifically to test the other refrigeration product lines that Evapco have developed. Besides evaporative condensers, evaporative fluid coolers and open cooling towers, Evapco manufacture and distribute throughout the world industrial products such as ice coils, evaporators and pressure vessels.

The ice coils, evaporators, evaporative condensers and evaporative fluid coolers utilise the patented "thermal-pak" coils developed by Evapco. This elliptical tube design has proven to be the most efficient design for coil product.



Through the acquisition of RVS in 1994, Evapco now manufactures pressure vessels and recirculation packages in Bryan, Texas and Taneytown. This means that Evapco can provide most of the major components for any refrigeration system. A single source responsibility that ensures quality, on time shipment and customer satisfaction.

Extending the product line even further, Evapco now manufactures Critical Process Air environments systems (CPA systems). These are manufactured at Evapco's latest facility in Lake View, Iowa. The CPA systems utilise a new UVC technology to ensure the CPA is producing the cleanest, contaminant free air for critical process rooms.

With 13 manufacturing plants throughout the world, Evapco has earned its reputation for innovation and quality.

Utilising this expertise of years of testing and information gleaned from Evapco's state-of-the-art thermal testing laboratories has aided in product development and refinement over the years.

Now with the full complement and the rights to manufacture the complete range of Evapco products, Aqua-Cool Towers has a depth of products which is not offered by any other cooling tower manufacturer in Australia.

The combination of Aqua-Cool Towers FRP technology and Evapco products and expertise in the HVAC and refrigeration markets, makes Aqua-Cool Towers Pty Ltd the premier cooling tower provider in Australia today.

This combination allows a customer to choose



between counter-flow and cross-flow designs, induced draft units manufactured in FRP, galvanised steel and stainless steel.

The centrifugal range of Evapco Inc. products allows installation in plant room locations or where sound levels are critical with the use of attenuation which is not possible with axial fan units.

While Aqua-Cool Towers is a small Australian company, the Evapco connection gives a depth of knowledge with which few companies in the world can compete.

Evapco's state-of-the-art laboratories and extensive engineering expertise has made available to Aqua-Cool Towers, to further develop our existing products and allow much quicker evaluation of new product lines suited specifically to the Australian market and conditions.

The Evapco connection has resulted in greater improvement in our cooling tower designs. New designs allow for more efficient product applications—from which our customers can only benefit both at the present time and in the future.



Engineering Specification: MSS Series A Cooling Towers

A. GENERAL: Cooling Tower Specification

Furnish and install as shown on plans an Aqua-Cool Towers' MSS Model _____ Cooling Tower. Each unit shall have a capacity of _____ kW Total Heat Rejection, operating at _____ l/sec water flow each from an entering water temperature at _____ °C at an entering wet bulb temperature of _____ °C.

B. UNIT CONSTRUCTION

The unit shall be manufactured from fibreglass reinforced polyester, with all interior surfaces, including fan cylinder, basin and casing having moulded gel coat finish to ensure ease of cleaning.

Unit design shall include a removable full height, access panel for complete cleanability and access. This is to enable service personnel to be clearly visible inside the structure.

All units are to have a small access port fitted to allow inspection of the water distribution system without requiring entry to the tower or removal of access panel or eliminators. All water connections shall be fibreglass or PVC. Cold water basin shall have edges rounded and graded to drain as per AS/NZS 3666.

Exterior surfaces shall be flow coated with UV-stabilised material. Tower support legs shall be moulded from fibreglass.

C. HEAT TRANSFER SECTION

The fill shall be of cross-fluted design to provide maximum surface area and minimal air pressure drop. The fill shall be in glued packs to allow easy removal. The PVC material must comply with the Cooling Tower Institute (CTI) STD 136.

Water Distribution System: Each inlet shall deliver water to the distribution systems by means of a transverse header pipe with longitudinal pipe laterals and low pressure plastic spray nozzles.

Drift Eliminators: Drift Eliminators shall be designed utilising a series of sinusoidal-shaped blades. Eliminators

shall be installed in easy to clean and handle modules limiting drift to less than 0.001% in compliance with AS4180.1. Eliminator blades shall be secured in end-caps to help prevent distortion and located in a horizontal position.

D. MECHANICAL EQUIPMENT

Fan: Fans shall be multi-blade axial flow with variable or fixed pitch manufactured from aluminium, fibreglass or polypropylene. Fan shall be direct or belt driven.

Mechanical Support: The mechanical support equipment shall be of heavy gauge steel construction and shall be hot dipped galvanised, after fabrication and designed to maintain alignment of rotating parts.

The mechanical support shall be installed at top of the fan cylinder. Easily removable fan guards shall be fitted and shall be a minimum of 4 mm mesh which is capable of supporting working personnel.

Motor: Electric motor shall be to IP56 D Standard totally enclosed, tropic-proofed construction, designed specifically for cooling tower application.

E. INLET LOUVRES

Inlet louvres shall be vacuum formed from PVC to CTI STD 136, designed to prevent splash-out and help inhibit sunlight entry to the unit interior. Air-inlet louvres shall be of two pass configuration installed at 90 degrees, removable and be located in PVC or optional stainless steel frames.

F. TOWER CONFIGURATION

Tower shall be a counter flow design so as to minimise sunlight entry into interior wetted area. Access to the water basin will be available from all four sides.

F. OTHER NOTES

No direct sunlight is permitted on any heat transfer surface.



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The manufacturer reserves the right to alter performance, specifications and design without notice

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