Magnum & Max

Aluminium Radiators

- **Low water content and fast thermal response**
- **Lightweight blocks for easy site handling and installation**
- **12 radiator heights for a wide selection of sizes**
- **10 year guarantee**
- **Finished in a high quality white RAL 9010 powder coating**

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November 2010

www.clyderadiators.co.uk

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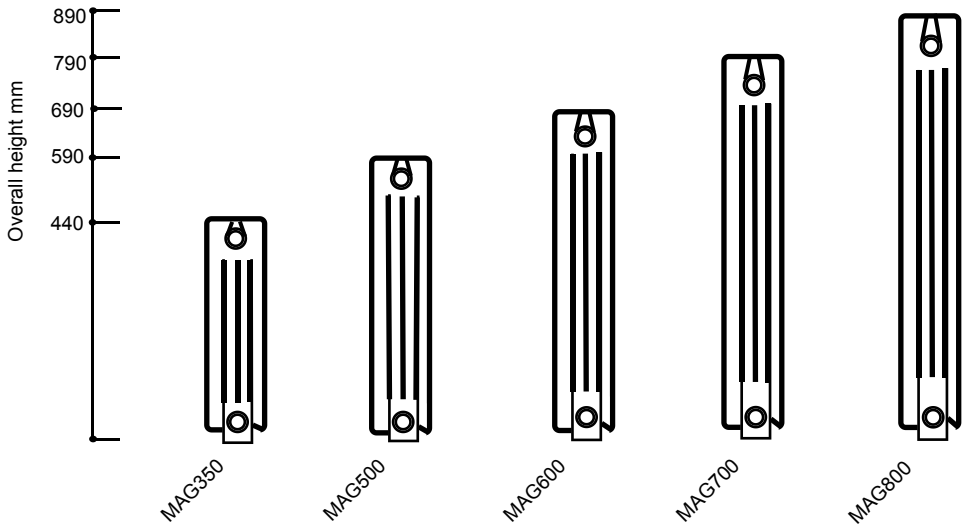
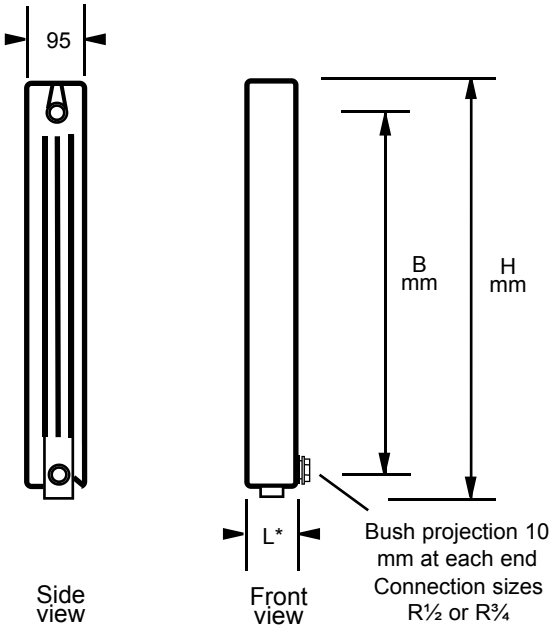
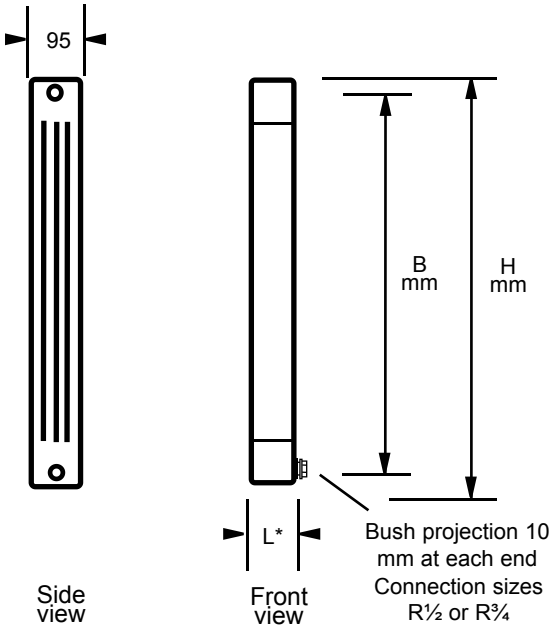


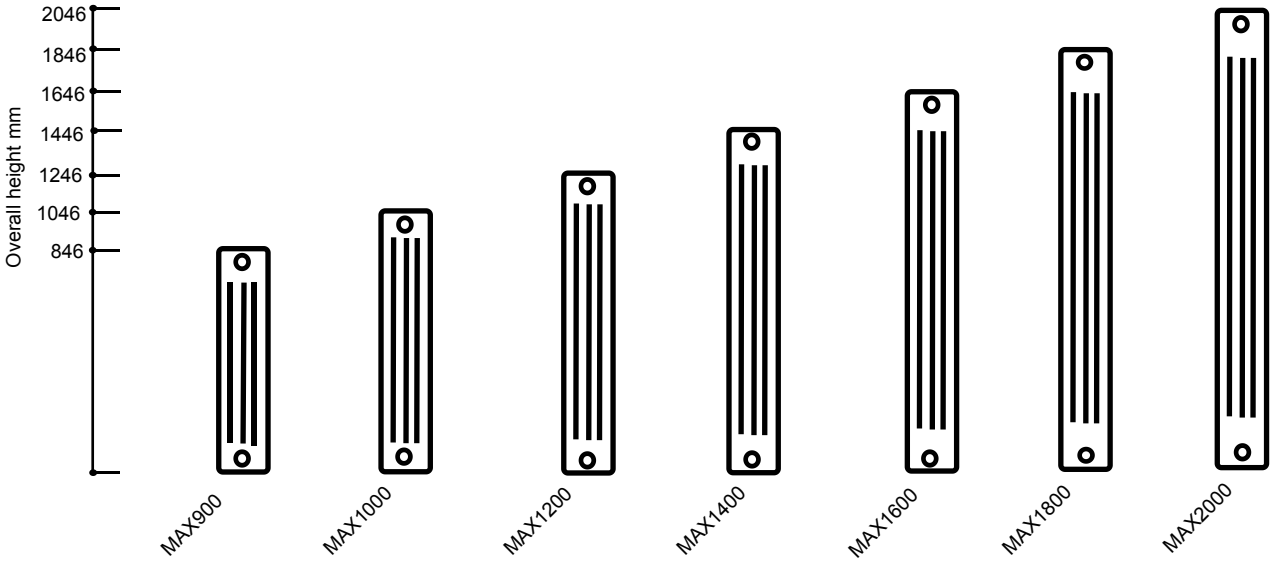


Magnum section



Max section

Max models



General information

Section emission rates and details for Magnum and Max models

Model	BS EN 442		Emission rates		Recommended	Section details					
	75/65/20°C		82/71/21°C	90/70/20°C	Max. No.	Overall	Overall	Bore		Dry	Water
	DT50		DT55.5	DT60	sections	Length ★	height	centres	Depth	w eight	content
	w atts	Exponent	w atts	w atts	★★	L mm	H mm	B mm	D mm	kg	litres
MAG350	94	1.32	108	120	40	80.8	440	350	95	1.13	0.35
MAG500	123	1.32	141	156	38	80.8	590	500	95	1.62	0.39
MAG600	142	1.32	163	181	33	80.8	690	600	95	1.66	0.49
MAG700	161	1.32	185	205	29	80.8	790	700	95	2.05	0.53
MAG800	180	1.32	207	229	26	80.8	890	800	95	2.19	0.59
MAX900	175	1.35	201	223	27	80.8	946	900	95	1.99	0.41
MAX1000	190	1.35	219	244	25	80.8	1046	1000	95	2.05	0.42
MAX1200	218	1.35	251	279	22	80.8	1246	1200	95	2.43	0.49
MAX1400	245	1.35	282	314	19	80.8	1446	1400	95	2.80	0.56
MAX1600	271	1.35	312	347	17	80.8	1646	1600	95	3.18	0.62
MAX1800	297	1.35	342	379	16	80.8	1846	1800	95	3.53	0.69
MAX2000	321	1.35	370	411	15	80.8	2046	2000	95	3.86	0.76

★ Overall section length = section + joint ring

★★ For maximum emission of 6kW at DT60 or 40 sections maximum

SI conversion factor : 1 w att = 3.412 Btu/h

Refer to page 5 for radiator valve connection sizes

Manufacturing standards

Clyde Magnum and Max aluminium radiators are tested and supplied in accordance with BS EN 442-1:1995. As required by this Standard, emission rates are quoted for the standard thermal output of DT=50 (75/65/20°C) with the relevant exponent of excess temperature.

Heat emission rates

For convenience the emission rates are also quoted for typical United Kingdom applications of DT=55.5 (82/71/21°C) and DT=60 (90/70/20°C).

Different water and/or room temperatures will change the emission rate of the radiator. The method of calculation and correction factors for various temperatures are given in Clyde's radiator emission guide EDS 658, available on request.

The emission rates stated are all based upon TBOE (top & bottom opposite end) connections.

Application

Clyde Magnum and Max radiators are suitable for use in either open vented or sealed heating systems with a maximum operating pressure of 6 bar.

Materials

These radiators are manufactured from aluminium alloy to EN AB 46100. The manufacturer is accredited to UNI EN ISO 14001:1996 and ISO 9001:2000. Sections are supplied finished in RAL 9010 white.

Water treatment

Clyde Magnum and Max radiators can be installed in systems containing iron, copper and plastic pipework, but care must be exercised to ensure that the system water and any water treatment is compatible.

Whenever new radiators are connected to an existing system, the pipework must be thoroughly cleaned and flushed. This is to remove debris, rust particles, carbonate deposits and any existing water treatment that might be incompatible with the heat exchanger. New systems must also be thoroughly flushed to remove debris and flux deposits. Clyde recommend that a permanent means of filtration be fitted into the return pipework, such as a sludge trap, hydrocyclone or full flow duplex filters. The radiator guarantee will be invalid if waterways are blocked by debris or carbonate deposits.

The pH value of the system water should be measured to ensure that it is between 6.5 and 8. Temporary hardness (calcium carbonate and magnesium carbonate) can be removed by boiling and its effects limited by preventing ingress of fresh, untreated water. Permanent hardness must not exceed 15° FR (150 mg/litre calcium carbonate). The radiator guarantee will be invalidated by the use of incorrect or incompatible water treatment. Specialist advice should be obtained, eg from;

Fernox Tel. 01483 793200

For full information on cleaning, flushing and protecting hot water systems, refer to BSRIA Application Guide AG 1/2001.

Guarantee

Subject to correct handling, installation, water treatment and operation, Clyde Magnum and Max radiators are guaranteed against manufacturing defects for 10 years from date of despatch.

Quick sizing charts

For exact emissions, refer table, page 3

Model	watts per section	Radiator emission in kilowatts											
		0.6	0.8	1.0	1.25	1.5	1.75	2.0	2.5	3.0	4.0	5.0	6.0
		Nearest number of sections required											
MAG350	94	6	9	11	13	16	19	21	27	32	—	—	—
MAG500	123	5	7	8	10	12	14	16	20	24	33	—	—
MAG600	142	4	6	7	9	11	12	14	18	21	28	—	—
MAG700	161	4	5	6	8	9	11	12	16	19	25	—	—
MAG800	180	—	4	6	7	8	10	11	14	17	22	—	—
MAX900	175	—	5	6	7	9	10	11	14	17	23	—	—
MAX1000	190	—	4	5	7	8	9	11	13	16	21	—	—
MAX1200	218	—	4	5	6	7	8	9	11	14	18	—	—
MAX1400	245	—	—	4	5	6	7	8	10	12	16	—	—
MAX1600	271	—	—	4	5	6	6	7	9	11	15	—	—
MAX1800	297	—	—	—	4	5	6	7	8	10	13	—	—
MAX2000	321	—	—	—	4	5	5	6	8	9	12	—	—

ΔT50

Inlet 75°C
Outlet 65°C
Room 20°C
BS EN 442-1:1995

Model	watts per section	Radiator emission in kilowatts											
		0.6	0.8	1.0	1.25	1.5	1.75	2.0	2.5	3.0	4.0	5.0	6.0
		Nearest number of sections required											
MAG350	108	6	7	9	12	14	16	19	23	28	37	—	—
MAG500	141	4	6	7	9	11	12	14	18	21	28	35	—
MAG600	163	4	5	6	8	9	11	12	15	18	25	31	—
MAG700	185	—	4	5	7	8	9	11	14	16	22	27	—
MAG800	207	—	4	5	6	7	8	10	12	14	19	24	—
MAX900	201	—	4	5	6	7	9	10	12	15	20	25	—
MAX1000	219	—	4	5	6	7	8	9	11	14	18	23	—
MAX1200	251	—	—	4	5	6	7	8	10	12	16	20	—
MAX1400	282	—	—	4	4	5	6	7	9	11	14	18	—
MAX1600	312	—	—	—	4	5	6	6	8	10	13	16	—
MAX1800	342	—	—	—	4	4	5	6	7	9	12	15	—
MAX2000	370	—	—	—	—	4	5	5	7	8	11	14	—

ΔT55.5

Inlet 82°C
Outlet 71°C
Room 21°C

Model	watts per section	Radiator emission in kilowatts											
		0.6	0.8	1.0	1.25	1.5	1.75	2.0	2.5	3.0	4.0	5.0	6.0
		Nearest number of sections required											
MAG350	120	5	7	8	10	13	15	17	21	25	33	—	—
MAG500	156	4	5	6	8	10	11	13	16	19	26	32	38
MAG600	181	—	4	6	7	8	10	11	14	17	22	28	33
MAG700	205	—	4	5	6	7	9	10	12	15	20	24	29
MAG800	229	—	—	4	5	7	8	9	11	13	17	22	26
MAX900	223	—	4	4	6	7	8	9	11	13	18	22	27
MAX1000	244	—	—	4	5	6	7	8	10	12	16	20	25
MAX1200	279	—	—	4	4	5	6	7	9	11	14	18	22
MAX1400	314	—	—	—	4	5	6	6	8	10	13	16	19
MAX1600	347	—	—	—	4	4	5	6	7	9	12	14	17
MAX1800	379	—	—	—	—	4	5	5	7	8	11	13	16
MAX2000	411	—	—	—	—	4	4	5	6	7	10	12	15

ΔT60

Inlet 90°C
Outlet 70°C
Room 20°C

Packing, handling & site work

Radiator blocks are supplied with protective cardboard packaging to facilitate handling.

Accessories are delivered packed separately for fitting by the installer. It is important that radiators are protected from the elements during offloading and are stored in dry and adequately heated premises. Radiators must be kept vertical whilst being carried to their installation locations to avoid damage to the section joints - refer page 6.

Magnum radiators are factory assembled up to 20 sections long and Max radiators up to 10 sections long. For longer radiators additional blocks are supplied complete with nipples and joints for site assembling - refer page 6. Assembling tools are optionally available to purchase or hire where additional blocks are supplied.

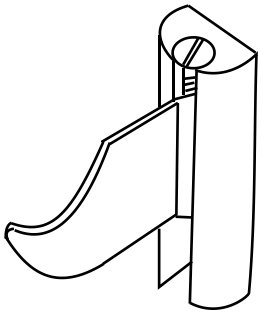
Connections, brackets and flow diverter

The maximum number of sections for each model for R½ pipe connection bushes is shown in the table below. Longer radiators should be fitted with R¾ connection bushes.

The number of wall brackets required for each radiator length is also shown in this table. The end brackets should be located one section in from the end, and additional brackets evenly spaced.

Flow diverters are supplied for the Max range.

Allow 10mm at the end of each radiator for the connection bushes.



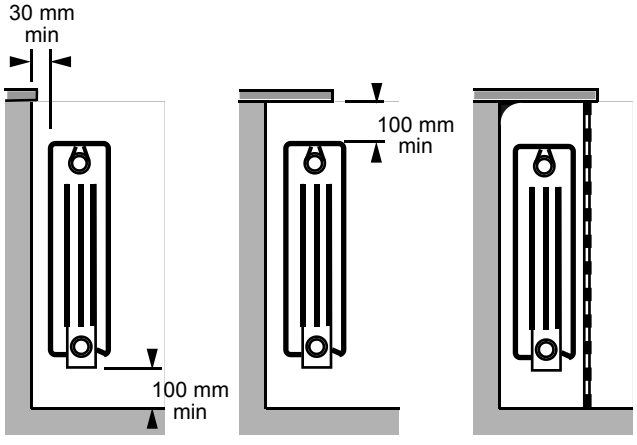
Radiator wall bracket

Model	Max no. sections for R½ connections	Diverter required	No. brackets		
			up to 20 sections	up to 30 sections	up to 40 sections
M350	28	no	4	6	8
M500	21	no	4	6	NA
M600	18	no	4	6	NA
M700	16	no	4	NA	NA
M800	14	no	4	NA	NA
M900	15	yes	4	NA	NA
M1000	14	yes	4	NA	NA
M1200	12	yes	4	NA	NA
M1400	11	yes	4	NA	NA
M1600	10	yes	4	NA	NA
M1800	9	yes	4	NA	NA
M2000	8	yes	4	NA	NA

Boxing and enclosures

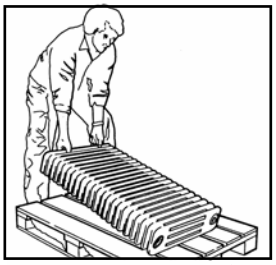
It is recommended that radiators are installed with a minimum gap of 100 mm above floor level. A full width sill above the radiator extending the depth of the radiator will reduce emission rates by approximately 4%.

Boxing of radiators or the use of decorative enclosures will reduce emission rates by upwards of 15%, according to the design of the boxing. Any restriction of the free flow of air over the radiator surface is detrimental to convected heat emission. Obscuring the front surface of the radiator eliminates the beneficial effect of radiated heat.

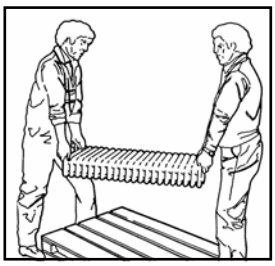


Carrying radiators

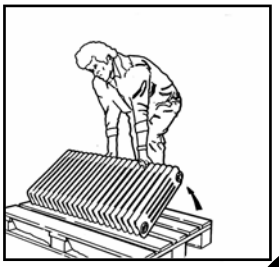
Always provide for sufficient manpower to make carrying safe. Incorrect handling of radiator blocks can cause water leaks from section joints. Lift the radiators blocks in the centre to bring them to the vertical position before lifting and carrying. Never carry radiators stretcher fashion. Although lighter than cast iron or steel column radiators, they must still be handled correctly and with care.



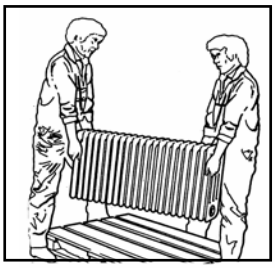
DO NOT !
Lift from one end ✗



DO NOT !
Carry radiators flat ✗



Always !
Lift in centre ✓



Always !
Keep sections vertical ✓

Assembling

Sections are joined with dry fitted joint rings between the machined faces of each section. Bushes and plugs are dry sealed in the connections at each end of the radiator with a joint ring supplied as part of the bush or plug. Hemp, tape or sealing compounds must not be used.

1 Before commencing assembly, ensure that the radiator blocks are adequately protected against scratching, abrasion or damage since the paint finish has already been applied. No responsibility can be accepted by Clyde for any damage to the paint finish that arises from handling, assembling or installing the radiators. It is essential to check that there is no damage to the paint finish before assembly is undertaken.

2 Position the section block horizontally on two lengths of timber.

3 Ensure that the machined faces and threads of the section are perfectly clean.

4 Screw two nipples one full turn into each of the section tappings. Note that the nipples have left and right handed threads.

5 Place a joint ring (as supplied) on each nipple.

6 Clean the machined surfaces and threads of the adjoining block or section. Lay this block or section beside the first block ensuring that the threads mating to the nipples have the correct thread rotation.

7 Measure and mark off the length of the adjoining block or section on the nipple turning bars.

8 Insert the turning bars through the nippleways of the adjoining block or section to engage with the nipples.

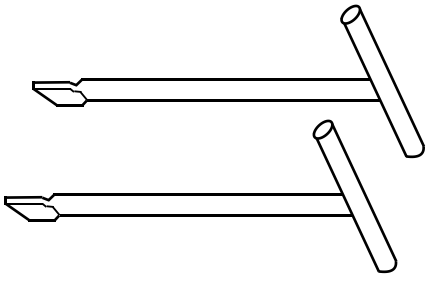
9 Rotate both nipple turning bars equally to draw the blocks together keeping them parallel. If the blocks are not pulled together evenly, threads can be damaged and may give rise to leakage. Tighten the section nipples to a torque of 300 - 380 Nm (220 - 280 ft.lbs) - ie. the full weight of a 10-stone man bearing down on a 2ft long tommy bar.

10 Repeat operations 2 to 9 until the radiator is fully assembled.

11 If a flow diverter is required, this should be fitted at the inlet to the radiator block.

12 Fit bushes, blank plug and vent valve according to the connection plan required.

Assembling tool set



2 x nipple turning bars

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