



COMMERCIAL HEATING SOLUTIONS



CAST IRON RADIATORS

Units 13-14 Charlwoods Road
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www.clyderadiators.co.uk 01342 305550

A brand of IRSAP, Italy's leading manufacturer of design led radiators.

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Clyde is a brand of the IRSAP, Italy's leading manufacturer of design led radiators. With over 50 years experience, we have the expertise to produce the best in quality & customer service.

Clyde provides bespoke solutions for LSTs, Cast Iron, Multi Column and Aluminium radiators. With a wide range of traditional and contemporary radiators, Clyde's solution based approach is designed to ensure we supply the ideal solution for all commercial and industrial requirements.

Our dedicated team of technical advisors and estimators will discuss your installation including the calculation of your heat output requirements (from drawings if necessary), arrange a full quotation based on your exact project specifications and provide lead times. They can also arrange a site visit from our National Sales Network if required.

For more information about Clyde or any of our products, please contact our customer service department: 01342 305522 / 305566

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GRANGE

Classic Victorian styling and flexible mounting options makes the Grange a perennial favourite. Available in 4 & 6 columns, mounted with either footed end sections or wall brackets

KEY FEATURES

- 4 or 6 Column in a choice of 6 Heights
- Footed Ends as standard or Wall Brackets (on request)
- Available in Primer as standard, 25 RAL colours, 31 Special Finishes, Polished, Lacquer plus the complete Farrow & Ball® range

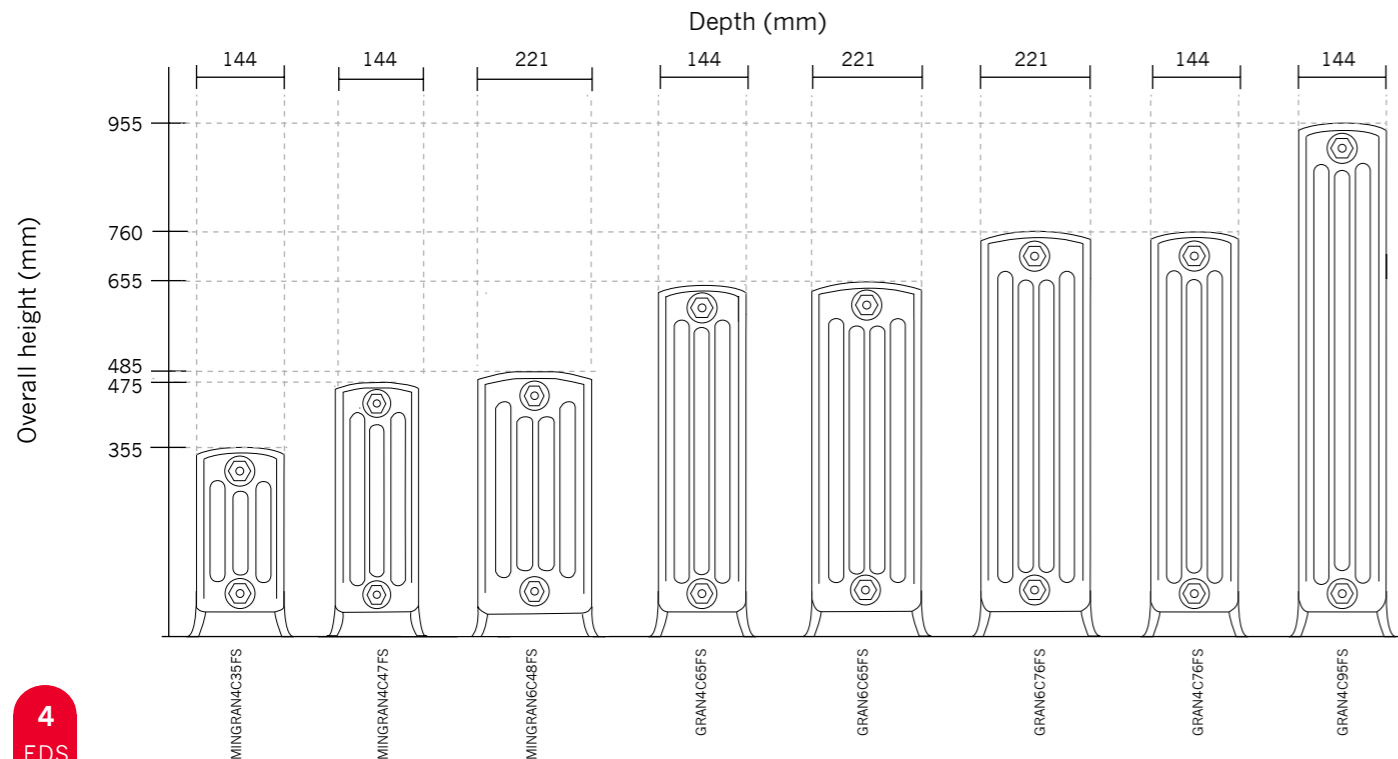
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* Subject to correct handling, installation, water treatment and operation, Clyde Grange radiators are guaranteed against manufacturing defects for 20 years from date of despatch.

PACKING, HANDLING AND SITE WORK

- With large orders radiator sections will be supplied on pallets 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. After radiators have been removed from their pallets, they must be kept vertical whilst being carried to their installation locations to avoid damage to the section joints.
- Radiators are factory assembled and pressure tested in blocks of up to 10 sections. For longer radiators additional blocks are supplied complete with nipples and joints for site assembling.
- Joining Keys are optionally available where additional blocks are supplied, the below outlines the required key;
 - All column radiators require a Heavy Duty Key.
 - For 4 Column radiators;
 - If more than two blocks are joined to make a complete radiator; Heavy Duty Key
 - If there are 4 or more completed radiators to be made; Heavy Duty Key
 - If there are 3 or less complete radiators to make & each completed radiator needs only 2 blocks to be joined; Basic Key



TECHNICAL DATA

PRODUCT FEATURES

- Curved top profile
- Open sections
- Suitable for open vented and sealed heating systems
- Primer, 25 RAL colours, 31 specials, polished, lacquered plus complete Farrow & Ball® range
- Available with Footed Ends as standard or Wall Brackets (on request)



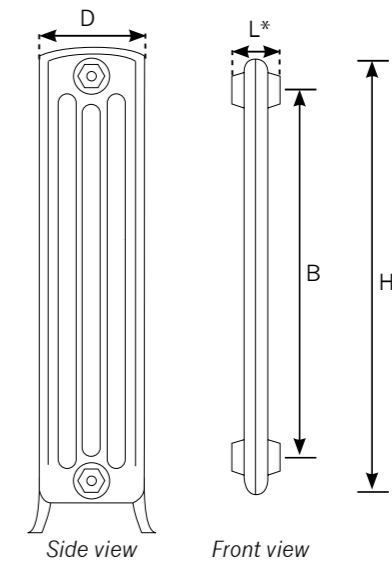
HEAT EMISSION RATES

- $\Delta T50$ (75°C / 65°C / 20°C)
- $\Delta T55.5$ (82°C / 71°C / 21°C)
- $\Delta T60$ (90°C / 70°C / 20°C)
- BS EN 442-1 conditions of $\Delta T50$

RANGE SELECTION

- 5 Heights in 4 Column
- 3 Heights in 6 Column

TECHNICAL DRAWINGS



SECTION EMISSION RATES

Model	BS EN 442		Emission rates			Recommended Max. No. sections	Section Details						
	75/65/20°C		82/71/21°C	90/70/20°C			Overall Length L mm*	Overall height H mm	Bore centres B mm	Depth D mm	Dry weight kg	Water content litres	Surface area m²
	DT50 watts	DT55.5 wattS	DT60 watts	DT60 watts									
MINGRAN4C35	46.5	52	59	40	60	355	200	144	3.23	0.55	0.111		
MINGRAN4C35FS	46.5	52	59	40	60	355	200	144	3.23	0.55	0.111		
MINGRAN4C47	62	70	79	40	60	475	315	144	4.35	0.67	0.157		
MINGRAN4C47FS	62	70	79	40	60	475	315	144	4.35	0.67	0.157		
GRAN4C65	87	98	110	40	60	655	500	144	5.5	89	0.222		
GRAN4C65FS	87	98	110	40	60	655	500	144	5.5	89	0.222		
GRAN4C76	101	114	128	40	60	760	602	144	7	0.96	0.257		
GRAN4C76FS	101	114	128	40	60	760	602	144	7	0.96	0.257		
GRAN4C95	125	141	158	40	60	955	800	144	8	1.16	0.332		
GRAN4C95FS	125	141	158	40	60	955	800	144	8	1.16	0.332		
MINGRAN6C48	94	106	119	40	60	485	350	221	6.37	0.8	0.243		
MINGRAN6C48FS	94	106	119	40	60	485	350	221	6.37	0.8	0.243		
GRAN6C65	127	143	161	35	60	655	500	221	8	1.22	0.333		
GRAN6C65FS	127	143	161	35	60	655	500	221	8	1.22	0.333		
GRAN6C76	148	167	188	35	60	760	602	221	9.36	1.35	0.372		
GRAN6C76FS	148	167	188	35	60	760	602	221	9.36	1.35	0.372		

* Overall section length = section + joint ring

SI conversion factor : 1 watt = 3.412 Btu/h

QUICK SIZING CHARTS

ΔT50 (75°C / 65°C / 20°C)

Model	watts per section	Radiator emission in kilowatts											
		0.6	0.8	1	1.25	1.5	1.75	2	2.5	3	4	5	6
		Nearest number of sections required											
MINGRAN4C35	46.5	11	15	19	24	29	33	38	.	.	.	.	.
MINGRAN4C35FS	46.5	11	15	19	24	29	33	38	.	.	.	.	.
MINGRAN4C47	62	9	11	14	18	21	25	29	36	.	.	.	.
MINGRAN4C47FS	62	9	11	14	18	21	25	29	36	.	.	.	.
GRAN4C65	87	6	8	10	13	15	18	20	25	31	.	.	.
GRAN4C65FS	87	6	8	10	13	15	18	20	25	31	.	.	.
GRAN4C76	101	5	7	9	11	13	15	18	22	26	35	.	.
GRAN4C76FS	101	5	7	9	11	13	15	18	22	26	35	.	.
GRAN4C95	125	4	6	7	9	11	12	14	18	21	28	35	.
GRAN4C95FS	125	4	6	7	9	11	12	14	18	21	28	35	.
MINGRAN6C48	94	6	8	9	12	14	17	19	24	28	38	.	.
MINGRAN6C48FS	94	6	8	9	12	14	17	19	24	28	38	.	.
GRAN6C65	127	4	6	7	9	10	12	14	17	21	28	35	.
GRAN6C65FS	127	4	6	7	9	10	12	14	17	21	28	35	.
GRAN6C76	148	4	5	6	7	9	10	12	15	18	24	30	36
GRAN6C76FS	148	4	5	6	7	9	10	12	15	18	24	30	36

ΔT55.5 (82°C / 71°C / 21°C)

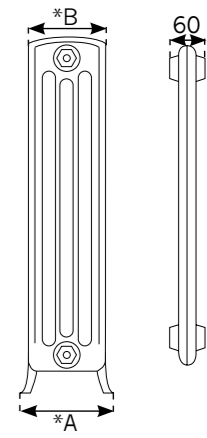
Model	watts per section	Radiator emission in kilowatts											
		0.6	0.8	1	1.25	1.5	1.75	2	2.5	3	4	5	6
		Nearest number of sections required											
MINGRAN4C35	52	11	15	19	24	29	33	38	.	.	.	.	.
MINGRAN4C35FS	52	11	15	19	24	29	33	38	.	.	.	.	.
MINGRAN4C47	70	9	11	14	18	21	25	29	36	.	.	.	.
MINGRAN4C47FS	70	9	11	14	18	21	25	29	36	.	.	.	.
GRAN4C65	98	6	8	10	13	15	18	20	25	31	.	.	.
GRAN4C65FS	98	6	8	10	13	15	18	20	25	31	.	.	.
GRAN4C76	114	5	7	9	11	13	15	18	22	26	35	.	.
GRAN4C76FS	114	5	7	9	11	13	15	18	22	26	35	.	.
GRAN4C95	141	4	6	7	9	11	12	14	18	21	28	35	.
GRAN4C95FS	141	4	6	7	9	11	12	14	18	21	28	35	.
MINGRAN6C48	106	6	8	9	12	14	17	19	24	28	38	.	.
MINGRAN6C48FS	106	6	8	9	12	14	17	19	24	28	38	.	.
GRAN6C65	143	4	6	7	9	10	12	14	17	21	28	35	.
GRAN6C65FS	143	4	6	7	9	10	12	14	17	21	28	35	.
GRAN6C76	167	4	5	6	7	9	10	12	15	18	24	30	36
GRAN6C76FS	167	4	5	6	7	9	10	12	15	18	24	30	36

ΔT60 (90°C / 70°C / 20°C)

Model	watts per section	Radiator emission in kilowatts											
		0.6	0.8	1	1.25	1.5	1.75	2	2.5	3	4	5	6
		Nearest number of sections required											
MINGRAN4C35	59	10	14	17	21	25	30	34	.	.	.	.	.
MINGRAN4C35FS	59	10	14	17	21	25	30	34	.	.	.	.	.
MINGRAN4C47	79	8	10	13	16	19	22	25	32	38	.	.	.
MINGRAN4C47FS	79	8	10	13	16	19	22	25	32	38	.	.	.
GRAN4C65	110	5	7	9	11	14	16	18	23	27	36	.	.
GRAN4C65FS	110	5	7	9	11	14	16	18	23	27	36	.	.
GRAN4C76	128	5	6	8	10	12	14	16	20	23	31	39	.
GRAN4C76FS	128	5	6	8	10	12	14	16	20	23	31	39	.
GRAN4C95	158	4	5	6	8	9	11	13	16	19	25	32	38
GRAN4C95FS	158	4	5	6	8	9	11	13	16	19	25	32	38
MINGRAN6C48	119	5	7	8	10	13	15	17	21	25	34	.	.
MINGRAN6C48FS	119	5	7	8	10	13	15	17	21	25	34	.	.
GRAN6C65	161	4	5	6	8	9	11	12	16	19	25	31	.
GRAN6C65FS	161	4	5	6	8	9	11	12	16	19	25	31	.
GRAN6C76	188	3	4	5	7	8	9	11	13	16	21	27	32
GRAN6C76FS	188	3	4	5	7	8	9	11	13	16	21	27	32

PIPE CENTRES & TECHNICAL DRAWING

Grange	Pipe centres left to right	Pipe centres from wall	*A Footed end section width	*B Section width
4 Column	60 x number of sections + 28mm bushes + valves	105mm - 120mm	174mm (footed ends protrude 31mm total from section width)	143mm
Mini 4 Column	60 x number of sections + 28mm bushes + valves	105mm - 120mm	174mm (footed ends protrude 30mm total from section width)	144mm
6 Column	60 x number of sections + 28mm bushes + valves	130mm - 150mm	250mm (footed ends protrude 28mm total from section width)	222mm
Mini 6 Column	60 x number of sections + 28mm bushes + valves	130mm - 150mm	255mm (footed ends protrude 33mm total from section width)	222mm



CONNECTIONS

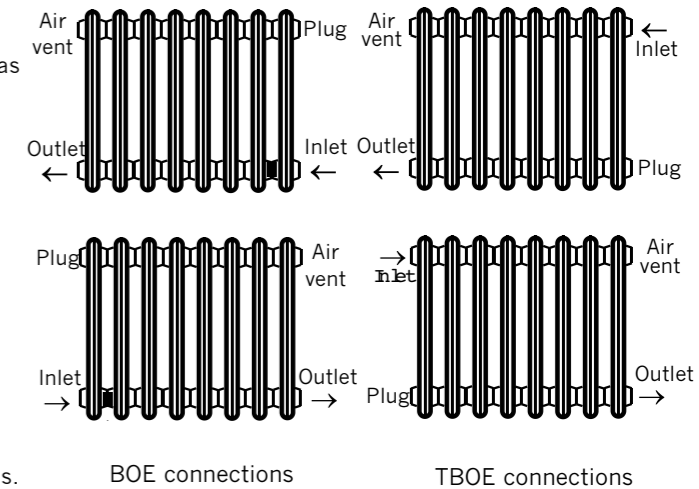
All connection fittings, including joining nipples for site assembling of blocks, must be dry jointed using the joint rings supplied. Thread pastes or tapes with or without packing such as hemp **must not be used**. All machined faces and threads must be thoroughly cleaned before joining.

A set of connection fittings and joint rings is provided for each radiator.

Each set comprises :

- 2 x R1¼ x R½ pipe connection bushes (or R1¼ x R¾ when requested)
- 1 x R1¼ plug (LH thread)
- 1 x R1¼ vent bush (RH thread) and R½ vent valve.

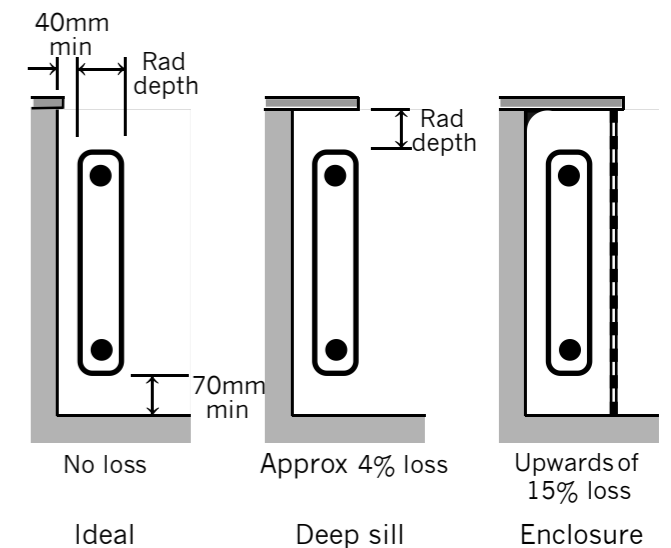
Radiators are normally installed with either BOE (bottom opposite end) or TBOE (top & bottom opposite end) connections. For installations with BOE connections,



The vent valve should always be fitted at the outlet end of the radiator. If necessary, rotate the radiator to position the vent correctly.

BOXING AND ENCLOSURES

It is recommended that radiators are installed with a minimum gap of 70mm above floor level. A full width window 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.



COMMISSIONING

In accordance with Part L1 2006 of the Building Regulations and BS7593:1992 code of practice for the treatment of hot water and central heating systems, we strongly recommend flushing the heating system post installation of new radiators and then adding the correct quantity and type of inhibitor for use with your radiator and system to prevent corrosion. Damage caused to systems not protected by a suitable inhibitor will not be covered by manufacturer's guarantee

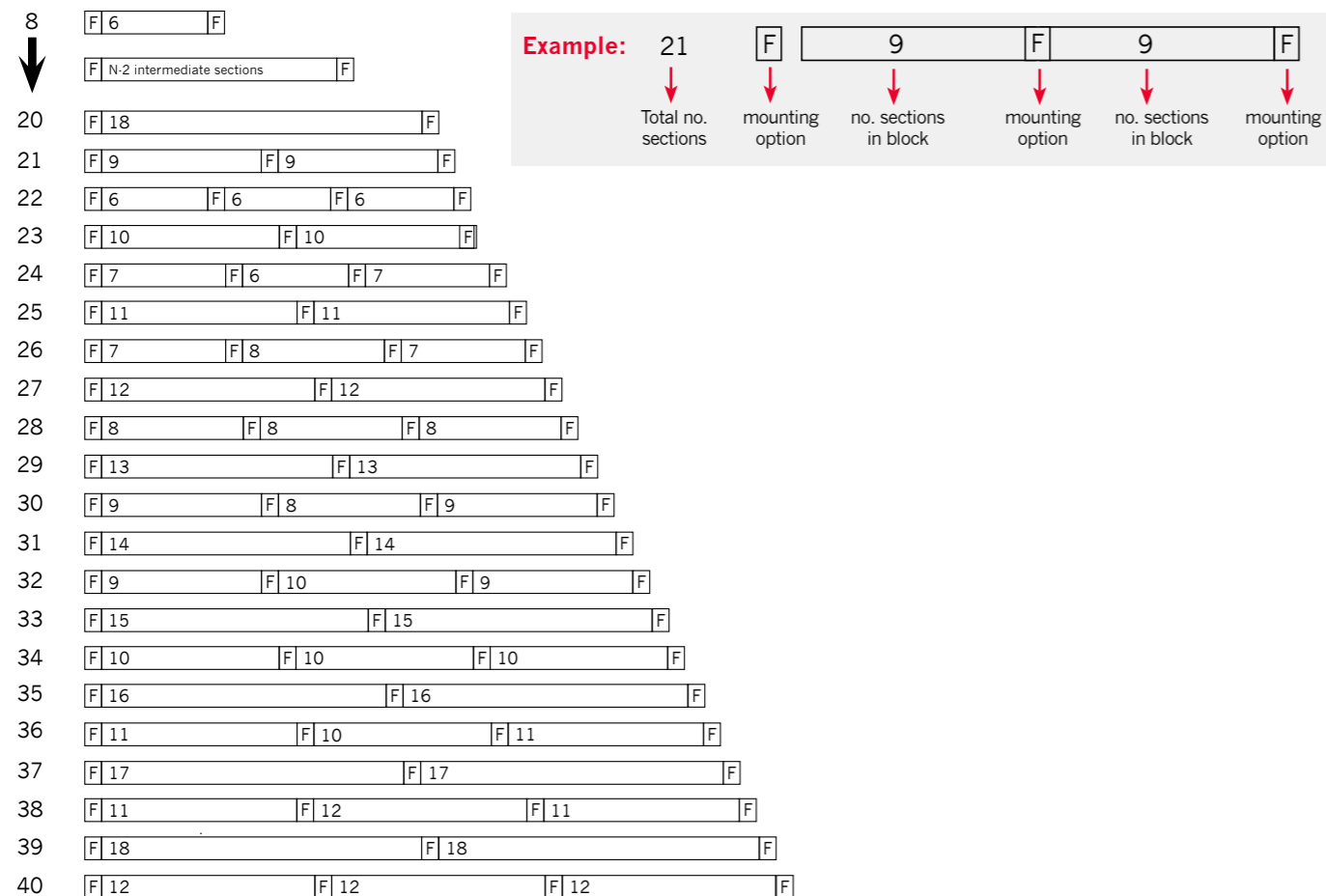
Before unpacking, please ensure that the delivered sizes and quantity are correct. Any shortages or damages must be notified to Clyde Radiators in writing within 7 days; Clyde Radiators, 13-14 Charlwoods Road, East Grinstead, West Sussex, RH19 2HU

FIXING ARRANGEMENTS, FLOOR MOUNTS & WALL BRACKETS

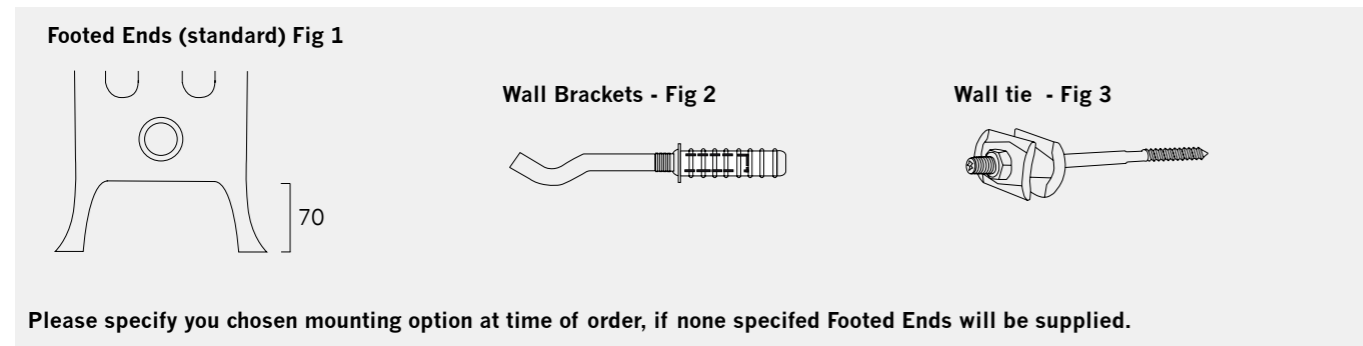
Grange radiators are always quoted with footed end sections as standard, if you require an alternative mounting option please specify at time of order. Clyde also offer an alternative mounting option; wall brackets, wall ties come as standard with all mounting options. Floor mounting is recommended for cast iron radiators. Wall brackets may be used for some radiators if the wall is sound and capable of taking the weight of the radiator. If the wall is generally unsound, built of low density cellular blocks or is a timber stud wall, floor mounts with wall stays should be used. Special arrangement may be necessary for providing fixing for stud walling, dry lined and composite walls (eg flint aggregate) which are commonly encountered in period restoration projects.

All screw fixes and wall plugs must be appropriate fittings selected to be suitable for the fabric of the wall to which the supports or brackets are being fixed. Do not use fibre or ceramic plug materials as these degrade in time and become unreliable. Advice on screw fixes and wall plugs is provided by specialist suppliers such as Fischer or Rawlplug. Pipework should never be used to provide support for the radiator. Assembling instructions are supplied with all Clyde radiators.

BLOCK MAKE-UP FOR ALL RADIATORS

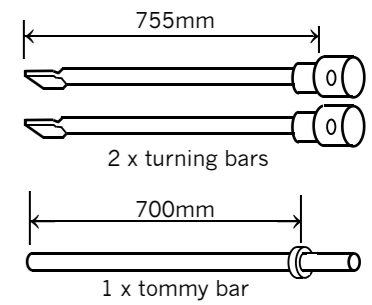


MOUNTING OPTIONS

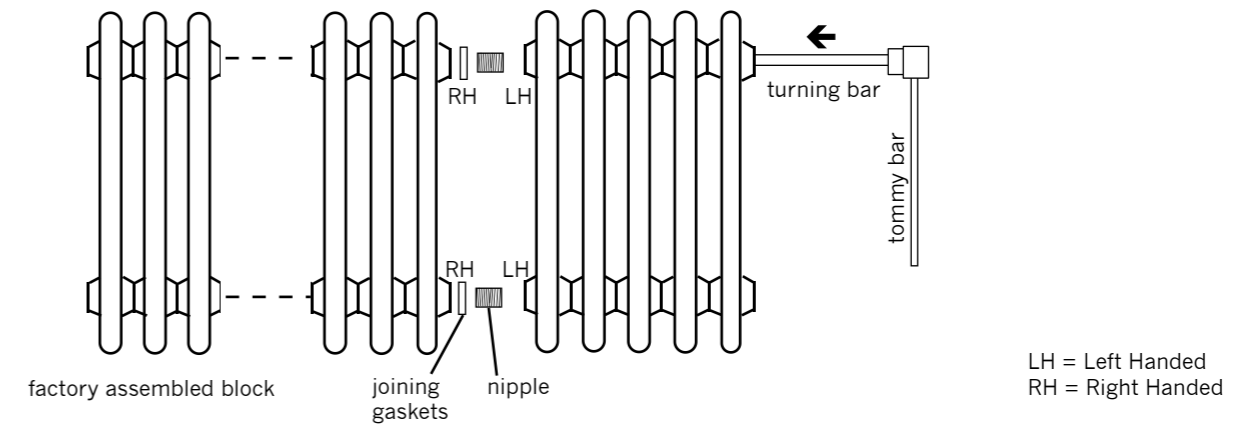


CONNECTIONS

Radiator blocks have Rp1¼ right hand threads at one end and Rp1¼ left hand threads at the other. Lay the blocks out so the right hand threads are aligned with left hand threads to suit the threaded nipples - refer diagram below. Before joining, inspect all blocks for primer paint runs and arrange these to be at the bottom of the radiator. Paint runs can usually be removed with a stiff wire brush. Match all blocks so that the assembled radiator is uniform along its entire length.



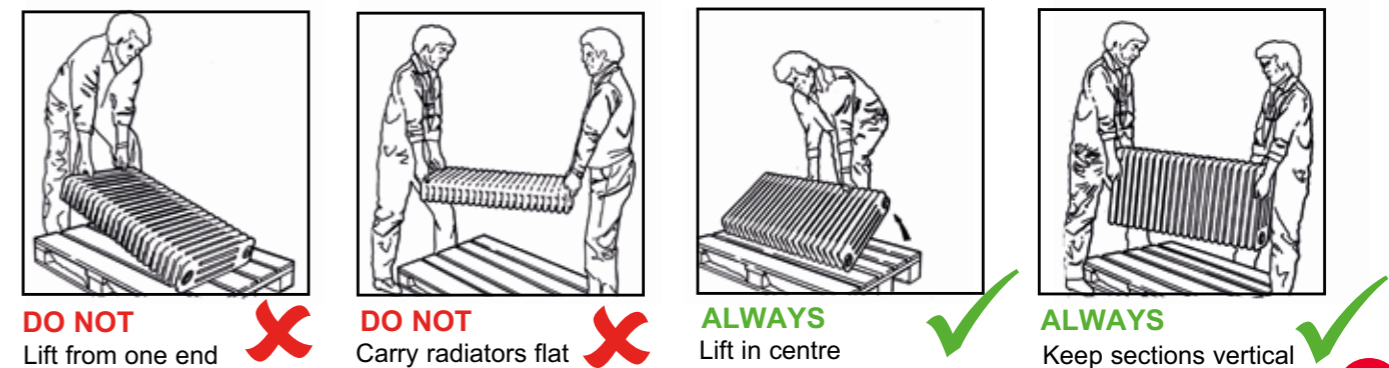
BLOCK ASSEMBLING



HANDLING

- With large orders, radiator sections will be supplied on pallets 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. After radiators have been removed from their pallets, they must be kept vertical whilst being carried to their installation locations to avoid damage to the section joints.
- Radiators are factory assembled and pressure tested up to ten sections. For longer radiators additional blocks are supplied complete with nipples and joints for site assembling.
- Assembling tools are optionally available where additional blocks are supplied.
- Joining Keys are optionally supplied on a sale or return basis where additional blocks are supplied.

Cast iron radiators are heavy. Always provide sufficient manpower to make carrying safe. Incorrect handling of radiator blocks can cause water leaks from section joints. Lift the radiator blocks in the centre to bring them to the vertical position before lifting and carrying. Never carry radiators in a stretcher fashion.



► ASSEMBLING

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

- Position the section block horizontally on two lengths of timber.
- Ensure that the machined faces and threads of the section are perfectly clean.
- Screw two nipples one full turn into each of the section tappings. Note that the nipples have left and right handed threads.
- Place a joining gasket (as supplied) on each nipple.
- 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.
- Measure and mark off the length of the adjoining block or section on the nipple turning bars.
- Insert the turning bars through the nippleways of the adjoining block or section to engage with the nipples.
- 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 tommy bar.
- Repeat operations 2 to 8 until the radiator is fully assembled.
- Fit bushes, blanking plug and vent valve according to the connection plan required.

Please visit our youtube channel where you can watch a demonstration on how to join and assemble a sectional cast iron radiator.

<https://www.youtube.com/watch?v=Nu1RJQGSrKk&list=PLMGnL07Af-x6fIWFfeVMOLKwq-50XBVaRc>

► PAINTING

CHOICE OF PAINT

Grange radiator blocks are supplied with a protective primer coating that will afford limited protection against the formation of rust provided that the blocks are correctly dry stored. Blocks will rust if they become wet.

Clyde Radiators can deliver your cast iron radiators fully furnished and ready for installation. We use a robust, polyester powder coat paint, which is applied by our specialist painters based in the UK, to achieve a long lasting, durable finish. Please be aware that as a result of the casting process, cast iron radiators have a rough surface finish with small imperfections which will show after the painting process.

THIS PROTECTIVE PRIMER COATING IS NOT INTENDED AS AN UNDERCOAT.

For a superior, long lasting paint finish we recommend that a protective coat of a zinc based rust inhibitor is applied. This must be compatible with the undercoat and finish coat selected for the radiator. Radiators may be finished with most domestic paints that are formulated to withstand temperatures up to 100°C. Spray paints (air drying or oven cured) as used for car bodywork are also suitable. Paint supplier's recommendations regarding the use of an undercoat should be observed to ensure a true colour rendering.

Topcoats and undercoats MUST NEVER be WATER BASED or EMULSION type. Care must be taken in selecting undercoats as many modern formulations are water based although they are designed for use with oil based topcoats. A water based paint will always create rust pocks that will grow and become unsightly.

PAINTING

Paint may be applied by brush or spray and an undercoat should be applied, in accordance with the paint manufacturer's instructions. The quantity of paint required may be calculated from the coverage factor declared by the paint manufacturer and the surface area of the radiator sections.

Mount the radiators in their final positions and complete all pipe connections. Painting radiators 'in situ' against a wall is not recommended as the entire surface cannot be reached and there will be a high risk of rust formation on untreated surfaces.

When all installation work has been completed, disconnect the pipework and remove the radiators from the wall. Because the radiators are heavy and cumbersome to move, it is highly advisable to paint each radiator close to where it is being installed. Stand or lay the radiators on wood chocks. For safety, radiators must be supported whilst standing up, but it is necessary to turn them over to examine and treat all surfaces.

Using dry cloths, a wire brush and/or emery sheets, remove all dust and debris from the radiator surface. If any rust spots are found these must be removed and then treated with a chemical rust cleaner such as 'Jenolite'.

GRANGE COLOUR OPTIONS - RAL COLOURS

If you are looking to have your Grange radiator in an alternative colour we offer the following RAL colour options, please specify chosen colour at time of order.



To discuss a quotation for other colours outside of the above range please call 01342 305550

GRANGE COLOUR OPTIONS - SPECIAL FINISHES

Choose from 31 Special finishes; Textured, Mottled, Bronze, Metallics and Golds, please specify chosen colour at time of order.



GRANGE COLOUR OPTIONS - FARROW & BALL®

Farrow & Ball® has been passionate about creating richly pigmented paint to original formulations using age-old methods since 1946. Their distinctive palette of 132 timeless colours (renowned for its depth & complexity) has transformed modern and traditional homes, large and small, across the world. Please visit our website www.clyderadiators.co.uk for the full range of colours, your chosen finish must be specified at time of order.

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OTHER CLYDE PRODUCTS

Clyde Radiators

COMMERCIAL HEATING SOLUTIONS

- 4 Flat Panel radiators
- Lightweight & Efficient Sectional Aluminum
- Sectional Cast Iron in 3 other styles
- 2 Bespoke LST options, made to specification
- Sectional Steel Multi Column in over 3200 sizes
- Trench: Practical aluminium convector for underfloor heating
- Mini: Aluminium and copper convector, in steel casing with aluminium grille



www.clyderadiators.co.uk

VALVES

Choose one of our TRV's to complement your cast iron radiator.

ESTATE TRV

- Height of Wheelhead 127mm
- Available in Brass & Chrome
- Straight or Angled
- For angled valves allow an extra 80mm in total
- Estate TRV's are not Bi-directional
- Supplied in pairs of one thermostatic valve & one lockshield
- R $\frac{1}{2}$ x 15mm compression angled valves



TRADITIONAL TRV

- Height of Wheelhead 115mm
- Chrome and Nickel finishes supplied with a Black top
- Antique Copper, Antique Brass and Polished Brass supplied with a Walnut top
- For angled valve allow an extra 90mm in total
- Traditional TRV's are not Bi-directional
- Supplied in pairs of one thermostatic valve & one lockshield
- R $\frac{1}{2}$ x 15mm compression angled valves



TRADITIONAL XL TRV

- Height of Wheelhead 160mm
- Available in Chrome, Nickel & Antique Brass supplied with a Black top
- Available in Antique Copper & Polished Brass supplied with a Walnut top
- For angled valve allow an extra 120mm in total
- Traditional XL TRV's are not Bi-directional
- Supplied in pairs of one thermostatic valve & one lockshield
- R $\frac{1}{2}$ x 15mm compression angled valves

