



MINI TRAIN SYSTEMS PTY LTD



CATALOGUE – MARCH 2024

ALL PRICES INCLUDE GST, ARE VALID AS OF 22/03/2024 AND ARE SUBJECT TO CHANGE WITHOUT NOTICE

NEW WEBSITE

Concurrent with the release of this new Catalogue, we're sending our new website live.

As well as reflecting extensions and updates on our product range, the website now includes an on-line shop for ordering basic items. Info on locomotives, rolling stock and track are included together with links to request a quote so we can make sure that we're offering the precise variation and delivery options you want.

We've also updated the layout of the catalogue to make it easier to navigate.

There are new designs under development in both 5" and 7 ¼" gauges that we'll announce later as they progress.

We're also hoping to be involved in more inter-club events this year to meet more of you face-to-face.

Visitors, by appointment as always, are welcome to check out our factory at St Marys in western Sydney, to meet the team that will build your project.

We'll See You on the Track!

MARCH 2024 CATALOGUE

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Any and all questions contact Roger Jones

via email info@minitrains.com.au

or phone 0401 059 178

Look out for us at Inter-Club meets as well!

We'll see you out on the track!

Section 1: Locomotives

My First Locomotive

MTS has a whole range of locos which are ideal for enthusiasts starting out. They're not too large or too expensive, but they can pull a load and be upgraded with motorised riding cars to haul even more!

MAXITRAK-MTS PLANETS AND BALDWIN

Courtesy of our friends Maxittrak in the UK, we can offer you two different versions of the "Planet" Industrial style diesel loco, plus the Australian EM Baldwin Cane loco, each with our own performance improving upgrades included. All versions include a headlight and a diesel sound simulator as standard. Supplied with our PS7 Power Control System and a handheld controller for the driver that simply plugs in to the back of the loco.

5" GAUGE PLANET

This is the small 5" gauge version which is easy to transport, will go around extremely tight backyards tracks and at 240W has enough power to pull a passenger car on most public tracks.

These locos feature Maxittrak's clever axle mounted motor system as used on their larger 5" gauge locos.

The standard package includes the loco, drivers riding car, battery and a charger. We also have an upgraded version with a 450W motorised bogie in the driver's riding car and an extra battery, effectively tripling the power available.



7 1/4" PLANET 2

The much larger version is intended for 7 1/4" gauge. At 700W it has enough power to pull a club passenger load of 2 or 3 straddle cars, is self-contained with internal batteries and can run with a range of riding cars. At the same time it is ideal for 7 1/4" gauge home layouts particularly those with tight curves.

To cope with the higher power demands on this size of loco, these have two 350W motors under the floor which drive the wheels via roller chains in a similar way to the MTS designed locos.

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The standard package includes the loco, drivers riding car, two batteries and a charger. We also have an upgraded version with a 450W motorised bogie in the drivers riding car significantly increasing the power available.

5" BALDWIN CANE LOCO

These engines were constructed by EM Baldwin & Sons of Castle Hill, New South Wales, Australia.

The company supplied smaller locomotives for industry from the 1950's to the 1980's. Designs included shunting, mining, and tunnel locomotives but the most common surviving engines were built for the Queensland sugar industry. At this time the extensive 2ft gauge lines were changing from steam to diesel traction. EM Baldwin built a large number of the replacement diesels to a continuously evolving design, to the extent that there are hardly two alike. Engines and gearboxes varied depending on power requirements and supplier's delivery dates.



The usual sugar industry livery was bright yellow with red and white striped buffer beams. Many enjoyed further enhancement with coloured stripes and panels giving the modeller many opportunities to customise the livery to suit your taste.

Many of these engines are still hard at work in the cane cutting season and form the backbone of the largest surviving 2ft gauge industrial railway system in the world.

This model is manufactured by our friends Maxitrak with design input from Mini Train Systems. MTS models feature a sound system as standard, MTS PS7 power control system with regenerative braking and full multi-unit (MU) control for double heading with other MTS locos.

The standard package includes the 480W loco, drivers riding car, two batteries and a charger. We also have an upgraded version with a 450W motorised bogie in the drivers riding car effectively doubling the power available.



MTS SECTION CARS

These are inspired by the small “section” or “gangers” cars that used to run around the railways with crews doing daily track inspections and repairs. They are based on our high seat straddle cars, and at 900W provide plenty of power for demanding home tracks and for public running at the club.

They include our PS7 Power Control system with a full control panel. They will also multi-unit with other MTS 24V electric locos doubling as a motorised driver’s riding car for conventional locos. Available with red or yellow powder coated steel sides.

While being great fun they are also one of the cheapest ways to get into the hobby!

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Specifications and Prices

	Planet	Baldwin	Planet2	Section Car
Gauge	5"	5"	5" or 7 ¼"	5" or 7 ¼"
Length	560mm	971mm	840mm	1300mm
Width	255mm	327mm	385mm	480mm
Height	465mm	471mm	700mm	760mm ++
Appx Weight	30kg	60kg	100kg **	120kg *
Min Radius	2.5m	3.8m	3.8m	3.8m or 6.25m
Top Speed	9.5km/h	9.5km/h	9.5km/h	9.5km/h
Power/Volts	240W/12V	480W/24V	700W/24V	900W/24V
Batteries	External	External	Internal	Internal
Front MU	Yes	Yes	No	Yes
Sound Unit	Yes	Yes	Yes	No
Control Panel	Opt	Opt	Opt	Std
Hand Control	Std	Std	Std	Opt

Package with riding car (except for Section Car), batteries and charger	Planet	Baldwin	Planet2	5"	7 ¼"
	\$8,500	\$11,500	\$12,000	\$6,500	\$6,900

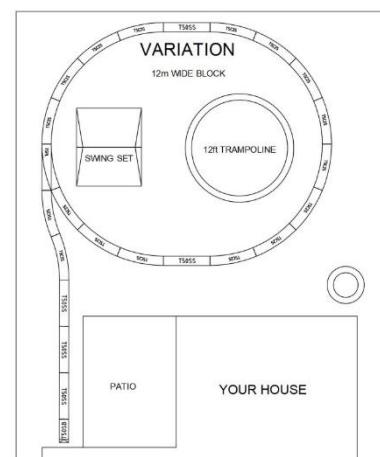
Package with 450W motorised riding car and upgrade from Hand to Control Panel	Planet	Baldwin	Planet2	na
	\$10,500	\$13,500	\$14,000	

Options:

Riding Car mounted vacuum brake pump and control for 5" gauge trains (Includes operating switch on car or, if Control Panel supplied, in that)	\$ 500
Control Panel in place of hand controller	\$ 300

Track Packages starting from under \$7,000

We custom design track packages for whatever size of property you have and type of railway you want. These can start from as little as \$6,500 for a simple oval layout with a siding.



MAXITRAK LOCOMOTIVES

As well as the Planets and Baldwins that we include in our standard range, our friends Maxittrak in the UK produce a wide range of battery electric locos mainly in 5" gauge but also some in 7 ¼" gauge.

Primarily British prototype, some US designs are also available, notably the 5" gauge F7.

When purchased through MTS, these locos are upgraded in our factory to feature:

- MTS PS7 Control System
- Sound Simulator
- Normally optional features such as additional motors, body details and lighting are supplied standard
- Packages include drivers riding car, and the option of motorised riding cars to improve performance in Australian conditions.

The 5" gauge range includes:

USA F7, BR Classes 20, 25, 59, 66, 73, and Warship

While in 7 ¼" gauge these models are available:

USA "Whitcomb", USA GP40, and BR "Deltic"

The BR Class 04 in Maxittrak's range is manufactured for them by MTS.

Because of currency and freight cost volatility, prices are on application.



The Drewry Shunter



Based on a full sized loco made in the UK, exported around the world, and operated on many different gauges, this chameleon like model is available with many different variations and customisations.

It's a powerful 2kW loco, with similar power to our other larger locos but is more affordable as a first loco.

All the Drewrys are the same size and power but they are available in 7 ¼" gauge, representing Standard Gauge locos and in 5" gauge representing 3ft 6" Narrow Gauge types.

Some examples are:

- Tasmanian V Class 5" Gauge
- Puffing Billy D21 5" Gauge
- NZR DS Class 5" Gauge
- BR Class 04 7 ¼" Gauge

Then there are the chain drive versions in both gauges that are the backbone of a number of clubs and private railways, and of course you can have your loco in pretty much any colour you like.



These locos are completely designed and manufactured in Australia by MTS. They feature many design details, solid and reliable construction, and plenty of pulling power.

Depending on track conditions these locos will handle four or more 5" gauge 1800 straddle cars or up to about four 2400 enclosed sided 7 ¼" gauge cars.

If you want to haul even more for 7 ¼" gauge we can also offer you the option of a 1kW power bogie in the riding car.

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Specifications

Gauge	5" or 7 ¼"	Power/Volts	2kW 48V
Length	1060mm	Batteries in Riding Car	
Width	350mm	Front MU	Yes
Height	495mm	Sound	Standard
Approx Wt	120kg	Control Panel	Standard
Min Radius	5.0m/6.25m	Hand Control	Optional
Top speed	Approx 9.2 km/h – can be varied up or down to order		

Packages with batteries and charger

	5" Rodded	5" Chain	7 ¼" Rodded	7 ¼" Chain
Standard with	\$19,900	\$18,900	\$20,400	\$19,400
1.5m riding car				
With Motorised 1.8m riding			\$24,000	\$23,000

Vac Brake Controls

& Pump add	\$ 500	\$ 500	\$ 500	\$ 500
Air Brake Controls (lineside air supply)			\$ 2,400	\$ 2,400
Air Brake Controls with on-board Compressor			\$ 3,000	\$ 3,000

Both options include upgrade to 1.8m riding car





Australian Locomotives

General Specifications

These locos are our masterpieces with a wealth of accurate detail parts via special laser cutting, 3D printing and resin and brass castings – hundreds on each loco – and yet they have plenty of pulling power and are tough and durable.

Featuring our PS7 power controllers they include Australian MyLocoSound diesel sound simulators with an amplifier and a speaker with plenty of bass response. They have working headlights, marker lights and number board lights.

These locos can run together in MU for extra power and spectacle and can also operate with our motorised riding cars.



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NSW 48 AND ANR 830 CLASS – Available In 5" Gauge And 7 ¼"



One of the most popular prototypes in Australia, the MTS model features all of the details you expect and performance to match, hauling four or more passenger cars on most tracks. Detail variants for Mk2, Mk3 and Mk4 are available as well as the two distinct sub-types in the Mk1 series.

For 5" gauge the included 1.2m Driver's Car with two AGM batteries provides enough capacity to run all day in most club environments with options available for increased storage capacity for extreme conditions. For 7 ¼" gauge we provide a 1.5m or 1.8m Driver's Car with four AGM batteries for their 48V system, supplemented by four internally mounted batteries.



As well as the traditional original Indian Red livery, the 48 class looks good in all its various colours, including: Reverse, Candy, Freight Corp, Pacific National, 125 Years Green, Bicentennial and a whole raft of special successor owner liveries.

MTS also builds the SAR/ANR 830 Class variant, in standard gauge/broad gauge form. Narrow gauge fans contact us!



Note that the big 7 ¼" gauge model is also available with 5" gauge wheels to run as a narrow gauge loco – Silvertons and 830's!

5" gauge MTS 48 Class locos can haul typically four straddle type passenger cars on most club tracks, while 7 ¼" versions can haul typically four enclosed cars.

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5" QR 2400/2170

These models represent examples of a whole range of QR classes and are available with both the original style cab shown in the model photo, or the later upgraded "Supercab" version.

Built to a scale of 1:8 (1 ½" to the foot), these narrow gauge locos run on 5" gauge track. In many ways the perfect "heavy hauler" for clubs. With 1.8kW of power and a highly efficient 48V system, they are capable of hauling six or more fully loaded 5" gauge straddle cars on most tracks, or typically four enclosed 7 ¼" gauge cars on dual gauge tracks.

These are big locos - 2.25m on the frames and weigh in at around 270kg so with all wheels driven have plenty of adhesion to handle the heaviest club load yet are still easily transportable in an 8x4 trailer.

For added realism these locos are also fitted with the Australian designed "MyLocoSound" diesel sound simulator, programmed to suit the GM motor in the prototype.

These locos carry both internal batteries and batteries in the driving car which give excellent capacity for a fully day of club passenger running.

Like all MTS PS7 controlled locos, the 2400 Class locos can double head with similarly fitted locos to combine power for even greater loads or just plain fun.



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Specifications and Prices

	48/830 CLASS – 5"	48/830 CLASS – 7 ¼"	2400/2170 CLASS
Gauge	5" Standard Gauge	7 ¼" Stand Gauge or 5" Narrow Gauge	5" Narrow Gauge
Scale	1:10.67 (1 1/8" = 1 ft)	1:8 (1 ½" = 1 ft)	1:8 (1 ½" = 1 ft)
Length	1386mm	1848mm	2250mm
Width	258mm	346mm	346mm
Height	400 over exhaust	535 over exhaust	484mm
Approx Wt	110kg	220kg with batteries	275kg with batteries
Min Radius	6.25m	8.5m	8.5m
Top speed	9.2 km/h – can be varied up or down to order		
Power/Volts	900W 24V	1.8kW 48V	1.8kW 48V
Loco Batteries	Riding Car Only	4 x RM12-33DC	4 x RM12-55DC
Riding Car Batteries	2 x RM12-100DC	4 x RM12-75DC	4 x RM12-75DC
	(all batteries are deep cycle AGM technology)		
Front MU	Yes	Yes	Yes
Sound	Standard	Standard	Standard
Control Panel	Standard	Standard	Standard
Hand Control	Optional	Optional	Optional

Package with Riding Car (1200 for 24V, 1500 for 48V), Batteries and Charger

24V	900W	\$22,995	NA	NA
48V	1.8kW	NA	\$30,975	\$30,975

Loco only if using your own riding car or using as a second unit double heading
 \$17,795 \$25,775 \$25,775

Double Heading Cable set
 \$ 200 \$ 220 \$ 220

Control Panel and Riding Car Wiring Package if using your own riding car
 \$ 900 \$ 990 \$ 990

Locos with internal batteries have a roof hatch accessed circuit breaker and battery charge socket so that you don't have to take the body off to charge the loco.

Liveries:

Prices are for standard liveries: 48 Class Indian Red or Reverse liveries and 2400 Class QR Blue. A premium may apply for other liveries.

Options:

Upgrade Riding Car 1200 > 1500 or 1500 > 1800 with air brake control & pump \$3,000

Steam-Outline Electric Locomotives

JINTY

“Jinty” is the nickname given to the former British LMS Railway Fowler 3F 0-6-0 tank locos, some 422 of which were built between 1924 and 1931. They were used for shunting, banking and light freight and passenger trains.

As well as on the LMS they ran on the S&DJR and lasted well into British Railways days. Nine are preserved and they are very popular with enthusiasts.



The 7 ¼” gauge MTS model is built to a scale of 1/8 of full size (1 ½” = 1ft), is all steel in construction with brass and 3D printed detail features, and has two 1kW 48V motors providing power via an MTS PS7 power controller. The whistle is an actual steam whistle that operates on compressed air that is supplied from the driver’s riding car.

As far as liveries are concerned, prototypically there are LMS and BR black, LMS crimson lake (as preserved) or S&DJR blue, but of course it’s your loco so you can have whatever colour you like!



AUSTERITY

During World War 2, Hunslet in the UK and their subcontractors built hundreds of these locos as shunters for use in the UK and in Europe. They continued in use and with new construction post-war with the LNER, and subsequently BR, as the J94 class and on military and private railways. So many operators that it’s hard to keep track, but most notably the National Coal Board (NCB) which, as probably the

last “in-service” operator, was the source of many of the currently preserved examples. Of the 450 plus built, some 56 have been preserved.

For those familiar with it, Public Works Dept. (PWD) No.79, preserved at the NSW Rail Museum, Thirlmere, is an example of the earlier (and smaller) “16 inch Hunslet” built in the 1930’s and shares many design features with these locos.

In revenue service and in preservation they have appeared in a huge number of liveries – just do a Google Images search and be amazed! They are a particularly handy loco with plenty of power for their size.

Choosing Between Austerity and Jinty

Each design has its advantages and if you love the look of both of them then your choice comes down to where you're going to run it.

In size they're much the same and power-wise they're identical. Essentially Austerity has a short wheelbase which makes it ideal for very tight curves, while Jinty's long wheelbase makes it more stable for higher speed running.



G.E.R. TRAM

These models are based on 12 trams built by the Great Eastern Railway Stratford works between 1903 and 1921. They operated on the Ipswich docks, Yarmouth and Vauxhall areas and were well known for operating Wisbech and Upwell tramway.

Our tram is a 7 ¼" gauge loco which is suitable for club style passenger hauling as well as running on more demanding home layouts.

At 1kW it has enough power to pull up to four 5" gauge 1.8m or two enclosed sided 7 ¼" gauge passenger cars on most club layouts. For even more power, the riding car can be upgraded to include a 1kW booster bogie.

While this loco is similar in appearance to some home-built 5" tram locos seen from time to time, it is much larger and much more powerful.

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Specifications and Prices

	GER Tram	Austerity	Jinty
Gauge	7 ¼"	7 ¼"	7 ¼"
Length	870mm	1154mm	1200mm
Width	390mm	318mm	340mm
Height	600mm	466mm	500mm
Approx Wt	110kg	150kg	120kg
Min Radius	3.8m/5.0m	6.25m	9m
Top speed	Approx 9.2 km/h – can be varied up or down to order		
Power/Volts	1kW 48V	2kW 48V	2kW 48V
Batteries	External	External	External
Front MU	Yes	No	No
Sound	Optional	Optional	Optional
Control Panel	Standard	Standard	Standard
Hand Control	Optional	Optional	Optional
Package with 1500 Riding Car Batteries and Charger	\$15,800	\$25,000**	\$24,500**

** Includes Air Compressor for whistle

Options:

Upgrade Tram Riding Car 1500 > 1800 with air brakes control & pump	\$3,000
Upgrade Jinty/Austerity to include air brake controls and fittings with 1500>1800 riding car upgrade	\$2,000
Double Heading Cable and Coupling Bar Set	\$ 200

Section 2: Rolling Stock

Drivers and Passenger Cars

STRADDLE CARS

These cars are available for passenger carrying in both 5" gauge and in 7 ¼" gauge. They feature powder coated steel frame construction with painted timber ends and footboards.

Colorbond® steel sides are included with standard colours being Shale Grey, Cottage Green, Manor Red, or Classic Cream. They are available in a range of lengths and, depending on version, two different seat heights.

5" gauge cars are supplied with Sandberg Bogies with reinforced pivot pins and all steel parts painted in epoxy enamel for rust protection. 7 ¼" un-braked cars are supplied with MTS H-Type bogies while air braked cars are fitted with MTS Q-Type bogies.

A range of options are available including special colours, train brakes, and for Driver's Riding Cars, train brake controls and motorised bogies to boost your loco power.



Passenger Cars

Available in 1.2m, 1.5m and 1.8m lengths with high (standard for 7 ¼" gauge) or low (standard for 5" gauge) seats.

Air brakes are available for 7 ¼" cars and vacuum brakes are available for 5" cars. Where train brakes are fitted they are applied to one bogie per car providing a nominal 50% of wheels braked.

Drivers Riding Cars



These have the same structure as Passenger Cars but include a parking brake, battery bay, power cut off switch, circuit breakers and wiring for various voltages, battery capacities and train braking systems.

For 12V/24V we have 1.2m high seat cars and for 24V/48V we have 1.5m and 1.8m high seat cars. The 1.8m cars have central seat divider.

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Guards Cars

These are 1.2m high seat cars with hand brakes for putting at the end of the train where separation from passenger space is required.

5" Gauge Standard Range	1200	1500	1800
Drivers (High)	12V/24V \$3,200	24V/48V \$3,465	24V/48V \$3,670
Vacuum Pump add	\$ 550	\$ 550	\$ 550
24V 450W Motorised add	\$2,200	\$2,200	\$2,200
24V/48V 900W Motorised add	-	\$2,900	\$2,900
Passengers (Low)	\$2,415	\$2,520	\$2,625
Vacuum Brakes add	\$ 475	\$ 475	\$ 475
Guards (High)	\$2,700	-	-

7 ¼" Gauge Standard Range	1200	1500	1800
Drivers (High)	\$3,800	\$4,065	\$4,270
Air Brake Control add	-	\$2,200	\$2,200
Compressor add	-	-	\$3,300
Passenger (High)	\$3,015	\$3,120	\$3,265
Air Brakes add	\$1,000	\$1,000	\$1,000
Guards	\$3,300	-	-
Air Brake Control add	\$ 700	-	-

Other Options

- Aluminium checkerplate tops added to footboards \$ 190 per car
- Vacuum brakes on second bogie of 5" Passenger Car \$ 200
- Air brakes on second bogie of 7 ¼" Passenger Car \$ 400



7 ¼" GAUGE ENCLOSED SIDED PASSENGER CARS

- Enclosed cars are essential for all commercial applications and are recommended for private and club use. These cars provide a far greater level of passenger safety than straddle cars - and steel lined foot-wells can reduce footwear restrictions on passengers.
- The large sides allow the owner a wide range of decoration options to customise their train and give it real character.
- Built as articulated multi car AALS Compliant "two pipe" Air Braked sets using MTS "G" Bogies.
- A typical set of two cars comprises:
 - An "A" car at the front - two bogies, a bar coupler at the front and ball coupling at the rear. The front bogie is un-braked.
 - A "B" car at the rear - one bogie (at the rear) and a ball socket coupling at the front.
- Sets can be extended by adding intermediate "C" cars or by bar coupling to other sets.
- Standard cars are approximately 2.5m long between coupler centres, with a 2.2m seat length and will seat typically 2 adults plus 3 children.
- A five car set, properly coupled, will fit (just) in one piece into a 40ft shipping container.
- Typical overall width (decoration dependent) 530mm, height under 600mm depending on body style.
- Standard decoration is "freight car" style with single body colour, plus black frames and bogies. More elaborate mouldings and paint schemes available at extra cost.



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Enclosed Car Pricing

2 Car Un-Braked Set – Standard “Freight” Decorations	\$ 8,400
2 Car Air Braked Set – Standard “Freight” Decoration	\$10,500
Add “C” type Air Braked intermediate car	\$ 4,800
Independent Car (2 bogies – no ball coupling - braked)	\$ 6,300

Seating and Foot Space

This image shows a set built and decorated for a commercial customer.

The longitudinal seat can optionally be made removable if you want your car to double as an actual freight car!

The minimum seat to floor height over the bogies is similar to our low-seat straddle cars. The section between the bogies has a reinforced drop floor making that area more comfortable for adults. We recommend that children always sit in front of their adults for safety and these cars are very comfortable in that mode.



Articulation Couplings

This image shows a more elaborate goods van style decoration. The rear car has been removed showing the ball coupling used at the back of an “A” or “C” Car. The front of a “B” (or a “C”) has a trailer socket coupling which sits over and locks down on this. The two cars then share this bogie, which is rated to take the weight, while the over-ride bars stop the rear car from twisting too much relative to the front car.

Gardening Wagons

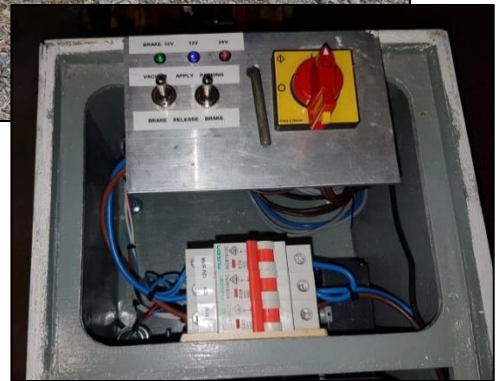
These cars were developed in response to customer requests and have proved quite popular. They are not intended as “scale” wagons in any way but as good solid and durable wagons for use in the garden.

- 5” Gauge wagons are supplied with “Sandberg” bogies as shown.
- Unbraked 7 ¼” Gauge wagons are identical body-wise and are supplied with un-braked MTS “H-Bogies”.
- Braked 7 ¼” Gauge wagons are fitted with MTS “Q” bogies and air brakes. These cars do NOT include a reservoir but have the AALS standard reservoir line piped through.
- Braked cars are braked on one bogie only.

Design variations including different lengths and body details are available to special order.

	5” Gauge	5” Vac Braked	7 ¼” Gauge	7 ¼” Air Braked
1.8m Open Wagon	\$2,000	\$2,400	\$2,200	\$3,860
1.8m Flat Car	\$1,800	\$2,200	\$2,000	\$3,660





5" Gauge Scale Freight And Driver's Cars

These cars form a range of scale model freight cars, some of which can double as driver's riding and battery cars.

Chassis are welded steel and bodies may be steel and/or laser cut plywood and timber construction. Sandberg bogies are supplied for economy, strength and reliability.

MRC/MBC/BPV

These cars are based on the NSW insulated/refrigerated milk van, famous in its "Nepean Milk" form as preserved at the Valley Heights Railway Museum. Many were later converted to insulated box vans (MBC) and with the addition of an extra compartment at one end for detonators, as BPV Explosive vans.

The MTS model is available as a straight scale wagon or as a driver's riding car with electrically operated parking brake, vacuum pump for train brakes, and standard MTS wiring for two batteries for 24V locomotives.

Scale wagons come with a shaped timber roof with appropriate detail features for the type selected. Driver's cars come with a padded seat, mounting space for control box (or brake control switches if a hand controller is used instead), plus a pair of screw-in footpegs. Exchange scale roof and second pair of footpegs for a co-driver are optional.

The Driver's Car variant comes with a cushioned seat as well as a scale roof, plus:

- Foot-pegs
- Electrically operated parking brake
- Main switch, circuit breakers and wiring for 2 batteries and 24V loco
- Vacuum Brake Pump



BPV (Driver's Riding Car version) with seat modified and roof ends added by owner.

	Scale Wagon	Drivers Car
MBC Box Van (plain roof)	\$3,990	\$5,990
BPV Explosives (extra doors)	\$4,190	\$6,190
MRC Refrigerator (catwalk, ladders)	\$4,500	\$6,500
Nepean Milk add	\$ 100	\$ 100

The BPV explosives van version is shown above, which includes the extra compartment and doors added on one end so that detonators could be stored separate from the explosives. These lasted through the blue livery PTC period and into the maroon L7 SRA era.

The MBC box van version is similar, just lacking the end doors. These also lasted right through.

All versions include sprung buffers, brass angle frame details and 3D printed hinges and door handles.



MLE/UME Flat Car

Over 500 MLE and UME 45' flat wagons were built in the 1940s and 1950s to carry increasing large-format heavy loads, as part of modernisations of the freight rollingstock in NSW.

Originally coded LE, these wagons have seen a long life with many conversions taking place to keep up with modern loads. Sheet steel, Containers, Pipe, and more are often seen on these wagons.

Pictured here is the UME Variant with a typical load.

AVAILABLE VERSIONS

- MLE - Bolster Flat-Wagon
- UME - Un-bolstered variant - as pictured
- CME, CMX, GME, JME, PMX, TMX, etc.
- Other sub-variants as requested

CONSTRUCTION

Our wagons feature a fully welded steel underframe which provides good strength for heavy loading, while the timber deck keeps the overall weight down. There are also plenty of detail features across the body.

PRICES

Basic	\$2,420	With mixed load	\$2,965
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Section 3: Track and Signalling



Track

General Specifications

- Our track is all welded steel with 25mm high flat bar rails and 50mm wide flat bar sleepers. It is MIG welded in jigs and supplied painted in red oxide primer with M6 high tensile bolts, washers and nuts to join the modules together.
- Average price per metre for bulk **STRAIGHT** track works out to be:
 - 5" Gauge – around \$113
 - 7 ¼" Gauge – around \$127
 - Dual Gauge – around \$162
 - Add about 10% for curved track
- Special versions are available, particularly for clubs, suitable for use with timber or recycled plastic sleepers with or without provision for rail to rail sleeper breaks for insulated track circuits.
- Straight track comes in multiples and fractions of 1.5m, and the cheapest way to buy it is in 3m lengths.
- The gauge is spread by 3mm on curves and abutting straights should be ordered with that adjustment built in.
- We have toolsets to assist you in building your own track should you wish and share our building standard so that track you build can be compatible with track you purchase from us.
- For those with access to AutoCAD®, ProgeCAD® or similar packages we have a free "puppet" file available making track design simpler.

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BASIC DIMENSIONS	5" gauge	5"+3 ½"	7 ¼" gauge	7 ¼" + 5"
Sleeper Length	295mm	295mm	395mm	395mm
Rail	25x10	25x10	25x12	25x12
Curve Gauge Spread	3mm	3mm/2mm	3mm	3mm/3mm

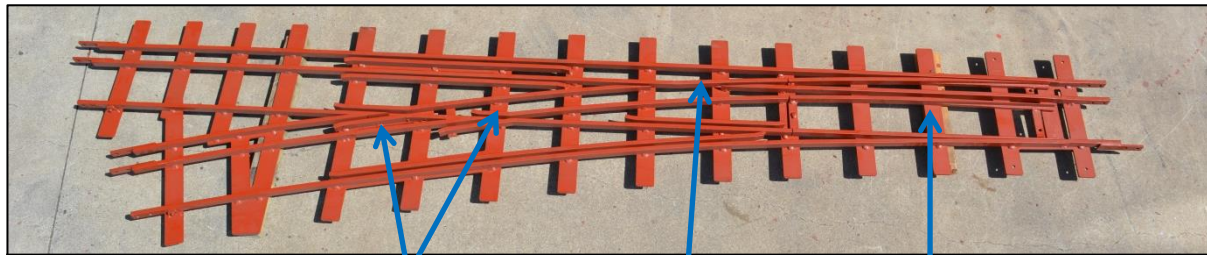
STRAIGHTS AND CURVES

Dual Gauge track is available either in 7 ¼" + 5" or 5" + 3 ½" gauges.

Track can also be supplied with shortened sleepers and pre-drilled for attachment to plastic or hardwood sleepers (please specify) which are NOT included in the price.

Straight	Length	5" Gauge	7 ¼" Gauge	Dual Gauge
"Single"	1.5m	\$200	\$220	\$290
"Double"	3.0m	\$339	\$380	\$486
"Half"	750mm	\$140	\$152	\$193
Buffer Stop	750mm	\$208	\$222	\$243
Left to Right/Right to Left – Common Rail Changer 3.0m				\$770
Custom made shorter straights are available – same price as next largest standard straight. eg. 1395mm is the same price as 1500mm.				
Please specify if either or both ends of a straight is connecting to a curve so that we can gauge spread to suit.				
Curves	Angle/Length	5" Gauge	7 ¼" Gauge	Dual Gauge
Small Radius				
2.5m	45deg/1.96m	\$313		
3.8m	22.5deg/1.5m	\$253		
5.0m	22.5deg/1.96m	\$293		
6.25m	15deg/1.64m	\$258	\$279	
6.25m	22.5deg/2.45m	\$348	\$373	
Large Radius				
8.5m	15deg/2.1m	\$319	\$352	\$460
10m	15deg/2.6m	\$353	\$392	\$506
12m	15deg/3.1m	\$400	\$439	\$579
14m	15deg/3.6m	\$460	\$513	\$646
18m	7.5 deg/2.35m	\$326	\$365	\$494
Custom angle curves are also available.				

POINTS AND DIAMONDS



Frogs

"K" Crossing

Moving Blades

Dual Gauge "Double Outer" Point showing the common features.
Single gauge points don't have a "K" crossing

Points All now include throw and mechanism tray. For point motor add \$100 each Radius/Angle	Straight Length	5" Gauge	7 1/2" Gauge	Dual Gauge
Small Radius				
3.8m/22.5deg Left, Right or Wye	1.5m	\$ 963		
6.25m/15deg Left, Right or Wye	2.25m	\$1,585		
6.25m/22.5deg Left, Right or Wye	2.25m		\$1,725	
Large Radius				
10m/15deg Left, Right or Wye	3.0m	\$1,602	\$1,893	\$2,731
14m/12deg Left or Right or Wye	3.0m	\$1,476	\$1,972	\$2,858
14m increase to 15 degrees		\$ 155	\$ 172	\$ 224
18m/12.5deg Radius Left or Right +++	4.5m		\$2,309	\$3,322
18m/2.5deg extender+++			\$ 204	\$ 259
+++ Point is 12.5 degrees. 2.5 degree extender is needed to match 15 degree module				
Special Points				
3 Way Point - 10m Radius, 15 Degree	3.0m		\$3,964	
Single Slip – 10m Radius, 15 Degree	3.75m		\$5,130	
Double Slip – 10m Radius, 15 Degree	3.75m		\$7,025	
Gauge Split Points (Bladeless) – not needing K-Crossing or if K-Crossing needed				\$1,155 \$1,565
<ul style="list-style-type: none"> • 5"+3 1/2" have bladed "K" Crossings and MUST have a lever or point motor fitted. Other versions may have "free trailing" blades in certain circumstances and not require a positive locking over actuator of any kind. • For dual gauge, please specify "double outer rail" or "double inner rail" as required. 				

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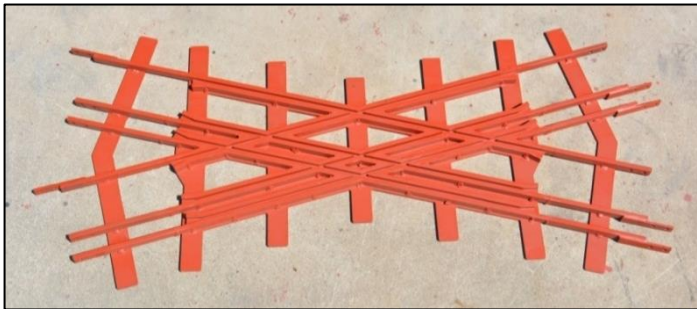


Left: Large UK style "Throw-over"

Right: US "Rotator" style (Both supplied all white: Yellow picked out here for photographic purposes.)

Below Left: Point motor attached to a 5" + 3 1/2" gauge point (checker plate mechanism cover not shown)

Below Right: Point motor, complete with checker plate cover in place, attached to a pair of club built points



30 Degree 7 1/4" + 5" Dual Gauge Diamond

Diamonds Angle	Straight Length	5" Gauge	7 1/4" Gauge	Dual Gauge
30 or 45	1.5m or 1.75m	\$1,447	\$1,568	\$1,689
15	3.0m	\$1,568	\$1,810	\$1,931
Custom from		\$1,760	\$1,980	\$2,200

SPECIAL TRACK SECTIONS

RAISED SERVICE TRACKS

Raised track sections are intended for service areas and loading bays. They are made from 50mm high steel rail with spreaders - rather than 25mm with sleepers - and bolt to the tops of concreted in steel posts. Third rails for dual gauge are 25mm sections welded to the tops of the spreaders.



LEVEL CROSSINGS

If you have a track crossing a path or driveway it may not be practical to cut the concrete and set it in. MTS makes "speed hump" style crossing tracks to solve this problem allowing vehicles to pass over the track without damage to either.

Raised Service Track	5" Gauge	7 ¼"	Dual Gauge
Straight 1.5m	\$189	\$215	\$277
Curve 10m/7.5deg/1.3m long	\$228	\$254	\$310
Buffer Stop	\$151	\$175	As Single
Post	\$165		
"Speed Hump" Level Crossing	5" Gauge	7 ¼"	Dual Gauge
Straight 1.5m	\$317	\$342	\$399
Straight 3.0m	\$576	\$622	\$723



TURNTABLES

We recently added our first turntables to our range. Initially these were designed for 5" gauge backyard railways using a smooth slab (not included) with no edge rail to avoid the trip hazard.

We are now adding a 7 ¼" gauge version and the option for an edge rail for greater edge wheel durability where the turntable can go in a pit or there is no practical trip hazard risk.

Each turntable includes two Track Connectors in the basic price

4m Diameter Turntable	5" Gauge	7 ¼" Gauge
Standard unit without edge rail for plain slab (NOT included)	\$2,750	\$2,970
Edge rail version	\$3,300	\$3,520
Addition Track Connector	\$ 275	\$ 275

BUILD YOUR OWN TRACK

When it comes to track, most of our customers buy complete sets from us however some just buy points or points and curves and build the rest themselves.

We have a range of tools and parts available which make it easier to get your track building right and at the same time make it easily compatible with MTS track when you buy complete points and sections from us to start out or finish things off.

Equipment You Will Need

The minimum workshop tools you need to build track are:

- A welder. Stick is OK but you'll kick yourself if you don't buy a proper MIG (with gas).
- Metal cutting band saw: To cut rails and sleepers to length. Buy a good one – and spare blades!
- Bench grinder and two angle grinders
- Bench drill and battery drill
- If making curves you'll also need a Bar Roller
- Range of G-Clamps
- Gauge bars to hold the rails in gauge during welding (included in our kit)
- Jigs to hold the rails and sleepers in place while welding

Track Building Toolsets and Parts

MTS track building tool sets include:

- For each gauge chosen:
 - 15 "Straight" (ie in-gauge) gauge bars
 - 15 "Curve" (ie 3mm over-gauge for curved track) gauge bars
 - 2 "Intermediate" (ie 1.5mm over-gauge) gauge bars
 - 1 each of the above modified for difficult positions
- 1 Rail Hole drilling jig
- 1 Rail Joiner positioning jig
- 6 sample MTS Rail Joiners to get you started
- Instruction Booklet covering build standards and construction techniques

To make track building even easier we can now supply designs or complete jigs for straights and curves to our range.

Prices

Track Building Toolset - Single Gauge \$330
(Specify 10mm or 12mm wide rail for 5" gauge, 7 ¼" 12mm wide is standard)

Track Building Toolset – Dual Gauge \$440
(Select 10mm wide rail for 5" + 3 ½" and 12mm wide rail for 7 ¼" + 5")

Rail Joiners Pack of 50 \$220

Please note that all of these parts are quite heavy so freight costs can be significant.

Signals



Above: Standard 3 aspect with diverge installed on the Nurraging Miniature Railway, Doonside NSW

Right: Compact level crossing lights on a private 5" gauge railway in NSW. The controller is in the box at the bottom of the post.

MTS has a comprehensive range of LED driven signals which can operate on 12V or 24V DC.

There are two sizes, "Standard", which is more durable for public installations such as at clubs, and "Mini" (about half the size of Standard) which may be more suitable for the home environment.

Two and three aspect signals are available and for the "Standard" size we also have



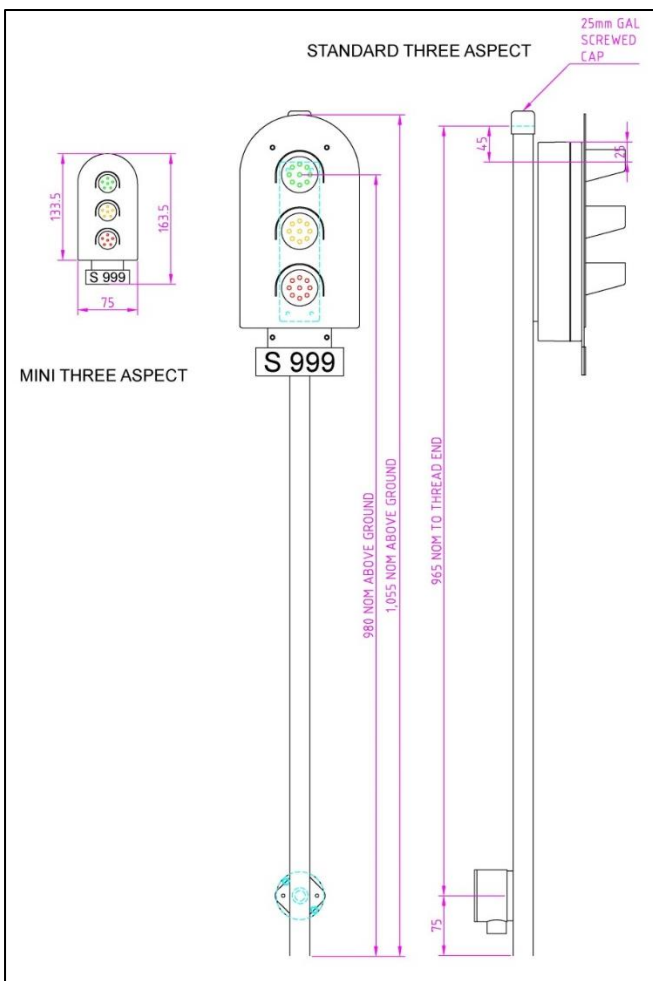
optional diverge and shunt indicators. We can also make the dual head style as commonly used in Victoria and South Australia.

Each signal includes a galvanised steel post with cables inside and a junction box near the ground, ready for you to concrete in.

Our range also includes automatic level crossing signals in both sizes. A 12V DC control unit is available which can operate the lights either off continuous track circuits or trip sections.

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Product Range	Standard	Mini
Level Crossing	\$990	\$880
Add "two tracks"	\$ 60	\$ 50
3 Aspect Signal (Green/Yellow/Red)	\$655	\$590
2 Aspect Signal (Green/Red or Green/Yellow)	\$580	\$425
Add Shunt Signal	\$205	
Add Diverge Signal	\$350	
Add Double Diverge (cross style) Signal	\$440	
Add Matrix	\$550	



Above: Standard 3 aspect with Matrix and Shunt indications

Section 4: Parts and Accessories

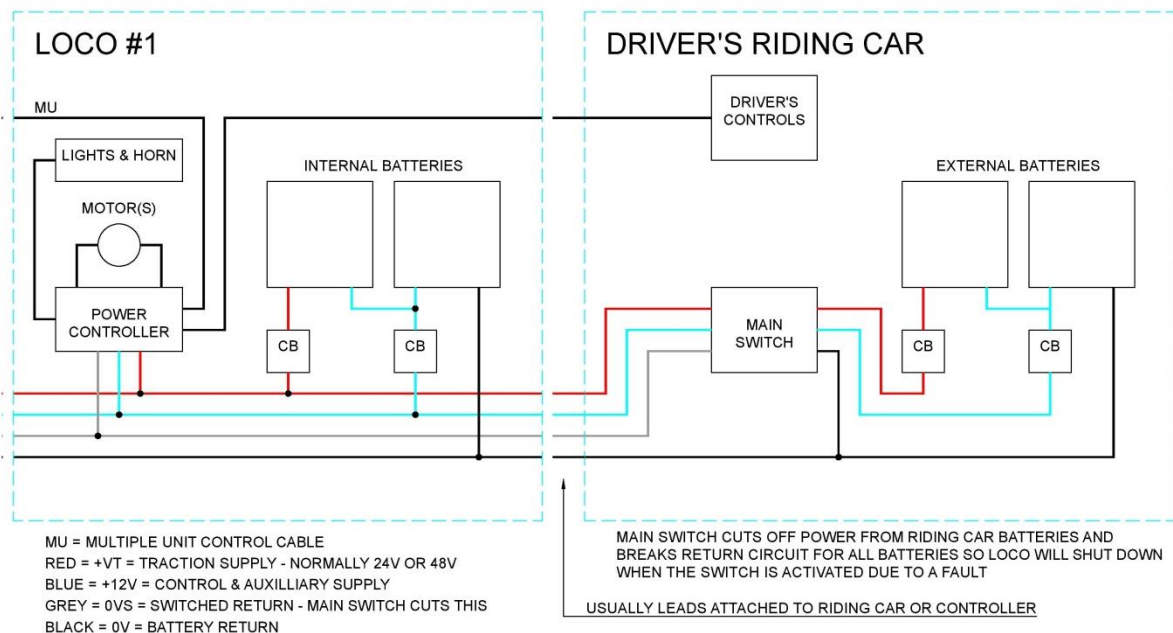
PS7 Control System

ELECTRIC LOCO SYSTEM OVERVIEW

Before going into details about specific products, it's best to have a quick overview of what comprises an electric loco for those who are new to this part of our hobby.

So what makes up a Power Control System? Essentially a battery, a motor and some sort of device that fits between the two for control.

Even the fine details aren't that complicated, but not necessarily obvious. For example you need circuit breakers on your batteries to protect the wiring if there is a short circuit fault, and the Power Cut-Off switch on your riding car needs to be wired so that the loco can be shut down in a fault, even if it has internal batteries.



This sub-section goes over some of the finer points for those who are interested.

Operating Voltage

Battery electric locos are all about electrical efficiency – keeping heat losses to a minimum. It's all about the amps: Keep the amps down and you keep the efficiency up.

In modern electronic power controllers the losses are largely current related, so because running on a higher voltage means lower amps for the same power, you go for a higher operating voltage if you can.

For the same power a 24V loco uses half the amps of a 12V loco of the same power, and a 48V loco uses just a quarter. Not only that, to carry the same amount of power without the cable heating up too much, the wire on a 12V loco needs to be SIXTEEN times bigger than on a 48V loco pulling the same load.

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The only downside of going for a higher voltage is that of course you need more batteries. With higher powered locos you're going to need multiple batteries anyway to get the range capacity, so it makes little financial difference what the operating voltage is.

On MTS locos, and our recommendation to people building their own locos, we select the voltage based on the power of the loco:

Up to 250W 12V

Small 5" gauge locos like the Planet that can typically pull one passenger car and are intended mainly for play.

Up to 1kW 24V

Medium sized 5" gauge passenger haulers, like our 48 class, which can pull up to about 4 passenger cars depending on track conditions

Over 1kW 48V

Larger 5" gauge "heavy haul" and most 7 ¼" gauge locos.

48V is a practical limit in most cases for home builders and is well below the voltage where electrical certification is required.

Batteries

If you simply use car batteries and they will work fine for a short time. They are designed to start cars using hundreds of amps for a few seconds before being immediately re-charged, but for trains you steadily discharge at tens of amps over several hours then recharge overnight. You simply don't get the daily operating hours and calendar life out of car batteries.

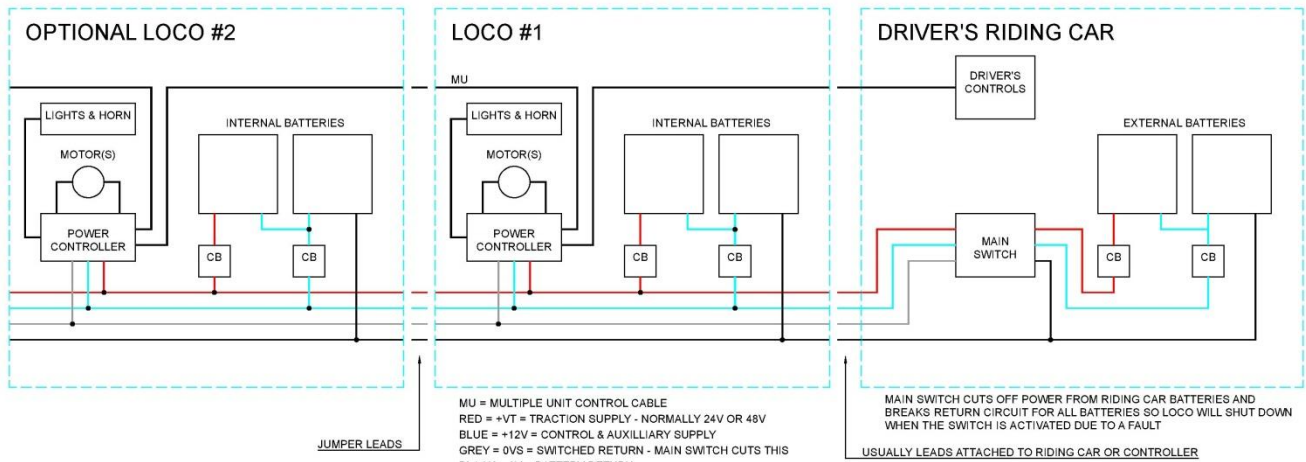
You should always use "Deep Cycle" batteries which are designed for backup power and traction applications. They can cost more, but over their operating life they usually wind up being cheaper and they are certainly better to use on a daily basis.

Battery technology is changing rapidly but for the past several years the best and most effective deep cycle batteries for our applications use AGM technology. These are a special gel type battery which have a high capacity for their size, need no maintenance and offer very good cycle life.

Like all batteries, the life of an AGM battery depends on how it's treated and MTS power PS7 power controllers monitor battery voltage to minimise the risk of life reducing over discharge.

Lithium batteries are likely to be an option in the next few years, however at this point the cost/capacity benefit doesn't add up. The weight saving is significant but if loco mounting is actually a disadvantage as you want the weight for adhesion reasons. Finally, while charge capacity should be

something like double volume for volume, it isn't as manufacturers are not taking advantage of the space and effectively half filling the case so that it fits in the same space as the older technology batteries.



Motors

Over the past ten or fifteen years in particular, due to market growth in mobility scooter, electric bicycle and small electric vehicle markets, compact, high powered permanent magnet DC motors have now become very cheap, compact and practical.

Many early electric model locos were built with older technology series-wound motors, usually modified Lucas C40 generators. These motors can be an issue to repair and lack the power and flexibility of their modern permanent magnet counterparts so are rarely if ever used on new locos.

Power Controllers – and MU Operation

The Power controller by definition controls the power from the batteries to the motors. MTS models include selectable current limiting for motor protection, battery monitoring for battery life maximisation and full Multiple Units (MU) functions so that two or more locos can be coupled together and operated by the one driver, just like the full size!

Modern electronic controllers use a pulse control system for driving and braking. The old resistor controllers are no longer used in new locos because of their lack of flexibility, high losses, size and cost as well as their general lack of suitability for use with modern permanent magnet motors.

MTS power controllers also include outputs for auxiliaries like headlights and horns plus interface connections for typical sound systems – all integrated into the MU Control.

Driver Controls

The actual controller the driver operates is usually separate from the Power Controller itself for safety, efficiency and convenience, and plugs into the loco to operate it. In the MTS system you can use either a simple hand held controller, that covers all of the basic functions and includes throttle and brake controls, or you can use a driver's riding car mounted control panel, which has extra features and functions.

In either case, hand controller or control panel, you just plug it in to the loco and go. The MTS system automatically works out which end the control is plugged in to, ensures that "forward" is always the direction away from the driver regardless of which way the loco is oriented and makes sure that all locos connected in MU all run in the same direction.

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Unlike some systems, MTS provides separate throttle and regen brake controls so that you can let your loco coast when you want to and apply just the amount of braking you want at any time, rather than using automatic, and sometimes unpredictable, single knob auto braking (ie. anti-coasting) controls.

All MTS Driver's Controllers include key operated power switches for safety and security. If you have more than one controller, hand or control panel, we can "common key" for no extra charge.

Deadman Option

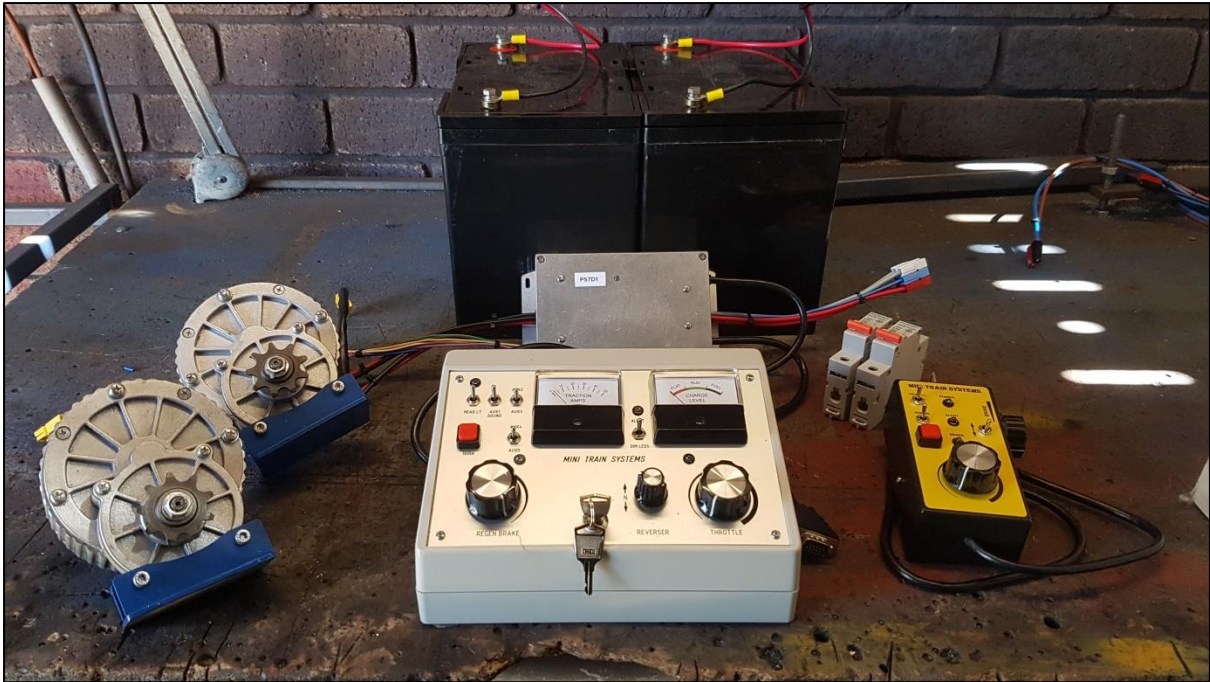
MTS Control panels and driver's seats can be fitted with a "deadman" system where if the driver gets off, or more importantly falls off the riding car, the control system shuts off the throttle and applies maximum regen braking to reduce the chance of run-away accidents.

Auxiliaries

MTS Power controllers include outputs for front and rear headlights and horn, as well as a switched power outlet and a 0-12V throttle signal for use with common sound simulation systems. The MU system ensures that when you are running locos in MU, the only headlight that comes on when you turn on the switch is the one on the front of the leading loco, which is also the only one that will sound its horn. The sound system outputs are active on all locos, though, as they should be.

When using our control panel you also have access to four additional auxiliary outputs when you add our Auxiliary Expansion Module into your loco. These can be used for pretty much anything you like – extra lights, special sound system functions, extra horns, maybe even pantograph controls!

These outputs are factory programmed as "on/off" circuits that work on all locos, however if you let us know what you want we can specially program one or more channels to be pulse outputs and/or disable when the loco is not the lead engine and/or be running direction dependent. Just let us know what you'd like and we'll see what we can do.



PS7 POWER CONTROL SYSTEM

Our PS7 Control System has continued to evolve with regular upgrades bringing new and improved features while maintaining a high level of compatibility with previous versions.

This catalogue sees the release of the new PS7F, whose enhancements include improved battery and load monitoring as well as “Sound System Ready” features.

Power Controllers

PS7F – for all locos –12V, 24V, 36V or 48V - \$495

Standard unit in this range

- 0-12V Throttle output for sound simulators
- Up to 2kW capacity when running on 48V
- Extender connector for advance interface modules

Add-Ons:

PS7-ELM – Enhanced Lighting Module for 48’s and similar period diesels

\$200

PS7-ALM – Customisable Auxilliary Module

\$POA

Driver’s Controls

PS7HC Hand Held Tether Controller

\$220

- Throttle, Brake and Direction controls
- Power, Brake and Alert indicators
- Horn button, Headlight Switch and Auxiliary output control – usually used to switch Sound Systems on or off
- Removable key for security



MINI TRAIN SYSTEMS PTY LTD

PS7CP Control Panel

\$495

Includes all of the hand controller features plus:

- Amp Meter to show engine loading
- Battery Charge Meter so you know how your batteries are lasting up
- “Brake” and “Drive” mode indicators
- Neutral position on the direction switch – Brake indicator flashes in Neutral
- Pilot light for the headlight circuit
- Dim switch to reduce the brightness of the indicators for night running
- Switches for 4 extra Auxiliary functions



Options and Accessories

Control Panel Options

Deadman Option – includes a lanyard plug

\$220

MU Cable Sets

MU + Power for 12V/24V with 4pin Power

\$200

MU + Power for 24V with 6pin Power

\$220

MU + Power for 48V with 6pin Power

\$220

MU + Power for 48V with 8pin Power

\$240

Driver's Car Cable Sets

Each includes Power Cut-Off Switch, Circuit breakers for 12V, 24V and 48V as the case may be. There is also an un-switched 12V circuit breaker to power tail lights and for brake pumps or compressors.

When used with correctly wired locos, this Power Cut-Off switch will shut down a faulty loco even if it has internal batteries, while still providing power to tail lights and brakes.

12V 32A with 4pin Power Connector

\$250

24V 32A with 4pin Power Connector - 12V rated to 25A.

\$300

24V 63A with 6pin Power Connector (heavy duty version), 12V rated to 25A

\$330

48V 63A with 8pin Power Connector, 12V rated 25A, 24V rated to 32A

\$390

MTS standard power connectors are upward compatible with different voltages. 12V and standard 24V systems use the same 4 pin connector with extra pins added for heavy duty 24V and different heavy pins added for 48V. Wrong voltages cannot be plugged in to each other, but you can plug a 4pin 12V or 24V loco into a 6pin 24V or 8pin 48V loco in MU and have power passed through correctly.

MOTORS

MTS has standardised on two motors based on power, voltage, size and practicality. All motors are sold with a 3/8" BS chain sprocket and plug-in power connectors fitted. Other sprockets sizes and alternative tooth counts available to order.

48V 1kW Direct Drive Motor

\$275

This is a heavy duty motor which requires gearing down to get to the right speed to drive the loco wheels, so it's best suited to larger locos. Standard 12t sprocket.



24V 450W Geared Motor

\$275

We also have a 450W 24V geared motor which has the advantage of being both compact and having a very useful shaft speed: Gearing 1 to 1 from motor to axle gives about 9km/h on a standard 5" gauge diesel wheel "light engine"! It's usually simply a matter of using a smaller motor sprocket to get the speed right for bigger wheels, and if you want more power put two or more motors in. If you want 48V you can gear two motors together and wire them in series for 48V as we do in the 2400's and the 7 1/4" gauge 48's.



Our version of this motor includes a mounting foot and an 18 tooth 3/8" chain sprocket – other sprockets available.

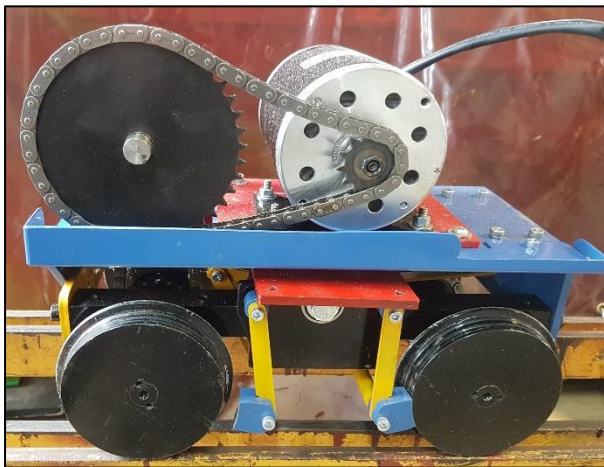
POWER BOGIES

MTS 5" K-Type Power Bogies

These are based on the Sandberg bogies and use many common parts. They have the same mounting height and will fit in many of the same places as an un-powered bogie. They feature a 450W 24V motor geared to run at around 9km/h unloaded.

Wheel Dia. 90, Wheelbase 190, Carry Height 110

K-Type Power Bogie – Un-braked	\$1260
K-Type Power Bogie – Mechanical Brakes	\$1365



MTS J-Type Power Bogies

These are based on our successful "H" type passenger car bogies but have a longer wheelbase and larger wheels so have a higher bolster mounting height. They are fitted with a 1kW 48V motor geared to run at around 10 km/h unloaded.

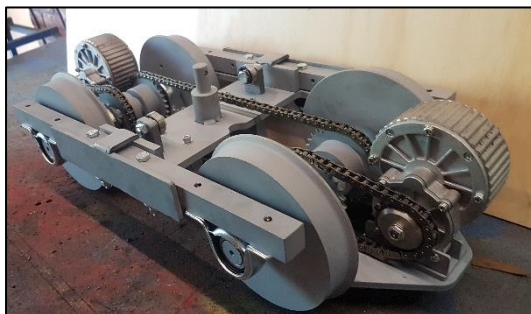
Wheel Dia 110, Wheelbase 238, Carry Height 125. Includes bolster plate.

Un-braked	\$1735
With Mechanical Brakes	\$1945

J450

450W 24V Version ideal for small self-propelled units like Section Cars.

Un-Braked	\$1470
With Mechanical Brakes	\$1680



Other Bogie Designs available to suit your needs.

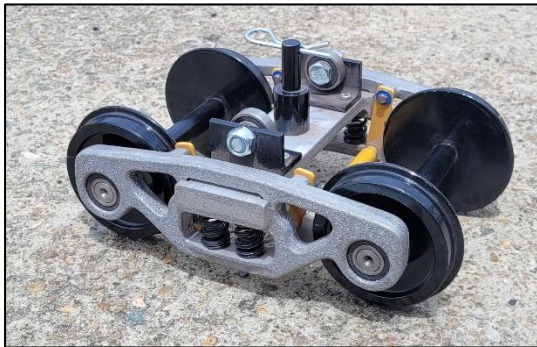
Heavy-Duty Traction Bogie designed for ride-in power cars and Trams. Price POA.

STANDARD BOGIES

5" Gauge Sandberg Bogies

We have standardised on the popular Australian made Sandberg bogies for almost all of our passenger cars and freight wagons.

Our versions of these bogies feature all steel parts painted in black epoxy paint (not in photo for clarity) and an extra strong pivot pin with R-Clip retention to your wagon.



Wheel Dia. 90, Wheelbase 190, Carry Height 110

Standard Un-braked	\$525
With Mechanical Brakes	\$580
With Vacuum Brakes	\$685

MTS 7 ¼" H-Type Bogies

These are our most economical 7 ¼" gauge bogies. They are inside framed to suit Mk2 straddle cars.

Wheel Dia 90, Wheelbase 200, Carry Height 120

Un-braked	\$ 870
With Mechanical Brakes	\$1,025



Q-Bogies

This is a new design with the first units being completed as this catalogue goes to press.

These bogies are designed with the same ride height and wheel size as the J bogies, so they can be used as an unpowered front bogie for a motorised riding car and/or provide air brakes for straddle type passenger cars.

Un-Braked	\$ 960
With Mechanical Brakes	\$1,130
With Air Brakes	\$1,350

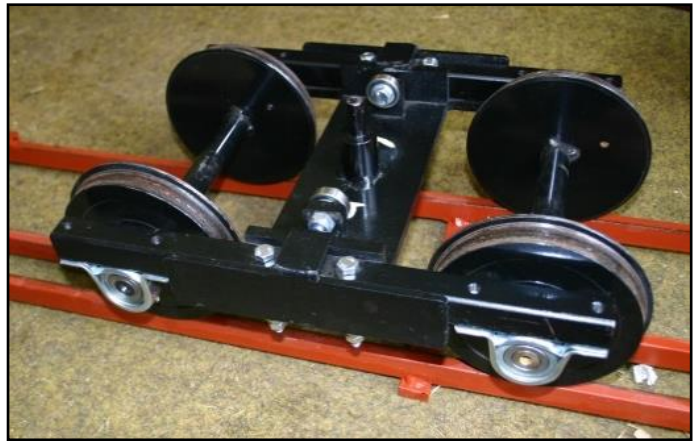
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MTS G-Type Bogies

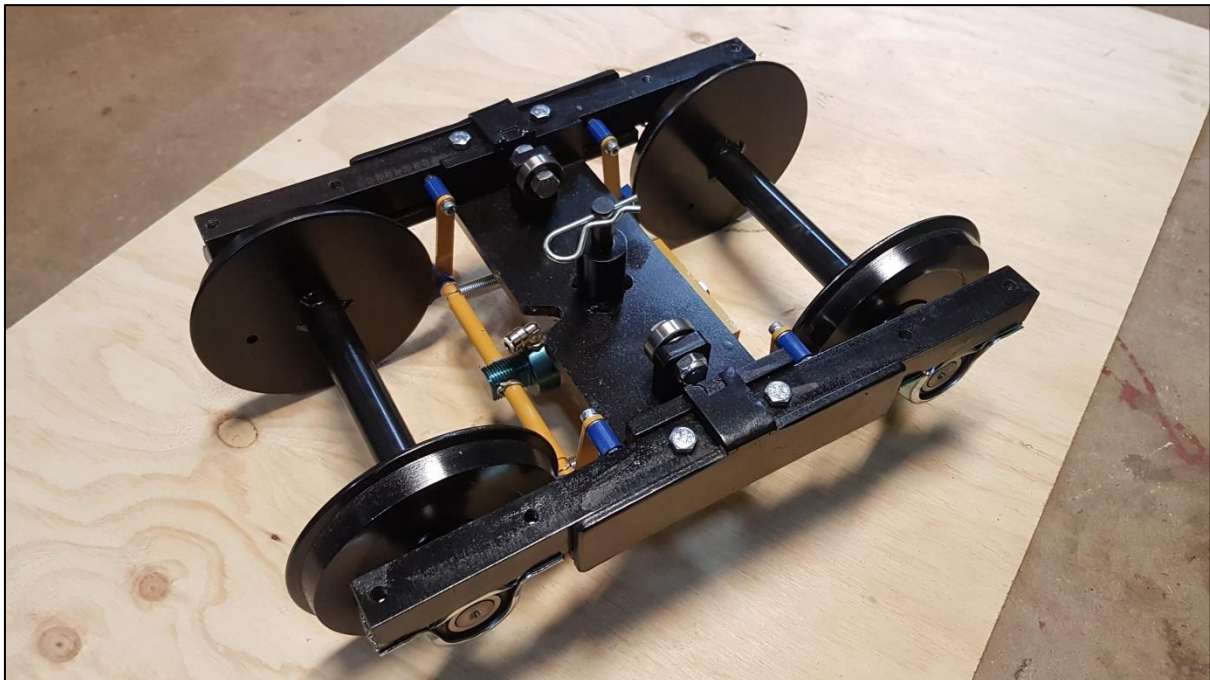
These are our standard passenger car bogies as used in our enclosed passenger cars. Developed, tried, tested and proven over twenty years of commercial operation, these are mechanically simple, solid and reliable.

Wheel Dia 140, Wheelbase 300, Carry Height 140

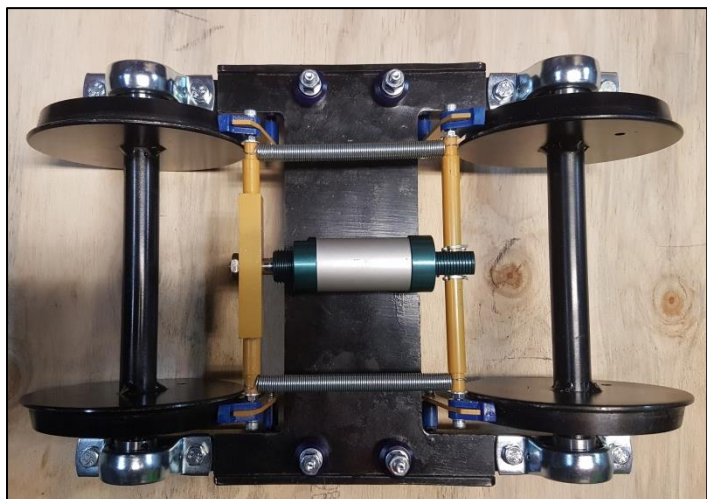
Un-braked	\$1,040
With Air Brakes	\$1,355



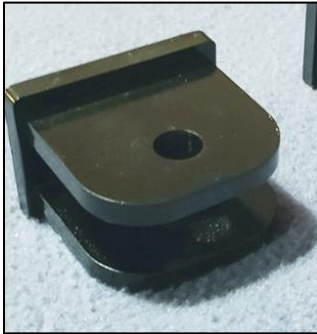
MTS 7 1/4" G Bogie – Un-braked shown



MTS 7 1/4" G Bogie – Air Braked Version



COUPLERS AND COUPLING BARS



MTS produces a range of couplings and coupling bars for both 5" gauge and 7 1/4" gauge locos and rolling stock.

Couplers are the single slot "duck bill" style to bolt directly on to buffer beams. They come complete, welded together and painted in black epoxy paint.

Coupler bars are laser cut from 6mm or 8mm plate steel and come in various lengths.

In accordance with AALS recommendations 5" gauge couplers and bars are designed for 6mm diameter pins and the 7 1/4" gauge versions for 10mm diameter pins.



Triple Slot Coupler (dual gauge)

When mounted with the bottom slot at the correct height for 5" gauge, the top slot will be at the right height of 7 1/4" gauge. Available for either 6mm or 10mm pins and ideal for mixed gauge loads.

Couplers	5" Single	7 1/4" Single	5" Triple	7 1/4" Triple
Slots	\$25	\$30	\$35	\$40

Now include Clevis Pins with R-Clip or Shaft Locking pin

5" Coupling Bars

Short (100mm hole centres)	\$6.00
Medium (150mm hole centres)	\$7.50
Long (200mm hole centres)	\$9.00

7 1/4" Coupling Bars

Short (150mm hole centres)	\$12
Medium (225mm hole centres)	\$15
Long (300 hole centres)	\$18

7 1/4" to 5" Coupling Bars

(225mm hole centres)	\$10
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Combo Packs

Comprises two coupling pockets, short bar and your choice of clevis pin/R-Clip or shaft lock

5" Gauge - \$50

7 1/4" Gauge - \$60

Travel Packs

A selection of bars and pins to help you couple up to whatever you find when visiting other clubs. Each pack comes with a plastic toolbox to carry everything around in.



5" Pack Comprises

- 1 each small, medium and large 5" bars, and a gauge changer bar
- 5" Single Clevis Pin, 5" Triple Clevis Pin, 5" Shaft Locking and a 7 1/4" Triple Clevis Pin

Pack Price \$60

7 1/4" Pack Comprises

- 1 each small, medium and large 7 1/4 " bars, and a gauge changer bar
- 7 1/4" Single Clevis Pin, 7 1/4" Triple Clevis Pin, 7 1/4" Shaft and a 5" Triple Clevis Pin

Pack Price \$80

Spare Coupling Pins (All Clevis Pins include R-Clips)

Single Pocket Ten Pack	5" Clevis \$40	5" Shaft Lock \$40	7 1/4" Clevis \$40	7 1/4" Shaft Lock \$40
Triple Pocket Ten Pack	5" Clevis \$50		7 1/4" Clevis \$50	
R-Clip 10 Pack	\$7.50		\$7.50	



Left:
Clevis with R-Clip

Right:
Shaft Locking Pin



PETROL AND ELECTRIC UPGRADE SERVICES

There are a vast number of great 5" gauge locos around built with drive systems based on the series of 422 Class articles published in the former Australian Model Engineering Magazine.

Early locos were petrol driven while later ones were electric had a pair of modified Lucas C40 generators connected to the same drive train instead. Apart from the noise, fumes and uneven running of the petrol locos over time, many petrol and early electric drives are now life expired and due for upgrade.

In response to customer requests, we now offer an upgrade service for these locos, bringing them right up to date with the latest MTS Power Controllers, Hand Controller or Control Panel, full MU operation in most cases from both ends, as well as modern motors and AGM batteries and suitable chargers.

These upgrades can provide an old loco with a new lease on life, in many cases with a performance upgrade to boot!

Options include illuminated number boxes and automatic lighting control as per our 48 class models and diesel sound simulators.



We quote on each job after inspecting the loco and prices vary from as little as \$4,000 to up to about \$6,000 depending how much needs to be done and if other repairs or modifications are needed at the same time.

The photo story that follows is based on our conversion of 30 plus years old 8001 for a customer in NSW.

As the loco arrived in our workshops. Intact but with some pre-existing drive issues, faulty lighting, some derail damage and some superficial rust on the chassis.



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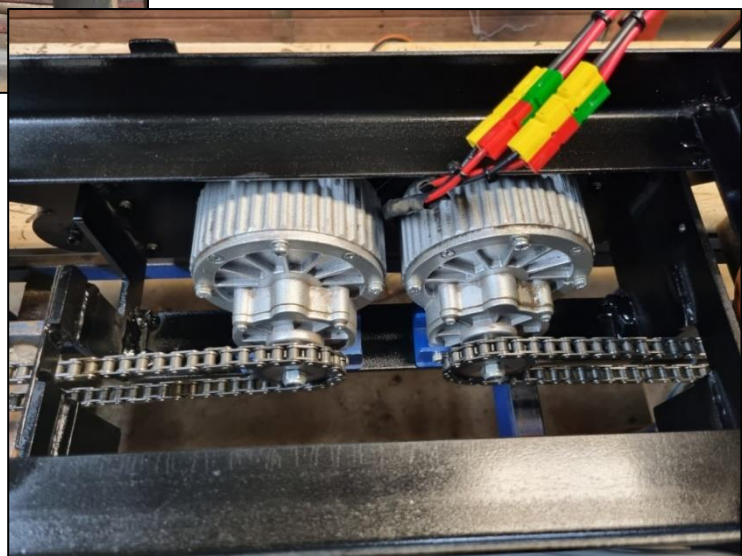
Left: The old cable control line ready to be removed. We welded up and filled these holes as part of the job.

Below: All of the old drive system taken out, ready for modifying the chassis.



Above: After cutting off the old drive mountings, the new motor mount is welded into the bottom of the fuel tank.

Right: Then after cleaning, welding, filling and repainting the whole chassis, the motors are installed and chained off to the bogies.



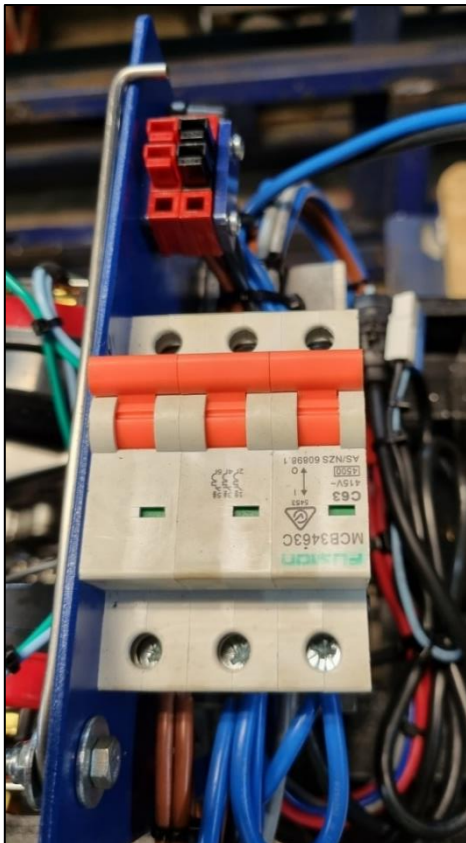
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Above: Fitted out chassis

Left: Circuit breakers and charge socket. This is accessible via the original hatch in the roof that used to be used for the pull start.

Below: Rebuilt pilot. Both ends of the loco are now the same with MU and power connectors and new couplings. The loco can now be driven from either end and double headed with other locos with MTS PS7 Power Control systems.



Look out for our Facebook page to see this loco and others when they get out on the track.

Section 5: Terms of Trade and FAQ's

ABOUT MINI TRAIN SYSTEMS

MTS started in 2010 as a spin-off from The Train Shed, the former Thomas the Tank Engine children's amusement park that operated in Luddenham in Western Sydney from 1998 till the start of work on Badgerys Creek Airport in 2014. Earlier roots go back to the Powerline Model Railway Centre from 1994-1996 and to club membership and private loco building starting in the mid 1970's.

The Train Shed featured 7 ¼" gauge electric powered locos ranging from "Percy" (about a metre long) up to "Gordon" (about 2.8m long) in size, and rolling stock designed and built by us to meet strict licensing requirements and commercial safety standards. Just as importantly they had to make us a living and that meant that above all else they had to be tough and reliable as well as easy to operate, maintain, and repair.

With over 40 years of club involvement and over 20 years of commercial construction and operation, we have established a business unique in its ability to design and build locos, rolling stock, track, and complete railways: Everything you need to operate in a club, have your own railway at home or operate a commercial miniature railway.

We can do as much or as little as you want, at all times listening to what you're saying and providing honest and impartial advice and suggestions.

A Train to Suit You

We aim to make sure that you get the best train we can build for the purpose you want to use it for, and most importantly that it's a train you like and enjoy running.

For that reason we have a whole range of locos and carriages to suit a range of uses and budgets.

It is to some degree a matter of "horses for courses". "Starter" locos are great for running at home or on club "play days", but may not have the power to pull larger passenger loads on public club running days. Conversely, some bigger locos may not be able to get around very tight backyard curves. You can have a loco that will do both, of course, and we can give you advice to inform your choice.

The same applies for carriages: We have straddle (or "sit astride") carriages of various lengths for backyard tracks and 5" gauge club track running, but recommend our 7 ¼" gauge enclosed sided carriages for added safety on all 7 ¼" club and commercial tracks and, when practical, on home 7 ¼" gauge tracks as well.

If you want to build your own carriages, or already have some, then we can also help you with bogies and wiring sets.

Keeping in mind your budget and the fact that you can start small and build up over time if that's what you want to do, start out by deciding what style of loco you like. Then it's a matter of where you want to run, how steep the track is and how much you want to pull.

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The tighter radii we see in residential private tracks (as opposed to rural blocks) means that larger locos may not be practical, though it can be surprising how tight a curve our locos will get around. At clubs the tracks have bigger curves but you need to be able to pull more to do the right thing on public running days and that pushes towards larger locos.

Even if the loco you like and can afford does not quite have the power you need, we now have powered riding car options to boost your pulling power very economically. If you take a typical large Maxitrak loco for example, because you love the look of it and they run so smoothly, you're probably able to pull two cars on lightly graded track. If that's not enough or the track is steep, adding one of our 5" gauge powered riding cars easily doubles your power for only a small extra cost.

If you're running at a club then the club usually owns the carriages and you just need to make sure you can couple up to them. Where train braking is required we have control systems for both the usual vacuum system used on 5" gauge and the air system common on 7 ¼" gauge.

For commercial operation we'll consult with you and give you our best advice based on personal commercial experience to allow you to make informed choices.

FAQs

How do I Pick between 5" and 7 ¼" Gauge?

In short it depends on where you're running and what you want to do. If running at a club you can make a choice based on what works best at your favourite club, while running commercially it will definitely be 7 ¼" gauge.

All other things being equal, if you're running at home, the cost of track per metre doesn't differ much between the two gauges, it comes down to the size of the curves, the steepness of the track and how much you want to pull. 5" gauge is best for lighter loads and tighter curves and enables you to get started with a cheaper train and a smaller track. 7 ¼" gauge, where you've got the space, is better for steeper tracks and heavier loads, but your starting point budget comes in a bit higher.

What's Special about MTS Trains?

We have 40 years of experience designing and building electric locomotives, initially for our own hobby use and since 1994 for commercial operation and for sale to families, rail fans and commercial operators. That experience shows in our designs in the toughness, durability and simplicity of maintenance in all of our products.

Everything we build, and especially the new designs, is properly tested in real world conditions before being delivered to the customer.

MTS is probably the first commercial manufacturer of 5" gauge electric powered detailed scale models of Australian Diesel Locos.

How are Maxitrak Locos that are sold by MTS Different?

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Mini Train Systems own branded locos are 100% designed and built here in Australia by us based on our decades of experience and to suit Australian operating conditions.

That puts us in an ideal position to market and support locos made by our friends Maxitrak in the UK. We have more demanding operating conditions here and that essentially means more battery capacity and heavier duty Power Control Systems. We take a wonderful model and make it just that bit better for you to enjoy. In many cases we include items that are optional in the UK as standard for locos sold in Australia.

For those considering privately importing models from other manufacturers overseas, the convenience, safety, warranty support and peace of mind of buying from an experienced local manufacturer should not be undervalued.

Does MTS only make Battery Electrics?

We have hobby experience operating steam locos and petrol/diesel powered locos, but honestly electric power is what we do best and that is what we concentrate on. Electric power gives you the best in safety, reliability, performance, economy, and convenience and doesn't generate toxic exhausts, cinders, or excess noise and heat.

If you want to pursue steam loco options further however and you are a member of a AALS affiliated club we can point you in the right direction for local loco builders.

Of course if you love the look of steam locos but don't want the down-sides or cost, we can help you with our range of steam-outline electric locos.

Regardless of loco technology, our track and carriages are standardised and will work with just about any other manufacturer's equipment.

Can I buy the Train in kit form and/or unpainted?

In some cases, yes you can.

Mini Train Systems are specialists in Ready-To-Run, reliable, and warrantied battery electric locos. Our locos are designed to be factory built and finished using special jigs and industrial manufacturing processes and are therefore not really suitable for sale as kits.

However if you want to add the personal touch and say "I made this" then a number of our Maxitrak sourced locos are available in painted or unpainted kit form as well as ready to run. The MTS power control system upgrade components are included in these kits as well.

How are MTS Power Control Systems Different?

There are a wide range of power controllers available on the market, some purpose designed and some adapted from designs intended for electric bicycles or mobility scooters.

Few, if any, provide the combination of features and benefits designed into MTS controllers, such as:

- Independent Regenerative Braking: Some other controllers also have a regenerative brake, where the motors act as generators, putting power back into the batteries to

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slow the train down. Unfortunately most controllers do this semi automatically as an anti-coast brake, which is not what drivers actually want. MTS controllers have separate brake and throttle controls so you can power up, coast along when you want to, and when you want to slow down, you control it exactly how you want.

- A choice of hand-held driver's controller or a full function control panel with meters and extra functions. It doesn't matter which type you plug into which loco, all the standard functions work the same.
- Battery Monitoring and Protection: The PS7 Power Controller monitors the off-load voltage on your batteries and as they go flat starts flashing a warning light. When they get too low the control system, after plenty of warning time, shuts the loco down to minimise the risk of battery damage.
- Automatic voltage detection: PS7 Power Controllers automatically detect 12, 24, 36, and 48 volt systems and adjust their internal settings accordingly. Most other controllers are either strictly 12 volt or strictly 24 volt and few allow for the advantages of higher voltage operation.
- Simple switch selection of current limiting levels to suit the motors in your loco.
- In built MU ("Multiple Unit") system: This allows two or more locos to be coupled together and driven by the one driver for more power. We can even do "distributed power systems" like full sized electric trains with more than one powered carriage or loco and making it possible to drive the train from either end.
- PS7 Power Controllers include a 0-12V throttle output for interfacing to popular sound simulators. This means that the diesel sound system responds to the throttle position, as it should, rather than to the motor speed, and reacts correctly to coasting and braking.
- MTS Control Systems are designed and built by us right here in Australia. In the unlikely event of you having a problem you're talking to the right people straight away.

Can I MU my loco with one made by another company?

If you fit one of our control systems to the other loco, yes you can.

Control systems made by other manufacturers may not be capable of MU operation, or the operator interface or connector method may not work well with multiple locomotives.

If you have a loco already, we can talk to you about converting it to our MTS control system, to take advantage of the MU system and other feature benefits.

Can I put an MTS Control System in another loco?

Yes you can.

MTS control systems suit a wide range of motor power ratings and operating voltages. Let us know what you have and we can suggest options for you from our range for you to install or we can do the installation for you. Many older second hand locos are fine mechanically but are let down by their control systems: We may well be able to help your phoenix to rise.

What sort of Batteries Should I Use?

Always use Deep Cycle batteries as opposed to car batteries: While more expensive, Deep Cycles are designed for traction use rather than car engine starting. For the same nominal amp-hour capacity they'll give you longer running times each day, a greater cycle count and a longer calendar life.

After a couple of decades running wet lead acid deep cycle batteries commercially and privately, we switched over completely to AGM batteries some years ago.

These are a special gel type no-maintenance spill-proof lead-acid battery with a higher charge density (amp hours per volume) than wet batteries and are well worth the extra.

While you *can* run your train on cheap car batteries, once you've used AGM Deep Cycle batteries you'll understand why money spent on the right batteries is never wasted.

How long will my train run?

We select batteries to suit your operating conditions and required run times.

The standard packages offered have enough capacity to run for a normal full day under typical operating conditions and loads. Heavier loads and steeper tracks will of course impact that and there are a number of options for larger batteries and extra battery packs should you need them.

Can MTS build something special that's not in the catalogue?

Yes we can.

We regularly build special products for customers. Sometimes these remain as one offs, like special carriages or site specific track sections, and at other times they get turned into regular catalogue items, which is how many of our new locomotive designs have come about.

Understandably the lead time for a special design is usually much longer than for standard existing products but of course the benefit is that you get exactly what you want.

Can I make my own track?

Yes you can.

We make a range of track building toolkits, which include instructions and assembly hints that guide you towards making strong and durable track compatible with track that you buy from us ready-made.

The majority of our customers buy all of their track from us ready-made, but some choose to make some or all of it themselves. If you have the time, skills and equipment then straight track is relatively straight forward to build once you have made a jig. Curved track is more complex and requires extra equipment (a bar roller for a start) and accurate jigs made for each radius required.

Most people leave the points to us, even if they're making all their own straights and curves. If you only need a few points, it's quite an art to get them right and it's a long and rocky road to go down if you haven't done it before. We've made hundreds of them; have decades of experience and all the right jigs so we can save you a load of heartache.

This is particularly true with clubs, where members may feel comfortable building their own running lines but prefer to take advantage of our skill and experience as far as the points go.

Why does MTS paint its track?

Where the steel has been welded and/or ground it is more susceptible to corrosion and that's the main reason we paint it: to slow down rust.

Standard treatment is painting all over with red oxide primer. In high corrosion areas we offer the option of an undercoat in primer mixed with the recommended concentration of Penetrol. Where we have to match appearance with unpainted track then you also have the option of spray painted black epoxy.

Of course many people leave their own-built track unpainted and as long as it is kept well drained and you don't mind the rust marks, it will stabilise. You just have to look after it.

You can save some money with MTS straights and curves by buying them unpainted and painting them yourself, or letting them weather as they are. Points are not sold unpainted.

Can MTS make Special Points?

Yes we can.

Sometimes your layout needs something special that isn't covered in our current list. The 14m and 18m radius points as well as the double slip came into our range initially to meet the needs of specific customers.

If you need something special and it's practical to make, then we're happy to quote for it, usually including a jiggling charge for the first one. Some items, like three way or double slip points are expensive, but we may well be able to come up with a cheaper design solution for you if that becomes a problem.

We also do specialised sleeper webs for our points specifically for clubs that use timber or plastic sleepers under the steel plates.

I'd love a track at home, but it won't fit!

That's just setting us a challenge!

Not everyone can have acreage and modern back yards are getting smaller, but that doesn't mean you can't have your own railway at home. Our Planet locos will go right down to 2.5m radius curves and many others in our range will go down to 3.8m radius. And of course your track doesn't have to be an oval: It can be an "end to end" design. You can twist and turn and go from one end to the other rather than round and round.

We've been doing this for years and it still surprises us what can be achieved, so don't abandon that dream before you talk to us.

Can I modify my MTS product after I have received it?

Of course you can.

Many people like to personalise their models and we encourage it. Just remember that any changes to mechanical or electrical systems not done by MTS will impact warranty.

Perhaps you'd like a special paint job or maybe there are specific body details you want to add. Even if you've bought your model complete, painted and ready-to-run there's no reason not to add your own special details.

Do you Deliver or do I have to Pick it up?

Either way is fine.

We are based in St Marys, in western Sydney. You can call and collect by appointment; however we do deliver to most areas of NSW, Victoria and SE Queensland. Outside those areas we can arrange freight or you can organise your own carrier.

Remember we also export!

Where do you do Installations?

We install tracks anywhere and everywhere in Australia. We also export and have even done an installation on an island in the Indian Ocean.

We can do 100% of the installation work with our staff and sub-contractors, or work with you and your helpers, sharing our expertise to get the results you're looking for at the most economical price.

What Copyright restrictions apply?

The design effort and experience that we put into our products is part of our Intellectual Property. All designs are therefore our copyright and **must not be copied** by any third party without specific written authorisation. Even when we custom build a product for a customer the copyright remains with MTS as the amount charged never fully covers the time spent in design.

We permit use of our track build standards with our track building toolkits but this **does not** extend to the design of our point webs, crossings, point motors or other accessories.

What Payment Terms Apply?

All goods must be paid for in full before they leave the factory.

As most items are built to order, a deposit and progress payments are usually made over the course of construction.

Payment may be made by Direct Deposit to our account, by Visa or MasterCard (no surcharges), We do not accept cheques and prefer not to handle cash.

What are your Cancelation Terms?

The usual Australian Consumer Protection rights apply to anything purchased from MTS.

We are not like a hobby shop selling mass produced models and most of our products are custom built for each customer. You are not entitled to a refund if you change your mind after work has commenced on your project.

If you do wish to cancel for whatever reason we can supply the goods that have been manufactured up to the value of the payments you have made. Alternatively we can assist you as best we can to have the project re-assigned to another customer and in that case may be able to help in negotiating a partial recovery of your deposit.

What Warranty is Provided?

We aim to ensure you get the best product that we can make, that it runs properly when we deliver it and continues to perform for you well into the future.

We provide a twelve month warranty on all parts and labour when equipment is used as recommended. In the unlikely event that you have a problem with any of our products talk to us before attempting to fix it yourself.

Do you provide After Warranty Support, Repairs and Maintenance?

Of course we provide ongoing support for every product we manufacture. This includes electrical and mechanical repairs, track maintenance, wheel re-machining, repainting and refurbishing.

We also provide other services like track inspection and routine maintenance.

Thank you for your time in looking at our catalogue and we hope that we can be of service to you sometime soon.

In the meantime ...

See you out on the track!