1981 E

märklin

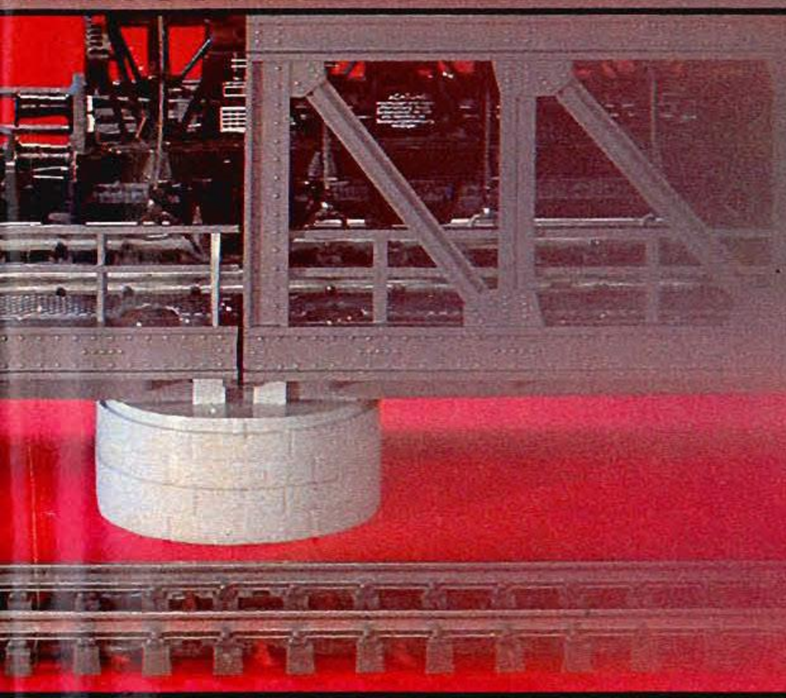
Three for All

Märklin has the correct scale for every need

1 Märklin mini-club From tiny ovals to large layouts in the smallest of space

Scale 1: 220
Gauge 6.5 mm (¼")

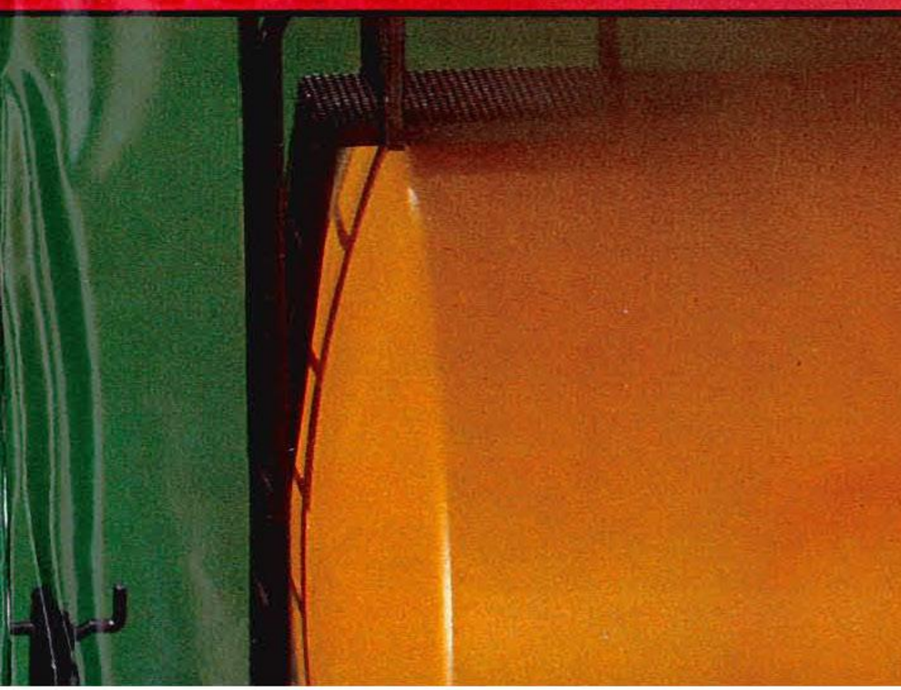
The smallest electric railway in the world has much to offer: it's a complete high quality model railroad system which includes state-of-the-art technology, refined trackwork, accurate and operational overhead system, and many accessories for realistic train operations and for scenicking a layout. Its flawless operation makes mini-club trains the excellent choice for highly detailed layouts. Working layouts can also be built on a shelf or in an attache case. The Märklin mini-club means model railroading fun for adults – charming, fascinating, and perfect for gift giving.



2 Märklin HO The ideal size for maximum enjoyment in model rail-roading

Scale 1: 87
Gauge 16.5 mm (⅝")

Ideal size trains with a solid feel, Märklin HO trains are precision-made models with accurate prototype detailing. It is the only HO system utilizing the dependable center stud contacts. This disguised third rail assures perfect operation. With a wide variety of accessories, the modelling possibilities in HO scale are virtually unlimited. The powerful, pulsating drama of real life railroading can be vibrantly brought to life on Märklin HO layouts.



3 Märklin I A real working super railroad for indoors and outdoors

Scale 1: 32
Gauge 45 mm (1-13/16")

These large Märklin trains can be set up anywhere: outdoors in the garden or on the terrace, indoors in any room, even the attic – Märklin I scale offers the entire family countless hours of fun. Märklin I scale is so easy to set up and take down that no technical skills are required. The enjoyment of these trains is increased because of their size. For example, the cars are large enough to load and transport small household items. The tank cars have operating spigots and can actually hold liquids. Whether serving drinks or harvesting strawberries, Märklin I scale trains are a practical way to enjoy the hobby of model railroading.
Top quality Märklin I trains are also collectors items.

Märklin Milestones

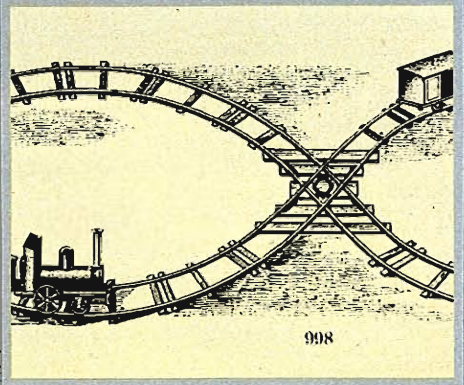
120-year tradition: Experience is the best teacher for quality and progress

Founded in 1859 by Friedrich Wilhelm Märklin, original products included dollhouse cookery, stagecoaches, and carousels. In 1888, sons Eugen and Karl joined in to form "Gebrüder Märklin" (Märklin Brothers).

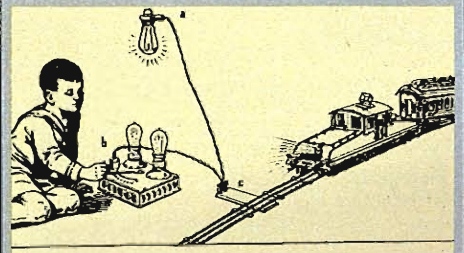
The Märklin clockwork railroad of 1891 was a pioneer achievement. It ran on a figure 8 and could be extended with switches and crossings.

Nine years later, at the Leipzig Fair of 1900, Märklin presented the first steam and electrically operated model railroad. But operating the trains was risky, however, because the early models used full house current.

The breakthrough came in 1926 with Märklin's 20 volt system, which reduced house current to safe voltage. Thus, children could play safely with the trains. Since 1935, Märklin HO trains have had a decisive role in the success of model railroading.



998



Schema zur Installation unserer Starkstrombahn

...n der Gleisanlage werden zusammengesetzt.
...r a an die Lichtleitung angeschlossen.
...Muffen des Anschlusskabels auf die Kontaktschiene c und den Regulierwiderstan...
...Bahn ist betriebsfertig.

Märklin Railroads in over 60 Countries

As early as 1909 Märklin railroads began appearing throughout the world. For example in Moscow, Budapest, Bucharest, Prague, Vienna, Warsaw, London, Amsterdam, Paris, Madrid, Rome, Washington, and New York. Today, Märklin benefits from an effecient worldwide distribution system. Its products are readily available from Capetown to Hammerfest (Norway), from Madagascar to the Fiji Islands, from New Zealand to Alaska, and from Tierra del Fuego (Chile/Argentina) to Japan.

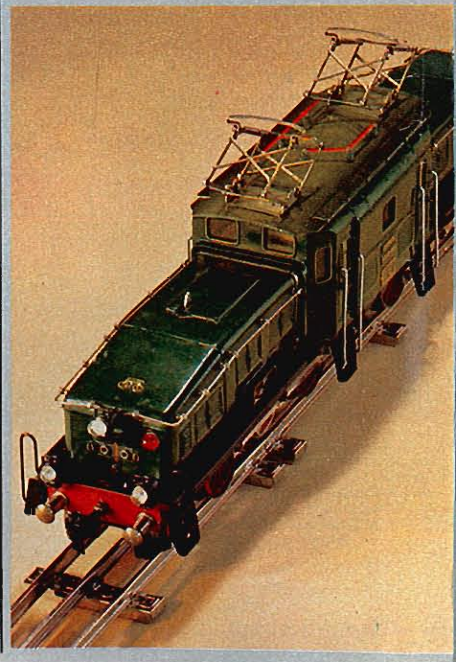
Märklin faces the future confidently: with exciting plans, developing programs, and dedication to precision-made quality products which will continue to roll on the high iron of success.

機関車 - 第3

世界最初のディ
したのは1893年
すぐれたディーセ
でおこなわれる
1950年代に入っ

Record Prices paid for Märklin Locomotives

Märklin trains have proven themselves to be good investments. Historical models are sought for, and bidded at, auctions throughout the world. For example, an I scale Crocodile, at RM 260 (ca. $85) the most expensive Märklin locomotive during the 1930s, was recently sold at an auction for an unbelievable DM 41,000 (ca. $22,000). In fact, engines and cars from the 1950s are already commanding much higher bids than their original sticker price.



$500,000 Tooling for a Single Locomotive

Top quality begins at the tooling and production stages. Märklin takes it so seriously that, for example, the I scale P8 locomotive project had $500,000 invested in tooling alone. This is why Märklin trains operate so well and so long.
Quality control is our keystone: Over $1-½ million per year is spent just testing Märklin products.

250 Million Wheels Roll and Roll

Thus far, Märklin has produced over 18 million locomotives and over 50 million cars which, with over 250 million wheels, roll on layouts throughout the world.

Here too, precision is the keynote. Because all wheels, whether having a tiny radius of 2.1 mm (5/64") or a large diameter of 52.6 mm (2-5/64") are made to exact standards so they will run true.

World Record in Continous Running

According to the famous "Guinness Book of Records", the world record for a model railroad train running continuously was 440.7 km (275 mi.). Our mini-club locomotive 8885 pulling 6 coaches glided effortlessly past that mark. Zipping along at 130 kmph (81 mph), the Z scale train covered 720 km (449 mi.) in 1,219 hours. Scaled to prototype at 1:220, the train covered 158,400 km (99,000 mi.) without care or repair.

To place this in perspective, the German Federal Railroads check their engines every 3,000 km (1,875 mi.) and give each engine a general overhaul every 30,000 km (18,750 mi.). If model railroaders followed this example, engines would have to be serviced after only 23 hours operation and a general overhaul would be required after 230 hours operation. But such scheduling is not needed in model railroading since the little engines can run circles around their big brothers.

Three Gauges for Endless Variety

The hobby of model railroading and the name Märklin are inseparable. Building on a rich tradition, new items are carefully planned, developed, and produced regularly at Göppingen.

Märklin variety includes three complete model railroad systems:

- HO – The ideal size; it has been unsurpassed in scope and popularity since its introduction in 1935.
- I – The large size for indoors and outdoors, reintroduced by Märklin in 1969.
- Z – The Märklin mini-club, the smallest electric railway in the world, first introduced in 1972.

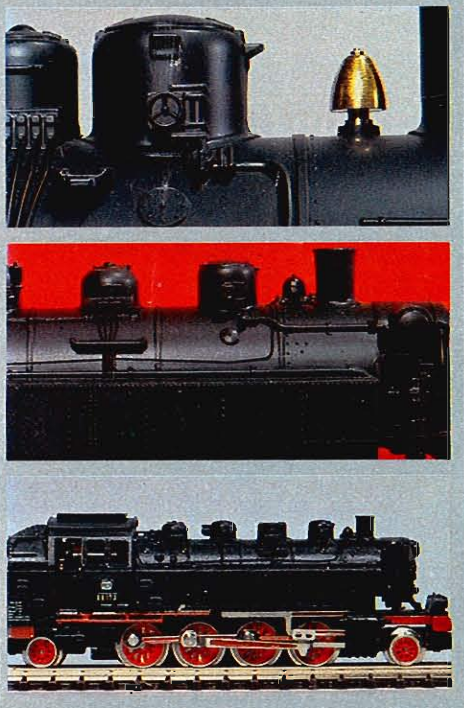


Table of Contents

✻ = **Märklin Service Pages**

märklin

Gebr. Märklin & Cie. GmbH
Postfach 8 60/8 80 · D-7320 Göppingen
Federal Republic of Germany

Direct selling from factory to private individuals is not possible. We reserve the right to make changes and availability is not guaranteed. Accuracy of quoted dimensions not guaranteed. – This catalog supercedes all previous issues.

Printed in Germany by Thiemig AG, München · 150 10 – MN 06 81 th ·

märklín
HO

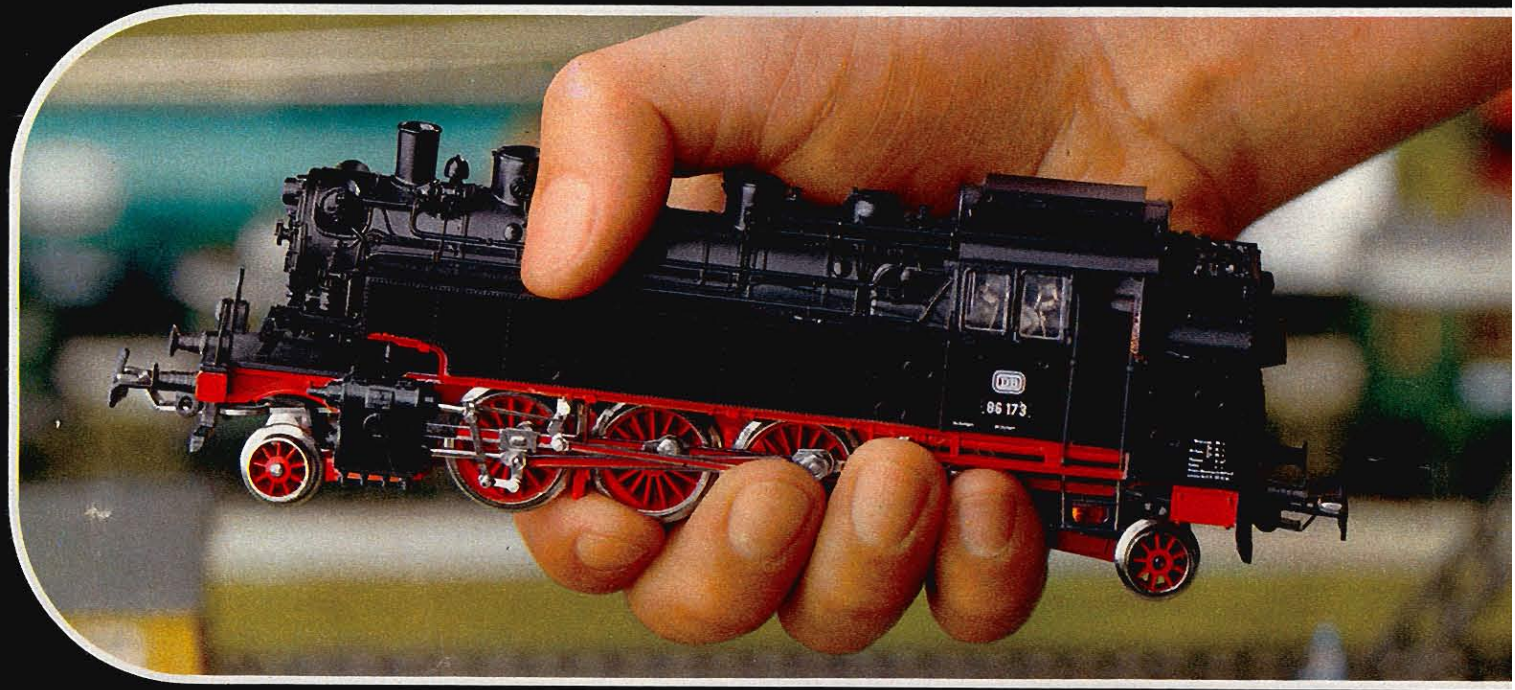

38 3553
D03 160-9
18 478
050 082-7
78 355
41 334
53 0001
86 173
160 001-4
140 239-5
111 136-8
103 113-7
120 001-3
1605
212 349-5
260 417-1
216 025-7
216 090-1
212 215-8

Märklin HO – Grasp the World of Trains

Märklin HO – 1:87 scale model railroading

Why do so many railroad modelers choose Märklin HO? Because Märklin has obvious advantages: precision made; technically reliable; accurate detailing; the authentic, sturdy models are easy to grasp.

Märklin HO models can stand up to vigorous handling. Sturdily built, Märklin models are masterpieces of beautifully detailed scale models of real life railroad engines and rolling stock.



Märklin HO – With the trouble-free contact stud system

Re-create the sights and sounds of real railroading

The popularity of Märklin HO is evident to all who see a layout in action. A genuine railroad atmosphere is captured by the powerful locomotives and the sound of trains rolling on the high iron.

Endless variety and trouble-free operation

The scope and variety of items available in the Märklin HO line offers hobbyists the opportunity to construct ever larger and more detailed layouts.

Short of space?

No problem! An action-packed Märklin HO layout can be built in surprisingly small spaces. With just a little planning, a fabulous layout can be built along a wall, in a corner, on two or more levels, or simply on a shelf. A double track main, for example is only 15 cm (6") wide.

Märklin's technique

Reliable operation of Märklin trains is assured through the center track studs (the invisible third rail). Märklin is the only HO model railroad system to utilize this efficient means of distributing electric current through the tracks.

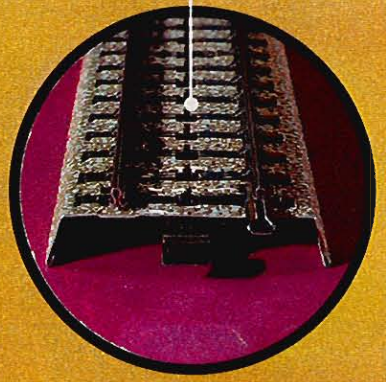
Märklin HO – Easy to Use

The unique Märklin contact stud system

Track current is supplied to motors via contact studs and pick up shoes (sliders). The shoe is always in contact with several studs, guaranteeing a flow of current. Current return is equally guaranteed because both outside rails are used. With this system, there is no need to worry about polarity . . . just connect the tracks, turn on the power, and trains run effortlessly.

Polarity is no problem because Märklin trains run on AC current. The center contact stud system, also known as the "invisible" third rail, was developed by Märklin to offer hobbists the benefits of running trains with 3-rail track, while maintaining the realism of 2-rail track.

The Märklin contact stud



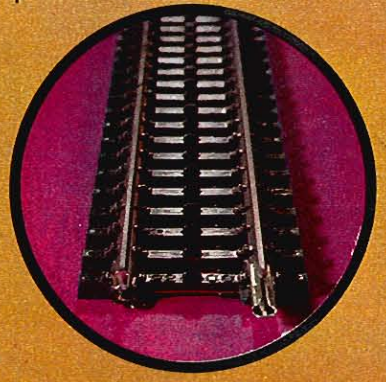
The sturdy M-tracks have metal roadbeds

Simple for beginners – Perfect for advanced modelers

Märklin trains are so well engineered that no previous technical knowledge is required for modelers to get started.

The reliable flow of current assures trouble-free operation even on the most complex layouts. This reliability is quickly appreciated when adding hidden tracks and reverse loops.

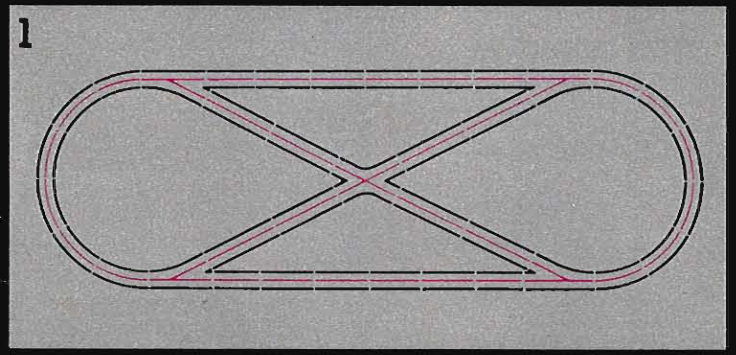
The true-to-life K-tracks have plastic ties



The Important Advantages of Märklin

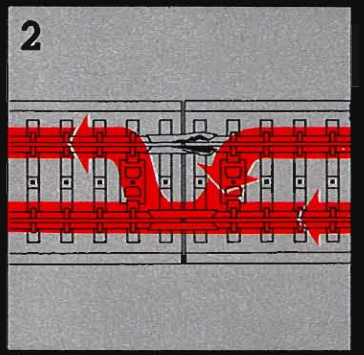
Märklin HO – a comprehensive system

This catalog illustrates the extensive Märklin HO system with its wide variety of models and accessories including rotating cranes and transfer tables.



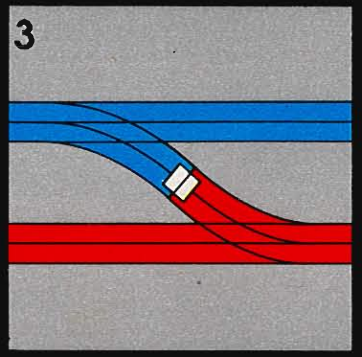
1 Simple Circuitry

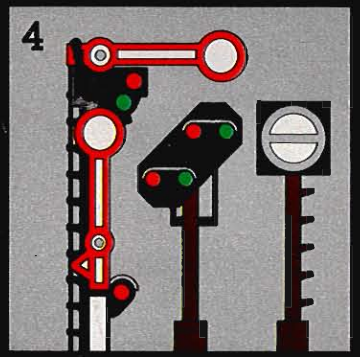
No complex wiring required for any track configuration, not even for reverse loops.

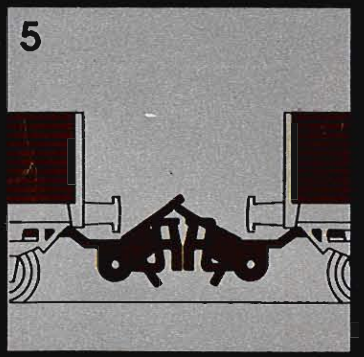


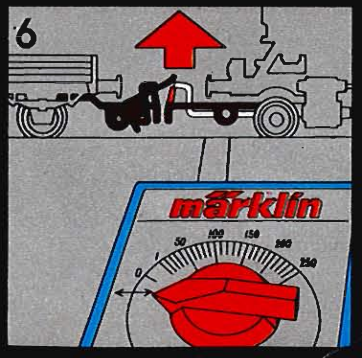
2 Fail-Safe Current Flow

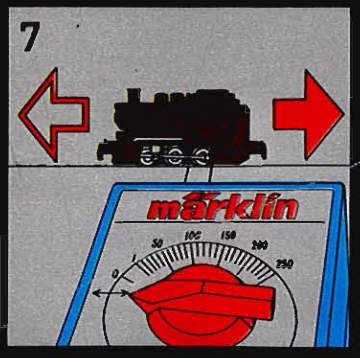
Even if one of the rail joiners gets warped, the other will still ensure a perfect connection.

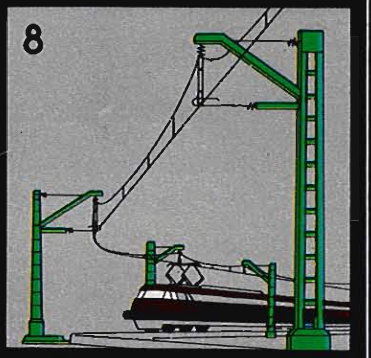












3 Easy to Set Up Separate Circuits

For M-track, just use center isolator 5022, and for K-track, use center isolator 7522. Special insulated track sections not required.

4 Märklin HO Signals

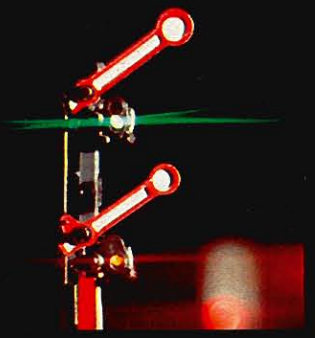
The well constructed signals permit realistic and genuine train traffic control. They are indispensable for fully automatic train control.

5 RELEX-Couplers

After uncoupling, cars can be pushed for spotting without the couplers re-engaging. This feature is essential for realistic yard operations.

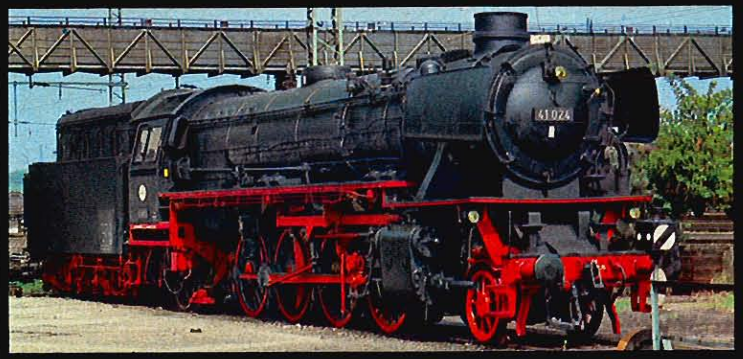
6 TELEX-Couplers

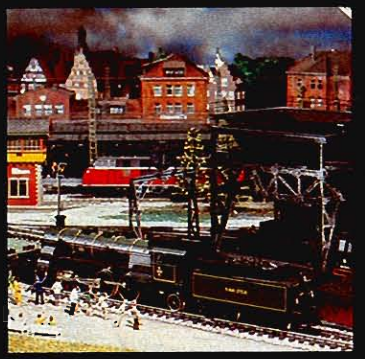
With TELEX-couplers, locomotives can be uncoupled at any point on the layout by means of remote control from the transformer.



7
Direction Switch

With Märklin HO, the direction switch is in the locomotives not in the track current. Thus, it is possible to run trains in opposite direction on the same circuit.





8
Märklin Catenary System

Electric locomotives can be operated realistically with an overhead system. This provides another advantage: Two trains can be operated independently on the same track. The Märklin catenary system mates perfectly with M or K track and functions just like real life overheads.

Beginning

There are four excellent ways of getting aboard the Märklin HO system.

The fun of model railroading is easy when using a beginner set to start with. All the basic necessities required for a layout are included with these sets. And there are no limits to how the set can evolve. For step-by-step extensions to the layout, Märklin offers the "SET" extension program. Or, for free-lancers, Märklin offers many tips through their books, brochures, and pamphlets.

1

2950

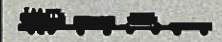
Large Fun-set

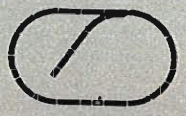
This set offers an absorbing and multi-faceted fun filled beginning for young modelers.

Backed by much research, this large set offers a variety of operating themes yet is surprisingly inexpensive. The possibilities for fun include: loading/unloading, remote control uncoupling, switching, installing turnouts and building various track plans.

Sensibly designed, the set contains a steam engine, three loaded freight cars, an uncoupling track, a manual switch, and several pieces of track.

A colorful 28-page pamphlet packed with tips on operating and building is included with the set.





2

2920

Ready to Run Passenger Train

This beginner's set is an excellent first step into the fabulous world of railroading.

Just add some extra track and switches for greater operating possibilities.

The steam engine and the two 2nd class coaches are ready to run. The fun of model railroading can be grasped by even very young modelers.

3

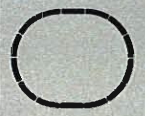
2930

Ready to Run Freight Train

This is the right set for those who want to start with a freight train. The attractive set with its illuminated class 89 steam engine, low-side gondola and dump car can be set up quickly and forwarding freight in no time.

Hours of fun are offered youngsters with the loading and unloading of freight cars and running the train.

Additional tracks and switches measureably extend the operating possibilities.



4

2875

Large Freight Train Set

For those who would like to experience the fun of operating a complete railroad from the start, this freight set is perfect, offering:

- Assortment of real-life models
- Diesel with head and tail lights plus RELEX-couplers
- Operating tail light for rear box car
- Large yard
- A lot of track

Plenty of operating possibilities, many different routes, interesting techniques, and realistic dispatching conveys the authentic fun of model railroading.

Contents: 1 multi-purpose class 212 diesel, 5 interesting freight cars, 3 switches, 1 slip switch, 3 bumpers, 34 track sections, and many accessories.

Setting Up

With the variety of books and accessories available from Märklin attractive complete layouts can grow from these starter sets.

"SET" – Extending by Stages
The extension sets in the "SET" program offers beginners the possibility of adding track to starter sets in a planned, orderly, step-by-step fashion.

For more about this, see page 82.

Free-Lancing
The scope of accessories available from Märklin, makes Märklin HO the excellent medium for modelers who want to design and build their own layouts. Practically everything is offered: Signals, electric blocks, uncoupling tracks, bridges, road crossings, catenary, etc.

Ideas and suggestions on setting up a layout are available from the following:
Track planning game, track stencils, plan books, layout books, signal books, an HO handbook, plus many brochures and pamphlets.

More about layout planning on page 74.

Starting with K Track
For detail-conscious beginners, Märklin's realistic-looking K track adds a dramatic dimension to model railroads.

More about K tracks, see pages 84–87.

Ready to Run Beginner Sets

1

2920 S 220 Volt
2924 S 240 Volt
2927 S 110 Volt (60 Hz)
2929 S 100 Volt Japan

Local Passenger Train with Transformer · Includes: 1 Tank engine 3104, 2 coaches, 12 curved tracks 5100, 1 straight track 5106, 1 feeder track 5131 with built-in capacitor to suppress radio interference, and 1 transformer · Train length 35 cm (1′ 1-¾″)

2

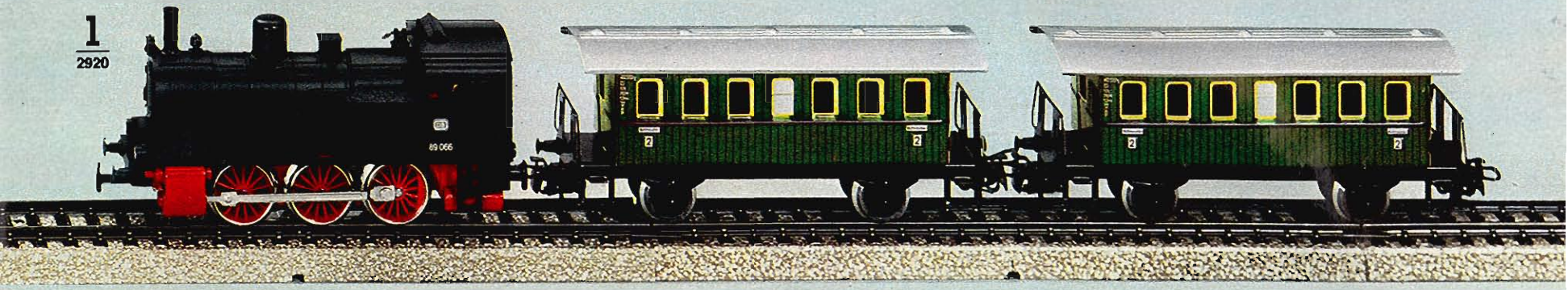
2930 S 220 Volt
2934 S 240 Volt
2937 S 110 Volt (60 Hz)
2939 S 100 Volt Japan

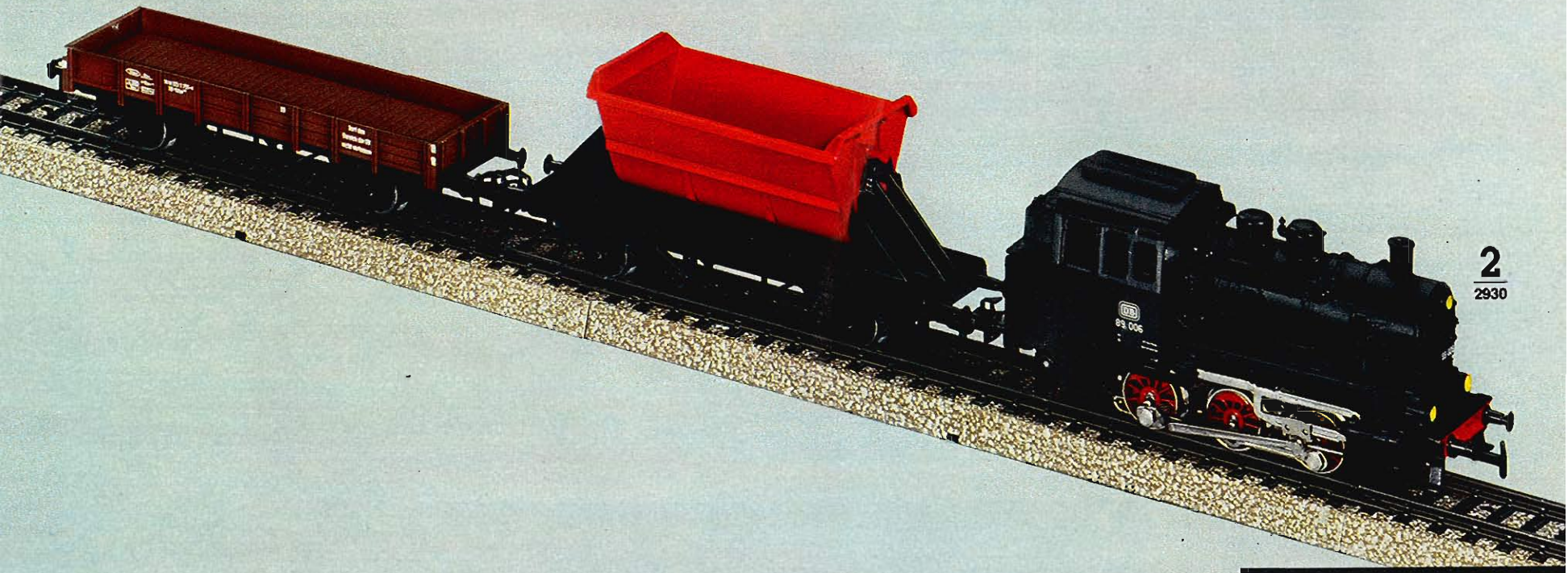
Freight Train with Transformer · Includes: 1 Tank engine 3000, 2 freight cars, 12 curved tracks 5100, 1 straight track 5106, 1 feeder track 5131 with built-in capacitor to suppress radio interference, and 1 transformer · Train length 34.5 cm (1′ 1-⅝″)

The transformers in these beginner sets are not available separately.

All Märklin transformers have connections for track current and for lights and accessories; and the ability to provide a spurt of 24 V to reverse locomotives. These transformers can also be used to provide power for larger engines or additional accessories.

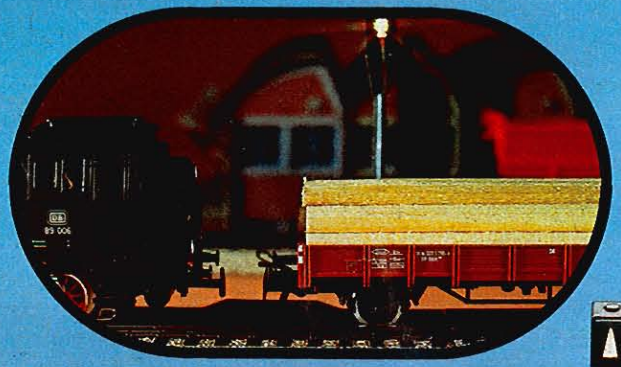
Connect Märklin transformers to AC outlets only

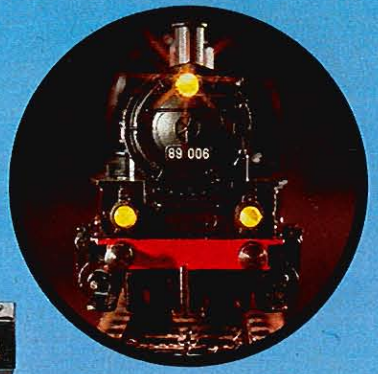




Versatile train set includes transformer

More "railroad" to start with





1

2950 220 Volt
2954 240 Volt
2957 110 Volt (60 Hz)
2959 100 Volt Japan

Freight train with transformer · Includes: 1 tanklocomotive 3000, 1 Dump car 4413, 1 low-side gondola 4423, 1 gondola 4430, 13 curved tracks 5100, 5 straight tracks 5106, 1 straight track 5107, 1 uncoupling track 5112, 1 light pole 5113, 1 feeder track 5131 with built-in capacitator to suppress radio static, 1 left-hand switch 5221, 1 position control box 7072, 1 bumper 7190, plus necessary wires, plugs, sockets, simulated freight as well as a transformer and instruction booklet · Train length 47.5 cm (1'6-¾")

The transformer included with this set is not available separately. It should only be connected to an Alternating Current (AC) outlet.

Signals
for safety and multi-train operation
Page 90

Control, switch, load, set out cars, uncouple, marshal, design layouts

- make plans, combine ideas
- design and modify layouts
- master electrical technology
- two or more can participate
- instruction booklet includes tips and ideas

1
2950

An Attractive Starter Set

Long freight train with plenty of track

2

2875 · Long freight train · Includes: 1 diesel switcher 3072, 1 boxcar 4411, 1 gondola 4431, 1 tank car 4442, 1 low-side gondola 4474 with load, 1 auto carrier 4613, 12 curved tracks 5100, 19 straight tracks 5106, 1 feeder track 5131 with built-in capacitor to suppress radio static, 1 pair of switches 5202, 1 right-hand switch 5202, 2 curved tracks 5206, 1 double slip switch 5207, 1 position control box 7072, 3 bumpers 7190, 1 distribution strip 7209, plus wires, plugs, and sockets · Train length 79.5 cm (2'7-¼")

This starter set offers a wide variety of operations and includes a large yard, realistic models, and a lot of track

- locomotive has working headlights and RELEX couplers
- real-life freight car loads
- operating marker lights on rear car
- double slip switch and three regular switches
- several yard tracks

2
2875

Rotating crane
Load cars by remote control
Page 99

Train Sets - a special gift

1 new
2854

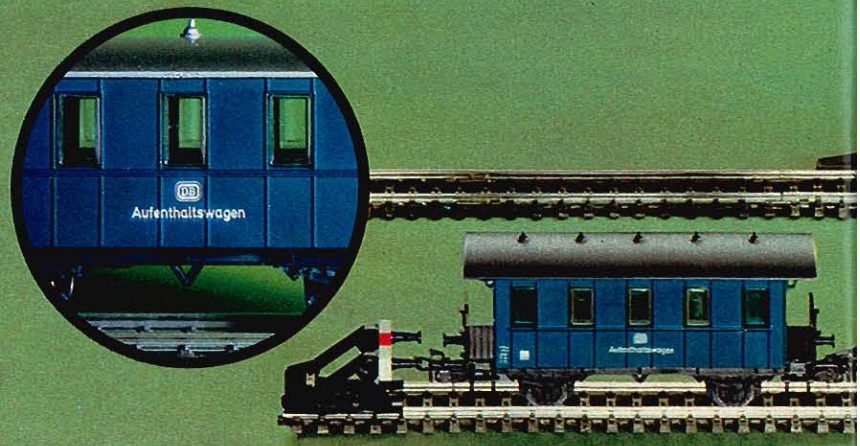
Track construction train with crew car and supplies

2

2853 · Includes: 1 diesel switcher 3064, 1 crane car 4611, 1 low-side gondola 4423 with boom support, 1 low-side gondola 4423 with ties, 1 gondola 4430 with ballast, 1 flat car 4663 with rail sections, and 1 crew car · Train length 94 cm (3' 1")

■ On the German Federal Railways, track construction trains are differentiated from maintenance-of-way trains. The latter are comprised usually of an engine and assorted freight cars for transporting sand, ballast, ties etc. to maintenance sites.

Track construction trains, on the other hand, consist of converted freight cars and passenger cars. Because construction sites on the German Federal Railways are not always within easy commuting distance for workers, sleepers and crew cars as well as other support cars (carpenter car, special-equipment cars, etc.) are also required.



TEE train with lighting and interior details

3

2852 · Includes: 1 high-speed electric locomotive 3054, 1 TEE coach 4096, 1 TEE diner 4097, and 1 TEE compartment coach 4098 with tail lights · All cars in this set have interior lighting · Set includes 10 painted figures as well as destination plates for various routes · Train length 107 cm (3' 6-⅛")

■ The TRANS EUROPE EXPRESS (TEE) trains inaugurated a new chapter in passenger service on major European railroads. The first TEE – a high-speed self-propelled rail car – entered service in 1957.

The locomotive included with this set is a class 103. First produced in 1965, series production began in 1970. These engines are designed for a maximum speed of 200 kmph (124 mph) and include many special safety features.

The TEE coaches are also of recent design and are exceptionally luxurious. The beige and red livery was used on the first TEE railcar and are still official TEE colors.

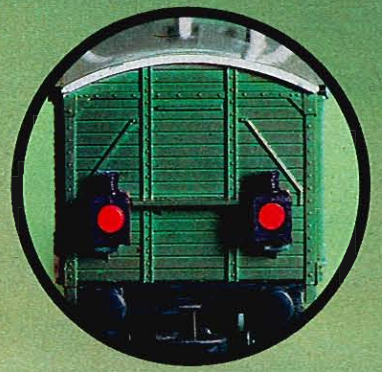
Unit train of Mannesmann pipes

1 new

2854 · Includes: 1 2-8-2T class 86 with new road number, 6 special-duty flat cars (floor centers pivot) lettered for the German Federal Railways and loaded with Mannesmann pipes plus 1 package car with new road number and rear markers · Entire train is a special run · Cars and locomotive not available separately · Train length 99.5 cm (3′ 3-¼″)

■ Prior to 1968, steam engines were used to haul pipe trains on non-electrified routes of the German Federal Railways. Between 1966 and 1968, for example, almost 500,000 tons of pipe were delivered annually to ports such as Bremen, Hamburg, and Rotterdam for export.

Mannesmann pipes are used to transport oil, gas, and water.



2
2853

3
2852

Steam Locomotives

Although the first steam locomotive to turn a wheel was built in 1804, it wasn't until 25 years later that the development of steam power began in earnest. The decisive event was the races held on October 8, 1829 to determine which steam engine would be used by England's first railway. George Stevenson's famous Rocket, incorporating many features still in use today won the race. Since then steam engines have undergone constant refinement.

Increasing performance requirements led to a great variety of types. In addition, many early designers attempted to establish their own styles. The first attempts to develop a semblance of standardization in locomotive construction began in Prussia in 1871. It wasn't until 1925 that the German State Railways finalized the classification of steam locomotives, at that time numbering 28,700 units.

Each locomotive was classified into one of 8 main types: Express Passenger, Local Passenger, Freight, Cog, Branch, Narrow-gauge, Passenger tank and Freight tank. Each engine was also given a serial number which consisted of a two digit class identifier (e.g.: Express Passenger 01-19, Freight 40-59 etc.) plus a three or four digit individual number. Thus, for example, Märklin's locomotive 3082 roadnumber 41 334 means that it is 334th engine of class 41. These numbers were displayed on all four sides of the steamers.

A popular method of classifying locomotives (steam, diesel and electric) is by wheel arrangement (in English-speaking countries) and by axle arrangement (in German-speaking countries). The wheels or axles are identified by numbers or letters separated by dashes or apostrophes.

In the German system, an apostrophe means that the axles are supported in a frame and are usually pilot or trailing axles. Where there is no apostrophe, the axles are incorporated into the main frame and are usually driving axles.

The large letter indicates the number of driven and coupled axles, with an A representing 1, B 2 etc. A small zero after the letter indicates uncoupled axles. The English system does not differentiate between coupled and uncoupled axles.

To illustrate here are a few examples:

The wheel arrangement of Märklin's locomotive 3085 is a 4-6-2, or using the German axle system: 2'C1'.
This means the two pilot axles (2) are supported independently (') of the main frame. The three driving axles (C) are coupled together. There is also a trailing axle (1) with independent support ('). Or using the English system, the locomotive has 4 pilot wheels, 6 drivers, and 2 trailing wheels.

The Märklin 3155 Electric is a Bo'Bo' because both pairs of driving axles (B) are uncoupled (o) and supported independent of main frame ('). The English equivalent is B-B i.e.: two four-wheel power trucks.

The Märklin 3049 Electric is a 1'Co1' because it has one pilot axle, three driving axles (C) and one trailing axle (o). The pilot and trailing axles are supported independent of the frame, hence the apostrophe, while the driving axles are uncoupled, hence the small zero. The English equivalent is 1-C-1.

Class 78

1 new

3106 · Tank locomotive · German Federal Railways' class 78 · Wheel arrangement 4-6-4T · Drivers are gear-driven · 2 non-skid tires · Simulated Heusinger valve gears · 3 working headlights at each end · Highly detailed body · Cab windows · Die cast zinc frame · Coupling hook with pre-uncoupler at each end · Length over buffers 16.9 cm (6-1/16")

= 7153 = 7164 = 60015

■ From 1912 to 1939, 535 of these engines were built for passenger service. Originally they were classed as T 18 by the Provincial Railway Administration.

After the German Railway Society was founded in 1923, a renumbering program was developed which made it easier to identify the various classes inherited from the provincial railways. Thus, the earlier class T 18 became class 78 and numbered 001 to 535.

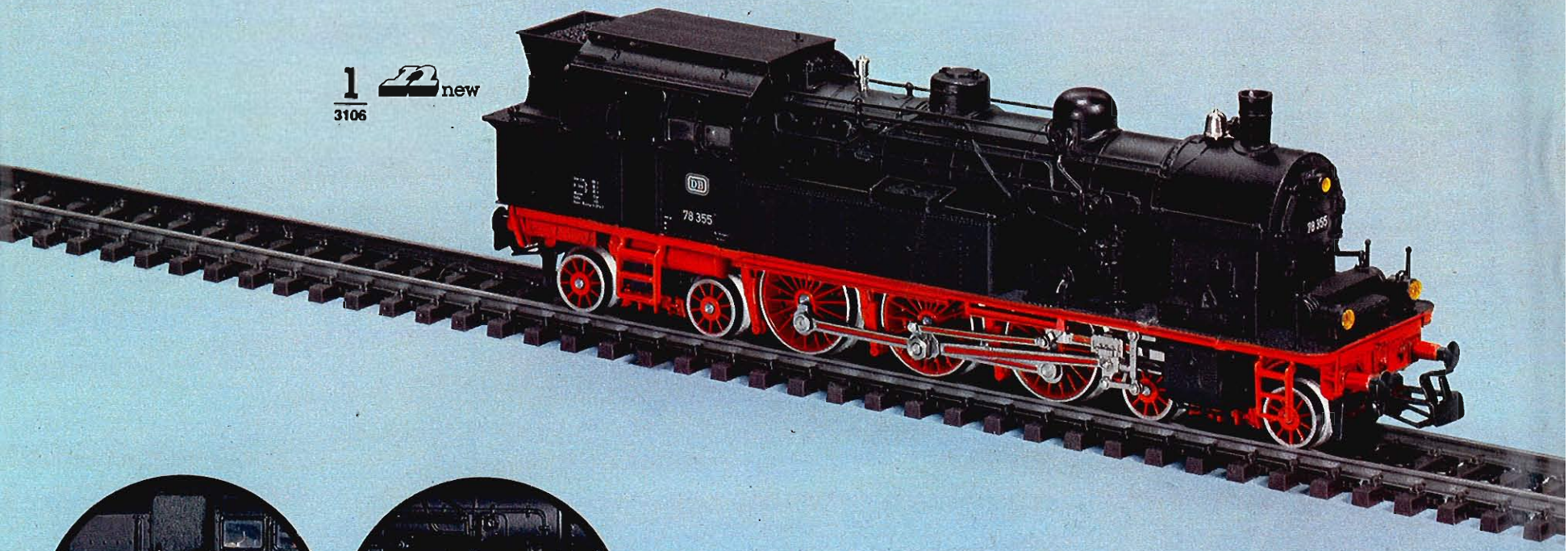
Of these 535 locomotives, 409 found themselves on the initial roster of the German Federal Railways in 1945. The last 4-6-4T to operate on the German Federal Railways was the 78 246. Based at Rottweil, it was retired in 1974.

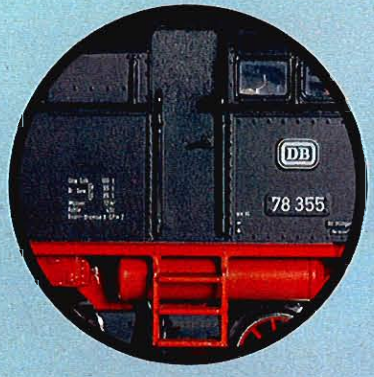
The class 78 was a well-constructed engine as its long service life attests. Its symmetrical wheel arrangement enabled it to obtain speeds of 100 kmph (62 mph) in forward or reverse thus making it ideal for commuter runs.

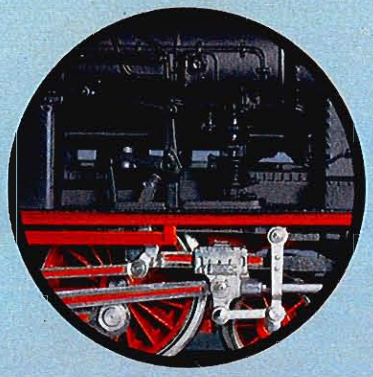
Our model's prototype, 78 355, was outshopped by Henschel and assigned to the Essen division in 1922. In 1933, it was re-assigned to Hanau where she remained until 1961 when she was assigned to Aalen. There she was the workhorse on the Stuttgart–Schorndorf branch which needed an engine capable of reverse operation since Schorndorf had no turning facilities.

Finally, in 1968, after 46 years of faithful service 78 355 was retired and scrapped.

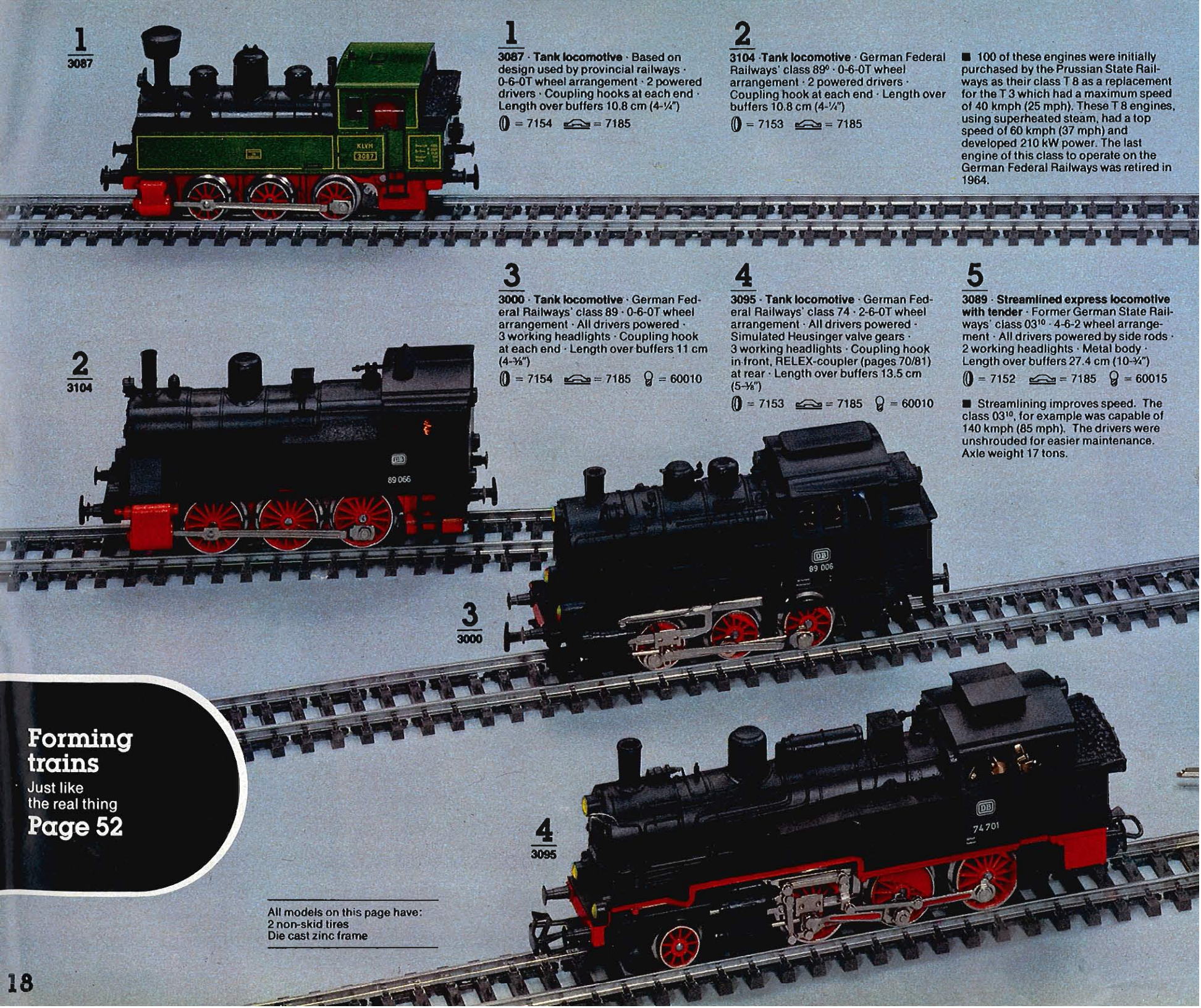
1 new
3106







Examples of train consists:



1
3087 · Tank locomotive · Based on design used by provincial railways · 0-6-0T wheel arrangement · 2 powered drivers · Coupling hooks at each end · Length over buffers 10.8 cm (4-¼")
⓪ = 7154 ⌓ = 7185

2
3104 · Tank locomotive · German Federal Railways' class 89⁰ · 0-6-0T wheel arrangement · 2 powered drivers · Coupling hook at each end · Length over buffers 10.8 cm (4-¼")
⓪ = 7153 ⌓ = 7185

■ 100 of these engines were initially purchased by the Prussian State Railways as their class T 8 as a replacement for the T 3 which had a maximum speed of 40 kmph (25 mph). These T 8 engines, using superheated steam, had a top speed of 60 kmph (37 mph) and developed 210 kW power. The last engine of this class to operate on the German Federal Railways was retired in 1964.

3
3000 · Tank locomotive · German Federal Railways' class 89 · 0-6-0T wheel arrangement · All drivers powered · 3 working headlights · Coupling hook at each end · Length over buffers 11 cm (4-⅜")
⓪ = 7154 ⌓ = 7185 ⚲ = 60010

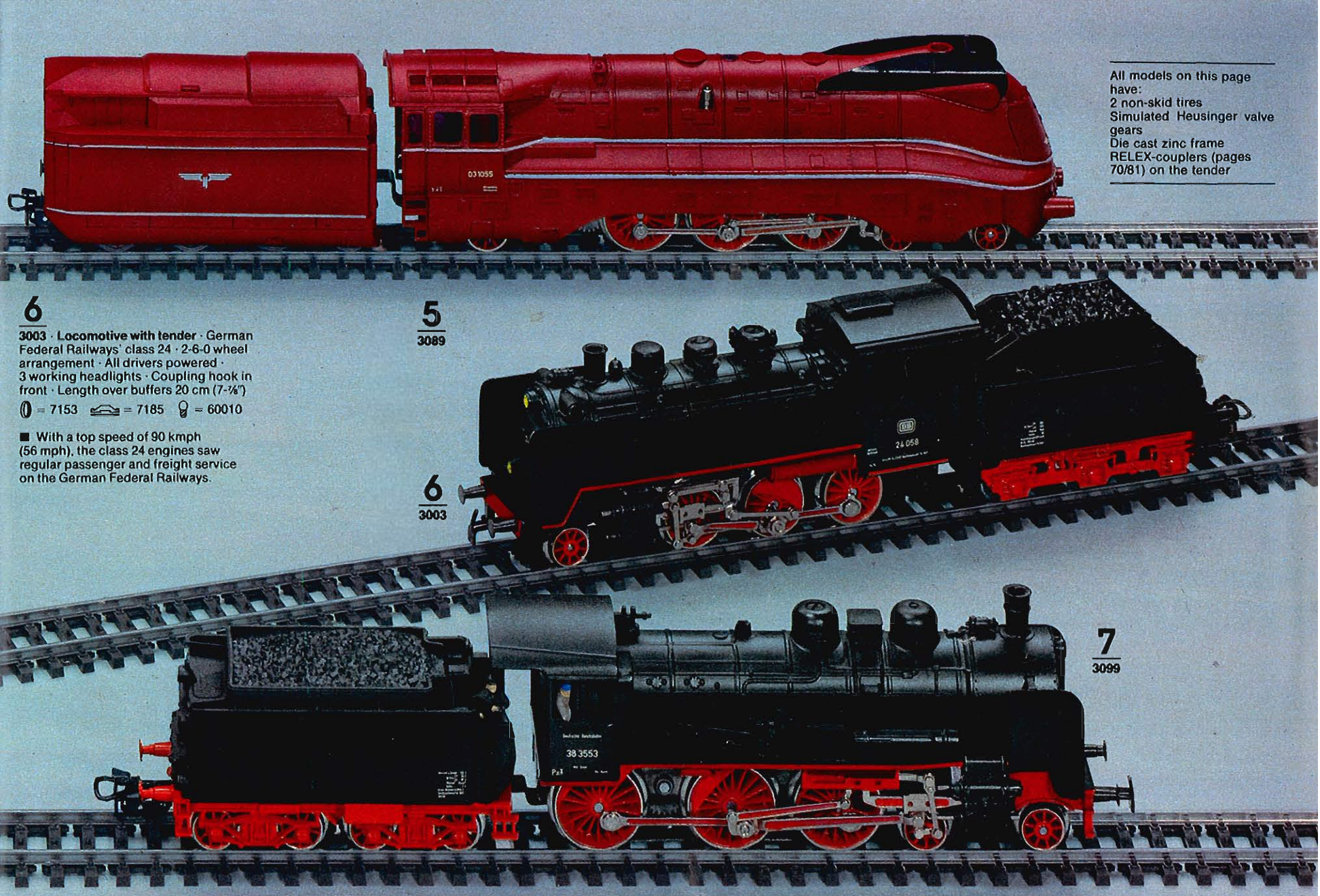
4
3095 · Tank locomotive · German Federal Railways' class 74 · 2-6-0T wheel arrangement · All drivers powered · Simulated Heusinger valve gears · 3 working headlights · Coupling hook in front, RELEX-coupler (pages 70/81) at rear · Length over buffers 13.5 cm (5-⅜")
⓪ = 7153 ⌓ = 7185 ⚲ = 60010

5
3089 · Streamlined express locomotive with tender · Former German State Railways' class 03¹⁰ · 4-6-2 wheel arrangement · All drivers powered by side rods · 2 working headlights · Metal body · Length over buffers 27.4 cm (10-¾")
⓪ = 7152 ⌓ = 7185 ⚲ = 60015

■ Streamlining improves speed. The class 03¹⁰, for example was capable of 140 kmph (85 mph). The drivers were unshrouded for easier maintenance. Axle weight 17 tons.

Forming trains
Just like the real thing
Page 52

All models on this page have:
2 non-skid tires
Die cast zinc frame



All models on this page have:
2 non-skid tires
Simulated Heusinger valve gears
Die cast zinc frame
RELEX-couplers (pages 70/81) on the tender

6

3003 · Locomotive with tender · German Federal Railways' class 24 · 2-6-0 wheel arrangement · All drivers powered · 3 working headlights · Coupling hook in front · Length over buffers 20 cm (7-⅞")

◯ = 7153 = 7185 = 60010

■ With a top speed of 90 kmph (56 mph), the class 24 engines saw regular passenger and freight service on the German Federal Railways.

5
3089

6
3003

7
3099

7

3099 · Locomotive with tender · Former German State Railways' class 38 · 4-6-0 wheel arrangement · All drivers powered · 3 working headlights · Metal body · Includes engineer and fireman · Coupling hook in front · Length over buffers 21.8 cm (8-⅝")

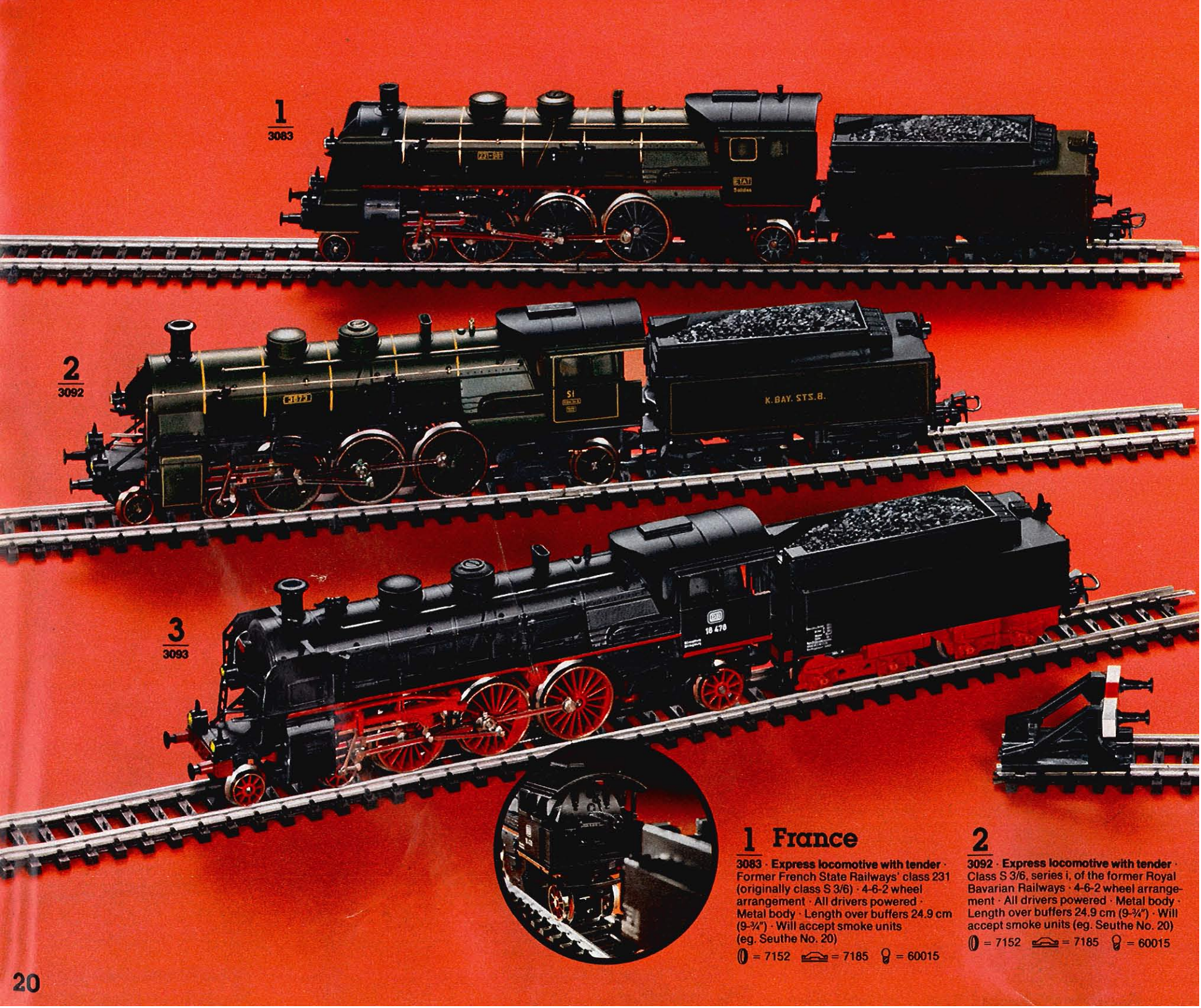
◯ = 7152 = 7185 = 60015

■ Built originally in 1906 as Prussian State Railways' class P 8, these 4-6-0's were known for reliability and low maintainence costs. Following the creation of the German State Railways, these engines became the workhorses throughout the country. They were still being used in passenger service in southern Germany as late as the 1960's.

Examples of train consists:

3003	4080	4067	4079	4079	4067	4079	4079	4067	4079	4079

3099	4004	4004	4004	4004	4004	4004	4004	4004	4004	4005



1 France

3083 · Express locomotive with tender · Former French State Railways' class 231 (originally class S 3/6) · 4-6-2 wheel arrangement · All drivers powered · Metal body · Length over buffers 24.9 cm (9-¾") · Will accept smoke units (eg. Seuthe No. 20)

= 7152 = 7185 = 60015

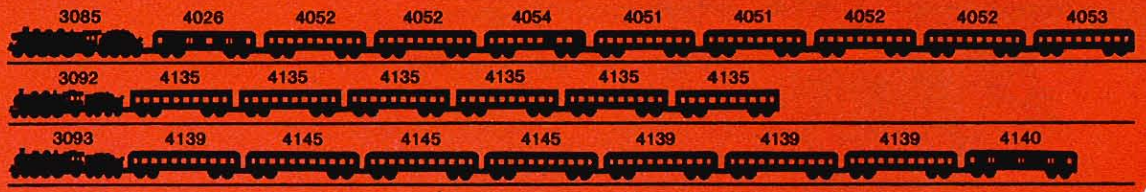
2

3092 · Express locomotive with tender · Class S 3/6, series i, of the former Royal Bavarian Railways · 4-6-2 wheel arrangement · All drivers powered · Metal body · Length over buffers 24.9 cm (9-¾") · Will accept smoke units (eg. Seuthe No. 20)

= 7152 = 7185 = 60015

All models have:
2 non-skid tires
Simulated Heusinger valve gears
3 working headlights
Die cast zinc frame
RELEX-couplers (pages 70/81) on the tender

Examples of train consists:



Märklin-Service
Spare parts list
Page 50

4
3085

3

3093 · Express locomotive with tender · German Federal Railways' class 18⁴ (originally the S 3/6) · 4-6-2 wheel arrangement · All drivers powered · Metal body · Length over buffers 24.9 cm (9-¾") · Will accept smoke units (eg. Seuthe No. 20)

⓪ = 7152 = 7185 = 60015

■ The first Bavarian S 3/6 was built in 1908. Well over 100 units were constructed, 30 in series i alone. After 1918, 11 engines went to France, where, with minor modifications, became their class 231. The series i became class 18⁴ on the German State and German Federal Railways. An elegant engine with good performance ratings, these locomotives were often used on international express trains such as the "Rheingold" and the "Orient Express". Maximum speed 120 kmph (75 mph). Weight 92.3 tons. Length over buffers 21.22 m (69'7-½").

4

3085 · Express locomotive with tender German Federal Railways' class 003 · 4-6-2 wheel arrangement · All drivers powered by axle gears · Length over buffers 27.7 cm (10-⅞") · Will accept smoke unit set 7226 (page 51)

⓪ = 7152 = 7164 = 60015

■ By the 1920s, some engines were built with 20 ton axle loads. This was too heavy for many lines, thus from 1930 onwards, 300 of this lighter engine were constructed. Maximum speed 130 kmph (80 mph). Power rating 1450 kW. Overall length 23.90 m (78' 5")

1
3084

2
3096

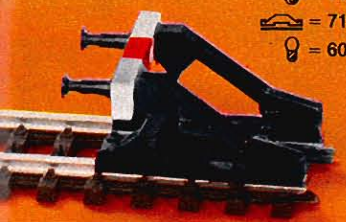
3
3082

All models have:
Working headlights
Simulated Heusinger valve gears
Die cast zinc frame

1

3084 · Heavy freight locomotive, brakeman's cab on tender · German Federal Railways' class 050 · 2-10-0 wheel arrangement · All drivers powered by axle gears · 4 non-skid tires · Coupling hook in front, RELEX-coupler (pages 70/81) on the tender · Good cornering ability because drivers are coupled in pairs · Length over buffers 26.1 cm (10-¼") · Will accept smoke unit set 7226 (page 51)

= 7153
= 7164
= 60015



■ With a low axle weight of 15.2 tons, these 2-10-0s could be used on branches. On account of this, over 3000 units were built from 1939 to 1943. Over 2000 were assigned to the German Federal Railways in 1945. After 1961, some were outfitted with brakeman's cabs (as on Märklin's model). Maximum speed 80 kmph (50 mph). Length over buffers 22.94 m (75'3").

2

3096 · Tank locomotive with Märklin TELEX-couplers · German Federal Railways' class 86 · 2-8-2T wheel arrangement · All drivers powered by side rods · 2 non-skid tires · TELEX-couplers at each end · Length over buffers 15.8 cm (6-¼")

= 7153 = 7164 = 60015

■ A total of 774 of these workhorses were built. The German Federal Railways acquired 385 units and used them mostly on branch lines. Prototype measures 13.82 m (45'4-⅛"), weighs 88.5 tons and had a maximum speed of 80 kmph (50 mph).

3

3082 · Freight locomotive with tender · German Federal Railways' class 41 · 2-8-2 wheel arrangement · All drivers powered with axle gears · 2 non-skid tires · Coupler hook in front, RELEX-coupler in rear (pages 70/81) · Length over buffers 27.5 cm (10-¾") · Will accept smoke unit set 7226 (page 51)

= 7153 = 7164 = 60015

■ The first of a total of 366 engines were outshopped in 1936. Originally intended for use on high-speed freights, it proved to be an excellent general purpose locomotive. Maximum speed 90 kmph (56 mph).

TELEX-couplers

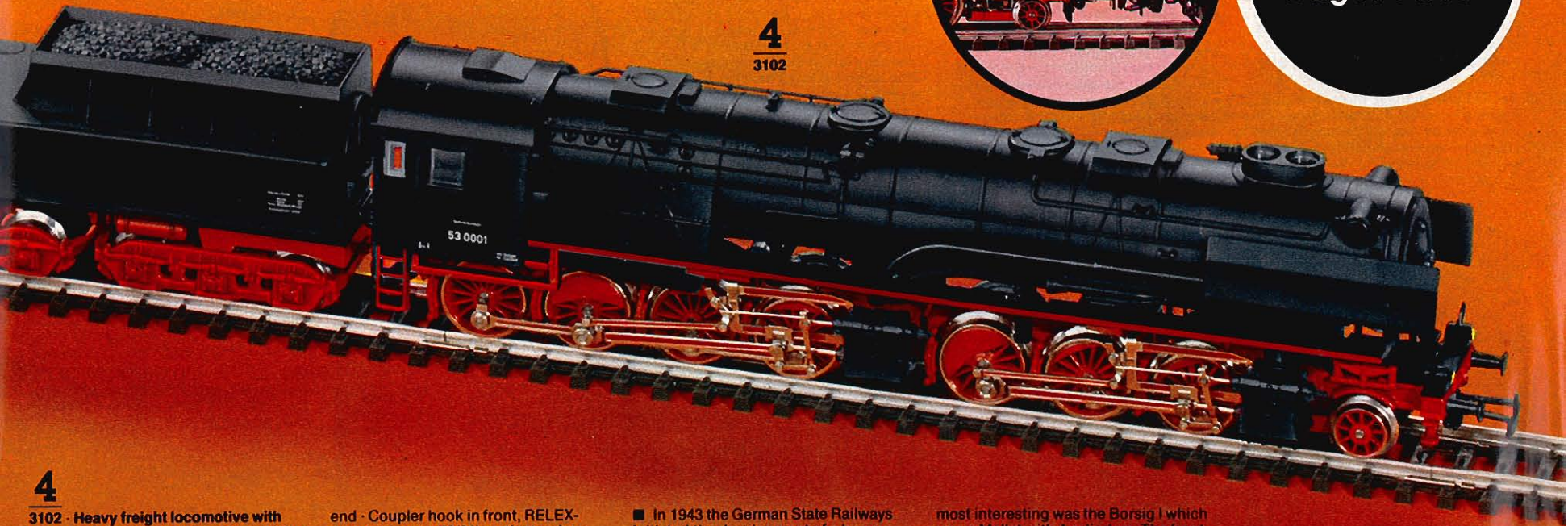
Remote control uncoupling of the locomotive

The Märklin models 3065 and 3096 are special locomotives which are outfitted with TELEX-couplers.

With control from the transformer, locomotives with TELEX-couplers can be uncoupled anywhere on the layout.

More about uncoupling Pages 70/81

4
3102



4

3102 · Heavy freight locomotive with tender · This Mallet is based on a design by Borsig for the former German State Railways · 2-6-8-0 wheel arrangement · 8 drivers powered by axle gears · 4 non-skid tires · 2 working headlights at each end · Coupler hook in front, RELEX-coupler (pages 70/81) on the tender · Good cornering ability because drivers are coupled in two groups · Will accept 2 smoke unit sets 7226 (page 51) · Length over buffers 31.4 cm (1'⅜")

= 7153 = 7185 = 60015

■ In 1943 the German State Railways initiated the development of a heavy duty freight locomotive. The planned engine should be able to pull 1700 tons up an .8 % grade having a curve with a radius of 360 m while maintaining a speed of 20 kmph (12.5 mph). Its maximum speed should be 80 kmph (50 mph) in either direction. Many designs were submitted and one of the most interesting was the Borsig I which was a Mallet with 4 cylinders. The front of the long boiler rested on the bolster of the front drivers. A simple yet powerful machine, the locomotive was never built. However, this engine, complete with double Heusinger valve gears, is now available as a Märklin model.

Catenary
for prototype
operation
Page 94

Electric Locomotives

The first electric locomotive was demonstrates to the public in Germany almost 50 years after the appearance of the first steam engines. Entering service on May 31, 1879, the little electric covered 13 kmph (8 mph) alone and 7 kmph (4-½ mph) with a train. Modern speeds of 150 kmph (93 mph) or 200 kmph (124 mph) show what progress has been made.

But, at the beginning, there were a lot of teething troubles: different types of electrical systems, varying frequences, few catenary standards, and only few short and disconnected electrified sections to operate on.

During the existence of the former German State Railways, there were some high points: The E 04 (Märklin Model 3049) achieved 151 kmph (94 mph) in 1933. The E 94 (Märklin Model 3022) proved itself by hauling 600 tons up a .2½ % grade.

The real breakthrough, however, occurred in the German Federal Railways' era as standardization evolved. Märklin model 3039 is an excellent example. Also fast freight locomotives (Märklin models 3057 and 3058) as well as high speed engines (Märklin model 3054) were developed.

Today, electric locomotives are the most common type motive power in use in Germany. The Federal Railways alone have 2700 units. Each month they average 11,700 km (6585 miles). On some routes, they speed the Intercity trains at 200 kmph (125 mph). Further, 82 % of rail freight and passenger service in Germany is now electrically operated. This factor led to the development of the class 120 multi-purpose electrics (Märklin model 3153).

Class 120

1

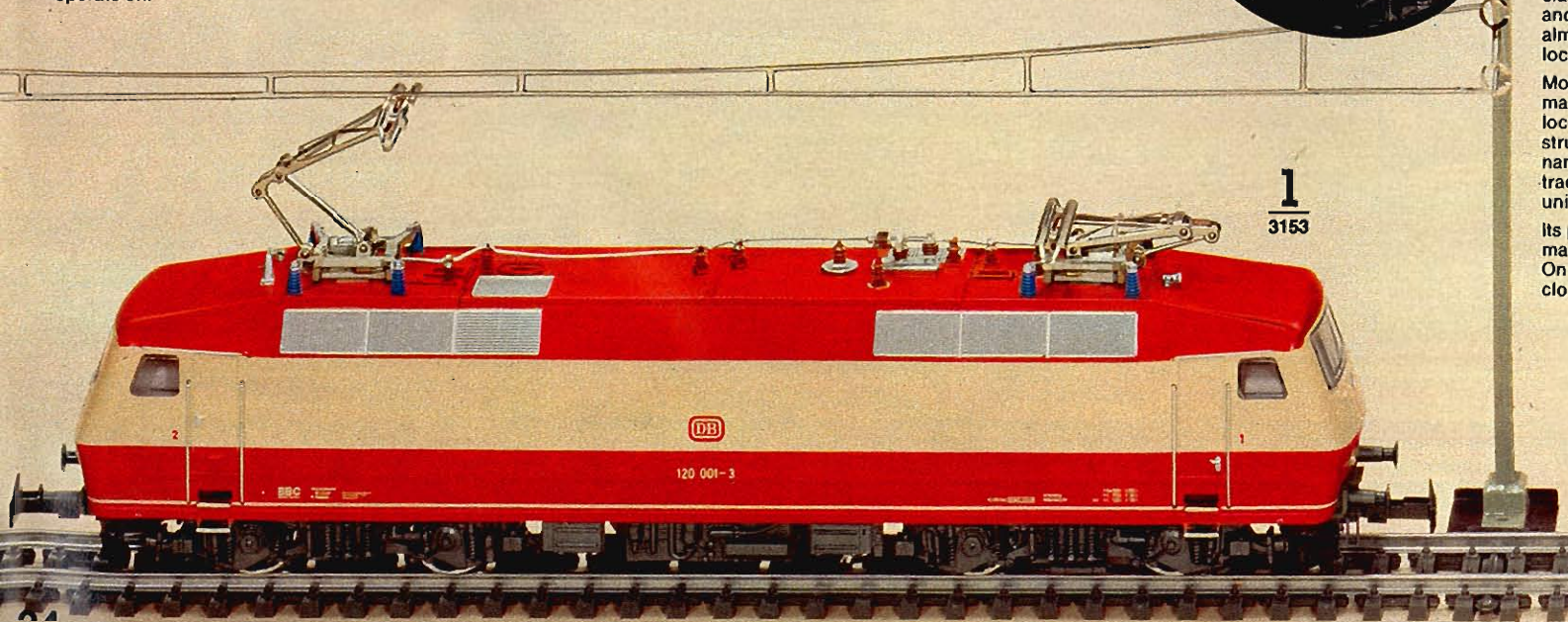
3153 · Multi-purpose locomotive · German Federal Railways' class 120 · B-B wheel arrangement · One power truck · 4 non skid tires · Coupling hooks at each end · Length over buffers 22.1 cm (8-¾")

= 7153 = 7164 = 60015

■ The German Federal Railways' class 120 is a turning point in the history of locomotive development. With this class, the Federal Railways made another advance in electric power... almost 100 years after the first electric locomotive entered service in Berlin.

Modern semi-conductor technology has made it possible to use AC motors in locomotives. Because of simple construction, AC motors have low maintenance costs. Yet, they offer continous traction at almost any speed. Thus these units can be used for any kind of service.

Its power output is 5600 kW and the maximum speed is 160 kmph (100 mph). On some trials, these engines have been clocked at 200 kmph (124 mph).



■ By the mid-1920s, the electrification of the Main Station in Munich as well as the many freight terminals in the Bavarian capital, impressed upon the German State Railways the need for a versatile electric switcher to replace ageing steamers and free up road electrics from switch duty.

Thus, in 1927, the former German Railway Society placed 14 E 60s in yard and switch duty at southern German stations, especially Munich.

These switchers also operated some commuter trains. Under the revised numbering system of the German Federal Railways, the E 60 became the 160.

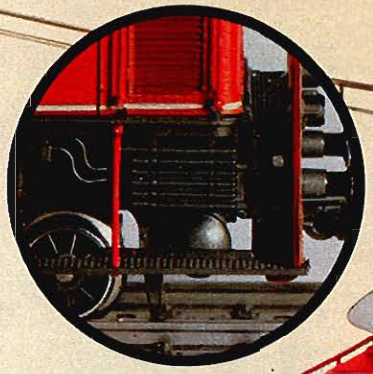
These engines have a power output of 830 kW and a maximum speed of 55 kmph (34 mph). Equipped with a double motor, power was transmitted to the wheels via a driveshaft.

Our model, number 160 001-4, was delivered to the Munich stationmaster in 1927 by AEG. After 51 years of service which included duty at other stations (Rosenheim, Innsbruck, Garmisch and Ingolstadt), this engine was retired at Garmisch in April 1978.

(AEG = Allgemeine Elektrizitäts-Gesellschaft, a hugh German electrical equipment manufacturing company)

All models have:
Lever for selecting operation by overhead or track current

3 working headlights at each end
Die cast zinc frame
Spring-loaded pantographs



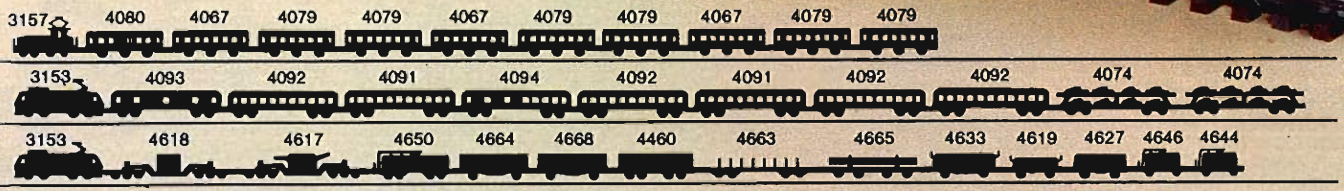
Class 160

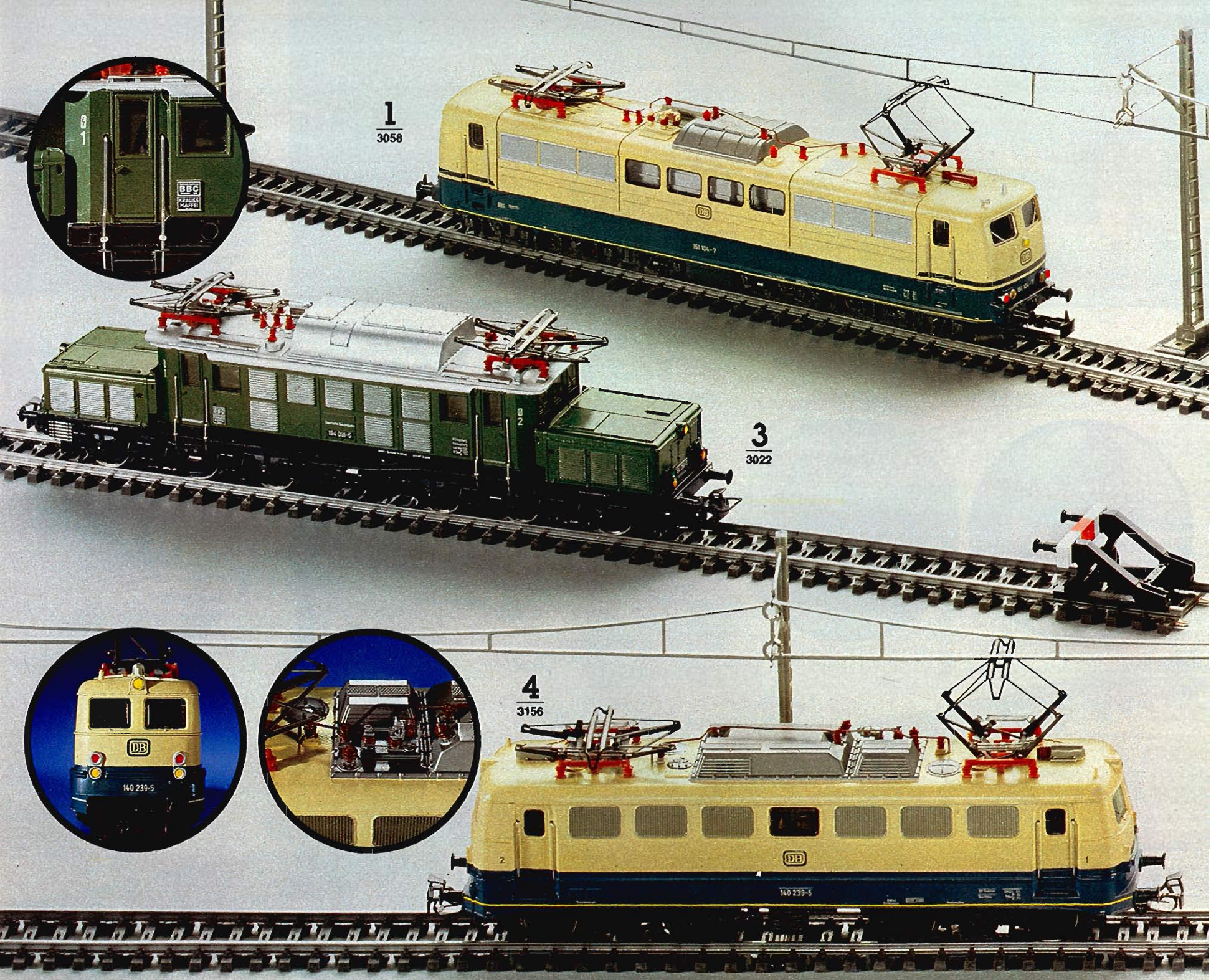
2 new

3157 · Electric locomotive · German Federal Railways' class 160 · 1-C wheel arrangement · All drivers powered · 2 non-skid tires · RELEX-couplers (pages 70/81) on each end · Length over buffers 12.8 cm (5")

◯ = 7153 ▭ = 7185 ◯ = 60010

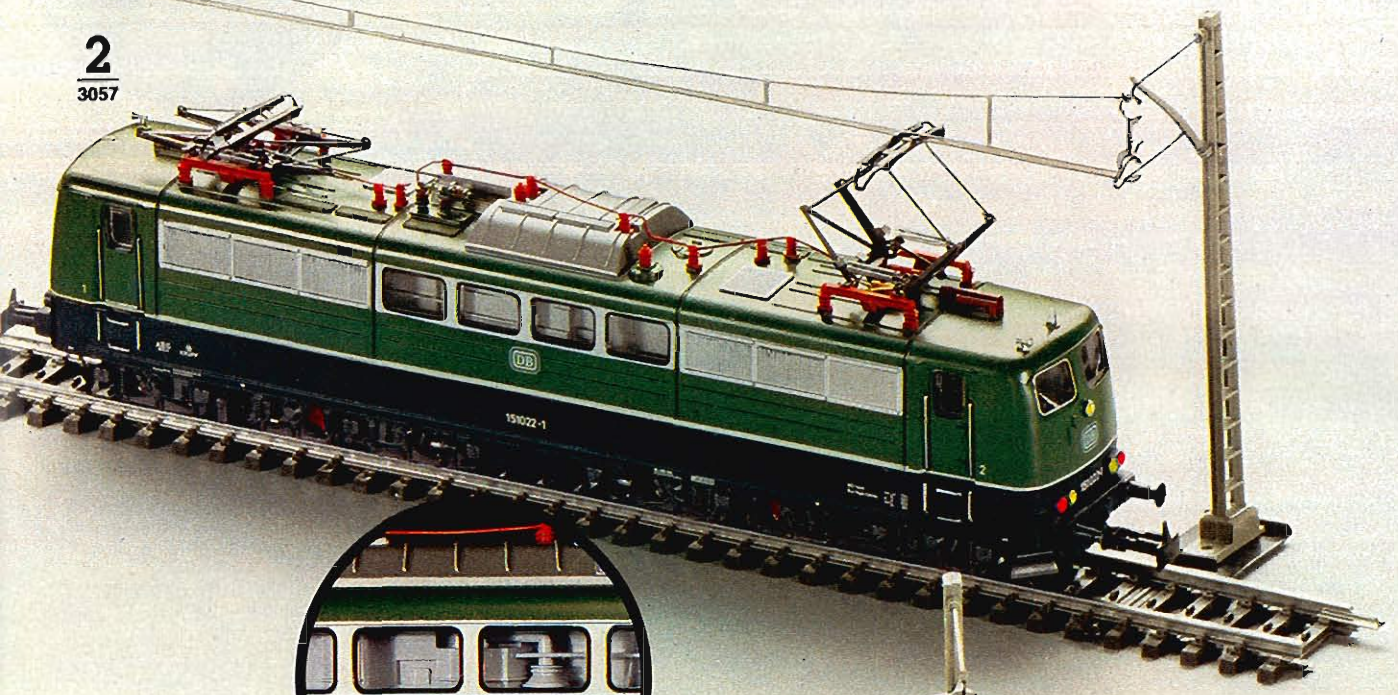
Examples of train consists:



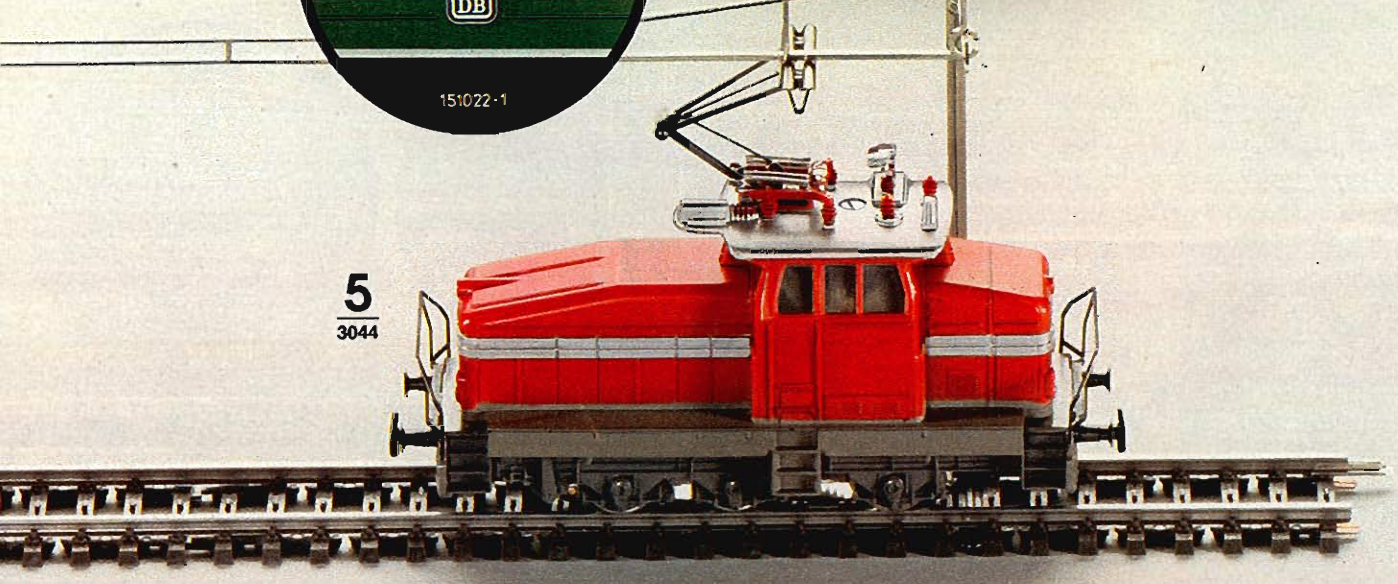

1
3058
3
3022
4
3156
DB
140 239-5

All models have:
Lever for selecting operation by overhead or track current
3 working headlights at each end
Die cast zinc frame
Spring-loaded pantographs

2
3057



5
3044



1

3058 · **Freight locomotive** · German Federal Railways' class 151 · C-C wheel arrangement · One power truck · 4 non-skid tires · Coupling hooks at each end · Length over buffers 22.2 cm (8-¾")

⓪ = 7153 = 7164 = 60015

2

3057 · **Freight locomotive** · German Federal Railways' class 151 · C-C wheel arrangement · One power truck · 4 non-skid tires · Coupling hooks at each end · Length over buffers 22.2 cm (8-¾")

⓪ = 7153 = 7164 = 60015

■ Raising the speeds of heavy freight trains made these engines necessary. The class 151 can pull 1000 tons on level track at 120 kmph (75 mph). Length 19.49 m (63'11-¼"). Tractive force at starting is 45 tons. Weight 118 tons. 6 traction motors deliver 6540 kW output.

3

3022 · **Heavy freight locomotive** · German Federal Railways' class 194 · C-C wheel arrangement · One power truck · 4 non-skid tires · 3-part metal body · RELEX-couplers (pages 70/81) on both ends · Length over buffers 21 cm (8-¼")

⓪ = 7153 = 7164 = 60015

■ The 194 is a heavyweight: 6 motors, 4670 kW starting power, total weight 120 tons, tractive force of 40 tons on starting; however, its maximum speed is just 90 kmph (56 mph).

4

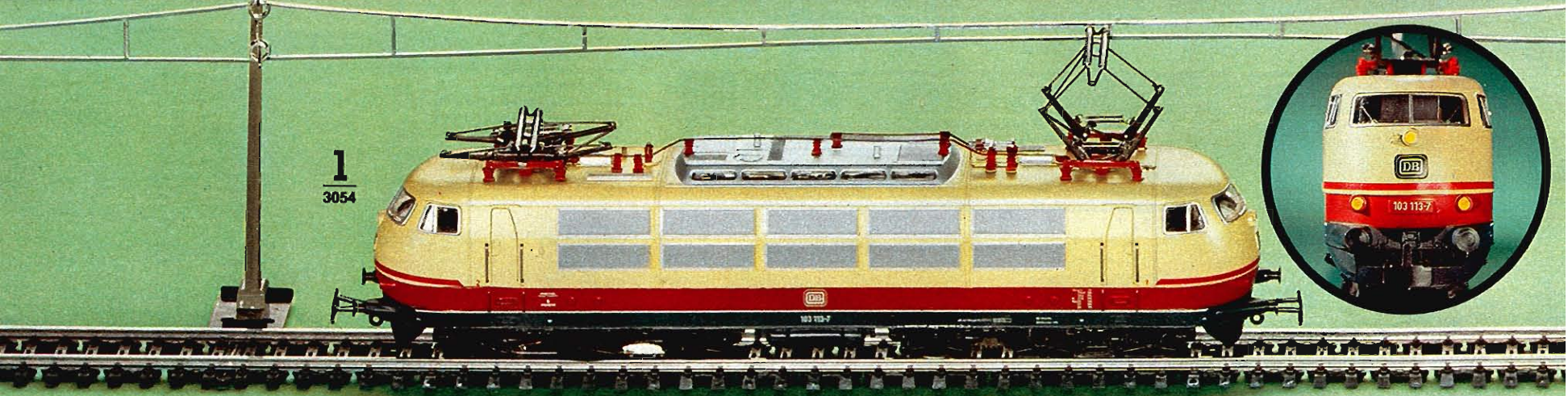
3156 · **Freight locomotive** · German Federal Railways' class 140 · B-B wheel arrangement · One power truck · 4 non-skid tires · Metal body · Coupling hooks with pre-uncoupler at each end · Length over buffers 18.1 cm (7-⅛")

⓪ = 7153 = 7164 = 60015

5

3044 · **Switch engine** · Multi-system industrial locomotive, type EA 800 · C wheel arrangement · All drivers powered · 2 non-skid tires · Coupling hook at each end · Length over buffers 11.2 cm (4-⅜")

⓪ = 7154 = 7185 = 60015



1

3054 · High speed locomotive · German Federal Railways' class 103 · C-C wheel arrangement · One power truck · 4 non-skid tires · Body painted in beige and red TEE colors · Coupling hook at each end · Length over buffers 21.9 cm (8-⅝")

Ⓞ = 7153 = 7164 = 60015

■ An elegant engine, the 103 is one of the fastest and most powerful high speed electrics on the German Federal Railways. It is 19.50 m (63'11-¾") long and has 6 motors driving 6 axles. Its hourly rating is 6600 kW, weight 112 tons, and has 32,000 kg (7,100 lb) tractive force on starting. Truly an engine ahead of its time.

2

3049 · Express locomotive · German Federal Railways' class 104 · 1-C-1 wheel arrangement · All drivers powered · 2 non-skid tires · 2 spring trucks · Coupling hooks at each end · Length over buffers 17.8 cm (7")

Ⓞ = 7153 = 7185 = 60015

■ Of the 23 originally built for the German State Railways, only numbers 17–22 were transferred to the Federal Railways. Since 1968, they have been numbered 104 017 thru 104 022 and are now in the process of being phased out.

3

3039 · Express locomotive · German Federal Railways' class 110 · B-B wheel arrangement · One power truck · 4 non-skid tires · Metal body · Coupling hooks with pre-uncoupler at each end · Length over buffers 18.1 cm (7-⅛")

Ⓞ = 7153 = 7164 = 60015

■ The 110 class electrics were obtained by the German Federal Railways as early as 1956. The engine is permitted to go 150 kmph (93 mph). They have 4 traction motors developing a total of 3620 kW. The locomotive weighs 85 tons and measures, from buffer to buffer, 16.44 m (53'9").

4

3042 · Express locomotive · German Federal Railways' class 111 · B-B wheel arrangement · One power truck · 4 non-skid tires · RELEX-couplers (pages 70/81) at both ends · Length over buffers 19.1 cm (7-½")

Ⓞ = 7153 = 7164 = 60015

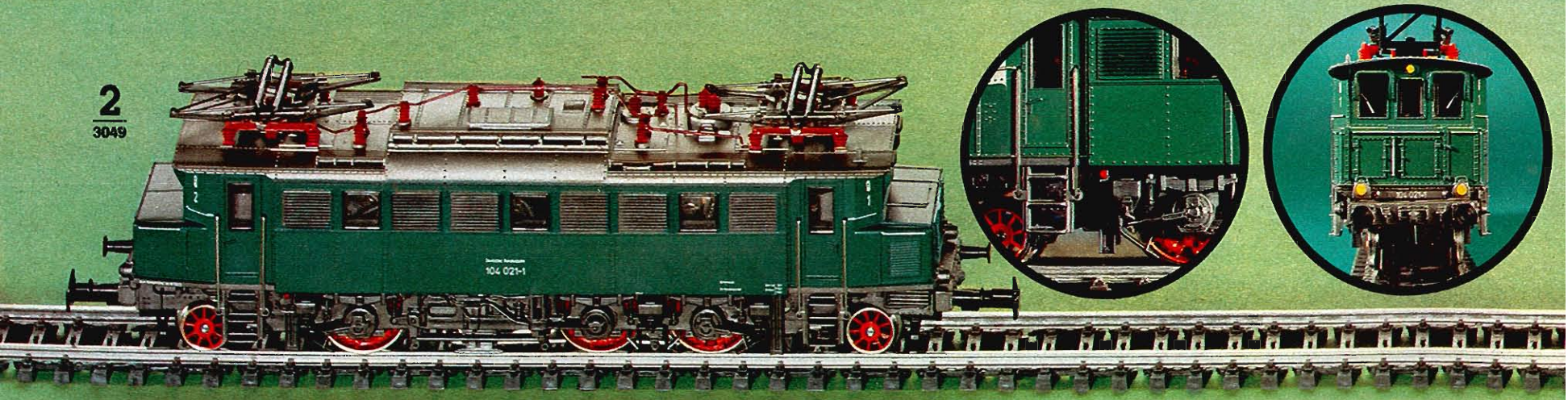
■ The class 111 is a further development of the well-proven 110. Emphasis was placed on improving the cabs, reducing track weight, and increasing on board safety. Weight 83 tons. Length 16.75 m (55'). Top speed 150 kmph (93 mph).

5

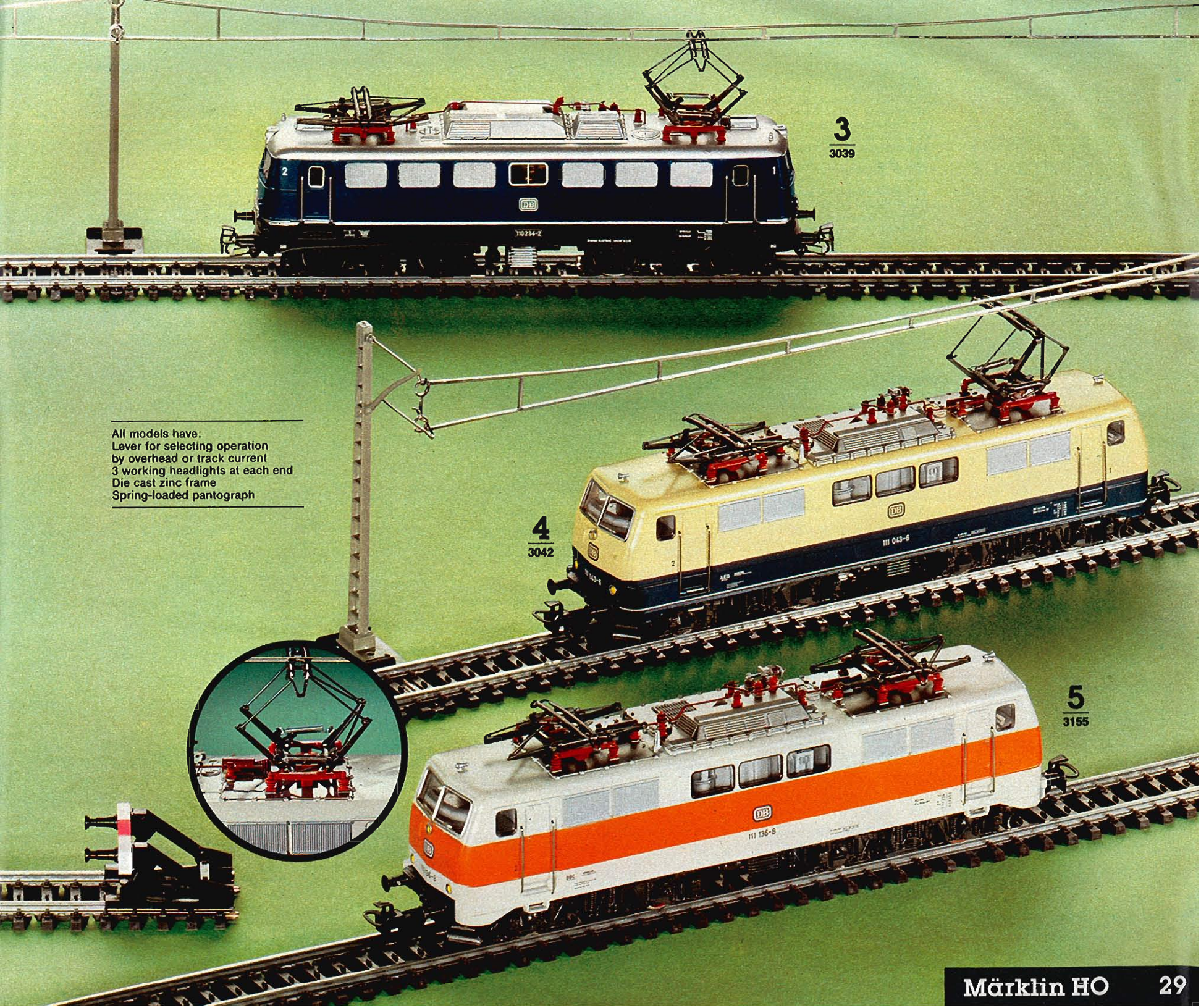
3155 · Express locomotive · German Federal Railways' class 111 · B-B wheel arrangement · One power truck · 4 non-skid tires · RELEX-couplers (pages 70/81) at both ends · Length over buffers 19.1 cm (7-½")

Ⓞ = 7153 = 7164 = 60015

■ Since 1978, the class 111 has been used in S-Bahn service in the Ruhr district and wear the attractive light gray/orange S-Bahn colors. (S-Bahn = Stadt Bahn – local long-distance commuter trains)



Example of train consist:



3
3039

4
3042

5
3155

All models have:
Lever for selecting operation
by overhead or track current
3 working headlights at each end
Die cast zinc frame
Spring-loaded pantograph

Switzerland

All models have:
Lever for selecting operation by overhead or track current
3 working headlights at each end
Die cast zinc frame
Spring-loaded pantograph

1

3050 · Heavy duty multi-purpose locomotive · Swiss Federal Railways' (SBB) class Ae 6/6 · C-C wheel arrangement · One power truck · 4 non-skid tires · Metal body · With emblem of Berne canton · Emblems of other Swiss cantons enclosed · Coupling hooks at each end · Length over buffers 20 cm (7-⅞")

⓪ = 7153 = 7164 = 60015

■ The Ae 6/6 is used on international trains. Weight 120 tons. Tractive power 4400 KW. 6 motors. Top speed 125 kmph (78 mph). Has strong starting and climbing power.

2

3151 · Express locomotive · Swiss Federal Railways' (SBB) class Ae 3/6^{II} · 2-C-1 wheel arrangement · All drivers powered · 2 non-skid tires · Sprung pilot and trailing trucks · RELEX-couplers (pages 70/81) at each end · Length over buffers 16 cm (6-⅜")

⓪ = 7153 = 7185 = 60015

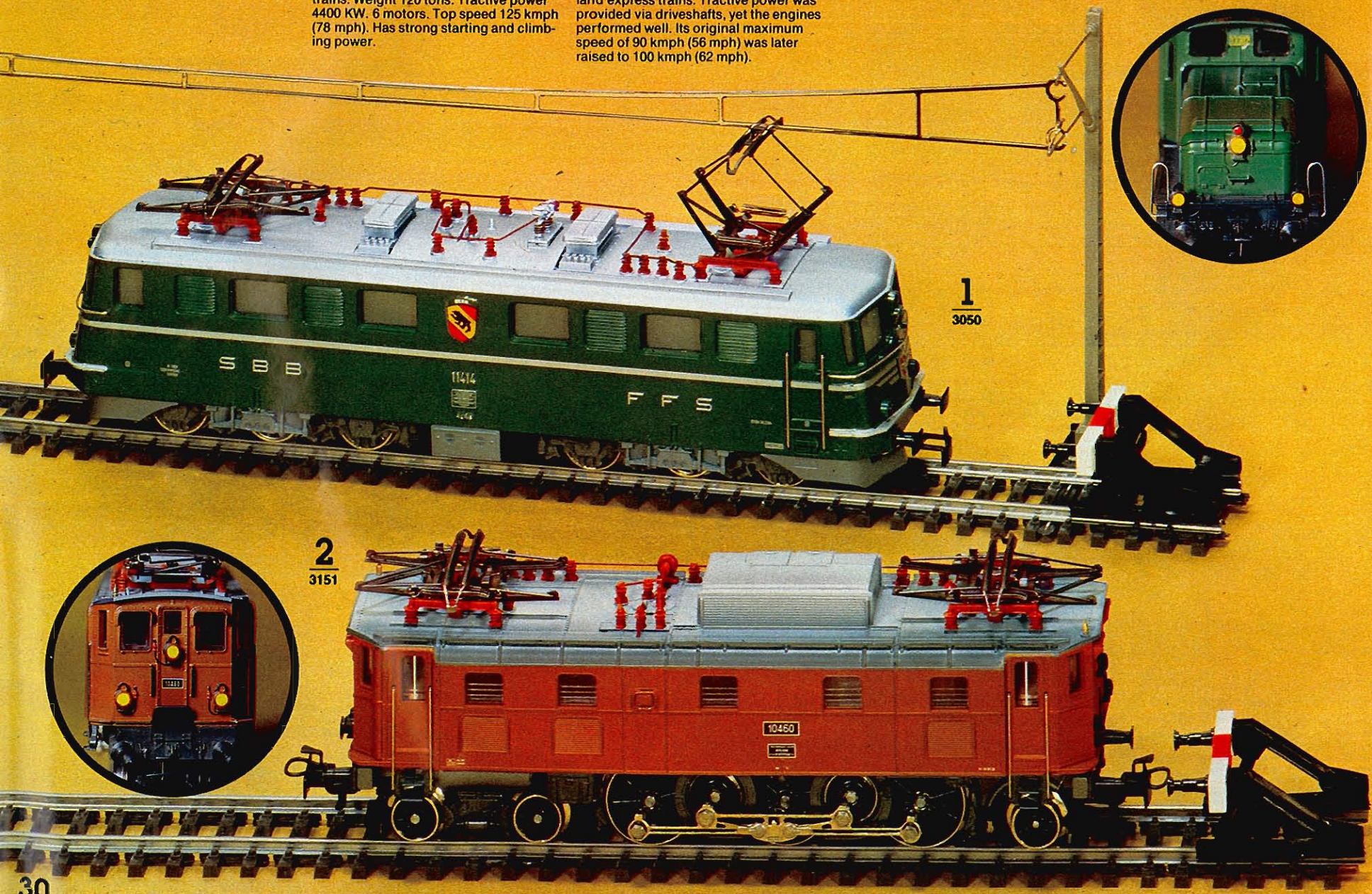
■ The SBB built 60 of these engines between 1924 and 1926 for use on lowland express trains. Tractive power was provided via driveshafts, yet the engines performed well. Its original maximum speed of 90 kmph (56 mph) was later raised to 100 kmph (62 mph).

3

3056 · Heavy freigth locomotive "Crocodile" · Model of the Swiss Federal Railways' (SBB) class Be 6/8^{III} · 1C-C1 wheel arrangement · One power truck · 4 non-skid tires · 3-part body · Good cornering ability because of flexibly coupled drivers · RELEX-couplers (pages 70/81) at each end · Length over buffers 22.8 cm (9")

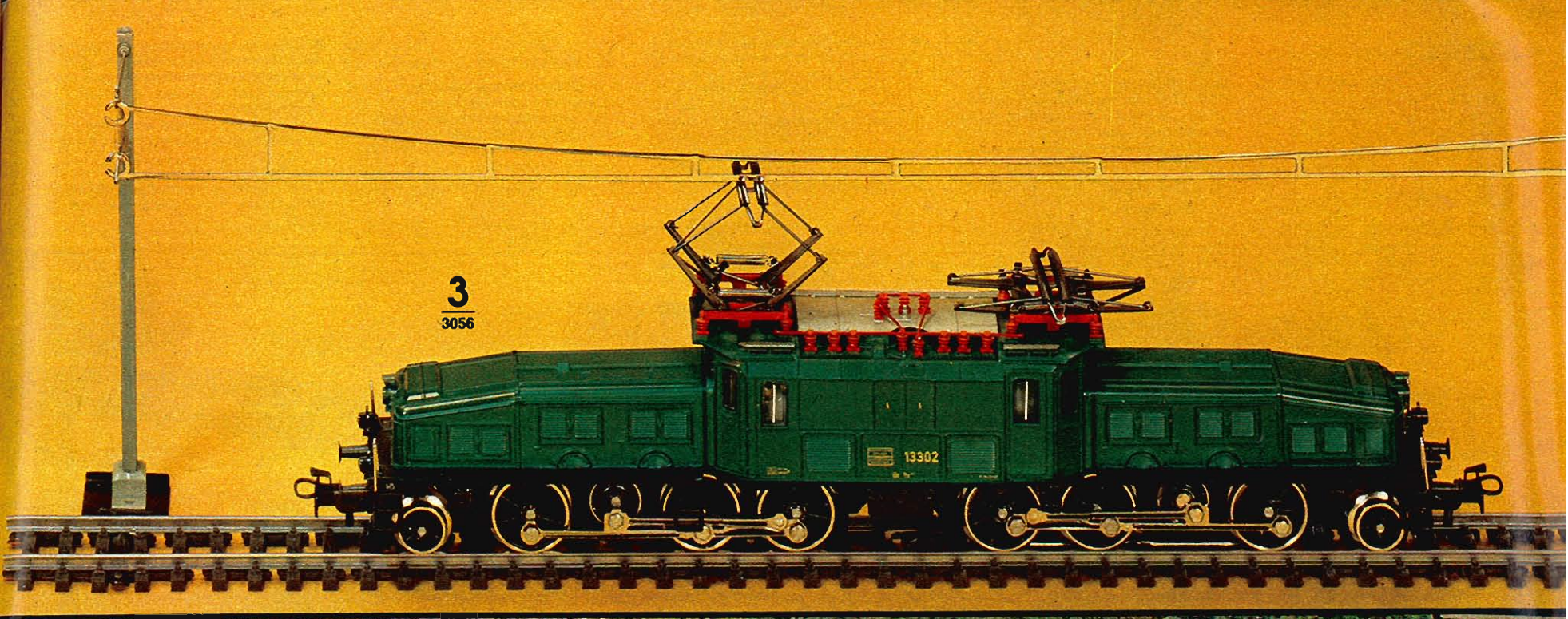
⓪ = 7153 = 7164 = 60015

■ In 1926/1927, 18 of these "crocodiles" were placed in service on the Gotthard line. With a length of 20.06 m (65' 9-¾") and a power output of 1800 kW giving it a top speed of 75 kmph (47 mph), their shape reminded many of crocodiles as they lumbered over the scenic Swiss grades.



1
3050

2
3151


3
3056
13302

Austria

1

3041 · Multi-purpose locomotive · Class 1043 of the Austrian Federal Railways (ÖBB) · B-B wheel arrangement · One power truck · Colorful livery · Coupling hook at both ends · Length over buffers 17.5 cm (6-⅞ ")

⓪ = 7153 = 7164 = 60015

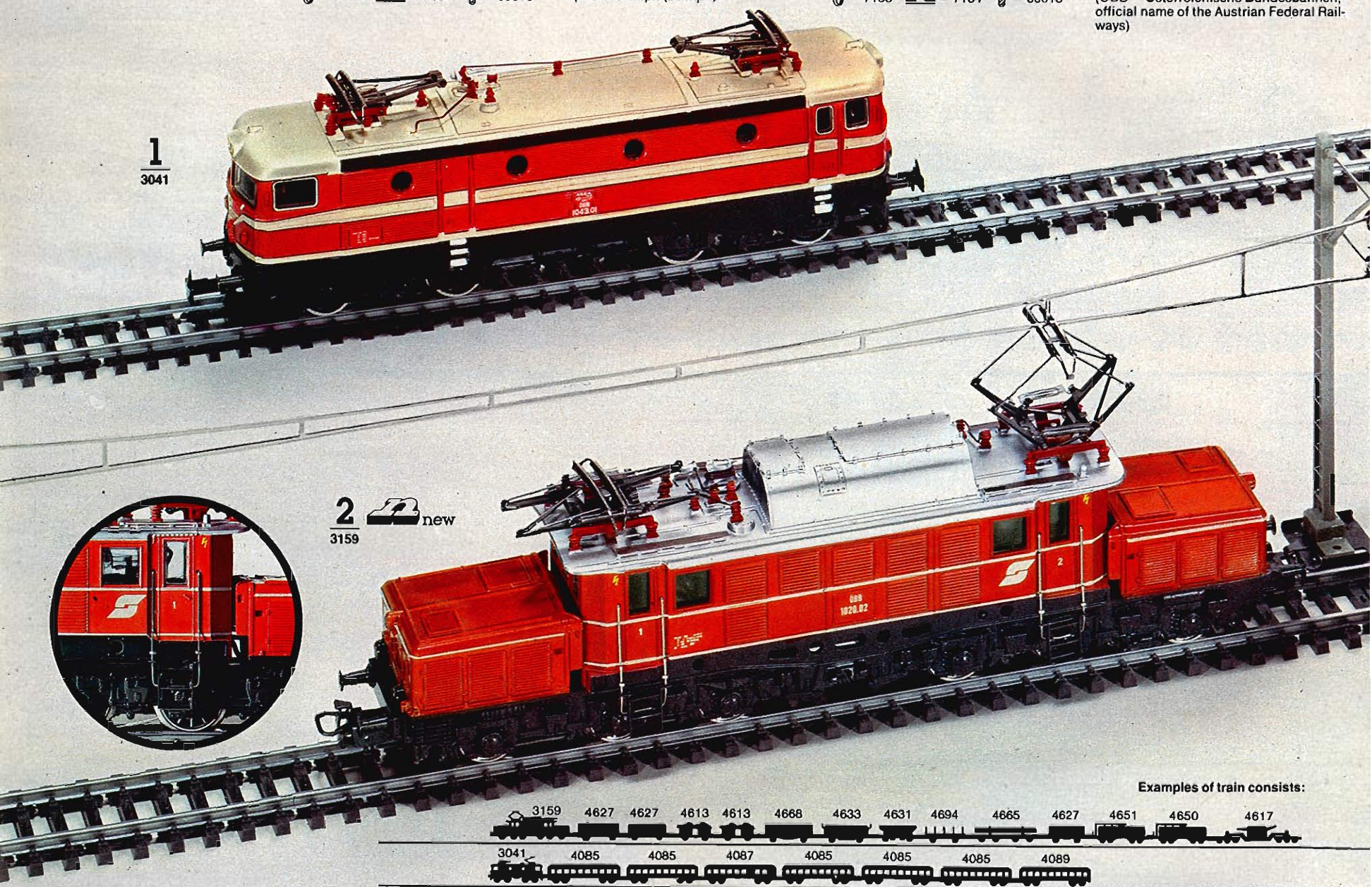
■ Following extensive trials with this engine, built by the Swedish firm ASEA, the Austrian Federal Railways purchased an initial batch of 4 units. The 16-⅔ Hz alternating current is converted to direct current by thyristors. Each engine has 4 motors which develop almost 3680 kW, enabling the 77.4 ton, 15.5 m (50'10-¼") locomotive to reach speeds up to 135 kmph (84 mph).

2 new

3159 · Freight locomotive · Class 1020 of the Austrian Federal Railways (ÖBB) · C-C wheel arrangement · One power truck · 3-piece metal body · RELEX coupling on both ends (pages 70/81) · Length over buffers 21 cm (8-¼")

⓪ = 7153 = 7164 = 60015

■ Originally constructed for the German Reichsbahn (class 94) in 1940, 44 units were consigned to the newly-organized Austrian Federal Railways in 1945 and were renumbered 1020.01 thru 1020.44. In 1955 three additional engines were built in Vienna. Originally painted green, these workhorses are now garbed in orange. Note the new ÖBB logo.
(ÖBB = Österreichische Bundesbahnen, official name of the Austrian Federal Railways)



Examples of train consists:

Netherlands

3 new

3161 · **Electric locomotive** · Model of class 1200 of the Netherlands Railways (NS) · C-C wheel arrangement · One power truck · Metal body · Coupling hooks on both ends · Length over buffers 19.6 cm (7-¾")

= 7154 = 7164 = 60015

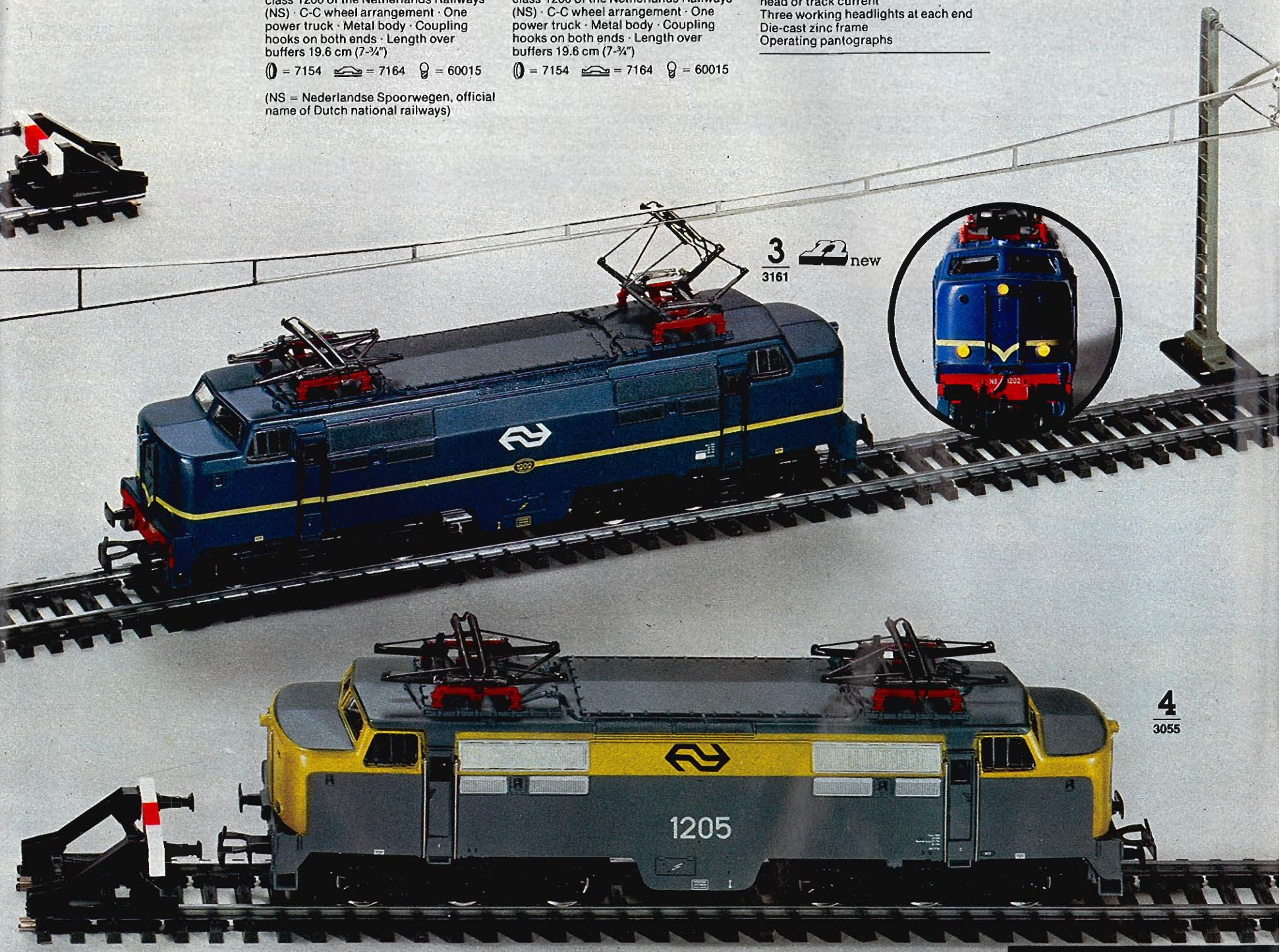
(NS = Nederlandse Spoorwegen, official name of Dutch national railways)

4

3055 · **Electric locomotive** · Model of class 1200 of the Netherlands Railways (NS) · C-C wheel arrangement · One power truck · Metal body · Coupling hooks on both ends · Length over buffers 19.6 cm (7-¾")

= 7154 = 7164 = 60015

All models have:
4 non-skid tires
Lever for selecting operation by overhead or track current
Three working headlights at each end
Die-cast zinc frame
Operating pantographs



1 Belgium

3152 · Four-phase express locomotive · Class 16 of the Belgian State Railways (NMBS/SNCB) · B-B wheel arrangement · One power truck · 4 non-skid tires · RELEX coupling on both ends (pages 70/81) · Length over buffers 19.4 cm (7-⅝")

⓪ = 7153 = 7164 = 60015

■ Capable of drawing current at four different phases, the Belgian Railways' class 16 is used in international service. The DC traction motors develop a continous rating of 2600 kW. Its maximum speed is 160 kmph (100 mph). Class 16 is compatible with the following overhead systems:

1500 Volts =	(SNCF, NS)
3000 Volts =	(SNCB, FS, JZ)
15 kV / 16⅔ Hz ~	(DB, SBB, ÖBB)
25 kV / 50 Hz ~	(SNCF, CFL)

2 France

3038 · High-performance locomotive · Class BB 9200 of the French National Railways (SNCF) · B-B wheel arrangement · One power truck · 4 non-skid tires · Metal body · Coupling hooks with pre-uncoupler at both ends · Length over buffers · 18 cm (7-⅛")

⓪ = 7153 = 7164 = 60015

■ Class BB 9200 locomotives have 4 motors which develop a total hourly rating of 4050 kW. These electrics weigh 80 tons and are capable of 160 kmph (100 mph) on certain routes.

(SNCF= Société Nationale des Chemins de Fer Français, official name of the French National Railways)

3 Sweden

3030 · Multi-purpose locomotive · Class Da of the Swedish State Railways (SJ) · 2-6-2 wheel arrangement · All drivers powered · Jackshaft driven through gears · 2 non-skid tires · Metal body · RELEX coupling at each end (pages 70/81) · Length over buffers 14.7 cm (5-¾")

⓪ = 7153 = 7185 = 60015

■ A general purpose engine, ideal for use on locals and branch line operation, the class Da locomotives have only one motor and an axle loading of just 15 to 17 tons. To prevent individual wheels from "running away", the engines are fitted with side rod drive.

4 Sweden

3043 · Multi-purpose locomotive · Class Rc of the Swedish State Railways (SJ) · B-B wheel arrangement · One power truck · 4 non-skid tires · Coupling hooks at both ends · Length over buffers 17.5 cm (6-⅞")

⓪ = 7153 = 7164 = 60015

■ Utilizing the latest in electric technology, these engines convert 16-⅔ Hz AC into Direct Current by means of thyristors. Under the hood are 4 motors which develop almost 3680 kW. The unit weighs 76 tons and can reach speeds of 135 kmph (84 mph). Overall measurements: 15.50 m (50 ft 10-¼") long.

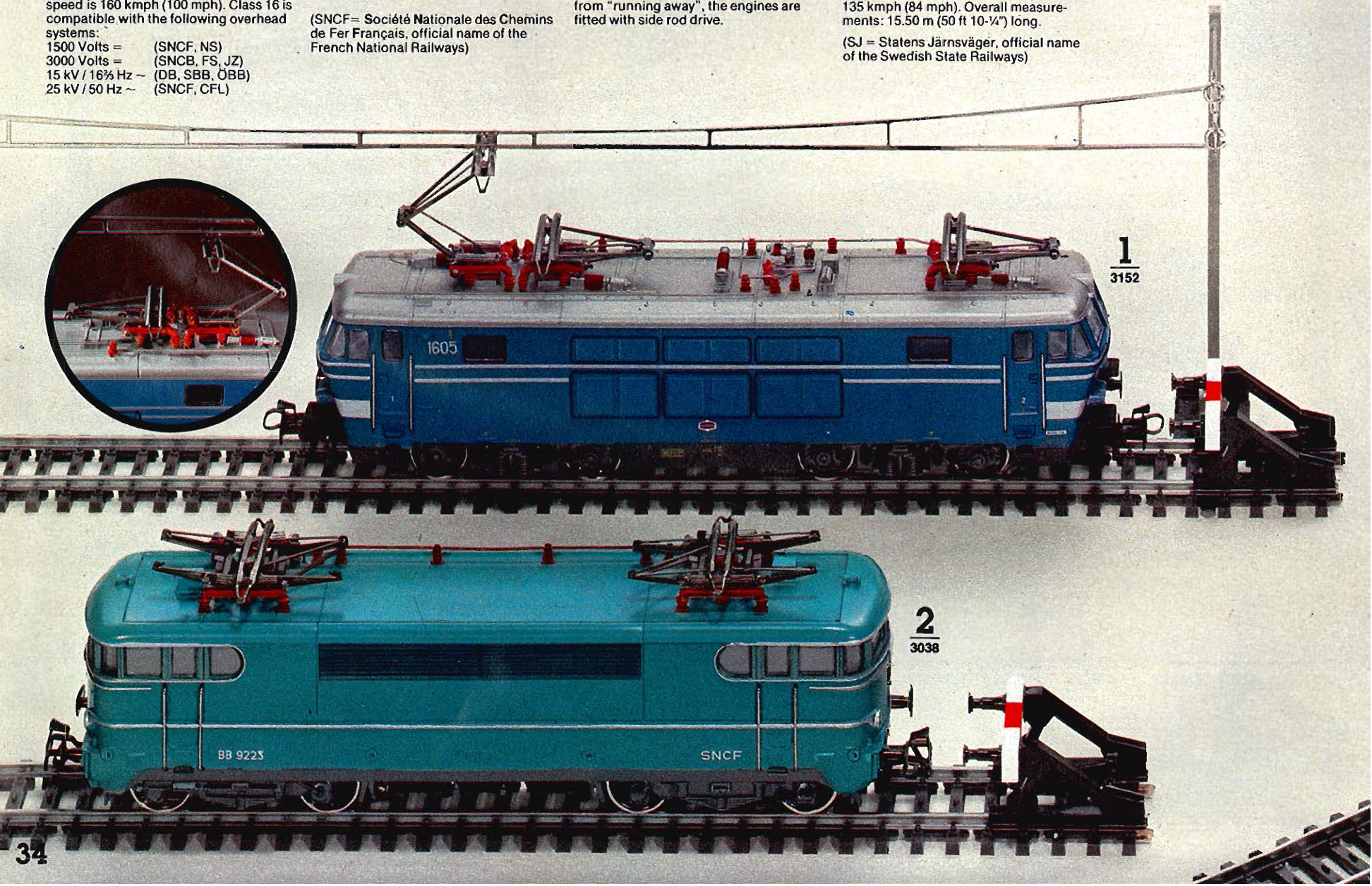
(SJ = Statens Järnsväger, official name of the Swedish State Railways)

5 Italy

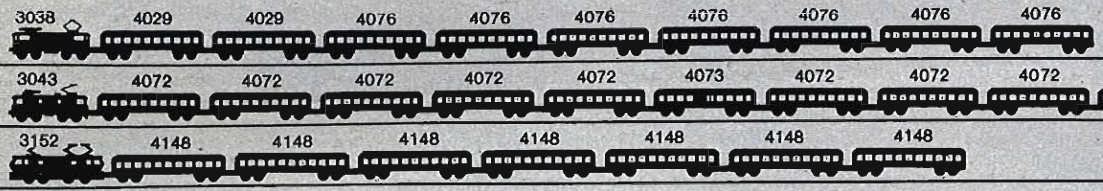
3035 · Electric locomotive · Class E 424 of the Italian State Railways (FS) · B-B wheel arrangement · One power truck · 4 non-skid tires · Metal body · Coupling hook with pre-uncoupler at each end · Length over buffers 17.5 cm (6-⅞")

⓪ = 7153 = 7164 = 60015

(FS = Ferrovie dello Stato, official name of the Italian State Railways)



Examples of train consists:



3
3030

4
3043

5
3035

All models have:
Lever for selecting operation by overhead or track current
Three working headlights at each end
Die-cast zinc frame
Operating pantographs

Diesel Locomotives

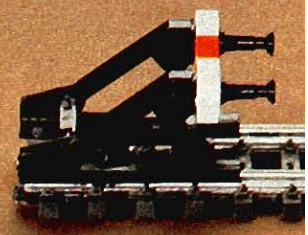
Although the diesel was invented in Germany (by Rudolf Diesel in 1897), the German railroads did not hurry to dieselize because the country had hugh reserves of coal for the steam engines. However, the availability of inexpensive fuel oil in the 1950s made dieselization economical. Consequently, in 1954, the German Federal Railways initiated its dieselization program. Steam was gradually phased out and the railways were fully dieselized by the 1970s.

In 1968, with total dieselization virtually a reality, the Federal Railways reclassified their motive power, placing diesels in Group 2 (Internal Combustion powered vehicles). In diesels, energy is released by burning diesel fuel. On early models, the energy was transmitted to the wheels by means of mechanical gears and drive shafts. Later research enabled the mechanical gearbox to be replaced by hydraulic transmission. In addition, drive mechanisms were improved. In modern diesels, a generator converts mechanical energy into electrical energy which, in turn, powers traction motors; hence the term: diesel-electrics.

Half of the 40 or so classes of diesels on the German Federal Railways are switchers. The most numerous is the class 260 (Märklin models 3064, 3065). Capable of yard and light road work, there are 941 units of this class in regular service on Federal Railways.

When making up trains in hugh classification yards, switchers are often out of sight of yard-dispatchers. An intricate system of signals guides the engineer. In addition, the engineer is in constant radio contact with the Yardmaster. In fact, at some yards, the switchers are unmanned, being controlled by radio from the dispatchers office.

Diesels, when well-maintained, have a remarkably long service life. For example, the V 200 (Märklin model 3021) initially used in long-distance service during the 1950s and 1960s, still sees regular service on work trains in the 1980s (some four decades after being outshopped!). These growlers are usually assigned to northern districts, particularly Oldenburg (on the North Sea coast) and Lübeck (on the Baltic coast). The V 200 can still haul respectable loads through the North German flatlands.



1

3064 · Diesel switcher · German Federal Railways' class 260 · 0-6-0 wheel arrangement · All wheels powered · Coupling hook with pre-uncoupler at each end · Length over buffers 12 cm (4-¾")

= 7153 = 7185 = 60010

1

3065 · Diesel switcher with Märklin-TELEX couplers · German Federal Railways' class 260 · 0-6-0 wheel arrangement · All wheels powered · TELEX couplers at each end (see page 23) · Length over buffers 12 cm (4-¾")

= 7153 = 7185 = 60010

TELEX couplers
remote control uncoupling
Page 23

2

3080 · Industrial switcher · 0-6-0 wheel arrangement · All wheels powered · Dummy couplers at each end · Length over buffers 11.2 cm (4-⅜")

= 7154 = 7185

3

3078 · Industrial switcher · Class DHG 500 · 0-6-0 wheel arrangement · All wheels powered · Dummy couplers at each end · Length over buffers 11.2 cm (4-⅜")

= 7154 = 7185 = 60015

All Märklin diesels feature:
2 non-skid tires
Prototypically correct 3 working headlights at each end (except model 3080)
Die-cast zinc frame

1

3147 · Road switcher · German Federal Railways' class 212 general purpose road switcher · B-B wheel arrangement · One power truck · Scale ends · RELEX couplers (pages 70/81) at each end · Length over buffers 14.1 cm (5-9/16")

= 7154 = 7164 = 60010

■ The 212 is a general purpose road switcher with a mass of 63.2 tons on its 12 m (39 ft 4") frame. Modern versions develop about 1000 kW and the power is hydraulically transmitted to drive shafts on all axles. Diesel has two gear ratios, which can be selected while the engine is in neutral. In low gear (for switching operations) locomotive exerts maximum tractive effort, but has a top speed of only 65 kmph (40 mph), while in high gear (for road service) the engine can gets speeds of 100 kmph (62 mph).

2

3072 · Road switcher · German Federal Railways' class 212 · B-B wheel arrangement · One power truck · Scale ends · RELEX couplers (pages 70/81) at each end · Length over buffers 14.1 cm (5-9/16")

= 7154 = 7164 = 60010

3

3021 · Express diesel · For freight and passenger service · German Federal Railways' class 220 · B-B wheel arrangement · One power truck · Metal body · Coupling hook with pre-uncoupler at each end · Length over buffers 21 cm (8-1/4")

= 7154 = 7183 = 60010

All Märklin diesels feature:
4 non-skid tires
Prototypically correct 3 working headlights at each end
Die-cast zinc frame

4

3074 · Road diesel · German Federal Railways class' 216 · B-B wheel arrangement · One power truck · RELEX couplers (pages 70/81) at each end · Length over buffers 18.2 cm (7-3/16")

= 7154 = 7164 = 60015

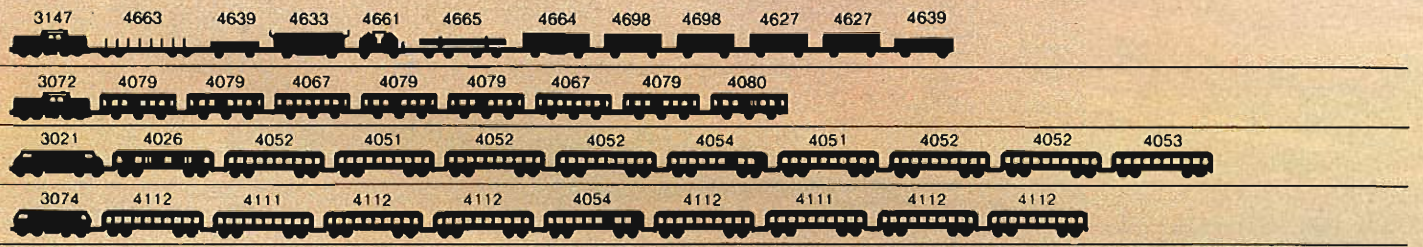
5

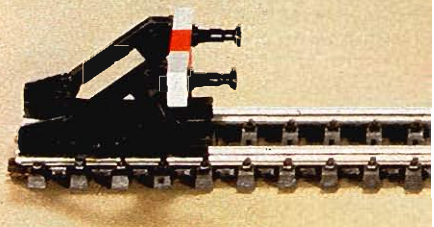
3075 · Road diesel · German Federal Railways' class 216 · B-B wheel arrangement · One power truck · RELEX couplers (pages 70/81) at each end · Length over buffers 18.2 cm (7-3/16")

= 7154 = 7164 = 60015

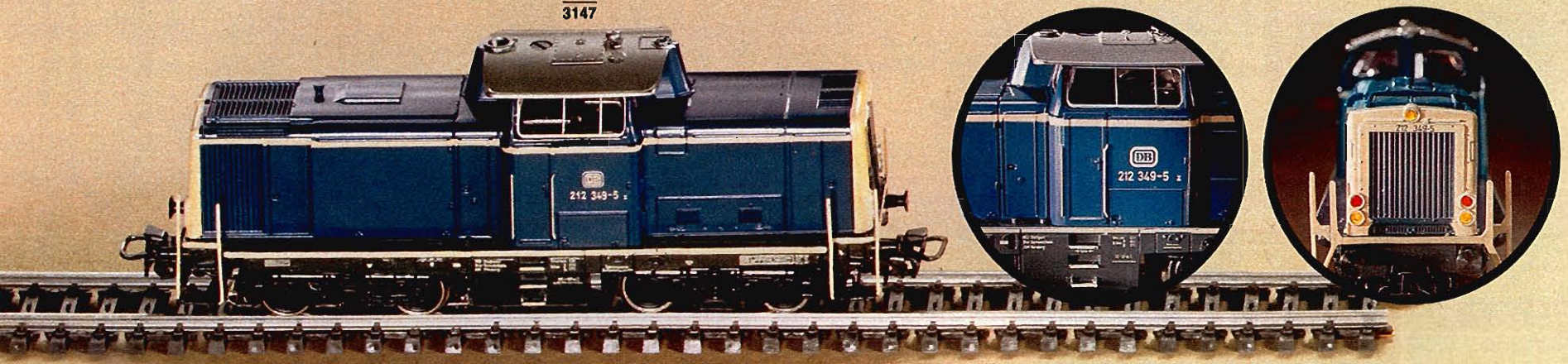
■ The class 216 diesels are used in freight and passenger service, primarily on non-electrified track. With a total weight of 79 tons (with full fuel tanks), the 216 can develop 1400 kW for a maximum speed of 120 kmph (75 mph).

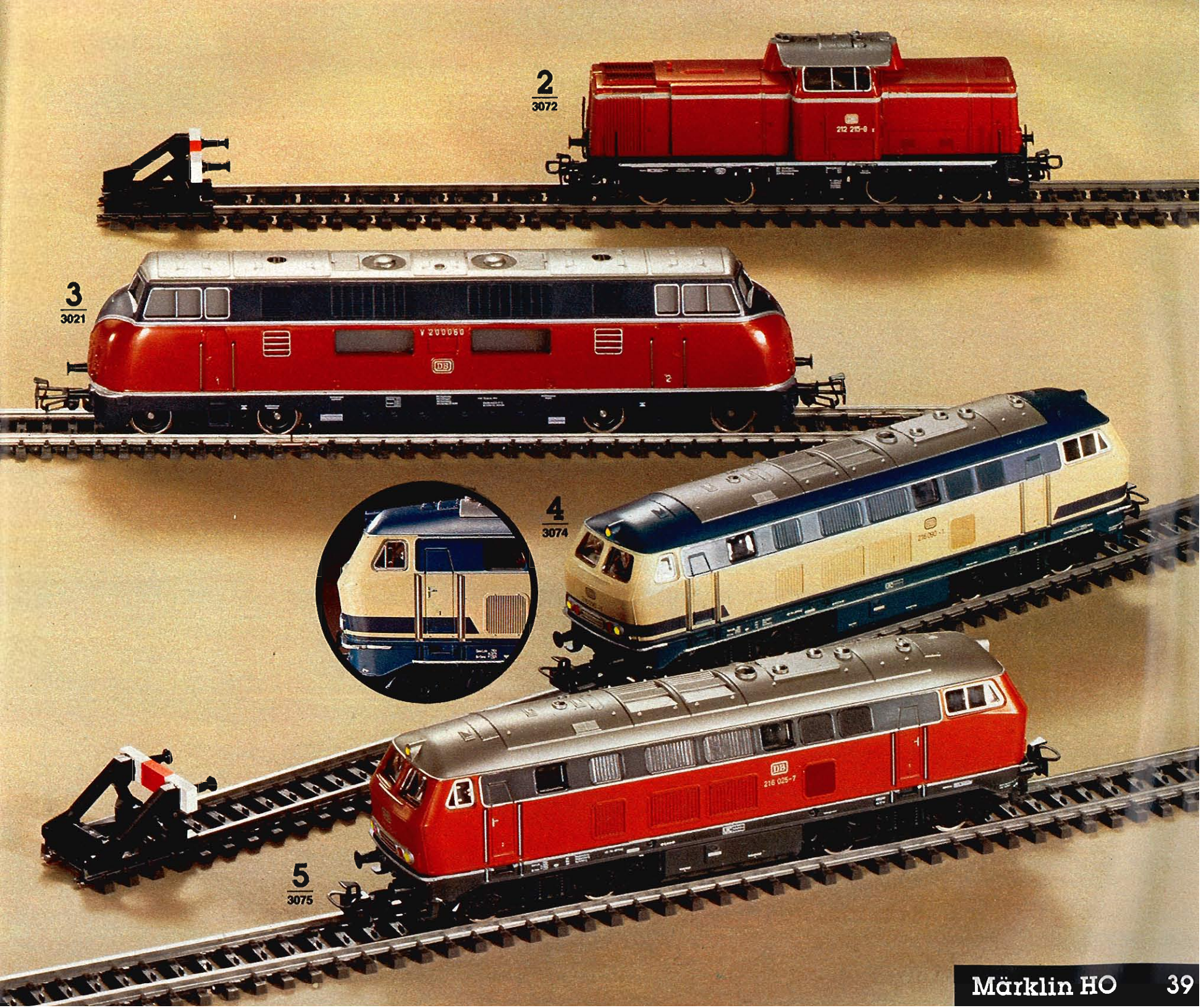
Examples of train consists:





1
3147




2
3072
3
3021
4
3074
5
3075

1 Denmark

3067 · **Road diesel** · Danish State Railways' (DSB) class My 1100 · A1A-A1A wheel arrangement · One power truck · 4 non-skid tires · 3 working headlights at each end · Metal body · Dummy couplers at each end · Length over buffers 20.5 cm (8-1/16")

⓪ = 7154 = 7164 = 60015

■ The Danish class My 1100 road diesel has diesel-electric drive, i.e.: diesel motors power generators which in turn supply current to electric motors which power the axles. This engine is similar to the Belgian class 204.
The Danish State Railways is known in Danish as Danske Statsbaner, with reporting marks DSB.

2 Belgium

3066 · **Road diesel** · Belgian State Railways' (NMBS/SNCB) class 204 · C-C wheel arrangement · One power truck · 4 non-skid tires · 3 working headlights at each end · Metal body · Dummy couplers at each end · Length over buffers 20.5 cm (8-1/16")

⓪ = 7154 = 7164 = 60015

■ A general workhorse, the Belgian class 204 is used on freight and passenger trains. Its power output is 1300 kW and maximum speed is 140 kmph (87 mph).

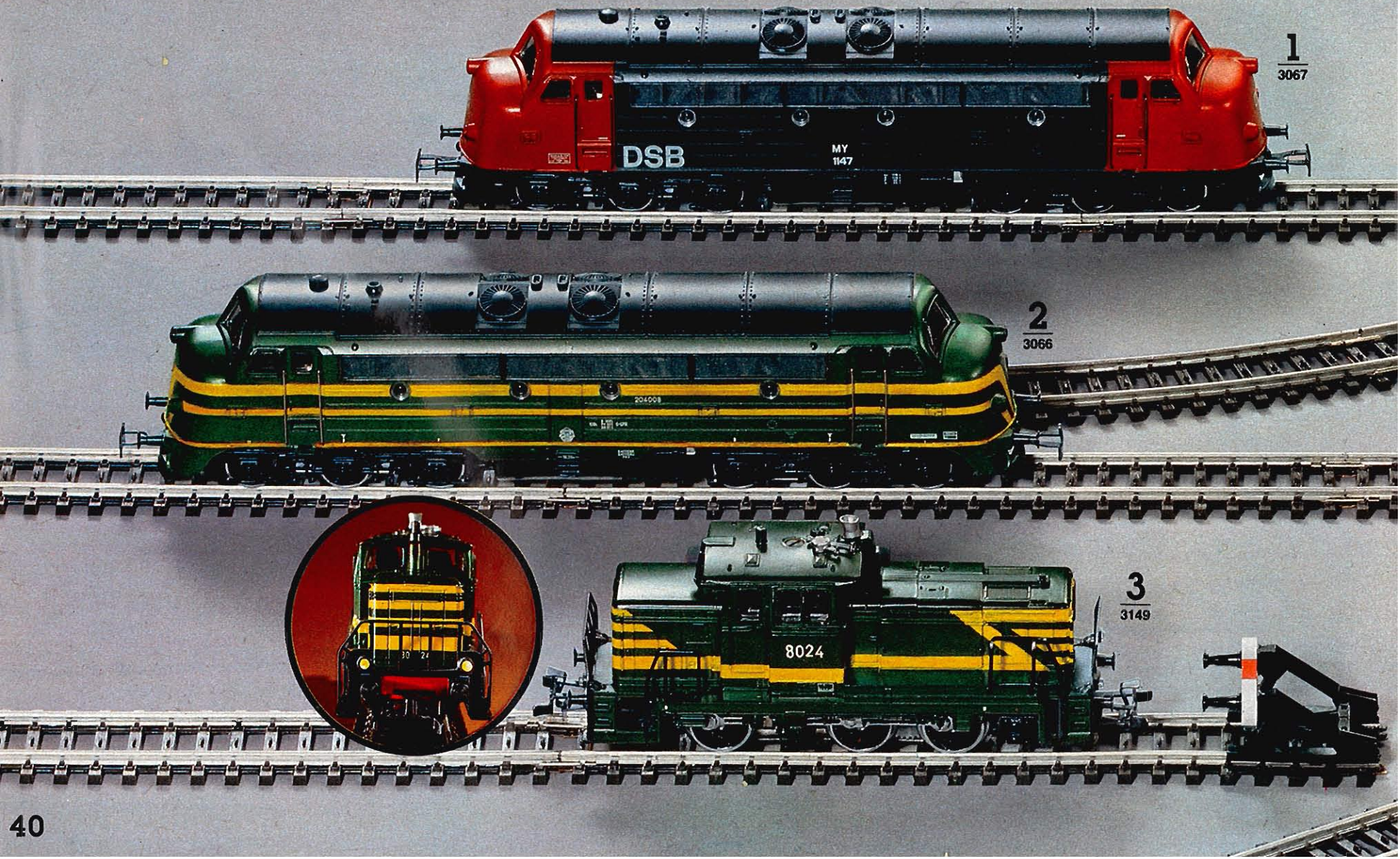
Because Belgium is bi-lingual, the Belgian State Railways have two official names: Flemish: Nationale Maatschappij der Belgische Spoorwegen (reporting marks NMBS).
French: Société nationale des chemins der fer Belges (reporting marks SNCB).

3 Belgium

3149 · **Yard switcher** · Belgian class 80 · 0-6-0 wheel arrangement · All wheels powered · 2 non-skid tires · 2 working headlights at each end · Die-cast zinc frame · Coupling hooks with pre-uncoupler at each end · Length over buffers 12 cm (4-3/4")

⓪ = 7153 = 7185 = 60010

Note: this yard engine is also used on branch lines.



4 USA

3062 · Road diesel · An F 7 in the livery of the Denver, Rio Grande & Western Railroad · Prototype made by General Motors' Electro-Motive Division · B-B wheel arrangement · One power truck · 4 non-skid tires · 2 working headlights · Metal body · Coupling hook at cab end · RELEX coupler (pages 70/81) at other end · Length 17.5 cm (6-⅞")

◐ = 7154 ⌓ = 7185 ⚲ = 60015

5 USA

4062 · Dummy road diesel · Unpowered version of 3062 · 2 working headlights · Metal body · Coupling hook at cab-end · Length 17.5 cm (6-⅞")

⌓ = 7185 ⚲ = 60015

6 USA

3060 · Road diesel · An F 7 in the livery of the Atchison, Topeka & Santa Fe Railway · Prototype made by General Motors' Electro-Motive Division · B-B wheel arrangement · One power truck · 4 non-skid tires · 2 working headlights · Metal body · Coupling hook at cab-end · RELEX couplers at other end (see pages 70/81) · Length over buffers 17.5 cm (6-⅞")

◐ = 7154 ⌓ = 7185 ⚲ = 60015

7 USA

4060 · Dummy road diesel · Unpowered version of 3060 · 2 working headlights · Metal body · Coupling hook at cab-end · Length 17.5 cm (6-⅞")

⌓ = 7185 ⚲ = 60015

3060 + 4060 USA
Power and dummy F 7 set · Atchison, Topeka & Santa Fé Railway

3062 + 4062 USA
Power and dummy F 7 set · Denver, Rio Grande & Western Railway

1

3077 · Rail zeppelin · Based on Kruckenberg's system · 8 wheels · One power truck · 4 non-skid tires · Realistic operation: As the track current is slowly increased from 4 V, the propeller is activated by a small motor as track current continues to increase, the zeppelin begins to roll · 2 working headlights · Sleek streamlined body · Die-cast zinc frame · Length 28.8 cm (11-3/8")

0 = 7154 = 7164 = 60015

■ In 1931, the rail zeppelin set a world speed record for tracked vehicles, 230 kmph (143 mph). Power derived from a 450 kW BMW aircraft engine which activated the propeller.

2

3071 · TEE articulated train-set · 3 units (power unit, coach-diner, and coach with cab) · Accurate beige-red color scheme used on TEE trains

Locomotive: Power unit has one 6 wheel power truck · 4 non-skid tires · Die-cast zinc frame

Train lettered for "Edelweiss", crack TEE train between Zürich and Amsterdam. More information page 43.

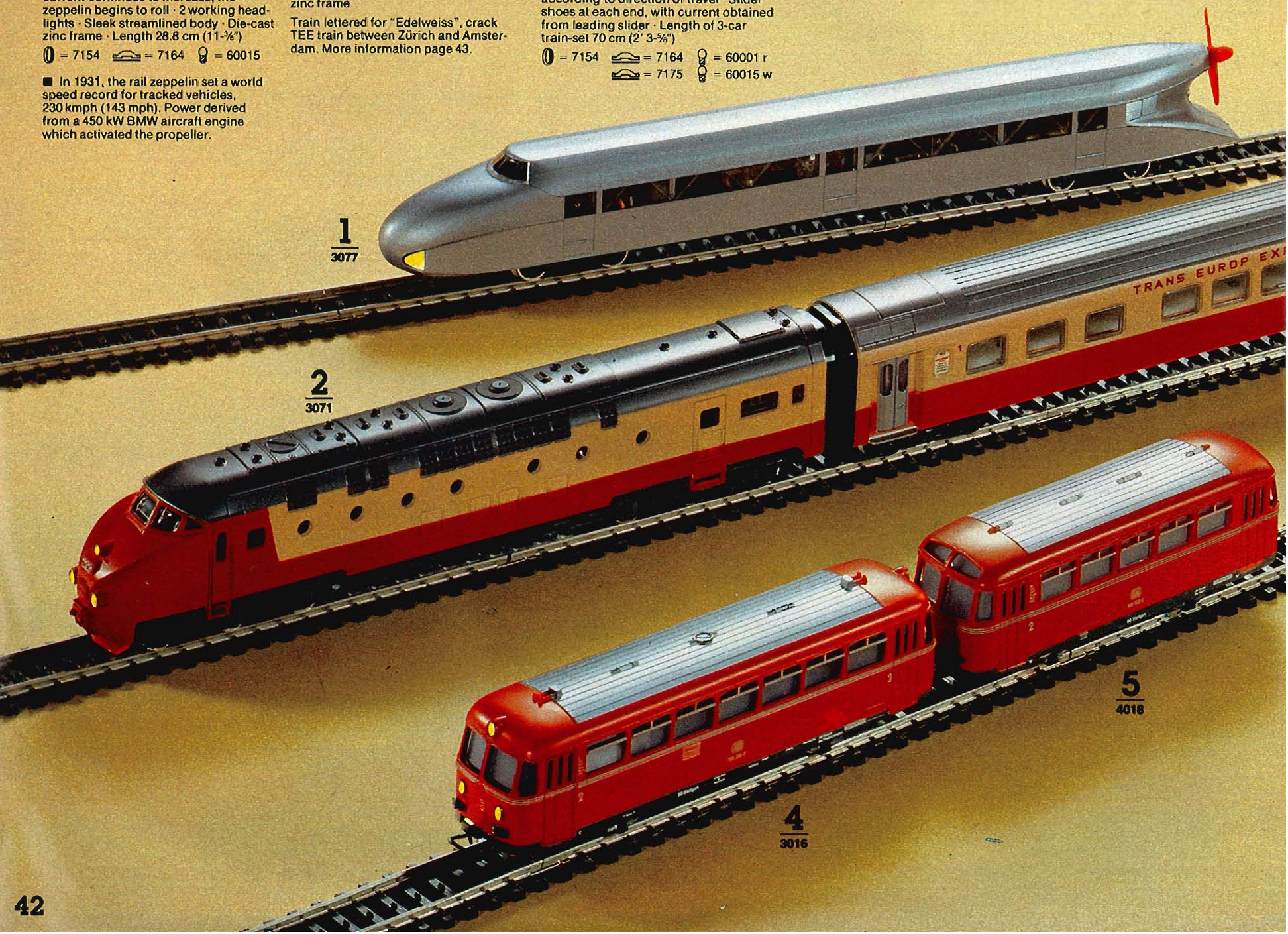
As with the prototype, Märklin's TEE model has special couplers which narrows the gaps between cars · Gaps between cars have special air-tight diaphragms · 3 white headlights and 2 red tail lights at each end, illuminated according to direction of travel · Slider shoes at each end, with current obtained from leading slider · Length of 3-car train-set 70 cm (2' 3-5/8")

0 = 7154 = 7164 = 60001 r
= 7175 = 60015 w

3

4071 · TEE Compartment car · 1st class · Flexible diaphragms at each end · Special TEE couplers · Length 23.3 cm (9-3/16")

The TEE train illustrated here consists of 3071 plus one 4071. Length is 93.3 cm (3' 1/8").



■ The TEE (Trans-Europ Express) are high-speed first-class only limiteds operated by the railways of western Europe. The train-sets are owned by the individual railroads but lettered and painted alike according to international agreement. Usually operated in 4-car set, the diesels can develop 1700 kW for speeds up to 140 kmph (87 mph). The trains are fully air-conditioned with sealed windows. The 1st class coaches seat 114, the diners seat 32.

To assure reliable service, most TEE runs have several identical train-sets. The Edelweiss (upon which Märklin's model is based) have 5 identical train-sets to ply the historical Rhine route between Zürich and Amsterdam.

3
4071

6
3028

7
4028

4

3016 · **Rail bus** · A model of German Federal Railways' class 795 · One power truck · 2 non-skid tires · 3 working headlights at each end · Interior lighting · Authentic red livery · Die-cast zinc frame · Special short couplers at each end according to prototype practice · Length over buffers 14.7 cm (5-¾")

= 7153 = 7164 = 60010

5

4018 · **Rail bus trailer** · A model of German Federal Railways' class 995 · Operating red tail lights at each end · Interior lighting · Special short couplers at each end according to prototype practice · Length over buffers 12 cm (4-¾")

= 7175 = 60010

6

3028 · **Self-propelled coach** · German Federal Railways' class 515 · Prototype powered by batteries · One power truck · 4 non-skid tires · 3 white headlights and 2 red tail lights at each end, illuminated according to direction of travel · Interior details with illumination · Dummy couplers at each end · Length over buffers 24 cm (9-½")

= 7154 = 7164 = 60001 r
= 60015 w

7

4028 · **Control car** · For use with self-propelled coach 3028 · A model of German Federal Railways' class 815 · Interior details with illumination · When coupled to 3028, 3 white headlights and 2 red tail lights illuminated according to direction of travel · Dummy couplers at both ends (eye at one end, hook at the other) · Length over buffers 24 cm (9-½")

= 7164 = 60001 r
= 60015 w

Basic Principles of Märklin Locomotives

The Märklin HO System

The decisive advantages of the Märklin HO system are not only the versatile Märklin tracks (with the "invisible" third rail) but also the precision engineered locomotives, which offer:

Fail-Safe Current Pick Up

The pick up shoe, also called a slider, is in constant contact with several studs of the hidden third rail.

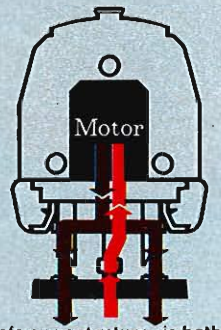
Fail-Safe Current Return

The current flows back through the wheels on **both** sides. Both outside rails carry return current.

Forward/Reverse Unit is in the Locomotive

A Locomotive's direction is determined by a direction switch (relay) in the locomotive. Thus it is possible to operate trains in both directions with the same track current.

All these advantages are possible because Märklin uses AC current.



Fail-Safe current return via **both** outside rails

The Slider (pick up shoe)

The slider assures a current supply to the locomotive. The slider consists of three parts: the shoe itself which is in constant contact with the third rail studs, a spring which presses on the shoe to insure contact, and an isolation plate which insulates the engine frame from the slider.

Fail-Safe current pick up

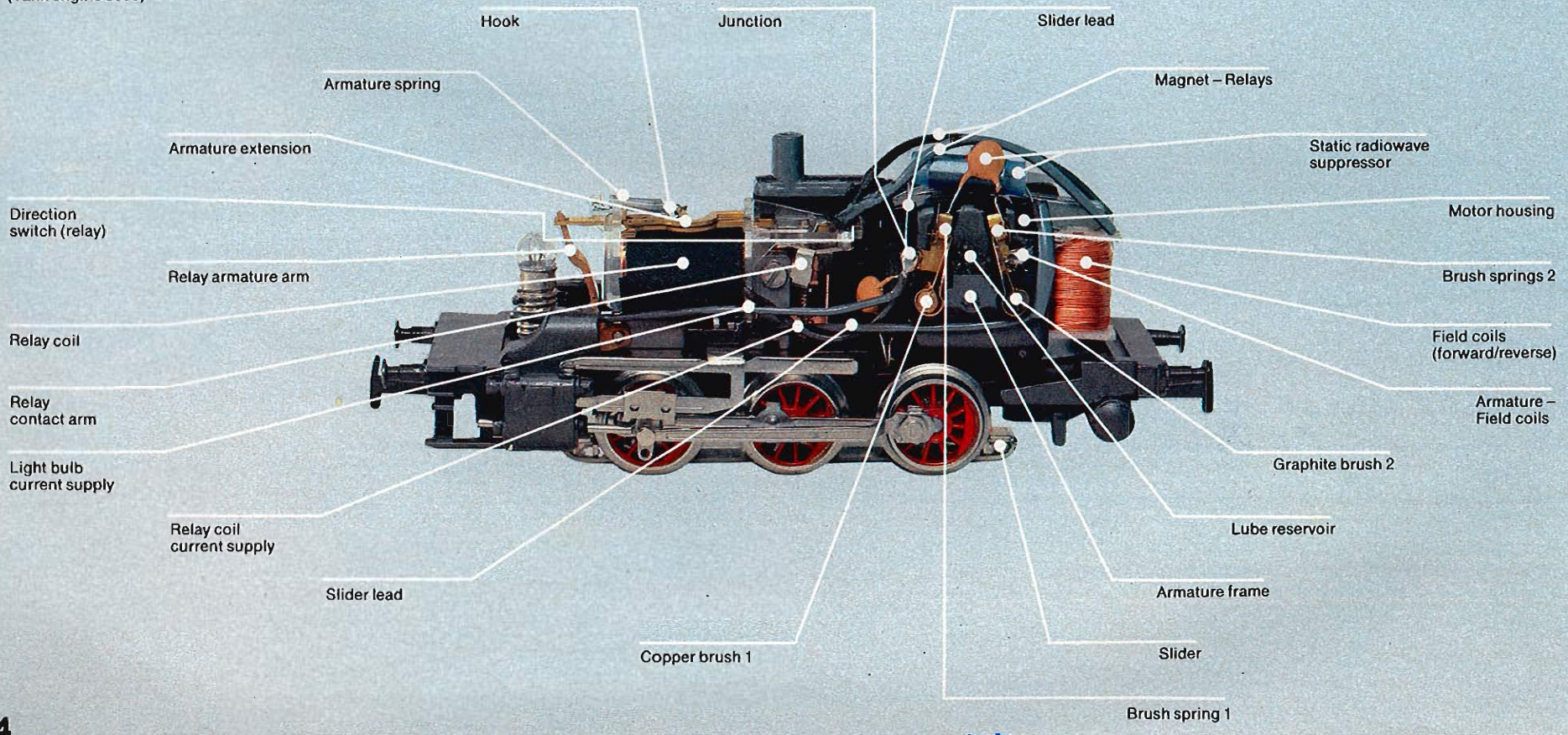
The Motor

The electric motors in Märklin locomotives consist of an electromagnet which draws current from two coils (one for forward and one for reverse); as well as an armature. On the motor housing are located the brush clips, brush springs, and the brushes themselves.

As a rule, Märklin locomotives utilize either a **flat (disc) commutator** or a **circular commutator**. With the former, the collector is a disc on the armature while with the latter the collector is shaped like a cylinder.

Locomotive with Flat Commutator Motor

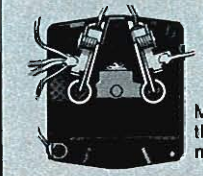
(Tank engine 3000)



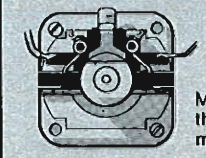
Externally, the two motors are distinguished by:

The flat commutator has one copper and one graphite brush.

The Circular commutator has two graphite brushes.



Motor housing for the flat commutator motor



Motor housing for the circular commutator housing

Direction Switch (Relays)

The direction switch determines the flow of current through the field coils, and thus the direction of travel for the engine.

These relays include:

A relay coil, relay armature arm, armature spring, armature extension, and relay contact arm.

The relay works as follows:
Some of the current picked up by the engine flows through the relay coil at all times. When the red knob on the transformer is rotated to the left of zero sending a momentary pulse of 24 V, the magnetic field becomes strong enough to trip the relay armature arm. As a result, the flow of current between the electromagnet and the ground via the armature extension is broken and the motor is turned off.

As soon as this pulse of over-voltage is stopped (by returning the red knob to zero), the magnetic field around the relay coil is killed, and the armature spring returns the relay armature arm to normal. At the same time, the relay contact arm is thrown in contact with the other of the two contacts on the coils (each time the relay is thrown, the arm flips from one contact to the other). Current flow is reestablished between magnet and ground, and the locomotive begins moving, but in the opposite direction.

Certain locomotives, namely 3065 and 3096 and the selfpropelled cars 3028 and 3071 function somewhat differently because of the TELEX couplers. However, the basic principles remain the same.

Current Flow

In a locomotive, current is picked up by a slider, fed through the slider lead to a junction from where the current is fed to three parallel circuits:

1. Motor Circuit
   Brush springs 1 → Brushes 1 → Armature (not visible in picture) → Brushes 2 → Brush springs 2 → Armature – field coil → Magnet → Magnet – Relay → Relays relay contact arm → Ground (frame, wheels, rails)
2. Relay Circuit
   Wire to relay coil → Relay coil → Ground
3. Illumination Circuit
   Wire to bulb → Bulb → Bulb socket → Ground

On electric locomotives, this junction is located at the switch for receiving current from the overhead or the third rail.

Locomotives with Flat Commutator Motors:

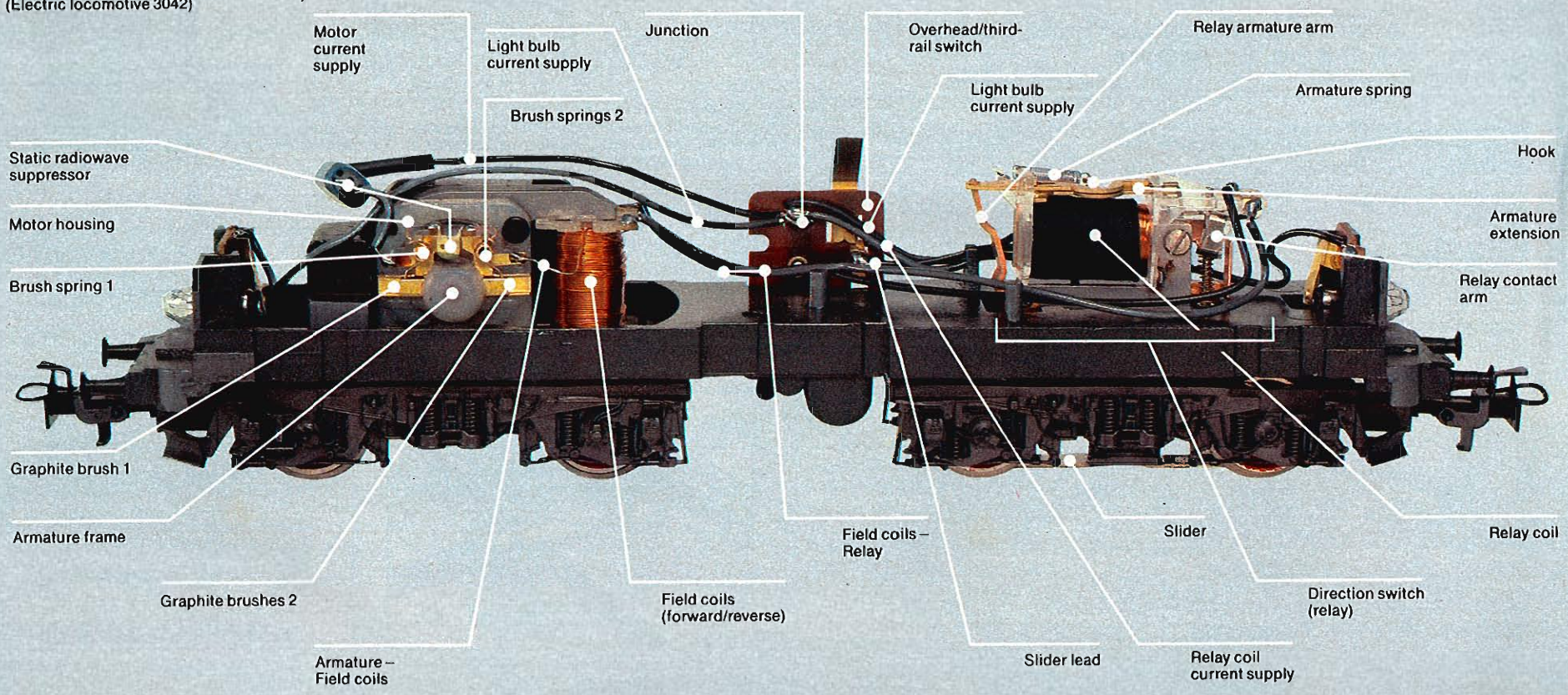
3000, 3003, 3016, 3021, 3022, 3028, 3030, 3041, 3043, 3044, 3050, 3054, 3055, 3060, 3062, 3064, 3065, 3066, 3067, 3071, 3072, 3074, 3075, 3077, 3078, 3080, 3083, 3087, 3089, 3092, 3093, 3095, 3096, 3099, 3147, 3149, 3159, 3161

Locomotives with Circular Commutator Motors:

3035, 3038, 3039, 3042, 3049, 3056, 3057, 3058, 3082, 3084, 3085, 3102, 3104, 3106, 3151, 3152, 3153, 3155, 3156, 3157

Locomotive with Circular Commutator Motor

(Electric locomotive 3042)



Engine Diagnosis

Märklin railroaders have come to reply upon the high quality and skilled workmanship that characterizes their locomotives.

Usually, if trouble develops in an engine, the cause is either normal wear and tear of certain parts or a lack of maintenance. In most cases, these problems can be corrected by the hobbysts with a minimum of effort.

The following schematics, together with the information provided on the previous two pages, are designed to assist Märklin railroaders diagnose troubles and to make minor repairs.

Should a locomotive develop a problem not discussed in these schematics, the engine should be taken to an authorized Märklin repair center.

For servicing locomotives and making minor repairs, the following tools are very handy:

- 1 small screwdriver 2.9 mm (⅛")
- 1 tweezers
- 1 flat nosed pliers
- 1 socket wrench 3.5 mm (9/64")
- 1 socket wrench 3.0 mm (⅛")

And now to the diagnosis:

Symptoms of engine problems are odd sounds, poor lighting, or faulty operation.

These symptoms suggest that a problem listed on this chart may be present.

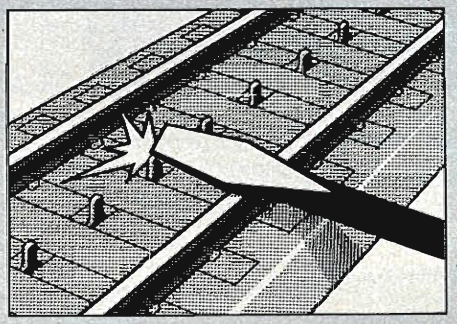
If something is wrong:

1. Determine what the trouble is.
2. Check for a probable source using this chart.
3. When the source is determined, the cause will be found in the "Diagnosis" column.
4. The "Repair" column tells how to fix it.
5. If trouble persists, the engine should be taken to an authorized Märklin repair station.

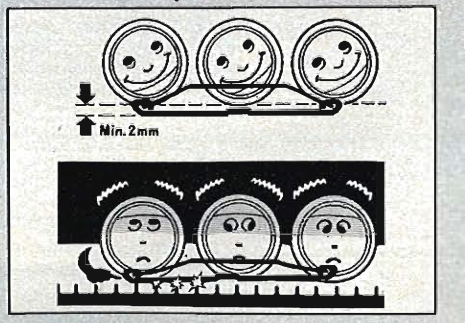
Problem

- Locomotive doesn't move
- Lights don't work
- No sound

Probable Source	Check for	Diagnosis	Repair
Current supply	No sparks when an attempt is made to short the rails	No current is flowing	Be sure that all connections are tight (leads on the transformer, feeder track, and rail joints) also that transformer is plugged in
Slider	Slider doesn't jut out more than 2 mm (9/64") on a horizontal with the wheels when engine is lifted off the tracks	Slider is not in contact with the third rail because there is not enough tension from the slider springs	Use tweezers to move the springs left and right under the isolation plate or replace the slider (for replacements, see pages 50/51)
Catenary/third rail switch on electrics	Move the switch to see if engine runs	Switch was on the wrong setting	No repair necessary
Junction (remove the engine shell according to instructions)	Slider lead may not be in contact with the junction	No current being fed to locomotive	Soldering required. Best to take the engine to a repair station
	Previous testing proves fruitless	A repair station will have to locate the problem	Take the engine to a repair station



Confirm current flow by short-circuiting the third rail with the outside rails

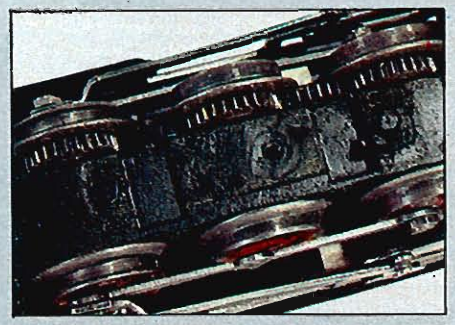


Slider must extend at least 2 mm (9/64") beyond the wheel flanges

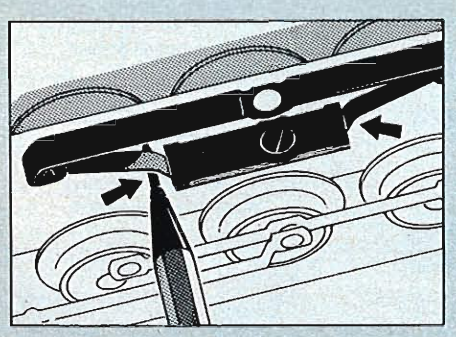
Problem

- Jerky or slow running
- Both sets of lights "on"
- Normal sound

Probable Source	Check for	Diagnosis	Repair
Engine is dirty	Check to see if the motor, gears, wheels or poles have accumulated grime	Grime is preventing good current flow	Clean the individual parts with a good solvent
Brushes (remove the engine shell according to instructions)	Lift the brush springs with tweezers and remove the brushes. See if brushes are too short (less than 3 mm (⅛"))	Worn brushes	Replace brushes (for replacements, see pages 50/51). If necessary, tighten the brush springs with the tweezers
	Previous testing proves fruitless	A repair station will have to locate the problem	Take the engine to a repair station



Very dirty steam locomotive

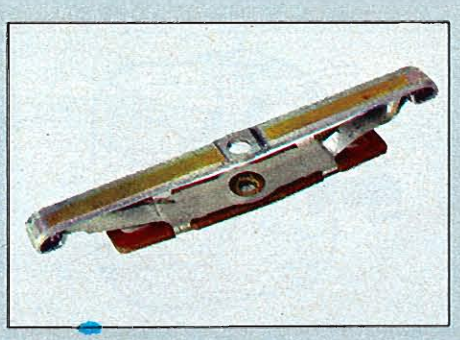


Correcting the pressure of the slider springs

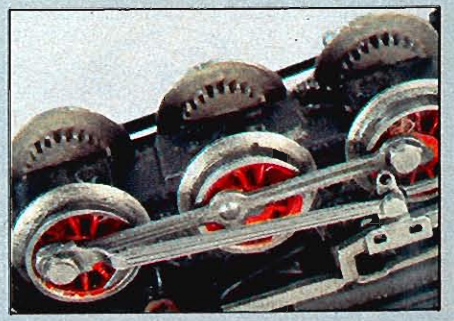
Problem

- Jerky running
- Lights flicker
- Sound normal

Probable Source	Check for	Diagnosis	Repair
Slider	See if slider is creating sparks when moving	Slider springs too weak or uneven	Use tweezers to move the springs left and right under the isolation plate
	Slider: Sparks Worn Burn spots Brass color Dirt spots	Worn out slider	Replace slider (for replacements, see pages 50/51)
Wheels	See if wheels spark when moving or if wheels have burn spots or are dirty	Poor ground contact because of dirty wheels (or track)	Moisten a rag with a track cleaning solvent and clean the wheels (or rails)
	Previous testing proves fruitless	A repair station will have to locate the problem	Take the engine to a repair station



Used slider

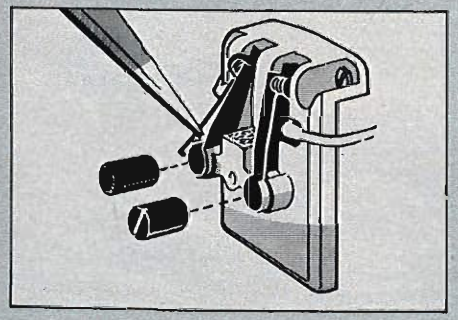


Engine wheels dirty with burn spots

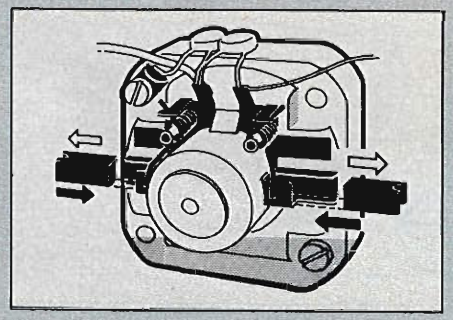
Problem

- Locomotive doesn't move
- Lights get brighter with higher current
- Engine sounds louder

Probable Source	Check for	Diagnosis	Repair
Brushes (remove the engine shell according to instructions)	Brushes are missing or they are shorter than 3 mm (⅛") or the springs are too weak	Circuit in the motor is broken	Replace brushes (for replacements, see pages 50/51). Tighten springs with tweezers
Direction switch (Relays)	See if the relay armature arm holds fast under normal tension. Test by lightly tugging it	Armature spring is missing or too weak	Replace armature spring (for replacements, see pages 50/51)
Leads to and from the field coil	Wires: There may be a break between the brushes and the field coil or between the field coil and relay. Or a soldered joint is broke	Circuit to the field coils is broken	Solder or replace the field coil. Take locomotive to a repair station
	Previous testing proves fruitless	A repair station will have to locate the problem	Take the engine to a repair station



Changing brushes on a flat commutator motor



Changing brushes on a circular commutator motor

Problem

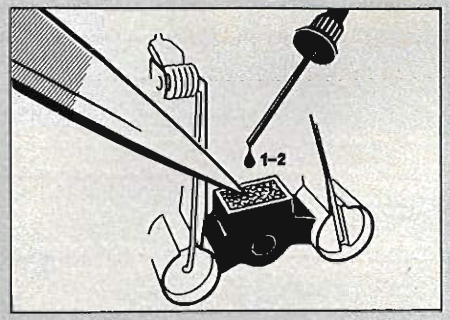
- Engine doesn't move no matter how much current is fed
- Lights burn bright
- Sound is normal

Probable Source	Check for	Diagnosis	Repair
Direction switch (remove the engine shell according to instructions)	Relay armature arm hold fast with high tension despite spring action	Armature spring has too little tension	Shorten the spring by a few curls by using a screwdriver to adjust its connection with the hook
	Previous testing proves fruitless	A repair station will have to locate the problem	Take the engine to a repair station

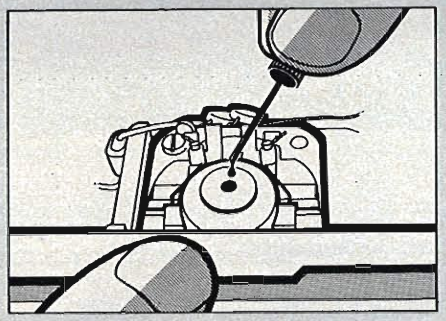
Problem

- Engine hesitates when changing directions or doesn't change directions

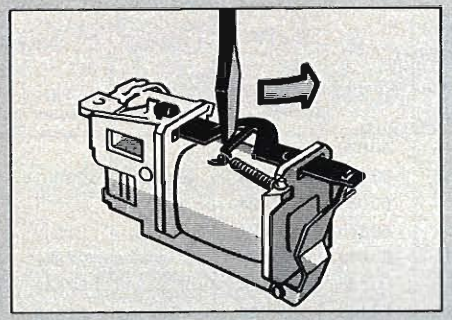
Probable Source	Check for	Diagnosis	Repair
Direction switch (remove engine shell according to instructions)	Relay armature arm hesitates or doesn't move when switched	Armature spring has too much tension	Stretch the armature spring a little with tweezers or adjust its connection on the hook with a screwdriver
	Lead to the relay coil is not connected to junction or coil	No current is reaching the relay coil	Solder or replace the direction switch (for replacements, see pages 50/51). Bring engine to dealer
	Previous testing proves fruitless	A repair station will have to locate the problem	Take the engine to a repair station



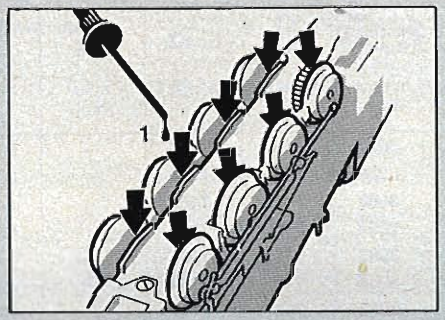
Oiling a flat commutator motor



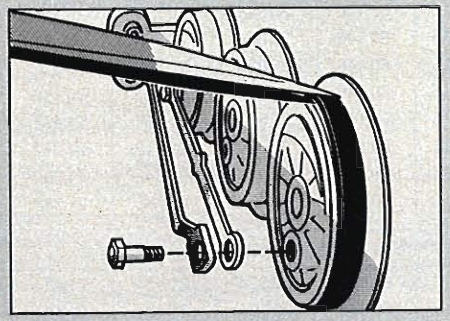
Oiling the axle bearings on a circular commutator motor



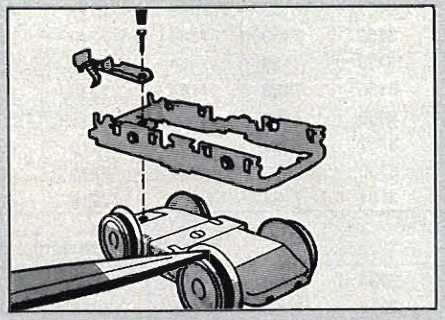
Easing the tension of the armature spring by bending the hook



Oiling the gears and armature frame (follow instructions)



Changing the non-skid tires on a steam locomotive



Changing the non-skid tires on diesels and electrics

Problem

- Engine has jerky or slow movement
- Lighting is normal
- Sound is awful

Probable Source	Check for	Diagnosis	Repair
Armature frame. Axle bearing of wheel sets Gears (remove engine shell according to instructions)	Everything appears normal	Apparently not enough lubrication	Put 1 or 2 drops of Märklin oil 7199 on the lube reservoir, armature frame, and axle bearings of the wheel sets
	Still no improvement after lubricating parts	A repair station will have to locate the problem	Take the engine to a repair station

Problem

- Engine shakes
- Lighting is normal
- Sound is normal

Probable Source	Check for	Diagnosis	Repair
Non-skid tires	Tires are worn or uneven. Tires are missing	Tires are worn	Replace tires according to instructions (for replacements, see pages 50/51)
Wheel sets	Wheels are hitting	The axles may be bent	Wheel sets must be replaced. Take engine to a repair station
	Previous testing proves fruitless	A repair station will have to locate the problem	Take the engine to a repair station

Spare Parts

For many years of reliable operation

The instruction sheets show how the non-skid tires, sliders, light bulbs, and reversing unit springs should be installed.

The Tables shown here give the part numbers of the more important spare parts. All spare parts can be obtained through your Märklin dealer.

Locomotives

Locomotive	Non-skid tire	Slider	Pantograph	Light bulb	Brushes	Reversing switch	Front coupler	Rear coupler
3000	7154	7185	–	60010	60030	20824	20001	20001
3003	7153	7185	–	60010	60030	20824	20214	70154
3016	7153	7164	–	60010	60030	20824	20989	20989
3021	7154	7183	–	60010	60030	20824	21166	21166
3022	7153	7164	7218	60015	60030	20824	21842	21842
3028	7154	7164	–	60001	60030	21899	70412	70412
				60015				
3030	7153	7185	7218	60015	60030	20824	21128	21128
3035	7153	7164	7218	60015	60146	20824	21484	21484
3038	7153	7164	7218	60015	60146	20824	21773	21773
3039	7153	7164	7218	60015	60146	20824	21484	21484
3041	7153	7164	7219	60015	60030	20824	70412	70412
3042	7153	7164	7218	60015	60146	20824	70156	70156
3043	7153	7164	7218	60015	60030	20824	70412	70412
3044	7154	7185	7219	60015	60030	20824	20001	20001
3049	7153	7185	7218	60015	60146	60824	70412	70412
3050	7153	7164	7218	60015	60030	20824	21708	21708
3054	7153	7164	7218	60015	60030	20824	22313	22313
3055	7154	7164	7218	60015	60030	20824	21783	21783
3056	7153	7164	7218	60015	60146	20824	70156	70156
3057	7153	7164	7218	60015	60146	20824	70412	70412
3058	7153	7164	7218	60015	60146	20824	70412	70412
3060	7154	7185	–	60015	60030	20824	21583	21586
3062	7154	7185	–	60015	60030	20824	21583	21586
3064	7153	7185	–	60010	60030	20824	21411	21411
3065	7153	7185	–	60010	60030	22970	21376	21376
							21377	21377
3066	7154	7164	–	60015	60030	20824	21783	21783
3067	7154	7164	–	60015	60030	20824	21783	21783
3071	7154	7164	–	60001	60030	22049	–	21929
		7175		60015				21951
								21954
3072	7154	7164	–	60010	60030	20824	21842	21842
3074	7154	7164	–	60015	60030	20824	70156	70156
3075	7154	7164	–	60015	60030	20824	70156	70156

Locomotive	Non-skid tire	Slider	Pantograph	Light bulb	Brushes	Reversing switch	Front coupler	Rear coupler
3077	7154	7164	–	60015	60030	20824	–	–
3078	7154	7185	–	60015	60030	20824	20001	20001
3080	7154	7185	–	–	60030	20824	20001	20001
3082	7153	7164	–	60015	60146	20824	21843	21842
3083	7152	7185	–	60015	60030	20824	–	21842
3084	7153	7164	–	60015	60146	20824	21843	21842
3085	7152	7164	–	60015	60146	20824	–	21842
3087	7154	7185	–	–	60030	20824	20001	20001
3089	7152	7185	–	60015	60030	20824	–	70154
3092	7152	7185	–	60015	60030	20824	–	21842
3093	7152	7185	–	60015	60030	20824	–	21842
3095	7153	7185	–	60010	60030	20824	22532	21842
3096	7153	7164	–	60015	60030	22970	21843	21843
							22897	22897
							22924	22924
3099	7152	7185	–	60015	60030	20824	22418	21842
3102	7153	7185	–	60015	60146	20824	21843	21842
3104	7153	7185	–	–	60146	20824	20001	20001
3106	7153	7164	–	60015	60146	20824	24281	24281
3147	7154	7164	–	60010	60030	20824	21842	21842
3149	7153	7185	–	60010	60030	20824	21411	21411
3151	7153	7185	7218	60015	60146	20824	70156	70156
3152	7153	7164	7219	60015	60146	20824	70156	70156
3153	7153	7164	7208	60015	60146	20824	70412	70412
3155	7153	7164	7218	60015	60146	20824	70156	70156
3156	7153	7164	7218	60015	60146	20824	21484	21484
3157	7153	7185	7218	60010	60146	20824	21842	21842
3159	7153	7164	7218	60015	60030	20824	21842	21842
3161	7154	7164	7218	60015	60030	20824	21783	21783

Locomotives discontinued within the past three years:

3034	7153	7164	7218	60015	60146	20824	21484	21484
3037	7153	7164	7218	60015	60146	20824	21484	21484
3086	7152	7185	–	60015	60030	20824	22418	21842
3090	7154	7185	–	–	60030	20824	20001	20001

Reversing unit springs

7194
Pack of 5 springs for reversing units

Smoke set

7226
Includes smoke unit (for locomotives 3082, 3084, 3085 and 3102), extra smokestack, cleaning wire, tweezers, and a capsule of smoke fluid.

Smoke oil

0241
Refills, in plastic capsules, for smoke set 7226

Re-railer

7224
Made of plastic · Easy way to get cars on the track · Length 300 mm (11-13/16") · Height 25 mm (1")

Coupling gauge

7001
For testing couplers · Made of nickel plated steel

Bottle of oil

7199
For locomotives and cars · Contains about 10 cc

Cars

Couplers for cars

21 005
4018

21 583
4060, 4062 (front)

21 622
4060, 4062 (rear)

21 842
4578, 4631, 4635

21 951
4071

21 954
4071

32 399
4632, 4650, 4651, 4652, 4653, 4663

32 402
4632

32 540
4067, 4079, 4080, 4100, 4101, 4102, 4103, 4107, 4108, 4633, 4644, 4646, 4664, 4668, 4694

70 154
4004, 4005, 4040, 4610, 4611, 4612, 4613, 4617, 4618, 4619, 4627, 4639, 4661, 4665

70 157
4074, 4084, 4091, 4092, 4093, 4094, 4095, 4096, 4097, 4098, 4099, 4150, 4151, 4152, 4154, 4410, 4411, 4413, 4414, 4415, 4417, 4418, 4419, 4420, 4421, 4423, 4424, 4430, 4431, 4432, 4440, 4441, 4442, 4460, 4473, 4474, 4475, 4695, 4696, 4697, 4698, 4699

70 158
4135, 4136, 4137, 4138, 4139, 4140, 4141, 4142, 4143, 4144, 4145, 4146, 4147, 4148, 4149, 4157

70 412
4028

Trucks with couplers, for cars

30 256
4076

30 339
4026, 4045, 4051, 4052, 4053, 4054, 4064, 4085, 4087, 4089, 4090, 4111, 4112

30 417
4029, 4049, 4072, 4073

30 547
4066, 4068

32 311
4571

32 339
4624, 4626

32 570
4575

Sliders

7164
Car 4028

7175
Cars 4018, 4053, 4089
Train lighting sets 7197, 7198, 7320, 7322, 7323

7185
Cars 4060, 4062

31 051
Cars 4103

41 494
Cars 4098, 4154, 4411
Train lighting set 7329

Light bulbs

60 000
Train lighting set 7077
Switches 2261, 5128, 5137, 5140, 5202
Bumper 7191
Signals 7036, 7038, 7039, 7040, 7041, 7042
Lamps 7280, 7281, 7282, 7283, 7284
Crane 7051

red **60 001**
Car 4028
Train lighting set 7079
Signals 7188, 7339

green **60 002**
Signals 7188, 7339

60 010
Car 4018
Train lighting set 7323
Light pole 5113
Lamps 7046, 7047, 7048

60 015
Cars 4028, 4060, 4062, 4089, 4411
Train lighting sets 7197, 7320, 7322, 7329
Transformer 6631

60 020
Train lighting set 7074

60 200
Signal 7242

red **60 201**
Signals 7239, 7240, 7241, Crossing gates 7292, 7592

green **60 202**
Signals 7187, 7236, 7237, 7238, 7239, 7240, 7241

orange **60 204**
Signals 7187, 7236, 7237, 7238, 7240, 7241

Accessories

35 256
Lamp frame for light pole 5113

40 185
Control panel for turntable 7186

40 619
Hooks for crane car 4611 and crane 7051

40 625
Magnet for crane 7051

41 270
Arms for crossing gates 7292 and 7592

60 027
Tube for smoke set 7226

97 170
Control panel for crane 7051

Rules for Prototype Operation

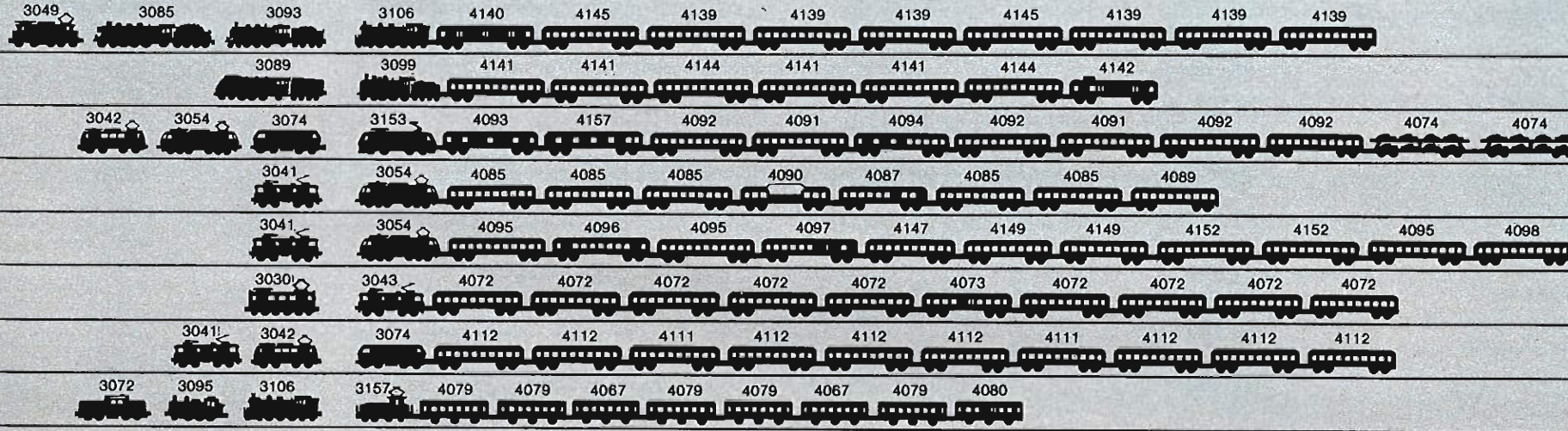
In order to insure safety, the consists of real trains are governed by strict rules. For example:
Cars may not be pulled by locomotives having higher maximum speeds than the cars themselves. Also, trains may not exceed prescribed maximums for length and number of cars. Further, passenger trains should consist of either all eight-wheel or all four-wheel cars. If it should be necessary to combine both types, the eight-wheel cars must be forward. Four-wheel cars require special permission to be included in trains having speeds greater than 90 kmph (56 mph). Mixed trains (i.e.: trains having both freight and passenger cars) operate only if demand warrants. In assembling freight trains, the total weight of the train must be considered before determining whether the maximum speed will be 80, 100, or 120 kmph (50, 63, or 75 mph). Detailed regulations about train consists are included in Rule Books.

0380

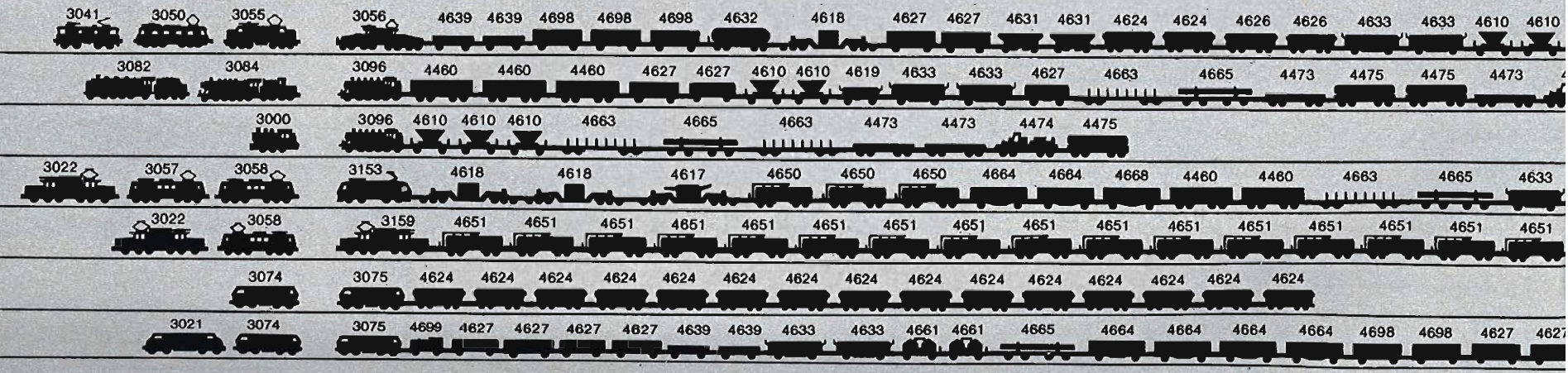
Booklet "Die Märklin-Bahn HO und ihr großes Vorbild", a handbook for Märklin model railroad enthusiasts · Includes hints for adding scenery to layouts; information on Märklin engines, cars, and their prototypes; signaling; prototype rules; train operation; circuitry (e.g.: multitrain operation); and much more · 228 pages · Size 15×24 cm (6"×9-½") · German text

Märklin's concern for accurate details is exemplified by the actual prototype lettering which appears on locomotives and cars.
Model railroaders often wonder what the numbers and letters on car sides mean. To explain these meanings, let us use Märklin freight car 4624 as an example. Lettering, signifying ownership and loading data, is stenciled on the left-hand side of both car sides.

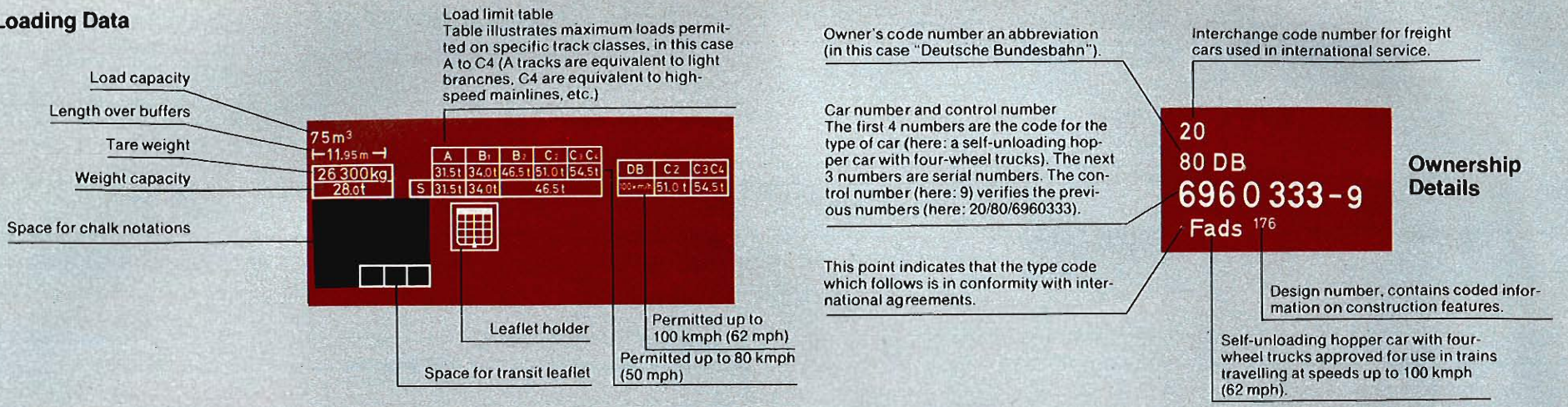
Examples of train consists:
Passenger trains



Freight trains



Loading Data



3021 4026 4051 4052 4052 4052 4051 4054 4052 4052 4053

3067 4045 4045 4045 4045 4045 4045 4045 4045

3152 4148 4148 4148 4148 4148 4148 4148

3161 4049 4049 4049 4049 4049 4049

3038 4029 4029 4076 4076 4076 4076 4076 4076

3050 4066 4066 4066 4068 4066 4066 4066 4066

3151 4146 4138 4138 4138 4138 4138

3099 4137 4143 4136 4136 4143 4136 4136

3000 4107 4107 4107 4107 4108

3099 4101 4101 4100 4100 4101 4103

3096 4004 4004 4004 4004 4004 4005

3092 4135 4135 4135 4135 4135 4135

4694 4627

613 4613 4612

3102 4695 4695 4695 4695 4695 4697 4697 4697 4697 4697 4696 4696 4696 4696 4696

3064 3065 3072 3147 4423 4611 4431 4424 4430 4430 4473 4474 4663 4663 4665

3078 3080 4417 4417 4417 4417 4417 4417 4417 4417

3084 4631 4631 4631 4631 4631 4631 4631 4631 4631 4631 4631 4631 4631

4619 4627 4627 4627 4646 4646 4644

3156 4613 4613 4613 4613 4613 4613 4613 4613 4613 4613 4613 4613 4613

3057 3153 4626 4626 4626 4626 4626 4626 4626 4626 4626 4626 4626 4626 4626 4626 4626 4626 4626 4626

3157 4635 4635 4694 4694 4665 4627

3082 4635 4635 4635 4635 4635 4635 4635 4635 4635 4635 4635 4635 4635 4635 4635 4635

4639 4652 4652 4652 4650 4651 4653 4633 4633

3062 4062 4575 4575 4571 4571 4571 4575 4575 4578

Passenger cars

"Donnerbüchsen"
Standard passenger cars of the former German State Railways · Platform and doors on both ends · Interior details · RELEX couplers (pages 70/81) · Length 16 cm (6-⅜")

1 new
4102 · Baggage car · Model of type Pwi 30 · 4 sliding doors · Windows set in plastic frames · Cupola on roof

2 new
4100 · Model of type BCi 29 · 2nd and 3rd class coach · Windows set in plastic frames

3 new
4101 · Model of type Ci 29 · 3rd class coach · Windows set in plastic frame

4 new
4103 · Baggage car · Same as 4102, but includes illuminated end markers
= 31051

■ Shortly after the establishment of the German Railway Association in 1924, a concerted effort was made to establish a standard design for passenger cars to replace the ageing fleets acquired from the various provincial railways when the lines were unified on April 1, 1920. A 2-axle design was selected and originally, the cars had wood roofs and wooden interior walls. Later versions were all-steel, known as class 29. Because of their noisy operation, they quickly acquired the nickname "Donnerbüchsen". The English equivalent of Donnerbüchsen would be "rattling crates".

Rebuilds
Passenger cars of the German Federal Railways · Windows set in plastic frames · Simulated rubber beading · RELEX couplers (pages 70/81) · Length 15.2 cm (6") · Accepts interior lighting kits = 7074 (page 66)

5
4067 · Model of type AB3yge · 1st and 2nd class coach

6
4079 · Model of type B3yge · 2nd class coach

7
4080 · Model of type BD3yge · 2nd class combine

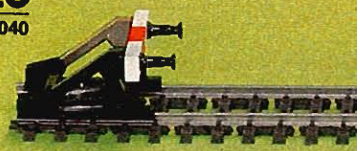
Prussian cars
Each car has six compartments · Windows glazed with "cellon" · RELEX couplers (pages 70/81) · Length 13 cm (5-⅛") · Accepts interior lighting kits = 7074 (page 66)

8
4004 · Compartment car without brakeman's cab

9
4005 · Compartment car with brakeman's cab

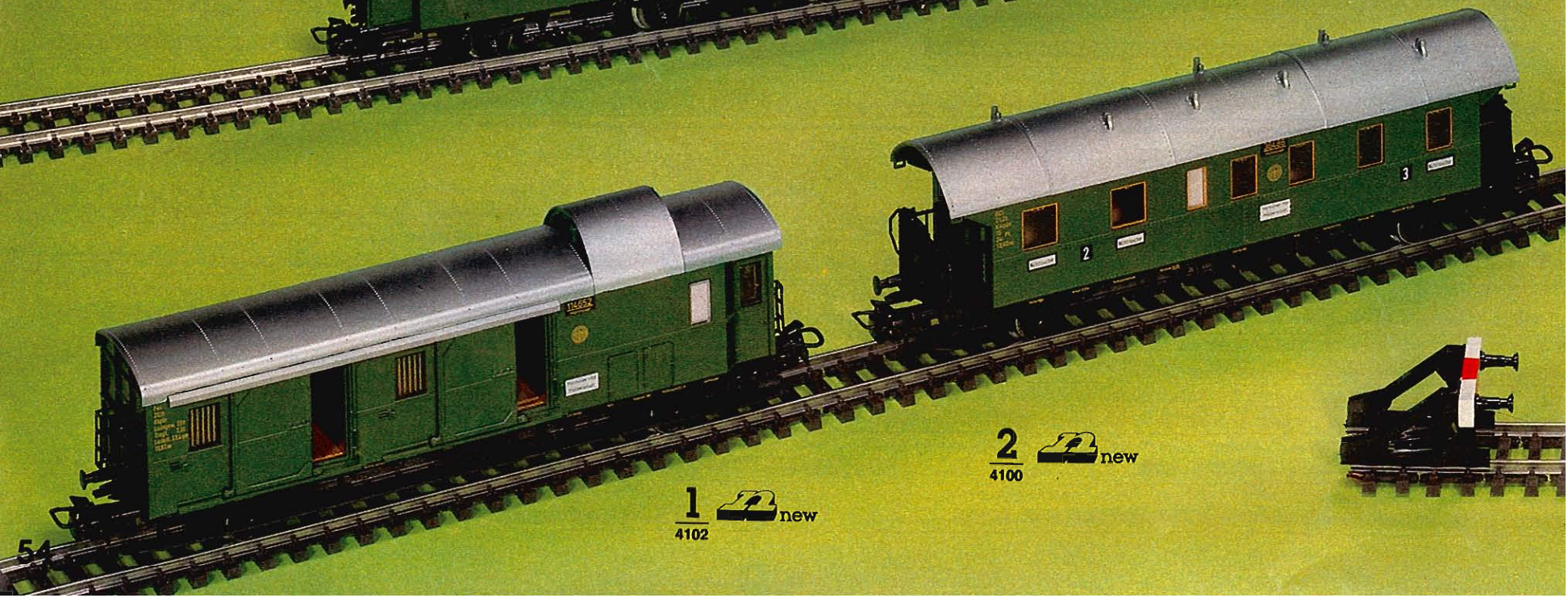
Coaches
Platform and doors at both ends · Unglazed windows · RELEX couplers (pages 70/81) · Length 11.5 cm (4-½")

10
4040



6
4079

5
4067



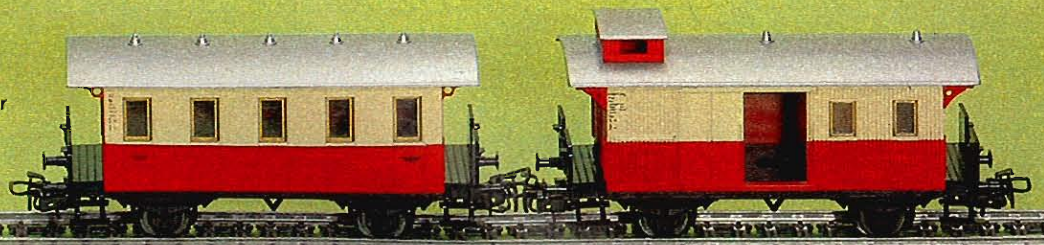
2 new
4100

1 new
4102

Cars of non-government operated railways
Platform and doors on both ends · Non-operating roof ventilators · Windows set in plastic frames · RELEX couplers (pages 70/81) · Length 11 cm (4-3/8") · Accepts interior lighting kits [⊓▪▪▪▪⊔] = 7323 (page 66)

11 new
4107 · Coach · Interior details

12 new
4108 · Baggage car with cupola for conductor



7
4080

11 new
4107

12 new
4108

RELEX couplers
For realistic switching
Page 70

4 new
4103

10
4040

3 new
4101

8
4004

9
4005

Express Coach of the former Royal Bavarian Railways

For through train service · Sturdy body · Windows set in plastic frames · Interior details · Non-operating ventilators of roof · Length 22 cm (8-⅝") · Accepts interior lighting kit = 7329 (page 66)

1
4135 · Model of type CCü 3rd class coach

The official name of the Royal Bavarian Railways was: Königliche Bayerische Staatsbahnen, reporting marks K. Bay. Sts. B.

Express coaches of the former German State Railways

For through train service · Sturdy body · Windows set in plastic frames · Accepts interior lighting kit = 7329 (page 66) · These cars were inherited from the Royal Bavarian Railways

2
4136 · Model of type C4ü bay 11 · 3rd class coach · Interior details · Non-operating ventilators on roof · Length 22 cm (8-⅝")

3
4137 · Model of type Pw4ü bay 09 · Baggage car with cupola · Length 20 cm (7-⅞")

4
4143 · Model of type ABC4ü bay 11 · Coach with 1st, 2nd, and 3rd class compartments · Interior details · Non-operating ventilators on roof · Length 23.2 cm (9-⅛")

1 / 4135

2 / 4136

3 / 4137

Standard express coaches of the former German State Railways

For through train service · Sturdy body · Windows set in plastic frames · Görlitz trucks · Accepts interior lighting = 7329 (page 66)

5
4141 · Model of type C4ü 31 **DR** · 3rd class coach · Interior details · Length 25 cm (9-⅞")

6
4142 · Model of type Pw4ü 30 **DR** · Baggage car with cupola · Length 22.6 cm (8-⅞")

7
4144 · Model of type B4i 30 **DR** · 2nd class coach · Interior details · Length 25 cm (9-⅞")

DR = Deutsche Reichsbahn (German State Railways)

5 / 4141

6 / 4142

8 / 4139

All cars have automatic couplers, destination signs for different routes, and can accept interior lighting kit (page 66).

Train consists

Just like prototype

See page 52

4
4143

7
4144

9
4140

10
4145

Standard express coaches of the German Federal Railways

For through train service · Sturdy body
Windows set in plastic frames · Gorlitz trucks · Accepts interior lighting
▭ = 7329 (page 66)

These cars were inherited from the former German State Railways.

8
4139 · Model of type Büe[354] **DB** · 2nd class coach · Interior details · Length 25 cm (9-⅞")

9
4140 · Model of type Düe[932] **DB** · Baggage car with cupola · Length 22.6 cm (8-⅞")

10
4145 · Model of type Ayse[604] **DB** · 1st class coach · Interior details · Length 25 cm (9-⅞")

DB = Deutsche Bundesbahn (German Federal Railways)

Express coaches 24 cm (9-½")

Express cars of the German Federal Railways

Windows set in plastic frames · Length 24 cm (9-½") · Accepts interior lighting kits [=======] (page 66)

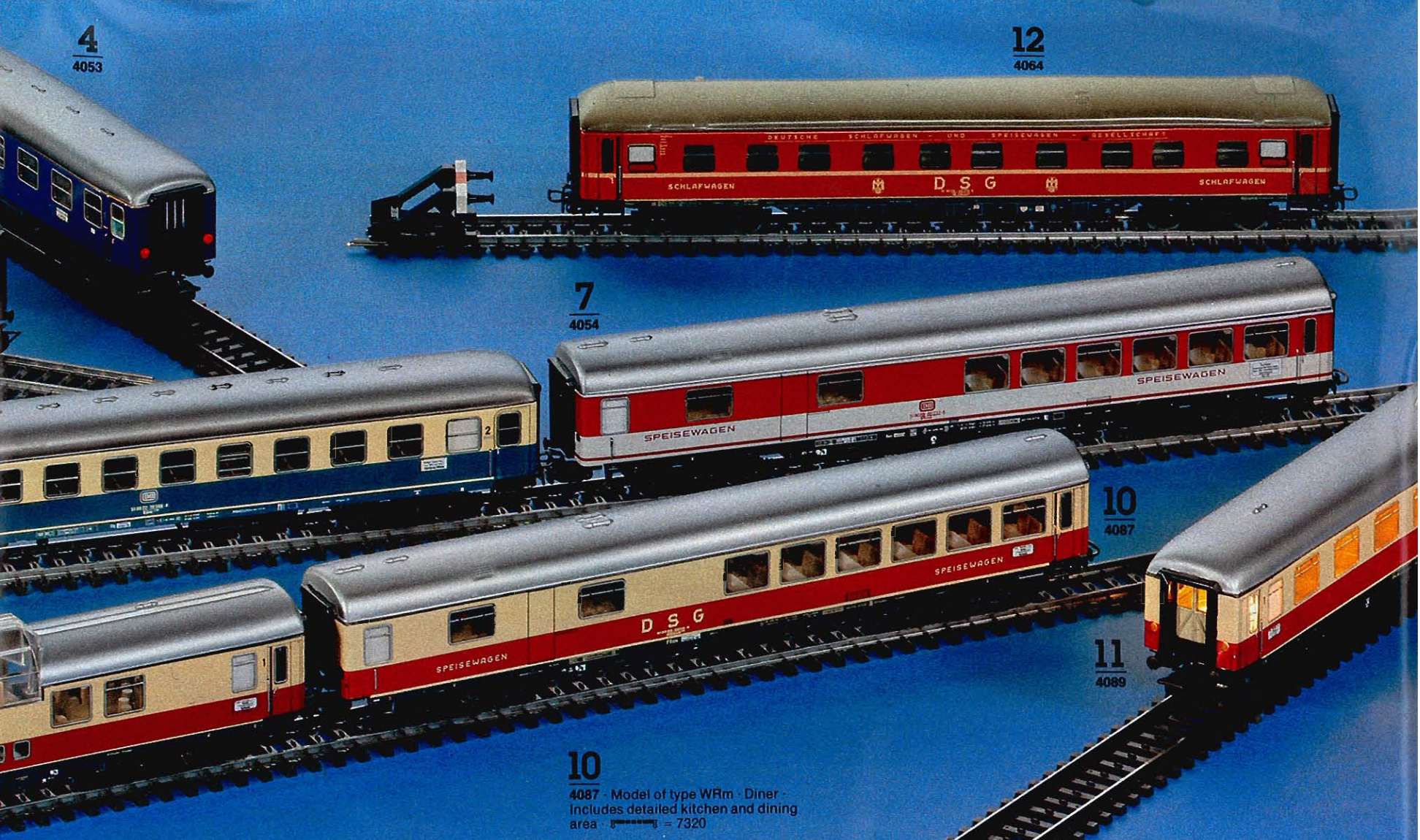
1
4026 · Model of type D ym · Baggage car · [=======] = 7077+7198

2
4051 · Model of type A üm · 1st class coach · Interior details · [=======] = 7077+7198

3
4052 · Model of type B üm · 2nd class coach · Interior details · [=======] = 7077+7198

4
4053 · Model of type A üm · Same as 4051 but includes illuminated end markers · [=======] = 7077

[~~~] = 7175



5
4111 · Model of type A üm · 1st class coach · Interior details · = 7077+7198

6
4112 · Model of type B üm · 2nd class coach · Interior details · = 7077+7198

7
4054 · Model of type WR üm[132] · Diner · Includes detailed kitchen and dining area · = 7320

German Federal Railways TEE coaches

These cars are also used on domestic IC (Intercity) trains · Windows set in plastic frames · Length 24 cm (9-½") · Accepts interior lighting kits (page 66)

8
4085 · Model of type Avm · Compartment car · Interior details include side corridor · = 7320

9
4090 · Model of type ADm · Vista dome car · Interior details · Dome made of transparent plastic · = 7322

10
4087 · Model of type WRm · Diner · Includes detailed kitchen and dining area · = 7320

11
4089 · Model of type Avm · Similar to 4085 but has slider to pick up current for interior and end markers
= 7175 = 60015

All cars have RELEX couplers (pages 70/81) and will accept interior lighting kits (page 66).

Express sleepers of the German Sleeping and Dining Car Co. (DSG)

(DSG = Deutsche Schlafwagen- und Speisewagen-Gesellschaft)

12
4064 · Model of type WLABüm class 33200 · 1st and 2nd class sleeper · Windows set in plastic frames · Length 24 cm (9-½") · Accepts interior lighting = 7320

Express coaches for International Service

Windows set in plastic frames · Accepts interior lighting kits (page 66)

Swedish Railways' express coaches

1

4072 · Model of type Bo 1 · 2nd class coach · Prototype colors · Length 23.7 cm (9-⅜") · = 7197

2

4073 · Model of type RBo 2 · Diner · Prototype colors · Length 23.7 cm (9-⅜") · = 7197

Danish Railways' express coaches

3

4045 · Model of type B 2300 · 2nd class · Length 24 cm (9-½") · = 7077+7198

Italian Railways' express sleeper

4 new

4152 · Model of type WLABm · 1st and 2nd class sleeper · Classes as T2S for TEN-pool service · Interior details · Length 27 cm (10-⅝") · = 7329

Dutch Railways' express coaches

5

4049 · Model of type B 6600 · 2nd class coach · Length 24 cm (9-½") · = 7320

6

4151 · Model of type TEN · 1st and 2nd class sleeper · Interior details · Length 27 cm (10-⅝") · = 7329

Swiss Federal Railways' express coaches

7

4146 · Model of original type F4ü · Baggage car with cupola · Length 23.2 cm (9-⅛") · = 7329

8

4138 · Model of original type C4ü · 3rd class coach · Interior details · Simulated ventilators on roof · Length 22.2 cm (8-¾") · = 7329

9

4066 · Model of type A 2500 · 1st class coach · Ribbed roof with simulated ventilators · Length 24 cm (9-½") · = 7320

10

4068 · Model of type RIC · Diner · Removable ribbed roof · Modern style pantograph · Length 24 cm (9-½") · = 7077

French Railways' express coaches

11

4076 · Model of type A8myfi · 1st class coach · Interior details · Length 24 cm (9-½") · = 7197

Express sleeper of the International Sleeping Car Co. (ISG)
(ISG = Internationale Schlafwagen-Gesellschaft)

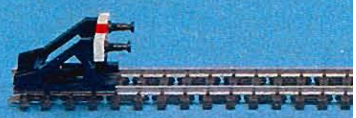
12

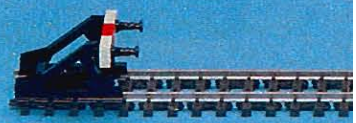
4029 · Model of ISG car 4581 · Length 24 cm (9-½") · = 7077+7198

German Federal Railways' express sleeper

13

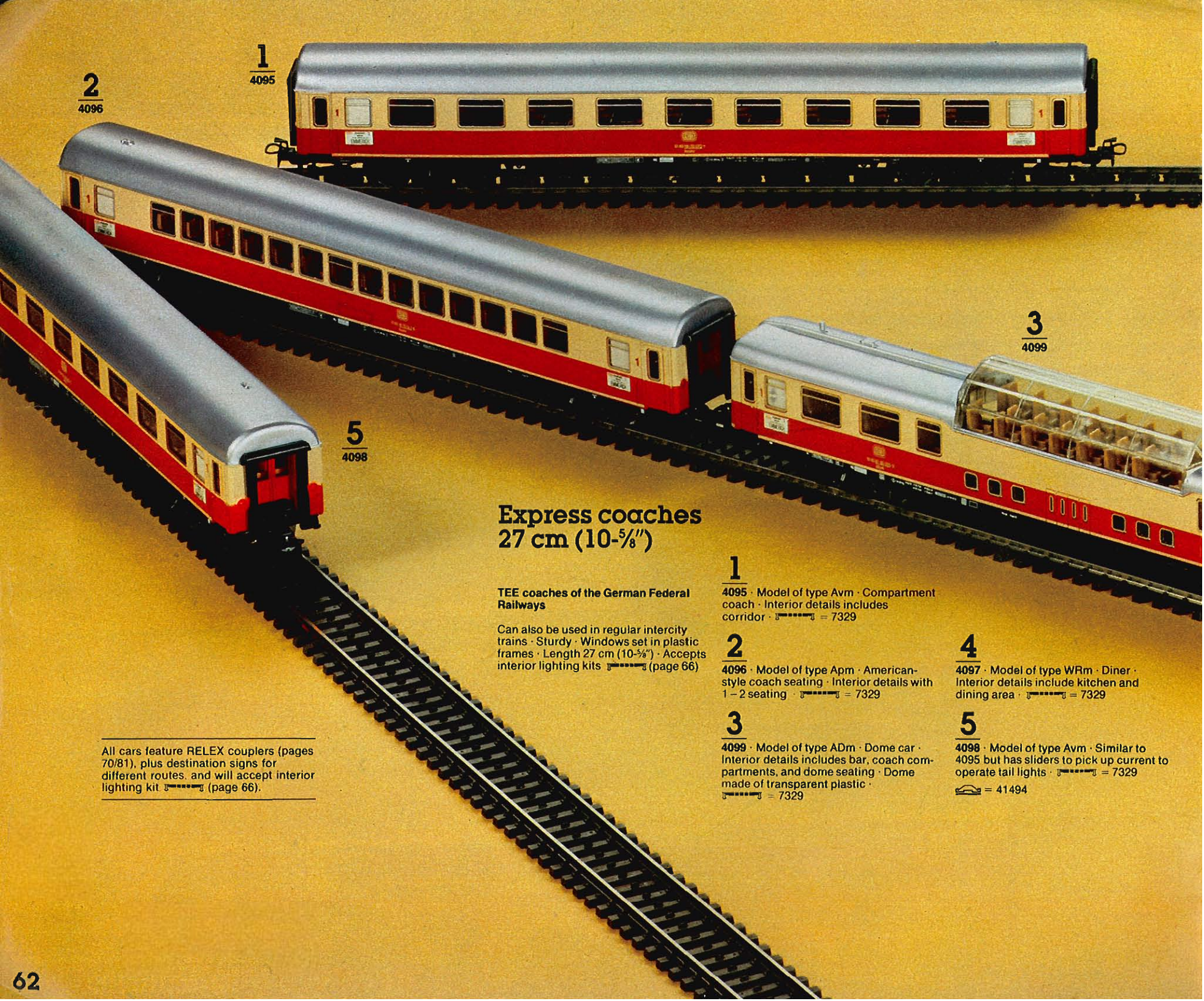
4150 · Model of type WLABsm · TEN livery · 1st and 2nd class sleeper · Interior details · Length 27 cm (10-⅝") · = 7329





All cars, except 4138 and 4146, have RELEX couplers (pages 70/81) and will accept interior lighting kits (page 66). Additional destination signs are included with cars 4076, 4150, 4151 and 4152.


1
4072
2
4073
3
4045
DSB
6
4151
TEN
5
4049
10
4068
SBB CFF
RESTAURANT
11
4076
9
4066
13
4150
TEN



Express coaches 27 cm (10-5/8")

TEE coaches of the German Federal Railways

Can also be used in regular intercity trains · Sturdy · Windows set in plastic frames · Length 27 cm (10-5/8") · Accepts interior lighting kits (page 66)

1

4095 · Model of type Avm · Compartment coach · Interior details includes corridor · = 7329

2

4096 · Model of type Apm · American-style coach seating · Interior details with 1 – 2 seating · = 7329

3

4099 · Model of type ADm · Dome car · Interior details includes bar, coach compartments, and dome seating · Dome made of transparent plastic · = 7329

4

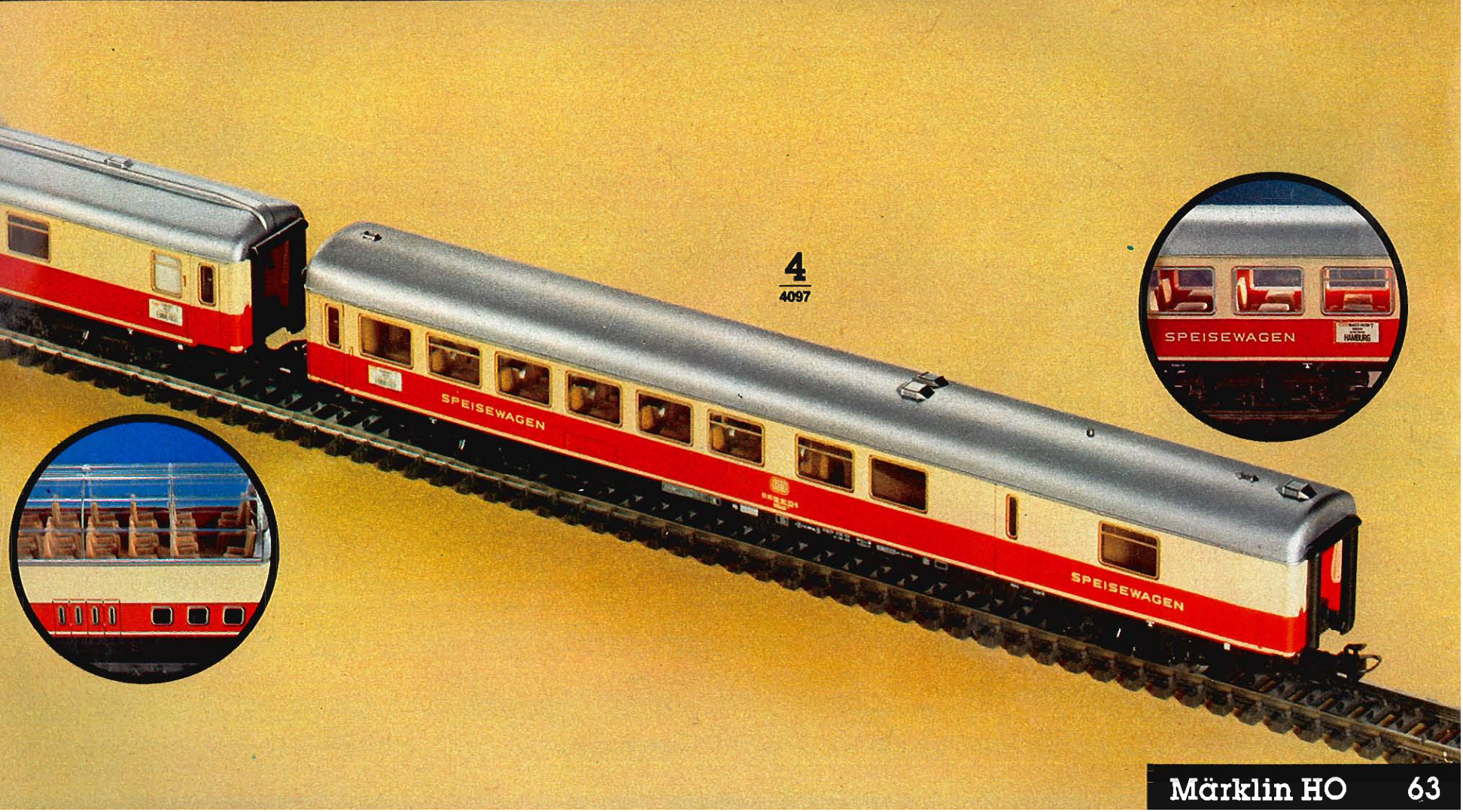
4097 · Model of type WRm · Diner · Interior details include kitchen and dining area · = 7329

5

4098 · Model of type Avm · Similar to 4095 but has sliders to pick up current to operate tail lights · = 7329

= 41494

All cars feature RELEX couplers (pages 70/81), plus destination signs for different routes, and will accept interior lighting kit (page 66).


4
4097
SPEISEWAGEN
SPEISEWAGEN
SPEISEWAGEN

Express coaches 27 cm (10-5/8")

German Federal Railways' passenger train auto carriers

1

4074 · Model of type DDm 915 · Length 26.4 cm (10-3/8") · Loaded with 8 WIKING miniature automobiles

4084 · Model of Type DDm 915 · Same as 4074 but includes no automobiles · Length 26.4 cm (10-3/8")

Mail cars of the German Federal Postal Service

2 new

4157 · Model of type mrz 73076 · Windows set in plastic frames · Interior details · Length 26.4 cm (10-3/8") · Accepts interior lighting ▭ = 7329

German Federal Railways' express coaches

Colorful liveries · Windows set in plastic frames · Length 27 cm (10-5/8") · Accepts interior lighting ▭ (page 66)

3

4091 · Model of type A üm[201] · 1st class coach · Interior details · ▭ = 7329

4

4092 · Model of type B üm[234] · 2nd class coach · Interior details · ▭ = 7329

5

4093 · Model of type D üm[902] · Baggage car · Operating baggage doors on each side · ▭ = 7329

6

4094 · Model of WR ümh[132] · Diner · Includes detailed kitchen and dining area · ▭ = 7329

7

4154 · Model of type B üm[234] · Same as 4092 but includes illuminated end markers · ▭ = 7329

▭ = 41494

EUROFIMA cars

Windows set in plastic frames · Interior details with side corridor · Length 26.4 cm (10-3/8") · Accepts interior lighting kits ▭ (page 66)

8

4148 · Model of EUROFIMA's A9 1st class coach in the colors of the Belgian State Railways (NMBS/SNCB) · ▭ = 7329

9 new

4149 · Model of EUROFIMA's A9 1st class coach in the colors of the Austrian Federal Railways (ÖBB) · ▭ = 7329

10

4147 · Model of type Avmz 207 (A9 EUROFIMA) · 1st class coach in colors of the German Federal Railways · ▭ = 7329

■ The "European Community for the Financing of Railroad Equipment" (EUROFIMA) is composed of representatives of six European railroads (DB, FS, ÖBB, SBB, SNCB, SNCF). Their task is to create standard design cars. Among their accomplishments are the type A9 1st class coach and the type B11 2nd class coach. The EUROFIMA cars are constructed by an international consortium under the leadership of the Linke-Hofmann-Busch Car Co.

EUROFIMA cars can be used in trains with speeds up to 200 kmph (125 mph). Presently there are 500 A9 cars on the German Federal Railways, 20 on the Belgian State Railways, and 25 on the Austrian Federal Railways.

3
4091

4
4092

7
4154

6
4094

SPEISEWAGEN

All cars, except 4147, 4148, 4149 and 4157, have RELEX-couplers (pages 70/81). All cars have destination plates for various routes and all, except 4074 and 4084, will accept interior lighting kits (page 66).

8
4148

10
4147

Train lighting

This schematic illustrates the various styles of train lighting. Instructions are included with each set.

Train lighting = ▬▬▬

7076
Current collector for use on coach 4040 to illuminate tail light 7079

7077
Interior lighting set for most 24 cm (9-½") coaches · Has socket for connecting additional sets · Light bulb
= 60000

7198
Current collector for interior lighting set 7077
= 7175

7079
Tail light with bulb · Clips onto buffer · For use on cars with metal buffers only · To illuminate use 7074, 7076 or 7198
= 60001 (red)

7074
Interior lighting set for coaches 4004, 4005, 4067, 4079 and 4080 · Has socket for connecting additional lighting sets · Light bulb included
= 60020

7322
Interior lighting set for TEE coach 4090 · Includes current collector 7198, 2 lamp sockets and 2 bulbs, plus instructions
= 7175
= 60015

7323
Interior lighting set f
cars 4107 and 4108 ·
Light bulb included
= 7175
= 60010

0226

0225

Interior details for cars 4045, 4049, 4066, 4067, 4072, 4073, 4079 and 4080

Interior details and figures are made of finely cast plastic; figures are hand-painted. Illustrated instructions included with each set.

0226

Package of 10 seated passengers · Each is hand-painted

0225

Interior details for express coaches · Includes 18 double seats, 6 single seats, and 2 rest rooms

7197

Interior lighting set for express coaches 4072, 4073 and 4076 · Includes current collector 7198, light diffuser, 2 lamp sockets and 2 bulbs, plus instructions

= 7175 = 60015

7320

Interior lighting set for TEE coaches 4085, 4087 and for express coaches 4049, 4054, 4064, 4066 and 4069 · Includes current collector 7198, light diffuser, 2 lamp sockets and 2 bulbs, plus instructions

= 7175 = 60015

7329

Interior lighting set · Has variable length light diffuser · For cars 4091 – 4099, 4135 – 4152, 4154 and 4157 · Includes current collector, light diffuser, 2 lamp sockets, and 2 bulbs, plus instructions

= 41494 = 60015

Freight Cars

All cars have RELEX couplers (pages 70/81). Frames and superstructures are made of plastic; wheels made of die cast zinc.

1 Switzerland

4420 · **Beer car** · Lettered for the Swiss brewery Eichhof · Length 11.5 cm (4-½")

2

4417 · **Beer car** · Lettered for Alpirsbacher Klosterbräu · Length 11.5 cm (4-½")

3

4419 · **Refrigerator car** · Lettered for "Pepsi" · Length 11.5 cm (4-½")

4

4414 · **Banana car** · Model of the German Federal Railways' type Ibbls · Length 11.5 cm (4-½")

5 new

4421 · **Beer car** · Lettered for Bitburger Brewery · Length 11.5 cm (4-½")

6

4415 · **Refrigerator car** · Model of the German Federal Railways' type Ichqrs 377 · Length 11.5 cm (4-½")

7

4418 · **Beer car** · Lettered for König-Brauerei Duisburg · Length 11.5 cm (4-½")

8

4440 · **Tank car** · ARAL · Length 11.5 cm (4-½")

9

4441 · **Tank car** · ESSO · Length 11.5 cm (4-½")

10

4442 · **Tank car** · SHELL · Length 11.5 cm (4-½")

11
4432 · **Wine car** · Older style · Lettered for Upper Rhine Wine Producers · Length 11.5 cm (4-½")

12
4431 · **Gondola** (DB-El-u) · Includes a load of simulated coal, removable · Length 11.5 cm (4-½")

13
4430 · **Gondola** · Model of the German Federal Railways' type El-u · Length 11.5 cm (4-½")

14
4411 · **Box car** with illuminated end markers · Model of the German Federal Railways' type Grs-v · Includes current collector · Length 11.5 cm (4-½")

= 41494 = 60015

15
4410 · **Box car** · Model of German Federal Railways' type Gs · Length 11.5 cm (4-½")

16
4460 · **Box car with swivel roof** · Model of the German Federal Railways' type Taes 890 · Length 16 cm (6-5/16")

17
4413 · **Dump car** · Bucket, latched in upright position, can be tipped to either side manually · Length 11.5 cm (4-½")

18
4423 · **Low-side gondola** · Model of German Federal Railways' type Kklm 505 · Length 11.5 cm (4-½")

19
4424 · **Low-side gondola** · Loaded with WIKING commercial vehicle · Length 11.5 cm (4-½")

20
4473 · **Low-side gondola** · Model of the German Federal Railways' type Rlmms · Length 16 cm (6-5/16")

21
4474 · **Low-side gondola** · Loaded with WIKING grade builder and WIKING shovel loader · Length 16 cm (6-5/16")

22
4475 · **Low-side gondola** with tarpaulin · Length 16 cm (6-5/16")

1
4610 · **Ore car** · Manually operated unloading hopper · Length 9.5 cm (3-¾")

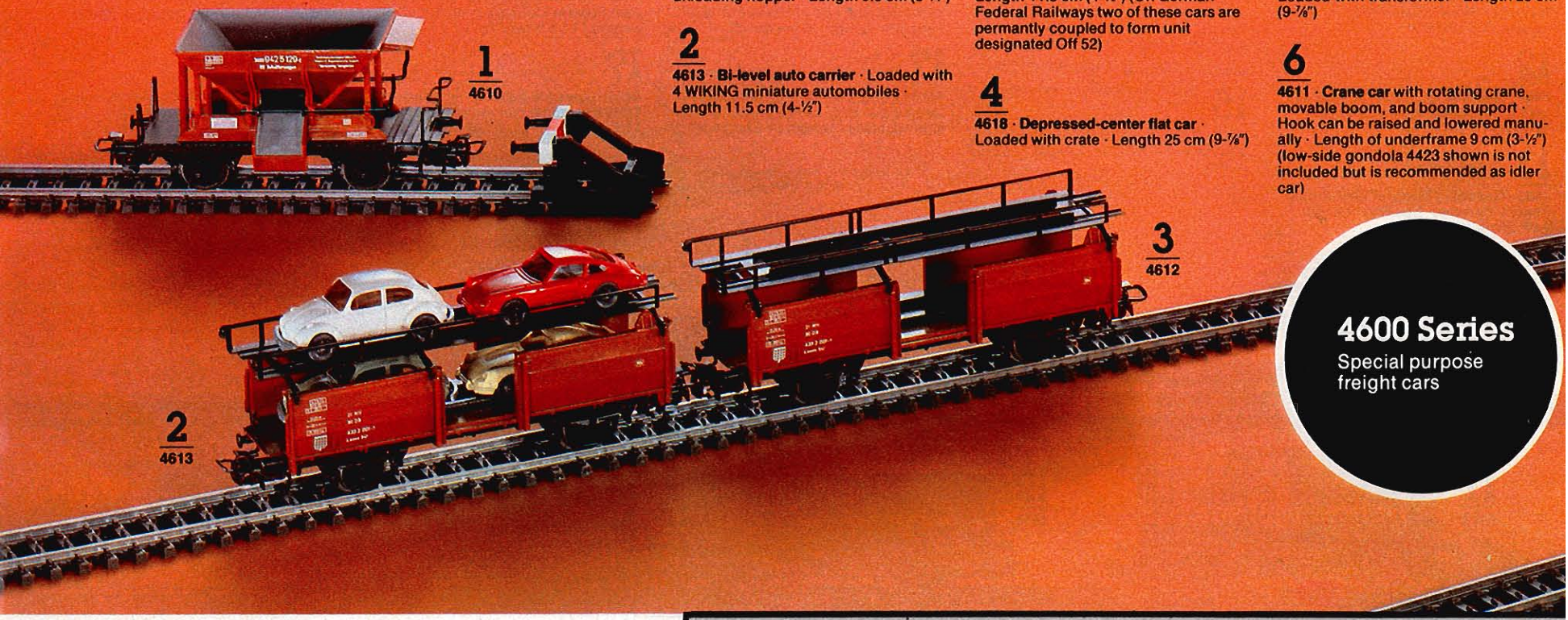
2
4613 · **Bi-level auto carrier** · Loaded with 4 WIKING miniature automobiles · Length 11.5 cm (4-½")

3
4612 · **Bi-level auto carrier** · Not loaded · Length 11.5 cm (4-½") (On German Federal Railways two of these cars are permantly coupled to form unit designated Off 52)

4
4618 · **Depressed-center flat car** · Loaded with crate · Length 25 cm (9-⅞")

5
4617 · **Depressed-center flat car** · Loaded with transformer · Length 25 cm (9-⅞")

6
4611 · **Crane car** with rotating crane, movable boom, and boom support · Hook can be raised and lowered manually · Length of underframe 9 cm (3-½") (low-side gondola 4423 shown is not included but is recommended as idler car)



4600 Series
Special purpose freight cars

RELEX Couplers.

All Märklin freight cars have RELEX couplers.

The fundamental difference between passenger and freight transportation is that whereas passengers can get on and off trains by themselves, freight must be directed to destinations by human and technological means.

Freight cars are loaded or unloaded at freight houses or industrial sidings and are then conveyed to marshalling yards by peddler freights.

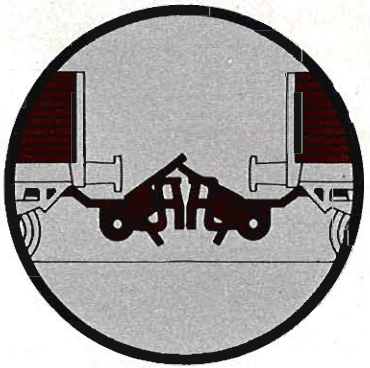
At marshalling yards, incoming trains are broken up and individual cars are switched onto different yard tracks based on destination.

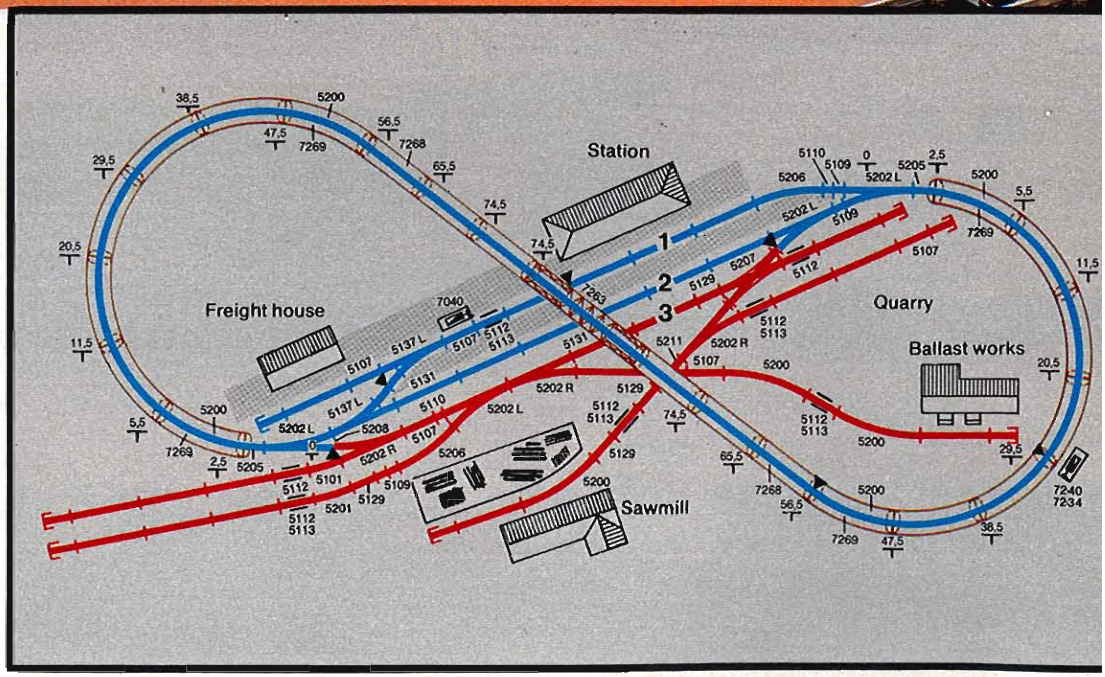
In larger yards, this switching is facilitated by a "hump" over which the cars roll to the proper ladder track. As soon as sufficient cars are assembled on a specific track, the dispatcher "calls" an outgoing freight.

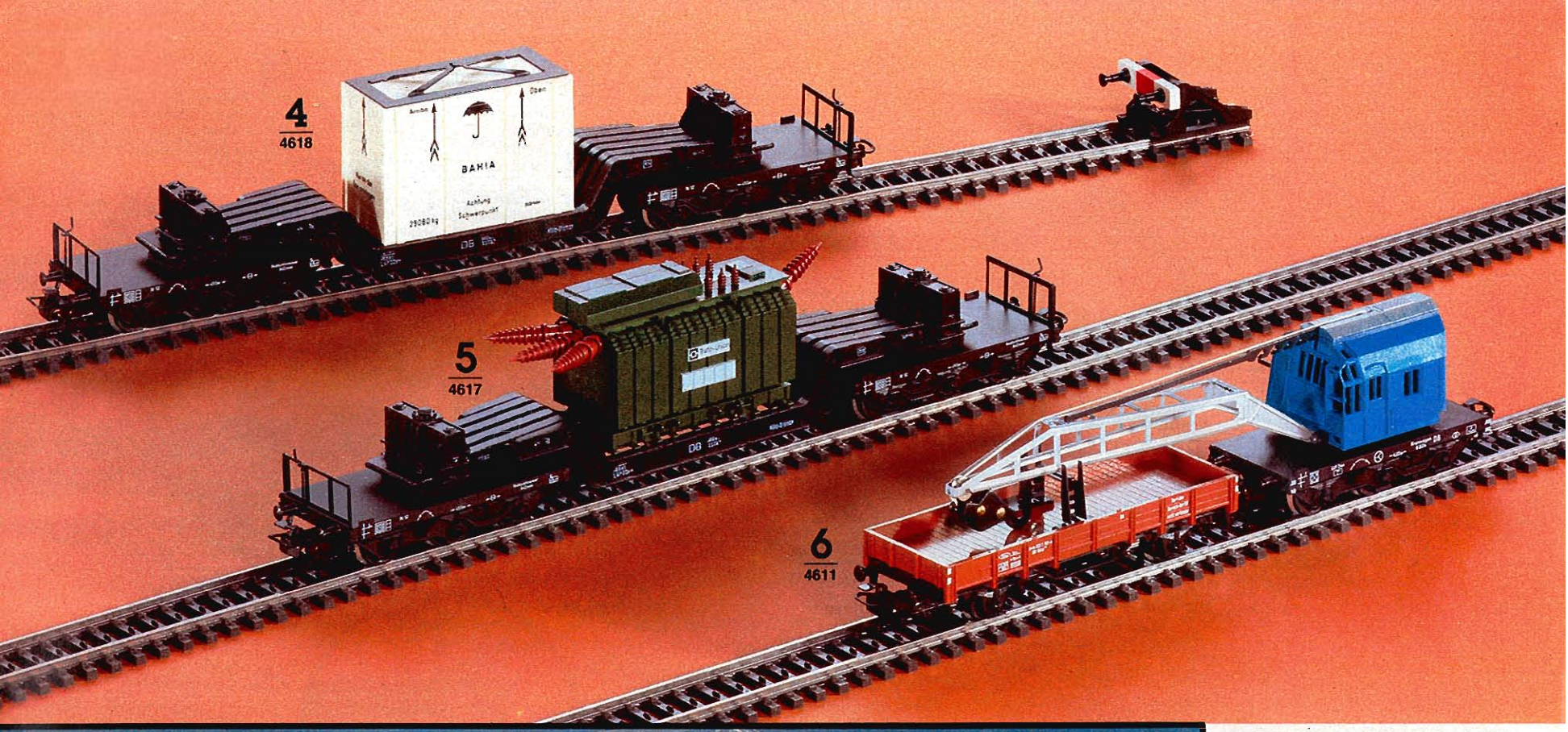
These interesting switching operations can be excitingly simulated on Märklin layouts thanks to the unique RELEX couplers.

With RELEX couplers, cars can be uncoupled at uncoupling tracks (pages 81/86) yet still be pushed or dropped off at a desired point without the couplers re-engaging.

The layout shown here is designed for modelers who want plenty of switching operations.







■ The sprawling Maschen classification yards (see photo) of the German Federal Railways' is the largest such facility in Europe. It took ten years to complete: Construction started on July 7, 1970 and was completely placed in service in 1980. Certain parts were in operation as early as 1977.

Measuring 7 km (4.35 miles) by 700 meters (2,334 ft), the yard contains 300 km (187 miles) of track and over 1,000 switches. A dispatcher can process 700 cars in an hour.

The foundations and roadbed include 590,000 ties, 1.5 million tons of ballast, and 20,000 tons of iron rods in the substrata.
13 million cubic meter of earth had to be removed. The river, the Seeve, flows under the yard for 580 meters (1,932 ft). 34 000 km (21,100 miles) of cable were laid. These facts give some idea of the magnitude of the undertaking.

While it may not be possible to model Maschen, switching and marshalling operations can offer hours of enjoyment on Märklin layouts.

1 new

4695 · **Box car with brakeman's cab** · Model of the former German State Railways G 10 · Operating doors on each side · 11 cm (4-3/8")

2

4696 · **Gondola with brakeman's cab** · Model of the former German State Railways' type O 10 · Length 10.1 cm (4")

3

4697 · **Flat car with brakeman' cab** · Floor center pivots · Model of the former German State Railways' type H 10 · Length 11.5 cm (4-½")

4

4664 · **Container car** · Model of German Federal Railways' type "Berlin" · Loaded with 2 removable containers · Length 15.6 cm (6-⅛")

5

4633 · **Gondola with sliding roof and sides** (Tbis[870]) · Roof halves and sides slide open · Length 15.7 cm (6-3/16")

6

4627 · **Box car** · Model of the German Federal Railways' type Gbrs-v[245] · Length 13.3 cm (5-¼")

7

4619 · **Covered gondola** with sliding roof (Ts[851]) · Length 11.5 cm (4-½")

8

4668 · **Container car** · Model of German Federal Railways' type "Berlin" · Loaded with 2 removable containers · Length 15.6 cm (6-⅛")

9

4635 · **Multi-section ballast car** · Model of German Federal Railways' type Fz[120] · Buckets can be tipped by unlatching holding bar · Length 10.5 cm (4-⅛")

10

4631 · **Side-unloading hopper car** · Model of German Federal Railways' type Ed · Length 11.2 cm (4-3/8")

The discharge chutes can be operated manually or by remote control using uncoupling track 5112 (page 81) and 2297 (page 86).

11

4626 · **High capacity covered hopper car** · Model of German Federal Railways' type KKt 57 · All hatches open · Length 13.3 cm (5-¼")

■ On a number of high capacity freight cars, fixed covers are fitted to provide the protection from the elements necessary for bulk materials such as grain.

12

4624 · **High capacity hopper car** (saddle car) · Model of the German Federal Railways' type Fads[176] · Length 13.3 cm (5-¼")

■ These cars are usually seen in unit trains, international and domestic, for coal, coke, ore, etc.

13

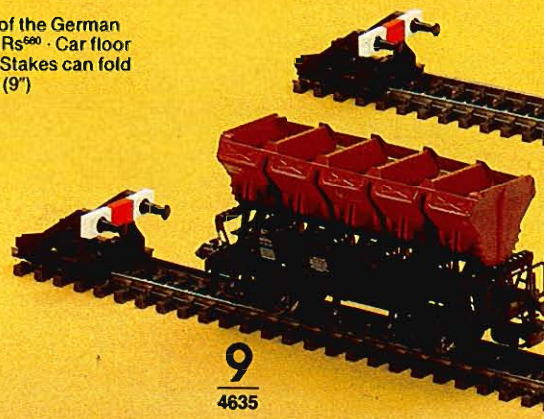
4665 · **Lumber car** · 2 "shorty" flat cars loaded with sawn lumber · Length 19.5 cm (7-¾")

14

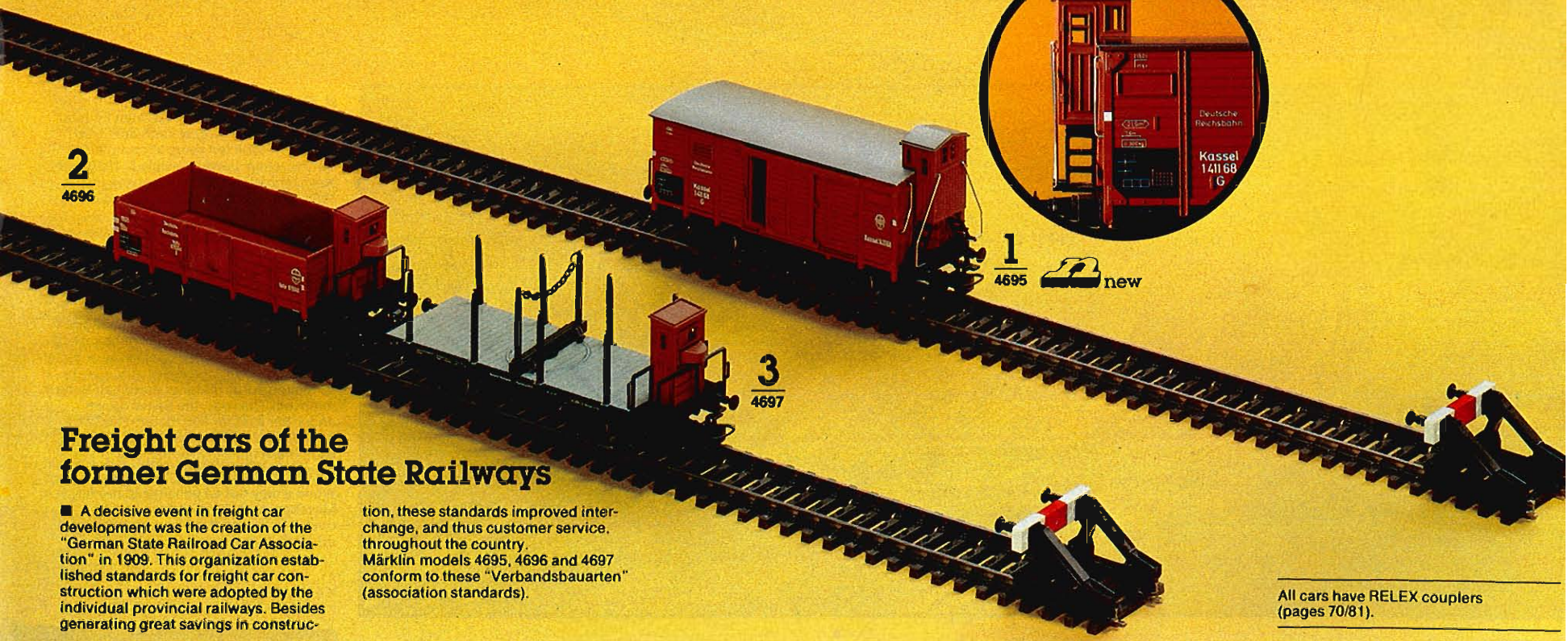
4663 · **Flat car** · Model of the German Federal Railways' type Rs[580] · Car floor made of die cast zinc · Stakes can fold down · Length 22.7 cm (9")

15

4694 · **Flat car** · Model of German Federal Railways' type Kbs 443 · Removable stakes · Can be used as low-side gondola · Length 15.7 cm (6-3/16")



9
4635



2
4696

1
4695 new

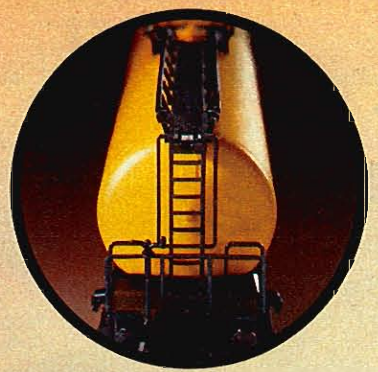
3
4697

Freight cars of the former German State Railways

■ A decisive event in freight car development was the creation of the "German State Railroad Car Association" in 1909. This organization established standards for freight car construction which were adopted by the individual provincial railways. Besides generating great savings in construction, these standards improved interchange, and thus customer service, throughout the country. Märklin models 4695, 4696 and 4697 conform to these "Verbandsbauarten" (association standards).

All cars have RELEX couplers (pages 70/81).


4
4664
6
4627
5
4633
7
4619
10
4631
SEA LAND
SEA LAND
8
4668
11
4626
12
4624
13
4665
14
4663
15
4694



1
4699

2
4644

3
4646

4
4661

5
4650

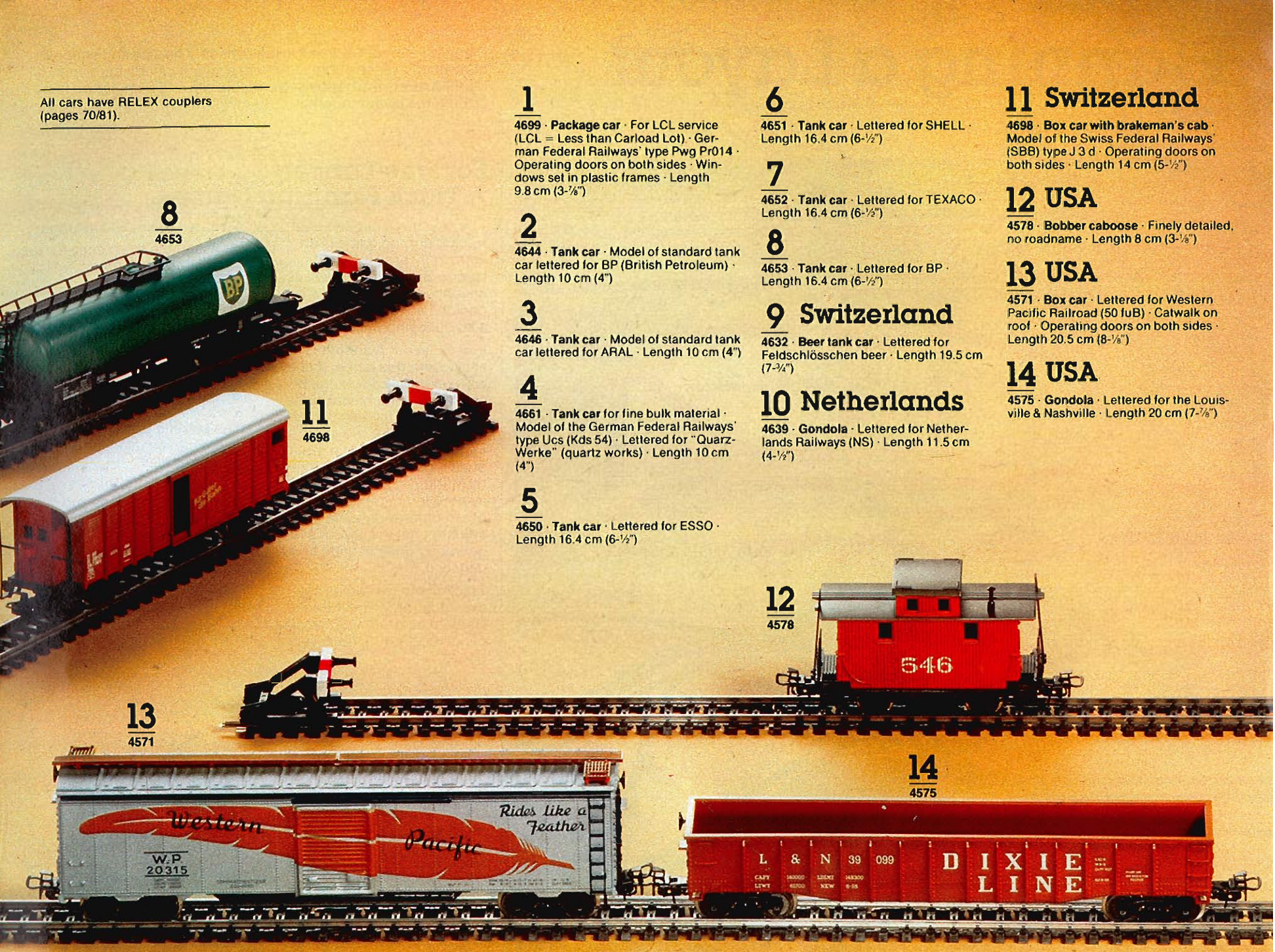
6
4651

7
4652

9
4632

10
4639

All cars have RELEX couplers (pages 70/81).



1

4699 · **Package car** · For LCL service (LCL = Less than Carload Lot) · German Federal Railways' type Pwg Pr014 · Operating doors on both sides · Windows set in plastic frames · Length 9.8 cm (3-⅞")

2

4644 · **Tank car** · Model of standard tank car lettered for BP (British Petroleum) · Length 10 cm (4")

3

4646 · **Tank car** · Model of standard tank car lettered for ARAL · Length 10 cm (4")

4

4661 · **Tank car** for fine bulk material · Model of the German Federal Railways' type Ucs (Kds 54) · Lettered for "Quarz-Werke" (quartz works) · Length 10 cm (4")

5

4650 · **Tank car** · Lettered for ESSO · Length 16.4 cm (6-½")

6

4651 · **Tank car** · Lettered for SHELL · Length 16.4 cm (6-½")

7

4652 · **Tank car** · Lettered for TEXACO · Length 16.4 cm (6-½")

8

4653 · **Tank car** · Lettered for BP · Length 16.4 cm (6-½")

9 Switzerland

4632 · **Beer tank car** · Lettered for Feldschlösschen beer · Length 19.5 cm (7-¾")

10 Netherlands

4639 · **Gondola** · Lettered for Netherlands Railways (NS) · Length 11.5 cm (4-½")

11 Switzerland

4698 · **Box car with brakeman's cab** · Model of the Swiss Federal Railways' (SBB) type J 3 d · Operating doors on both sides · Length 14 cm (5-½")

12 USA

4578 · **Bobber caboose** · Finely detailed, no roadname · Length 8 cm (3-⅛")

13 USA

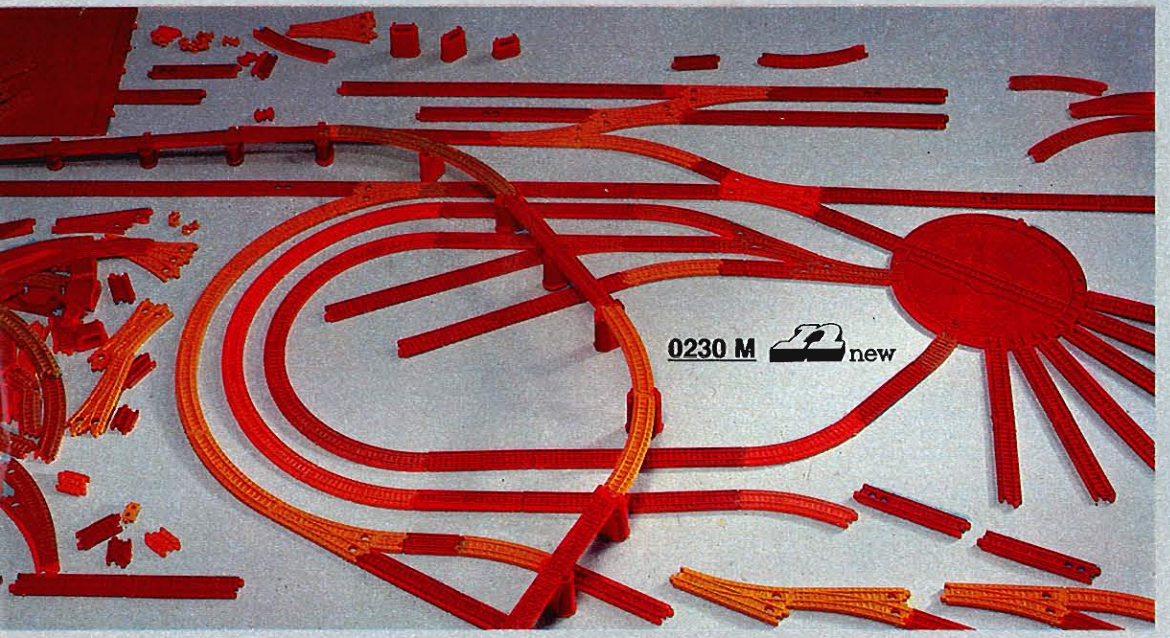
4571 · **Box car** · Lettered for Western Pacific Railroad (50 fuB) · Catwalk on roof · Operating doors on both sides · Length 20.5 cm (8-⅛")

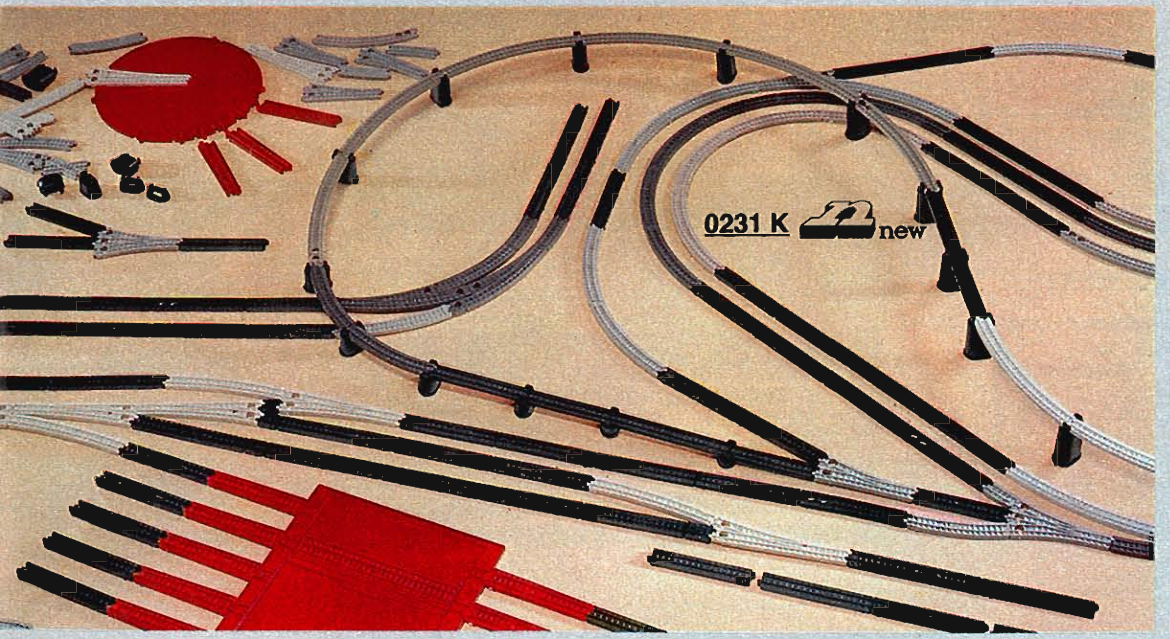
14 USA

4575 · **Gondola** · Lettered for the Louisville & Nashville · Length 20 cm (7-⅞")

Planning a Layout

Planning a model railroad is fun in itself. The size and shape of available space suggests where a layout can be built and Märklin offers the hobbyist the resources and stimulation for putting the layout together.





For Free-Lancers: A Track Planning Game

The new three dimensional track planning game is an amazingly easy way to design a layout. Beginners as well as advanced modelers now have a decided advantage in planning a layout using this method.

In fact, layout planning is so easy using this game, that even with no prior knowledge of geometry or technical signs, complicated layouts can be quickly plotted. The game includes scaled down replicas of all types of HO track offered by Märklin. The pieces are easily coupled together. Using colors to differentiate the radii, adjustments in a layout's geometry can be made immediately.

Track planning games are available for M and K tracks. Game pieces are ⅛th the size of corresponding track sections.

So easy to plan and arrange:

- Assemble the pieces for the desired track plan.
- Trace the layout on paper and write in the part numbers.
  Or, since the part numbers are on the game pieces, glue the pieces on paper.
- Set up the parts list.

The Märklin track planning game can be used for other purposes also.

As a control board:
All the switch pieces and some of the straight and curved pieces have holes in which LEDs can be mounted. The position of signals and switches on the layout are then immediately known.

0230 M new

Track Planning Game for planning and making mock-ups of model railroad layouts · All M track sections for series 5100 and 5200 scaled 1:5 · Includes transfer table, turntable, and pillars · Enough parts to design a medium size layout · All pieces have corresponding track part numbers on both sides · Pieces are 4 color-coded (3 curves and straight tracks) · Track pieces fit snugly together

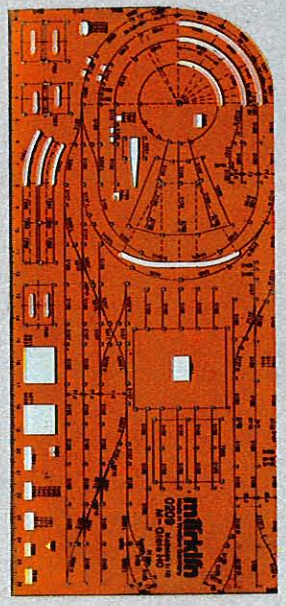
0231 K new

Track Planning Game for planning and making mock-ups of model railroad layouts · All K track sections of the series 2200 (2100) scaled 1:5 · Includes transfer table, turntable, and pillars · Enough parts to design a medium size layout · All pieces have corresponding track part numbers on both sides · Pieces are 7 color-coded (5 curves, straight tracks, and 1 14° 26' switch) · Track pieces fit snugly together

For Advanced Modelers: Track Planning Stencils

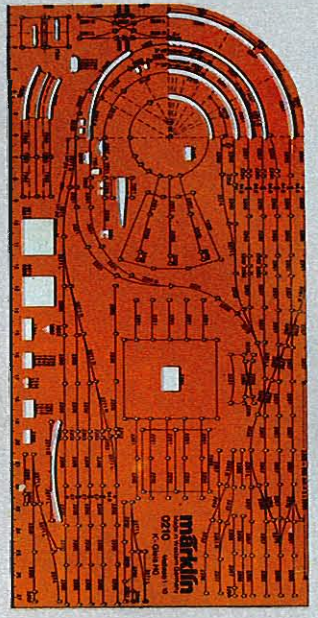
For modelers who are familiar with the geometry of Märklin HO railroading, a track planning stencil set is available. The stencils can be used over and over.

In the M and K track planning stencils, the track pieces are 1/10th the size of actual track sections. To trace the stencils, use a sharp pencil. Instructions with practical tips are included.



0209 M new

Track Planning Stencils for M tracks in the 5100 and 5200 series for designing layouts

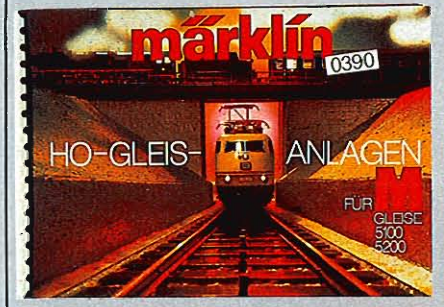


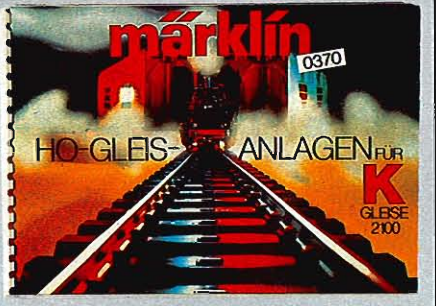
0210 K new

Track Planning Stencils for K track in the 2200 (2100) series for designing layouts

For Those in a Hurry: Layout Planning Books

Completely scenicked layouts with detailed parts lists are illustrated in these books. Included are track plans, wiring details, overhead plans, and accessories list. Colorful photos of finished layouts complement the text.





0392 M

Layouts for the 5100 and 5200 series M track · Booklet with full color illustrations and detailed track plans for 16 layouts including catenary systems · Electrical circuits are color-coded · Includes additional examples of track geometry · An outstanding guide for the construction of larger layouts · 56 pages · Size 21×30 cm (8-¼" × 11-¾") · English supplementary text

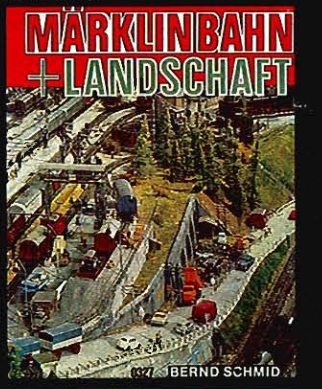
0372 K

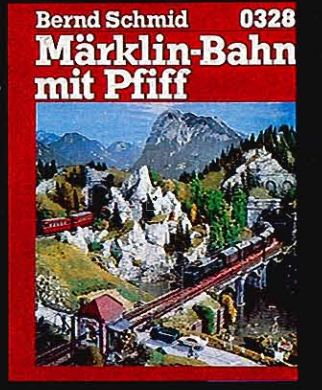
Layouts for the 2200 (2100) series K track · Booklet with full color illustrations and detailed track plans for 16 layouts including catenary systems · Electrical circuits are color-coded · Includes additional examples of track geometry · An outstanding guide for the construction of larger layouts · 52 pages · Size 21×30 cm (8-¼" × 11-¾") · English supplementary text

Märklin Tips for Track and Scenery

0327

Märklin-Bahn + Landschaft · German language book by Bernd Schmid · An excellent aid for building self-designed layouts · Technical details, roadbed design, landscape planning, and information on accessories are discussed in depth · Well illustrated, many photos in color · 192 pages · Size 16.4×20.3 cm (6-½" × 8")





0328

Märklin-Bahn mit Pfiff · German language book by Bernd Schmid · Many new tips on railroad construction for the more ambitious modelers · The "How" in book 0327 is explained as a "What" · All kinds of construction projects are discussed · Well illustrated, many photos in color · 262 pages · Size 22×17 cm (8-¾" × 6-¾")

Some Hints on Installing M-Tracks

Diagram 1 shows the three Märklin M-track circles with their radii, loading gauge, and curvature, as well as the number of sections required for a semi-circle (Fig. 1).

Circle 5200 = 12 track sections
Circle 5100 = 12 track sections
Circle 5120 = 8 track sections

Concentric circles

Concentric circles can be constructed by using 5100 and 5200 series tracks. The distance between track centers, measured from contact stud to contact stud, is 77.4 mm (3-1/16"). Clearance is 39 mm (1-1/2"). Switches 5202, 5221 or 5140 can be used to connect the two loops.

M-track switches

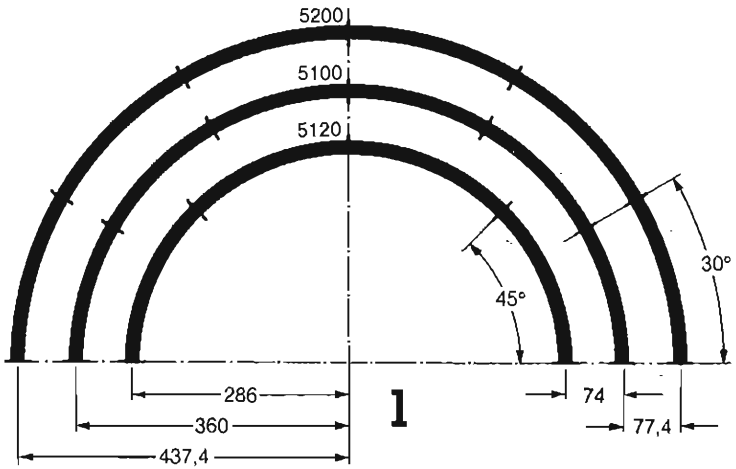
Electromagnetic switches 5137, 5140 and 5202 and the double slip switches 5128 and 5207 are operated by double solenoids. When a car approaches the switch from a "wrong" direction, its wheels automatically adjust the points to avoid a derailment. After the car leaves the switch, the points return to the original position. Switch tracks can be connected to each other.

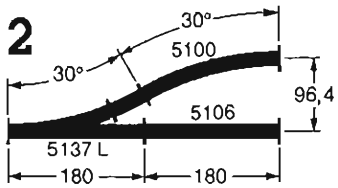
Branches with switches 5100

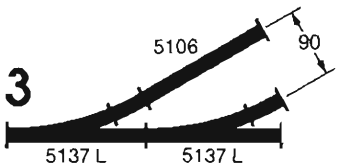
A parallel siding can be built by using a 5137 switch and curve 5100. The distance between siding and main track is 96.4 mm (3-3/4"). Adding a 5106 to the main line allows the two tracks to maintain the same length. See Fig. 2.

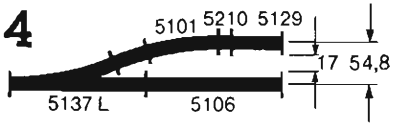
Figure 3 illustrates two parallel sidings leaving the main line. Numbers indicate track sections needed.

When using a 5101 curve, rather than a 5100, the two tracks will parallel closer. The distance is then only 54.8 mm (2-1/8") (Fig. 4).





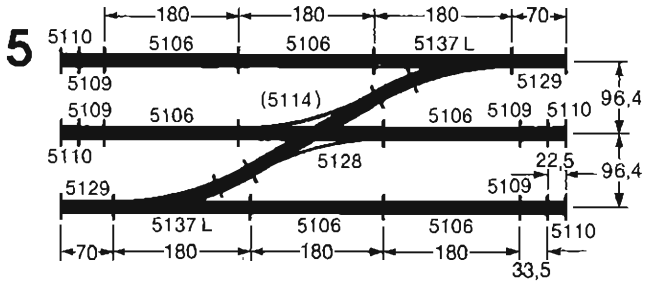


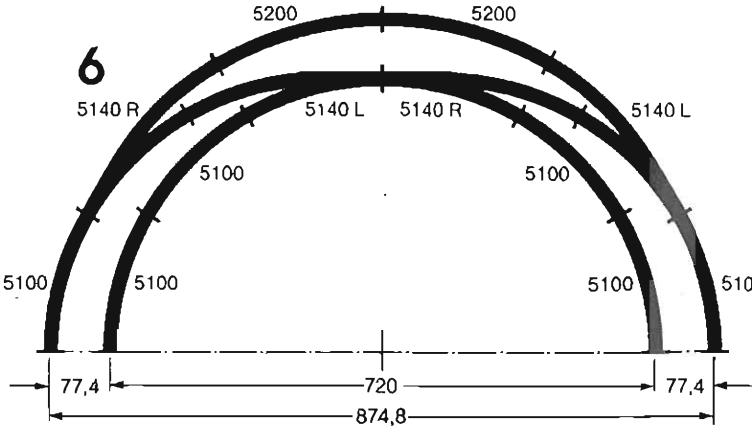


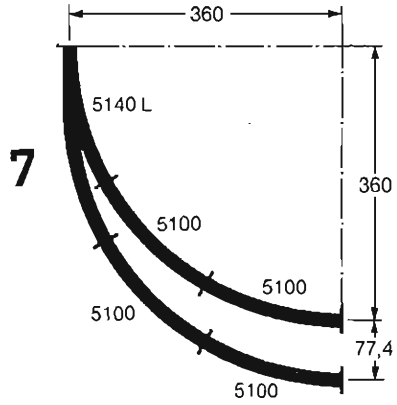
When there are 3 or more parallel tracks spaced 96.4 mm (3-3/4") apart, a slip track can be installed by using 5137 and double slip switch 5128. If access or egress to middle track is not desired, then crossing 5114 can be used in place of 5128 (Fig. 5).

To install slip tracks on curves, use the 5140 curved switches. Figure 6 illustrates one example of using curved switches on concentric circles. Note that on the outside circle, 5100 curves must be used in conjunction with 5200 curves to maintain parallel alignment of 77.4 mm (3-1/16"). In this design, the bow can be tied on the outside loop only by cutting track sections.

Figure 7 illustrates another way of using curved switch 5140.







Branches with switches 5200

To maintain parallel alignment with 5202 switch, use 5206 curve. Here, the distance between track centers is just 77.4 mm (3-1/16"), same as two larger circles shown in figure 1. A 5106 straight is also needed to maintain parallel alignment (Fig. 8).

Figure 9 illustrates two sidings leaving the mainline. Numbers indicate track sections required.

Figure 10 illustrates how to have multi-tracks in parallel using 5202 switch.

When there are 3 or more parallel tracks spaced 77.4 mm (3-1/16") apart, slip tracks can be installed by using 5202 and double slip switch 5207. If access and egress from middle track is not desired, then crossing 5215 can be used in place of 5207 (Fig. 11).

Figure 12 illustrates how to install a double slip track using 5202 switches.

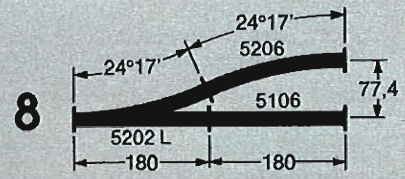
The three-way switch 5214, having the same radii as 5202, is a space saving way of installing yards, station access tracks etc. (Fig. 13).

Three-way switches can be connected in tandem (Fig. 14).

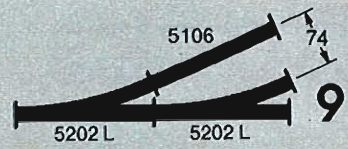
Figure 15 illustrates one method of constructing multi-track mainline using three-way switches.

Figure 16 is a summary of the various methods of using Märklin M-turnouts. One's imagination can suggest even more ways.

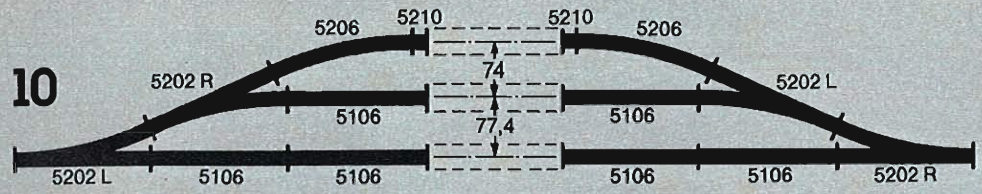
More about track planning on page 76



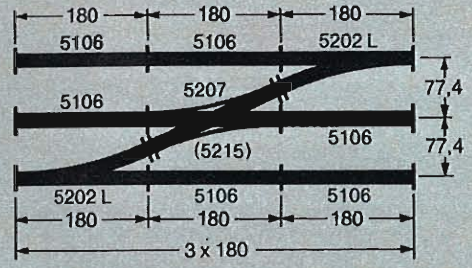
8



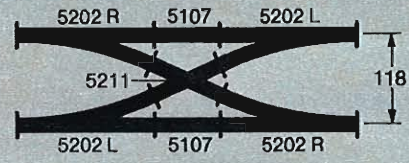
9



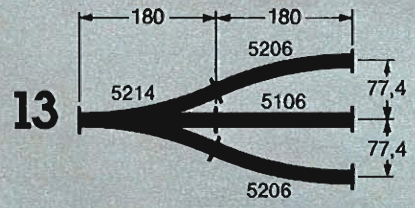
10



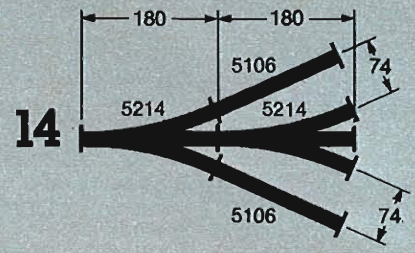
11



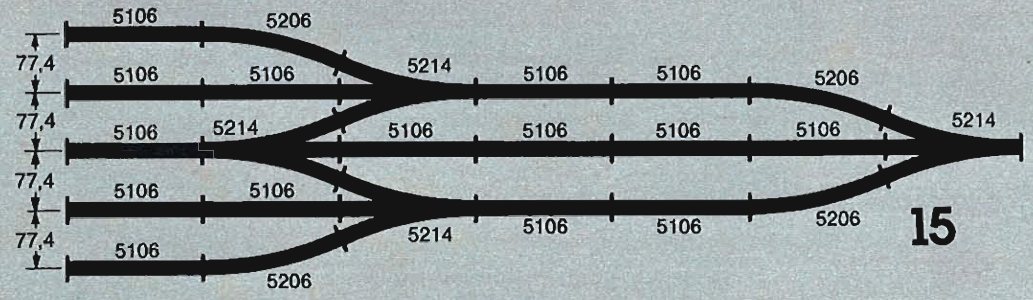
12



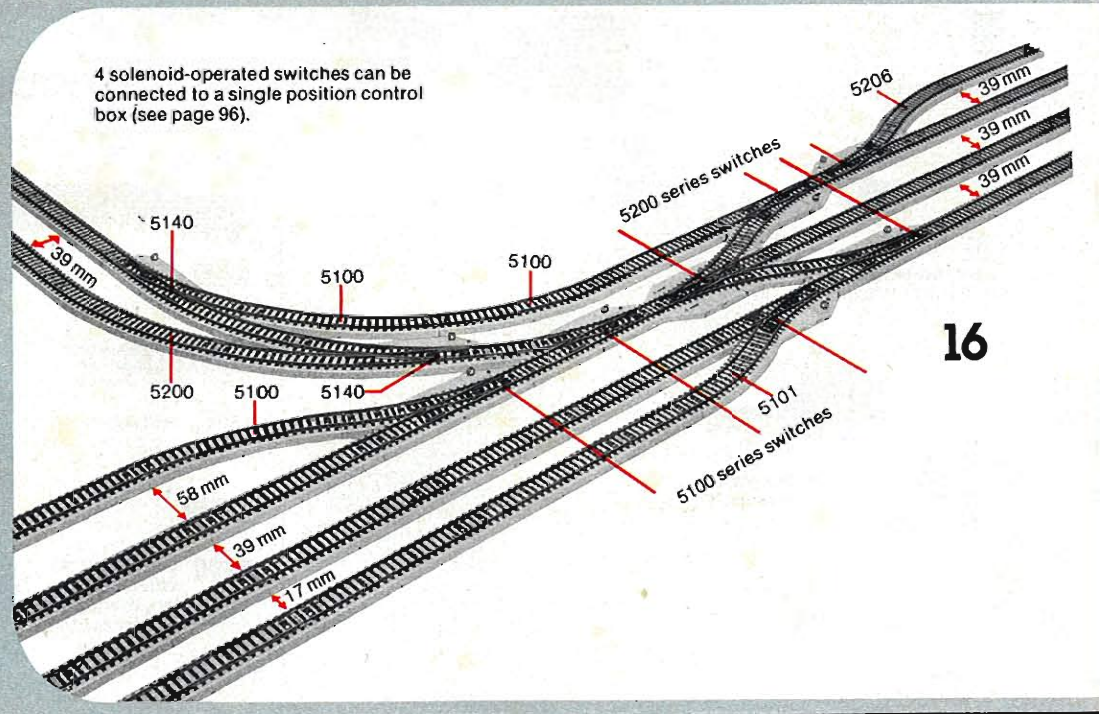
13



14



15



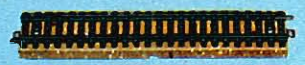
16

Märklin M-Tracks

The exciting feature about M-track is that the roadbed is part of the track section. Thus M-tracks are excellent for layouts which are changed frequently.

(M = metal body)

Straight tracks, 5100 series



5106 Regular section = 180 mm (7-½")

5107 Half section = 90 mm (3-9/16")

5129 **Adjustment section** · Length 70 mm (2-¾")

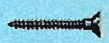
5108 Quarter section = 45 mm (1-¾")

5109 3/16 section = 33.5 mm (1-5/16")

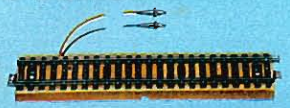
5110 ⅛ section = 22.5 mm (⅞")

7190
Bumper, riveted steel type · Clipped onto 70 mm (2-¾") track section

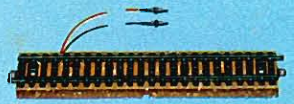
7191
Bumper, riveted steel type · Illuminated · clipped onto 70 mm (2-¾") track section
= 60000



7299
Wood screws · Ideal for securing M-tracks · Pack of 200



5111 **Feeder track** · Regular section = 180 mm (7-⅛") · Includes 2 leads



5131 **Feeder track** · Regular section = 180 mm (7-⅛") · Includes 2 leads · Has capacitor to suppress radio static · One 5131 required for each track circuit

5146 **Remote control track** · Half section = 90 mm (3-9/16")

5114 **Crossing** · Length 193 mm (7-⅝") = 30° · The third rails are isolated from each other

Curved tracks for standard circles, 5100 series

5100 Regular section = 30°

5101 Half section = 15°

5102 Quarter section = 7° 30'

5103 **Feeder track** · Regular section = 30° · Includes 2 leads

5147 **Remote control track** · Half section = 15°

Remote control tracks
The remote control tracks (5146, 5147, 5213) enable automatic control of solenoid-operated accessories. The trip is activated by current collectors on the individual vehicles, and various operations can be performed. Current for these activites is fed through 2 sockets isolated from each other electrically.

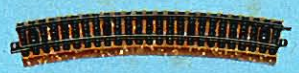
5120
Tight radius tracks for branchs and industrial spurs · Can be negotitated by short vehicles only
Curved track · Regular length = 45°

Curved tracks for larger circles, 5200 series

5200 Regular section = 30°

5201 Half section = 15°

5205 Length = 5° 43' · When used with 5206, length equals a 5200 regular section



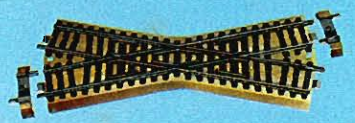
5206 Length = 24° 17' · Same radius as switches 5202 and 5221

5213 **Remote control track** curved · Half section = 15°

5208 **Adjustment section** straight · Length 8 mm (5/16")

5210 **Adjustment section** straight · Length 16 mm (⅝")

5211
48½° crossing · Length 98 mm (3-⅞") · Third rails isolated from each other electrically



5215
24° 17' crossing · Length 180 mm (7-⅛") · Includes 2 adjustment sections 5208 · Same overall length as 5207 · Third rails isolated from each other electrically

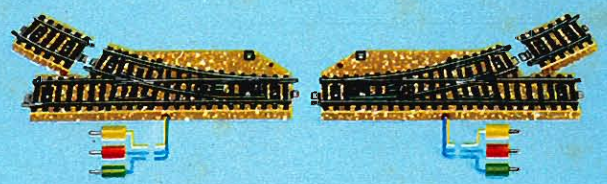
Märklin M-switches with sprung points, 5100/5200 series

with double solenoid operation for remote control

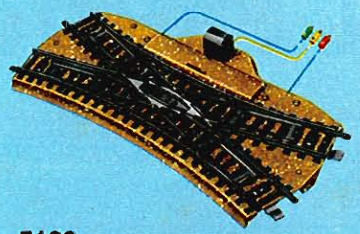
5202
Pair of solenoid-operated switches · One right and one left hand switch · Illuminated · Track lengths correspond to 5206 and 5106
= 60000

5221
Pair of manually operated switches · Track lengths correspond to 5202

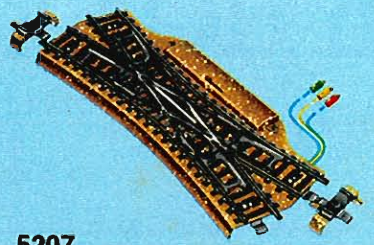
5140
Pair of solenoid-operated curved switches · One right and one left hand curved switch · Illuminated · Length and radii same as 5100 curve · Length of outside curve 265.4 mm (10-½")
= 60000



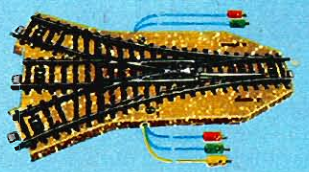
5137
Pair of solenoid-operated switches · One right and one left hand switch · Illuminated · Straight length 180 mm (7-⅛") · Radius of curve 360 mm (1' 2-¼") · To maintain a 5100 curvature, use section 5102 (included)
= 60000



5128
Double slip switch · Crossing angle 30° · Double-solenoid operation · Illuminated to indicate direction of points · Can be operated manually also · Tangent length is 193 mm (7-⅝") · Curvature same as 5100
= 60000



5207
Double slip switch · Ideal for maintaining parallel track spacing of 77.4 mm (3-1/16") · Double-solenoid operation · Can be manually operated also · Tangent length 180 mm (7-⅛") · Curvature same as 5202, 5221 and 5206 · 2 adjustment tracks 5208 included



5214
Three-way switch · Both curves symmetrical · Operated by 2 double-solenoids · Can be operated manually also · Tangent track measures 180 mm (7-⅛") · Curvature 437.4 mm (1' 5-⅛"), same as the 5200 circle · To maintain parallel spacing of 77.4 mm (3-1/16") use 5206 track section

5112
Uncoupling track · For releasing automatic couplings · When the button on the control box is pressed, the solenoid-operated ramps on either side of studs are raised, releasing the couplers · Includes 2 leads · Length of track 90 mm (3-½")

5113
Light pole · For use with uncoupler track · Die cast zinc · Illuminated during uncoupling · Height 85 mm (3-⅜")
= 60010

Märklin RELEX Couplers

The couplers are opened by raising the ramps.

A RELEX coupler is designed to remain "open" after uncoupling so the car can be spotted somewhere else without the couplers re-engaging.

RELEX couplers bring a layout to life. No longer is it required to keep everything within arm's reach. Just use the uncoupler tracks along with the 5113 light pole, strategically placing them throughout the layout. When the desired coupling is over the uncoupler track, just press the button on the control box. The coupler will "open" and the train can either proceed or push the uncoupled car to a desired location without fear of the couplers re-engaging.

2291 **Adapter track** · Regular section = 180 mm (7-⅛") · For connecting 5100 and 5200 tracks to 2200 series

7171
Sound absorbent strips · Pack of 50, includes 50 wood screws · These strips will absorb some of the natural sounds created when M-tracks are laid on a plywood base · These strips do not affect the mounting of a catenary system

7195
Number plate set · Ideal for use in identifying switches and signals on a layout · Includes 12 slotted bases and 24 number plates

Märklin HO SET Program

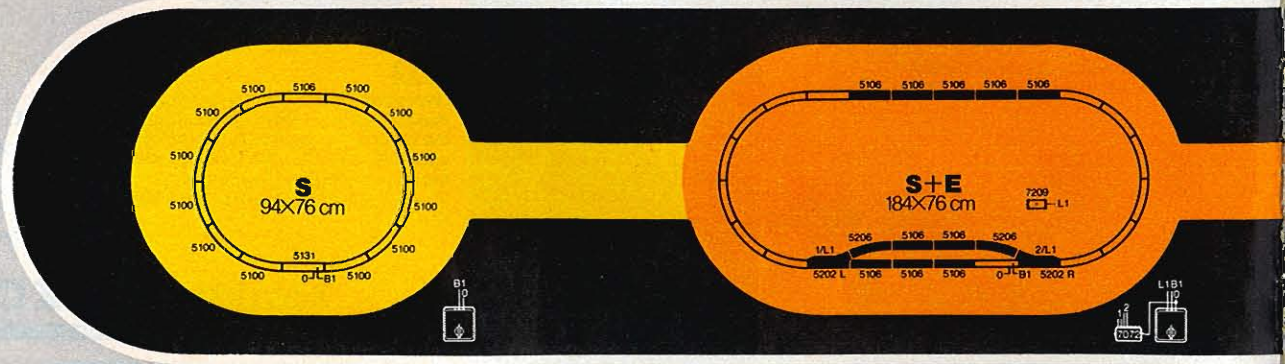
All Märklin HO basic sets (pages 10–13) can be extended into larger layouts. The SET gift program is a particularly easy method and quite logical.
The first step is to acquire extension set E 5190 (with manually operated switches) or E 5191 (with electrically operated switches). Additional extensions are possible by any combination of sets T1 5192, T2 5193 and T3 5194.

The track plans shown here, for example, show how sets 2920 and 2930 can be enlarged. The same principles apply to set 2950. Indeed, additional variety is possible by adding and can be extended with the SET program siding from 2950. The large gift pack 2875 already includes set "E" and many items from "T3".

5190
Extension set E · Includes 10 straights 5106, 2 curved tracks 5206, 1 pair of manually operated switches 5221 and instructions

5191
Extension set E · Includes 10 straights 5106, 1 pair solenoid-operated switches 5202, 2 curved tracks 5206, 1 position control box 7072, 1 distribution strip 7209, plus leads, sockets, plugs and instructions

Basic Sets
For the SET Program
Pages 10–13

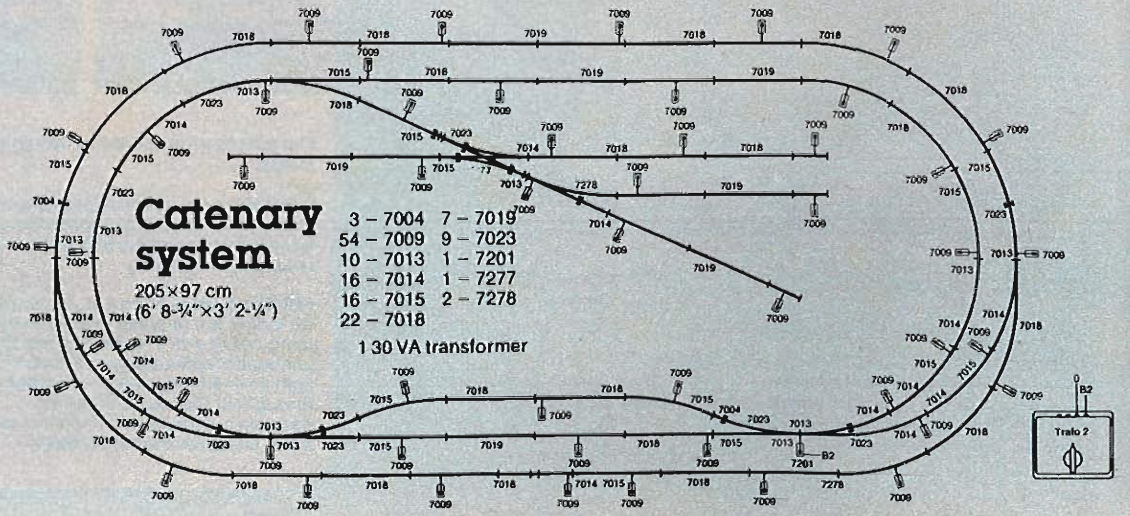


SET
for endless variety

Examples 2 and 3 show how SET can be used to make different layouts. **ANY** set is thus an excellent way to enhance and enlarge **any** layout.

For more enhancement, add catenary. Example 1 offers a suggested design.

1



5192

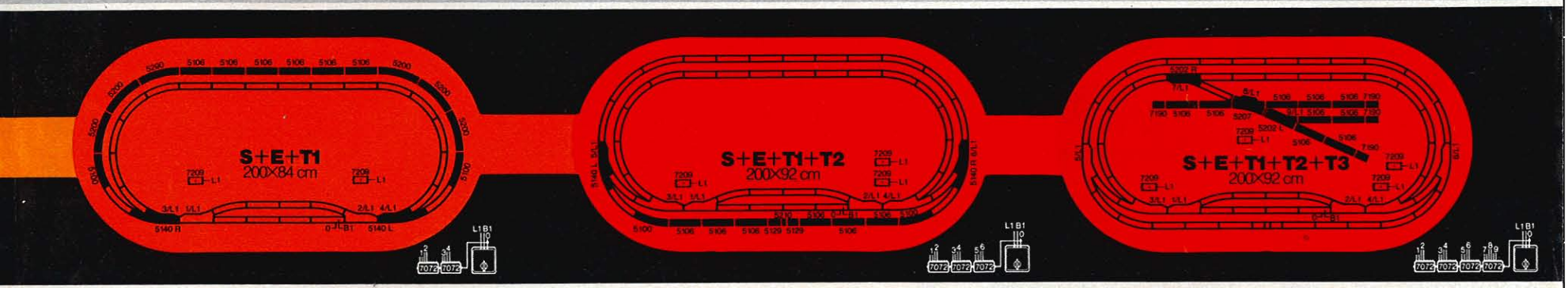
Double track set T1 · Includes 2 curved tracks 5100, 6 straights 5106, 1 pair of solenoid-operated curved switches 5140, 6 curved tracks 5200, 1 position control box 7072, 1 distribution strip 7209, plus leads, sockets, plugs and instructions

5193

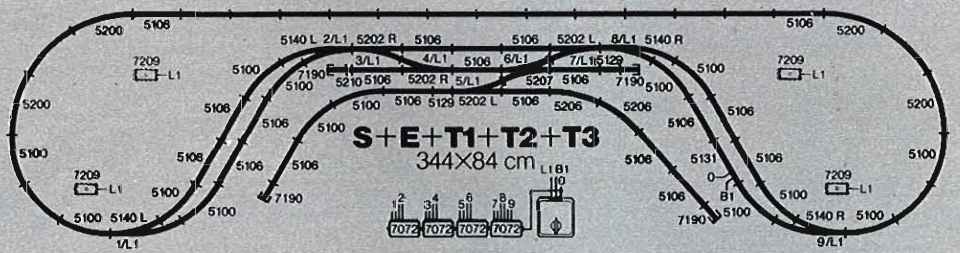
Station track set T2 · Includes 2 curved tracks 5100, 6 straights 5106, 2 straights 5129, 1 pair of solenoid-operated curved switches 5140, 1 straight 5210, 1 position control box 7072, 1 distribution strip 7209, plus leads, sockets, plugs and instructions

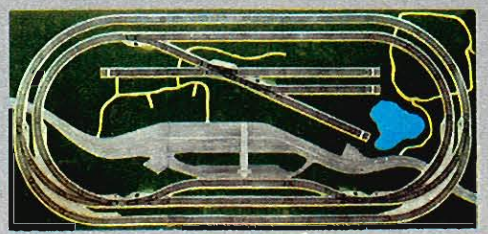
5194

Yard track set T3 · Includes 9 straights 5106, 1 pair of solenoid-operated switches 5202, 1 double slip switch 5207, 1 position control box 7072, 4 bumpers 7190, 1 distribution strip 7209, plus leads, sockets, plugs and instructions



2

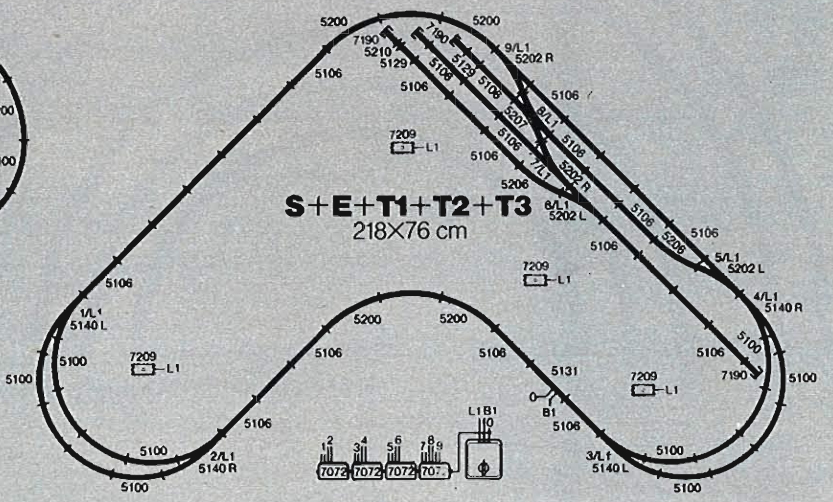




7298

Märklin-Toporama · Realistic landscape design · Ideal for use with SET extension program with basic sets 2920–2927 and 2930–2937 · Track layout to stage "T3" printed on · Tufted grass adds three-dimensional effect · Size 205×97 cm (6′ 8-¾″×3′ 2-¼″)

3



Tips on K Track Geometry

K track has realistic looking plastic ties

(K = Kunststoff, the German word for plastic)

K track is versatile and lends itself well in building layouts. There are 5 different radii of curves plus a flex track offering modelers the chance to add closely parallel tracks, gentle curves and long tangents to layouts.

Realistic looking K track enables modelers to have trackwork that looks real. Yet, K track is suprisingly easy to install and its geometry is simple.

K Track

Figure 1:
K track has a realistic prototypical appearance. As with M track, it also utilizes center stud contacts.

With K track, both running rails are laid on plastic ties.

K track is 30 mm (1-3/16") wide and 5.2 mm (13/64") high.

Parallel Tracks

Figure 2:
One of the highlights of K track geometry are the five different radii. A radius is measured from the mid-point of a circle to the track center, right to the center stud contacts (track center).

The distances between track centers is 64.6 mm (2-37/64") on each radius except between Standard Circle II and the Large Circle I (129.3 mm, 5-5/32").

To determine the loading gauge between the tracks, subtract 30 mm (1-3/16") since the tracks themselves are 30 mm (1-3/16") wide.

Part Number	Name	Diameter	Radius	Distance from track center	Number of track sections needed for complete circle
2210	Industrial Circle	590.8 mm 23-1/4"	295.4 mm 11-5/8"	64.6 mm 2-37/64"	8
2221	Standard Circle I	720 mm 2'4-1/4"	360 mm 1'2-1/8"	64.6 mm 2-37/64"	12
2231	Standard Circle II	849.2 mm 2'9-1/2"	424.6 mm 1'4-3/4"	129.3 mm 5-5/32"	12
2241	Large Circle I	1107.8 mm 3'7-1/2"	553.9 mm 1'9-3/4"	64.6 mm 2-37/64"	12
2251	Large Circle II	1237 mm 4'1/2"	618.5 mm 2'1/4"		12
The flex track 2205 can be bent to any of the above radii.					

The Industrial Circle and the two Large Circles only have full length track sections. However, the Märklin K track program does include smaller sections for the standard curves. These smaller sections are clearly differentiated by their part numbers:

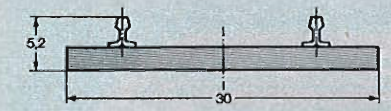
For Standard Circle I, smaller track sections have a **2** as the third digit in the part number (2221, 2223, 2224)

For Standard Circle II, smaller track sections have a **3** as the third digit in the part number (2231, 2232, 2234, 2235).

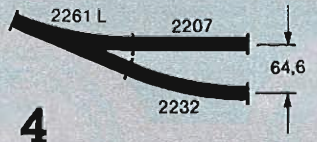
Double Slip Switch, Three-Way Switch, and Plain Switches

Figure 3:
The curve in the plain switches 2261 and 2264, the double slip switch 2260, and the three-way switch 2270 as well as the angle on the crossing 2259 are equal to that of the curved track section 2232. The tangents of these switches and crossings equal that of the straight track section 2206.

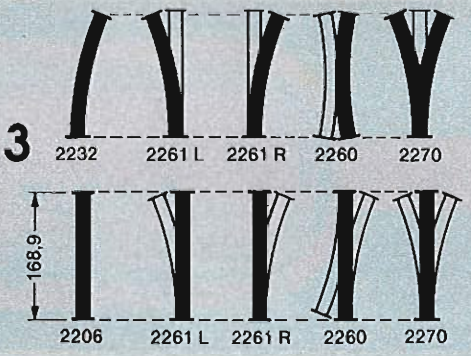
This is one of the special benefits of K track geometry: Switches and crossings can be easily interchanged without affecting the track length or the distances between tracks.



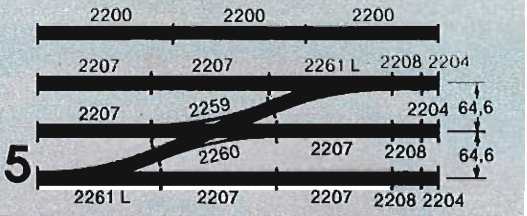
1



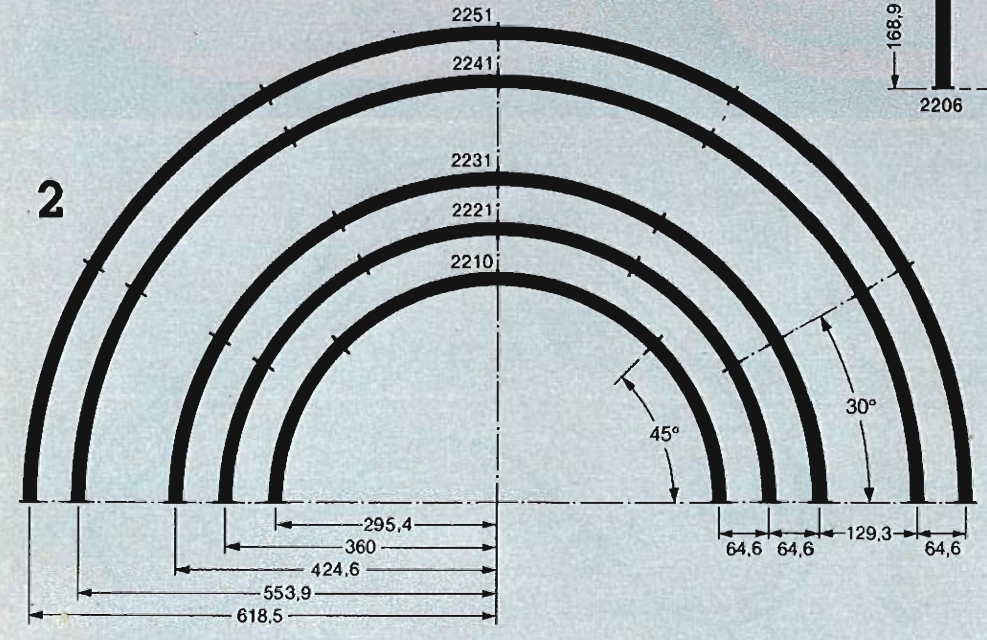
4



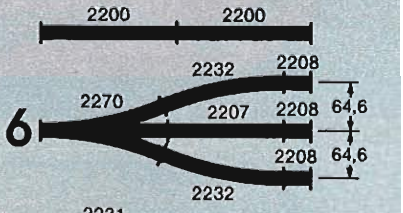
3



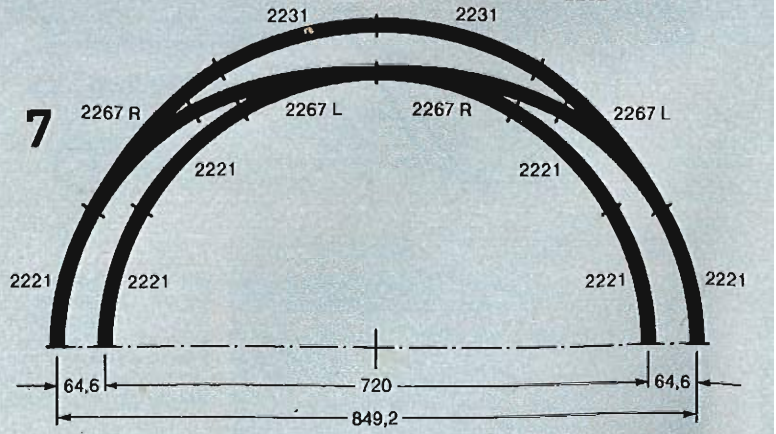
5



2



6



7

A New Generation of Switches

Switches offer Diversity

Figure 4:
In order to maintain the standard distance between tracks on curves of 64.6 mm (2-37/64") when using switch 2261, curved section 2232 and Make-up section 2207 are required. This way there are no kinks in the arc. In this example, the switch 2261 is shown at the end of the curve.

Figure 5:
To maintain the 64.6 mm (2-37/64") distance with three or more parallel tracks, the crossing 2259 or the double slip switch 2260 is required.

Also, adjustment sections 2208 and 2204 are required to extend this track diagram a full length of 3×2200 (540 mm, 1' 9-3/8").

Figure 6:
The three-way switch 2270 is actually a combination of two 2261 switches. Three-way switches save space and are especially useful in stations and yard areas.

Extending the curve on the switch with curved track 2232 maintains the track spacing of 64.6 mm (2-37/64"). To maintain equal spacing with all three tracks, the tangent of the switch must be extended with the adjustment track 2207.

Adjustment section 2208 extends this diagram for 2×2200.

Curved Switches

Figure 7:
Curved switches save space also since tracks can be connected on curves.

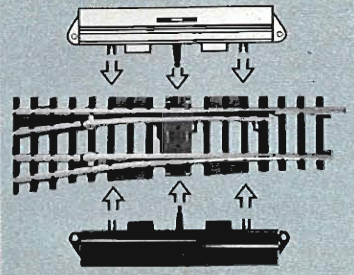
The inner curve on this switch is equal to the curved section 2221 used in the standard circle I.

To maintain the track distance of 64.6 mm (2-37/64") as well as a smooth curve on the outside curve (which is a standard circle II), a curved section 2221 from the standard circle I is required.

Additional Examples of How Switches Can Be Used appears on pages 86/87.

The sleek K switches

- Parallel tracks with center-to-center distance of 57 mm (2-1/4")
- Narrow switch angle, 14° 26'
- Radius of curve 902.4 mm (2' 11-5/8")
- Narrow angle curvature similar to prototype high speed switches
- Manual turnouts can be easily converted to solenoid operation by substituting an electromagnetic actuator for the hand lever



- Switch machine attaches left or right

2271 new

Pair of Manual Switches · Includes one right and one left hand turnout · Radius of curve 902.4 mm (2' 11-5/8") · Length of tangent 225 mm (9") · Switch angle 14° 26'

2209 new

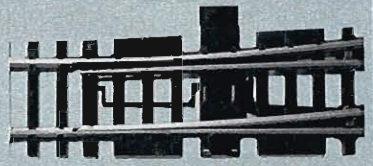
Straight Track Section · Length 217.9 mm (8-5/8") · Ideal for use with the 2271 switches when the switch is installed at an angle

2203 new

1/8th Straight Track Section · Length 30 mm (1-3/16") · Can be used to maintain track spacing on parallel lengths

- Current flows in direction of switch points
- Actuator can be mounted under the layout
- Actuator can be monitored

- Movable frogs, lines up with points

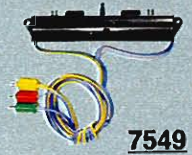


- Rail indented to accept points

The manual lever can be removed and replaced with the solenoid operated actuator 7549.

2274 new

Curved Track Section · Radius 902.4 mm (2' 11-5/8") · 14° 26' · Same curvature as with the 2271 switch



7549 new

Solenoid Operated Actuator · For use with the 2271 switches · Fits on either side of the switch · Can be placed under the layout (installation set required)

Geometry of High Speed Switches

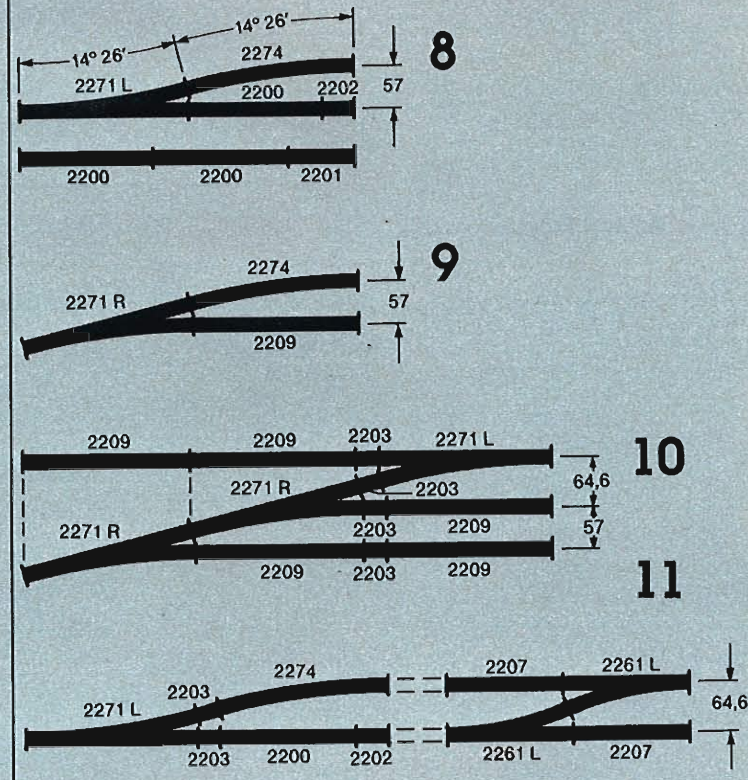
Figure 8:
To maintain parallel track spacing of 57 mm (2-1/4") when using the 2271 switch, curved track 2274 and straight tracks 2200 and 2202 are required. The total diagram measures 2-1/2 track lengths (450 mm, 1' 5-11/16").

Figure 9:
If the 2271 switch is on an angle, the length of the switch curve is kept in proportion by using the straight track 2209 (217.9 mm, 8-5/8").

Figure 10:
When the 2271 switch is used on parallel tracks having a 64.6 mm (2-37/64") spacing, the 1/8th straight track 2203 is needed to maintain proper spacing. In this diagram, 2271 R is on an angle and the 2209 straight track is used to maintain proportional length.

Figure 11:
An additional example showing how to maintain the 64.6 mm (2-37/64") spacing by using the 2203 straight track.

More about Track Planning Page 76



Märklin K-Track

with prototype profile

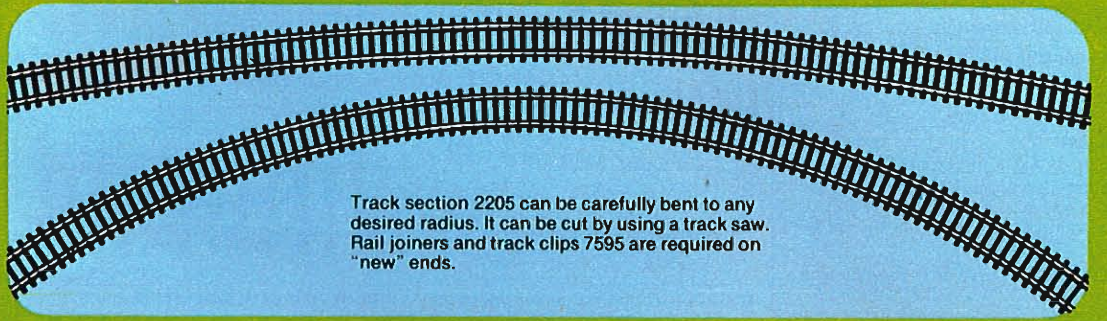
Straight tracks

2200 Regular section = 180 mm (7-⅛")

2201 Half section = 90 mm (3-⁹⁄₁₆")

2202
Quarter section = 45 mm (1-¾")

2204
⅛ section = 22.5 mm (⅞")



2205 **Flexible straight track** · Length of 5 regular sections = 900 mm (2' 11-½") · Stainless steel rails

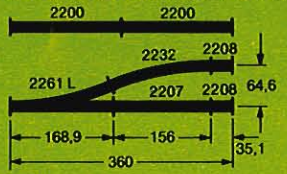
7595 **Rail joiners and track clips** · 10 of each · For 2205 track · Required to connect 2205 to other tracks if the flexible track has been shortened

Assorted straight tracks and crossings

2206 Length 168.9 mm (6-⅝")

2207 Length 156 mm (6-⅛")

2258 **Crossing** · 45° crossing · Tangent length 90 mm (3-⁹⁄₁₆")



2208
Length 35.1 mm (1-⅜")

2259 **Crossing** · 22° 30' crossing · Tangent length 168.9 mm (6-⅝")

2290 **Feeder track** · Regular section = 180 mm (7-⅛") · Includes terminals marked "O" and "B"

2292 **Feeder track** · Same as 2290 but includes suppressor for radio static · One 2292 should be used for each circuit

2291 **Adapter track** · Regular section = 180 mm (7-⅛") · For connecting 5100 and 5200 series to the 2200 series

2297 **Uncoupling track** · Half section = 90 mm (3-⁹⁄₁₆") · For releasing automatic couplers · Has solenoids to operate the uncoupler ramp · For use with control box 7072

2299 **Remote control track** · Half section = 90 mm (3-⁹⁄₁₆")

7391
Bumper, riveted steel type · To be clipped onto rails · Length 38 mm (1-½") · Round head wood screw included

7599
Wood screws · Pack of 200 · Recommended for securing K-tracks

Curved Tracks

Radius 295.4 mm (11-⅝")

Industrial curve

Tight radius track for branches and industrial spurs · Can be negotiated by short vehicles only

2210 Regular section = 45°

Radius 360 mm (1' 2-¼") · Standard circle I

2221 Regular section = 30°

2223 Half section = 15°

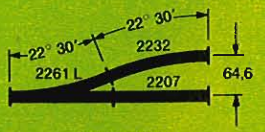
2224 Quarter section = 7° 30'

2229 **Remote control track** · Half section = 15° · Radius 360 mm (1' 2-⅛")

The remote control tracks (2229, 2239, 2299) enable automatic control of solenoid-operated accessories. The trip is activated by current collectors on the individual vehicles, and various operations can be performed. Current for these activities is fed through 2 sockets isolated from each other electrically.

Radius 424.6 mm (1' 4-¾") · Standard circle II

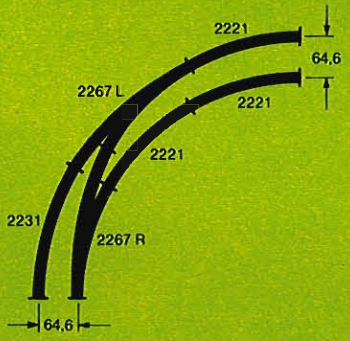
2231 Regular section = 30°



2232 ¾ section = 22° 30'

2233 Half section = 15°

2234 Quarter section = 7° 30'



2235 ⅛ section = 3° 45'

2239 **Remote control track** · Half section = 15° · Radius 424.6 mm (1' 4-¾")

Radius 553.9 mm (1' 9-¾") · Large circle I

2241 Regular section = 30°

Radius 618.5 mm (2' ¼") · Large circle II

2251 Regular section = 30°

Märklin K switches 2200 with sprung points

2261

Pair of solenoid-operated switches · One right and one left hand switch · Illuminated · Radius of curve 424.6 mm (1' 4-¾") · Length of straight track 168.9 mm (6-⅝")

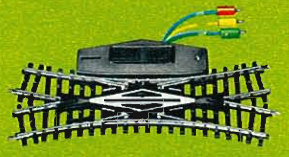
= 60000

2264

Pair of manually operated switches · One right and one left hand switch · Radius of curve 424.6 mm (1' 4-¾") · Length of straight track 168.9 mm (6-⅝")

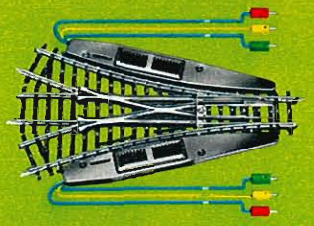
2267

Pair of solenoid-operated curved switches · One right and one left hand switch · Length and curvature of inside curve same as 2221 · Length of outside curve 244.6 mm (9-⅝")



2260

Double slip switch · Radius 424.6 mm (1' 4-¾") · Operated by electrically by remote control · Can be operated manually also · Tangent length 168.9 mm (6-⅝")



2270

Three-way switch · Operated by 2 double solenoids · Can be operated manually · Both curves symmetrical for multi-track parallel alignment · Tangent 168.9 mm (6-⅝") · Curvature 424.6 mm (1' 4-¾")

7500

Ground connector with terminal, for use with ground leads on 2200 series tracks

7504

Third rail connector with terminal · To be connected with center rail (studs) where 2200 track sections join

7522

Third rail isolator · For isolating track circuits where 2200 track sections join


BOSCH

Multi-train operation

Wide variety of model railroad operation provided by 1+2+3

Running several trains at once on a model railroad captures the throbbing spirit of real railroads. The Märklin HO system, with its wide variety of switches, signals, and accessories offers countless opportunities to depict real life situations. Even automatic block controls can be installed. Of course, additional circuitry is required, but even that is designed to imitate the real thing.

1.

Multi-train operation with signals

Signals are essential for the safe operation of railroads whenever there is more than one train. If one train gets too close to another, a "Halt" signal will stop it while the other train continues to gain distance. Signals prevent collision and assure the efficient operation on model railroads.

Signals can be controlled in two ways:

1. With position control-box 7072 (page 96)
2. By locomotives tripping a remote control track (page 80 for M-track and page 86 for K-track)

Märklin signal manuals 0342 and 0361 (page 91) describe these methods of operation.

2.

Multi-train operation using separate electric circuits

An easy way to run more than one train on a layout is to have each locomotive controlled by a separate transformer. There are various ways of establishing separate circuits, whether a simple siding or a major section of the layout. Each layout section conected to a specific transformer, must be isolated electrically.

For more details, see page 92.

3.

Multi-train operation with catenary system

With the increasing number of prototype lines being electrified, modelers may consider using an overhead system for multi-train operation. With a fully functional Märklin overhead system, it is possible to control two trains independently on a single track. Track signals can also be installed. Märklin has developed overhead line signal connectors for this purpose. Further, the catenary system itself can be divided into separate electrical circuits.

For more details on the catenary system, see page 94.

1.

Multi-train operation with signals

Signals

Home and distant signals are used for train control – in real life as well as on Märklin HO.
Distant signals do not control trains directly, they only advise what the home signal is saying. Distant signals add authentic realism to model layouts.
Home signals are used to control trains and installation instructions are included with each signal. Additional information appears in the Signal Manuals 0342 and 0361.

Signals for M-tracks

1

7339 · Color light home signal · For use with position control box 7072 · When red, there is no current in block controlled by signal · Includes track section with gap in center rail 90 mm (3-½") long · W 55 mm (2-³⁄₁₆") · L 90 mm (3-½") · H 90 mm (3-½")

= 60001 red = 60002 green

2

7187 · Color light distant signal · Colors change from green/green to amber/amber · W 16 mm (⅝") · L 11 mm (⁷⁄₁₆") · H 60 mm (2-³⁄₈")

= 60202 green = 60204 orange

3

7188 · Color light home signal · Red and green lights · Double solenoid · Includes hand lever · Pair of sockets for connection to a distant signal 7187 · With base plate · W 28 mm (1-⅛") · L 70 mm (2-¾") · H 90 mm (3-½")

= 60001 red = 60002 green

4

7036 · Distant signal with movable disc · Lights change from amber/amber to green/green · Double solenoid · With base plate · W 28 mm (1-⅛") · L 65 mm (2-⁹⁄₁₆") · H 73 mm (2-⅞")

= 60000

5

7039 · Home signal with one semaphore arm · Lights change from red to green · Double solenoid · With base plate · W 27 mm (1-¹⁄₁₆") · L 70 mm (2-¾") · H 125 mm (5")

= 60000

6

7040 · Home signal with two coupled semaphore arms · Lights change from red to green/amber · Double solenoid · With base plate · W 27 mm (1-¹⁄₁₆") · L 70 mm (2-¾") · H 125 mm (5")

= 60000

7

7038 · Distant signal with movable disc and movable semaphore arm · Light sequence same as 7036 or from amber/amber to amber/amber/green · 2 double solenoids · With base plate · W 28 mm (1-⅛") · L 65 mm (2-⁹⁄₁₆") · H 73 mm (2-⅞")

= 60000

8

7041 · Home signal with 2 independent semaphore arms · Lights change from red to green or red to green/amber · 3 double solenoids · With base plate · W 27 mm (1-¹⁄₁₆") · L 97 mm (3-¹³⁄₁₆") · H 125 mm (5")

= 60000

9

7042 · Track closure signal · Mast with movable front and rear discs · Double solenoid · With base plate · W 28 mm (1-⅛") · L 70 mm (2-¾") · H 70 mm (2-¾")

= 60000

Signals for K and M tracks

The color light home signals and track closure signals of the 7200 series have trips which enable them to control track current in the catenary as well as the center "rail". **The signal masts, and the lighting unit of track closure signal 7242 can be set up independent of track current switch.** Bracket 7320 is required to secure the masts.

Center "rail" isolators, connectors and instructions are included with signals 7239, 7240, 7241 and 7242.

10

7236 · Color light distant signal · Lights change from amber/amber to green/green · Includes bracket 7230 and base plate · W 16 mm (⅝") · L 28 mm (1-⅛") · H 67 mm (2-⅝")

= 60202 green = 60204 orange

11

7239 · Color light home signal · Lights change from red to green and track current is controlled by double solenoid · Includes hand lever · With base plate · W 30 mm (1-³⁄₁₆") · L 70 mm (2-¾") · H 90 mm (3-½")

= 60201 red = 60202 green

12

7237 · Color light distant signal · Lights change from amber/amber to amber/green · Includes bracket 7230 and base plate · W 16 mm (⅝") · L 28 mm (1-⅛") · H 67 mm (2-⅝")

= 60202 green = 60204 orange

13

7240 · Color light home signal · Lights change from red to green/amber and track current controlled by double solenoid · Includes hand lever · With base plate · W 30 mm (1-³⁄₁₆") · L 70 mm (2-¾") · H 90 mm (3-½")

= 60201 red = 60202 green
= 60204 orange

14

7238 · Color light distant signal · Lights change from amber/amber to green/green or amber/green · Double solenoid operation for the amber/green setting · With base plate · W 30 mm (1-³⁄₁₆") · L 70 mm (2-¾") · H 67 mm (3-½")

= 60202 green = 60204 orange

15

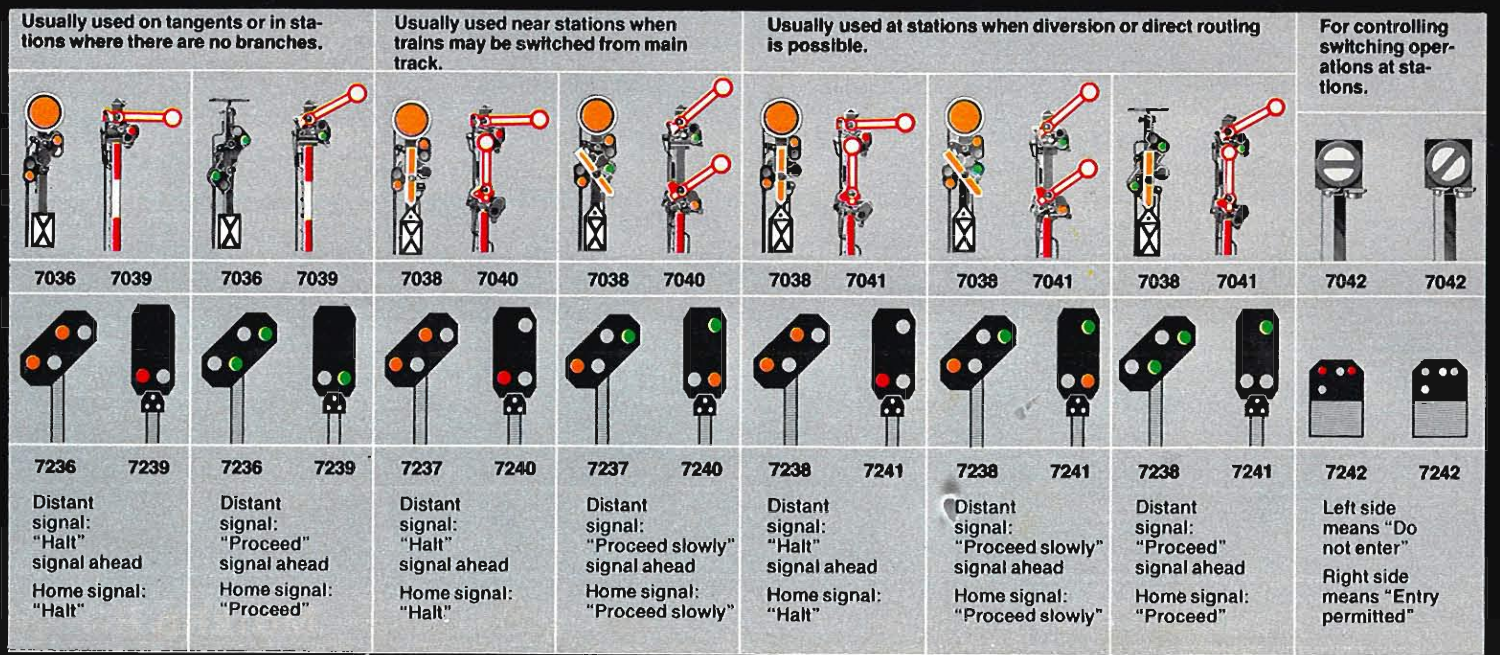
7241 · Color light home signal · Changes from red to green or green/amber and track current is controlled by double solenoid with an additional solenoid for the green/amber setting · With base plate · 2 additional hand levers · W 30 mm (1-³⁄₁₆") · L 95 mm (3-¾") · H 90 mm (3-½")

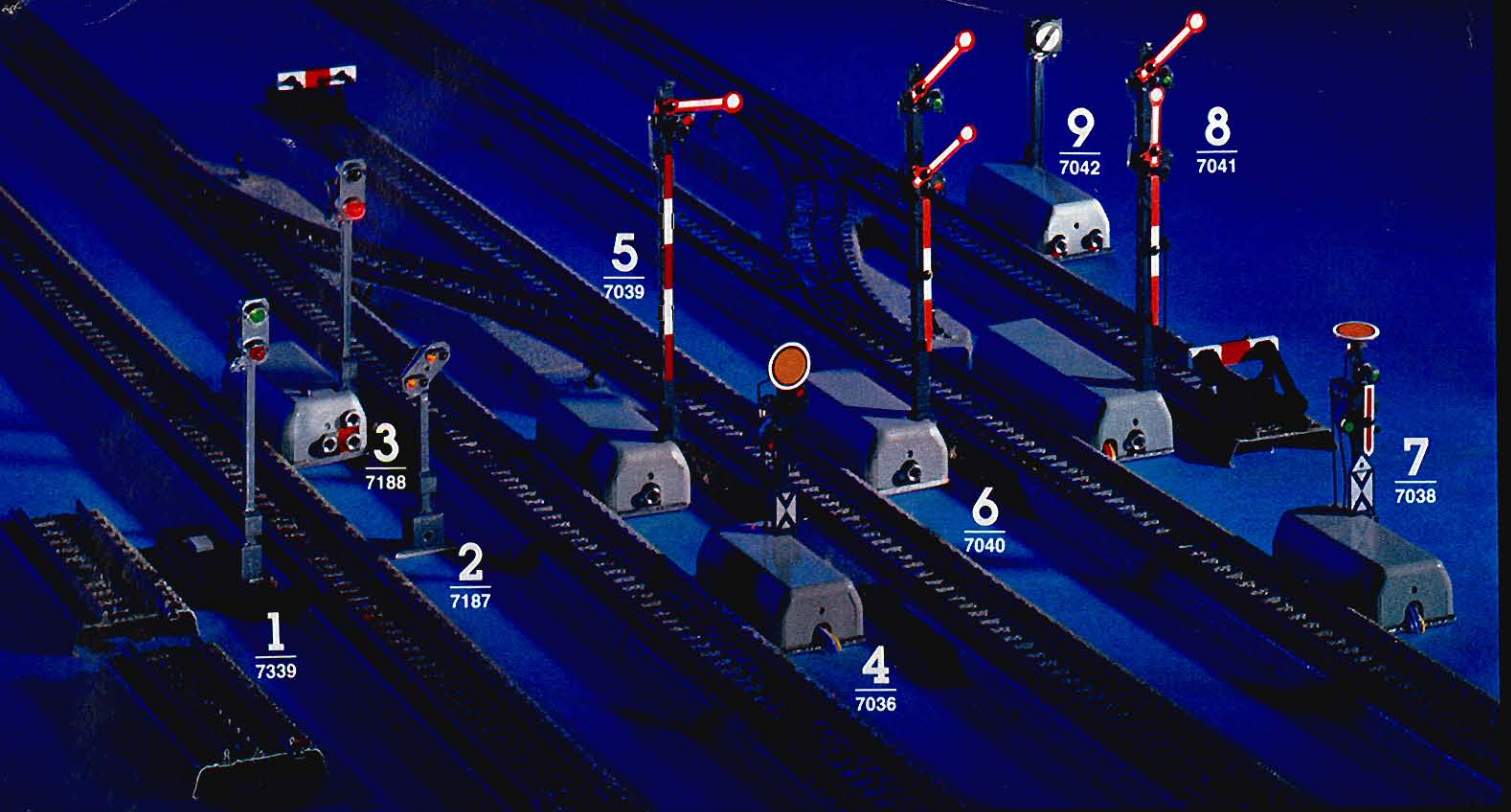
= 60201 red = 60202 green
= 60204 orange

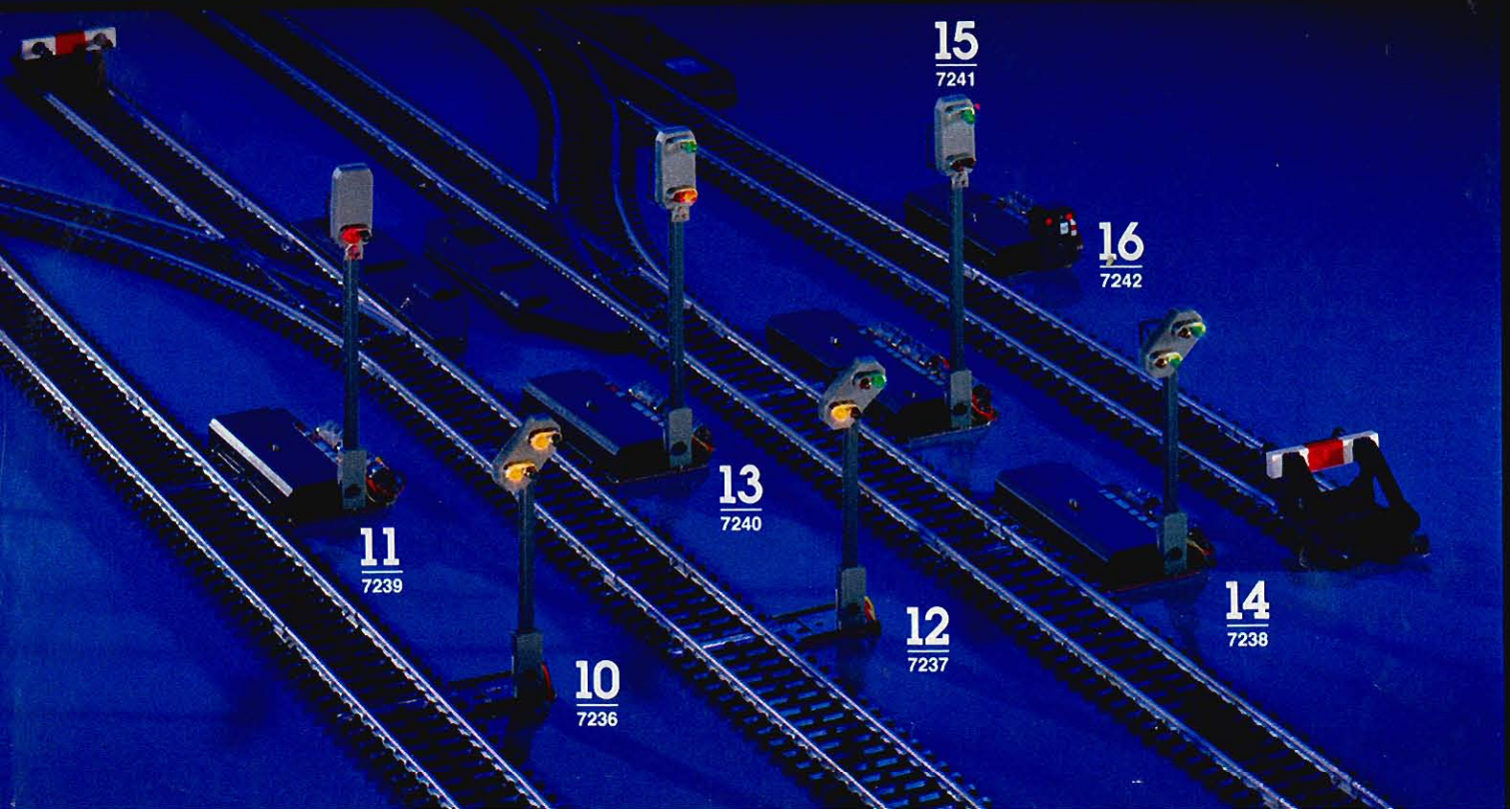
16

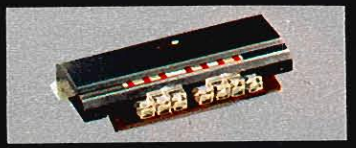
7242 · Track closure signal · Changes from red/red to white/white and track current is controlled by double solenoid · Includes hand lever · W 30 mm (1-³⁄₁₆") · L 70 mm (2-¾") · H 18 mm (¹¹⁄₁₆")

= 60200









7245

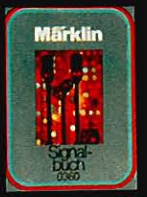
Universal remote control switch with 2 single pole switches and one changeover switch for various circuits · It can operate 3 accessories simultaneously · Lots of possible applications are shown in Signal Manuals 0342 and 0361 · Double solenoid operation · Can be operated by remote control track, position control box or manually · W 30 mm (1-3/16") · L 70 mm (2-3/4") · H 8 mm (5/16")

7230

Bracket · For securing masts of color light signals 7238, 7239, 7240, 7241 and the track closure signal 7242 when they are set up independent of track current

0342 M

Marklin Signal Manual for 7000 and 7100 signals · Offers detailed instructions, with full color illustrations, on the installation and uses of the 7000 and 7100 signals as well as the universal remote control switch with M tracks · 28 pages · Size 18 × 25 cm (7-1/8" × 9-7/8") · English text



0361 K

Märklin Signal Manual for the 7200 signals · Offers detailed instructions, with full-color illustrations, on the installation and uses of the 7200 signals and remote control switch with K tracks · 48 pages · Size 18 × 25 cm (7-1/8" × 9-7/8") · English text

2.

Electrical Circuits

Multi-train Operation Using Separate Electrical Circuits

Every additional electrical circuit increases the number of ways trains can be controlled and operated.

Electrical circuits do not have to be circular. Sidings, branches, and marshalling yards can each have their own circuits.

An additional circuit can be used for grades. A transformer used for this purpose can regulate the speeds on the grade so trains do not lose momentum in climbing nor descend too fast. All this can be done automatically.

Circuit separation is simple: All that's required is the "third-rail" isolator 5022 (page 96) or 7522 (page 87) a transformer (page 97) for each circuit plus feeder tracks (page 80 for M-track, and page 86 for K-track).

This example shows how train operation can become more varied and realistic:

One Circuit

Two trains are powered by the same track current. They both run faster, slower or change direction at the same time, by use of the single transformer. Adding signals, one train can be halted while the other continues its run. Trains "in the hole" (i.e.: halted by a red signal) can not have their direction changed.

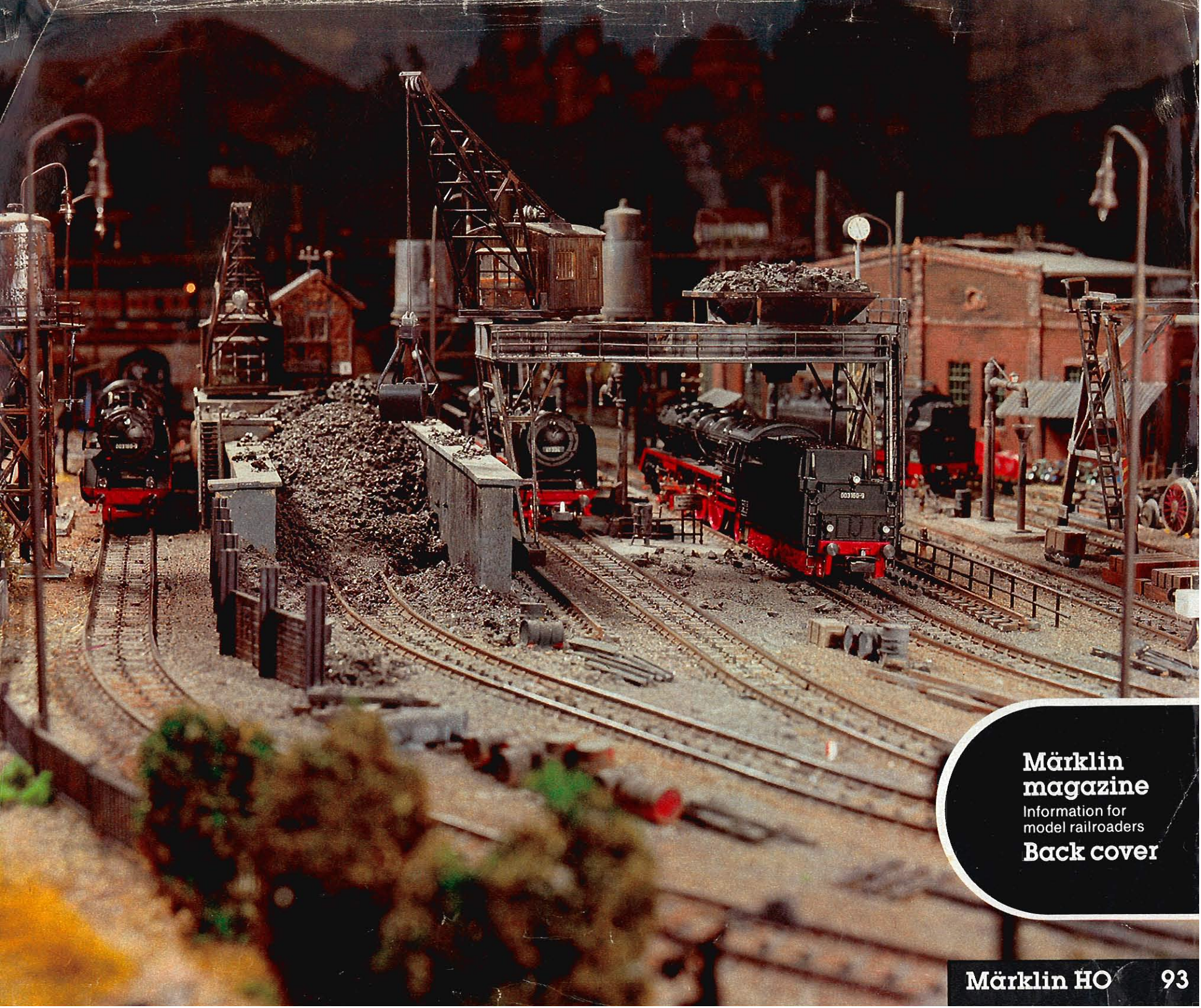
Two Circuits

When the tracks of the engine service facility are on a separate circuit, locomotives can be shuttled and serviced at proper (i.e. slower) rates of speed without affecting operation of the mainline.

Three Circuits

When the outer parallel track is connected to a third circuit, railroad operation becomes even more realistic.

Note the railbus operating at low speed on the inside track, while on the outer track an express train blurs by at high speed.



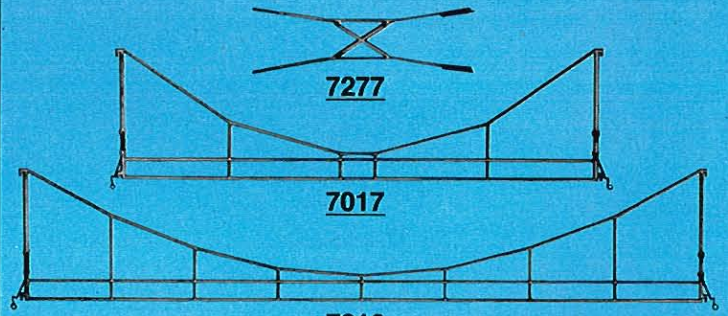
Märklin magazine
Information for model railroaders
Back cover

3. Catenary system

Multi-train operation with catenary system

Märklin overhead for K and M tracks

Locomotives equipped with pantographs can pick up current as reliably from overhead as from the studs. To select either system, just adjust the lever within the engine. If the catenary is connected to a different transformer, it is possible to operate two trains independent of each other on the same track.
The catenary systems shown here are suitable for both K tracks and M tracks. The entire system is based on actual prototype practice. The sprung contact line supports at the masts ensure a reliable flow of current.
Practical snap-on connections, for example, of contact wires 7013 and 7023, enable the contact lines to be set to any length.
Contact sections are flexible and bend to any curve. This can easily be done by hand. The longest contact wire 7019 is ideal for long straight tracks. Any width can be spanned by using tower mast 7021 and cross-spans 7016.
Each cross-span and two tower masts can cover four tracks. For every additional 4 tracks, another cross-span and tower mast is needed. A fifth track can have overhead suspended by cantilever support arm 7525.



7277

7017

7016

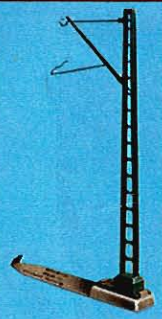
7019

7018

7278

7013

Overhead for M track 5100/5200



7009
Catenary mast · Basic element · Height 100 mm (4″)

7010
Feeder mast · For supplying current, includes 2 leads, and instructions · Height 100 mm (4″)

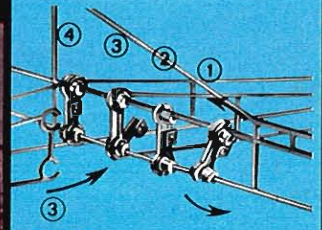
7012
Feeder mast for signals, with one lead · Height 100 mm (4″)

7201
Feeder mast for current supply, includes red and brown lead · Additional brown lead · Built in capacitor to control radio static · 1 mast required for each circuit · Instructions included · Height 100 mm (4″)

7005
Catenary set for train control with 7000 series signals which are not mounted on tower masts · Includes 2 feeder masts 7012, 2 insulator sections 7022 and 2 overhead line sections 7014

7003
Catenary system connector lead for connection to signals when tower masts are used, and for supplying current to any point · Length 600 mm (1′ 11-⅝″)

7004
Fastening kit · Includes 5 bolts, 5 nuts, and 5 washers · Ideal for use when usual methods of assembly are not possible



7006
Contact wire insulation · For insulating sections of contact line from cross-spans · One required for each track and cross-span · 15×6 mm (⅝×¼″)

7014
Contact line section · Female portion for snap-on connection · Length 115 mm (4-½″)

7015
Contact line section · Male portion for snap-on connection · Length 115 mm (4-½″)

7022
Insulator section · Male portion (for snap-on connection) for interrupting overhead current flow · Length 115 mm (4-½″)

7023
Adjustment section for snap-on connections · Length 100 mm (4″)

All contact line sections are nickel plated.

7277
Crossing sections · For 2258, 2259, 2260, 5114, 5128, 5207, 5211 and 5215

7017
Cross-span · Spans 3 tracks · To be hooked to tower masts · Length 280 mm (11″)

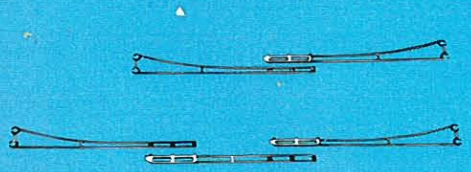
7016
Cross-span · Spans 4 tracks · To be hooked to tower masts · Length 390 mm (1′ 3-⅜″)

7019
Contact line section for straight tracks only · Length 360 mm (1′ 2-¼″)

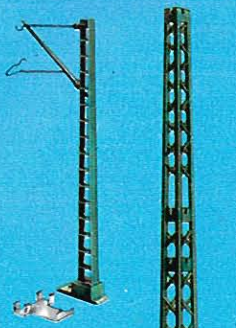
7018
Contact line section for straight and curved tracks · Length 270 mm (10-⅝″)

7278
Contact line section for use on inside track of 2200 series double curve · Length 235 mm (9-¼″)

7013
Contact line section for snap-on connections, especially at switches · Length 240 mm (9-½″)

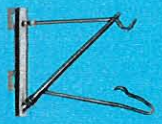


Using contact line sections 7014, 7015 and 7023 it is possible to make any length from 177 to 360 mm (7″–1′2-¼″). The snap-on connections can be reinforced with fastening kit 7004.



7511
Bridge mast · For attaching to sides of plastic bridges and ramps · Height 97 mm (3-⅞″)

7021
Tower mast with recesses for hooking on cross-spans 7016 and 7017 and the cantilever support arm 7525 · For tower mast with arc light see page 103 · Height with M-tracks 157 mm (6-³⁄₁₆″) · Height with K-tracks 154 mm (6-¹⁄₁₆″)



7525
Cantilever support arm for use with tower mast 7021 · Can hold one or two overhead lines

Catenary for K-tracks 2200

7509
Catenary mast · Basic element for construction of an overhead on the 2200 tracks · Height 97 mm (3-⅞″)

7510
Feeder mast with red lead and plug attached to the mast · Brown lead with plug unattached · Includes instructions · Height 97 mm (3-⅞″)

7512
Feeder mast with red lead attached, for connecting overhead to home signals · Height 97 mm (3-⅞″)

7501
Feeder mast with red and brown leads attached · Includes capacitor to suppress radio static · One mast required for each circuit · Instructions included · Height 97 mm (3-⅞″)

7505
Catenary set for train control on 7200 signals not mounted to tower masts · Includes 2 feeder masts 7512, 2 insulator sections 7022 and 2 contact line sections 7014 · For use with 2200 track sections

Simple Electrical Engineering

Märklin HO electrical engineering is based on simple rules. Variable track voltage for locomotives and constant power for accessories are provided by transformers 6631 and 6671 which are included with basic sets. Color leads identify which wire is connected to which accessory.

Solenoid-operated items such as switches or signals are normally controlled by switching on the current return path. The position control box 7072 determines the position of the solenoid armature and, hence, the position of the switch, etc.

Wires (leads)

Copper wires consist of 24 separate strands 0.10 mm (0.004") in diameter each, for an overall circumference of 0.19 mm² (0.03 sq in). Can withstand short circuits.

7100 **Wire** · Single core · Gray · 10 m (33')

7101 **Wire** · Single core · Blue · 10 m (33')

7102 **Wire** · Single core · Brown · 10 m (33')

7103 **Wire** · Single core · Yellow · 10 m (33')

7105 **Wire** · Single core · Red · 10 m (33')

Standard colors of electrical leads in Märklin circuits:

Red = Track current connection (from transformer to track center "rail" or overhead line)

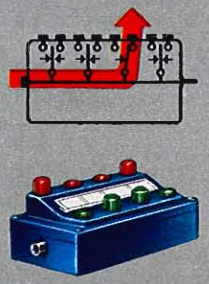
Yellow = Lighting and solenoid-operated items

Brown = Ground lead from track (running rails) or position control box to transformer

Blue = Return lead for solenoid-operated items to position control box or remote control track (with green, red and orange plugs)

Accessories for remote control

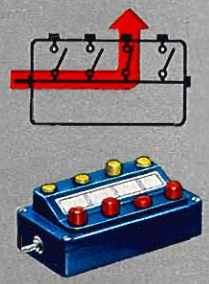
Schematic of 7072 (with line 3 closed)



7072

Position control box with 8 sockets for connecting 4 double solenoid operated items · Position of buttons correspond to position of signals, switches, etc. · Length 80 mm (3-⅛") · Width 40 mm (1-⁹⁄₁₆")

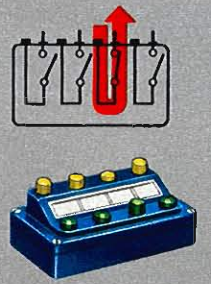
Schematic for 7210 (with line 3 closed)



7210

Control box for distributing track or accessory current on 4 different circuits by means of indicating buttons · Can be used for isolating as many as 4 sidings which are connected to a single track current · Length 80 mm (3-⅛") · Width 40 mm (1-⁹⁄₁₆")

Schematic of 7211 (with line 3 closed)



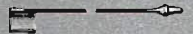
7211

Control box for controlling 4 different track or light circuits by means of indicating buttons · Can be used to isolate up to 4 sidings which are connected to a single track current · Length 80 mm (3-⅛") · Width 40 mm (1-⁹⁄₁₆")

Sockets

7111 = brown
7112 = yellow
7113 = green
7114 = orange
7115 = red
7117 = gray

Plugs with side sockets



7131 = brown
7132 = yellow
7133 = green
7134 = orange
7135 = red
7137 = gray

5022

Center "rail" isolators · Strip of 5

7000

Staples · Bag of 50 · For securing wires to wooden bases

7209

Distribution strips · With 11 single sockets · Size 50×20 mm (2-¾")

Märklin heavy-duty transformers

Every Märklin transformer is completely safe; its insulation has been tested to several thousand volts. In addition, a built-in circuit breaker protects the transformer from overloads and shorts. All transformers include wire for plugging into conventional household outlets.

Locomotive speed is proportional to the track voltage, i.e.: the further to the right the knob is turned, the faster the train goes. To reverse an engine, just turn the control knob to the left of zero and release. A short spurt of 24 V will trip the reversing mechanism.

We guarantee trouble-free operation of Märklin railroads only when genuine Märklin transformers are used.

Märklin 16 VA and 30 VA transformers have outlets for supplying current to tracks, lights, and solenoid-operated items.

The transformers in the gift packs (pages 10–13) have the same features as those described here, the only difference is less power output.

Transformers must be protected from dampness and are not designed for outdoor operation.

For connection with household AC current only

Power consumption by locomotives and lights

A rule of thumb:
Add up VA of engines, subtract from transformer total; the remainder can be used for lights. For example: switcher 3000 and express steamer 3085 each require about 9 VA and express diesel 3021 about 12 VA. Any margin of power left after totalling up these VAs can be used for lighting, allowing 1 VA for each bulb. Further details and more examples are in booklet 0380 "Märklin HO Railroads and Their Originals".

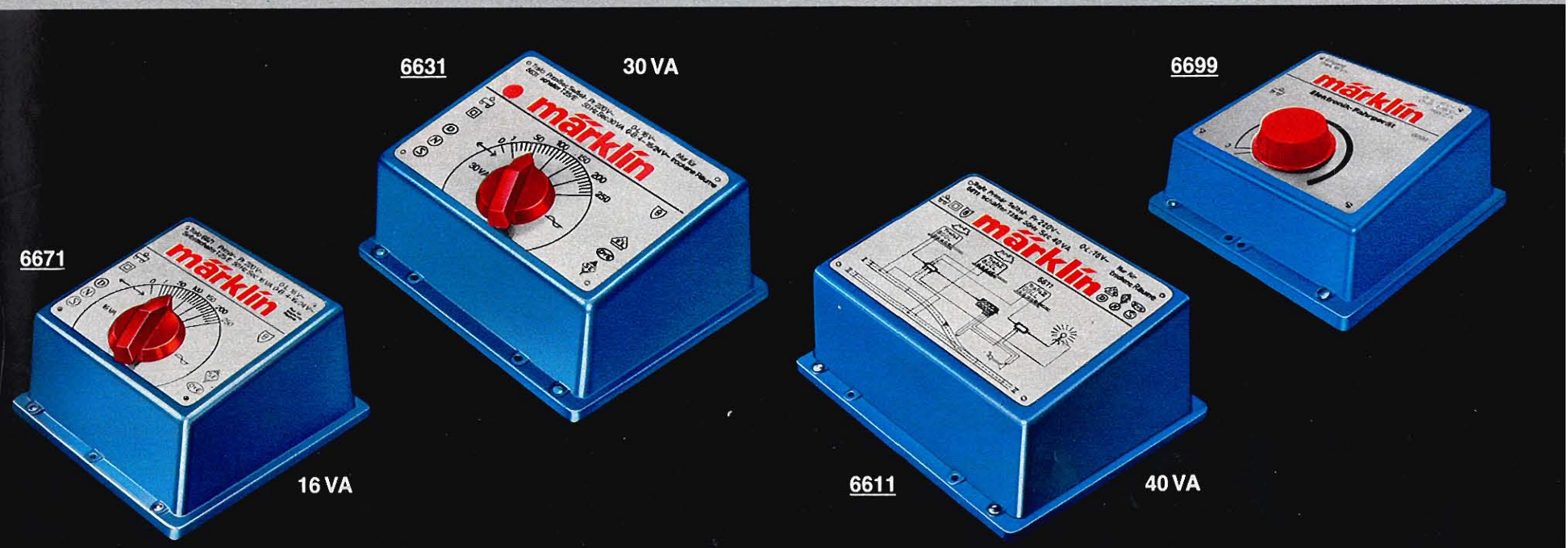
6671 220 Volt
6660 100 Volt Japan
6667 110 Volt (60 Hz) USA
6669 240 Volt
Transformer · Output 16 VA · Track current adjustable between 4 and 16 V · Lighting voltage 16 V · Plastic housing · Weight 1.2 kg (2½ lb) · Dimensions 125×135×75 mm (5″×5-⅜″×3″)

6631 220 Volt
6620 100 Volt Japan
6627 110 Volt (60 Hz) USA
6629 240 Volt
Transformer · Output 30 VA · Track current adjustable between 4 and 16 V · Lighting voltage 16 V · Plastic housing · Red pilot light · Weight 2.1 kg (4¾ lb) · Dimensions 158×135×75 mm (6-¼″×5-⅜″×3″)
= 60015

6611 220 Volt
Transformer for lights and solenoid-operated items · Output 40 VA · Output voltage approximately 16 V AC · Plastic housing · Weight 2.0 kg (4½ lb) · Dimensions 158×135×75 mm (6-¼″×5-⅜″×3″)

6699
Electronic power pack for prototype operation · For use with Märklin lighting transformer 6611 or can be connected to the lighting sockets of a 30 VA Märklin transformer · Lighting voltage 16 V · Electronic control of engine speed and direction · Maximum permitted load 1.8 amperes · Plastic housing · Weight 315 grams (11 oz) · Dimensions 125×135×55 mm (5″×5-⅜″×2-⅛″) · Use Märklin leads and plugs to extend connector leads if required

Ideal for HO gauge:
Locomotives can now operate prototypically, i.e.: gradual starts, gentle braking and occasional slow running.



Accessories

Locomotive maintainance facilities are some of the most interesting aspects of railroad operation, whether prototype or model. The layout and functions of a maintainance depot depend on the type of locomotives being served.

(Note: the letters BW, often seen in German railroad publications is the German abbreviation for their term for locomotive maintainance facilities, "Bahnbetriebswerk".)

Steam locomotive maintainance facilities
After each trip, an engine usually coals up, then it is spotted over an ash pit. After cleaning out the ashes, it's moved to a water spout (on German railroads, one seldomly sees water towers, usually the water is stored and/or pumped from underground) to refill the tender. Fresh sand is also poured in the sand domes found atop the boilers (sand is needed for traction on slippery rails). The locomotive is then ready for service and is either spotted on a ready track or stored in the roundhouse, rear end first

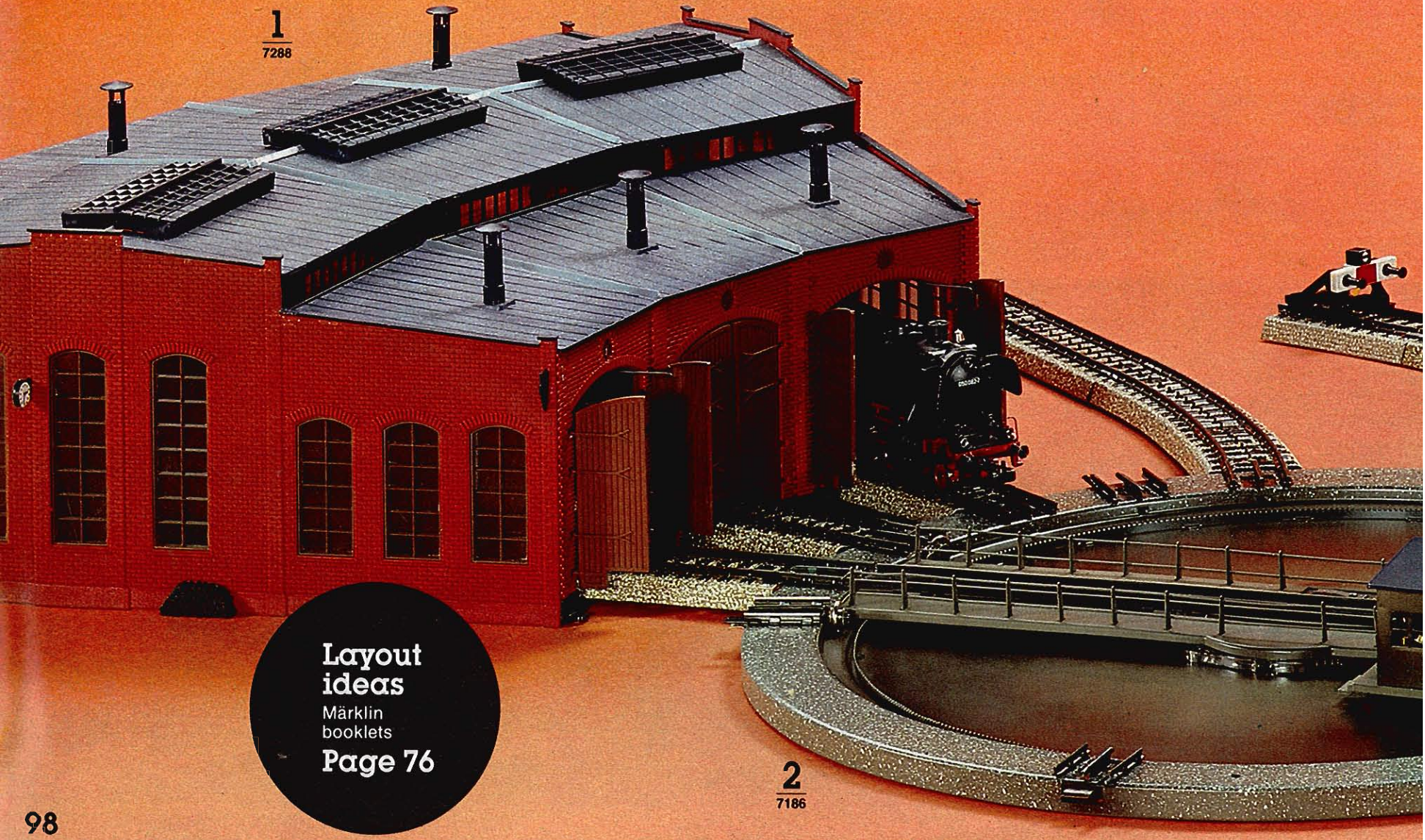
1

7288 · Locomotive roundhouse kit · 3-bay roundhouse with molded plastic parts · Operating track doors · (Tracks not included) · Base measures: 442×350 mm (1′ 5-⅜″×1′ 1-¾″) · Height 128 mm (5″)

2

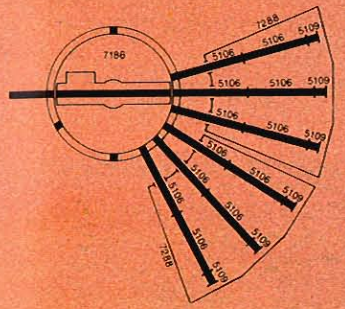
7186 · Operating turntable kit · Operates by remote control · Bridge turns either direction · Outside diameter 360 mm (1′ 2-⅛″) · Control switch and leads included · Spoke tracks not in alignment with turntable bridge receive no current

Adapter track 2291
For connecting K-tracks (see page 86) to turntable 7186.

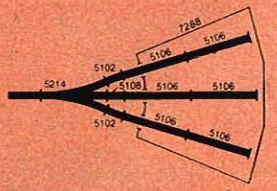


Layout ideas
Märklin booklets
Page 76

This illustration shows a track diagram for the turntable and two roundhouses. Design shown based on prototype.



Märklin's 3-bay roundhouse 7288 can also be connected to a siding with a 3-way switch 5214.



3

7051 · Operating crane with magnet · Operates by remote control · Crane rotates 360° · Separate motors rotate crane and lift hook · Magnet, operated by electricity, can lift iron or iron-containing objects · Boom elevation adjustable by hand · Control cab illuminated when magnet powered · Height 260 mm (10-¼") · Base measures: 90×90 mm (3-½"×3-½") · 1 combined position control and on/off switch panal

= 60000

This crane introduces a touch of realism to your layout. The operating magnet will load and unload gondolas and other open top freight cars. Also, with a little ingenuity, this crane can lift non-metallic items just place a few small steel screws strategically and the magnet will lift wooden items. Or remove the magnet, ala prototype practice, and use the big hook. Truly, this crane offers unlimited possibilities to bring "life" to a layout.

3
7051

Diesel-era Engine Facilities

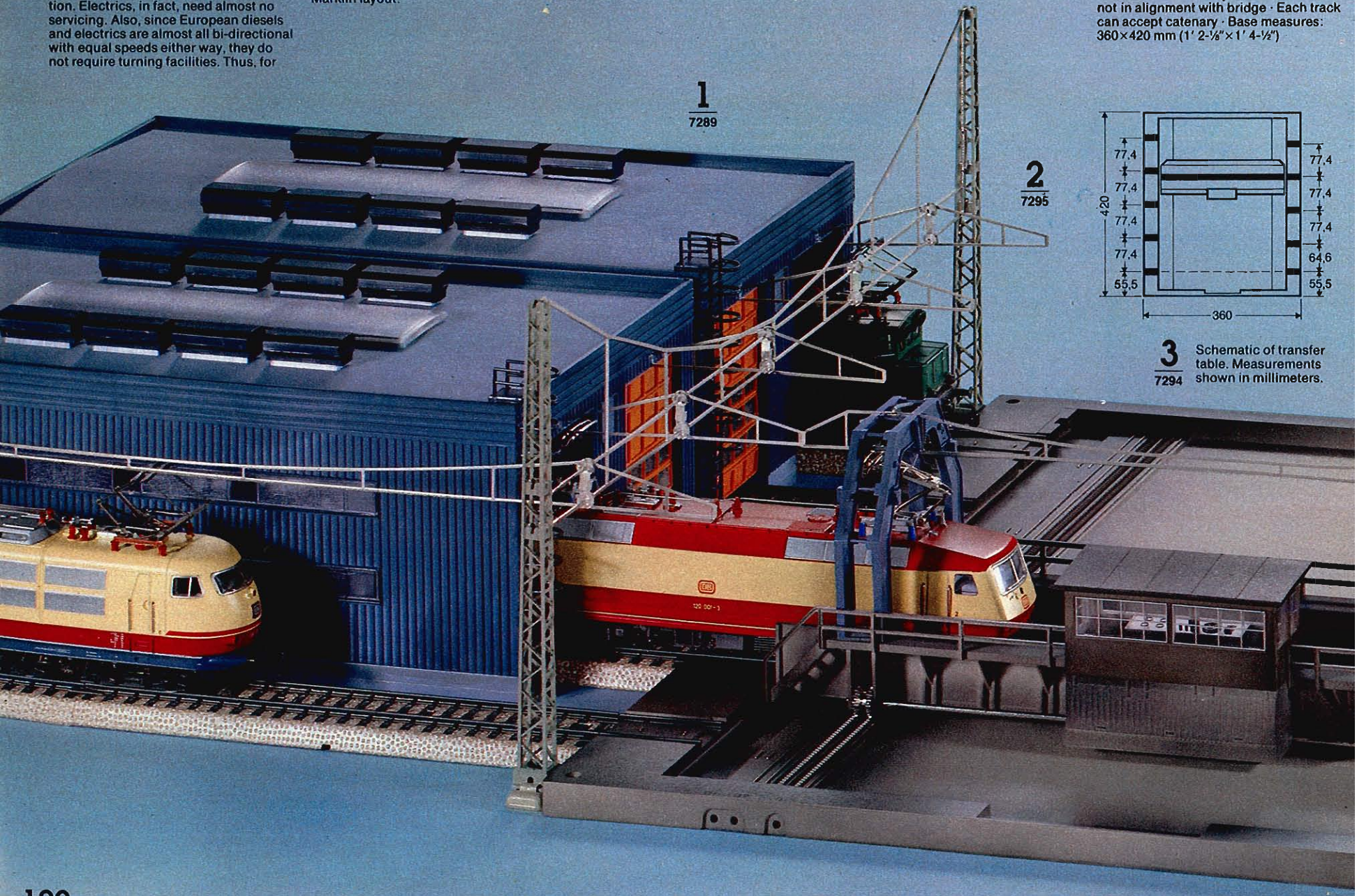
A major benefit of diesels and electrics is that they need very little servicing. Diesels are fueled up at pumps and what little water they need can be easily replenished with a simple hose connection. Electrics, in fact, need almost no servicing. Also, since European diesels and electrics are almost all bi-directional with equal speeds either way, they do not require turning facilities. Thus, for storage purposes, space saving transfer tables are utilized in place of turntables.

Provide prototype-like facilities for your diesels, add a diesel-era depot to your Märklin layout.

1
7289 · **2-bay engine house kit** · Features pre-colored plastic parts · 4 hand-operated track doors · (Track sections not included) · Measures: 280×150 mm (11″×6″)

2
7295 · **Overhead kit for transfer table** · Includes 2 overhead support gantries · One piece catenary wire with leads soldered on · 10 short catenary wires for stall tracks

3
7294 · **Transfer table** · With 2 approach tracks and 8 stall tracks · Mates with engine shed 7289 · Includes operating switch · Operated by electric motor · Current automatically cut off to tracks not in alignment with bridge · Each track can accept catenary · Base measures: 360×420 mm (1′ 2-⅛″×1′ 4-½″)

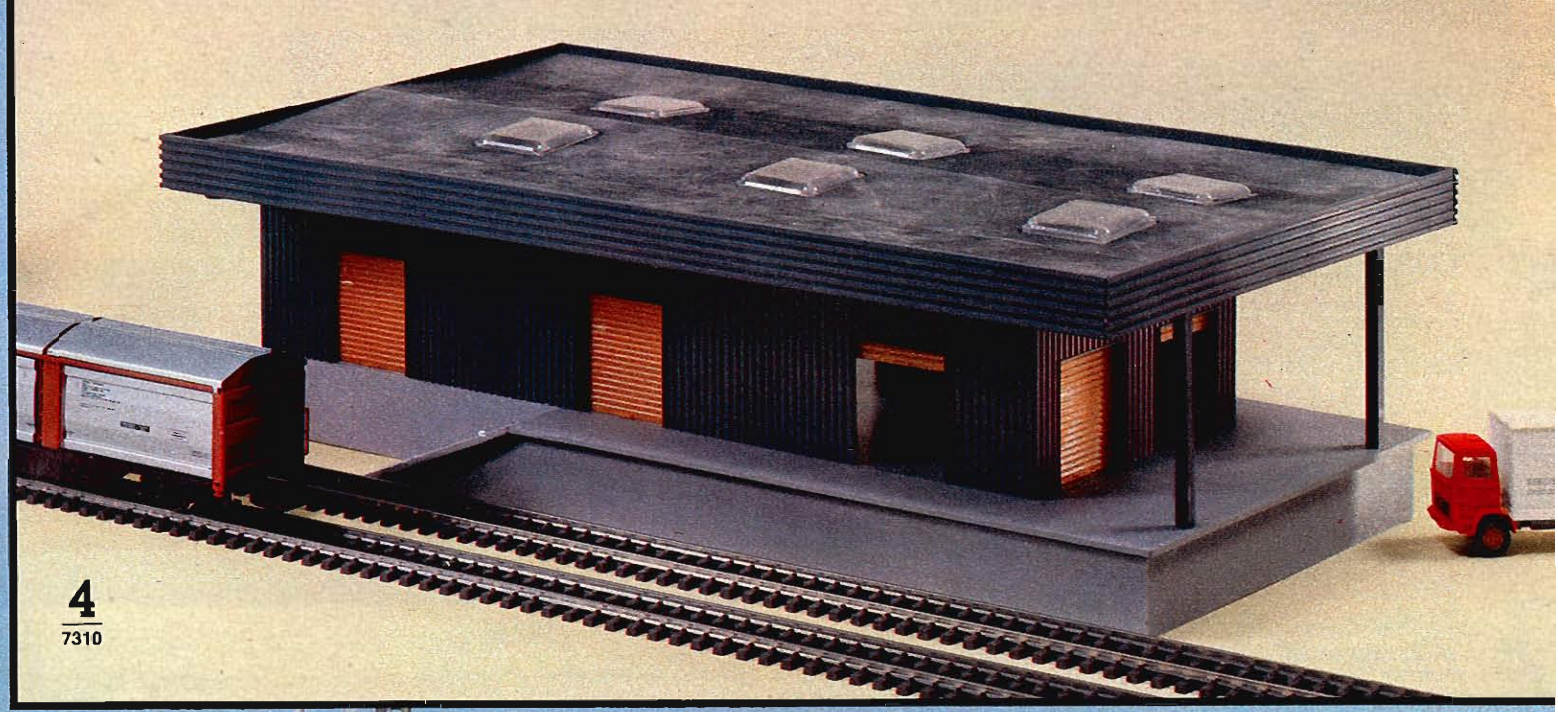


3 / **7294** Schematic of transfer table. Measurements shown in millimeters.

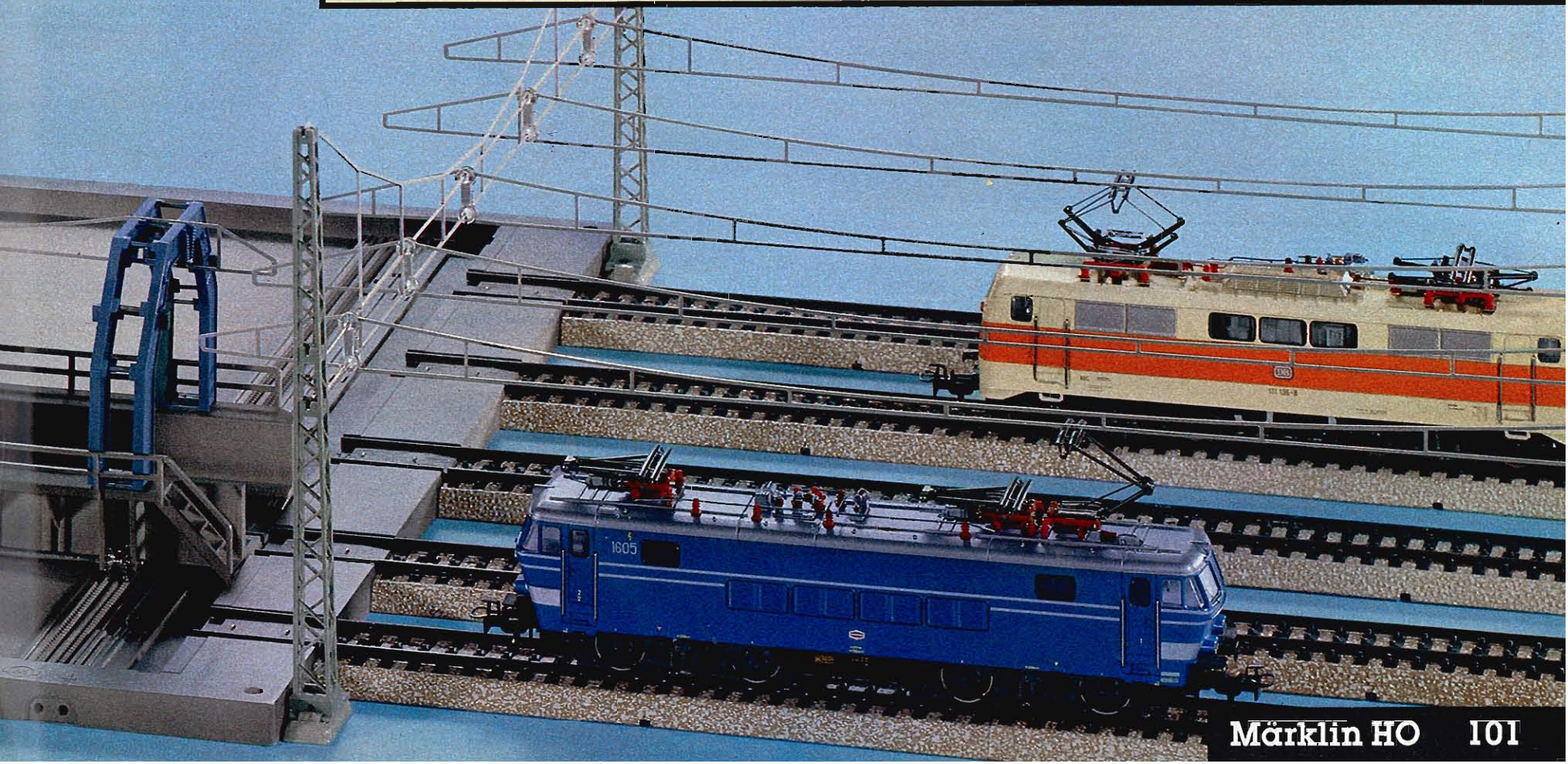
4

7310 · **Freight house kit** · Features pre-colored plastic parts · Modern prototype · 8 hand operated roller doors · Measures: 355×200 mm (1 ft 2″×7-⅞″)

The prototype of this kit stands at Maschen, Germany, site of Europe's most modern classification yard.



4
7310



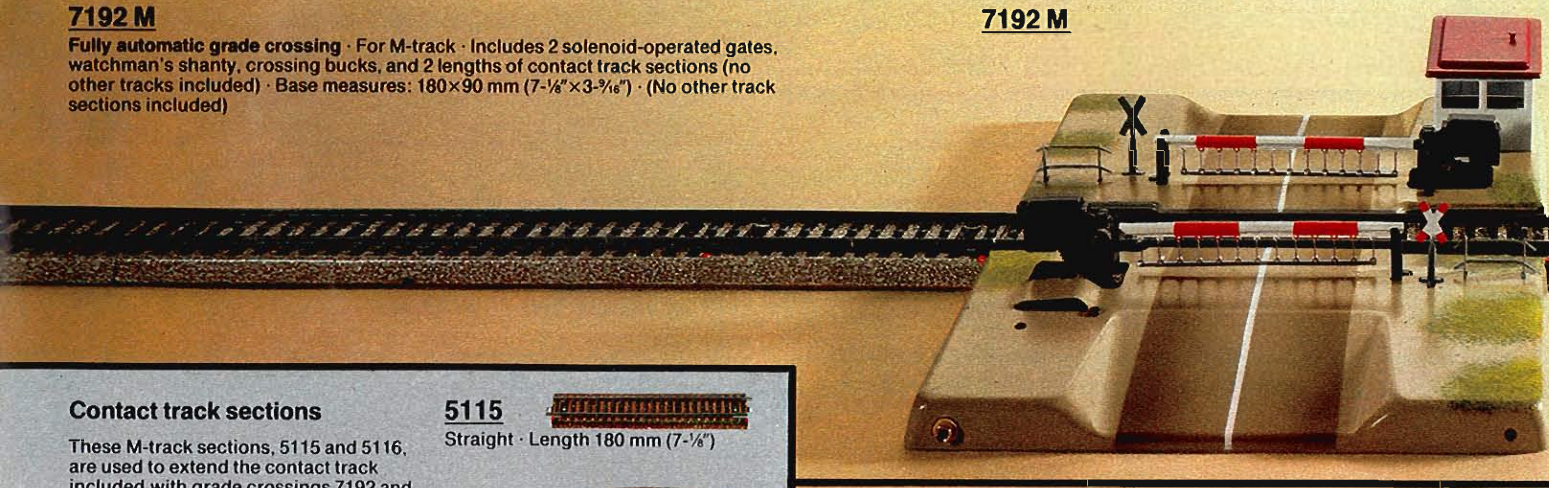
Grade Crossings

Fully automatic grade crossings

The gates close automatically when an approaching train trips the contacts. As soon as the last car clears the contact, the gates open automatically. The length of the contact track section can be varied as required. Use 5115 and 5116 for M-tracks, and regular track sections for K-track.

7192 M

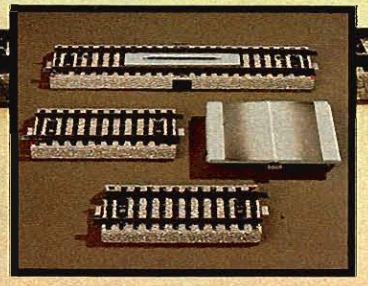
Fully automatic grade crossing · For M-track · Includes 2 solenoid-operated gates, watchman's shanty, crossing bucks, and 2 lengths of contact track sections (no other tracks included) · Base measures: 180×90 mm (7-⅛"×3-⁹⁄₁₆") · (No other track sections included)



7192 M

7193 M

Extension set for fully automatic grade crossing 7192 · One set required for each additional track · Includes set of contact tracks plus highway extension



Contact track sections

These M-track sections, 5115 and 5116, are used to extend the contact track included with grade crossings 7192 and 7292. Note: 5115 and 5116 are the **only** tracks which can extend the activation range of the crossing gates.

5115

Straight · Length 180 mm (7-⅛")

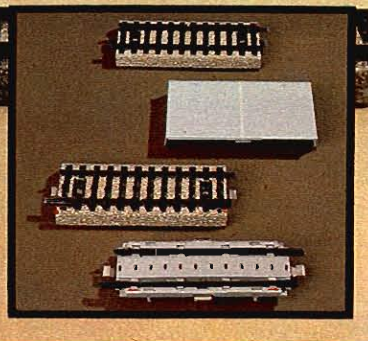
5116

Curved · Radius 360 mm (1' 2-⅛")

7292 M

7293 M

Extension set for grade crossing 7292 · One set required for each additional track · Includes: set of contact track sections, plus a length of highway (adjustable between 43 mm (1-¹¹⁄₁₆") and 78 mm (3-⅛")



7292 M

Fully automatic grade crossing · Half-length crossing gates · For M-track · Includes: 2 solenoid-operated gates, 4 red warning lights (activated when gates are down), and a set of contact tracks (length of one and one-half straight tracks) · Base measures: 137×95 mm (5-⅜"×3-¾") · (No other track sections included)

= 60201

Lighting

These lights can be switched on and off by using circuit-breaker boxes 7210 or 7211 (page 96). The lights can also be activated by a passing train. For more information, see signal manuals 0342 M or 0361 K (page 91).

7046

Arc light with lattice mast · Can also be used with M-track overhead · Height 192 mm (7-⁹⁄₁₆") · Base measures: 14×28 mm (⁹⁄₁₆"×1-⅛")

= 60010

7048

Arc light · Height 156 mm (6-⅛") · Base diameter: 29 mm (1-⅛")

= 60010

7283
Floodlight · Mounted on lattice mast · Includes base plate · Can also be used with overhead systems · Height 170 mm (6-¾")
= 60000

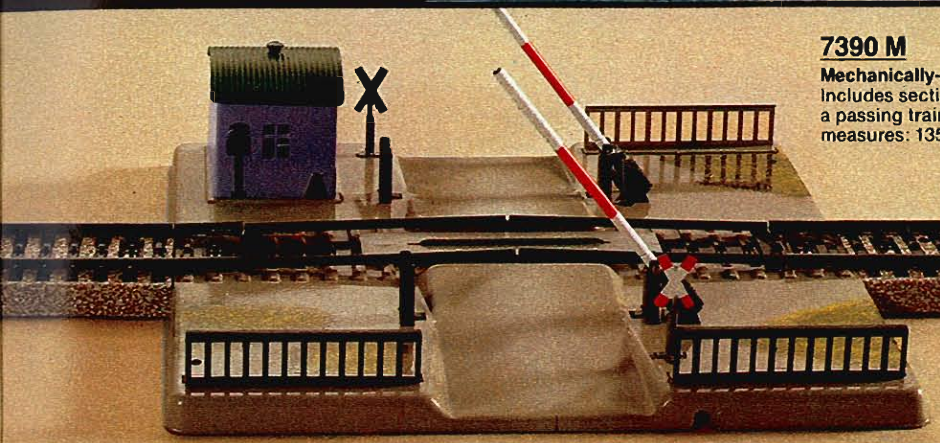
7280
Street lamp · Height 117 mm (4-⅝") · Base diameter: 25 mm (1")
= 60000

7281
Platform light · 2 lamp arms · Height 97 mm (3-⅞") · Base diameter: 25 mm (1")
= 60000

7282
Twin-lamp street light · 2 lamp arms · Height 120 mm (4-¾") · Base diameter: 25 mm (1")
= 60000

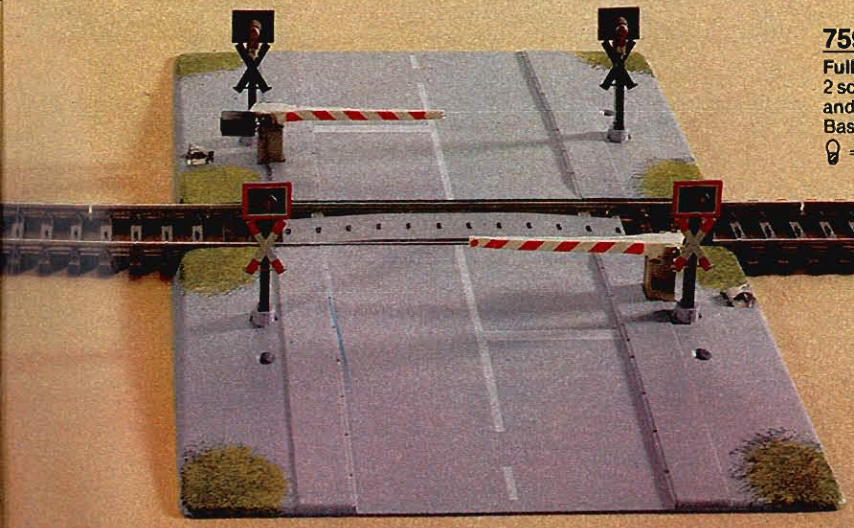
7284
Park light · Height 63 mm (2-½") · Base diameter: 15 mm (⅝")
= 60000

7047
Modern streetlight · Height 127 mm (5") · Base diameter: 27 mm (1-1/16")
= 60010

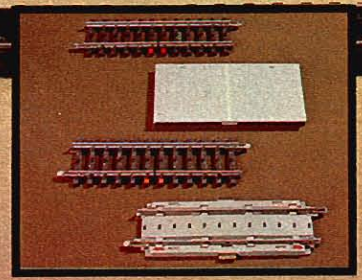


7390 M
Mechanically-operated grade crossing · For single track line · For M-track · Includes section of M-track · The gates are activated by a lever which is tripped by a passing train · Length of grade crossing track same as track section 5106 · Base measures: 135×180 mm (5-⅜"×7-⅛")

Adaptor track section 2291
Enables K-track (page 86) of the 2200 series to be connected to M-track grade crossings 7192 and 7390.



7592 K
Fully automatic crossing gate · For K-track · With half-length gates · Includes: 2 solenoid-operated gates, 4 red warning lights (activated when gates are down), and a set of contact track sections (length of one and one-half track sections) · Base measures: 137×95 mm (5-⅜"×3-¾") · (No other track sections included)
= 60201



7593 K
Extension set for grade crossing 7592 · One set required for each additional track · Includes: Set of contact track sections (length of one and one-half straight tracks) plus length of highway (adjustable between 43 mm (1-11/16") and 78 mm (3-1/16")

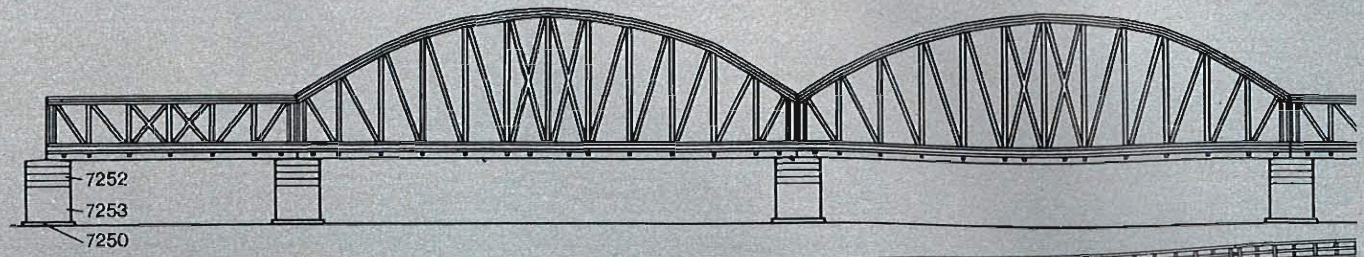
Bridges more tracks in less space

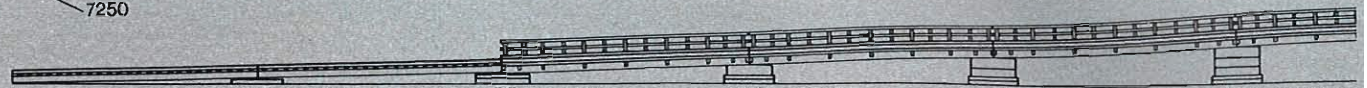
Bridges and ramps add beauty and versatility to model railroads. For example, valleys, roads, and urban areas can be bridged. Most importantly, however, bridges enable you to add more tracks in the same given area.

With Märklin bridge kits, any size or combination of bridges and ramps can be built. The pillar sections 7252 and 7253 interlock, thus enabling pillars to be constructed in any heights in increments of 6 mm (¼"). By pairing together the base plates 7250 and 7251, it is possible to raise pillar heights in increments of 3 mm (⅛"). Flat head wood screws 7599 are recommended for securing pillar sections and plates.

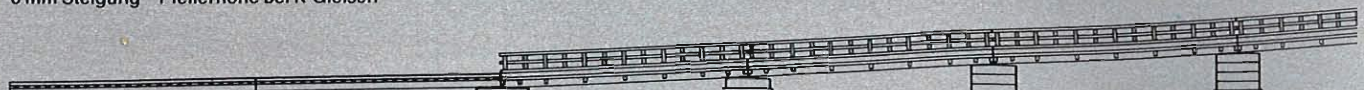
Complete instructions for the assembly of bridges are included with 7262 and 7263.

Examples of bridge and ramp construction





0	2,5 = 1 x 7250	5,5 = 1 x 7250 1 x 7251	11,5 = 1 x 7252 1 x 7250 1 x 7251	17,5 = 2 x 7252 1 x 7250 1 x 7251	23,5 = 3 x 7252 1 x 7250 1 x 7251
6 mm Steigung	Pfeilerhöhe bei M-Gleisen				
0	2,5 = 1 x 7250	2,5 = 1 x 7250	8,5 = 1 x 7252 1 x 7250	14,5 = 2 x 7252 1 x 7250	20,5 = 3 x 7252 1 x 7250
6 mm Steigung	Pfeilerhöhe bei K-Gleisen				



0	2,5 = 1 x 7250	5,5 = 1 x 7250 1 x 7251	11,5 = 1 x 7252 1 x 7250 1 x 7251	20,5 = 3 x 7252 1 x 7250	29,5 = 4 x 7252 1 x 7250 1 x 7251
9 mm Steigung	Pfeilerhöhe bei M-Gleisen				
0	2,5 = 1 x 7250	2,5 = 1 x 7250	8,5 = 1 x 7252 1 x 7250	17,5 = 2 x 7252 1 x 7250 1 x 7251	26,5 = 4 x 7252 1 x 7250
9 mm Steigung	Pfeilerhöhe bei K-Gleisen				

7267 K+M

7234

7250

7251

7252

7253

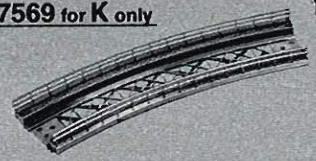
7269 for M only

7263 K+M

7262 K+M

7268 K+M

7569 for K only



7262 K+M

Truss bridge · Gray · Can also be used in conjunction with through bridge 7263 · For use with K- or M-tracks · Includes 3 clips for securing K-tracks · Instructions · Height 45 mm (1-¾") · Length 180 mm (7-⅛")

7263 K+M

Through bridge · Gray · For use with K- and M-tracks · Includes 6 clips for securing K-tracks · Instructions · Center height 117 mm (4-⅝") · Length 360 mm (1ft 2-⅛")

7234

Base plate · For securing 7200 series signal masts to bridges

7250

Base plate · For pillar foundation · Light brown · 2.5 mm (1/10") thick

7251

Base plate · For placement between pillar and bridge or ramp · Should only be used in conjunction with 7250 · Light brown · 3 mm (⅛") thick

7252

Pillar sections · 6 mm (¼") high · Gray · Suitable for building ramps in 6 mm (¼") increments

7253

Pillar sections · 30 mm (1-3/16") high · Gray

7267 K+M

Curved ramp · Gray · Radius 360 mm (1 ft 2-⅛") · For use with K- or M-tracks · Includes 3 clips for securing K-tracks · Length and radius same as track sections 2221 and 5100

7268 K+M

Straight ramp · Gray · For use with K- or M-tracks · Includes 3 clips for securing K-tracks · Length 180 mm (7-⅛")

7269 for M only

Curved ramp · Gray · Radius 437.4 mm (185-⅛") · For use with 5200 M-track only · Length and radius same as track section 5200

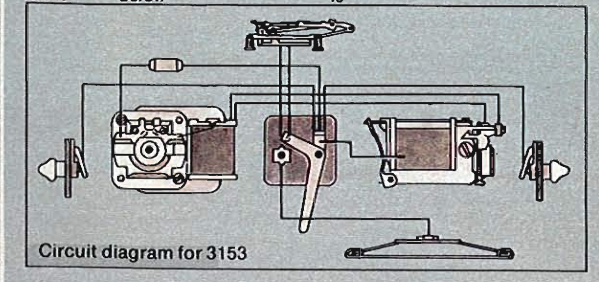
7569 for K only

Curved ramp · Gray · Radius 424.6 mm (184-¾") · For use with K-track only (standard circle II, see page 87) · Includes 3 clips for securing track · Length and radius same as track section 2231

Electric multi-purpose locomotive 3153 Class 120

Märklin locomotives are engineering masterpieces. Each precision made unit is carefully inspected and includes many delicate parts. Yet, the engines are powerful and built to last. More than a 100 years of experience in model railroading – that's the basis of Märklin's success.

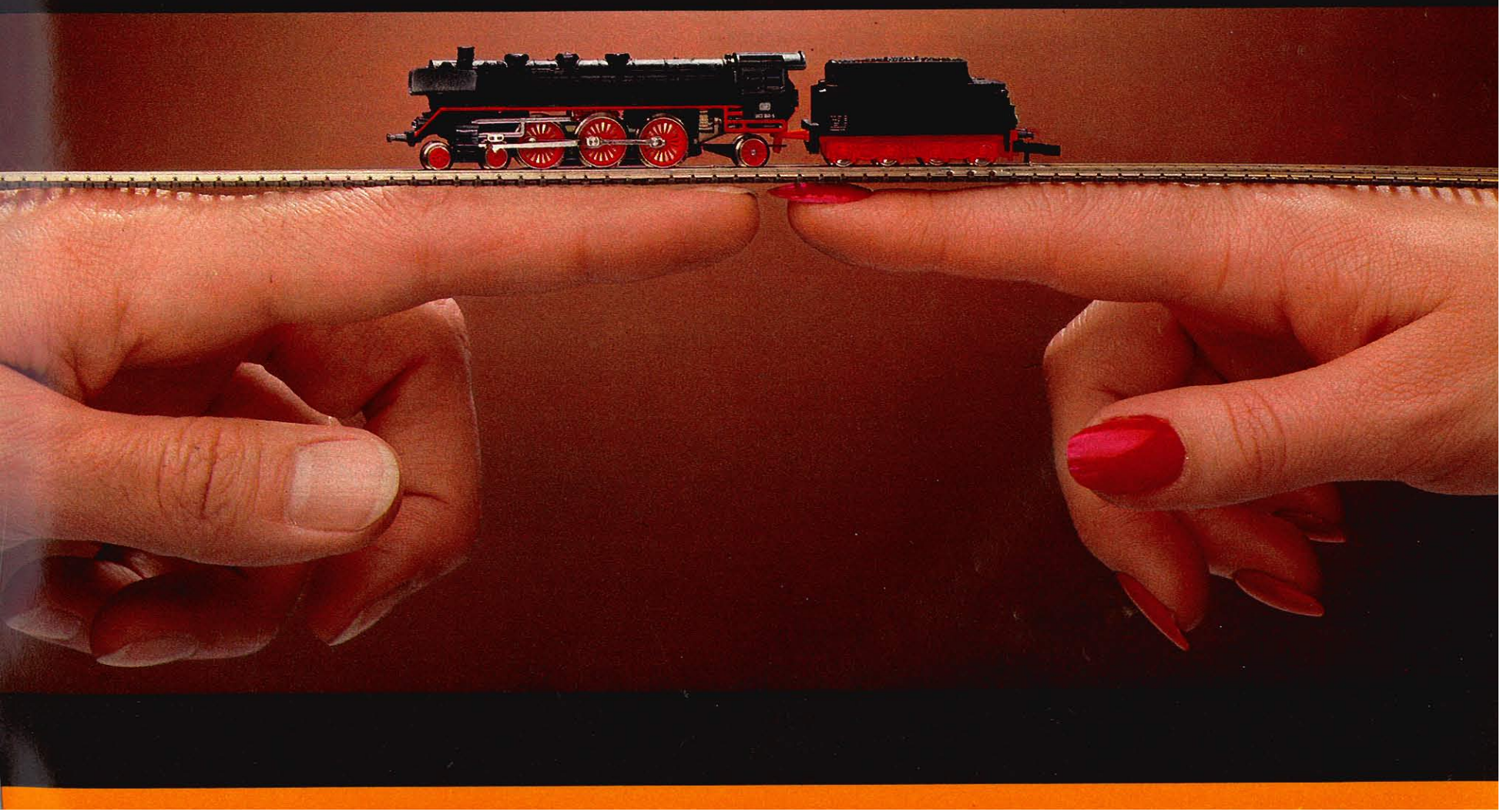
Part-Number	Description	Reference Number
24209	A complete locomotive includes	1
24211	Shell	2
24217	Modern style pantograph	3
78504	Cylinder screw	4
24196	Light channel	5
78525	Cylinder screw	6
24197	Complete motor with the most important parts:	
24198	Chassis	7
	Upon which are assembled:	
23794	Gear	8
23184	Gear pin	9
23185	Toothed gear	10
22309	Wheel and axle with	11
7153	Non-skid tires	12
21761	Driver with non-skid tire with	13
23139	Field coil	14
23144	Armature	15
23135	Motor shield	16
78512	Cylinder screw	17
60146	Brushes	18
60091	Suppressor	19
20824	Reversing unit with	20
7194	Reversing contact spring and	21
78510	Cylinder screw	22
24195	Supporters	23
21476	Switch	24
21831	Headlight contact	25
60015	Light bulb	26
24207	Buffer plate with	27
76147	Buffers	28
24194	Current trap	29
21462	Truck plate	30
78619	Wood screw	31
24206	Truck frame	32
78505	Cylinder screw	33
70412	Coupling hook	34
22676	Truck	35
40164	Spring washer	36
75351	Cylinder screw	37
24201	Truck frame	38
7164	Slider	39
75610	Screw	40



Circuit diagram for 3153

märklin
mini-club

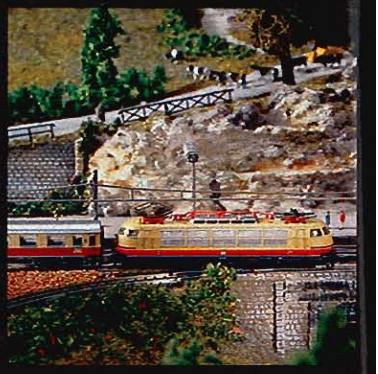
the smallest electric railway in the world



Z Scale (1:220)
Track width 6.5 mm (¼")
Operates on 8 volts DC
Highlight includes fully functional catenary system

mini-club is a reliable, fully-functional model railway system precision-built by old-world craftsmen according to the exacting, world-renowned standards of Märklin.

mini-club is a high-quality, finely detailed model railroad system which offers hobbyists almost limitless modelling opportunities in surprisingly little space, mini-club layouts can be built anywhere: suitcase, drawer, even in an attache case. In fact a Z scale oval fits neatly on a shelf only 30 cm (11-13/16") wide. Another 4 cm (1-9/16") width and you can have a double track oval.



The fully operational overhead system adds even more fun to a layout. A prototypically correct electrified mainline enables one to run two trains, totally independent of each other, on the same track.

Märklin mini-club What every man desires

mini-club's tiny size opens up wide possibilities for adding character to a layout. In addition to the Z scale accessories shown in this catalog; exciting, imaginative mini-club landscapes can be created out of common household items such as matchboxes and corks.

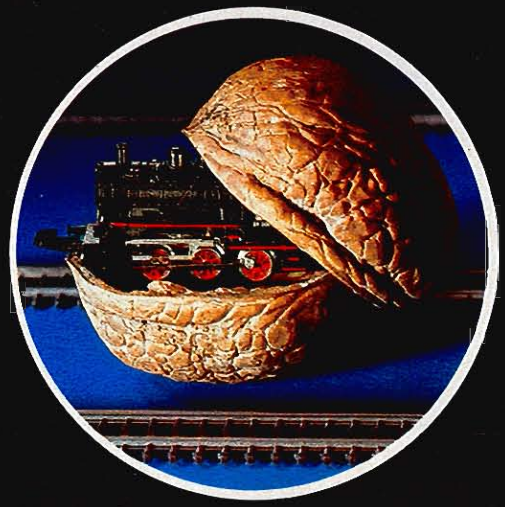
mini-club is ready to run

It is surprisingly simple to get started! Just unpack it, set it up, and it runs! An ideal way to begin is with a starter set such as 8158 – 8161 and 8163 – 8166 S. Each includes a ready to run locomotive, track, and a power pack. mini-club layouts can be systematically expanded using the track "SET" program (page 126). Or you can design a "personalized" layout by acquiring the engines, rolling stock, etc. individually.

Further information on mini-club layouts is available in brochures 0292 and 0322 as well as from your local Märklin dealer.

The gift that's "right" all year long

Beginners Sets



8158 220 Volt
8159 100 Volt Japan
8160 110 Volt (60 Hz) USA
8161 240 Volt

Freight train with power pack · Includes: 1 tank engine (2-6-0T) 8895, 1 beer car 8603, 1 box car 8605, 1 banana car 8606, 1 freight train baggage car 8609, 19 straight track 8500, 4 curved track 8520, 6 curved track 8521, 1 double-slip switch 8560, 1 pair remote controlled switches 8561, 1 right-handed remote control switch 8561, 1 feeder track 8590, 2 curved track 8591, 3 bumpers 8991, 1 water spout, 1 position control box 7072, 1 distribution strip 7209, leads, plugs, sleeves, and 1 power pack · Train measures 273 mm (10-¾")

8163 S 220 Volt
8164 S 100 Volt Japan
8165 S 110 Volt (60 Hz) USA
8166 S 240 Volt

Freight train with power pack · Includes: 1 tank engine (0-6-0T) 8800, 1 banana car 8606, 1 low-side gondola 8610, 1 straight track 8500, 4 curved track 8520, 6 curved track 8521, 1 feeder track 8590 and 1 power pack · Train measures 160 mm (6-⅝")

Both beginner stets can be extended into larger layouts by using the "SET" program (page 126), and/or adding catenary, signals, accessories, and your own imagination!

Train sets

mini-club train sets are "dream" gifts–beautifully packaged and thoughtfully arranged, these sets often include items not available separately.

8101

Push-Pull train · Includes: 1 E 111 electric locomotive, 1 commuter coach 8716, 1 commuter coach 8717, 1 commuter combine with engineer's compartment 8718 · The locomotive and combine car have operational direction lights so that the train end which is going forward will show the prototypically correct 3 white lights, while the other end will show two red lights · Train measures 449 mm (1' 5-¾")
NOTE: Only the locomotive included with this set has this special directional light feature.
This train set is a model of a typical German commuter train (Nahverkehrszug) seen in regular service from Flensburg to Konstanz.

8102

Express train · Includes: 1 steam engine (4-6-2) 8892, 2 coaches 8730, and 1 baggage car · Train measures 372 mm (1' 2-¾")
The baggage car is not available separately.
This train set is a model of a through passenger train of the German State Railways (Deutsche Reichsbahn) of the 1920's and 1930's.

■ The first S 3/6 locomotives were based in Munich until 1941 and were the mainstay for passenger trains in Bavaria, powering limiteds to Lindau, Ulm, Würzburg, Nürnberg, Regensburg, Salzburg, and Kufstein.

NOTE: Express trains are called D-Züge in German. The D stands for Durchgang (Through), and was originally meant to advertise that the train had diaphragms enabling safe passage between cars while train is in motion.

8103

Track work train · Includes: 1 diesel switcher 8864, 1 crane car 8621, 1 low-side gondola 8610 with boom support, 1 low-side gondola 8610 with stacks of crossties, 1 low-side gondola 8610 with rail sections, 2 high-side gondolas 8622 loaded with ballast, and 1 crew car · Train measures 440 mm (1' 5-¼")

■ Construction trains have varied consists. Our set 8103 typifies a track construction train. Other trains might include additional freight cars for supplies. Also, if a project will last several days, sleeping cars are added, and perhaps an old diner, for the convenience of workers.

8104 new

Passenger train of the former Prussian State Railways · Includes: 1 tank engine (series T 12, built for passenger service), 1 6-wheel baggage car, and 3 6-wheel coaches (one 2nd class, one 2nd and 3rd class, and one 3rd and one 4th class) · Train measures 420 mm (1' 4-½")

These cars feature accurate colors and stenciling according to prototype practice. Cars are not available separately.

The official name of the Prussian railways was: Königliche Preußische Eisenbahnverwaltung–Royal Prussian Railway Administration–often called KPEV for short.

■ At the beginning of the 20th century, Prussian passenger trains were made up of 6-wheel (3 axle) compartment cars. In those days, trains were the only reliable means of transportation and these compartment cars were the mainstay of passenger service.

A benefit of the compartment cars, was the quick entraining and detraining. At that time, there were four classes of service based on seating comfort. To help passengers find their cars, each class had their own livery and were also distinguished by Roman numerals.

The exterior color for 1st and 2nd class cars was dark green, for 3rd class rust-brown, and 4th class dark gray.


8158
KULMBACHER
Mönchshof-Bräu
8163

Steam Engines

Illustrations shown actual size 1:1

mini-club steam engines feature

Remote control for forward and reverse drive · Prototypically correct three working headlights (except 8800 which has no lights and 8803 which requires lighting set 8953) · All driving axles powered · Automatic couplers at rear of tender or tank engine · Die cast zinc frame · Metal body

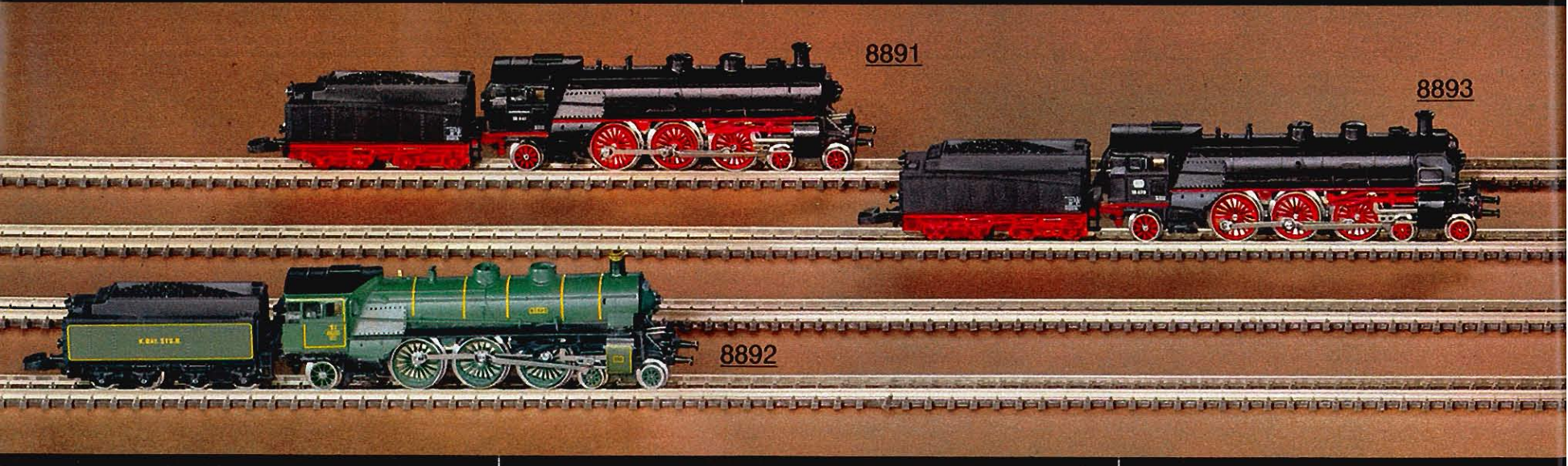
= 8953

8891

Express locomotive with tender · Model of the former German State Railways' class 18⁴ · 4-6-2 wheel arrangement · Length over buffers 106 mm (4-3/16")

One of the most famous German steam engines was the Bavarian Pacific, first built around 1910 and saw service into the 1960s. Our mini-club program offers this engine in three versions: the S 3/6 Royal Bavarian Railways 8892 (1910–1920), the class 18 of the German State Railways 8891 (1920–1945), and the class 18⁴ of the German Federal Railways 8893 (since 1945).

The letters K. Bay. Sts. B. on 8892 stand for Königliche Bayrische Staatsbahn (Royal Bavarian State Railways).



mini-club locomotives should only be powered by Märklin power packs 6701 or 6727 (with maximum track voltage 8 V) or with the power packs included with the train sets.

The locomotives are fitted with radio interference suppressors. In conjunction with the suppressors built in to the Märklin power packs, and feeder track 8590, the chance of mini-club operation disturbing neighbor's radio and TV reception is remote.

8892

Express locomotive with tender · Model of former Royal Bavarian Railways' class S 3/6 · 4-6-2 wheel arrangement · Length over buffers 106 mm (4-3/16")

8893

Express locomotive with tender · Model of German Federal Railways' class 18⁴ · 4-6-2 wheel arrangement · Length over buffers 106 mm (4-3/16")

Examples of train consists:

8827

Freight locomotive with tender · Model of German Federal Railways' class 41 · 2-8-2 wheel arrangement · Length over buffers 112 mm (4-3/8")

8896

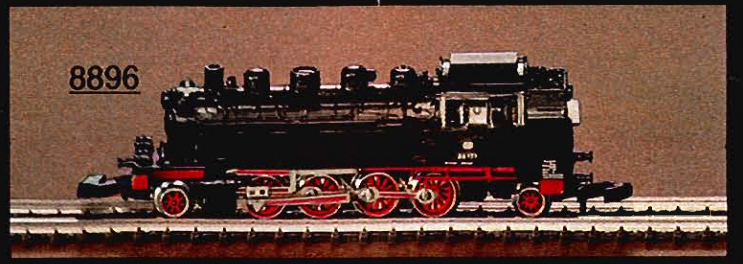
Tank locomotive · Model of the German Federal Railways' class 86 · 2-8-2T wheel arrangement · Three working headlights at each end · Red driving assemblies · Automatic couplers at each end · Length over buffers 63 mm (2-1/2")

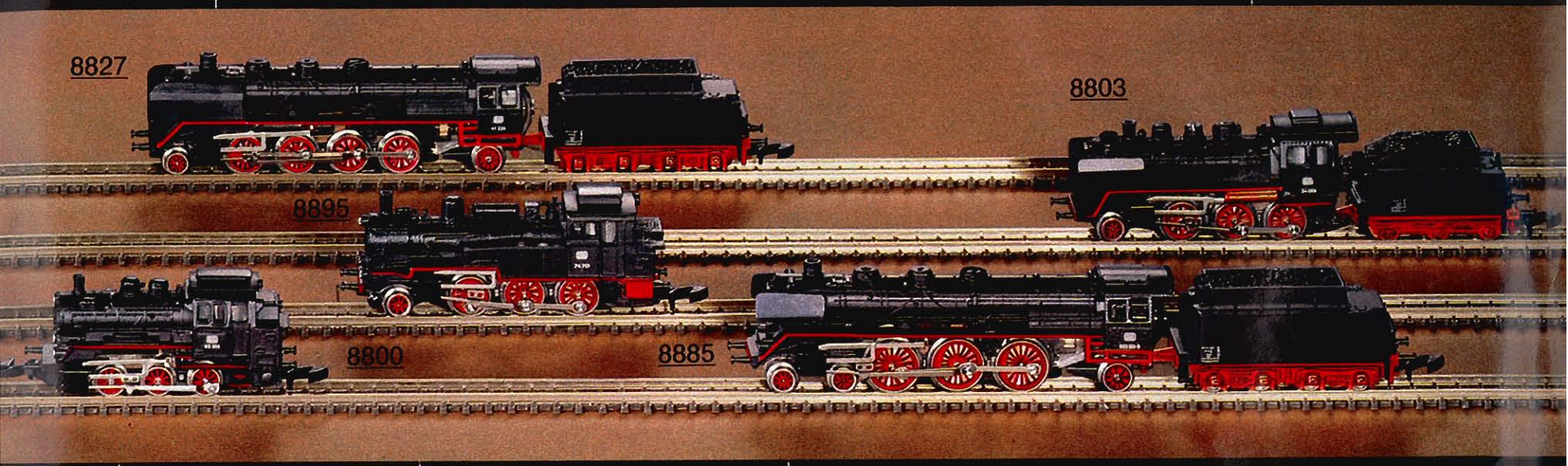
= 60210 (rear)

■ Engine class 86 was produced by various manufacturers from 1928 until 1943. An efficient locomotive, it was used in passenger and freight service, particularly on branches and in mountainous districts. Of the 774 engines built for the German State Railways, 385 were assigned to the German Federal Railways after 1945.

8803

Passenger locomotive with tender · Model of German Federal Railways' class 24 · 2-6-0 wheel arrangement · Length over buffers 82 mm (3-1/4")





8800

Tank locomotive · Model of class 89 · 0-6-0T wheel arrangement · Automatic couplers on both ends · Length over buffers 45 mm (1-3/4")

8895

Tank locomotive · Model of the German Federal Railways' class 74 · 2-6-0T wheel arrangement · Coupling hook in front · Length over buffers 55 mm (2-3/16")

8885

Express locomotive with tender · Model of the German Federal Railways' class 003 · 4-6-2 wheel arrangement · Length over buffers 112 mm (4-3/8")

Engine 8885 has set a world record for endurance. Pulling 6 coaches, the engine operated continuously for 1219 hours, covering an elapsed distance of 720 km (447 miles) or the distance between Hamburg and Stuttgart or Cincinnati and Atlanta. The previous endurance record, according to the world-famous "Guinness Book of Records" was only 440.7 km (273.8 miles) covered in about 300 hours.
This record was established at an impartial testing institute.

Electric Locomotives

Although only 40 % of the German Federal rail network is electrified, it accounts for 80 % of the traffic load, because electric power is the most cost-effective means of operating trains on busy mainlines. Electric power is also relatively clean, and free of world energy crises since the German Federal Railways relies upon domestic coal to fuel power stations.

To appreciate the economics of rail transport, consider that the entire German Federal energy consumption is about equal that of the western part of Berlin. Further, in the Federal Republic of Germany, rail transportation requires only 0.8 % of Bonn's energy resources, while road traffic accounts for 8 %-ten times as much energy but getting only 2.3 times as much transportation.

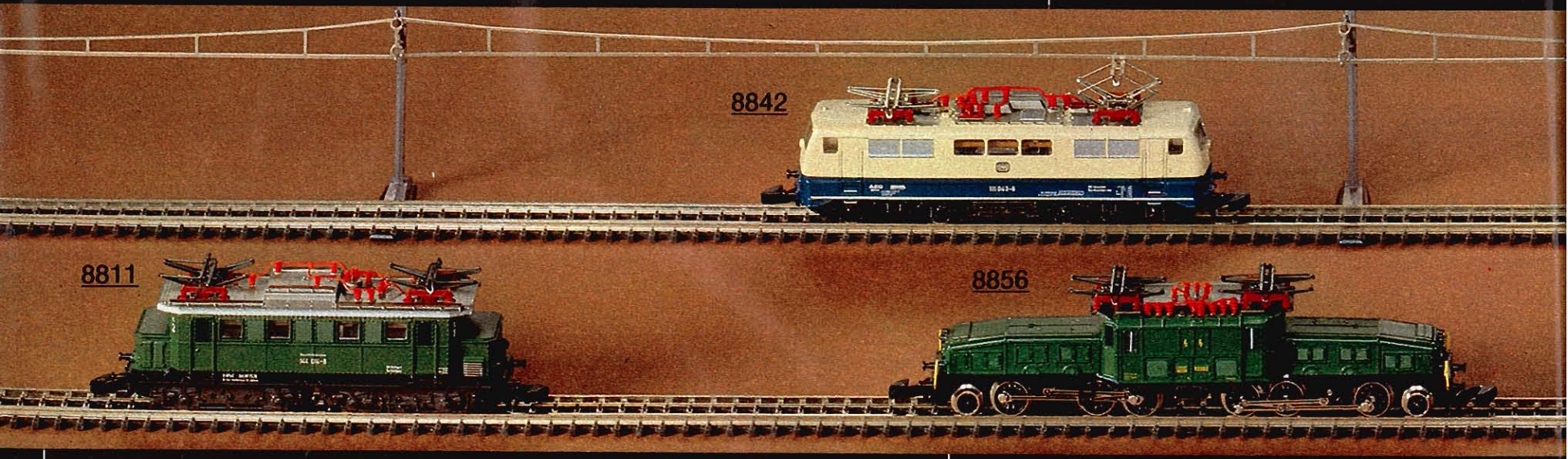
mini-club electric locomotives feature

Remote control for forward and reverse drive · Both trucks powered · Three working headlights at each end, illuminated according to engine's direction · Can operate from track current or overhead · 2 spring-powered pantographs · Automatic coupling at each end · Die cast zinc frame · Windows inserted in plastic frames on colorfully painted plastic bodies

= 8953

8842

Electric express locomotive · Model of the German Federal Railways' class 111 · B-B wheel arrangement · Length over buffers 76.8 mm (3")



8811

Electric passenger locomotive · Model of the German Federal Railways' class 144 · B-B wheel arrangement · Length over buffers 68 mm (2-1/16")

■ Affectionately called "Mädchen für alles" (Maid for all Work), this engine, originally class E 44 of the German State Railways, was first outshopped by Siemens-Schuckert in 1931 for the newly electrified Augsburg – Stuttgart stretch. Capable of both freight and passenger service, 174 engines were built between 1931 and 1945. The German Federal Railways also purchased an additional 7 after 1945.

The E 44, however, quickly proved its worth in 1931 and was soon seen hauling trains throughout the realm of the German State Railways. As a versatile workhorse, these engines averaged about 20,000 km (12,440 miles) per month.

The E 44 was driven by 4 axle-mounted motors located on two double-axled trucks. All tractive and braking forces were absorbed by the trucks, which are coupled together. Total power was 1860 kW continuous rating, or 2200 kW hourly rating, and maximum speed was 90 kmph (56 mph).

8856

Electric freight locomotive · Model of the Swiss Federal Railways' (SBB) Be 6/8^{III}, popularly known as the Crocodile · 2-C-C-2 wheel arrangement · Length over buffers 91 mm (3-5/8")

The "Crocodile" is one of the world's most intriguing locomotives. Even the mini-club's version of this mighty machine measures 91 mm (3-5/8") long. And, like the prototype, it is articulated so it can negotiate mini-club curves. The three body sections, i.e.: center and both ends, are finely detailed and feature insulated electrical cables on the roof as well as handrails on the buffer beams.

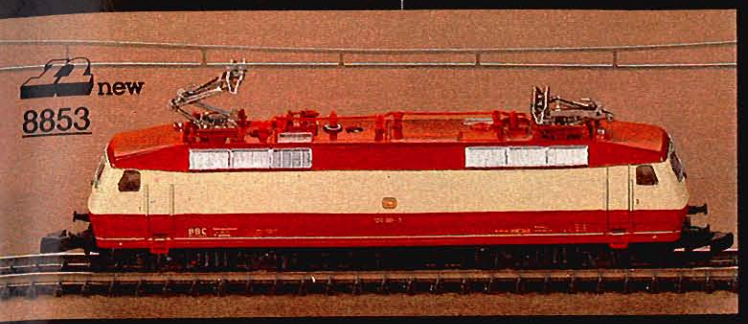
■ 40 % of all transalpine traffic goes via the Gotthard line, a major Swiss trunk line. By the 1920s, traffic had become so heavy that special locomotives were needed, which could shuttle two round trips in 28 hours between Arth-Goldau and Chiasso on the Swiss-Italian border. This first engine was a Ce 6/8^{II} which soon evolved into the heavy freight locomotive, class Be 6/8^{III}, the famous "Crocodile".

Its performance: It could pull 2000 tons at 60 km/h (37 mph) on level track, and it could pull 520 tons (about 15 cars) up a 2.6 % incline at 40 kmph (25 mph).

Operate Electric Locomotives realistically with Overhead wiring. mini-club offers a fully functional catenary system (see page 128).

8853 new

Electric multi-purpose locomotive · Model of the German Federal Railways' class 120 · B-B wheel arrangement · Length over buffers 87 mm (3-⅜")



■ The Class 120 engines include the latest state-of-the-art in locomotive development. For the first time, a German Federal Railways engine includes a 3-phase motor. This has only been possible because of recent developments in semi-conductor technology, which also enables the engine to achieve better performance records. The locomotive has a power output rating of 5600 kW and achieves a top speed of 160 kmph (100 mph).

The engine has unique features which make it the locomotive of the future:
– All-around general purpose engine. It can be used equally on freight as well as passenger trains.
– Improves the life of the railbed. Only 40 % of its mass is dead weight, as compared to 60 % on other locomotives.
– Frugal use of energy. It requires only 86 % of the energy of other similar locomotives.
These engines carry a price tag of 4 million D-Mark (about $ 2 million).

8855

Electric locomotive · Model of the German Federal Railways' class 111 (This engine powers the high-speed limiteds in the Rhine and Ruhr districts) · B-B wheel arrangement · Length over buffers 76.8 mm (3")

8857

Electric freight locomotive · Model of the German Federal Railways' class 151 · C-C wheel arrangement · Length over buffers 88 mm (3-½")

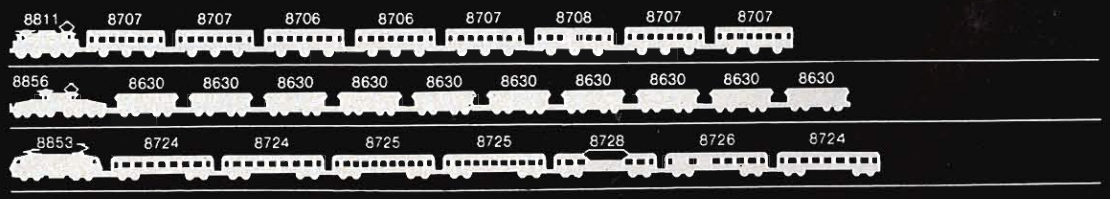
8854

Electric high-speed locomotive · Model of the German Federal Railways' class 103 · C-C wheel arrangement · Length over buffers 88 mm (3-½")

8858

Electric freight locomotive · Model of the German Federal Railways' class 151 · C-C wheel arrangement · Length over buffers 88 mm (3-½")

Examples of train consists:



Diesel Locomotives · Self-propelled Cars

mini-club Diesels and Self-propelled Cars feature

Remote control for forward and reverse drive · All axles powered · Three working headlights at each end (except 8802 and 8864) · Automatic couplers at both ends (except 8802) · Die cast zinc frame · Colorful bodies

= 8953

8864

Diesel switcher · Model of the German Federal Railways' class 260 · 0-C-0 wheel arrangement · Colorful metal body · Length over buffers 49 mm (1-15/16")

■ The class 260 diesels date from 1955. Originally designated V 60, it has a 12 cylinder 478 kW diesel engine under the long hood and fuel tanks and air tanks under the short hood.

Steam enthusiasts should be happy to know that pre-warming the 260's power plant depends partly on coke-fired boilers.

8821 new

Diesel-hydraulic express locomotive · Model of the German Federal Railways' class 221 · B-B wheel arrangement · Three working headlights at each end, illuminated in direction of travel · Length over buffers 84 mm (3-3/8")

■ The class 221 engines are successors of the earlier class 220. The 221s were needed because of the demands of heavier payloads and longer trains which were taxing the 220s. Between 1962 and 1965 50 of these 221s were built for the German Federal Railways. Both diesels have a power output of 993 kW. Utilizing hydraulic transmission, the 221s can achieve 140 kmph (87 mph). These diesels are outfitted with oil-fired boilers.

8875

Road diesel · Model of the German Federal Railways' class 216 · B-B wheel arrangement · Three working headlights at each end, illuminated in direction of travel · Length over buffers 75 mm (3")

8874

Road diesel · Model of the German Federal Railways' class 216 · B-B wheel arrangement · Three working headlights at each end, illuminated in direction of travel · Length over buffers 75 mm (3")

■ In the mid-50s, the German Federal Railways began to dieselize. Because of the diesels utilitarian nature, fewer diesel types were necessary for the broad variety of German trains–a development unique in the railroad world. The most successful of the German diesels, and the systems workhorse on non-electrifed stretchs since 1956, is the class 216, first out-shopped by the Krupp works in Essen in the mid 1950s.

8816

Railbus · Model of the German Federal Railways' type 798 · Length over buffers 62 mm (2-7/16")

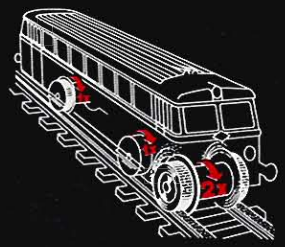
As an aid for safe and effecient switching, the 260 is fitted with radio-telephones enabling constant communications between engineer, yardmaster, and other rail personnel. This engine can also be operated by remote control.

Like class 261 engines, class 260 locos are also used on freight trains.

8817

Trailer for railbus · Model of the German Federal Railways' type 998 · Length over buffers 62 mm (2-7/16")

How the Track-Cleaning Car works



8802

Track-cleaning car · 2 powered axles · Automatic coupler on rear end · Length over buffers 62 mm (2-7/16")

The vehicle has two powered axles. The rear wheels are ridged to provide better traction. Two track-cleaning ridged wheels are located ahead of the front axle. These rotate faster than the driving wheels, causing the dirt to be thrown off the tracks.

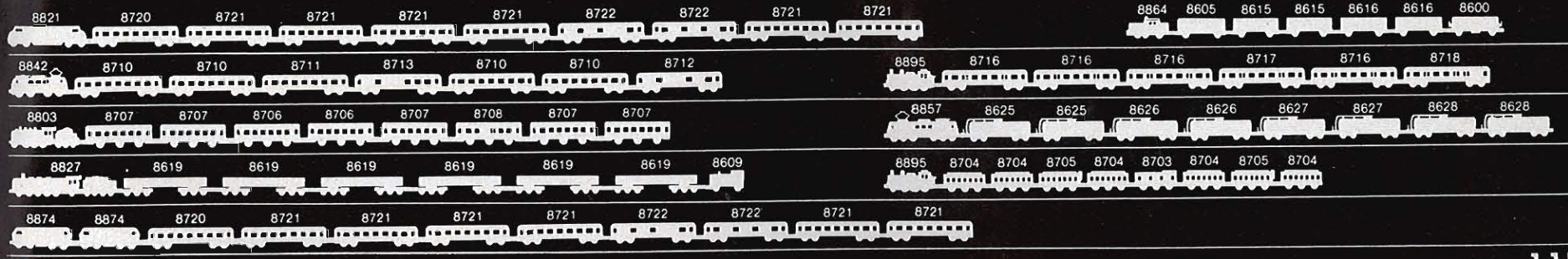
Locomotive Replacement Parts

Locomotive	8800	8802	8803	8811	8816	8821	8827	8842	8853	8854	8855	8856	8857	8858	8864	8874	8875	8885	8891	8892	8893	8895	8896
Carbon Brushes	8987	8988	8987	8989	8988	8989	8989	8989	8989	8988	8989	8989	8988	8988	8987	8988	8988	8989	8989	8989	8989	8987	8989
Lights			(8953)	8953	8953	8953	8953	8953	8953	8953	8953	8953	8953	8953		8953	8953	8953	8953	8953	8953	8953	8953
Pantographs				8955				8955 (8956)	8956	8955 (8956)	8955 (8956)	8955	8955	8955									

7199

Bottle of oil · Contains about 10cc lubricating oil for locomotives and cars

Examples of train consists:



Passenger Cars

Passenger Cars of the German Federal Railways

Models of cars of the German Federal Railways · 6 wheels · Windows set in plastic frames · Length 61 mm (2-3/8")

8706

Passenger car · Type AB3yge · 1st and 2nd class

8707

Passenger car · Type B3yge · 2nd class

8708

Combine car · Type BD3yge · 2nd class

■ At the beginning of the 1950s there were many obsolete and damaged 4- and 6-wheel coaches on the rip tracks of the German Federal Railways. But, by modifying the underframes of these cars, new types of 6-wheeled coaches for 2nd class service were built. Some cars were also modified to include either a 1st class section or a baggage section. All cars were also fitted with beaded walkways.

Passenger Cars of the German Federal Railways

Models of cars of the German Federal Railways · For commuter service · 8 wheels · Windows set in plastic frames · Length 120 mm (4-3/4")

■ These Commuter Cars (Nahverkehrswagen) of the German Federal Railways were nicknamend "Silverliners" (Silberlinge) because the bodies were made of stainless steel. Lengthwise, just below the windows, the cars feature an intriguing Peacock's Eye livery.

8716

Commuter car · Type Bnb · 2nd class

8717

Commuter car · Type ABnb · 1st and 2nd class

8718

Commuter car with baggage compartment and control cab · Type BDnrzf · 2nd class · Three white headlights and two red tail-lights at control cab end, illuminated according to direction of travel

■ Most commuter trains are Push-Pull and consist of a diesel, several coaches based on traffic demands, and a control car at one end. Push-Pull trains require no terminal turnaround; the engineer merely walks to the other end to resume operation.

When the train runs diesel-first, two red lights shine from the control car.

When the train runs control car-first, three white lights shine from the control car.

Passenger Cars of the former German provincial railways

Models of cars used by the Württemberg Railways · 4 wheels · Platform and entrance at each end · Windows glazed at each end with "Cellon" frames · Length 60 mm (2-3/8")

8700 Passenger cars

8701 Passenger cars

Model of the **Bavarian Railways** · 8 wheels · Windows set in plastic frames · Length 87 mm (3-3/8")

8730

Express coach · For through train service · Type CCü of the former Royal Bavarian State Railways · 3rd class

Passenger Cars of the former German State Railways

Models of cars of the former German State Railways · 8 wheels · Windows set in plastic frames

8731

Express coach · For through train service · Type C4ü bay 11 · 3rd class · Length 87 mm (3-⅜")

8732

Express baggage car · For through train service · Type Pw4ü bay 09 · Length 78 mm (3-⅛")

Passenger cars of the German Federal Railways

Models of cars of the German Federal Railways · 6 wheels · Windows set in plastic frames · Length 57 mm (2-¼")

8703

Baggage car · Formerly type Pw3-pr02

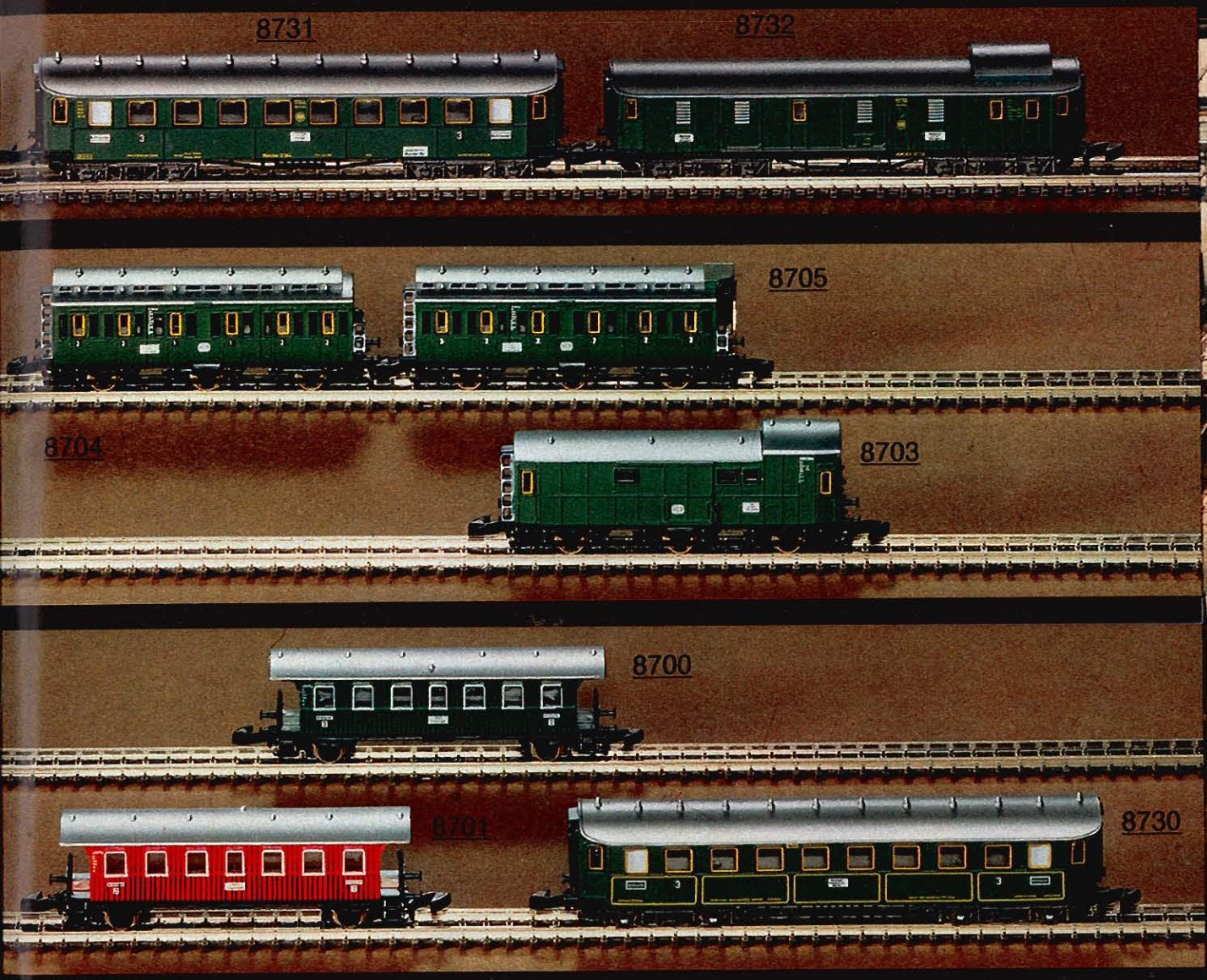
8704

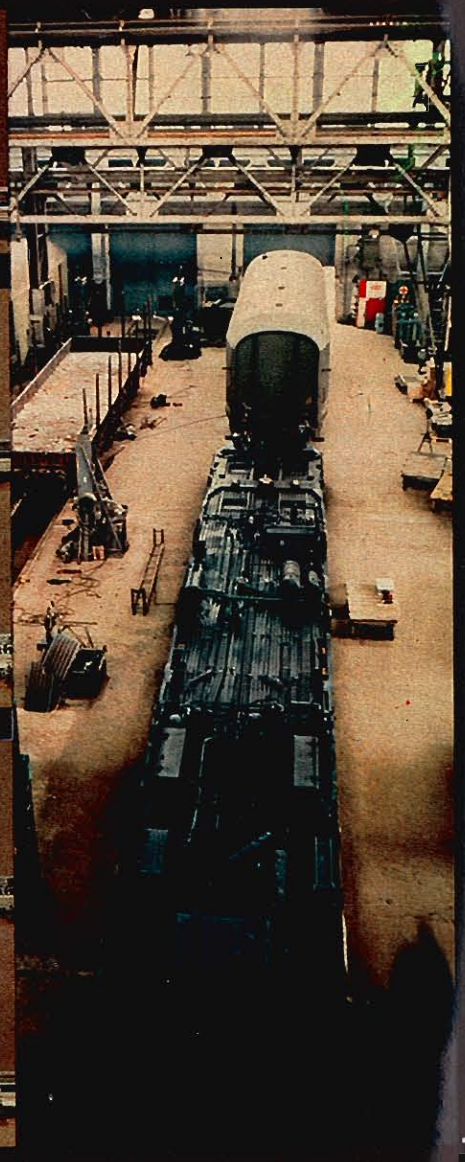
Compartment car · Formerly type BC3-pr03

8705

Compartment car with brakeman's cab · Formerly type B3-pr03

■ The compartment cars of the German Federal Railways were originally built for the Prussian provinicial railway. Many were equipped with brakeman cabs.





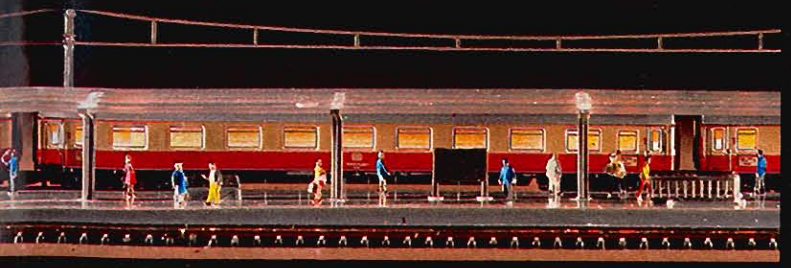
8724
8734

8725 | 8735

8726 | 8736

8710

8711



Passenger Cars of the German Federal Railways

All models have the following features: 8 wheels · Windows set in plastic frames · Length 120 mm (4-¾")

The mini-club TEE (**T**rans **E**urope **E**xpress) cars are available either with or without interior lighting.

8724 without interior lighting
8734 with interior lighting
TEE-Compartment car · Type Avm

8725 without interior lighting
8735 with interior lighting
TEE-American style coach · Type Apm

8726 without interior lighting
8736 with interior lighting
TEE-Diner · Type WRm

8728 without interior lighting
8738 with interior lighting
TEE-Dome car · Type ADm · Dome shell made of transparent plastic

■ TEE trains are the varnish flagships of the German Federal Railways. All trains are completely 1st class, coaches have American style 2-2 seating, entire train is air-conditioned, and passenger-comfort is the TEE trademark.

TEE-Intercity trains travel at speeds up to 160 kmph (100 mph) and can reach 200 kmph (125 mph) on suitable track.

8714
Auto carier · Generally used on long-distance tourist trains as well as regular passenger trains · Type DDm 915 · Includes 8 autos

■ Auto-trains are fairly common in Germany and usually consist of several auto-carriers on the tail end of a through express train.
Autos are driven onto the carriers under their own power utilizing ramps to reach the different levels. Drivers and occupants leave and return to their cars by walking along the ramps or climbing ladders on the carriers.

8710
Express coach · For through train service · Type Aüm · 1st class

8711
Express coach · For through train service · Type Büm · 2nd class

8712
Baggage car · For through train service · Type Düm

8713
Diner · For through train service · Type WRüm

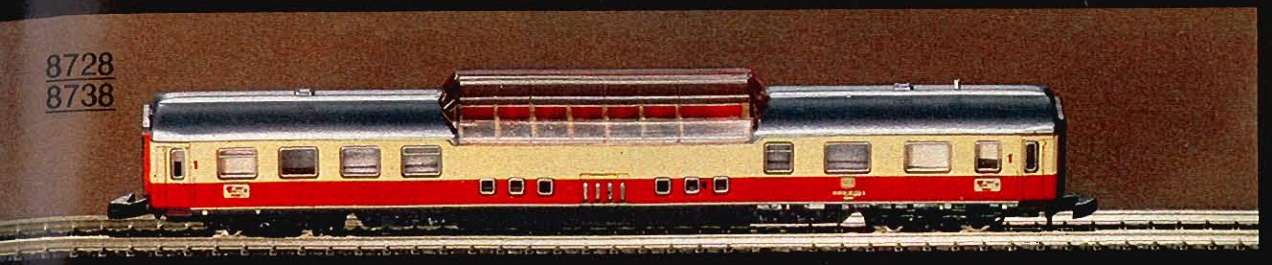
8720
Express coach · For through train service · Type Aüm · 1st class

8721
Express coach · For through train service · Type Büm · 2nd class

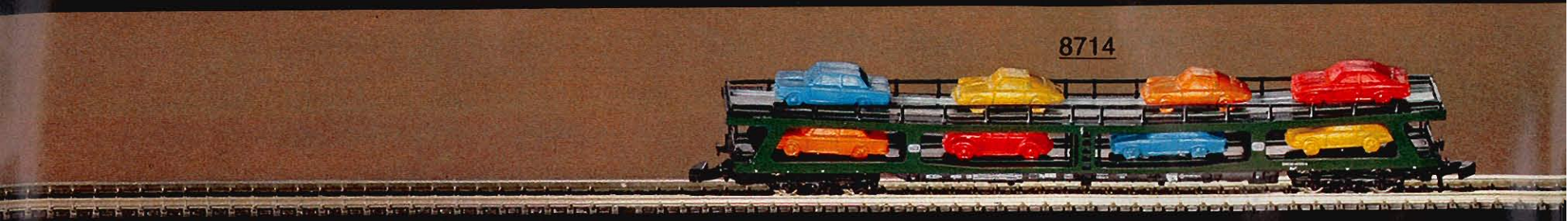
8722
Baggage car · For through train service · Type Düm

8723
Diner · For through train service · Type WRüm

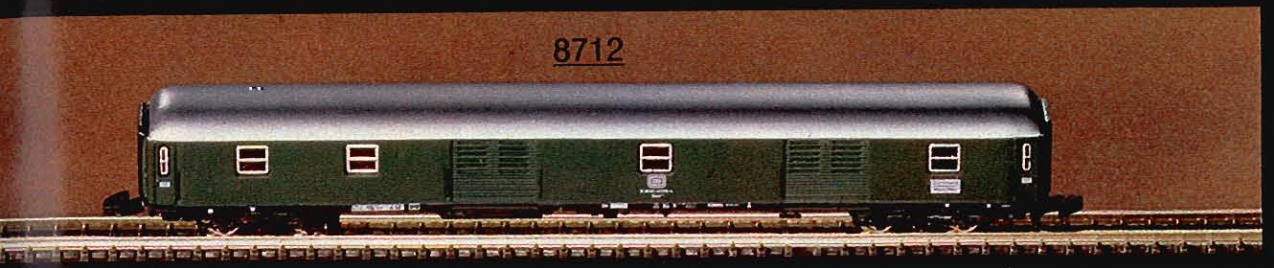
8728
8738



8714



8712



8713

8723

8720

8721

8722

Freight Cars

■ The German Federal Railways field about 290,000 freight cars for general transportation, plus about 16,000 maintenance and special purpose cars.

In addition, there are 50,000 privately owned freight cars operating on the German Federal tracks.

Some 65 % of the freight cars are conventionally designed while 35 % are specially-built cars.

8600
Refrigerated car · German Federal Railways' type Ichqrs · Length 54 mm (2-⅛")

8601
Beer car · Dortmunder Union · Length 54 mm (2-⅛")

8609
Package car · For LCL service (LCL = Less than Carload Lot) · German Federal Railways' type Dg · Operating doors on each side · Length 40 mm (1-⁹⁄₁₆")

8602
Beer car · Spatenbräu München · Length 54 mm (2-⅛")

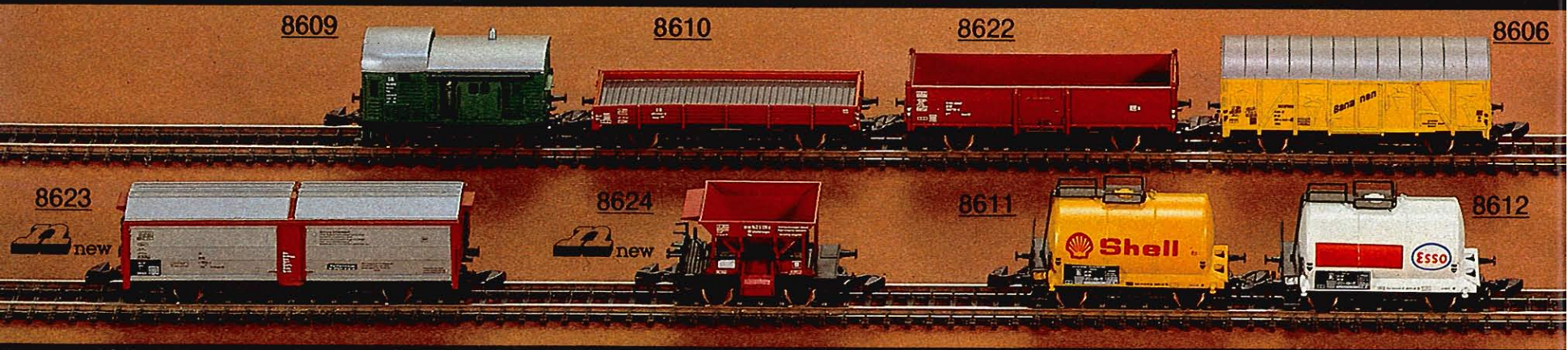
8610
Low-side gondola · Length 54 mm (2-⅛")

8603
Beer car · Kulmbacher Mönchshof-Bräu · Length 54 mm (2-⅛")

8622
High-side gondola · German Federal Railways' type Omm 52 · Length 54 mm (2-⅛")

8604
Beer car · Kulmbacher Reichelbräu · Length 54 mm (2-⅛")

8606
Banana car · German Federal Railways' type Ibbls · Length 54 mm (2-⅛")



8623 new
Bulk-freight car · Special purpose car featuring sliding roof and sides · German Federal Railways' type Tbis 870 · Length 64 mm (2-⁷⁄₁₀")

■ This special purpose car with sliding doors and sliding sides was designed for the economical loading and unloading of damp and bulk items. Every part of the car can be reached easily by a crane or fork-lift truck.

8624 new
Ballast car · Equipped with Talbot self-unloader · Used only in work train service · Length 33 mm (1-³⁄₁₀")

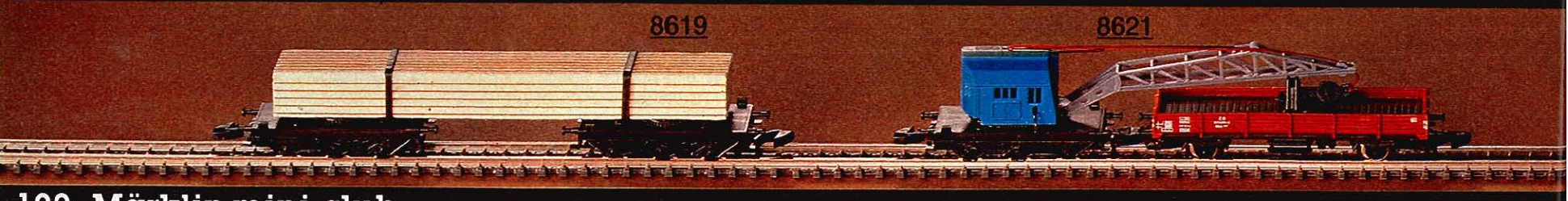
■ The German Federal Railways has special maintenance of way cars. This car, for example, has trap doors along the sides which are operated manually by a lever. When a door opens, the sheer weight of the ballast allows for "self-unloading".

8619
Disconnected Lumber car · In 2 parts · Loaded with finished lumber · Length 93 mm (3-⅝")

8611
Tank car · Shell · 4 wheels · Length 40 mm (1-⁹⁄₁₆")

8621
Crane car · Featuring a rotating crane, movable boom and boom support · Crane hook can be raised and lowered by hand · Length of underframe 35 mm (1-⅜") · (Low-side gondola 8610 is not included in the price, but is recommended for use when moving the crane car)

8612
Tank car · Esso · 4 wheels · Length 40 mm (1-⁹⁄₁₆")



The trend is definitely toward more specially-designed freight cars as the German Federal Railways, reacting to market demands, cooperates with shippers to build cars which offer customers optimum protection against damage, automated loading and unloading systems, plus take into consideration price and service life.

8607
Beer car · Feldschlösschen · Length 54 mm (2-1/8")

8608
Beer car · Carlsberg · Length 54 mm (2-1/8")

8605
Box car · German Federal Railways' type Gbrs · Length 54 mm (2-1/8")

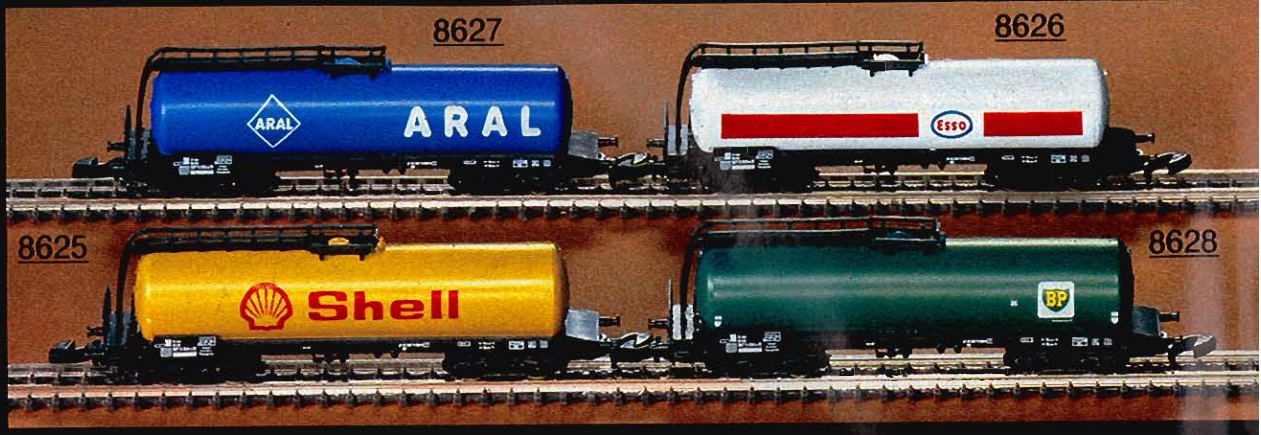
8615
Container car · DB · Length 54 mm (2-1/8")

8616
Container car · Sea Land · Length 54 mm (2-1/8")

8630
Self-unloading hopper car · German Federal Railways' type Fads 176 · Length 53 mm (2-1/16")

8627
Tank car · Aral · 8 wheels · Length 75 mm (3")

8626
Tank car · Esso · 8 wheels · Length 75 mm (3")



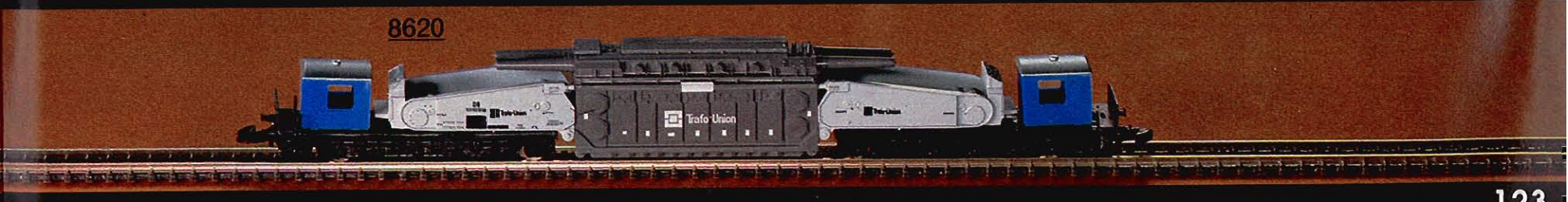
8613
Tank car · Aral · 4 wheels · Length 40 mm (1-9/16")

8614
Tank car · BP · 4 wheels · Length 40 mm (1-9/16")

8625
Tank car · Shell · 8 wheels · Length 75 mm (3")

8628
Tank car · BP · 8 wheels · Length 75 mm (3")

8620
Depressed-center flat car · Loaded with transformer · Length 154 mm (6-1/16")



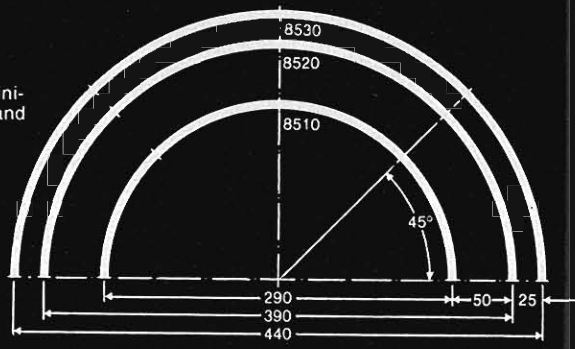
Track Work

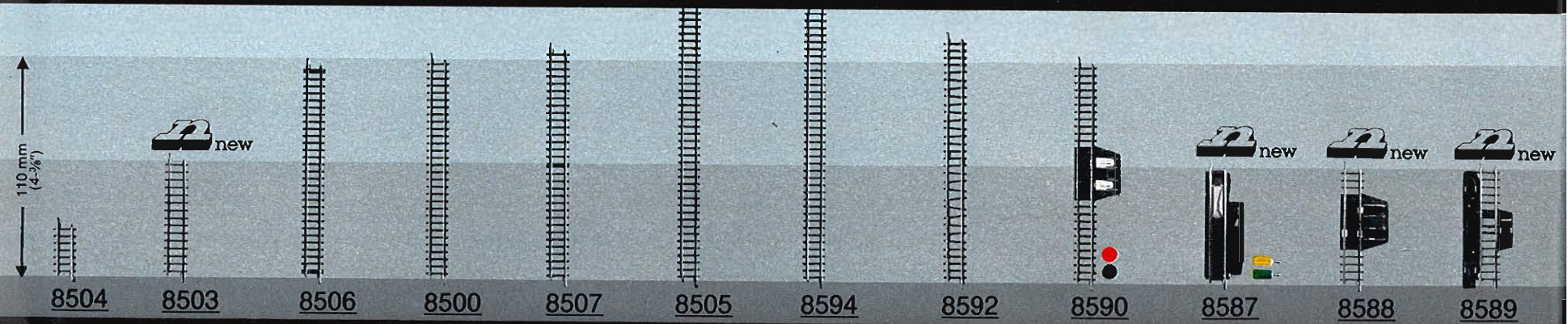
The Track System

The remarkable mini-club track sections have a gauge of only 6.5 mm (¼") with rails just 11.5 mm (7/16") high 2.5 mm (1/10") yet amazingly detailed. The accurately detailed nickel silver rails are mounted on plastic crossties. As with other scale railroads, the track sections are joined together by means of clips (fishplates). To insure a firmer connection, the fishplates are strengthened by claw couplings on the end ties, just beneath the rails.

This diagram shows the 3 Märklin mini-club track radii, including diameter and loading gauge.

Radius 8510 = 8 track sections
Radius 8520 = 8 track sections
Radius 8530 = 8 track sections





8504 Length 25 mm (1")

8503 Length 55 mm (2-3/16")

8506 Length 108.6 mm (4-5/16") · Extension track for use with crossing 8559 and double-slip switch 8560

8500 Length 110 mm (4-3/8")

8507 Length 112.8 mm (4-7/16") · Same length as the diagonal on crossing 8559 and double-slip switch 8560

8505 Length 220 mm (8-13/16")

8594 Length 660 mm (2 ft 2") · Can be made into flex-track by selectively notching the ties · When doing so, rails and tie-strip should be shortened to conform to curves and new track clips (8954) installed

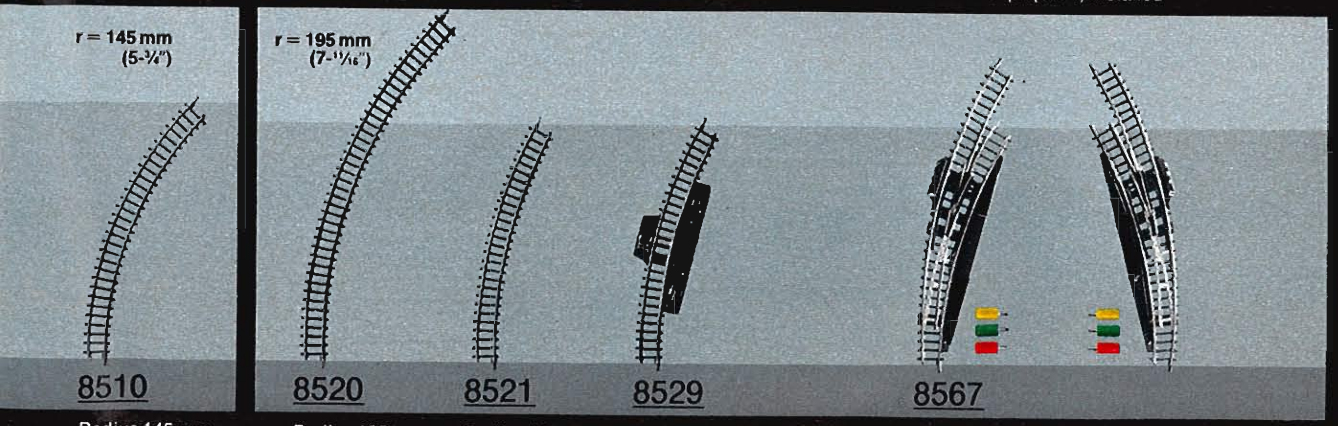
8592 Length varies from 100-to-120 mm (3-15/16" to 4-3/4") · Excellent extension track for use with switches or filling in odd gaps

8590 **Feeder track** · With radio interference supressor · Includes two track terminals and lead wires · Length 110 mm (4-3/8")

8587 **Uncoupling track** · Includes electro-magnet · Can be operated either by remote control (using control switch 7072) or manually using a lever · Length 55 mm (2-3/16")

8588 **Derail track** · Includes connecting clamp · One rail is disconnected at the center · Length 55 mm (2-3/16")

8589 **Circuit track** · Includes connecting clamps · When train passes over track, a circuit is tripped · Length 55 mm (2-3/16")



8510 Radius 145 mm (5-3/4") · 45°

8520 Radius 195 mm (7-11/16") · 45°

8521 Radius 195 mm (7-11/16") · 30°

8529 **Circuit track** · Radius 195 mm (7-11/16") · 30° · With terminals · When train passes over track, a circuit is tripped

8567 **Pair of solenoid-operated curved switches** · Radius 195 mm (7-11/16") · 30° (same as 8521) · Length of outside track 125 mm (4-15/16") · (Fig. 4)

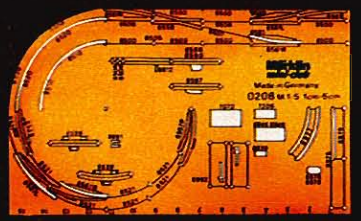
8530 Radius 220 mm (8-11/16") · 45°

8531 Radius 220 mm (8-11/16") · 30°

8539 **Circuit track** · Radius 220 mm (8-11/16") · 30° · Include terminals · When trai passes over track, a circuit is tripped

Layout Planning

It's easy to plan your mini-club layout. Use these specially-prepared "how-to" books, templates, and even a game! You'll know exactly what you'll need to realize your dream.



0208

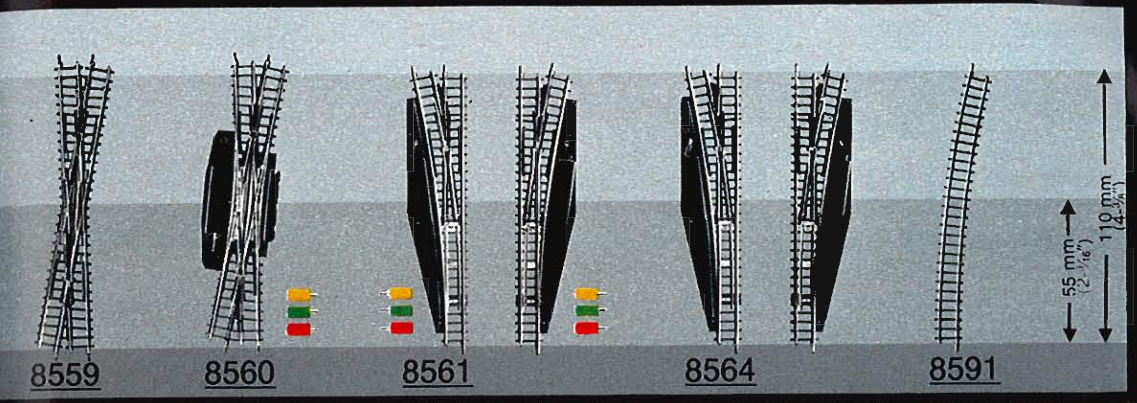
Layout templates for mini-club tracks · Scaled 1:5

0292

Booklet · 54 pages of layout designs · Includes wiring schematics, catenary, and bridgework · English text supplement included

0322 new

Booklet "Märklin-Spaß mit mini-club" by Bernd Schmid · Excellent for beginners and advanced modelers alike · Wide assortment of "how-to" tips for building mini-club layouts · Easy-to-understand text · Ideas for track work, scenery, plus novel suggestions possible only with mini-club · Well-illustrated, many color photos · 126 pages · 22×17 cm (8-¾"×6-¾") · German text



8559

Crossing · Length 112.8 mm (4-7/16") · 13° · (Fig. 1)

8560

Double slip switch · Length 112.8 mm (4-7/16") · 13° · Radius 323 mm (1' ¾") · (Fig. 1)

8561

Pair of solenoid operated switches · Length 110 mm (4-3/8") · 13° · Radius 490 mm (1' 7-¼") · (Figs. 2 and 3)

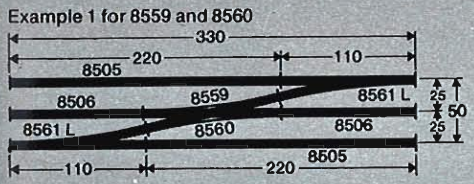
8564

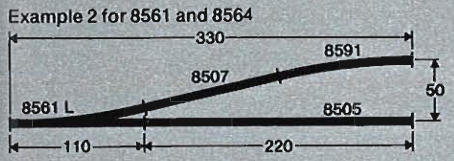
Pair of manual switches · Length 110 mm (4-3/8") · 13° · Radius 490 mm (1' 7-¼") (Figs. 2 and 3)

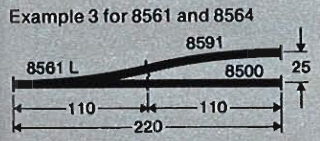
8591

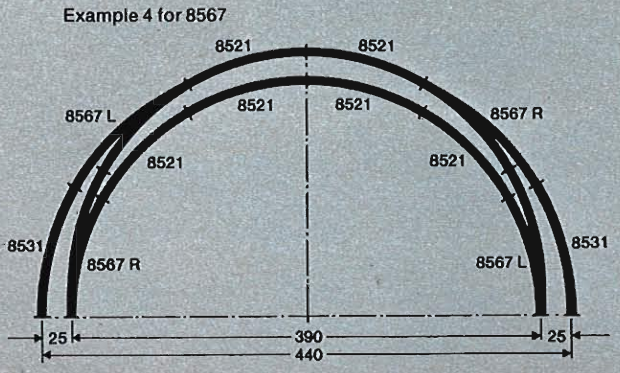
Radius 490 mm (1ft 7-¼") · 13° · Same as the curve on switches 8561 and 8564

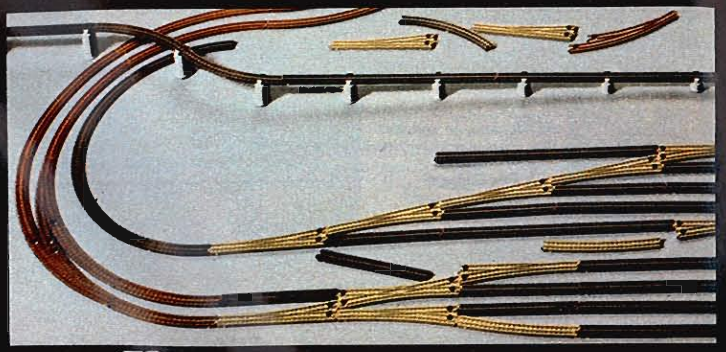
All turnouts (except 8564) including the double-slip switch are operated by double solenoids as well as manually. Can be actuated by position control box 7072 or by track circuits.











0232 new

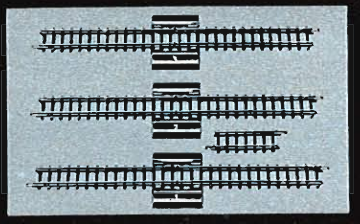
mini-club layout planning game for designing scale-sized layouts as well as general planning · Includes half-sized replicas of mini-club track sections · Enough "track" to design a medium large layout · Each "track" piece has the mini-club part number printed on the bottom · Arranged in 5 colors (3 curves, straight track sections and switches) · "Track" sections can be coupled together

With this game it is possible to plan your layout without referring to complicated geometry for curves. The color-coded "track" sections takes the guesswork out of layout planning.

To make this game a "Game", just add dice! And you can make up your own rules. For example, if someone throws a six, he gets a double slip switch. Excellent game for re-living the railroad construction wars of the 19th Century.

8974

Re-railing Ramp · Easy way to get cars on the track



8993

Reversing Loop Kit · Easy way to ensure proper polarity on reverse loops

8931 new

Illuminated bumper · Includes screw for connecting to track · Length 16 mm (11/16")

8991

Bumper · Clips onto track · Length 15 mm (5/8")

8954

Pack with 10 insulated and 20 non-insulated rail joiners

8999

100 Track Nails · 0.5×6 mm (1/64"×¼")

SET Expansion Program

The ideal way to realize your mini-club dream layout is to begin with one of the basic sets 8158–8161 or 8163 S–8166 S (see pages 110/111).

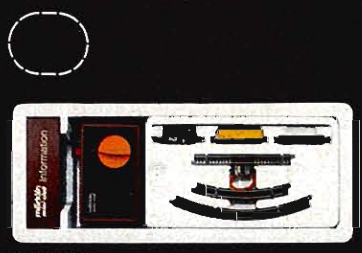
To Expand the 8163 S

First, expand the oval and add a passing track by using one of the "E" sets 8190 or 8191. Further expansion is possible by using the three "T" sets:

T1 8192 for double-tracking the oval
T2 8193 for passing track in the station area
T3 8194 for marshalling yard

The three "T" sets can be added in any sequence. A suggested sequence is shown on this page.

The basic sets 8158–8161 already include all the track for expansion sets S, E, and T3 except for a siding. Expansion sets T1 and T2 is all that is required to build the layout shown at the lower right-hand end of the SET sequence on the page. But, also, mini-club lends itself well to free-lancing as well!



8163
Freight train with power pack S

8158
Freight Train with power pack

8930
Toporama · Landscape-guide designed especially for the mini-club SET expansion program · Right-of-way clearly marked · Made of heavy-duty cloth · Colorful · Can be used with sets S+E onwards · Size 50×120 cm (1' 7-¾" × 1' 11¼")

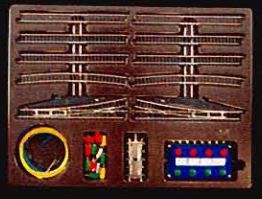
Overhead Kits

Operate your electric locomotives realistically with the fully-functional mini-club overhead system. The catenary kits shown here are specifically designed for use with the SET expansion program, but are also excellent for use on free-lanced layouts.

8198
Overhead system kit S+E · Contains all items necessary for adding catenary to the basic "S" set plus the "E" expansion set · Includes: 18×8911 · 1×8912 · 9×8922 · 11× 8923 · 1×8926

8199
Overhead system kit T1+T2+T3 · Contains all items necessary for adding catenary to the three "T" expansion sets · Includes: 4×8911 · 16×8914 · 3×8921 · 6×8922 · 24×8923 · 2×8924 · 6×8925 · 1×8926 · 1×8927

8190
Expansion set E with manual switches · Includes: 1×8564 · 2×8591 · 10×8500 · Instructions



8191
Expansion set E with solenoid-operated switches · Includes: 1×8561 · 2×8591 · 10×8500 · 1×7072 · 1×7209 · Leads, sockets, plugs · Instructions

8192
Double track set T1 · Includes: 1×8567 · 2×8521 · 4×8530 · 6×8500 · 1×7072 · 1×7209 · Leads, sockets, plugs · Instructions

8193
Station passing track set T2 · Includes: 1×8567 · 2×8521 · 2×8504 · 6×8500 · 1×7072 · 1×7209 · Leads, sockets, plugs · Instructions

8194
Marshalling yard set T3 · Includes: 1×8560 · 1×8561 · 10×8500 · 1×7072 · 1×7209 · 4×8991 · Leads, sockets, plugs · Instructions

Power Packs and Installation Accessories

Multiple train control adds interest and excitement to any model railroad.

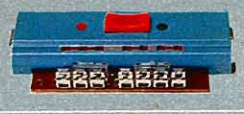
Multiple train operation is possible by using separate electrical circuits; with each circuit controlling a different stretch of track. Each circuit requires a separate power pack.

6701 new

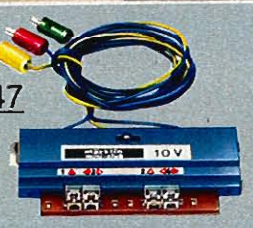
6727

8945

8946

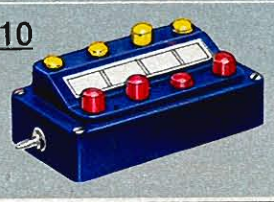


8947

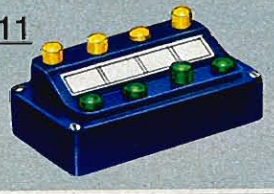


7072

7210



7211



Wires

Copper wires consist of 24 separate strands 0.10 mm (0.004") in diameter each, for an overall circumference of 0.19 mm² (0.03 sq in). Can withstand short-circuits.

Sockets

7111 = brown
7112 = yellow
7113 = green
7114 = orange
7115 = red
7117 = gray

Plugs with side sockets

7131 = brown
7132 = yellow
7133 = green
7134 = orange
7135 = red
7137 = gray

7100 **Wire** · Single-core · Gray · 10 m (33 ft)

7101 **Wire** · Single-core · Blue · 10 m (33 ft)

7102 **Wire** · Single-core · Brown · 10 m (33 ft)

7103 **Wire** · Single-core · Yellow · 10 m (33 ft)

7105 **Wire** · Single-core · Red · 10 m (33 ft)

7000 **Staples** · Bag of 50 · For stapling wires on wood

7209 **Distribution strip** · With 11 single sockets · Measures 50×20 mm (2"×¾")

Once the tracks are laid, it is then time to install wiring. And it's easy using Märklin's color-coded leads.
Red: for wires supplying power to the rails.
Brown: for wires returning current from the rails. These Brown wires are grounded.
Yellow: for supplying constant voltage to operating accessories, and lights.
Gray: for return of constant voltage from operating accessories, and lights. The Gray wires are also grounded. These gray wires are also used for returning current from solenoid operated switches.
Blue: for supplying current to solenoid-operated switches. These blue wires have color-coded plugs for proper operation of the switches.

6701 220 Volt new

Märklin mini-club Power Pack electronic 08 for use with AC power supply · Uses a programmed diode-circuitry to supply a steady flow of current at any range for smooth operation · Ideal for prototypically slow starts with realistic acceleration and decelleration · Single knob controls both the **DC track voltage** (between 0 and 8 V) as well as direction of travel (by rotating knob from center position) · Power output to 8 VA DC for tracks and 10 volt 8 VA **AC** for accessories · Brown plastic housing · Weight 0.8 kg (1-¾ oz) · Measures 85×117×70 mm (3-$^{11}/_{32}$" × 4-⅝" × 2-¾")

6720 100 Volt Japan

6727 110 Volt (60 Hz) UL-Approved

6729 240 Volt

Märklin mini-club power pack for use with AC power supply · Output 12 VA · **DC track current** adjustable between 2 V and 8 V · Polarity reversing switch for determing direction of travel · 10 V **AC current for accessories** · Blue plastic case · Weight 1.2 kg (2½ lb) · Measures: 125×135×75 mm (4-$^{15}/_{16}$" × 5-$^{5}/_{16}$" × 3")

8939

Color light home signal · Operating red/green lights · 2 bulbs · Operates either with universal remote control switch 8945 or with manual signal switch 8946 · Height 34.5 mm (1-⅜")

= 8953

8940

Home signal with 1 semaphore · Operating red/green lights · Uses double-solenoid · Can be used for automatic train control · Operates either with position control box 7072 or with a circuit track · Height 45 mm (1-¾")

= 8953

8945

Universal remote control commutator (switch) uses 2 single-pole switches and one changeover switch for various circuits · The Universal can perform a variety of functions-up to three simultaneously · For examples see booklet 0292 · Operates on 10 V · Double-solenoid operation · Operated in conjunction with a circuit track, a position control box or by hand · Width 30 mm (1-⅜") · Length 70 mm (2-¾") · Height 8 mm ($^{5}/_{16}$")

8946

Manual signal control panel with 2 single-pole switches and one changeover switch · Used for controlling signal 8939 as well as track current · Width 30 mm (1-⅜") · Length 70 mm (2-¾") · Height 8 mm ($^{5}/_{16}$")

8947

Double-pole changeover switch (for reversing polarity) · Operates on 10 V · Double-solenoid operation · Operates in conjunction with a circuit track, position control box or by hand · Width 30 mm (1-$^{3}/_{16}$") · Length 70 mm (2-¾") · Height 8 mm ($^{5}/_{16}$")

7072

Position control box with 8 sockets for connecting 4 double-solenoid operated items · Position of buttons correspond to position of signals, switches, etc. · Length 80 mm (3-⅛") · Width 40 mm (1-$^{9}/_{16}$")

7210

Circuit breaker box for distributing track or accessory current on 4 different circuits by means of indicating buttons · Length 80 mm (3-⅛") · Width 40 mm (1-$^{9}/_{16}$")

7211

Circuit-breaker box · On-Off switch for 4 different track and accessory circuits · Uses push-buttons · Length 80 mm (3-⅛") · Width 40 mm (1-$^{9}/_{16}$")

8954

Pack of rail joiners · Includes 20 metal joints and 10 insulating joints

Overhead System

8911
Single track mast · Includes supporting plate · Height 38 mm (1-½")

8912
Feeder mast to connect power supply to overhead · Includes supporting plate and leads · Height 38 mm (1-½")

8913
Bridge mast for clipping on side of bridges, ramps, etc. · Height 41 mm (1-⅝")

8914
Tower mast for multiple track overhead · Can accept cross-spans 8924 and 8925 · Base 7×13 mm (¼" × ½") · Height 61 mm (2-⅜")

8922
Catenary wire for straight and curved tracks · Length 165 mm (6-½")

8923
Catenary wire · Adjustable length 150 to 180 mm (5-⅞" to 7-⅛")

8924
Cross-span · Hooks onto tower masts · Spans 5 tracks · Length about 123 mm (4-⅞")

8925
Cross-span · Hooks onto tower masts · Spans 3 tracks · Length about 72 mm (2-⅞")

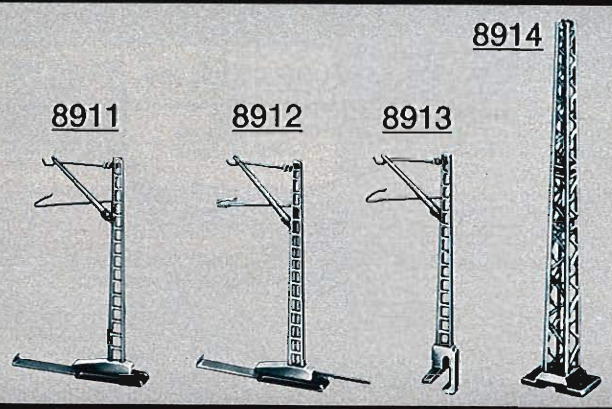
8921
Catenary insulators · Pack of 8 white and 2 gray insulators for insulating catenary wires from cross-spans · White insulators hold 2 wires, gray insulators hold 3 wires

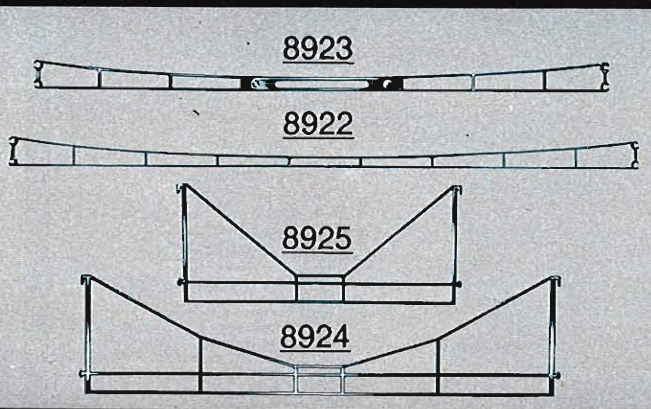
8926
Pack of 8 insulator sections and 6 connecting springs · Required for insulating points on overhead and at switches

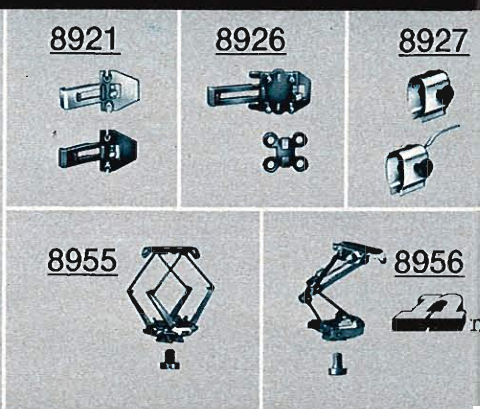
8927
Catenary wire terminals · Contains 2 screw terminals with leads and 3 without leads · For feeding power to catenary wires and for holding wire sections together (such as over crossings etc.)

8955
Standard pantographs · Includes screw for mounting

8956 new
Modern-style pantograph · Includes screw for mounting

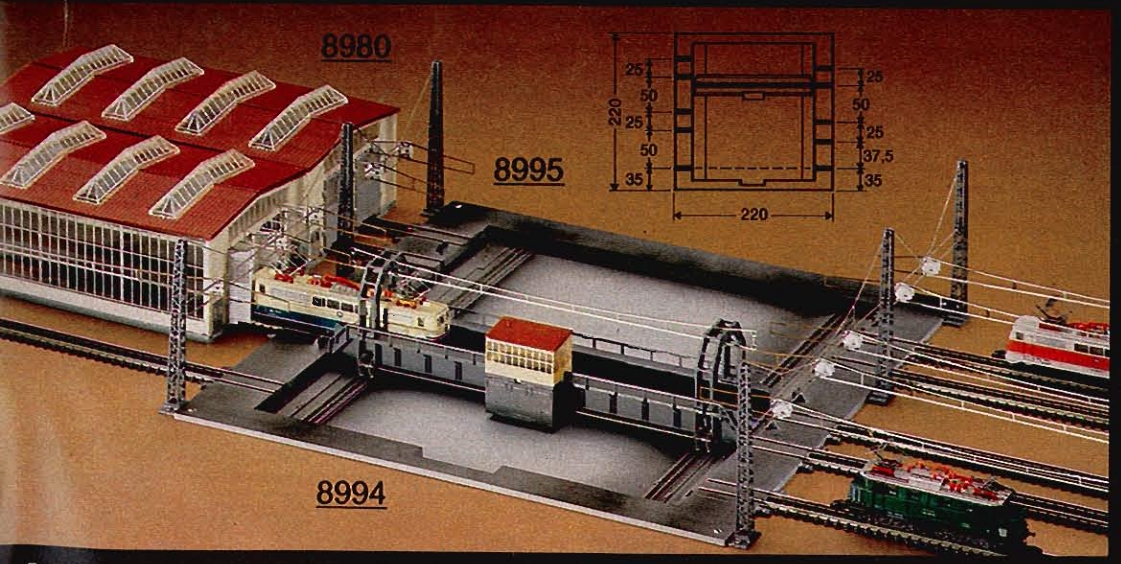


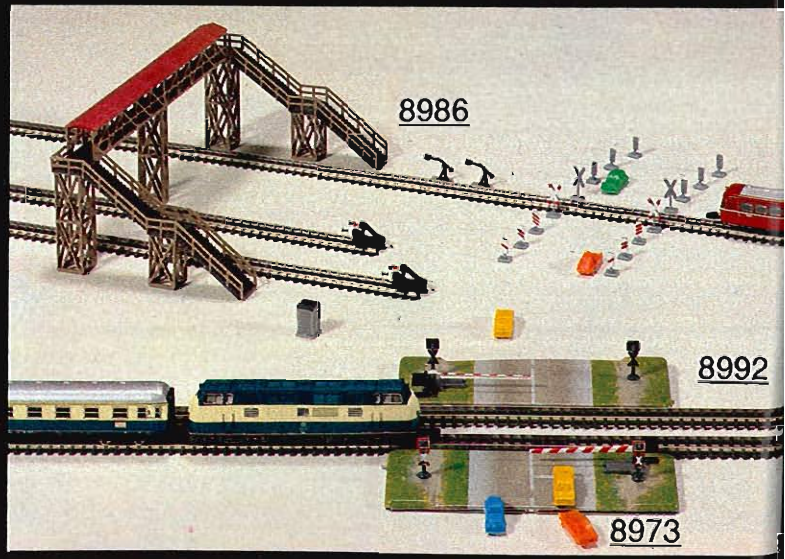




Accessories

Märklin's mini-club system includes a wide range of accessories which add character to a layout. Use these accessories for depicting real life scenes on steam, diesel or electric layouts. General scenery material (mats, grass, trees, etc.) is also available at any reputable hobby shop. Structure kits listed here can be illuminated with lighting set 8950.





8960
Göppingen Station kit · Model of center wing of actual station · Base measures: 228×114 mm (9″ × 4-½″) · Height 44 mm (1-¾″)
(Göppingen, Märklin's hometown, is in the state of Baden-Württemberg and lies astride the main Stuttgart–Munich line.)

8961
Platform kit · 2 complete kits · Total overall length 440 mm (1 ft 5-¼″) · Width of each platform 38 mm (1-½″) · Height 23 mm (⅞″)

8965
Interlocking tower kit · Base area 69×39 mm (2-¾″ × 1-½″) · Height 46 mm (1-¾″)

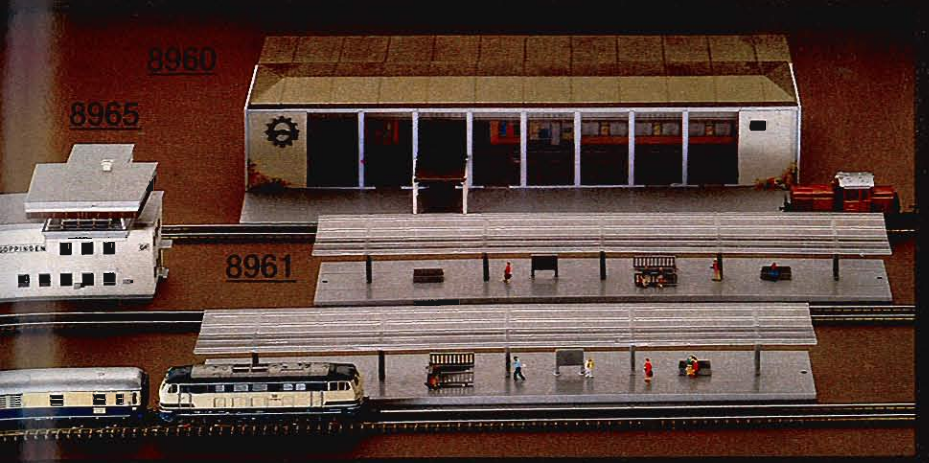
8975
Through bridge · Gray · Length 220 mm (8-⅝″)

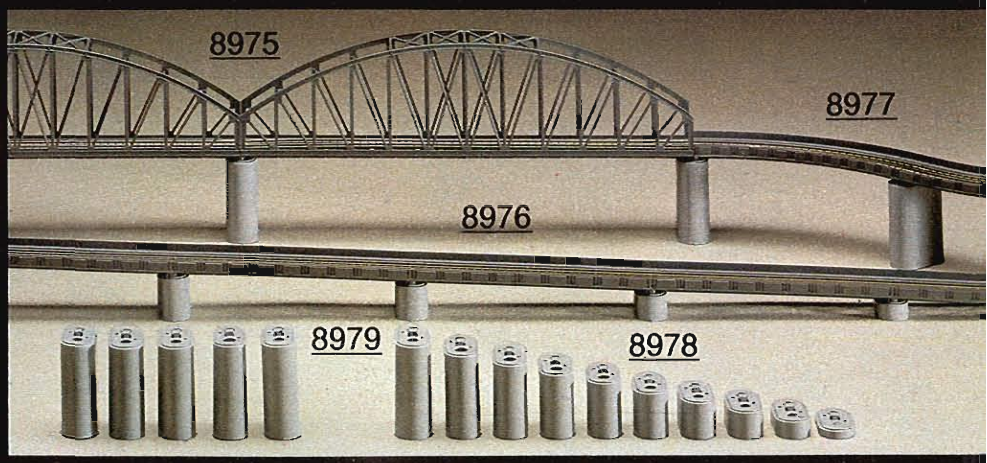
8976
Straight ramp · Length 110 mm (4-⅜″)

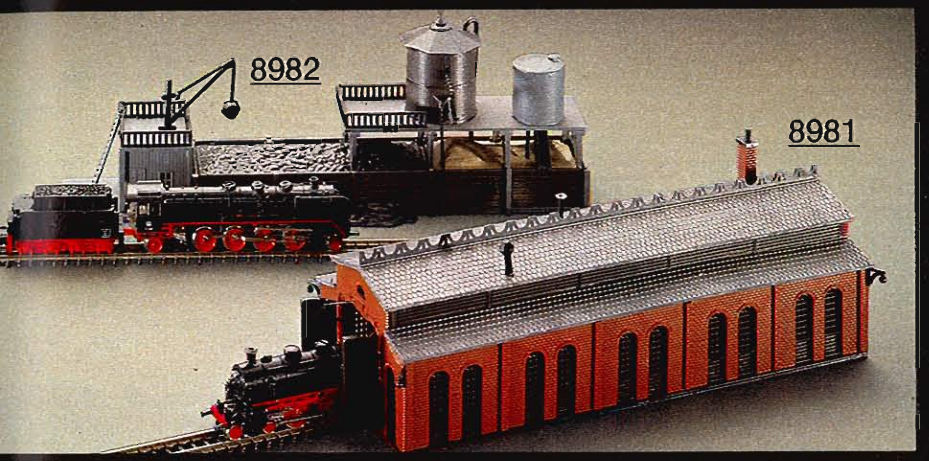
8977
Curved ramp · Radius 145 mm (5-¾″) · Track curvature 45° · Will accomodate curved track 8510

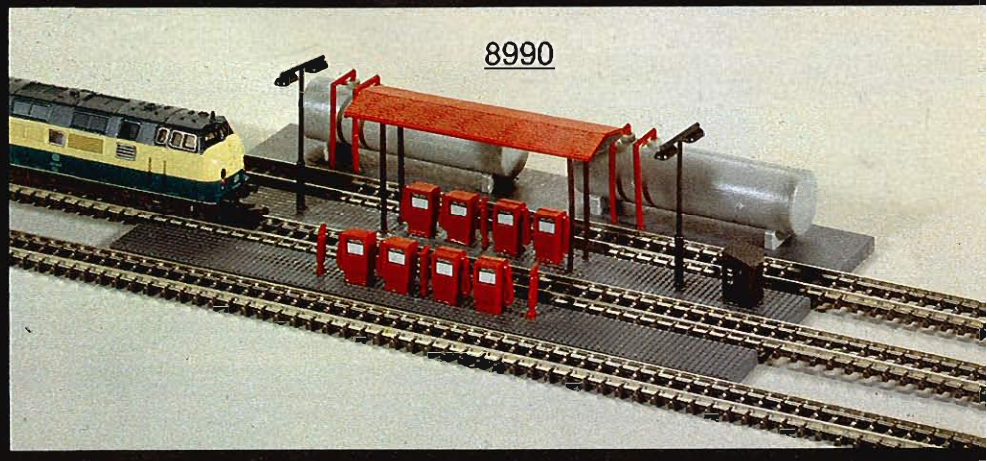
8978
Set of approach ramp pillars · Includes 10 pillars, one each of 4, 8, 12, 16, 20, 24, 28, 32, 36, and 40 mm (0.157″ to 1-⅝″)

8979
Set of bridge pillars · Includes 5 pillars 40 mm high (1-⅝″)









8980
Two-bay engine house with operating doors · Kit includes 2 insulated track sections which automatically stop engines · Can accomodate overhead wires · Length 152 mm (6″) · Width 74 mm (2-⅞″) · Height 51 mm (2″)

8995
Overhead kit for transfer table · Includes 2 support masts 1 catenary wire 8922 with lead soldered on · 10 short catenary wires for approach tracks

8994
Transfer table with 2 approach tracks and 8 stall tracks · Mates with engine house 8980 · Can be flush-mounted on layout · Power pack for remote control of table and locomotives · Operates with electric motor · Power is automatically disconnected to tracks not alligned with table · Width and length both 220 mm (8-⅝″)

8973
Package of assorted mini-club automobiles

8986
Right-of-way detail assortment · Includes 2 tension maintainers (for signals and switches) · 4 crossing bucks · 4 sets of three railroad crossing approach highway signs · A telephone booth and a foot bridge

8992
Grade crossing kit with gates · Includes 2 solenoid-operated crossing gates · 2 pair of crossing bucks (iluminated when gates are down) · Each half measures: 96×37 mm (3-¾″ × 1-½″)

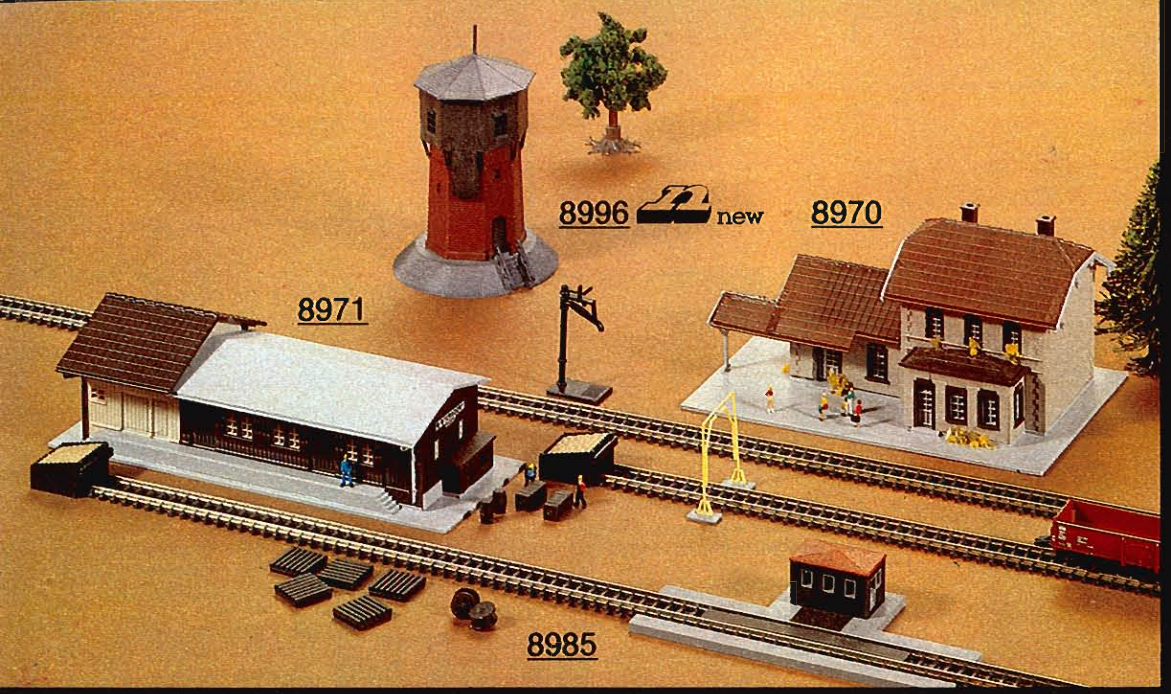
= 8953

For exciting prototype operation of the grade crossing, you'll need:
a) for **manual operation**: 1 manual signal control box 8946
b) for **automatic** operation by approaching train: 1 universal remote control switch 8945, 2 circuit tracks (be sure to use the appropriate type, e. g.: 8529, 8539, or 8599)

8981
Single-bay engine house with operating doors · Includes insulated track which automatically stops engines · Base measures: 150×50 mm (5-⅞″ × 2″)

8982
Steam locomotive servicing area kit · Includes crane, coal bunker, water tower, sand bunker with spout · Base measures: 150×35 mm (5-⅞″ × 1-⅜″)

8990
Diesel servicing kit · Includes fuel pumps, heating oil pumps, storage tanks, and roof · Base measures: 150×75 mm (5-⅞″ × 3″)



8970
Wintersdorf station kit · Includes main building, annex and canopy · Can be used alone or in conjunction with 8971 freight house · Base measures: 72×112 mm (2-⅞" × 4-⅜") · Height 54 mm (2-⅛")

8971
Freight house kit · Includes warehouse, platform, and equipment storage area · Can be used alone or in conjunction with 8970 station · Base measures: 53×130 mm (2-⅛" × 5-⅛") · Height 38 mm (1-½")

8985
Freight station detail kit · Includes loading gauge, scale (non-working) with shed, 2 bumpers, 5 stacks of crossties, 2 cable reels, 2 crates, and 2 drums

8996 new
Water tower kit · With spout · Base measures: 55×55 mm (2-³⁄₁₆" × 2-³⁄₁₆") · Height 75 mm (3")

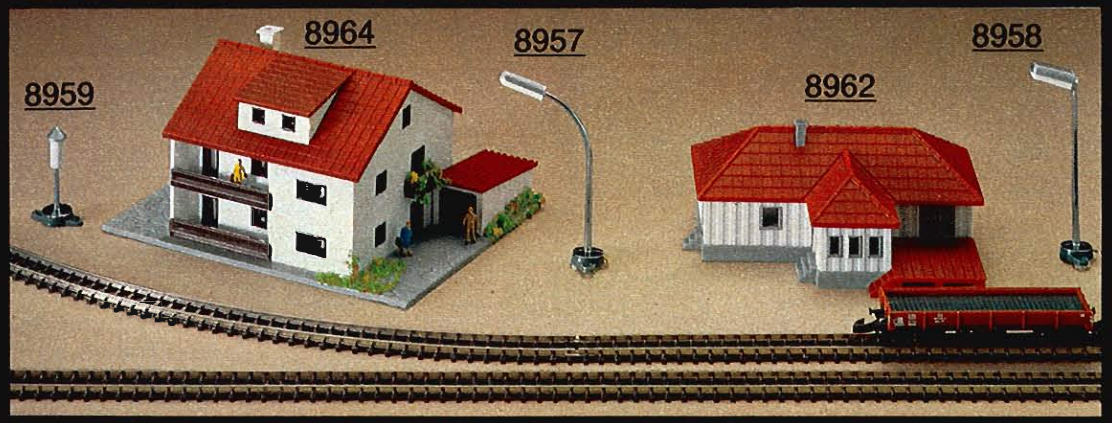
7599
Flat head wood screws · Ideal for connecting bridges to pillars · Pack of 200

8950
Lamp with socket · Includes leads · Ideal for stations, buildings, etc.

= 8953

8953
Lamp · 10 V bulb · For use with socket 8950, signals 8939 and 8940, grade crossing 8992, and for illuminated locomotives

60210
Light bulb for items 8896, 8957, 8958, and 8959



8957
Street light · Height 46 mm (1-¾") · Base 8×14 mm (⁵⁄₁₆" × ⁹⁄₁₆")

= 60210

8958
Station light · Height 46 mm (1-¾") · Base 8×14 mm (⁵⁄₁₆" × ⁹⁄₁₆")

= 60210

8959
Park light · Height 25 mm (1") · Base 8×14 mm (⁵⁄₁₆" × ⁹⁄₁₆")

= 60210

8962
Dürnau station kit · Multi-purpose building with annex and platform · Base measures: 70×50 mm (2-¾" × 2") · Height 30 mm (1-³⁄₁₆")

8964
Private residence kit · Includes garage · Can be made into a one or two-story house · Base measures: 91×71 mm (3-⅝" × 2-¾") · Height 45 mm (1-¾")

8963
Apartment house kit · Include penthouse which can be used separately as bungalow and newsstand · Base measures: 86×84 mm (3-⅜" × 3-⁵⁄₁₆") · Height 97 mm (3-⅞")

8968
Bungalow kit with terrace · Includes garage · White sides · Can be built as a one or two story home in many variations, or as a terrace house · Base measures: 81×45 mm (3-¼" × 1-¾") · Height 29 mm (1-⅛")

8969
Bungalow kit with terrace · Includes garage · Same as kit 8968 except sides are colored blue


märklin
I
212 225-7
DB
212 225-7

All aboard!

I scale 45 mm (1-¾") gauge
Scaled 1:32
2-rail AC system
True-to-life models with accurate Märklin-quality detailing

At last, a model railroad that can be placed anywhere in and around the house. Märklin's large scale trains offer endless hours of fun for people of all ages. The size and sturdy construction provide ample scope for a wide variety of railroad operations.
The Märklin I trains are excellent attractions at parties (watch how guests react as hors d'oeuvres and drinks arrive "by train"!).
The high quality and prototypical accuracy will impress even the most experienced model railroaders.

The best way to get started is with the Beginner's Set 5530. It includes everything necessary to get rolling. Or, one can indulge on a piece by piece basis acquiring the engines, cars and track as needed.
Märklin I can be placed easily, and relaid with equal ease, anywhere in and around the house.
The locomotives are AC powered and operate on realistic 2-rail track. Direction of motion is controlled by a switch in the locomotive.

With the Beginner's Set

The beginner's set is an ideal basis upon which to develop a Märklin large size railroad.
The set can be easily extended economically according to preference. Build a nice long main line, install yards and switches, establish an engine maintainence depot, or explore the many ways of operating the locomotives and cars.

5530 220 Volt

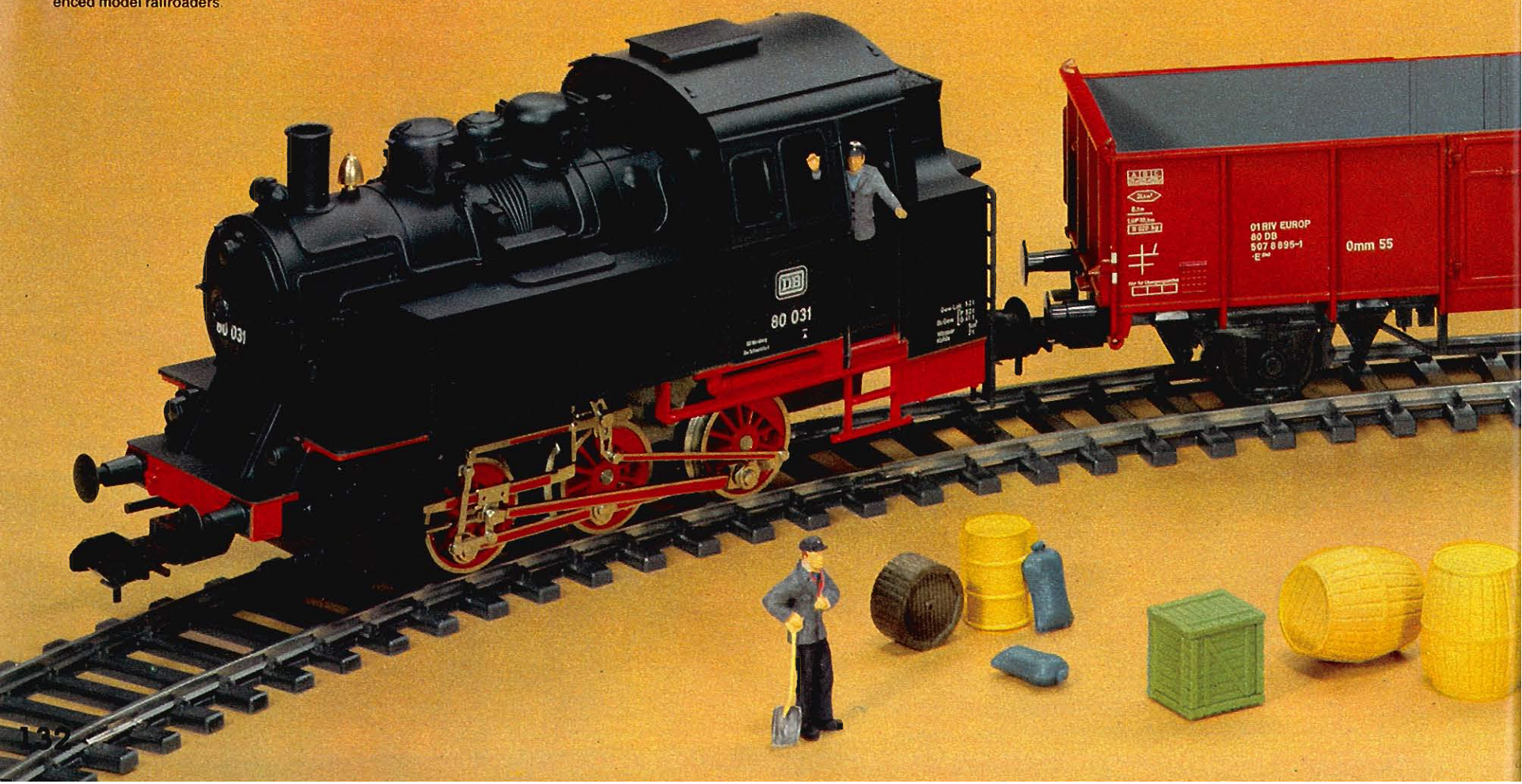
Freight train with transformer · Includes: 1 tank engine 5700, 1 gondola 5850, 1 flat car 5853, 1 straight track 5900, 12 curved tracks 5921, 1 feeder track 5990 with capacitor to suppress radio static, engineer and fireman figures, 2 barrels, 2 sacks, 1 crate, 1 oil drum, 1 reel of cable, and 9 logs for freight loads, and 1 transformer 6631 · Length of train 97 cm (3' 2")

Or the do-it-yourself method

A Märklin I layout can be easily developed on a piece-by-piece basis. There is a good variety of track sections, locomotives and cars.

For the simplest layout, an oval, all that's necessary is a feeder track 5990, a straight track 5900, and 12 curved tracks 5921. But there is no need to stop at an oval. Add a "straightaway" for more fun. All that is needed are 9 additional straight tracks 5900.

With a lengthy straight section, hours of fun can be had loading and unloading the cars. And it is suprisingly inexpensive to add switches, additional track, stations, etc.

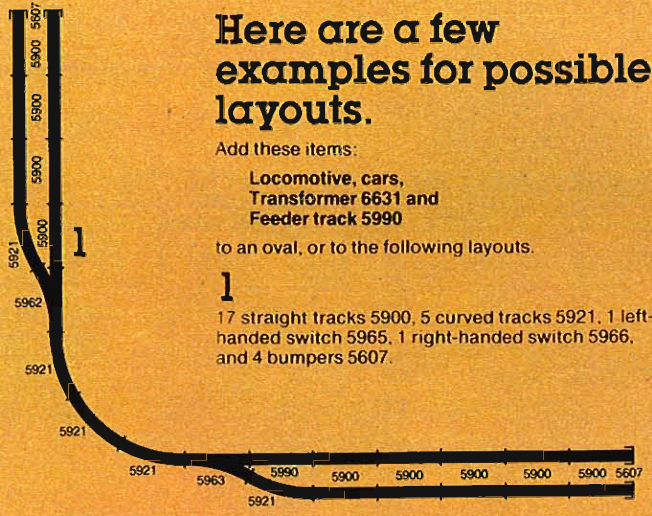


Here are a few examples for possible layouts.

Add these items:

Locomotive, cars, Transformer 6631 and Feeder track 5990

to an oval, or to the following layouts.

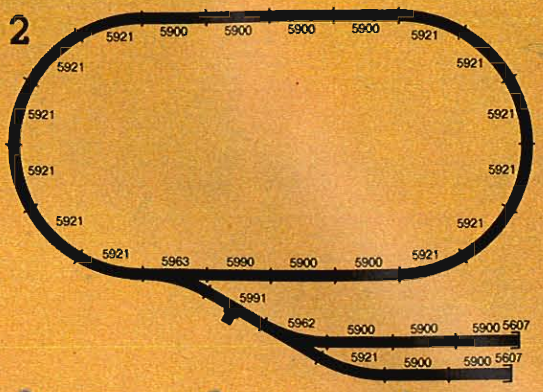


1

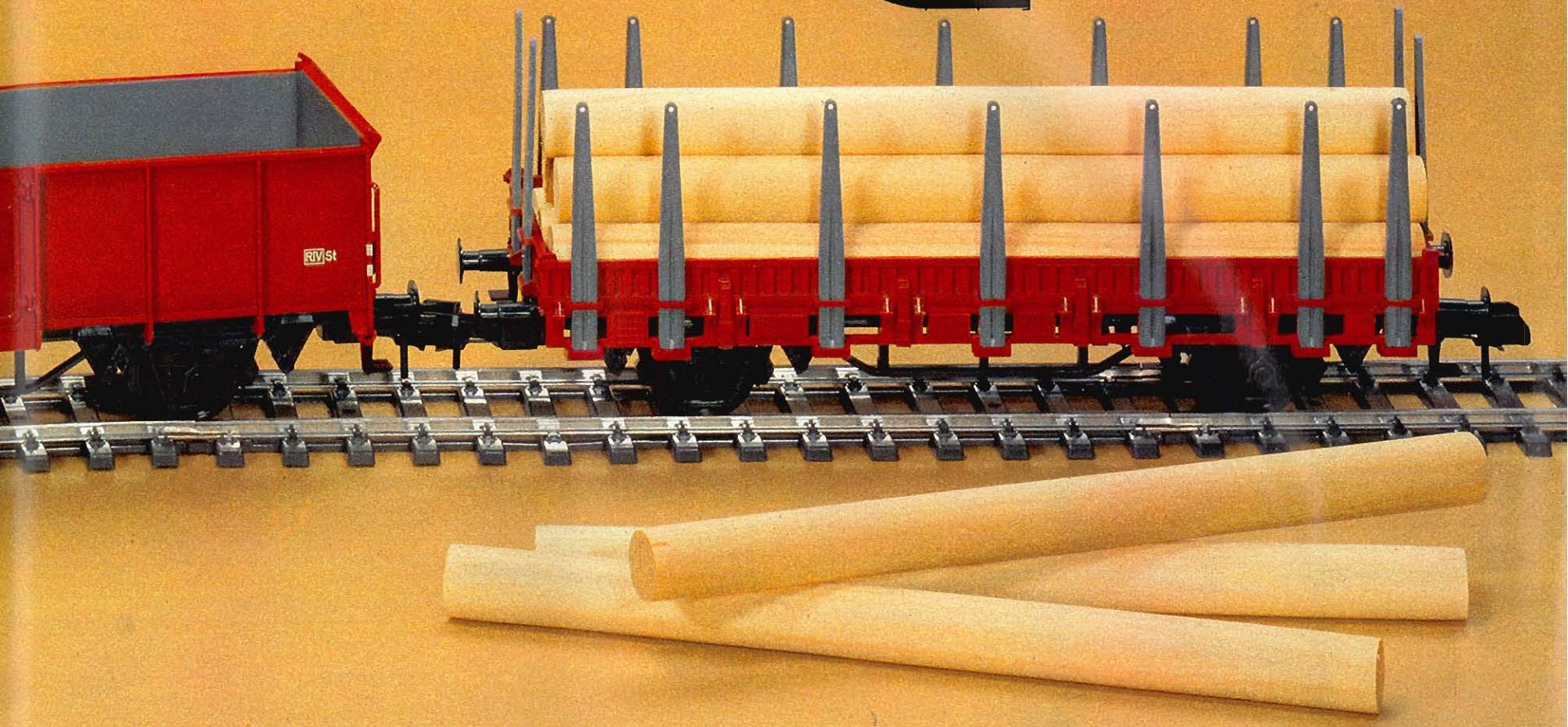
17 straight tracks 5900, 5 curved tracks 5921, 1 left-handed switch 5965, 1 right-handed switch 5966, and 4 bumpers 5607.

2

11 straight tracks 5900, 13 curved tracks 5921, 1 left-hand switch 5962 (5965), 1 right-hand switch 5963 (5966), 1 uncoupler track 5991, 2 bumpers 5607, 1 control box 7072, wires and plugs.



The cars can be spotted anywhere on the layout for the shipment of liquids and freight. The tank cars 5865–5867, for example, can be filled from the operating water spout. The dump car 5859 is loaded with gravel, etc.



The class 212

Both cabs are completely detailed. Cab doors have operating handles.

■ With dieselization in sight, the German Federal Railways required a diesel that could perform branch line work and also assist with short-haul main line work. In 1956, the Federal Railways, in cooperation with Maschinenbau Kiel GmbH, began to develop the V 100.

The diesel-hydraulic engine V 100, later classed as the 211, was placed in service in 1958. It had a rating of 806 kW. A total of 364 units were built.

Soon after the V 100 was developed, however, surging traffic demands required a more powerful unit. Thus the class 212 came to be. Since 1962, 381 units have been outshopped. Its motor is rated at 993 kW, and has a top speed of 100 kmph (62 mph). The diesel is equipped with an oil-fired boiler to supply heat for passenger cars.

Like its predecessor, the 211, the 212 is a multi-purpose diesel designed for branch line work and short-hauls on non-electrified track.

5772 new

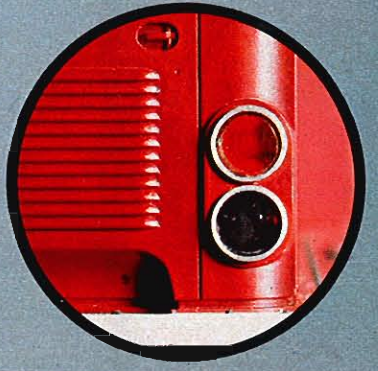
Multi-purpose diesel · German Federal Railways' class 212 · B-B wheel arrangement · 1 worm-gear driven power truck · Ball-bearing armature shaft · 2 non-skid tires · Die cast zinc frame · Prototypical color scheme · Operating cab doors · Remote control switch for forward or reverse · Constant-brightness head and tail lights, 3 white headlights and 2 red tail lights at each end illuminated according to direction of travel · 2 completely detailed cab quarters · Sprung buffers at each end · Automatic, removable clawcouplers · Also includes 2 screw couplers and 4 simulated air brake hoses which can be installed in place of the claw couplers · Length over buffers 38.4 cm (1' 3-¼")

Light bulb = 60019
Brushes = 60152

5742 new

Multi-purpose diesel · 2-rail DC version of the 5772

Head and tail lights illuminated according to direction of travel.



The class 78

■ Märklin's I scale class 78 engine carries the roadnumber 78 355. Its prototype had a long and busy career with the German railroads before being retired on December 11, 1968.

The 78 355 was the seventy-eigth of its class to be produced by Henschel. It was delivered to the Essen Division in 1922 and initially assigned roadnumber "Essen 8930". Records are unclear as to where it spent its first 11 years, but by 1933, the 78 355 was stationed at Hanau. She remained there until 1961, when she was transferred to Aalen on the Stuttgart–Schorndorf line. That line was not yet electrified and the authorities required a steamer capable of push-pull operation.

As recent as 1963, Aalen had ten T 18 locomotives stationed there. (T 18 was the former designation of the class 78.) Its ability to run well in either direction made it a good candidate for push-pull operation. Thus several of the 78s were outfitted with m.u. controls, especially those assigned to branches north of the Stuttgart–Schorndorf mainline.

During the "push" phase of the push-pull operation, the engineer sat in the cab of the front coach and telegraphed braking and accelerating commands to the fireman. This procedure required excellent teamwork between engineer and fireman and the fireman had to be very knowledgeable of an engineer's duties. During the "pull" phase both men occupied the locomotive cab.

These 4-6-4T locomotives were also used in yard duty. A few were even outfitted with radio control and used for switching, for example at the Düsseldorf Main Station.

5706

Tank locomotive · German Federal Railways' class 78 · 4-6-4T wheel arrangement · All drivers powered through hidden gears · Armature shaft mounted between ball bearings · 2 non-skid tires · Simulated Heusinger valve gearing · Die cast zinc frame · Highly detailed body with flat black finish · Remote control switch for forward or reverse · Built-in smoke set · 3 constant-brightness headlights at each end · Sprung buffers at each end · Automatic, removable claw couplers · Also includes 2 screw couplers and 4 simulated air brake hoses which can be installed in place of claw couplers (in such case, the rail guards would have to be changed, both sets included) · Engineer and fireman figures included · Length over buffers 46.3 cm (1' 6-¼").

Light bulb	= 60019
Carbon brushes	= 60152
Smoke fluid	= 0241

This model will not negotiate curves with a radius less than 1 meter (3' 3"). Curved tracks 5932 and switches 5972/5973 are appropriate for the 5706.

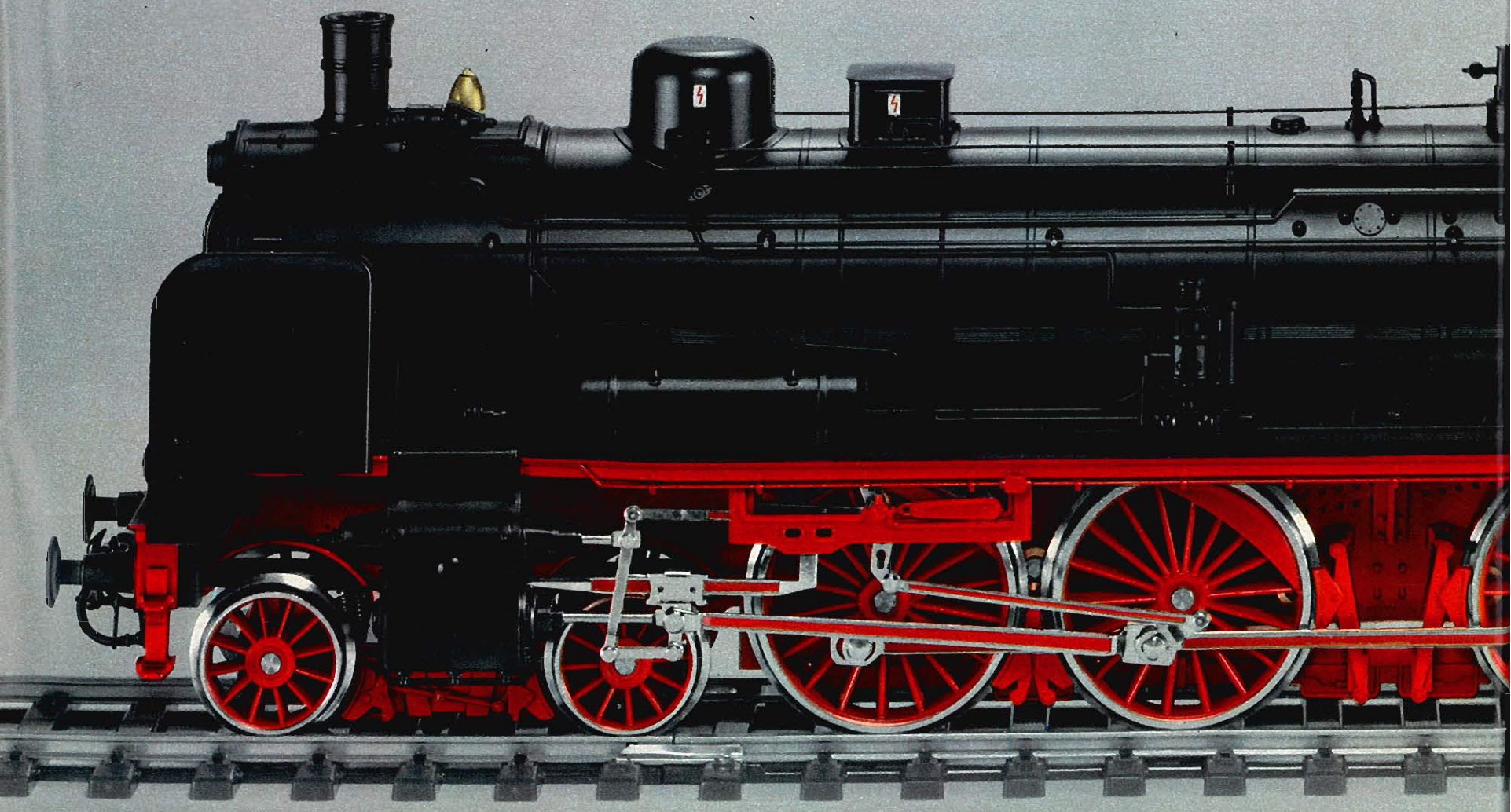
5746

Tank locomotive · 2-rail DC version of the 5706

The class 38

■ The class 38 was one of the most popular passenger train locomotives ever built. By 1928, 3800 units were already in service. With an average service-life of 66 years, they hauled all types of varnish.

The first of these engines was built in 1906 by Schwarzkopff Locomotive Works for the Prussian Railways as their class P 8. Because they were economical and reliable, the P 8 quickly became the favored Prussian passenger engine. These 4-6-0 locomotives were also popular on foreign railroads.



5799

Locomotive with tender · German Federal Railways' class 38 · 4-6-0 wheel arrangement · All drivers powered through hidden gears · Armature shaft mounted between ball bearings · 2 non-skid tires · Simulated Heusinger valve gears · Die cast zinc frame · Highly detailed body includes elephant ears and remarkably detailed backhead · Prototypical flat black finish · Remote control for forward and reverse · Built-in smoke set · 3 constant-brightness headlights at each end · 8-wheeled tender with 2 trucks · Real coal in the tender · Sprung buffers and imitation air brake hoses on buffer beams · Prototypical screw coupler in front, which can be replaced with an automatic claw coupler · Automatic claw coupler on tender · Illuminated cab · Includes engineer and fireman figures · Length over buffers 58 cm (1' 11")

Light bulb * = 60019
Carbon brushes = 60146
Smoke fluid = 0241

This model will not negotiate curves with a radius lass than 1 meter (3' 3"). Curved tracks 5932 and switches 5972/5973 are appropriate for the 5799.

5797

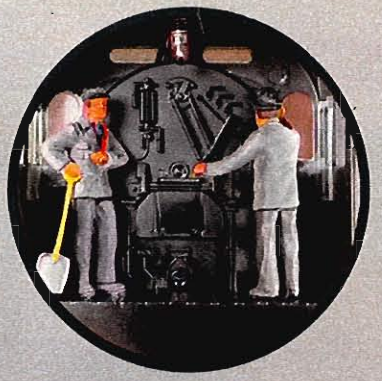
Locomotive with tender · Similar to the 5799 but has mechanism to simulate real locomotive sounds including whistles · Sound mechanism, which creates realistic exhaust sounds, is located in the tender · The whistle is activated by means of special magnets located on the track · 2 of these magnets are provided

5749

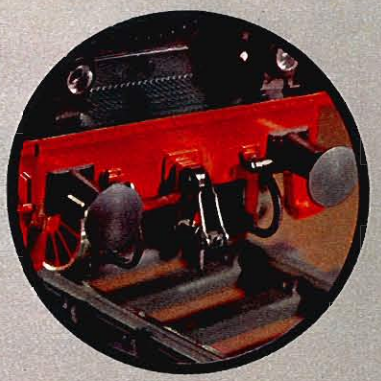
Locomotive with tender · 2-rail DC version of the 5799

5747

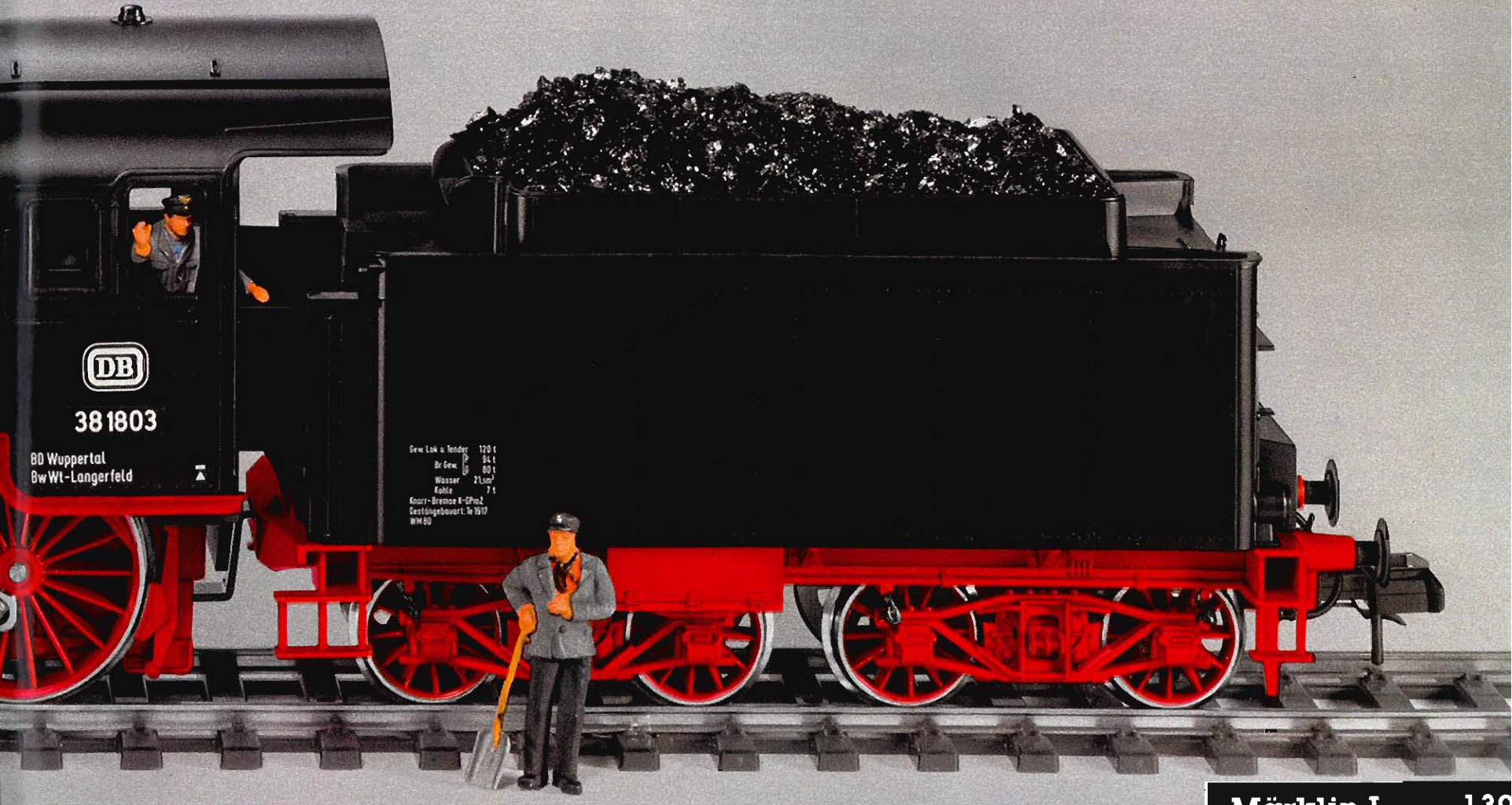
Locomotive with tender · 2-rail DC version of the 5797



Highly detailed and illuminated cab.



Sprung buffers, prototypical screw couplers and simulated air brake hoses.



The class 80

■ The class 80 engines were built in 1927/28. Rated at 422 kW, they could haul 1380 tons at 35 kmph (22 mph) on level track.

The German Federal Railways had 17 of these locomotives and the last one was retired in 1965. A few of these switchers were used on industrial railways in the Rhine and Ruhr districts.

2
5702

1
5700

3 operating headlights at each end

Diesel switcher

Operating cab doors.

3
5720

3

5720 · Diesel switcher · Industrial switcher with 0-6-0 wheel arrangement · 2 non-skid tires · Remote control for forward and reverse · 3 operating headlights at each end · Red body with yellow striping · Operating cab doors · Windows with "cellon" panes · Die cast zinc frame · Automatic claw coupler and sprung buffers at each end · Length over buffers 30.25 cm (1')

light bulb = 60015
carbon brushes = 60035

1

5700 · Tank locomotive · German Federal Railways' class 80 · 0-6-0T wheel arrangement · 2 non-skid tires · Simulated Heusinger valve gears · Remote control for forward and reverse · 3 headlights at both ends · Operating cab doors · Windows have "cellon" panes · Die cast zinc frame · Automatic claw coupler and sprung buffers at each end · Length over buffers 30.25 cm (1')

Light bulb = 60015
Carbon brushes = 60035

2

5702 · Tank locomotive · 0-6-0T wheel arrangement · 2 non-skid tires · Simulated Heusinger valve gears · Remote control for forward and reverse · 3 headlights at each end · Black boiler, dark green tanks and cab, brass colored window frames and hand rails · Operating cab doors · Windows have "cellon" panes · Die cast zinc frame · Automatic claw coupler and sprung buffers at each end · Length over buffers 30.25 cm (1')

Light bulb = 60015
Carbon brushes = 60035

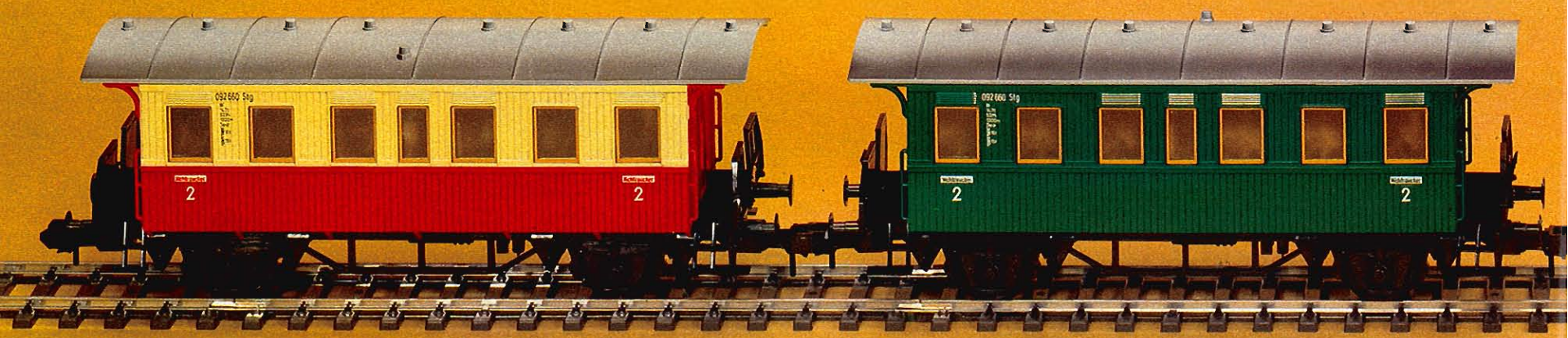
Passenger Cars

1

5800 · **Coach** · Model based on coach used by a private railway · Operating doors · Simulated ventilators on roof · Windows set in plastic frames · Interior features simulated wooden seats · Length 31 cm (1' ¼")

2

5801 · **Coach** · Model of car used by the former Royal Württemberg State Railways · Same features as the 5800 but with a green finish



1
5800

2
5801

These 6-wheel coaches all have sprung buffers.

3
5808

3

5808 · **Baggage car** · Model of the German Federal Railways' type D3pr02 · 6 wheels · Axle frames articulated to negotiate curves · Sprung buffers · Sliding as well as hinged doors open · Windows set in plastic frames · Interior details · Removable roof · Length 39.1 cm (1′ 3-⅜″) · Will accept interior lighting set 5605

4

5804 · **Compartment car** · 2nd class · Model of the German Federal Railways' type B3pr07 · 6 wheels · Axle frames articulated to negotiate curves · Sprung buffers · All doors open · Windows set in plastic frames · Interior details · Removable roof · Length 39.1 cm (1′ 3-⅜) · Will accept interior lighting set 5605

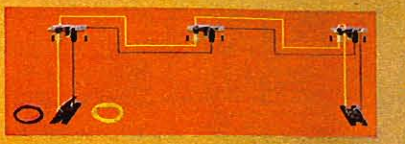
5

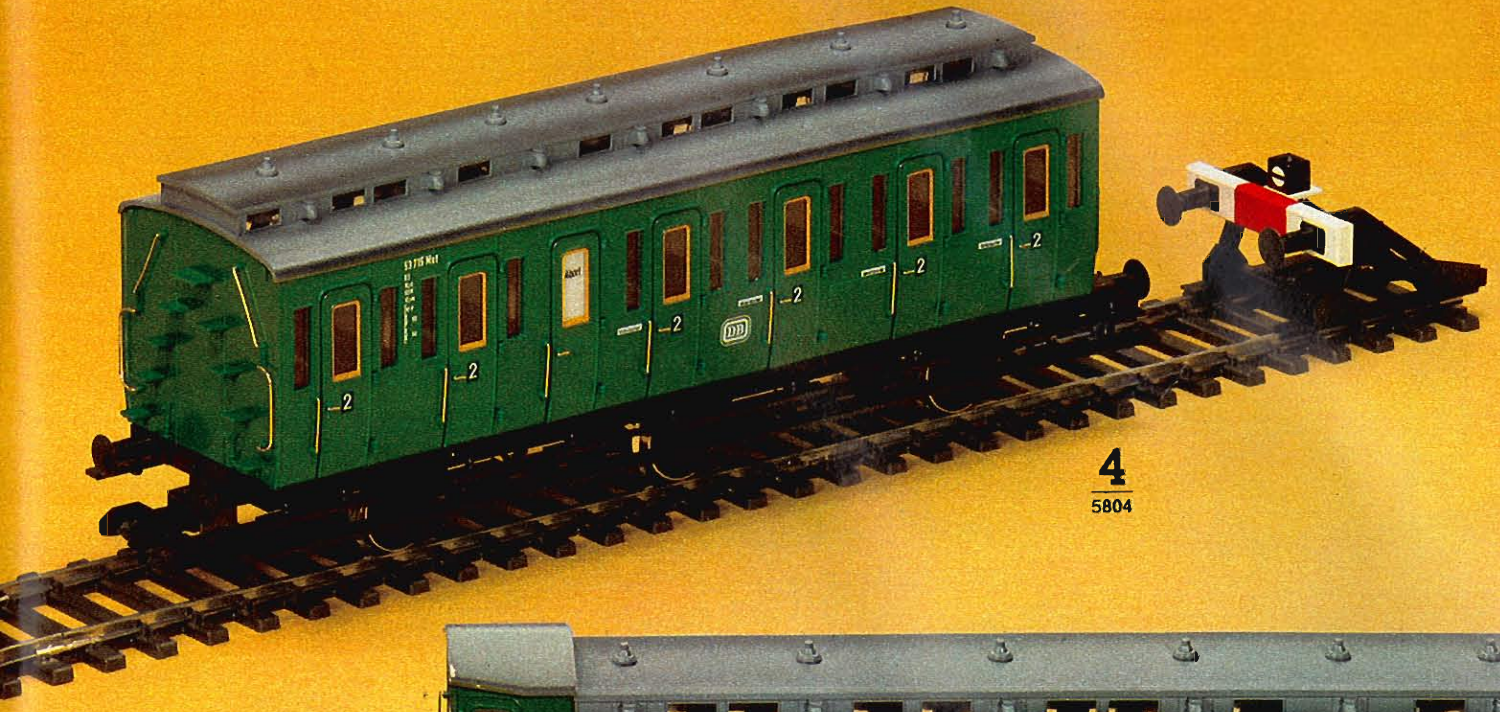
5805 · **Compartment car with brakeman's cab** · 2nd class · Model of the German Federal Railways' type B3pr07 · 6 wheels · Axle frames articulated to negotiate curves · Sprung buffers · All doors open · Windows set in plastic frames · Interior details · Removable roof · Length 39.1 cm (1′ 3-⅜″) · Will accept interior lighting set 5605

5605

Interior lighting set for cars 5804, 5805, and 5808 · Includes 2 pick up shoes, 3 lighting units, leads and plugs plus instructions

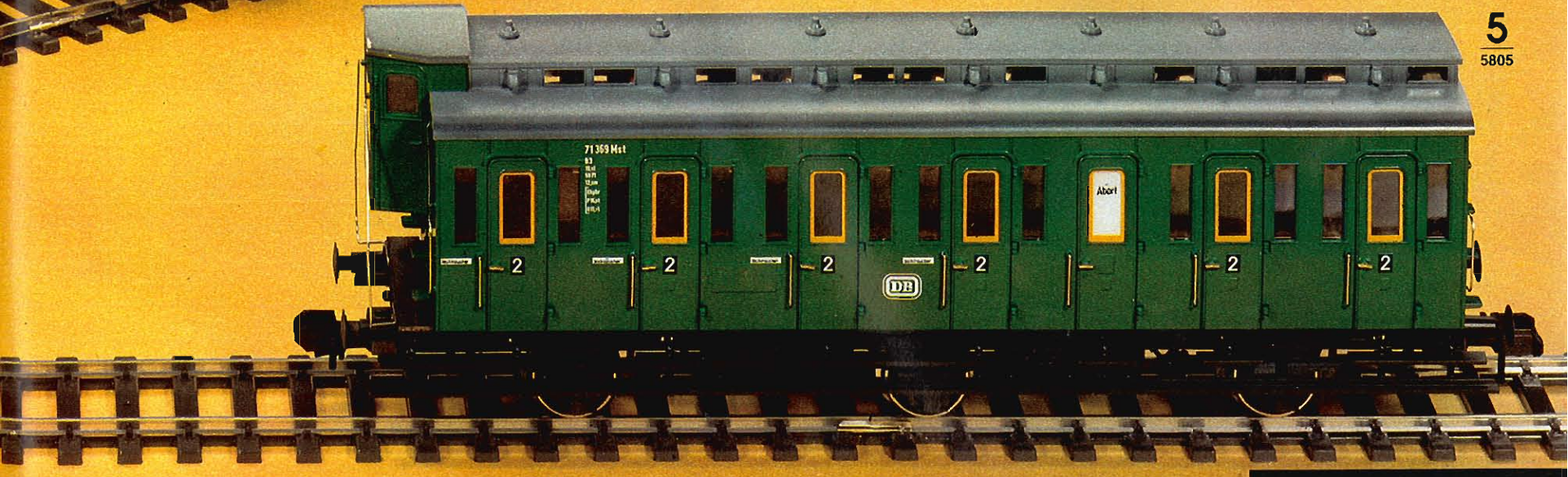
= 49342 = 60000





4
5804

Hinged doors have operating handles.



5
5805

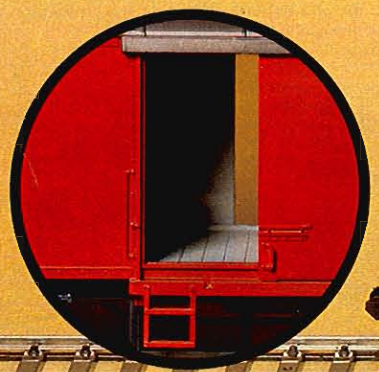
Freight Cars

1
5860 · **Box car** · German Federal Railways' type Gls · Sliding doors

2
5850 · **Gondola car** · German Federal Railways' type Omm 55

3
5851 · **Gondola car** · Lettered for the Belgian State Railways

The finely-detailed Märklin I scale freight cars offers many possibilities for fun. Length of cars 31 cm (1' ¼").



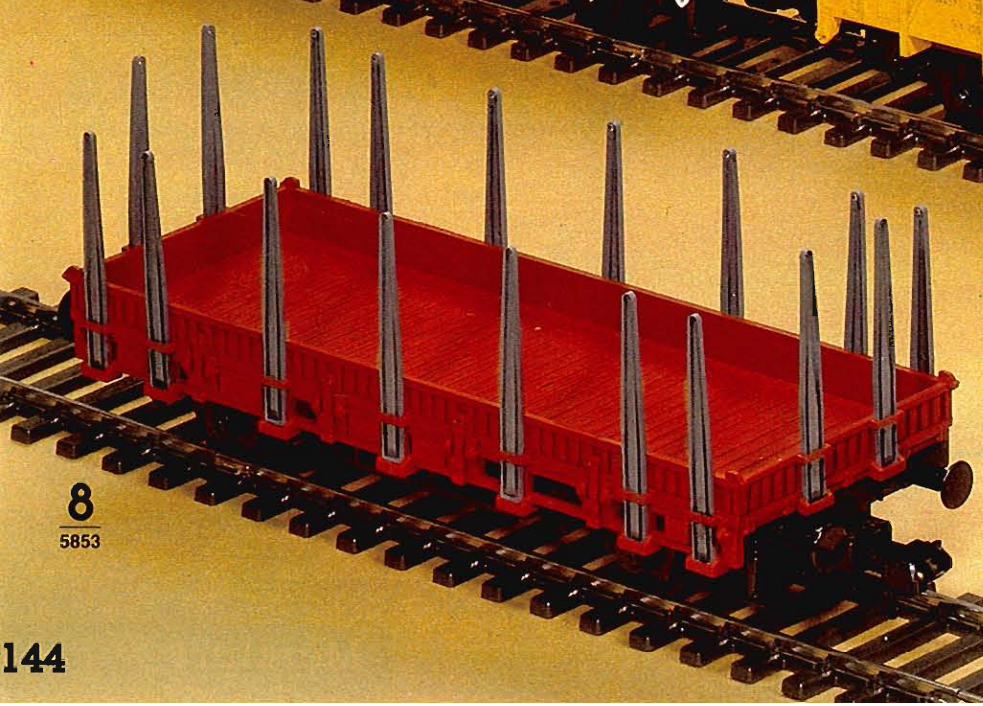
Sliding doors.

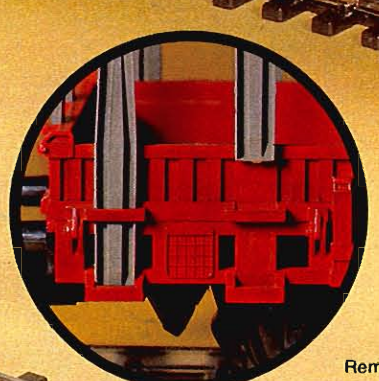
1
5860

5
5861

6
5863

8
5853





Removable stakes.

4
5859 · **Dump car** · Buckets can be unloaded by manual tipping

5
5861 · **Beer car** · Lettered for Dortmunder Union brewery · Sliding doors

6
5863 · **Beer car** · Lettered for Haller Löwenbräu brewery · Sliding doors

7 new
5857 · **Box car** · Lettered for the Miele Washing Machine Co. · Sliding doors open

8
5853 · **Flat car** with removable stakes

2
5850

3
5851

4
5859

7 new
5857

Buckets can be tipped.

1

5871 · **2 Flat cars with center pivots** · Includes steel pipe load · Length 64 cm (2' 1-¼")

2

5872 · **Box car with end markers** · German Federal Railways' type Gls · Sliding doors · End markers have 2 LEDs and can be mounted for day or night settings · Length 31 cm (1' ¼")

Illuminated end markers mounted for day or night settings.

3

5876 · **Low sided gondola with autos** · The 2 autos are clipped to the floor and can be removed · Length 31 cm (1' ¼")

4

5875 · **Lumber car** · Removable stakes · 9-piece lumber load · Length 31 cm (1' ¼")

5

5867 · **Tank car** · ARAL · Can carry real liquids-hatch and spigot operate · Length 31 cm (1' ¼")

6

5865 · **Tank car** · ESSO · Can carry rea liquids-hatch and spigot operate · Length 31 cm (1' ¼")

7

5866 · **Tank car** · SHELL · Can carry re liquids-hatch and spigot operate · Length 31 cm (1' ¼")

2
5872

5
5867

6
5865

Spigot pours.

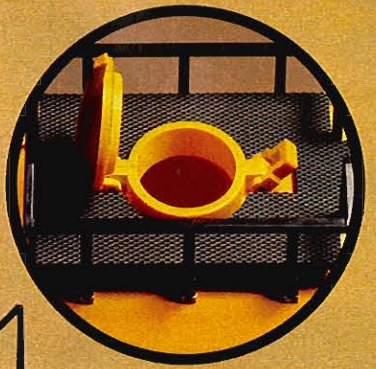
1
5871

MANNESMANN

3
5876

4
5875

Shell



Hatch opens.

7
5866

Terminal Facilities

1

5615 · "Altmühlhof" Station Kit · A classic small town station · Transparent windows · Interior lighting · Accessories include station sign · Platform extensions and railings (length 31 cm – 1′ ¼") · Made of corrosion resistant material · Base area 60×29 cm (1′ 11-⅝"×11-½")

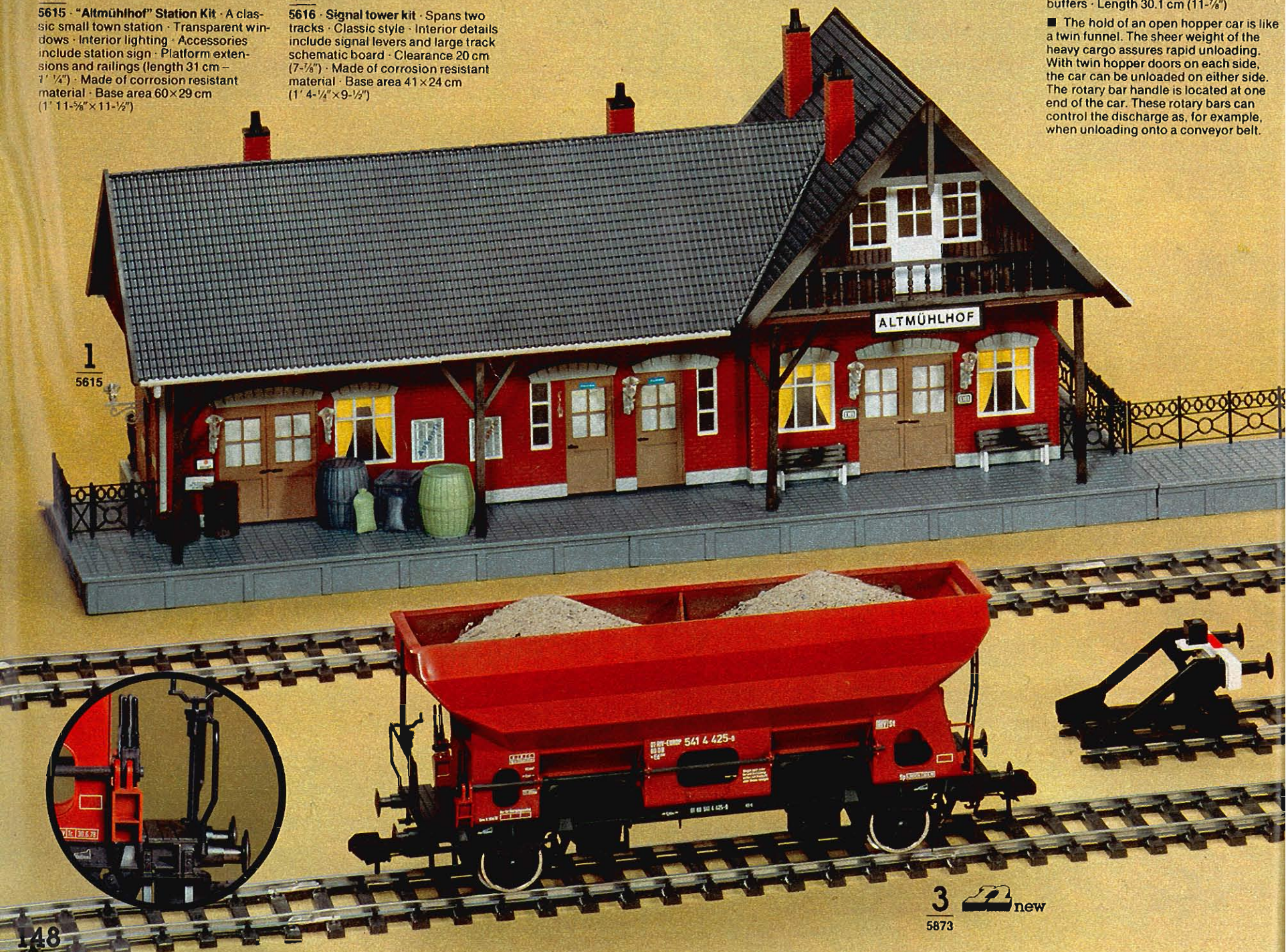
2

5616 · Signal tower kit · Spans two tracks · Classic style · Interior details include signal levers and large track schematic board · Clearance 20 cm (7-⅞") · Made of corrosion resistant material · Base area 41×24 cm (1′ 4-¼"×9-½")

3 new

5873 · Hopper car with rotary bar · German Federal Railways' type Ed 090 · Rotary bar will open hoppers · Sprung buffers · Length 30.1 cm (11-⅞")

■ The hold of an open hopper car is like a twin funnel. The sheer weight of the heavy cargo assures rapid unloading. With twin hopper doors on each side, the car can be unloaded on either side. The rotary bar handle is located at one end of the car. These rotary bars can control the discharge as, for example, when unloading onto a conveyor belt.



1
5615

3 new
5873

Operating rotary bar trips hoppers.

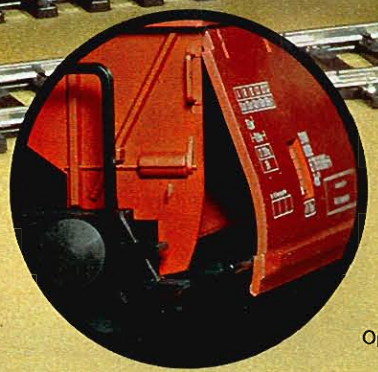
4

5874 · Hopper car with 4-wheel trucks · German Federal Railways' type Fad 168 · Discharge doors open · Sprung buffers · Length 37 cm (1' 2-½")

■ Bulk freight cars of this type are used in national and international traffic for the transportation of coal, coke, ore, etc. They usually are coupled together in unit trains in order to make efficient use of rapid unloading ability. Often, these unit trains will have as many as 40 cars.

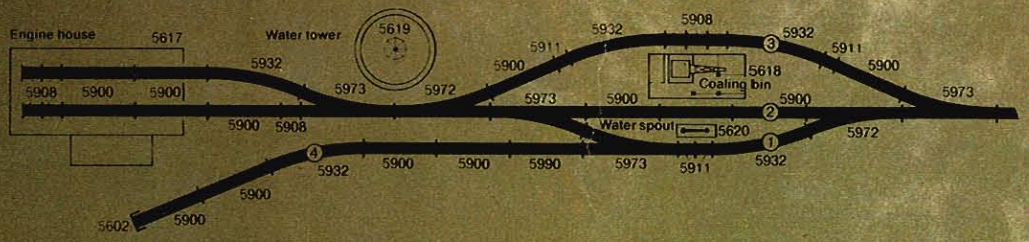
2
5616

4
5874



Operating discharge doors.

Locomotive Maintenance Depot



(1) Throat track
(2) Coaling track
(3) Ashpit and sand track
(4) Ready track

■ While all locomotives require periodic maintenance and inspection, steam locomotives also require extra routine servicing before each run.

Electric locomotives require just a little sand for braking; all their energy is derived from the overhead.

Diesel locomotives also require fuel oil as well as sand. However, these servicing tasks can be accomplished while at the station, on a short siding, or at the engine house as well as at major diesel overhaul facilities.

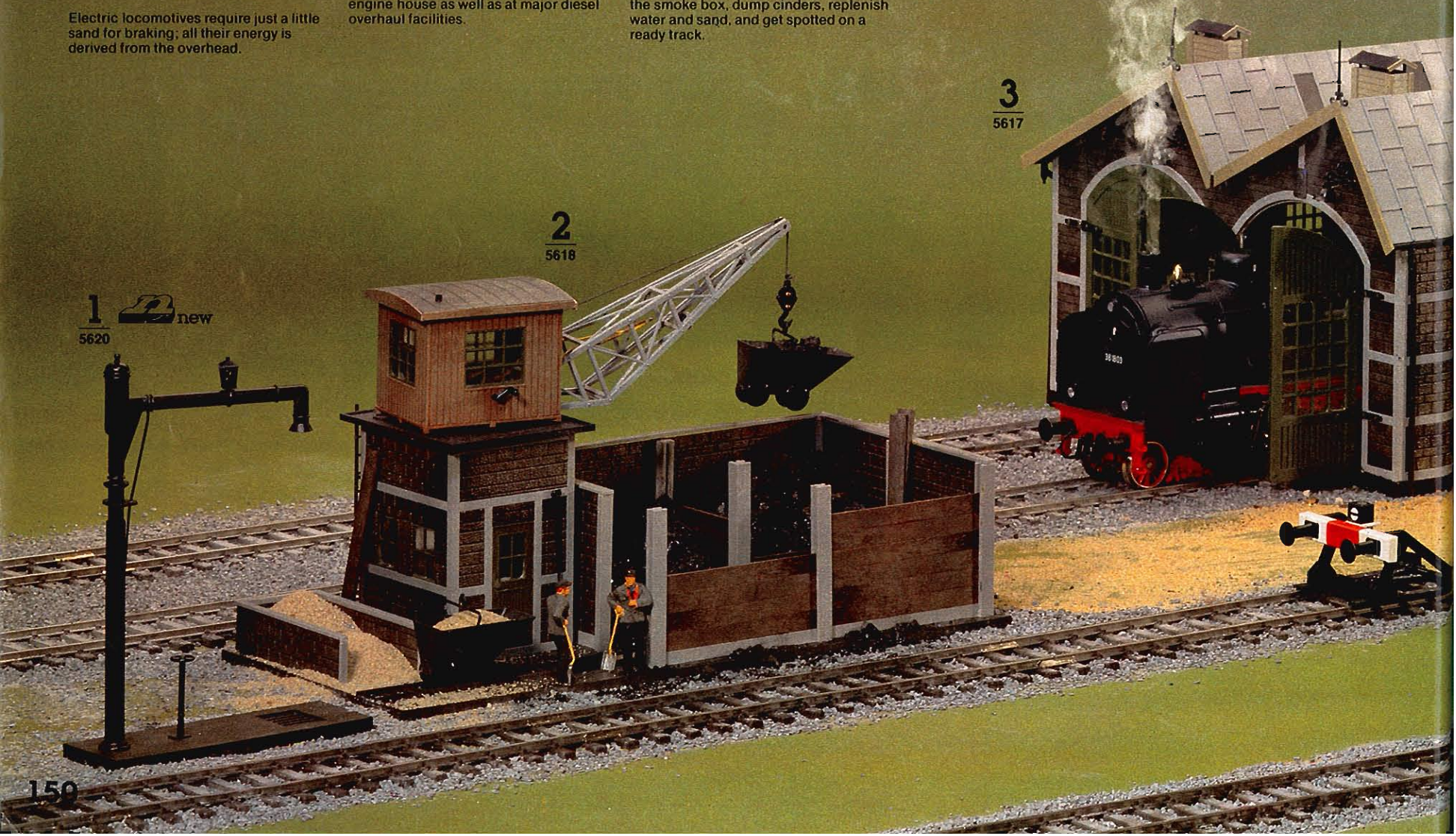
Steam locomotives, though, must undergo a regular series of servicing operations in a particular order. After a trip, the order usually is: coal-up, clean the smoke box, dump cinders, replenish water and sand, and get spotted on a ready track.

1 new

5620 · Water spout kit · Includes pump and tank · Fully operational · Use with water tower 5619 for added realism · Position control box 7072 required · Made of corrosion resistant material · Base area approx. 16×5 cm (6-5/16"×2")

2

5618 · Coaling bin kit · Includes coal bin, two narrow-gauge coal cars, and a manually operated crane · Made of corrosion resistant material · Base area 40×18 cm (1' 3-3/4"×7-1/8")



3

5617 · **Engine house kit** · Classic style · Transparent windows · Interior lighting · Four individually operated track doors · Made of corrosion resistant material · Base area 62×48 cm (2' 3⅜"×1' 6-⅞")

4 new

5619 · **Water tower** · Comes fully assembled · Hand painted · Holds water for use in conjunction with water spout 5620 · Prototype stands at Crailsheim, Germany · Made of corrosion resistant material · Base area 30×30 cm (11-⅞"×11-⅞")

■ The Crailsheim water tower has been declared an historical monument and is now protected by the government of Baden-Württemberg (a German **Land** or province). It is no longer used for railroad purposes. The tower stands 22 m (72' 2-¼") high.

The Tower, built in 1912, now has a secure future. During its railroad days its 600 cubic meter storage tank held enough water to quench the thirst of 50 steam engines per day.

Since January 3, 1981, the old water tower is a community gathering place with two floors and a permanent art gallery. An interesting sidelight: in one of the halls, the seating area consists of 50 seats, with overhead baggage rack, salvaged from an old coach.

Note: On German railroads, steam engines did not get water direct from water towers as in America, rather the towers were situated at a central location (if in a large terminal) or municipally owned and the water was piped to individual water spouts located at track side. This prototype practice can now be duplicated in I scale using the tower and spout kit shown here.

4 new

5619

Signals

1 new

5612 · **Distant signal** · For use with home signal 5611 · Movable disc · Lights change from amber/amber to green/green · Double-solenoid operation · Height 19.3 cm (7-⅝") · Width 6 cm (2-⅜") · Length 11 cm (4-⅜")

= 60000

2

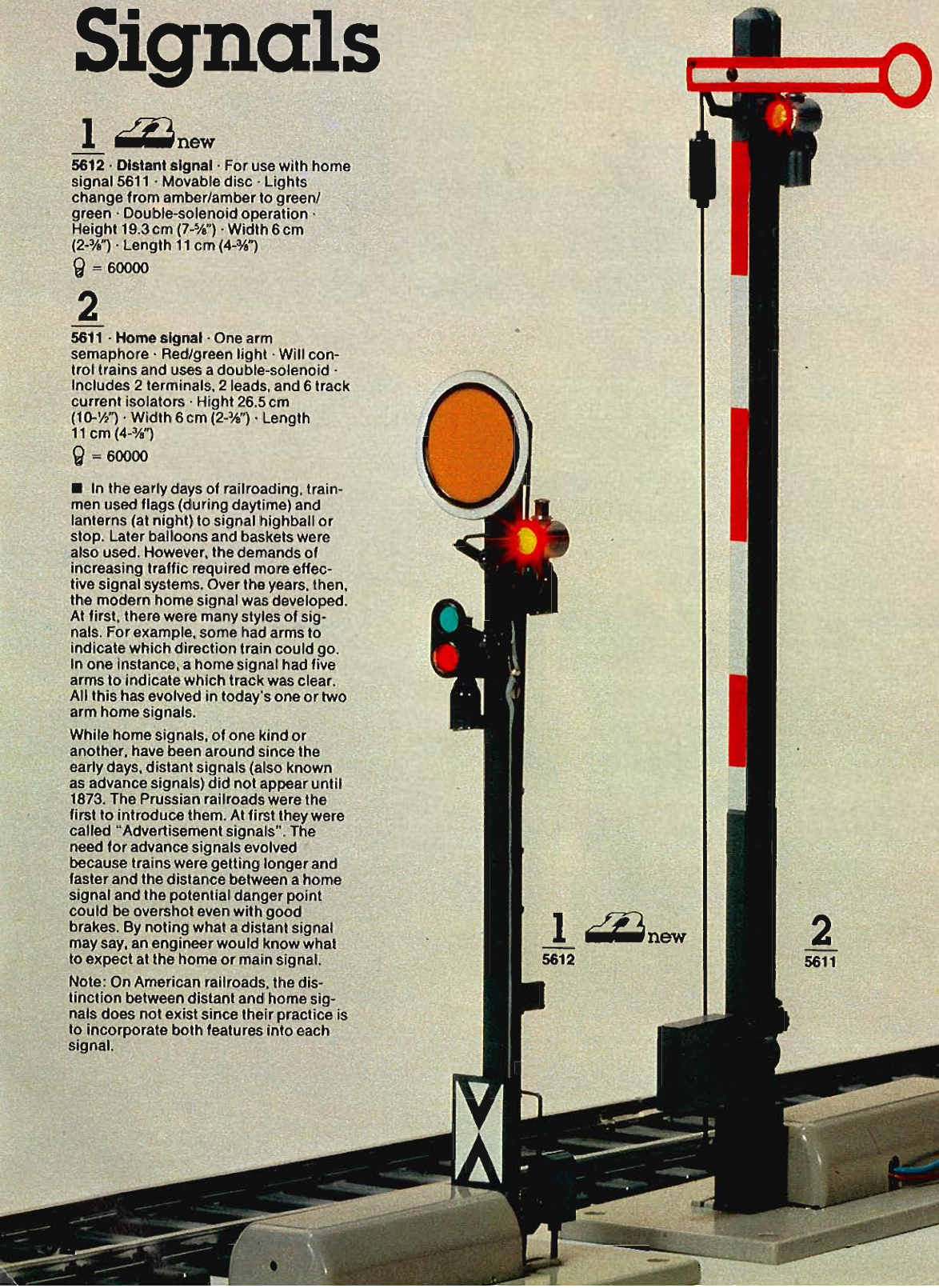
5611 · **Home signal** · One arm semaphore · Red/green light · Will control trains and uses a double-solenoid · Includes 2 terminals, 2 leads, and 6 track current isolators · Hight 26.5 cm (10-½") · Width 6 cm (2-⅜") · Length 11 cm (4-⅜")

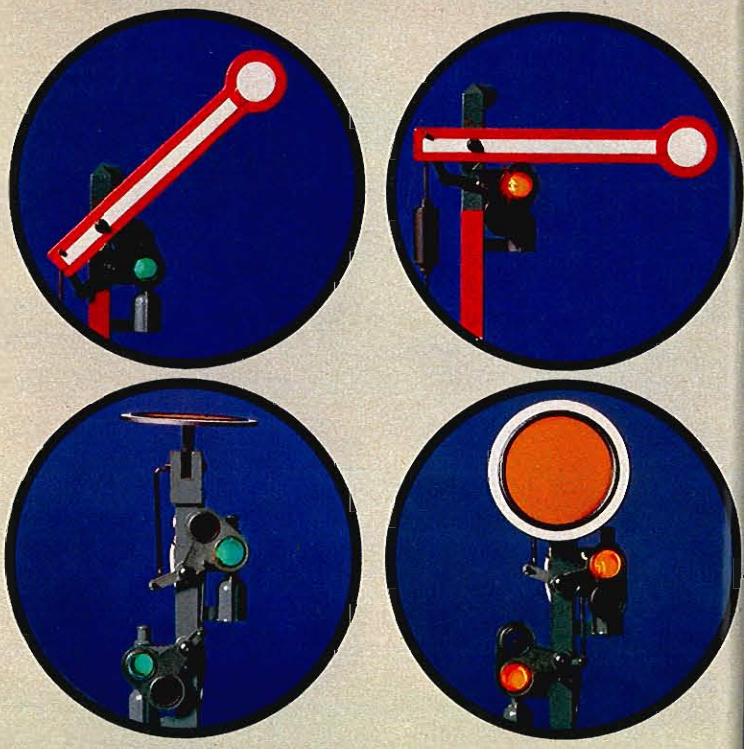
= 60000

■ In the early days of railroading, trainmen used flags (during daytime) and lanterns (at night) to signal highball or stop. Later balloons and baskets were also used. However, the demands of increasing traffic required more effective signal systems. Over the years, then, the modern home signal was developed. At first, there were many styles of signals. For example, some had arms to indicate which direction train could go. In one instance, a home signal had five arms to indicate which track was clear. All this has evolved in today's one or two arm home signals.

While home signals, of one kind or another, have been around since the early days, distant signals (also known as advance signals) did not appear until 1873. The Prussian railroads were the first to introduce them. At first they were called "Advertisement signals". The need for advance signals evolved because trains were getting longer and faster and the distance between a home signal and the potential danger point could be overshot even with good brakes. By noting what a distant signal may say, an engineer would know what to expect at the home or main signal.

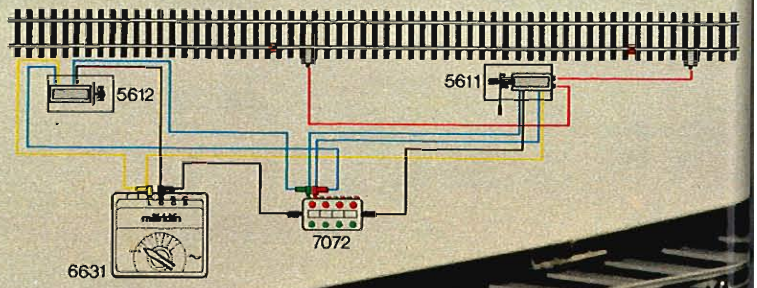
Note: On American railroads, the distinction between distant and home signals does not exist since their practice is to incorporate both features into each signal.





When the disc is horizontal (i. e. not visible to the engineer), the distant signal is reporting that the home signal is green and train should proceed.

If the disc is vertical (i. e. visible to the engineer), the distant signal is reporting that the home signal is red and train must be prepared to stop.



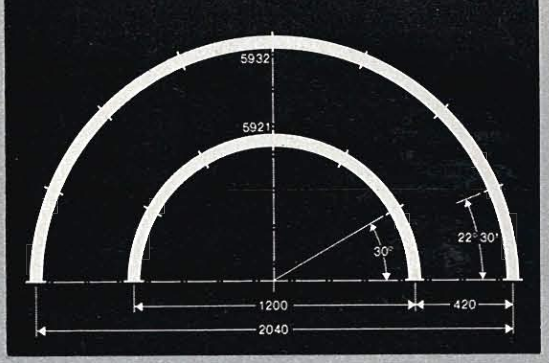
In this diagram the train stops at the home signal. For real-life signaling on l scale layouts, be sure to use the positio control box 7072.

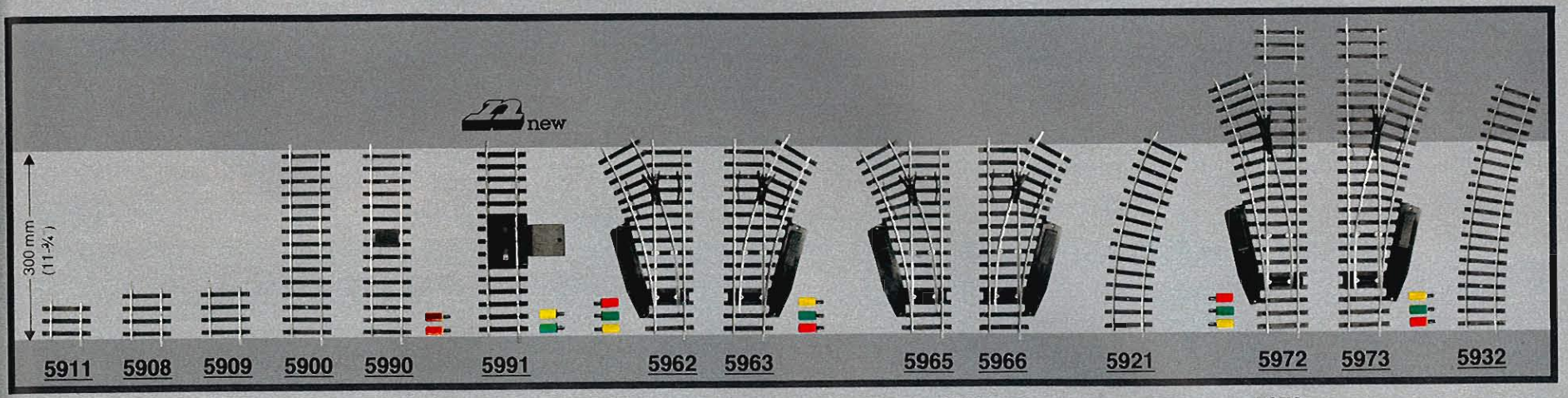
Tracks

The Märklin I track system includes curve tracks needed for 2 different radii. For a circle having a diameter of 2040 mm (6′ 8″) use 16 sections of 5932, and for a circle having a diamter of 1200 mm (3′ 11″), use 12 sections of 5921. Engines 5706, 5797, and 5799 will only negotiate the larger circle.

Although I scale is 2-rail, no polarity problems are encountered on reversing loops, crossings, or wyes because this scale also uses the AC technology that has made Märklin a trademark for flawless operation. As in Märklin's HO locomotives, the forward/reverse switch is built into the I scale locomotives.

The stainless rust-proof Märklin I rails have a prototype look. The ties are made of corrosion-resistent material. Thus Märklin I tracks can be laid outdoors. Any apparent rust marks are caused by contact with rusty metals lying on the tracks and these marks can be easily removed with a damp cloth.



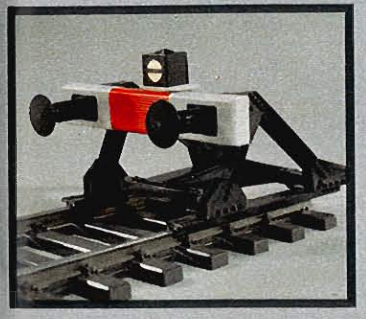


5911
Straight track · Length 59.5 mm (2-³⁄₈″)

5908
Straight track · Length 80.4 mm (3-³⁄₁₆″)

5909
Insulated straight track · Length 80.4 mm (3-³⁄₁₆″) · For dividing the layout into electrically isolated sections

5603
Retaining clips · Package of 28 · For added strength at rail joints



5602
Bumper · Riveted steel type · Sprung buffers · Clips onto rails · Length 9.8 cm (3-⅞″)

5607
Bumper · Riveted steel type · Illuminated signal · Sprung buffers · Clips onto rails · Length 9.8 cm (3-⅞″)
= 60000

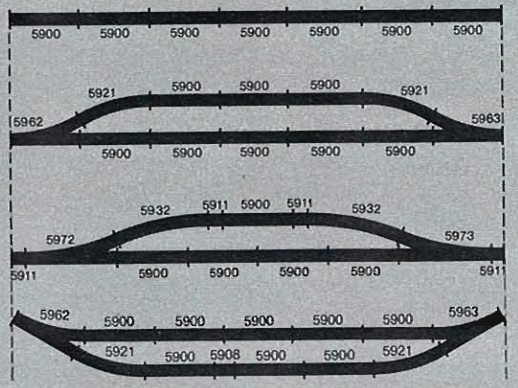
5900
Straight track · Length 300 mm (11-¾″)

5990
Feeder track, straight · Length 300 mm (11-¾″) · Built-in capacitor to suppress radio static · 2 feeder wires, each 1 meter (3′ 3-⅜″) long

5991 new
Uncoupling track · Length 300 mm (11-¾″) · Includes electro-magnets · Remote control operation (use position control box 7072)

5962
Left-hand switch, remote control · Operates by double-solenoid · Sprung points · Angle of curve 30° · Radius of curve 600 mm (1′ 11-⅝″) · Length of straight track 300 mm (11-¾″)

5963
Right-hand switch, remote control · Operates by double-solenoid · Sprung points · Angle of curve 30° · Radius of curve 600 mm (1′ 11-⅝″) · Length of straight track 300 mm (11-¾″)



5965
Left-hand switch, manual · Sprung points · Angle of curve 30° · Radius of curve 600 mm (1′ 11-⅝″) · Length of straight track 300 mm (11-¾″)

5966
Right-hand switch, manual · Sprung points · Angle of curve 30° · Radius of curve 600 mm (1′ 11-⅝″) · Length of straight track 300 mm (11-¾″)

5921
30° Curved track · Radius 600 mm (1′ 11-⅝″)

5972
Left-hand switch, remote control · Operates by double-solenoid · Sprung points · Angle of curve 22° 30′ · Radius of curve 1020 mm (3′ 4″) · Length of straight track 390.5 mm (1′ 3-⅜″) · Includes straight track section 5911

5973
Right-hand switch, remote control · Operates by double-solenoid · Sprung points · Angle of curve 22° 30′ · Radius of curve 1020 mm (3′ 4″) · Length of straight track 390.5 mm (1′ 3-⅜″) · Includes straight track section 5911

5932
22° 30′ Curved track · Radius 1020 mm (3′ 4″)

5600
Uncoupler · For use with straight track 5900 · Fits between the rails · Releases couplers in one direction of travel only, thus enabling cars to be pushed after uncoupling · Length 175 mm (6-⅞″)

Power Packs and Electronic Accessories

Standard colors used in Märklin circuity:

Wires

Copper wires consist of 24 separate strands 0.10 mm (0.004") in diameter each, for an overall circumference of 0.19 mm² (0.03 sq in). Can withstand short circuits.

Red = Track current

Yellow = Lights and solenoid-operated items

Brown = Track current and ground return from position control box to transformer

Blue = Return wire from solenoid-operated items to position control box (with green and red plugs)

7100
Wire · Single core · Gray · 10 m (33')

7101
Wire · Single core · Blue · 10 m (33')

7102
Wire · Single core · Brown · 10 m (33')

7103
Wire · Single core · Yellow · 10 m (33')

7105
Wire · Single core · Red · 10 m (33')

Sockets

7111 = brown
7112 = yellow
7113 = green
7114 = orange
7115 = red
7117 = gray

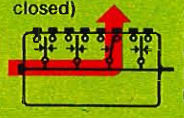
Plugs with side sockets

7131 = brown
7132 = yellow
7133 = green
7134 = orange
7135 = red
7137 = gray

Accessories for Remote Control

7072

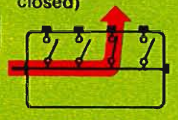
7072 schematic (3rd circuit closed)



7072
Position control box with 8 sockets for connecting 4 double solenoid operated items · Position of buttons correspond to position of signals, switches, etc. · Length 80 mm (3-⅛") · Width 40 mm (1-⁹⁄₁₆")

7210

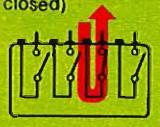
7210 schematic (3rd circuit closed)



7210
Control box for distributing track or accessory current on 4 different circuits by means of indicating buttons · Length 80 mm (3-⅛") · Width 40 mm (1-⁹⁄₁₆")

7211

7211 schematic (3rd circuit closed)



7211
Control box for controlling 4 different track or light circuits by means of indicating buttons · Length 80 mm (3-⅛") · Width 40 mm (1-⁹⁄₁₆")

7209

7209
Distribution strip · With 11 single sockets · Size 50 × 20 mm (2" × ¾")

The following transformers and power packs may be used to power Märklin I scale locomotives.

For connection to AC outlet only

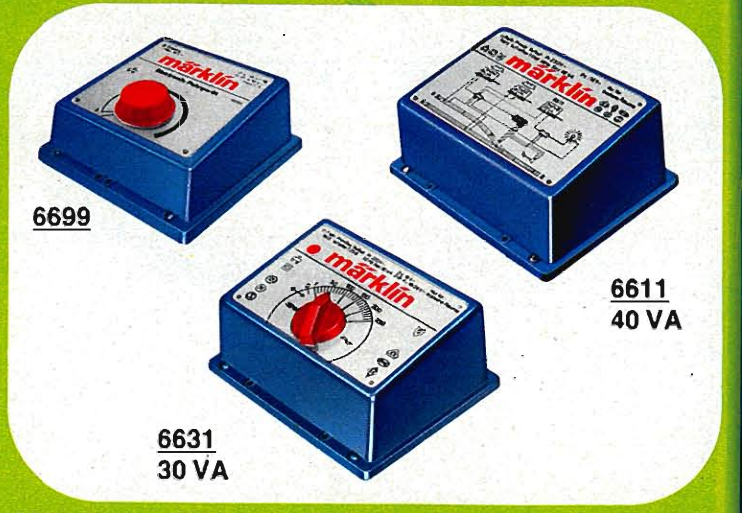
Every Märklin transformer is completely safe; its insulation has been tested to several thousand volts. In addition, a built-in circuit breaker protects the transformer against overloads and shorts. Power pack 6699 is recommended for outdoors use.

Locomotive speed is proportional to the track voltage, i.e.: the further to the right the knob is turned, the faster the train goes. To reverse an engine, just turn the control knob to the left of zero and release.

6699
Power pack for indoors and outdoors · For use with Märklin lighting transformer 6611 or with light sockets of a Märklin transformer with 30 VA output · Lighting voltage 16 Volts · Electronic control of engine speed and direction · Maximum permitted load 1.8 Amps · Plastic housing · Weight 315 grams (11 oz) · Measures 125 × 135 × 55 mm (4-¹⁵⁄₁₆" × 5-⁵⁄₁₆" × 2-³⁄₁₆") · Use Märklin wires and sockets to extend connecting leads

For outdoors: use the 6699 in conjunction with 6611 or 6631.

This power pack also permits locomotives to be run very slowly.



6631 220 Volt

6620 100 Volt Japan

6627 110 Volt (60 Hz) USA

6629 240 Volt

Transformer · Output 30 VA · Track current adjustable between 4 and 16 V · Lighting voltage 16 V · Plastic housing · Red pilot light · Weight 2.1 kg (4-¾ lb) · Measures 158 × 135 × 75 mm (6-¼ × 5-⁵⁄₁₆" × 3-¹⁵⁄₁₆")

= 60015

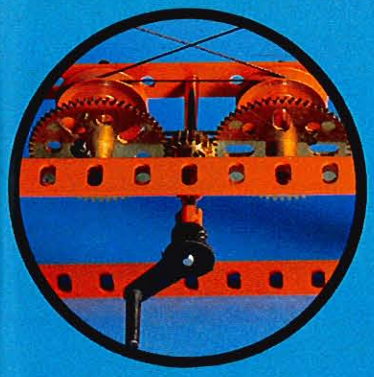
6611 220 Volt

Transformer for lights and solenoid-operated items · Output 40 VA · Output voltage approximately 16 V AC · Plastic housing · Weight 2 kg (4-⅜ lb) · Measures 158 × 135 × 75 mm (6-¼" × 5-⁵⁄₁₆" × 3-¹⁵⁄₁₆")

märklin

the big one for the garden, the terrace and indoors

märklin metall



Drive Unit

Running Cable

1057 new
Cable Railway

Construction system that's fun and easy to build

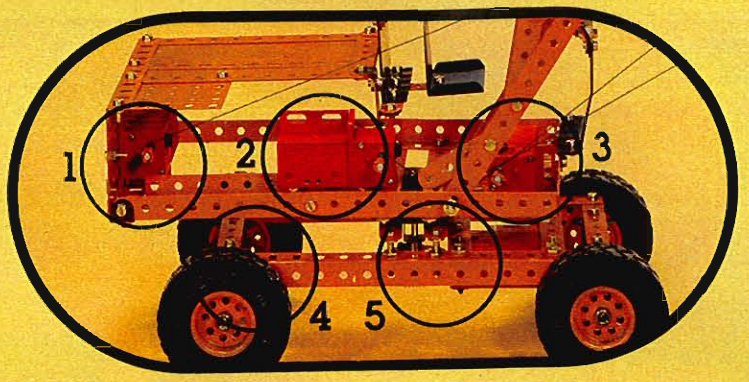

Bauma GmbH

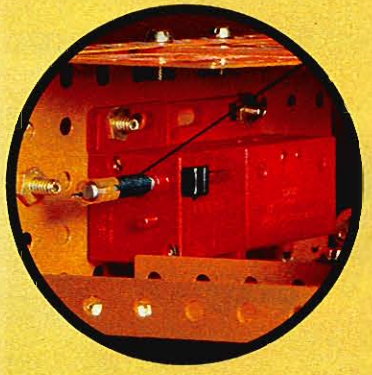
Märklin metall

Works Just Like the Real Thing

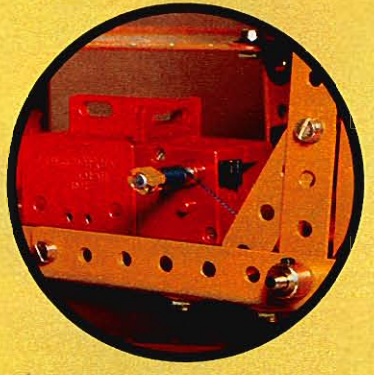
An example using the Construction Vehicles kit.

It's fun to motorize the models. For example, the new motor 1074 brings the clamshell excavator to life.

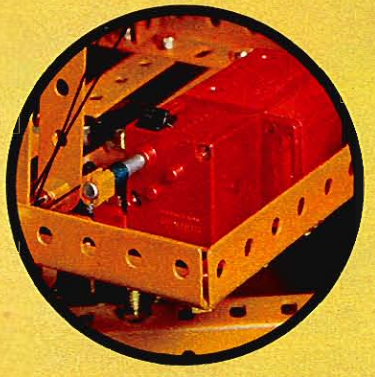




1. Motor: raise and lower the beam



2. Motor: raise and lower the shovel arm

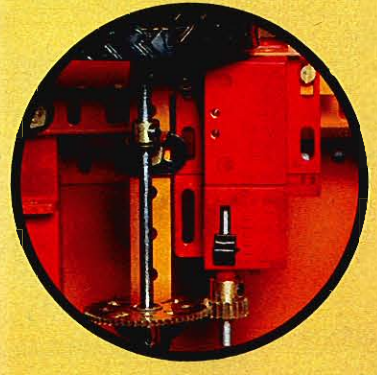


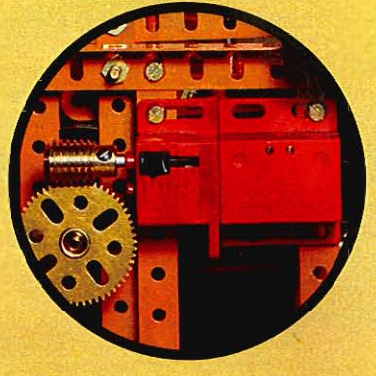
3. Motor: open and close the clamshell

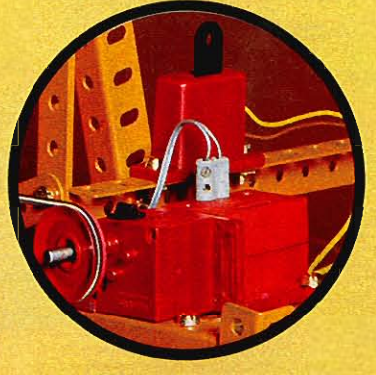
4. Motor: forward and reverse drive

5. Motor: turn the superstructure 360°

1074 new







The Märklin metall System

1054 Farm Machinery
This kit contains all necessary parts to construct any of the various machines and implements used in modern agriculture, such as: Tractor-drawn Plow, Winches, Cultivator, Deep Hoe, Rotary Hay Rake, Hay Baler, Spike Tooth Rotary, etc.

1055 Construction Vehicles
With this kit it is possible to build any of the various heavy machinery used at construction sites, such as: Clamshell Excavator, Bulldozer, Articulated Shovelnose Dumper, Scraper, etc.

1056 Trucks
The giants of the highway can be built with this kit. Includes parts necessary for details such as hinged cabs, steering mechanism, winches, and axles with independent suspension. Among the trucks that can be constructed are Tractor-Trailers with flat bed or stake body, Dump Truck, and Van Trailers.

1057 new
Cable Railway
Build a cable railway complete with base station and summit station. Kit includes cables, drive unit and 2 cars with bogies. Cars can be loaded with figurines and "freight". Cable Railway can be set up anywhere for example, between table and floor, or across small potholes in a garden.

1051 Basic Kit A
with 178 parts

1052 Basic Kit B
with 265 parts

1053 Basic Kit C
with 442 parts

1061 Extension Kit E1
extends basic kit A to equal basic kit B

1062 Extension Kit E2
extends basic kit B to equal basic kit C

1063 Extension Kit E3
enlarges basic kit C

1073 AC/DC Motor
With 2 gears and built in switch. Will motorize metall kits.

1074 new
Small Motor
With 5 gears and built in switch. Will operate metall kits. The gears can be adjusted for lateral drive.

A complete Märklin metall prospectus is available free of charge from your dealer.

märklin sprint

The racing pros' inside track

Basic sets include 2 race cars, 2 speed controllers, a supply of track sections, crash barriers, bridge supports, as well as a 24-page instruction booklet with information on layouts.

It's the ability of the "driver" that determines whether a car will negotiate curves properly or in a power slide.

Cars have front-wheel drive for excellent traction. Includes self-cleaning sprung skid-type current collectors.

Märklin engines are designed for high performance–sturdy, easy to rev up, low center of gravity and gearbox transmission.

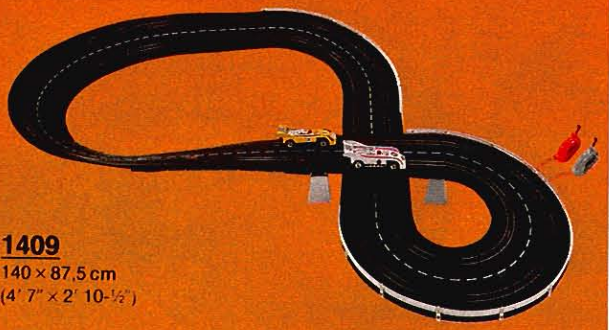
We recommend Märklin power pack 6771 for powering the sprint racing system.

1412

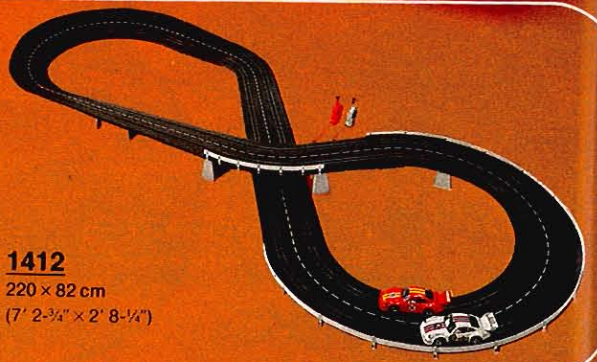
1409

Two different racetracks can by built with the contents of set 1409.

1409
127 × 105 cm
(4' 2" × 3' 3-½")

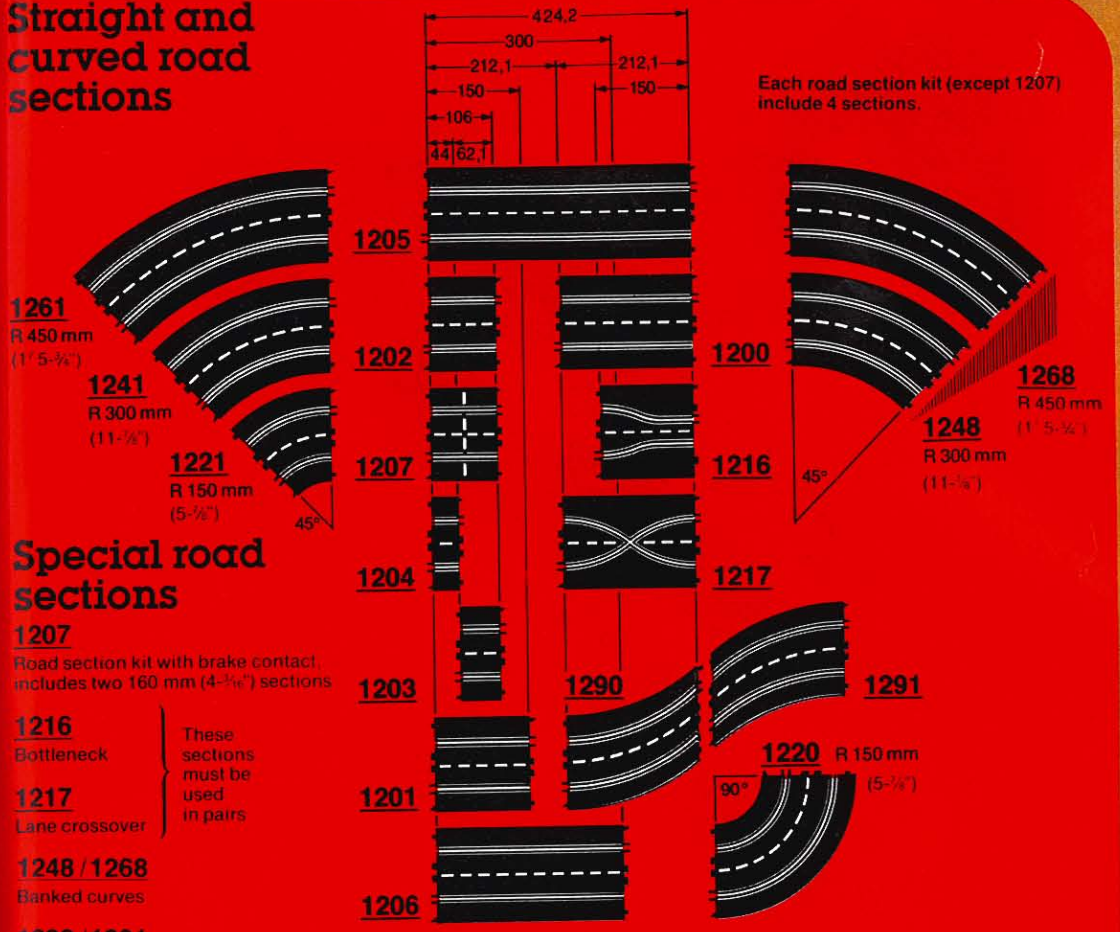


1409
140 × 87,5 cm
(4' 7" × 2' 10-½")



1412
220 × 82 cm
(7' 2-¾" × 2' 8-¼")

Straight and curved road sections



Each road section kit (except 1207) include 4 sections.

Special road sections

1207
Road section kit with brake contact, includes two 160 mm (4-⅜") sections

1216 Bottleneck
1217 Lane crossover
These sections must be used in pairs

1248 / 1268
Banked curves

1290 / 1291
Straight inclines

Use Märklin's hinged lock-couplings for rapid and secure assembling and dismantling.

The speed controller can be connected to almost any straight section–wherever it is most favorable for the "driver".

Crash barriers are safety features, just like at real racetracks.

Tire sets

1500
Includes 2 rubber tires, dimensions 20.5 × 6 mm (13/16" × ¼") · For the 1300, 1301, 1308, 1310, 1311, 1312, 1316, 1317, 1318

1501
Includes 2 rubber tires, dimensions 23 × 7 mm (⅞" × ¼") · For the 1300, 1301

1503
Includes 2 rubber tires, dimensions 21.5 × 7.6 mm (⅞" × 5/16") · For the 1308, 1310, 1311, 1312, 1316, 1317, 1318

1505
Includes 2 rubber tires, dimensions 20.5 × 8.5 mm (13/16" × 5/16") · For the 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332

1506
Includes 2 rubber tires, dimensions 24 × 12.5 mm (15/16" × ½") · For the 1330, 1331

1510
Additional sliders (1 pair) · To be clipped onto regular pick up sliders on Märklin sprint cars · Enables sprint cars to be used on other racetracks

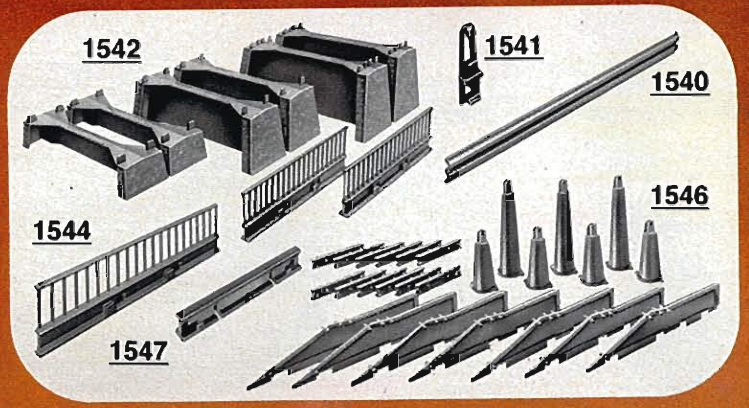
60146
Pair of brushes · For motors in Märklin sprint cars

1591 / 1594
Speed controller with connecting kit · Built-in capacitor to suppress radio static · Can control one automobile at a time

1592
Rectifier · For connecting to Märklin railroad transformers having at least 16 VA output · 57 × 52 × 15 mm (2-¼" × 2-1/16" × ⅝") · Using socket pairs "Auto 1" and "Auto 2", DC current is supplied to operate up to 4 autos simultaneously

1593
Start clock · To be connected between power pack and racetrack · When time set on the knob (adjustable between 0–5 minutes) has elapsed, track current is cut off

6771
Märklin sprint power pack · For 220 V AC supply only · Output approx. 14 V DC · Rating 10 watts · Overload protection by automatic circuit breaker · Plastic case · Weight 1.2 kg (2-½ lb) · Measures 125 × 135 × 55 mm (5" × 5-¼ × 2-⅛")



1540
Flexible crash barrier · Length 2 m (6' 6-¼")

1541
Crash barrier support

1542
Overpass kit · Includes 2 pillars 27 mm (1-1/16") high, 2 pillars 49 mm (1-15/16"), 2 pillars 61.5 mm (2-⅜") high, and 2 bridge railings

1544
Bridge railings · Length 135 mm (5-5/16")

1545
Mechanical lap counter · Counts to 99 · Numbers can be reset · Requires road section 1202 to maintain track length

1546
Banked curve supports · Required if a banked curve has 4 lanes

1547
Reinforcement section · For connecting and reinforcing straight sections at joints · Length 74 mm (2-15/16")

1
1300 · Mercedes W 196 Monoposto · (front 1500, rear 1501)

2
1301 · Ferrari Supersqualo · (front 1500, rear 1501)

(Note: Figures shown in parentheses refer to tire sets)

3
1308 · Jaguar Type E · (front 1500, rear 1503)

4
1310 · Porsche 911T Targa · (front 1500, rear 1503)

5
1311/1312 · Mercedes C 111 · (front 1500, rear 1503)

6
1316/1317 · Porsche Carrera 6 · 2 working headlights · (front 1500, rear 1503)
= 60000

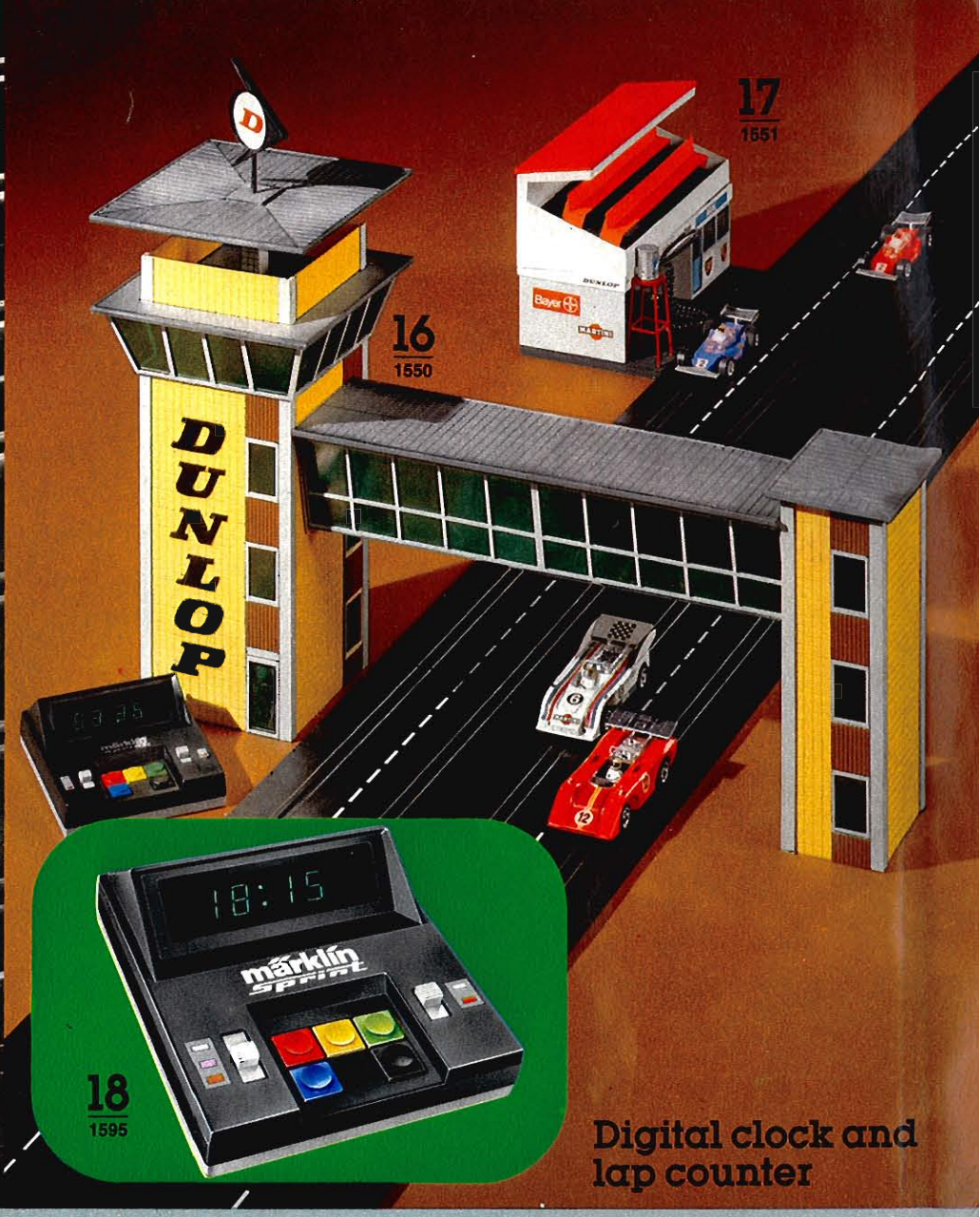
7
1318 · Porsche 911T Targa with police markings · Continuously flashing blue light · (front 1500, rear 1503)
= 60209

8
1319 · McNamara · (1505)

9
1320 · Lola T 222 · (1505)

10
1321/1329 · Porsche Can Am 917/10 · (1505)

11
1322/1323 · BMW 2002 turbo · (1505)



Digital clock and lap counter

12
1324/1325 · Porsche 935 · (1505)

13
1326/1332 · BMW 320i RC · (1505)

14
1327/1328 · Porsche 936 · (1505)

15
1330/1331 · Ferrari 312 T2 · (front 1505, rear 1506)

16
1550 · **Controller's tower and walkway kit** · Walkway will bridge up to 4 lanes

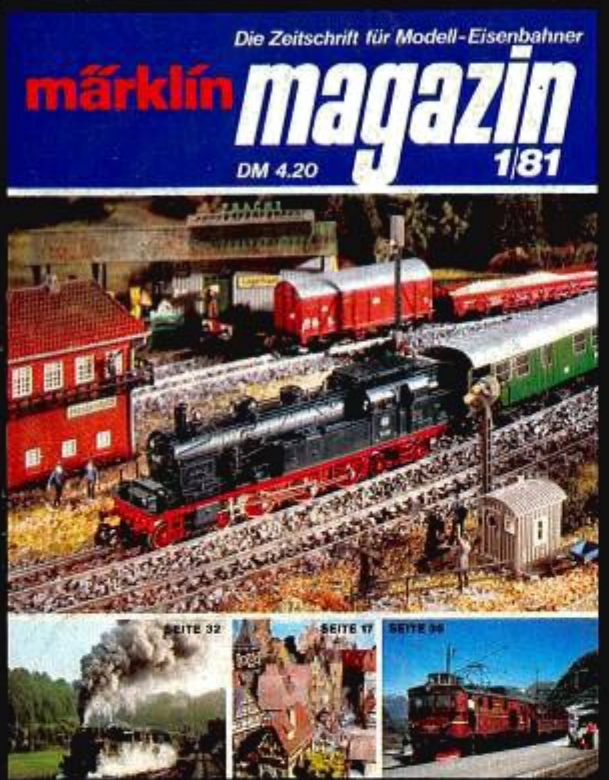
17
1551 · **Pit and fuel stop kit** · Spectator benches on roof · Includes spare tires, gas bottles, oil drum on stand · Base measures 270 × 130 mm (10-⅝" × 5-⅛")

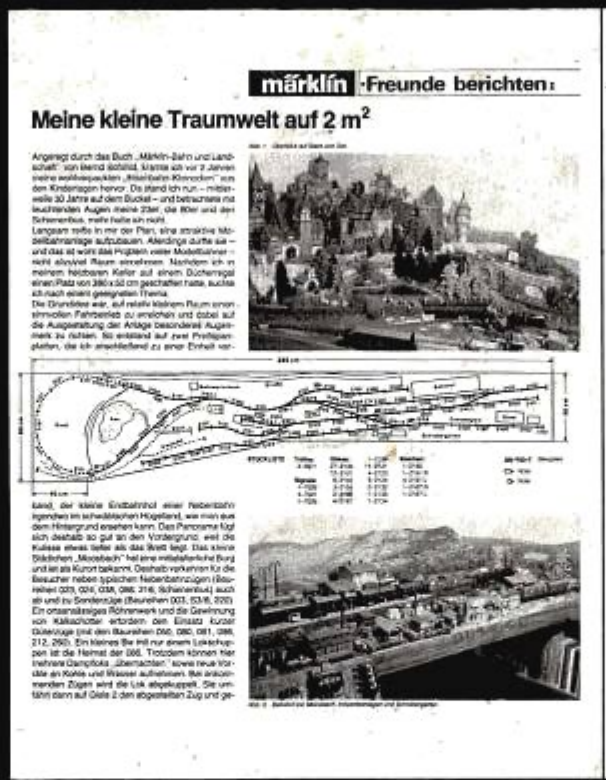
18
1595 · **Race control center** with microprocessor · Can be used either as an electronic lap counter or as a 24-hour digital clock · Can count laps on 2 lanes up to 99, or displays the current and/or fastest lap time on either lane

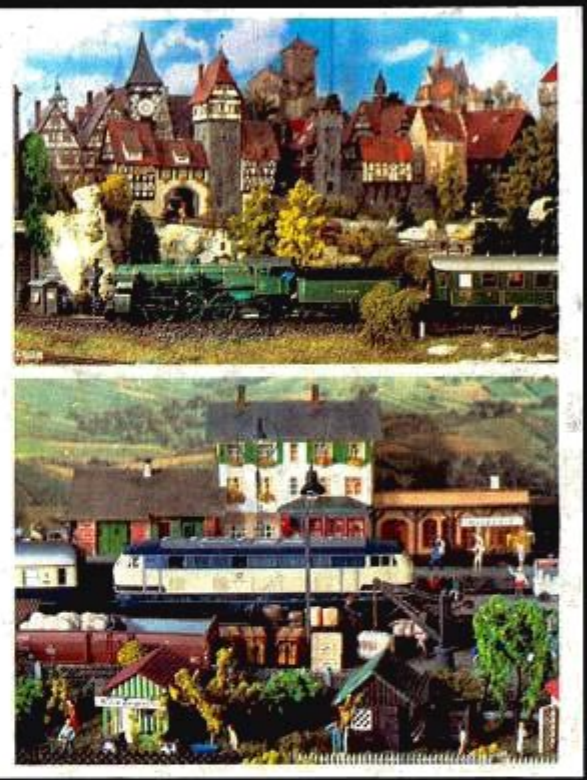
Märklin magazine

Printed in German, the Märklin magazine is published four times a year, February, May, August, and November. A subscription brings a whole year's worth of valuable information.

Obtainable from:
Modellbahnen-Welt Verlags-GmbH, Postfach 9 40,
D-7320 Göppingen, Federal Republic of Germany
or from your Märklin dealer.







Each issue contains a trainload of information, tips, and suggestions designed to help beginners and professional modelers enjoy Märklin railroading. Its 50 pages (many in color) are an invaluable aid in understanding European railroading, models and prototype. Topics include:

- Layout design and landscaping
- Märklin modelers describe their layouts
- Märklin models and their prototypes
- German railroads, histories and present day operations
- Reports on non-German railroads
- Assembly instructions for Märklin products (HO, mini-club (Z), and I scales)
- Reports on new items
- Book reviews
- Electrical circuits for model railroads
- Updates on the House of Märklin