



# Cal Scale

A Division of  
Bowser Mfg.

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## HO Freight Car & Caboose Parts

### "AB" Air Brake System #190-283

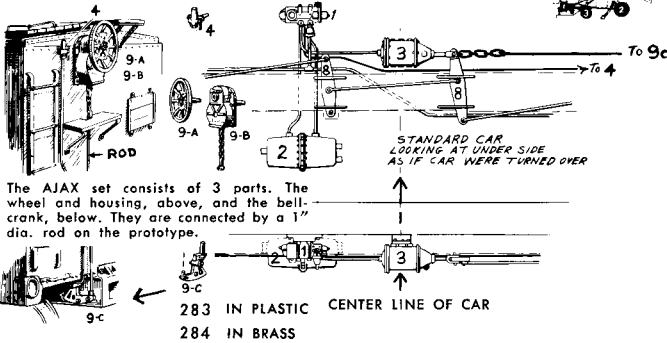
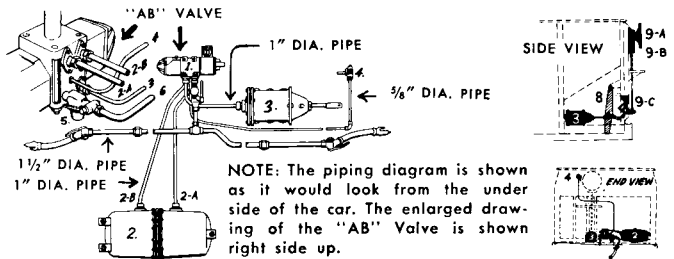
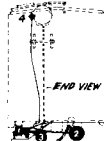
#### AIR BRAKE SYSTEM

The parts may be glued or soldered together and to the cars depending upon the materials you use to work with in car construction.

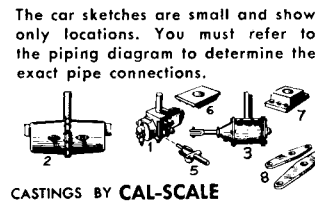
The sketch labeled "Standard Car" shows the location of parts and lines on such cars as Box, Reefers, Gondolas, Flats, Tank Cars and Caboose. There are many variations. The most common is the Hopper Car for which a sketch is shown.

All the basic castings are included. Wire for the piping is not included but the sizes of the prototype pipes are noted for the modeler who wishes to go to that detail.

- 1—"AB" VALVE
- 2—AIR RESERVOIR
- 3—BRAKE CYLINDER
- 4—RETAINER VALVE
- 5—DUST COLLECTOR
- 6—"AB" VALVE BRKT.
- 7—BRAKE CYL. BRKT.
- 8—BRAKE LEVERS
- 9A—AJAX BRAKE WHEEL
- 9B—AJAX HOUSING
- 9C—AJAX BELL CRANK



The AJAX set consists of 3 parts. The wheel and housing, above, and the bell-crank, below. They are connected by a 1" dia. rod on the prototype.



AIR HOSES  
are available in sets

20 Hoses in plastic	276
4 Hoses in BRASS	277

### "KC" AB Air Brake System #190-290

#### AIR BRAKE SYSTEM

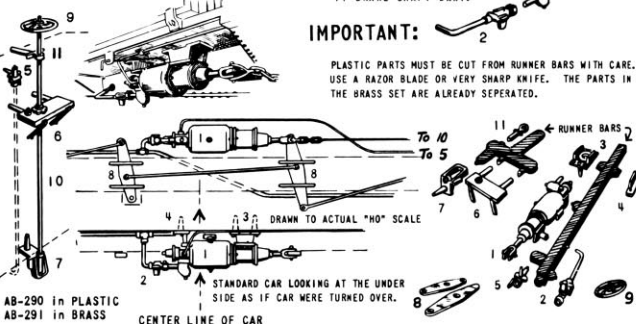
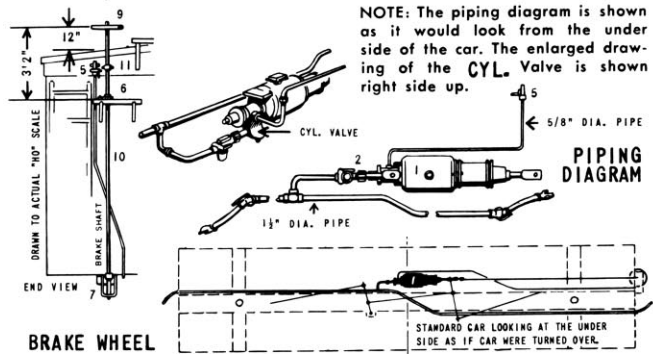
The parts may be glued or soldered together and to the cars depending upon the materials you use to work with in car construction.

The sketch labeled "Standard Car" shows the location of parts and lines on such cars as Box, Reefers, Gondolas, Flats, Tank Cars and Caboose.

All the basic castings are included. Wire for the piping is not included but the sizes of the prototype pipes are noted for the modeler who wishes to go to that detail. ONLY THE BRAKE SHAFT IS INCLUDED.

- 1—BRAKE CYLINDER
- 2—DUST COLLECTOR
- 3—FRONT CYL. BRKT.
- 4—REAR CYL. BRKT.
- 5—RETAINER VALVE
- 6—CAR END PLATFORM
- 7—BRAKE SHAFT STEP
- 8—BRAKE LEVERS
- 9—BRAKE WHEEL
- 10—BRAKE SHAFT
- 11—BRAKE SHAFT BRKT.

**IMPORTANT:**  
PLASTIC PARTS MUST BE CUT FROM RUNNER BARS WITH CARE. USE A RAZOR BLADE OR VERY SHARP KNIFE. THE PARTS IN THE BRASS SET ARE ALREADY SEPERATED.



AIR HOSES  
are available in sets

20 Hoses in plastic	AH-276
4 Hoses in BRASS	AH-277

WESTINGHOUSE "KC" BRAKE SET

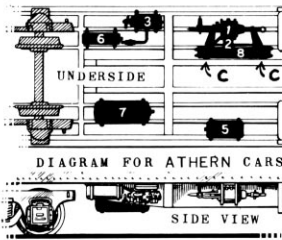
BY CAL-SCALE

HO Plastic &  
Lost Wax Brass

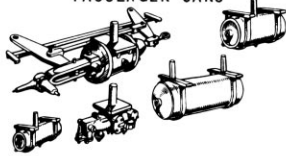
# CAL SCALE

Freight and Passenger  
Car Parts

## Westinghouse "UC" Air Brake System for Standard Steel Passenger Cars #190-300

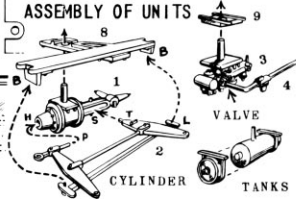


WESTINGHOUSE TYPE "UC"  
AIR BRAKE SYSTEM  
FOR ALL STANDARD STEEL  
PASSENGER CARS



AB-300 CAL-SCALE

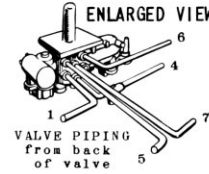
All the basic castings are included. Wire for the piping is not included but the sizes of the prototype pipes are noted for the modeler who wishes to go to that detail.



**IMPORTANT**—Separate parts from runners with **EXTREME CARE** using a razor blade. Assemble first, the Tanks and Valve, then the Cylinder as follows. Insert piston "P" in hole "H" then snap tip "T" into slot "S". Now slip on bracket "8" and glue the lever supports "L" to bracket at "B" (two points). Last lightly glue levers to Cylinder at "H" and "S". The basic units are now assembled.

**ATTACHING THE SYSTEM TO CARS**  
If your car is an **ATHERN** or like car, with a deep center beam, the levers must be cut off ("C" in Athern diagram) flush with bracket.

Shown here is the standard arrangement of parts. In most cases the Brake Cyl. will be close to side of car. The location shown is on cars with a shallow center beam or old wooden cars modernized.

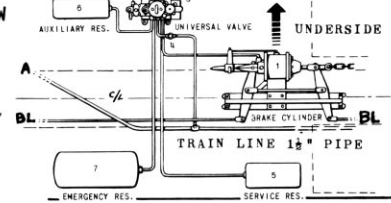


- 1-Brake Cylinder
- 2-Lever assembly
- 3-Universal Valve
- 4-Cent. Dust Collector
- 5-Service Reservoir
- 6-Auxiliary Reservoir
- 7-Emergency Reservoir
- 8-Cylinder Bracket
- 9-Univ. Valve Bracket

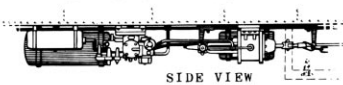
The Brake Set may be located in the middle of the car or towards either end depending upon what other equipment is under the car.

The Train Line "A" continues to the ends of the car where the air hoses attach. The Brake Lever Rods "BL" run to each of the trucks.

All pipes but the Train Line are 1" Diameter. Rest are 1/4".



DRAWN TO ACTUAL "HO" SCALE



## Air Brake Set for Express Reefers #190-324 ASSEMBLY

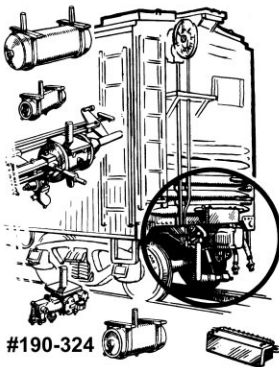
"BONUS DETAIL"  
with Cal-Scale

This side of the instructions shows the assembly of the Steam, Air and Signal Hose Group (1) and the complete Brake Set group (2).

When you have completed the assembly of the sets refer to the other side of this sheet for proper locations on your Express Reefers.

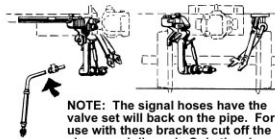
These sets are applicable to any car used in passenger service.

### 2 COMPLETE BRAKE SET



#190-324

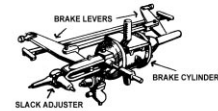
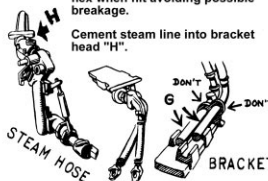
### 1 STEAM & AIR HOSE



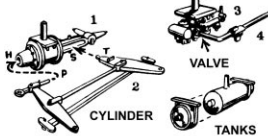
**NOTE:** The signal hoses have the valve set will back on the pipe. For use with these brackets cut off the valves and discard. Only the air hoses have exposed valves as air valves are near the hose itself.

Cement air and signal hoses to bracket but Don't cement at the rings. This allows hoses to flex when hit avoiding possible breakage.

Cement steam line into bracket head "H".

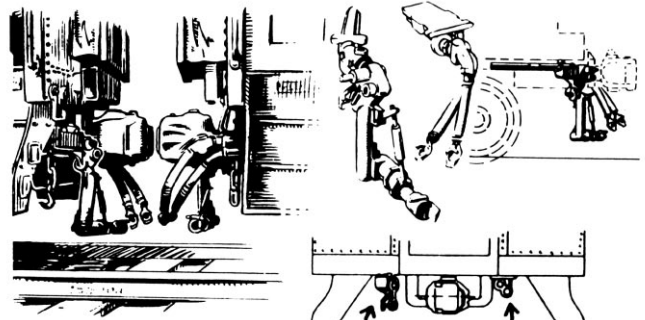


1. Brake Cylinder
2. Lever Assembly
3. Universal Valve
4. Cent. Dust Collector
5. Service Reservoir
6. Auxiliary Reservoir
7. Emergency Reservoir



**IMPORTANT** - Separate parts from runner with Extreme Care. Use a razor blade.

Assemble the Tanks and Valve First. Then the Cylinder, inserting the piston "P" in hole "H" slip tip "T" into slots "S" and lightly glue in place.

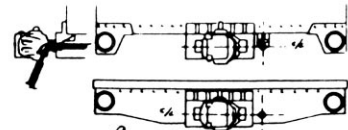


### STANDARD PASSENGER CAR STEAM, AIR AND SIGNAL HOSES

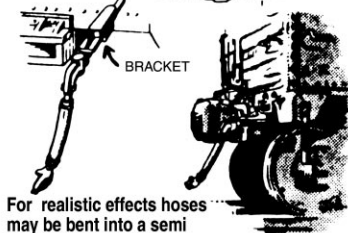
Used on passenger and express reefer cars. 12 hoses and needed brackets, enough to equip TWO passenger cars.

#190-275 Plastic

### FREIGHT CAR AIR HOSES



PLASTIC  
OR  
BRASS



For realistic effects hoses may be bent into a semi curved position.

### FREIGHT CAR STANDARD AIR HOSES

Air hoses for freight cars of all types and cabooses. 20 hoses and brackets, enough to equip TEN cars.

#190-276 In Plastic

### STANDARD AIR HOSES IN BRASS

For locomotives, tenders and all types of cars. 4 hoses cast in brass

#190-277 In Brass

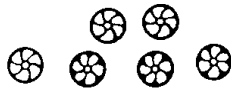
HO Plastic &  
Lost Wax Brass

# CAL SCALE

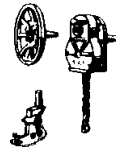
Freight and Passenger  
Car Parts



Brake Levers  
Plastic  
#190-494 (4 pair)



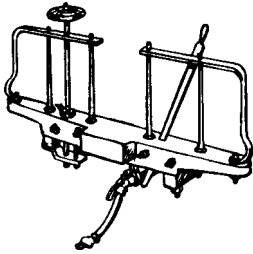
Brake Wheels  
Two types (set of 6)  
#190-289 Brass  
#190-487 Plastic



Brake Wheel  
Housing  
& Fulcrum  
#190-351  
(plastic) (6 sets)



"ABD"  
Modern Freight Brake  
Set  
#190-313  
Two complete sets for the  
very latest cars or to update  
older freight equipment



#190-321 Wood Passenger  
Car End Railings  
@ End railings, 2 brake  
wheels, and two air hoses

## Marker Lights



#190-325  
Standard  
Caboose



#190-463  
Caboose Marker  
Light PRR

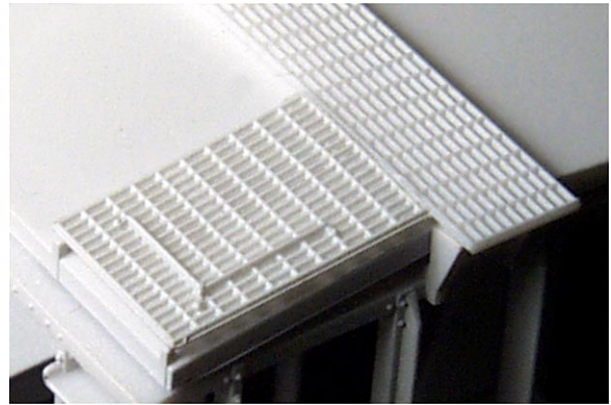


#190-464  
Caboose Marker  
Light PRR, PENN  
CENTRL, & CONRAIL



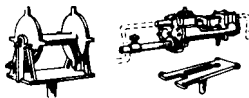
#190-465  
Caboose Marker  
Light CONRAIL

## Open Grated Roof Walk 36' long



Open Grated Roof Walk 36' long  
(2 pcs) & Laterals (4 pcs) - Styrene  
#190-491

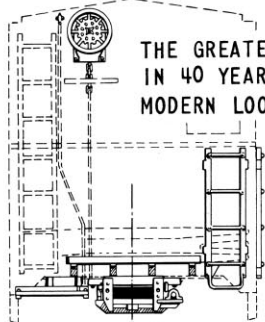
## WATER PUMP



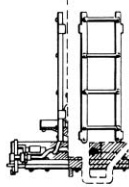
#190-287  
Steam driven w/ Bracket,  
Valve & Hose reel

## Hydra-Cushion Car Detailing Kit #190-301

**HYDRA-CUSHION "HO"**  
Car Detailing Kit



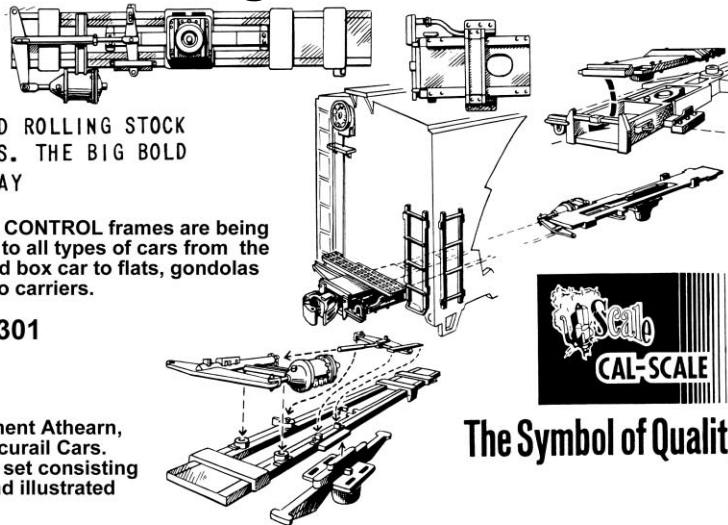
THE GREATEST CHANGE IN RAILROAD ROLLING STOCK  
IN 40 YEARS, SHOCK CONTROL CARS. THE BIG BOLD  
MODERN LOOK IN RAILROADING TODAY



SHOCK CONTROL frames are being  
applied to all types of cars from the  
standard box car to flats, gondolas  
and auto carriers.

#190-301

Designed to compliment Athearn,  
Roundhouse and Accurail Cars.  
A complete detailing set consisting  
of 23 plastic parts and illustrated  
instructions



The Symbol of Quality