

THE PENNSYLVANIA RAILROAD

NO. 65-C.

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DIESEL POWERED TRACK SWEEPER - OPERATION AND MAINTENANCE INSTRUCTIONS -
(Power Cars 498176, 498178 - Sweeper Cars 498175, 498177 -
Supply Cars 498755 and 489500).
(Supersedes Instructions No. 65-B, dated Philadelphia, Pa., June 30, 1950)

GENERAL

Locomotive front end cinders, coal droppings, sand from leaky cars, and from locomotive sanding device, etc., falling to track, eventually build up sufficient material to come in contact with base of rail and establish electrical bridge between the two rails, thereby interfering with proper operation of block signals, or inspection of track. For this reason, it becomes necessary to remove the accumulation of debris. In order to economically remove same, the use of track sweeping machine covered by these instructions is resorted to.

TRACK SWEEPER TRAIN MAKE-UP

The track sweeper train is primarily a work train, consisting of a locomotive, tool-riding car, track sweeper power car, track sweeper car, dirt cars and cabin car (if and when cabin car is required).

When performing track sweeping operation, the locomotive operating in forward direction, pushes the train, the dirt cars to the front and remaining equipment in the order enumerated above.

Speed of train when engaged in sweeping operation ranges from $\frac{1}{2}$ to $1\frac{1}{2}$ MPH., depending upon nature of sweeping to be done.

Adequate provision is made for lighting, including flood lighting for night operation.

GENERAL OPERATION

The general operation of track sweeper is as follows:

With the train moving forward, cinder and dirt is scarified to facilitate gathering by broom. Immediately following the scarifier is the sweeper unit, equipped with broom (adjustable for height of rails) and conveyors. It is attached to track sweeper frame by means of a draw bar and flexible joint at the front end and follows the rails by means of trailer wheels directly in back of the broom. The broom sweeps up the cinders and dirt between and outside of the rails the length of the tie and throws same on to suitable conveyors by which it is conveyed to the dirt cars for final disposition at refuse dumps.

On the sweeper unit between the broom and trailing wheels are rail wipers for removal of dirt thrown on to rail head by brooming operation. This facilitates locomotive traction.

Electric power for operating machinery of the sweeper is supplied at 230 volts D.C. by Diesel driven generator set located in the power car.

Following the sweeper power car is the tool-riding car.

DESCRIPTION OF EQUIPMENT

Power Car (498178 & 498176)

The power car consists of an X-25 all steel box car modified to receive one 6-cylinder 6" x 6½" Murphy Engine Co. Diesel engine, direct connected to 100 K.W., 230-Volt D.C. Columbia Generator nominally running at 1200 RPM., together with fuel tank of 1400 gallons capacity and a lubricating oil supply tank of 150 gallons capacity.

The engine set is started by means of 24-volt storage batteries charged by generator located on the engine.

Ventilation of the power car is obtained by the use of louvers in the side of car and hatches in the roof of car, in addition to end and side doors.

For night operation, flood lights are supplied at ends of car, as well as at sides of car, for illuminating track. A motor driven fuel oil pump is provided to facilitate transfer of fuel oil from barrel or supply truck to supply tank in cars.

The generator and Diesel engine (direct connected at crank shaft coupling) is unit mounted on continuous steel frame, resting on Fabreeca dampeners and attached to sub-base at car proper.

The engine is equipped with 24-volt battery charging generator with voltage and current regulators incorporated therein. Twenty-four (24) volt starter motor, automotive type, flywheel mounting with magnetic cut-in switch, is employed.

Unit fuel injectors are used.

Cooling system is provided with oversize radiators and water circulating pump.

Capacity of cooling system is 28 gallons per unit.

Radiator fans are of the pusher type.

Automatic cut-out control protection is provided in the engine for protection against overheating of engine or loss of lubricating oil pressure.

Oil bath type air cleaners, cage mounted, are provided at engine intake. Air Maze type R-72 air cleaners are used at the intakes to the generator. Fuel oil filter is provided in fuel oil lines to injection system. Lubricating oil filters and lubricating oil coolers are provided in the engine lubricating oil system. For proper care of these units consult Murphy Diesel Engine Instructions for Operation, Maintenance and Repair of Engines. This manual together with parts list is with power car and must be kept available at all times for use of foreman in charge.

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FUEL TANK

Fuel tank of capacity 1400 gallons, for storage of fuel oil used by the Diesel engine sets, is located centrally on the car. This tank can be filled either by gravity through filler housing (protectoseal equipped) or by means of a motor driven fuel transfer pump located at the fuel tank. Fuel tank is provided with pet cocks for indicating height of fuel. Fuel filling connections which are exposed to abrasive dust are provided with dummy plugs or caps.

LUBRICATING OIL TANK

Adjacent to the fuel tank is a lubricating oil supply tank of 150 gallons capacity. Same is provided with handhole opening for filling purposes. Oil can be removed from the lubricating oil supply tank through spigot provided for that purpose. Spigot is protected from abrasive dust by dummy plug or cap.

STARTER BATTERIES

Twenty-four (24) volt lead acid type storage battery is provided for the engine-generator set. The battery also serves for restricted emergency lighting of the interior of power car. Each battery consists of two (2) six-cell trays of Gould type 4D-G-153, Heavy Duty, 153 ampere hour capacity, at twenty hour rate, or approved equal.

SWITCHBOARDS

Switchboard provided in the power car has circuit breaker, ammeter, voltmeter and field regulating rheostat.

ILLUMINATION FOR NIGHT OPERATION

To facilitate night operation, 230-Volt, D.C., lighting is provided in the interior of the power car. Switches controlling such lights are provided at the interior side wall of the car. D.C. current (from starter battery) is provided for emergency lighting in the power car. Battery should always be conserved for starting purposes only. Exterior lighting at the power car is likewise provided, and controlled by switches located inside the car.

LOCKERS

One (1) clothes locker is provided in car. A material locker is also provided.

POWER CABLE CONNECTIONS

Jumper connections and receptacles are provided at both ends of power car to facilitate operation of sweeper from either end of power car.

Sweeper Cars (498175 & 498177)

Sweeper car is of special construction to meet clearance requirements involved in connection with broom drive mechanism. It consist primarily of a truss side frame from which is suspended the sweeper unit consisting of broom, flight and lateral screw conveyors, motor drives for broom, "B" conveyor, and "C" conveyor which is adjustable for height to meet restricted clearances. The sweeper unit can be raised or lowered by means of sweeper unit hoist and on curved track is provided with centering device located on car frame directly in back of sweeper unit. This centering device permits the broom to be lowered on curves so that the broom trailer wheels will take

their proper position on rails. At rear end of car, located adjacent to power car is a pillar crane which is used for the purpose of transferring dirt car conveyors from loaded cars to empty cars.

Cable jumpers are provided between the sweeper car and the power car for transmission of power to the various sweeper car units.

Lighting is provided for night operation of this unit.

Controls, both electric and air, are arranged for convenience of operator from either ground or from deck. Ground controls are accessible from riding platform, located forward of broom. Brass plates properly stamped show functions of all electric and air controls.

Emergency electric switches are located on sweeper car and dirt car conveyors, any one of these switches stops entire unit.

Interlocking electric control is provided for all sweeping and conveyor functions.

Supply Cars (498755 & 489500)

These cars provide facilities for repairs to broom and machinery, and includes work bench, vise, bristle cutting and bending machine, storage bins for broom segments and machinery parts.

Riding facilities and heating stove are provided.

Dirt Car Conveyors:

Dirt car conveyors are provided for loading out material picket up from track to H-21 hopper cars. All dirt car conveyors, as well as sweeping and conveying functions in the sweeper car, are electrically interlocked so as to require conveyors to be started before sweeping operation is begun. Likewise, in the event of stopping of any function in the sweeping cycle, all functions to rear of that cycle are brought to a stop, while those ahead of the cycle continue to operate in order to clear up the conveying system.

OPERATION

Power Car (498176 & 498178)

Instruction manuals relative to operation of the Diesel generator set is supplied. These instruction manuals should be kept at all times in the Power Cars. The manuals are complete in themselves and give all necessary information in connection with the operation of engine sets. A parts manual is also supplied for the purpose of identifying and ordering such parts as may be required for service purposes.

In the general operation of the power unit, it is necessary that the machine be kept in tidy condition and thoroughly protected from abrasive dust and dirt.

Starter batteries should be periodically checked (at least once every week) by hydrometer and for water level. It is not advisable to attempt to disturb charging rates of the generators supplying the batteries and, if such adjustment is necessary, a competent electrician should be employed for this purpose.

Battery charging generators: All generators and cut-out and regulator devices are properly assembled, adjusted, tested, and sealed. Under no condition must they be tampered with in the field. Any servicing must be performed by properly qualified individual under instructions from the Chief Engineer M.W.

Cut-out device must be adjusted and set as per Equipment Manufacturers' instructions.

In order that full benefit of charging control may be obtained, it is absolutely essential that:

1. All battery connections be firm and free from corrosion (lubricate connections with grease or vaseline).
2. All connections at generator, ammeter, etc. to be clean and tight to eliminate resistance to charging with consequent higher voltage at generator and resultant cutting out at voltage regulator on account of high charging voltage required.
3. At time of engine oil change, thorough check should be made to see that all electric connections are in good order and tight.

Diesel Engine: Extreme care should be taken with regard to the quality of fuel oil used. Fuel should be obtained over P.R.R. Specifications No. 111.

Lubricating oil required for the above engine is 12 gallons. Condition of lubricating oil should be frequently checked so as to avoid carbon sludging or excessive thinning out of oil.

Oil filters should be frequently checked as to their effectiveness in keeping lubricating oil clean and clear. Follow manufacturer's Instruction Manual.

Radiator system should be checked daily to see that proper amount of water is in radiator system at all times. During freezing weather, antifreeze, such as Prestone or Zerex, should be resorted to. At times when antifreeze is resorted to, same should be of mixture which will give minus 10° F. protection. Capacity of cooling system is 28 gallons per unit on Murphy engines and 20 gallons per unit on General Motors Engines.

Fire Extinguishers:

Carbon dioxide extinguishers furnished should be subject to monthly inspection to see that same are kept in good working condition.

Sweeper Car (498175 & 498177)

When starting sweeper train, conveyors on dirt cars should be started first, following which should be the "C" conveyor, "B" conveyor, broom flight conveyor and broom. These units are all controlled by means of magnetic switches, with master controller located in the upper deck of sweeper car.

The speed at which the broom and broom conveyor are to be operated will depend upon condition of material to be removed. It is advisable to operate these units at a fairly high speed in order to avoid congestion at these points. It is not advisable to attempt to broom into too heavy a cut on account of overloading broom bristles and choking up the broom conveyor. The depth to which the broom operates in the material to be removed can be regulated as follows:

Broom height adjustment: Depth of broom below top of rail, (broom trailer wheels on rail) is regulated by means of adjusting nut "B" on eyebolt stem "A" sketch - page 6(a). Piston travel blocks "D" at broom balancing air cylinder will hold broom at predetermined depth. By releasing one or more of these travel blocks additional depth of broom below top of rail can be had. When dirt is very deep and adjustment on eyebolt stem "A" does not raise broom a sufficient amount, additional

height may be obtained by raising valve handle on broom balancing control valve "G" and admitting air into broom balancing air cylinder "F" thus raising broom by means of bell crank "E". When sweeping, the valve handle on the control valve "G" for broom balancing device should be placed in lower quadrant position "3". With the pressure regulating valve "H" and the safety valve "I" properly adjusted the broom will be balanced and will ride over high ties and other obstructions without damage to bristles. The broom is lowered with control valve handle in mid or horizontal position "2" which permits air in cylinder to escape through safety valve "I" which should be set so that the broom will drop slowly. The pressure regulating valve "H" should be set at slightly below the pressure at the safety valve.

Special care must be exercised during sweeping operations in order to avoid fouling guard rails, crossing planks, frogs or other obstructions which lie below top of rail. Upon approaching such obstructions, the sweeper train should be stopped and the sweeper unit raised to clear. The sweeper unit is raised by pressing the sweeper unit hoist switch located just back of the broom on side of car frame. On account of clearances involved in connection with sweeper unit, special precautions should be exercised at tunnels, overhead bridges, station platforms, etc.

The "C" conveyor can be lowered inside the 15'- 0" clearance line when sweeper is being moved over road as a "dead" unit. Such lowering requires that the dirt car conveyor adjacent to "C" conveyor be removed.

When handling dirt car conveyors by means of the crane provided on the sweeper car, it is necessary to resort to the auxiliary side bearing wedges in order to prevent excessive roll or tip of sweeper car under crane loads. The auxiliary side bearings should be kept out of engagement, however, when sweeper is being moved over road. Provision is made for locking the auxiliary side bearing wedges in this position.

Cables used for hoisting purposes on the sweeper car should be kept thoroughly lubricated, using Texaco Crater Compound or approved equal.

All bearings on sweeper car mechanism should be frequently lubricated, using ball bearing grease for this purpose. Application of grease should be made by means of hand operated grease gun, which is also provided.

Frequent check should be made of the broom conveyor chains to see that slack is properly taken up so as to avoid hammering or snagging of chains.

Tracing List F-415414 covers all drawings used in connection with the construction of power car and sweeper car. Tracing F-436071 is a list of tracings used in construction of dirt car conveyors. For description of repair parts required for maintenance or repair, see drawings enumerated in this list.

List of Emergency Repair Parts to be carried on Sweeper Train as well as at Juniata Stores Department, is attached to these instructions.

There is a spare General Motors Diesel engine generator set Model 3-268A, (6½" x 7", 3-cylinder 2-cycle) held at Altoona to protect the operation of these sweepers.

L. E. Gingerich
Chief Mechanical Officer

PROTECT PARTS FOR TRACK SWEEPER 'CARS 498175, 498177 AND
 100-TON CAPACITY DIRT CAR CONVEYOR

| <u>Acct-Ref.</u> | <u>De- tail No.</u> | <u>Tracing Number</u> | <u>Description</u> | <u>Number Per Sweeper</u> | <u>Stored at Altoona</u> | <u>Total</u> |
|------------------|-----------------------------|---------------------------|--|-----------------------------------|----------------------------------|--------------|
| 15A-3494 | 1 | D-446601-C | Track Sweeper car conveyor attach- ment link. | 75 | 200 | 350 |
| 15A-3461 | FC-1 | D-446602-A | 100-Ton Capacity Dirt Car Conv'r. Attachment Link | 75 | 200 | 350 |
| 15A-3942 | 2 | D-446600-C | Track Sweeper Car Conv'r.,100-Ton Capacity Dirt Conv'r. Straight Side Bar Link Assemblies. | 300 | 400 | 1000 |
| 15A-3495 | 3 | D-446600-C | Track Sweeper Car Conv'r.,100-Ton Capacity Dirt Car Conv'r. Off Set Side Bar Link Complete. | 50 | 50 | 150 |
| 15A-3940 | 4 | D-446600-C | Track Sweeper Car Conv'r.,100-Ton Capacity Dirt Car Conv'r. Bushings. | 50 | 200 | 300 |
| 15A-3941 | 5 | D-446600-C | Track Sweeper Car Conv'r.,100-Ton Cap. Dirt Car Conv'r. Roller 2" Dia. 1-5/32" Wide. | 50 | 50 | 150 |
| 15A-3943 | 6 | D-446600-C | Track Sweeper Car Conv'r.,100-Ton Cap. Dirt Car Conv'r.,Straight Side Bar Link Pairs, 45/64" DL. | 300 | 400 | 1000 |
| 15A-3903 | F-438974-C | | Track Sweeper Conv'r.,100-Ton Cap. Dirt Car Conv'r.Link Pin 11/16"Dia., 3-3/8" Long. | 600 | 600 | 1800 |
| 45A-406 | | | Track Sweeper Conv'r.,100-Ton Cap. Dirt Car Conv'r.Cotter Pins 1/4"x1 1/2" Long. | 1500 | 1500 | 4500 |
| 9-6674 | 1 | D-451397-A | Sweeper Unit Center Conveyor Flight 4'- 8" Long. | 12 | 12 | 36 |
| 9-6675 | 2 | D-451397-A | Sweeper Unit End Conveyor (2) Flight 20-1/8" Long. | 30 | 30 | 90 |
| 9-4791 | | C-422737-N | "B" Conveyor Flight 2'- 10 1/4" Long. | 36 | 50 | 122 |
| 9-6673 | 1 | D-443044-A | "C" Conveyor Flight 2'- 5-3/4" Long. | 15 | 15 | 45 |
| 9-6672 | F-1 | D-447986-A | 100-Ton Cap.Dirt Car Conveyor Flight 23 1/4" Long. | 75 | 75 | 225 |
| 9-6725 | S-1 | E-430203-C | Sweeper Unit Conveyor Drive Counter Shaft 2'- 3-1/16". | 0 | 2 | 2 |
| | | D-428339-B | Lateral or Screw Conveyor. | 0 | 2 | 2 |
| 9-6726 | S-2 | E-430203-C | Sweeper Unit Center Conveyor Head Shaft 4'- 4" Long. | 0 | 2 | 2 |
| 9-6727 | S-3 | E-430203-C | Sweeper Unit End Conveyor (2) Head Shaft 2'- 8 1/2" Long. | 0 | 2 | 2 |
| | 1 | D-437265-C | Sweeper Unit Center Conveyor Foot Shaft 4'- 10 1/2" Long. | 0 | 2 | 2 |
| | 2 | D-437265-C | Sweeper Unit End Conveyor (2) Foot Shaft 24-1/16" Long. | 0 | 2 | 2 |
| 9-6728 | | C-422737-N | "B" Conv'r. Head Shaft 3'- 11" Long. | 1 | 2 | 4 |
| 9-5877 | | D-446276-B | "B" Conv'r.Foot Shaft 3'- 8-3/4" Long. | 3 | 4 | 10 |
| 9-6681 | 1 | D-443045-B | "C" Conv'r.Head Shaft 3'-4-9/16" Long. | 1 | 2 | 4 |
| 9-6682 | 2 | D-443045-B | "C" Conv'r.Foot Shaft 3'- 3-3/4" Long. | 1 | 2 | 4 |
| 9-6683 | SH-1 | E-429334-E | 100-Ton Cap.Dirt Car Conv'r. Head Shaft 2-15/16"Dia.,3'-1-5/16" Long. | 1 | 2 | 4 |
| 9-6710 | SH-3 | E-446265-B | 100-Ton Cap.Dirt Car Conv'r. Foot Shaft 2'- 8"Long, 2-3/16"Dia.at Bearings only. | 3 | 4 | 10 |

| <u>Acct-Ref.</u> | <u>Detail Number</u> | <u>Tracing Number</u> | <u>Description</u> | <u>Number Per Sweeper</u> | <u>Stored at Altoona</u> | <u>Total</u> |
|------------------|----------------------|-----------------------|---|---------------------------|--------------------------|--------------|
| 9-6718 | 1 | D-449560-A) | Sweeper Unit Conveyor Sprocket | 2 | 4 | 8 |
| 9-6719 | 2 | D-449560-A) | Bore, 2-3/4" Nom. | 2 | 4 | 8 |
| 9-6720 | 3 | D-449560-A | Sweeper Unit Conveyor Sprocket | 2 | 4 | 8 |
| | | | Bore, 2-3/16" Nom. | | | |
| | 9 | D-449560-A | Sweeper Unit Conveyor Sprocket | -- | -- | -- |
| | | | Bore, 2-3/16" Nom. | | | |
| | 1 | C-436861-C | Sweeper Unit, Take-up Shaft, | 0 | 2 | 2 |
| | | | (9'- 2-7/8" Long) | | | |
| | 1 | D-449560-A | Sweeper Unit Conveyor Sprocket | -- | -- | -- |
| | | | Bore 3 1/2" Long. | | | |
| | 2 | D-449560-A | Sweeper Unit Conveyor Sprocket | -- | -- | -- |
| | | | Bore 4" Long. | | | |
| 9-6721 | 4 | D-449560-A | "B" Conv'r. Head & Foot Shaft; "C" | 2 | 2 | 4 |
| | | | Conv'r. Foot Shaft Sprocket, | | | |
| | | | Bore 2-7/16" Nom. | | | |
| 9-6722 | 4A | D-449560-A | "B" Conv'r. Foot Shaft, "C" Conv'r. | 0 | 2 | 2 |
| | | | Foot Shaft Sprocket, Bore 2-15/32" Nom. | | | |
| 9-6723 | 6 | D-449560-A | "C" Conv'r. Head Shaft Sprocket | 0 | 4 | 4 |
| | | | Bore 2-7/16" N. | | | |
| | S2 | E-449577-A | 100-Ton Cap. Dirt Car Conv'r. Head & | 2 | 2 | 6 |
| | | | Foot Shafts Sprocket, Bore 2-15/16" | | | |
| | | | Nom. | | | |
| | Item 19 | A-430209-D | Sweeper Unit Conv'r. Drive Chain | | | |
| | | | ASA-100, 65" L. | | | |
| | " 20 | A-430209-D | Sweeper Unit Conv'r. Drive Chain | | | |
| | | | ASA-100, 72 1/2" L. | | | |
| | " 21 | A-430209-D | Sweeper Unit Conv'r. Drive Chain | | 50 Ft. | 100 Ft. |
| | | | ASA-100, 62 1/2" L. | | | 200 Ft. |
| | | C-422793-C | "B" Conv'r. Drive Chain, ASA-100, 220" L. | | | |
| Item 9 | | C-443047-C | "C" " " " " " 206 1/4" L. | | | |
| " 10 | | C-443047-C | "C" " " " " " 133-3/4" L.) | | | |
| | | A-435705-I | 100-Ton Cap. Dirt Car Conveyor Drive | 50 Ft. | 100 Ft. | 200 Ft. |
| | | | Chain A-508, Style K, 262" Long. | | | |
| 31-2943 | FC447 BR-215 | E-429343-B | 100-Ton Cap. Dirt Car Conv'r. Roller | 2 | 8 | 12 |
| | | | Bearing, 2-15/16" Shaft | | | |
| 31-2941 | FC419 BR-103 | E-429343-B | 100-Ton Cap. Dirt Car Conv'r. Drive | 1 | 4 | 6 |
| | | | Roller Bearing, 1-3/16" Shaft. | | | |
| 31-2944 | F419L B2103 | E-429343-B | 100-Ton Cap. Dirt Car Conv'r. Drive | 0 | 4 | 4 |
| | | | Roller Bearing, 1-3/16" Shaft. | | | |
| 31-2942 | FC435 BR203 | E-429343-B | 100-Ton Cap. Dirt Car Conv'r. Roller | 1 | 4 | 6 |
| | | | Bearing, 2-3/16" Shaft. | | | |
| | ZG207 | D-422728-F | "B"&"C" Conveyor Roller Bearing | 2 | 8 | 12 |
| | | | Only Less Housing. | | | |
| 31-2901 | ZG207 | D-422728-F | "B" Conv'r. Head Shaft Roller Bearing, | | | |
| | | | 2-7/16" Shaft with Steel Housing. | | | |
| 31-2901 | ZG207 | D-422728-F | "C" Conv'r. Foot Shaft Roller Bearing, | 2 | 4 | 6 |
| | | | 2-7/16" Shaft with Steel Housing. | | | |

PROTECT PARTS FOR
TRACK SWEEPER CARS

| <u>Acct-Ref.</u> | <u>Detail Number</u> | <u>Tracing Number</u> | <u>Description</u> | <u>Number Per Sweeper</u> | <u>Stored at Altoona</u> | <u>Total</u> |
|------------------|----------------------|-----------------------|--|---------------------------|--------------------------|--------------|
| 31-2946 | 2 ZA-207 | F-447270-B | (Sweeper Unit Conv'r. Drive Roller (Bearing with Steel Housing 2-7/16" (Shaft; Boom Drive Roller Bearing (with Steel Housing 2-7/16" Shaft; "C" Conv'r. Drive Roller Bearing (2-7/16" Shaft with Steel Housing. | 2 | 4 | 8 |
| 31-2945 | 1 ZBR207 | F-447270-B | (Sweeper Unit Conv'r. Drive Roller (Bearing with Steel Housing 2-7/16" (Shaft; "C" Conv'r. Drive Roller (Bearing 2-7/16" Shaft. | 2 | 4 | 8 |
| 31-2938 | 1 B2207 | E-430739-D | (Sweeper Unit Conv'r. Drive Roller (Bearing 2-7/16" Shaft; "B" Conv'r. (Roller Bearing 2-7/16" Shaft. | 2 | 4 | 8 |
| 31-2939 | 2 B2203 | E-430739-D | Sweeper Unit Conv'r. Drive Roller Bearing Shaft 2-3/16" | 2 | 2 | 6 |
| 31-2940 | 3 B2115 | E-430739-D | Sweeper Unit Conv'r. Drive Roller Bearing Shaft 1-15/16" | 2 | 4 | 8 |
| 31-1044 | Item 4 | E-430099-B | Sweeper Unit Conv'r. Drive Ball Bearing SKF 1308 | | | |
| 31-2937 | FC440 BR208 | F-436834-A | Sweeper Unit Conv'r. Drive Roller Bearing 2 1/2" Shaft | 2 | 4 | 8 |
| | 3 A2111 | F-424213-D | Sweeper Unit Roller Bearing, 1-11/16" Shaft. | 0 | 0 | 0 |
| 31-2935 | BR111 | F-430296-B | Sweeper Unit Roller Bearing, 1-11/16" Shaft. | 0 | 4 | 4 |
| 31-2936 | F427 B2111 | F-430295-B | Sweeper Unit Roller Bearing, 1-11/16" Shaft. | 0 | 4 | 4 |
| | Item 24 | A-432317-A | Sweeper Unit Broom Shaft Ball Bearing SKF-1315 | 2 | 2 | 6 |
| | Item 12 | A-430303-C | Sweeper Unit Broom Drive Ball Bearing SKF-1312 | 2 | 2 | 6 |
| | 1 | E-432469-A | Sweeper Unit Trailing Wheels, Timken Roller Bearing, Series 755, Cup 752, Cone 759. | 0 | 4 | 4 |
| | 10 | C-430005-A | Sweeper Unit Broom Support Link and Clevis. | | | |
| | 16 | C-430005-A | Sweeper Unit Broom Height Adj. Bolt | | | |
| 45A-3368 | 31F | C-432316-B | Sweeper Unit Broom 1/4"x.042" Flat Tempered Brush Wire M.C. Grade E-4 | 12 Rolls 100-120# | 24 Rolls 100-120 # | 48 Rolls |
| 46-3771 | 31D&E | D-435903-B | Sweeper Unit Broom 3/8" x 7/8", 3/16" Radius Rubber. | 650 Ft. | 650 Ft. | 1950 Ft. |
| | | D-435903-B | Sweeper Unit Broom #11 Soft Iron Wire. | 200-250# | 200-250# | 600-750# |

PROTECT PARTS FOR
TRACK SWEEPER CARS