OPERATING, MAINTENANCE & PARTS MANUAL

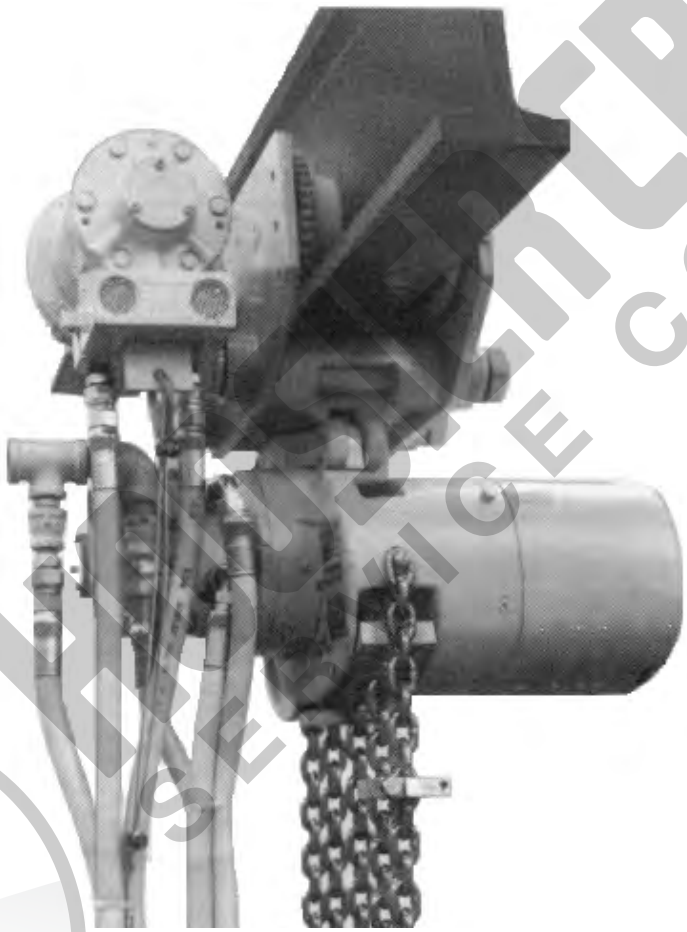
COLUMBUS McKINNON CORPORATION

MANUAL #: 11720909

SERIES 6000

FULL AIR MOTOR DRIVEN TROLLEY

Capacities from 1 to 3 metric tons



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Follow all instructions and warnings for inspecting, maintaining and operating this trolley.

The use of any trolley presents some risk of personal injury or property damage. That risk is greatly increased if proper instructions and warnings are not followed. Before using this trolley, each operator should become thoroughly familiar with all warnings, instructions and recommendations in this manual. Retain this manual for future reference and use.

Forward this manual to the trolley operator. Failure to operate the equipment as directed in this manual may cause injury. Should you have any questions regarding this product, please call Columbus McKinnon.

The hoisting equipment described in this manual is intended for industrial use only and should not be used to lift, support or otherwise transport people.

LOAD RATINGS

Before installing, make certain the capacity of the hoist does not exceed the capacity of the trolley and the supporting structure is capable of supporting the load, hoist and trolley.

MAINTENANCE / INSPECTION

The trolley should be inspected periodically for evidence of excess wear or overload and its continued ability to support the load. The frequency of inspection will depend on the severity of use. It is recommended that the user begin with a monthly inspection and extend periods to quarterly, semi-annually or annually based on monthly experience. **Any worn parts should be replaced immediately.** The trolley should be visually inspected for the following conditions: loose hardware, sideplate damage or bending, cracks or distortion, wheel wear or cracks and worn bearings.

October 2012 REV. AB

HOOSIER CRANE
SERVICE COMPANY

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This trolley (FADT01) will work with the following hoists:

- **CM Airstar (Series 2200)**
- **CM Airstar (Series 6000)**
- **Budgit BAH - Small Frame (Series 2200)**
- **Budgit BAH - Large Frame (Series 6000)**
- **Yale YAL**
- **Yale KAL**
- **Coffing CAH**

GENERAL

These Full Air Motor Driven Trolleys are designed for use on air hoists. They attach directly to a suspension bracket or mounting lug at top of hoist. Special field conversion kits (see below) are available to accommodate use of these trolleys on existing hook type air hoists.

Specifications herein subject to change without notice.

⚠ WARNING

THIS EQUIPMENT IS NOT SUITABLE OR DESIGNED TO BE USED IN CONJUNCTION WITH LIFTING OR LOWERING PERSONS.

HOIST FIELD CONVERSION KITS

CATALOG NUMBER	DESCRIPTION
905421	Lug Suspension Kit - 1 Ton
905422	Lug Suspension Kit - 2 Ton
905424	Lug Suspension Kit - 3 Ton

Above lug suspension kits contain a suspension lug assembly which is installed in place of the hoist upper hook. Instructions for installing these kits are not included in this booklet. They are furnished in each kit

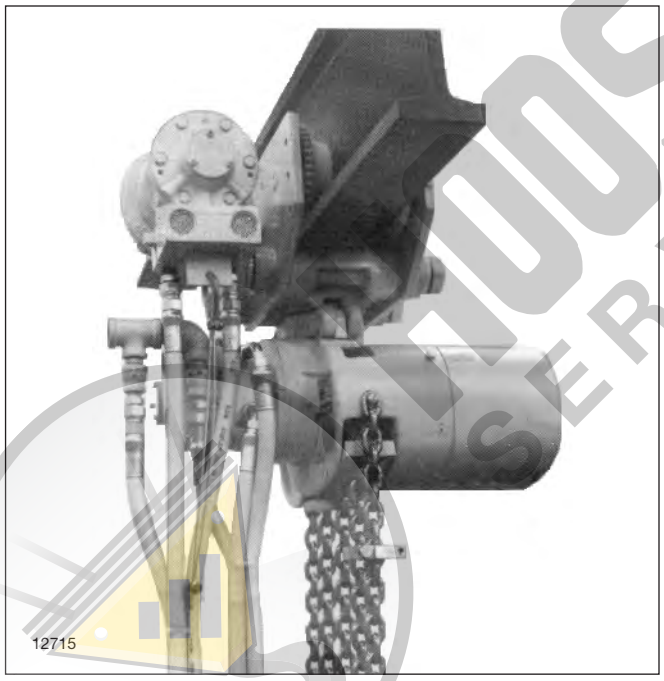

Figure 1. Standard Trolley and Hoist

A standard 3 ton Air Motor Driven Trolley is illustrated in Figure 1. The pendant and hose assembly is shipped loose and should be attached after trolley and hoist installation.

Assembly of your new trolley to your hoist and installation of the complete unit on its runway beam can be accomplished with a minimum of effort by following the instructions given below.

⚠ WARNING

SINCE RIGID MOUNTING DOES NOT ALLOW HOIST TO ROTATE WITH PULL OF LOAD, RIGID MOUNTED AIR MOTOR DRIVEN TROLLEYS MUST NOT BE USED WITH HOISTS HAVING ROLLER TYPE LOAD CHAIN.

THE INFORMATION CONTAINED IN THIS MANUAL IS FOR INFORMATIONAL PURPOSES ONLY AND CMCO DOES NOT WARRANT OR OTHERWISE GUARANTEE (IMPLIEDLY OR EXPRESSLY) ANYTHING OTHER THAN THE COMPONENTS THAT LIFT-TECH MANUFACTURES AND ASSUMES NO LEGAL RESPONSIBILITY (INCLUDING, BUT NOT LIMITED TO CONSEQUENTIAL DAMAGES) FOR INFORMATION CONTAINED IN THIS MANUAL.

ASSEMBLY OF TROLLEY TO HOIST

NOTE: If trolley is to be used on an existing CM hoist, the necessary hoist conversion kit should be first installed following instructions furnished with kit.

Place hoist on workbench, suspension lug facing up and proceed as follows:

1. Make certain that lug on hoist is properly oriented and installed before attachment to trolley. All air hoists within the CMCO family of brands are cross mounted so that the reeving is parallel to the beam and the trolley air motor should be on the same side of the runway beam as the hoist air motor.
2. Determine proper spacing for trolley side plates so that adequate wheel clearance (approximately 1/8") is provided on both sides of I-beam, between inside faces of wheel flanges and edges of bottom beam flange. Proper spacing is obtained by varying the number of spacer washers (furnished with trolley) installed on suspension cross pins between suspension lug and trolley side plates (Figure 2).

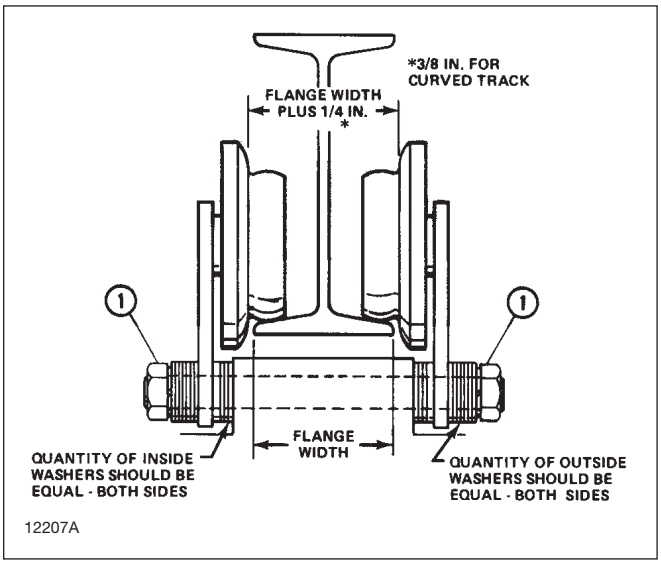

Figure 2. Proper Wheel Spacing

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3. Due to manufacturing tolerances, I-beams having the same size designations may have varying dimensions making it impossible to prescribe the specific number of spacer washers required between trolley side plates and suspension lug for any given beam size. It will, therefore, be necessary to determine the spacer washer requirement by "trial and error" assembly.
   a. First measure the exact width of bottom flange on runway beam and then add 1/4" to that measurement (3/8" for curved beam). The total is the required distance between inside faces of wheel flanges to obtain satisfactory wheel operating clearance. See Figure 2.
   b. Temporarily assemble trolley to hoist using about 3 or 4 washers at each end of suspension pins, between side plates and suspension lug. Tighten pin nuts for accurate check of spacing.
   c. Measure distance between inside faces of wheel flanges and compare with the total dimension obtained in paragraph a above.
   d. Remove trolley sides and add or remove an equal number of inside spacer washers as required to obtain proper distance between wheels.
   e. When wheel spacing is correct, remaining spacer washers are to be installed on outside ends of suspension pins (see note below) and the pins then secured with lockwashers and hex nuts. The nuts (1, Figure 2) should not be completely tightened until after the hoist and trolley are mounted on runway beam.

NOTE: It is important that all spacer washers that come with trolley be used. Install remaining spacer washers equally on outside ends of pins.

INSTALLING TROLLEY AND HOIST

1. Hoist and trolley combination may be installed on runway beam by either of two methods.
   a. If one end of beam is open or exposed, trolley may be installed by sliding it onto beam.
   b. If trolley cannot be slid over end of beam, remove hex nuts (1, Figure 2), lockwashers and outer spacer washers from pins on one side of trolley. Spread or remove one side plate to facilitate positioning trolley over bottom flange of beam. Reinstall side plate, outer spacer washers, lockwashers and hex nuts on suspension pins.

⚠ WARNING

AFTER TROLLEY HAS BEEN INSTALLED ON BEAM, MAKE SURE SUITABLE STOP(S) IS SECURED ON OPEN ENDED BEAMS TO PREVENT TROLLEY FROM ROLLING OFF THE BEAM (STOPS SHOULD CONTACT TROLLEY SIDE PLATES, NOT WHEELS). MAKE CERTAIN THAT ALL SPACER WASHERS AND LOCKWASHERS ARE IN PLACE ON SUSPENSION PINS AND THAT HEX NUTS ARE TIGHT. RECHECK CLEARANCE DIMENSIONS BETWEEN WHEEL FLANGES AND BEAM FLANGES (FIGURE 2).

CONNECTING TROLLEY TO AIR SERVICE

1. The recommended operating air pressure for Full Air Motor Driven Trolleys is 90 psi. When line pressure exceeds 100 psi (at trolley when trolley is operating), it is recommended that a pressure regulator valve be provided in the air supply to maintain proper pressure. Air consumption at full load and full speed should be set at 80 SCFM.
2. A filter lubricator unit (Figure 3) must be installed between air source and air hose leading to trolley. These keep air flowing to trolley free of dirt and add lubricant to air so internal parts of motor are constantly lubricated. Use a good grade of spindle oil, approximate viscosity 180 ssu at 100°F., air powered tool oil, or S.A.E. 10W machine oil. CMCO distributors can provide filter-lubricator units.

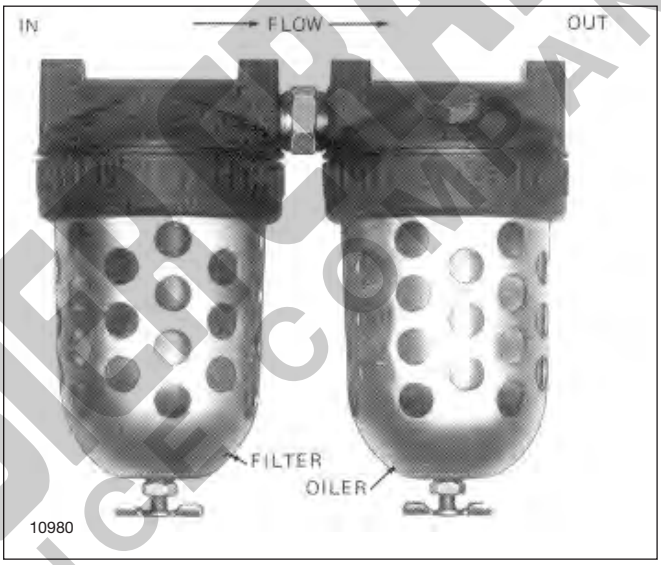

Figure 3. Air Filter and Lubrication Unit.

3. The air intake elbow on the Series 6000 air hoist should point away from the runway beam (see Figure 1).
   a. Use close nipple in elbow to attach tee as shown in Figures 1 and 9.
   b. Connect hoist to nearest filtered and lubricated air source using 3/4" I.D. air hose attached to tee. Avoid use of hose assemblies of smaller diameters that will cause air flow restrictions and reduce hoist and trolley performance.
   c. Provide sufficient hose to reach from air source to farthest point of trolley travel. Hose Trolleys are one recommended means of keeping hose up out of the way.
   d. Attach hose assemblies as shown in Figure 11.
   e. See hoist manual for hoist air connection requirements.

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LUBRICATION

1. Wheel bearings are permanently lubricated and require no additional lubricant.
2. Drive wheel gears are to be lubricated with an open type gear grease which is heavy, plastic, extreme pressure and tacky; such as MOBIL TAC 275 NC or equal.
3. The right angle worm gear reducer oil is a synthetic lubricant with excellent wear protection capability and long life. This oil does not require changing. When replacing oil due to repairs, use MOBIL SCH 634 or equal.
4. Servicing air line filter and lubricator unit is of primary importance since it's the only source of lubrication for control valves and air motor. Fill lubricator with a good grade of light spindle oil, air powered tool oil, or S.A.E. 10W machine oil.

MAINTENANCE

1. Series 6000 Full Air Motor Driven Trolleys are built to give long service, but should be inspected periodically for evidence of damage or wear, particularly when subjected to unusually severe operating conditions.
2. Inspection of pendant throttle control assembly.
   a. Disassembly.
      1) Disconnect three air hoses from top of throttle control assembly.
      2) Remove wire rope clips holding wire rope strain cable for pendant throttle control assembly and disconnect wire rope.
      3) Remove two large hex head threaded caps from throttle control assembly side opposite control levers.
      4) Remove spring from under each cap
      5) Remove each spool valve by threading a #10-24 screw into tapped hole in valve and pulling valve out.
   b. Reassembly.
      1) Before assembly, all parts should be thoroughly cleaned and inspected to determine their serviceability. Replace all parts that are worn or damaged.
      2) Reassemble parts in reverse of the disassembly steps above.
3. Inspection of supply head assembly.
   a. Disassembly. (See Figure 9).
      1) Disconnect three air hoses leading to the pendant throttle control assembly.
      2) Remove two hex socket cap screws and lockwashers on side of supply head assembly and remove supply head assembly from air motor body.
      3) To gain access to the valves, remove the retaining rings and screens at the ports and pull out the muffling material.
      4) Remove the two pan head screws on the side of the supply head assembly to release the valves inside the assembly.
      5) Pull valve sleeve, spring and stem out of the supply head assembly. Valve parts may be reached by using needle nose pliers.

      Steps (3) thru (5) can also be accomplished with supply head assembly in place.
   b. Reassembly. (See Figure 9).
      1) efore assembly, all parts should be thoroughly cleaned and inspected to determine their serviceability. Replace all parts that are worn or damaged.
      2) Install valve springs and stems in sleeves and lubricate.
      3) Slide sleeves into position in supply head (small, single hole on side of sleeves must align with retaining screws) and reinstall retaining screws.
      4) Replace supply head gasket. Position gasket so that no portion of ports is covered.
4. Inspection of air motor.
   a. General. For removal of supply head assembly, see Paragraph 3.
   b. Disassembly. (See Figure 10).
      1) Remove four hex socket cap screws and then remove motor from gearbox.
      2) Remove three fillister head screws, end cap and gasket.
      3) Remove six hex head bolts holding rear end plate to motor cylinder.
      4) Hold the shaft in a soft jawed vise and using a puller, adapted to fit the three #10-32 bolt centers of the end cap, remove rear end plate and shim gasket. Do not try to pry the end plate from the motor.
      5) Remove six hex socket cap screws from front end plate.
      6) Remove motor body exposing the rotor assembly while leaving front end plate mounted on shaft. This relationship must be maintained to eliminate the necessity of adjusting the motor upon reassembly.
      7) Remove vanes, springs and pins.
      NOTE: Motors requiring further disassembly should be sent to an authorized repair station for repairs.

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8) Check for worn or damaged rotor vanes. Inspect ball bearings and check condition of rotor, shaft, cylinder and end plates. Any repairs beyond replacing vanes, springs and pins would best be done at an authorized repair station. Repair or replace defective parts as noted in following steps:

a. Rotor. Examine end faces for roughness and vane slots for wear and burrs. A new vane should move in and out without binding. Smooth roughness on end faces and remove sharp edges or burrs at slot corners using a hone. Replace motor if rotor and shaft assembly is excessively worn or damaged.

b. Cylinder. Examine surface of bore diameter for rough circular grooves from scoring. If the cylinder is badly scored, it must be replaced. A badly scored cylinder cannot be restored by honing, since it will only enlarge bore diameter, widening seal point between rotor and cylinder, resulting in loss of speed and power. If cylinder is replaced, new shim gaskets of the proper thickness are required to maintain the original spacing of the end plates.

c. End Plates. Check faces of front and rear end plates for wear or scoring. If wear depth is greater than .005 inch, end plates should be replaced. Light score marks can be lapped out with 150-grit abrasive cloth on a flat surface.

d. Rotor Vanes and Springs. Inspect the rotor vanes for wear, scoring, warpage or other damage. Compare the width of the old vane with the new one to determine the amount of wear that has taken place on the width. If the old vane is more than 3/64" less than the new vane (in width), it must be replaced. An old vane that shows wear on the thickness must also be replaced. Vanes worn in this manner will eventually fail, cause costly repairs and unexpected downtime on the trolley. Warped vanes must also be replaced as the vanes must move in and out of the rotor slot without binding. Inspect leaf springs and centering pins. Worn areas on springs can cause eventual spring breakage and motor lock up. Replace worn springs, particularly when vanes are replaced.

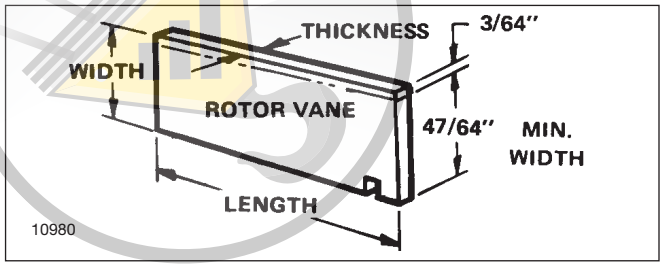

Figure 4. Rotor Vane.

e. Motor Bearings. Check motor bearings, especially the bearings at the extended shaft end of the motor, for excessive looseness or binding. If bearing requires replacement, send motor to an authorized repair station. Do not, under any circumstances, wash sealed bearings or blow off with a high pressure air hose.

c. Reassembly.

1) Before assembly, all parts should be thoroughly cleaned and inspected to determine their serviceability. Replace all worn or damaged parts.

2) Position assembly vertically with rotor facing upward. Insert push pins in rotor. Place shim gasket and motor body on end plate, using dowel pins for positioning. Insert vanes and springs into rotor. Take care that spring tab is positioned in slot of vane.

3) Install six hex socket head screws through front end plate.

4) Place shim gasket and rear end plate on body, using dowel pins for positioning. Press rear bearing onto rotor shaft by pressing on inner race. Bearing outer race should not be bottomed on rear end plate. Shaft must not move laterally in front bearing.

5) Install six hex head bolts through rear end plate.

6) Replace end cap and gasket and install three fillister screws.

7) Rotor and shaft must turn freely in body.

8) Position motor in proper orientation on trolley gearbox with key in place and fasten with four hex socket head screws.

REPLACEMENT PARTS

The following parts list and illustrations cover standard model Full Air Motor Driven Trolleys. Typical units are used as the basis for the exploded parts illustrations; therefore, certain variations may occur from the parts information given. For this reason always give the catalog number and model number of the trolley when ordering replacement parts. For gearbox give complete nameplate data.

The factory recommends complete replacement of the air motor or gearbox. Service is available, however, from your local authorized repair station.

The numbers assigned to the parts of our various assemblies in our parts lists are not the part numbers used in manufacturing the part. They are identification numbers, that when given with the trolley serial number, permit us to identify, select or manufacture and ship the correct part needed for any trolley. Supply complete numbers from the identification plate of the gearbox that match the numbers (including digits - where x's appear) in the lower right hand corner of the parts illustration for the motor and gearbox assemblies.

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Figure 5.
Trolley Frame and Wheels (3-1/8" and 5" c/c Pins)

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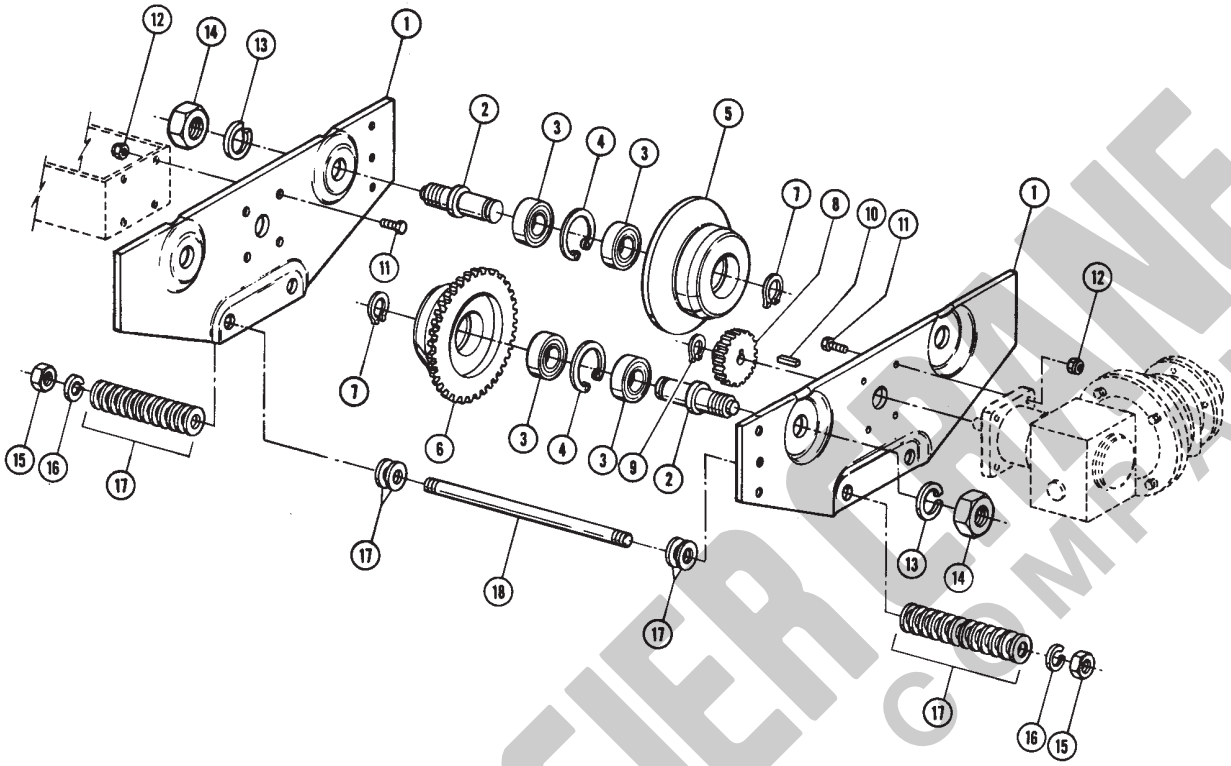

Reference Number	Description	3-1/8" c/c Pins		5" c/c Pins	
		Part #	Qty. Required	Part #	Qty. Required
1	**Plate Assembly - Side**	–	–	–	–
	For 3" t o 5" Flange Widths Standard and Spark-Resistant	BET-2700	2	–	–
	For 5-1/8" to 7-1/4" Flange Widths	BET-2701	2	–	–
	For 7-1/2" to 9-1/8" Flange Widths	BET-2702	2	–	–
	For 3-5/8" to 6" Flange Widths Standard and Spark-Resistant	–	–	BET-2703	2
	For 6-1/4" to 8-5/8" Flange Widths	–	–	BET-2704	2
	For 8-7/8 to 11-1/4" Flange Widths	–	–	BET-2705	2
2	**Shaft - Wheel**	BET-2706	4	BET-2706	4
3	**Bearing - Ball**	BET-2707	8	BET-2707	8
4	**Ring - Retaining**	BET-2708	4	BET-2708	4
5	**Wheel - Plain** (Except Spark-Resistant)	BET-2709	2	BET-2709	2
	For Spark-Resistant Only	BET-400	2	BET-400	2
6	**Wheel - Geared** (Except Spark-Resistant)	BET-2711	2	BET-2711	2
	For Spark-Resistant Only	BET-401	2	BET-401	2
7	**Ring - Retaining**	BET-2713	4	BET-2713	4
8	**Pinion - Motor**	BET-2714	1	BET-2715	1
9	**Ring - Retaining**	BET-2716	1	BET-2716	1
10	**Key - Motor Pinion**	BET-2717	1	BET-2717	1
11	**Screw - Hex Cap**	BET-2718	8	BET-2718	8
12	**Nut - Self-Locking**	BET-2719	8	BET-2719	8
13	**Lockwasher**	BET-2720	4	BET-2720	4
14	**Nut - Hex Jam**	BET-2721	4	BET-2721	4
15	**Hut - Hex Jam**	BET-2722	4	BET-2721	4
16	**Lockwasher**	BET-2723	4	BET-2720	4
17	**Washer - Spacer**	BET-2724	56	BET-2725	36
18	**Pin - Suspension**	–	–	–	–
	For 3" t o 5" Flange Widths Standard and Spark-Resistant	BET-2726	2	–	–
	For 5-1/8" to 7-1/4" Flange Widths	BET-2727	2	–	–
	For 7-1/2" to 9-1/8" Flange Widths	BET-2728	2	–	–
	For 3-5/8" to 6" Flange Widths Standard and Spark-Resistant	–	–	BET-2729	2
	For 6-1/4" to 8-5/8" Flange Widths	–	–	BET-2730	2
	For 8-7/8 to 11-1/4" Flange Widths	–	–	BET-2731	2

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Figure 6.
Trolley Frame and Wheels (6" c/c Pins)

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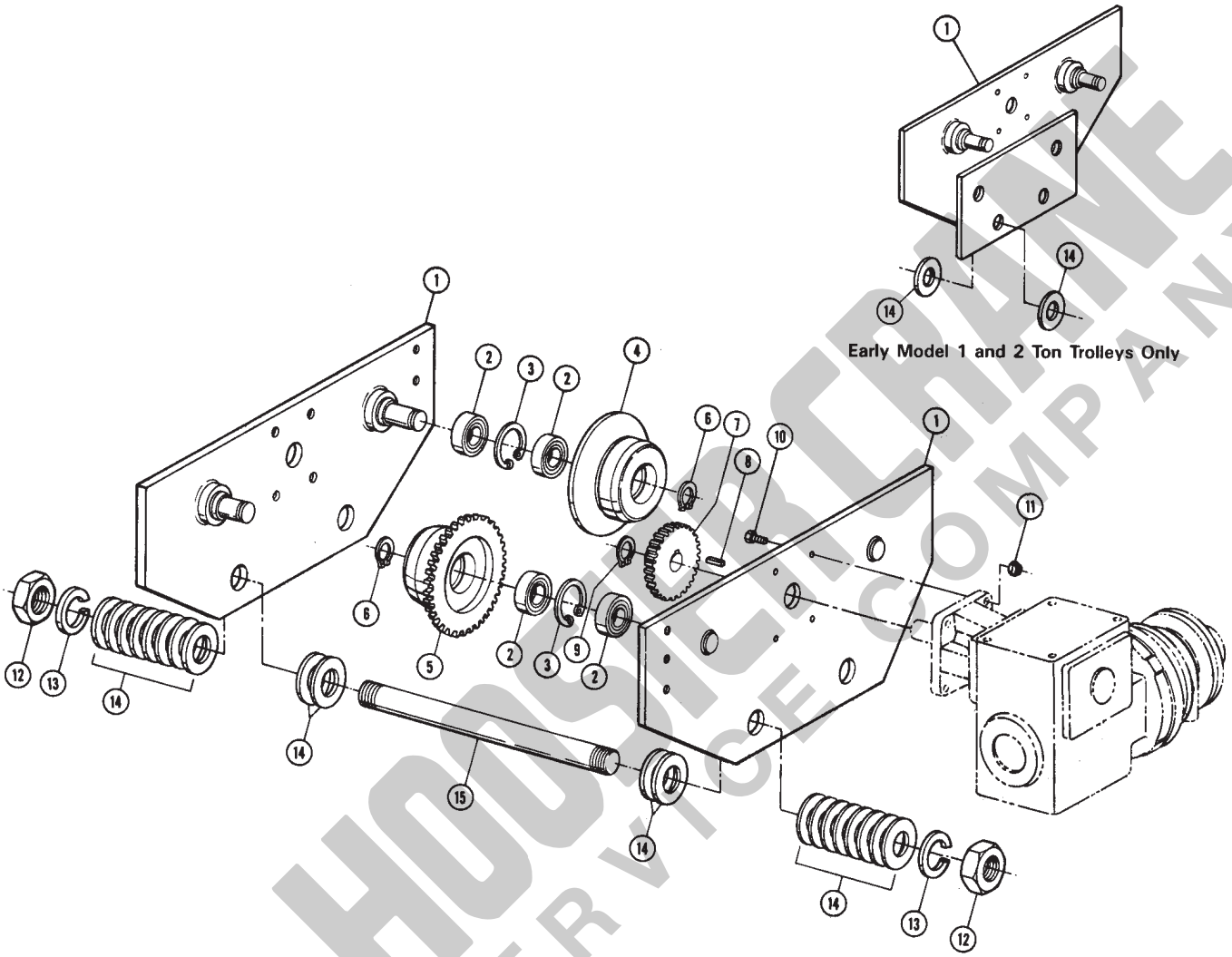

Reference Number	Description	Early Model 1 Ton Trolleys		Early Model 2 Ton Trolleys		3 Ton Trolleys	
		Part #	Qty. Required	Part #	Qty. Required	Part #	Qty. Required
1	**Plate Assembly - Side**	BAT-500	2	BAT-501	2	BET-2800	2
2	**Bearing - Ball**	BET-2803	8	BET-2803	8	BET-2803	8
3	**Ring - Retaining**	BET-2804	4	BET-2804	4	BET-2804	4
4	**Wheel - Plain** (Except Spark-Resistant)	BET-2805	2	BET-2805	2	BET-2805	2
	For Spark-Resistant Only	BET-2806	2	BET-2806	2	BAT-502	2
5	**Wheel - Geared** (Except Spark-Resistant)	BET-2807	2	BET-2807	2	BET-2807	2
	For Spark-Resistant Only	BET-2808	2	BET-2808	2	BAT-503	2
6	**Ring - Retaining**	BET-2809	4	BET-2809	4	BET-2809	4
7	**Pinion - Motor**	BET-2810	1	BET-2810	1	BET-2810	1
8	**Key - Motor Pinion**	BET-2811	1	BET-2811	1	BET-2811	1
9	**Ring - Retaining**	BET-2812	1	BET-2812	1	BET-2812	1
10	**Screw - Hex Cap**	BET-2813	4	BET-2813	4	BET-2813	4
11	**Nut - Self-Locking**	BET-2814	4	BET-2814	4	BET-2814	4
12	**Nut - Hex Jam**	BAT-504	4	BAT-505	4	BET-2815	4
13	**Lockwasher**	BAT-506	4	BAT-507	4	BET-2816	4
14	**Washer - Spacer**	BAT-508	56	BAT-509	64	BET-2817	40
15	**Pin - Suspension**	BAT-510	2	BAT-511	2	BET-2818	2

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Figure 7.
Motor and Gearbox Assembly (3-1/8" and 5" c/c Pins)

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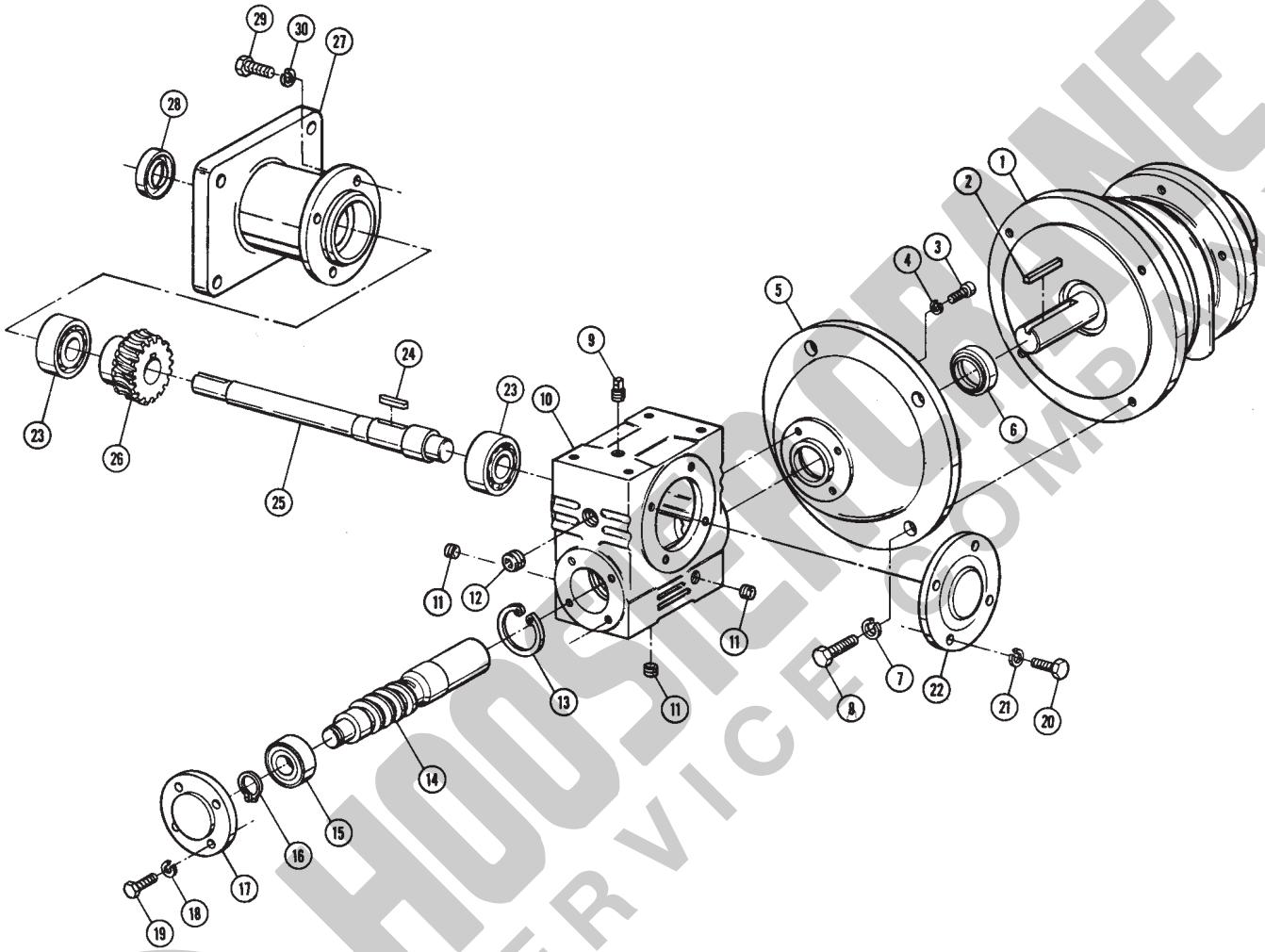

Reference Number	Description	Part #	Qty. Req.
	Motor and Gearbox Assembly - Complete	BAT-1000	1
1	**Motor** (Includes reference number 2)	BAT-800	1
2	Key - Motor	BET-3802	1
	Gearbox Assembly	BET-3803	1
3	Cap Screw - Hex Socket Head	BET-3804	4
4	Lockwasher	–	4
5	Flange - Motor	BET-3805	1
6	Seal - Oil	BET-3806	1
7	Lockwasher	–	4
8	Bolt - Hex Head	–	4
9	Plug - Breather	BET-3807	1
10	Gearbox	BET-3808	1
11	Plug - Drain	BET-3809	3
12	Plug - Filler	–	1
13	Ring - Retaining	–	1
	Worm, Gear Set (Includes Ref. Nos. 2 and 26)	BET-3810	1
14	Worm Shaft	*	1
15	Bearing	–	1

Reference Number	Description	Part #	Qty. Req.
16	Ring - Retaining	BET-3812	1
17	Bearing Cap	BET-3813	1
18	Lockwasher	–	4
19	Bolt - Hex Head	BET-3814	4
20	Bolt - Hex Head	BET-3815	4
21	Lockwasher	–	4
22	Bearing Cap	BET-3816	1
23	Bearing	BET-3817	2
24	Key - Worm Gear	BET-3818	1
25	Shaft - Output	BET-3819	1
26	Gear - Worm	*	1
27	Flange - Output	BET-3820	1
28	Seal - Oil	BET-3821	1
29	Bolt - Hex Head	BET-3822	4
30	Lockwasher	–	4

* Worm Shaft and worm gear are available in gear set only. Order gear set BET-3810.

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Figure 8.
Motor and Gearbox Assembly (6" c/c Pins)

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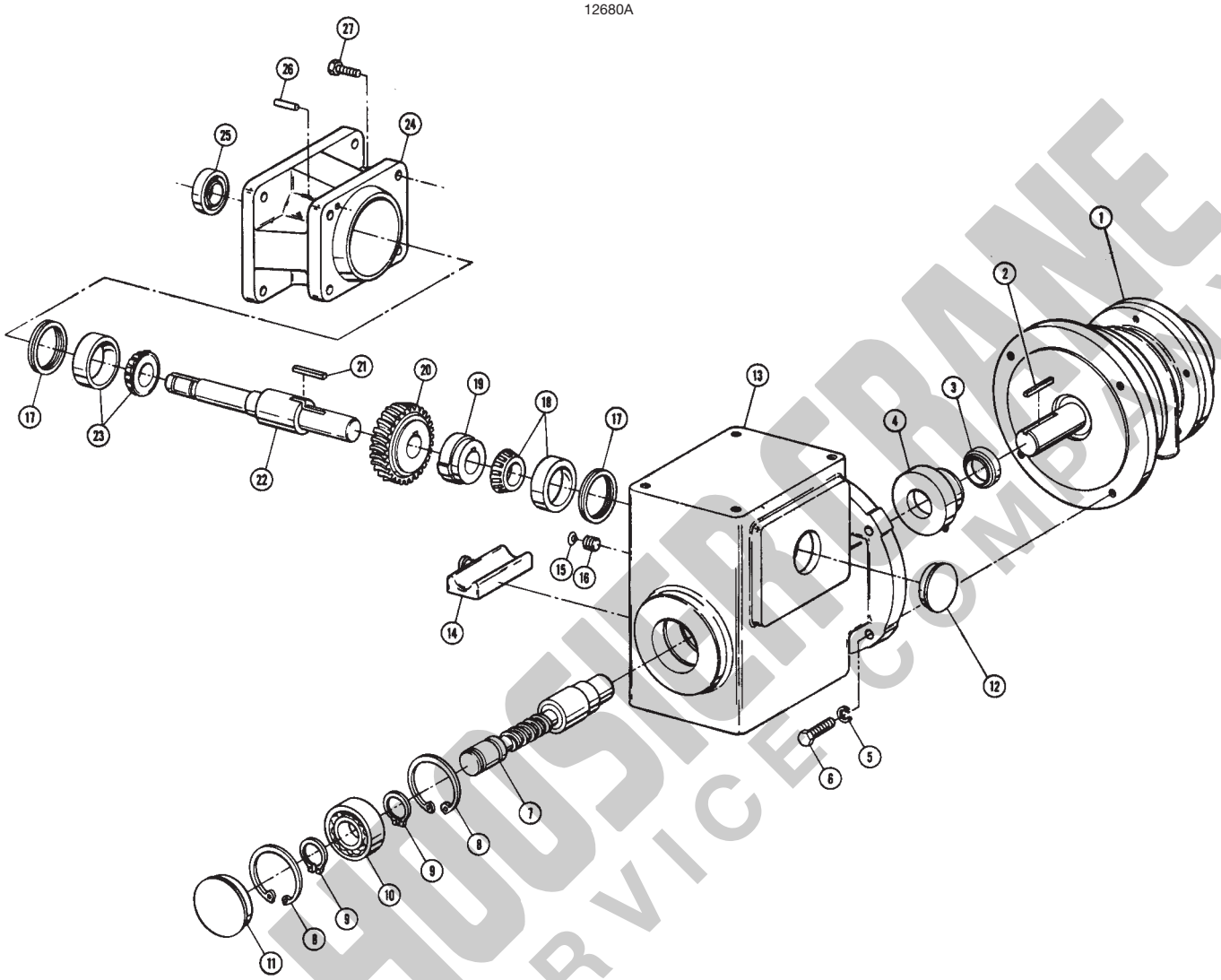

Reference Number	Description	Part #	Qty. Req.
	Motor and Gearbox Assembly - Complete	BAT-600	1
1	**Motor** (Includes reference number 2)	BAT-800	1
2	Key - Motor	BET-3002	1
	Gearbox Assembly	BET-3003	1
4	Seal - Oil	BET-3004	1
5	Adaptor - Seal	BET-3005	1
6	Lockwasher	BET-3006	4
7	Bolt - Hex Head	BET-3007	4
	Worm, Gear Set (Includes Ref. Nos. 7 and 20)	BET-3008	1
7	Worm Shaft	*	1
8	Ring - Retaining	BET-3009	2
9	Ring - Retaining	BET-3010	2
10	Bearing - Ball	BET-3011	1
11	Plug - Bore	BET-3012	1
12	Plug - Bore	BET-3013	1

Reference Number	Description	Part #	Qty. Req.
13	Gearbox	BET-3014	1
14	Compression Chamber	BET-3015	1
15	Caplug	BET-3016	1
16	Set Screw - Socket Head	BET-3017	1
17	Load Ring	BET-3018	2
18	Bearing - Roller	BET-3019	1
19	Spacer	BET-3020	1
20	Gear - Worm	*	1
21	Key - Worm Gear	BET-3021	1
22	Shaft - Output	BET-3022	1
23	Bearing - Roller	BET-3023	1
24	Housing - Bearing	BET-3024	1
25	Seal - Oil	BET-3025	1
26	Pin - Dowel	BET-3026	2
27	Bolt - Hex Head	BET-3027	4

* Worm Shaft and worm gear are available in gear set only. Order gear set BET-3008.

NOTE: Quantities given are the number of parts required per Motor and Gearbox Assembly

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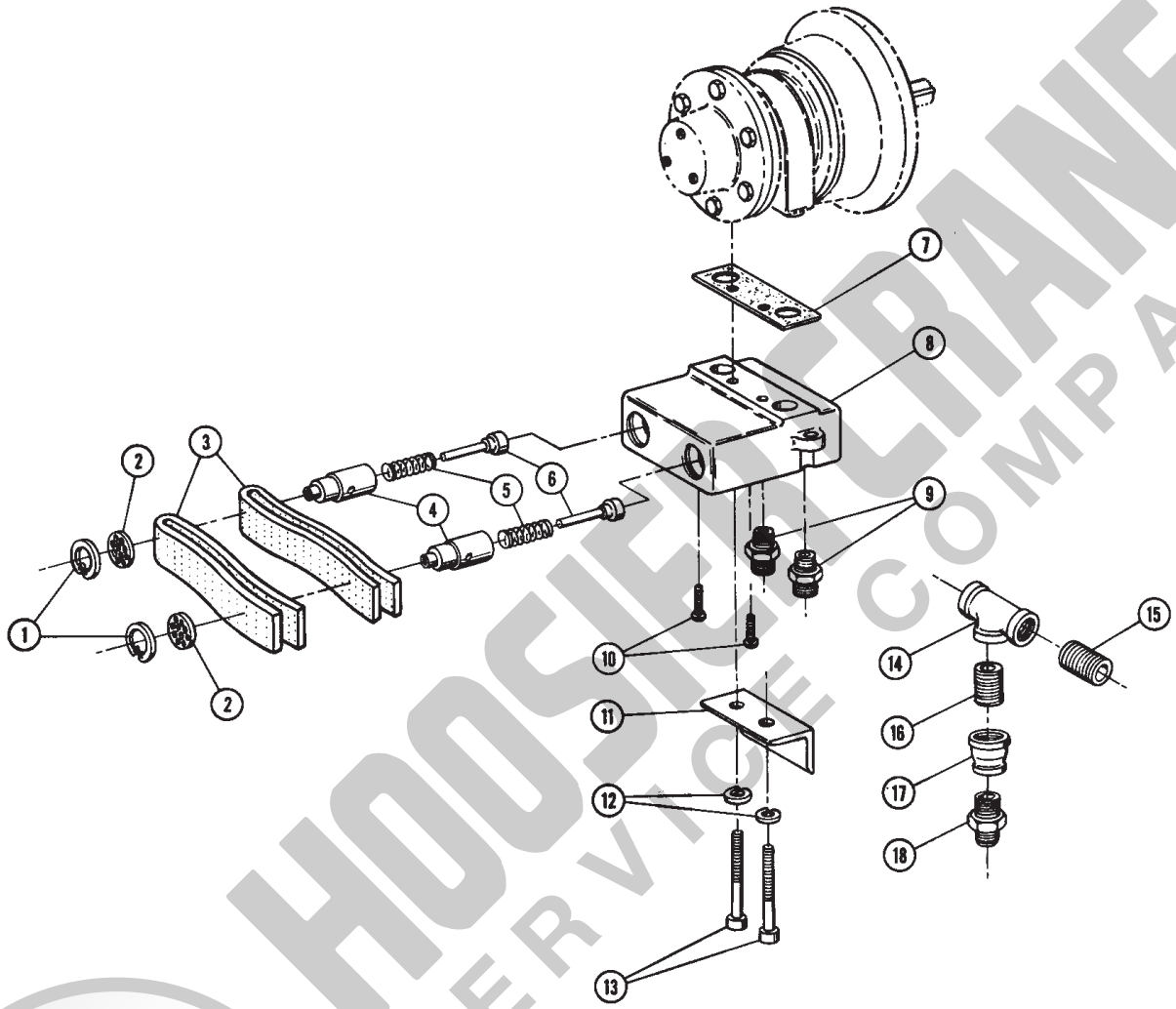
Figure 9.
Supply Head Assembly

12717



Reference Number	Description	Part #	Quantity Required
1	Ring - Internal Retaining	BAH-5105	2
2	Screen - Exhaust Valve	BAH-5104	2
3	Muffling Material	BAH-5103	2
4	Sleeve - Valve	BAH-5125	2
5	Spring - Valve	BAH-5124	2
6	Stem - Valve	BAH-5123	2
7	Gasket - Supply Head	BAH-5114	1
8	Supply Head	BAH-5100	1
9	Adaptor Fitting	BAH-5107	2
10	Screw - Self-Tapping	BAH-5106	2
11	Anchor - Cable	BAT-700	1
12	Lockwasher	BAH-5113	2
13	Cap Screw - Hex Socket	BAH-5112	2
14	Tee - Reducing	BAT-701	1
15	Nipple - Close Pipe	BAT-702	1
16	Nipple - Close Pipe	BAH-5110	1
17	Coupling - Reducing	BAT-703	1
18	Adaptor Fitting	BAH-5107	1

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Figure 10.
Air Motor

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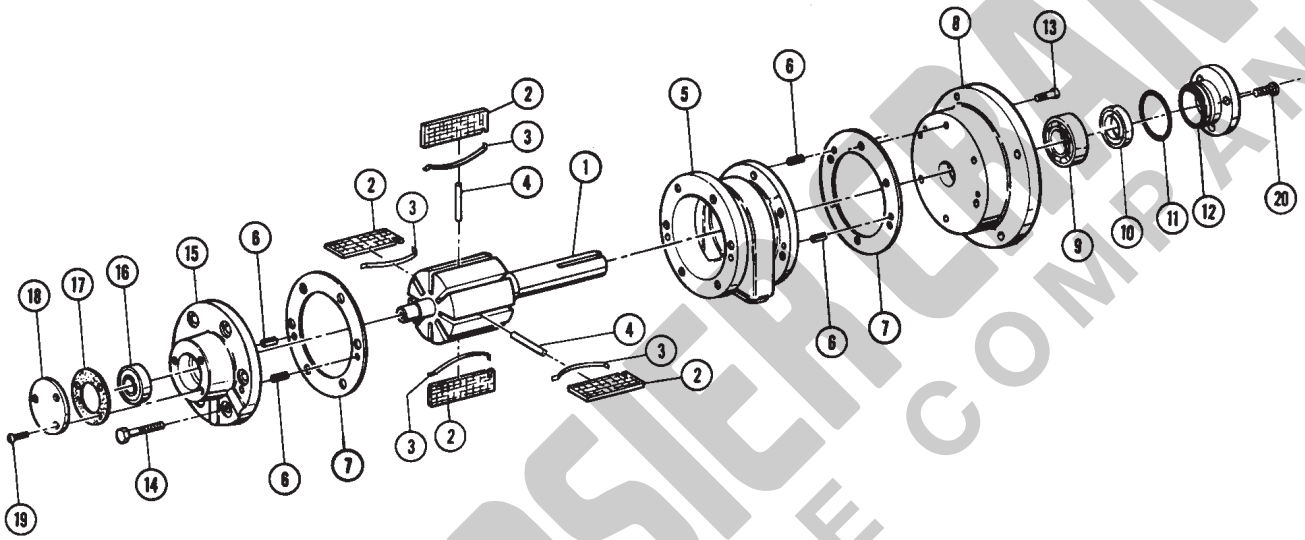

Reference Number	Description	Part #	Quantity Required
	Air Motor Assembly	BAT-800	1
1	**Rotor and Shaft Assembly**	BAT-801	1
2	**Vane**	BAH-5202	8
3	**Spring - Vane**	BAH-5203	8
4	**Push Pin**	BAT-808	4
5	**Body - Air Motor**	BAT-802	1
6	**Pin - Dowel**	BAH-5206	4
7	**Gasket - Body**	BAH-5207	2
8	**End Plate - Drive End**	BAT-803	1
9	**Bearing - Drive End**	BAT-804	1
10	**Shaft Seal**	BAT-805	1
11	**"O" Ring**	BAT-806	1
12	**Cap**	BAT-807	1
13	**Screw**	BAH-5222	6
14	**Screw**	BAH-5221	6
15	**End Plate - Dead End**	BAH-5215	1
16	**Bearing - Dead End**	BAH-5216	1
17	**Gasket - End Cap**	BAH-5217	1
18	**End Cap - Dead End**	BAH-5218	1
	End Plate Puller Tool (Not Shown)	BAH-5219	–
19	**Screw**	BAH-5220	3
20	**Screw - Hex Socket Head**	BAT-809	3

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Figure 11.
Pendant Throttle Control

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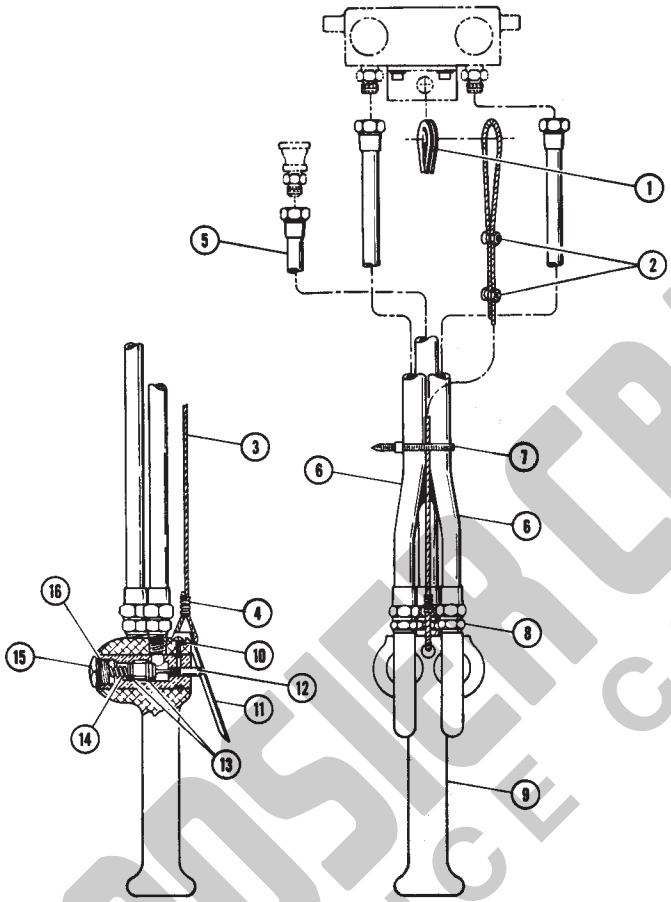

Reference Number	Description	Part #	Qty. Req.
1	**Motor and Gearbox Assembly** - Complete	BAH-5302	1
2	**Motor** (Includes reference number 2)	BAH-5304	2
3	**Cable - Strain Relief** (Specify Length Required	BAH-5305	
	7' 6" for 10 ft. Hoist Lift		1
	10' 6" for 13 ft. Hoist Lift		1
	12' 6" for 15 ft. Hoist Lift		1
	17' 6" for 20 ft. Hoist Lift		1
4	**Sleeve - Pressed**	BAH-5306	1
5	**Hose Assembly - Supply**		
	for 10 ft. Hoist Lift	BAT-900	1
	for 13 ft. Hoist Lift	BAT-901	1
	for 15 ft. Hoist Lift	BAT-902	1
	for 20 ft. Hoist Lift	BAT-903	1
6	**Hose Assembly - Control**		
	for 10 ft. Hoist Lift	BAT-904	2
	for 13 ft. Hoist Lift	BAT-905	2
	for 15 ft. Hoist Lift	BAT-906	2
	for 20 ft. Hoist Lift	BAT-907	2

Reference Number	Description	Part #	Qty. Req.
7	**Tie - Cable**	BAH-5316	4
8	**Adaptor Fitting**	BAH-5317	3
9	**Pendant Throttle Handle Assembly** Complete (includes reference numbers 10 through 16 pluse handle)	BAT-908	1
10	**Pin - Throttle Lever**	BAH-5319	1
11	**Throttle Lever**	BAH-5320	2
12	**Valve - Throttle**	BAH-5321	2
13	**Ring - Throttle Valve Seal**	BAH-5322	4
14	**Spring - Throttle Valve**	BAH-5323	2
15	**Cap - Throttle Valve**	BAH-5324	2
16	**Seal - Throttle Valve Cap**	BAH-5325	2

HOOSIER CRANE SERVICE COMPANY

RECOMMENDED SPARE PARTS FOR YOUR FULL AIR MOTOR DRIVEN TROLLEY

Certain parts of your trolley will, in time, require replacement under normal wear conditions. It is suggested that the following parts be purchased for your trolley as spares for future use.

One Motor Pinion
One Set of Wheel Bearings
One Set of Wheels
One Set of Oil Seals
One Set of Motor Vanes
One Set of Motor Springs
One Set of Motor Pins

NOTE: When ordering parts, always furnish Model and Catalog Number and Gearbox Nameplate Data of trolley on which the parts are to be used.

Parts for your trolley are available from your local Authorized Repair Station. For the location of your nearest repair station, contact:

IN USA
Columbus McKinnon Corporation
Industrial Products Division
140 John James Audubon Parkway
Amherst, New York 14228-1197

Phone: 800.888.0985 • Fax: 716.689.5644
www.cmworks.com

IN CANADA
Columbus McKinnon Ltd.
P.O. Box 1106
10 Brook Road, North
Cobourg, Ontario K9A 4W5

Phone: 905.372.0153 • Fax: 905.372.3078
www.cmworks.com

HOSEFCRANE SERVICE COMPANY

WARRANTY

WARRANTY AND LIMITATION OF REMEDY AND LIABILITY

A. Seller warrants that its products and parts, when shipped, and its work (including installation, construction and start-up), when performed, will meet applicable specifications, will be of good quality and will be free from defects in material and workmanship. All claims for defective products or parts under this warranty must be made in writing immediately upon discovery and, in any event, within one (1) year from shipment of the applicable item unless Seller specifically assumes installation, construction or start-up responsibility. All claims for defective products or parts when Seller specifically assumes installation, construction or start-up responsibility, and all claims for defective work must be made in writing immediately upon discovery and, in any event, within one (1) year from completion of the applicable work by Seller, provided; however, all claims for defective products and parts must be made in writing no later than eighteen (18) months after shipment. Defective items must be held for Seller's inspection and returned to the original f.o.b. point upon request. THE FOREGOING IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES WHATSOEVER, EXPRESS, IMPLIED AND STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS.

B. Upon Buyer's submission of a claim as provided above and its substantiation, Seller shall at its option either (i) repair or replace its product, part or work at either the original f.o.b. point of delivery or at Seller's authorized service station nearest Buyer or (ii) refund an equitable portion of the purchase price.

C. This warranty is contingent upon Buyer's proper maintenance and care of Seller's products, and does not extend to normal wear and tear. Seller reserves the right to void warranty in event of Buyer's use of inappropriate materials in the course of repair or maintenance, or if Seller's products have been dismantled prior to submission to Seller for warranty inspection.

D. The foregoing is Seller's only obligation and Buyer's exclusive remedy for breach of warranty, and is Buyer's exclusive remedy hereunder by way of breach of contract, tort, strict liability or otherwise. In no event shall Buyer be entitled to or Seller liable for incidental or consequential damages. Any action for breach of this agreement must be commenced within one (1) year after the cause of action has occurred.

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Columbus McKinnon Corporation • Industrial Products Division • 40 John James Audubon Parkway
Amherst, New York 14228-1197 • 800 888-0985 • Fax 716 689-5644

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