



## **OPERATOR'S / PARTS MANUAL**



### ***Dump Trailers***

#### **Models**

**P-5103S/4E**

**P-516/3S**

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# INTRODUCTION

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## CONGRATULATIONS!

Thank you for choosing PRONOVOST. We are confident this equipment will meet your requirements in terms of quality, performance and reliability.

This manual was prepared to assist you in the safe operation of your new Dump Trailer. It contains important information which will help you achieve excellent returns with your PRONOVOST Dump Trailer for years to come.

Please read this manual before operating your Trailer and keep it for future reference.

Before using this equipment, you or any other person who will be using it must familiarize yourself with the safety recommendations, the operating and safety instructions. Please read carefully and be sure to understand and follow all recommendations and procedures.

In this manual, the right and left sides are identified while standing at the rear end of the equipment and facing it.

If you require additional information on your Dump Trailer, please contact your PRONOVOST Dealer.

**NOW** take a moment to enter the model, serial number and the date of purchase of your Trailer in the space provided below.

When ordering parts from your Dealer, please refer to these numbers for a fast and efficient service. Use PRONOVOST parts for replacement.

The model and serial numbers are on the name plate shown on Fig. 1.



Figure 1

MODEL: \_\_\_\_\_ ✍

SERIAL NO: \_\_\_\_\_ ✍

DATE OF PURCHASE: \_\_\_\_\_ ✍

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# ***SAFETY***

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## ***GENERAL SAFETY***

**2**

### **WHEN YOU SEE THIS SYMBOL**



**ATTENTION!**

**BE ALERT  
YOUR SAFETY IS INVOLVED**

This symbol "SAFETY ALERT" is used in this manual and on the safety decals on the Trailer. It warns you of the possibility of danger. Carefully read, understand and follow all safety recommendations before operating the equipment.

- 1) Careful operation is the best assurance against accidents. Carefully read this manual and follow all recommendations before operating this equipment. It is the owner's responsibility to make sure that anyone who will operate the Trailer will read this manual before operating the equipment.
- 2) Do not modify the equipment. Any non authorized modification may affect the efficiency and/or safety of the equipment.
- 3) Never operate the equipment with defective parts or if damaged in any way. Have it repaired before using it.
- 4) Make sure all fasteners are in place and properly secured or tightened. Refer to torque chart on page 26.
- 5) Hydraulic fluids under pressure can damage your skin. Do not use your hands to locate a leak.
- 6) Battery (with 12V hydraulic system) contains

sulfuric acid. Avoid contact with skin, eyes or clothing.

## ***SAFETY IN OPERATION***

- 1) **WARNING!** Do not overload your trailer, do not exceed the load capacity indicated in the specifications on page 12.
- 2) Be sure there are no obstructions around the equipment and that no one stands near the equipment when in use.
- 3) Do not operate an engine in a confined or non ventilated area.
- 4) Do not perform any adjustments, cleaning, maintenance or repairs with the engine running on the towing vehicle. Preferably remove the key from the ignition.
- 5) Be careful when backing-up, make sure you have good visibility.
- 6) In the case of a Highway Service Trailer, make sure the suspension, brakes and lights are all functioning properly.
- 7) Do not forget to unlock the proper panel before dumping.
- 8) With the 3-way dump trailers, do not forget to install the pins in the two ball-joints on the side you wish to dump the load, and release the adjacent panel.
- 9) Always travel at a safe operating speed following regulations and common sense. In the case of agricultural service tires, follow the manufacturer's specified safe speed. The road speed should be such as to maintain full control over steering and braking.

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## ***SAFETY (cont'd)***

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### ***SAFETY WITH MAINTENANCE***

- 1) Perform maintenance according to recommendations contained in this manual.
  - 2) **Before performing any work under the raised platform, always install the safety prop provided.**
  - 3) If the trailer is hooked up to the tractor while performing maintenance work, make sure the engine is not running and preferably remove the ignition key.
- 2) Be alert while driving on the road. Never carry passengers.

**2**

### ***SAFETY IN TRANSPORT***

- 1) On public roads, use proper safety lights and check local regulations.

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# DECALS

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## SAFETY DECALS

The safety decals are affixed wherever special safety precautions are indicated. Locate them on the equipment and read them carefully. If a decal is damaged, lost or illegible, install a new one. The following photos indicate where each one must be installed.

**3**

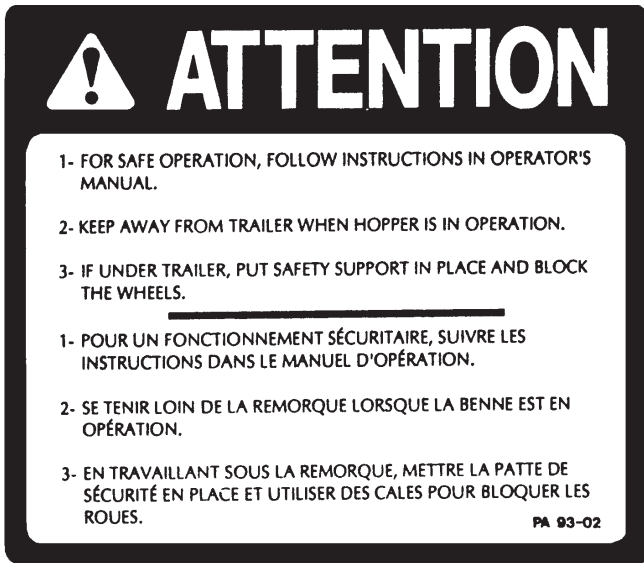


Figure 2  
Decal A Part no.: A110



Figure 3

## MAINTENANCE DECALS

The maintenance decals indicate the points requiring lubrication. Refer to maintenance section for more details.

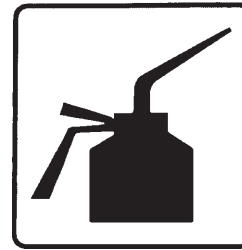


Figure 4 Part no.: A 105



Figure 5 Part no.: A 106



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# ***START-UP***

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## ***BASIC START-UP PROCEDURES***

- 1) Lubricate all grease fittings with a good quality multiuse grease.
- 2) Lubricate panel release mechanism, front and rear with good quality oil.
- 3) Adjust tire pressure to manufacturer's specifications.
- 4) Install wheels on hubs.
- 5) Install panels.
- 6) Install all hydraulic hoses and fittings compatible with your equipment.
- 7) Verify for adequate tightness of all fastening devices. Refer to torque chart on page 26.
- 8) Operate the hydraulic system a few times, raising and lowering the platform in order to remove any trapped air in the system. Then check the oil level in the tractor's hydraulic oil reservoir.
- 9) With the 3-way dump trailer, the ball-joint pins are usually installed in a **diagonal** configuration to prevent tipping during handling. They must be installed on the side you wish to dump the load. **ATTENTION: Never use the diagonal configuration when using your Dump Trailer.**
- 10) Do not forget to unlock the proper panel before dumping.

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## ***MAINTENANCE***

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**Before performing any work under the raised platform, always install the safety prop provided.**

- 1) Wipe off all grease fittings with a clean cloth before adding grease in order to avoid injecting dirt or sand.
- 2) Repair or replace damaged grease fittings.
- 3) Lubricate all grease fittings every 20 hours of operation.
- 4) Check all bolts on wheels after first 5 hours of operation and then every 50 hours of operation.
- 5) Lubricate panel release mechanism, front and rear, every 20 hours of operation.
- 6) Check tire pressure every 50 hours of operation, adjust according to manufacturer's recommendation indicated on the tires.
- 7) Check brakes once a year and adjust or repair if necessary.
- 8) Open, clean and lubricate wheel bearings once a year.
- 9) Check all nuts and bolts once a year. If necessary use torque chart on page 26.

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## ***STORAGE***

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- 1) Store in a cool, dry place.
- 2) Install wooden blocks under the axles to keep the tires off the ground and cover them if left exposed to the sun.
- 3) Keep all piston rods in the retracted position. This will assure better protection against the elements.
- 4) Clean your trailer.
- 5) Thoroughly inspect all parts of the trailer. Replace or repair worn or defective parts.
- 6) Touch-up or repaint if necessary.
- 7) Lubricate all points before storage.

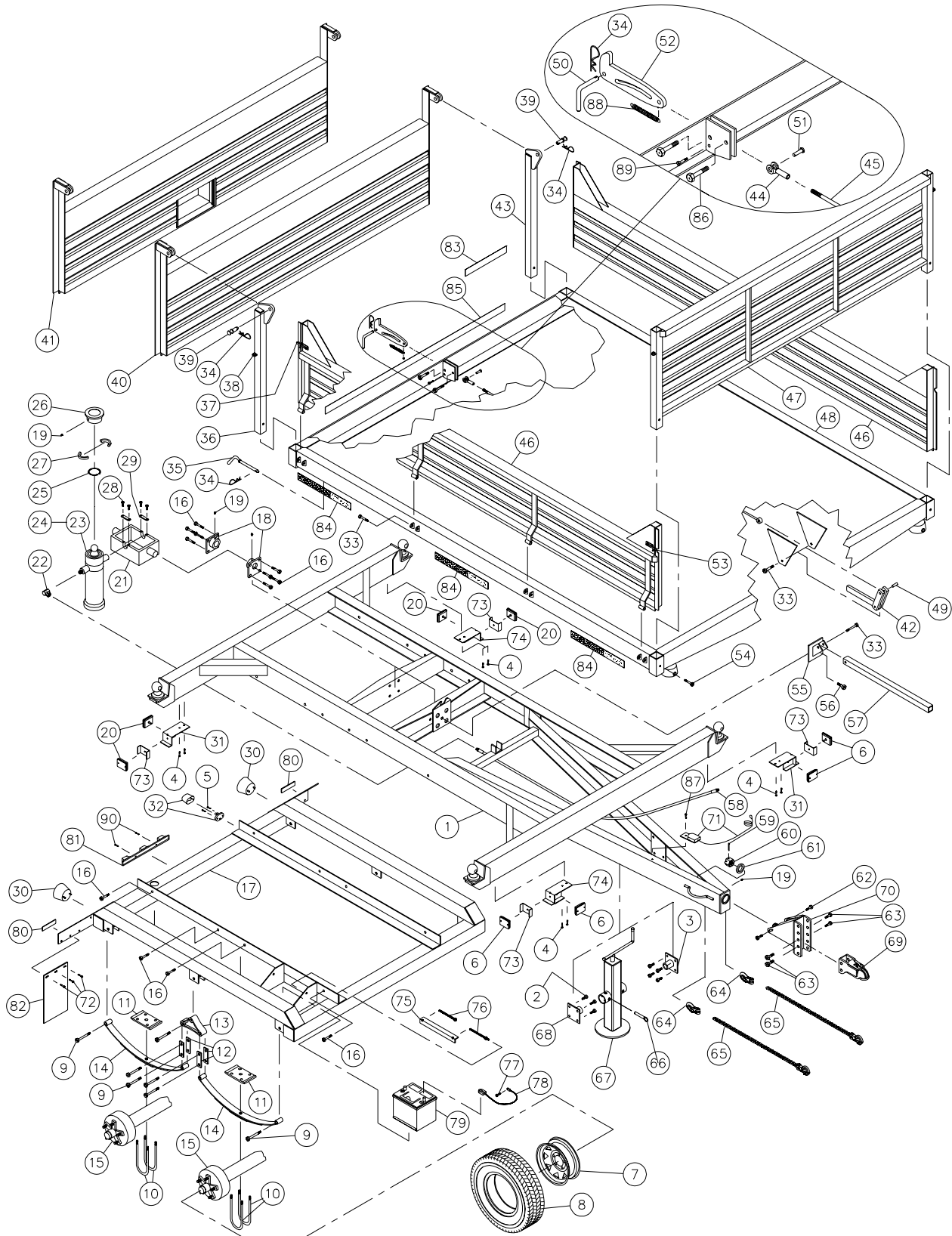
# ***SPECIFICATIONS***

<b>SERVICE</b>	<b>OFF-ROAD</b>	<b>HIGHWAY</b>
<b>MODEL</b>	<b>P-516/3S</b>	<b>P-5103S/4E</b>
Gross weight	16000 lbs / 7264 kg	10000 lbs / 4540 kg
Width x length interior of box in/mm	90 x 120 / 2286 x 3048	90 x 120 / 2286 x 3048
Thickness of floor	3/16" / 4.78 mm	3/16" / 4.78 mm
Side panel height 12G (removable)	16" / 406 mm	16" / 406 mm
Front/back panel height 12G (removable)	24" / 610 mm	24" / 610 mm
Platform height	36 1/2" / 927 mm	38 1/2" / 978 mm
Overall length	175" / 4445 mm	175" / 4445 mm
Overall width	96 1/2" / 2451 mm	96 1/2" / 2451 mm
Overall height	69 1/2" / 1765 mm	71 1/2" / 1816 mm
Free height / maximum lift	20" / 508 mm	22" / 559 mm
Thread width	75" / 1905 mm	78" / 1981 mm
Dumping angle (back)	47°	47°
Dumping angle (2 sides)	47°	47°
Central unloading hatch (8" x 12")	option	option
Axle	Tandem	Tandem
Suspension	--	Springs
Hubs	6 bolts	6 bolts
Hub capacity	5000 lbs / 2270 kg	2500 lbs / 1136 kg
Spindles	2" / 51 mm	--
Wheels	4	4
Wheel dimensions	15 x 8 x 6	15 x 6 x 6
Tires (standard)	11L15 (8 ply)	ST-225/75R15 (8 ply)
Hitch: clevis/swivel	standard	option
Hitch: ball coupler 2 5/16" / 59 mm	option	standard
Electric brakes	--	standard
Security chain	option	standard
Electric power pack	option	option
Battery 12V	option	standard
Light system (12 V)	--	standard
Oil / volume required	5.2 L	5.2 L
Cylinder	1 single acting	1 single acting
Hitch weight (empty)	260 lbs / 118 kg	260 lbs / 118 kg
Total weight	2920 lbs / 1327 kg	3180 lbs / 1445 kg

Design and specifications subject to change without notice.

# DUMP TRAILER P-5103S/4E

170-02345



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## ***DUMP TRAILER P-5103S/4E (cont'd)***

REF.	PART #	DESCRIPTION	QTY
1	120-02401	Main frame for P-5103S/4E .....	1
2	300-38280	Bolt 7/16" NC x 1 1/4" lg + nylon locknut .....	8
3	110-00051	Jack support plate .....	1
4	316-20191	Teck screw 10-16 x 1/2" lg .....	8
5	300-18190	Bolt 8 - 32 x 1/2" lg + nylon locknut .....	4
6	52077	Parking light (yellow) .....	4
7	RM-1565	Rim 15" x 6" - 6 bolts .....	4
8	PN-22575R15	Tire ST 225/75 R15 .....	4
9	300-42400	Bolt 9/16" NC x 3" lg + nylon locknut .....	14
10	Std.	"U" bolt 1/2" NF x 3" x 7" + 2 nylon locknut .....	8
11	51599	Spring back plate .....	4
12	51601	Pivot plates .....	8
13	51483	Spring's pivot .....	2
14	51484	Springs 3/8" x 1 3/4" x 25 1/4" center .....	4
15	110-11501	Road axle with hub and brakes .....	2
16	300-40310	Bolt 1/2" NC x 1 1/2" lg + nylon locknut .....	16
17	120-02221	Highway running gear support .....	1
18	110-09041	Support for cylinder gimbal .....	2
19	Std.	Grease fitting 1/4"-28 straight .....	5
20	52076	Parking light (red) .....	4
21	51611	Cylinder gimbal .....	1
22	9455-8x8	Elbow (swivel) .....	1
23	51478	Telescopic cylinder 5 sections (see detail page 22) .....	1
24	51479	Repair kit for cylinder no. 51478 .....	1
25	51480	Retaining ring .....	1
26	51482	Ball-joint seat (welded) .....	1
27	51481	Locking segments for ball-joint .....	2
28	308-32020	Bolt Metric M8 - 1.25 x 20 mm lg .....	4
29	51477	Retaining plate for cylinder gimbal .....	2
30	32229	Rear signal light .....	2
31	110-12001	Support for lights (left front & right rear) .....	2
32	52070	Light for license plate .....	1
33	300-40400	Bolt 1/2" NC x 3" lg + nylon locknut .....	10
34	Std.	Hitch pin clip 1/8" x2 9/16" lg .....	5
35	150-00721	Pin for platform pivot .....	2
36	110-14661	Right rear stake .....	1
37	51584-G	Side panel lock (L.H.) (welded) .....	2
38	51583	Ring for side panel lock (welded) .....	4
39	150-02831	Hinge pin for rear panel .....	2
40	110-03892	Standard rear panel .....	1
41	120-00682	Rear panel with grain door .....	opt.
42	110-14271	Lever for automatic locking mechanism .....	1
43	110-14671	Left rear stake .....	1
44	51435	Clevis 1/2" - 20 NF + nut .....	1
45	110-14601	Rod 1/2" for rear panel lock .....	1
46	110-07811	Side panel .....	2
47	110-07821	Front panel .....	1
48	120-01952	Platform .....	1
49	150-02761	Pin 1/2" x 1 1/2" lg .....	1
50	150-02861	Pin for rear locking mechanism .....	1

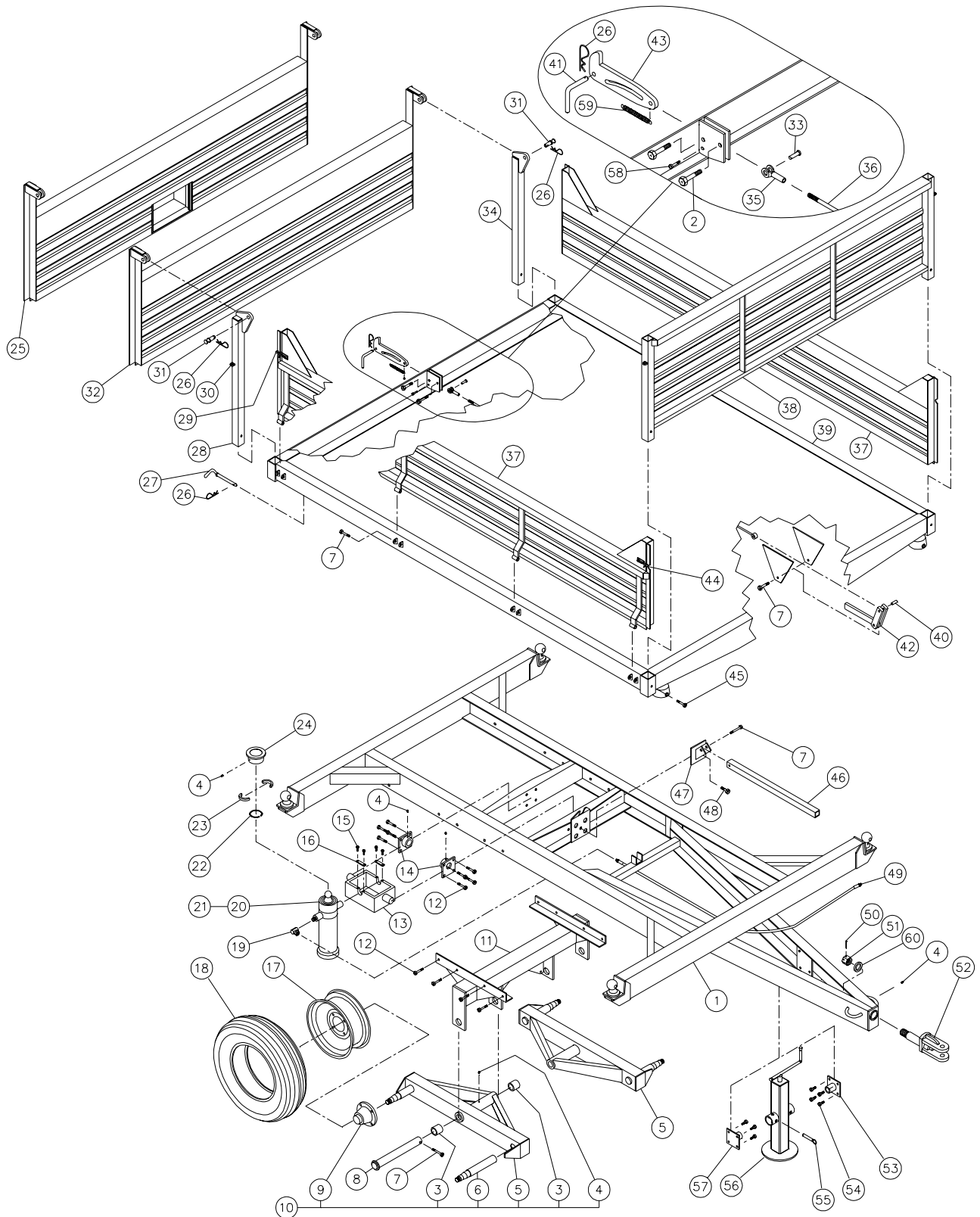
# DUMP TRAILER P-5103S/4E (cont'd)

REF.	PART #	DESCRIPTION	QTY
51	51436	Clevis pin 1/2" x 1 37/64" .....	1
52	130-16211	Rear panel lock .....	1
53	51584-D	Side panel lock (R.H.) (welded) .....	2
54	300-38430	Bolt 7/16" NC x 3 1/2" lg + nylon locknut .....	4
55	110-07831	Safety prop bracket .....	1
56	300-44310	Bolt 5/8" NC x 1 1/2" lg + nylon locknut .....	1
57	160-04011	Safety prop .....	1
58	190-02151	Hose 3/8" x 156" lg .....	1
59	Std.	Cotter pin 1/4" x 3" lg .....	1
60	357-57000	Castle nut 1 1/2" NC .....	1
61	130-20401	Flat washer 1 5/8" i.d. x 2 3/8" o.d. ....	1
62	300-38310	Bolt 7/16" NC x 1 1/2" lg + nylon locknut + 2 flat washers .....	2
63	Std.	Bolt 5/8" NF x 4 1/2" lg + nylon locknut .....	2
64	54070	Hook with safety lock .....	2
65	54064	Chain 5/16" (10000 lbs) + hook with safety lock .....	2
66	110-00181	Pin for jack .....	1
67	110-14841	Jack PC-3012L (up to serial # 8215)(see detail page 23) .....	1
67	190-05972	Jack type P-575 (from serial # 8216 and up) .....	1
68	110-00061	Jack support plate .....	1
69	51615	Ball hitch 2 5/16" .....	1
70	110-14752	Adjustable mounting support for ball hitch .....	1
71	52069	Emergency brake switch .....	1
72	300-32250	Bolt 1/4" NC x 1" lg + nylon locknut & flat washer .....	6
73	130-13371	Light guard .....	4
74	110-12002	Support for lights (right front & left rear) .....	2
75	130-05751	Angle .....	1
76	110-04841	Tightener + nylon locknut 3/8" NC + nylon locknut 7/16" NC .....	2
77	300-36250	Bolt 3/8" NC x 1" lg + nylon locknut .....	1
78	51607	Battery cable 4G x 16" lg .....	1
79	51614	Battery 12 volts 850 amp. ....	1
80	52074	Self-adhesive reflector (red) 1 1/8" x 4 1/2" .....	2
81	52071	Set of 3 parking lights (red) .....	1
82	51612	Mudguard 8" x 14" .....	2
83	190-02921	Self-adhesive reflector strip 2" x 14" lg .....	2
84	190-03011	Self-adhesive reflector strip 2" x 18" lg .....	6
85	190-02931	Self-adhesive reflector strip 2" x 47" lg .....	1
86	300-40340	Bolt 1/2" NC x 2" lg + nylon locknut .....	2
87	300-32220	Bolt 1/4" NC x 3/4" lg + nylon locknut .....	1
88	190-02351	Spring 3/4" x 4 1/2" lg .....	1
89	300-34340	Bolt 5/16" NC x 2" lg + nylon locknut .....	1
90	300-20250	Bolt 10-24 x 1" lg NC .....	2



# DUMP TRAILER P-516/3S

170-02353



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# DUMP TRAILER P-516/3S (cont'd)

REF.	PART #	DESCRIPTION	QTY
1	120-02401	Frame .....	1
2	300-40340	Bolt 1/2" NC x 2" lg + nylon locknut .....	2
3	160-01091	Brass bushing 1 3/4" i.d. x 2" o.d. x 2" lg .....	4
4	Std.	Grease fitting 1/4"-28 straight .....	7
5	110-11401	Tandem frame (up to serial # 8200) .....	2
5	110-11402	Tandem frame (from serial # 8201 and up) .....	2
6	150-02271	Axle 2" ø x 15" lg (welded) (up to serial # 8200) .....	4
6	150-02272	Axle 2 1/4" ø x 15" lg (welded) (from serial # 8201 and up) .....	4
7	Std.	Bolt 1/2" NC x 3" lg + nylon locknut .....	12
8	110-00011	Pin for tandem .....	2
9	51441	Hub # H-5000 complete (see details page 21) .....	4
10	110-11404	Tandem assembly .....	2
11	110-11921	Cross-beam .....	1
12	300-40310	Bolt 1/2" NC x 1 1/2" lg + nylon locknut .....	16
13	51611	Cylinder gimbal .....	1
14	110-09041	Cylinder gimbal mounting plate .....	2
15	308-32020	Bolt M8 - 1.25 x 20 mm lg .....	4
16	51477	Retaining plate for cylinder gimbal .....	2
17	R-1586	Rim 15" x 8" - 6 holes .....	4
17	R-15106	Rim 15" x 10" - 6 holes (4) .....	opt.
18	PN-11L15	Tire 11L15 - 8 ply with tube .....	4
18	PN-12.5L15	Tire 12.5L15 - 10 ply with tube (4) .....	opt.
19	9455-8x8	Elbow (swivel) .....	1
20	51478	Telescopic cylinder 5 sections (see details page 22) .....	1
21	51479	Repair kit for cylinder no. 51478 .....	1
22	51480	Retaining ring .....	1
23	51481	Locking segments for ball-joint .....	2
24	51482	Ball joint seat (welded) .....	1
25	120-00682	Rear panel with grain door .....	opt.
26	Std.	Hitch pin clip 1/8" x 2 9/16" lg .....	5
27	150-00721	Pin for platform pivot .....	2
28	110-14661	Right rear stake .....	1
29	51584-G	Side panel lock (L.H.) (welded) .....	2
30	51583	Ring for side panel lock (welded) .....	4
31	150-02831	Hinge pin for rear panel .....	2
32	110-03892	Standard rear panel .....	1
33	51436	Pin 1/2" ø x 1 37/64" lg .....	1
34	110-14671	Left rear stake .....	1
35	51435	Clevis 1/2" - 20 NF + nut .....	1
36	110-14601	Rod 1/2" for rear panel lock .....	1
37	110-07811	Side panel .....	2
38	110-07821	Front panel .....	1
39	120-01952	Platform .....	1
40	150-02761	Pin 1/2" x 1 1/2" lg .....	1
41	150-02861	Pin for rear locking mechanism .....	1
42	110-14271	Lever for automatic locking mechanism .....	1
43	130-16211	Rear panel lock .....	1
44	51584-D	Side panel lock (R.H.) (welded) .....	2
45	300-38430	Bolt 7/16" NC x 3 1/2" lg + nylon locknut .....	4
46	160-04011	Safety prop .....	1

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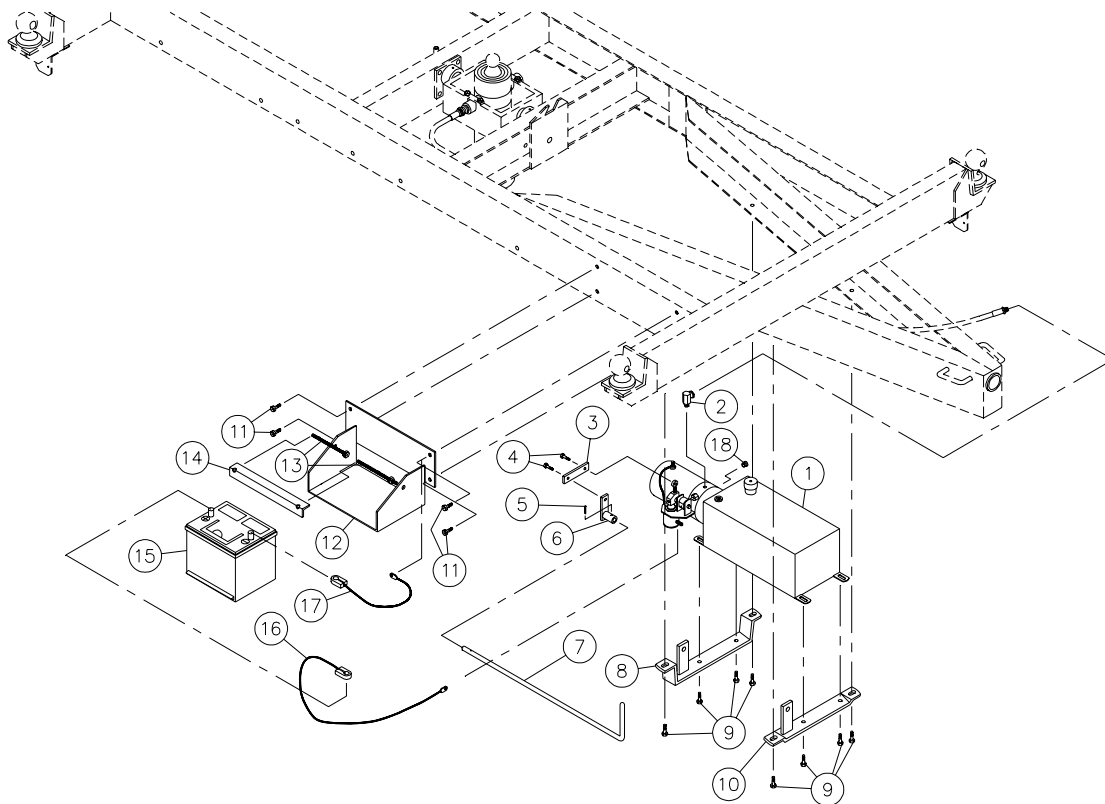
## ***DUMP TRAILER P-516/3S (cont'd)***

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<b>REF.</b>	<b>PART #</b>	<b>DESCRIPTION</b>	<b>QTY</b>
47	110-07831	Safety prop bracket .....	1
48	300-44310	Bolt 5/8" NC x 1 1/2" lg + nylon locknut .....	1
49	190-02151	Hose 3/8" x 156" lg.....	1
50	Std.	Cotter pin 1/4" x 3" lg .....	1
51	Std.	Castle nut 1 1/2" NC .....	1
52	110-06901	Swivel hitch .....	1
53	110-00051	Jack mounting plate .....	1
54	300-38280	Bolt 7/16" NC x 1 1/4" lg + nylon locknut .....	8
55	110-00181	Pin for jack .....	1
56	110-14841	Jack PC-3012L (up to serial # 8215)(see detail page 23) .....	1
56	190-05972	Jack type P-575 (from serial # 8216 and up).....	1
57	110-00061	Jack mounting plate .....	1
58	300-34340	Bolt 5/16" NC x 2" lg + nylon locknut .....	1
59	190-02351	Spring 3/4" x 4 1/2" lg .....	1
60	130-20401	Flat washer 1 5/8" i.d. x 2 3/8" o.d. ....	1

# ELECTRIC HYDRAULIC PUMP

170-00961

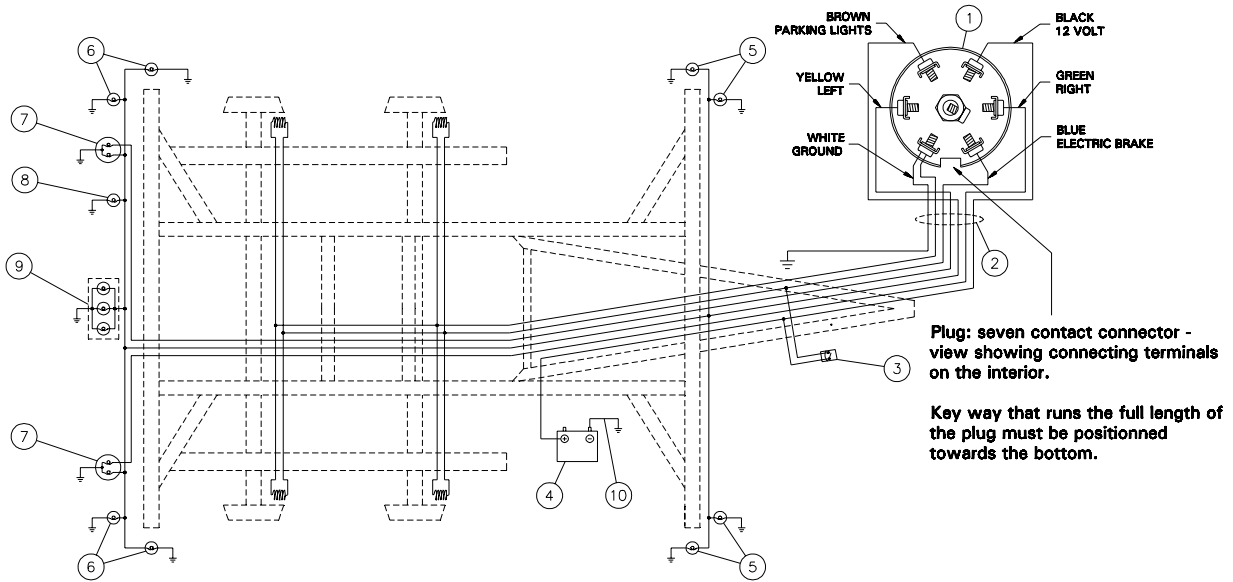


REF.	PART #	DESCRIPTION	QTY	
			P-516/3S	P-5103S/4E
1	613-00000	Electric hydraulic pump .....	1	1
2	9405x6x6	Fitting 90° (9045x6x6) .....	1	1
3	140-05011	Connecting rod .....	1	1
4	300-34280	Bolt 5/16" NC x 1 1/4" lg + nylon locknut .....	2	2
5	Std.	Roll pin 1/8" x 1" .....	1	1
6	110-06801	Pivot .....	1	1
7	150-00541	Handle 26" lg .....	1	1
8	110-07861	Rear support (for pump) .....	1	1
9	300-36310	Bolt 3/8" NC x 1 1/2" lg + nylon locknut & flat washer .....	8	8
10	110-07851	Front support (for pump) .....	1	1
11	300-36250	Bolt 3/8" NC x 1" lg + nylon locknut .....	4	-
12	110-06772	Battery holder .....	1	-
13	110-04841	Threaded rod + 1 nylon locknut 3/8" NC + 1 nylon locknut 7/16" NC .....	2	-
14	130-05751	Angle .....	1	-
15	51614	Battery 12 volts - 850 Amp .....	opt.	-
16	51617	Battery cable 4G x 36" lg .....	1	1
17	51607	Battery cable 4G x 16" lg .....	1	-
18	C3159x4	Cap 1/4" NPTM .....	1	1

**8**

# ELECTRIC CIRCUIT P-5103S/4E

170-01711

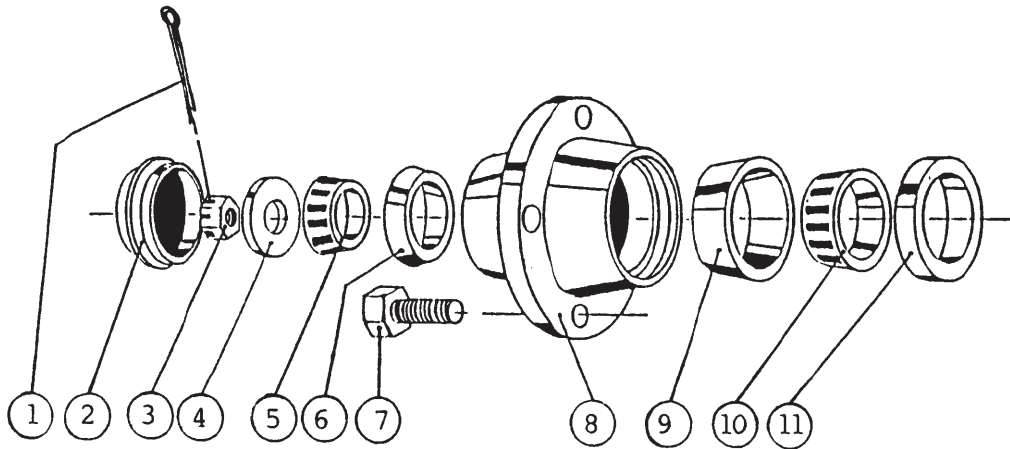


REF.	PART #	DESCRIPTION	QTY
1	52065	Connector 7 poles (trailer side) .....	1
2	52072	P-5103S/4E conductors cable kit .....	1
3	52069	Emergency brake switch .....	1
4	51614	Battery 12 volts - 850 Amp .....	1
5	52077	Yellow parking light .....	2
6	52076	Red parking light .....	2
7	32229	Flasher .....	2
8	52070	License plate .....	1
9	52071	Kit of 3 parking lights .....	1
10	51607	Battery cable 4 GA x 10" lg .....	1
NI*	52078	Connector 7 poles (vehicle side) .....	1

\*NI = Not illustrated

8

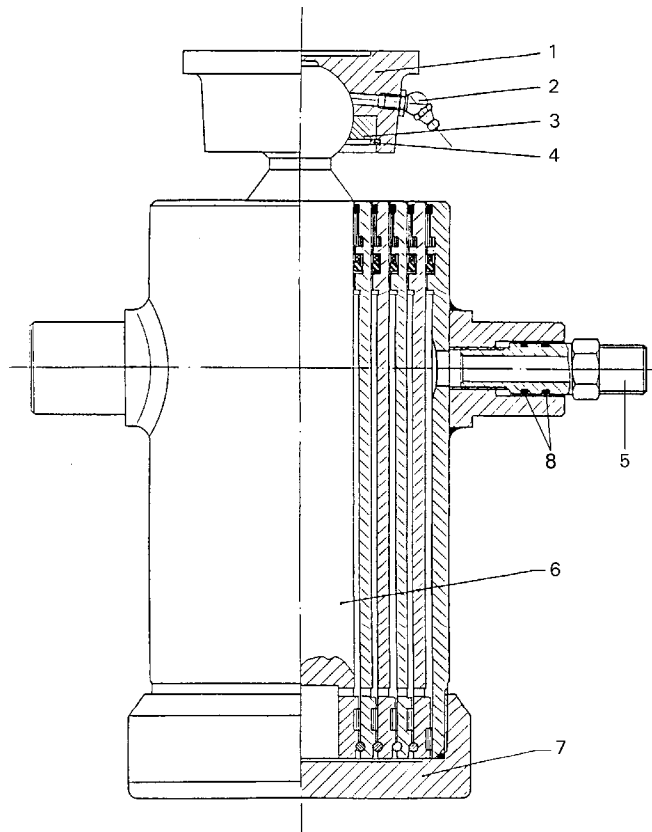
# HUB H5000



REF.	PART #	DESCRIPTION	QTY
1	Std.	Cotter pin 5/32" x 1 1/2" .....	1
2	51417	Dust cap 2.570" ø .....	1
3	51442	Castle nut 7/8" NF .....	1
4	Std.	Flat washer 7/8" .....	1
5	51416	Roller bearing Timken: cone no. 4T-LM48548 .....	1
6	51415	Roller bearing Timken: cup no. 4T-LM48510 .....	1
7	51418	Rim screw 9/16" .....	6
8	51414	Hub only H5000 .....	1
9	51413	Roller bearing Timken: cup no. 4T-LM603011 .....	1
10	51412	Roller bearing Timken: cone no. 4T-LM603049 .....	1
11	51443	Oil seal no. CR20044 .....	1

**8**

# TELESCOPIC CYLINDER # 51478



REF.	PART #	DESCRIPTION	QTY
1	51482	Ball joint seat (welded) .....	1
2	Std.	Grease fitting 1/4"-28 straight .....	1
3	51481	Locking segments for ball-joint 2 7/16" .....	1
4	51480	Retaining ring (interior), 2.727" .....	1
5	51586	Connector .....	1
6	51487	Piston with ball .....	1
7	51489	Threaded cylinder base .....	1
8	51589	Seal kit for connector .....	1
NI*	51488	Repair kit for cylinder .....	1

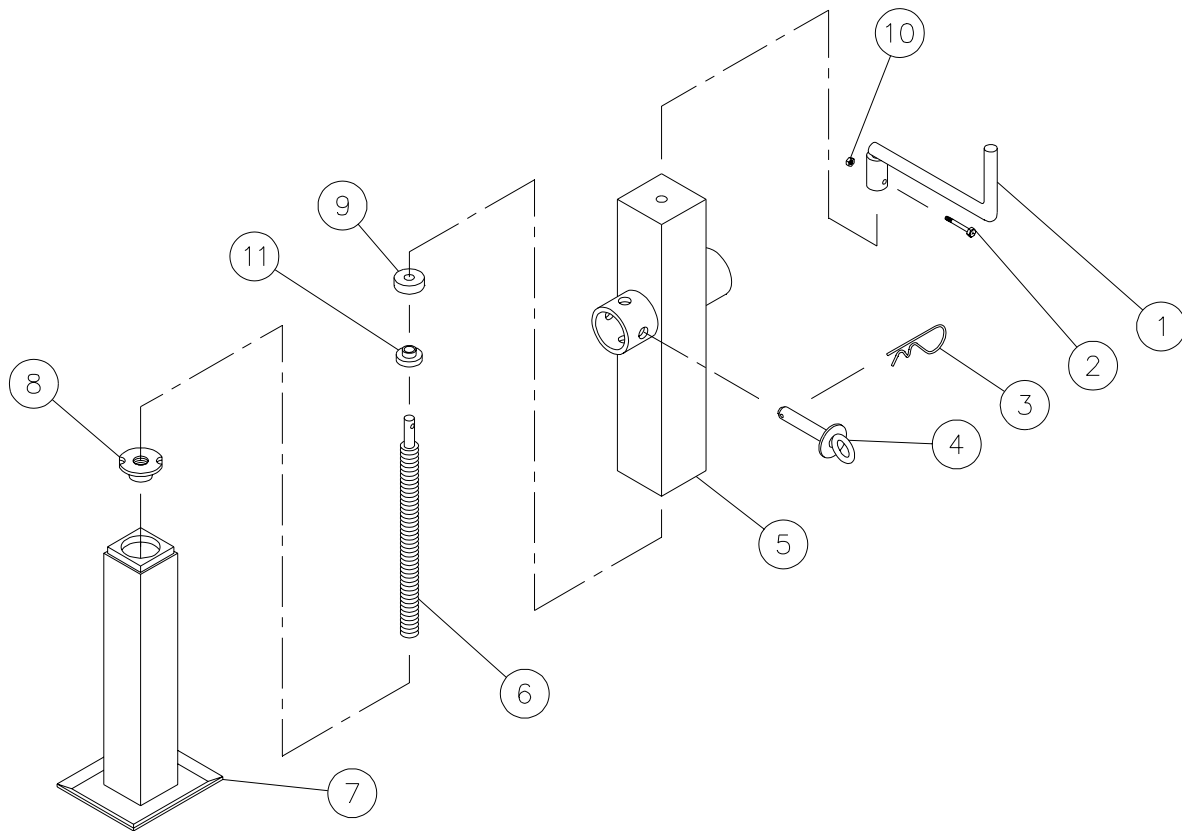
\*NI = Not illustrated

\* Some parts might not be available separately.

8

# JACK PC-3012L # 110-14841 (up to serial # 8215)

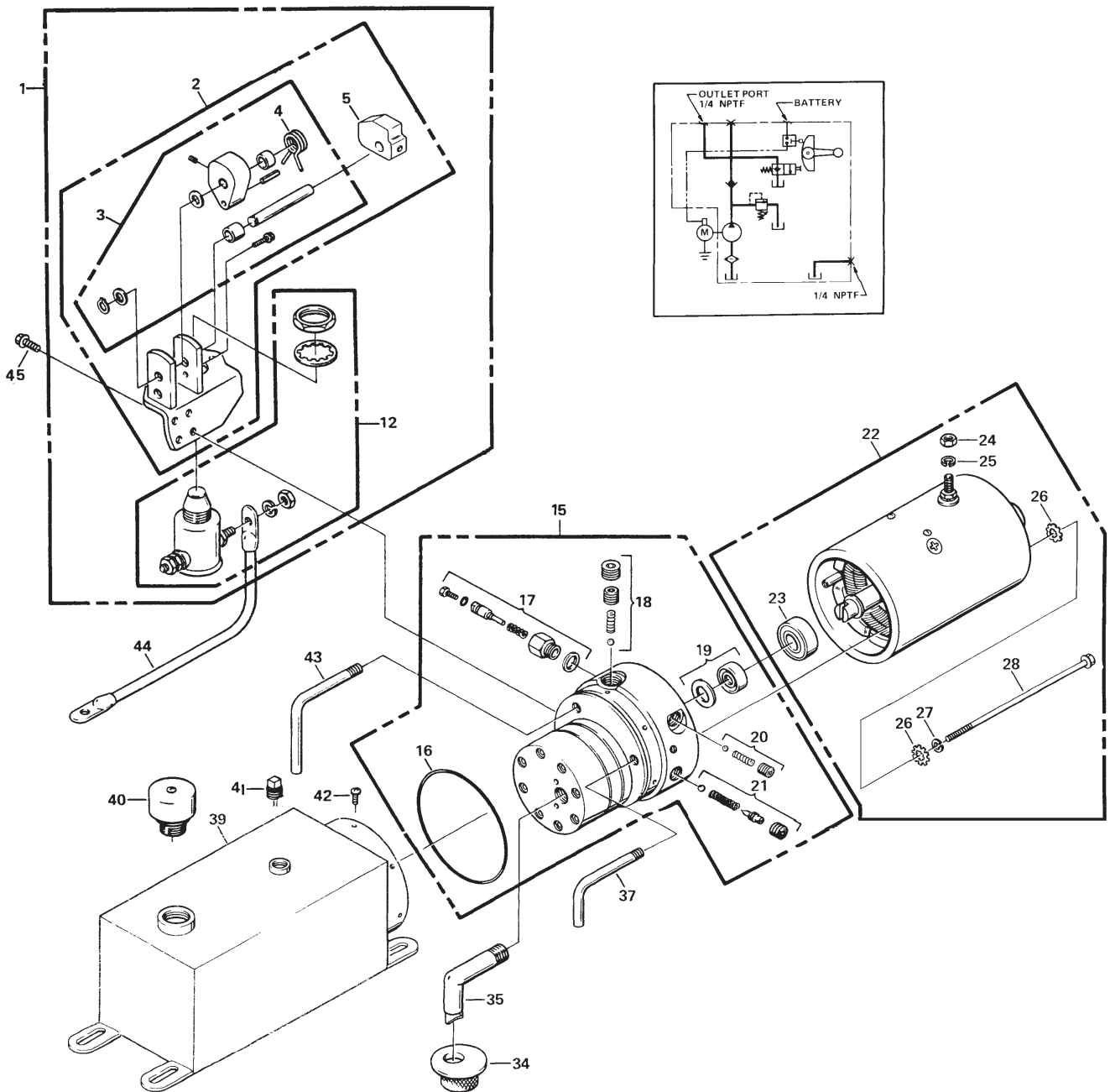
110-14841



REF.	PART #	DESCRIPTION	QTY
1	110-14411	Hand crank .....	1
2	Std.	Bolt 1/4" NC x 1 1/4" lg + nylon locknut .....	1
3	Std.	Hitch pin clip 5/32" .....	1
4	110-00181	Pin 5/8" x 3 1/2" .....	1
5	110-00081	Jack external part .....	1
6	150-00091	Acme screw 7/8"-8 x 13" lg .....	1
7	110-00031	Jack support .....	1
8	160-00111	Acme nut 7/8"-8 (brass) .....	1
9	51475	Ball bearing .....	1
10	150-00121	Ball bearing support .....	1

8

# POWER PACK # 613-00000



8










## **POWER PACK # 613-00000 (cont'd)**

REF.	PART #	DESCRIPTION	QTY
1	51537	Bracket assembly with mounting plate and start switch .....	1
2	51538	Bracket assembly with mounting plate .....	1
3	51539	Bracket assembly only .....	1
4	51540	Torsion spring .....	1
5	51541	Block .....	1
12	51542	Start switch .....	1
15	51543	Pump assembly (gear code 05) .....	1
16	51544	Industrial o-ring (3 5/8" x 3 7/8" x 1/8") .....	1
17	51545	Plunger .....	1
18	51546	Main check valve .....	1
19	51547	Seal and gasket .....	1
20	51548	Descending check valve .....	1
21	51549	Relief valve .....	1
22	51550	Electric motor 12V DC .....	1
23	51551	Ball bearing .....	1
24	Std.	Nut 5/16"-24 .....	1
25	Std.	Lock washer 5/16" .....	1
26	Std.	Star washer 1/4" .....	4
27	Std.	Lock washer 1/4" .....	2
28	Std.	Bolt 1/4"-20 x 6 1/2" .....	2
34	51552	Filter .....	1
35	51553	Filter (suction tube) 3/8" NPT 90° .....	1
37	51554	Return tube 1/8" .....	1
39	51555	Reservoir 6 1/4" x 7" x 15", 510 in <sup>3</sup> usable .....	1
40	51556	Vent plug .....	1
41	51557	Square head plug .....	1
42	Std.	Screw 10-24 x 3/8" .....	6
43	51558	Return tube (1/8 NPT) .....	1
44	51559	Insulated cable with lugs 9" 6 gauge .....	1
45	Std.	Flange hex. head screw (tap tite) 1/4"-20 x 5/8" .....	4






\* Some parts might not be available separately.

# TORQUE CHART

## TORQUE SPECIFICATION TABLE

Thread UNC and UNF		Grade 2 				Grade 5   				Grade 8*   			
Bolt size		Torque				Torque				Torque			
Inches	mm	Pound feet min.	max.	Newton meters min.	max.	Pound feet min.	max.	Newton meters min.	max.	Pound feet min.	max.	Newton meters min.	max.
1/4	6.35	5	6	6.8	8.13	9	11	12.2	14.9	12	15	16.3	30.3
5/16	7.94	10	12	13.6	16.3	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8	9.53	20	23	27.1	31.2	35	42	47.5	57.0	45	54	61.0	73.2
7/16	11.11	30	35	40.7	47.4	54	64	73.2	86.8	70	84	94.9	113.9
1/2	12.70	45	52	61.0	70.5	80	96	108.5	130.2	110	132	149.2	179.0
9/16	14.29	65	75	88.1	101.6	110	132	149.2	179.0	160	192	217.0	260.4
5/8	15.88	95	105	128.7	142.3	150	180	203.4	244.1	220	264	298.3	358.0
3/4	19.05	150	185	203.3	250.7	270	324	366.1	439.3	380	456	515.3	618.3
7/8	22.23	160	200	216.8	271.0	400	480	542.4	650.9	600	720	813.6	976.3
1	25.40	250	300	338.8	406.5	580	696	786.5	943.8	900	1080	1220.4	1464.5
1 1/8	25.58	-	-	-	-	800	880	1084.8	1193.3	1280	1440	1735.7	1952.6
1 1/4	31.75	-	-	-	-	1120	1240	1518.7	1681.4	1820	2000	2467.9	2712.0
1 3/8	34.93	-	-	-	-	1460	1680	1979.8	2278.1	2380	2720	3227.3	3688.3
1 1/2	38.10	-	-	-	-	1940	2200	2630.6	2983.2	3160	3560	4285.0	4827.4

\* Thick nuts must be used with grade 8 bolts.

Size of screw	Thread	Pitch (mm)	Grade 4T  				Grade 7T 				Grade 8T  			
			Torque				Torque				Torque			
			Pound feet min.	max.	Newton meters min.	max.	Pound feet min.	max.	Newton meters min.	max.	Pound feet min.	max.	Newton meters min.	max.
M6	UNC	1.00	3.6	5.8	4.9	7.9	5.8	9.4	7.9	12.7	7.2	10	9.8	13.6
M8	UNC	1.25	7.2	14	9.8	19	17	22	23	29.8	20	26	27.1	35.2
M10	UNC	1.5	20	25	27.1	33.9	34	40	46.1	54.2	38	46	51.5	62.3
M12	UNC	1.75	28	34	37.9	46.1	51	59	69.1	79.9	57	66	77.2	89.4
M14	UNC	2.0	49	56	66.4	75.9	81	93	109.8	126	96	109	130.1	147.7
M16	UNC	2.0	67	77	90.8	104.3	116	130	157.2	176.2	129	145	174.8	196.5
M18	UNC	2.0	88	100	119.2	136	150	168	203.3	227.6	175	194	237.1	262.9
M20	UNC	2.5	108	130	146.3	176.2	186	205	252	277.8	213	249	288.6	337.4
M8	UNF	1.0	12	17	16.3	23	19	27	25.7	36.6	22	31	29.8	42
M10	UNF	1.25	20	29	27.1	39.3	35	47	47.4	63.7	40	52	54.2	70.5
M12	UNF	1.25	31	41	42	55.6	56	68	75.9	92.1	62	75	84	101.6
M14	UNF	1.5	52	64	70.5	86.7	90	106	122	143.6	107	124	145	168
M16	UNF	1.5	69	83	93.5	112.5	120	138	162.6	187	140	158	189.7	214.1
M18	UNF	1.5	100	117	136	158.5	177	199	239.8	269.6	202	231	273.7	313
M20	UNF	1.5	132	150	178.9	203.3	206	242	279.1	327.9	246	289	333.3	391.6

Use the above torques when special torque is not given.

NOTE: These values apply to fasteners as received from supplier, dry, or when lubricated with normal engine oil. They do not apply if extreme pressure lubricants are used.

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## ***WARRANTY***

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PRONOVOST warrants this product to the initial purchaser for the period of one year from the date of purchase against defects in materials and workmanship.

We will replace or repair defective parts free of charge if they are returned to our plant in St-Tite, Quebec, Canada.

Transportation charges are the responsibility of the customer. This warranty is not transferable.

Hydraulic cylinders are covered by the manufacturer of these items.

All PRONOVOST spare parts purchased are covered by a three (3) month warranty.

This warranty becomes void and nul if the equipment is modified, breaks down as the result of an accident, is not operated according to manufacturer's recommendations, damaged by negligence or if maintenance has not been carried out as specified.

Our obligation is limited to the replacement or repair of the defective part. PRONOVOST accepts no responsibility for direct or indirect consequential damages of any kind.









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