

# 1648 PLUS POWERBOX PAVER



Parts Manual

**Discount  
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February, 2015  
S/N 1001 – UP  
Part # 30955

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# INTRODUCTION

When ordering service parts, specify the correct part number, full description, quantity required, the unit model number and serial number. For your safety and continued proper operation, use only genuine POWERBOX service parts.

The model and serial number for this unit are on a tag located on the paver control panel.

"Right" and "left" are determined from the operator's position facing forward.

POWERBOX reserves the right to make changes or improvements in the design or construction of any part of the unit without incurring the obligation to install such changes on any previously delivered units.

If grease fittings and common attaching hardware, such as cotter pins, set screws, woodruff keys, screws, nuts, etc., are not illustrated, they may be in the parts list indented below the part they are associated with. The hardware listed is for mounting purposes and is NOT included when the part is ordered for replacement.

Standard attaching hardware torque values are provided at the back of this manual. Unless otherwise specified, all capscrews are Grade 5, cadmium or zinc plated; hexagon nuts for Grade 5 capscrews and bolts are Grade A.

An hydraulic O-ring sizing chart is also provided on the inside cover of this manual.

The numbers shown in the parts page headers are Engineering tracking numbers only and should not be used for parts ordering purposes.

**NOTE:** *The following abbreviations may be used herein:*

ASSD.....	Assembled
ASY.....	Assembly
ASSY.....	Assembly
AR.....	As Required
CB.....	Carriage Bolt
CP.....	Cotter Pin
CS.....	Cap Screw (Hexagon Head)
CYL.....	Cylinder
DIA.....	Diameter
FHCS.....	Flat Head Cap Screw
FT.....	Foot or Feet
GR.....	Grade
HB.....	Hex Bolt
HLN.....	Hex Lock Nut
HN.....	Hex Nut
HP.....	High Pressure
HYD.....	Hydraulic
INS.....	Insert
LH.....	Left Hand
LN.....	Lock Nut
LT.....	Left
LW.....	Lock Washer
M.....	Metric
MM/mm.....	Millimeter
NPT.....	National Pipe Threaded
NSS.....	Not Sold Separately
RH.....	Right Hand
RT.....	Right
SHCS.....	Socket Head Cap Screw
SLTD.....	Slotted
SN.....	Serial Number or Slotted Nut
SQ.....	Square
W/.....	With

# 1648 PLUS

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# DECAL LOCATIONS

## GENERAL INFORMATION

Decal location information is provided to assist in the proper selection and application of new decals, in the event the original decals become damaged or the machine is repainted. Refer to the listing for the illustration reference number, part number, description and quantity of each decal provided in the kit. Refer to the illustrations for appropriate replacement locations.

To ensure proper selection of the correct replacement decals, compare all of the various close-up location drawings to the machine before starting to refinish the unit. Then circle each decal shown (applicable to the machine) while checking off its part number in the listing. After verifying all the decals needed for replacement, place any extra unnecessary decals aside for disposal. If there is a decal on a part that is to be replaced, be sure that the replacement part has the decal applied to it.

**NOTE:** Refer to the SAFETY chapter of this Operator's Manual for the specific information provided on the various safety decals furnished in the decal kit.

## NEW DECAL APPLICATION

Surfaces MUST be free from dirt, dust, grease and other foreign material before applying the new decal. To apply, remove the smaller portion of the decal backing paper and apply this part of the exposed adhesive backing to the clean surface while maintaining proper position and alignment. Slowly peel off the other portion of the backing paper while applying hand pressure to smooth out the decal surface.

The decal kit for the model 1648 Plus Paver is listed below:

Ref. No.	Part No.	Description & Quantity
1	6937	DECAL - TIE DOWN POINT
2	9794	DECAL - WASHDOWN SOLUTION
3	11329	WEILER SERIAL NUMBER PLATE
4	21226	DECAL - ULTRA LOW SULFUR FUEL
5	21956	INT'L DECAL - READ OPERATORS MANUAL
6	27350	DECAL - HAND CRUSH, 4 X 2
7	29975	DECAL - ENGINE EMISSION CONTROL INFO 2015
	25491	DECAL - ENGINE EMISSION CONTROL INFO 2014
8	73162772	DECAL - USA
9	P101115	DECAL / DRIVE CONTROL
10	P101116	DECAL / 7 STACK VALVE
11	P101118	DECAL / AUGER CONTROL
12	P101119	DECAL / 5 POSITION RT
13	P101481	DECAL / "POWERBOX" CORP GRAY
14	P101986	DECAL / STEER VALUE
15	P137660	DECAL / ETHER
16	P175774	DECAL / GAUGE PANEL
17	P175805	DECAL / FILTER REFERENCE
18	P175806	DECAL / PUMP CONTROL
19	P175862	DECAL / 1648 MAINTENANCE
20	P175900	DECAL / 1648 RIGHT
21	P175932	DECAL / 1648 LEFT
22	P204100	DECAL WARNING
23	P204101	DECAL WARNING
24	P207300	DECAL / ON/OFF
25	P210200	DECAL SAFETY PROP
26	P473204	DECAL / 1648 PRESSURE TEST
27	P480087	DECAL / DEPTH ADJ
28	PL65924	DECAL / DANGER ROTATING
29	PL65942	DECAL / HOT SURFACE WARNING
30	V2326315	DECAL - FLUID UNDER PRESSURE

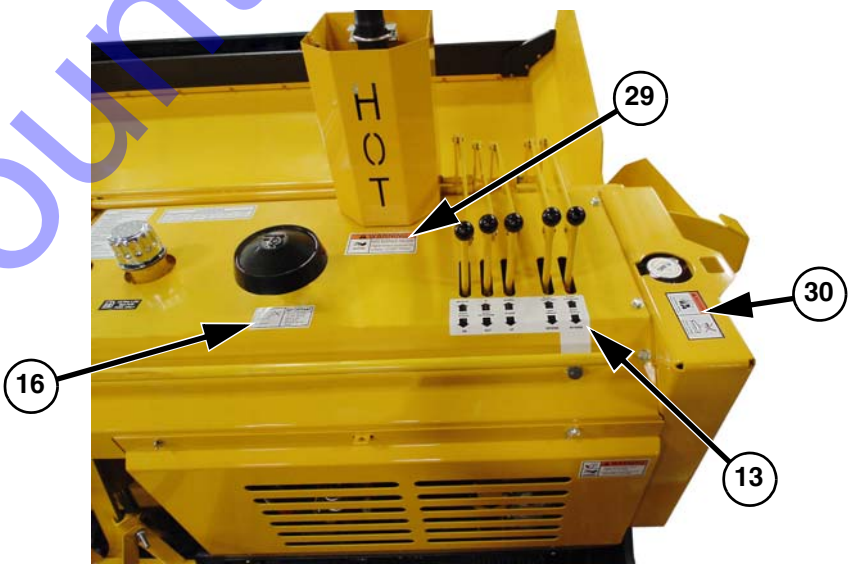
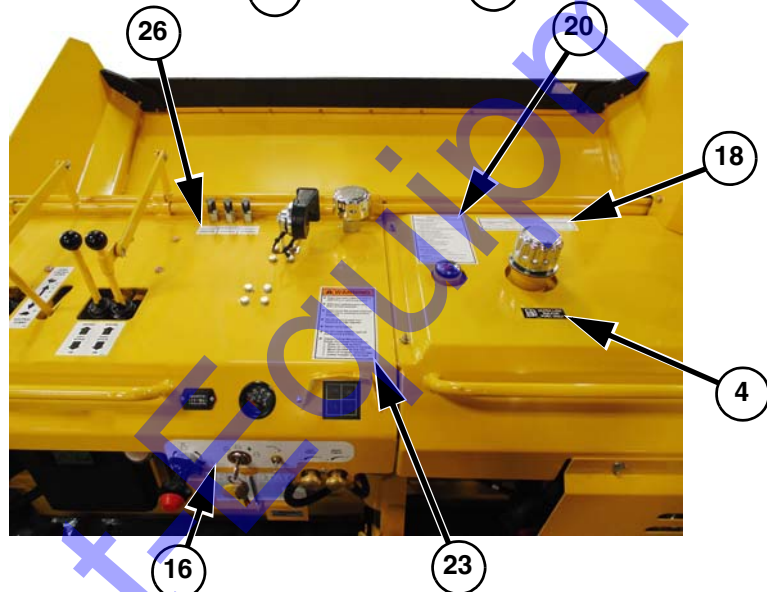
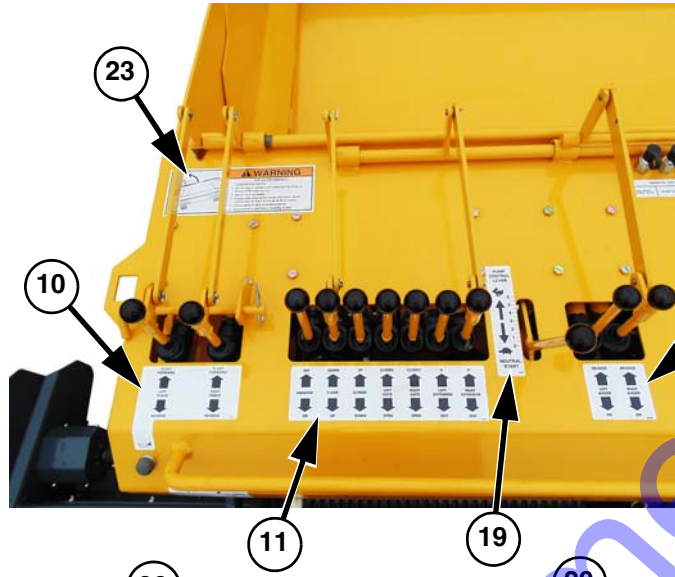


## CAUTION

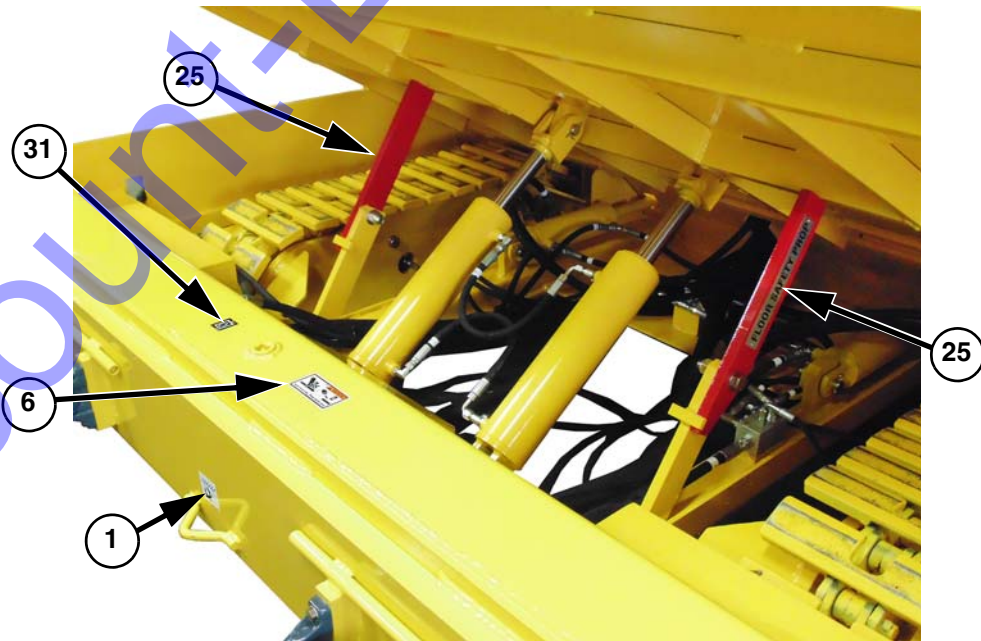
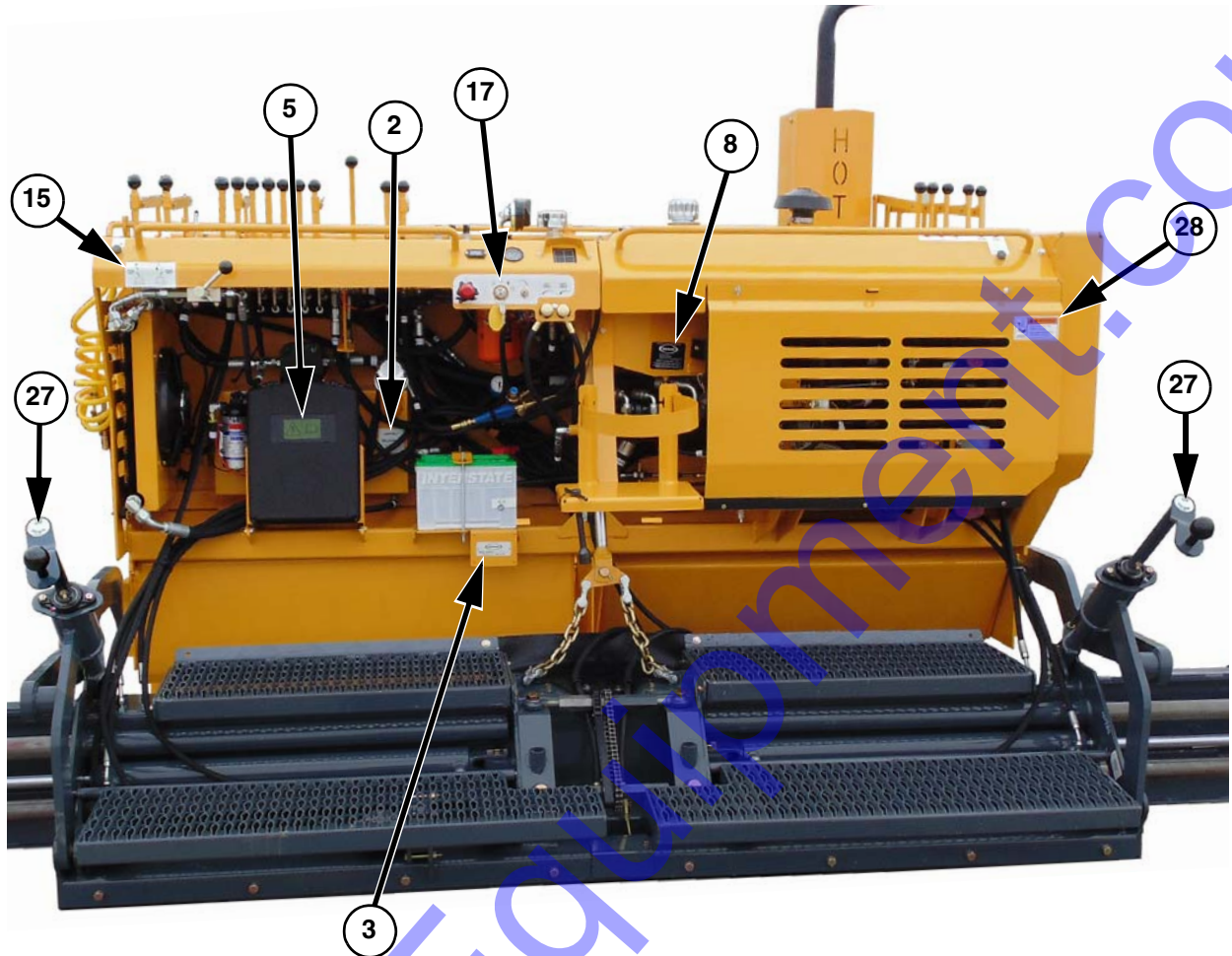
**ALWAYS** follow safety precautions on decals. Replace the decals if they are damaged, or if the unit is repainted. If repainting, **BE SURE** all applicable decals are affixed to the unit.



1648 - GENERAL  
DECAL LOCATIONS



# 1648 - GENERAL DECAL LOCATIONS

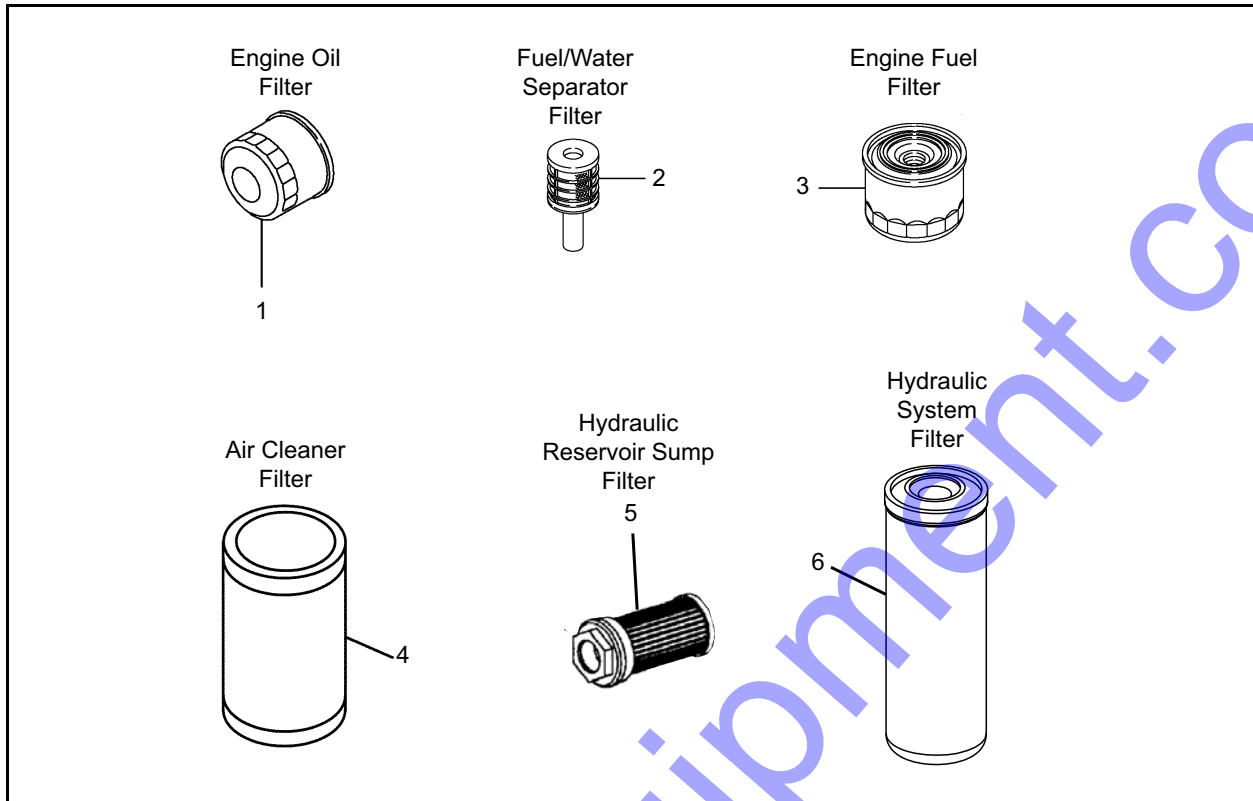




1648 - GENERAL  
DECAL LOCATIONS

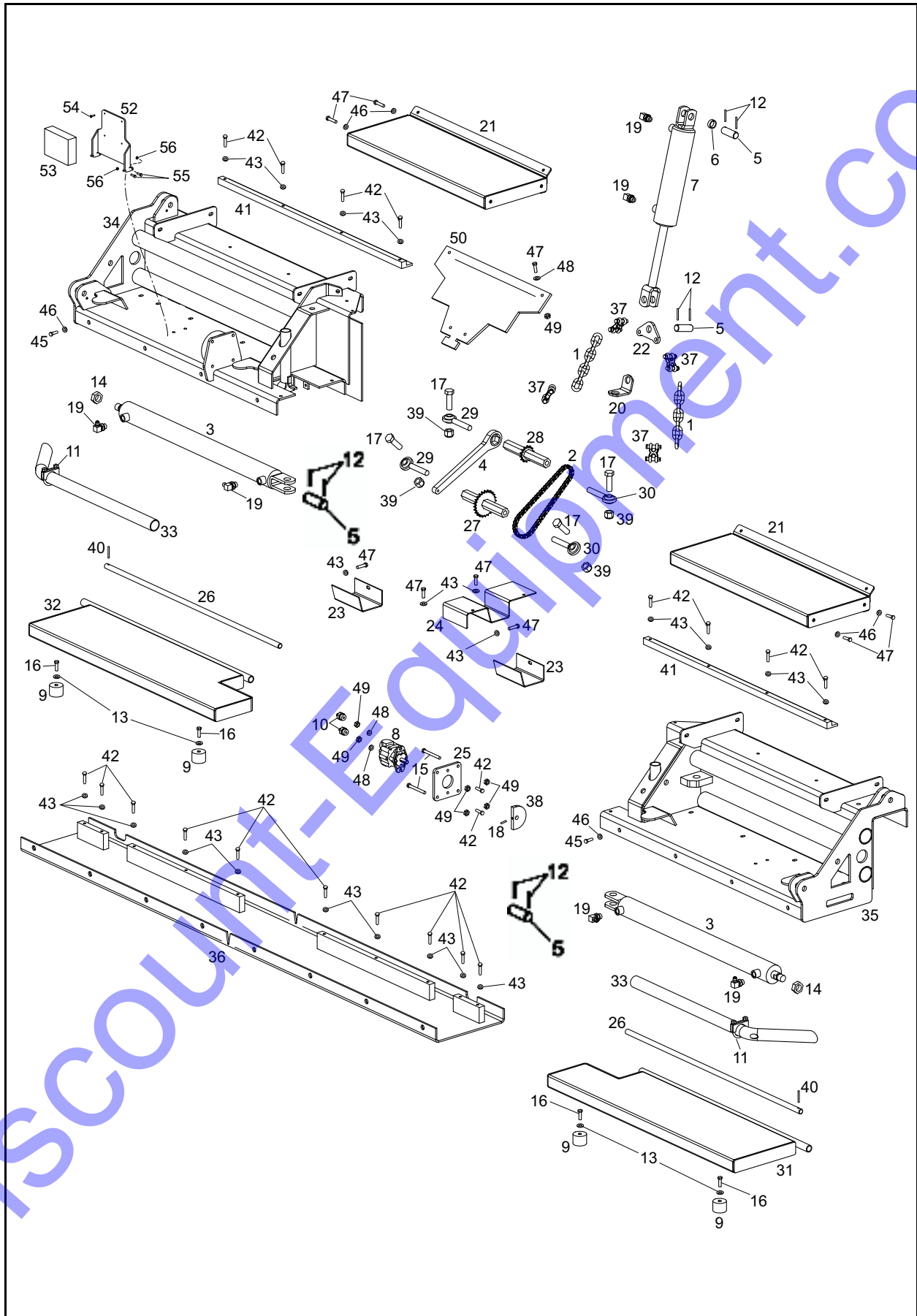


# 1648 - GENERAL FILTERS



Ref. No.	Part No.	Description	Qty.
1	P195568	ENGINE OIL FILTER	1
2	P203822	WATER SEPARATOR FILTER	1
3	P270979	FUEL FILTER	1
4	P175783C1	AIR CLEANER ELEMENT	1
5	P128299	STRAINER/W/BY PASS	1
6	C1G8878	HYDRAULIC OIL FILTER	2

**1648 - CHASSIS**  
**430030 - MAIN SCREED**



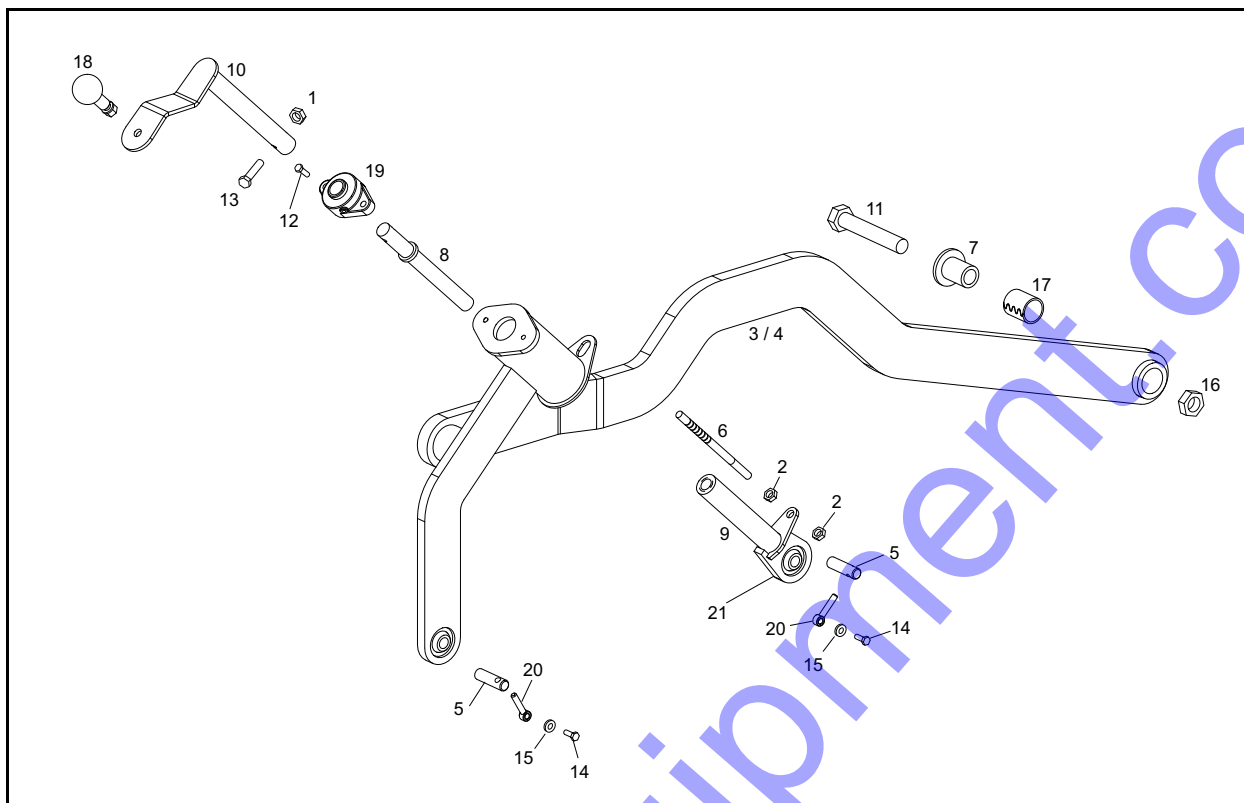
**1648 - CHASSIS  
430030 - MAIN SCREED**

Ref. No.	Part No.	Description	Qty.
1	P100930	CHAIN / SCREED LIFT	2
2	P473278	CHAIN	1
3	P473265	CYLINDER / SCREED EXTEND	2
*	P700510	SEAL KIT	
4	P472251	WRENCH / RACHET	1
5	P471297	PIN / CYLINDER END	4
6	P471084	SPACER / SCREED CYLINDER	1
7	P101355	CYLINDER / SCREED LIFT	1
*	P700430	SEAL KIT	
8	P349450	MOTOR / VIBRATOR	1
*	P282400	SERVICE KIT (SEALS & BEARING)	
9	P272700	ISOLATOR / BUMPER	4
10	PL60253	ADPTR / STRAIGHT	2
11	30209	CLAMP/MUFFLER 1.75	2
12	26812	COTTER PIN / 3/16 X 2	8
13	29409	LOCK WASHER 1/2"	4
14	9599	HJN 1 F2ZY	2
15	3772	BOLT / 3/8 X 3	4
16	70926154	BOLT / 1/2 X 1	4
17	70922744	BOLT / 3/4 X 2-1/2	4
18	30091	SHSS CP 5/16 X 5/16	1
19	P110227	ADPTR / 90DEG	6
20	P101161	WRENCH HOLDER	1
21	P100978	TOP PLATFORM	2
22	P100865	CHAIN CLEVIS ANCHOR	1
23	P100864	TORCH BOX	2
24	P100863	MIDSCREED FLOOR COVER	1
25	P100862	VIBRATOR MOUNT	1
26	P100861	PLATFORM HINGE PIN	2

Ref. No.	Part No.	Description	Qty.
27	P101272	CROWN ADJUST, LARGE	1
28	P101271	CROWN ADJUST, SMALL	1
29	P100849	LEFT BALL JOINT	2
30	P100847	RIGHT BALL JOINT	2
31	P100830	RIGHT PLATFORM	1
32	P100828	LEFT PLATFORM	1
33	P100816	SCREED EXHAUST TUBE	2
34	P101981	LEFT SCREED	1
35	P101980	RIGHT SCREED	1
36	P101977	WEAR PLATE	1
37	P100592	CLEVIS / DOUBLE LINK	4
38	P100504	VIBRATOR COUNTERWEIGHT	1
39	70916170	LOCK NUT / 3/4"	4
40	70916171	SPRING PIN / .25X1.25	2
41	P101228	SCREED ALIGNMENT BAR	2
42	3769	BOLT / 3/8 X 1-1/4	18
43	70919312	LOCK WASHER / 3/8	22
45	70923473	CS 1/2X1-1/4 C5ZY	8
46	29409	LW 1/2 RZY	8
47	70923490	CS 3/8X1 C5ZY	16
48	70918266	3/8 / FLAT WASHER	6
49	PL520022	FLEXLOCK NUT 3/8-16	20
50	P175275	GUARD/RUBBER	1
52	29970	MANUAL BOX PLATE	1
53	7185	HOLDER/MANUAL PLASTIC	1
54	3759	BOLT 1/4-20 x 3/4 ZY	4
-	70918264	WASHER 1/4 ZY	4
-	14654	LOCK NUT 1/4-20 CNTRLK ZY	4
55	3759	BOLT 1/4-40 x 3/4 ZY	4
56	27146	LN LG. FL. SERR. 1/4 CZ	4

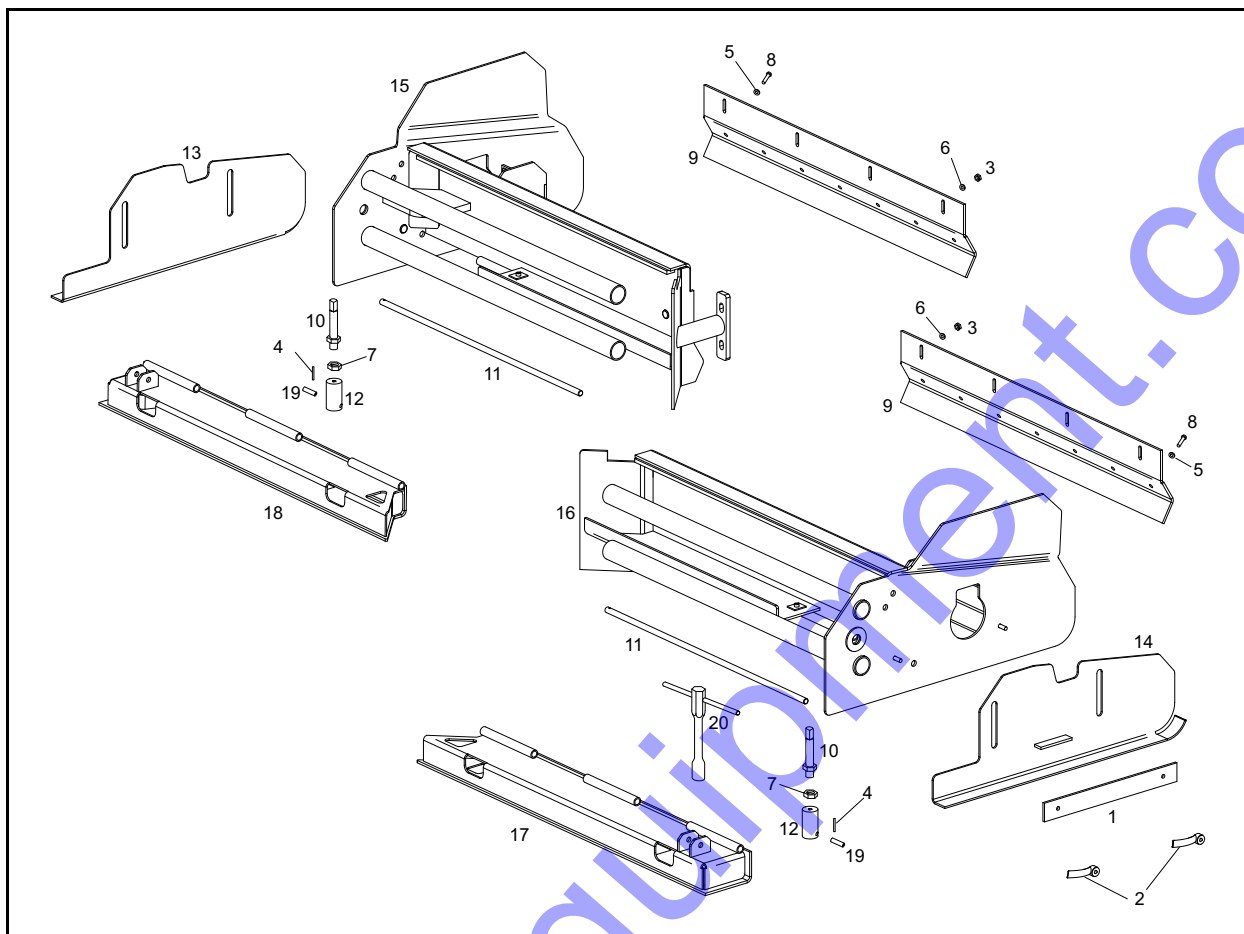


**1648 - CHASSIS**  
**430032 - PULLARMS**



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	12027	LOCK NUT 3/8"	2	10	P101103	ADJUSTER HANDLE	2
2	10475	LOCK NUT 1/2"	4	11	30312	BOLT, 1-8X6"	2
3	P100772	LEFT PULLARM (Augers on flow gates)	1	12	70923490	BOLT, 3/8-16X1	4
	P100917	LEFT PULLARM (Augers on screed)	1	13	70923701	BOLT, 3/8-16X2	2
4	P100780	RIGHT PULLARM (Augers on flow gates)	1	14	14679	BOLT, 5/16-18X7/8	4
	P100915	RIGHT PULLARM (Augers on screed)	1	15	3778	LOCK WASHER, 5/16"	4
5	P100782	PIN, PULLARM	4	16	C6K3632	NUT, STOVER 1-8	2
6	P100783	DEPTH INDICATOR	2	17	PL68048	SPRING BUSHING	2
7	P100784	PULLARM SWIVEL	2	18	PL69597	SPINNER KNOB	2
8	P100866	SCREED ADJUST ROD	2	19	P472066	SCREED ADJUST BEARING	2
9	P100891	ADJUST BALL JOINT	2	20	P472798	ROD END	4
				21	30213	BALL JOINT ONLY	1

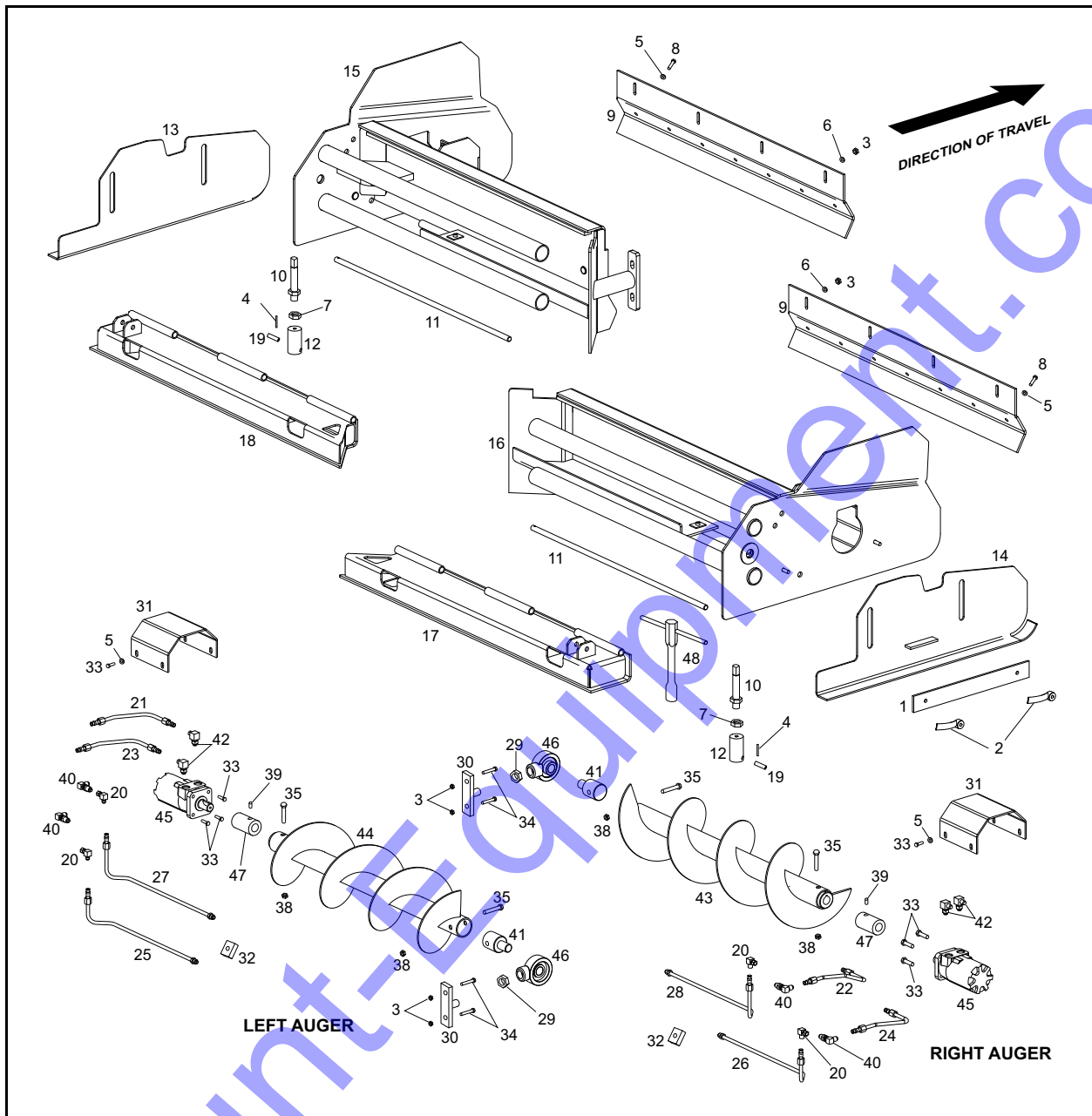
**1648 - CHASSIS  
430021 - SCREED EXTENSIONS WITHOUT AUGERS**



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	P178000	SHOE TIGHTENER BAR	2	11	P100860	SCREED EXTEN.HINGE PIN	2
2	P015900	HANDLE NUT	4	12	P100859	EXT DEPTH ADJ TUBE	2
3	PL520022	FLEXLOCK NUT 3/8-16	8	13	P100845	LEFT EXTENSION SHOE	1
4	70918452	COTTER PIN 1/8 X 1	2	14	P100843	RIGHT EXTENSION SHOE	1
5	70919312	LOCK WASHER 3/8"	14	15	P100840	LEFT TOP EXTENSION	1
6	70918266	FLAT WASHER 3/8"	8	16	P100834	RIGHT TOP EXTENSION	1
7	70901431	NUT 3/4"	4	17	P100517	RIGHT SCREED EXTENSION	1
8	70923490	BOLT 3/8 X 1	14	18	P100516	LEFT SCREED EXTENSION	1
9	P101217	STRIKE-OFF	2	19	21854	CLEVIS PIN 1/2 X 2-1/2	2
10	P101160	DEPTH ADJUSTMENT	2	20	P101140	T-HANDLE (FOR REF. 10)	1

# 1648 - CHASSIS

## 430030 - SCREED EXTENSIONS WITH AUGERS



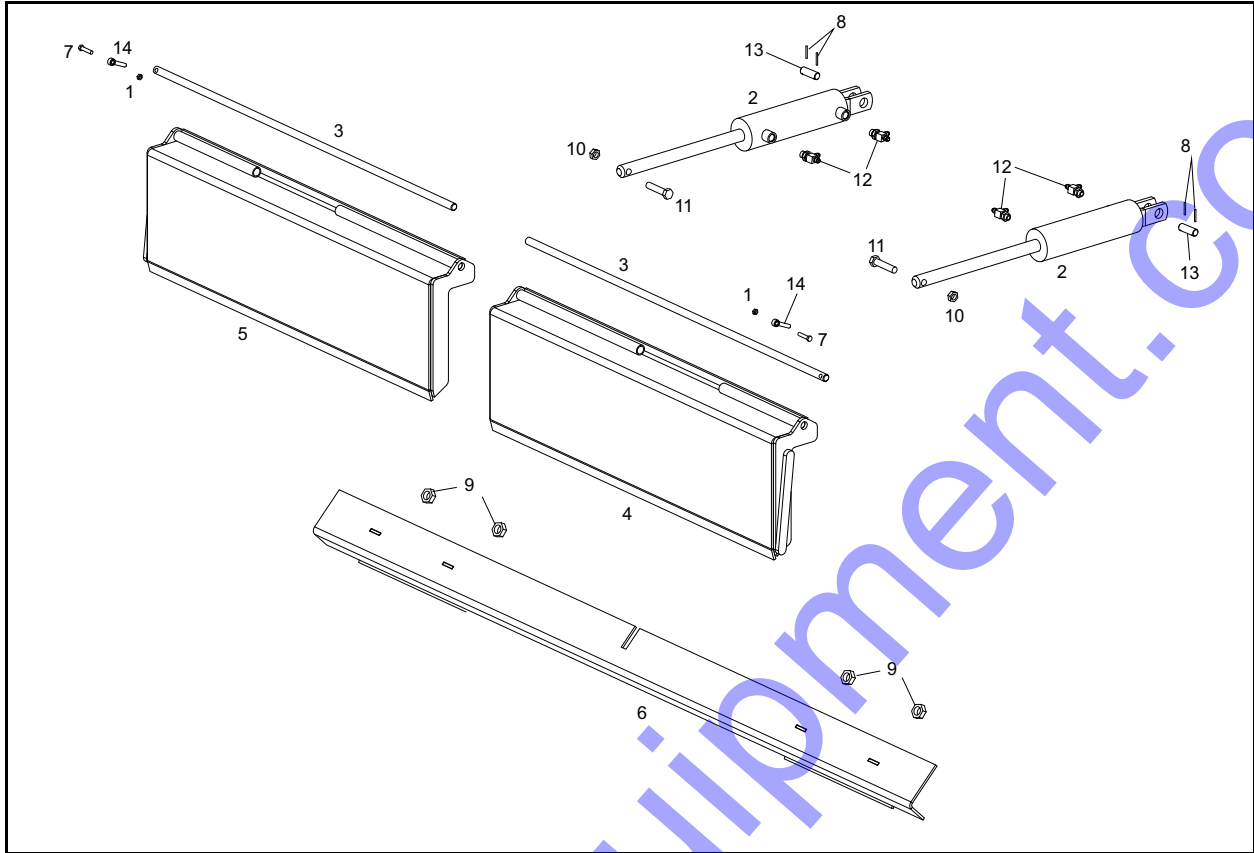
Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	P178000	SHOE TIGHTENER BAR	2	13	P100590	LEFT EXTENSION SHOE	1
2	P015900	HANDLE NUT	4	14	P100589	RIGHT EXTENSION SHOE	1
3	PL520022	FLEXLOCK NUT 3/8-16	12	15	P175018	LEFT TOP EXTENSION	1
4	70918452	COTTER PIN 1/8 X 1	2	16	P175019	RIGHT TOP EXTENSION	1
5	70919312	LOCK WASHER 3/8"	14	17	P100517	RIGHT SCREED EXTENSION	1
6	70918266	FLAT WASHER 3/8"	8	18	P100516	LEFT SCREED EXTENSION	1
7	70901431	NUT 3/4"	4	19	21854	CLEVIS PIN 1/2 X 2-1/2	2
8	70923490	BOLT 3/8 X 1	14	20	P091039	ADPTR, 90 DEG	4
9	P101217	STRIKE-OFF	2	21	P100593	TUBE/LT AUGER MOTOR	1
10	P101160	DEPTH ADJUSTMENT	2	22	P100594	TUBE/RT AUGER MOTOR	1
11	P100860	SCREED EXTEN.HINGE PIN	2	23	P100595	TUBE/LT AUGER MOTOR	1
12	P100859	EXT DEPTH ADJ TUBE	2	24	P100596	TUBE/RT AUGER MOTOR	1

**1648 - CHASSIS**  
**430030 - SCREED EXTENSIONS WITH AUGERS**

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
25	P100597	TUBE/LT AUGER	1	39	6086	SET SCREW 3/8-16	2
26	P100598	TUBE/RT AUGER	1	40	P098534	90 BLKHD MJ06-MJ06	8
27	P100599	TUBE/LT AUGER	1	41	P311800	AUGER HUB, MALE	2
28	P100600	TUBE/RT AUGER	1	42	P470406	ADPTR. 90 DEG	4
29	P100875	NUT, 3/4-14	2	43	P473328	AUGER	1
30	P100884	BEARING SUPPORT	2	44	P473327	AUGER	1
31	P100919	AUGER MOTOR COVER	2	45	P480071	AUGER MOTOR	2
32	30296	TWIN CLAMP BODY, 3/8	2	*	P279009	SEAL KIT	
33	3767	BOLT, 3/8 X 3/4	16	46	P480177	BEARING	2
34	3770	3/8 X 1-1/2	4	47	P311600	AUGER HUB, FEMALE	2
35	4931	BOLT, 1/2 X 3-1/2	4	48	P101140	T-HANDLE (FOR REF. 10)	1
38	29759	NUT, 1/2-13 FLEXLOCK	4				

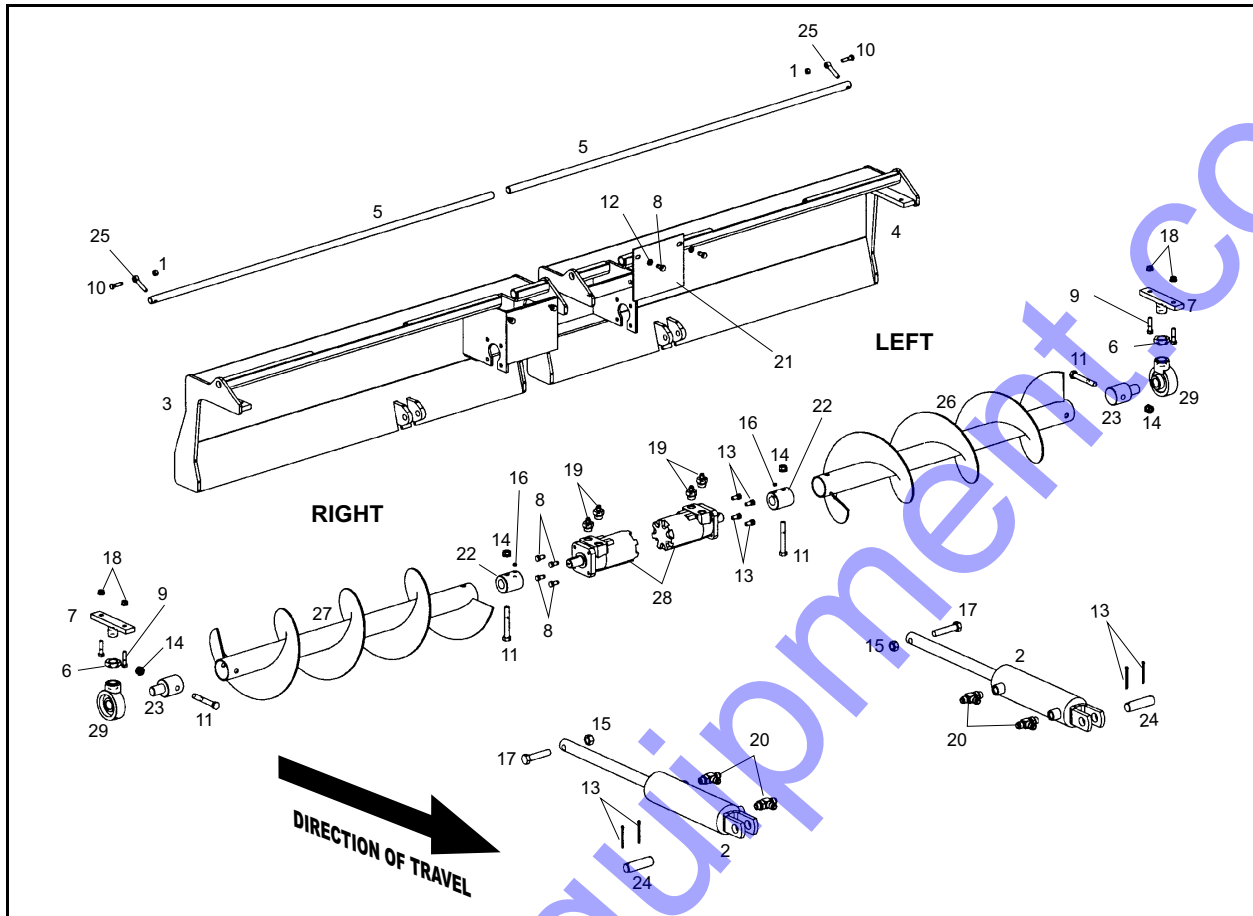


**1648 - CHASSIS**  
**430042 - FLOW GATE WITHOUT AUGERS**



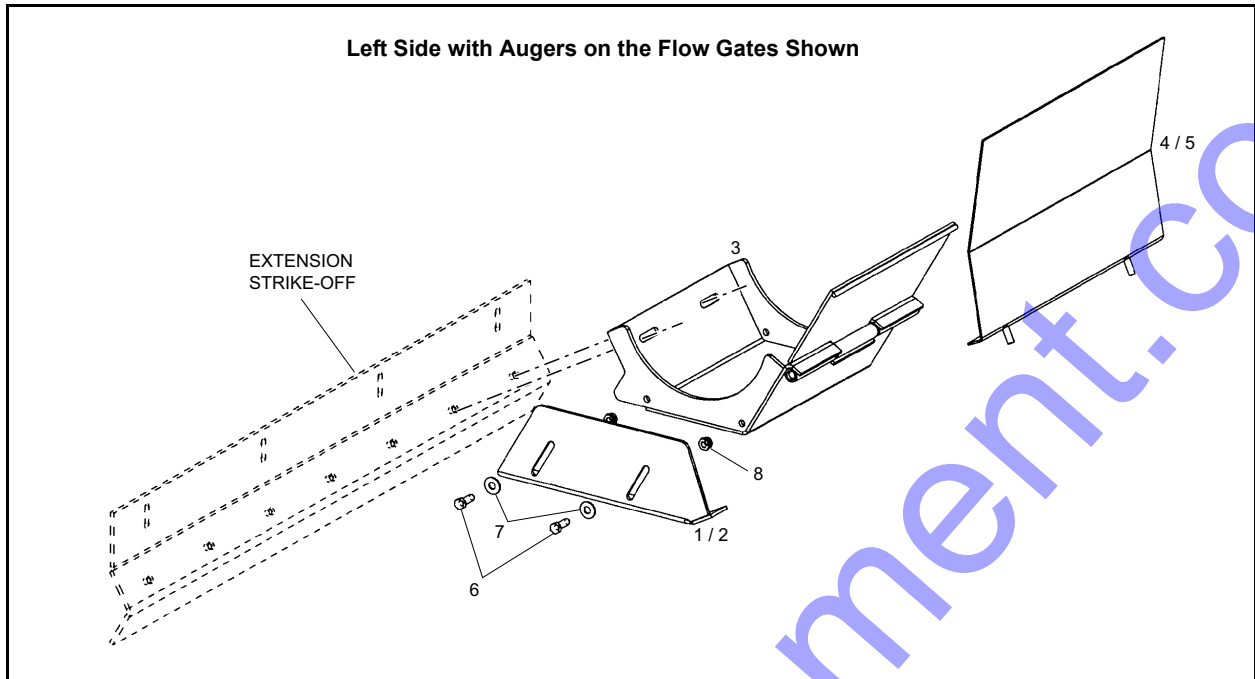
Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	21009	LOCK NUT 5/16"	2	8	26812	COTTER PIN, 3/16X2	4
2	P100713	GATE CYLINDER	2	9	29759	FLEXLOC NUT, 1/2-13	4
*	P700669	SEAL KIT		10	3758	NUT, 5/8"	2
3	P100788	HINGE PIN	2	11	7294	BOLT, 5/8-11X3	2
4	P101415	RIGHT FLOW GATE	1	12	P114742	TEE RUN MJ08-MAORB08-MJ08	4
5	P101408	LEFT FLOW GATE	1	13	P471296	PIN, CYLINDER END	2
6	P101124	DEFLECTOR	1	14	P472798	ROD END	2
7	4490	BOLT, 5/16-18X1-1/4	2				

**1648 - CHASSIS  
430015 - FLOW GATE WITH AUGERS**



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	21009	LOCK NUT 5/16"	2	16	6086	SET SCREW, 3/8-16	2
2	P100713	GATE CYLINDER	2	17	PL50578	BOLT, 5/8-11X3	2
*	P700669	SEAL KIT		18	PL520022	FLEXLOC NUT, 3/8-16	4
3	P100714	RIGHT FLOW GATE	1	19	PL60253	ADAPTER, STRAIGHT	4
4	P100715	LEFT FLOW GATE	1	20	P114742	TEE RUN MJ08-MAORB08-MJ08	4
5	P100788	HINGE PIN	2	21	P136200	MOTOR COVER	2
6	P100875	NUT, 3/4-14	2	22	P311600	FEMALE AUGER HUB	2
7	P100884	BEARING SUPPORT	2	23	P311800	MALE AUGER HUB	2
8	3767	BOLT, 3/8-16X3/4	12	24	P471296	PIN, CYLINDER END	2
9	3770	BOT, 3/8-16X1-1/2	4	25	P472798	ROD END	2
10	4490	BOLT, 5/16-18X1-1/4	2	26	P473327	AUGER	1
11	4931	BOLT, 1/2-13X3-1/2	4	27	P473328	AUGER	1
12	70919312	LOCK WASHER, 3/8"	4	28	P480071	AUGER MOTOR	2
13	26812	COTTER PIN, 3/16X2	4	*	P279009	SEAL KIT	
14	29759	FLEXLOC NUT, 1/2-13	4	29	P480177	BEARING	2
15	3758	NUT, 5/8"	2				

**1648 - CHASSIS  
SCREED CUTOFF OPTION**



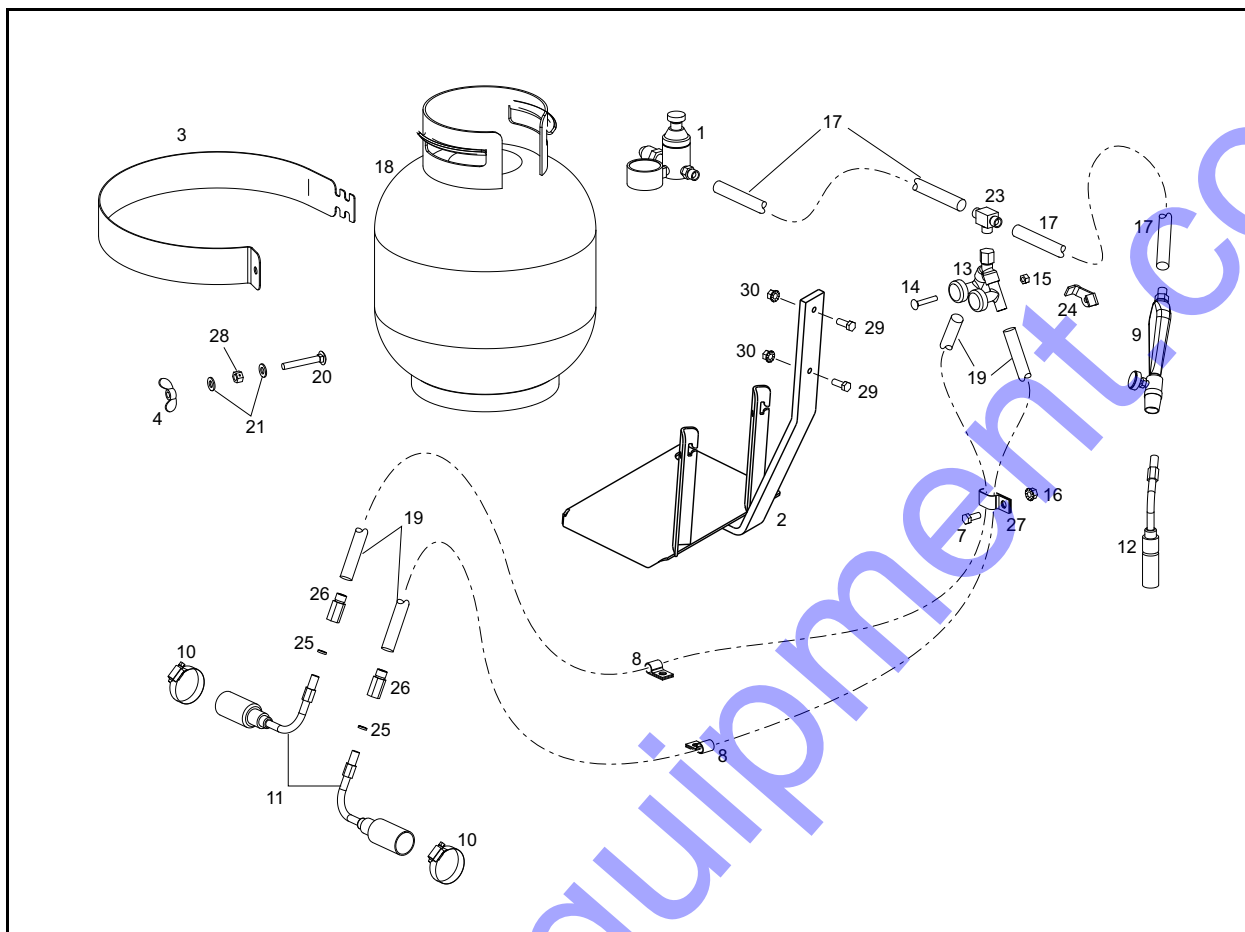
**Pavers with Flow Gate Augers**

Ref. No.	Part No.	Description	12" Cutoff Qty.	24" Cutoff Qty.
1	P101197	LEFT SHOE	1	1
2	P101196	RIGHT SHOE	1	1
3	P101190	CUTOFF, 12"	1	2
4	P101219	BLOCKOFF PLATE, 18"	1	0
5	P101220	BLOCKOFF PLATE, 24"	0	1
6	70923490	BOLT, 3/8-16X1	2	4
7	70918266	FLAT WASHER, 3/8"	2	2
8	PL520022	LOCK NUT, 3/8"	2	4

**Pavers with Screed Extension Augers**

Ref. No.	Part No.	Description	12" Cutoff Qty.	24" Cutoff Qty.
1	P101195	LEFT SHOE	1	1
2	P101194	RIGHT SHOE	1	1
3	P101190	CUTOFF, 12"	1	2
4	P101219	BLOCKOFF PLATE, 18"	1	0
5	P101220	BLOCKOFF PLATE, 24"	0	1
6	70923490	BOLT, 3/8-16X1	2	4
7	70918266	FLAT WASHER, 3/8"	2	2
8	PL520022	LOCK NUT, 3/8"	2	4

**1648 - CHASSIS  
430342 - PROPANE KIT**

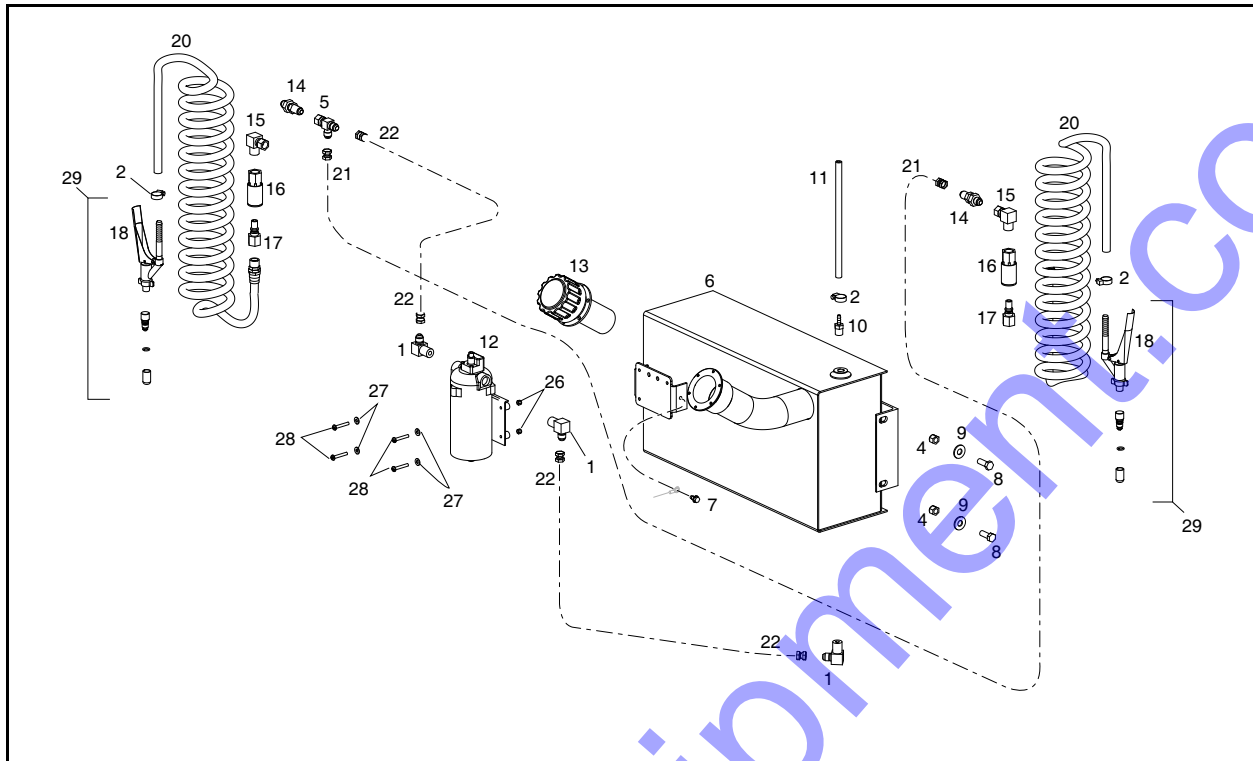


Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	P380200	REGULATOR	1	17	P100533	HOSE/PROPANE	2
2	P176430	ASSY/MOUNTING LP TANK	1	18	*	20# PROPANE TANK	1
3	P175494	BAND/LP	1	19	P270200	HOSE 6FT	2
4	17840	NUT/WING LIGHT 5/16 ACZY	1	20	24632	CB 5/16X2-1/4 C5ZY	1
7	70922126	CS 5/16X3/4 C5ZY	1	21	P650810	FW 5/16 ANZY	2
8	4645	CLAMP/HOSE	2	23	P175562	LP TEE	1
9	P253000	HANDLE	1	24	P175633	MANIFOLD BRACKET	1
10	70921912	#24 SAE HOSE CLAMP	2	25	P175674	GASKET/PLASTIC	2
11	P101148	PROPANE TORCH TIP	2	26	P175811	LP ADAPTER	2
12	30211	PROPANE TORCH TIP	1	27	70933615	CLAMP/HOSE DOUBLE	1
13	P175632	Y VALVE/LP	1	28	21009	LN 5/16 CBZY	1
14	26107	CB 1/4X1-1/2 CBC	1	29	P650525	CS 5/16X1-1/4 C5	2
15	14654	LN 1/4 CBZY	1	30	13585	HN LG FL 5/16 C2ZY	2
16	13585	HN FL SLOC 5/16 CZY	2				

\* Serviced locally

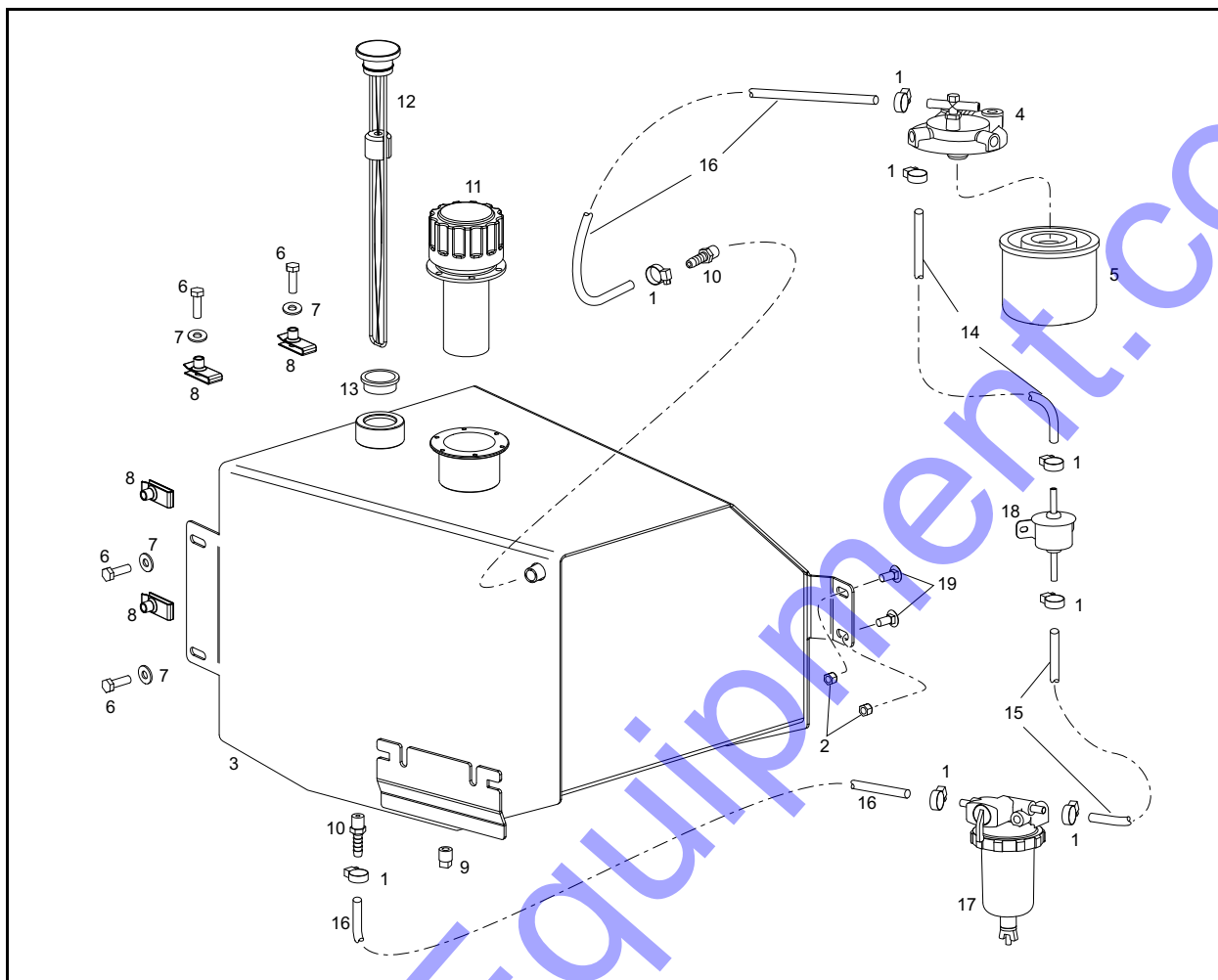


**1648 - CHASSIS**  
**430019 - SPRAYDOWN TANK**



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	P057650	ADP. -6JICM -6NPTM 90DEG	3	15	P471760	ADP. -6PM -6JFS 90	2
2	73162655	HOSE CLAMP #M5	3	16	P471761	COUPLING, QUICK FEMALE	2
4	12027	HEX LOCK NUT 3/8"	4	17	P471762	COUPLING, QUICK MALE	2
5	P072806	ADP. -6FICFS -6JICM TEE	1	18	P175371	VALVE/THRUSTLESS	2
6	P175388	SPRAYDOWN TANK	1	20	P471756	FLEXCOIL HOSE ASY	2
7	9675	SCREW THWH TC USL 1/4 X 1/2 CZY	1	21	P101133	HOSE ASY	1
8	70923490	CAP SCREW, 3/8 X 1 C5ZY	4	22	P470464	HOSE ASY	2
9	70918266	FLAT WASHER, 3/8 AWZY	4	26	3753	HLN INST #1024 CZY	4
10	7244	HOSE BARB, 1/4NPT X 1/4	1	27	3779	FW #10 AZY	4
11	29988	HOSE, CLEAR 1/4 X 3/32 WALL	1	28	3776	PHMS SLT #1024X1-1/4 ZY	4
12	30294	PUMP	1	29	11859/11860	VALVE/HAND APPLICATOR (INCL. 18, 19, 23, 24)	2
13	P470472	FILLER CAP ASY	1				
14	P142900	ST BLKHD MJ06-MJ06	2				

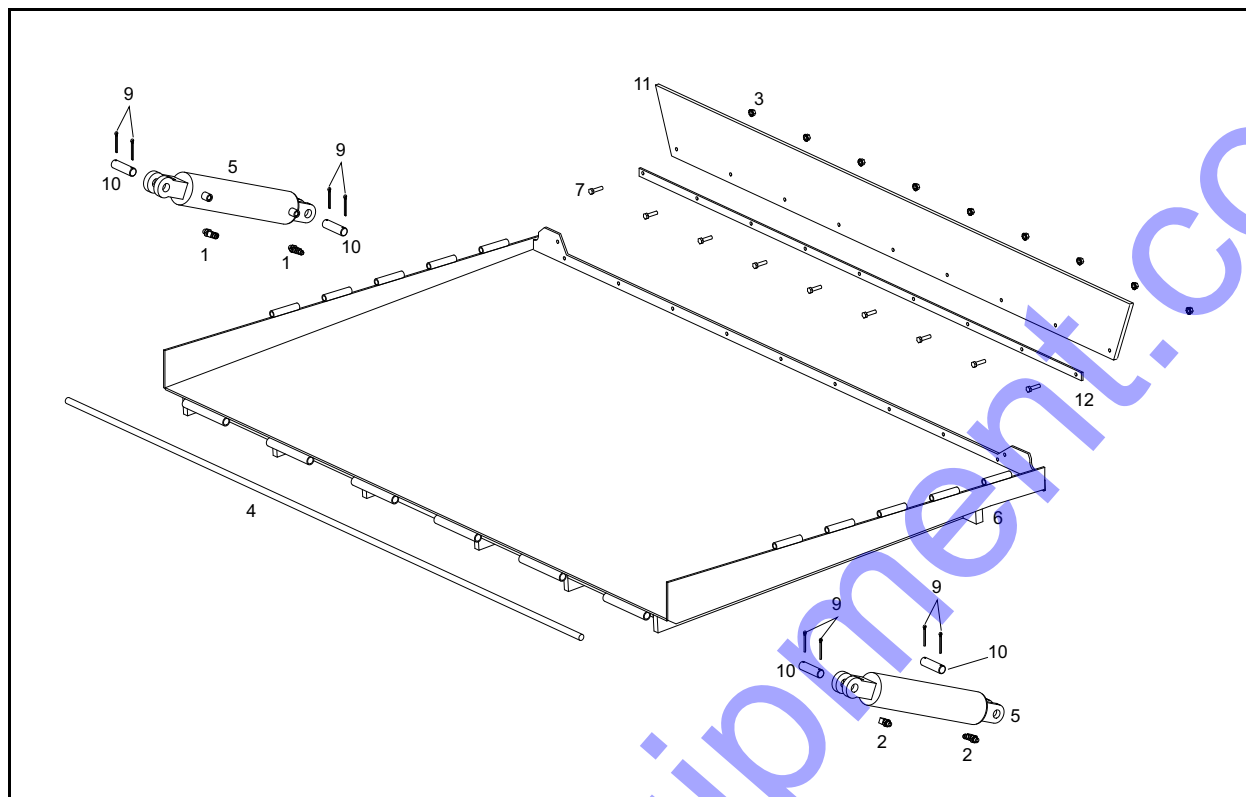
**1648 - CHASSIS**  
**430339 - FUEL SYSTEM**



Ref. No.	Part No.	Description	Qty.
1	73162655	CLAMP, HOSE #M5	8
2	13585	HEX NUT, SLOC 5/16	2
3	P175646	FUEL TANK	1
4	P186467	FUEL FILTER BRACKET	1
5	P270979	FUEL FILTER	1
6	70926149	CAP SCREW, 5/16 X 1 C5ZY	4
7	3778	LOCK WASHER, 5/16	4
8	30309	NUT, RETAINING CLIP 5/16	4
9	70901652	PLUG, -4NPTM	1
10	7393	HOSE BARB, 1/4 NPT X 5/16	2
11	P470472	FILLER CAP	1

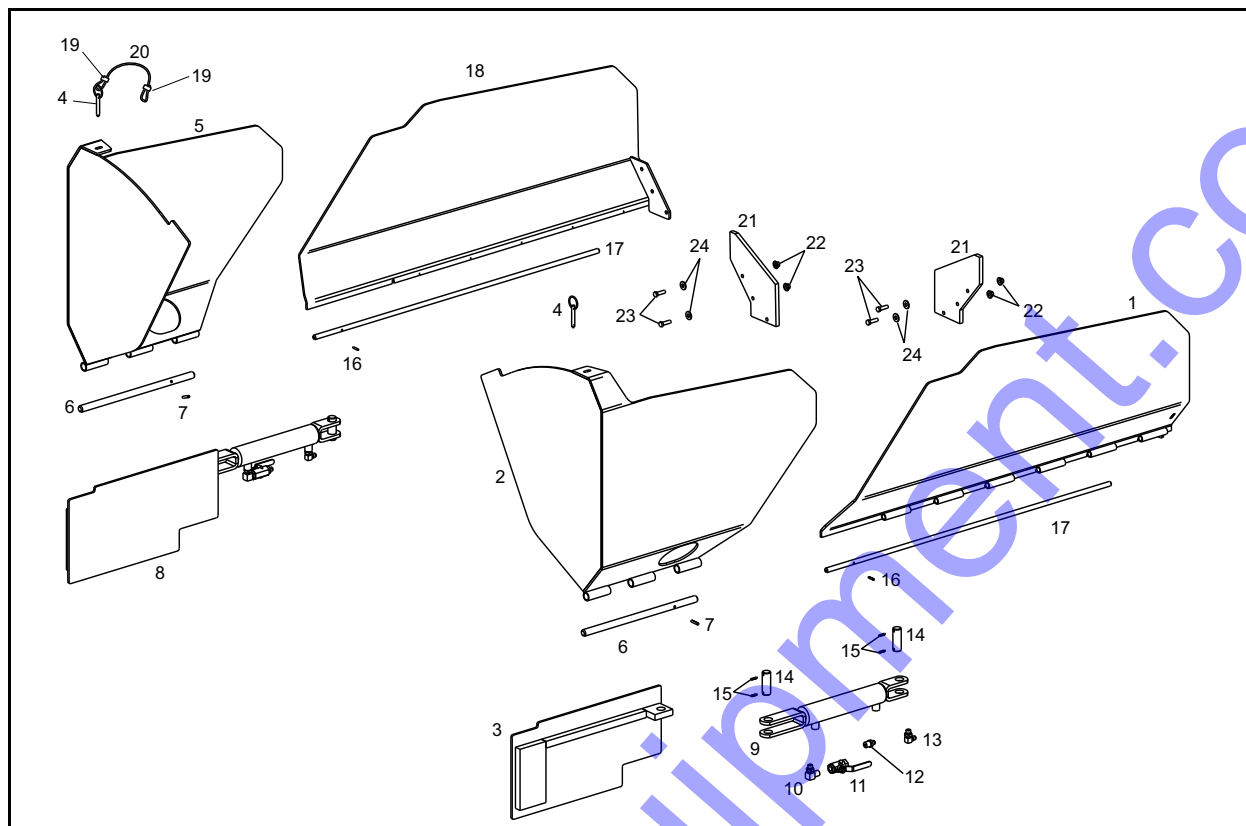
Ref. No.	Part No.	Description	Qty.
12	P473298	FUEL GAUGE 13"	1
13	P473303	GROMMET, FUEL GAUGE KELCH	1
14	P175751	HOSE/FUEL5/16X8.5"	1
15	P175752	HOSE/FUEL 5/16X10"	1
16	P175882	HOSE/FUEL 5/16X12"	2
17	P188492	SEPARATOR ASSY	1
18	P186308	PUMP ASSY / FUEL FEED	1
19	24633	CB 5/16 X 1-1/4 C5Z4	2

**1648 - CHASSIS**  
**430013 - HOPPER**



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	P054820	ADP, .ADJ TEE -6OPM -6JIC	2	6	P175886	HOPPER	1
2	P068938	ADP, -6ORM -6JICM 90 DEG	2	7	3770	CS 3/8X1-1/2 C5ZY	9
3	18939	HN LF SLOC 3/8 CZ	9	9	26812	CP EPSC 3/16 X 2 Z	8
4	P100687	PIN / HOPPER HINGE	1	10	P471296	PIN / CYLINDER END	4
5	P50304590	CYLINDER / HOPPER	2	11	P175879	LIP / HOPPER	1
*	P50290094	SEAL KIT		12	P175887	BAR / HOPPER LIP	1

**1648 - CHASSIS  
430336 - WINGS / SIDE GATES**

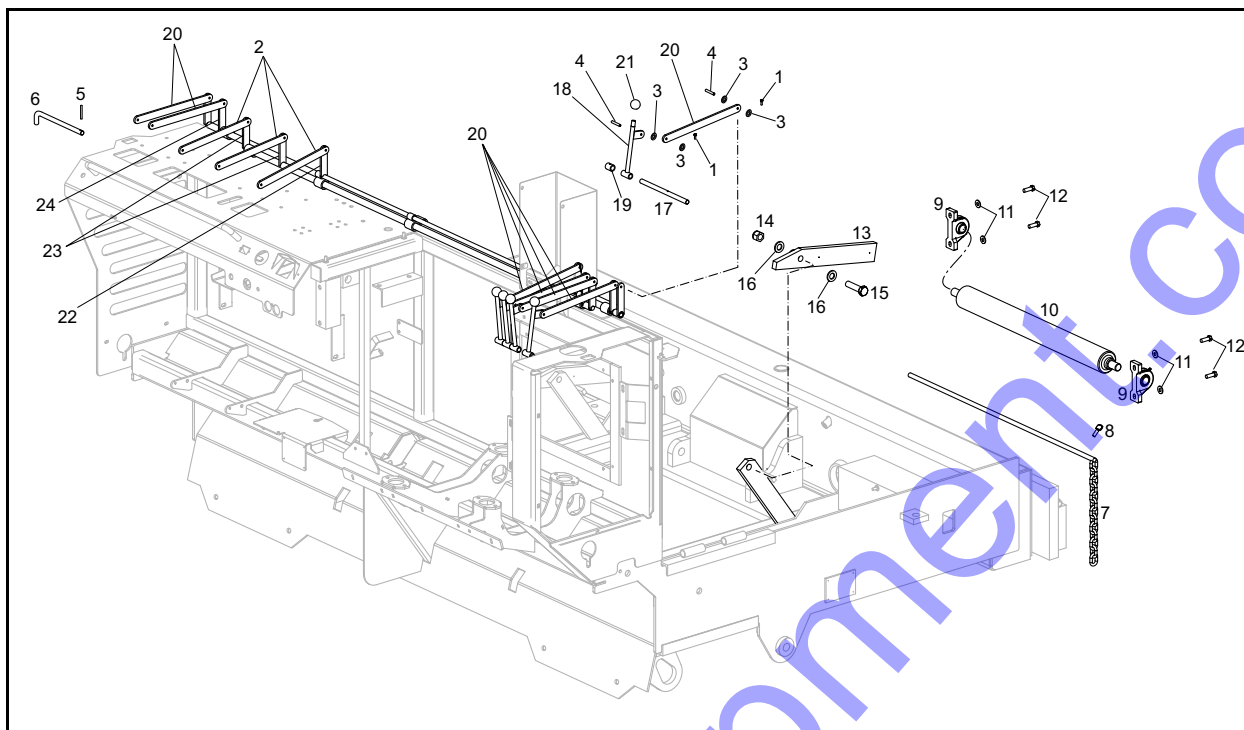


Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	P175661	WELD/RT FRONT WING	1	13	P068938	ELBOW/90 DEG ADJUSTABLE	2
2	P175043	WELD/RT REAR WING	1	14	P471297	PIN/CYLINDER CLEVIS END	4
3	P100382	WELD/RT SIDE GATE	1	15	26812	CP EPSC 3/16 X 2 Z	8
4	P470609	PIN/QUICK RELEASE	2	16	26471	PIN/SPRING	2
5	P175628	WELD/LT REAR WING	1	17	P100670	PIN/1648 FRONT WING	2
6	P100671	PIN/1648 REAR WING	2	18	P175663	WELD/LT FRONT WING	1
7	15580	PIN/ROLL .25X 1.25	2	19	P122633	CRIMP SLEEVE	4
8	P100381	WELD/LT SIDE GATE	1	20	P470610	WIRE/NYLON COATED	2
9	P50304589	CYLINDER/SIDE GATE	2	21	P175881	LIP/WING	2
*	P50289470	SEAL KIT		22	18939	LN LG FL SERR 3/8 CZ	4
10	26440	ADP 90-6 ORING -6MP	2	23	3769	CS 3/8X1-1/4 C5ZY	4
11	30298	VALVE/.375"	2	24	70918266	FW 3/8 AWZY	4
12	P062889	ADAPTER/STEEL PIPE	2				



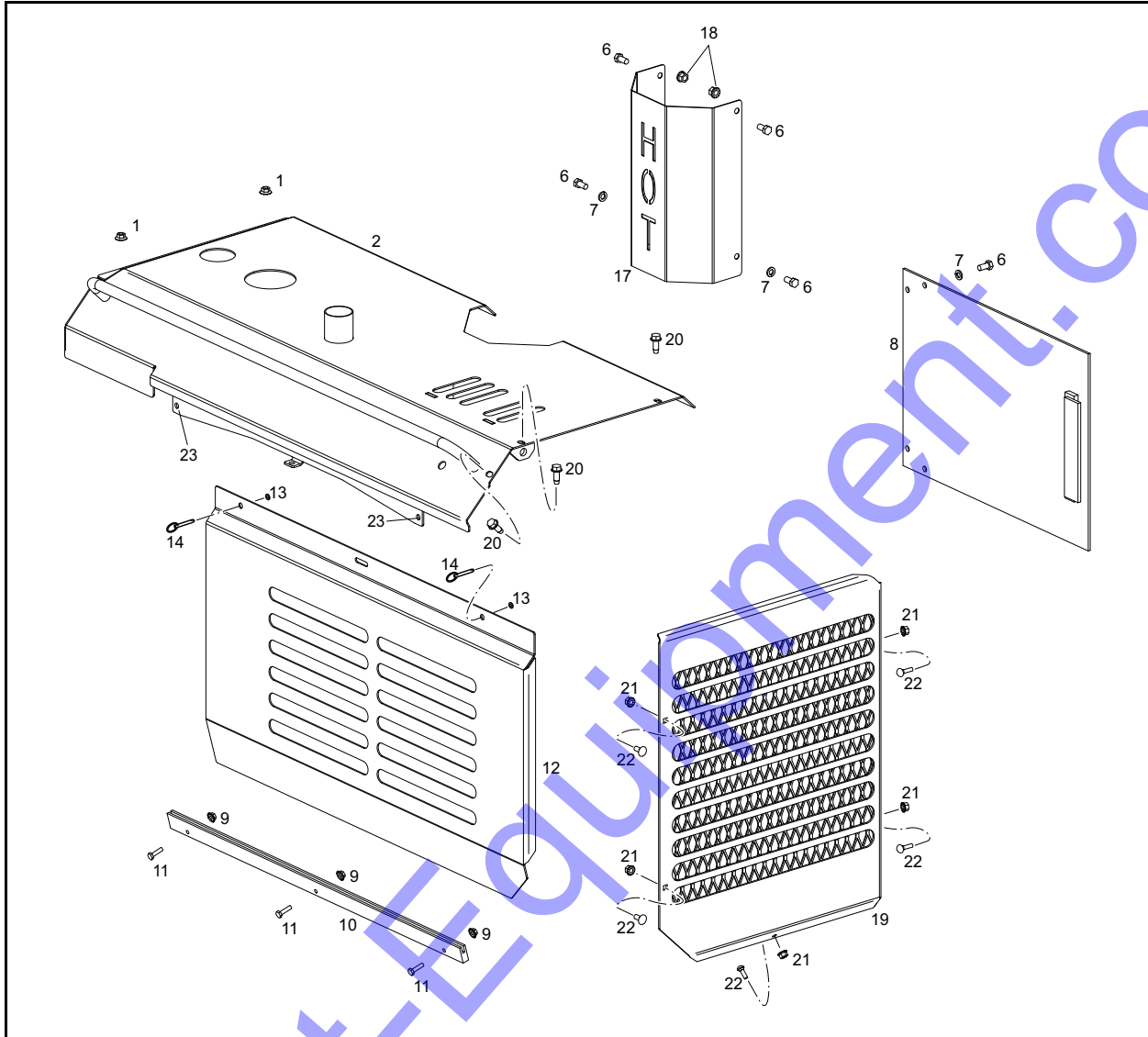
# 1648 - CHASSIS

## 430335 - CHASSIS / BACKWALL



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	70919313	CP EPSC 3/32 X 3/4 Z	20	13	P470025	FLOOR PROP	2
2	P143200	1/4" X1 X 12" DUAL CONTROL	3	14	70916170	HLN INST 3/4 CZY	2
3	3779	FW #10 AZY	40	15	17980	BOLT/HHCS .75-10X3.0 GR8	2
4	30088	CLEVIS PIN 1/4 X 51/64 ZY	20	16	70929188	FW 3/4 AWZY	4
5	11147	PIN/HAIR	1	17	P101126	PIN/RT CONTROLS	1
6	P470246	PIN/DRIVE CONTROL STOP	1	18	P101083	WELD/CONTROL ARM	5
7	P470014	WELD ALIGNMENT SLIDE	2	19	P101211	SPACER/RT CONTROLS	1
8	30089	SCREW/THUMB .38-16 X 1	2	20	P137200	1/4" X 1 X 13" DUAL CONTROL	7
9	P024000	BEARING 1" PILLOW BLOCK	4	21	75241792	KNOB/BALL 1-1/4 X 1/2-13	5
10	P470606	BAR/PUSH ROLLER	2	22	P101089	WELD/AUGER CONTROL	1
11	18832	FW 7/16 ZY	8	23	P101087	WELD/EXTEN-FLOOR CONTROL	2
12	C8T9382	CS 7/16X1-1/4 C5	8	24	P101080	WELD/DUAL DRIVE CONTROL	1

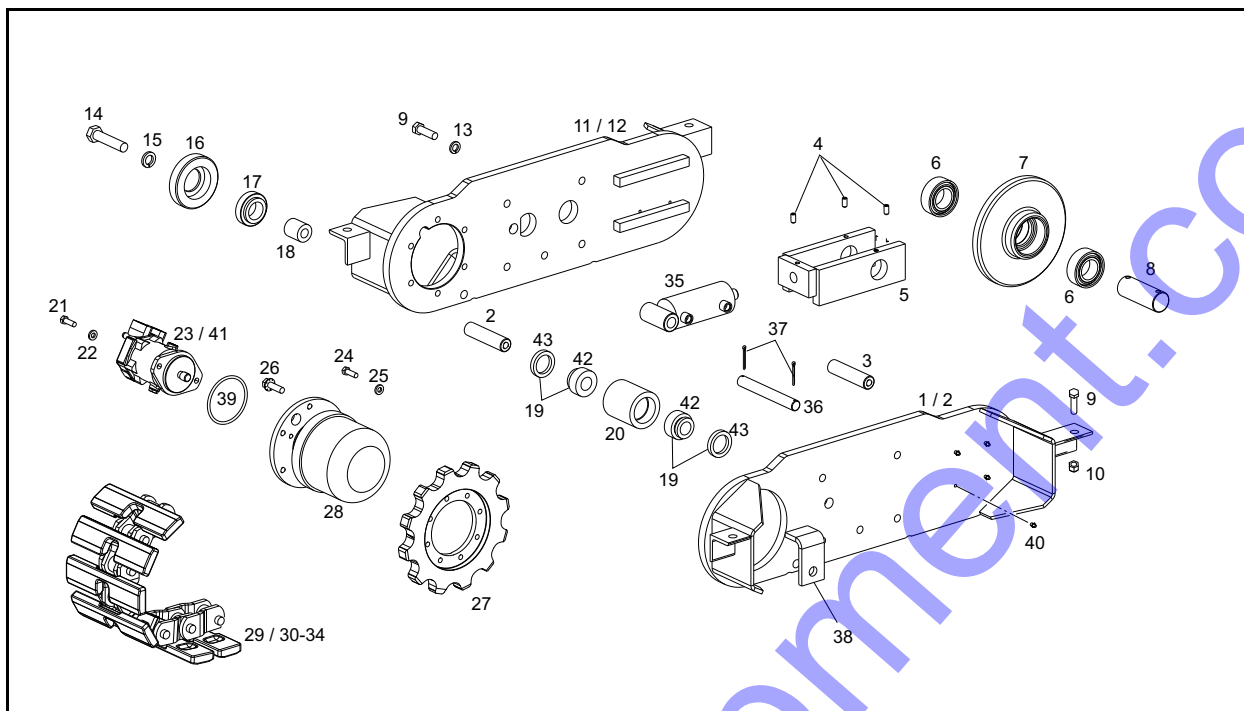
**1648 - CHASSIS  
430343 - COVERS**



Ref. No.	Part No.	Description	Qty.
1	13585	HN LF SLOC 5/16 CZ	2
2	P175533	WDMT/RT COVER	1
6	3767	CS 3/8X3/4 C5ZY	8
7	70919312	LW 3/8 RZY	6
8	P471547	ACCESS PANEL	1
9	27146	HN LF SLOC 1/4 CZ	3
10	P471855	NYLATRON GUIDE	1
11	70926771	CS 1/4X1 C5ZY	3
12	P175535	COVER/ENGINE	1

Ref. No.	Part No.	Description	Qty.
13	PL62721	FASTENER RETAINER	2
14	PL62720	FASTENER/STUD	2
17	P175678	COVER/MUFFLER	1
18	18939	LN FL SERR 3/8 CZY	2
19	P175764	WDMT/COOLER COVER	1
20	30096	SCREW/THWH TF USL 3/8X1 CZY	3
21	13585	LN FL SERR 5/16 CZY	5
22	17925	CB 5/16X3/4 C5ZY	5
23	PL62722	FASTENER RECEPTACLE	2

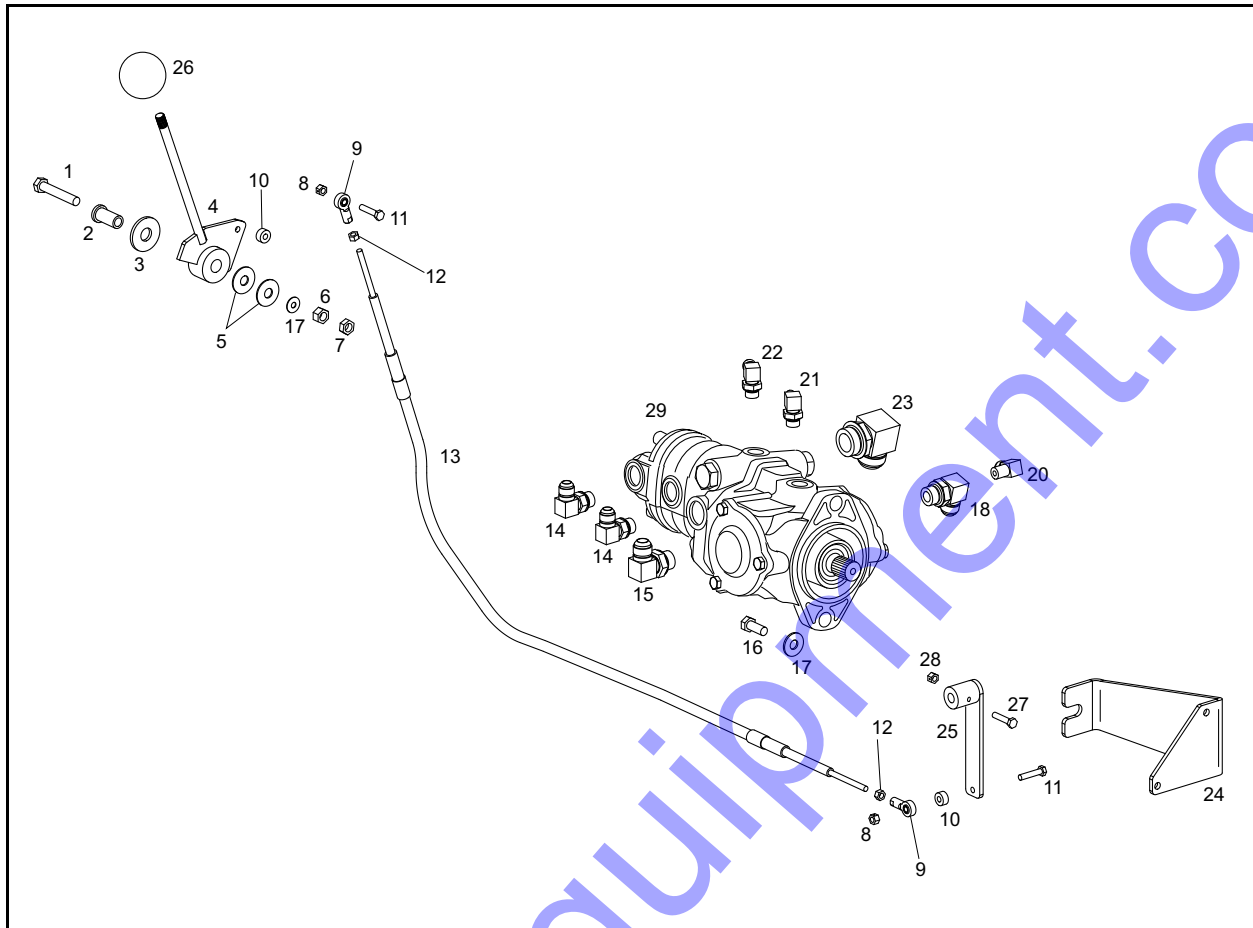
**1648 - CHASSIS**  
**430012 - TRACK**



Quantities listed and drawing are shown for right track assembly only, except Refs. 2 & 12

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	P470574	RIGHT TRACK FRAME	1	23	30297	MOTOR/DRIVE	1
2	P470572	LEFT TRACK FRAME (not shown, for left side track only)	1	24	24634	CS 1/2X1-1/2 F8ZY	8
3	P480122	SHAFT/TRACK ROLLER	5	25	3784	WASHER/HARD .50	8
4	28204	SS .50 X 1	3	26	30094	BOLT/FLANGE .625-11X 2	6
5	P471504	WELDMENT/TRACK YOKE	1	27	P471543	MACHINE/DRIVE SPROCKET	1
6	P471502	BEARING/IDLER HUB	2	28	P271900	HUB/TORQUE (SEE PAGE 46 FOR DETAIL)	1
7	P471448	MACHINED SPROCKET, IDLER	1	29	P473056	WELDMENT/TRACK (INCLUDES REFS 30-34)	1
8	P471501	AXLE/FRONT MACHINED	1	30	P700645	STANDARD PAD W/ LINK	27
9	70922744	CS 3/4X2-1/2 C5ZY	14	31	P700646	LH PAD W/ LINK	1
10	70916170	HLN INST 3/4 CZY	4	32	P700647	RH PAD W/ LINK	1
11	P470571	RIGHT TRACK MOTOR FRAME	1	33	P362400	PIN/LINKAGE	1
12	P470573	LEFT TRACK MOTOR FRAME (not shown, for left side track only)	1	34	P362500	PIN/COTTER	1
13	70928455	LW 3/4 RZY	10	35	P480118	CYL.TRACK TENSION SEAL KIT	1
14	30095	BOLT 1-8X 4.50	2	36	P480124	PIN/TRACK CYL.	1
15	5351	LW 1 RZY	2	37	26812	CP EPSC 3/16 X 2 Z	2
16	P471479	ROLLER/OUTRIGGER	2	38	P471177	OUTRIGGER BRACKET	1
17	P024500	BEARING W/O COLLAR	2	39	7746	O-RING 045 N70	1
18	P471182	SPACER	2	40	30097	GREASE ZERK .312	8
19	P069485	BEARING/1.44 DIA.	6	41	P176123	SEAL KIT 3.02 MOTOR	1
20	P471186	ROLLER/TRACK	3	42	P069485	BALL BEARING	6
21	3774	CS 1/2X1-1/2 C5ZY	2	43	P069485	BEARING COLLAR	6
22	3784	FW 1/2 AWZY	2				

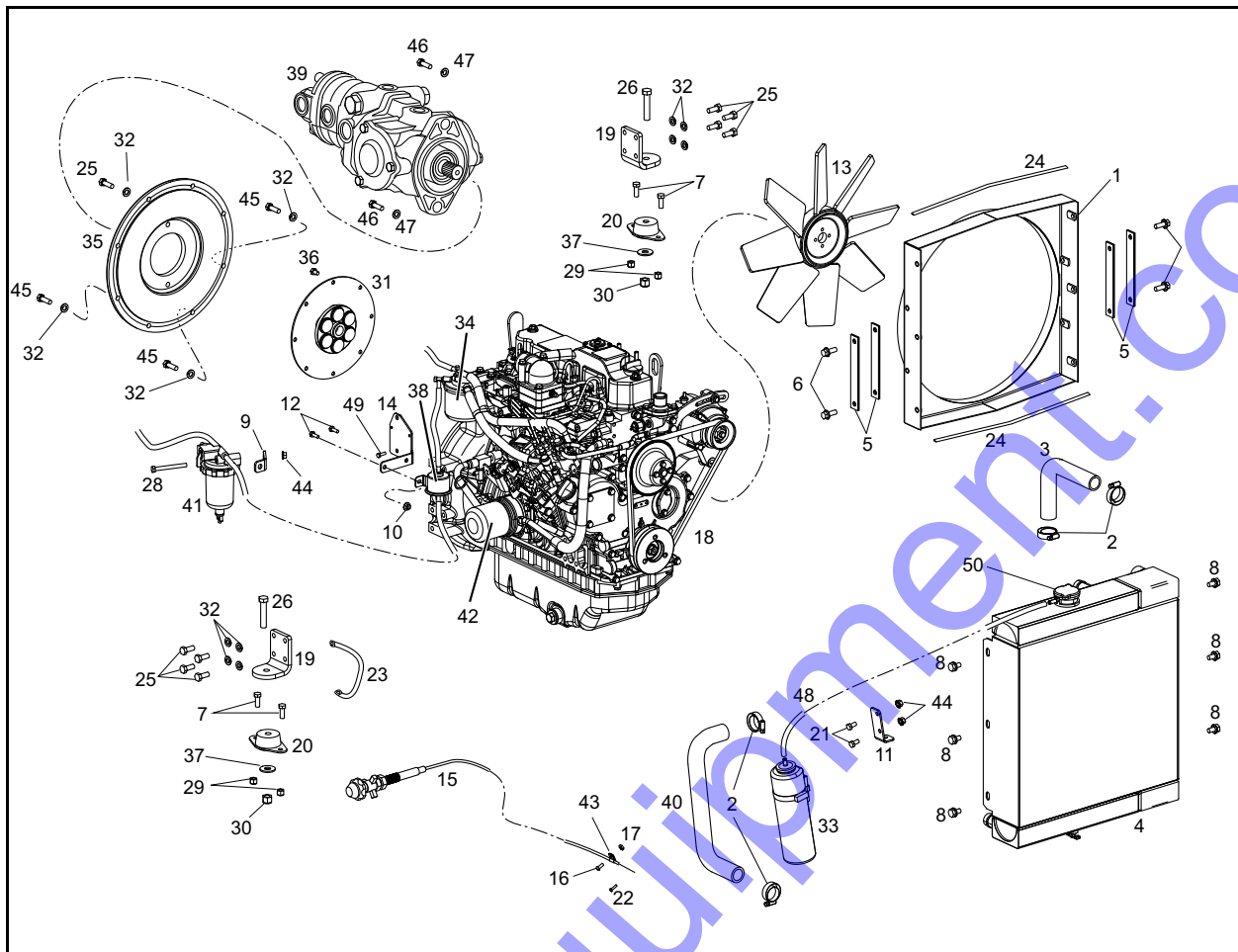
**1648 - CHASSIS  
430350 - HYDROSTATIC PUMP LINKAGE**



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	5360	CS 1/2X3 C5ZY	1	15	P055005	ELBW/HYD FIT 90°	1
2	P175559	TUBE/PIVOT	1	16	70923473	CS 1/2X1-1/4 C5ZY	2
3	P081073	DISK/FRICTION	1	17	3784	FW 1/2 AWZY	3
4	P175560	WDMT/DRIVE LEVER	1	18	P237000	ADAPTER .375 PIPE 90°	1
5	30093	WASHER/BELLEVILLE 1/2 (NOTE: washers assembled with concave sides facing)	2	20	P470673	ADAPTER 90°	1
6	70916951	HN 1/2 C2ZY	1	21	P110227	ELBOW/MALE 3/8	1
7	70913744	HJN 1/2 C2ZY	1	22	P054816	ELBOW 90 DEG STR THD "O"	1
8	21009	LN 5/16 CBZY	2	23	P127349	90 MJ20-MAORB20	1
9	73162973	ROD END/FEMALE 5/16	2	24	P175563	BRKT/CABLE SPPT	1
10	P175704	SPACER/.37 LONG	2	25	P175556	WDMT/PUMP ARM	1
11	14683	CS 5/16X1-1/2 C5ZY	2	26	75241792	KNOB/BALL 1-1/4 X 1/2-13	1
12	5603	HN 5/16 F2Z	2	27	PL50065	NUT .375-24 FLEXLOCK Z	1
13	P175689	CABLE/PUMP CONTROL	1	28	26822	HC .375 X 2 C8 Z	1
14	P067761	ELBOW/MALE 90°	2	29	P473287	PUMP/AXIAL GEAR (SEE PAGE 42 FOR DETAIL)	1

# 1648 - CHASSIS

## 430337 - ENGINE



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	P175523	FAN SHROUD	1	17	70916621	HN MS #1024 CZY	1
2	70922660	HOSE CLAMP	4	18	P176872	ENGINE/YANMAR 4TNV88-BDGP	1
3	P175520	HOSE/UPPER RADIATOR	1	19	P175467	MOUNT/ENGINE	4
4	P175518	RADIATOR	1	20	11441	ISOLATION MOUNT	4
5	P175551	RADIATOR SPACER	4	21	12475	CS 5/16X5/8 C5ZY	2
6	27196	CS FL LOCK 3/8 X 1 C5ZY	4	22	27210	CS M4-0.7X16 C8.8 ZY	1
7	3769	CS 3/8X1-1/4 C5ZY	8	23	PL630004	STRAP GRND 4 GA X 14" SILVER	1
8	27191	CS FL LOCK 3/8 X 5/8 C5ZY	6	24	P132270	SHROUD SEAL	2
9	P175634	BRKT/WATER SEPARATOR	1	25	5218	CS M10-1.50 X 25 C8.8 ZO	21
10	27146	HN LF SLOC 1/4 CZ	2	26	70923752	CS 1/2X2-1/2 C5ZY	4
11	P175640	BRKT/WATER BOTTLE SPPT	1	28	3766	CS 5/16 X 3 C5ZY	1
12	3759	CS 1/4X3/4 C5ZY	2	29	12027	HLN INST 3/8 CZY	8
13	P189938	COOLING FAN	1	30	10475	HLN INST 1/2 CZY	4
14	P175635	BRKT/FUEL PUMP	1	31	P250-32577	FLEXIBLE DRIVE PLATE	1
15	P471410	CABLE/THROTTLE CONTROL	1				
16	18702	RHMS SLT #1024X1/2 CZY	1				

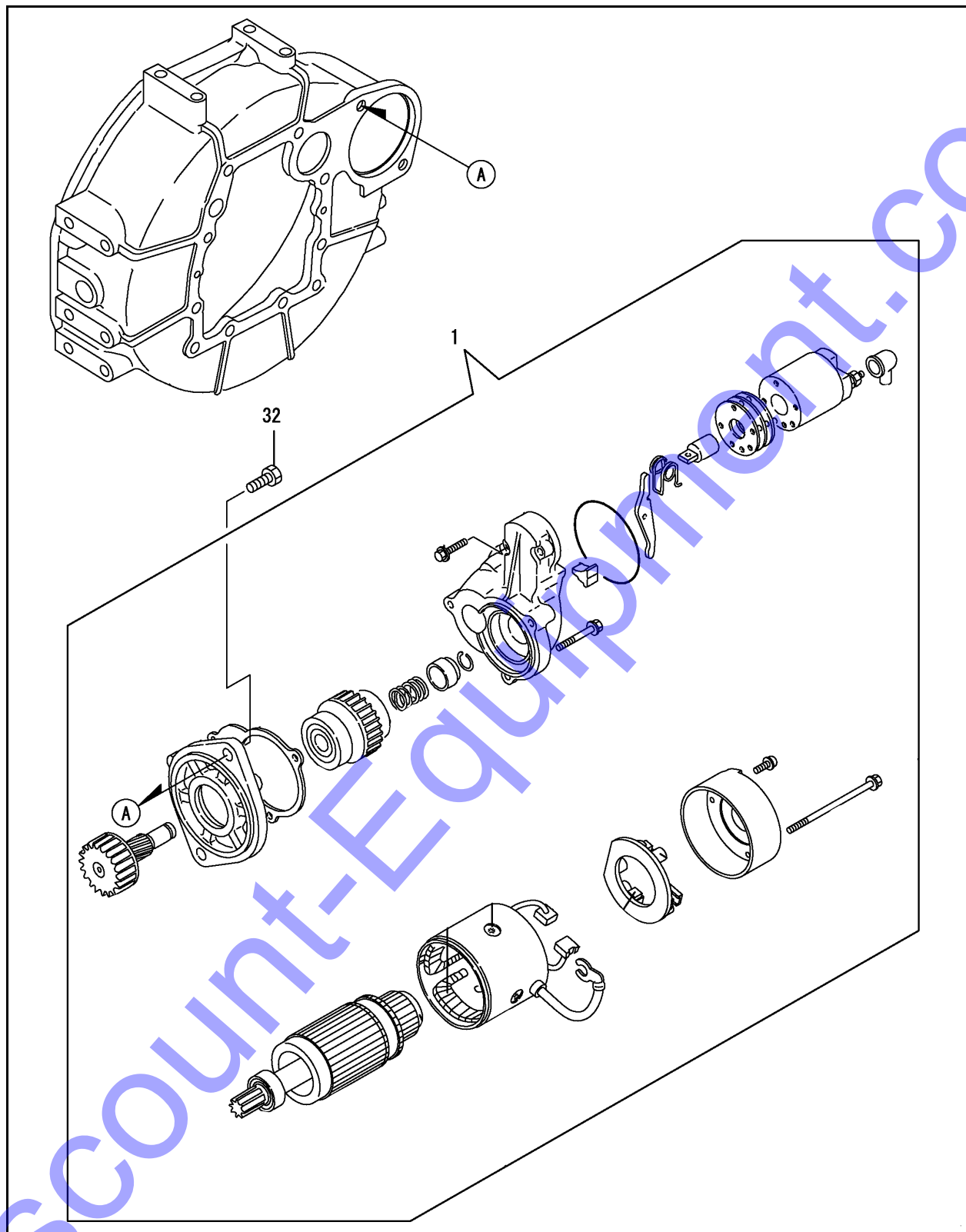
**1648 - CHASSIS**  
**430337 - ENGINE**

Ref. No.	Part No.	Description	Qty.
32	3785	LW 7/16 RZY	24
33	P425-36233	OVERFLOW BOTTLE	1
34	P270979	FUEL FILTER	1
35	P160-32740	PLATE/PUMP MOUNT	1
36	3929	CS M8-1.25X16 C8.8ZY SP DIN931	8
37	3784	FW 1/2 AWZY	2
38	P186308	PUMP ASSY/FUEL FEED	1
39	P473287	PUMP (SEE PAGE 42 FOR DETAIL)	1
40	P175519	HOSE/LOWER RADIATOR	1
41	P188492	SEPARATOR ASSY	1
42	P195568	OIL FILTER	1
43	P471411	CLAMP/THROTTLE CABLE	1
44	13585	HN FL SLOC 5/16 CZY	3
45	11106431	CS M10-1.5X30 C8.8 ZY	3
46	70923473	CS 1/2 X 1-1/4 C5ZY	2
47	3784	FW 1/2 AWZY	2
48	P101132	OVERFLOW HOSE	1
49	16043431	CS M8-1.25X20 C8.8 ZY	2
50	P139476	CAP/RADIATOR	1

\* P175749 was replaced by P176872 for service



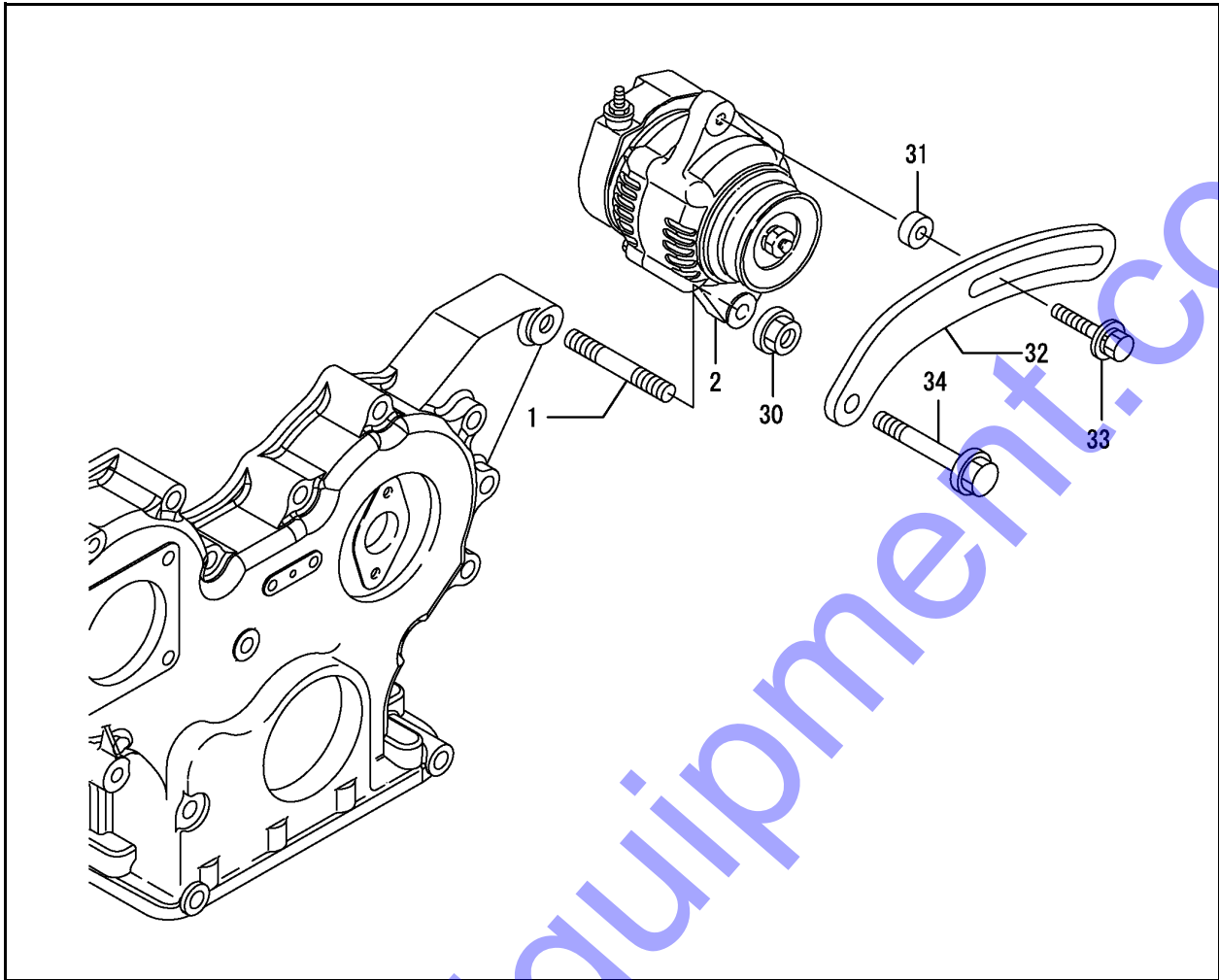
**1648 - YANMAR ENGINE  
MODELS 4TNV88-BDGP/4TNV88-XGP STARTER**



Ref. No.	Part No.	Description	Qty.
1	P188586	STARTER	1
32	P188748	BOLT M12X 25 PLATED	2

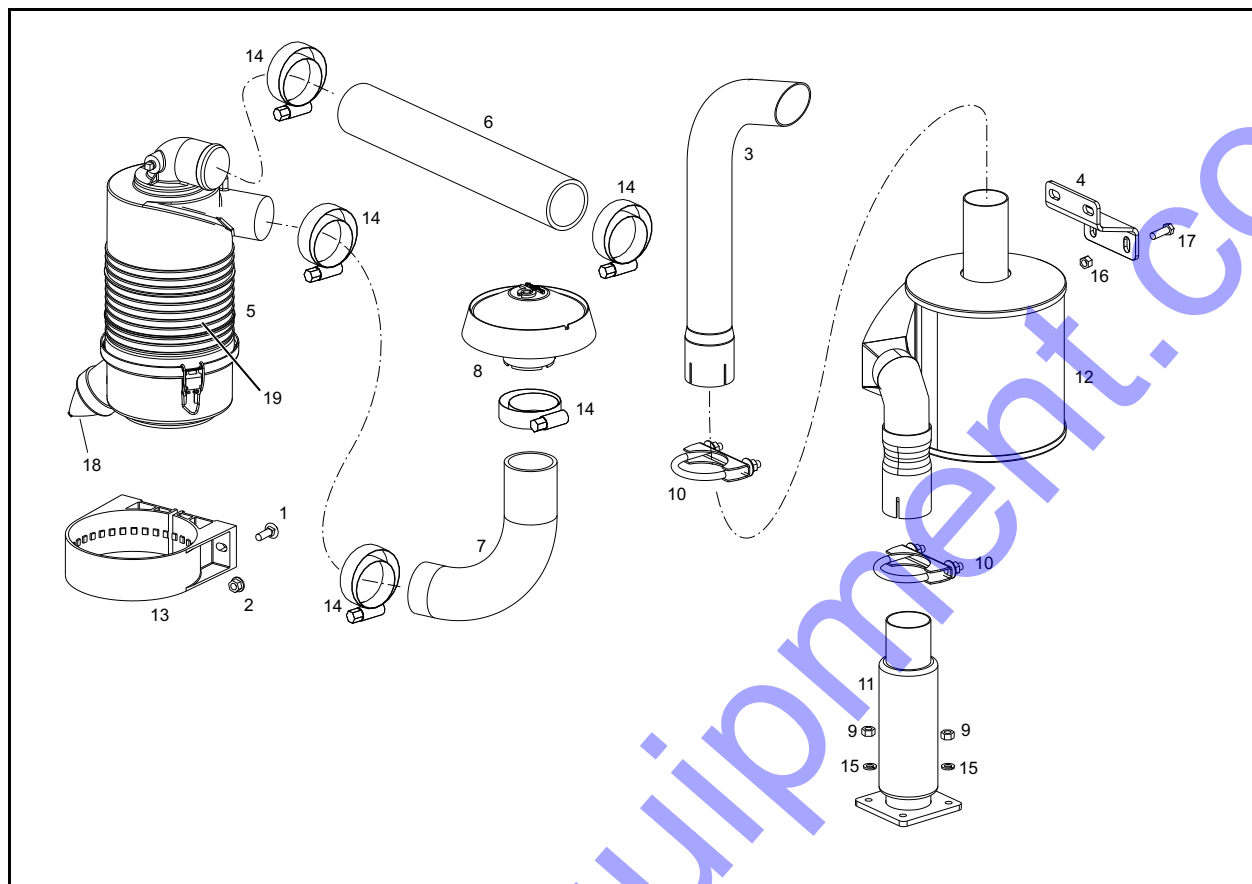
# 1648 - YANMAR ENGINE

## MODELS 4TNV88-BDGP/4TNV88-XGP GENERATOR



Ref. No.	Part No.	Description	Qty.
1	P186484	STUD	1
2	P188636	GENERATOR	1
30	P138141	NUT	1
31	P188500	ADJUSTER/BELT	1
32	P176153	ADJUSTER/BELT	1
33	P192273	BOLT/ADJUSTER	1
34	P425-34747	BOLT M8 X 45 PLATED	1

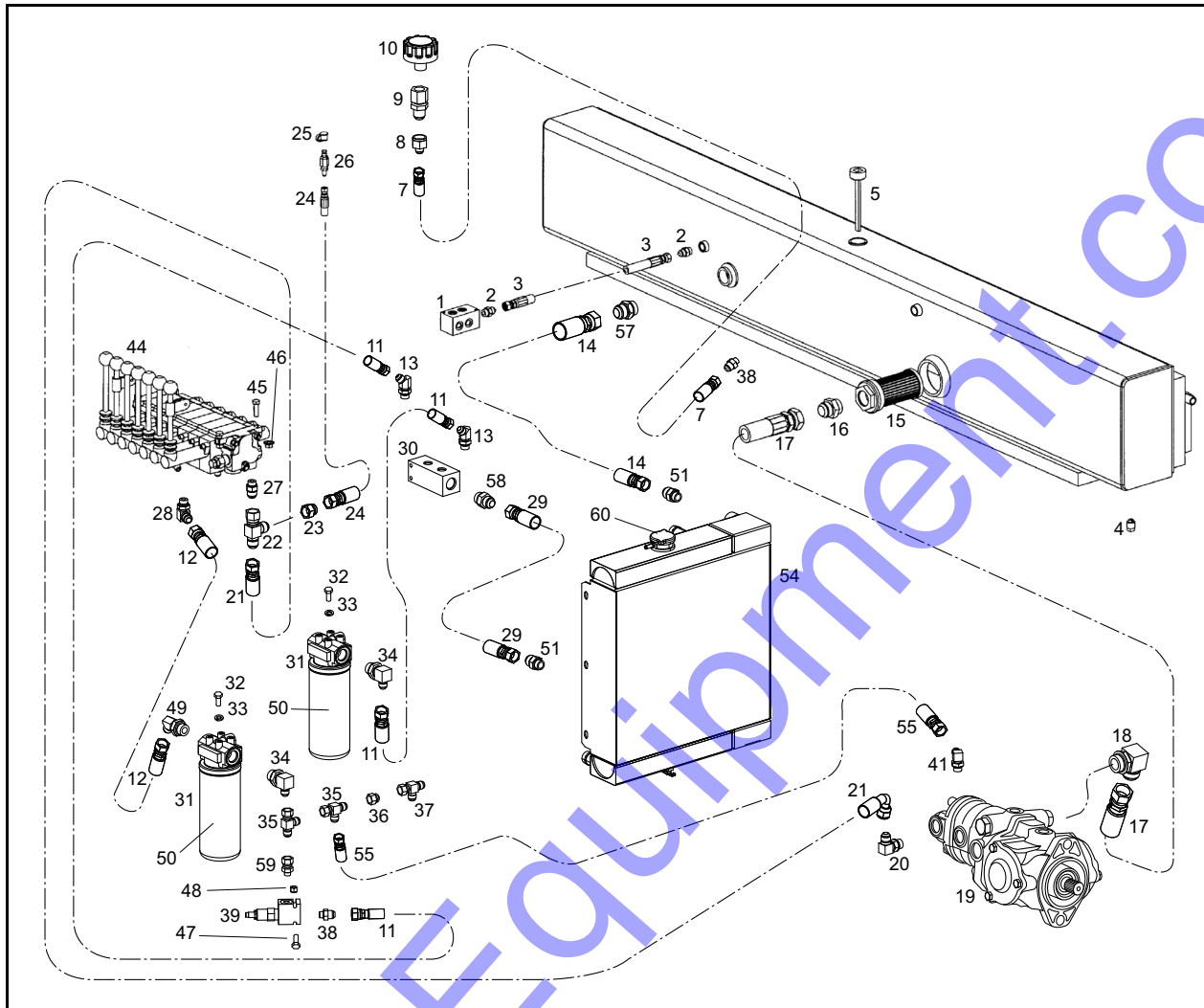
**1648 - YANMAR ENGINE  
430337 - ENGINE EXHAUST / AIR INLET**



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	24631	CB 5/16X1 C5ZY	2	11	P175629	TUBE/EXHAUST FLEXIBLE	1
2	13585	HN FL SLOC 5/16 CZY	3	12	P175676	MUFFLER/TS20TL	1
3	P175708	TUBE/EXHAUST 2"	1	13	P175781	BRKT/PLASTIC 5" MOUNT	1
4	P175715	BRKT/UPPER MUFFLER SPPT	1	14	70921913	CLAMP/HOSE #40	4
5	P175783	AIR CLEANER	1	15	3778	LW 5/16 RZY	4
6	P175552	HOSE/AIR CLEANER	1	16	18939	LN LG FL SERR 3/8 CZ	2
7	P175706	HOSE/AIR INTAKE 2"	1	17	70923490	CS 3/8 X 1 C5ZY	2
8	P175782	RAIN CAP/2"	1	18	P176136	VAC VALVE	1
9	16100821	HN M8-1.25 C8 ZY	4	19	P175783C1	AIR FILTER ELEMENT	1
10	30208	CLAMP/MUFFLER 5/16 X 2 1	2				

# 1648 - HYDRAULICS

## MAIN HYDRAULICS



Ref. No.	Part No.	Description	Qty.
1	P100357	MANIFOLD/TRACK DRIVE	1
2	P054626	ADAP-80RM-8JICM STR	2
3	P100646	HOSE -8 A8/A8 24"	1
4	PL43221	PLUG 1/2-14 MAGNETIC B.I.	1
5	P013150	WELDMENT / DIPSTICK	1
7	P471415	HOSE ASSY/-8	1
8	P230-32672	REDUCER FJ12-MJ08	1
9	P471289	ADAP 12 BLKHD STR.	1
10	P471247	BREATHER/CAP PRESSURIZED	1
11	P175725	HOSE-8 A8/A8 12"	2
12	P175728	HOSE-10 A10/A10 14.5"	1
13	P076880	45 MJ08-MAORB08	2
14	P175701	HOSE/-16 A12/A16X121.0	1
15	P128299	RESERVOIR SUMP FILTER	1
16	P079038	HYD/FITTING	1
17	P101210	HOSE -20 A20/A20 86"	1
18	P127349	90 MJ20-MAORB20	1
19	P473287	PUMP/AXIAL GEAR (SEE PAGE 42 FOR DETAIL)	1

Ref. No.	Part No.	Description	Qty.
20	P067761	ELBOW/MALE 90 DEG	1
21	P100649	HOSE -10 A10/DS10 40"	1
22	P058610	TEE/FEMALE RUN SWIVEL	1
23	P129848	ST 10FLF 06FLM	1
24	P100948	HOSE -4 A4/A6 15"	1
25	73162660	DUST/CAP QUICK	1
26	PL62834	TESTPORT	1
27	P230-30569	UNION/HYD FITTING	1
28	P067455	ELBOW/HYD FITTING 90 DEG	1
29	P175606	HOSE/-12 A12/A12 48"	1
30	P175604	MANIFOLD/RETURN	1
31	C1967614	CHARGE FILTER AY	2
32	5218	BOLT M10-1.5 x 25 ZY	8
33	70918266	FW 3/8 AWZY	8
34	P121775	ELBOW/HYD FITTING	2
35	P076143	TEE/FEMALE RUN SWIVEL	2
36	PL60588	ADAPTER 37 REDUCING	1
37	P072806	TEE/HYDR. FITTING	1

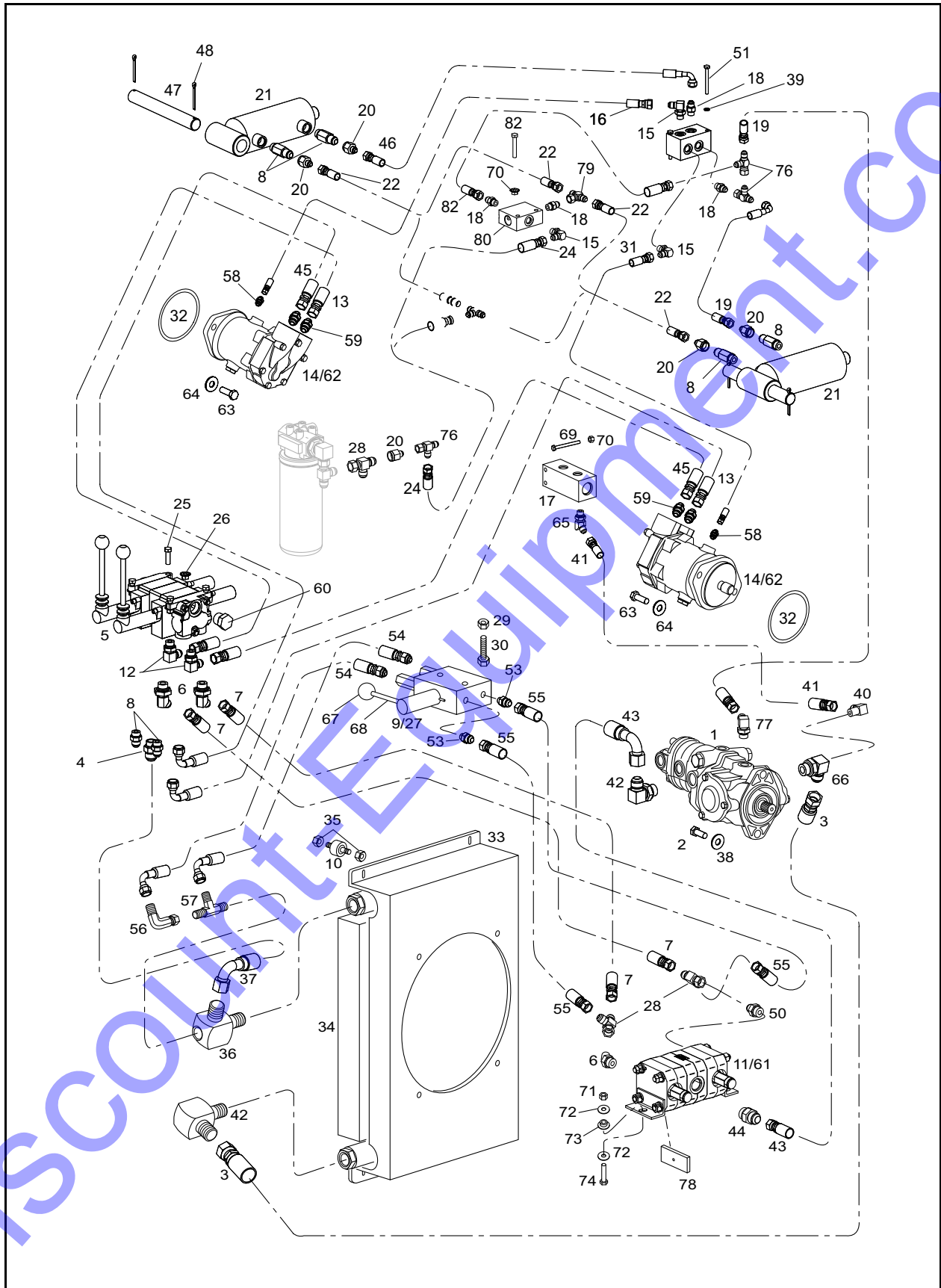
**1648 - HYDRAULICS  
MAIN HYDRAULICS**

Ref. No.	Part No.	Description	Qty.
38	P072803	UNION HYD FITTING	2
39	30299	RELIEF VALVE	1
41	P054816	ELBOW 90 DEG STR	1
44	P101280	VALVE 7 STACK (SEE PAGE 50 FOR DETAIL)	1
45	3769	CS 3/8X1-1/4 C5ZY	4
46	18939	HN LF SLOC 3/8 CZ	4
49	P471357	ADAP 12ORM -10JICM 45 DEG	1
50	C1G8878	OIL FILTER, CHARGE PUMP, 9.5"	2

Ref. No.	Part No.	Description	Qty.
51	P054819	UNION/HYDRAUL. FITTING	2
54	P175518	OIL COOLER / RADIATOR	1
55	P175723	HOSE-8 A8/A8 23"	1
57	P064644	ST MJ16-MORB16	1
58	P072587	ST SA12 FL12	1
59	P471496	ADAPTER -60RM -8JICF	1
60	P139476	CAP/RADIATOR	1

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# 1648 - HYDRAULICS TRACK DRIVE



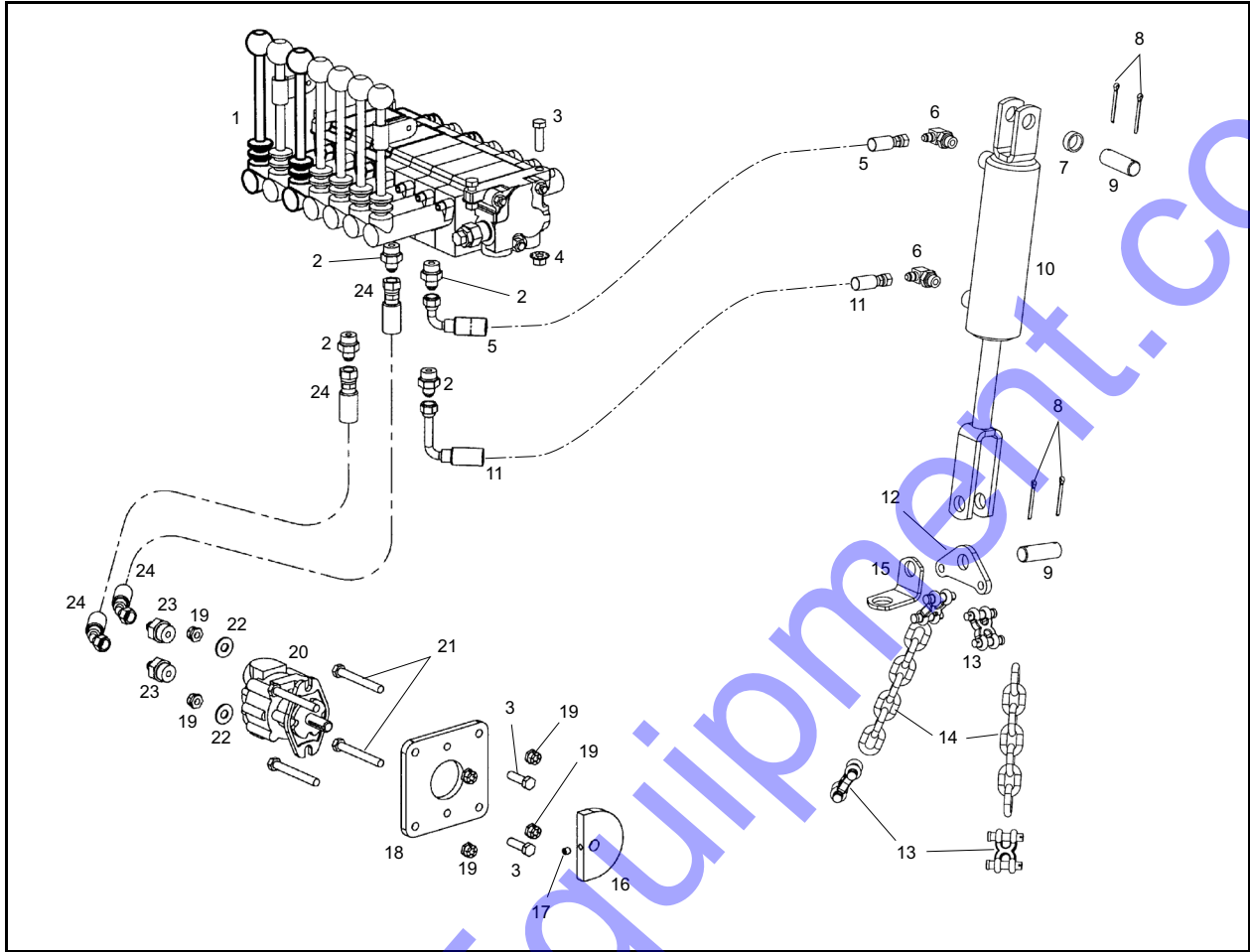


# 1648 - HYDRAULICS TRACK DRIVE

Ref. No.	Part No.	Description	Qty.
1	P473287	PUMP/AXIAL GEAR (SEE PAGE 42 FOR DETAIL)	1
2	70923473	CS 1/2X1-1/4 C5ZY	2
3	P100644	HOSE -12 A12/NS12 62"	1
4	P072580	UNION/HYDRAULIC. FITTING	1
5	P101282	WELD/DRIVE VALVE (SEE PAGE 48 FOR DETAIL)	1
6	PL51572	ADAPTER 10ORM-8JICM 45°	2
7	P175721	HOSE-8 A8/A8 14	2
8	P054626	ADAP-80RM-8JICM STR	6
9	P175241	VALVE/STEERING	1
10	P131706	ISOLATOR	4
11	P175194	FLOW DIVIDER/HYDRAULIC	1
12	P054816	ELBOW 90 DEG STR THD	2
13	P100634	HOSE -8 A8/A8 120"	2
14	30297	MOTOR/3.02 CID PISTON	2
15	P068938	ELBOW/90 DEG ADJUSTABLE	3
16	P100637	HOSE -4 A6/A6 32"	1
17	P175604	MANIFOLD/RETURN	1
18	P054994	ADAPTER/STR THD MALE	4
19	P100633	HOSE -4 A6/DS6 78"	2
20	PL60588	ADAPTER 37 REDUCING	5
21	P480118	CYL.TRACK TENSION	2
*	P700583	SEAL KIT	
22	P100631	HOSE -4 A6/A6 36"	2
23	-	-	-
24	P175720	-	1
25	3769	CS 3/8X1-1/4 C5ZY	4
26	18939	HN LF SLOC 3/8 CZ	4
27	P175354	SEAL KIT/STEERING VALVE	1
28	P076143	TEE/FEMALE RUN SWIVEL	3
29	12027	LN FL CTR 3/8 3FZY	2
30	20945	CS3/8 X 2-1/4	2
31	P100636	HOSE -4 A6/A6 96"	1
32	7746	O-RING 045 N70	2
33	P175107	OIL COOLER SHROUD	1
34	30214	COOLER/HEAT EXCHANGER	1
35	13585	LN FL SERR 5/16 CZY36	8
36	P175276	HYD. FITTING	1
37	P175164	HOSE ASSY	1
38	3784	FW 1/2 AWZY	2
39	70919310	LW 1/4 RZY	2
40	P470673	ADP/.38NPT-8JICM 90D .031 DIA	1
41	P175726	HOSE-6 A6/A8 14"	1

Ref. No.	Part No.	Description	Qty.
42	P055005	ELBOW/HYD FITTING 90 DEG.	2
43	P175729	HOSE-12 A12/DS12 41"	1
44	P072587	ST SA12 FL12	1
45	P100635	HOSE -8 A8/DS8 124"	2
46	P100632	HOSE -4 A6/DS6 15"	1
47	P480124	PIN/TRACK CYL.	2
48	26812	CP EPSC 3/16 X 2 Z	4
50	P089099	UNION/HYDRAULIC FITTING	1
51	4109	CS 1/4X2-1/2 C5ZY	2
53	P054994	ADAPTER/STR THD MALE	2
54	P175278	HOSE/STEERING RETURN	2
55	P175280	HOSE/DIVIDER-STEER	2
56	P091039	ELBOW/HYDR. FITT 90 DEG	1
57	P175377	FTG/6804-06-04-06-NWO-FG	1
58	P230-24749	ST MJ06-MORB08	2
59	P088046	ST MJ08-MORB12	4
60	7337	PLUG MORB12	1
61	P175376	SEAL KIT/FLOW DIVIDER	1
62	P176123	SEAL KIT/MOTOR	
63	3774	CS 1/2X1-1/2 C5ZY	4
64	3784	FW 1/2 AWZY	4
65	P079026	45 MJ06-MAORB06	1
66	P237000	ADAPTER, .38 PIPE 90°	1
67	P103524	HANDLE / STEER VALVE	1
68	P103523	LEVER / STEER VALVE	1
69	7187	CS 5/16X2-1/2 C5ZY	2
70	13585	LN LG FL SERR 5/16 CZ	4
71	12027	HLN INST 3/8 CZY	2
72	70918266	FW 3/8 AWZY	4
73	P175766	BUSHING/ISOLATION	2
74	70922287	CS 3/8X1-3/4 C5ZY	2
76	P072806	TEE/HYDR. FITTING	1
77	P110227	ELBOW/MALE 3/8	1
78	P175858	PAD/ISOLATION	2
79	P095457	TE MJ06 MJ06 FJS06	1
80	30300	VALVE/RELIEF/CHECK	1
81	P100637	HOSE, -4 A6/A6 32"	1
82	3765	CS 5/16X2 C5ZY	2

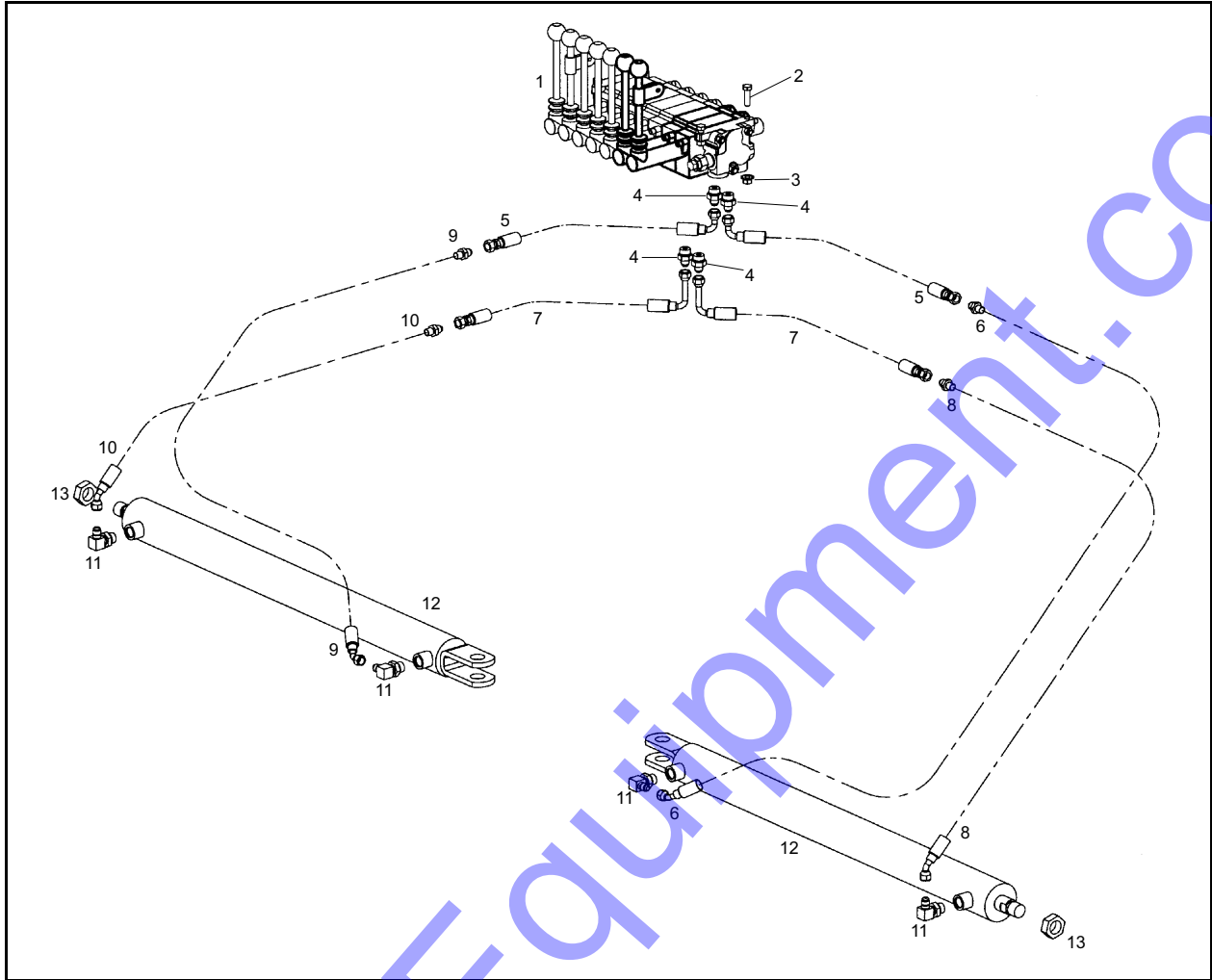
# 1648 - HYDRAULICS SCREED LIFT AND VIBRATOR



Ref. No.	Part No.	Description	Qty.
1	P101280	VALVE (SEE PAGE 50 FOR DETAIL)	1
2	P230-24749	ST MJ06-MORB08	4
3	3769	CS 3/8X1-1/4 C5ZY	6
4	18939	HN LF SLOC 3/8 CZ	4
5	P100972	HOSE -6 A6/DS6 45"	1
6	P110227	ELBOW/MALE 3/8 MJ-3/4-16	2
7	P471084	SPACER/SCREED CYL	1
8	26812	CP EPSC 3/16 X 2 Z	4
9	P471297	PIN/CYLINDER CLEVIS END	2
10	P101355	CYL. SCREED LIFT	1
*	P700430	SEAL KIT / GATE CYL	
11	P100973	HOSE -6 A6/DL6 45"	1
12	P100865	ANCHOR/CHAIN CLEVIS	1

Ref. No.	Part No.	Description	Qty.
13	P100592	CLEVIS/DOUBLE LINK 3/8	4
14	P473364	CHAIN/SCREED LIFT	2
15	P101161	HOLDER/T-HANDLE WRENCH	1
16	P100504	CNTRWT/VIBRATOR MOTOR	1
17	30091	SHSS CP 5/16X5/16	1
18	P100862	MOUNT/1648 VIBRATOR	1
19	PL520022	FLEX/LOCK NUT .375-16	6
20	P349450	MOTOR VIBRATOR	1
*	P282400	SERVICE KIT	
21	3772	CS 3/8X3 C5ZY	4
22	70918266	FW 3/8 AWZY	2
23	PL60253	ADP-100RM-6JICM	2
24	P100949	HOSE -6 A6/NS6 80"	2

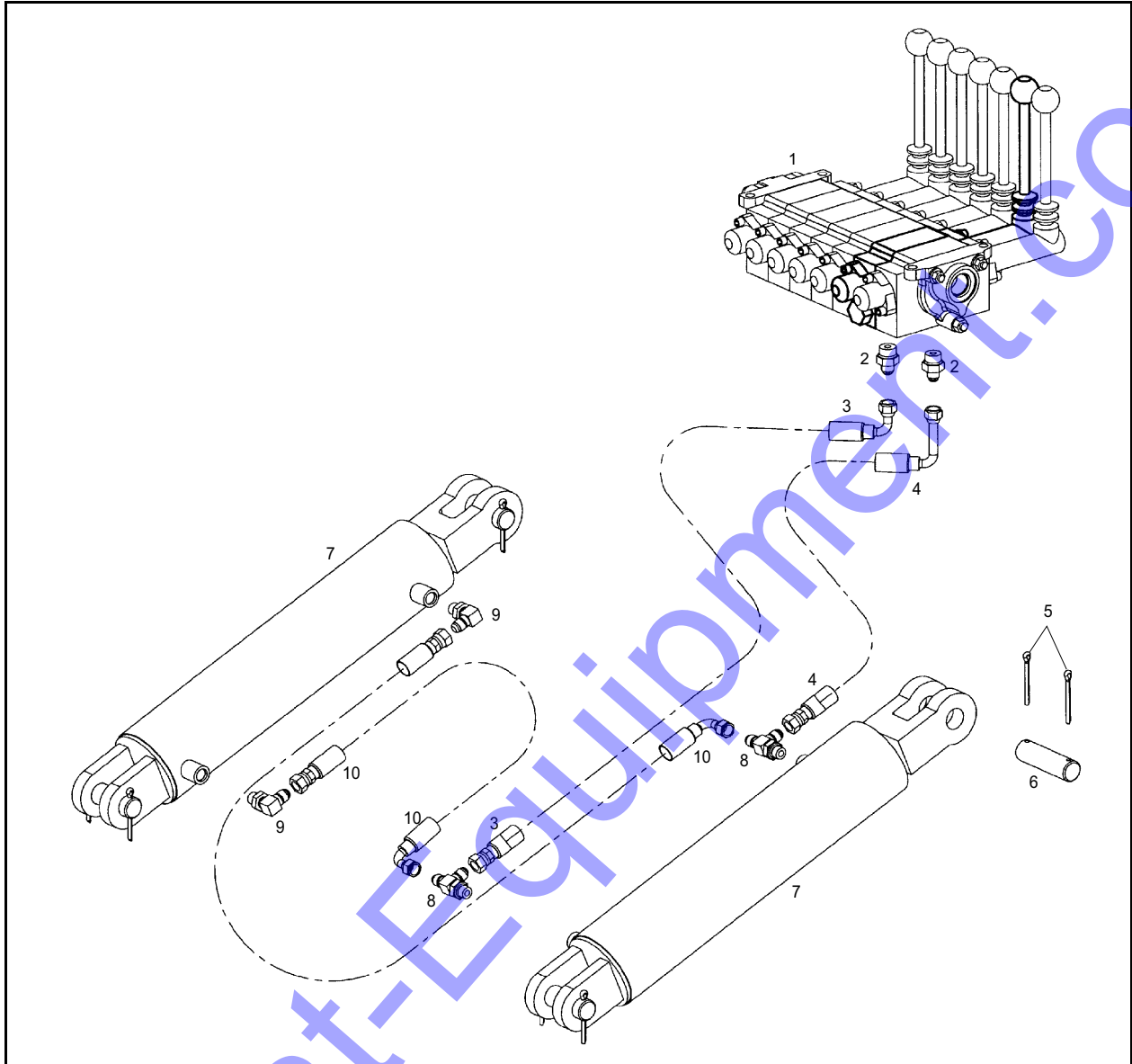
# 1648 - HYDRAULICS SCREED EXTENSION



Ref. No.	Part No.	Description	Qty.
1	P101280	VALVE 7 STACK (SEE PAGE 50 FOR DETAIL)	1
2	3769	CS 3/8X1-1/4 C5ZY	4
3	18939	HN LF SLOC 3/8 CZ	4
4	P230-24749	ST MJ06-MORB08	4
5	P100358	HOSE -6 A6/DS6 20"	2
6	P100954	HOSE -6 H6/NS6 122"	1
7	P100955	HOSE -6 A6/DL6 20"	2

Ref. No.	Part No.	Description	Qty.
8	P100953	HOSE -6 H6/NS6 98"	1
9	P100952	HOSE -6 H6/NS6 86"	1
10	P100951	HOSE -6 H6/NS6 62"	1
11	P110227	ELBOW/MALE 3/8 MJ-3/4-16	4
12	P473265	CYL/1648 SCREED EXT. 30"	2
*	P700510	SEAL KIT	
13	9599	HJN 1 F2ZY	2

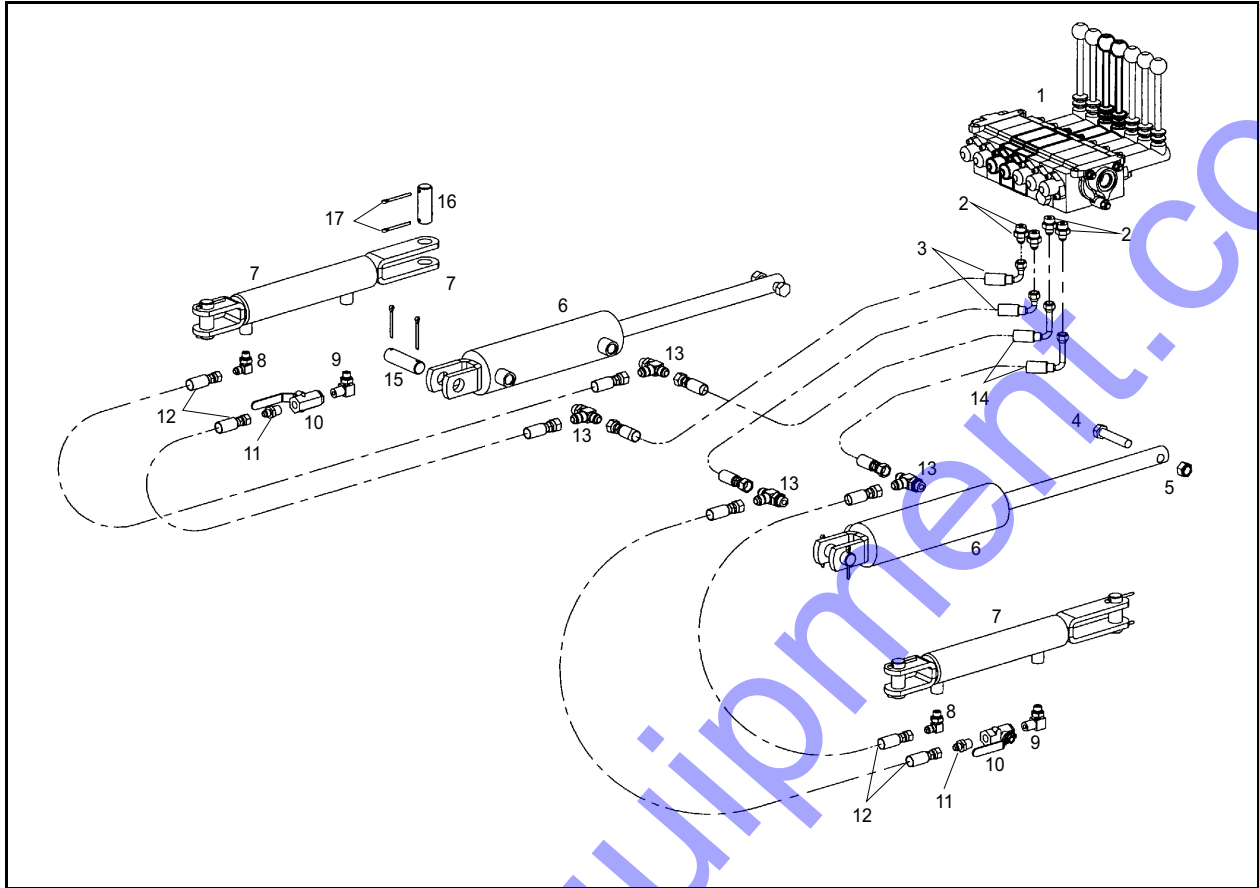
# 1648 - HYDRAULICS HOPPER



Ref. No.	Part No.	Description	Qty.
1	P101280	VALVE 7 STACK (SEE PAGE 50 FOR DETAIL)	1
2	P230-24749	ST MJ06-MORB08	2
3	P100944	HOSE -6 A6/DS6 110"	1
4	P100945	HOSE -6 A6/DL6 100"	1
5	26812	CP EPSC 3/16 X 2 Z	8
6	P471296	PIN/CYLINDER	4

Ref. No.	Part No.	Description	Qty.
7	P50304590	CYLINDER/HOPPER LIFT	2
*	P50290091	SEAL KIT	
8	P054820	TEE/HYD FITTING	2
9	P068938	ELBOW/90 DEG ADJUSTABLE	2
10	P100358	HOSE -6 A6/DS6 20"	2

# 1648 - HYDRAULICS GATE

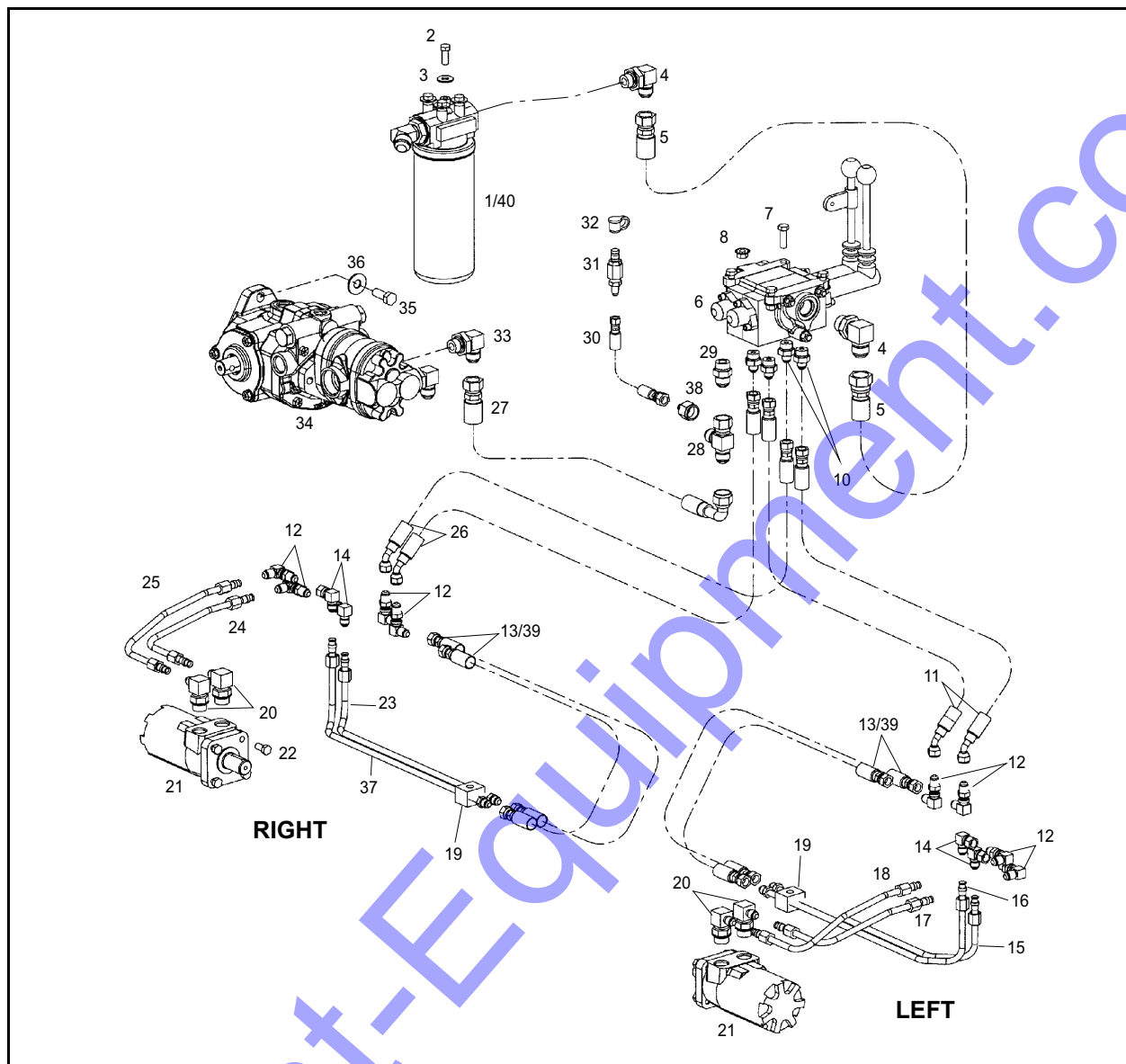


Ref. No.	Part No.	Description	Qty.
1	P101280	7-STACK VALVE (SEE PAGE 50 FOR DETAIL)	1
2	P230-24749	ST MJ06-MORB08	4
3	P100474	HOSE -6 A8/DS6 89"	2
4	7294	CS 5/8X3 C8ZY	2
5	3758	NUT/STOVER LOCK .625-11	2
6	P100713	CYLINDER/GATE	2
*	P700669	SEAL KIT	
7	P50304589	CYLINDER/SIDE GATE	2
*	P50290091	SEAL KIT	
8	P068938	ELBOW/90 DEG ADJUSTABLE	2

Ref. No.	Part No.	Description	Qty.
9	26440	ADP 90-6 O-RING -6MP	2
10	30298	VALVE/.375"	2
11	P062889	ADAPTER/STEEL PIPE	2
12	P100946	HOSE -6 A6/A8 85"	4
13	P114742	TEE RUN MJ08-MAORB08-MJ08	4
14	P100475	HOSE -6 A8/DL6 84"	2
15	P471296	PIN/CYLINDER	2
16	P471297	PIN/CYLINDER	4
17	26812	CP EPSC 3/16 X 2 Z	12

# 1648 - HYDRAULICS

## AUGER MOTORS ON SCREED



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	C1967614	CHARGE FILTER AY	1	16	P100599	TUBE/LT AUGER	1
2	5218	BOLT M10-1.5 x 25 ZY	4	17	P100595	TUBE/LT AUGER MOTOR	1
3	70918266	FW 3/8 AWZY	4	18	P100593	TUBE/LT AUGER MOTOR	1
4	P072615	ELBOW/HYD.FITTING 90°	2	19	30296	CLAMP BODY/TWIN 3/8	2
5	P175727	HOSE-10 A10/A10 24"	1	20	P470406	ADP-10 ORM -6 90°	4
6	P101281	AUGER VALVE (SEE PAGE 52 FOR DETAIL)	1	21	P480071	MOTOR/AUGER	2
7	3769	CS 3/8X1-1/4 C5ZY	4	*	P279009	SEAL KIT	
8	18939	HN LF SLOC 3/8 CZ	4	22	3767	CS 3/8X3/4 C5ZY	8
10	P230-24749	ST MJ06-MORB08	4	23	P100598	TUBE/RT AUGER	1
11	P100974	HOSE -6 A6/NS6 60"	2	24	P100596	TUBE/RT AUGER MOTOR	1
12	P098534	90 BLKHD MJ06-MJ06	8	25	P100594	TUBE/RT AUGER MOTOR	1
13	P100483	HOSE -6 A6/A6 36"	4	26	P100975	HOSE -6 A6/NS6 104"	2
14	P091039	ELBOW/HYDR. FITT. 90°	4	27	P100647	HOSE -10 A10/DS10 35"	1
15	P100597	TUBE/LT AUGER	1	28	P058610	TEE/FEMALE RUN 10	1
				29	P072580	CONNECTOR,MALE	1

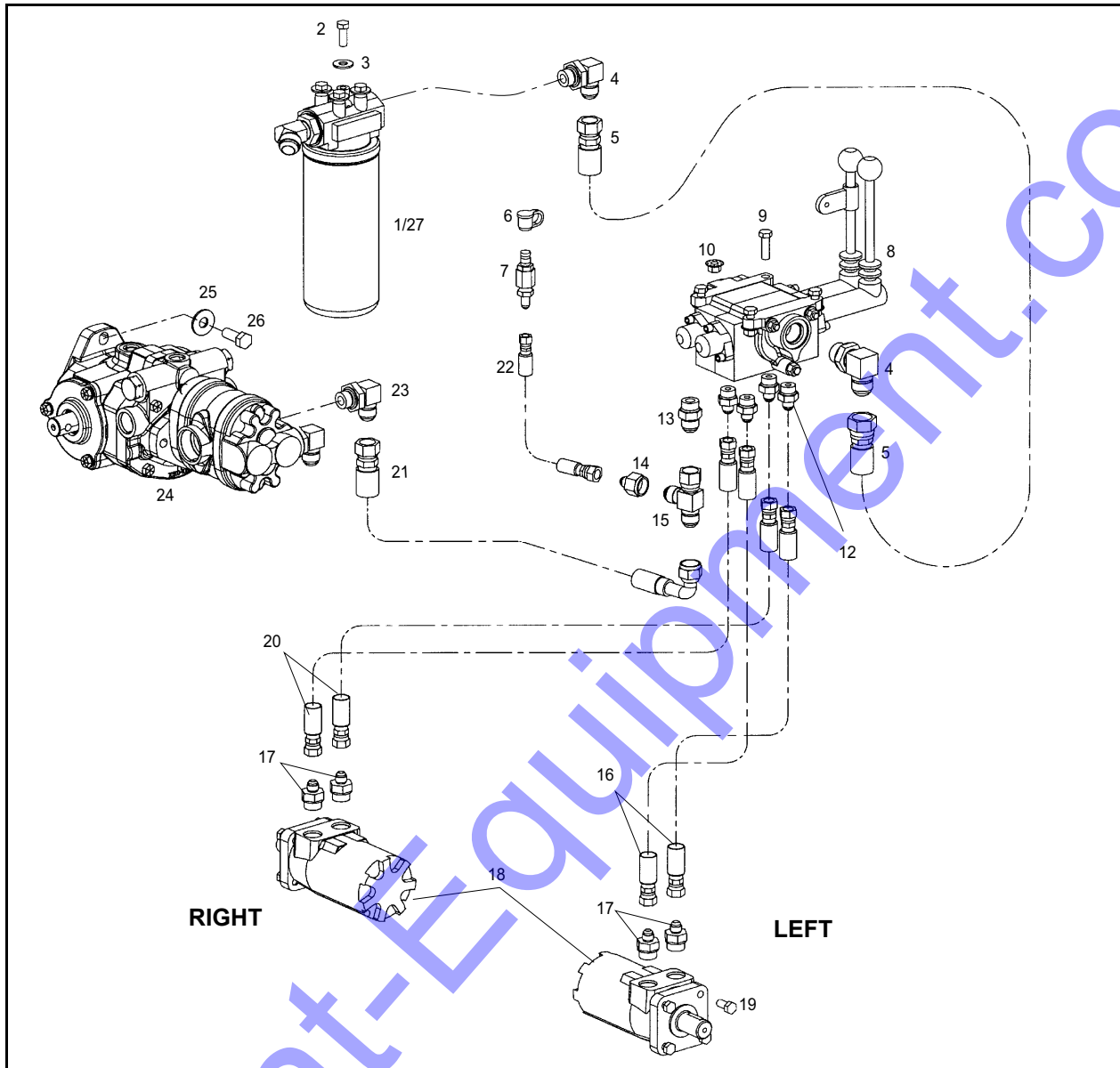


**1648 - HYDRAULICS  
AUGER MOTORS ON SCREED**

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
30	P100645	HOSE -4 A4/A6 8"	1	35	70923473	CS 1/2X1-1/4 C5ZY	2
31	PL62834	TESTPORT	1	36	3784	FW 1/2 AWZY	2
32	73162660	DUST/CAP QUIK	1	37	P100600	TUBE/RT AUGER	1
33	P067761	ELBOW/MALE 90 DEG	1	38	P129848	REDUCER FJ10-MJ06	1
34	P473287	PUMP/AXIAL GEAR (SEE PAGE 42 FOR DETAIL)	1	39	P101072	SLEEVE, HI-TEMP HOSE	2
				40	C1G8878	OIL FILTER, CHARGE PUMP, 9.5"	1

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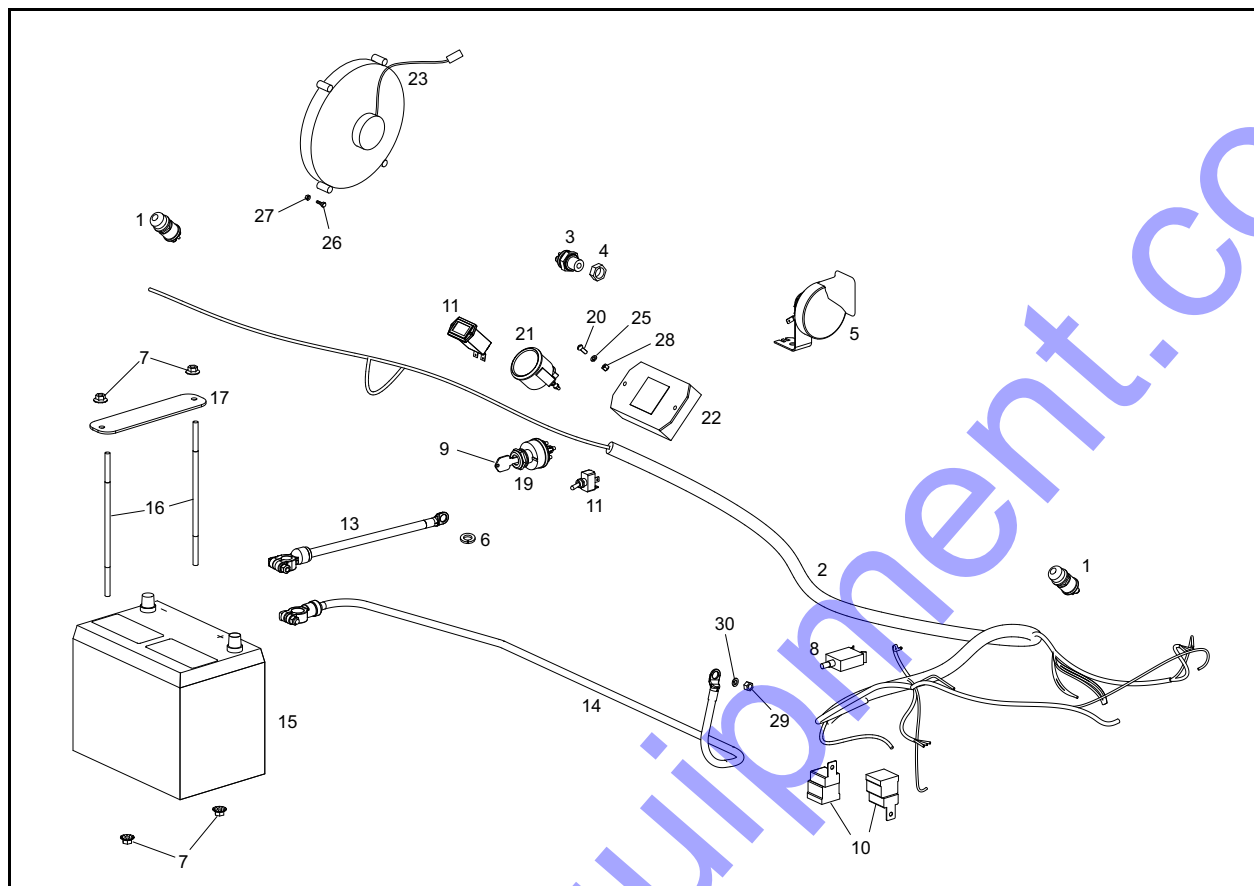
# 1648 - HYDRAULICS AUGER MOTORS ON GATE



Ref. No.	Part No.	Description	Qty.
1	30310	FILTER W/HEAD SEC.	1
2	70923490	CS 3/8X1 C5ZY	4
3	70918266	FW 3/8 AWZY	4
4	P072615	ELBOW/HYD.FITTING 90°	2
5	P175727	HOSE-10 A10/A10 24"	1
6	73162660	DUST/CAP QUIK	1
7	PL62834	TESTPORT	1
8	P101281	AUGER VALVE (SEE PAGE 52 FOR DETAIL)	1
9	3769	CS 3/8X1-1/4 C5ZY	4
10	18939	HN LF SLOC 3/8 CZ	4
12	P230-24749	ST MJ06-MORB08	4
13	P072580	CONNECTOR,MALE	1
14	P129848	ST 10FLF 06FLM	1
15	P058610	TEE/FEMALE RUN SWIVEL	1

Ref. No.	Part No.	Description	Qty.
16	P100483	HOSE -6 A6/A6 36"	2
17	PL60253	ADP-100RM-6JICM	4
18	P480071	MOTOR/AUGER	2
*	P279009	SEAL KIT	
19	3767	CS 3/8X3/4 C5ZY	8
20	P100484	HOSE -6 A6/NS6 48"	2
21	P100647	HOSE -10 A10/DS10 35"	1
22	P100645	HOSE -4 A4/A6 8"	1
23	P067761	ELBOW/MALE 90°	1
24	P473287	PUMP/AXIAL GEAR (SEE PAGE 42 FOR DETAIL)	1
25	3784	FW 1/2 AWZY	2
26	70923473	CS 1/2X1-1/4 C5ZY	2
27	P074830	ELEMENT ONLY	1

**1648 - ELECTRICAL**  
**430340 - ELECTRICAL COMPONENTS**

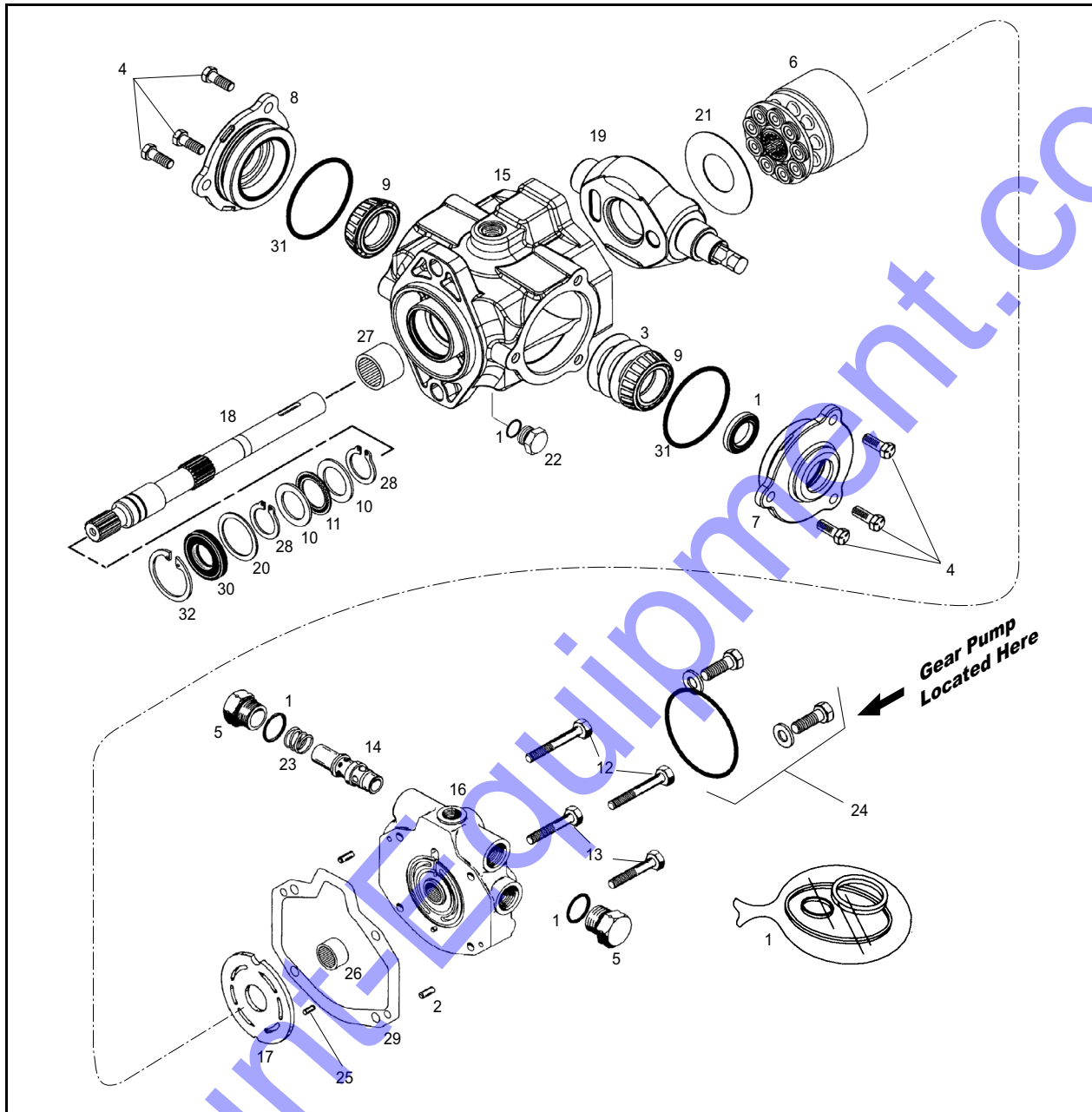


Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	C3D9718	PUSHBUTTON SWITCH	2	15	*	BATTERY (OBTAIN LOCALLY. GROUP SIZE34; 675 CCA)	1
2	P270112	HARNESS/ENGINE	1	16	P470348	ROD/BATTERY HOLDDOWN	2
3	PL62277	SWITCH/NEUTRAL SAFETY	1	17	P175619	PLATE/BATTERY HOLD DOWN	1
4	PL50172	NUT/BULKHEAD .75-16	1	19	P195087	SWITCH/IGNITION (WITH KEY)	1
5	PL41847	HORN 12V ELECT.	1	20	70917388	RHMS SLT #1024X3/4 CZY	2
6	30087	LW INT T 3/8 AZY	1	21	P137113	GAUGE, WATER TEMP	1
7	13585	HN LF SLOC 5/16 CZ	4	22	P175722	MODULE/CONTROL	1
8	P420-35569	CIRCUIT BREAKER 35AMP	1	23	PL500594	FAN/OIL COOLER	1
9	P073694	KEY (WITHOUT SWITCH)	2	25	30086	LW INT T #10 AZY	2
10	P420-35602	RELAY	2	26	3759	CS1/4 X 3/4 C5ZY	4
11	P072340	GAUGE/HOURMETER	1	27	30207	LN FL CTR 1/4 CZY	4
12	6129	SWITCH ON-OFF TOGGLE	1	28	3753	HLN INST #1024 CZY	2
13	P175620	BATTERY CABLE/NEGATIVE	1	29	16100821	HN M8-1.25 C8 ZY	1
14	P175837	CABLE/BATTERY POS	1	30	3778	LW 5/16 RZY	1

\* Not serviced separately

# 1648 - COMPONENT DETAIL

## P473287 - HYDRAULIC PUMP - FRONT (PISTON) SECTION



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
	P473287	COMPLETE ASSEMBLY (INCLUDES GEAR SECTION)	1	10	P123081	THRUST PLATE	2
1	P190-32866	SEAL REPAIR KIT (INCLUDES REFS. 28, 29, 30, 31, 32)	1	11	*	BEARING, NEEDLE THRUST	1
2	P604260	PIN, DOWEL	2	12	*	SCREW, CAP	2
3	P350-32622	RING, CRUSH	1	13	*	SCREW, CAP	2
4	*	SCREW, CAP	6	14	P700546	VALVE, RELIEF	1
5	P088311	PLUG ASSEMBLY (INCLUDES O-RING)	2	15	*	HOUSING	1
6	P123070	ROTATING KIT SUBASY	1	16	P700681	ENDCOVER, SUBASY	1
7	P160-32876	PLATE, COVER SUBASY	1	17	*	PLATE, VALVE	1
8	*	PLATE, COVER SUBASY	1	18	*	SHAFT, DRIVE	1
9	P700678	CUP, BEARING	2	19	P700682	SWASHPLATE, SUBASY	1
				20	P400-32296	WASHER	1
				21	P400-32550	INSERT, CAMPLATE	1

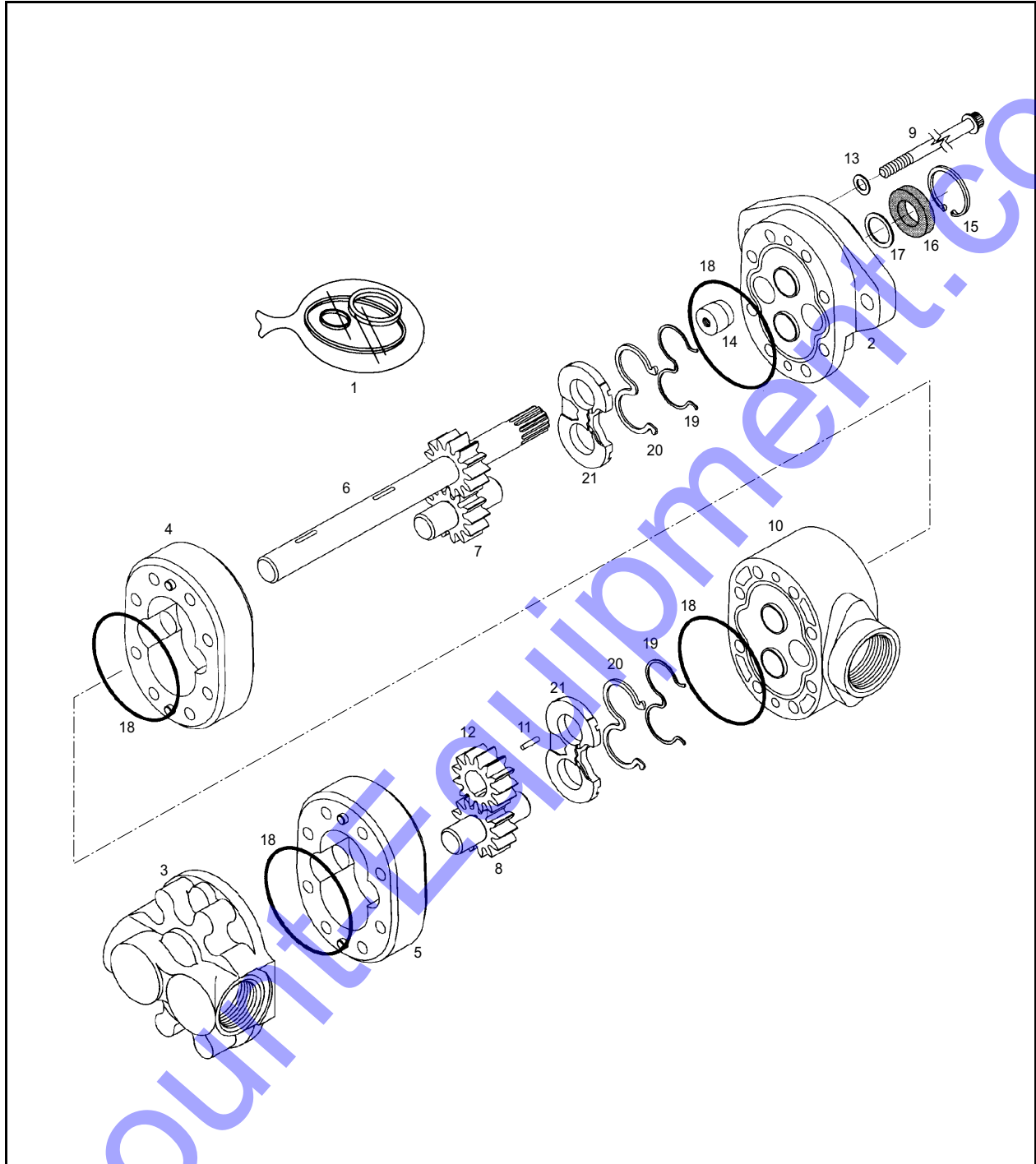
**1648 - COMPONENT DETAIL  
P473287 - HYDRAULIC PUMP - FRONT (PISTON) SECTION**

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
22	*	PLUG, SUBASSY (INCLUDES O-RING)	1	29	*	GASKET (INCLUDED IN REF. 1)	1
23	P700018	SPRING	1	30	*	SEAL, SHAFT (INCLUDED IN REF. 1)	1
24	P700548	GEAR PUMP MOUNT KIT (INCLUDES O-RING, WASHER AND CAPSCREWS)	1	31	*	O-RING (INCLUDED IN REF. 1)	2
25	P123125	DOWEL PIN	1	32	*	RETAINING RING (INCLUDED IN REF. 1)	1
26	P123124	BEARING	1				
27	P700394	BEARING	1				
28	*	RETAINING RING (INCLUDED IN REF. 1)	2				

\* Not serviced separately

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**1648 - COMPONENT DETAIL**  
**P700552 - HYDRAULIC PUMP - REAR (GEAR) SECTION**



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
	*	COMPLETE GEAR PUMP ASY. (INCLUDED IN P473287)	1	7	*	FRONT IDLER GEAR ASY.	1
1	P130059	SEAL REPAIR KIT	1	8	*	REAR IDLER GEAR ASY.	1
2	P130033	FRONT PLATE ASY.	1	9	P122928	CAPSCREW	8
3	*	BACK PLATE	1	10	*	ADAPTER PLATE	1
4	P700558	FRONT BODY ASY.	1	11	P129426	KEY	1
5	P700558	REAR BODY ASY.	1	12	*	REAR GEAR	1
6	*	DRIVE GEAR ASY.	1	13	*	WASHER	4
				14	*	PLUG	1

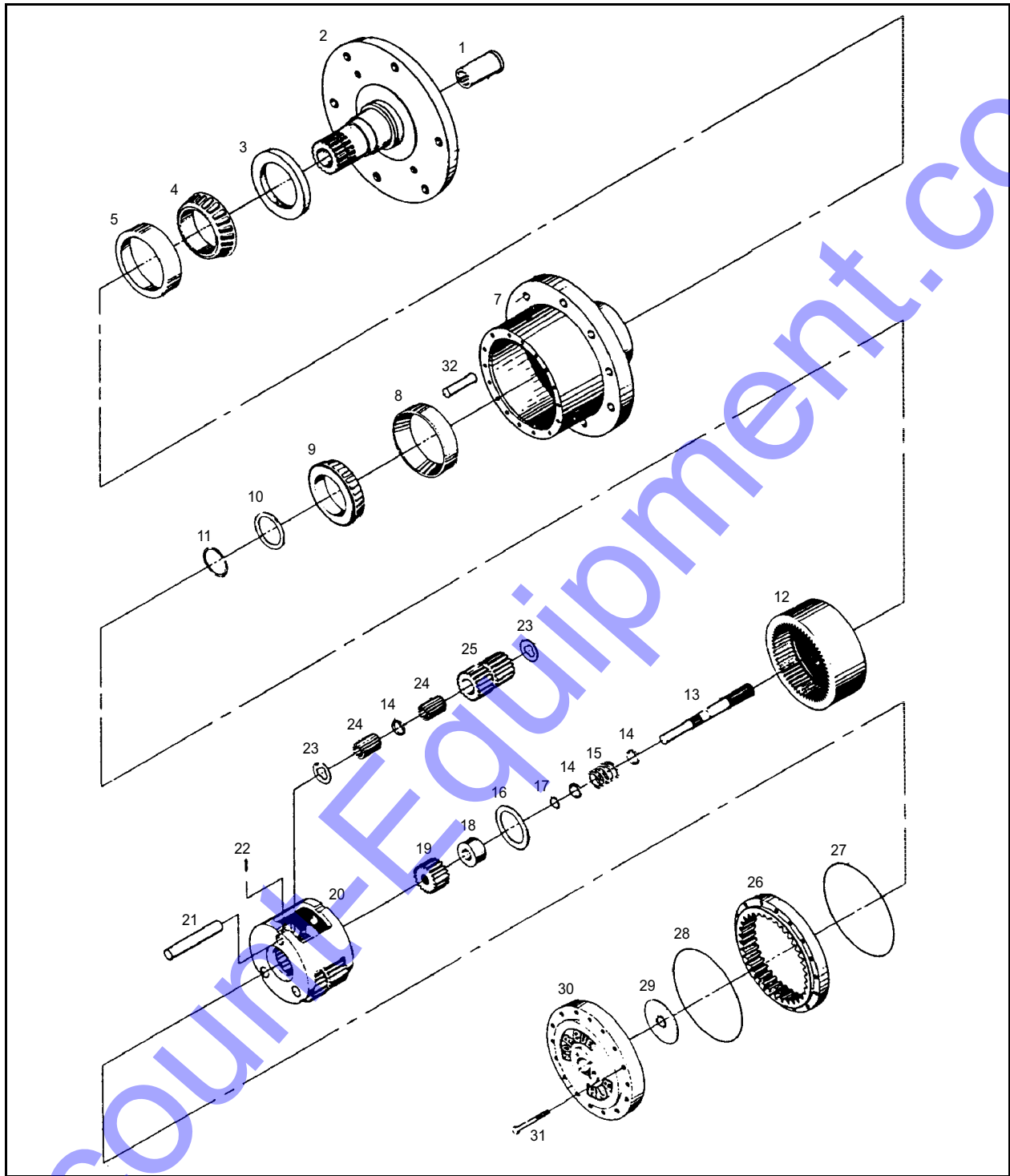
**1648 - COMPONENT DETAIL  
P700552 - HYDRAULIC PUMP - REAR (GEAR) SECTION**

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
15	P122008	RETAINING RING	1	20	*	SEAL	2
16	*	SHAFT SEAL	1	21	*	WEAR PLATE	2
17	*	WASHER	1			* Not serviced separately	
18	*	O-RING	4				
19	*	BACKUP GASKET	2				

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**1648 - COMPONENT DETAIL**  
**P271900 - TORQUE HUB**



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
	P271900	COMPLETE TORQUE HUB ASSY.	1	7	*	HOUSING	1
1	P700670	COUPLING	1	8	P700063	BEARING CUP	1
2	*	SPINDLE	1	9	P700064	BEARING CONE	1
3	P700103	SEAL	1	10	P700068	THRUST WASHER	1
4	P003940	BEARING CONE	1	11	P384600	RETAINER RING	1
5	PL97239	BEARING CUP	1	12	*	INTERNAL GEAR	1

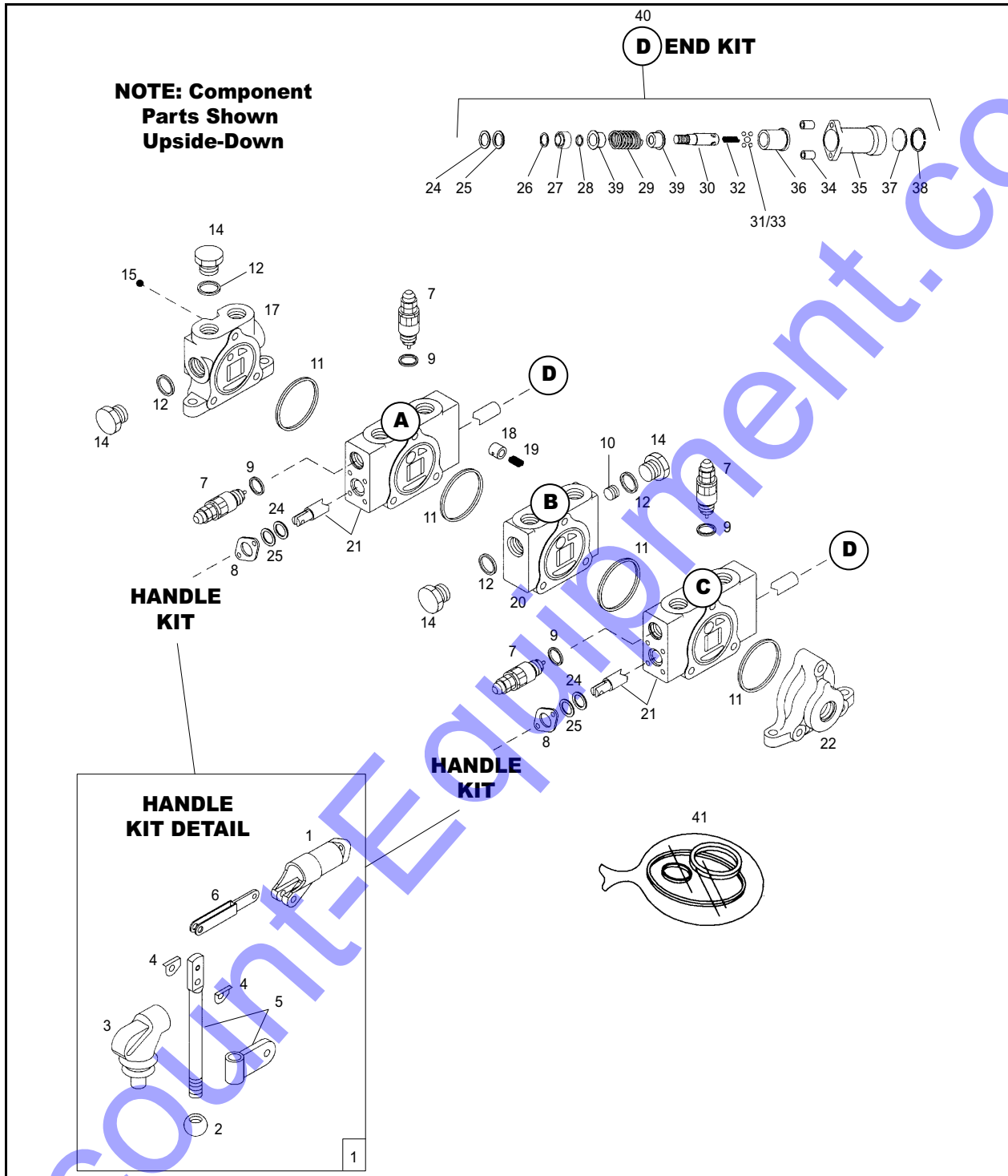
**1648 - COMPONENT DETAIL**  
**P271900 - TORQUE HUB**

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
13	*	INPUT SHAFT	1	24	P700072	NEEDLE ROLLERS	96
14	P700073	THRUST WASHER	3	25	P700105	CLUSTER GEAR	3
15	P700085	SPRING	1	26	*	RING GEAR	1
16	*	THRUST WASHER	1	27	P382100	O-RING	1
17	P700081	RETAINER RING	1	28	L500774	O-RING	1
18	P700111	INPUT SPACER	1	29	L500775	THRUST CAP	1
19	P700104	SUN GEAR	1	30	L500776	COVER ASSEMBLY	1
20	P700076	CARRIER	1	31	L500773	GR8 BOLT 5/16-18X2-1/4	12
21	P700070	PLANET SHAFT	3	32	L500777	DOWEL PIN	4
22	P700074	ANTI-ROLL PIN	3			* Not serviced separately	
23	P700071	THRUST WASHER	2				

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# 1648 - COMPONENT DETAIL

## 101282 - TRACK DRIVE CONTROL VALVE



Ref. No.	Part No.	Description	Qty.
	P101282	COMPLETE TRACK DRIVE CONTROL ASSY	1
1	P045625	HANDLE PIVOT MOUNT	2
2	75241792	KNOB	2
3	P700163	BOOT	2
4	P700164	SHIM	4
5	P470427	HANDLE W/TAB	2

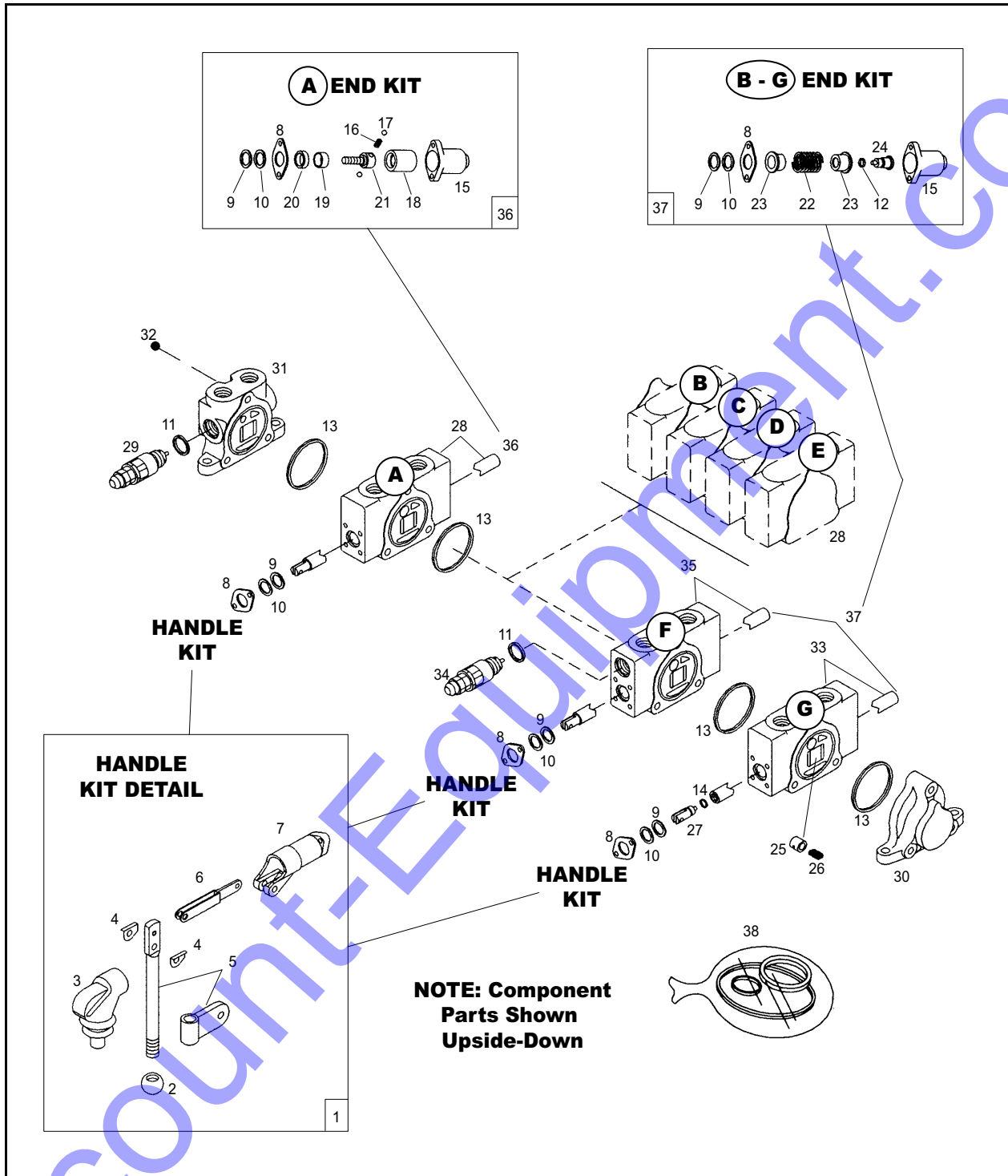
Ref. No.	Part No.	Description	Qty.
6	P700165	LINK	4
7	P471469	RELIEF, 3500 PSI	4
8	P700166	SEAL PLATE	2
9	*	RELIEF SEAL	4
10	*	PLUG (NPT)	1
11	P382900	BETWEEN SECT. SEAL	4

**1648 - COMPONENT DETAIL  
101282 - TRACK DRIVE CONTROL VALVE**

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
12	P700563	PLUG SEAL, MID-SECT.	4	28	*	O-RING	1
14	P093851	PLUG	4	29	*	SPRING	1
15	*	TIE ROD, LONG	2	30	*	SPOOL END-DETENT PIN	1
	*	TIE ROD, SHORT	1	31	*	BALL	4
17	*	INLET HOUSING	1	32	*	SPRING	1
18	*	POPPET, C.V.	2	33	*	BALL	1
19	P135369	SPRING	2	34	*	SPACER	2
20	*	MID-INLET HOUSING "B"	1	35	*	CAP-SPOOL	1
21	*	WORK SECT. HOUSING "A&C"	2	36	*	SLEEVE-DETENT	1
	*	SPOOL	2	37	*	SPACER	1
22	*	OUTLET HOUSING	1	38	*	RETAINING RING-INTERNAL	1
23	P286100	HANDLE KIT, LESS TAB (INCL. REFS. 1-6)	2	39	*	SPRING SEAT	2
24	P393400	SPOOL SEAL	4	40	P700686	END KIT (INCL. REFS. 26-39)	2
25	74995327	SPOOL WIPER	4	41	P700571	COMPLETE SEAL KIT	1
26	*	O-RING	1			* Not serviced separately	
27	*	SPACER, SPOOL CAP	1				

# 1648 - COMPONENT DETAIL

## 101280 - 7- STACK CONTROL VALVE WITH RELIEF



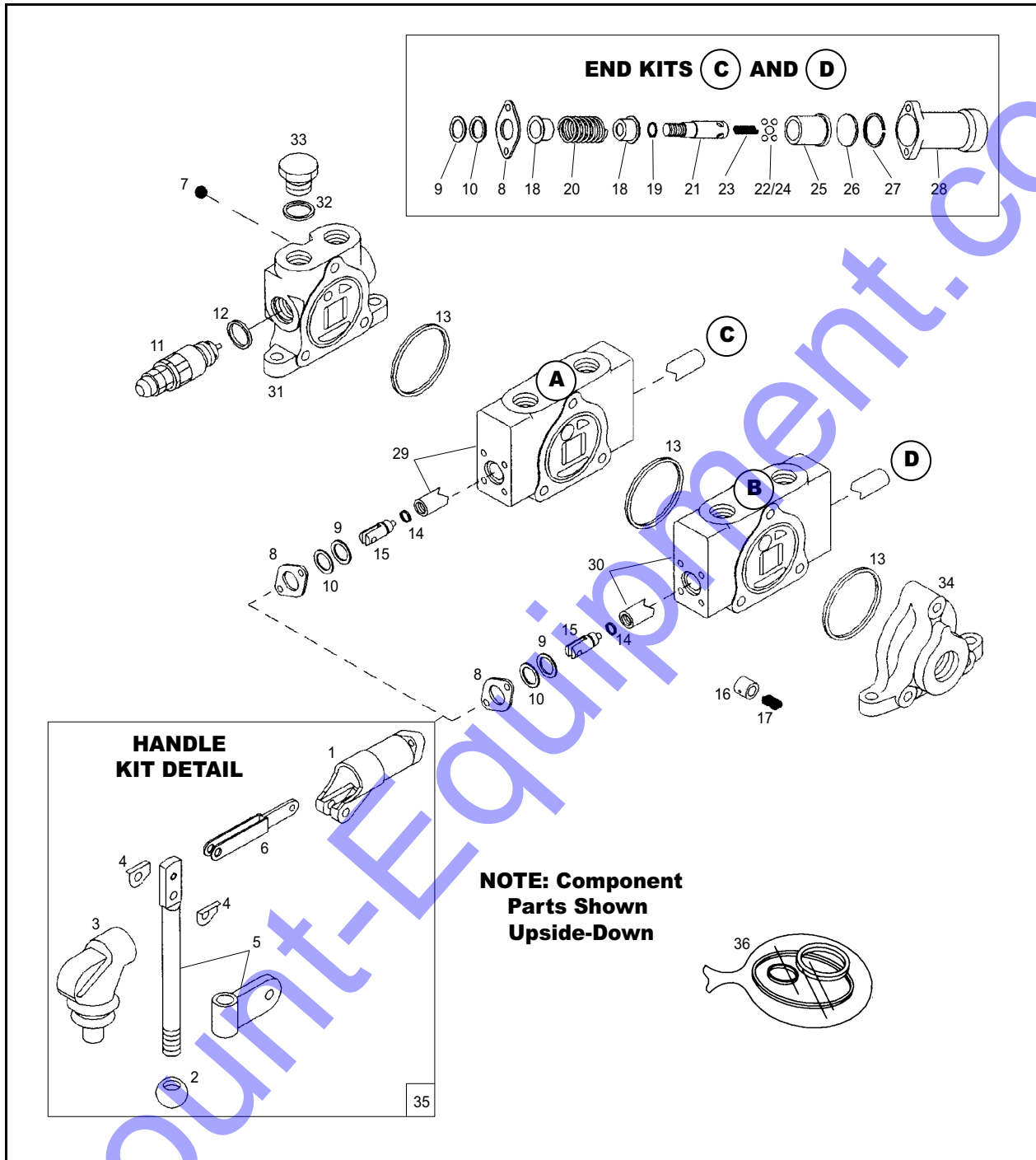
Ref. No.	Part No.	Description	Qty.
	P101280	COMPLETE 7-STACK CONTROL VALVE ASSEMBLY	1
1	P286100	HANDLE KIT (INCL. REFS 2-7, EXCLUDING TAB)	7
2	75241792	KNOB	7
3	P700163	BOOT	7
4	P700164	SHIM	14

Ref. No.	Part No.	Description	Qty.
5	P470427	HANDLE W/TAB	2
6	P700165	LINK	14
7	P045625	HANDLE PIVOT MOUNT	7
8	P700166	SEAL PLATE	14
9	P393400	SPOOL SEAL	14
10	74995327	SPOOL WIPER	14
11	*	RELIEF SEAL	2

**1648 - COMPONENT DETAIL**  
**101280 - 7- STACK CONTROL VALVE WITH RELIEF**

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
12	*	SPOOL END SEAL	1	26	P135369	SPRING	6
13	P382900	BETWEEN SECTS.SEAL	4	27	P700417	CLEVIS END	6
14	*	CLEVIS END SEAL	7	28	P418040	SPOOL WORK SECT. "A - E"	1
15	P700604	CAP	7	29	P418203	RELIEF	1
16	P700168	SPRING	1	30	*	END SECTION	1
17	*	BALL	1	31	P700506	INLET/OUTLET SECTION	1
18	*	DETENT SLEEVE	1	32	P700170	TIE ROD KIT	1
19	*	SPACER	1	33	P418035	SPOOL WORK SECT. "G"	1
20	*	SPACER	1	34	P700519	RELIEF	1
21	*	DETENT PIN	1	35	P700518	SPOOL WORK SECTION. "F"	1
22	P700220	SPRING	6	36	P277820	SPOOL END SERVICE KIT "A"	1
23	*	SPRING SEAT	12	37	P700469	SPOOL END SERV. KIT "B-G"	6
24	*	SPOOL END	6	38	P700471	COMPL. SEAL KIT	1
25	*	POPPET-C.V.	6			* Not serviced separately	

**1648 - COMPONENT DETAIL**  
**101281 - AUGER CONTROL VALVE**



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
	P101281	COMPLETE AUGER CONTROL VALVE ASSY	1	3	P700163	BOOT	2
	P700533	END KIT "C"	1	4	P700164	SHIM	4
	P700576	END KIT "D"	1	5	P470427	HANDLE W/TAB WELD	2
	P700578	COMPL. SPOOL SECT. "A" ASY.	1	6	P700165	LINK	4
	P700577	COMPL. SPOOL SECT. "B" ASY.	1	7	*	TIE ROD, LONG	2
1	P045625	HANDLE PIVOT MOUNT	2		*	TIE ROD, SHORT	1
2	75241792	KNOB	2	8	P700166	SEAL PLATE	4
				9	P393400	SPOOL SEAL	4









**1648 - COMPONENT DETAIL  
101281 - AUGER CONTROL VALVE**

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
10	74995327	SPOOL WIPER	4	25	*	DETENT SLEEVE	2
11	P418203	RELIEF ASY.	1	26	*	SPACER	2
12	*	RELIEF SEAL	1	27	*	INT. RETAINER RING	2
13	P382900	BETWEEN SECT. SEAL	2	28	*	SPOOL CAP	2
14	*	CLEVIS END SEAL	2	29	*	HOUSING, SECT. "A"/ SPOOL	1
15	P700417	CLEVIS END	2	30	*	HOUSING, SECT. "B"/ SPOOL	1
16	*	POPPET, C.V.	2	31	*	INLET HOUSING/SPOOL	1
17	P135369	SPRING	2	32	P700563	O-RING	1
18	*	SPRING SEAT	2	33	P700565	PLUG	1
19	*	O-RING	2	34	*	OUTLET HOUSING	1
20	P700220	SPRING	2	35	P286100	HANDLE KIT (INCLUDES REFS. 1, 2, 3, 4, 6)	2
21	*	DETENT PIN	2	36	P700571	COMPL. REPAIR KIT	1
22	*	BALL	8				
23	*	INNER SPRING	2				
24	*	BALL	2				

\* Not serviced separately

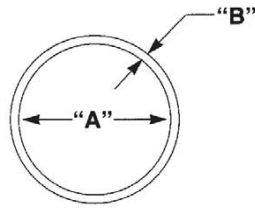
# TORQUE SPECIFICATIONS

Use these torque values when tightening hardware (excluding locknuts, and self-tapping, thread-forming, and sheet metal screws) unless otherwise specified.

UNIFIED NATIONAL THREAD	GRADE 2 		GRADE 5 		GRADE 8 	
	DRY	LUBED	DRY	LUBED	DRY	LUBED
8-32	19*	14*	30*	22*	41*	31*
8-36	20*	15*	31*	23*	43*	32*
10-24	27*	21*	43*	32*	60*	45*
10-32	31*	23*	49*	36*	68*	51*
1/4-20	66*	50*	9	75*	12	9
1/4-28	76*	56*	10	86*	14	10
5/16-18	11	9	17	13	25	18
5/16-24	12	9	19	14	25	20
3/8-16	20	15	30	23	45	35
3/8-24	23	17	35	25	50	35
7/16-14	32	24	50	35	70	55
7/16-20	36	27	55	40	80	60
1/2-13	50	35	75	55	110	80
1/2-20	55	40	90	65	120	90
9/16-12	70	55	110	80	150	110
9/16-18	80	60	120	90	170	130
5/8-11	100	75	150	110	220	170
5/8-18	110	85	180	130	240	180
3/4-10	175	130	260	200	380	280
3/4-16	200	150	300	220	420	320
7/8-9	170	125	430	320	600	460
7/8-14	180	140	470	360	660	500
1-8	250	190	640	480	900	680
1-12	270	210	710	530	1000	740
METRIC COARSE THREAD	GRADE 8.8 		GRADE 10.9 		GRADE 12.9 	
	DRY	LUBED	DRY	LUBED	DRY	LUBED
M6-1	8	6	11	8	13.5	10
M8-1.25	19	14	27	20	32.5	24
M10-1.5	37.5	28	53	39	64	47
M12-1.75	65	48	91.5	67.5	111.5	82
M14-2	103.5	76.5	145.5	108	176.5	131
M16-2	158.5	117.5	223.5	165.5	271	200

\*All torque values are in ft-lbs except those marked with an \* which are in lbs.  
For metric torque value (N-m) multiply ft-lbs value by 1.355 or the in-lbs value by 0.113.

## O-RING TABLE



FITTING THREAD SIZE	DIAMETER "A"	DIAMETER "B"
9/16 - 18	0.468	0.078
3/4 - 16	0.644	0.087
7/8 - 14	0.755	0.097
1-1/16 - 12	0.924	0.116
1-5/16 - 12	1.171	0.116
1-5/8 - 12	1.475	0.118

### Recommended Coupling & Adapter Installation Torque Specifications

#### For SAE "O" Ring Boss (Steel)

Size		Ft-Lbs (N·m)	
Dash	Fractional (In.)	Minimum	Maximum
-3	3/16	8 (11)	10 (14)
-4	1/4	14 (19)	16 (22)
-5	5/16	18 (24)	20 (27)
-6	3/8	24 (33)	26 (35)
-8	1/2	50 (68)	60 (81)
-10	5/8	72 (98)	80 (108)
-12	3/4	125 (169)	135 (183)
-14	7/8	160 (217)	180 (244)
-16	1	200 (271)	220 (298)
-20	1-1/4	210 (285)	280 (380)
-24	1-1/2	270 (366)	360 (488)

#### For JIC 37° and 45° (Machined or Flared)

Steel			
Size		Ft-Lbs (N·m)	
Dash	Fractional (In.)	Minimum	Maximum
-4	1/4	10 (14)	11 (15)
-5	5/16	13 (18)	15 (20)
-6	3/8	17 (23)	19 (26)
-8	1/2	34 (46)	38 (52)
-10	5/8	50 (68)	56 (76)
-12	3/4	70 (95)	78 (106)
-16	1	94 (127)	104 (141)
-20	1-1/4	124 (168)	138 (187)
-24	1-1/2	156 (212)	173 (235)
-32	2	219 (297)	243 (330)

**REVISION HISTORY**

Revision	Date	Pages	Description
1648 Plus February 2015 30955	02/2015	All	First Edition Parts Manual Released.

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