



**Parts Manual**

# **TOURNAMENT ULTRA PLUS**

**7590**

**SN: T3855**

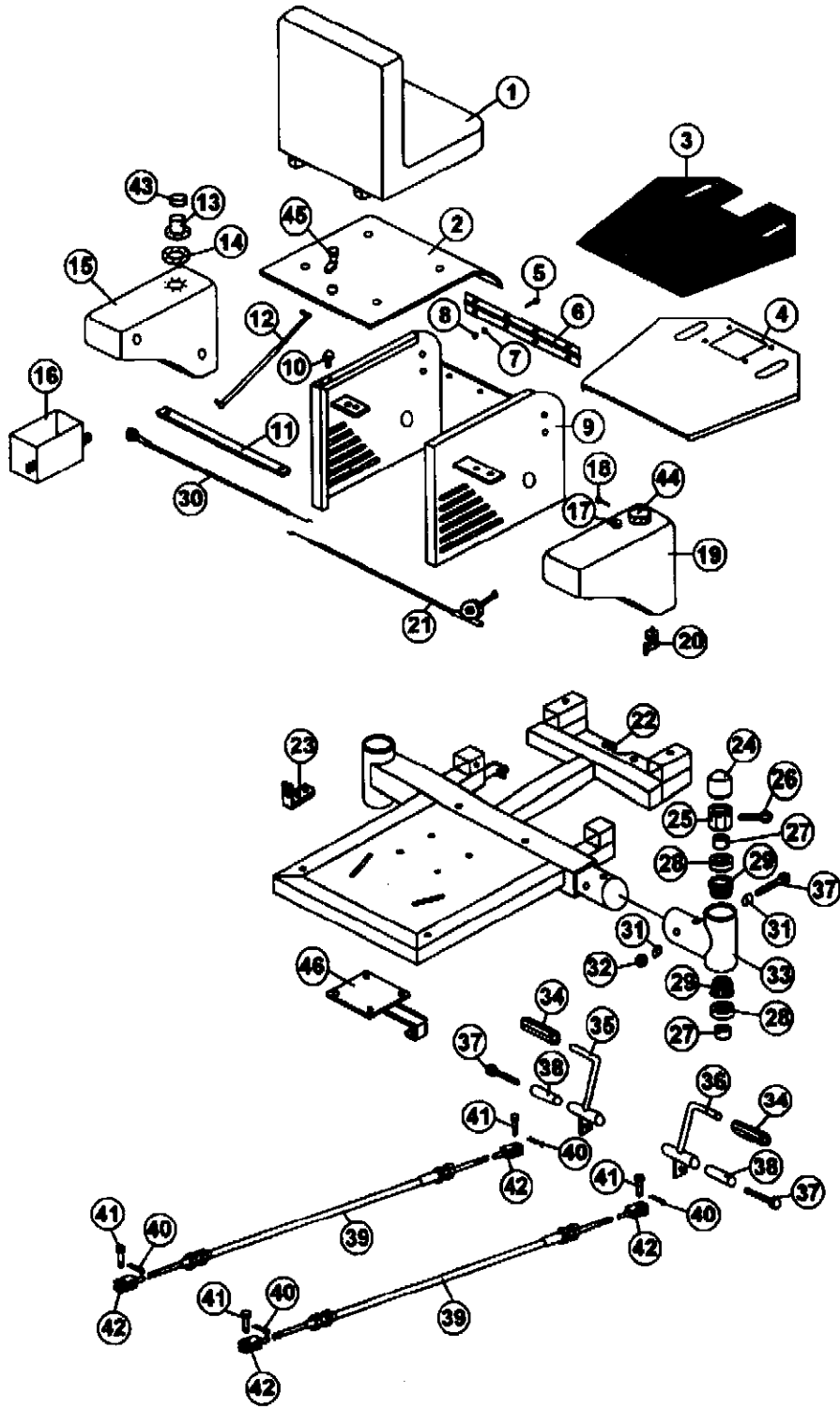
**March, 2011**

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# 7590 FRAME DRAWING



**7590 FRAME PARTS LIST**

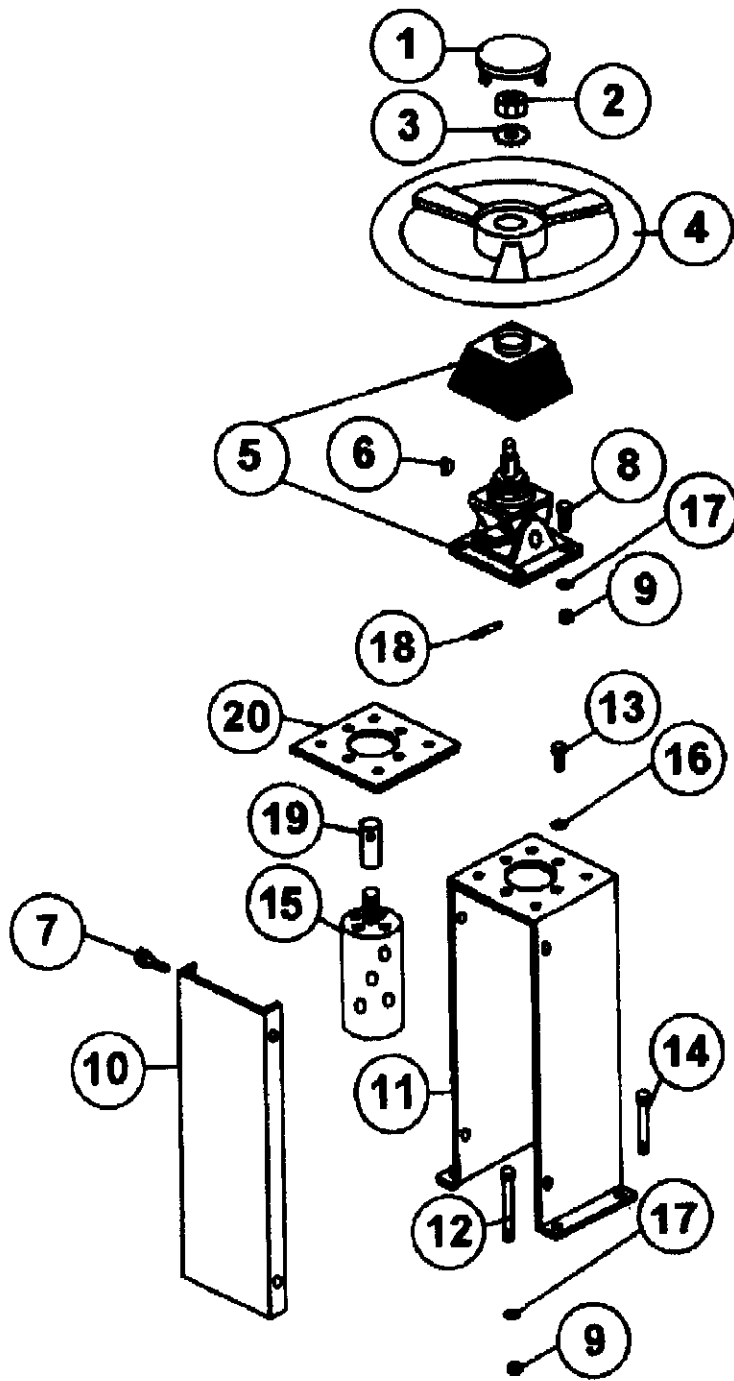
<b>REF#</b>	<b>PART#</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1	832-123	Low-Back "Smithco" Seat	1
2	750-253-1	Seat Plate	1
3	750-278	Rubber Mat	1
4	750-241	Deck Plate	1
5	400-002	5/16" x 1" HHCS	10
6	750-254	Seat Plate Hinge	1
7	400-207	5/16" Lockwasher	10
8	400-102	5/16" - 18 Hex Nut	10
9	750-262	Engine Cover	1
10	41-143	Protective Bumper	2
11	750-290	Cover Brace	1
12	41-127	Gas Shock Assembly	1
13	750-293	Oil Tank Neck	1
14	750-292-1	Oil Cap Gasket	1
15	943-111	Oil Tank	1
16	750-402	Battery Box	1
17	943-110-4	Vent Valve	1
18	400-043	1/4" - 20 x 3/4" HHCS	6
19	943-110	Gas Tank	1
20	943-110-2	Gas Valve	1
21	750-715	Throttle Cable	1
22	750-403	Main Frame	1
23	750-251	Shift Cable Bracket	2
24	750-192	1 1/8" Poly Hex Nut & Cap	2
25	932-042	Thick Slotted Nut 1 1/4"	2
26	709-143	Cotter Pin 1/8" x 2"	2
27	932-024	Spacer	4
28	932-022	Seal	4
29	932-023	Bearing	4
30	943-126	Choke Cable	1
31	750-186	1/2" ID x 3/4" OD x 1/2" Spacer	2
32	400-112	1/2" - 13 Locknut 2-Way	1
33	750-166	Swivel Axle Bracket	1
34	943-127	Accelerator Pedal Pad	2
35	750-642	Left Foot Pedal	1
36	750-643	Right Foot Pedal	1
37	400-061	1/2" - 13 x 3 1/2" HHCS	3
38	10-007	Oillite Bushing	4
39	44-001	Control Cable	2
40	720-079	Cotter Pin 3/32 x 3/4"	6
41	720-078	5/16" x 1" Clevis Pin	4
42	11-102	1/4" Fine Thread Yoke w/5/16" Pin	4
43	750-292	Oil Filler Breather	1
44	943-110-5	Gas Cap	1
45	843-172	Cover Latch	1
46	750-831	Power Steering Bracket	1



## 7590 ROLLER HOUSING PARTS LIST

REF#	PART#	DESCRIPTION	QTY.
1	750-830	Left Roller Housing	1
2	750-826	Right Roller Housing	1
3	750-821-1	Hydraulic Motor Adjuster Plate	2
4	40-199	Idler Spring	2
5	1083	#50 Master Link	3
6	750-248	#50 Chain 64 Pitch	1
7	750-821	Roller Assembly	2
8	400-105	½" – 13 Hex Nut	4
9	713-806	Ball Joint	2
10	400-056	½" – 13 X 2 ½" HHCS	2
11	400-136	½" – 20 Fine Thread Hex Nut	2
12	750-242	Tie Rod	1
13	400-044	¼" – 20 x 1" Bolt	2
14	400-208	¼" Lock Washer	2
15	720-004	Flange Bearing	2
16	750-721	Spacer 1 ¼"	2
17	750-220-2	Hub Shaft	2
18	750-210-2	Scraper Knob	2
19	750-210-1	Scraper Rod	4
20	750-210	Scraper Assembly	2
21	750-802	Hub 4 Bolt	2
22	1189	Lug Bolt	8
23	400-210	½" Lock Washer	8
24	400-105	½" – 13 Hex Nut	8
25	750-801-1	Nut	2
26	740-023	3/16" x ¾" Key	2
27	750-801	Hydro Gear Motor	2
28	750-827	Motor Mount	1
29	400-209	3/8" Lock Washer	16
30	400-090	3/8" x 1 ¼" Bolt	16
31	400-103	3/8" Hex Nut	8

7590 STEERING DRAWING

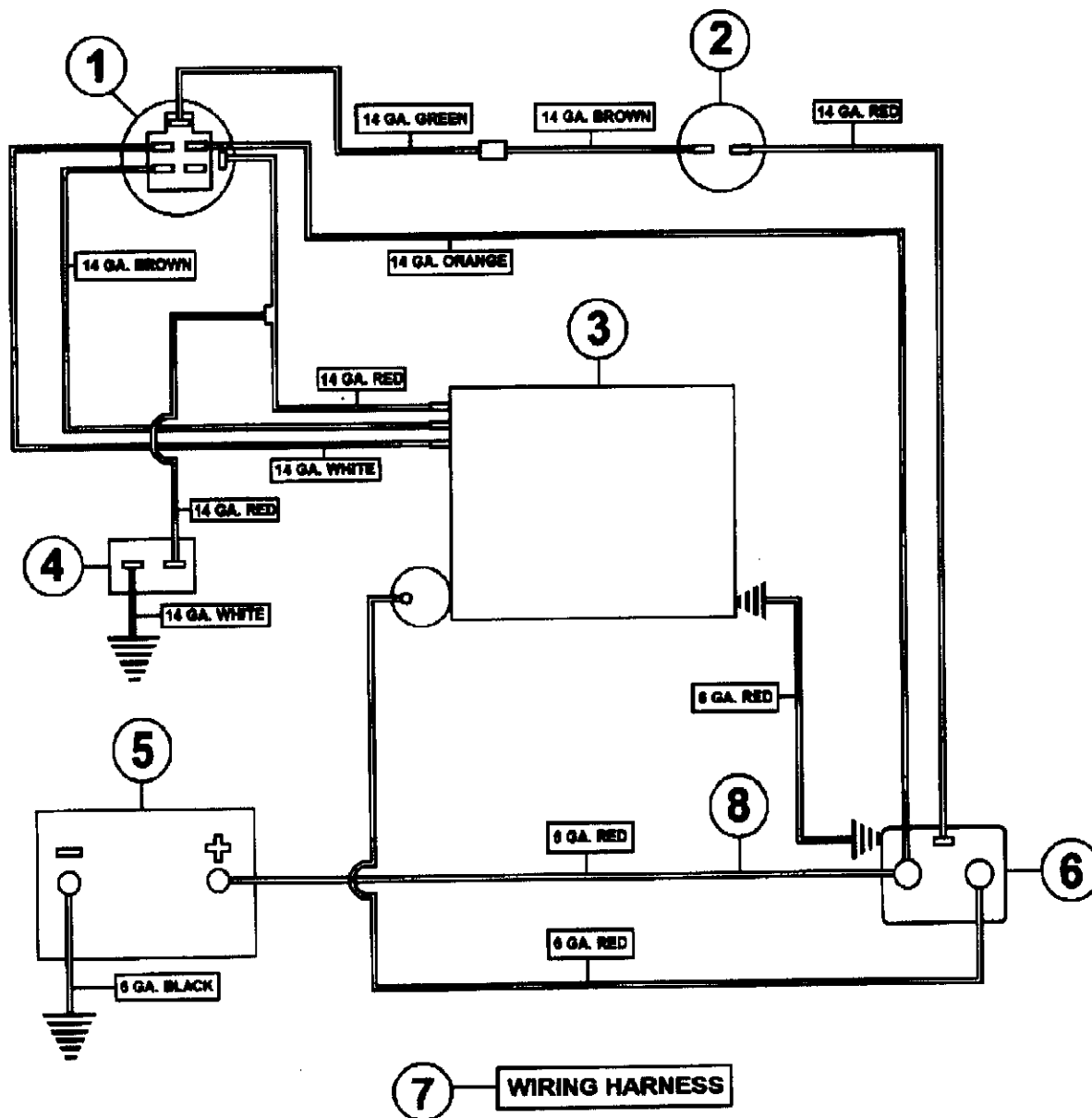


## 7590 STEERING PARTS LIST

REF#	PART#	DESCRIPTION	QTY.
1	730-046-2	Steering Wheel Cap	1
2	932-122	5/8" – 18 Hex Jam Nut	1
3	400-143	5/8" Lock Washer	1
4	730-046	Steering Wheel w/Cap	1
5	832-028	Tilt Steering Mechanism & Boot	1
6	740-023	3/16" x 3/4" Key	1
7	400-073	1/4" x 1" Self Tap Screw	4
8	400-003	5/16" – 18 x 1 1/4" HHCS	4
9	400-102	5/16" – 18 Hex Nut	8
10	750-107	Steering Column Cover	1
11	750-106	Steering Column	1
12	400-010	5/16" – 18 x 5" HHCS	2
13	400-043	1/4" x 3/4" Bolt	4
14	400-314	5/16" x 4 1/2" Bolt	2
15	750-804	Power Steering Pump	1
16	400-208	1/4" Lock Washer	4
17	400-207	5/16" Lock Washer	8
18	832-030	7/32" x 1 1/4" Spring Pin	1
19	750-806	Stub Shaft	1
20	750-841	Steering Pump Plate	1



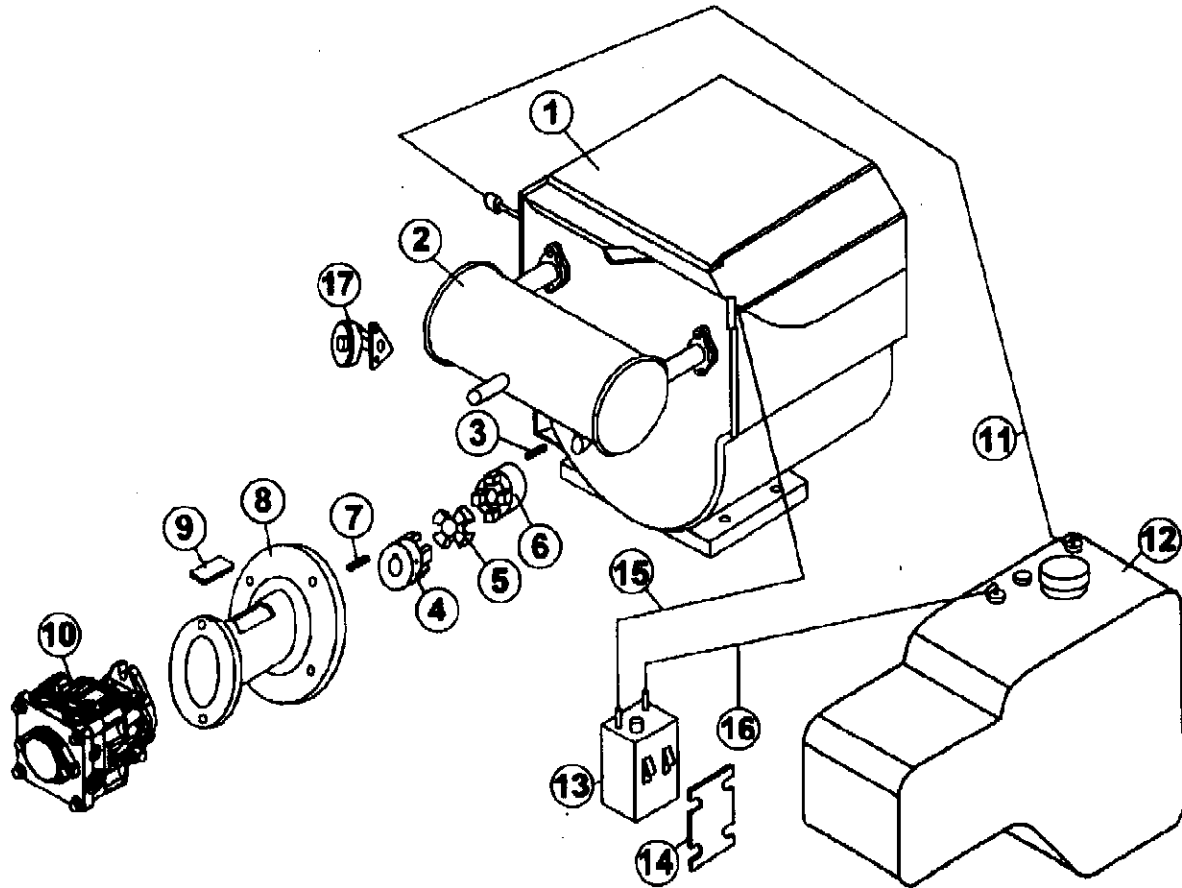
# 7590 WIRING DRAWING



## WIRING PARTS LIST

REF#	PART#	DESCRIPTION	QTY.
1	932-071	Key Switch	1
2	932-119-1	Safety Seat Switch	1
3	943-100	16 HP Vanguard Twin Engine	1
4	44-873	Hour Meter	1
5		Battery	
6	932-072	Solenoid	1
7	750-265	Wiring Harness	1
8	750-401	Battery Wire 6GA Red 33"	1

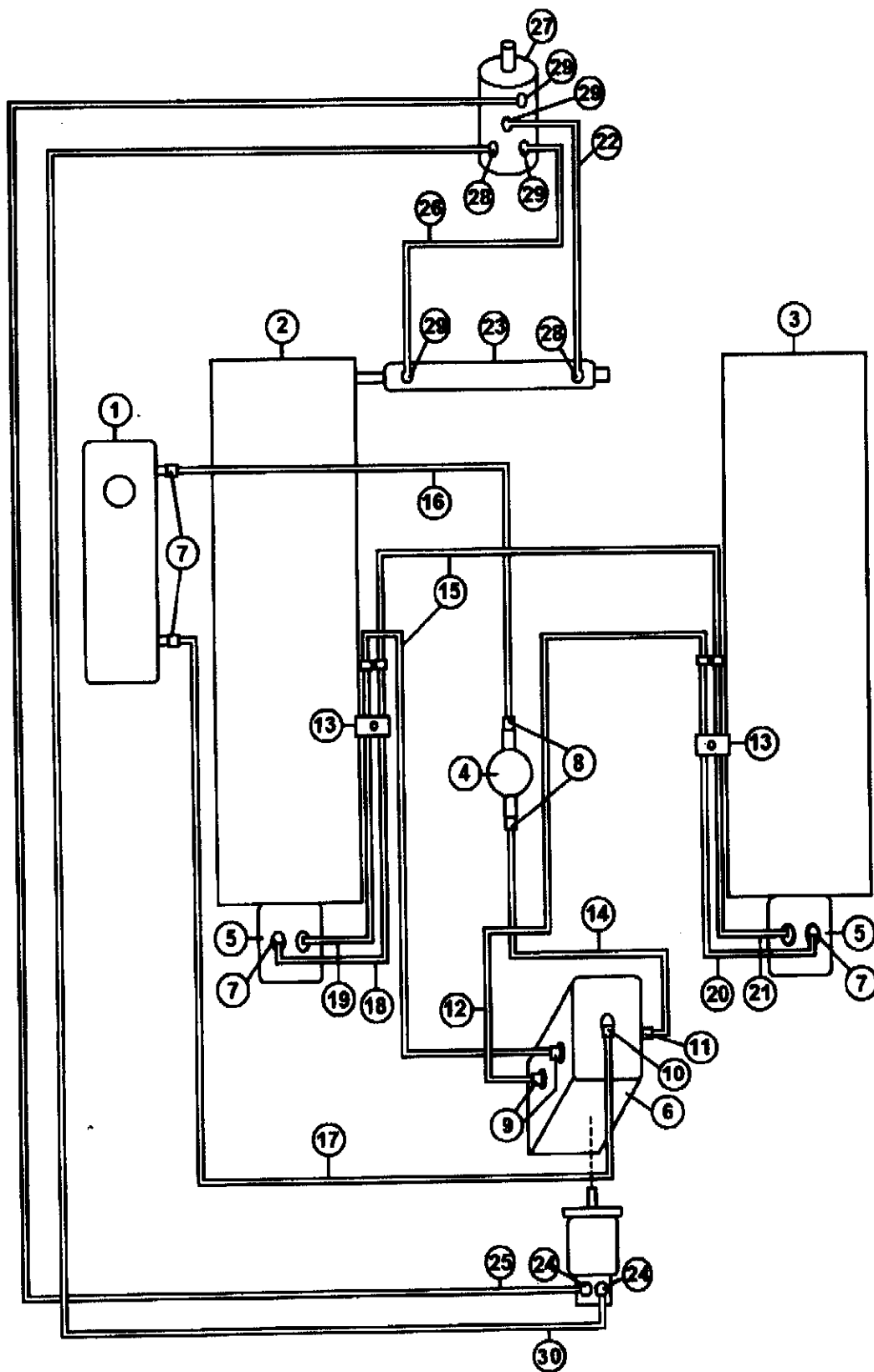
## 7580 ENGINE DRAWING



## 7590 ENGINE PARTS LIST

REF#	PART#	DESCRIPTION	QTY.
1	943-100	16 HP Engine (Model# 303447 Type 1131-E1)	1
2	943-115	Muffler	1
3	1517	1/4" x 1" Key	1
4	750-137	Pump Hub	1
5	720-027	Element	1
6	41-147	Engine Coupling 1"	1
7	750-201	3/16" x 1" Key	1
8	750-255	Bell Housing	1
9	750-127-1	Bell Housing Cover	1
10	750-800	Hydro Pump	1
11	638	1/4" Gas Hose 35"	1
12	943-110	Gas Tank	1
13	943-241	Carbon Canister	1
14	943-240	Carbon Canister Mount	1
15	638	1/4" Gas Hose 40"	1
16	638	1/4" Gas Hose 17"	1
17	943-159	Oil Filter Adapter	1

# HYDRAULIC PLUMBING DRAWING

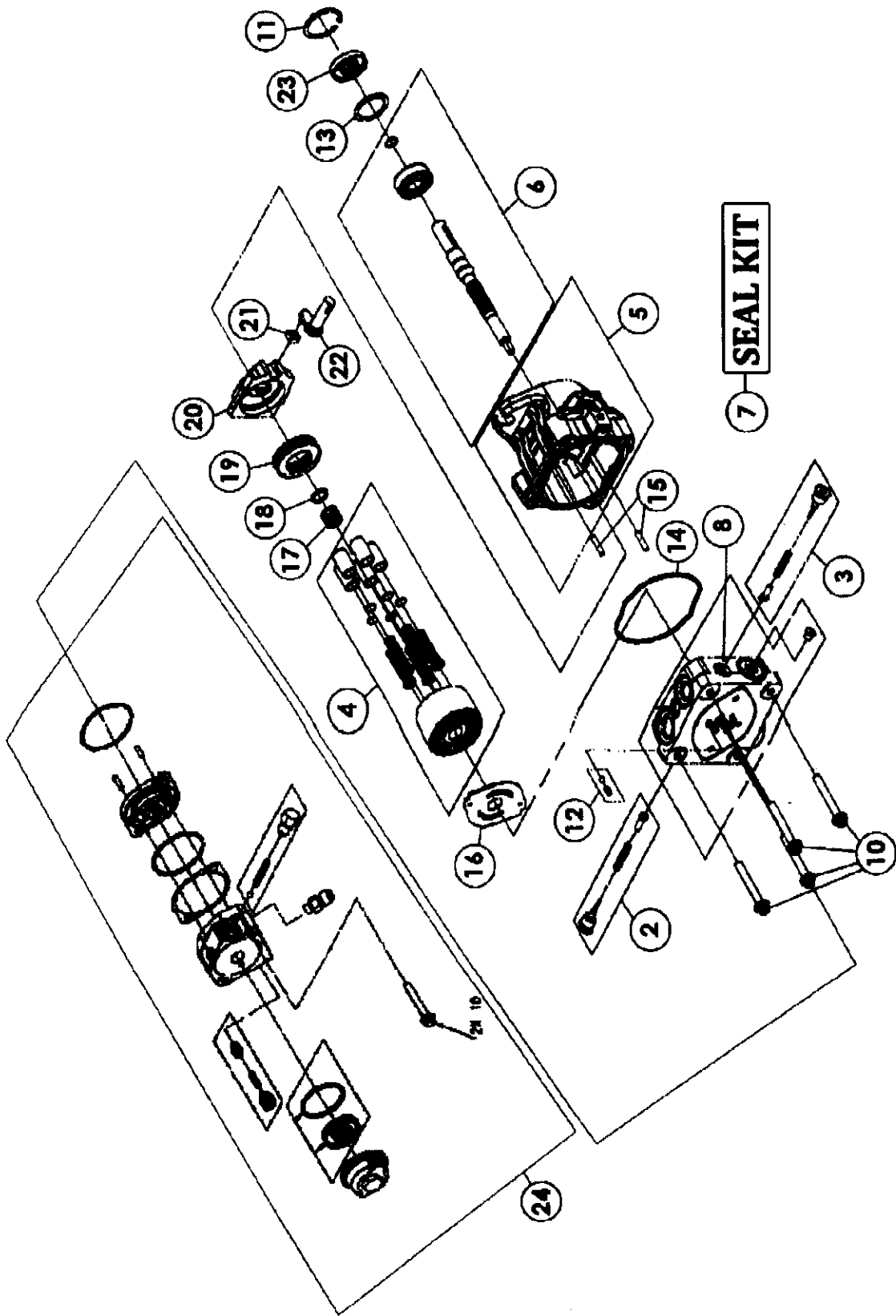


## HYDRAULIC PLUMBING PARTS LIST

REF#	PART#	DESCRIPTION	QTY.
1	943-111	Oil Tank	1
2	750-825	Left Roller Housing	1
3	750-826	Right Roller Housing	1
4	750-302	Filter Head	1
5	750-801	Wheel Motor	2
6	750-803	Pump w/Charge Pump	1
7	750-326	Wheel Motor Fitting	4
8	750-325	Oil Filter Head Fitting	2
9	750-322	Pump Fitting	2
10	750-324	Pump Fitting Top	1
11	750-295	Pump Fitting	1
12	750-501	Hyd Hose 47" x 1/2" (w/o 90° to Straight)	1
13	750-502	Hard Line Clamp	2
14	750-310	Hydraulic Hose – Pump to Filter	1
15	750-503	Hydraulic Hose 38"	2
16	750-306	Hydraulic Hose – Oil Tank to Filter Head	1
17	750-305	Hydraulic Hose – Oil Tank to Pump	1
18	750-504	Hard Line Long Left Side	1
19	750-505	Hard Line Short Left Side	1
20	750-506	Hard Line Long Right Side	1
21	750-507	Hard Line Short Right Side	1
22	750-833	Hydraulic Hose	1
23	750-805	Power Steering Ram	1
24	750-834	Hydraulic Fitting 1/4" 45 degrees	2
25	750-835	Hydraulic Hose 65"	2
26	750-836	Hydraulic Hose 33 1/2"	1
27	750-804	Power Steering Pump	1
28	750-837	Hydraulic Fitting	2
29	750-838	Hydraulic Fitting	4
30	750-839	Hydraulic Hose 65"	1
31	750-807	Power Steering Hose Kit	1
32	750-500	Roller Hose Kit	1

**NOTE: OIL FILTER IS A PART# 750-300**

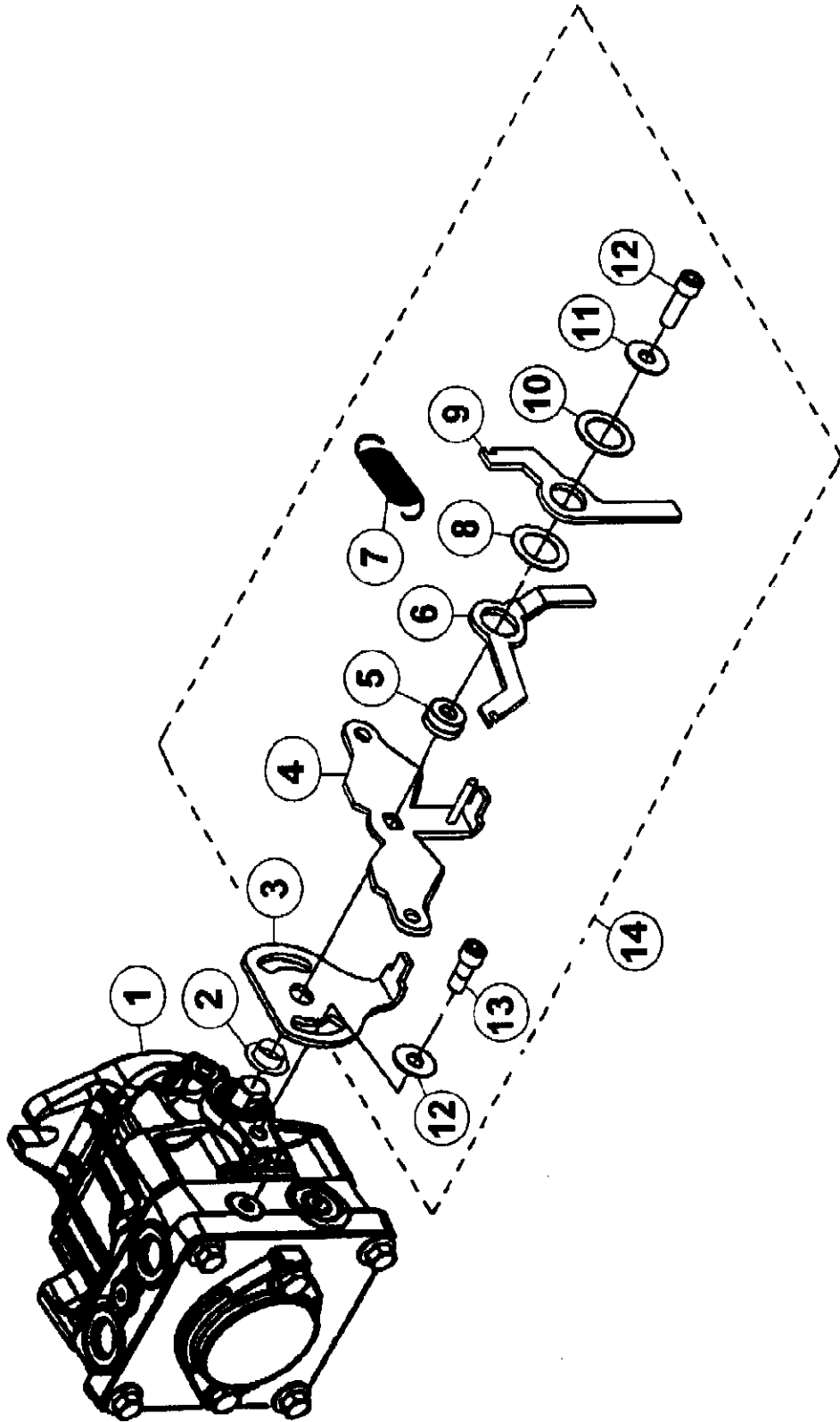
# 750-803 PUMP DRAWING



**750-803 PUMP PARTS LIST**

<b>REF#</b>	<b>PART#</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1	750-228-25	Charge Pump Kit	1
2	750-228-26	Shock Valve	1
3	750-228-29	Shock Valve	1
4	750-128-25	Cylinder Block Kit	1
5	750-228-5	Housing	1
6	750-228-6	Pump Shaft 15mm	1
7	750-228-7	Seal Kit	1
8	750-228-8	End Cap	1
9	750-228-9	M x 1. X 25 mm Bolt	2
10	750-228-10	M8 x 1.25 x 60 Bolt	4
11	750-228-11	Retaining Ring	1
12	750-228-12	Charge Relief	1
13	750-228-13	Spacer	1
14	750-228-14	O-Ring	1
15	750-228-15	Pin	2
16	750-228-16	Valve Plate	1
17	750-228-17	Spring	1
18	750-228-18	Thrust Washer	1
19	750-228-19	Thrust Bearing	1
20	750-228-20	Swash Plate	1
21	750-228-21	Slot Guide	1
22	750-228-22	Trunnion Arm	1
23	750-228-4	Lip Seal	1
24	750-803-1	Charge Pump Assembly	1

**750-803 PUMP LINKAGE DRAWING**

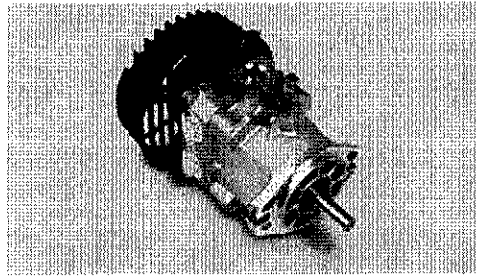


## 750-803 PUMP LINKAGE PARTS LIST

REF.#	PART#	DESCRIPTION	QTY.
1	750-803	Pump	1
2	750-228-30	Bushing	1
3	750-343-1	Shift Lever Top (New)	1
3	750-343	Shift Lever Top (Old)	1
4	750-344-1	Shift Lever Bottom (Sq. Hole .470)	1
4	750-344	Shift Lever Bottom (Sq. Hole .350)	1
5	750-228-31	Bushing	1
6	750-345	Shift lever Right	1
7	750-229-1	Spring	1
8	750-228-32	Washer	1
9	750-346	Shift Lever Left	1
10	750-228-33	Washer	1
11	750-228-34	5/16" Flat Washer	2
12	750-228-35	Allen Head Bolt	1
13	750-228-36	Allen Head Bolt	1
14	750-228-37	Parts Kit	1



# PERFORMANCE CHART



Product Type		PC	PG	PJ	PR	PW
<b>Displacement</b>	in <sup>3</sup> /rev [cc/rev]	0.37 [6.1]	0.62 [10.2]	0.73 [12]	0.97 [16]	1.33 [21.8]
<b>Input Speed</b>						
Maximum Unloaded	rpm	3600	3600	3600	3600	3600
Minimum Loaded	rpm	1800	1800	1800	1800	1800
<b>System Operating Pressure</b>						
Continuous	psi [bar]	750 [51]	1000 [70]	1000 [70]	1250 [86]	1250 [86]
Intermittent	psi [bar]	1750 [120]	2100 [145]	2100 [145]	2500 [172]	2500 [172]
Peak	psi [bar]	2500 [172]	3500 [240]	3500 [240]	3750 [260]	3750 [260]
<b>Pump Performance</b>						
@ 2400 rpm/1000 psi	gpm [l/min]	3.6 [13.6]	6.1 [23.1]	7.1 [26.8]	9.6 [36.3]	13.1 [49.8]
@ 3000 rpm/1000 psi	gpm [l/min]	4.5 [17.0]	7.6 [28.8]	8.9 [33.6]	12 [45.4]	16.4 [62.1]
@ 3600 rpm/1000 psi	gpm [l/min]	5.4 [20.4]	9.2 [34.8]	10.8 [40.8]	14.4 [54.5]	19.6 [74.2]
<b>Case Pressure</b>						
Maximum @ Cold Start	psi [bar]	10 [0.7]	10 [0.7]	10 [0.7]	25 [1.7]	25 [1.7]
Continuous - Max.	psi [bar]	4 [0.3]	4 [0.3]	4 [0.3]	10 [0.7]	10 [0.7]
<b>Inlet Vacuum</b>						
Maximum Continuous Inches Mercury		4	4	4	4	4
<b>Charge Pump Displacement(s)</b>	in <sup>3</sup> /rev [cc/rev]	.13 [2.1]	0.11/0.13 [1.9/2.1]	0.19 [3.2]	0.13/0.19 [2.1/3.2]	0.13/0.19 [2.1/3.2]
<b>Auxiliary Pump Displacement</b>	in <sup>3</sup> /rev [cc/rev]	0.19 [3.2]	0.19 [3.2]	0.19 [3.2]	0.19 [3.2]	0.19 [3.2]
<b>Auxiliary Pump Relief Setting</b>	psi [bar]	650 [45]	650 [45]	650 [45]	650 [45]	650 [45]
<b>Auxiliary Pump Performance</b> @3200 rpm, 500 psi, 70 SUS [13 Cst] oil, & 180°F	gpm [l/min]	1.8 - 2.0 [6.8 - 7.6]	1.8 - 2.0 [6.8 - 7.6]	1.8 - 2.0 [6.8 - 7.6]	1.8 - 2.0 [6.8 - 7.6]	1.8 - 2.0 [6.8 - 7.6]

**Control Torque Required  
to Stroke Pump**  
[Approximate - 20° External Stroke Angle]

lb-in / 1000 psi	75	85	85	95	105
[N-m / 70 bar]	[8.5]	[9.6]	[9.6]	[10.7]	[11.9]
lb-in / 500 psi	55	60	60	75	85
[N-m / 35 bar]	[6.2]	[6.8]	[6.8]	[8.5]	[9.6]

**Pump Oil Temperature**

Maximum Intermittent (hottest point)	°F	230	230	230	230	230
	[°C]	[110]	[110]	[110]	[110]	[110]
Normal Operating Range	°F	-10 to 200	-10 to 200	-10 to 200	-10 to 200	-10 to 200
	[°C]	[-23 to 93]	[-23 to 93]	[-23 to 93]	[-23 to 93]	[-23 to 93]

**Fluid Viscosity Limits @ 230°F [110°C]**

Optimum	SUS[cSt]	70 [13]	70 [13]	70 [13]	70 [13]	70 [13]
Minimum	SUS[cSt]	55 [9]	55 [9]	55 [9]	55 [9]	55 [9]

**Weight of Unit**

lbs [kg]	7 [3.2]	8 [3.6]	12.65 [5.7]	12 [5.4]	14 [6.3]
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**Inlet Filtration Requirement**

Nominal	micron	25	25	25	25	25
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# The Smithco Commercial Products Two-Year Limited Warranty

Smithco, Inc. (Smithco) warrants your 2007 or newer Smithco Commercial Product ("Product") purchased after January 1, 2007, to be free from defects in materials or workmanship for the period of time listed below. Where a warrantable condition exists, Smithco will repair the Product at no cost to you including diagnosis, labor (at the Smithco standard labor rate, subject to the Smithco flat rate schedule), and parts.

## Warranty Duration Is:

1. Two years, 1500 operational hours\* from the date of delivery to the original purchaser or three years from the date of original manufacturer of the product, whichever occurs first. (\*Products equipped with hour meter).
2. Products used in rental situations are covered for 90 days from date of delivery to original user/renter.

## Owner responsibilities:

As the Product owner, you are responsible for required maintenance and adjustments stated in your Owner's Manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim. **You are particularly responsible to train all present and future operators of this product on the safe operation of this product at your location.**

## Instructions for Obtaining Warranty Service:

You are responsible for notifying the Authorized Smithco Products Distributor from whom you purchased the Product as soon as you believe a warrantable condition exists and not later than 30 days from discovery of the condition.

If you need help locating an Authorized Smithco Distributor, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Smithco Product Support Department  
Highway SS @ Poplar St.  
Cameron, Wisconsin 54822  
Telephone: 715-458-4192      E-Mail: [ProductSupport@Smithco.com](mailto:ProductSupport@Smithco.com)

## Maintenance Parts:

Parts scheduled for replacement as required maintenance ("Maintenance Parts"), are warranted for the period of time up to the scheduled replacement time for that part.

## Items/Conditions Not Covered:

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. The items/conditions listed below are not covered by this warranty.



Product failures which result from the use of non-Smithco replacement parts, or from installation and use of add-on, modified, or unapproved accessories are not covered.



Product failures which result from failure to perform required maintenance and/or adjustments are not covered.



Product failures that result from operating the Product in an abusive, negligent or reckless manner are not covered.



This warranty does not apply to parts subject to consumption through use, unless found to be defective. Examples of parts which are consumed, or used up during normal Product operation include, but are not limited to: blades, tines, teeth, scarifiers, rakes, plates, wear plates, castor wheels, tires, batteries, filters, belts, nozzles, etc.



This warranty does not apply to failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.



This warranty does not apply to normal "wear and tear" items. Normal "Wear and Tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.



Smithco may require the return of failed parts or components in order determine the validity of any warranty claim.



Smithco will not be obligated to replace components of other manufacturers if inspection by the original component manufacturer indicates that failure was due to normal wear and tear, expected consumption through use or improper care or service.

#### **Other Legal Disclaimers:**

The above remedy for product defects through repair or replacement by an authorized Smithco distributor or dealer is the purchaser's sole remedy for any defect. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**THERE ARE NO OTHER EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH ABOVE. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE LIMITED WARRANTIES CONTAINED HEREIN.**

Some States may not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

**THE SMITHCO COMPANY IS NOT LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE PRODUCT, INCLUDING ANY COST OR EXPENSE OF PROVIDING A SUBSTITUTE PRODUCT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.**

Some states may not allow the exclusion of indirect, incidental or consequential damages, so the above exclusion may not apply to you.

**Smithco neither assumes, nor authorizes any person to assume for it, any other liability in connection with the sale or use of this product.**

**SMITHCO, INC.  
WANYE, PA 19087**

