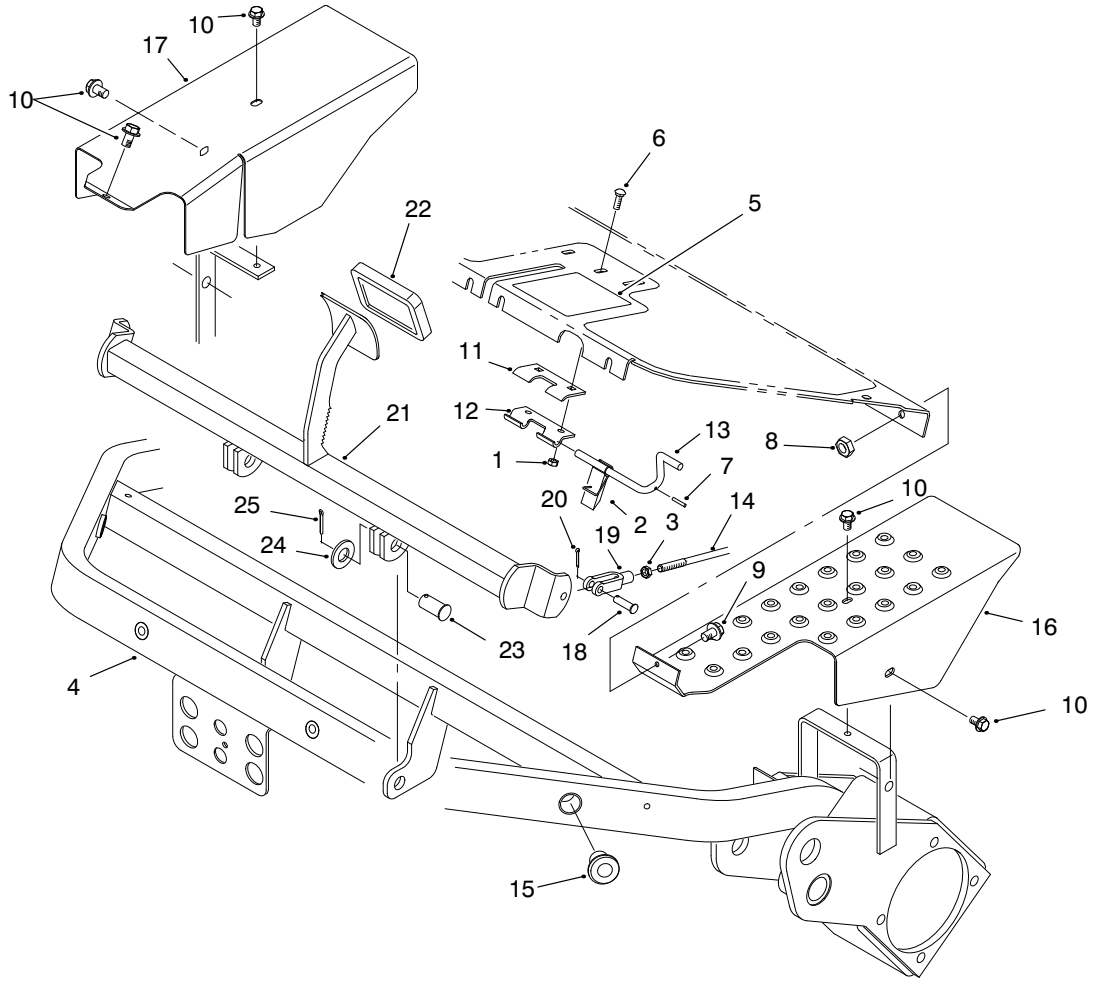
FORM NO. 3323−245

TORO®

MODEL NO. 04381−91121 & UP

PARTS CATALOG

GREENSMASTER® 3200D
TRACTION UNIT



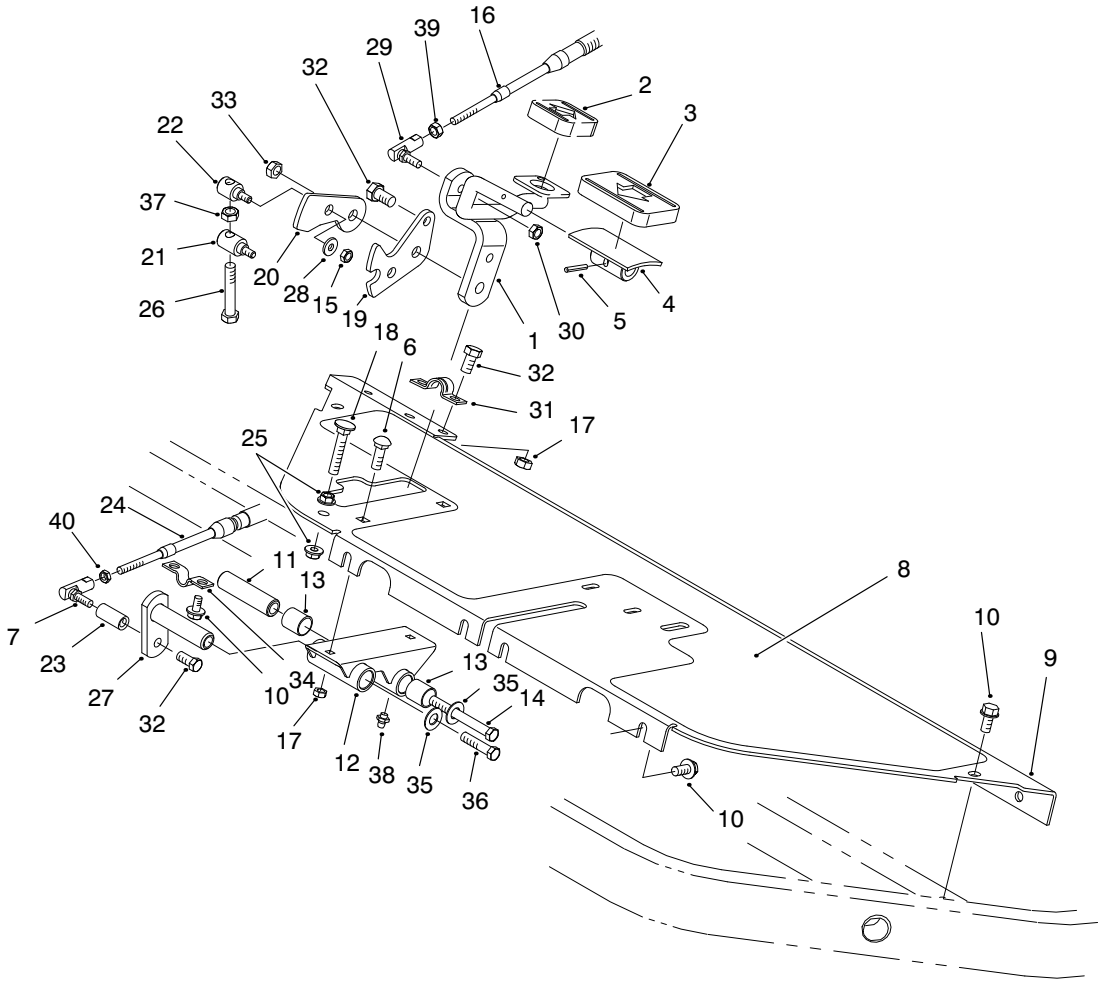
T−2222−3

FRAME & BRAKE PEDAL ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	33023−00	Nut − Lock	2
2	93−2276	Spring − Brake Latch	1
3	3220−2	Nut − Jam	2
4	93-2010-01	Frame	1
5	93−8062	Decal − Parking Brake	1
6	33123−016	Screw − Carriage	2
7	32121−50	Pin − Roll	1
8	33024−00	Nut − Lock	1
9	33114−020	Screw − HH	1
10	32144−14	Screw − HH	5
11	95−1628	Hinge − Upper	1
12	95−1629	Hinge − Lower	1
13	94−9600	Brake Latch	1

Ref. No.	Part No.	Description	No. Used
14	93−2069	Rod − Brake	2
15	83−1700	Bushing − Flange	3
16	93-2073-01	Shield − Wheel LH	1
17	93-2072-01	Shield − Wheel RH	1
18	283−61	Pin − Clevis	2
19	282−2	Clevis	2
20	3272−6	Pin − Cotter	2
21	93-2075-01	Brake Pedal	1
22	93−7629	Pad − Foot Brake	1
23	283−87	Pin − Clevis	2
24	3256−27	Washer − Flat	2
25	3272−11	Pin − Cotter	2

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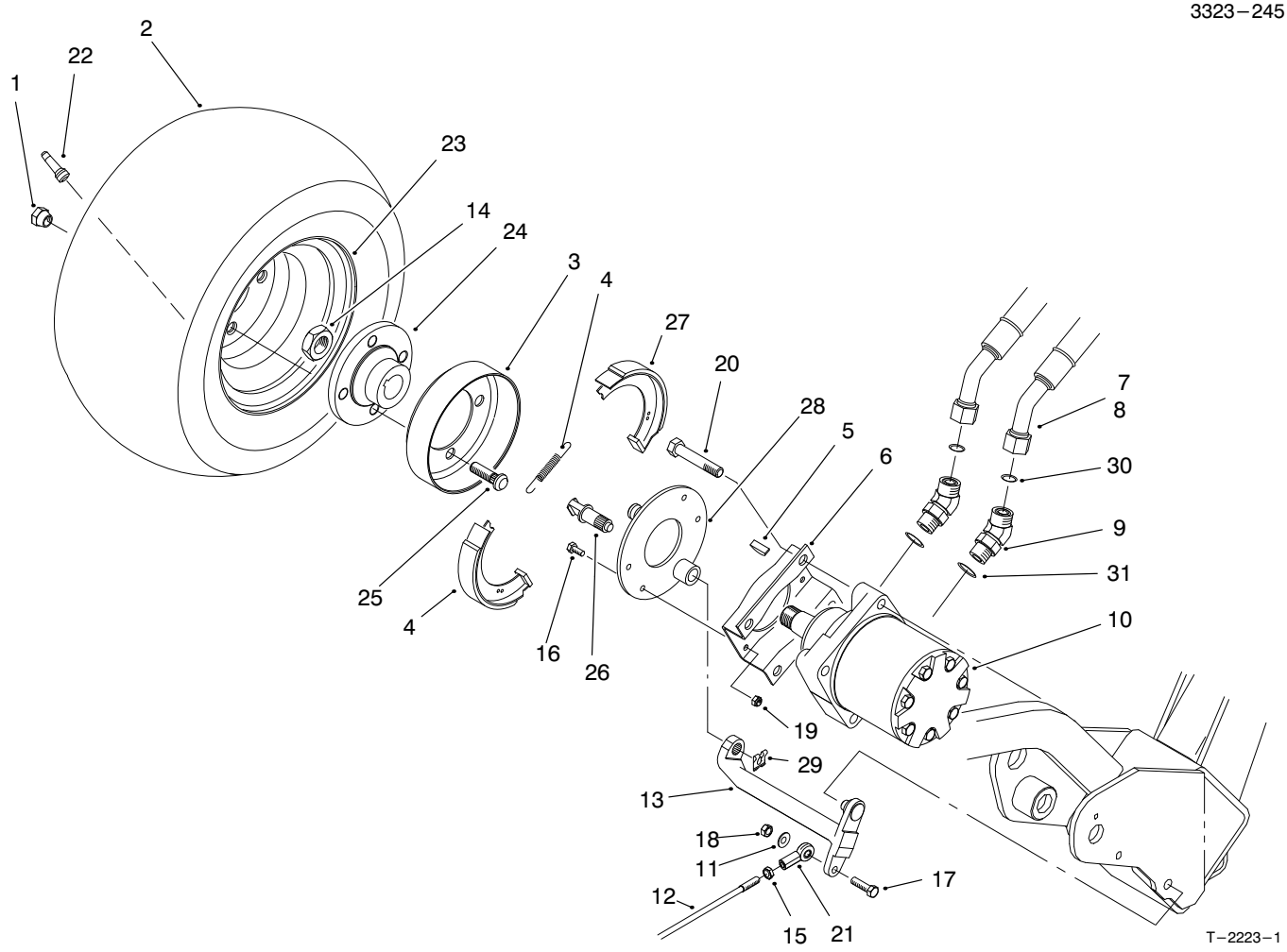
T−2242−2

FLOOR PANEL & TRACTION PEDAL ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	93-2085-01	Rod	1
2	74−9110	Pad − Pedal Reverse	1
3	74−9100	Pad − Pedal Forward	1
4	49-6440-03	Pedal − Accelerator	1
5	32121−45	Roll Pin	1
6	33124−020	Screw − Carr.	2
7	2411−38	Ball Joint Assembly	1
8	93−2142	Pad − Floor Plate	1
9	94-6399-01	Plate − Floor	1
10	32144−14	Screw − HH	8
11	94−1371	Spacer	1
12	94−1383	Pedal Pivot	1
13	256−311	Bushing − Straight	4
14	33115−090	Screw − HH	1
15	33023−00	Nut − Lock	2
16	93−2099	Cable − Traction Control	1
17	33024−00	Nut − Lock	4
18	17−9420	Screw − Handle	1
19	94−1373	Bracket −Lock	1
20	94−1372	Bracket − Mow	1

Ref. No.	Part No.	Description	No. Used
21	94−1375	Trunion Lock Bracket	1
22	94−1374	Trunion Mow Bracket	1
23	94−1386	Shaft − Pedal Lock	1
24	94−1304	Cable − Neutral Lock	1
25	32128−20	Nut − Lock	2
26	94−3489	Screw − HH	1
27	94−1300	Neutral Lock	1
28	3256−1	Washer − Flat	2
29	2411−34	Ball Joint	1
30	3296−13	Nut − Lock	1
31	93−2092	Clamp − Cable	1
32	33114−016	Screw − HH	4
33	33025−00	Nut − Lock	1
34	93−2279	Clamp − Cable	1
35	3256−24	Washer − Flat	2
36	33115−016	Screw − HH	1
37	33014−00	Nut − Hex	1
38	302−5	Fitting − Grease	1
39	3220−1	Nut − Jam	1
40	3219−14	Nut − Hex.	1

* Not Illustrated

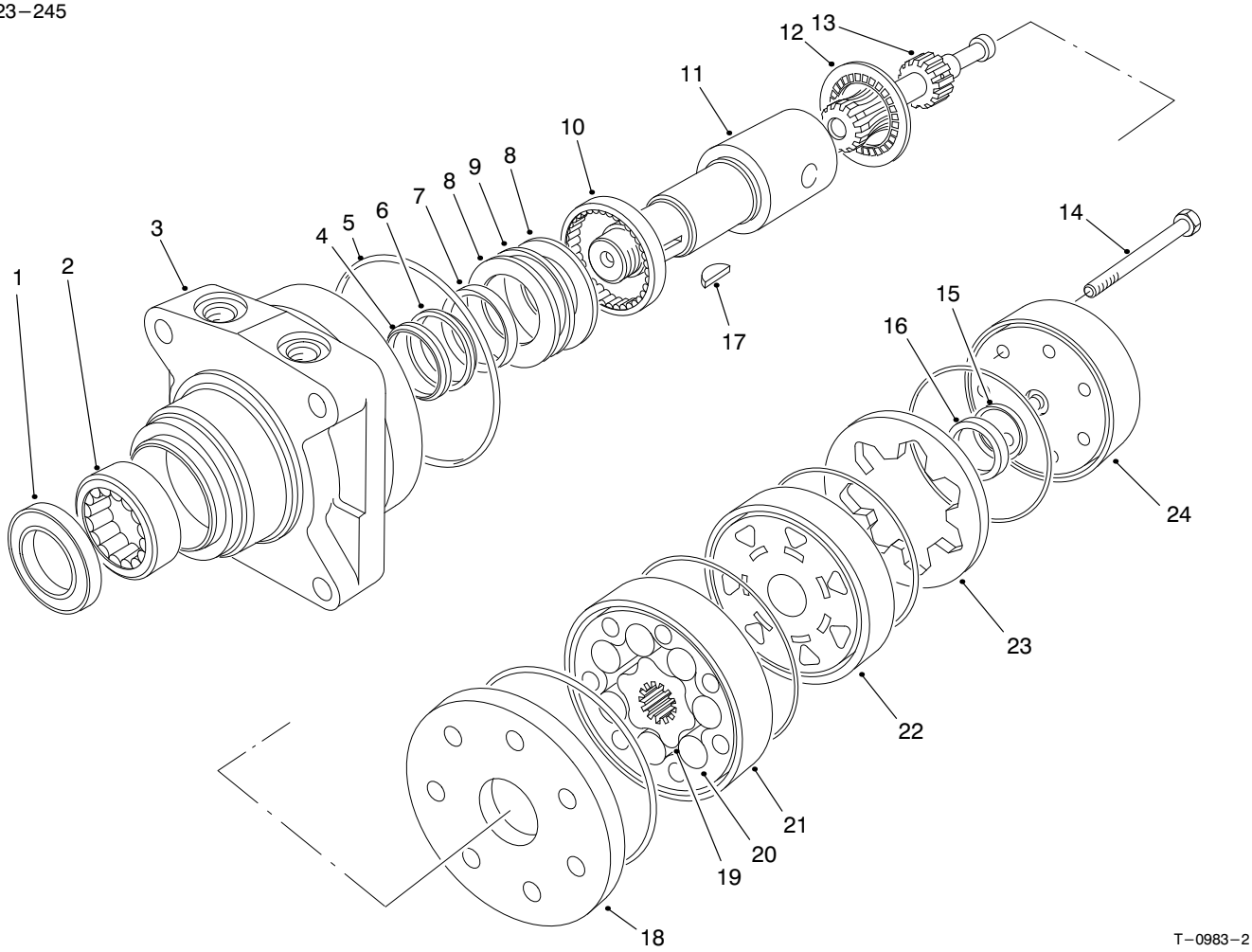


FRONT WHEEL & BRAKE ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	242−50	Nut − Lug	8
2	28−3680	Tire	2
3	10−6850	Drum − Brake	2
4	70−9880	Spring − Return	4
5	3257−42	Key − Woodruff	2
6	84-2000-03	Bracket − Brake	2
7	94−5357	Hose Assembly − RH	2
8	94−5358	Hose Assembly − LH	2
9	340−14	Fitting − 45˚ (Incl. Ref. #30−31)	4
10	92−9199	Hydraulic Motor − Wheel	2
11	3256−23	Washer − Flat	2
12	93−2069	Rod − Brake	2
13	93−2096	Lever − Brake	2
14	26−3790	Nut − Lock	2
15	3220−20	Nut − Jam	2
16	33113−020	Screw − HH	8
17	33114−030	Screw − HH	2
18	33024−00	Nut − Lock NI	2
19	33023−00	Nut − Lock NI	8
20	33116−060	Screw − HH	8
21	93−2070	Clevis − Swivel	2
22	232−24	Stem − Valve	2
23	217−60	Rim	2
24	10-6870-03	Hub − Wheel	2
25	85−6540	Stud − Drive	8
26	70−9860	Cam − Brake	2
27	70−9840	Shoe − Brake	4
28	70−9870	Plate − Backing	2
29	70−9850	Clip − Retaining	2
30	237−65	O−Ring	4
31	237−80	O−Ring	4
*	10−6821	Brake Drum Assembly (Incl. Ref. #3 & 24−25)	2
*	71−1500	Brake Assembly (Incl. Ref. #4 & 26−29)	2

*Not Illustrated

3323−245



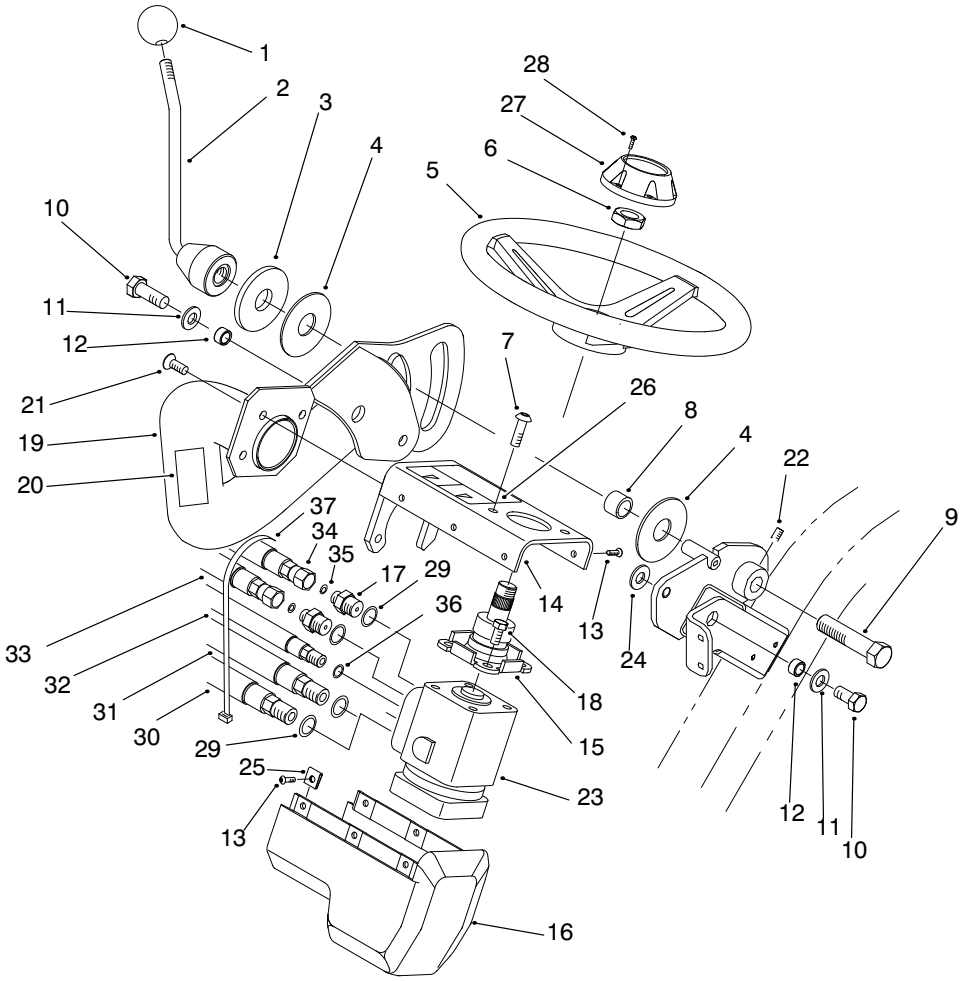
T−0983−2

HYDRAULIC DRIVE MOTOR ASSEMBLY NO. 92−9199

Ref. No.	Part No.	Description	No. Used
†1		Seal − Dirt & Water	1
†2		Bearing	1
†3		Housing	1
†4		Washer − Back−Up	1
†5		Ring − Seal	5
†6		Washer − Back−Up	1
†7		Seal − Inner	1
†8		Washer − Thrust	2
†9		Bearing − Thrust	1
†10		Bearing	1
11	76−0860	Shaft − Coupling	1
12	76−0850	Bearing − Thrust	1
13	92−9761	Link − Drive	7
14	92−9762	Screw − Cap Hex. Hd.	1
†15		Seal − Commutator	1
†16		Commutator	1

Ref. No.	Part No.	Description	No. Used
17	3257−42	Key − Woodruff	1
18	76−0870	Plate − Wear	1
†19		Rotor	1
†20		Vane	7
†21		Stator	1
22	76−0840	Manifold	1
†23		Ring − Commutator	1
24	76−0940	End Cover Assembly	1
*	92−9763	Rotor Set (Incl. Ref. #19−21)	1
*	76−0880	Commutator Assembly (Incl. Ref. #15, 16 & 23)	1
*	94−8178	Seal Kit (Incl. Ref. #1, 4−7 & 15)	1
*	76−0810	Housing Assembly (Incl. Ref. #2, 3 & 8−10)	1

*Not Illustrated
†Not Serviced Separately

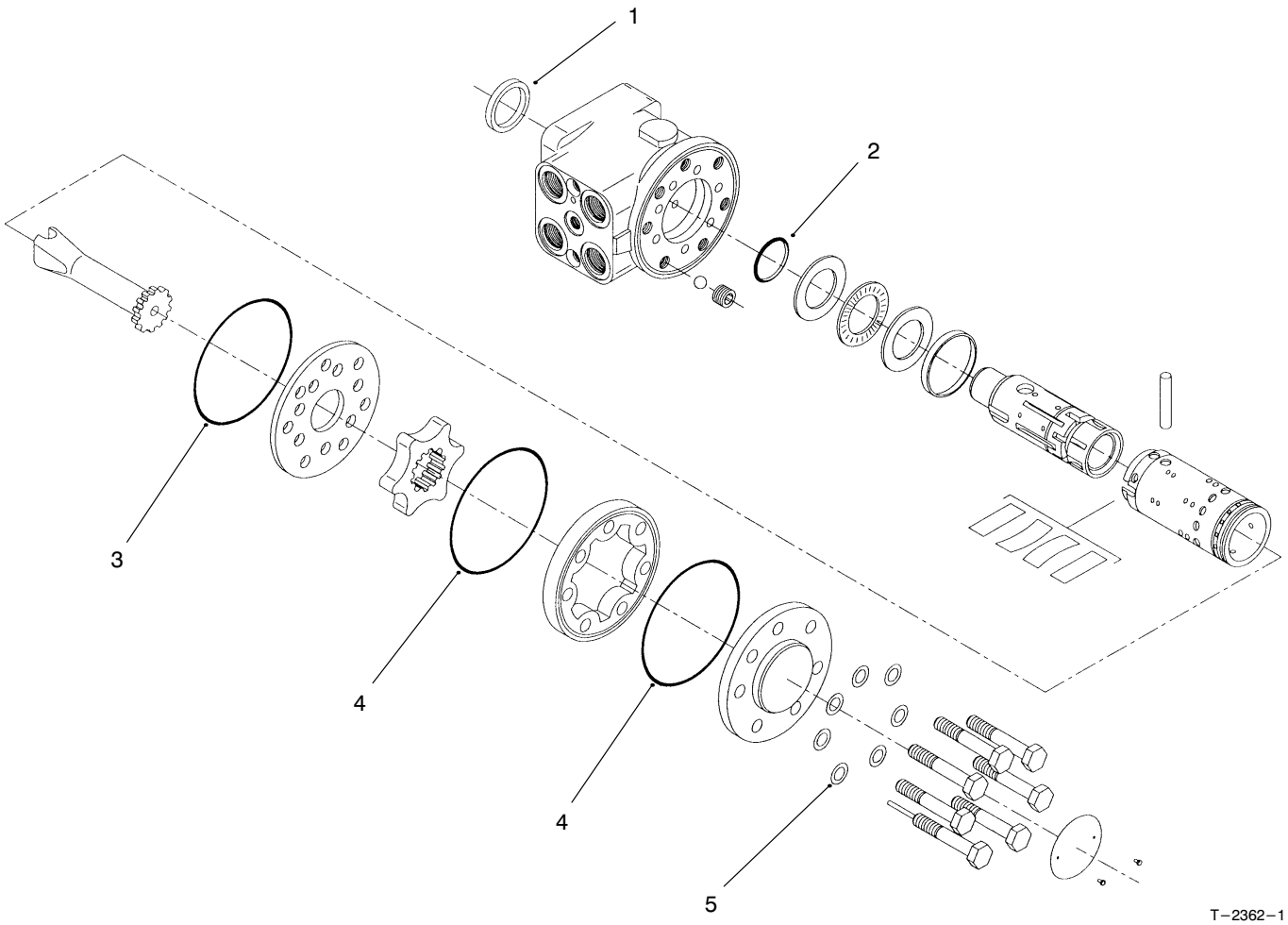


T−2224−1

STEERING ARM ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	233−48	Knob	1
2	93-2400-03	Lockup Handle	1
3	83−0760	Spacer − Lockup	1
4	83−0740	Disc − Friction	2
5	68−5130	Wheel − Steering (Incl. Ref. #27−28)	1
6	47−6990	Nut − Steering Wheel	1
7	3274−63	Screw − HSBH	2
8	83−0730	Spacer − Lockup	1
9	93−2199	Screw − HH	1
10	325−4	Screw − HH	2
11	3256−26	Washer − Flat	2
12	47−2890	Bushing	2
13	3274−39	Screw − HSBH	6
14	94−9628	Steering Cover Asm (Incl. Ref. #26)	1
15	83−1420	Steering Column Assembly	1
16	94−6366	Cover − Steering Valve	1
17	340−133	Fitting − Hydraulic (Incl. Ref. #29−30)	2

Ref. No.	Part No.	Description	No. Used
18	323−4	Screw − HH	2
19	93-2115-01	Steering Arm	1
20	93−8068	Decal − Steering Arm	1
21	3274−80	Screw − HSBH	3
22	3246−3	Screw − Set	1
23	93−2120	Steering Control Valve	1
24	65−6390	Washer − Thrust	1
25	3290−277	Nut − Speed	6
26	93−8063	Decal − Warning	1
27	68−5140	Cap − Steering Wheel	1
28	32144−21	Screw − PPH	2
29	237−79	O−Ring	4
30	93−2272	Hose Assembly	1
31	93−2252	Hose Assembly	1
32	93−2269	Hose Assembly	1
33	93−2270	Hose Assembly	1
34	93−2271	Hose Assembly	1
35	237−21	O−Ring	2
36	237−42	O−Ring	1
37	3290−379	Tie − Cable	1

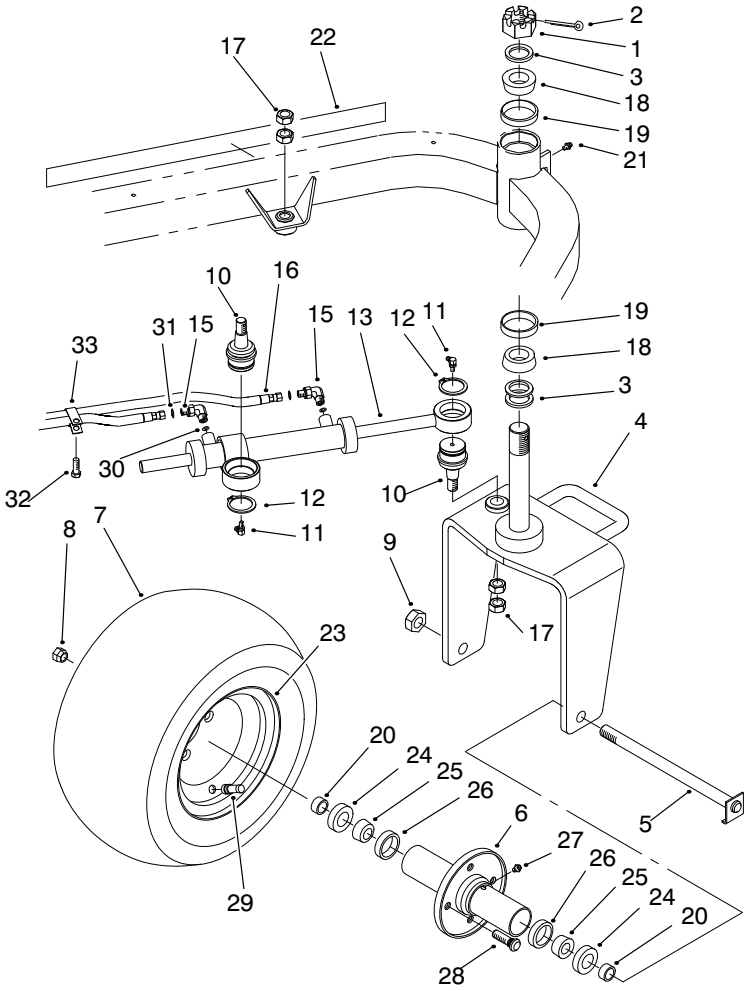


STEERING CONTROL VALVE NO. 93−2120

Ref. No.	Part No.	Description	No. Used
†1		Ring − Dust Seal	1
†2		O−Ring	1
†3		O−Ring	1
†4		O−Ring	2

Ref. No.	Part No.	Description	No. Used
†5		Washer	7
*	94−4929	Kit − Seal (Incl. Ref. #1−5)	1

†Not Serviced Separately



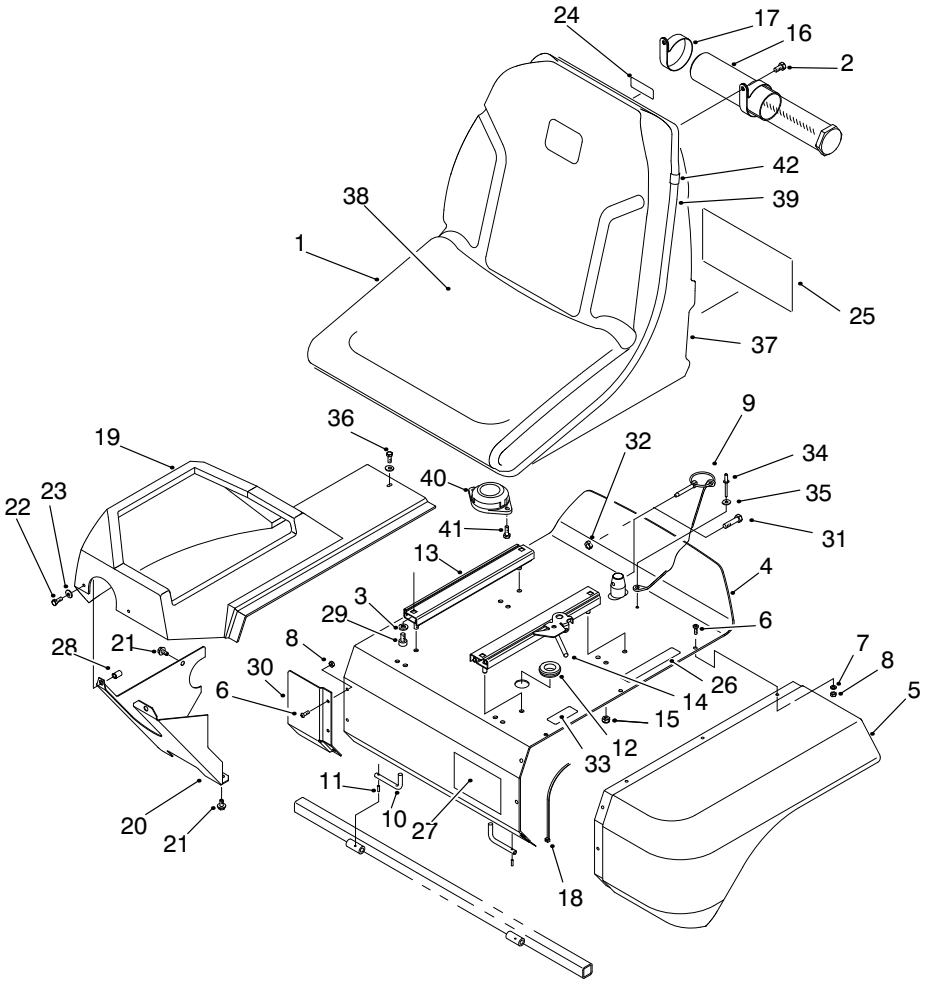
T−2225−1

REAR WHEEL ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	32136−9	Nut − Hex	1
2	3272−37	Pin − Cotter	1
3	18−6320	Washer − Steering	3
4	93-2125-01	Castor Fork	1
5	5−3934	Bolt	1
6	75−9440	Hub − Wheel	1
7	28−3680	Tire	1
8	242−50	Nut − Lug	4
9	3296−67	Nut − Lock NI	1
10	92-5838-01	Ball Joint	2
11	302−60	Fitting − Grease, 90˚	2
12	32151−104	Ring − Retaining, Ext.	2
13	93−2122	Cylinder Asm − Steering (Incl. Ref. #32)	1
14	93−2270	Hose Assembly	1
15	340−132	Fitting − Hydraulic	2
16	93−2269	Hose Assembly	1
17	3220−6	Nut − Jam	4

Ref. No.	Part No.	Description	No. Used
18	254−70	Bearing Cone	2
19	254−61	Bearing − Cup	2
20	74−3730	Spacer − Cylinder	2
21	302−5	Fitting − Grease, Str.	1
22	93−2233	Decal −GR3200	2
23	217−60	Rim	1
24	253−111	Seal − Shaft	2
25	254−78	Cone − Bearing	2
26	254−79	Cup − Bearing	2
27	302−55	Fitting − Grease	1
28	10−6830	Stud − Drive	4
29	232−27	Valve Stem w/Cap	1
30	237−78	O−Ring	2
31	237−21	O−Ring	2
32	32144−14	Screw − Hex. Washer Hd.	1
33	92−5753	Clamp − Hose Double	1
*	94−4398	Kit − Seal, Cylinder Repair	1

*Not Illustrated

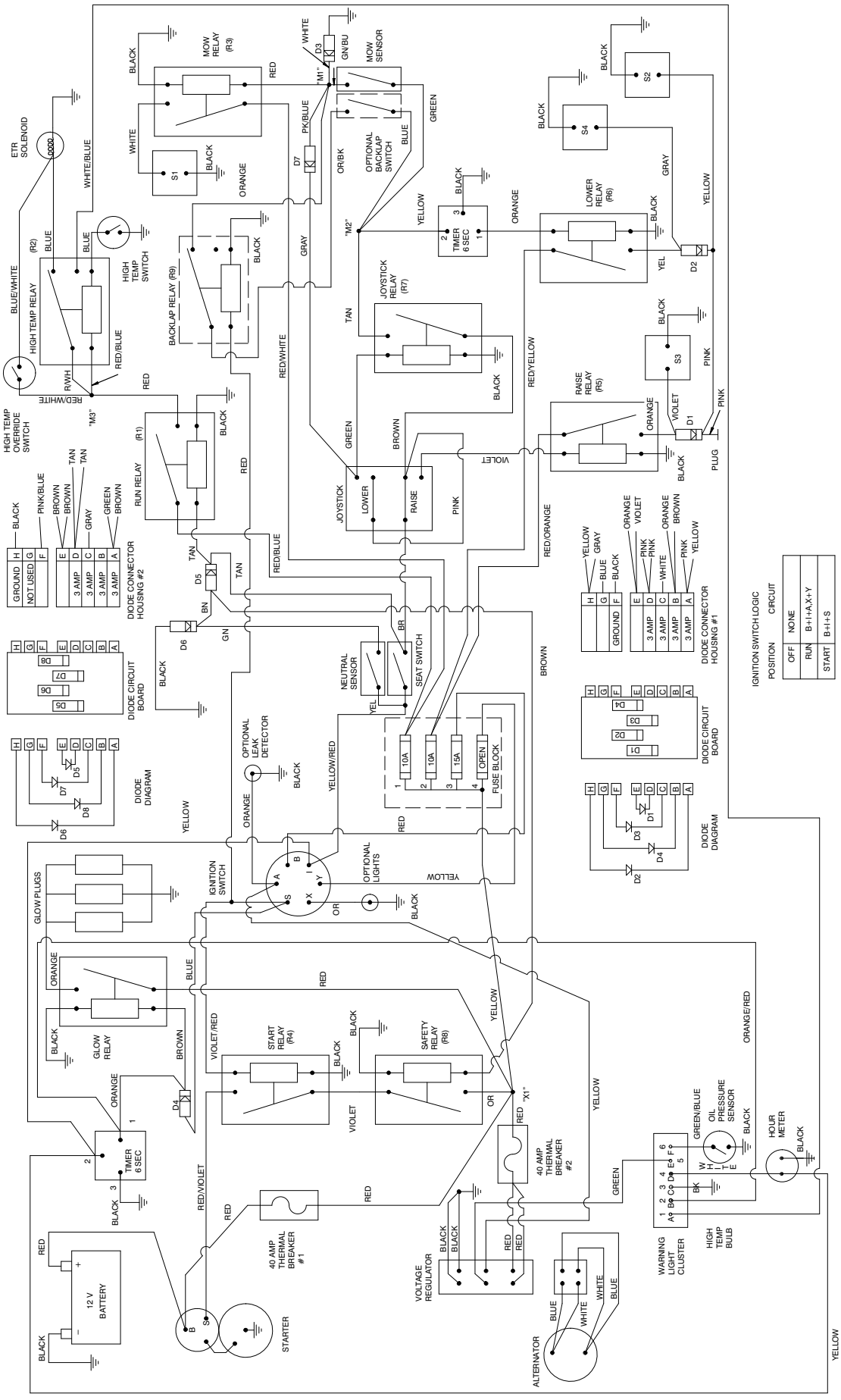


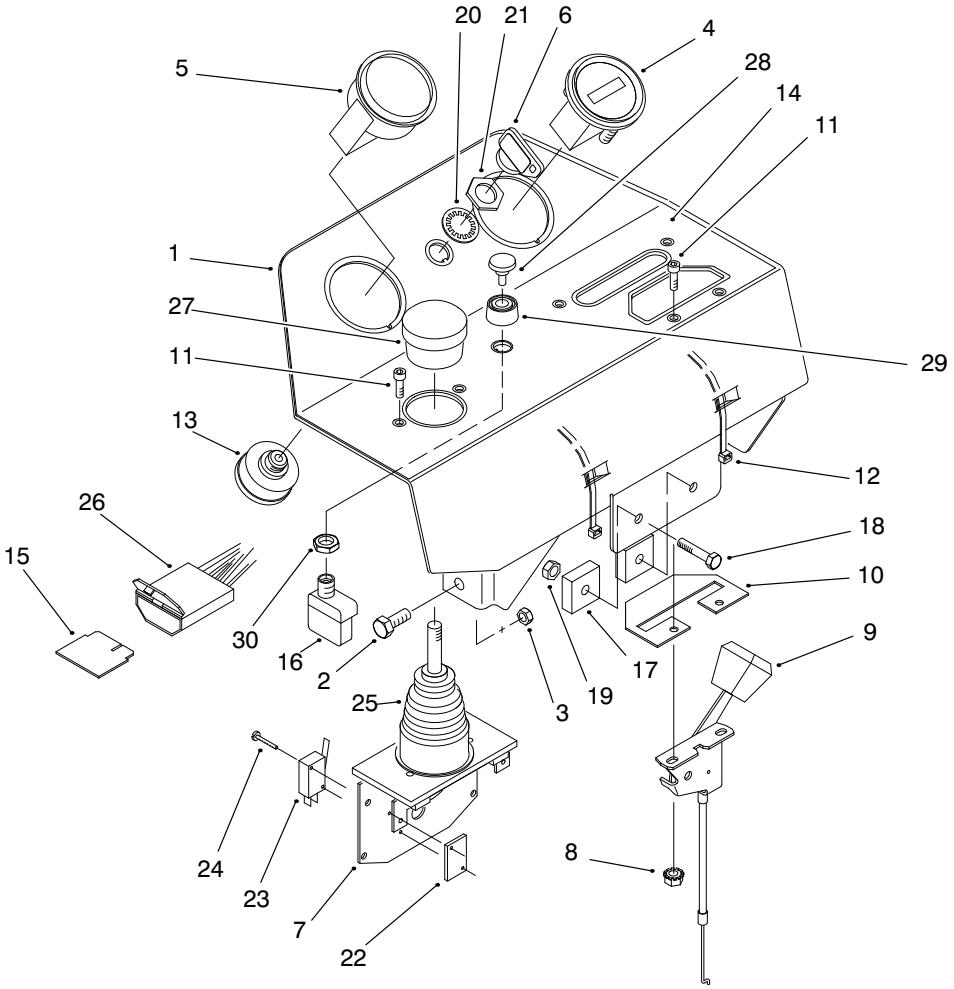
T−2226−3

SEAT ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	92−6280	Seat Assembly (Incl. Ref. #37−42)	1
2	322−2	Screw − HH	2
3	3256−23	Washer − Flat	4
4	94−9627	Seat Support Asm (Incl. Ref. #26, 27 & 33)	1
5	93−2128	Panel − Seat Base	1
6	3274−39	Screw − HSBH	9
7	3256−77	Washer − Flat	6
8	3296−12	Nut − Lock	9
9	77−3780	Lynch Pin & Lanyard Assy.	
10	93−2422	Rod − Seat Pivot	2
11	32121−7	Pin − Spring	2
12	237−100	Grommet	1
13	92−8990	Adjuster − Seat	1
14	92−8991	Adjuster w/Latch	1
15	3296−29	Nut − Lock	4
16	74−0720	Tube − Manual	1
17	2412−133	Clamp − R	2
18	3290−378	Tie − Cable	1
19	93−2578	Shroud − Console	1
20	94-4547-01	Panel − Lower	1
21	32144−14	Screw − HH	2
22	33113−016	Screw − HH	2
23	3256−1	Washer − Flat	3
24	93−8067	Decal − Hydraulic Oil	1
25	94−9633	Decal − Service	1
25	94−9642	Decal − Service (Danish)	1
25	94−9643	Decal − Service (Dutch)	1
25	94−9641	Decal − Service (Finnish)	1
25	94−9635	Decal − Service (French)	1
25	94−9636	Decal − Service (German)	1
25	94−9638	Decal − Service (Italian)	1
25	94−9644	Decal − Service (Japanese)	1
25	94−9640	Decal − Service (Norwegian)	1
25	94−9639	Decal − Service (Portuguese)	1
25	94−9634	Decal − Service (Spanish)	1
25	94−9637	Decal − Service (Swedish)	1
26	93−6689	Decal − No Rider	1
27	94−2579	Decal − Toro	1
28	93−5447	Insert − Threaded	2
29	3274−12	Screw − HSH	4
30	94-4546-01	Panel − Extension	1
31	33113−030	Screw − HH (Europe)	1
32	33023−00	Nut − Lock NI (Europe)	1
33	93−7252	Decal − CE Mark	1
34	3290−282	Rivet − Pop	1
35	3256−49	Washer − Flat	1
36	33113−012	Sctew − Hex. Hd.	1
37	92−6534	Shell − Seat	1
38	92−6533	Kit − Cushion Repair	1
39	351−78	Edging	1
40	92−6282	Switch − Seat	1
41	321−3	Screw − Hex. Hd.	2
42	351−80	Clip − Edging	1

ELECTRICAL SCHEMATIC



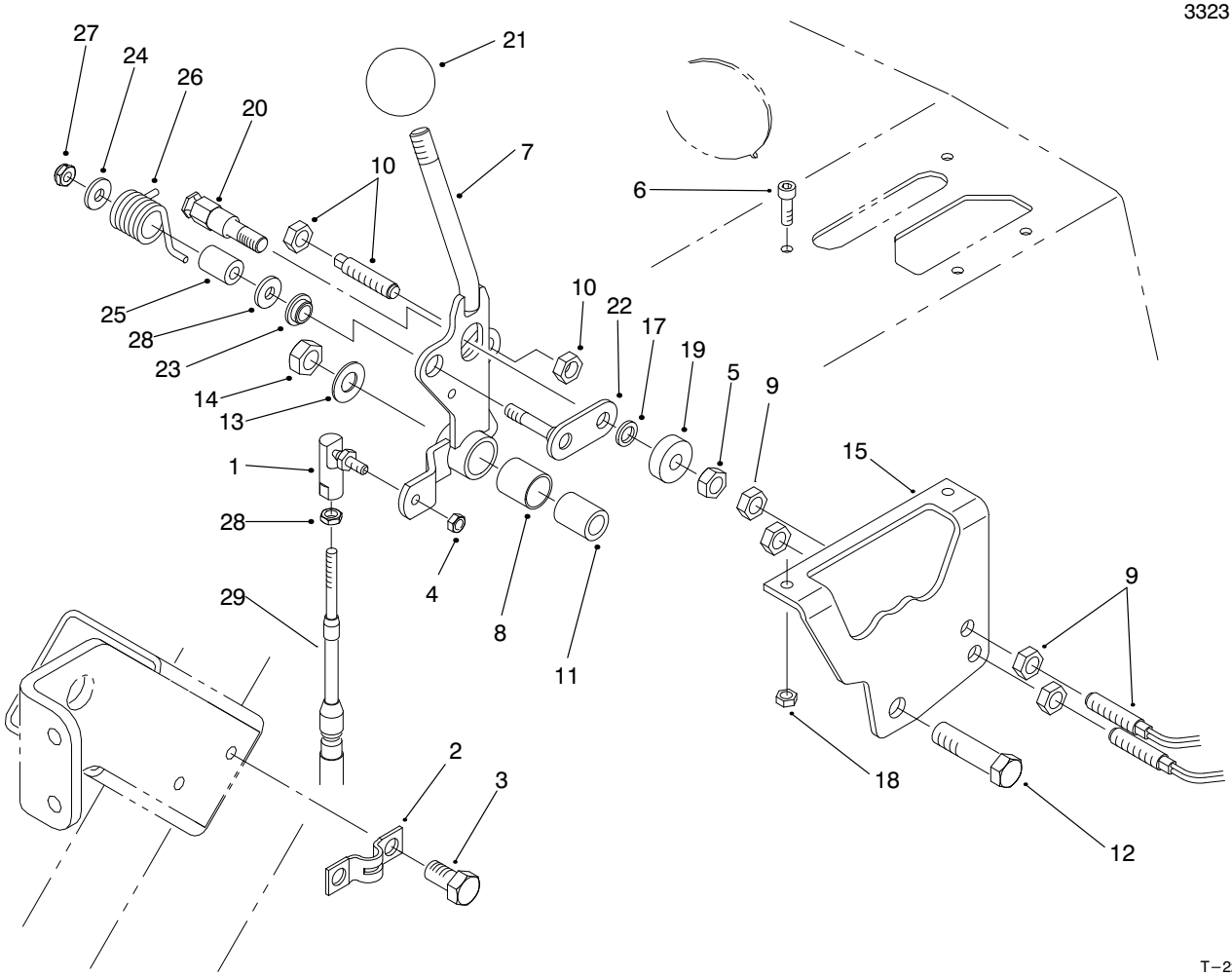


T−2292−1

CONTROL PANEL ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	94-6953-03	Console	1
2	33114−020	Screw − HH	4
3	33024−00	Nut − Lock NI	4
4	66−2950	Gauge − Hour Meter	1
5	92−9775	Warning Light Cluster	1
6	63−8360	Key − Ignition	2
7	98−2195	Lever − Control (Incl. Ref. #22−25 & 27)	1
8	32149−8	Nut − Keps	2
9	93−2322	Control − Throttle	1
10	85-9190-03	Plate − Control	1
11	3273−26	Screw − PPH	4
12	3290−378	Tie − Cable	2
13	27−2360	Switch − Ignition	1
14	94−8077	Decal − Console	1
15	92−3188	Diode − Circuit Board	1

Ref. No.	Part No.	Description	No. Used
16	72−9760	Switch − Override (Incl. Ref. #30)	1
17	92−2538	Timer − Glow Plug	2
18	33113−030	Screw − HH	2
19	33023−00	Nut − Lock NI	2
20	218−446	Washer − Lock	1
21	218−447	Nut − Hex.	1
22	3290−354	Plate − Nut	2
23	218−590	Switch − Micro	2
24	3290−93	Screw − HH	4
25	3290−488	Boot − Control, Lift	1
26	93−2340	Harness − Wire	1
27	3290−489	Knob − Control, Lift	1
28	43−6280	Button − Push	1
29	43−6420	Bezel	1
30	218−498	Nut − Hex.	1



T−2265−5

TRACTION HANDLE ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	2411−38	Ball Joint	1
2	93−2279	Clamp − Cable	1
3	32144−14	Screw − HH	2
4	3296−27	Nut − Lock	1
5	33024−00	Nut − Lock NI	1
6	3273−26	Screw − HSH	2
7	94−9611	Handle	1
8	256−311	Bushing − Straight	1
9	93−2055	Reed Switch − Sensor	2
10	93−2056	Reed Switch − Actuator	1
11	94−1378	Tube − Handle Pivot	1
12	33115−040	Screw − HH	1
13	3256−24	Washer − Flat	1
14	33025−00	Nut − Lock NI	1

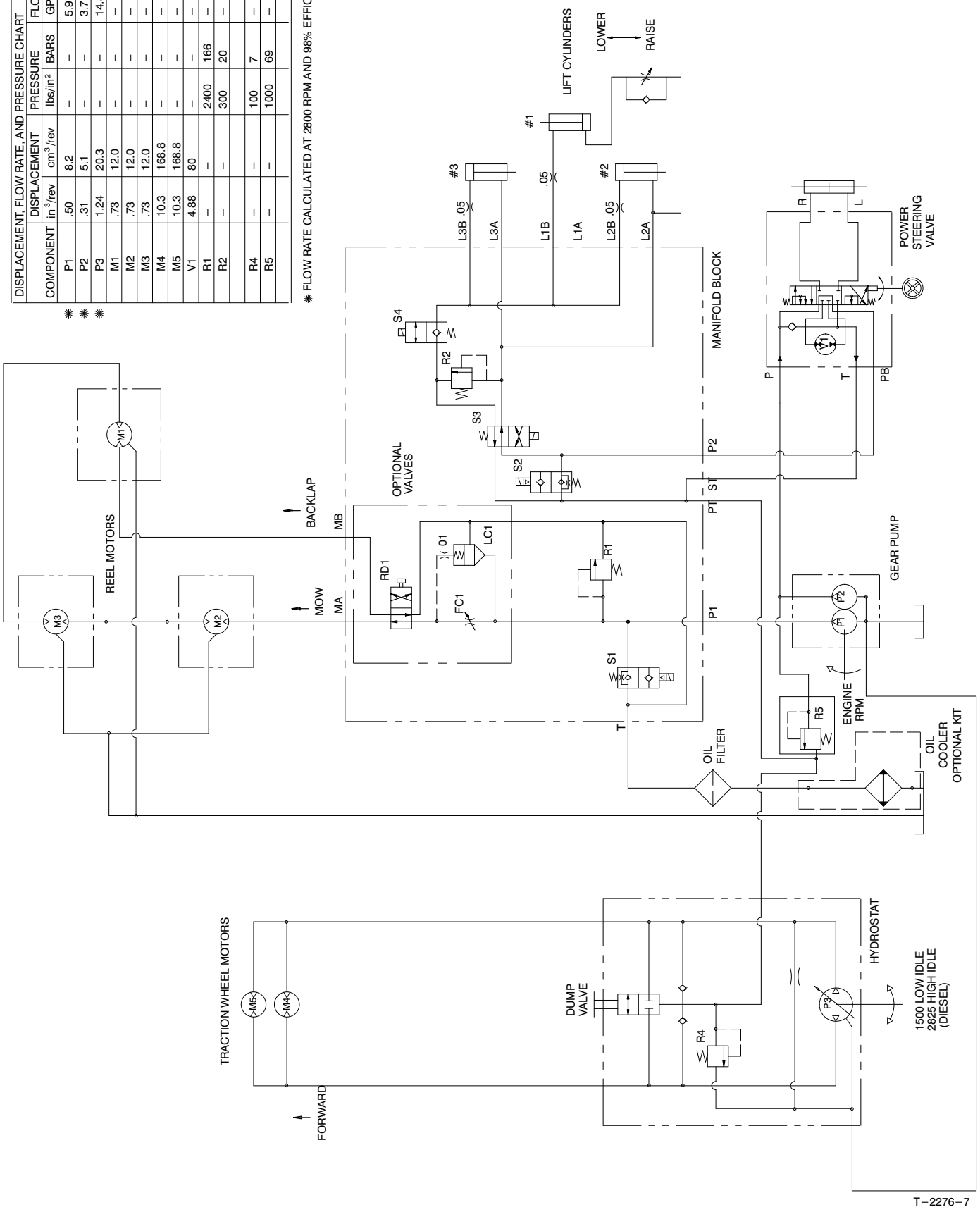
Ref. No.	Part No.	Description	No. Used
15	94−6398	Bracket − Traction	1
17	75−5470	Spacer	1
18	3296−27	Nut − Lock	2
19	251−259	Bearing − Ball	1
20	94−9617	Pin − Spring	1
21	233−42	Knob	1
22	94−9614	Roller − Pivot	1
23	94−9619	Bushing	1
24	3256−1	Washer − Flat	1
25	94−9618	Spacer − Spring	1
26	94−9620	Spring − Torsion	1
27	33023−00	Nut − Lock	1
28	3256−23	Washer − Flat	1

HYDRAULIC SCHEMATIC

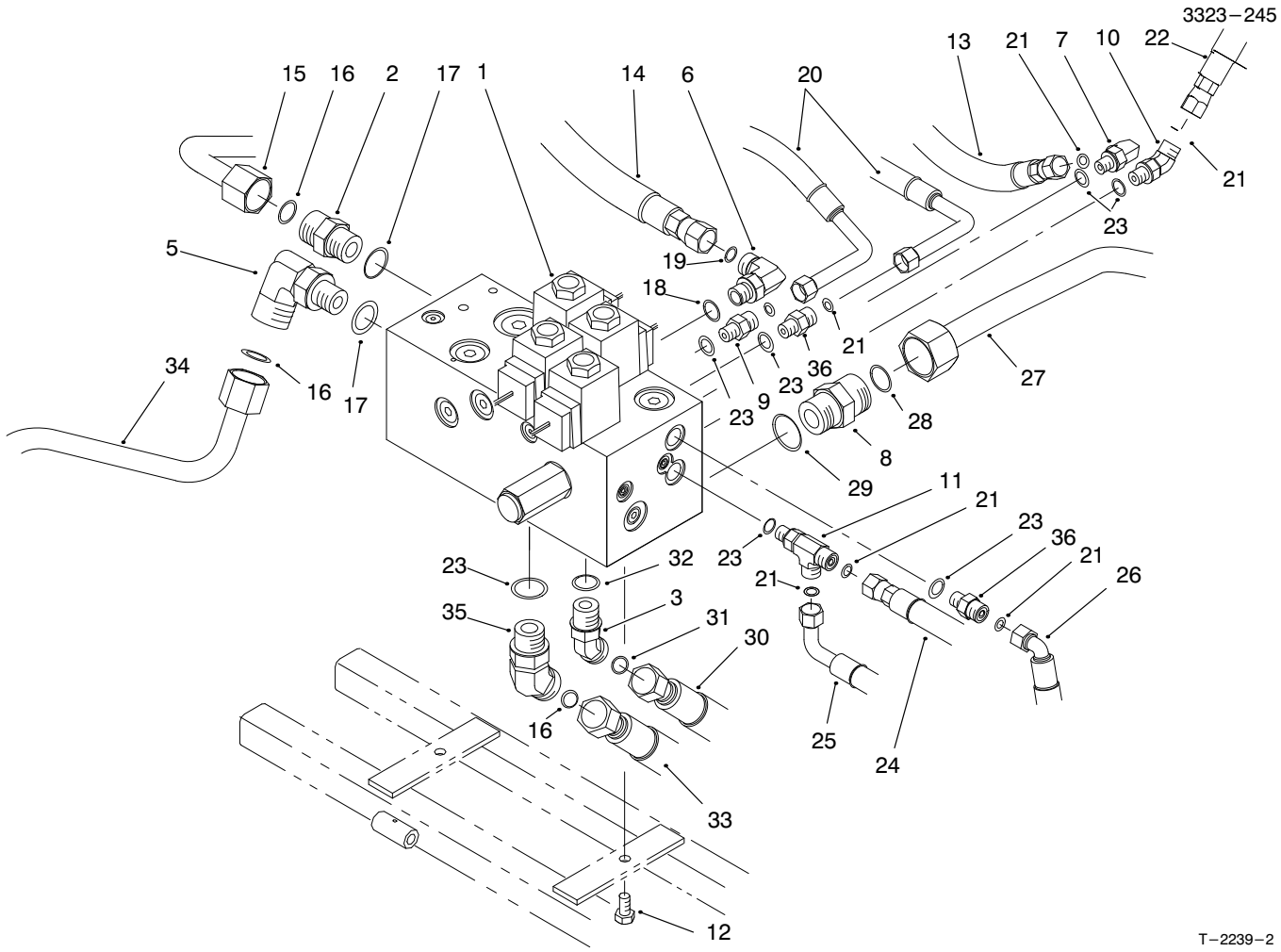
DISPLACEMENT, FLOW RATE, AND PRESSURE CHART						
	DISPLACEMENT		PRESSURE		FLOW RATE	
COMPONENT	in^3/rev	cm^3/rev	lbs/in^2	BARS	GPM	LPM
P1	.50	8.2	–	–	5.9	22.4
P2	.31	5.1	–	–	3.7	13.9
P3	1.24	20.3	–	–	14.8	55.8
M1	.73	12.0	–	–	–	–
M2	.73	12.0	–	–	–	–
M3	.73	12.0	–	–	–	–
M4	10.3	168.8	–	–	–	–
M5	10.3	168.8	–	–	–	–
V1	4.88	80	–	–	–	–
R1	–	–	2400	166	–	–
R2	–	–	300	20	–	–
R4	–	–	100	7	–	–
R5	–	–	1000	69	–	–

✱✱✱

✱ FLOW RATE CALCULATED AT 2800 RPM AND 98% EFFICIENCY

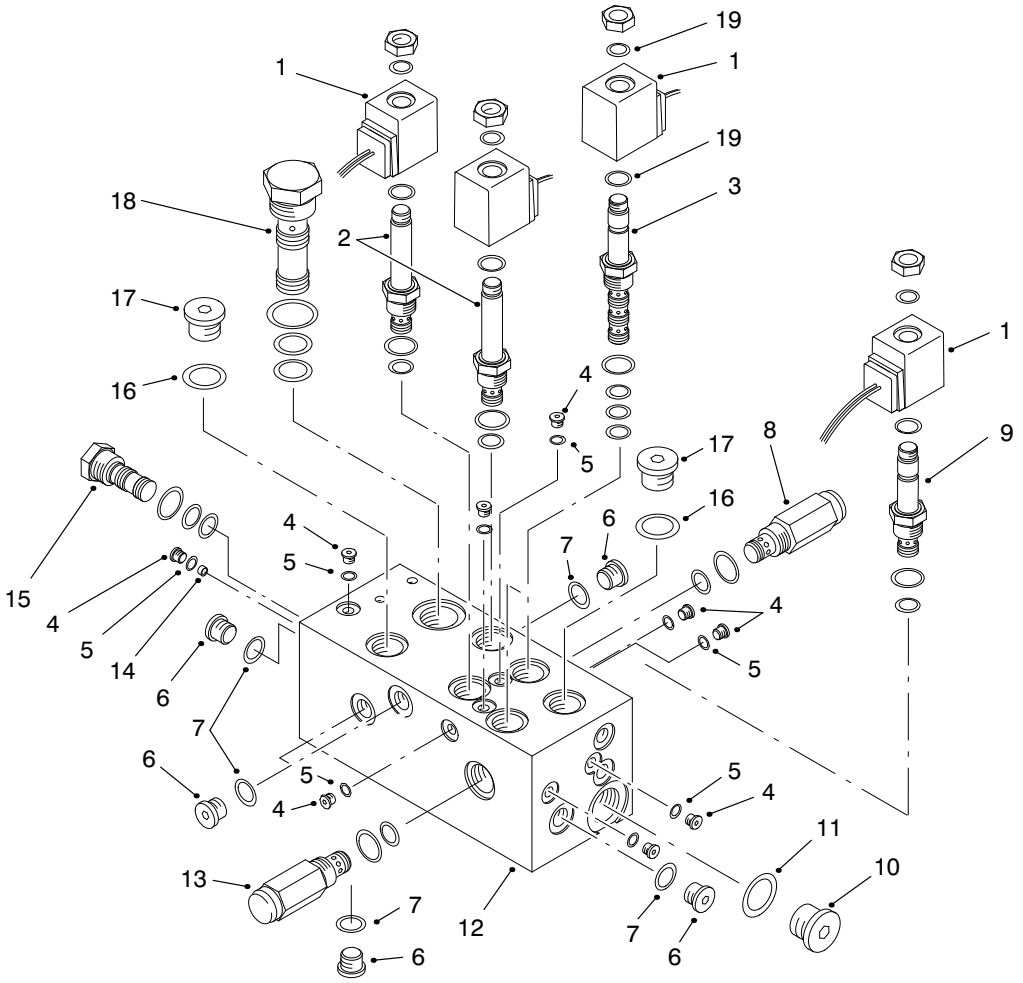


T–2276–7



MANIFOLD INSTALLATION ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	93−2240	Manifold Assembly	1
2	340−7	Fitting − Hydraulic (Incl. Ref. #16−17)	1
3	340−138	Fitting − Hydraulic 45° (Incl. Ref. #31−32)	1
5	340−17	Fitting − Hydraulic 90° (Incl. Ref. #16−17)	1
6	340−77	Fitting − Hydraulic 90° (Incl. Ref. #18−19)	1
7	340−132	Fitting − Hydraulic 90° (Incl. Ref. #21 & 23)	1
8	340−9	Fitting − Hydraulic (Incl. Ref. #28−29)	1
9	340−92	Fitting − Hydraulic (Incl. Ref. #21 & 23)	1
10	340−103	Fitting − Hydraulic 45° (Incl. Ref. #21 & 23)	1
11	340−140	Tee − Hydraulic (Incl. Ref. #21 & 23)	1
12	33114−016	Screw − HH	2
13	93−2271	Hose Assembly	1
14	93−2272	Hose Assembly	1
15	94−1317	Tube − Hydraulic	1
16	237−65	O−Ring	3
17	237−80	O−Ring	2
18	237−42	O−Ring	1
19	237−22	O−Ring	1
20	93−2254	Hose Assembly	2
21	237−21	O−Ring	7
22	94−3477	Hose Assembly	1
23	237−78	O−Ring	7
24	93−2258	Hose Assembly	1
25	93−2256	Hose Assembly	1
26	93−2255	Hose Assembly	1
27	94−4518	Tube − Hydraulic	1
28	237−58	O−Ring	1
29	237−81	O−Ring	1
30	94−6383	Hose Assembly	1
31	237−30	O−Ring	1
32	237−79	O−Ring	1
33	94−1332	Hose Assembly	1
34	94−1320	Tube − Hydraulic	1
35	340−14	Fitting − Hydraulic (Incl. Ref. #16 & 23)	1
36	95−1639	Fitting − Orificed (Incl. Ref. #21 & 23)	2



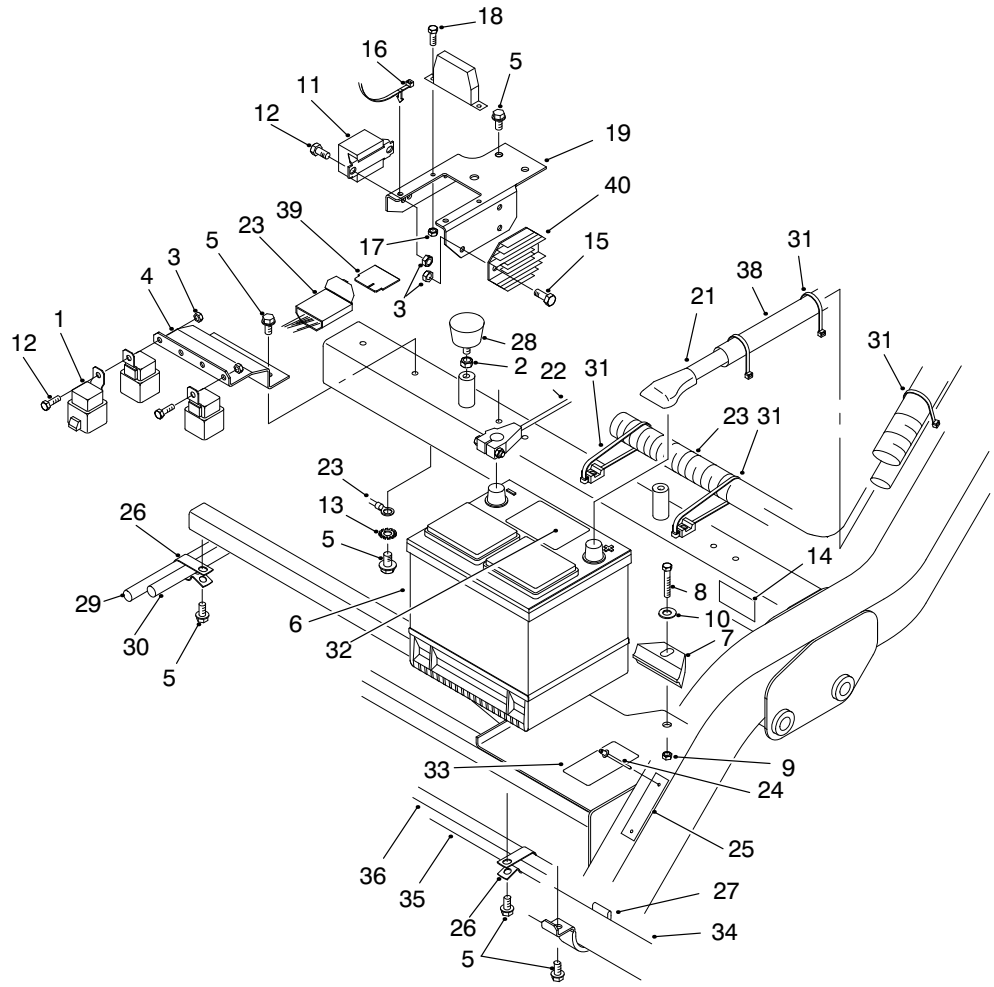
T−2251−1

MANIFOLD ASSEMBLY NO. 93−2240

Ref. No.	Part No.	Description	No. Used
1	88−9190	Solenoid − 20 Watt	4
2	93−7494	Cartridge − N.O. Poppet (Use Seal Kit #75−2080)	2
3	94−2627	Cartridge (Use Seal Kit #75−2090)	1
4	353−991	Plug (Incl. Ref. #5)	9
5	237−156	O−Ring	9
6	353−989	Plug (Incl. Ref. #7)	6
7	237−42	O−Ring	6
8	75−2010	Cartridge − Relief 2400 psi (Use Seal Kit #75−2080)	1
9	92−6315	Cartridge − N.C. (Use Seal Kit #75−2080)	1
10	353−988	Plug (Incl. Ref. #11)	1
11	237−79	O−Ring	1

Ref. No.	Part No.	Description	No. Used
†12		Body − Manifold	1
13	94−6351	Cartridge − Relief 150 psi (Use Seal Kit #75−2080)	1
14	95−5999	Plug − Orifice	1
15	94−6353	Plug − Cavity (Use Seal Kit #95−5641)	1
16	237−80	O−Ring	2
17	354−70	Plug (Incl. Ref. #16)	2
18	94−6352	Plug − Cavity (Use Seal Kit #94−3661)	1
19	94−5438	Seal − Solenoid	8
*	75−2080	Seal Kit	5
*	95−5641	Seal Kit	1
*	75−2090	Seal Kit	1
*	94−3661	Seal Kit	1

*Not Illustrated
†Not serviced separately



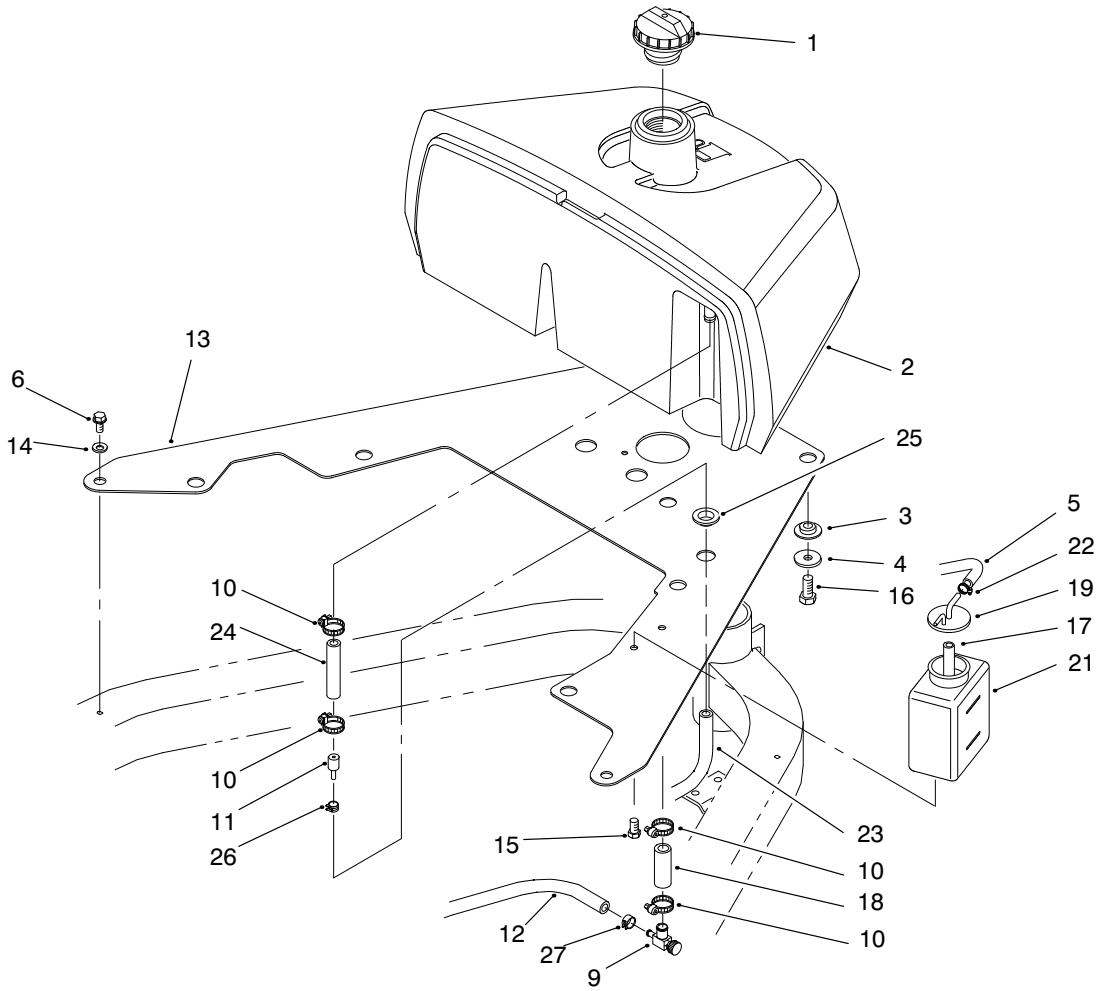
T−2275−5

ELECTRONICS INSTALLATION ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	70−1480	Relay	8
2	3218−2	Nut − Hex Jam	2
3	33023−00	Nut − Lock	8
4	93-2169-01	Bracket − Relay	1
5	32144−14	Screw − HH	8
6	66−2750	Battery	1
7	66−2490	Retainer − Battery	1
8	33115−040	Screw − HH	1
9	33025−00	Nut − Lock	1
10	3256−24	Washer − Flat	1
11	66−8800	Relay − Glow Plug	1
12	33113−016	Screw − HH	6
13	3254−2	Washer − Lock	1
†14		Decal − ANSI	1
15	33113−030	Screw − HH	2
16	94−1325	Push Mount Tie	2
17	3296−2	Nut − Lock	2
18	32105−13	Screw − HH	2
19	93-2123-03	Bracket − Fuse Block	1
21	93−2343	Cable − Battery Positive	1

Ref. No.	Part No.	Description	No. Used
22	93−2344	Cable − Battery Negative	1
23	93−2340	Wire Harness	1
24	3290−415	Rivet − Pop	2
†25		Serial Plate	1
26	92−5753	Clamp − Hose Double	2
27	93−2036	Clamp − Air Hose	1
28	68−3270	Bumper	2
29	93−2270	Hose Assembly	1
30	93−2269	Hose Assembly	1
31	3290−378	Tie − Cable	7
32	93−7276	Decal − Danger	1
33	93−6668	Decal − Battery	1
34	93−2035	Hose − Air Cleaner	1
35	93−2256	Hose Assembly	1
36	93−2255	Hose Assembly	1
38	94−4519	Tube − Convoluted	1
39	92−3188	Diode − Circuit Board	1
‡40	185516140	Regulator	1
*	70−8570	Circuit Breaker − 40 Amp	2

*Not Illustrated
†Not serviced separately
‡Obtain from your local Perkins Dealer.

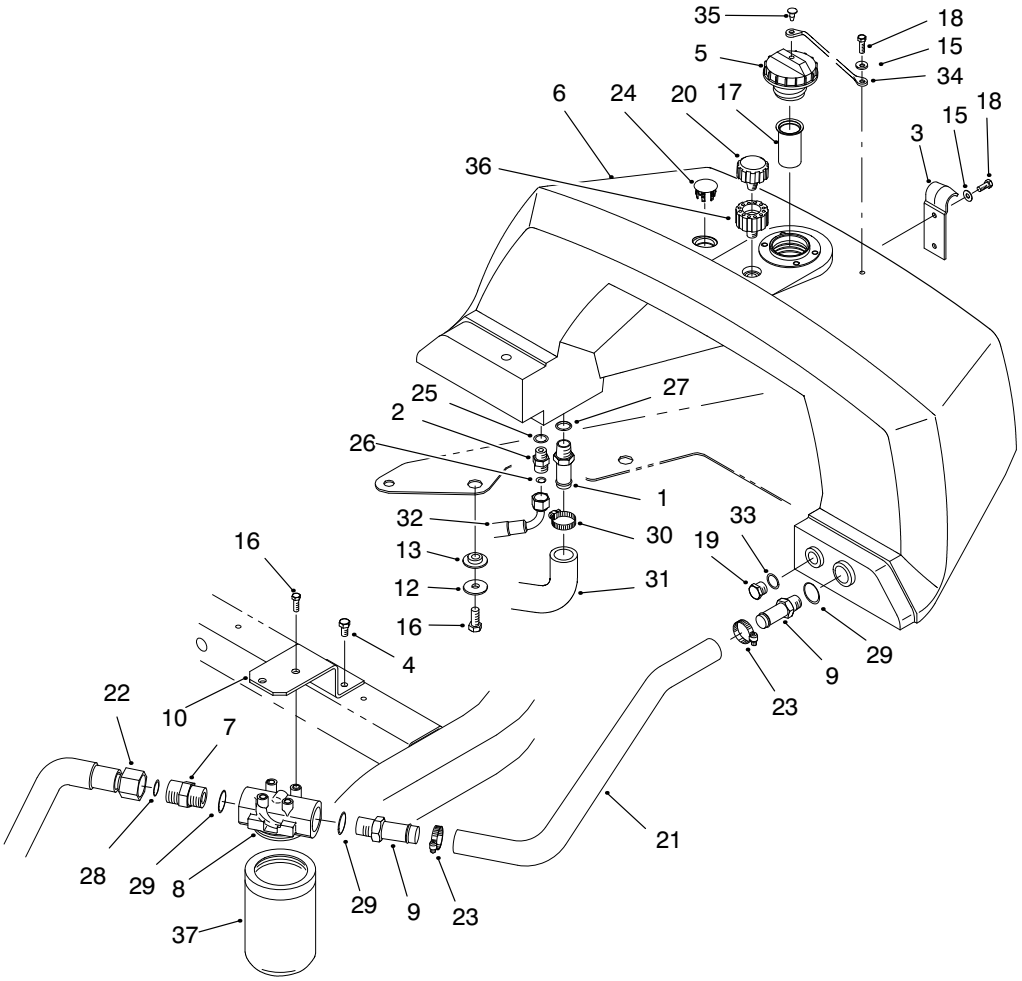


T−2271−2

FUEL TANK ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	93−3102	Fuel Cap − Diesel	1
2	93−2225	Tank − Fuel	1
3	240−11	Grommet	3
4	93−4637	Washer − Flat	3
5	93−2260	Hose − Expansion Tank	1
6	32144−14	Screw − HH	3
9	56−2520	Fitting − Fuel Shut Off	1
10	2412−36	Clamp − Hose	4
11	93−2299	Fitting − Fuel	1
12	93−2230	Hose − Fuel	1
13	94-1364-03	Plate	1
14	3256−23	Washer − Flat	2

Ref. No.	Part No.	Description	No. Used
15	33114−016	Screw − HH	2
16	33115−020	Screw − HH	3
17	94−1348	Hose − Tank	1
18	94−4353	Hose − Fuel	1
19	93−2048	Cap − Overflow Tank	1
21	93−2049	Tank − Overflow	1
22	2412−108	Clamp − Hose	1
23	93−2298	Hose − Fuel	1
24	56−2230	Hose − Fuel	1
25	237−124	Grommet	1
26	2412−108	Clamp − Hose	1
27	92−2379	Clamp − Hose	1



T−2272−4

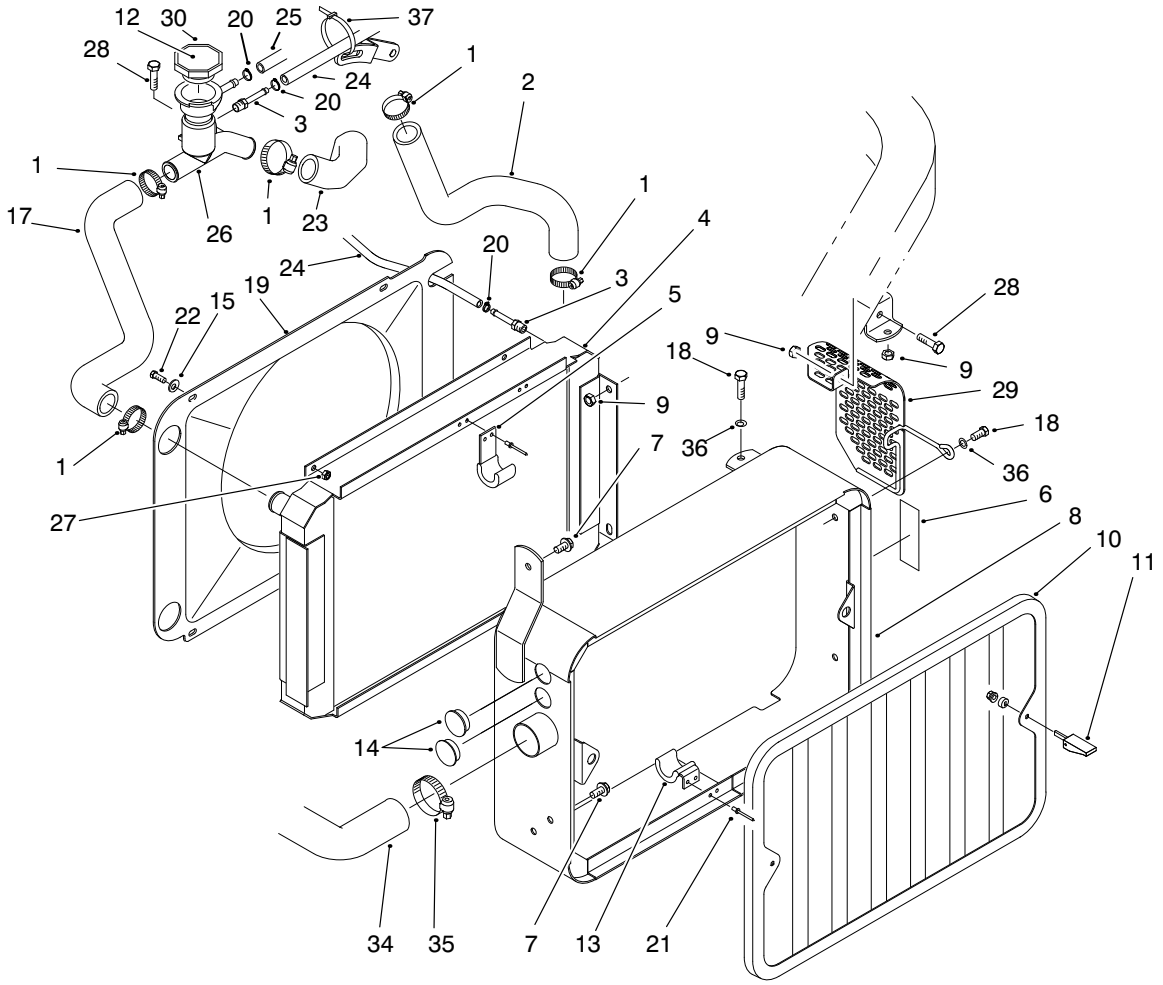
HYDRAULIC RESERVOIR ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	354−78	Fitting − Hydraulic (Incl. Ref. 27)	1
2	340−2	Fitting − Hydraulic (Incl. Ref. 25 &26)	1
3	93−2438	Clamp − Fuel Tank	1
4	32144−14	Screw − HH	2
5	93−7160	Cap − Hydraulic Oil (Incl. Ref. #34−35)	1
6	93−2235	Tank − Hydraulic	1
7	340−9	Fitting − Hydraulic (Incl. Ref. 28 & 29)	1
8	93−2242	Filter Assembly − Oil (Incl. Ref. #37)	1
9	354−73	Fitting − Hydraulic, Barb (Incl. Ref. #29)	2
10	93-2236-03	Mount − Oil Filter	1
12	93−4637	Washer − Flat	4
13	240−11	Grommet	4
15	3256−1	Washer − Flat	3
16	33115−020	Screw − HH	6
17	93−2275	Screen − Filler	1

Ref. No.	Part No.	Description	No. Used
18	33113−016	Screw − HH	3
19	353−988	Plug (Incl. Ref. 33)	1
20	68−6150	Breather − Air	1
21	94−9607	Hose − Formed	1
22	94−4518	Hose − Assembly	1
23	2412−129	Clamp − Hose	2
24	93−2437	Plug − Serrated	1
25	237−42	O−Ring	1
26	237−22	O−Ring	1
27	237−146	O−Ring	1
28	237−58	O−Ring	1
29	237−81	O−Ring	3
30	2412−34	Clamp − Hose	1
31	93−2068	Hose − Pump Inlet	1
32	94−4539	Hose Assembly	1
33	237−79	O−Ring	1
†34		Tether	1
†35		Plug	1
36	92−8020	Adapter − Breather	1
37	75−1310	Element − Filter	1

†Not serviced separately

3323−245

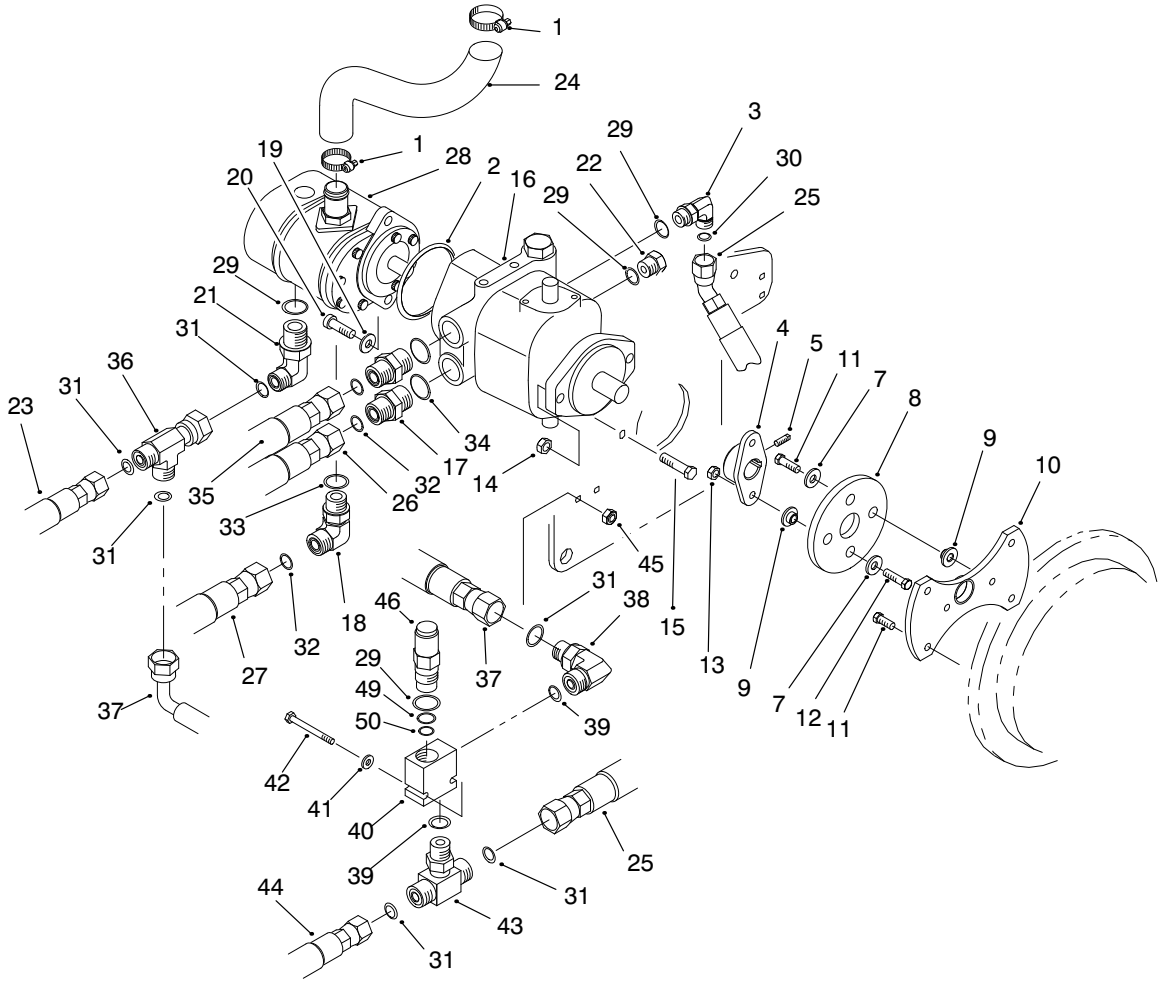


T−2274−3

RADIATOR ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	2412−34	Clamp − Hose	5
2	93−2031	Hose − Radiator	1
3	304−73	Fitting − Hydraulic Barb	2
4	93−2300	Radiator	1
5	93−2425	Bracket − Cooler Upper	2
6	93−6681	Decal − Warning	1
7	32144−14	Screw − HH	2
8	94−9623	Radiator Support Asm (Incl. Ref. #6)	1
9	33024−00	Nut − Lock	6
10	93-2050-03	Screen	1
11	74−5950	Latch − Swell	2
12	93−7840	Decal − Radiator Cap	1
13	93−2424	Bracket − Cooler Lower	2
14	94−4528	Plug	2
15	3256−22	Washer − Flat	4
17	93−2018	Hose − Radiator	1

Ref. No.	Part No.	Description	No. Used
18	33114−020	Screw − HH	5
19	93−2320	Shroud − Fan	1
20	2412−108	Clamp − Hose	3
21	3269−15	Rivet − Pop	8
22	33113−016	Screw − HH	4
23	93−2016	Hose − Radiator	1
24	94−1349	Hose − Breather	1
25	93−2260	Hose − Expansion Tank	1
26	94−3473	Elbow Assembly − Radiator	1
27	33023−00	Nut − Lock	4
28	33114−016	Screw − HH	3
29	94-3480-03	Guard − Alternator	1
30	66−3240	Cap − Radiator	1
34	93−2035	Hose − Air Cleaner	1
35	2412−92	Clamp − Hose	1
36	3256−23	Washer − Flat	2
37	3290−378	Tie − Cable	1

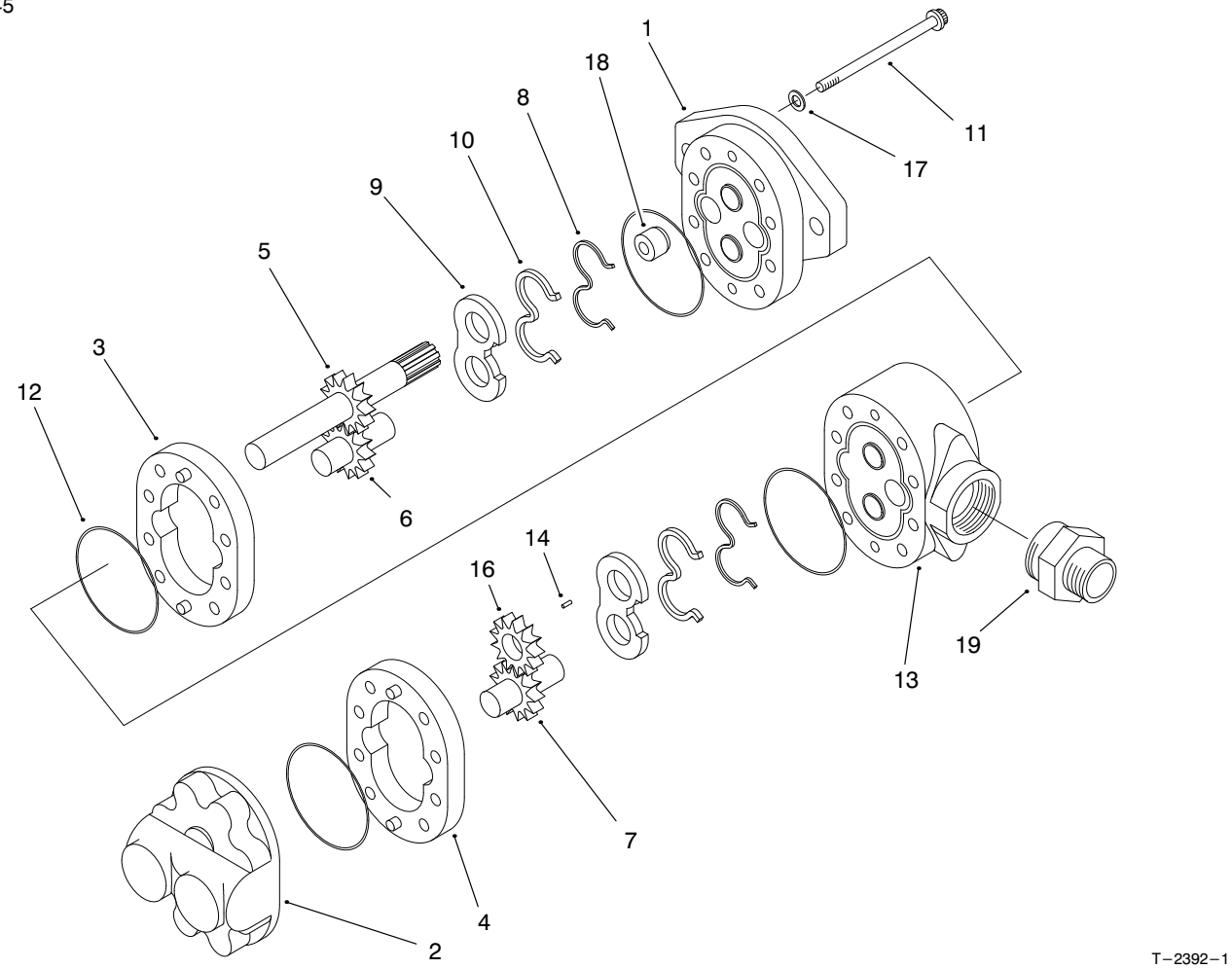


T−2270

HYDRAULIC PUMP & HYDROSTAT ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	2412−34	Clamp − Hose	2
2	60−3520	O−Ring	1
3	340−18	Fitting − Hydraulic 90˚ (Incl. Ref. #29 & 31)	1
4	93−2589	Hub − Pump	1
5	3241−6	Screw − SQH	2
7	3256−3	Washer − Flat	4
8	80−8650	Coupling − Rubber	1
9	27−6600	Spacer − Coupling	4
10	93-2170-03	Pump Adapter	1
11	33114−020	Screw − HH	6
12	33114−030	Screw − HH	2
13	33024−00	Nut − Lock	2
14	33025−00	Nut − Lock	2
15	33115−035	Screw − HH	2
16	100−3174	Hydrostat	1
17	340−8	Fitting − Hydraulic (Incl. Ref. #32 & 34)	2
18	340−17	Fitting − Hydraulic 90˚ (Incl. Ref. #32 & 33)	1
19	3256−24	Washer − Flat	2
20	3274−1	Screw − HSH	2
21	340−18	Fitting − Hydraulic 90˚ (Incl. Ref. #29 & 31)	1
22	353−988	Plug (Incl. Ref. #29)	1
23	93−2252	Hose Assembly	1

Ref. No.	Part No.	Description	No. Used
24	99−1905	Hose − Pump Inlet	1
25	94−6384	Hose Assembly	1
26	94−5355	Hose Assembly	1
27	94−1332	Hose Assembly	1
28	95−0533	Gear Pump	1
29	237−79	O−Ring	4
31	237−22	O−Ring	7
32	237−65	O−Ring	3
33	237−80	O−Ring	1
34	237−81	O−Ring	2
35	94−5356	Hose Assembly	1
36	340−115	Fitting − Tee	1
37	98−4606	Hose Assembly	1
38	340−77	Fitting − Hydraulic 90˚	1
39	237−42	O−Ring	2
40	94−6385	Valve − Relief (Incl. Ref. #46)	1
41	3256−22	Washer − Flat	2
42	33113−050	Screw − HH	2
43	340−94	Fitting − Tee	1
44	94−6383	Hose Assembly	1
45	33023−00	Nut − Lock	2
46	94−6386	Cartridge − Relief Valve (Incl. Ref. #29 & 49−50)	1
49		O−Ring	1
50		Ring−Backup	1



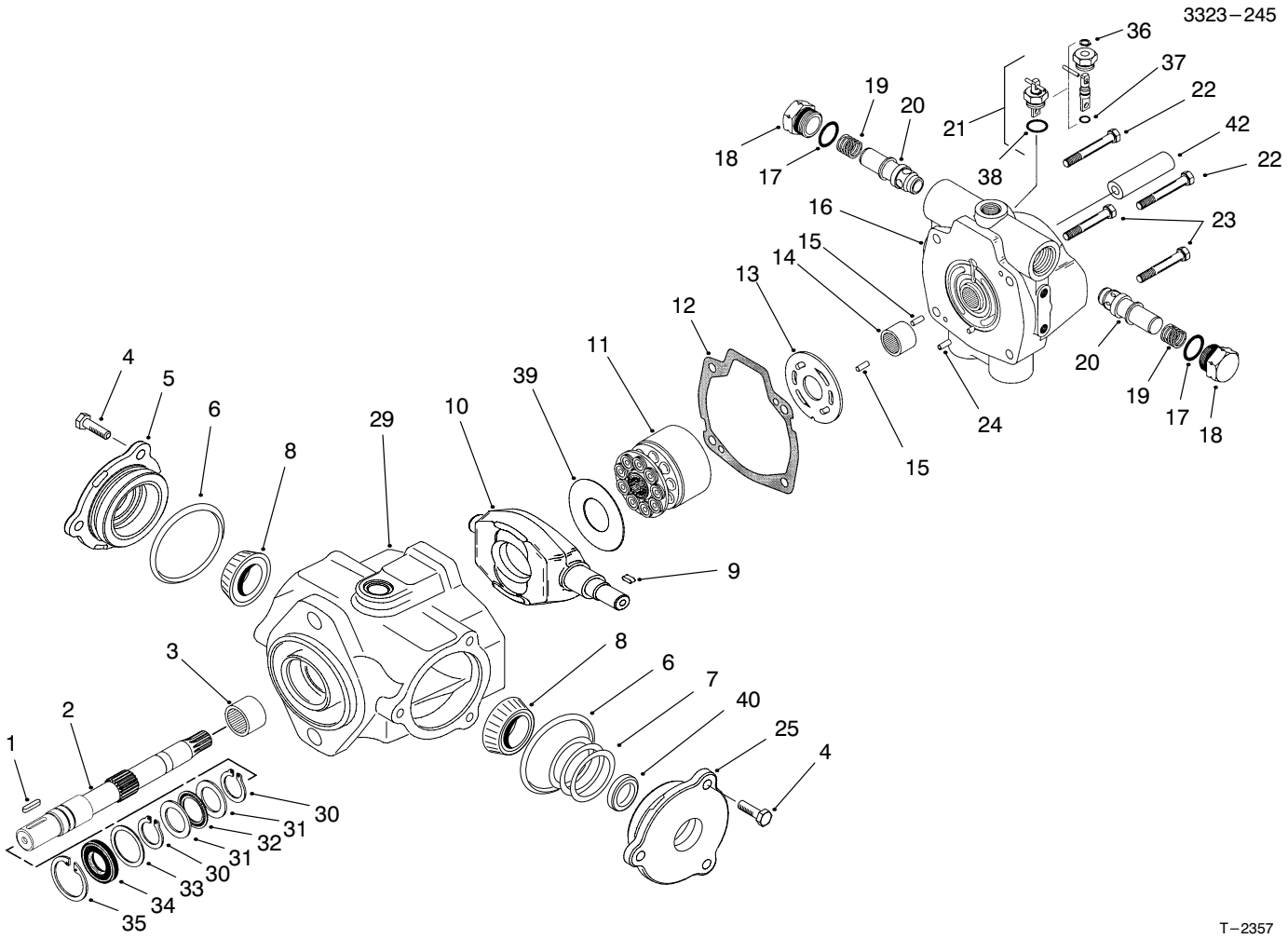
T−2392−1

GEAR PUMP ASSEMBLY NO. 95−0533

Ref. No.	Part No.	Description	No. Used
†1		Plate − Front	1
†2		Plate − Back	1
†3		Body	1
†4		Body	1
†5		Gear − Drive	1
†6		Gear − Idler	1
†7		Gear − Idler	1
†8		Gasket − Backup	2
†9		Plate − Wear	2
†10		Seal − Pressure	2
11	94−8158	Screw − Cap	8

Ref. No.	Part No.	Description	No. Used
†12		O−Ring	4
†13		Plate − Adapter	1
†14		Key	1
†15		Tube	1
†16		Gear	1
17	94−8160	Washer	4
18	94−3011	Plug	1
†19		Fitting − Suction	1
*	94−8161	Kit − Seal Repair (Incl. Ref. #8,10, 12 & 17−18)	1

†Not Serviced Separately
*Not Illustrated



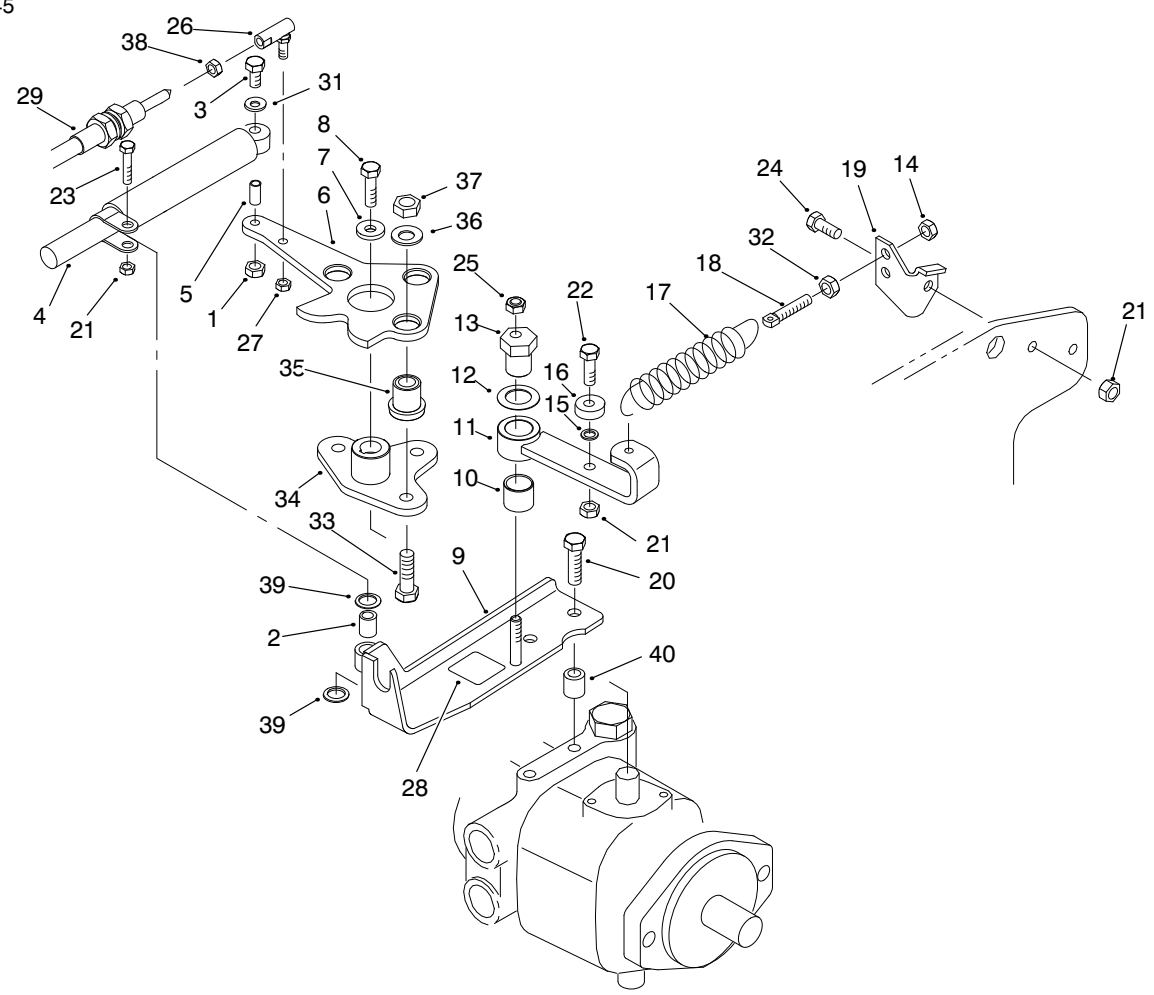
HYDROSTAT ASSEMBLY NO. 100−3174

Ref. No.	Part No.	Description	No. Used
1	94−3645	Key	1
2	94−6359	Shaft − Drive	1
3	94−6363	Bearing	1
4	98−4640	Screw − Cap	6
5	98−4644	Cover Plate Assembly	1
6	100−3179	O−Ring	2
7	100−3182	Shim Kit	1
8	98−4639	Bearing − Cone	2
9	94−3646	Key	1
10	100−3175	Plate − Cam	1
11	76−6070	Rotating Kit Assembly	1
12	33−4930	Gasket	1
13	100−3180	Plate − Valve	1
14	94−6368	Bearing	1
15	76−6150	Pin − Dowel	2
16	100−3177	Back Plate Assembly (Incl. Ref. #14 & 24)	1
†17		O−Ring	4
18	70−1240	Plug Assembly (Incl. Ref. #17)	2
19	100−3178	Spring	2
20	94−3644	Seat	2

Ref. No.	Part No.	Description	No. Used
21	100−3181	Dump Valve Assembly (Incl. Ref. #36−38)	1
22	76−6170	Screw − Cap	2
23	76−6160	Screw − Cap	2
†24		Pin − Roll	1
25	98−4645	Cover Plate Assembly	1
29	100−3176	Housing Assembly (Incl. Ref. #3)	1
30	32151−29	Ring − Retaining	2
31	252−71	Race − Bearing	2
32	252−66	Bearing − Thrust	1
33	33−3720	Washer	1
34	42−2720	Seal − Shaft	1
35	32151−13	Ring − Retaining	1
†36		Ring − Retaining	1
†37		O−Ring	1
†38		O−Ring	1
39	98−4635	Insert − Camplate	1
†40		Seal − Shaft	1
42	74−9040	Coupler	1
*	98−4643	Seal Repair Kit (Incl. Ref. #6, 12, 17, 30, 34−38 & 40)	1

*Not Illustrated
†Not Serviced Separately

3323−245

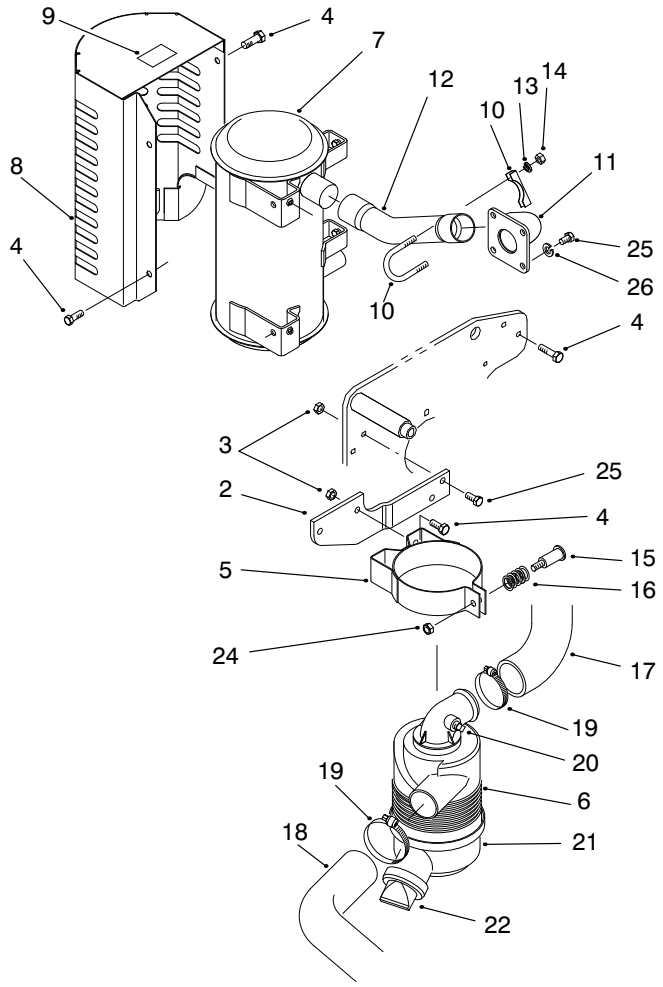


T−2228−3

NEUTRAL SYSTEM ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	33023−00	Nut − Lock	1
2	94−8197	Tube − Pivot	1
3	33113−030	Screw − HH	1
4	76−8870	Lever Damper Assembly	1
5	94−1312	Spacer − Pivot	1
6	94-3488-03	Lever − Pump	1
7	88−7200	Washer − Pivot	1
8	3210−6	Screw − HH	1
9	94−9603	Cable Support	1
10	94−9609	Bushing − Straight	1
11	94−4527	Neutral Arm	1
12	3−6498	Washer − Thrust	1
13	93−2111	Stud − Traction	1
14	3296−4	Nut − Lock Elastic	1
15	75−5470	Spacer	1
16	251−259	Bearing − Ball	1
17	94−1369	Spring − Ext.	1
18	99−8194	Pin	1
19	98−4607	Bracket − Spring	1
20	323−8	Screw − HH	2

Ref. No.	Part No.	Description	No. Used
21	33024−00	Nut − Lock	3
22	33114−025	Screw − HH	1
23	33114−030	Screw − HH	1
24	33114−020	Screw − HH	1
25	3296−29	Nut −Hex	1
26	2411−34	Ball Joint	1
27	3296−13	Nut − Lock	1
28	93−9051	Decal − Eccentric Bolt	1
29	93−2099	Cable − Traction Control	1
31	3256−22	Washer − Flat	1
32	3220−2	Nut − Jam	1
33	33115−035	Screw − HH	3
34	94−3486	Plate	1
35	63−9750	Mount − Rubber	3
36	2844	Washer	3
37	33025−00	Nut − Lock	3
38	3220−1	Nut − Jam	1
39	94−8196	Washer − Nylon	2
40	92−5723	Spacer	2



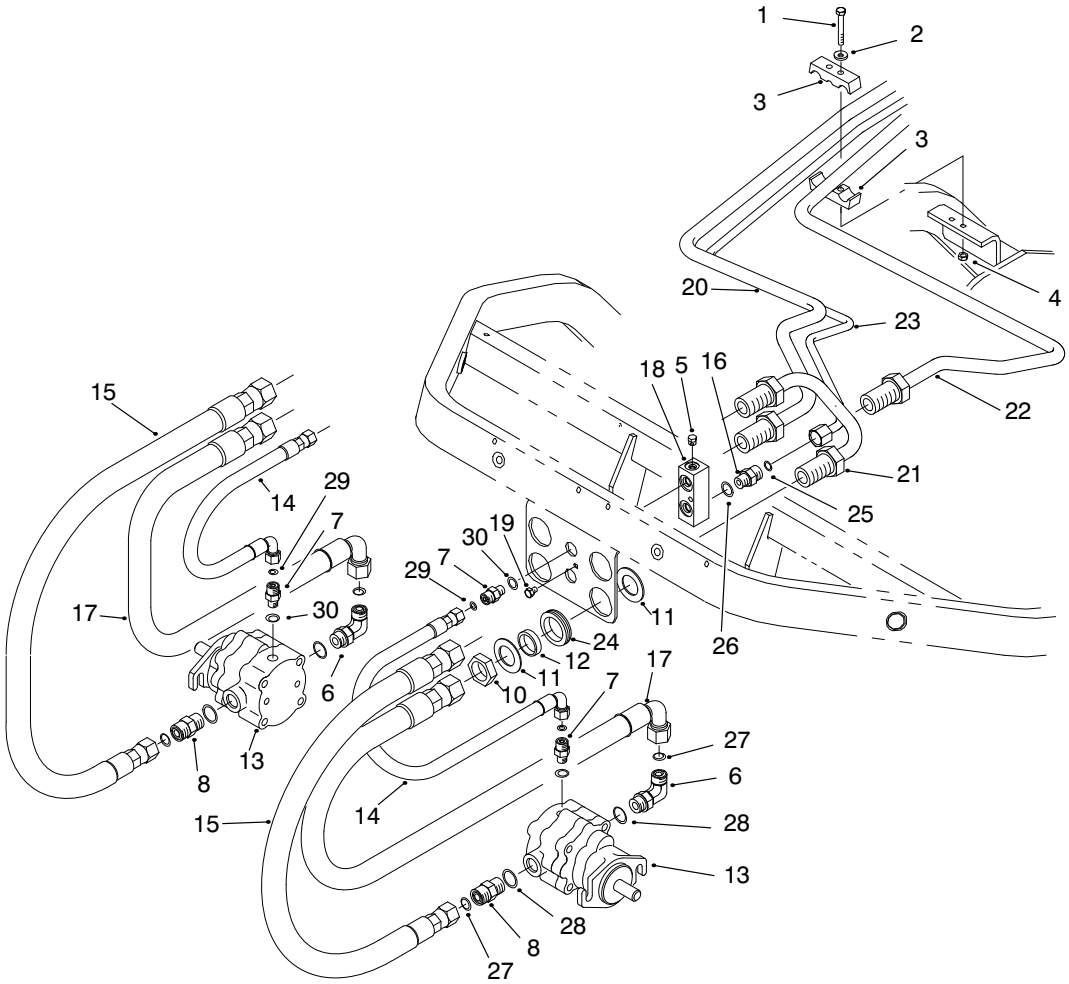
T−2291−3

MUFFLER & AIR CLEANER ASSEMBLY

Ref. No.	Part No.	Description	No. Used
2	94-5359-03	Bracket − Air Cleaner	1
3	33024−00	Nut − Lock	4
4	33114−020	Screw − HH	8
5	93−2191	Mounting Band Assembly (Incl. Ref. #24−26)	1
6	93−2190	Air Cleaner Assembly (Incl. Ref. #20−23)	1
7	94−8153	Muffler	1
*	94−8157	Arrester − Spark (Optional)	1
8	94−9629	Muffler Shield Asm (Incl. Ref. #9)	1
9	93−8069	Decal − Hot Surface	1
10	2112−9	Clamp (Incl. Ref. #13 & 14)	2
11	93−2185	Exhaust Bracket	1

Ref. No.	Part No.	Description	No. Used
12	93−2183	Pipe − Exhaust	1
13	3253−4	Washer − Lock	4
14	3217−6	Nut − Hex.	4
15	94−3653	Bolt	1
16	94−3654	Spring − Compression	1
17	93−2423	Hose − Air Cleaner	1
18	93−2035	Hose − Air Cleaner	1
19	2412−92	Clamp − Hose	2
20	285−17	Plug	1
21	94−3652	Cover Assembly	1
22	94−1414	Valve	1
*23	93−2195	Element − Air Cleaner	1
24	48−9510	Nut − Lock	1
25	33114−025	Screw − HH	6
26	3253−4	Washer − Spring Lock	4

*Not Illustrated

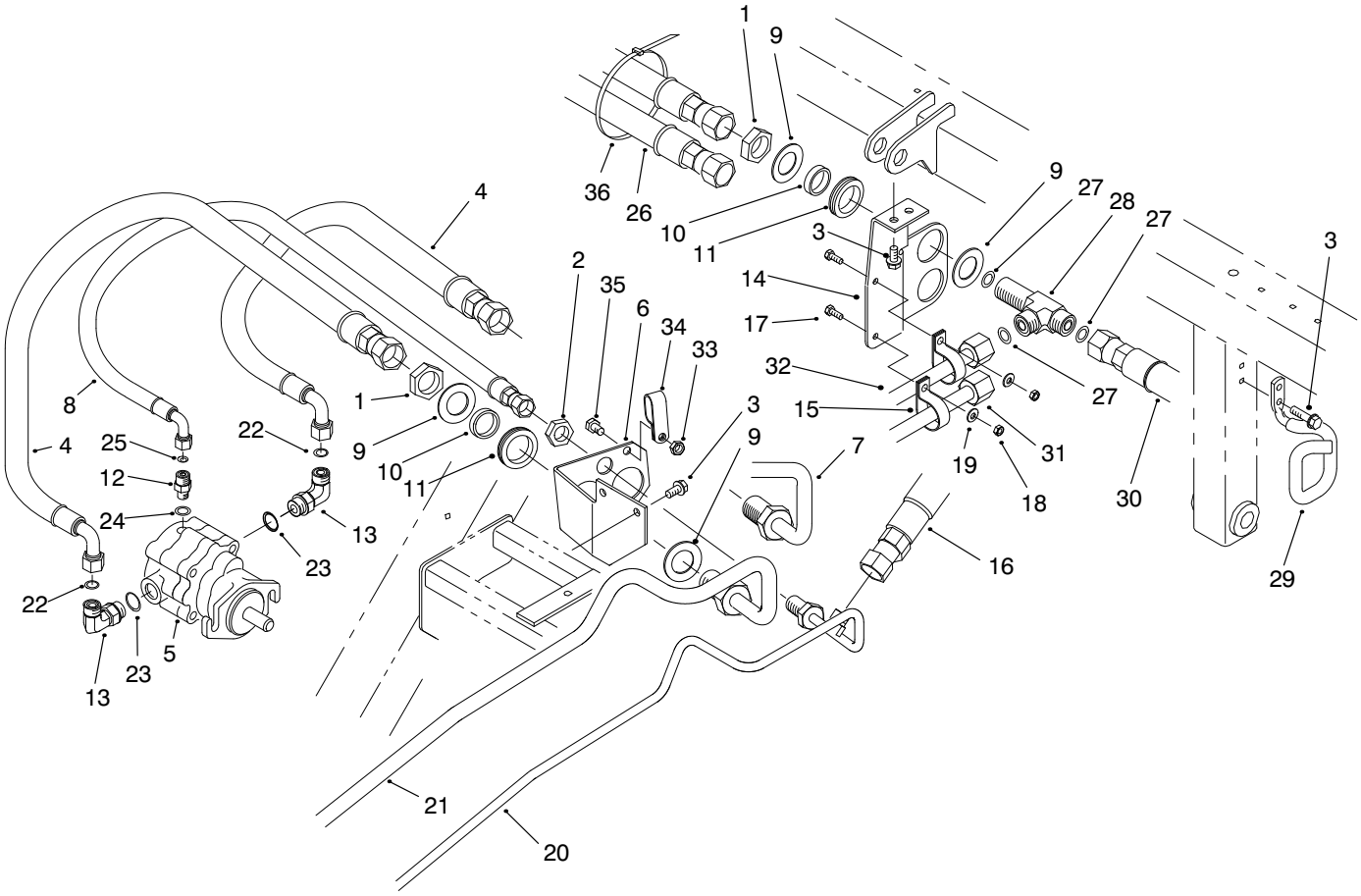


T−2240−1

REEL MOTOR INSTALLATION ASSEMBLY − RH & LH

Ref. No.	Part No.	Description	No. Used
1	33113−050	Screw − HH	2
2	3256−1	Washer − Flat	2
3	93−2509	Clamp − Tube	2
4	33023−00	Nut − Lock NI	2
5	353−991	Plug	1
6	340−98	Fitting − Hydraulic 90˚ (Incl. Ref. #27−28)	2
7	340−92	Fitting − Hydraulic (Incl. Ref. #29−30)	4
8	340−4	Fitting − Hydraulic (Incl. Ref. #27−28)	2
10	340−74	Nut − Bulkhead	4
11	69−9010	Washer	8
12	69−9000	Spacer	4
13	93−1375	Reel Motor	2
14	93−2264	Hose Assembly	2
15	95−2908	Hose Assembly	2

Ref. No.	Part No.	Description	No. Used
16	340−2	Fitting − Hydraulic (Incl. Ref. #25−26)	1
17	95−2909	Hose Assembly	2
18	93−2238	T−Block (Incl. Ref. #5)	1
19	33113−008	Screw − HH	1
20	94−1318	Tube − Hydraulic	1
21	94−1319	Tube − Hydraulic	1
22	94−1320	Tube − Hydraulic	1
23	94−1321	Tube − Hydraulic	1
24	240−3	Grommet − Rubber	4
25	237−22	O−Ring	1
26	237−42	O−Ring	1
27	237−30	O−Ring	4
28	237−79	O−Ring	4
29	237−21	O−Ring	4
30	237−78	O−Ring	4



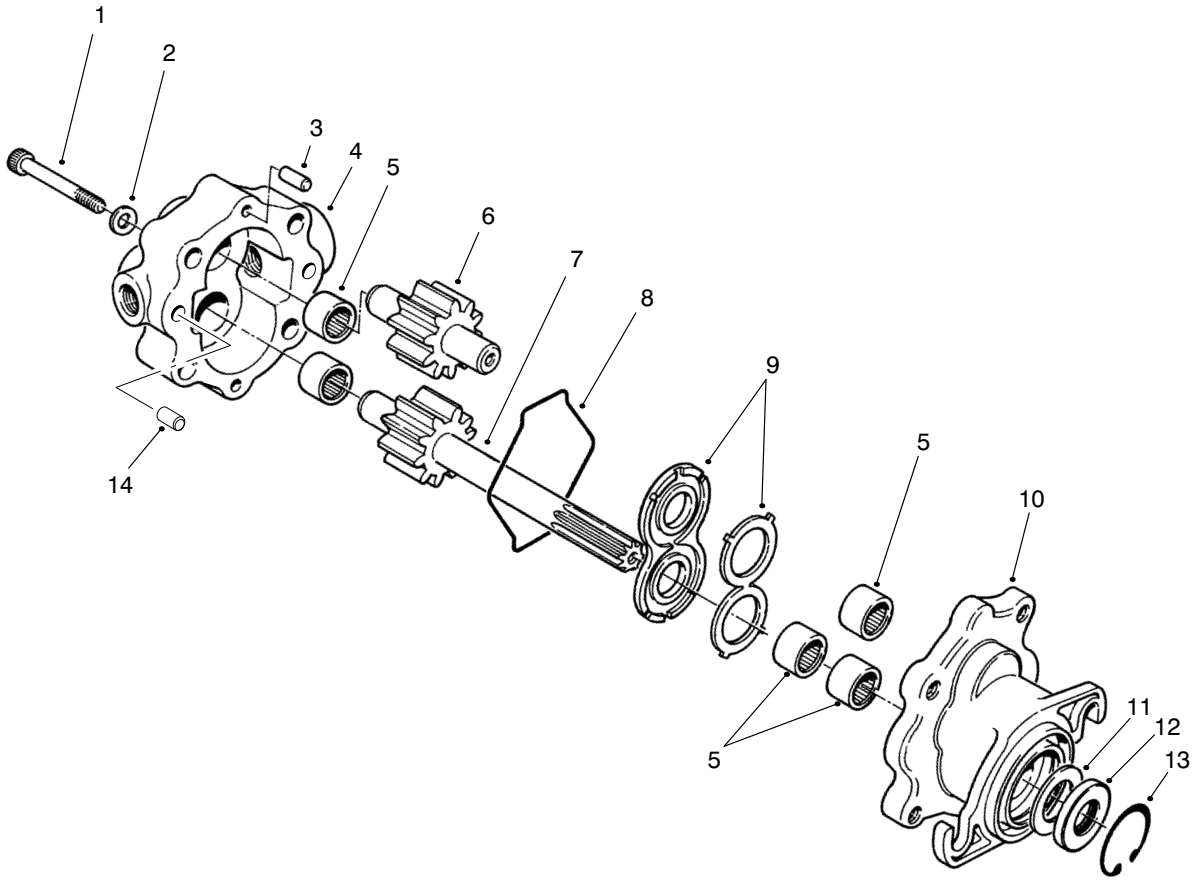
T−2241−2

REEL MOTOR INSTALLATION ASSEMBLY − REAR

Ref. No.	Part No.	Description	No. Used
1	340−74	Nut − Bulkhead	4
2	340−70	Nut − Bulkhead	1
3	32144−14	Screw − HH	6
4	95−2907	Hose Assembly	2
5	93−1375	Reel Motor	1
6	94−1316	Bracket − Bulkhead	1
7	94−1317	Tube − Hydraulic	1
8	94−1328	Hose Assembly	1
9	69−9010	Washer	8
10	69−9000	Spacer	4
11	240−3	Grommet − Rubber	4
12	340−92	Fitting − Hydraulic (Incl. Ref. #24−25)	1
13	340−98	Fitting − Hydraulic 90° (Incl. Ref. #22−23)	2
14	94-8155-03	Bracket − Bulkhead	1
15	2412−134	Clamp − R	2
16	94−4539	Hose Assembly	1
17	33113−020	Screw − HH	2
18	33023−016	Nut − Lock NI	2

Ref. No.	Part No.	Description	No. Used
19	3256−22	Washer − Flat	2
20	94−1321	Tube − Hydraulic	1
21	94−1318	Tube − Hydraulic	1
22	237−30	O−Ring	2
23	237−79	O−Ring	2
24	237−78	O−Ring	1
25	237−21	O−Ring	1
26	94−5357	Hose Assembly	2
27	237−65	O−Ring	3
28	94−5350	Fitting − Bulkhead Tee (Incl. Ref. #27)	2
29	94−5352	Retainer − Hose	1
30	94−5358	Hose Assembly	2
31	94−5353	Tube − Hydraulic	1
32	94−5354	Tube − Hydraulic	1
33	33024−00	Nut − Lock	1
34	2412−137	Clamp − Tube, Double	1
35	33114−020	Screw − HH	1
36	3290−378	Tie − Cable	1

3323−245



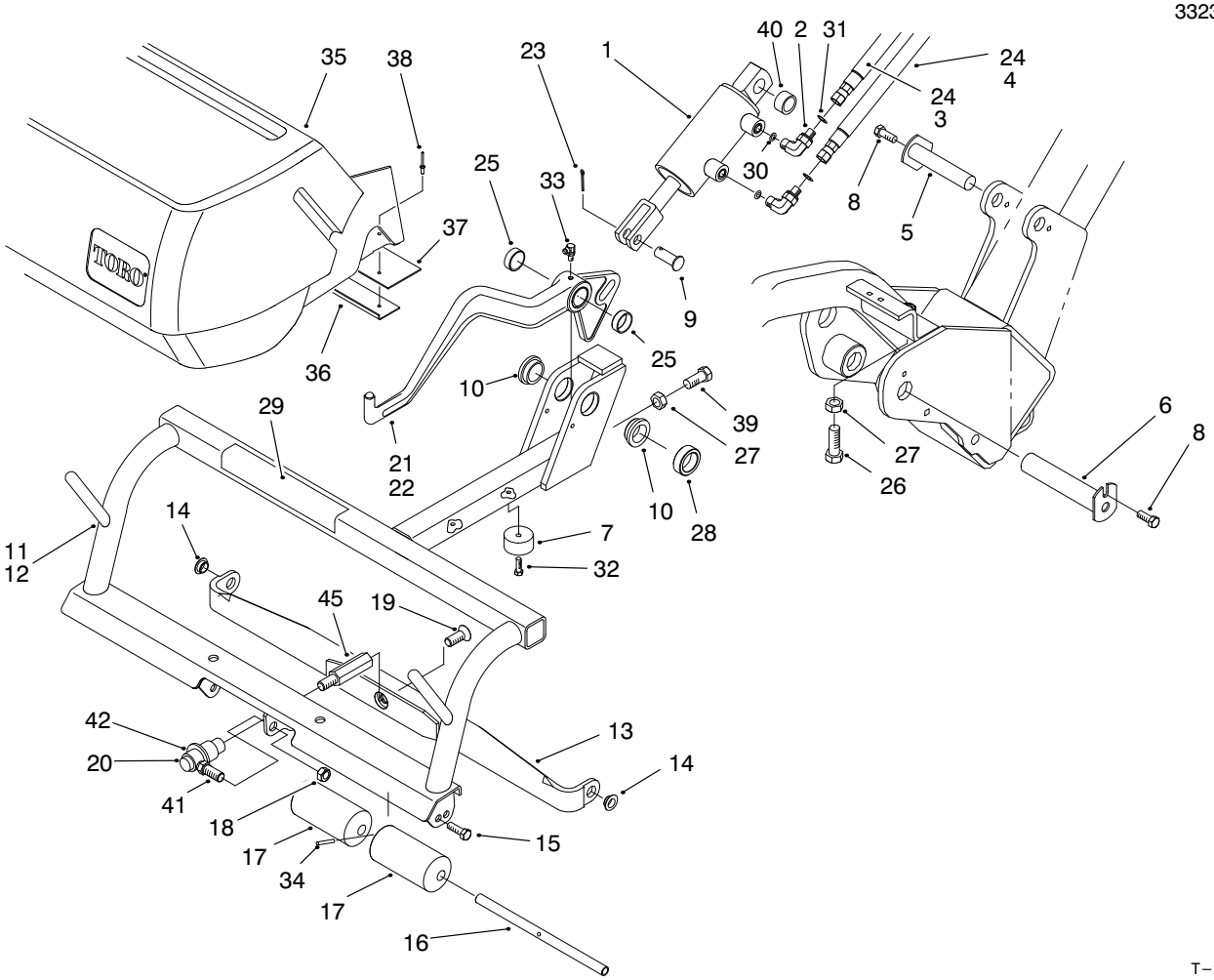
T−1872−2

REEL MOTOR ASSEMBLY NO. 93−1375

Ref. No.	Part No.	Description	No. Used
1	354−50	Screw−Hex Socket Hd.	4
2	354−51	Washer	4
3	353−599	Pin−Dowel	2
4	93−3614	Assembly − Cover (Incl. Ref. #5)	1
†5		Bearing−Needle	5
6	93−3616	Assembly − Idler Gear	1
7	93−3615	Assembly − Drive Shaft	1
8	354−46	Ring−Seal	1

Ref. No.	Part No.	Description	No. Used
9	74−3810	Assembly − Load Plate	1
10	92−8795	Assembly − Body (Incl. Ref. #5)	1
†11		Spacer	1
†12		Seal−Shaft	1
13	32151−41	Ring − Retaining	1
14	92−8796	Pin − Dowel	2
*	92−8863	Repair Kit (Incl. Ref. #8, & 11−13)	1

*Not Illustrated
†Not Serviced Separately



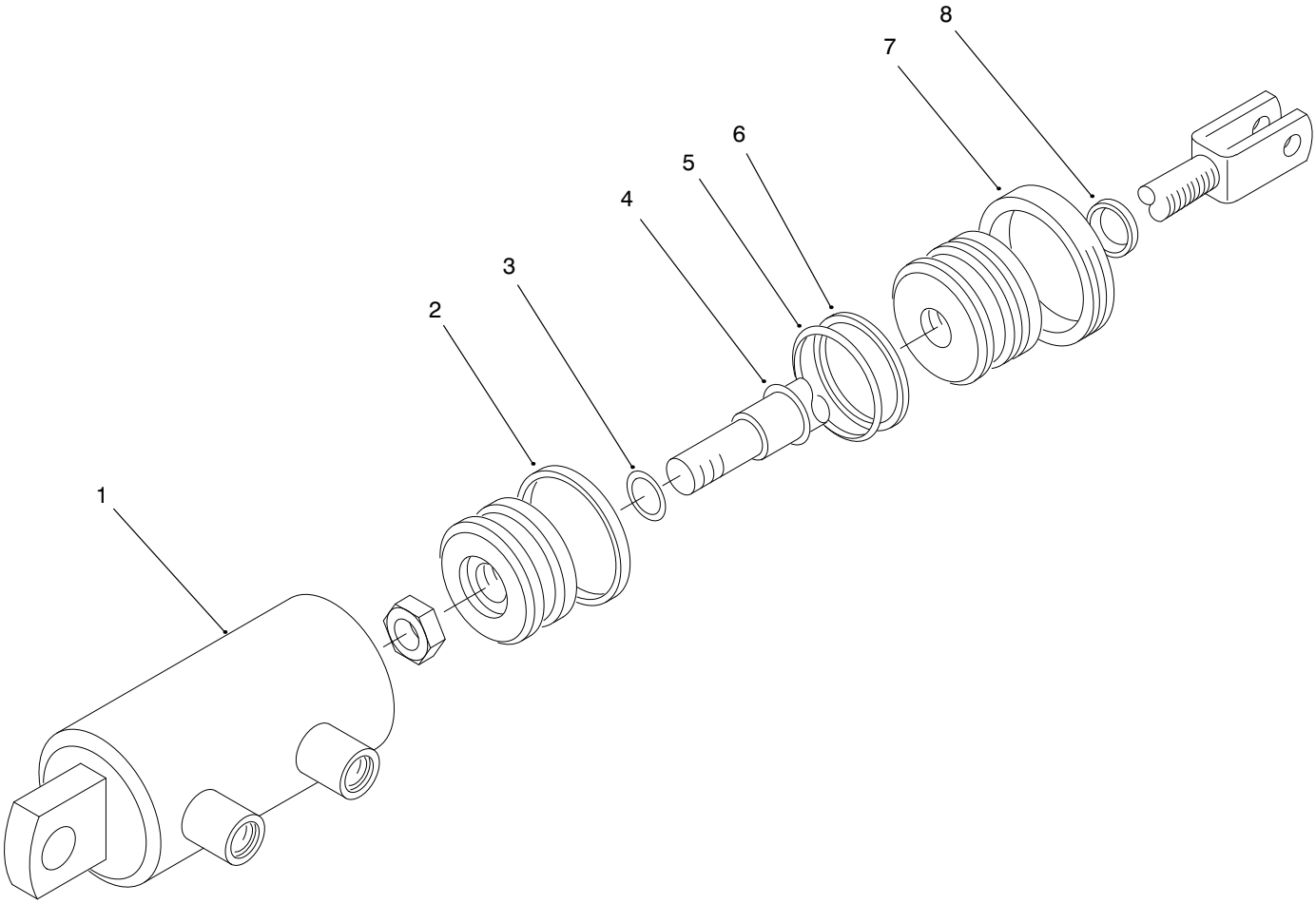
T−2230−7

PULL FRAME ASSEMBLY − RH & LH

Ref. No.	Part No.	Description	No. Used
1	99−8158	Hydraulic Cylinder Assembly	2
2	340−132	Fitting − Hydraulic 90˚ (Incl. Ref. #30−31)	4
3	93−2255	Hose Assembly	1
4	93−2256	Hose Assembly	1
5	10−6060	Pin − Ram Pivot	2
6	94−8198	Pin	2
7	94−4548	Bumper	2
8	32144−14	Screw − HH	4
9	283−8	Pin − Clevis	2
10	94−9610	Bushing − Flange	4
11	99−1455	Carrier − RH (Incl. Ref. #10 & 29)	1
12	99−1454	Carrier − LH (Incl. Ref. #10 & 29)	1
13	98−4624	Pull Arm	2
14	93−2368	Bushing − Flange	4
15	3211−2	Screw − HH	8
16	93−2363	Shaft − Roller	4
17	93−2362	Roller − Anti Scalp	8
18	3296−19	Nut − Lock	2
19	98−2178	Screw	2
20	94−9647	Ball Joint (Incl. Ref. #41 & 42)	2
21	98-2174-01	Lift Arm − RH	1
22	98-2176-01	Lift Arm − LH	1
23	3272−11	Pin − Cotter	2
24	93−2254	Hose Assembly	2
25	92−8995	Bushing − Straight	4
26	325−6	Screw − HH	2
27	3218−5	Nut − Jam	4
28	93−2384	Spacer − Carrier	2
29	93−8064	Decal − Warning	2
30	237−78	O−Ring	4
31	237−21	O−Ring	4
32	32144−44	Screw − HWH	2
33	302−60	Fitting − Grease 90˚	2
34	32121−6	Pin − Roll	4
35	98−2199	Grass Basket Assembly (Incl. Ref. #36−38)	2
36	95−2903	Angle − Basket Seal	2
37	93−2551	Seal − Basket	2
38	3290−382	Rivet − Pop	16
39	325−4	Screw − HH	2
40	74−3730	Spacer − Cylinder	2
41	94−9648	Ball Stud	2
42	98−2179	Shell & Housing Assembly	2
45	98−0632	Adapter − Pull Link	2
*	65−8320	Bar − Guage	1
*†	99−1456	Pad	3

* Not Illustrated.

†To be installed on cutting unit grass shields as required.



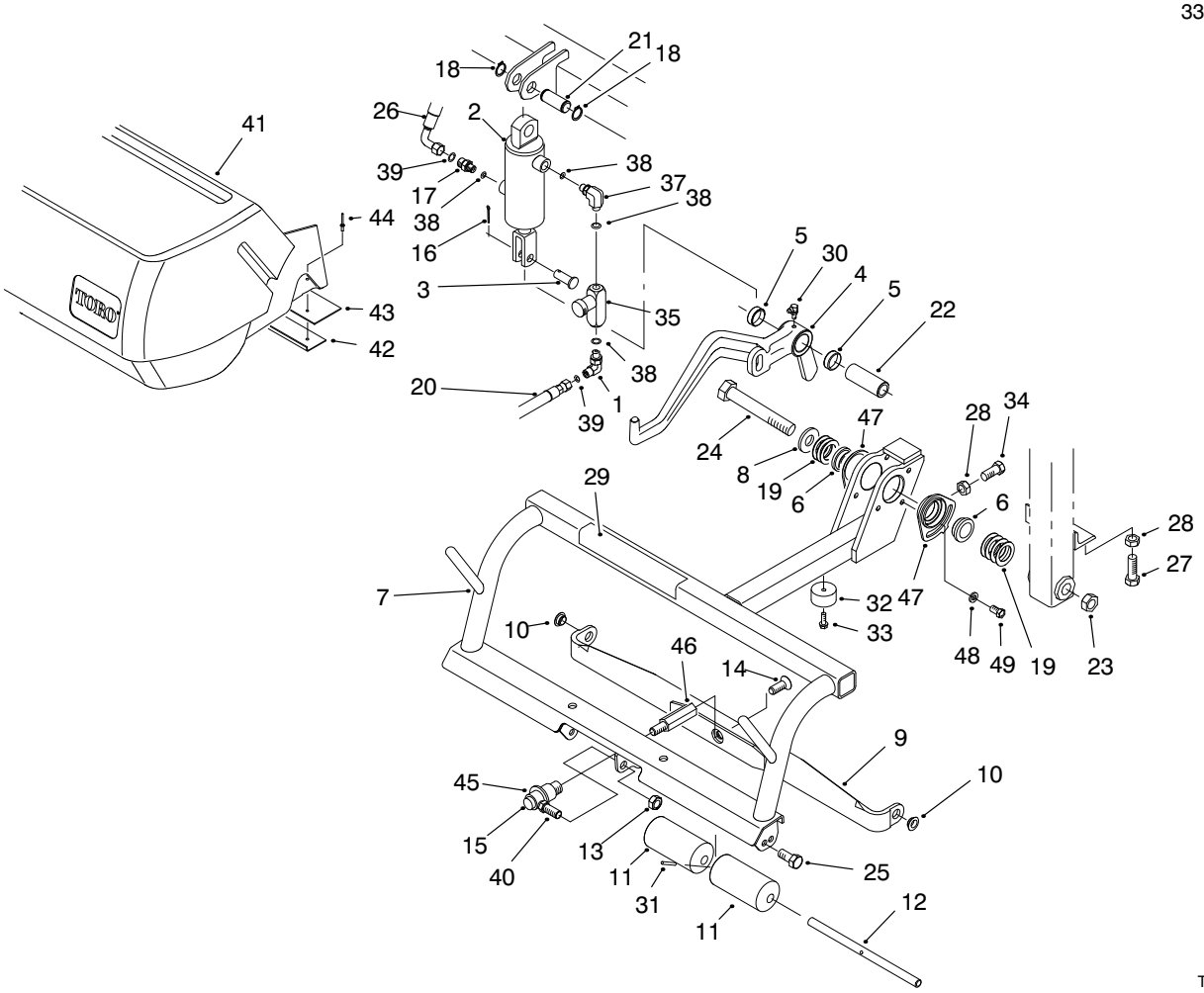
T−3159−1

HYDRAULIC CYLINDER NO. 99−8158

Ref. No.	Part No.	Description	No. Used
†1		Barrel	1
†2		Uniring	1
†3		O−Ring	1
†4		Seal − Rod	1
†5		O−Ring	1

Ref. No.	Part No.	Description	No. Used
†6		Washer − Back−Up	1
7		Collar−Internal	1
†8		Seal − Dust	1
*	99−8163	Kit − Seal, Repair (Incl. Ref. #2−6 & 8)	1

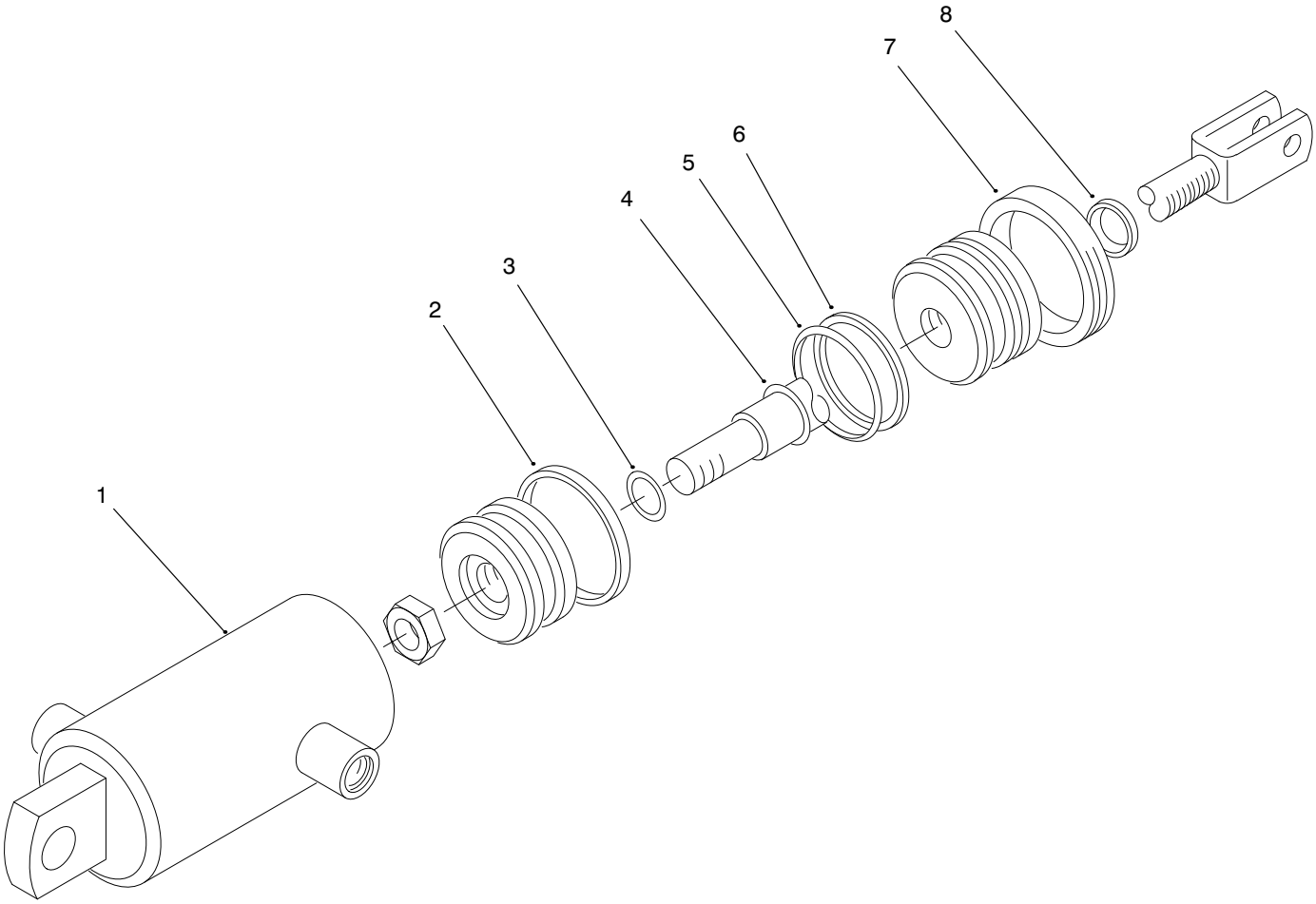
†Not Serviced Separately



PULL FRAME ASSEMBLY − REAR

Ref. No.	Part No.	Description	No. Used
1	340−132	Fitting − Hydraulic 90˚ (Incl. Ref. #38 & 39)	1
2	99−8157	Hydraulic Cylinder Assembly	1
3	283−8	Pin − Clevis	1
4	98-2172-01	Lift Arm − Center	1
5	92−8995	Bushing − Straight	2
6	98−2197	Bushing − Flange	2
7	99−1453	Center Carrier Asm (Incl. Ref. #29)	1
8	69−8940	Washer − Flat	1
9	98−4624	Pull Arm	1
10	93−2368	Bushing − Flange	2
11	93−2362	Roller − Anti Scalp	4
12	93−2363	Shaft − Roller	2
13	3296−19	Nut − Lock	1
14	98−2178	Screw − HH	1
15	94−9647	Ball Joint (Incl. Ref. #40 & 45)	1
16	3272−11	Pin − Cotter	1
17	95−1639	Fitting − Hydraulic (Incl. Ref. #38 & 39)	1
18	32120−72	Ring − Retaining, Ext.	2
19	63−2290	Washer − Thrust	9
20	93−2258	Hose Assembly	1
21	94−3452	Pin − Cylinder	1
22	94−8199	Tube − Pivot	1
23	3296−53	Nut − Hex	1

Ref. No.	Part No.	Description	No. Used
24	327−17	Screw − HH	1
25	3211−2	Screw − HH	4
26	94−3477	Hose Assembly	1
27	325−6	Screw − HH	1
28	3218−5	Nut − Jam	2
29	93−8064	Decal − Warning	1
30	302−60	Fitting − Grease 90˚	1
31	32121−6	Pin − Roll	2
32	94−4548	Bumper − Recessed	1
33	32144−44	Screw − HWH	1
34	325−4	Screw − HH	1
35	93−7489	Valve − Flow Control	1
37	95−2927	Fitting − Hydraulic 90˚ (Incl. Ref. #38)	1
38	237−78	O−Ring	4
39	237−21	O−Ring	2
40	94−9648	Ball Stud	1
41	98−2199	Grass Basket Assembly (Incl. Ref. #42−44)	1
42	95−2903	Angle − Basket Seal	1
43	93−2551	Seal − Basket	1
44	3290−382	Rivet − Pop	8
45	98−2179	Shell & Housing Assembly	1
46	98−0632	Adapter − Pull Link	1
47	98−4618	Bushing − Eccentric	2
48	3256−74	Washer − Flat	2
49	33114−016	Screw − Cap Hex. Hd.	2

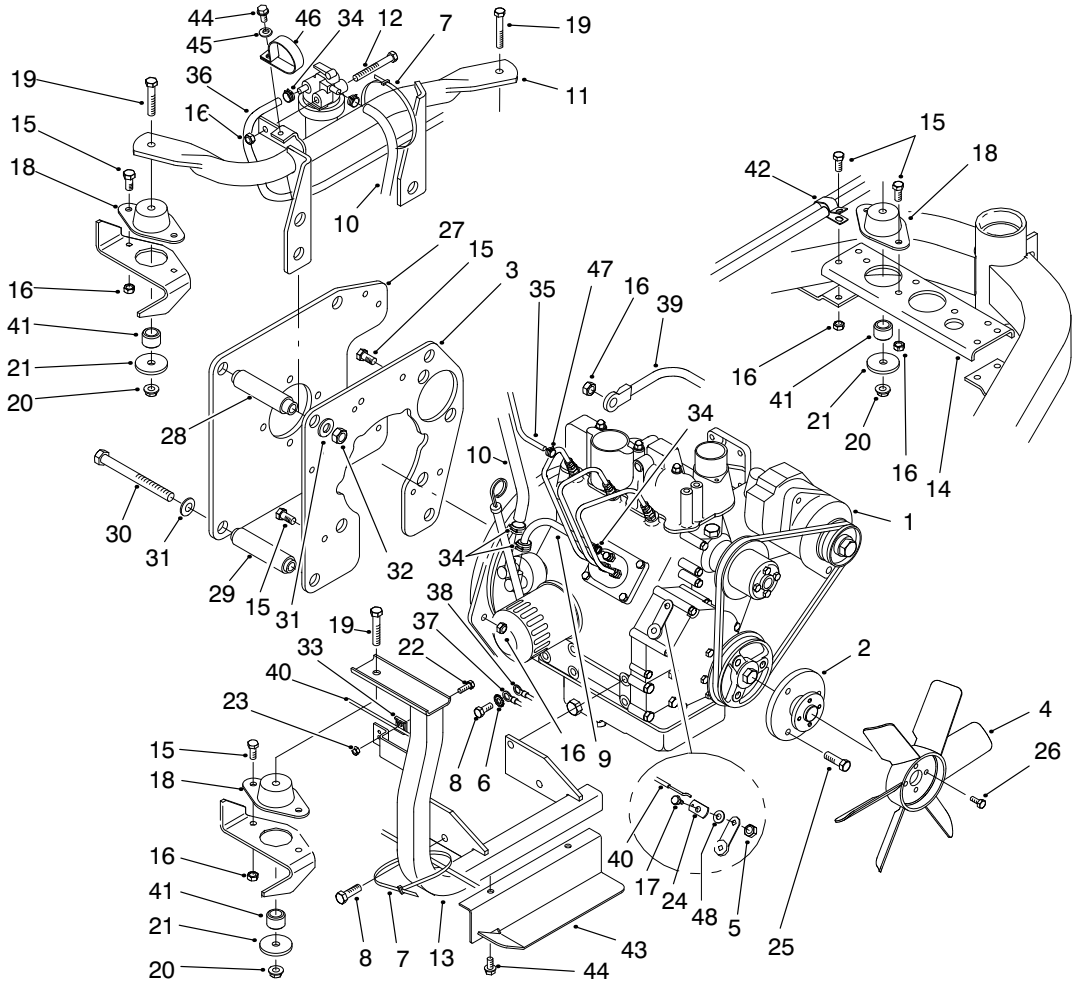


T−3158−1

HYDRAULIC CYLINDER NO. 99−8157

Ref. No.	Part No.	Description	No. Used
†1		Barrel	1
†2		Uniring	1
†3		O−Ring	1
†4		Seal − Rod	1
†5		O−Ring	1
†6		Washer − Back−Up	1
7		Collar−Internal	1
†8		Seal − Dust	1
*	99−8163	Kit − Seal, Repair (Incl. Ref. #2−6 & 8)	

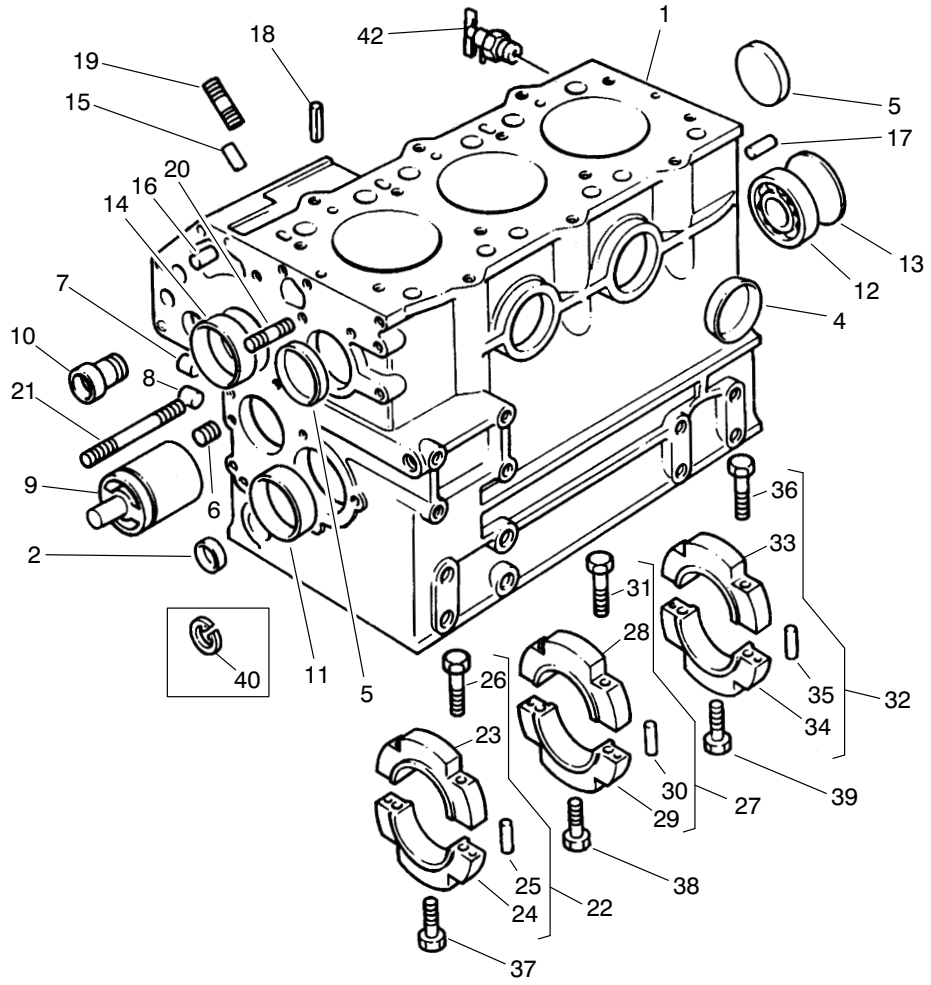
†Not Serviced Separately



ENGINE INSTALLATION ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	95−0535	Engine − Perkins (Incl. Ref. #4)	1
2	93−2152	Adapter − Fan	1
3	93-2151-03	Plate − Backing	1
4		Fan	1
5	3296−27	Nut − Lock	1
6	3254−3	Washer − Lock	1
7	3290−378	Tie − Cable	2
8	33115−020	Screw − HH	5
9	93−2043	Hose − Fuel	1
10	93−2260	Hose − Expansion Tank	1
11	93-2160-03	Engine Mount − Rear	1
12	33114−070	Screw − HH	1
13	93-2155-03	Engine Mount − Front	1
14	93-2020-01	Bracket − Support	1
15	33114−020	Screw − HH	14
16	33024−00	Nut − Lock	14
17	94−1390	Screw − Shoulder	1
18	83−1030	Mount − Engine	3
19	323−11	Screw − HH	3
20	3290−357	Nut − Lock, Flange	3
21	83−1040	Plate − Washer	3
22	32105−13	Screw − HH	1
23	3296−2	Nut − Lock	1
24	92−3154	Tab − Throttle	1

Ref. No.	Part No.	Description	No. Used
25	33114−020	Screw − HH	3
26	33113−016	Screw − HH	4
27	98-4608-03	Plate − Pump	1
28	93−2177	Spacer − Upper	2
29	93−2178	Spacer − Lower	2
30	33116−130	Screw − HH	4
31	3256−26	Washer − Flat	8
32	33026−00	Nut − Lock	4
33	81−1690	Clamp − Throttle Cable	1
34	94−8191	Clamp − Hose	5
35	93−2298	Hose − Fuel	1
36	93−2230	Hose − Fuel	1
37	93−2344	Cable − Battery Negative	1
38	93−2340	Wire Harness	1
39	93−2343	Cable − Battery Positive	1
40	93−2322	Cable − Throttle Control	1
41	94−4538	Spacer − Mount	3
42	92−5753	Clamp − Hose, Double	1
43	94-8156-03	Shield − Dust	1
44	32144−14	Screw − HWH	3
45	3256−23	Washer − Flat	1
46	2412−107	Clamp − R	1
47	94−8189	Clamp − Hose	1
48	3256−51	Washer − Flat	1



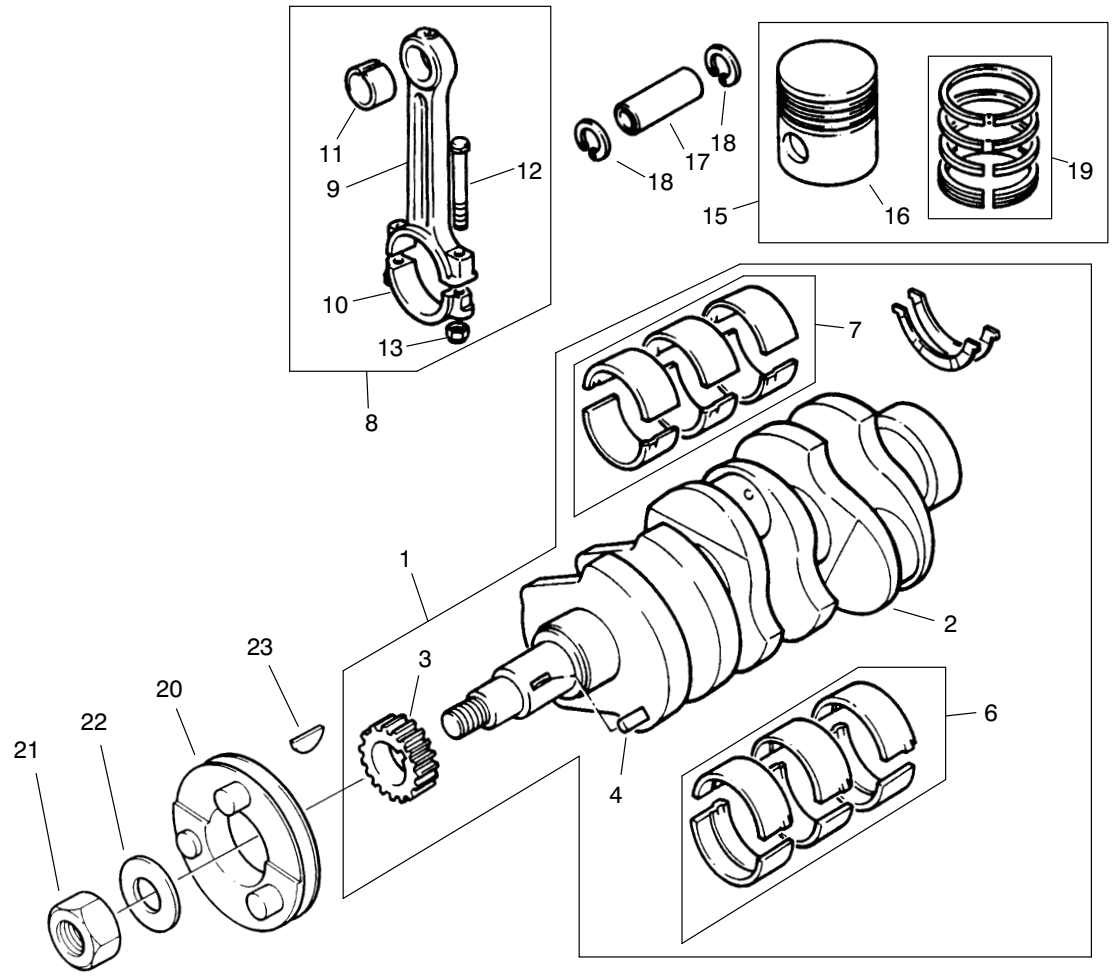
T−1377−1

CYLINDER BLOCK ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	110186150	Kit − Cylinder Block	1
2	064200015	Plug	1
4	064200040	Plug	2
5	064200040	Plug	2
6	198466050	Plug	3
7	198466010	Plug	4
8	198466070	Plug	2
9	165296160	Shaft	1
10	198517090	Bush	1
11	198517300	Bush	1
*	198517304	Bush, 0.25mm u/s	1
*	198517307	Bush, 0.50mm u/s	1
12	040106203	Bearing − Ball	1
13	064100045	Plug	1
14	042303015	Bush	1
15	030500512	Dowel	2
16	030500616	Dowel	2
17	030500820	Dowel	2
18	030309005	Pin	2
19	012100620	Stud	2
20	012100635	Stud	1
21	012100660	Stud	1
22	110156220	Holder (Incl. Ref. #23 & 24)	1

Ref. No.	Part No.	Description	No. Used
23		Cap	1
24		Cap	1
25	030500612	Dowel	2
26	010810840	Screw	2
27	110156230	Holder (Incl. Ref. #28 & 29)	1
28		Cap	1
29		Cap	1
30	030500612	Dowel	2
31	010810840	Screw	2
32	110156240	Holder (Incl. Ref. #33 & 34)	1
33		Cap	1
34		Cap	1
35	030500612	Dowel	2
36	010810840	Screw	2
37	011310850	Screw	1
38	011310850	Screw	1
39	010700845	Screw	2
40	036509005	Circlip	1
41	064200018	Plug	2
42	198736052	Cock	1
*	195906840	Kit − Gasket	1

NOTE: Obtain replacement parts from your local Perkins Dealer.
*Not Illustrated



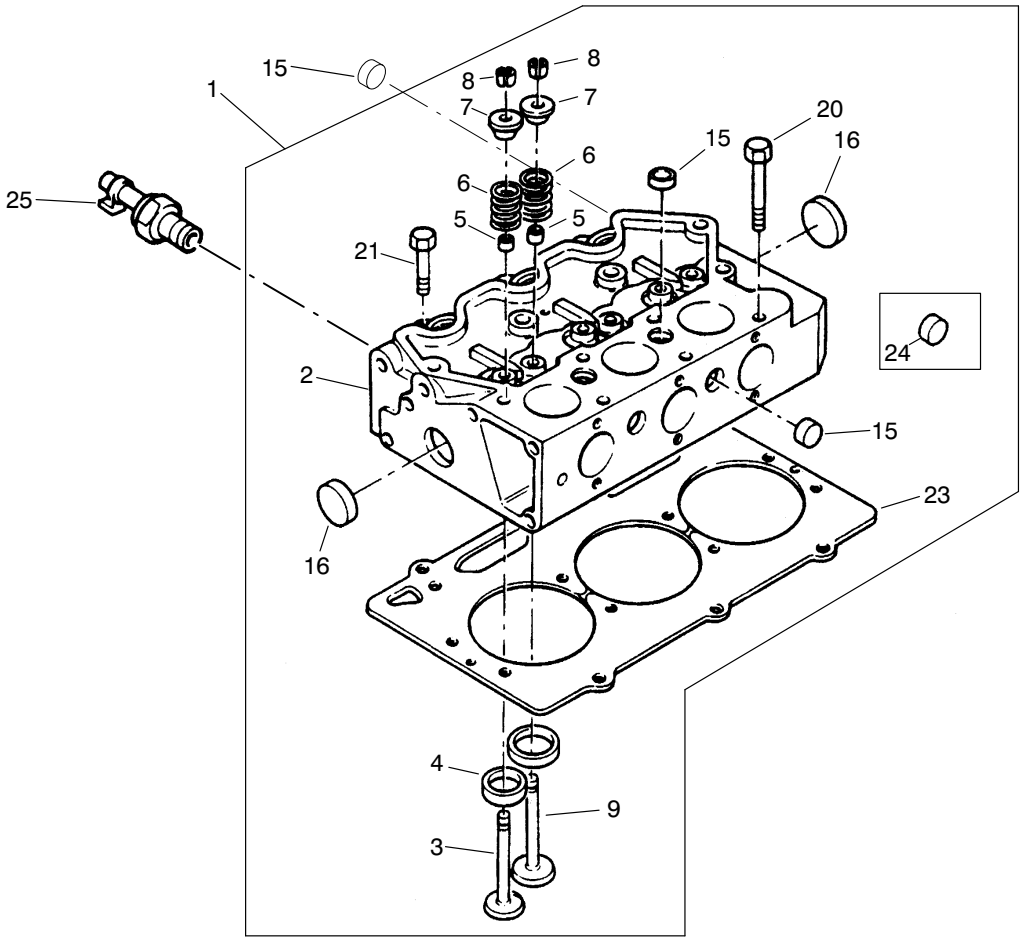
T–2174–3

CRANKSHAFT ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	115236020	Kit – Crankshaft (Inc. Ref. #2)	1
2		Crankshaft	1
3	115276210	Gear	1
4	030509020	Key	1
6	198586030	Kit – Bearing, Std.	1
*	198586034	Kit – Bearing, 0.25mm u/s	1
*	198586037	Kit – Bearing, 0.50mm u/s	1
7	198586060	Kit – Bearing, Std.	1
*	198586064	Kit – Bearing, 0.25mm u/s	1
*	198586067	Kit – Bearing, 0.50mm u/s	1
8	115026240	Connecting Rod Assembly (Incl. Ref. # 9 & 10)	3
9		Rod	1
10		Cap	1
11	198517325	Bushing	1
12	115176130	Screw	2

Ref. No.	Part No.	Description	No. Used
13	020109103	Nut	2
14	115017090	Kit – Piston, Std.	3
*	115017100	Kit – Piston, 0.5mm o/s	1
15	115016960	Kit – Piston, Std. (Incl. Ref. #16)	1
*	115016970	Kit – Piston, 0.5mm o/s (Incl. Ref. #16)	1
16		Piston	1
17	115326260	Pin	1
18	036500019	Circlip	2
19	115107400	Kit – Piston Ring, Std.	1
*	115107410	Kit – Piston Ring, 0.5mm o/s	1
20	115396742	Pulley	1
21	020800018	Nut	1
22	026200018	Washer	1
23	134100508	Key	1

NOTE: Obtain replacement parts from your local Perkins Dealer.
*Not Illustrated



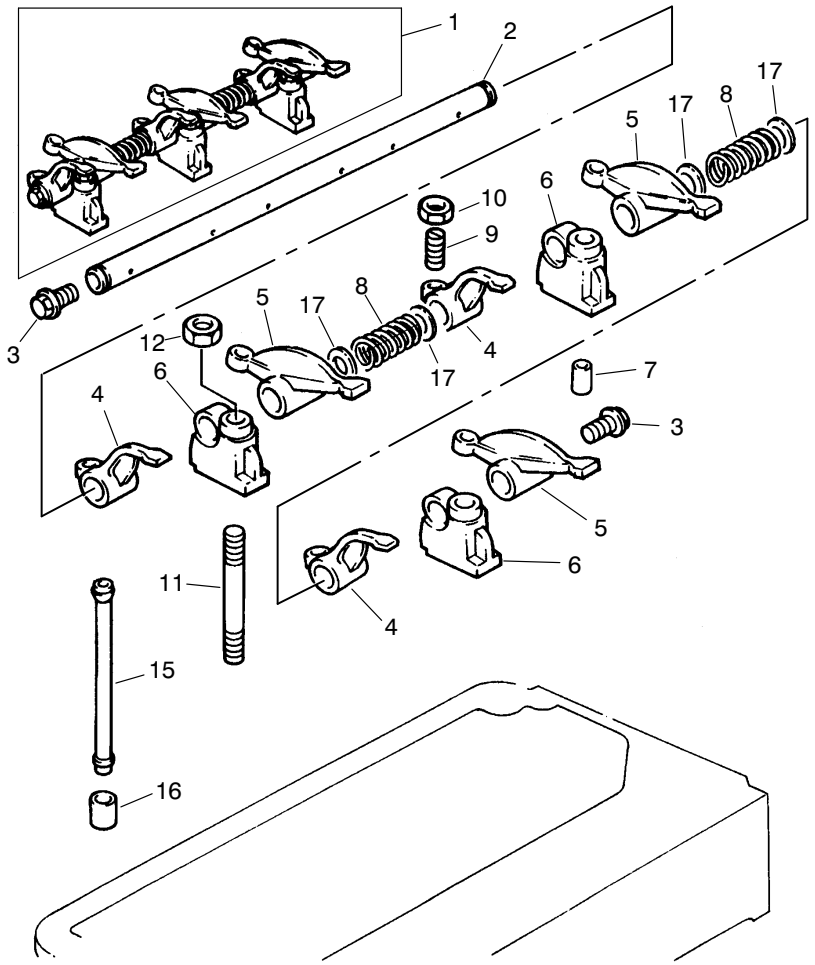
T−2175

CYLINDER HEAD ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	111016911	Kit − Cylinder Head	1
2	111086030	Kit − Cylinder Head	1
3	120166280	Valve Inlet	3
4	110136290	Insert	3
5	120406080	Seal	3
6	198217070	Spring	3
7	120186100	Cap	3
8	120226080	Cotter	6
9	120176290	Valve Exhaust	3
11	120406080	Seal	3
12	198217070	Spring	3

Ref. No.	Part No.	Description	No. Used
13	120186100	Cap	3
14	120226080	Cotter	6
15	198466070	Plug	4
16	064200022	Plug	3
17	064200022	Plug	3
20	111136340	Screw	11
21	111136350	Screw	3
23	111147400	Gasket, o/s 1.3mm	1
24	064200018	Plug	2
25	185246060	Switch − Oil Pressure	1

NOTE: Obtain replacement parts from your local Perkins Dealer.
*Not Illustrated



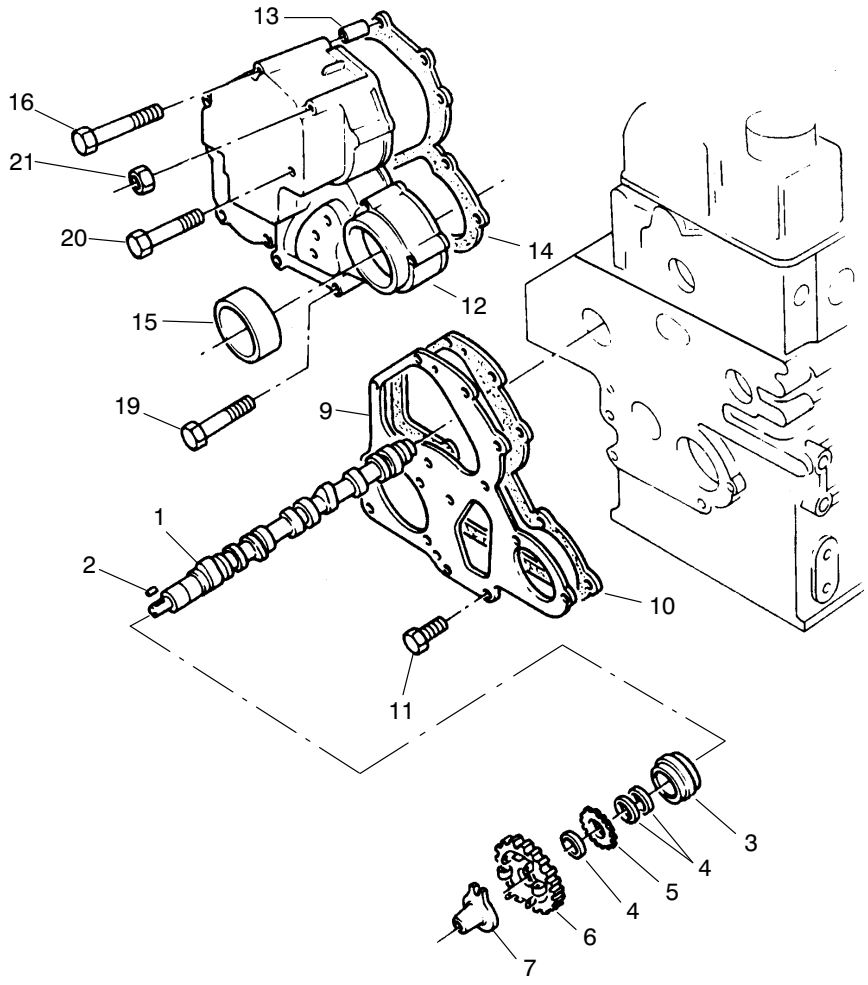
T–1380–1

ROCKER ARM ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	120036330	Rocker Shaft Assembly	1
2	120316190	Shaft	1
3	064609006	Plug	2
4	120356120	Lever	3
5	120356110	Lever	3
6	120346170	Bracket	3
7	030300325	Pin	1
8	198217080	Spring	2

Ref. No.	Part No.	Description	No. Used
9	199486220	Adjusting Screw	6
10	020109076	Nut	6
11	012109177	Stud	3
12	023100008	Nut	3
15	120456240	Rod	6
16	120116100	Tappet	6
17	199280280	Washer	4

NOTE: Obtain replacement parts from your local Perkins Dealer.



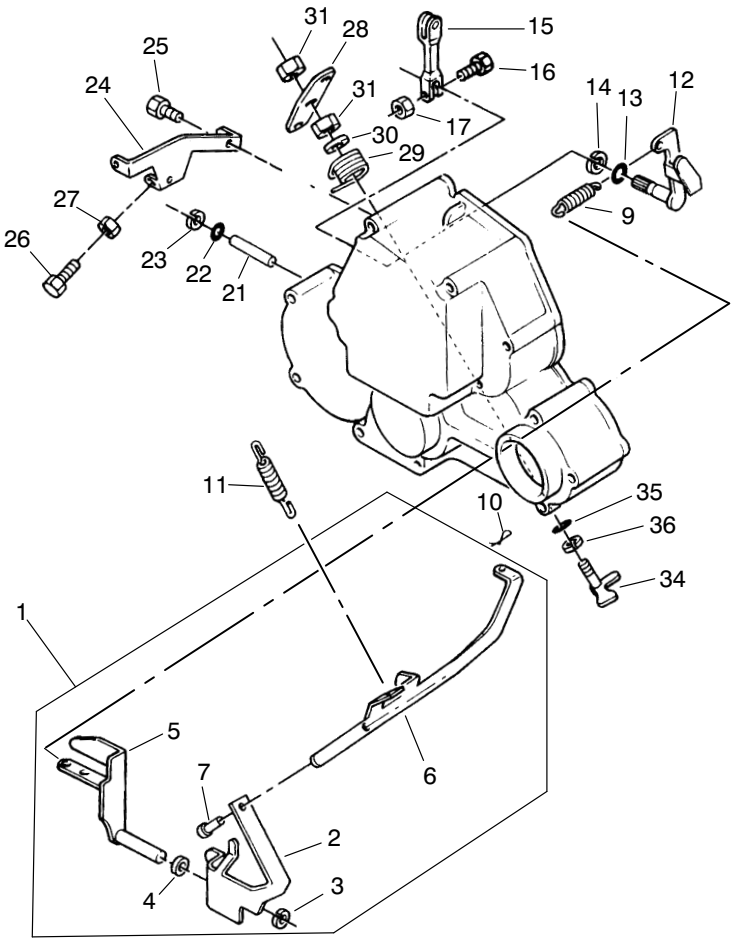
T–1381–1

CAMSHAFT ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	120026121	Camshaft	1
2	034100508	Key	1
3	040109059	Bearing	1
4	199216230	Spacer	3
5	120736081	Gear	1
6	120016030	Gear	1
7	125256120	Tappet	1
9	165166260	Plate	1
10	165996400	Joint	1

Ref. No.	Part No.	Description	No. Used
11	011300612	Bolt	3
12	165106131	Cover	1
13	030300414	Pin	1
14	165996410	Joint	1
15	198636090	Seal	1
16	011300680	Screw	2
19	011300640	Screw	4
20	011300660	Screw	2
21	023100006	Nut	1

NOTE: Obtain replacement parts from your local Perkins Dealer.



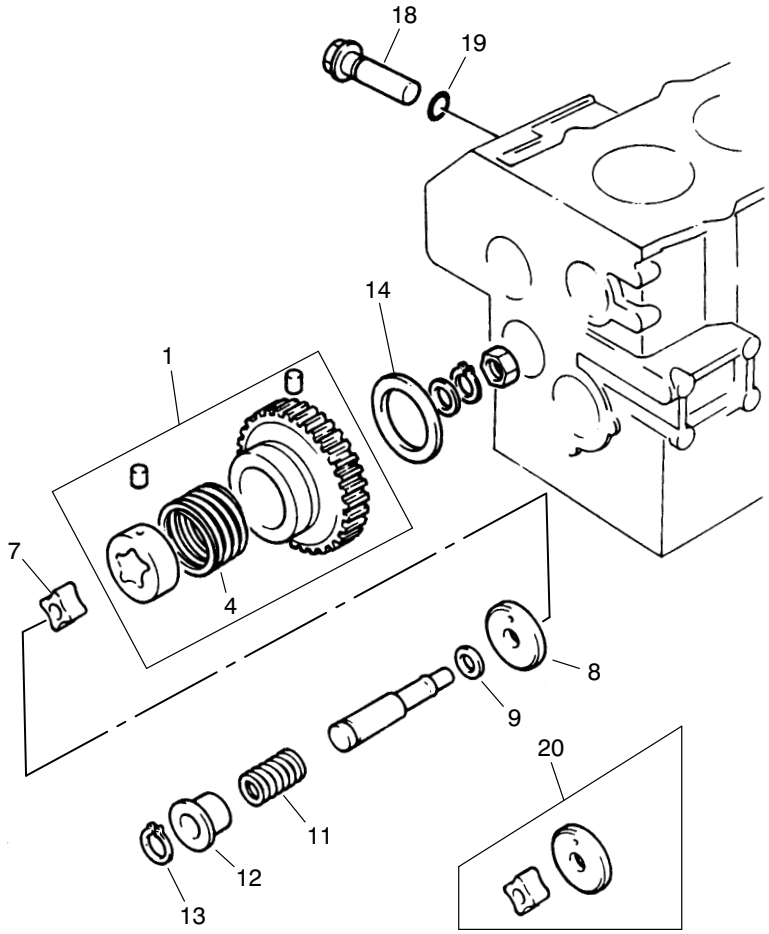
T−1382−1

TIMING COVER ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	125046250	Lever	
		(Incl. Ref. #2, 6 & 7)	1
2		Lever	1
3	036800008	Circlip	1
4	026200010	Washer	1
5	125406071	Lever	1
6		Link	1
7		Pin	1
9	198217110	Spring	1
10	031100004	Pin	1
11	198216731	Spring	1
12	125156170	Arm	1
13	052100070	O Ring	1
14	036800008	Circlip	1
15	125416300	Lever	1
16	010110630	Screw	1

Ref. No.	Part No.	Description	No. Used
17	023100006	Nut	1
21	125116130	Shaft	1
22	052100030	Seal − O−Ring	1
23	036800005	Circlip	1
24	125976120	Stay	1
25	011300616	Screw	2
26	010109264	Screw	2
27	023100006	Nut	2
28	125176080	Lever	1
29	198216760	Spring	1
30	026200008	Washer	1
31	020300008	Nut	2
34	125156180	Arm	1
35	052100050	O Ring	1
36	036800006	Circlip	1

NOTE: Obtain replacement parts from your local Perkins Dealer.



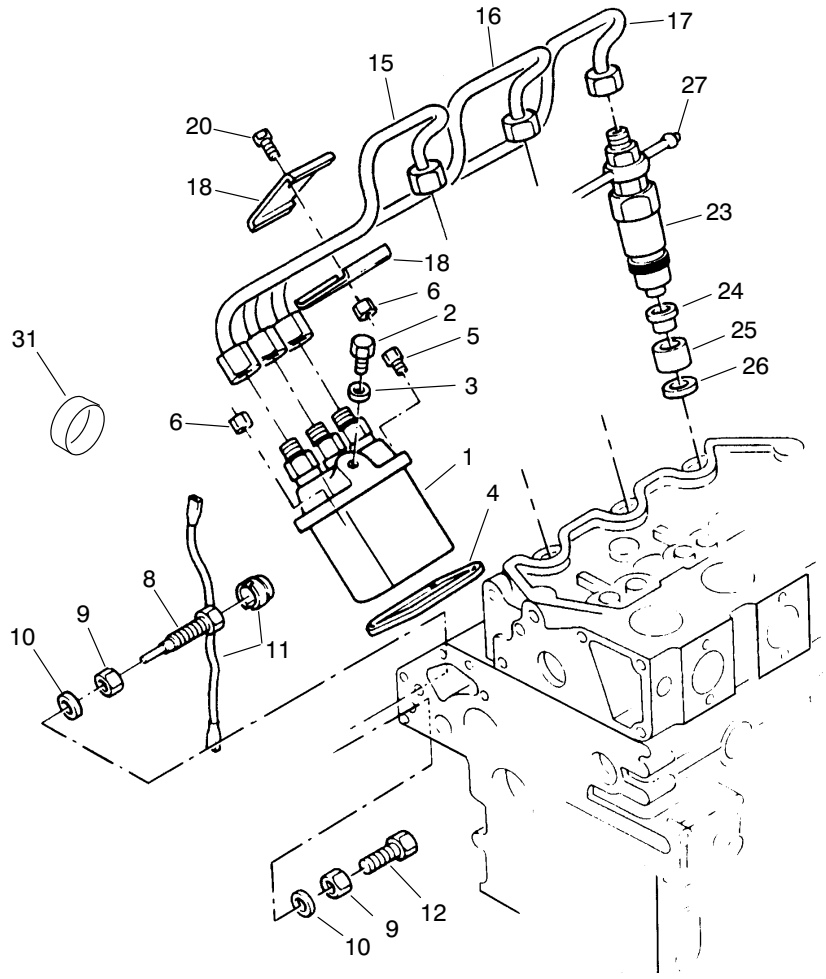
T−1383−1

OIL PUMP ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	165026110	Gear	1
4	198216821	Spring	1
7	140166130	Rotor	1
8	140116140	Cover	1
9	199286150	Shim, 0.10mm o/s	1
*	199286160	Shim, 0.15mm o/s	1
*	199286170	Shim, 0.20mm o/s	1
*	199286180	Shim, 0.50mm o/s	1

Ref. No.	Part No.	Description	No. Used
11	198216720	Spring	1
12	199236540	Collar	1
13	036800010	Circlip	1
14	199266180	Washer	1
18	140036120	Valve	1
19	052100150	Seal − O−Ring	1
20	140186010	Repair Kit	1

NOTE: Obtain replacement parts from your local Perkins Dealer.
*Not Illustrated



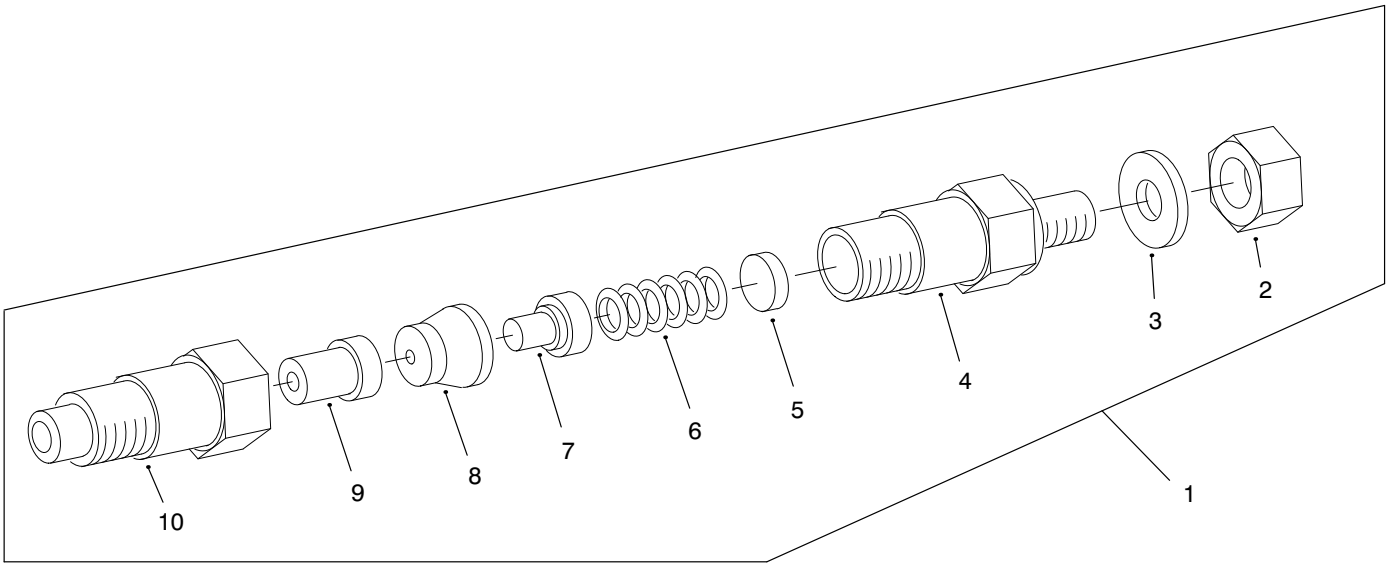
T–1384–1

FUEL INJECTION SYSTEM ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	131017610	Injection Pump	1
2	131236280	Screw	1
3	025100006	Washer	1
4	131426300	Shim	1
5	011300620	Screw	2
6	023100006	Nut	2
8	131046160	Screw	1
9	023109002	Nut	1
10	025100010	Washer	1
11	198236030	Wire	1
12	010109475	Screw	1
13	023109008	Nut	1
14	025100010	Washer	1

Ref. No.	Part No.	Description	No. Used
15	131507010	Injection Pipe No. 1 Cyl.	1
16	131507020	Injection Pipe No. 2 Cyl.	1
17	131507030	Injection Pipe No. 3 Cyl.	1
18	199106020	Damper	2
19	199106020	Damper	2
20	010100625	Screw	2
21	023100006	Nut	2
23	131406340	Atomiser	3
24	131426200	Gasket	3
25	111316280	Insert	3
26	198996090	Seal	3
27	131606260	Pipe	1
31	198466060	Plug	2

NOTE: Obtain replacement parts from your local Perkins Dealer.



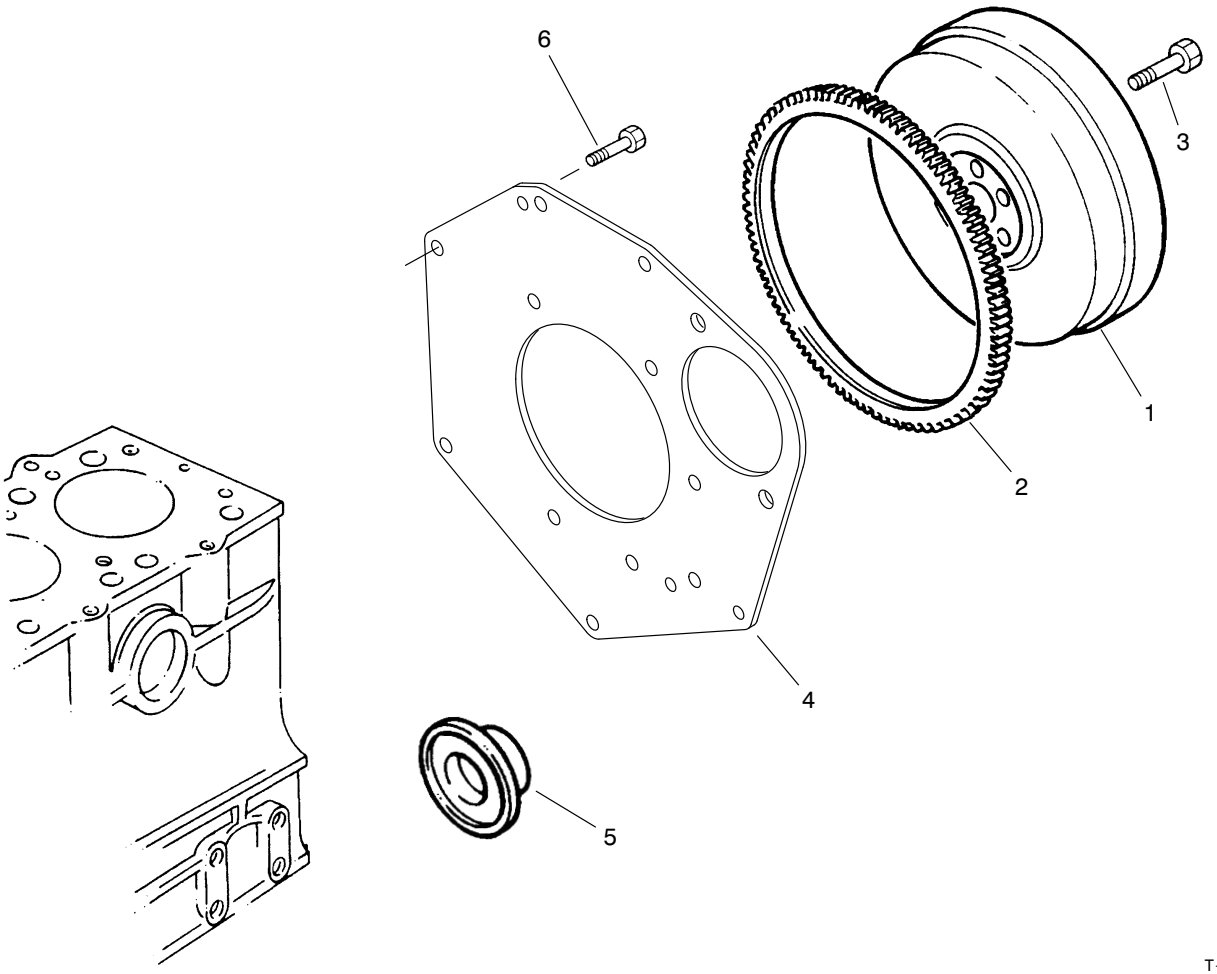
T−2495

INJECTION PUMP ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	131406340	Atomiser	3
2	131446069	Nut	1
3	131426210	Washer	1
4	131446065	Body	1
5	131437250	Shim, 0.90mm o/s	1
*	131437251	Shim, 0.925mm o/s	1
*	131437252	Shim, 0.95mm o/s	1
*	131437253	Shim, 0.975mm o/s	1
*	131437354	Shim, 1.00mm o/s	1
*	131437255	Shim, 1.025mm o/s	1
*	131437256	Shim, 1.05mm o/s	1
*	131437257	Shim, 1.075mm o/s	1
*	131437258	Shim, 1.10mm o/s	1
*	131437259	Shim, 1.125mm o/s	1
*	131437260	Shim, 1.15mm o/s	1
*	131437261	Shim, 1.175mm o/s	1

Ref. No.	Part No.	Description	No. Used
*5	131437262	Shim, 1.20mm o/s	1
*	131437263	Shim, 1.225mm o/s	1
*	131437264	Shim, 1.250mm o/s	1
*	131437265	Shim, 1.275mm o/s	1
*	131437266	Shim, 1.30mm o/s	1
*	131437267	Shim, 1.325mm o/s	1
*	131437268	Shim, 1.35mm o/s	1
*	131437269	Shim, 1.375mm o/s	1
*	131437270	Shim, 1.40mm o/s	1
*	131437271	Shim, 1.425mm o/s	1
*	131437272	Shim, 1.45mm o/s	1
6	131446066	Spring	1
7	131446070	Pin	1
8	131446068	Spacer	1
9	131416150	Nozzle	1
10	131446067	Nut	1

NOTE: Obtain replacement parts from your local Perkins Dealer.
*Not Illustrated

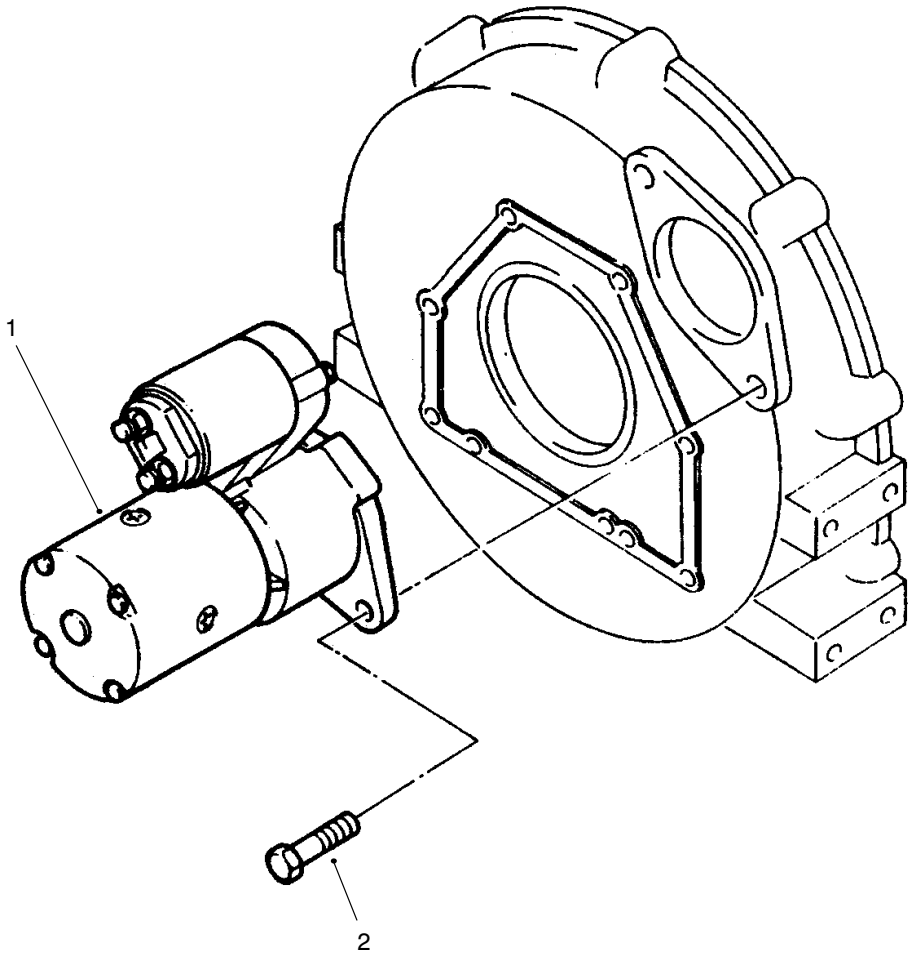


T–1387–3

FLYWHEEL ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	115357190	Flywheel	1
2	115376150	Gear – Ring	1
3	010109330	Screw	4
4	110366400	Plate	1
5	198636080	Seal	1
6	011310816	Screw	10

NOTE: Obtain replacement parts from your local Perkins Dealer.

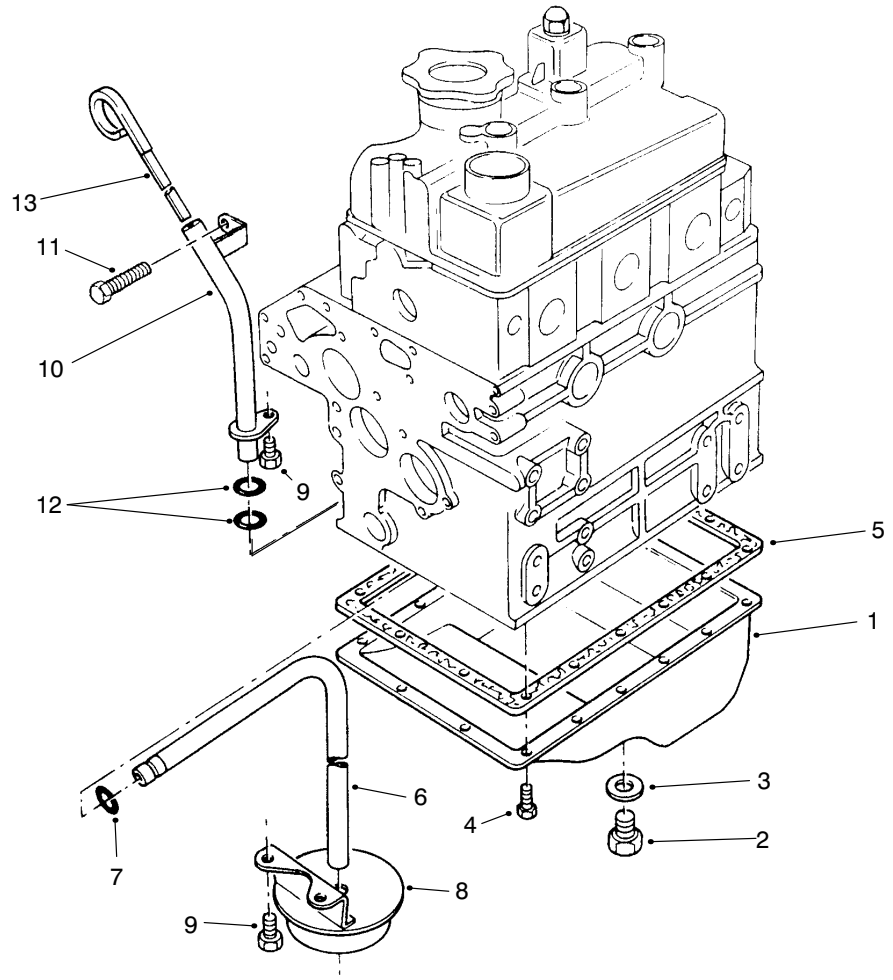


T–2191–1

STARTER INSTALLATION ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	185086400	Starter Motor	1
2	011401020	Screw	2

NOTE: Obtain replacement parts from your local Perkins Dealer.

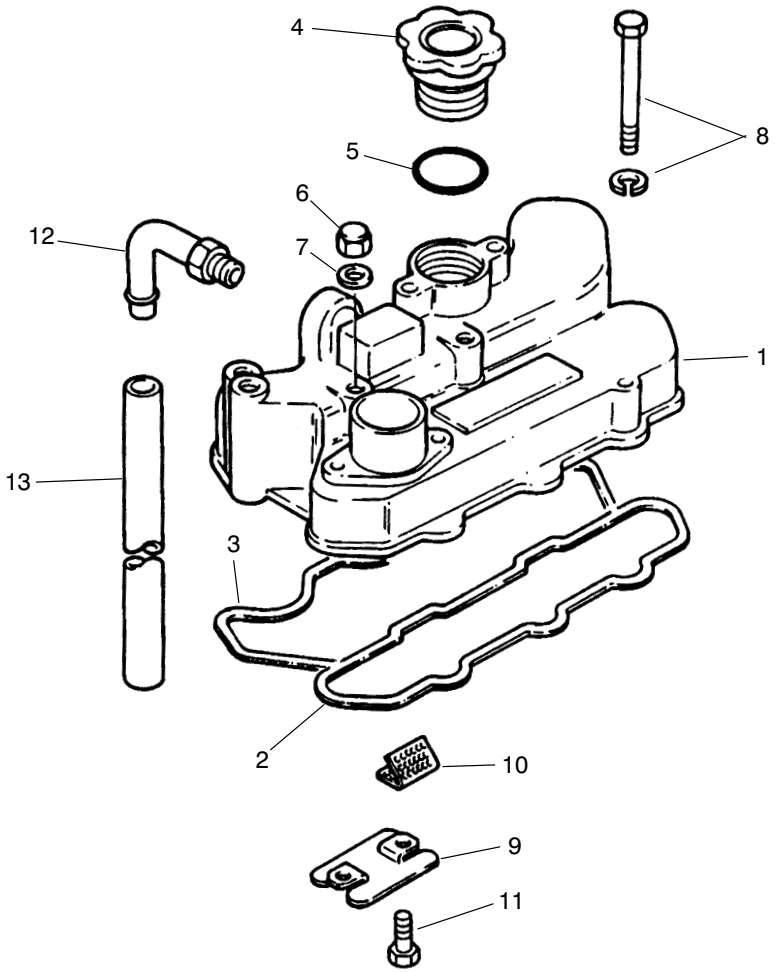


T−1390−1

OIL SUMP ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	110706860	Sump	1
2	010401212	Plug	2
3	025100012	Washer	2
4	010109235	Screw	18
5	110996590	Gasket	1
6	140986590	Pipe	1
7	052109076	Seal − O−Ring	1
8	140406310	Strainer	1
9	011300612	Bolt	3
10	110756380	Tube	1
11	011300812	Screw	1
12	052100100	Seal − O−Ring	2
13	198416371	Dipstick	1

NOTE: Obtain replacement parts from your local Perkins Dealer.



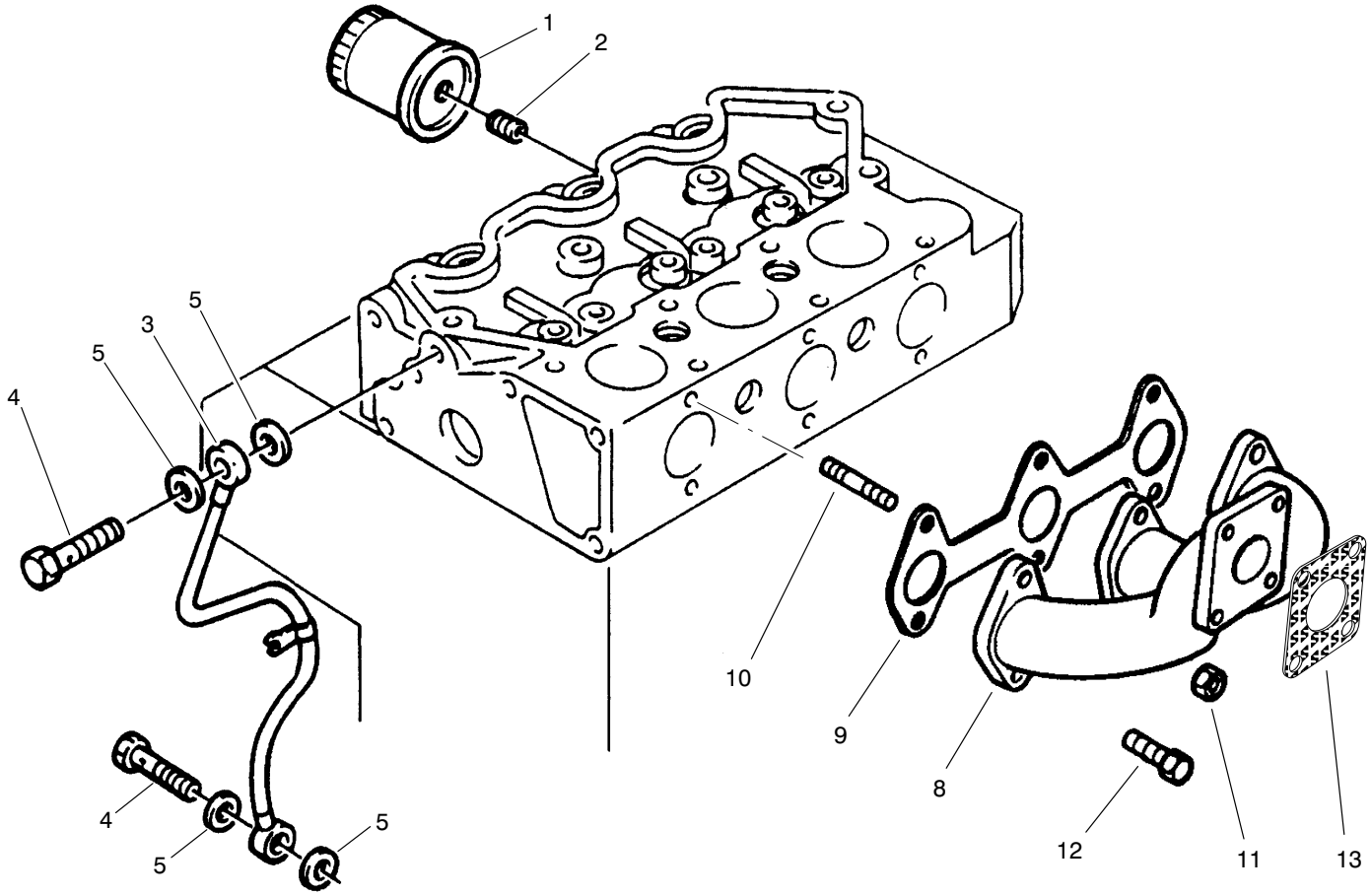
T–1391–1

VALVE COVER ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	111026371	Cover	1
2	111996330	Gasket	1
3	111996060	Gasket	1
4	198436010	Cap	1
5	052100400	Seal	1
6	024500008	Nut	3
7	198996060	Washer	3

Ref. No.	Part No.	Description	No. Used
8	011300650	Screw	2
9	110666110	Plate	1
10	110666120	Gauze	1
11	011300612	Bolt	2
12	110986500	Pipe	1
13	068122560	Hose	1

NOTE: Obtain replacement parts from your local Perkins Dealer.
*Not Illustrated



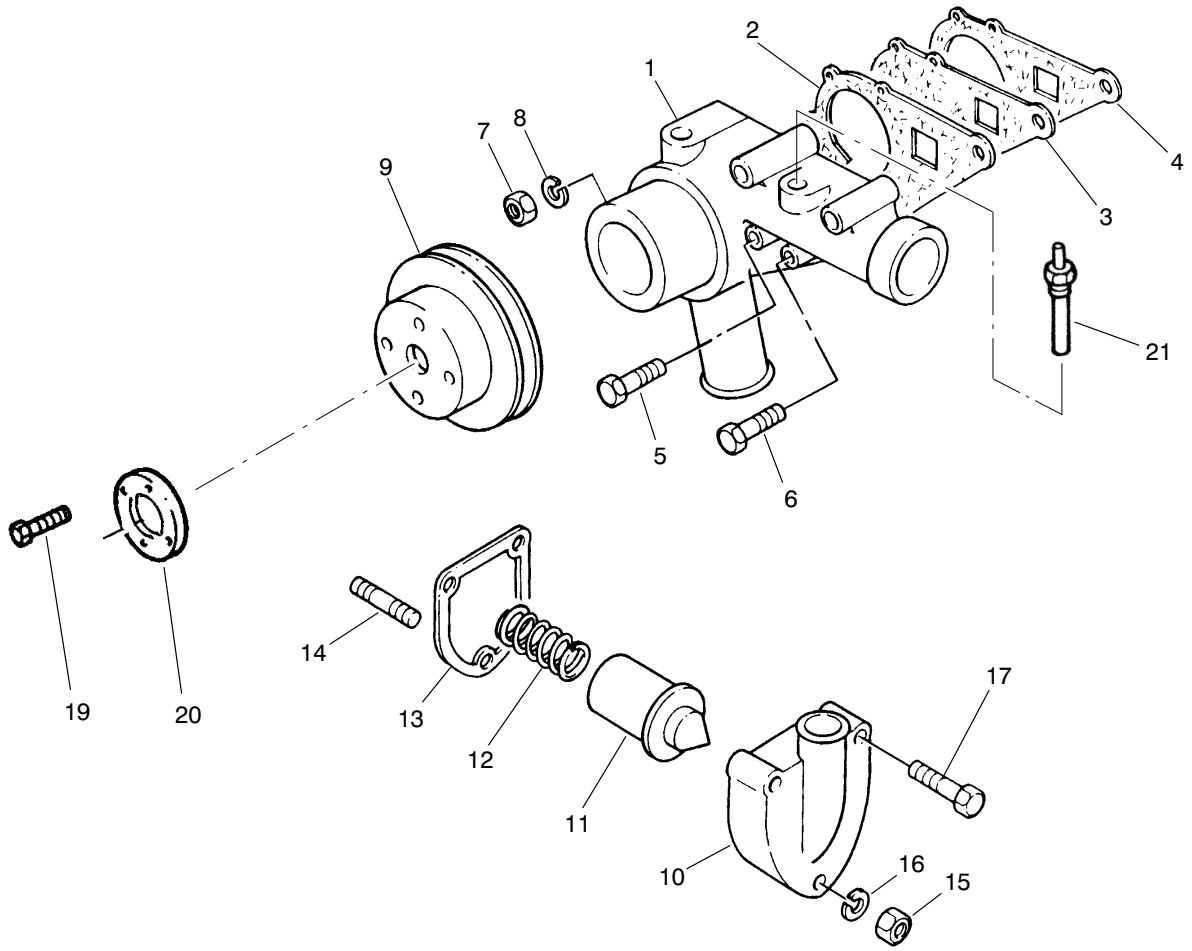
T−1392−2

OIL FILTER & EXHAUST MANIFOLD ASSEMBLIES

Ref. No.	Part No.	Description	No. Used
†1	85−4930	Filter − Oil	1
2	140546020	Connection	1
3	140606680	Pipe	1
4	198486780	Bolt	1
5	198996060	Washer	2
6	198486780	Bolt	1
7	198996060	Washer	2

Ref. No.	Part No.	Description	No. Used
8	135616620	Manifold − Exhaust	1
9	135996520	Gasket	1
10	012110625	Stud	3
11	023100006	Nut	3
12	011310625	Screw	3
13	314990013	Gasket − Muffler	1

NOTE: Obtain replacement parts from your local Perkins Dealer.
†Available from your local TORO Distributor.



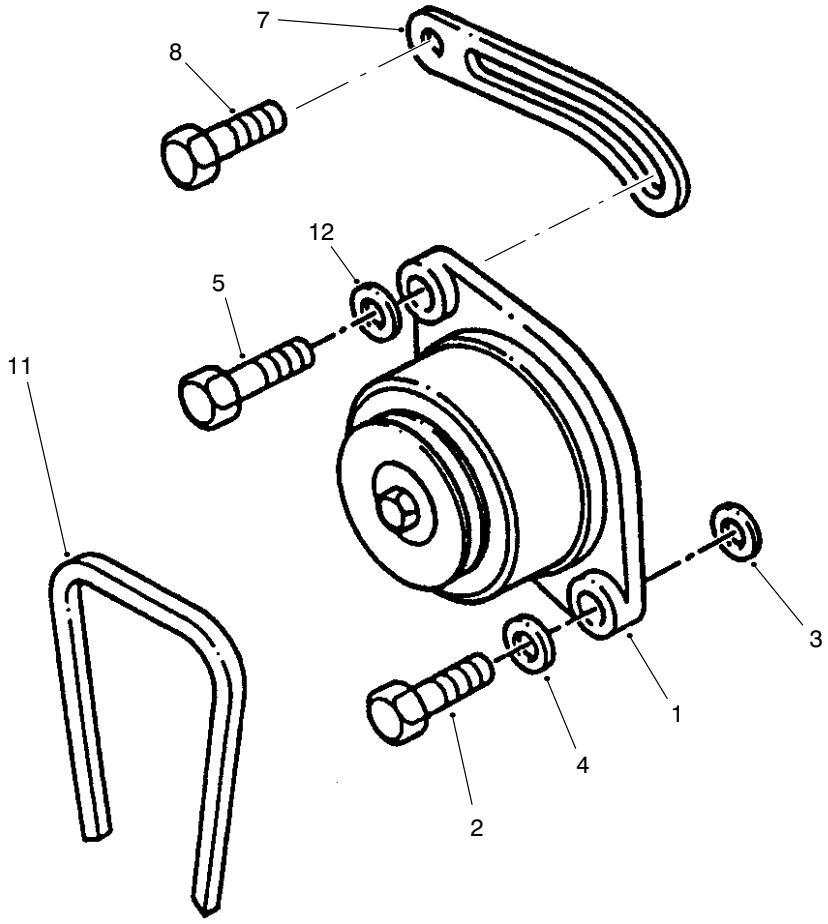
T–2454

WATER PUMP ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	145017400	Pump – Water	1
2	145996430	Gasket	1
3	145146270	Backplate	1
4	145996420	Gasket	1
5	011300635	Screw	3
6	011300650	Screw	4
7	023100006	Nut	1
8	027100006	Washer	1
9	145336490	Pulley	1
10	145216161	Housing	1

Ref. No.	Part No.	Description	No. Used
11	145206062	Thermostat	1
12	198217410	Spring	1
13	145996440	Gasket	1
14	012100650	Stud	1
15	023100006	Nut	1
16	027100006	Washer	1
17	011300650	Screw	2
19	011310620	Screw	4
20	145386520	Plate	1
21	385720101	Sender – Temperature	1

NOTE: Obtain replacement parts from your local Perkins Dealer.



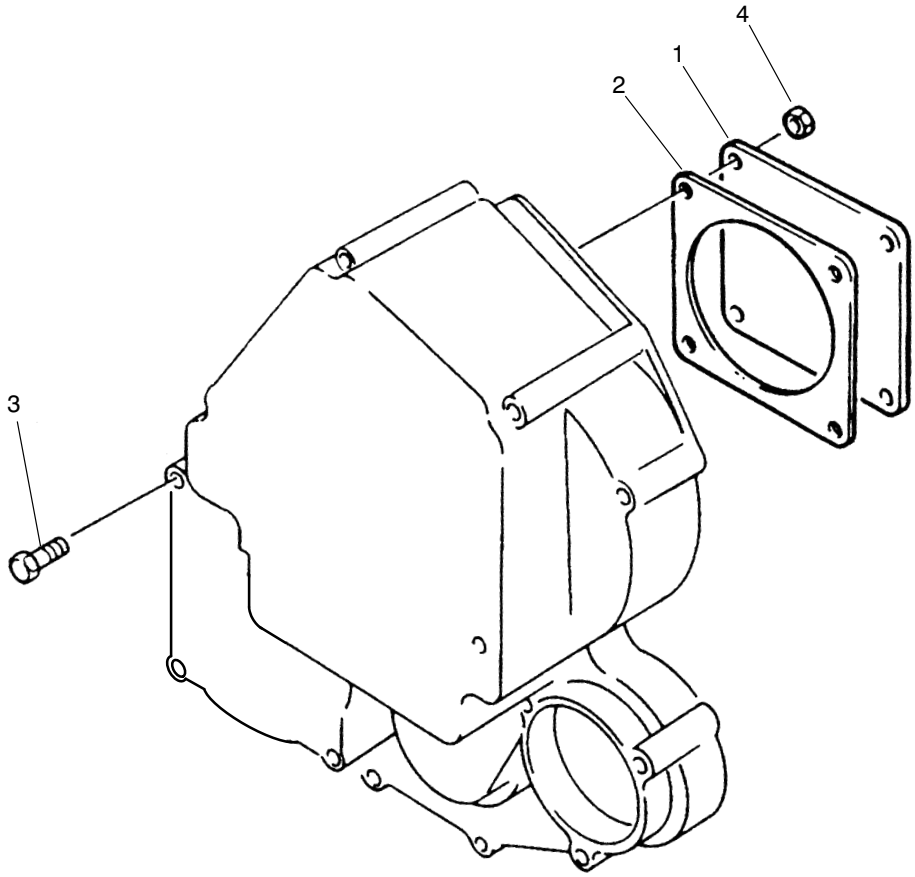
T–2192–1

ALTERNATOR ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	185046300	Alternator	1
2	010110850	Screw	1
3	199236850	Washer	1
4	026109017	Washer	1
5	011310825	Screw	1

Ref. No.	Part No.	Description	No. Used
7	185726910	Lever	1
8	011300816	Screw	1
11	080109083	Belt	1
12	026109017	Washer	1

NOTE: Obtain replacement parts from your local Perkins Dealer.

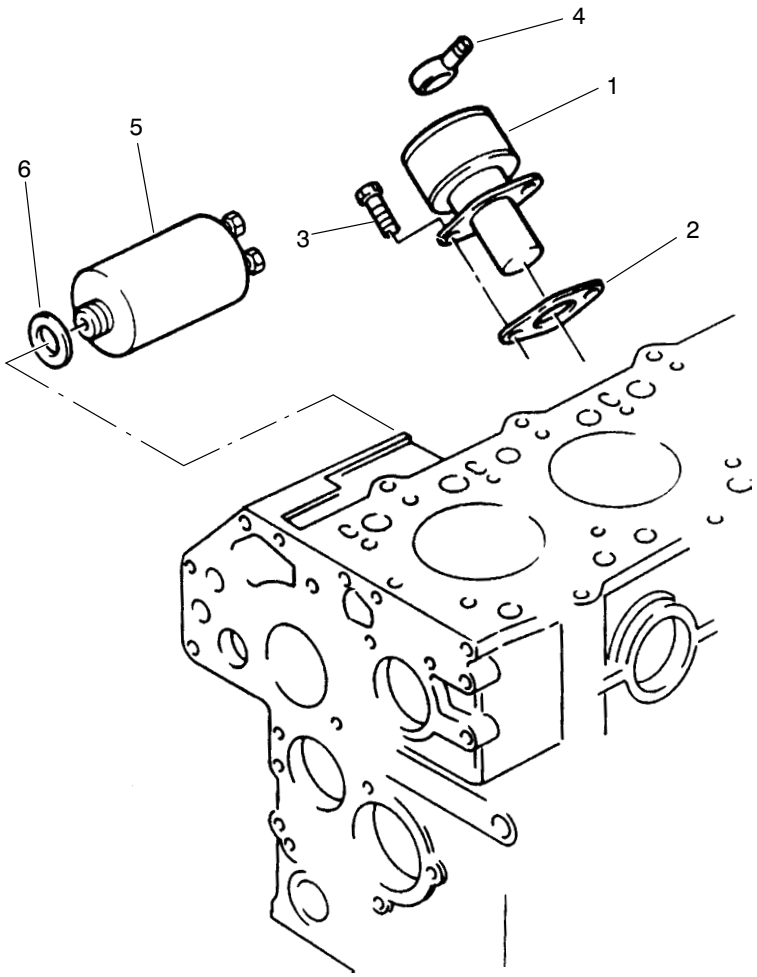


T–1398–1

TIMING COVER PLATE ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	165206360	Plate	1
2	165996420	Gasket	1
3	010110850	Screw	4
4	023100008	Nut	4

NOTE: Obtain replacement parts from your local Perkins Dealer.

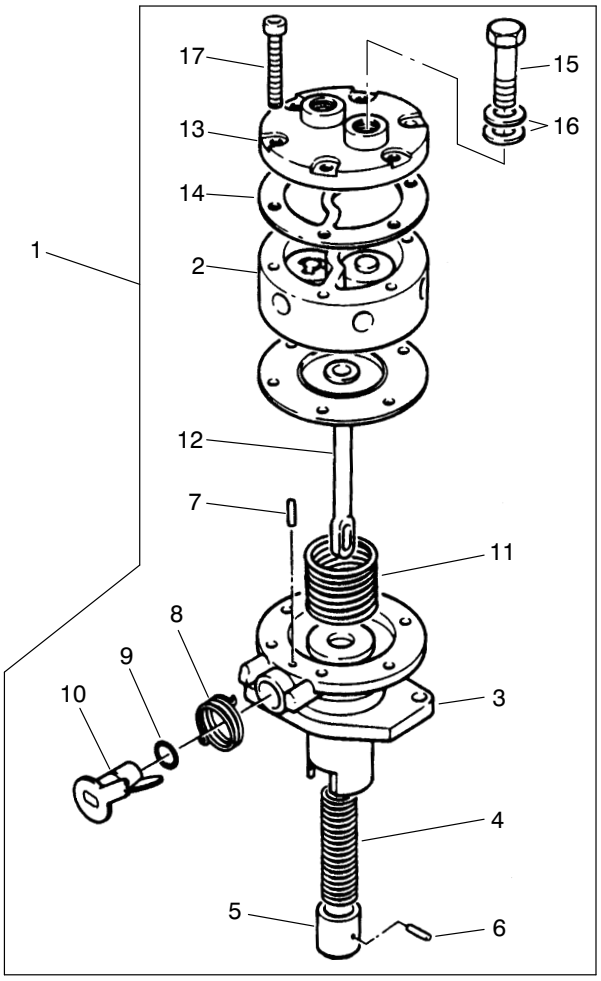


T–2179–2

LOW PRESSURE FUEL SYSTEM & THROTTLE STOP ASSEMBLIES

Ref. No.	Part No.	Description	No. Used
1	130506140	Pump – Lift	1
2	130996130	Gasket	1
3	011140616	Screw	2
4	198486840	Connection	2
5	185206082	Solenoid	1
6	025100016	Washer	1

NOTE: Obtain replacement parts from your local Perkins Dealer.



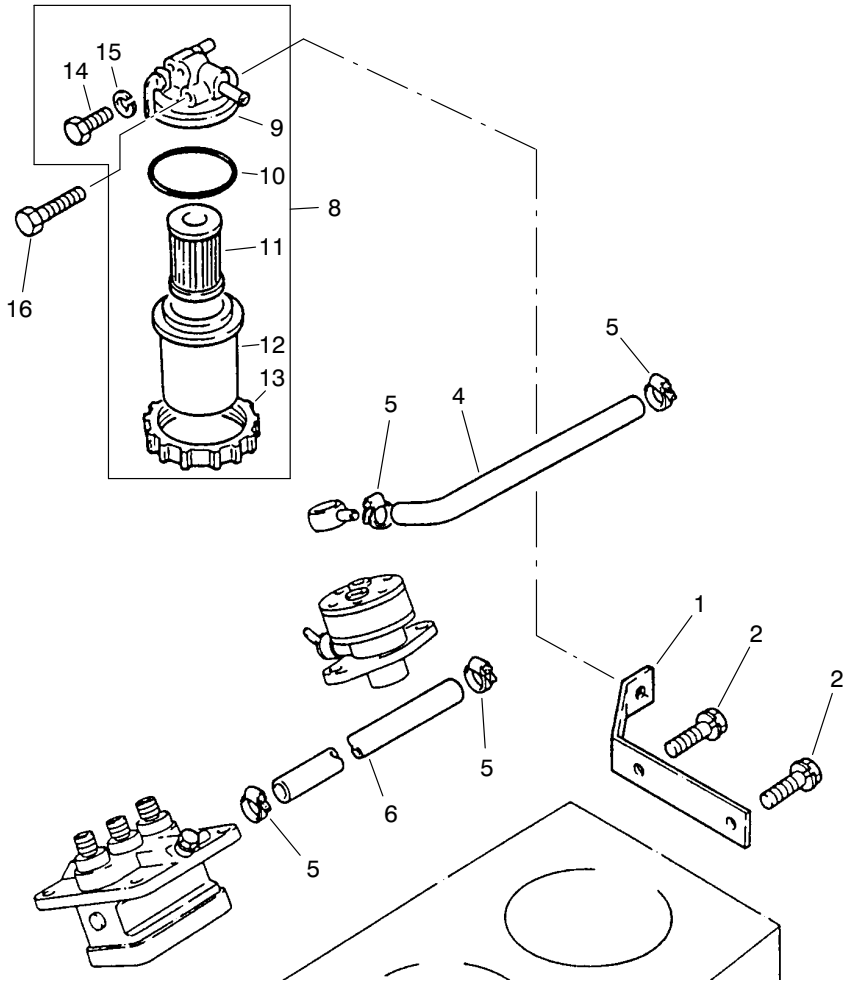
T−2455−1

LIFT PUMP ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	130506140	Lift Pump Assembly (Incl. Ref. #2)	1
2		Body	1
3	130516080	Body	1
4	130516081	Spring	1
5	130516082	Plunger	1
6	130516085	Pin	1
7	130516088	Pin	1
8	130516083	Spring	1

Ref. No.	Part No.	Description	No. Used
9	131226180	Seal − O−Ring	1
10	130516086	Lever	1
11	130516087	Spring	1
12	130516084	Diaphragm	1
13	130516090	Cap	1
14	130516089	Gasket	1
15	130516092	Bolt	2
16	130516069	Washer	4
17	130516091	Screw	6

NOTE: Obtain replacement parts from your local Perkins Dealer.



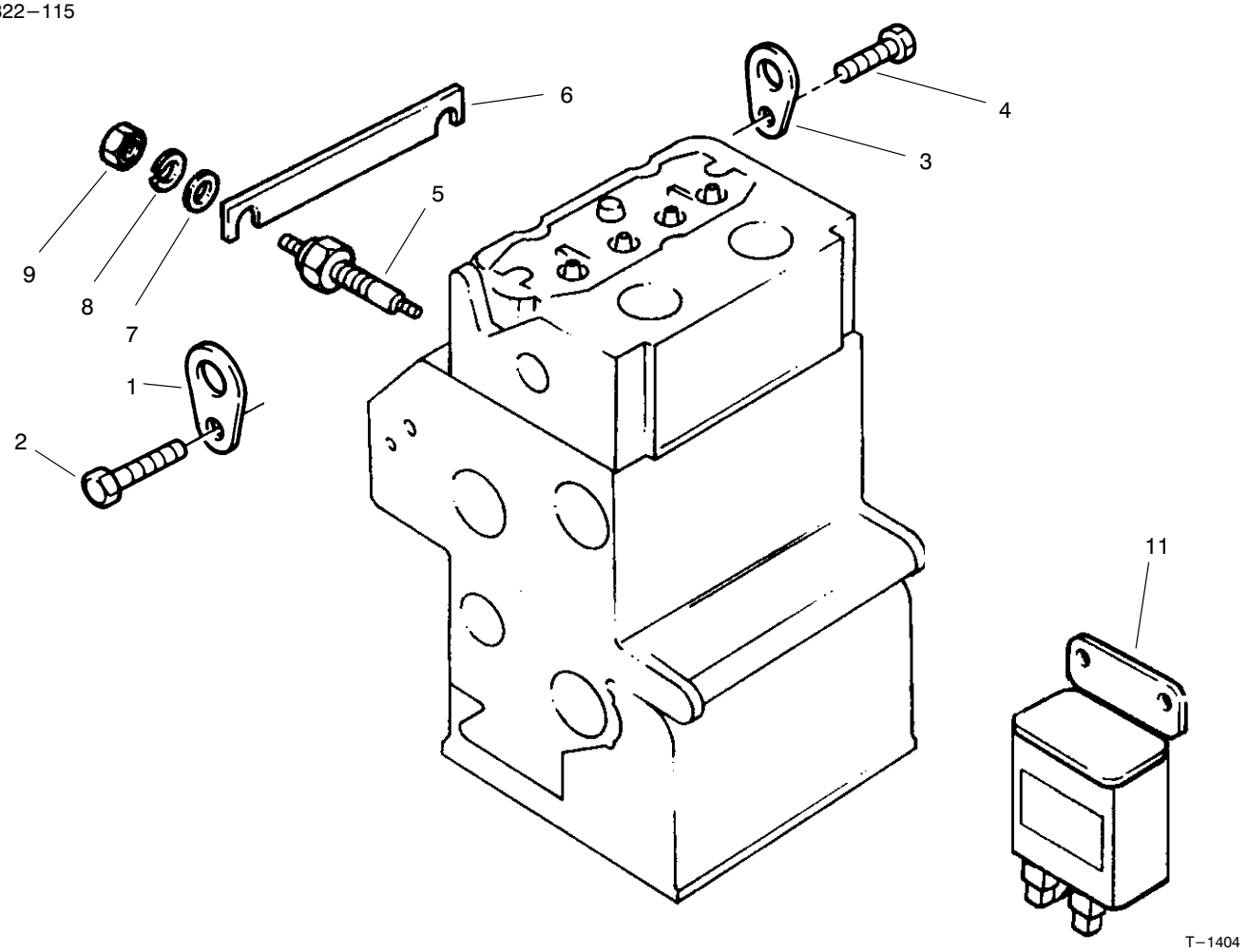
T−2180−1

FUEL FILTER ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	130976222	Bracket	1
2	011310816	Screw	1
4	068207224	Pipe − Fuel	1
5	198346020	Clip	4
6	068207400	Pipe − Fuel	1
8	130306041	Fuel Filter Assembly (Incl. Ref. #9)	1
9		Head − Filter	1

Ref. No.	Part No.	Description	No. Used
10	052100440	Seal − O−Ring	1
11	130336040	Element − Filter	1
12	130336031	Container	1
13	130446090	Ring	1
14	130446080	Plug	2
15	130326120	Washer	2
16	010100865	Screw	1

NOTE: Obtain replacement parts from your local Perkins Dealer.

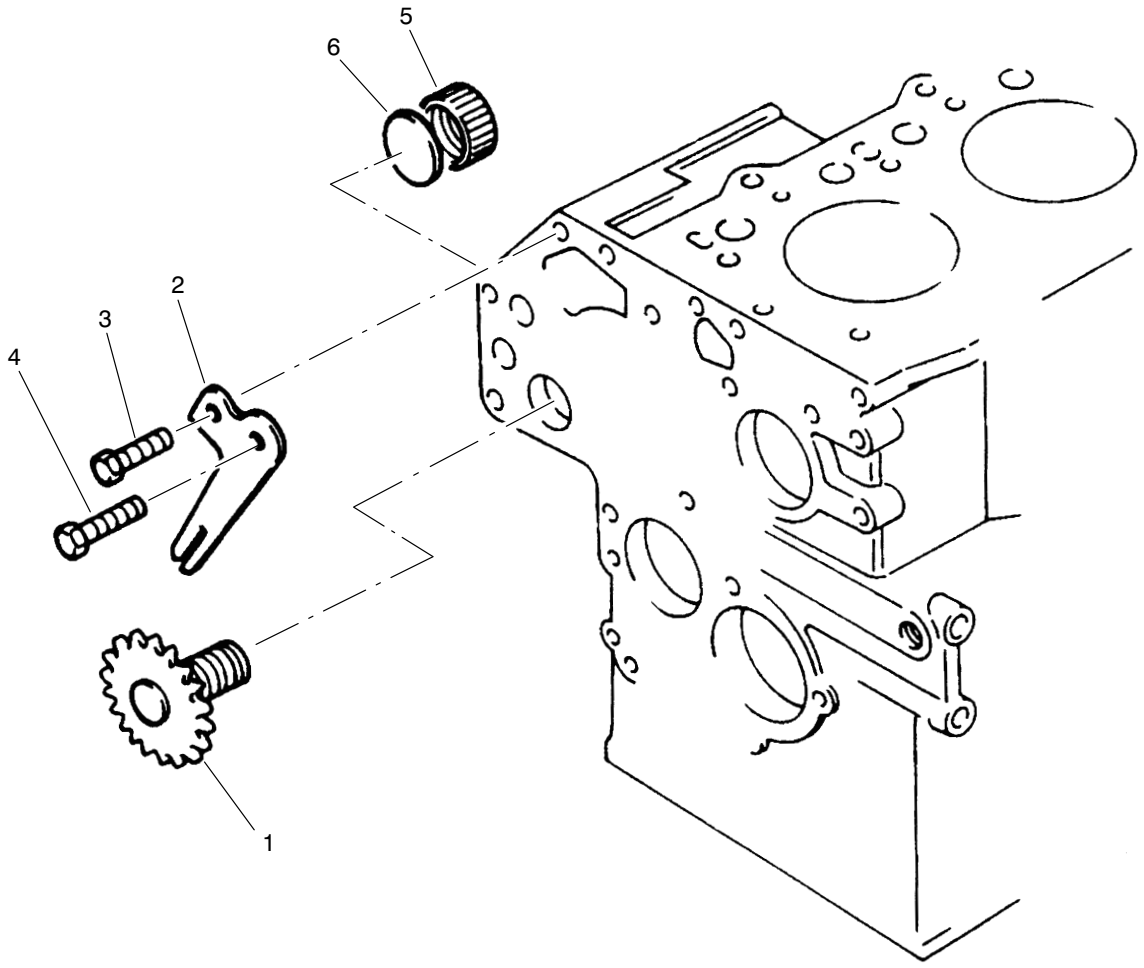


ENGINE LIFTING TAB & COLD START ASSEMBLIES

Ref. No.	Part No.	Description	No. Used
1	195816200	Plate	1
2	011310816	Screw	1
3	195816200	Plate	1
4	011310816	Screw	1
5	185366190	Heater	3

Ref. No.	Part No.	Description	No. Used
6	185376170	Bar	1
7		Washer	3
8		Washer	3
9		Nut	3
11	385230120	Relay	1

NOTE: Obtain replacement parts from your local Perkins Dealer.

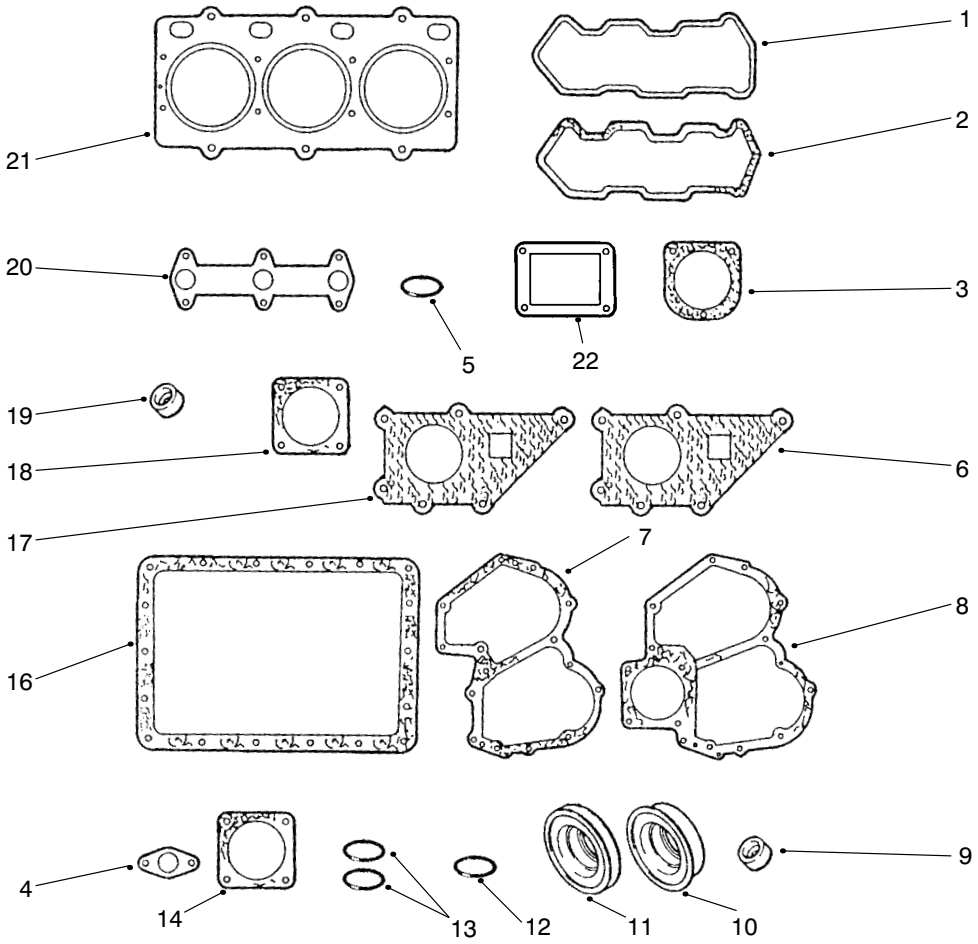


T–1406

TACHOMETER & HOUR RECORDER DRIVE ASSEMBLY

Ref. No.	Part No.	Description	No. Used
1	120076070	Shaft	1
2	199566651	Plate	1
3	011310612	Screw	1
4	010700610	Screw	1
5	199376230	Cap	1
6	120996060	Seal	1

NOTE: Obtain replacement parts from your local Perkins Dealer.
*Not Illustrated



T−1970−2

GASKET AND SEALS

Ref. No.	Part No.	Description	No. Used
1	111996060	Gasket − Valve Cover	1
2	111996330	Gasket − Valve Cover	1
3	145996440	Gasket	1
4	130996130	Gasket − Lift Pump	2
5	052100400	Seal − Oil Filler Cap	1
6	145996430	Gasket − Water Pump	1
7	165996400	Gasket	1
8	165996410	Gasket	1
9	131426200	Gasket	3
10	198636080	Seal − Crankshaft	1
11	198636090	Seal	1
12	052109076	O−Ring	1

Ref. No.	Part No.	Description	No. Used
13	052100100	O−Ring − Dipstick Tube	2
14	165996420	Gasket − Timing Cover	1
16	110996590	Gasket − Oil Pan	1
17	145996420	Gasket − Water Pump	1
18	314990013	Gasket − Muffler	1
19	120406080	Seal	3
20	135996520	Gasket − Exhaust Manifolt	1
21	111147390	Gasket − Cylinder Head	1
22	130996070	Gasket	1
*	195906840	Kit − Gasket & Seals (Incl. Ref. #1−21)	1

NOTE: Obtain replacement parts from your local Perkins Dealer.

*Not Illustrated

PRODUCT CHANGES

In an effort to make improvements available to TORO owners as quickly as possible, minor changes are incorporated into Toro's products from time to time that do not become immediately shown in the Parts Catalog. If such a change has been made in your unit, which is not reflected in your manual, see your TORO Distributor or his Authorized TORO Service Dealer for information and part numbers.

IDENTIFICATION AND ORDERING

MODEL AND SERIAL NUMBERS

The Greensmaster 3200D has two identification numbers; a model number and a serial number. The two numbers are stamped on a plate which is located on the left hand frame rail. In any correspondence concerning the Greensmaster 3200D, supply model and serial numbers to assure that correct information and replacement parts are obtained.

To order replacement parts from an Authorized TORO Service Dealer, supply the following information:
1. Model and serial number of the Greensmaster 3200D.
2. Part number, description, and the quantity of part(s) desired.

NOTE: Do not order by reference number if a parts catalog is being used; use the PART NUMBER.

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MAINTENANCE RECORD

Date								