

Ditch Witch[®]

JT2720 Mach 1 All Terrain



ISSUE NO. 18PL-05/18

For Replacement Copy Order **P/N 053-081**

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This manual contains information concerning the following models:
JT2720 Mach 1 All Terrain Directional Drilling System

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DECAL LOCATION

AT/JT27M1

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-783		DECAL KIT - AT2720MI	JT2720 ALL TERRAIN
	275-869		DECAL KIT - JT2720MI	JT2720 MACH I
1	274-049	3	DANGER ELECTROCUTION	
2	274-050	1	WARNING JOBSITE HAZARD	
3	274-318	4	TIE DOWN LOCATION	
4	274-442	8	LIFT LOCATION	
5	273-187	1	JT2720 ALL-TERRAIN IDENTIFIER	SEE FOOTNOTE 2
	274-679	1	JT2720 MODEL-ID	SEE FOOTNOTE 3
6	274-724	1	WARNING ONE CALL NOTIFICATION	
7	270-6773	1	PATENT	
8	273-185	1	FRONT-BACK WRENCH	
9	273-184	1	PIPE-LIFT-SHUTTLE	
10	273-183	1	FLOW-LUBE-GRIPPER	
11	274-865	1	SETUP CONTROL PANEL	
12	273-124	1	ALL TERRAIN INSTRUMENTS	SEE FOOTNOTE 2
	700-051	1	JET TRAC INSTRUMENTS	SEE FOOTNOTE 3
	273-188	1	ALL-TERRAIN INSTRUMENTS	SEE FOOTNOTE 4
13	273-012	1	AT/JT-IGNITION-COLD START	
14	274-877	AR	GRAPHIC STRIPE (SOLD PER INCH)	USE 75"
15	274-883	1	DITCH GRAPHIC STRIPE	
16	274-884	1	WITCH GRAPHIC STRIPE	
17	273-452	1	NOTICE COOLANT	
18	273-182	1	BORE-PIPE-THROTTLE	
19	273-190	1	JOYSTICK-INDICATOR LIGHTS	
20	273-189	1	THRUST-ROTATION-FLUID	
21	270-1023	1	NOTICE HYDRAULIC OIL LEVEL	
22	275-449	2	DITCH WITCH LOGO PLACARD	
23	275-400	1	NOTICE OIL LEVEL	
24	273-181	1	ANCHOR ROTATION-THRUST	
25	275-355	1	CAUTION HOT PARTS	
26	275-023	1	OIL LEVEL	
27	275-033	1	NOTICE ELECTRICAL SYSTEM	
28	273-475	1	WARNING READ OPERATOR MANUAL	
29	275-120	1	RESERVOIR (THF)	
	274-672	1	ENVIRO HYDRAULIC RESERVOIR	SEE FOOTNOTE 1
30	275-148	1	FUEL TANK (DIESEL)	
31	273-146	1	NOTICE ADD COOLANT	
32	275-184	4	WARNING MOVING PARTS	
33	275-197	2	DANGER ROTATING SHAFT	
34	270-5127	1	BATTERY	
35	275-230	6	DANGER STRIPE 1.75" X 18"	
36	273-186	1	MACH I IDENTIFIER	
37	273-278	1	DANGER WRENCH	
38	273-198	1	TRACKER CONTROL	
39	274-291	1	SOUND POWER	SEE FOOTNOTE 4
40	273-226	1	SHUTTLE STOP INDICATOR	
41	273-235	1	CONSOLE ELECTRICAL CENTER	
42	273-236	1	ENGINE ELECTRICAL CENTER	
43	273-234	1	PIPELOADER VALVE	
44	273-233	1	FRONT WRENCH VALVE	
45	273-230	1	ENGINE - STOP	

FOOTNOTES

1. NOT PART OF KIT. SEE 256-030 ENVIRONMENTAL HYDRAULIC OIL.
2. PART OF KIT NUMBER 275-783.
3. PART OF KIT NUMBER 275-869.
4. NOT PART OF KIT. FOR EUROPEAN UNITS ONLY.
5. NOT PART OF KIT. FOR EARLY STYLE INSTRUMENT PANELS.
6. LOCATE DECAL ON BATTERY SO THAT DECAL IS VISIBLE WHEN VIEWING BATTERY.

RADIATOR

BEGINS WITH S/N 2V2657

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	343-683	1	TOP RADIATOR BRACKET	
2.	116-727	1	SHOCK MOUNT	
3.	106-628	1	SCREW (M10-1.5 X 60MM)	
4.	105-894	1	LOCKNUT (M10-1.5, PRV TRQ, 10.9)	
5.	107-004	1	FLG LK SCREW (M12-1.75 X 45MM)	
6.	194-245	1	RADIATOR	
7.	116-487	2	ISOLATION MOUNT	
8.	106-700	2	SCREW (M12-1.75 X 80mm)	
9.	106-685	2	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
10.	106-164	4	FLG LK SCREW (M10-1.50 X 30MM)	
11.	105-894	4	LOCKNUT (M10-1.5, PRV TRQ, 10.9)	
12.	116-733	1	LOWER COOLANT HOSE	
13.	116-732	1	UPPER COOLANT HOSE	
14.	110-134	4	WORM CLAMP (2.062" TO 2.750")	
15.	318-646	1	FAN GUARD	
16.	105-117	4	WASHER (5/16")	
17.	107-096	4	LOCKNUT (M8-1.25, NLK)	
18.	194-818	1	FAN (23.0" OD, 2.50" BC)	
19.	178-991	1	FAN SPACER (SPACING .75)	
20.	106-063	4	SCREW (M8-1.25 X 40MM, 10.9)	TORQUE TO 30 FT. LBS.
21.	353-312	-	ENGINE MOUNT	
22.	194-020	-	ENGINE - JOHN DEERE DIESEL	OBSOLETE
23.	106-397	1	WASHER (M12, HARDENED)	
24.	105-091	4	LOCK WASHER (5/16")	
25.	170-378	1	FAN BELT	
26.	110-927	1	CAP	
27.	106-397	1	WASHER (M12, HARDENED)	
28.	194-251	-	FAN CLUTCH (154 MM PULLY)	OBSOLETE, SEE NOT SHOWN FOR SERVICE PART.

NOT SHOWN:

500-1220	FAN CLUTCH	REQUIRES 184-190 SPACER
184-190	FAN SPACER (SPACING 2.50)	

FOOTNOTES:

NOTE:

COLD START KIT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-881		COLD START CONVERSION KIT	INCL REF NO'S 2-6 & 8-17; SEE FOOTNOTE 1
1.	215-478		BUTT CONNECTOR (14-16 GA)	
2.	343-318	1	COLD START BRACKET	
3.	106-386	2	FLG LOCKNUT (M8-1.25)	
4.	106-162	4	FLG SCREW (M8-1.25 X 20MM)	
5.	195-841	1	VALVE/CANISTER BRACKET	
	110-252		CAPLUG (3/4")	
	195-844		GASKET	
6.	115-365	1	GROMMET (2-1/8", SOLD PER 1")	
7.	195-842	1	ETHER CANISTER	SEE FOOTNOTE 2
8.	110-367	1	WORM CLAMP (3.250" TO 4.125")	
9.	156-272	1	TUBE CONNECTOR (O2N-O2T90,ORF)	INCL FERRULE & NUT, SEE FOOTNOTE 3
	156-204		FERRULE (O2T)	
	156-205		COMPRESSION NUT (O2T)	
10.	106-382	1	FLG LK SCREW (M10-1.5 X 20MM)	
11.	105-072	1	LOCK WASHER (3/8")	
12.	215-590	1	RING TERMINAL (3/8")	
13.	215-073	1	SENSOR SWITCH	
14.	156-018	AR	BULK TUBING (1/8",SOLD PER 1")	USE 1 @ 63"
15.	195-843	1	INJECTOR NOZZLE	INCL FERRULE & NUT, SEE FOOTNOTE 3
	156-204		FERRULE (O2T)	
	156-205		COMPRESSION NUT (O2T)	
16.	514-402		CONNECTOR (10S - O2NF)	

NOT SHOWN

110-248 CABLE TIE (1/16" - 1/4")

FOOTNOTES

1. REFER TO INSTALLATION INSTRUCTIONS 051-198
2. NOT PART OF KIT; NEED TO ORDER SEPARATELY.
3. DO NOT INSTALL WITH LOCTITE 567

CARRIAGE CHAIN

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	303-304	-	CARRIAGE	
2.	309-568	2	SLIDE BAR, TOP	
3.	309-622	4	SHIM PLATE	
4.	309-621	2	SLIDE BAR	
5.	309-623	1	BACKUP PLATE	
6.	309-570	2	SLIDE BAR, BOTTOM	
7.	106-578	10	SCREW (M12-1.75 X 80mm)	
8.	106-685	10	LOCKNUT (M12-1.75,PRV TRQ,10.9)	
9.	106-397	10	WASHER (M12, HARDENED)	
10.	107-273	2	WASHER (1/2")	
11.	106-352	2	HEX NUT (M24-3.00) ZP	
12.	343-758	1	BAR, CHAIN TENSIONER	
13.	105-594	2	SCREW (M20-2.50 X 240MM)	
14.	106-374	4	HEX NUT (M20-2.50, 10.9) ZP	
15.	343-759	1	THREADED BAR	
16.	129-009	1	ROLLER CHAIN (#140-ECH, 205P)	
17.	306-581	1	BAR, BACKUP	
18.	191-044	-	CHAIN REPAIR KIT (#140 ECH,5P)	
19.	130-612	-	CLEVIS (#140-2)	USED WITH FULL LENGTH CHAIN
20.	107-448	-	140-EC CLEVIS	USED WITH CHAIN SHORTENED 1 PITCH.
21.	106-587	1	LOCKNUT (M24-3.0,PRV TRQ,10.9)	

FOOTNOTES

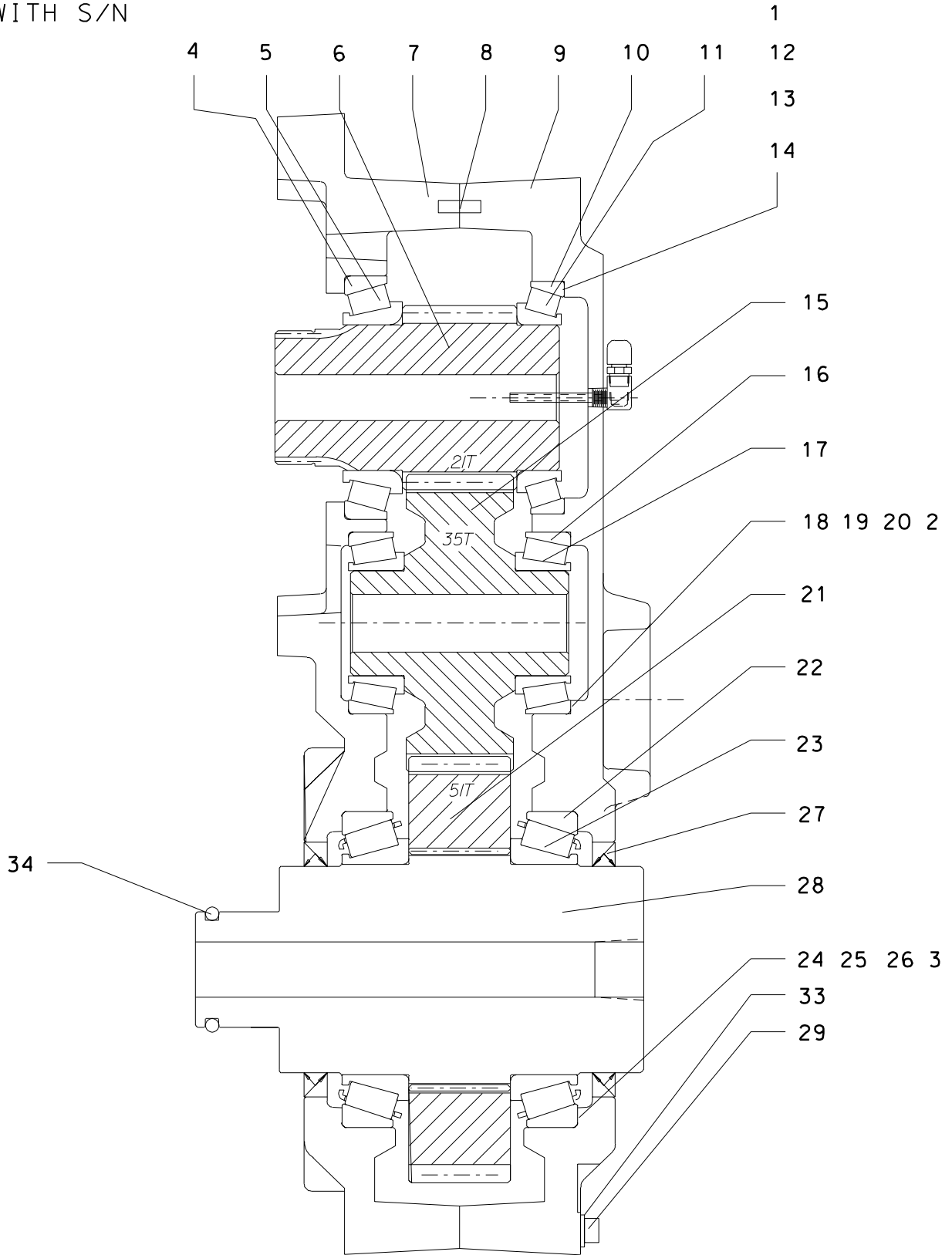
INTERNAL WATER SWIVEL

JT2720 MACH 1 ALL TERRAIN ONLY
BEGINS WITH S/N 2X0001

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	191-257	-	SEAL REPAIR KIT (157-469)	USED ONLY ON GEARBOX NUMBER 166-455 OR 166-457
1.		-	BACKUP WASHER	
2.		-	VITON O-RING	
3.		-	VITON O-RING	
4.		-	COIL SPRING	
5.		-	VITON O-RING	
6.		-	SHOULDER SCREW	
7.		-	HOUSING	
8.		-	FLOATING SEAL ASSEMBLY	
9.		-	SEAL ASSEMBLY	

FOOTNOTES

ROTATION GEARBOX
JT2720 MACH 1 ONLY
ENDS WITH S/N



ROTATION GEARBOX
JT2720 MACH 1 ALL TERRAIN ONLY
ENDS WITH S/N 2W0927

REF	PART				
NO.	NUMBER	QTY	DESCRIPTION		REMARKS
39.	126-100	3	TAPERED BEARING (2")		
40.	115-457	1	EXTERNAL SNAP RING (2.5")		
41.	157-631	1	INTERNAL SEAL (4.250")		
42.	107-485	1	SHIM (.002")		
43.	107-486	1	SHIM (.003")		
44.	107-487	1	SHIM (.007")		
45.	125-1060	1	TAPERED BERARING SET (1.625")		
46.	307-904	1	MOTOR COVER		
47.	165-800	1	SHIM (.002")		
48.	165-801	1	SHIM (.003")		
49.	165-802	1	SHIM (.007")		
50.	107-575	1	SHIM (.020")		
51.	107-579	1	SHIM (.020")		
52.	153-153	1	SEAL		
53.	166-268	1	OUTPUT SHAFT		
54.	106-396	14	WASHER (M10, HARDENED)		

FOOTNOTES:

NOTE:

WRENCH PIPE GUIDE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	303-360	-	STATIONARY CLAMP	
2.	310-421	1	BLOCK RETAINER WELDMENT	
3.	314-361	2	GUIDE BLOCK (3.25)	
4.	305-950	1	BRACKET, SPRAY	
5.	106-724	4	FLG SCREW (M10-1.50 X 25MM)	
6.	305-951	1	BRACKET, SPRAY	
7.	106-387	4	FLG LOCKNUT (M10-1.50)	
8.	310-454	1	WRENCH GUIDE FRAME	
9.	106-806	4	FLG LK SCREW (M12-1.75 X 25MM)	
10.	110-228	2	LYNCH PIN (7/16" X 2")	

FOOTNOTES

GROUND DRIVE BRAKE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	499-405		HYDRAULIC BRAKE	
2.	499-404		STACK SERVICE KIT	SEE FOOTNOTE 1

NOT SHOWN:

FOOTNOTES:

KIT INCLUDES: TORQUE PIN O-RING, TORQUE PIN PUSH RETAINER, 2X SPRING, TORQUE PIN, PRIMARY DISC, ROTATING DISC & STATIONARY DISC.

NOTE:

SIDE PANELS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	309-882	1	BACK GRILLE	
2.	106-551	42	CLIP NUT (M8-1.25)	
3.	106-381	21	FLG LK SCREW (M8-1.25 X 25MM)	
4.	310-388	1	REAR LOWER PANEL, LH	
5.	106-991	42	FLG LOCK SCREW (M8-1.25 X 20mm)	
6.	106-386	24	FLG LOCKNUT (M8-1.25)	
7.	308-571	1	VENT	
8.	310-461	1	REAR, RH, LWR	
9.	343-189	1	FRONT PANEL (RH)	
10.	308-394	1	FRONT PANEL, LH	
11.	309-092	1	FRONT LEFT DOOR	
12.	343-775	1	SHEET METAL SUPPORT	
13.	310-451	1	RIGHT REAR DOOR	
14.	343-514	1	RIGHT DOOR	
15.	107-550	2	LIFT-OFF HINGE (OFFSET) LH	
16.	107-549	2	LIFT-OFF HINGE (OFFSET) RH	
17.	106-428	8	SCREW (M5-0.80 X 14mm, SOC)	LOCTITE 242
18.	117-558	5	ADJUST LEVER LATCH (LOCKING)	BEGINS WITH S/N 2X0001
	214-961		KEY, PAIR (BASE CODE)	
	217-309		LOCK PLUG 4/LATCH (BASE CODE)	
	110-757	5	LEVER LATCH (ADJUST, LOCKING)	INCL KEYS
	110-596		KEYS (PAIR)	
19.	305-677	1	PLATE, BATTERY SUPPORT	
20.	149-468	-	HYDRAULIC TANK	
21.	117-427	1	POCKET PULL HANDLE	
22.	117-307	1	FLAP	
23.	106-850	8	LOCKNUT (M5-0.80)	
24.	106-426	8	SCREW (M5-0.80 X 25MM, SOC)	
25.	309-781	1	MUD FLAP RETAINER	
26.	106-162	2	FLG SCREW (M8-1.25 X 20MM)	
27.	250-622	1	MANUAL COMPARTMENT	
28.	110-560	4	POP RIVET (3/16" X 1/2", ALUM)	

FOOTNOTES

COOLANT SYSTEM MOUNTING

BEGINS WITH S/N 2X0001

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	117-558	1	ADJUST LEVER LATCH (LOCKING)	BEGINS WITH S/N 2X0001
	214-961		KEY, PAIR (BASE CODE)	
	217-309		LOCK PLUG 4/LATCH (BASE CODE)	
	110-757	1	LEVER LATCH (ADJUST, LOCKING)	
2.	106-991	8	FLG LK SCREW (M8-1.25 X 20MM)	
3.	111-051	1	HINGE	
4.	111-052	1	HINGE	
5.	105-650	8	SCREW (M4-0.70 X 10MM)	
6.	106-551	8	CLIP NUT (M8-1.25)	
7.	117-915	1	CAM LOCK (BASE CODE)	
	214-961		KEY, PAIR (BASE CODE)	
	110-711	1	CAM LOCK	INCL KEYS
	217-844		KEYS (PAIR)	
8.	194-157	1	RADIATOR DOOR	
9.	105-836	4	FLG LOCK BOLT (1/4-NC X 1/2")	
10.	110-580	1	HINGE (6")	
11.	105-832	4	FLG LOCKNUT (1/4-NC)	
12.	106-385	2	FLG LOCKNUT (M6-1.00)	
13.	310-785	1	TOP COVER (REAR)	
14.	106-161	2	FLG SCREW (M6-1.00 X 20MM)	
15.	364-229	1	OVERFLOW TANK (3 QT)	
16.	364-543	1	EXPANSION TANK	
17.	354-581	1	DOOR PANEL	
18.	310-791	1	PLATE	

FOOTNOTES

BATTERY SUPPORT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-894	4	LOCKNUT (M10-1.50, PRV TRQ,10.9)	
2.	153-543	1	THRUST VALVE (ELECTRIC)	
3.	159-411	1	FILTER HEAD (20SF-20SF)	
	168-616	-	FILTER HEAD GASKET	
	149-840	2	FILTER ELEMENT (1-1/2-UNF)	SEE FOOTNOTE 1
	159-079	2	FILTER ELEMENT (1-1/2-UNF)	SEE FOOTNOTE 2
4.	178-011	8	BOSS	
5.	105-825	4	FLG LK BOLT (3/8-NC X 3/4")	
6.	305-677	-	PLATE, BATTERY SUPPORT	
7.	106-617	4	SCREW (M10-1.50 X 80MM)	
8.	105-865	2	BOLT (1/4-NC X 3/4", GD8)	
9.	215-231	1	LINEAR ACTUATOR	
	196-058	1	CABLE SWIVEL (.081")	
	196-331	1	CABLE (LINEAR ACTUATOR)	
	214-299	1	ACTUATOR PIGTAIL	
10.	105-832	4	FLG LOCKNUT (1/4-NC)	
11.	356-491	2	TIE-DOWN ROD (1/4-NC X 9.3")	
12.	356-490	1	BATTERY PLATE	
13.	362-784	1	BATTERY TRAY	
14.	215-244	2	BATTERY	
15.	215-350	1	BAT CABLE (2 GA X 8", BLK)	
16.	215-337	1	BAT CABLE (2/0 GA X 19", BLK)	
17.	215-349	1	BAT CABLE (2 GA X 8", RED)	
18.	215-317	1	BAT CABLE (2/0 GA X 54", RED)	
19.	116-389	1	BULK TUBING (3/4", SOLD PER 1')	USE 1 @ 48"

FOOTNOTES

- USE 149-840 ELEMENT AFTER HOSE OR COMPONENT REPLACEMENT OR REPAIR
- REPLACE WITH 159-079 AFTER FIRST 50 HOURS.

OPERATORS STATION GAUGES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-566	1	POTENTIOMETER	
2.	214-489	6	ROCKER SW (DPDT) (ON)-OFF-(ON)	
3.	217-916	1	ROCKER SWITCH (DPDT) ON-OFF-ON	
4.	217-911	1	ROCKER SWITCH (SPDT) ON-OFF-ON	
5.	211-009	1	LEFT CONSOLE COVER	
6.	217-724	1	BUTTON SWITCH (SPST)	
	217-206	1	BUTTON SWITCH (SPST)	
	214-943	1	BUTTON SWITCH (SPST)	
	215-754	1	MC INSULATOR (2-TERMINAL)	
7.	362-929	3	SWITCH PANEL	
8.	362-931	1	SWITCH PANEL	
9.	211-014	1	RIGHT CONSOLE COVER	
10.	258-045	1	GAUGE (4000 PSI)	
11.	258-036	1	HYD PRESSURE GAUGE (6000 PSI)	
12.	215-131	1	OIL PRESSURE GAUGE	
	215-415	1	NITE-LIGHT KIT (12V DC)	OPTION
13.	258-037	1	WATER TEMPERATURE GAUGE	
14.	215-133	1	FUEL GAUGE	
	215-415	1	NITE-LIGHT KIT (12V DC)	OPTION
15.	217-020	1	PILOT LIGHT	
	217-027	1	INSERT (RED) HYD OIL HI TEMP	
	217-036	1	INSERT (YELLOW) HYD OIL PSI	
	217-074	2	LENS REFLECTOR	
	217-046		BULB (12V DC)	
16.	217-241	1	ESID MODULE	
17.	215-1224	1	DUAL AXIS JOYSTICK	OBSOLETE, REPLACE WITH 190-1740
	190-1740	1	JOYSTICK REPLACEMENT KIT	SEE FOOTNOTE I
	197-104	1	REMANUFACTURED 214-565 JYSTK	OBSOLETE
18.	217-221	1	FLOW METER DISPLAY	
19.	110-560	2	POP RIVET (3/16" X 1/2", ALUM)	
20.	106-640	19	BOLT (M6-1.00 X 20MM, BUT SOC)	
21.	106-237	8	LOCKNUT (M6-1.00, PRV TRQ, NLK)	
22.	306-607	1	HORN BUTTON	
	306-608	1	BUTTON COVER	
23.	214-840	1	GREEN LED (12V DC)	
24.	N/A	1	REMOTE DISPLAY	
25.	106-574	3	CLIP NUT (M6-1.00)	
26.	348-896	1	COVER PLATE	FOR UNITS WITHOUT REMOTE DISPLAY
27.	501-343	2	BOLT (#10-24 X 1/2", SOC)	
28.	106-048	2	LOCKNUT (#10-24)	
29.	319-412	1	FLOW METER WEATHER COVER	

NOT SHOWN:

319-412	1	FLOW METER WEATHER COVER	
215-1787	1	JOYSTICK JUMPER	SEE FOOTNOTE I

FOOTNOTES:

I. JOYSTICK JUMPER 215-1787 IS NEEDED TO CONNECT OLDER HARNESS TO 215-1714 JOYSTICK.

AUXILIARY CONSOLE

JT2720 MACH 1 ALL TERRAIN ONLY

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	305-847	1	PANEL ENGINE CONSOLE	
2.	214-301	1	ACCESSORY SOCKET	
3.	217-017	1	CONNECTOR (4-WAY, FM)	
4.	306-603	1	AUDIO ALARM	
5.	217-819	1	BAT DISCONNECT SWITCH	
6.	211-070	1	TACHOMETER (3000 RPM)	
7.	258-036	1	HYD PRESSURE GAUGE (6000 PSI)	
8.	217-907	1	ROCKER SWITCH (DPDT) ON-ON	
9.	217-907	1	ROCKER SWITCH (DPDT) ON-ON	
10.	217-908	1	ROCKER SWITCH (DPDT) ON-ON-ON	
11.	217-911	1	ROCKER SWITCH (SPDT) ON-OFF-ON	
12.	106-273	2	SCREW (#6-32 X 5/8", FLT, BRASS)	
13.	105-215	2	BOLT (3/8-NC X 4-1/2")	
14.	106-379	2	FLG LK SCREW (M6-1.00 X 20MM)	
15.	106-385	2	FLG LOCKNUT (M6-1.00)	

FOOTNOTES

HYDRAULIC PUMPS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-020	-	ENGINE - JOHN DEERE DIESEL	OBSOLETE
2.	160-914	1	FLYWHEEL COUPLING	
	105-918	-	BOLT (7/16-NC X 1-1/2", SOC)	SEE FOOTNOTE 1
3.	105-156	8	BOLT (3/8-NC X 1-1/2")	SEE FOOTNOTE 1 LOCTITE 277
4.	160-901	1	PUMP PLATE	
5.	106-164	12	FLG LK SCREW (M10-1.50 X 30mm)	
6.	153-105	1	HYD PUMP	
	197-099	-	REBUILT 153-105 HYD. PUMP	
	499-061		CHARGE PUMP - 26CC	
	499-062		PUMP SHAFT (13T)	
	500-764		MULTIFUNCTION VALVE - LIMITER	
	500-2421		LIMITER SEAL NUT	
	190-764		SEAL REPAIR KIT	
	149-544		EDC CONTROLLER	
7.	106-333	4	SCREW (M12-1.75 X 40mm)	
8.	149-390	1	HYDRAULIC PUMP	INCLUDES REF 19
	197-100	-	REBUILT 149-390 HYD. PUMP	
	190-803		SEAL REPAIR KIT	
	190-804		BEARING KIT	
	499-063		SHAFT (SPLINED 14T)	
	499-064		LOAD SENSE CONTROL	
9.	105-048	4	BOLT (1/2-NC X 1-1/2")	
10.	158-461	1	HYD PUMP	
	500-966		SEAL REPAIR KIT	
11.	106-081	2	SCREW (M10-1.50 X 35MM, 12.9)	
12.	106-090	2	LOCK WASHER (M10)	
13.	307-400	1	BRACKET, HYD. MOUNTING	
14.	155-162	1	COUPLER (04N-5/160D, STR)	
15.	115-286	1	PIPE BUSHING (1/2NMX1/4NF)	
16.	105-072	8	LOCK WASHER (3/8")	
17.	105-070	8	LOCK WASHER (1/2")	
18.	105-244	8	WASHER (1/2")	
19.	157-183	1	O-RING (048 D70)	
20.	168-619	1	PUMP GASKET	
21.	110-333	1	BOLT-ON CLAMP (1")	

NOT SHOWN:

FOOTNOTES:

1. TORQUE BOLT PER TORQUE CHART IN BACK OF MANUAL

NOTE:

AUXILIARY PUMP INLET HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-468	1	HYDRAULIC TANK WELDMENT	
2.	155-146	1	S/O COUPLER (12S-16H90)	
3.	111-027	4	T-BOLT CLAMP (1.25"-1.50")	
4.	116-460	AR	BULK HOSE (1", SOLD PER 1')	USE 1 @ 13.5"
5.	149-535	1	HYDRAULIC LINE (-16)	
6.	116-460	AR	BULK HOSE (1", SOLD PER 1')	USE 1 @ 22.5"
7.	154-188	1	S/O COUPLER (16S-16H90)	
8.	158-461	1	HYDRAULIC PUMP	
	500-966	-	SEAL REPAIR KIT	
9.	105-818	4	BOLT (1/4-NC X 1-1/2")	
10.	322-289	3	BACKUP (BOLT-ON)	
11.	110-573	3	BOLT-ON CLAMP (1", SOLD PER SET)	
12.	366-001	1	SPACER PLATE	
13.	105-085	2	LOCKNUT (1/4-NC)	
14.	105-224	2	BOLT (1/4-NC X 2-1/2")	

FOOTNOTES

NOTE
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS

ROTATION PRESSURE GAUGE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-342	1	CONNECTOR (06S-06090)	DGK0IPFOCV;SVNNNZZZ
2.	159-156	1	QDC ADAPTER (02-040F)	
3.	154-220	1	CONNECTOR (040-06S)	
4.	154-265	1	UNION RUN TEE (040FX-040-040)	
5.	153-296	1	HOSE (040FX90M-66"-5000)	
6.	117-419	1	ABRASION SLEEVE (1.00" X 66")	
7.	154-355	1	BK CONNECTOR (040-04090BK)	
8.	153-105	-	PUMP, HYDRAULIC	
	499-061		CHARGE PUMP - 26CC	
	499-062		PUMP SHAFT (13T)	
	500-764		MULTIFUNCTION VALVE - LIMITER	
	500-2421		LIMITER SEAL NUT	
	190-764		SEAL REPAIR KIT	
	149-544		EDC CONTROLLER	
9.	159-157	1	QDC ADAPTER (02-060F)	

NOT SHOWN:

FOOTNOTES:

NOTE:

ROTATION MOTOR HOT OIL HYDRAULIC JT2720 MACH 1 ONLY

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	153-275	1	FLOW CONTROL CARTRIDGE	
2.	154-345	1	RUN TEE (06S-060-060)	
3.	153-342	1	HYDRAULIC LINE (-06)	
4.	154-228	1	UNION (060-060FX90)	TORQUE TO 30-33 LB-FT.
5.	156-936	1	HOSE (060FX90-170"-3000)	
6.	117-676	1	ABRASION SLEEVE (1.00" X 30")	
7.	117-714	1	ABRASION SLEEVE (1.00" X 54")	
8.	154-229	1	BK CONNECTOR (060-06090BK)	
9.	515-716	1	HOSE (060FX90-42"-3000)	
10.	117-717	1	ABRASION SLEEVE (1.00" X 40")	
11.	149-970	-	HYDRAULIC MOTOR	
	197-095	-	REMANUFACTURED 149-970 MOTOR	OBSOLETE
	191-250	1	SEAL KIT	
	599-284	-	SHUTTLE UPGRADE KIT	
12.	153-187	-	SPIKE MANIFOLD	OBSOLETE
13.	305-710	-	MAIN FRAME	
14.	156-905	-	HYD LINE (24)	
15.	157-038	1	O-RING (012 D90)	
16.	149-871	1	FLOW CHECK VALVE(060-060)	
17.	159-525	1	HYD LINE (-06)	
18.	159-538	1	ADAPTER (M14-1.50-060)	TORQUE TO 40-44 LB-FT.

NOT SHOWN:

FOOTNOTES:

NOTE:

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LOAD SENSE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	153-238	3	BK CONNECTOR (06S-040)	
2.	154-226	5	CONNECTOR (040-06S90)	
3.	155-153	1	CONNECTOR (06S-06S)	
4.	154-316	1	RUN TEE (04S-040-040)	
5.	154-278	2	CONNECTOR (04S-040)	
6.	154-702	1	HOSE (040FX-30"-3000)	
7.	117-676	1	ABRASION SLEEVE (1.00" X 30")	
8.	515-683	1	HOSE (040FX90-28"-3000)	
9.	515-735	1	HOSE (040FX-22"-3000)	
10.	158-600	3	HYD SHUTTLE VALVE	
11.	154-966	1	HOSE (040FX-95"-3000)	
12.	117-213	1	ABRASION SLEEVE (1.00" X 96")	
13.	154-220	1	CONNECTOR (040-06S)	
14.	149-648	1	HYDRAULIC LINE (-04)	
15.	153-299	1	HOSE (040FX-84"-3000)	
16.	117-413	1	ABRASION SLEEVE (1.00" X 84")	
17.	153-543	1	THRUST VALVE (ELECTRIC)	
18.	150-2251	1	HYDRAULIC CONTROL VALVE	
	501-904	-	FLOW CONTROL VALVE	
	500-1362	-	COMPENSATOR VALVE	
	500-1363	-	COMPENSATOR VALVE - SEAL KIT	
19.	149-258	1	HYDRAULIC VALVE	
20.	158-064	1	HYD CONTROL VALVE	
21.	149-390	1	HYDRAULIC PUMP	
22.	159-156	1	QDC ADAPTER (02-040F)	
23.	154-265	1	UNION RUN TEE (040FX-040-040)	

NOT SHOWN:

FOOTNOTES:

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS

FRONT WRENCH PRESSURE & RETURN HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	515-527	1	HOSE (100FX90-54"-3000)	
2.	117-657	1	ABRASION SLEEVE (1.59" X 54")	
3.	115-813	1	ABRASION SLEEVE (1.59" X 36")	
4.	515-498	1	HOSE (100FX90S-36"-3000)	
5.	149-532	1	HYDRAULIC LINE (-12)	
6.	149-531	1	HYDRAULIC LINE (-12)	
7.	149-530	1	HYDRAULIC LINE (-12)	
8.	154-368	1	UN RUN TEE (120FX-120-120)	
9.	154-269	1	CONNECTOR (12S-120)	
10.	154-292	1	RUN TEE (12S-120-120)	
11.	155-222	1	REDUCER (16S-12SF)	
12.	149-815	1	TEE (12S-120-040, SPECIAL)	
13.	149-258	-	HYDRAULIC VALVE	
	191-103	-	SEAL REPAIR KIT	FOR USE ON 499-311
	191-104	-	SEAL REPAIR KIT	FOR USE ON 501-872
	499-309	-	SOLENOID	REPLACEMENT FOR WRENCH ROTATE SECTION
	499-310	-	SOLENOID COIL	REPLACEMENT FOR WRENCH ROTATE SECTION
	499-311	-	SOLENOID CARTRIDGE	REPLACEMENT FOR THE FRONT AND REAR WRENCH SECTIONS
	499-312	-	SOLENOID COIL	REPLACEMENT FOR THE FRONT AND REAR WRENCH SECTIONS
	499-313	-	CHECK VALVE	LABELED CV1 AND CV2 ON VALVE BODY
	500-703	-	SEAL REPAIR KIT	FOR USE ON 499-313
	501-872	-	SHUTTLE VALVE	LABELED SV1, SV2 AND SV3 ON VALVE BODY
14.	108-078	4	BOLT (1/4-NC X 4-3/4", GD. 5)	
15.	322-290	2	MOUNT (WELD-ON)	
16.	110-411	6	BOLT-ON CLAMP (3/4", SET)	
17.	322-289	1	BACKUP (BOLT-ON)	
18.	107-420	3	SCREW (M10-1.50 X 140MM)	
19.	105-894	3	LOCKNUT(M10-1.50,PRV TRQ,10.9)	
20.	303-648	-	DRILL FRAME WLDMN'T	
21.	309-891	1	BRACKET	
22.	154-441	2	REDUCER (100-120F)	
23.	157-040	2	O-RING (016 D90)	
24.	157-039	1	O-RING (014 D90)	
25.	106-076	16	WASHER (1/4")	

NOT SHOWN:

FOOTNOTES:

- (A) CONNECTS TO TEE IN PARKER THRUST VALVE PRESSURE INLET PORT
- (B) CONNECTS TO BRANCH TEE ON COOLER INLET TUBE
- (C) CONNECTS TO BULKHEAD RUN TEE ON TOP OF SUNSTRAND ROTATION PUMP
- (D) CONNECTS TO SOLENOID VALVE ON DRILL FRAME FOR CHARGE PRESSURE ON "OUTER ROTATION BRAKE HYDRAULICS"
- (E) CONNECTS TO TANK PORT ON ANCHOR VALVE IN PIVOT FRAME
- (F) CONNECTS TO PRESSURE PORT ON ANCHOR VALVE IN PIVOT FRAME

NOTE:

PIPE GRIPPER HYDRAULICS

BEGINS WITH S/N 2V1091

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-355	2	BK CONNECTOR (040-04090BK)	
2.	154-252	2	CONNECTOR (04S-04090)	
3.	153-095	-	HYD VALVE	
4.	154-379	2	UN BR TEE (040FX-040-040)	
5.	515-599	2	HOSE (040FX90-13"-3000)	
6.	515-148	2	HOSE (040FX90-10"-3000)	
7.	117-415	2	ABRASION SLEEVE (1.59" X 10")	
8.	515-030	1	HOSE (040FX90-64"-3000)	
9.	154-729	1	HOSE (040FX90-44"-3000)	
10.	515-440	1	HOSE (040FX-64"-3000)	
11.	117-214	1	ABRASION SLEEVE (1.25" X 40")	
12.	154-275	2	BK CONNECTOR (040-040BK)	
13.	306-746	-	HOSE TRACK	
14.	117-392	1	ABRASION SLEEVE (1.25" X 60")	
15.	149-062	2	CYL ()	
16.	154-401	1	CONNECTOR (04S-04090, ORF)	
17.	154-693	1	HOSE (040FX-44"-3000)	
18.	154-474	3	CONNECTOR (04S-04090, XL)	

FOOTNOTES

NOTE:
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

HYDRAULIC CYLINDERS (4.0" X 2.0")

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	149-698	-	CYL (4.0 X 2.0 X 4.0)	SEE FOOTNOTES 1 & 2
1	149-768	1	CYLINDER BARREL (4.0 X 4.0)	
2	153-021	1	CYLINDER ROD (2.00 X 4.0)	
	151-066	-	CYL (4.0 X 2.0 X 5.0)	SEE FOOTNOTES 1 & 2
1	152-012	1	CYLINDER BARREL (4.0 X 5.0)	
2	150-440	1	CYLINDER ROD (2.00 X 5.0)	
	149-699	-	CYL (4.0 X 2.0 X 6.0)	SEE FOOTNOTES 1 & 2
1	152-062	1	CYLINDER BARREL (4.0 X 6.0)	
2	149-735	1	CYLINDER ROD (2.00 X 6.0)	
	149-700	-	CYL (4.0 X 2.0 X 8.0)	SEE FOOTNOTES 1 & 2
1	152-030	1	CYLINDER BARREL (4.0 X 8.0)	
2	149-736	1	CYLINDER ROD (2.00 X 8.0)	
	149-701	-	CYL (4.0 X 2.0 X 10.0)	SEE FOOTNOTES 1 & 2
1	149-769	1	CYLINDER BARREL (4.0 X 10.0)	
2	153-016	1	CYLINDER ROD (2.00 X 10.0)	
	151-088	-	CYL (4.0 X 2.0 X 12.0)	SEE FOOTNOTES 1 & 2
1	150-298	1	CYLINDER BARREL (4.0 X 12.0)	
2	150-429	1	CYLINDER ROD (2.00 X 12.0)	
	149-702	-	CYL (4.0 X 2.0 X 16.0)	SEE FOOTNOTES 1 & 2
1	152-007	1	CYLINDER BARREL (4.0 X 16.0)	
2	149-737	1	CYLINDER ROD (2.00 X 16.0)	
	149-703	-	CYL (4.0 X 2.0 X 20.0)	SEE FOOTNOTES 1 & 2
1	149-770	1	CYLINDER BARREL (4.0 X 20.0)	
2	149-738	1	CYLINDER ROD (2.00 X 20.0)	
	149-704	-	CYL (4.0 X 2.0 X 24.0)	SEE FOOTNOTES 1 & 2
1	152-063	1	CYLINDER BARREL (4.0 X 24.0)	
2	149-739	1	CYLINDER ROD (2.00 X 24.0)	
3	149-006	1	CYLINDER HEAD (4.0 X 2.00)	
4	149-303	1	LOCK RING (4.0)	
5	149-307	1	CYLINDER PISTON (4.0 X 2.00)	
6	106-145	1	BOLT (1-NC X 2-1/4", GD8)	SEE FOOTNOTE 3
7	157-035	1	O-RING (342 D90)	
8	157-036	1	BACKUP RING (342 D90)	
9	157-559	1	U-SEAL (2.000")	
10	157-558	1	WIPER SEAL (2.000")	
11	125-793	1	WEAR RING	
12	157-570	1	BACKUP RING (238 D90)	
13	157-044	1	O-RING (238 D90)	
14	106-144	1	WASHER (1")	

FOOTNOTES

- REF. #1 & #2 ARE SPECIFIC TO EACH CYLINDER, REF. #3 THRU #14 ARE COMMON FOR ALL THE ABOVE LISTED CYLINDERS.
- SEAL REPAIR KIT P/N: 190-189
- APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 630-700 FT-LBS

NOT SHOWN:

- 259-040 U-SEAL INSTALLER (1.5" - UPI)
- 259-239 WIPER/SEAL INSTALLER (2")
- 259-246 PISTON SEAL INSTALLER (4")
- 259-247 PISTON INSTALLER (4")
- 259-188 CYL HEAD SPANNER - TWO PIN

ELECTRICAL SCHEMATIC

JT2720AT MACH1

CKT NO.	WIRE COLOR	FUNCTION	REMARKS
111.	WHT/ORG	REMOVE/MANUAL/ADD SWITCH TO PIPELOADER FUNCTION SWITCHES & MANUAL RELAY	
112.	BRN/YEL	REMOVE/MANUAL/ADD SWITCH TO MACHINE CONTROLLER	
113.	TAN/BLK	MACHINE CONTROLLER TO STATUS LIGHT RELAY	
114.	GRA/GRN	JOYSTICK Y-AXIS RELAY TO MACHINE CONTROLLER	
115.	TAN/GRN	JOYSTICK X-AXIS RELAY TO MACHINE CONTROLLER	
116.	BLU/GRN	5 VOLT OUTPUT FROM MACHINE CONTROLLER	
117.	TAN	MACHINE CONTROLLER TO SHUTTLE SWITCH AND SOLENOIDS	
118.	PUR	MACHINE CONTROLLER TO REAR WRENCH ROTATE SWITCH AND SOLENOIDS	
119.	GRA	MACHINE CONTROLLER TO LUBRICATOR SWITCH AND SOLENOIDS	
120.	GRN	MACHINE CONTROLLER TO PIPE GRIP SWITCH AND SOLENOIDS	
121.	BLU	MACHINE CONTROLLER TO PIPE LIFT SWITCH AND SOLENOIDS	
122.	YEL	MACHINE CONTROLLER TO REAR WRENCH SWITCH, REAR WRENCH CLOSE SOLENOID, & DIODE	
123.	BRN	MACHINE CONTROLLER TO FRONT WRENCH SWITCH, FRONT WRENCH CLOSE SOLENOID, & DIODE	
124.		NOT USED	
125.		NOT USED	
126.		NOT USED	
127.		NOT USED	
128.	BLU/GRN	PIPE LIFT UP SOLENOID TO DIODE ANODE	
129.	BLU/YEL	PIPE LIFT DOWN SOLENOID TO DIODE ANODE	
130.	GRN/BLU	PIPE GRIPPER OPEN SOLENOID TO DIODE ANODE	
131.	GRN/ORG	PIPE GRIPPER CLOSE SOLENOID TO DIODE ANODE	
132.	GRA/GRN	SAVER SUB LUBRICATOR SOLENOID TO DIODE ANODE	
133.	GRA/YEL	PIPE END LUBRICATOR SOLENOID TO DIODE ANODE	
134.	PUR/GRN	REAR WRENCH ROTATE CW SOLENOID TO DIODE ANODE	
135.	PUR/YEL	REAR WRENCH ROTATE CCW SOLENOID TO DIODE ANODE	
136.	TAN/GRN	SHUTTLE EXTEND SOLENOID TO DIODE ANODE	
137.	TAN/WHT	SHUTTLE RETRACT SOLENOID TO DIODE ANODE	
138.	WHT	JUMPER ON REMOVE/MANUAL/ADD SWITCH	
139.		NOT USED	
140.	TAN/RED	FRONT HOME SWITCH TO MACHINE CONTROLLER & LED	
141.	PNK	MACHINE CONTROLLER TO ALED	
142.	WHT/RED	MANUAL RELAY TO MANUAL PIPELOADER SWITCHES	
143.		NOT USED	
144.	PUR/ORG	ROTATION CW VOLTAGE TRANSLATOR TO SOLENOID	
145.	PUR/YEL	ROTATION CCW VOLTAGE TRANSLATOR TO SOLENOID	
146.	GRN/PUR	RIGHT TRACK FORWARD DIODE TO RIGHT TRACK FORWARD SOLENOID	
147.	GRN/RED	RIGHT TRACK REVERSE DIODE TO RIGHT TRACK REVERSE SOLENOID	
148.	GRN/YEL	LEFT TRACK REVERSE DIODE TO LEFT TRACK REVERSE SOLENOID	
149.	GRN/ORG	LEFT TRACK FORWARD DIODE TO LEFT TRACK FORWARD SOLENOID	
150.	YEL	FLUID FLOW POT 0.5V TO FLUID SWITCH "OFF"	
151.	BLU/RED	TRACCOM FUSE CIRCUIT	
152.	GRA/RED	DUMP VALUE SOLENOID TO DIODE ANODE	
153.	WHT	REMOTE DISPLAY TO DOWNLOAD CONNECTION "B"	
154.	YEL	REMOTE DISPLAY TO DOWNLOAD CONNECTION "C"	
155.	BLK	REMOTE DISPLAY TO DOWNLOAD CONNECTION "A"	
156.		NOT USED	
157.		NOT USED	
158.	GRA/PUR	REMOTE ENABLE RELAY TO REMOTE ENABLE LIGHT	
159.		NOT USED	
160.	TAN/ORG	THRUST FORWARD DIODE TO THRUST FORWARD SOLENOID	
161.	TAN/YEL	THRUST REVERSE DIODE TO REAR STOP RELAY	
162.	ORG/GRA	ROTATION CW DIODE TO ROTATION CW SOLENOID	
163.	YEL/GRA	ROTATION CCW DIODE TO ROTATION CCW SOLENOID	
164.	WHT/YEL	MOBILE SOLENOID RELAY TO TRACK DRIVE SOLENOIDS	
165.	TAN/PUR	REMOTE ENABLE SELECT RELAY TO MOBILE SOLENOID RELAY	
166.	WHT	ENGINE STOP RELAY TO LATCH RELEASE RELAY	
167.	BLU/WHT	RESISTOR TO LEFT TRACK AUXILIARY SWITCH	

ELECTRICAL DIAGRAM ALL TERRAIN GAUGE HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-912	1	ROCKER SWITCH (DPDT) ON-ON-ON	
2.	217-907	2	ROCKER SWITCH (DPDT) ON-ON	
3.	214-301	1	ACCESSORY SOCKET	
4.	215-2594	1	HOUR METER	
5.	217-017	1	CONNECTOR (4-WAY, FM)	
6.	306-603	1	AUDIO ALARM	
7.	211-070	1	TACHOMETER (3000 RPM)	
8.	217-908	1	ROCKER SWITCH (ON-ON(ON),DPDT)	
9.	214-663	1	AT GAUGE HARNESS	

NOT SHOWN:

FOOTNOTES:

NOTE:

COIL MOUNT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-428	1	PIVOT FRAME	
2.	185-142	2	PIN	
3.	309-400	1	GUIDE PLATE	
4.	309-399	1	COVER PLATE	
5.	216-063	1	CURRENT TRANSFORMER	
	211-084	1	CURRENT TRANSFORMER	
6.	110-126	2	BOLT-ON CLAMP (1/2")	
7.	105-117	8	WASHER (5/16")	
8.	106-330	4	SCREW (M8-1.25 X 70MM)	
9.	106-561	4	LOCKNUT (M8-1.25, PRV TRQ, 10.9)	
10.	106-387	4	FLG LOCKNUT (M10-1.50)	
11.	106-724	4	FLG SCREW (M10-1.50 X 25MM)	
12.	110-128	2	SPRING CLIP PIN (5/32" X 1")	

FOOTNOTES

NOT SHOWN
214-550 1 CURRENT COIL CABLE

NOTE:

LEFT AUGER ANCHOR DRIVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-895	1	HYD MOTOR	
	500-390		SEAL REPAIR KIT - REAR	
	500-391		SEAL REPAIR KIT - SHAFT	
	502-177		SHAFT AND BEARING ASS'Y	
	107-792		BOLT (5/16"X 1-5/8", DBL HEX)	
	165-900		KEY (7/16" SQ X 1.250")	
	105-917		CASTLE NUT (1-1/4-NF)	SEE FOOTNOTE 1
	500-2123		FRONT RETAINER (ANCHOR MOTOR)	
2.	150-747	2	CYLINDER ASSEMBLY	
3.	125-771	2	COMPOSITION BUSHING (1.25")	
4.	183-765	2	TAPERED PIN (31.7MM X 110MM)	
5.	181-982	2	TAPERED INSERT (1.25")	
6.	106-469	2	FLG SCREW (M12-1.75 X 30MM)	USE LOCTITE 242
7.	359-799	1	MAST	
8.	106-685	23	LOCKNUT(M12-1.75,PRV TRQ,10.9)	
9.	106-471	4	FLG SCREW (M16-2.00 X 30MM)	USE LOCTITE 242
10.	309-194	4	CLAMP PLATE	
11.	309-195	8	GLIDE STRIP	
12.	309-203	4	CARRIAGE SPACER BAR	
13.	106-335	14	SCREW (M12-1.75 X 70MM)	
14.	309-206	1	BULKHEAD PLATE	
15.	125-773	2	COMPOSITION BUSHING (1.75")	
16.	309-209	1	ARM	
17.	106-700	2	SCREW (M12-1.75 X 80MM)	
18.	309-204	1	BULKHEAD PLATE	
19.	309-582	-	FLANGED HEX DRIVER	
20.	178-881	1	FLANGE	
21.	105-245	8	SCREW (M10-1.50 X 25MM)	USE LOCTITE 242
22.	106-397	9	WASHER (M12, HARDENED)	
23.	105-279	1	CARRIAGE BOLT (1/2-NC X 3")	
24.	105-501	1	COTTER PIN (1/8" X 2")	
25.	105-071	1	WASHER (1/2")	
26.	105-833	1	FLG LOCKNUT (1/2-NC)	
27.	110-531	1	HANDLE (1/2-NC, BLACK)	USE LOCTITE 242
28.	309-602	1	ANCHOR HANGER	
29.	106-333	2	SCREW (M12-1.75 X 40MM, 8.8)	
30.	106-594	4	SCREW (M12-1.75 X 60MM)	
31.	309-207	1	MOTOR MOUNT	
32.	179-239	1	TAPERED PIN (44.4MM X 288MM)	
33.	181-975	1	TAPERED INSERT (1.75")	
34.	106-470	1	FLG SCREW (M16-2.00 X 40MM)	USE LOCTITE 242

NOT SHOWN:

FOOTNOTES:

1. TORQUE NUT TO 375 FT. LB. DRY OR 275 FT. LB. LUBED

NOTE:

LEFT ANCHOR MOTOR HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-438	2	CONNECTOR (08S-080, LG)	
2.	117-388	2	ABRASION SLEEVE (1.25" X 42")	
3.	309-204	1	BULKHEAD PLATE	
4.	515-718	2	HOSE (080FX90S-42"-3000)	
5.	154-396	2	BK CONNECTOR (080-08090BK)	
6.	117-324	2	ABRASION SLEEVE (1.25" X 48")	
7.	154-716	2	HOSE (080FX90-48"-3000)	
8.	154-307	2	CONNECTOR (16S-080)	
9.	149-895	-	HYD MOTOR	
	500-390		SEAL REPAIR KIT - REAR	
	500-391		SEAL REPAIR KIT - SHAFT	
	107-792		BOLT (5/16"X 1-5/8", DBL HEX)	
	165-900		KEY (7/16" SQ X 1.250")	
	105-917		CASTLE NUT (1-1/4-NF)	
10.	158-064	-	HYD CONTROL VALVE (4-SPOOL)	

NOT SHOWN:

FOOTNOTES:

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

FLUID SYSTEMS

MUD PUMP

46 GPM BEGINS WITH S/N 2V1841

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	153-544	-	MUD PUMP (17.9 CU/IN, 46 GPM)	
	191-094		PACKING REPAIR KIT	INCLUDES 3,5,7 & PISTON CUPS
	197-083		REBUILT MUD PUMP	
	190-802		VALVE REPAIR KIT	INCLUDES 1,4
1.	499-110	3	VALVE - SUCTION AR	
2.	499-118	3	CYLINDER COVER	
3.	499-116	3	O-RING (014 D70)	
4.	499-111	3	VALVE - DISCHARGE AR	
5.	165-730	3	CYLINDER GASKET	
6.	499-119	3	WASHER	
7.	499-115	3	O-RING (146 D70)	
8.	499-302	3	CERAMIC CYLINDER	
9.	499-113	3	SEAL HOLDER	
10.	499-125	6	EXTERNAL SEAL	
11.	499-126	3	SEAL HOLDER	
12.	499-123	1	BASE GASKET	
13.	499-114	3	NUT (HEX, SPECIAL, BRASS)	
14.	499-039	3	PLUNGER NUT	
15.	310-962	3	PISTON HOLDER	
16.	499-394	1	SIGHT GAGE	
17.	153-438	1	WIPER SEAL	
18.	499-392	1	CROSSHEAD ROD ASSEMBLY	
19.	499-393	1	ROD BEARING (PAIR)	
20.	499-569	1	FLUID CYLINDER (L06)	

NOT SHOWN:

499-122	2	BEARING HOUSING GASKET
499-124	1	GREASE SEAL
259-352	-	FMC PISTON/PACKING TOOL
259-470	-	FMC VALVE TOOL

FOOTNOTES:

NOTE:

GREASE PUMP MOUNTING

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-682	1	HOSE (040FX-17"-3000)	SEE FOOTNOTE 2
2.	515-538	1	HOSE (060FX90S-15"-3000)	SEE FOOTNOTE 4
3.	117-195	1	ABRASION SLEEVE (1.00" X 125")	
4.	154-916	1	HOSE (040FX90-120"-3000)	
5.	154-802	1	HOSE (040FX90-26"-3000)	
6.	154-252	2	CONNECTOR (04S-04090)	
7.	514-414	1	CONNECTOR (04S-06045)	
8.	154-655	1	HOSE (060FX-160"-3000)	SEE FOOTNOTE 3
9.	149-399	1	SPRAY NOZZLE (65)	
10.	514-163	1	BK CONNECTOR (060-060BK)	
11.	308-644	1	NOZZLE BRACKET	
12.	117-194	4	ABRASION SLEEVE (1.00" X 16")	
13.	350-398	-	GREASE PUMP PARTS	
14.	350-400	-	COVER	
15.	350-399	-	BASE	
16.	256-1005	-	TOOL JNT LUBE, 2 GAL, ENVTL FRIENDLY	METAL FREE, ALL WEATHER
	256-031	-	TOOL JNT LUBE, SUMR SPRY 2 GAL	
	259-858	-	TOOL JNT LUBE, STD SPRY 2 GAL	
17.	154-224	1	CONNECTOR (06S-06045)	
18.	154-278	1	BK CONNECTOR (04S-040BK)	
19.	117-759	1	ABRASION SLEEVE (1.00" X 160")	
20.	154-344	1	UN RUN TEE (060FX-060-060)	
21.	154-326	1	CAP (060F)	
22.	154-221	1	CONNECTOR (06S-060)	
23.	305-834	1	HOLDER ASSEMBLY	
24.	106-383	4	FLG LK SCREW (M10-1.50 X 30MM)	
25.	106-387	4	FLG LOCKNUT (M10-1.50)	
26.	154-401	1	CONNECTOR (04S-04090, ORF)	
27.	117-280	1	ABRASION SLEEVE (1.00" X 25")	
28.	154-382	1	CONNECTOR (06S-06045, ORF)	
29.	154-342	1	CONNECTOR (06S-06090)	
30.	154-929	1	HOSE (060FX90-19"-3000)	SEE FOOTNOTE 1
31.	106-386	2	FLG LOCKNUT (M8-1.25)	
32.	154-811	1	HOSE (040FX-116"-3000)	
33.	154-263	1	CONNECTOR (04S-04045)	
34.	117-792	1	ABRASION SLEEVE (1.00" X 115")	
35.	310-591	1	VALVE	
36.	106-570	2	SCREW (M8-1.25 X 60MM)	
37.	106-385	1	FLG LOCKNUT (M6-1.00)	
38.	106-848	1	FLG SCREW (M6-1.00 X 25MM)	

NOT SHOWN:

FOOTNOTES:

1. GREASE IN FROM PUMP
2. HYDRAULIC OIL OUT TO LUBE PUMP
3. TO REAR APPLICATOR
4. TO SPRAY NOZZLE

NOTE:

REFER TO O-RING CHART (800-301) ON BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

APPLICATOR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	305-911	2	BRACKET, APPLICATOR	
2.	106-385	2	FLG LOCKNUT (M6-1.00)	
3.	306-423	1	WIPER PARTS ASS'Y	
	116-937	1	APPLICATOR	
	107-394	4	WASHER (.375", ALUMINUM)	
	107-395	2	RIVET (.156 X .500) SEMI-TUBUL	
4.	305-912	1	BASE, APPLICATOR	
5.	106-093	2	SCREW (M6-1.00 X 45MM)	

NOT SHOWN:

FOOTNOTES:

NOTE:

SHUTTLE MOUNT, FRONT

BEGINS WITH S/N 2V1091

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	313-416	-	FRONT SHUTTLE	
2.	305-528	2	BAR, RETAINER	
3.	305-530	4	SPACER BAR	
4.	305-529	2	SPACER BAR	
5.	350-653	1	BEARING PLATE	
6.	350-633	-	SHUTTLE MOUNT, FRONT	
7.	106-386	3	FLG LOCKNUT (M8-1.25)	
8.	105-894	10	LOCKNUT (M10-1.50,PRV TRQ,10.9)	
9.	106-916	3	BOLT (M8-1.25 X 25MM, SOC)	
10.	105-996	10	BOLT (M10-1.50 X 45MM)	

FOOTNOTES

PIPE SHUTTLE

REAR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	309-544	1	GRIPPER PLATE	
2.	350-636	1	LATCH WELDMENT	
3.	370-154	1	ROLLER	
4.	105-507	4	ROLL PIN (3/8" X 2")	
5.	125-469	2	COMPOSITION BUSHING (.500")	
6.	106-378	1	FLG LK SCREW (M6-1.00 X 12MM)	
7.	354-376	1	PIN	
8.	354-357	1	ROD END	
9.	105-310	1	JAM NUT (3/4-NC)	
10.	354-323	1	PLUNGER	
11.	354-355	1	TUBE	
12.	105-250	2	BOLT (1/2-NC X 4.25")	USE LOCTITE 242
13.	105-031	1	BOLT (3/8-NC X 1")	
14.	105-118	1	WASHER (3/8")	
15.	354-356	2	SPRING GUIDE	
16.	117-180	1	COMPRESSION SPRING	
17.	354-432	1	CAP	
18.	149-062	1	CYL ()	
19.	354-354	1	SPACER	
20.	350-635	1	SHUTTLE REAR WELDMENT	
21.	178-247	2	SHUTTLE ADJUSTMENT PIN	
22.	115-545	4	EXTERNAL SNAP RING (.75")	
23.	178-294	2	COMPOSITION BUSHING .75 X .75	
24.	303-789	1	AUXILARY PIPE LOADER	
25.	303-809	1	WEAR PLATE	
26.	106-301	2	LOCKNUT (1/2-NC, NLK)	
27.	303-916	1	SUPPORT BAR SHUTTLE	
28.	303-810	1	WEAR STRIP	
29.	106-640	16	SCREW (M6-1.00 X 20MM,BUT SOC)	
30.	106-237	16	LOCKNUT (M6-1.00,PRV TRQ,NLK)	
31.	303-388	1	SPACER	
32.	308-873	1	WEAR INSERT	
33.	183-411	2	COTTERLESS HITCH PIN (.5" X 2")	
34.	125-137	2	BALL BEARING (.375")	

FOOTNOTES

SHUTTLE MOTOR HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	153-095	-	HYD VALVE	BEFORE S/N: CMWJ27T2K60000038
	153-741	-	HYD VALVE	AFTER S/N: CMWJ27T2K60000039
2.	154-474	1	CONNECTOR (04S-04090, XL)	
3.	154-252	1	CONNECTOR (04S-04090)	
4.	154-379	2	UN BR TEE (040FX-040-040)	
5.	115-813	1	ABRASION SLEEVE (1.59" X 36")	
6.	149-975	2	HYD MOTOR	
7.	155-181	4	REDUCER (10S-04SF)	
8.	154-278	4	CONNECTOR (04S-040)	
9.	154-898	2	HOSE (040FX45-54"-3000)	
10.	117-657	1	ABRASION SLEEVE (1.59" X 54")	
11.	515-020	1	HOSE (040FX45-36"-3000)	
12.	153-317	1	HOSE (040FX45-35"-3000)	

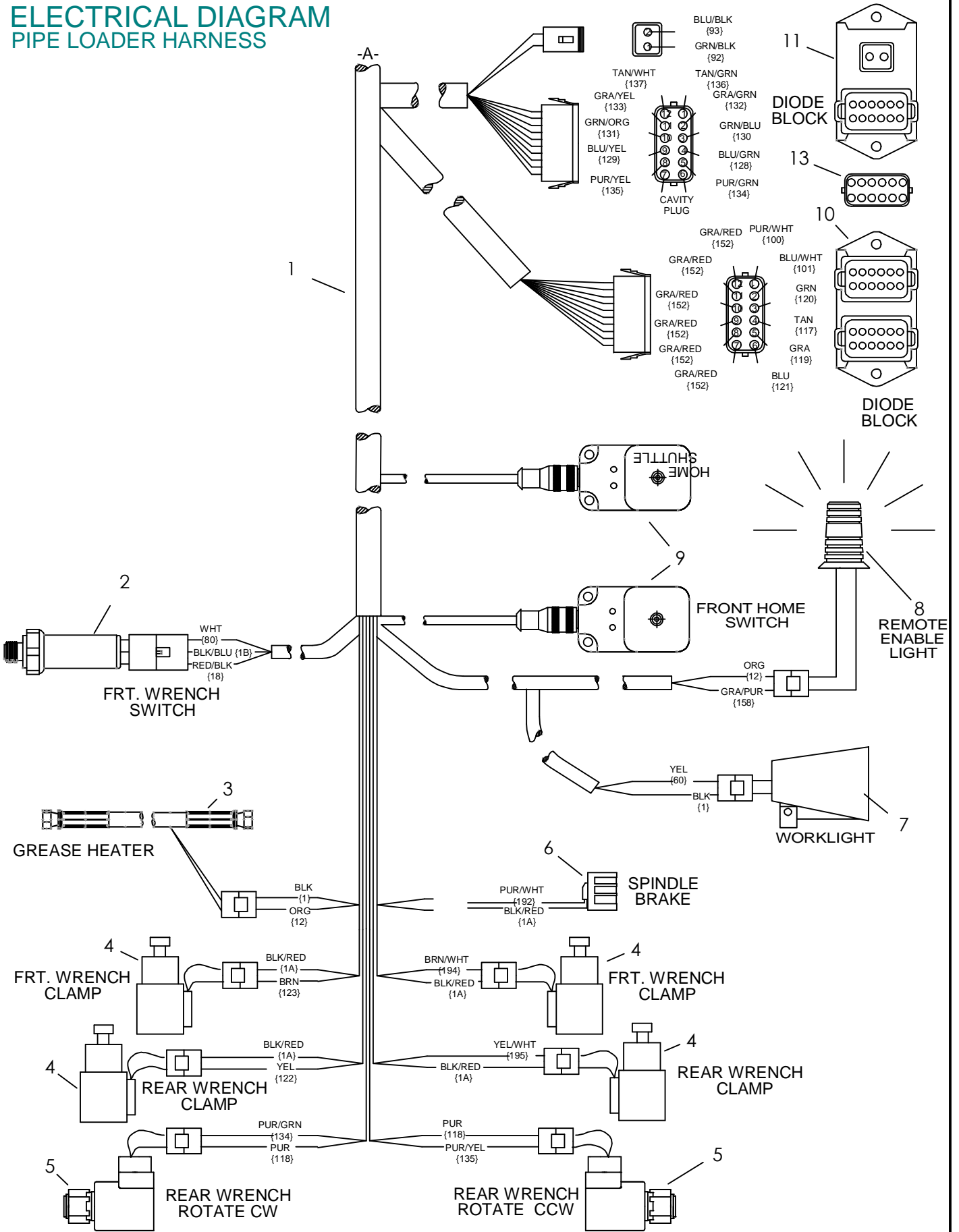
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FOOTNOTES:

NOTE:

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ELECTRICAL DIAGRAM PIPE LOADER HARNESS



WIRE LINE ASSEMBLY

REF	PART			
NO.	NUMBER	QTY	DESCRIPTION	REMARKS
1.	358-860	1	COLLECTOR RING	
2.	115-155	1	COLLAR (08NF-08NF)	
3.	115-156	1	REDUCER (08N-06NF)	
4.	358-855	1	PACK-OFF FITTING (.125-.187)	
5.	306-980	1	ADAPTER, COLLECTOR RING	
6.	115-162	1	NIPPLE (08N-4")	
7.	159-288	1	WATER SWIVEL THRU SHAFT	
8.	115-151	1	REDUCER (16N-12NF)	
9.	154-867	1	HOSE (120FX90-36"-2250)	
10.	149-595	1	CONNECTOR (8N-120)	
11.	154-378	1	REDUCER STEM (120-160F)	
12.	105-707	4	SET SCREW (1/4-NF X3/8",CUP)	

NOT SHOWN:

FOOTNOTES:

NOTE:

PIPE BOX

JT2720 MACH 1 ONLY

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	313-243	1	JT PIPE BOX	
2.	303-876	4	PIPE BOX PIN WELDMENT	
3.	110-228	8	LYNCH PIN (7/16" X 2")	
4.	178-522	2	ROTATION PIN	
5.	313-247	1	LIFT BAR	
6.	313-252	1	LIFT BLOCK	
7.	313-242	1	JT SHORT PIPE BOX	
8.	700-057	4	WARNING CRUSHING FORCE	
9.	701-326	4	WARNING CRUSHING WEIGHT	
10.	274-679	1	DECAL - MODEL ID {JT2720}	
11.	274-877	AR	GRAPHIC STRIPE	USE 1 @ 60.00"
12.	274-876	1	DITCH WITCH GRAPHIC STRIPE	

FOOTNOTES

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