

# **OIL WORKS, INC.**

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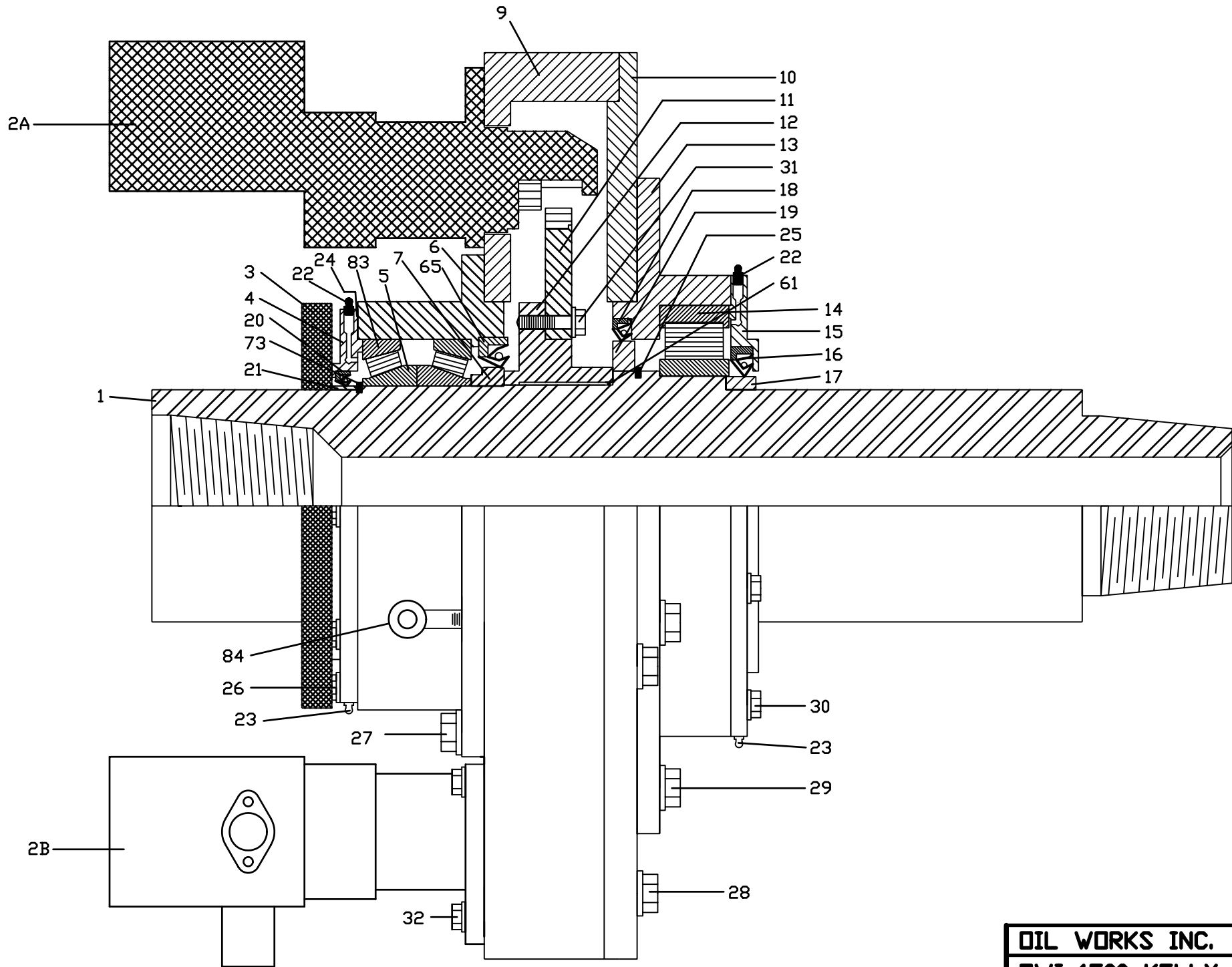
OILWORKSINC@OILWORKSINC.COM

# Model OWI 1500 Kelly Spinner

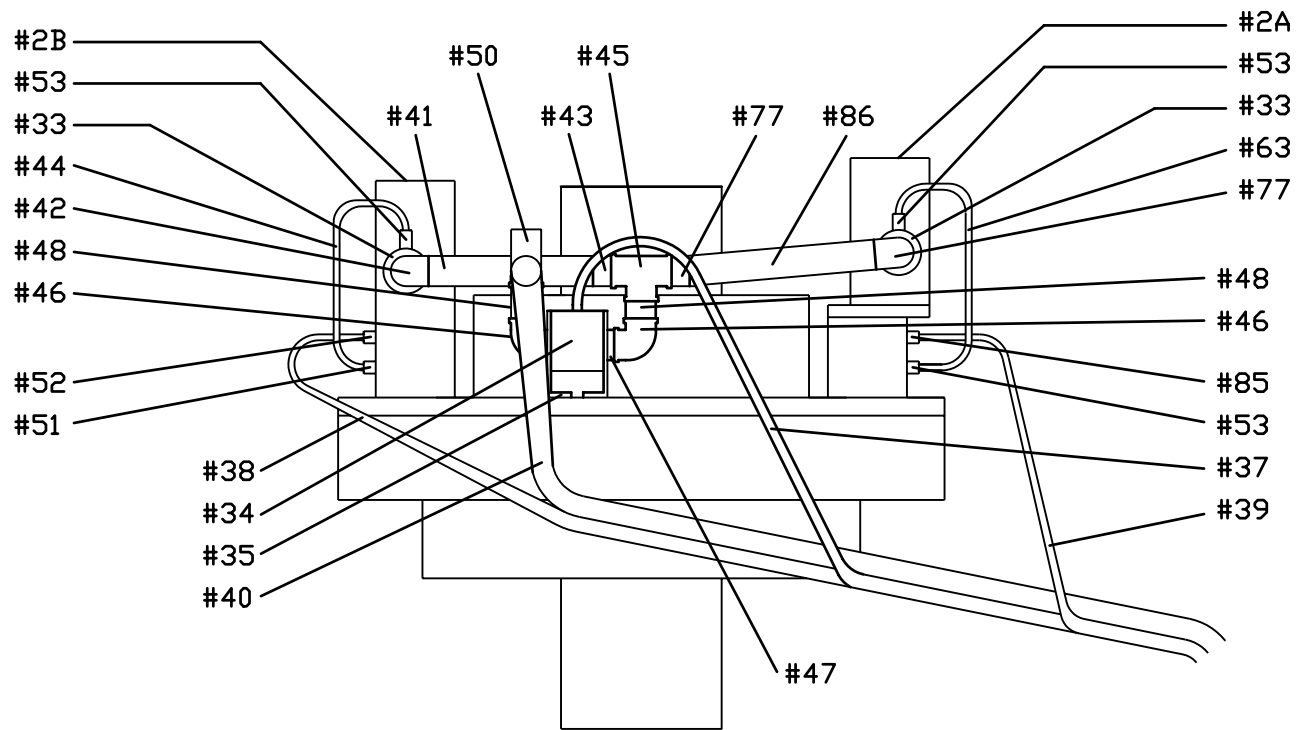


- Variable Speed Control
- Tapered Roller Bearing Set In Upper Bearing Carrier
- Radial Bearing In Lower Bearing Carrier
- OWI Turbine Air Motors
- Solid Steel Machined Housing
- Replaceable Seal Sleeves
- Totally Sealed Capsule

PATENT #6,619,389 B1

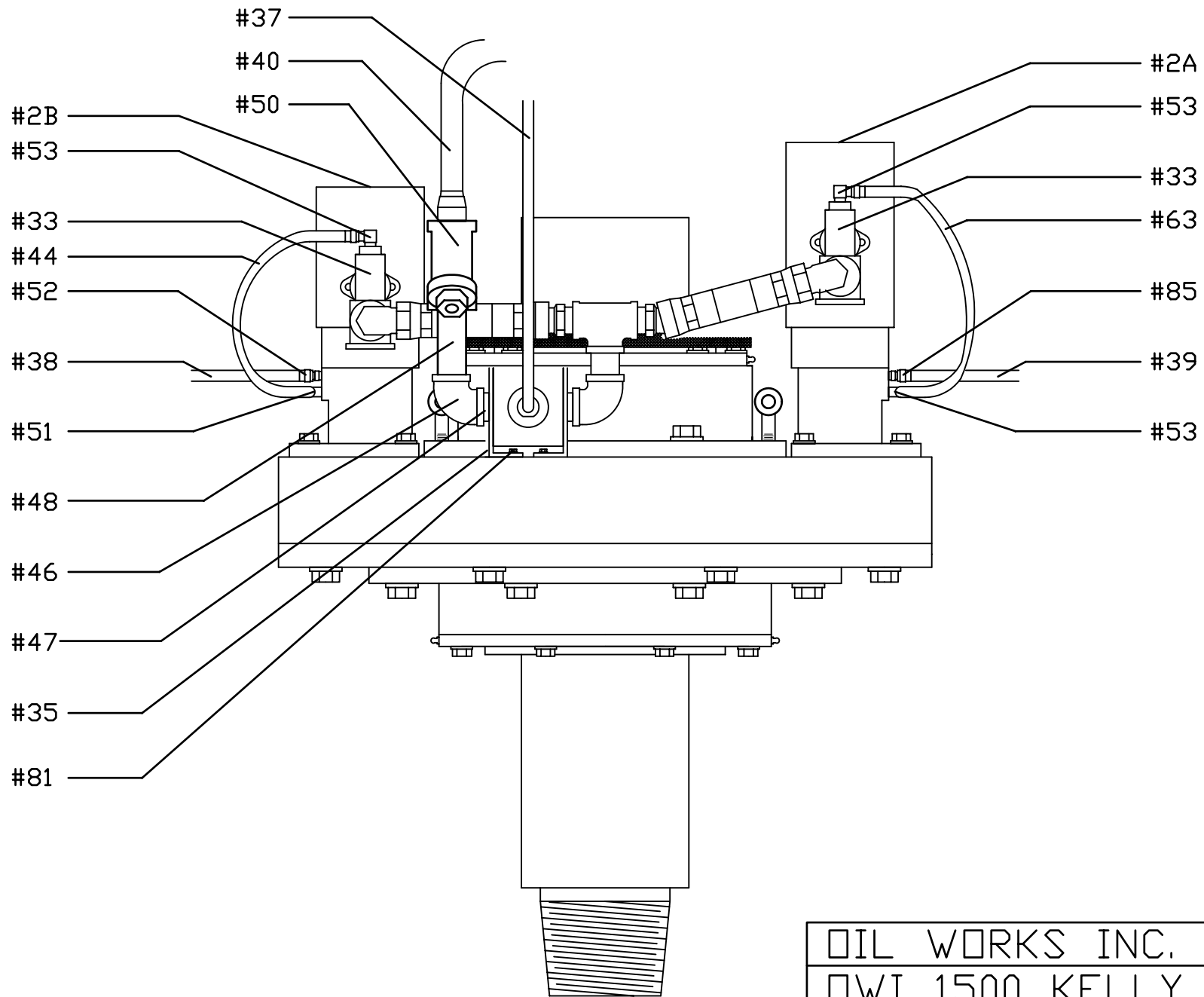


**OIL WORKS INC.**  
**DWI 1500 KELLY SPINNER**

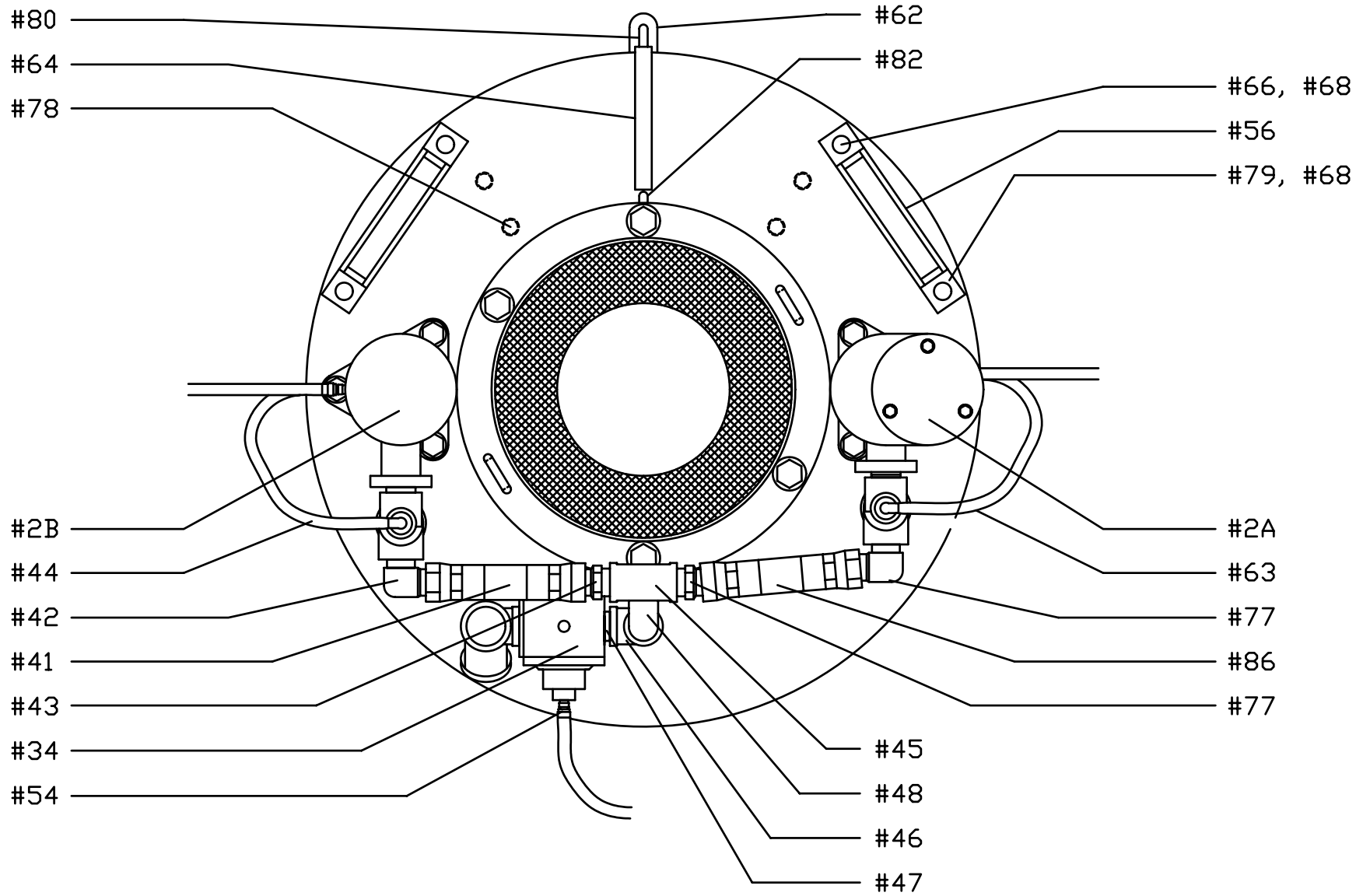


OIL WORKS INC.

OWI 1500 KELLY SPINNER



OIL WORKS INC.  
 OWI 1500 KELLY SPINNER  
 FRONT VIEW LAYOUT



OIL WORKS INC.
OWI 1500 KELLY SPINNER
TOP VIEW LAYOUT

# OWI 1500 KELLY SPINNER PARTS LIST

ITEM #	STOCK #	DESCRIPTION	PART #	QTY
1	1KS0001	STEM, 46"	15011	1
2a	1KS0920	STARTER, RH183	15012-183	1
2b	1KS0917	STARTER, LH73	15012-73L	1
3	1KS0901	NEOPRENE SHEILD	15013	1
4	1KS0003	CAP, TOP BRG	15014	1
5	1KS0903	RACE, TOP CARRIER BRG	SEE #83	
6	1KS0004	CARRIER, TOP BRG	15016	1
7	1KS0017	SLEEVE, SEAL (LAB SEAL TO GREASE SEAL	15069	1
8	1KS0006	SEAL, LAB SLEEVE	15018	1
9	1KS0007	HOUSING, TOP	15019	1
10	1KS0008	HOUSING, LOWER	15020	1
11	1KS0009	GEAR, RING	15021	1
12	1KS0010	GEAR, HUB	15022	1
13	1KS0011	CARRIER, LOWER BRG	15023	1
14	1KS0904	BRG, LOWER CARRIER RADIAL	15024	1
15	1KS0012	CAP, LOWER BRG	15025	1
16	1KS0905	SEAL, LOWER OIL	15026	1
17	1KS0013	SLEEVE, LOWER SEAL	15027	1
18	1KS0906	SEAL, MIDDLE OIL	15028	1
19	1KS0014	SLEEVE, MIDDLE SEAL	15029	1
20	1KS0907	SEAL, TOP OIL	15030	1
21	1KS0015	SLEEVE, TOP SEAL	15031	1
22	1KS0957	ZERK, 1/8" GREASE	15032	2
23	1KS0958	ZERK, 1/8" RELIEF	15033	2
24	1KS0931	SHIM SET	15034	1
25	1KS0909	RING, SPIROLOX SNAP	15035	1
26	1KS0932	BOLT, TOP BRG CAP	15036	8
27	1KS0933	BOLT, TOP BRG CARRIER	15037	6
28	1KS0933	BOLT, HOUSING	15038	8
29	1KS0933	BOLT, LOWER BRG CARRIER	15039	8
30	1KS0932	BOLT, LOWER BRG CAP	15040	8
31	1KS0934	BOLT, RING GEAR	15041	6
32	1KS0934	BOLT, TURBINE MOTOR	15042	6
33	1KS0910	VALVE, RELAY	15043	2
34	1KS0911	VALVE, PILOT	15044	1
35	1KS0912	BRACKET, PILOT VALVE	15045	2
36	1KS0914	THROTTLE, CONTROL VALVE	15046	1
37	1KS0937	AIR LINE, THROTTLE	15047	1
38	1KS0939	AIR LINE, BREAK-OUT	15049	1
39	1KS0938	AIR LINE, MAKE-UP	15048	1
40	1KS0952	HOSE, AIR SUPPLY	15050	1
41	1KS0953	HOSE, LH73 MOTOR SUPPLY	15051	2
42	1KS0944	ADAPTER, 90 DEGREE	15052	1
43	1KS0948	ADAPTER, STRAIGHT	15053	2
44	1KS0950	HOSE, LH73 AIR SUPPLY BENDIX	15054	1
45	1KS0956	TEE	15055	1
46	1KS0949	ELL, 90 DEGREE	15056	2
47	1KS0955	NIPPLE, CLOSE	15057	2
48	1KS0954	NIPPLE, 2"	15058	4
50	1KS0915	STRAINER, "Y"	15060	1
51	1KS0946	ADAPTER, RELAY HOSE	15061	2
52	1KS0941	ADAPTER, AIR LINE	15062	2
53	1KS0947	ADAPTER, RELAY VALVE	15063	2
54	1KS0945	ADAPTER, PILOT HOSE	15064	1
56	1KS0016	LUG, TOP HOUSING	15066	2
61	1KS0018	KEY,SHAFT	15071	1
62	1KS0019	BRACKET, GREASE HOSE	15072	1
63	1KS0951	HOSE, RH183 AIR SUPPLY BENDIX	15073	1
64	1KS0951	HOSE, GREASE	15073	1
65	1KS0908	SEAL, LAB REPLACEMENT OIL	15074	1
66	1KS0935	BOLT, LUG	15075-3 1/2	4
68	1KS0936	WASHER, LUG BOLT	15076	4
71	1KS0021	TAG,KELLY SPINNER	15079	1
73	1KS0981	RING,TOP BEARING RETAINING	15081	1
77	1KS0943	ADAPTER, 45 DEGREE	15087	2
78	1KS0980	BOLT, LUG	15075-1 1/4	4
79	1KS0978	BOLT, LUG	15075-3	4
81	1KS0913	SCREW, PILOT VALVE BRACKET	15086	4
83	1KS0902	BRG, TOP CARRIER, SET	15015-A	2
84	1KS0940	EYE, LIFTING	15077	2
85	1KS0942	ADAPTER, AIR LINE	15088	1
86	1KS0985	HOSE, RH183 MOTOR SUPPLY	15085	1

## **AIR SUPPLY FOR KELLY SPINNER**

A MINIMUM 2" AIR SUPPLY LINE SHOULD BE INSTALLED ALONG SIDE THE MUD STANDPIPE. AT THE TOP OF THE STANDPIPE THE 2" NEEDS TO BE REDUCED TO 1". THE 1" HOSE IS RUN DOWN THE ROTARY HOSE TO THE KELLY SPINNER "Y" STRAINER.

## **INSTALLATION OF THE HAND THROTTLE CONTROL VALVE AND ¼" PILOT AIR LINES**

THE CONTROL VALVE SHOULD BE MOUNTED IN THE DRILLERS CONSOLE AND A ¼" LUBRICATOR INSTALLED IN THE SUPPLY LINE OF THE VALVE. THE THREE ¼" CONTROL LINES SHOULD BE FASTENED TO THE 2" STANDPIPE AND RUN UP THE DERRICK AND DOWN THE ROTARY HOSE THEN CONNECTED TO THE KELLY SPINNER. IF HARD LINES ARE USED TO RUN THE CONTROL LINES UP THE DERRICK, 1/8" OR ¼" PIPE SHOULD BE USED. THE SMALLER THE LINES THE BETTER CONTROL YOU WILL HAVE OF THE KELLY SPINNER.

## **INSTALLATION OF THE KELLY SPINNER**

THE KELLY SPINNER IS MADE UP BETWEEN THE SWIVEL STEM AND THE KELLY VALVE. THE TURNBUCKLES ARE ATTACHED TO THE SWIVEL ACCORDING TO THE DRAWING FURNISHED. THE TURNBUCKLES SHOULD BE CROSSED, **NEVER STRAIGHT UP AND DOWN.**

**NOTE:** BEFORE CONNECTING THE AIR LINES AND CONTROL LINES TO THE KELLY SPINNER, BLOW SUFFICIENT AIR THROUGH THEM TO REMOVE ANY FOREIGN MATTER THAT COULD GET INTO THE KELLY SPINNER.

UPON INSTALLATION OF THE KELLY SPINNER, GREASE THE TOP AND BOTTOM BEARING HOUSINGS WITH ALL-PURPOSE WATER REPELLENT GREASE. GREASE ZERK FITTINGS ARE LOCATED ON THE TOP AND BOTTOM SEAL RETAINERS. THERE ARE GREASE RELIEFS OPPOSITE THE GREASE ZERKS (AT THE BOTTOM OF THE TOP BEARING CARRIER ON LATER MODELS). IT IS BEST TO TURN THE ROTARY TABLE WHILE GREASING THE KELLY SPINNER. SOME LATER MODELS HAVE A GREASE HOSE INSTALLED ON THE TOP SEAL RETAINER. THIS HOSE LEADS DOWN TO THE BOTTOM OF THE KELLY SPINNER AND IS ATTACHED TO A LOWER HOUSING BOLT. THIS HOSE MAKES IT EASIER TO GREASE THE TOP BEARING WHILE DRILLING. **DO NOT EVER REMOVE OR PLUG ANY GREASE RELIEFS. THIS WILL PRESSURIZE THE BEARING CAVITY AND CAUSE INTERNAL SEAL DAMAGE.**

AIR PRESSURE ADJUSTMENTS CAN BE MADE AT THE HAND THROTTLE CONTROL VALVE TO LIMIT THE MAXIMUM TORQUE OUTPUT OF THE KELLY SPINNER TO THE DESIRED LEVEL. THE RECOMMENDED PRESSURE FOR THE GEAR REDUCED MOTOR IS 80 PSI.

## **TROUBLE SHOOTING GUIDE**

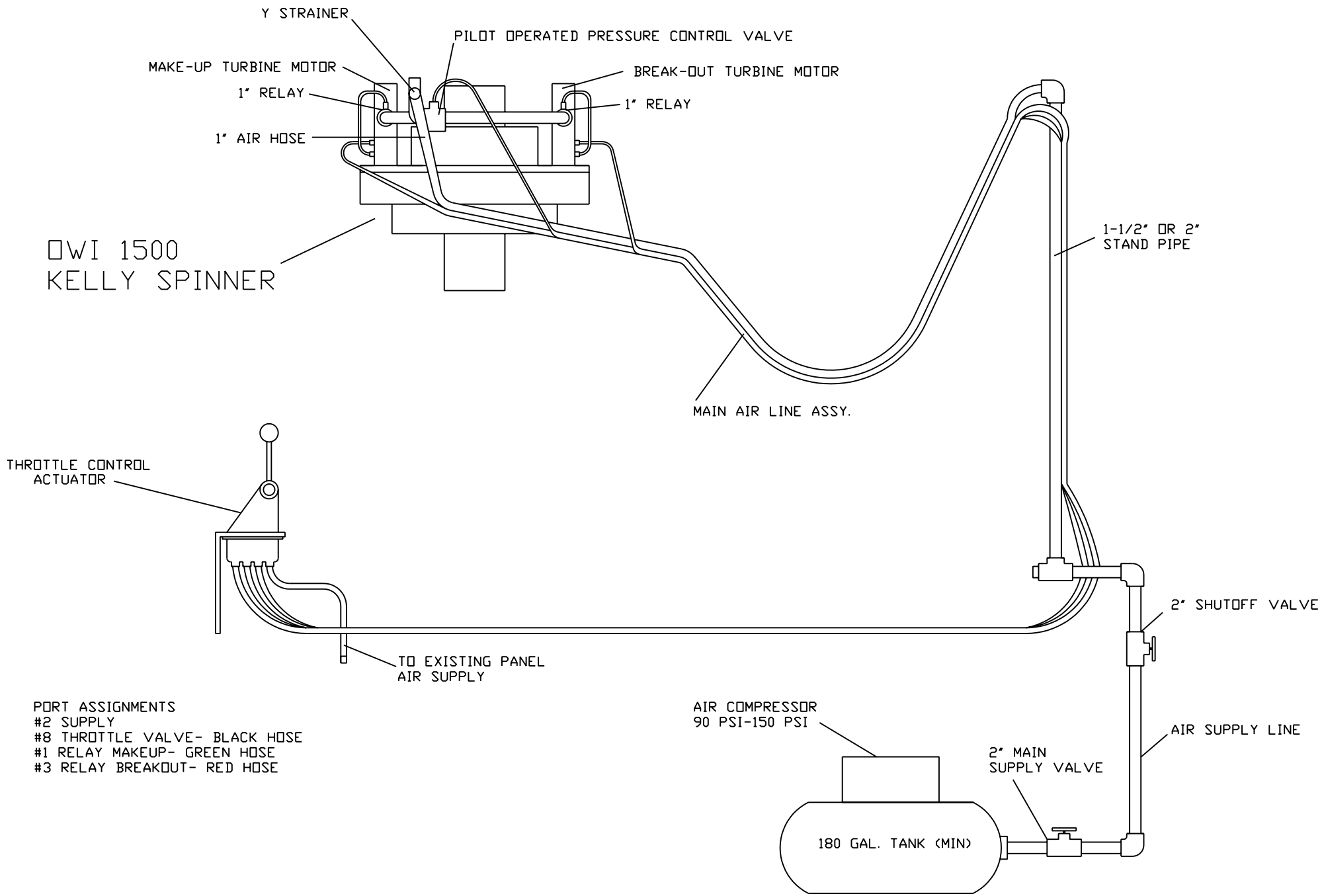
IN CASES WHERE THE KELLY SPINNER MOTOR DOES NOT WORK OR STAYS ON, THE MOST COMMON PROBLEM IS THE RELAY VALVE. THE MOST FREQUENT CAUSE IS FOREIGN MATTER COMING THROUGH THE CONTROL LINE. DISASSEMBLE THE RELAY VALVE AND CLEAN IT OF ANY FOREIGN MATTER AND REASSEMBLE. DISCONNECT THE AIR LINES AND BLOW AIR THROUGH THEM AND REATTACH.

IF THE KELLY SPINNER SEEMS TO LOSE POWER OR BECOME WEAK, DISASSEMBLE AND CLEAN THE "Y" STRAINER. THIS "Y" STRAINER SHOULD BE CLEANED PERIODICALLY FOR PREVENTATIVE MAINTENANCE. IF THE RING GEAR HAS BEEN DAMAGED IT CAN BE REPLACED BY TURNING THE SPINNER OVER AND REMOVING THE ¾" CAP SCREWS FROM THE LOWER PLATE. LIFT THE LOWER PLATE AND BEARING CARRIER OVER THE PIN END OF THE SUB. REMOVE THE 5/8" CAP SCREWS HOLDING THE RING GEAR ON TO THE STEM. THERE ARE THREADED HOLES IN THE RING GEAR TO USE AS PUSHER HOLES. TAKE THE TWO CAP SCREWS THAT HOLD THE RING GEAR ON, PUT THEM IN THE THREADED HOLES AND PUSH THE RING GEAR OFF. IT WILL TAKE A SMALL AMOUNT OF HEAT ON THE NEW RING GEAR TO BE ABLE TO INSTALL IT ON THE STEM. REINSTALL THE 5/8" CAP SCREWS IN THE RING GEAR THEN INSTALL THE LOWER BEARING HOUSING AND PLATE OVER THE PIN OF THE SPINNER. REINSTALL THE ¾" CAP SCREWS IN THE LOWER HOUSING. **NOTE: RE TIE-WIRE ALL CAP SCREWS ON THE SPINNER.** NO BEARING ADJUSTMENT IS NEEDED.

## **OPERATION OF THE KELLY SPINNER**

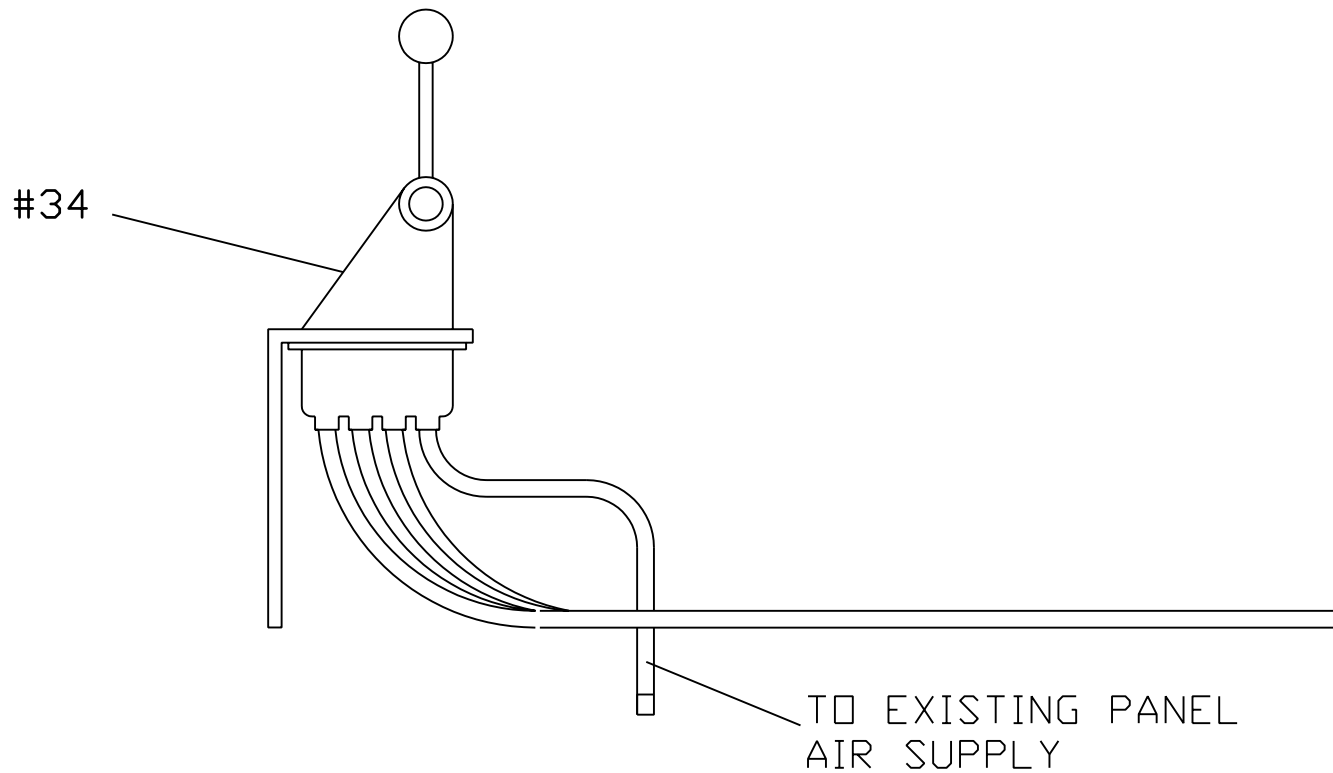
THE OWI 1500 KELLY SPINNER IS DESIGNED TO OPERATE AT VARIABLE SPEEDS. WHEN YOU ENGAGE THE THROTTLE IN THE FORWARD POSITION **DO NOT RETURN TO NEUTRAL UNTIL THE KELLY IS MADE UP TO THE DESIRED POSITION.** YOU CAN REDUCE OR INCREASE SPEED WITH THE THROTTLE BUT ONCE THE THROTTLE VALVE IS RETURNED TO THE NEUTRAL POSITION DO NOT RE-ENGAGE THE THROTTLE VALVE FOR 20 TO 30 SECONDS. THE TURBINE AIR MOTOR TURNS IN EXCESS OF 20,000 RPM AND MUST BE GIVEN AMPLE TIME TO STOP BEFORE RE-ENGAGING, OR PINION AND MOTOR DAMAGE CAN OCCUR.





PORT ASSIGNMENTS  
 #2 SUPPLY  
 #8 THROTTLE VALVE- BLACK HOSE  
 #1 RELAY MAKEUP- GREEN HOSE  
 #3 RELAY BREAKOUT- RED HOSE

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 OWI 1500 KELLY SPINNER



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