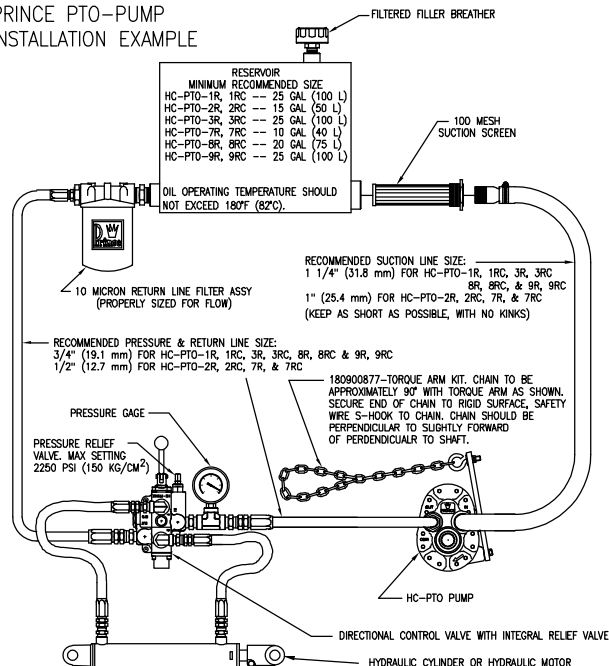


SYM.	REVISION
NC	-

PRINCE PTO-PUMP INSTALLATION EXAMPLE



PUMP MODEL	DESIGN RPM	MAXIMUM RPM	FLOW AT DESIGN RPM	INPUT POWER AT DESIGN RPM	REQUIRED SHAFT TYPE
HC-PTO-1R,1RC	540	600	21.0 gpm (79.5 l/min)	32.1 HP (23.5 kW)	1 3/8" (34.9 mm), 6 TOOTH
HC-PTO-2R,2RC	540	600	11.4 gpm (43.1 l/min)	18.1 HP (13.5 kW)	1 3/8" (34.9 mm), 6 TOOTH
HC-PTO-3R,3RC	1000	1100	22.4 gpm (84.8 l/min)	34.3 HP (25.6 kW)	1 3/8" (34.9 mm), 21 TOOTH
HC-PTO-7R,7RC	540	600	7.1 gpm (26.9 l/min)	11.9 HP (8.9 kW)	1 3/8" (34.9 mm), 6 TOOTH
HC-PTO-8R,8RC	1000	1100	13.5 gpm (51.1 l/min)	22.6 HP (16.7 kW)	1 3/8" (34.9 mm), 21 TOOTH
HC-PTO-9R,9RC	540	600	17.1 gpm (64.7 l/min)	27.4 HP (20.4 kW)	1 3/8" (34.9 mm), 6 TOOTH

\*Numbers based on 2000 psi (140 Kg/cm<sup>2</sup>)

500107048 Rev NC

PUMP INSTALLATION INSTRUCTIONS FOR MODELS:  
HC-PTO-1R, 1RC, 2R, 2RC, 3R, 3RC, 7R, 7RC,  
8R, 8RC, & 9R, 9RC

Prince PTO series pumps are specifically designed for PTO operation on agricultural tractors. In order to utilize these pumps to their full potential, please read the following and review the illustration on the back of this page before installation.

**OPEN CENTER:** Pump flow must return to the reservoir with the valve in the neutral position (valve must be an open center valve).

**PRESSURE:** Before installing, insure that the system has a relief valve set at or below rated pressure of 2250 psi (150 Kg/cm<sup>2</sup>).

**FILTRATION:** A 100 mesh suction strainer and a 10 micron return line filter, both sized properly for flow and both incorporating a "dirty filter" internal bypass filter are recommended. (Note: If the pump is being installed on a system where there has been a component that failed, the system should be cleaned out and new oil should be used.)

**HYDRAULIC FLUID:** Use a good quality mineral base hydraulic fluid with a viscosity of 70-250 sus (13-55 cSt) at system operating conditions. Depending on temperature, commonly used fluids are 10W, 20W, ISO32, ISO46 and ATF.

**TEMPERATURE:** If operating oil temperature exceeds 180°F (82°C), a larger reservoir or heat exchanger is required.

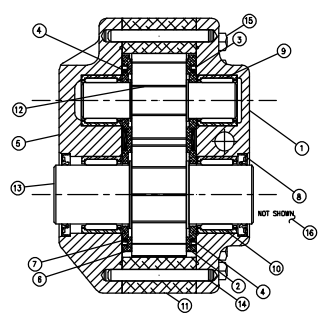
**TORQUE ARM:** Torque arm kit #180900877, with an 11" (280 mm) long torque arm and 800 lb (375 Kg) minimum working strength chain, is recommended. The chain should be approx. 90° to the torque arm and be secured to a rigid surface. The chain should be perpendicular to the PTO shaft to avoid an end thrust on the pump.

**SPLINE LENGTH:** Drive shaft must extend into pump a minimum of 3" (75 mm) for 6 tooth splines, 2 1/2" (60 mm) for 21 tooth splines.

**PORTS:** Ports are as shown. (Note, pumps are provided with a steel plug for the auxiliary outlet port and adapters shown.)

PUMP MODEL	INLET PORT RPM	INLET PORT TO HOSE ADAPTER (PRINCE PART No.)	AUXILIARY OUTLET PORT	REAR OUTLET PORT	OUTLET PORT TO PIPE ADAPTER (PRINCE PART No.)
HC-PTO-1R & 1RC	#16 SAE O-RING	1 1/4" (31.8 mm) HOSE (270011013)	#12 SAE O-RING	#12 SAE O-RING	3/4" (19.1 mm) F. PIPE (500204011)
HC-PTO-2R & 2RC	#16 SAE O-RING	1 1/4" (31.8 mm) HOSE (270011013)	#12 SAE O-RING	#12 SAE O-RING	3/4" (19.1 mm) F. PIPE (500204011)
HC-PTO-3R & 3RC	#16 SAE O-RING	1 1/4" (31.8 mm) HOSE (270011013)	#12 SAE O-RING	#12 SAE O-RING	3/4" (19.1 mm) F. PIPE (500204011)
HC-PTO-7R & 7RC	#16 SAE O-RING	1" (25.4 mm) HOSE (270011017)	#12 SAE O-RING	#12 SAE O-RING	3/4" (19.1 mm) F. PIPE (500204011)
HC-PTO-8R & 8RC	#16 SAE O-RING	1 1/4" (31.8 mm) HOSE (270011013)	#12 SAE O-RING	#12 SAE O-RING	3/4" (19.1 mm) F. PIPE (500204011)
HC-PTO-9R & 9RC	#16 SAE O-RING	1 1/4" (31.8 mm) HOSE (270011013)	#12 SAE O-RING	#12 SAE O-RING	3/4" (19.1 mm) F. PIPE (500204011)

HC-PTO REPLACEMENT PARTS



ITEM	QTY	PAC PART NO.	DESCRIPTION
1	1	50010104	FRONT PLATE
2	1	50010208	WEAR PLATE, FRONT PLATE SIDE
3	2	50010302	PROTECTOR, FRONT PLATE SIDE
4	2	50010302	SEAL
5	1	50010108	BACK PLATE, HC-PTO-1, 2, 3, 7, 8, 9 OR RC MODELS
6	1	50010208	WEAR PLATE, BACK PLATE SIDE
7	1	50010302	PROTECTOR, BACK PLATE SIDE
8	2	21000005	SHAFT
9	2	21000005	SHAFT BEARING
10	2	21110001	DRIVE SHAFT BEARING
11	1	50010201	BODY, HC-PTO-1R
11	1	50010202	BODY, HC-PTO-2R
11	1	50010203	BODY, HC-PTO-3R
11	1	50010204	BODY, HC-PTO-7R
11	1	50010205	BODY, HC-PTO-8R
11	1	50010206	BODY, HC-PTO-9R
11	1	50010207	BODY, HC-PTO-RC
11	1	50010208	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010209	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010210	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010211	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010212	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010213	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010214	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010215	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010216	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010217	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010218	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010219	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010220	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010221	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010222	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010223	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010224	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010225	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010226	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010227	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010228	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010229	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010230	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010231	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010232	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010233	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010234	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010235	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010236	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010237	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010238	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010239	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010240	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010241	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010242	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010243	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010244	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010245	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010246	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010247	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010248	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010249	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010250	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010251	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010252	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010253	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010254	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010255	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010256	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010257	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010258	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010259	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010260	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010261	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010262	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010263	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010264	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010265	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010266	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010267	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010268	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010269	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010270	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010271	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010272	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010273	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010274	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010275	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010276	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010277	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010278	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010279	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010280	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010281	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010282	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010283	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010284	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010285	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010286	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010287	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010288	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010289	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010290	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010291	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010292	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010293	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010294	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010295	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010296	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010297	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010298	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010299	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010300	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010301	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010302	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010303	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010304	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010305	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010306	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010307	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010308	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010309	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010310	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010311	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010312	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010313	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010314	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010315	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010316	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010317	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010318	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010319	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010320	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010321	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010322	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010323	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010324	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010325	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010326	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010327	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	50010328	DRIVE GEAR ASSY, HC-PTO-1R, 2R, 3R, 7R, 8R, 9R, RC
11	1	500	