

Operation, Installation and
Maintenance Manual

Rockford®

Power Take-Offs

*with 6 1/2", 7 1/2", 8", 10" and
11 1/2" HE Clutches*

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1.0 Power Take-Off Quick Reference Guide

The following charts basic information applicable to Rockford® Power Take-Offs with 6 1/2" HE, 7 1/2" HE, 8" HE, 10" HE, 11 1/2" HE and 11 1/2" HE(DP) clutches. Many of these part numbers are no longer available as production assemblies, and are included here as a convenient reference for repair purposes. This list is as complete as permitted by information available at the time of printing.

Rockford Powertrain Part No.	Old Manufacturing Part No.	SAE Housing Size	Clutch Size	Quantity Clutch Plate(s)	Facing Type	Clutch Release Yoke Dim. ⁷	Pilot Bearing Type ¹	Release Bearing Type	Bearing Housing Code ²	Notes ³
4-11044	PTA 11014	1	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11045	PTA 11016	1	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11046	PTA 11122	1	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11047	PTA 11125	1	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11048	PTA 11130	1	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11049	PTA 11134	1	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11050	PTA 11135	1	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11051	PTA 11138	1	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11052	PTA 11140	1	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11053	PTA 11157-D	1	11 1/2" HE(DP)	2	Organic	3.75"	1.1812	Bronze	A	LS/O
4-11054	PTA 11162	1	11 1/2" HE	1	Organic	3.00"	Roller	Bronze	A	
4-11055	PTA 11163	1	11 1/2" HE	1	Organic	3.00"	Roller	Bronze	A	LS/O
4-11056	PTA 11164	1	11 1/2" HE	1	Organic	3.00"	Roller	Bronze	A	
4-11088	PTA 11155-D	1	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	A	
4-11118	PTA 21012	2	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11119	PTA 21012	2	10" HE	1	Organic	3.00"	Roller	Bronze	A	
4-11120	PTA 21025	2	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11122	PTA 21119	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11123	PTA 21123	2	11 1/2" HE	1	Organic	3.00"	.9844	Bronze	A	
4-11124	PTA 21125	2	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11125	PTA 21128	2	11 1/2" HE	1	Organic	3.00"		Bronze	A	
4-11126	PTA 21104-D	2	11 1/2" HE(DP)	2	Organic	3.75"	1.1812	Bronze	A	
4-11127	PTA 21144-D	2	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	A	
4-11128	PTA 21146-D	2	11 1/2" HE(DP)	2	Organic	3.75"	.9844	Bronze	A	
4-11129	PTA 21164	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11130	PTA 21165	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11131	PTA 21168	2	11 1/2" HE	1	Organic	3.00"	.9844	Bronze	A	
4-11132	PTA 21175	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11133	PTA 21177	2	11 1/2" HE	1	Organic	3.00"	.9837	Bronze	B	
4-11134	PTA 21180	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11135	PTA 21181	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-11170	PTA 3813	3	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11171	PTA 3815	3	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-11172	PTA 3820	3	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11173	PTA 3823	3	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-11174	PTA 31025	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11175	PTA 31025s	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11176	PTA 31027	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11177	PTA 31028	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11178	PTA 31036	3	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11179	PTA 31039	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11180	PTA 31045	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	

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¹ Roller Bearings-supplied by Detroit Diesel

Ball Bearings-supplied with PTO

Shaft pilot dimensions furnished if pilot bearing *not* supplied with PTO

.6994 = .6994"/.6990" .9837 = .9837"/.9830"

.6995 = .6995"/.6990" .9844 = .9844"/.9840"

.7500 = .7500"/.7496" 1.1812 = 1.1812"/1.1808"

.7875 = .7875"/.7871" 1.1822 = 1.1822"/1.1816"

.9830 = .9830"/.9375"

² Used for reference during repair of the PTO

³ O = Outboard bearing required

LS = Long Shaft

⁴ Model OC clutch is no longer made

⁵ Output end of shaft is tapered for a 2nd clutch

⁶ Oil seal at shaft output in bearing housing

⁷ Output end of shaft is splined

ROCKFORD POWERTRAIN®

Information subject to change without notice

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Rockford Powertrain Part No.	Old Manufacturing Part No.	SAE Housing Size	Clutch Size	Quantity Clutch Plate(s)	Facing Type	Clutch Release Yoke Dim. ²	Pilot Bearing Type ¹	Release Bearing Type	Bearing Housing Code ²	Notes ³
4-11181	PTA 31052	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11183	PTA 31116	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11184	PTA 31120N	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11185	PTA 31123	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11186	PTA 31124	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11187	PTA 31126	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11188	PTA 31133	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11189	PTA 31140	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11190	PTA 31141	3	11 1/2" HE	1	Organic	3.00"	Ball	Ball	A	
4-11191	PTA 31149	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11192	PTA 31151-D	3	11 1/2" HE(DP)	2	Organic	3.00"	Ball	Bronze	A	
4-11193	PTA 31152	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11194	PTA 31153	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11195	PTA 31157	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11196	PTA 31166	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11236	PTA 463	4	6 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11237	PTA 479	4	7 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11238	PTA 4712	4	7 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11239	PTA 4715	4	7 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11240	PTA 4718	4	7 1/2" HE	1	Organic	3.00"	.9844	Bronze	C	
4-11241	PTA 4722	4	7 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11242	PTA 4819	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11243	PTA 4820	4	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11244	PTA 4824	4	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11245	PTA 4829	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11246	PTA 4832	4	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11247	PTA 4839	4	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11248	PTA 4846	4	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11249	PTA 4847	4	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-11250	PTA 4851	4	8" HE	1	Organic	3.00"	.9844	Bronze	C	
4-11251	PTA 4853	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11252	PTA 4855	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11253	PTA 4856	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11255	PTA 4860	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11256	PTA 41025	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11257	PTA 41028	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11258	PTA 41029	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11259	PTA 41031	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11260	PTA 41044	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11261	PTA 41047	4	10" HE	1	Organic	3.00"	1.1812	Bronze	C	
4-11262	PTA 41052	4	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11263	PTA 41053	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11264	PTA 41055	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11265	PTA 41057	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11266	PTA 41059	4	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11267	PTA 41064	4	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-11268	PTA 41065	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11269	PTA 41066	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	LS/O

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¹ Roller Bearings-supplied by Detroit Diesel

Ball Bearings-supplied with PTO

Shaft pilot dimensions furnished if pilot bearing *not* supplied with PTO

.6994 = .6994"/.6990" .9837 = .9837"/.9830"

.6995 = .6995"/.6990" .9844 = .9844"/.9840"

.7500 = .7500"/.7496" 1.1812 = 1.1812"/1.1808"

.7875 = .7875"/.7871" 1.1822 = 1.1822"/1.1816"

.9830 = .9830"/.9375"

² Used for reference during repair of the PTO

³ O = Outboard bearing required

LS = Long Shaft

4 Model OC clutch is no longer made

5 Output end of shaft is tapered for a 2nd clutch

6 Oil seal at shaft output in bearing housing

7 Output end of shaft is splined

Rockford Powertrain Part No.	Old Manufacturing Part No.	SAE Housing Size	Clutch Size	Quantity Clutch Plate(s)	Facing Type	Clutch Release Yoke Dim. ²	Pilot Bearing Type ¹	Release Bearing Type	Bearing Housing Code ²	Notes ³
4-11271	PTA 41068	4	10" HE	1	Organic	3.00"	Ball	Ball	A	
4-11293	PTA 5614	5	6 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11294	PTA 5615	5	6 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11296	PTA 5617	5	6 1/2" HE	1	Organic	3.00"	.6995	Bronze	C	
4-11298	PTA 5712	5	7 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11299	PTA 5716	5	7 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11300	PTA 5718	5	7 1/2" HE	1	Organic	3.00"	.7875	Bronze	C	
4-11302	PTA 5822	5	8" OC	1	Organic	3.00"	Ball	Bronze	C	(4)
4-11303	PTA 5846	5	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11304	PTA 5847	5	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11305	PTA 5851	5	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11306	PTA 5852	5	8" HE	1	Organic	3.00"	.9380	Bronze	C	
4-11307	PTA 5853	5	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-11308	PTA 5855	5	8" HE	1	Organic	3.00"	.6994	Bronze	C	
4-11309	PTA 5870	5	8" HE	1	Organic	3.00"	.7500	Bronze	C	
4-11310	PTA 5871	5	8" OC	1	Organic	3.00"	Ball	Bronze	C	(4)
4-11312	PTA 5881	5	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-11313	PTA 5882	5	8" OC	1	Organic	3.00"	.7875	Bronze	A	(4)
4-11319	PTA 664	6	6 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11320	PTA 665	6	6 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-11321	PTA 675	6	7 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-12015	PTA 41071	4	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-12801	PTA 21187	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-13235	PTA 31158-D	3	11 1/2" HE(DP)	2	Organic	3.00"	1.1812	Bronze	A	
4-13236	PTA 31167	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-13238	PTA 41069	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-13239	PTA 5847N	5	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-13241	PTA 5885	5	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-13675	PTA 3811	3	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-13680	PTA 5868	5	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-13732	PTA 3822	3	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-14565	PTA 672	6	7 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-14566	PTA 31128	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-14567	PTA 21135	2	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	LS/O
4-14754	PTA 31057	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-14960	PTA 5887	5	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-15024	PTA 41072	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-15242	PTA 21153-D	2	11 1/2" HE(DP)	2	Metallic	3.75"		Bronze	A	no shaft
4-15243	PTA 21174-D	2	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	A	
4-15244	PTA 21186	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-15253	PTA 11159	1	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	LS (5)
4-15396	PTA 31058	3	10" HE	1	Organic	3.00"	Ball	Ball	A	
4-15400	PTA 21015	2	10" HE	1	Organic	3.00"	1.1812	Bronze	A	LS/O
4-15401	PTA 21151-D	2	11 1/2" HE(DP)	2	Organic	3.75"	1.1812	Bronze	A	
4-15475	PTA 4835	4	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-15592	PTA 31169	3	11 1/2" HE	1	Organic	3.00"	Ball	Ball	B	(5)
4-15667	PTA 31171	3	11 1/2" HE	1	Organic	3.00"	Ball	Ball	A	
4-15752	PTA 11146	1	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	LS

(Continued next page)

¹ Roller Bearings-supplied by Detroit Diesel

Ball Bearings-supplied with PTO

Shaft pilot dimensions furnished if pilot bearing *not* supplied with PTO

.6994 = .6994"/.6990"	.9837 = .9837"/.9830"
.6995 = .6995"/.6990"	.9844 = .9844"/.9840"
.7500 = .7500"/.7496"	1.1812 = 1.1812"/1.1808"
.7875 = .7875"/.7871"	1.1822 = 1.1822"/1.1816"
.9830 = .9380"/.9375"	

² Used for reference during repair of the PTO

³ O = Outboard bearing required

LS = Long Shaft

4 Model OC clutch is no longer made

5 Output end of shaft is tapered for a 2nd clutch

6 Oil seal at shaft output in bearing housing

7 Output end of shaft is splined

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Information subject to change without notice

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Rockford Powertrain Part No.	Old Manufacturing Part No.	SAE Housing Size	Clutch Size	Quantity Clutch Plate(s)	Facing Type	Clutch Release Yoke Dim. ²	Pilot Bearing Type ¹	Release Bearing Type	Bearing Housing Code ²	Notes ³
4-15791	PTA 41073	4	10" HE	1	Organic	3.00"	1.1812	Ball	A	
4-16332	PTA 31173	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-16352	PTA 4863	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-16494	PTA 21195	2	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	LS/O
4-16498	PTA 3824	3	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-16810	PTA 31175	3	11 1/2" HE	1	Organic	3.00"	Ball	Ball	A	
4-16935	PTA 31178	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-17055	PTA 31177	3	11 1/2" HE	1	Metallic	3.00"	Ball	Ball	A	
4-17059	PTA 41074	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-17061	PTA 31179	3	11 1/2" HE	1	Organic	3.00"	Ball	Ball	A	
4-17080	PTA 21196-D	2	11 1/2" HE(DP)	2	Organic	3.75"	1.1812	Bronze	A	
4-17320	PTA 31038	3	10" HE	1	Organic	3.00"	.9844	Bronze	A	
4-17418	PTA 5890	5	8" HE	1	Organic	3.00"	Ball	Bronze	B	
4-17437	PTA 21198	2	11 1/2" HE	1	Organic	3.00"	.9844	Bronze	A	
4-17491	PTA 21199-D	2	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	A	
4-17592	PTA 41075	4	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-17607	PTA 21182	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-17636	PTA 11171	1	11 1/2" HE	1	Metallic	3.00"	Roller	Bronze	A	
4-17762	PTA 41077	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-17778	PTA 21192-D	2	11 1/2" HE(DP)	2	Metallic	3.75"	Ball	Bronze	A	
4-18162	PTA 4864	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-18254	PTA 5891	5	8" OC	1	Organic	3.00"	.7875	Bronze	C	(4)
4-18320	PTA 5892	5	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-18461	PTA 31183-D	3	11 1/2" HE(DP)	2	Organic	3.00"	Ball	Bronze	A	
4-18931	PTA 31061	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-19060	PTA 11174	1	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-19062	PTA 211105-D	2	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	D	
4-19099	PTA 31185	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-19100	PTA 211104	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-19155	PTA 41080	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-19481	PTA 21190	2	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-19489	PTA 11021	1	10" HE	1	Organic	3.00"	Ball	Bronze	B	
4-19490	PTA 11172-D	1	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	D	
4-19491	PTA 21029	2	10" HE	1	Organic	3.00"	Ball	Bronze	B	
4-19492	PTA 3825	3	8" HE	1	Organic	3.00"	Ball	Bronze	B	
4-19493	PTA 31062	3	10" HE	1	Organic	3.00"	Ball	Bronze	B	
4-19494	PTA 41079	4	10" HE	1	Organic	3.00"	Ball	Bronze	B	
4-19716	PTA 31186	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-19816	PTA 31161-D	3	11 1/2" HE(DP)	2	Organic	3.00"	Ball	Bronze	A	
4-19845	PTA 31055	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-20072	PTA 21159-D	2	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	A	
4-20114	PTA 41081	4	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-20336	PTA 3827	3	8" HE	1	Organic	3.00"	Ball	Bronze	B	
4-20435	PTA 21147-D	2	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	A	
4-20477	PTA 41085	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-20485	PTA 21112	2	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-20669	PTA 211113	2	11 1/2" HE	1	Organic	3.75"	1.1812	Bronze	A	

(Continued next page)

¹ Roller Bearings-supplied by Detroit Diesel

Ball Bearings-supplied with PTO

Shaft pilot dimensions furnished if pilot bearing *not* supplied with PTO

.6994 - .6994"/.6990" .9837 - .9837"/.9830"

.6995 - .6995"/.6990" .9844 - .9844"/.9840"

.7500 - .7500"/.7496" 1.1812 - 1.1812"/1.1808"

.7875 - .7875"/.7871" 1.1822 - 1.1822"/1.1816"

.9830 - .9830"/.9375"

² Used for reference during repair of the PTO

³ O = Outboard bearing required

LS = Long Shaft

⁴ Model OC clutch is no longer made

⁵ Output end of shaft is tapered for a 2nd clutch

⁶ Oil seal at shaft output in bearing housing

⁷ Output end of shaft is splined

Rockford Powertrain Part No.	Old Manufacturing Part No.	SAE Housing Size	Clutch Size	Quantity Clutch Plate(s)	Facing Type	Clutch Release Yoke Dim. ²	Pilot Bearing Type ¹	Release Bearing Type	Bearing Housing Code ²	Notes ³
4-20673	PTA 211100	2	11 1/2" HE	1	Organic	3.00"		Bronze	A	
4-20916	PTA 41082	4	10" HE	1	Organic	3.00"	1.1812	Bronze	B	
4-20935	PTA 31190	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-21096	PTA 31192	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-21636	PTA 11180	1	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	A	
4-21637	PTA 11181	1	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	B	
4-21638	PTA 31194	3	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	B	
4-21681	PTA 31159	3	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	A	
4-22029	PTA 41090	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-22230	PTA 31067	3	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-22232	PTA 211108-D	2	11 1/2" HE(DP)	2	Metallic	3.75"	Ball	Bronze	D	
4-22354	PTA 31172	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-22409	PTA 31198	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-22606	PTA 4867	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-22630	PTA 31199	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-22815	PTA 5896	5	8" OC	1	Organic	3.00"	.7875	Ball	C	(4)
4-22960	PTA 21124	2	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-23106	PTA 11183-D	1	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	A	
4-23145	PTA 311104	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-23371	PTA 311106	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-23403	PTA 41094	4	10" HE	1	Organic	3.00"	Ball	Bronze	B	
4-23403	PTA 41094	4	10" HE	1	Organic	3.00"	Ball	Bronze	B	
4-23410	PTA 311103	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-23651	PTA 311101	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-23668	PTA 11184-D	1	11 1/2" HE(DP)	2	Organic	3.75"	1.1812	Bronze	D	
4-23676	PTA 41095	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-23681	PTA 41088	4	10" HE	1	Organic	3.00"	1.1812	Ball	A	
4-24183	PTA 11185	1	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-24491	PTA 311108	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-24637	PTA 41096	4	10" HE	1	Organic	3.00"	Ball	Bronze	B	(7)
4-24712	PTA 311105	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-24758	PTA 311110	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-24759	PTA 311111	3	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	B	
4-24827	PTA 41097	4	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-24829	PTA 311109	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-24838	PTA 5897	5	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-24897	PTA 21127-D	2	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	A	
4-25373	PTA 41098	4	10" HE	1	Organic	3.00"	Ball	Bronze	B	
4-25458	PTA 5898	5	8" HE	1	Organic	3.00"	.6694	Bronze	A	
4-25512	PTA 41099	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-25551	PTA 311100	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-25607	PTA 410100	4	10" HE	1	Organic	3.00"	Ball	Bronze	B	
4-25627	PTA 11186	1	11 1/2" HE	1	Organic	3.00"	Ball	Ball	A	
4-25694	PTA 31070	3	10" HE	1	Organic	3.00"	Ball	Bronze	B	
4-25695	PTA 311113	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	B	
4-25774	PTA 31073	3	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-25815	PTA 3829	3	8" HE	1	Organic	3.00"	Ball	Bronze	A	

(Continued next page)

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Ball Bearings-supplied with PTO
Shaft pilot dimensions furnished if pilot bearing *not* supplied with PTO
.6994 = .6994"/.6990" .9837 = .9837"/.9830"
.6995 = .6995"/.6990" .9844 = .9844"/.9840"
.7500 = .7500"/.7496" 1.1812 = 1.1812"/1.1808"
.7875 = .7875"/.7871" 1.1822 = 1.1822"/1.1816"
.9830 = .9830"/.9375"

² Used for reference during repair of the PTO

³ O = Outboard bearing required

LS = Long Shaft

4 Model OC clutch is no longer made

5 Output end of shaft is tapered for a 2nd clutch

6 Oil seal at shaft output in bearing housing

7 Output end of shaft is splined

ROCKFORD POWERTRAIN

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Rockford Powertrain Part No.	Old Manufacturing Part No.	SAE Housing Size	Clutch Size	Quantity Clutch Plate(s)	Facing Type	Clutch Release Yoke Dim. ²	Pilot Bearing Type ¹	Release Bearing Type	Bearing Housing Code ²	Notes ³
4-26048	PTA 58100	5	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-26152	PTA 31076	3	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-26325	PTA 21138-D	2	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	D	
4-26980	PTA 211141-D	2	11 1/2" HE(DP)	2	Organic	3.75"	1.1812	Bronze	D	
4-26981	PTA 211142-D	2	11 1/2" HE(DP)	2	Organic	3.00"	1.1812	Bronze	B	
4-26982	PTA 211143-D	2	11 1/2" HE(DP)	2	Organic	3.75"	1.1812	Bronze	A	
4-26983	PTA 211144	2	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-27076	PTA 410105	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-27083	PTA 311122	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-27208	PTA 5723	5	7 1/2" HE	1	Organic	3.00"	.7875	Bronze	C	
4-27225	PTA 211120	2	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	A	
4-27419	PTA 410106	4	10" HE	1	Organic	3.00"	Ball	Bronze	B	
4-27489	PTA 11192-D	1	11 1/2" HE(DP)	2	Metallic	3.75"	Ball	Bronze	D	
4-27490	PTA 11194-D	1	11 1/2" HE(DP)	2	Metallic	3.75"	Ball	Bronze	D	
4-27494	PTA 211149	2	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	B	
4-27495	PTA 211150-D	2	11 1/2" HE(DP)	2	Metallic	3.75"	Ball	Bronze	D	
4-27739	PTA 211151	2	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	A	
4-28297	PTA 410108	4	10" HE	1	Organic	3.00"	Ball	Ball	B	
4-28356	PTA 410109	4	10" HE	1	Organic	3.00"	Ball	Ball	B	(7)
4-28855	PTA 2810	2	8" HE	1	Organic	3.00"	Ball	Bronze	C	
4-29222	PTA 21032	2	10" HE	1	Organic	3.00"	Roller	Bronze	A	
4-29223	PTA 21033	2	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-29244	PTA 21034	2	10" HE	1	Organic	3.00"	1.1812	Bronze	B	
4-29451	PTA 410110	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-29733	PTA 11022	1	10" HE	1	Organic	3.00"	1.1812	Bronze	B	
4-29740	PTA 311130	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-29741	PTA 21153	2	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-29765	PTA 31131	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-29766	PTA 21154-D	2	11 1/2" HE(DP)	2	Organic	3.75"	1.1812	Bronze	A	
4-30345	PTA 311132	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-30357	PTA 410111	4	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-30358	PTA 410112	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-30378	PTA 5623	5	6 1/2" HE	1	Organic	3.00"	Ball	Bronze	C	
4-30493	PTA 410113	4	10" HE	1	Organic	3.00"	1.1812	Bronze	B	
4-30542	PTA 5835	5	8" HE	1	Organic	3.00"	.9844	Bronze	B	
4-30730	PTA 311140	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	B	
4-30818	PTA 58105	5	8" HE	1	Organic	3.00"	.6994	Bronze	A	
4-30835	PTA 3840	3	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-30924	PTA 58110	5	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-30928	PTA 58115	5	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-30971	PTA 4870	4	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-30973	PTA 4875	4	8" HE	1	Organic	3.00"	.9844	Bronze	A	
4-30974	PTA 58120	5	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-30982	PTA 4880	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	(6)
4-30985	PTA 3845	3	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-31026	PTA 4885	4	8" HE	1	Organic	3.00"	Ball	Bronze	A	
4-31271	PTA 21040	2	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-31274	PTA 11025	1	10" HE	1	Organic	3.00"	Ball	Bronze	A	

(Continued next page)

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Ball Bearings-supplied with PTO

Shaft pilot dimensions furnished if pilot bearing *not* supplied with PTO

.6994 = .6994"/.6990"

.9837 = .9837"/.9830"

.6995 = .6995"/.6990"

.9844 = .9844"/.9840"

.7500 = .7500"/.7496"

1.1812 = 1.1812"/1.1808"

.7875 = .7875"/.7871"

1.1822 = 1.1822"/1.1816"

.9830 = .9830"/.9375"

² Used for reference during repair of the PTO

³ O = Outboard bearing required

LS = Long Shaft

4 Model OC clutch is no longer made

5 Output end of shaft is tapered for a 2nd clutch

6 Oil seal at shaft output in bearing housing

7 Output end of shaft is splined

Rockford Powertrain Part No.	Old Manufacturing Part No.	SAE Housing Size	Clutch Size	Quantity Clutch Plate(s)	Facing Type	Clutch Release Yoke Dim. ²	Pilot Bearing Type ¹	Release Bearing Type	Bearing Housing Code ²	Notes ³
4-31276	PTA 21045	2	10" HE	1	Organic	3.00"	1.1812	Bronze	B	
4-31283	PTA 11035	1	10" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-31427	PTA 3850	3	8" HE	1	Organic	3.00"	Ball	Bronze	B	
4-31434	PTA 3855	3	8" HE	1	Organic	3.00"	.9844	Bronze	B	
4-31725	PTA 11030	1	10" HE	1	Organic	3.00"	1.1812	Bronze	B	
4-32555	PTA 410115	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	(6)
4-34015	PTA 4890	4	8" HE	1	Organic	3.00"	Ball	Ball	A	
4-34192	PTA 5625	5	6 1/2" HE	1	Organic	3.00"	.7875	Ball	C	
4-34193	PTA 4725	4	7 1/2" HE	1	Organic	3.00"	.7875	Ball	C	
4-34510	PTA 311150	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-34511	PTA 311155	3	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	A	
4-34512	PTA 311160	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-34513	PTA 311165	3	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	A	
4-34514	PTA 211155	2	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-34515	PTA 211160	2	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	A	
4-34516	PTA 311100	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-34517	PTA 311105	3	11 1/2" HE	1	Metallic	3.00"	Ball	Bronze	A	
4-34630	None	4	10" HE	1	Organic	3.00"	1.1812	Ball	A	
4-34845	None	3	11 1/2" HE(DP)	2	Organic	3.75"	Ball	Bronze	A	
4-34846	None	3	11 1/2" HE(DP)	2	Metallic	3.75"	Ball	Bronze	A	
4-35119	None	3	11 1/2" HE	1	Organic	3.00"	1.1812	Bronze	A	
4-35762	None	3	10" HE	1	Organic	3.00"	1.1812	Ball	C	
4-36003	None	3	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-36029	None	4	10" HE	1	Organic	3.00"	Spher. Rollr	Bronze	A	
4-36065	None	4	10" HE	1	Organic	3.00"	Ball	Bronze	A	
4-36144	None	3	11 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-36220	None	2	11 1/2" HE	1	Organic	3.75"	Ball	Bronze	A	
4-36270	None	4	7 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	
4-36271	None	5	7 1/2" HE	1	Organic	3.00"	Ball	Bronze	A	

(Continued next page)

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Shaft pilot dimensions furnished if pilot bearing *not* supplied with PTO

.6994 = .6994"/.6990"

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² Used for reference during repair of the PTO

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LS = Long Shaft

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6 Oil seal at shaft output in bearing housing

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ROCKFORD POWERTRAIN

Information subject to change without notice

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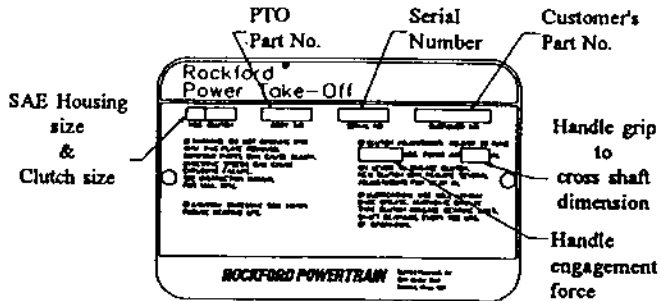
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2.0 Introduction

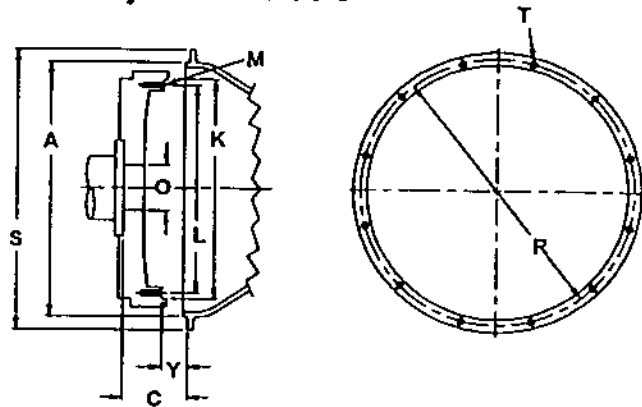
Performance of the following procedures by the owner and operator should ensure reliable PTO operation.

2.1 Locating the Part Number and Serial Number.

Refer to the nameplate for part number and serial number information. The PTO part number is also located on a small tag on the mounting flange of the PTO between two of the mounting holes.



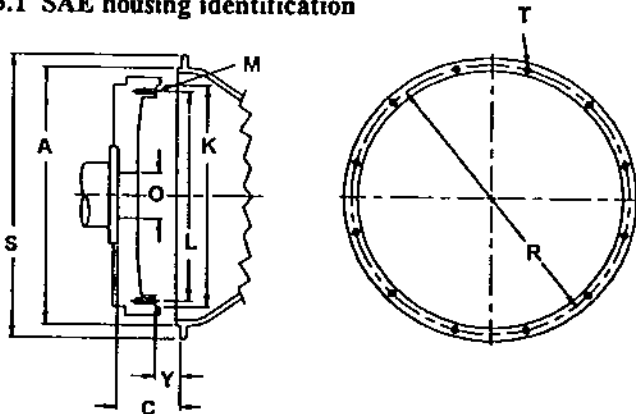
3.2 SAE flywheel dimensions



Clutch Size	Drive Ring Pilot "K"	Bolt Circle "L"	Housing Face to Flywheel "Y"	Pilot Bearing Bore "O"	Bolt Hole "M"	
					Qty.	Size
6-1/2	8.500	7.875	1.19	2.0472 (52mm)	6	5/16
7-1/2	9.500	8.750	1.19	2.0472 (52mm)	8	5/16
8	10.375	9.625	2.44	2.4409 (62mm)	6	3/8
10	12.375	11.625	2.12	2.8346 (72mm)	8	3/8
11-1/2	13.875	13.125	1.56	2.8346 (72mm)	8	3/8
14	18.375	17.250	1.00	3.1496 (80mm)	8	1/2
14-DP	18.375	17.250	1.00	3.1496 (80mm)	8	1/2
14-3P	18.375	17.250	1.00	3.9370 (100mm)	8	1/2
18	22.500	21.375	.62	3.9370 (100mm)	6	5/8
18-DP	22.500	21.375	.62	3.9370 (100mm)	6	5/8
18-3P	22.500	21.375	.62	4.7244 (120mm)	6	5/8

3.0 General Information, Specifications & Recommendations

3.1 SAE housing identification



3.3 Application Guidelines

Rockford® Power Take-Offs with 6 1/2", 7 1/2" 8", 10", and 11 1/2" HE clutches are approved for either in-line drive or side-loaded applications within allowable limits.

S.A.E. Hsg. No.	Pilot Diameter "A"	O.D. "S"	Bolt Circle "R"	Housing Face to Crankshaft "C"	Flywheel Housing Bolts and Bolt Holes "T"		
					Qty.	Hole Dia.	Bolt Size
"0"	25.500	28.00	26.750	3.94	16	.547	1/2
"1/2"	23.000	25.50	24.375	3.94	12	.547	1/2
"1"	20.125	21.75	20.875	3.94	12	.484	7/16
"2"	17.625	19.25	18.375	3.94	12	.433	3/8
"3"	16.125	17.75	16.875	3.94	12	.433	3/8
"4"	14.250	15.88	15.000	*	12	.433	3/8
"5"	12.375	14.00	13.125	*	8	.433	3/8
"6"	10.500	12.12	11.250	2.81	8	.433	3/8

* 3.94 for 8" clutch;
2.81 for 6" and 7" clutch

All dimensions are in inches

3.4 Allowable Side Load Pulls

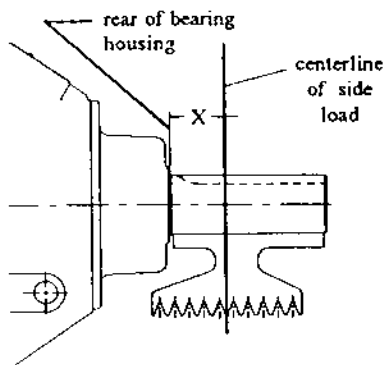
The following formula can be used to estimate applied side loads. Loads are calculated on proper tensioning of belts. If belts are tightened excessively, the resulting side load can exceed the calculated value. If belts are undertightened, belt "whip" and other resultant factors can cause intermittent side load pulls which exceed allowable limits.

$$L = \frac{128000 \times \text{HP.}}{N \times D} \times F \times A$$

L = predicted side load (lbs.)
 HP. = horsepower
 N = shaft speed (rev./min.)
 D = pitch diameter of pulley (in.)
 F = load factor (see below)
 1.0 for chain or gear drive
 2.5 for V Belt drive
 3.5 for flat belt drive
 A = 1.0 for low & moderate duty drives
 1.4 for severe shock loads or large inertia loads (reciprocating compressors, crushers, chippers, planers, etc.)

Side load charts are not furnished for the following Power Take-Offs because the pilot bearing is provided by the customer. Pilot bearing size and type are integral to allowable side load pull calculations. Therefore allowable side load charts cannot be furnished until bearing information is known.

6 1/2"	4-34192	10"	4-34630	11 1/2"	4-11054
			4-20114		4-11055
7 1/2"	4-34193		4-20916		4-11128
			4-24827		4-11196
8"	4-30928		4-26152		4-17636
	4-30971		4-30493		4-20669
	4-30818		4-29222		4-20673
	4-30835		4-29223		4-26982
	4-30924				4-29740
	4-24838				4-29741
					4-29766
					4-30730
					4-35119



The following charts list allowable side load pulls. For Power Take-Off part numbers not listed, contact an Authorized Rockford® Distributor for assistance.

for Power Take-Off Part Numbers 4-11236 4-11294 4-11319

6 1/2"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	1080	960	870	750	600	-	-	-
	2400	1020	900	810	710	570	-	-	-
	2600	970	860	770	670	540	-	-	-
	2800	920	820	740	640	520	-	-	-
	3600	890	790	710	620	500	-	-	-

for Power Take-Off Part Numbers 4-30378

6 1/2"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	1123	998	899	769	616	514	441	386
	2400	1057	939	846	724	580	484	415	364
	2800	1004	892	803	687	551	460	394	345
	3200	960	853	768	657	527	440	377	330
	3600	923	821	739	632	507	423	363	318

for Power Take-Off Part Numbers 4-11238 4-11298 4-14565

7 1/2"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	1080	960	870	750	600	-	-	-
	2400	1020	900	810	710	570	-	-	-
	2800	970	860	770	670	540	-	-	-
	3400	900	800	720	630	500	-	-	-

for Power Take-Off Part Numbers 4-11244

8"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	1146	1033	941	791	633	528	453	397
	2400	1078	972	886	744	596	497	427	373
	2800	1024	924	841	707	566	472	405	355
	3200	979	883	805	676	542	452	388	339

for Power Take-Off Part Numbers 4-11247 4-26048

8"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	1110	1000	910	840	770	-	-	-
	2400	1050	940	860	790	730	-	-	-
	2800	990	900	810	750	690	-	-	-
	3200	950	860	780	710	660	-	-	-

for Power Take-Off Part Numbers 4-24838

8"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	959	858	776	661	531	444	381	334
	2400	902	807	731	622	500	418	359	315
	2800	857	767	694	591	475	397	341	299
	3200	820	734	664	565	454	380	326	286

for Power Take-Off Part Numbers 4-30973 4-30974 4-30985

8"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	3220	1990	1440	1130	930	790	680	-
	2400	3030	1870	1350	1060	870	740	640	-
	2800	2800	1780	1290	1010	830	700	610	-
	3200	2750	1700	1230	960	790	670	580	-

for Power Take-Off Part Numbers 4-30982

8" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	2155	1407	1044	830	689	589	514	456
2400	2028	1324	983	781	649	554	484	429
2800	1927	1258	934	742	616	526	460	408
3200	1843	1203	893	710	589	504	440	390

for Power Take-Off Part Numbers 4-31026 4-34015

8" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	3209	1984	1436	1125	925	785	682	603
2400	3019	1867	1351	1059	870	739	642	567
2800	2868	1773	1284	1006	827	702	610	539
3200	2743	1696	1228	962	791	671	583	516

for Power Take-Off Part Numbers 4-31427

8" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	780	720	660	610	570	530	500	-
2400	740	670	620	570	540	500	470	-
2800	700	640	590	550	510	480	450	-
3200	670	610	560	520	490	450	430	-

for Power Take-Off Part Numbers 4-11256 4-11174

10" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	4820	4450	3660	2910	2420	2060	1800	-
2200	4680	4320	3550	2820	2340	2000	1740	-
2400	4560	4210	3450	2740	2270	1940	1690	-
2600	4450	4110	3360	2670	2210	1890	1650	-
2800	4360	4020	3270	2600	2160	1840	1610	-

for Power Take-Off Part Numbers 4-15396

10" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	4824	4452	3667	2915	2420	2068	1805	1602
2200	4688	4327	3552	2824	2344	2003	1749	1552
2400	4568	4215	3451	2743	2277	1946	1699	1508
2600	4459	4115	3360	2671	2217	1895	1654	1468
2800	4361	4025	3278	2606	2163	1848	1614	1432
3000	4272	3942	3202	2547	2114	1806	1577	1400

for Power Take-Off Part Numbers 4-19493 4-19494

10" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	1300	1200	1110	1040	970	920	870	-
2200	1260	1160	1080	1010	940	890	840	-
2400	1220	1130	1050	980	920	860	820	-
2600	1190	1100	1020	950	890	840	790	-
2800	1160	1070	990	930	870	820	770	-

for Power Take-Off Part Numbers 4-23676 4-32555

10" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	2155	1407	1044	830	689	589	514	456
2400	2028	1324	983	781	649	554	484	429
2800	1927	1258	934	742	616	526	460	408
3200	1843	1203	893	710	589	504	440	390

for Power Take-Off Part Numbers 4-28297

10" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	1303	1204	1119	1045	981	924	873	827
2200	1262	1166	1084	1013	950	895	846	802
2400	1226	1133	1053	984	923	869	821	779
2600	1194	1103	1025	958	899	846	800	758
2800	1165	1076	1000	935	877	826	780	740
3000	1138	1052	978	913	857	807	763	723

for Power Take-Off Part Numbers 4-28356

10" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	1299	1198	1112	1037	972	912	877	843
2200	1258	1160	1077	1004	941	884	846	811
2400	1222	1127	1046	976	914	858	819	784
2600	1190	1098	1019	950	890	836	797	762
2800	1161	1071	994	927	868	815	774	739
3000	1135	1047	971	906	849	797	756	721

for Power Take-Off Part Numbers 4-30358

10" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	3916	2557	1898	1509	1252	1070	934	829
2200	3794	2477	1838	1462	1213	1037	905	803
2400	3685	2406	1786	1420	1178	1007	879	780
2600	3588	2342	1739	1382	1147	981	856	760
2800	3501	2285	1696	1349	1119	957	835	741
3000	3421	2233	1658	1318	1094	935	816	724

for Power Take-Off Part Numbers 4-31271

10" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	4870	4510	3900	3100	2570	2190	1920	-
2200	4730	4380	3780	3000	2490	2130	1860	-
2400	4610	4270	3670	2910	2420	2070	1800	-
2600	4500	4170	3570	2840	2350	2010	1750	-
2800	4400	4080	3480	2770	2300	1960	1710	-

for Power Take-Off Part Numbers 4-11122 4-11183 4-11046 4-21681 4-21636 4-27225

11 1/2" RPM	X" Distance							
	0	1"	2"	3"	4"	5"	6"	7"
2000	4869	4511	3896	3097	2571	2197	1918	-
2200	4732	4384	3774	3001	2490	2128	1858	-
2400	4610	4271	3666	2915	2419	2067	1805	-
2600	4501	4170	3569	2838	2355	2013	1758	-
2800	4402	4078	3482	2769	2298	1964	1715	-
3000	4312	3995	3403	2706	2246	1919	1676	-

4-11127 4-11088 4-17778
for Power Take-Off Part Numbers 4-27489 4-34845 4-34846

11 1/2"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	6820	5280	3940	3140	2610	2230	1950	-
	2200	6630	5110	3810	3040	2530	2160	1890	-
	2400	6460	4970	3710	2950	2460	2100	1840	-
	2600	6300	4840	3610	2880	2390	2050	1790	-
	2800	6170	4720	3520	2810	2330	2000	1740	-

for Power Take-Off Part Numbers 4-34512 4-34513

11 1/2"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	1300	1210	1130	1060	990	940	890	-
	2200	1260	1170	1090	1020	960	910	860	-
	2400	1230	1140	1060	990	930	880	830	-
	2600	1190	1110	1030	970	910	860	810	-
	2800	1170	1080	1010	940	890	840	790	-

for Power Take-Off Part Numbers 4-15667 4-24829

11 1/2"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	4877	4518	3916	3110	2579	2203	1923	1706
	2200	4740	4391	3793	3013	2499	2134	1863	1653
	2400	4617	4277	3685	2927	2427	2073	1810	1605
	2600	4508	4176	3588	2850	2363	2019	1762	1563
	2800	4409	4084	3500	2780	2306	1970	1719	1525

for Power Take-Off Part Numbers 4-19062 4-27495

11 1/2"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	953	886	827	776	731	691	655	-
	2200	923	858	802	752	708	669	634	-
	2400	897	834	779	731	688	650	616	-
	2600	873	812	758	711	670	633	600	-
	2800	852	792	740	694	654	618	585	-

for Power Take-Off Part Numbers 4-19490 4-22232

11 1/2"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	954	887	828	777	732	692	655	623
	2200	924	859	802	753	709	670	635	603
	2400	898	834	779	731	689	651	617	586
	2600	874	812	759	712	670	634	601	571
	2800	853	793	740	695	654	618	586	557

for Power Take-Off Part Numbers 4-30345

11 1/2"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	4199	2731	2023	1607	1333	1138	994	881
	2200	4068	2645	1960	1557	1291	1103	963	854
	2400	3951	2570	1904	1512	1254	1071	935	830
	2600	3847	2502	1854	1472	1221	1043	910	808
	2800	3753	2441	1809	1437	1191	1018	888	788

4-34510 4-34511 4-34514
for Power Take-Off Part Numbers 4-34515 4-34516 4-34517

11 1/2"	RPM	X" Distance							
		0	1"	2"	3"	4"	5"	6"	7"
	2000	4860	4510	3890	3090	2570	2190	1910	-
	2200	4730	4380	3770	3000	2490	2120	1850	-
	2400	4610	4270	3660	2910	2410	2060	1800	-
	2600	4500	4170	3560	2830	2350	2010	1750	-
	2800	4400	4070	3480	2760	2290	1960	1710	-

3.5 Maximum Safe Operating Speeds

Maximum safe operating speeds of Rockford® Power Take-Offs with HE clutches used for either in-line or side load drives are shown below.

6 1/2" HE	3700 RPM
7 1/2" HE	3400 RPM
8" HE	3250 RPM
10" HE	3000 RPM
11 1/2" HE	2800 RPM
11 1/2" HE(DP)	2800 RPM

3.6 Required Clutch Torque Capacity

To determine the actual torque capacity for any given application the torque service factor must be considered. See the following chart and formula to calculate the proper clutch capacity required for the application.

Required Clutch Torque Capacity Calculation:

Required Clutch Torque = Maximum Engine Torque x Service Factor

Torque Service Factors

Blower or Vacuum	
-Centrifugal with free flow of air _____	1.7
-With high start-up inertia or subject to choking of air supply _____	4.0
Compressors	
-Reciprocating, 1 or 2 cylinders _____	4.0
-Reciprocating, 3 or more cylinders _____	2.5
-Roto screw or turbine _____	2.0
Conveyor	
-Fed uniformly _____	1.5
-Not fed uniformly _____	2.0
-Reciprocating _____	3.0
Drills _____	2.0
Generator _____	2.0
Pump	
-Centrifugal or Turbine _____	1.5
-Dredge _____	2.0
-Mud or reciprocating _____	3.0
Rock Crusher, Hammer Mill _____	3.0
Snow Blower _____	2.0
Wood Chipper, Saw Mill _____	3.0

Ratings:

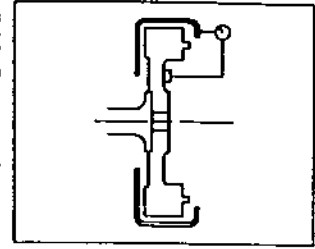
Shafts, bearings and clutch capacities are rated on a conservative basis. For unusually heavy starting loads, frequent engagement service, or if prime mover is engine of less than 4 cylinders, consult our Sales Representatives for recommendations. Extremely low speed engines require special consideration.

3.7 Alignment Tolerances for Flywheels and Flywheel Housings

Check the alignment of the engine flywheel and the engine flywheel housing. Excessive bore and face runout of the flywheel, flywheel housing, and flywheel housing adapters, if used, can adversely affect the performance of the PTO and the system of which it is a part. A dial indicator will be required to measure alignment.

3.7.1 Flywheel housing face runout deviation check.

Mount the indicator base on the face of the flywheel and position the dial indicator tip perpendicular to the flywheel housing mounting flange face. Rotate the flywheel through 360 degrees.



Note:

The flywheel and crankshaft of the engine must be held against either the front or rear of the crankshaft thrust bearing while the total indicator sweep (TIR) measurement is being made.

The total indicator reading should not exceed:

SAE #1, #2, #3 Housing .008" (.203 mm.)

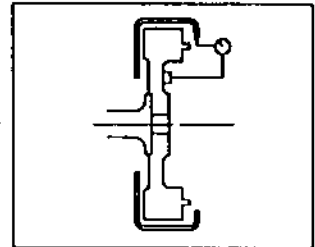
SAE #4, #5, #6 Housing .006" (.152 mm.)

Note:

See 3.1 for identification of SAE Housings

3.7.2 Flywheel housing bore runout deviation check.

Mount the indicator base on the face of the flywheel and position the dial indicator tip so its movement is perpendicular to the pilot bore surface of the flywheel housing. Rotate the flywheel through 360 degrees.



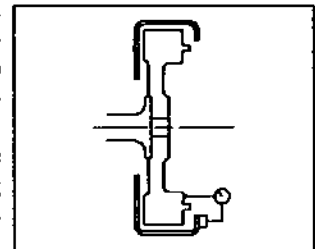
The total indicator reading should not exceed:

SAE #1, #2, #3 Housing .008" (.203 mm)

SAE #4, #5, #6 Housing .006" (.152 mm.)

3.7.3 Flywheel face runout deviation check.

Mount the indicator base on the flywheel housing and position the dial indicator tip so its movement is perpendicular to the face of the flywheel. The indicator tip should be positioned near the drive ring mounting bolt circle diameter. Rotate the flywheel through 360 degrees.



Note:

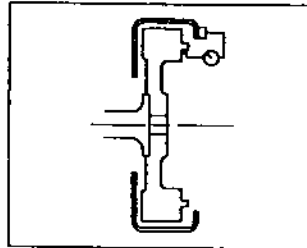
The flywheel and crankshaft of the engine must be held against either the front or rear of the crankshaft thrust bearing while the total indicator sweep (TIR) measurement is being made.

Measure the diameter of the drive ring bore in the flywheel

Clutch Size (reference)	Drive Ring Bore Diameter	Maximum T.I.R.
6 1/2" HE	8 1/2" (216 mm.)	.004" (.102 mm.)
7 1/2" HE	9 1/2" (241 mm.)	.005" (.127 mm.)
7 1/2" HE	11 1/8" (282 mm.)	.006" (.152 mm.)
8" HE	10 3/8" (263 mm.)	.005" (.127 mm.)
8" HE	11" (279 mm.)	.006" (.152 mm.)
10" HE	12 3/8" (314 mm.)	.006" (.152 mm.)
10" HE	13" (330 mm.)	.007" (.178 mm.)
11 1/2" HE	13 7/8" (352 mm.)	.007" (.178 mm.)
11 1/2" HE	15 1/2" (394 mm.)	.008" (.203 mm.)

3.7.4 Flywheel drive ring pilot bore runout deviation check.

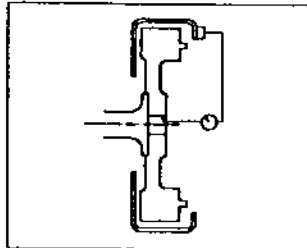
Mount the indicator base on the flywheel housing and position the dial indicator tip so its movement is perpendicular to the drive ring pilot bore surface of the flywheel. Rotate the flywheel through 360 degrees.



The total indicator reading should not exceed:
0.005 inches (0.127 mm)

3.7.5 Flywheel pilot bearing bore runout deviation check.

Mount the indicator base on the flywheel housing and position the dial indicator tip so its movement is perpendicular to the pilot bearing bore surface of the flywheel. Rotate the flywheel through 360 degrees.



The total indicator reading should not exceed:
0.005 inches (0.127 mm)

3.8 PTO main bearing end play setting

See 1.0 PTO Quick reference guide for bearing type. Ball type main bearings require no adjustment. See 14.0 for adjustment procedure for tapered-roller type main bearings.

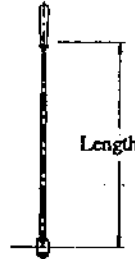
Main Bearing end play
Grease lubricated bearings: .004" - .008" loose

3.9 PTO handle engaging force

The proper clutch engagement pressure must be maintained. Maintaining the correct engagement pressure is the responsibility of the owner/operator. The clutch should be adjusted whenever the engagement pressure has decreased 10 to 15% below the specification for the PTO.

Note:

If the facings have been slipped excessively, and enough heat was generated that the facings began to smoke, the clutch material may have been destroyed. Excessive heat normally destroys the friction material. Therefore further clutch adjustment will not remedy slippage problems. Replace friction discs.



Determine whether the engagement force is correct. Measure the distance from the middle of the handle grip location to the center of the cross-shaft. Attach a spring scale to the handle at the handle grip location and pull the scale perpendicular to the handle to measure the force required to engage the clutch.

3.9.1 Engagement force using a standard handle

Handle Length Cross Shaft to Grip	Release Yoke Length	Engagement Force	
12" (3050 mm) 6 1/2" HE SAE #4, #5, #6	3.0" (762 mm)	45 - 65 lbs. (200-289N) 41 lbs. (182 N) 38 lbs. (169 N)	Original Setting 10% decrease 15% decrease
12" (3050 mm) 7 1/2" HE SAE #4, #5, #6	3.0 (762 mm.)	45 - 65 lbs. (200-289N) 41 lbs. (182 N) 38 lbs. (169 N)	Original Setting 10% decrease 15% decrease
12" (3050 mm) 8" HE SAE #4	3.0" (762 mm)	60 - 80 lbs. (267-356N) 54 lbs. (240 N) 51 lbs. (227 N)	Original Setting 10% decrease 15% decrease
16" (4060 mm) 8" HE SAE #3	3.0" (762 mm)	45 - 60 lbs. (200-267 N) 41 lbs. (182 N) 38 lbs. (169 N)	Original Setting 10% decrease 15% decrease
12" (3050 mm) 10" HE SAE #4	3.0" (762 mm)	95-120 lbs. (423-534 N) 85 lbs. (378 N) 81 lbs. (360 N)	Original Setting 10% decrease 15% decrease
16" (4060 mm) 10" HE SAE #2, #3	3.0" (762 mm)	70 - 90 lbs. (311-400 N) 63 lbs. (280 N) 59 lbs. (262 N)	Original Setting 10% decrease 15% decrease
21" (9340 mm) 10" HE SAE #1	3.0" (762 mm)	55 - 70 lbs. (245-311 N) 50 lbs. (222 N) 47 lbs. (209 N)	Original Setting 10% decrease 15% decrease
16" (4060 mm) 11 1/2" HE SAE #2, #3	3.0" (762 mm)	75 - 95 lbs. (334-423 N) 68 lbs. (302 N) 64 lbs. (287 N)	Original Setting 10% decrease 15% decrease
21" (9340 mm) 11 1/2" HE SAE #1	3.0" (762 mm)	60 - 75 lbs. (267-334 N) 54 lbs. (240 N) 51 lbs. (227 N)	Original Setting 10% decrease 15% decrease
16" (4060 mm) 11 1/2" HE(DP) SAE #2, #3	3.75" (953 mm)	95 120 lbs. (423-534 N) 85 lbs. (378 N) 81 lbs. (360 N)	Original Setting 10% decrease 15% decrease
21" (9340 mm) 11 1/2" HE(DP) SAE #1	3.75" (953 mm)	75 - 90 lbs. (334-400 N) 68 lbs. (302 N) 64 lbs. (287 N)	Original Setting 10% decrease 15% decrease

3.9.2 Altered or special handle length

For other handle lengths, use the following formula.

$$X = 1.15 \times \frac{(A \times Y)}{B}$$

X Engagement force at attachment point.	lbs. force	(newtons)
Y Engagement force at clutch release bearing	lbs.	(newtons)
A Length of clutch release yoke	inches	(centimeters)
B Length of handle (cross shaft to attachment point)	inches	(centimeters)

Clutch Size and Type	Value A	Value Y
6 1/2" HE	3.0" (762 mm)	175-200# (778-887N)
7 1/2" HE	3.0" (762 mm)	175-200# (778-887N)
8" HE	3.0" (762 mm)	225-250# (1001-1112N)
10" HE	3.0" (762 mm)	350-375# (1557-1668N)
11 1/2" HE	3.75" (953 mm)	375-400# (1668-1779N)
11 1/2" HE(DP)	3.75" (953 mm)	375-400# (1668-1779N)

3.9.3 Torque wrench method

A torque wrench may be used at the cross shaft to measure engagement force. (An adapter must be made to provide a nut at the end of the cross shaft.)

Clutch Size and Type	Engagement Torque Measured at cross shaft
6 1/2" HE	50-58 ft.-lbs. (68-79Nm)
7 1/2" HE	50-58 ft.-lbs. (68-79Nm)
8" HE	65-72 ft.-lbs. (88-98Nm)
10" HE	101-108 ft.-lbs. (137-146Nm)
11 1/2" HE	108-115 ft.-lbs. (146-156Nm)
11 1/2" HE(DP)	147-162 ft.-lbs. (199-220Nm)

Note:

The above values include a 15% allowance for friction within the clutch release mechanism.

4.0 Maintenance.

4.1 Lubrication requirements

4.1.1 Grease Specification

High grade, lithium base #2, short fibre grease recommended for use in 2,100 RPM roller bearings operating at 200°F. (93.3°C.)

4.1.2 Grease specification for special conditions

For ambient temperatures above 100°F. (23.6°C.), contact the factory for specifications.

Grease Caution:

Do not mix sodium or calcium based greases with lithium grease. Do not mix different types of greases under any circumstances in Rockford® Power Take-offs.

4.2 Lubrication Intervals.

The following lubrication intervals are suggested as guidelines. The owner operator is responsible for establishing lubrication intervals appropriate to the duty cycle and environmental operating conditions to which the PTO is subjected.

4.2.1 Bronze & greasible Ball-Type Release Bearing

Using a hand operated grease gun, add 1 or 2 pumps of grease per 8-10 hrs. of operation (or add grease until grease begins to weep from the I.D. of the bearing. Rotate the shaft (by hand) while adding grease. Do Not Overgrease!!

4.2.2 Main Bearings

Grease every 100 hours of operation. Add grease until grease is forced out of the labyrinth seal(s) around the shaft. Manually (not by starting the engine) rotate the shaft while adding grease.

4.2.3 PTO Cross Shaft

Grease every 500 hours of operation. Add one or two pumps of grease from a hand operated grease gun.

4.2.4 Clutch Linkage and Levers

Lubricate with engine oil every 500 hours of operation.

4.2.5 Pilot Bearing

Using a hand operated grease gun, add 1 or 2 shots of grease per 100 hrs. of operation.

Note:

Cartridge-type pilot bearings are sealed units and require no additional lubrication.

The lubrication intervals and the amount of grease used should be adjusted to minimize the amount of grease forced out of the bearing housing and the the clutch release bearing. A small amount of grease driven from the bearing housing and clutch release bearing is an indication that enough grease is being provided.

4.3 Bearing Operating Temperature.

4.3.1 Main Bearing

Operating temperature range is normally between 170°F. and 200°F. (76.7°C. to 93.3°C.) Locations with high ambient temperatures such as desert climates will cause the bearings to run hotter. More frequent lubrication intervals and/or specialized grease designed for higher operating temperatures will be required.

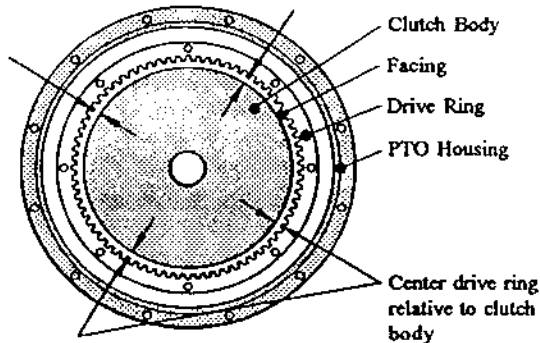
Note:

There is a tendency to test temperature with the hand. However, it is difficult to hold a hand on a bearing housing operating at 150°F. (65.6°C.) although that temperature is below the normal 170F. operating temperature of the PTO. Therefore a thermometer (contact type) should be used to make reasonably accurate temperature measurements.

5.0 Installation Information

5.1 Preparation.

Do not disengage the clutch before installing the PTO on the engine. Disengagement allows the clutch plates to slip out of the correctly aligned positions established at the factory.



5.1.1 If the facing plates have become misaligned, they may be realigned by using the drive ring as a gauge. If the plates require alignment, follow the procedure outlined below.

5.1.2 Support the PTO unit with the output shaft hanging straight down. Blocks or a hoist can be used to hold the PTO in position.

5.1.3 Use the clutch drive ring provided with the PTO or remove the drive ring from the engine flywheel to use as an alignment gauge. Place the drive ring over the clutch facings with the clutch disengaged. Engage the drive teeth of the facings with the drive ring and align the facings by centering the drive ring relative to the O.D. of the clutch body. While holding the drive ring and facings centered, engage the clutch.

5.1.4 Remove the drive ring.

5.2 Flywheel and flywheel housing alignment checks

It is strongly recommended that dial indicator checks be made (as shown in 3.7) prior to installation of the PTO, especially on new engines or when bearing failures or shaft wear were found after the previous PTO was removed and examined for cause of failure.

5.3 Lubrication required before installation.

5.3.1 See 4.1 for information on the type(s) of lubricant(s) required.

5.3.2 Lubricate as follows before installation

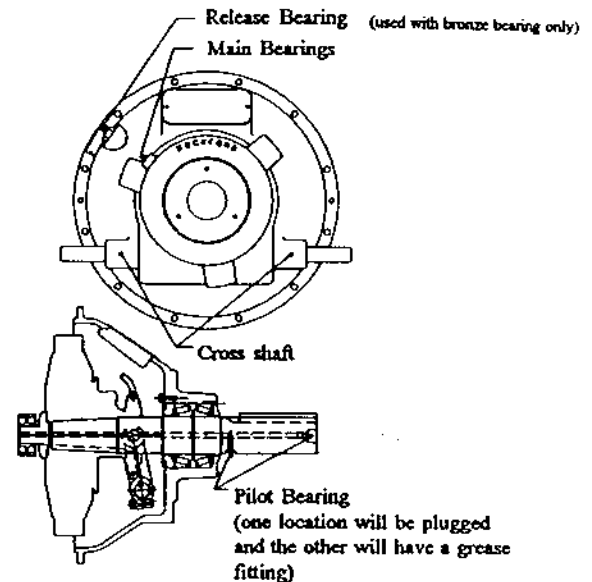
Release bearing

Non-greasible Ball Bearing type release bearing:
Sealed bearing- no lubrication required.

Bronze & greasible Ball-Type release bearing:

With a hand operated grease gun, add 1 or 2 shots of

grease per 8-10 hrs. operation (or until grease begins to weep from the I.D. of the bearing and the release sleeve. Rotate the shaft (by hand) while adding grease. Do Not Overgrease!!



Main bearing:

With a hand operated grease gun, add 1 or 2 pumps of grease while rotating the shaft (by hand), or until grease weeps from the labyrinth seals around the shaft at either end of the bearing housing.

Pilot bearing lube passage:

Some PTOs have a hole drilled through the length of the shaft to provide lube to the pilot bearing. The grease fitting may be located either at the end or to the side of the output shaft. Add grease until the center passage is filled with grease. Be sure that the shipping plug is removed from the pilot bearing end of the shaft.

Cross shaft:

Pump 1 or 2 shots of grease into each of the grease fittings located in the PTO housing, near each end of the cross shaft.

5.4 Install the PTO on the engine

5.4.1 Install the drive ring on the engine flywheel. Be sure that the ring is seated in the locating bore. Use U.S.A. SAE Grade 5 bolts (or equivalent) with lockwashers. Torque the bolts according to the chart below.

Clutch Size and Type	Bolt Size	Torque Specification
6 1/2" HE	5/16-18	15-18 ft.-lbs. (20-24 Nm)
7 1/2" HE	5/16-18	15-18 ft.-lbs. (20-24 Nm)
8" HE	3/8-16	26-32 ft.-lbs. (32-43 Nm)
10" HE	3/8-16	26-32 ft. lbs. (32-43 Nm)
11 1/2" HE	3/8-16	26-32 ft. lbs. (32-43 Nm)
11 1/2" HE(DP)	3/8-16	26-32 ft. lbs. (32-43 Nm)

Use the engine manufacturer's torque specifications if different from the above.

5.4.2 Pack the flywheel pilot bearing cavity with grease. Install the pilot bearing in the flywheel. Be sure that the pilot bearing spacer, if used, is in place. Two types of spacers may be used. Spacers may be installed in the flywheel to keep the pilot bearing from going too far into the bore in the flywheel, and a spacer may be used on the pilot end of the PTO shaft between the pilot bearing and the PTO to help maintain proper pilot bearing location in the flywheel bore.

5.4.3 Install the PTO

Caution:

Avoid force in installing the PTO to avoid damaging the teeth in the clutch facing during the installation process.

Install bolts and lockwashers. Use U.S.A. SAE Grade 5 bolts (or equivalent) with lockwashers. Torque bolts according to the chart below.

SAE Housing Size	Bolt Size	Torque Specification
*1	7/16-14	42-50 ft.-lbs. (57-68 Nm)
*2	3/8-16	26-32 ft.-lbs. (32-43 Nm)
*3	3/8-16	26-32 ft.-lbs. (32-43 Nm)
*4	3/8-16	26-32 ft.-lbs. (32-43 Nm)
*5	3/8-16	26-32 ft.-lbs. (32-43 Nm)
*6	3/8-16	26-32 ft.-lbs. (32-43 Nm)

Use the engine manufacturer's torque specifications if different from the above torque recommendation.

5.5 Correct Handle Installation Position.



Install the clutch handle or release mechanism. Position the handle so that it is pointing either straight up or straight down. Positioning the lever vertically minimizes loading on the release bearing. If an external clutch engagement mechanism is used, be sure there is no load on the release bearing either toward the engaged or released position.

5.6 Clutch Adjustment Procedure.

Rockford® power take-offs with HE clutches described in this manual do not automatically adjust to compensate for wear of the clutch facing(s). The owner/operator must periodically adjust the clutch to ensure correct clutch operation.

The clutch should be adjusted if the force require to engage the clutch drops by 10-15% of the specified engagement force. (See 3.9.1 or 3.9.2) Clutch engagement force should be continually monitored so proper clutch adjustment is maintained. Destructive damage may have already occurred if en-

gagement force is allowed to diminish to the point where the clutch fails to carry the load (slippage), if facing(s) have overheated, or if the clutch self-disengages (normally a result of improper clutch adjustment).

Note:

New clutches or new facings usually require several, frequent adjustments until the friction facing surfaces have "worn in". The clutch friction facing will become glazed, and possibly permanently damaged if the clutch is permitted to slip excessively.

5.6.1 Adjust the clutch.

Measure the distance from the middle of the handle grip location to the center of the cross-shaft. Attach a spring scale to the handle at the location specified below and pull the scale perpendicular to the handle-to measure the force required to engage the clutch.

Refer to the chart at 3.9.1 for adjustment specifications

If the clutch requires adjustment, remove the PTO nameplate, disengage the clutch and rotate it to gain access to the adjusting ring lock.

Remove the lock bolt and adjustment lock

Rotate the adjusting ring counter-clockwise to tighten the clutch. Rotating the adjusting ring clockwise will loosen the clutch. Adjust to obtain the proper handle engagement force.

When clutch is properly adjusted, reposition the locking finger in a slot. Tighten the adjustment lock bolt.

Note:

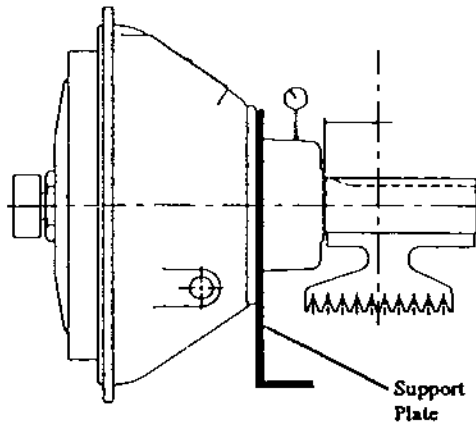
A new clutch installation usually requires several adjustments until the friction facing surfaces have "worn in". Clutch friction facing will become glazed, and possibly permanently damaged, if the clutch is permitted to slip excessively.

5.7 Attaching and shimming the PTO support plate

The following shimming procedures for shimming the support plate and outboard bearing must be carefully followed. The outboard bearing will help to support the side loads imposed on the PTO shaft by the belts. If the three bearings are not installed so that the center of the PTO shaft is in a straight line, reduced bearing life will occur. It is therefore important that the internal PTO bearings be properly installed and adjusted, and that neither the support plate nor the outboard bearing impose a load which would tend to bow the centerline of the PTO shaft.

Note: Rockford Powertrain does not supply support plates or outboard bearings.

5.7.1 Attach the power take off to the engine, preferably without a pulley or any other component attached to the PTO shaft.



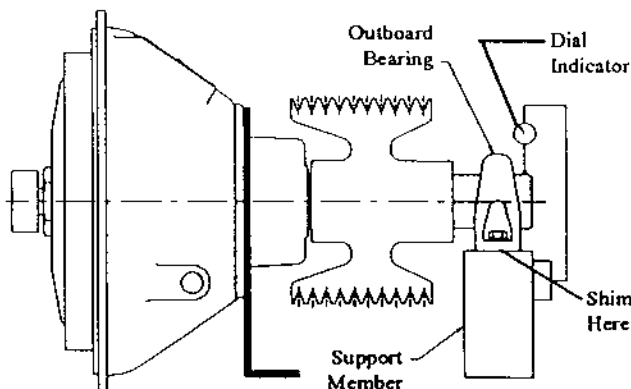
5.7.2 Mount (2) dial indicators 90° apart to a solid base or solid part of the engine (only one indicator is illustrated).

5.7.3 Place the points of the dial indicators against the top and side of the bearing housing, as far to the rear of the PTO as possible. Set the dial indicators to read zero.

5.7.4 Bolt the support plate to the PTO. Begin tightening the bolts which affix the support plate to the base. Read the dial indicators. Add shims until the indicators read 0+ 0.001 inches (0.0254 mm.), after the mounting bolts have been installed and properly torqued. The dial indicator readings must remain within + 0.001 inches (0.0254 mm) of zero. The support plate is intended to maintain alignment of the bearings when a side load is imposed on the output shaft.

5.7.5 Install the sheave or other drive component on the shaft. The pulley must be mounted so that the center of the side load is as close to the center of the main bearings as possible.

5.8 Attaching and Shimming an outboard shaft support bearing.



5.8.1 The power take off must be bolted to the engine.

5.8.2 Align the support plate as described in section 5.7.

5.8.3 Bolt and torque the outboard bearing support member to the frame.

5.8.4 Install the outboard bearing on the PTO shaft in the position where it will later be tightened to the outboard bearing support member. Install shims between the outboard bearing and the support member, but leave a gap in the shims at this time.

5.8.5 Secure (2) dial indicators to a solid base. Place the points of the indicators on top and side of the shaft, as close as possible to the outboard bearing. Set the dial indicators to "0".

5.8.6 Properly torque the bolts securing the outboard bearing to the support member.

5.8.7 Read the dial indicator. Add shims until the indicator reads 0+ 0.001 inches (0.0254 mm.) after installing and properly torquing the mounting bolts.

5.8.8 Tighten the belts. The belts should not be tightened until all the mounting bolts have been tightened.

6.0 Operation

6.1 Clutch Engagement

6.1.1 The PTO clutch should normally be engaged with the engine operating below 1,000 RPM. After the load has been brought up to engine speed, and the clutch is no longer slipping, the engine speed may be increased to operating speed.

6.1.2 Where high inertia loads must be picked up, engaging the clutch at 1,000 RPM may result in stalling the engine. Heavy inertia loads may be brought up to speed by a series of short engagements and disengagements at intervals long enough to prevent excessive heat build up in the facings. Under extreme circumstances, the engine may have to be operated at higher speeds while engagement occurs, but **UNDER NO CIRCUMSTANCES** should the clutch be slipped for more than a second or two without either fully engaging the clutch or completely disengaging the clutch to permit it to cool.

7.0 Rockford Powertrain Limited Warranty

Rockford Powertrain, Inc. warrants its new products to the consumer to be free from defects in material and workmanship under normal use and service.

This warranty does not apply to any part which shall have been repaired or altered by anyone not the authorized representative of Rockford Powertrain, Inc. so as in our judgement to affect its stability, strength, and reliability nor any part subject to misuse, negligence, accident, or improper installation.

In addition, this warranty does not apply unless the Rockford Powertrain product is serviced in accordance with Rockford Powertrain, Inc. recommendations and is installed in a Rockford Powertrain, Inc. approved application, including use of correct lubricant.

Rockford Powertrain's responsibility under this warranty is limited to making good at its factory, at no cost to the owner, any part or parts of such product from a Rockford Powertrain, Inc. approved application which shall be returned to us transportation charges prepaid within six (6) months from the date of delivery of said products to the consumer or the original purchaser (but not to exceed ninety (90) days of service), whichever occurs first, and proof thereof from date of installation, and which examination shall disclose to our satisfaction to have been thus defective.

User accepts the responsibility of operating and maintaining the Rockford Powertrain product in accordance with Rockford Powertrain's recommendations and standard maintenance practices as described in Rockford® Manuals and bulletins.

A request for information and/or repair of any Rockford Powertrain product may be initiated by contacting Rockford Powertrain, Inc., Rockford, Illinois, United States of America, or any authorized Rockford distributor.

THE WARRANTIES CONTAINED HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. We neither assume nor authorize any person to assume for us any other liability in connection with the power take off.

IN NO EVENT SHALL ROCKFORD POWERTRAIN, INC. BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

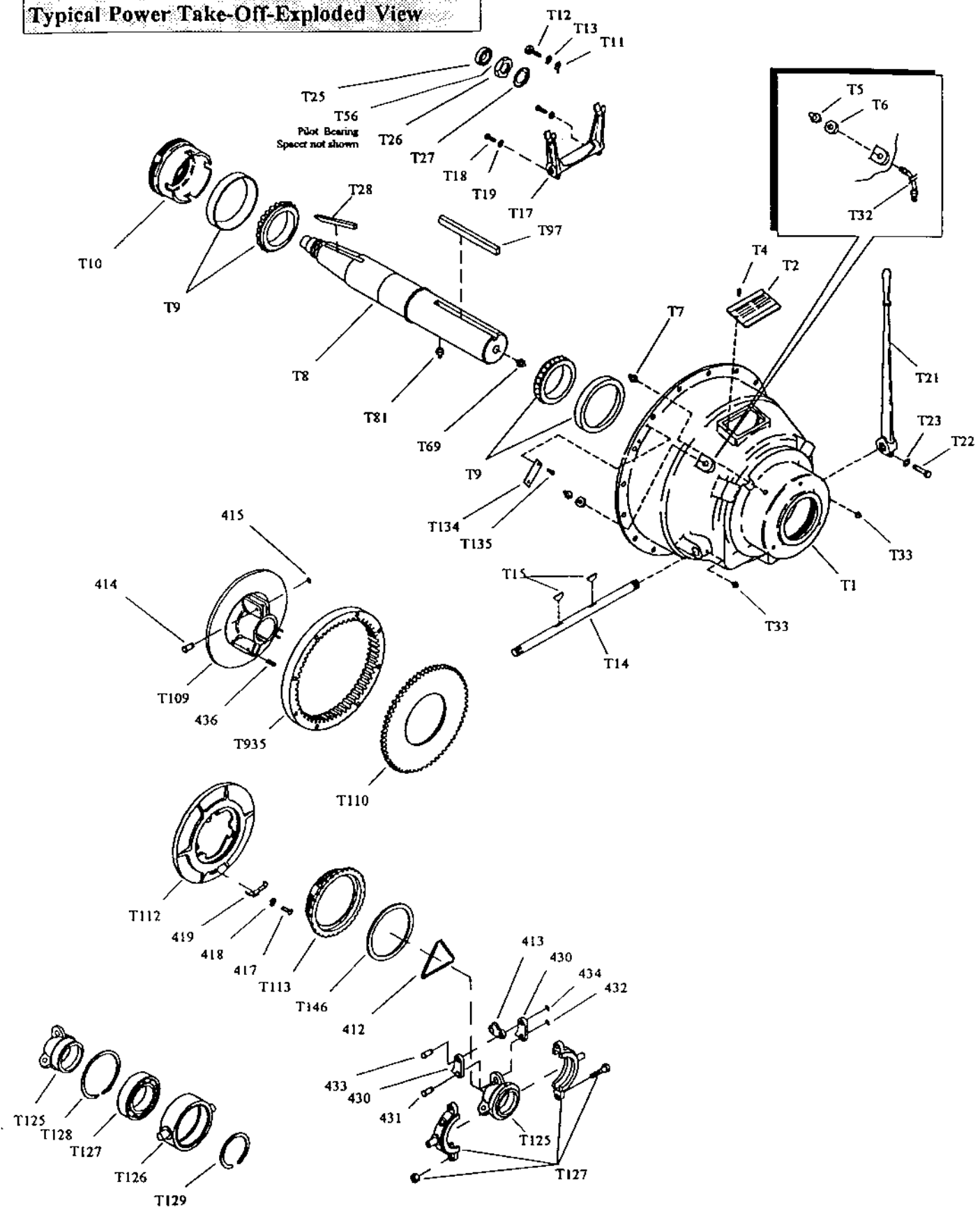
THIS LIMITED WARRANTY IS APPLICABLE TO MECHANICS® AND ROCKFORD® PRODUCTS MARKETED BY ROCKFORD POWERTRAIN, INC., EXCLUDING ROCKFORD® FAN DRIVE PRODUCTS.

Typical Power Take-Off List of Parts (see illustration next page)

Item	Item Name	Qty.	Item	Item Name	Qty.
T1	Bell Housing	1	T79	Clutch Assembly	1
T2	Name Plate	1		(includes all parts listed below	
T4	Bolt	2		except T935 Drive Ring)	
T5	Grease Zerk	1	T109	Clutch Body	1
T6	Jam Nut	1	T110	Facing Plate	1
T7	Grease Zerk	1	T112	Pressure Plate	1
T8	Drive Shaft	1	T113	Adjusting Ring	1
T9	Main Bearings	2	412	Lever Spring	1
T10	Bearing Retainer	1	413	Lever	3
T11	Adjusting Lock	1	414	Clevis Pin	3
T12	Lock Bolt	1	415	Retaining Ring	3
T13	Lock Washer	1	417	Lock Bolt	1
T14	Cross Shaft	1	418	Lock Washer	1
T15	Woodruff Key	2	419	Adjustment Lock	1
T17	Release Yoke	1	430	Link	6
T18	Bolt	2	431	Clevis Pin	3
T19	Washer	2	432	Retaining Ring	3
T21	Shifting Lever	1	433	Clevis Pin	3
T22	Bolt	1	434	Retaining Ring	3
T23	Washer	1	436	Separator Spring	3
T25	Pilot Bearing	1	T125	Release Sleeve	1
T26	Nut	1	T126	Bearing Carrier	1
T27	Locking Washer	1	T127	Release Bearing	1
T28	Clutch Key	1	T128	Internal Snapping	1
T32	Grease Tube	1	T129	External Snapping	1
T33	Grease Fitting (cross shaft)	2	T146	Wear Ring	1
T56	Bearing Spacer ¹	1	T935	Drive Ring	1
T69	Grease Fitting (end of shaft)	1			
T78	Headless Setscrew ¹	1			
T79	Clutch Assembly	1			
T81	Pipe Plug	1			
T97	Output Key	1			
T134	Nameplate	1			
T135	Drive Screw	2			

¹ not shown

Typical Power Take-Off-Exploded View



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