

Pump / PTO Combination Reference Chart - (Chelsea & Muncie)

Transmission Make & Model / PTO Manufacturer Reference Number	Pump Model & Capacity In GPM	Pump Trans. Ratio	Chelsea PTO Model	PTO % Of Engine Speed	Pump Test 100% GPM @ 150 PSI (Engine RPM)	Pump Test 70% GPM @ 200 PSI (Engine RPM)	Pump Test 50% GPM @ 250 PSI (Engine RPM)	Pump Test 100% GPM @ 165 PSI (Engine RPM)	Pump (Horse power) Req'd	PTO Continuous Torque Rating (ft.-lbs.)	Pump Torque Required (ft.-lbs.)
Allison 3000 EVS & 3500 EVS with Left & Right PTO Ports (Chelsea ALL-13)	CPK-2-250	3.40	280GGFJP.*	103%	1678	1814	1999	NA**	38	360	111
	CPK-2-250	4.00	280GGFJP.*	103%	1426	1542	1699	NA**	38	360	125
	CPK-2-300	3.40	280GKFJP.*	115%	1598	1663	1803	NA**	44	340	126
	CPK-3-500	3.40	280GGFJP.*	103%	1856	1842	1642	NA**	87	360	247
	CL K-500	2.93	280GGFJP.*	103%	1583	1698	1863	NA**	76	360	216
	CL PA-500	2.10	870XGFJP.*	145%	1568	1683	1846	NA**	76	334	155
	CG K-500	2.14	280GKFJP.*	115%	1520	1698	1870	NA**	95	340	232
	CG K-500	2.14	870XEFJP.*	113%	1547	1728	1903	NA**	95	429	232
	CG K-500	2.45	280GGFJP.*	103%	1483	1656	1823	NA**	95	360	266
	CG PA-500	1.90	280GMFJP.*	129%	1526	1705	1877	NA**	95	318	206
	CG PA-500	2.10	280GKFJP.*	115%	1549	1730	1904	NA**	95	340	228
	CG PA-500	2.10	870XEFJP.*	113%	1576	1761	1938	NA**	95	429	228
	CG PA-750	1.90	280GMFJP.*	129%	1654	1736	1895	1709	107	318	255
	CG PA-750	1.90	870XFFJP.*	128%	1667	1749	1910	1723	107	379	255
	CG PA-750	2.10	280GMFJP.*	129%	1497	1571	1715	1547	107	318	282
	CG PA-750	2.10	870XEFJP.*	113%	1709	1793	1958	1765	107	429	282
	CG PA-750	2.10	870XFFJP.*	128%	1509	1583	1728	1559	107	379	282
	CG K-750	2.14	870XEFJP.*	113%	1677	1759	1921	1733	107	429	287
	CG K-750	2.45	280GGFJP.*	103%	1607	1686	1841	1660	107	360	329
	CX(S) K-750	1.88	870XEFJP.*	113%	1601	1798	2015	1664	160	429	369
	CX(S) K-750	2.14	870XEFJP.*	113%	1406	1580	1770	1462	160	429	420
	CX(S) PA-750	1.70	870XFFJP.*	128%	1563	1755	1967	1624	160	379	334
	CX(S) PA-750	1.90	870XEFJP.*	113%	1583	1780	1994	1647	160	429	373
	CX(S) PA-750	2.10	870XEFJP.*	113%	1433	1610	1804	1489	160	429	412
	CX(S) K-1000	1.88	870XEFJP.*	113%	1652	1827	2019	1718	168	429	387
	CX(S) K-1000	2.14	870XDFJP.*	99%	1657	1831	2025	1723	168	490	440
	CX(S) K-1250****	2.14	870XCFJP.*	93%	1854	1974	2168	1927	179	522	495
	CX(S) PA-1000	1.70	870XFFJP.*	128%	1613	1783	1972	1677	168	379	350
	CX(S) PA-1000	1.90	870XEFJP.*	113%	1635	1807	1998	1700	168	429	391
	CX(S) PA-1250	2.10	870XDFJP.*	99%	1775	1889	2076	1844	179	490	486
	CS PA-750	1.70	870XFFJP.*	128%	1419	1606	1794	1476	143	379	327
	CS PA-750	1.90	870XEFJP.*	113%	1438	1628	1819	1496	143	429	365
	CS PA-750	2.10	870XDFJP.*	99%	1485	1682	1878	1545	143	490	404
	CS PA-1000	1.90	870XEFJP.*	113%	1462	1634	1824	1523	153	429	412
	CS PA-1000	2.10	870XDFJP.*	99%	1510	1687	1884	1573	153	490	455
	CS PA-1250	1.90	870XDFJP.*	99%	1729	1877	2088	1786	170	490	490
	CSK-750	1.88	870XEFJP.*	113%	1453	1646	1838	1512	143	429	362
	CSK-1000	1.88	870XEFJP.*	113%	1478	1650	1843	1539	153	429	408
	CSK-1250	1.88	870XDFJP.*	99%	1747	1897	2110	1805	170	490	485
	CM PA-500	1.70	280GMFJP.*	129%	1589	1803	1450	NA**	106	318	239
	CM PA-500	1.90	280GKFJP.*	115%	1595	1810	1456	NA**	106	340	267
	CM PA-500	2.10	280GGFJP.*	103%	1612	1828	1470	NA**	106	360	296
	CM PA-750	1.70	870XFFJP.*	128%	1618	1834	1494	1698	133	379	300
	CM PA-750	1.90	870XEFJP.*	113%	1640	1858	1514	1721	133	429	335
	CM PA-750	2.10	870XDFJP.*	99%	1693	1919	1654	1778	133	490	370
	CM PA-1000	1.70	870XFFJP.*	128%	1673	1845	1558	1744	150	379	351
	CM PA-1000	1.90	870XEFJP.*	113%	1696	1870	1579	1767	150	429	392
	CM PA-1000	2.10	870XDFJP.*	99%	1751	1931	1630	1825	150	490	433
	CM PA-1250	2.10	870XCFJP.*	93%	1941	2078	1820	2015	181	522	507
	CMK-1250	2.14	870XCFJP.*	93%	1904	2040	1786	1977	181	522	517

Transmission Make & Model / PTO Manufacturer Reference Number	Pump Model & Capacity In GPM	Pump Trans. Ratio	Chelsea PTO Model	PTO Engine Speed	Pump Test 100% GPM @ 150 PSI (Engine RPM)	Pump Test 70% GPM @ 200 PSI (Engine RPM)	Pump Test 50% GPM @ 250 PSI (Engine RPM)	Pump Test 100% GPM @ 165 PSI (Engine RPM)	Pump (Horse power) Req'd	PTO Continuous Torque Rating (ft. lbs.)	Pump Torque Required (ft.-lbs.)
Allison 3000 EVS & 3500 EVS with Left & Top PTO Ports (Chelsea ALL-16EV)	CS PA-1250	1.70	870XDFJP-*	121%	1582	1716	1909	1633	170	554	439
	CS PA-1250	1.90	870XCFJP-*	114%	1502	1630	1813	1551	170	588	490
	CS PA-1250	2.10	870XBFJP-*	106%	1461	1586	1764	1509	170	632	542
	CSK-1250	1.88	870XCFJP-*	114%	1518	1647	1832	1568	170	588	485
	CM PA-1250	1.70	870XDFJP-*	121%	1842	1974	1728	1913	181	554	411
	CM PA-1250	1.90	870XCFJP-*	114%	1750	1875	1641	1817	181	588	459
	CM PA-1250	2.10	870XBFJP-*	106%	1703	1824	1597	1768	181	632	507
	CX(S) PA-1250	1.90	870XCFJP-*	114%	1704	1813	1992	1770	179	588	440
	CX(S) PA-1250	2.10	870XCFJP-*	114%	1541	1640	1803	1602	179	588	486
	CX(S) PA-1500	1.90	870XDFJP-*	121%	1740	1740	1892	1783	210	554	511
	CX(S) K-1250	2.14	870XCFJP-*	114%	1512	1611	1768	1572	179	588	495
	CX(S) K-1500	2.14	870XBFJP-*	106%	1763	1763	1918	1808	210	632	576
	CSU K-1500	2.00	870XBFJP-*	106%	1642	1750	1934	1698	208	632	584
	CSU PA-1500	1.90	870XCFJP-*	114%	1607	1713	1893	1662	208	588	554
	CMU K-1500	1.69	870XCFJP-*	114%	1801	1962	1713	1868	212	588	523
Allison 4000 EVS & 4500 EVS with Left & Top PTO Ports (Chelsea ALL-14)	CS PA-1250	1.70	870XBFJP-*	124%	1544	1674	1863	1594	170	552	439
	CS PA-1250	1.90	870XAFJP-*	116%	1476	1602	1782	1524	170	591	490
	CSK-1250	1.65	870XBFJP-*	124%	1590	1725	1919	1642	170	552	426
	CM PA-1250	1.70	870XBFJP-*	124%	1798	1926	1686	1867	181	552	411
	CM PA-1250	1.90	870XAFJP-*	116%	1720	1842	1613	1785	181	591	459
	CMK-1250	1.88	870XAFJP-*	116%	1738	1862	1630	1804	181	591	454
	CX(S) PA-1250	1.90	870XAFJP-*	116%	1674	1782	1958	1740	179	591	440
	CX(S) K-1250	1.88	870XAFJP-*	116%	1692	1801	1978	1759	179	591	435
	CX(S) K-1500	1.88	870XBFJP-*	124%	1716	1716	1866	1759	210	552	506
	CX(S) K-1500	1.88	870XAFJP-*	116%	1834	1834	1995	1880	210	591	506
	CSU K-1500	2.00	870XAFJP-*	116%	1500	1599	1767	1552	208	591	584
	CMU K-1500	1.69	870XAFJP-*	116%	1770	1928	1684	1836	212	591	523
Ford F550 Torqshift 10 with Left PTO Port (Chelsea FRD-13) *Limit Maximum Engine RPM to 2,450	CPK-2-250	2.93	210FMMFP-•2 4X2 Chassis	144%	1392	1505	1659	1446	38	188	96
	CPK-2-250	2.93	210FMMFP-•2 4X2 Chassis	144%	1200	1297	1430	1246	38	188	111
	CPK-2-300	2.93	210FMMFP-•4 4X4 Chassis	144%	1481	1540	1671	1446	44	188	108
	CPK-2-300	2.93	210FMMFP-•4 4X4 Chassis	144%	1276	1328	1440	1246	44	188	126

Transmission Make & Model / PTO Manufacturer Reference Number	Pump Model & Capacity In GPM	Pump Trans. Ratio	Muncie PTO Model	PTO % Of Engine Speed	Pump Test 100% GPM @ 150 PSI (Engine RPM)	Pump Test 70% GPM @ 200 PSI (Engine RPM)	Pump Test 50% GPM @ 250 PSI (Engine RPM)	Pump Test 100% GPM @ 165 PSI (Engine RPM)	Pump (Horse power) Req'd	PTO Continuous Torque Rating (ft.-lbs.)	Pump Torque Required (ft.-lbs.)
Allison 3000 EVS & 3500 EVS with Left & Right PTO Ports (Muncie ALLI-05)	CPK-2-250	3.40	A20-A1008-*	114%	1516	1639	1806	NA**	38	360	106
	CPK-2-250	4.00	A20-A1007-*	99%	1484	1604	1768	NA**	38	415	125
	CPK-2-300	4.00	A20-A1007-*	99%	1579	1641	1781	NA**	44	415	148
	CPK-3-500	3.40	A20-A1008-*	114%	1677	1664	1483	NA**	81	360	239
	CL K-500	2.93	A20-A1007-*	99%	1646	1767	1938	NA**	76	415	223
	CL PA-500	2.10	A20-A1010-*	131%	1736	1863	2044	NA**	76	310	155
	CG K-500	2.14	A20-A1009-*	122%	1460	1631	1795	NA**	95	340	232
	CG K-500	2.14	A20-A1008-*	114%	1533	1713	1886	NA**	95	360	232
	CG K-500	2.45	A20-A1007-*	99%	1542	1723	1897	NA**	95	415	266
	CG PA-500	1.90	A20-A1010-*	131%	1502	1679	1848	NA**	95	310	206
	CG PA-500	2.10	A20-A1008-*	114%	1562	1746	1921	NA**	95	360	228
	CG PA-500	2.10	A20-A1009-*	122%	1460	1631	1795	NA**	95	340	228
	CG PA-750	1.90	A20-A1009-*	122%	1749	1835	2004	1807	107	340	255
	CG PA-750	1.90	A20-A1010-*	131%	1629	1709	1866	1683	107	310	255
	CG PA-750	2.10	A20-A1008-*	114%	1694	1177	1940	1750	107	360	282
	CG PA -750	2.10	A20-A1009-*	122%	1583	1661	1813	1635	107	340	282
	CG PA -750	2.10	A20-A1010-*	131%	1474	1547	1689	1523	107	310	282
	CG K-750	2.14	A20-A1008-*	114%	1662	1744	1904	1718	107	360	287
	CG K-750	2.45	A20-A1008-*	114%	1452	1524	1663	1150	107	360	329
	CS PA-750	1.70	A20-A1009-*	122%	1489	1685	1882	1548	143	340	327
	CS PA-750	2.10	A20-A1007-*	99%	1485	1682	1876	1545	143	415	404
	CS PA-1000	1.90	A20-A1007-*	99%	1669	1865	2082	1738	153	415	412
	CSK-750	2.14	A20-A1007-*	99%	1458	1651	1842	1516	143	415	362
	CM PA-500	1.70	A20-A1009-*	122%	1680	1907	1534	1757	106	340	239
	CM PA-500	1.90	A20-A1008-*	114%	1609	1826	1468	1682	106	360	267
	CM PA-500	2.10	A20-A1007-*	99%	1677	1902	1529	1754	106	415	290
	CM PA-750	1.70	A20-A1009-*	122%	1698	1924	1567	1782	133	340	300
	CM PA-750	1.90	A20-A1008-*	114%	1625	1842	1501	1706	133	360	335
	CM PA-750	2.10	A20-A1007-*	99%	1693	1919	1564	1778	133	415	370

Transmission Make & Model / PTO Manufacturer Reference Number	Pump Model & Capacity GPM	Pump Trans Ratio	Muncie PTO Model	PTO % Of Engine Speed	Pump Test 100% GPM @ 150 PSI (Engine RPM)	Pump Test 70% GPM @ 200 PSI (Engine RPM)	Pump Test 50% GPM @ 250 PSI (Engine RPM)	Pump Test 100% GPM @ 165 PSI (Engine RPM)	Pump (Horse power) Req'd	PTO Continuous Torque Rating (ft.-lbs.)	Pump Torque Required (ft.-lbs.)
Allison 3000 EVS & 3500 EVS with Left and Top PTO Ports (Muncie ALLI-10)	CS PA-1250	1.70	CD40-A1007-*	122%	1569	1702	1893	1620	170	600	439
	CS PA-1250	1.90	CD40-A1007-*	122%	1403	1523	1694	1449	170	600	490
	CM PA-1250	1.70	CD40-A1007-*	122%	1827	1957	1714	1898	181	600	411
	CM PA-1250	1.90	CD40-A1007-*	122%	1635	1752	1534	1698	181	600	459
	CX(S) PA-1250	1.90	CD40-A1007-*	122%	1592	1694	1861	1654	179	600	440
	CX(S) PA-1250	2.10	CD40-A1007-*	122%	1440	1533	1684	1497	179	600	486
	CX(S) K-1250	1.88	CD40-A1007-*	122%	1609	1712	1881	1672	179	600	435
	CSU K-1500	1.69	CD40-A1007-*	122%	1622	1739	1882	1673	205	600	528
	CMU K-1500	1.69	CD40-A1007-*	122%	1683	1834	1601	1746	212	600	523
Allison 4000 EVS & 4500 EVS with Left & Top PTO Ports (Muncie ALLI-06)	CM PA-1250	1.70	A30-A1007-*	141%	1581	1694	1483	1642	181	415	411
	CX(S) PA-1250	1.70	A30-A1006-*	122%	1780	1894	2080***	2849	179	400	393
	CX(S) K-1250	1.56	A30-A1007-*	141%	1677	1786	1962	1743	179	415	361
Ford 10R140 10 Speed or 4x4 Diesel 2020 and Later Left Side Port (FORD-12)	CPK-2-250	2.93	F20-F1312	130%	1542	1667	1838	1602	38	261	96
	CPK-2-300	2.93	F20-F1312	130%	1641	1706	1851	1602	44	261	108
NOTE: Some PTO/Pump ratiocombinations may exceed the rated maximum RPM of the pump and should be avoided (see Form F-1052 Power and Speed Data for Transmissions). The PTO listed on this work sheet is only a suggestion of one PTO that may be suitable for this application and is not an endorsement by Waterous Company. Final approval of the application should be granted by the PTO manufacturer chosen.											
NOTE: Engine RPM may vary 3% above or below the values shown on this document. Pump horsepower required may vary 5% above or below the values shown on this document. (See Form F-1096 Fire Pump Performance - General Information).											
* Complete partnumber to be determined by PTO manufacturer.											
** Not Applicable. Pumping Engine Overload Test: Required if the pump has a rated capacity of 750 GPM (3000 L/min) or greater.											
*** Check with PTO manufacturer if approval needed. Otherwise see (Chelsea ALL-16EV) or (Chelsea ALL-14) and use Allison transmission with left & Top PTO Ports.											
**** PTO only suggested if engines governed RPM is 2300 RPM or higher.											