WATEROUS SINCE 1886

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	1868	2059	NA**	38	360	106
	CPK-2-250	4.00	280GGFJP-*	103%	1469	1588	1699	NA**	38	360	125
	CPK-2-300	3.40	280GKFJP-*	115%	1598	1663	1803	NA**	44	360	148
	CPK-3-500	3.40	280GGFJP-*	103%	1856	1842	1642	NA**	81	360	239
	CL K-500	2.93	280GGFJP-*	103%	1583	1698	1863	NA**	76	360	223
	CL PA-500	2.10	870XGFJP-*	145%	1568	1683	1846	NA**	76	334	172
	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	402
	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	870XDFJP-*	99%	1741	1855	2036	1810	179	490	495
	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	1481	NA**	106	340	267
	CM PA-500	2.10	280GGFJP-*	103%	1612	1828	1470	NA**	106	360	290
	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

WATEROUS SINCE 1886

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	1892	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	1928	1684	212	591	523
Ford F550 Torqshift 6 with Left PTO Port (Chelsea FRD-10) *Limit Maximum Engine RPM to 2,450	CPK-2-250	2.93	249FMLLX-*4 4X4 Chassis	124%	1617	1748	1927	1679	38	160	96
	CPK-2-250	2.93	249FMLLX-*2 4X2 Chassis	124%	1617	1748	1927	1679	38	160	96
	CPK-2-300	2.93	249FMLLX-*4 4X4 Chassis	124%	1720	1789	1940	1789	44	160	116
	CPK-2-300	2.93	249FMLLX-*2 4X2 Chassis	124%	1720	1789	1940	1789	44	160	116

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	CS24-A1007-*	100%	1728	1868	2059	NA**	38	305	106
	CPK-2-250	4.00	CS24-A1007-*	100%	1469	1588	1750	NA**	38	305	125
	CPK-2-300	4.00	CS24-A1007-*	100%	1563	1625	1763	NA**	44	305	148
	CPK-3-500	3.40	CS24-A1007-*	100%	1912	1897	1691	NA**	81	305	239
	CL K-500	2.93	CS24-A1007-*	100%	1630	1749	1919	NA**	76	305	223
	CL PA-500	2.10	CS24-A1010-*	132%	1723	1848	2028	NA**	76	290	172
	CG K-500	2.14	CS24-A1008-*	115%	1520	1698	1870	NA**	95	295	232
	CG K-500	2.14	CS40-A1008-*	120%	1457	1628	1792	NA**	95	420	232
	CG K-500	2.45	CS24-A1007-*	100%	1527	1706	1878	NA**	95	305	266
	CG PA-500	1.90	CS24-A1010-*	132%	1491	1667	1834	NA**	95	290	206
	CG PA-500	2.10	CS24-A1008-*	115%	1549	1730	1904	NA**	95	295	228
	CG PA-500	2.10	CS40-A1008-*	120%	1484	1658	1825	NA**	95	420	228
	CG PA-750	1.90	CS24-A1010-*	132%	1617	1696	1852	1670	107	295	255
	CG PA-750	1.90	CS40-A1009-*	128%	1667	1749	1910	1723	107	379	255
	CG PA-750	2.10	CS24-A1010-*	132%	1463	1535	1676	1511	107	295	282
	CG PA -750	2.10	CS40-A1008-*	120%	1609	1688	1843	1663	107	420	282
	CG PA -750	2.10	CS40-A1009-*	128%	1509	1583	1728	1559	107	379	282
	CG K-750	2.14	CS40-A1008-*	120%	1579	1657	1809	1632	107	420	287
	CG K-750	2.45	CS24-A1007-*	100%	1655	1737	1896	1710	107	305	329
	CX(S) K-750	1.88	CS40-A1008-*	120%	1508	1693	1898	1567	160	420	369
	CX(S) K-750	2.14	CS40-A1008-*	120%	1324	1488	1667	1377	160	420	420
	CX(S) PA-750	1.70	CS40-A1009-*	128%	1563	1755	1967	1624	160	379	334
	CX(S) PA-750	1.90	CS40-A1008-*	120%	1491	1676	1878	1551	160	420	373
	CX(S) PA-750	2.10	CS40-A1008-*	120%	1349	1516	1698	1403	160	420	402
	CX(S) K-1000	1.88	CS40-A1008-*	120%	1556	1720	1902	1618	168	420	387
	CX(S) K-1000	2.14	CS40-A1007-*	100%	1640	1813	2005	1706	168	484	440
	CX(S) PA-1000	1.70	CS40-A1009-*	128%	1613	1783	1972	1677	168	379	350
	CX(S) PA-1000	1.90	CS40-A1008-*	120%	1539	1702	1882	1601	168	420	391
	CX(S) PA-1000	2.10	CS40-A1007-*	100%	1671	1848	2043	1738	168	484	432
	CX(S) K-1250	1.88	CS40-A1008-*	120%	1636	1741	1913	1700	179	420	410
	CS PA-750	1.70	CS40-A1009-*	128%	1419	1606	1794	1476	143	379	327
	CS PA-750	1.90	CS40-A1008-*	120%	1354	1533	1713	1409	143	420	365
	CS PA-750	2.10	CS40-1007-**	100%	1470	1665	1859	1530	143	484	404
	CS PA-1000	1.70	CS40-A1009-*	128%	1442	1612	1800	1502	153	379	369
	CS PA-1000	1.90	CS40-A1008-*	120%	1347	1538	1718	1434	153	420	412
	CS PA-1000	2.10	CS40-A1007-*	100%	1495	1670	1865	1557	153	484	455
	CSK-750	1.88	CS24-A1008-*	120%	1368	1550	1731	1424	143	420	362
	CSK-1000	1.88	CS24-A1008-*	120%	1392	1554	1736	1449	153	420	408
	CM PA-500	1.70	CS24-A1010-*	132%	1553	1762	1417	1624	106	295	239
	CM PA-500	1.90	CS24-A1008-*	115%	1595	1810	1456	1668	106	295	267
	CM PA-500	2.10	CS24-A1007-*	100%	1660	1883	1514	1736	106	305	290
	CM PA-750	1.70	CS40-A1009-*	128%	1618	1834	1494	1698	133	379	300
	CM PA-750	1.90	CS40-A1008-*	120%	1448	1641	1337	1520	133	420	335
	CM PA-750	2.10	CS40-A1007-*	100%	1676	1900	1548	1760	133	484	370
	CM PA-1000	1.70	CS40-A1009-*	128%	1673	1845	1558	1744	150	379	351
	CM PA-1000	1.90	CS40-A1008-*	120%	1597	1761	1487	1664	150	420	392
	CM PA-1000	2.10	CS40-A1007-*	100%	1733	1912	1614	1807	150	484	433

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 and Top PTO Ports (Muncie ALLI-10)	CS PA-1250	1.70	CS40-A1007-*	122%	1569	1702	1893	1620	170	554	439
	CS PA-1250	1.90	CS40-A1007-*	122%	1403	1523	1694	1449	170	554	490
	CM PA-1250	1.70	CS40-A1007-*	122%	1827	1957	1714	1898	181	554	411
	CM PA-1250	1.90	CS40-A1007-*	122%	1635	1752	1534	1698	181	554	459
	CX(S) PA-1250	1.70	CS40-A1008-*	147%	1477	1572	1727	1535	179	464	393
	CX(S) PA-1250	1.90	CS40-A1007-*	122%	1592	1694	1861	1654	179	554	440
	CX(S) PA-1250	2.10	CS40-A1007-*	122%	1440	1533	1684	1497	179	554	486
	CX(S) K-1250	1.88	CS40-A1007-*	122%	1609	1712	1881	1672	210	554	435
	CSU K-1500	2.00	CS40-A1007-*	122%	1500	1599	1767	1552	208	591	584
	CMU K-1500	1.69	CS40-A1007-*	122%	1683	1834	1601	1746	212	554	523
Allison 4000 EVS & 4500 EVS with Left & Top PTO Ports (Muncie ALLI-06)	CS PA-1250	1.70	CS40-A1007-*	144%	1329	1442	1604	1449	170	554	490
	CM PA-1250	1.70	CS40-A1007-*	144%	1548	1658	1452	1608	181	554	411
	CX(S) PA-1250	1.70	CS40-A1007-*	144%	1508	1605	1763	1567	179	554	393
	CX(S) K-1250	1.56	CS40-A1007-*	144%	1642	1749	1921	1707	179	554	361
	CX(S) K-1500	1.88	CS40-A1007-*	144%	1478	1478	1607	1515	210	554	506
	CMU K-1500	1.69	CS40-A1007-*	144%	1426	1553	1356	1479	212	554	523
Ford F550 Torqshift 6 with Left PTO Port (Muncie FORD-9) *Limit Maximum Engine RPM to 2,400	CPK-2-250	2.93	FR66-F1209-D3BX (4x2 & 4X4 Chassis)	127%	1579	1706	1881	1639	38	160	96
	CPK-2-300	2.93	FR66-F1209-D3BX (4x2 & 4X4 Chassis)	127%	1680	1746	1846	1746	44	160	116

NOTE: Some PTO/Pump ratio combinations 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 horserpower required may vary 5% above or below the values shown on this document. (See Form F-1096 Fire Pump Perfromance - General Information).

***** Complete part number 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 goverened RPM is 2300 RPM or higher.