

Pile Work Cycle

all energy values in J

[illegible]

Serial Truck-Loading Cycle

all energy values in J

[illegible]

Simultaneous Truck-Loading Cycle

all energy values in J

Reference Setup													Improved, partially displacement-controlled Setup																		
lifting half								lowering half					used (1) or removed (0)	lifting half								lowering half					used (1) or removed (0)				
used (1) or removed (0)	E _{inv}	E _{inv++}	E _{inv-}	E _{impl}	E _{impl+}	E _{impl-}	c _{half}	E _{inv}	E _{inv++}	E _{inv-}	E _{impl}	E _{impl+}		E _{impl-}	c _{half}	used (1) or removed (0)	E _{inv}	E _{inv++}	E _{inv-}	E _{impl}	E _{impl+}	E _{impl-}	c _{half}	E _{inv}	E _{inv++}	E _{inv-}		E _{impl}	E _{impl+}	E _{impl-}	c _{half}
1	540600	540600	0	211390	241100	29710	2.00	1	363900	363900	0	-33080	15010	48070	5.77	0	391600	391600	0	219730	249200	29470	1.41	1	289500	289500	0	-38560	12380	50940	4.26
1	561200	561200	0	231790	264900	33110	1.88	1	359700	359700	0	-36300	13150	49450	5.75	1	388600	388600	0	220670	253700	33030	1.36	1	255100	255100	0	-34250	18180	46060	4.41
1	601100	601100	0	239870	272800	32930	1.97	1	376900	376900	0	-41060	13000	54060	5.62	1	410300	410300	0	232290	266600	34310	1.36	0	355500	355500	0	-3640	22560	26190	7.29
1	582000	582000	0	246430	278100	31670	1.88	1	382900	382900	0	-43220	12050	55270	5.69	1	380200	380200	0	211390	245400	34010	1.36	1	248800	248800	0	-33010	14800	47810	3.97
1	586100	586100	0	220130	263400	43270	1.91	1	389100	389100	0	-46730	10590	57320	5.73	1	369500	369500	0	205830	239300	33470	1.34	1	276200	276200	0	-38080	14540	52620	4.11
0	581200	581200	0	218390	278200	59810	1.72	0	382900	382900	0	-38620	14330	53150	5.5	0	375000	375000	0	209060	244200	35170	1.34	0	270900	270900	0	-38610	11530	50040	4.39
1	545000	545000	0	208740	248500	39760	1.89	1	351400	351400	0	-30060	15480	45540	5.76	0	340300	340300	0	193770	219800	26030	1.38	1	273000	273000	0	-36190	16440	52630	3.95
1	536400	536400	0	212010	243100	31090	1.96	0	355600	355600	0	-27320	13930	41230	5.64	1	401300	401300	0	245110	278900	33790	1.28	1	248700	248700	0	-32550	14330	46880	4.06
1	515000	515000	0	206890	238000	29110	1.93	0	352400	352400	0	-16920	16880	33800	5.95	1	426400	426400	0	267160	301400	34240	1.27	1	263100	263100	0	-32200	15960	48160	4.10
0	573600	573600	0	200750	268100	67350	1.71	1	352600	352600	0	-38120	14640	50760	5.39	1	407600	407600	0	239980	273800	33820	1.33	1	253800	253800	0	-34820	15020	49840	3.91
8								8								8															
c _{half} average							1.93																								4.13
s _c half							0.04																								0.18
													</																		

Pallet-Lifting Cycle

all energy values in J

[illegible]

Pallet-Lowering Cycle

all energy values in J

[illegible]