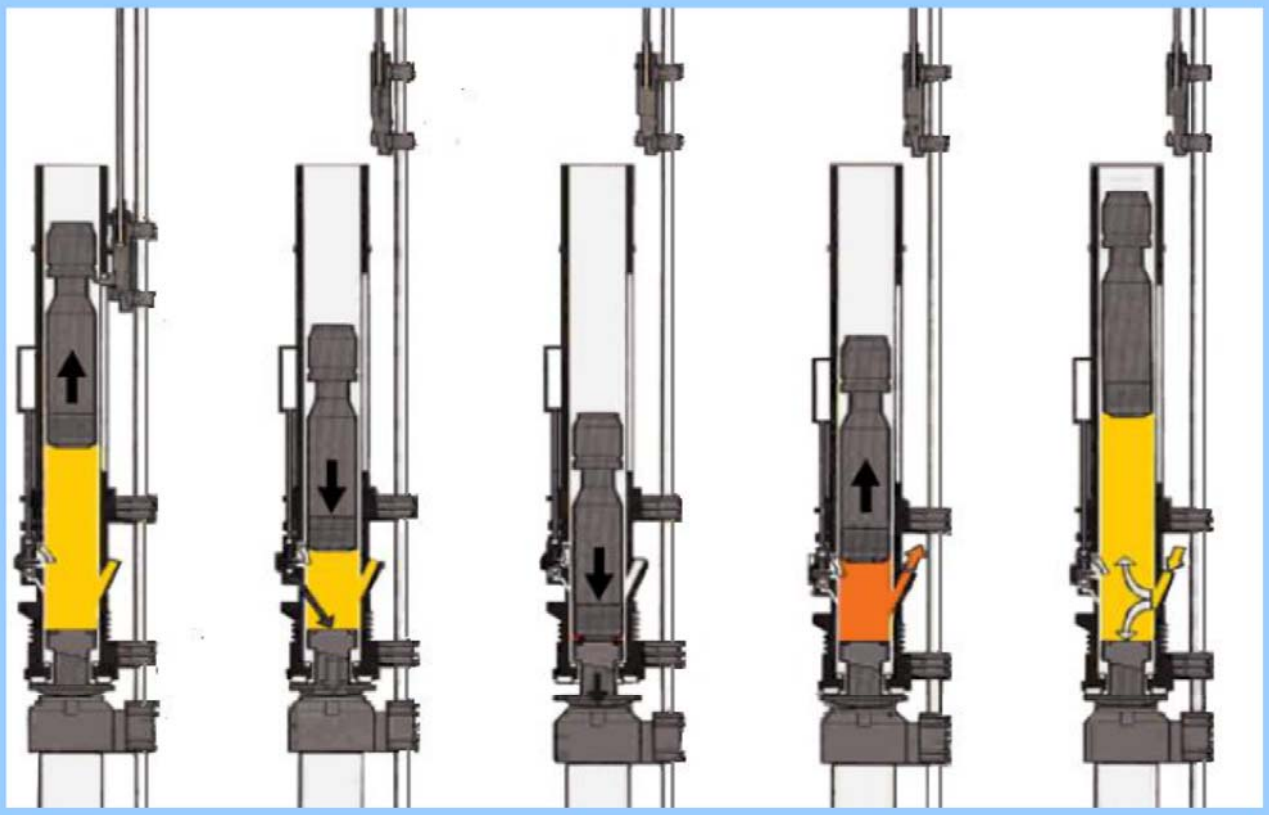



Diesel Hammers

01/2014

Since entering the market in 2006, SPI's high quality and competitive pricing has quickly made it a major supplier to the pile driving equipment industry in the United States. SPI has the knowledge, experience and capability to become your principal supplier for high quality diesel pile hammers and well-machined piling parts and accessories. With dealers throughout the United States, SPI is committed to providing your business with competitive pricing, timely delivery and quality service.



Raising the piston (starting)

For starting the diesel hammer, the piston (ram) is raised by means of trip gear and is automatically released at a certain height.

Injection of diesel fuel and compression

Falling piston actuates the pump lever on the back of the fuel pump, which injects a measured amount of diesel fuel on to the top of the impact block. Compression of the air in the cylinder starts the moment the falling piston passes the exhaust ports. The increasing compression presses the impact block and pile helmet firmly onto the pile head.

Impact and explosion

When the piston strikes the top of the impact block, the heat generated by the compression of air, in the presence of atomized fuel, causes the explosion of the fuel, throwing the piston upward and forcing the impact block downward to drive the piles further into the ground.

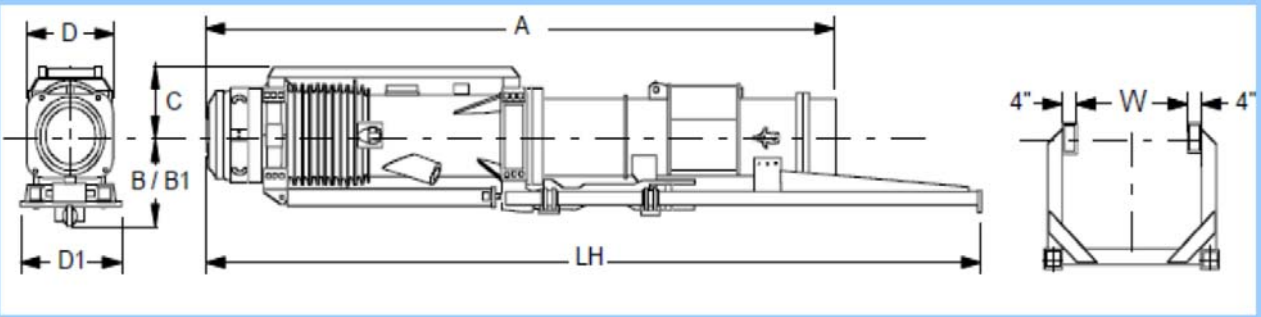
Exhaust

While moving upwards, the piston will pass and open the exhaust ports. Exhaust gases will be released and the pressure in the cylinder will return to normal.

Scavenging

The piston continues to move upward, which draws in fresh air, cools the cylinders and releases the pump lever. The pump lever returns to its starting position, sucking again the diesel oil. Gravity stops the upward motion and it starts falling through the cylinders once again.

Model	D12-42	D16-32	D19-42	D25-32	D30-32	D30-26	D36-32	D46-32	D50	D62-22
	Batter piling forward and backward up to									
	1:2	1:2/1:1	1:2/1:1	1:3/1:1	1:3/1:1	1:3/1:1	1:3/1:1	1:3/1:1	1:2/1:1	1:2/1:1
Approx.Piston Weight(lbs.)	2,822	3,527	4,012	5,512	6,614	7,937	7,937	10,141	11,023	13,669
Approx.Anvil Weight(lbs.)	660	779	779	1,456	1,456	1,456	2,354	2,354	2,354	2,420
Blows per minute[1]										
Minimum(1/min)	37	37	37	37	37	37	37	37	37	36
Maximum(1/min)	52	52	52	52	52	52	52	52	52	52
Energy per blow[2](adjustable)										
Maximum(ft.lbs.)	29,840	37,000	42,480	58,300	69,925	83,950	83,950	107,280	115,650	161,640
Minimum(ft.lbs.)	15,000	26,000	21,510	29,510	35,400	42,500	42,500	54,320	59,000	79,200
Consumption[3]										
Diesel Fuel(gal./hr)	1.19	1.45	1.98	2.11	2.64	3.04	3.04	4.23	4.65	5.28
Lubrication Oil(gal./hr)	0.13	0.26	0.16	0.26	0.26	0.40	0.40	0.40	0.79	0.85
Capacity										
Diesel Fuel(gal.)	6.34	8.45	8.45	17.70	17.70	17.70	23.51	23.51	21.90	25.89
Lubrication Oil(gal.)	1.72	2.38	2.38	5.02	5.02	5.02	4.50	4.50	5.52	8.32
Weight[3]										
Hammer(lbs.)	6030	7165	7826/ 8146	11750/ 12808	13294/ 13911	14617/ 15234	17615/ 18518	19819/ 20723	25132	26168/ 27072
Hammer,Standard Operating(lbs.)	6472	7608	9700	13520	14623	14623	19744	21949	26830	28464
Dimensions										
A-length(ft.)	14.1	18.4	18.4	17.8	17.8	17.8	18.3	18.3	18.3	22.6
LH-length,Standard(ft.)	19.0	19.2	19.2	21.3	21.3	21.3	21.3	21.3	21.3	24.8
LH-length with hydr.Start(ft.)	-	19.2	19.2	22.5	22.5	22.5	22.5	22.5	22.5	25.8
B-Center to trip(inch)	13.0	14.0	14.0	17.5	17.5	17.5	19.0	19.0	19.0	20.0
B1-Center to trip(inch)	-	22.0	22.0	24.0	24.0	24.0	26.0	26.0	26.0	27.0
C-Center to pump guard(inch)	15.0	16.0	16.0	19.0	19.0	19.0	20.5	20.5	20.5	25.5
D-Width of hammer(inch)	18.3	19.5	19.5	25.0	25.0	25.0	28.5	28.5	28.5	32.5
D1-With of trip(inch)	24.5	24.5	24.5	32.0	32.0	32.0	37.0	37.0	37.0	35.5
W-Min.lead width(inch)	21.0	21.0	21.0	26.0	26.0	26.0	32.0	32.0	32.0	32.0



1. Depending on fuel pump setting, soil type, and pile type.
2. Potential energy calculated by multiplying piston weight and stroke. The stroke of the ram is a result of the blow rate and does not consider any pile driving conditions, neither loss by compression or friction.
3. Consumption and weights are approximate, weight of guiding depends on type and size of diesel hammer guiding.
4. Dimensions round up to the half inch.
5. All data subject to change without notification.

D80-23	D100-13	D128	D138	D160	D180	D220	D260	D320	Model
Batter piling forward and backward up to									
1:2/1:1	1:5/1:2	1:3/1:1	1:3/1:2	1:3/1:2	1:3/1:2	1:3/1:2	1:3/1:2	1:3	
17,637	22,046	28,219	30,424	35,274	39,683	48,510	57,330	70,560	**Approx.Piston Weight(lbs.)**
4,620	4,620	6,688	6,668	9,581	9,581	14,036	14,036	14,036	**Approx.Anvil Weight(lbs.)**
									Blows per minute[1]
36	36	36	36	36	36	36	36	36	Minimum(1/min)
45	45	45	45	46	46	50	50	50	Maximum(1/min)
									Energy per blow[2](adjustable)
197,150	246,390	307,600	340,000	394,250	443,500	546,000	652,000	796,000	Maximum(ft.lbs.)
126,180	157,685	184,000	217,600	241,470	272,000	302,000	362,000	445,000	Minimum(ft.lbs.)
									Consumption[3]
6.60	7.93	9.51	10.00	12.00	14.00	18.00	21.00	25.36	Diesel Fuel(gal./hr)
0.77	0.77	0.95	1.06	1.32	1.32	1.72	2.03	2.50	Lubrication Oil(gal./hr)
									Capacity
40.95	40.95	50.19	50.19	63.40	63.40	122.00	132.00	185.00	Diesel Fuel(gal.)
8.45	8.45	15.85	15.85	21.13	21.13	26.40	31.70	39.60	Lubrication Oil(gal.)
									Weight[3]
36078/ 37269	43695/ 44886	51808/ 53616	57099	68784	75023	99208	118608	145946	Hammer(lbs.)
39980	47598	56328	59811	72741	78980	104499	123899	154764	Hammer,Standard Operating(lbs.)
									Dimensions
23.6	24.1	25.5	25.9	25.8	25.8	26.8	26.7	27.3	A-length(ft.)
28.1	28.1	27.8	27.8	25.8	25.8	26.8	26.8	-	LH-length,Standard(ft.)
28.1	28.1	27.8	27.8	25.8	25.8	26.8	26.8	-	LH-length with hydr.Start(ft.)
26.0	26.0	30.5	30.5	33.7	33.7	29.5	29.5	33.1	B-Center to trip(inch)
33.0	33.0	31.0	31.0	33.7	33.7	29.5	29.5	33.1	B1-Center to trip(inch)
23.0	23.0	22.5	22.5	24.5	24.5	27.0	27.0	-	C-Center to pump guard(inch)
35.0	35.0	41.0	41.0	45.5	45.5	52.0	52.0	43.3	D-Width of hammer(inch)
47.5	47.5	47.5	47.5	51.2	51.2	-	-	53.1	D1-With of trip(inch)
42.0	42.0	42.0	42.0	48.0	48.0	-	-	-	W-Min.lead width(inch)



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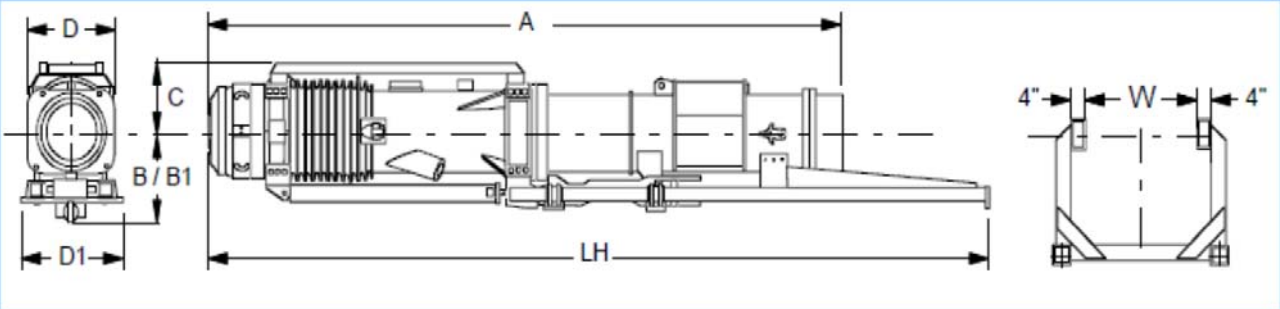
	1:2	1:2/1:1	1:2/1:1	1:3/1:1	1:3/1:1	1:3/1:1	1:3/1:1	1:3/1:1	1:2/1:1	1:2/1:1
Approx.Piston Weight(kg.)	1,280	1,600	1,820	2,500	3,000	3,600	3,600	4,600	5,000	6,200
Approx.Anvil Weight(kg.)	300	354	354	662	662	662	1070	1070	1070	1100
Blows per minute[1]										
Minimum(1/min)	37	37	37	37	37	37	37	37	37	36
Maximum(1/min)	52	52	52	52	52	52	52	52	52	52
Energy per blow[2](adjustable)										
Maximum(kNm)	40,4	50,1	57,6	79,0	94,9	113.8	113.8	145,5	156,8	219,1
Minimum(kNm)	20,3	35,6	29,1	40,0	48,0	57,6	57,6	73,6	80	107,4
Consumption[3]										
Diesel Fuel(l./hr)	4.5	7.6	7.6	8	10	11.5	11.5	16	17.6	20
Lubrication Oil(l./hr)	0.5	0.6	0.6	1	1	1.5	1.5	1.5	3	3.2
Capacity										
Diesel Fuel(l.)	24	32	32	67	67	67	89	89	83	98
Lubrication Oil(l.)	6,5	9	9	19	19	19	17	17	20.9	31.5
Weight[3]										
Hammer(kg)	2,735	3,250	3,550 /3,695	5,330 /5,810	6,030 /6,310	6,630 /6,910	7,990 /8,400	8,990 /9,400	11400	11870 /12280
Hammer,Standard Operating(kg.)	2,936	3,451	4,400	6,133	6,633	6,630	8,956	9,956	12,170	12,911
Dimensions										
A-length(mm.)	5,580	5,610	5,610	5,425	5,425	5,425	5,580	5,580	5,580	6,890
LH-length,Standard(mm.)	5,850	5,850	5,850	6,490	6,490	6,490	6,490	6,490	6,490	7,560
LH-length with hydr.Start(mm.)	-	-	-	6,860	6,860	6,860	6,860	6,860	6,860	7,864
B-Center to trip(mm)	356	356	356	445	445	445	445	482	482	508
B1-Center to trip(mm)	-	559	559	610	610	610	610	660	660	686
C-Center to pump guard(mm)	381	406	406	482	482	482	482	521	521	648
D-Width of hammer(mm)	482	495	495	635	635	635	635	724	724	825
D1-With of trip(mm)	622	622	622	812	812	812	812	940	940	902
W-Min.lead width(mm)	534	534	534	660	660	660	660	812	812	812



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8,000	10,000	12,800	13,800	16,000	18,000	22,000	26,000	32,000	**Approx.Piston Weight(kg.)**
2100	2100	3040	3040	4355	4355	6380	6380	6380	**Approx.Anvil Weight(kg.)**
									Blows per minute[1]
36	36	36	36	36	36	36	36	36	Minimum(1/min)
45	45	45	45	46	46	50	50	50	Maximum(1/min)
									Energy per blow[2](adjustable)
267,3	334,0	417	461	544	601,3	740	884	1080	Maximum(kNm)
171.1	213,8	250,02	295	331,84	368,3	410	490	610	Minimum(kNm)
									Consumption[3]
25	30	36	39	45	54	68	80	96	Diesel Fuel(l./hr)
2.9	2.6	3.6	4	5	5	6.5	7.7	9,5	Lubrication Oil(l./hr)
									Capacity
155	155	190	190	240	240	460	500	700	Diesel Fuel(l.)
32	32	60	60	80	80	100	120	150	Lubrication Oil(l.)
									Weight[3]
16365 /16905	19820 /20360	23500 /24320	25,900	31,200	34,030	45,000	53,800	66,200	Hammer(kg)
18,135	21,590	25,550	27,130	32,995	35825	47,400	56,200	70,200	Hammer,Standard Operating(kg.)
									Dimensions
7,195	7,195	7,772	7,894	7,864	8,047	8,153	8,153	8,320	A-length(mm.)
8,565	8,565	8,475	8,475	7,864	7,864	8.168	8.168	-	LH-length,Standard(mm.)
8,565	8,565	8,475	8,475	7,864	7.864	8.168	8.168	-	LH-length with hydr.Start(mm.)
660	660	775	775	856	856	749	749	840	B-Center to trip(mm)
838	838	788	788	856	856	749	749	840	B1-Center to trip(mm)
584	584	572	572	622	622	685	685	-	C-Center to pump guard(mm)
890	890	1,042	1,042	1,156	1,156	1,321	1,321	1,100	D-Width of hammer(mm)
1,206	1,206	1,206	1,206	1,300	1,300	-	-	1,350	D1-With of trip(mm)
1,067	1,067	1,067	1,067	1,200	1,200	-	-	-	W-Min.lead width(mm)