

CONMACO

DROP PILE HAMMERS

Drop Hammers may be operated by any type of hoisting engine having a friction clutch and, in the case of the lighter hammers, by tractors. The former method will permit faster operation and also greatly facilitate the regulation of the fall required. When a hoisting engine is not available, the driving can be successfully accomplished by using a tractor and a pair of nippers.

When employing an engine for lifting, the hoisting line is attached securely to a round steel pin provided near the top of the hammer. After raising hammer to the desired height, the hoisting drum is declutched, thereby allowing the hammer to fall with the hoisting line still attached and causing the drum to revolve backward while the line is being unwound from it.

The present form of the Vulcan Pile Hammer and the material used in its construction are the result of over half a century of experience in the manufacture and use of this product.

Attention is called, particularly, to the following features:

The weight is so disposed as to bring the center of gravity as near the bottom of the hammer as possible.

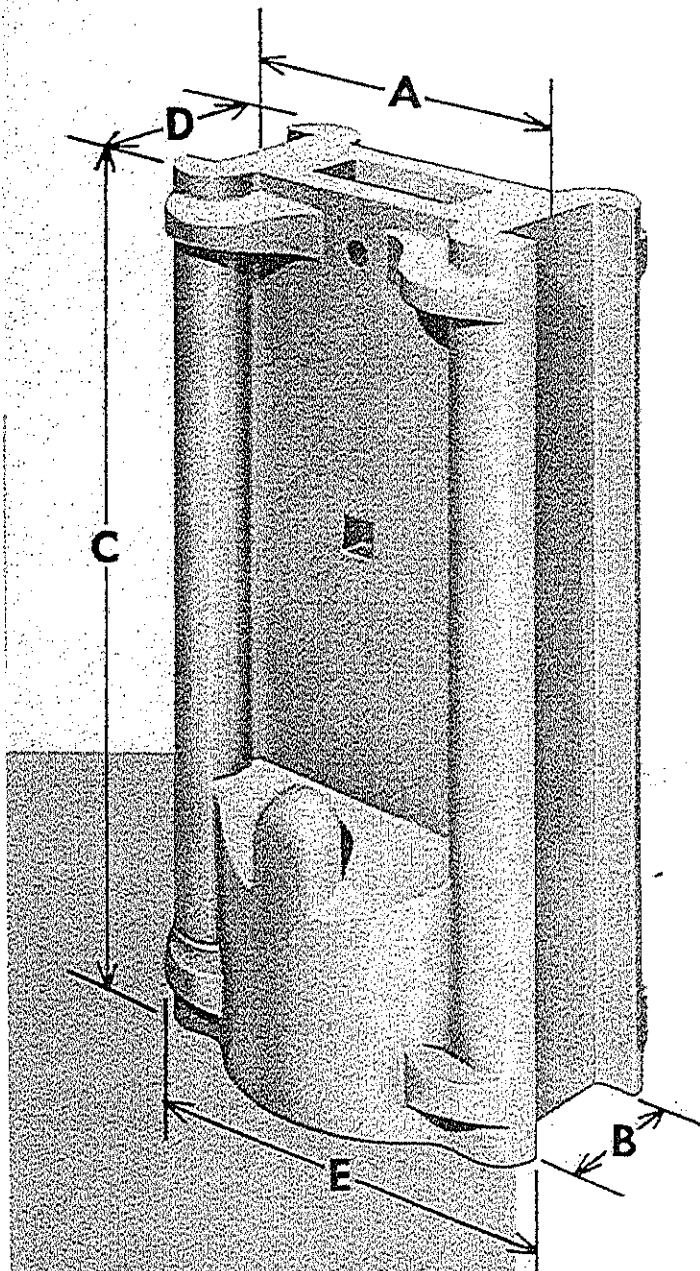
Hammer is made with long jaws to afford ample bearing surface against leaders.

The pin, or die, by means of which the hammer is lifted, is located within the body of the hammer, minimizing the head-room required in the leaders.

Rope sling hooks, for lifting pile cushioning devices, are an integral part of the hammer casting.

In the table at the bottom of page 3 are given the weights and dimensions of the standard sizes of Vulcan Drop Hammers that are regularly carried in stock.

The thickness of leader sticks should be $\frac{1}{4}$ " less than, B, the width of jaws listed in the table; whereas



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DROP PILE HAMMERS

the spread of the leader sticks should be $\frac{1}{2}$ " greater than, A, the distance between the jaws listed in the table. By adhering to these clearances in constructing leaders, the side slap and jar on the leaders, which occurs when the hammer strikes the pile, is reduced to a minimum.

Drop Hammers having jaws varying from those listed as standard can be manufactured to suit existing leaders. Drop Hammers of a greater weight can also be furnished.

Inquiries should specify the desired weight of Drop Hammer, the intended means of operation, and the required sizes of jaws or the sizes of leaders with which the hammer is to be used. State precisely whether the dimensions given refer to the Drop Hammer or to the leaders, thereby avoiding a misunderstanding and attendant delay.

For the driving of round wooden piles there is a decided advantage in using the Vulcan Pile Cap

described on page 4.

Drop Hammers weighing under 2,500 lbs. are not sufficiently heavy for the purpose of driving the usual precast concrete piles. The use of a light hammer involves a high fall and consequent damage to the pile. This damage can be eliminated only by the use of an excessive amount of cushioning, but, the additional cushioning required would nullify the energy developed from the fall.

As a mat of some material must be interposed between the hammer and the top surface of a concrete pile head to distribute the blow over the entire area, the Driving Head described on page 6 is recommended, for it combines, in one unit, this function with that of a toggling device and of a hammer cushion.

To drive steel sheet piling properly a Sheeting Cap or a Helmet is essential. These are described on pages 5 and 6.

TABLE 1 - DIMENSIONS OF STOCK DROP HAMMERS

Weight of Hammer	A	B	C	D	E	Recommended Hammer Line Wire Size	Recommended Pile Line Wire Size
500	13	4 1/4	24	12	16 1/4	.....	.....
600	13	4 1/4	24	12	16 1/4	.....	.....
700	14	4 1/4	28 1/2	14	17 1/2	.....	.....
800	14	4 1/4	28 1/2	14	17 1/2	.....	.....
1000	16	5 1/4	33	13	20	.....	.....
1200	16	5 1/4	35	15	20	.....	.....
1500	18	6 1/4	35	15	22 1/2	3/8 inch	3/8 inch
1800	18	6 1/4	40	17	22 1/2	1/2 inch	3/8 inch
2000	19	7 1/4	40	18	23 3/4	3/8 inch	3/8 inch
2500	19	7 1/4	46	19	23 3/4	3/8 inch	1/2 inch
3000	20	8 1/4	48 1/2	20	25	3/4 inch	3/8 inch

Tabulated weights are in pounds and dimensions in inches.
All sizes of stock Hammers have flat bottoms.

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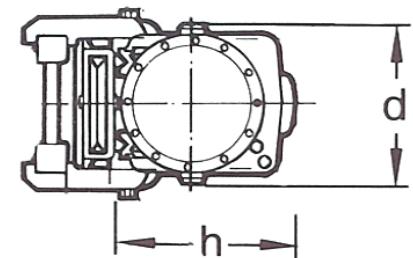
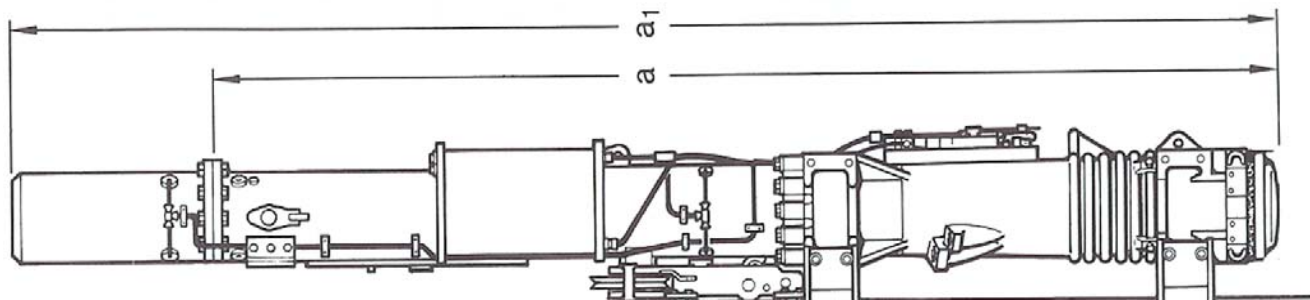


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SPI Diesel Hammer Specifications

Model		D8-22	D12-42	D19-42	D25-32	D30-32	D36-32	D46-32	D62-22	D80-23	D100-13
App. piston weight	lbs	1,762	2,820	4,185	5,506	6,610	7,930	10,132	13,656	17,621	22,026
Energy per blow											
Maximum	ft.lbs.	17,668	31,335	42,498	58,280	69,937	83,926	107,236	161,594	196,923	246,155
Minimum	ft.lbs.	9,439	15,129	21,254	29,502	35,403	40,923	52,288	79,004	126,262	157,830
Blows per min											
Minimum	bl./min.	38	36	37	37	37	37	37	35	36	36
Maximum	bl./min.	52	52	52	52	52	53	53	50	45	45
Consumption											
Diesel fuel	gal./hr	1.00	1.20	2.00	2.11	2.64	3.04	4.23	5.28	6.60	7.93
Lubrication oil	gal./hr	0.13	0.13	0.16	0.26	0.26	0.39	0.39	0.53	0.68	0.68
Capacity											
Diesel fuel	gal.	5.3	6.3	20.0	17.7	17.7	23.5	23.5	25.8	40.9	40.9
Lubrication oil	gal.	1.6	1.7	5.0	5.0	5.0	4.5	4.5	8.3	8.4	8.4
Weight											
Hammer	lbs.	4,000	5,750	8,350	12,370	13,400	17,375	19,600	27,000	37,300	44,900
With lead guides	lbs.	5,400	7,100	9,700	14,800	15,900	19,900	22,100	29,300	41,200	48,800
Dimensions											
Hammer Length (a / a1)	ft.	15.4	15.5/18.3	15.5/18.3	17.2/20.5	17.2/20.5	17.3/20.6	17.3/20.6	19.4/22.7	20.3/23.6	21/24.1
Hammer width, overall (d)	inch	16.1	17.3	19	25.2	25.2	31	31	31.5	35	35
Hammer depth, overall (h)	inch	23.2	24	26.2	28	28	33.4	33.4	38	43.7	43.7
Minimum lead width	inch	21	21	21	26	26	32	32	32	42	42

All data subject to change without notification
Consumption and weights are approximate.



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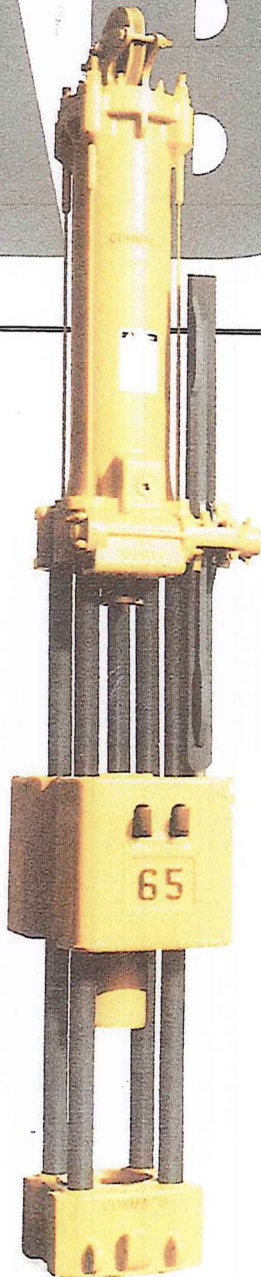
SINGLE-ACTING AIR/STEAM HAMMERS

CABLE

Conmaco's patented* cable-connected pile hammers are efficient, dependable and simple to maintain.

By connecting cylinder to base with cables, these hammers eliminate all column keys and column bar breakage. And by eliminating key slots, the base casting can be even stronger.

Conmaco cable-connected hammers are also engineered with easily serviceable features like an outboard bearing on the trip mechanism, renewable cast iron valve sleeves and replaceable inserts for slide bar grooves** to simplify maintenance and increase service life. Even the cables can



be retensioned, if necessary, with no special tools or training.

Conmaco cable-connected hammers are available in nearly any size. And each one comes with the expertise and follow-through Conmaco has gained during more than 80 years of selling, renting and servicing pile driving equipment.

Feature for feature, blow for blow, you won't find higher quality, or better lifetime value, than Conmaco cable-connected hammers.

CONMACO[®]

*Depend on our Quality.
Benefit from our Experience.*

*U.S. Patent #3,375,881

**Not available on model 300E5 and 200E5.



CABLE CONNECTED PILE HAMMER SPECIFICATIONS

MODEL	50E5	65E5	80E5	100E5	115E5	125E5	200E5	300E5
Rated Striking Energy - Maximum - Ft. Lbs.	25,000	32,500	40,000	50,000	57,500	62,500	100,000	150,000
Weight of Striking Parts - Nominal - Lbs.	5,000	6,500	8,000	10,000	11,500	12,500	20,000	30,000
Stroke Length - Maximum - Inches	60	60	60	60	60	60	60	60
Blows/Minute at Refusal (Maximum Stroke)	48	50	47	47	42	41	46	40
Steam Consumption @ 212° F (at hammer)	1,918	2,584	2,623	3,155	2,863	3,229	6,451	7,523
Operating Pressure (at Hammer) - PSI	70	95	80	100	100	100	110	135
Air Consumption (Adiabatic - at hammer)	560	700	740	850	770	875	1,700	1,900
Inlet Connection - Dia. In Inches (NPT)	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	4	4
Distance between Jaws - Inches	20	20	26	26	26	26	56	56
Jaw Width - Inches {d}	8 1/4	8 1/4	9 1/4	9 1/4	9 1/4	9 1/4	11 1/4	11 1/4
Length of Hammer (without helmet)	16'10"	16'10"	17'9"	17'9"	17'9"	18'0"	19'1"	20'10"
Width of Hammer - Inches	31 1/4	31 1/4	35 3/16	35 3/16	35 3/16	35 3/16	61 1/4	61 1/4
Depth of Hammer - Inches	39	47-3/4	42-1/8	49-7/16	53	53	53	53
Weight of Hammer - Lbs.	11,000	12,500	21,000	19,500	21,000	22,000	47,170	58,400
Size of Hoisting Line - Dia. In Inches	3/4	3/4	7/8	7/8	7/8	7/8	--	--

MODEL	50E3	65E3	80E3	100E3	115E3
Rated Striking Energy - Maximum - Ft. Lbs.	15,000	19,500	24,000	30,000	34,500
Blows per Minute - Normal Stroke & No Set	60	60	50	50	50
Inlet Pressure at Hammer - SI	80	100	85	100	120
Normal Stroke - Inches	36	36	36	36	36
Volume of Free Air - CFM - adiabatic {b}	565	625	850	950	1,060
Steam Consumption @ 212° F (at hammer)	1,925	2,300	3,000	3,425	3,980
Inlet Connection - Dia. In Inches	2	2	37,288	37,288	37,288
Head Sheave Groove Diameter	3/4	3/4	7/8	7/8	7/8
Distance between Jaws - Inches	20	20	26	26	26
Jaw Width - Inches {d}	8 1/4	8 1/4	9 1/4	9 1/4	9 1/4
Length of Hammer (without helmet)	13'0"	13'0"	15'0"	15'0"	15'0"
Weight of Striking Parts - Lbs.	5,000	6,500	8,000	10,000	11,500
Weight of Hammer - Lbs.	9,700	11,200	16,700	18,700	20,250

{a} Hammer operating speed is a function of many variables, including penetration resistance, cushion material, pressure, stroke, etc. Observed blow-count will vary depending on driving conditions. Energy is not a function of speed.

{b} Compressor output must exceed air required at hammer due to line and efficiency losses. It is advisable that the adiabatic consumption figure be increased by approximately 30% in the determination of the required compressor size.

{c} Steam consumption is based on feedwater and steam temperature of 212° F.

{d} Standard Female Jaw dimensions are shown. Male Jaws are available on special order.

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CONMACO

SINGLE-ACTING AIR/STEAM HAMMERS

OFFSHORE

Since the first platforms were constructed in the Gulf of Mexico, Conmaco has been a solid part of the offshore industry.

During our nearly 40 years of experience supplying the industry with equipment and service, Conmaco has become thoroughly familiar with the changing needs offshore.

Today, that experience goes into the engineering of some of the world's most dependable offshore pile driving hammers.

Conmaco offshore hammers are available in energy ratings from 60,000 to 1,050,000 foot-pounds. All feature Conmaco's patented* cable connection which allows retensioning, if necessary, without special tools or training.

Many Conmaco offshore hammers are available with optional 3-wedge slide bars that let you manually shift the trip to shorten the hammer stroke. And most feature a large diameter ram point shank to reduce breakage.



The largest Conmaco offshore hammers (models 5700, 6850 and 1750) are equipped with an Auto-Stop feature and low cushion indicator. This unique combination instantly shuts down the hammer if it is not on the pile or if the piling runs away from the hammer, to reduce the risk of damage to the hammer or crane.

These three giants are also equipped with an improved packing gland assembly for simple servicing, and bushings in the ram to reduce or eliminate serious galling of the columns.

But the biggest benefit of these hammers can't be found on a spec sheet. It's the solid service Conmaco delivers to help you do your best job offshore.

CONMACO[®]
*Depend on our Quality.
Benefit from our Experience.*

*U.S. Patent #3,375,881

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OFFSHORE HAMMER SPECIFICATIONS

NOTE: All hammers are single-acting, air/steam open-style hammers.

MODEL	CONMACO 1750	CONMACO 6850	CONMACO 5700	CONMACO 5300	CONMACO 300	CONMACO 200
RATED ENERGY** (FT.-LBS)	1,050,000	510,000	350,000	150,000	90,000	60,000
BLOWS PER MINUTE	42	40	40	46	55	60
MAXIMUM NORMAL STROKE (IN)	72"	72"	60"	60"	36"	36"
WT. OF STRIKING PART (LBS)	175,000	85,000	70,000	30,000	30,000	20,000
NET WEIGHT*** (LBS)	450,000	173,600	152,000	62,000	55,390	44,560
HAMMER LENGTH	35' 6"	25' 1 1/2"	23' 11 1/2"	20' 9 1/2"	16' 10"	15' 0"
JAW DIMENSIONS	Cage	18 3/4" x 100"	18 3/4" x 100"	14" x 80"(M)	11 1/4" x 56"(F)	11 1/4" x 56" (F)
MAXIMUM PIPE PILE SIZE	120"	84"	84"	72"	54"	54"
STEAM CONSUMPTION (LBS/HR)	68,330	27,798	21,252	12,296	8,550	7,500
AIR CONSUMPTION (SCFM)	13,601	5,889	4,502	2,148	1,833	1,634
INLET PRESSURE (PSI)	160	180	160	160	150	120
INLET SIZE	6" (x2 hoses)	6"	4" (x2 hoses)	4"	3"	3"

**Maximum rated energy at full stroke.
***Without helmet or leads.
(F) Female Jaws

AMCON is a Reg. TM of Conmaco, Inc.

Also Contact Conmaco for these fine Marine & Energy products:

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(Line Pulls from 5,000 to 500,000 lbs)

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Helmets

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