

BRONS and HVID OIL ENGINE LIST

MAKE	Cty.	Rebadged	Cyl No	Type	Hp	Style	configuration
Country Codes							
America	US						
Australia	AU						
Canada	CA						
Czechoslovakia	CZ						
Denmark	DK						
France	FR						
Germany	DE						
Japan	JP						
Netherlands	NL						
Norway	NO						
Russia	RU						
South Africa	ZA						
Switzerland	CH						
<p>Jan Brons a Dutchman (b January 20 1865 d February 9 1954) designed a spraying cup engine which was a vertical engine using an explosion cup with very small holes connecting the cup to the combustion chamber. It is a prechamber engine with a high compression ratio. The first one was built in 1900 and Brons got a German patent.</p> <p>The Brons engine details are as follows: All Brons engines are vertical</p> <p>The Brons engine which is a normal 4 stroke cycle has in the sprayer a valve and a needle; the latter, moved by the governor, controls the quantity of combustible fluid. The lower end of the explosion cup which partly protrudes into the cylinder. is provided with one or more small holes.</p> <p>During the first stroke the fuel-valve is open and the necessary quantity of fuel flows into the cup by gravity and suction along with some air. During the second stroke the fuel valve closes along with the intake valve (they work together,) on the next stroke the compression raises the temperature of the air and causes self-ignition of the partly vaporised fuel in the cup. By the force of the explosion in the cup the main part of the remaining combustible liquid is ejected and sprayed through the small holes into the cylinder, where immediately the main combustion takes place.</p> <p>The compression ratio was changeable via shims between the con rod bearing and rod. This raised or lowered the compression ratio to make combustion occur at the right time. It had to be changed when different fuels were used ie. diesel or kerosene!</p>							
<p>Rasmus Martin Hvid (b1881 - d 1950) a naturalised US citizen from Denmark got a patent for a spraying cup diesel engine which differed from the Brons patent and had a tapered space around the cup with an extra row of holes around the top of the cup it is not known if any of the Hvid type engines sold ever had this feature.</p> <p>I have now found that only the very earliest of the Hvid engines had this feature it was not a success because the cup got too hot and problems developed with</p>							

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carboning up of the cup. Hvid changed the design back to the Brons system where							
the cup was in contact with the metal of the cylinder head for better heat transfer.							
Hvid bought a license for the Brons engine probably to save being charged for infringe-							
ment. I suspect that Hvid had prior knowledge of the Brons patent as the two							
spraycup drawings Brons and Hvid are so similar. Too much of a coincidence.							
Hvid did not build any engines he just licensed others to do this and it seems to me							
that most if not all Hvid engines were horizontal. I wonder why this is so did American							
farmers have a preference for horizontal engines??							
A drawing of the vertical Burnoil patent does not show this tapered space and in							
fact looks like the Brons design. The patent does not say if it is Brons or Hvid but I							
have to lean towards it being a Brons as it is a vertical engine							
Whereas the drawing of the Hvid patent No 1,134,857 filed Feb 2 1912 patented							
Apr 6 1915 does show the tapered space.							
After writing all of the above I have now looked at a Brons patent drawing and I see							
that the very early Brons spraycup also had a tapered space around the cup this now							
makes me doubly suspicious of the Hvid patent the only difference being the extra							
row of holes and the horizontal build of the Hvid.							
I do not know how one goes about defining an Hvid engine from a Brons except for							
the fact that most if not all Hvid engines were horizontal, unless definite proof can be							
found to say that a particular builder had an Hvid license or a Brons license.							
I suppose the best way to differentiate between the two is to say that European and							
English engines are Brons patent and American and most of the world are Hvid							
The more I delve into the Hvid engine business in America the more I find that the							
companies involved get more and more tied up with one another.							
Bates & Edmonds	US		1	4 stroke	6hp	Brons	vertical
Motor Company			2	4 stroke	12hp	Brons	vertical
Lansing Michigan							
Became Hill Diesel Engine Co q.v.							
Bates & Edmonds made Brons/Hvid engines branded "Bull Dog" were they all vertical							
or some horizontal ? See Bull Dog below							
Berkel	NL						
W.A.Van Berkel							
Rotterdam							
same as Van Berkel			1	4 stroke	22-30hp	Brons	Vertical
			2	4 stroke	48-70hp	Brons	Vertical
			3	4 stroke	65-90hp	Brons	Vertical
made engines with 1-2-3 & 4 cylinders 1919- 1922 then sold as Fra-Vrie q.v.							

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Buzacott & Co Ltd	AU						
Rosebery Sydney						Brons	vertical ??
Australia							
A Buzacott Brons engine is said to exist! but I do not know any more than this about it and after 1923 the company became Rosebery Engine Works it could even be a Roseberry							
Much more info needed on this in case it is just a " Furphy "							
Clark & Fauset	AU	Burnoil	1	4stroke		Hvid	horizontal
Engineers Brisbane		Cliff &					
		Bunting					
These are Cliff & Bunting Burnoil engines rebadged another bit of badge engineering							
Cliff & Bunting	AU		1	4 stroke	4hp	Hvid	horizontal
Melbourne	AU		1	4 stroke	6hp	Hvid	horizontal
	AU		1	4 stroke	10hp	Hvid	horizontal
Also named Burnoil but not the same as Burnoil Engine Co Indiana q.v.							
C & B made engines for others see Co-op and Premier q.v.							
These C & B engine look to be made by C & B and not bought in or copied in fact the 10hp has a carburettor and spark plug and is started on petrol (gasoline)							
Co-op	AU	C & B	1	4 stroke	6hp	Hvid	horizontal
Gippsland and Northern Co-operative							
Co Collins Street Melbourne Australia							
rebadged Cliff & Bunting engine sold by Gippsland and Northern Co-operative Co.Ltd.							
Cummins Engine Co.	US		1	4 stroke	1.5hp	Hvid	horizontal
Columbus Ohio	US		1	4 stroke	2.5hp	Hvid	horizontal
	US		1	4 stroke	3hp	Hvid	horizontal
	US		1	4 stroke	6hp	Hvid	horizontal
	US		1	4 stroke	8hp	Hvid	horizontal
	US		1	4 stroke	12.5hp	Hvid ?	vertical
	US		2	4 stroke		Hvid	vertical
	US		3	4 stroke		Hvid	vertical
	US		4	4 stroke		Hvid	vertical
	US		5	4 stroke		Hvid	vertical
I am not sure that one could call a vertical sprycup engine an Hvid as I think the patent called for a horizontal engine but the book said Hvid. I am not sure that the vertical engines were Hvid? as I think that Cummins had modified the delivery system to use a positive displacement pump. by the time he started building vertical engines							
Daihatsu	JP		1	4 stroke	2hp	Hvid	horizontal
Formerly known as			1	4 stroke	3hp	Hvid	horizontal
Hatsudoki Seizo			1	4 stroke	6hp	Hvid	horizontal

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Kabushiki Kaisha			1	4 stroke	8hp	Hvid	horizontal
Osaka Japan			1	4 stroke	10/15hp	Hvid	vertical
engines built from 2hp to 60hp			2	4 stroke		Hvid	vertical
made verical & horizontal engines under licence from the R.M.Bit Company ? a Hvid offshoot ?							
Davenport Mfg.Co.	US		1	4 stroke	3hp	Hvid	horizontal
Davenport Iowa			1	4 stroke	6hp	Hvid	horizontal
Deutz-Brons	DE					Brons	vertical
Cologne Germany							
Had to call the engines Deutz - Brons not Diesel, built marine and stationary 1, 2, 3 & 4, cylinder engines up to 80hp							
Dodge Engine Co.	US		2	4 stroke	25hp	Brons	vertical
Mishawaka Indiana			4	4 stroke	50hp	Brons	vertical
Made vertical marine and stationary engines after taking over Burnoil not known if they made horizontal engines							
Dunn	US	Burnoil	1	4 stroke	3hp	Hvid	horizontal
W.E.Dunn			1	4 stroke	4.5hp	Hvid	horizontal
Manufacturing Co.							
a look alike Burnoil							
Evinrude	US		1	4 stroke	1.5 hp	Hvid	horizontal
Evinrude Motor Co.			1	4 stroke	3 hp	Hvid	horizontal
Milwaukee Wisconsin			1	4 stroke	5 hp	Hvid	horizontal
			1	4 stroke	7 hp	Hvid	horizontal
These engines had an enclosed crankcase and pressure fed bearings and piston and were very heavily built							
Fairbanks Company	US	Bull Dog				Hvid	horizontal
New York							
There is no connection between this company and Fairbanks-Morse or Fairbanks - Grant ??							
It seems that Fairbanks may have got some engines from Bates & Edmonds hence the Bull Dog name, yet another bit of badge engineering.							
Fairbanks Company did not make their own engines they always " bought in"							
Fra - Vrie, Fravrie							
Franken & De Vries	NE	see Berkel				Brons	Vertical
also Fravi also known as Fravri & Momaram. I think that the Berkel engine was taken over by Franken & De Vries and marketed until 1933/34							
Frick & Co.	US					Hvid	
Frick & Co. may have made Hvid type engines or perhaps marketed them built by some one else							
I need more information on this one							

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A.S.Fricks	DK			4 stroke		Brons	vertical
Efterfølgere of Aarhus							
Denmark							
Built many different types of "Brons" engines which are copies of Brons engines in sizes from 4, 10, 20, 40, & 60 hp							
A.G.Gideon	NO		1	4 stroke	12hp	Brons	vertical
Molde Norway							
Built single cylinder engines from 12 hp to 60hp and after 1914 1 & 2 cylinder engines to 100hp							
Hercules Gas Engine	US		1	4 stroke	3hp	Hvid	horizontal
Co. Evansville			1	4 stroke	7hp	Hvid	horizontal
Indiana			1	4 stroke	9hp	Hvid	horizontal
Hercules built Thermoil engines for Sears, Roebuck & Co.and others & was the most prolific builder of Hvid type of engine said to be more than 25,000 sizes are listed from 2.5hp -5,6,7,8, & 9hp Early versions were rather fragile with broken crankshaft , frames and other problems							
These engines were later marketed as Hercules Diesel Oil Engines until 1929							
Hill Diesel Engine	US		1	4 stroke		Hvid	horizontal
Company			2	4 stroke	12hp	Hvid	vertical
Lansing			3	4 stroke	60bhp	Brons	vertical
Michigan			4	4 stroke	80bhp?	Brons	vertical
Hill Diesel engine Company was created from the Bates & Edmonds Company q.v.							
A photo of an engine plate I have seen states made under license from R.M. Hvid Co							
Chicago Ill. and this was on a two cylinder vertical 12 hp engine type V							
Built same vertical engines as Midwest Engine Co q.v.							
Hill Diesel Engine Co - Hill Pump Co Anderson Indiana							
Hoag	CA	Brantford	1	4 stroke	3.5hp	Hvid	horizontal
The Hoag Oil Engine	CA	Brantford	1	4 stroke	3hp	Hvid	horizontal
Company Brantford	CA	Brantford	1	4 stroke	6hp	Hvid	horizontal
Ontario							
these single cylinder Hoag engines came from the same factory as the Brantford singles it is not known if the two cylinder Brantford was sold under the Hoag name							
R.M.Hvid (Veed)	US						
Company							
Battle Creek							
Michigan							
Hvid did not make any engines he just sold Licences to other companies to do so							
The Advance Thresher Company was taken over by the R.M.Rumely Company Hvid had							
been the designer of the Advance engine							

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Imperial	US		1	4 stroke	5hp	Hvid	horizontal
Johnny	CA		1	4 stroke	6hp	Hvid	horizontal
built by the Omega Machinery Co. St.Hyacinthe Quebec Canada using own design							
unsure if this has an automatic inlet valve or mechanical							
Jones Oil Engines	US		1			Hvid	horizontal
Syracuse NY							
Laurin & Klement	CZ		1	4 stroke	4hp	Brons	vertical
(now Skoda)			1	4 stroke	16hp	Brons	vertical
Jungbunzlau Austria - hungary			2	4 stroke	32hp	Brons	vertical
sold a licence to Prague Machine Co. and entered into agreement to only build engines up to 16hp							
also built a Naptha motor on the Brons patent Type B 6hp							
Mars Machine Tools	AU						
see Victor q.v.							
A.H. McDonald	AU		1	4 stroke	2hp	Brons	horizontal
Imperial Engine Works			1	4 stroke	8hp	Brons	horizontal
Melbourne			1	4 stroke	15hp	Brons	horizontal
			1	4 stroke		Brons	Vertical
At the Mc Donald factory the engines were always refered to as operating on the Brons system.							
Mc Donald acquired and copied the St Marys H.O "Super Diesel" engine and used the Super							
Diesel name without permission and built engines up to 20hp							
McDonald built some 2 cylinder engines which were not a success and they were rebuilt as singles							
The last McDonald engine with Brons spraycup was delivered in 1954 the last to be delivered in							
the world Brons having delivered their last one in 1946							
H.V.Mc Kay	AU		1	4 stroke	6hp	Hvid	horizontal
"Sundiesel"							
Manille Bogaerts	NL		1	4 stroke	12/16hp	Brons	vertical
Tilburg							
only one engine made							
Midwest Engine Co.	US		2	4 stroke		Brons	vertical
Indianapolis			3	4 stroke	60bhp	Brons	vertical
Indiana			4	4 stroke	80bhp?	Brons	vertical
			1	4 stroke	20bhp	Hvid	horizontal
			1	4 stroke	25bhp	Hvid	horizontal
			1	4 stroke	30bhp	Hvid	horizontal
			1	4 stroke	35bhp	Hvid	horizontal
The Midwest Engine Co. started life in 1872 as the Indianapolis Car & Machine Works							

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it changed name to Atlas Engine Works 1878 it changed again to Lyons-Atlas in 1912 and merged with Hill Pump Co. and became Midwest Engine Co. 1918, they made both types of engine, info from Diesel's Engine by C.L.Cummins jr.								
If you read the book Paten Brons by Jan Vegter he says that Midwest only built horizontal engines I suspect that the vertical engines are left over from the Hill Diesel Engine Co / Hill Pump Co.								
Moteurs Brantford	FR							
A Piquand		Thermoil	1	4 stroke	6hp	Hvid	horizontal	
		Thermoil	1	4 stroke	9hp	Hvid	horizontal	
		Brantford	2	4 stroke	12hp	Hvid	horizontal	
		Brantford	2	4 stroke	16hp	Hvid	horizontal	
The picture of the engine looks like a Thermoil which Brantfords were.								
It is interesting that an engine plate says Moteurs Brantford brevets Hvid Super Diesel whereas a pamphlet says in one place Brandford (sic) Super Diesel and in another place Branford (sic) I feel sure that the 12 & 16 hp engine must be Brantford twin cylinder engines but I think the 16hp listed in the pamphlet could be a missprint as Brantford did not make an 8hp so there is no way of making a 16hp. I think it should be 18hp which is made from two 9hp engines see								
Brantford								
Omega	CA					Hvid		
Built by Omega Machinery Co. St. Hyacinthe Quebec Canada these may be slightly different to the Johnny the Omega is said to have an automatic ! inlet valve not sure if this applies to Johnny as well see Johnny above								
Page Engineering Co	US		2	4 stroke	75hp	Hvid	horizontal	
Chicago	US		1	4 stroke	55hp	Hvid	horizontal	
	US		2	4 stroke	115hp	Hvid	horizontal	
	US		3	4 stroke	155hp	Hvid	horizontal	
Parmaco	US		1	4 stroke	7hp	Hvid	horizontal	
Parkersburg Machine Co. Parkersburg West Virginia								
Penmac	US	Thermoil	1	4 stroke	6hp	Hvid	horizontal	
Petroeum Engine & Manufacturing Co NY	US	Thermoil	1	4 stroke	8hp	Hvid	horizontal	
		these are possible rebadged Brantfords						
Pohl Oil Engines	US	St Marys??		4 stroke	3hp?	Hvid	horizontal	
Geo D.Pohl MFG Co. Vernon NY								
Prague Machine Co	CZ			4 stroke	40hp	Brons	vertical	
some engines were branded with the Ringhoffer name								
built large engines under Laurin & Klement (now Skoda) licence								

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Premier Machinery	AU	C & B	1	4 stroke	6hp?	Hvid	horizontal
Company Morphett St.							
Adelaide							
South Australia							
A rebadged Cliff & Bunting engine							
Rabinowitse	RU			4 stroke		Brons	vertical
also built large engines under Laurin & Klement (now Skoda) licence							
Ransomes Sims	UK		1	2 stroke	3.5/4hp		vertical
& Jefferies "Wizard"			1	2 stroke	6/7hp		vertical
Ipswich UK							
Brons only had a patent for a 4 stoke, engine Ransomes got a patent under No 179075 on the two stroke cycle prechamber engine only about 250 of each size Wizard engines were built by Ransomes							
Rapson & Dutton	AU						
Brisbane					2.5hp	Hvid	horizontal
Australia					3.5hp	Hvid	vertical
R&D hence Rand							
The 3.5 had a modified Hvid system but was later more like Brons							
The first 3.5 had the injector horizontal with a modified nozzle cup							
Rapson and Dutton became Mars Machine Tools q.v. and made engines under the name Rand, and Victor q.v. after the name change to Mars							
Renfrew	US	Thermoil	1	4 stroke	6hp	Hvid	horizontal
Machinery Co.	US		2	4 stroke	12hp	Hvid	horizontal
The twin is possibly a rebadged Brantford and the single looks like a Thermoil							
Renfrew did not make their own engines but sold engines made by Christensen Engineering Co. but I do not know if Christensen made Hvid engines for Renfrew							
Ronaldson & Tippet	AU			4 stroke		Brons	
Imitation McDonald - not known how many or how many different types built							
Sears, Roebuck & Co	US	Thermoil	1	4 stroke	2.5hp	Hvid	horizontal
		Thermoil	1	4 stroke	3hp	Hvid	horizontal
		Thermoil	1	4 stroke	5hp	Hvid	horizontal
		Thermoil	1	4 stroke	7hp	Hvid	horizontal
even said to be a 1.5 hp engine??							
Sears, Roebuck used Hercules & Cummins to supply engines							
Sormovo	RU		1	4 stroke		Brons	vertical
The Iron, Steel & Engine Works Ltd			2	4 stroke		Brons	vertical

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Sormovo near Nizjnii-Novgorod Russia engines were same as first type Brons engine							
Standard	US					Brons	vertical ?
Standard Scale & Supply Co Pittsburg							
Steijewel Amsterdam	NE			4 stroke		Brons	vertical
A Brons look alike							
St Marys Machine Company 1896 Ohio	US	Hercules?	1	4 stroke	2hp	Hvid	horizontal
later moved to St Marys Oil Engine Co. St. Charles Mo.		Hercules?	1	4 stroke	4hp	Hvid	horizontal
		Hercules?	1	4 stroke	8hp	Hvid	horizontal
		Hercules?	1	4 stroke	9hp	Hvid	horizontal
			1	4 stroke	14hp	Brons	vertical
			1	4 stroke	20hp	Hvid	horizontal
			1	4 stroke	30hp	Hvid	horizontal
			2	4 stroke	40hp	Hvid	horizontal
			2	4 stroke	50hp	Hvid	horizontal
			2	4 stroke	60hp	Hvid	horizontal
St Marys catalog states all sizes built 2hp to 150hp							
The small St Marys engines up to 9hp may have been made by Hercules?? I am not sure of this fact but have seen a reference that suggests this to be correct!							
St Marys also built a double acting horizontal 4 stroke Brons/Hvid engine of 75hp							
Machine division was sold to Boos Machine Co.?? q.v. Boos made engines for a very short time.							
It seems on further investigation that Boos only bought the old St Mary's premises in Ohio and not the Machine business and started " making " engines themselves this may explain why they look like Thermoils !							
Some St Marys engines had hemispherical combusation chambers and piston heads to match this is unusual							
St Marys built Super - Diesel heavy oil H.O. engines							
Timmer	NL		1-2 cyl	4 stroke		Brons	vertical
Timmer made 1 & 2 Cylinder engines from 6 - 100hp							
Nanno Timmer was Jan Brons partner. Timmer claimed that 1,000 engines were built 1905-1927							
Timmer didn't have rights to the Brons patent he made his prechamber engines with a hit and miss system Timmer patented a two stroke which they never built, the Ransome looks like the Timmer but not sure if it is built under Timmer licence							
Thermoil made by Hercules or Cummins for Sears,Roebuck	US		1	4 stroke	1.5hp	Hvid	horizontal
	US		1	4 stroke	2.5hp	Hvid	horizontal
	US		1	4 stroke	3hp	Hvid	horizontal
	US		1	4 stroke	5hp	Hvid	horizontal
	US		1	4 stroke	6hp	Hvid	horizontal
	US		1	4 stroke	8hp	Hvid	horizontal

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	US		1	4 stroke	9hp	Hvid	horizontal
The horsepower ratings of the Thermoil engines are very confusing depends who you read what sizes you get							
Van Berkel	NL					Brons	vertical
same as Berkel							
Verwer	NL		1	4 stroke	4/6hp	Brons	Vertical
Nieuwolda							
was an employee of Jan Brons and made 4 or 5 engines the Verwer engines were Brons copies							
Victor	AU						
Mars Machine Tools			1	4 stroke	2.5hp	Hvid	horizontal
basically the same as the Rapson and Dutton q.v.							
Victory	CA	Thermoil	1	4 stroke		Hvid	horizontal
An imitation Thermoil							
Made in Canada could have come from Brantford as there was a foundry by that name in Brantford							
Voigt Voortrekker	ZA		1	4 stroke	5-8-14hp	Brons	horizontal
An imitation Thermoil with an own designed cylinder head but all made in Paarl in South Africa Built by W.Voigt Engineers and Copper Works							
Western Machinery	US		1	4 stroke	25hp	Brons	vertical
Co. Los Angeles			2	4 stroke	50hp	Brons	vertical
California			3	4 stroke	75hp	Brons	vertical
			4	4 stroke	199hp	Brons	vertical
J.Samuel White & Co	UK						
East Cowes							
Isle of Wight UK							
White Brons	UK		2	4 stroke		Brons	vertical
	UK		4	4 stroke		Brons	vertical
A very comprehensive revision undertaken after reading what I can of the Book Patent Brons one hundred years of vaporizing cup engines by Jan Vegter I have added a description of the workings of the engine and some Brons and Hvid history I am currently getting some of the Jan Vegter book translated so maybe further updates to come.							
updated 29/10/2011 after new engine names were found							
List compiled by W.Denis Basson any further information gratefully received							
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