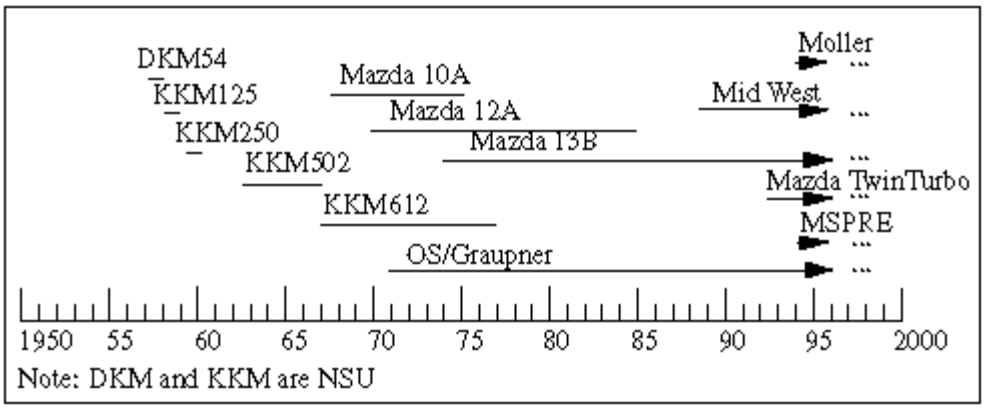
Rotary Combustion Engine Data

Categories are: NSU, Mazda, Mid-West, Wankel GMBH, Moller, Curtiss-Wright, Daimler-Benz, Fichtel Sachs, Rolls-Royce, Norton, and Other.



Power figures are SAE net unless noted SAE gross, DIN, or JIS. 1.341 bhp = 1 KW; 1 bhp = 0.7457 kW. Early (1960 and before) German horsepower figures are almost certainly gross even if not marked as such. American horsepower appears to have gone to net about 1970. Multiplying JIS by .80 or .85 gives SAE net.

Engine capacities are quoted as single chamber capacity. Various bodies de-rate the RCE by applying coefficients of 1.7, 1.8, 2.0 or even 3.0 to boost the apparent size.

NSU / Wankel Engines

Eng.	Yrs	Model	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)

DKM 32	35	Wankel's first experiment, non-operational				
DKM 54	57	experimental	125 x 1			29 hp net at 17,000 rpm
KKM 125	58	(aka KKM 57)	125 x 1			25-30/10-12,000 net
KKM 250	59	exp. auto power	250 x 1			44/9000 gross
KKM 400	60	exp. auto	400 x 1			51/6000 net
KKM 60	60	Mk I exp aircool	60 x 1			3/6000
KKM 60	61	Mk II exper.	60 x 1			6/6000
KKM 150	61	prod. prototype	150 x 1			18/6000 net
KKM 150LI	61	port. fire pump	150 x 1			13.5/6000 net
KKM 2x300	61		295 x 2 =	590		66/6000 net
KKM 500X1	61	exp.	500 x 1			60/6000 net
	61	NATO drone	x 2			
	61	motor scooter				
KKM 60	62	Mk III exper.	60 x 1			4.2/6500
KKM 507	63	exp. from 500X1	500 x 1			18/5000 net
KKM 509/506	64	exp.	498 x 2 =	996		110/6000 net
KKM 510	64	exp. air cool	215 x 1			10.5/5000 net
KKM 502	62-3	Spider Test	498 x 1		8.6	50/6000 net 52/2500 DIN.
KKM 502	64-67	Spider	498 x 1 =	498	8.6	64/5000, 54/3000 SAE
KKM 512	65	exp., military	498 x 2 =	996		110/6000 net
KKM 514	65-69	exp. air cool	500 x 2 =	1000		35/5000 net. Fr KKM 507
KKM 513	66	exp. liquid cool	500 x 1			
KKM 613	66-67	from KKM 612	498 x 1			49/5500 net 51/2745
KKM 612	67-77	Ro80 115hp net	498 x 2 =	996	9.0	129/5800, 112/4500grSAE?
KKM 514	69	exp. air cool	500 x 2 =	1000		46/5000 net
KKM 619	69		x 3			150-180 bhp.
KKM 613	70	Citron M35	x 1			49/5500 net 51/2745
KKM 622	73	Citr. GS birotor	x 2			107 bhp
KKM 871	70-76	in Audi 100 test	750 x 2 =	1500		170 hp
W-87		marine aircool	108 x 1 =	108	8.5	8.7 hp 5800 rpm SAE 64lb
V-87		marine aircool	108 x 1 =	108	8.5	8.7 hp 5800 rpm SAE 68lb
W-120		marine aircool	160 x 1 =	160	8.0	12 hp 4700 rpm SAE 67lb
V-120		marine aircool	160 x 1 =	160	8.0	12 hp 4700 rpm SAE 76lb
H-120		marine aircool	160 x 1 =	160	8.0	12 hp 4700 rpm SAE 85lb
		marine "Zisch"				220 KW
DKM 78	82	Wankel Institute	300 x (1?)			300 KW
Audi	~85	Natural Gas stratified charge.				

Mazda Engines

Eng.	Yrs	Model	cc x rotors		Comp	BHP/rpm, Torq(lb-ft/rpm)
40A	61	experimental	386 x 1 =	386		
L8A	62	experimental	399 x 1 =	399		
L8A/0353	62	experimental	399 x 2 =	798		
L8A/3804	63	experimental	399 x 3 =	1197		
L8A/3805	63	experimental	399 x 4 =	1596		160/6000 gross
400/3867	67	experimental	395 x 2 =	790		
400/3893	69	experimental	495 x 2 =	990		
3912	70	experimental	356 x 1 =	356		35 bhp
X002	70	experimental	360 x 1 =	360		
3915	70	experimental	x 1 =	360?		
6A	70s	experimental	573 x 1 =	573		from 12A
7A	70s	experimental	654 x 1 =	654		from 13B
2002	71	experimental	491 x 4 =	1964		180/6000 (from 10A)
10A/3820	64	prototype	491 x 2 =	982		
10A/0810	67	Cosmo L10A	491 x 2 =	982		110/7000 (gross)
10A/0813	68	Cosmo L10B	491 x 2 =	982		128/7000 (gross)
10A/0820	68	Cosmo	491 x 2 =	982		100/7000 (gross)
10A/3883	68	Singapore GPrace	491 x 2 =	982		204 bhp
10A/0820	69-72	Presto (JpnR100)	491 x 2 =	982		100/7000 98/3500
10A/3877	69-72	R100(US)	491 x 2 =	982		100/7000 92/4000 akaM10A

10A/0866	71-5?	RX-3(Jpn)	491 x 2 = 982		105/7000 (gross)
10B	68-69	Cosmo			128 (gross)
12A/3830	66	experimental	573 x 2 = 1146		
12A/3872	68	prototype	573 x 2 = 1146		
12A/3830	66	prototype	573 x 2 = 1146		
12A	70-71	R100	573 x 2 = 1146	9.4	100/7000 (gr.), 92/4000
12A	70-71	RX-2	573 x 2 = 1146	9.4	120 (gross)
12A	72	R100	573 x 2 = 1146	9.4	77/6000, 80/4000
12A/3905	72	RX-2 US	573 x 2 = 1146	9.4	102/6800, 98/4000 net
12A/R612	72-75	RX-3 US	573 x 2 = 1146	9.4	90/6000, 96/4000 net
12A	73	Luce GR (Japan)	573 x 2 = 1146	9.4	120/6500, 116/3500 DIN
12A	73	Luce GR AP (Jpn)	573 x 2 = 1146	9.4	115/6500, 114/3500 DIN
12A	73	Luce GR II (Jpn)	573 x 2 = 1146	9.4	130/7000, 120/4000 DIN
12A	73	Luce GR IIAP (J)	573 x 2 = 1146	9.4	125/7000, 117/4000 DIN
12A	73	RX-2	573 x 2 = 1146	9.4	97/6500, 96/4000
12A	73	LeMans race tune	573 x 2 = 1146		250/8000
12A SIP	74	RX-2	573 x 2 = 1146	9.4	97/6500, 96/4000
12A	76	RX-3 Nikki 2bl	573 x 2 = 1146	9.4	95/6000, 102/4000
12A	77-78	RX-3SP	573 x 2 = 1146	9.4	95/6000, 102/4000
12ASport	77	Sports Kit(race)	573 x 2 = 1146	9.4	250+/9000
12A	79-80	RX-7	573 x 2 = 1146	9.4	100/6000, 105/4000
12A Lean	81-85	RX-7 US LeanBurn	573 x 2 = 1146	9.4?	100/6000?, 105/4000?
12A 6PI	82-85	Luce,Cosmo (Jpn)	573 x 2 = 1146		
12A/Turb	83-8?	Luce,Cosmo,RX-7	573 x 2 = 1146	8.5	160/6000JIS, 165/4000
12A/Turb	8?-85	Luce,Cosmo,RX-7	573 x 2 = 1146	8.5	165/6000JIS, 165/4000
12A	84-85	RX-7 (S,GS,GSL)	573 x 2 = 1146	9.4	101/6000, 107/4000
12B	73-75	racing one distr	573 x 2 = 1146		250+/9500
13A/0823	70-72	R130 front drv	655 x 2 = 1310	9.1	126/6000, 127/3500
13B	73	R130 (Japan)	654 x 2 = 1308	9.1	125/6000, 127/3500
13B	74-75	RX-4	654 x 2 = 1308	9.2	110/6000, 117/3500
13B	76-78	RX-4	654 x 2 = 1308	9.2	110/6000, 120/4000
13B	76-78	RX-5 (Cosmo)	654 x 2 = 1308	9.2	110/6000, 120/4000
13B Race	77	Racing	654 x 2 = 1308	9.4	290+/9000
13B Race	79	Le Mans Racing	654 x 2 = 1308		285/9000
13B Race	80	Le Mans Qualify	654 x 2 = 1308		300
13B Race	80	Le Mans Racing	654 x 2 = 1308		290/8500
13B DEI	83+	Cosmo,Luce,RX-7	654 x 2 = 1308		
13B Race	84	Le Mans, factory	654 x 2 = 1308		330 sprint, 310 enduro
13B Turb	84	Racing	654 x 2 = 1308	7.5	500/8000, 326/7500
13B DEI	84-85	RX-7 (GSL-SE)	654 x 2 = 1308	9.4	135/6000, 133/2750
13B DEI	86-89	RX-7 2nd gen	654 x 2 = 1308	9.4	146/6500, 138/3500
13B Turb	86-89	RX-7 Turbo II	654 x 2 = 1308	8.5	182/6500, 183/3500
13B	89	Luce (Japan929)	654 x 2 = 1308	8.5	177/6500, 181/3500 JIS
13B VDEI	89-92	RX-7 Light Rotor	654 x 2 = 1308	9.7	160/7000, 140/4000
13B Turb	89-91	RX-7 T II Lt Rtr	654 x 2 = 1308	9.1	200/6500, 196/3500
13B Twin	92+	RX-7 Seq. Turbo	654 x 2 = 1308	9.0	255/6500, 217/5000
MSPRE	95+	RX-01 MulSidPrt	x 2		220/8500, 159/6500
13B Renesis	99	RX-Evolv NA engine, 280 HP			
13G		racing	x 3		
13J		racing	x 3? 4?		
15A	73	experimental	737 x 2 = 1474		135/5750gross, 145/3500
	84/5	MX-03 (exp)	654 x 3 = 1962		320/7000 JIS, 290 lbft
20G			x 3		
21A R-II	72	experimental	1046 x 2 = 2092		(22A 2x1169cc planned)
R26B		racing 448 lb-ft	654 x 4 = 2616		700/9000 62mkg/6500
ROSCO	70s	proposed stratified charge, late 70s			
SCP		proposed precombustion chamber engine			
TISC		experimental supercharged			
DISC	80s	late 80s			
DISC-II	90s	early 90s			
Miller	90s	Miller Cycle RCE			
HR-X		exp. hydrogen	499 x 2 = 998		100 ps, 13 kg-m torque
HRX-2		exp. hydrogen			
RE10X	80s	exp. alloy small cap. for MX-04 show car (Miata precursor)			

Mid-West Engines (background)

Eng.	Yrs	Application	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)
AE 50R	95-now	aircraft	294 x 1 = 294	9	50
AE 100R	96-now	aircraft	294 x 2 = 588	9	100
AE 110R	97-now	fuel-inj.	294 x 2 = 588	9	105. aka GAEI 100R

Wankel GmbH (background)

Eng.	Yrs	Application	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)
LCR-407 SGti	98	Aircraft, kart	407 x 1 = 407	10	35/6000, 31/4500
LCR-814 TGti	98	Aircraft	407 x 2 = 814	10	75/6000, 66.4/4000
LCR-814 TGti Twin	98	Aircraft	2x407 x 2 = 1628	10	150/6000, 132.8/4000
proto turbo	98	heavy fuel			50

Moller International (background)

Eng.	Yrs	Application	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)
Moller	85+	R&D; based on OMC single rotor air-cooled eng.			
PA 530	95-now	aircraft, water	530 x 1 = 530		
PL 1060	95-now	aircraft, water	530 x 2 = 1060		150 est.
Moller	93+	RotaPower	375? x 2 = 750?		

Curtiss-Wright / John Deere

Eng.	Yrs	Application	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)
RC1-60	59	side port in	980 x 1 = 980		105/6000 108/3500
RC1-60	59	peripheral in	980 x 1 = 980		160/7000 135/5000
RC4-60	60	1st multi-rotor	980 x 4 = 3920		425/6500 400/4000
RC1-1920	60	Monster!	31500 x 1 =31500		782/1525
RC1-4.3	61	air-cooled	70.5 x 1 = 71		3.5/4000 bhp
RC1-4.3	61	air-cooled	70.5 x 1 = 71		3.5/4000 bhp
RC2-8.6	61	H20 cool	141 x 2 = 282		50/12000
RC2-602	61		980 x 2 = 1960		215/5000 212/3500
RC1-60J1	62	twin plugs	980 x 1 = 980		107 hp
RC1-60	62	stratified ch.	980 x 1 = 980		
RC4-60J2	62	military	980 x 4 = 3920		417? lbs air cool?
RC2-60U5	63-68	vehicles, 280lb	980 x 2 = 1960		200/5500 gross 200/4300
RC1-60J4	65	air cool	980 x 1 = 980		
RC2-60M4		marine	980 x 2 = 1960		200/5500 continuous
RC2-60N	65?	power generation	980 x 2 = 1960		95/4800 net contin.
RC2-60T3	66-68	military	980 x 2 = 1960		185/5000 gross
RC2-60U10	65-67	veh., per., JP4	980 x 2 = 1960		178/5000 to RollsRoyce
RC2-60U10	65-67	veh., side, JP4	980 x 2 = 1960		155/5000 to RollsRoyce
RC2-60Y8	66-68	QStar, Cessna177	980 x 2 = 1960		185/5000 gross
RC2-90Y2	66	aviation	1467 x 2 = 2934		275/6000 aka YRC-180-2
RC1-90	67-70+	H20 cool, per.	1467 x 1 = 1467		
RC2-90J6			980 x 2 = 1960		
RC2-75Y1	72	avi. mockup	1222 x 2 = 2444		285/6000 projected
RC2-60-N8		900 lbs			
RC2-60-U10		325 lbs, +50lb flywheel, heavy fuel			
RC3-90		w access. 410 lbs air-cool, 480 lb water-cool			
RC4-90		w access. 510 lbs air-cool, 613 lb water-cool			
RC5-90		w access. 605 lbs air-cool, 740 lb water-cool			
RC6-90		w access. 710 lbs air-cool, 860 lb water-cool			
J Deere	80s	stratified charged (SCORE?)			2250 bhp

J Deere	80s	proposed tank engine				750 bhp,22.5 cu ft space
J Deere		conv. Mazda to Nat. Gas				
J Deere		Nat. Gas	5800 x 1			

Daimler-Benz

Eng.	Yrs	Application	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)
KP Serie	62	experimental	700 x 1 = 700		
KP Serie	62	experimental	700 x 2 = 1400		
KA Serie	65-66	Fuel inj. Cars	450 x 2 = 900		
KA Serie	65-66	Fuel inj. Cars	450 x 3 = 1350		
KC Serie	67		560 x 2 = 1120		
KC Serie	67		560 x 3 = 1680		
KE Serie	69	C111	600 x 3 = 1800		280/7000 net 220/5-6500
KE Serie	70	C111 305-400bhp	600 x 4 = 2400		350/7000 net 290/4-5500

Fichtel Sachs

Horsepower figures are net.

Eng.	Yrs	Application	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)
KM 3	72	lawnmower	110 x 1 = 110		3/3300
KM 24	72+	snowmobiles	294 x 1 = 294		23/6000 21.7/4800
KM 37	65+	stationary	108 x 1 = 108		6.6/5500
KM 48	65+	stationary	160 x 1 = 160		8/4800
KM 914A	67+	station. aircool	303 x 1 = 303		16/4500 18.8/3500
KM 914B	67+	snowmobiles	303 x 1 = 303		19/5500 20.3/4000

Rolls-Royce

Developed experimental two stage units with low and high pressure stages to achieve Diesel cycle operation.

Eng.	Yrs	Application	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)
R1	66-67	exp. 2 stage	500 + 1126 = 1726		55/4500
R2	66	exp. 2 stage			
R3		HP stage	1216		180/4500
R6	72	exp 2stg (1265+3250)	x 2 = 9030		350/4500 expected
6.5		tanks, 930 lb.			

Norton

Eng.	Yrs	Application	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)
EMAP	70s	NVT proto.			
Interpol		motorcycle	294 x 2 = 588	9.0	63 (85bhp)/9000
Classic	88	motorcycle	294 x 2 = 588	7.5	79/9000
Commander	88	Commander mcycle	294 x 2 = 588	9	85/9000
F1	90+	sport motorcycle	294 x 2 = 588	9	95PS/9500, 57/7500
NR 642	~89	Light aircraft			90 bhp
NR 622	80s	Ultra light aircraft			82 bhp
P62	80s	from NR 622			90 bhp
NR 731	~89	target drone			38 bhp
NR 801	~89	Ultra light aircraft 23 kg			50/7500 or 40bhp/6000

UAV Engines Ltd.

Eng.	Yrs	Application	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)
GR18			?		
AR682	94+	Unmanned Air	294 x 2 = 588		100 kW @ 6000 rpm nominal
AR682R	99+	Unmanned Air	294 x 2 = 588		85? bhp @ 6600 (160 kW @ 8250)
AR731	99+	Unmanned Air	208 x 1 = 208		28? kW @ 7800 rpm
AR741	99+	Unmanned Air	208 x 1 = 208		50? kW @ 7800 rpm
AR801	99+	Unmanned Air	294 x 1 = 294		53 kW @ 6000 (68 kW @ 8000)
AR801R	99+	Unmanned Air	294 x 1 = 294		53 kW @ 6000 (68 kW @ 8000)

Other Engines

Eng.	Yrs	Application	cc x rotors	Comp	BHP/rpm, Torq(lb-ft/rpm)
Graupner	71-now	models, toys	5 x 1 = 5		1.27 bhp Graupner/OS
Yanmar	69-73	R220 outbd mar.	220 x 1		22.5/6000 net
Yanmar	69-73	R450 outbd mar.	450 x 1		50/6000 net
-	70+	Hercules W2000	294 x 1 = 294	8.5	32/6500, 24.5/4500
OMC 471	72+	snowmobiles	528 x 1 = 528		35/5500, 37.5/4000
GM	72	cast iron, 255 lb.			
GM	73	prototype	= 3300		(200ci)
GM RC206	74	345 lb, aluminum			
Yamaha	73	motorcycle	330 x 2 = 660		68/6500
VW	70s	5 chamber KKM by Peter Hofbauer			
Suzuki	75-76	RE5 motorcycle	497 x 1 = 497	8.6	48/6500, 45/3500 actual
-	76	Van Veen OCR	500 x 2 = 1000		110
Ingersoll	~86	Ingersoll-Rand IR-2500	41000 cc?		
Lada	80s	Soviet car	x 2		
Lada	80s	car/ambul/mil.	x 3		120-280 bhp
Alturdyne/Alturair		based on Mazda? San Diego			350 hp
DawnStar	95+?	Israel, 95 lbs,			38 bhp (claim) 20 (est)
SuperLight	180 SL	based on Mazda 13B, 210 lbs.			
Eco-Max	98	gen., air, more	654 x 1 = 654		

Any additions and corrections appreciated.

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