Goedhart KOAL-S

Air cooled condensers
Cu/Al

R404A

engineering for a better world

GEA Heat Exchangers

Goedhart KOAL-S

Range benefits

Meeting your specification -
Our range has literally 1000s of models, created through a modular design and variety of fan sizes, offering a greater choice to match your requirements.

Designed to be quiet -
Our condensers can meet even the most stringent noise restrictions using the latest 6, 8 & 12 pole fansets. In addition, we offer EC technology across the standard range which offers variable speed control and high efficiency.

Energy efficient -
Due to rising energy costs, efficiency is becoming a key industry issue and is increasingly important on end-user criteria. Our new units use the latest technology to ensure greater energy efficiency.

Backing our beliefs -
We are so confident in our product that we offer one years warranty on all condensers and an additional one year warranty on all EC fans (subject to standard Terms & Conditions of Sale and excluding corrosion through misapplication).

Fansets
The EBMpapst fansets chosen for the range offer the best combined performance for air volume, noise and efficiency available in the refrigeration industry, customers can select the latest EC technology, offering high efficiency and speed controllability.

Coils
Coils are manufactured from high-quality materials ensuring a quality product without compromise. These coils have been tested extensively and ensure an optimised cooling efficiency.

Standard coils are manufactured from copper tubes, which are mechanically expanded into fully collared holes in the fins. This ensures an effective and permanent bond between the tube and the fin, maximising heat transfer characteristics.

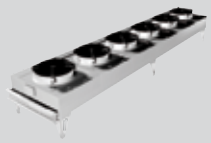
Within the coil casework surround, each fan chamber is separated by internal baffle plates to prevent windmilling of off-cycle fans. Alternative fin materials are available to give added protection in polluted or saline atmospheres: -

- Cu/Av - Copper tube / vinyl coated aluminium fins
- Cu/Cu - Copper tubes / copper fins
- Cu/Al/Bg - Copper tubes / aluminium fins Blygold coated
- Cu/Almg - Copper tubes / Seawater resistant aluminium fins

All standard coils are fully leak and strength tested to 36 bar for a maximum operating pressure of 27 bar.

Multi-sectioning
All models are suitable for multi-sectioning, permitting more than one refrigeration system to operate with a single condenser.

All V-bank and full width flat-bed units are twin section as standard. Larger V-bank models are manufactured in 4 sections, 2 per coil to ensure they conform to category 1 of the 'Pressure Equipment Directive'.

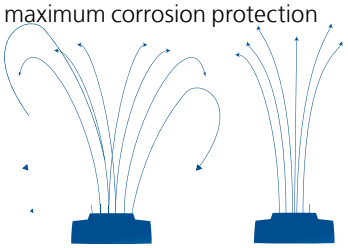
	Models	No. fans
	KOAL-S E	1 - 8
	KOAL-S G	1 - 16
	KOAL-S M	1 - 9
	KOAL-S X	1 - 9
	KOAL-S VM	2 - 16
	KOAL-S VL	2 - 16

V=Yes X=No O=Option

	Options				Capacities kW at 15K DT1		
Rows of fans	Supply	EC fans	Adiabatic cooling system	Fin materials	10	100	1000
2	1 &3 ph	V	X	Al AV Cu Almg		11 -390 kW	
1 or 2	3 ph	V	O	Al AV Cu Almg		23 - 970 kW	
1	3 ph	V	O	Al AV Cu Almg		27- 595 kW	
1	3 ph	V	O	Al AV Cu Almg		33 - 754 kW	
2	3 ph	V	O	Al AV Cu Almg		54 - 980 kW	
2	3 ph	V	O	Al AV Cu Almg		61 - 1090 kW	

Fan data

Goedhart offers a variety of fan types and speeds to suit specific requirements. The fansets include guarding in accordance with B5 EN ISO 13857. Motors are environmentally protected to IP54. The wire fan guards are of welded construction and coated in a weatherproof durable synthetic finish for maximum corrosion protection



Typical fan New fan

The blade profile of Goedhart's new fan and its proximity to the fan-plate reduces the occurrence of air-recirculation due to a more projected airflow.

AC Fansets

The standard AC fansets used in the entire Goedhart condenser range are external rotor motors with either die cast aluminium or plastic sickle bladed impellers. The sickle-shaped design of the blades reduce the fan noise considerably versus other fansets available.

The fansets are supplied with a full bell mouth fan plate, optimised to provide the highest efficiency, lowest noise fan currently available. Motors can be connected in Delta or Star configurations for high or low speed operation or, as an option can be switchable between the 2 speeds. The motors can also be externally speed controlled by triac or inverter systems

EC Fansets

For speed control the EC motor offers high efficiency whilst being extremely quiet over its entire operational range. At nominal speed, there is an energy saving of about 10%. In the controlled range, both relative and absolute savings are substantially more pronounced.

Fan type & Pole	Diameter	Model length	D (Delta)			Y (Star)		
			Speed [rpm]	FLC [A]	SC [A]	Speed [rpm]	FLC [A]	SC [A]
N5 4 pole	500 mm	A, B	1225	2.8	4.7	Single Phase		
N5 6 pole		A, B	915	1.2	2.3	Single Phase		
N5 8 pole		A, B	680	0.4	1.0	560	0.2	0.3
N5 EC		Information on request						
N6 4 pole	630 mm	B, C	1330	5.2	19.0	1035	3.3	6.0
N6 6 pole		B, C	900	1.8	5.0	700	1.1	2.5
N6 8 pole		B, C	650	1.0	3.1	470	0.5	1.0
N6 EC		Information on request						
N8 6 pole	800 mm	A, B, C	920	4.2	14.0	730	2.3	4.0
N8 6 pole		A, B, C	670	2.5	6.2	550	1.3	2.2
N8 12 pole		A, B, C	450	1.4	2.3	350	0.6	0.8
Q8 12 pole		A, B, C	370	0.7	1.0	240	0.5	0.8
N9 6 pole	910 mm	A, B, C	905	5.7	19	640	3.3	1.1
L9 EC		A, B, C	Variable 100-600	1.2	1.7			
09 EC		A, B, C	Variable 100-870	3.1	4.3			

Note: The figures in the table are for 400V/3ph/50Hz operation and per fan, except N5 4&6 pole which are 230V/1ph/50Hz

Type description

KOAL-S EA 1 2 4 H - N6 04 - AL

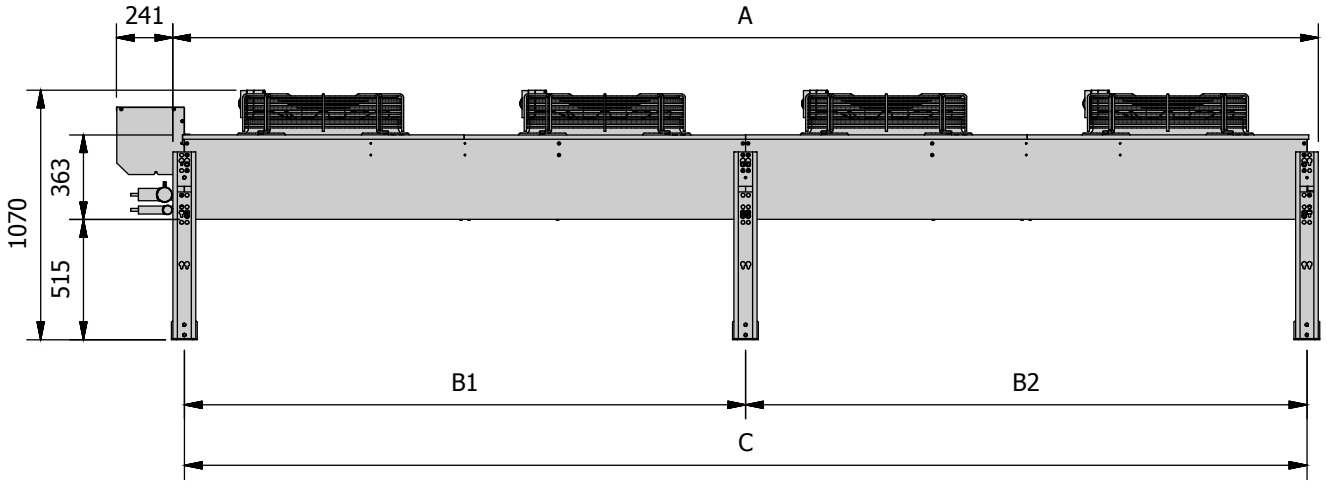
KOAL-S E	= range
A, B, C	= module length
1 or 2	= bank of fans
1, 2, 3, 4	= fans per bank
2, 3, 4	= coils row
H = Horizontal = Vertical air direction V = Vertical = Horizontal air direction	= orientation
N5=500mm, N6=630mm	= Fan type
AC pole 04, 06, 08, EC, XX=without fans	= Motor speed

AL = Copper tubes/Aluminium fins
AV = Copper tubes/Vinyl coated aluminium fin
CU = Copper tubes/Copper fins
BG = Blygold tubes and fins
ALMG = Copper tubes/Sea water resistant (Almg) fins

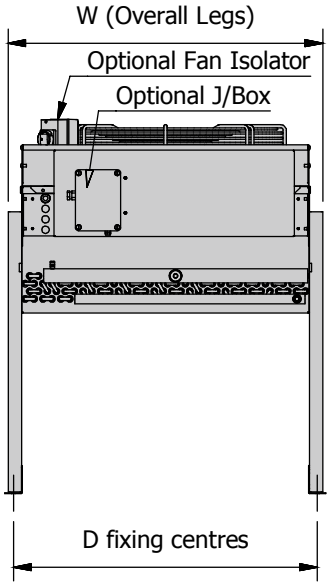
KOAL-S E 500 Selection data

Model KOAL-S E	DELTA (High Speed)					STAR (Low Speed)					Total Surface	Internal Volume	R404A Charge
	Duty (15 K DT1 - Dew Point) R404A & R507A	Air Volume	Sound Pressure Level at 10m (+/- 2 dB(A))	Power Input	Energy rating	Duty (15 K DT1 - Dew Point) R404A & R507A	Air Volume	Sound Pressure Level at 10m (+/- 2 dB(A))	Power Input	Energy rating			
	kW	m³/h	dB(A)	W		kW	m³/h	dB(A)	W		m²	dm³	kg
500 mm 4 pole 1x230V													
EA112-N504-1	16,3	6840	45	540	D	-	-	-	-	-	26	5	1,6
EB112-N504-1	20,1	7416	46	530	D	-	-	-	-	-	38	7	2,2
EA113-N504-1	20,5	6408	45	560	D	-	-	-	-	-	38	7	2,2
EA114-N504-1	23,3	6048	44	570	D	-	-	-	-	-	51	9	2,8
EB113-N504-1	25,5	7200	46	530	C	-	-	-	-	-	58	10	3,2
EB114-N504-1	28,8	6912	45	540	C	-	-	-	-	-	77	12	3,8
EA122-N504-1	32,6	13752	48	1090	D	-	-	-	-	-	51	9	2,8
EB122-N504-1	40,2	14904	49	1060	D	-	-	-	-	-	77	12	3,8
EA123-N504-1	41,0	12888	48	1120	D	-	-	-	-	-	77	12	3,8
EA124-N504-1	46,6	12096	47	1150	D	-	-	-	-	-	102	17	5,4
EA132-N504-1	48,9	20592	50	1630	D	-	-	-	-	-	77	13	4,1
EB123-N504-1	51,0	14400	49	1070	C	-	-	-	-	-	115	18	5,7
EB124-N504-1	57,6	13896	48	1080	C	-	-	-	-	-	154	24	7,6
EB132-N504-1	60,3	22320	51	1580	D	-	-	-	-	-	115	18	5,7
EA133-N504-1	61,5	19296	49	1680	D	-	-	-	-	-	115	18	5,7
EA142-N504-1	65,2	27432	51	2170	D	-	-	-	-	-	102	16	5,1
EA134-N504-1	69,9	18144	49	1720	D	-	-	-	-	-	154	24	7,6
EB133-N504-1	76,5	21528	50	1600	C	-	-	-	-	-	173	26	8,2
EB142-N504-1	80,4	29736	52	2110	D	-	-	-	-	-	154	23	7,3
EA143-N504-1	82,0	25704	50	2230	D	-	-	-	-	-	154	23	7,3
EB134-N504-1	86,4	20808	50	1620	C	-	-	-	-	-	230	34	10,7
EA144-N504-1	93,2	24264	50	2290	D	-	-	-	-	-	205	31	9,8
EB143-N504-1	102,0	28728	51	2130	C	-	-	-	-	-	230	34	10,7
EB144-N504-1	115,2	27792	51	2160	C	-	-	-	-	-	307	44	13,9
500 mm 6 pole 1x230V													
EA112-N506-1	13,6	5040	37	230	C	-	-	-	-	-	26	5	1,6
EB112-N506-1	16,7	5544	38	230	B	-	-	-	-	-	38	7	2,2
EA113-N506-1	17,1	4752	36	240	B	-	-	-	-	-	38	7	2,2
EA114-N506-1	18,8	4464	36	250	B	-	-	-	-	-	51	9	2,8
EB113-N506-1	20,6	5328	37	230	B	-	-	-	-	-	58	9	2,8
EB114-N506-1	22,9	5112	37	230	B	-	-	-	-	-	77	12	3,8
EA122-N506-1	27,2	10152	40	470	C	-	-	-	-	-	51	9	2,8
EB122-N506-1	33,4	11016	41	450	B	-	-	-	-	-	77	12	3,8
EA123-N506-1	34,2	9504	39	480	B	-	-	-	-	-	77	12	3,8
EA124-N506-1	37,6	8928	39	490	B	-	-	-	-	-	102	16	5,1
EA132-N506-1	40,8	15192	41	700	C	-	-	-	-	-	77	12	3,8
EB123-N506-1	41,2	10656	40	460	B	-	-	-	-	-	115	17	5,4
EB124-N506-1	45,8	10296	40	470	B	-	-	-	-	-	154	24	7,6
EB132-N506-1	50,1	16560	42	680	B	-	-	-	-	-	115	18	5,7
EA133-N506-1	51,3	14328	41	720	B	-	-	-	-	-	115	18	5,7
EA142-N506-1	54,4	20232	42	940	C	-	-	-	-	-	102	16	5,1
EA134-N506-1	56,4	13392	41	740	B	-	-	-	-	-	154	24	7,6
EB133-N506-1	61,8	15984	42	690	B	-	-	-	-	-	173	26	8,2
EB142-N506-1	66,8	22104	43	910	B	-	-	-	-	-	154	23	7,3
EA143-N506-1	68,4	19080	42	970	B	-	-	-	-	-	154	23	7,3
EB134-N506-1	68,7	15408	41	700	B	-	-	-	-	-	230	34	10,7
EA144-N506-1	75,2	17856	42	990	B	-	-	-	-	-	205	30	9,5
EB143-N506-1	82,4	21240	43	920	B	-	-	-	-	-	230	34	10,7
EB144-N506-1	91,6	20520	42	930	B	-	-	-	-	-	307	44	13,9
500 mm 8 pole 3x400V													
EA112-N508-3	11,2	3744	29	120	B	10,1	3096	25	80	A	26	4	1,3
EA113-N508-3	13,7	3456	29	120	A	12,1	2880	25	80	A	38	7	2,2
EB112-N508-3	13,8	4104	29	120	A	12,4	3456	26	80	A	38	7	2,2
EA114-N508-3	14,8	3240	28	130	A	13	2736	24	80	A	51	9	2,8
EB113-N508-3	16,6	3960	29	120	A	14,8	3312	25	80	A	58	9	2,8
EB114-N508-3	18	3816	29	120	A	15,8	3168	25	80	A	77	12	3,8
EA122-N508-3	22,4	7488	32	250	B	20,2	6264	28	160	A	51	8	2,5
EA123-N508-3	27,4	6984	32	250	A	24,2	5760	27	160	A	77	12	3,8
EB122-N508-3	27,6	8208	32	250	A	24,8	6984	29	150	A	77	12	3,8
EA124-N508-3	29,6	6480	31	260	A	26	5400	27	160	A	102	16	5,1
EB123-N508-3	33,2	7848	32	250	A	29,6	6624	28	160	A	115	17	5,4
EA132-N508-3	33,6	11160	34	370	B	30,3	9360	30	240	A	77	12	3,8
EB124-N508-3	36	7560	32	250	A	31,6	6264	28	160	A	154	23	7,3
EA133-N508-3	41,1	10440	33	370	A	36,3	8640	29	240	A	115	17	5,4
EB132-N508-3	41,4	12312	34	370	A	37,2	10440	30	230	A	115	17	5,4
EA134-N508-3	44,4	9648	33	400	A	39	8136	29	240	A	154	24	7,6
EA142-N508-3	44,8	14904	35	500	B	40,4	12456	31	320	A	102	16	5,1
EB133-N508-3	49,8	11808	34	370	A	44,4	9936	30	230	A	173	26	8,2
EB134-N508-3	54	11376	33	370	A	47,4	9432	30	240	A	230	34	10,7
EA143-N508-3	54,8	13896	34	500	A	48,4	11520	30	320	A	154	23	7,3
EB142-N508-3	55,2	16416	35	490	A	49,6	13896	31	310	A	154	23	7,3
EA144-N508-3	59,2	12888	34	530	A	52	10872	30	320	A	205	30	9,5
EB143-N508-3	66,4	15768	35	500	A	59,2	13248	31	310	A	230	34	10,7
EB144-N508-3	72,0	15120	35	500	A	63,2	12600	31	320	A	307	44	13,9

KOAL-S E Drawing



E SINGLE BANK HORIZONTAL UNIT



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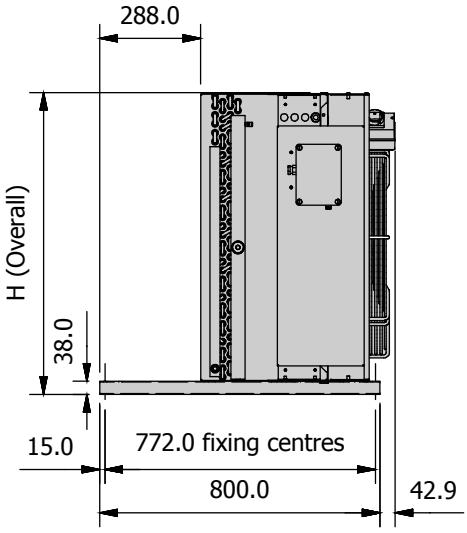
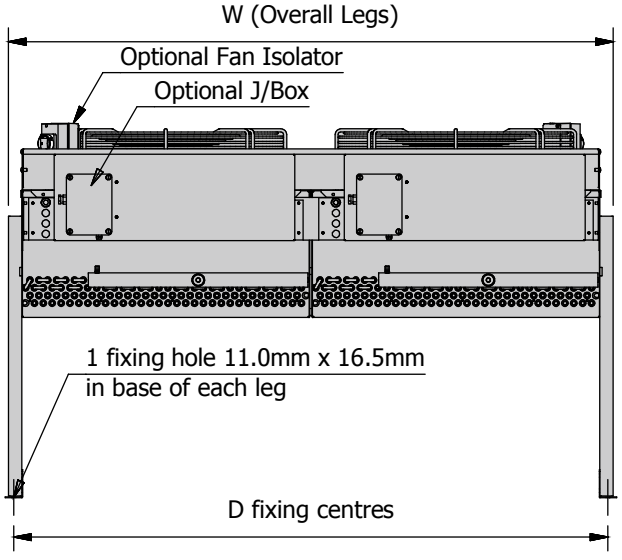
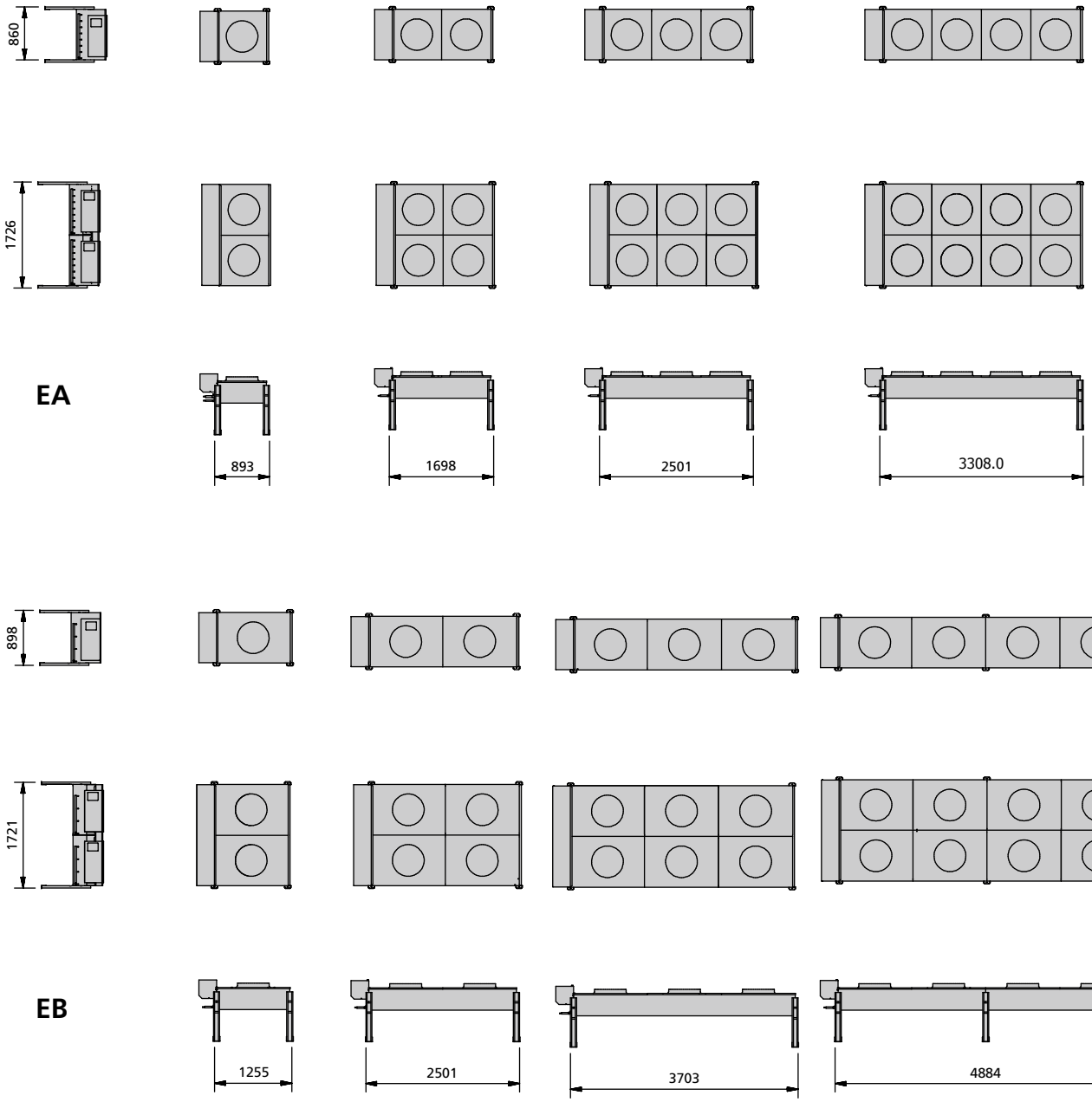


E DOUBLE BANK HORIZONTAL UNIT



KOAL-S E Dimensions

Model **KOAL-S E**		Banks	Fans per bank	Coil Rows	A	B1	B2	C	D	W	H	Approx Dry Weight		Inlet	Outlet
												AL	CU		
					mm	mm	mm	mm	mm	mm	mm	kg	kg	mm	mm
EA	112	1	1	2	893	-	-	795	867	898	863	75	85	35	15
EA	113	1	1	3	893	-	-	795	867	898	863	80	97	28	15
EA	114	1	1	4	893	-	-	795	867	898	863	85	107	35	15
EA	122	1	2	2	1698	-	-	1600	867	898	863	120	142	35	15
EA	123	1	2	3	1698	-	-	1600	867	898	863	130	163	35	15
EA	124	1	2	4	1698	-	-	1600	867	898	863	140	184	35	15
EA	132	1	3	2	2500,5	-	-	2402,5	867	898	863	164	197	35	15
EA	133	1	3	3	2500,5	-	-	2402,5	867	898	863	183	233	42	28
EA	134	1	3	4	2500,5	-	-	2402,5	867	898	863	195	261	54	35
EA	142	1	4	2	3308	-	-	3210	867	898	863	209	254	42	28
EA	143	1	4	3	3308	-	-	3210	867	898	863	229	296	54	28
EA	144	1	4	4	3308	-	-	3210	867	898	863	249	338	54	35
EA	212	2	1	2	893	-	-	795	1695	1726	-	144	164	35	15
EA	213	2	1	3	893	-	-	795	1695	1726	-	154	187	28	15
EA	214	2	1	4	893	-	-	795	1695	1726	-	164	209	35	15
EA	222	2	2	2	1698	-	-	1600	1695	1726	-	233	278	35	15
EA	223	2	2	3	1698	-	-	1600	1695	1726	-	253	320	35	15
EA	224	2	2	4	1698	-	-	1600	1695	1726	-	273	362	35	15
EA	232	2	3	2	2500,5	-	-	2402,5	1695	1726	-	322	389	35	15
EA	233	2	3	3	2500,5	-	-	2402,5	1695	1726	-	360	460	42	28
EA	234	2	3	4	2500,5	-	-	2402,5	1695	1726	-	383	517	54	35
EA	242	2	4	2	3308	-	-	3210	1695	1726	-	413	502	42	28
EA	243	2	4	3	3308	-	-	3210	1695	1726	-	452	586	54	28
EA	244	2	4	4	3308	-	-	3210	1695	1726	-	492	670	54	35
EB	112	1	1	2	1293	-	-	1195	867	898	863	97	113	35	15
EB	113	1	1	3	1293	-	-	1195	867	898	863	104	129	35	15
EB	114	1	1	4	1293	-	-	1195	867	898	863	113	146	35	15
EB	122	1	2	2	2500,5	-	-	2402,5	867	898	863	163	196	35	15
EB	123	1	2	3	2500,5	-	-	2402,5	867	898	863	177	227	42	28
EB	124	1	2	4	2500,5	-	-	2402,5	867	898	863	192	259	54	35
EB	132	1	3	2	3703	-	-	3605	867	898	863	230	280	42	28
EB	133	1	3	3	3703	-	-	3605	867	898	863	252	327	54	28
EB	134	1	3	4	3703	-	-	3605	867	898	863	274	375	54	35
EB	142	1	4	2	4903	2402,5	2402,5	4805	867	898	863	322	389	42	28
EB	143	1	4	3	4903	2402,5	2402,5	4805	867	898	863	352	452	54	35
EB	144	1	4	4	4903	2402,5	2402,5	4805	867	898	863	381	515	54	35
EB	212	2	1	2	1293	-	-	1195	1695	1726	-	188	221	35	15
EB	213	2	1	3	1293	-	-	1195	1695	1726	-	203	252	35	15
EB	214	2	1	4	1293	-	-	1195	1695	1726	-	219	286	35	15
EB	222	2	2	2	2500,5	-	-	2402,5	1695	1726	-	319	386	35	15
EB	223	2	2	3	2500,5	-	-	2402,5	1695	1726	-	349	449	42	28
EB	224	2	2	4	2500,5	-	-	2402,5	1695	1726	-	379	512	54	35
EB	232	2	3	2	3703	-	-	3605	1695	1726	-	454	554	42	28
EB	233	2	3	3	3703	-	-	3605	1695	1726	-	498	648	54	28
EB	234	2	3	4	3703	-	-	3605	1695	1726	-	543	743	54	35
EB	242	2	4	2	4903	2402,5	2402,5	4805	1695	1726	-	632	766	42	28
EB	243	2	4	3	4903	2402,5	2402,5	4805	1695	1726	-	693	892	54	35
EB	244	2	4	4	4903	2402,5	2402,5	4805	1695	1726	-	751	1018	54	35
EC	112	1	1	2	1293	-	-	1195	1070	1101	1066	104	125	35	15
EC	113	1	1	3	1293	-	-	1195	1070	1101	1066	114	145	35	15
EC	114	1	1	4	1293	-	-	1195	1070	1101	1066	123	165	35	15
EC	122	1	2	2	2500,5	-	-	2402,5	1070	1101	1066	175	216	42	28
EC	123	1	2	3	2500,5	-	-	2402,5	1070	1101	1066	193	256	54	28
EC	124	1	2	4	2500,5	-	-	2402,5	1070	1101	1066	212	295	54	35
EC	132	1	3	2	3703	-	-	3605	1070	1101	1066	250	312	54	28
EC	133	1	3	3	3703	-	-	3605	1070	1101	1066	278	372	54	35
EC	134	1	3	4	3703	-	-	3605	1070	1101	1066	306	431	54	35
EC	142	1	4	2	4903	2402,5	2402,5	4805	1070	1101	1066	344	427	42	35
EC	143	1	4	3	4903	2402,5	2402,5	4805	1070	1101	1066	381	506	54	35
EC	144	1	4	4	4903	2402,5	2402,5	4805	1070	1101	1066	418	585	54	35
EC	212	2	1	2	1293	-	-	1195	2101	2132	-	197	238	35	15
EC	213	2	1	3	1293	-	-	1195	2101	2132	-	216	278	35	15
EC	214	2	1	4	1293	-	-	1195	2101	2132	-	234	317	35	15
EC	222	2	2	2	2500,5	-	-	2402,5	2101	2132	-	338	412	42	28
EC	223	2	2	3	2500,5	-	-	2402,5	2101	2132	-	375	500	54	28
EC	224	2	2	4	2500,5	-	-	2402,5	2101	2132	-	412	579	54	35
EC	232	2	3	2	3703	-	-	3605	2101	2132	-	488	613	54	28
EC	233	2	3	3	3703	-	-	3605	2101	2132	-	544	731	54	35
EC	234	2	3	4	3703	-	-	3605	2101	2132	-	599	850	54	35
EC	242	2	4	2	4903	2402,5	2402,5	4805	2101	2132	-	664	830	42	35
EC	243	2	4	3	4903	2402,5	2402,5	4805	2101	2132	-	738	988	54	35
EC	244	2	4	4	4903	2402,5	2402,5	4805	2101	2132	-	812	1145	54	35

KOAL-S E model layout