

# Product Range

## Fresh ideas from Searle



GEA Heat Exchangers

# GEA Searle



## NBQ Quiet Condensing unit

The NBQ range of Condensing units have been developed to offer high quality and low noise solutions for commercial refrigeration applications. Units include Bitzer reciprocating compressors with a tradition of high quality and excellent reliability.

NBQ units are supplied complete with fully wired control panels, incorporating mains isolation, compressor thermal & overload protection, compressor contactor and condenser fan speed control. All electrical components are also wired to the panel, with spare terminals provided for additional options 'CR', 'SU' and 'OLC-K1'.

Compressors and components are located in an acoustic enclosure to ensure minimum noise levels during operation, allowing the units to be applied in stringent low noise applications. The acoustic enclosure has a unique design that allows for rapid access without removal of fixings.

Units include integral condensers with inner grooved copper tube and vinyl coated aluminium fins for improved corrosion resistance. Condensers utilise external rotor motors for low noise operation with high reliability and market leading energy efficiencies. Units may

be specified with Copper fin coils for further improved corrosion resistance.

NBQ models are divided into two groups, Motor 1 units for use with R404A in Medium to High applications, comprising of 15 models, Motor 2 units for use with R404A at Low temperature and R134A at Medium to High temperature applications, comprising of 16 models.

Units with 4 cylinder compressors may be specified with Capacity Regulation (CR) compressor head, and/or Start Unloader (SU) compressor head. Larger units incorporate oil sensors for increased protection as standard, also optional on all 4 cylinder units.

### NBQ Standard Features

- New Style Casework
- Single 400/450/630mm 6/8 pole fansets
- Easy Access Features
- Simplified Assembly
- Generously sized coil



- Standard Fin material options
- Sight Glass Viewport
- Rear Connections
- Compressor located in acoustically lined enclosure
- All Line Components located locally to compressor to minimise pipe runs
- Fan Grille is also removable for easy fan access
- Front cover can be removed completely, with no removal of fixings required.
- Lid raises up, with latch at 45°
- Crankcase heater fitted on all models

# NBQ Standard Features

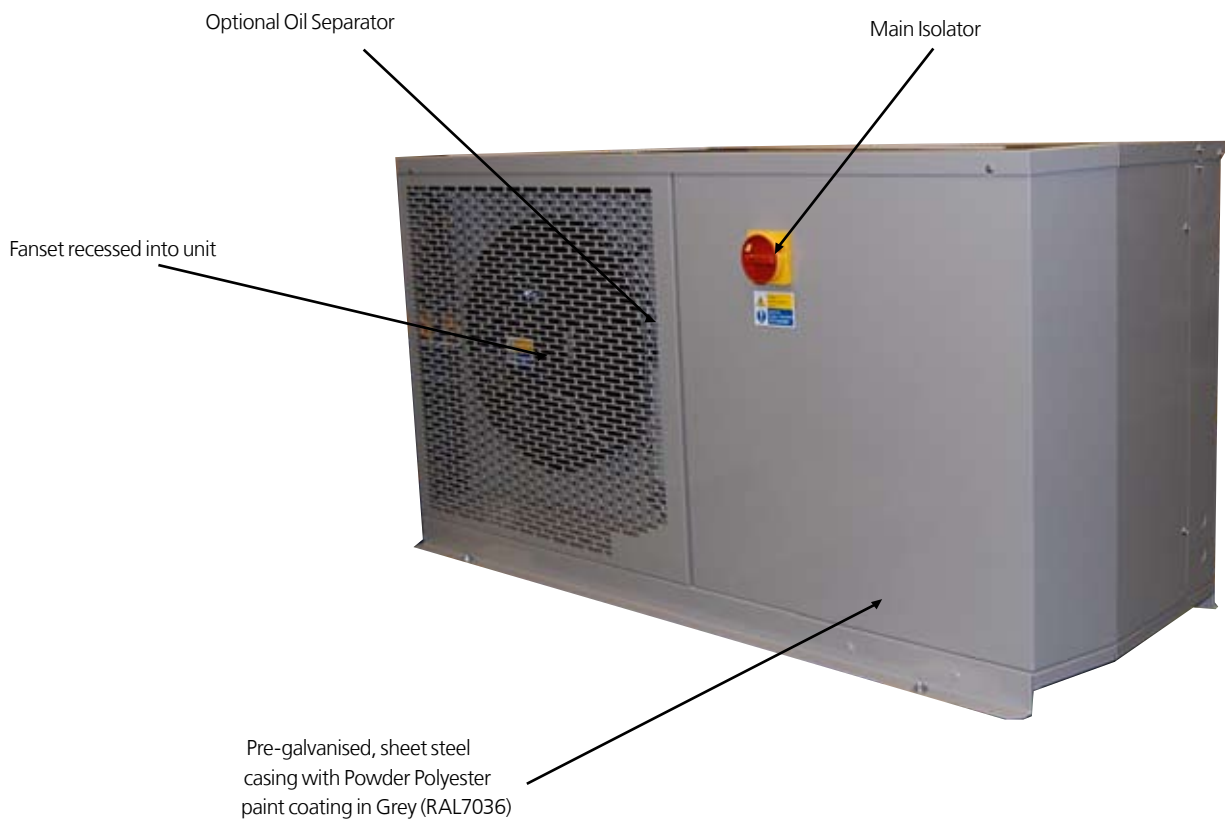
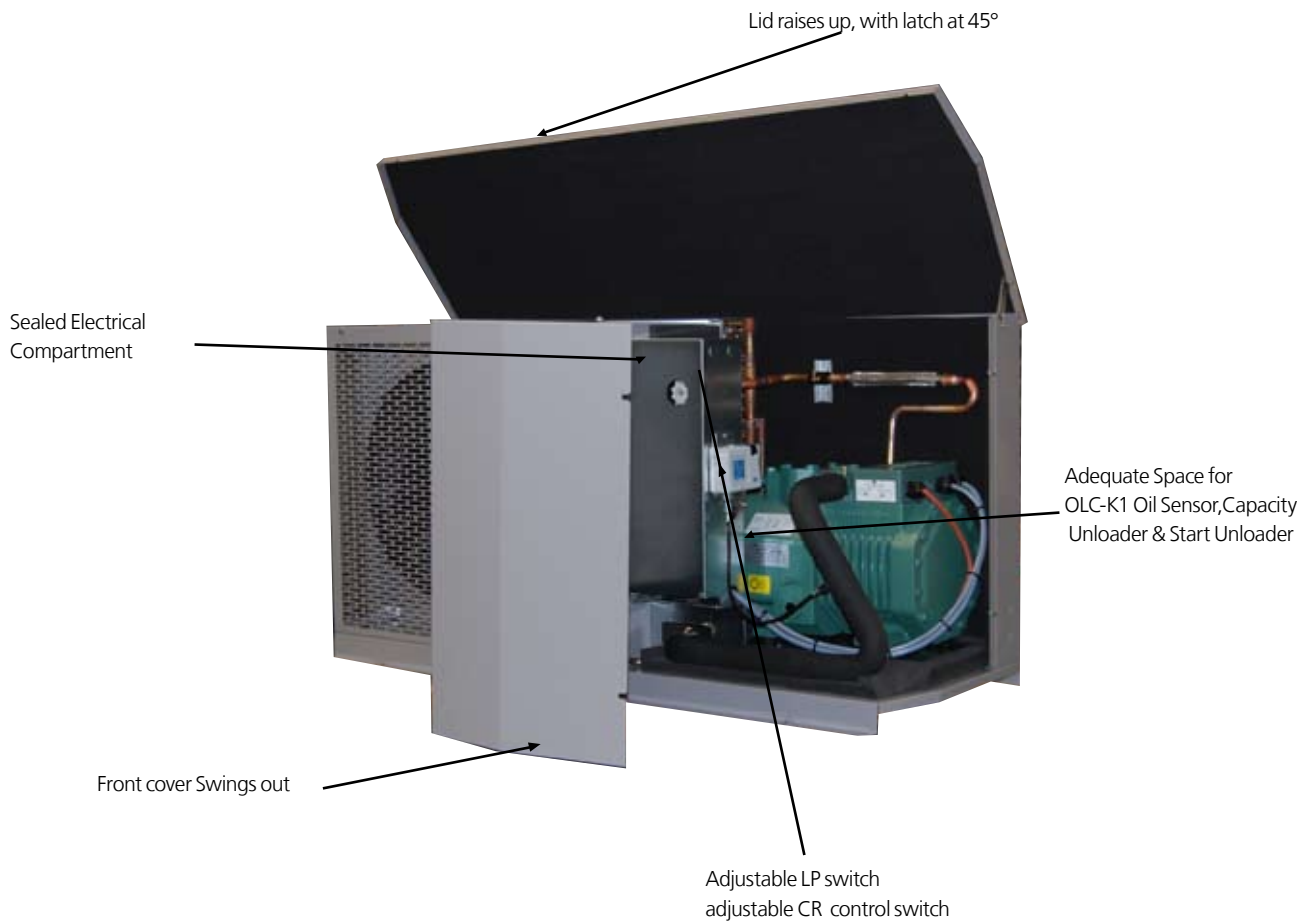
Standard specification

**N B Q 2 J C - 0 7 - X A 2**

Range	N
Comp Technology	B = Bitzer Reciprocating
Unit Type	Q = Quiet (6/8pl fans)
Compressor model	eg. 2JC-07 = 2JC-07.2Y
Oil Separator	X = No Oil Separator, S = Oil Separator
Coil/Case	A, B, D, E
Rows	2 = Rows, 3 = Rows



# NBQ Features





# NBQ - Motor 1

## Capacity

R404A

Medium temperature 100% Capacity (no CR Head)

Type	Ambient Temp. °C	Cooling Capacity	Qo [Watt]	Power consumption		Pe [kW]		
				Evaporation temperature °C				
				5	0		-5	-10
NBQ2JC-07-XA2	27	Q	4871	4157	3552	2947	2458	1969
		P	1.41	1.34	1.27	1.21	1.13	1.05
	32	Q	4468	3811	3253	2695	2242	1788
		P	1.51	1.43	1.35	1.26	1.17	1.08
	35	Q	4070	3604	3074	2544	2112	1679
		P	1.54	1.48	1.39	1.30	1.20	1.10
NBQ2HC-2-XA2	27	Q	5883	5064	4353	3642	3060	2478
		P	1.86	1.76	1.65	1.54	1.43	1.31
	32	Q	5398	4646	3989	3333	2792	2252
		P	1.98	1.85	1.73	1.60	1.47	1.34
	35	Q	4929	4395	3771	3147	2632	2116
		P	2.01	1.91	1.78	1.64	1.50	1.36
NBQ2GC-2-XA2	27	Q	6472	5609	4848	4087	3450	2813
		P	2.25	2.10	1.96	1.81	1.67	1.52
	32	Q	5926	5139	4440	3741	3154	2566
		P	2.39	2.22	2.06	1.90	1.73	1.57
	35	Q	5413	4857	4195	3534	2976	2418
		P	2.43	2.29	2.12	1.94	1.77	1.60
NBQ2FC-3-XA2	27	Q	7591	6694	5793	4892	4151	3410
		P	2.75	2.25	2.25	2.24	2.06	1.87
	32	Q	6950	6156	5315	4475	3791	3108
		P	2.88	2.29	2.31	2.34	2.13	1.92
	35	Q	6382	5832	5028	4224	3575	2926
		P	2.80	2.31	2.36	2.40	2.18	1.95
NBQ2EC-3-XB2	27	Q	9343	8163	7096	6030	5099	4167
		P	3.45	3.18	2.92	2.67	2.43	2.20
	32	Q	8564	7490	6510	5531	4677	3823
		P	3.67	3.37	3.08	2.80	2.53	2.27
	35	Q	7844	7085	6158	5231	4424	3616
		P	3.72	3.49	3.18	2.87	2.59	2.31
NBQ2DC-3-XB3	27	Q	11043	9626	8354	7082	5978	4875
		P	3.91	3.61	3.34	3.06	2.79	2.51
	32	Q	10121	8827	7658	6489	5477	4466
		P	4.16	3.83	3.52	3.21	2.90	2.59
	35	Q	9263	8348	7241	6134	5177	4220
		P	4.23	3.96	3.63	3.29	2.97	2.64
NBQ2CC-4-XB3	27	Q	12538	11048	9659	8271	7054	5837
		P	5.06	4.62	4.22	3.82	3.45	3.08
	32	Q	11457	10109	8842	7575	6457	5339
		P	5.35	4.88	4.44	4.00	3.59	3.19
	35	Q	9545	8352	7158	6099	5039	4039
		P	5.04	4.57	4.11	3.68	3.25	2.82
NBQ4FC-5-XD2	27	Q	15960	13792	11910	10027	8475	6922
		P	5.11	4.81	4.50	4.18	3.85	3.52
	32	Q	14658	12675	10941	9208	7771	6334
		P	5.44	5.10	4.74	4.38	4.01	3.63
	35	Q	13409	12004	10361	8717	7349	5980
		P	5.54	5.27	4.88	4.50	4.10	3.70
NBQ4EC-6-XD2	27	Q	18870	16460	14298	12137	10297	8458
		P	6.68	6.22	5.75	5.29	4.82	4.36
	32	Q	17261	15071	13087	11104	9409	7714
		P	7.08	6.56	6.04	5.51	5.00	4.48
	35	Q	15780	14237	12361	10484	8876	7267
		P	7.18	6.77	6.21	5.65	5.10	4.55
NBQ4DC-7-XD2	27	Q	21119	18544	16173	13802	11737	9672
		P	8.05	7.46	6.87	6.29	5.71	5.13
	32	Q	19284	16952	14785	12617	10717	8817
		P	8.50	7.86	7.21	6.56	5.92	5.28
	35	Q	17636	15997	13952	11907	10106	8305
		P	8.60	8.10	7.41	6.73	6.05	5.37
NBQ4CC-9-XD3	27	Q	25733	22619	19751	16883	14403	11924
		P	9.74	9.05	8.35	7.65	6.95	6.26
	32	Q	23572	20750	18129	15507	13220	10932
		P	10.29	9.53	8.77	8.01	7.24	6.48
	35	Q	21614	19629	17155	14681	12509	10337
		P	10.42	9.83	9.02	8.22	7.42	6.62
NBQ4VCS-10-XD3	27	Q	27274	23996	20922	17849	15173	12497
		P	10.01	9.16	8.34	7.53	6.77	6.01
	32	Q	24917	21936	19115	16295	13827	11359
		P	10.51	9.58	8.69	7.80	6.97	6.14
	35	Q	20700	18031	15362	13019	10767	8621
		P	9.84	8.90	7.96	7.08	6.21	5.37
NBQ4TCS-12-XE2	27	Q	35153	30674	26619	22565	19097	15629
		P	12.02	11.05	10.17	9.29	8.44	7.60
	32	Q	32159	28079	24377	20675	17476	14277
		P	12.68	11.61	10.62	9.64	8.70	7.77
	35	Q	29402	26523	23032	19541	16503	13465
		P	12.80	11.94	10.89	9.85	8.86	7.87
NBQ4PCS-15-XE3	27	Q	42712	37196	32201	27206	22712	18217
		P	13.73	12.54	11.52	10.49	9.54	8.58
	32	Q	39179	34151	29556	24961	20859	16757
		P	14.47	13.13	11.99	10.84	9.79	8.75
	35	Q	35875	32323	27969	23614	19748	15881
		P	14.55	13.48	12.27	11.05	9.95	8.85
NBQ4NCS-20-XE3	27	Q	47316	41341	35889	30437	25778	21119
		P	16.63	15.18	13.84	12.51	11.28	10.05
	32	Q	43439	37954	32916	27877	23566	19255
		P	17.45	15.84	14.37	12.90	11.55	10.20
	35	Q	39815	35922	31132	26342	22239	18136
		P	17.51	16.24	14.68	13.13	11.71	10.29

Unit with Capacity Regulation not to be used at this condition.

# NB Physical Data

	Type	Compressor		Motor Connection (V)	Case size, Condenser coil rows A,B,D,E / 2,3	Fan					
		Max operating current	Max starting current			Fan type	Current consumption	Max starting current	Motor Connection	Power Consumption	Air Flow condenser
		FLC (A)	RA (A)				FLC (A)	LRA (A)		(kW)	
NBQ Motor 1	NBQ2JC-07-XA2	3.5	14.8	D.O.L. 380...420VY 3/50 Hz	A2	1 x 6pl 400mm	0.7	1.4	D.O.L. 220...240V 1/50 Hz	0.13	2484
	NBQ2HC-2-XA2	4.3	22.5		A2	1 x 6pl 400mm	0.7	1.4		0.13	2484
	NBQ2GC-2-XA2	4.7	22.5		A2	1 x 6pl 400mm	0.7	1.4		0.13	2484
	NBQ2FC-3-XA2	5.8	25.5		A2	1 x 6pl 400mm	0.7	1.4		0.13	2484
	NBQ2EC-3-XB2	6.4	37.0		B2	1 x 6pl 450mm	1.0	1.8		0.14	3600
	NBQ2DC-3-XB3	7.8	37.0		B3	1 x 6pl 450mm	1.0	1.8		0.14	3276
	NBQ2CC-4-XB3	9.4	44.2		B3	1 x 6pl 450mm	1.0	1.8		0.14	3276
	NBQ4FC-5-XD2	10.8	62.2		D2	1 x 8pl 630mm	2.0	3.3		0.34	7632
	NBQ4EC-6-XD2	13.2	62.2		D2	1 x 8pl 630mm	2.0	3.3		0.34	7632
	NBQ4DC-7-XD2	15.9	82.4		D2	1 x 8pl 630mm	2.0	3.3		0.34	7632
	NBQ4CC-9-XD3	20.0	82.4		D3	1 x 8pl 630mm	2.0	3.3		0.34	7128
	NBQ4VCS-10-XD3	21.0	59.0	P.W.	D3	1 x 8pl 630mm	2.0	3.3	0.34	7128	
	NBQ4TCS-12-XE2	24.0	69.0	380...420VYY 3/50 Hz	E2	2 x 8pl 630mm	4.0	6.6	0.67	14472	
	NBQ4PCS-15-XE3	31.0	81.0	E3	2 x 8pl 630mm	4.0	6.6	0.67	13248		
NBQ4NCS-20-XE3	37.0	97.0	E3	2 x 8pl 630mm	4.0	6.6	0.67	13248			
NBQ Motor 2	NBQ2KC-05-XA2	2.7	12.0	D.O.L. 380...420VY 3/50 Hz	A2	1 x 6pl 400mm	0.7	1.4	D.O.L. 220...240V 1/50 Hz	0.13	2484
	NBQ2JC-07-XA2	3.5	14.8		A2	1 x 6pl 400mm	0.7	1.4		0.13	2484
	NBQ2HC-1-XA2	3.5	16.7		A2	1 x 6pl 400mm	0.7	1.4		0.13	2484
	NBQ2GC-2-XA2	4.7	22.5		A2	1 x 6pl 400mm	0.7	1.4		0.13	2484
	NBQ2FC-2-XA2	4.9	22.5		A2	1 x 6pl 400mm	0.7	1.4		0.13	2484
	NBQ2EC-2-XA3	5.7	26.0		A3	1 x 6pl 400mm	0.7	1.4		0.13	2268
	NBQ2DC-2-XA3	6.9	30.7		A3	1 x 6pl 400mm	0.7	1.4		0.13	2268
	NBQ2CC-3-XA3	8.5	37.0		A3	1 x 6pl 400mm	0.7	1.4		0.13	2268
	NBQ4FC-3-XD2	9.2	42.5		D2	1 x 8pl 630mm	2.0	3.3		0.34	7632
	NBQ4EC-4-XD2	10.7	47.0		D2	1 x 8pl 630mm	2.0	3.3		0.34	7632
	NBQ4DC-5-XD2	13.5	62.2		D2	1 x 8pl 630mm	2.0	3.3		0.34	7632
	NBQ4CC-6-XD3	15.9	62.2	D3	1 x 8pl 630mm	2.0	3.3	0.34	7128		
	NBQ4VCS-6-XD3	14.0	39.0	P.W.	D3	1 x 8pl 630mm	2.0	3.3	0.34	7128	
	NBQ4TCS-8-XD3	17.0	49.0	380...420VYY 3/50 Hz	D3	1 x 8pl 630mm	2.0	3.3	0.34	7128	
	NBQ4PCS-10-XD3	21.0	59.0	D3	1 x 8pl 630mm	2.0	3.3	0.34	7128		
	NBQ4NCS-12-XD3	24.0	69.0	D3	1 x 8pl 630mm	2.0	3.3	0.34	7128		

# NBQ Physical Data

Type	Connections		Receiver			Weight (Stand)  (kg)	Sound Levels	
	Suction valve  Zoll Inch Pouce	Refrigerant Outlet  Zoll Inch Pouce	Total volume  (L)	Maximum refrigerant charge			dB(A)*	
				R134a (kg)	R404A / R507A (kg)		Max*	Min*
NBQ2JC-07-XA2	5/8"	3/8"	6.2	5.7	5.0	136	38	32
NBQ2HC-2-XA2	5/8"	3/8"	6.2	5.7	5.0	138	38	32
NBQ2GC-2-XA2	5/8"	3/8"	6.2	5.7	5.0	138	39	33
NBQ2FC-3-XA2	5/8"	3/8"	6.2	5.7	5.0	140	39	33
NBQ2EC-3-XB2	7/8"	1/2"	6.2	5.7	5.0	172	40	36
<b>NBQ2DC-3-XB3</b>	<b>7/8"</b>	<b>1/2"</b>	<b>6.2</b>	<b>5.7</b>	<b>5.0</b>	<b>172</b>	<b>40</b>	<b>36</b>
NBQ2CC-4-XB3	7/8"	1/2"	6.2	5.7	5.0	172	40	36
NBQ4FC-5-XD2	7/8"	5/8"	18.0	16.6	14.4	224	44	40
NBQ4EC-6-XD2	1 1/8"	5/8"	18.0	16.6	14.4	224	44	41
NBQ4DC-7-XD2	1 1/8"	7/8"	18.0	16.6	14.4	225	44	41
NBQ4CC-9-XD3	1 1/8"	7/8"	18.0	16.6	14.4	282	45	42
NBQ4VCS-10-XD3	1 1/8"	7/8"	18.0	16.6	14.4	330	45	42
NBQ4TCS-12-XE2	1 3/8"	7/8"	18.0	16.6	14.4	342	48	44
NBQ4PCS-15-XE3	1 5/8"	7/8"	18.0	16.6	14.4	343	48	45
NBQ4NCS-20-XE3	1 5/8"	7/8"	18.0	16.6	14.4	351	48	45
NBQ2KC-05-XA2	5/8"	3/8"	6.2	5.7	5.0	136	38	32
NBQ2JC-07-XA2	5/8"	3/8"	6.2	5.7	5.0	136	38	32
NBQ2HC-1-XA2	5/8"	3/8"	6.2	5.7	5.0	137	38	32
NBQ2GC-2-XA2	5/8"	3/8"	6.2	5.7	5.0	138	39	33
NBQ2FC-2-XA2	5/8"	3/8"	6.2	5.7	5.0	138	39	33
NBQ2EC-2-XA3	7/8"	3/8"	6.2	5.7	5.0	164	39	33
NBQ2DC-2-XA3	7/8"	3/8"	6.2	5.7	5.0	164	39	33
NBQ2CC-3-XA3	7/8"	3/8"	6.2	5.7	5.0	166	39	33
NBQ4FC-3-XD2	7/8"	5/8"	18.0	16.6	14.4	220	44	40
NBQ4EC-4-XD2	1 1/8"	5/8"	18.0	16.6	14.4	222	44	41
NBQ4DC-5-XD2	1 1/8"	5/8"	18.0	16.6	14.4	224	44	41
NBQ4CC-6-XD3	1 1/8"	5/8"	18.0	16.6	14.4	282	45	42
NBQ4VCS-6-XD3	1 1/8"	7/8"	18.0	16.6	14.4	323	45	42
NBQ4TCS-8-XD3	1 3/8"	7/8"	18.0	16.6	14.4	325	45	42
NBQ4PCS-10-XD3	1 3/8"	7/8"	18.0	16.6	14.4	330	45	42
NBQ4NCS-12-XD3	1 3/8"	7/8"	18.0	16.6	14.4	332	45	42

Noise levels are sound pressure, measured in decibels at 10m from the front face / Compressor Access door side of the unit.

Max noise levels are with Condenser fan/s at maximum speed and compressor fully loaded,

Min noise levels are with Condenser fan/s at minimum speed via speed controller and compressor fully loaded

Unit Weights are net dry weights without packing or refrigerant, also not including additional options (Oil separator / SU Head / CR Head)



GEA Heat Exchangers

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We reserve the right to change in whole or part, the specification detailed in this brochure without prior notice and, when necessary to achieve continuous production, to use alternative competitive designs of sub contract components made by various manufacturers.

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