



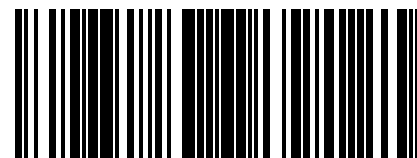
INSTALLATION MANUAL

CHILLER REVERSIBLE HEAT PUMP

- EXTERNAL UNIT
- HIGH EFFICIENCY
- HOT WATER PRODUCING UP TO 131°F / 55°C
- POWER SUPPLY 60Hz

NRL 800-1800

EN



Dear Customer,

Thank you for choosing an AERMEC product. This product is the result of many years of experience and in-depth engineering research, and it is built using top quality materials and advanced technologies.

Moreover, the CE mark guarantees that our appliances fully comply with the requirements of the European Machinery Directive in terms of safety. We constantly monitor the quality level of our products, and as a result AERMEC products are synonymous with Safety, Quality, and Reliability.

Product data may be subject to modifications deemed necessary for improving the product without the obligation to give prior notice.

Thank you again.
AERMEC S.p.A

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Standards and Directives respected on designing and constructing the unit:

PROTECTION RATING

1. IP 24

ACOUSTIC PART:

1. ISO DIS 9614/2 (INTENSIMETRIC METHOD))
2. SOUND POWER (EN ISO 9614-2)
3. SOUND PRESSURE (EN ISO 3744)

REFRIGERANT GAS:

This unit contains fluoride gases with greenhouse effect covered by the Kyoto Protocol. Maintenance and disposal must only be performed by qualified staff.

STANDARD:

UL 1995

Heating and cooling equipment.

ANSI/NFPA

Standard 70 National Electrical code (N.E.C.).

CSA C.22.1.- C.22.2

Safety Standard Electrical Installation.

1. DESCRIPTION AND CHOICE OF UNIT

Chillers and heat pumps for outdoor condensed in the air with R410A Series NRL have been designed and manufactured to satisfy heating and cooling needs and the production of domestic hot water (DHW) in medium to small commercial or residential buildings.

Maximum reliability

The presence of several scroll compressors allows NRL chillers various partialisations of the cooling capacity.

Models:

1. NRL "°" standard chiller
2. NRL "H" heat pump *
3. NRL "C" motocondensing

The versions can be in different set-ups at the same time in order to satisfy a wide range of plant engineering solutions:

1. "A" HIGH EFFICIENCY
2. "E" SILENCED HIGH EFFICIENCY
3. "D" WITH DESUPERHEATER
4. "T" WITH TOTAL RECOVERY

Configurations not allowed:

YD / YT / YH
HT / HC
TC / DC

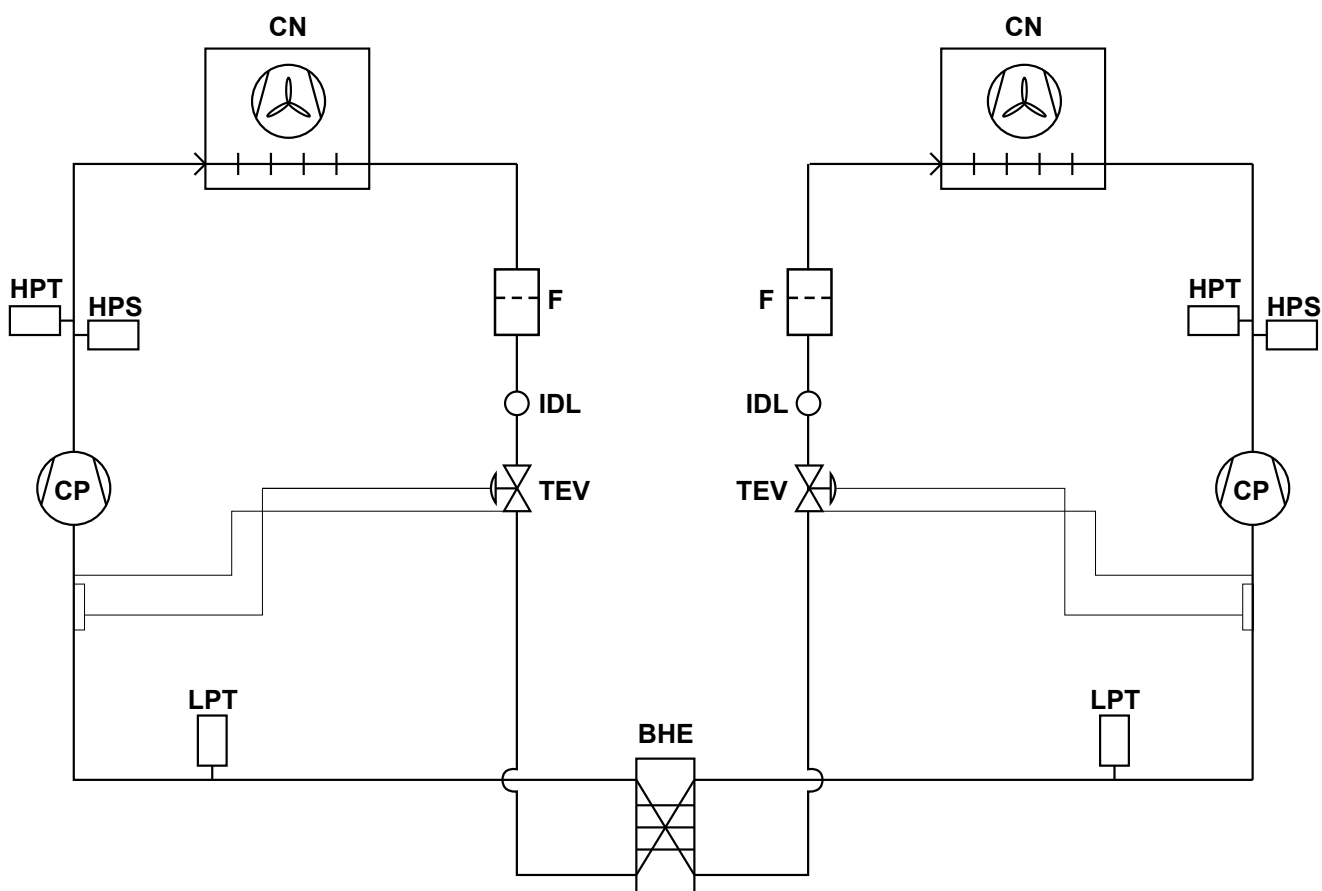
* Possibility of production of D.H.W. (DCPX_UL | VMF-ACS | AER485).

2. COMPONENTS AND CONFIGURATIONS

COMPONENTS	VERSIONS				
	°	H	C	D	T
COOLING CIRCUIT					
THERMOSTATIC VALVE X - Y (CONFIGURATION OPTION)	yes	yes	no	no	no
EXCHANGER PLATE (EVAPORATOR)	yes	yes	no	yes	yes
EXCHANGER PLATE (TOTAL RECOVERY)	no	no	no	no	yes
EXCHANGER PLATE (DESUPERHEATER)	no	no	no	yes	no
AIR SIDE EXCHANGE	yes	yes	yes	yes	yes
COMPRESSOR	yes	yes	yes	yes	yes
DEHYDRATOR FILTER	yes	yes	yes	yes	yes
HIGH PRESSURE SWITCH	yes	yes	yes	yes	yes
HIGH PRESSURE TRANSDUCER	yes	yes	yes	yes	yes
LOW PRESSURE TRANSDUCER	yes	yes	yes	yes	yes
LIQUID INDICATOR	yes	yes	yes	yes	yes
LIQUID TANK	no	yes	no	no	yes
ONE-WAY VALVES	no	yes	no	no	yes
LIQUID SEPARATOR	no	yes	no	no	yes
CYCLE REVERSE VALVE	no	yes	no	no	yes

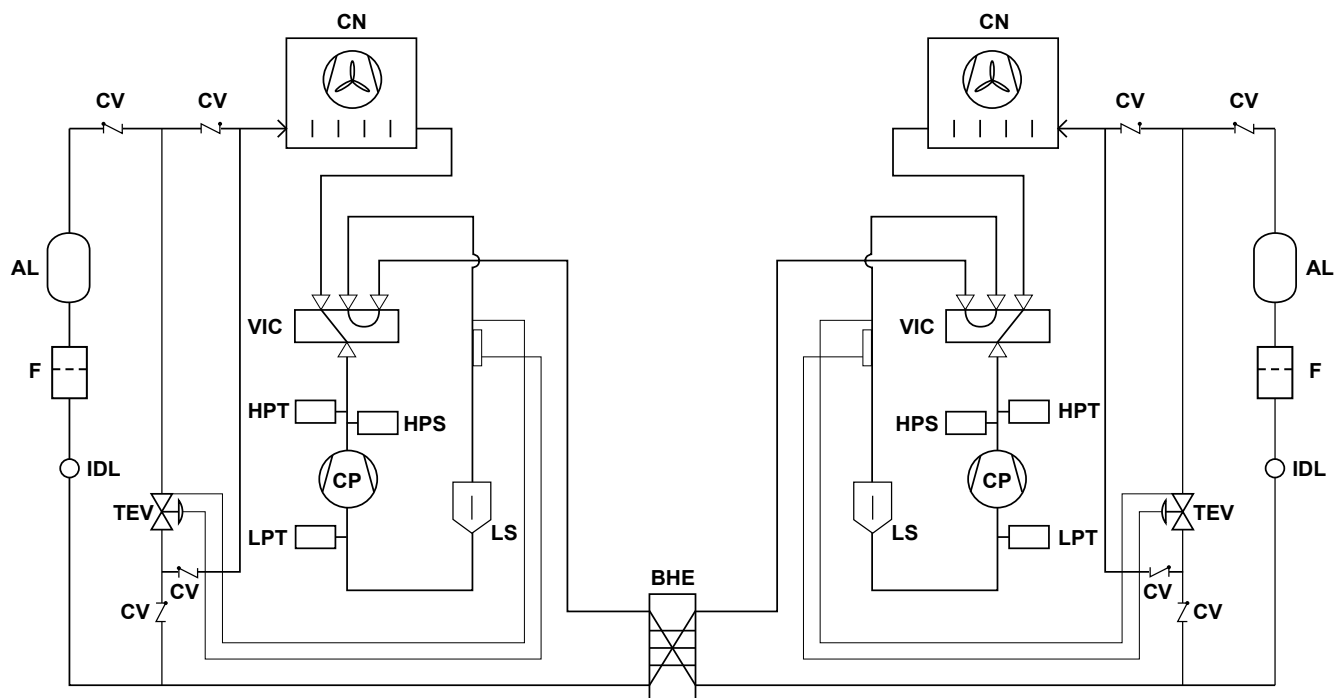
3. COOLING CIRCUIT

3.1. NRL ONLY COOLING


KEY:

BHE	PLATE HEAT EXCHANGER
CN	AIR SIDE EXCHANGE
CP	COMPRESSOR
F	FILTER DRIER
HPS	HIGH PRESSURE SWITCH
HPT	HIGH PRESSURE TRANSDUCERS
IDL	LIQUID INDICATOR
LPT	LOW PRESSURE TRANSDUCER

3.2. COOLING CIRCUIT NRL HEAT PUMP



KEY:

AL	FLUID STORAGE TANK
BHE	PLATE HEAT EXCHANGER
CN	AIR SIDE EXCHANGE
CP	COMPRESSOR
CV	ONE-WAY VALVES
F	FILTER DRIER
HPS	HIGH PRESSURE SWITCH
HPT	HIGH PRESSURE TRANSDUCERS
IDL	LIQUID INDICATOR
LPT	LOW PRESSURE TRANSDUCERS
LS	LIQUID SEPARATOR
VIC	REVERSE CYCLE VALVE

4. SELECTION AND PLACE OF INSTALLATION

Before beginning installation consent with client and pay attention to the following recommendations:

- The support surface must be capable of supporting the unit weight.
- The safety differences between the unit and other appliances or structures must be scrupulously respected so that the inlet and outlet air from the fans is free to circulate.
- The unit must be installed by an enabled technician in compliance with the national legislation in force in the country of destination, respecting the minimum technical spaces in order to allow maintenance.

5. POSITIONING

The machine is delivered from the factory wrapped in estincoil. Before handling the unit, verify the lifting capacity of the machines used. After removal of packaging, movement of apparatus must be carried



The unit must be installed by a qualified and suitably trained technician, in compliance with the national legislation in force in the country of destination (Ministerial Decree 329/2004). AERMEC will not assume any responsibility for damage due to failure to follow these instructions.



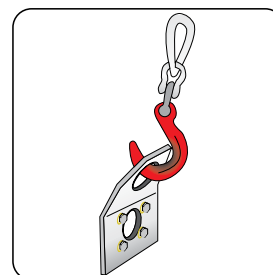
Before beginning any operation, READ THESE INSTRUCTIONS CAREFULLY AND CARRY OUT THE SAFETY CHECKS TO REDUCE ALL RISK OF DANGER TO A MINIMUM. All the staff involved must have thorough knowledge of the operations and any dangers that may arise at the moment in which the installation operations are carried out.

out by qualified and adequately equipped personnel. To handle the machine: see figure

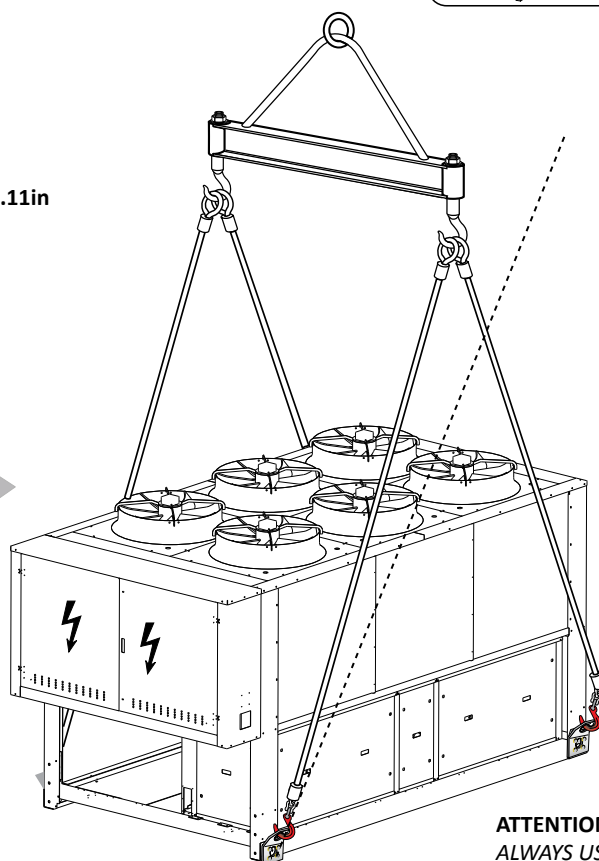
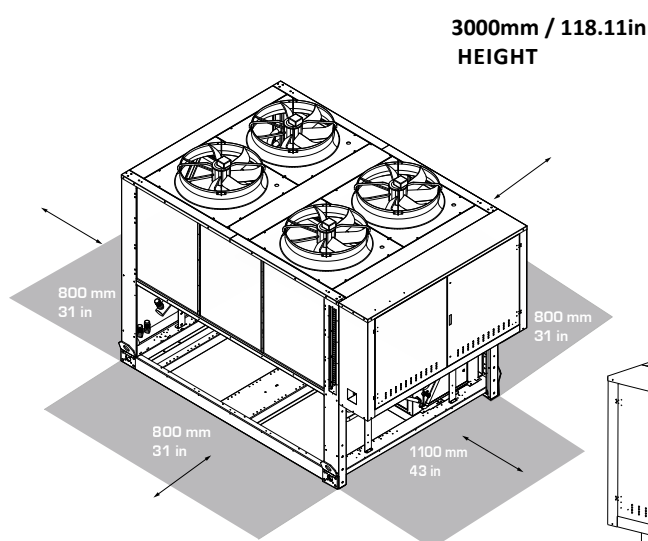
- attach the lifting belts to the relevant eye-bolts (as indicated in figure).
- ATTENTION: ALWAYS USE THE RELEVANT EYE-BOLTS**
- To ensure that the structure of the unit is not damaged, place protection between the lifting belt and the unit. It is strictly prohibited to stand below the unit.
 - Remember that whilst operational the chiller can cause vibrations; therefore anti-vibration mounts (AVX accessories) are recommended, fixed in the holes

-on the base according to the assembly layout.

- It is mandatory to foresee to the necessary technical space in order to allow ROUTINE AND EXTRAORDINARY MAINTENANCE interventions
- Fix the unit checking that it is level. Make sure that the hydraulic and electric part can be easily reached.



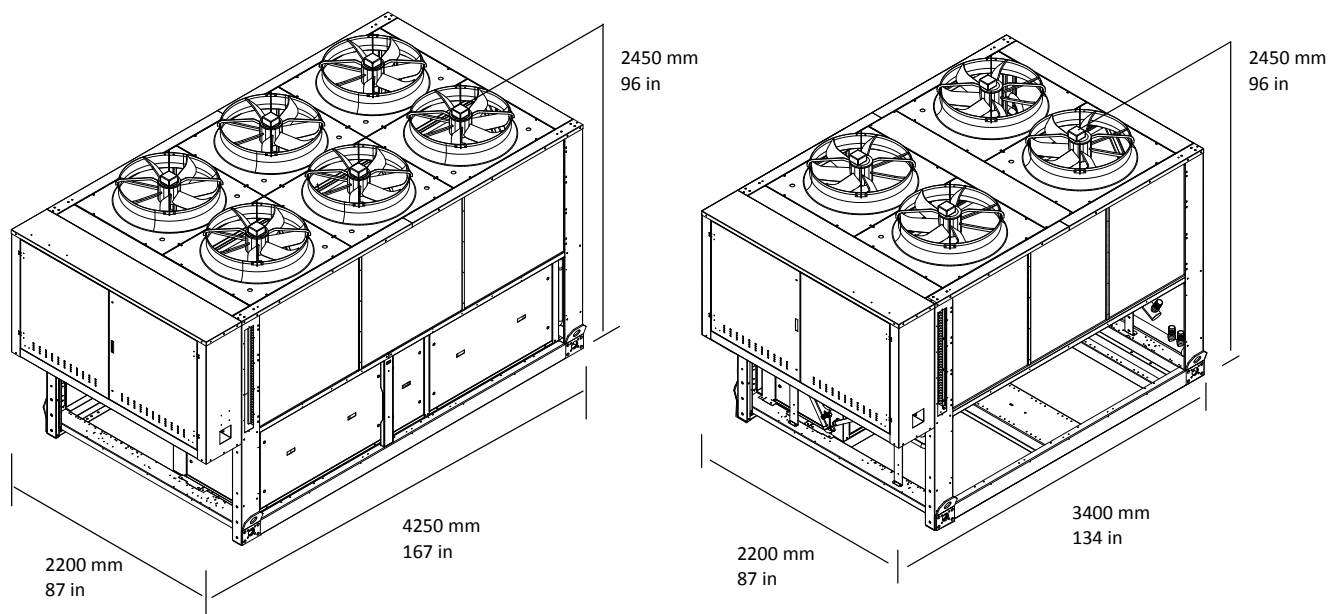
5.1. MINIMUM TECHNICAL (mm)



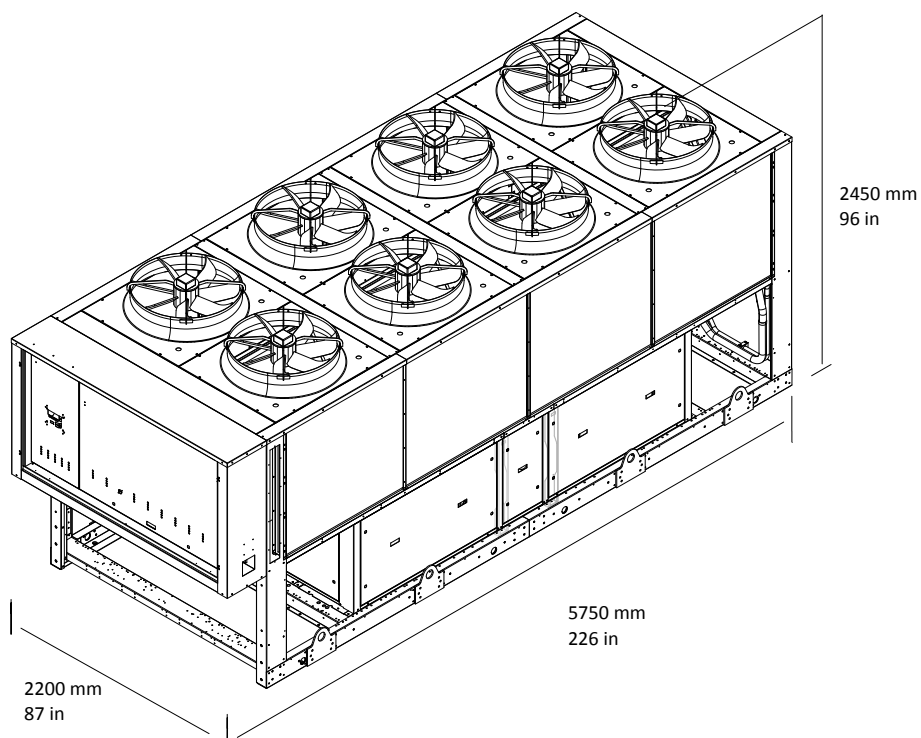
ATTENTION:
ALWAYS USE
THE RELEVANT
EYE-BOLTS

6. DIMENSIONS

6.1. NRL 800 - 900 - 1000 HA / NRL 800 900 1000 A

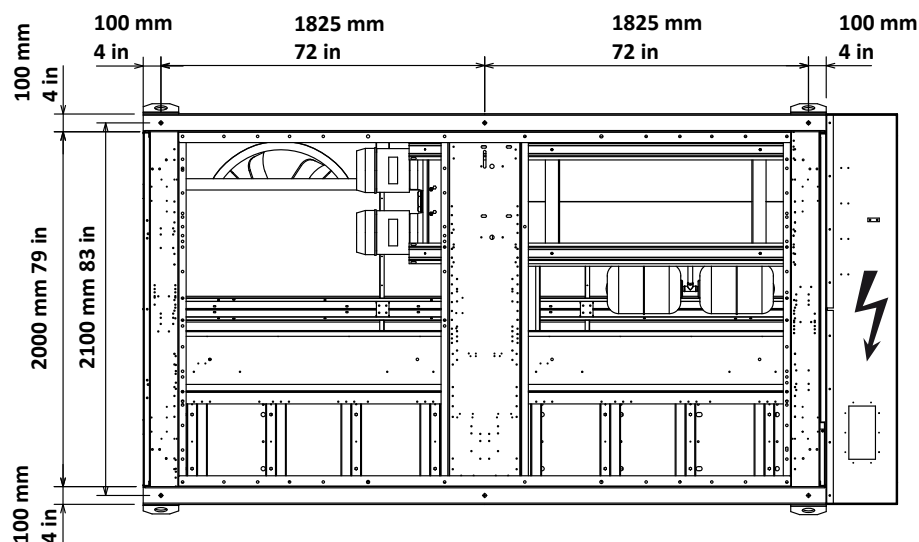


6.2. NRL 1250 - 1400 - 1500 - 1650 - 1800 HA / NRL 1250 - 1400 - 1500 - 1650 - 1800A / NRL 140 P1

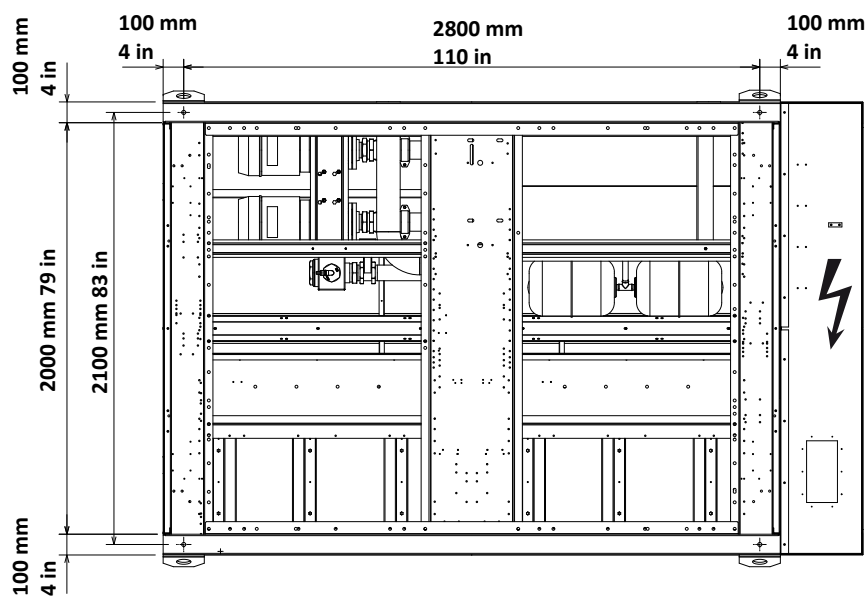


7. ANTIVIBRATION POSITIONING

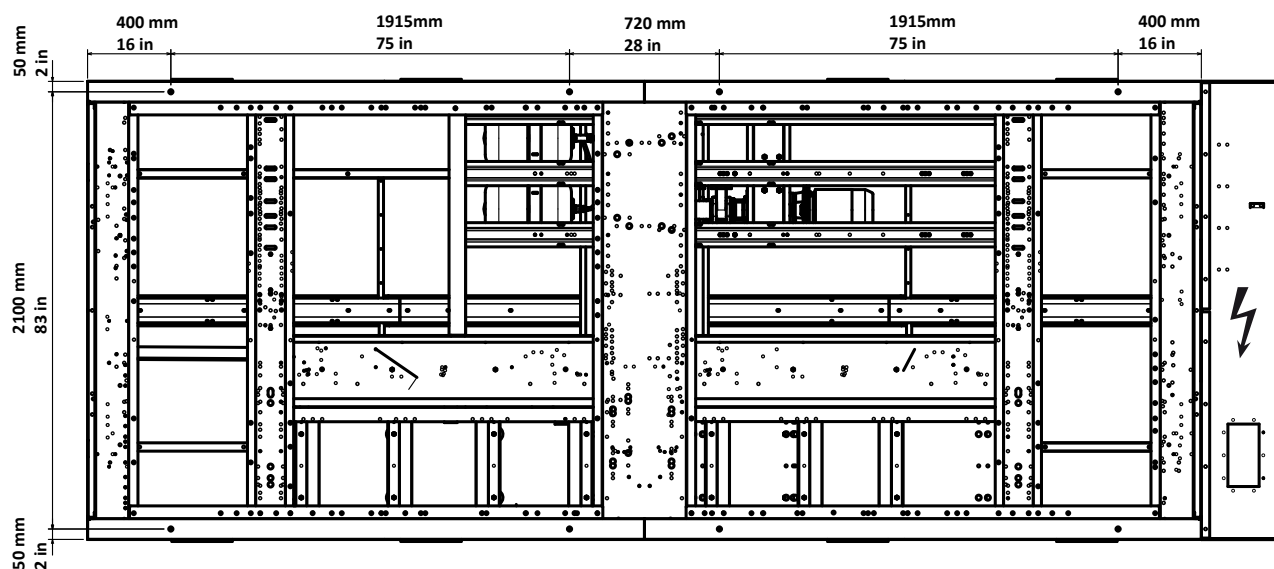
7.1. NRL 800 - 900 - 1000 HA



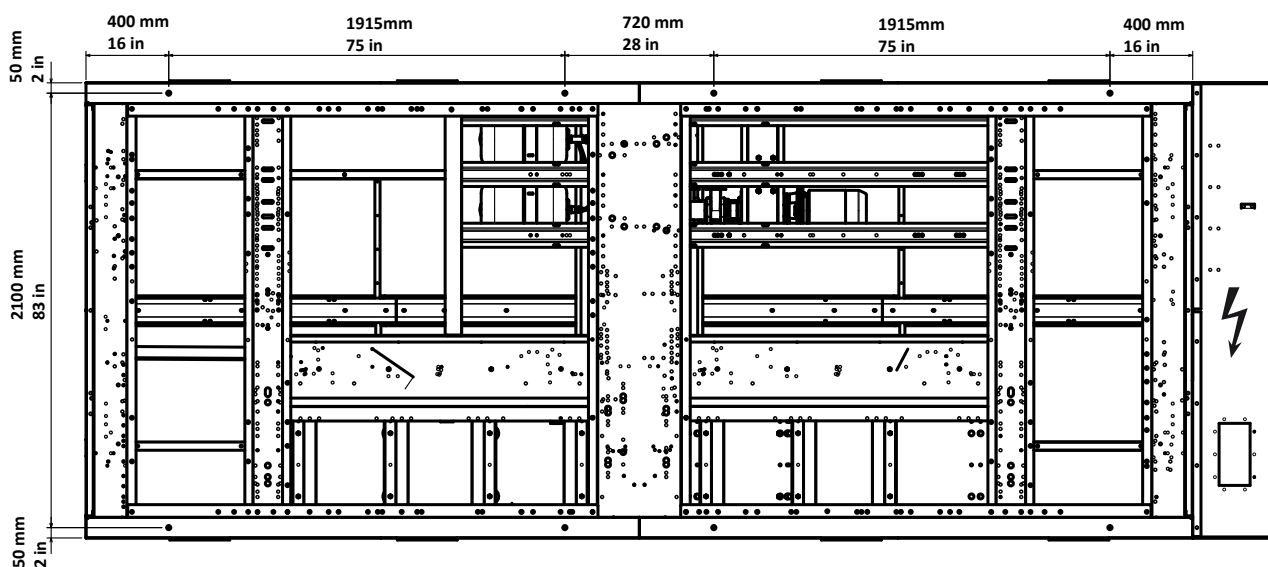
7.2. NRL 800 - 900 - 1000 A



7.3. NRL 1250 - 1400 - 1500 - 1650 - 1800 HA / NRL 1250 - 1400 - 1500 - 1650 - 1800A

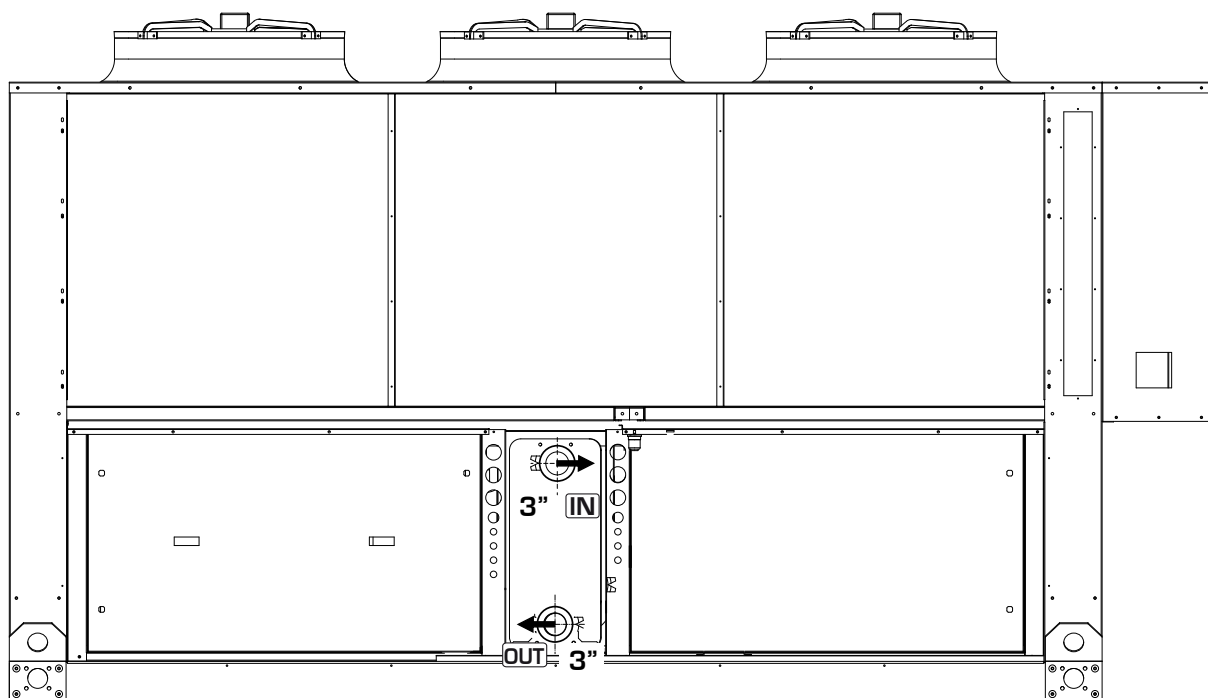


7.4. NRL 1400 P1

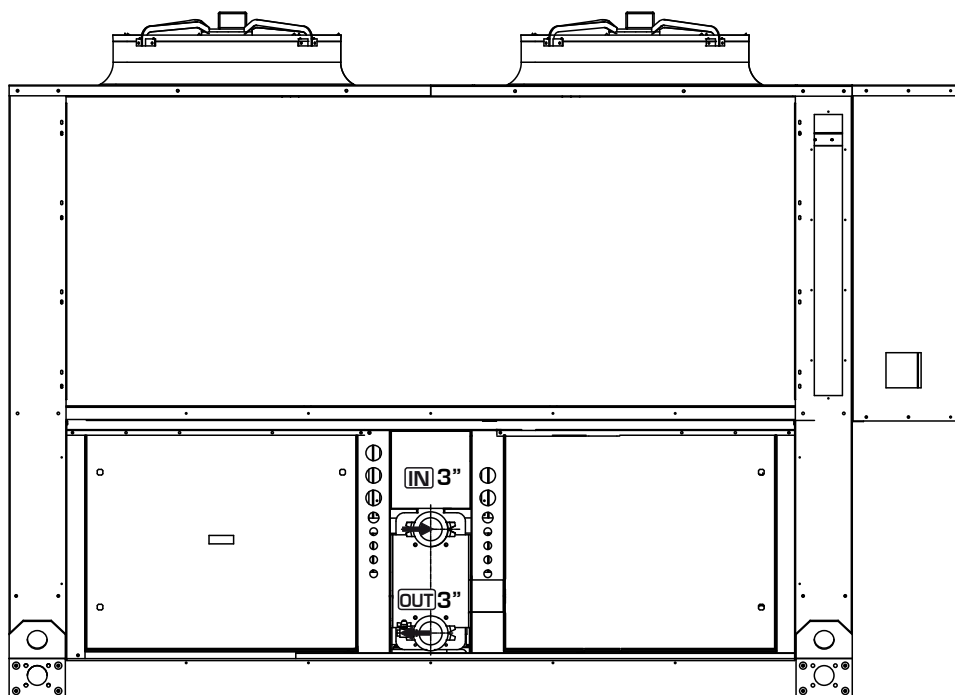


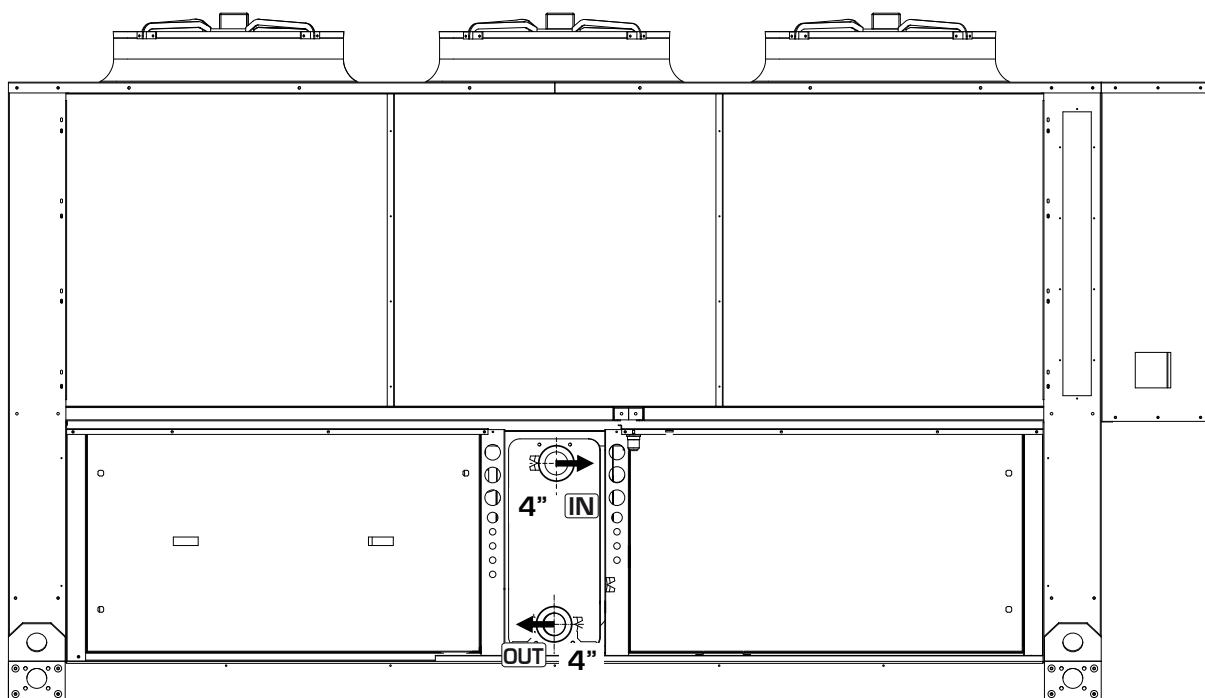
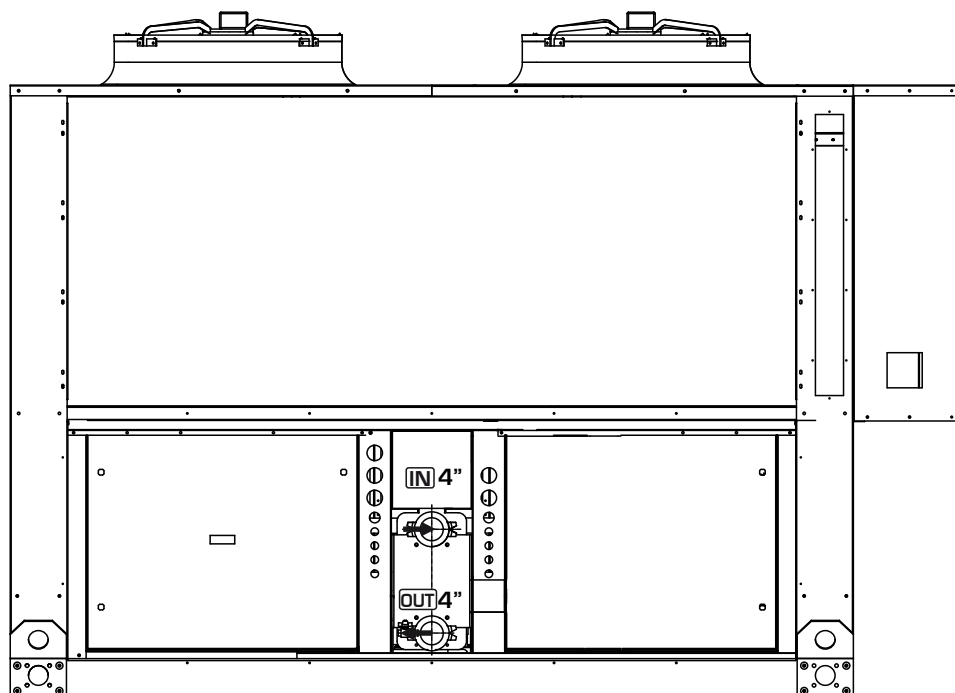
8. HYDRAULIC CONNECTION

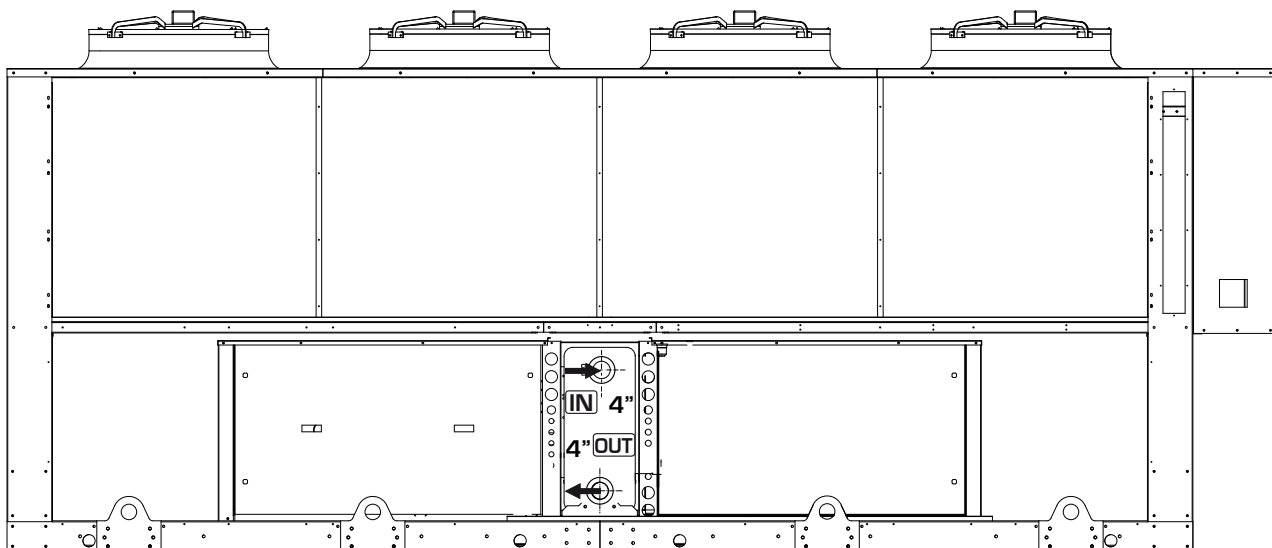
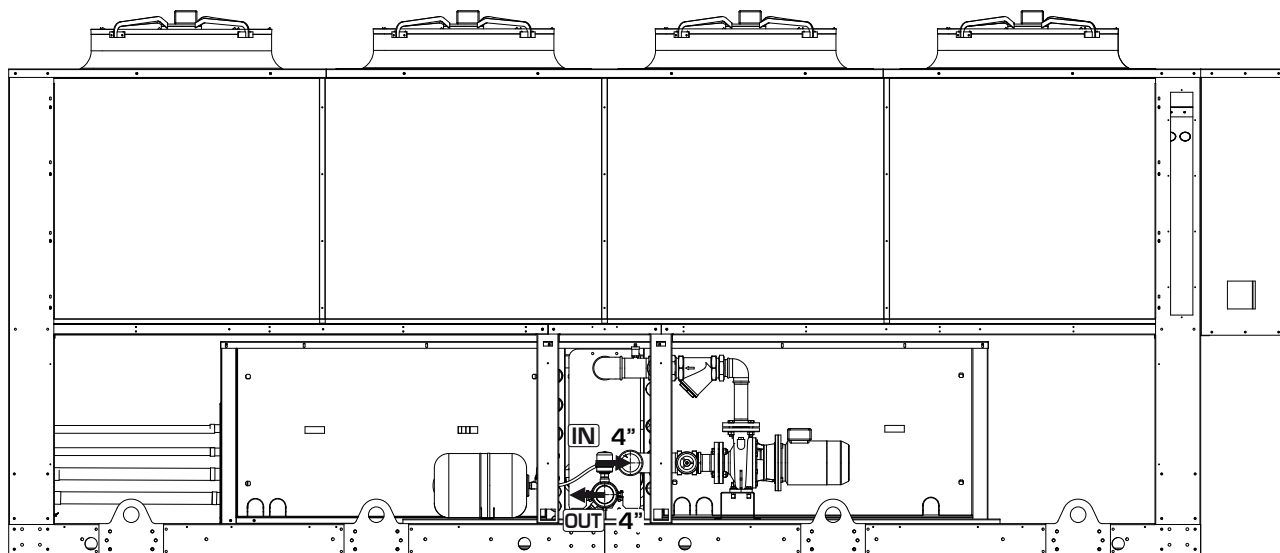
8.1. NRL 800 - 900 HA



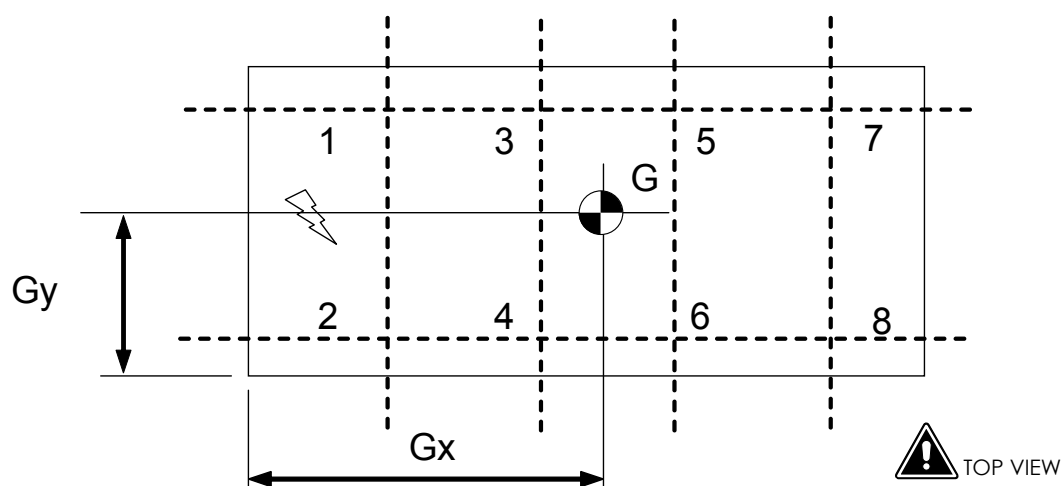
8.2. NRL 800 - 900 A



8.4. 1000 HA**8.3. 1000 A**

8.6. NRL 1250 - 1400 - 1500 - 1650 - 1800 HA / NRL 1250 - 1400 - 1500 - 1650 - 1800A**8.5. NRL 1400 HA P1**

9. DISTRIBUTION OF PERCENTAGE WEIGHTS ON SUPPORTINGPOINTS

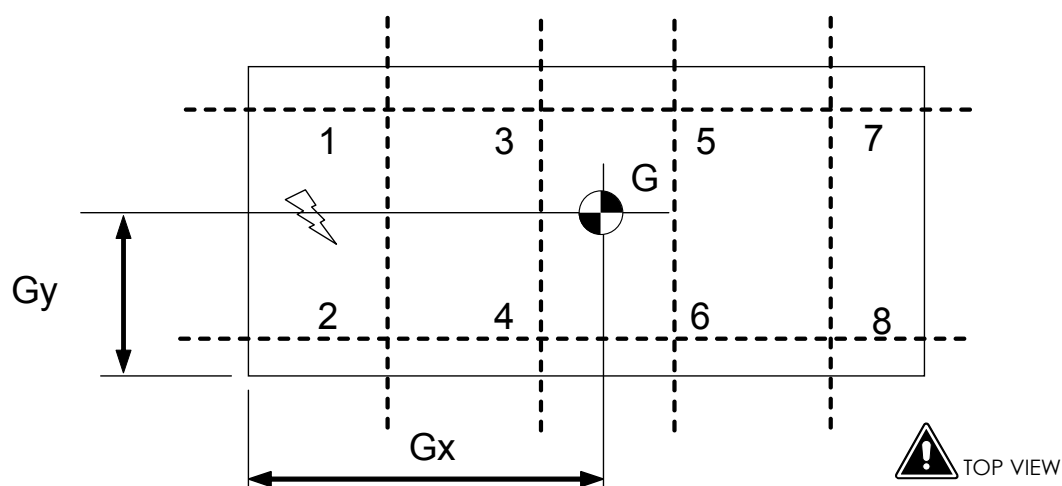


VERSION COOLING ONLY

MODEL	Version	Hydronic kit	EMPTY					RUNNING						KIT AVX
			WEIGHT	CENTRE OF GRAVITY				TOTAL WEIGHT	WATER	CENTRE OF GRAVITY				
				Lbs	XG mm	XG in	YG mm			YG in	Lbs	XG mm	XG in	
NRL 800	A	00	4134	1296	51,02	954	37,55	4167	33	1298	51,09	955	37,61	AVX 704
		01	4861	1289	50,75	1066	41,98	6504	1642	1280	50,41	1223	48,17	AVX 705
		02	4971	1288	50,72	1081	42,55	6614	1642	1280	50,39	1232	48,49	AVX 705
		03	4883	1289	50,75	1068	42,07	6526	1642	1280	50,41	1225	48,22	AVX 705
		04	5016	1288	50,71	1085	42,72	6658	1642	1280	50,39	1234	48,59	AVX 705
		P1	4475	1292	50,88	1012	39,82	4696	220	1292	50,88	1040	40,94	AVX 706
		P2	4586	1291	50,84	1029	40,50	4806	220	1291	50,84	1056	41,56	AVX 706
		P3	4497	1292	50,88	1014	39,93	4718	220	1292	50,87	1042	41,04	AVX 706
		P4	4586	1291	50,85	1027	40,45	4806	220	1291	50,84	1055	41,52	AVX 706
NRL 900	A	00	4475	1344	52,90	927	36,51	4519	44	1345	52,96	929	36,59	AVX 710
		01	5203	1330	52,38	1036	40,78	6856	1653	1313	51,68	1192	46,94	AVX 711
		02	5313	1329	52,31	1050	41,35	6967	1653	1312	51,64	1201	47,27	AVX 711
		03	5269	1330	52,35	1043	41,08	6923	1653	1312	51,66	1197	47,12	AVX 711
		04	5445	1327	52,24	1064	41,91	7099	1653	1311	51,60	1209	47,60	AVX 711
		P1	4817	1337	52,63	983	38,69	5049	231	1335	52,56	1011	39,79	AVX 706
		P2	4927	1335	52,56	999	39,35	5159	231	1333	52,49	1026	40,39	AVX 706
		P3	4883	1336	52,59	991	39,03	5115	231	1334	52,52	1019	40,11	AVX 706
		P4	5016	1334	52,51	1010	39,76	5247	231	1332	52,44	1036	40,77	AVX 706
NRL 1000	A	00	4850	1330	52,34	933	36,75	4916	66	1332	52,42	936	36,85	AVX 716
		01	5600	1319	51,93	1034	40,69	7275	1676	1305	51,39	1182	46,54	AVX 711
		02	5710	1318	51,88	1047	41,22	7385	1676	1304	51,36	1190	46,86	AVX 711
		03	5644	1318	51,91	1041	40,97	7319	1676	1305	51,37	1186	46,71	AVX 711
		04	5820	1316	51,82	1060	41,74	7496	1676	1304	51,32	1198	47,18	AVX 711
		P1	5214	1324	52,14	984	38,75	5467	254	1324	52,11	1011	39,79	AVX 712
		P2	5324	1323	52,07	1000	39,36	5578	254	1322	52,05	1025	40,35	AVX 712
		P3	5258	1323	52,10	992	39,07	5512	254	1323	52,08	1018	40,08	AVX 712
		P4	5390	1322	52,03	1009	39,74	5644	254	1321	52,01	1034	40,70	AVX 712

VERSION COOLING ONLY

MO- DEL	Version	Hydronic kit	EMPTY					RUNNING					KIT AVX	
			WEIGHT	CENTRE OF GRAVITY				TOTAL WEIGHT	WATER	CENTRE OF GRAVITY				
				lbs	XG mm	XG in	YG mm			YG in	Lbs	XG mm		XG in
NRL 1250	A	00	7275	2168	85,34	940	37,01	7341	66	2162	85,10	942	37,08	AVX 7012
		01	8003	2203	86,71	1010	39,74	9678	1676	2256	88,80	1125	44,30	AVX 7013
		02	8113	2207	86,91	1019	40,13	9789	1676	2259	88,93	1132	44,57	AVX 7013
		03	8069	2205	86,81	1015	39,94	9744	1676	2257	88,87	1129	44,44	AVX 7013
		04	8245	2212	87,10	1029	40,52	9921	1676	2262	89,07	1139	44,84	AVX 7013
		P1	7617	2185	86,02	975	38,37	7871	254	2188	86,14	993	39,11	AVX 7014
		P2	7727	2190	86,23	985	38,79	7981	254	2193	86,34	1003	39,50	AVX 7014
		P3	7683	2188	86,13	980	38,59	7937	254	2191	86,24	999	39,31	AVX 7014
		P4	7815	2194	86,37	992	39,06	8069	254	2196	86,47	1010	39,76	AVX 7014
NRL 1400	A	00	7496	2503	98,53	929	36,57	7562	66	2504	98,59	930	36,62	AVX 7009
		01	8223	2507	98,69	998	39,27	9899	1676	2515	99,02	1112	43,78	AVX 7010
		02	8333	2507	98,72	1007	39,65	10009	1676	2515	99,03	1119	44,05	AVX 7010
		03	8289	2507	98,71	1003	39,47	9965	1676	2515	99,03	1116	43,92	AVX 7010
		04	8466	2508	98,74	1017	40,04	10141	1676	2516	99,05	1126	44,32	AVX 7010
		P1	7837	2505	98,61	963	37,91	8091	254	2507	98,71	981	38,62	AVX 7009
		P2	7948	2505	98,64	974	38,33	8201	254	2508	98,74	991	39,01	AVX 7009
		P3	7904	2505	98,62	968	38,13	8157	254	2508	98,72	986	38,82	AVX 7009
		P4	8036	2506	98,65	980	38,60	8289	254	2508	98,75	997	39,26	AVX 7009
NRL 1500	A	00	7760	2477	97,54	914	35,97	7826	66	2479	97,61	915	36,02	AVX 7009
		01	8488	2484	97,78	981	38,64	10163	1676	2496	98,25	1096	43,14	AVX 7010
		02	8598	2485	97,82	991	39,02	10274	1676	2496	98,27	1103	43,41	AVX 7010
		03	8554	2484	97,80	986	38,84	10229	1676	2496	98,26	1099	43,28	AVX 7010
		04	8708	2485	97,85	1001	39,40	10384	1676	2497	98,30	1109	43,68	AVX 7010
		P1	8102	2481	97,66	947	37,29	8356	254	2484	97,79	965	37,99	AVX 7009
		P2	8212	2482	97,70	958	37,70	8466	254	2485	97,82	975	38,38	AVX 7009
		P3	8168	2481	97,68	953	37,51	8422	254	2484	97,81	970	38,20	AVX 7009
		P4	8278	2482	97,72	964	37,97	8532	254	2485	97,85	981	38,63	AVX 7009
NRL 1650	A	00	8113	2522	99,28	894	35,21	8179	66	2523	99,34	896	35,27	AVX 734
		01	8863	2524	99,37	961	37,83	10538	1676	2529	99,57	1075	42,31	AVX 735
		02	8973	2524	99,39	970	38,21	10648	1676	2529	99,58	1081	42,57	AVX 735
		03	8907	2524	99,38	966	38,03	10582	1676	2529	99,58	1078	42,44	AVX 735
		04	9083	2525	99,40	980	38,58	10759	1676	2530	99,59	1088	42,84	AVX 735
		P1	8477	2523	99,33	927	36,51	8730	254	2525	99,40	945	37,20	AVX 736
		P2	8587	2523	99,34	938	36,91	8841	254	2525	99,41	955	37,59	AVX 736
		P3	8521	2523	99,33	933	36,72	8774	254	2525	99,41	950	37,40	AVX 736
		P4	8653	2524	99,35	944	37,17	8907	254	2525	99,42	961	37,83	AVX 736
NRL 1800	A	00	8422	2493	98,14	875	34,46	8488	66	2494	98,20	877	34,52	AVX 798
		01	9149	2497	98,32	941	37,06	10825	1676	2506	98,67	1055	41,53	AVX 799
		02	9259	2498	98,34	951	37,43	10935	1676	2507	98,69	1062	41,79	AVX 799
		03	9215	2498	98,33	946	37,25	10891	1676	2507	98,68	1058	41,67	AVX 799
		04	9392	2499	98,37	960	37,80	11067	1676	2507	98,71	1068	42,06	AVX 799
		P1	8763	2495	98,23	908	35,74	9017	254	2498	98,33	925	36,44	AVX 800
		P2	8874	2496	98,25	918	36,14	9127	254	2498	98,35	935	36,82	AVX 800
		P3	8830	2495	98,24	913	35,95	9083	254	2498	98,34	931	36,64	AVX 800
		P4	8962	2496	98,27	925	36,40	9215	254	2499	98,37	941	37,06	AVX 800



VERSION HEAT PUMP

MODEL	Version	Hydronic kit	EMPTY					RUNNING						KIT AVX
			WEIGHT	CENTRE OF GRAVITY				TOTAL WEIGHT	WATER	CENTRE OF GRAVITY				
				Lbs	XG mm	XG in	YG mm			YG in	Lbs	XG mm	XG in	
NRL 800	HA	00	5732	2027	80	946	37	5776	44	2031	80	947	37	AVX 7003
		01	6460	2001	79	1043	41	8113	1653	1965	77	1193	47	AVX 7004
		02	6570	1998	79	1056	42	8223	1653	1962	77	1202	47	AVX 7004
		03	6482	2000	79	1045	41	8135	1653	1964	77	1195	47	AVX 7004
		04	6614	1996	79	1060	42	8267	1653	1962	77	1204	47	AVX 7004
		P1	6074	2014	79	994	39	6305	231	2012	79	1019	40	AVX 7005
		P2	6184	2010	79	1009	40	6415	231	2008	79	1033	41	AVX 7005
		P3	6096	2013	79	997	39	6327	231	2011	79	1022	40	AVX 7005
		P4	6184	2010	79	1008	40	6415	231	2008	79	1032	41	AVX 7005
NRL 900	HA	00	5952	1780	70	929	37	5997	44	1781	70	931	37	AVX 7006
		01	6680	1782	70	1024	40	8333	1653	1786	70	1175	46	AVX 7008
		02	6812	1782	70	1038	41	8466	1653	1787	70	1183	47	AVX 7008
		03	6746	1782	70	1031	41	8400	1653	1787	70	1179	46	AVX 7008
		04	6923	1783	70	1051	41	8576	1653	1787	70	1192	47	AVX 7008
		P1	6294	1781	70	977	38	6526	231	1783	70	1002	39	AVX 7007
		P2	6426	1781	70	992	39	6658	231	1783	70	1016	40	AVX 7007
		P3	6360	1781	70	985	39	6592	231	1783	70	1009	40	AVX 7007
		P4	6493	1782	70	1001	39	6724	231	1783	70	1024	40	AVX 7007
NRL 1000	HA	00	6129	1751	69	913	36	6195	66	1752	69	915	36	AVX 7006
		01	6878	1756	69	1007	40	8554	1676	1765	69	1157	46	AVX 7007
		02	6989	1757	69	1020	40	8664	1676	1766	70	1166	46	AVX 7007
		03	6923	1756	69	1014	40	8598	1676	1765	70	1162	46	AVX 7007
		04	7099	1757	69	1033	41	8774	1676	1766	70	1175	46	AVX 7007
		P1	6493	1753	69	960	38	6746	254	1756	69	985	39	AVX 7008
		P2	6603	1754	69	975	38	6856	254	1757	69	999	39	AVX 7008
		P3	6537	1754	69	968	38	6790	254	1756	69	992	39	AVX 7008
		P4	6669	1754	69	984	39	6923	254	1757	69	1007	40	AVX 7008

VERSION HEAT PUMP

MO- DEL	Version	Hydronic kit	EMPTY							RUNNING					KIT AVX
			WEIGHT	CENTRE OF GRAVITY				TOTAL WEIGHT	WATER	CENTRE OF GRAVITY					
				Lbs	XG mm	XG in	YG mm			YG in	Lbs	XG mm	XG in	YG mm	
NRL 1250	HA	00	8113	2531	100	927	37	8179	66	2532	100	929	37	AVX 7009	
		01	8841	2537	100	1000	39	10516	1676	2547	100	1123	44	AVX 7010	
		02	8951	2538	100	1010	40	10626	1676	2548	100	1130	45	AVX 7010	
		03	8907	2537	100	1005	40	10582	1676	2548	100	1127	44	AVX 7010	
		04	9083	2538	100	1020	40	10759	1676	2549	100	1138	45	AVX 7010	
		P1	8455	2534	100	963	38	8708	254	2536	100	983	39	AVX 7011	
		P2	8565	2535	100	974	38	8818	254	2537	100	993	39	AVX 7011	
		P3	8521	2534	100	969	38	8774	254	2537	100	988	39	AVX 7011	
		P4	8653	2535	100	982	39	8907	254	2538	100	1000	39	AVX 7011	
NRL 1400	HA	00	8179	2517	99	922	36	8245	66	2519	99	923	36	AVX 7009	
		01	8907	2524	99	994	39	10582	1676	2537	100	1117	44	AVX 7010	
		02	9039	2525	99	1004	40	10714	1676	2537	100	1124	44	AVX 7010	
		03	8973	2525	99	999	39	10648	1676	2537	100	1121	44	AVX 7010	
		04	9149	2526	99	1015	40	10825	1676	2538	100	1132	45	AVX 7010	
		P1	8521	2521	99	957	38	8774	254	2524	99	976	38	AVX 7011	
		P2	8653	2522	99	969	38	8907	254	2525	99	987	39	AVX 7011	
		P3	8587	2521	99	963	38	8841	254	2524	99	982	39	AVX 7011	
		P4	8719	2522	99	976	38	8973	254	2525	99	994	39	AVX 7011	
NRL 1500	HA	00	8223	2494	98	919	36	8311	88	2496	98	920	36	AVX 7009	
		01	8951	2503	99	991	39	10648	1698	2519	99	1114	44	AVX 7010	
		02	9061	2504	99	1001	39	10759	1698	2520	99	1121	44	AVX 7010	
		03	8995	2503	99	996	39	10692	1698	2519	99	1118	44	AVX 7010	
		04	9171	2505	99	1012	40	10869	1698	2520	99	1129	44	AVX 7010	
		P1	8565	2498	98	955	38	8841	276	2502	99	973	38	AVX 7011	
		P2	8675	2500	98	966	38	8951	276	2503	99	984	39	AVX 7011	
		P3	8609	2499	98	960	38	8885	276	2503	99	979	39	AVX 7011	
		P4	8741	2500	98	973	38	9017	276	2504	99	991	39	AVX 7011	
NRL 1650	HA	00	8554	2534	100	901	35	8642	88	2536	100	903	36	AVX 734	
		01	9281	2540	100	972	38	10979	1698	2550	100	1094	43	AVX 735	
		02	9392	2540	100	982	39	11089	1698	2550	100	1102	43	AVX 735	
		03	9348	2540	100	977	38	11045	1698	2550	100	1098	43	AVX 735	
		04	9502	2541	100	992	39	11199	1698	2551	100	1109	44	AVX 735	
		P1	8896	2537	100	936	37	9171	276	2540	100	955	38	AVX 736	
		P2	9006	2538	100	947	37	9281	276	2540	100	966	38	AVX 736	
		P3	8962	2537	100	942	37	9237	276	2540	100	961	38	AVX 736	
		P4	9072	2538	100	954	38	9348	276	2541	100	972	38	AVX 736	
NRL 1800	HA	00	8818	2508	99	881	35	8907	88	2509	99	882	35	AVX 737	
		01	9546	2515	99	951	37	11244	1698	2528	100	1074	42	AVX 738	
		02	9656	2516	99	961	38	11354	1698	2529	100	1081	43	AVX 738	
		03	9590	2515	99	957	38	11288	1698	2529	100	1077	42	AVX 738	
		04	9766	2517	99	972	38	11464	1698	2530	100	1088	43	AVX 738	
		P1	9160	2511	99	916	36	9436	276	2514	99	934	37	AVX 736	
		P2	9270	2512	99	927	36	9546	276	2515	99	945	37	AVX 736	
		P3	9204	2512	99	921	36	9480	276	2515	99	940	37	AVX 736	
		P4	9337	2513	99	934	37	9612	276	2516	99	951	37	AVX 736	

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MODEL			PERCENTAGE OF WEIGHT DISTRIBUTION SUPPORTS (%)							
			1	2	3	4	5	6	7	8
			%	%	%	%	%	%	%	%
NRL 800	A	00	11,7%	15,2%	26,4%	34,3%	5,4%	7,0%	-	-
		01	11,8%	9,4%	40,7%	32,5%	3,1%	2,5%	-	-
		02	11,8%	9,3%	41,2%	32,4%	3,0%	2,3%	-	-
		03	11,8%	9,4%	40,8%	32,5%	3,1%	2,4%	-	-
		04	11,8%	9,2%	41,4%	32,4%	3,0%	2,3%	-	-
		P1	11,9%	13,2%	30,6%	34,1%	4,8%	5,4%	-	-
		P2	11,9%	12,9%	31,4%	34,0%	4,7%	5,1%	-	-
		P3	11,9%	13,2%	30,7%	34,1%	4,8%	5,4%	-	-
		P4	11,9%	12,9%	31,3%	34,0%	4,7%	5,1%	-	-
NRL 900	A	00	10,3%	14,1%	26,3%	35,9%	5,6%	7,7%	-	-
		01	10,8%	9,1%	39,9%	33,7%	3,5%	3,0%	-	-
		02	10,8%	9,0%	40,3%	33,6%	3,4%	2,9%	-	-
		03	10,8%	9,0%	40,1%	33,6%	3,5%	2,9%	-	-
		04	10,8%	8,8%	40,8%	33,5%	3,3%	2,7%	-	-
		P1	10,6%	12,5%	30,2%	35,5%	5,2%	6,1%	-	-
		P2	10,6%	12,2%	31,0%	35,4%	5,1%	5,8%	-	-
		P3	10,6%	12,3%	30,6%	35,5%	5,1%	5,9%	-	-
		P4	10,6%	12,0%	31,4%	35,3%	5,0%	5,6%	-	-
NRL 1000	A	00	10,2%	13,8%	27,3%	36,8%	5,1%	6,9%	-	-
		01	10,7%	9,2%	39,9%	34,3%	3,2%	2,8%	-	-
		02	10,7%	9,1%	40,3%	34,2%	3,1%	2,6%	-	-
		03	10,7%	9,1%	40,1%	34,3%	3,2%	2,7%	-	-
		04	10,7%	8,9%	40,8%	34,1%	3,0%	2,5%	-	-
		P1	10,4%	12,3%	30,8%	36,3%	4,7%	5,5%	-	-
		P2	10,5%	12,0%	31,5%	36,2%	4,6%	5,2%	-	-
		P3	10,5%	12,1%	31,2%	36,2%	4,6%	5,3%	-	-
		P4	10,5%	11,8%	32,0%	36,1%	4,5%	5,1%	-	-
NRL 1250	A	00	11,9%	16,0%	22,5%	30,1%	2,0%	2,7%	6,3%	8,5%
		01	10,5%	10,0%	28,8%	27,5%	6,4%	6,1%	5,5%	5,2%
		02	10,4%	9,8%	29,0%	27,4%	6,6%	6,2%	5,4%	5,1%
		03	10,4%	9,9%	28,9%	27,4%	6,5%	6,2%	5,5%	5,2%
		04	10,3%	9,6%	29,3%	27,3%	6,8%	6,3%	5,4%	5,0%
		P1	11,7%	14,2%	24,2%	29,4%	3,1%	3,8%	6,2%	7,5%
		P2	11,6%	13,8%	24,5%	29,3%	3,3%	4,0%	6,1%	7,3%
		P3	11,6%	14,0%	24,4%	29,3%	3,2%	3,9%	6,1%	7,4%
		P4	11,5%	13,6%	24,8%	29,2%	3,5%	4,1%	6,1%	7,2%
NRL 1400	A	00	7,7%	10,6%	16,0%	21,9%	13,4%	18,3%	5,1%	6,9%
		01	6,7%	6,6%	22,7%	22,2%	16,7%	16,3%	4,4%	4,3%
		02	6,7%	6,5%	23,0%	22,2%	16,8%	16,2%	4,4%	4,2%
		03	6,7%	6,5%	22,9%	22,2%	16,7%	16,3%	4,4%	4,3%
		04	6,6%	6,3%	23,3%	22,2%	16,9%	16,2%	4,3%	4,1%
		P1	7,6%	9,4%	17,8%	22,1%	14,3%	17,8%	4,9%	6,2%
		P2	7,5%	9,2%	18,1%	22,1%	14,5%	17,7%	4,9%	6,0%
		P3	7,5%	9,3%	18,0%	22,1%	14,4%	17,7%	4,9%	6,1%
		P4	7,5%	9,0%	18,4%	22,1%	14,6%	17,6%	4,9%	5,9%

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MODEL			PERCENTAGE OF WEIGHT DISTRIBUTION SUPPORTS (%)							
			1	2	3	4	5	6	7	8
			%	%	%	%	%	%	%	%
NRL 1500	A	00	7,9%	11,1%	15,7%	22,0%	13,2%	18,5%	4,8%	6,8%
		01	7,0%	7,0%	22,3%	22,4%	16,4%	16,5%	4,2%	4,2%
		02	6,9%	6,9%	22,5%	22,4%	16,5%	16,4%	4,2%	4,2%
		03	6,9%	7,0%	22,4%	22,4%	16,4%	16,5%	4,2%	4,2%
		04	6,9%	6,7%	22,8%	22,4%	16,6%	16,3%	4,1%	4,1%
		P1	7,7%	9,9%	17,4%	22,3%	14,0%	18,0%	4,7%	6,0%
		P2	7,7%	9,7%	17,7%	22,3%	14,2%	17,9%	4,7%	5,9%
		P3	7,7%	9,8%	17,6%	22,3%	14,1%	17,9%	4,7%	5,9%
		P4	7,7%	9,5%	18,0%	22,3%	14,3%	17,8%	4,7%	5,8%
NRL 1650	A	00	7,4%	10,8%	14,5%	21,2%	14,0%	20,4%	4,8%	7,0%
		01	6,6%	6,9%	20,9%	21,9%	17,1%	17,9%	4,2%	4,4%
		02	6,6%	6,8%	21,2%	21,9%	17,2%	17,8%	4,2%	4,4%
		03	6,6%	6,8%	21,1%	21,9%	17,1%	17,8%	4,2%	4,4%
		04	6,5%	6,7%	21,5%	21,9%	17,3%	17,7%	4,2%	4,3%
		P1	7,3%	9,6%	16,2%	21,5%	14,8%	19,7%	4,7%	6,2%
		P2	7,2%	9,4%	16,5%	21,6%	15,0%	19,6%	4,7%	6,1%
		P3	7,2%	9,5%	16,4%	21,5%	14,9%	19,6%	4,7%	6,1%
		P4	7,2%	9,3%	16,7%	21,6%	15,1%	19,5%	4,6%	6,0%
NRL 1800	A	00	7,3%	11,0%	15,1%	22,8%	12,9%	19,5%	4,5%	6,9%
		01	6,6%	7,1%	21,3%	23,1%	16,0%	17,4%	4,1%	4,4%
		02	6,5%	7,0%	21,5%	23,1%	16,2%	17,3%	4,0%	4,3%
		03	6,6%	7,1%	21,4%	23,1%	16,1%	17,4%	4,0%	4,4%
		04	6,5%	6,9%	21,8%	23,1%	16,3%	17,2%	4,0%	4,2%
		P1	7,2%	9,9%	16,7%	23,0%	13,8%	19,0%	4,5%	6,1%
		P2	7,1%	9,7%	17,0%	23,0%	13,9%	18,9%	4,4%	6,0%
		P3	7,2%	9,8%	16,8%	23,0%	13,9%	18,9%	4,4%	6,1%
		P4	7,1%	9,5%	17,2%	23,0%	14,1%	18,8%	4,4%	5,9%

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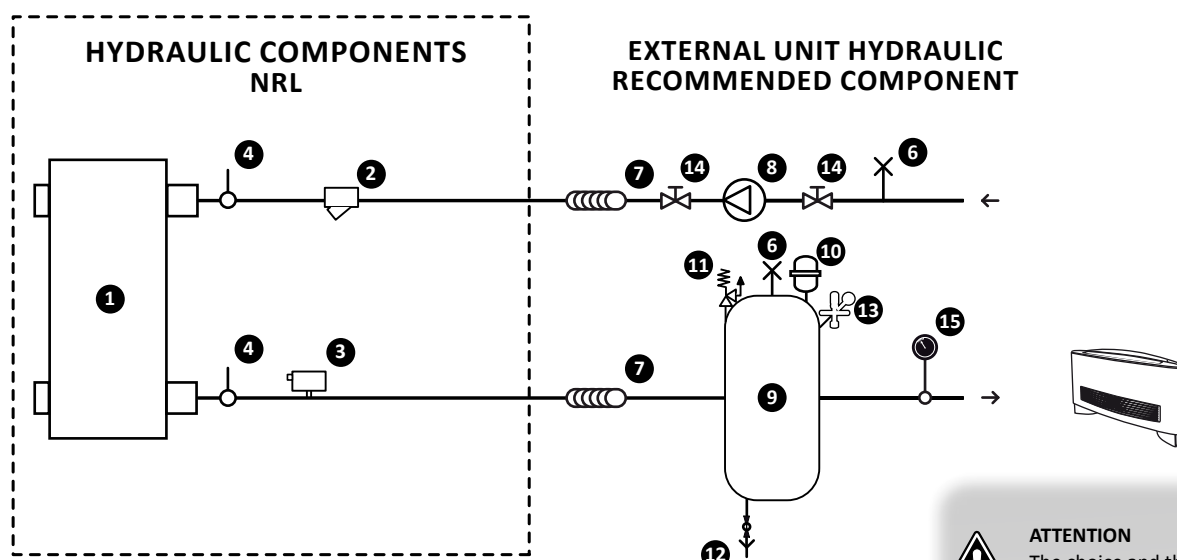
MODEL			PERCENTAGE OF WEIGHT DISTRIBUTION SUPPORTS (%)							
			1	2	3	4	5	6	7	8
			%	%	%	%	%	%	%	%
NRL 800	HA	00	7,7%	10,2%	25,1%	33,2%	10,2%	13,5%	-	-
		01	7,5%	6,3%	38,1%	32,1%	8,7%	7,3%	-	-
		02	7,5%	6,2%	38,5%	32,0%	8,6%	7,1%	-	-
		03	7,5%	6,3%	38,1%	32,1%	8,7%	7,3%	-	-
		04	7,5%	6,2%	38,7%	32,0%	8,6%	7,1%	-	-
		P1	7,8%	9,0%	28,6%	33,2%	10,0%	11,5%	-	-
		P2	7,7%	8,7%	29,3%	33,1%	9,9%	11,2%	-	-
		P3	7,8%	8,9%	28,7%	33,2%	9,9%	11,5%	-	-
		P4	7,7%	8,8%	29,3%	33,1%	9,9%	11,2%	-	-
NRL 900	HA	00	8,7%	11,9%	28,2%	38,4%	5,4%	7,4%	-	-
		01	8,5%	7,4%	40,5%	35,3%	4,4%	3,9%	-	-
		02	8,5%	7,3%	40,9%	35,2%	4,4%	3,8%	-	-
		03	8,5%	7,3%	40,7%	35,2%	4,4%	3,8%	-	-
		04	8,4%	7,1%	41,4%	35,0%	4,3%	3,7%	-	-
		P1	8,8%	10,5%	31,6%	37,7%	5,2%	6,2%	-	-
		P2	8,8%	10,2%	32,2%	37,6%	5,2%	6,0%	-	-
		P3	8,8%	10,3%	31,9%	37,7%	5,2%	6,1%	-	-
		P4	8,8%	10,1%	32,7%	37,5%	5,1%	5,9%	-	-
NRL 1000	HA	00	9,0%	12,6%	27,6%	38,7%	5,0%	7,1%	-	-
		01	8,8%	7,9%	39,6%	35,7%	4,2%	3,8%	-	-
		02	8,8%	7,8%	40,1%	35,6%	4,1%	3,7%	-	-
		03	8,8%	7,8%	39,9%	35,6%	4,2%	3,7%	-	-
		04	8,7%	7,6%	40,6%	35,4%	4,1%	3,6%	-	-
		P1	9,0%	11,1%	30,9%	38,1%	4,9%	6,0%	-	-
		P2	9,0%	10,9%	31,5%	37,9%	4,8%	5,8%	-	-
		P3	9,0%	11,0%	31,2%	38,0%	4,9%	5,9%	-	-
		P4	9,0%	10,7%	31,9%	37,8%	4,8%	5,7%	-	-
NRL 1250	HA	00	7,1%	9,7%	16,3%	22,3%	14,0%	19,1%	4,9%	6,7%
		01	6,3%	6,1%	22,3%	21,4%	18,0%	17,3%	4,3%	4,2%
		02	6,3%	6,0%	22,6%	21,4%	18,2%	17,2%	4,3%	4,1%
		03	6,3%	6,0%	22,5%	21,4%	18,1%	17,2%	4,3%	4,1%
		04	6,3%	5,8%	22,8%	21,3%	18,3%	17,1%	4,3%	4,0%
		P1	7,0%	8,6%	17,9%	22,1%	15,0%	18,6%	4,8%	5,9%
		P2	6,9%	8,4%	18,2%	22,1%	15,3%	18,5%	4,8%	5,8%
		P3	6,9%	8,5%	18,0%	22,1%	15,1%	18,6%	4,8%	5,9%
		P4	6,9%	8,3%	18,4%	22,1%	15,4%	18,5%	4,8%	5,7%
NRL 1400	HA	00	7,0%	9,7%	16,4%	22,6%	14,0%	19,4%	4,6%	6,3%
		01	6,3%	6,1%	22,4%	21,7%	18,1%	17,5%	4,1%	3,9%
		02	6,2%	6,0%	22,6%	21,6%	18,2%	17,4%	4,0%	3,9%
		03	6,3%	6,0%	22,5%	21,7%	18,1%	17,5%	4,0%	3,9%
		04	6,2%	5,9%	22,9%	21,6%	18,4%	17,4%	4,0%	3,8%
		P1	6,9%	8,6%	17,9%	22,5%	15,1%	18,9%	4,5%	5,6%
		P2	6,8%	8,4%	18,2%	22,4%	15,3%	18,8%	4,5%	5,5%
		P3	6,9%	8,5%	18,1%	22,4%	15,2%	18,9%	4,5%	5,6%
		P4	6,8%	8,3%	18,4%	22,4%	15,4%	18,7%	4,4%	5,4%

VERSION HEAT PUMP

MODEL			PERCENTAGE OF WEIGHT DISTRIBUTION SUPPORTS (%)							
			1	2	3	4	5	6	7	8
			%	%	%	%	%	%	%	%
NRL 1500	HA	00	7,3%	10,1%	16,3%	22,7%	13,7%	19,1%	4,5%	6,3%
		01	6,6%	6,4%	22,3%	21,7%	17,8%	17,3%	4,0%	3,9%
		02	6,5%	6,3%	22,5%	21,7%	17,9%	17,2%	4,0%	3,8%
		03	6,6%	6,3%	22,4%	21,7%	17,8%	17,3%	4,0%	3,9%
		04	6,5%	6,2%	22,8%	21,6%	18,1%	17,2%	3,9%	3,7%
		P1	7,2%	9,0%	17,9%	22,5%	14,8%	18,6%	4,4%	5,6%
		P2	7,1%	8,8%	18,2%	22,5%	15,0%	18,5%	4,4%	5,4%
		P3	7,2%	8,9%	18,0%	22,5%	14,9%	18,6%	4,4%	5,5%
		P4	7,1%	8,7%	18,4%	22,5%	15,1%	18,5%	4,4%	5,3%
NRL 1650	HA	00	6,9%	10,0%	15,1%	21,7%	14,4%	20,7%	4,6%	6,6%
		01	6,3%	6,4%	21,0%	21,2%	18,3%	18,5%	4,1%	4,1%
		02	6,3%	6,3%	21,2%	21,2%	18,5%	18,4%	4,1%	4,1%
		03	6,3%	6,3%	21,1%	21,2%	18,4%	18,5%	4,1%	4,1%
		04	6,2%	6,1%	21,5%	21,1%	18,6%	18,3%	4,0%	4,0%
		P1	6,8%	8,9%	16,6%	21,7%	15,4%	20,1%	4,5%	5,9%
		P2	6,8%	8,7%	17,0%	21,7%	15,7%	20,0%	4,5%	5,7%
		P3	6,8%	8,8%	16,8%	21,7%	15,6%	20,1%	4,5%	5,8%
		P4	6,8%	8,6%	17,2%	21,7%	15,8%	19,9%	4,5%	5,6%
NRL 1800	HA	00	6,8%	10,1%	15,7%	23,4%	13,4%	19,9%	4,3%	6,4%
		01	6,2%	6,6%	21,4%	22,4%	17,3%	18,1%	3,9%	4,1%
		02	6,2%	6,4%	21,6%	22,4%	17,4%	18,0%	3,9%	4,0%
		03	6,2%	6,5%	21,5%	22,4%	17,3%	18,1%	3,9%	4,1%
		04	6,2%	6,3%	21,9%	22,3%	17,6%	17,9%	3,9%	3,9%
		P1	6,7%	9,1%	17,1%	23,2%	14,4%	19,5%	4,3%	5,8%
		P2	6,7%	8,9%	17,4%	23,2%	14,6%	19,4%	4,2%	5,6%
		P3	6,7%	9,0%	17,3%	23,2%	14,5%	19,4%	4,2%	5,7%
		P4	6,7%	8,8%	17,6%	23,1%	14,7%	19,3%	4,2%	5,5%

10. HYDRAULIC CIRCUIT

10.1. INTERNAL AND EXTERNAL HYDRAULIC CIRCUIT "00" (STANDARD)



STANDARD COMPONENT

1	Exchanger plate (SYSTEM SIDE)
2	Water filter (supplied)
3	Flow switch (supplied)
4	Water temperature probes (IN/OUT)

RECOMMENDED COMPONENTS NOT SUPPLIED (CHARGED TO THE INSTALLER)

6	Air Vent
7	Anti-vibration couplings
8	Pump
9	Storage tank
10	Expansion tank
11	Safety valve
12	Ball stop Tank
13	Charging unit
14	Ball Stop
15	Manometer

PH	6-8
Electric conductivity	less than 200 mV/cm (77°F / 25°C)
Chloride ions	less than 50 ppm
Sulphuric acid ions	less than 50 ppm
Total iron	less than 0.3 ppm
Alkalinity M	less than 50 ppm
Total hardness	less than 50 ppm
Sulphur ions	none
ammonia ions	none
Silicone ions	less than 30 ppm



ATTENTION

The choice and the installation of components external to the NRL up to the installer, who must operate according to the rules of good technical design and in compliance with the regulations in force in the country of destination.



ATTENTION

The hydraulic pipes connecting to the machine must be properly sized to the actual flow of water required by the system in operation. The water flow to the exchanger must always be constant.

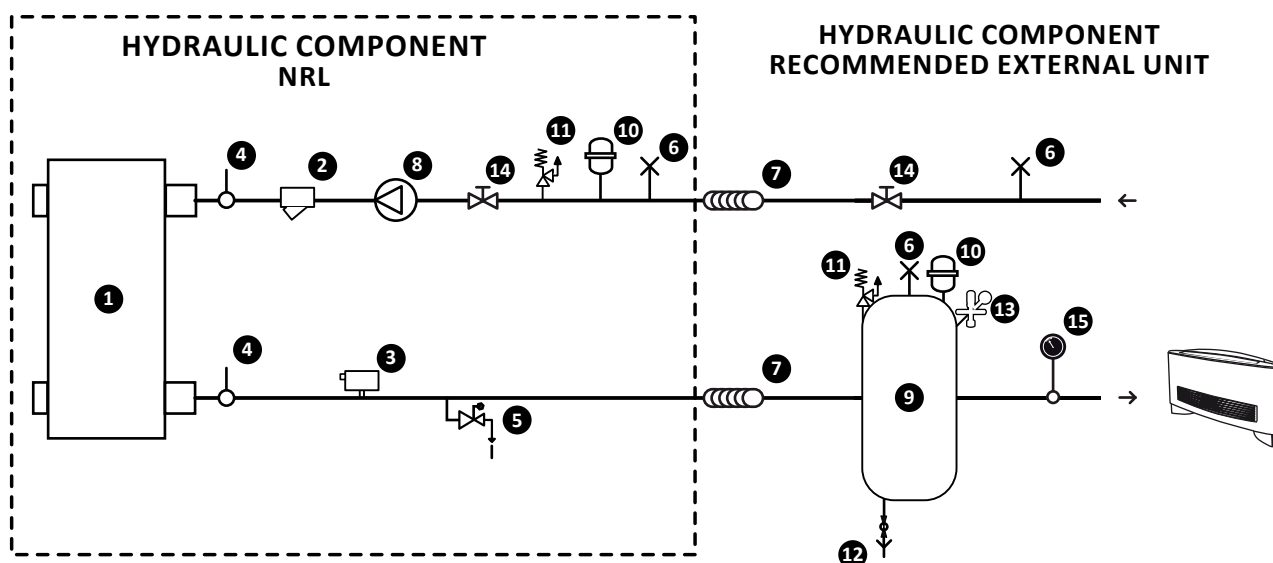


ATTENTION

Carefully wash the plant, before connecting the unit. This allows cleaning to remove any residue such as weld spatter, slag, rust or other impurities from the pipes. These substances may otherwise accumulate in and cause a machine malfunction. The connecting pipes should be supported so as not to weigh, with their weight on the unit.

**THE DRAWINGS ARE ONLY
EXAMPLES OF THE HYDRAULIC
CIRCUIT.**

10.2. INTERNAL AND EXTERNAL HYDRAULIC CIRCUIT - NRL PUMP VERSION

**STANDARD COMPONENT**

- | | |
|-----|-----------------------------------|
| 1. | Exchanger plate |
| 2. | Water filter (fitted) |
| 3. | Flow switch (fitted) |
| 4. | Water temperature probes (IN-OUT) |
| 5. | Ball stop drain |
| 6. | Air Vent |
| 8. | Pump |
| 10. | Expansion tank |
| 11. | Safety valve |
| 14. | Ball Stop |

**RECOMMENDED COMPONENTS NOT SUPPLIED
(CHARGED TO THE INSTALLER)**

- | | |
|-----|--------------------------|
| 6. | Air Vent |
| 7. | Anti-vibration couplings |
| 9. | Tank |
| 10. | Expansion tank |
| 12. | Ball Stop Tank |
| 13. | Charging unit |
| 14. | Ball Stop |
| 15. | Manometer |

**ATTENTION**

The choice and the installation of components external to the NRL up to the installer, who must operate according to the rules of good technical design and in compliance with the regulations in force in the country of destination.

**ATTENTION**

The hydraulic pipes connecting to the machine must be properly sized to the actual flow of water required by the system in operation. The water flow to the exchanger must always be constant.

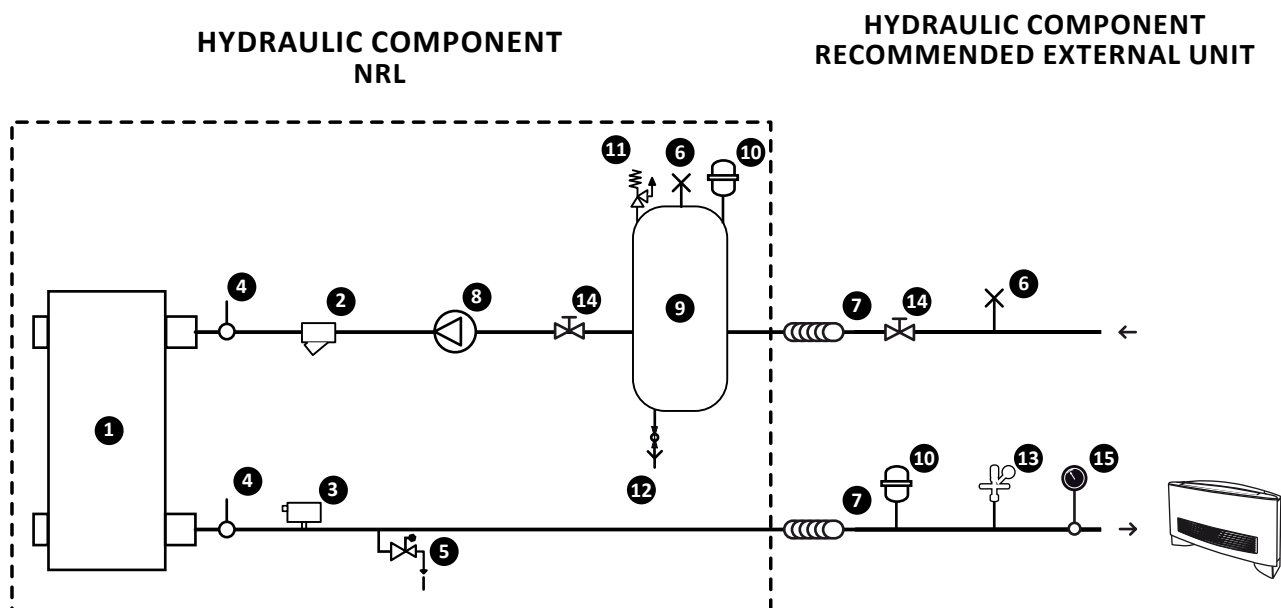
**ATTENTION**

Carefully wash the plant, before connecting the unit. This allows cleaning to remove any residue such as weld spatter, slag, rust or other impurities from the pipes. These substances may otherwise accumulate in and cause a machine malfunction. The connecting pipes should be supported so as not to weigh, with their weight on the unit.

**THE DRAWINGS ARE ONLY
EXAMPLES OF THE HYDRAULIC
CIRCUIT.**

PH	6-8
Electric conductivity	less than 200 mV/cm (77°F / 25°C)
Chloride ions	less than 50 ppm
Sulphuric acid ions	less than 50 ppm
Total iron	less than 0.3 ppm
Alkalinity M	less than 50 ppm
Total hardness	less than 50 ppm
Sulphur ions	none
ammonia ions	none
Silicone ions	less than 30 ppm

10.3. INTERNAL AND EXTERNAL HYDRAULIC CIRCUIT - NRL PUMP VERSION AND STORAGE TANK

**STANDARD COMPONENT**

1.	Exchanger plate
2.	Water filter (fitted)
3.	Flow switch (fitted)
4.	Water temperature probes (IN-OUT)
5.	Ball stop drain
6.	Air Vent
8.	Pump
9.	Tank
10.	Expansion tank
11.	Safety valve
12.	Ball stop Tank
14.	Ball Stop

**RECOMMENDED COMPONENTS NOT SUPPLIED
(CHARGED TO THE INSTALLER)**

6.	Air Vent
7.	Anti-vibration couplings
10.	Expansion tank
13.	Charging unit
14.	Ball Stop
15.	Manometer

PH	6-8
Electric conductivity	less than 200 mV/cm (77°F / 25°C)
Chloride ions	less than 50 ppm
Sulphuric acid ions	less than 50 ppm
Total iron	less than 0.3 ppm
Alkalinity M	less than 50 ppm
Total hardness	less than 50 ppm
Sulphur ions	none
ammonia ions	none
Silicone ions	less than 30 ppm

**ATTENTION**

The choice and the installation of components external to the NRL up to the installer, who must operate according to the rules of good technical design and in compliance with the regulations in force in the country of destination.

**ATTENTION**

The hydraulic pipes connecting to the machine must be properly sized to the actual flow of water required by the system in operation. The water flow to the exchanger must always be constant.

**ATTENTION**

Carefully wash the plant, before connecting the unit. This allows cleaning to remove any residue such as weld spatter, slag, rust or other impurities from the pipes. These substances may otherwise accumulate in and cause a machine malfunction. The connecting pipes should be supported so as not to weigh, with their weight on the unit.

**THE DRAWINGS ARE ONLY
EXAMPLES OF THE HYDRAULIC
CIRCUIT.**

11. ELECTRICAL WIRINGS

The default NRL chillers are completely wired and only need the connection to the power supply net, downstream to a group switch, according to the regulations in force in the country where the machine is installed.

It is also suggested to check:

- the mains supply characteristics, to ensure it is suitable for the levels indicated in the electrical data table, also taking into consideration any other equipment that may be operating at the same time.
- The unit is only powered after the last (hydraulic and electric) installations.
- Follow the connections instructions of the phase conductors, and earth.
- The power line will have a special protection upstream against short circuits and earth losses that sections the system according to other users.
- The voltage should be within a tolerance of $\pm 10\%$ of the rated supply voltage of the machine (for Three-phase units displacement max 3% between the phases). If these parameters are not respected, contact the energy supplier. For electrical wirings use isolated double cables according to the standards in force in the different countries.
- It is necessary to use a omnipolar thermomagnetic switch, in compliance with the CEI-EN standards (contact opening of at least 3 mm), with adequate switch capability and differential protection based on the followed electrical data table, installed as close as possible to the machine.

- It is necessary to carry out an efficient earth connection. The manufacturer can not be held responsible for any damage caused by the failure and ineffective earthing of the machine.

- For units with Three-phase power check the correct connection of the phases.

WARNING

It is forbidden to use water pipes for the earthing of the machine.

11.1. RECOMMENDED SECTION OF ELECTRIC CABLES

The cable sections indicated in the table are advised for a maximum length of 50 m.

For higher lengths or different types of cable installation, it will be the DESIGNERS responsibility to carefully measure the line main switch, the supply power line and the earthing protection connection, and the working connection cables:

- the length
- the type of cable
- Absorption of the unit and its physical position, and room temperature.

WARNING:

Check that all power cables are correctly secured to the terminals when switched on for the first time and after 30 days of use. Afterwards, check the connection of the power cables every six months. Slack terminals could cause the cables and components to overheat.



ATTENTION

All electrical operations must be carried out by qualified personnel, in accordance with the corresponding regulations, trained and informed about the risks related to such operations.



ATTENTION

The characteristics of electric lines and related components must be established by personnel authorised to design electric installations, following international regulations and the national regulations of the country in which the unit is installed, in compliance with the legislative regulations in force at the moment of installation.



ATTENTION

For installation requirements, the wiring layout supplied with the unit must be compulsory referred to. The wiring layout together with the manuals must be kept in good conditions and readily accessible for future operations on the unit.



ATTENTION

it is compulsory to check the machine sealing before connecting the electrical wiring. The machine should only be powered once the hydraulic and electric operations are completed.

12. ELECTRONIC CONTROL(PCO⁵)

START-UP CIRCULATING PUMP

1. Turn the unit on (ON)
2. Start Pump
3. Control water flow rate (20 seconds):
Flow switch or pressure switch (if provided)
4. Whenever alarms do not occur, the compressor starts.



ANTI-FREEZE ALARM

Reference parameters:

Compressor	BLOCK - OFF	ON
Temperature	3°C <	> 3°C
Max operations	n° 2	-
Cod. Anti-freeze alarm	See User Manual	
Restart		
Manual		
Electrical Heater	OFF	ON
Temperature	> 5°C	4°C <
Circulating Pump	OFF	ON
Temperature	> 5°C	4°C <
<i>Only for pure water (not added with glycol)</i>		

WATER FLOW ALARM

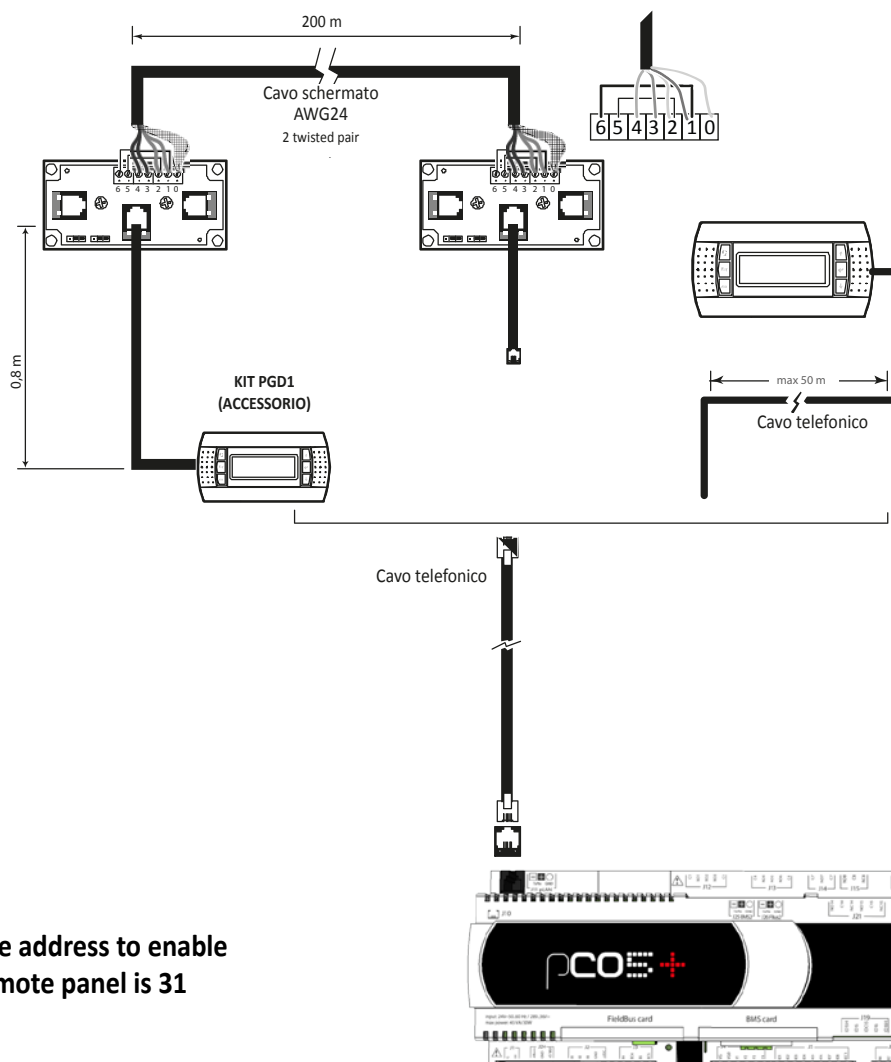
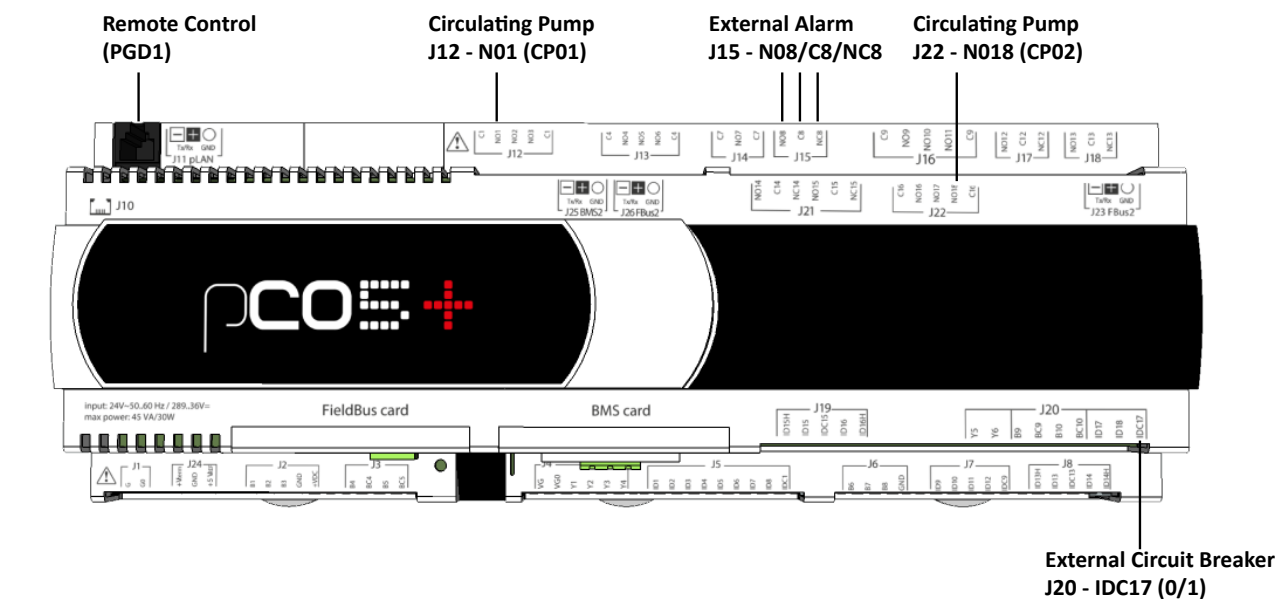
If the water flow rate is not sufficient, this safety stops the compressors and the pump

Water Pump	BLOCCO - OFF	ON
	Flow Switch or Pressure Switch (if provided)	
Water flow rate	>20 seconds	-
is not sufficient	Compressor not work	
Cod. Alarm	See User Manual	-
Water flow rate	-	>20 seconds
is sufficient		Start Compressor

Versions with Total Recovery and Condensing
Units are equipped with GR3 electronics
(standard remote panel)

All the other versions have pCO5 electronics
(remote panel available as accessory)

AUXILIARY CONNECTIONS (For Standard Version)



- The address to enable remote panel is 31

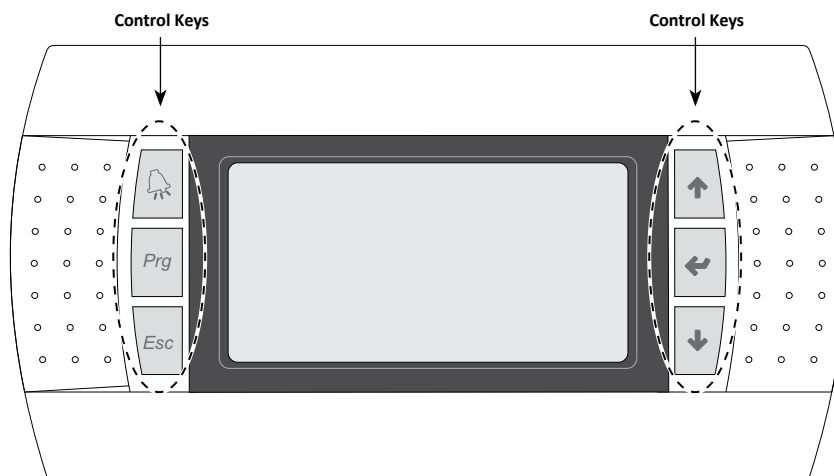
For more information, refer to the wiring diagrams in the selection program or site www.aermec.com

13. USER INTERFACE (PGD1)

The unit control panel allow the quick setting and display of the unit's operating parameters. The board memorises all the default settings and any modifications. By installing the remote control panel PGD1 it is possible to remotely replicate all the functions and the settings available on the unit. After a power failure the unit is capable of an automatic restart, retaining the original settings.

The user interface consists of a graphic display with six navigation keys; the display is arranged through a menu hierarchy, activated by pressing the navigation keys. The default display of these menus is the main screen. The navigation between the various parameters is by using the arrow keys located to the right of the display. These keys are also used for the modification of the selected parameter.

INTERFACE CONTROL KEYS



Key	Fucntion
	ALARM key Displays the list of active and historical alarms (red LED on = active alarm)
	MENU ACTIVATION key Pressing this key activates the navigation between menus (orange LED on = winter operating mode active)
	EXIT MENU key Pressing this key returns to the previous menu
	NAVIGATION (+) key - Pressing this key when navigating between menu/parameters passes to the next menu/parameter - Pressing this key when modifying a parameter increases the value of the selected parameter
	NAVIGATION (enter) key - Pressing this key when navigating between menus allows entry to the selected menu - Pressing this key when navigating between parameters allows selection of the parameter displayed to modify it - Pressing the key when modifying a parameter confirms the modification of the parameter value selected
	NAVIGATION (-) key - Pressing this key when navigating between menu/parameters passes to the previous menu/parameter - Pressing this key when modifying a parameter decreases the value of the selected parameter

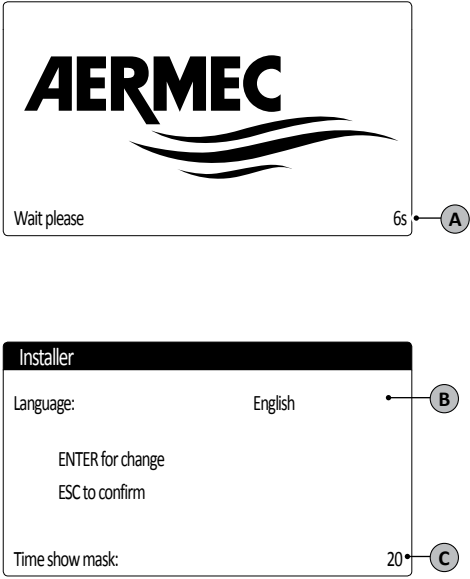
14. START-UP PROCEDURE

After having powered up the unit the control board will carry out preliminary operations before being ready for use. This initial procedure takes around 60 seconds to complete. During the initial loading procedure two screens are displayed: a start-up screen and a screen to

select the system language. These screens are detailed in the table below.

WARNING: The system language can be set on the screen displayed at the start-up or can be modified at

any time through the appropriate screen contained in the Installer menu.

Display on the unit	Index	Display/Parameter
	A	Remaining time for software loading: this value shows the remaining time to starting the software loaded on the unit, and passing the to system language selection
	B	System language: this parameter shows the current language set for the system. To change the language follow the instructions shown on the screen.
	C	Remaining time to select the language: this value shows the remaining time to modify the language. When the time elapses the display goes to the main screen (Main screen - General monitoring). WARNING: It is possible to modify the system language at any time using the appropriate screen contained in the Installer menu. (Menu password = 0000).
WARNING: It is possible to modify the system language at any time using the appropriate screen contained in the Installer menu. (Menu password = 0000).		

15. MENU STRUCTURE AND NAVIGATION

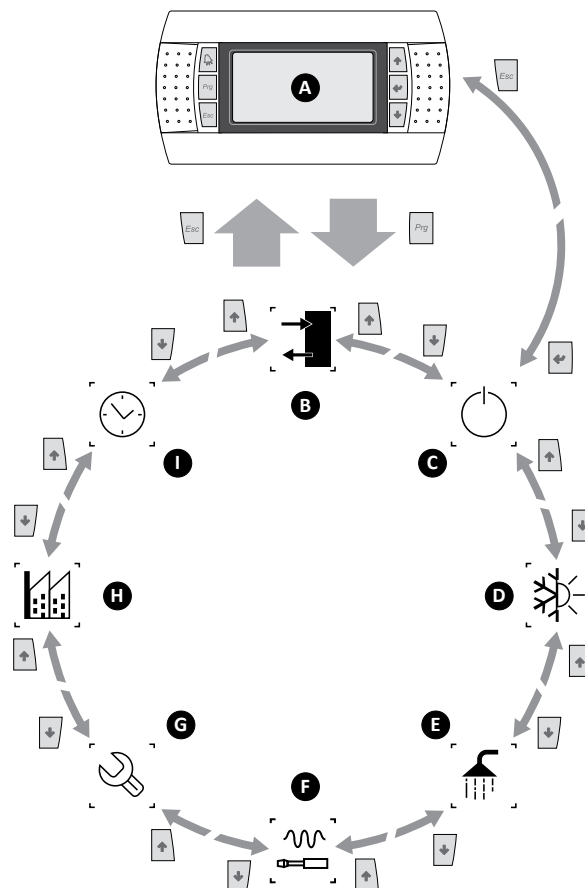
Both the functions to control the unit and the operating information are displayed on the unit mounted control panel. All the functions and information are arranged in screens which in turn are grouped into menus.

During the normal operation of the unit the main screen is displayed, from which it is possible to access the selection of the other operating menus.

The menus are displayed through the rotation of the icons that they represent. Once the desired icon is selected the chosen menu is entered, permitting the display or modification of the parameters that it is made up from. The procedure for navigating the menus, or changing parameters, is explained in detail in the chapter "User operating procedures".

The adjacent drawing shows the relation between the various menus and the navigation keys used.

The operating menus are arranged as in the following drawing:



WARNING: Improper selection of the parameters in the Installer menu may cause malfunctions of the unit. It is recommended that these parameters are only modified by personnel qualified in the installation and configuration of the unit.

Index	Icon	Menu	Menu function
A	---	MAIN	The screens in this menu display the current conditions of the unit (unit status, setpoints, circuit data, etc.)
B		IN/OUT	This menu contains advanced information on the unit operation
C		ON/OFF	This menu permits the unit to be enabled or disabled, and provides information on the status
D		SYSTEM	This menu permits the selection of the operating modes, the water setpoints and the time-clock for the system
E		RECOVERY	If the unit includes heat recovery, this menu permits the setting of the parameters associated with the heat recovery
F		INSTALLER	This menu contains the settings useful for the installer (enabling digital inputs, BMS configuration, control, pumps, etc.) WARNING: This menu is password protected. The password is: 0000
G		ASSISTANCE	This menu is only accessible to qualified personnel
H		FACTORY	This menu is only accessible to qualified personnel
I		CLOCK	This menu contains the clock settings for the system control (date, hour, calendar)

16. USER OPERATING PROCEDURES

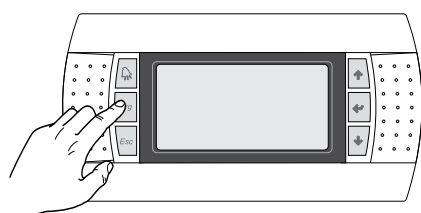
To check or modify the operating parameters of the unit it is necessary to use the interface of the control panel on the unit. The basic operations that the user must be capable of, for the correct use of the unit, are:

- (1) Moving from one menu to the next.
- (2) Selecting and modifying a parameter.

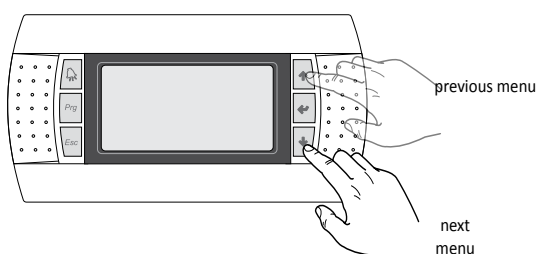
1

Moving between menus

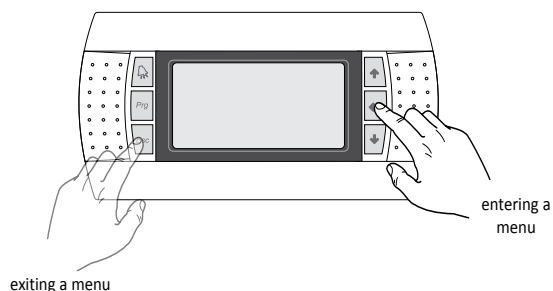
(a) To move between the menus, the order in which they are displayed is shown in the previous page, enter the menu selection mode by pressing the key (Prg).



(b) Once in the menu selection mode it is possible to move between menus using the arrow keys: the key (←) to move to the previous menu, and the key (→) to move to the next menu.



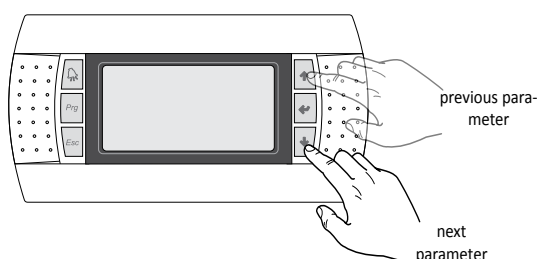
(c) When the desired menu is seen press the key (Enter) to enter the menu. Press the key (Esc) to return to the menu selection mode.



2

Selecting and modifying a menu

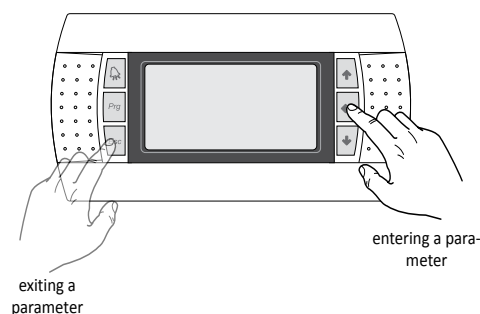
(a) Once in the menu selected, by following the procedure (1), it is possible to move between the screens using the arrow keys: the key (←) to move to the previous parameter, and the key (→) to move to the next parameter.



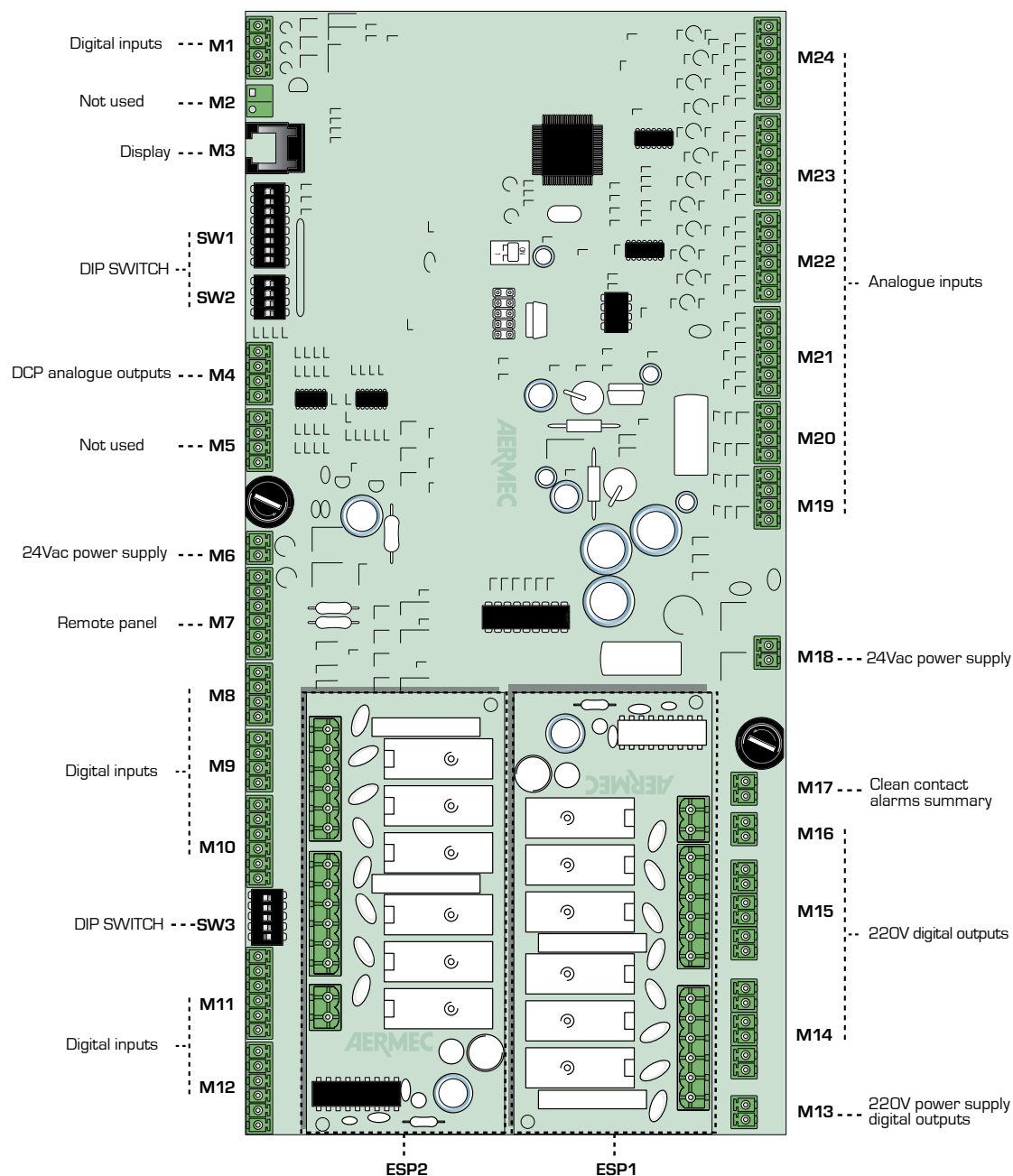
(c) When the desired parameter is seen press the key (Enter) to enter the parameter. To exit the parameter and return to the parameter selection mode press the key (Esc).

WARNING: Once a parameter is selected by pressing the key (Enter), the parameter selection mode is automatically accessed and in this mode the desired parameter values can be set with the following procedure:

- (1) Pressing the key (Enter) causes a flashing cursor to appear on the first modifiable field of the parameter. If no modifiable fields are displayed then the cursor will not appear.
- (2) Pressing the key (←) or the key (→), the value of the field can be increased or decreased.
- (3) Pressing the key (Enter) confirms the modification of the field value, saving it in memory. On the basis of the type of parameter selected the number of modifiable fields can change.



18. ELECTRONIC CONTROL(GR3)



Versions with Total Recovery and Condensing Units are equipped with GR3 electronics (standard remote panel)

All the other versions have pCO⁵ electronics (remote panel available as accessory)

CONNECTION TO THE POWER SUPPLY

Accertarsi che non ci sia presenza di tensione sulla linea elettrica a cui vi allaccerete.

TO ACCESS THE ELECTRIC BOX

Turn ¼ the screws of the electrical panel in counter-clockwise direction

Turn the handle of the door-block disconnecting switch to OFF (see figure).

In this way, the electrical panel can be accessed

ELECTRICAL POWER CONNECTION

For functional connection of the unit take the supply power cable to the electrical panel inside the unit in the previous page and connect it to the disconnecting switch terminals observing the phase, and the earth.

AUXILIARY CONNECTIONS AT THE USER/INSTALLER EXPENSE

The terminals indicated in future explanations are part of the GR 3 control boards. For installation requirements, refer to the wiring diagram supplied with the unit.

The wiring diagram together with the manuals must be kept in good conditions and readily accessible for future operations on the unit .

AUXILIARY SWITCH (IAD)

To prepare the auxiliary switch, connect the device to the clamp 4 of the control board M7 SC and to the clamp 4 of the remote panel.

PUMP CONTACTOR (CP01 - CP02)

To prepare the pump contactor, connect the device CP01 to the clamp 2 of the control board M16 SC and the device CP02 to the clamp 4 and 6 of the control board M1 SE2.

EXTERNAL ALARM (EA)

To prepare an external alarm device, connect the device contact to the clamp 1 and 2 of the control board M17.

CONNECTION PR3 (STANDARD)

Connect the remote panel PR3 to the control board M7 SC (as shown below), remember that the maximum allowed distance is 50 m.

THE PR3 CONNECTED MUST BE ENABLED, AS WELL.
See next procedure.

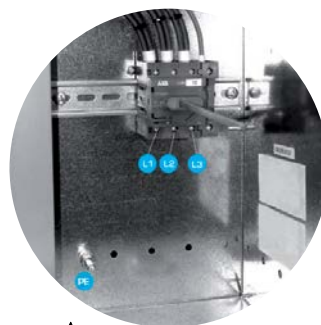
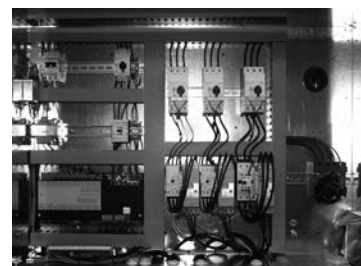
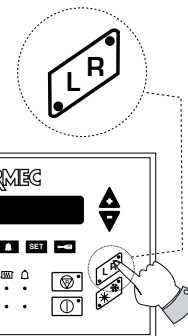
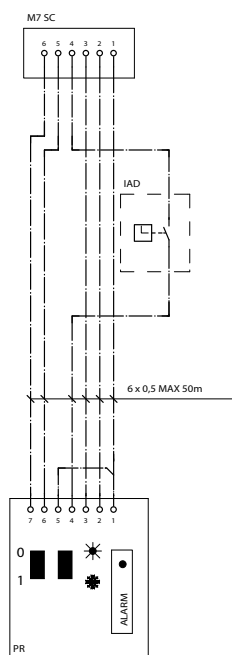


Fig. 1

Key fig.1	
L1	Line 1
L2	Line 2
L3	Line 3
PE	Earth

**CONNECTION
REMOTE PANEL - PR3****COMANDO A DISTANZA
REMOTE CONTROL****ENABLING
REMOTE PANEL - PR3**

To enable the remote panel PR3:

- act on the L/R key on the small panel of the GR3 on the machine (as shown in the figure above)
- when the LED next to the letter R (Remote) lights up, the machine function will be enabled by the remote panel.

SEASON CHANGEOVER

- For each seasonal change check that the operation conditions return to the limit.
- Check that the absorption current of the compressor is less than the maximum indicated in the technical data table.
- Check in the models with three-phase supply power that the noise level of the compressor is not abnormal, in this case invert a phase.
- Make sure that the voltage value are within the prefixed limits and that the displacements between the three phases (three-phase supply power) do not get above 3%.

SEASON CHANGE OF THE PANEL ON THE MACHINE

To activate the season change, just press the indicated key in (fig. 5). To ensure that the operation is successful, machine must be active as remote or local. For further information refer to the USE manual.

SEASON CHANGE OF PR3

Just act directly on the switch. The machine turns off automatically and it restarts with the selected operation mode.

Led On

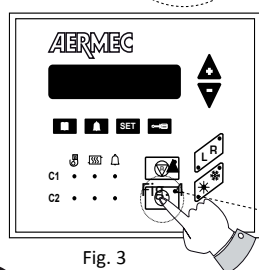


Fig. 3

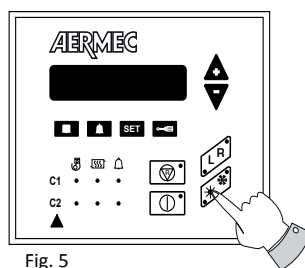
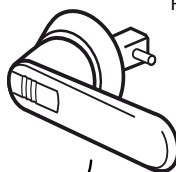
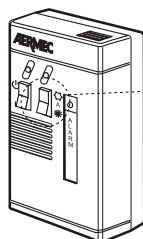


Fig. 5



◀ Remote panel PR3

⚠ ATTENTION

1) Commissioning must be performed with standard settings. Only when the inspection has been completed can the functioning Set Point values be changed. Before start-up, power the unit for at least 12-24 hours, positioning the protection magnet circuit breaker switch and the door lock isolating switch at ON. Make sure that the control panel is off in order to allow the compressor oil sump to heat.

2) We recommend to envision a machine book (not supplied, but the user's responsibility), which allows to keep track of the interventions performed on the unit. In this way it will be easy to suitably organise the interventions making research and the prevention of any machine breakdowns easier. Use the date to record date, type of intervention made (routine maintenance, inspection or repairs), description of the intervention, measures actuated.

3) It is forbidden to LOAD the cooling circuit with a refrigerant different to that indicated. Using a different refrigerant gas can cause serious damage to the unit.



37040 Bevilacqua (VR) - Italy
Via Roma, 996 - Tel. (+39) 0442 633111
Telefax (+39) 0442 93730 – (+39) 0442 93566
www.aermec.com



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