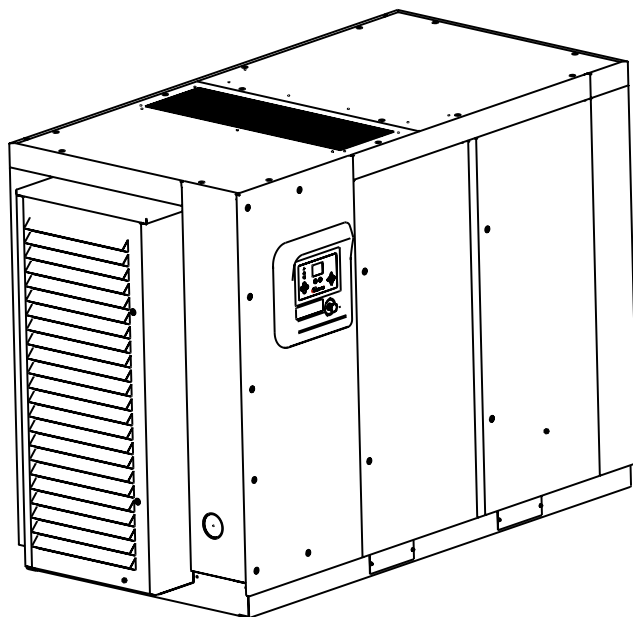




## Contact-Cooled Rotary Screw Air Compressor

### R90-160 1S - ULTRA EL & FG



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## Parts Information



**Save These Instructions**



Only allow **Ingersoll Rand** trained Technicians to perform maintenance on this product. For additional information contact **Ingersoll Rand** factory or nearest Distributor.

The use of other than genuine **Ingersoll Rand** replacement parts may result in safety hazards, decreased performance and increased maintenance and may invalidate all warranties.

Refer all communications to the nearest **Ingersoll Rand** Office or Distributor.

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## PARTS ORDERING INFORMATION

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These products are designed and constructed to provide long, trouble-free service. In time it may be necessary to order and install new parts to replace those that have been subjected to wear.

For your convenience and future reference it is recommended that the following information be recorded.

Model Number \_\_\_\_\_  
 Serial Number \_\_\_\_\_  
 Date Purchased \_\_\_\_\_

When ordering replacement parts, please specify the following:

1. Complete model number and serial number as it appears on the data (name) plate.
2. Part number(s) and part description as shown in this manual.
3. Quantity required.

### NOTICE

- Continuing improvement and advancement of design may cause changes to this equipment which are not included in this manual. Manuals are periodically revised to incorporate changes. Always check the manual edition number on the front cover for the latest issue.
- Sections of this manual may not apply to your product.
- Using other than genuine **Ingersoll Rand** replacement parts may invalidate the warranty.

### ■ **Return Goods Policy**

**Ingersoll Rand** will not accept any returned goods for warranty or service work unless prior arrangements have been made and written authorization has been provided from the location where the goods were purchased.

Products which have been modified without **Ingersoll Rand** approval, mishandled or misused will not be repaired or replaced under warranty. A printed copy of the warranty which applies to this product is provided inside the back cover of this manual.

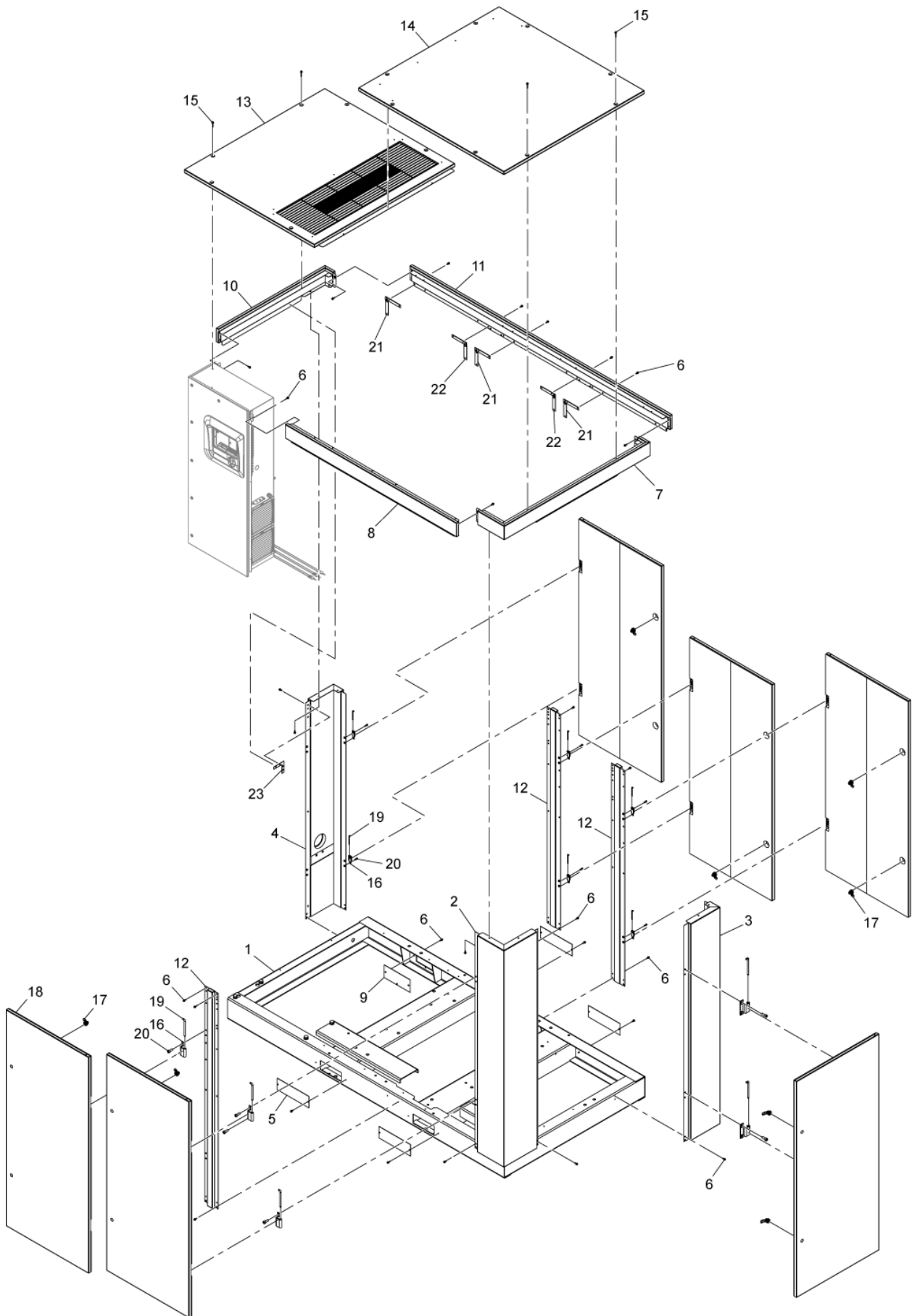
### ■ **Disposal**



When the life of the product has expired, it is recommended that it be disassembled, degreased and parts separated as to materials so that they may be recycled.

Refer all communications to the nearest **Ingersoll Rand** Office or Distributor.

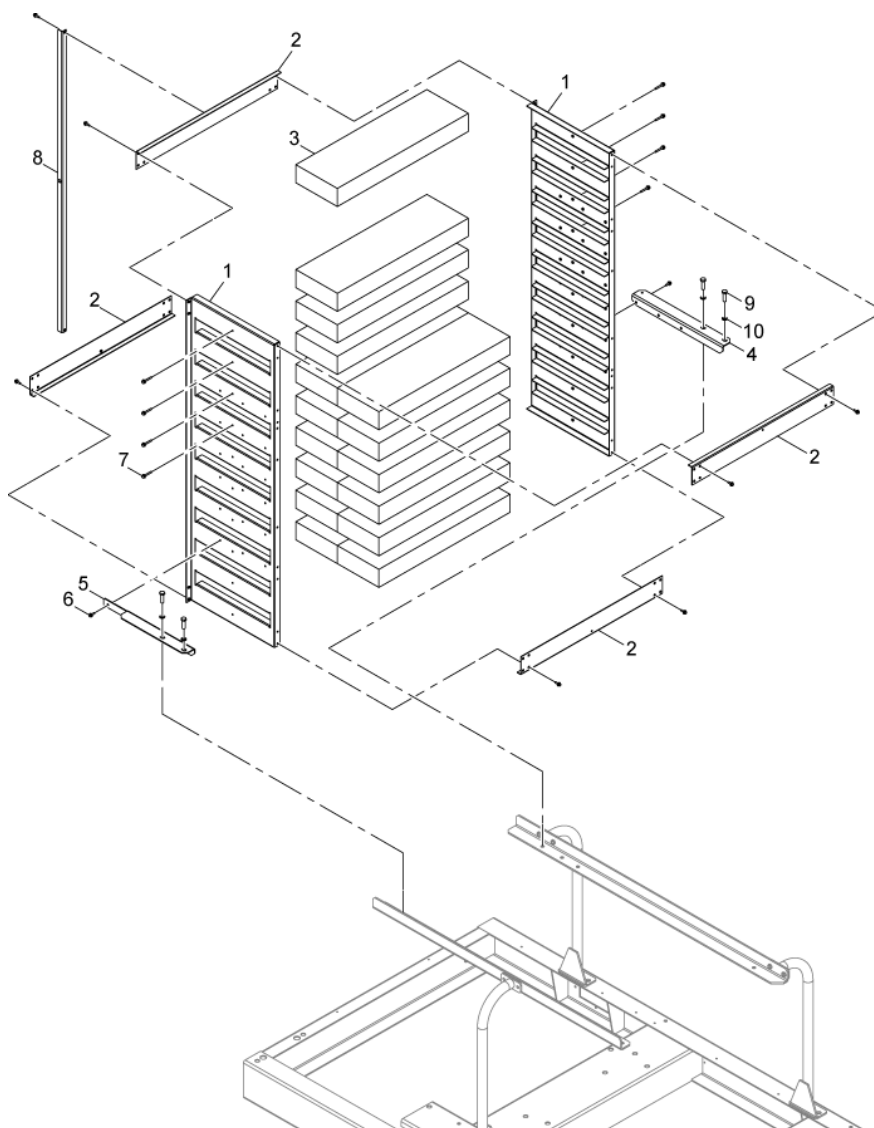
# ENCLOSURE ASSEMBLY DRAWING



**ENCLOSURE ASSEMBLY PARTS LIST**

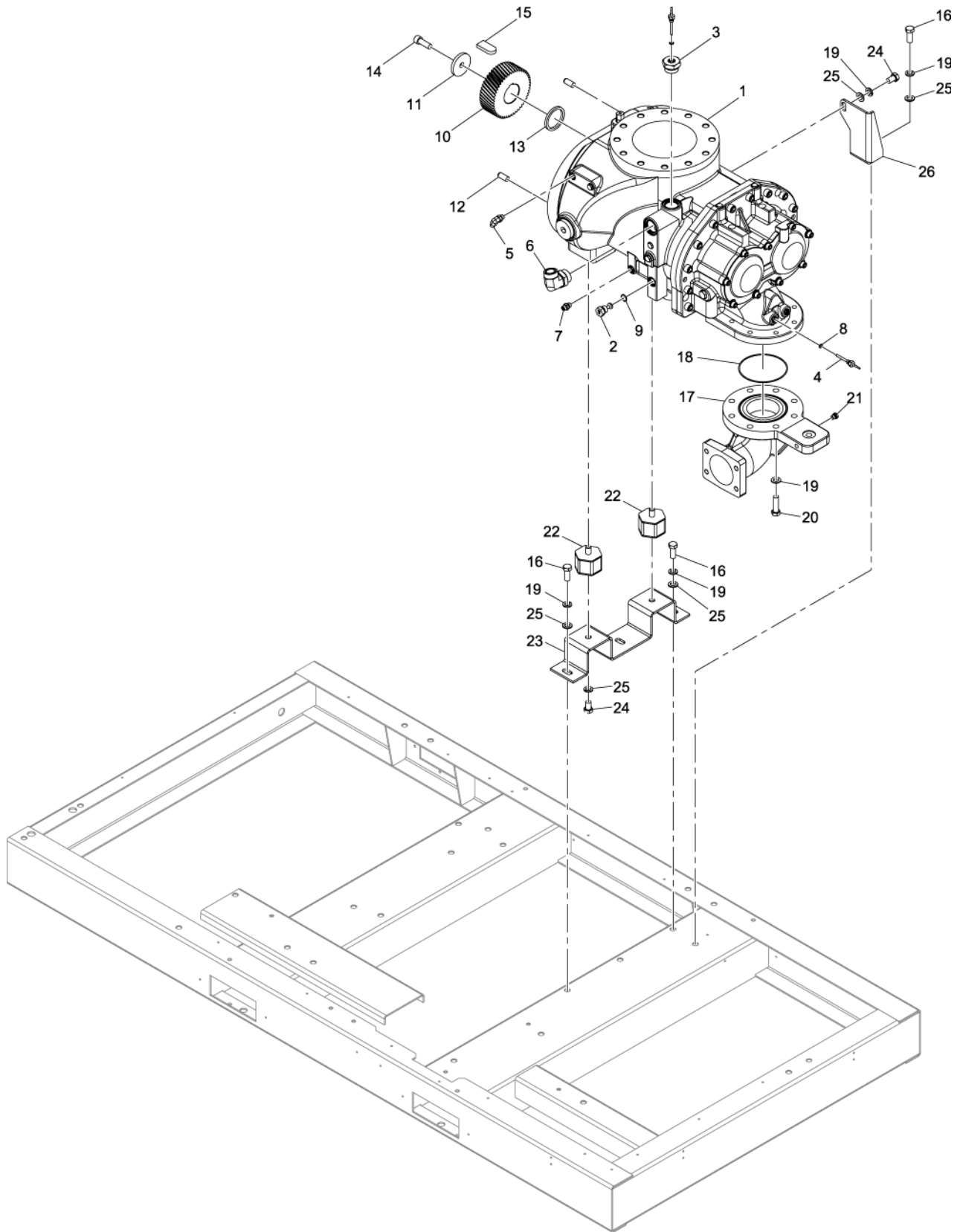
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23412109	1	BASE, STANDARD	11	24731820	1	ASSEMBLY, TOP REAR PANEL (WITH FOAM)
	23507742	1	BASE, CONTAINMENT		49040199	1	PANEL, TOP REAR EPOXY
	49040074	1	BASE, CONTAINMENT R90/110KW BLACK EPOXY		23495161	1	FOAM, TOP REAR PANEL
2	24731671	1	ASSEMBLY, RIGHT FRONT CORNER (WITH FOAM)	12	24731598	3	ASSEMBLY, VERTICAL SUPPORT (WITH FOAM)
	49040173	1	CORNER, RIGHT FRONT CORNER R90/110 EPOXY		49041460	3	SUPPORT, VERTICAL R90-160 EPOXY
	24731697	1	FOAM, RIGHT FRONT CORNER (LARGE)		23491129	3	FOAM, VERTICAL SUPPORT
	24731705	1	FOAM, RIGHT FRONT CORNER (SMALL)	13	23440167	1	ASSEMBLY, TOP LEFT PANEL (SHEET METAL W/ FOAM)
3	24731622	1	ASSEMBLY, RIGHT REAR CORNER (WITH FOAM)		49040132	1	PANEL, TOP LEFT R90/110KW EPOXY
	49040165	1	CORNER, RIGHT REAR R90/110 EPOXY		23443971	1	FOAM, TOP LEFT PANEL (LARGE)
	24731663	1	FOAM, RIGHT REAR CORNER (LARGE)		23443963	1	FOAM, TOP LEFT PANEL (REAR SMALL)
	24731655	1	FOAM, RIGHT REAR CORNER (SMALL)		23440233	1	FOAM, TOP LEFT PANEL (FRONT SMALL)
4	24731556	1	ASSEMBLY, LEFT REAR CORNER (WITH FOAM)	23440225	1	FOAM, TOP LEFT PANEL (RIGHT SMALL)	
	49040157	1	CORNER, LEFT REAR R90/110 EPOXY	14	23496144	1	ASSEMBLY, TOP RIGHT PANEL (SHEET METAL W/ FOAM)
	24731580	1	FOAM, LEFT REAR CORNER (NARROW SIDE)		49040223	1	PANEL, TOP RIGHT R90/110KW EPOXY
	23494941	1	FOAM, LEFT REAR CORNER (TOP HALF)		23496169	1	FOAM, TOP RIGHT PANEL
	24731572	1	FOAM, LEFT REAR CORNER (BOTTOM HALF)	15	54699368	14	SCREW, HEX HEAD
5	39495981	4	COVER, FORKLIFT HOLE		96750187	14	SCREW, HEX HEAD
	54614276	4	COVER, FORKLIFT HOLE BLACK EPOXY FINISH	16	22159842	12	HINGE, PIN HALF
6	39917489	AR	SCREW, HEX HEAD		46591244	12	HINGE, PIN HALF
	96750187	AR	SCREW, HEX HEAD	17	23180565	12	LATCH, DOOR
7	24732067	1	ASSEMBLY, TOP RIGHT END PANEL (WITH FOAM)		18	23491137	6
	49040231	1	PANEL, TOP RIGHT END EPOXY	49041445		6	DOOR, COMMON R55-160KW EPOXY
	23494735	1	FOAM, TOP RIGHT PANEL (SMALL)	23491152			FOAM, COMMON DOOR
	23494727	1	FOAM, TOP RIGHT PANEL (MEDIUM)	19	93580140	12	HINGE, PIN
	23494719	1	FOAM, TOP RIGHT PANEL (LARGE)		46591251	12	HINGE, PIN
8	24731887	1	ASSEMBLY, TOP FRONT PANEL (WITH FOAM)	20	24718223	AR	SCREW
	49040207	1	PANEL, TOP FRONT EPOXY		96760426	AR	SCREW
	23494990	1	FOAM, TOP FRONT PANEL	21	24716805	6	SUPPORT, ENCLOSURE CORNER LEFT HAND
9	23452048	1	PLATE, WATER CONNECTION COVER		49032998	6	SUPPORT, ENCLOSURE CORNER LEFT W/EPOXY
	49042161	1	PLATE, WATER CONNECTION COVER W/BLACK EPOXY	22	24716813	5	SUPPORT, ENCLOSURE CORNER RIGHT HAND
10	24732042	1	ASSEMBLY, TOP LEFT END PANEL (WITH FOAM)		49033004	5	SUPPORT, ENCLOSURE CORNER RIGHT W/EPOXY
	49040215	1	PANEL, TOP LEFT END EPOXY	23	24648784	1	SUPPORT, ENCLOSURE CORNER (SHORT)
	23495096	1	FOAM, TOP LEFT PANEL (LARGE)		49041452	1	SUPPORT, ENCLOSURE CORNER (SHORT) EPOXY
	23494735	1	FOAM, TOP RIGHT PANEL (SMALL)				
				<b>AR</b>	<b>AS REQUIRED</b>		

ENCLOSURE ASSEMBLY drawing & parts list



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23472624	2	SUPPORT, SIDE BATT	7	54699368	8	SCREW, HEX HEAD M6 X 35
2	23473366	4	ANGLE, INLET SILENCER		96762901	8	SCREW, HEX HEAD M6 X 35
3	23474117	16	BATT, 3 INCH INTAKE	8	23476187	1	RETAINER
4	23497076	1	ANGLE, SUPPORT REAR BATT ASSEMBLY	9	96704309	4	SCREW, HEX HEAD
5	23497910	1	ANGLE, SUPPORT FRONT BATT ASSEMBLY		96729256	4	SCREW, HEX HEAD
6	39917489	AR	SCREW, HEX HEAD	10	96712096	4	WASHER, SPRING LOCK
	96750187	AR	SCREW, HEX HEAD	<b>AR AS REQUIRED</b>			

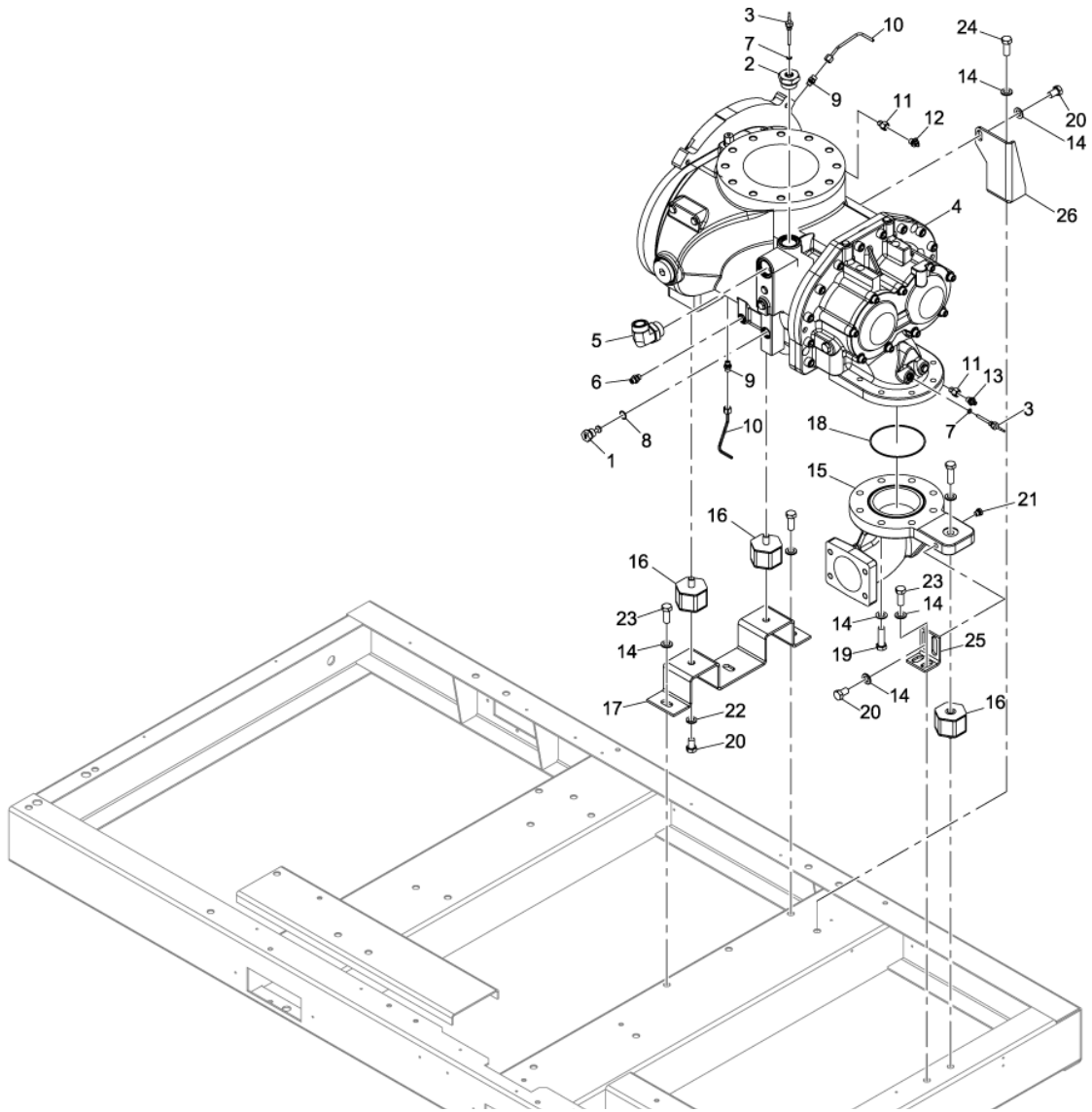
# AIREND (FIXED SPEED) ASSEMBLY DRAWING



**AIREND (FIXED SPEED) ASSEMBLY PARTS LIST**

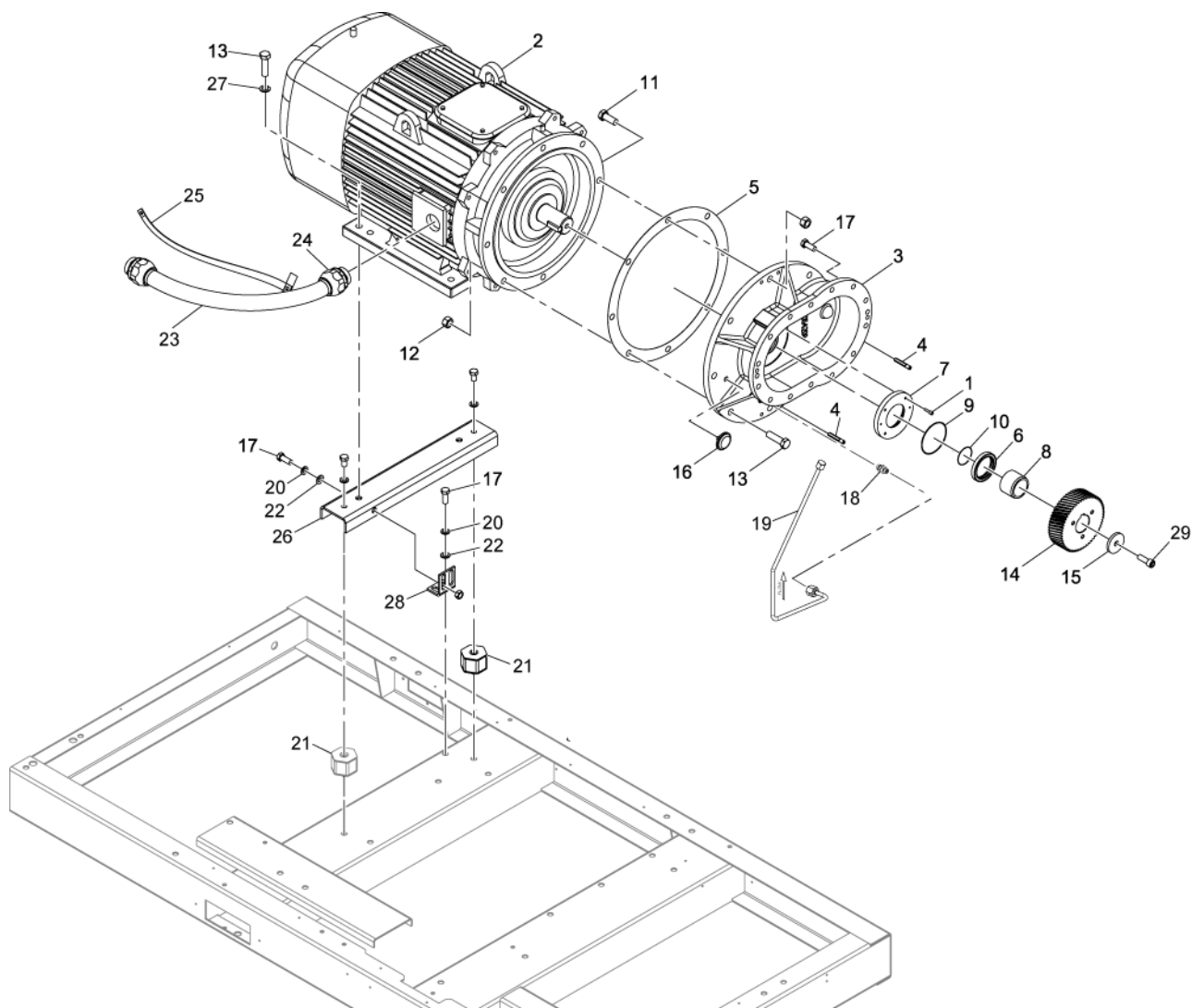
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23397607	1	AIREND 226MM SPA WITHOUT GEARCASE	13	39326483	1	SPACER, GEAR MALE ROTOR
2	23436231	1	ORIFICE	14	96708391	1	SCREW, SOCKET HEAD M16 X 45.0 LONG
3	23506116	1	ADAPTER	15	96759212	1	KEY, RECT ONE ROUND END 11MM X 18MM X 55MM
4	23522246	2	SENSOR	16	96702337	3	SCREW, HEX HEAD
5	96757604	1	ELBOW	17	23389349	1	ELBOW, DISCHARGE 226 AIREND (MACH)
6	96757737	1	ELBOW	18	95023396	1	O-RING
7	96757927	1	CONNECTOR	19	96705645	13	WASHER
8	96759295	2	O-RING	20	96719836	8	SCREW, HEX HEAD
9	96759352	1	O-RING	21	96757000	1	PLUG, HEX HEAD M12
10	23430705	1	GEAR SET, R90IU-110 PSIG	22	23411556	2	MOUNT, ISOLATION
	23430739	1	GEAR SET, R90IU-125 PSIG	23	23432222	1	SUPPORT, VSD DRIVETRAIN
	23532591	1	GEAR SET, R90IU-145 PSIG	24	96738372	5	SCREW, HEX HEAD
	23430804	1	GEAR SET, R90IU-200 PSIG	25	96765169	9	WASHER
	23430689	1	GEAR SET, R90IU-7.5 BARG	26	23516362	1	BRACE, AIREND SHIPPING
	23430697	1	GEAR SET, R90IU-8.5 BARG				
	23430705	1	GEAR SET, R90IU-10 BARG				
	23430770	1	GEAR SET, R90IU-14 BARG				
	23430671	1	GEAR SET, R110IU-110 PSIG				
	23430697	1	GEAR SET, R110IU-125 PSIG				
	23430853	1	GEAR SET, R110IU-145 PSIG				
	23430754	1	GEAR SET, R110IU-200 PSIG				
	23430655	1	GEAR SET, R110IU-7.5 BARG				
	23430663	1	GEAR SET, R110IU-8.5 BARG				
23430671	1	GEAR SET, R110IU-10 BARG					
23430705	1	GEAR SET, R110IU-14 BARG					
11	35255819	1	CLAMP, PLATE				
12	35295336	2	PIN, DOWEL M16 X 40				

## AIREND (VSD) ASSEMBLY DRAWING & PARTS LIST



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23436231	1	ORIFICE, INJECTION	17	23432222	1	SUPPORT, VSD DRIVETRAIN
2	23506116	1	ADAPTER	18	95023396	1	O-RING
3	23522246	2	SENSOR	19	96719836	8	SCREW, HEX HEAD
4	42679316	1	VSD AIREND	20	96738372	4	SCREW, HEX HEAD M16-2.00 X 25.0 LONG
5	96757737	1	ELBOW	21	96757000	1	PLUG, HEX HEAD M12
6	96757927	1	CONNECTOR	22	96765169	2	WASHER
7	96759295	2	O-RING	23	96702337	5	SCREW, HEX HEAD M16-2.00 X 40.0 LONG
8	96759352	1	O-RING	24	96703962	1	SCREW, HEX HEAD M16-2.00 X 50.0 LONG
9	96757919	2	CONNECTOR	25	23516354	1	BRACE, AIREND SHIPPING AT DISCHARGE ELOW
10	23453343	2	TUBE, SEAL SCAVENGE	26	23516362	1	BRACE, AIREND SHIPPING
11	23453483	2	CONNECTOR				
12	96759550	1	ELBOW				
13	96759634	1	CONNECTOR				
14	96705645	20	WASHER				
15	23389349	1	ELBOW				
16	23411556	3	MOUNT, ISOLATION				

## DRIVE (FIXED SPEED) ASSEMBLY DRAWING & PARTS LIST

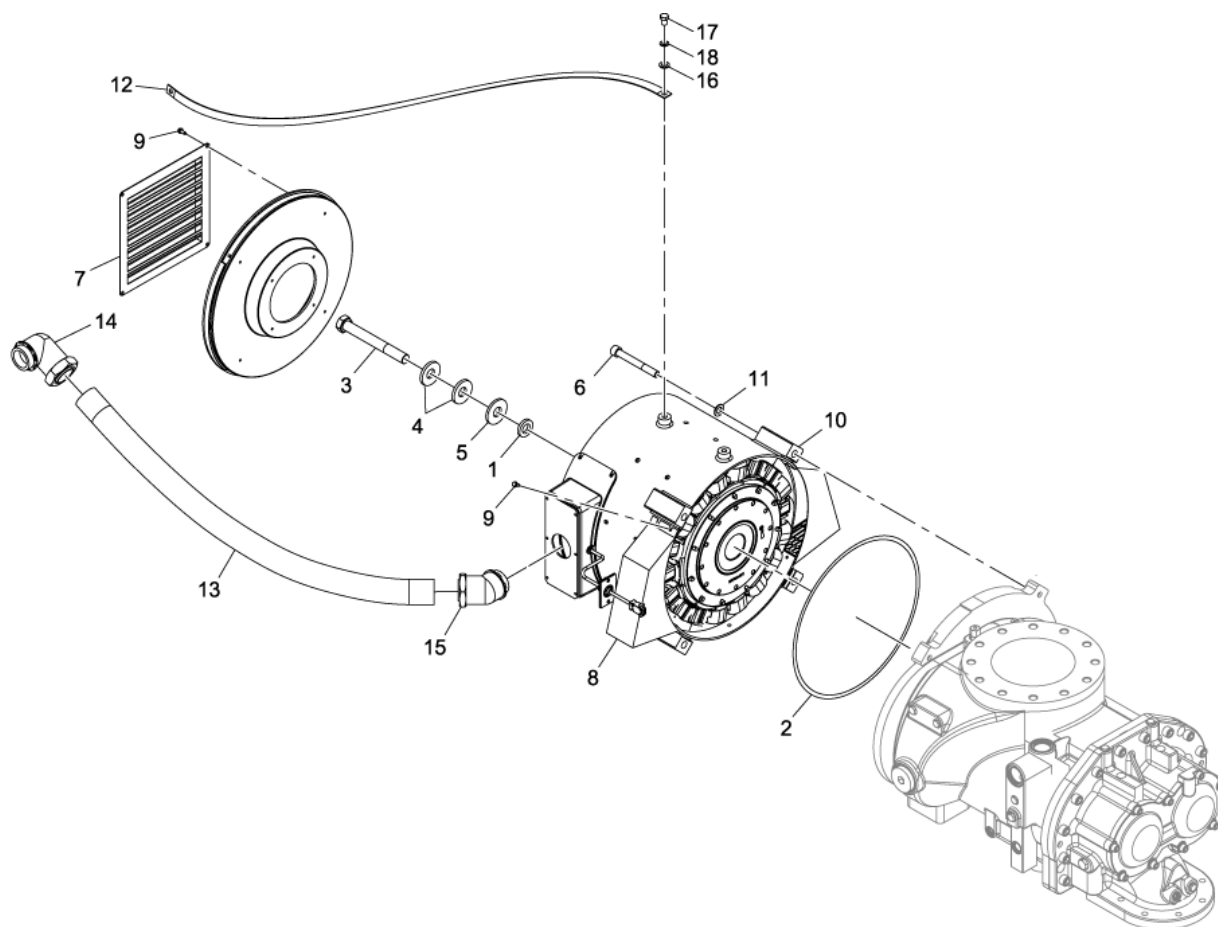


Item	Part No.	Qty	Description	Item	Part No.	Qty	Description	
1	22168710	4	CAP SCREW	2	23777527	1	MOTOR, DRIVE 125HP 575V 60HZ TEFC (NEMA PREMIUM)	
2	23414295	1	OPTION ITEM, MOTOR 90KW 400V 50HZ TEFC (IE3)		23414360	1	MOTOR, DRIVE 150HP 380V 60HZ TEFC (NEMA PREMIUM)	
	23441694	1	MOTOR, DRIVE 90KW 400V 50HZ TEFC (IE1)		46403598	1	MOTOR, 150HP / 110KW 380V 60HZ (BRAZIL) (IE2)	
	23414303	1	MOTOR, DRIVE 110KW 400V 50HZ TEFC (IE3)		23414378	1	MOTOR, DRIVE 150HP 440V 60HZ TEFC (NEMA PREMIUM)	
	23441702	1	MOTOR, DRIVE 110KW 400V 50HZ TEFC (IE1)		46403606	1	MOTOR, 150HP / 110KW 440V 60HZ (BRAZIL) (IE2)	
	23414337	1	MOTOR, DRIVE 125HP 380V 60HZ TEFC (NEMA PREMIUM)		23777493	1	MOTOR, DRIVE 150HP 460V 60HZ TEFC (NEMA PREMIUM)	
	46403614	1	MOTOR, 125HP / 90KW 380V 60HZ (BRAZIL) (IE2)		23777535	1	MOTOR, DRIVE 150HP 575V 60HZ TEFC (NEMA PREMIUM)	
	23414345	1	MOTOR, DRIVE 125HP 440V 60HZ TEFC (NEMA PREMIUM)		23434772	1	MOTOR, DRIVE 125HP 460V 60HZ TEFC (NEMA PREMIUM)	
	46403622	1	MOTOR, 125HP / 90KW 440V 60HZ (BRAZIL) (IE2)		23422249	1	MOTOR, DRIVE 125HP 575V 60HZ TEFC (NEMA PREMIUM)	
	23777485	1	MOTOR, DRIVE 125HP 460V 60HZ TEFC (NEMA PREMIUM)					

**DRIVE (FIXED SPEED) ASSEMBLY PARTS LIST**

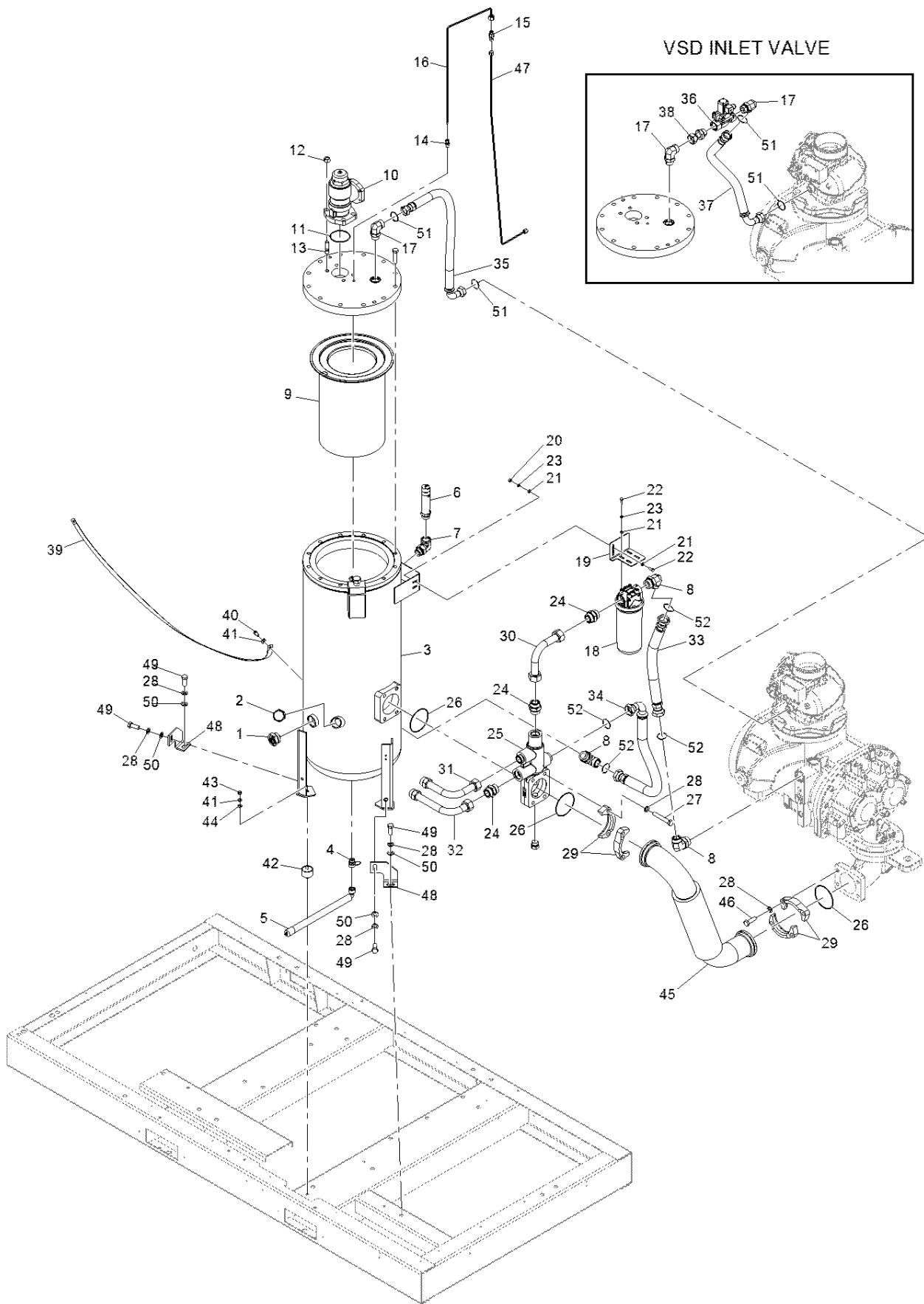
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
2	23434780	1	MOTOR, DRIVE 150HP 460V 60HZ TEFC (NEMA PREMIUM)	14	23430705	1	GEAR SET, R90IU-110 PSIG
	23422256	1	MOTOR, DRIVE 150HP 575V 60HZ TEFC (NEMA PREMIUM)		23430739	1	GEAR SET, R90IU-125 PSIG
	23414311	1	MOTOR, DRIVE 132KW 400V 50HZ TEFC (IE3)		23532591	1	GEAR SET, R90IU-145 PSIG
	23441710	1	MOTOR, DRIVE 132KW 400V 50HZ TEFC (IE1)		23430804	1	GEAR SET, R90IU-200 PSIG
	23414329	1	MOTOR, DRIVE 160KW 400V 50HZ TEFC (IE3)		23430689	1	GEAR SET, R90IU-7.5 BARG
	23441728	1	MOTOR, DRIVE 160KW 400V 50HZ TEFC (IE1)		23430697	1	GEAR SET, R90IU-8.5 BARG
	23414394	1	MOTOR, DRIVE 200HP 380V 60HZ TEFC (NEMA PREMIUM)		23430705	1	GEAR SET, R90IU-10 BARG
	46403580	1	MOTOR, 200HP 150KW/380V 60HZ (BRAZIL) (IE2)		23430770	1	GEAR SET, R90IU-14 BARG
	23414402	1	MOTOR, DRIVE 200HP 440V 60HZ TEFC (NEMA PREMIUM)		23430671	1	GEAR SET, R110IU-110 PSIG
	46403572	1	MOTOR, 200HP 150KW/440V 60HZ (BRAZIL) (IE2)		23430697	1	GEAR SET, R110IU-125 PSIG
	23827140	1	MOTOR, 200HP 460V 60HZ TEFC (NEMA PREMIUM)		23430853	1	GEAR SET, R110IU-145 PSIG
	23827157	1	MOTOR, 200HP 575V 60HZ TEFC (NEMA PREMIUM)		23430754	1	GEAR SET, R110IU-200 PSIG
	23827199	1	MOTOR, 200HP 460V 60HZ TEFC (NEMA PREMIUM)		23430655	1	GEAR SET, R110IU-7.5 BARG
	23827207	1	MOTOR, 200HP 575V 60HZ TEFC (NEMA PREMIUM)		23430663	1	GEAR SET, R110IU-8.5 BARG
3	23428485	1	HSG, GEARCASE	23430671	1	GEAR SET, R110IU-10 BARG	
4	39194915	2	PIN, DOWEL	23430705	1	GEAR SET, R110IU-14 BARG	
5	39454558	1	GASKET - GEAR CASE TO MOTOR	15	39109129	1	PLATE, RETAINER
6	89244024	1	SEAL, SHAFT HIGH PRESSURE	16	88089743	1	BREATHER, FILTER .25 INCH BSPT
7	89244040	1	SEAL HOUSING -	17	96702337	17	SCREW, HEX HEAD M16-2.00 X 40.0 LONG
8	89292460	1	SLEEVE, SHAFT	18	47547139001	1	VALVE, IN-LINE CHECK (1/4 INCH ORFS MALE X M14 MALE)
9	95023107	1	O-RING	19	47555578001	1	TUBE, GEARCASE SCAVENGE
10	95991642	1	O-RING	20	96705645	2	WASHER
11	96704481	1	SCREW, HEX HEAD	21	23411556	2	MOUNT, ISOLATION
12	96720446	6	NUT, HEX STYLE 1	22	96765169	2	WASHER
13	96721162	9	SCREW, HEX HEAD	23	39147194	A/R	CONDUIT
				24	54564059	2	CONNECTOR
				25	54732144	1	STRAP
				26	23423957	1	MOUNT, MOTOR (FIXED SPEED)
				27	96737721	2	WASHER
				28	23516354	1	BRACE
				29	96708391	1	SCREW, SOCKET HEAD M16 X 45.0 LONG
				A/R	AS REQUIRED		

## DRIVE (VSD) ASSEMBLY DRAWING & PARTS LIST



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22056279	1	SPACER	12	22222863	1	STRAP, EARTH GROUND 1500MM LONG
2	22088892	1	GASKET, VITON	13	39132311	1	CONDUIT, 2" SEALTITE GREY
3	22136048	1	BOLT, HEX HEAD	14	95373924	1	ELBOW
4	22136105	2	WASHER	15	95383014	1	ELBOW
5	22136345	1	WASHER	16	96701412	1	WASHER
6	22504583	4	SCREW	17	96719851	1	SCREW, HEX HEAD M12-1.75 X 16.0 LONG
7	23643190	1	LOUVER, MOTOR	18	96739933	1	WASHER, M12
8	23701253	2	VENT, AIR MOTOR (VSD)				
9	39917489	8	SCREW				
10	42541797	1	ROTOR/STATOR S/A 90-110kW 380-480V				
	23581721	1	ROTOR/STATOR S/A 90-110kW 575V				
11	96705645	20	WASHER				

# SEPARATOR TANK ASSEMBLY DRAWING

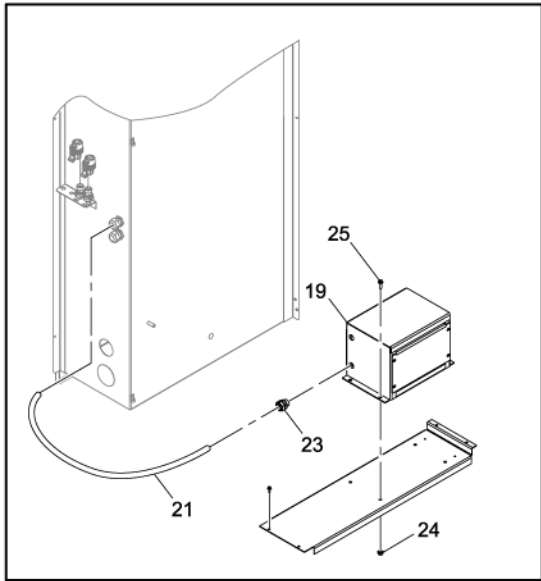


## SEPARATOR TANK ASSEMBLY PARTS LIST

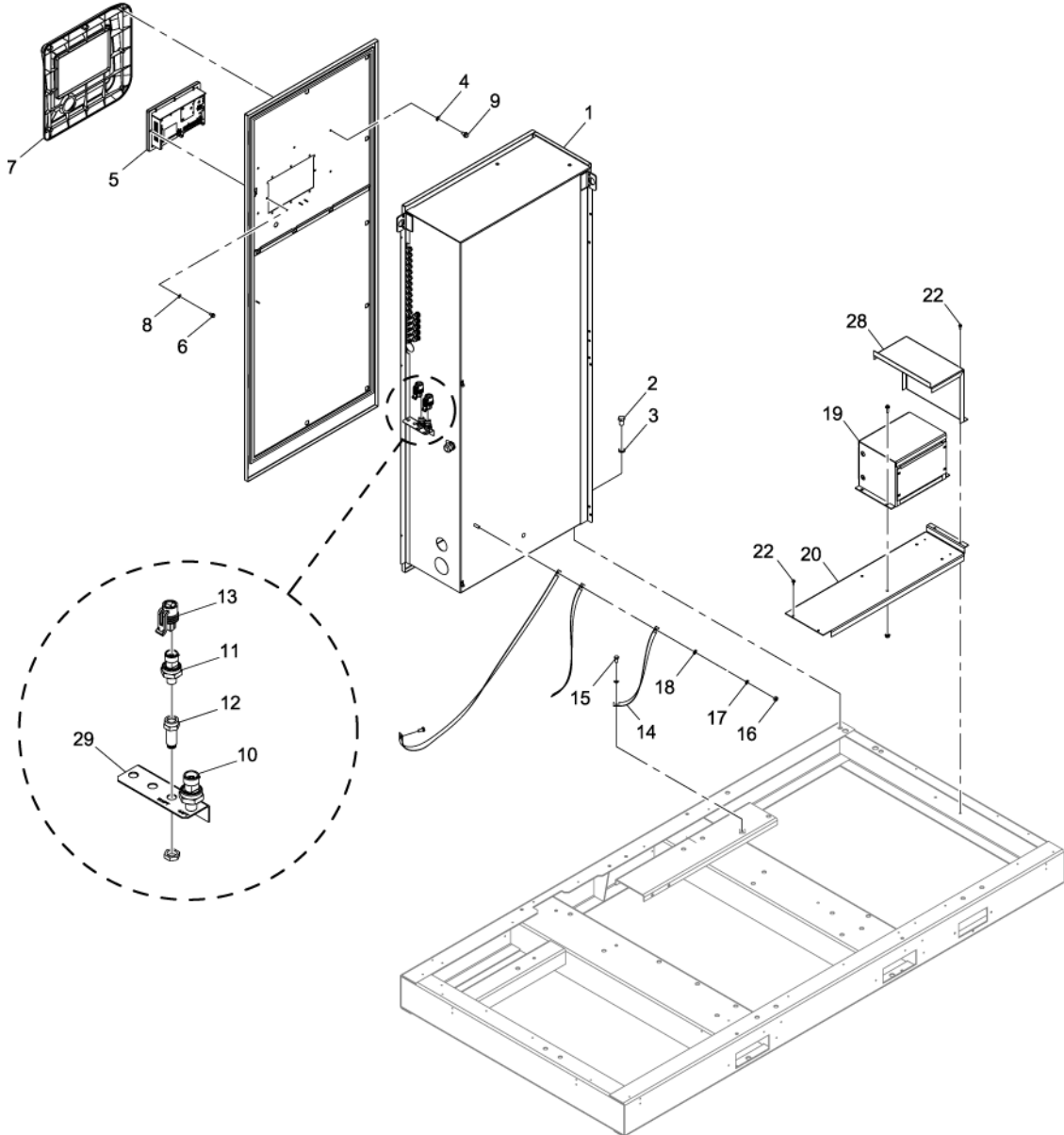
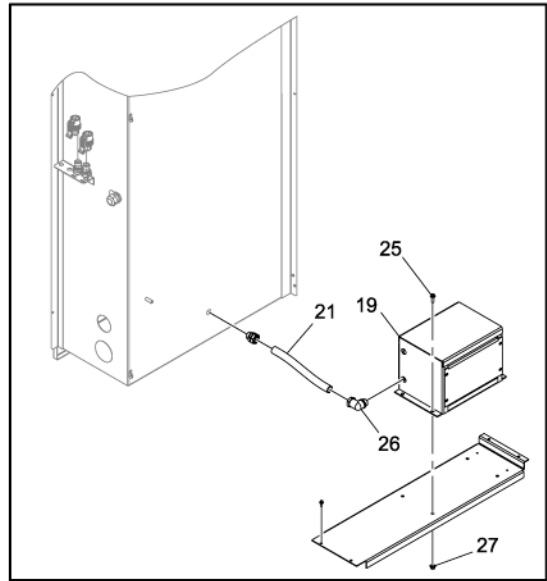
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23404866	1	SIGHT GLASS	31	24589251	1	TUBE, HSTCV TO COOLER
2	23408628	1	PLUG	32	49095615	1	TUBE, HSTCV TO COOLER
3	23555907	1	TANK, SEPARATOR (ASME, CRN, NR-13)	33	24265621	1	HOSE, HYDRAULIC (SS)
	23558315	1	TANK, SEPARATOR (GB-150)		48662837	1	HOSE, HYDRAULIC (RUBBER)
	23558323	1	TANK, SEPARATOR (TUV)	34	24260861001	1	HOSE, HYDRAULIC (SS)
	23558331	1	TANK, SEPARATOR (CE)		85575850	1	HOSE, HYDRAULIC (RUBBER)
	23558349	1	TANK, SEPARATOR (ASME PACIFIC RIM)	35	85575173	1	HOSE, HYD (34 INCHES LONG)
	23558356	1	TANK, SEPARATOR (AS1210)	36	23525678	1	VALVE, SOLENOID
4	24096901	1	VALVE, DRAIN M 22 X 1.5	37	85574929	1	HOSE, HYD (24 INCHES LONG)
5	24096984	1	HOSE, DRAIN ASSEMBLY	38	96763321	1	CONNECTOR
6	23443674	1	VALVE, PRESSURE RELIEF	39	22222863	1	STRAP
	23443666	1	VALVE, PRESSURE RELIEF 1	40	96702279	1	SCREW, HEX HEAD
	23443690	1	VALVE, PRESSURE RELIEF 16 BAR (GB)	41	96712096	4	WASHER
7	23500374	1	ELBOW 90 STREET	42	23388994	3	MOUNT
8	96757737	3	ELBOW	43	96704812	3	NUT, HEX
9	23545841	1	ELEMENT	44	96714399	3	WASHER
10	23030901	1	VALVE	45	23415748	1	TUBE, AIREND DISCHARGE (AS1210,ASME,CRN,NR-13,GB150,PACIFIC RIM TUV)
11	95022349	1	O-RING		23522345	1	TUBE, AIREND DISCHARGE (PED FOR CE)
12	96711882	4	NUT	46	96703962	4	SCREW, HEX HEAD M16-2.00 X 50.0 LONG
13	96723796	4	STUD	47	23524291	1	TUBE, SCAVENGE 6MM OD
14	23413479	1	ADAPTER	48	23505563	3	BRACE, TANK SHIPPING
15	23829328	1	VALVE, ORIFICE/CHECK	49	96702337	6	SCREW, HEX HEAD M16-2.00 X 40.0 LONG
16	23830128	1	TUBE, SCAVENGE .25 OD	50	96705645	6	WASHER, PRODUCT GRADE A M16
17	96757711	2	ELBOW	51	24840605	4	O-RING STANDARD VITON .926
18	23416613	1	FILTER	52	24840613	4	O-RING STANDARD VITON 1.176
19	23439219	1	SUPPORT, OIL FILTER				
20	96701370	2	NUT, HEX				
21	96701396	8	WASHER				
22	96702824	6	SCREW, HEX HEAD M8-1.25 X 20.0 LONG				
23	96741467	6	WASHER, SPRING LOCK				
24	96758107	3	CONNECTOR 1.25 TUBE X M42				
25	23879141	1	ASSEMBLY, HSTC VALVE (7.5-10 BAR)				
	23879158	1	ASSEMBLY, HSTC VALVE (14 BAR/200 PSIG)				
26	95060018	3	O-RING				
27	96704952	4	SCREW, HEX HEAD				
28	96765169	14	WASHER				
29	96950308	4	FLANGE CLAMP				
30	23429632	1	TUBE, HSTCV TO COOLER				

# STARTER BOX ASSEMBLY DRAWING

AIR COOLING



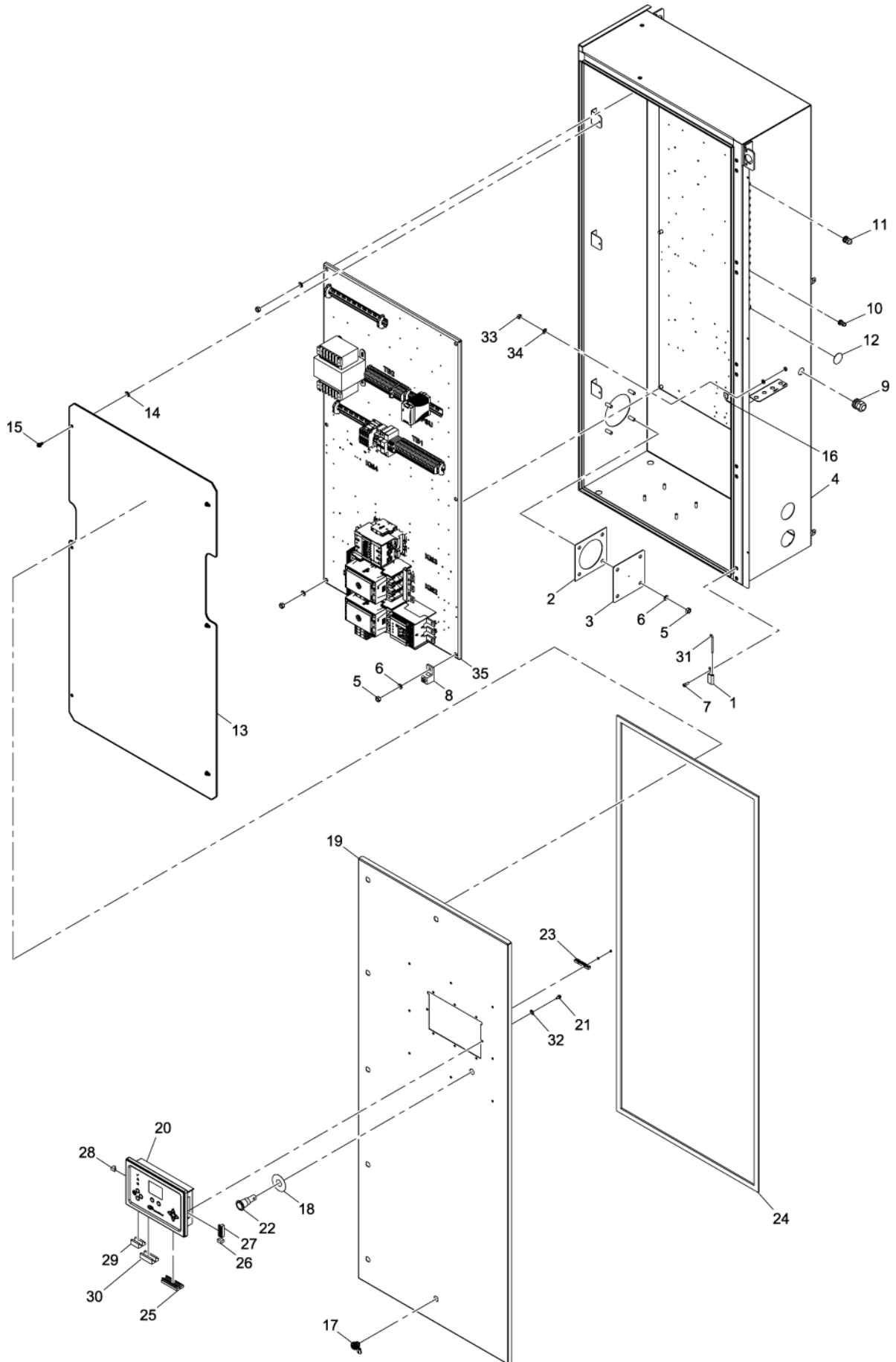
WATER COOLING



## STARTER BOX ASSEMBLY PARTS LIST

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	24192650	1	STARTER BOX ASSY, VSD 90-110kW 380-575V 50/60Hz A/C	10	47545275001	1	TRANSDUCER, PRESSURE 225 PSI, 5VDC
	24192668	1	STARTER BOX ASSY, VSD 90-110kW 380-575V 50/60Hz W/C	11	47560902001	1	TRANSDUCER, VACUUM 0-15 PSIG, 5 VDC, 1/8 BSPT
	24203333	1	STARTER BOX ASSY, VSD 132-160kW 380-575V 50/60Hz A/C & W/C	12	23453095	2	BULKHEAD, FEMALE UNION
	24192635	1	STARTER BOX ASSY, Y/D 90-110kW 400-575V 50/60Hz A/C & W/C	13	39875570	2	CABLE, TRANSDUCER
	24201535	1	STARTER BOX ASSY, Y/D 90-110kW 380V 60Hz A/C & W/C; 132-160kW, 440-575V, 60Hz A/C & W/C	14	54732144	1	STRAP, EARTH GROUND
	24201527	1	STARTER BOX ASSY, Y/D 132-160kW 380-415V 50/60Hz A/C & W/C	15	96702279	1	SCREW, HEX HEAD
	24192676	1	STARTER BOX ASSY, S.S 90-110kW 380-575V 50/60Hz A/C & W/C	16	96704812	1	NUT, HEX STYLE 1
	24203457	1	STARTER BOX ASSY, S.S 132-160kW 380-415V 50/60Hz A/C & W/C	17	96712096	2	WASHER, SPRING LOCK
	24203465	1	STARTER BOX ASSY, S.S 132-160kW 440-575V 50/60Hz A/C & W/C	18	96714399	1	WASHER, PRODUCT
2	96738372	4	SCREW, HEX HEAD	19	22737910	1	TRANSFORMER, 15 KVA
3	96765169	4	WASHER, LOCK		22737928	1	TRANSFORMER, 6 KVA
4	23524879	8	WASHER, FLAT	20	23555733	1	SUPPORT, TRANSFORMER 575V
5	23629512	1	CONTROLLER, Xe-90M (STANDARD)	21	39132279	A/R	CONDUIT, .75 UL SEALTITE
	23711288	1	CONTROLLER, Xe-145M (ENHANCED)	22	39917489	6	SCREW, HEX HEAD FLANGE
6	23829344	8	SCREW, SELF THREADING	23	95359295	3	CONNECTOR, INSULATED THROAT
7	45657103	1	FRAME, USER INTERFACE	24	96704416	4	NUT, HEX FLANGE LOCK
8	95929055	8	WASHER, LOCK EXTERNAL TOOTH	25	96712153	4	SCREW, HEX HEAD FLANGE
9	96727565	8	BOLT, HEX FLANGE	26	95318457	1	ELBOW, INSULATED THROAT
				27	96704804	4	NUT, HEX FLANGE LOCK
				28	23561533	1	SHIELD, 575 V TRANSFORMER
				29	23497076	1	ANGLE, SUPPORT
				**	23911282	1	SCHEMATIC, ELECTRICAL WIRING (FIXED SPEED - Y/D)
					23911308	1	SCHEMATIC, ELECTRICAL WIRING (VSD)
					23911274	1	SCHEMATIC, ELECTRICAL WIRING (FIXED SPEED - SOFT STARTER)
				A/R	AS REQUIRED		
				**	NOT ILLUSTRATED		

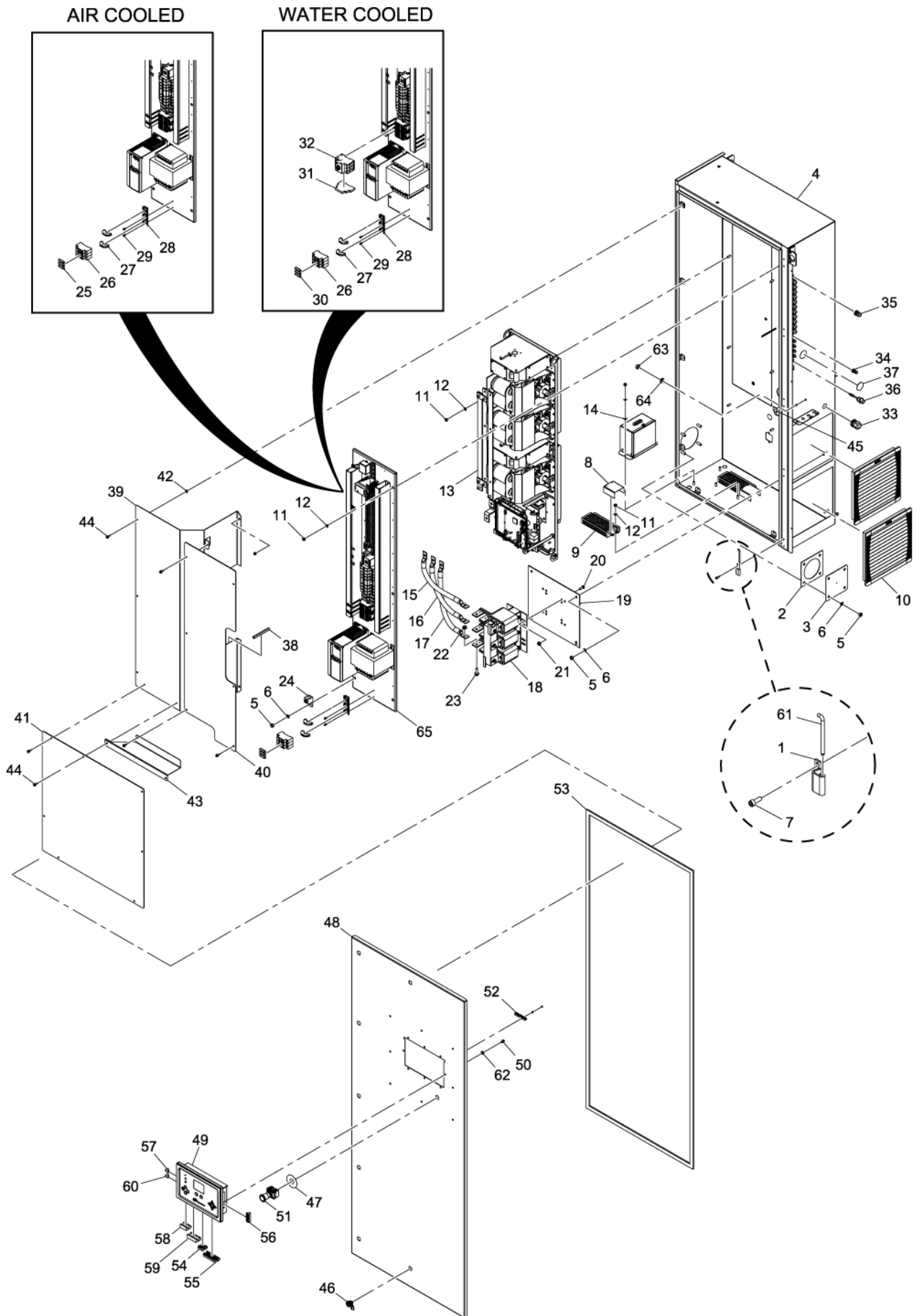
# STARTER BOX (FIXED SPEED) ASSEMBLY DRAWING



**STARTER BOX (FIXED SPEED) ASSEMBLY PARTS LIST**

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description												
1	22159842	5	HINGE, DOOR PIN	26	39204441	1	PLUG, 3 POSITION												
2	23409154	1	GASKET, POWER-IN PLATE	27	39242375	1	PLUG, 10 POSITION												
3	23409162	1	PLATE, STARTER BOX POWER	28	54719182	1	CONNECTOR, 2 WAY												
4	23433022	1	ENCLOSURE, STARTER BOX	29	54729496	1	CONNECTOR, 8 WAY												
5	96704812	10	NUT, HEX STYLE 1	30	54729520	2	CONNECTOR, 12 WAY												
6	96718655	4	WASHER, SPRING LOCK	31	93580140	5	PIN, HINGE												
7	96743729	16	SCREW, SOCKET HEAD	32	95929055	8	WASHER, LOCK EXTERNAL TOOTH												
8	39933551	1	LUG, GROUNDING	33	96703756	4	NUT, HEX STYLE 1												
9	22501720	1	GLAND, CABLE M25X1.5	34	96705165	4	WASHER, PRODUCT												
10	23547763	5	GLAND, WIRE	35	47601863001	1	STARTER BOX ASSY, Y/D 90-110kW 380-575V 50/60Hz A/C												
11	23549603	12	GLAND, WIRE				47601864001	1	STARTER BOX ASSY, Y/D 90-110kW 380-575V 50/60Hz W/C										
12	23936446	1	SEAL, HOLE 32MM DIAMETER						47601865001	1	STARTER BOX ASSY, Y/D 132-160kW 380-575V 50/60Hz A/C & W/C								
13	23409139	1	PANEL								24192619	1	STARTER BOX ASSY, S.S 90-110kW 380-575V 50/60Hz A/C & W/C						
14	23523491	6	RETAINER, 6mm SCREW										24203432	1	STARTER BOX ASSY, S.S 132-160kW 380-415V 50/60Hz A/C & W/C				
15	39917489	6	SCREW, HEX HEAD FLANGE												24203440	1	STARTER BOX ASSY, S.S 132-160kW 440-575V 50/60Hz A/C & W/C		
16	22265813	1	WIRE, GROUND																
17	23180565	7	LATCH, DOOR																
18	23262405	1	PLATE, EMERGENCY STOP																
19	23434269	1	DOOR, STARTER BOX																
20	23629512	1	CONTROLLER, Xe-90-M (STANDARD)																
	23711288	1	CONTROLLER, Xe-145M (ENHANCED)																
21	23829344	8	SCREW, SELF THREADING																
22	23990716	1	STOP, EMERGENCY																
23	32342115	1	BUS, ALUMINIUM GROUNDING																
24	35140409	A/R	STRIP, RUBBER SEAL																
25	39191655	2	PLUG, 16 POSITION																
				A/R	AS REQUIRED														

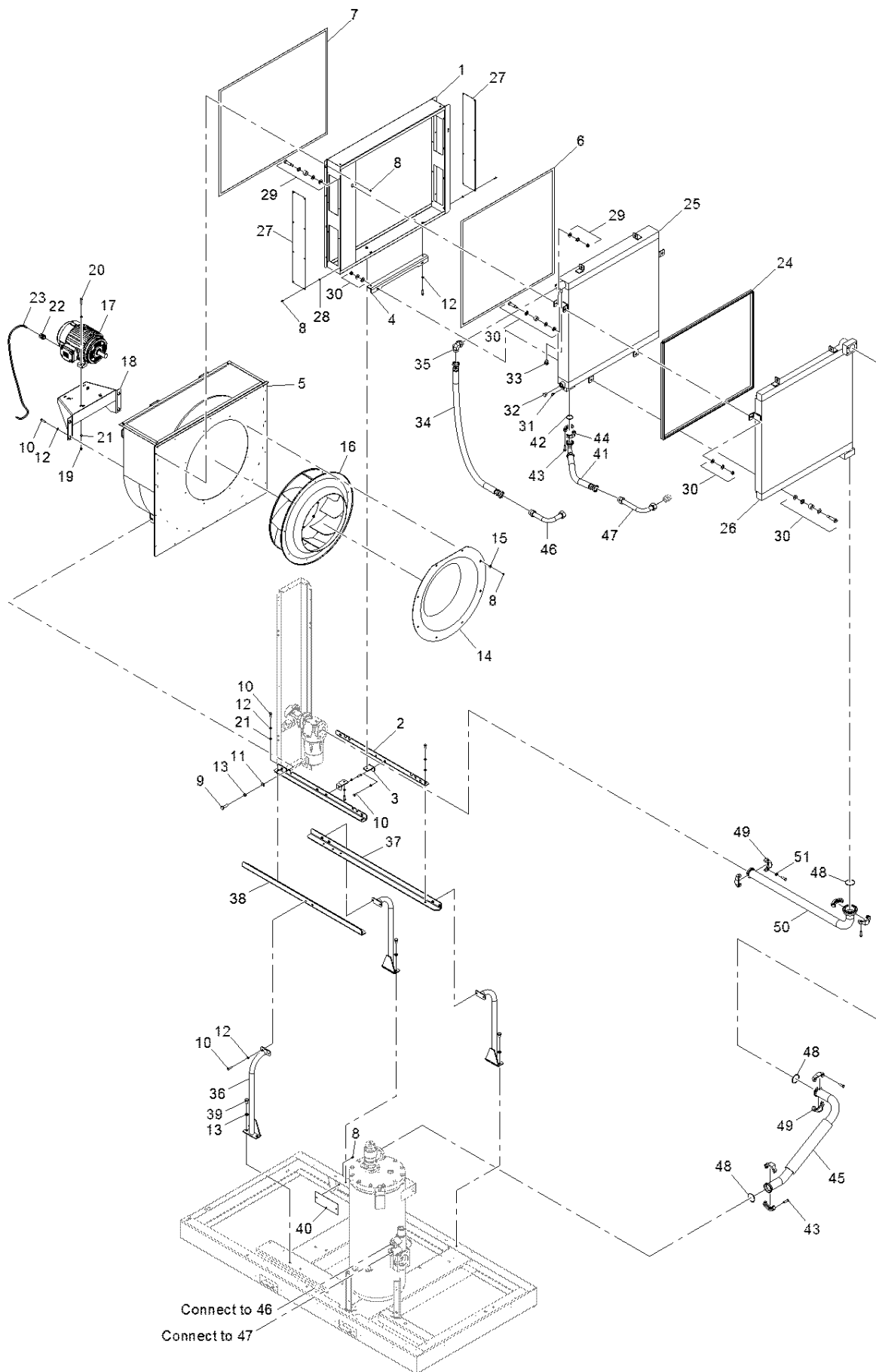
# STARTER BOX (VSD) ASSEMBLY DRAWING



**STARTER BOX (VSD) ASSEMBLY PARTS LIST**

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22159842	5	HINGE, DOOR PIN	37	23936446	1	SEAL, HOLE 32MM DIAMETER CARBON STEEL
2	23409154	1	GASKET, POWER-IN PLATE	38	22526446	A/R	GROMMET, CONTINUOUS
3	23409162	1	PLATE, STARTER BOX POWER	39	23409147	1	PANEL, DRIVE
4	23436090	1	ENCLOSURE, STARTER BOX	40	23443633	1	PANEL, CLEAR
5	96704812	18	NUT, HEX STYLE 1	41	23461296	1	COVER, LINE REACTOR
6	96718655	14	WASHER, SPRING LOCK	42	23523491	16	RETAINER, 6mm SCREW
7	96743729	10	SCREW, SOCKET HEAD	43	23536964	1	COVER, ANGLED
8	22203657	2	GUARD, HEATER	44	39917489	16	SCREW, HEX HEAD FLANGE
9	22245450	2	HEATER, 62.5 WATTS	45	22222855	1	STRAP, GROUND
10	23464829	2	FILTER, DRIVE BOX INTAKE	46	23180565	7	LATCH, DOOR (NEMA 4)
11	96701370	16	NUT, HEX STYLE 1	47	23262405	1	PLATE, EMERGENCY STOP
12	96741467	16	WASHER, SPRING LOCK	48	23434269	1	DOOR, STARTER BOX
13	23459811	1	DRIVE, HPM, 90-110kW 380-480VAC	49	23629512	1	CONTROLLER, Xe-90M (STANDARD)
	23459829	1	DRIVE, HPM, 132-160kW 380-480VAC		23711288	1	CONTROLLER, Xe-145M (ENHANCED)
	23581655	1	DRIVE, HPM, 90-160kW 575VAC	50	23829344	8	SCREW, SELF THREADING
14	96719745	2	WASHER, PRODUCT	51	24360919	1	SWITCH, EMERGENCY STOP
15	23610017	1	CABLE, L1 POWER	52	32342115	1	BUS, ALUMINIUM GROUNDING
16	23610025	1	CABLE, L2 POWER	53	35140409	A/R	STRIP, RUBBER SEAL
17	23610033	1	CABLE, L3 POWER	54	39186093	2	PLUG, 6 POSITION
18	24271264	1	REACTOR, LINE (RL-16002B1)	55	39191655	2	PLUG, 16 POSITION
	23702350	1	REACTOR, LINE (RL-20003B1)	56	39242375	1	PLUG, 10 POSITION
19	24277881	1	PLATE, LINE REACTOR	57	54719182	1	CONNECTOR, 2 WAY
20	96702824	4	SCREW, HEX HEAD	58	54729496	2	CONNECTOR, 8 WAY
21	96704416	4	NUT, HEX FLANGE LOCK	59	54729520	2	CONNECTOR, 12 WAY
22	96704846	3	NUT, HEX FLANGE LOCK	60	54729546	1	CONNECTOR, 2 WAY
23	96718663	3	SCREW, HEX HEAD FLANGE	61	93580140	5	PIN, HINGE
24	39933551	1	LUG, GROUNDING	62	95929055	8	WASHER, LOCK EXTERNAL TOOTH
25	22477491	3	FUSE, TIME DELAY, CLASS CC	63	96703756	4	NUT, HEX STYLE 1
26	22859433	1	BLOCK	64	96705165	4	WASHER, PRODUCT
27	39252937	2	STOP	65	24192205	1	ASSEMBLY, BACKPANEL(90- 110kW AIR CLD VSD / 380-575V 60 Hz)
28	54729595	1	RAIL, DIN 100mm LONG		24192304	1	ASSEMBLY, BACKPANEL(90- 110kW WTR CLD VSD / 380- 575V 60 Hz)
29	96751722	2	SCREW, TAPPING HEX WASHER HEAD		24203341	1	ASSEMBLY, BACKPANEL (132- 160kW AIR CLD & WTR CLD VSD / 380-575V 60Hz)
30	22365910	3	FUSE, TIME DELAY	A/R	AS REQUIRED		
31	23072069	1	BLOCK, AUX CONTACT				
32	23728751	1	PROTECTOR, MOTOR				
33	22501720	1	GLAND, CABLE M25X1.5				
34	23547763	5	GLAND, WIRE WITH LOCKING NUT				
35	23549603	12	GLAND, WIRE WITH LOCKING NUT				
36	23568447	1	KIT, USB SERVICE PORT AND CABLE, 2 METERS				

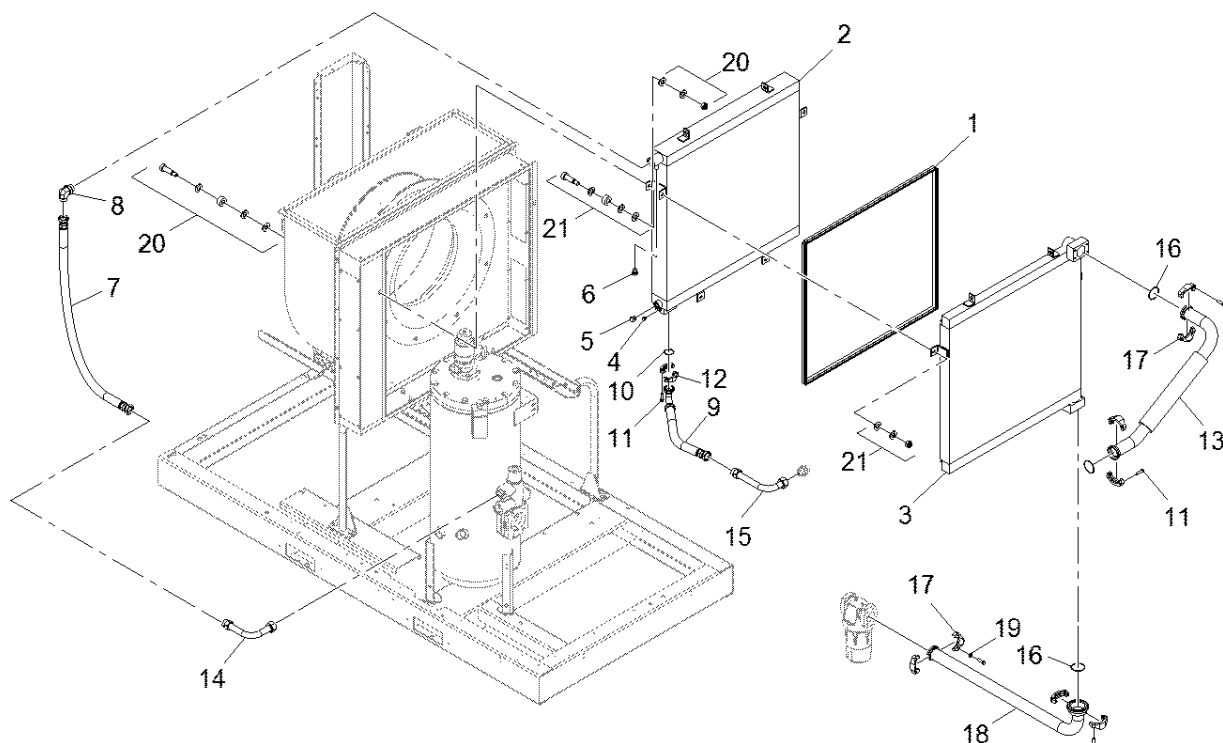
# BLOWER ASSEMBLY DRAWING



**BLOWER ASSEMBLY PARTS LIST**

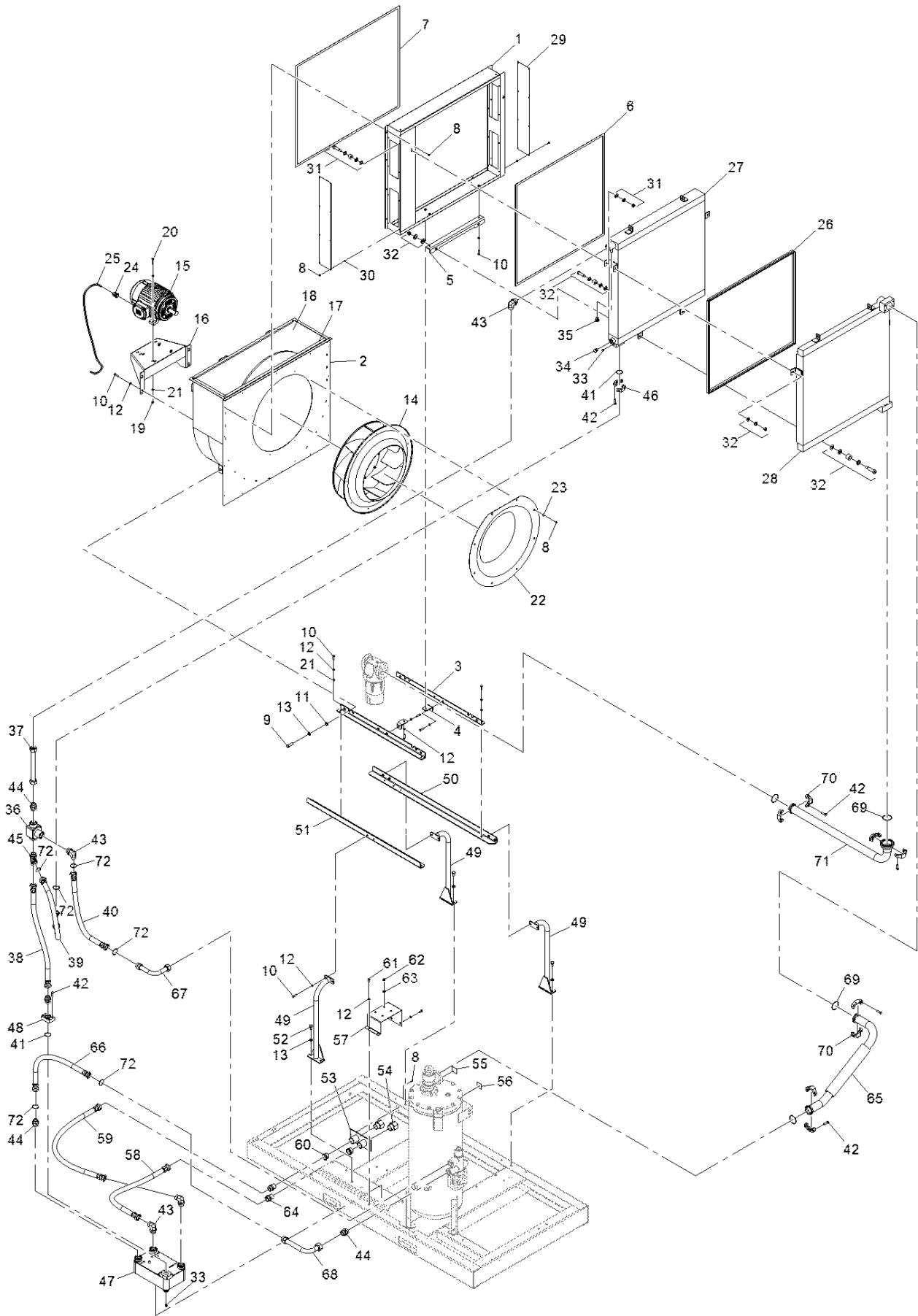
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23434822	1	PLENUM, BLOWER	30	49148679	6	KIT, COOLER MOUNTING HARDWARE
2	23446974	2	ANGLE, BLOWER / COOLER SUPPORT (COMMON)	31	96757000	1	PLUG, HEX HEAD
3	23446982	2	BRACE, PLENUM	32	96757059	1	PLUG, HEX HEAD
4	23447139	1	ANGLE, COOLER MOUNTING	33	23522238	1	SENSOR FOR VSD ONLY
5	23597909	1	60 Hz HOUSING	33	96757000	1	PLUG FOR FIXED SPEED
	23597917	1	50 Hz HOUSING				
6	23609928	A/R	GASKET, STRIP .375THK X .5 WIDE	34	24265654	1	HOSE, HYDRAULIC (SS)
7	39117312	A/R	GASKET, STRIP .06THK X .75 WIDE	34	48662829	1	HOSE, HYDRAULIC (RUBBER)
8	39917489	40	SCREW, HEX HEAD	35	96757737	1	ELBOW, 90
9	96703962	2	SCREW, HEX HEAD	36	23445182	3	LEG, COOLER / BLOWER SUPPORT
10	96704309	20	SCREW, HEX HEAD M10-1.50 X 35.0 LONG	37	23446958	1	ANGLE, BLOWER / COOLER SUPPORT (LONG)
11	96705645	2	WASHER, PRODUCT	38	23446966	1	ANGLE, BLOWER / COOLER SUPPORT (SHORT)
12	96712096	24	WASHER, SPRING LOCK	39	96738372	6	SCREW, HEX HEAD
13	96765169	8	WASHER, LOCK	40	23452048	1	PLATE, WATER CONNECTION COVER
14	23417165	1	INLET CONE - 60 Hz	41	24265647	1	HOSE, HYDRAULIC (SS)
	23391352	1	INLET CONE - 50 Hz		48662910	1	HOSE, HYDRAULIC (RUBBER)
15	96745559	8	WASHER, LARGE OUTSIDE DIAMETER	42	95987970	1	O-RING
16	23413818	1	BLOWER - 60 Hz	43	96702444	20	SCREW, HEX HEAD
	23413800	1	BLOWER - 50 Hz	44	96955166	2	FLANGE CLAMP, SPLIT HALF
17	46403655	1	MOTOR - 380V 60 Hz	45	23428261	1	TUBE, MPCV TO AFT CLR
	46403648	1	MOTOR - 440V 60 Hz	46	24589251	1	TUBE, HSTCV TO COOLER
	23423650	1	MOTOR - 460V 60 Hz	47	49095615	1	TUBE, HSTCV TO COOLER
	23423668	1	MOTOR - 575V 60 Hz	48	95028502	8	O-RING
	23423627	1	MOTOR - 400V 50 Hz	49	95961496	4	FLANGE CLAMP, SPLIT HALF
18	23446800	1	SUPPORT, BLOWER MOTOR	50	23821689	1	TUBE, 2.50" AFTER COOLER OUTLET
19	96704812	4	NUT, HEX STYLE 1		23743602	1	TUBE, 2.50" AFTER COOLER OUTLET
20	96705116	4	SCREW, HEX HEAD	51	96701412	4	WASHER, PLAIN
21	96714399	8	WASHER, PRODUCT				
22	22501720	1	GLAND, CABLE M25X1.5				
23	23693658	1	CABLE, ASSEMBLY				
24	23394190	1	GASKET, SELF GRIPPING	A/R	ASREQUIRED		
25	23422496	1	COOLER, OIL (90-110 KW) (CRN)				
	23869266	1	COOLER, OIL (110 KW) (PED/STD)				
26	23422512	1	COOLER, AIR (90-110 KW) (PED/CRN)				
	23869258	1	COOLER, AIR (90-110 KW) (STD)				
27	23448582	2	COVER, COOLER ACCESS				
28	23523491	16	RETAINER				
29	49148604	2	KIT, COOLER MOUNTING HARDWARE				

## COOLING (AIR COOLED) ASSEMBLY DRAWING & PARTS LIST



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23394190	A/R	GASKET, SELF GRIPPING	12	96955166	2	FLANGE CLAMP,
2	23422496	1	COOLER, OIL (90-110 KW) (CRN)	13	23428261	1	TUBE, MPCV TO AFT CLR AIR COOLED
	23869266	1	COOLER, OIL (110 KW) (PED/STD)	14	24589251	1	TUBE, HSTCV TO COOLER
3	23422512	1	COOLER, AIR (90-110 KW) (PED/CRN)	15	49095615	1	TUBE, HSTCV TO COOLER
	23869258	1	COOLER, AIR (90-110 KW) (STD)	16	95028502	4	O-RING, STANDARD -232
4	96757000	1	PLUG, HEX HEAD M12	17	95961496	8	FLANGE CLAMP
5	96757059	1	PLUG, HEX HEAD M22PLUG	18	23821689	1	TUBE, 2.50" AFTER COOLER OUTLET
6	23522238	1	SENSOR FOR VSD ONLY		23743602	1	TUBE, 2.50" AFTER COOLER OUTLET W/O MOISTURE SEPARATOR
	96757000	1	PLUG FOR FIXED SPEED	19	96701412	4	WASHER, PLAIN
7	24265654	1	HOSE, HYDRAULIC (SS)	20	49148604	2	KIT, COOLER MOUNTING HARDWARE
	48662829	1	HOSE, HYDRAULIC (RUBBER)	21	49148679	6	KIT, COOLER MOUNTING HARDWARE
8	96757737	1	ELBOW, 90				
9	24265647	1	HOSE, HYDRAULIC (SS)				
	48662910	1	HOSE, HYDRAULIC (RUBBER)				
10	95987970	1	O-RING, STANDARD -225				
11	96702444	20	SCREW, HEX HEAD				

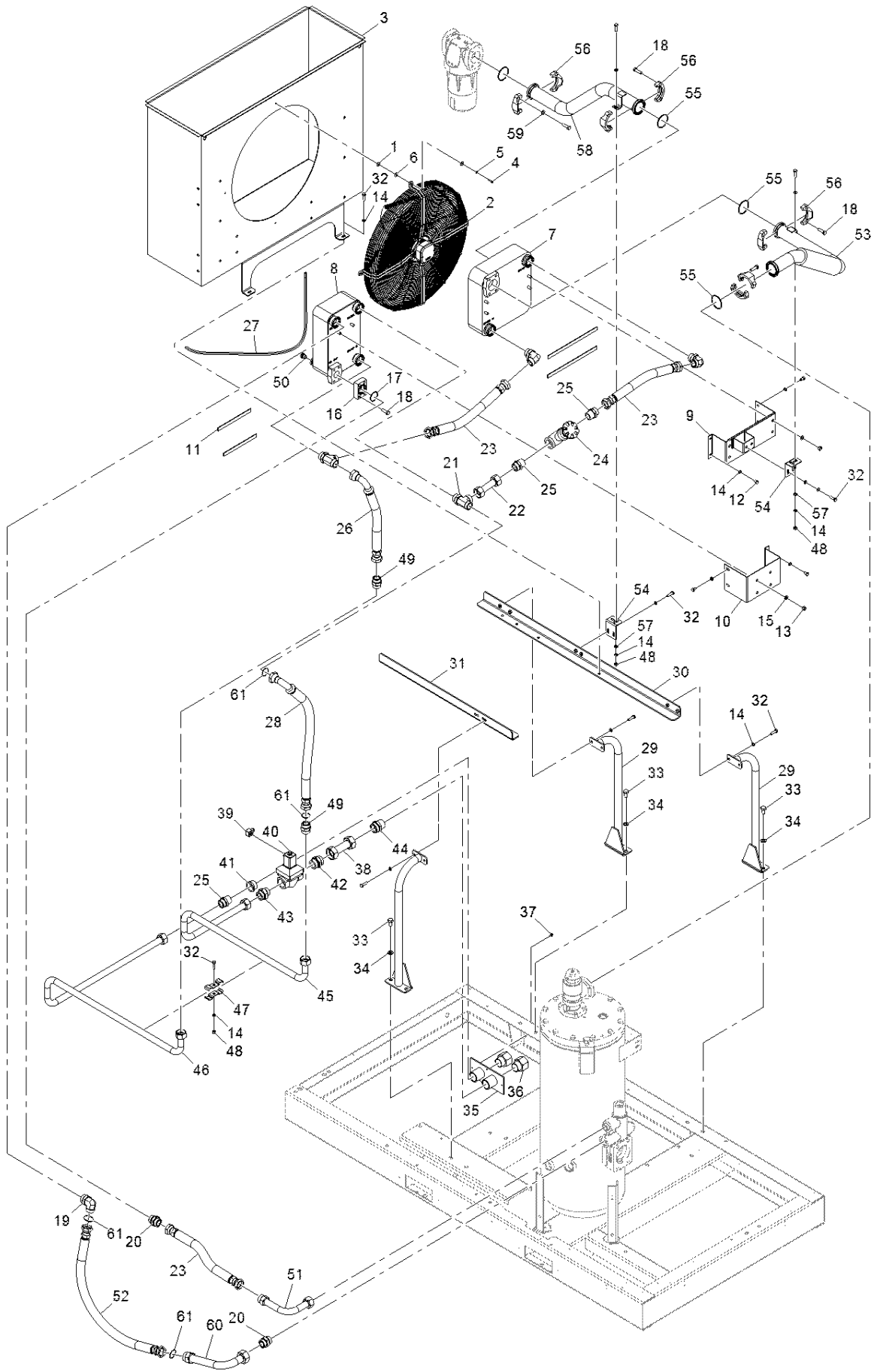
# COOLING (AIR COOLED WITH ERS) ASSEMBLY DRAWING



**COOLING (AIR COOLED WITH ERS) ASSEMBLY PARTS LIST**

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23434822	1	PLENUM, BLOWER	37	23483050	1	TUBE
2	23434855	1	SHROUD, BLOWER 60 Hz HOUSING	38	24265571	1	HOSE, HYDRAULIC (SS)
	23436702	1	SHROUD, BLOWER 50 Hz HOUSING		48662928	1	HOSE, HYDRAULIC (RUBBER)
3	23446974	2	ANGLE, BLOWER / COOLER	39	24265597	1	HOSE, HYDRAULIC (SS)
4	23446982	2	BRACE, PLENUM		48662811	1	HOSE, HYDRAULIC (RUBBER)
5	23447139	1	ANGLE, COOLER MOUNTING	40	24265639	1	HOSE, HYDRAULIC (SS)
6	23609928	A/R	GASKET, STRIP		48662845	1	HOSE, HYDRAULIC (RUBBER)
7	39117312	A/R	GASKET, STRIP	41	95987970	2	O-RING
8	39917489	40	SCREW, HEX HEAD FLANGE	42	96702444	24	SCREW, HEX HEAD
9	96703962	2	SCREW, HEX HEAD	43	96757737	4	ELBOW, 90
10	96704309	20	SCREW	44	96758107	4	CONNECTOR
11	96705645	2	WASHER	45	96758438	1	TEE
12	96712096	28	WASHER, SPRING LOCK	46	96955166	2	FLANGE CLAMP
13	96765169	8	WASHER	47	23460140	1	OIL COOLER, WATER-COOLED
14	23413818	1	BLOWER - 60 Hz	48	23462336	1	ADAPTER
	23413800	1	BLOWER - 50 Hz	49	23445182	3	LEG, COOLER/BLOWER SUPPORT
15	46403655	1	MOTOR - 380V 60 Hz	50	23446958	1	ANGLE, BLOWER / COOLER SUPPORT (LONG)
	46403648	1	MOTOR - 440V 60 Hz	51	23446966	1	ANGLE, BLOWER / COOLER SUPPORT (SHORT)
	23423650	1	MOTOR - 460V 60 Hz	52	96738372	6	SCREW, HEX HEAD
	23423668	1	MOTOR - 575V 60 Hz	53	22279582	1	PLATE, COUPLING
	23423627	1	MOTOR - 400V 50 Hz	54	39325576	2	ADAPTER
16	23446800	1	SUPPORT, BLOWER MOTOR	55	93166403	1	DECAL, WATER IN
17	23503410	1	FOAM, BLOWER SHROUD	56	93166411	1	DECAL, WATER OUT
18	23503436	1	FOAM , 60 Hz HOUSING	57	23462633	1	BRACKET
	23503428	1	FOAM , 50 Hz HOUSING	58	85575694	1	HOSE, HYD(56 INCHES LONG)
19	96704812	4	NUT, HEX	59	85575702	1	HOSE, HYD(69 INCHES LONG)
20	96705116	4	SCREW, HEX HEAD	60	95950341	2	BUSHING
22	23417165	1	INLET CONE - 60 Hz	61	96702279	4	SCREW, HEX HEAD
	23391352	1	INLET CONE - 50 Hz	62	96704291	2	NUT, HEX STYLE 1
23	96745559	8	WASHER	63	96739933	2	WASHER, SPRING LOCK
24	22501720	1	GLAND, CABLE M25X1.5	64	96955422	2	CONNECTOR
25	23693658	1	CABLE, ASSEMBLY 14	65	23428261	1	TUBE, MPCV TO AFT CLR AIR COOLED"
27	23422496	1	COOLER, OIL (90-110 KW) (CRN)	66	24267015	1	HOSE, HYDRAULIC (SS)
	23869266	1	COOLER, OIL (110 KW) (PED/STD)		48662860	1	HOSE, HYDRAULIC (RUBBER)
28	23422512	1	COOLER, AIR (90-110 KW) (PED/CRN)	67	24589251	1	TUBE, HSTCV TO COOLER
	23869258	1	COOLER, AIR (90-110 KW) (STD)	68	49095615	1	TUBE, HSTCV TO COOLER
29	23448582	2	COVER, COOLER ACCESS	69	95028502	4	O-RING
30	23523491	16	RETAINER, 6mm SCREW	70	95961496	8	FLANGE CLAMP
31	49148604	2	KIT	71	23821689	1	TUBE, 2.50" AFTER COOLER OUTLET
32	49148679	6	KIT		23743602	1	TUBE, 2.50" AFTER COOLER OUTLET W/O MOISTURE SEPARATOR
33	96757000	2	PLUG, HEX HEAD M12	72	24840613	6	O-RING STANDARD VITON 1.176
35	23451842	1	SENSOR FOR VSD ONLY	A/R ASREQUIRED			
	96757059	1	PLUG FOR FIXED SPEED				
36	23482938	1	VALVE				

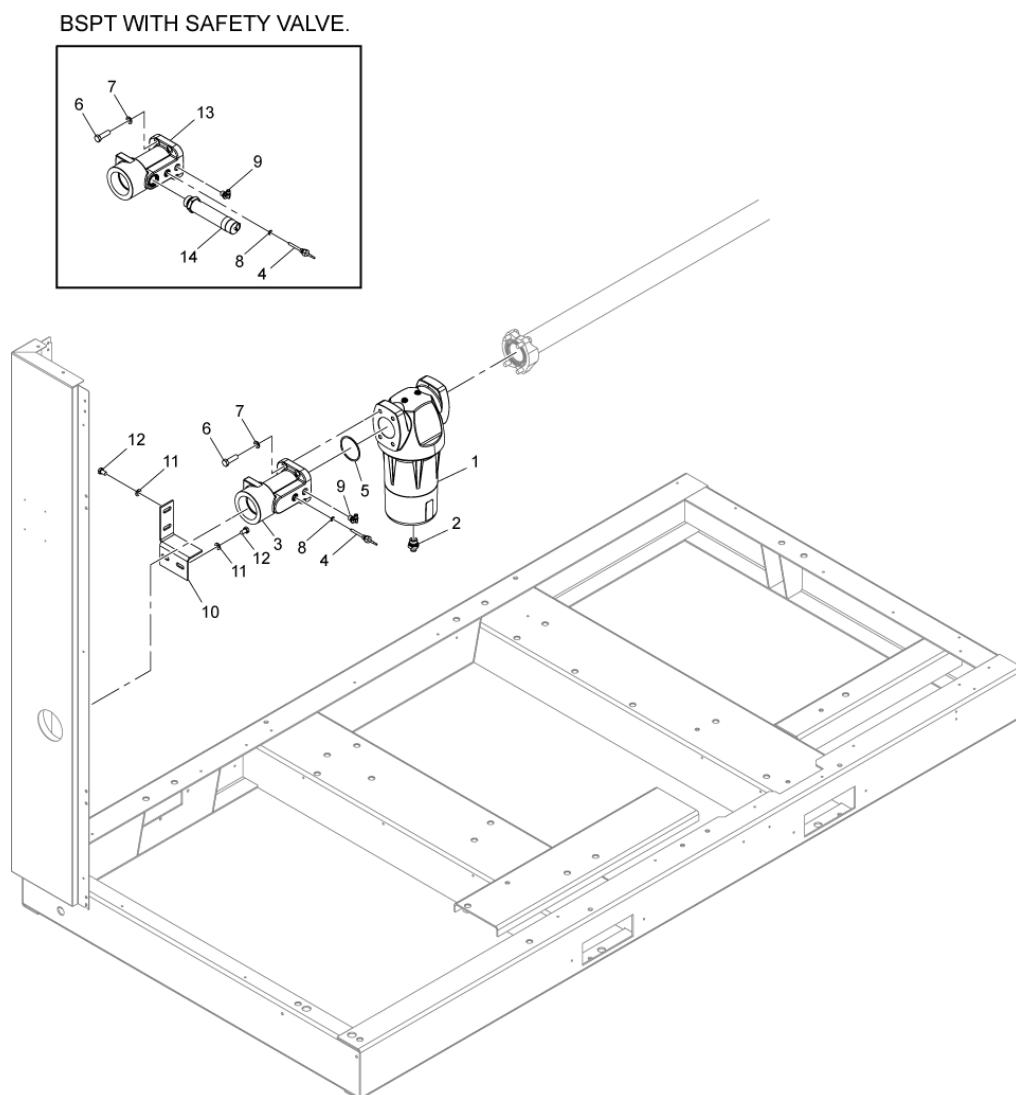
# COOLING (WATER COOLED) ASSEMBLY DRAWING



**COOLING (WATER COOLED) ASSEMBLY PARTS LIST**

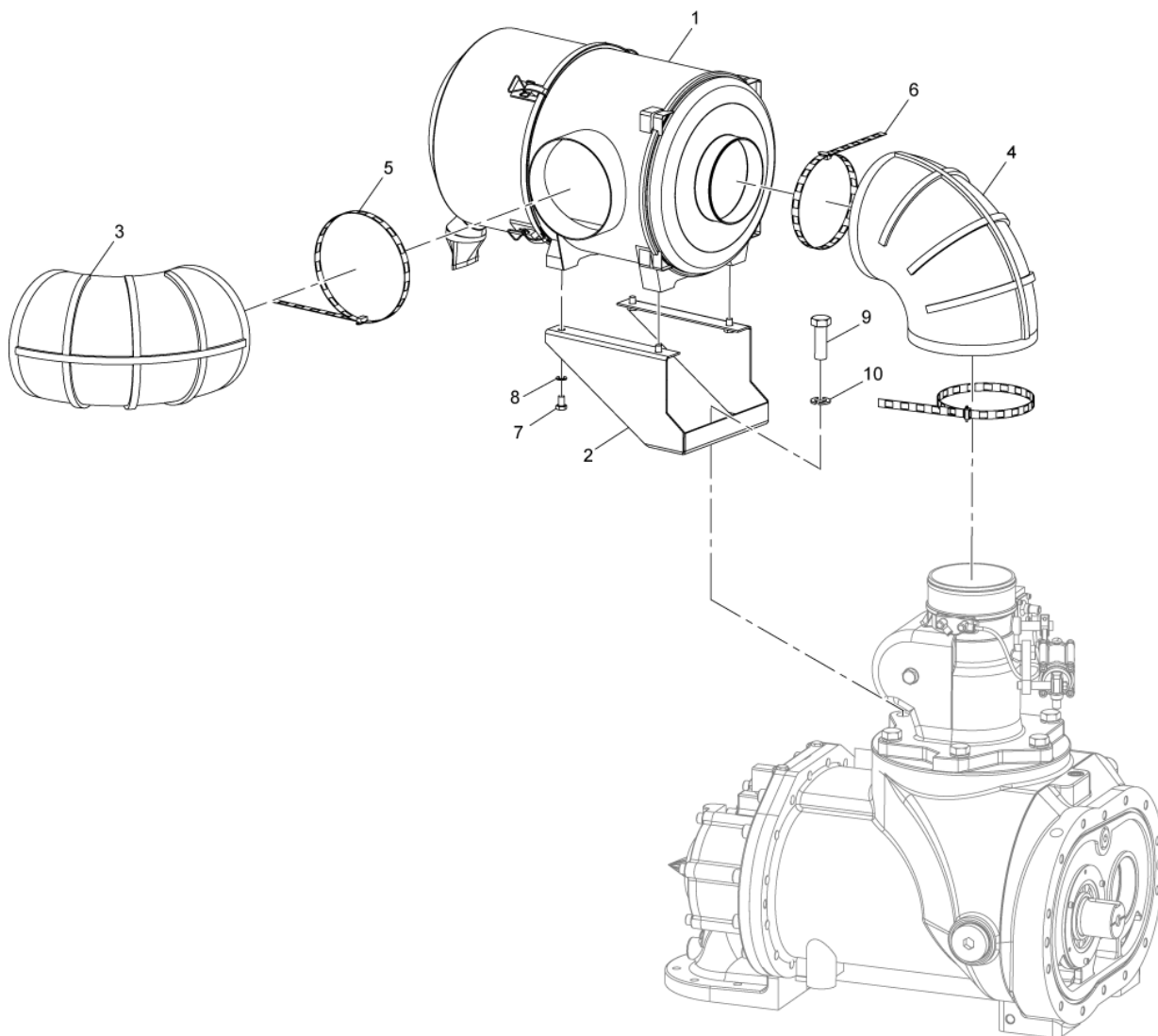
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22382212	4	WASHER, RUBBER	37	39917489	3	SCREW, HEX HEAD FLANGE
2	23447071	1	FAN	38	23448590	1	TUBE
3	23460876	1	SHROUD, FAN	39	23532054	1	CABLE ASSEMBLY
4	96702246	4	SCREW, HEX HEAD	40	23547664	1	VALVE, SOLENOID WATER
5	96727573	4	WASHER, SPRING LOCK,	41	95950341	1	BUSHING, REDUCER
6	96745559	8	WASHER, LARGE OUTSIDE DIAMETER	42	96761598	1	CONNECTOR, 28,30,32 MM TUBE
7	23460132	1	AFTERCOOLER, WATER-COOLED	43	96761606	1	CONNECTOR, 38 MM TUBE
8	23460140	1	OIL COOLER, WATER-COOLED	44	96955448	1	CONNECTOR
9	23462625	1	BRACKET, AFTERCOOLER WATER COOLED (CARBON STEEL)	45	23462500	1	TUBE, WATER OUT TO BASE WATER COOLED
	24573941	1	BRACKET, AFTERCOOLER WATER COOLED (GALVANISED STEEL)	46	23462518	1	TUBE, WATER IN WATER COOLED
10	23462633	1	BRACKET, OIL COOLER MOUNTING WATER COOLED	47	23522642	2	SUPPORT, TUBE
11	85038412	A/R	GASKET	48	96704812	3	NUT, HEX STYLE 1
12	96701479	8	SCREW, HEX HEAD	49	96756192	2	UNION, STRAIGHT 1.25
13	96704291	6	NUT, HEX STYLE 1	50	96757000	1	PLUG, HEX HEAD M12
14	96712096	25	WASHER, SPRING LOCK,	51	24589251	1	TUBE, HSTCV TO COOLER
15	96739933	6	WASHER, SPRING LOCK,	52	24265589	1	HOSE, HYDRAULIC (SS)
16	23462336	1	ADAPTER		48662878	1	HOSE, HYDRAULIC (RUBBER)
17	95987970	1	O-RING	53	23462351	1	TUBE, MPCV TO AFTERCOOLER WATER COOLED
18	96702444	20	SCREW, HEX HEAD	54	23540974	2	SUPPORT, PIPE SEP TANK TO AFT-CLR
19	96757737	3	ELBOW, 90	55	95028502	4	O-RING, STANDARD -232
20	96758107	2	CONNECTOR	56	95961496	8	FLANGE CLAMP, SPLIT HALF
21	96758438	2	TEE	57	96714399	8	WASHER, PRODUCT
22	23462542	1	TUBE, TRIM VALVE OUT WATER COOLED	58	23821887	1	TUBE, COOLER DISCHARGE WATER COOLED
23	24265563	3	HOSE, HYDRAULIC (SS)		23744238	1	TUBE, COOLER DISCHARGE - WC W/O MOISTURE SEPARATOR
	48662852	3	HOSE, HYDRAULIC (RUBBER)	59	96701412	4	WASHER, PLAIN
24	95067203	1	VALVE, GLOBE 150LB	60	49095615	1	TUBE, HSTCV TO COOLER
25	96955422	3	CONNECTOR	61	24840613	4	O-RING STANDARD VITON 1.176
26	85575736	1	HOSE, HYD (22 INCHES LONG)	A/R AS REQUIRED			
27	23693658	1	CABLE, ASSY				
28	85575728	1	HOSE, HYD (34 INCHES LONG)				
29	23445182	3	LEG, COOLER / BLOWER SUPPORT				
30	23460850	1	ANGLE, WATER COOLER SUPPORT				
31	23461171	1	ANGLE, WATER COOLER SUPPORT				
32	96704309	17	SCREW, HEX HEAD				
33	96738372	6	SCREW, HEX HEAD				
34	96765169	6	WASHER, LOCK				
35	22279582	1	PLATE, COUPLING				
36	39325576	2	ADAPTER				

## CUSTOMER CONNECTION MOISTURE SEPARATOR DRAWING & PARTS LIST



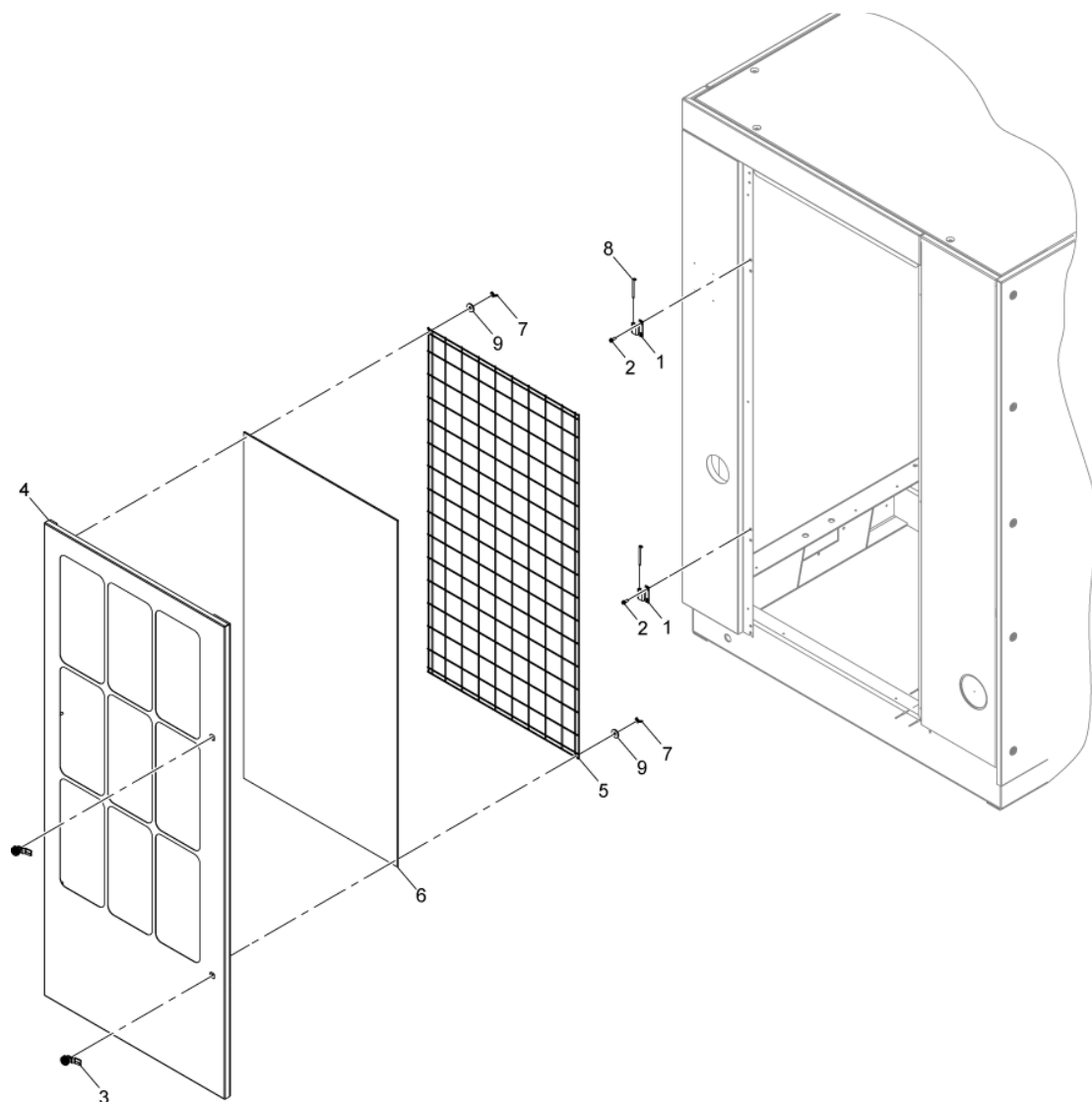
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23762750	1	SEPARATOR, MOISTURE	9	96759550	1	ELBOW
2	96763073	1	CONNECTOR, (USED ON STANDARD CONDENSATE)	10	23876774	1	SUPPORT, AIR DISCHARGE PIPING (CARBON STEEL)
	96761697	1	CONNECTOR, (USED ON NO-LOSS DRAIN VALVE)		24574063	1	SUPPORT, AIR DISCHARGE PIPING (GALVANISED STEEL)
3	23435373	1	CUSTOMER, CONNECTION 2.5" NPT	11	96701479	4	SCREW
	23435381	1	CUSTOMER, CONNECTION 2.5" BSPT	12	96714399	4	WASHER
	23438641	1	CUSTOMER, CONNECTION 2.5" BSPT WITH SAFETY VALVE)	13	23438641	1	CUSTOMER CONNECTION 64MM ISO 6162 X 2.5 FEMALE BSPT W/SAFETY
4	23522238	1	SENSOR, TEMPERATURE THERMISTOR	14	23443708	1	VALVE, PRESSURE RELIEF 8.5 BAR GB M33
5	95028502	1	O-RING		23443716	1	VALVE, PRESSURE RELIEF 9.5 BAR GB M33
6	96702444	4	SCREW		23443724	1	VALVE, PRESSURE RELIEF 11 BAR GB M33
7	96739933	4	WASHER		23443732	1	VALVE, PRESSURE RELIEF 15.4 BAR GB M33
8	96759295	1	O-RING				

**AIR FILTER (STANDARD & HIGH DUST) ASSEMBLY DRAWING & PARTS LIST**



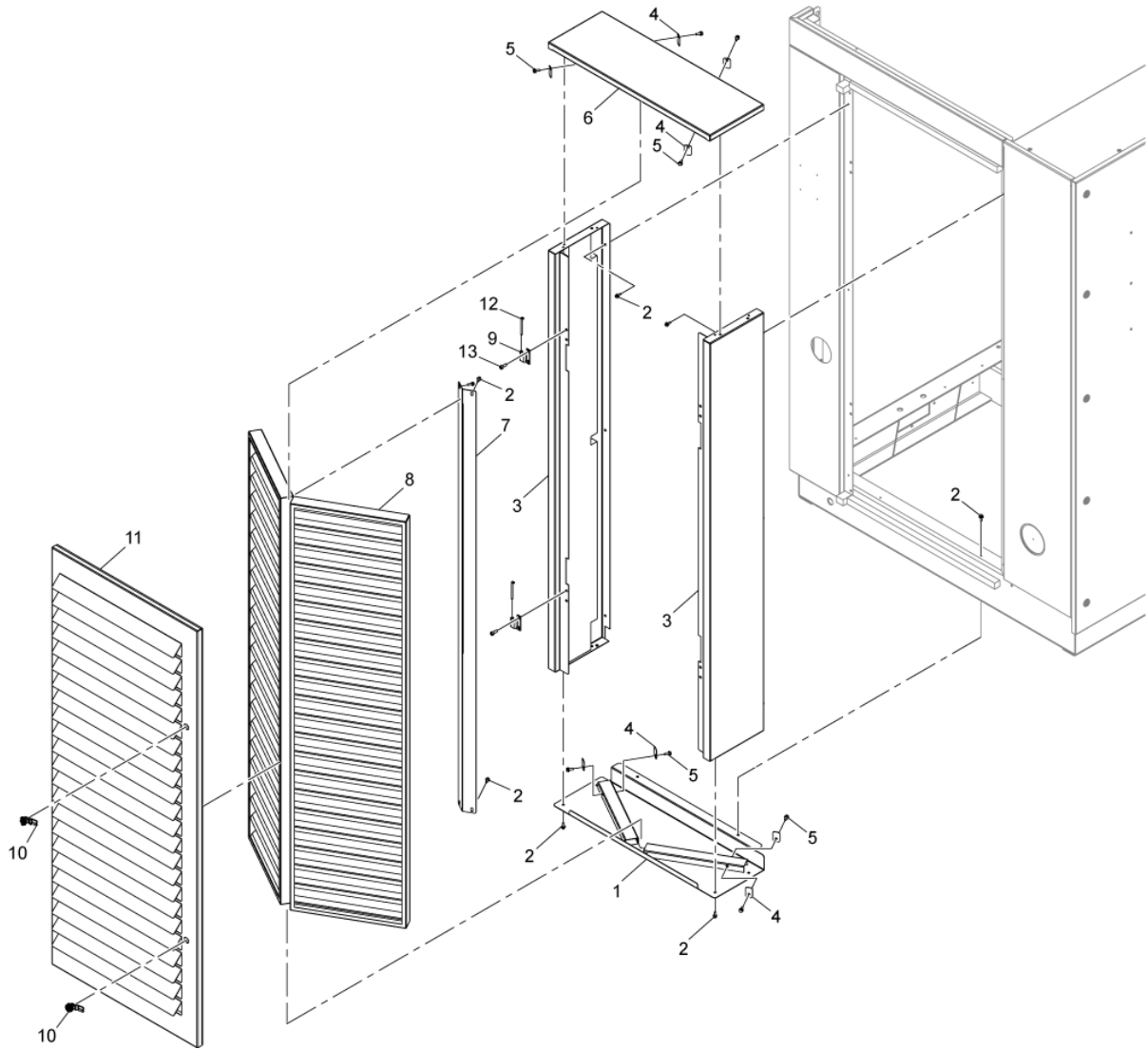
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23390131	1	AIR FILTER - STANDARD	5	39117536	1	CLAMP 6.12-9.12
	23415821	1	AIR FILTER - HIGH DUST	6	39213798	2	CLAMP
2	23440274	1	SUPPORT, AIR FILTER (CARBON STEEL)	7	96701479	4	SCREW, HEX HEAD
	24573925	1	SUPPORT, AIR FILTER (GALVANISED STEEL)	8	96712096	4	WASHER, SPRING LOCK
3	35112630	1	ELBOW, 90 DEG	9	96716337	1	SCREW, HEX HEAD
4	35117605	1	ELBOW, 90 DEG. RUBBER	10	96737721	1	WASHER, SPRING LOCK

**PRE-FILTER (STANDARD & ODM) ASSEMBLY DRAWING & PARTS LIST**



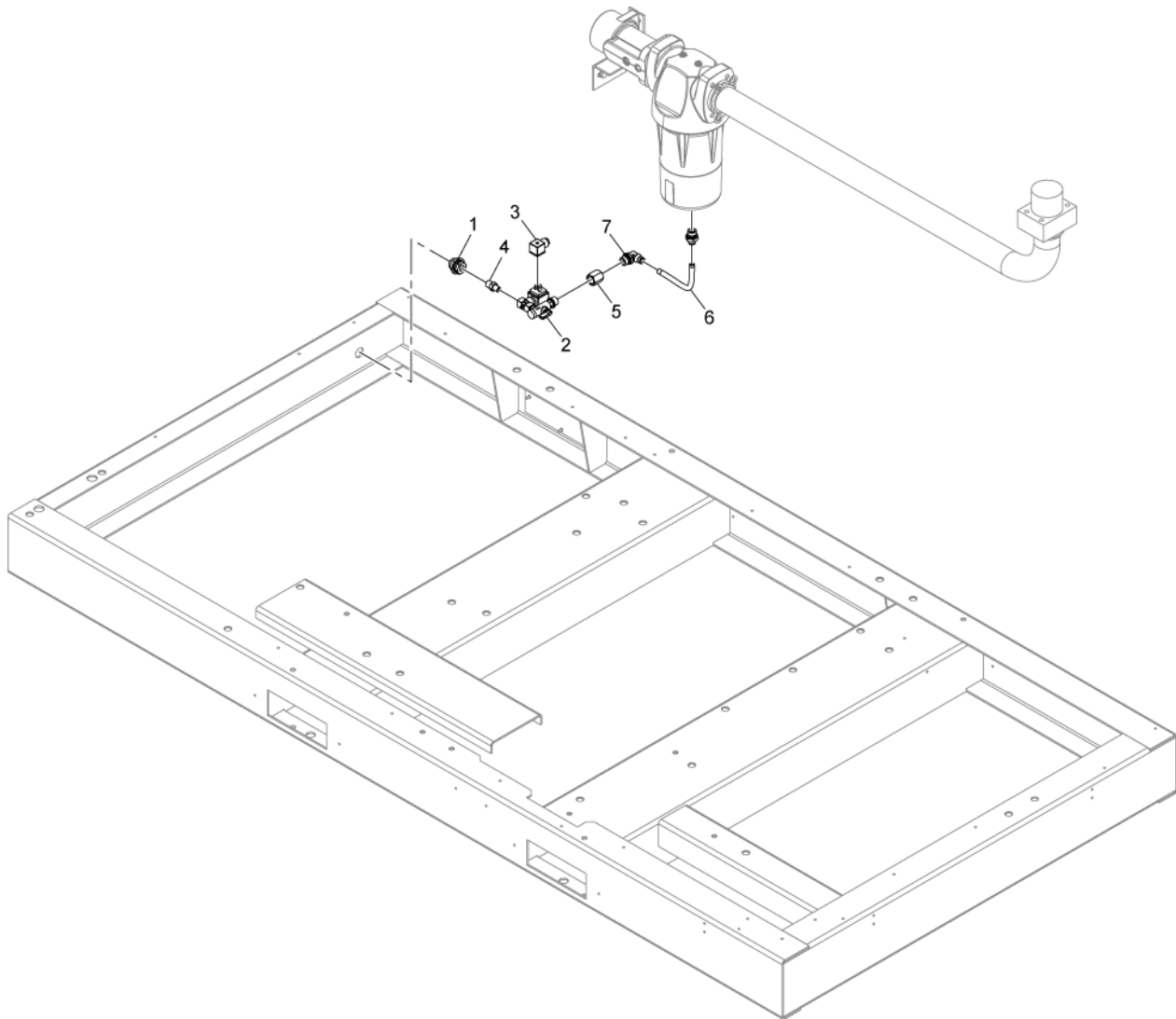
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22159842	2	HINGE	5	23496433	1	GRILL, INTAKE
2	24718223	4	SCREW	6	23497001	1	PAD, PRE-FILTER
3	23180565	2	LATCH, DOOR	7	39232889	6	NUT, WING
4	23495179	1	INTAKE DOOR (STANDARD)	8	93580140	2	HINGE, PIN
	23506991	1	INTAKE DOOR (OUTDOOR MOD)	9	96740188	6	WASHER

**PRE FILTER HI DUST ASSEMBLY DRAWING & PARTS LIST**



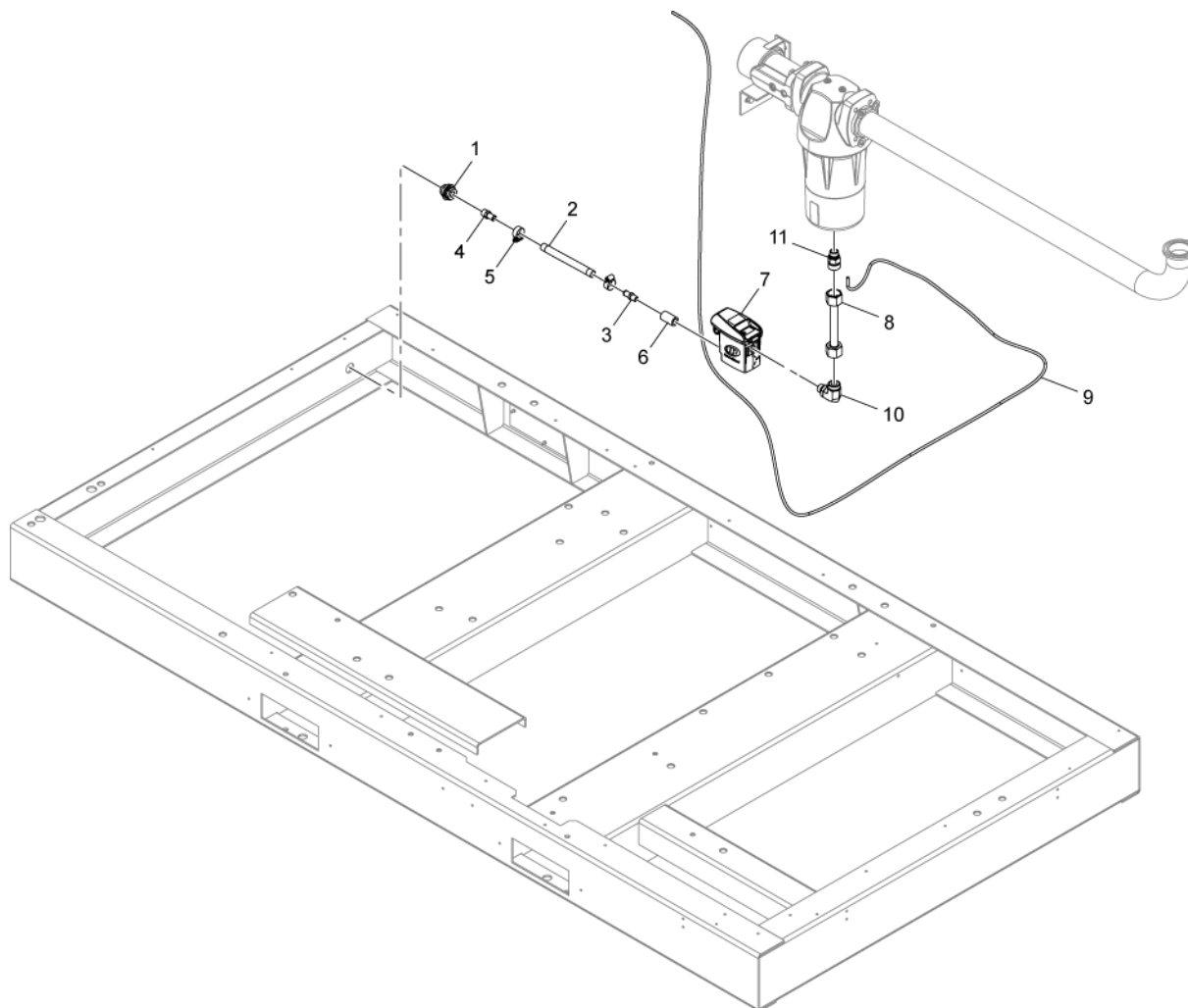
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23517485	1	ASSEMBLY, BOTTOM PANEL	7	23512882	1	ANGLE, PRE-FILTER
	49040116	1	PANEL, BOTTOM (HIGH DUST PRE-FILTER) R90/110KW EPOXY		49040090	1	ANGLE, PRE-FILTER R90/110KW EPOXY
	23517501	1	FOAM, TOP/BOTTOM PANEL	8	23512866	2	FILTER, PANEL AIR
2	39917489	20	SCREW, HEX HEAD FLANGE	9	22159842	2	HINGE
	96750187	20	SCREW, HEX HEAD		46591244	2	HINGE, PIN HALF
3	23512874	2	ASSEMBLY, SIDE PANEL	10	23180565	2	LATCH, DOOR
	49040082	2	PANEL, SIDE (HIGH DUST PRE-FILTER) R90/110KW EPOXY 1		11	23516602	1
	23516560	2	FOAM, SIDE PANEL (LARGE) 1	49040108		1	DOOR, PACKAGE INTAKE (HIGH DUST PRE-FILTER) R90/110KW EPOXY 1
23517436	4	FOAM, SIDE PANEL (SMALL) 2	23516594	1		FOAM, PACKAGE INTAKE DOOR (LATCH SIDE) 1	
4	23517519	8	TAB, FILTER PANEL	23516586	2	FOAM, PACKAGE INTAKE DOOR (TOP / BOTTOM) 2	
	49033145	8	TAB, FILTER PANEL R90/110KW W/EPOXY	12	93580140	2	HINGE, PIN
5	96742689	8	BOLT, HEX FLANGE		46591251	2	HINGE, PIN
	96750187	8	SCREW, HEX HEAD	13	24718223	4	SCREW
6	23517493	1	ASSEMBLY, TOP PANEL		96760426	4	SCREW, SOCKET HEAD
	49040124	1	PANEL, TOP (HIGH DUST PRE-FILTER) R90/110KW EPOXY				
	23517501	1	FOAM, TOP / BOTTOM PANEL				

## CONDENSATE (STANDARD) ASSEMBLY DRAWING & PARTS LIST



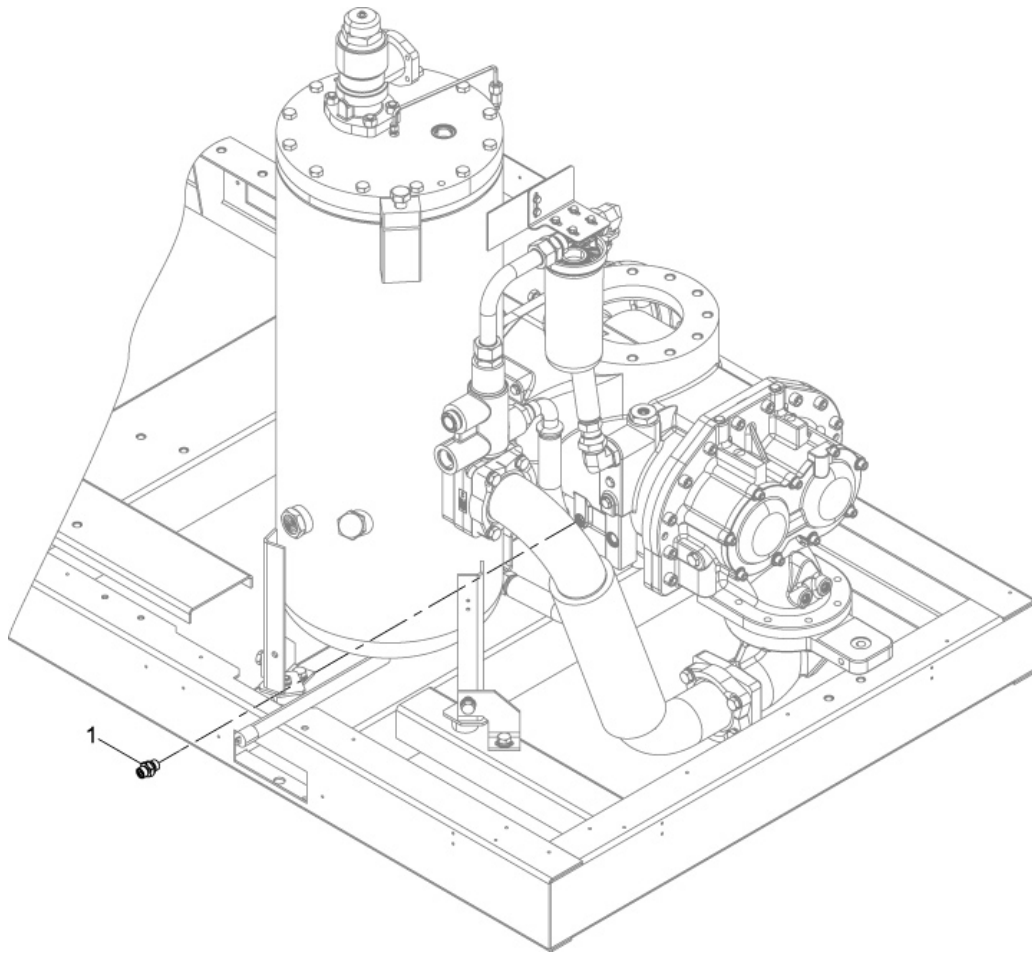
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22219026	1	CONNECTOR	5	23452287	1	COUPLING
2	23434830	1	VALVE, SOLENOID DRAIN	6	23452329	1	TUBE, 12 MM NYLON(14 INC)
3	23532104	1	CABLE ASSEMBLY	7	96759832	1	ELBOW
4	95916011	1	NIPPLE				

## CONDENSATE (NO LOSS) ASSEMBLY DRAWING & PARTS LIST



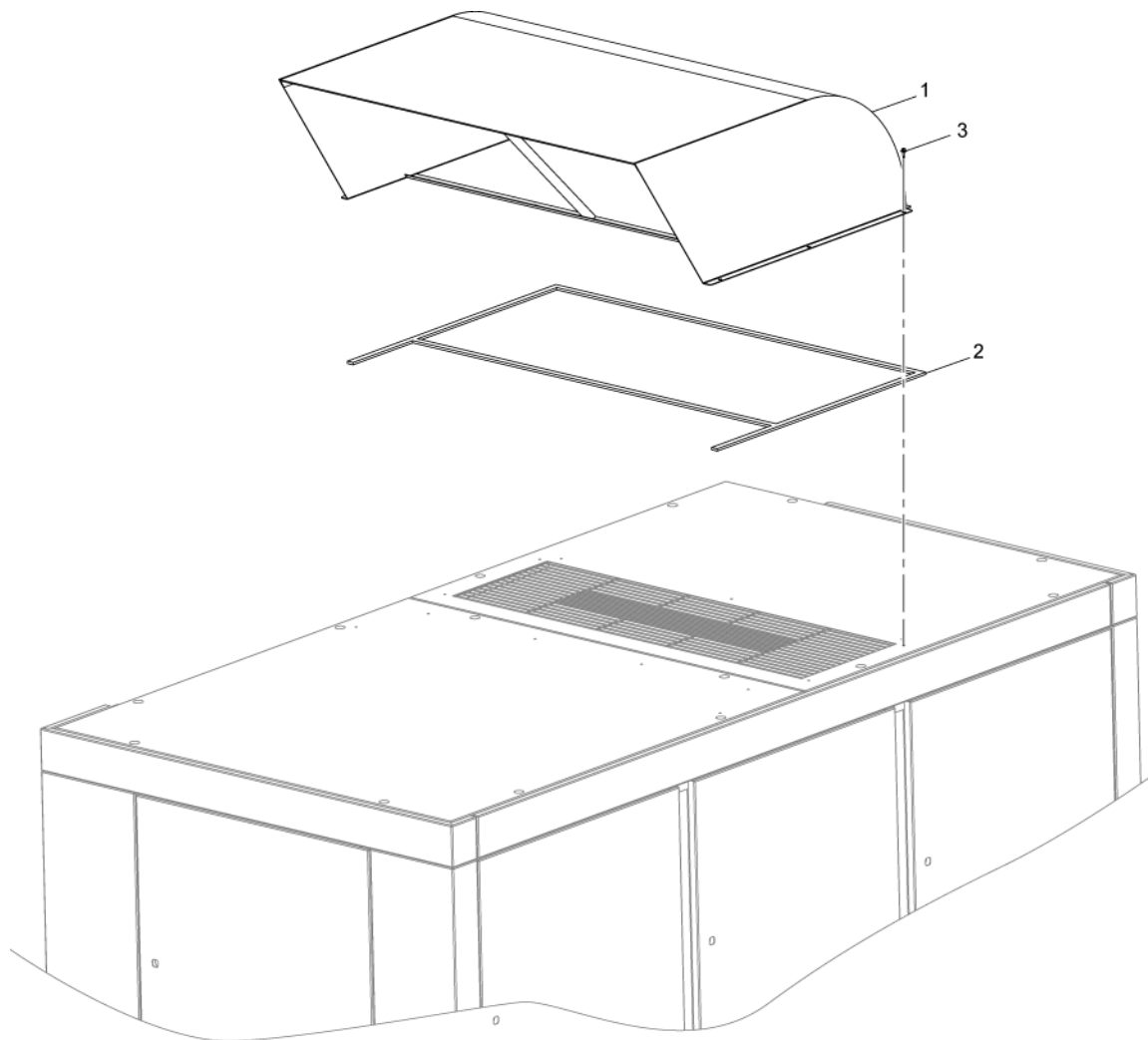
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22219026	1	CONNECTOR	6	95952990	1	COUPLING
2	23697220	7	HOSE, .50 INCH	7	23434848	1	VALVE
3	39311311	1	FITTING, BARBED 1/2"HOSE-1/4NPT	8	23502438	1	TUBE, 0.75 SS CODENSATE
4	39311329	1	FITTING, BARBED 1/2"HOSE-3/8NPT	9	23529753	9	CABLE
5	95220844	2	CLAMP	10	96760962	1	ELBOW
				11	96761697	1	CONNECTOR

**FOOD GRADE ASSEMBLY DRAWING & PARTS LIST**



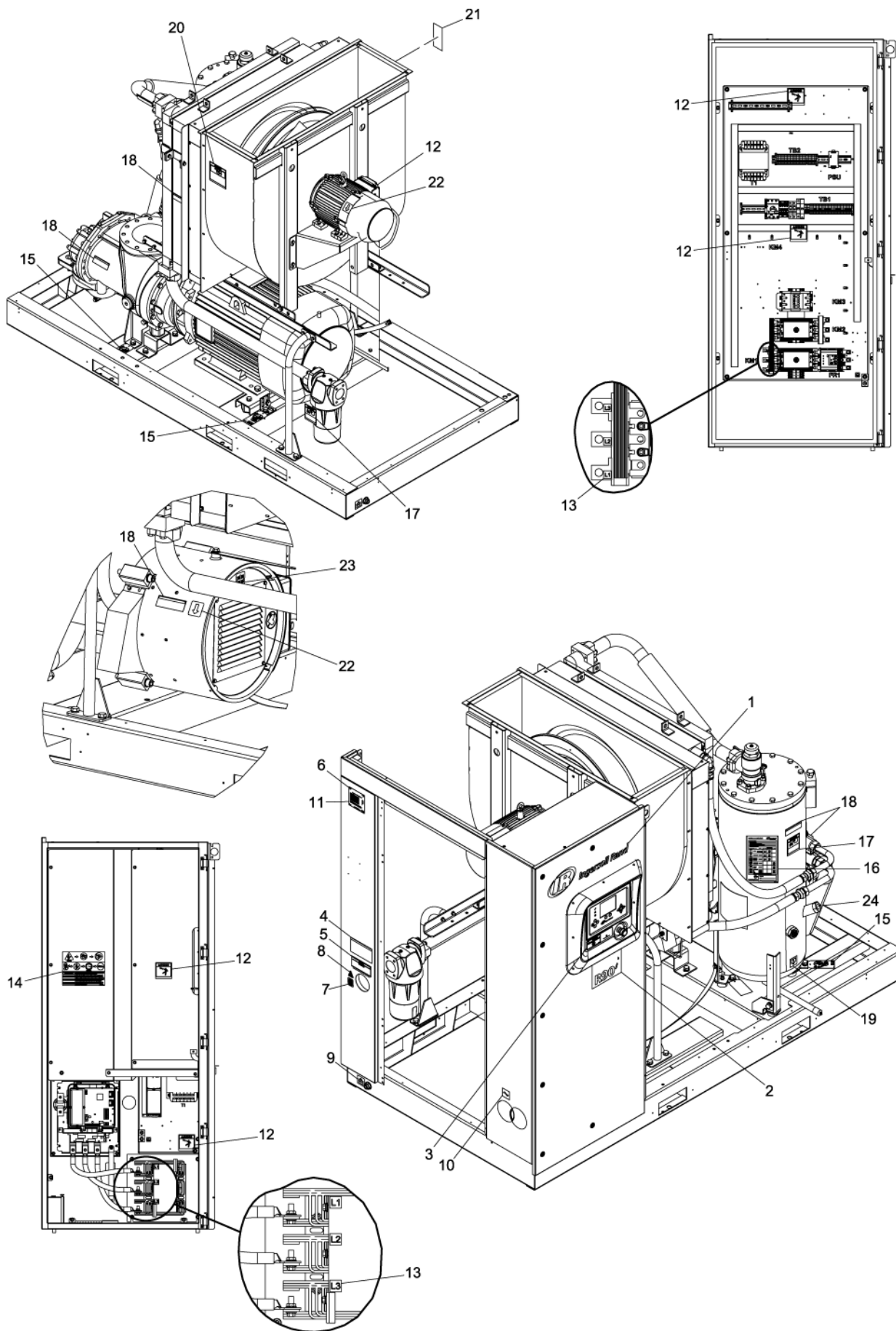
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	96757927	1	CONNECTOR				

## OUTDOOR MOD ASSEMBLY DRAWING & PARTS LIST



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23505100	1	CHUTE, ODM EXHAUST HOOD	3	39917489	13	SCREW
2	35140409	164	SEAL, RUBBER STRIP				

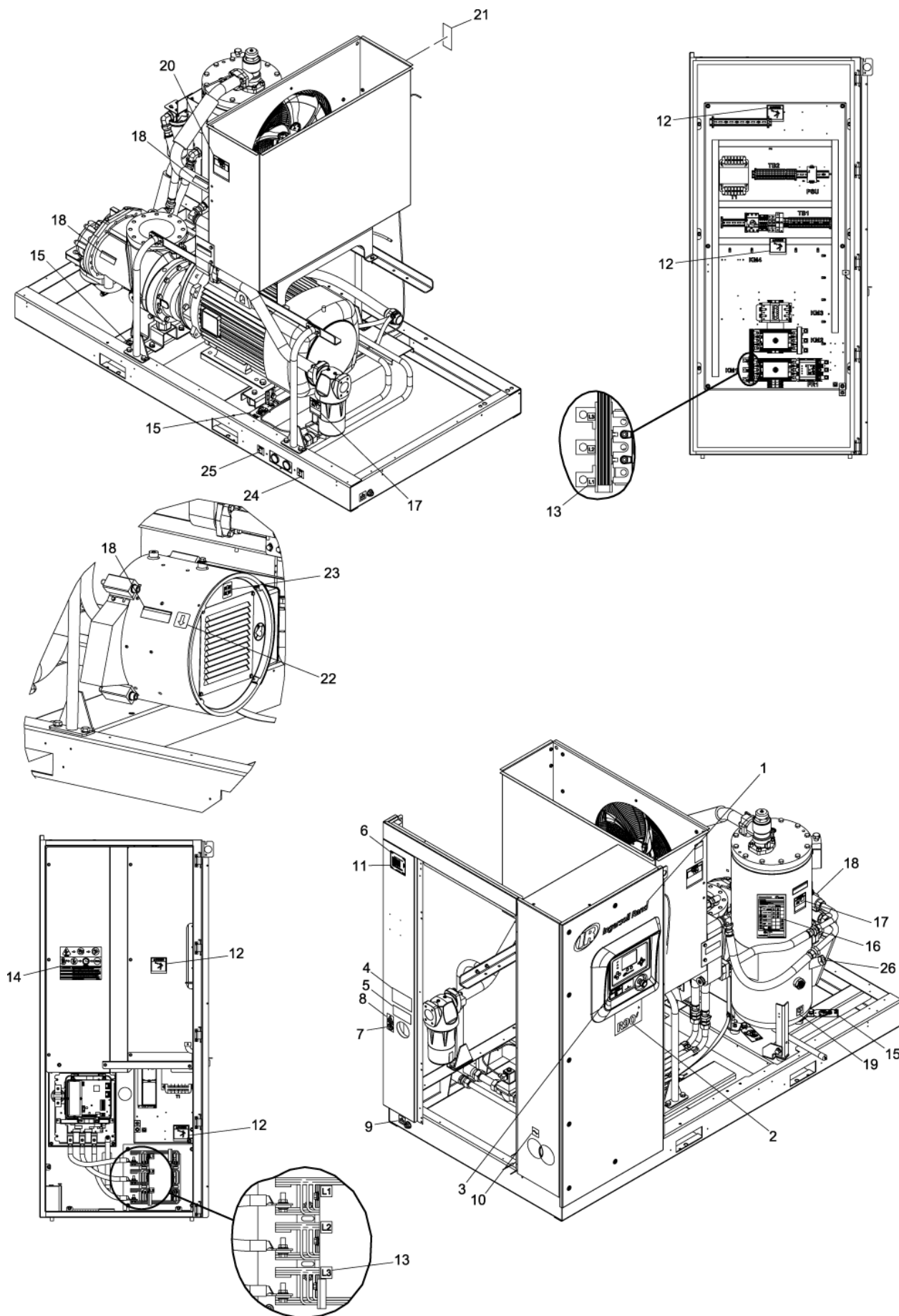
# DECALS AIR COOLED DRAWING



**DECALS AIR COOLED PARTS LIST**

<b>Item</b>	<b>Part No.</b>	<b>Qty</b>	<b>Description</b>	<b>Item</b>	<b>Part No.</b>	<b>Qty</b>	<b>Description</b>
1	22913032	1	DECAL, IR LOGO	17	32343527	3	LANGUAGE DECAL
2	23536881	1	DECAL, R90I	17	92930585	3	ISO DECAL
	23536923	1	DECAL, R110I		18	32343584	9
	23536907	1	DECAL, R90N	92867530		9	ISO DECAL
	23536949	1	DECAL, R110N	19	93166460	1	DECAL, COOLANT DRAIN
3	23540099	1	DECAL, WARNING	20	32343550	2	LANGUAGE DECAL
4	32343519	1	DECAL, DANGER		93165959	2	ISO DECAL
5	32343543	1	DECAL, NOTICE	21	32343907	1	LANGUAGE DECAL
6	92512540	4	RIVETS USED WITH ISO DECALS		92867522	1	ISO DECAL
7	92867407	1	DECAL, DO NOT INHALE	22	93165983	3	DECAL, ROTATION
8	92867498	1	DECAL, AIR DISCHARGE	23	93165959	1	DECAL, USE GUARDS
9	93166478	1	DECAL, CONDENSATE DRAIN	24	23540586	1	DECAL, ULTRA COOLANT
10	93166486	1	DECAL, POWER INLET				
11	-	1	PLATE, DATA				
12	32343568	6	LANGUAGE DECAL				
	92930593	6	ISO DECAL				
13	39591474	2	DECAL, STARTER				
14	23538754	1	DECAL, 15 MINUTE WARNING				
15	23551559	6	TAG, SHIPPING BRACE				
16	23579394	1	DECAL, MAINTENANCE VSD				
	23579402	1	DECAL, MAINTENANCE FIXED SPEED				

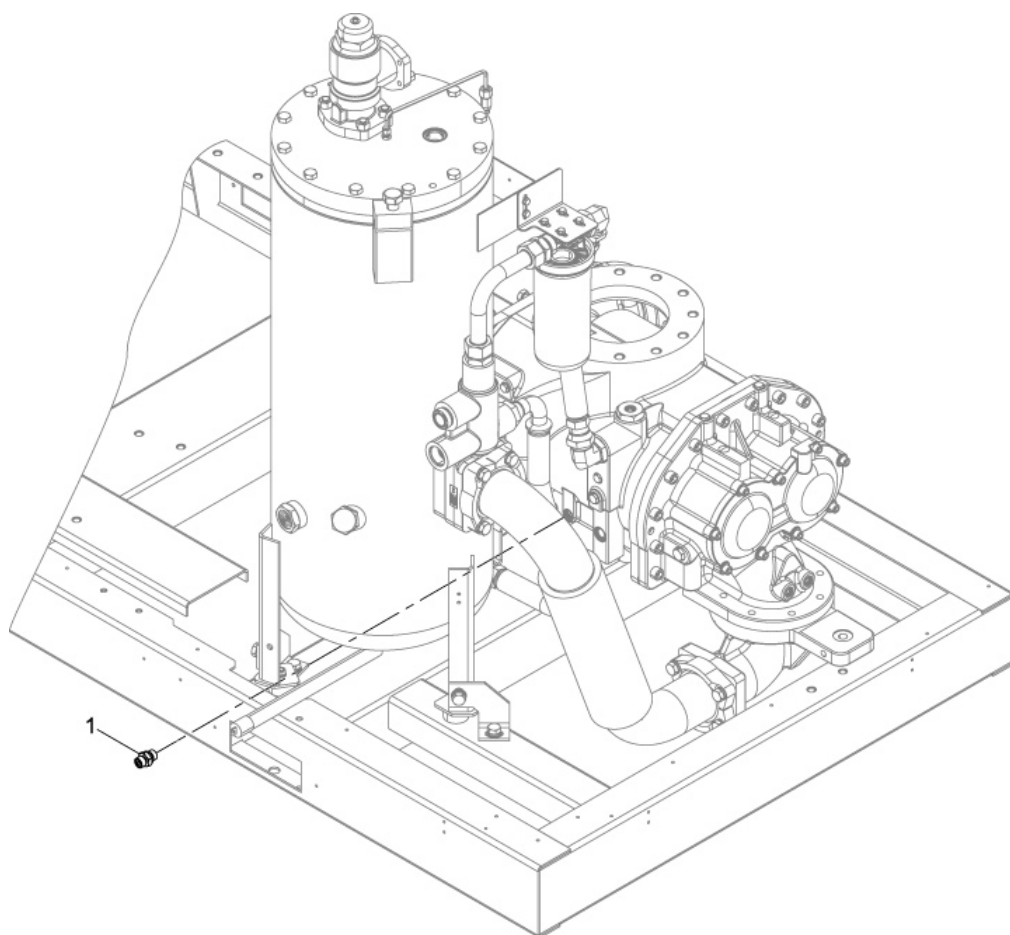
# DECALS WATER COOLED DRAWING



## DECALS WATER COOLED PARTS LIST

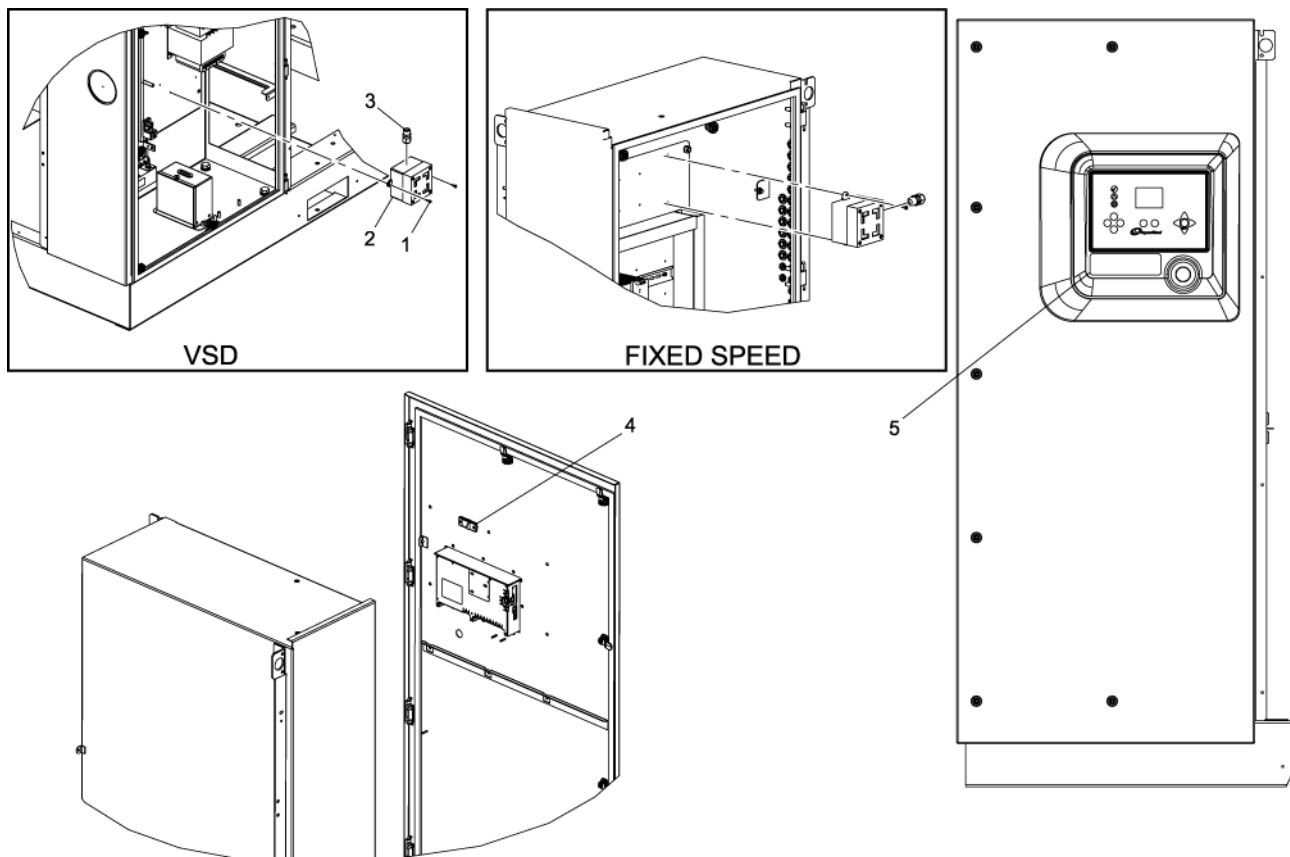
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22913032	1	DECAL, IR LOGO	21	32343907	1	LANGUAGE DECAL
2	23536881	1	DECAL, R90I	21	92867522	1	ISO DECAL
	23536923	1	DECAL, R110I	22	93165983	3	DECAL, ROTATION
	23536907	1	DECAL, R90N	23	93165959	1	DECAL, USE GUARDS
	23536949	1	DECAL, R110N	24	93166403	1	DECAL, WATER IN
3	23540099	1	DECAL, WARNING	25	93166411	1	DECAL, WATER OUT
4	32343519	1	DECAL, DANGER	26	23540586	1	DECAL, ULTRA COOLANT
5	32343543	1	DECAL, NOTICE				
6	92512540	4	RIVETS USED WITH ISO DECALS				
7	92867407	1	DECAL, DO NOT INHALE				
8	92867498	1	DECAL, AIR DISCHARGE				
9	93166478	1	DECAL, CONDENSATE DRAIN				
10	93166486	1	DECAL, POWER INLET				
11	-	1	PLATE, DATA				
12	32343568	6	LANGUAGE DECAL				
	92930593	6	ISO DECAL				
13	39591474	2	DECAL, STARTER				
14	23538754	1	DECAL, 15 MINUTE WARNING				
15	23551559	6	TAG, SHIPPING BRACE				
16	23579394	1	DECAL, MAINTENANCE VSD				
	23579402	1	DECAL, MAINTENANCE FIXED SPEED				
17	32343527	3	LANGUAGE DECAL				
	92930585	3	ISO DECAL				
18	32343584	9	LANGUAGE DECAL				
	92867530	9	ISO DECAL				
19	93166460	1	DECAL, COOLANT DRAIN				
20	32343550	2	LANGUAGE DECAL				
	93165959	2	ISO DECAL				

## ULTRA FG DRAWING & PARTS LIST



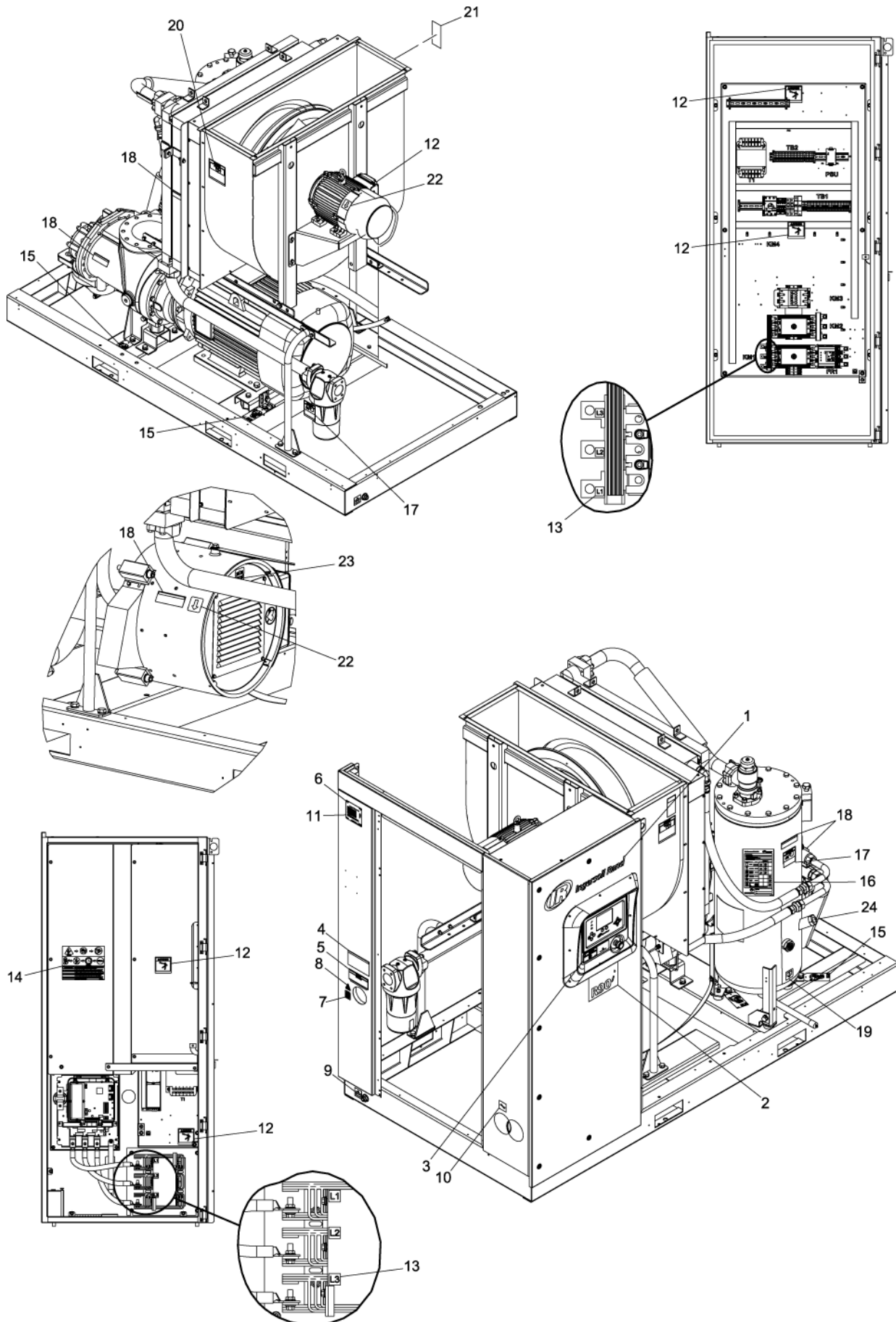
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	96757927	1	CONNECTOR				

**PORO (XE) DRAWING**



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	35249721	2	SCREW, SLOTTED WASHER HEAD TAPPING	**	39129085	A/R	WIRE, 16 GA - (RED)
2	39100136	1	MOD ALRM HORN	**	39146782	A/R	WIRE, 16 GA - (WHITE)
3	39265640	1	CONNECTOR, STRAIN RELIEF	**	NOT ILLUSTRATED		
4	23749021	1	OPTION, PORO AND SCHEDULED START/STOP	A/R	AS REQUIRED		
5	23550171	1	DECAL, PORO				

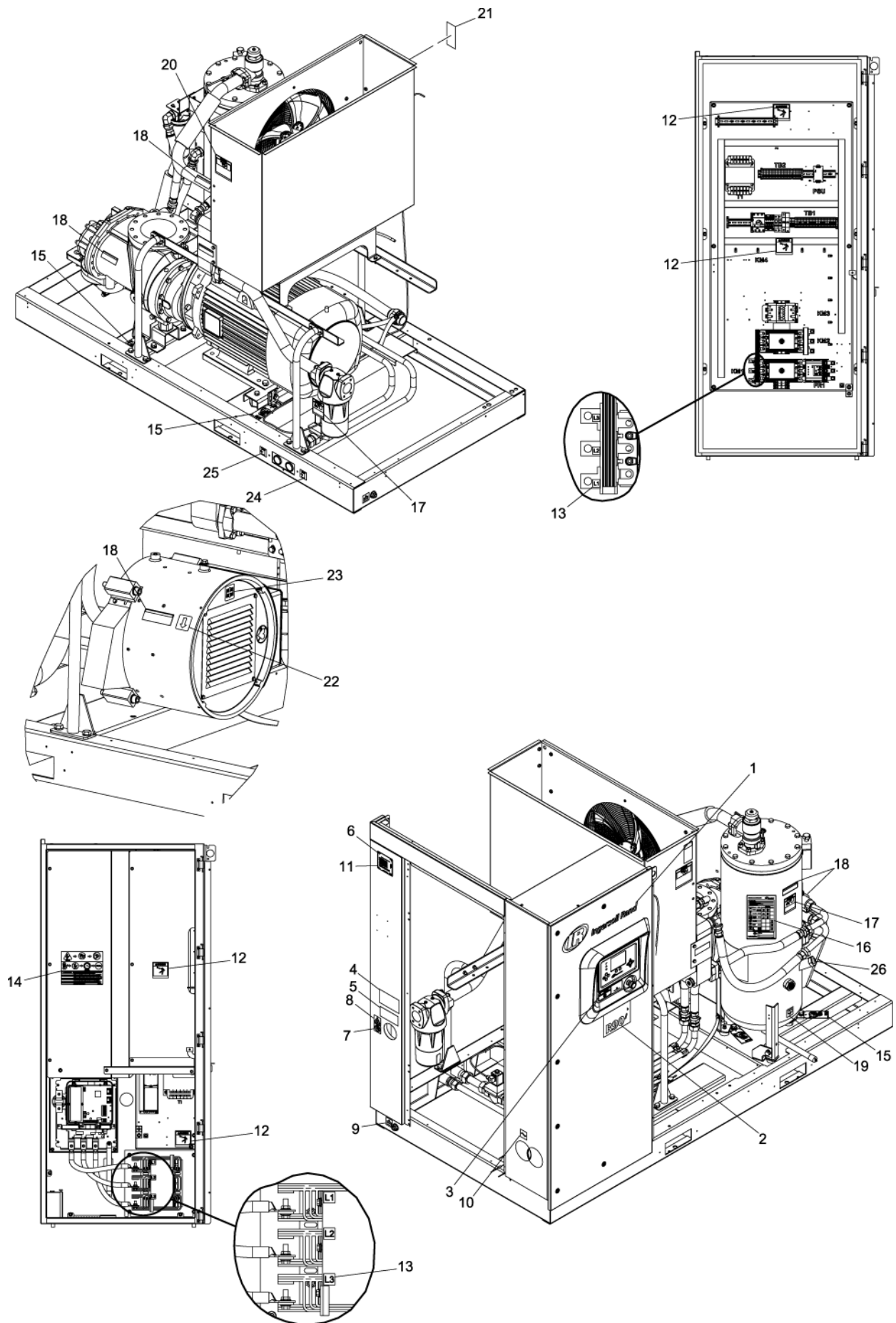
# DECALS AIR COOLED ULTRA EL & FG DRAWING



## DECALS AIR COOLED ULTRA EL & FG PARTS LIST

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22913032	1	DECAL, IR LOGO				
2	23536881	1	DECAL, R90I	16	24098469	1	DECAL, MAINTENANCE VSD ULTRA EL
	23536923	1	DECAL, R110I		24098451	1	DECAL, MAINTENANCE FS ULTRA EL
	23536907	1	DECAL, R90N		24097925	1	DECAL, MAINTENANCE VSD ULTRA FG
	23536949	1	DECAL, R110N		24097891	1	DECAL, MAINTENANCE FS ULTRA FG
3	23540099	1	DECAL, WARNING				
4	32343519	1	DECAL, DANGER				
5	32343543	1	DECAL, NOTICE				
6	92512540	4	RIVETS USED WITH ISO DECALS	17	32343527	3	LANGUAGE DECAL
7	92867407	1	DECAL, DO NOT INHALE		92930585	3	ISO DECAL
8	92867498	1	DECAL, AIR DISCHARGE	18	32343584	9	LANGUAGE DECAL
9	93166478	1	DECAL, CONDENSATE DRAIN		92867530	9	ISO DECAL
10	93166486	1	DECAL, POWER INLET	19	93166460	1	DECAL, COOLANT DRAIN
11	-	1	PLATE, DATA	20	32343550	2	LANGUAGE DECAL
12	32343568	6	LANGUAGE DECAL		93165959	2	ISO DECAL
	92930593	6	ISO DECAL	21	32343907	1	LANGUAGE DECAL
13	39591474	2	DECAL, STARTER		92867522	1	ISO DECAL
14	23538754	1	DECAL, 15 MINUTE WARNING	22	93165983	3	DECAL, ROTATION
15	23551559	6	TAG, SHIPPING BRACE	23	93165959	1	DECAL, USE GUARDS
				24	24071771	1	DECAL, ULTRA EL FILLER
					24071755	1	DECAL, FILLER (ULTRA FOOD GRADE)

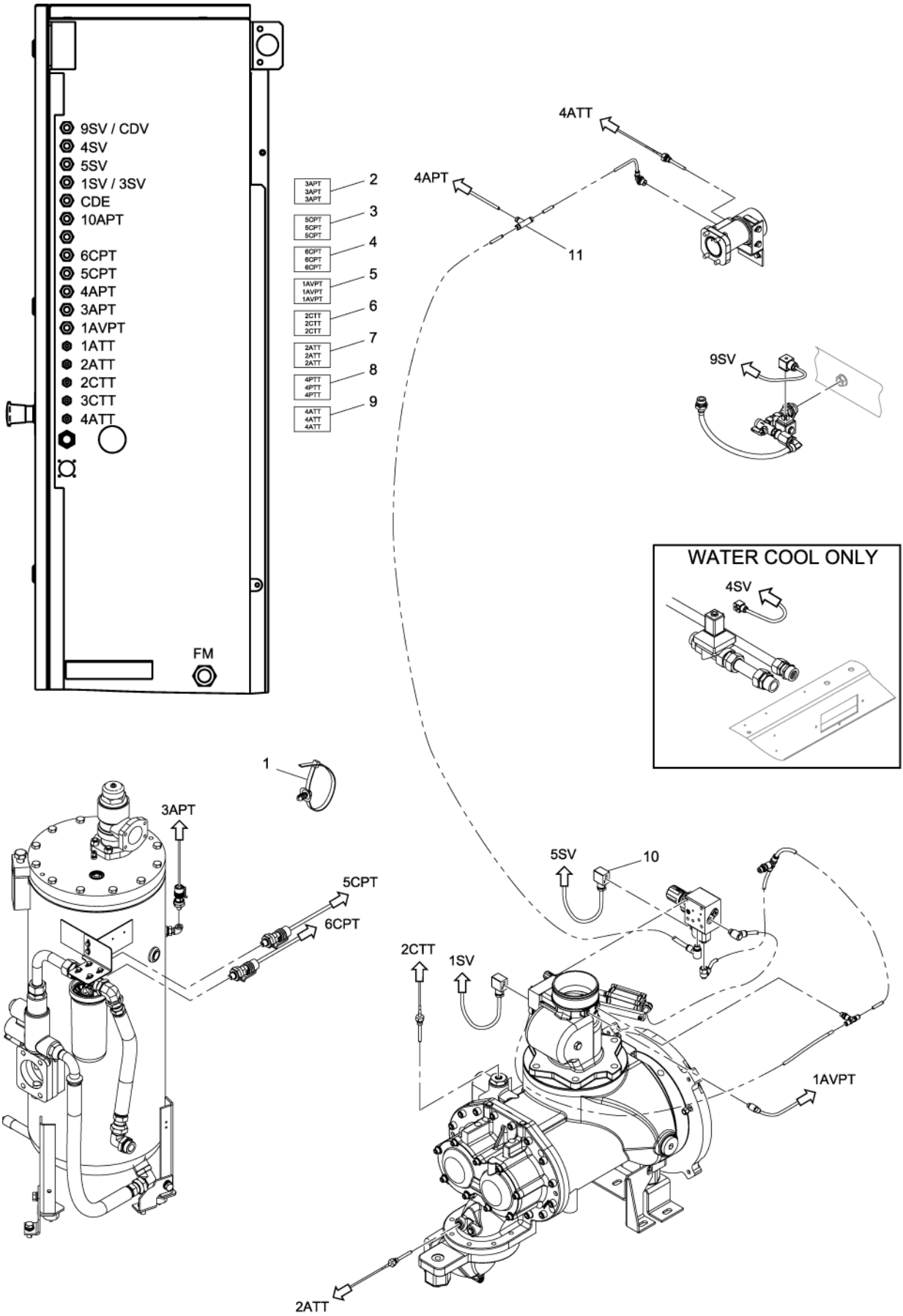
# DECALS WATER COOLED ULTRA EL & FG DRAWING



## DECALS WATER COOLED ULTRA EL & FG PARTS LIST

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22913032	1	DECAL, IR LOGO				
2	23536881	1	DECAL, R90I	16	24098469	1	DECAL, MAINTENANCE VSD ULTRA EL
	23536923	1	DECAL, R110I		24098451	1	DECAL, MAINTENANCE FS ULTRA EL
	23536907	1	DECAL, R90N		24097925	1	DECAL, MAINTENANCE VSD ULTRA FG
	23536949	1	DECAL, R110N		24097891	1	DECAL, MAINTENANCE FS ULTRA FG
3	23540099	1	DECAL, WARNING				
4	32343519	1	DECAL, DANGER				
5	32343543	1	DECAL, NOTICE				
6	92512540	4	RIVETS USED WITH ISO DECALS	17	32343527	3	LANGUAGE DECAL
7	92867407	1	DECAL, DO NOT INHALE		92930585	3	ISO DECAL
8	92867498	1	DECAL, AIR DISCHARGE	18	32343584	9	LANGUAGE DECAL
9	93166478	1	DECAL, CONDENSATE DRAIN		92867530	9	ISO DECAL
10	93166486	1	DECAL, POWER INLET	19	93166460	1	DECAL, COOLANT DRAIN
11	-	1	PLATE, DATA	20	32343550	2	LANGUAGE DECAL
12	32343568	6	LANGUAGE DECAL		93165959	2	ISO DECAL
	92930593	6	ISO DECAL	21	32343907	1	LANGUAGE DECAL
13	39591474	2	DECAL, STARTER		92867522	1	ISO DECAL
14	23538754	1	DECAL, 15 MINUTE WARNING	22	93165983	3	DECAL, ROTATION
15	23551559	6	TAG, SHIPPING BRACE	23	93165959	1	DECAL, USE GUARDS
				24	93166403	1	DECAL, WATER IN
				25	93166411	1	DECAL, WATER OUT
				26	24071771	1	DECAL, ULTRA EL FILLER
					24071755		DECAL, FILLER (ULTRA FOOD GRADE)

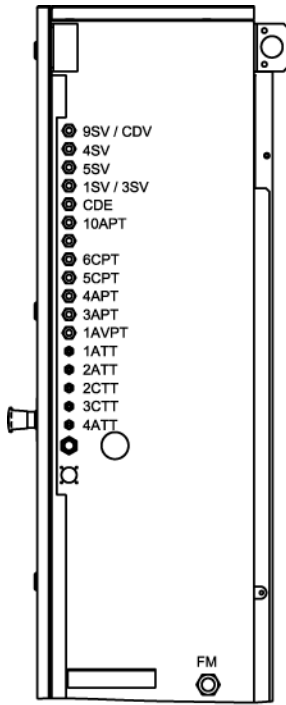
# CONTROLS MODULATION DRAWING



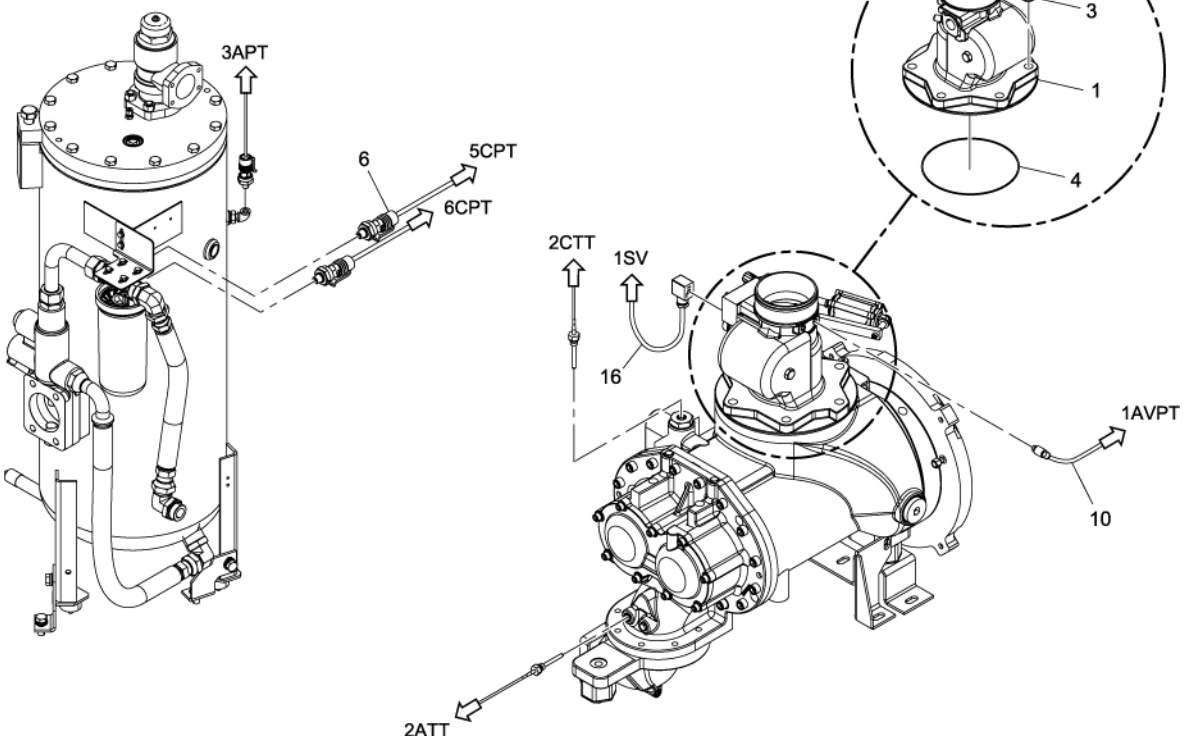
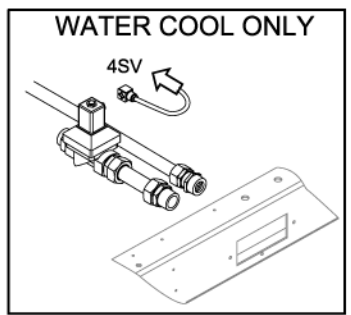
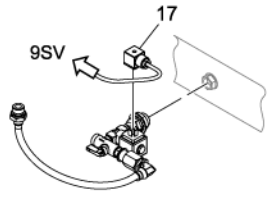
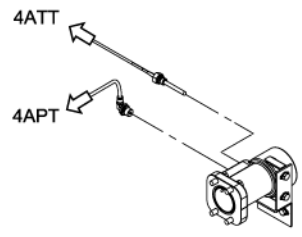
## CONTROLS MODULATION PARTS LIST

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22052609	A/R	TIE, CABLE - BASE	9	24108532	2	LABEL, CABLE 4ATT
2	24068595	2	LABEL, CABLE 3APT	10	23531841	1	CABLE, 5SV (MODULATION) FORM B
3	24068611	2	LABEL, CABLE 5CPT	11	96759709	1	TEE, UNION
4	24068629	2	LABEL, CABLE 6CPT	A/R AS REQUIRED			
5	24068587	2	LABEL, CABLE 1AVPT				
6	24108540	2	LABEL, CABLE 2CTT				
7	24108516	2	LABEL, CABLE 2ATT				
8	24068603	2	LABEL, CABLE 4APT				

# CONTROLS ON/OFF DRAWING



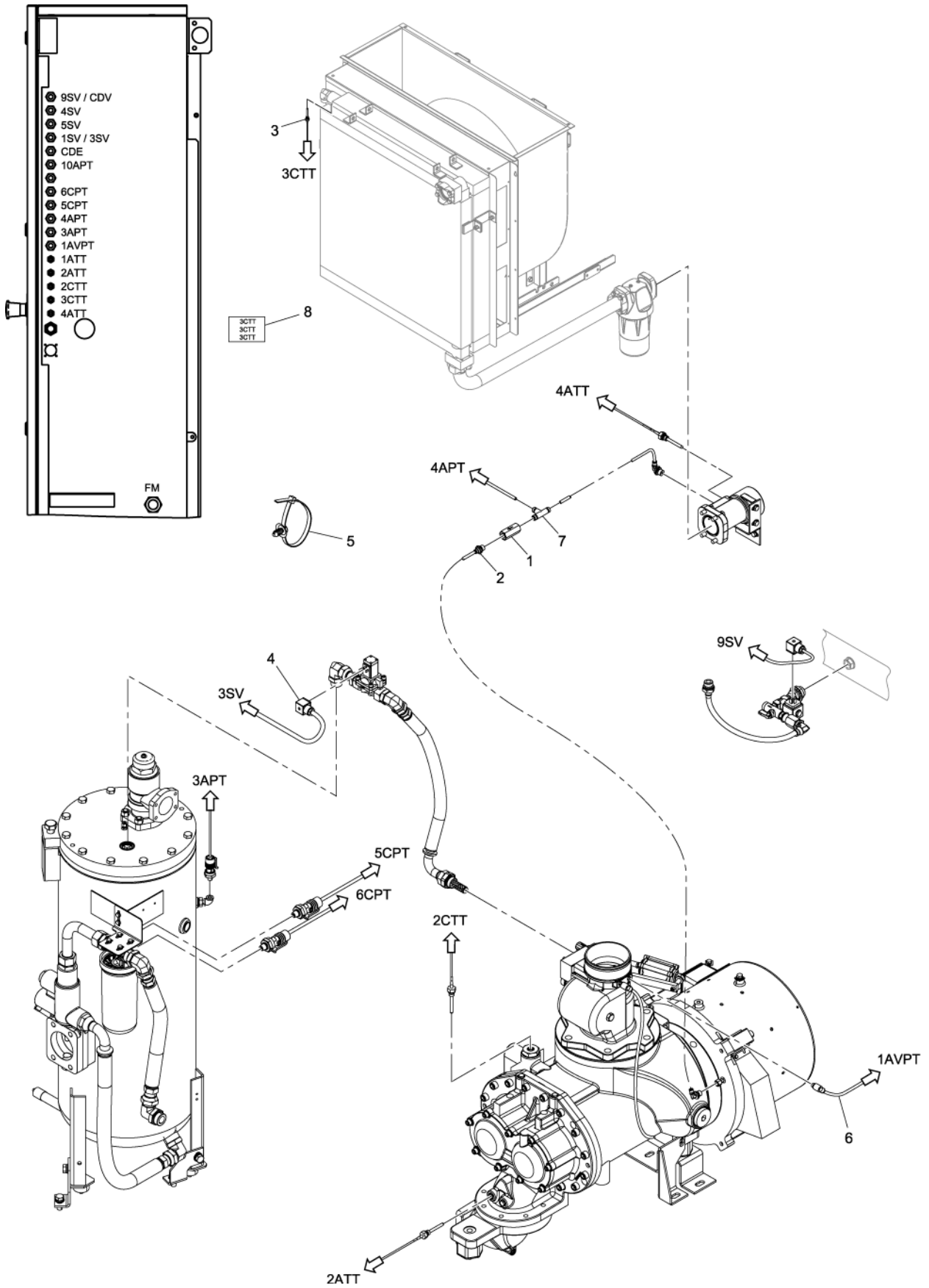
- 7 3APT 3APT 3APT
- 8 5CPT 5CPT 5CPT
- 9 6CPT 6CPT 6CPT
- 11 1AVPT 1AVPT 1AVPT
- 12 2CTT 2CTT 2CTT
- 13 2ATT 2ATT 2ATT
- 14 4PTT 4PTT 4PTT
- 15 4ATT 4ATT 4ATT



**CONTROLS ON/OFF PARTS LIST**

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23421191	1	INLET VALVE W/MODULATION	11	24068587	2	LABEL, CABLE 1AVPT
	23421183	1	INLET VALVE HPKG120-A + VVF18 FXD SPD	12	24108540	2	LABEL, CABLE 2CTT
	23421209	1	INLET VALVE HK 120 VARIABLE SPEED	13	24108516	2	LABEL, CABLE 2ATT
2	96716337	6	SCREW, HEX HEAD	14	24068603	2	LABEL, CABLE 4APT
3	96737721	6	WASHER, SPRING LOCK	15	24108532	2	LABEL, CABLE 4ATT
4	96957261	1	O-RING, STANDARD -272	16	23531858	1	CABLE, LOAD FORM B
5	22052609	A/R	TIE, CABLE - BASE	17	23532104	1	CABLE, ASSEMBLY, 9SV
6	23529373	3	CABLE, TRANSDUCER		23529753	1	CABLE, 20-3 CONDUCTOR 600V5
7	24068595	2	LABEL, CABLE 3APT	A/R AS REQUIRED			
8	24068611	2	LABEL, CABLE 5CPT				
9	24068629	2	LABEL, CABLE 6CPT				
10	23452303	A/R	TUBE, NYLON				

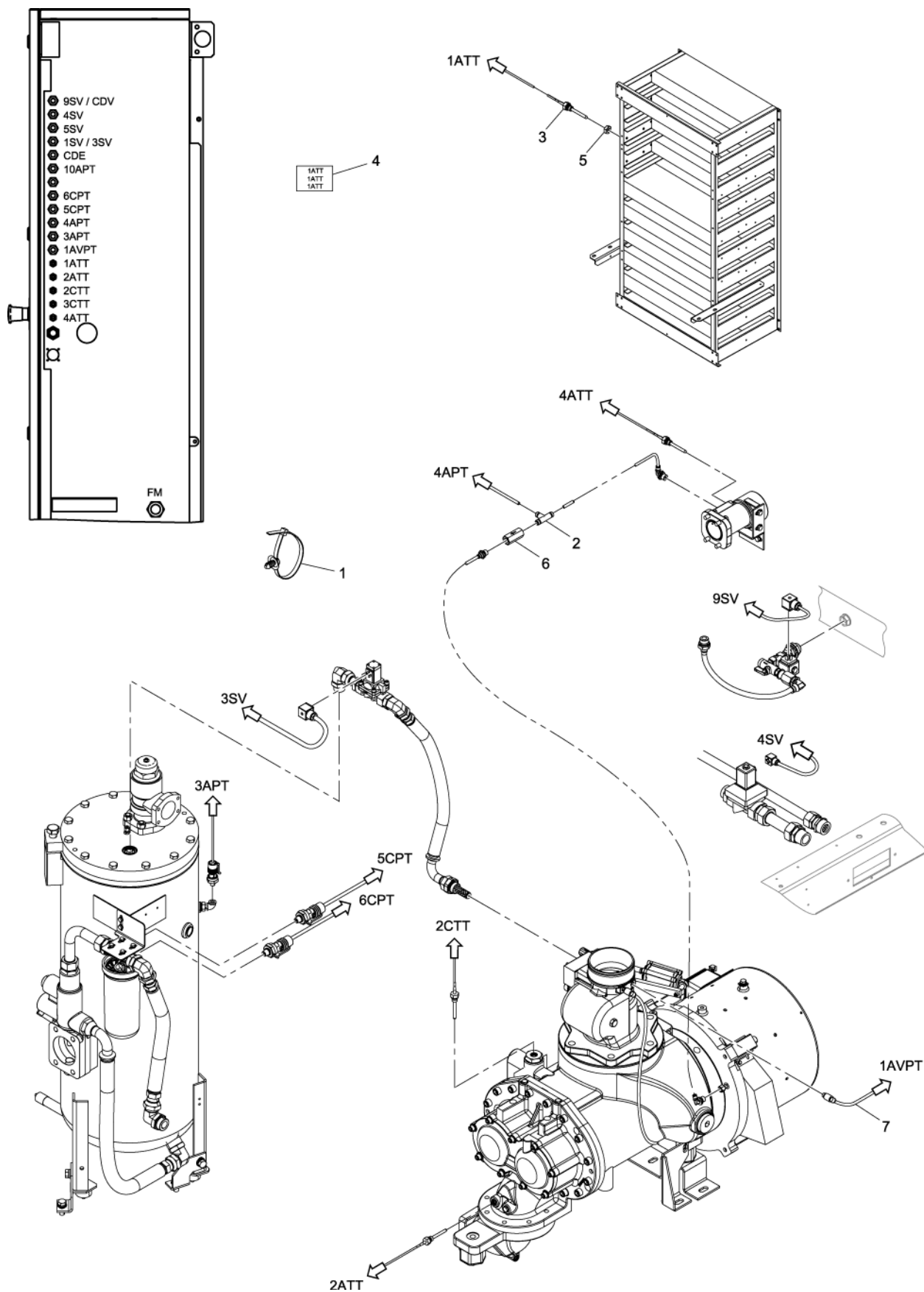
# CONTROLS VSD AIR COOLED DRAWING



## CONTROLS VSD AIR COOLED PARTS LIST

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	23467814	1	STRAINER, ORIFICE	7	96759733	1	TEE, UNION
2	96759634	1	CONNECTOR, PUSH IN	8	24108524	2	LABEL, CABLE 3CTT
3	23522238	1	SENSOR, TEMPERATURE				
4	23721806	1	CABLE, 3SV (BLOWDOWN)	A/R	AS REQUIRED		
5	22052609	A/R	TIE, CABLE - BASE				
6	23452303	A/R	TUBE, NYLON				

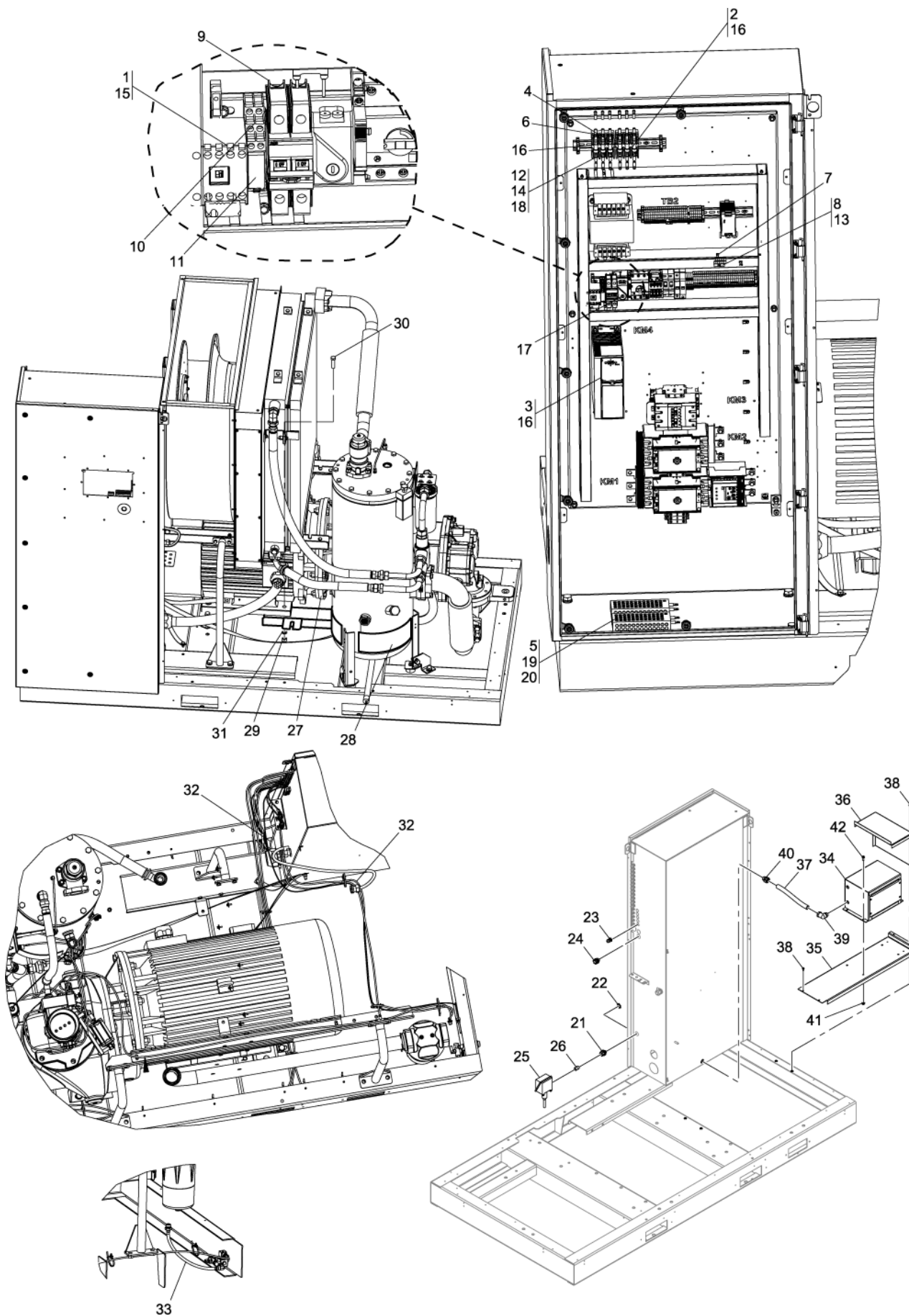
# CONTROLS VSD WATER COOLED DRAWING



## CONTROLS VSD WATER COOLED PARTS LIST

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22052609	A/R	TIE, CABLE - BASE	6	23467814	1	STRAINER, ORIFICE
2	96759733	1	TEE, UNION	7	23452303	A/R	TUBE, NYLON
3	23522238	1	SENSOR, TEMPERATURE				
4	24108557	2	LABEL, CABLE 1ATT	A/R	AS REQUIRED		
5	96764493	1	NUT, HEX THIN CHAMFERED				

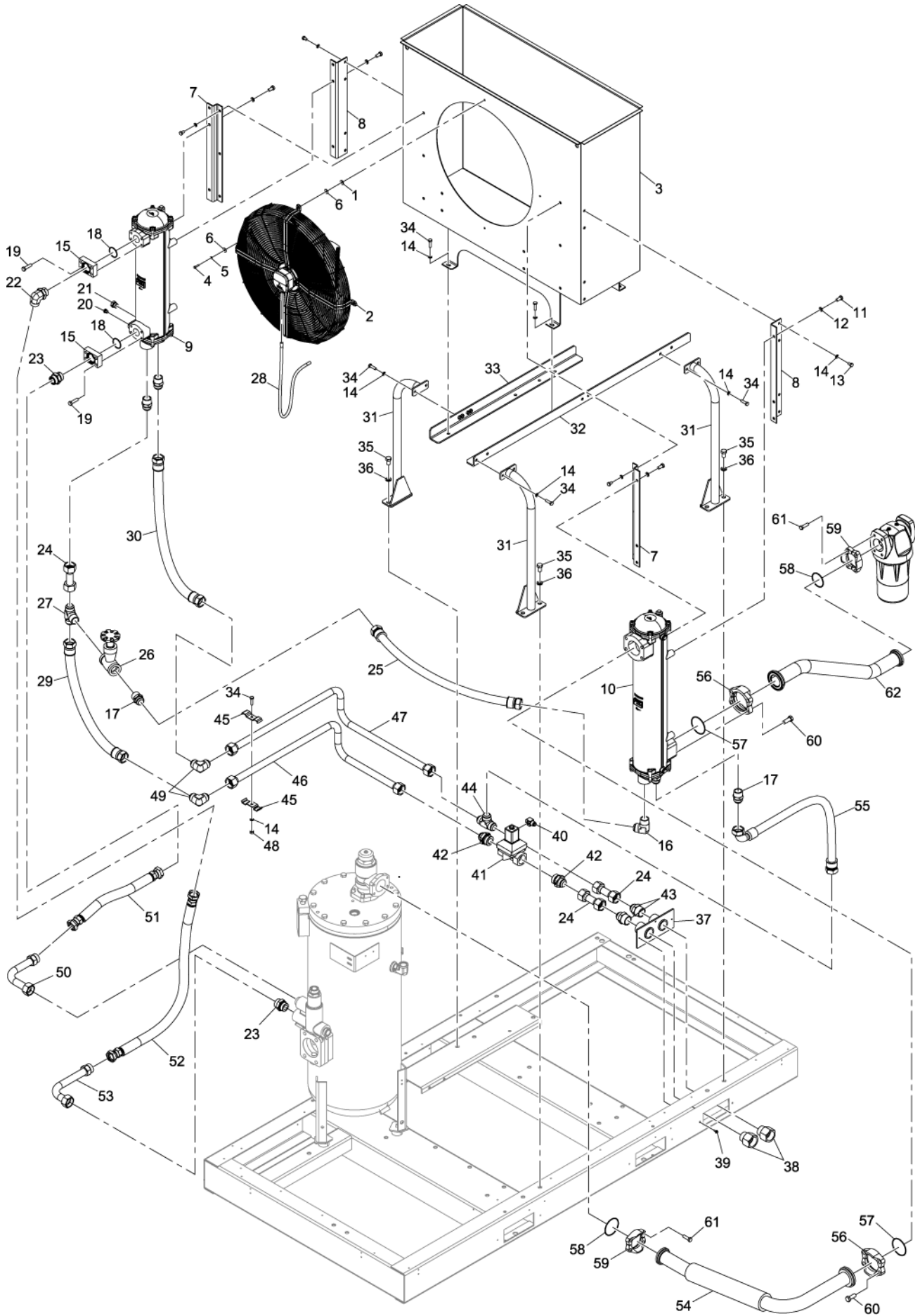
# FREEZE PROTECTION DRAWING



**FREEZE PROTECTION PARTS LIST**

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22085864	2	SUPPRESSOR	33	23540560	A/R	TUBING, 12 MM FLUOROPOLYMER
2	22315618	3	FUSE, 20A 600V	34	22737910	1	TRANSFORMER, 15 KVA
3	23434368	1	DRIVE, FAN VF (FC51M3) 4KW	35	23555733	1	SUPPORT, TRANSFORMER
4	23541568	3	FUSE, 30A 600V	36	23561533	1	SHIELD, 575 V TRANSFORMER
5	23554801	2	HEATER, 250 WATTS 120 VOLTS	37	39132279	A/R	CONDUIT, .75"
	23560253	2	HEATER, 250 WATTS 240 VOLTS	38	39917489	6	SCREW, HEX HEAD FLANGE
6	23580004	2	BLOCK, FUSE 30A, 600V, 3-POLE	39	95318457	1	ELBOW, INSULATED THROAT
7	23668833	1	CAPACITOR, PLASTIC FILM	40	95359295	1	CONNECTOR, INSULATED THROAT
8	23668858	1	DIODE, TVS	41	96704416	4	NUT, SERRATED FLANGE
9	23684301	1	BREAKER, CIRCUIT 30A	42	96712153	4	SCREW, HEX HEAD FLANGE
10	24329161	1	SOCKET, RELAY FINGER SAFE	**	23519580	1	SUPPORT, LOW AMBIENT
11	24521965	1	RELAY, PLUG-IN, DPDT	**	97330401	1	SEALANT, HEAT RESISTANT
12	39108121	A/R	WIRE, 12 AWG BLACK	**	35268788	20	CABLE TIE
13	39186093	1	PLUG, 6 POSITION	**	39181011	A/R	HEAT TRACING 120 VOLTS - 60HZ
14	39249834	A/R	WIRE, 12 AWG GREEN/YELLOW		39237078	A/R	HEAT TRACING 240 VOLTS - 50HZ
15	39266200	1	RELAY, K1-2 N37 KW - 300 HP	**	39181037	5	INSULATION, 5/8" IDX1/2" THK. PIPE
	22628440	1	RELAY, CONTROL 230V	**	39197546	1	TAPE, ALUMINUM FOIL
	22628457	1	BASE, RELAY FINDER 9474SMA	**	39205059	2	END SEAL CAP
16	54691076	7	SCREW, M4 X 0.7 X 10 MM	**	39497987	1	INSULATION, SHEET
17	54766928	1	THERMOSTAT, NORMALLY CLOSED	**	NOT ILLUSTRATED		
18	95986097	24	TERMINAL, RING TONGUE	A/R	AS REQUIRED		
19	96701370	4	NUT, HEX STYLE 1				
20	96741467	4	WASHER, SPRING LOCK				
21	35275494	1	HUB				
22	39108949	3	LOCKNUT, .50 INCH				
23	39177555	5	GLAND, WIRE				
24	39180997	2	SEAL .50 INCH HEAT				
25	39482898	1	THERMOSTAT, AMBIENT SENSING				
26	95785192	1	NIPPLE, EXTRA STRONG				
27	23538150	1	HEATER, 1000 WATTS 120 VOLTS				
	23538168	1	HEATER, 1000 WATTS 240 VOLTS				
28	23538176	4	HEATER, 250 WATTS 120 VOLTS				
	23538184	4	HEATER, 250 WATTS 240 VOLTS				
29	96711882	2	NUT, HEX STYLE 1				
30	96742531	2	SCREW, HEX HEAD				
31	96765169	2	WASHER, LOCK				
32	23540545	A/R	TUBING, 6 MM FLUOROPOLYMER				

# COOLING (SEA/HARSH WATER COOLED) ASSEMBLY DRAWING



**COOLING (SEA/HARSH WATER COOLED) ASSEMBLY PARTS LIST**

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	22382212	4	WASHER	33	23461171	1	ANGLE, WATER COOLER SUPPORT
2	23447071	1	FAN	34	96704309	10	SCREW
3	23460876	1	SHROUD, FAN	35	96738372	6	SCREW
4	96702246	4	SCREW, HEX HEAD	36	96765169	6	WASHER, LOCK HELICAL SPRING M16
5	96727573	4	WASHER, SPRING LOCK	37	22279582	1	PLATE
6	96745559	8	WASHER, LARGE OUTSIDE DIA	38	39325576	2	ADAPTER
7	23545130	2	SUPPORT, COOLER (WATER COOLED)	39	39917489	3	SCREW
8	23545189	2	ANGLE, COOLER SUPPORT (WATER COOLED)	40	23532054	1	CABLE ASSEMBLY, 4SV (4595)
9	23572415	1	COOLER, OIL (HARSH WATER)	41	23547664	1	VALVE, SOLENOID WATER 1.5 BSPP (G)
	23546021	1	COOLER, OIL (SEA WATER)	42	23576283	2	TUBE, (HARSH WATER)
10	23572423	1	COOLER, AIR (HARSH WATER)		23573025	2	TUBE, (SEA WATER)
	23546039	1	COOLER, AIR (SEA WATER)	43	95505582	2	CONNECTOR, (HARSH WATER)
11	96718861	8	SCREW, HEX HEAD		96957691	2	CONNECTOR, (SEA WATER)
12	96739933	8	WASHER	44	95900320	1	TEE, (HARSH WATER)
13	96701479	14	SCREW, HEX HEAD		23345705	1	TEE, (SEA WATER)
14	96712096	24	WASHER, SPRING LOCK	45	23522642	2	SUPPORT, TUBE
15	23462336	2	ADAPTER	46	23576291	1	TUBE, (HARSH WATER)
	95937660	1	ELBOW (HARSH WATER)		23573363	1	TUBE, (SEA WATER)
16	96957717	1	ELBOW (SEA WATER)	47	23576309	1	TUBE, (HARSH WATER)
	95973111	4	CONNECTOR (HARSH WATER)		23573371	1	TUBE, (SEA WATER)
17	96955109	4	CONNECTOR (SEA WATER)	48	96704812	1	NUT, HEX STYLE 1
18	95987970	2	O-RING	49	96951272	2	ELBOW, (HARSH WATER)
19	96702667	8	SCREW, HEX		96957725	2	ELBOW, (SEA WATER)
20	96757000	4	PLUG, HEX HEAD M12	50	24589251	1	TUBE, HSTCV TO COOLER
21	96757059	1	PLUG, HEX HEAD M22	51	24265621	1	HOSE, HYDRAULIC (SS)
22	96757737	1	ELBOW		48662837	1	HOSE, HYDRAULIC (RUBBER)
23	96758107	2	CONNECTOR	52	24265902	1	HOSE, HYDRAULIC (SS)
	23576283	3	TUBE, (HARSH WATER)		48662902	1	HOSE, HYDRAULIC (RUBBER)
24	23573025	3	TUBE, (SEA WATER)	53	49095615	1	TUBE, HSTCV TO COOLER
	85561793	1	HOSE, (HARSH WATER)	54	23573140	1	TUBE, MPCV TO AFTERCOOLER
25	23576366	1	HOSE, (SEA WATER)	55	85562213	1	HOSE, (HARSH WATER)
	95067203	1	VALVE, GLOBE 150LB		23576374	1	HOSE, (SEA WATER)
26	96957758	1	TEE, (HARSH WATER)	56	95016283	4	FLANGE CLAMP, SPLIT HALF 3.00 NOMINAL
	96957733	1	TEE, (SEA WATER)	57	95022349	2	O-RING
27	23693658	1	CABLE, ASSY	58	95028502	2	O-RING
28	85561744	1	HOSE, (HARSH WATER)	59	95961496	4	FLANGE CLAMP
	24644031	1	HOSE, (SEA WATER)	60	96702337	8	SCREW, HEX HEAD M16
29	85562155	1	HOSE, (HARSH WATER)	61	96702444	8	SCREW, HEX HEAD M12
	23576382	1	HOSE, (SEA WATER)	62	23821879	1	TUBE, AFTERCOOLER OUTLET
30	23445182	3	LEG, COOLER / BLOWER SUPPORT		23744261	1	TUBE, COOLER DISCHARGE
31	23460850	1	ANGLE, WATER COOLER SUPPORT				
32							

## RECOMMENDED PARTS LIST

### 90 - 110 kW FIELD KITS

CCN	DESCRIPTION
23548217	KIT, ERS FIELD
24357261	KIT, ERS FIELD (W/SS COOLANT HOSES)
23729635	KIT, PORO FIELD (Xe)
23565468	KIT, HIGH DUST PACKAGE PRE-FILTER FIELD
23565450	KIT, HIGH DUST AIR INLET FILTER FIELD
23592504	KIT , TRANSFORMER 575/460V
23565476	FOOD GRADE LUBRICANT W/ EXTEND FILTER FIELD
23562176	KIT, FIELD INSTALLATION MODULATION OPTION (R90/110kW)
23655087	KIT , DANFOSS FC51 DRIVE SERVICE TOOL
23590730	KIT, REMOTE SENSING (VSD)
23689979	KIT, OUTDOOR MOD (90-110KW SS)
24244311	KIT, REMOTE SENSING (XE90/145)

### 90-110 kW SERVICE KITS

CCN	DESCRIPTION
23467244	KIT, SERVICE SOLENOID FOR VVF18ENO & PVVF18ENO (HAKG/HPKG80,110,120&140)
23467251	KIT, SERVICE ACTUATOR CYLINDER (HAKG/HPKG 80, 110, 120 & 140)
23531569	KIT, SERVICE HSTCV 102MM-M42 180°F-198°F)
23531577	KIT, SERVICE MPCV DN64 OUT DN76 IN
23531585	KIT, SERVICE INLET VALVE HAKG/HPKG/HK 120 (Fixed & Variable Speed)
23531601	KIT, SERVICE HK120 VALVE (VARIABLE SPD)
23531627	KIT, SERVICE BLOWDOWN BLOCK VVF18ENO (HAKG/HPKG 110, 120 & 140)
23531635	KIT, SERVICE MODULATION BLOCK PVVF18ENO
23533243	KIT, SERVICE HSTCV 102MM-M42 195°F-212°F
23569197	KIT, SERVICE (AIR COOLED HOSE)
24346181	KIT, SERVICE (AIR COOLED W/SS COOLANT HOSE) (R90-110 kW)
23569205	KIT, SERVICE (WATER COOLED HOSE)
24346199	KIT, SERVICE (WATER COOLED W/SS COOLANT HOSE) (R90-110 kW)
23569213	KIT, SERVICE (AIR COOLED HOSE - ERS)
24346173	KIT, SERVICE (AIR COOLED W/SS COOLANT HOSE - ERS) (R90-110kW)
23570344	KIT, SERVICE INTERVAL 8K HOURS FS ON/OFF (HAKG 110, 120 & 140) & VS (HK110)
23570369	KIT, SERVICE INTERVAL 8K HOURS FS MODULATION (HPKG 110, 120 & 140)
23858236	KIT, REPLACEMENT ACTUATOR CYLINDER PBED 40 (HAKG/HPKG 80, 110, 120 & 140)
24657173	KIT, R90-110 (1 STAGE) SHAFT SEAL (FS)
24742629	KIT, R90-160 (1 STAGE) SHAFT SEAL (VSD)
23473069	UNIT, SERVICE (BEKOMAT 32 VARIO BSP)

## RECOMMENDED PARTS LIST

### 90 -110 kW MAINTENANCE KITS

CCN	DESCRIPTION
23565245	KIT, START-UP (X-TEND FOOD GRADE)
23565252	KIT, FIXED SPEED X-TEND FOOD GRADE (3MO/2K)
23565260	KIT, VSD X-TEND FOOD GRADE (3MO/2K)
23565278	KIT, FIXED SPEED FILTER, ULTRA
23565286	KIT, VSD FILTER, ULTRA
23565294	KIT, FIXED SPEED MAINTENANCE (6MO/4K)
23565302	KIT, FS HIGH DUST AIR FILTER MAINTENANCE (6MO/4K)
23569312	KIT, FS HI DUST AIR & PRE-FILTER MAINTENANCE (6MO/4K)
23565310	KIT, VSD MAINTENANCE (6MO/4K)
23565328	KIT, FIXED SPEED MAINTENANCE (1YR/8K), ULTRA
23565336	KIT, FIXED SPEED X-TEND FOOD GRADE MAINTENANCE (1YR/8K)
23565344	KIT, FS HIGH DUST AIR FILTER MAINTENANCE (1YR/8K), ULTRA
23569320	KIT, FS HIGH DUST AIR & PRE-FILTER MAINTENANCE (1YR/8K), ULTRA
23565369	KIT, VSD MAINTENANCE (1YR/8K), ULTRA
23565377	KIT, VSD X-TEND FOOD GRADE MAINTENANCE (1YR/8K)
24183436	KIT, START-UP (ULTRA FG FOOD GRADE)
24183451	KIT, FIXED SPEED MAINTENANCE (1YR/6K/8K)
24183485	KIT, FS HIGH DUST AIR FILTER MAINT. (1YR/6K/8K)
24183493	KIT, VSD MAINTENANCE (1YR/6K/8K)
23583420	KIT, START-UP (X-TEND FOOD GRADE)
23583438	KIT, FIXED SPEED X-TEND FOOD GRADE 132-160kW (3MO/2K)
23583446	KIT, VSD X-TEND FOOD GRADE 132-160kW (3MO/2K)
23583453	KIT, FIXED SPEED FILTER 132-160kW, ULTRA
23583461	KIT, VSD FILTER 132-160kW, ULTRA
23583479	KIT, FIXED SPEED MAINTENANCE 132-160kW (6MO/4K)
23583487	KIT, VSD MAINTENANCE 132-160kW (6MO/4K)
23583495	KIT, FIXED SPEED HIGH DUST AIR FILTER MAINTENANCE 132-160kW (6MO/4K)
23583503	KIT, FIXED SPEED HIGH DUST AIR & PRE- FILTER MAINTENANCE 132-160kW (6MO/4K)
23583511	KIT, FIXED SPEED 132-160kW MAINTENANCE (1YR/8K), ULTRA
23583529	KIT, VSD MAINTENANCE 132-160kW (1YR/8K), ULTRA
23583537	KIT, FIXED SPEED X-TEND FOOD GRADE MAINTENANCE 132-160kW (1YR/8K)
23583545	KIT, VSD X-TEND FOOD GRADE MAINTENANCE 132-160kW (1YR/8K)
23583552	KIT, FS HIGH DUST AIR FILTER MAINTENANCE 132-160kW (1YR/8K), ULTRA
23583560	KIT, FS HIGH DUST AIR & PRE-FILTER MAINTENANCE 132-160kW (1YR/8K), ULTRA
24183519	KIT, START-UP (ULTRA FG FOOD GRADE)
24183527	KIT, FIXED SPEED 132-160kW MAINT. (1YR/6K/8K)
24183543	KIT, VSD 132-160kW MAINT. (1YR/6K/8K)
24183568	KIT, FS HIGH DUST AIR FILTER 132-160kW MAINT. (1YR/6K/8K)

## RECOMMENDED PARTS LIST

### 132 - 160 kW FIELD KITS

CCN	DESCRIPTION
23582075	KIT, FIELD ERS
24354276	KIT, FIELD ERS (W/SS COOLANT HOSES)
23729635	KIT, PORO FIELD (Xe)
23582307	KIT, HIGH DUST PACKAGE PRE-FILTER FIELD
23582315	KIT, HIGH DUST AIR INLET FILTER FIELD (132-160kW SINGLE STAGE)
23592801	KIT, FIELD INSTALLATION MODULATION OPTION (R132/160kW)
23590730	KIT, REMOTE SENSING (VSD)
23655087	KIT, DANFOSS FC51 DRIVE SERVICE TOOL
23686967	KIT, FOOD GRADE LUBRICANT W/ EXTEND FILTER FIELD
23689987	KIT, OUTDOOR MOD (132-160kW & 90-110kW)
24244311	KIT, REMOTE SENSING (XE90/145)
47601862001	KIT, REPLACEMENT, FS SD, ABB A TO AF CONTACTOR, 90-110kW 400-575V 50/60HZ
47602308001	KIT, FS SD, ABB A TO AF CONTACTOR, 90-110KW 380V, 132-160kW 440-575V 60HZ
47604236001	KIT, REPLACEMENT, FS SD, ABB A TO AF CONTACTOR, 132-160kW, 380-415V, 50/60Hz

### 132 - 160 kW SERVICE KITS

CCN	DESCRIPTION
23467244	KIT, SERVICE SOLENOID FOR VVF18ENO & PVVF18ENO (HAKG/HPKG80,110,120&140)
23467251	KIT, SERVICE ACTUATOR CYLINDER (HAKG/HPKG 80, 110, 120 & 140)
23551823	KIT, SERVICE HSTCV 102MM-M48 180°F-198°F
23551831	KIT, SERVICE HSTCV 102MM-M48 195°F-212°F
23531577	KIT, SERVICE MPCV DN64 OUT DN76 IN
23531593	KIT, SERVICE INLET VALVE HAKG/HPKG/HK 140 (Fixed & Variable Speed)
23531619	KIT, SERVICE HK 140 VALVE (VARIABLE SPD)
23531627	KIT, SERVICE BLOWDOWN BLOCK VVF18ENO (HAKG/HPKG 110, 120 & 140)
23531635	KIT, SERVICE MODULATION BLOCK PVVF18ENO
23570344	KIT, SERVICE INTERVAL 8K HOURS FS ON/OFF (HAKG 110, 120 & 140) & VS (HK110)
23570369	KIT, SERVICE INTERVAL 8K HOURS FS MODULATION (HPKG 110, 120 & 140)
23582422	KIT, SERVICE (AIR COOLED HOSE)
24364408	KIT, SERVICE (AIR COOLED HOSE) (W/SS COOLANT HOSES) (R132-160 KW)
23582430	KIT, SERVICE (WATER COOLED HOSE)
24364416	KIT, SERVICE (WATER COOLED HOSE) (W/SS COOLANT HOSES) (R132-160 KW)
23582455	KIT, SERVICE (AIR COOLED HOSE - ERS)
24364457	KIT, SERVICE (AIR COOLED HOSE - ERS) (W/SS COOLANT HOSES) (R132-160KW)
23858236	KIT, REPLACEMENT ACTUATOR CYLINDER PBED 40 (HAKG/HPKG 80, 110, 120 & 140)
24657181	KIT, R132-160 (1 STAGE) SHAFT SEAL (FS)
24742629	KIT, R90-160 (1 STAGE) SHAFT SEAL (VSD)
23473069	UNIT, SERVICE (BEKOMAT 32 VARIO BSP)

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**RECOMMENDED PARTS LIST**


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**132 - 160 kW MAINTENANCE KITS**

<b>CCN</b>	<b>DESCRIPTION</b>
23583420	KIT, START-UP (X-TEND FOOD GRADE)
23583438	KIT, FIXED SPEED X-TEND FOOD GRADE 132-160kW (3MO/2K)
23583446	KIT, VSD X-TEND FOOD GRADE 132-160kW (3MO/2K)
23583453	KIT, FIXED SPEED FILTER 132-160kW, ULTRA
23583461	KIT, VSD FILTER 132-160kW, ULTRA
23583479	KIT, FIXED SPEED MAINTENANCE 132-160KW (6MO/4K)
23583487	KIT, VSD MAINTENANCE 132-160KW (6MO/4K)
23583495	KIT, FIXED SPEED HIGH DUST AIR FILTER MAINTENANCE 132-160KW (6MO/4K)
23583503	KIT, FIXED SPEED HIGH DUST AIR & PRE- FILTER MAINTENANCE 132-160KW (6MO/4K)
23583511	KIT, FIXED SPEED 132-160kW MAINTENANCE (1YR/8K), ULTRA
23583529	KIT, VSD MAINTENANCE 132-160kW (1YR/8K), ULTRA
23583537	12 KIT, FIXED SPEED X-TEND FOOD GRADE MAINTENANCE 132-160kW (1YR/8K)
23583545	KIT, VSD X-TEND FOOD GRADE MAINTENANCE 132-160kW (1YR/8K)
23583552	KIT, FS HIGH DUST AIR FILTER MAINTENANCE 132-160kW (1YR/8K), ULTRA
23583560	KIT, FS HIGH DUST AIR & PRE-FILTER MAINTENANCE 132-160kW (1YR/8K), ULTRA
24183519	KIT, START-UP (ULTRA FG FOOD GRADE)
24183527	KIT, FIXED SPEED 132-160KW MAINT. (1YR/6K/8K)
24183543	KIT, VSD 132-160KW MAINT. (1YR/6K/8K)
24183568	KIT, FS HIGH DUST AIR FILTER 132-160KW MAINT. (1YR/6K/8K)



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