



**Installation Data Sheet**  
**Series: 1:1 Direct Drive BSD.4 SFC**  
**Document No.: TI-DATA-2020-SFC 37T 45ST**  
**Version: 1.3**  
**Revision Date: 04/17/2023**

| Model   | SFC 37T  |     |     |       |      |     | SFC 45ST                    |     |     |       |     |     |
|---|--|-----|-----|-------|------|-----|-----------------------------|-----|-----|-------|-----|-----|
|   | 110  | 125 | 145 | 175   | 190  | 217 | 110                         | 125 | 145 | 175   | 190 | 217 |
| <b>I. COOLING DATA</b>  |  |     |     |       |      |     |                             |     |     |       |     |     |
| Cooling System Available [Std., Opt.]   | A/C, W/C   |     |     |       |      |     | A/C, W/C                    |     |     |       |     |     |
| Standard Ambient Temp. Range [°F]   | 40 - 115   |     |     |       |      |     | 40 - 115                    |     |     |       |     |     |
| <b>VENTILATION OF COMPRESSOR ROOM</b>   |  |     |     |       |      |     |                             |     |     |       |     |     |
| Air Inlet Opening [sq. ft.] (A/C) Z   | 13   |     |     |       |      |     | 15                          |     |     |       |     |     |
| Air Inlet Opening [sq. ft.] (W/C) Z   | 5  |     |     |       |      |     | 5                           |     |     |       |     |     |
| <b>Solution A (forced ventilation with exhaust fan) as shown in service manual</b>                                  |  |     |     |       |      |     |                             |     |     |       |     |     |
| Cooling Fan Capacity [CFM] (A/C)  | 10,006   |     |     |       |      |     | 11,772                      |     |     |       |     |     |
| Cooling Fan Capacity [CFM] (W/C)  | 1,471  |     |     |       |      |     | 1,766                       |     |     |       |     |     |
| <b>Solution B (exhaust air used for space heating) as shown in service manual</b>                                   |  |     |     |       |      |     |                             |     |     |       |     |     |
| Internal Cooling Fan Capacity [CFM] (A/C)   | Compressor   |     |     | Dryer |      |     | Compressor                  |     |     | Dryer |     |     |
|   | 4,826  |     |     | 1,295 |      |     | 4,826                       |     |     | 1,295 |     |     |
| Internal Cooling Fan Capacity [CFM] (W/C)   | 706  |     |     |       |      |     | 706                         |     |     |       |     |     |
| Max. Additional Pressure Drop for Ducts [inch Water Column] (A/C)   (W/C)   | 0.24 / 0.16  |     |     |       |      |     | 0.24 / 0.16                 |     |     |       |     |     |
| Exhaust Air Opening Reference Dimensions (L x W) [in]   | 25 X 25  |     |     |       |      |     | 25 X 25                     |     |     |       |     |     |
| <p align="center"><b>Model shown for reference only</b><br/> <b>Actual Duct size may vary with installation</b></p> |  |     |     |       |      |     |                             |     |     |       |     |     |
| <b>Solution A Exhaust Fan</b>   |  |     |     |       |      |     |                             |     |     |       |     |     |
| <b>Solution B Exhaust Duct</b>  |  |     |     |       |      |     |                             |     |     |       |     |     |
| <b>Ventilation of Compressor Room Z</b>   |  |     |     |       |      |     |                             |     |     |       |     |     |
| <b>AIR COOLED DATA</b>  |  |     |     |       |      |     |                             |     |     |       |     |     |
| Internal Cooling Fan Capacity [CFM]   | 4,826  |     |     |       |      |     | 4,826                       |     |     |       |     |     |
| Approach Temp. [°F]   | Reference conditions: 14.5 psia, 30% relative humidity and 68°F inlet air temperature. |     |     |       |      |     |                             |     |     |       |     |     |
|   | 10.8   |     | 9   |       | 12.6 |     | 10.8                        |     | 9   |       |     |     |
| Typical Heat Rejected [BTU / HR]  | 155,500  |     |     |       |      |     | 172,000                     |     |     |       |     |     |
| Fan Motor [HP], oilcooler/aircooler   | 0.75   |     |     |       |      |     | 0.75                        |     |     |       |     |     |
| <b>WATER COOLED DATA</b>  |  |     |     |       |      |     |                             |     |     |       |     |     |
| Type of heat exchangers   | stainless steel, plate-type  |     |     |       |      |     | stainless steel, plate-type |     |     |       |     |     |
| Internal Cooling Fan Capacity [CFM]   | 706  |     |     |       |      |     | 706                         |     |     |       |     |     |
| Approach Temp. [°F]   | Reference conditions: 14.5 psia, 30% relative humidity and 68°F inlet air temperature. |     |     |       |      |     |                             |     |     |       |     |     |
|   | 1.8  |     |     |       |      |     | 1.8                         |     |     |       |     |     |
| Typical Heat Rejected into Cooling Water [BTU / HR]   | Based on highest input kW of machine.  |     |     |       |      |     |                             |     |     |       |     |     |
|   | 137,000  |     |     |       |      |     | 161,000                     |     |     |       |     |     |
| Heat Rejected into Cooling Air [BTU / HR]   | 16,000   |     |     |       |      |     | 19,000                      |     |     |       |     |     |
| Max. outlet temperature [°F]  | Discharge temperature limited for non-treated water (to prevent calcification).        |     |     |       |      |     |                             |     |     |       |     |     |
|   | 120  |     |     |       |      |     | 120                         |     |     |       |     |     |
| Temperature differential between inlet water and max. discharge water temperature [°F]                              | 20   |     | 50  |       | 20   |     | 50                          |     |     |       |     |     |
| Max. inlet water temperature [°F]   | 104  |     | 70  |       | 104  |     | 70                          |     |     |       |     |     |
| Min. cooling water flow [gpm]   | 13.9   |     | 5.6 |       | 15.8 |     | 6.4                         |     |     |       |     |     |
| Pressure drop across compressor package [psi] WITHOUT cooling water throttling valve                                | 14.5   |     | 2.2 |       | 18.9 |     | 2.9                         |     |     |       |     |     |
| Pressure drop across compressor package [psi] WITH cooling water throttling valve                                   | 16   |     | 3   |       | 21   |     | 5                           |     |     |       |     |     |



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|--|--|-----|-----|-----|---|-----|---|-----|-----|---|-----|---|----------------------------|--|--|--|--|--|
|  | 110  | 125 | 145 | 175 | 190   | 217 | 110   | 125 | 145 | 175   | 190 | 217   |                            |  |  |  |  |  |
| <b>Rated Pressure [psig]</b>   |  |     |     |     |   |     |   |     |     |   |     |   |                            |  |  |  |  |  |
| <b>II. ELECTRICAL DATA</b> <i>Electrical data may vary in accordance with motor manufacturer's specifications. Motors are EISA compliant.</i>  |  |     |     |     |   |     |   |     |     |   |     |   |                            |  |  |  |  |  |
| <b>DRIVE MOTOR</b>   |  |     |     |     |   |     |   |     |     |   |     |   |                            |  |  |  |  |  |
| Motor HP   | 50   |     |     |     |   |     | 60  |     |     |   |     |   |                            |  |  |  |  |  |
| Insulation Class   | F  |     |     |     |   |     | F   |     |     |   |     |   |                            |  |  |  |  |  |
| Standard Voltage   | 460V/3ph/60Hz  |     |     |     |   |     | 460V/3ph/60Hz   |     |     |   |     |   |                            |  |  |  |  |  |
| Type   | SynRM(IES2)  |     |     |     |   |     | SynRM(IES2)   |     |     |   |     |   |                            |  |  |  |  |  |
| <b>FAN MOTOR (A/C)</b>   |  |     |     |     |   |     |   |     |     |   |     |   |                            |  |  |  |  |  |
| Insulation Class   | F  |     |     |     |   |     | F   |     |     |   |     |   |                            |  |  |  |  |  |
| Fan Motor [HP], oilcooler   aircooler  | 1  |     |     |     |   |     | 1   |     |     |   |     |   |                            |  |  |  |  |  |
| Full Load Amps [FLA] @ 460V/3ph/60Hz   | 1.76   |     |     |     |   |     | 1.76  |     |     |   |     |   |                            |  |  |  |  |  |
| Full Load Amps [FLA] @ 575V/3ph/60Hz   | CF   |     |     |     |   |     | CF  |     |     |   |     |   |                            |  |  |  |  |  |
| <b>FAN MOTOR (W/C)</b>   |  |     |     |     |   |     |   |     |     |   |     |   |                            |  |  |  |  |  |
| Insulation Class   | F  |     |     |     |   |     | F   |     |     |   |     |   |                            |  |  |  |  |  |
| Fan Motor [HP], Single Speed   | 0.16   |     |     |     |   |     | 0.16  |     |     |   |     |   |                            |  |  |  |  |  |
| Full Load Amps [FLA] @ 460V/3ph/60Hz   | 0.6  |     |     |     |   |     | 0.6   |     |     |   |     |   |                            |  |  |  |  |  |
| Full Load Amps [FLA] @ 575V/3ph/60Hz   | CF   |     |     |     |   |     | CF  |     |     |   |     |   |                            |  |  |  |  |  |
| <b>TOTAL PACKAGE DATA (A/C)</b>  |  |     |     |     |   |     |   |     |     |   |     |   |                            |  |  |  |  |  |
| Do NOT operate package on any unsymmetrical power supply. Also do NOT operate package on power supplies like, for example, a three-phase (open) delta or three-phase star with non-grounded neutral. The machine requires a symmetrical three-phase power supply transformer with a WYE configuration output as shown on the right. In a symmetrical three-phase supply the phase angles and voltages are all the same. Other power supplies are not suitable. |  |     |     |     |  |     | <b>three-phase star (wye);<br/>4-wire;<br/>grounded neutral</b> |     |     |  |     | <b>three-phase star (wye);<br/>3-wire;<br/>grounded neutral</b> |                            |  |  |  |  |  |
| Continuous Duty [Hours per day]  | 24   |     |     |     |   |     | 24  |     |     |   |     |   |                            |  |  |  |  |  |
| Control Cabinet Class (NEMA)   | 12   |     |     |     |   |     | 12  |     |     |   |     |   |                            |  |  |  |  |  |
| Short Circuit Current Rating (SCCR) [kA] @ 460V/3ph/60Hz   | Field installed fuse required, see below*  |     |     |     |   |     | 50  |     |     |   |     |   |                            |  |  |  |  |  |
| Short Circuit Current Rating (SCCR) [kA] @ 575V/3ph/60Hz   | Field installed fuse required, see below*  |     |     |     |   |     | CF  |     |     |   |     |   |                            |  |  |  |  |  |
| Package Full Load Amps @ 460V/3ph/60Hz [FLA]   | 83   |     |     |     |   |     | 87  |     |     |   |     |   |                            |  |  |  |  |  |
| Package Full Load Amps @ 575V/3ph/60Hz [FLA]   | CF   |     |     |     |   |     | CF  |     |     |   |     |   |                            |  |  |  |  |  |
| Recommended Disconnect Fuse Size [Amps] @ 460V/3ph/60Hz  | *Time delay (dual element) fuse; Class J ≤ 600A (e.g. AJT) /<br>Class L > 600A (e.g. A4BQ).<br>Based on 2020 NEC 240.6, 430.52, and Tables 430.52,<br>430.248, and 430.250   |     |     |     |   |     | 110   |     |     |   |     |   | 125                        |  |  |  |  |  |
| Recommended Disconnect Fuse Size [Amps] @ 575V/3ph/60Hz  |  |     |     |     |   |     | CF  |     |     |   |     |   | CF                         |  |  |  |  |  |
| Recommended Disconnect Wire Size [AWG/kcmil] @ 460V/3ph/60Hz   | The following multi-strand copper core wires are given according to 2020 NEC 310.14, 310.15, 310.16 and table 310.16 adjusted for 40°C ambient temperature. If other local conditions prevail, for example high temperature, the cross section should be checked and adjusted according to 2020 NEC 110.14(C), 220.3, 310.14, 310.15, 310.16, 430.6, 430.22, 430.24, 670.4(A) and other local codes. |     |     |     |   |     | 1 AWG per phase and ground                                      |     |     |   |     |   | 1 AWG per phase and ground |  |  |  |  |  |
| Recommended Disconnect Wire Size [AWG/kcmil] @ 575V/3ph/60Hz   |  |     |     |     |   |     | CF  |     |     |   |     |   | CF                         |  |  |  |  |  |
| <b>TOTAL PACKAGE DATA (W/C)</b>  |  |     |     |     |   |     |   |     |     |   |     |   |                            |  |  |  |  |  |
| Package Full Load Amps @ 460V/3ph/60Hz [FLA]   | 82   |     |     |     |   |     | 86  |     |     |   |     |   |                            |  |  |  |  |  |
| Package Full Load Amps @ 575V/3ph/60Hz [FLA]   | CF   |     |     |     |   |     | CF  |     |     |   |     |   |                            |  |  |  |  |  |



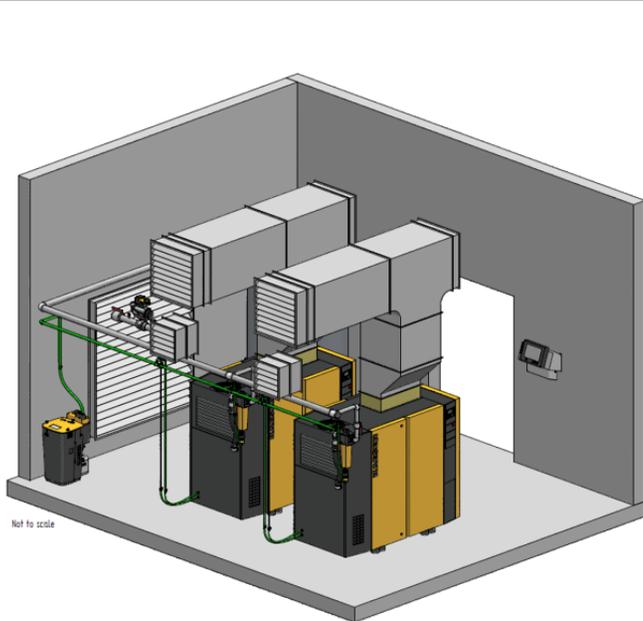
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|---|--|-----|-----|-----|-----|-----|---|-----|-----|-----|-----|-----|-----|
|   | Rated Pressure [psig]  | 110 | 125 | 145 | 175 | 190 | 217                                       | 110 | 125 | 145 | 175 | 190 | 217 |
| <b>INSTALLATION and MAINTENANCE DATA</b>                                |  |     |     |     |     |     |   |     |     |     |     |     |     |
| A/C with Super Soundproofing [dB(A)]                                    | SOUND PRESSURE LEVEL [Measured in dB(A) according to ISO 2151 using ISO 9614-2]        |     |     |     |     |     | 74  |     |     |     |     |     |     |
| W/C with Super Soundproofing [dB(A)]                                    | 71   |     |     |     |     |     | 71  |     |     |     |     |     |     |
| A/C Air Discharge [inches NPT or Flange]                                | 1 1/2 NPT  |     |     |     |     |     | 1 1/2 NPT                                 |     |     |     |     |     |     |
| W/C Air Discharge [inches NPT or Flange]                                | 1 NPT  |     |     |     |     |     | 1 NPT                                     |     |     |     |     |     |     |
| Cooling Water Connection [inches NPT or Flange]                         | 1 x 2 1/4 + 3 x 1  |     |     |     |     |     | 1 x 2 1/4 + 3 x 1                         |     |     |     |     |     |     |
| Power Input Conduit Opening(s) [inches]                                 | 2 @ 1/4  |     |     |     |     |     | 2 @ 1/4                                   |     |     |     |     |     |     |
| Condensate Drain Connection [NPT]                                       | 81 1/4   |     |     |     |     |     | 81 1/4                                    |     |     |     |     |     |     |
| Width [inches]  | 40 1/2   |     |     |     |     |     | 40 1/2                                    |     |     |     |     |     |     |
| Depth [inches]  | 66 7/8 A/C, 68 3/4 W/C   |     |     |     |     |     | 66 7/8 A/C, 68 3/4 W/C                    |     |     |     |     |     |     |
| Height [inches]   | 22 6/7   |     |     |     |     |     | 22 6/7                                    |     |     |     |     |     |     |
| Floor Space [sq. ft.]   | 2,535  |     |     |     |     |     | 2,601                                     |     |     |     |     |     |     |
| Weight (A/C) [lb]   | 2,535  |     |     |     |     |     | 2,601                                     |     |     |     |     |     |     |
| Weight (W/C) [lb]   | Weight may vary based on airend selected.  |     |     |     |     |     | Weight may vary based on airend selected. |     |     |     |     |     |     |
| <b>COMPRESSOR FLUID DATA</b>  |  |     |     |     |     |     |   |     |     |     |     |     |     |
| Fluid Capacity (A/C) [gal]  | 6.9  |     |     |     |     |     | 6.9                                       |     |     |     |     |     |     |
| Fluid Capacity (W/C) [gal]  | 5.9  |     |     |     |     |     | 5.9                                       |     |     |     |     |     |     |
| Flow Rate [gal/min]   | 14.5   |     |     |     |     |     | 14.5                                      |     |     |     |     |     |     |
| Typical Oil Consumption [fl. Oz./100 h]                                 | 6.29   |     |     |     |     |     | 7.16                                      |     |     |     |     |     |     |
| Standard Fluid Type   | Sigma S-460  |     |     |     |     |     | Sigma S-460                               |     |     |     |     |     |     |
| <b>MAINTENANCE PARTS</b>  |  |     |     |     |     |     |   |     |     |     |     |     |     |
| Air Inlet Filter  | 6.4139.0   |     |     |     |     |     | 6.4139.0                                  |     |     |     |     |     |     |
| Filter Mat (optional)   | 6.1943.0   |     |     |     |     |     | 6.1943.0                                  |     |     |     |     |     |     |
| Filter Mat for Control Cabinet  | 7.4519.00040 (4x)  |     |     |     |     |     | 7.4519.00040 (4x)                         |     |     |     |     |     |     |
| Fluid Filter  | 6.4493.0   |     |     |     |     |     | 6.4493.0                                  |     |     |     |     |     |     |
| Fluid Separator Kit   | 6.3569.0   |     |     |     |     |     | 6.3569.0                                  |     |     |     |     |     |     |
| Maintenance Kit for Optional 5-year warranty                            | ANAKBSD3SFCS   |     |     |     |     |     | ANAKBSD3SFCS                              |     |     |     |     |     |     |
| Maintenance Kit for Optional 5-year warranty, with food-grade lubricant | ANAKBSD3SFCF   |     |     |     |     |     | ANAKBSD3SFCF                              |     |     |     |     |     |     |
| <b>DRYER DATA - FOR T MODELS</b>  |  |     |     |     |     |     |   |     |     |     |     |     |     |
| Dryer Model   | ABT 83   |     |     |     |     |     | ABT 83                                    |     |     |     |     |     |     |
| Maximum Inlet Air Pressure (Compressed Air at Inlet to Dryer) [psig]    | 232  |     |     |     |     |     | 232                                       |     |     |     |     |     |     |
| Nominal Pressure Drop at Rated Flow [psid]                              | 1.5  |     |     |     |     |     | 1.5                                       |     |     |     |     |     |     |
| Rated Pressure Dewpoint [°F] at Standard Conditions                     | Reference conditions: 14.5 psia, 30% relative humidity and 68°F inlet air temperature. |     |     |     |     |     | 38  |     |     |     |     |     |     |
| Pressure Dewpoint per ISO 8573-1.                                       | Class 4 - 6 based on ambient conditions.   |     |     |     |     |     | Class 4 - 6 based on ambient conditions.  |     |     |     |     |     |     |
| <b>REFRIGERATION SYSTEM DATA - FOR T MODELS</b>                         |  |     |     |     |     |     |   |     |     |     |     |     |     |
| Compressor Type   | ZR22K3E-TFD  |     |     |     |     |     | ZR22K3E-TFD                               |     |     |     |     |     |     |
| BTU/Refrigeration ASHRAE  | 12,400   |     |     |     |     |     | 12,400                                    |     |     |     |     |     |     |
| Outlet Air Temperature (Nominal at Rated Conditions) [°F]               | Reference conditions: 14.5 psia, 30% relative humidity and 68°F inlet air temperature. |     |     |     |     |     | 73  |     |     |     |     |     |     |
| Refrigerant Type  | R-513A   |     |     |     |     |     | R-513A                                    |     |     |     |     |     |     |
| GWP (Global Warming Potential)  | 631  |     |     |     |     |     | 631                                       |     |     |     |     |     |     |
| CO2 equivalent [t]  | 0.7  |     |     |     |     |     | 0.7                                       |     |     |     |     |     |     |
| Refrigerant Charge [lb]   | 2.4  |     |     |     |     |     | 2.4                                       |     |     |     |     |     |     |
| Air Flow Across Condenser [CFM]   | 1,295  |     |     |     |     |     | 1,295                                     |     |     |     |     |     |     |

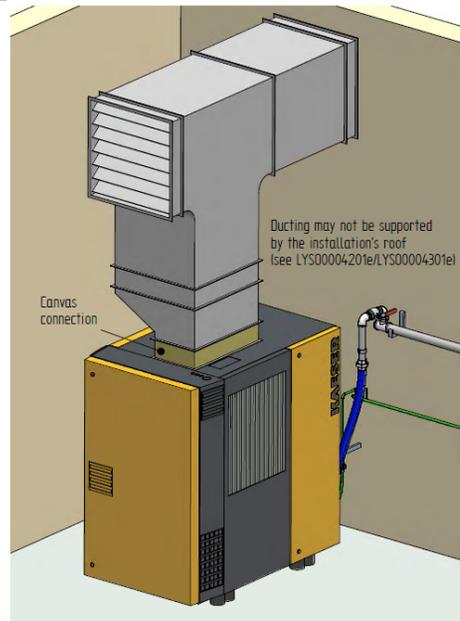
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|-----------------------|---------|-----|-----|-----|-----|-----|----------|-----|-----|-----|-----|-----|
|                       | 110     | 125 | 145 | 175 | 190 | 217 | 110      | 125 | 145 | 175 | 190 | 217 |
| Rated Pressure [psig] |         |     |     |     |     |     |          |     |     |     |     |     |

**SAMPLE SKETCHES**

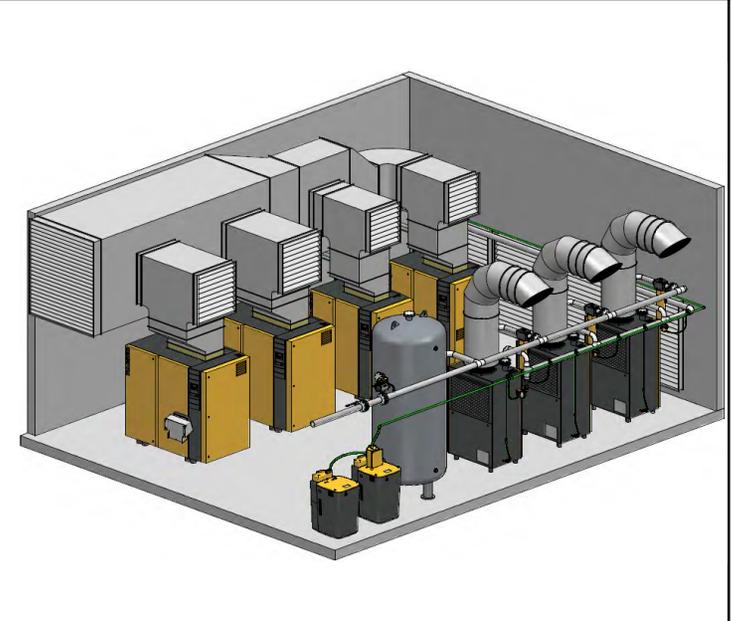
**Sample Installation Planning**  
**Examples of room ventilation and ductwork**  
 Please note the upsizing required for compressor exhaust ducts



2x BSD 60 T / 2x F83 KE



Duct / pipe connection BSD



**Example designs only, not for construction purposes.**