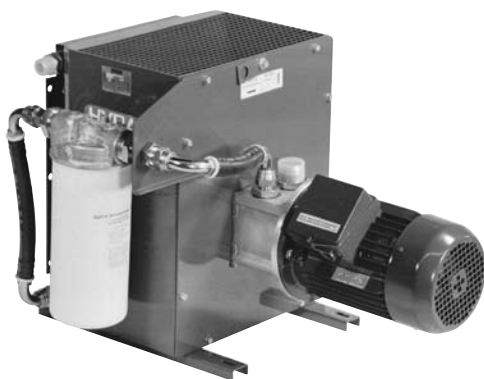
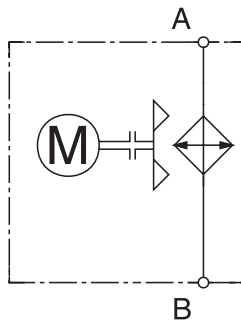


SC Series Air Cooled Oil Coolers

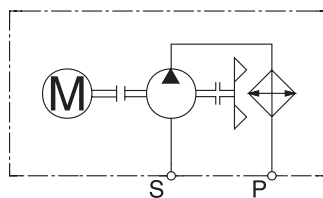


Hydraulic Symbol

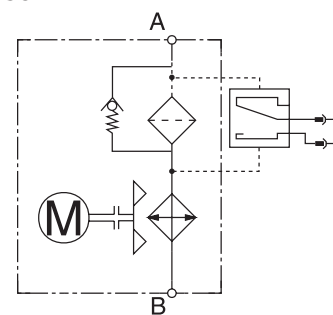
SC



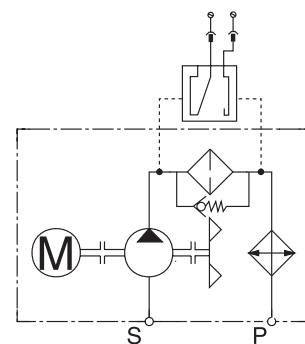
SCA



SCF



SCAF



Description

The SC Series cooler design uses a large radial blower wheel assembly which spins slowly to draw air through an oversized cooler. This combination offers excellent cooling capacity with low noise.

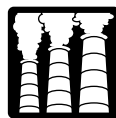
Features

- High efficient plate and fin style heat exchangers
- Externally mounted heat exchangers for easy maintenance and cleaning
- Modular pump and filter options for a plug and play fluid conditioning system
- Available with HYDAC MF and LPF series filters
- Accessories Include: Thermostats (*adjustable and fixed*), Integrated Thermostatic Bypass Valves, and Bypass Valves
- Down to 64 dBa noise level
- Up to 16 HP cooling capacity
- Warm air is directed up and away from work area
- Packaged systems with pump flows ranging from 3.1 gpm to 18.5 gpm
- Maximum flows (*w/o pump*)
- up to 42 gpm

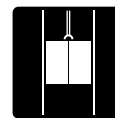
Applications



Gearboxes



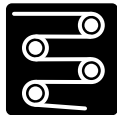
Industrial



Elevators



Power Generation



Pulp & Paper



Railways



Shipbuilding



Steel / Heavy Industry

Model Code

SC 1L 1.5 A 10 MF95 3 B TR1 XX X

Model _____

- SC = Basic Cooler
- SCF = Cooler with filter
- SCA = Cooler with circulator pump
- SCAF = Cooler with circulator pump and filter

Size (See the heat transfer table found on page 29 to determine the proper size.) _____

0S, 1L, 1S, 2L, 2S, 3L, 3S, 4L, 4S
 Note: L = 1200 RPM, S = 1800 RPM

Modification Number (latest version always supplied) _____

Motor _____

- A = 1 phase 115/230 volt (only available on SC/SCA-0 and 1 models)
- B = 3 phase 230/460 volt
- C = 3 phase 575 volt

Pumps _____

- (omit) = No Pump for SC and SCF Models
- 10 = 10 ccm/rev, L = 3.1 gpm, S = 4.75gpm (sizes 0S, 1L, 1S only)
- 28 = 28 ccm/rev, L = 8.4, S = 12.75 (sizes 2L, 2S, 3L, 3S, 4L, 4S only)
- 40 = 40 ccm/rev, L = 12 (sizes 2L, 3L, 4L only)

Filter Type (not applicable for SC and SCA models) _____

- (omit) = No filter / SC and SCA models
- MF95 = Spin-on / 25 gpm
- MF190 = Spin-on / 30 gpm
- MF195 = Spin-on / 60 gpm
- LPF160 = Cartridge / 42 gpm
- LPF240 = Cartridge / 63 gpm

Micron Rating _____

- (omit) = No filter / SC and SCA models
- 3 = 3 microns, Absolute
- 5 = 5 microns, Absolute
- 10 = 10 microns, Absolute
- 20 = 20 microns, Absolute

Filter Indicator _____

- (omit) = No filter
- B = Visual
- C = Electrical (AC/DC) (LPF filters only)
- D24 = Visual (lamp) and Electrical (switch)
- D115 = Visual (lamp) and Electrical (switch)
- D230 = Visual (lamp) and Electrical (switch)

numbers indicate supply voltage for light
(LPF filters only)

Accessories _____

- (omit) = None
- TR1 = Reservoir Thermostat, adjustable 32° to 200°F
- AITR = Inline Thermostat, adjustable 32° to 200°F
- TS-120 = Inline Thermostat, fixed 120°F
- TS-140 = Inline Thermostat, fixed 140°F
- TS-160 = Inline Thermostat, fixed 160°F
- IBT = Thermostatic bypass valve
- IBP = Inegrated bypass valve

only available with
SC & SCF Units

Opening Temperature (IBT only) _____

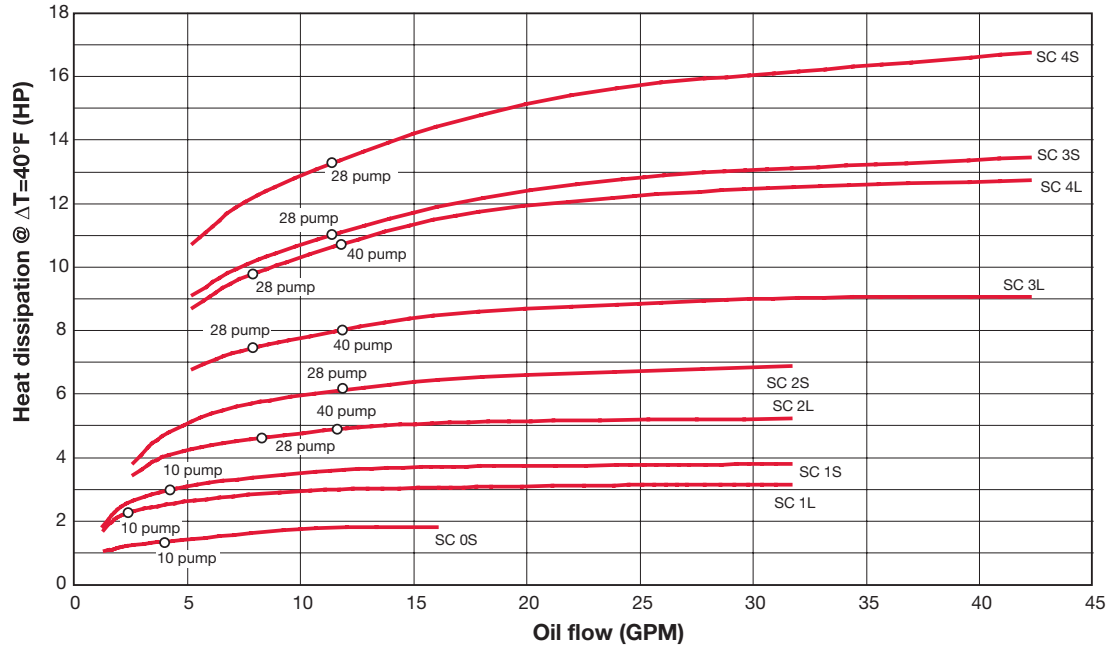
| | Opening Temp. | Closing Temp. |
|----|----------------|---------------|
| 45 | = 113°F (45°C) | 131°F (55°C) |
| 50 | = 130°F (55°C) | 150°F (65°C) |
| 60 | = 140°F (60°C) | 158°F (70°C) |

Opening Pressure Drop (IBT & IBP only) _____

| | |
|---|------------------|
| 2 | = 2 bar (29 psi) |
| 3 | = 3 bar (45 psi) |

SC Series Cooling Capacities

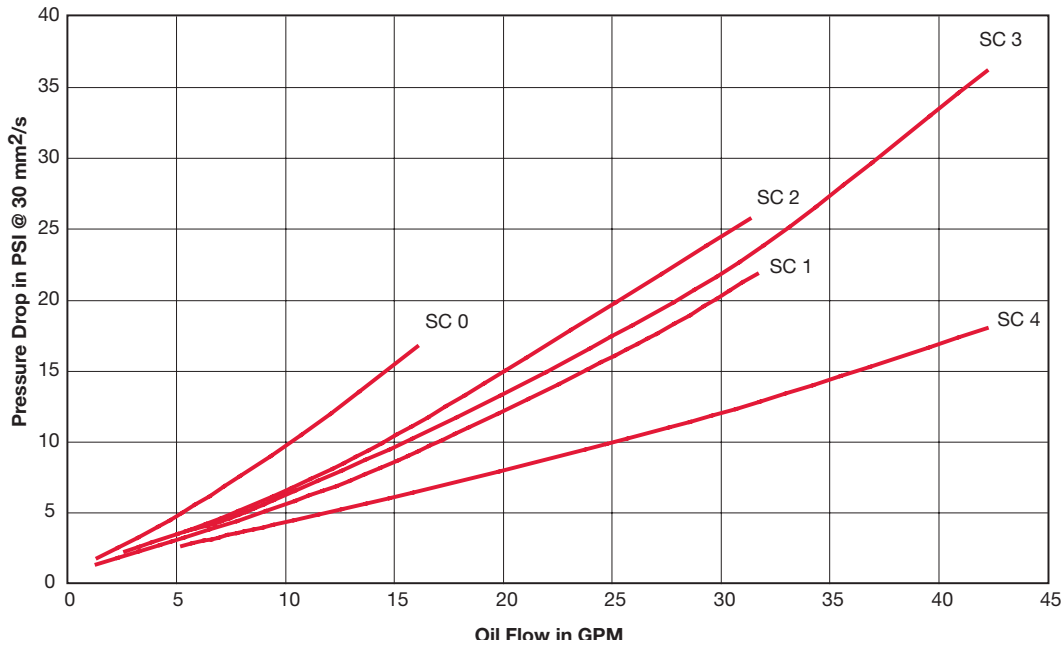
Tolerance: +/- 5%



Pressure Drops

Pressure differential Δp depending on flow rate Q and the viscosity of the oil.
Graph uses oil viscosity of 30mm²/s.

Tolerance: +/- 5%



*Pressure Drop Curves above using fluid with a viscosity of 30 mm²/s.
For other viscosities the result must be multiplied by the K Factors below.

| | | | | | | | | | |
|--------------------------------|-----|------|------|-----|-----|------|-----|-----|-----|
| Viscosity (SSU) | 46 | 70 | 102 | 150 | 213 | 250 | 315 | 464 | 695 |
| Viscosity (mm ² /s) | 10 | 15 | 22 | 32 | 46 | 54 | 68 | 100 | 150 |
| K Factor | 0.5 | 0.65 | 0.77 | 1 | 1.3 | 1.52 | 1.9 | 2.8 | 5.3 |

Engineering Data

| | | |
|--------------------------------|---------------------------------------|--|
| Construction | Housing | Welded steel housing, steel filter bracket, steel legs, steel blower wheel |
| | Heat Exchanger | Aluminum |
| | Motors | TEFC, IEC Frame B5 Flange |
| | Pump | Aluminum housing, steel inner pump ring, steel rotor, and steel vanes |
| Mounting Position | Horizontal, motor shaft | |
| Maximum Pressure | W/o Pump | 230 psi (16 BAR) Dynamic 290 psi (20 BAR) Static |
| | With Pump | 90 psi (6 BAR)* |
| Rated Suction Pressure | 11.8" Hg (-.4 BAR) to 44 psi (3 BAR) | |
| Fluids | Mineral oil to DIN 51524 Part 1 and 2 | |
| Contamination Limit | Permissible contamination < NAS 12 | |
| Max Viscosity | W/o Pump | 2000 cst |
| | With Pump | 180 cst |
| Ambient Temperature | 50°F (10°C) to 104°F (40°C) | |
| Maximum Oil Temperature | W/o Pump | 266°F (130°C) |
| | With Pump | 175°F (80°C) |
| Air Flow Direction | Pulled across Heat Exchanger | |

*Note: SCA/SCAF units do not include relief valve. Pressure higher than 90 psi (measured at pump outlet) will result in motor overload conditions.

Specifications

| Model | Description | Fluid Specifications | | | Motor Specifications | | | Weight lbs. |
|-----------------|-------------|--------------------------------|--------------------------------------|--------------|----------------------|------|------|-------------|
| | | Max. Oil Flow Without Pump gpm | Pump Displacement. Per Pump Code gpm | | Noise Level dBa*1 | kW | RPM | |
| SC 0, SCF 0 | Fan | 16 | - | - | 68 | 0.21 | 1800 | 31 |
| SCA 0, SCAF 0 | Fan/Pump | - | Code 10 - 4.75 | - | 70 | 0.43 | 1800 | 51 |
| SC 1L, SCF 1L | Fan | 32 | - | - | 64 | 0.30 | 1200 | 47 |
| SCA 1L, SCAF 1L | Fan/Pump | - | Code 10 - 3.1 | - | 68 | 0.43 | 1200 | 69 |
| SC 1S, SCF 1S | Fan | 32 | - | - | 69 | 0.30 | 1800 | 47 |
| SCA 1S, SCAF 1S | Fan/Pump | - | Code 10 - 4.75 | - | 71 | 0.43 | 1800 | 69 |
| SC 2L, SCF 2L | Fan | 32 | - | - | 66 | 0.43 | 1200 | 71 |
| SCA 2L, SCAF 2L | Fan/Pump | - | Code 28 - 8.45 | Code 40 -12 | 68 | 1.30 | 1200 | 99 |
| SC 2S, SCF 2S | Fan | 32 | - | - | 76 | 0.70 | 1800 | 71 |
| SCA 2S, SCAF 2S | Fan/Pump | - | Code 28 - 12.75 | - | 77 | 1.80 | 1800 | 99 |
| SC 3L, SCF 3L | Fan | 42 | - | - | 73 | 0.70 | 1200 | 104 |
| SCA 3L, SCAF 3L | Fan/Pump | - | Code 28 - 8.45 | Code 40 - 12 | 73 | 1.30 | 1200 | 148 |
| SC 3S, SCF 3S | Fan | 42 | - | - | 82 | 0.91 | 1800 | 104 |
| SCA 3S, SCAF 3S | Fan/Pump | - | Code 28 - 12.75 | - | 84 | 2.20 | 1800 | 148 |
| SC 4L, SCF 4L | Fan | 42 | - | - | 73 | 0.70 | 1200 | 108 |
| SCA 4L, SCAF 4L | Fan/Pump | - | Code 28 - 8.45 | Code 40 - 12 | 73 | 1.30 | 1200 | 152 |
| SC 4S, SCF 4S | Fan | 42 | - | - | 82 | 0.91 | 1800 | 108 |
| SCA 4S, SCAF 4S | Fan/Pump | - | Code 28 - 12.75 | - | 84 | 2.20 | 1800 | 152 |

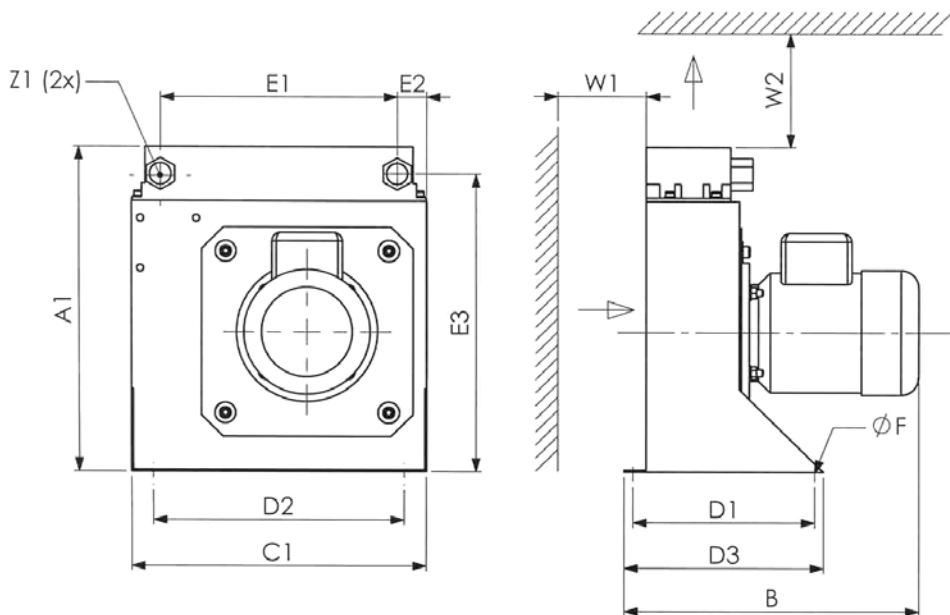
*The noise levels are only a guide as acoustic properties depend on the characteristics of the room, connections, viscosity and resonance.

1) 3 Phase Motor

SC Series

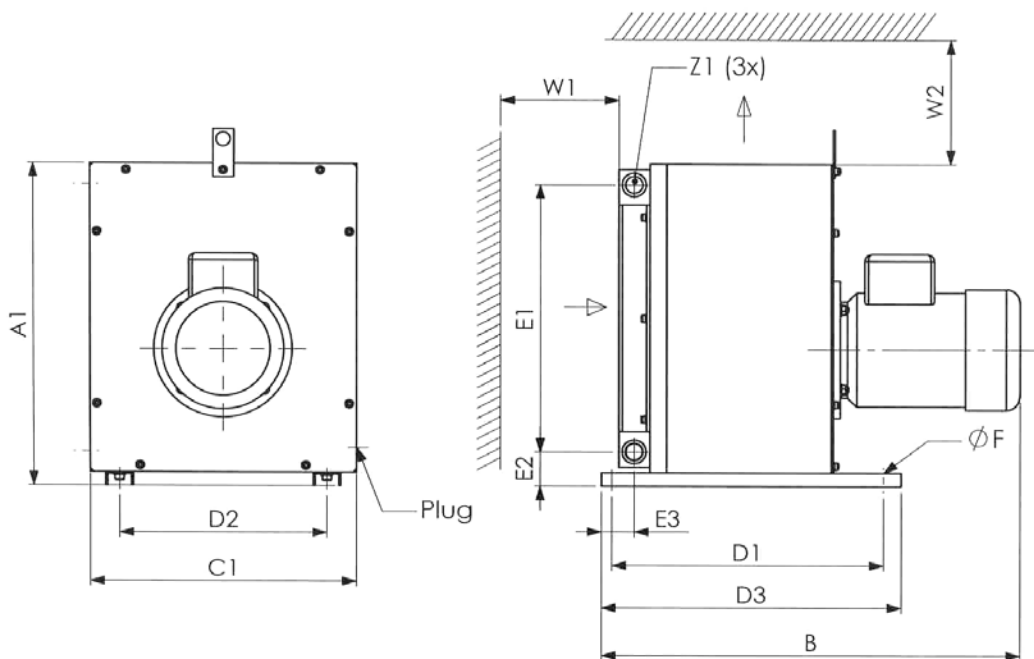
Dimensions

Size 0 S



| Model | A1 | B | C1 | D1 | D2 | D3 | E1 | E2 | E3 | F | W1 | W2 | Z1 |
|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|----------------|
| SC 0S | 14.65 | 12.89 | 13.19 | 8.07 | 11.22 | 8.86 | 10.59 | 1.30 | 13.43 | 0.35 | 31.50 | 7.87 | 1 1/16"-12 UNF |

Sizes 1 - 4 L, S



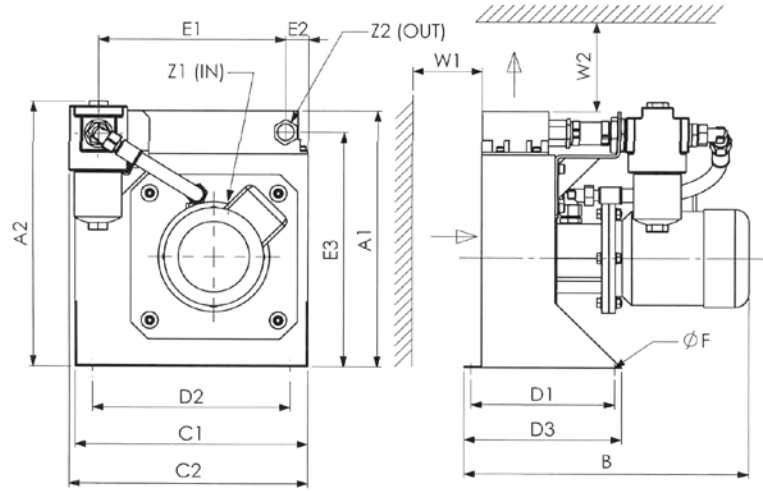
| Model | A1 | B | C1 | D1 | D2 | D3 | E1 | E2 | E3 | F | W1 | W2 | Z1 |
|----------|-------|-------|-------|-------|-------|-------|-------|------|------|------|-------|-------|----------------|
| SC 1L, S | 14.76 | 20.47 | 13.58 | 12.60 | 11.22 | 14.17 | 11.38 | 1.99 | 1.87 | 0.35 | 39.37 | 11.81 | 1 1/16"-12 UNF |
| SC 2L, S | 18.50 | 23.70 | 15.16 | 15.35 | 11.81 | 16.93 | 15.31 | 1.99 | 1.87 | 0.35 | 59.06 | 15.75 | 1 1/16"-12 UNF |
| SC 3L, S | 20.87 | 27.68 | 17.72 | 18.50 | 14.17 | 19.69 | 17.28 | 2.19 | 2.46 | 0.35 | 78.74 | 19.69 | 1 1/16"-12 UNF |
| SC 4L, S | 20.87 | 27.68 | 17.72 | 18.50 | 14.17 | 19.69 | 17.28 | 2.19 | 2.11 | 0.35 | 78.74 | 19.69 | 15/16"-12 UNF |

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches.

SCA / SCAF Series

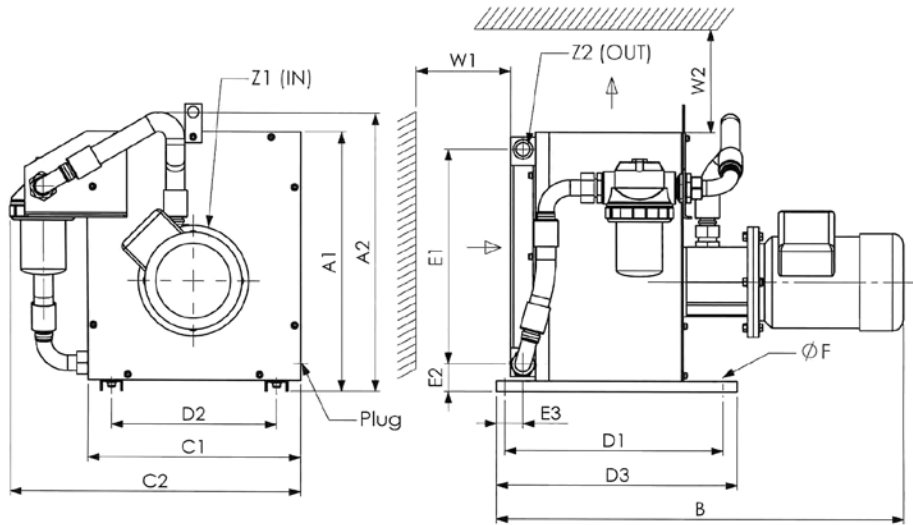
Dimensions

Sizes 0 S



| Model | A1 | A2 | B | C1 | C2 | D1 | D2 | D3 | E1 | E2 | E3 | F | W1 | W2 | Z1 | Z2 |
|---------|-------|-------|-------|-------|-------|------|-------|------|------|------|-------|------|------|-------|------------------|----------------|
| SCA 0S | 14.65 | 0.00 | 17.05 | 13.19 | 0.00 | 8.07 | 11.22 | 8.86 | 9.53 | 1.67 | 13.27 | 0.35 | 7.87 | 31.50 | 3/4"-12 JIC-8(M) | 1 1/16"-12 UNF |
| SCAF 0S | 14.65 | 15.20 | 16.06 | 13.19 | 13.54 | 8.07 | 11.22 | 8.86 | 9.53 | 1.67 | 13.27 | 0.35 | 7.87 | 31.50 | 3/4"-12 JIC-8(M) | 1 1/16"-12 UNF |

Sizes 1 - 4 L, S



| Model | A1 | A2 | B | C1 | C2 | D1 | D2 | D3 | E1 | E2 | E3 | F | W1 | W2 | Z1 | Z2 |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|-------|-------|----------------------|----------------|
| SCA 1L, S | 14.76 | - | 23.64 | 13.58 | - | 12.60 | 11.22 | 14.17 | 11.38 | 1.99 | 1.99 | 0.35 | 11.81 | 39.37 | 1 1/16"-12 JIC-12(M) | 1 1/16"-12 UNF |
| SCAF 1L, S | 14.76 | 15.35 | 23.64 | 13.58 | 19.13 | 12.60 | 11.22 | 14.17 | 11.38 | 1.99 | 1.99 | 0.35 | 11.81 | 39.37 | 1 1/16"-12 JIC-12(M) | 1 1/16"-12 UNF |
| SCA 2L, S | 18.50 | - | 28.66 | 15.16 | - | 15.35 | 11.81 | 16.93 | 15.31 | 1.99 | 1.99 | 0.35 | 15.75 | 59.06 | 1 5/16"-12 JIC-16(M) | 1 1/16"-12 UNF |
| SCAF 2L, S | 18.50 | 19.69 | 28.66 | 15.16 | 20.71 | 15.35 | 11.81 | 16.93 | 15.31 | 1.99 | 1.99 | 0.35 | 15.75 | 59.06 | 1 5/16"-12 JIC-16(M) | 1 1/16"-12 UNF |
| SCA 3L, S | 20.87 | - | 32.64 | 17.72 | - | 18.50 | 14.17 | 19.69 | 17.28 | 2.19 | 1.99 | 0.35 | 19.69 | 78.74 | 1 5/8"-12 JIC-20(M) | 1 1/16"-12 UNF |
| SCAF 3L, S | 20.87 | 22.05 | 32.64 | 17.72 | 22.93 | 18.50 | 14.17 | 19.69 | 17.28 | 2.19 | 1.99 | 0.35 | 19.69 | 78.74 | 1 5/8"-12 JIC-20(M) | 1 1/16"-12 UNF |
| SCA 4L, S | 20.87 | - | 32.64 | 17.72 | - | 18.50 | 14.17 | 19.69 | 17.28 | 2.19 | 1.99 | 0.35 | 19.69 | 78.74 | 1 5/8"-12 JIC-20(M) | 1 5/16"-12 UNF |
| SCAF 4L, S | 20.87 | 22.05 | 32.64 | 17.72 | 22.93 | 18.50 | 14.17 | 19.69 | 17.28 | 2.19 | 1.99 | 0.35 | 19.69 | 78.74 | 1 5/8"-12 JIC-20(M) | 1 5/16"-12 UNF |

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches.