

# DESIGN ENVELOPE 4280 END SUCTION

## 2×1.5×5 (50-125) | 1505-001.5 | SUBMITTAL

File No: 103.5752  
 Date: NOVEMBER 08, 2021  
 Supersedes: NEW  
 Date: NEW

Job: \_\_\_\_\_ Representative: \_\_\_\_\_  
 \_\_\_\_\_ Order No: \_\_\_\_\_ Date: \_\_\_\_\_  
 Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_  
 Capacity: \_\_\_\_\_ USgpm (L/s) Head: \_\_\_\_\_ ft (m)  
 Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_  
 Temperature: \_\_\_\_\_ °F (°C) Specific gravity: \_\_\_\_\_  
 Suction: 2" (50 mm) Discharge: 1.5" (40 mm)

**UL STD 778 & CSA STD C22.2 NO.108 certified**

Test report is supplied with each pump

### MATERIALS OF CONSTRUCTION

- ANSI 125**  
 CONSTRUCTION: LPDESF  
 E-coated ductile iron A536 Gr 65-45-12, stainless fitted
- ANSI 250**  
 CONSTRUCTION: HPDESF  
 E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

- ANSI 125**  
 175 psig at 150°F (12 bar at 65°C)  
 100 psig at 300°F (7 bar at 150°C)
- ANSI 250**  
 375 psig at 150°F (26 bar at 65°C)  
 260 psig at 300°F (21 bar at 150°C)

### MECHANICAL SEAL DESIGN DATA

Seal type: 2A  
 Stationary seat: Silicone carbide  
 Secondary seal: EPDM  
 Spring: Stainless steel  
 Rotating hardware: Stainless steel

### DEPM MOTOR AND CONTROL DATA

**HP:** 1.5  
**RPM:** 3000  
**Motor enclosure:** TEFC  
**Volts /Phase:**  200-240V/1ph  380-480V/3ph  
 For 200-240V/3ph or 575V/3ph,  
 see File #:103.5705  
**Efficiency:** IE5  
**Protocol (standard):**  BACnet™ MS/TP  BACnet™ TCP/IP  
 Modbus RTU  
**Control enclosure:**  Indoor - UL TYPE 12  
**Fused disconnect switch:** See File 100.8131  
**EMI/RFI control:** Integrated filter designed to meet  
 EN61800-3  
**Harmonic suppression:** Equivalent: 5% AC line reactor -  
 Supporting IEEE 519-1992 requirements\*\*  
**Cooling:** Fan-cooled, surface cooling  
**Ambient temperature:** -10°C to +40°C up to 1000 meters above  
 sea level (+14°F to +104°F, 3300 ft)  
**Analog I/O:** Two inputs, one output. Output can  
 be configured for voltage or current  
**Digital I/O:** Two inputs, two outputs. Outputs can  
 be configured as inputs  
**Relay outputs:** Two programmable  
**Communication port:** 1-RS485

\*\* If supplied with the system electrical details, Armstrong will run a computer simulation of the system wide harmonics. If system harmonic levels are exceeded Armstrong can also recommend additional harmonic mitigation and the costs for such mitigation.

### FLOW READOUT ACCURACY

The Design Envelope model selected will provide flow reading on the controls local keypad & digitally for the BMS. The model readout will be factory tested to ensure ±5% accuracy.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
Temperature	up to 200°F / 93°C	over 200°F / 93°C	up to 200°F / 93°C	over 200°F / 93°C	up to 200°F / 93°C	over 200°F / 93°C
Rotating face	Silicone carbide		Resin bonded carbon	Antimony loaded carbon	Resin bonded carbon	
Seat elastomer	EPDM (L-cup)	EPDM (O-ring)	EPDM (L-cup)	EPDM (O-ring)	EPDM (L-cup)	EPDM (O-ring)
Material code	SCsc L EPSS 2A	SCsc O EPSS 2A	C-sc L EPSS 2A	ACsc O EPSS 2A	C-sc L EPSS 2A	C-sc O EPSS 2A

## OPTIONS

### SENSORLESS BUNDLE (STANDARD)



Operation of pump without a remote sensor. Includes:

- Sensorless control
- Flow readout
- Constant flow
- Constant pressure

Minimum system pressure to be maintained \_\_\_\_\_ ft (m)

\* If minimum maintained system pressure is not known: Default to 40% of design head

### PARALLEL SENSORLESS



Operation of multiple pumps without a remote sensor

Minimum system pressure to be maintained \_\_\_\_\_ ft (m)

\* If minimum maintained system pressure is not known: Default to 40% of design head

### ENERGY PERFORMANCE BUNDLE



Provides energy savings on oversized systems by adjusting pump parameters to on-site conditions. Includes:

- **Auto-flow balancing** - Automatically determines control curve between design flow at on-site system head, and minimum (zero-head) flow for energy savings
- **Maximum flow control** - Limits flow rate to pre-set maximum for potential energy savings

Maximum flow rate \_\_\_\_\_ gpm (L/s)

\*Only available if sensorless bundle is enabled

\*Available in single pump operation only

### PROTECTION BUNDLE



Protects other flow sensitive equipment by setting limits of pump operation. Includes:

- **Minimum flow control** - Attempts to maintain flow rate to pre-set minimum to protect equipment in system
- **Bypass valve control** - Actuates a bypass valve to protect flow sensitive equipment if pre-set minimum flow rate is reached

Minimum flow rate \_\_\_\_\_ gpm (L/s)

\*Only available if sensorless bundle is enabled

### DUAL SEASON SETUP



Pre-sets heating and cooling parameters for pumps in 2-pipe systems

#### Cooling

Duty point \_\_\_\_\_ gpm (L/s) at \_\_\_\_\_ ft (m)

Minimum system pressure to be maintained \_\_\_\_\_ ft (m)

#### Heating

Duty point \_\_\_\_\_ gpm (L/s) at \_\_\_\_\_ ft (m)

Minimum system pressure to be maintained \_\_\_\_\_ ft (m)

\*Available in single pump operation only

## OPTIONAL SERVICES

### ON-SITE PUMP COMMISSIONING



### PUMP MANAGER

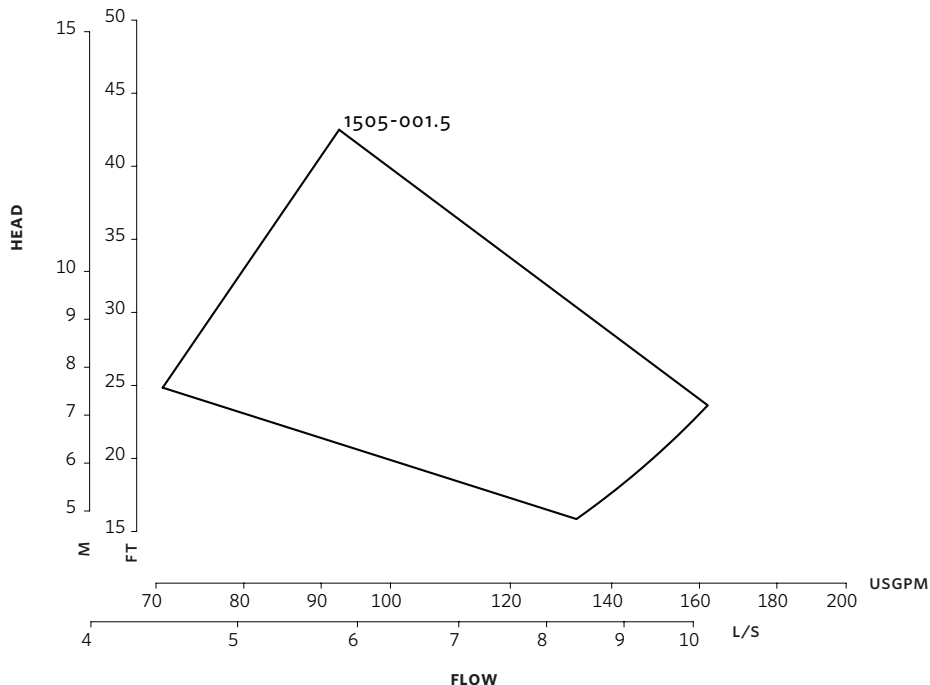


Online service for sustained pump performance and enhanced reliability.

Available in 3 or 5 year terms

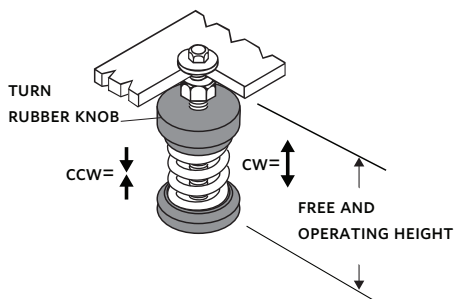
\* Requires an internet connection to be provided by building

\* Includes an extended warranty for parts and labour (wearable parts excluded)

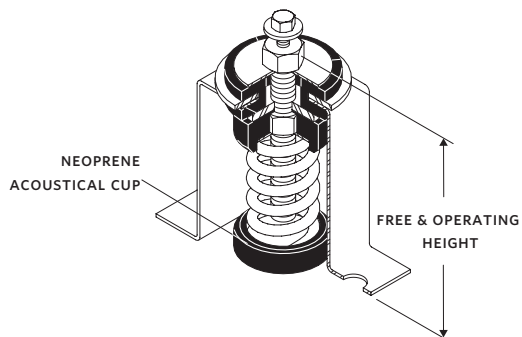


Performance curves are for reference only.  
Confirm current performance data with Armstrong ADEPT Quote or ADEPT Select selection software.

**STANDARD**



**SEISMIC MOUNT OPTION**



**NOTE:**  
All springs have additional travel to solid equal to 50% of the rated deflection.

**DIMENSION DATA**

**STANDARD**

<b>Size:</b>	2×1.5×5
<b>HP:</b>	1.5
<b>RPM:</b>	3000
<b>Frame:</b>	71
<b>HA:</b>	10.32 (262)
<b>HD:</b>	8.75 (222)
<b>HI:</b>	14.53 (369)
<b>HV:</b>	5.97 (152)
<b>X:</b>	7.00 (178)
<b>Y:</b>	4.00 (102)
<b>Free &amp; operating height:</b>	3.75 (95)
<b>Weight:</b>	68 (31.0)

**SPRING DATA**

<b>Rated Capacity per spring lbs (kgs):</b>	54 (25.0)
<b>Rated Deflection inch (mm):</b>	1.20 (30)
<b>Mount Constant lbs/in (kg/mm):</b>	45 (0.8)

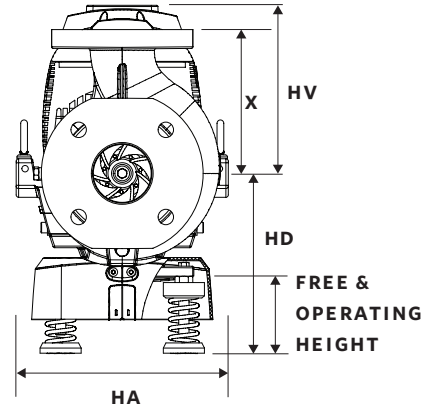
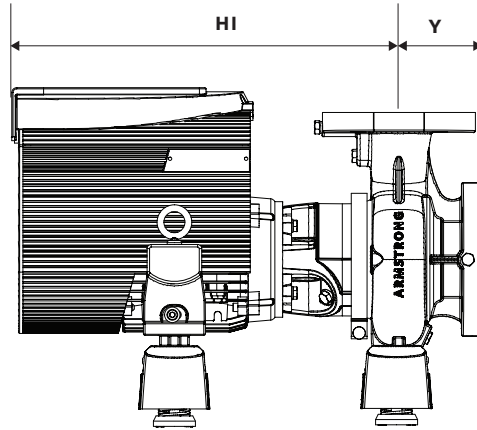
**SEISMIC MOUNT OPTION**

<b>ZE:</b>	5.75 (146)
<b>F:</b>	4.00 (102)
<b>G:</b>	6.00 (152)
<b>H:</b>	0.50 (12)
<b>HA:</b>	10.32 (262)
<b>HD:</b>	10.00 (254)
<b>N:</b>	4.96 (126)
<b>Free &amp; operating height:</b>	5.00 (127)
<b>Max. horizontal static G rating:</b>	6.7

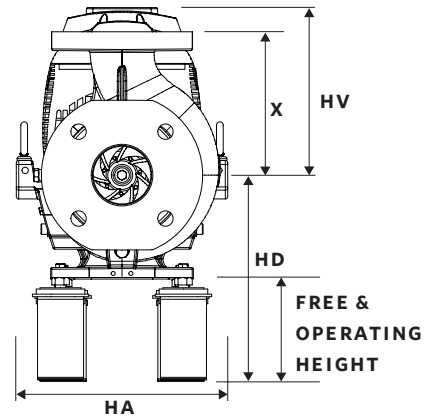
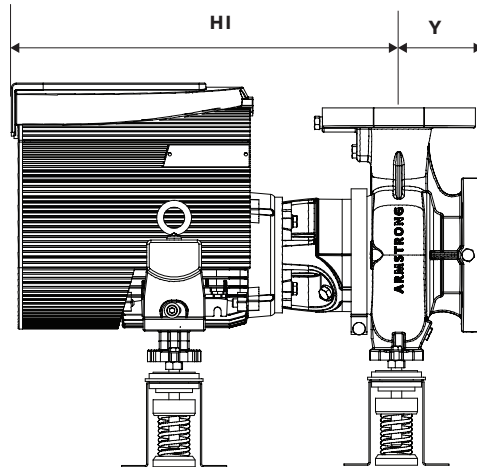
Dimensions - inch (mm)  
Weight - lbs (kg)

- Tolerance of ±0.125" (±3 mm) should be used
- For exact installation, data please write factory for certified dimensions

STANDARD



SEISMIC MOUNT OPTION



TORONTO  
+1 416 755 2291

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