

## DESIGN ENVELOPE 4280 END SUCTION | 40-80 (1.5x1.25x3) | 3280-00.75 | SUBMITTAL

File No: 103.57501EC  
Date: MARCH 14, 2023  
Supersedes: 103.57501EC  
Date: NOVEMBER 08, 2021

Job: \_\_\_\_\_ Representative: \_\_\_\_\_

Order No: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_  
Capacity: \_\_\_\_\_ L/s (USgpm) Head: \_\_\_\_\_ m (ft)  
Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_  
Temperature: \_\_\_\_\_ °C (°F) Specific gravity: \_\_\_\_\_  
Suction: 40 mm (1.5") Discharge: 30 mm (1.25")  
MEI ≥ 0.70

### MATERIALS OF CONSTRUCTION

- PN 16**  
CONSTRUCTION: LPDES F  
E-coated ductile iron A536 Gr 65-45-12, stainless fitted
- PN 25**  
CONSTRUCTION: HPDES F  
E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

- PN 16**  
16 bar at 49°C (232 psig at 120°F)  
7 bar at 150°C (100 psig at 300°F)
- PN 25**  
25 bar at 65°C (362 psig at 149°F)  
21 bar at 150°C (304 psig at 300°F)

### FLOW READOUT ACCURACY

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

### 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

**kW:** 0.75  
**RPM:** 3600  
**Motor enclosure:** TEFC  
**Volts /Phase:**  200-240V/1ph  380-480V/3ph  
For 200-240V/3ph or 575V/3ph, see File #:103.5701IEC  
**Efficiency:** IE5  
**Protocol (standard):**  BACnet™ MS/TP  
 BACnet™ TCP/IP  
 Modbus RTU  
**Control enclosure:**  Indoor - IP 55  
**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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
Temperature	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F
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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm) at \_\_\_\_\_ m (ft)

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

##### Heating

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

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

\*Available in single pump operation only

### OPTIONAL SERVICES

#### ON-SITE PUMP COMMISSIONING



#### PUMP MANAGER

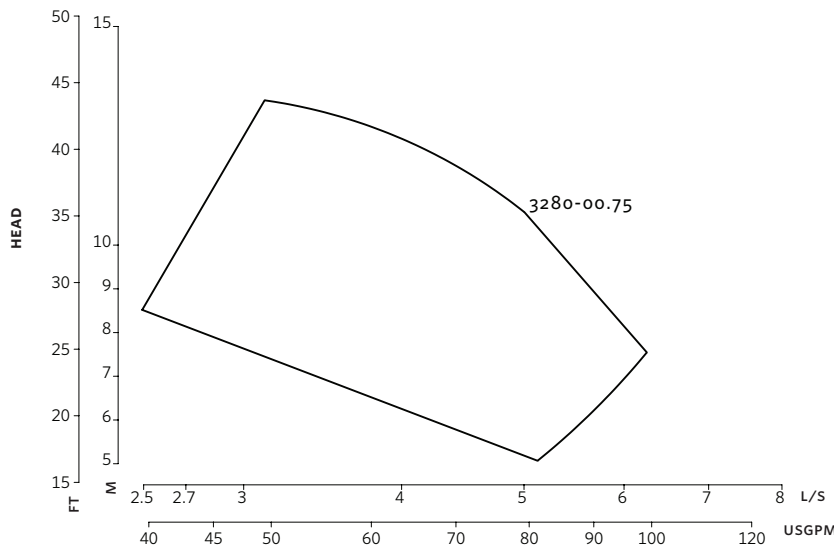


Online service for sustained pump performance and enhanced reliability.

Available in 3 or 5 year terms

\* Requires an internet connection to be provided by building

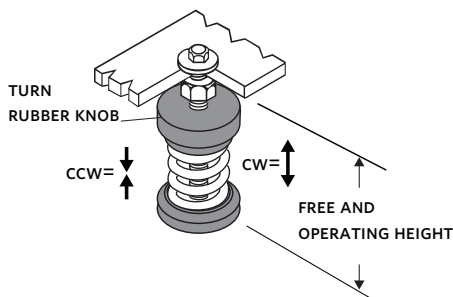
\* Includes an extended warranty for parts and labour (wearable parts excluded)



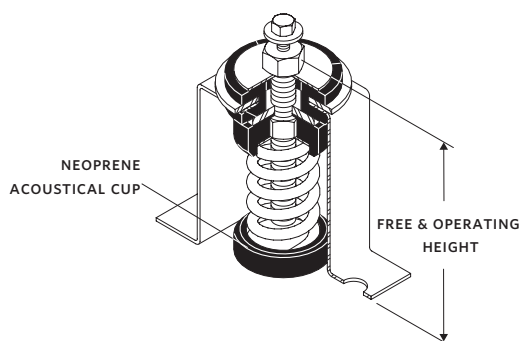
Performance curves are for reference only.

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>	1.5×1.25×3
<b>κW:</b>	0.75
<b>RPM:</b>	3600
<b>Frame:</b>	71
<b>HA:</b>	294 (11.58)
<b>HD:</b>	190 (7.50)
<b>HI:</b>	343 (13.50)
<b>HV:</b>	160 (6.31)
<b>X:</b>	115 (4.53)
<b>Y:</b>	97 (3.81)
<b>Free &amp; operating height:</b>	95 (3.75)
<b>Weight:</b>	30.0 (66)

**SPRING DATA**

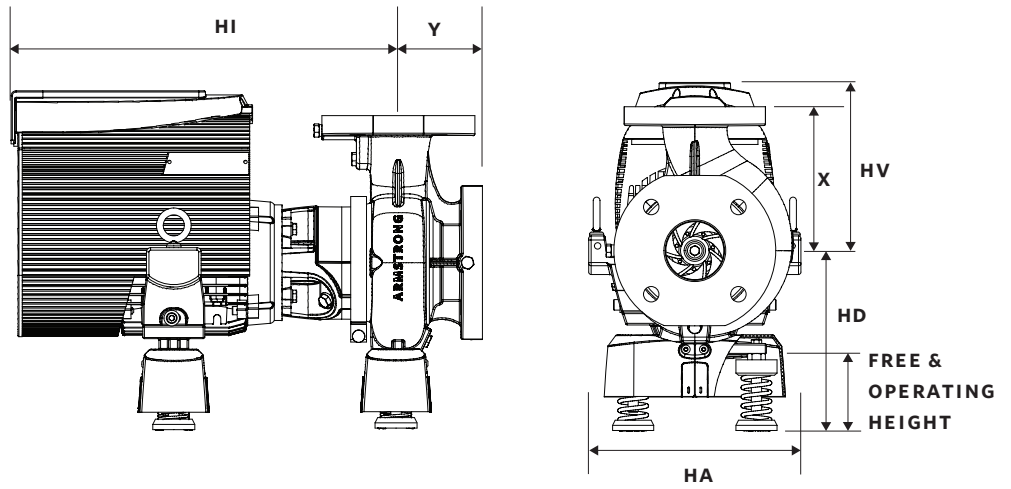
<b>Rated Capacity per spring</b>	25.0 (54)
<b>Rated Deflection</b>	30 (1.20)
<b>Mount Constant</b>	0.8 (45)

**SEISMIC MOUNT OPTION**

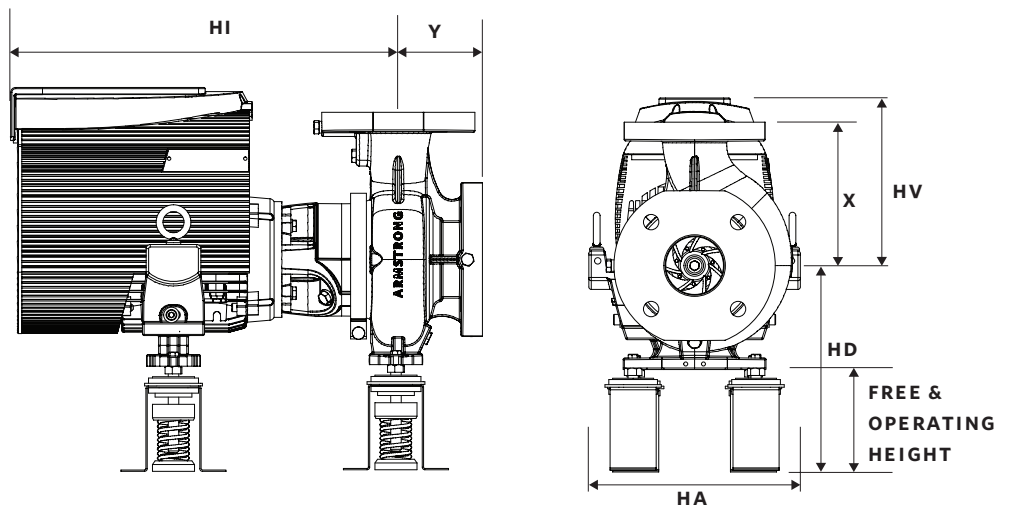
<b>2E:</b>	16 (8.50)
<b>F:</b>	102 (4.00)
<b>G:</b>	114 (4.50)
<b>H:</b>	12 (0.50)
<b>HA:</b>	273 (10.75)
<b>HD:</b>	222 (8.75)
<b>N:</b>	98 (3.85)
<b>Free &amp; operating height:</b>	127 (5.00)
<b>Max. horizontal static G rating:</b>	6.7

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

**STANDARD**



**SEISMIC MOUNT OPTION**



TORONTO  
+1 416 755 2291

BUFFALO  
+1 716 693 8813

DROITWICH SPA  
+44 121 550 5333

MANCHESTER  
+44 161 223 2223

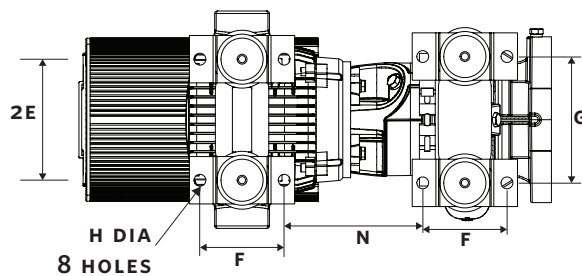
BANGALORE  
+91 80 4906 3555

SHANGHAI  
+86 21 5237 0909

BEIJING  
+86 21 5237 0909

SÃO PAULO  
+55 11 4785 1330

DUBAI  
+971 4 887 6775



JIMBOLIA  
+40 256 360 030

## DESIGN ENVELOPE 4280 END SUCTION | 40-80 (1.5x1.25x3) | 3280-001.1 | SUBMITTAL

File No: 103.57511EC  
Date: MARCH 14, 2023  
Supersedes: 103.57511EC  
Date: NOVEMBER 08, 2021

Job: \_\_\_\_\_ Representative: \_\_\_\_\_

Order No: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_  
Capacity: \_\_\_\_\_ L/s (USgpm) Head: \_\_\_\_\_ m (ft)  
Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_  
Temperature: \_\_\_\_\_ °C (°F) Specific gravity: \_\_\_\_\_  
Suction: 40 mm (1.5") Discharge: 30 mm (1.25")  
MEI ≥ 0.70

### MATERIALS OF CONSTRUCTION

- PN 16**  
CONSTRUCTION: LPDES F  
E-coated ductile iron A536 Gr 65-45-12, stainless fitted
- PN 25**  
CONSTRUCTION: HPDES F  
E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

- PN 16**  
16 bar at 49°C (232 psig at 120°F)  
7 bar at 150°C (100 psig at 300°F)
- PN 25**  
25 bar at 65°C (362 psig at 149°F)  
21 bar at 150°C (304 psig at 300°F)

### FLOW READOUT ACCURACY

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

### 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

**kW:** 1.1  
**RPM:** 4500  
**Motor enclosure:** TEFC  
**Volts /Phase:**  200-240V/1ph  380-480V/3ph  
For 200-240V/3ph or 575V/3ph, see File #:103.57031EC  
**Efficiency:** IE5  
**Protocol (standard):**  BACnet™ MS/TP  
 BACnet™ TCP/IP  
 Modbus RTU  
**Control enclosure:**  Indoor - IP 55  
**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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
Temperature	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F
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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm) at \_\_\_\_\_ m (ft)

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

#### Heating

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

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

\*Available in single pump operation only

## OPTIONAL SERVICES

### ON-SITE PUMP COMMISSIONING



### PUMP MANAGER

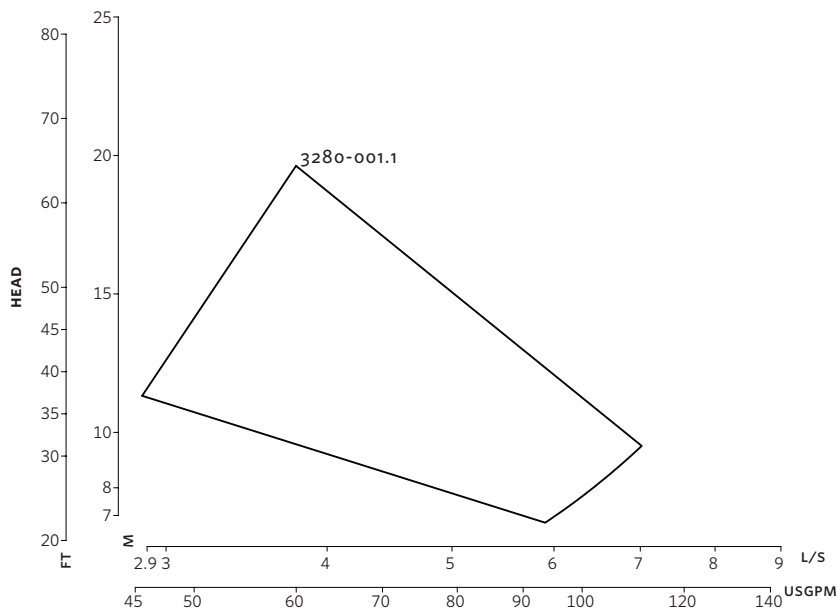


Online service for sustained pump performance and enhanced reliability.

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)



**DIMENSION DATA**

**STANDARD**

<b>Size:</b>	1.5×1.25×3
<b>κW:</b>	1.1
<b>RPM:</b>	3600
<b>Frame:</b>	71
<b>HA:</b>	294 (11.58)
<b>HD:</b>	190 (7.50)
<b>HI:</b>	343 (13.50)
<b>HV:</b>	160 (6.31)
<b>X:</b>	115 (4.53)
<b>Y:</b>	97 (3.81)
<b>Free &amp; operating height:</b>	95 (3.75)
<b>Weight:</b>	30.0 (66)

**SPRING DATA**

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

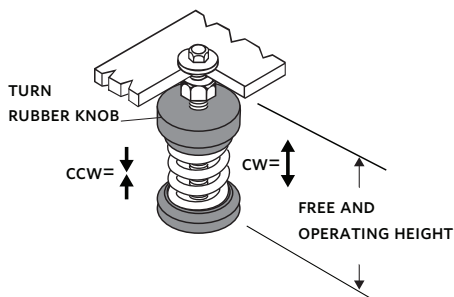
**SEISMIC MOUNT OPTION**

<b>2E:</b>	16 (8.50)
<b>F:</b>	102 (4.00)
<b>G:</b>	114 (4.50)
<b>H:</b>	12 (0.50)
<b>HA:</b>	273 (10.75)
<b>HD:</b>	222 (8.75)
<b>N:</b>	98 (3.85)
<b>Free &amp; operating height:</b>	127 (5.00)
<b>Max. horizontal static G rating:</b>	6.7

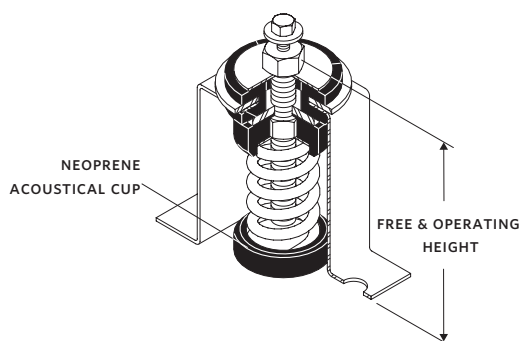
Performance curves are for reference only.

Confirm current performance data with Armstrong ADEPT Quote or ADEPT Select selection software.

**STANDARD**



**SEISMIC MOUNT OPTION**



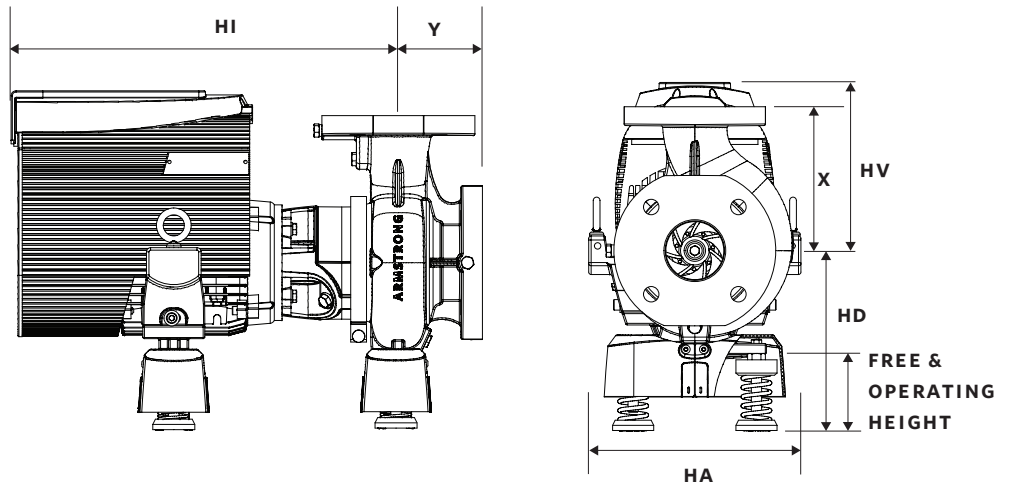
**NOTE:**

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

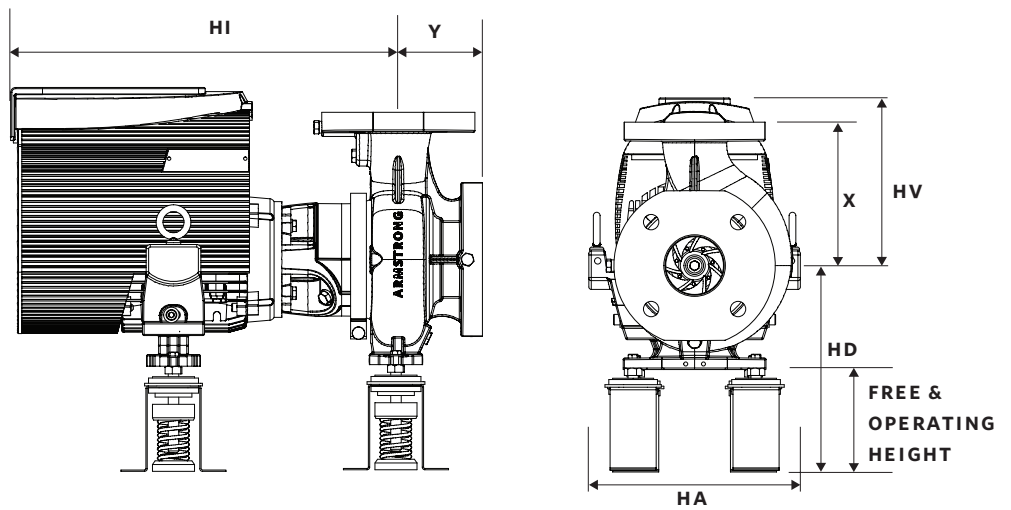
- Dimensions - mm (inch)
- Weight - kg (lbs)

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

STANDARD



SEISMIC MOUNT OPTION



TORONTO  
+1 416 755 2291

BUFFALO  
+1 716 693 8813

DROITWICH SPA  
+44 121 550 5333

MANCHESTER  
+44 161 223 2223

BANGALORE  
+91 80 4906 3555

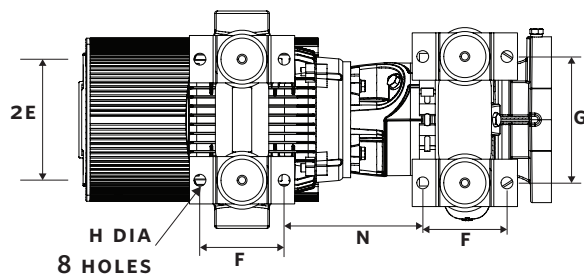
SHANGHAI  
+86 21 5237 0909

BEIJING  
+86 21 5237 0909

SÃO PAULO  
+55 11 4785 1330

DUBAI  
+971 4 887 6775

JIMBOLIA  
+40 256 360 030





## DESIGN ENVELOPE 4280 END SUCTION | 50-125 (2x1.5x5) | 4012-001.1 | SUBMITTAL

File No: 103.5752IEC  
Date: MARCH 14, 2023  
Supersedes: 103.5752IEC  
Date: NOVEMBER 08, 2021

Job: \_\_\_\_\_ Representative: \_\_\_\_\_

Order No: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_  
Capacity: \_\_\_\_\_ L/s (USgpm) Head: \_\_\_\_\_ m (ft)  
Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_  
Temperature: \_\_\_\_\_ °C (°F) Specific gravity: \_\_\_\_\_  
Suction: 50 mm (2") Discharge: 40 mm (1.5")  
MEI ≥ 0.70

### MATERIALS OF CONSTRUCTION

- PN 16**  
CONSTRUCTION: LPDESF  
E-coated ductile iron A536 Gr 65-45-12, stainless fitted
- PN 25**  
CONSTRUCTION: HPDESF  
E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

- PN 16**  
16 bar at 49°C (232 psig at 120°F)  
7 bar at 150°C (100 psig at 300°F)
- PN 25**  
25 bar at 65°C (362 psig at 149°F)  
21 bar at 150°C (304 psig at 300°F)

### FLOW READOUT ACCURACY

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

### 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

**kW:** 1.1  
**RPM:** 3000  
**Motor enclosure:** TEFC  
**Volts /Phase:**  200-240V/1ph  380-480V/3ph  
For 200-240V/3ph or 575V/3ph, see File #:103.5705IEC  
**Efficiency:** IE5  
**Protocol (standard):**  BACnet™ MS/TP  
 BACnet™ TCP/IP  
 Modbus RTU  
**Control enclosure:**  Indoor - IP 55  
**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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
Temperature	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F
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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm) at \_\_\_\_\_ m (ft)

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

#### Heating

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

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

\*Available in single pump operation only

## OPTIONAL SERVICES

### ON-SITE PUMP COMMISSIONING



### PUMP MANAGER

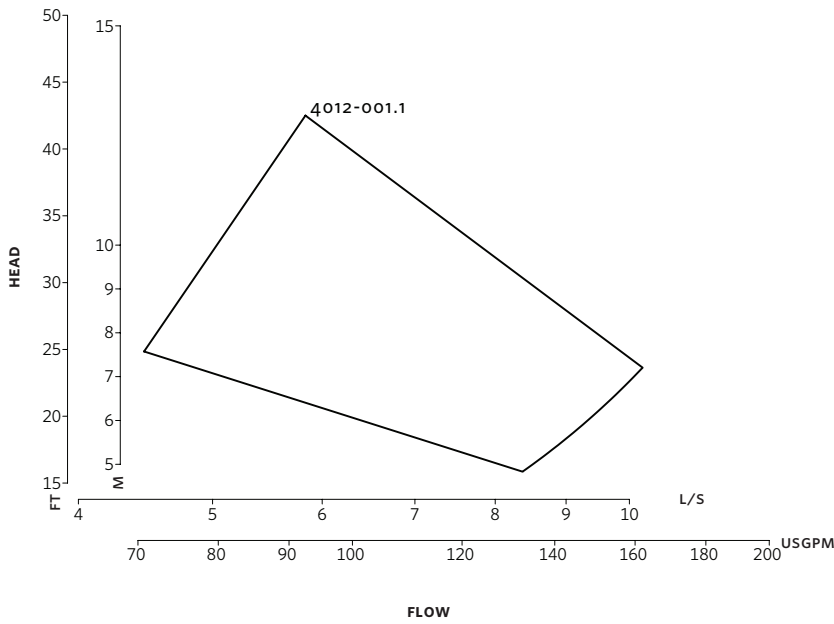


Online service for sustained pump performance and enhanced reliability.

Available in 3 or 5 year terms

\* Requires an internet connection to be provided by building

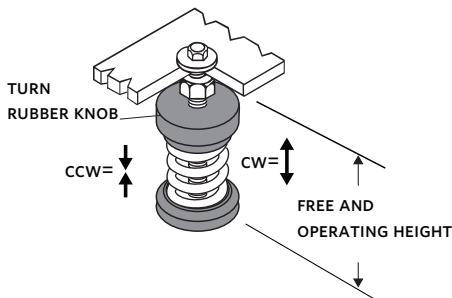
\* Includes an extended warranty for parts and labour (wearable parts excluded)



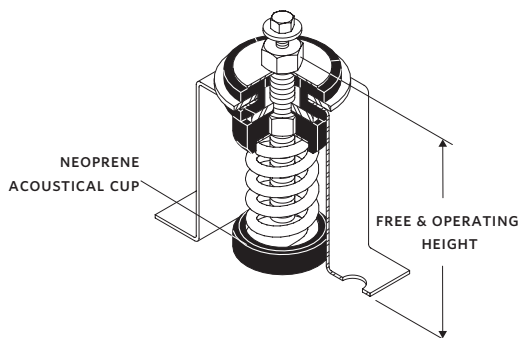
Performance curves are for reference only.

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>κW:</b>	1.1
<b>RPM:</b>	3000
<b>Frame:</b>	71
<b>HA:</b>	262 (10.32)
<b>HD:</b>	222 (8.75)
<b>HI:</b>	369 (14.53)
<b>HV:</b>	152 (5.97)
<b>X:</b>	178 (7.00)
<b>Y:</b>	102 (4.00)
<b>Free &amp; operating height:</b>	95 (3.75)
<b>Weight:</b>	31.0 (68)

**SPRING DATA**

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

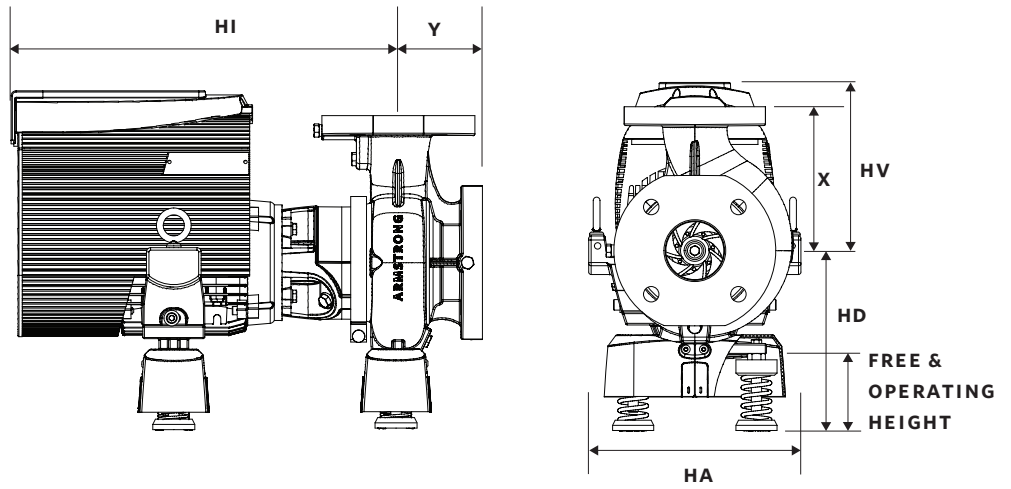
**SEISMIC MOUNT OPTION**

<b>2E:</b>	146 (5.75)
<b>F:</b>	102 (4.00)
<b>G:</b>	152 (6.00)
<b>H:</b>	12 (0.50)
<b>HA:</b>	262 (10.32)
<b>HD:</b>	254 (10.00)
<b>N:</b>	126 (4.96)
<b>Free &amp; operating height:</b>	127 (5.00)
<b>Max. horizontal static G rating:</b>	6.7

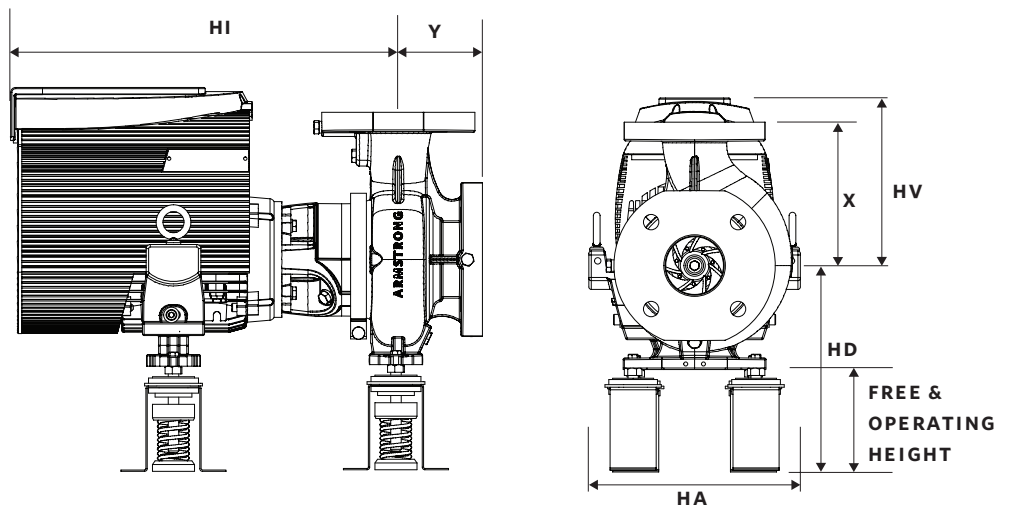
- Dimensions - mm (inch)
- Weight - kg (lbs)

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

**STANDARD**



**SEISMIC MOUNT OPTION**



TORONTO  
+1 416 755 2291

BUFFALO  
+1 716 693 8813

DROITWICH SPA  
+44 121 550 5333

MANCHESTER  
+44 161 223 2223

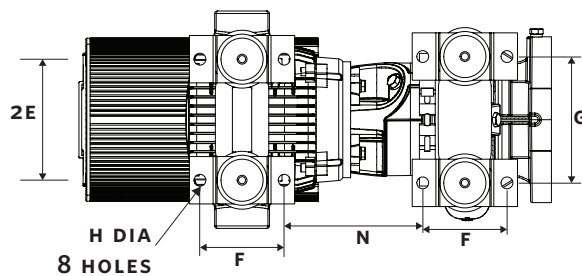
BANGALORE  
+91 80 4906 3555

SHANGHAI  
+86 21 5237 0909

BEIJING  
+86 21 5237 0909

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+55 11 4785 1330

DUBAI  
+971 4 887 6775



JIMBOLIA  
+40 256 360 030

## DESIGN ENVELOPE 4280 END SUCTION | 50-125 (2x1.5x5) | 4012H-001.1 | SUBMITTAL

File No: 103.5753IEC  
Date: MARCH 14, 2023  
Supersedes: 103.5753IEC  
Date: NOVEMBER 08, 2021

Job: \_\_\_\_\_ Representative: \_\_\_\_\_

Order No: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_  
Capacity: \_\_\_\_\_ L/s (USgpm) Head: \_\_\_\_\_ m (ft)  
Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_  
Temperature: \_\_\_\_\_ °C (°F) Specific gravity: \_\_\_\_\_  
Suction: 50 mm (2") Discharge: 40 mm (1.5")  
MEI ≥ 0.70

### MATERIALS OF CONSTRUCTION

- PN 16**  
CONSTRUCTION: LPDES F  
E-coated ductile iron A536 Gr 65-45-12, stainless fitted
- PN 25**  
CONSTRUCTION: HPDES F  
E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

- PN 16**  
16 bar at 49°C (232 psig at 120°F)  
7 bar at 150°C (100 psig at 300°F)
- PN 25**  
25 bar at 65°C (362 psig at 149°F)  
21 bar at 150°C (304 psig at 300°F)

### FLOW READOUT ACCURACY

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

### 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

**kW:** 1.1  
**RPM:** 3000  
**Motor enclosure:** TEFC  
**Volts /Phase:**  200-240V/1ph  380-480V/3ph  
For 200-240V/3ph or 575V/3ph, see File #:103.5707IEC  
**Efficiency:** IE5  
**Protocol (standard):**  BACnet™ MS/TP  
 BACnet™ TCP/IP  
 Modbus RTU  
**Control enclosure:**  Indoor - IP 55  
**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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
Temperature	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F
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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm) at \_\_\_\_\_ m (ft)

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

#### Heating

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

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

\*Available in single pump operation only

## OPTIONAL SERVICES

### ON-SITE PUMP COMMISSIONING



### PUMP MANAGER

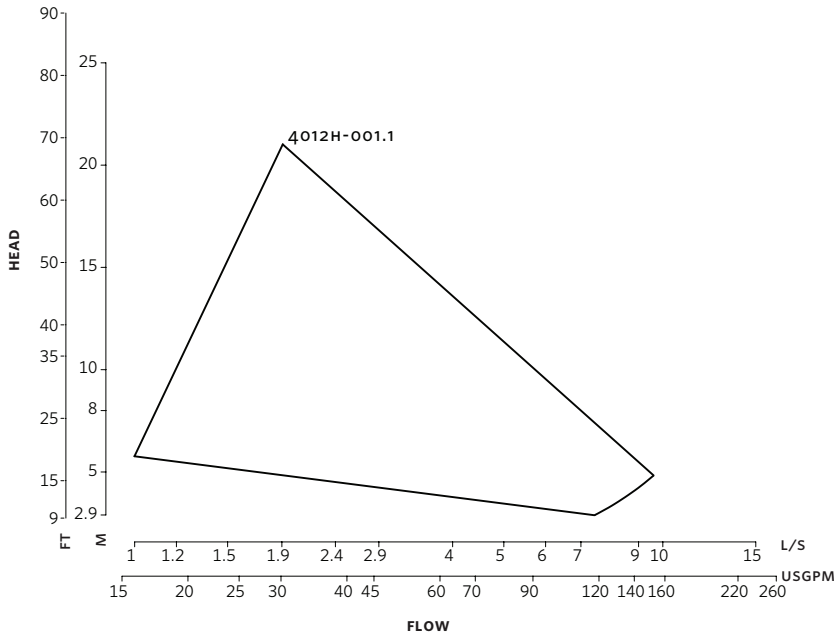


Online service for sustained pump performance and enhanced reliability.

Available in 3 or 5 year terms

\* Requires an internet connection to be provided by building

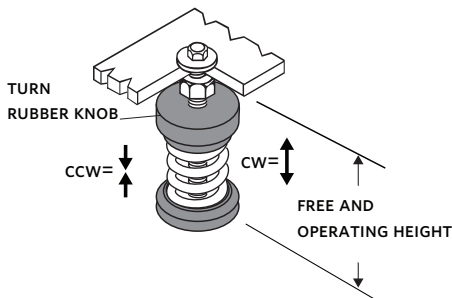
\* Includes an extended warranty for parts and labour (wearable parts excluded)



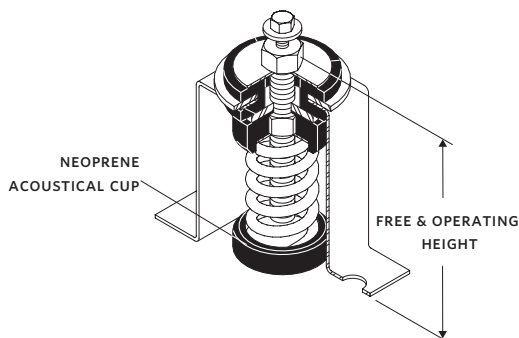
Performance curves are for reference only.

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>κW:</b>	1.1
<b>RPM:</b>	3000
<b>Frame:</b>	71
<b>HA:</b>	262 (10.32)
<b>HD:</b>	222 (8.75)
<b>HI:</b>	369 (14.53)
<b>HV:</b>	152 (5.97)
<b>X:</b>	178 (7.00)
<b>Y:</b>	102 (4.00)
<b>Free &amp; operating height:</b>	95 (3.75)
<b>Weight:</b>	31.0 (68)

**SPRING DATA**

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

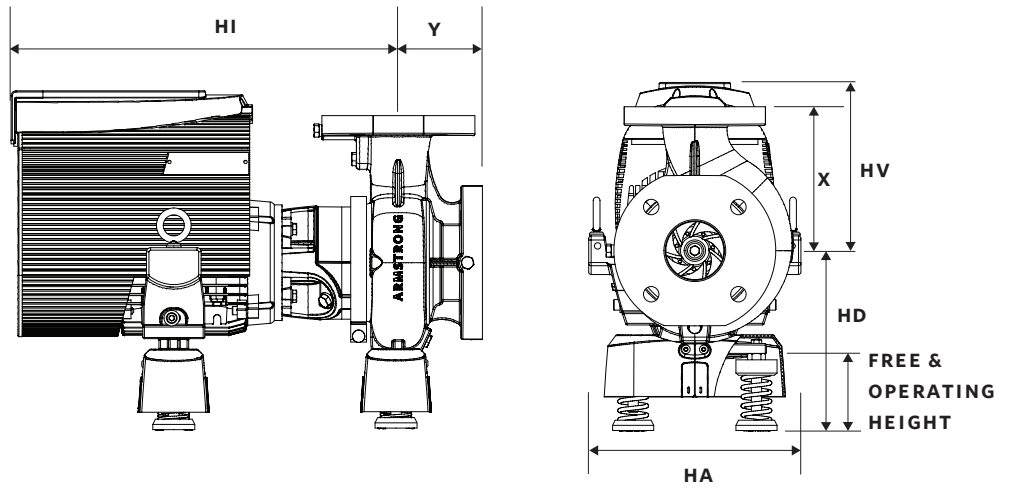
**SEISMIC MOUNT OPTION**

<b>2E:</b>	146 (5.75)
<b>F:</b>	102 (4.00)
<b>G:</b>	152 (6.00)
<b>H:</b>	12 (0.50)
<b>HA:</b>	262 (10.32)
<b>HD:</b>	254 (10.00)
<b>N:</b>	126 (4.96)
<b>Free &amp; operating height:</b>	127 (5.00)
<b>Max. horizontal static G rating:</b>	6.7

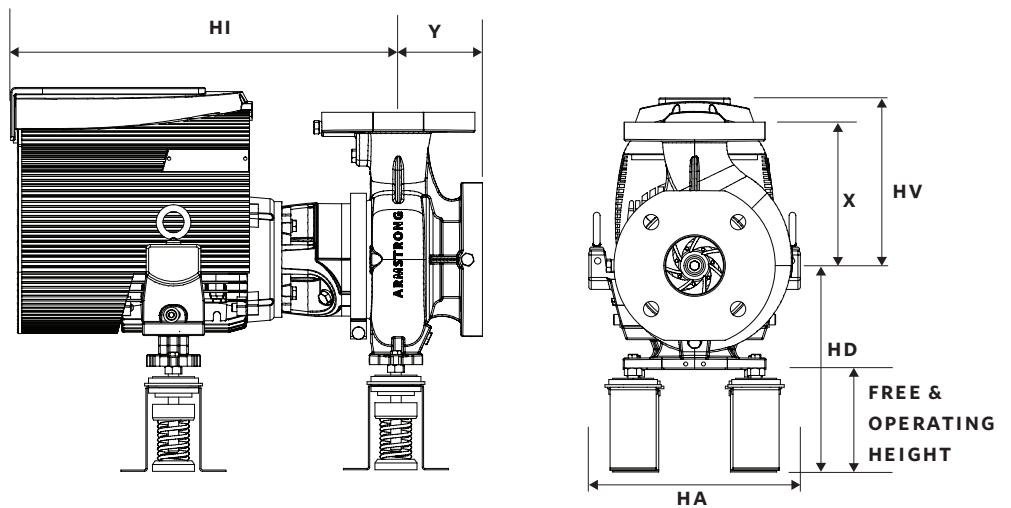
- Dimensions - mm (inch)
- Weight - kg (lbs)

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

**STANDARD**



**SEISMIC MOUNT OPTION**



TORONTO  
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MANCHESTER  
+44 161 223 2223

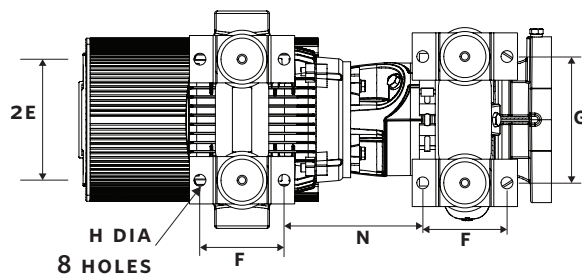
BANGALORE  
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BEIJING  
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DUBAI  
+971 4 887 6775



JIMBOLIA  
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## DESIGN ENVELOPE 4280 END SUCTION | 50-125 (2x1.5x5) | 4012-001.5 | SUBMITTAL

**File No:** 103.5754IEC  
**Date:** MARCH 14, 2023  
**Supersedes:** 103.5754IEC  
**Date:** NOVEMBER 08, 2021

Job: \_\_\_\_\_ Representative: \_\_\_\_\_

Order No: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_  
 Capacity: \_\_\_\_\_ L/s (USgpm) Head: \_\_\_\_\_ m (ft)  
 Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_  
 Temperature: \_\_\_\_\_ °C (°F) Specific gravity: \_\_\_\_\_  
 Suction: 50 mm (2") Discharge: 40 mm (1.5")  
 MEI ≥ 0.70

### MATERIALS OF CONSTRUCTION

- PN 16**  
 CONSTRUCTION: LPDESF  
 E-coated ductile iron A536 Gr 65-45-12, stainless fitted
- PN 25**  
 CONSTRUCTION: HPDESF  
 E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

- PN 16**  
 16 bar at 49°C (232 psig at 120°F)  
 7 bar at 150°C (100 psig at 300°F)
- PN 25**  
 25 bar at 65°C (362 psig at 149°F)  
 21 bar at 150°C (304 psig at 300°F)

### FLOW READOUT ACCURACY

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

### 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

**kW:** 1.5  
**RPM:** 3000  
**Motor enclosure:** TEFC  
**Volts /Phase:**  200-240V/1ph     380-480V/3ph  
 For 200-240V/3ph or 575V/3ph, see File #:103.5709IEC  
**Efficiency:** IE5  
**Protocol (standard):**  BACnet™ MS/TP  
 BACnet™ TCP/IP  
 Modbus RTU  
**Control enclosure:**  Indoor - IP 55  
**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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
<b>Temperature</b>	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F
<b>Rotating face</b>	Silicone carbide		Resin bonded carbon	Antimony loaded carbon	Resin bonded carbon	
<b>Seat elastomer</b>	EPDM (L-cup)	EPDM (O-ring)	EPDM (L-cup)	EPDM (O-ring)	EPDM (L-cup)	EPDM (O-ring)
<b>Material code</b>	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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm) at \_\_\_\_\_ m (ft)

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

#### Heating

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

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

\*Available in single pump operation only

## OPTIONAL SERVICES

### ON-SITE PUMP COMMISSIONING



### PUMP MANAGER

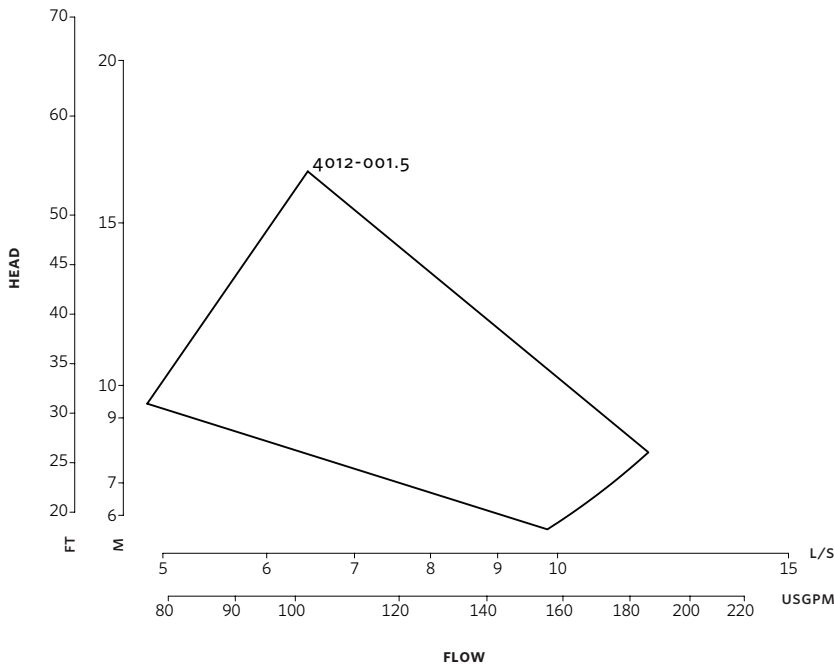


Online service for sustained pump performance and enhanced reliability.

Available in 3 or 5 year terms

\* Requires an internet connection to be provided by building

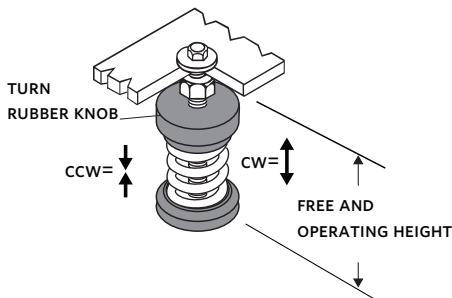
\* Includes an extended warranty for parts and labour (wearable parts excluded)



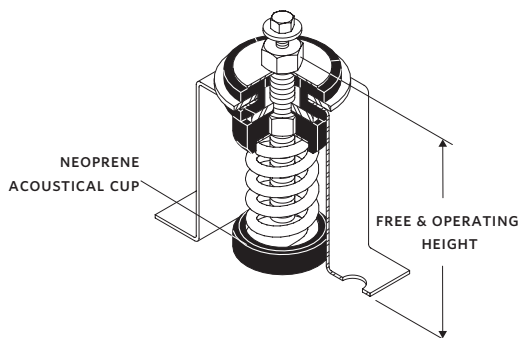
Performance curves are for reference only.

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>κW:</b>	1.5
<b>RPM:</b>	3000
<b>Frame:</b>	71
<b>HA:</b>	262 (10.32)
<b>HD:</b>	222 (8.75)
<b>HI:</b>	369 (14.53)
<b>HV:</b>	152 (5.97)
<b>X:</b>	178 (7.00)
<b>Y:</b>	102 (4.00)
<b>Free &amp; operating height:</b>	95 (3.75)
<b>Weight:</b>	32 (70.5)

**SPRING DATA**

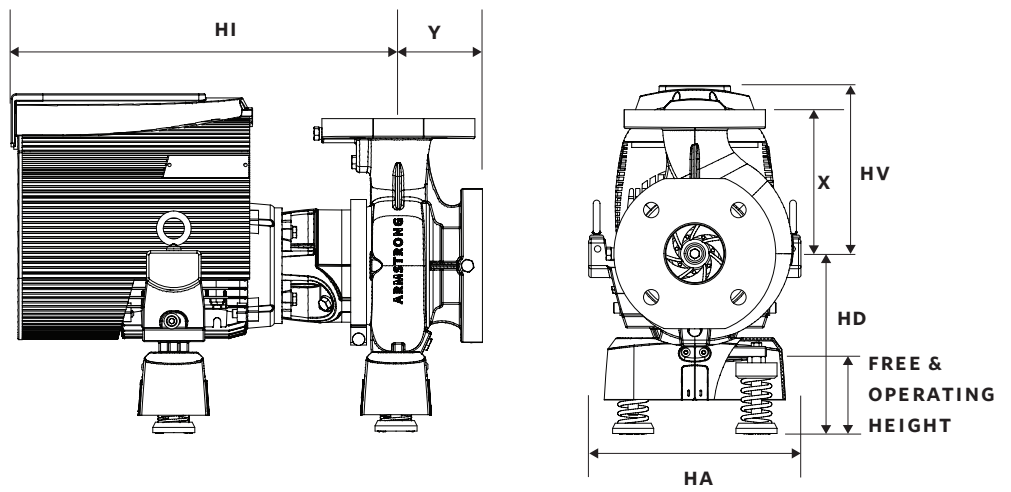
<b>Rated Capacity per spring</b>	25.0 (54) kgs (lbs)
<b>Rated Deflection</b>	30 (1.20) mm (inch)
<b>Mount Constant</b>	0.8 (45) kg/mm (lbs/in)

**SEISMIC MOUNT OPTION**

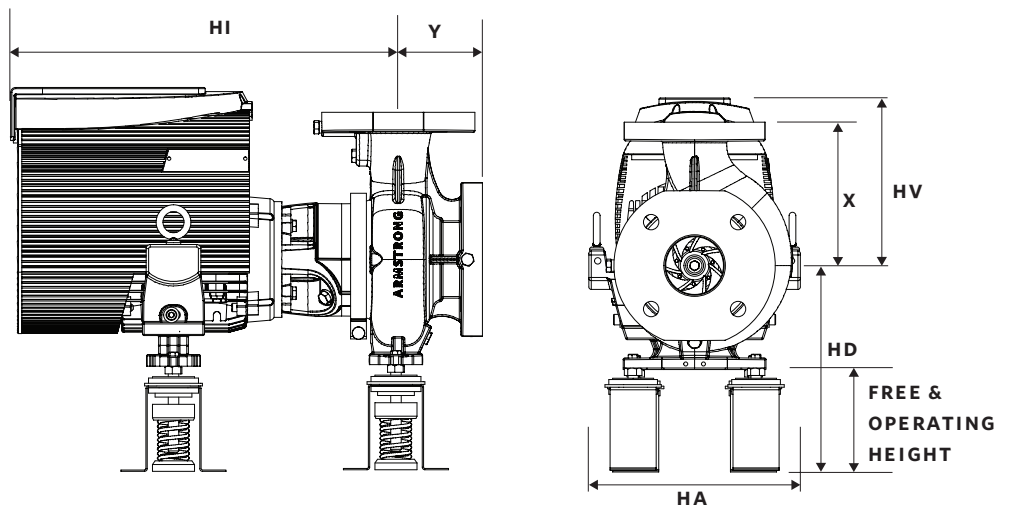
<b>2E:</b>	146 (5.75)
<b>F:</b>	102 (4.00)
<b>G:</b>	152 (6.00)
<b>H:</b>	12 (0.50)
<b>HA:</b>	262 (10.32)
<b>HD:</b>	254 (10.00)
<b>N:</b>	126 (4.96)
<b>Free &amp; operating height:</b>	127 (5.00)
<b>Max. horizontal static G rating:</b>	6.7

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

**STANDARD**



**SEISMIC MOUNT OPTION**



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MANCHESTER  
+44 161 223 2223

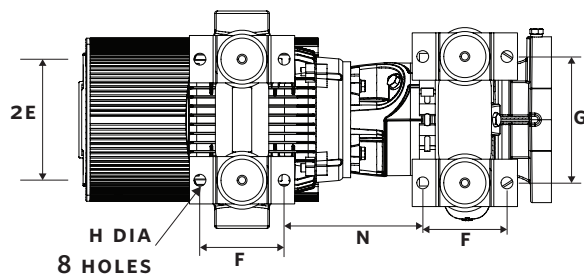
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+971 4 887 6775



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## DESIGN ENVELOPE 4280 END SUCTION | 50-125 (2x1.5x5) | 4012H-001.5 | SUBMITTAL

**File No:** 103.5755IEC  
**Date:** MARCH 14, 2023  
**Supersedes:** 103.5755IEC  
**Date:** NOVEMBER 08, 2021

Job: \_\_\_\_\_ Representative: \_\_\_\_\_

Order No: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_  
 Capacity: \_\_\_\_\_ L/s (USgpm) Head: \_\_\_\_\_ m (ft)  
 Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_  
 Temperature: \_\_\_\_\_ °C (°F) Specific gravity: \_\_\_\_\_  
 Suction: 50 mm (2") Discharge: 40 mm (1.5")  
 MEI ≥ 0.70

### MATERIALS OF CONSTRUCTION

- PN 16**  
**CONSTRUCTION:** LPDESF  
 E-coated ductile iron A536 Gr 65-45-12, stainless fitted
- PN 25**  
**CONSTRUCTION:** HPDESF  
 E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

- PN 16**  
 16 bar at 49°C (232 psig at 120°F)  
 7 bar at 150°C (100 psig at 300°F)
- PN 25**  
 25 bar at 65°C (362 psig at 149°F)  
 21 bar at 150°C (304 psig at 300°F)

### FLOW READOUT ACCURACY

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

### 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

**kW:** 1.5  
**RPM:** 3000  
**Motor enclosure:** TEFC  
**Volts /Phase:**  200-240V/1ph     380-480V/3ph  
 For 200-240V/3ph or 575V/3ph, see File #:103.5711IEC  
**Efficiency:** IE5  
**Protocol (standard):**  BACnet™ MS/TP  
 BACnet™ TCP/IP  
 Modbus RTU  
**Control enclosure:**  Indoor - IP 55  
**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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
<b>Temperature</b>	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F
<b>Rotating face</b>	Silicone carbide		Resin bonded carbon	Antimony loaded carbon	Resin bonded carbon	
<b>Seat elastomer</b>	EPDM (L-cup)	EPDM (O-ring)	EPDM (L-cup)	EPDM (O-ring)	EPDM (L-cup)	EPDM (O-ring)
<b>Material code</b>	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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm) at \_\_\_\_\_ m (ft)

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

##### Heating

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

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

\*Available in single pump operation only

### OPTIONAL SERVICES

#### ON-SITE PUMP COMMISSIONING



#### PUMP MANAGER

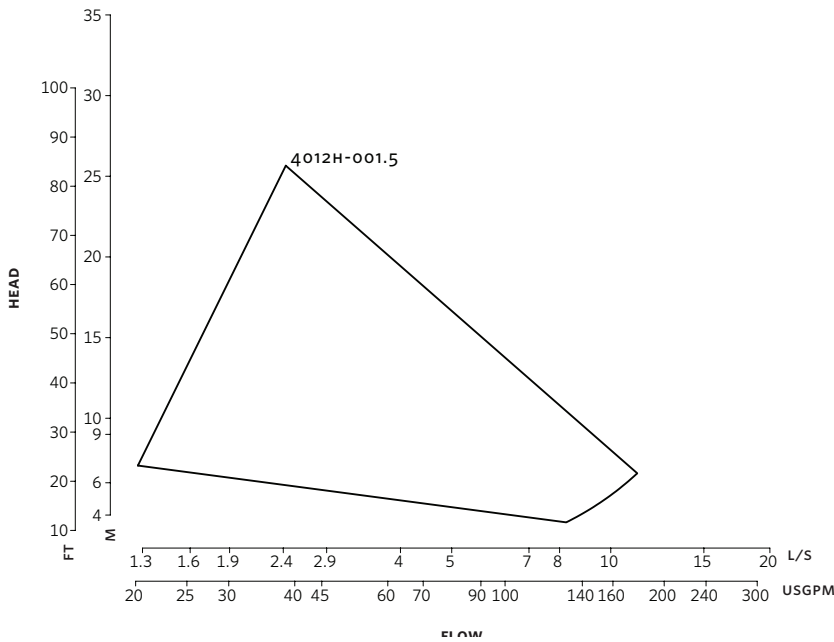


Online service for sustained pump performance and enhanced reliability.

Available in 3 or 5 year terms

\* Requires an internet connection to be provided by building

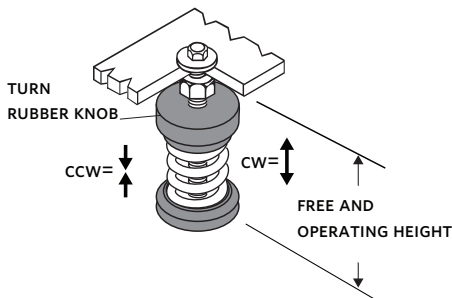
\* Includes an extended warranty for parts and labour (wearable parts excluded)



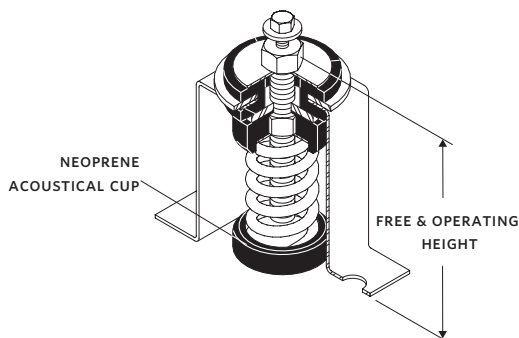
Performance curves are for reference only.

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>κW:</b>	1.5
<b>RPM:</b>	3000
<b>Frame:</b>	71
<b>HA:</b>	262 (10.32)
<b>HD:</b>	222 (8.75)
<b>HI:</b>	369 (14.53)
<b>HV:</b>	152 (5.97)
<b>X:</b>	178 (7.00)
<b>Y:</b>	102 (4.00)
<b>Free &amp; operating height:</b>	95 (3.75)
<b>Weight:</b>	32 (70.5)

**SPRING DATA**

<b>Rated Capacity per spring</b>	25.0 (54)
<b>Rated Deflection</b>	30 (1.20)
<b>Mount Constant</b>	0.8 (45)

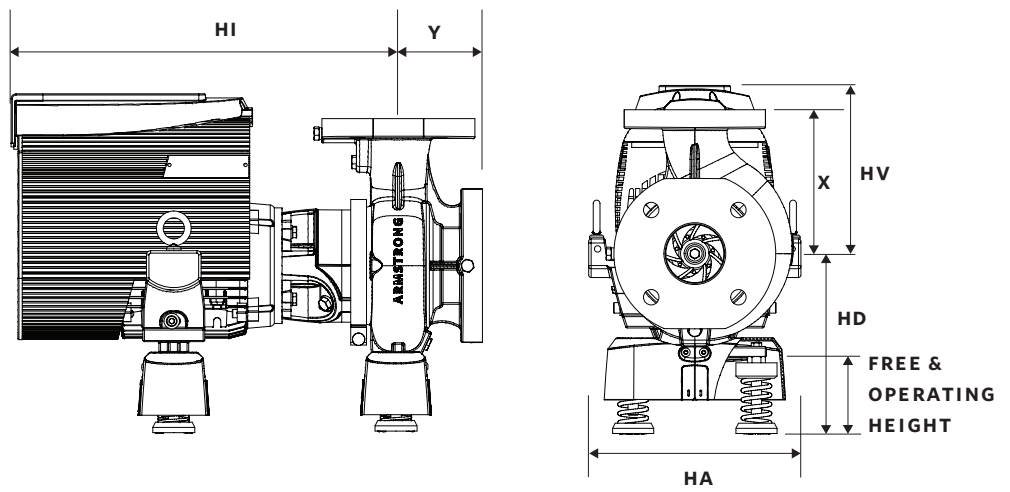
**SEISMIC MOUNT OPTION**

<b>2E:</b>	146 (5.75)
<b>F:</b>	102 (4.00)
<b>G:</b>	152 (6.00)
<b>H:</b>	12 (0.50)
<b>HA:</b>	262 (10.32)
<b>HD:</b>	254 (10.00)
<b>N:</b>	126 (4.96)
<b>Free &amp; operating height:</b>	127 (5.00)
<b>Max. horizontal static G rating:</b>	6.7

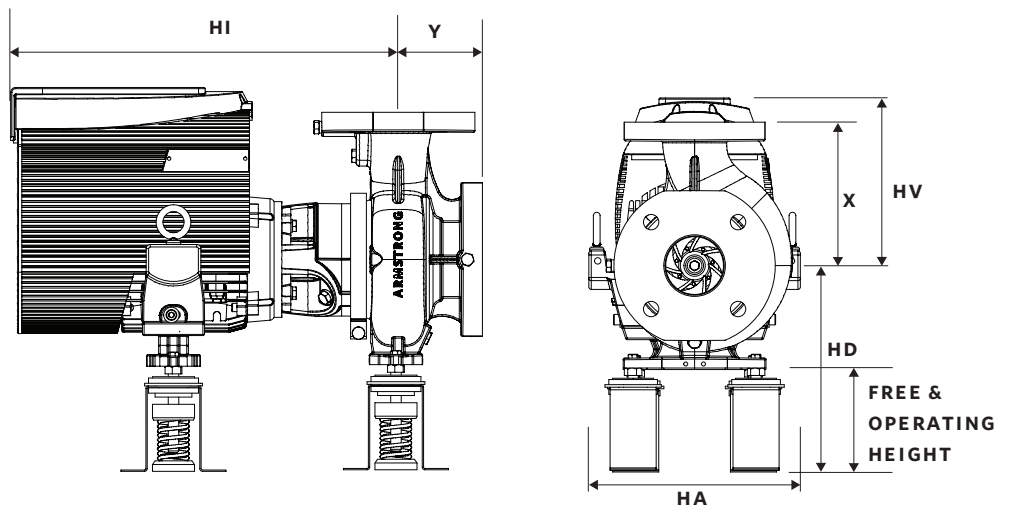
- Dimensions - mm (inch)
- Weight - kg (lbs)

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

**STANDARD**



**SEISMIC MOUNT OPTION**



TORONTO  
+1 416 755 2291

BUFFALO  
+1 716 693 8813

DROITWICH SPA  
+44 121 550 5333

MANCHESTER  
+44 161 223 2223

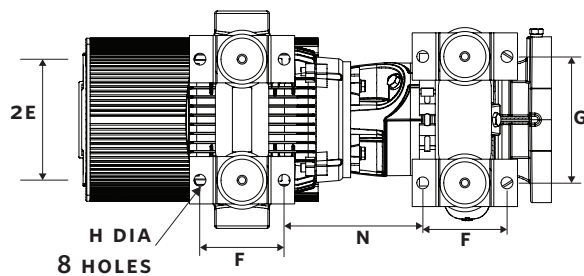
BANGALORE  
+91 80 4906 3555

SHANGHAI  
+86 21 5237 0909

BEIJING  
+86 21 5237 0909

SÃO PAULO  
+55 11 4785 1330

DUBAI  
+971 4 887 6775



JIMBOLIA  
+40 256 360 030



## DESIGN ENVELOPE 4280 END SUCTION | 65-125 (2.5x2x5) | 5012-001.1 | SUBMITTAL

File No: 103.57561EC  
Date: MARCH 14, 2023  
Supersedes: 103.57561EC  
Date: NOVEMBER 08, 2021

Job: \_\_\_\_\_ Representative: \_\_\_\_\_

Order No: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_  
Capacity: \_\_\_\_\_ L/s (USgpm) Head: \_\_\_\_\_ m (ft)  
Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_  
Temperature: \_\_\_\_\_ °C (°F) Specific gravity: \_\_\_\_\_  
Suction: 65 mm (2.5") Discharge: 50 mm (2")  
MEI ≥ 0.70

### MATERIALS OF CONSTRUCTION

- PN 16**  
CONSTRUCTION: LPDESF  
E-coated ductile iron A536 Gr 65-45-12, stainless fitted
- PN 25**  
CONSTRUCTION: HPDESF  
E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

- PN 16**  
16 bar at 49°C (232 psig at 120°F)  
7 bar at 150°C (100 psig at 300°F)
- PN 25**  
25 bar at 65°C (362 psig at 149°F)  
21 bar at 150°C (304 psig at 300°F)

### FLOW READOUT ACCURACY

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

### 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

**kW:** 1.1  
**RPM:** 3000  
**Motor enclosure:** TEFC  
**Volts /Phase:**  200-240V/1ph  380-480V/3ph  
For 200-240V/3ph or 575V/3ph, see File #:103.57231EC  
**Efficiency:** IE5  
**Protocol (standard):**  BACnet™ MS/TP  
 BACnet™ TCP/IP  
 Modbus RTU  
**Control enclosure:**  Indoor - IP 55  
**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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
Temperature	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F
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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm) at \_\_\_\_\_ m (ft)

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

#### Heating

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

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

\*Available in single pump operation only

## OPTIONAL SERVICES

### ON-SITE PUMP COMMISSIONING



### PUMP MANAGER

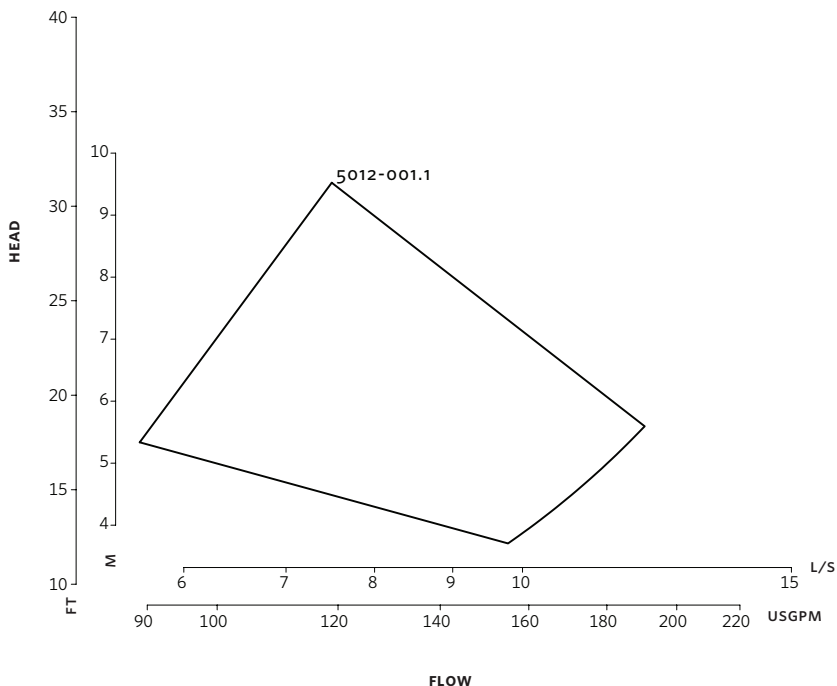


Online service for sustained pump performance and enhanced reliability.

Available in 3 or 5 year terms

\* Requires an internet connection to be provided by building

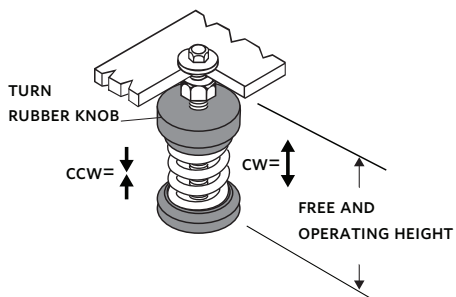
\* Includes an extended warranty for parts and labour (wearable parts excluded)



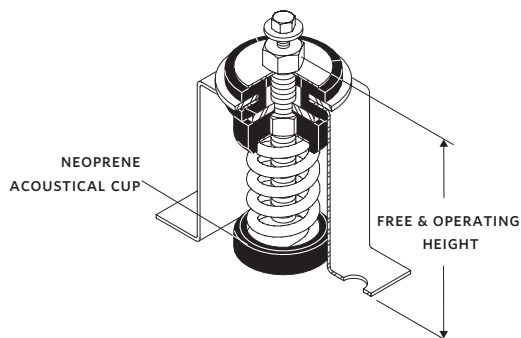
Performance curves are for reference only.

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>	2.5×2×5
<b>κW:</b>	1.1
<b>RPM:</b>	3000
<b>Frame:</b>	71
<b>HA:</b>	262 (10.32)
<b>HD:</b>	222 (8.75)
<b>HI:</b>	360 (14.16)
<b>HV:</b>	127 (4.99)
<b>X:</b>	178 (7.00)
<b>Y:</b>	102 (4.00)
<b>Free &amp; operating height:</b>	95 (3.75)
<b>Weight:</b>	26.9 (59)

**SPRING DATA**

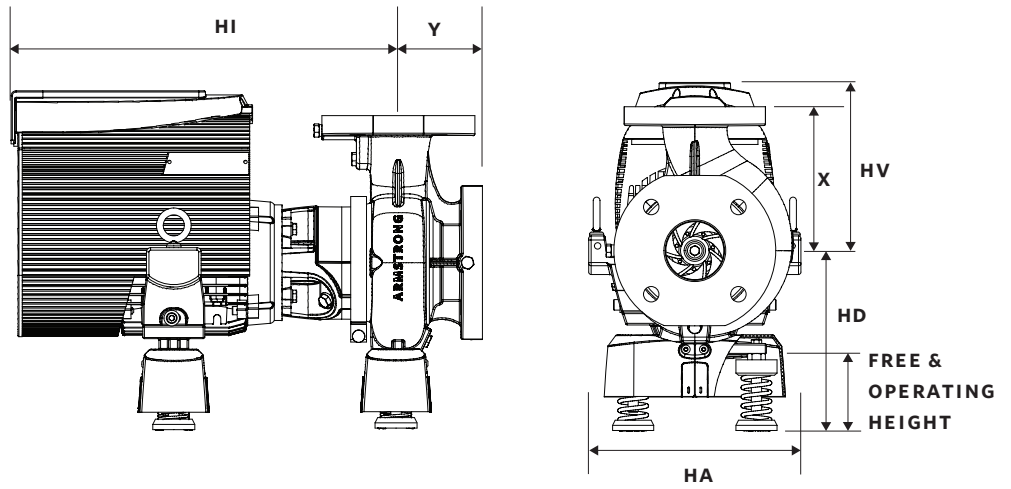
<b>Rated Capacity per spring</b>	25.0 (54)
<b>Rated Deflection</b>	30 (1.20)
<b>Mount Constant</b>	0.8 (45)

**SEISMIC MOUNT OPTION**

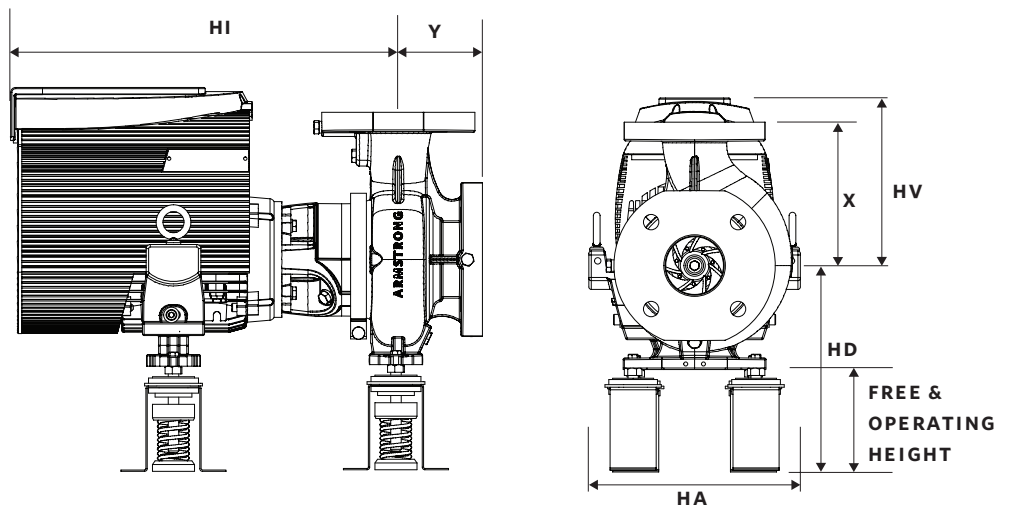
<b>2E:</b>	146 (5.75)
<b>F:</b>	102 (4.00)
<b>G:</b>	152 (6.00)
<b>H:</b>	12 (0.50)
<b>HA:</b>	262 (10.32)
<b>HD:</b>	254 (10.00)
<b>N:</b>	127 (5.00)
<b>Free &amp; operating height:</b>	127 (5.00)
<b>Max. horizontal static G rating:</b>	6.7

- Dimensions - mm (inch)
- Weight - kg (lbs)
- Tolerance of ±3 mm (±0.125") 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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DROITWICH SPA  
+44 121 550 5333

MANCHESTER  
+44 161 223 2223

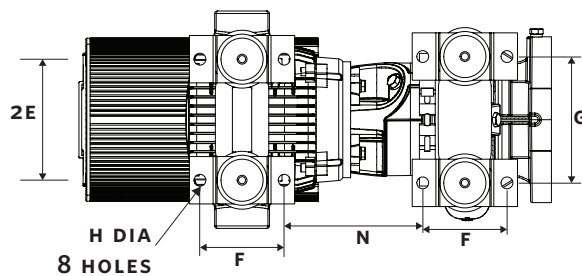
BANGALORE  
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SHANGHAI  
+86 21 5237 0909

BEIJING  
+86 21 5237 0909

SÃO PAULO  
+55 11 4785 1330

DUBAI  
+971 4 887 6775



JIMBOLIA  
+40 256 360 030

## DESIGN ENVELOPE 4280 END SUCTION | 65-125 (2.5x2x5) | 5012-001.5 | SUBMITTAL

File No: 103.5757IEC  
Date: MARCH 14, 2023  
Supersedes: 103.5757IEC  
Date: NOVEMBER 08, 2021

Job: \_\_\_\_\_ Representative: \_\_\_\_\_

Order No: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### PUMP DESIGN DATA

No. of pumps: \_\_\_\_\_ Tag: \_\_\_\_\_

Capacity: \_\_\_\_\_ L/s (USgpm) Head: \_\_\_\_\_ m (ft)

Liquid: \_\_\_\_\_ Viscosity: \_\_\_\_\_

Temperature: \_\_\_\_\_ °C (°F) Specific gravity: \_\_\_\_\_

Suction: 65 mm (2.5") Discharge: 50 mm (2")

MEI ≥ 0.70

### MATERIALS OF CONSTRUCTION

**PN 16**

CONSTRUCTION: LPDES F

E-coated ductile iron A536 Gr 65-45-12, stainless fitted

**PN 25**

CONSTRUCTION: HPDES F

E-coated ductile iron A536 Gr 120-90-2, stainless fitted

### MAXIMUM PUMP OPERATING CONDITIONS

**PN 16**

16 bar at 49°C (232 psig at 120°F)

7 bar at 150°C (100 psig at 300°F)

**PN 25**

25 bar at 65°C (362 psig at 149°F)

21 bar at 150°C (304 psig at 300°F)

### FLOW READOUT ACCURACY

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

### 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

**kW:** 1.5

**RPM:** 3000

**Motor enclosure:** TEFC

**Volts /Phase:**  200-240V/1ph  380-480V/3ph

For 200-240V/3ph or 575V/3ph,  
see File #:103.5725IEC

**Efficiency:** IE5

**Protocol (standard):**  BACnet™ MS/TP

BACnet™ TCP/IP

Modbus RTU

**Control enclosure:**  Indoor - IP 55

**Fused disconnect switch:** See File 100.8131

**EMI/RFI control:** Integrated filter designed to meet  
EN61800-3

**Harmonic suppression:** Equivalent: 5% AC line reactor - Sup-  
porting 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.

FLUID TYPE	ALL GLYCOLS > 30% WT CONC		ALL OTHER NON-POTABLE FLUIDS		POTABLE (DRINKING) WATER	
Temperature	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F	up to 93°C / 200°F	over 93°C / 200°F
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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ m (ft)

\* 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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm)

\*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 \_\_\_\_\_ L/s (gpm) at \_\_\_\_\_ m (ft)

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

##### Heating

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

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

\*Available in single pump operation only

### OPTIONAL SERVICES

#### ON-SITE PUMP COMMISSIONING



#### PUMP MANAGER

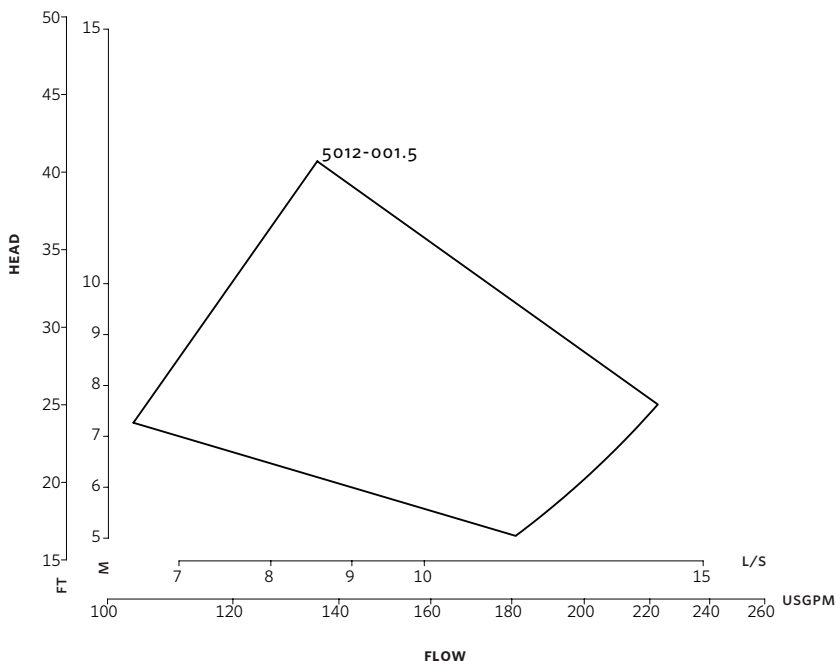


Online service for sustained pump performance and enhanced reliability.

Available in 3 or 5 year terms

\* Requires an internet connection to be provided by building

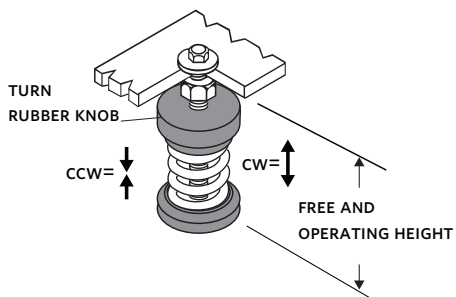
\* Includes an extended warranty for parts and labour (wearable parts excluded)



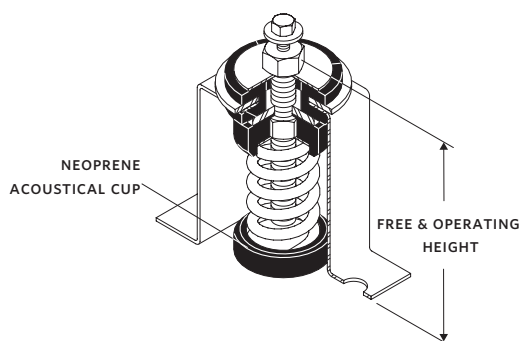
Performance curves are for reference only.

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>	2.5×2×5
<b>κW:</b>	1.5
<b>RPM:</b>	3000
<b>Frame:</b>	71
<b>HA:</b>	262 (10.32)
<b>HD:</b>	222 (8.75)
<b>HI:</b>	360 (14.16)
<b>HV:</b>	127 (4.99)
<b>X:</b>	178 (7.00)
<b>Y:</b>	102 (4.00)
<b>Free &amp; operating height:</b>	95 (3.75)
<b>Weight:</b>	27.5 (61)

**SPRING DATA**

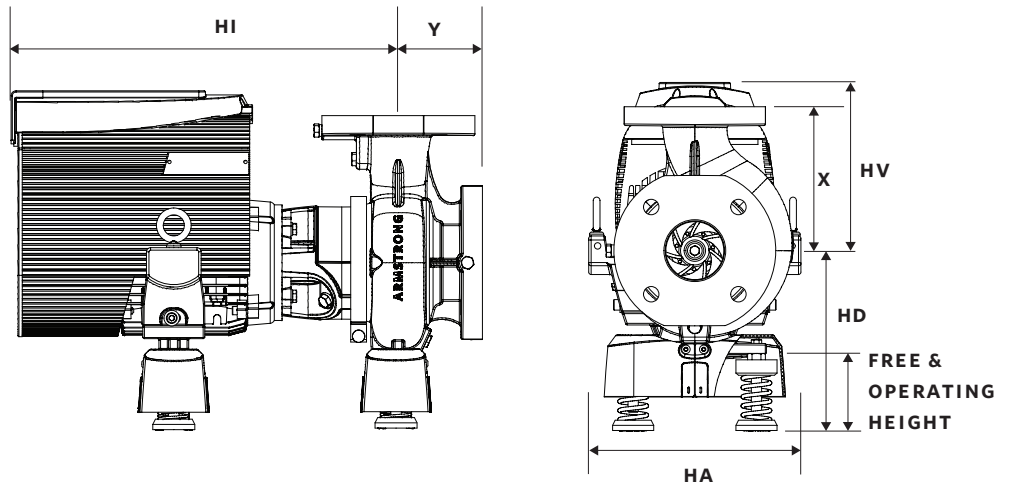
<b>Rated Capacity per spring</b>	25.0 (54) kgs (lbs)
<b>Rated Deflection</b>	30 (1.20) mm (inch)
<b>Mount Constant</b>	0.8 (45) kg/mm (lbs/in)

**SEISMIC MOUNT OPTION**

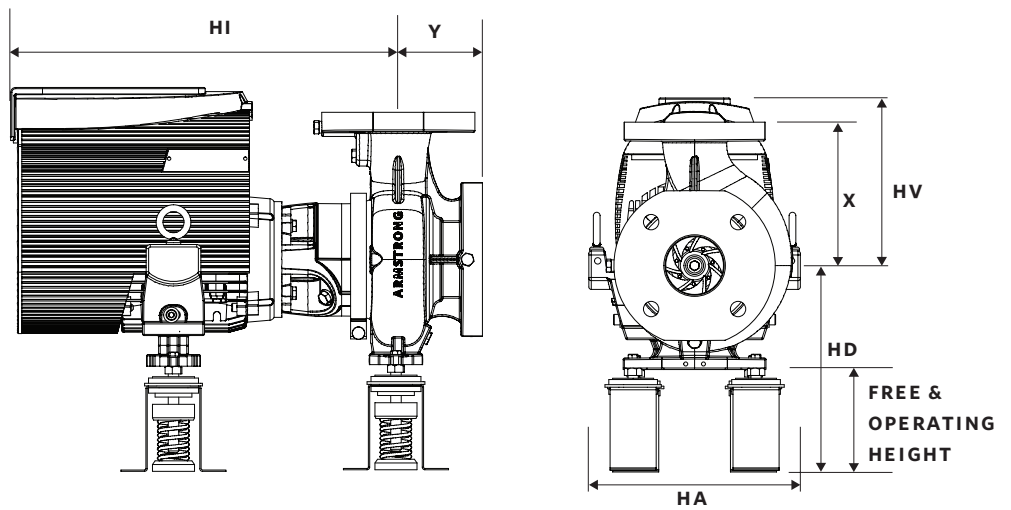
<b>2E:</b>	146 (5.75)
<b>F:</b>	102 (4.00)
<b>G:</b>	152 (6.00)
<b>H:</b>	12 (0.50)
<b>HA:</b>	262 (10.32)
<b>HD:</b>	254 (10.00)
<b>N:</b>	127 (5.00)
<b>Free &amp; operating height:</b>	127 (5.00)
<b>Max. horizontal static G rating:</b>	6.7

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

**STANDARD**



**SEISMIC MOUNT OPTION**



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