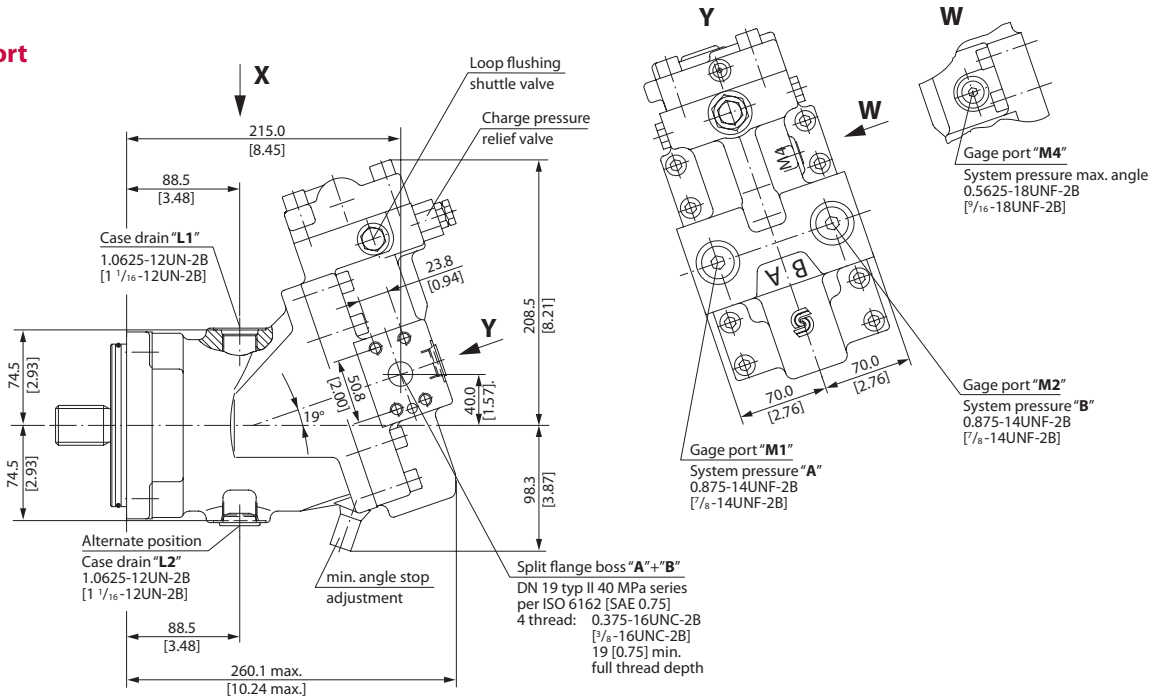


SAE Flange Design  
 per ISO 3019/1

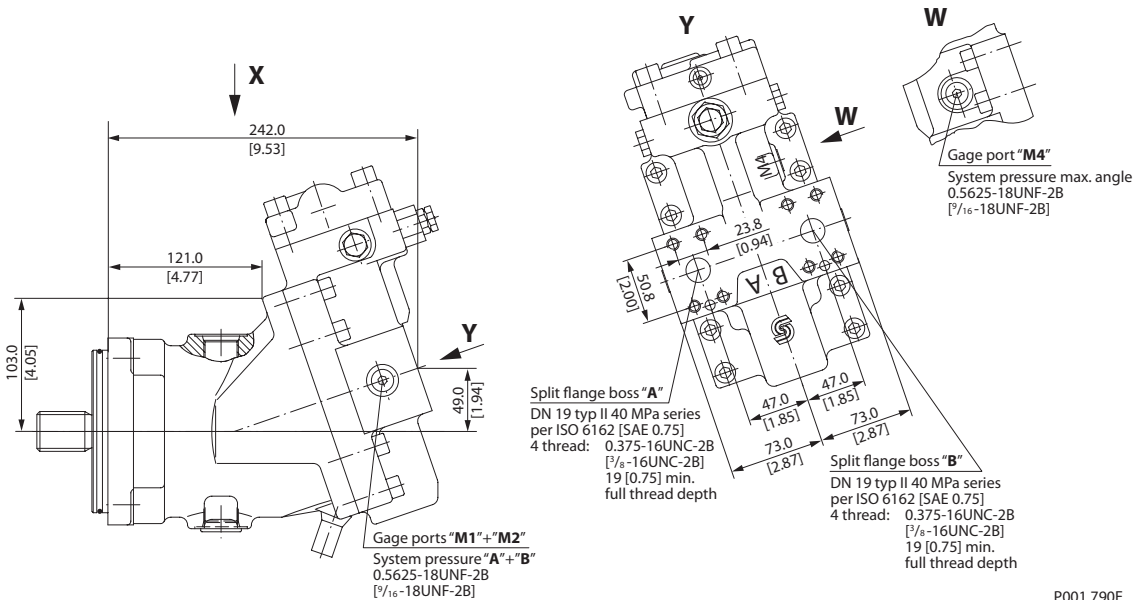
51V060-1 Two Position Control, N1NN

mm  
 [in]

Side Port



Axial Port



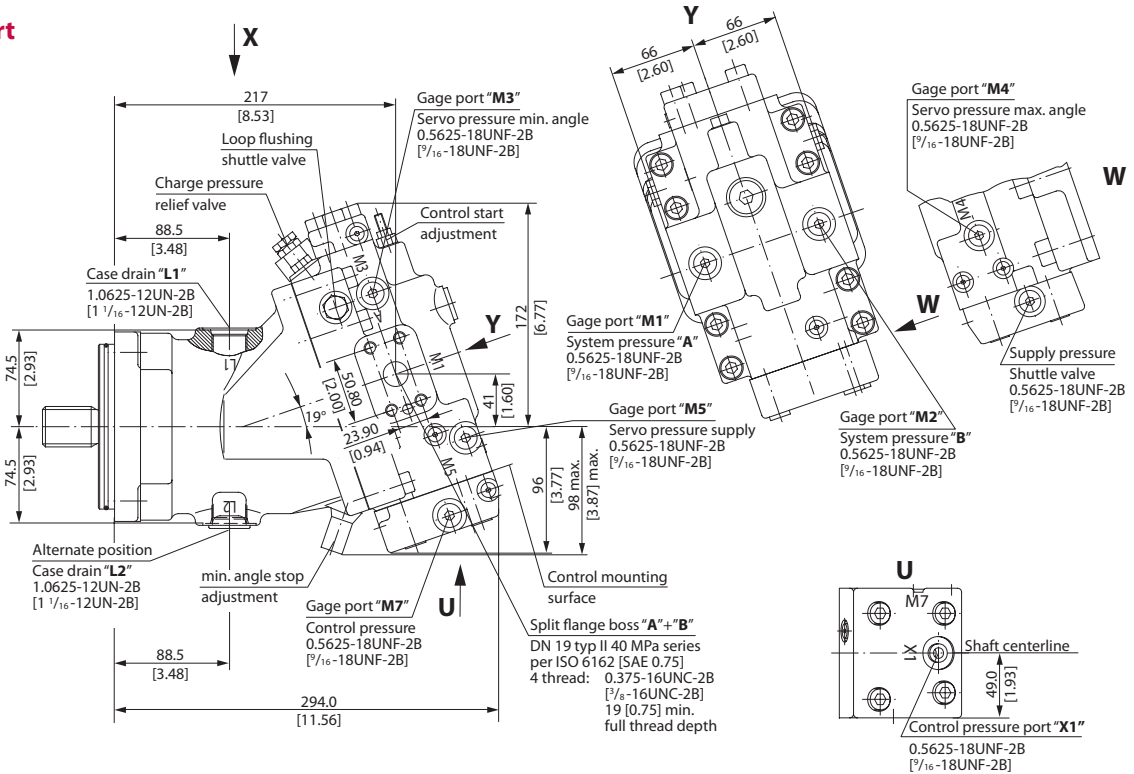
P001 790E

SAE Flange Design  
per ISO 3019/1  
(continued)

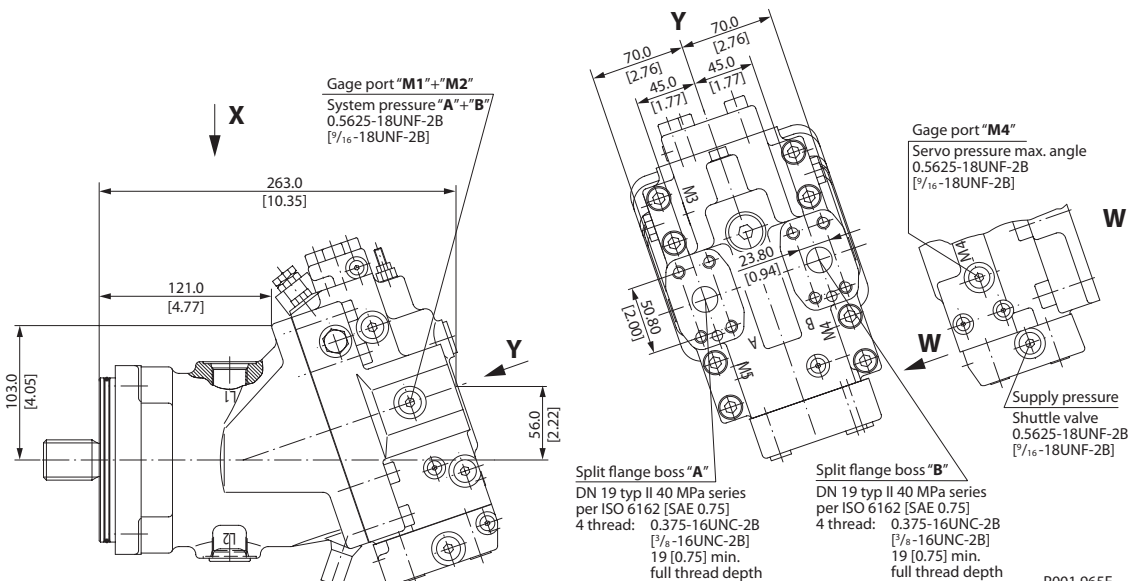
51V060 Proportional and Two Position Control, HZB1

mm  
[in]

Side Port



Axial Port

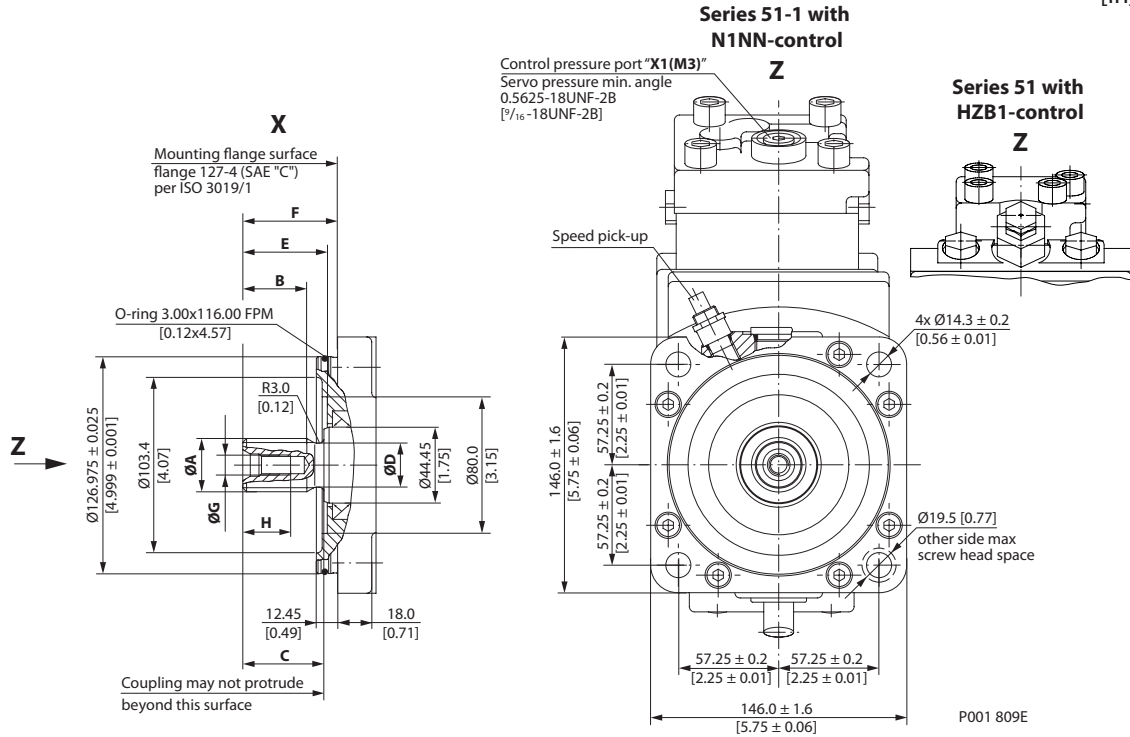


P001 965E

SAE Flange Design  
 per ISO 3019/1  
 (continued)

Shaft Options – 51V060-1 and 51V060

mm  
 [in]



| Shaft Spline Data |   |         |           |         |
|-------------------|---|---------|-----------|---------|
| Shaft option      | S1  |         | C6        |         |
| Dimension         | mm  | [in]    | mm        | [in]    |
| Number of teeth   | 14  |         | 21        |         |
| Pitch             | 12/24   |         | 16/32     |         |
| Pressure angle    | 30°   |         |           |         |
| Spline            | ANSI B92.1-1970<br>class 5<br>flat root side fit                                    |         |           |         |
| Pitch dia         | 29.633  | [1.167] | 33.337    | [1.312] |
| A                 | 31.15   | [1.23]  | 34.43     | [1.36]  |
| B                 | 37.50   | [1.48]  | 37.50     | [1.48]  |
| C                 | 47.50±0.5   | [1.87]  | 47.50±0.5 | [1.87]  |
| D                 | 25.80   | [1.02]  | 30.00     | [1.18]  |
| E                 | 50.30±1.2   | [1.98]  | 50.30±1.2 | [1.98]  |
| F                 | 55.50±0.7   | [2.19]  | 55.50±0.7 | [2.19]  |
| G                 | 0.4375-14UNC-2B [7/16-14UNC-2B]<br>allowed torque in thread max. 91 Nm [805 lbf·in] |         |           |         |
| H                 | 28.00   | [1.10]  | 28.00     | [1.10]  |

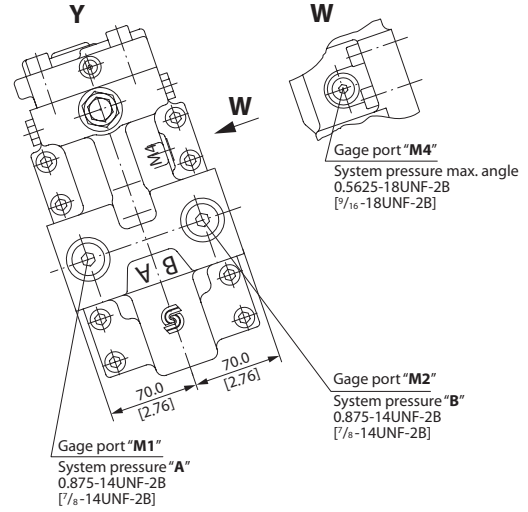
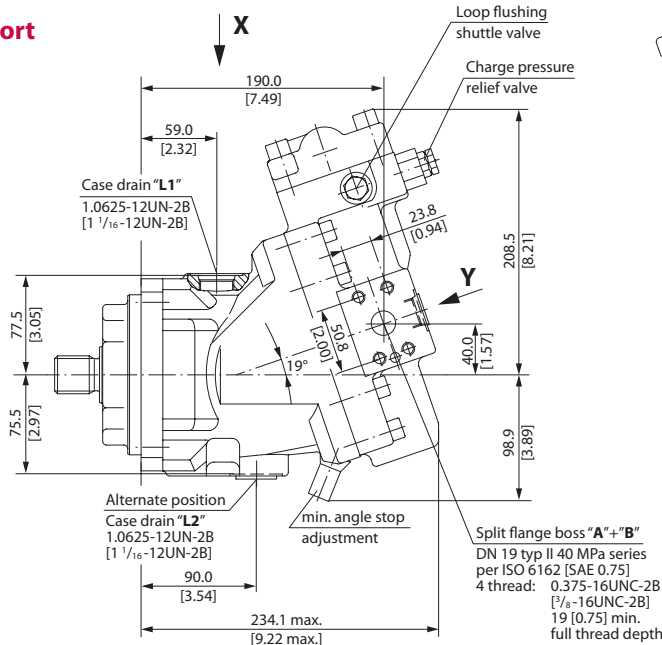
Flow into port **A** results in **CW** rotation of output shaft.  
 Flow into port **B** results in **CCW** rotation of output shaft.  
 Shaft rotation is determined by viewing from shaft end.  
 Ports with O-ring seal and inch threads shall be in accordance with ISO 11926/1.  
 Split flange boss A and B per ISO 6162 is identical with high pressure series SAE J518 code 62 (6000 psi).  
 Contact your Sauer-Danfoss representative for specific installation drawings.

**DIN Flange Design  
 per ISO 3019/2**

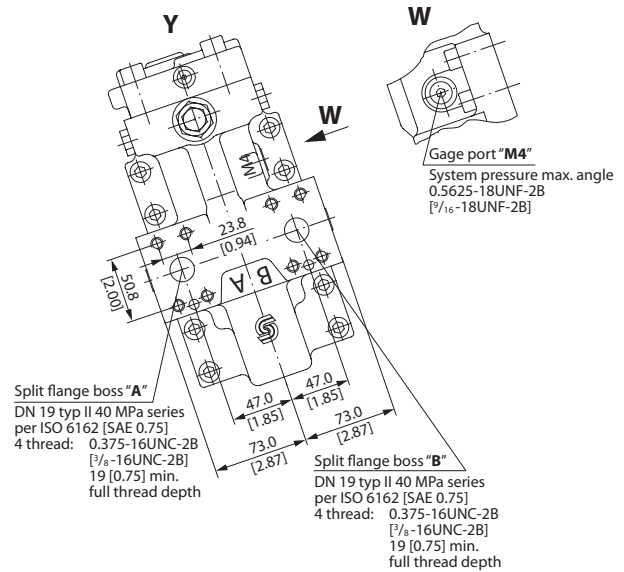
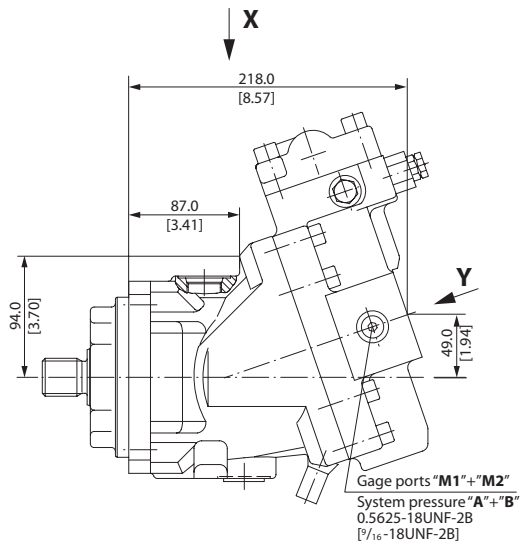
**51D060-1 Two Position Control, N1NN**

mm  
 [in]

**Side Port**



**Axial Port**

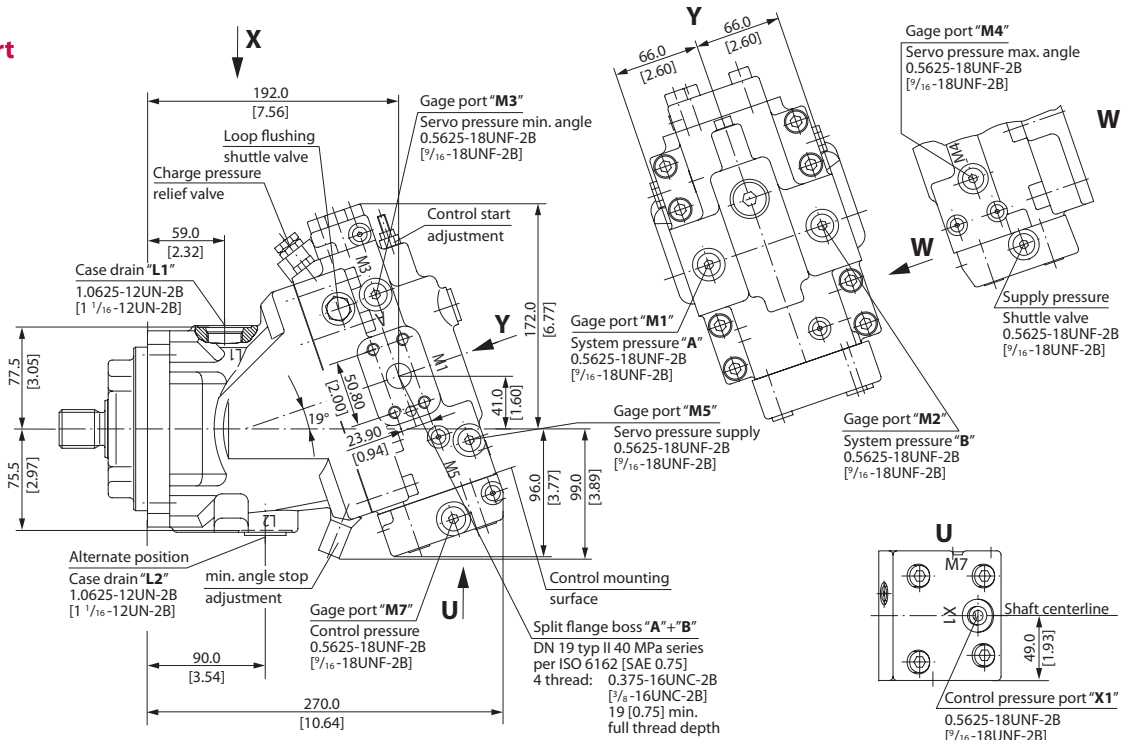


**DIN Flange Design**  
per ISO 3019/2  
(continued)

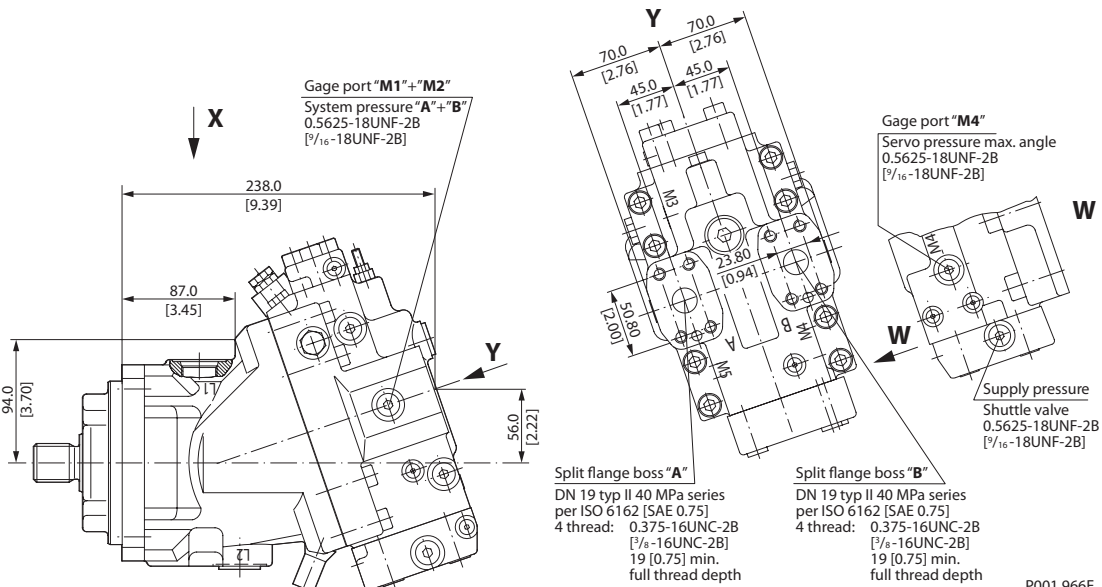
**51D060 Proportional and Two Position Control, HZB1**

mm  
[in]

**Side Port**



**Axial Port**

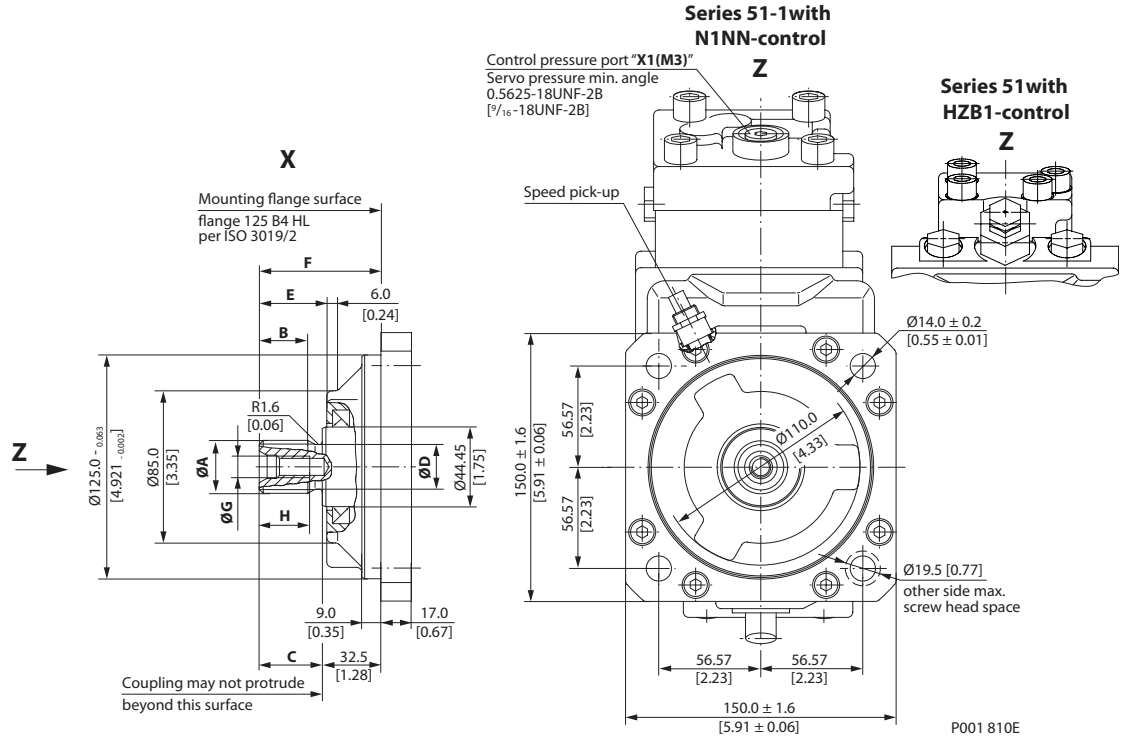


P001 966E

DIN Flange Design  
 per ISO 3019/2  
 (continued)

Shaft Options – 51D060-1 and 51D060

mm  
 [in]



| Shaft Spline Data |   |         |  |         |
|-------------------|---|---------|--|---------|
| Shaft option      | D1  |         | D2                                     |         |
|                   | mm  | [in]    | mm                                     | [in]    |
| Number of teeth   | 14  |         | 16                                     |         |
| Spline            | W30x2x30x14x9g<br>side fit<br>DIN 5480                      |         | W35x2x30x16x9g<br>side fit<br>DIN 5480 |         |
| Pitch dia         | 28.000  | [1.102] | 32.000                                 | [1.260] |
| A                 | 29.60   | [1.17]  | 34.60                                  | [1.36]  |
| B                 | 27.00   | [1.06]  | 32.00                                  | [1.28]  |
| C                 | 35.00±0.5   | [1.38]  | 40.00±0.5                              | [1.58]  |
| D                 | 25.00   | [0.98]  | 30.00                                  | [1.18]  |
| E                 | 37.50±1.1   | [1.48]  | 42.50±1.1                              | [1.67]  |
| F                 | 67.50±0.6   | [2.66]  | 72.50±0.6                              | [2.85]  |
| G                 | M10x1.5<br>allowed torque in thread max. 67 Nm [593 lbf·in] |         |  |         |
| H                 | 25.00   | [0.98]  | 25.00                                  | [0.98]  |

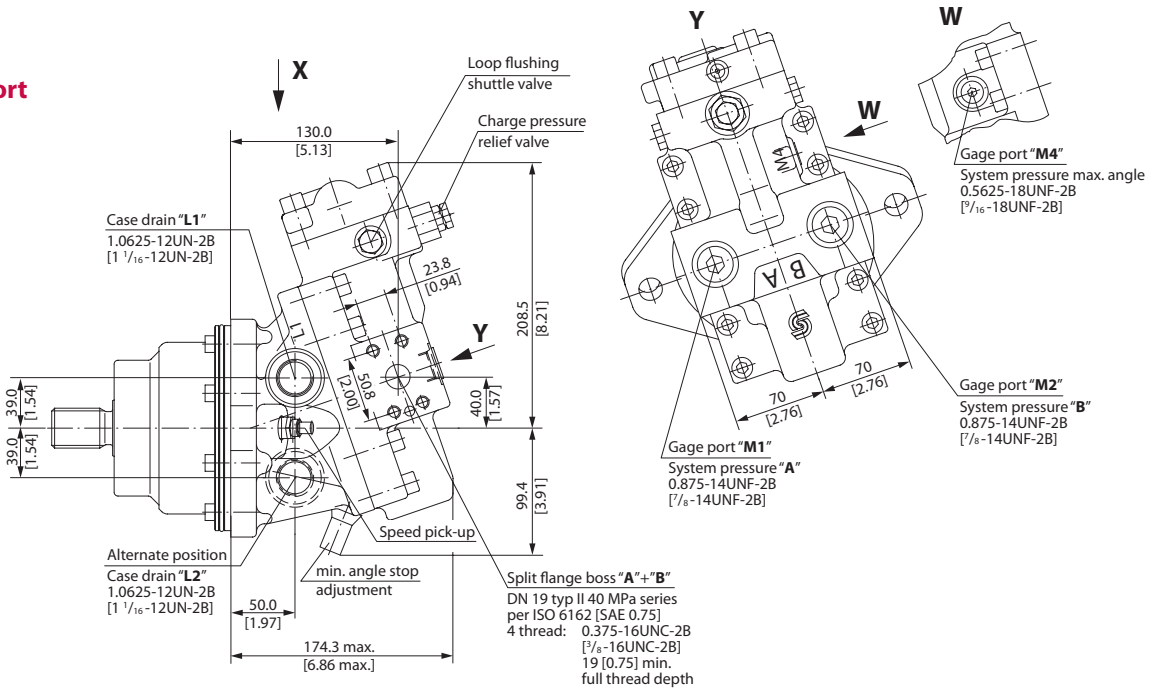
Flow into port **A** results in **CW** rotation of output shaft.  
 Flow into port **B** results in **CCW** rotation of output shaft.  
 Shaft rotation is determined by viewing from shaft end.  
 Ports with O-ring seal and inch threads shall be in accordance with ISO 11926/1.  
 Split flange boss A and B per ISO 6162 is identical with high pressure series SAE J518 code 62 (6000 psi).  
 Contact your Sauer-Danfoss representative for specific installation drawings.

**Cartridge Flange**

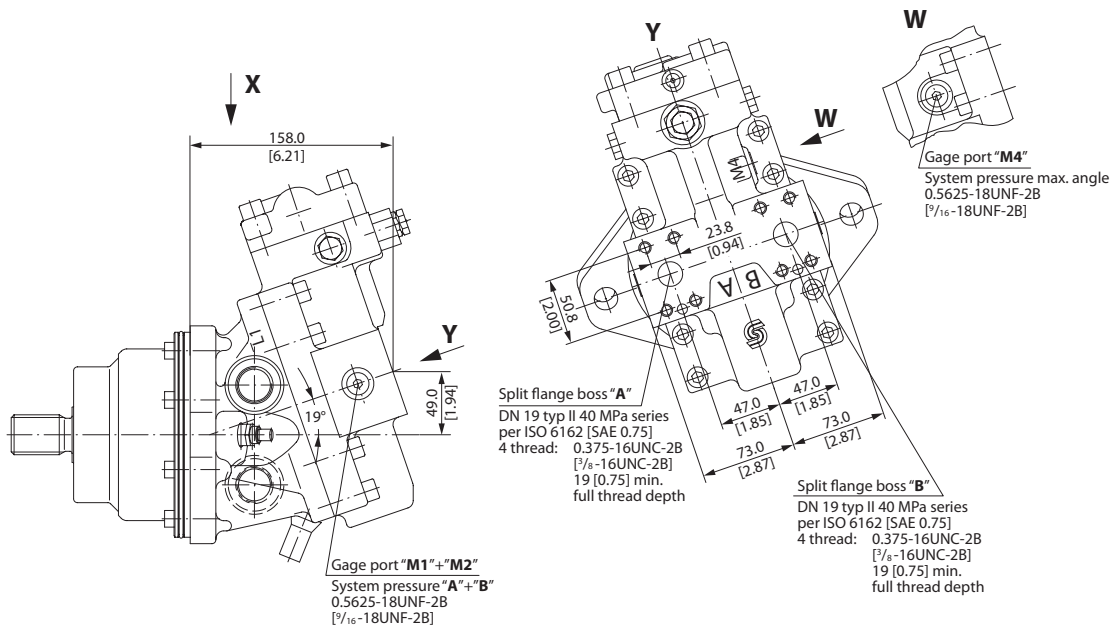
**51C060-1 Two Position Control, N1NN**

mm  
[in]

**Side Port**



**Axial Port**



P001 792E

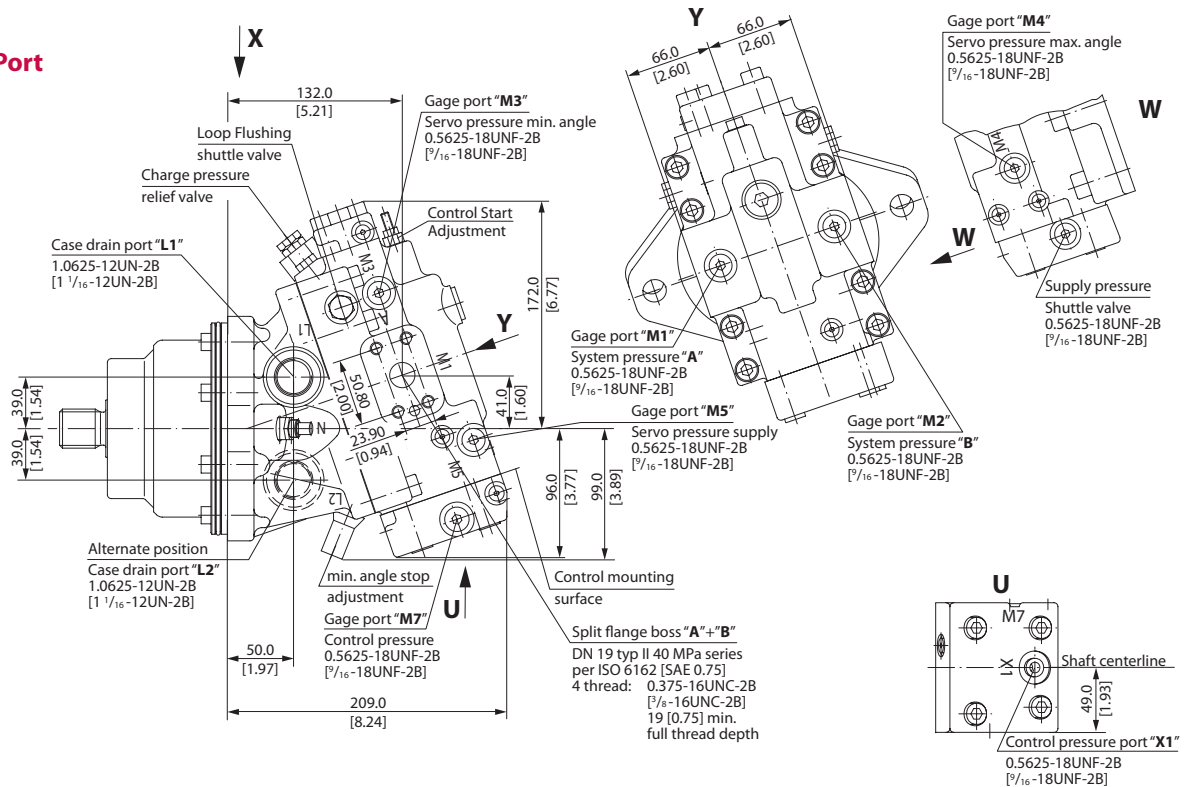


**Cartridge Flange**  
**(continued)**

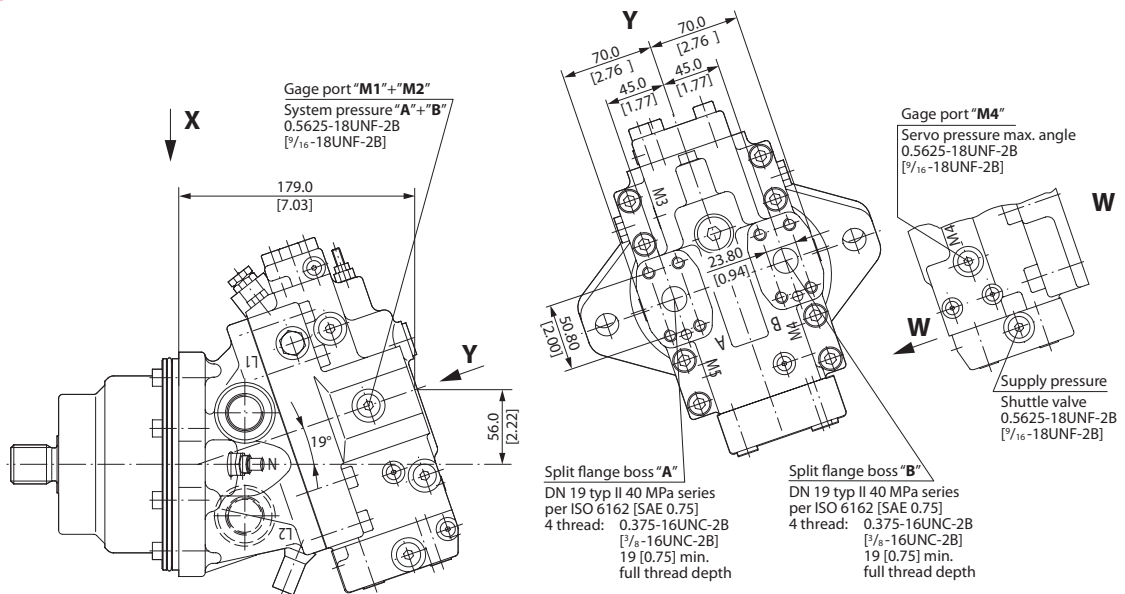
**51C060 Proportional and Two Position Control, HZB1**

mm  
[in]

**Side Port**



**Axial Port**



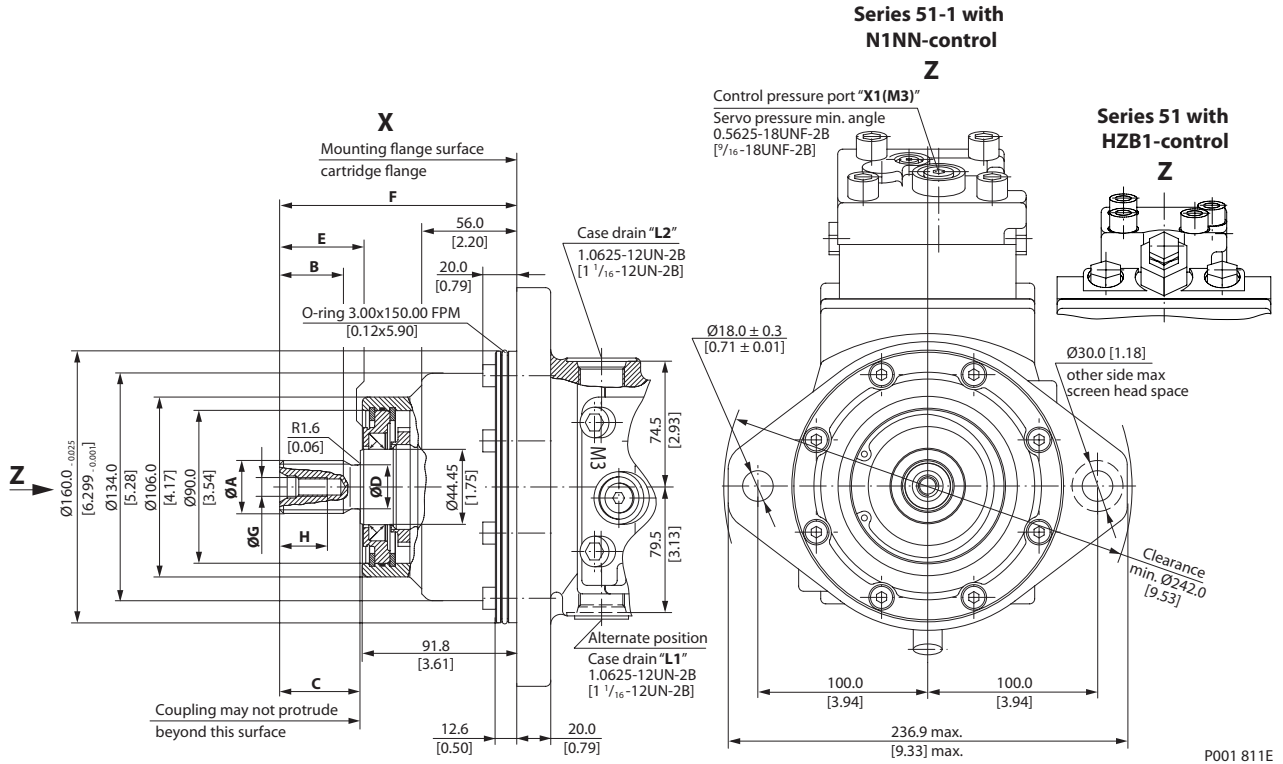
P001 967E



Cartridge Flange  
 (continued)

Shaft Options – 51C060-1 and 51C060

mm  
 [in]



P001 811E

| Shaft Spline Data |   |         |  |         |
|-------------------|---|---------|--|---------|
| Shaft option      | D1  |         | D2                                     |         |
| Dimension         | mm  | [in]    | mm                                     | [in]    |
| Number of teeth   | 14  |         | 16                                     |         |
| Spline            | W30x2x30x14x9g<br>side fit<br>DIN 5480                      |         | W35x2x30x16x9g<br>side fit<br>DIN 5480 |         |
| Pitch dia         | 28.000  | [1.102] | 32.000                                 | [1.260] |
| A                 | 29.60   | [1.17]  | 34.60                                  | [1.36]  |
| B                 | 27.00   | [1.06]  | 32.00                                  | [1.28]  |
| C                 | 35.00±0.5   | [1.38]  | 40.00±0.5                              | [1.58]  |
| D                 | 25.00   | [0.98]  | 30.00                                  | [1.18]  |
| E                 | 36.80±1.4   | [1.45]  | 41.80±1.4                              | [1.65]  |
| F                 | 127.20±0.6  | [5.00]  | 132.20±0.6                             | [5.21]  |
| G                 | M10x1.5<br>allowed torque in thread max. 67 Nm [593 lbf·in] |         |  |         |
| H                 | 25.00   | [0.98]  | 25.00                                  | [0.98]  |

Flow into port **A** results in **CW** rotation of output shaft.  
 Flow into port **B** results in **CCW** rotation of output shaft.  
 Shaft rotation is determined by viewing from shaft end.  
 Ports with O-ring seal and inch threads shall be in accordance with ISO 11926/1.  
 Splite flange boss A and B per ISO 6162 is identical with high pressure series SAER J518 code 62 (6000 psi).  
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