

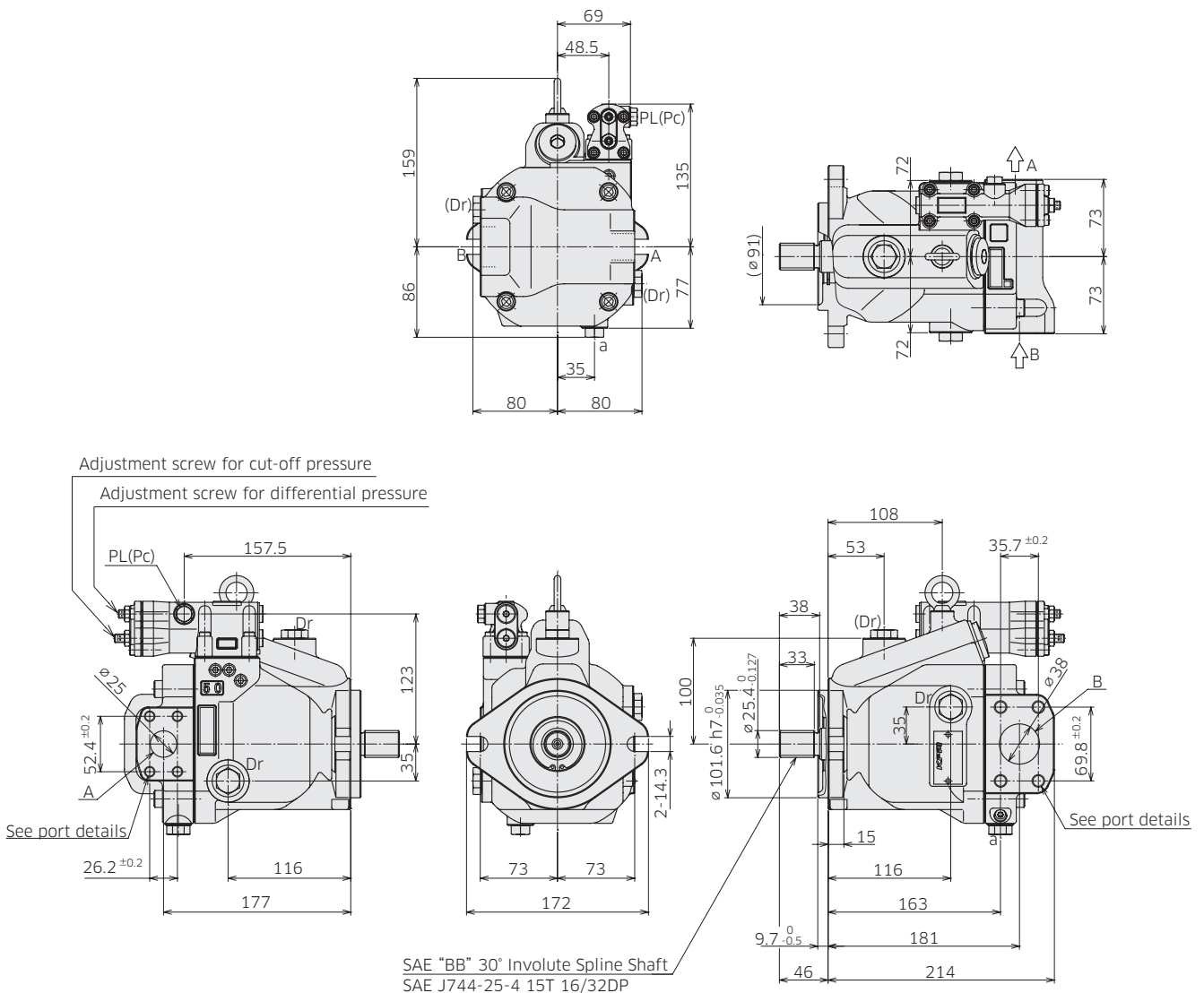
# Kawasaki K3VLS Hydraulic Pump Product catalog

## 3-1 Installation Dimensions

\*Dimensions in mm.

### ◆ K3VLS50 with Cut-off/Load Sense Control, Side Port (Clockwise Rotation)

Model Code : K3VLS 50 - 1 0 R BB \* - L0 A  
 : K3VLS 50 - 1 0 R BB \* - L1 A  
 : K3VLS 50 - 1 0 R BB \* - P0 A



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

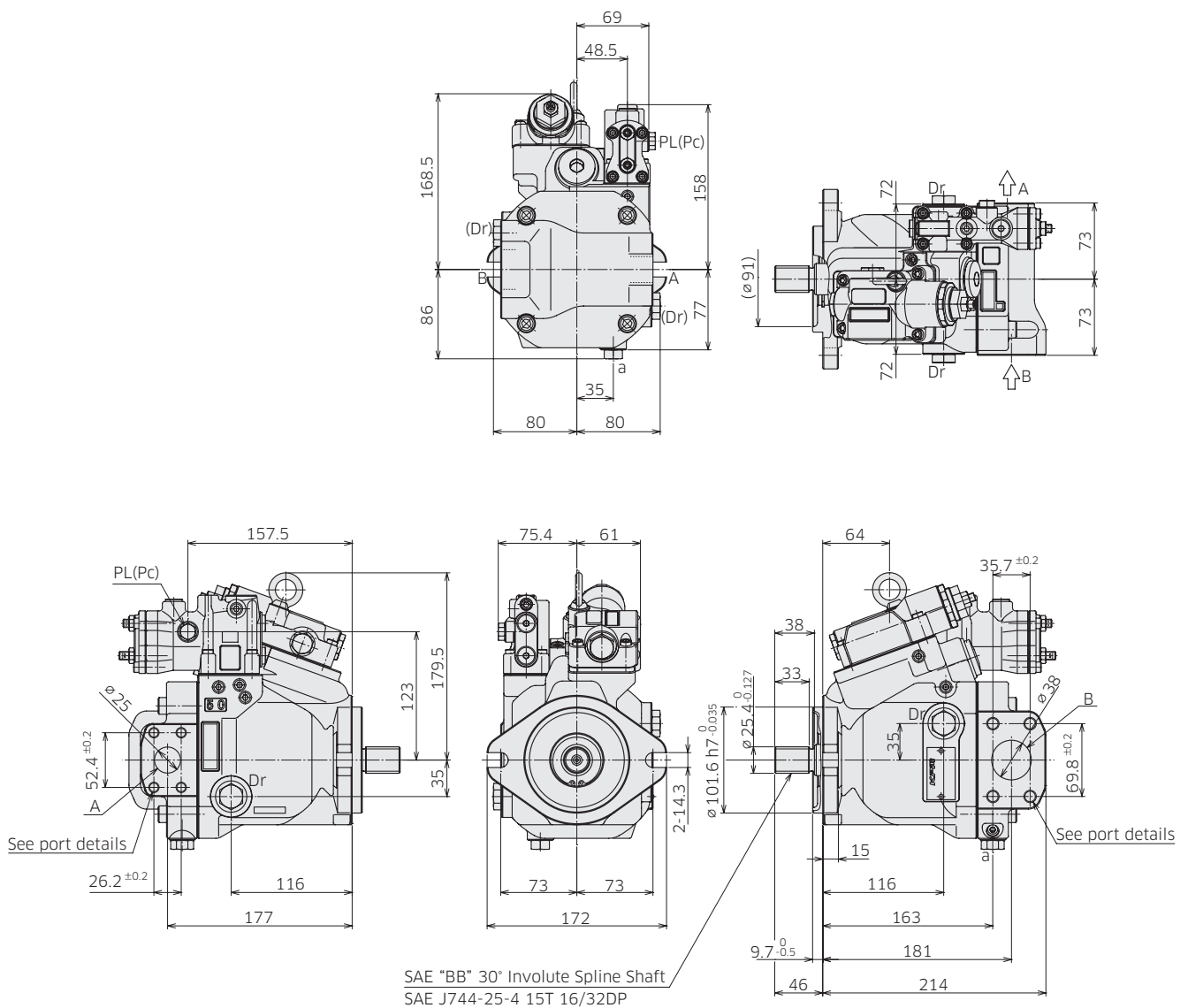
## 3. Dimensions

### 3-1 Installation Dimensions

\*Dimensions in mm.

#### ◆ K3VLS50 with Torque Limit Control, Side Port (Clockwise Rotation)

Model Code : K3VLS 50 - 1 0 R BB \* - L0 A A  
 : K3VLS 50 - 1 0 R BB \* - L1 A A  
 : K3VLS 50 - 1 0 R BB \* - P0 A A





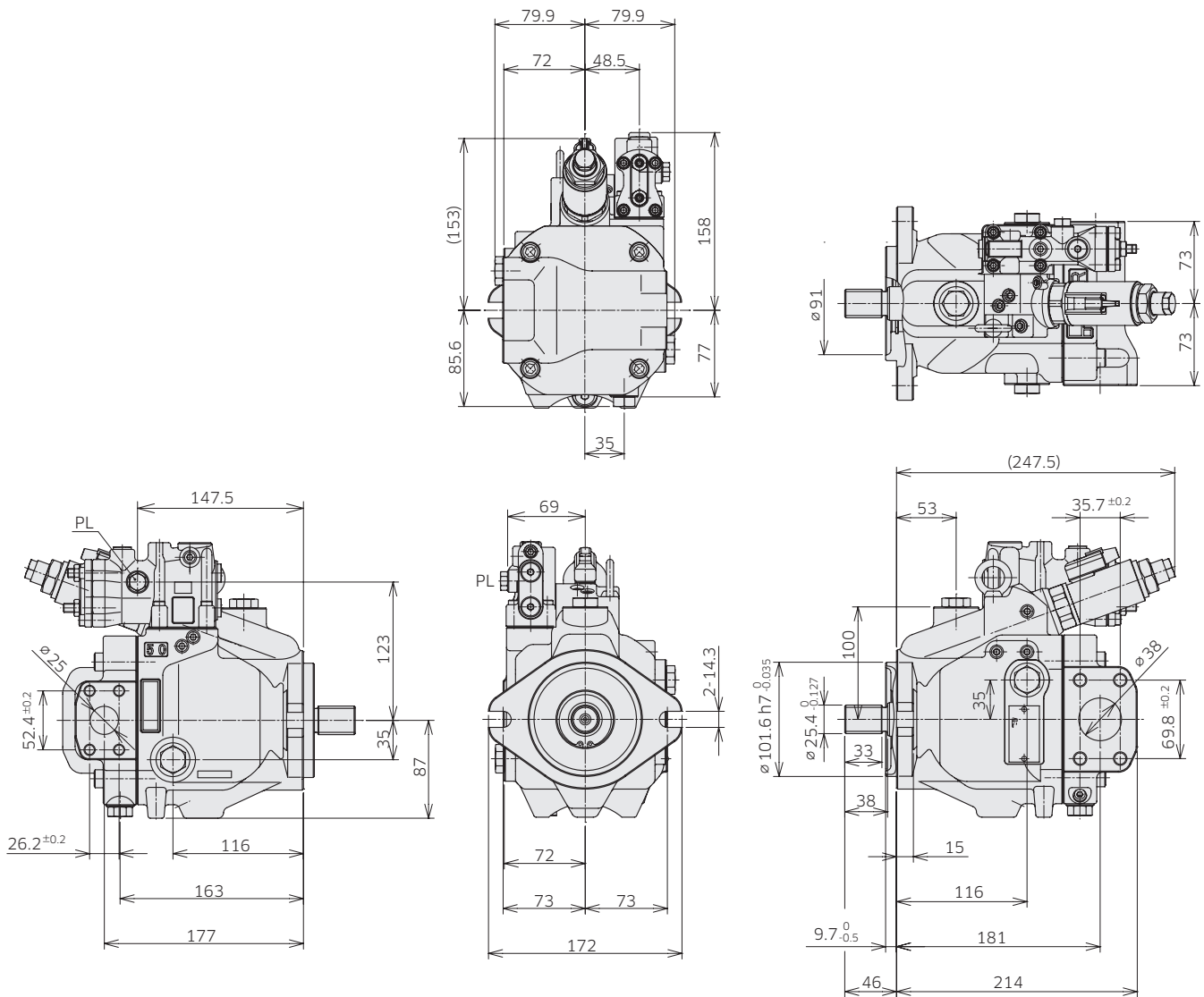
### 3. Dimensions

## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS50 Electric Displacement Control , Side Port (Clockwise Rotation)

Model Code : K3VLS 50 - 1 0 R BB \* - LO A E or - LO A F  
 : K3VLS 50 - 1 0 R BB \* - L1 A E or - L1 A F  
 : K3VLS 50 - 1 0 R BB \* - PO A E or - PO A F





### 3. Dimensions

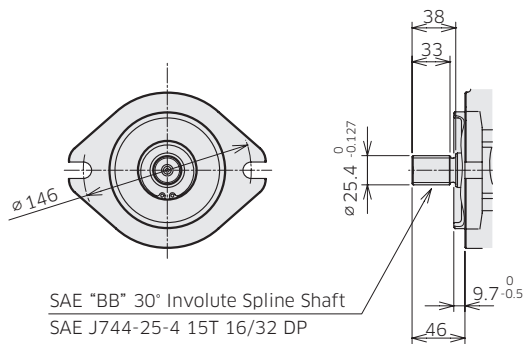
## 3-1 Installation Dimensions

\*Dimensions in mm.

### ◆ K3VLS50 Mounting Flange and Shaft Options

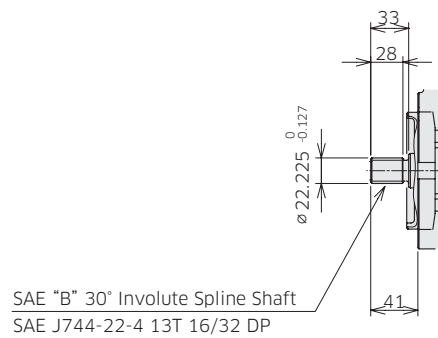
#### SAE BB Spline Shaft

Ordering Code "7. Mounting Flange and Shaft": BB



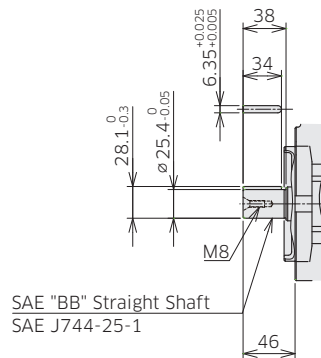
#### SAE B Spline Shaft

Ordering Code "7. Mounting Flange and Shaft": B



#### SAE BB Keyed Shaft

Ordering Code "7. Mounting Flange and Shaft": K2



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

## ◆ K3VLS50 Porting Details

### Main SAE Flanged Ports

Des	Port name	Port size	Flange threads	Tightening torque (Nm)
-----	-----------	-----------	----------------	------------------------

### UNF Threaded Version ('S' in position 8 of model code)

A	Delivery port	SAE J518C std pressure (code 61) 1"	3/8-16UNC-2B-18	57
B	Suction port	SAE J518C std pressure (code 61) 1-1/2"	1/2-13UNC-2B-22	98

### Metric Version ('H' in position 8 of model code)

A	Delivery port	PORT ISO 6162-1: 2012 P25M	M10-17	57
B	Suction port	PORT ISO 6162-1: 2012 P38M	M12-20	98

### Auxiliary Ports

Des	Port name	Port size	Tightening torque (Nm)
-----	-----------	-----------	------------------------

### SAE Version

Dr	Drain port	3/4-16UNF-2B-14.3 (ISO 11926-1: 1995)	98
PL	Load sensing port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
Pc	Pressure control port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
a	Gauge port	9/16-18UNF-2B-12.7 (ISO 11926-1: 1995)	59
Psv	Servo pressure port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
Pf	Power shift pressure port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12

### 3. Dimensions

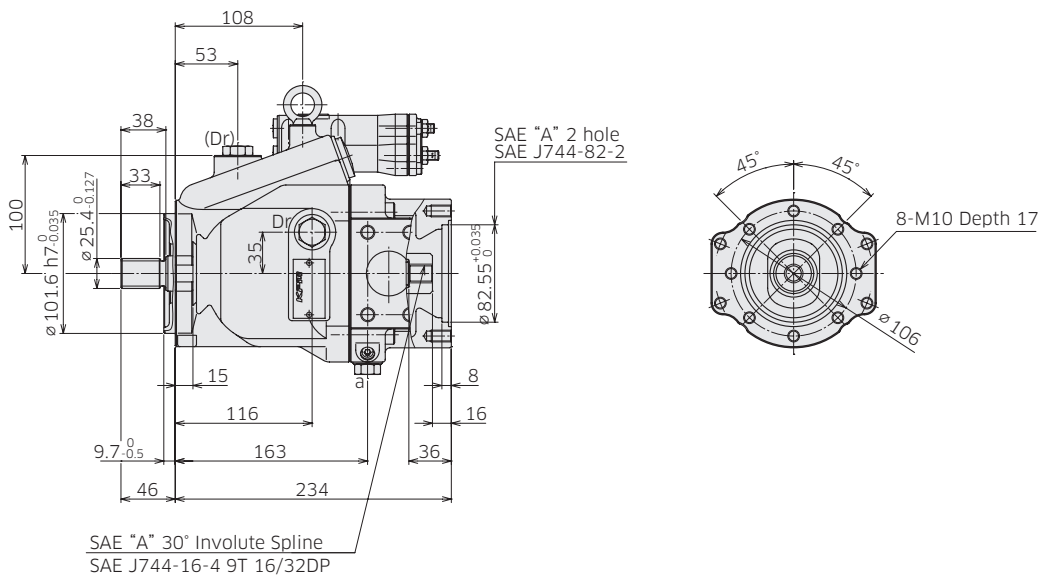
## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS50 Through Drive Options

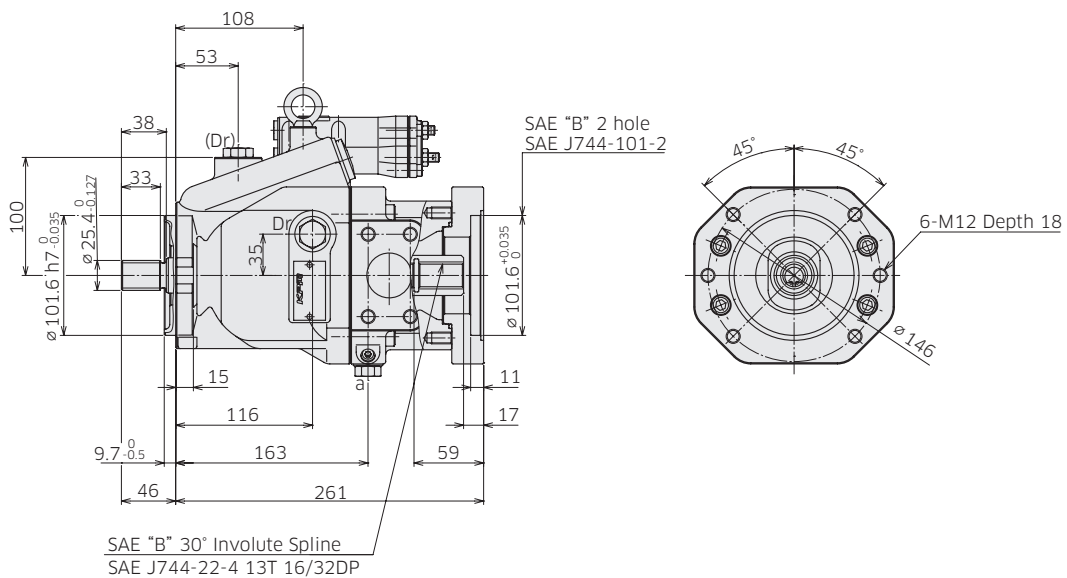
**Through Drive SAE A**

**Ordering Code "5. Through Drive and Porting": A**



**Through Drive SAE B**

**Ordering Code "5. Through Drive and Porting": B**



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.



### 3. Dimensions

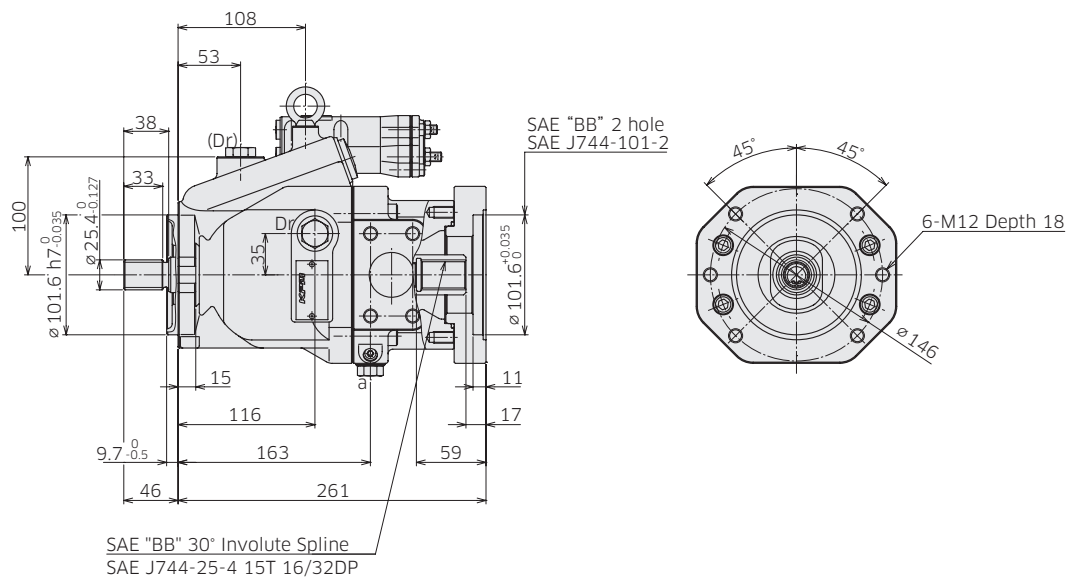
## 3-1 Installation Dimensions

\*Dimensions in mm.

### ◆ K3VLS50 Through Drive Options

Through Drive SAE BB

Ordering Code "5. Through Drive and Porting": BB



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.



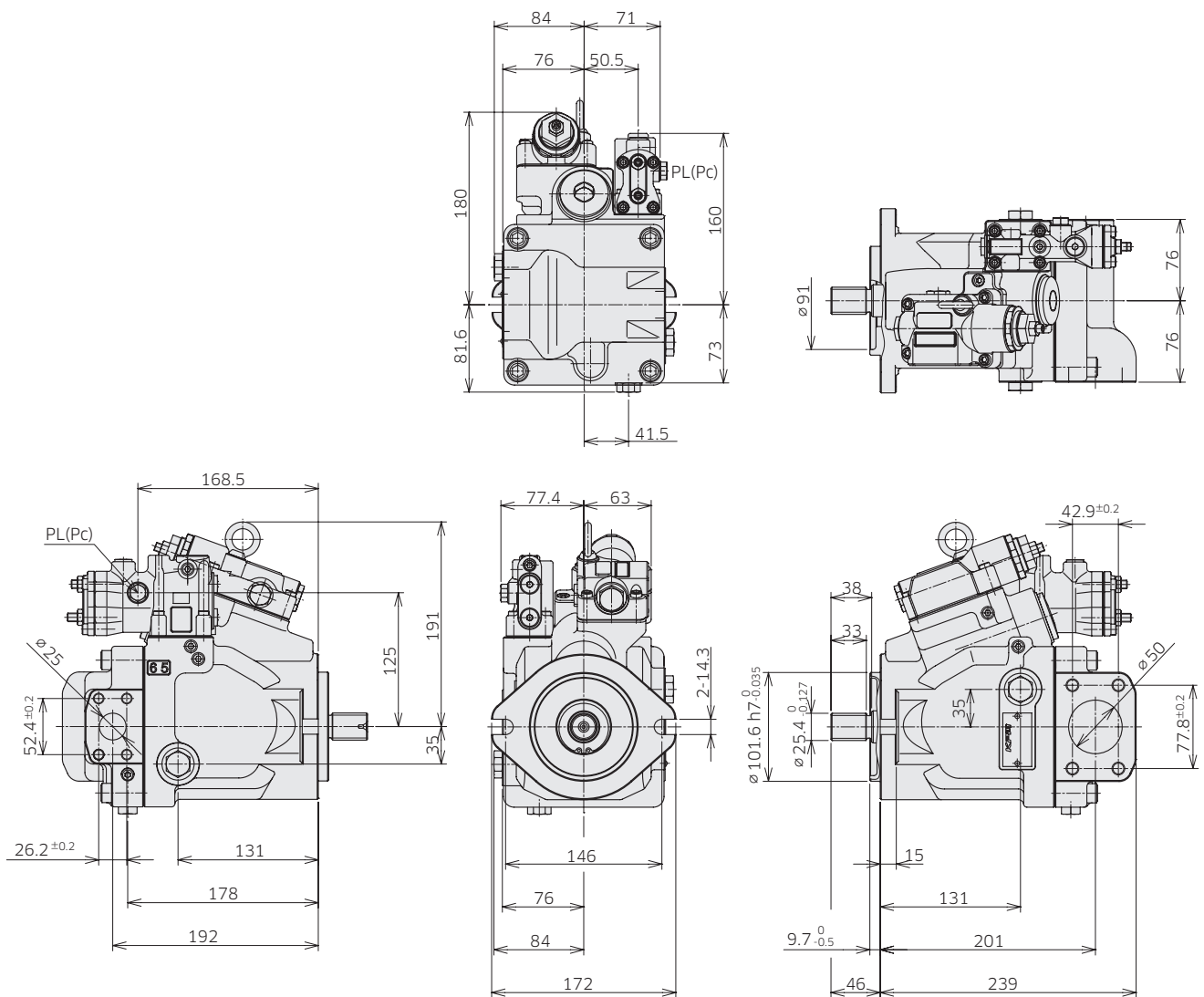
### 3. Dimensions

## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS65 Torque Limit Control, Side Port (Clockwise Rotation)

Model Code : K3VLS 65 - 1 0 R BB \* - L0 A A  
 : K3VLS 65 - 1 0 R BB \* - L1 A A  
 : K3VLS 65 - 1 0 R BB \* - P0 A A



## 3. Dimensions

### 3-1 Installation Dimensions

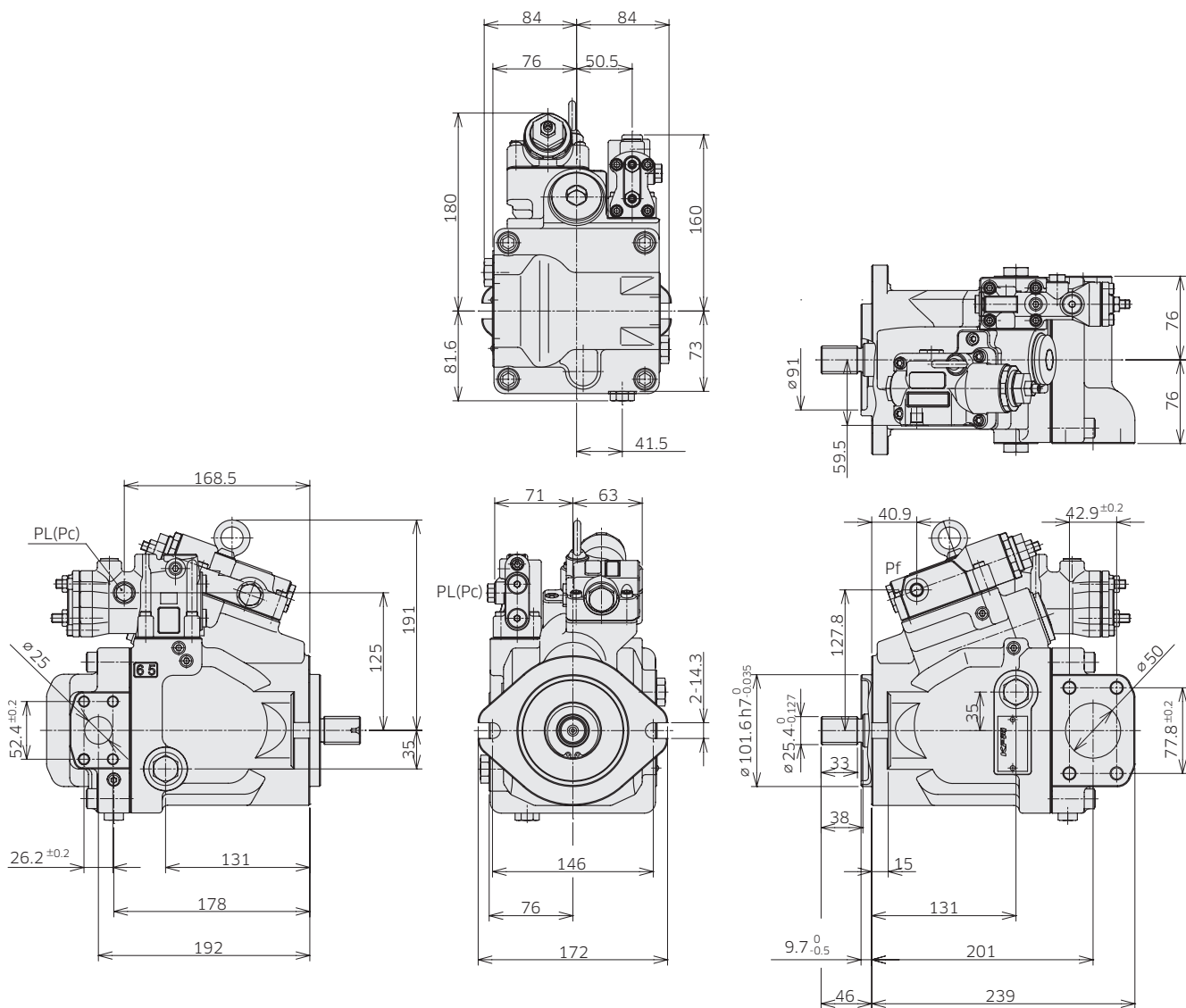
\* Dimensions in mm.

#### ◆ K3VLS65 Torque Limit with Power Shift Control, Side Port (Clockwise Rotation)

Model Code : K3VLS 65 - 1 0 R BB \* - L0 A B

: K3VLS 65 - 1 0 R BB \* - L1 A B

: K3VLS 65 - 1 0 R BB \* - P0 A B



### 3. Dimensions

## 3-1 Installation Dimensions

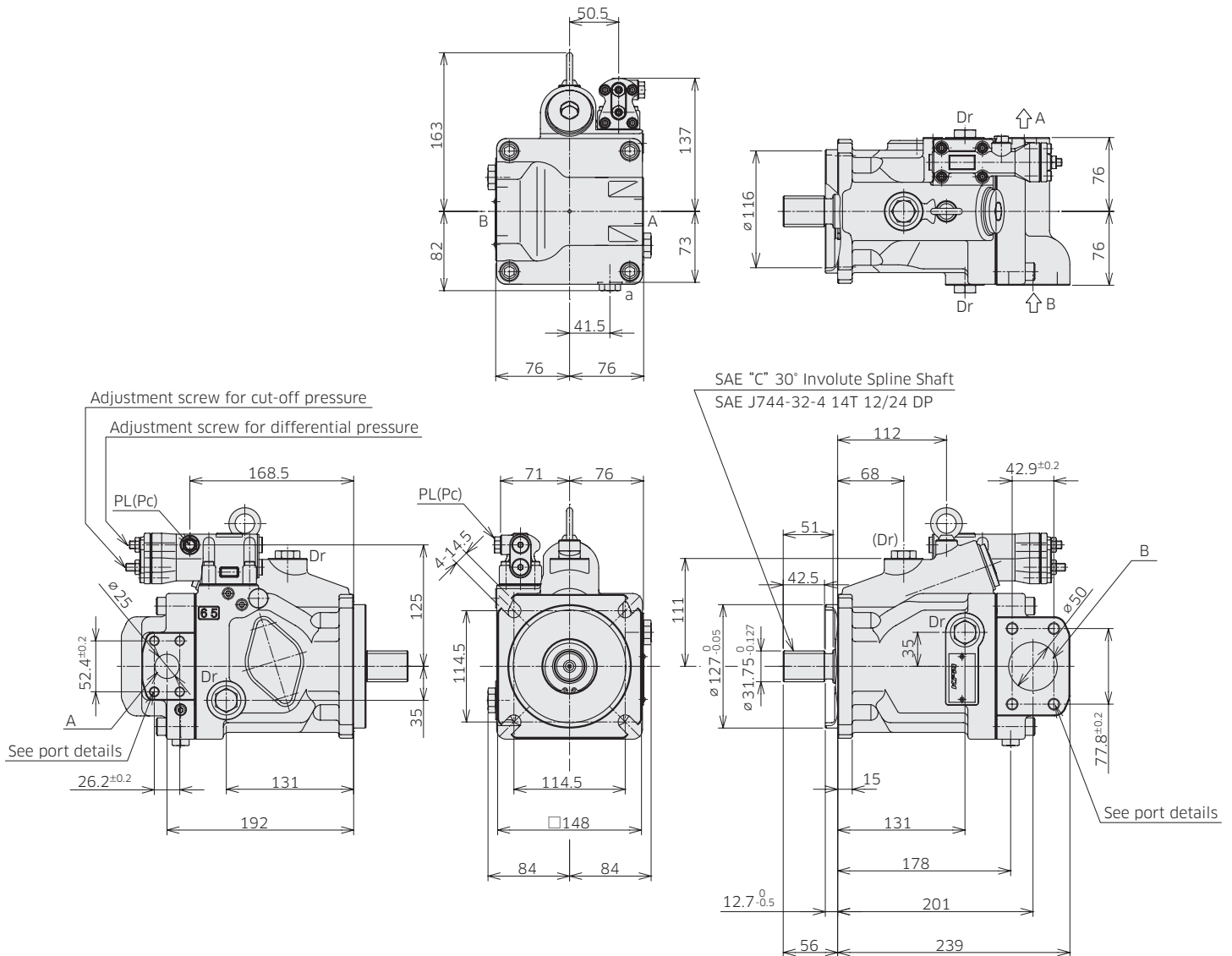
\*Dimensions in mm.

### ◆ K3VLS65 with Cut-off Load Sense Control, Side Port (Clockwise Rotation, SAE C-4 Mount Type)

Model Code : K3VLS 65 - 1 0 R C \* - L0 A

: K3VLS 65 - 1 0 R C \* - L1 A

: K3VLS 65 - 1 0 R C \* - P0 A



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

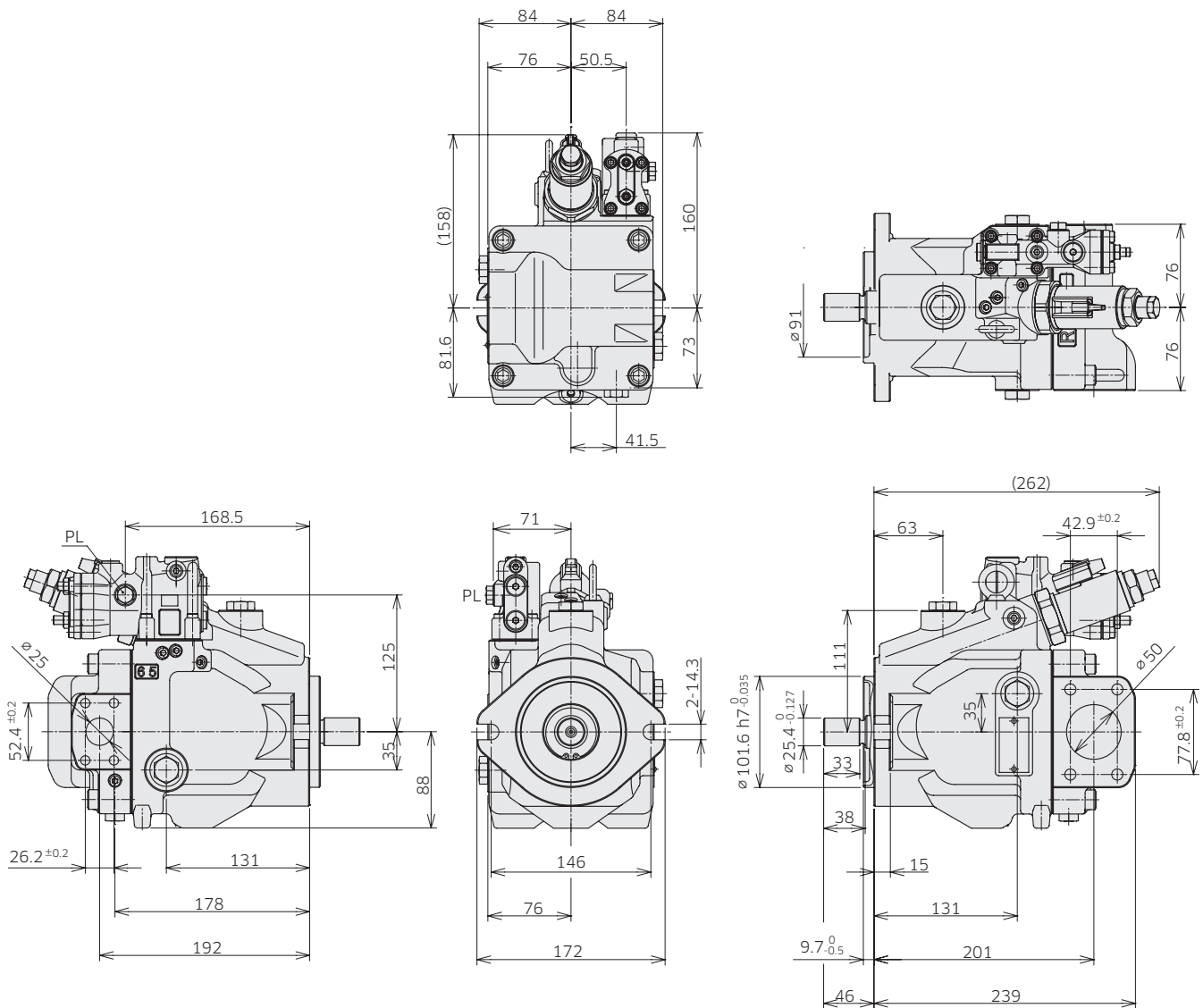
### 3. Dimensions

## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS65 Electric Displacement Control , Side Port (Clockwise Rotation)

Model Code : K3VLS 65 - 1 0 R BB \* - L0 A E or - L0 A F  
 : K3VLS 65 - 1 0 R BB \* - L1 A E or - L1 A F  
 : K3VLS 65 - 1 0 R BB \* - P0 A E or - P0 A F



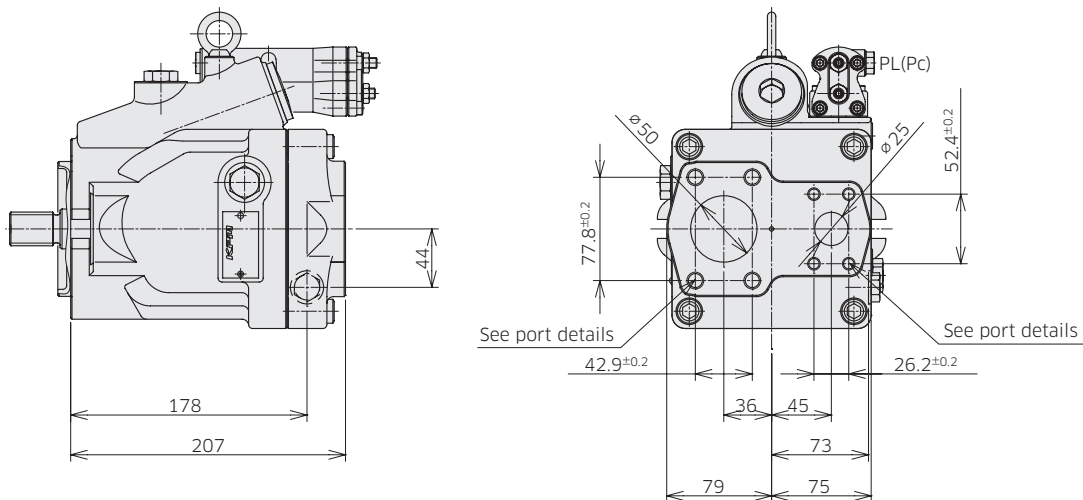
### 3. Dimensions

## 3-1 Installation Dimensions

\* Dimensions in mm.

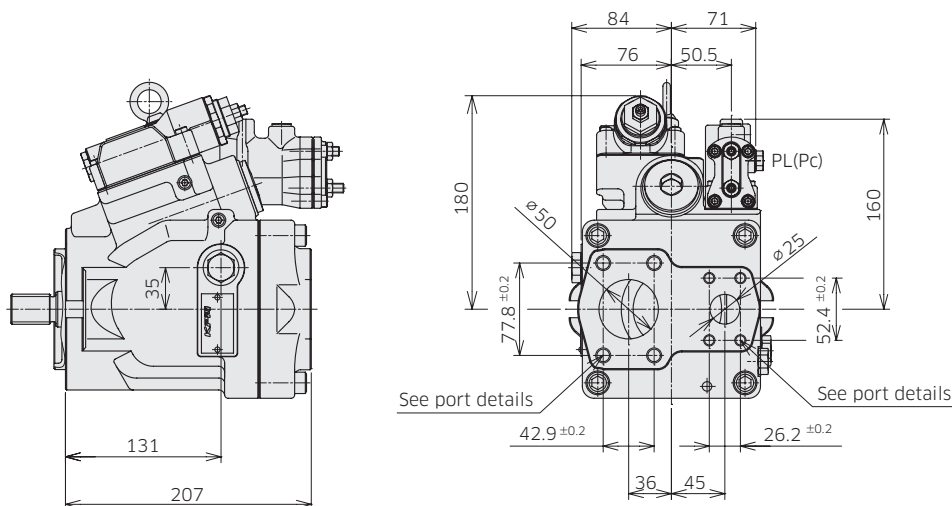
### ◆ K3VLS65 Rear Port (Clockwise Rotation)

Model Code : K3VLS 65 - 1 R R BB \* - L0 A  
 : K3VLS 65 - 1 R R BB \* - L1 A  
 : K3VLS 65 - 1 R R BB \* - P0 A



### ◆ K3VLS65 Torque Limit Control, Rear Port (Clockwise Rotation)

Model Code : K3VLS 65 - 1 R R BB \* - L0 A A  
 : K3VLS 65 - 1 R R BB \* - L1 A A  
 : K3VLS 65 - 1 R R BB \* - P0 A A



### 3. Dimensions

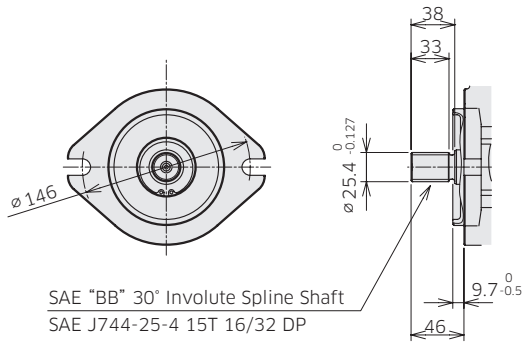
## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS65 Mounting Flange and Shaft Options

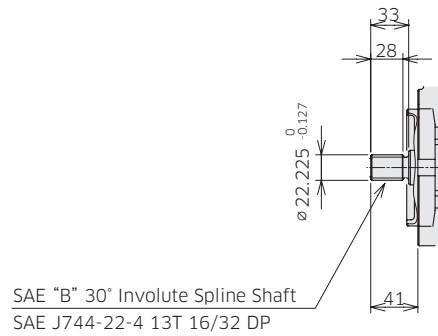
#### SAE BB Spline Shaft

Ordering Code "7. Mounting Flange and Shaft": BB



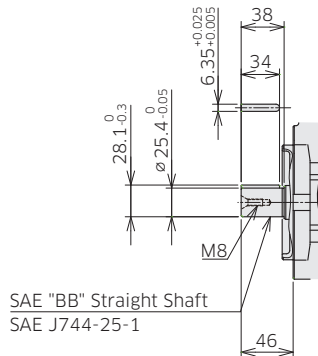
#### SAE B Spline Shaft

Ordering Code "7. Mounting Flange and Shaft": B



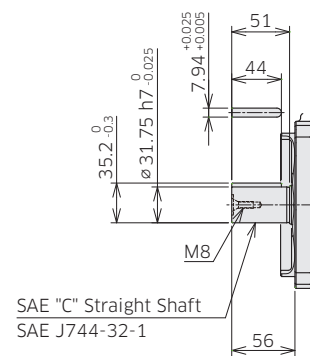
#### SAE BB Keyed Shaft

Ordering Code "7. Mounting Flange and Shaft": K2



#### SAE C Keyed Shaft

Ordering Code "7. Mounting Flange and Shaft": K3



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.



## ◆ K3VLS65 Porting Details

### Main SAE Flanged Ports

Des	Port name	Port size	Flange threads	Tightening torque (Nm)
-----	-----------	-----------	----------------	------------------------

### UNF Threaded Version ('S' in position 8 of model code)

A	Delivery port	SAE J518C std pressure (code 61) 1"	3/8-16UNC-2B-18	57
B	Suction port	SAE J518C std pressure (code 61) 2"	1/2-13UNC-2B-22	98

### Metric Version ('H' in position 8 of model code)

A	Delivery port	PORT ISO 6162-1: 2012 P25M	M10-17	57
B	Suction port	PORT ISO 6162-1: 2012 P51M	M12-20	98

### Auxiliary Ports

Des	Port name	Port size	Tightening torque (Nm)
-----	-----------	-----------	------------------------

### SAE Version

Dr	Drain port	3/4-16UNF-2B-14.3 (ISO 11926-1: 1995)	98
PL	Load sensing port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
Pc	Pressure control port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
a	Gauge port	9/16-18UNF-2B-12.7 (ISO 11926-1: 1995)	59
Psv	Servo pressure port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
Pf	Power shift pressure port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12

### 3. Dimensions

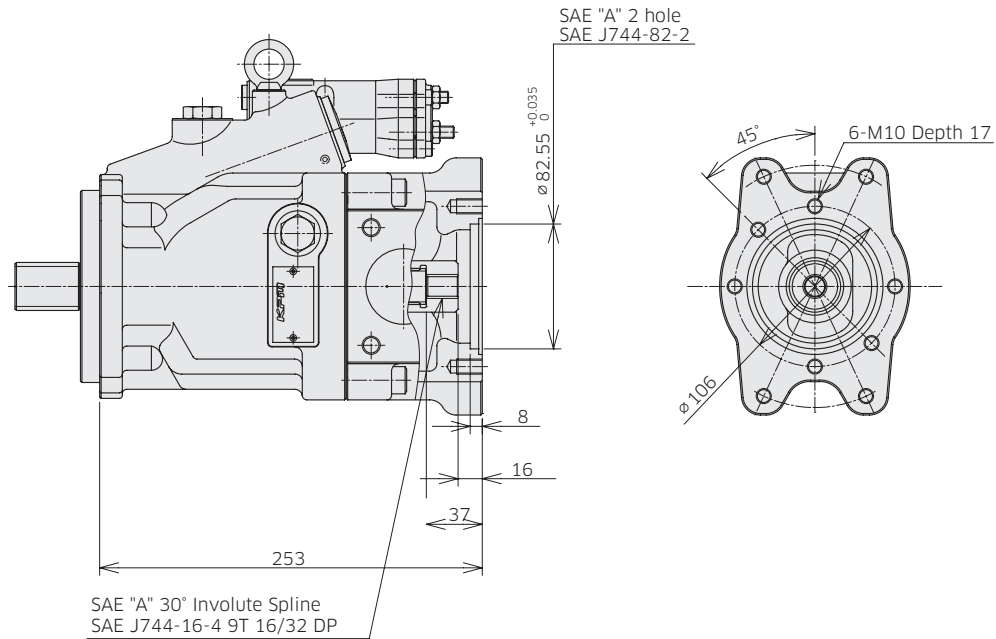
## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS65 Through Drive Options

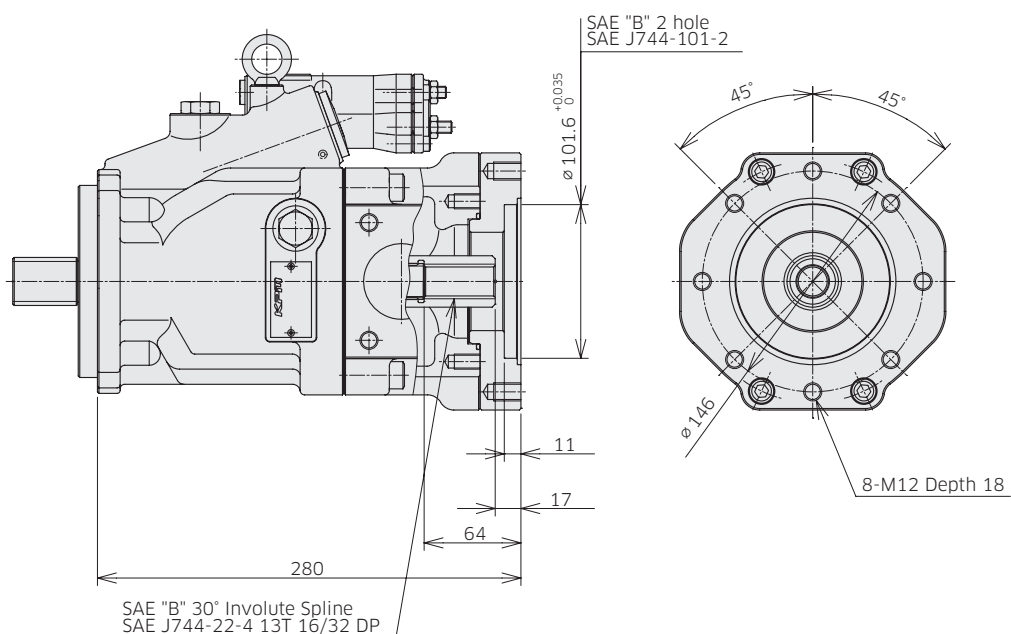
**Through Drive SAE A**

**Ordering Code "5. Through Drive and Porting": A**



**Through Drive SAE B**

**Ordering Code "5. Through Drive and Porting": B**



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

### 3. Dimensions

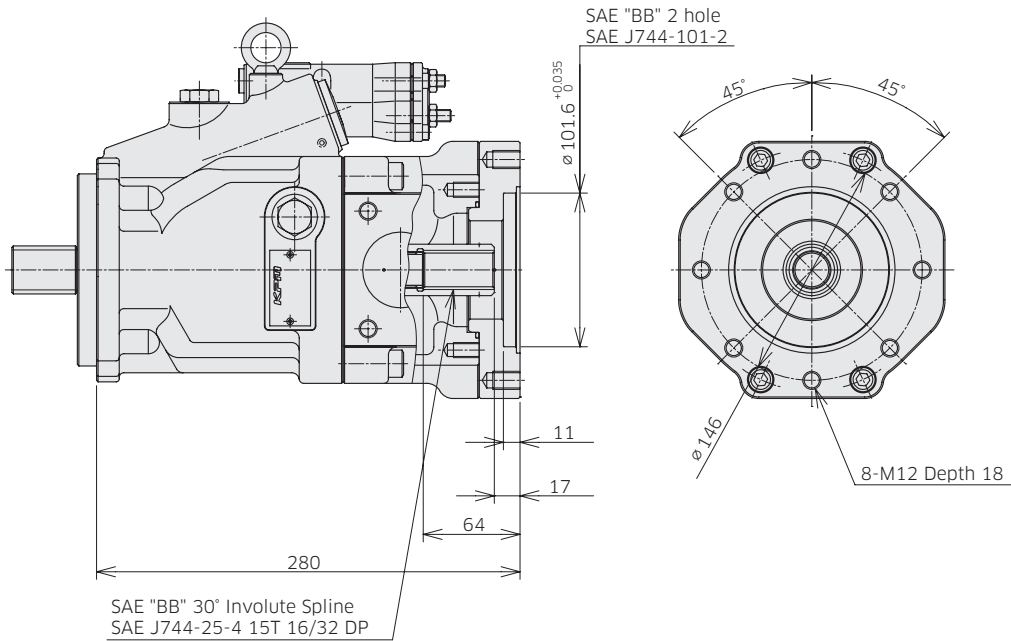
## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS65 Through Drive Options

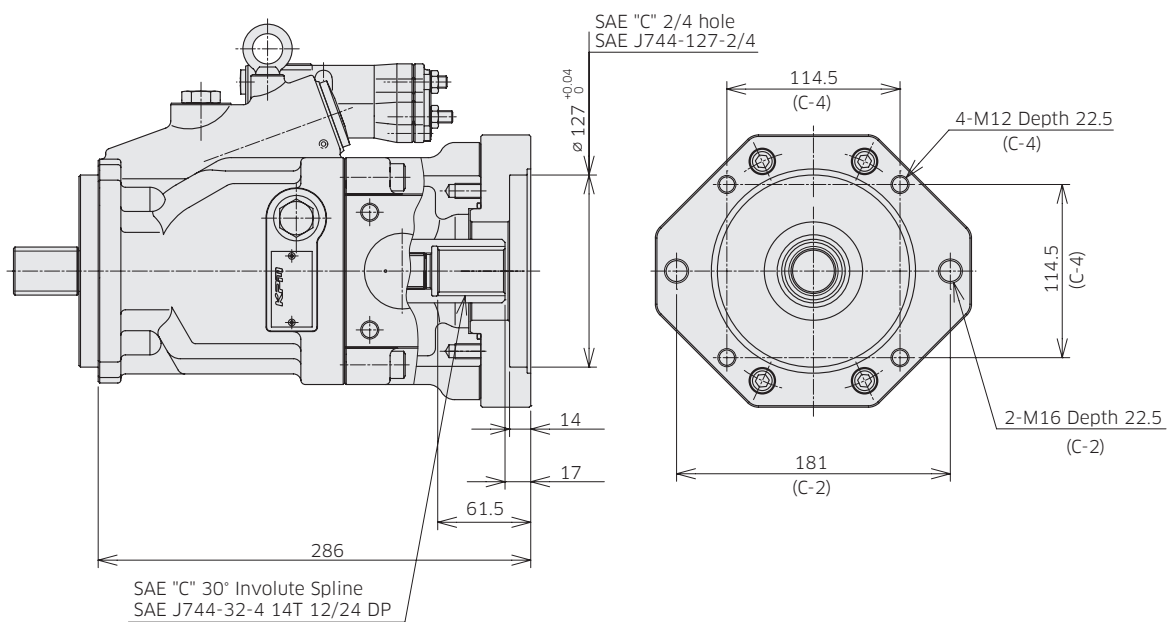
**Through Drive SAE BB**

**Ordering Code "5. Through Drive and Porting": BB**



**Through Drive SAE C**

**Ordering Code "5. Through Drive and Porting": C**



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.



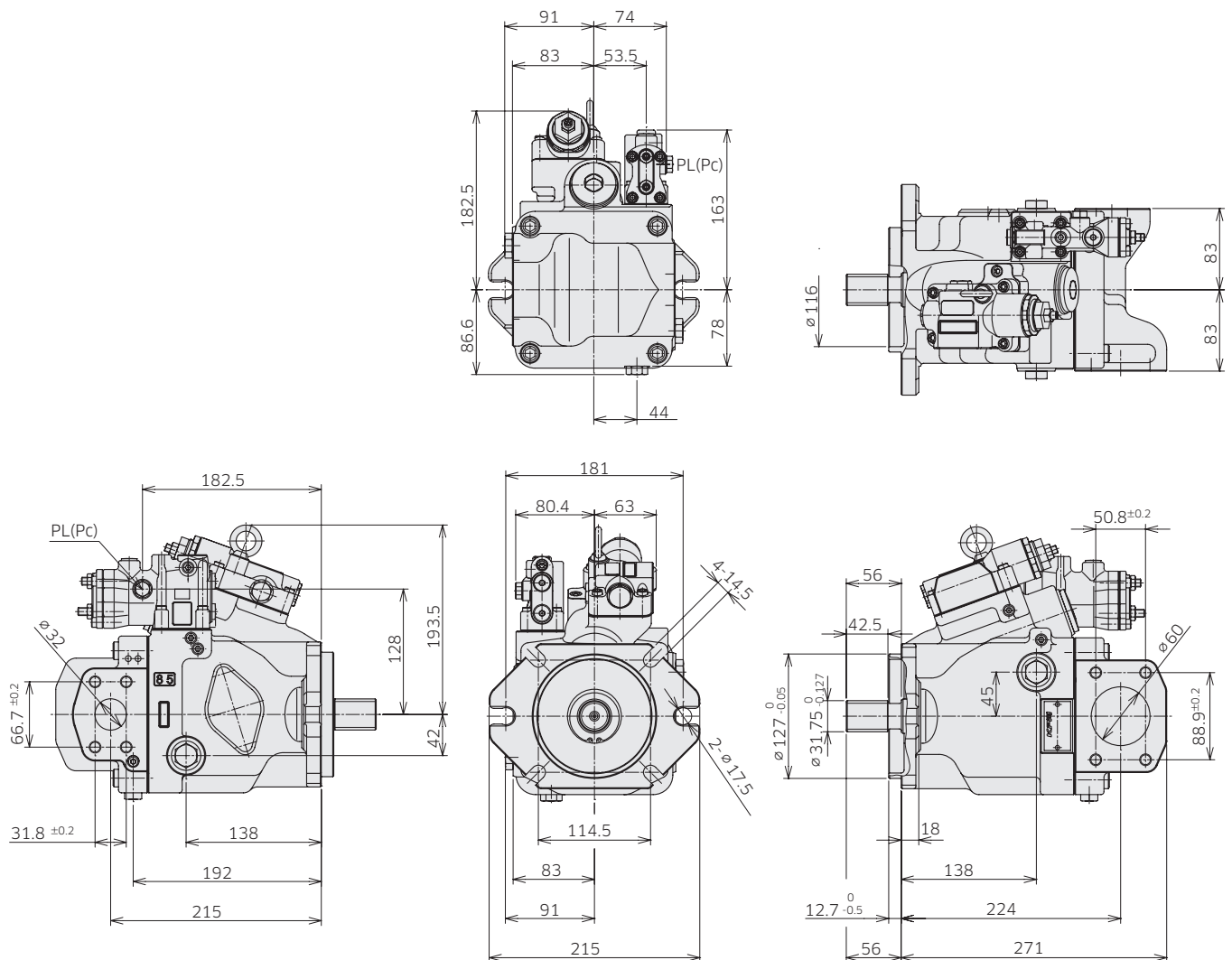
### 3. Dimensions

## 3-1 Installation Dimensions

\*Dimensions in mm.

### ◆ K3VLS85 Torque Limit Control, Side Port (Clockwise Rotation)

Model Code : K3VLS 85 - 1 0 R C \* - L0 A A  
 : K3VLS 85 - 1 0 R C \* - L1 A A  
 : K3VLS 85 - 1 0 R C \* - P0 A A



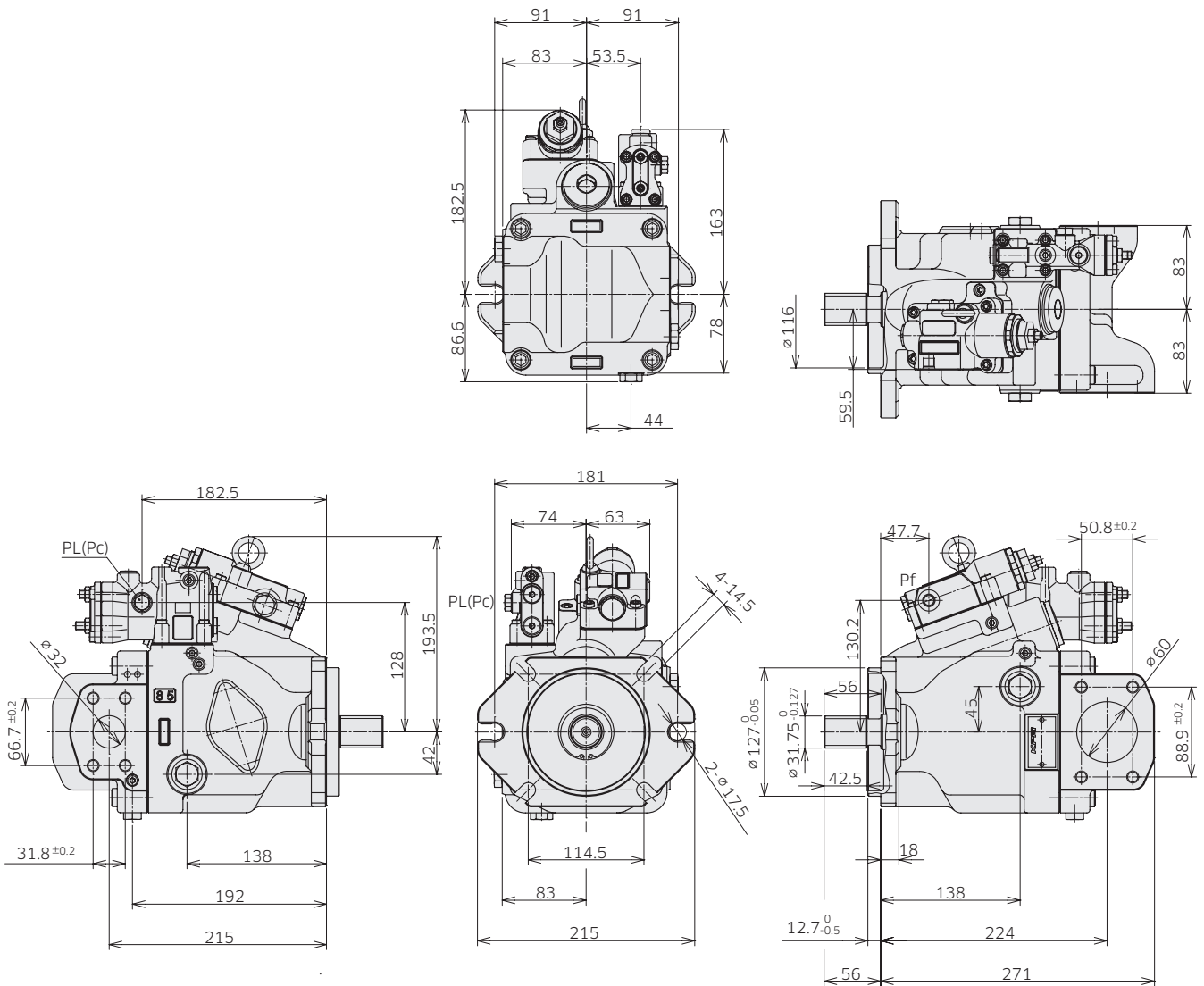
### 3. Dimensions

## 3-1 Installation Dimensions

\*Dimensions in mm.

### ◆ K3VLS85 Torque Limit with Power Shift Control, Side Port (Clockwise Rotation)

Model Code : K3VLS 85 - 1 0 R C \* - L0 A B  
 : K3VLS 85 - 1 0 R C \* - L1 A B  
 : K3VLS 85 - 1 0 R C \* - P0 A B



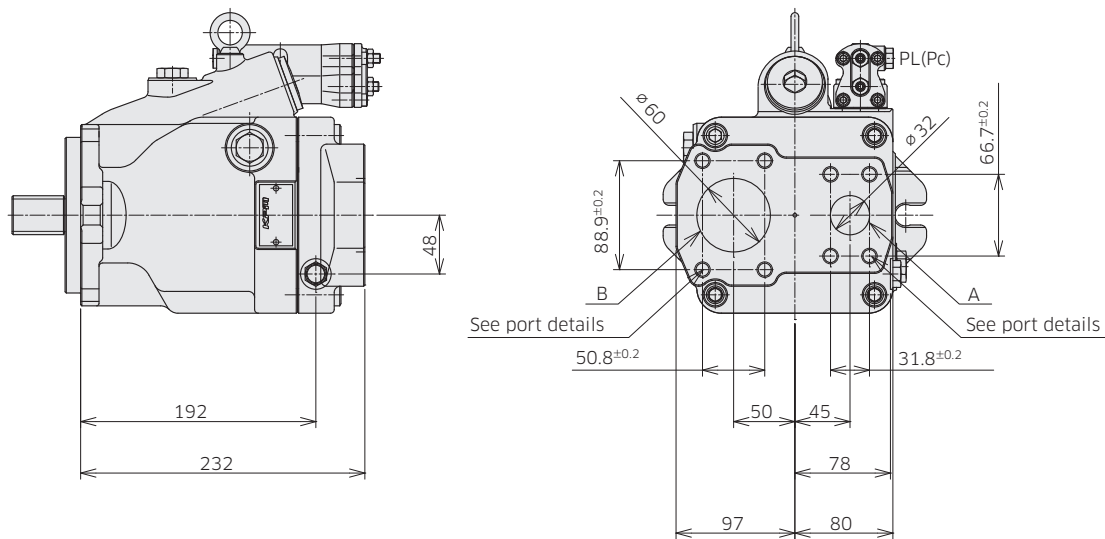
### 3. Dimensions

## 3-1 Installation Dimensions

\* Dimensions in mm.

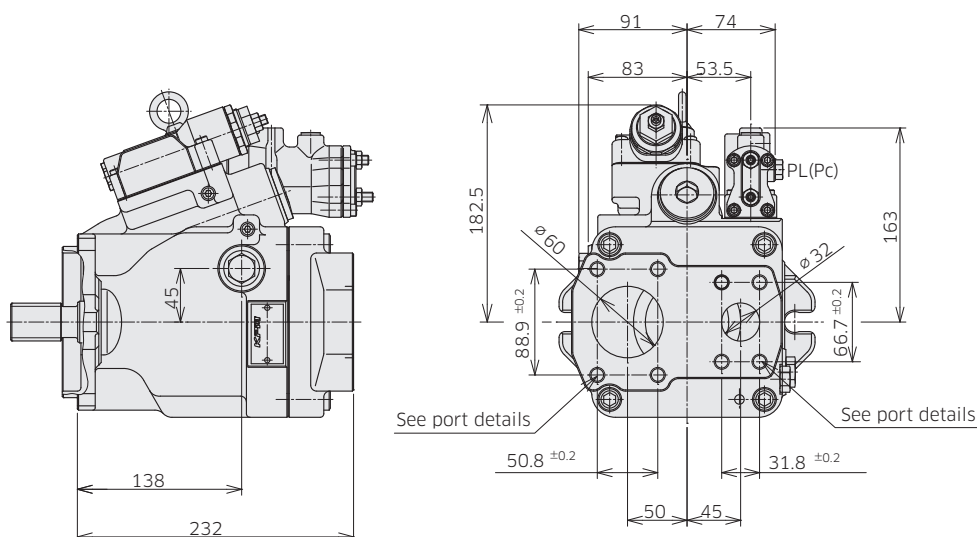
### ◆ K3VLS85 Rear Port (Clockwise Rotation)

Model Code : K3VLS 85 - 1 R R C \* - L0 A  
 : K3VLS 85 - 1 R R C \* - L1 A  
 : K3VLS 85 - 1 R R C \* - PO A



### ◆ K3VLS85 Torque Limit Control, Rear Port (Clockwise Rotation)

Model Code : K3VLS 85 - 1 R R C \* - L0 A A  
 : K3VLS 85 - 1 R R C \* - L1 A A  
 : K3VLS 85 - 1 R R C \* - PO A A



### 3. Dimensions

## 3-1 Installation Dimensions

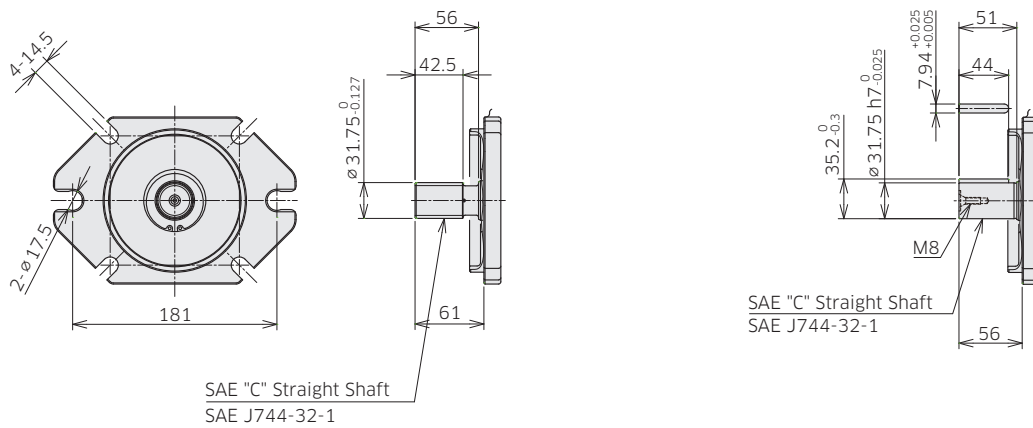
### ◆ K3VLS85 Mounting Flange and Shaft Options

#### SAE C Spline Shaft

Ordering Code "7. Mounting Flange and Shaft": C

#### SAE C Keyed Shaft

Ordering Code "7. Mounting Flange and Shaft": K3



### ◆ K3VLS85 Porting Details

#### Main SAE Flanged Ports

Des	Port name	Port size	Flange threads	Tightening torque (Nm)
-----	-----------	-----------	----------------	------------------------

#### UNF Threaded Version ('S' in position 8 of model code)

A	Delivery port	SAE J518C high pressure (code 62) 1-1/4"	1/2-13UNC-2B-22	98
B	Suction port	SAE J518C std pressure (code 61) 2-1/2"	1/2-13UNC-2B-22	98

#### Metric Version ('H' in position 8 of model code)

A	Delivery port	PORT ISO 6162-2: 2012 P32M	M12-23	98
B	Suction port	PORT ISO 6162-1: 2012 P64M	M12-22	98

#### Auxiliary Ports

Des	Port name	Port size	Tightening torque (Nm)
-----	-----------	-----------	------------------------

#### SAE Version

Dr	Drain port	3/4-16UNF-2B-14.3 (ISO 11926-1: 1995)	98
PL	Load sensing port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
Pc	Pressure control port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
a	Gauge port	9/16-18UNF-2B-12.7 (ISO 11926-1: 1995)	59
Psv	Servo pressure port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
Pf	Power shift pressure port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12



### 3. Dimensions

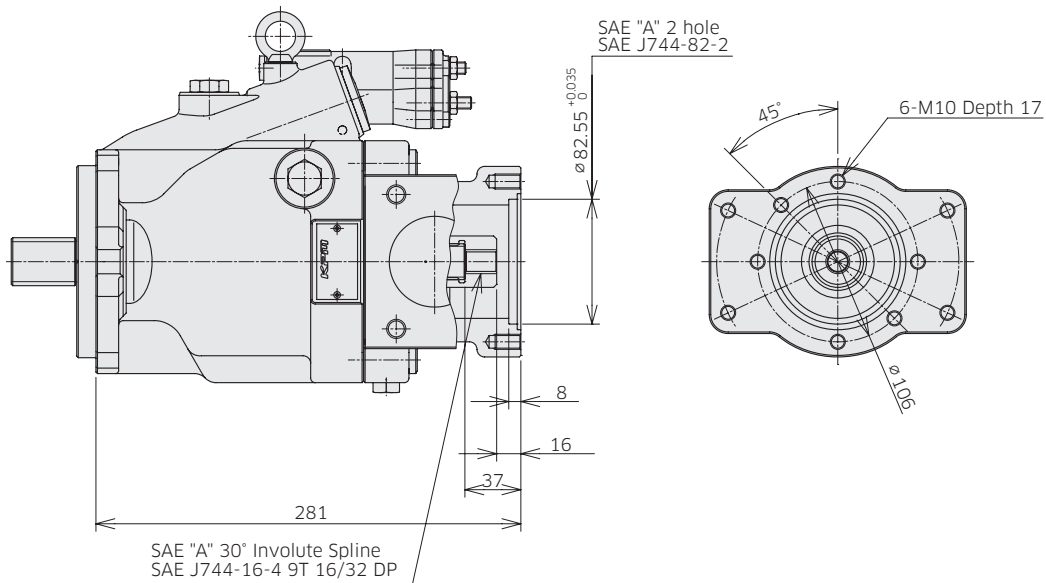
## 3-1 Installation Dimensions

\*Dimensions in mm.

### ◆ K3VLS85 Through Drive Options

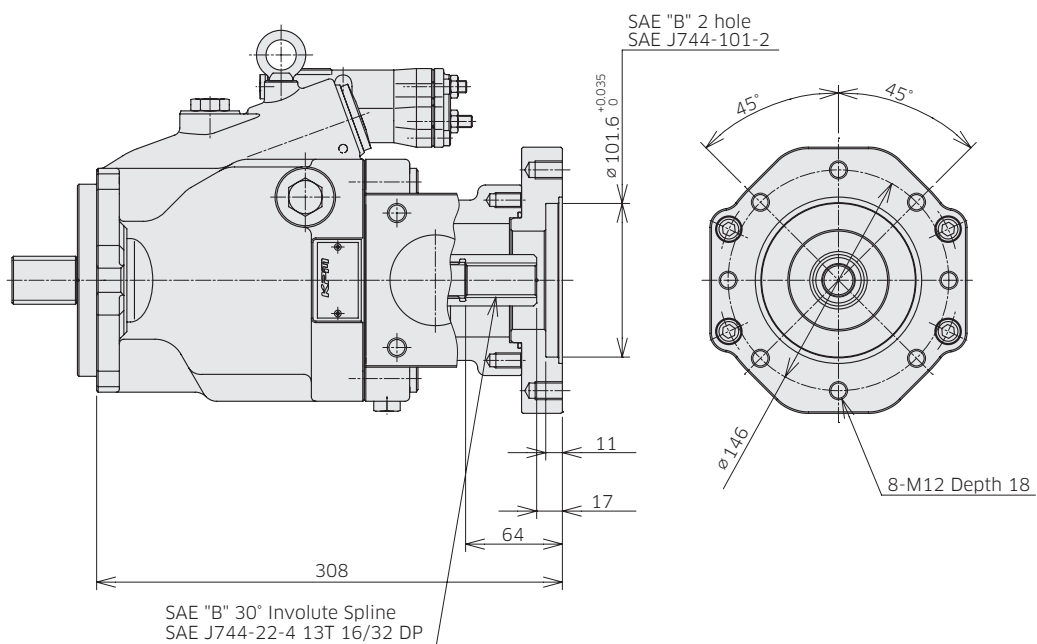
Through Drive SAE A

Ordering Code "5. Through Drive and Porting": A



Through Drive SAE B

Ordering Code "5. Through Drive and Porting": B



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

### 3. Dimensions

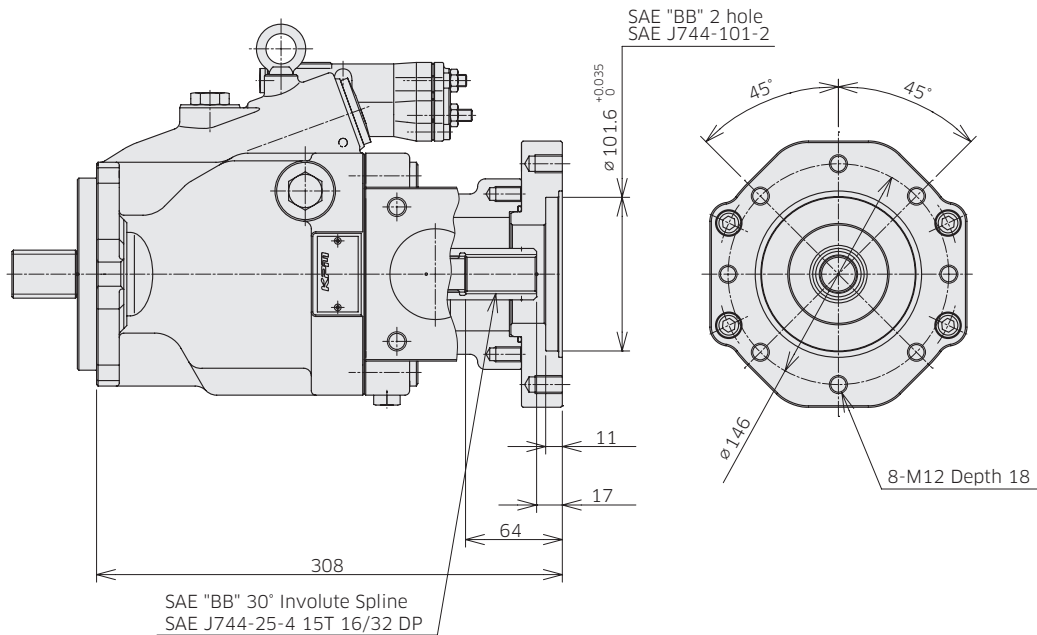
## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS85 Through Drive Options

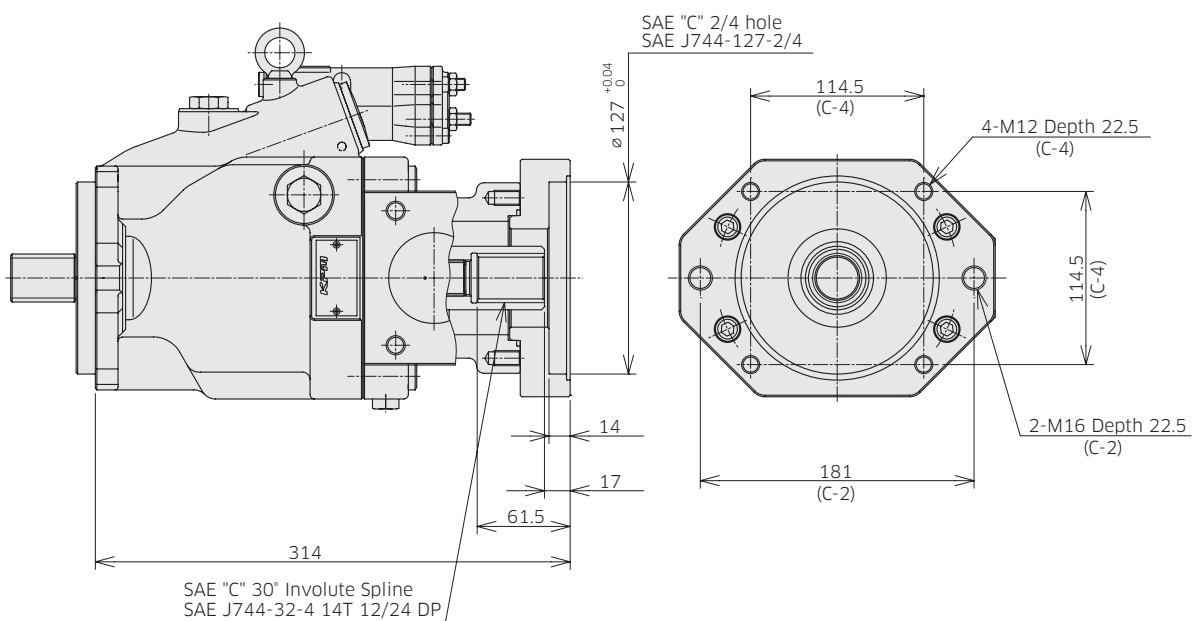
Through Drive SAE BB

Ordering Code "5. Through Drive and Porting": BB



Trough Drive SAE C

Ordering Code "5. Through Drive and Porting": C



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

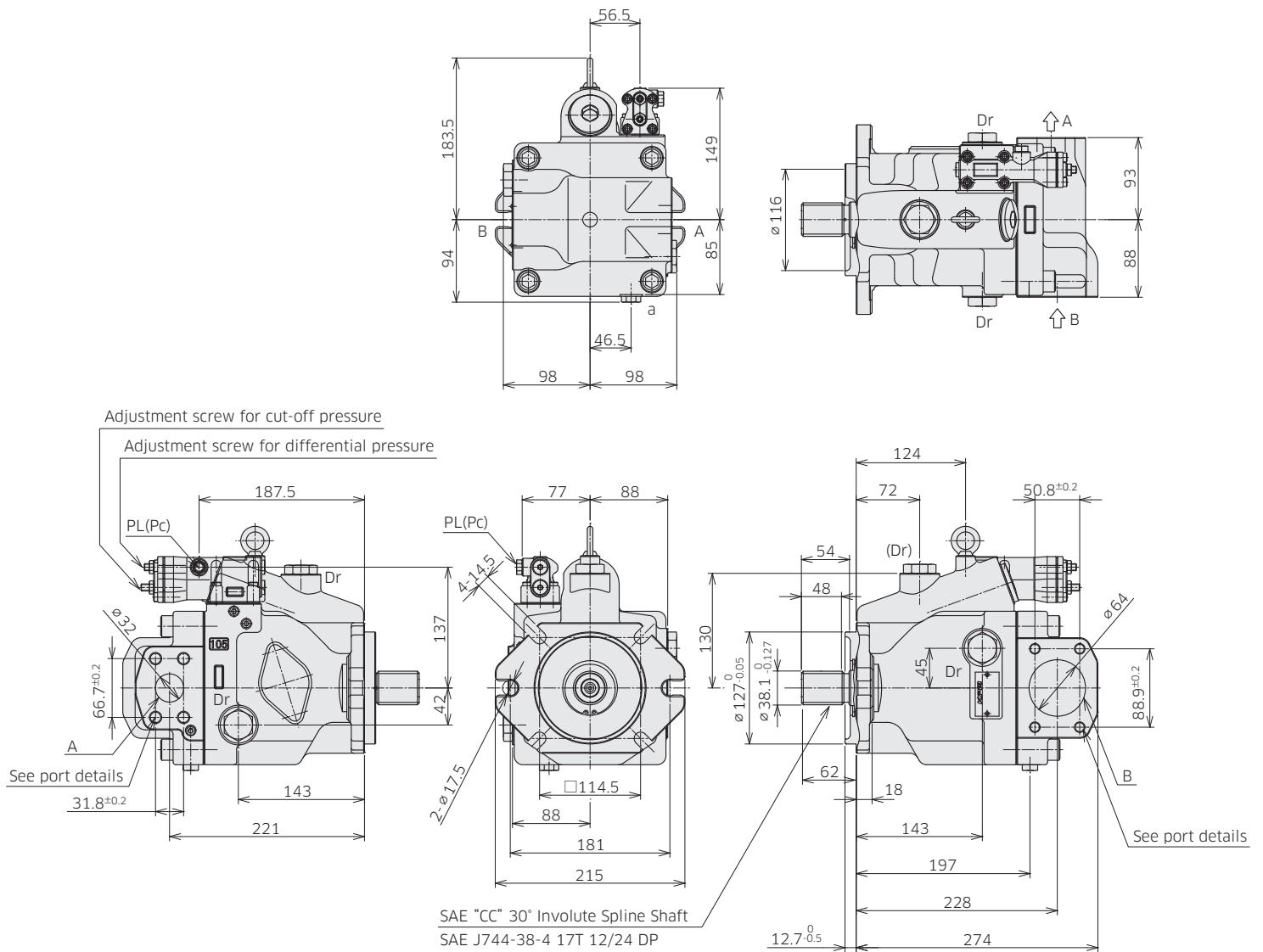
### 3. Dimensions

## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS105 with Cut-off / Load sense Control, Side Port (Clockwise Rotation)

Model Code : K3VLS 105 - 1 0 R CC \* - L0 A  
 : K3VLS 105 - 1 0 R CC \* - L1 A  
 : K3VLS 105 - 1 0 R CC \* - P0 A



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

### 3. Dimensions

## 3-1 Installation Dimensions

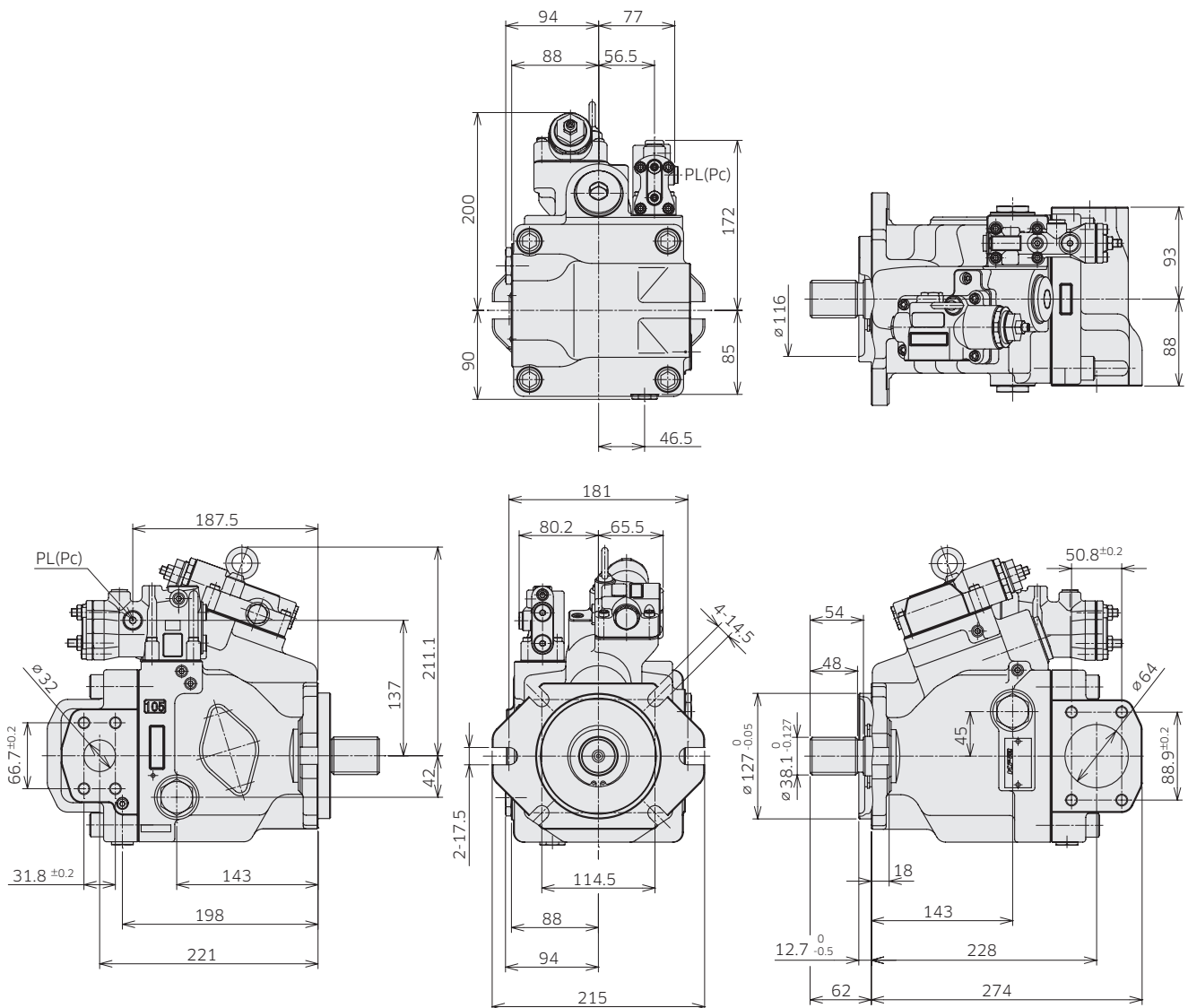
\* Dimensions in mm.

### ◆ K3VLS105 Torque Limit Control, Side Port (Clockwise Rotation)

Model Code : K3VLS 105 - 1 0 R CC \* - L0 A A

: K3VLS 105 - 1 0 R CC \* - L1 A A

: K3VLS 105 - 1 0 R CC \* - P0 A A



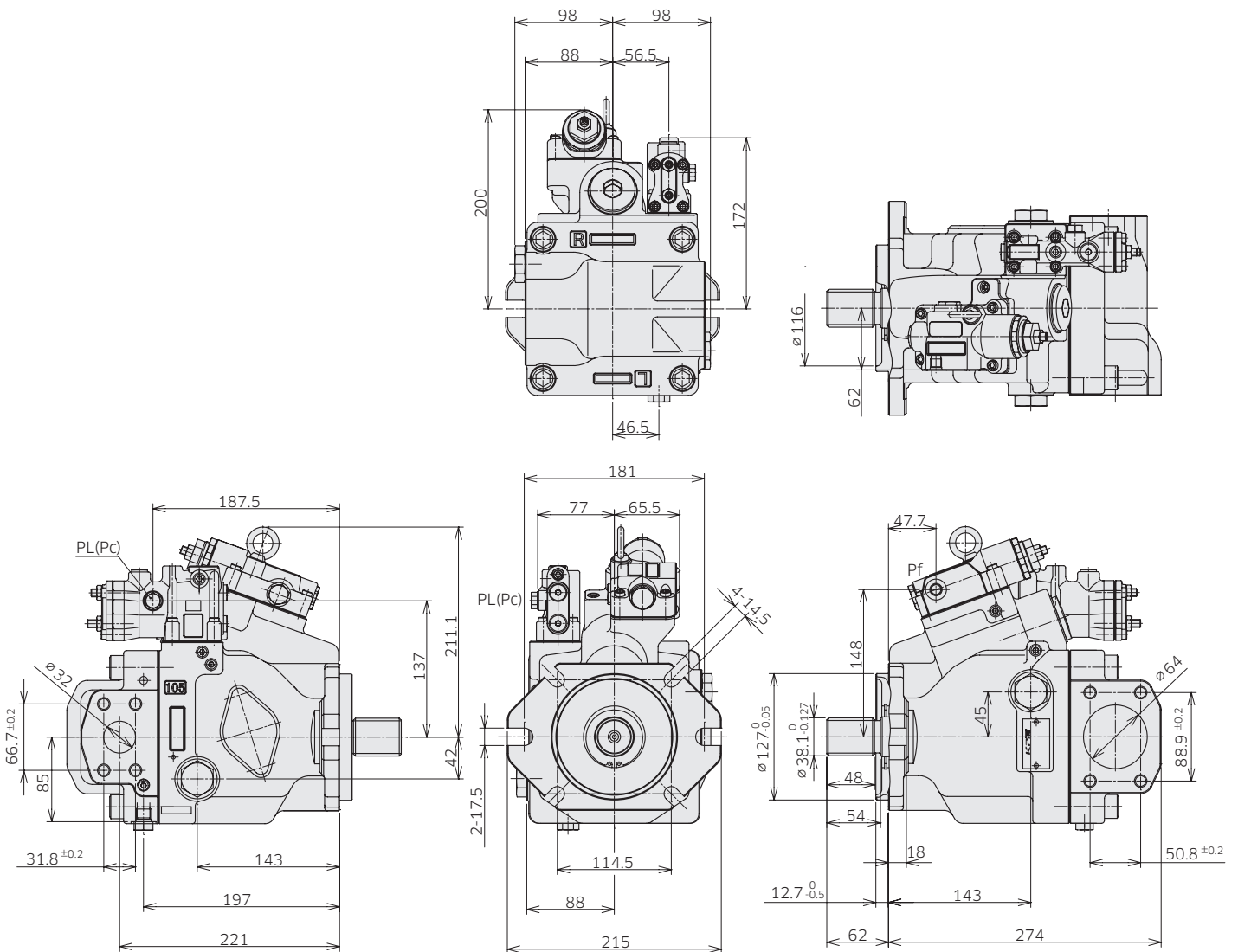
### 3. Dimensions

## 3-1 Installation Dimensions

\*Dimensions in mm.

### ◆ K3VLS105 Torque Limit with Power Shift Control, Side Port (Clockwise Rotation)

Model Code : K3VLS 105 - 1 0 R CC \* - L0 A B  
 : K3VLS 105 - 1 0 R CC \* - L1 A B  
 : K3VLS 105 - 1 0 R CC \* - P0 A B





### 3. Dimensions

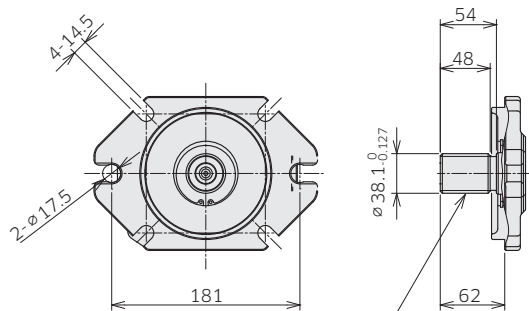
## 3-1 Installation Dimensions

\*Dimensions in mm.

### ◆ K3VLS105 Mounting Flange and Shaft Options

#### SAE CC Spline Shaft

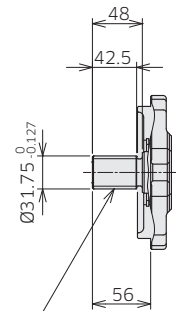
Ordering Code "7.Mounting Flange and Shaft": CC



SAE "CC" 30° Involute Spline Shaft  
SAE J744-38-4 17T 12/24 DP

#### SAE C Spline Shaft

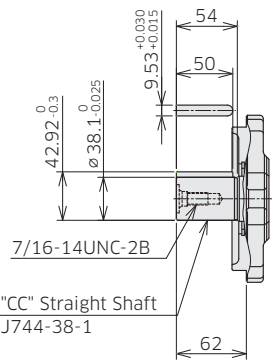
Ordering Code "7.Mounting Flange and Shaft": C



SAE "C" 30° Involute Spline Shaft  
SAE J744-32-4 14T 12/24 DP

#### SAE CC Keyed Shaft

Ordering Code "7. Mounting Flange and Shaft": K4



SAE "CC" Straight Shaft  
SAE J744-38-1

Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

## 3. Dimensions

# 3-1 Installation Dimensions

### ◆ K3VLS105 Porting Details

#### Main SAE Flanged Ports

Des	Port name	Port size	Flange threads	Tightening torque (Nm)
-----	-----------	-----------	----------------	------------------------

#### UNF Threaded Version ('S' in position 8 of model code)

A	Delivery port	SAE J518C high pressure (code 62) 1-1/4"	1/2-13UNC-2B-22	98
B	Suction port	SAE J518C std pressure (code 61) 2-1/2"	1/2-13UNC-2B-22	98

#### Metric Version ('H' in position 8 of model code)

A	Delivery port	PORT ISO 6162-2: 2012 P32M	M12-23	98
B	Suction port	PORT ISO 6162-1: 2012 P64M	M12-22	98

#### Auxiliary Ports

Des	Port name	Port size	Tightening torque (Nm)
-----	-----------	-----------	------------------------

#### SAE Version

Dr	Drain port	1-1/16-12UN-2B-19 (ISO 11926-1: 1995)	167
PL	Load sensing port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
Pc	Pressure control port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
a	Gauge port	9/16-18UNF-2B-12.7 (ISO 11926-1: 1995)	59
Psv	Servo pressure port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
Pf	Power shift pressure port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12



### 3. Dimensions

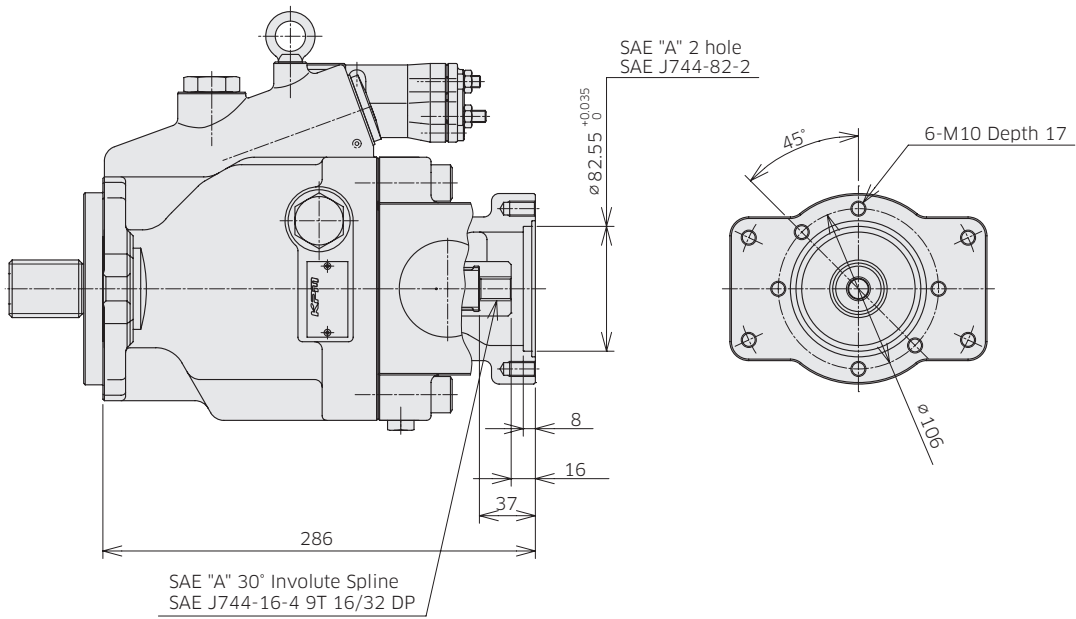
## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS105 Through Drive Options

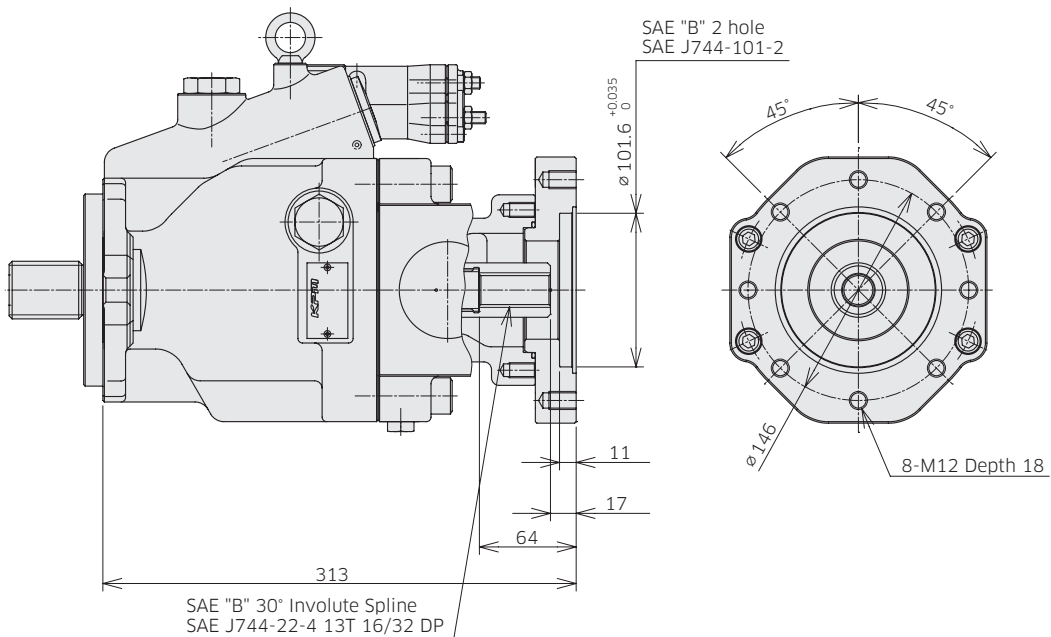
**Through Drive SAE A**

**Ordering Code "5. Through Drive and Porting": A**



**Through Drive SAE B**

**Ordering Code "5. Through Drive and Porting": B**



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

### 3. Dimensions

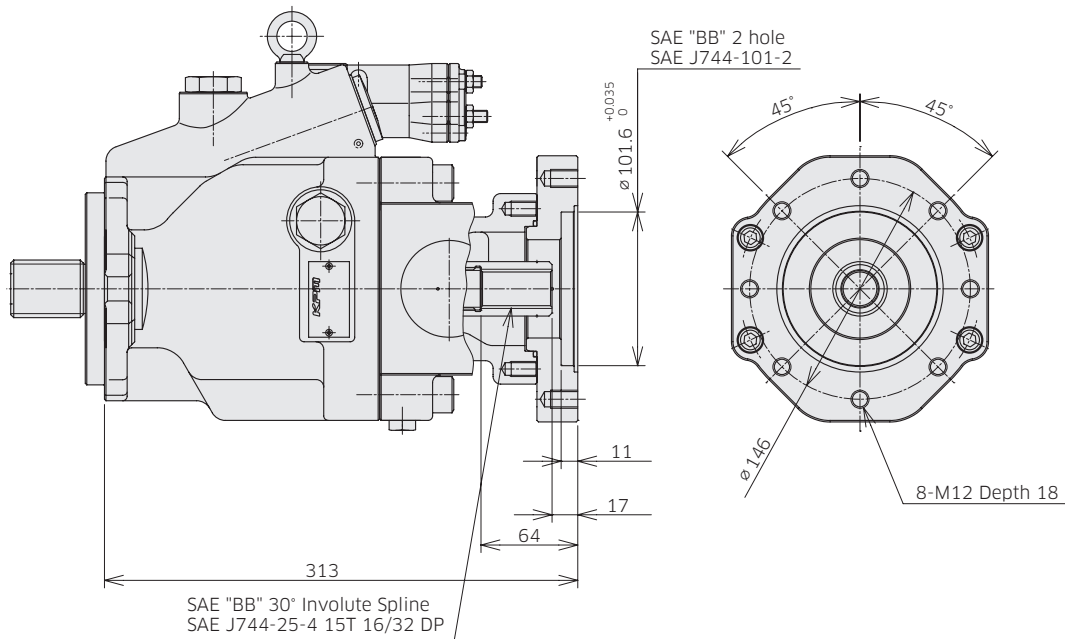
## 3-1 Installation Dimensions

\*Dimensions in mm.

### ◆ K3VLS105 Through Drive Options

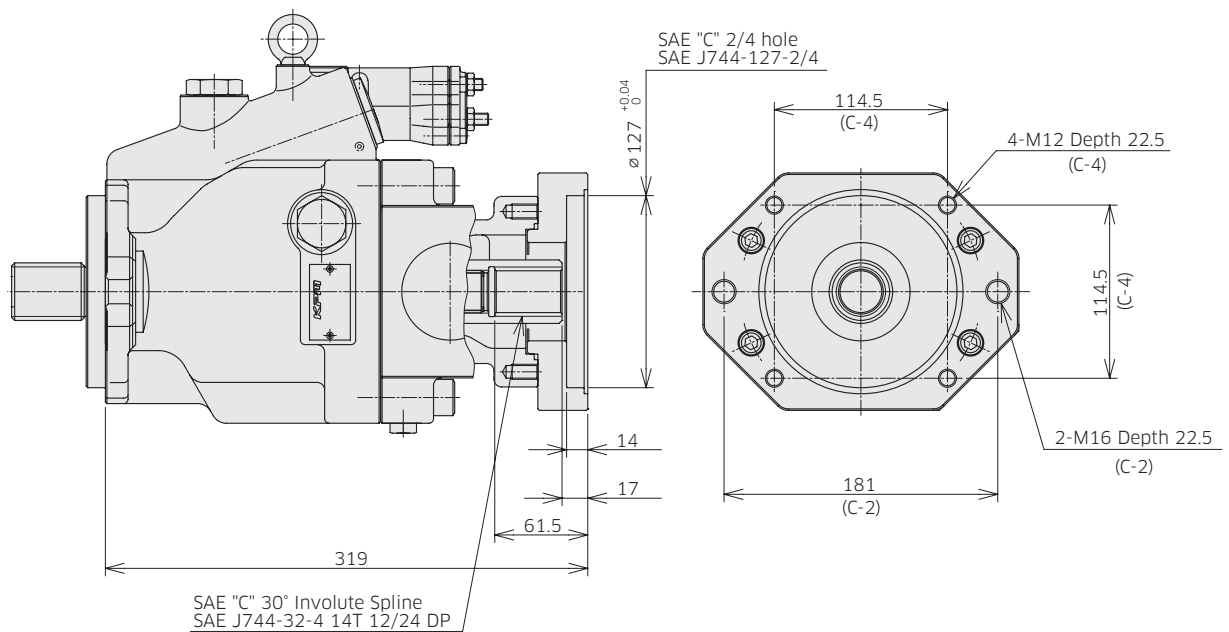
Through Drive SAE BB

Ordering Code "5. Through Drive and Porting": BB



Through Drive SAE C

Ordering Code "5. Through Drive and Porting": C



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

### 3. Dimensions

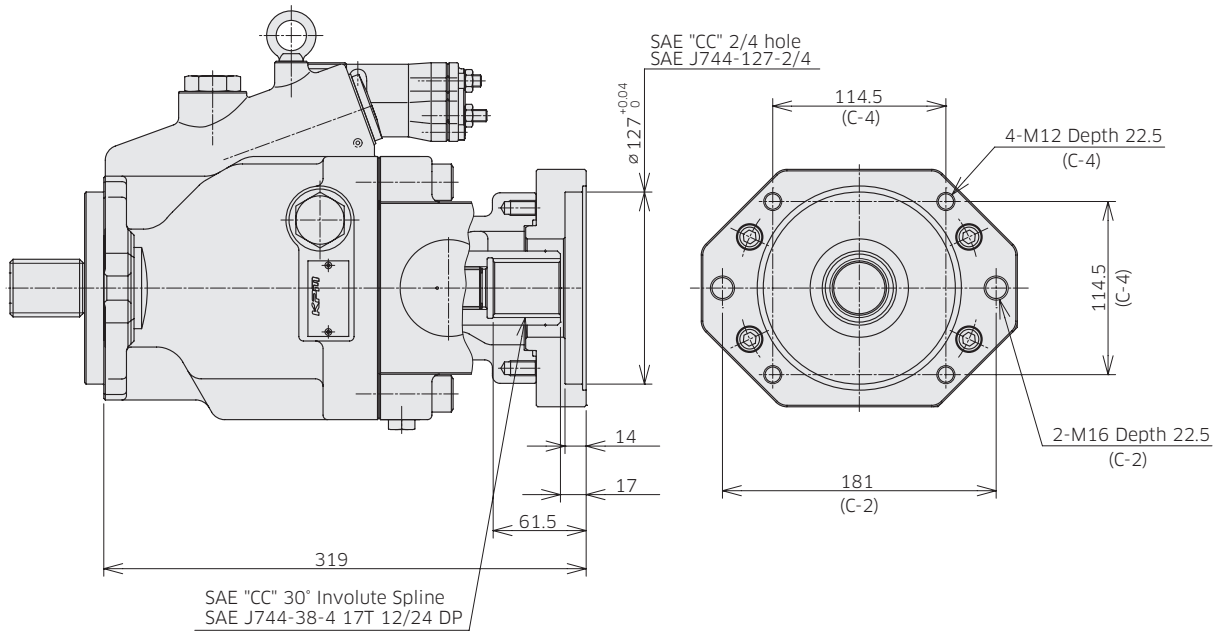
## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS105 Through Drive Options

Through Drive SAE CC

Ordering Code "5. Through Drive and Porting": CC



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

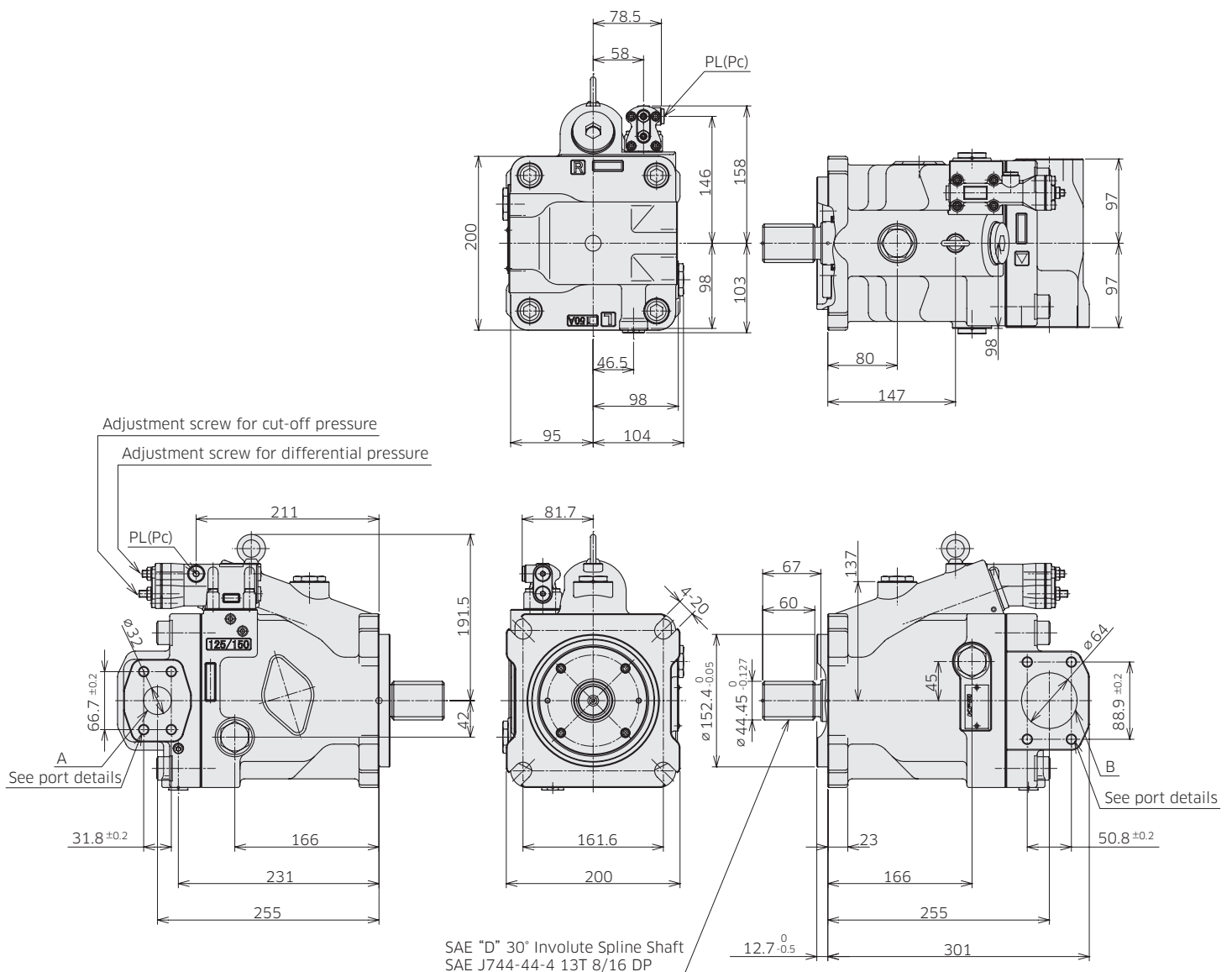
### 3. Dimensions

## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS150 with Cut-off/Load Sense Control, Side Port (Clockwise Rotation)

Model Code : K3VLS 150 - 1 0 R D \* - L0 A  
 : K3VLS 150 - 1 0 R D \* - L1 A  
 : K3VLS 150 - 1 0 R D \* - P0 A



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

### 3. Dimensions

## 3-1 Installation Dimensions

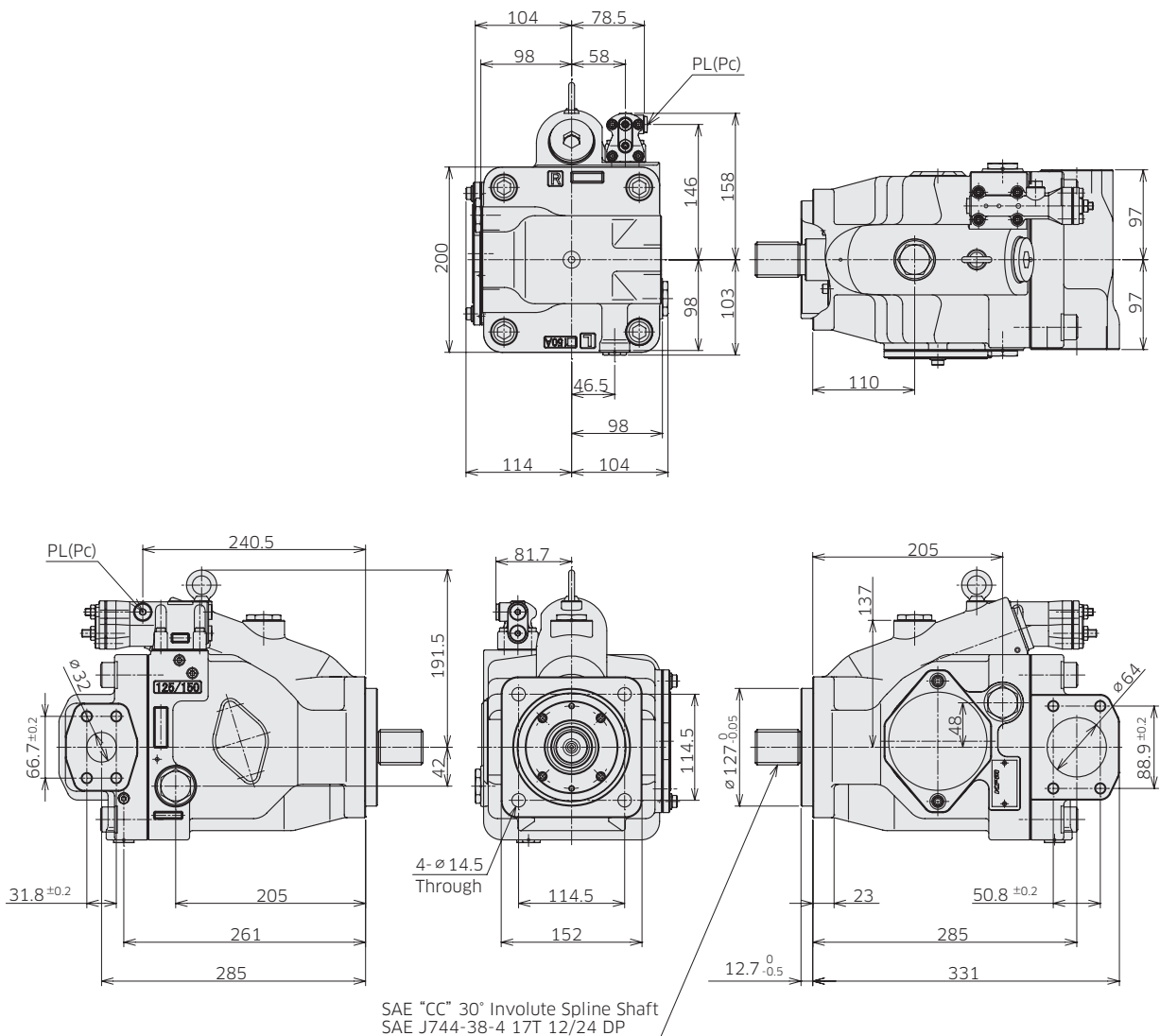
\*Dimensions in mm.

### ◆ K3VLS150 with Cut-off/Load Sense Control, Side Port (Clockwise Rotation, SAE C-4 Mount Type)

Model Code : K3VLS 150 - 1 0 R CC \* - L0 A

: K3VLS 150 - 1 0 R CC \* - L1 A

: K3VLS 150 - 1 0 R CC \* - P0 A



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

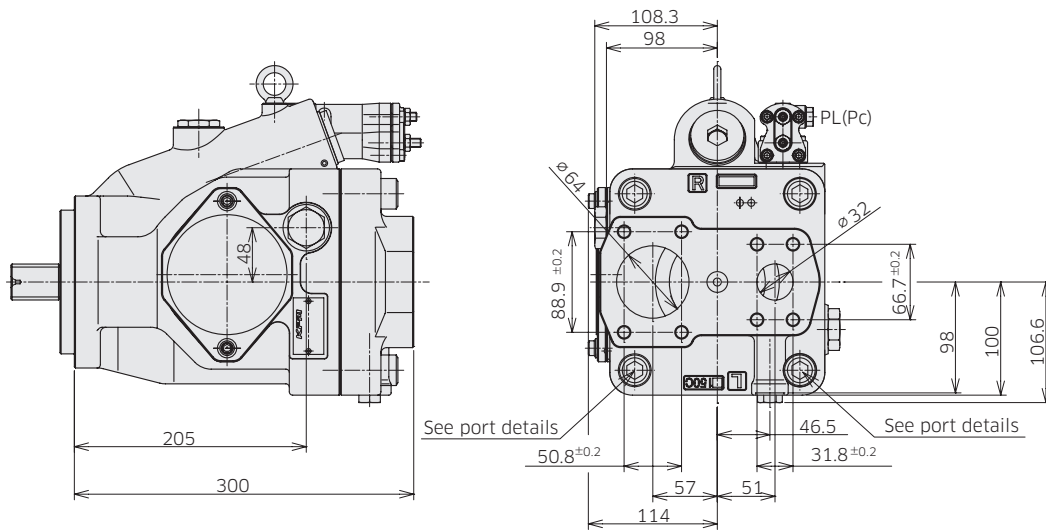
### 3. Dimensions

## 3-1 Installation Dimensions

\*Dimensions in mm.

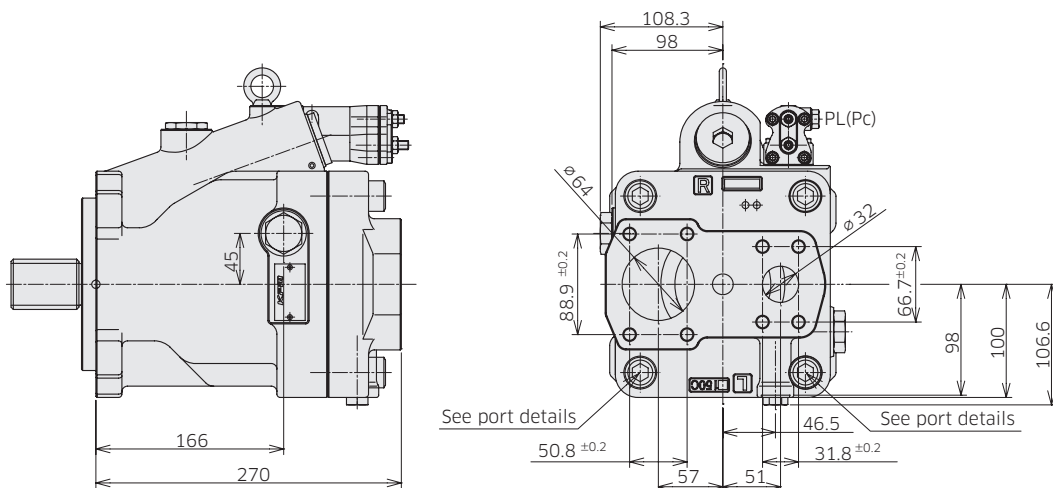
### ◆ K3VLS150 Rear Port (Clockwise Rotation, SAE C-4 Mount Type)

Model Code : K3VLS 150 - 1 R R C \* - L0 A  
 : K3VLS 150 - 1 R R C \* - L1 A  
 : K3VLS 150 - 1 R R C \* - P0 A



### ◆ K3VLS150 Rear Port (Clockwise Rotation, SAE D Mount Type)

Model Code : K3VLS 150 - 1 R R D \* - L0 A  
 : K3VLS 150 - 1 R R D \* - L1 A  
 : K3VLS 150 - 1 R R D \* - P0 A



### 3. Dimensions

## 3-1 Installation Dimensions

\* Dimensions in mm.

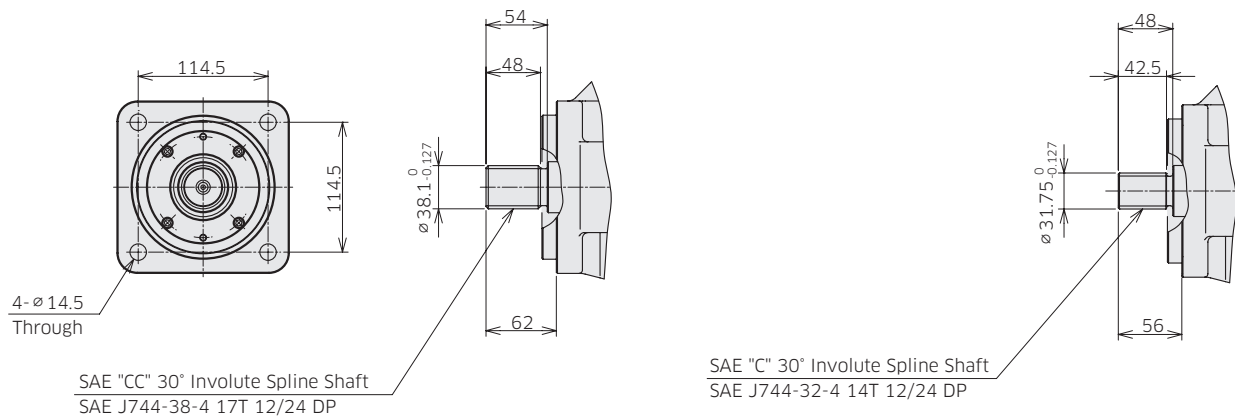
### ◆ K3VLS150 Mounting Flange and Shaft Options

#### SAE CC Spline Shaft

Ordering Code "7. Mounting Flange and Shaft": CC

#### SAE C Spline Shaft

Ordering Code "7. Mounting Flange and Shaft": C



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

### ◆ K3VLS150 Porting Details

#### Main SAE Flanged Ports

Des	Port name	Port size	Flange threads	Tightening torque (Nm)
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#### UNF Threaded Version ('S' in position 8 of model code)

A	Delivery port	SAE J518C high pressure (code 62) 1-1/4"	1/2-13UNC-2B-22	98
B	Suction port	SAE J518C std pressure (code 61) 2-1/2"	1/2-13UNC-2B-22	98

#### Metric Version ('H' in position 8 of model code)

A	Delivery port	PORT ISO 6162-2:2012 P32M	M12-23	98
B	Suction port	PORT ISO 6162-1:2012 P64M	M12-23	98

#### Auxiliary Ports

Des	Port name	Port size	Tightening torque (Nm)
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#### SAE Version

Dr	Drain port	1-1/16-12UN-2B-19 (ISO 11926-1: 1995)	167
PL	Load sensing port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
Pc	Pressure control port	7/16-20UNF-2B-11.5 (ISO 11926-1: 1995)	12
a	Gauge port	9/16-18UNF-2B-12.7 (ISO 11926-1: 1995)	59
Psv	Servo pressure port	7/16-20UNF-2B-11.5 (ISO 11926-1:1995)	12
Pf	Power shift pressure port	7/16-20UNF-2B-11.5 (ISO 11926-1:1995)	12

### 3. Dimensions

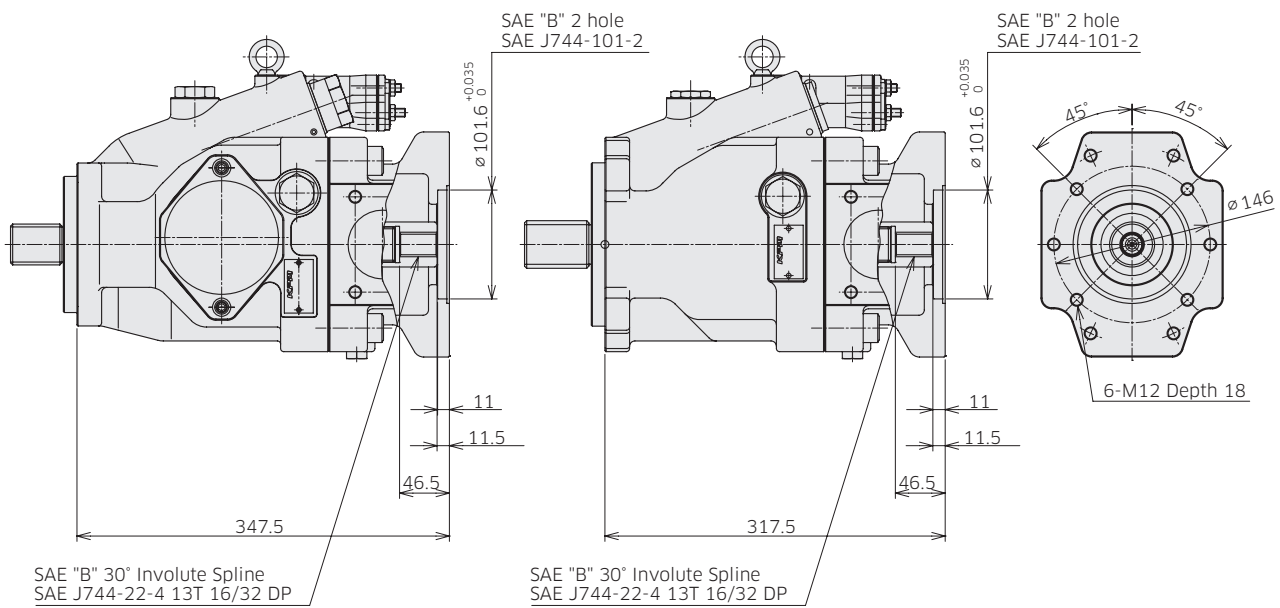
## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS150 Through Drive Options

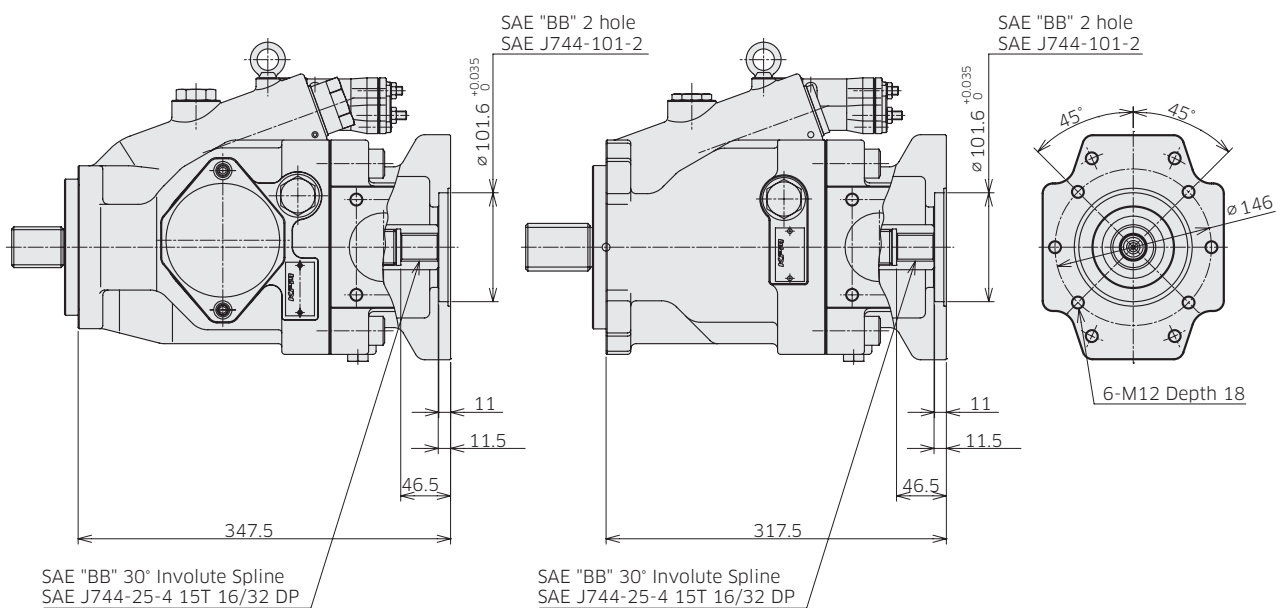
**Through Drive SAE B**

**Ordering Code "5. Through Drive and Porting": B**



**Through Drive SAE BB**

**Ordering Code "5. Through Drive and Porting": BB**



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.



### 3. Dimensions

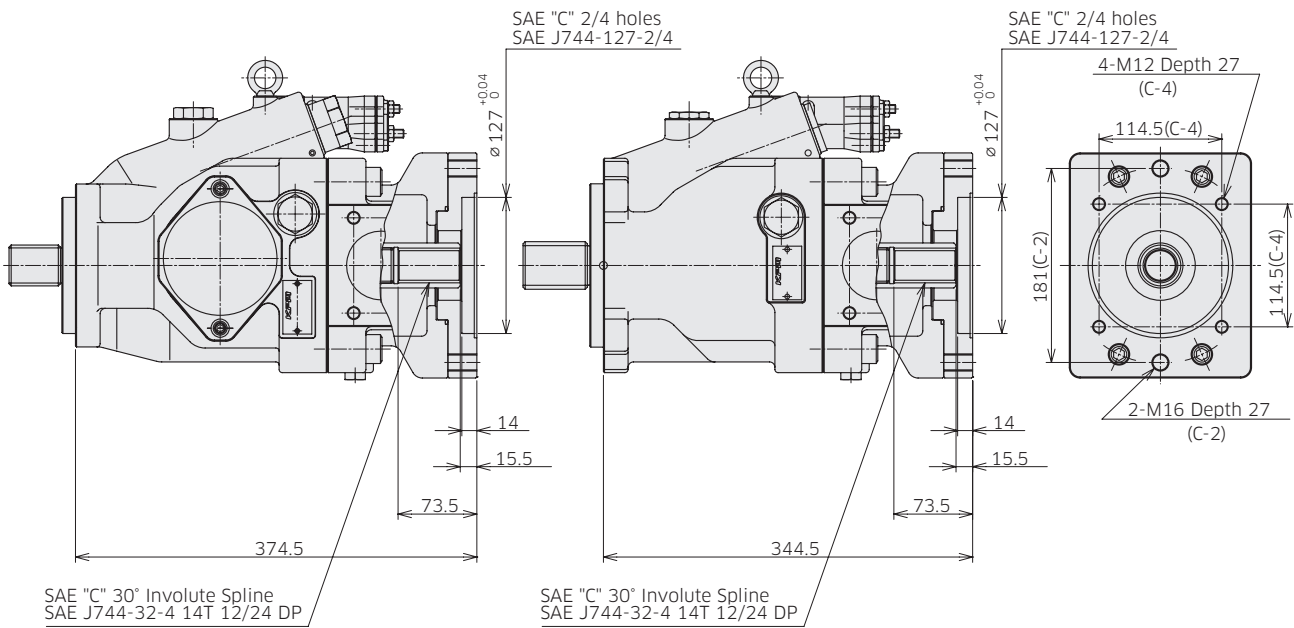
## 3-1 Installation Dimensions

\* Dimensions in mm.

### ◆ K3VLS150 Through Drive Options

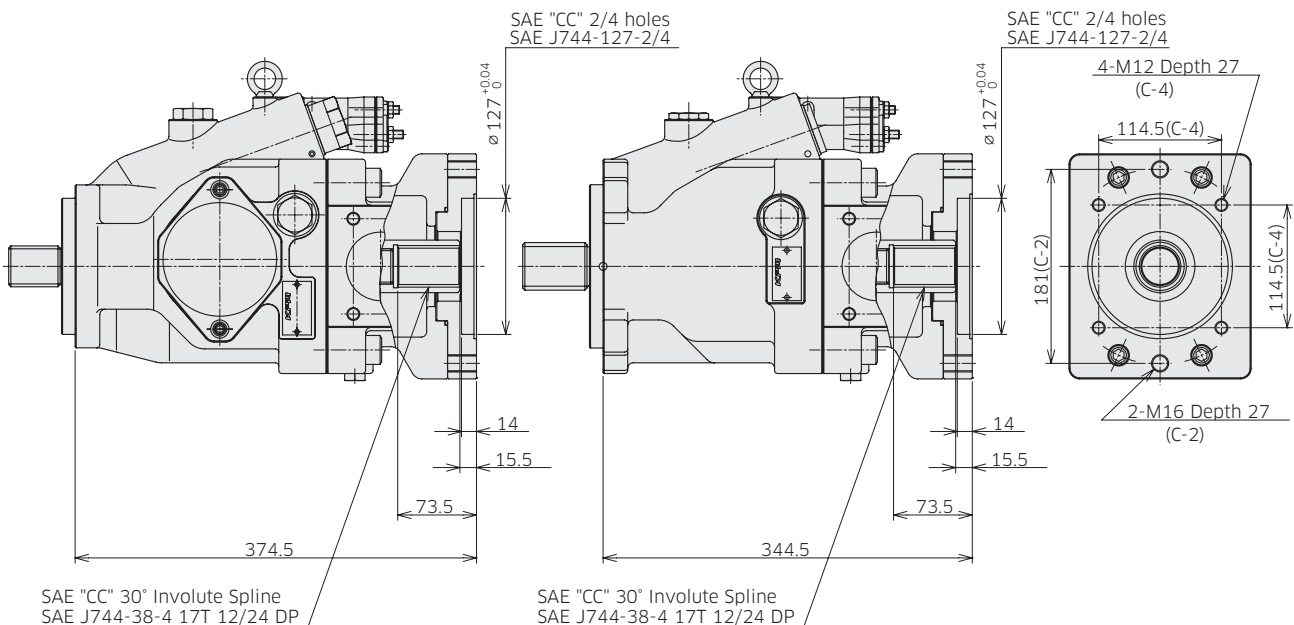
**Through Drive SAE C**

**Ordering Code "5. Through Drive and Porting": C**



**Through Drive SAE CC**

**Ordering Code "5. Through Drive and Porting": CC**



Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit.

### 3. Dimensions

## 3-2 Installation of Auxiliary Pumps

#### ■ Allowable mass moment for combination pump

K3VLS series can consist of multiple pumps using through drive mounting. The second pump can be attached up to the same size of the first pump. The table below shows the maximum allowable mass moment to the mounting flange of the first pump under the dynamic acceleration of 10G. The moment can be calculated by the formula shown below.

	K3VLS50	K3VLS65		K3VLS85		K3VLS105		K3VLS150	
	SAE B mount	SAE B mount	SAE C mount	SAE C-2 mount	SAE C-4 mount	SAE C-2 mount	SAE C-4 mount	SAE C mount	SAE D mount
Allowable mass moment $T_m$ (Nm) (dynamic acceleration of 10G)	180	210	330	280	410	280	410	500	680

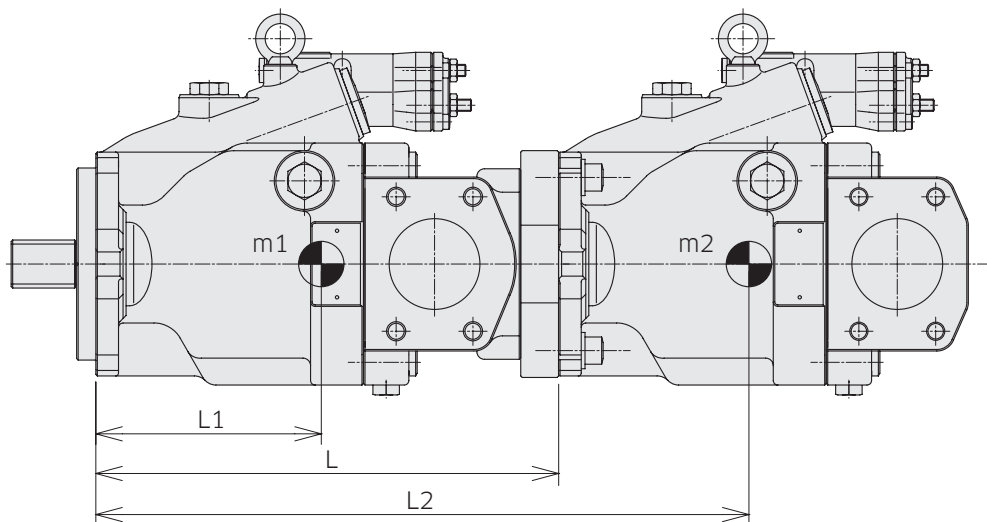
#### ■ Calculation formula for mass moment

$$T_m = (m_1 \times L_1 + m_2 \times L_2 + m_3 \times L_3 + \dots) \times 1 / 102$$

$m_1, m_2, m_3 \dots$  : Weight of pump [kg]

$L_1, L_2, L_3 \dots$  : Center of gravity [mm]

See next page for values.



### 3. Dimensions

## 3-2 Installation of Auxiliary Pumps

■ Values for calculation of mass moment

Through drive size ported	Length, weight		50	65 SAE B mount	65 SAE C mount	85	105	150 SAE C mount	150 SAE D mount
Without through drive, side ported	Total length L (mm)		214	239	239	271	274	331	301
	Center of gravity L1 (from mounting face: mm)		107	117	113	126	131	166	139
	Weight (kg)	with torque limiter	24	28	29	34	40	57	55
		without torque limiter	21	25	26	31	37	54	52
Without through drive, rear ported	Total length L (mm)		188	207	207	232	237	300	270
	Center of gravity L1 (from mounting face: mm)		101	111	108	120	123	161	134
	Weight (kg)	with torque limiter	23	27	28	33	39	56	54
		without torque limiter	20	24	25	29	35	53	51
SAE A	Total length L (mm)		234	253	253	281	286	–	–
	Center of gravity L1 (from mounting face: mm)		116	129	126	136	137	–	–
	Weight (kg)	with torque limiter	26	31	32	37	42	–	–
		without torque limiter	23	28	29	33	39	–	–
SAE B SAE BB	Total length L (mm)		261	280	280	308	313	348	318
	Center of gravity L1 (from mounting face: mm)		133	146	142	152	152	182	155
	Weight (kg)	with torque limiter	29	35	35	41	46	63	61
		without torque limiter	26	31	32	37	43	60	58
SAE C SAE CC	Total length L (mm)		–	–	278	314	319	375	345
	Center of gravity L1 (from mounting face: mm)		–	–	150	157	156	198	171
	Weight (kg)	with torque limiter	–	–	37	42	47	69	67
		without torque limiter	–	–	35	38	44	66	64