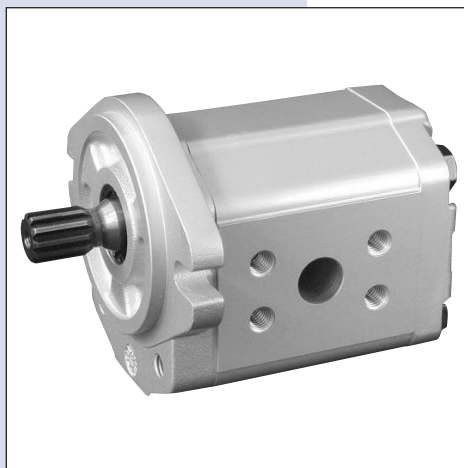
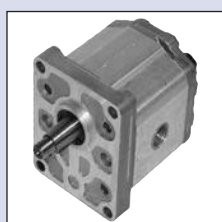


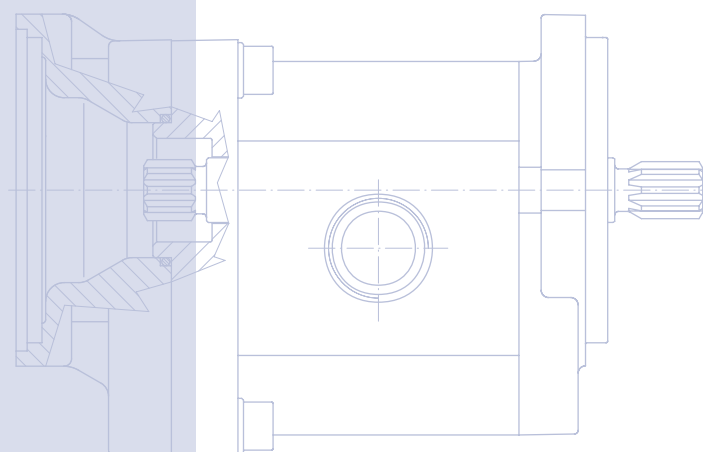
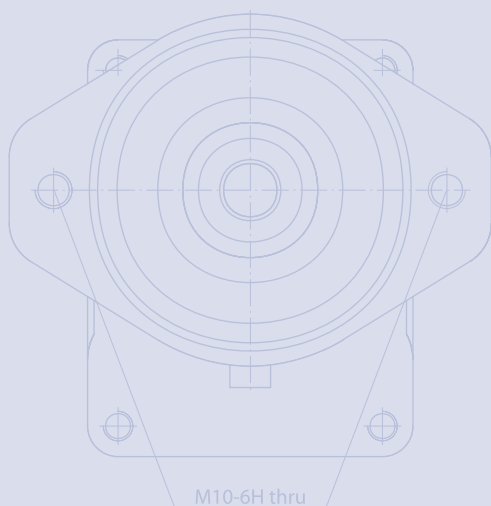


Group 2 Gear Pumps

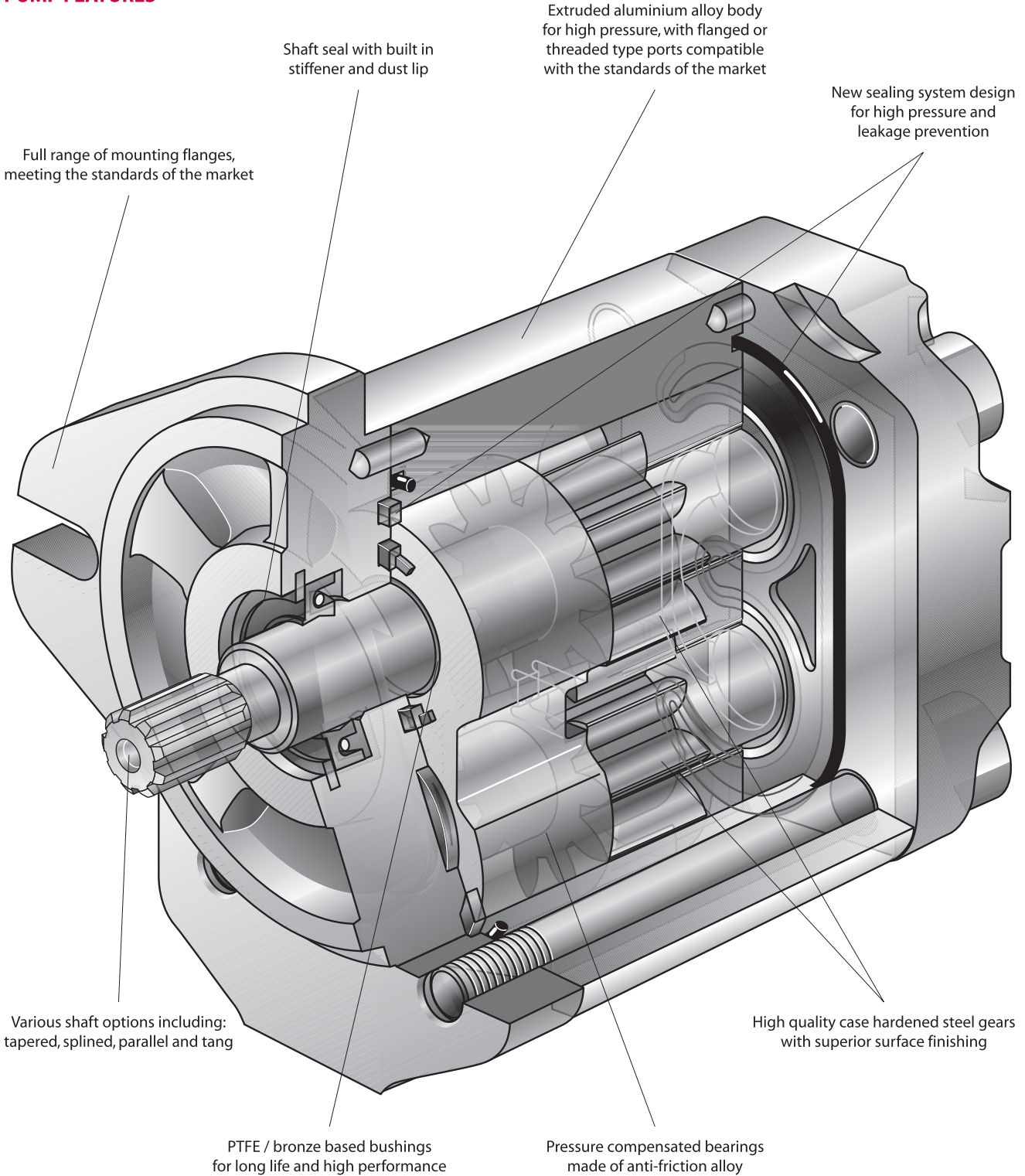
Technical Information



SAE A Pad



PUMP FEATURES



P101 000

Specifications for Group 2 pumps are listed on these two pages.
 For definition and explanation of the various terms, see [page 12](#).

HARDWARE SPECIFICATIONS

Pump model		4	6	8	11	14	17	19	22	25
Displacement	cm ³ [in ³]	3.9 [0.24]	6.0 [0.37]	8.4 [0.51]	10.8 [0.66]	14.4 [0.88]	16.8 [1.02]	19.2 [1.17]	22.8 [1.39]	25.2 [1.54]
SNP										
Peak pressure	bar [psi]	280 [4060]	280 [4060]	280 [4060]	280 [4060]	280 [4060]	280 [4060]	230 [3335]	200 [2900]	175 [2538]
Rated pressure	bar [psi]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	210 [3045]	180 [2610]	160 [2320]
Minimum speed at 0-100 bar	min ⁻¹ (rpm)	600	600	600	500	500	500	500	500	500
Minimum speed at 100-180 bar	min ⁻¹ (rpm)	1200	1200	1000	800	750	750	700	700	700
Minimum speed at 180 bar to rated pressure	min ⁻¹ (rpm)	1400	1400	1400	1200	1000	1000	1000	-	-
Maximum speed	min ⁻¹ (rpm)	4000	4000	4000	4000	3500	3000	3000	3000	3000
SKP										
Peak pressure	bar [psi]	280 [4060]	280 [4060]	280 [4060]	280 [4060]	280 [4060]	280 [4060]	260 [3770]	230 [3335]	200 [2900]
Rated pressure	bar [psi]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	240 [3480]	210 [3045]	190 [2755]
Minimum speed at 0-100 bar	min ⁻¹ (rpm)	600	600	600	500	500	500	500	500	500
Minimum speed at 100-180 bar	min ⁻¹ (rpm)	1200	1200	1000	800	750	750	700	700	700
Minimum speed at 180 bar to rated pressure	min ⁻¹ (rpm)	1400	1400	1400	1200	1000	1000	1000	800	800
Maximum speed	min ⁻¹ (rpm)	4000	4000	4000	4000	3500	3000	3000	3000	3000
SHP										
Peak pressure	bar [psi]							260 [3770]	230 [3335]	200 [2900]
Rated pressure	bar [psi]							240 [3480]	210 [3045]	190 [2755]
Minimum speed at 0-100 bar	min ⁻¹ (rpm)							600	600	600
Minimum speed at 100-180 bar	min ⁻¹ (rpm)							800	800	800
Minimum speed at 180 bar to rated pressure	min ⁻¹ (rpm)							1000	1000	1000
Maximum speed	min ⁻¹ (rpm)							3000	3000	3000
ALL										
The data below represent mean values for standard configured pumps										
Weight	kg [lb]	2.3 [5.1]	2.4 [5.3]	2.5 [5.5]	2.7 [5.8]	2.9 [6.3]	3.0 [6.5]	3.1 [6.7]	3.2 [7.0]	3.3 [7.3]
Moment of inertia of rotating components	x 10 ⁻⁶ kg m ² [x 10 ⁻⁶ lbf ft ²]	21.3 [505]	26.5 [629]	32.4 [769]	38.4 [911]	47.3 [1122]	53.3 [1265]	59.2 [1405]	68.1 [1616]	74.1 [1758]
Theoretical flow at maximum speed	l/min [US gal/min]	15.6 [4.12]	24.0 [6.34]	33.6 [8.87]	43.2 [11.4]	50.4 [13.3]	50.4 [13.3]	57.6 [15.2]	68.4 [18.0]	75.6 [20.0]

Caution: Allowable pressure may be limited by shaft torque capability. Refer to [page 23](#).

MODEL CODE



Type

- SNP 2** = Standard Gear Pump
- SKP 2** = High Torque Gear Pump
- SHP 2** = High Pressure Gear Pump
- SNI 2** = Gear Pump with Internal Drain Relief Valve
- SNE 2** = Gear Pump with External Drain Relief Valve

Valve (omit when not used)

- U** = Priority Flow Divider with Pilot Relief Valve
- L** = Priority Flow Divider with Pilot Relief Valve and Static Load Sensing
- N** = Priority Flow Divider with Pilot Relief Valve and Dynamic Load Sensing
- P** = Priority Flow Divider with Full Flow Relief Valve
- R** = Priority Flow Divider with Full Flow Relief Valve and Static Load Sensing
- V** = Priority Flow Divider with Full Flow Relief Valve and Dynamic Load Sensing

Valve Port Position (omit when not used)

- S** = Side Ports
- F** = Rear Ports

Displacement – cm³/rev [in³/rev]

- 4** = 3.9 [0.24]
- 6** = 6.0 [0.37]
- 8** = 8.4 [0.51]
- 11** = 10.8 [0.66]
- 14** = 14.4 [0.88]
- 17** = 16.8 [1.03]
- 19** = 19.2 [1.17]
- 22** = 22.8 [1.39]
- 25** = 25.2 [1.54]

Direction of Rotation

- D** = Right (Clockwise)
- S** = Left (Anti-clockwise)

Input Shaft / Mounting Flange / Port Configuration

CO Tapered shafts, 1:5 or 1:8

- CO01** = 1:8 tapered shaft / European four bolt flange / European flanged ports
- CO02** = 1:5 tapered shaft / German four bolt PTO flange / German standard ports
- CO04** = 1:5 tapered shaft / German two bolt PTO flange (Deutz) / German standard ports
- CO05** = 1:5 tapered shaft / German two bolt PTO flange (Deutz) / German standard ports
- CO09** = 1:8 tapered shaft / Perkins 4.236 timing case flange / European flanged ports
- CO09** = (variant BBM) 1:8 tapered shaft / Perkins 900 series flange / German standard ports
- CO0B** = 1:8 tapered shaft / Perkins 1000 series left side PTO flange / European flanged ports
- CO91** = (variant LBD) 1:8 tapered shaft / European four bolt flange / European flanged ports / equipped with outrigger bearing
- CO94** = 1:5 tapered shaft / German two bolt PTO flange (Deutz) / German standard ports / equipped with outrigger bearing

CI Parallel shafts, 15mm or 15.875mm

- CI01** = 15mm [0.591 in] parallel shaft / European four bolt flange / European flanged ports
- CI06** = 15.875mm [0.625 in] parallel shaft / SAE "A" flange / SAE O-ring boss ports
- CI96** = (variant LEP) 19.05mm [0.750 in] parallel shaft / SAE "A" flange / SAE O-ring boss ports / equipped with outrigger bearing

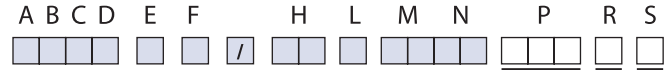
SC Splined shafts, DIN B17x14, SAE 9T 16/32p, or SAE 11T 16/32p (SKP 2 only)

- SC01** = DIN splined shaft / European four bolt flange / European flanged ports
- SC02** = DIN splined shaft / German four bolt PTO flange / German standard ports
- SC04** = DIN splined shaft / German two bolt PTO flange (Deutz) / German standard ports
- SC05** = DIN splined shaft / German two bolt PTO flange (Deutz) / German standard ports
- SC06** = SAE splined shaft / SAE A flange / SAE O-ring boss ports
- SC36** = SAE splined shaft / SAE A flange plus SAE A auxiliary mounting pad / SAE O-ring boss ports

FR Sauer-Danfoss tang shaft

- FR03** = Sauer-Danfoss tang shaft / flanged for multiple configuration / German standard ports

MODEL CODE (continued)



Variant Code (Three letter code describes valve settings or other variants to standard configuration)

- BBM** = Variation on 09 flange to accommodate Perkins 900 series engine mounting
- LEP** = Variant on standard straight shaft used with C196 outrigger bearing option
- LBD** = Variant on standard tapered shaft used on CO91 outrigger bearing option

- U**** Integral flow divider
 - Pressure setting at controlled flow – bar [psi]
 - L** = 60 [870] **T** = 140 [2031]
 - M** = 70 [1015] **C** = 150 [2176]
 - N** = 80 [1160] **U** = 160 [2321]
 - O** = 90 [1305] **D** = 170 [2466]
 - P** = 100 [1450] **V** = 180 [2611]
 - Q** = 110 [1595] **E** = 190 [2756]
 - R** = 120 [1740] **X** = 200 [2901]
 - S** = 130 [1885]

- Controlled flow – l/min [US gal/min]
 - M** = 8 [2.11] **J** = 18 [4.75]
 - F** = 10 [2.64] **Q** = 20 [5.28]
 - N** = 12 [3.17] **K** = 22 [5.81]
 - O** = 14 [3.70] **R** = 24 [6.34]
 - P** = 16 [4.23] **I** = 26 [6.86]

- V**** Integral relief valve
 - Pressure setting – bar [psi]
 - A** = No setting **O** = 90 [1305]
 - B** = No valve **P** = 100 [1450]
 - C** = 18 [261] **Q** = 110 [1595]
 - D** = 25 [363] **R** = 120 [1740]
 - E** = 30 [435] **S** = 130 [1885]
 - F** = 35 [508] **T** = 140 [2031]
 - G** = 40 [580] **U** = 160 [2321]
 - K** = 50 [725] **V** = 170 [2466]
 - L** = 60 [870] **W** = 180 [2611]
 - M** = 70 [1015] **X** = 210 [3046]
 - N** = 80 [1160] **Z** = 250 [3626]

- Pump speed for relief valve setting – min⁻¹ (rpm)
 - A** = Not defined
 - C** = 500
 - E** = 1000
 - F** = 1250
 - G** = 1500
 - K** = 2000
 - I** = 2250
 - L** = 2500
 - M** = 2800
 - N** = 3000
 - O** = 3250

Version (Value representing a change to the initial project)

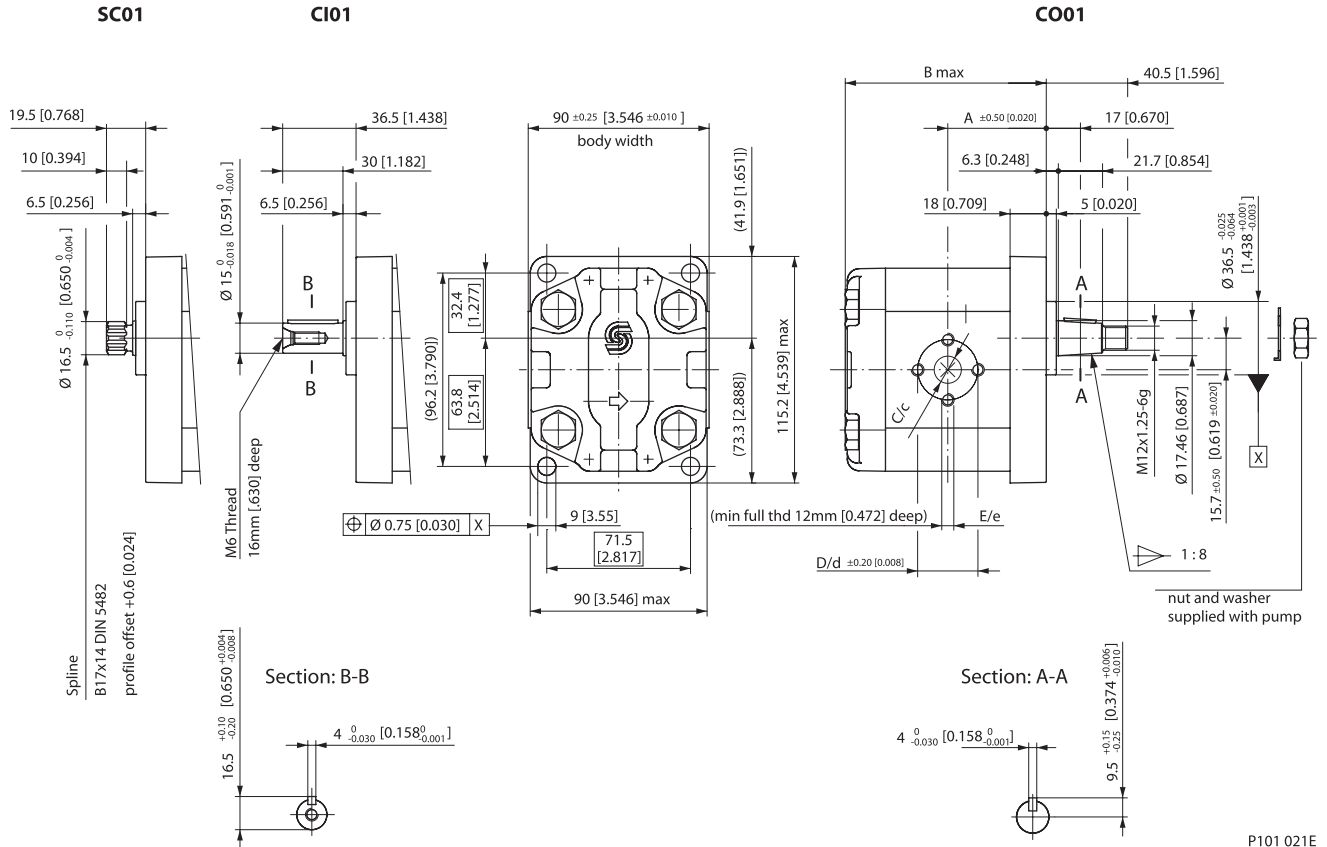
- .** = Initial project
- 1..9 A..Z** = Reserved to

Port Type (If other than standard)

- .** = Standard port for the flange type specified
- B** = Flanged port with threaded holes in "X" pattern (German standard ports), centered on the body
- C** = Flanged port with threaded holes in "+" pattern (European Standard)
- E** = Threaded SAE o-ring boss port
- F** = **Threaded Gas port (BSP)**
- G** = Flanged port with threaded holes in "X" pattern (German standard ports), offset from center of body

SC01 / CI01 / CO01

Standard porting and rear cover shown. See [page 43](#) for additional porting options. See [page 44](#) for valve options. See [page 45](#) for outrigger bearing options.



P101 021E

Type (displacement)		4	6	8	11	14	17	19	22	25
Dimensions	A*	43.25 [1.703]	45 [1.772]	45 [1.772]	49 [1.929]	52 [2.047]	52 [2.047]	56 [2.205]	59 [2.323]	59 [2.323]
	B**	90.0 [3.543]	93.0 [3.681]	97.5 [3.839]	101.5 [3.996]	107.5 [4.232]	111.5 [4.390]	115.5 [4.574]	121.5 [4.783]	125.5 [4.941]
Inlet	C	13.5 [0.531]	13.5 [0.531]	13.5 [0.531]	13.5 [0.531]	20 [0.787]	20 [0.787]	20 [0.787]	20 [0.787]	20 [0.787]
	D	30 [1.181]	30 [1.181]	30 [1.181]	30 [1.181]	40 [1.575]	40 [1.575]	40 [1.575]	40 [1.575]	40 [1.575]
	E	M6	M6	M6	M6	M8	M8	M8	M8	M8
Outlet	c	13.5 [0.531]	13.5 [0.531]	13.5 [0.531]	13.5 [0.531]	13.5 [0.531]	13.5 [0.531]	13.5 [0.531]	13.5 [0.531]	20 [0.787]
	d	30 [1.181]	30 [1.181]	30 [1.181]	30 [1.181]	30 [1.181]	30 [1.181]	30 [1.181]	30 [1.181]	40 [1.575]
	e	M6	M6	M6	M6	M6	M6	M6	M6	M8

* Add 3 mm [0.118 in] for SHP 2 pumps.

** Add 6 mm [0.236 in] for SHP 2 pumps.