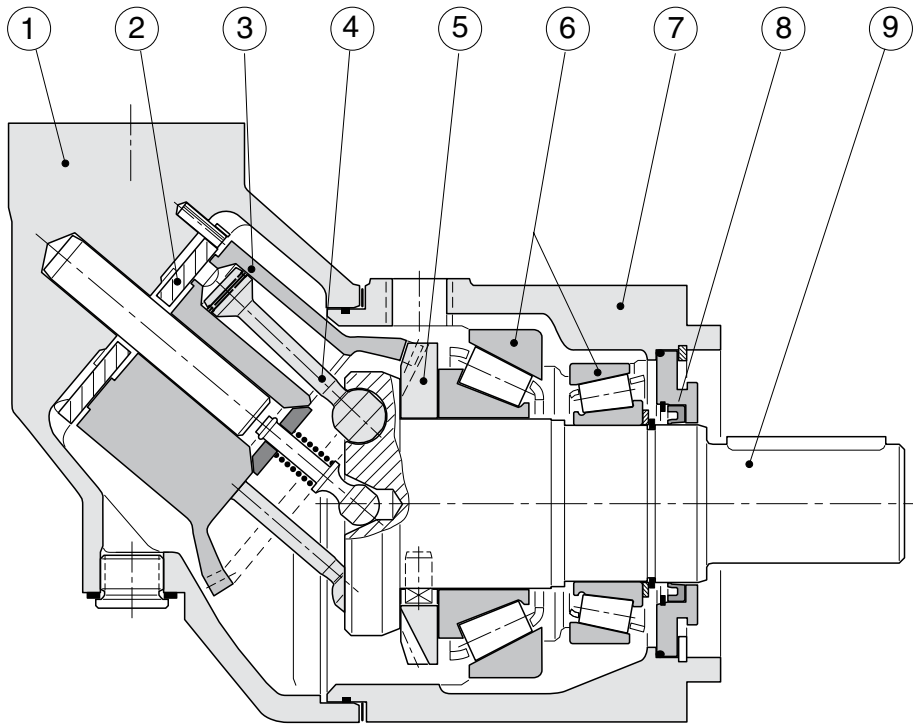


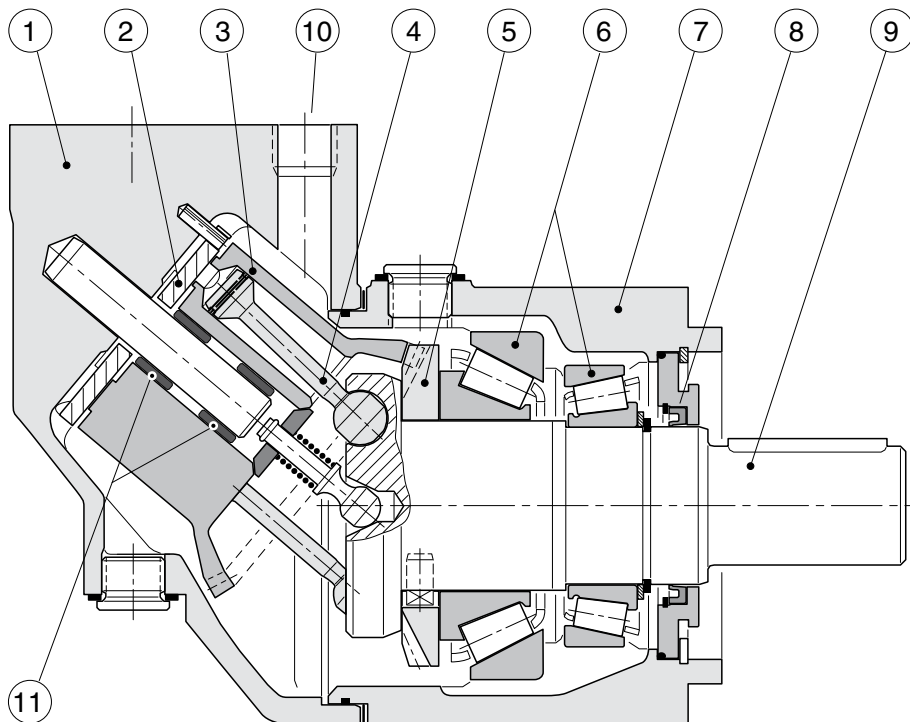
**F12 cross sections**

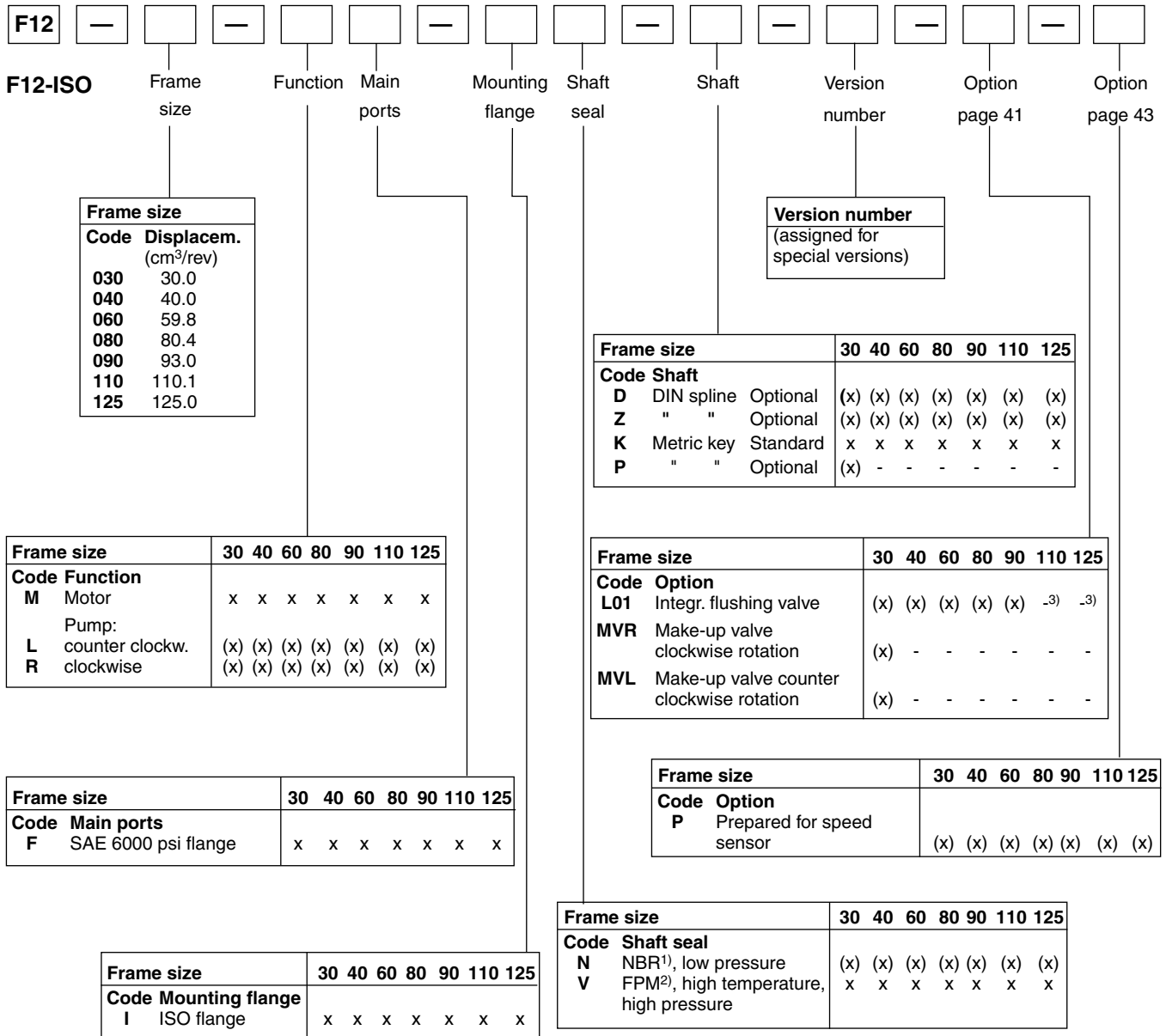
**F12-30, -40, -60, -80 and -90**  
 (F12-60 shown)



- Legend:
- |                            |                            |  |
|----------------------------|----------------------------|--|
| 1. Barrel housing          | 5. Timing gear             | 9. Output/input shaft                  |
| 2. Valve plate             | 6. Tapered roller bearings | 10. Port E (F12-110 and -125)          |
| 3. Cylinder barrel         | 7. Bearing housing         | 11. Needle bearings (F12-110 and -125) |
| 4. Piston with piston ring | 8. Shaft seal              |  |

**F12-110 and -125**  
 (F12-110 shown)





x: Available (x): Optional - : Not available

1) NBR - Nitrile rubber

2) FPM - Fluor rubber

3) F12-110 and -125: Accessory valve block (page 41)

**F12** [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Frame size      Function      Main ports      Mounting flange      Shaft seal      Shaft      Version number      Option page 41      Option page 43

**F12-Cartridge CETOP**

Frame size	
Code	Displacem. (cm <sup>3</sup> /rev)
030	30.0
040	40.0
060	59.8
080	80.4
090	93.0
110	110.1
125	125.0
150	150.0

Version number		Frame size							
(assigned for special versions)		30	40	60	80	90	110	125	150
<b>Code</b>	<b>Shaft</b>								
<b>C</b>	DIN spline Standard	x	x	x	x	x	x	x	-
<b>K</b>	Metric key Optional	(x)	-	(x)	(x)	(x)	-	-	x
<b>X</b>	Metric key <sup>4</sup> Optional	-	(x)	-	-	-	-	-	-
<b>X</b>	Spline <sup>5</sup> DIN 5480	-	-	-	-	-	x	x	-
<b>D</b>	Spline DIN 5480	-	-	-	-	-	-	-	(x)

Frame size		30	40	60	80	90	110	125	150
<b>Code</b>	<b>Function</b>								
<b>M</b>	Motor	x	x	x	x	x	x	x	x
<b>H</b>	Motor, high pressure	-	-	-	-	-	-	-	(x)
<b>R</b>	Pump: Clockwise	-	-	-	-	-	-	-	(x)
<b>L</b>	counter clockw.	-	-	-	-	-	-	-	(x)

Frame size		30	40	60	80	90	110	125	150
<b>Code</b>	<b>Option</b>								
<b>L01</b>	Integr. flushing valve	(x)	(x)	(x)	(x)	(x)	- <sup>3)</sup>	- <sup>3)</sup>	-
<b>MVR</b>	Make-up valve clockwise rotation	(x)	-	-	-	-	-	-	-
<b>MVL</b>	Make-up valve counter clockwise rotation	(x)	-	-	-	-	-	-	-

Frame size		30	40	60	80	90	110	125	150
<b>Code</b>	<b>Option</b>								
<b>P</b>	Prepared for speed sensor	x	(x)	(x)	(x)	(x)	x	x	-

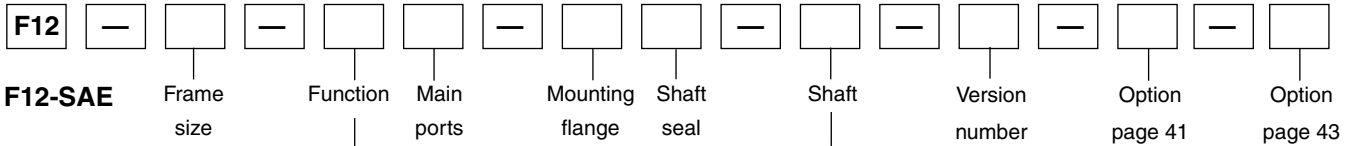
Frame size		30	40	60	80	90	110	125	150
<b>Code</b>	<b>Main ports</b>								
<b>F</b>	SAE 6000 psi flange	x	x	x	x	x	x	x	x

Frame size		30	40	60	80	90	110	125	150
<b>Code</b>	<b>Mounting flange</b>								
<b>C</b>	Cartridge	x	x	x	x	x	x	x	-
<b>C</b>	CETOP	-	-	-	-	-	-	-	x

Frame size		30	40	60	80	90	110	125	150
<b>Code</b>	<b>Shaft seal</b>								
<b>N</b>	NBR <sup>1)</sup> , low pressure	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
<b>V</b>	FPM <sup>2)</sup> , high temperature, high pressure	x	x	x	x	x	x	x	x

x: Available      (x): Optional      -: Not available

1) NBR - Nitrile rubber  
 2) FPM - Fluor rubber  
 3) F12-110 and -125: Accessory valve block (page 41)  
 4) Special version number 264  
 5) Special version number 326



Frame size	
Code	Displacem. (cm <sup>3</sup> /rev)
030	30.0
040	40.0
060	59.8
080	80.4
090	93.0
110	110.1
125	125.0
150	150.0
250	242.0

**Version number**  
 (assigned for special versions)

Frame size		30	40	60	80	90	110	125	150	250
<b>Code Shaft</b>										
<b>S</b>	SAE spline	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
<b>U</b>	" " Optional	-	-	(x)	(x)	-	-	-	-	-
<b>T</b>	SAE key Standard	x	x	x	x	x	x	x	x	-
<b>K</b>	Metric key	-	-	-	-	-	-	-	(x)	x
<b>F</b>	SAE spline	-	-	-	-	-	-	-	-	(x)
<b>D</b>	Spline, DIN 5480	-	-	-	-	-	-	-	-	(x)

Frame size		30	40	60	80	90	110	125	150	250
<b>Code Function</b>										
<b>M</b>	Motor	x	x	x	x	x	x	x	x	x
<b>H</b>	Motor, high pressure	-	-	-	-	-	-	-	(x)	-
<b>L</b>	Pump: counter clockw.	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
<b>R</b>	clockwise	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)

Frame size		30	40	60	80	90	110	125	150	250
<b>Code Option</b>										
<b>L01</b>	Integr. flushing valve	(x)	(x)	(x)	(x)	(x)	- <sup>3)</sup>	- <sup>3)</sup>	-	-
<b>MVR</b>	Make-up valve clockwise rotation	(x)	-	-	-	-	-	-	-	-
<b>MVL</b>	Make-up valve counter clockwise rotation	(x)	-	-	-	-	-	-	-	-

Frame size		30	40	60	80	90	110	125	150	250
<b>Code Main ports</b>										
<b>S</b>	SAE 6000 psi flange	x	x	x	x	x	x	x	-	-
<b>U</b>	SAE, UN threads	(x)	(x)	(x)	(x)	(x)	(x)	(x)	-	-
<b>F</b>	SAE 6000 psi flange <sup>4)</sup>	-	-	-	-	-	-	-	x	x

Frame size		30	40	60	80	90	110	125	150	250
<b>Code Option</b>										
<b>P</b>	Prepared for speed sensor	(x)	(x)	(x)	(x)	(x)	(x)	(x)	-	-

Frame size		30	40	60	80	90	110	125	150	250
<b>Code Mounting flange</b>										
<b>S</b>	SAE 4 bolt	x	x	x	x	x	x	x	x	x
<b>T</b>	SAE 2 bolt	x	x	x	-	-	-	-	-	-

Frame size		30	40	60	80	90	110	125	150	250
<b>Code Shaft seal</b>										
<b>N</b>	NBR <sup>1)</sup> , low pressure	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	-
<b>V</b>	FPM <sup>2)</sup> , high temperature, high pressure	x	x	x	x	x	x	x	x	x

x: Available      (x): Optional      -: Not available

- 1) NBR - Nitrile rubber
- 2) FPM - Fluor rubber
- 3) F12-110 and -125: Accessory valve block (page 41)
- 4) Metric threads