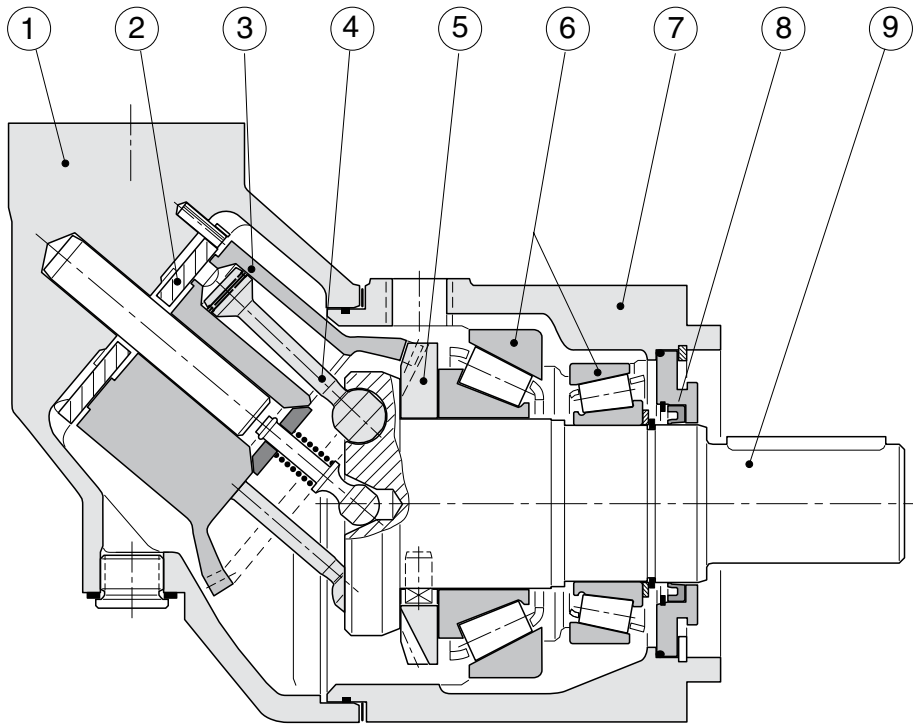


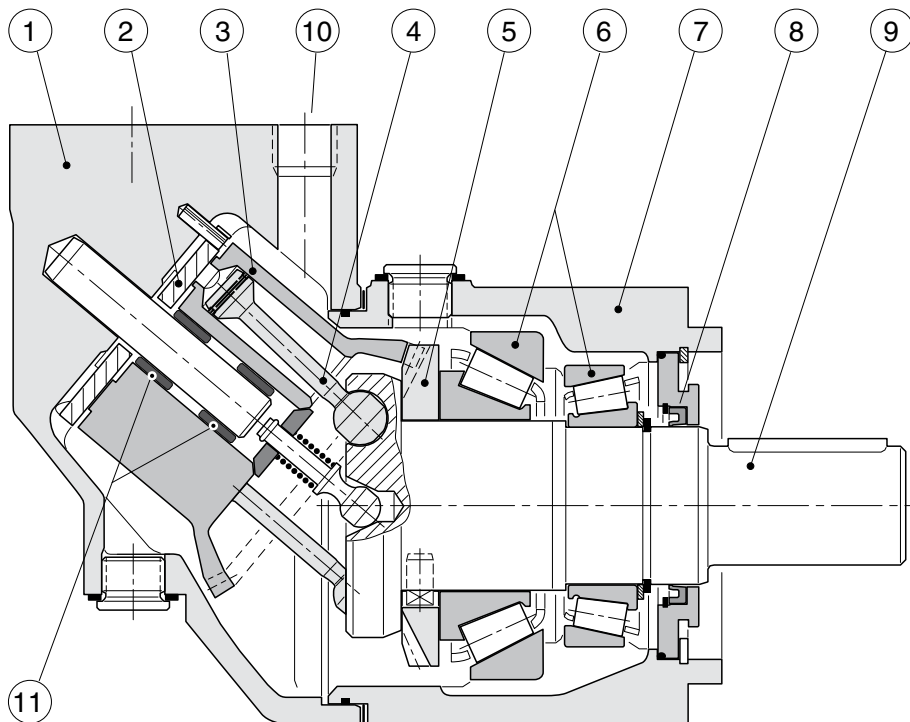
**F12 cross sections**

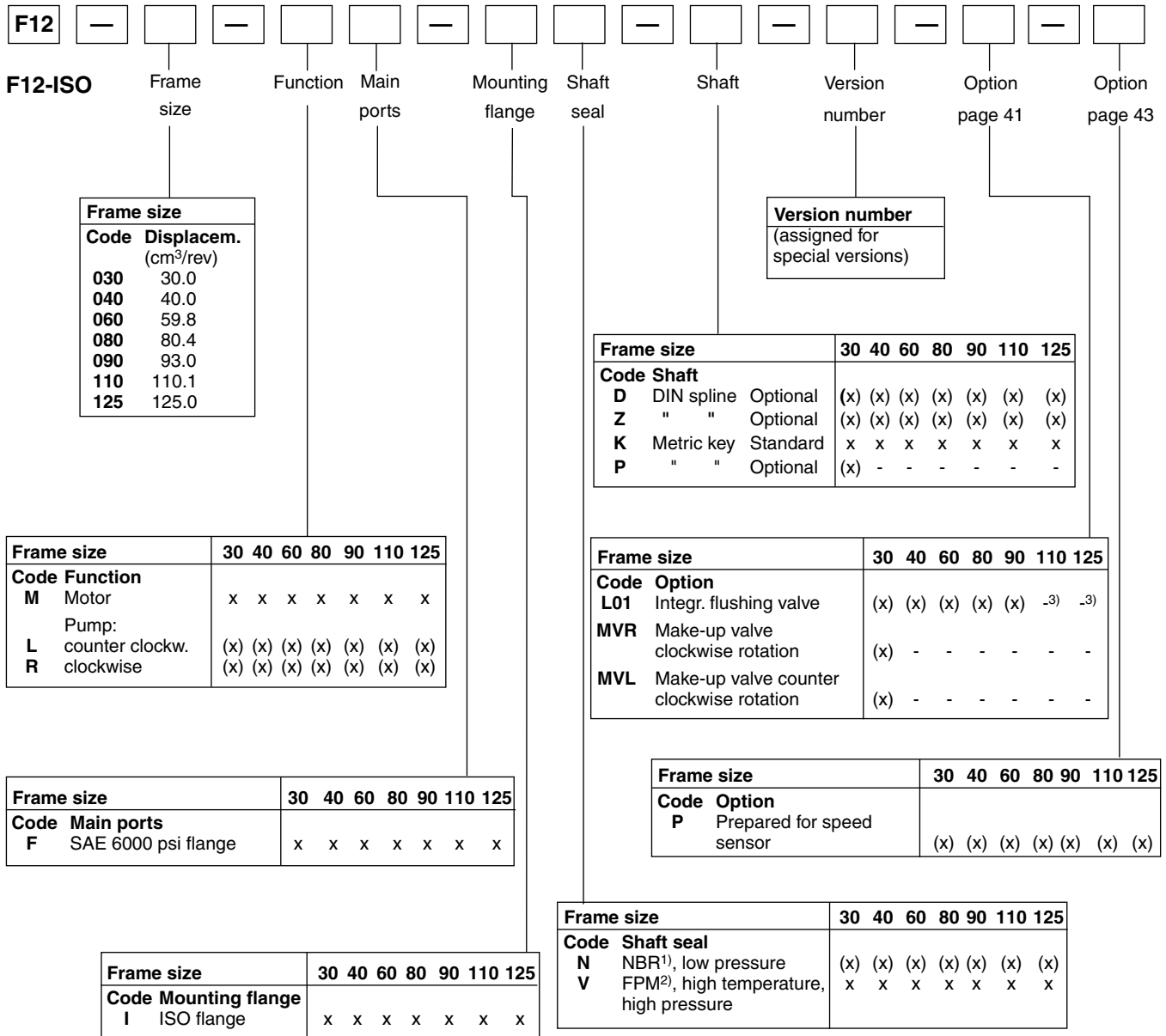
**F12-30, -40, -60, -80 and -90**  
 (F12-60 shown)



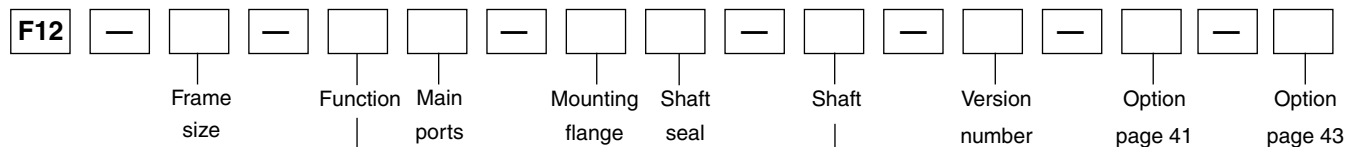
- Legend:
- |                            |                            |  |
|----------------------------|----------------------------|--|
| 1. Barrel housing          | 5. Timing gear             | 9. Output/input shaft                  |
| 2. Valve plate             | 6. Tapered roller bearings | 10. 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-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**  
 (assigned for special versions)

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

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

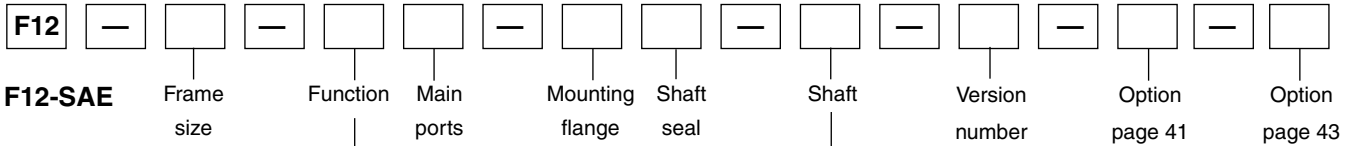
Frame size	30	40	60	80	90	110	125	150
<b>Code Option</b>								
<b>P</b> Prepared for speed sensor	x	(x)	(x)	(x)	(x)	x	x	-

Frame size	30	40	60	80	90	110	125	150
<b>Code 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 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</b>	<b>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</b>	<b>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</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	250
<b>Code</b>	<b>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</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	250
<b>Code</b>	<b>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</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

- 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