



OIL SOLUTIONS

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**PO Box 38**  
**Strathfieldsaye, VIC, 3551**  
**1800 OIL SOL**  
**1800 645 765**  
**[sales@oilsolutions.com.au](mailto:sales@oilsolutions.com.au)**  
**[www.oilsolutions.com.au](http://www.oilsolutions.com.au)**  
"For All Your Hydraulic Needs"

# **Data Sheet**

## **OSPM Mini-Steering Unit**



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# Chapter

# 1

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## Description

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### **Description**

The OSPM is a compact steering unit, in base version with integrated shaft for direct steering wheel mounting and integrated fittings in the rear ports.

This brings about a very compact and cost effective system solution minimizing installation cost and time.

The OSPM product program has newly been extended with versions with 12 teeth female spline and column interface as found on any other type of steering units.

This makes combination of OSPM steering unit and SASA steering angle sensor possible. These versions are named OSPMC (rear ported) and OSPMSC (side ported).



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# Chapter

# 2

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## Features

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- Shafts (type A or B) for direct steering wheel mount, or spline shaft (male 9 teeth, or female, 12 teeth) for column mount with square or round flange
- Variants: ON, PB, LS dynamic, X CN as pilot unit
- Displacements: 32-100 cc/rev
- Port threads:
  - Rear: ORFS-ISO 8434-3
  - Side: Metric-ISO 6149-1 or UNF-ISO 11926-1
- Built-in valve functions available: pressure relief, shock, suction, check valve in P line and check valve in LS line. Emergency steer valve is standard in all versions
- Low steering torque
- Low pressure drop

### Applications

- Compact-utility tractors
- Turf care machines
- Universal tractors
- Forklift trucks
- Municipal vehicles
- ATVs



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# Chapter

# 3

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## Detailed description

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### OSPM program

OSPM steering unit is available in the following versions:

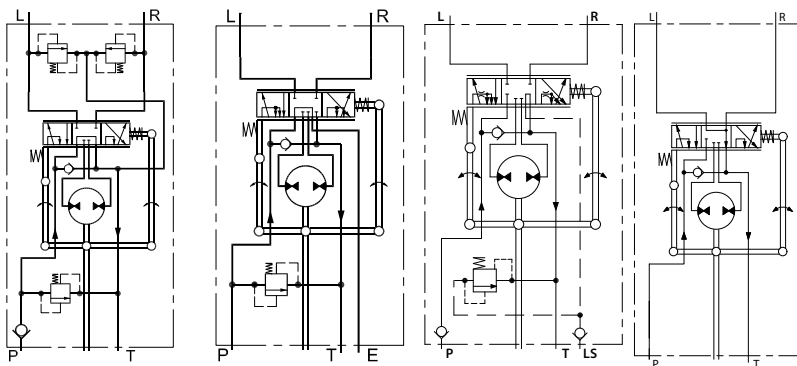
- **ON**: Open center Non-reaction
- **PB**: Power Beyond non-reaction
- **LS**: Load Sensing dynamic non-reaction
- **X CN**: Closed center Non-reaction, pilot steering unit for EHPS

**Table 1: OSPM characteristics**

<b>Displacement</b>	32, 40, 50, 63, 70, 80 or 100 cc/rev	
<b>Max. system pressure/ max P-T port pressure</b>	150 bar [2175 psi]	
<b>Max. system pressure/ max E-T (E=Power beyond)</b>	150 bar [2175 psi]	
<b>Max. T-port pressure</b>	20 bar [290 psi]	
<b>Max. flow</b>	20 l/min [5.3 US gal/min]	
<b>Input torque (for standard neutral spring kit 150L4055)</b>	0.5 to 2 N•m [4.4 to 18 lbf•in]	
<b>Port options</b>	P, T, L, R, LS/E	
	<b>ORFS-ISO 8434-3 (Rear)</b>	9/16-18 UNF or 11/16-18 UN
	<b>Metric-ISO 6149-1 (Side)</b>	M14 x 1.5
	<b>UNF-ISO 11926-1 (Side)</b>	9/16-18 UNF

Shaft and flange options	Shaft	Flange for column/fixing
	<b>Male, cone, type A for steering wheel</b>	Ears in end cover with 4x M8
	<b>Male cone + spline, type B for steering wheel</b>	Ears in end cover with 4x M8
	<b>Male, 9 teeth spline, for column</b>	Round flange w. 4x M6
	<b>Female, 12 teeth spline, for column</b>	Square flange w. 4x M10 Or round flange w. 4x M6
<b>Neutral pressure drop</b>	OSPM(C) ON: 5 bar [73 psi] OSPM(S) ON: 3 bar [43 psi] OSPM(C) PB: 6 bar [87 psi] OSPM(S) PB: 4.5 bar [65 psi] at 15 l/min [4 US gal/min] and at viscosity 21 cSt	

### OSPM cetop



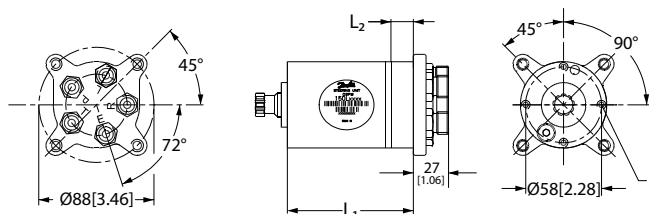
**Figure 1:**  
**OSPM ON**

**Figure 2:**  
**OSPM PB**

**Figure 3:**  
**OSPM LS**

**Figure 4:**  
**OSPMX CN**

### OSPM dimensions

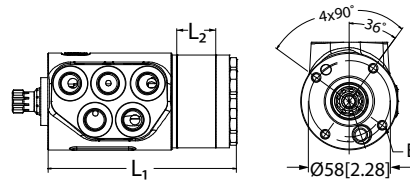


**E:** 4 × M6 × 1, 11 mm [0.432 in] deep

Mini steering unit	L <sub>1</sub>		L <sub>2</sub>	
	mm	[in]	mm	[in]
OSPM				
OSPM 32 ON	90	[3.54]	11.0	[0.43]
OSPM 40 ON	93	[3.66]	13.7	[0.54]
OSPM 50 ON	96	[3.78]	17.1	[0.67]
OSPM 63 ON	100	[3.94]	21.6	[0.85]
OSPM 70 ON	103	[4.05]	24.0	[0.94]
OSPM 80 ON	106	[4.17]	27.4	[1.08]
OSPM 100 ON	113	[4.45]	34.2	[1.35]
OSPM 32 PB/LS	103	[4.06]	11.0	[0.43]
OSPM 40 PB/LS	106	[4.17]	13.7	[0.54]
OSPM 50 PB/LS	109	[4.29]	17.1	[0.67]
OSPM 63 PB/LS	113	[4.45]	21.6	[0.85]
OSPM 70 PB/LS	116	[4.57]	24.0	[0.94]
OSPM 80 PB/LS	119	[4.69]	27.4	[1.08]
OSPM 100 PB/LS	126	[4.96]	34.2	[1.35]

**Figure 5: Dimensions in mm[in]**

#### OSPMS dimensions



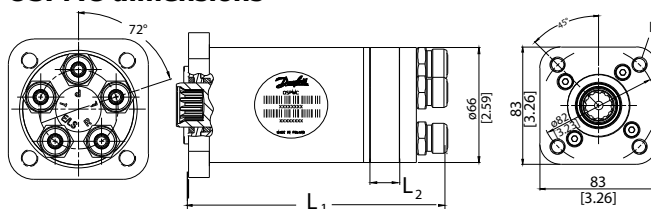
E: 4 × M6 × 1, 11 mm [0.432 in] deep

Mini steering unit	L <sub>1</sub>		L <sub>2</sub>	
	Mm	[in]	mm	[in]
OSPMS				
OSPMS 32 ON	107	[4.21]	11.0	[0.43]
OSPMS 40 ON	110	[4.33]	13.7	[0.54]
OSPMS 50 ON	114	[4.49]	17.1	[0.67]
OSPMS 63 ON	118	[4.65]	21.6	[0.85]
OSPMS 70 ON	120	[4.73]	24.0	[0.94]
OSPMS 80 ON	124	[4.89]	27.4	[1.08]
OSPMS 100 ON	131	[5.16]	34.2	[1.35]
OSPMS 32 PB/LS	120	[4.73]	11.0	[0.43]

Mini steering unit OSPMS	L <sub>1</sub>		L <sub>2</sub>	
	Mm	[in]	mm	[in]
OSPMS 40 PB/LS	122	[4.81]	13.7	[0.54]
OSPMS 50 PB/LS	126	[4.96]	17.1	[0.67]
OSPMS 63 PB/LS	130	[5.12]	21.6	[0.85]
OSPMS 70 PB/LS	133	[5.24]	24.0	[0.94]
OSPMS 80 PB/LS	136	[5.36]	27.4	[1.08]
OSPMS 100 PB/LS	143	[5.63]	34.2	[1.35]

**Figure 6: Dimensions in mm[in]**

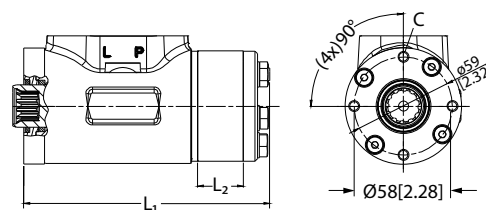
### OSPMC dimensions



**B** 4 x M10 x 1.5, 12mm [0.47 in] deep

Mini steering unit OSPMC w. square or round flange	L <sub>1</sub>		L <sub>2</sub>	
	mm	[in]	mm	[in]
OSPMC 32 ON	130	[5.12]	11.0	[0.43]
OSPMC 40 ON	133	[5.24]	13.7	[0.54]
OSPMC 50 ON	136	[5.36]	17.1	[0.67]
OSPMC 63 ON	141	[5.56]	21.6	[0.85]
OSPMC 70 ON	143	[5.63]	24.0	[0.94]
OSPMC 80 ON	147	[5.79]	27.4	[1.08]
OSPMC 100 ON	153	[6,03]	34.2	[1.35]
OSPMC 32 PB/LS	143	[5.63]	11.0	[0.43]
OSPMC 40 PB/LS	146	[5.75]	13.7	[0.54]
OSPMC 50 PB/LS	149	[5.87]	17.1	[0.67]
OSPMC 63 PB/LS	154	[6.07]	21.6	[0.85]
OSPMC 70 PB/LS	156	[6.15]	24.0	[0.94]
OSPMC 80 PB/LS	160	[6.30]	27.4	[1.08]
OSPMC 100 PB/LS	166	[6.54]	34.2	[1.35]

**Figure 7: Dimensions in mm[in]**

**OSPMSC dimensions**

**C** 4 x M6 x 1, 12.5 mm [0.49 in] deep

Mini steering unit OSPMSC w. square or round flange	L <sub>1</sub>		L <sub>2</sub>	
	Mm	[in]	mm	[in]
OSPMSC 32 ON	120	[4.73]	11.0	[0.43]
OSPMSC 40 ON	123	[4.85]	13.7	[0.54]
OSPMSC 50 ON	126	[4.96]	17.1	[0.67]
OSPMSC 63 ON	131	[5.16]	21.6	[0.85]
OSPMSC 70 ON	133	[5.24]	24.0	[0.94]
OSPMSC 80 ON	137	[5.40]	27.4	[1.08]
OSPMSC 100 ON	143	[5.63]	34.2	[1.35]
OSPMSC 32 PB/LS	133	[5.24]	11.0	[0.43]
OSPMSC 40 PB/LS	135	[5.32]	13.7	[0.54]
OSPMSC 50 PB/LS	139	[5.48]	17.1	[0.67]
OSPMSC 63 PB/LS	143	[5.63]	21.6	[0.85]
OSPMSC 70 PB/LS	146	[5.75]	24.0	[0.94]
OSPMSC 80 PB/LS	149	[5.87]	27.4	[1.08]
OSPMSC 100 PB/LS	156	[6.15]	34.2	[1.35]

**Figure 8: Dimensions in mm[in]**

