



Osborne Engineering Limited

OEV Vertical Guide Bearing



General Description

The Osborne Vertical Guide Bearing is a comprehensive self contained standard assembly comprising a rotating collar, journal bearing pads, cooling mechanism and outer casing. Additional monitoring and ancillary features are incorporated to meet customer requirements. Radial loads are transmitted through the collar to the journal pads which support the load by generating and sustaining a hydrodynamic oil film. Preloaded journal pads are provided as standard to offer increased stability. The internal components operate within an oil flooded chamber facilitating operation in demanding and otherwise corrosive environments. Outer housings are supplied primed for weather resistance, ready for final coating. Customer specific paint requirements can also be accommodated. Custom designs are also available to cover requirements outside of the standard Vertical Guide Bearing range including split and electrically insulated variants.

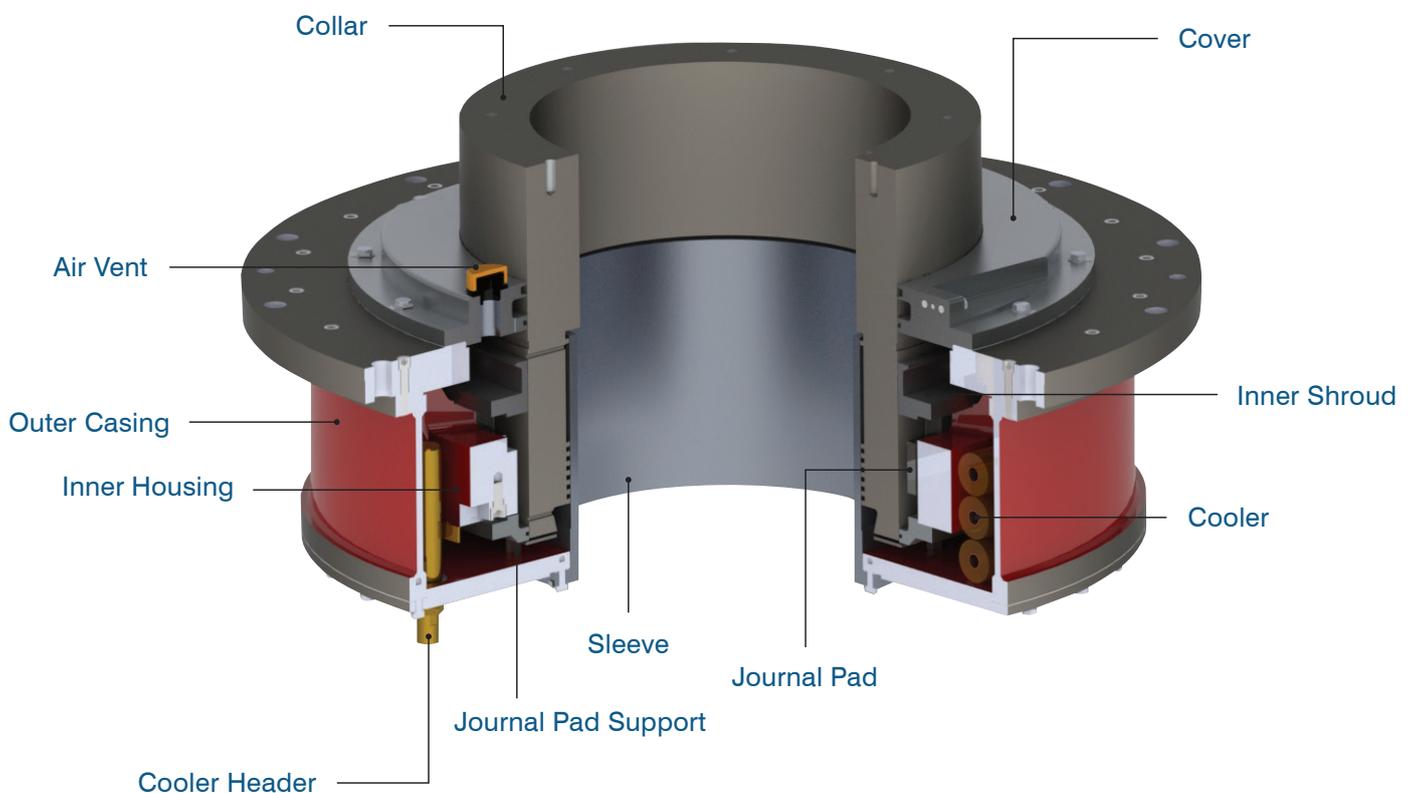
Typical Applications

Vertical pumps

Motors

Hydro generators

Hydro turbines



Temperature Measurement

Temperature measurement is the preferred condition monitoring tool for most bearing assemblies. OEV bearing assemblies can be supplied with RTD's for accurate measurement of the journal pads & oil bath temperatures. Local dial thermometers can also be added for simple temperature reading. All of these instruments can be fitted with thermowells allowing removal without the need to drain oil from the bearing. Customer preferred instruments can be incorporated into our designs or details of our preferred standard instruments can be requested.

Lubrication Methods

The OEV bearing range is designed for two types of cooling. Completely self contained water cooled or circulating oil cooled using an external lubrication system. Water cooling is provided using our standard Cupro-Nickel wire wound cooling tube, other materials can also be used depending upon specification requirements, such as titanium and stainless steel. Circulated oil cooling is utilised when cooling water is not available or cooling tubes are not desirable.

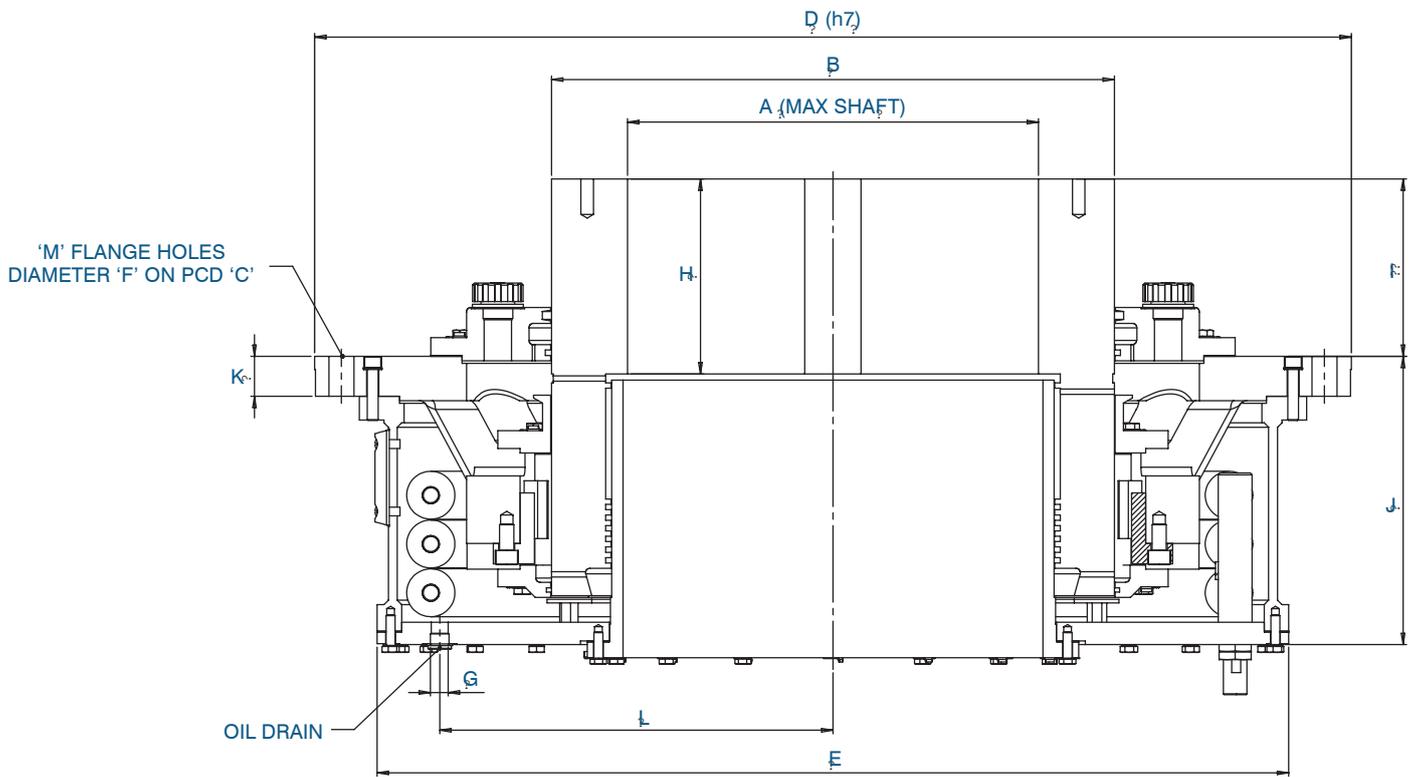


Table 1 – Vertical guide bearing selection guide

	A	B	C	D	E	F	G	H	I	J	K	L	M	MAX RADIAL LOAD (KN)
OEV9	130	217	410	450	385	9	G3/4	60	50	150	20	140	12	14.5
OEV10	180	273	510	550	485	9	G3/4	75	60	180	25	190	12	23.5
OEV11	220	324	640	680	600	9	G3/4	90	75	210	30	240	18	33
OEV12	300	437	760	800	725	11	G1	140	120	250	35	290	18	60
OEV13	340	501	880	930	810	11	G1	140	120	280	40	320	20	76
OEV14	460	630	1100	1160	1020	13.5	G1	200	180	340	45	420	24	118

Transportation Weights (Kg)

SIZE	9	10	11	12	13	14
	80	145	245	470	750	1280

Oil Sump Capacity (Litres)

SIZE	9	10	11	12	13	14
	8	11	18	36	48	75

Locking Collar Keyway (mm)

KEY	2 X 2	5 X 5	10 X 8	16 X 10	22 X 14	32 X 18	45 X 25	63 X 32
SHAFT	10 – 22	22 – 44	44 – 65	65 – 95	95 – 150	150 – 230	230 – 350	330 – 500

Technical Documentation

With every order OEL engineers will provide a detailed arrangement drawing, operating and maintenance instruction manual and comprehensive bearing performance prediction calculation providing the following information;

- Oil bath temperature
- Required oil viscosity grade
- Bearing power loss
- Maximum operating pressure
- Minimum film thickness
- Cooling water requirements

Ordering Code

OEV - Series - G - Cooling method

Series = 9,10,11,12,13,14

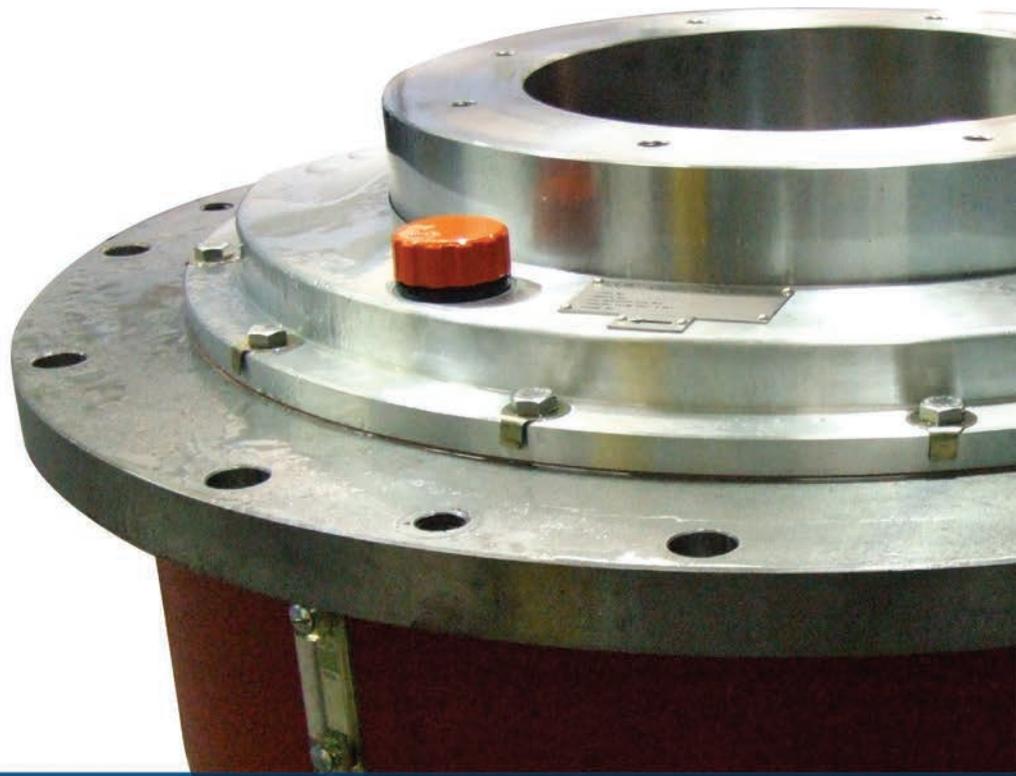
G = Guide bearing

W = Water cooled

C = Circulating oil cooled

Example = OEV-9-G-W

Example denotes an OEV series 9 guide bearing, water cooled.



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