What is claimed is:

1. A screw compressor comprising:

a pair of rotor shafts disposed horizontally;

bearings for supporting said rotor shafts;

a bearing casing for accommodating said bearings;

an oil sump formed in a bottom of said bearing casing, said oil sump being structured so as to allow a lower portion of said bearings to be soaked into oil for lubrication;

a chamber provided separately from said bearing casing;

an oil line for communication between said oil sump and said chamber; and

oil level detecting means disposed in said chamber,

wherein a pair of timing gears are mounted on one ends of said rotor shafts and accommodated within said bearing casing, said timing gears meshing with each other, and the position of connection between said oil sump formed in said bearing casing with said timing gears accommodated therein and said oil line corresponds to a lower-limit height of oil level of said oil sump permitting lubrication of said bearings.

2. The screw compressor of claim 1 further comprising a communication line for communication between a space positioned above an oil level in said chamber and a space positioned above an oil level in said bearing casing.

3. The screw compressor of claim 1 further comprising:

an oil supply line for the supply of oil to said bearing casing,

wherein when said oil level detecting means detects as a value of the oil level in said chamber a value lower than a preset first value indicative of a lower limit, oil is fed into said bearing casing through said oil supply line.

4. The screw compressor of claim 1 further comprising:

an oil discharge line for the discharge of oil from said bearing casing,

wherein when said oil level detecting means detects as a value of the oil level in said chamber a value higher than a preset second value indicative of an upper limit, oil is discharged from said bearing casing through said oil discharge line.

5. The screw compressor of claim 1 further comprising:

an oil supply line for the supply of oil to said bearing casing;

an oil discharge line for the discharge of oil from said bearing casing; and

oil temperature detecting means disposed in said oil line,

wherein:

when said oil level detecting means detects as a value of the oil level in said chamber a value lower than a preset first value indicative of a lower limit, oil is fed into said bearing casing through said oil supply line, while

when said oil level detecting means detects as a value of the oil level in said chamber a value higher than a preset second value indicative of an upper limit, oil is discharged from said bearing casing through said oil discharge line, further,

when said oil level detecting means detects as a value of the oil level in said chamber a value higher than a preset third value lying between said first value and said second value and when said oil temperature detecting

means detects as a value of the oil temperature a value higher than a preset value, the oil is discharged from said bearing casing through said oil discharge line.

CLAIMS

What is claimed is:

1. A screw compressor comprising:

a pair of rotor shafts disposed horizontally;

bearings for supporting said rotor shafts;

a bearing casing for accommodating said bearings;

an oil sump formed in a bottom of said bearing casing, said oil sump being structured so as to allow a lower portion of said bearings to be soaked into oil for lubrication, wherein a pair of timing gears are mounted on one ends of said rotor shafts and accommodated within said bearing casing, said timing gears meshing with each other;

an oil chamber provided separately from said bearing casing;

an oil line connected between said oil sump and said oil chamber, wherein a height position of a connection of said oil line to said oil sump corresponds to a lower-limit height of an oil level in said oil sump for permitting lubrication of said bearings; and

oil level detector disposed in said oil chamber.

2. The screw compressor according to claim **1**, further comprising a communication line for communication between a space positioned above an oil level in said oil chamber and a space positioned above an oil level in said bearing casing.

3. The screw compressor according to claim **1**, further comprising an oil supply line for the supply of oil to said bearing casing, wherein when said oil level detector detects as a value of the oil level in said oil chamber a value lower than a preset first value indicative of a lower limit, oil is fed into said bearing casing through said oil supply line.

4. The screw compressor according to claim **1**, further comprising an oil discharge line for the discharge of oil from said bearing casing, wherein when said oil level detector detects as a value of the oil level in said chamber a value higher than a preset second value indicative of an upper limit, oil is discharged from said bearing casing through said oil discharge line.

5. The screw compressor according to claim **1**, further comprising:

an oil supply line for the supply of oil to said bearing casing;

an oil discharge line for the discharge of oil from said bearing casing; and

oil temperature detector disposed in said oil line,

wherein:

when said oil level detector detects as a value of the oil level in said oil chamber a value lower than a preset first value indicative of a lower limit, oil is fed into said bearing casing through said oil supply line, while

when said oil level detector detects as a value of the oil level in said oil chamber a value higher than a preset second value indicative of an upper limit, oil is discharged from said bearing casing through said oil discharge line, further,

when said oil level detector detects as a value of the oil level in said oil chamber a value higher than a preset third value lying between said first value and said second value and when said oil temperature detector detects as a value of the oil temperature a value higher than a preset value, the oil is discharged from said bearing casing through said oil discharge line.

6. The screw compressor according to claim **1**, wherein the lower limit height of the oil level in said oil sump for permitting lubrication of said bearings is approximately a height of a center of the lowermost bearing element.