WHAT IS CLAIMED IS:

1. A membrane filtration system, comprising:

a treatment tank;

a membrane support frame disposed in the treatment tank;

a reciprocating portion coupled to the membrane support frame and operable to reciprocate the membrane support frame;

a sliding means disposed in the treatment tank, connected to the reciprocating portion, and guiding a moving direction of the membrane support frame; and

a sludge lifting portion flexibly disposed at a lower end of the membrane support frame and operable to lift sludge accumulated at a lower part of the treatment tank.

2. The membrane filtration system of claim 1, wherein the sludge lifting portion includes:

a first vane body disposed at a lower end of the membrane support frame;

a second vane body coupled to a lower end of the first vane body; and

an elevation unit arranged to interlock the first vane body and the second vane body and operable to elevate the second vane body.

3. The membrane filtration system of claim 2, wherein the elevation unit includes:

a hydraulic cylinder disposed on the first vane body; and

an elevation rod disposed on the second vane body and coupled to a rod of the hydraulic cylinder.

4. The membrane filtration system of claim 3, wherein the sludge lifting portion includes a third vane body coupled to a lower end of the second vane body.

5. The membrane filtration system of claim 4, wherein the sludge lifting portion includes a lifting blade coupled to a lower end of the third vane body and operable to lift sludge during a reciprocating motion of the membrane support frame.

6. The membrane filtration system of claim 5, wherein the lifting blade is disposed to form a non-zero angle with respect to the third vane body.

7. The membrane filtration system of claim 6, wherein the sludge lifting portion includes an elastic body disposed between the second vane body and the third vane body and operable to alleviate an impact applied when the lifting blade collides with a bottom of the treatment tank.

8. The membrane filtration system of claim 7, wherein the sludge lifting portion includes a shock-absorbing pad disposed at an end of the lifting blade and operable to alleviate an impact applied when the lifting blade collides with a bottom of the treatment tank.

9. A membrane bio reactor, comprising:

a biological treatment train operable to perform at least one of anaerobic, anoxic, and aerobic biological treatment processes; and

the membrane filtration system of claim 1.

10. A membrane filtration system, comprising:

a treatment tank; a membrane support frame disposed in the treatment tank;

a sludge lifting portion flexibly disposed at a lower end of the membrane support frame and operable to lift sludge accumulated at a lower part of the treatment tank; and

an interval adjusting portion operable to adjust an interval between the membrane support frame or the sludge lifting portion and the treatment tank.

11. The membrane filtration system of claim 10, wherein the interval adjusting portion includes:

a first interval adjuster operable to adjust an interval between the membrane support frame and an inner wall of the treatment tank; and

a second interval adjuster operable to adjust an interval between the sludge lifting portion and a bottom of the treatment tank.

12. The membrane filtration system of claim 11, further comprising: a reciprocating portion coupled to the membrane support frame and operable to reciprocate the membrane support frame.

13. The membrane filtration system of claim 12, wherein the reciprocating portion includes a reciprocating frame operable to interlock with the membrane support frame, and the first interval adjuster includes:

a control cylinder disposed at an upper end of the reciprocating frame; and

a moving unit coupled to a rod of the control cylinder, supporting the membrane support frame, and operable to move in a width direction of the reciprocating frame.

14. The membrane filtration system of claim 13, wherein the moving unit includes:

a moving rail disposed in the width direction of the reciprocating frame; and

a moving block including a rolling wheel operable to move along the moving rail.

15. The membrane filtration system of claim 14, wherein the first interval adjuster includes:

a first proximity sensor disposed at a side surface of the membrane support frame;

a first interval processor configured to calculate an interval between the membrane support frame and an inner wall of the treatment tank using a signal transmitted from the first proximity sensor;

a first hydraulic amount processor configured to convert a calculated value of the first interval calculator into a hydraulic driving value; and

a first driver operable to drive the control cylinder based on the hydraulic driving value of the first hydraulic amount processor.

16. The membrane filtration system of claim 15, wherein the sludge lifting portion includes:

a first vane body disposed at a lower end of the membrane support frame;

a second vane body coupled to a lower end of the first vane body;

a third vane body coupled to a lower end of the second vane body;

a lifting blade arranged to form a non-zero angle with respect to a lower end of the third vane body and operable to lift sludge during a reciprocating motion of the membrane support frame; and

an elevation unit arranged to interlock the first vane body and the second vane body and operable to elevate the second vane body.

17. The membrane filtration system of claim 16, wherein the elevation unit includes:

a hydraulic cylinder disposed on the first vane body; and

an elevation rod disposed on the second vane body and coupled to a rod of the hydraulic cylinder.

18. The membrane filtration system of claim 17, wherein the second interval adjuster includes:

a second proximity sensor disposed on the lifting blade;

a second interval processor configured to calculate an interval between the lifting blade and a bottom of the treatment tank using a signal transmitted from the second proximity sensor;

a second hydraulic amount processor configured to convert a calculated value of the second interval calculator into a hydraulic driving value; and

a second driver operable to drive the hydraulic cylinder based on the hydraulic driving value of the second hydraulic amount processor.

19. The membrane filtration system of claim 12, further comprising a sliding portion disposed in the treatment tank, connected to the reciprocating portion, and operable to guide a moving direction of the membrane support frame.

20. The membrane filtration system of claim 10, further comprising an interval measuring unit operable to measure an interval between the membrane support frame or a vane member and the treatment tank, the interval measuring unit including:

a first interval measuring sensor operable to measure an interval between the membrane support frame and an inner wall of the treatment tank; and

a second interval measuring sensor operable to measure an interval between the vane member and a bottom of the treatment tank.