

# DSP - ARF

## ■ CENTRIFUGAL GRIT SEPARATOR and "AIR LIFT"



### V.I MACHINE DESCRIPTION

The DSP grit classifier is centrifugal machine that induces a cyclon effect on those effluent flows where the velocity is not sufficient to create the cyclon in the grit classifier.

The centrifugal force separates the grit and sand from the liquid effluent. The rotating rake combines the impeller effect with the sand removal moving the separated solids toward the central pit.

In the bottom of the pit is installed the suction nozzle of the air-lift which will evacuate the mixture of water and grit enriched in grit. The mixture has to be further treated with a grit separator.

The "Air Lift" pumps are generally used for lifting small flows of contaminated water or sludge up to 2 ft. above the liquid level.

The working principle is based on the difference of density between the effluent and the mixture effluent/air. The mixture results lighter and consequently capable of flowing upwards pushed by the air and the head of the effluent outside the air-lift.

Once the mixture is discharged it releases the air dissolved inside the flow.

The DSP grit classifier is installed in grit separation basins made of concrete and having cylindrical-conical shape. Drawings of typical installations are available on request.

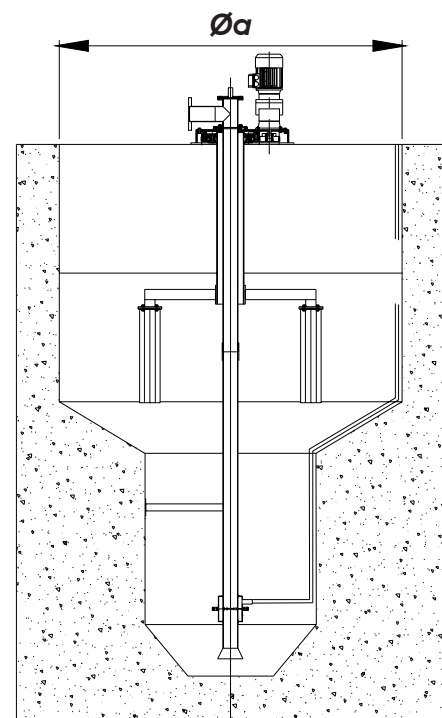
The unit is driven by a set of gears installed on an axial bearing holding the central shaft. The motion is provided by a worm gears gearmotor, which is driven by a worm gear gearbox.

The power transmission box is completely filled with oil.

### V.II TECHNICAL DATA

*n.b.: the manufacturer may modify some dimensions or sizes without prior information!*

	Øa (ft.)	Rotating speed (rpm)	Installed power (HP)	Air Lift pump (Ø)	Effluent flow (cfm)	Air flow (cfm)	Grit / Water flow (cfm)
DSP 20	6.5	35	0.60	80	250	60	2
DSP 25	8.2	35	0.60	80	450	60	2
DSP 30	10.0	35	0.60	80	850	60	4
DSP 35	11.5	35	0.90	80	1050	90	4
DSP 40	13.0	35	0.90	100	1500	90	4
DSP 45	15.0	28	0.90	100	2400	120	6
DSP 50	16.5	28	1.75	100	3000	120	6
DSP 55	18.0	23	1.75	100	3900	120	6
DSP 60	20.0	23	1.75	100	4450	120	6

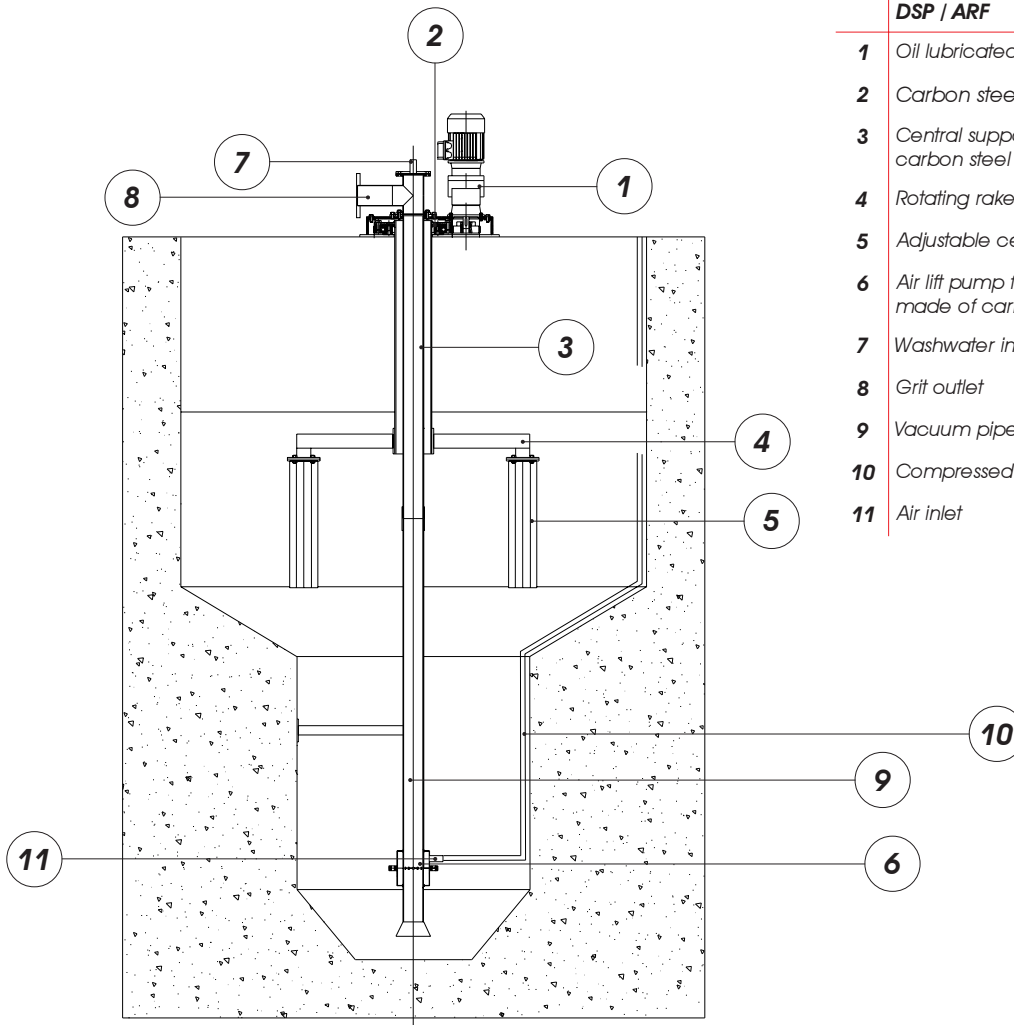


■ **Centrifugal Grit Separator and "AIR LIFT"**

"AIR LIFT"	Head (mm)	Air flow (m <sup>3</sup> /h)	Water flow (m <sup>3</sup> /h)
ARF 80	500	9	13
ARF 100	500	12	15
ARF 150	500	32	30

*n.b.: The capacity is indicated for reference only*

**V.III SUPPLY COMPONENTS**



**Centrifugal Grit Separator and AIR LIFT DSP / ARF**

- 1 Oil lubricated gearmotor
- 2 Carbon steel gears case
- 3 Central supporting shaft made of sch. 40 carbon steel tube
- 4 Rotating rake
- 5 Adjustable centrifugal blades inclination
- 6 Air lift pump for settled sand extraction made of carbon steel
- 7 Washwater inlet
- 8 Grit outlet
- 9 Vacuum pipe
- 10 Compressed air pipe
- 11 Air inlet

**V.IV OPTIONS**

- Hot dip galvanised construction;
- AISI 304 stainless steel construction;
- Lifting tube with no-return valve, air piping and control valve.