

DAF design

raw feed flow Qf	250 m ³ /h	1101 U.S. GPM	A/S	0.02	
liquid temperature	29.4 °C	84.9 °F	load rate	2 gpm/sq.ft.	
altitude	183 m	600 ft			
oil or SS concentration	5010 mg/L		Operating pressure	40 psig	3.70 atm
			Sys Sat efficiency f	0.8	
			Solubility ratio B	1	
Barometric pressure Pb	14.4 psia	0.98 atm	air solubility ml/L	16.24	
reduced pressure Pr	0.98 atm	(assumed equal to barometric pressure)	Henry's constant	76594.81	

pressurized-to-feed Qp/Qf ratio = **2.414** less 1 use partial or recycle pressuration
 equal 1 use total or recycle pressuration
greater 1 use recycle pressuration

pressurized flow Qp = Qf * Qp/Qf = 2658 U.S. gpm 603.6 m³/h

	TP option	R option
Air rate for total or partial flow pressuration option		Recycle option
Qa/Qp 0.0068 SCF/gal		0.004541 SCF/gal
Qa 18.04 SCFM		12.07 SCFM

TP option compressor data

Air supply compressor to provide 3x or 4x required flow rate at a pressure about 75% above system operating pressure

Unit selection anywhere between			S-I units	
Compressor 3x capacity	54.1 SCFM	at	70 psig	92.0 m³/h 5.74 atm
Compressor 4x capacity	72.2 SCFM	at	same	122.6 m³/h same

R option compressor data

Air supply compressor to provide 3x or 4x required flow rate at a pressure about 75% above system operating pressure

Unit selection anywhere between				
Compressor 3x capacity	36.2 SCFM	at	70 psig	61.5 m³/h 5.74 atm
Compressor 4x capacity	48.3 SCFM	at	same	82.0 m³/h

tentative tank dimensions

hydraulic sizing

Circular

Rectangular

L

W

TP option tank	
Qp/Qf less than 1 dimensions	
26.5 ft dia.	8.07 m dia.
38.3 ft	11.68 m
14.4 ft	4.38 m

R option tank	
Qp/Qf greater than 1 dimensions	
48.9 ft dia.	14.92 m dia.
70.8 ft	21.58 m
26.5 ft	8.09 m

solid load sizing

Circular

Rectangular

L

W

	30060 kg/day	66156 lb/day	2756 lb/hr	1.5 lb/h per sq.ft.
48.4 ft dia.	14.75 m			
70.0 ft	21.34 m			
26.3 ft	8.00 m			