



BR1200

Beam Driven Chemical Injection Pump

	PLUNGER SIZE					
	3/16"	1/4"	3/8"	1/2"	3/4"	1"
Standard Model						
Model Number	BR1204	BR1201	BR1203	BR1205	BR1206	BR1207
Maximum Discharge Pressure (psig)	3000	1500	1000	500	250	125
Maximum Recommended Speed (Strokes/Minute)	50	50	50	50	50	50
Volume (Per Head)						
Hourly @ 0 psig Discharge Pressure						
Volume* (litres/hour)	0.09	0.16	0.35	0.63	1.42	2.52
Volume* (imp gal/hour)	0.02	0.03	0.07	0.14	0.31	0.55
Volume* (US gal/hour)	0.02	0.04	0.09	0.16	0.37	0.66
Hourly @ 1000 psig Discharge Pressure						
Volume* (litres/hour)	0.08	0.14	0.33	n/a	n/a	n/a
Volume* (imp gal/hour)	0.01	0.03	0.07	n/a	n/a	n/a
Volume* (US gal/hour)	0.02	0.03	0.08	n/a	n/a	n/a
Daily @ 0 psig Discharge Pressure						
Volume* (litres/day)	2.1	3.8	8.5	15.1	34.1	60.6
Volume* (imp gal/day)	0.4	0.8	1.8	3.3	7.5	13.3
Volume* (US gal/day)	0.5	1.0	2.2	4.0	9.0	16.0
Daily @ 1000 psig Discharge Pressure						
Volume* (litres/day)	1.9	3.5	7.9	n/a	n/a	n/a
Volume* (imp gal/day)	0.4	0.7	1.7	n/a	n/a	n/a
Volume* (US gal/day)	0.5	0.9	2.1	n/a	n/a	n/a

* Volumes shown are at 18 Strokes per Minute.

Performance Specifications

Volume (litres per day per head) for Single Ratchet Tooth Engagement

Stokes Min.	3/16" Plunger			1/4" Plunger			3/8" Plunger			1/2" Plunger			3/4" Plunger			1" Plunger		
	Stroke Length			Stroke Length			Stroke Length			Stroke Length			Stroke Length			Stroke Length		
2	0.00	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.05	0.03	0.06	0.08	0.06	0.13	0.19	0.11	0.22	0.34
4	0.01	0.02	0.02	0.01	0.03	0.04	0.03	0.06	0.09	0.06	0.11	0.17	0.13	0.25	0.38	0.22	0.45	0.67
6	0.01	0.02	0.04	0.02	0.04	0.06	0.05	0.09	0.14	0.08	0.17	0.25	0.19	0.38	0.57	0.34	0.67	1.01
8	0.02	0.03	0.05	0.03	0.06	0.08	0.06	0.13	0.19	0.11	0.22	0.34	0.25	0.50	0.76	0.45	0.90	1.35
10	0.02	0.04	0.06	0.04	0.07	0.11	0.08	0.16	0.24	0.14	0.28	0.42	0.32	0.63	0.95	0.56	1.12	1.68
12	0.02	0.05	0.07	0.04	0.08	0.13	0.09	0.19	0.28	0.17	0.34	0.50	0.38	0.76	1.14	0.67	1.35	2.02
14	0.03	0.06	0.08	0.05	0.10	0.15	0.11	0.22	0.33	0.20	0.39	0.59	0.44	0.88	1.33	0.79	1.57	2.36
16	0.03	0.06	0.09	0.06	0.11	0.17	0.13	0.25	0.38	0.22	0.45	0.67	0.50	1.01	1.51	0.90	1.79	2.69
18	0.04	0.07	0.11	0.06	0.13	0.19	0.14	0.28	0.43	0.25	0.50	0.76	0.57	1.14	1.70	1.01	2.02	3.03

Volume (US pints per day per head) for Single Ratchet Tooth Engagement

Stokes Min.	3/16" Plunger			1/4" Plunger			3/8" Plunger			1/2" Plunger			3/4" Plunger			1" Plunger		
	Stroke Length			Stroke Length			Stroke Length			Stroke Length			Stroke Length			Stroke Length		
2	0.01	0.02	0.02	0.01	0.03	0.04	0.03	0.07	0.10	0.06	0.12	0.18	0.13	0.27	0.40	0.24	0.47	0.71
4	0.02	0.03	0.05	0.03	0.06	0.09	0.07	0.13	0.20	0.12	0.24	0.36	0.27	0.53	0.80	0.47	0.95	1.42
6	0.02	0.05	0.07	0.04	0.09	0.13	0.10	0.20	0.30	0.18	0.36	0.53	0.40	0.80	1.20	0.71	1.42	2.13
8	0.03	0.07	0.10	0.06	0.12	0.18	0.13	0.27	0.40	0.24	0.47	0.71	0.53	1.07	1.60	0.95	1.90	2.84
10	0.04	0.08	0.12	0.07	0.15	0.22	0.17	0.33	0.50	0.30	0.59	0.89	0.67	1.33	2.00	1.19	2.37	3.56
12	0.05	0.10	0.15	0.09	0.18	0.27	0.20	0.40	0.60	0.36	0.71	1.07	0.80	1.60	2.40	1.42	2.84	4.27
14	0.06	0.12	0.17	0.10	0.21	0.31	0.23	0.47	0.70	0.41	0.83	1.24	0.93	1.87	2.80	1.66	3.32	4.98
16	0.07	0.13	0.20	0.12	0.24	0.36	0.27	0.53	0.80	0.47	0.95	1.42	1.07	2.13	3.20	1.90	3.79	5.69
18	0.07	0.15	0.22	0.13	0.27	0.40	0.30	0.60	0.90	0.53	1.07	1.60	1.20	2.40	3.60	2.13	4.27	6.40

EXAMPLE:

R = Pump Rate per Head (Volume/Day)

r = Stroke Rate (Strokes per Minute)

$$v = R/t$$

t = Number of Teeth Engaged (Max. 20)

v = Volume for Single Ratchet Tooth Engagement (from Table)

$$R = v \cdot t$$

$$t = R/v$$

To determine pump size and settings to pump 6 Litres/Day (single head) with a pump jack stroke rate of 6 spm.

$$V = R/t = (6 \text{ Litres/Day}) / (20 \text{ Teeth Engagement}) = 0.3 \text{ Litres/Day per Tooth Engagement}$$

From the Table above, at a Stroke Rate of 6 spm, a 3/4" plunger set at medium or long stroke or a 1" plunger at any stroke length will work, (pick 3/4" plunger at long stroke, v=0.57 L/Day/Tooth). Determine number of teeth engagement required.

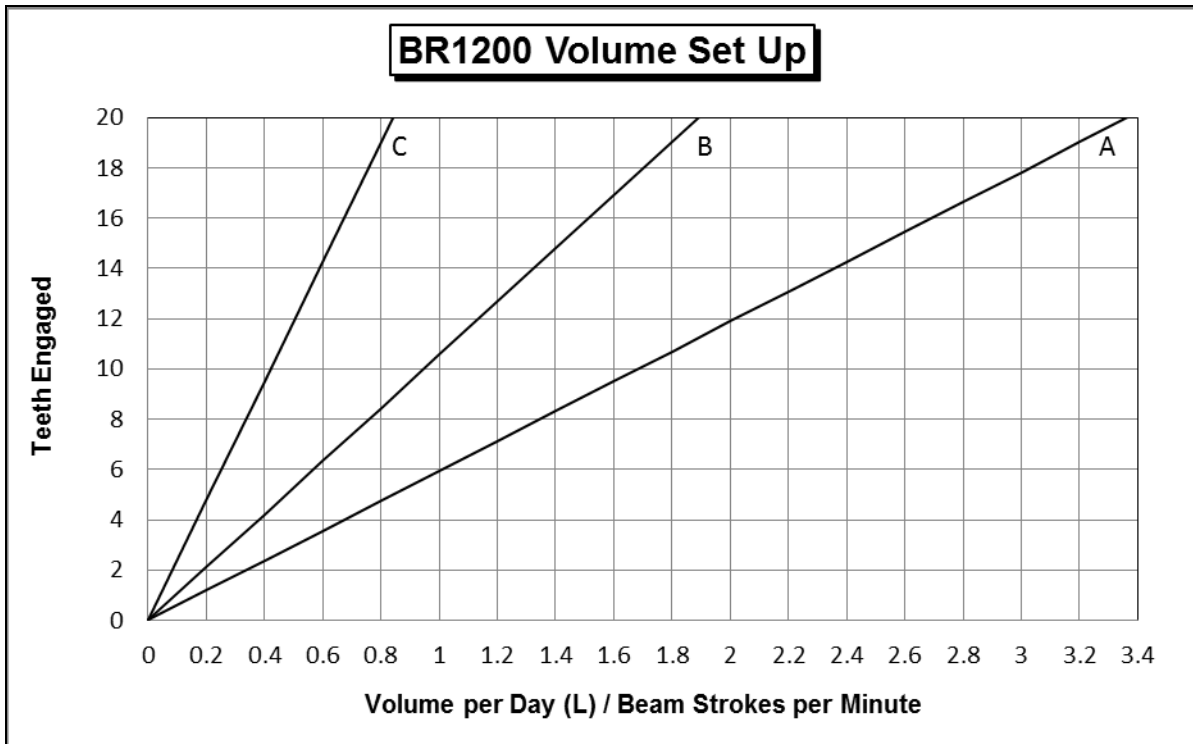
$$t = R/v = (6 \text{ L/Day}) / (0.57 \text{ L/Day/Tooth}) = 10.53 \text{ teeth} \quad (\text{Use 11 Teeth})$$

Theoretical Volume:

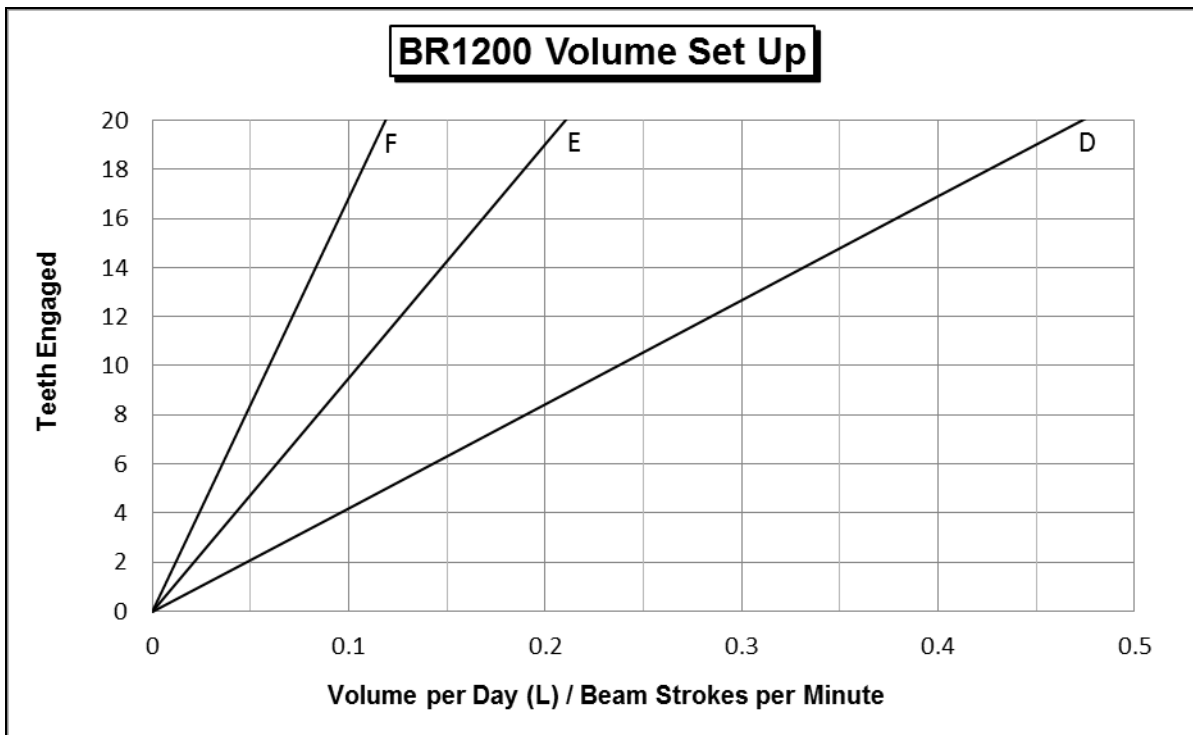
$$R = v \cdot t = (0.57 \text{ Litres/Day/Tooth}) \cdot (11 \text{ Teeth}) = 6.27 \text{ Litres/Day}$$

Volume Set Up

To set up the BR1200 for the correct volume output, the correct number of teeth needs to be engaged. To find out the correct number of teeth, divide the desired volume per day in litres by the beam strokes per minute to get the value used on the horizontal axis of the graphs below.



NOTE: Volumes based on 0 psig Discharge Pressure with a Full Stroke.



NOTE: Volumes based on 0 psig Discharge Pressure with a Full Stroke.

A - 1" Plunger, Full Stroke
 B - 3/4" Plunger, Full Stroke
 C - 1/2" Plunger, Full Stroke

D - 3/8" Plunger, Full Stroke
 E - 1/4" Plunger, Full Stroke
 F - 3/16" Plunger, Full Stroke