



Caterpillar G3412TA/ Ariel JGJ-4/3 Stage

Build Date: 1991

Engine: Caterpillar G3412TA (625 HP @ 1800 RPM)

Compressor Frame: Ariel JGJ-4

Stages: 3

Cylinders:

- (2) 11" J (185 psi)
- 7.125" J (600 psi)
- 4.125" (1,270 psi)

Cooler: Amercool 132-VC

- MAWP IC-1: 300 psi
- MAWP IC-2: 645 psi
- MAWP AC: 1,250 psi

Condition:

- Engine: High hour runner; OH recommended.
- Frame: Good, field-run condition.
- Package: Very nice and heavy with a wide skid. Unit has been sandblasted and primed to prevent rust damage.

Price: \$150k

Example performance runs and photos included below.



Company: Ariel Corporation
 Quote:
 Case 1:

Ariel Performance

Customer:
 Inquiry:
 Project:



Compressor Data:

Elevation,ft:	2700.00	Barmtr,psia:	13.300	Ambient,F:	100.00
Frame:	JGJ/4	Stroke, in:	3.50	Rod Dia, in:	1.500
Max RL Tot, lbf:	42000	Max RL Tens, lbf:	21000	Max RL Comp, lbf:	23000
Rated RPM:	1800	Rated BHP:	1240.0	Rated PS FPM:	1050.0
Calc RPM:	1800.0	BHP:	568	Calc PS FPM:	1050.0

Driver Data:

Type:	Nat. Gas
Mfg:	Caterpillar
Model:	G3412 TA
BHP:	570 (5.00%)
Avail:	570

Services

Gas Model

Service 1

VMG-APRNL2

Stage Data:

	1 (SG)	---	2	3
Target Flow, MMSCFD	2.500	---	2.500	2.500
Flow Calc, MMSCFD	2.330	---	2.322	2.291
BHP per Stage	217.7	---	169.9	168.7
Specific Gravity	0.6500	---	0.6480	0.6346
Ratio of Sp Ht (N)	1.2436	---	1.2462	1.2640
Comp Suct (Zs)	0.9934	---	0.9788	0.9408
Comp Disch (Zd)	0.9902	---	0.9738	0.9476
Pres Suct Line, psig	20.00	---	N/A	N/A
Pres Suct Flg, psig	19.67	---	123.67	402.11
Pres Disch Flg, psig	127.09	---	410.00	1363.63
Pres Disch Line, psig	N/A	---	N/A	1350.00
Pres Ratio F/F	4.258	---	3.090	3.315
Temp Suct, F	80.00	---	120.00	120.00
Temp Clr Disch, F	120.00	---	120.00	120.00

Cylinder Data:

	Throw 1	Throw 3	Throw 4	Throw 2
Cyl Model	11J	11J	7-1/2J	4-5/8HJ
Cyl Bore, in	11.000	11.000	7.125	4.625
Cyl RDP (API), psig	160.0	160.0	545.5	2363.6
Cyl MAWP, psig	185.0	185.0	600.0	2600.0
Cyl Action	DBL	DBL	DBL	DBL
Cyl Disp, CFM	686.5	686.5	284.3	116.1
Pres Suct Intl, psig	16.35	16.35	114.33	381.71
Temp Suct Intl, F	89	89	126	125
Pres Disch Intl, psig	139.76	139.76	437.13	1428.88
Temp Disch Intl, F	297	297	292	307
HE Suct Gas Vel, FPM	10403	10403	8909	7720
HE Disch Gas Vel, FPM	9633	9633	8136	7263
HE Spcrs Used/Max	0/0	0/0	0/2	0/2
HE Vol Pkt Avail	1.50+51.93	1.50+51.93	No Pkt	No Pkt
Vol Pkt Used	8.00 (V) %	8.00 (V) %	No Pkt	No Pkt
HE Min Clr, %	14.00	14.00	17.87	24.43
HE Total Clr, %	19.65	19.65	17.87	24.43
CE Suct Gas Vel, FPM	10210	10210	8514	6908
CE Disch Gas Vel, FPM	9454	9454	7775	6499
CE Spcrs Used/Max	0/0	0/0	0/2	0/2
CE Min Clr, %	13.68	13.68	18.51	29.92
CE Total Clr, %	13.68	13.68	18.51	29.92
Suct Vol Eff HE/CE, %	47.7/60.9	47.7/60.9	66.9/66.0	54.9/46.4
Disch Event HE/CE, ms	3.9/5.2	3.9/5.2	5.5/6.2	4.7/5.0
Suct Pseudo-Q HE/CE	11.5/11.1	11.5/11.1	7.4/6.7	5.0/4.0
Gas Rod Ld Comp, %	51.2 C	51.2 C	57.0 C	79.8 C
Gas Rod Ld Tens, %	54.6 T	54.6 T	57.5 T	71.4 T
Gas Rod Ld Total, %	55.3	55.3	59.9	79.4
Xhd Pin Deg/%Rvrsl lbf	174/96.6	174/96.6	168/89.8	170/61.5
Flow Calc, MMSCFD	1.165	1.165	2.322	2.291

*NOTE: This performance run is based on changing 3rd stage cylinder from 4.125" (1,270 psi) to 4.625" (2,600 psi).



Company: Ariel Corporation
 Quote:
 Case 1:

Ariel Performance

Customer:
 Inquiry:
 Project:



Compressor Data:

Elevation,ft:	2700.00	Barmtr,psia:	13.300	Ambient,F:	100.00
Frame:	JGJ/4	Stroke, in:	3.50	Rod Dia, in:	1.500
Max RL Tot, lbf:	42000	Max RL Tens, lbf:	21000	Max RL Comp, lbf:	23000
Rated RPM:	1800	Rated BHP:	1240.0	Rated PS FPM:	1050.0
Calc RPM:	1800.0	BHP:	568	Calc PS FPM:	1050.0

Driver Data:

Type:	Nat. Gas
Mfg:	Caterpillar
Model:	G3412 TA
BHP:	570 (5.00%)
Avail:	570

Services

Gas Model

Service 1

VMG-APRNL2

Stage Data:

	1 (SG)	---	2	3
Target Flow, MMSCFD	2.500	---	2.500	2.500
Flow Calc, MMSCFD	2.638	---	2.638	2.617
BHP per Stage	187.7	---	186.1	181.9
Specific Gravity	0.6500	---	0.6496	0.6430
Ratio of Sp Ht (N)	1.2506	---	1.2475	1.2639
Comp Suct (Zs)	0.9891	---	0.9765	0.9357
Comp Disch (Zd)	0.9854	---	0.9713	0.9420
Pres Suct Line, psig	42.00	---	N/A	N/A
Pres Suct Flg, psig	41.45	---	138.19	427.90
Pres Disch Flg, psig	142.99	---	437.24	1363.63
Pres Disch Line, psig	N/A	---	N/A	1350.00
Pres Ratio F/F	2.855	---	2.974	3.121
Temp Suct, F	80.00	---	120.00	120.00
Temp Clr Disch, F	120.00	---	120.00	120.00

Cylinder Data:

	Throw 1	Throw 3	Throw 4	Throw 2
Cyl Model	11J	11J	7-1/2J	4-5/8HJ
Cyl Bore, in	11.000	11.000	7.125	4.625
Cyl RDP (API), psig	160.0	160.0	545.5	2363.6
Cyl MAWP, psig	185.0	185.0	600.0	2600.0
Cyl Action	CE(HEVR)	CE(HEVR)	DBL	DBL
Cyl Disp, CFM	340.0	340.0	284.3	116.1
Pres Suct Intl, psig	36.05	36.05	127.82	405.82
Temp Suct Intl, F	91	91	126	125
Pres Disch Intl, psig	157.88	157.88	466.46	1430.98
Temp Disch Intl, F	247	247	287	298
HE Suct Gas Vel, FPM	3468	3468	8909	7720
HE Disch Gas Vel, FPM	N/A	N/A	8136	7263
HE Spcrs Used/Max	N/A	N/A	0/2	0/2
HE Vol Pkt Avail	N/A	N/A	No Pkt	No Pkt
Vol Pkt Used	N/A %	N/A %	No Pkt	No Pkt
HE Min Clr, %	N/A	N/A	17.87	24.43
HE Total Clr, %	N/A	N/A	17.87	24.43
CE Suct Gas Vel, FPM	10210	10210	8514	6908
CE Disch Gas Vel, FPM	9454	9454	7775	6499
CE Spcrs Used/Max	0/0	0/0	0/2	0/2
CE Min Clr, %	13.68	13.68	18.51	29.92
CE Total Clr, %	13.68	13.68	18.51	29.92
Suct Vol Eff HE/CE, %	N/A/75.8	N/A/75.8	68.5/67.6	58.2/50.3
Disch Event HE/CE, ms	N/A/6.9	N/A/6.9	5.6/6.4	5.0/5.4
Suct Pseudo-Q HE/CE	N/A/11.1	N/A/11.1	7.4/6.8	5.1/4.1
Gas Rod Ld Comp, %	2.9 C	2.9 C	59.8 C	78.4 C
Gas Rod Ld Tens, %	51.6 T	51.6 T	60.2 T	69.6 T
Gas Rod Ld Total, %	27.4	27.4	62.9	77.7
Xhd Pin Deg/%Rvrsl lbf	140/49.7	140/49.7	158/85.4	169/60.0
Flow Calc, MMSCFD	1.319	1.319	2.638	2.617

*NOTE: This performance run is based on changing 3rd stage cylinder from 4.125" (1,270 psi) to 4.625" (2,600 psi).



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 Quote:
 Case 1:

Ariel Performance

Customer:
 Inquiry:
 Project:



Compressor Data:

Elevation,ft:	2700.00	Barmtr,psia:	13.300	Ambient,F:	100.00
Frame:	JGJ/4	Stroke, in:	3.50	Rod Dia, in:	1.500
Max RL Tot, lbf:	42000	Max RL Tens, lbf:	21000	Max RL Comp, lbf:	23000
Rated RPM:	1800	Rated BHP:	1240.0	Rated PS FPM:	1050.0
Calc RPM:	1800.0	BHP:	571	Calc PS FPM:	1050.0

Driver Data:

Type:	Nat. Gas
Mfg:	Caterpillar
Model:	G3412 TA
BHP:	570 (5.00%)
Avail:	570

Services

Gas Model	VMG-APRNL2			
Stage Data:	1 (SG)	2	3	
Target Flow, MMSCFD	2.500	2.500	2.500	
Flow Calc, MMSCFD	2.324	2.315	2.283	
BHP per Stage	222.7	178.6	157.9	
Specific Gravity	0.6500	0.6475	0.6338	
Ratio of Sp Ht (N)	1.2431	1.2460	1.2672	
Comp Suct (Zs)	0.9934	0.9781	0.9351	
Comp Disch (Zd)	0.9901	0.9729	0.9423	
Pres Suct Line, psig	20.00	N/A	N/A	
Pres Suct Flg, psig	19.67	128.94	446.70	
Pres Disch Flg, psig	132.36	454.59	1363.63	
Pres Disch Line, psig	N/A	N/A	1350.00	
Pres Ratio F/F	4.418	3.289	2.993	
Temp Suct, F	80.00	120.00	120.00	
Temp Clr Disch, F	120.00	120.00	120.00	
Cylinder Data:	Throw 1	Throw 3	Throw 4	Throw 2
Cyl Model	11J	11J	7-1/2J	3-7/8RJ
Cyl Bore, in	11.000	11.000	7.125	3.875
Cyl RDP (API), psig	160.0	160.0	545.5	2000.0
Cyl MAWP, psig	185.0	185.0	600.0	2200.0
Cyl Action	DBL	DBL	DBL	DBL
Cyl Disp, CFM	686.5	686.5	284.3	79.5
Pres Suct Intl, psig	16.36	16.36	119.25	413.81
Temp Suct Intl, F	89	89	126	125
Pres Disch Intl, psig	145.41	145.41	484.21	1446.32
Temp Disch Intl, F	302	302	301	298
HE Suct Gas Vel, FPM	10403	10403	8909	9498
HE Disch Gas Vel, FPM	9633	9633	8136	8292
HE Spcrs Used/Max	0/0	0/0	0/2	0/0
HE Vol Pkt Avail	1.50+51.93	1.50+51.93	No Pkt	No Pkt
Vol Pkt Used	5.00 (V) %	5.00 (V) %	No Pkt	No Pkt
HE Min Clr, %	14.00	14.00	17.87	17.39
HE Total Clr, %	18.09	18.09	17.87	17.39
CE Suct Gas Vel, FPM	10210	10210	8514	8075
CE Disch Gas Vel, FPM	9454	9454	7775	7050
CE Spcrs Used/Max	0/0	0/0	0/2	0/0
CE Min Clr, %	13.68	13.68	18.51	23.24
CE Total Clr, %	13.68	13.68	18.51	23.24
Suct Vol Eff HE/CE, %	49.0/59.2	49.0/59.2	64.3/63.2	70.1/62.2
Disch Event HE/CE, ms	3.9/5.0	3.9/5.0	5.2/5.9	5.7/6.1
Suct Pseudo-Q HE/CE	11.5/11.1	11.5/11.1	7.4/6.7	7.0/5.1
Gas Rod Ld Comp, %	53.5 C	53.5 C	64.3 C	56.6 C
Gas Rod Ld Tens, %	57.1 T	57.1 T	65.1 T	45.5 T
Gas Rod Ld Total, %	57.9	57.9	67.8	53.7
Xhd Pin Deg/%Rvrsl lbf	169/97.5	169/97.5	143/84.4	166/84.0
Flow Calc, MMSCFD	1.162	1.162	2.315	2.283

*NOTE: This performance run is based on changing 3rd stage cylinder from 4.125" (1,270 psi) to 3.875" (2,200 psi).



Company: Ariel Corporation
 Quote:
 Case 1:

Ariel Performance

Customer:
 Inquiry:
 Project:



Compressor Data:

Elevation,ft.: **2700.00** Barmtr,psia: 13.300 Ambient,F: 100.00
 Frame: **JGJ/4** Stroke, in: 3.50 Rod Dia, in: 1.500
 Max RL Tot, lbf: 42000 Max RL Tens, lbf: 21000 Max RL Comp, lbf: 23000
 Rated RPM: 1800 Rated BHP: 1240.0 Rated PS FPM: 1050.0
 Calc RPM: **1800.0** **BHP:** **565** Calc PS FPM: 1050.0

Driver Data:

Type: Nat. Gas
 Mfg: **Caterpillar**
 Model: **G3412 TA**
 BHP: **570 (5.00%)**
 Avail: 570

Services

Gas Model

Service 1

VMG-APRNL2

Stage Data:

	1 (SG)	2	3
Target Flow, MMSCFD	2.500	2.500	2.500
Flow Calc, MMSCFD	2.600	2.600	2.578
BHP per Stage	190.5	196.2	166.1
Specific Gravity	0.6500	0.6496	0.6422
Ratio of Sp Ht (N)	1.2502	1.2470	1.2675
Comp Suct (Zs)	0.9891	0.9758	0.9288
Comp Disch (Zd)	0.9853	0.9704	0.9356
Pres Suct Line, psig	42.00	N/A	N/A
Pres Suct Flg, psig	41.45	143.41	480.55
Pres Disch Flg, psig	148.21	489.89	1363.63
Pres Disch Line, psig	N/A	N/A	1350.00
Pres Ratio F/F	2.950	3.211	2.788
Temp Suct, F	80.00	120.00	120.00
Temp Clr Disch, F	120.00	120.00	120.00

Cylinder Data:

	Throw 1	Throw 3	Throw 4	Throw 2
Cyl Model	11J	11J	7-1/2J	3-7/8RJ
Cyl Bore, in	11.000	11.000	7.125	3.875
Cyl RDP (API), psig	160.0	160.0	545.5	2000.0
Cyl MAWP, psig	185.0	185.0	600.0	2200.0
Cyl Action	CE(HEVR)	CE(HEVR)	DBL	DBL
Cyl Disp, CFM	340.0	340.0	284.3	79.5
Pres Suct Intl, psig	36.05	36.05	132.67	444.51
Temp Suct Intl, F	91	91	126	125
Pres Disch Intl, psig	163.50	163.50	522.06	1449.24
Temp Disch Intl, F	252	252	298	287
HE Suct Gas Vel, FPM	3468	3468	8909	9498
HE Disch Gas Vel, FPM	N/A	N/A	8136	8292
HE Spcrs Used/Max	N/A	N/A	0/2	0/0
HE Vol Pkt Avail	N/A	N/A	No Pkt	No Pkt
Vol Pkt Used	N/A %	N/A %	No Pkt	No Pkt
HE Min Clr, %	N/A	N/A	17.87	17.39
HE Total Clr, %	N/A	N/A	17.87	17.39
CE Suct Gas Vel, FPM	10210	10210	8514	8075
CE Disch Gas Vel, FPM	9454	9454	7775	7050
CE Spcrs Used/Max	0/0	0/0	0/2	0/0
CE Min Clr, %	13.68	13.68	18.51	23.24
CE Total Clr, %	13.68	13.68	18.51	23.24
Suct Vol Eff HE/CE, %	N/A/74.8	N/A/74.8	65.3/64.3	72.7/65.5
Disch Event HE/CE, ms	N/A/6.8	N/A/6.8	5.3/6.0	6.0/6.5
Suct Pseudo-Q HE/CE	N/A/11.1	N/A/11.1	7.4/6.8	7.2/5.2
Gas Rod Ld Comp, %	2.9 C	2.9 C	68.7 C	55.4 C
Gas Rod Ld Tens, %	54.1 T	54.1 T	69.4 T	43.9 T
Gas Rod Ld Total, %	28.6	28.6	72.3	52.3
Xhd Pin Deg/%Rvrsl lbf	135/48.6	135/48.6	144/82.2	165/82.7
Flow Calc, MMSCFD	1.300	1.300	2.600	2.578

*NOTE: This performance run is based on changing 3rd stage cylinder from 4.125" (1,270 psi) to 3.875" (2,200 psi).











