

## UNIT COMMISSIONING INFORMATION

Unit No: 94104	Date: November 15, 1995	Manufactured Date: November, 1995
Send to Pamco: EDMONTON	Attention: GARY ZIELASKO	Copy To: Willard Martin
Project Manager: John Tolton	Sales Engineer: Jagi Singh	Additional Copies: SM/AJP/JT <i>at</i>

Customer: Petrostar Petroleum	Address: 3750, 700 - Second Street S.W. Calgary, AB T2P 2W2
Contact: David Bustin	
Phone No: (403) 265-1142	

Unit Location: Talbot Lake	Site Contact: Lief Leadlay	Phone No.: (403) 557-8009
L.S.D.: 4-3-96-10 W5M	Contact for Spare Parts:	Phone No.:

Start-Up	As per sales order: X	No Allowance in sales order: X	Details:
Field Completion	As per sales order: X	No Allowance in sales order: X	Details:
Site Re-assembly	As per sales order: X	No Allowance in sales order: X	Details:
Performance Data	Attached: Yes		Date to Follow:
Parts Manuals	Shipping date: November 30, 1995		Blueprints/Drawings: November 30, 1995
Parts Shortages: None			

DRIVER: Waukesha	Model No.: L7042GSI	S/N: C11395	Spec. No.:
Ignition: CEC	P/N: 69788	Spark Plug P/N: RTM77N	Coil No.: 591-011B
Harness: Pamco	P/N: C1W1001	Eng. Fuel Filter P/N: 51-230-70C Headline	
Air Filter P/N: Wauk. 169180G	Starter Mfg: Ingresol Rand	P/N: SS810GB03R31-31A	

COMPRESSOR: Ariel	Model No.: JGK/4	S/N: F-10539
COOLER: Air-X-Changer	Model No.: 156EH-144-26	Job No.: 945129A
Inlet Separator: 75H-7-336-18-655-WM-8F	Filter Element P/N: FG 336	
CONTROL PANEL: Spartan Controls Ltd.	Model No.: Microguard	

Compressor Frame Parts List Attached: Yes

Compressor Cylinder Parts List Attached: Yes

Cooler Dwg Attached: X Dwg. No.: CLR94104 Rev #: 2Control Panel Dwg. Attached: X Dwg. No.: MA-3250 Rev #: 0Drive Train Equipment Drawing Attached: X Dwg. No.: SF94104F Rev #: 1

A Drawing No.: GA94104	Service Drawing No.: SF94104A - G
Process Drawing No.: PF94104	Other: Inlet Separator Peco PE 94-D196



**UNLOADING TABLE**

UNIT NUMBER 94104, 94105, 94106

CUSTOMER PETROSTAR PETROLEUM INC.

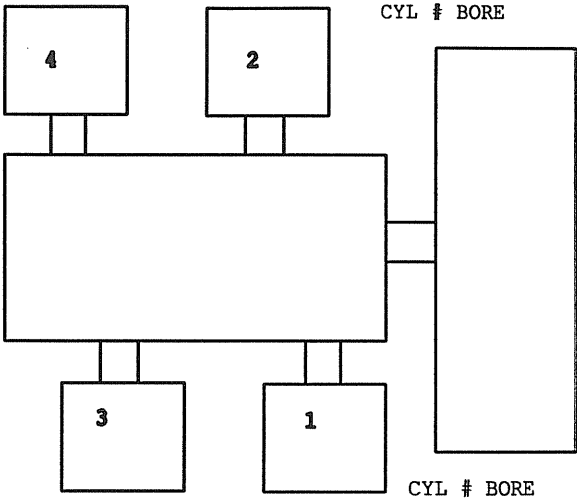
UNIT DESCRIPTION WA1448-4-3

UNIT LOCATION HAMBURG

DATE JULY 14, 1994 BY INAYAT VIRANI

UNLOADING TABLE IS FOR DISCHARGE PRESSURE

$P_D = 1440$  PSIG

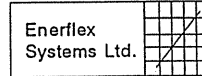


NO	14-1/8" K				14-1/8" K				9-1/8" K				5-7/8" K							
	HE (%) POCKET OPEN	HE	HCA's	CE	UNLOAD END S	HE (%) POCKET OPEN	HE	HCA's	CE	UNLOAD END S	HE (%) POCKET OPEN	HE	HCA's	CE	UNLOAD END S	HE (%) POCKET OPEN	HE	HCA's	CE	UNLOAD END S
1.	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-
2.	25	-	-	-	-	25	-	-	-	-	0	-	-	-	-	0	-	-	-	-
3.	50	-	-	-	-	50	-	-	-	-	0	-	-	-	-	0	-	-	-	-
4.	75	-	-	-	-	75	-	-	-	-	0	-	-	-	-	0	-	-	-	-
5.	75	-	-	-	-	N/A	-	-	HE	-	0	-	-	-	-	0	-	-	-	-
6.	75	2	2	-	-	N/A	-	2	HE	-	0	-	-	-	-	0	-	-	-	-
7.	75	4	4	-	-	N/A	-	4	HE	-	0	-	-	-	-	0	-	-	-	-
8.	N/A	-	4	HE	HE	N/A	-	-	HE	-	0	-	-	-	-	0	-	-	-	-
9.	N/A	-	4	HE	HE	N/A	-	4	HE	-	0	-	-	-	-	0	-	-	-	-

NOTE: Suction range may require valve spring changes and/or valve modifications. Please refer to operating manuals.

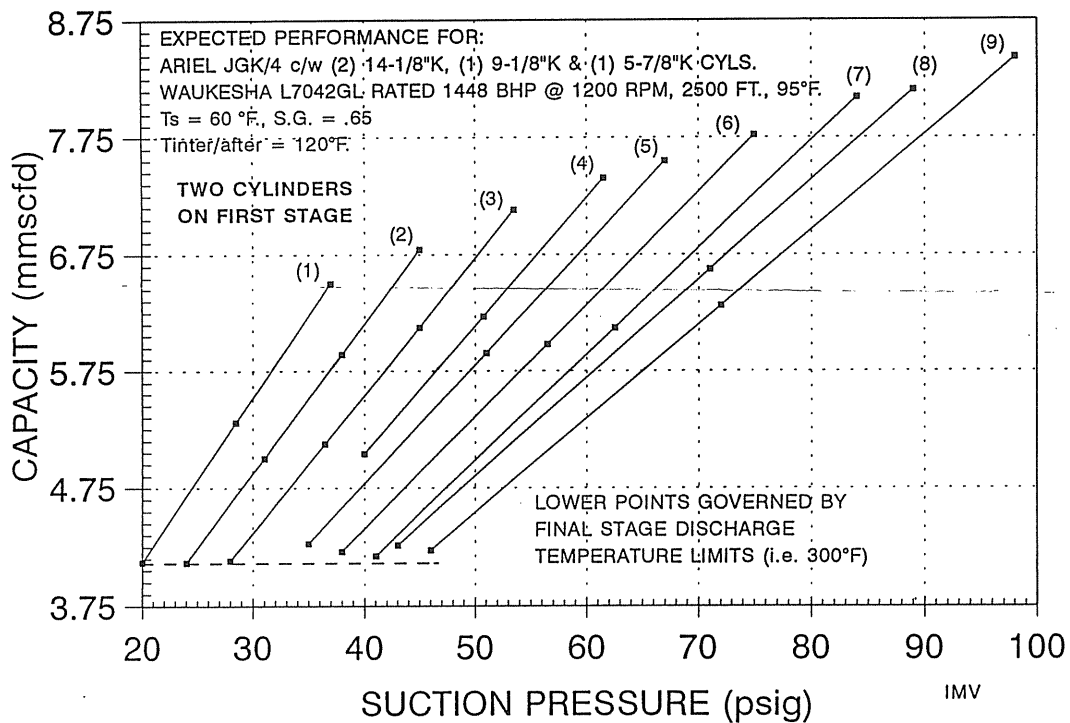
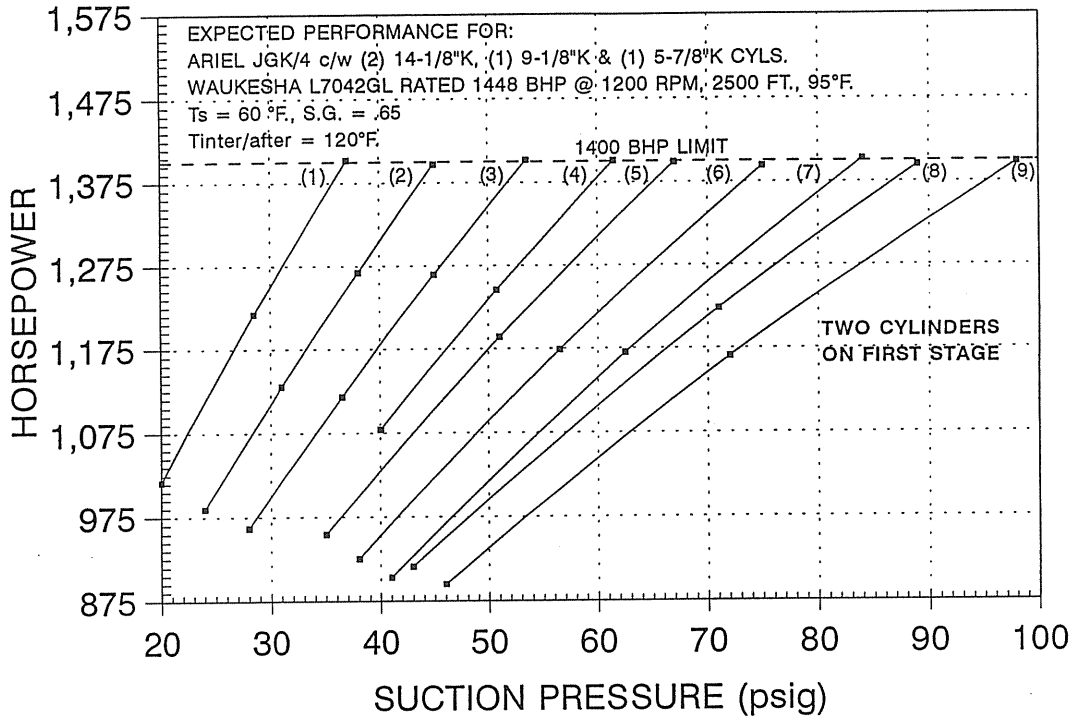
# PETROSTAR PETROLEUMS INC. HAMBURG COMPRESSOR STATION

JULY 13/94



Pd = 1440 psig

ESL UNIT 94104/94105/94106



## COMPRESSOR PERFORMANCE SUMMARY

94104

Compressor: Ariel JGK/4 c/w (2) 14-1/8" K + 9-1/8" K + 5-7/8" K cylinders x 5-1/2" stroke.  
Engine: Waukesha L7042GL rated 1448 HP @ 1200 RPM, 2500 ft., 95 deg. F.  
Cooler: Air-X-Changers 156EH-112-26, requires 46 HP to drive.

Page No.	Suction Pressure (psig)	Discharge Pressure (psig)	Capacity (mmscfd)	Compression Horsepower	Operating Speed (RPM)	Operating Mode
*1	150	1440	8.33	1198	1200	CE + DBL + DBL
**2	130	1440	9.46	1402	1200	DBL + DBL + DBL
3	100	1440	8.61	1400	1200	DBL + DBL + DBL
4	100	1440	8.53	1400	1200	CE, CE + DBL + DBL
5	75	1440	7.83	1400	1200	DBL, CE + DBL + DBL
6	50	1440	7.01	1400	1200	DBL, DBL + DBL + DBL
***7	37	1440	6.51	1400	1200	DBL, DBL + DBL + DBL
8	25	1440	4.83	1136	1200	DBL, DBL + DBL + DBL
9	15	1440	3.44	890	1200	DBL, DBL + DBL + DBL

- \* Maximum suction pressure.
- \*\* Maximum suction pressure loading HP.
- \*\*\* Minimum suction pressure loading HP.

### Operating Conditions

Gas is sweet, S.G. = 0.65  
Suction temperature = 60° F.  
Intercooling temperatures = 120° F.  
Aftercooling temperature = 120° F.

### Legend

CE - crank end single acting cylinder  
DBL - double acting cylinder

Note: There is only one first stage cylinder on the package for a suction pressure range of 100 - 150 psig.

DATE: July 13 / 94  
 Enerflex Systems Ltd.  
 QUOTE : 288-94A  
 REMARKS : 150 - 1440 psig

ARIEL - VER 5.1  
 CUSTOMER: Petrostar Pete.  
 INQUIRY : David Bustin  
 PROJECT : Stock Units

PAGE: 1  
 ELEVAT'N FT: 2500  
 BARMTR PSIA: 13.400  
 AMB'NT DegF: 95

COMPRESSOR DATA:

FRAME MODEL: JGK/4	STROKE INCH: 5.500	ROD DIA INCH: 2.000	TYPE : Gas Engine
MAX RL #TOT: 70000	MAX RL #TENS: 35000	MAX RL #COMP: 40000	MFR : Waukesha
RATED RPM: 1200	RATED BHP: 2400	RATED PS FPM: 1100	MODEL: 7042GL
CALC RPM: 1200	CALC BHP: 1198	CALC PS FPM: 1100	BHP : 1448 (CONT)

DRIVER DATA:

SERVICES

..... GATHERING .....

STAGE DATA:

	STAGE 1	STAGE 2	STAGE 3
FLOW REQ'D MMSCFD . . . .	0.000	0.000	0.000
FLOW CALC MMSCFD . . . .	8.326	8.326	8.326
CYL HP PER STAGE . . . .	260.5	491.5	421.7
SPECIFIC GRAVITY . . . .	0.6500	0.6500	0.6500
RATIO OF SP HT 'N' . . . .	1.2787	1.2594	1.2611
COMPRSBLY SUC ZS . . . .	0.9688	0.9660	0.9185
COMPRSBLY DCH ZD . . . .	0.9694	0.9643	0.9272
PRES SUC LINE PSIG . . . .	150.00	N/A	N/A
PRES SUC FLG PSIG . . . .	150.00	241.93	613.46
PRES DCH FLG PSIG . . . .	246.93	618.46	1455.00
PRES DCH LINE PSIG . . . .	N/A	N/A	1440.0
PRES RATIO F/F . . . .	1.5932	2.4747	2.3425
TEMP SUC DegF . . . .	60.0	120.0	120.0
TEMP CLR DCH DegF . . . .	120.0	120.0	120.0

CYLINDER DATA:

	THROW 2	THROW 3	THROW 4
CYLINDER MODEL . . . .	14-1/8K	9-5/8K	6-1/4K
CYLINDER BORE INCH . . . .	14.125	9.125	5.875
CYL RDP (API) PSIG . . . .	577.0	1155.0	1864.0
CYLINDER MAWP PSIG . . . .	635.0	1270.0	2050.0
CYLINDER ACTION . . . .	CE (HEVR)	DBL	DBL
CYLINDER DISP CFM . . . .	586.505	487.559	195.080
PRES SUC INTL PSIG . . . .	138.14	225.25	585.20
TEMP SUC INTL DegF . . . .	66.62	125.56	124.13
CMPRSB'Y SUC Zsph . . . .	0.9700	0.9671	0.9205
PRES DCH INTL PSIG . . . .	266.60	661.44	1523.82
TEMP DCH INTL DegF . . . .	141.97	265.33	250.18
HE SUC GAS VEL FPM . . . .	N/A	8673	7262
HE DCH GAS VEL FPM . . . .	N/A	8196	6829
HE SPACRS USED/MAX . . . .	N/A	0/4	0/2
HE VVPKT %CL AVAIL . . . .	N/A	1.0+49.1	0.8+45.2
% OF VVPKT USED . . . .	N/A	0.00	0.00
HE MIN CLEARANCE % . . . .	N/A	17.24	20.92
HE TOT CLEARANCE % . . . .	N/A	18.25	21.71
HE VOL EFF % . . . .	N/A	74.67	73.54
CE SUC GAS VEL FPM . . . .	8475	8257	6421
CE DCH GAS VEL FPM . . . .	7704	7802	6038
CE SPACRS USED/MAX . . . .	0/4	0/4	0/2
CE MIN CLEARANCE % . . . .	17.05	18.87	25.52
CE TOT CLEARANCE % . . . .	17.05	18.87	25.52
CE VOL EFF % . . . .	87.12	74.02	69.99
SUC PSEU-Q HE/CE % . . . .	NA /7.4	7.5 /6.8	5.4 /4.2
GAS ROD LD OUT # . . . .	2603 C	29316 C	27424 C
GAS ROD LD IN # . . . .	17651 T	26373 T	20553 T
GAS ROD LD TOT # . . . .	20254	55689	47977
GAS ROD LD REVRSL . . . .	YES	YES	YES
FLOW CALC MMSCFD . . . .	8.326	8.326	8.326
CYLINDER HP . . . .	260.5	491.5	421.7

BLANK THROWS: #1

NOTE: '\*'=OUT OF LIMIT '^'=SPECIAL APPL MMSCFD AT 14.700 PSIA 60F ADD COOLER HP

DATE: July 13 / 94  
 Enerflex Systems Ltd.  
 QUOTE : 288-94A  
 REMARKS : Max Ps Load HP  
 COMPRESSOR DATA:

ARIEL - VER 5.1  
 CUSTOMER: Petrostar Pete.  
 INQUIRY : David Bustin  
 PROJECT : Stock Units

PAGE: 2  
 ELEVAT'N FT: 2500  
 BARMTR PSIA: 13.400  
 AMB'NT DegF: 95

FRAME MODEL: JGK/4	STROKE INCH: 5.500	ROD DIA INCH: 2.000	TYPE : Gas Engine
MAX RL #TOT: 70000	MAX RL #TENS: 35000	MAX RL #COMP: 40000	MFR : Waukesha
RATED RPM: 1200	RATED BHP: 2400	RATED PS FPM: 1100	MODEL: 7042GL
CALC RPM: 1200	CALC BHP: 1402	CALC PS FPM: 1100	BHP : 1448 (CONT)

SERVICES ..... GATHERING .....

STAGE DATA:	STAGE 1	STAGE 2	STAGE 3
FLOW REQ'D MMSCFD	0.000	0.000	0.000
FLOW CALC MMSCFD	9.462	9.462	9.462
CYL HP PER STAGE	406.8	538.5	432.9
SPECIFIC GRAVITY	0.6500	0.6500	0.6500
RATIO OF SP HT 'N'	1.2758	1.2599	1.2624
COMPRSBLY SUC ZS	0.9726	0.9621	0.9121
COMPRSBLY DCH ZD	0.9712	0.9608	0.9218
PRES SUC LINE PSIG	130.00	N/A	N/A
PRES SUC FLG PSIG	130.00	271.65	665.36
PRES DCH FLG PSIG	276.65	670.36	1454.96
PRES DCH LINE PSIG	N/A	N/A	1440.0
PRES RATIO F/F	2.0227	2.3987	2.1633
TEMP SUC DegF	60.0	120.0	120.0
TEMP CLR DCH DegF	120.0	120.0	120.0
CYLINDER DATA:	THROW 2	THROW 3	THROW 4
CYLINDER MODEL	14-1/8K	9-5/8K	6-1/4K
CYLINDER BORE INCH	14.125	9.125	5.875
CYL RDP (API) PSIG	577.0	1155.0	1864.0
CYLINDER MAWP PSIG	635.0	1270.0	2050.0
CYLINDER ACTION	DBL	DBL	DBL
CYLINDER DISP CFM	1185.01	487.559	195.080
PRES SUC INTL PSIG	119.39	252.95	634.53
TEMP SUC INTL DegF	65.38	125.39	123.77
CMPSB'Y SUC Zsph	0.9735	0.9633	0.9142
PRES DCH INTL PSIG	297.93	717.32	1525.31
TEMP DCH INTL DegF	171.45	260.84	238.81
HE SUC GAS VEL FPM	8648	8673	7262
HE DCH GAS VEL FPM	7862	8196	6829
HE SPACRS USED/MAX	4/4	0/4	0/2
HE VVPKT %CL AVAIL	0.9+46.1	1.0+49.1	0.8+45.2
% OF VVPKT USED	100.00	0.00	0.00
HE MIN CLEARANCE %	16.27	17.24	20.92
HE TOT CLEARANCE %	75.30	18.25	21.71
HE VOL EFF %	39.37	75.67	76.32
CE SUC GAS VEL FPM	8475	8257	6421
CE DCH GAS VEL FPM	7704	7802	6038
CE SPACRS USED/MAX	4/4	0/4	0/2
CE MIN CLEARANCE %	17.05	18.87	25.52
CE TOT CLEARANCE %	29.29	18.87	25.52
CE VOL EFF %	72.78	75.05	73.23
SUC PSEU-Q HE/CE %	7.4 /7.4	7.5 /6.8	5.5 /4.3
GAS ROD LD OUT #	28385 C	31253 C	26280 C
GAS ROD LD IN #	27011 T	28035 T	19256 T
GAS ROD LD TOT #	55395	59287	45536
GAS ROD LD REVRSL	YES	YES	YES
FLOW CALC MMSCFD	9.462	9.462	9.462
CYLINDER HP	406.8	538.5	432.9

BLANK THROWS: #1

NOTE: '\*'=OUT OF LIMIT '^'=SPECIAL APPL MMSCFD AT 14.700 PSIA 60F ADD COOLER HP

DATE: July 13 / 94  
 Enerflex Systems Ltd.  
 QUOTE : 288-94A  
 REMARKS : 100 - 1440 psig

ARIEL - VER 5.1  
 CUSTOMER: Petrostar Pete.  
 INQUIRY : David Bustin  
 PROJECT : Stock Units

PAGE: 3  
 ELEVAT'N FT: 2500  
 BARMTR PSIA: 13.400  
 AMB'NT DegF: 95

COMPRESSOR DATA:

FRAME MODEL: JGK/4	STROKE INCH: 5.500	ROD DIA INCH: 2.000	TYPE : Gas Engine
MAX RL #TOT: 70000	MAX RL #TENS: 35000	MAX RL #COMP: 40000	MFR : Waukesha
RATED RPM: 1200	RATED BHP: 2400	RATED PS FPM: 1100	MODEL: 7042GL
CALC RPM: 1200	CALC BHP: 1400	CALC PS FPM: 1100	BHP : 1448 (CONT)

DRIVER DATA:

SERVICES

..... GATHERING .....

STAGE DATA:

	STAGE 1	STAGE 2	STAGE 3
FLOW REQ'D MMSCFD . . . .	0.000	0.000	0.000
FLOW CALC MMSCFD . . . .	8.612	8.612	8.612
CYL HP PER STAGE . . . .	447.2	503.5	425.1
SPECIFIC GRAVITY . . . .	0.6500	0.6500	0.6500
RATIO OF SP HT 'N' . . . .	1.2736	1.2596	1.2615
COMPRSBLY SUC ZS . . . .	0.9784	0.9650	0.9169
COMPRSBLY DCH ZD . . . .	0.9763	0.9634	0.9258
PRES SUC LINE PSIG . . . .	100.00	N/A	N/A
PRES SUC FLG PSIG . . . .	100.00	249.44	626.62
PRES DCH FLG PSIG . . . .	254.44	631.62	1454.96
PRES DCH LINE PSIG . . . .	N/A	N/A	1440.0
PRES RATIO F/F . . . .	2.3619	2.4540	2.2943
TEMP SUC DegF . . . .	60.0	120.0	120.0
TEMP CLR DCH DegF . . . .	120.0	120.0	120.0

CYLINDER DATA:

	THROW 2	THROW 3	THROW 4
CYLINDER MODEL . . . .	14-1/8K	9-5/8K	6-1/4K
CYLINDER BORE INCH . . . .	14.125	9.125	5.875
CYL RDP (API) PSIG . . . .	577.0	1155.0	1864.0
CYLINDER MAWP PSIG . . . .	635.0	1270.0	2050.0
CYLINDER ACTION . . . .	DBL	DBL	DBL
CYLINDER DISP CFM . . . .	1185.01	487.559	195.080
PRES SUC INTL PSIG . . . .	91.68	232.25	597.71
TEMP SUC INTL DegF . . . .	66.42	125.51	124.04
CMPRSB'Y SUC Zsph . . . .	0.9792	0.9661	0.9189
PRES DCH INTL PSIG . . . .	273.35	675.60	1524.18
TEMP DCH INTL DegF . . . .	193.05	264.12	247.20
HE SUC GAS VEL FPM . . . .	8648	8673	7262
HE DCH GAS VEL FPM . . . .	7862	8196	6829
HE SPACRS USED/MAX . . . .	4/4	0/4	0/2
HE VVPKT %CL AVAIL . . . .	0.9+46.1	1.0+49.1	0.8+45.2
% OF VVPKT USED . . . .	5.00	0.00	0.00
HE MIN CLEARANCE % . . . .	16.27	17.24	20.92
HE TOT CLEARANCE % . . . .	31.47	18.25	21.71
HE VOL EFF % . . . .	63.83	74.94	74.28
CE SUC GAS VEL FPM . . . .	8475	8257	6421
CE DCH GAS VEL FPM . . . .	7704	7802	6038
CE SPACRS USED/MAX . . . .	4/4	0/4	0/2
CE MIN CLEARANCE % . . . .	17.05	18.87	25.52
CE TOT CLEARANCE % . . . .	29.29	18.87	25.52
CE VOL EFF % . . . .	65.89	74.30	70.86
SUC PSEU-Q HE/CE % . . . .	7.7 /7.4	7.5 /6.8	5.4 /4.2
GAS ROD LD OUT # . . . .	28788 C	29808 C	27134 C
GAS ROD LD IN # . . . .	27578 T	26795 T	20223 T
GAS ROD LD TOT # . . . .	56366	56603	47357
GAS ROD LD REVRSL . . . .	YES	YES	YES
FLOW CALC MMSCFD . . . .	8.612	8.612	8.612
CYLINDER HP . . . .	447.2	503.5	425.1

BLANK THROWS: #1

NOTE: '\*'=OUT OF LIMIT '^'=SPECIAL APPL MMSCFD AT 14.700 PSIA 60F ADD COOLER HP

Enerflex Systems Ltd.  
QUOTE :288-94A  
REMARKS :100 - 1440 psig  
COMPRESSOR DATA:

CUSTOMER: Petrostar Pete.  
INQUIRY : David Bustin  
PROJECT : Stock Units

ELEVAT'N FT: 2500  
BARMTR PSIA: 13.400  
AMB'NT DegF: 95

FRAME MODEL: JGK/4  
MAX RL #TOT: 70000  
RATED RPM: 1200  
CALC RPM: 1200

STROKE INCH: 5.500  
MAX RL #TENS: 35000  
RATED BHP: 2400  
CALC BHP: 1400

ROD DIA INCH: 2.000  
MAX RL #COMP: 40000  
RATED PS FPM: 1100  
CALC PS FPM: 1100

DRIVER DATA:  
TYPE : Gas Engine  
MFR : Waukesha  
MODEL: 7042GL  
BHP : 1448 (CONT)

SERVICES

..... GATHERING .....

STAGE DATA:

	STAGE 1	STAGE 2	STAGE 3
FLOW REQ'D MMSCFD	0.000	0.000	0.000
FLOW CALC MMSCFD	8.531	8.531	8.531
CYL HP PER STAGE	461.4	490.1	424.2
SPECIFIC GRAVITY	0.6500	0.6500	0.6500
RATIO OF SP HT 'N'	1.2731	1.2598	1.2614
COMPRSBLY SUC ZS	0.9784	0.9647	0.9173
COMPRSBLY DCH ZD	0.9767	0.9631	0.9262
PRES SUC LINE PSIG	100.00	N/A	N/A
PRES SUC FLG PSIG	100.00	252.17	622.95
PRES DCH FLG PSIG	257.17	627.95	1455.02
PRES DCH LINE PSIG	N/A	N/A	1440.0
PRES RATIO F/F	2.3860	2.4150	2.3076
TEMP SUC DegF	60.0	120.0	120.0
TEMP CLR DCH DegF	120.0	120.0	120.0

CYLINDER DATA:

	THROW 1	THROW 2	THROW 3	THROW 4
CYLINDER MODEL	14-1/8K	14-1/8K	9-5/8K	6-1/4K
CYLINDER BORE INCH	14.125	14.125	9.125	5.875
CYL RDP (API) PSIG	577.0	577.0	1155.0	1864.0
CYLINDER MAWP PSIG	635.0	635.0	1270.0	2050.0
CYLINDER ACTION	CE(HEVR)	CE(HEVR)	DBL	DBL
CYLINDER DISP CFM	586.505	586.505	487.559	195.080
PRES SUC INTL PSIG	91.91	91.91	234.79	594.22
TEMP SUC INTL DegF	70.18	70.18	125.42	124.06
CMPRSB'Y SUC Zsph	0.9797	0.9797	0.9658	0.9194
PRES DCH INTL PSIG	275.73	275.73	671.83	1524.13
TEMP DCH INTL DegF	198.35	198.35	261.75	248.03
HE SUC GAS VEL FPM	N/A	N/A	8673	7262
HE DCH GAS VEL FPM	N/A	N/A	8196	6829
HE SPACRS USED/MAX	N/A	N/A	0/4	0/2
HE VVPKT %CL AVAIL	N/A	N/A	1.0+49.1	0.8+45.2
% OF VVPKT USED	N/A	N/A	8.00	0.00
HE MIN CLEARANCE %	N/A	N/A	17.24	20.92
HE TOT CLEARANCE %	N/A	N/A	22.18	21.71
HE VOL EFF %	N/A	N/A	71.52	74.07
CE SUC GAS VEL FPM	8475	8475	8257	6421
CE DCH GAS VEL FPM	7704	7704	7802	6038
CE SPACRS USED/MAX	4/4	4/4	0/4	0/2
CE MIN CLEARANCE %	17.05	17.05	18.87	25.52
CE TOT CLEARANCE %	29.29	29.29	18.87	25.52
CE VOL EFF %	65.40	65.40	74.83	70.62
SUC PSEU-Q HE/CE %	NA /7.3	NA /7.3	7.5 /6.8	5.4 /4.2
GAS ROD LD OUT #	1771 C	1771 C	29403 C	27216 C
GAS ROD LD IN #	26819 T	26819 T	26395 T	20317 T
GAS ROD LD TOT #	28590	28590	55798	47533
GAS ROD LD REVRSL	YES	YES	YES	YES
FLOW CALC MMSCFD	4.266	4.266	8.531	8.531
CYLINDER HP	230.7	230.7	490.1	424.2

NOTE: '\*'=OUT OF LIMIT '^'=SPECIAL APPL MMSCFD AT 14.700 PSIA 60F ADD COOLER HP



Enerflex Systems Ltd.  
 QUOTE :288-94A  
 REMARKS :75 - 1440 psig  
 COMPRESSOR DATA:

CUSTOMER: Petrostar Pete.  
 INQUIRY : David Bustin  
 PROJECT : Stock Units

ELEVAT'N FT: 2500  
 BARMTR PSIA: 13.400  
 AMB'NT DegF: 95

FRAME MODEL: JGK/4	STROKE INCH: 5.500	ROD DIA INCH: 2.000	TYPE : Gas Engine
MAX RL #TOT: 70000	MAX RL #TENS: 35000	MAX RL #COMP: 40000	MFR : Waukesha
RATED RPM: 1200	RATED BHP: 2400	RATED PS FPM: 1100	MODEL: 7042GL
CALC RPM: 1200	CALC BHP: 1400	CALC PS FPM: 1100	BHP : 1448 (CONT)

DRIVER DATA:

SERVICES ..... GATHERING .....

STAGE DATA:	..... STAGE 1 .....	STAGE 2	STAGE 3
FLOW REQ'D MMSCFD	..... 0.000	..... 0.000	0.000
FLOW CALC MMSCFD	..... 7.828	..... 7.828	7.828
CYL HP PER STAGE	..... 490.7	..... 470.5	414.8
SPECIFIC GRAVITY	..... 0.6500	..... 0.6500	0.6500
RATIO OF SP HT 'N'	..... 1.2710	..... 1.2592	1.2605
COMPRSBLY SUC ZS	..... 0.9831	..... 0.9677	0.9213
COMPRSBLY DCH ZD	..... 0.9808	..... 0.9658	0.9296
PRES SUC LINE PSIG	..... 75.00	..... N/A	N/A
PRES SUC FLG PSIG	..... 75.00	..... 228.81	590.44
PRES DCH FLG PSIG	..... 233.81	..... 595.44	1454.95
PRES DCH LINE PSIG	..... N/A	..... N/A	1440.0
PRES RATIO F/F	..... 2.7966	..... 2.5136	2.4317
TEMP SUC DegF	..... 60.0	..... 120.0	120.0
TEMP CLR DCH DegF	..... 120.0	..... 120.0	120.0

CYLINDER DATA: THROW 1 THROW 2 THROW 3 THROW 4

CYLINDER MODEL	..... 14-1/8K	14-1/8K	9-5/8K	6-1/4K
CYLINDER BORE INCH	..... 14.125	14.125	9.125	5.875
CYL RDP (API) PSIG	..... 577.0	577.0	1155.0	1864.0
CYLINDER MAWP PSIG	..... 635.0	635.0	1270.0	2050.0
CYLINDER ACTION	..... DBL	CE (HEVR)	DBL	DBL
CYLINDER DISP CFM	..... 1185.01	586.505	487.559	195.080
PRES SUC INTL PSIG	..... 68.56	68.74	213.02	563.31
TEMP SUC INTL DegF	..... 67.65	71.63	125.64	124.30
CMPRSB'Y SUC Zsph	..... 0.9839	0.9843	0.9688	0.9234
PRES DCH INTL PSIG	..... 250.57	250.12	636.65	1523.07
TEMP DCH INTL DegF	..... 216.93	221.54	267.58	255.55
HE SUC GAS VEL FPM	..... 8648	N/A	8673	7262
HE DCH GAS VEL FPM	..... 7862	N/A	8196	6829
HE SPACRS USED/MAX	..... 4/4	N/A	0/4	0/2
HE VVPKT %CL AVAIL	..... 0.9+46.1	N/A	1.0+49.1	0.8+45.2
% OF VVPKT USED	..... 32.80	N/A	0.00	0.00
HE MIN CLEARANCE %	..... 16.27	N/A	17.24	20.92
HE TOT CLEARANCE %	..... 44.29	N/A	18.25	21.71
HE VOL EFF %	..... 38.91	N/A	74.16	72.17
CE SUC GAS VEL FPM	..... 8475	8475	8257	6421
CE DCH GAS VEL FPM	..... 7704	7704	7802	6038
CE SPACRS USED/MAX	..... 4/4	4/4	0/4	0/2
CE MIN CLEARANCE %	..... 17.05	17.05	18.87	25.52
CE TOT CLEARANCE %	..... 29.29	29.29	18.87	25.52
CE VOL EFF %	..... 57.33	57.31	73.50	68.39
SUC PSEU-Q HE/CE %	..... 7.3 /7.3	NA /7.3	7.5 /6.8	5.4 /4.2
GAS ROD LD OUT #	..... 28768 C	1363 C	28454 C	27930 C
GAS ROD LD IN #	..... 27704 T	26771 T	25632 T	21127 T
GAS ROD LD TOT #	..... 56472	28134	54086	49057
GAS ROD LD REVRSL	..... YES	YES	YES	YES
FLOW CALC MMSCFD	..... 4.936	2.892	7.828	7.828
CYLINDER HP	..... 306.0	184.7	470.5	414.8

NOTE: '\*'=OUT OF LIMIT '^'=SPECIAL APPL MMSCFD AT 14.700 PSIA 60F ADD COOLER HP

Enerflex Systems Ltd.  
QUOTE :288-94A  
REMARKS :50 - 1440 psig  
COMPRESSOR DATA:

CUSTOMER: Petrostar Pete.  
INQUIRY : David Bustin  
PROJECT : Stock Units

ELEVAT'N FT: 2500  
BARMTR PSIA: 13.400  
AMB'NT DegF: 95

FRAME MODEL: JGK/4  
MAX RL #TOT: 70000  
RATED RPM: 1200  
CALC RPM: 1200

STROKE INCH: 5.500  
MAX RL #TENS: 35000  
RATED BHP: 2400  
CALC BHP: 1400

ROD DIA INCH: 2.000  
MAX RL #COMP: 40000  
RATED PS FPM: 1100  
CALC PS FPM: 1100

DRIVER DATA:  
TYPE : Gas Engine  
MFR : Waukesha  
MODEL: 7042GL  
BHP : 1448 (CONT)

SERVICES

..... GATHERING .....

STAGE DATA:

FLOW REQ'D MMSCFD  
FLOW CALC MMSCFD  
CYL HP PER STAGE  
SPECIFIC GRAVITY  
RATIO OF SP HT 'N'  
COMPRSBLY SUC ZS  
COMPRSBLY DCH ZD  
PRES SUC LINE PSIG  
PRES SUC FLG PSIG  
PRES DCH FLG PSIG  
PRES DCH LINE PSIG  
PRES RATIO F/F  
TEMP SUC DegF  
TEMP CLR DCH DegF

..... STAGE 1 ..... STAGE 2 STAGE 3  
..... 0.000 ..... 0.000 0.000  
..... 7.014 ..... 7.014 7.014  
..... 540.0 ..... 435.4 400.7  
..... 0.6500 ..... 0.6500 0.6500  
..... 1:2675 ..... 1:2587 1:2595  
..... 0.9879 ..... 0.9706 0.9261  
..... 0.9852 ..... 0.9684 0.9337  
..... 50.00 ..... N/A N/A  
..... 50.00 ..... 207.19 552.30  
..... 212.19 ..... 557.30 1454.97  
..... N/A ..... N/A 1440.0  
..... 3.5582 ..... 2.5871 2.5957  
..... 60.0 ..... 120.0 120.0  
..... 120.0 ..... 120.0 120.0

CYLINDER DATA:

CYLINDER MODEL  
CYLINDER BORE INCH  
CYL RDP (API) PSIG  
CYLINDER MAWP PSIG  
CYLINDER ACTION  
CYLINDER DISP CFM  
PRES SUC INTL PSIG  
TEMP SUC INTL DegF  
CMPRSB'Y SUC Zsph  
PRES DCH INTL PSIG  
TEMP DCH INTL DegF  
HE SUC GAS VEL FPM  
HE DCH GAS VEL FPM  
HE SPACRS USED/MAX  
HE VVPKT %CL AVAIL  
% OF VVPKT USED  
HE MIN CLEARANCE %  
HE TOT CLEARANCE %  
HE VOL EFF %  
CE SUC GAS VEL FPM  
CE DCH GAS VEL FPM  
CE SPACRS USED/MAX  
CE MIN CLEARANCE %  
CE TOT CLEARANCE %  
CE VOL EFF %  
SUC PSEU-Q HE/CE %  
GAS ROD LD OUT #  
GAS ROD LD IN #  
GAS ROD LD TOT #  
GAS ROD LD REVRSL  
FLOW CALC MMSCFD  
CYLINDER HP

THROW 1 THROW 2 THROW 3 THROW 4  
14-1/8K 14-1/8K 9-5/8K 6-1/4K  
14.125 14.125 9.125 5.875  
577.0 577.0 1155.0 1864.0  
635.0 635.0 1270.0 2050.0  
DBL DBL DBL DBL  
1185.01 1185.01 487.559 195.080  
45.42 45.42 192.85 527.02  
69.26 69.26 125.80 124.60  
0.9886 0.9886 0.9716 0.9281  
226.66 226.66 595.60 1521.92  
251.91 251.91 271.76 264.98  
8648 8648 8673 7262  
7862 7862 8196 6829  
0/4 0/4 0/4 0/2  
0.9+46.1 0.9+46.1 1.0+49.1 0.8+45.2  
39.40 39.40 0.00 0.00  
16.27 16.27 17.24 20.92  
35.34 35.34 18.25 21.71  
32.59 32.59 73.21 69.67  
8475 8475 8257 6421  
7704 7704 7802 6038  
0/4 0/4 0/4 0/2  
17.05 17.05 18.87 25.52  
17.05 17.05 18.87 25.52  
63.62 63.62 72.52 65.49  
6.8 /7.3 6.8 /7.3 7.5 /6.8 5.4 /4.2  
28574 C 28574 C 27020 C 28770 C  
27660 T 27660 T 24399 T 22080 T  
56235 56235 51420 50850  
YES YES YES YES  
3.507 3.507 7.014 7.014  
270.0 270.0 435.4 400.7

NOTE: ``'=OUT OF LIMIT ^^'=SPECIAL APPL MMSCFD AT 14.700 PSIA 60F ADD COOLER HP

Enerflex Systems Ltd.  
 QUOTE : 288-94A  
 REMARKS : Min Ps Load HP  
 COMPRESSOR DATA:

CUSTOMER: Petrostar Pete.  
 INQUIRY : David Bustin  
 PROJECT : Stock Units

ELEVAT'N FT: 2500  
 BARMTR PSIA: 13.400  
 AMB'NT DegF: 95

FRAME MODEL: JGK/4	STROKE INCH: 5.500	ROD DIA INCH: 2.000	TYPE : Gas Engine
MAX RL #TOT: 70000	MAX RL #TENS: 35000	MAX RL #COMP: 40000	MFR : Waukesha
RATED RPM: 1200	RATED BHP: 2400	RATED PS FPM: 1100	MODEL: 7042GL
CALC RPM: 1200	CALC BHP: 1400	CALC PS FPM: 1100	BHP : 1448 (CONT)

DRIVER DATA:

SERVICES ..... GATHERING .....

STAGE DATA:	.....	STAGE 1	.....	STAGE 2	STAGE 3
FLOW REQ'D MMSCFD	.....	0.000	.....	0.000	0.000
FLOW CALC MMSCFD	.....	6.513	.....	6.513	6.513
CYL HP PER STAGE	.....	573.2	.....	413.2	390.0
SPECIFIC GRAVITY	.....	0.6500	.....	0.6500	0.6500
RATIO OF SP HT 'N'	.....	1.2648	.....	1.2584	1.2588
COMPRBLTY SUC ZS	.....	0.9904	.....	0.9724	0.9291
COMPRBLTY DCH ZD	.....	0.9877	.....	0.9701	0.9362
PRES SUC LINE PSIG	.....	37.00	.....	N/A	N/A
PRES SUC FLG PSIG	.....	37.00	.....	193.79	528.54
PRES DCH FLG PSIG	.....	198.79	.....	533.54	1455.04
PRES DCH LINE PSIG	.....	N/A	.....	N/A	1440.0
PRES RATIO F/F	.....	4.2101	.....	2.6398	2.7096
TEMP SUC DegF	.....	60.0	.....	120.0	120.0
TEMP CLR DCH DegF	.....	120.0	.....	120.0	120.0

CYLINDER DATA:	THROW 1	THROW 2	THROW 3	THROW 4
CYLINDER MODEL	14-1/8K	14-1/8K	9-5/8K	6-1/4K
CYLINDER BORE INCH	14.125	14.125	9.125	5.875
CYL RDP (API) PSIG	577.0	577.0	1155.0	1864.0
CYLINDER MAWP PSIG	635.0	635.0	1270.0	2050.0
CYLINDER ACTION	DBL	DBL	DBL	DBL
CYLINDER DISP CFM	1185.01	1185.01	487.559	195.080
PRES SUC INTL PSIG	33.37	33.37	180.35	504.41
TEMP SUC INTL DegF	70.47	70.47	125.92	124.80
CMPRSB'Y SUC Zsph	0.9910	0.9910	0.9733	0.9311
PRES DCH INTL PSIG	211.91	211.91	570.04	1521.24
TEMP DCH INTL DegF	277.09	277.09	274.69	271.22
HE SUC GAS VEL FPM	8648	8648	8673	7262
HE DCH GAS VEL FPM	7862	7862	8196	6829
HE SPACRS USED/MAX	0/4	0/4	0/4	0/2
HE VVPKT %CL AVAIL	0.9+46.1	0.9+46.1	1.0+49.1	0.8+45.2
% OF VVPKT USED	0.00	0.00	0.00	0.00
HE MIN CLEARANCE %	16.27	16.27	17.24	20.92
HE TOT CLEARANCE %	17.16	17.16	18.25	21.71
HE VOL EFF %	56.16	56.16	72.53	67.95
CE SUC GAS VEL FPM	8475	8475	8257	6421
CE DCH GAS VEL FPM	7704	7704	7802	6038
CE SPACRS USED/MAX	0/4	0/4	0/4	0/2
CE MIN CLEARANCE %	17.05	17.05	18.87	25.52
CE TOT CLEARANCE %	17.05	17.05	18.87	25.52
CE VOL EFF %	56.39	56.39	71.82	63.49
SUC PSEU-Q HE/CE %	7.5 /7.2	7.5 /7.2	7.4 /6.7	5.4 /4.2
GAS ROD LD OUT #	28110 C	28110 C	26124 C	29295 C
GAS ROD LD IN #	27282 T	27282 T	23628 T	22675 T
GAS ROD LD TOT #	55392	55392	49753	51969
GAS ROD LD REVRSL	YES	YES	YES	YES
FLOW CALC MMSCFD	3.256	3.256	6.513	6.513
CYLINDER HP	286.6	286.6	413.2	390.0

NOTE: '\*'=OUT OF LIMIT '^'=SPECIAL APPL MMSCFD AT 14.700 PSIA 60F ADD COOLER HP

Enerflex Systems Ltd.  
 QUOTE :288-94A  
 REMARKS :25 - 1440 psig  
 COMPRESSOR DATA:

CUSTOMER: Petrostar Pete.  
 INQUIRY : David Bustin  
 PROJECT : Stock Units

ELEVAT'N FT: 2500  
 BARMTR PSIA: 13.400  
 AMB'NT DegF: 95

FRAME MODEL: JGK/4	STROKE INCH: 5.500	ROD DIA INCH: 2.000	TYPE : Gas Engine
MAX RL #TOT: 70000	MAX RL #TENS: 35000	MAX RL #COMP: 40000	MFR : Waukesha
RATED RPM: 1200	RATED BHP: 2400	RATED PS FPM: 1100	MODEL: 7042GL
CALC RPM: 1200	CALC BHP: 1136	CALC PS FPM: 1100	BHP : 1448 (CONT)

DRIVER DATA:

SERVICES

..... GATHERING .....

STAGE DATA:

	..... STAGE 1 .....	..... STAGE 2 .....	..... STAGE 3 .....
FLOW REQ'D MMSCFD	0.000	0.000	0.000
FLOW CALC MMSCFD	4.828	4.828	4.828
CYL HP PER STAGE	435.4	335.0	341.3
SPECIFIC GRAVITY	0.6500	0.6500	0.6500
RATIO OF SP HT 'N'	1.2643	1.2569	1.2560
COMPRSBLY SUC ZS	0.9927	0.9784	0.9394
COMPRSBLY DCH ZD	0.9905	0.9758	0.9452
PRES SUC LINE PSIG	25.00	N/A	N/A
PRES SUC FLG PSIG	25.00	148.20	446.93
PRES DCH FLG PSIG	153.20	451.93	1455.03
PRES DCH LINE PSIG	N/A	N/A	1440.0
PRES RATIO F/F	4.3387	2.8794	3.1900
TEMP SUC DegF	60.0	120.0	120.0
TEMP CLR DCH DegF	120.0	120.0	120.0

CYLINDER DATA:

	THROW 1	THROW 2	THROW 3	THROW 4
CYLINDER MODEL	14-1/8K	14-1/8K	9-5/8K	6-1/4K
CYLINDER BORE INCH	14.125	14.125	9.125	5.875
CYL RDP (API) PSIG	577.0	577.0	1155.0	1864.0
CYLINDER MAWP PSIG	635.0	635.0	1270.0	2050.0
CYLINDER ACTION	DBL	DBL	DBL	DBL
CYLINDER DISP CFM	1185.01	1185.01	487.559	195.080
PRES SUC INTL PSIG	22.24	22.24	137.79	426.68
TEMP SUC INTL DegF	70.69	70.69	126.40	125.56
CMPRSB'Y SUC Zsph	0.9931	0.9931	0.9792	0.9414
PRES DCH INTL PSIG	163.41	163.41	482.28	1518.53
TEMP DCH INTL DegF	281.57	281.57	287.43	295.18
HE SUC GAS VEL FPM	8648	8648	8673	7262
HE DCH GAS VEL FPM	7862	7862	8196	6829
HE SPACRS USED/MAX	0/4	0/4	0/4	0/2
HE VVPKT %CL AVAIL	0.9+46.1	0.9+46.1	1.0+49.1	0.8+45.2
% OF VVPKT USED	0.00	0.00	0.00	0.00
HE MIN CLEARANCE %	16.27	16.27	17.24	20.92
HE TOT CLEARANCE %	17.16	17.16	18.25	21.71
HE VOL EFF %	54.78	54.78	69.47	60.83
CE SUC GAS VEL FPM	8475	8475	8257	6421
CE DCH GAS VEL FPM	7704	7704	7802	6038
CE SPACRS USED/MAX	0/4	0/4	0/4	0/2
CE MIN CLEARANCE %	17.05	17.05	18.87	25.52
CE TOT CLEARANCE %	17.05	17.05	18.87	25.52
CE VOL EFF %	55.01	55.01	68.66	55.20
SUC PSEU-Q HE/CE %	7.5 /7.2	7.5 /7.2	7.4 /6.7	5.3 /4.1
GAS ROD LD OUT #	22214 C	22214 C	23024 C	31087 C
GAS ROD LD IN #	21585 T	21585 T	20956 T	24712 T
GAS ROD LD TOT #	43799	43799	43980	55798
GAS ROD LD REVRSL	YES	YES	YES	YES
FLOW CALC MMSCFD	2.414	2.414	4.828	4.828
CYLINDER HP	217.7	217.7	335.0	341.3

NOTE: '\*'=OUT OF LIMIT '^'=SPECIAL APPL MMSCFD AT 14.700 PSIA 60F ADD COOLER HP

Enerflex Systems Ltd.  
QUOTE :288-94A  
REMARKS :15 - 1440 psig  
COMPRESSOR DATA:

CUSTOMER: Petrostar Pete.  
INQUIRY : David Bustin  
PROJECT : Stock Units

ELEVAT'N FT: 2500  
BARMTR PSIA: 13.400  
AMB'NT DegF: 95

FRAME MODEL: JGK/4  
MAX RL #TOT: 70000  
RATED RPM: 1200  
CALC RPM: 1200

STROKE INCH: 5.500  
MAX RL #TENS: 35000  
RATED BHP: 2400  
CALC BHP: 890

ROD DIA INCH: 2.000  
MAX RL #COMP: 40000  
RATED PS FPM: 1100  
CALC PS FPM: 1100

DRIVER DATA:  
TYPE : Gas Engine  
MFR : Waukesha  
MODEL: 7042GL  
BHP : 1448 (CONT)

SERVICES

..... GATHERING .....

STAGE DATA:

	STAGE 1	STAGE 2	STAGE 3
FLOW REQ'D MMSCFD	0.000	0.000	0.000
FLOW CALC MMSCFD	3.438	3.438	3.438
CYL HP PER STAGE	319.9	264.4	281.9
SPECIFIC GRAVITY	0.6500	0.6500	0.6500
RATIO OF SP HT 'N'	1.2636	1.2551	1.2532
COMPRSBLY SUC ZS	0.9946	0.9835	0.9484
COMPRSBLY DCH ZD	0.9929	0.9808	0.9532
PRES SUC LINE PSIG	15.00	N/A	N/A
PRES SUC FLG PSIG	15.00	109.88	377.27
PRES DCH FLG PSIG	114.88	382.27	1455.03
PRES DCH LINE PSIG	N/A	N/A	1440.0
PRES RATIO F/F	4.5169	3.2095	3.7588
TEMP SUC DegF	60.0	120.0	120.0
TEMP CLR DCH DegF	120.0	120.0	120.0

CYLINDER DATA:

	THROW 1	THROW 2	THROW 3	THROW 4
CYLINDER MODEL	14-1/8K	14-1/8K	9-5/8K	6-1/4K
CYLINDER BORE INCH	14.125	14.125	9.125	5.875
CYL RDP (API) PSIG	577.0	577.0	1155.0	1864.0
CYLINDER MAWP PSIG	635.0	635.0	1270.0	2050.0
CYLINDER ACTION	DBL	DBL	DBL	DBL
CYLINDER DISP CFM	1185.01	1185.01	487.559	195.080
PRES SUC INTL PSIG	12.97	12.97	101.99	360.27
TEMP SUC INTL DegF	70.98	70.98	127.02	126.34
CMPRSB'Y SUC Zsph	0.9949	0.9949	0.9841	0.9503
PRES DCH INTL PSIG	122.66	122.66	407.40	1516.02
TEMP DCH INTL DegF	287.62	287.62	303.52	319.61
HE SUC GAS VEL FPM	8648	8648	8673	7262
HE DCH GAS VEL FPM	7862	7862	8196	6829
HE SPACRS USED/MAX	0/4	0/4	0/4	0/2
HE VVPKT %CL AVAIL	0.9+46.1	0.9+46.1	1.0+49.1	0.8+45.2
% OF VVPKT USED	0.00	0.00	0.00	0.00
HE MIN CLEARANCE %	16.27	16.27	17.24	20.92
HE TOT CLEARANCE %	17.16	17.16	18.25	21.71
HE VOL EFF %	52.85	52.85	65.33	52.62
CE SUC GAS VEL FPM	8475	8475	8257	6421
CE DCH GAS VEL FPM	7704	7704	7802	6038
CE SPACRS USED/MAX	0/4	0/4	0/4	0/2
CE MIN CLEARANCE %	17.05	17.05	18.87	25.52
CE TOT CLEARANCE %	17.05	17.05	18.87	25.52
CE VOL EFF %	53.10	53.10	64.40	45.65
SUC PSEU-Q HE/CE %	7.5 /7.2	7.5 /7.2	7.3 /6.7	5.2 /4.1
GAS ROD LD OUT #	17247 C	17247 C	20348 C	32612 C
GAS ROD LD IN #	16786 T	16786 T	18644 T	26448 T
GAS ROD LD TOT #	34033	34033	38992	59060
GAS ROD LD REVRSL	YES	YES	YES	YES
FLOW CALC MMSCFD	1.719	1.719	3.438	3.438
CYLINDER HP	159.9	159.9	264.4	281.9

NOTE: '\*'=OUT OF LIMIT '^'=SPECIAL APPL MMSCFD AT 14.700 PSIA 60F ADD COOLER HP

Purchaser	ENERFLEX 945129
Date	1-24-95
Page	1 of 1

Purchaser	ENERFLEX TAG JOBS 94104/5/6					
Ref. No.	P.O.421502/3/4	Destination	PETROSTAR ALBERTA			
	3 Model	156EH-114-26	Air-x-changer			
PERFORMANCE						
1	Service	EJW	ELOW/TAW	IC-1	IC-2	AC
2	Flow	576GPM	90GPM	6.52MMSCFD	9.47MMSCFD	9.47MMSCFD
3	Fluid	50%GLY	50%GLY	.65SPGR	.65SPGR	.65SPGR
4	Temperature in, °F	180.0	146.4	277.0	261.0	239.0
5	Temperature out, °F	165.0	130.0	120.0	120.0	120.0
6	Pressure, PSI			194PSIG	670PSIG	1440PSIG
7	Pressure Drop, PSI	5.1	10.6	2.0	2.6	12.8
8	Heat Load, BTU/HR	4013500	660100	1222045	1683262	1567503
9	True MTD	49.6	28.4	60.7	53.6	53.0
10	Overall Rate	158.5	152.8	61.6	81.0	115.5
11	Fouling Factor	.0005	.0005	.0020	.0020	.0020
12	Tube Surface, Sq. Ft.	511	162	334	391	261
13	Total Surface, Sq. Ft.	7609	2411	4972	8367	4154
14	Sections, No. of	COMBINED	COMBINED	1	1	1
15	Connected	SINGLY	SINGLY	SINGLY	SINGLY	SINGLY
16	No. Passes	1	2	1	2	2
17	Design Temp. °F	300/-20	300/-20	350/-20	350/-20	350/-20
18	Design Press. PSIG	14*	14*	645	800	1650
19	Test Press. PSIG	75	75	968	1200	2475
20	Nozzles	6-150RF	3-150RF	6-300RF	4-600RF	3-900RTJ
21	Tubes, OD x BWG	3/4X16	3/4X16	3/4X16	1X16	5/8X16
22	Material	SA214 STEEL	SA214 STEEL	SA214 STEEL	SA214 STEEL	SA214 STEEL
23	No./Section, Length	101,26	32,26	66,26	58,26	62,26
24	No. Rows	3	3	4	4	3
25	FLANGES	SA105SCH 40	SA105SCH 40	SA105SCH 80	SA105SCH 80	SA105SCH 80
26	Fins, Type	WHEEL	WHEEL	WHEEL	WHEEL	WHEEL
27	Material	AL	AL	AL	AL	AL
28						
29	X-RAY			SPOT	SPOT	SPOT
30	Headers, Type	BOX	BOX	BOX	BOX	BOX
31	Material	STEEL	STEEL	STEEL	STEEL	STEEL
32	Counterflow					
33	Corrosion Allowance			.0625	.0625	.0625
34	Grvd Tube Sheet			DBL	DBL	DBL
35	Plugs, Type	SHOULDER	SHOULDER	SHOULDER	SHOULDER	SHOULDER
36	Material	STEEL	STEEL	STEEL	STEEL	STEEL
37	Retarders					
38	Accelerators					
39	ASME Code Stamp	&N.B.		YES	YES	YES
40	Total SCFM	211438	Temp. In °F. 95	Temp. Out °F 134.4	Elev. 2500	
MECHANICAL EQUIPMENT • STRUCTURES						
41	No. Fans	1HP/Fan 50.6	RPM 260	Dia. 156	No. Blades 8	Material ALUMINUM Make MOORE-60ED
42	Drive	V-BELT BY OTHERS				
43						
44	Draft Type	FORCED	No. of Bays	Overall Width	Length	Height
45	Guards	FAN		Assembly	PACKAGED	
46						
47	Est. Shipping Weight	26775 LBS				
48	Accessories					
49		*-BUILT TO STANDARD 50# DESIGN, BUT DESIGNATED 14#				
50		TO ELIMINATE NECESSITY OF PROVINCIAL REGISTRATION				

COMPRESSOR BALANCING RECORD

BALANCE BY: BRYAN HEDRICK      FRAME: JGK/4      FRAME S/N: F10539      STROKE (inches): 5.50

PARTS GROUP	THROW #1		THROW #2		THROW #3		THROW #4		THROW #5		THROW #6	
	S/N:	LBS.	S/N:	LBS.	S/N:	LBS.	S/N:	LBS.	S/N:	LBS.	S/N:	LBS.
Connecting Rod w/ Bushing, Bolts, & Bearing Shells	D-0973	92.8	D-0973	94.8	D-0973	93.8	D-0973	93.3	D-0973	0	0	0
Piston w/ Rings, Rod, Collar & Nut	C-1010	92.4	C-1079	230.4	C-1022	128.5	C-1079	229.8	C-1079	0	0	0
	C-0887		C-0876		C-0887		C-0876		C-0876	0	0	0
Crosshead w/ Bushing	D-0949	194.0	D-0868	74.9	D-0871	153.1	D-0868	74.8	D-0868	0	0	0
Balance Nut w/ Setscrews	B-0785	26.0	B-0780	6.0	B-0786	29.8	B-0780	6.0	B-0780	0	0	0
TOTAL WEIGHT UNBALANCE (LBS)	405.2		406.1		405.2		403.9		0.0		0.0	
	0.9		1.3		1.3		0.0		0.0		0.0	

ARIEL CORPORATION INDUSTRIAL PARK, 35 BLACKJACK ROAD, MOUNT VERNON, OHIO 43050

**CYLINDER LUBRICATION**

FRAME SERIAL #: F-10539

MODEL: JGK/4

DESIGN SPEED (RPM): 1200

STROKE (IN): 5 1/2

Standard Cylinder Lube Feed Rate: 0.5 Pints/Day/Inch of Bore for a : JGK/4

The Packing Bore is Doubled for Proportioning of Lubrication. The Overall Feed Rate is Doubled for the Break-In-Period (Recommended to Last for One Week After Startup)

Cylinder and Rod Sizes:	THROW# 1 C-28906	THROW# 3 C-28905
Cylinder Bore:	5.875 K	9.125 K
Packing Bore:	2.000	2.000
Sizes Assigned for Proportioning:	THROW# 1	THROW# 3
Cylinder Bore:      Top Lube:	3.380	4.500
Bottom Lube:	3.380	4.500
Packing Bore:	4.500	4.500

Sum of dia's of cyl bore and (packing bore X 2) plus any add'l lube: 24.750 (Inches)

Specified Rate of Lubrication from ARIEL: 0.5 pints/day/inch

Number of pints/day = feed rate X sum of bores: 12.375 pints/day    Min. Pump Size: 1/4 in.

Req'd feed rate/min = pints/day X (cvsn factor: 0.0200) = 0.248 cubic inches/min

Lubriquip	A - 2584 - K	12T*-12T-9T
Distribution Block	Ariel Part Number	Block Sizes & Types

- 1 X 0.012 in<sup>3</sup> equals : 0.012 in<sup>3</sup> (proportional to: 4.50 ) Inches of Bore
- 1 X 0.012 in<sup>3</sup> equals : 0.012 in<sup>3</sup> (proportional to: 4.50 ) Inches of Bore
- 1 X 0.012 in<sup>3</sup> equals : 0.012 in<sup>3</sup> (proportional to: 4.50 ) Inches of Bore
- 1 X 0.012 in<sup>3</sup> equals : 0.012 in<sup>3</sup> (proportional to: 4.50 ) Inches of Bore
- 1 X 0.009 in<sup>3</sup> equals : 0.009 in<sup>3</sup> (proportional to: 3.38 ) Inches of Bore
- 1 X 0.009 in<sup>3</sup> equals : 0.009 in<sup>3</sup> (proportional to: 3.38 ) Inches of Bore

Total: 0.066 in<sup>3</sup>                      Total: 24.75 Inches of Bore

Block Cycle Rate:

$$\frac{0.248 \text{ in}^3 \text{ Required}}{0.066 \text{ in}^3 \text{ Block Displacement}} = \frac{3.759 \text{ cycles}}{\text{minute}} = \frac{0.266 \text{ min}}{\text{cycle}}$$

Recommended Feed Rate:

Break In: One Stroke in: 8 seconds on indicator pin

Normal Operation: One Stroke In: 16 seconds on indicator pin



**CYLINDER LUBRICATION**

FRAME SERIAL #: F-10539 MODEL: JGK/4  
 DESIGN SPEED (RPM): 1200 STROKE (IN): 5 1/2

Standard Cylinder Lube Feed Rate: 0.5 Pints/Day/Inch of Bore for a : JGK/4

The Packing Bore is Doubled for Proportioning of Lubrication. The Overall Feed Rate is Doubled for the Break-In-Period (Recommended to Last for One Week After Startup)

Cylinder and Rod Sizes:	THROW# 2 C-28904	THROW# 4 C-28903
Cylinder Bore:	14.125 K	14.125 K
Packing Bore:	2.000	2.000
Sizes Assigned for Proportioning:	THROW# 2	THROW# 4
Cylinder Bore: Top Lube:	8.000	8.000
Bottom Lube:	8.000	8.000
Packing Bore:	4.000	4.000

Sum of dia's of cyl bore and (packing bore X 2) plus any add'l lube: 40.000 (Inches)

Specified Rate of Lubrication from ARIEL: 0.5 pints/day/inch

Number of pints/day = feed rate X sum of bores: 20.000 pints/day Min. Pump Size: 3/8 in.

Req'd feed rate/min = pints/day X (cvsn factor: 0.0200) = 0.401 cubic inches/min

Lincoln St. Louis A - 3277 - K 24T\*-24T-12T

Distribution Block Ariel Part Number Block Sizes & Types

- 1 X 0.024 in<sup>3</sup> equals : 0.024 in<sup>3</sup> (proportional to: 8.00 ) Inches of Bore
- 1 X 0.024 in<sup>3</sup> equals : 0.024 in<sup>3</sup> (proportional to: 8.00 ) Inches of Bore
- 1 X 0.024 in<sup>3</sup> equals : 0.024 in<sup>3</sup> (proportional to: 8.00 ) Inches of Bore
- 1 X 0.024 in<sup>3</sup> equals : 0.024 in<sup>3</sup> (proportional to: 8.00 ) Inches of Bore
- 1 X 0.012 in<sup>3</sup> equals : 0.012 in<sup>3</sup> (proportional to: 4.00 ) Inches of Bore
- 1 X 0.012 in<sup>3</sup> equals : 0.012 in<sup>3</sup> (proportional to: 4.00 ) Inches of Bore

Total: 0.120 in<sup>3</sup> Total: 40.00 Inches of Bore

Block Cycle Rate:

$$\frac{0.401 \text{ in}^3 \text{ Required}}{0.120 \text{ in}^3 \text{ Block Displacement}} = \frac{3.341 \text{ cycles}}{\text{minute}} = \frac{0.299 \text{ min}}{\text{cycle}}$$

Recommended Feed Rate:

Break In: One Stroke in: 9 seconds on indicator pin  
 Normal Operation: One Stroke In: 18 seconds on indicator pin