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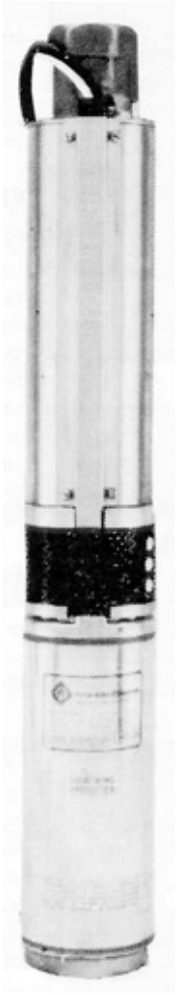
Evaluation Report



Report On

VALLEY S1208 SUBMERSIBLE DEEP WELL PUMP - 130

prairie agricultural machinery institute

Humboldt, Saskatchewan · Lethbridge, Alberta · Portage la Prairie, Manitoba

DIRECTOR ..... J.A. Peck

VALLEY S1208 SUBMERSIBLE DEEP WELL PUMP

MANUFACTURER:

Valley Pump Company
927 Hanley Industrial Court
St. Louis, Missouri
63144 U.S.A.

DISTRIBUTOR:

Ideal Distributors Limited
340 Lynn Avenue
North Vancouver, B.C.
V7J 2C5

RETAIL PRICE:

$397.00 (f.o.b. Winnipeg, Manitoba, October 1978)

SUMMARY AND CONCLUSIONS

Measured capacity of the Volley S1208 submersible pump varied from 70 L/min to 10 L/min over a range of discharge heads from 11 to 65 m. Capacity was 10% lower than manufacturer's published data at peak efficiency.

Peak pump-motor efficiency of 25% occurred at a discharge head of 45 m with a flow of 43.5 L/min. The corresponding power output was 0.32 kW.

The operator's manual was clearly written, containing comprehensive installation, servicing and operating instructions. An electrical wiring kit was provided with the pump,

RECOMMENDATIONS

It is recommended that the manufacturer consider:
Modifying the operator's manual to include the recommendation that a safety line be attached to the pump during installation.

Chief Engineer - E. O. Nyborg
Senior Engineer - J. C. Thauberger
Project Engineer - R. R. Hochstein

THE MANUFACTURER STATES THAT

With regard to the recommendation:

When we next revise our Installation Manual, we will include instructions on the use of a safety line when installing our pump,

MANUFACTURER'S ADDITIONAL COMMENT

Regarding the indicated test capacity of 1096 less than catalogued, at maximum efficiency, we feel that this difference was apparently caused by some characteristic in manufacture of the pump tested. We maintain a continued testing program which indicates performance much closer to that catalogued.

GENERAL DESCRIPTION

The Valley S1208 is a 100 mm diameter, 8 stage, deep well, submersible water pump with a 32 mm (nominal 1-1/4 inch NPT) discharge outlet, designed for use in wells up to 65 m deep. It is powered by a 230 V, 0.37 kW Franklin electric motor.

Detailed specifications are given in APPENDIX I.

SCOPE OF TEST

The performance characteristics of the Valley S1208 were determined with water, over a full range of discharge heads, using a standard pump testing procedure[1]. in addition, the suitability of the operator's manual and the safety of the pump were assessed.

RESULTS AND DISCUSSION

PERFORMANCE CHARACTERISTICS

Pump performance characteristics, over a range of discharge heads from 7 to 67 m of water are given in FIGURE 1. Maximum flow rate at 7 m discharge head was 72 L/min while flow ceased at a discharge head of 67 m. The manufacturer's published performance data indicated higher pumping rates than those obtained, over the full range of discharge heads. At the point of peak pump motor efficiency the manufacturer's published data exceeded the PAMI test data by 10%. The peak efficiency, occurring at a head of 4.5 m, was 25%. The corresponding flow rate was 43.5 L/min

Maximum power output was 0.32 kW, occurring at the peak efficiency point, with a corresponding current draw of 5.58A. A reduction in line voltage from 230 volts to 204 volts did not have any appreciable effect on the overall performance.

OPERATOR'S MANUAL

The operator's manual was clearly written and contained comprehensive installation, servicing and operating instructions. Although an 11 mm diameter rope eye was provided on the pump far attachment of a safety line, installation instructrons did not advise use of a line when installing the pump. It is suggested that the operalor's manual include recommendations on the use of a safety line. Plastic pipe can be easily damaged, during installation, or due to unexpected pumping pressure. When installing the pur'np with galvanized pipe, security would also be assured during coupling of successive pipe lengths.

SAFETY ASSESSMENT

A power cable selection chart and suggested fuse sizes were provided and a method of splicing the motor drop cable was clearly explained in the operator's manual. This method provided a sate electrical connection, if the instructions were closely followed.

The operator's manual did not recommend a minimum pressure rating for the discharge line but did advise that a suitable pressure relief valve be used in the discharge line.

1. PAMI T7821, Detailed Test Procedures for Domestic Water Pumps.

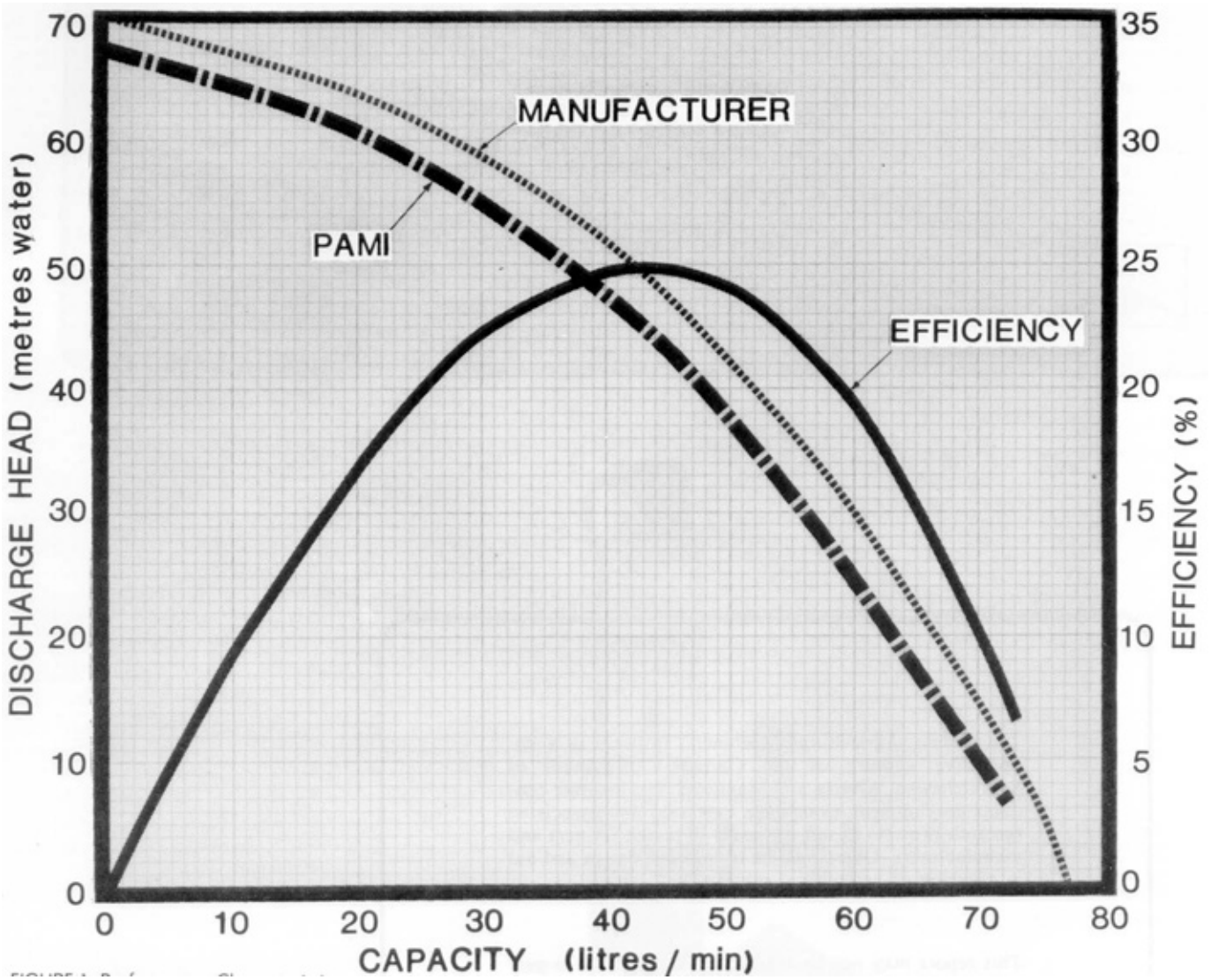


FIGURE 1. Performance Characteristics

APPENDIX 1

SPECIFICATIONS:

Pump:	
--make	Valley
--model	S1208
--serial number	MF 3052
--number of impetlors	8
--speed	3450 rpm
Motor:	
--make	Franklin Electric
--model	21430541 t 6 Date Code D77
--size	0.37 kW (0.50 hp)
--voltage	230 V
--ampere rating	4.9 A
--service factor amperage	5.9A
--service factor	1.6
--speed	3450 rpm
Overall Dimensions:	
--motor length	250 mm (9.85 in)
--pump length	410 mm (16.15 in)
--total length	660 mm (26.0 in)
--clearance diameter	98 mm (3.82 in)
Total Weight:	13.3 kg (29.3 lb)
Inlet:	
--location	285 mm (11 in) above pumpfoot
--screen type	plastic
--screen mesh	2.4 mm (0.094 in)
--inlet area	13200 mm² (20.5 in²)
Outlet:	
--nominal size	32 mm (1-1/4 in NPT)
Rope Eyes:	
--number	1
--diameter	11 mm (0.43 in)

APPENDIX II

METRIC UNITS

In keeping with the Canadian metric conversion program, this report has been prepared in SI units, For comparative purposes, the following conver, sions may be used;

1 metre (m) = 1000 millimetre (mm)	= 39.37 inches (in)
1 kilopascal (kPa) = 0.102 metres water	= 0.145 pounds/square inch (psi)
1 litre/min (L/mtn)	= 0.22 Imperial gallon/minute (gal/min)
1 kilowatt (kW)	= 1.34 horsepower (hp)

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