

Dear Sir,

Tracker

T58127

Your Ref:

No:

Pump Ref: 2BB 9670

After your meeting with our Michael Carey we are pleased to provide the following budget quotation.

The points raised in the meeting were as follows

1. Machine headers before fitting Stainless steel end plates
2. Pump footprint must be 1857mm
3. The rotor length must be 1370mm
4. Centre plate clearances not as critical as pump is not used for two duties
5. St Regis to supply when required two lantern rings
6. St Regis when required to supply bearings
7. St Regis have 20 pump clamps if required
8. Bearing journals to be spiral welded not metal sprayed
9. Check shaft material as will be German spec

Our response is as follows:-

1. The machining of the header was already included in original quotation
2. We have now allowed for making the foot print 1857mm
3. We can not achieve the rotor length if the foot print is to be 1857mm.
To obtain the footprint of 1857mm the components will have to measure as follows
 - De header must be 257mm Ft centre to plate (currently 250mm)
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 - 1 x Body must be 657mm (currently 676.5mm)
 - 1 x Body must be 657mm (currently 675.6)
 - Centre plate must equal 25mm (currently 25mm)
 - 4 Gaskets of 1mm

Total equals 1857mm

This means the rotor needs to measure 1344mm (currently 1376mm) so correct clearance against body is obtained (657mm+657mm+25mm+4mm=1347mm-3mm to obtain clearance=1344mm)

The pump length will be reduced by approx 24mm to obtain foot print 1857mm

4. Centre plate is no longer to be machined
5. Customer to free issue bearings as included in original quote
6. Customer to free issue 20 clamps
7. PSRG to spiral weld bearing locations
8. PSRG to offer additional option to perform material analysis

We are now pleased to offer our revised quotation



Unit as received

The unit has been dismantled inspected and the following found

Pump Supply & Repair Group Ltd
Incorporating :
Pump Supply & Repair Co. and
Pump Repairs Manchester Ltd
Registered Number: **4664897**

Inspection Report

General condition

- On inspection of all internals a heavy build up of lime scale was present. This in areas was 10-15mm thick. This was apparent on the rotor vanes and internals of the headers.
- Both headers anti cavitation holes were completely blocked with this scale build up.
- The flap valves were missing – PTFE part
- Both bearings were inspected and general operating wear was found. All bearings were well lubricated and still intact
- A large amount of the fastenings will need to be replaced as they are worn and corroded
- A number of the body clamps have sheared and will need replacing.
- One lantern ring is damaged



Scale build up in header internals, Rotor and anti cavitation holes

Main Component Condition

Rotor Assembly

- The stainless steel support rings which been added to the rotor are on the whole still in good condition. The running faces of the rotor however are heavily scored due to contacting the header end plate plates during operation.
- The gland sleeves are heavily scored
- The bearing locations are worn and scored



Rotor Scoring to rotor face Worn packing sleeve Worn bearing diameters
Body 1 (smaller section)

The stainless steel lining has started to buckle and lift from the base metal at one end. This lining is no longer in a repairable condition



Buckling and lifting of body

Body 2 (Larger section)

The Stainless steel lining is still in good condition and no sign of buckling is apparent
Light scoring is also apparent on the centre plate but is deemed fit for further use



Body and centre plate

Header assembly

Both header assembly end plate liners are no longer fit for use
Heavy scoring and fracturing is apparent and in areas the cast iron material has started show through.



Header assy

Scoring and fracturing

Repair Proposal

Stage one - Machine and fabrication

Rotor Assy

1. Machine rotor to a length of 1344mm
2. Remove existing Bronze sleeves
3. Manufacture and fit new bronze sleeves
4. Chase all threads
5. Polish all shaft diameters
6. Spiral weld both bearing location. Lloyds and DMV approved
7. Dynamically balance rotor assy to ISO G6.3

Headers x2

1. Remove existing stainless steel end plates
2. Machine end plate location
3. Manufacture new 316 stainless steel end plates
4. Bolt plate to header assembly using counter sunk screws
5. Stainless weld counter sunk screw
6. Final machine so foot to plate distance is 257mm

Body 1 (small section)

1. Cut existing stainless steel lining from body
2. Roll new 316 3mm stainless piece and weld and bolt into body using counter sunk screws. - This process will have to take place after the machining of the rotor
3. Stainless steel weld counter sunk screws and machine
4. Machine body to 657mm

Body 2 (large section)

1. Remove centre plate
2. Machine body to 657mm

Stage two – Belzona preparation and coating

Coating application procedure

To minimise the risk of similar build up of scale in the future we would propose to coat both rotor and internals of the headers with **Belzona 1341 Super glide**. This product will reduce the level of scale build up by improving the efficiency of the fluid handling systems and protecting metals from the effects of erosion/corrosion. This will also improve the efficiency of the unit by reducing viscous drag. We will have to advise that the chemical cleaning which is currently in operation at your site will not be suitable for this product if left submerged for the 3-6 hours. Based on the information given by yourselves a flush through with the chemical followed by a water flush will be acceptable. We would advise if possible the unit is monitored without flushing for a limited period to inspect the level of build up and requirement for flushing

Prior to coating, the header internals and rotor will be grit blasted to SA 2 ½ @ 75microns. The components will then be chemically cleaned by pressure washing and left to breathe. This process will be repeated until acceptable levels are obtained. The components will then be final grit blasted to SA 2 ½ @ 75 microns prior to coating.

The coating will be applied in two coats of different colours @ 250 microns per coat. This is to ensure that all the base material is coated and future wear patterns are visible.

On completion of the coating the components will be spark tested to ensure maximum coverage is attained

Stage three – Rebuild, Test, spray paint and despatch

The unit will be rebuilt on completion of the above with the following spares:

- 1 Bearing set – **Customer free issue**
- 1 Gasket set
- 1 Gland packing set
- 20 fabricated clamps- **Customer free issue**
- Anti seizing lubrication
- Bearing lubricant
- Fastening as required

On completion on all fitting work the unit will be hydrostatically pressure tested and spray painted prior to despatch

The price to carry out the above work will remain at £

Ex Works Excluding VAT

Additional Extra

Perform material analysis

The additional cost to perform a material analysis is £

Anticipated availability will be XX working weeks from your permission to proceed.

Goods supplied as our standard terms and conditions. Terms 30 days.

We trust our quotation meets your approval. In the meantime no further action will be taken on this unit until your full instructions are received.

We regret that any pump you choose not to repair or has been deemed beyond economical repair will be subject to inspection/collection charges of £ **NETT**. This charge will be waived if a new unit is purchased from ourselves.

There will also be an additional cost of carriage incurred; should you request the return of the unit.

We offer a full installation and commissioning service on this type of pump. Whether it's a simple like for like swap or a brand new installation involving, mechanical, electrical and civil work. **PSRG** can offer –

The complete service for industrial pumps!

Please visit our website at www.pumpgroup.co.uk for up to date information on our company and www.surpluspumps.co.uk for information on our current range of surplus pumps.

Yours faithfully,

Steve Smith

Quotation Department