Hammelmann process pumps are built to operate at the continuous maximum duty stated in the performance parameters. Just compare the crankshaft speed, average plunger speed, plunger diameter and power rating.

**Features**
- Power ratings up to 70 kW
- Vertical 3 cylinder design

**Adjustment**
- The stroke alters in relation to the middle position.
- Very precise adjustment possible (API 675 with deviations)

**Adjustment options**
- Hand wheel
- Servomotor also available for hazardous areas
- Nominal power = up to 900 [W]
- Nominal supply voltage = 115/230 or 400/480 [V]
- Net frequency = 50/60Hz
- Communication interface:
  - Modbus
  - CANopen
  - CANmoiton
  - Maschinenbus
  - DeviceNet
  - EtherNet / IP
  - Profinbus DP
  - Ether CAT

**Stroke adjustment operation**
The stroke length is altered by turning the variator shaft. This can be achieved when the pump is not running as well as during operation. Once the adjustment has been made the variator shaft is held in position by the servomotor. The system then runs with the newly adjusted stroke length providing the required flow rate.

- Smooth, automatic adjustment of the flow rate
- Compact design with small footprint
- Highly energy efficient, Flow rate adjustment without energy loss also under partial load
- Possible to control the flow rate down to zero

**Quality and reliability**
- Crank section calculation by 'Finite element method' ensures long working life under continuous load
- Stainless steel pump head free of alternating stress
- Integral speed reduction gear
- Pressurised oil lubrication system with oil cooler/filter
- Bellows form hermetic seal between the suction chamber and crank section
- Large selection of materials available for different fluids

**Zero Emission**
In the Zero Emission design the pumped fluid is hermetically sealed within the pump preventing leakage to atmosphere during operation.

The bellow system is gastight.
## Technical data, series HAMPRO 70 V

### Performance parameters (Standard design)

<table>
<thead>
<tr>
<th>HAM PRO</th>
<th>Q* [l/min]</th>
<th>Q* [m³/h]</th>
<th>Required power rating [kW]</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>30</td>
<td>45</td>
<td>70</td>
</tr>
<tr>
<td><strong>D</strong> [mm]</td>
<td><strong>n1</strong></td>
<td><strong>n2</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Operating pressure [bar]</strong></td>
<td></td>
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<tr>
<td>74 V</td>
<td>0 - 7,5</td>
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<td>0 - 0,56</td>
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<tr>
<td>73 V</td>
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<td>0 - 1,56</td>
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<tr>
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<td>0 - 206</td>
<td>0 - 12,48</td>
<td>60</td>
</tr>
</tbody>
</table>

### Data
- Rod force: 43 kN
- Stroke: 0 – 40 mm
- Mean plunger speed at n2:
  - 750 1/min. = 1,0 m/sec
  - 900 1/min. = 1,2 m/sec

### Standards
- Machine directive 2006/42/EG
- ATEX 94/9/EG
- API 675 (with deviations)
- TA-Luft
- NORSOK M501
- NORSOK M650
- NACE MR0175

### Certificates
- DIN EN ISO 9001
- DIN EN ISO 14001
- DIN EN ISO 50001
- BS OHSAS 18001
- ASME-U
- Achilles
- EAC

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**ENERGY EFFICIENT**

Hammelmann plunger pumps convert 93 to 98 % of the shaft power to hydraulic energy.

** Data refer to the medium water (compressibility considered)

D = Plunger diameter
n1 = Motor/Engine r.p.m.
n2 = Crankshaft r.p.m.