PCG HYDRAULICS LIMITED

QX DATA SHEETS - SINGLE PUMPS

1 General

1.1 Product description

The QX pumps are the 5th generation of the internal gear pumps, which have proven themselves in thirty years of service around the world. Numerous improvements have been made to the straightforward and robust design.

Advances in the manufacturing process have made it possible without making higher demands on individual components to build pumps that are considerably lighter and more compact.

A new tooth profile, conceived and optimised with the help of CAE, has yielded another significant reduction in noise levels. Large sealing areas result in higher efficiencies.

The internal ring gear is supported by a hydrodynamic / hydrostatic lubrication film, which allows operation at low viscosities or low and high speeds. QX pumps are therefore suitable for use with variable speed drives, where they can provide variable flow rates.

1.2 Advantages

- extremely long service life
- sound pressure level < 57 dB (A)
- volumetric efficiency up to 98%
- suitable for use with variable speed drivers
- can be used with fire resistant fluids (HFB, HFC and HFD = QXV), fuels, biodegradable and low-viscosity fluids
- certifications by ATEX 2, ABS, DNV, GL, LR, NK, ...
- low flow and pressure pulsations

1.3 ATEX compliant explosion protection

The internal gear pumps QX are suitable for application in hazardous areas and complies with the following guidelines:

ATEX directive	94/9/EC
group	II
equipment category	3
atmosphere	G
temperature class	T3 and T4

II 3 G EEx c II T4
-20℃<=Ta<=+40℃

II 3 G EEx c II T3
-20℃<=Ta<=+80℃

2 Technical data

2.1 General (deviating values according manufacturer's specification)

Installation attitude	unrestricted
Mounting method (standard)	oval 2-hole flange to ISO 3019/1 (SAE): QX 3-6 oval 2-hole flange to ISO 3019/2 (metric) QX 2+8
Direction of rotation	CW, alternatively CCW (but not reversible)
Pump drive method	in-line, through a flexible coupling
Volumetric efficiency η_v	up to 98%
Fluids	HLP mineral oils to DIN 51524, Part 2 HFC fluids to VDMA 24317
Minimum fluid cleanliness	NAS 1638, Class 9 or ISO 4406, code 20/18/15 (see section 9)
Operating viscosity Starting viscosity	10 - 100 mm^2/s* 10 - 300 mm^2/s * *other values on request
Fluid temperature range	HLP-mineral oils -20 °C min. / + 80 °C max. (considering viscosity field) HFC +50°C max.
Inlet pressure maximum minimum	1.5 bar absolute (without external drain connection) 0.5 to 0.98 bar absolute (dependent on pump frame size and speed, see example in section 3.3.2)
Startup against pressure	Max. 20 bar (other values on request)