

# CAST IRON PENSTOCK SPECIFICATION

## OPERATING STEM (OPTIONAL, RISING OR NON-RISING)

Stainless Steel to BS EN 10088 grade 1.4305 (as standard).

Operating stems (spindles) are designed to accommodate the thrusts, torques and bending loads associated with penstock operation. The rising stem does not rotate but moves up and down by virtue of rotating the drive sleeve positioned out of the flow at the head of the penstock. The non-rising stem rotates through the door nut thus moving the door.

(Page 7: Clause 2.1.5.) (Page 15:Table 8)

## STEM NUT

Manufactured from Gunmetal BS 1400 L.G.2.

The stem nut is fitted into the door pocket and pinned to the rising stem (spindle) and threaded to accept the non-rising stem (spindle). Clearance between the nut and nut pocket is sufficient to allow the self alignment of the stem and free movement of the door.

(Page 7:Clause 2.1.5.5.) (Page 15:Table 8)

## FASTENERS

Stainless Steel to BS 6105 A\$ – Finish self colour.

Only stainless steel fasteners, (construction bolts) are used in the manufacture of the penstocks.

## INSTALLATION, OPERATION AND MAINTENANCE

The correct installation of penstocks is of critical importance. Installation should always be carried out in accordance with the instructions supplied with each penstock. The full operating and maintenance instructions are also provided and should be similarly observed.

(Page 21:Section 5)

## ALLOWABLE LEAKAGE

The extensive sealing area and nature of the penstock precludes any guarantee of drop tight sealing. Adams' penstocks are however designed to minimise leakage which will always be significantly lower than the allowable leakage as detailed within BS 7775 and AWWA C501.

Maximum allowable leakage according to BS 7775:-

- For an on-seating head less than 6 metres (static head) – 1.25 litres per minute per metre of seal perimeter.
- For an off-seating head less than 6 metres (static head) – 2.5 litres per minute per metre of seal perimeter.
- Any leakage tests should be carried out on site.

(Page 17:Section 3) (Page 21:Annex B)

## SEATING DUTIES

Adams' penstocks are designed to meet the individual application requirements. This enables the most cost effective design to be offered while still incorporating and meeting all of the elements of the specification.