

SPECIFICATION FOR CAST IRON WALL MOUNTED TYPE PENSTOCKS

SPECIFICATION No 0001-CIP

Frames shall be formed from ductile iron with a fixed yoke section. The minimum grade for the iron will be BS1452-BSEN 1561 GJL 250. The frame will incorporate stainless steel grade 316 BSEN 10088-2 (1.4401/1.4404) integral guides and ductile iron ISO 1083 BSEN 1563 adjustable wedges.

The frames will be suitable for grouting and bolting to vertical walls.

The seating side of the frame will have a mechanically fixed phosphor bronze seal. The phosphor bronze will be to BS1400 PB2 and be secured with on to a bed of high build adhesive, finally secured with a sufficient amount of special taper breakneck phosphor bronze screws. The seal is then to be machined and finished to the non-acceptance of 0.0025" (0.06mm) feeler gauge

Doors shall be formed from close grained cast iron with a fixed nut pocket. The door nut pocket shall enable the connection of the operating stem nut. The design shall allow the removal of the nut without disturbing the door. The minimum grade for the iron will be BS1452-BSEN 1561 GJL 250. The door will incorporate cast iron integral guides and taper wedge surfaces.

The seating side of the door will have a mechanically fixed phosphor bronze seal. The phosphor bronze will be to BS1400 PB2 and be secured with on to a bed of high build adhesive, finally secured with a sufficient amount of special taper breakneck screws. The un-seating side of the door will have a ground and scraped taper wedge surface. The seal is then to be machined and finished to the non-acceptance of 0.0025" (0.06mm) feeler gauge.

Wedges will be from ductile iron ISO 1083 BSEN 1563 be fully adjustable and be of the taper wedge design. They will be secured by means of stainless steel grade 316 securing pins and incorporate stainless steel grade 316 BSEN 10088-2 (1.4401/1.4404) adjusting pins for final commissioning.

The Penstocks shall be capable of both operating and withstanding the working heads (refer to particular specification).

Where necessary additional top wedging shall be provided by means of door wedges and a frame cross beam to ensure water tightness meets the required limits.

A renewable rubber EPDM face to BS681-1 shall be fitted to a machined face at the base of the Penstock door. The Flush invert face shall be retained in place by means of a stainless steel retainer and stainless steel retaining pins. The grade of stainless will be 316 BSEN 10088-2 (1.4401/1.4404). It shall be renewable in situ.

The Penstock operating stem will be of the rising or non-rising type and be manufactured from stainless steel grade 316 BSEN 10088-2 (1.4401/1.4404). The extension spindle will be mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994. The stem will work through a machine cut operating nut either housed in a thrust taking arrangement mounted direct to the top of the frame or remote on a pillar or housed in a nut located on a pocket at the top of the Penstock door. If actuated the stem will work through the drive sleeve of the actuator unit. (Actuator or gearbox operated Penstocks will utilise the drive sleeve supplied by the vendor)

For rising stems a cover tube shall be provided (indicating or non-indicating). Actuator cover tubes to be Manufacturers standard.

Headstocks shall be manufactured from heavy gauge mild steel and shall be heavy duty galvanised to BS729.

The Penstock will be clockwise closing at the hand wheel. This will be clearly marked on the hand wheel (integrally or mechanically fixed. the hand wheel will be no smaller than 300mm and geared that one operator can operate the Penstock using an effort of approximately 180N. This excluded electrically actuated Penstocks.

Installation of the Penstocks will be by electro zinc plated mild steel BS 7371-8:2011 or stainless steel grade A4 BSEN10088-2 (1.4401/1.4404) expanding/resin anchors. Following installation final adjustment and initial lubrication is to be undertaken and the door operated through one cycle (or as recommended by the manufacturer). If considered necessary by the client's representative a leakage test shall be undertaken at the maximum specified head.

The maximum allowed leakage will be as BS7775:2005.

BS Specification BS7775:2005, including normative specifications references therein.

Cast Iron parts will be coated in-accordance with the following

Blast clean SA2½.

Two pack epoxy paint with a min of 250 microns DFT.

SPECIFICATION FOR FABRICATED WALL MOUNTED TYPE PENSTOCKS

SPECIFICATION No 0002-SGW

Frame shall be half or full frame manufactured from welded rigid mild steel sections to mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall have removable gusseted yoke piece to allow removal/fitting of door as required.

Where necessary, the side frames shall have reinforcement gussets to cater for off-seating pressures, to prevent any distortion in the frame under full load.

The seating side of the frame shall have resilient EPDM seals to the sides and soffit, seals shall be mechanically fixed with stainless steel grade 316 BS EN ISO 3506 pt1-2 fasteners, and poly ethylene retaining strips BS ISO 15527:2010, so the seal can be removed with the Penstock in situ.

The off-seating side of the frame shall have stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) adjustable wedges (Weir Penstocks - parallel slides poly ethylene BS ISO 15527:2010) with stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) adjusters.

The door shall be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall comprise a main sealing plate with hollow section reinforcing matrix welded to the off-seating side of the plate. All matrix section joints shall be fully welded and sealed. Angled door wedges shall be welded to the sides of the matrix.

Where necessary, additional top wedging shall be provided by means of door wedges and a frame crossbeam to ensure water tightness to the required limits.

The base of the door shall have a formed EPDM seal to create a flush invert, the EPDM seal will be to BS681-1, the seal will be mechanically fixed with stainless steel grade 316 fasteners BS EN ISO 3506 pt1-2 and retaining strips 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404), so it can be removed with the Penstock in situ.

A door lift bracket shall be welded to the top of the door to enable connection of the operating door nut. The design shall allow removal of the nut without disturbing the door.

The Penstock operating stem will be of the rising or non-rising type and be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404). The extension spindle can be mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404). The stem will work through a machine cut operating nut either

housed in a thrust taking arrangement mounted direct to the top of the frame, remote on a pillar or housed in a nut located on a pocket at the top of the Penstock door. If actuated the stem will work through the drive sleeve of the actuator unit. (Actuator or gearbox operated Penstocks will utilise the drive sleeve supplied by the vendor) For rising stems a cover tube shall be provided (indicating or non-indicating). Actuator cover tubes to be Manufacturer's standard

Headstocks shall be manufactured from heavy gauge mild steel and shall be heavy duty galvanised to BS729.

The Penstock will be clockwise closing at the hand wheel. This will be clearly marked on the hand wheel (integrally or mechanically fixed. the hand wheel will be no smaller than 300mm and geared that one operator can operate the Penstock using an effort of approximately 180N. This excluded electrically actuated Penstocks. Installation of the Penstocks will be by electro zinc plated mild steel BS 7371-8:2011 or stainless steel grade A4 BSEN10088-2 (1.4401/1.4404) expanding/resin anchors.

Following installation final adjustment and initial lubrication is to be undertaken and the door operated through one cycle (or as recommended by the manufacturer). If considered necessary by the client's representative a leakage test shall be undertaken at the maximum specified head.

The maximum allowed leakage will be as BS7775:2005.

BS Specification BS7775:2005, including normative specifications references therein.

Mild steel parts will be coated in-accordance with the following:-

Blast clean SA2½.

Galvanise to BS729 and or 'T' wash

Two pack epoxy 150 microns DFT. – black.

Stainless steel self colour, the stainless steel should be cleaned after fabrication by approved methods.

SPECIFICATION FOR FABRICATED CHANNEL MOUNTED TYPE PENSTOCKS

SPECIFICATION No 0003-SGC

Frame shall be half or full frame manufactured from welded rigid mild steel sections to mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall have removable gusseted yoke piece to allow removal/fitting of door as required.

Frames shall be suitable for grouting into prepared rebates in channel - walls and floors. If no prepared civil rebates are available side fixing angles shall be included to allow wall fixing in channels. Maximum water depth to top of door.

The seating side of the frame shall have resilient EPDM seals to the vertical sides, seals shall be mechanically fixed with stainless steel grade 316 BS EN ISO 3506 pt1-2 fasteners, and poly ethylene retaining strips BS ISO 15527:2010, so the seal can be removed with the Penstock in situ.

Seals shall be mechanically fixed with stainless steel grade 316 BS EN ISO 3506 pt1-2 fasteners and low-friction retaining strips.

The off-seating side of the frame shall have low-friction guide strips to ensure door maintains contact with the side seals. Fasteners shall be stainless steel grade 316 BS EN ISO 3506 pt1-2.

Doors shall be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall comprise a main sealing plate with a hollow section reinforcing matrix welded to the off-seating side of the plate.

The base of the door shall have a formed EPDM seal to create a flush invert, the EPDM seal will be to BS681.1, the seal will be mechanically fixed with stainless steel grade 316 fasteners BS EN ISO 3506 pt 1-2 and retaining strips 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404), so it can be removed with the Penstock in situ .

A door lifting bracket shall be welded to the top of the door to enable connection of the operating stem door nut. The design shall enable removal of the nut without disturbing the door.

The Penstock operating stem will be of the rising or non-rising type and be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404). The stem will work through a machine cut operating nut either housed in a thrust taking arrangement mounted direct to the top of the frame, remote on a pillar or housed in a nut located in a pocket at the top of the Penstock door. If actuated the stem will work through the drive sleeve of the actuator unit.

(Actuator or gearbox operated Penstocks will utilise the drive sleeve supplied by the vendor)

Headstocks shall be manufactured from heavy gauge mild steel and shall be heavy duty galvanised to BS729.

For rising stems a cover tube shall be provided (indicating or non-indicating). Actuator cover tubes to be Manufacturer's standard.

The Penstock will be clockwise closing at the hand wheel. This will be clearly marked on the hand wheel (integrally or mechanically fixed. the hand wheel will be no smaller than 300mm and geared that one operator can operate the Penstock using an effort of approximately 180N. This excluded electrically actuated Penstocks.

Following installation final adjustment and initial lubrication is to be undertaken and the door operated through one cycle (or as recommended by the manufacturer). If considered necessary by the client's representative a leakage test shall be undertaken at the maximum specified head.

The maximum allowed leakage will be as BS7775:2005.

BS Specification BS7775:2005, including normative specifications references therein.

Mild steel parts will be coated in-accordance with the following:-

Blast clean SA2½.

Galvanise to BS729 and or 'T' wash

Two pack epoxy 150 microns DFT. – black.

Stainless steel self colour, the stainless steel should be cleaned after fabrication by approved methods.

SPECIFICATION FOR DUCTILE IRON WALL /FLANGE MOUNTED FLAP VALVES

SPECIFICATION No 0004-DIF

Frames shall be formed from ductile iron. The minimum grade for the iron will be BS1452-BSEN 1561 GJL 250. The frames will be suitable for grouting and bolting to vertical walls and fixing to flanged pipes with a % of fixing holes in a PN16 flange.

The seating side of the frame will have a mechanically fixed phosphor bronze seal. The phosphor bronze will be to BS1400 PB2 and be complete with a sufficient amount of special phosphor bronze taper screws. The seal will be machined and finished to the non-acceptance of 0.0025" (0.06mm)

Doors shall be formed from close grained cast iron. The minimum grade for the iron will be BS1452-BSEN 1561 GJL 250. The seating side of the door will have a mechanically fixed phosphor bronze seal. The phosphor bronze will be to BS1400 PB2 and be complete with a sufficient amount of special phosphor bronze taper screws. The seal will be machined and finished to the non-acceptance of 0.0025" (0.06mm)

Hinge pins will be of stainless steel grade 316 BSEN10088-2 (1.4401/1.4404) and be complete with 2No securing split pins 316 BSEN10088-2 (1.4401/1.4404). The flap valve will be of the double hung type. The hinge links will be phosphor bronze n BS1400 PB2 of suitable size to suit the duty.

The Flap valves shall be capable of both operating and withstanding the working heads. Maximum leakage will be 1.25 litres/min/seal perimeter at 4m head.

Installation of the Flap valves will be by electro zinc plated mild steel BS 7371-8:2011 or stainless steel grade A4 BSEN10088-2 (1.4401/1.4404) expanding/resin anchors. If considered necessary by the client's representative a leakage test shall be undertaken at the maximum specified head.

Ductile Iron parts will be coated in-accordance with the following

Blast clean SA2½.

Two pack epoxy 250 microns DFT- black.

SPECIFICATION FOR FABRICATED WALL MOUNTED TYPE FLAP VALVES

SPECIFICATION No 0005-SGF

Frame shall be frame manufactured from welded rigid mild steel sections to mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall have removable stainless steel 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) double hung hinge bracket.

Hinge links will be of stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and be complete with phosphor bronze BS1400 PB2 fitted bushes. The flap valve will be of the double hung type. The hinge links will be 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and will be of suitable size to suit the duty.

The seating side of the frame shall have resilient EPDM seals to BS681-1 to the sides and soffit, seals shall be mechanically fixed with stainless steel grade 316 BS EN ISO 3506 pt1-2 fasteners, and poly ethylene retaining strips BS ISO 15527:2010, so the seal can be removed with the Flap Valve in situ.

The door shall be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall comprise a main sealing plate with hollow section reinforcing matrix welded to the off-seating side of the plate. All matrix section joints shall be fully welded and sealed. The door shall be provided with a suitable lifting lug. The lug shall be welded to the bottom of the door to enable connection of a proprietary lifting device.

Installation of the Penstocks will be by electro zinc plated mild steel BS 7371-8:2011 or stainless steel grade A4 BSEN10088-2 (1.4401/1.4404) expanding/resin anchors. Following installation final adjustment and initial lubrication is to be undertaken and the door operated through one cycle (or as recommended by the manufacturer). If considered necessary by the client's representative a leakage test shall be undertaken at the maximum specified head. The maximum allowed leakage will be 0.5 litres/hour per metre of door seating perimeter.

Mild steel parts will be coated in-accordance with the following:-

Blast clean SA2½.

Galvanise to BS729 and or 'T' wash

Two pack epoxy 150 microns DFT. – black.

Stainless steel self colour, the stainless steel should be cleaned after fabrication by approved methods.

SPECIFICATION FOR FABRICATED CHANNEL MOUNTED TYPE STOP LOGS

SPECIFICATION No 0006-SGCSL

Frame shall be frame manufactured from welded rigid mild steel channel sections to mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall have removable stainless steel 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) which allows easy removal of the log.

Frames shall be suitable for grouting into prepared rebates in channel - walls and floors. Where necessary side fixing angles shall be provided to allow wall fixing in channels.

The seating and off seating side of the frame shall have resilient EPDM seals to BS 681-1 to the sides and soffit, seals shall be mechanically fixed with stainless steel grade 316 BS EN ISO 3506 pt1-2 fasteners, and poly ethylene retaining strips BS ISO 15527:2010, so the seal can be removed with the frame in situ.

Logs shall be manufactured from aluminium AlMgSi0,5-6060 to EN 753-3, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) poly ethylene retaining strips BS ISO 15527:2010 and tropical hard woods (from a sustainable source). All seals on the log will be EPDM to BS681-1, and be either mechanically fixed or force fit into position. All seals must be replaceable.

Maximum water depth to top of top log.

A log lifting pin (s) shall be provided within the log, to enable connection of the lifting poles or lifting arrangement.

Following installation final adjustment and door operated through one cycle (or as recommended by the manufacturer).

Mild steel parts will be coated in-accordance with the following:-

Blast clean SA2½.

Galvanise to BS729 and or 'T' wash

Two pack epoxy 150 microns DFT. – black.

Stainless steel self colour, the stainless steel should be cleaned after fabrication by approved methods

SPECIFICATION FOR FABRICATED STOP LOGS WALL MOUNTED TYPE

SPECIFICATION No 0006-SGWSL

Frame shall be frame manufactured from welded rigid mild steel channel sections to mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall have removable stainless steel 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) which allows easy removal of the log. Frames shall be suitable for fixing to vertical walls and if required prepared rebates in floors.

The seating and off seating side of the frame shall have resilient EPDM seals to BS 681-1 to the sides and soffit, seals shall be mechanically fixed with stainless steel grade 316 BS EN ISO 3506 pt1-2 fasteners, and poly ethylene retaining strips BS ISO 15527:2010, so the seal can be removed with the frame in situ.

Logs shall be manufactured from aluminium AlMgSi0,5-6060 to EN 753-3, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) poly ethylene retaining strips BS ISO 15527:2010 and tropical hard woods (from a sustainable source). All seals on the log will be EPDM to BS681-1, and be either mechanically fixed or force fit into position. All seals must be replaceable.

Maximum water depth to top of top log.

A log lifting pin (s) shall be provided within the log, to enable connection of the lifting poles or lifting arrangement.

Installation of the Stop log frames will be by electro zinc plated mild steel BS 7371-8:2011 or stainless steel grade A4 BSEN10088-2 (1.4401/1.4404) expanding/resin anchors. Following installation final adjustment and initial lubrication is to be undertaken and the door operated through one cycle (or as recommended by the manufacturer). If considered necessary by the client's representative a leakage test shall be undertaken at the maximum specified head. The maximum allowed leakage will be 0.5 litres/hour per metre of log seating perimeter.

Mild steel parts will be coated in-accordance with the following:-

Blast clean SA2½.

Galvanise to BS729 and or 'T' wash

Two pack epoxy 150 microns DFT. – black.

Stainless steel self colour, the stainless steel should be cleaned after fabrication by approved methods

SPECIFICATION FOR FABRICATED **HANDSTOPS WALL MOUNTED TYPE**

SPECIFICATION No **0007-SGWHS**

Frame shall be frame manufactured from welded rigid mild steel channel sections to mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall have removable stainless steel 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) which allows easy removal of the log. The base of the frame will have neoprene flush invert seal. The frame will be suitable for bolting to a prepared surface

The seating side of the frame shall have resilient Composite seals to the sides; seals shall be bonded to the frame.

The door shall be manufactured from upvc to BS3757:1978/ polyethylene to BS ISO 15527:2010 shall comprise a main sealing plate with reinforcement as required.

The maximum water depth will be door depth.

A 'T' section door lift bracket or suitable sized hand hole shall be provided at the top of the door.

Installation of the Hand stops will be by electro zinc plated mild steel BS 7371-8:2011 or stainless steel grade A4 BSEN10088-2 (1.4401/1.4404) expanding/resin anchors. Following installation final adjustment and initial lubrication is to be undertaken and the door operated through one cycle (or as recommended by the manufacturer). If considered necessary by the client's representative a leakage test shall be undertaken at the maximum specified head. The maximum allowed leakage will be 0.5 litres/hour per metre of door seating perimeter.

Mild steel parts will be coated in-accordance with the following:-

Blast clean SA2½.

Galvanise to BS729 and or 'T' wash

Two pack epoxy 150 microns DFT. – black.

Stainless steel self colour, the stainless steel should be cleaned after fabrication by approved methods

SPECIFICATION FOR FABRICATED CHANNEL MOUNTED TYPE HANDSTOPS

SPECIFICATION No 0008-SGCHS

Frame shall be frame manufactured from welded rigid mild steel channel sections to mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall have removable stainless steel 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) which allows easy removal of the log. The base of the frame will have neoprene flush invert seal. The frame will be suitable for grouting into prepared channel rebate.

The seating side of the frame shall have resilient Composite seals to the sides; seals shall be bonded to the frame.

The door shall be manufactured from UPVC to BS3757:1978/ polyethylene to BS ISO 15527:2010 shall comprise a main sealing plate with reinforcement as required.

The maximum water depth will be door depth.

A 'T' section door lift bracket or suitable sized hand hole shall be provided at the top of the door.

Installation of the Hand stops will be by electro zinc plated mild steel BS 7371-8:2011 or stainless steel grade A4 BSEN10088-2 (1.4401/1.4404) expanding anchors. Following installation final adjustment and initial lubrication is to be undertaken and the door operated through one cycle (or as recommended by the manufacturer). If considered necessary by the client's representative a leakage test shall be undertaken at the maximum specified head. The maximum allowed leakage will be 0.5 litres/hour per metre of door seating perimeter.

Mild steel parts will be coated in-accordance with the following:-

Blast clean SA2½.

Galvanise to BS729 and or 'T' wash

Two pack epoxy 150 microns DFT. – black.

Stainless steel self colour, the stainless steel should be cleaned after fabrication by approved methods

SPECIFICATION FOR HYDROSTATIC VALVE FLANGE MOUNTED TYPE

SPECIFICATION No 0009-HSV

Body, bridge, bell mouth and gland shall be frame manufactured from welded rigid mild steel sections to mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall have removable stainless steel 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404).

Body will be suitable for bolting to a mating flange. At the top of the body there will be with an adjustable gland assembly bolted to it.

The outlet will be either a bell mouth or Side outlet cowl.

The shaft pocket shall enable the connection of the operating stem nut. The design shall allow the removal of the shaft without disturbing the bell mouth.

A UPVC to BS3757:1978/ polyethylene to BS ISO 15527:2010 sliding section shall be specified and attached to the bell mouth or side outlet cowl, designed to slide inside of the adjustable gland box.

The gland box will be adjustable in situ by means of stainless steel 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404), adjusting pins.

In the base of the pillar there shall be an anti rotation device to prevent the cylinder from rotating during operation. No guide rods shall be used.

The operating stem will be of the rising type and be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404). . The stem will work through a machine cut operating nut housed in a thrust taking arrangement mounted on a pillar. If actuated the stem will work through the drive sleeve of the actuator unit. (Actuator or gearbox operated Hydrostatic will utilise the drive sleeve supplied by the vendor)

For rising stems a cover tube shall be provided (indicating or non-indicating). Actuator cover tubes to be Manufacturers standard.

Headstocks shall be manufactured from mild steel and shall be heavy duty galvanised to BS729.

The Hydrostatic valve will be clockwise closing at the hand wheel. This will be clearly marked on the hand wheel (integrally or mechanically fixed. the hand wheel will be no smaller than 300mm and geared that one operator can operate the Hydrostatic valve using an effort of approximately 180N. This excluded electrically actuated Penstocks.

Following installation final adjustment and initial lubrication is to be undertaken and then operated through one cycle (or as recommended by the manufacturer).

Mild steel parts will be coated in-accordance with the following:-

Blast clean SA2½.

Galvanise to BS729 and or 'T' wash

Two pack epoxy 150 microns DFT. – black.

Stainless steel self colour, the stainless steel should be cleaned after fabrication by approved methods

SPECIFICATION FOR FLOATING ARM AND DECANTING ARMS FLANGE MOUNTED TYPE

SPECIFICATION No 0010-FA

Body, bridge, bellmouth and gland shall be frame manufactured from welded rigid mild steel sections to mild steel grade 43A BSEN 10025:S275 JOH 1997/J2H 1994, stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) and shall have removable stainless steel 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404), cast iron BSEN 1561:2011 grade 250 min.

The bend will incorporate a sole plate and integral guides and adjustable stainless steel trunion pin. The flange shall be designed so that a chute can be fitted. The outlet flange will be drilled to suit a mating flange.

The sole plate will be suitable for grouting and bolting to a horizontal surface.

The swivel bend will have bonded and pinned cast copper rings to BSEN 1982:2008. The gunmetal will be machined to the non-acceptance of 0.0025" (0.06mm)

For the floating arrangement the chute shall be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404). Fitted at the top of the chute should be either single or twin floats. Around the float there should be a scum box. If required and to control the flow a suitably sized orifice plate shall be fitted to ensure a constant flow discharge. To prevent siphoning during operation breather pipes should be included at the top of the chute.

For the decanting arrangement the chute shall be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404). Fitted directly to the top of the chute should be a stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) guide rod. The guide rod shall be fitted to a stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) min trunion shaft. Operation should be through a trunion mounted drive sleeve. The Decanting valve operating stem will be of the rising type and be manufactured from stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) min. The stem will work through a machine cut trunion operating drive sleeve housed in a pillar.

Headstocks shall be manufactured from heavy gauge mild steel and shall be heavy duty galvanised to BS729 after blast cleaning.

The Decanting valve will be clockwise closing at the hand wheel. This will be clearly marked on the hand wheel (integrally or mechanically fixed. the hand wheel will be no smaller than 300mm and geared that one operator can operate the valve using an effort of approximately 180N.

Installation of the Penstocks will be by electro zinc plated mild steel BS 7371-8:2011 or stainless steel grade 304/316 BSEN10088-2 (1.4301/1.4307-1.4401/1.4404) expanding or resin anchors.

Following installation final adjustment and initial lubrication is to be undertaken and the door operated through one cycle (or as recommended by the manufacturer). If considered necessary by the client's representative a leakage test shall be undertaken at the maximum specified head.

Mild steel -Cast Iron parts will be coated in-accordance with the following
Galvanise to BS729 and or 'T' wash
Two pack epoxy 150 microns DFT. – black.

Stainless steel self colour, the stainless steel should be cleaned after fabrication by approved methods