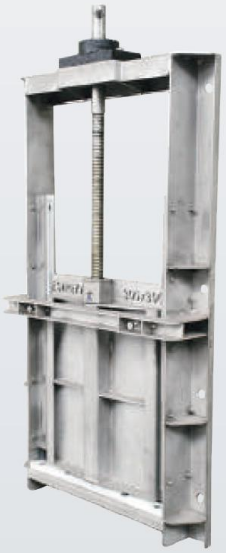
PENSTOCK

Large

Medium



Small

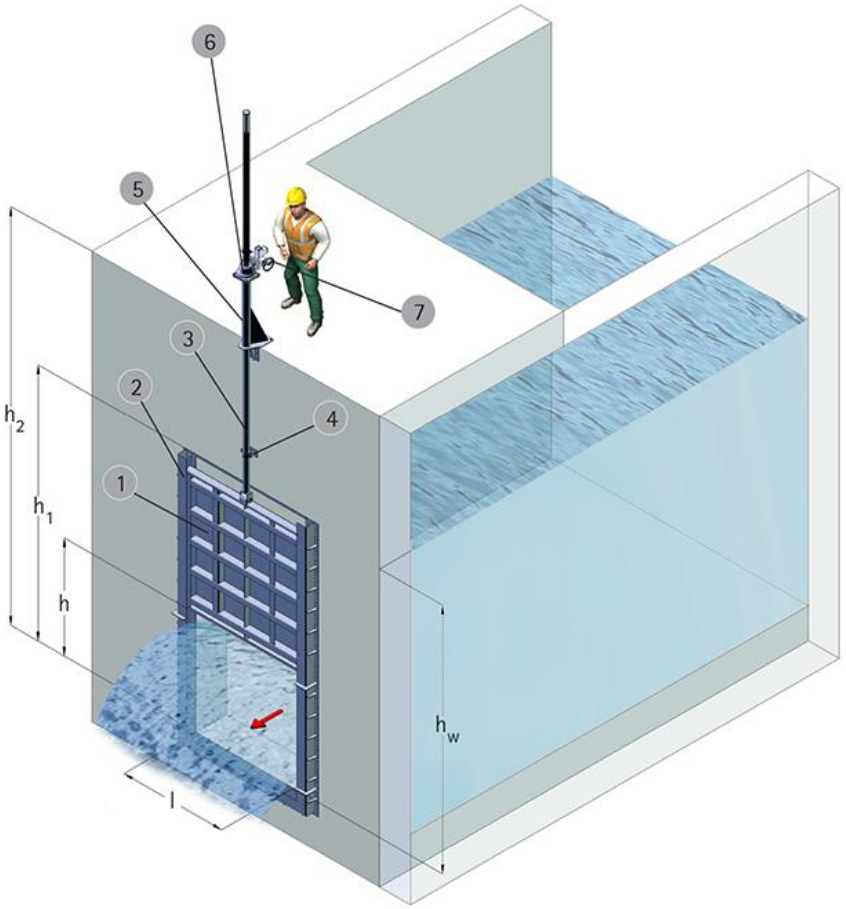
Maximum Allowable Leakage

Liters per minute per meter of perimeter:

= 1.25 + (0.1025 x (unseating head in meters - 6.1))

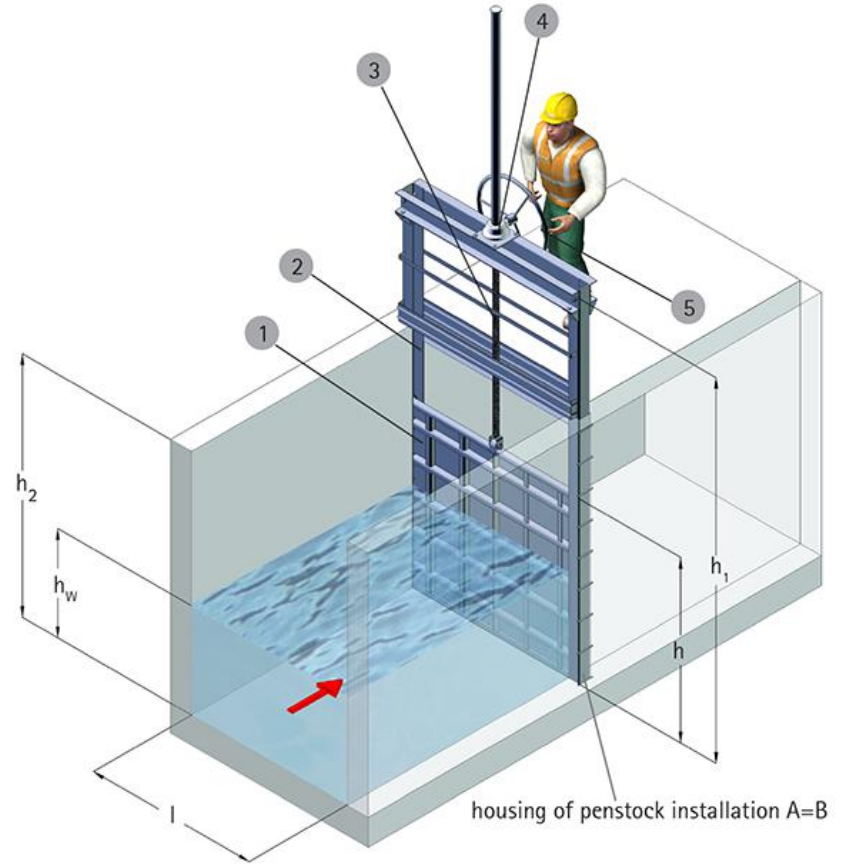
Example: If we have a gate with 10m head, the leakage for the unseating head will be:

1.25 + (0.1025 x (10 - 6.1)) = 1.65 lpm/m of perimeter



LEGEND

1. door
2. frame
3. control rod
4. guide for rod
5. manoeuvring column
6. gearbox or actuator unit
7. handwheel



LEGEND

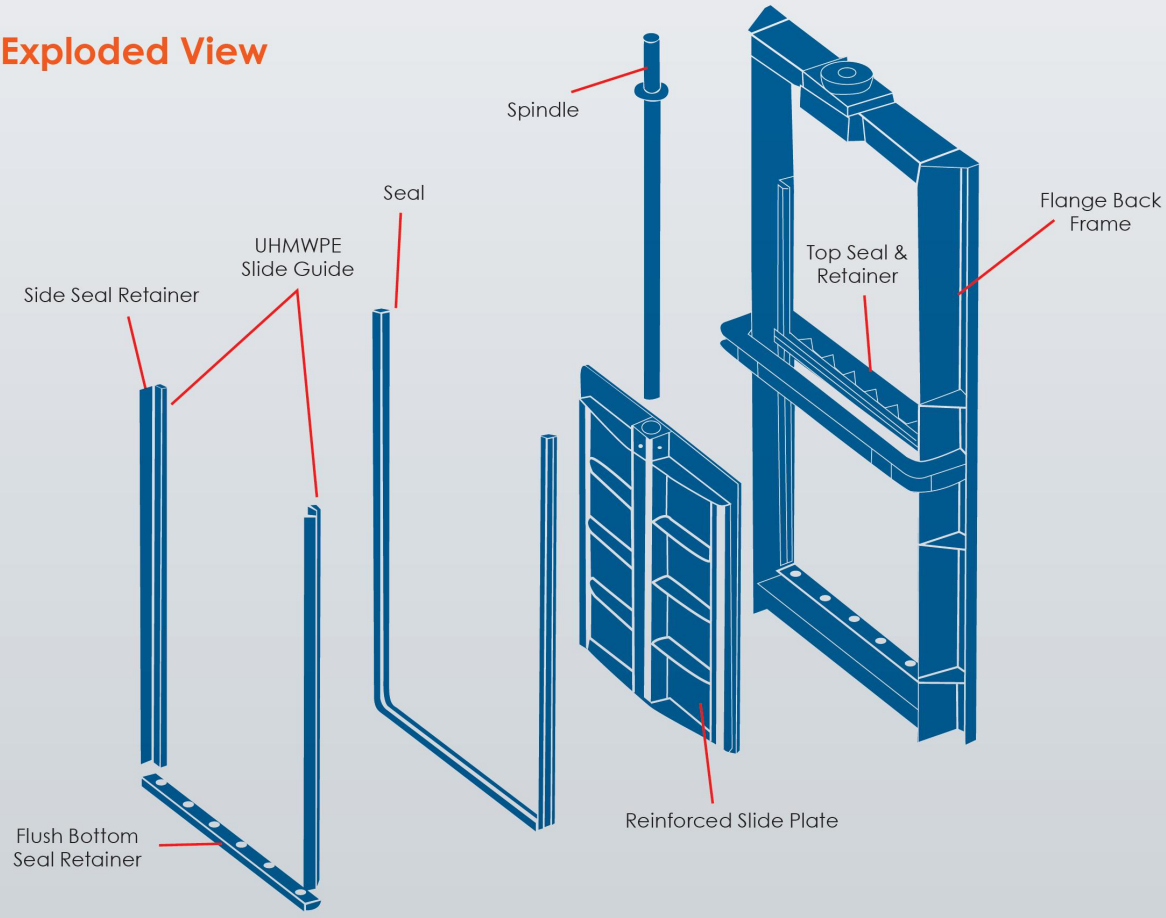
1. door
2. frame
3. control rod
4. gearbox or actuator unit
5. handwheel

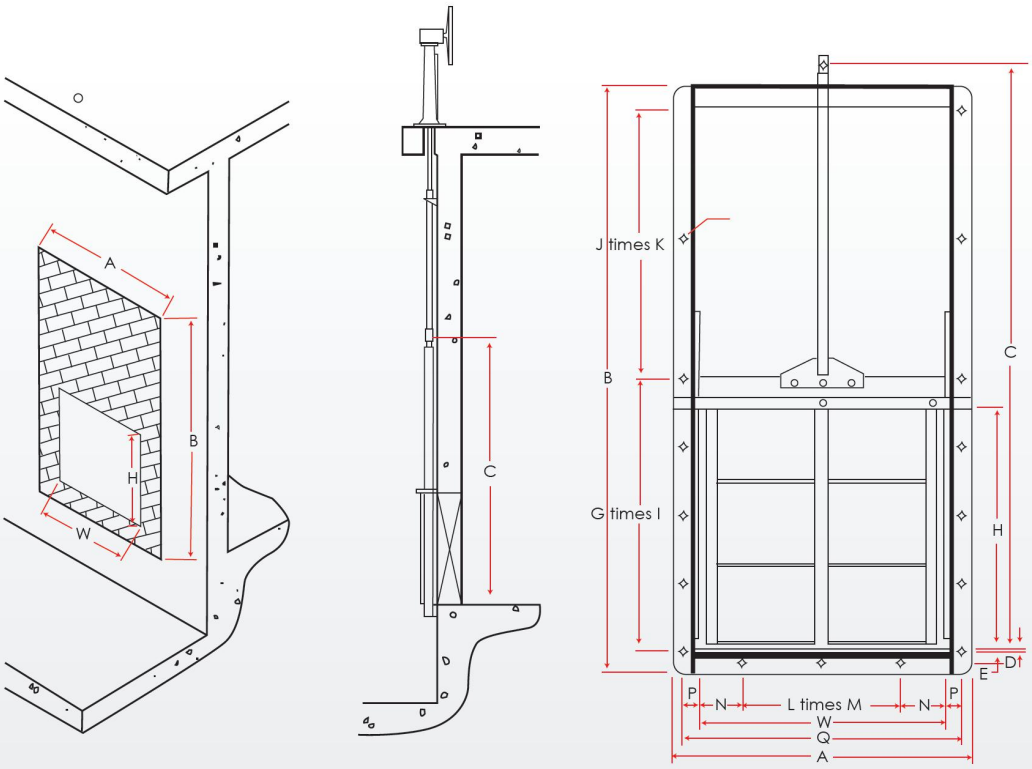
Material Specification

Component	Material
Frame, Side Frame and Slide Plate (Metal Door)	Stainless Steel (BS 970 Gr 304/304L or 316/316L)
Operating Nut	Gunmetal (BS1400 LG2)
Sealing and Pressure Adjusters Door Plate (Plastic Doors)	UHMWPE (UV Stabilized)
Flush Invert Seal	EPDM Rubber (ASTM 2000)
Fasteners and Adjusters	Stainless Steel (Gr A2 or A4)
Spindle	Stainless Steel (BS 970 Gr 304/304L or 316/316L)
Seal Retainer	Stainless Steel (BS 970 Gr 304/304L or 316/316L)
Slice Guide	UHMWPE (UV Stabilized)

Other materials and finishes are also available on request.

Exploded View

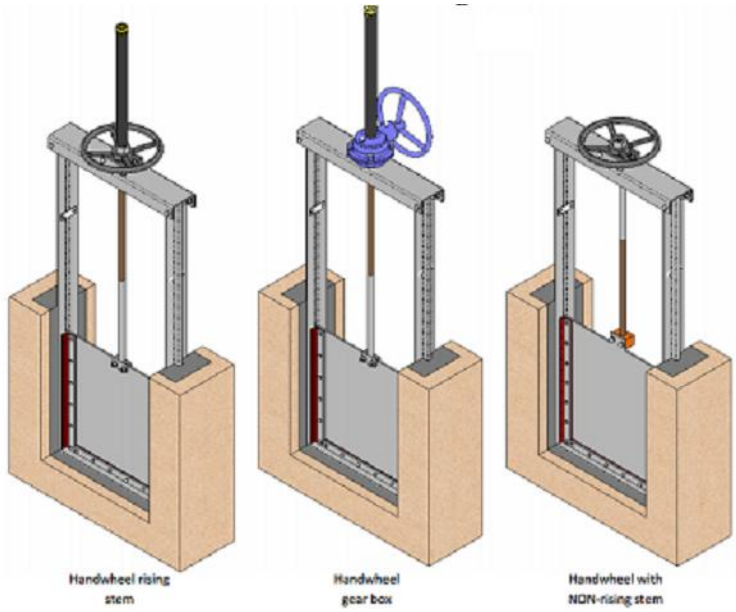


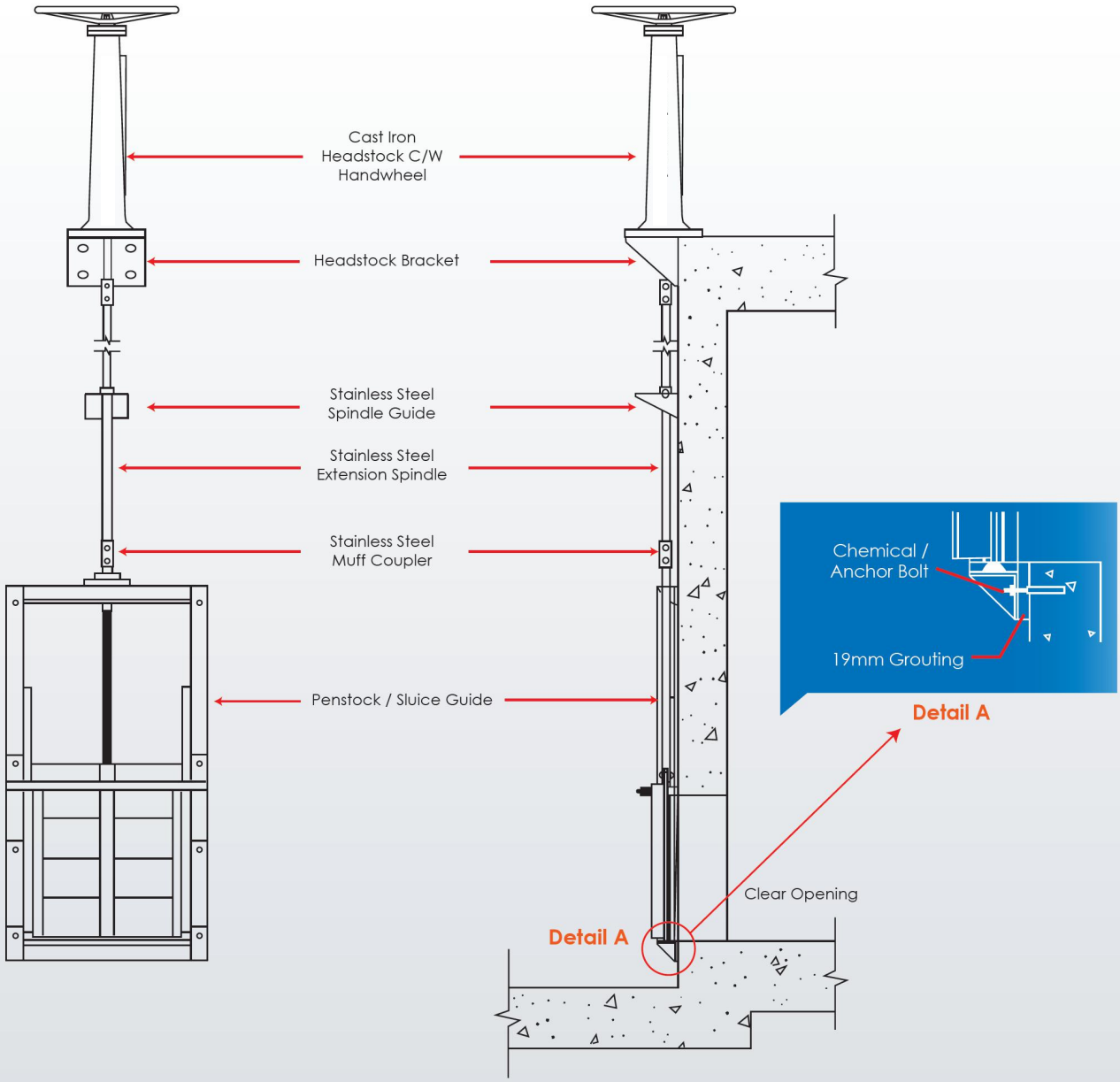


Comply with the surface eveness zone of +/-2mm / linear meter, with a surface finish as accurate as possible.

Dimensions in millimeters (mm)

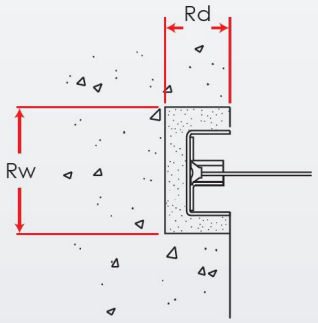
Clear Opening		Overall Size			Bolt Hole Position													Dia. of Spindle	Mass (kg)
W	H	A	B	C	D	E	F	G	I	J	K	L	M	N	P	Q	NOS		
150	150	350	600	750	17	-	65	1	227	1	218	-	-	-	62.5	275	6	25	22
200	200	400	710	860	17	-	70	2	150	1	270	-	-	-	62.5	325	8	25	26
225	225	430	750	900	17	-	70	2	152	1	306	-	-	-	65	355	8	25	28
250	250	450	850	1000	17	-	70	2	175	1	360	-	-	-	62.5	375	8	25	30
300	300	500	880	1030	17	-	70	2	200	1	340	-	-	-	62.5	425	8	25	40
350	350	550	964	1114	17	-	70	2	220	1	374	-	-	-	62.5	475	8	28	50
400	400	600	1125	1275	17	-	70	2	263.5	1	458	-	-	-	62.5	525	8	28	60
450	450	650	1225	1375	17	-	70	2	287.5	1	510	-	-	-	62.5	575	8	28	70
500	500	700	1300	1450	17	-	70	2	315	1	530	-	-	-	62.5	625	8	32	90
600	600	800	1600	1750	17	-	70	3	235	1	675	-	-	-	62.5	725	10	35	100
700	700	900	1780	1930	17	32.5	70	4	211	2	383	1	250	225	62.5	825	16	35	110
750	750	960	1850	2000	17	42.5	80	4	211	2	413	1	270	240	67	884	16	35	120
800	800	1010	1930	2080	17	42.5	80	4	225	2	425	1	287	257	67	934	16	35	120
900	900	1110	2160	2310	17	42.5	80	4	250	2	460	1	320	290	67	1036	16	35	140
1000	1000	1240	2400	2550	17	55	102	5	230	2	485	2	265	235	75	1150	19	35	160

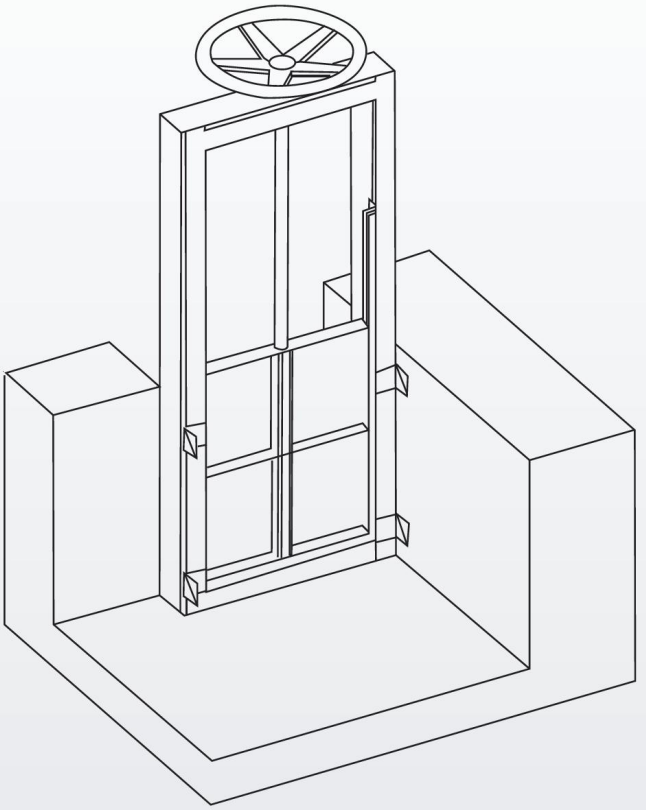

Handwheel rising stem
Handwheel gear box
Handwheel with NON-rising stem


Cast Iron Headstock C/W Handwheel
Headstock Bracket
Stainless Steel Spindle Guide
Stainless Steel Extension Spindle
Stainless Steel Muff Coupler
Penstock / Sluice Guide
Chemical / Anchor Bolt
19mm Grouting
Detail A
Detail A
Clear Opening

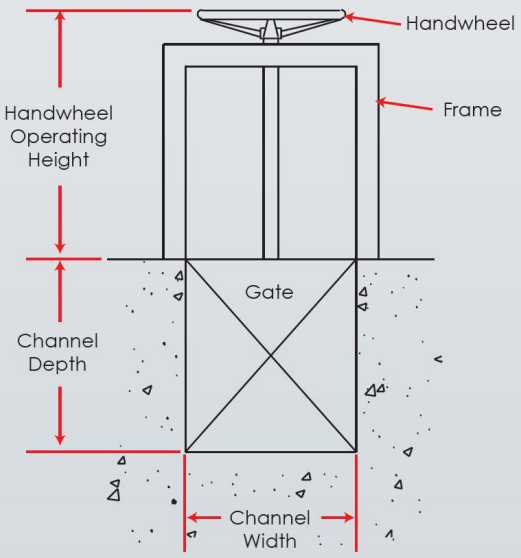
CHANNEL MOUNTED REBATE DIMENSION

Item	Aperture Size	Rw	Rd
1	>1.0 M2	150mm	60mm
2	1.0 M2<>3.0 M2	170mm	65mm
3	3.0 M2 & Above	190mm	70mm

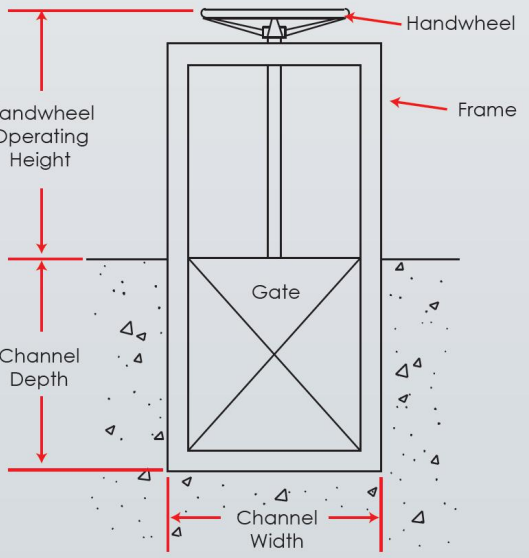




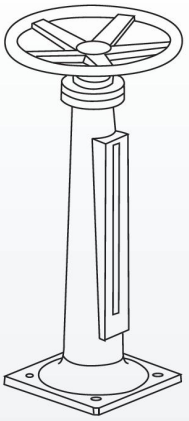
OPTION "A"
Overall width of the slide gate frame equal or less than channel width



OPTION "B"
Channel width equal to "gate" width

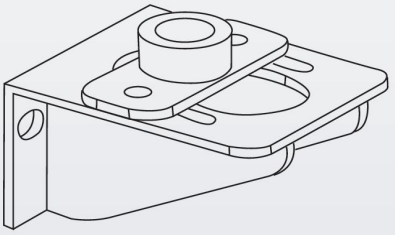


Accessories



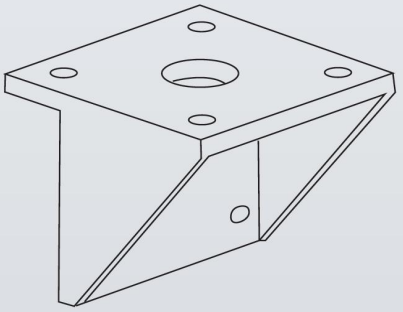
Headstock

Headstock cone comes with variety of formats. Depending on the user's requirement, special custom-designed headstocks or gate opening mechanisms can also be manufactured that including electric actuated, pneumatic / hydraulic actuated, manual geared and direct manual with / without indicator.



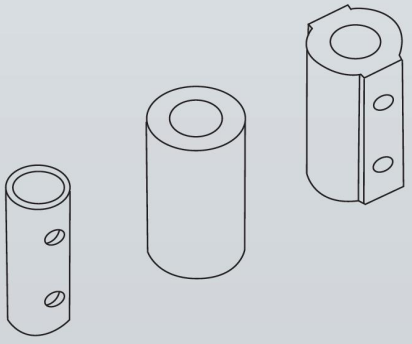
Stem Guides

Stem guides are provided as required to support the stem from buckling. The stem guides are designed as per AWWA/BS7775 Standards. Stem guide brackets are fabricated from 304 stainless steel (316 optional). The stem guide collar is fabricated from 304 stainless steel (316 optional) with an ultra high molecular weight polyethylene (UHMWPE) (bronze optional) bushing.



Headstock Wall Bracket

Headstock wall brackets are used to support headstock or extension spindle. When no concrete structure or suitable floor exists in the operating area. Manufactured in cast iron / mild steel / stainless steel, the brackets are designed to withstand all normal operating loads.



Muff Coupler

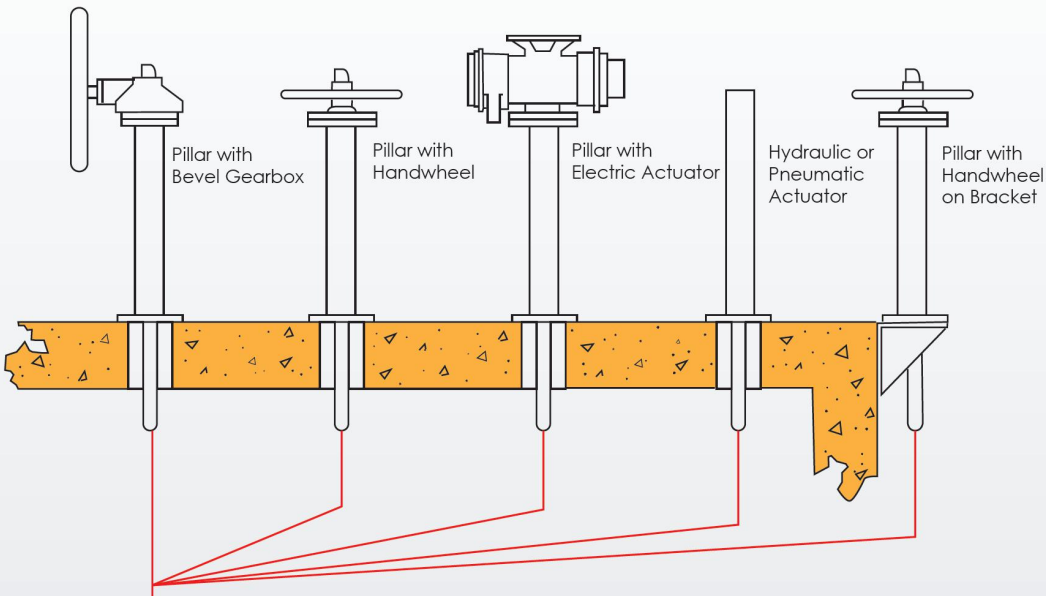
Manufactured in SUS304 / SUS316 / cast iron for joining straight lengths of spindle in-line. For use with axial and torsion loads (rising and non-rising spindle application)

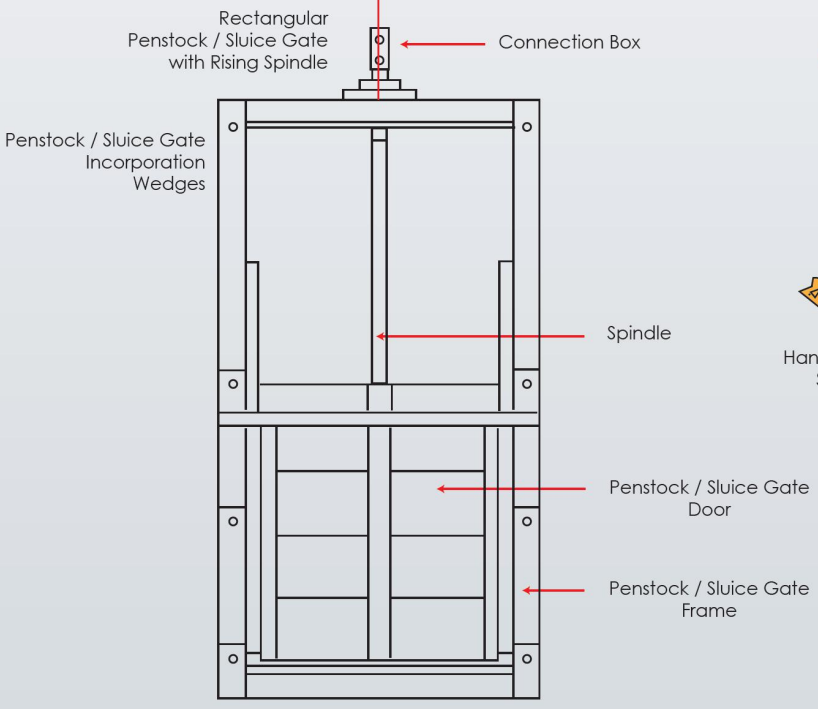
Two type of coupling are available :-
1. Plain muff coupling,
2. Screwed muff coupling.

The use of a particular type of coupling will depend upon the operating duty and/or the specification.

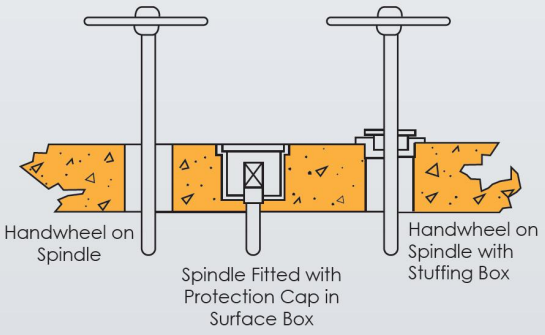
Mode of Operation

There are a number of different modes of operation available, although the standard requirement is either handwheel or protection cap (for Teekey operation).





Other Method of Operation Suitable for Non Rising Spindles



Non-rising spindle type penstocks / sluice gate are designed to accommodate the thrust reaction when operated, however, a rising spindle type penstock generates a remote thrust which must be taken into consideration when choosing a suitable means of operation.