WATERMAN INDUSTRIES, INC.

OPERATION AND MAINTENANCE MANUAL

FOR:

SLIDE GATE

FOR:

BRISBANE CITY COUNCIL
AUSTRALIA

MANUFACTURED BY: WATERMAN INDUSTRIES, INC.
25500 ROAD 204
EXETER, CALIFORNIA 93221
PHONE: (209) 562-4000

REF: WATERMAN JOB# E-6879
WATERMAN QUOTE # WQ95-EE-6053

SERVICE: ARRANGED THROUGH THE FACTORY
PHONE: 209-562-4000
FAX : 209-562-2277
CONTACT:DAN M. PHIPPS

SOLD TO:

VALVEFLO ENG. PTY LTD.
22 JEAYS STREET BOWEN HILLS
BRISBANE 4006 QUEENSLAND
AUSTRALIA

WATERMAN INDUSTRIES, INC.

OPERATION AND MAINTENANCE MANUAL
INDEX

Waterman INDUSTRIES, INC.

FORWARD

The purpose of this manual is to provide information to the engineers, contractors, plant operators and associated personnel involved with the installation, operation and maintenance of equipment supplied by WATERMAN INDUSTRIES, INC. for this project. Although every care is taken in our factory to ensure top quality equipment, we cannot be responsible for damage caused by negligence after shipping. Therefore, described herein are WATERMAN'S recommended methods of handling, storage, installation, adjustment, and initial operation for standard situations to be used in conjunction with the approved installation drawings provided by WATERMAN INDUSTRIES, INC. If proper care and accuracy are exercised in the field when installing our gates, they will operate as designed at maximum efficiency.

Waterman INDUSTRIES, INC.

RECEIVING

CHECK COUNT all parts when you receive shipment. All individually shipped parts or assemblages are listed on the packing list(s). Should a storage exist, notify WATERMAN INDUSTRIES, INC. immediately. We cannot be responsible for any shortages reported more than 30 days after receipt of shipment. Special care should be taken in accounting for and safely storing all bolts, nuts, and small items which are often misplaced at jobsites.

Unless your contract with WATERMAN INDUSTRIES, INC. states otherwise, all equipment is shipped F.O.B. factory. If any equipment has been damaged in transit, the purchaser will be responsible for filing claim with the transportation company. For assistance in filing any claim and/or replacing equipment, please contact WATERMAN INDUSTRIES, INC. directly.

Waterman INDUSTRIES, INC.

HANDLING AND STORAGE

All WATERMAN gates and appurtenances are precision machinery and should be handled accordingly. While all parts are of rugged design, it is never the less possible to warp machined surfaces, stems, etc., through improper storage and handling. To avoid all problems of this nature we recommend the following:

1. Lift gates through stem hole in top of lift nut box on cover only when shipping stops are in place, taking particular care of wedges and seats.
2. Support full length of stems at all times, being sure not to damage threads.
3. Store equipment on an even, clean, dry surface to prevent distortion.
4. Cover all equipment to protect machined surfaces.
5. **DO NOT** stack equipment without protection and proper spacers.
6. Handle lifts as you would any precision machinery.

Waterman INDUSTRIES, INC.

INSTALLATION OF SLIDE GATE TO FACE OF CONCRETE WALL

1. The wall mounted guide frame must be set plumb and straight regardless of the condition of the vertical conncrete wall on which it is to be mounted. The wall may need to be grout faced if it is unduly rough or badly out of plumb. Any small voids between the guide frame and the wall should be filled with a mastic sealant or with grout in an extreme case. The amount of sealing required will depend solely on the accuracy with which the wall is formed or faced. We emphasize that the guide frame is sufficiently flexible that it will follow the contour of the wall if all bolts are pulled tight. If grout used in any of this sealing, it should be of non-shrink type so as to maintain its seal after curing.

1a. Paragraph 1 above applies especially around gate sealing periphery.

2 Secure all anchor bolts in proper position in forms, checking carefully to see that size, projection, perpendicular, and horizontal alignments conform to requirements shown on our installation drawings. EXTREME CARE must be exercised in this initial procedure in that bolts which are improperly set will cause gate warpage and therefore excess leakage between the seating surfaces. DO NOT FORCE GATE ON TO MISALIGNED BOLTS.

Optional method of mounting could be with concrete anchors or studs. Install concrete anchor per manufacturer's recommended procedure, making sure that stud projections are as shown on drawing. Use guide rail as template.

3. The guide frame should be hung loosely on the mounting bolts, tightening each nut a small amount each time until the guide touches the wall initially. The guide should then be checked to ensure that both legs are parallel and plumb. After the wall has been dressed to provide a good mounting surface for the guide frame all bolts should be tightened and the guide frame again checked of straightness.

3a. Paragraph above also applies to extension frame above opening.

Waterman INDUSTRIES, INC.

PROCEDURE FOR INSTALLING RISING STEMS AND STEM GUIDES

1. Stems are normally shipped with thrust nuts, limit nuts and couplings attached if so equipped. These must be removed prior to installation.
2. After the gate has been mounted and shipping stops have been removed, lower short-threaded end of stem through holes in upper ribs of cover into contact with the top of the thrust nut.
3. With trust nut located in gate pocket, thread stem into thrust nut until stem is flush with bottom of nut.
4. Tighten set screws on thrust nut into indents in stem.
5. Mount stem guides in order from bottom up as stem is installed. Do not tighten stem guide assembly bolts, taking care to maintain proper plumb and horizontal orientation.
6. Install stem couplings as required, being sure to install keys. Tighten all set screws, or drive in pins as required.
7. Take care not to bend stems or damage threads during installation. *
8. Thoroughly clean and grease stem threads with heavy duty grease, such as Mobilux grease #2EP or equal. (See maintenance section for equivalent greases.)
9. Check final alignment of stem to be sure it is plumb and does not bind. (This should be checked again after installation of lift mechanism.)

*This is especially true on electric motor operated lifts. Extra care should be taken with stems for these operators.

Waterman INDUSTRIES, INC.

INITIAL OPERATION OF GATES

1. After gate, stem guides, stem, lifting mechanism, and other necessary appurtenances have been installed, check the following prior to operation:

    a. Check all assembly and mounting hardware for proper tightness.

    b. Apply tension to stem and check for proper alignment.

    c. Remove any shipping stops on gates.

    d. Check gate guide grooves, seats and wedges for any foreign matter and clean as necessary.

2. If not done previously, or if gate stem has set some time after installation, thoroughly clean stem threads and lubricate in accordance with stem installation instruction.

3. Open gate slide to fully open position. All lifts are factory lubricated, so there is no need for additional lubrication.

    a. For manually operated lifts, turn handwheel or handcrank in direction noted on handwheel or lift housing.

    b. Electric operators should be initiated per the instruction in the operation manual for this item.

    c. Pressure must be applied to bottom side of cylinder pistons to get gate to rise. This should be done with annually actuated controls, rather than automatic controls, with pressure being applied very slowly and carefully. *

    * On pneumatic operators gate will "jump" out of closed position then begin steady rising movement. There is no way to prevent this.

    Regardless of operator, operation should be easy and unlabored. If not, check for binding or other causes by reviewing previously mentioned installation and start-up procedures. Do not apply any excess force to handwheel or handcranks on operators.

4. Clean all dirt, paint, concrete splatter, or other foreign material from seating surfaces, wedges, flushbottom seal, etc.

WATERMAN INDUSTRIES, INC.

INITIAL OPERATION OF GATES (CONT'D)

5. Grease any and all seating and wedging surfaces with water resistant grease as noted below:

   a. For machined iron or bronze seating or wedging surfaces, grease with Intertol Grease Coating, as manufactured by Koppers, Inc., or equal. *

   * See lubrication chart for equivalent lubricants. NOTE: Some installations may require food grade lubricants due to environmental conditions. If so, use Huskey "Husk-It" Lube-O-Seal or equivalent.

   b. Grease stainless steel seats and wedging surfaces with Never-Seez, manufactured by Never-Seez Corporation or equal. * For best results mix Never-Seez with an equal portion of ten weight oil.

   c. Seating surfaces of aluminum or fiberglass slide gates, including gates with UHMW polyethylene bearing strips require no lubrication.

6. Close gate completely and check for proper closure. See **CAUTION** following:

   a. On all cast iron sliding gates (also applicable to flap gates and shear gates) check seat clearance with .004" feeler gauge. Best results can be obtained by checking seat faces from back side of gate when installation permits. Adjust any wedges as necessary per applicable wedge adjustment procedures following, until .004" feeler gauge cannot be inserted between seats.

   b. On fabricated slide gates, check to see that slide fits flat against seating surface. Check to be sure frame is not warped.

CAUTION: Be extremely careful when closing gate so as not to apply excessive compressive force on stem. The stem under a compressive load is the weakest link in the system and can buckle (bow) if excessive force is applied to operator. Limit nuts should be in place if applicable.

7. Set any limit nuts or position indicators as required per applicable instructions.

8. Cycle gates with operators to ensure proper installation, alignment, and operation.

Waterman INDUSTRIES, INC.

PROCEDURE FOR ADJUSTING SIDE PRESSURE BARS ON SENTINEL SLIDE GATES (FLATBACK MODEL SHOWN, OTHER MODELS SIMILAR)

A. To increase seat pressure:

1. Loosen adjusting stud lock nut. (B)
2. Tighten outer nut (A) slightly until proper seating is attained.
3. Tighten locking nut. (B)

B. To decrease seat pressure:

1. Loosen nut. (A)
2. Tighten nut (B) slightly until proper seating is attained.
3. Tighten nut. (A)

CHECK SEAT CLEARANCE AROUND FULL PERIPHERY. A .002" FEELER GAUGE SHOULD NOT PASS BETWEEN SEATS OR BETWEEN GATE BOTTOM AND BOTTOM SEAL. READJUST AS NECESSARY.

Waterman INDUSTRIES, INC.

PROCEDURE FOR ADJUSTING TOP WEDGE ON SENTINEL SLIDE GATES

Check seat clearance with .002" feeler gauge. If seats allow insertion of gauge follow Procedure A. If seats are binding, follow Procedure B.

A. To increase seat pressure:

1. Loosen locking nut. (A).
2. Tighten adjusting nut (B) slightly until proper seating is attained.
3. Tighten locking nut. (A)

B. To decrease seating pressure:

1. Loosen nut. (B)
2. Tighten nut (A) slightly until proper seating is attained.
3. Tighten nut . (B)

WEDGE SHOULD NOT BE ADJUSTED IN SO FAR AS TO PREVENT THE GATE BOTTOM FROM DEPRESSING THE BOTTOM SEAL. TO DO SO COULD CAUSE GATE DAMAGE.

Waterman INDUSTRIES, INC.

SLIDE GATE TROUBLE SHOOTING GUIDE

The installation of slide gates requires a great deal of care to prevent damage to the gates and distortion of the frame. Slide gates are an economical choice for open channel flow applications where tight sealing is not necessary. There is no standard allowable leakage specification for slide gates and some leakage is to be expected. However, the following trouble-shooting tips may help to reduce the leakage and improve the performance of the gate.

SYMPTOM: Leakage at bottom of gate.
CAUSE: Concrete, asphalt or debris under Q-seal on stop bar or in sill slot of a standard invert gate.
REMEDY: Remove foreign material. Check seal for permanent damage and possible replacement.

SYMPTOM: Leakage at sides of gate.
CAUSE: Concrete or debris wedged between disc and guide.
REMEDY: Remove foreign material.

SYMPTOM: Leakage at sides or bottom of gate.
CAUSE: Generally occurs on gates distorted by bolting to uneven concrete walls without the use of grout.
REMEDY: Loosen anchor bolt nuts, shim gate to true plane and fill in void between guide and wall with grout.

SYMPTOM: Leakage at top of gate.
CAUSE: Excessive hoist effort at closed position deflecting the top of disc outward.
REMEDY: Limit hoist input to 40# pull. Set stop collar on stem as described on page 3.6.

SYMPTOM: Leakage at invert of gate used as downward opening weir.
CAUSE: "J" seal may be out of adjustment across invert.
REMEDY: Loosen seal retainer bolts and force seal out into contact with disc. Tighten bolts.

SYMPTOM: Excessive effort to operate.
CAUSE: Dry stem threads or grit laden grease in threads.
REMEDY: Clean threads and grease with extreme pressure lubricant.

SYMPTOM: Excessive effort to operate.
CAUSE: May occur on long weirs with multistem application pulling the disc unevenly.
REMEDY: Disconnect couplings in interconnecting shafts. Rote individual hoist head pinion shafts until disc top is level then reassemble shaft couplings.

WATERMAN INDUSTRIES, INC.

MAINTENANCE OF GATES OR VALVES

Other than periodic cleaning as required to maintain smooth operation or painting to maintain appearance, no maintenance is required on the following listed equipment:

SLIDE GATE

MAINTENANCE OF OPERATING STEMS

1. It is critical that operating stem be periodically cleaned and greased. Even though some environmental conditions are harsher that others and the use of pipe covers will protect stems, they still need to be cleaned and greased with Mobilux grease #2EP or equal * at least once every six (6) months. More often if the grease becomes dirty.

   *See lubrication chart for equivalent lubricants. Page 6.10

2 **WARNING!!!** Non-rising stem gates generally require a special maintenance program. If the level of the fluid rises above the top of the opening, the threads on the stem may become coated with grit. Under this condition, frequent use of the gate will wear the threads in the thrust nut creating a dangerous and possible damaging situation. Therefore the following maintenance procedure should be followed:

a. If practical, the stem should be kept clean and greased.

b. If the gate is cycled on the average of once a week, the thrust nut should be removed every year and inspected for wear. (More frequently after the first signs of wear or if the frequency of operation is greater or the conditions are severe.)

Waterman INDUSTRIES, INC.

LUBRICATION CROSS REFERENCE CHART

STEMS

LUBRICANT	MANUFACTURER
Molykote Type G	Alpha Molykote Co.
Valvoline Wal-Lith #2EP	Ashland Oil & Refining Co.
No. 52 Grease	Atlantic Richfield (ARCO)
Dura Lith #2	Chevron Oil Co.
Lubriplate #630-2	Fiske Bros. Refining Co.
Gulf Crown EP2	Gulf Oil Co.
Mobilux Grease #2EP	Mobil Oil Co.
Mobil Grease #4	Mobil Oil Co.
Alvania #AEP	Shell Oil Co.
MultiFak #2EP	Texaco Oil Co.
Tycol Azepro #11	Tidewater Oil Co.

LIFTS (also Aux. Gearboxes and Universal Couplings)

LUBRICANT	MANUFACTURER
Lubriplate Type 630-AA	Fiske Brothers Refining Co.
Mobilplex #45	Mobil Oil Co.
Mobil Grease Special	Mobil Oil Co.
Zenaplex II	Penwalt Keystone Co.

MACHINED IRON AND BRONZE SURFACES SEATS AND WEDGES

LUBRICANT	MANUFACTURER
NO-OX-ID	W.R. Grace, Inc. (Dearborn Chemical Division)
Intertol Grease Coating	Koppers, Inc.

STAINLESS STEEL SURFACES (Seats and Wedges)

Never-Seez	Never-Seez Corp.

Waterman INDUSTRIES, INC.

SPECIAL TOOLS

The installation and adjustments of Waterman gates and equipment requires no special tools and can be accomplished using a minimum of the following standard tools:

10" or 12" Crescent Wrench (2 required)

1/2" or 5/8" Allen Wrench

.004" Feeler Gauge

While these are the minimum tools required, installation time can be greatly decreased with such standard tools as socket wrenches and box wrenches.

If electric motor operated lifts, or cylinder operators are supplied, see separate manufacturer's Operation and Maintenance manual for special tools.

Waterman INDUSTRIES, INC.

SPARE PARTS & PARTS REPLACEMENT

All products supplied by Waterman Industries, Inc. are designed to last indefinitely if properly maintained and operated, therefore, no spare parts are recommended.

Should it become necessary to replace a part, refer to the enclosed installation or detail drawings for the appropriate part number or size. Replacements may be ordered direct from the factory or through your local representative. Always be prepared to give the Waterman Job number and installation drawing number. (see "Field Service", Pg. 8.0).

(If certain spare parts were required by project specifications, they will be listed on sheet 7.1, under "Spare Parts Addendum").

Replacement parts for "vendor supplied" products, i.e. motorized operators, hydraulic cylinders, etc. should be ordered as recommended in separate manufacturers O & M data located elsewhere in this manual.

WATERMAN INDUSTRIES, INC.

FIELD SERVICE

When trouble develops either in the installation, operation, or performance of the equipment, the installation manual and drawings should be checked to determine if the equipment has been installed properly. If proper performance and operation cannot be obtained, and assistance from the factory is desired, please contact the factory and **REFERENCE THE JOB NUMBER** **E-6879** , so that we may locate the project records and better assist you. Our company may be contacted at:

WATERMAN INDUSTRIES, INC
P.O. BOX 458
EXETER, CALIFORNIA 93221

PHONE: (209) 562-4000
FAX: (209) 562-2277

Arrangements may be made to send a representative to the jobsite if this is required. If the equipment is faulty in workmanship or material, the necessary repairs or adjustments will be made by the factory at no cost to the purchaser. If, however, the problem is due to faulty installation or adjustment, the cost of the field service will be charged to the purchaser.

If repairs are made in the field by the purchaser or authorized by the purchaser, backcharges for these repairs will **NOT** be accepted by the company unless the company has been notified prior to the incurring of these costs and has accepted the responsibility for these repairs. **ANY UNAUTHORIZED REPAIRS OR CHANGES TO EQUIPMENT WILL AUTOMATICALLY VOID WARRANTY.**

The company will not be liable for contingent costs or costs of delay due to the faulty equipment and the repairs thereof.

FIELD SERVICE CHARGES

Field service charges begin from the time of departure until the return of the service man and include a daily rate plus travel and subsistence expenses. Premium day and hourly rates will be charged on Saturdays, Sundays, and Holidays and for time spent before 6 a.m. or after 5 p.m. or over eight (8) hours per day. A schedule of Field Service charges can be obtained by calling Waterman Industries, Inc.

If service personnel are required for equipment produced by another manufacturer (i.e. for electric Motor operator), that manufacturer's standard service charges will prevail.

WATERMAN INDUSTRIES, INC.

LIMITED WARRANTY

Every effort is made to assure the highest quality merchandise, free of any defects, which is warranted against defects in material and workmanship when used in accordance with the standards and/or instructions recommended by this catalog or other written quotation of this firm, but no warranty, expressed or implied, is made other than as follows:

Products manufactured by Waterman Industries, Inc. are warranted against defects in materials and workmanship for (18) eighteen months after shipment or (12) twelve months after installation, whichever occurs first and such warranty can only be enforced by the original consumer purchaser. During the warranty period, the product will be repaired or replaced at Waterman Industries, Inc.'s option at no cost to the purchaser.

Measure of damage is the price of defective material only. No charges for labor or expense required to remove or replace defective material or for any consequential damages will be allowed. Warranty excludes damage due to misuse, neglect or misapplication.

Any implied warranty of merchantability of fitness is limited to the duration of this written warranty. To the extent allowed by law, neither Waterman Industries, Inc. nor its selling dealer or agent shall have any responsibility for less of use of the product, loss of time, commercial loss or consequential damages.

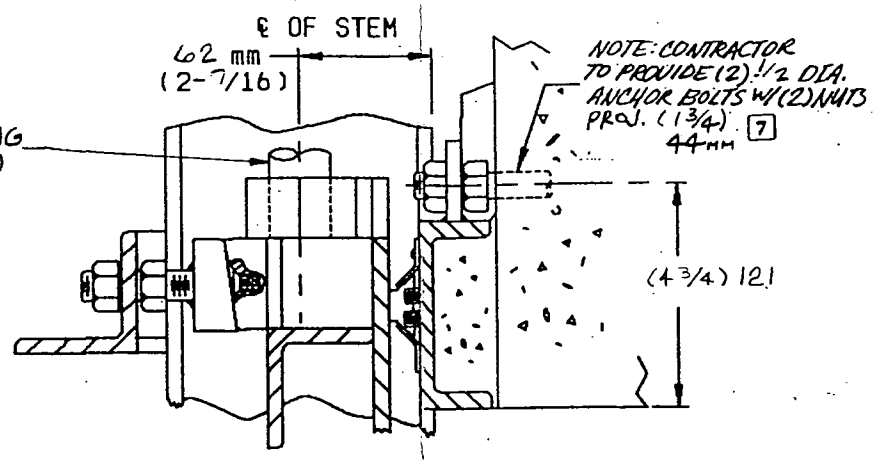
In the event a warranted product is believed defective, notify your Waterman Sales Office and furnish date purchased, copy of invoice or shipping documents. **DO NOT** attempt repairs or returns without authorization from Waterman Industries, Inc. Unauthorized repairs may void warranty, and costs for unauthorized repairs performed or replacement parts purchased within the warranty period will not be reimbursed. A return authorization number must be obtained from Waterman Industries, Inc. prior to returning any merchandise.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of consequential damages, therefore the above limitation may not apply to you.

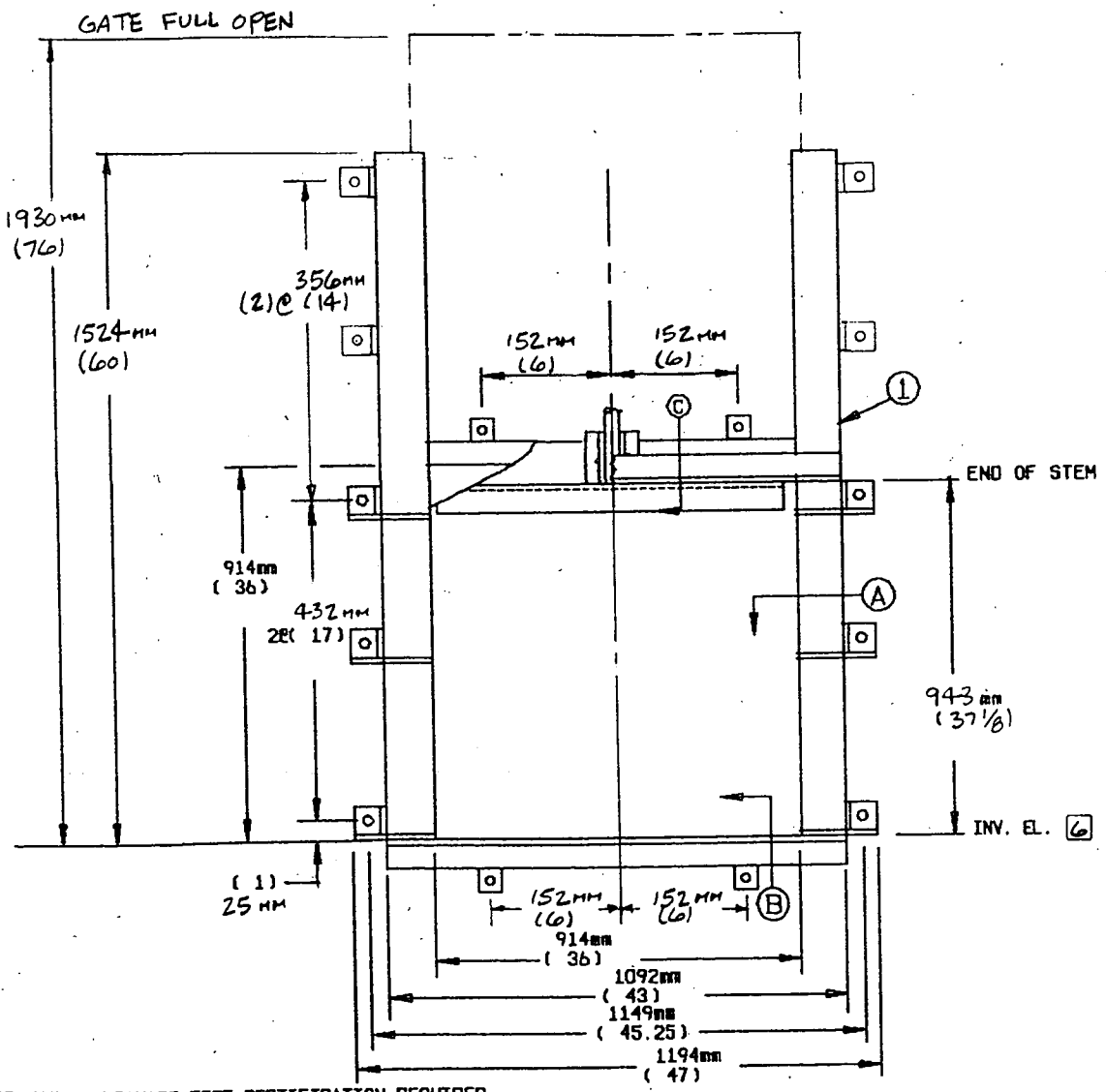
This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

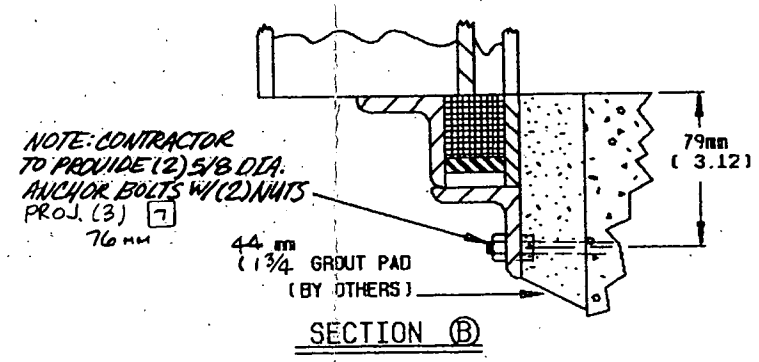
It is the policy of this company to encourage the settlement of disputes in an informal manner, and if such disputes arise over a warranty claim an informal dispute settlement mechanism can be agreed upon at that time.

NOTE: LIFT & STEM (BY OTHERS) NOT SHOWN

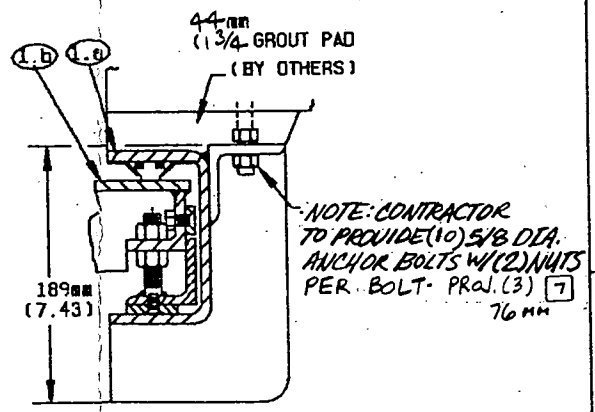


SECTION Ⓒ





SECTION Ⓑ



SECTION Ⓐ

MATERIAL KEY	FINISH KEY	PAINT KEY
1. CAST IRON: ASTM A-126 CL. B 9A. STN. STEEL: ASTM A-276 TY. 304 9B. STN. STEEL: ASTM A-276 TY. 316L 13. NEOPRENE RUBBER: ASTM D-2000 15A. STN. STL. HDW.: ASTM F-593 & 594 TYPE 304 (GRADE B & B8) 21. UHMW POLYETHYLENE 27. SILICON BRONZE: ASTM B-98 35. P.V.C.	1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY	

ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/ GATE	TOTAL QTY
1.a FRAME ASSEMBLY	–	–		1	1
FRAME WELDMENT	9B	2	103830	1	
SEAL & SEAT	13,21	2	101761 (E1723), 103841	A/R	
RETAINER BAR	9B	2,3	103717	A/R	
BOTTOM SEAL	13	2	104696	1	
ASSEMBLY HARDWARE	15A	2	---	A/R	
TOP WEDGE ASSEMBLY	9B,35	2	104450	1	
1.b SLIDE ASSEMBLY					
SLIDE WELDMENT	9B	2	104181	1	
PRESSURE BAR ASSEMBLY	9B,21	2	103834,103832	2	
SIDE RUB BAR	21	2	103770	4	
ASSEMBLY HARDWARE	15A	2	---	A/R	
TOP WEDGE SEAT	21	2	104446	2	

NOTES:
1. (GATE CAPACITY) MAX. SEATING HD.= 36 FT.: MAX UNSEATING HD.= 36 FT.
2. OPERATING HEAD FROM ℄: SEATING= 36 FT.: UNSEATING= 36 FT. [6]
3.
4.
5.

[6] CONTRACTOR TO VERIFY OR SUPPLY.
[7] DIMENSION INCLUDES ¾INCH FOR GROUT PAD.
9 DIMENSIONS IN MILLIMETERS WITH INCHES IN PARENTHESIS. (UNLESS SHOWN OTHERWISE)

(1) GATE REQ'D

SHOP NOTE : LEAKAGE TEST CERTIFICATION REQUIRED

REF: BRISBANE CITY COUNCIL
AUSTRALIA

914mm X 914mm (36 X 36) WATERMAN MODEL

SENTINEL III – A

STAINLESS STEEL SLIDE GATE

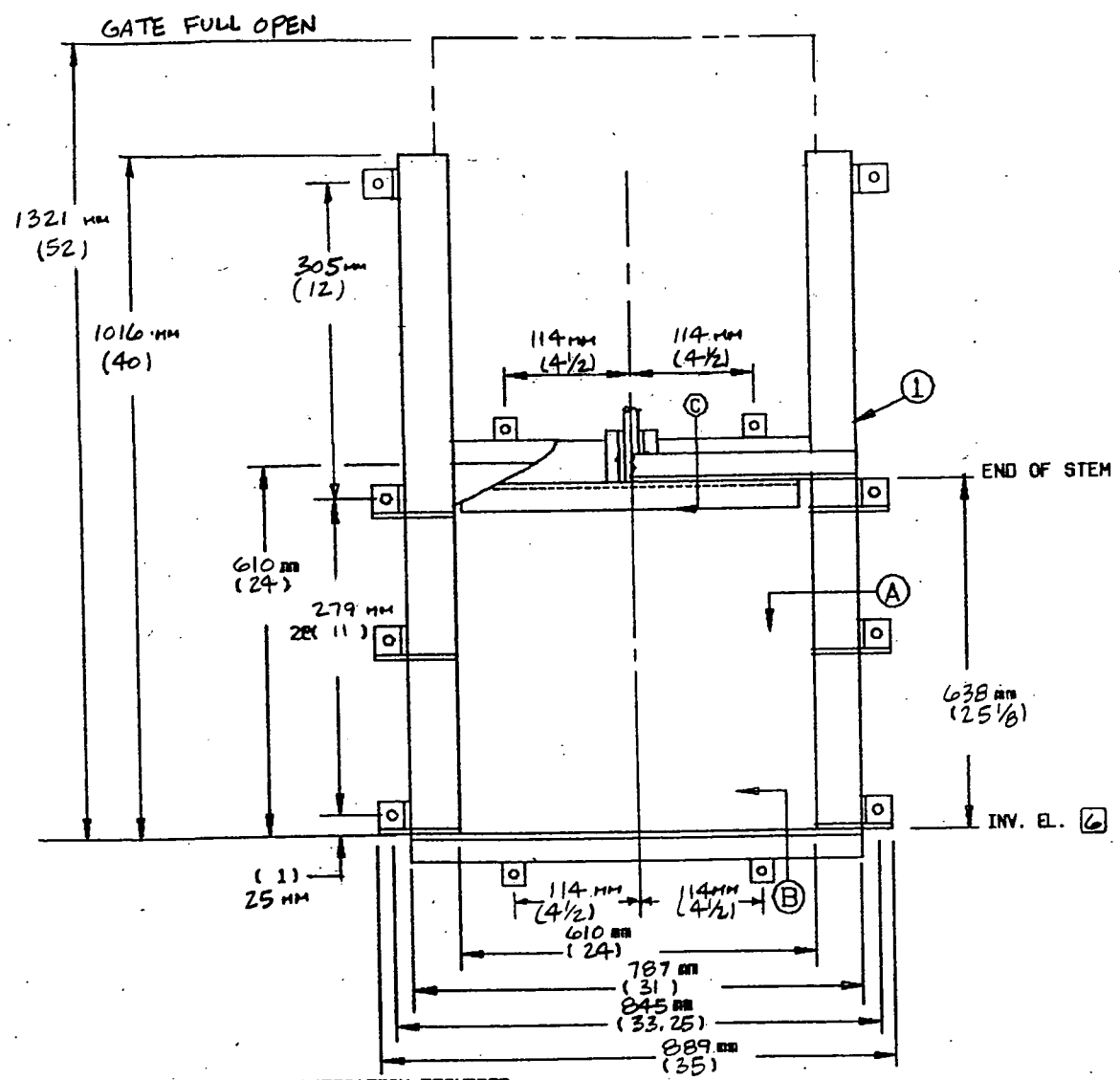
FOR: VALVEFLO ENG PTY LTD
22 JEAYS STREET BOWEN HILLS
BRISBANE 4006 QUEENSLAND
AUSTRALIA

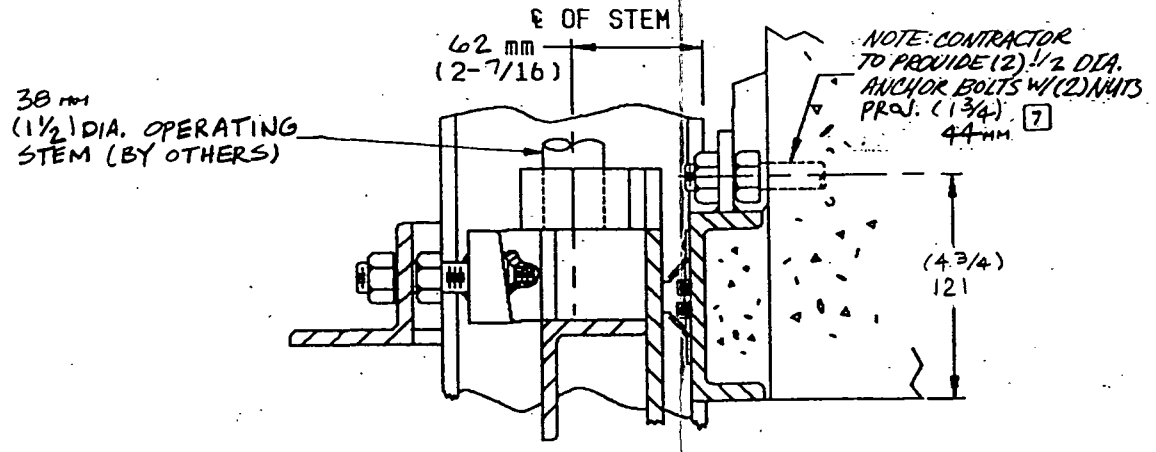
P.O. VQ95334301

REV.NO.	DATE	BY	JOB NO.	PROJECT MANAGER
			E-6879-9	DAN
REV.NO.	DATE	BY	QUOTE NO.	QUOTE ITEM NO.
			WQ95-E-6053	1
REV.NO.	DATE	BY	DRAWN BY	CHECKED BY
			SH	G.M.
REV.NO.	DATE	BY	SCALE	DATE
			NONE	03-03-1995
REV.NO.	DATE	BY	DRAWING NO.	
			RB-95-0335	

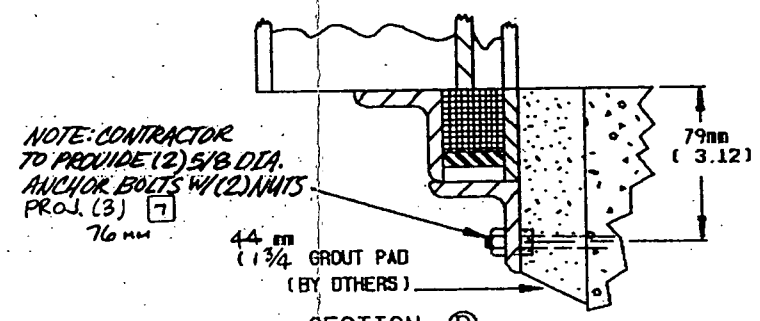
WATERMAN INDUSTRIES INC. EXETER, CALIFORNIA 93221

NOTE: LIFT & STEM (BY OTHERS) NOT SHOWN

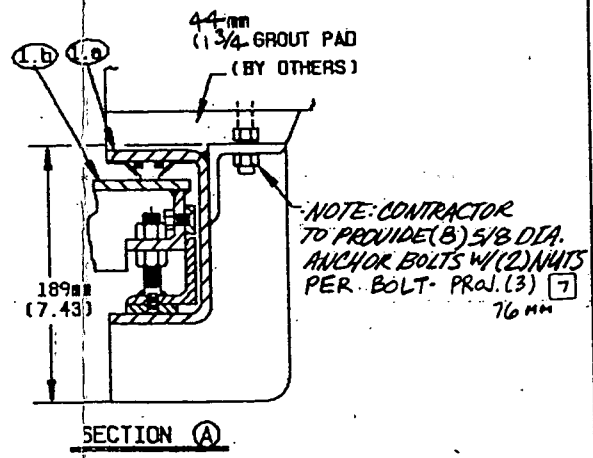




SECTION Ⓒ



SECTION Ⓑ



SECTION Ⓐ

MATERIAL KEY	FINISH KEY	PAINT KEY
1. CAST IRON: ASTM A-126 CL. B 9A. STN. STEEL: ASTM A-276 TY. 304 90. STN. STEEL: ASTM A-276 TY. 316L 13. NEOPRENE RUBBER: ASTM D-2000 15A. STN. STL. HDW.: ASTM F-593 & 594 TYPE 304 (GRADE B & B8) 21. UHMW POLYETHYLENE 27. SILICON BRONZE: ASTM B-98 35. P.V.C.	1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY	

ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/ GATE	TOTAL QTY
1.a FRAME ASSEMBLY	–	–		1	1
FRAME WELDMENT	90	2		1	
SEAL & SEAT	13,21	2	101761 (E1723), 103841	A/R	
RETAINER BAR	90	2,3	103717	A/R	
BOTTOM SEAL	13	2	104696	1	
ASSEMBLY HARDWARE	15A	2	—	A/R	
TOP WEDGE ASSEMBLY	90,35	2	104450	1	
1.b SLIDE ASSEMBLY					
SLIDE WELDMENT	90	2		1	
PRESSURE BAR ASSEMBLY	90,21	2	103835, 103833	2	
SIDE RUB BAR	21	2	103770	4	
ASSEMBLY HARDWARE	15A	2	—	A/R	
TOP WEDGE SEAT	21	2	104446	2	

NOTES:
1. (GATE CAPACITY) MAX. SEATING HD.= 36 FT.: MAX UNSEATING HD.= 36 FT.
2. OPERATING HEAD FROM ℄ SEATING= 36 FT.: UNSEATING= 36 FT. 6
3.
4.
5.
6 CONTRACTOR TO VERIFY OR SUPPLY.
7 DIMENSION INCLUDES ¼INCH FOR GROUT PAD.
9 DIMENSIONS IN MILLIMETERS WITH INCHES IN PARENTHESIS. (UNLESS SHOWN OTHERWISE)

(1) GATE REQ'D

SHOP NOTE : LEAKAGE TEST CERTIFICATION REQUIRED

REF: BRISBANE CITY COUNCIL
AUSTRALIA

610 mm X 610 mm (24 X 24) WATERMAN MODEL
SENTINEL III – A
STAINLESS STEEL SLIDE GATE

FOR: VALVEFLO ENG PTY LTD
22 JEAYS STREET BOWEN HILLS
BRISBANE 4006 QUEENSLAND
AUSTRALIA

P.O. VQ95334301

REV.NO.	DATE	BY	JOB NO.	PROJECT MANAGER
			E-6879-9	DAN
REV.NO.	DATE	BY	QUOTE NO.	QUOTE ITEM NO.
			WQ95-E-6053	2
REV.NO.	DATE	BY	DRAWN BY	CHECKED BY
			SH	G.M.
REV.NO.	DATE	BY	SCALE	DATE
			NONE	03-03-1995
REV.NO.	DATE	BY	DRAWING NO.	
			RB-95-0336	

WATERMAN INDUSTRIES INC. EXETER, CALIFORNIA 93221