INSTRUCTION MANUAL

DECKERS

(GRAVITY THICKENERS)

MODEL 48" x 180"

CUSTOMER SNOWFLAKE P&P DIV.

P.O. E-1621-S

~~PROJECT~~ CONTRACT No. 1886

EQUIPMENT NOS. 192-1253 & 192-1254

HYMAC G-17423

MACHINE NOS. 4632

INSTRUCTION MANUAL

DECKERS

INTRODUCTION

A decker is a type of stock thickener used where high volumes and moderate consistency change (1% to 6% is typical) are required. It consists of a wire mesh covered cylinder (mould) rotating in a vat of stock. Level differences between the inside and outside of the mould induce a drainage of water from the stock. Stock is fed into one side of the vat and passes under the mould, forming a mat on the wire. This mat is picked off by a rubber covered (couch) roll and sliced off by a (doctor) blade running the length of the roll. The thickened stock so removed crepes over the doctor blade and falls from the apron into a discharge chute. White water drained into the cylinder mould passes through the end of the decker and out through a pipe.

Hymac deckers (gravity thickeners) are designated by diameter and length of cylinder mould, e.g. 48" x 131". In this manual, the following definitions are used :-

Inlet : where thin stock enters the machine

Outlet : where white water is removed

Discharge : exit for thickened stock

Drawings are supplied separately for every decker: these should be referred to when reading this manual.

INSTRUCTION MANUAL

DECKERS

OPERATION - General

Because the operation of a decker depends on level differences, the primary control is on the white water outlet. This control is best accomplished by an adjustable weir box attached to the machine. Secondary controls are Couch Roll nip pressure and overflow ports. Low freeness stocks (e.g. groundwood) can usually be run without a weir as the level difference required for capacity is nearly the diameter of the mould. Freer stocks require the weir to maintain a level difference (8-20 inches).

INSTRUCTION MANUAL

DECKERS

OPERATION - Start-up

1. Clean the vat of all foreign material. Check packing glands, bearing grease and tightness of the deckle strap. Ensure the gearbox has oil.

2. Hose down the deckle straps to wet them. Caution - never run a cylinder mould dry, it will burn out the deckle straps.

3. Start the cylinder drive and check rotation. (Trace the mat flow on the cylinder over the couch roll and off the doctor to determine correct rotation.) Wrong rotation does no harm, it just doesn't work. Check shower and shower drive for oil and correct operation.

4. Set adjustable stops on couch roll arms so that couch roll clears the cylinder or at worst touches it only lightly. Adjust spring tension to counter balance couch roll at this point.

5. Set adjusting screw on doctor counter balance weights sufficiently to allow doctor to bear evenly on couch roll without excessive pressure.

6. Close the drain, set the weir to maximum. Flood the vat if possible; if not, keep a hose on the deckle strap.

7. Start shower drive, shower, and cylinder drive.

8. Commence feeding stock to the inlet. Adjust the weir to keep the vat level 5 to 7 inches from the top. A mat will form on the cylinder. When it is thick enough, the couch roll will pick it up and discharge it.

9. Open the overflow ports on each end to allow a small flow to wash stock down the discharge chute. Take care not to allow the vat level to fall too low; as this will plug the vat and require a cleanout.

10. To shut down, try to thin out the stock coming to the inlet. This will prevent stock being drained to sewer. Once thin, the inlet flow can be shut off entirely. For temporary halts, simply stop the stock flow, and restart it at will. For longer ones, thin the stock as described, then shut down the drive and drain the vat.

DECKERS

OPERATION - Factors affecting performance

Performance is measured by discharge consistency (DC) and production (TPD). It is affected by the following factors :-

1. Freeness:	The higher the freeness the better the performance, both TPD and DC.
2. Inlet Consistency:	Affects mostly the TPD, the higher the better
3. Type of stock:	Fillers and particles clog the wires lowering both TPD and DC.
	Performance on virgin fibres will be better than recycled ones
	Performance on Chemical Pulp will be better than groundwood.
4. Differential head:	Low differential will give higher TPD at lower DC High " " " lower " " higher "
5. Speed of Cylinder	If low decreases TPD, increases DC If high increases " decreases "
6. Air or foam:	Decreases DC
7. Stock level in vat:	Low level decreases TPD High " " DC
8. Temperature:	Performance increases slightly

OPERATION - Trouble shooting

Sympton	Cause	Cure
1. No mat, vat plugs	Differential too high	Raise weir
2.	Inlet consistency high	Raise weir
3. No mat, vat overflows	Wire clogged	Clean with HP hose
4.	Wire scaled	Soak in Muriatic acid
5.	Differential too low	Lower weir
6. Mat intermittent DC ok	Low input flow	Not necessary
7. " " DC low	Low input flow	Lower weir

INSTRUCTION MANUAL

DECKERS

MAINTENANCE - General

Deckles:

Keep these just tight enough to seal. This means finger tight on the take-up screws. To replace, remove the screws or rivets from the keeper plate. Mark and punch holes in the new deckle and re-fasten to the keeper. When re-installing, make sure the spring tensioner just takes up the slack.

Bearings:

These will require lubrication at regular intervals of 3 months. If bearings are running hot, stop and drain the decker. Pull the bearing caps for inspection. If there has been grease churning, scoop some out. If the bearings are worn or broken they should be replaced. Bearings can be replaced with the mould in place if done carefully.

Packings:

See the general assembly drawing for replacement packings. These should never be set up tight as the stock level is normally below this level.

Mould wires:

Inspect weekly for tears. Small ones can be silver soldered. See the sheet on replacing wires for more information.

Drives:

See Manufacturer's sheets for maintenance instructions.

INSTRUCTION MANUAL

DECKERS

MAINTENANCE - Removal of Cylinder Mould

1. Remove all auxiliary equipment from above the decker.
2. Remove the apron attached to the couch roll shaft.
3. Sling under each end of the couch roll and take up the slack.
4. Unbolt the balance arm and spring tensioner.
5. Lift the couch roll/doctor assembly as a unit.
6. Remove the shower pipe.
7. Remove Deckle Strap.
8. Unfasten end plates and slide them clear of the bolts.
9. Remove the pillow block mounting bolts; disconnect drive coupling.
10. Sling under the shafts and lift the mould clear of the vat.
11. Set the mould on horses such that the shaft will bear the weight. This is done to protect the wire coverings and perforated deck.
12. Re-assembly is the reverse of these steps.

MAINTENANCE - Replacement of Packing Sleeves

1. Remove cylinder mould.
2. Block the mould carefully under the end spiders, using cushions to protect the wires.
2.
3. Remove bearings.
4. Cut or grind away sealant holding sleeve flange to pipe; apply to heat to sleeve to loosen it. If sleeve still sticks, use a hacksaw to cut a spiral slot in the sleeve, releasing it.
5. Clean the shaft.
6. Heat replacement sleeve in oil to 350°F approx. Use a pair of tongs to grip the sleeve and slide it on the shaft until the flange rests against the pipe end. Do this quickly or the sleeve may stick to the shaft before it is in proper position.
7. Wash off oil and apply a sealant to the flange joint.
8. Re-install cylinder mould.

INSTRUCTION MANUAL

DECKERS

MAINTENANCE - Removal of Cylinder Mould Wire

1. Remove the mould, placing the stub shafts on horses so the mould can be turned.
2. Unscrew the clamp rings from each end of the cylinder.
3. Remove the facing wire by snipping axially.
4. Remove backing wire by melting the solder in the seams.
5. Clean any solder left on the perforated shell.
6. Inspect shell for dents and cracks.
7. To replace wire see special sheet devoted to the subject.

MAINTENANCE - Trouble Shooting

Symptom	Cause	Cure
1. Deckles burning out	Too tight	Set up screws finger tight
2. " " "	Improper decker material	Use specified deckle straps
3. Frequent packing changes	Too tight	Loosen
4. Frequent wire changes	couch pressure too high	re-adjust
5. Wire seams not straight	couch roll	this is normal
6. Wire folds over at seam	wires soldered to deck	Re-solder
7. Tear in wire	foreign object	Re-solder or patch
8. Grooves in couch roll	doctor clearance low or high	Re-adjust, inspect more frequently.

INSTRUCTION MANUAL

DECKERS

SPARE PARTS

Refer to drawing supplied with order

2 - Spare wires. Specify mesh and "(πD + 2") circumference x (L + 4) or as specified on assembly drawing.

2 - Shaft sleeves

2 - Bearings

1 - Set packing

1 - Set shower nozzles

1 - Set of Drive spares (see Manufacturer's instructions)

1 - Doctor

1 - Deckle Strap

RSD:IIJH

REPLACEMENT OF WIRE - Metallic Mesh

Brazing (Silver Soldering, Longitudinal Seams

Wrap the wire mesh on the cylinder mould and straighten and centre carefully. Place the 36" wide canvas band clamp on one end & tighten. Place holding straps around the mould over each spider except those covered by the canvas clamp, working from the end with the canvas band clamp. With the wire mesh thus firmly held, fit and trim the wire to correct size on that portion held by the canvas band clamp. Do not attempt to trim the whole length at once.

An interlocking (or "scrambled") seam is used. In this type of seam a number of cross wires are removed and the circumferential wires are cut long so that they overlap or interlock. On 10 mesh backing wires, 2 cross wires are removed from each side. On 40 mesh and 60 mesh facing wires 3 cross wires are removed. This provides a seam 3/16" to 1/4" wide.

After trimming the wire mesh, the interlocking ends are carefully pressed into place. Apply Handy Flux and braze. For the 10 mesh wire use the #3 tip with a small neutral flame. For the 40 and 60 mesh use the #1 tip. Care must be used to keep from overheating the wires ahead of the joint. Care must also be taken to see that the interlocking ends are pressed down so that the seam will be as flat as possible.

When the seam has been completed up to the first spider, or approximately 30", remove the canvas band clamp and place it between the 1st and 2nd spiders. Repeat the same procedure for the full length.

The flux is highly corrosive and, after the joint is completed should be neutralized with a mild Alkaline bath such as 5-10% washing soda solution which may be swabbed on with a rag. After neutralizing, rinse thoroughly with water.

The backing and facing wire seams should be located diametrically opposite each other. Do not solder wires together or wires to cylinder.

After completing the whole seam, inspect carefully and touch up rough spots with a fine file.

Fastening Ends of Wires

After the longitudinal seam is complete trim the wires to approximately 1" longer than the cylinder mould. Cut V-notches where the clamp bolts occur, fold wire around end of cylinder mould and clamp.

Where a single corduroy type of wire is used, it is treated in the same manner as the facing wire.

Equipment:

1 - 36" Canvas Band Clamp (for tightening)
3 - Narrow Canvas Straps (for holding)
1 - pr. straight scissors-Wiss #20 & 1 pr. Bent Scissors-Lamplough #27 1/2
1 - or 4.1/2" Jewellers precision cutting pliers-Krauter #31
1 - soldering torch-Schmidth for Oxyacetyline
-Hoke #71 NA for Oxy-Natural Gas complete with tips 1-4

MATERIAL

Easy-Flo or Brazing Allow 1/32 dia. (Silver Solder); Handy-flux.

INSTRUCTION MANUAL

DECKERS

INSTALLATION

Deckers are shipped partly dis-assembled on skids. The mould is installed and blocked to prevent movement. Pillow blocks are factory lubricated. The couch roll and related parts are boxed separately. The gearbox will be skidded and usually contains no oil.

1. Lower decker onto its foundation bolts, shimming to level.

2. Unblock the mould and check the alignment of the deckle rings, stuffing box, etc. If the vat is twisted, the deckle straps will not seal properly and cracks may develop in the vat.

3. Assemble the drive and align the shafts, grout in place.

4. Attach discharge chute inlet, outlet and drain piping. White water control boxes can be installed at this point or left until later.

5. Lay out the couch roll and doctor parts in correct sequence. This is shown on Drawing Z-13458 for current standard deckers.

6. Install the spring tensioning bolts on each end of the decker.

7. Slide the lower adjusting nut, spring and spring seat over this bolt.

8. Place each balance arm on the end frame and fasten loosely. The spring tensioning nut should protrude through a slot in the balance arm. Run the securing nuts down to holdthe balance arm.

9. Sling under the couch roll shafts and lift it into place over the balance arms. Bolt down the pillow blocks.

10. Remove the doctor from its box and slide the following parts on each end : Apron pivot block (if used), apron stop collar, doctor balance weight, doctor pillowblock and doctor bearing stop collar.

11. Sling under the shaft and support the doctor assembly over the balance arms. Slide the spacer blocks under the pillow blocks and bolt the assembly down.

12. Check the alignment of couch roll to cylinder mould, and doctor to couch roll, bolt down.

13. Install the apron on the doctor blade shaft.

/continued.....

INSTRUCTION MANUAL

DECKERS

Installation (contd)

14. Remove the couch roll covering and align the balance arm stops so that the couch roll just clears the cylinder mould. The gap should be even over the whole length.

15. Screw the spring tension nut up to compress the spring to approximately half its original length. This can be finely adjusted later under operation.

16. Install.

17. Adjust the Doctor Blade so that it just touches the couch roll. Set the stops on the counterweights so the blade cannot go further.

18. Install shower pipe if supplied. Stationary showers have brackets to hold the pipe. This should be installed to spray as directly on the wire as possible without splashing the couch roll.

    Oscillating showers are installed in like manner, except the brackets contain rollers. Bolt the drive to the end frame, dowelling in place. Install motor and align gear unit, V-belts and crank connections to the pipe. Rotate the unit by hand to ensure no parts are binding. Connect the hose to the shower pipe.

19. Fill gearboxes with oil of a type specified in this manual or manufacturers' instruction sheets.

20. Thoroughly clean all parts of the vat, piping system, control box, etc. This is very important as foreign objects can ruin the wire mesh in short order.

Special Instructions - Couch Roll Drive

These units are fitted with special Couch Roll Drive arrangement shown on Drawing Z-14096. The cylinder mould drives a chain from a sprocket attached to one stub shaft. A second sprocket idles on the balance arm pivot pin, driving a gear. The mate to this gear drives the Couch Roll through a slip clutch.

Operation

The decker will operate normally, except of course for a spinning couch roll when no stock is present. The slip clutch has been incorporated to compensate for speed differences caused by large variations in mat thickness.

Maintenance

Chain should be lubricated manually at weekly intervals with SAE 30 oil. An inspection lube cover has been provided for this purpose. Gears should be lubricated at monthly intervals with a heavy sticking type grease such as "Keystone".

The chain can be adjusted by operating the chain tensioner installed on the end frame.

Disassembly

1. Remove covers and guard.
2. "Break" chain at connecting link and remove.
3. Loosen set screw on Morse Torque Limiter and remove unit together with gear.
4. Pry loose one finger of the locking washer and remove Torque Limiter locknut.
5. Remove bevel washer, retaining ring, friction ring, gear, other friction ring and gear bushing, in that order.
6. To disassemble sprocket/gear assembly, remove snap ring item 29.
7. Slide the components off the pivot pin in order. Make sure the key driving sprocket and gear are not lost on disassembly.

Installation/Assembly is the reverse of these steps.

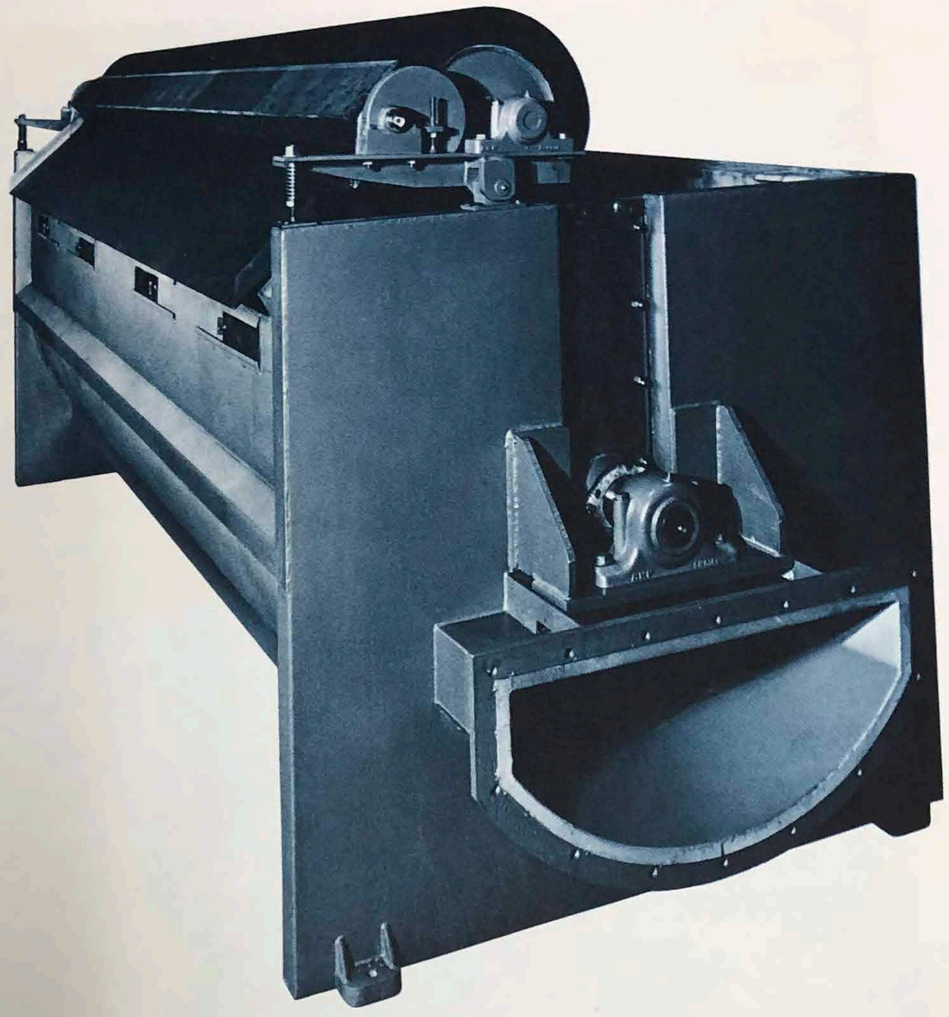
Spare Parts

In addition to parts listed on page 46, we recommend as well the following:

1	- Chain, item 41.
1 Set	- Sprockets, items 27, 40, 34.
1	- Tensioner bushing, item 50.
1	- Pivot bushing, item 25.
2	- Thrust washers, item 24.
2	- Thrust washers, item 35.

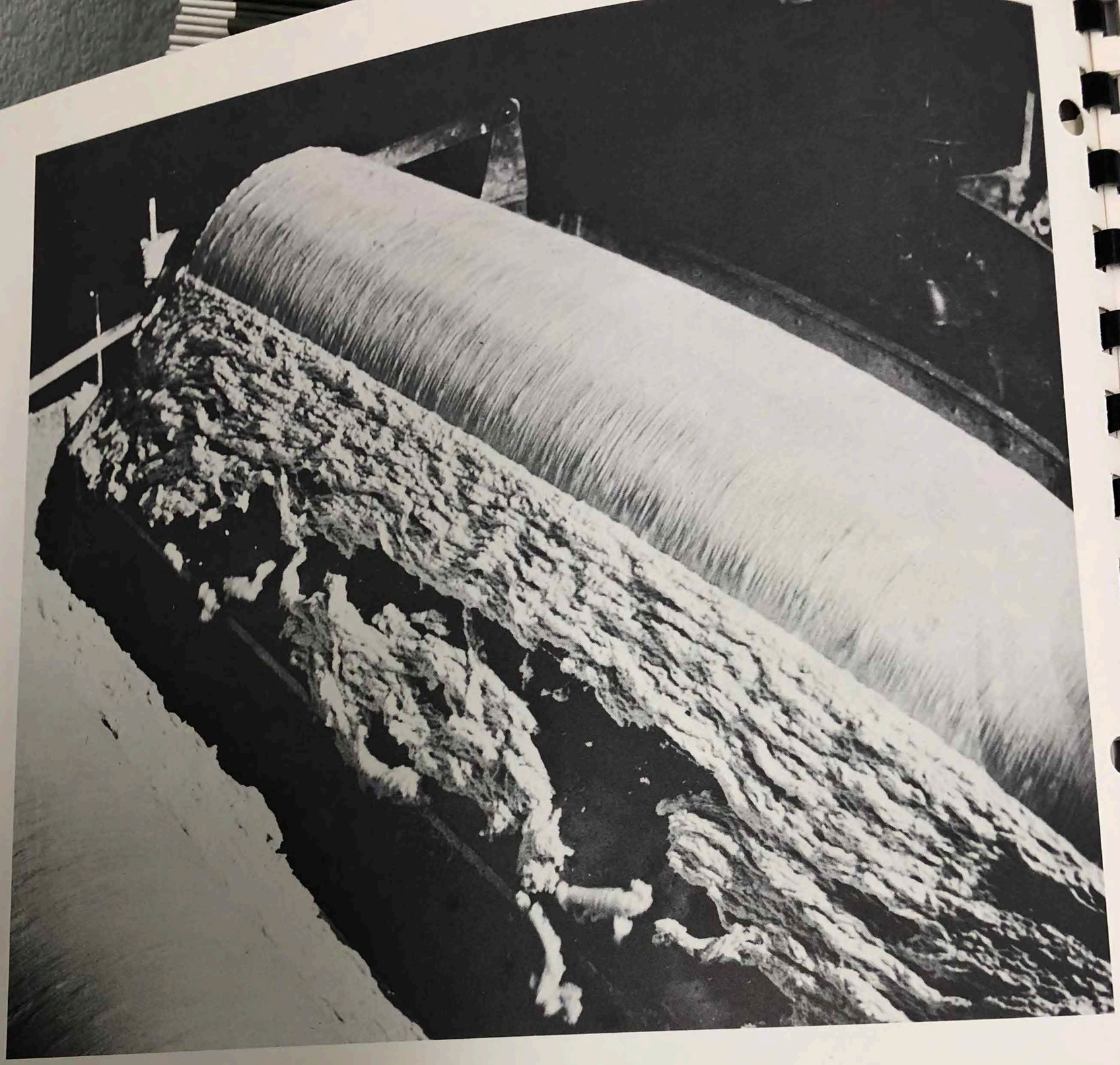
TSD:LD

hymac



stock preparation specialists

hymac gravity thickener - bulletin d700



forword The Hymac Gravity Thickener with its high capacity and low consistency effluent, is the result of many experiments in thickening operations. While the principles involved in the operation of a thickener are widely used in the pulp and paper industry, we have incorporated refinements in design that allow the equipment to operate at optimum performance. In installations where medium consistency thick stock is required in the range of 5 to 10%, a Gravity Thickener will produce the highest production per sq. foot of floor area consistent with low maintenance and operational cost.

description of design The Hymac Thickener consists of a wire covered perforated stainless steel cylinder mould rotating in an elongated stainless steel vat. The vat is amply reinforced to provide a rigid structure. Wherever possible, corners and places where stock and slime will collect have been eliminated. The white water is discharged at one end of the cylinder only, through an outlet of liberal size to allow the white water to get away quickly. This eliminates the need for one deckle strap and the remaining one is a specially designed spring loaded type which reduces the normal braking action, thereby reducing horse-power loss.

A balance between the design of the supply inlet and the position of the cylinder mould in the vat contributes to a minimum disturbance of sheet formation across the cylinder mould. While originally designed for a downward rotation of the cylinder mould into the inlet side and for doctoring on the under side of the couch roll, current design allows for rotation in either direction.

The discharge side is provided with adjustable ports under the doctor apron, which allows for a controlled bleeding of the thickened stock that accumulates

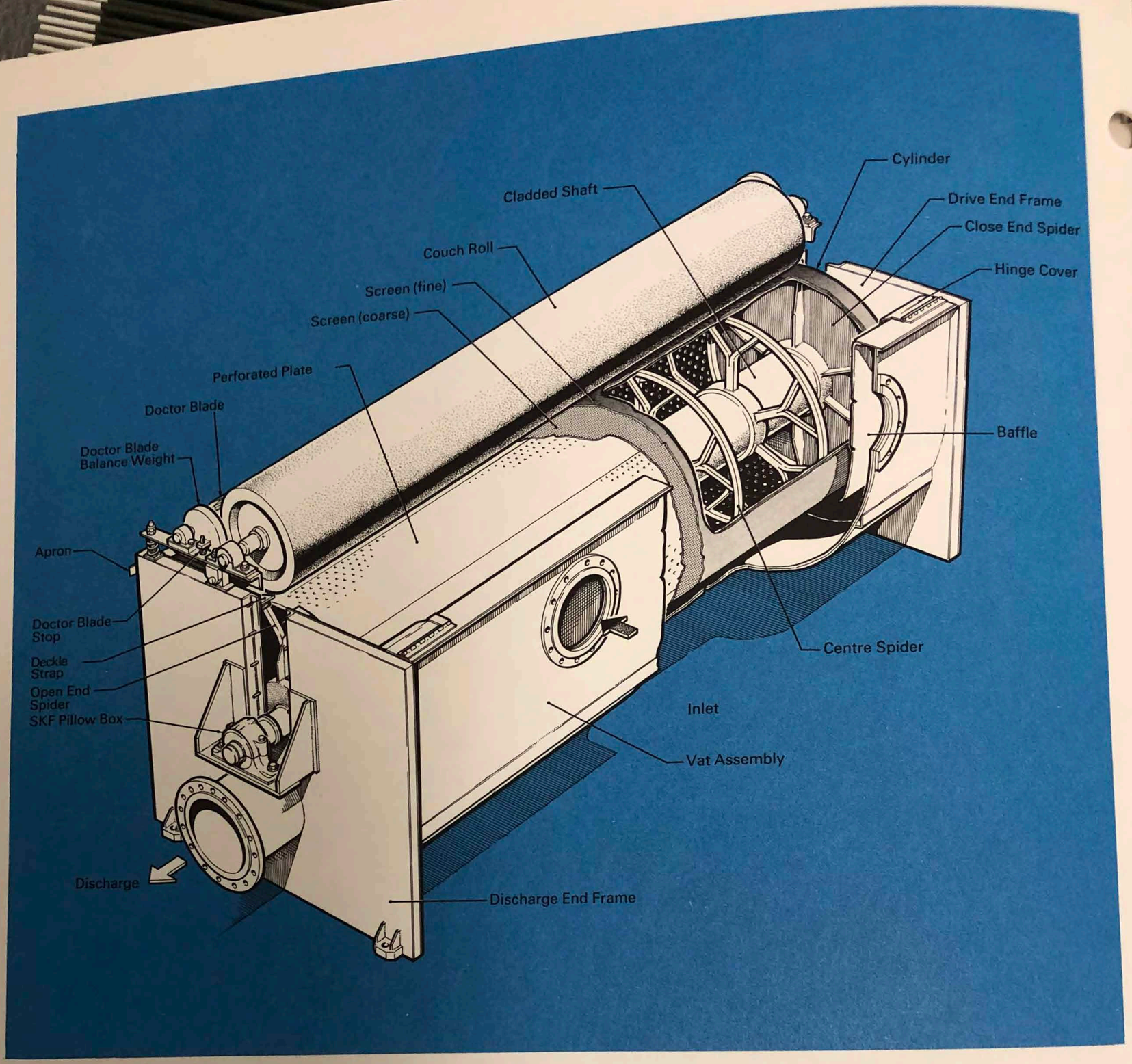
at the nip of the couch roll and the cylinder mould. This pulp can be passed to dilute and maintain the desired composite consistency for storage.
When used for sulphite or sulphate operation, an external means for control of the white water is necessary. This may be provided by means of a white water effluent chamber with an adjustable weir or an external valve either manually or automatically controlled. Proper white water control maintaining a constant differential head between stock level and effluent level, proper peripheral speed of the cylinder mould, combined with the design of the inlet, results in uniform sheet formation and maximum fibre deposition of the cylinder mould, which prevents the passage of excessive solids into the effluent. Effluent consistencies will vary depending on type of wire cover and wood species and other variables. On groundwood lowest recorded mill measurements show 0.035% to the highest of 0.08%. On chemical furnish this is much lower and will range from 0.01 to 0.03%.

installation

The decker is shipped partially dismantled. The vat with the cylinder mould inside is skidded and the top of the vat covered to prevent damage to the cylinder mould wires and also all pipe flanges are covered. The cylinder mould is also blocked in the vat to prevent movement during shipping.
The drive is skidded and shipped as a complete unit comprising baseplate, gear reducer and coupling.
The couch roll and doctor blade, together with the top housing assembly, are boxed to prevent damage.
Before placing the vat in position on the foundation, make certain that the foundation is level.
Improper levelling of foundation will cause a twist in the vat when it is tied down, that will not allow the deckle rings on the vat and cylinder mould to line up.

start up and maintenance

1. Check packing glands on end covers at cylinder mould (½" square Garlock No. 233).
2. Check lubrication of cylinder mould and couch roll bearings (Alemite No. 2 grease).
3. Check rotation of motor to give proper rotation of cylinder mould with regard to method of doctoring stock off couch roll (over or under doctor blade).
4. Set adjustable stops on couch roll arms so that couch roll touches cylinder mould lightly and adjust spring tension to counter balance couch roll at this point.
5. Set adjusting screw on doctor counterbalance weights sufficiently to allow doctor to bear evenly on couch roll without excessive pressure.
6. With cylinder mould revolving, open stock inlet valves sufficiently to maintain level of stock between 5" and 7" from top of vat.
   In groundwood operation, the white water outlet will maintain the differential head between the stock level and white water level. In sulphite or sulphate operation, an adjustable weir on the white water discharge will have to be provided to allow for forming a sheet on the cylinder mould and maintaining a differential head between the white water level and the level of the stock in the vat.
7. Periodic washing of cylinder mould wires during operation is required to maintain efficiency.
   The frequency of washing is determined by visual observation by the operator. Hymac supplies oscillating showers to continuously clean the wire, as an option.
8. Clean and inspect the wires during shut down and make any necessary repairs to wires.
   Check packings and replace if necessary.
   Lubricate cylinder mould and couch roll bearings.



operation of hymac gravity thickeners

The Hymac gravity thickener consists mainly of a wire screen-covered cylinder mould rotating inside a vat. Thin pulp stock is fed into the vat and comes into contact with the cylinder mould.
Due to the differential head between the stock level inside the vat and the white water level inside the cylinder mould, a mat is formed on the face of the cylinder mould with the white water passing into the inside of the cylinder mould.
The mat is lifted from the cylinder mould by a couch roll and is doctored off the couch roll and is allowed to fall into the thick stock chest.
The white water is drawn off one end of the decker vat, there being a deckle strap seal arrangement between the cylinder mould and the end frame of the vat.

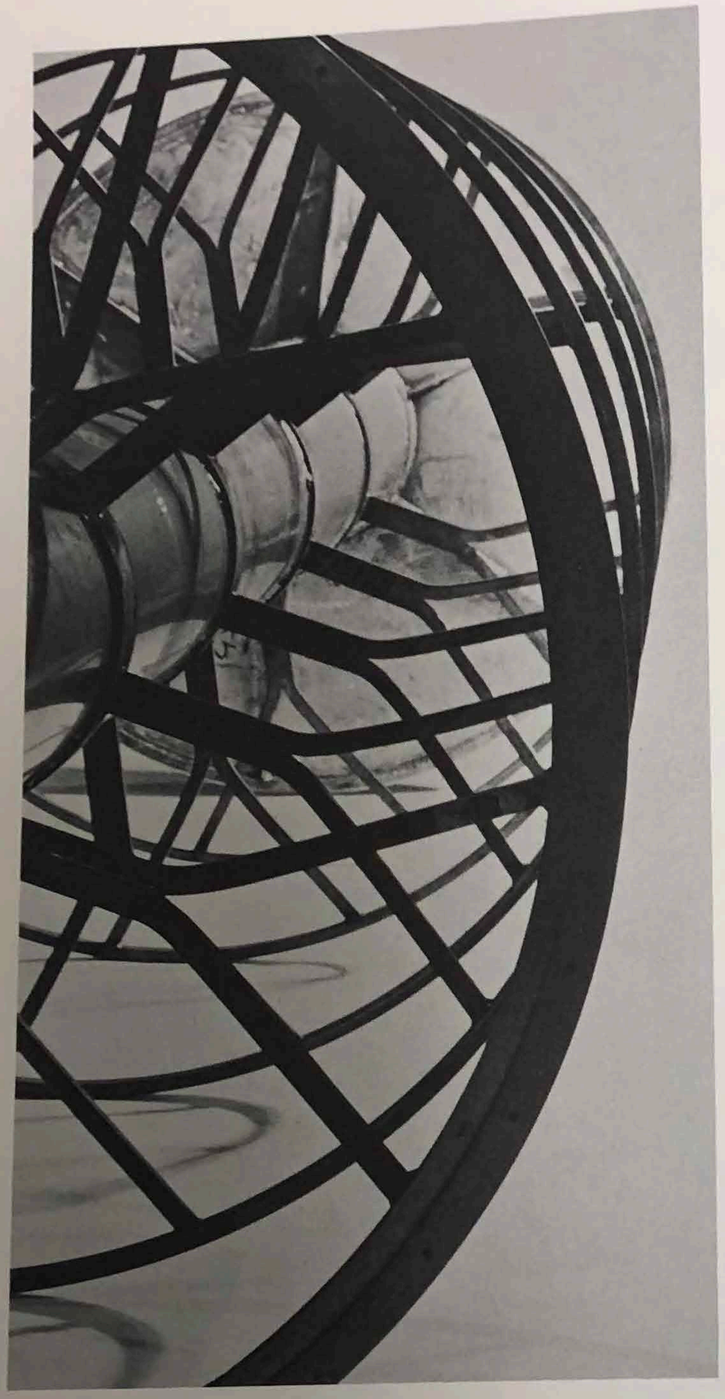
the capacity of deckers or gravity thickeners is dependent upon:

1. Type of stock.
2. Inlet consistency.
3. Inlet stock freeness.
4. Stock level in the vat.
5. Differential head.
6. Rotational speed of drum.
7. Temperature of stock.
8. The presence of entrained air or foam.

Decker capacity is very noticeably affected by stock freeness, the production being much higher on a very free chemical pulp than on a slow groundwood stock.
In order to obtain highest capacity, the stock level in the vat should be maintained at about 5" from the top of the vat. A lower vat level will result in some loss in production. This is purely a matter of utilising as much of the cylinder surface as possible.
On groundwood stocks and some high-yield stocks, it is desirable to maintain as high a differential head as possible.

ame
Spider
Cover

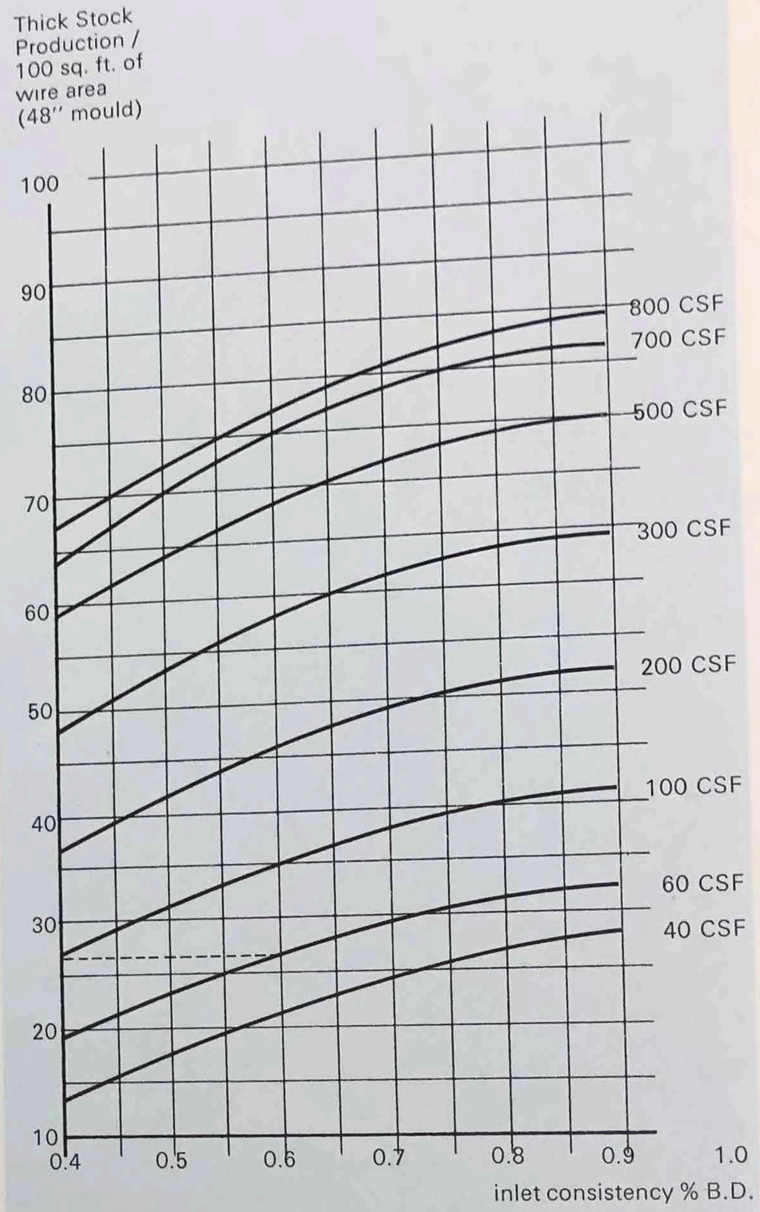
It is important that the white water effluent piping or flumes be sized and located in such a manner as to assure free discharge from the decker.
On some chemical pulps, notably normal yield sulphite, which display compressible characteristics, it is necessary to operate at a certain fixed differential head. On normal sulphite this head is generally between 6"—12" and the exact head must be determined in each mill. In order to maintain this optimum differential head, a white water control box or other metering device must be employed on the white water discharge of the decker.
The rotational speed of the cylinder mould has an effect on decker capacity and also to some extent on the thick stock consistency. Higher speeds will produce greater capacity but will also tend to reduce thick stock consistency. Since this relationship between speed and capacity and consistency varies for different types of stock, it is recommended that you consult Hydraulic Machinery Company Limited prior to making any changes to existing equipment. New equipment is provided with the optimum speed to suit the application. The stock temperature can influence decker capacity to a slight degree, due mainly to the reduction in viscosity of water at higher temperatures. Stock feed to the decker should be free of entrained air or foam, otherwise reduction in capacity may occur, especially operating in the standard rotation. Operating in the counter-flow rotation or reverse to standard rotation with this type of stock has shown the possibilities of overcoming this problem and obtaining normal capacity and in some instances slightly higher with higher consistencies.
The consistency of the thick stock is affected to some degree by the inlet consistency, the couch roll pressure, the speed of rotation, and the direction of rotation. Higher inlet consistencies will produce slightly higher thick stock consistencies. By allowing the full weight of the couch roll to rest on the cylinder mould, the consistency can be increased by 1—2%, however wire life is affected with this approach. As mentioned above, higher speeds of operation tend to reduce thick stock consistency particularly with certain grades of stock. A number of routine adjustments should be made on the decker to ensure that it is functioning properly at all times.
The couch roll should be adjusted by means of the spring tensioning device provided so that it runs smoothly when the decker is operating with stock. Normally the couch roll will bounce quite noticeably when riding directly on the cylinder mould. Running in this manner, although it will provide higher discharge consistencies, is hard on the wire covering. We do not therefore normally recommend this type of operation.
The doctor blade should be checked periodically to ensure that it is in proper alignment with the couch roll and the doctor blade counter-balance weights should be set to provide the minimum pressure required so as to decrease the power consumption and reduce wear.
The deckle strap will require adjustment from time to time but it is important to note that it should not be tightened too much. Actually, only sufficient tension is required in the deckle strap to hold it in place since the differential pressure of the stock will provide adequate pressure for sealing.
On start-up, the cylinder mould should be started prior to the introduction of stock into the vat and since during this initial period there will be no lubrication on the deckle strap, it should be wetted down with a hose prior to starting the decker.
If the decker is to run continuously for a prolonged period, without stock, a continuous flow of water should be applied to the deckle strap.
It is necessary to clean the wire cloth with a hose once or twice per shift to ensure optimum operating



conditions. This can be done quite satisfactorily while the machine is running. On shut-down, the complete decker, including cylinder mould and vat, should be thoroughly washed down with a high pressure hose.

slusher These type of thickeners are similar in construction to the standard Hymac decker, except no couch roll is supplied. Rather thickened stock is moved, aided by slusher bars mounted on cylinder mould, from inlet to discharge in an anti-clockwise direction.
The slusher comes complete with inlet headbox, assuring proper stock flow distribution into the vat. Slushers find application where a reasonably constant discharge consistency is desired with variable feed

capacity chart for hymac thickeners



Multipliers for approximating thick stock production on deckers for various size units

wire area (sq. ft.)	decker size (in.)	multiplier
102.5	48 x 98	1.025
137.0	48 x 131	1.370
157.0	48 x 150	1.570
188.3	48 x 180	1.883
205.5	48 x 196	2.055
235.5	60 x 180	2.120
285.5	78 x 168	2.450
326.5	78 x 192	2.810

Example: Capacity of 48" x 150" decker on 60 CSF groundwood stock at 0.6% BD feed consistency. From chart read 26.5 TPD per 100 sq. ft. of wire area. To convert this to the 48" x 150" use the specified multiplier of 1.570 and arrive at 41.6 TPD capacity.

Notes:

1. Multipliers for 60" & 78" dia. moulds are adjusted for decreased efficiency. 48" dia. mould is optimum on the wire face area drainage basis.
2. These are ***average guide figures;*** further adjustment is required for types of wood species.
3. Decker should not be fed with higher than 1 -1.25% B.D. inlet consistency.

consistency (broke thickening). The slusher discharge consistency does not usually exceed 3.5—4.0% B.D. Slushers must be sized by knowing the exact operating conditions and therefore no capacity charts are offered due to the many variables involved. For approximate size selection, use decker capacity figures less 30%. The largest Hymac Slusher is 96" dia. x 204" face, driven by a 25 H.P. 1170 rpm motor. Hoods in either stainless steel or reinforced fiberglass can be furnished. A continuous shower is necessary for proper operation.

cylinder mould

Hymac manufactures cylinder moulds for a wide range of deckers. Through many hundreds of installations, their durability, has made these moulds one of the most popular moulds for replacement. They have Hymac's standard construction of spider reinforced structure and a perforated solid stainless steel cylinder deck. Hymac also provides a service of cylinder mould repair, either for deckers or for cylinder board machine type moulds. Wire covering is optional.

specification D-48

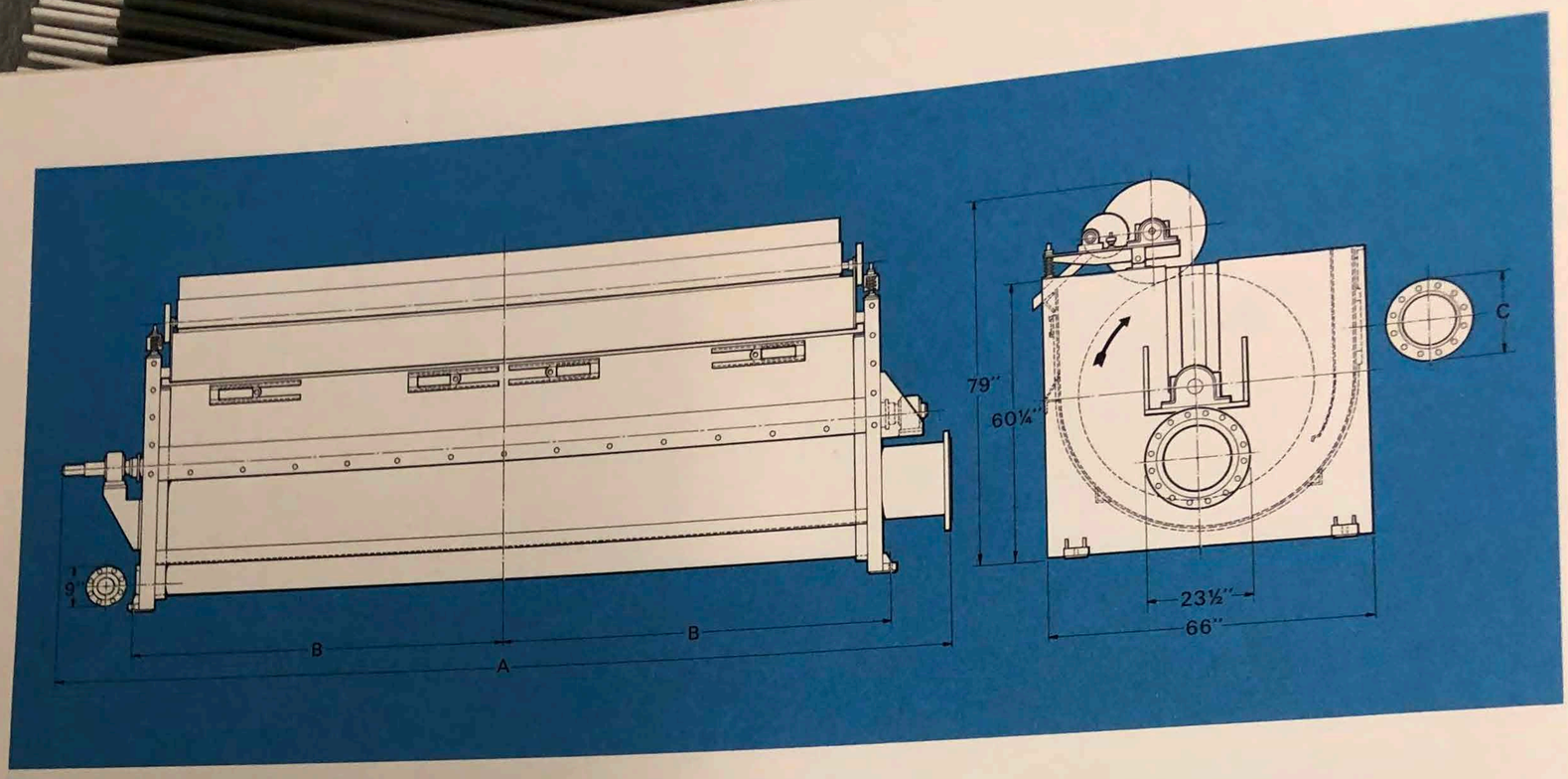
Standard 48" dia. Thickeners

General This specification covers a thickener with a stainless steel vat and cylinder mould, a rubber covered couch roll and a drive arrangement to give a suitable speed of rotation to the cylinder mould. Anti-friction bearings are used throughout.

Vat The vat shall be of standard fabricated construction and made of ⅛" thick stainless steel reinforced on the outside with mild steel angles and bars. It will be welded to box end sections each consisting of ⅛" stainless steel on the inside and ⅛" thick mild steel plate on the outside separated by 3" mild steel channels and stayed with 3" x ¼" mild steel bars. Stainless steel baffles ⅛" thick extend over inlets deflecting the incoming stock away from the cylinder mould. One end is fitted with a stainless steel deckle ring, which is welded integral to the end frame and machined to the correct diameter to match the deckle ring provided on the cylinder mould. A white water discharge outlet is provided in one end of the vat and a 4" diameter stainless steel wash out at other end.

Cylinder Mould The 48" dia. stainless steel cylinder mould is of a perforated drum design. The stainless steel deck will be supported by one closed end spider, three intermediate spiders, or more depending on face width, and one open end spider. These spiders are constructed entirely of stainless steel and are assembled and welded to a 12" extra strong pipe core which has raised bands to support each spider. The pipe core is fitted with steel journals having 3-3/16" at the bearings and all portions of the shaft coming in contact with stock will be covered with stainless steel casings 1/16" thick. The perforated stainless shell is welded to the periphery of the spiders forming a cylinder 48" in diameter. A stainless steel deckle ring is provided on the vat. Stainless steel clamp rings are provided on both end spiders. Type 316 stainless steel wires are supplied and applied at the option of the customer and consist of No. 10 mesh backing wire and a No. 40 or 60 mesh facing wire for groundwood operation or a 12 x 64 mesh corduroy wire for sulphite operation.

Couch Roll The couch roll is made of 16" OD steel pipe or 20" OD steel pipe fitted with mild steel heads and journals which are 1½" dia. at the bearings. It will be supplied for the following alternate coverings: "Hycar", "Nitrile" or "Neoprene" which will be ½" thick and finished to 17" diameter or 21" diameter having a P & J ⅛" Ball Plastometer density of 100-125.



Doctor The doctor blade is made of micarta or equivalent and is fastened onto a rigid stainless steel angle with stainless steel screws. The doctor angle is fitted with stainless steel journals and is supported by bronze bearings which are secured to the couch roll housing assemblies.

Couch Roll Mounting Assembly The couch roll mounting assembly will be of fabricated steel. Arrangement is made for adjustment of the couch roll in relation to the cylinder mould and also for adjustment of the doctor blade in relation to the couch roll.

Bearings The cylinder mould and couch roll will turn on grease lubricated and self-aligning anti-friction bearings.

Drive Unit A worm gear reducer of correct ratio will be supplied plus high speed and low speed shaft couplings. Also supplied will be a fabricated steel base machined to accept the customer's motor.

Drawings We will provide all necessary drawings for installation and start up.

Standard 48" dia. Thickener (DWG. No. Z-7787)

Face Length Cyl. Mould	35"	48"	66"	98"	131"	150"	163"	180"	196"
Weight (Approx.) Lbs.	4200	5600	6700	8300	8500	9500	10,500	11,500	12,500
A	79⅜	92⅝	110⅜	143	175⅜	194⅜	207⅝	224⅜	239⅛
B	27¼	67½	42¾	59 1/16	75¼	84¾	91⅜	99¾	107⅝
C	19	19	19	19	19	19	21	21	21
motor require-ments	3hp	5hp	5hp	5hp	7½hp	7½hp	7½hp	10hp	10hp
	870, 1170, 1750 rpm depending on mould speed								

Note:
60", 78" & 96" dia. thickeners are also available.

Other Hymac products include: Hunter Pressure Screens, Hymac Turboflex Pulpers, Bark Drainers, Stock Drainers, Hymac Agitation Equipment, Pulp Screens and R.B. Centrifugal Cleaners.

Full descriptions and specifications are obtainable from:

Head Office:

Hydraulic Machinery Company Limited,
1243 Dorion St., Montreal, Que.
Telephone: (514) 524-7534

Sales and Service centres:

Donaldson, Pyrch & Hume Ltd.,
3920, Grant Street,
Burnaby 2, B.C.
Telephone (604) 294-4731

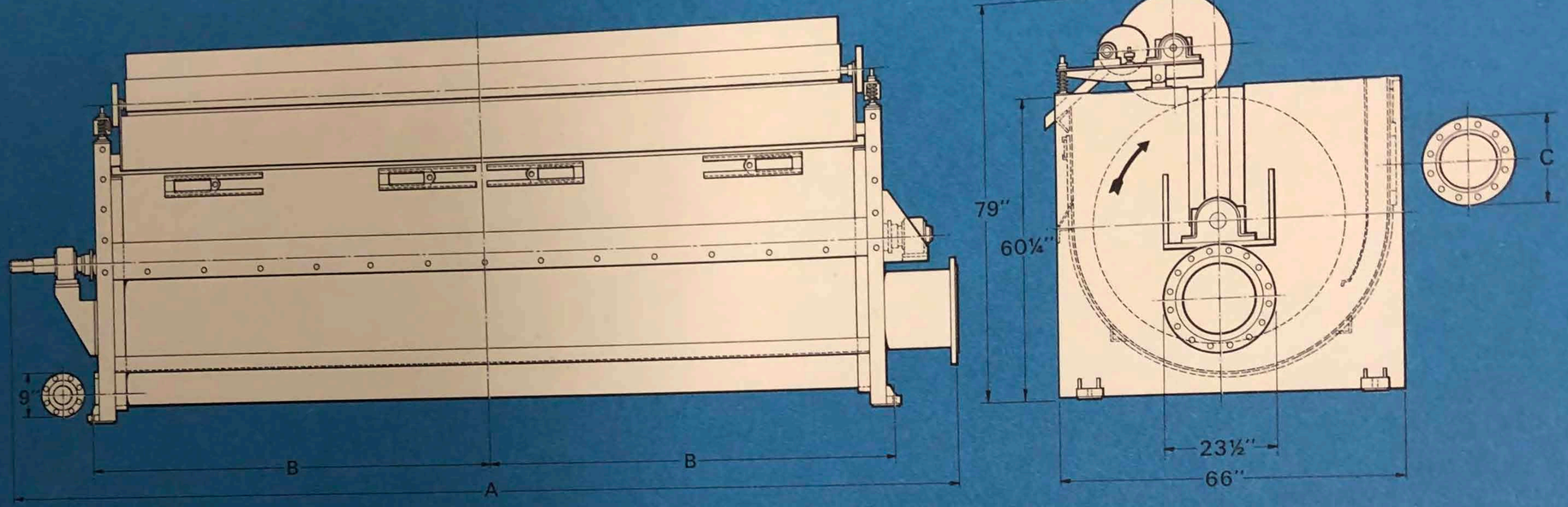
mited,
Vancouver 123, B.C.

Hy Limited,
c/c , New Jersey 08534
Tel

Local representatives throughout the world

hymac

jan/1970



Doctor The doctor blade is made of micarta or equivalent and is fastened onto a rigid stainless steel angle with stainless steel screws. The doctor angle is fitted with stainless steel journals and is supported by bronze bearings which are secured to the couch roll housing assemblies.

Couch Roll Mounting Assembly The couch roll mounting assembly will be of fabricated steel. Arrangement is made for adjustment of the couch roll in relation to the cylinder mould and also for adjustment of the doctor blade in relation to the couch roll.

Bearings The cylinder mould and couch roll will turn on grease lubricated and self-aligning anti-friction bearings.

Drive Unit A worm gear reducer of correct ratio will be supplied plus high speed and low speed shaft couplings. Also supplied will be a fabricated steel base machined to accept the customer's motor.

Drawings We will provide all necessary drawings for installation and start up.

Standard 48" dia. Thickener (DWG. No. Z-7787)

Other Hymac products include: Hunter Pressure Screens, Hymac Turboflex Pulpers, Bark Drainers, Stock Drainers, Hymac Agitation Equipment, Pulp Screens and R.B. Centrifugal Cleaners.

Full descriptions and specifications are obtainable from:

Head Office:

Hydraulic Machinery Company Limited,
1243 Dorion St., Montreal, Que.
Telephone: (514) 524-7534

Sales and Service centres:

Donaldson, Pyrch & Hume Ltd.,
3920, Grant Street,
Burnaby 2, B.C.
Telephone (604) 294-4731

nited,
Vancouver 123, B.C.

Hy
c/c
Tel
Limited,
, New Jersey 08534

Local representatives throughout the world