

OPERATION  
AND  
MAINTENANCE

Flaherty  
**MODEL C**  
SPREAD-MASTER



<http://www.geffs.com>

Geffs Manufacturing, Inc.  
P.O. Box 4885  
Pocatello, Idaho 83205-4885  
203-232-1100



*Flaherty Branch*  
BUFFALO-SPRINGFIELD DIVISION  
KOEHRING COMPANY  
POCATELLO, IDAHO, U. S. A.  
P. O. Box 4789

**TO LOCATE PARTS IN THE VARIOUS  
POWER PACKAGES BY MACHINE SERIAL NUMBER**

Serial No. of Spreadmaster	Minn. -Moline Catalog No.	Description
C-163 thru C-599	R-1145 A with Supplement B	#283B-4 cubic inch engine with UTIL Transmission
C-600 thru C-699	R-2029 No. 42	#283-4 cubic inch engine with 5 Star Transmission
5MC-700 thru 5MC-799	R-2029 with Supplement No. A - No. 48	336-4 cubic inch engine with 5 Star Transmission
5MD-800 and later	R-2057 No. 55	336-4 cubic inch engine with 5 Star Transmission and Orbitrol Steering

NOTE: Power Package Catalog #55 (R-2057) is identical to #42 (R-2029) and Catalog #48 (R-2029) EXCEPT the Orbitrol and Pump for the steering system has been added to Catalog #55 (R-2057)



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## SPREAD-MASTER

### FOREWORD

To familiarize the operators and to simplify the ordering of parts, this catalog is in general composed of actual photos showing the item in its relative position in the machine.

Each photo has its companion page to the left with corresponding page, part number, and description.

The Power Package is furnished by other manufacturers and their repair catalog shows the material and parts supplied by Flaherty Mfg.

When ordering, it is only required to give the Flaherty machine serial number with the page and part number shown on the companion page of these books, along with the brief description -- such as shaft, collar, etc.

BE SURE THE FLAHERTY SERIAL NUMBER appears with each communication, and the LENGTH of the Front Hopper, when replacing parts for same. If a small part is not identified in the photo simply note: Pin, Bolt, Washer, etc. for Item 16-8, 1-6, the main part on which it is used.

Grease and Lubrication points are indicated on the photos and Page "J" consists of a check list of these locations, along with an hourly recommendation for safety. THESE ITEMS MUST BE CHECKED EACH 4 HOURS OF FULL OPERATION OR AS INDICATED ON PAGE "J".



FLAHERTY MFG., INC.

P.O. Box 1387 - Pocatello, Idaho

THE PROPER OPERATION OF THE SPREAD-MASTER

Serial No. \_\_\_\_\_

DO NOT

Engage jaw clutch before control gate is open or allow it to remain engaged after gate is closed. (Page 30)

Allow control gate to operate with uneven opening, this will cause uneven spreading. (Page 4 - Item 1)

Allow front wheels to touch oil on splices, etc.

Shift transmission or shuttle while machine is in motion.

When idling use shuttle in neutral - use neutral in main transmission.

Allow front hopper to run low of material while unloading trucks, or Spread-Master will be forced to stop while making truck exchange.

Trip tail gate of attached truck until bed is raised to near 2/3 full-up' position. Premature dumping will result in excessive spillage around rear-hopper-to truck seals.

Disengage truck from truck hook until bed is empty and lowered sufficiently to clear rear hopper seal skirting.

DO

Keep rod screen in place in front hopper.

Set metering lever adjusting stop to desired position on quadrant.

Check control gate for even spacing between gate edge and spread roll perimeter.

Set mesh screen under spread roll at proper angle to assure material's free flow.

Engage jaw clutch thus operating agitator immediately after control gate starts opening.

Back up sufficient distance to allow time for accurate joint when starting a new spread.

Operate while spreading at all times against a full throttle, allowing the governor to control speed. Select gear needed and open throttle full.

Keep front hopper as full as possible at end of truck load to provide time to change trucks.

Have conveyor belts moving when truck tail gate is opened.

Raise truck bed to near 2/3 full-up' position before tripping tail gate.

Check all trucks for proper tail-gate-to-rear-hopper spacing (Print showing this relationship is furnished in Operator's Manual).

Replace rubber seal skirting when damage occurs.

When ordering parts always refer to machine by Serial No. and length of front hopper.

## OPERATIONAL NOTES AND REPAIR PROCEDURES

Suggested By

Flaherty Manufacturing Co.

The following is a brief outline of operational and repair procedures, suggested by Flaherty Manufacturing Co., to be used with their Spread-Master machines. These procedures are a compilation of our experiences, and are given to the operators of the Spread-Master as an aid to better understanding of the problems arising from the adoption of a new type of machine to the standard construction routines.

If the operator will follow, very closely, these suggestions, he will be pleased with the efficiency of this unit and the extra profits made possible with its use.

### STEERING

This machine is guided by a hydraulic steering system with conventional wheel. See power package manual (Page 49).

### FRONT HOPPER

Pages 1 thru 14

The front hopper is a storage bin and a mechanism to evenly spread cover materials. Its spreading width ranges from 6" to 13 feet.

This hopper assembly consists of an agitator, a spread roll, and width control gates.

### ROD SCREENS

Page 8

When the Spread-Master comes from the factory, the front hopper is equipped with rod screens that function to stop over-sized materials, mud, sticks, etc., from entering the spread opening. These screens should be in place whenever it is possible to use them. On extra large chips, 1" or larger it may be necessary to order 2" openings on screens. If streaks or light areas appear behind the spread roll on the deposited material, it is caused by over-size foreign materials too large to pass control gate. In most cases when this condition occurs, the foreign material can be discharged by suddenly opening the control gate to full position then immediately closing back to the proper control position. If this fails, the foreign matter is very large and can be dislodged only by manual means. If plugging is not too severe, it is recommended that the hopper be allowed to run low then the piece or pieces removed.

### SPREAD ROLL

Page 4 and 6

The spread roll forms the bottom of the hopper and, when rotating, is the means of distributing the materials. The speed of this roll is fixed at the factory and need not be changed, as the amount of flow of materials is changeable by opening or closing the control gate the proper amount to get the desired cover. Accuracy to within a few oz. per sq. yd. is obtainable.

Page B



## CONTROL GATE ROD

Page 4

The control gate is moved by means of adjustable linkage to the control lever at the driver's seat. If at any time the deposited materials are heavier on one side than on the other, check the opening on each end of the hopper - with the gate approximately 1/2" open. If this measurement indicates more than 1/32" variation, pull the clevis pin on the reach rod, on one end and adjust to the desired distance.

## MATERIAL CONTROL SYSTEM

Pages 4 and 34

Because of the necessary accuracy needed to do an effective spreading job, the control lever for the control gate is so built that one slot change in the metering quadrant allows only 1/16" change of opening on the control gate and to assure the return of the control lever to the exact spot with a minimum loss of time, a stop lever is installed behind the control lever, on the metering quadrant. This stop lever is set at the desired opening and the control lever is brought into contact with it when gate is opened, each time the machine is started. To change stop-lever into a different slot, push down pawl and shift to desired position.

## FRONT HOPPER JAW CLUTCH AND DRIVES (OPERATIONS)

Page 30

The spread-roll and auger are rotated through a series of sprockets and chains by a standard jaw clutch. It is imperative that this jaw clutch be disengaged before the control gate is closed, and re-engaged after the control gate is opened. Failure to use this precaution will result in damage to the jaw clutch and, or drives.

It is a simple matter for the operator to speak, nod or otherwise signal his helper when to engage or disengage this clutch. A few minutes practice is usually all that is needed to make this team work accurate enough for proper operation of the machine.

## CARE OF CHAIN DRIVE

Page 2

There is an idler in the chain that drives the auger and spread roll. To adjust the tension on the chain, open the chain guard on the right end of the front hopper. Adjustment is then made by moving the idler in its slotted base plate holes.

## AGITATOR

Page 6

The function of the agitator is to offset any tendency of material to bridge or arch as in the case of wet sand, etc., assuring an even feed to the spread roll. On each end of the sections there is a ductile steel wear plate facing against a fixed wear plate. Bolted to the hopper end, with the bearing bolts, these plates must be replaced periodically as wear occurs. Neglect of these wear plates will cause shafts and bearings to fail prematurely.

The agitator flights are made in sections which are welded to the auger tube.

Page C

## GATE CONTROL

Page 10

The gate control lever is connected to the hopper through a reach rod and a pivot. The reach rod is the linkage from this pivot to the gate control shaft and has an adjustable end. This adjustment can be varied to re-position the gate control lever and increase or decrease the total opening of the control gates.

## REMOVAL AND ATTACHMENT OF FRONT HOPPER

The front hopper is held to the Spreadmaster on a steel seat which interlocks with a steel lip on rear edge of hopper. See page 12 for diagram.

The front hopper is held in place also by 2 latch pins, one on each side of the conveyor frame. These pins should be tightened when hopper is placed in working position.

## JAW CLUTCH AND SHAFT (MAINTENANCE)

Page 30

The jaw clutch (front hopper drive) is adjusted at the factory to allow approximately 3/16 clearance between the stationary jaw and the driven jaw, when clutch is disengaged. If wear or sprung linkage changes this clearance and the jaw clutches are allowed to move together or fail to release, damage to the jaw clutch will result as well as making the control of the spread roll impossible.

If this condition occurs, remove the pin from the clevis on the reach rod connecting the jaw clutch to the Bell crank and adjust in or out to get the proper clearance at the jaw clutch dogs - (This Bell crank is located inside the front conveyor support above the 1-3/4" shaft that drives the jaw clutch) Reinstall the clevis pin and cotter pin lock. See page 22, item 2.

To adjust chain drive from the jaw clutch to the front hopper drive shaft, loosen the four bolts in the flange bearings on each end of the hopper drive shaft and loosen the shaft until proper tightness is attained. If total travel in the slots does not give proper adjustment, raise the shaft to the top of the slots and remove one, or one-half link and re-adjust. NOTE: Care must be taken not to fit this chain too tightly, or the driven jaw may seize the clutch shaft.

When adjusting the jaw clutch to hopper drive shaft chain, it becomes necessary to lower this shaft. The chain drive to the spread roll and auger will become loose. Re-adjust this chain.

The jaw clutch must be greased approximately every 4 hours of operation to assure ease of control and proper lubrication.

## CONTROL GATES IN REAR HOPPER

Page 48

These gates slide in a guide and operated by a handle protruding from the upper edge of the hopper head plates. These gates are adjustable and are held in position by means of a pin fastened to a chain welded to the hopper head plate. These gates are used to help control the amount of material on the conveyor belts, thereby eliminating the necessity of continual stopping and starting of the conveyor belts.

Page D



## CONVEYORS

Pages 42, 44, 46

The function of the two conveyors (one on each side of the machine) is to transport the materials from the rear hopper into the front hopper and spread roll.

To help eliminate spillage of materials these conveyors have a bolted on chute lining, which is replaceable and adjustable when worn.

## CHUTE LINING WEAR

Page 50

The chute lining on the conveyor sides of the Spread-Master are held in place by a special channel, bolted to the conveyor side angles. To adjust or replace this chute lining, loosen the 3/8" bolts and lower the lining strip or remove as desired. To replace, simply insert new lining under this channel and tighten the hold down bolts.

Care should be taken in installing or adjusting the chute lining to assure an even bearing on the conveyor belt. Be very sure the opening remaining on the conveyor belt surface is parallel to the belt or excess spillage and wear is certain to occur.

## CONVEYOR BELT ADJUSTMENT

The belts on the conveyor are adjusted at the factory, when the Spread-Master is test operated, but frequently due to stretching, load variation, skirting drag, etc. final adjustment must be made in the field. See pages 44 and 46.

To move the belt to the right, take up nut at top right hand edge of conveyor frame thus raising belt idler. To move the belt to the left, tighten the left hand nut. Care should be used in this adjustment as the belt will respond slowly and over adjustment is likely to occur. This adjustment should be made with conveyor belts running and loaded.

To further aid in adjusting the belts, there is an adjustment at the tail pulley which may be used to further tighten the belts when wear occurs, and to help in aligning the tail pulleys. These adjusters are of the conventional type. To adjust, tighten the nut opposite the side you wish to move the belt. Extreme care should be taken to assure the belts are running accurately and evenly on the head and tail pulleys.

When a new belt is installed, loosen these tail pulleys adjusters to the end of the bolt threads, and also loosen the adjusters behind the head pulleys. This will give sufficient slack to allow the belt ends to be pulled together without the use of a belt stretcher. When re-tightening belt, be sure the belt does not sag excessively between the troughing rolls when loaded.

## BELT SPLICES

Page 50

We suggest the splice be made with No. 1 plate grip fasteners. Any good fastener may be used which will work on a 10" radius without pulling, this is important, because too large a fastener will tear out the belt after a short time of operation.

## CLUTCH ADJUSTMENT

(See Adjustment Twin Disc Clutch Catalog)

When necessary to adjust head pulley clutches, pull adjusting lock out and rotate clockwise until distinct snap is felt on clutch lever when engaged - rotate until stop falls into hole and adjustment is complete.

This clutch has a molded type clutch friction block and exceptionally long wear life.

To replace friction block, pull adjusting lock out and rotate counter-clockwise until sufficient clearance is made to allow removal of worn or glazed blocks. To insert new blocks - turn clockwise to tighten and adjust.

## HEAD PULLEY CLUTCH LEVERS

Page 18

The head pulley clutches are operated by means of a hand lever. These hand levers are anchored to a bracket fastened to the upper end of the conveyor frame and are fixed into position by means of a pivot pin, which holds both head pulley clutch lever and the jaw clutch lever. To remove either of these levers, pull the cotter pin and tap the pivot pin out to the desired distance to release the desired lever.

Each conveyor is controlled by a friction type clutch. These clutches are installed on a common shaft driven by a number 80 roller chain from the gear reduction box directly beneath it. The clutches are connected to the Head Pulley shafts through a ball bearing mounted, clutch flange extension and an automotive type universal joint. This installation should be almost trouble free if lubrication recommendations (See "Lubrication") are followed. Frequent inspection of spider flange and sub seal is advisable.

## CONVEYOR BELT LENGTH

Conveyor belts are 4 ply 20" standard rubber covered conveyor belting and should be cut 35'8" long.

Run conveyor belts snug enough that very little dip occurs between the troughing rolls when loaded.

## CONVEYOR BELT WIPER

Page 42

Immediately under the front of each head pulley is a rubber wiper set to touch the conveyor belt. The function of this wiper is to aid in cleaning adhesive particles from the conveyor, and to prevent excessive gravel from following under the head pulleys when overloading of the hopper occurs. This strip should be replaced or moved up whenever wear causes clearance from the conveyor belt.

Page F



## BAFFLE PLATES

Page 42

The gravel baffle plates are located directly below the head pulleys of each conveyor and are needed to aid in placing cover materials into the extreme ends and center of the front hopper. These baffle plates also minimize segregation of heavier materials.

## REMOVAL OF BAFFLE PLATES

Page 42

On the machine frame the Baffle Plates are welded to the front of the machine and are thereby fixed into position except a small portable extension on each outer end. These sections are held on by means of two pegs which set into two mating bushings welded to the machine. Removal of these extension pieces is necessary when installing or removing the front of Spread Hopper.

## GRAVEL DEFLECTORS

Page 42

The gravel deflector frame is anchored to the upper end of each conveyor and is held in place by four 1/2" cap screws bolted through slots in the conveyor. The function of this deflector is to aid in the control of the conveyed material. This deflector should be so spaced to control the material in an even fan shaped cascade along the entire face of the baffle plates. This will eliminate segregation of material.

Mounted vertically at the apex of the baffle plates is another deflector plate. The function of this plate is control of the materials stream from side to side as desired. On narrower than full width spread, this vertical deflector must be moved to control the flow of material to compensate for the reduction in width of spread. These vertical deflector plates are adjusted with a reach rod and are held in place with a thumb screw.

Bolted to the inner edge of the vertical deflector plate are two small deflectors held in place with one bolt. The purpose of these small plates is to control the fines which in some types of cover material tend to center on the conveyor belt and thereby have a tendency to streak the cover course. By adjusting the pitch of these deflectors, a greater or less portion of these fines can be deflected to the extreme ends of the baffle plates and when properly adjusted, will eliminate any tendency to streak the cover.

## TRUCK HITCH

Page 48 - See Diagram, Page K

The function of the truck hitch on the Spreader is to provide a means whereby the truck can be held in a close relationship with the rear hopper. The success of the entire spreading function is directly related to this hook-up, and extreme care should be taken to assure the accuracy of this hook-up with every truck working with the Spread-Master.

Page G

## TRUCK HITCH (Continued)

With the delivery of each Spread-Master unit we send a sketch of the truck hook and the required mating hook up for the rear end of the trucks to be used. As all trucks are somewhat different, it is impossible for Flaherty Mfg. to manufacture these hook-ups here as a stock item.

In general, all tail gates of the truck beds must set inside of the retaining rubber-skirt 8" when the bed is raised. Frame lengths vary; over-hang of dump bed on the frames vary, relationship of the rear wheels to the frame vary. Therefore, the check of each bed in relation to the rear hopper of the Spread-Master must be made.

On large tandem trucks, normally the frame, rear wheels, and often the tail gate of the dump bed, are on the same perpendicular line. In such cases it will be necessary to install bed extensions to assure a proper seal when in the dumping position. When the above condition arises, hitches should be set to allow 2" to 2-1/2" clearance of the rear tire to the bumper member on the Spread-Master, and the bed extension determined from this point on clearance to Differential cover.

## SEALING TRUCK BEDS TO HOPPER

If trouble is encountered with spillage while dumping into the rear hopper, check these items:

Is your truck hook-up installed as per the preceeding paragraphs?

Does tail gate set inside of rubber skirt on rear hopper?

On large trucks, do you have restraining chains on tail gates?  
(Where restraining chains are used, allow approximately 18" of slack  
in the chains.)

## FRONT DISTRIBUTION SCREEN

Page 10

The function of the front screen as used on the Spread-Master is chiefly as a grading device, and is unique in this application, as it places the largest rock particles into the oil ahead of the finer particles, and thus makes a quality seal coat job.

Page H



## ADJUSTMENT

The front of spread screen is held in place by two 3/8" bolts in each end of the special bracket. Loosen each of the bolts when making adjustments and retighten when adjustment is finished. This screen must be set at a steep angle to allow the materials to flow freely over the surface. Too flat an adjustment will cause the cover material to pile up and an uneven spread will result.

Extreme care must be exercised to prevent this screen from being pushed into the ground when turning the Spread-Master around or driving it off the roadway. We recommend the adjustment of the screen up as far as possible when the above conditions arise, as no cover material is being used at such time and this precaution will prevent damage to the screen.

## SCREEN SIZES

Page 8

The Spread-Master is equipped and shipped with one size screen. This screen is 3/4" mesh, and is the size required in most applications. However, if large materials are handled, such as 1" and up, we make a 1-1/8" mesh screen, which can be obtained in place of the 3/4" screen.

## POWER TAKE-OFF AND VEE BELT ADJUSTMENT

Page 26

The Spread-Master has a "front of engine" power take-off and is connected to the drive through an automotive type slip spline shaft and universal joint. This universal drive also acts as a belt tightener for the three Vee Belts which drive the gear box.

To tighten the belts, loosen the 4 cap screws in the bearing housing and pry over until the desired tightness is reached -- CAUTION: Do not run these belts extremely tight! They are built into the machine to provide a safety link in case of trouble in the spread roll, or spread agitator assembly and will slip if this trouble occurs unless they are run extremely tight. In case trouble occurs and the belts do not slip, damage may be caused in the power train.

We recommend these belts be adjusted tight enough to drive the assembly under normal load. This may take a little time and a couple of adjustments, but it is advisable as a safety feature in case of trouble.

## POWER UNIT ADJUSTMENT

For adjustment and operational instructions on the power unit, see applicable Operator's Manual furnished with each machine.

Page I

### LUBRICATION - ENGINE AND TRANSMISSION

See -- Lubrication Sheet and Chart -- for lubrication for the power unit see -- applicable Operator's Manual.

Main components are shown on each picture, also see chart below:

#### LUBRICATION CHART

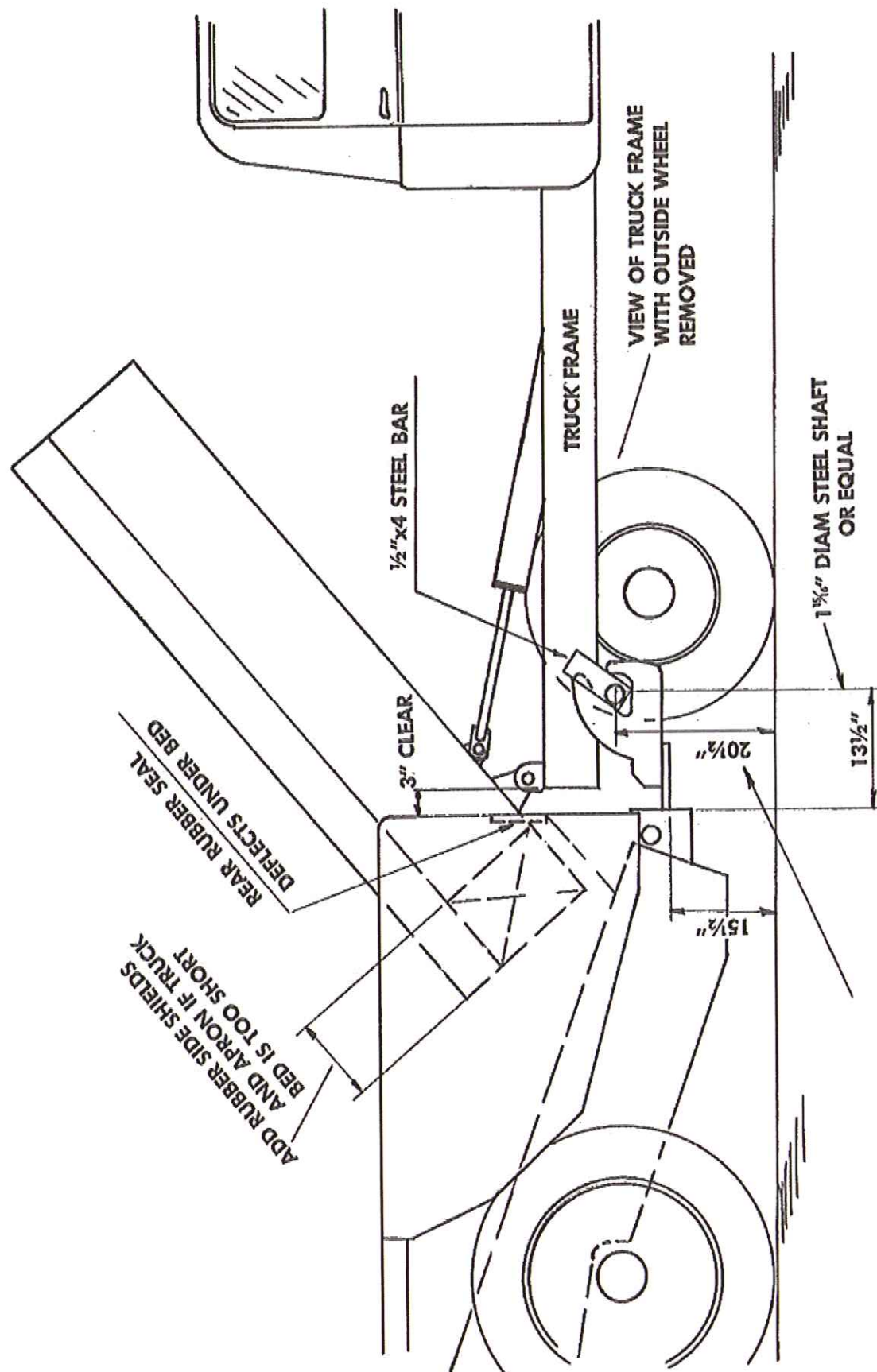
Location Page-Item	Description	Minimum Hours To Grease
2-3	Bearings	4 hours
2-15	Bearings	4 hours
4-11	Bearings	15 days
4-See Page 2	Same as 2-3	4 hours
16-1	Yoke	8 hours
16-13	Collar Assembly	4 hours
16-15	Bearings	4 hours
18-10	Oil Fill for Reduction Gear	To fill use 5 lbs. (5 pints #GX90 Gear Oil)
	Jaw Clutch Driven	4 hours
30-3	Jaw Clutch Driver	4 hours
30-7	Shift Yoke Cam	4 hours
42-6	Head Pulley Bearings	8 hours
48-1	Truck Hitch	15 days
MM Pkg. 55 Page 49	Hydraulic Pump	Use Type A Trans. Fluid

\*\*\*\*\*

NOTE: Any unauthorized changes to the Flaherty Spread-Master will be the responsibility of the person or persons making the change and thereby Voids the responsibility of Flaherty Mfg., Inc., in the altered machine.

\*\*\*\*\*

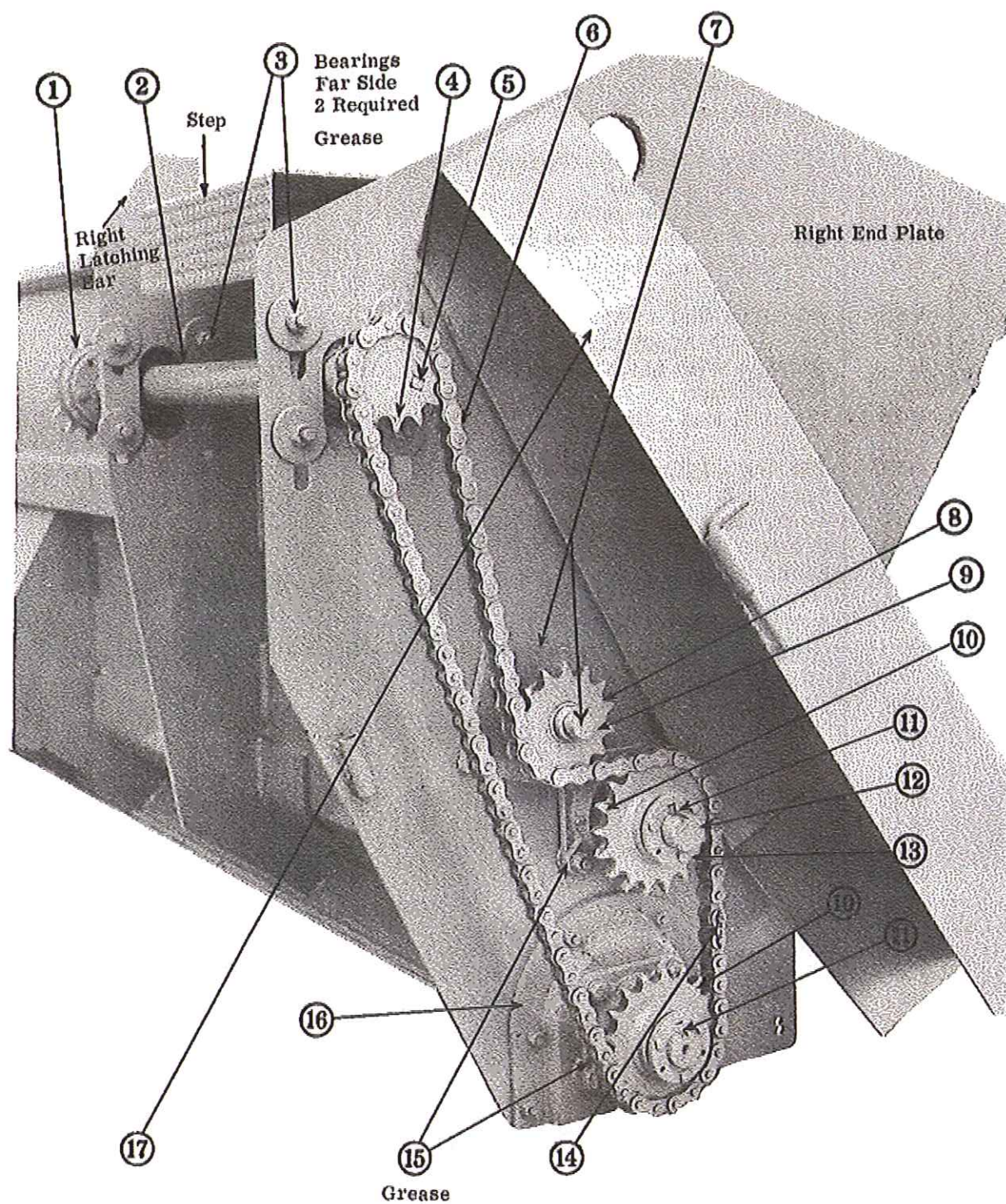




## TRUCK HOOK & PULL BAR ATTACHMENT

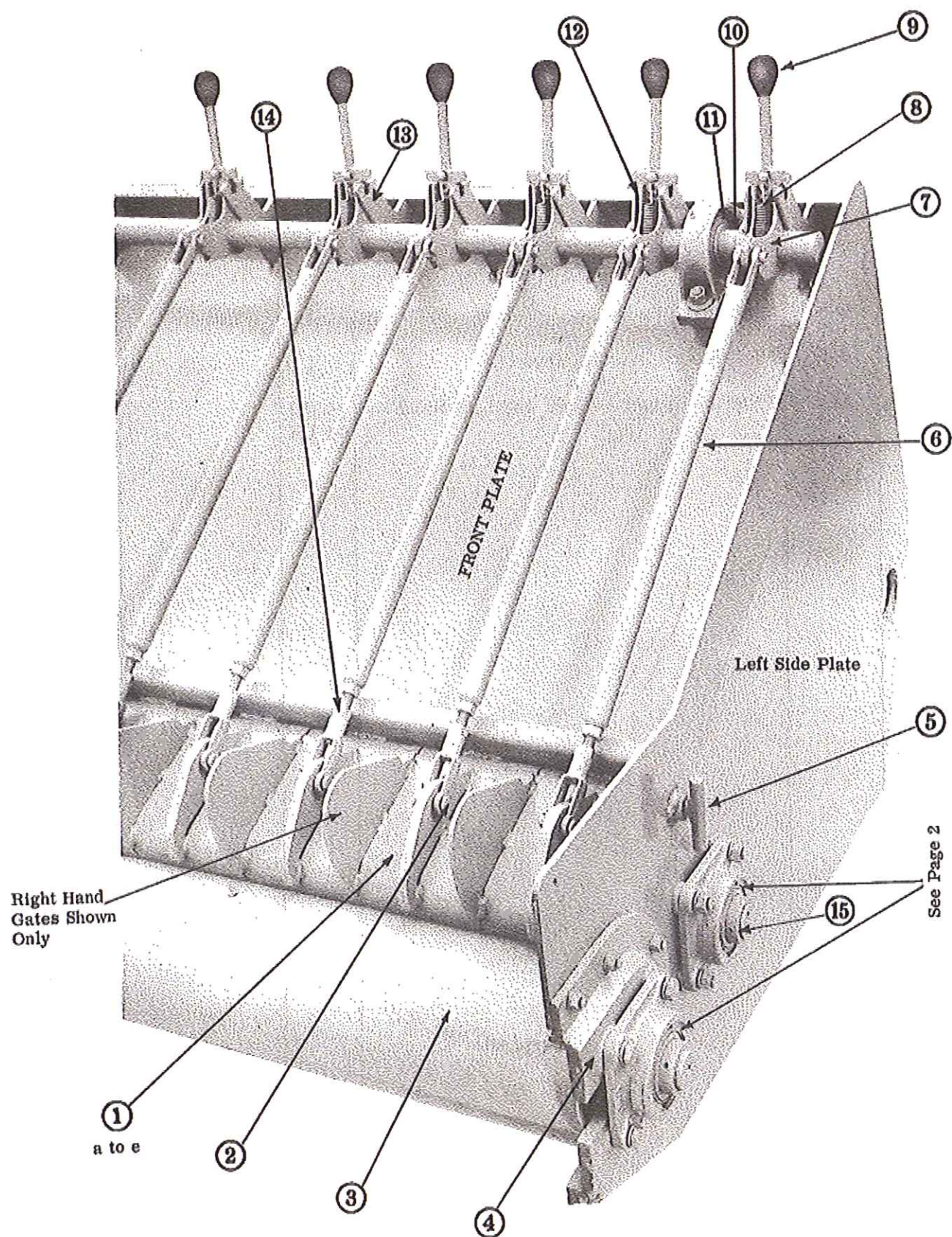
Page & Part No.	DESCRIPTION	No. Reqd.		
2-1	Sprocket with Bushing (Drive Inboard)	1		
2-2	*Shaft - Hopper Drive	1		
2-3	Bearings - Flanged (Drive Hopper Shaft)	2		
2-4	Sprocket (Drive Outboard)	1		
2-5	Key	1		
2-6	Chain-Roller (Hopper Driven)	1		
2-7	Tightener Assembly - Chain Includes Sprocket, Bracket & Bearings	1		
2-8	Tightener Sprocket w/Bearings	1		
2-8A	Bearings - Tightener Sprocket	2		
2-9	Tightener Bracket Assy. Chain (Bracket Only)	1		
2-10	Sprocket with Bushing (Agitator and Spreadroll)	2		
2-11	Key - Agitator Shaft and Sp. Roll	1 ea.		
2-12	Shaft Stub - Agitator Keyed (See 6-6)			
2-13	Bolts with Bushings	--		
2-14	Connecting Link - (Specify if half link required)			
2-15	Bearing - Flanged	4		
2-16	Spread Roll Shield Right Hand	1		
2-17	Chain Guard (Hopper)	1		
	*NOTE: Item 2-2 is for 13 ft. Front Hopper. They vary in length for 10 ft., 11 ft., and 12 ft. sizes of hoppers. Specify length of Front Hopper when ordering.			





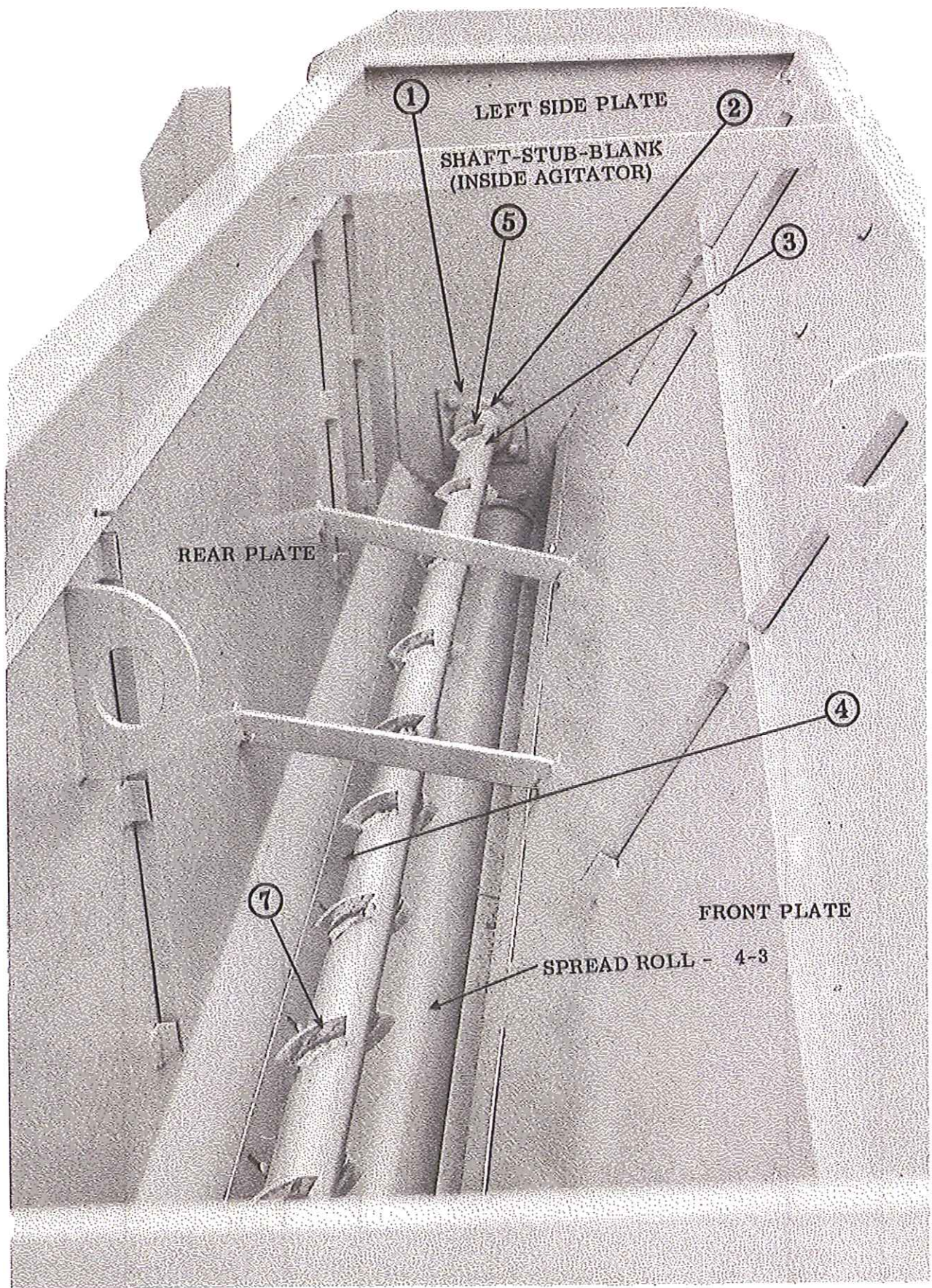
Page & Part No.	DESCRIPTION	No. Reqd.		
4-1	6" Gate Assembly - Right Hand	5		
4-1a	6" Gate Assembly - Left Hand	5		
4-1b	12" Gate Assembly - Right Hand	3		
4-1c	12" Gate Assembly - Left Hand	3		
4-1d	12" Gate Assembly - Center	2		
4-1e	13½" Gate Assembly - Center(See Sched.)	None		
4-2	Clevis Pin & Cotter	36		
4-3	*Spread Roll Assembly	1		
4-4	Spread Roll Shield - Left Hand	1		
4-5	*Hinge Rod - Gate	2		
4-6	Adjusting Rod - Gate	18		
4-7	Gate Latch Assembly	18		
4-8	Spring - Gate Latch Assembly	18		
4-9	Knob Rubber	18		
4-10	*Control Rod - Gate	1		
4-11	Bearing - Pillow Block	4		
4-12	Gate Lock - Control Rod	18		
4-13	Lock, Gate Control Closed			
4-14	Clevis - Threaded	18		
4-15	Shaft, Stub Agitator - Plain	1		
	* Specify Length of Front Hopper			
	Schedule Material Required for 10 ft., 11 ft., & 12 ft. Hoppers			
	13 ft. 12 ft. 11 ft. 10 ft.			
4-1		4	3	4
4-1a		4	3	4
4-1b		3	3	2
4-1c		3	3	2
4-1d		2	2	None
4-1e	None	None	None	2
4-2	AS SHOWN ABOVE	16	14	14
4-4		16	14	14
4-5		16	14	14
4-6		16	14	14
4-7		16	14	14
4-8		16	14	14
4-9		16	14	14
4-10		16	14	14
4-12		16	14	14





Page & Part No.	DESCRIPTION	No. Reqd.		
6-1	Wear Plate Square	2		
6-2	Wear Plate Round	2		
6-3	Agitator Assembly - Complete with stub shafts (Specify Length of Hopper)	1		
6-4	Spread Roll Leveling Strip-Less Bolts (Specify Length of Hopper)	1		
6-5	Shaft Idler End - Blank	1		
6-6	Shaft Stub - Driven, Keyed	1		
6-7	Flights - Auger - Right and Left Hand	14 RH 14 LH		

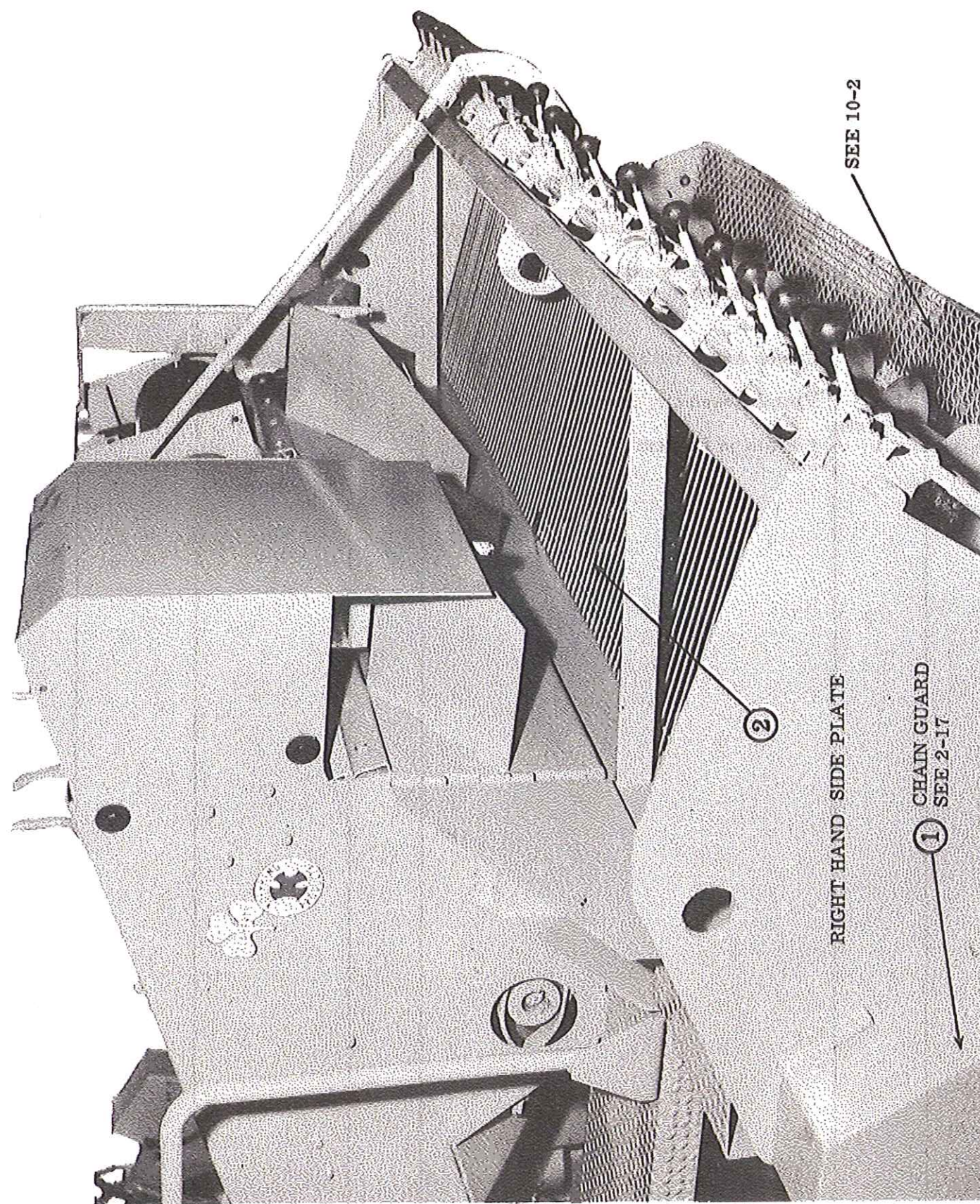






Page & Part No.	DESCRIPTION	No. Reqd.		
8-1	Chain Guard (Hopper)		See 2-17	
8-2	Screens - Specify Size	Varies		

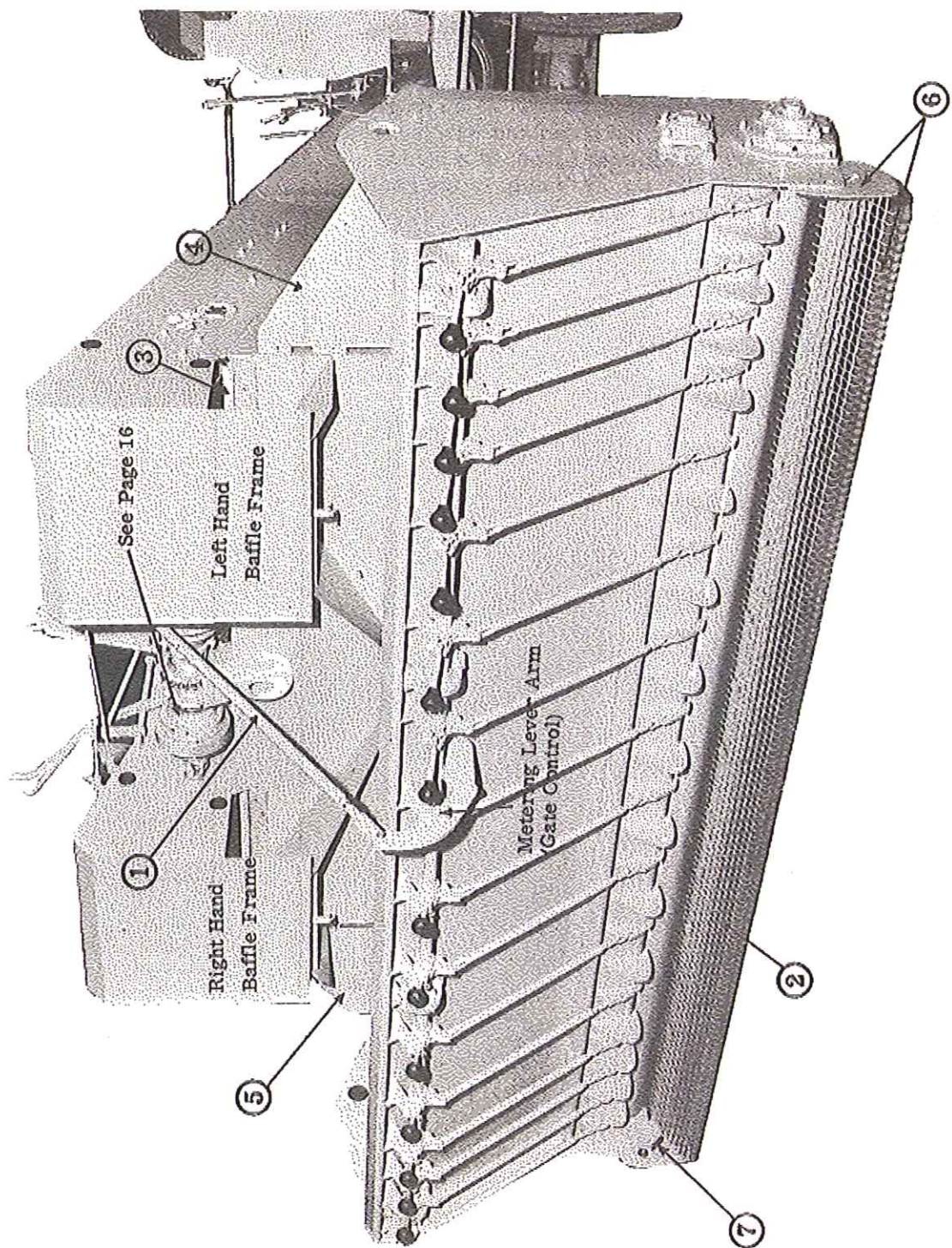






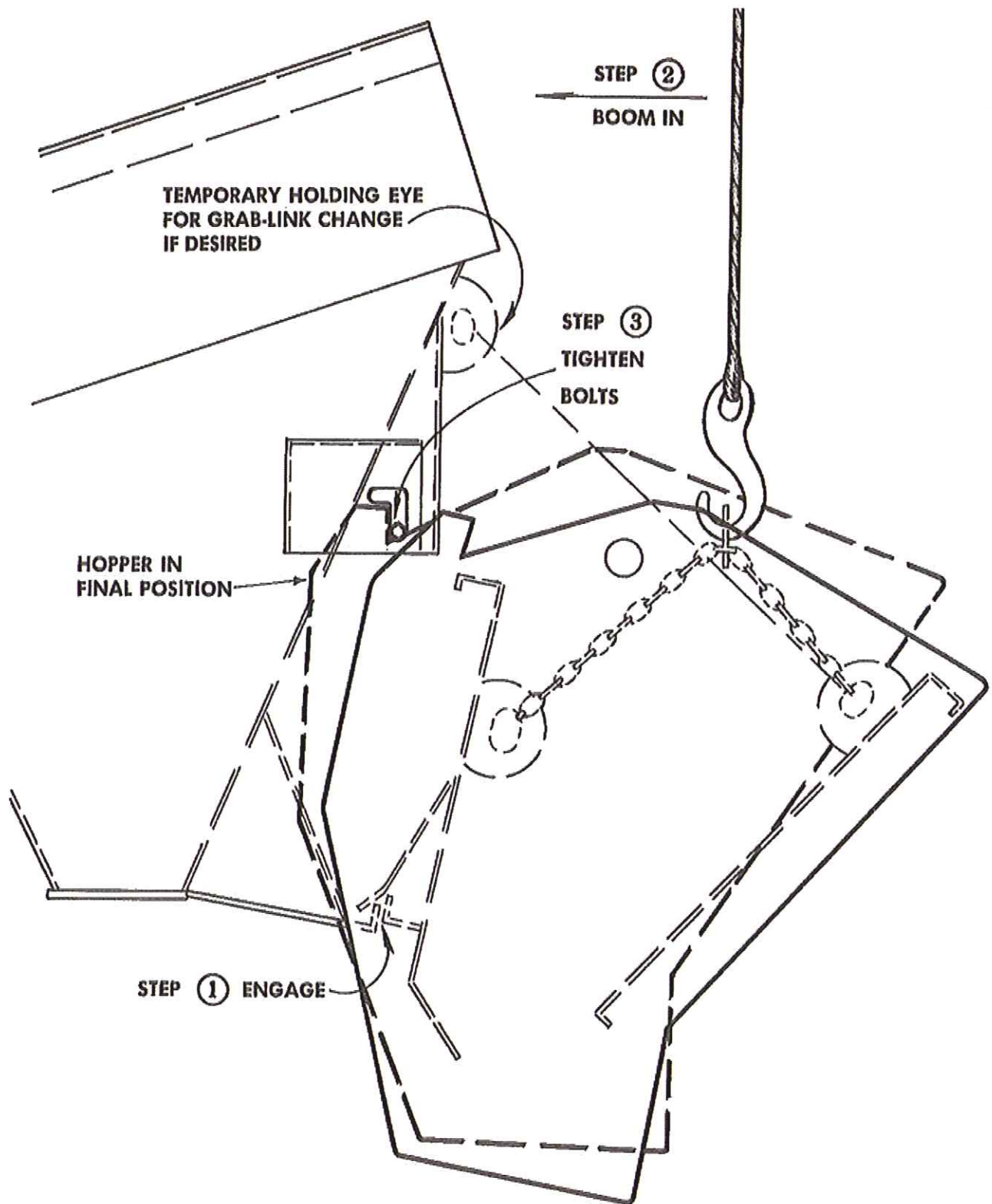
Page & Part No.	DESCRIPTION	No. Reqd.		
10-1	Reach Rod - Gate Control	1		
10-2*	Distribution Screen (Specify Length)	1		
10-3	Wiper - Conveyor Belt	1		
10-4	Baffle Extn. , Left Hand (Specify Length)	1		
10-5	Baffle Extn. , Right Hand (Specify Length)	1		
	* NOTE: 3/4" mesh screen standard. Other sizes available on special order.			
10-6	Screen Assy. With Frame complete	1		
10-7	Frame Assembly, Screen			
	* Price on Request			





Page & Part No.	DESCRIPTION	No. Reqd.		
12-1	<p data-bbox="358 310 846 373">General Arrangement of assembling Front Hopper to machine.</p> <p data-bbox="358 405 878 552">NOTE: We also furnish as an extra, a portable hand boom and winch. This mounts on forward deck of machine -- for either, the assembly is the same as shown on Page 12.</p>			

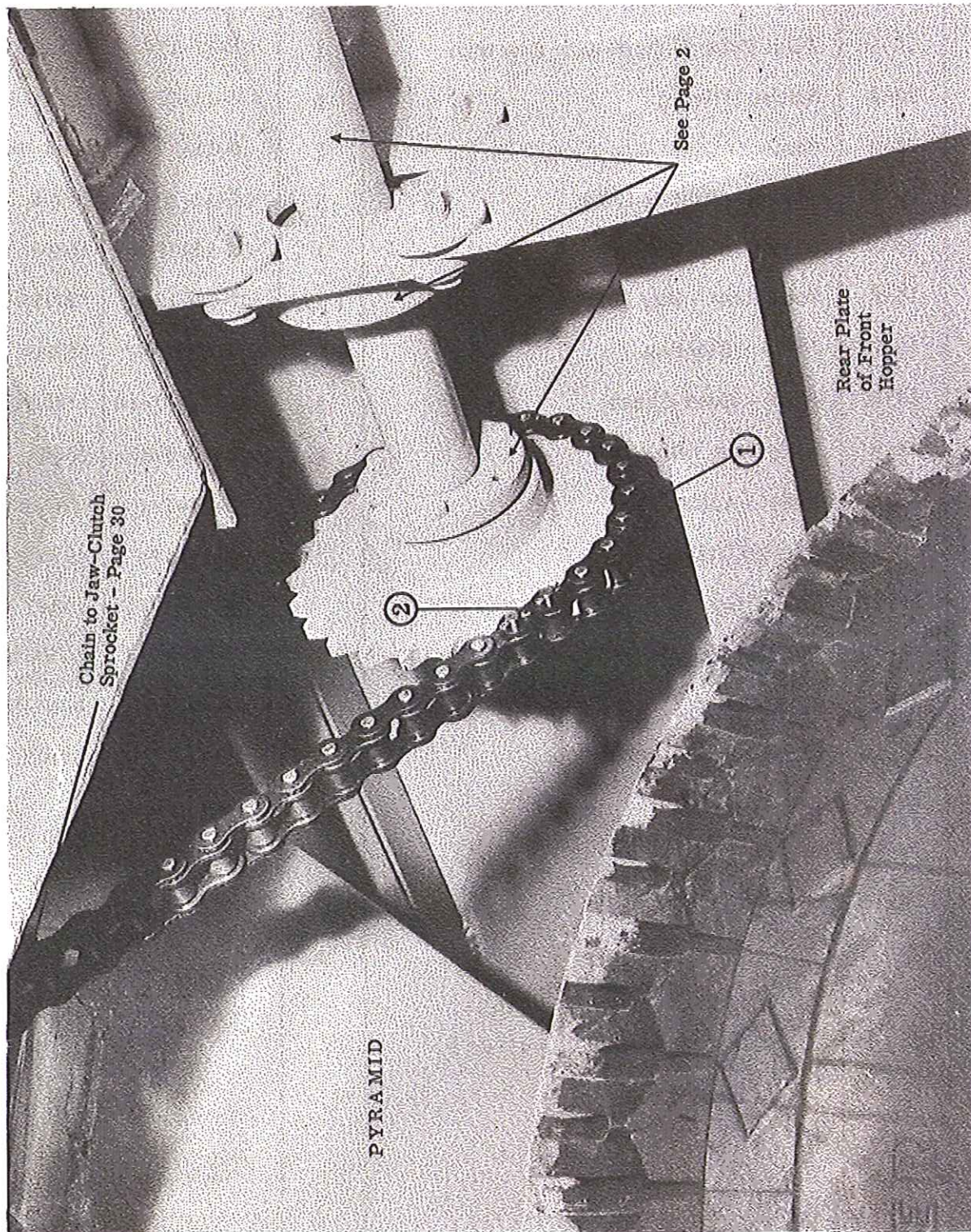




## ASSEMBLY OF HOPPER TO MACHINE



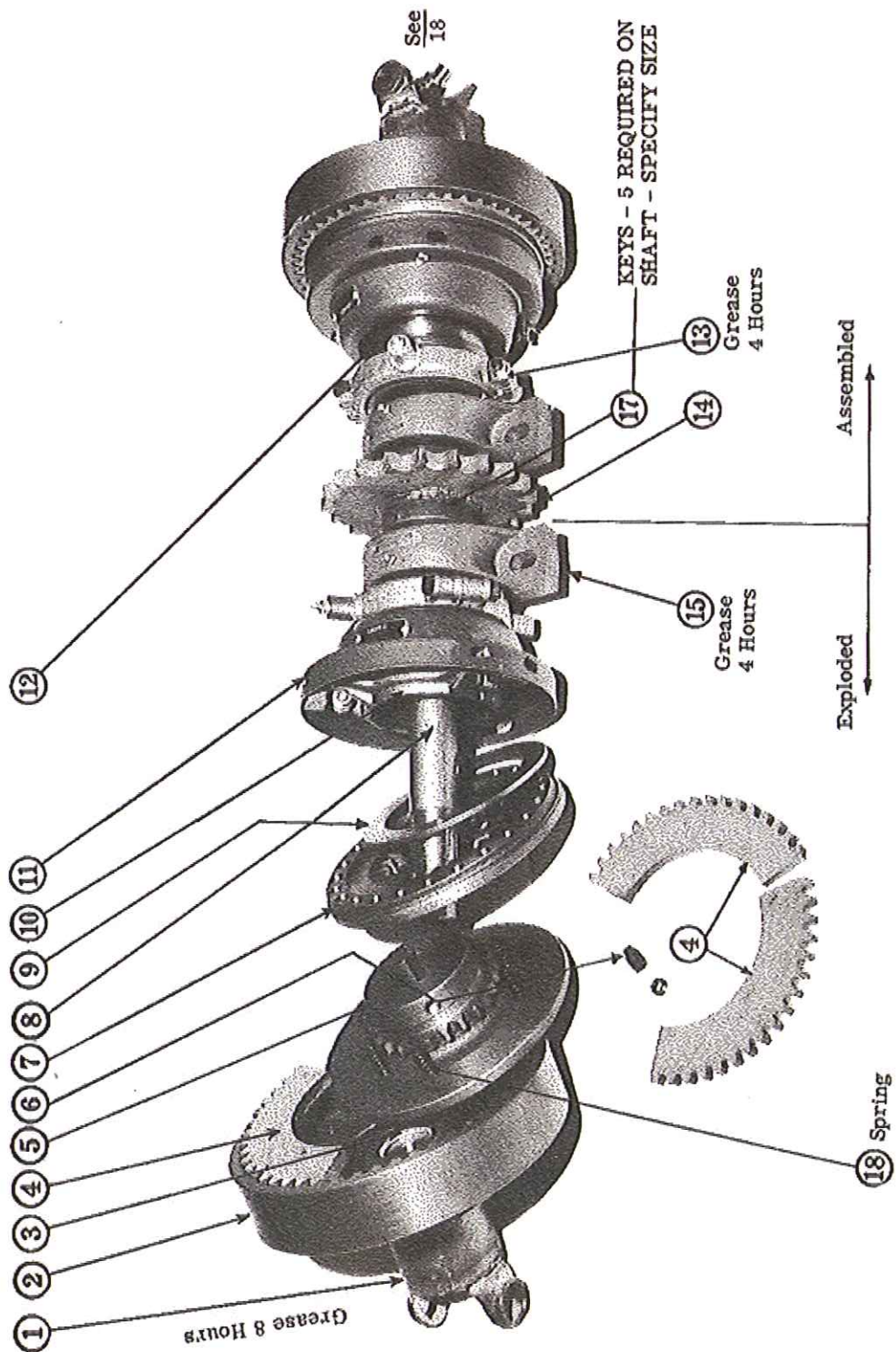






Page & Part No.	DESCRIPTION	No. Reqd.		
16-1	Pilot Yoke Flanged with Bearings	1		
16-2	Spider Driving	1		
16-3	Seal	1		
16-4	Plates - Split Driving	3		
16-5	Plate - Hub & Back	1		
16-6	Set Screw - Dog Point & Plain Set	1 ea.		
16-7	Plate - Floating	1		
16-8	Shaft - Head Clutch	1		
16-9	Ring Disc - Rollers	1		
16-10	Yoke - Adjusting			
16-11	Cover Clutch			
16-12	Cone Ring			
16-13	Cone Collar Assembly - Bronze Collar. Hub Cone & Bronze Collar 1½			
16-14	Sprocket	1		
16-15	Bearings - Pillow Block	1		
16-17	Key (½ x ½ x 1")	2		
16-17	Key (3/8 x 3/8 x 2")	3		
16-18	Springs Release	6		

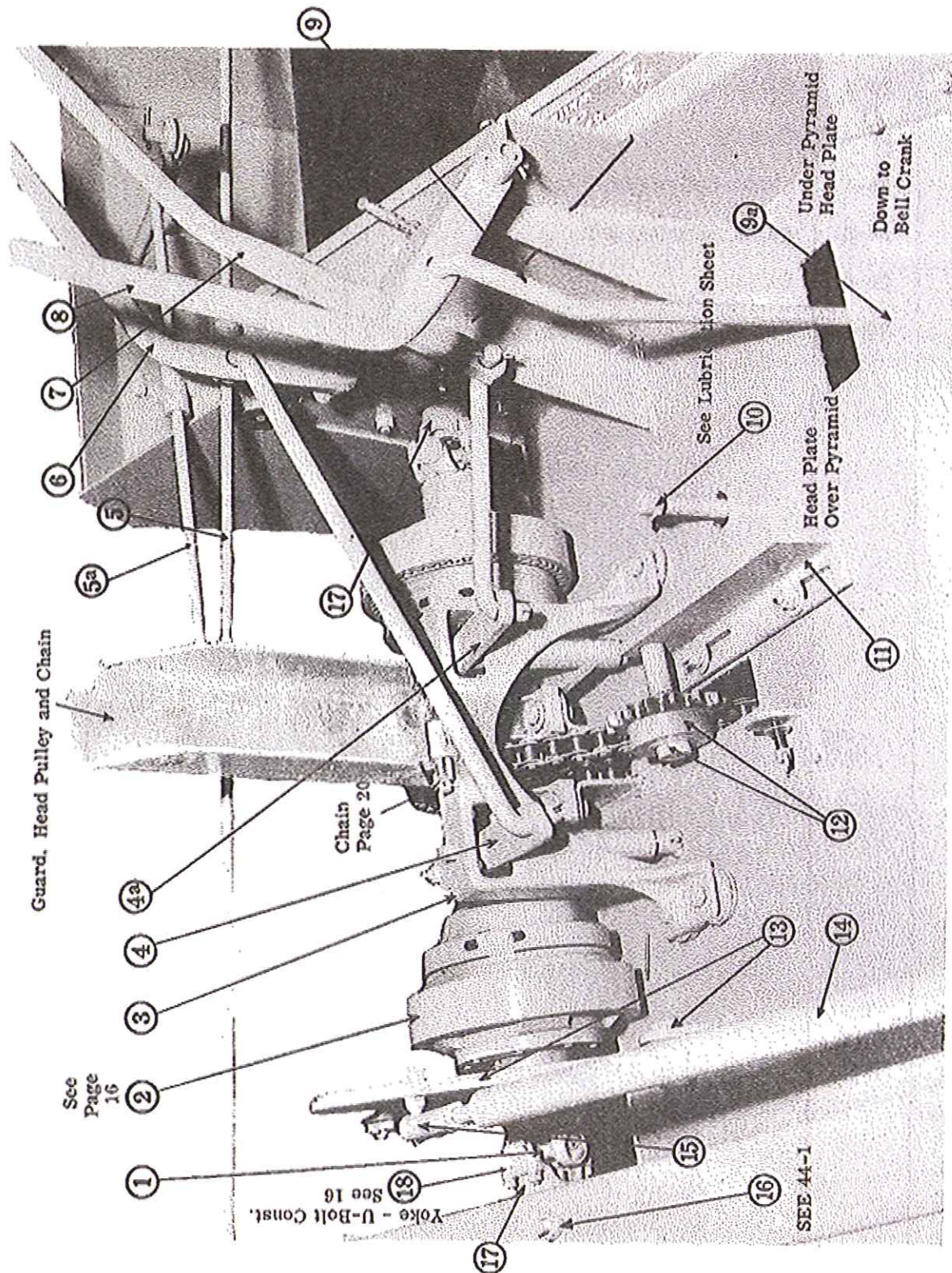




MODEL CL 108 CLUTCHES  
AND HEAD SHAFT TO HEAD  
PULLEY ARRANGEMENT

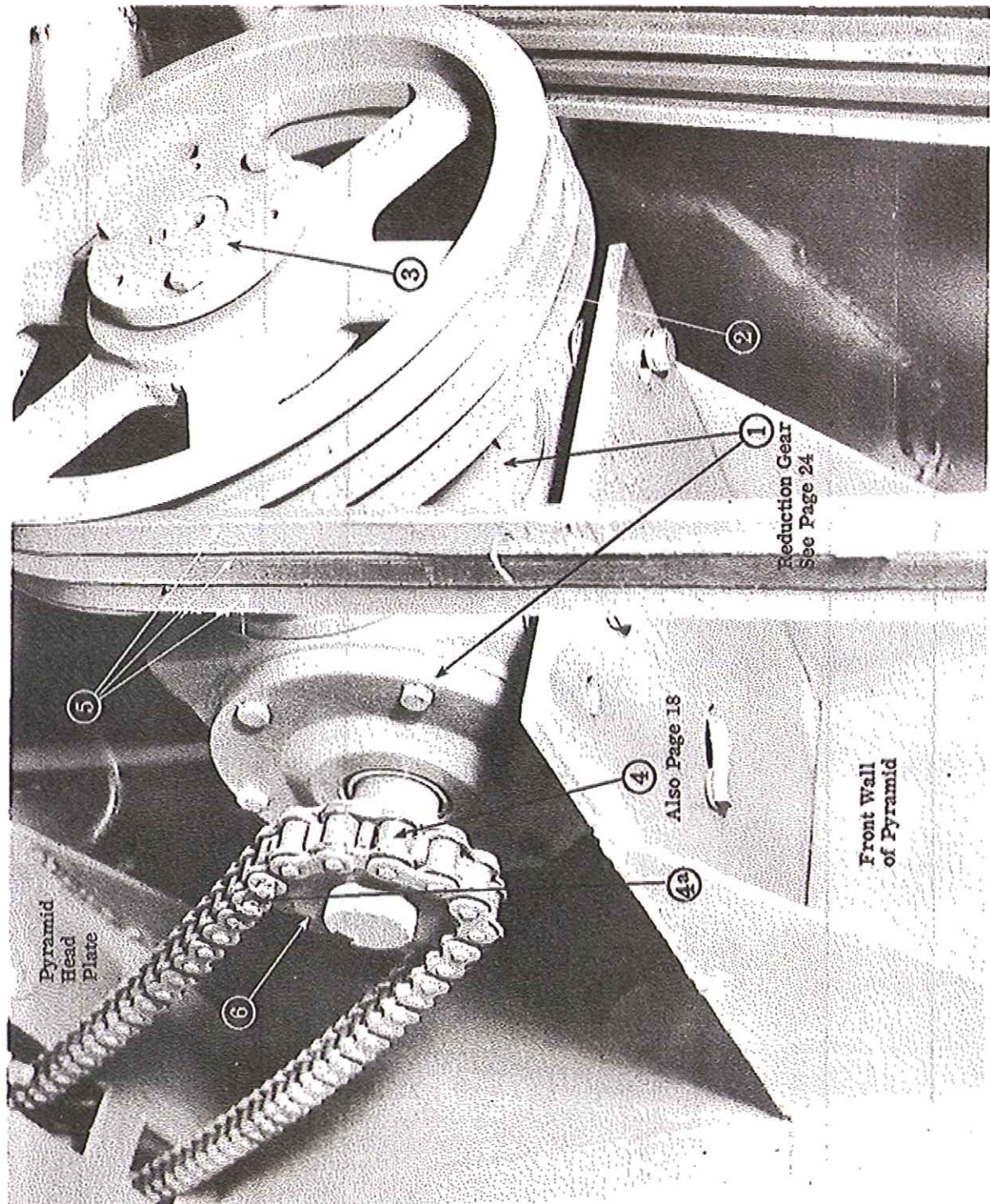
Page & Part No.	DESCRIPTION	No. Reqd.		
18-1	Cross Assembly	2		
18-2	Clutch Assembly	2		
18-3	Bracket, Clutch Yoke	1		
18-4	Throw-out Yoke Left	1		
18-4a	Throw-out Yoke Right	1		
18-5	Control Rod, Long	1		
18-5a	Control Rod, Short	1		
18-6	Lever - Clutch, Left Hand	1		
18-7	Lever - Clutch, Right Hand	1		
18-8	Lever - Jaw Clutch	1		
18-9	Linkage - Jaw Clutch Top	1		
18-9a	Linkage - Jaw Clutch Bottom	1		
18-10	Oil Fill & Gage -- 88 Gear	1		
18-11	Tightener Bracket	1		
18-12	Tightener Sprocket w/Bearing	1		
18-13	Fulcrum	1		
18-13	Fulcrum - Base Pivot	1		
18-14	Rod, Control Assy. (Front Hopper Gates)	1		
18-15	Socket, Control Assy.	1		
18-16	Bolt - Conveyor Belt Take-up	2		
18-17	Universal Yoke - Head Pulley Shaft	2		
18-18	U-Bolts (Per Joint)	2		





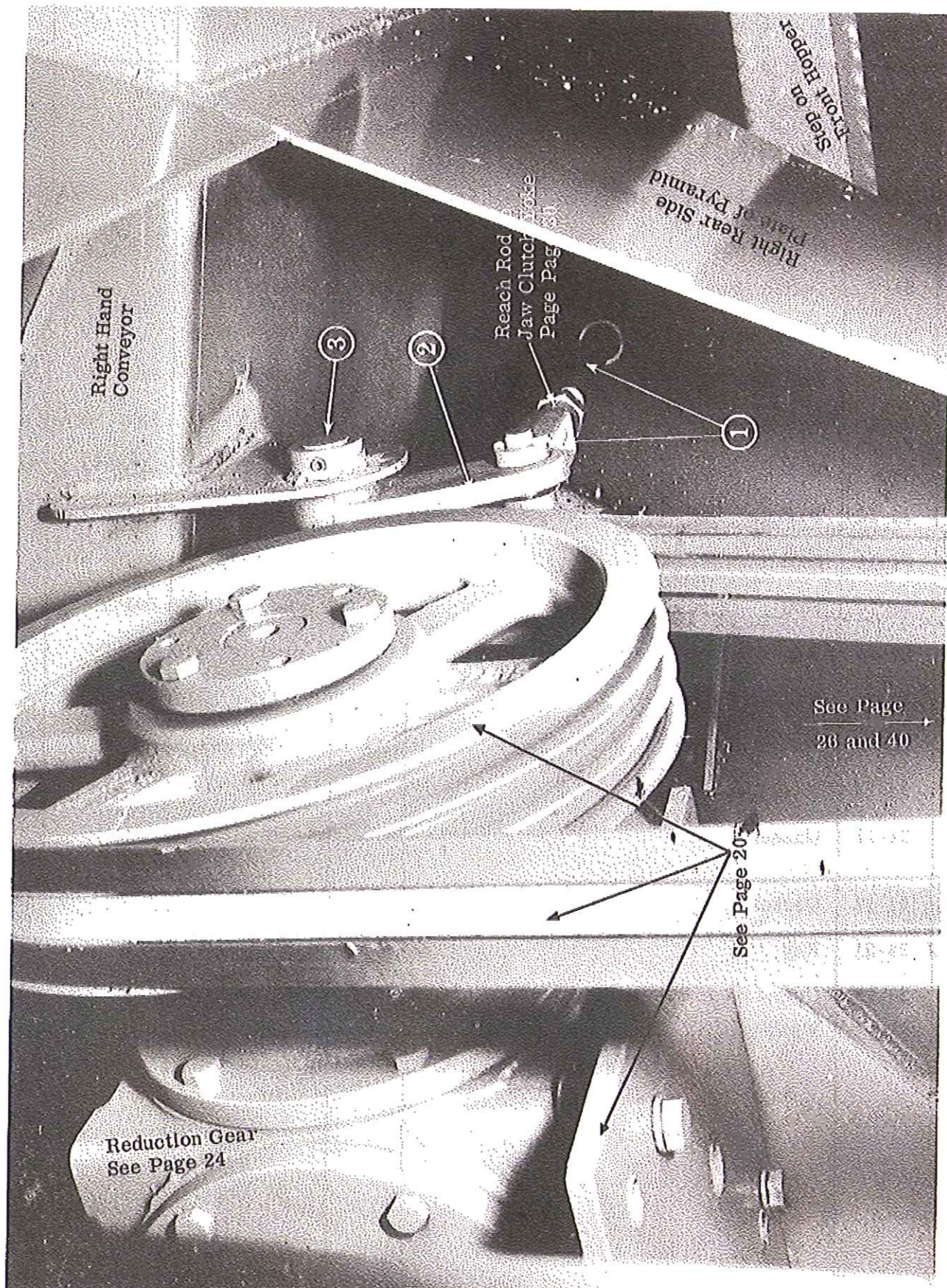
Page & Part No.	DESCRIPTION	No. Reqd.		
20-1	3:1 Speed Reducer (With 30" Ext. Shaft)	1		
20-2	Sheave with Bushing	1		
20-3	Bushing	1		
20-4	Chain-Roller (See Page 18)	1		
20-5	Belts, Matched Set	1 set		
20-6	Sprocket	1		
20-4a	Connector Link (Specify if $\frac{1}{2}$ link req'd.)		See page 18	





Page & Part No.	DESCRIPTION	No. Reqd.		
22-1	Reach Rod - Lower			
22-2	Bell Crank			
22-3	Shaft			



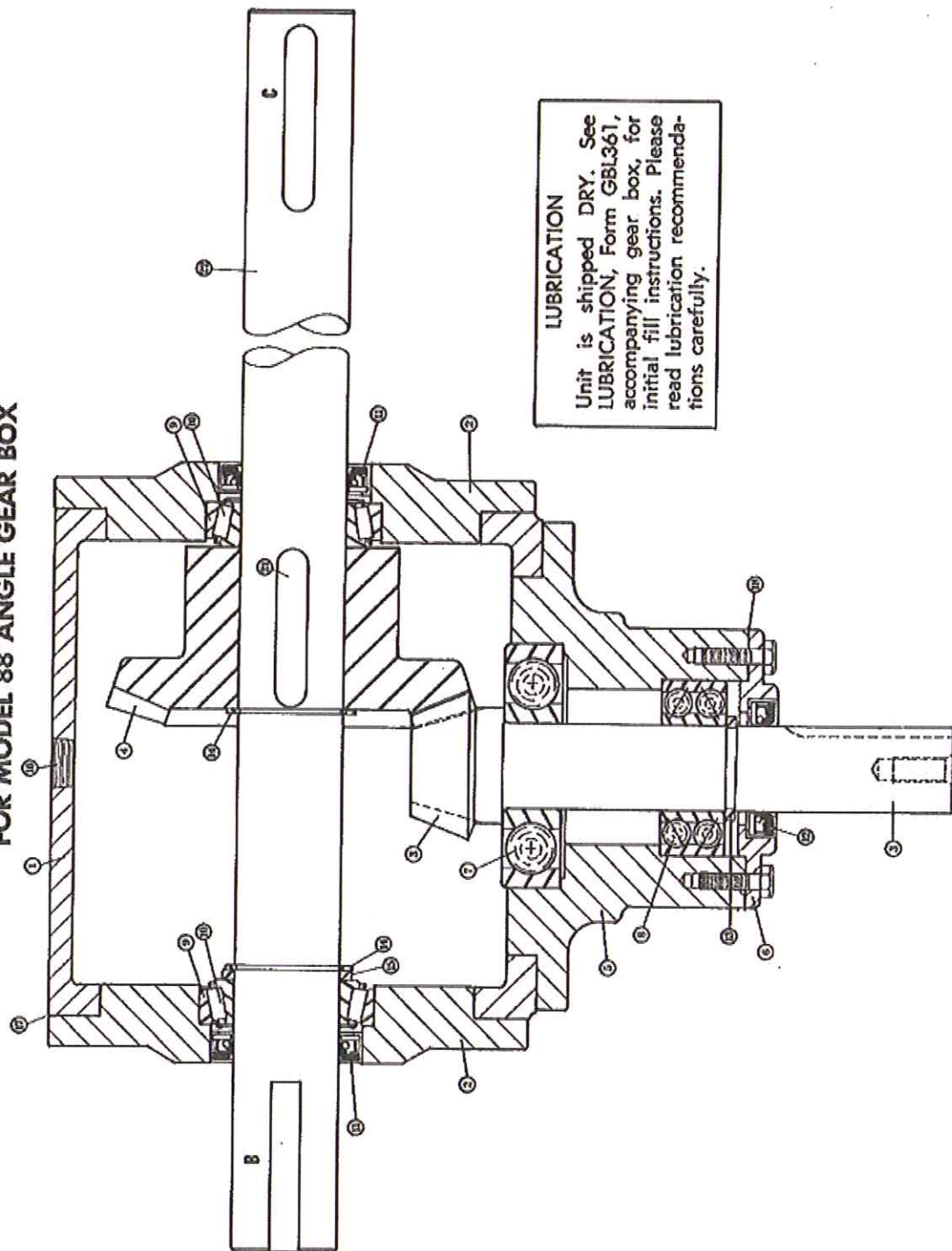




Page & Part No.	DESCRIPTION	No. Reqd.		
24-1	Case	1		
24-2	End Cap	2		
24-3	Pinion Shaft & Gear	2		
24-4	Gear	1		
24-5	Pinion Housing	1		
24-6	Seal Holder	1		
24-7	Ball Bearing	1		
24-8	Ball Bearing	1		
24-9	Bearing Cup	2		
24-10	Bearing Cone	2		
24-11	Seal	2		
24-12	Seal	2		
24-13	Snap Ring	1		
24-14	Retaining Ring	2		
24-15	Spacer Washer	1		
24-16	Pipe Plug ( $\frac{1}{2}$ Npt. )	1		
24-17	Gasket			
24-18	Gasket	1		
24-21	Key	1		
24-22	Output Shaft	1		
24-23	Spacer			

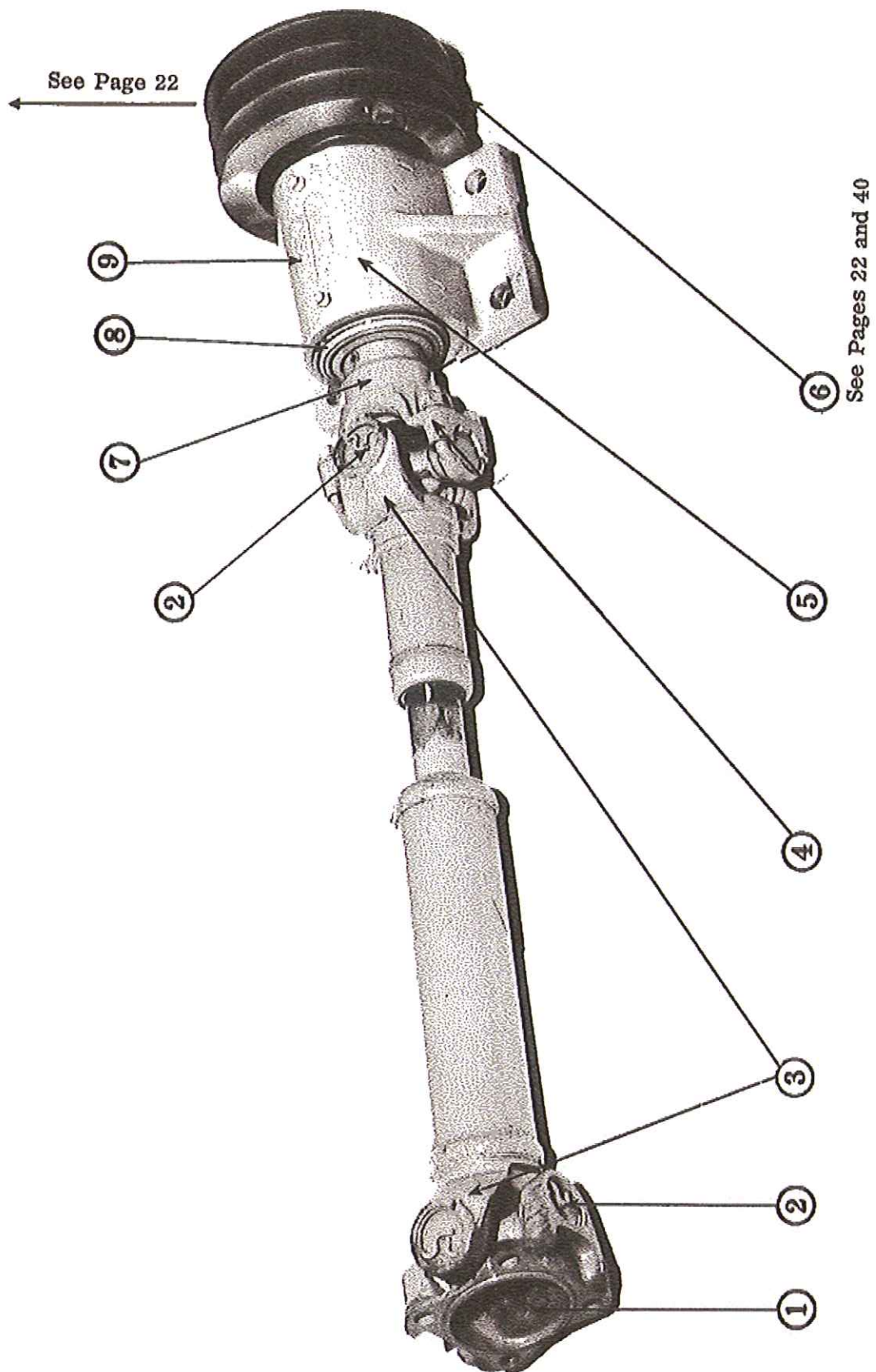


**MAINTENANCE INSTRUCTIONS AND PARTS LIST  
FOR MODEL 88 ANGLE GEAR BOX**



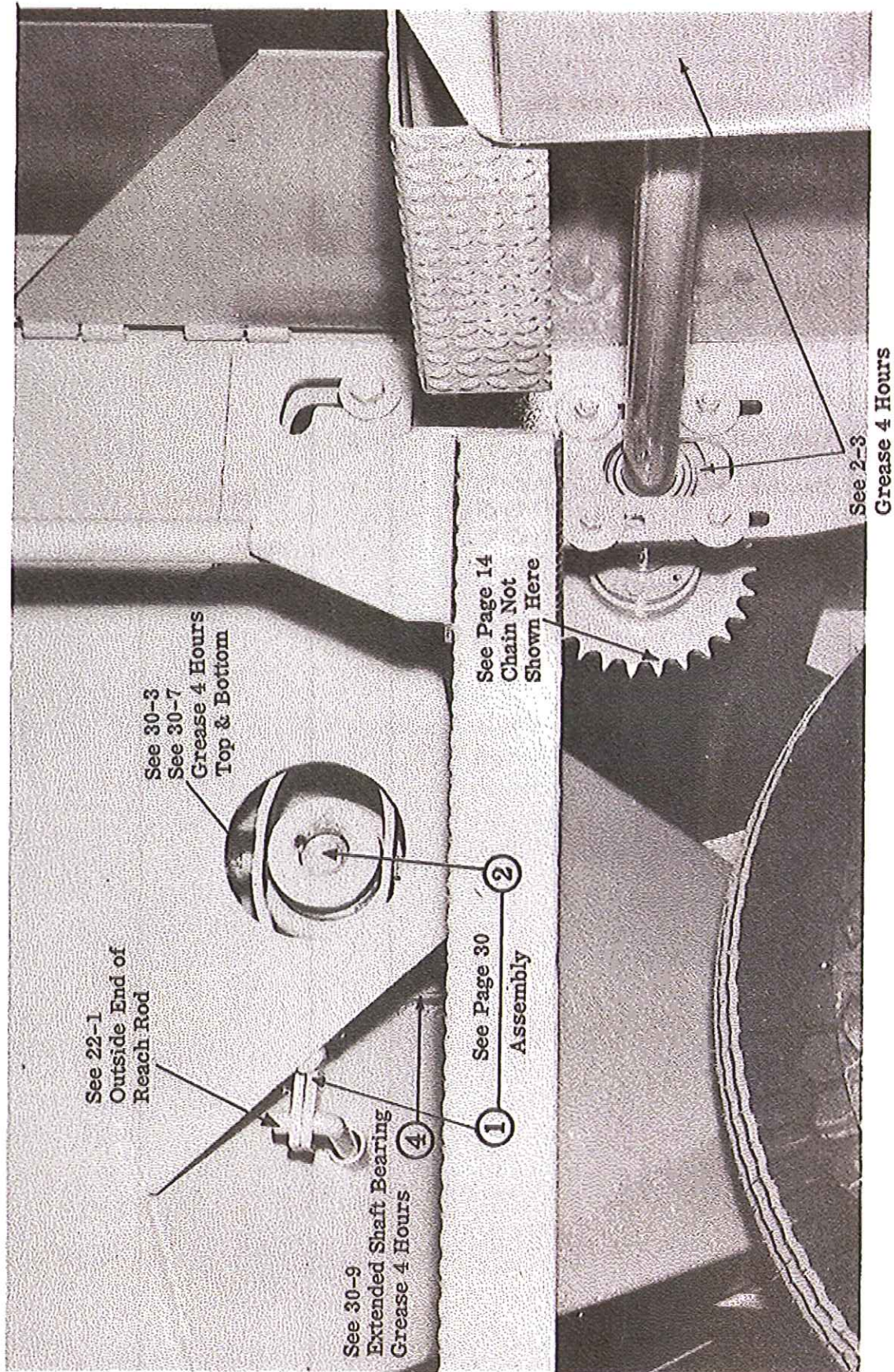
Page & Part No.	DESCRIPTION	No. Reqd.		
26-1	Flanged Yoke	1		
26-2	Snap Rings & Cross Kit	2		
26-3	Drive Line Slip Spline Assembly	1		
26-4	Yoke & U-Bolts	1		
26-5	Bearing Housing - Drive Assy. with Bearings and Shaft	1		
26-6	Sheave with Bushing	1		
26-7	Shaft, Drive	1		
26-8	Bearings, Drive Shaft	2		
26-9	Bearing Housing with Bearings & Shaft	1	Items 26-5 26-7 & 26-8	





Page & Part No.	DESCRIPTION	No. Reqd.		
28-1	FOR REFERENCE AND			
28-2	GREASE ONLY			
28-3				
28-4	Bearing, Flanged	1	See 30-9	

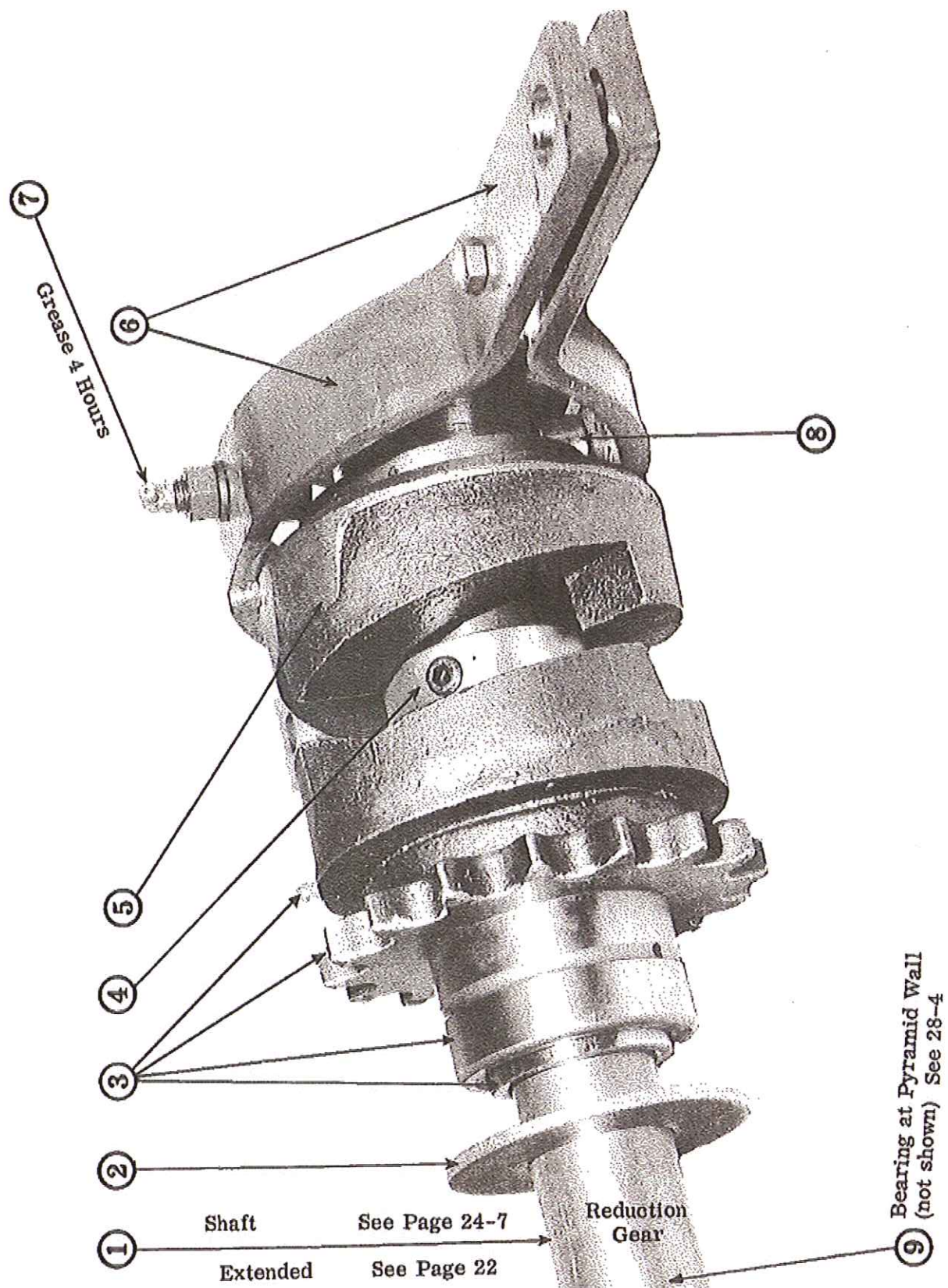






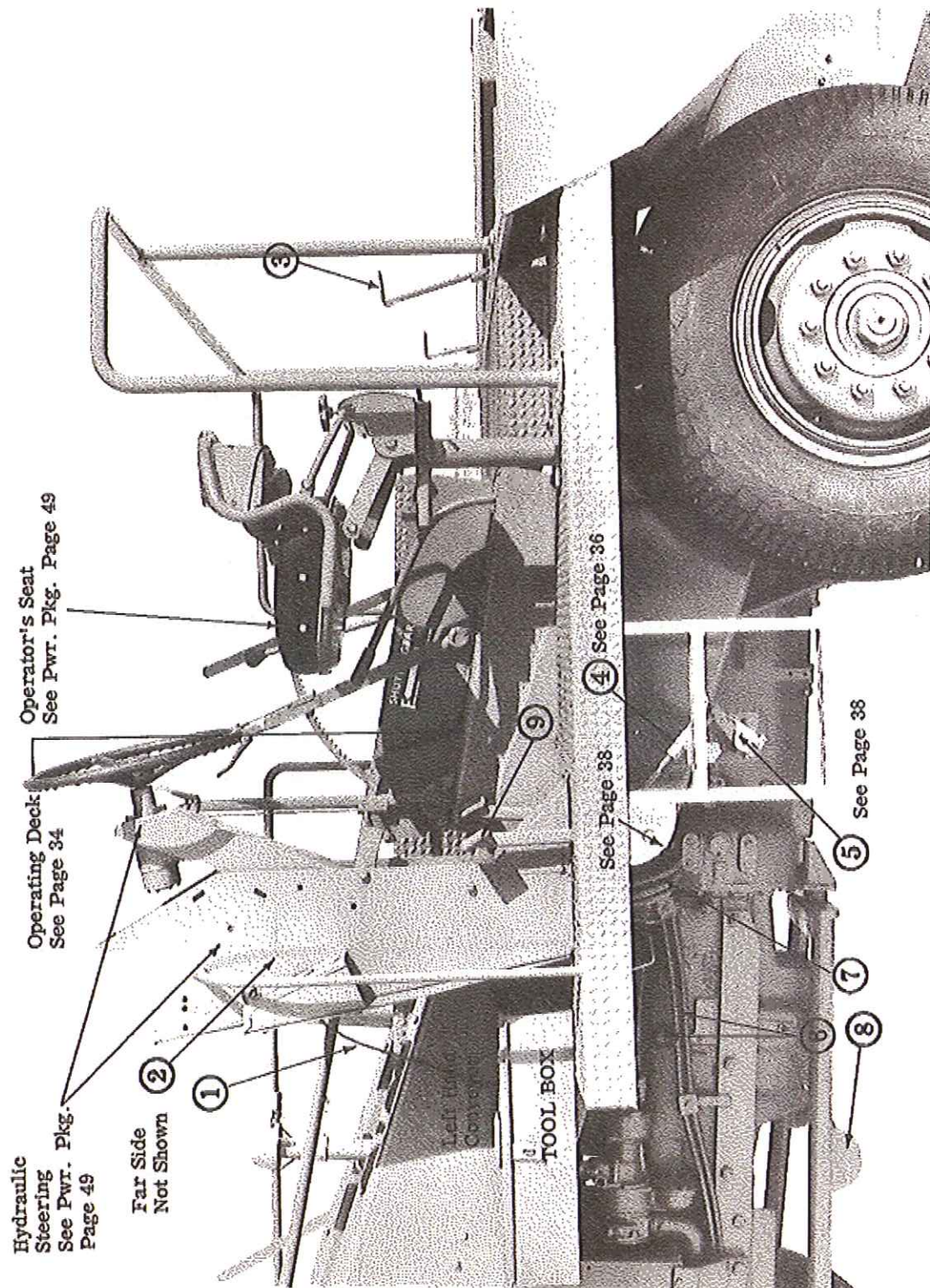
Page & Part No.	DESCRIPTION	No. Reqd.		
30-1	30" Extended Shaft (Gear Box)		See Page 24	
30-2	Washer			
30-3	Jaw Clutch & Sprocket Driven w/Bearing	1		
30-4	Set Collar	1		
30-5	Jaw Clutch - Driver	1		
30-6	Throw Out Yoke Assembly	1		
30-7	Zerk	1		
30-8	Cam Follower Bearing	2		
30-9	Bearing, Flanged	1		
30-3	Bearing			
30-3	"			





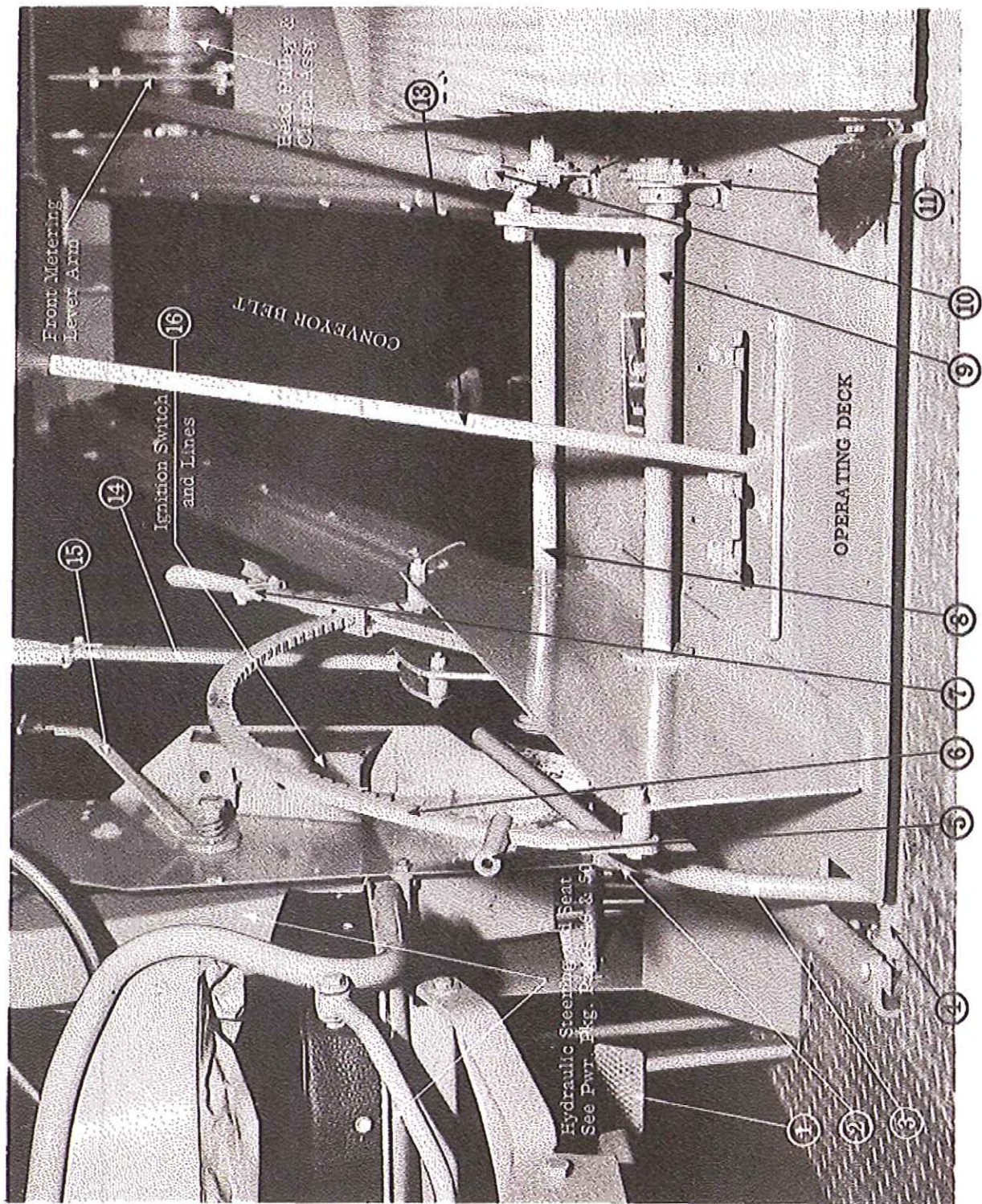
Page & Part No.	DESCRIPTION	No. Reqd.		
32-1	Choke - Control Cable Assembly	1		
32-2	Throttle - Control Cable Assembly		Spicer 7907-IX	
32-3	Handle - Control Gate (Rear Hopper - LH Conveyor)		See 48-5	
32-4	Reach Rod - Clutch	1		
32-5	Lever Arm - Clutch Shaft	1		
32-6	Hydraulic Lines - Long to Cylinder	2	106" By 3/8	
32-7	Hydraulic Lines - Short to Pump	2		
32-8	Rods, Radius - Engine to Axle Assy.	1	CS-1-3-1	
32-9	Pedal - Clutch (See 34-1)			





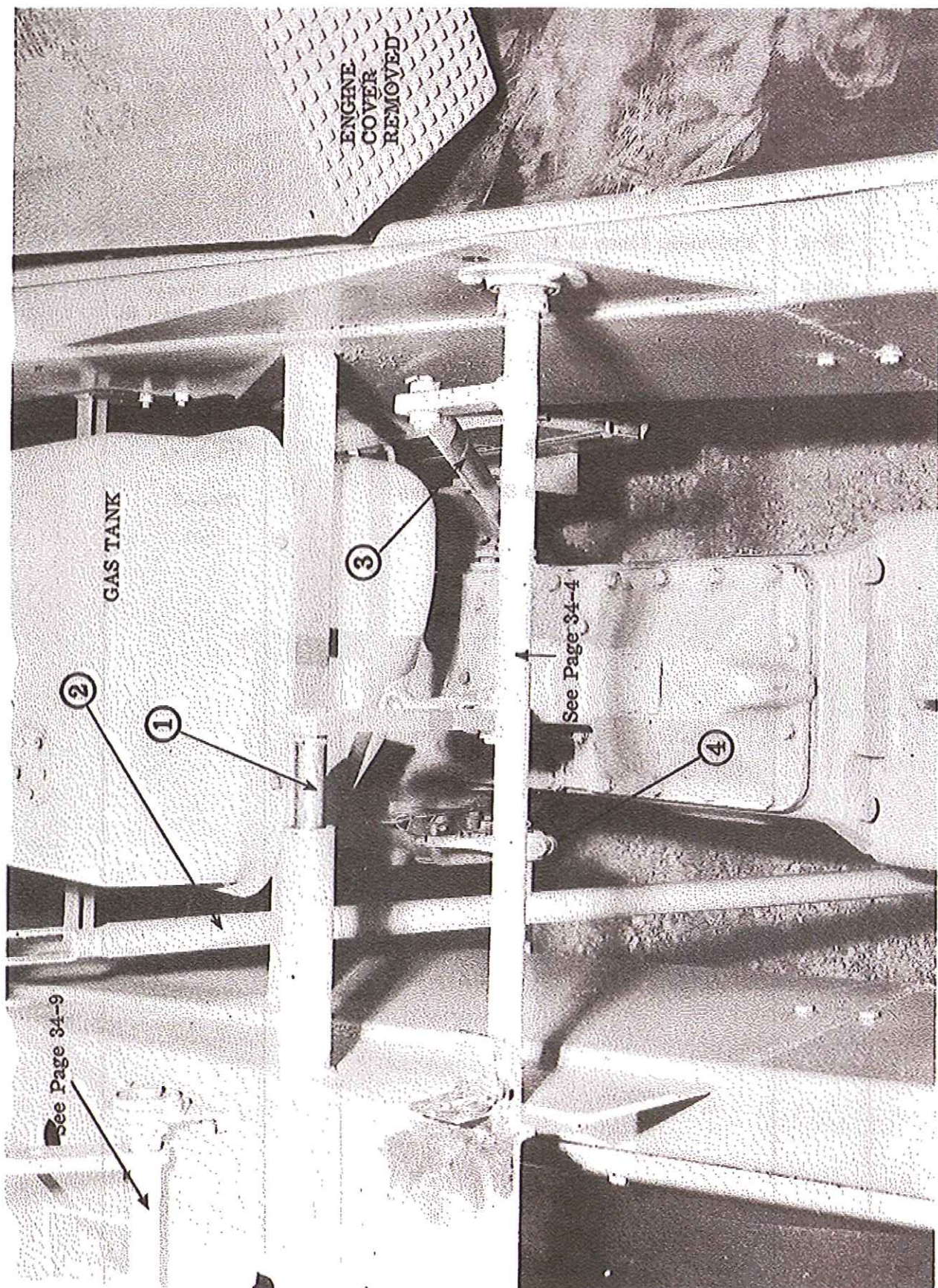
Page & Part No.	DESCRIPTION	No. Reqd.		
34-1	Clutch Pedal	1		
34-2	Brake Pedal	1		
34-3	Lever - Shuttle Gear	1		
34-4	Cross Shaft - Shuttle Gear	1		
34-5	Pawl Metering Lever Stop	1		
34-6	Quadrant - Metering	1		
34-7	Lever - Metering	1		
34-8	Shaft - Hand Brake	1		
34-9	Cross Shaft - Metering			
34-10	Reach Rod - Metering to Front Lever Arm	1		
34-11	Bearings - Hand Brake and Metering Shaft	2		
34-13	Lever - Transmission Shift	1		
34-14	Lever - Hand Brake	1		
34-15	Throttle - Gas	1		
34-16	Ignition Switch and Lines	1		





Page & Part No.	DESCRIPTION	No. Reqd.		
36-1	Cross Shaft - Shift	1	See 34-13	
36-2	Reach Rod - Hand Brake	1		
36-3	Reach Rod - Shuttle Gear	1		
36-4	Cross Shaft & Reach Rods - Clutch	1		

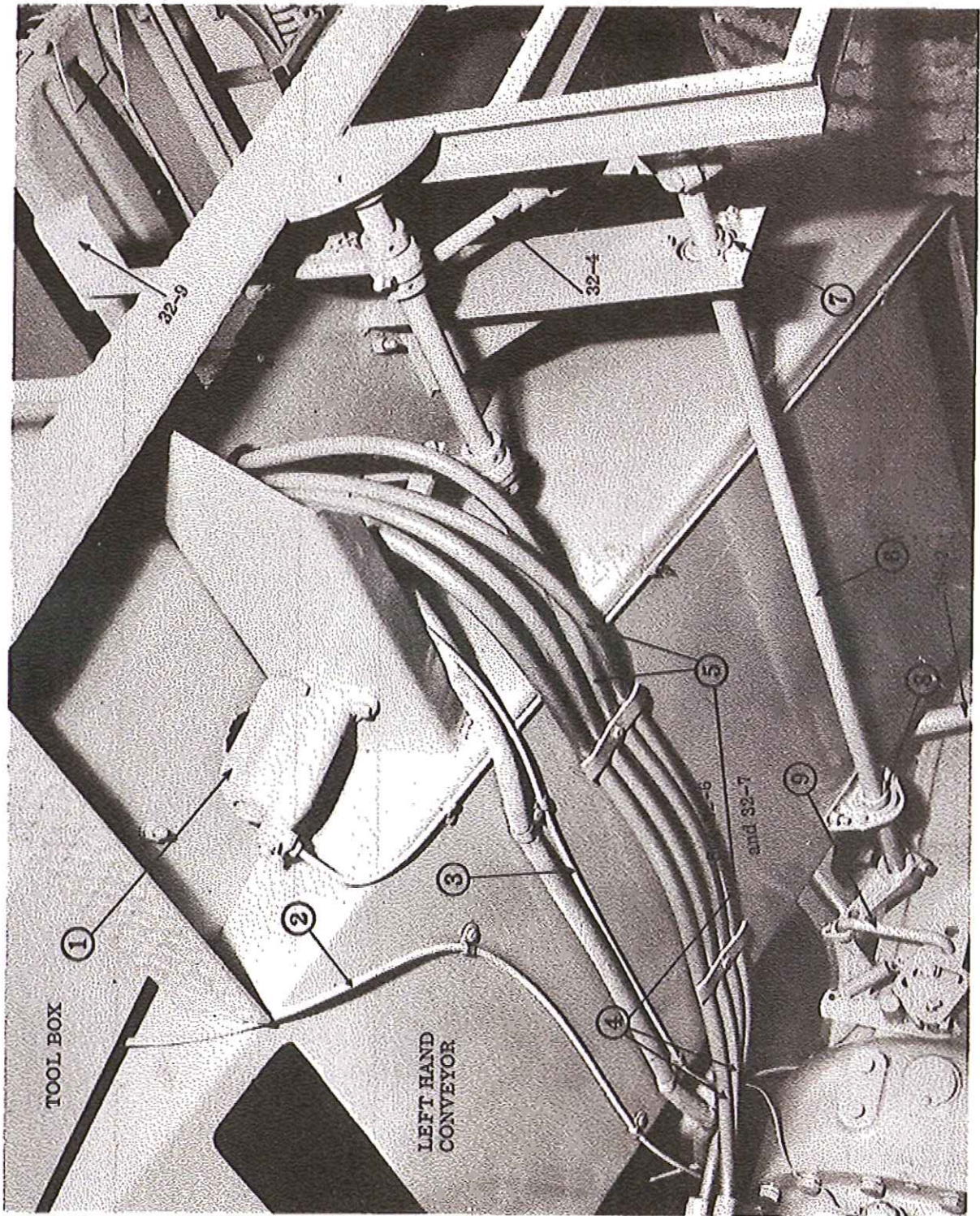






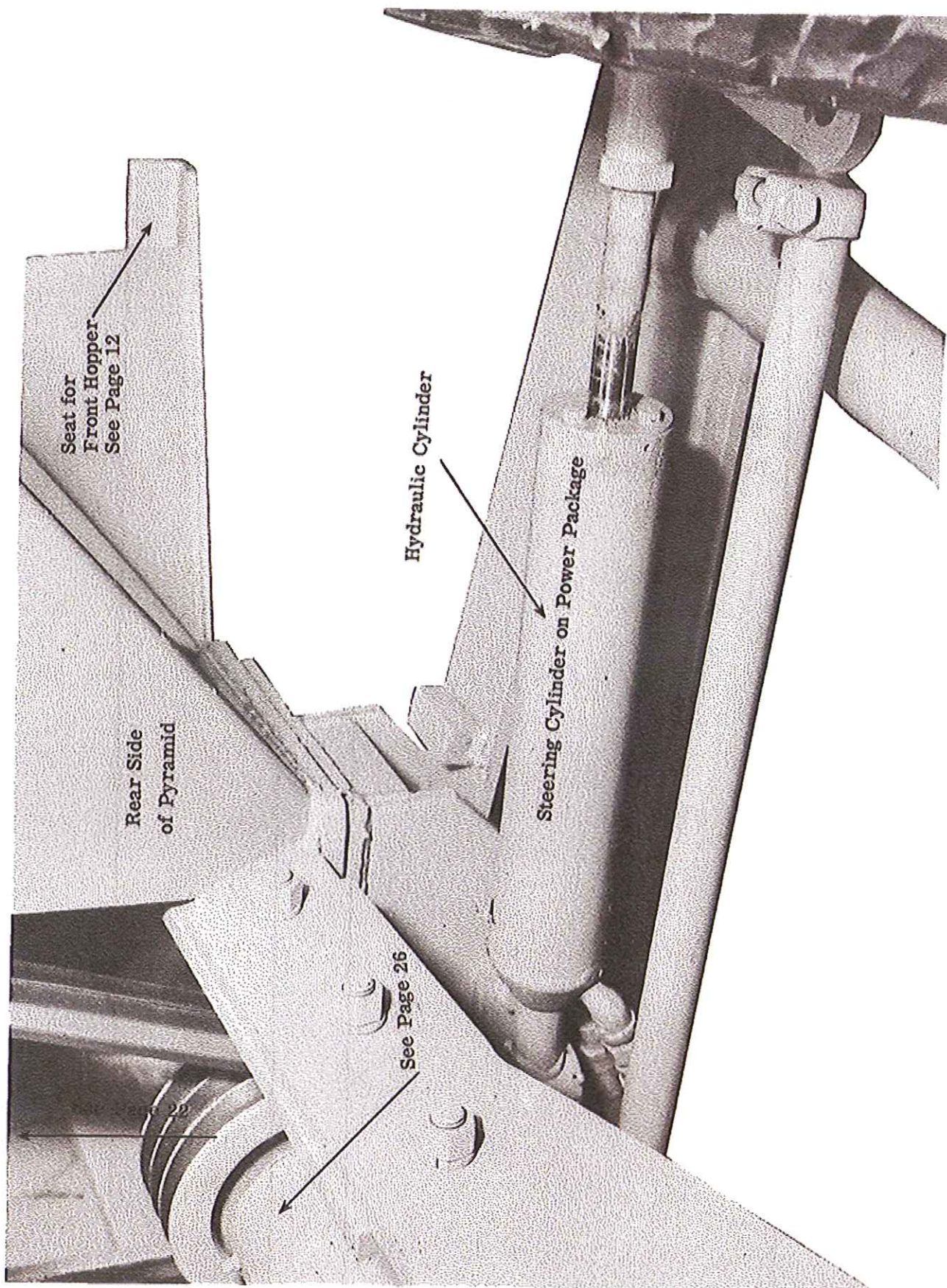
Page & Part No.	DESCRIPTION	No. Reqd.		
38-1	Master Cylinder - Brake <sup>Eis M16 Kit</sup>	1		
38-2	Wagner-1050 1 1/16 cylinder Wire, Armoured - Choke		See 32-2	
38-3	Wire, Armoured - Throttle		See 32-3	
38-4	Hydraulic Lines to Steering Cylinder	2	See 40-1	
38-5	Hydraulic Lines to Pump	2	See Power Pkg, Page 49	
38-6	Cross Shaft - Clutch	1		
38-7	Bearing - Flanged	1		
38-8	Bearing - Pillow Block	1		
38-9	Link - Engine to Cross Shaft Clutch	1		





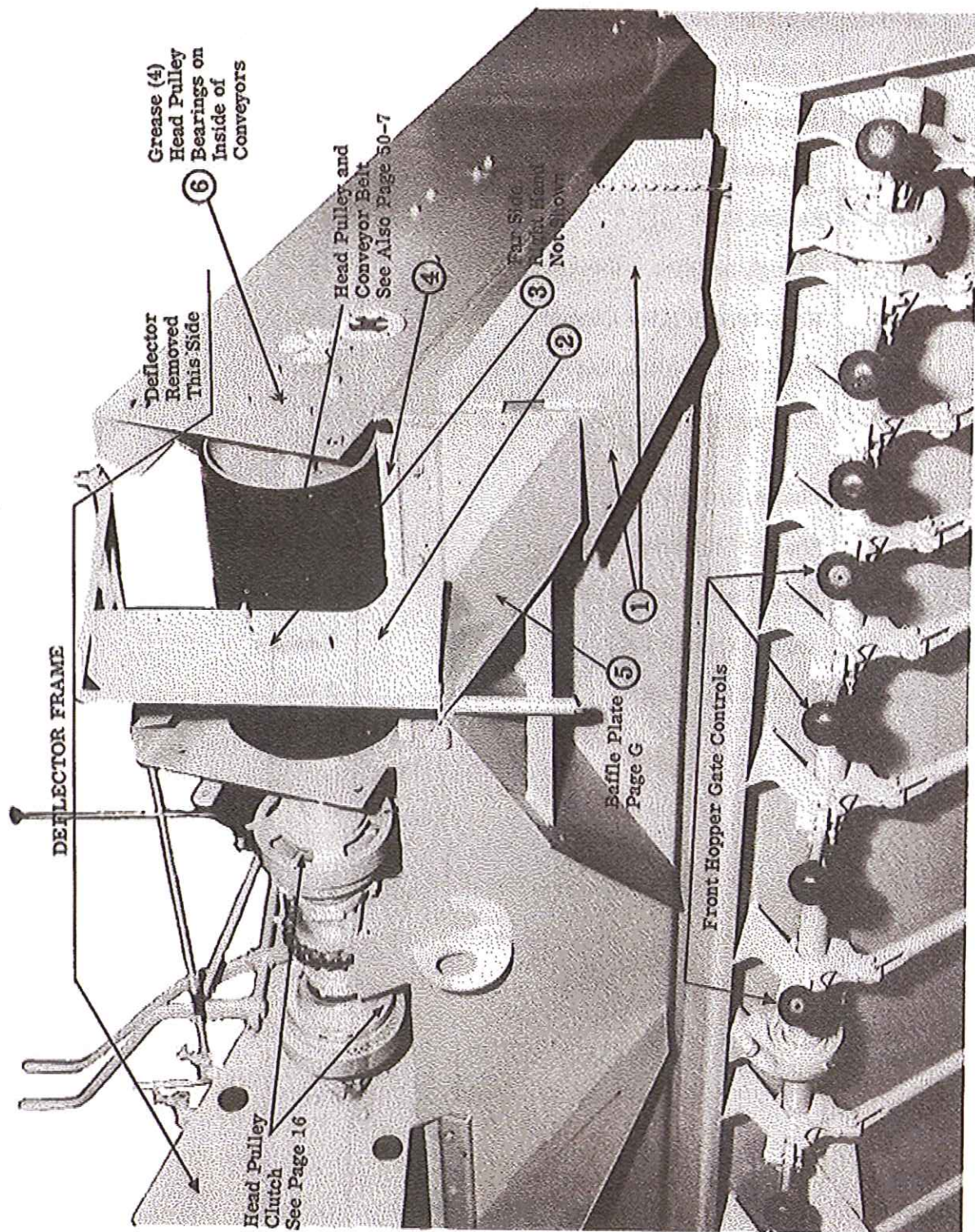
Page & Part No.	DESCRIPTION	No. Reqd.		
	<p>FOR REFERENCE ONLY</p> <p>SEE ITEMS AS NOTED</p>			





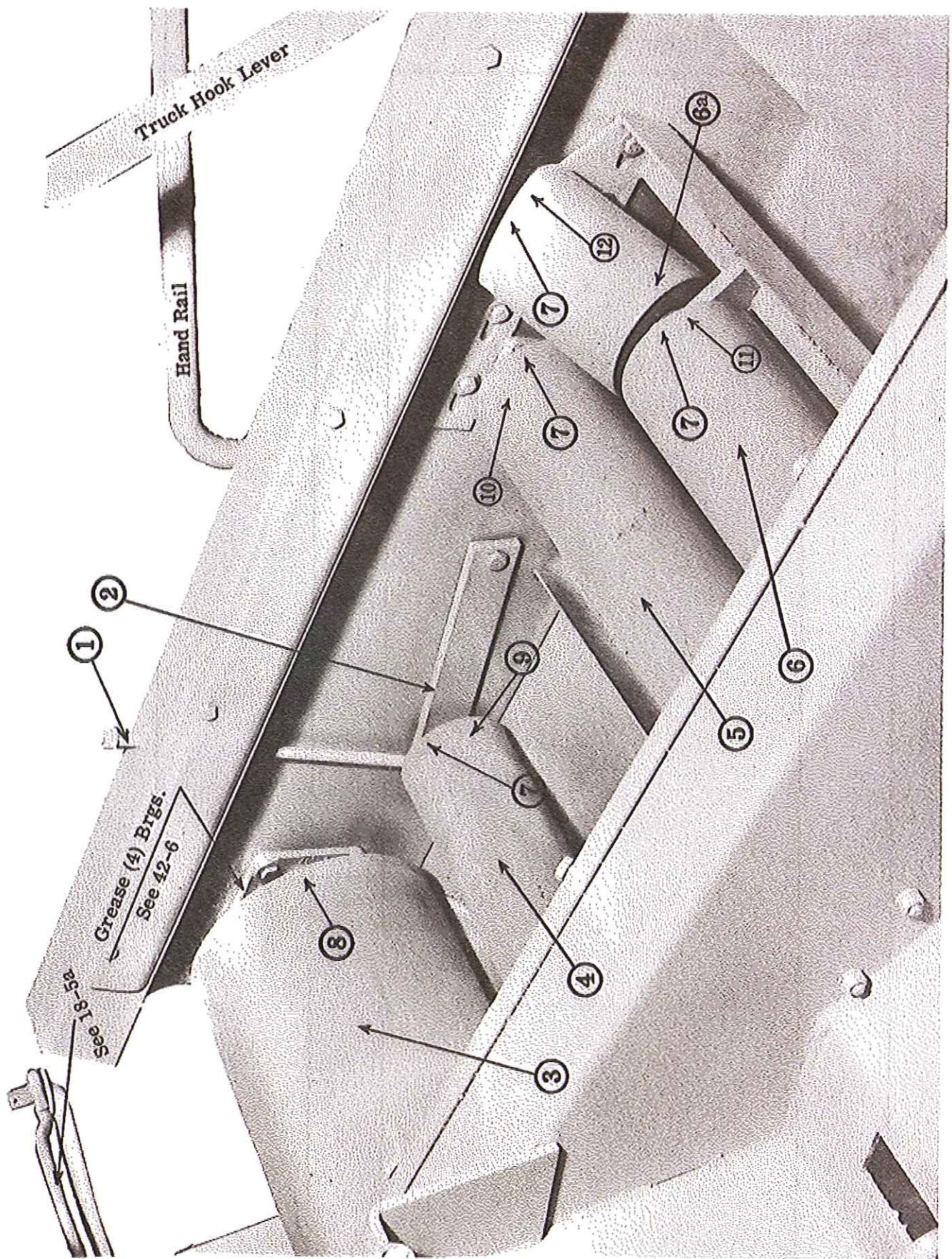
Page & Part No.	DESCRIPTION	No. Reqd.		
42-1L	Baffle Extension Plate - Left Hand (Specify Hopper Size)	1	Not Shown	
42-1R	Baffle Extension Plate - Right Hand (Specify Hopper Size)	1		
42-2	Vertical Deflector Plate	2		
42-3	Baffle Arm Right	1		
42-3	Baffle Arm Left	1		
42-4	Wiper	2		
42-5	Baffle Plate Fixed			
42-6	Bearings, Flanged	4		





Page & Part No.	DESCRIPTION	No. Reqd.		
44-1	Threaded Bolt - Head Pulley Adjustment	4		
44-2	Belt Tightner Arm	4		
44-3	Head Pulley	2		
44-4	Tightener Idler	2		
44-5	Return Idler 22"	4		
44-6	Troughing Idler - Complete	14		
44-6 <sup>B</sup>	Roll-Trough Idler Center	1 ea.		
44-6 A	Roll-Trough Idler End	2 ea.		
44-7	Bearings For All Items 4, 5, 6 Same	As Reqd		
44-8	Shafts, Head Pulley	2 ea.		
44-9	Shaft - Tightener Idler	2 ea.		
44-10	Shaft End - Return Idler	2 ea.		
44-11	Shaft - Center Roll	2 ea.		
44-12	Shaft - End Roll	2 ea.		





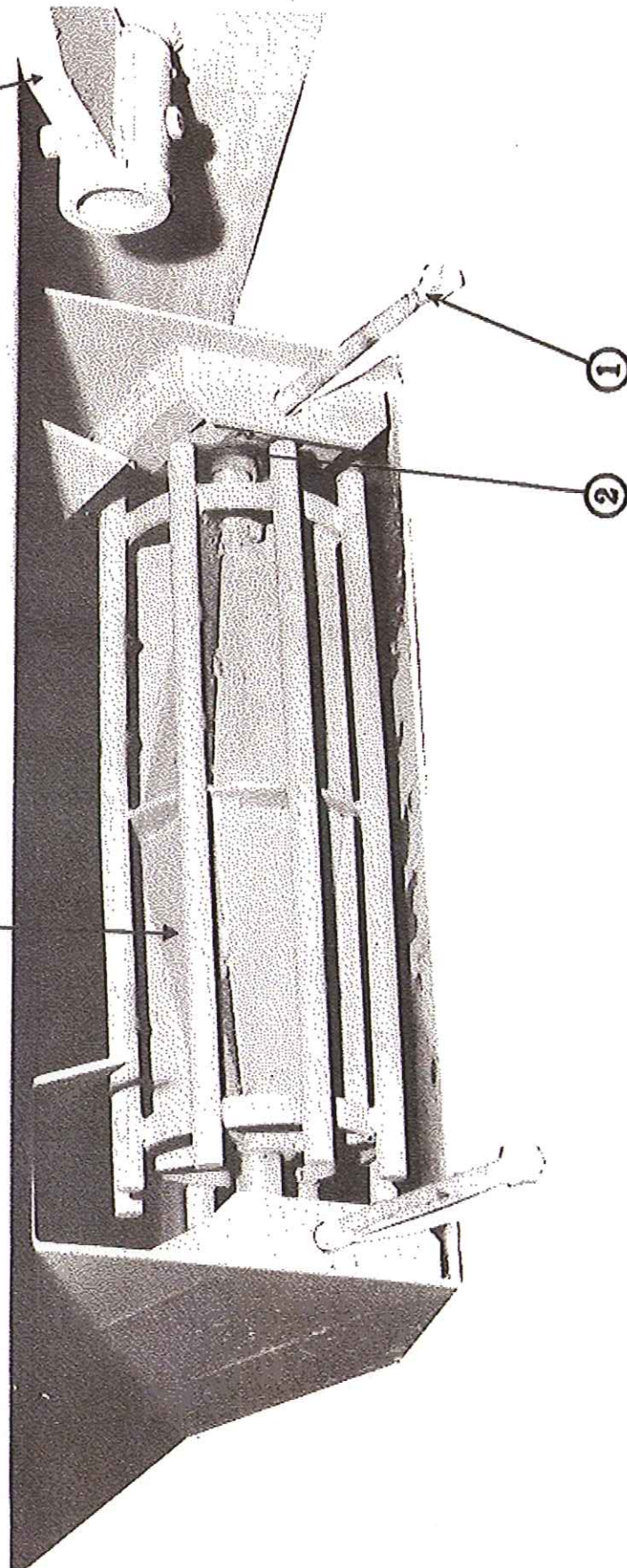


Page & Part No.	DESCRIPTION	No. Reqd.		
46-1	Threaded Bolt Assembly	4		
46-2	Take-up Bearing	4		
46-3	Tail Pulley	2		



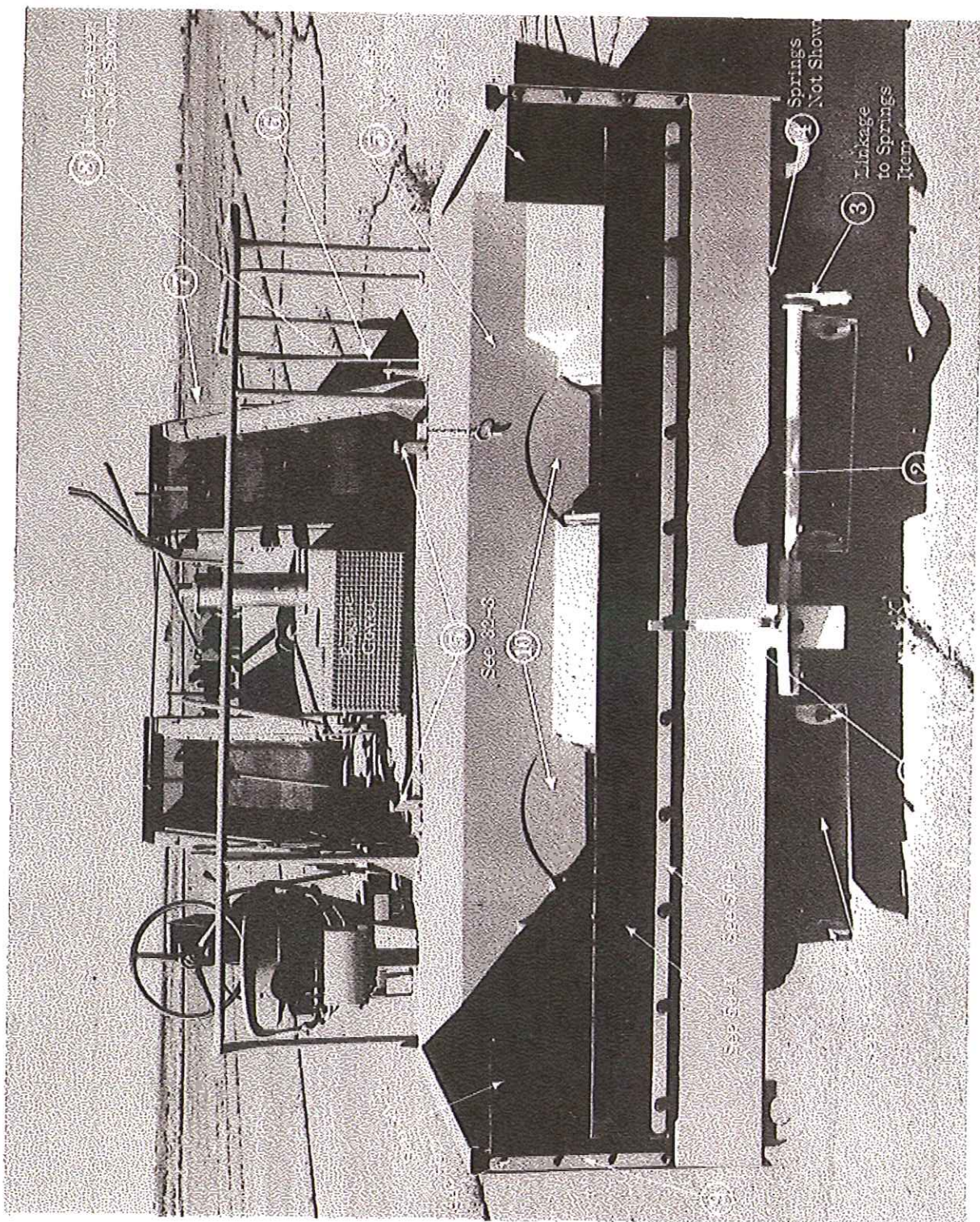
TRUCK HITCH  
SEE 48-1

③ SHOWN WITH  
BELT REMOVED



Page & Part No.	DESCRIPTION	No. Reqd.		
48-1	Truck Hitch Assembly	1		
48-2	Cross Arm & Tube - Truck Hitch	1		
48-3	Linkage Rod with Spring Eye	1		
48-4	Springs	2		
48-5	Pins, Clevis (Gate Handle)	2		
48-6	Lever Truck Hitch (Rear)	1		
48-7	Lever Truck Hitch (Front)	1		
48-8	Link Between (6) and (7)	1		
48-9	Steel Bolt Strip - Seal-Rear Vertical	2		
48-10	Gates Rear Hopper Strike-off	2		

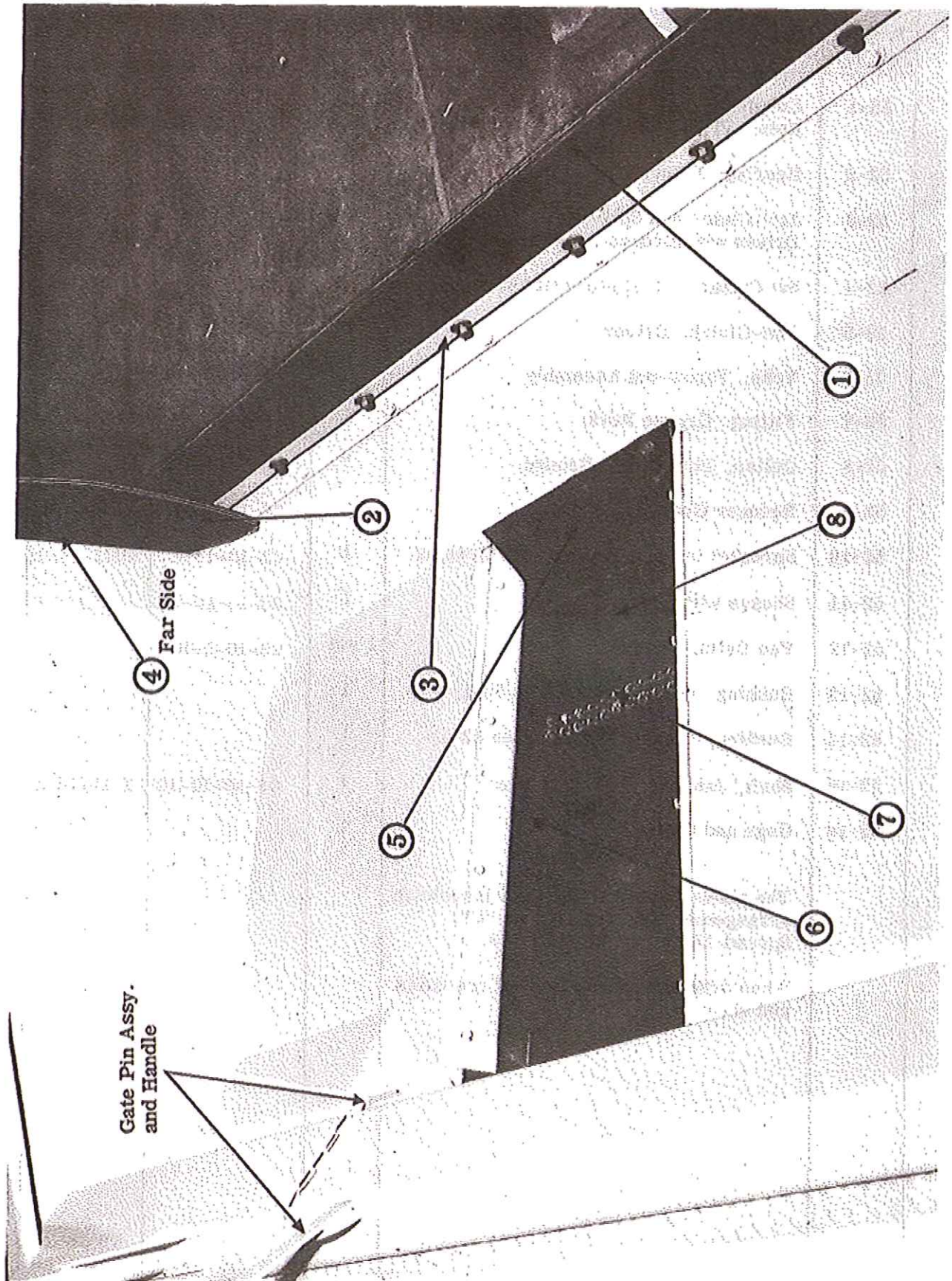






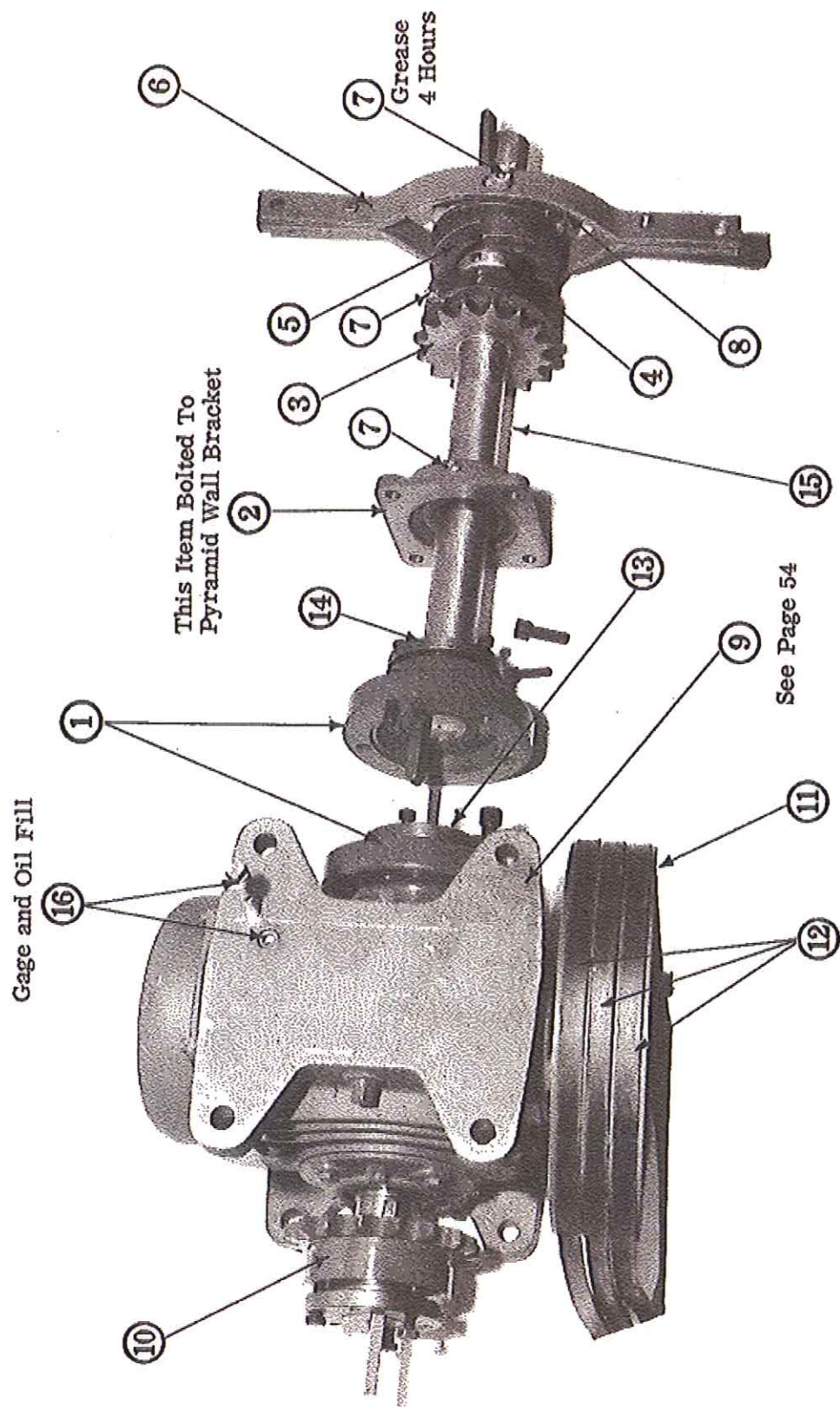
Page & Part No.	DESCRIPTION	No. Reqd.		
50-1	Rubber Seal - Rear Hopper Horizontal	1	See 48-9	
50-2	Rubber Seal - Rear Hopper Vertical	2		
50-3	Steel Bolt Strip - Seal-Rear Horizontal	1		
50-4	Steel Bolt Strip - Seal-Rear Vertical			
50-5	Rubber Seal - Hopper Rear to Conveyor	2		
50-6	Conveyor Belt Side Seals	8		
50-7	Splice - Belt Conveyor	2 Box		
50-8	Belt - Main Conveyor	2		





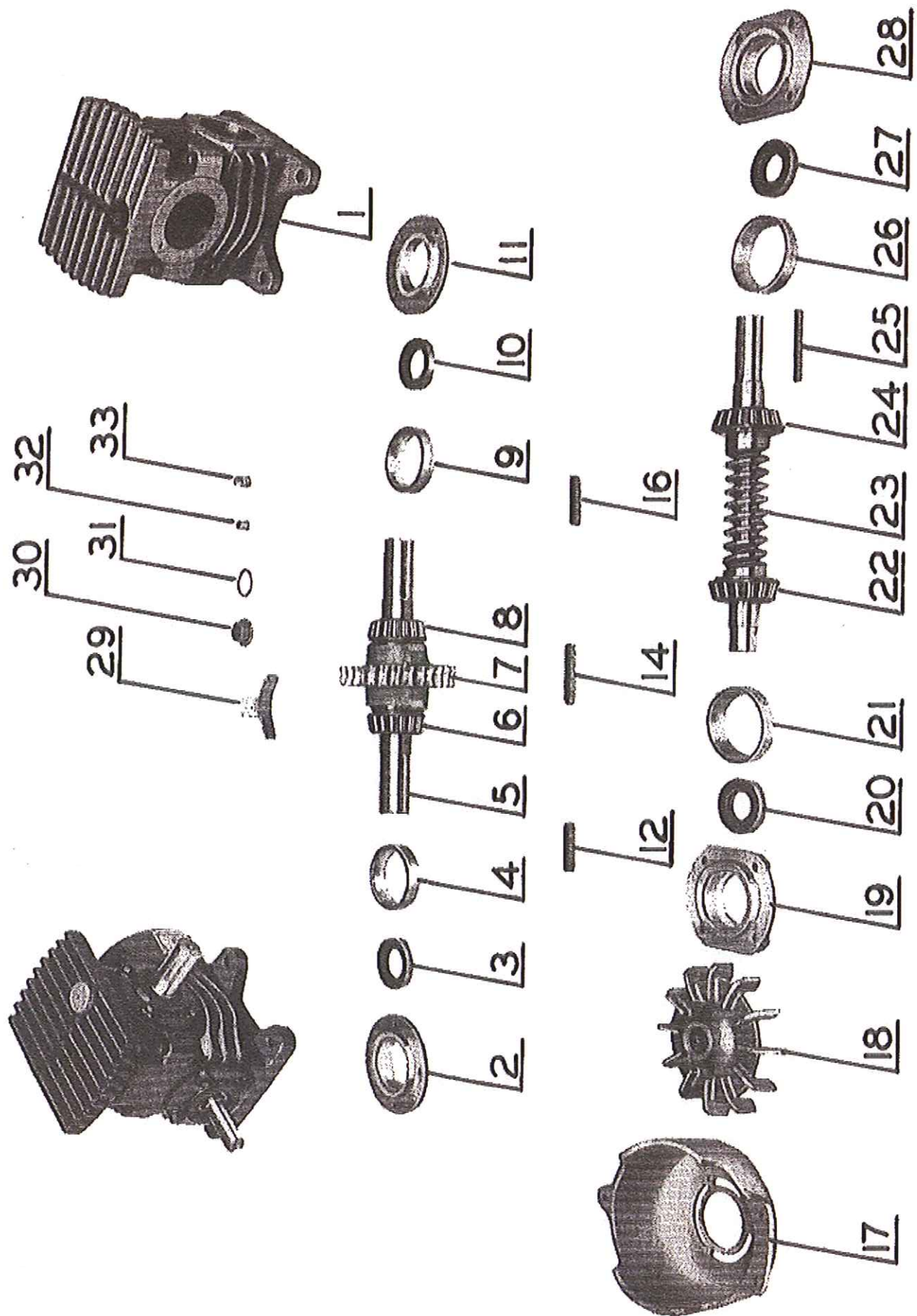
Page & Part No.	DESCRIPTION	No. Reqd.		
52-1	Coupling, Rigid with Bushings Note: 52-13 - 52-14	1		
52-2	Bearing, Flanged	1		
52-3	Jaw-Clutch and Sprocket Driven with Bronze Bearing	1		
52-4	Set Collar	1		
52-5	Jaw-Clutch, Driver	1		
52-6	Yoke, Throw-out Assembly			
52-7	Fitting, Grease Zerk	3		
52-8	Collar, Throw-out, Bronze	1		
52-9	Reducer Gear 5:1	1		
52-10	Sprocket to Head Pulleys with Bushing	1		
52-11	Sheave with Bushing	1		
52-12	Vee Belts, Matched	1 set		
52-13	Bushing, 1-3/4" Diam. (See 52-1)	1		
52-14	Bushing, 1-15/16" Diam. (See 52-1)	1		
52-15	Shaft, Jaw Clutch to Gear Box	1		
52-16	Gage and Oil Fill	1		
	<p>The above reduction gear and jaw clutch arrangement is for all Model "C" Spread-Masters, thru 5MC799.</p> <p>When ordering specify size of vee-belts and sheaves.</p>			





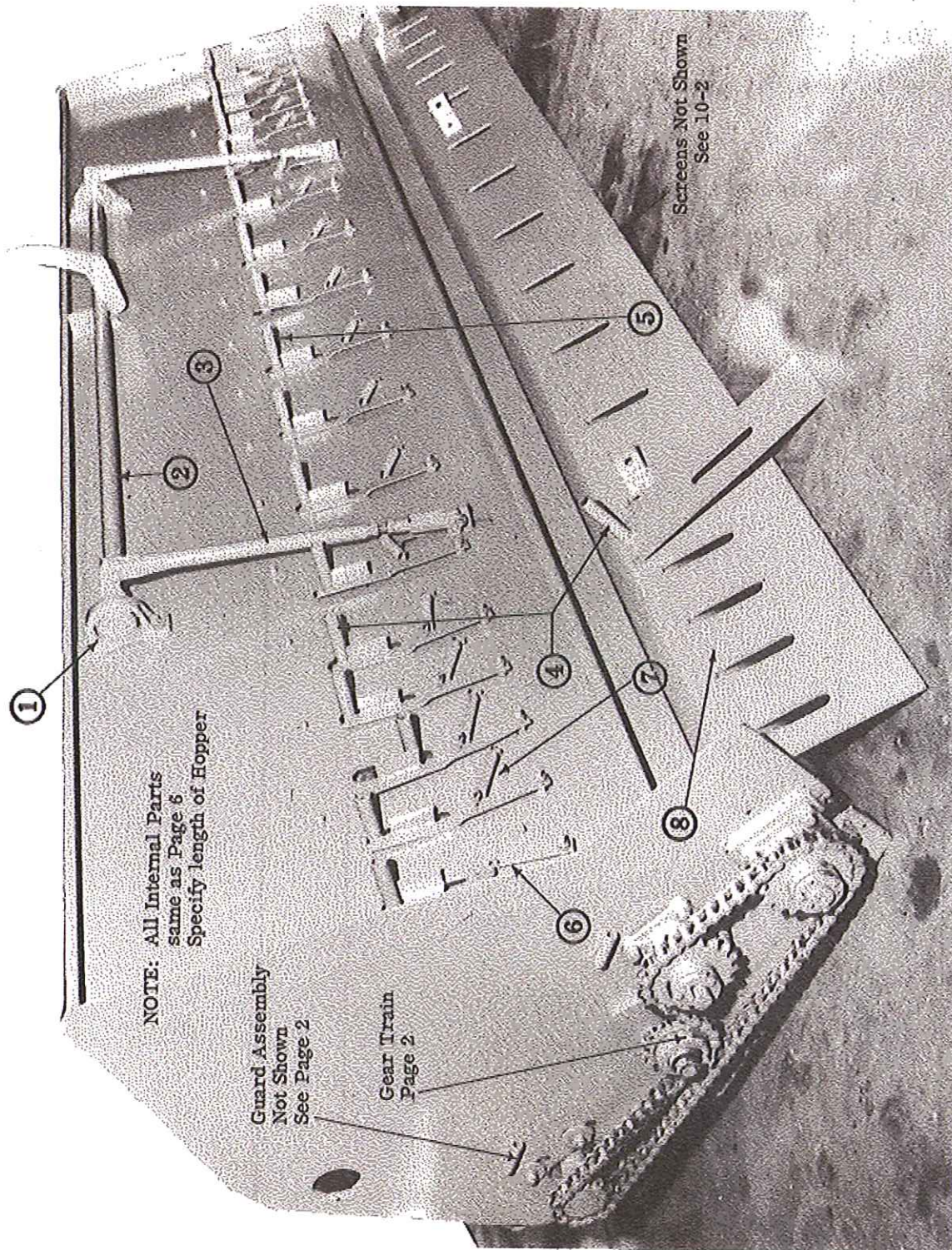
Page & Part No.	DESCRIPTION	No. Reqd.		
Morse	Speed Reducer			
54-1	Case	1		
54-2	Open bearing retainer, output	1		
54-3	Oil Seal, output	1		
54-4	Bearing cup, output	1		
54-5	Worm gear shaft	1		
54-6	Bearing cone, output	1		
*54-7	Worm gear,	1		
54-8	Bearing cone, output	1		
54-9	Bearing cup, output	1		
54-10	Oil seal, output	1		
54-11	Open bearing retainer, output	1		
54-12	Output extension key	1		
54-14	Worm gear key	1		
54-16	Output extension key	1		
54-17	Fan housing	1		
54-18	Fan	1		
54-19	Open bearing retainer, input	1		
54-20	Oil seal, input	1		
54-21	Bearing cup, input	1		
54-22	Bearing cone, input	1		
54-23	Worm	1		
54-24	Bearing cone, input	1		
54-25	Worm extension, key	1		
54-26	Bearing cup, input	1		
54-27	Oil seal, input	1		
54-28	Open bearing retainer, input	1		
54-29	Output bearing oiler	1		
54-30	Oil filler and breather plug	1		
54-31	Oil filler plug gasket	1		
54-32	Oil level fitting	1		
54-33	Oil drain plug	1		
	*Worms and gears for replacement sold only in matched pairs.			
54-34	Out put shaft shims.			
54-35	In put shaft Shims			
54-36	In put short shaft end cap			
54-37	In Put Short worm no fan			





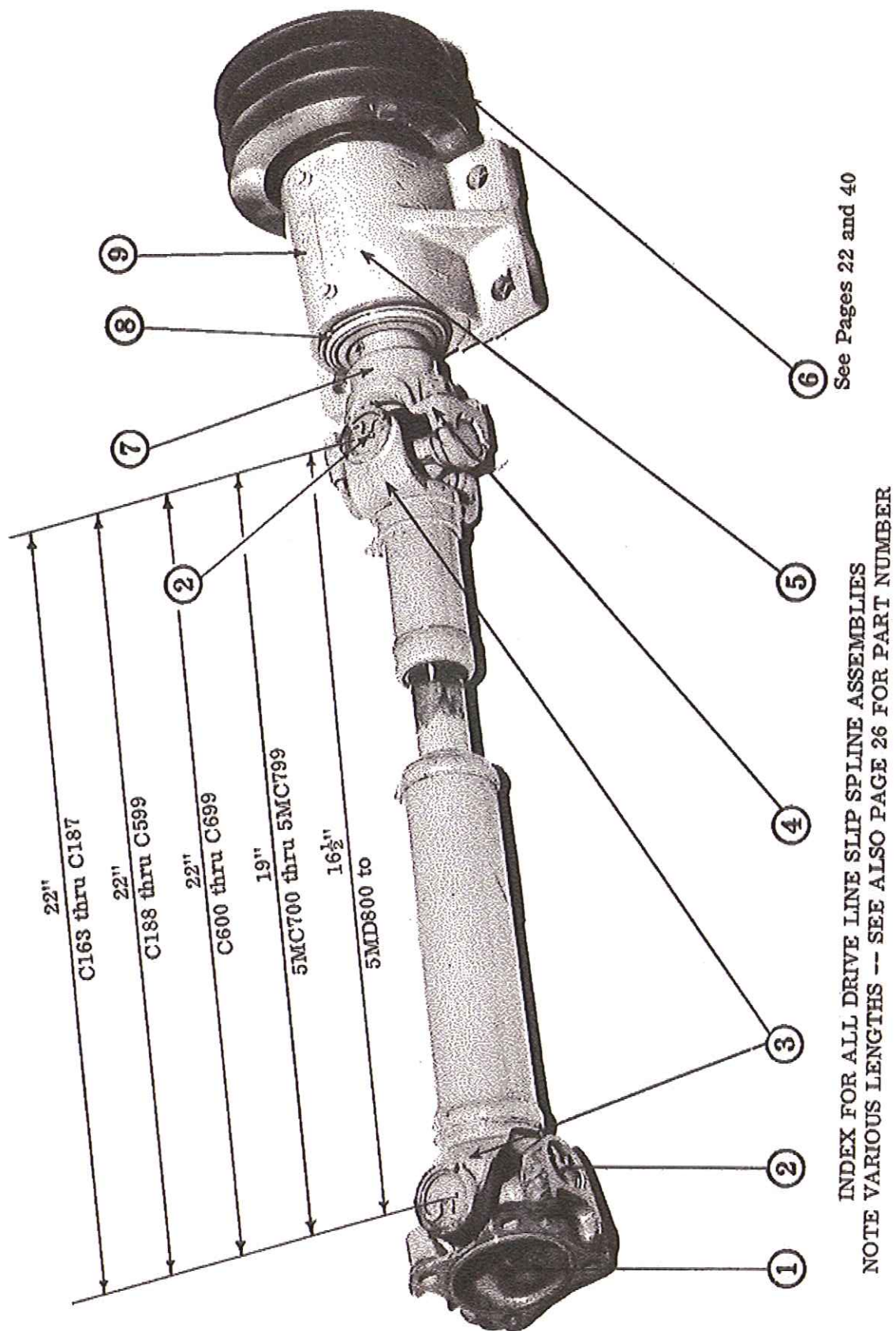
Page & Part No.	DESCRIPTION	No. Reqd.		
56-1	Bearing, Pillow Block	2		
56-2	*Shaft, Control	1		
56-3	Rod, Reach, Control	2		
56-4	Gates, Cut off 6"	Specify Amount		
56-5	Gates, Cut off 12"	"		
56-6	Locks, Cut of Gates, RH Shown	"		
56-7	Springs, Gate Lock	"		
56-8	*Gate Assy., Slide	1		
	* Specify Length			





Page & Part No.	DESCRIPTION	No. Reqd.		
58-1	Flanged Yoke	1		
58-2	Snap Ring and Cross Kit	2		
58-3	Drive Line Slip Spline Assembly	1		
58-4	Yoke and U-Bolts	1		
58-5	Bearing Housing with Bearings & Shaft	1		
58-6	Sheave with Bushing	1		





**DEALER REFERENCE**  
**TO IDENTIFY PARTS IN THE VARIOUS**  
**SPREAD-MASTER MODELS BY SERIAL NUMBER**

Serial No. of Spreadmaster	Description of Part	Page & Part No.	Notes & Incidental Parts
C163 thru C187	Drive Line - Slip Spline Assy.	58-3	Center to center of Cross Kit equals 22 inches
C-188 thru C-599	Drive Line - Slip Spline Assys.	58-3	Center to center of Cross Kit equals 22 inches
C-600 thru C-699	Drive Line - Slip Spline Assy.	58-3	Center to Center of Cross Kit equals 22 inches
5MC-700 thru 5MC-799	Drive Line - Slip Spline Assy.	58-3	Center to Center of Cross Kit equals 19 inches
5MD-800 To Date	Drive Line - Slip Spline Assy.	58-3	Center to Center of Cross Kit equals 16½ inches
C-163 thru C-379	Bearings for Drive Slip-Spline Assy.	58-5	2 - Pillow Blocks on Special Base Plate
C-380 To Date	Bearings for Drive Slip-Spline Assy.	26-5	This bearing will interchange with C-163 thru C-379 by change of base plate.
C-163 thru C-238	Universal Joints for Drive Slip-Spline Assy.	58-4 58-2	Republic-Not made now Replace with Spicer
C-239 To Date	Universal Joints for Drive Slip-Spline Assy.	58-4 58-2	Spicer
C-163 thru C-378	Vee-Belts	20-5	3-B78 (1 set)
C-379 5MC-799	Vee-Belts	20-5	3-B81 (1 set)
5MD-800 To Date	Vee-Belts	20-5	3-B75 (1 set)
C-163 thru C-378	Upper Sheave - 3TB-9.4	20-2	Bushing Q1-1-1/8
C-379 thru 5MC-799	Upper Sheave - 3TB-11.0	20-2	Bushing Q1-1-1/8
5MD-800 To Date	Upper Sheave - 3TB-12.4	20-2	Bushing Q1-1-3/8
C-163 thru C-238	Pilot Yoke - Head Pulley	16-1	Republic-Not made now Replace with Spicer
C-239 To Date	Pilot Yoke - Head Pulley	16-1	Spicer
C-163 to 5 C-655	Steel Hand Levers	42 & 48	Note: All forged levers interchange with others
C-656 To Date	Forged Hand Levers	42 & 48	Note: All forged levers interchange with others



DEALER REFERENCE (Continued)

Serial No. of Spreadmaster	Description of Part	Page & Part No.	Notes & Incidental Parts
C-163 thru 5MC-799	Speed Reducer	54	5:1 Ratio - with rigid coupling
C-163 thru 5MC-799	Rigid Coupling, Reducer Shaft	52-1	RS7Q
C-163 thru 5MC-799	Bushing - Reducer Shaft	52-14	Q1 - 1-15/16
C-163 thru 5MC-799	Bushing - Reducer Shaft	52-13	Q1 - 1-3/4
C-163 thru 5MC-799	Bearing - Reducer Shaft	52-2	1-15/16 Flanged
C-163 thru 5MC-799	Shaft-Reducer to Jaw Clutch	52-15	1-15/16 x 28"
5MD800 To Date	Speed Reducer with Extended Shaft	24	3:1 Ratio
5MD800 To Date	Bearing - Ext. Shaft (Not Shown-Similar to Page 52)		1-3/4" Flanged
5MD800 To Date	Washer - Ext. Shaft	30-2	1-3/4" Plain
C-163 to 5MC-799	Sprocket - Head Clutches	16-14	80-C-18
5MD-800 To Date	Sprocket - Head Clutches	16-14	80-C-20
C-163 to 5MC-799	Sprocket - Gear Box to Head Clutch	Similar to 20-6	80-Q-17 with Q1 - 1-3/4
5MD-800 To Date	Sprocket - Gear Box to Head Clutch	Similar to 20-6	80-B-13
C-163 to 5MC-799	Jaw Clutch - Driven with IGT Sprocket	52-3	With Bronze Sleeve Bushing
C-163 to 5MC-799	Jaw Clutch Driver	52-5	With Bronze Throw-Out Collar
C-163 to 5MC-799	Yoke - Jaw Clutch	52-6	For Bronze Throw-Out Collar
5MD-800 To Date	Jaw Clutch - Driven with IGT Sprocket	30-3	With Roller Bearing & Washer
5MD800 To Date	Jaw Clutch - Driver	30-5	With Cam Roller Race
5MD800 To Date	Yoke - Jaw Clutch	30-6	With Cam Roller Bearing
C-163 thru C-490	Front Hopper - with Straight Gates	56	New Type Hopper Will Interchange
C-491, C-494, C-499, C-500, C-501, C-502, C-503, C-504	Front Hopper with Radial Ductile Cast Gates with Long Hinge in Center	Not Shown *	No Interchange See Note (1) Below

\*Note (1): To use the steel gates as replacement for the ductile cast with long hinge in center, the hinges on the hopper must be cut out and the new type welded in their proper place.

DEALER REFERENCE (Continued)

Serial No. of Spreadmaster	Description of Part	Page & Part No.	Notes & Incidental Parts
C-505 to C-654	Front Hopper with Radial Ductile Cast Gates-with hinges on sides	Not Shown	Direct Interchange with New Type
C-655 To Date	Front Hopper with Radial Steel Gates	4-1a to 4-1e	These will Interchange with C-505 to C-654
C-491 thru C-682	Front Hopper - Ductile Cast Gate Locks	Not Shown *	No Interchange See Note (2) Below
C-683 To Date	Front Hopper-Steel Gate Locks	4-12	
C-163 thru 5MC-799	Sprocket Inboard-Front Hopper	2-1	80-Q-17
5MD-800 To Date	Sprocket Inboard-Front Hopper	2-1	80-Q-26
C-163 thru 5MC-799	Chain - Jaw Clutch to Front Hopper	14-1	52 pitches
5MD-800 To Date	Chain - Jaw Clutch to Front Hopper	14-1	58 pitches

\*Note (2) To use the steel gate locks as replacement for the ductile cast gate locks the entire control rod assembly and bearings must be replaced. The gate lock plates must be cut out and the new type welded in their proper place.

FOR 13 ft, 12 ft, 11 ft and 10'-3 HOPPERS

(Above is inside dimension)

C-163 thru C-473	Front Hopper without Spread Roll Shields	Page 56	
C-474 To Date	Front Hopper with Spread Roll Shields	4-4 2-16	
C-163 thru C-473	Front Hopper Spread Rolls without Shields	Page 56	These Spread Rolls (Item 4-3) are $\frac{1}{4}$ " Shorter than the inside of Hopper
C-474 To Date	Front Hopper Spread Rolls (Item 4-3) with Shields	4-4 2-16	These Spread Rolls (Item 4-3) are $1\frac{1}{4}$ " Longer than the inside of Hopper