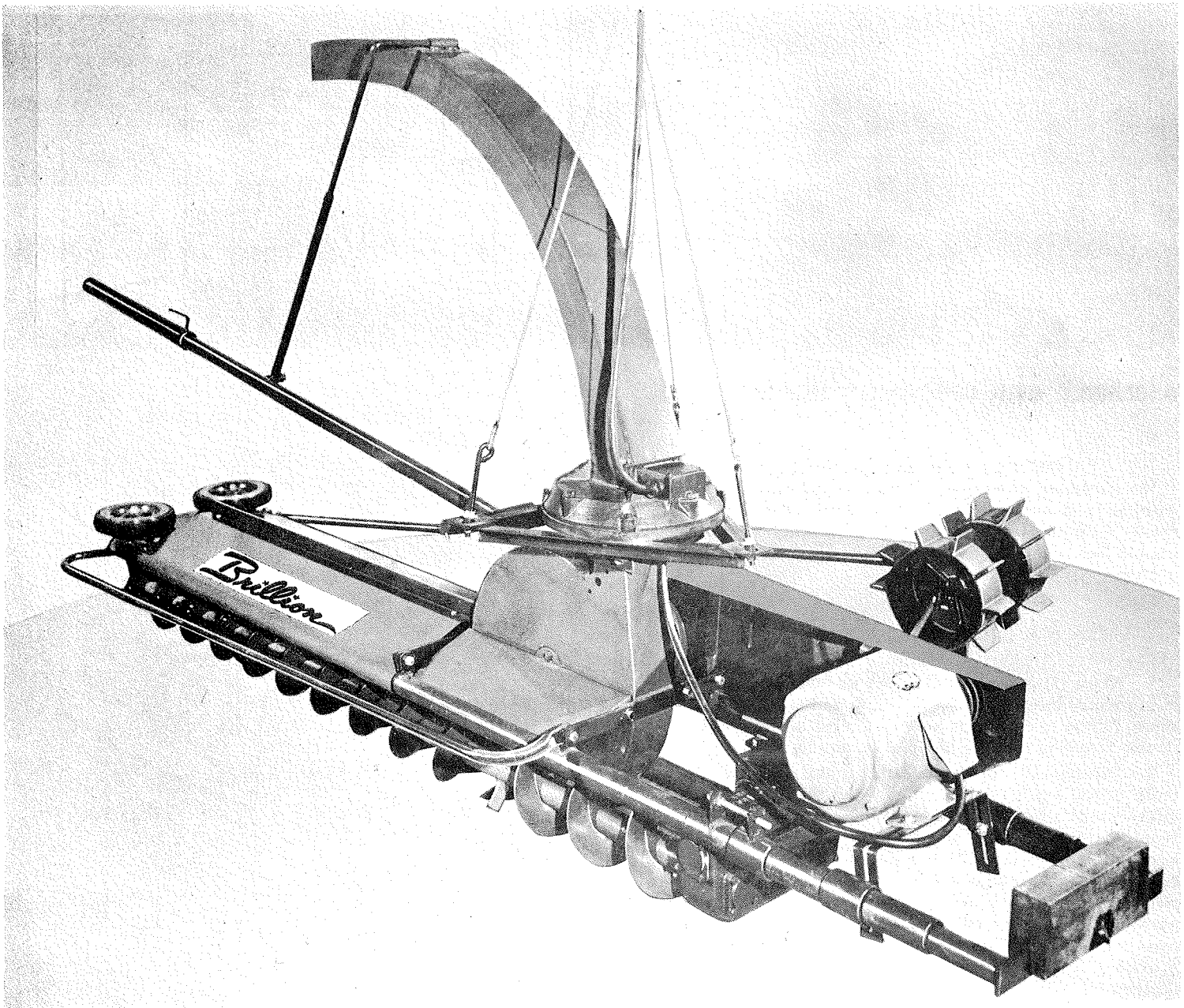


# Brillion

## SILO UNLOADER

MODELS SU-2275

THRU SU-3010

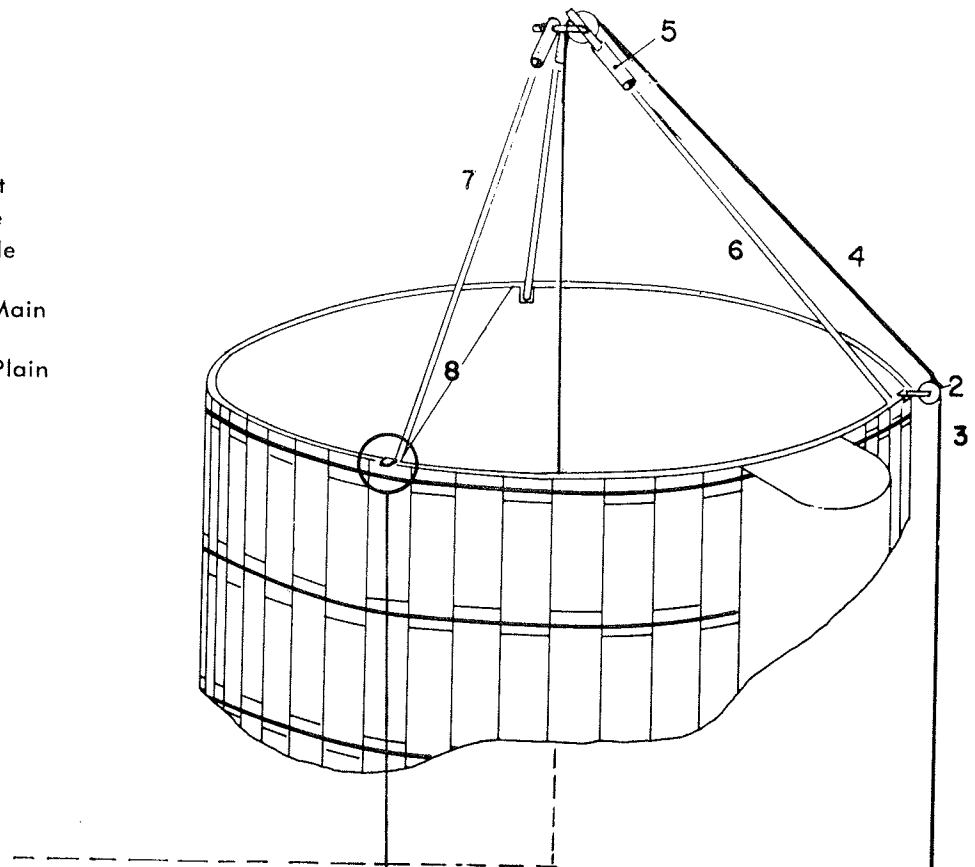


**BRILLION IRON WORKS, INC.**  
BRILLION, WISCONSIN

PRINTED IN U.S.A.

The **BRILLION** silo unloader is manufactured under some or all of the following patents:  
U.S. Patents: 2,719,058 — 2,794,560 — 2,876,043 — 2,877,907 — 2,888,253 — 2,671,696 — 2,906,108.  
Canadian Patents: 539,138 and other patents pending.

Index No.	Part No.	Description
1		Winch
2	SU-11515	Cable Pulley
3	SU-11514	Pulley Bracket
4	825	Aircraft Cable
5	SU-17560	Tripod Triangle
6	SU-17562	Tripod Leg—Main
7	SU-17561	Tripod Leg—Plain
8	SU-18619	Safety Hook



## ASSEMBLY AND OPERATING INSTRUCTIONS

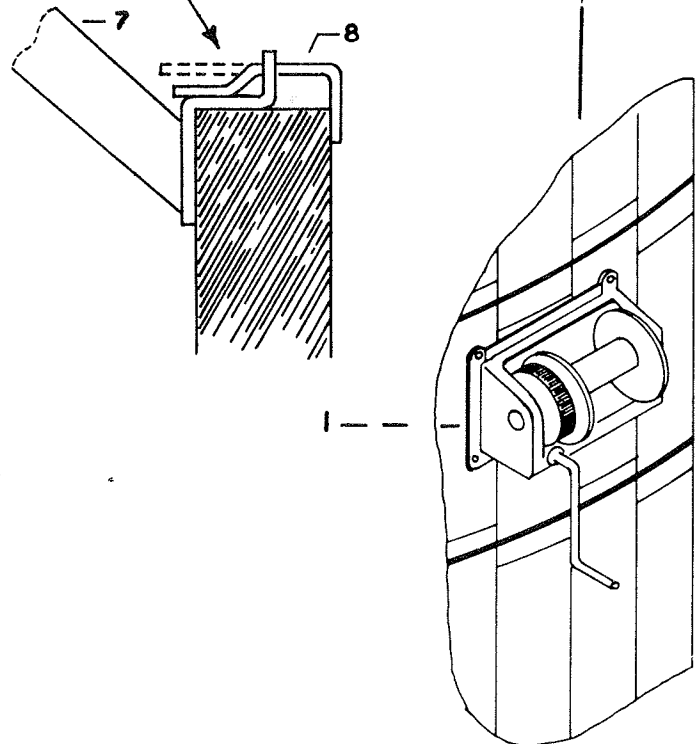
### INSTALLATION and ASSEMBLY

The illustrated drawing should be carefully studied before installation is made, and all instructions read completely. Proper installation will give you an unloader that will be trouble free and will do the job required of it, cheaply and quickly.

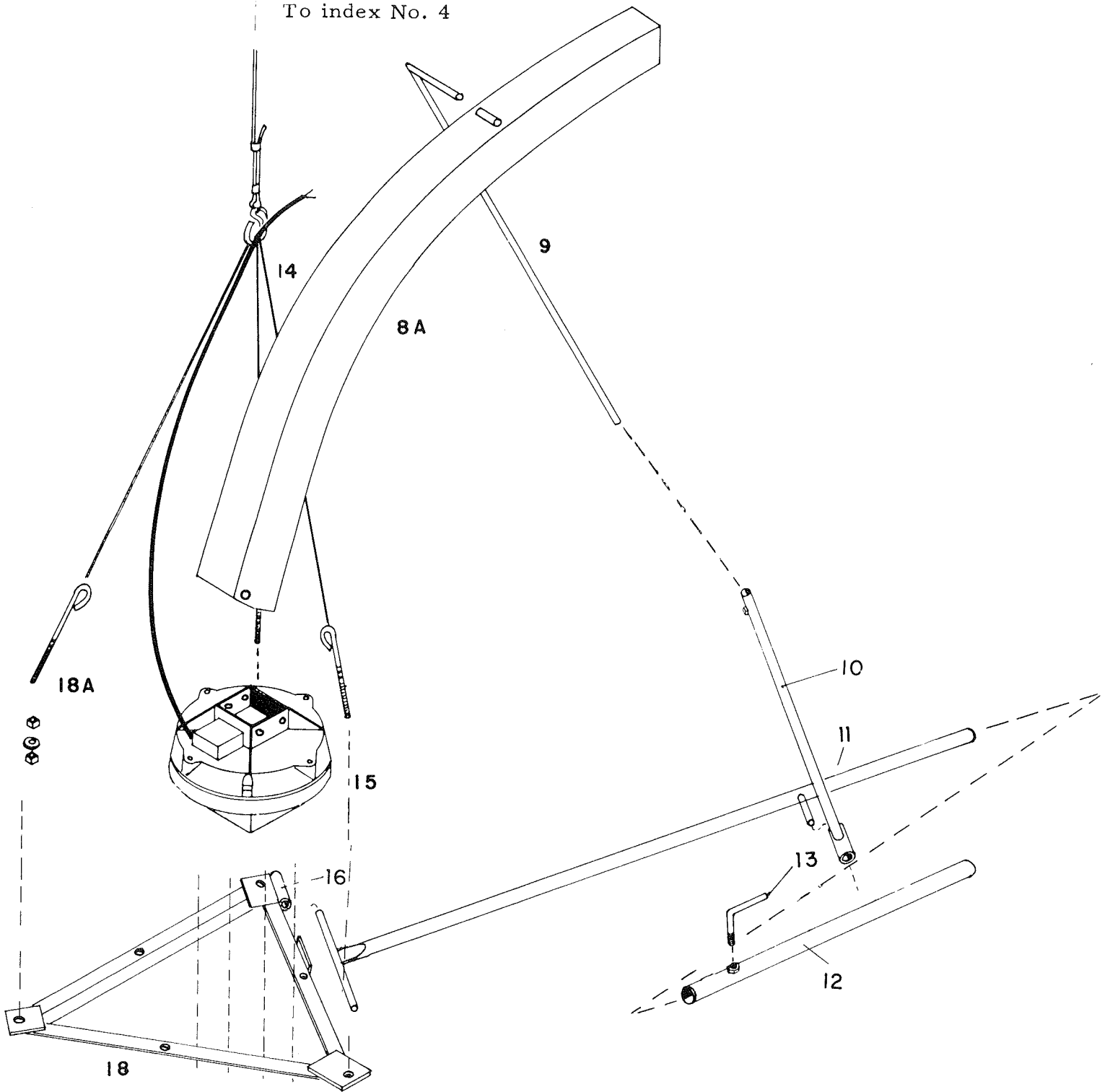
### ORDER of ASSEMBLY

1. Winch (1) — Mount and attach as follows: Mount winch in convenient location, at elbow height and to one side of silo chute. Pulleys to change direction of cable are available if a remote mounting location of winch is desired.

2. Tripod—12 thru 16, Bolt pulley bracket (3) to main tripod leg (6) using proper bolt holes to adjust for thickness of silo wall. Mount pulley (2) on bracket (3). Tripod—18 thru 24, Place main tripod leg (6) and the two plain tripod legs (7) into the tripod triangle (5) and bolt securely. Tripods—all sizes, Thread cable (4) thru pulleys and mount tripod at the top of silo with the legs normally equally spaced, having the main leg (6) directly over the winch. Slide tripod safety rods (8) thru holes provided. Bend rod down sharply next to the hole as per illustration. Fasten a counter weight on the free end of the cable and take up slack cable on the winch. **THIS CABLE MUST BE CENTERED IN THE SILO.** With the counter weight suspended, measure the distance from the cable to the silo wall in at least three directions. If measurements are not the same in all directions adjust tripod legs to correct.



To index No. 4



3. Support Triangle (16) — To collector ring assembly (15), using bolts in the collector ring. Place electric inlet box opposite to torque arm side of support triangle (16).

4. Collector Ring (15) — Bolt to Impeller (17) (see next two views) keeping outlet wires underneath ring towards the motor.

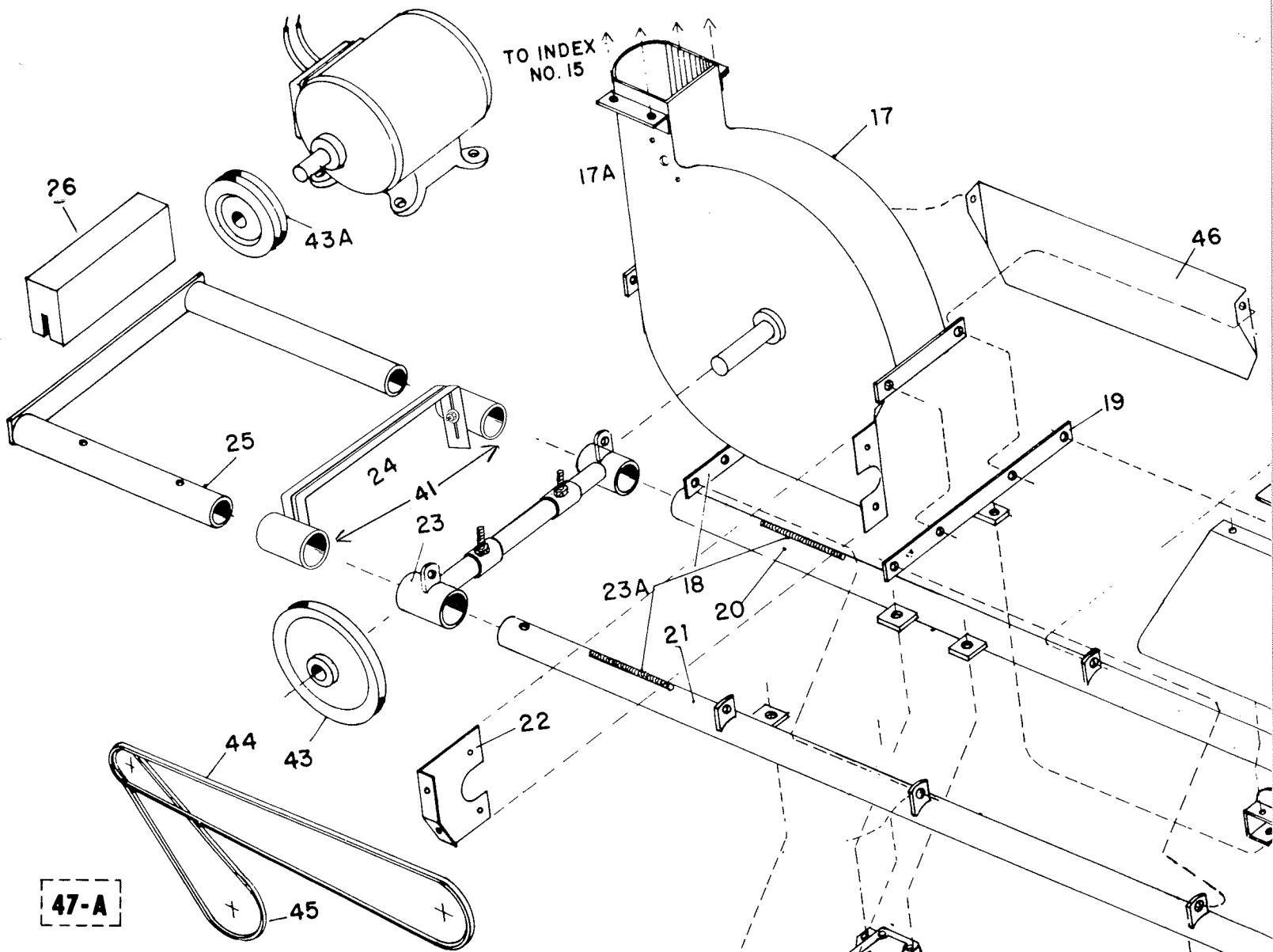
5. Adjusting cable Assembly (14) — Attach to support triangle (16) and to cable (4) as shown.

6. Discharge Chute (8a) — To collector ring (15)

7. Torque Arm (11) — Slip through sleeve in support triangle (16) as shown, and secure with cotter keys.

8. Discharge Chute Hanger Rod (9), and Discharge Chute Hanger Tube (10) — Attach to Chute (8a) and to Torque Arm (11), securing with cotter keys.

Index No.	Part No.	Description
8A	SU-16555	Discharge Chute — Thrower
9	SU-16526	Discharge Chute Hanger Rod
10	SU-16525	Discharge Chute Hanger Tube
11	SU-17524	Torque Arm
12	SU-17540	Torque Arm Slip Tube
13	SU-17546	Tightening Handle
14	SU-19542	Adjusting Cable Assembly
15	SU-17400	Collector Ring Assembly
16	SU-17563	Support Triangle
18A	SU-17553	Spacer-Adj. Cable Assembly



9. Knives (37) — Should be used in frozen or hard-packed silage, and only for portion of auger corresponding to frozen part of silage. Bolt to the augers (28 and 29) so that the sharpened edge will give a slicing action into the silage. The knives should be on the "following" side of the auger, not on the "conveying" side, with the bolt heads on the "conveying" side and the nuts on the "following" side.

10. Augers (28 and 29) — Attach to Gear Box (27), being sure to have the flights, or spirals, of the lead and rear auger staggered at the entrance to the Impeller (17), to insure proper flow of the material into the impeller.

11. Frames (20 and 21) — Attach lead and rear frame to gear box (27). (Do NOT tighten bolts until assembly is complete.)

12. Outboard Frame Support (32) — Mounts on top of Frame members (20 and 21). Place bearing retainer of outboard bearing assembly (34) in position and fasten with cotter key.

13. Wall Cleaners (35 and 36) — Must be attached so that their cutting edges rotate in the same direction as the augers. (Facing the gear box, the right hand, or lead auger (28) rotates clockwise, while the left hand or rear auger (29) rotates counterclockwise.) Attach wall cleaner (35) to lead auger (28) and wall cleaner (36) to rear auger (29).

14. Impeller (17) — Bolt front (19) and rear (18) impeller housing support bars to impeller (17). Place impeller in position between augers and bolt housing support bars (18 and 19) to frames (20 and 21). Attach front shield (46) to bolts securing front side of impeller to impeller bounting bars.

15. Weight and Shield Support (30) — Attach to front impeller housing support (19) and outboard frame support (32).  
 16. Motor Mounts (23 and 24) — Slip on Frame members (20 and 21) placing mount (23) (with lugs) nearest impeller.  
 17. Balance Weight Holder (25) — slip inside frame members (20 and 21).

18. Balance Weight (26) — To either weight and shield support (30) or balance weight holder (25), fastening securely by set screw. (See operating adjustment.)

19. Motor to Motor Mounts (23 and 24).

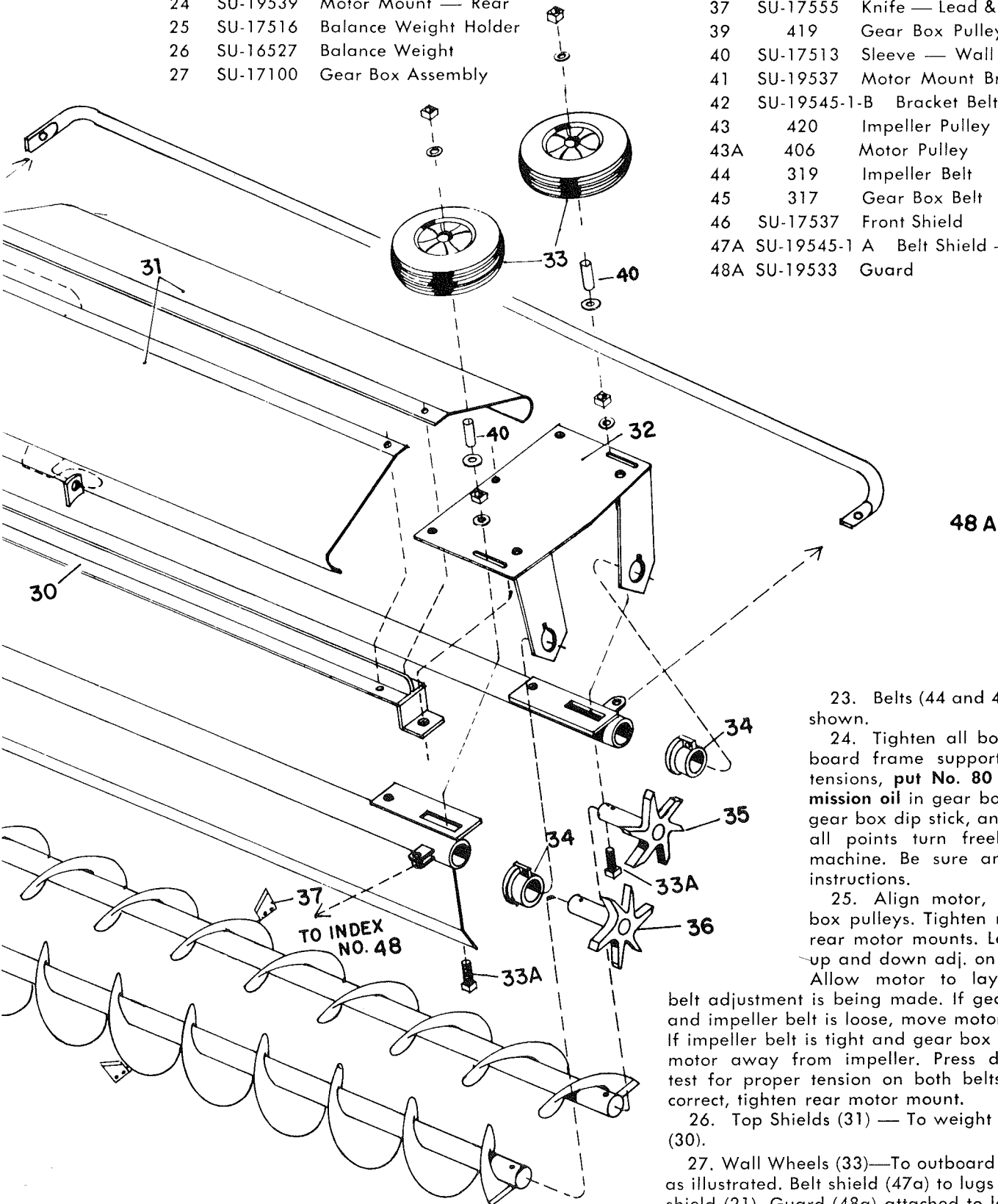
20. Double Groove Pulley (43a) — On motor shaft (4.6 pitch diameter by 1").

21. Pulley (39) — On gear box. (4.7 pitch diameter by 1").

22. Pulley (43) — On impeller. (9.4 pitch diameter by 1½").

Index No.	Part No.	Description
17	SU-17200	Impeller Assembly
18	SU-17204	Rear Impeller Housing Support
19	SU-17203	Front Impeller Housing Support
20	SU-17501	Lead Frame
21	SU-19502	Rear Frame & Shield
22	SU-17505	Rear Auger End Shield
23	SU-19538	Motor Mount — Front
23A	SU-17552	Motor Tightening Rods
24	SU-19539	Motor Mount — Rear
25	SU-17516	Balance Weight Holder
26	SU-16527	Balance Weight
27	SU-17100	Gear Box Assembly

28	SU-17503	Lead Auger
29	SU-17504	Rear Auger
30	SU-17543	Weight & Shield Support
31	SU-17544	Shield (top)
32	SU-17511	Outboard Frame Support
33	831	Wall Wheel
33A	SU--17547	Wall Wheel Bolt
34	SU-17512	Outboard Bearing Assembly
35	SU-17549	Wall Cleaner Assembly — Lead
36	SU-17548	Wall Cleaner Assembly — Rear
37	SU-17555	Knife — Lead & Rear
39	419	Gear Box Pulley
40	SU-17513	Sleeve — Wall Wheel
41	SU-19537	Motor Mount Bracket
42	SU-19545-1-B	Bracket Belt Guard
43	420	Impeller Pulley
43A	406	Motor Pulley
44	319	Impeller Belt
45	317	Gear Box Belt
46	SU-17537	Front Shield
47A	SU-19545-1 A	Belt Shield — Not Shown
48A	SU-19533	Guard



23. Belts (44 and 45) — To pulleys as shown.

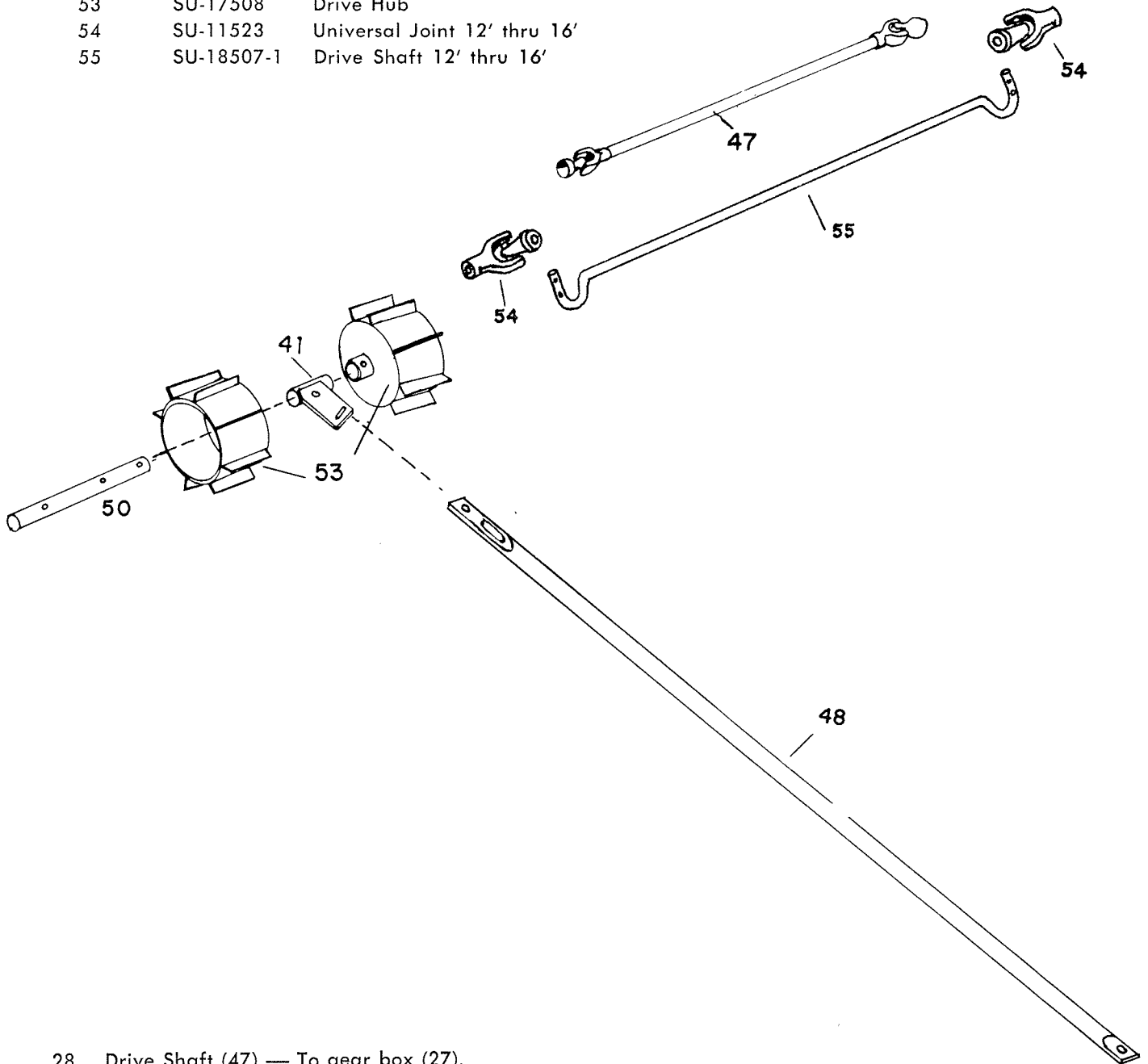
24. Tighten all bolts starting at outboard frame support (32), adjust belt tensions, **put No. 80 all purpose transmission oil** in gear box to high mark on gear box dip stick, and check to see that all points turn freely before starting machine. Be sure and read operating instructions.

25. Align motor, impeller and gear box pulleys. Tighten motor to front and rear motor mounts. Leave nuts loose on up and down adj. on rear motor mount. Allow motor to lay into belts while belt adjustment is being made. If gear box belt is tight and impeller belt is loose, move motor towards impeller. If impeller belt is tight and gear box belt is loose, move motor away from impeller. Press down on motor to test for proper tension on both belts. When tension is correct, tighten rear motor mount.

26. Top Shields (31) — To weight and shield support (30).

27. Wall Wheels (33)—To outboard frame support (32) as illustrated. Belt shield (47a) to lugs on rear frame and shield (21). Guard (48a) attached to lead frame at outer end and to matching lug next to impeller at other end.

Index No.	Part No.	Description
41	SU-18520	Drive Hub Shaft Bearing
47	SU-19507	Drive Shaft Weldment — 18' and up
48	SU-19530	Tie Bar
50	SU-18541	Drive Hub Shaft
53	SU-17508	Drive Hub
54	SU-11523	Universal Joint 12' thru 16'
55	SU-18507-1	Drive Shaft 12' thru 16'



28. Drive Shaft (47) — To gear box (27).
29. Drive Hubs (53) and Drive Hub Shaft Bearing (41)  
To drive hub shaft (50) as shown in illustration.
30. Drive Hub Shaft (50)—To universal joint on drive  
shaft weldment (47).
31. Tie Bar (48) — To drive hub shaft bearing (41)  
and rear frame and shield (21).
32. Guard (61) — Attach to lug on lead frame at out-  
er end and to matching lug next to impeller at other end.

## WIRING INSTRUCTIONS

The motors supplied require 230 volts for proper operation. The voltage must not vary from this rating by more than 10% while the machine is in operation. It is recommended that wiring specifications and installation should be obtained from a qualified electrician. In wiring it must be stressed that motors must be properly protected against overload by proper fuses or a thermal overload switch. Motors are guaranteed only by the motor manufacturer and only if the above specifications are followed.

**WARNING:** THE FRAME OF THE UNLOADER MUST BE PROPERLY GROUNDED. THE METHOD TO BE DETERMINED BY THE INSTALLING ELECTRICIAN. THE ELECTRICAL WIRING SHOULD ALSO INCLUDE AN ELECTRICAL DISCONNECTOR NEAR THE MOTOR.

## OPERATING INSTRUCTIONS

Make sure that the transmission is filled to the upper mark on the dip stick with No. 80 all purpose transmission oil. With the unloader raised above the surface of the silage so no material can enter the machine, turn switch on and allow the machine to run for a period of at least 15 minutes without throwing down silage. During this period the operator should acquaint himself with the operation of the machine.

**Balance Weight (26):** To be adjusted for individual silo conditions. The purpose of the balance weight is to maintain a "cone" in the level of the silage. The proper "cone" can be determined by the distance between the bottom of the transmission and the surface of the silage. Never allow the transmission to ride on the silage or to push material ahead of it. Maintain a clearance of approximately 1" at this point. If the machine starts "coning" to greatly, use weight on the motor end on holder (25). The weight holder (25) may be placed in two positions for added balance. (Note spaced bolt holes.) If the surface of the silage loses its "cone" or becomes too flat, the weight can be taken off the motor end and placed on the weight and shield support (30) over the augers. This position is usually used in hard packed or frozen silage.

**Adjusting Cable Assembly (14):** This is designed to control the unevenness of the surface of the silage caused by hard-packed or frozen conditions on one side and loose or unfrozen conditions on another side. Loosen the cable or cables nearest the high side or if there is a shortage of threads, tighten the cable or cables on the opposite side.

**Wall Wheels (33):** Wall wheels are to be adjusted so that the wall cleaners (35 and 36) just miss the silo wall. If there are protruding bolt heads or other obstructions, the wall wheels should be set so the wall cleaners miss them. On a smooth wall silo, the wheels should be set so that both wheels contact the wall at all times. If the doors protrude out a considerable distance, place the wheel over the lead auger about one-half the distance of the protrusion.

**IMPORTANT. Drive Hubs (53) —** The angle of the drive hubs is adjusted where the tie bar is bolted to the drive hub shaft bearing (No. 41 in illustration). **The proper adjustment has been made when the center of the unloader rides in the center of the silo.** Any deviation of this adjustment will cause the unloader to either be too far away from the wall from a point adjacent to the hubs or the hubs themselves will ride to close to the wall. If slippage of the drive hub occurs, it may be due to:

1. Insufficient or improper lubrication of the collector ring assembly.
2. Insufficient knives on the lead auger (which helps pull the machine).
3. Tripod improperly centered so there is too much wall pressure on one side.
4. Binding on the torque arm.
5. Improper size machine for silo size.
6. Improper adjustment of Drive hub. In some conditions, such as light grain silage where the surface is always light or fluffy, a drive hub weight is available for added traction.

**Knives (37):** Add knives to the outer end of lead and rear augers (28 and 29) when in frozen and hard packed silage. The augers will convey material more evenly if the knives are removed when conditions permit.

**Wall Cleaners (35 and 36):** If congestion of material or "jamming" at the outboard frame support (32) occurs because of rotten or extremely wet silage, relief may be obtained by removing the lead wall cleaner (35). Replace it when silage is firm or frozen. Be sure that the ends of the teeth and outer cutting edges are kept sharp at all times. **Unloader will not stay close to wall if outer cutting edges are dull.**

**Discharge Chute (8a):** The top center of the silo door is the proper material discharge point and the hanger rod (9) and tube (10) will allow proper vertical placement. Velocity of discharged material will be lessened by having chute in too low a position.

**Winch (1):** Let down of the hand winch controls the rate of flow when unloading silage. The amount of let down (turns of winch handle) will be determined by experience. (See your dealer.) Due to the variation of conditions, the operator will have to determine the proper flow and capacity of his own machine. The machine **must** be raised from the silage when not in operation. With the machine in the raised position (approximately 10 turns of the winch handle) turn the machine on and shut off immediately. This will clear all material out of the machine. **Do not let machine down into the silage without being turned on.**

**Torque Arm Extension (12):** With the augers on the opposite side from the door frame, adjust extension (12) so that the end comes within four inches of the outside of the silo chute. After the initial setting has been made and found to be satisfactory, the torque arm can be marked so that when the extension is telescoped to change doors it can be set at the proper position without rechecking.

**Belts: Proper pulley alignment is essential. Align motor, impeller and gear box pulleys.** Tighten motor to front and rear motor mounts. Leave nuts loose on up and down adj. on rear motor mount. Allow motor to lay into belts while belt adjustment is being made. If gear box belt is tight and impeller belt is loose, move motor towards impeller. If impeller belt is tight and gear box belt is loose, move motor away from impeller. Press down on motor to test for proper tension on both belts. When tension is correct, tighten rear motor mount.

**Lubrication: Gear Box is shipped dry.** Maintain the level between two marks on dip stick of No. 80 all purpose transmission oil. While the finest oil seals are used, they are not guaranteed to be leak proof. It is up to you to maintain the proper oil level.

**Collector Ring Assembly (15):** Use lithium base grease through the zerk fittings. (It is shipped pre-packed with an all-weather lithium based grease.) Grease sparingly once a month with ordinary use; one stroke of ordinary grease gun to each fitting. Grease drive hub shaft bearing at same time.

**Impeller (17):** Using a pressure oil can, oil the shafts of the "V" shaped thrower paddles, as they must swing free at all times. Failure to do so may result in poor performance and bearing failures. Oil all other moving parts not equipped with zerk fittings. Oiling should be done when discharge chute is moved to next door to avoid special trip up silo.

**Motors:** See motor lubrication card. Caution: If this motor is to be used on some other "continuous operation" work, be sure to remove the end cap, for proper ventilation. Replace end cap before re-installing on silo unloader. Other parts to be lubricated occasionally with a light oil are: Winch crank and spool shaft.

