

Slinger Model 710 Tow Type

DEALER SERVICE PARTS LISTING

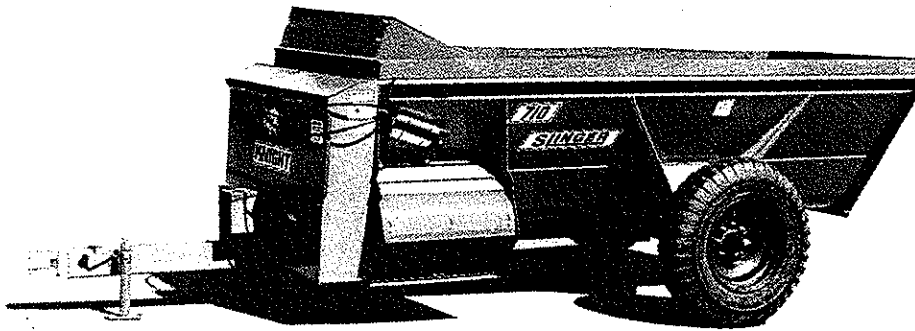


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710-TOW
SERVICE PARTS

Catalog P/N 005238
R013191

ABBREVIATIONS

710-TOW R081090

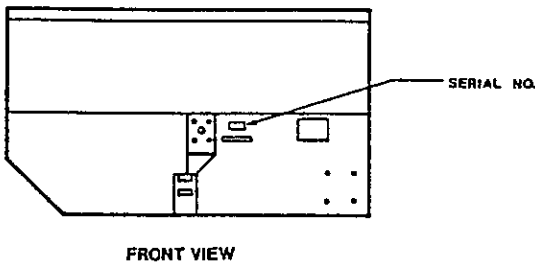
| | |
|--------------|---------------------------|
| Assy | Assembly |
| A/R | As Required |
| B | Bolt |
| Brg | Bearing |
| BSN | Before Serial Number |
| BTM | Bottom |
| C Bolt | Carriage Bolt |
| Cttr | Cotter |
| CV | Constant Velocity (Joint) |
| Dia | Diameter |
| ea | Each |
| Eq or Equiv | Equivalent |
| FLN | Flanged Lock Nut |
| FW | Flat Washer |
| Ga | Gauge |
| Gr or Grd | Grade |
| Hd | Head |
| Hyd | Hydraulic |
| ID | Inside Diameter |
| Ill or Illus | Illustration |
| Ind | Indicator |
| KW | Keyway |
| LH | Left Hand |
| LW | Lock Washer |
| Mtg Hrd | Mounting Hardware |
| NC | National Coarse |
| NF | National Fine |
| OD | Outside Diameter |
| Pc(s) | Piece(s) |
| PD | Pitch Diameter |
| PTO | Power Takeoff (Shaft) |
| Q or Qty | Quantity |
| Reg Mach | Regular Machine |
| RH | Right hand |
| SN | Serial Number |
| Sprkt | Sprocket |
| Sq | Square |
| Std | Standard |
| UASN | Used After Serial Number |
| UBSN | Used Before Serial Number |

This listing uses a number indentation system to specify the parts of an assembly. Any number which is indented to the right, indicates that it is a component of the item to the upper left. Example:

| <u>Part no</u> | <u>Description</u> | <u>Qty</u> |
|----------------|--------------------|------------|
| uuu-uuu | Assembly A | 2 |
| vvv-vvv | Sub-Assembly B | 3 |
| | (Component of A) | |
| www-ww | Component of B | 5 |
| xxx-xxx | Another Com- | 1 |
| | ponent of B | |
| yyy-yyy | Sub-Assembly C | 1 |
| | (Component of A) | |
| etc. | | |

Using this system, the sub-assemblies and their components are included if an Assembly is ordered. Similarly, the components of a sub-assembly are included if a sub-assembly is ordered.

The quantity (qty) associated with an assembly, represents the number of times an assembly could be shown in the drawing. The sub-assembly quantity however, is the number of times a sub-assembly is used to build one assembly. Similarly, the component quantity refers to the number of times a given component is found in one sub-assembly.



Serial Number Location
Front View
Figure A

MODEL AND SERIAL NUMBER INFORMATION is located below the drive shielding (Fig. A). The model number, serial number and part number should be known when asking service personnel for parts.

If you cannot find the part you need, be as descriptive as possible when placing an order:

Sprockets: give the bore size, number of teeth, and number and size of keyways.

Roller chain: give the size of chain (stamped on the side of each link) and number of links.

Shafting: give the diameter, length, and number and size of keyways.

Hardware is generally not included with parts. If you need any hardware, check the size, the length, and the grade (Fig. B), then check the hardware list in this manual for the part numbers. All hex head bolts up to and including 7/16" diameter are grade 5, and nuts are grade B unless otherwise stated.

The hardware listing also includes listings for zerks, cotter pins, set screws, and roller chain links.

The illustrations in this manual are meant to be used only as a guide for identifying parts and locating their relative positions.

Bolt Grades

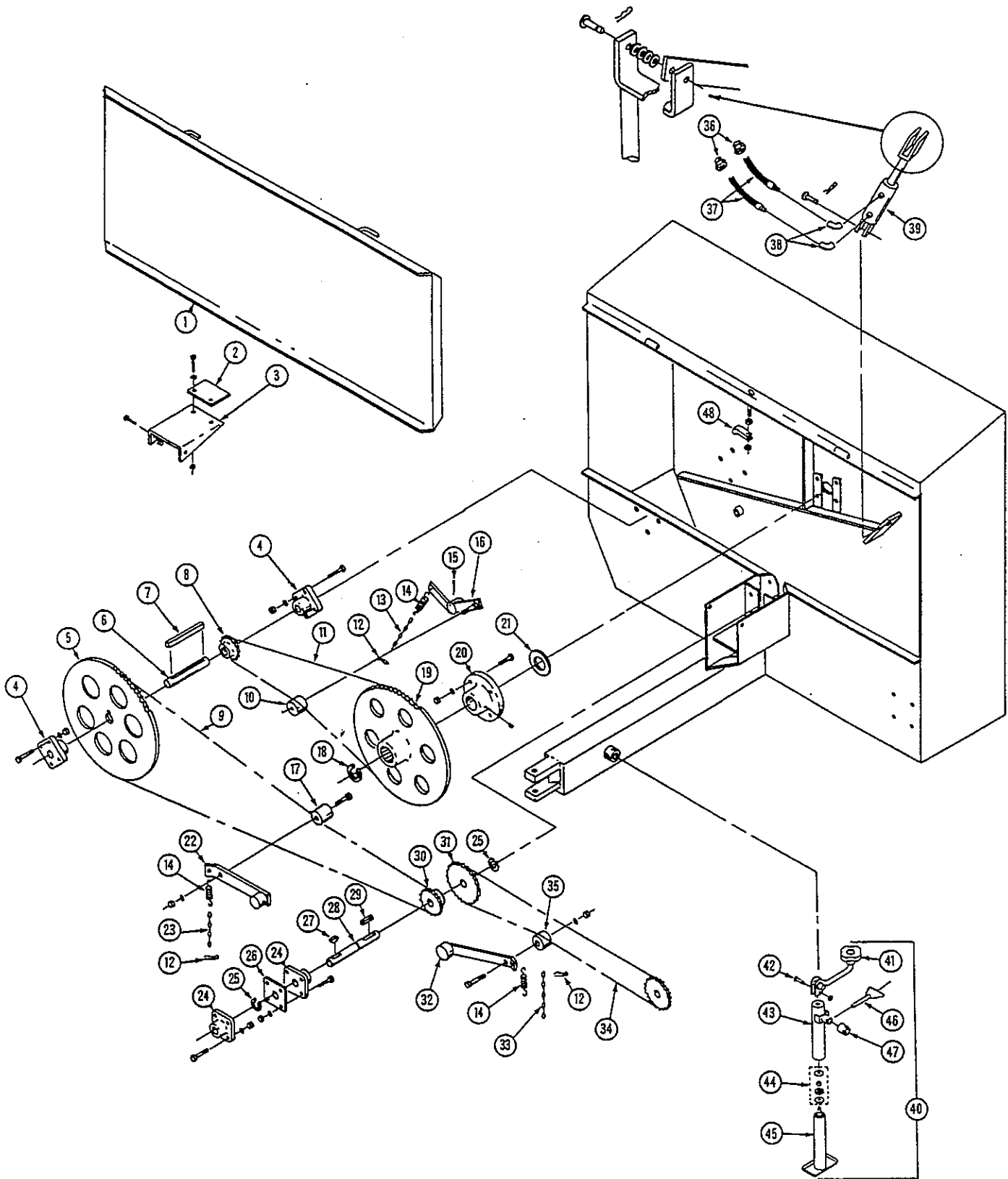


Bolt Head Grade Markings
Figure B

A * following a part number (XXX-XXX*) indicates that the part is no longer used in production for this application. Superscript letters (XXX-XXX^A) refer to footnotes and/or illustration boxes.

FRONT END PARTS

710-TOW R081090



KNIGHT MANUFACTURING CORP. PO BOX 167 BROADHEAD, WI 53520
OFFICE: (608) 897-2131 PARTS/SERVICE: (608) 897-2125 FAX: (608) 897-2561

FRONT END PARTS

710-TOW R081090

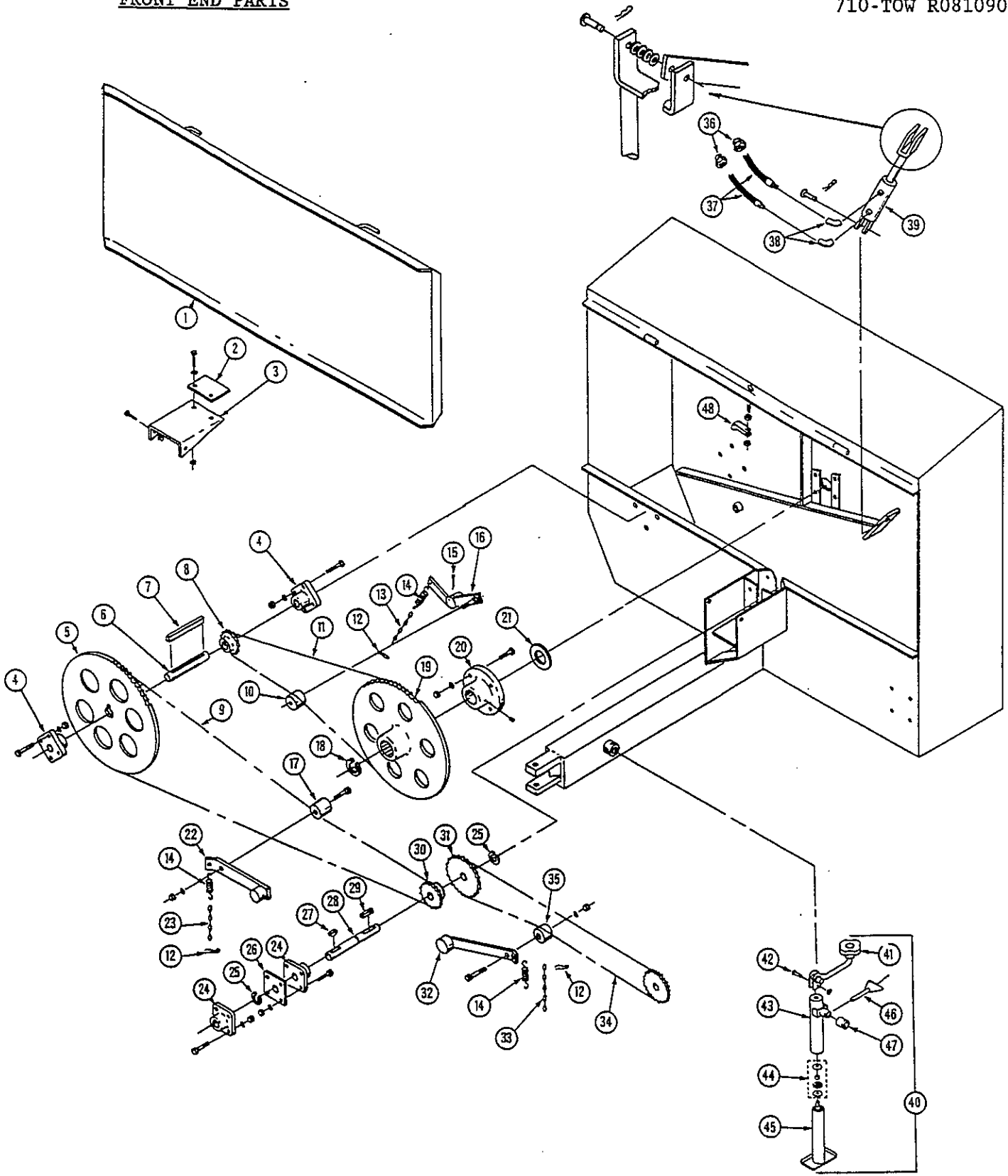
| REF | PART NO | QTY | DESCRIPTION |
|-----|-----------------------|-----|---|
| 1 | 101-662 | 1 | Front Shield Assembly |
| 2 | 133-539 | 1 | Shield Belt |
| 3 | 133-538 | 1 | Mtg Hrd: 5/16" x 3/4" Bolt, FW & FLN (2 ea) PTO Shield Cover Mtg Hrd: 5/16" x 3/4" Bolt, FLN & 171-393 Belleville Washer (2 ea) |
| 4 | 170-008 | 2 | Brg; 2", FYH UCF X10-32E L-III Or Equiv Mtg Hrd: 5/8" x 1-3/4" Tap Bolt, LW & Nut (3 & 4 ea) |
| 5 | 133-396 | 1 | Sprocket; 60-B-120, 2" Bore, 1/2" KW |
| 6 | 133-449 | 1 | Shaft |
| 7 | 171-695 | 1 | Key; 1/2" x 4-1/2" |
| 8 | 131-352 | 1 | Sprocket; 100-B-12, 2" Bore, 1/2" KW |
| 9 | 171-697 | 1 | Roller Chain; 60-1-140 Pitch, W/Connector Link |
| 10 | 134-179 | 1 | Tightener Block Mtg Hrd: 3/4" Jam Nut |
| | 171-316* ^A | 1 | Idler Sprocket; 100-A-10, UBSN 277 |
| | 171-332* | 1 | Spacer Bushing; UBSN 277 |
| 11 | 171-699 | 1 | Roller Chain; 100-1-71 Pitch, W/Connector Link |
| 12 | 170-800 | 3 | Clinch Pin |
| 13 | 170-845 | 1 | Machine Chain; #4 x 17 Link |
| 14 | 172-006 | 3 | Spring; 4-5/8" Long |
| 15 | 170-135 | 1 | Cotter Pin; 5/32" x 3" |
| 16 | 101-577 ^A | 1 | Chain Tightener Arm (Works With Sprockets & Blocks) |
| 17 | 134-178 | 1 | Tightener Block Mtg Hrd: 1/2" x 2-3/4" Bolt, FW, LW & Nut |
| | 171-264* ^A | 1 | Idler Sprocket; 60-A-15, UBSN 277 |
| 18 | 170-152 | 1 | Snap Ring; 2-1/2", Truarc 5100-250 Or Equiv |
| 19 | 133-595 | 1 | Sprocket; 100-B-60, 2-1/2" Splined Bore |
| 20 | 170-365 | 1 | Bearing; 2-1/2", F-B22440E Or Equiv Mtg Hrd: 5/8" x 2" Bolt, LW & Nut |
| 21 | 133-277 | 1 | Seal; 2-1/2" ID |
| 22 | 101-761 | 1 | Chain Tightener Arm |
| | 101-581* ^A | 1 | Tightener Arm; Sprocket Style, UBSN 277 |
| 23 | 170-518 | 1 | Machine Chain; #4 x 30 Link |
| 24 | 171-585 | 2 | Bearing; 1-3/8", FYH NANF 207-22 Or Equiv Mtg Hrd: 1/2" x 1-3/4" Bolt, LW & Nut (4 ea) |

A: The current tightener blocks are very wear resistant and can be used in place of idler sprockets. In order to mount the blocks, it is necessary to modify the "sprocket style" tightener arms or replace them with the current "block style" arms.

A * following a part number (XXX-XXX*) indicates that the part is no longer used in production for this application. Superscript letters (XXX-XXX^A) refer to footnotes and/or illustration boxes.

FRONT END PARTS

710-TOW R081090



KNIGHT MANUFACTURING CORP. PO BOX 167 BRODHEAD, WI 53520
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FRONT END PARTS

710-TOW R081790

| REF | PART NO | QTY | DESCRIPTION |
|-----|-----------------------|-----|---|
| 25 | 170-499 | 2 | Snap Ring; 1-3/8", Truarc 5160-137 Or Equiv |
| 26 | 133-316 | 1 | Spacer |
| 27 | 170-170 | 1 | Woodruff Key; 3/8" x 1-1/4" |
| 28 | 133-533 | 1 | Input Shaft |
| 29 | 170-052 | 1 | Key; 3/8" x 2-1/8" |
| 30 | 133-394 | 1 | Sprocket; 60-B-13, 1-3/8" Bore, 3/8" KW |
| 31 | 133-477 | 1 | Sprocket; 60-B-27, 1-3/8" Bore, 3/8" KW |
| 32 | 101-817 | 1 | Chain Tightener Arm |
| | 101-579* ^A | 1 | Tightener Arm; Sprocket Style, UBSN 277 |
| 33 | 170-479 | 1 | Machine Chain; #4 x 9 Link |
| 34 | 171-698 | 1 | Roller Chain; 60H-1-78 Pitch, W/Connector Link |
| 35 | 134-155 | 1 | Tightener Block |
| | | | Mtg Hrd: 1/2" x 2-3/4" Bolt, FW, LW & Nut |
| | 171-264* ^A | 1 | Idler Sprocket; 60-A-15, UBSN 277 |
| 36 | 170-235 | 2 | 1/2" To 3/8" Reducer Bushing |
| 37 | 171-309 | 2 | Hydraulic Hose Assembly; 1/4" x 132" |
| 38 | 171-030 | 2 | Swivel Connector; 3/8" - 90 Degrees |
| 39 | 170-232 | 1 | Hydraulic Cylinder; 2-1/2" x 8" (Seal Kit #170-464) |
| | | | Use 170-122 FW As Shown To Prevent Binding |
| | 170-941* ^B | 1 | Hyd. Cylinder; 2" x 8" (Seal Kit #170-075*), UBSN 277 |
| 40 | 170-984 | 1 | Jackstand |
| 41 | 170-386 | 1 | Crank Assembly |
| 42 | 171-860 | 1 | Crank Pin (Includes "C" Washer) |
| 43 | 170-986 | 1 | Outer Tube |
| 44 | 170-397 | 1 | Thrust Bearing Kit |
| 45 | 171-941 | 1 | Inner Tube Assembly (Includes Nut & Screw) |
| 46 | 170-987 | 1 | Pin And Chain Assembly |
| 47 | 170-985 | 1 | Mount Tube |
| 48 | 171-782 | 1 | Hose Clamp; Mtg Hrd: 5/16" Hex Nut And FLN |

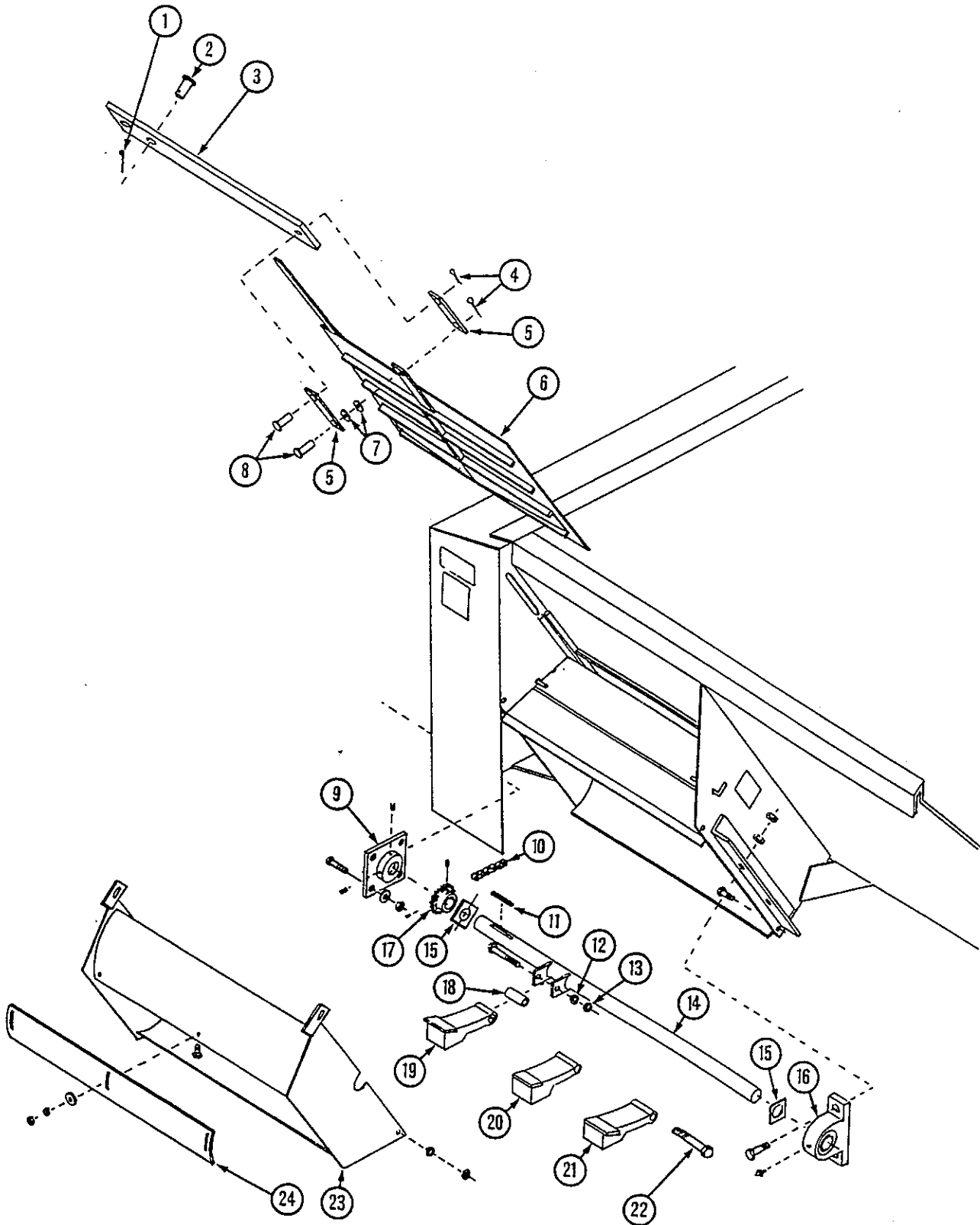
A: The current tightener blocks are very wear resistant and can be used in place of idler sprockets. In order to mount the blocks, it is necessary to modify the "sprocket style" tightener arms or replace them with the current "block style" arms.

B: The current 2-1/2" x 8" hydraulic cylinder can be used in place of the 2" x 8" cylinder.

A * following a part number (XXX-XXX*) indicates that the part is no longer used in production for this application. Superscript letters (XXX-XXX^A) refer to footnotes and/or illustration boxes.

DISCHARGE PARTS

710-TOW R081090



KNIGHT MANUFACTURING CORP. PO BOX 167 BRODHEAD, WI 53520
OFFICE: (608) 897-2131 PARTS/SERVICE: (608) 897-2125 FAX: (608) 897-2561

DISCHARGE PARTS

710-TOW DR051592

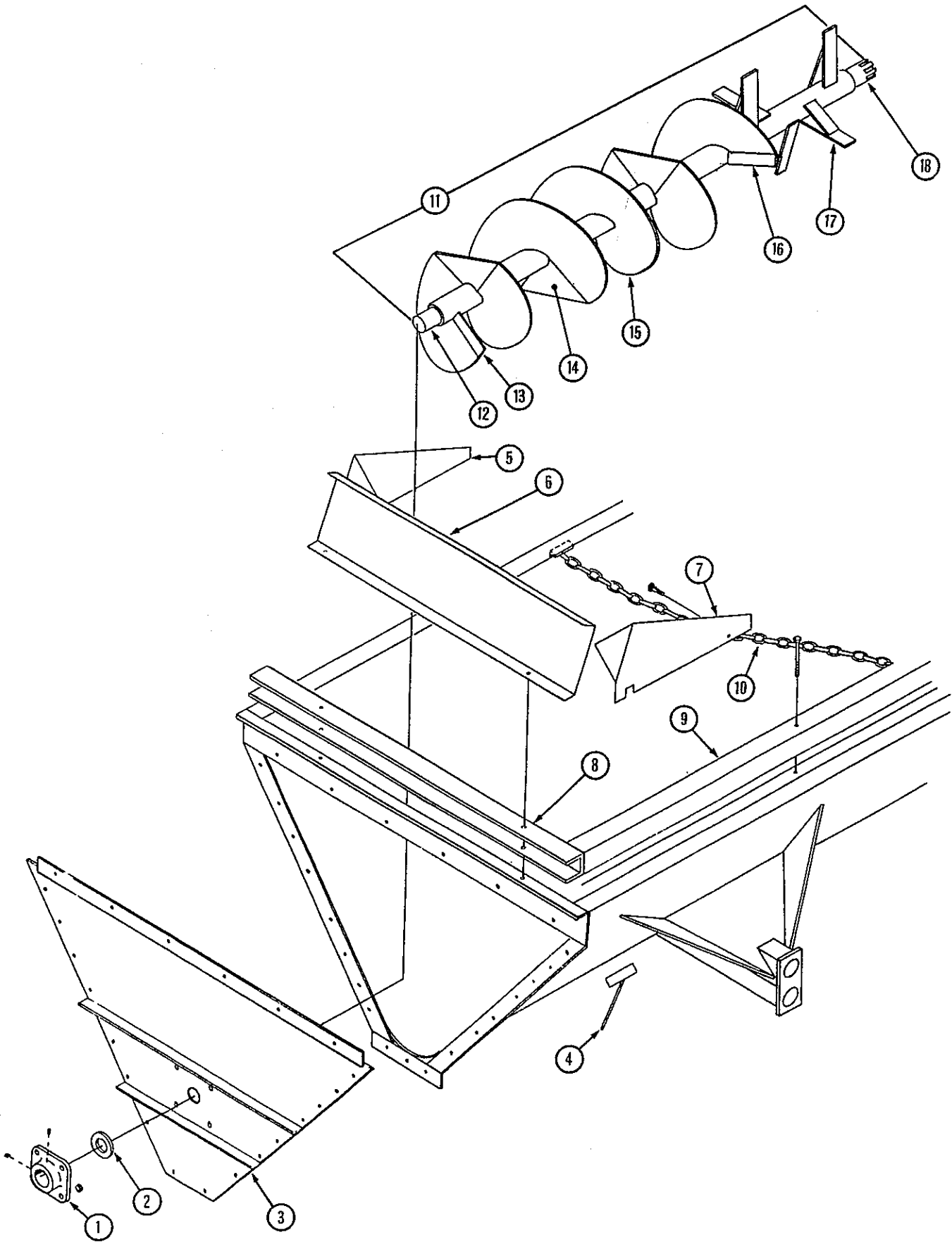
| REF | PART NO | QTY | DESCRIPTION |
|-----|-----------------------|-----|---|
| 1 | 170-074 | 1 | Hairpin Clip |
| 2 | 170-073 | 1 | Clevis Pin; 1" Dia |
| 3 | 134-174 ^A | 1 | Pivot Bar; 5" Wide |
| | 133-444 ^{*A} | 1 | Pivot Bar; 4" Wide, UBSW 277 |
| 4 | 170-236 | 2 | Cotter Pin; 5/32" x 1-1/2" |
| 5 | 133-445 | 2 | Door Linkage Bar |
| 6 | 101-583 | 1 | Discharge Door Assembly |
| 7 | 170-066 | 2 | Flat Washer; 5/8" |
| 8 | 171-696 | 2 | Clevis Pin; 5/8" x 2" |
| 9 | 170-008 | 1 | Bearing; 2", FYH UCF X10-32E L-III Or Equiv Mtg Hrd: 5/8" x 1-3/4" Tap Bolt, LW & Nut (4 ea) |
| 10 | 171-698 | 1 | Roller Chain; 60H-1-78 Pitch, W/Connector Link |
| 11 | 170-835 | 1 | Key; 1/2" x 1-1/2" Long |
| 12 | 171-671 | 12 | Lock Nut; 1/2", Grade 8 |
| 13 | 170-036 | 12 | Jam Nut; 1/2" |
| 14 | 101-572 | 1 | Hammer Shaft Assembly |
| 15 | 133-604 | 2 | Belt; Shaft Seal Mtg Hrd: 1/4" x 1" Bolt, FW, LN & 171-083 FW (1 ea) |
| 16 | 171-586 | 1 | Bearing; 2" Pillow Block, FYH NAP 211-32 L-III Mtg Hrd: 5/8" x 2-1/2" Bolt, FW (2 ea) & LN (4) |
| 17 | 133-395 | 1 | Sprocket; 60-B-18, 2" Bore, 1/2" KW |
| 18 | 133-238 | 12 | Hammer Sleeve |
| 19 | 101-548 ^C | 1 | Front Hammer (Tip #133-299) |
| 20 | 101-586 ^C | 10 | Main Hammer (Tip #133-298) |
| 21 | 101-549 ^C | 1 | Rear Hammer (Tip #133-299) Use AWS E10018 Electrode Or Greater For Welding Replacement Tips |
| 22 | 171-573 | 12 | Bolt; 1/2" x 4-1/2", 30% Stronger Than Grade 8, 180,000 PSI Minimum Tensile Strength |
| 23 | 101-633 | 1 | Door Shroud Assembly; Mtg Hrd: 3/8" x 1" Bolt, LN (4 ea) & 3/8" Heavy FW (2 ea) |
| 24 | 134-586 ^B | 1 | Shroud Visor Mtg Hrd: 5/16" x 1" Bolt, FW, LW & Nut (3 ea) |

A: The current 5" wide pivot bar can be used in place of the 4" wide bar. The panel slot on units equipped with the 4" wide bar will have to be lengthened to accept the 5" wide bar.

B: The edges of the visor may need to be modified to clear welds on door shroud assemblies built before 1-1-92.

C: Use Stulz Manganese-XL or Equiv. Welding Electrodes for Hammer repair. Order Kit 300-030 - Quantity as required.

An asterisk (*) at the end of a part number (XXX-XXX*) indicates that the part is no longer used in production for this application. Superscript letters (XXX-XXX^A) refer to footnotes and/or illustration boxes.



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REAR, TOP & AUGER PARTS

710-TOW R081090

| REF | PART NO | QTY | DESCRIPTION |
|-----|----------------------|-----|--|
| 1 | 170-008 | 1 | Bearing; 2", FYH UCF X10-32E L-III Or Equiv Mtg Hrd: 5/8" x 1-3/4" Bolt, FW, LW & Nut (4 ea) |
| 2 | 133-376 | 1 | Seal; 2" ID x 3-1/2" OD |
| 3 | 101-571 | 1 | Rear Panel Mtg Hrd: 5/16" x 3/4" Bolt, FLN (23 ea) & FW (17) |
| 4 | 101-636 | 1 | Cleaning Tool |
| 5 | 133-556 | 1 | Splash Guard Side (RH Front & LH Rear) |
| 6 | 133-688 | 1 | Splash Guard End Mtg Hrd: 5/16" x 1" Bolt, LW, Nut (6 ea) & FW (12) |
| 7 | 133-557 | 1 | Splash Guard Side (LH Front & RH Rear) Mtg Hrd: To Wood Rail: 3/8" x 3-1/2" C Bolt & Nut (4 ea) To Side Panel: 3/8" x 1" Bolt, LW & Nut (4 ea) |
| 8 | 133-687 | 2 | End Panel Extension Mtg Hrd: 5/16" x 1" Bolt, LW, Nut (2 ea), FW (6) & 3/8" x 2-1/2" Lag Screw (2) |
| 9 | 133-657 | 2 | Wood Rail; 3" x 4" x 144" Mtg Hrd: 3/8" x 4-1/2" Carriage Bolt & Nut (5 ea) |
| 10 | 133-718 | 1 | Restrictor Chain Mtg Hrd: 1/2" x 1-1/2" Grd 5 Bolt, FW & LN (2 ea) |
| 11 | 101-685 ^A | 1 | Auger Assembly; 90 Degree Delayed Flight |
| 12 | 101-575 | 1 | Rear Plug; 2" Dia |
| 13 | 131-552 | 1 | Rear Flighting Support Bar |
| 14 | 133-736 | 4 | 90 Degree Flighting Delay Block |
| 15 | 133-399 | 5 | Flighting; 3/8" x 4-1/2" x 24" x 24" LH |
| 16 | 133-630 | 1 | Front Flighting Support Bar (Tapered) |
| 17 | 101-570 | 5 | Paddle Assembly |
| 18 | 101-631 ^B | 1 | Front Plug; 2-1/2" Splined Shaft |

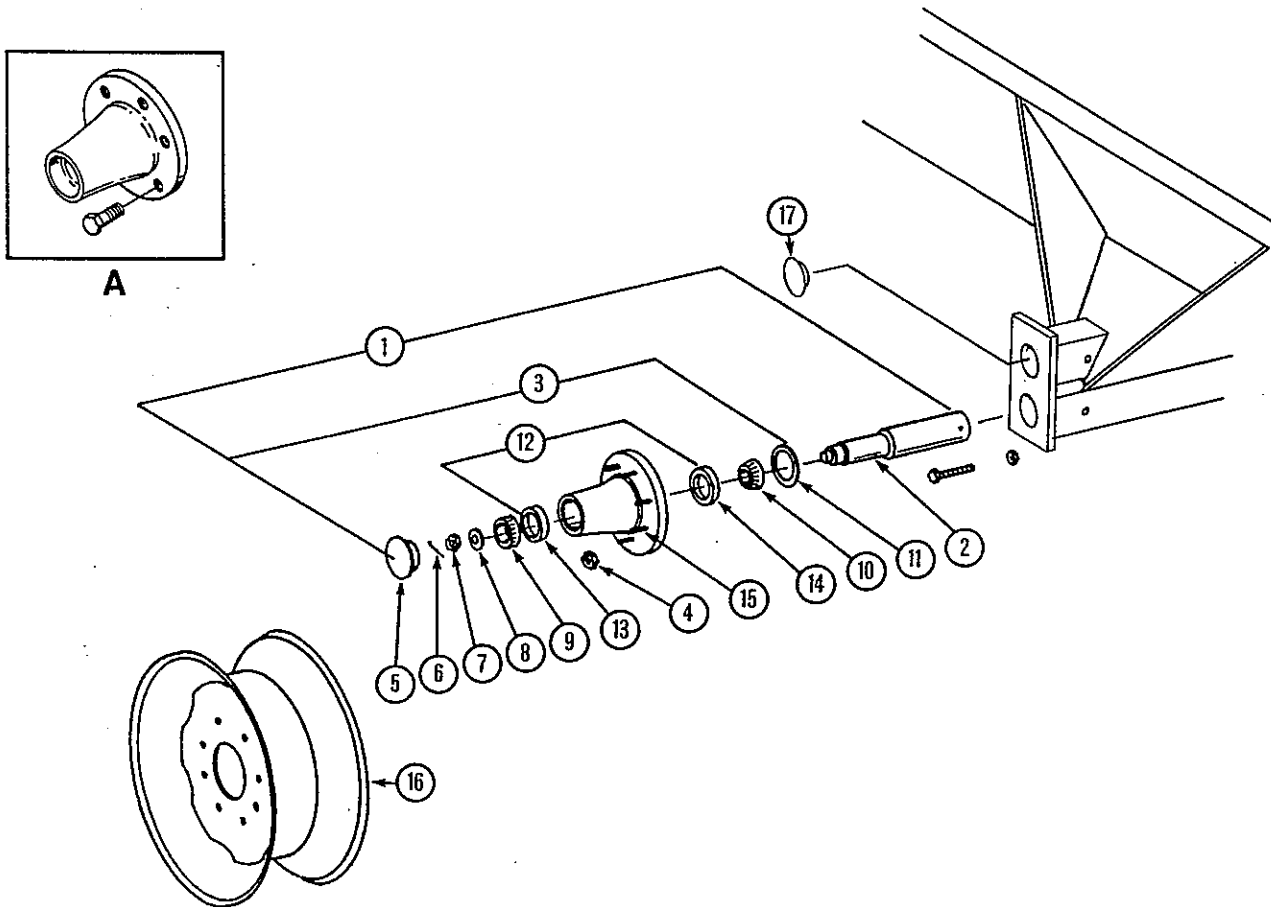
A: 3 different auger versions have been used: the 180 degree delayed flight, the 90 degree delayed flight, and the full flighted auger. The 90 degree delayed flight auger has proven to be the most versatile. All three versions use the same components except for the delay blocks. For parts, refer to the auger listed above and consult Knight Mfg. to determine the best method of repair.

B: All 2-1/2" plugs sold after 4-89 have hardened splines for improved strength.

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| REF | PART NO | QTY | DESCRIPTION |
|-----|----------------------|-----|---|
| 1 | 171-800 | 2 | 8-Bolt Hub & Spindle Assembly |
| 2 | 171-745 | 1 | Spindle; 2-1/2" Dia, Mtg Hrd: 3/8" x 4" Bolt & LN |
| 3 | 170-755 | 1 | Complete 8-Bolt Hub Assembly |
| 4 | 171-827 ^A | 8 | Nut; 5/8" NF |
| 5 | 170-550 | 1 | Dust Cap |
| 6 | 170-236 | 1 | Cotter Pin; 5/32" x 1-1/2" |
| 7 | 170-132 | 1 | Castle Nut; 7/8" NF |
| 8 | 170-131 | 1 | Flat Washer; 7/8" Heavy |
| 9 | 170-545 | 1 | Bearing Cone: Timken 14137A Or Equiv (Outer) |
| 10 | 170-554 | 1 | Bearing Cone: Timken 3780 Or Equiv (Inner) |
| 11 | 170-556 | 1 | Grease Seal; C/R 25105 Or Equiv |
| 12 | 170-705 ^A | 1 | 8-Bolt Hub Assembly |
| 13 | 170-546 | 1 | Bearing Race; Timken 14276 Or Equiv (Outer) |
| 14 | 170-553 | 1 | Bearing Race; Timken 3720 Or Equiv (Inner) |
| 15 | 171-826 ^A | 8 | Stud; 5/8" NF |
| 16 | 170-112 | 2 | Wheel; 20" x 8", 8-Hole |
| 16 | 171-779 | 2 | Wheel; 16.1" x 14", 8-Hole |
| 16 | 172-284 | 2 | Wheel; 22-1/2" x 8-1/4", 8-Hole |
| 17 | 172-269 | 2 | Axle Plug; 2-1/2" Dia. UASN 710-397 |

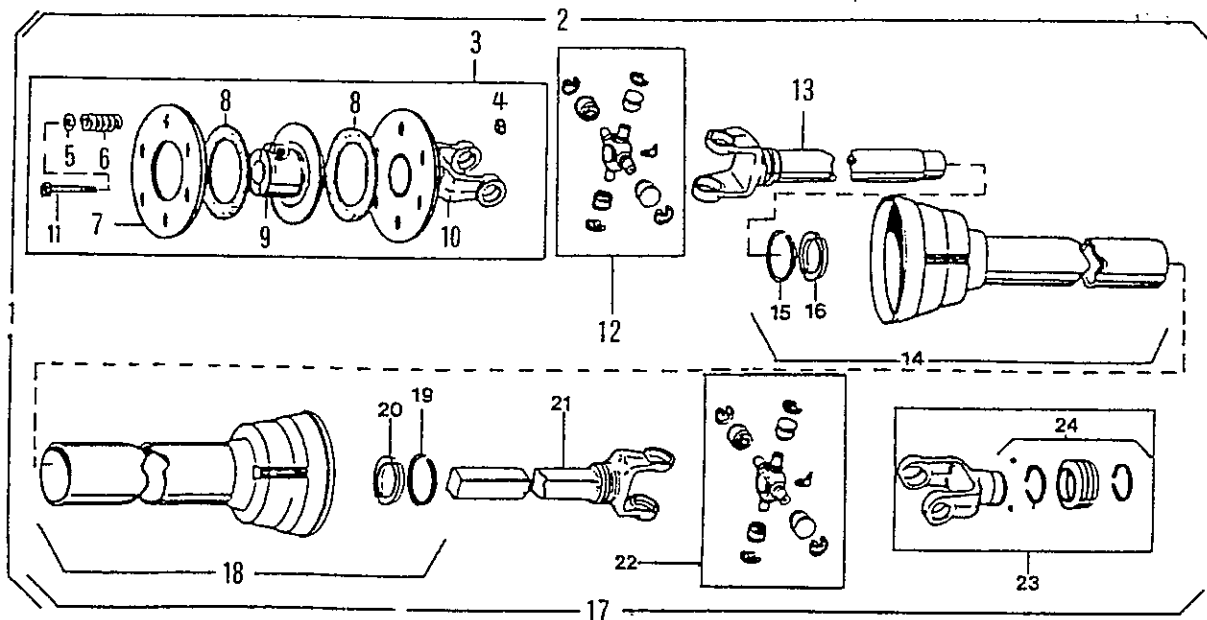
A: Before 1-88, hubs used bolts instead of studs and nuts. Order 170-557* for the 9/16" x 1-1/8" bolts.



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| REF | PART NO | QTY | DESCRIPTION |
|-----|----------------------|-----|--|
| 1 | 171-750 | 1 | 14R 9000 Friction Clutch PTO Driveline Mtg Hrd: 1/2" x 3" Bolt & LN |
| 2 | 171-752 | 1 | Joint & Friction Half (Male Half) |
| 4 | 170-047 | 6 | Stopnut |
| 5 | 171-762 | 6 | Washer |
| 6 | 171-761 | 6 | Spring |
| 7 | 171-759 | 1 | Pressure Plate |
| 8 | 171-760 | 2 | Friction Disc |
| 9 | 171-758 | 1 | Drive Hub |
| 10 | 171-757 | 1 | Clutch Yoke W/Plate |
| 11 | 171-813 | 6 | Bolt; 3/8" x 4-1/4" |
| 12 | 170-720 | 1 | Repair Kit |
| 13 | 171-754 | 1 | Yoke & Tube |
| 14 | 171-755 | 1 | Male Shield Assembly |
| 15 | 170-219 | 1 | Bearing Retainer |
| 16 | 170-220 | 1 | Nylon Bearing |
| 17 | 171-751 | 1 | Joint & Shaft Half (Female Half) |
| 18 | 171-756 | 1 | Female Shield Assembly |
| 19 | 170-219 | 1 | Bearing Retainer |
| 20 | 170-220 | 1 | Nylon Bearing |
| 21 | 171-753 | 1 | Yoke & Shaft Assembly |
| 22 | 170-720 | 1 | Repair Kit |
| 23 | 172-018 | 1 | Lock Yoke Assembly |
| 24 | 172-019 ^A | 1 | Spring Lock Repair Kit |

A: The manual slide lock repair kit (171-529*) is obsolete. Order the 172-018 lock yoke assembly.



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DECAL & PAINT LIST

710-TOW DR091691

The following decals are listed below for your convenience.
Use the operator's manual for decal location, part number and ordering.

Unit Decals:

| PART NO | QTY | DESCRIPTION |
|---------|-----|--|
| 171-843 | 1 | Set of Decals |
| 170-154 | 2 | "KNIGHT" |
| 170-155 | 1 | Knight Head |
| 170-490 | 1 | Important - Reduce Engine Speed . . . |
| 170-849 | 2 | WARNING - Beware Of Power Driven . . . |
| 170-893 | 1 | Slow Moving Vehicle Decal |
| 171-598 | 2 | "Slinger" |
| 171-599 | 1 | CAUTION - Do Not Exceed 540 RPM |
| 171-712 | 1 | NOTICE - Retighten Set Screws . . . |
| 172-370 | 1 | NOTICE - Friction Clutch Adjustment |
| 171-820 | 2 | DANGER - Rotating Auger Inside . . . |
| 171-821 | 2 | DANGER - Material Discharges . . . |
| 171-835 | 2 | "710" |
| 171-912 | 1 | Caution - Implement Driveline |
| 171-913 | 1 | WARNING - Do Not Operate . . . |
| 171-950 | 1 | "U.S. Patent No. . . ." |
| 171-992 | 2 | Red Reflector |
| 172-171 | 1 | CAUTION - Read Operator's Manual |

PTO Driveline Decals:

| | | |
|---------|---|-----------------------------|
| 171-550 | 1 | DANGER, PTO . . . |
| 171-599 | 1 | Do Not Exceed 540 RPM . . . |
| 171-799 | 1 | DANGER - Shield Missing |

Paint:

| | |
|---------|---------------------------|
| 170-366 | Knight Yellow Aerosol Can |
| 170-812 | Knight Yellow Quart Can |
| 170-813 | Knight Yellow Gallon Can |
| 170-367 | Knight Red Aerosol Can |
| 170-814 | Knight Red Quart Can |
| 170-815 | Knight Red Gallon Can |

OPTIONAL KITS

710-TOW R081090

Safety Chain For Towed Equipment P/N 172-195

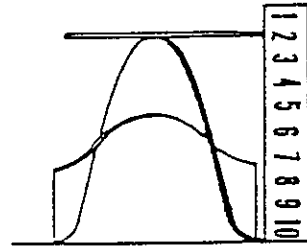
This chain is designed to retain the connection between the towing and towed machines in the event of separation of the primary attaching system. It should be used whenever the unit is transported on the highway.

Light Kit For Towed Equipment

This light kit is designed for lighting and marking of agricultural field equipment whenever the equipment is on a highway. This kit is pre-assembled, and it includes mounting hardware.

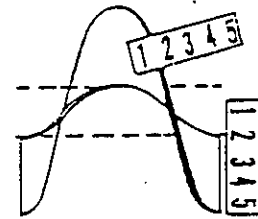
| PART NO | QTY | DESCRIPTION |
|----------|-----|---|
| 300-007 | 1 | Complete Light Kit - Assembled |
| 172-173 | 2 | Red And Amber Light Assembly |
| 172-174 | 25' | 4 Conductor Wire |
| 172-175 | 1 | 4 Pin In-Line Connector (Male & Female) |
| Options: | | |
| 172-110 | 1 | 7 Pin Female Connector |

OUTSIDE DIAMETER: Outside diameter can be determined by laying the flight on a flat surface and measuring from the top to the base.
NOTE: Dimensions may vary slightly.

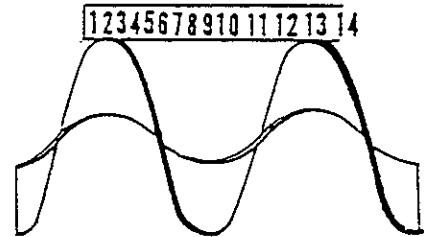


THICKNESS: Thickness of flighting can be determined with any linear measuring instrument.

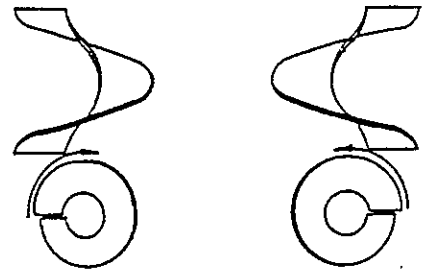
INSIDE DIAMETER: To find the inside diameter of flight, measure the distance from the inside of the flight to the peak. Then multiply the dimension by two and subtract the answer from the outside diameter dimension.



PITCH: Pitch is the dimension from one peak to the next, measured along the axis of the shaft. The term full pitch means that the outside diameter and the pitch are the same.



RIGHT HAND AND LEFT HAND FLIGHTING: As you look at the face of flighting and it is slanting downward to the right; it is right hand and if it is slanting downward to the left; it is left hand.



Flighting dimensions are written in a series similar to the following:

1/4" - 4" - 14" - 14"
Thick - I.D. - O.D. - Pitch

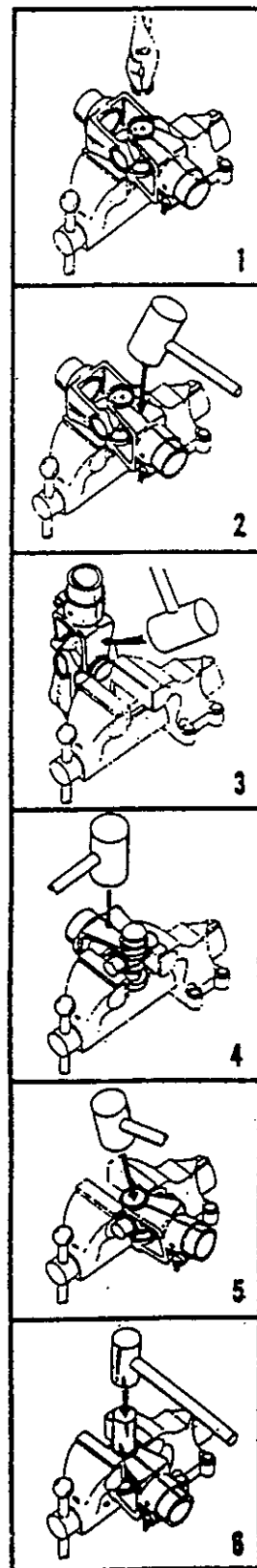
DISASSEMBLY PROCEDURE:

1. Remove the four snap rings as shown in Figure #1.
2. Position the joint in an open vise, with each ear of one yoke supported by a vise jaw. Figure #2
3. With a soft hammer or mallet, strike the top ear of the unsupported yoke as indicated by the arrow in Figure #2. This will drive the top bushing outward approximately 3/8 of an inch.
4. Grip the loosened bushing in the vise as shown in Fig. #3. Drive the yoke off the bushing by striking the yoke ear with a mallet in the direction of the arrow. (Fig. #3)
5. This same procedure should be followed to remove the bushing that is directly opposite the one in Step 4. After this, the yoke itself may be removed.
6. To remove the remaining two bushings, support the cross as shown in Figure #4. Make certain that the vise jaws are covered with brass protectors. By striking the yoke ear as indicated by the arrow in Figure #4, the remaining bushings can be removed by repeating the procedure called for in Step 4 & Figure #3.

ASSEMBLY PROCEDURE:

DURING REASSEMBLY, BE SURE THAT THERE IS NO DIRT ON THE TRUNNIONS OF THE CROSS OR IN THE BUSHINGS!

1. Start one bushing in the yoke ear and position the center cross through the yoke. Drive the first bushing down flush with the outside surface of the ear as shown in Fig. #5. Support the underside of the ear so as not to spring the yoke.
2. Clamp the ear in the vise as shown in Figure #6. Use a punch of the same diameter as the bushing, drive the bushing past the snap ring groove, and insert a snap ring.
3. Position the cross and drive in the opposite bushing as described in Steps 1 & 2, and Insert a snap ring.
4. Assemble the second yoke in the same manner.
5. To insure proper seating, and to eliminate any possible tightness, strike the forged surfaces of the yoke ears with a mallet. This will insure a free flexing joint.
6. Lubricate with a good grade of multipurpose grease.



HARDWARE PART NUMBER LISTING

710-TOW R081090

All hex head bolts up to and including 7/16" dia are grade 5 unless otherwise specified. All fasteners are NC thread unless otherwise specified.

| <u>Size</u> | <u>Hex Nuts</u> | <u>Locknuts</u> | <u>Jam Nuts</u> | <u>Flt Wsh.</u> | <u>Lk Wsh.</u> |
|-------------|-----------------|-----------------|-----------------|-----------------|----------------|
| #10 | 171-606 | | | 171-525 | 171-605 |
| 1/4 | 170-125 | 170-069 | | 170-301 | 170-124 |
| 5/16 | 170-119 | 170-028 | | 170-127 | 170-118 |
| 3/8 | 170-007 | 170-047 | 170-022 | 170-244 | 170-006 |
| 7/16 | 170-062 | 170-239 | 170-046 | 170-138 | 170-061 |
| 1/2 | 170-004 | 170-042 | 170-036 | 170-040 | 170-003 |
| 5/8 | 170-011 | 170-031 | 170-037 | 170-066 | 170-010 |
| 3/4 | 170-017 | 170-185 | 170-035 | 170-015 | 170-016 |
| 7/8 | | | | 170-131 | 172-003 |
| 1 | | | | 170-122 | 171-021 |

HEX HEAD BOLTS

| <u>Bolt Size</u> | <u>Part No</u> | <u>Bolt Size</u> | <u>Part No</u> | <u>Bolt Size</u> | <u>Part No</u> |
|------------------|----------------|------------------|----------------|----------------------|----------------|
| 1/4 x 3/4 | 170-803 | 3/8 x 3 | 170-380 | 5/8 x 1-3/4 | 170-030 |
| 1/4 x 7/8 | 171-094 | 3/8 x 3-1/2 | 170-292 | (Tap Bolt - Grade 5) | |
| 1/4 x 1 | 170-310 | 3/8 x 4 | 170-877 | 5/8 x 2 | 170-009 |
| 1/4 x 1-1/2 | 170-068 | 3/8 x 4-1/2 | 170-519 | (Grade 5) | |
| 1/4 x 2-3/4 | 171-203 | 3/8 x 5 | 170-493 | 5/8 x 2 | 171-772 |
| 1/4 x 3 | 171-403 | 3/8 x 5-1/2 | 170-593 | (Tap Bolt) | |
| 5/16 x 5/8 | 170-532 | 3/8 x 6-1/2 | 171-291 | 5/8 x 2-1/2 | 170-129 |
| 5/16 x 3/4 | 170-262 | 7/16 x 3/4 | 170-265 | (Tap Bolt) | |
| 5/16 x 7/8 | 170-256 | 7/16 x 1 | 170-032 | 5/8 x 3 | 170-258 |
| 5/16 x 1 | 170-027 | 7/16 x 1-1/4 | 170-354 | 5/8 x 3-1/2 | 170-038 |
| 5/16 x 1-1/4 | 170-188 | 7/16 x 1-1/2 | 170-059 | 5/8 x 4 | 170-371 |
| 5/16 x 1-1/2 | 170-372 | 7/16 x 2 | 170-356 | 5/8 x 4-1/2 | 170-067 |
| 5/16 x 1-3/4 | 170-263 | 7/16 x 2-1/2 | 170-379 | 5/8 x 5 | 170-065 |
| 5/16 x 2 | 170-376 | 7/16 x 3 | 170-270 | 5/8 x 6 | 170-381 |
| 5/16 x 2-1/2 | 170-369 | 7/16 x 5-1/2 | 170-377 | 5/8 x 9-1/2 | 171-039 |
| 5/16 x 3 | 170-295 | 7/16 x 6 | 170-378 | 3/4 x 2 | 170-058 |
| 5/16 x 3-1/4 | 171-639 | 1/2 x 3/4 | 171-252 | 3/4 x 2-1/4 | 171-275 |
| 5/16 x 4 | 170-293 | 1/2 x 1 | 170-149 | 3/4 x 2-1/2 | 170-374 |
| (Tap Bolt) | | 1/2 x 1-1/4 | 170-373 | 3/4 x 3 | 170-014 |
| 5/16 x 4-1/2 | 170-294 | 1/2 x 1-1/2 | 170-002 | 3/4 x 3-1/2 | 170-195 |
| 3/8 x 3/4 | 170-439 | 1/2 x 2 | 170-050 | 3/4 x 4 | 170-419 |
| 3/8 x 7/8 | 170-268 | 1/2 x 2-1/2 | 170-319 | 3/4 x 4-1/2 | 170-846 |
| 3/8 x 1 | 170-054 | 1/2 x 3 | 170-168 | (Grade 5) | |
| 3/8 x 1-1/4 | 170-005 | 1/2 x 4 | 171-509 | 3/4 x 6 | 171-116 |
| 3/8 x 1-1/2 | 170-368 | 1/2 x 4-1/2 | 171-573 | (Grade 5) | |
| 3/8 x 2 | 170-245 | 1/2 x 5 | 171-412 | | |
| 3/8 x 2-1/4 | 170-320 | 5/8 x 1 (G.5) | 171-087 | | |
| 3/8 x 2-1/2 | 170-257 | 5/8 x 1-1/4 | 171-366 | | |

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HARDWARE LISTING CONTINUED

710-TOW R081090

TRUSS HEAD BOLTS

| <u>Bolt Size</u> | <u>Part No</u> |
|------------------|----------------|
| #8 x 1-1/2 | 171-210 |
| #10 x 3/4 | 171-604 |
| 1/4 x 1/2 | 170-123 |
| 1/4 x 3/4 | 170-193 |
| 1/4 x 1 | 170-194 |
| 5/16 x 1 | 170-117 |
| (Grade 5) | |

CARRIAGE BOLTS

| <u>Bolt Size</u> | <u>Part No</u> |
|------------------|----------------|
| 1/4 x 1-1/2 | 170-355 |
| 1/4 x 2-1/2 | 171-394 |
| 1/4 x 3 | 170-509 |
| 5/16 x 1 | 170-370 |
| 5/16 x 2-1/2 | 171-395 |
| 5/16 x 5-1/2 | 170-494 |
| 3/8 x 3-1/2 | 171-283 |
| 3/8 x 4-1/2 | 170-191 |
| 3/8 x 5 | 170-495 |
| 3/8 x 6-1/2 | 171-174 |
| 3/8 x 8 | 170-297 |
| 1/2 x 6-1/2 | 171-098 |
| 1/2 x 9 | 171-255 |

ZERKS

| <u>Size</u> | <u>Part No</u> |
|-------------|----------------|
| 1/4-28 | 170-023 |
| 1/4-28 - 45 | 170-148 |
| 1/4-28 - 90 | 170-049 |
| 1/4 NPT | 170-277 |
| 1/8 NPT | 170-865 |
| 1/8 NPT-45 | 170-864 |
| 1/8 NPT-65 | 170-215 |
| 1/8 NPT-90 | 170-866 |

COTTER PINS

| <u>Size</u> | <u>Part No</u> |
|--------------|----------------|
| 1/16 x 1/2 | 170-992 |
| 3/32 x 3/4 | 170-364 |
| 1/8 x 3/4 | 170-177 |
| 1/8 x 1 | 170-045 |
| 1/8 x 1-1/4 | 170-033 |
| 1/8 x 1-1/2 | 170-382 |
| 5/32 x 1 | 170-421 |
| 5/32 x 1-1/2 | 170-236 |
| 5/32 x 3 | 170-135 |
| 3/16 x 1-1/4 | 170-991 |
| 3/16 x 2 | 170-115 |
| 1/4 x 1-1/2 | 170-521 |
| 1/4 x 2 | 170-056 |

SET SCREWS

| <u>Size</u> | <u>Part No</u> |
|------------------|----------------|
| 1/4 x 1/4 NC | 170-247 |
| 5/16 x 5/16NC | 170-248 |
| 5/16 x 1/2 NC | 170-254 |
| 5/16 x 1/4 NF | 170-993 |
| 5/16 x 5/16NF | 170-825 |
| 5/16 x 5/8 NF | 170-456 |
| 3/8 x 1/4 NC | 170-856 |
| 3/8 x 3/8 NC | 170-151 |
| 3/8 x 1/2 NC | 170-857 |
| (nylock) | |
| 3/8 x 3/4 NC | 170-289 |
| (sq head) | |
| 3/8 x 3/4 NC | 170-290 |
| (sq hd drilled) | |
| 3/8 x 1 NC | 170-021 |
| 3/8 x 1/2 NF | 171-469 |
| 7/16 x 7/16NC | 170-288 |
| 7/16 x 1 NC | 170-147 |
| (sq head) | |
| 1/2 x 5/8 NC | 170-249 |
| 1/2 x 1 NC | 170-438 |
| 1/2 x 1-1/4NC | 171-085 |
| (half dog point) | |
| 5/8 x 5/8 NC | 170-250 |

ROLLER CHAIN
CONNECTOR LINKS

| <u>Size</u> | <u>Part No</u> |
|-------------|----------------|
| #50-2R | 170-094 |
| #50 | 170-088 |
| #60-2R | 170-095 |
| #60 | 170-089 |
| #60H | 171-102 |
| #80 | 170-090 |
| #80H | 170-821 |
| #100 | 170-091 |
| #100H | 171-969 |
| #120 | 170-092 |
| #140 | 170-093 |
| #160 | 170-888 |

OFFSET LINKS

| <u>Size</u> | <u>Part No</u> |
|-------------|----------------|
| #50 | 170-096 |
| #60-2R | 170-103 |
| #60 | 170-097 |
| #80 | 170-098 |
| #80H | 170-820 |
| #100 | 170-099 |
| #120 | 170-100 |
| #140 | 170-101 |
| #160 | 170-887 |

ROLLER LINKS

| <u>Size</u> | <u>Part No</u> |
|-------------|----------------|
| #50 | 171-415 |
| #60 | 171-416 |
| #80 | 171-417 |
| #80H | 170-795 |
| #120 | 171-419 |
| #140 | 171-420 |

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| 101-549 | 7 | 134-174 | 7 | 170-814 | 12 | 171-782 | 5 |
| 101-570 | 9 | 134-178 | 3 | 170-815 | 12 | 171-799 | 12 |
| 101-571 | 9 | 134-179 | 3 | 170-835 | 7 | 171-800 | 10 |
| 101-572 | 7 | 170-008 | 3, 7, 9 | 170-845 | 3 | 171-813 | 11 |
| 101-575 | 9 | 170-036 | 7 | 170-849 | 12 | 171-820 | 12 |
| 101-577 | 3 | 170-047 | 11 | 170-893 | 12 | 171-821 | 12 |
| 101-579* | 5 | 170-052 | 5 | 170-941* | 5 | 171-826 | 10 |
| 101-581* | 3 | 170-066 | 7 | 170-984 | 5 | 171-827 | 10 |
| 101-583 | 7 | 170-073 | 7 | 170-985 | 5 | 171-835 | 12 |
| 101-586 | 7 | 170-074 | 7 | 170-986 | 5 | 171-843 | 12 |
| 101-631 | 9 | 170-075* | 5 | 170-987 | 5 | 171-860 | 5 |
| 101-633 | 7 | 170-112 | 10 | 171-030 | 5 | 171-912 | 12 |
| 101-636 | 9 | 170-122 | 5 | 171-083 | 7 | 171-913 | 12 |
| 101-662 | 3 | 170-131 | 10 | 171-264* | 3, 5 | 171-941 | 5 |
| 101-685 | 9 | 170-132 | 10 | 171-309 | 5 | 171-950 | 12 |
| 101-761 | 3 | 170-135 | 3 | 171-316* | 3 | 171-992 | 12 |
| 101-817 | 5 | 170-152 | 3 | 171-332* | 3 | 172-006 | 3 |
| 131-352 | 3 | 170-154 | 12 | 171-393 | 3 | 172-018 | 11 |
| 131-552 | 9 | 170-155 | 12 | 171-529* | 11 | 172-019 | 11 |
| 133-238 | 7 | 170-170 | 5 | 171-550 | 12 | 172-110 | 13 |
| 133-277 | 3 | 170-219 | 11 | 171-573 | 7 | 172-171 | 12 |
| 133-297 | 7 | 170-220 | 11 | 171-585 | 3 | 172-173 | 13 |
| 133-298 | 7 | 170-232 | 5 | 171-586 | 7 | 172-174 | 13 |
| 133-299 | 7 | 170-235 | 5 | 171-598 | 12 | 172-175 | 13 |
| 133-316 | 5 | 170-236 | 7, 10 | 171-599 | 12 | 172-195 | 13 |
| 133-376 | 9 | 170-365 | 3 | 171-671 | 7 | 300-007 | 13 |
| 133-394 | 5 | 170-366 | 12 | 171-695 | 3 | | |
| 133-395 | 7 | 170-367 | 12 | 171-696 | 7 | | |
| 133-396 | 3 | 170-386 | 5 | 171-697 | 3 | | |
| 133-399 | 9 | 170-397 | 5 | 171-698 | 5, 7 | | |
| 133-444* | 7 | 170-464 | 5 | 171-699 | 3 | | |
| 133-445 | 7 | 170-479 | 5 | 171-712 | 12 | | |
| 133-449 | 3 | 170-490 | 12 | 171-745 | 10 | | |
| 133-477 | 5 | 170-499 | 5 | 171-746 | 12 | | |
| 133-533 | 5 | 170-518 | 3 | 171-750 | 11 | | |
| 133-538 | 3 | 170-545 | 10 | 171-751 | 11 | | |
| 133-539 | 3 | 170-546 | 10 | 171-752 | 11 | | |
| 133-556 | 9 | 170-550 | 10 | 171-753 | 11 | | |
| 133-557 | 9 | 170-553 | 10 | 171-754 | 11 | | |
| 133-595 | 3 | 170-554 | 10 | 171-755 | 11 | | |
| 133-604 | 7 | 170-556 | 10 | 171-756 | 11 | | |
| 133-630 | 9 | 170-557* | 10 | 171-757 | 11 | | |
| 133-657 | 9 | 170-705 | 10 | 171-758 | 11 | | |
| 133-687 | 9 | 170-720 | 11 | 171-759 | 11 | | |
| 133-688 | 9 | 170-755 | 10 | 171-760 | 11 | | |
| 133-718 | 9 | 170-800 | 3 | 171-761 | 11 | | |
| 133-736 | 9 | 170-812 | 12 | 171-762 | 11 | | |

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