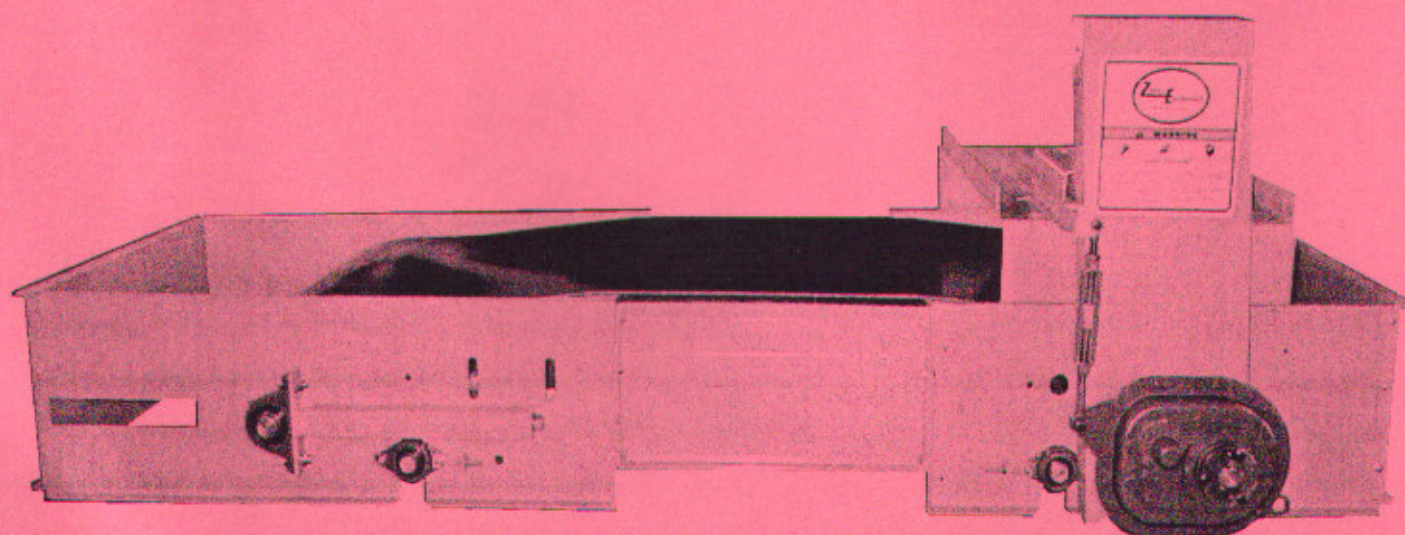


Zabel *E*quipment, Inc.

Eastman, Wisconsin 608-874-4105

MODEL ZC3600 36" BELT CONVEYOR

INSTALLATION AND OPERATION MANUAL



MANUFACTURES OF CONVEYORS, FEEDERS, AND MANURE PUMPS

**PHONE (608) 874-4105
FAX (608) 874-4451**

**25952 STATE HWY 27
EASTMAN, WIS. 54626**

WARRENTY CARD

*THE FOLLOWING INFORMATION IS NEEDED FOR WARRENTY TO APPLY
TO THIS PRODUCT, MADE BY ZABEL EQUIPMENT, INC., EASTMAN, WI.*

NAME: _____ PHONE: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

EQUIPMENT MODEL: _____ SIZE/LENGTH: _____

PURCHASED FROM: _____ STATE: _____

INSTALLED BY: _____ DATE INSTALLED: _____

CHECK ALL THAT APPLY: ☐ BEEF ☐ DAIRY ☐ HOGS
☐ POULTRY ☐ SHEEP

.....
*I HAVE RECEIVED A COPY OF THE OWNERS MANUAL AND HAVE BEEN
INSTRUCTED ON HOW TO USE THIS EQUIPMENT BY THE SELLER OR
INSTALLER OF THIS PRODUCT.*

SIGNATURE: _____ DATE: _____

.....
**NOTE: THIS CARD MUST BE RETURNED WITHIN 30 DAYS OR
WARRENTY WILL BE VOID.**

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Introduction

The Zabel Equipment, Inc. ZC3600 Belt Conveyor is designed for years of minimum maintenance service. Greaseable bearings are used throughout the entire conveyor, to ensure maximum bearing life. Treated wood or plastic slider bed reduces friction up to 30% over metal slider beds, resulting in increased belt life and reduced horsepower requirement. The concave belt running at a slower speed than other conveyors, will take material up a steeper incline. These features make the ZC3600 Belt Conveyor one of the most efficient, and longest lasting conveyors on the market.



Safety Precautions

Do not use or operate this equipment until this manual has been read and understood. Serious injury could result if operator is improperly instructed.

Keep all guards, shields and safety devices in place. Keep all hardware tight and properly adjusted to be sure equipment is in the safest operating mode. Failure to do so could result in damage to the equipment and/or serious injury to the operator.

Be sure area is clear before operating unit. **Never** allow anyone to stand on or near unit while it is in operation. **Never** leave operating unit unattended.

Keep hands, feet, and clothing away from power driven parts while unit is in operation. Failure to do so could result in serious injury or death!

Disconnect and lock-out power supply when servicing the unit to ensure against accidental operation of the unit. Failure to do so could result in serious injury to the person(s) performing the service or damage to the equipment.

Keep alert when operating conveyor and after using shut off power and lock-out.



Electrical Precautions

Use extreme caution around electrical components. Zabel Equipment, Inc. assumes no responsibility for the electrical wiring used with this machine and will not be liable for failure of equipment due to improper electrical power installation.

Electrical wiring should be performed by a qualified electrician to meet all Local, State, or National electrical codes. Inadequate or improper wiring can cause fire or death!

Before You Start – Plan The Installation

Zabel Equipment, Inc. ZC3600 Belt Conveyor

1. Read this manual thoroughly and familiarize yourself with the parts of the equipment.
2. Determine if one or both ends of the conveyor are critical as far as positioning or height is concerned, position conveyor accordingly.
3. Plan positioning and alignment of all options (diverter, rotary brush, downspouts, ect...) before starting.
4. The ZC3600 Belt Conveyor is built out of heavy material, so plan how you will handle and temporarily support conveyor until installation is complete.
5. Decide how this conveyor is to be supported and fastened into position. Supports must be securely fastened to a solid structure. Take into consideration the weight of the material to be handled, along with the weight of the conveyor itself.
6. If conveyor is to be ran outside of a building, covers should be considered, to protect conveying belt and material being conveyed from the elements (wind, rain, snow, sunlight, ect...).
7. Tools needed for assembly of the conveyor:
 - 1: 7/16"-1-1/8" combination wrenches
 - 2: 7/16"-1-1/8" socket with ratchet
 - 3: Set of Allen wrenches
 - 4: Flat blade and/or Phillips screw driver
 - 5: Pliers; slip-joint, locking(Vice-Grips®)
 - 6: Adjustable wrench
 - 7: Hammer
 - 8: Line-up punch

Policy

In keeping with our policy of continually improving products, Zabel Equipment, Inc. reserves the right to change or redesign any product or part without incurring the obligation to install or furnish such changes on products previously delivered. Drawings shown in this manual are representational and may vary from actual production units.

Installation Procedure

Step 1: Remove return roller assemblies attached to the under side of all 8' sections, 4' sections, and any other special sections with return rollers. Install return roller assemblies in the bottom center holes. Lay out all sections and open all parts boxes, and inspect for damage or missing parts.

Step 2: Start with either the drive or idle section. Place the drive or idle in the desired position.

Step 3: Take the next section and attach it to the previous section as pictured below, using six 3/8"x1" hex head bolts and six 3/8" hex nuts. Continue adding sections; including any inclines, declines and drive or idle section; until desired length is achieved.

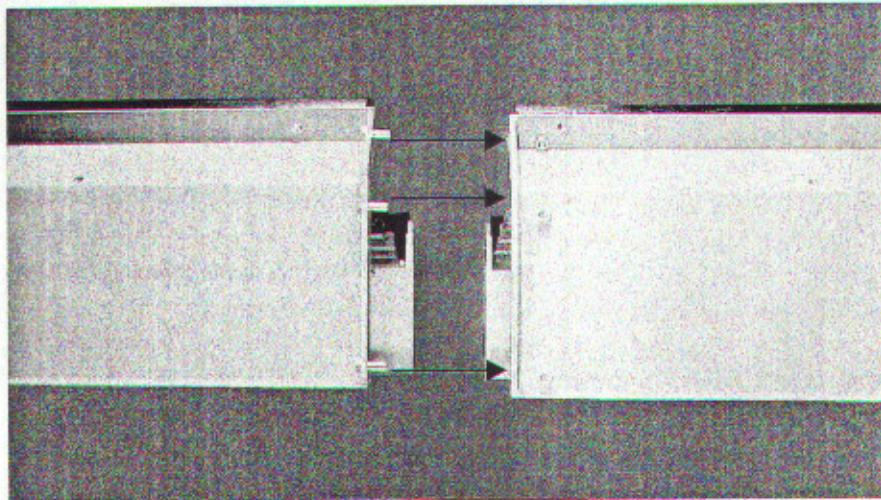


Figure 1

Step 4: Install belting with the PVC coated (shiny), or crescent (ruff) side up. Pull belting over the tail drum and then over all of the pinch rollers and return roller assemblies (except on the incline joint, belt must run under return roller), and all supports holding up conveyor. Pull belting over the drive drum until both ends meet. Mesh the loops of the belt lacing together, and thread the supplied cable through the loops. Pinch the end loops of the lacing to keep cable in place. Tighten belting using the two belt take-up screws on the idle end (shown in figure 2), tighten evenly. **Note:** Belt tension will vary with the length of the conveyor, belt is considered tight when belting moves under full load with no slippage on drive drum.

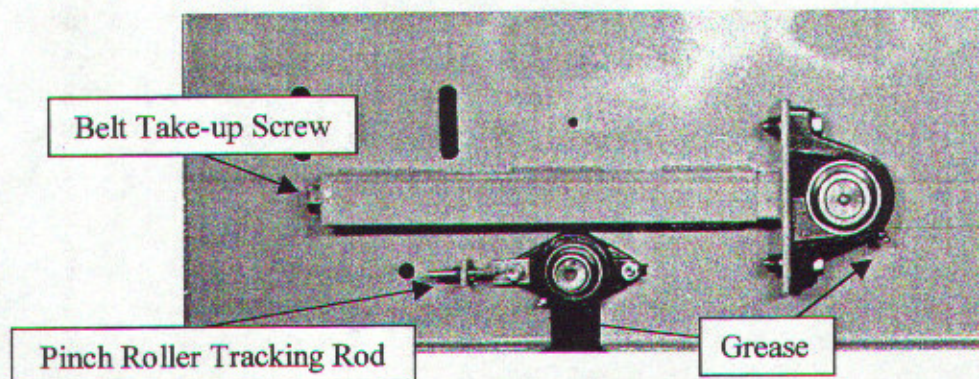


Figure 2

Step 5: A foot-mounted electric motor can be attached to the motor mount plate. Use an electric motor of sufficient horsepower, refer to the “**Horsepower Requirement**” chart. Place the supplied belt sheave onto the motor shaft and lock in position. Move the motor to align motor and jack shaft sheaves. Now tighten motor mounting bolts securely. Roll the supplied belts onto the sheaves. Tighten belts using the two belt tensioning bolts located on the front side of the motor mount plate, be sure to tighten evenly. **Note:** All electrical connections should be made by a qualified electrician, and should conform to all applicable codes.

Horsepower Requirements

Length of Conveyor

| <u>Up To 15'</u> | <u>16' to 23'</u> | <u>24' to 30'</u> | <u>31' to 45'</u> | <u>46' to 70'</u> | <u>71' to 115'</u> | <u>116' to 150'</u> |
|------------------|-------------------|-------------------|-------------------|-------------------|--------------------|---------------------|
| 1hp | 1-1/2hp | 2hp | 3hp | 5hp | 7-1/2hp | 10hp |

Horsepower requirement for incline or decline; add 10' per incline or decline to total conveyor length, then use chart above.

Step 6: Install all shield and any optional equipment at this time. (i.e. hoppers, rotary brushes, covers, down spouts, ect...)

Step 7: Tracking the conveyor belt, start on the idle end. Run conveyor in short intervals (5-10 seconds), adjusting as required. If belting run to one side, tighten the take-up screw (shown in figure 2) on that side. Move to the drive end, and adjust tracking using the roller tracking rod weldment, located on the side opposite the drive reduction (shown in figure 3). Now run conveyor and adjust tracking on pinch rollers, adjusting pinch rollers will affect tracking on drive and tail drum. Adjust pinch rollers using tracking rods (shown in figure 2 and 3). Make any necessary adjustments to assure proper tracking on all drums and pinch rollers. **Note:** Belting may wander up to 3/4" from side to side, this is normal. Belt tracking will need to be observed frequently over the first year, until initial stretch and set is achieved.

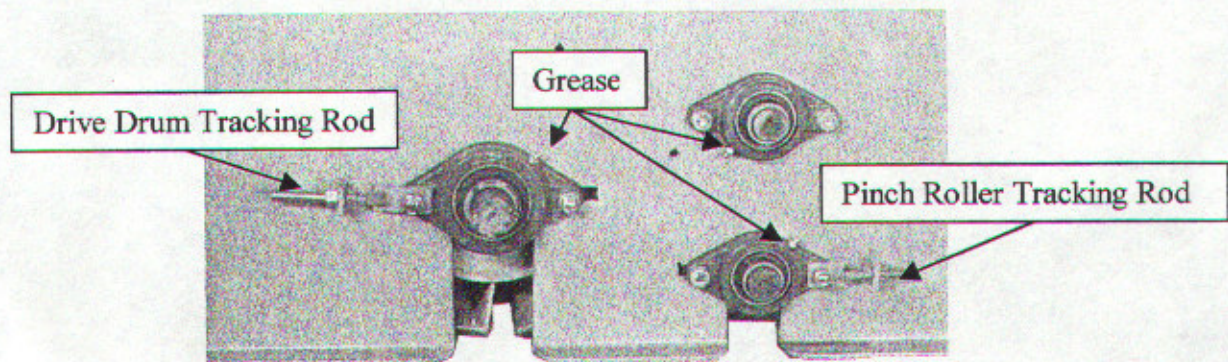
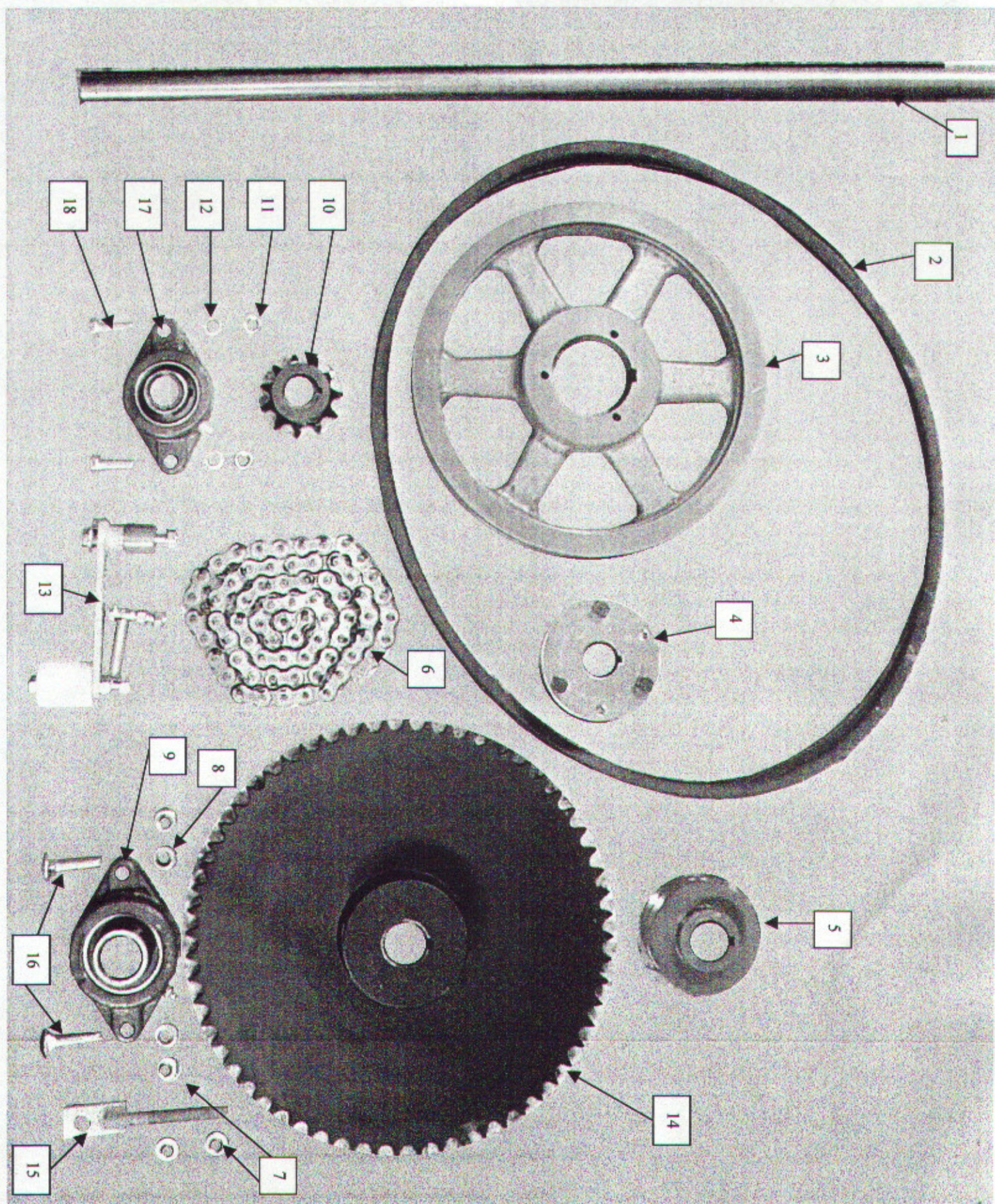


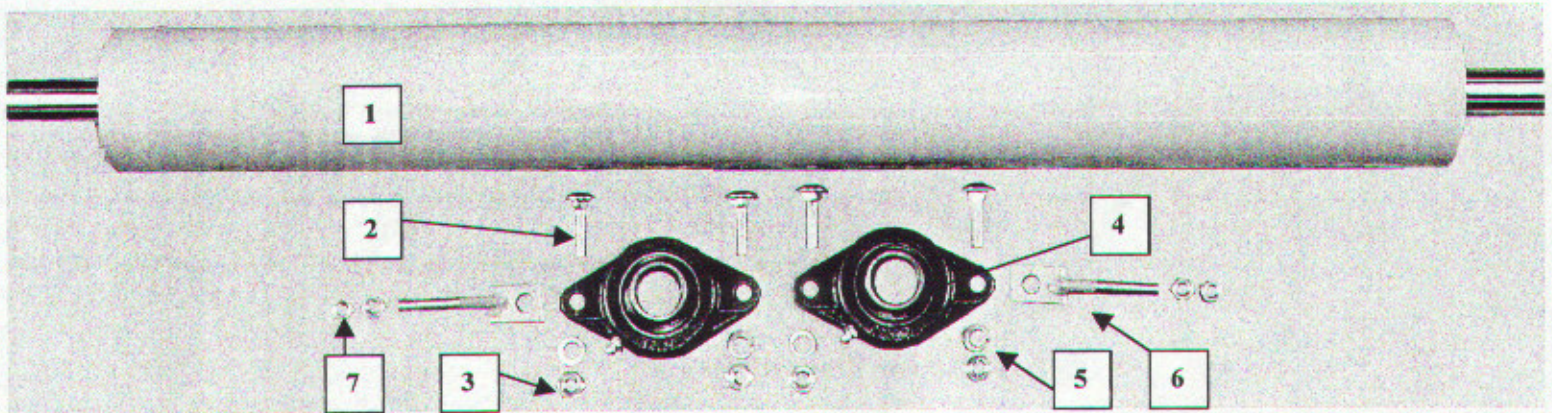
Figure 3



Sprocket Reduction Drive Components

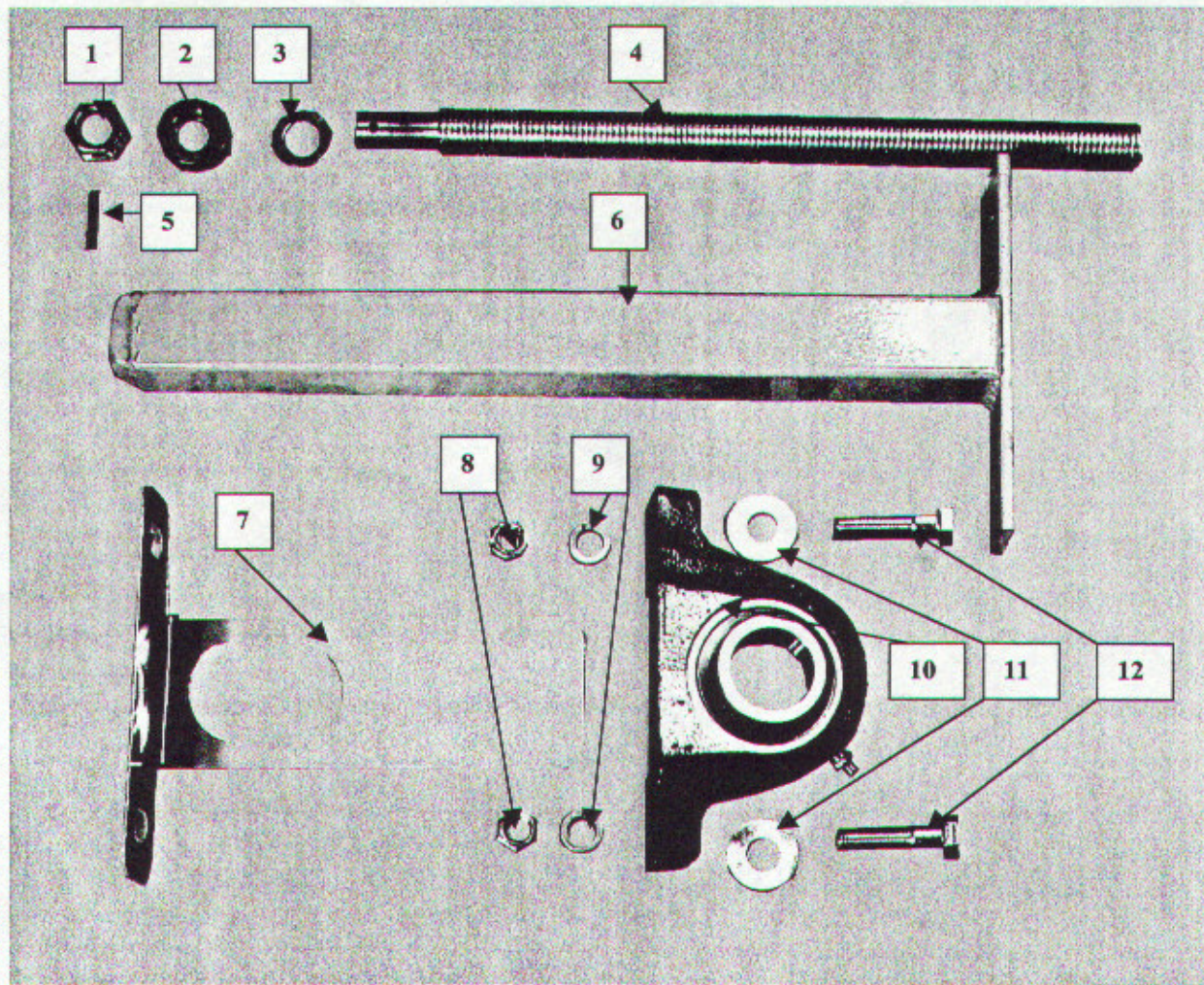
| Item # | Description | Part # | Qty. |
|--------|---------------------------------|--------------|------|
| 1 | Jack Shaft, 1-1/4"x48" | ZC36243 | 1 |
| 2 | B66 V-Belt | BBB66 | 2 |
| 3 | 2TB124 2-groove V-Belt Sheave | ZF202 | 1 |
| 4 | Q1x1-1/4" Taper Hub | PHQ114 | 1 |
| 5 | 2BK36x1-1/8" 2-Groove Sheave | PP2BK36118 | A/R |
| | 2BK36x1-3/8" 2-Groove Sheave | PP2BK36138 | A/R |
| 6 | 68pitch #60 Roller Chain | ZC36244 | 1 |
| 7 | 1/2" Hex Nut | 1BHN12 | 4 |
| 8 | 1/2" Lock Washer | 1BLW12 | 2 |
| 9 | 1-1/2" 2-Bolt Flange Block Brg. | VM93278 | 1 |
| 10 | 60BS11x1-1/4" Sprocket | ZF201 | 1 |
| 11 | 7/16" Hex Nut | 1BHN716 | 2 |
| 12 | 7/16" Lock Washer | 1BLW716 | 2 |
| 13 | Drive Chain Tightener Assembly | ZC36245 | 1 |
| 14 | 60BS60x1-1/2" Sprocket | ZC36246 | 1 |
| 15 | 1/2" Tracking Bolt | ZF222 | 1 |
| 16 | 1/2"x1-3/4" Carriage Bolt | 1BCB12134 | 2 |
| 17 | 1-1/4" 2-Bolt Flange Block Brg. | ZC-FC225114S | 1 |
| 18 | 7/16"x1-1/4" Hex Head Bolt | 1BHS716114 | 2 |
| | 3/8"x3/8"x2" Key | ZF236 | 1 |
| | 1/4"x1/4"x3" Key | ZC36247 | 1 |

Pinch Roller Assembly



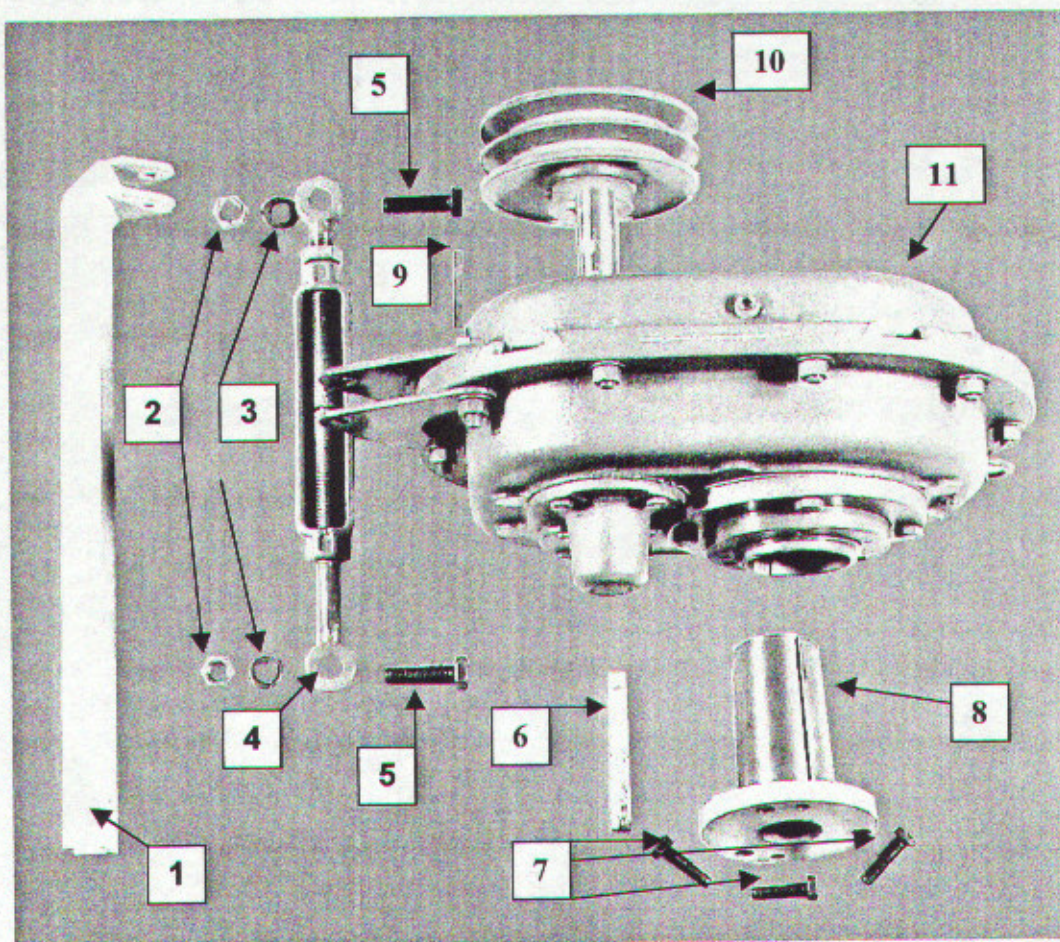
| Item # | Description | Part # | Qty. |
|--------|------------------------------------|--------------|------|
| 1 | 4" Pinch Roller | ZC36221 | 1 |
| 2 | 7/16"x1-1/4" Carriage Bolt | 1BCB716114 | 4 |
| 3 | 7/16" Hex Nut | 1BHN716 | 4 |
| 4 | 1-1/4" 2-Bolt Flange Block Bearing | ZC-FC225114S | 2 |
| 5 | 7/16" Lock Washer | 1BLW716 | 4 |
| 6 | Roller Adjusting Rod | ZCF108 | 2 |
| 7 | 3/8" Hex Nut | 1BHN38 | 4 |

Idle Bearing Tube Assembly Parts List



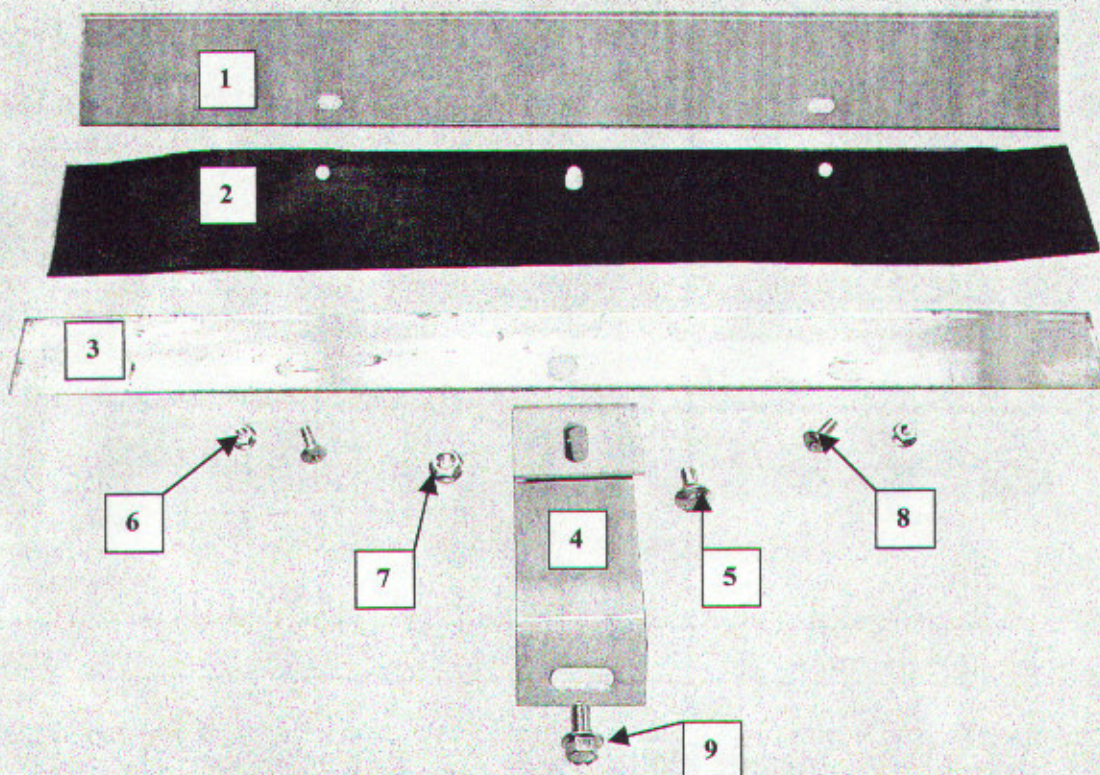
| Item # | Description | Part # | Qty. |
|--------|-----------------------------|-----------|------|
| 1 | Drilled Nut | ZC36216 | 1 |
| 2 | 3/4" Thrust Bearing | X18-C | 1 |
| 3 | 3/4"x10ga. Machine Bushing | X06 | 1 |
| 4 | Take-Up Bolt | ZC36215 | 1 |
| 5 | 3/16"x1-1/8" Spring Pin | ZC36217 | 1 |
| 6 | Idle Bearing Tube | ZC36218 | 1 |
| 7 | Idle Roller Shield | ZC36219 | 1 |
| 8 | 1/2" Hex Nut | 1BHN12 | 2 |
| 9 | 1/2" Lock Washer | 1BLW12 | 2 |
| 10 | 1-1/2" Pillow Block Bearing | ZF220 | 1 |
| 11 | 1/2" SAE Flat Washer | 1BFW12SAE | 2 |
| 12 | 1/2"x1-3/4" Hex Bolt | 1BHS12134 | 2 |

115SMT Gear Drive Parts List



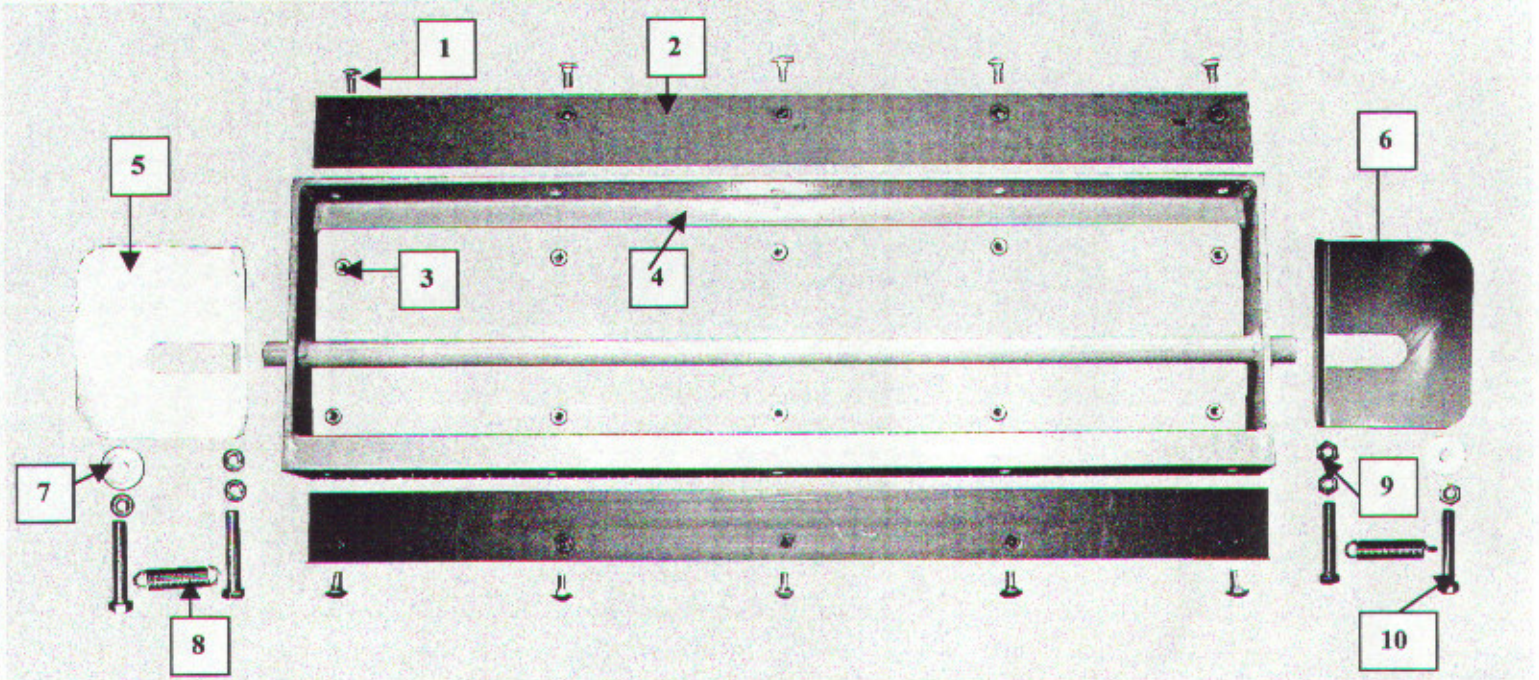
| Item # | Description | Part # | Qty. |
|--------|------------------------------|-----------|------|
| 1 | Torque Arm | ZC36212 | 1 |
| 2 | 1/2" Hex Nut | 1BHN12 | 2 |
| 3 | 1/2" Lock Washer | 1BLW12 | 2 |
| 4 | Belt Tensioner | ZC36213 | 1 |
| 5 | 1/2"x1-1/2" Hex Bolt | 1BHS12112 | 2 |
| 6 | 3/8"x1/2"x4 Step Key | ZC36214 | 1 |
| 7 | 3/8"x1-1/2" Hex Bolt | 1BHS38112 | 3 |
| 8 | 1-1/2" Bore Taper Bushing | ZC36011 | 1 |
| 9 | 1/4"x1/4"x2-3/4" Key | ZC162545 | 1 |
| 10 | 2BK57X1" Bore Sheaves | PP2BK571 | 1 |
| 11 | 115SMT15 Shaft Mount Reducer | ZC36210 | 1 |

Skirt Boards Parts List



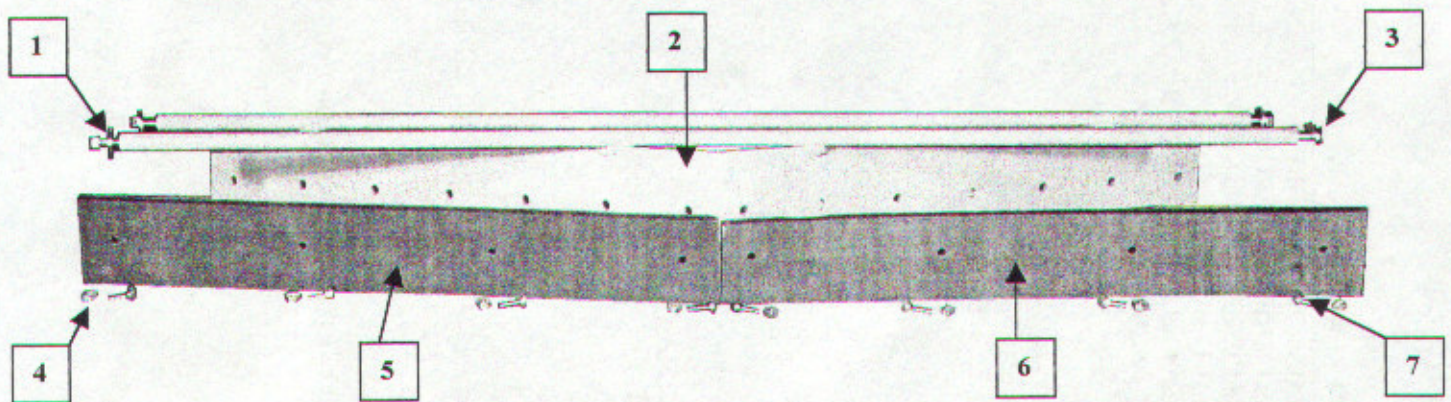
| Item # | Description | Part # | Qty. |
|--------|-----------------------------|-----------|------|
| 1 | 2' Skirt Board Outer | ZC36223 | AR |
| | 3' Skirt Board Outer | ZC36224 | AR |
| | 4' Skirt Board Outer | ZC36225 | AR |
| | 5' Skirt Board Outer | ZC36226 | AR |
| | 8' Skirt Board Outer | ZC36227 | AR |
| 2 | 1/4"x3" Skirt Board Rubber | ZC045 | AR |
| 3 | 2' Skirt Board Inner | ZC36228 | AR |
| | 3' Skirt Board Inner | ZC36229 | AR |
| | 4' Skirt Board Inner | ZC36230 | AR |
| | 5' Skirt Board Inner | ZC36231 | AR |
| | 8' Skirt Board Inner | ZC36232 | AR |
| 4 | Skirt Board Support Bracket | ZC36233 | AR |
| 5 | 3/8"x3/4" Carriage Bolt | 1BCB3834 | AR |
| 6 | 1/4" Flange Nut | 1BFN14 | AR |
| 7 | 3/8" Flange Nut | 1BFN38 | AR |
| 8 | 1/4"x3/4" Truss Head Screw | 1BTHS1434 | AR |
| 9 | 3/8"x3/4" Flange Head Bolt | 1BFB3834 | AR |

External Belt Scraper Parts List



| Item # | Description | Part # | Qunty. |
|--------|---------------------------|-----------|--------|
| 1 | 3/8"x3/4" Carriage Bolt | 1BCB3834 | 10 |
| 2 | 1/4"x3"x36" Scraper Blade | ZC36238 | 2 |
| 3 | 3/8" Hex Nut | 1BHN38 | 10 |
| 4 | Scraper Frame Weldment | ZC36239 | 1 |
| 5 | Right Hand Scraper Plate | ZC36240 | 1 |
| 6 | Left Hand Scraper Plate | ZC36241 | 1 |
| 7 | 1/2" Oversize Flat Washer | 1BFW12O | 2 |
| 8 | Extension Spring | ZC36242 | 2 |
| 9 | 1/2" Hex Nut | 1BHN12 | 6 |
| 10 | 1/2"x3-1/2" Hex Bolt | 1BHS12312 | 4 |

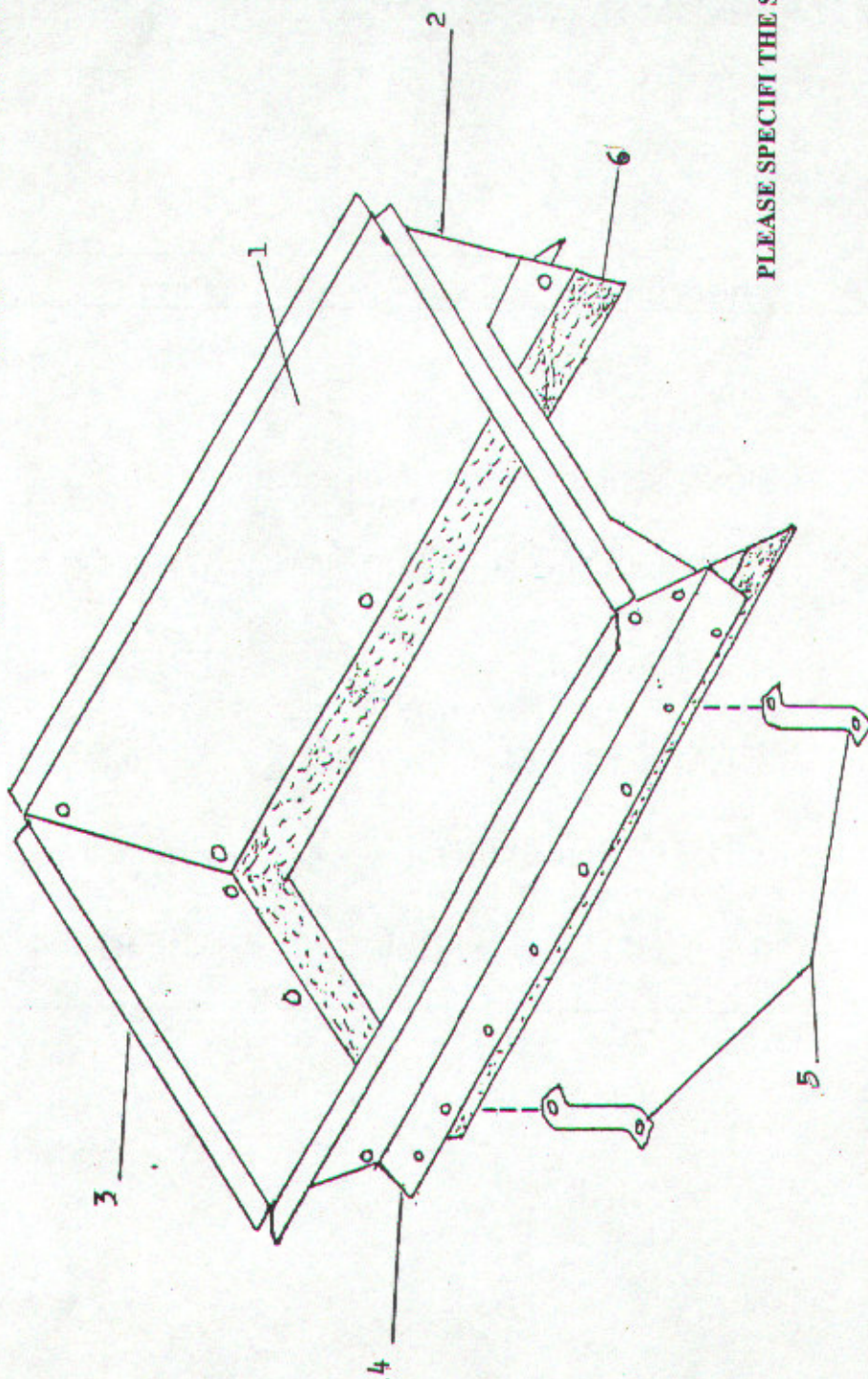
Inner Scraper Parts List



| Item # | Description | Part # | Qty. |
|--------|------------------------------|----------|------|
| 1 | 3/8" Flat Washer | 1BFW38 | 4 |
| 2 | Inner Scraper Frame Weldment | ZC36235 | 1 |
| 3 | 3/8"x3/4" Hex Bolt | 1BHS3834 | 4 |
| 4 | 1/4" Hex Nut | 1BHN14 | 8 |
| 5 | UHMW Blade (long) | ZC36236 | 1 |
| 6 | UHMW Blade (short) | ZC36237 | 1 |
| 7 | 1/4"x3/4" Carriage Bolt | 1BCB1434 | 8 |

HOPPER ASSEMBLY, 2', 3', 4', 6' & 8'
IN REG. & FLOW THROUGH
ZC164

| ITEM | PART# | QUANTITY | DESCRIPTION |
|------|----------|----------|----------------------------|
| 1 | ZC164-F | 2 | GALV. HOPPER SIDE |
| 2 | ZCF164-H | 1 | GALV. HOPPER FRONT |
| 3 | ZCF164-G | 1 | GALV. HOPPER BACK |
| 4 | ZC164-J | 2 | GALV. HOPPER ANGLE |
| 5 | ZC164-L | 2 PR. | HOPPER SUPPORT LEG BRACKET |
| 6 | ZC060 | 2L- 1/S | 2" BELT SEALING STRIP |



PLEASE SPECIFY THE SIZE/TYPE OF HOPPER YOU NEED