



INSTRUCTION MANUAL

MODEL: SD,D-Series Belt 16" Belt Width

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SECTION ONE

GENERAL INSTRUCTIONS

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To the operator:

This Manual is written for you. Knowing what is in it could save your life and the life of others, and protect you from injury. Read it carefully. Operate the conveyor unit only after you have received thorough training in its safe operation.

To the owner:

Redline Systems has prepared this manual to aid you in the training process. However, you are responsible for making sure the workers understand the equipment's operation and know how to use it with safety.

We highly recommend that after their initial training, workers receive periodic reviews operating and safety procedures. Your regular monthly safety meeting is a good time to have this review

GENERAL

These instructions cover the general operation of Redline's portable conveyors/elevators. A specific conveyor may have options that require different operation procedures.

Section one – General Instructions

This section contains general safety instructions and warranty. Read all instruction before operating the conveyor.

Section Two – Operating Instructions

This section contains instructions for operating your portable conveyor.

Section Three – Maintenance and Service Instructions

This section contains instructions for maintaining and servicing your portable conveyor.

Section Four – Safety and Warning Labels

This section contains information about the various safety and warning labels that come with your portable conveyor.

Section Five – Parts Identification

This section contains parts lists and diagrams for your portable conveyor

WARNING AND CAUTIONS

Since there are so many factors to consider, we cannot give you a complete list of every problem or hazard that can arise when operating a conveyor. Nevertheless, we can state certain principles. The intended use of this conveyor is to move bulk handling material. When you use the conveyor for other than its intended purpose, hazards arise. Also, conveyors have moving parts that can be exposed. Exposed parts may be hazardous if you fail to observe proper precautions.

The list below sets out and describes a variety of hazards and general cautions with which you should be familiar. These are illustrations of possible hazards that may develop as a result of improper or careless use of the equipment. This list is not all inclusive. Therefore, avoid hazardous conduct and situations, even if they are not specifically listed.

Persons

1. Training Before Operating.

Operate the equipment only after being thoroughly trained. Since one type of conveyor unit may operate differently than another, only operate equipment upon which you have received specific training. Training should include both normal and emergency conditions. Get training in the safe operation of the equipment at least once every six (6) months. If you have not used a particular unit within the past 60 days, retrain on that unit before operation.

2. Health/Physical Requirements.

Operate the equipment only if you do not have health, physical or mental limitations that might impair safe operation. Operating the equipment; i.e. loading the conveyor with material, can require a high degree of physical exertion.

3. Caution when Lifting.

Use caution when lifting heavy objects. Failure to observe proper procedures and due care when lifting can result in bodily injury, including, but not limiting to, hernias and back stress. Be sure to wear support belts.

4. Be Careful.

Do not use the conveyor equipment in any dangerous way. Be aware of the potential dangers that can, or do exist under particular operating circumstances. Failure to exercise prudence and due care when operating the equipment is unsafe and hazardous.

5. Follow the operating instructions

for conveyors in general, and for the specific model in use. Failure to do so is unsafe and hazardous

6. Training for maintenance.

Only service or adjust the equipment if you have been thoroughly trained. Failure to do so is unsafe and hazardous

7. Clothing.

Wear proper clothing when operating the equipment. Do not wear loose clothing, as it is a risk to get caught in the moving parts of the conveyor and draw you into the machinery. Also, wear appropriate personal safety equipment while operating the conveyor: Steel-toed safety shoes, hard hats and gloves, as necessary

Conditions and Locations

1. Conveyor Maintenance

Maintain the conveyor unit properly. Correct unsafe conditions immediately.

2. DO NOT OPERATE THE CONVEYOR NEAR ELECTRICAL POWER LINES.

ANSI standards provide that you should not operate the conveyor within ten (10') feet of power lines. We strongly suggest you maintain a 20 to 30 foot safety distance between any part of the conveyor and the closest power lines. You absolutely should not operate the conveyor if any power lines are within the safety zone.

3. Wet Conditions

Do not turn on, or plug in electrical components near water exposures or in wet conditions.

4. Secure Mobile Unit.

Only operate the conveyor when the Undercarriage and conveyor have been leveled and anchored properly. Do not operate conveyor when the undercarriage wheels are free of movement on the ground. Do not operate conveyor when transporting the equipment.

Uses

1. Transport only materials.

The conveyor's purpose is to transport material, not people. Using the conveyor to transport people is extremely hazardous and may cause injury or death.

2. Conveyor not a ladder.

Do not allow anyone to climb on the conveyor or use it as a ladder to reach higher elevations.

3. Running Conveyor.

Do not let anyone ride, stand or sit on a running conveyor.

4. Instability of conveyor.

Instability of a conveyor can result from being placed on dirt, unstable ground or another unstable support.

5. Weight limitations.

Weight limitation or load capacities of the conveyor should be observed carefully.

WARRANTY

Redline Systems, Inc. builds all of its equipment to exact specifications, and rigidly inspects it before leaving the factory. We warrant our products, for three months from the date of purchased, to be free from defects in material and workmanship, under normal use and service. Under this warranty, Redline Systems, Inc. obligation is limited to repairing or replacing, at our discretion, FOB Clearfield, Utah, USA, any part of the product that our examination discloses is defective. This warranty does not cover circumstances beyond Redline Systems, Inc's control, nor problems caused by failure to follow operating and maintenance instructions in our manuals. We make no other express warranty for this products. This warranty is in lieu of all other warranties, express or implied. Redline Systems Inc. will not be responsible for any consequential or incidental damages resulting from the sale or use of its conveyors, regardless of the cause of such damage; except, as otherwise specifically provided by law. This warranty does not cover parts not manufactured by Redline Systems, Inc., such as engines, belts, batteries, tires, hydraulic hoses, and hydraulic motors (Look to the individual warranties of their manufacturers). We will, however, help you, if need be, to settle a problem. This warranty will not apply to defects resulting from damage, alteration, lack of maintenance or misuse. If, in the opinion of Redline Systems, Inc. personnel, modifications or additions made outside our factory have affected the equipment adversely, so as to make it faulty, this warranty is void. This warranty also will be void if any parts not manufactured, or approved, by Redline Systems, Inc. have been incorporated, or if repairs are made without authorization from Redline Systems, Inc. We reserve the right to make changes in the construction or design of any product at any time without notice to any prior purchaser.

RETURNS

Redline Systems, Inc. requires that you accompany all returned merchandise by a RMA (return merchandise authority) number. Your local dealer or distributor can aid in securing warranty replacement and service. If you do not have a representative in your area, you may contact the factory directly.

SECTION TWO

OPERATING INSTRUCTIONS

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OPERATING CAUTIONS

1. Do not operate the equipment until you have set up an operating safety zone around the conveyor.
2. **Missing Safety Device.**
Do not operate the conveyor if it is missing any guard, or other safety device.
3. Do not reach through any piece of equipment for any reason, whether it is in operation or not.
4. **People Around the Conveyor.**
Do not let unauthorized and untrained individuals on or around the equipment. Never allow anyone to stand under the conveyor, whether it is in operation or not. Maintain the safety zone. Be especially watchful while raising or lowering the bin and or conveyor.
5. **Unauthorized personnel.**
Do not let unauthorized and untrained individuals, especially small children, on, around or near the equipment
6. **Training before operating.**
Do not attempt to use the conveyor equipment unless you have been fully trained in its operation
7. **Unobstructed view.**
Operate the conveyor only when your view of the conveyor and the surrounding are clear and unobstructed.
8. **Starting the conveyor.**
When starting the conveyor, notify all people in the immediate vicinity.
9. **Stable ground**
Make sure conveyor is on a stable ground surface and placed as close to level as possible. Use extreme caution when backing the conveyor up if equipped with an undercarriage.
10. **Belt or chain adjustment**
Only trained personnel shall track or adjust a conveyor belt or chains, as needed, while the conveyor is in operation

CONVEYORS WITH UNDERCARRIAGES

1. Do not pull or tow any unit faster than 65 MPH, or the minimum speed limit.
2. Secure all equipment firmly that is towed or mounted on truck.
3. Check tires for correct pressure, and to see if they are in good condition.
4. Use safety chains any time undercarriage mounted conveyors are moved.
5. Red flags, flashing lights and appropriate signs should be attached when towing a conveyor.

OPERATING PROCEDURES

1. Select a safe operation site. Set up a safety zone around the conveyor.
2. Review the warning and operating instructions contained on the sticker attached to the conveyor. Review the instruction manual if there are any questions about operating the conveyor, and get help as needed, before starting operation
3. Make sure the conveyor and undercarriage are unable to move by chocking the undercarriage wheels properly on a level surface. Make sure all pins are in place.
4. Make sure all guards are in place before operating the conveyor
5. Inspect conveyor for any hazards or interfering objects that may come in contact with the conveyor when starting the conveyor. Make sure all maintenance has been done.

Be careful not to overload the conveyor belt with the material you are trying to move.

CONVEYOR START-UP

Before conveyor is turned on, check for foreign objects that may have been left inside conveyor during installation. These objects could cause serious damage during start-up.

After conveyor has been turned on and is operating, check motors, reducers, and moving parts to make sure they are working freely.

CAUTION! - Because of the many moving parts on the conveyor, all personnel in the area of the conveyor need to be warned that the conveyor is about to be started.

BELT TRACKING

HOW IS THE CONVEYOR BELT TRACKED

The belt is tracked by adjusting: Drive Pulley, Tail Pulley, and Return Idlers.

IMPORTANT: When belt tracking adjustments are made, they should be minor (1/16 in. at a time on idlers, etc., should be sufficient.).

Give the belt adequate time to react to the adjustments. It may take several complete revolutions around the conveyor for the belt to begin tracking properly.

- A) Stand at tail pulley looking toward drive and note what direction belt is traveling.
- B) Having observed belt and determined tracking problem, follow procedures in “How to Steer The Belt”,
- C) Make sure all troughing idlers and return roller idlers are square to the conveyor frame.
- D) Make sure the belt is tensioned properly.

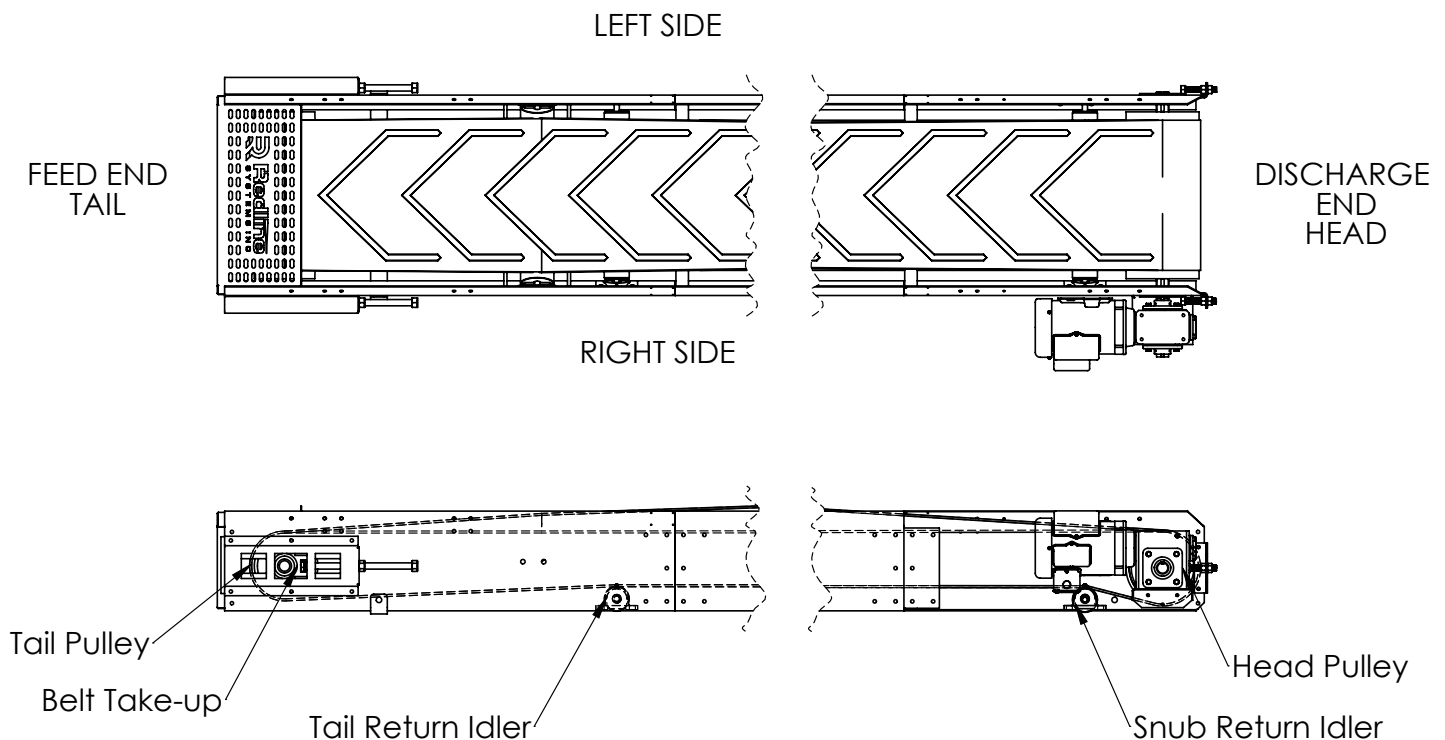
HOW TO STEER THE BELT

Head Pulley Tracking

- A) Make sure the head pulley is square to the conveyor.
- B) Make adjustments to the Sub Return idler roller to walk the belt left or right until the belt maintains its position near center of the pulley **NOTE:** It is acceptable for the belt to deviate from left to right as long as the edge of the belt does not extend past the edge of the pulley.
- C) Minor adjustment to the head pulley adjuster bolt may be needed to square the head pulley to the conveyor.

Tail Pulley Tracking

- A) Make adjustments to the belt take-up adjuster bolt to center the belt on the pulley. Example: If the belt is steering off the pulley to the left side, the take-up bolt on the left side can be adjusted outward to push the belt back to the right. Or, the right take-up bolt can be loosened to bring the belt back to the right.
- B) Adjustments to the tail return roller can also be made to steer the belt left or right.



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SERVICE AND MAINTENANCE

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MAINTENANCE SAFETY PRECAUTIONS

- A) Maintenance, such as lubrication and adjustments, shall be performed only by qualified and trained personnel.
- B) It is important that a maintenance program be established to insure that all conveyor components are maintained in a condition which does not constitute a hazard to personnel.
- C) When a conveyor is stopped for maintenance purposes, starting devices or powered accessories shall be locked or tagged out in accordance with a formalized procedure designed to protect all person or groups involved with the conveyor against an unexpected start.
- D) Replace all safety devices and guards before starting equipment for normal operation.
- E) Whenever practical, DO NOT lubricate conveyors while they are in motion. Only trained personnel who are aware of the hazard of the conveyor in motion shall be allowed to lubricate.

SAFETY GUARDS

Maintain all guards and safety devices IN POSITION and IN SAFE REPAIR.

WARNING SIGNS

Maintain all warning signs in a legible condition and obey all warnings. See Page 2 of this manual for examples of warning signs.

GENERAL

This section contains general instructions for maintaining and servicing Redline System's Conveyors.

1. No maintenance shall be performed when a conveyor is in operation, except by a trained personnel, to track the belt.
2. Routine inspections, preventative, and corrective maintenance programs must be implemented.
3. Refer to your engine and motor service manual for service instructions
4. Keep all exposed cylinder rods oiled to avoid rust. (For undercarriages with Hydraulic cylinder lift)
5. Keep gear reduction chain and sprockets in alignment and set the set screws tight. Keep the roller chain lubed regularly with a bar and chain oil.
6. Check and keep all nuts and bolts tight
7. Belt Alignment: Make sure the belt runs in the center of the head and tail pulleys. To adjust the belt, turn the adjusters in or out. It is normal for the conveyor to walk from side to side on the pulleys, but it should not rub on the conveyor sides.
8. Inspect cylinder pins, axial pins, often to make sure the cotter pin clips have not come out.
9. If you conveyor is equipped with a gearbox reducer, refer to the gearbox service manual for service instructions for the proper oil level and maintenance schedule.

LUBRICATION

BEARINGS

STANDARD: See separate documentation at the end of the manual that contains lubrication and maintenance instructions.

CHAIN

If your unit is supplied with a chain drive reduction, It is recommended that the drive chain be lubricated with SAE-30 oil approximately every 40 hours of operation. Under extreme conditions, more frequent lubrication may be required. (Also, See “Drive Chain Alignment and Tension”).

REDUCERS

See separate documentation at the end of the manual that contains lubrication and maintenance instructions.

PREVENTIVE MAINTENANCE CHECKLIST

COMPONENT	SUGGESTED ACTION	SCHEDULE		
		Weekly	Monthly	Quarterly
MOTOR	Check Noise			
	Check Temperature			
	Check Mounting Bolts			
REDUCER	Check Noise			
	Check Temperature			
	Check Oil Level			
BELT	Check Tracking			
	Check Tension			
	Check Lacing			
HYDRAULICS	Check for any leaks			
	Check Oil Level in Reservoir			
	Check for Loose fittings - tighten			
BEARINGS	Check Noise			
	Check Lubrication			
	Check Mounting Bolts			
STRUCTURAL	General Check: All loose bolts, etc. tightened			

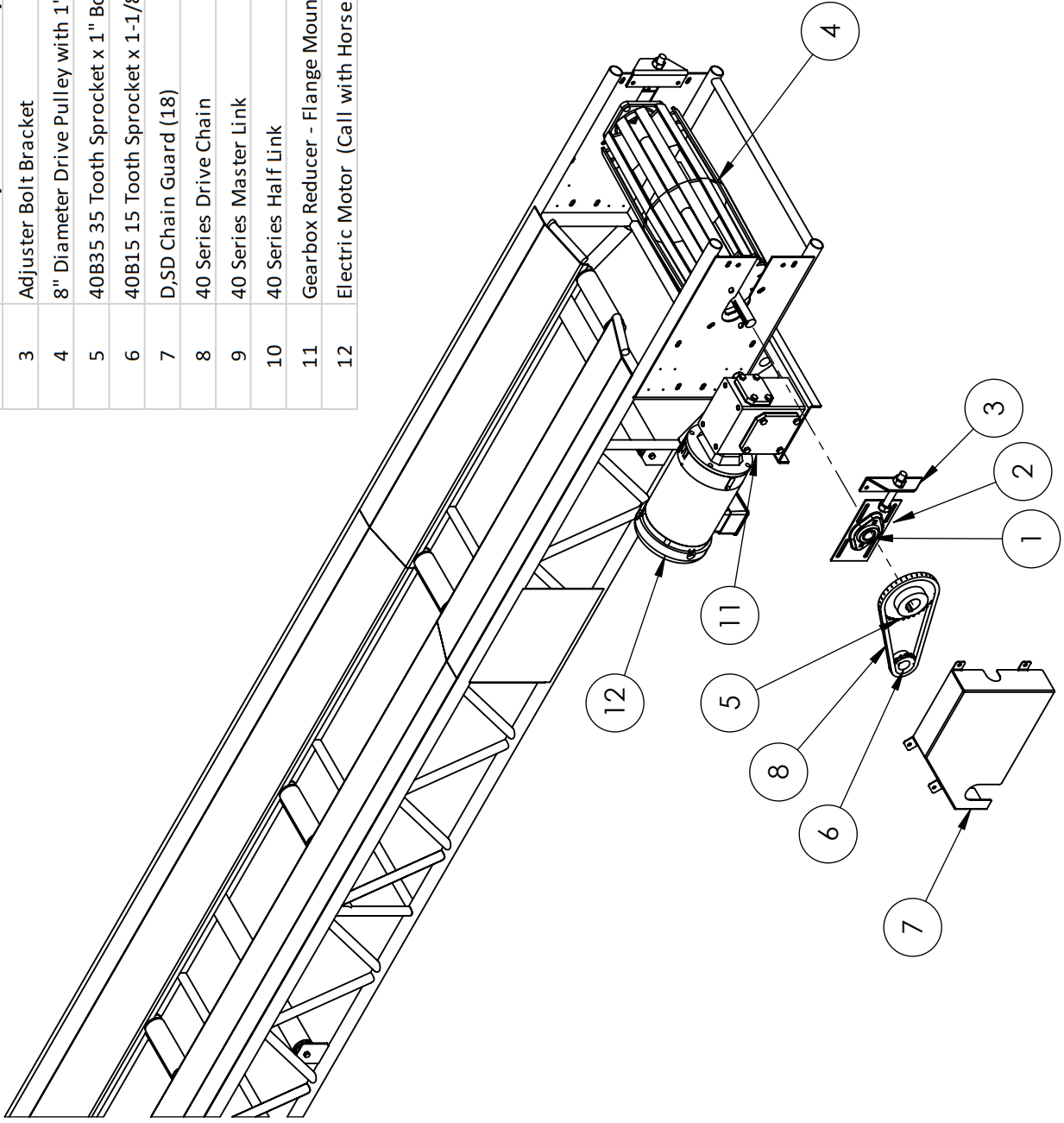
SECTION FOUR

PARTS IDENTIFICATION



Drive (Head) End Components

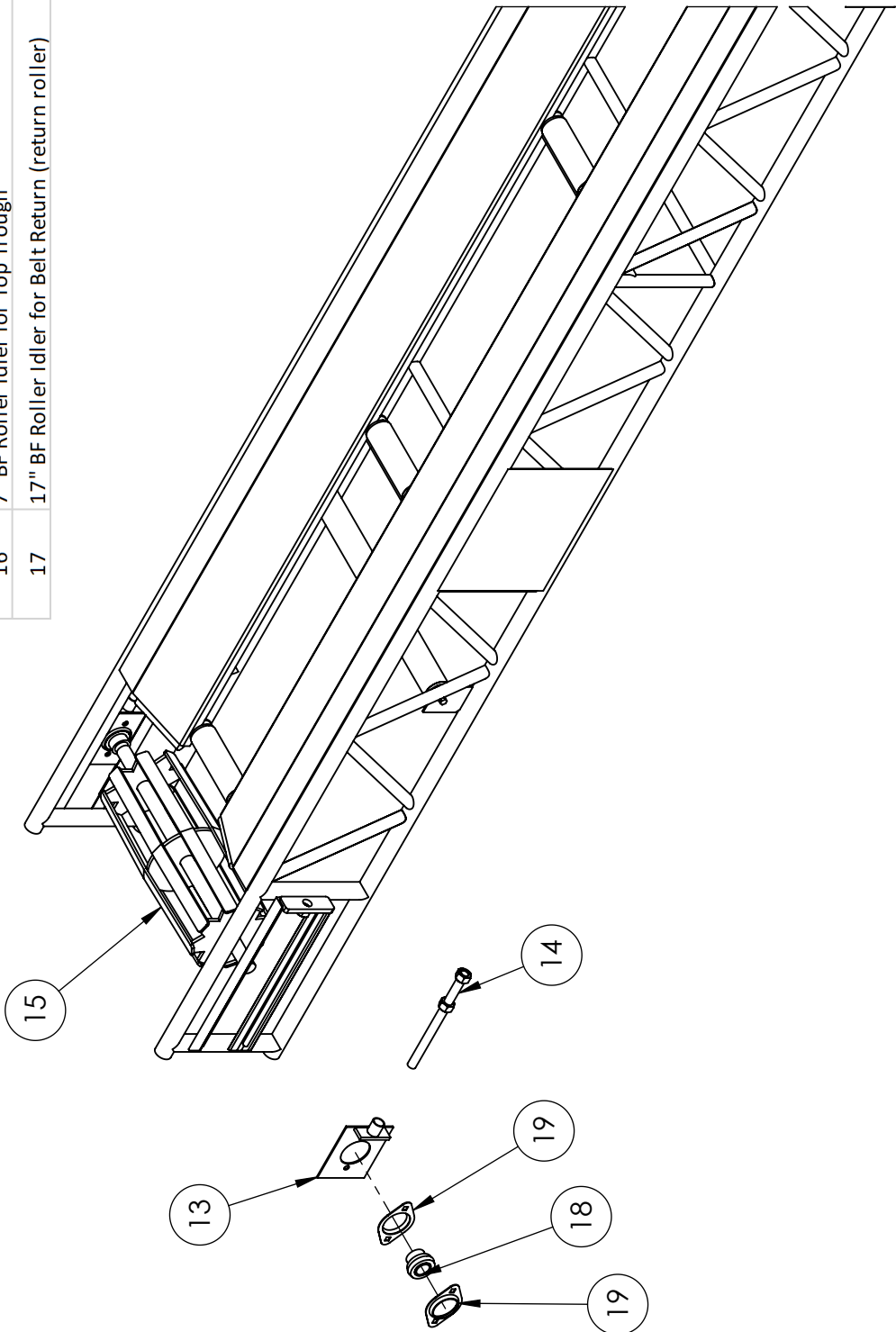
Item No.	Description	Part No.
1	1" Insert Bearing with Flangette	16AIA
2	MSTU-52 Adjuster Plate with Adjuster bolt	16BJA
3	Adjuster Bolt Bracket	5BDC
4	8" Diameter Drive Pulley with 1" Shaft (1/4" Keyway)	D1602-16
5	40B35 35 Tooth Sprocket x 1" Bore	17BBA
6	40B15 15 Tooth Sprocket x 1-1/8" Bore	17BAA
7	D,SD Chain Guard (18)	19REC
8	40 Series Drive Chain	17BAC
9	40 Series Master Link	17BAD
10	40 Series Half Link	17BAE
11	Gearbox Reducer - Flange Mount 10:1 237 - 56C	
12	Electric Motor (Call with Horse Power, Voltage & Frame Size)	



Tail End Components

Item No.	Description	Part No.
18	1" Insert Bearing with Flangette and Lock Collar	16A/A
19	#52 2-hole Flangette Only	16BFA
13	Take-up Plate for 1" Bearing	58DD
14	5/8" x 10" Threaded Take-up Rod	5DGH
15	6" Diameter Tail Pulley with 1" Shaft	D1603-16
16	7" BF Roller Idler for Top Trough	20DAA7
17	17" BF Roller Idler for Belt Return (return roller)	20DAA17

B



A

A

Lubrication

PreLubricated

Turner bearing units come standard with an approximate 1/3rd grease fill. The bearings contain Shell Gadus S2 V220 (Lithium 12 Hydroxy-based grease). Because the bearings come from the factory prelubricated, you should not add grease to the unit before placing it into service.

Relubrication

Depending on the application, relubrication may be necessary to maximize bearing life. In these instances it is important to add only the amount of grease listed in Table 58a. The purpose of this relubrication is to ensure that your bearing is not running dry, but take care not to overfill your bearing. Ideally, a 1/3rd grease fill should be maintained.

See Table 58b for information on the frequency of relubrication intervals. Please note that relubricating a bearing may cause the operating temperature of the bearing to increase. This increase is temporary and the bearing should return to normal operating temperature after a short period of time.

Before Relubrication

- Clean the grease fitting and surrounding area.
- Clean nozzle or tip of greasing equipment
- Ensure that the grease you intend to install is compatible with previously installed lubricant.
- For best results, the bearing should be in rotation during relubrication.

TABLE 58a
RELUBRICATION AMOUNTS

Bearing Number	Fill Amount oz.
201-203	0.03
204	0.05
205	0.06
206	X05 0.10
207	X06 0.15
208	X07 0.15
209	X08 0.20
210	X09 0.25
211	X10 0.35
212	X11 0.45
213	X12 0.50
214	X13 0.60
215	X14 0.65
216	X15 0.85
217	1.0
218	X17 1.2
	X20 2.1

Over Lubrication Warning

In most environments, completely filling a bearing with grease may significantly decrease bearing life. Do not relubricate a bearing with more lubricant than listed in Table 58a. Unless your bearing is in a **very** dirty or wet environment, avoid the practice of pumping grease until you feel resistance, or until lubrication is emitted from bearing seals.

TABLE 58b RELUBRICATION INTERVALS


Environment	DN* Value	Temperature (F°)	Interval
Clean	40,000 and below	5-150°	6-12 months
		150-210°	2-6 months
Clean	40,000-70,000	5-150°	2-6 months
		150-210°	1 month
Dirty	Any DN	5-150°	1 week to 1 month
		150-210°	1 day to 2 weeks
Very dirty	Any DN	Any temp.	1 day to 2 weeks
Exposed to water splashes	Any DN	Any temp.	Daily

*DN = bore of the bearing (mm) x rpm

WORLDWIDE ELECTRIC CORPORATION

HdR SERIES PROGRAM - WORM GEAR SPEED REDUCERS

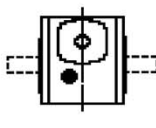
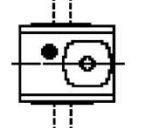
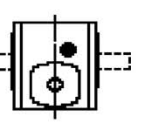
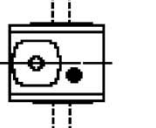
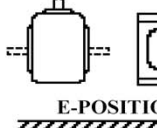
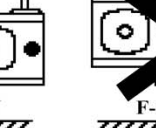
LUBRICATION SCHEDULE

Recommended Lubricant	-30° To 225°F -34° To 107°C	40° To 90°F 4.4° To 32.2°C		80° To 125°F 26.7° To 51.7°C	
AGMA Rating	Synthetic	7	7 EP	8	8 EP
ISO Grade	320 / 460	460	460	680	680
	Mobil SHC 634 Synthetic	Mobil 600W Cylinder Oil	---	Mobil Extra Hecla Super Cylinder Oil	Mobilgear 634
Getty Refining Co.	Synthetic Recommendation Is Exclusively For Mobil SHC 634	---	Veedol Asreslube 95	---	Veedol Asreslube 98
Lubrication Engr. Inc.		Almasol 608	---	Almasol 609	---
Lubriplate		---	---	SPO-288	---
Shell Oil Co.		Omala J460	Omala 460	Omala J460	Omala 680
Texaco Inc.		---	Meropa 460	---	Meropa 680

CAUTION: Lubricants Are Compounded For Use In Worm Gears. Some Contain Non-Corrosive, Extreme Pressure Additives.

DO NOT USE Lubricants That Contain Sulphur and / or Chlorine Which Are Corrosive To Bronze Gears. Extreme Pressure Lubricants, In Some Cases, Contain Materials That Are Toxic. Avoid Use Of These Lubricants Where They Can Result In Harmful Effects.

CAUTION: Too Much Oil Will Cause Overheating and Too Little Will Result In Gear Failure. Check Oil Level Regularly. More Frequent Oil Changes Are Recommended When Operating Continuously, At High Temperatures Or Under Conditions Of Extreme Dirt Or Dust.

HORIZONTAL INPUT SHAFT	VERTICAL INPUT SHAFT
    <div style="display: flex; justify-content: space-around; font-size: small;"> A-POSITION B-POSITION C-POSITION D-POSITION </div>	  <div style="display: flex; justify-content: space-around; font-size: small;"> E-POSITION F-POSITION </div> <p style="text-align: center; font-weight: bold; margin-top: 10px;">NOT RECOMMENDED</p>

Reducer Size	Approximate Capacity (Ounces)					
	A	B	C	D	E	F
133	5.82 Ounces	8.52 Ounces	8.52 Ounces	7.62 Ounces	6.92 Ounces	6.92 Ounces
154	11.64 Ounces	15.74 Ounces	15.74 Ounces	14.44 Ounces	13.54 Ounces	13.54 Ounces
175	11.64 Ounces	18.74 Ounces	18.74 Ounces	17.24 Ounces	15.14 Ounces	15.14 Ounces
206	19.41 Ounces	28.41 Ounces	28.41 Ounces	26.71 Ounces	21.81 Ounces	21.81 Ounces
237	24.07 Ounces	35.17 Ounces	35.17 Ounces	33.77 Ounces	29.67 Ounces	29.67 Ounces
262	34.55 Ounces	48.25 Ounces	48.25 Ounces	45.85 Ounces	41.05 Ounces	41.05 Ounces
325	73.75 Ounces	102.55 Ounces	102.55 Ounces	97.75 Ounces	88.05 Ounces	88.05 Ounces



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