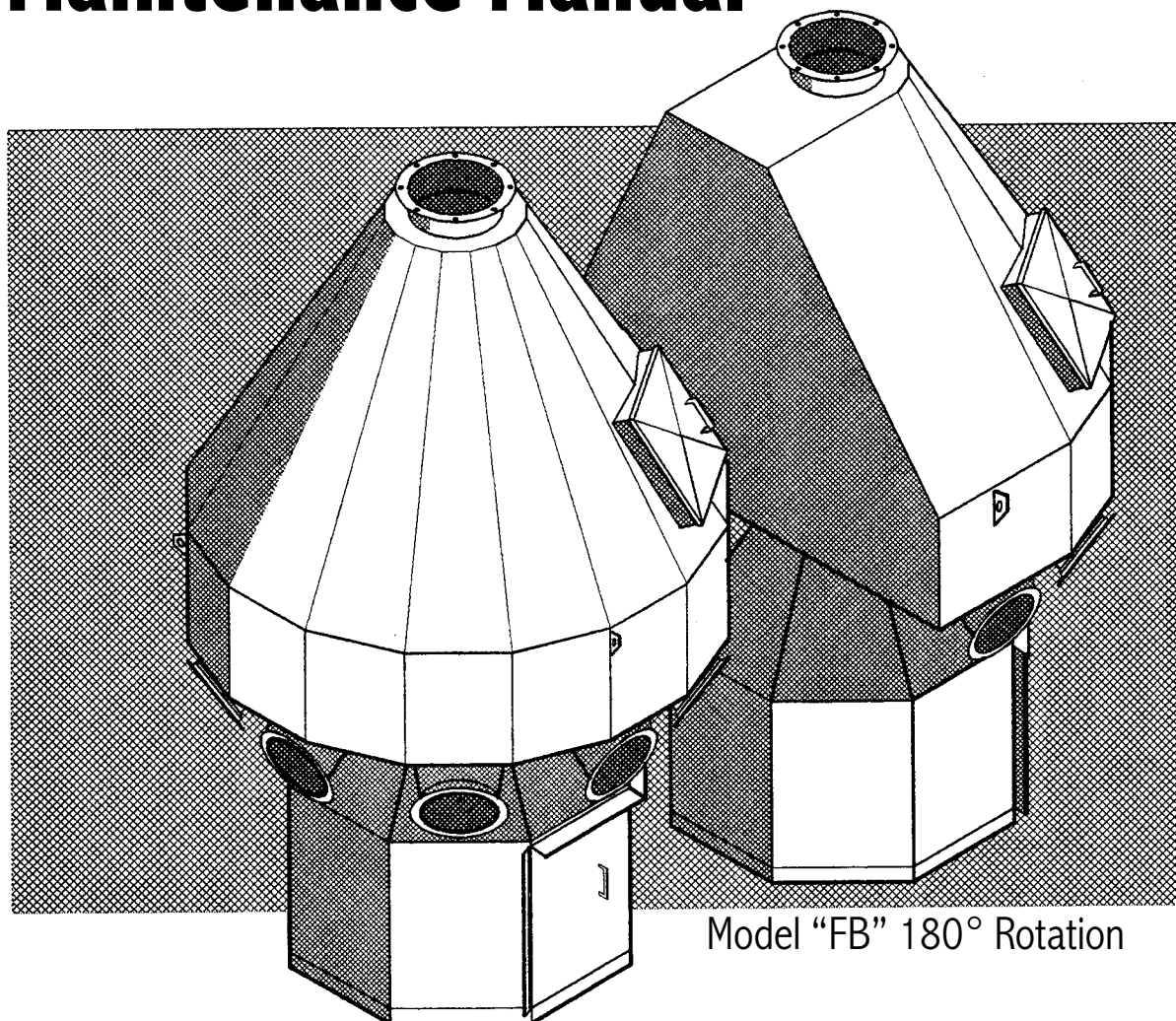
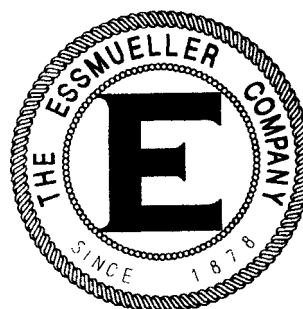
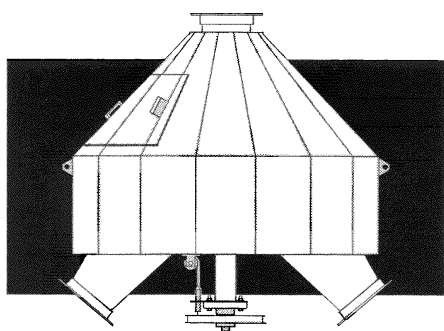


Installation, Wiring, and Maintenance Manual



Model "FB" 180° Rotation

Model "ST" 360° Rotation



Models "ST" and "FB"
Electric Turn-Head Distributors
and Cable and Pipe Control
Manual Turn-Head Distributors

Introduction

Your “Essmueller” turn-head distributor is a piece of quality equipment. It has been designed to provide years of trouble-free service. Durability and performance are results of the engineering skill, craftsmanship and top quality materials that go into “Essmueller” products. This manual contains instructions for installation, operation, and maintenance of our turn-head distributors. A separate section deals with safety and safety responsibility. With proper installation, a careful awareness for safety and periodic checks for maintenance, you can expect many years of satisfactory performance.

Safety Responsibility

It is the responsibility of the contractor, installer, owner, and user to supplement materials and services furnished by The Essmueller Company with necessary items to make the turn-head installation comply with the law. Electrical controls, machinery guards, railings and walkways are some of the necessary equipment for a safe workplace.

“Essmueller” turn-head distributors are not normally designed to handle hazardous materials or operate in a hazardous environment. Hazardous materials can be those that are explosive, inflammable, or toxic. Special construction is usually required and The Essmueller Company should be consulted for all such installations.

Most accidents are the result of someone’s carelessness or negligence. When installing the turn-head distributor, the following minimum provisions should be followed in order to avoid an unsafe or hazardous condition.

1. “Essmueller” turn-head distributors should not be operated until access panels are closed. If the distributor is to be opened for inspection cleaning or observation, the drive motor is to be locked out electrically in such a manner that it cannot be restarted by anyone, however remote the area, until maintenance operation has been completed.
2. Rotating components inside the turnspout housing can cause severe injury. Use caution near discharge spout openings. In large distributors where a worker may physically enter the housing, use safety harness and follow OSHA and industry-approved confined space entry procedures. When working inside the drive, do not reconnect power until access panel has been replaced. Do not overload the distributor or use it for any material other than it was designed to handle.
3. Always practice good housekeeping. Perform periodic cleaning inside the turn-head distributor housing to keep it free of accumulated material. Establish schedules for inspection and cleaning of equipment and working area.

SAFETY: Essmueller subscribes to standards of the ANSI Safety Sign Standard program as administered by the Equipment Manufacturers Council (EMC) of the American Feed Industry Association (AFIA). Essmueller equipment will be labeled in accordance with this program on all removable covers, guards, inspection doors, inlets, and discharges.

If the owner or installer needs help in designing a safe installation and a safe working place, The Essmueller Company will be glad to assist in selection of special devices, equipment, and signs. This includes “Lock-Out Tag-Out” procedures and enclosure of hazardous components.

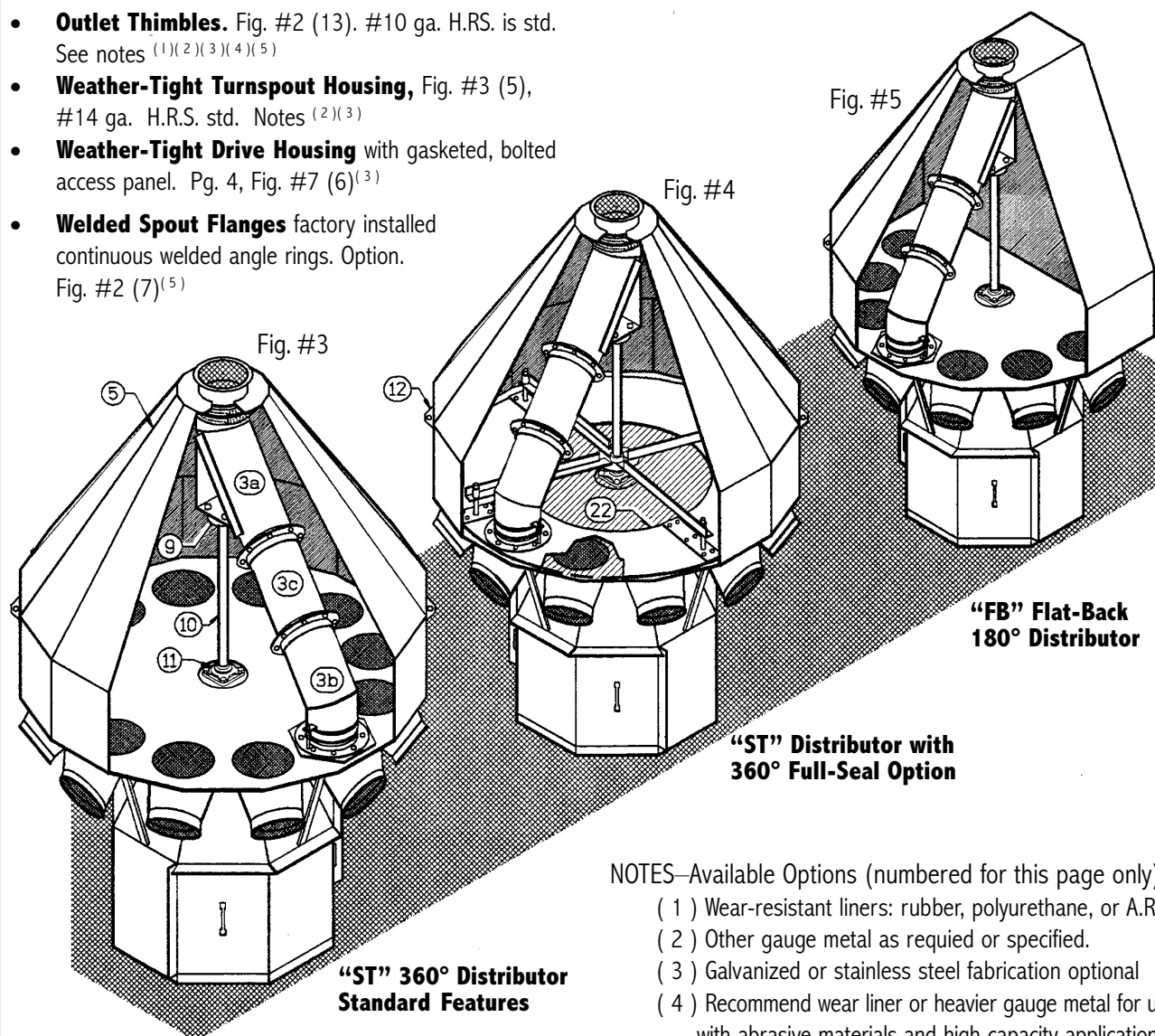
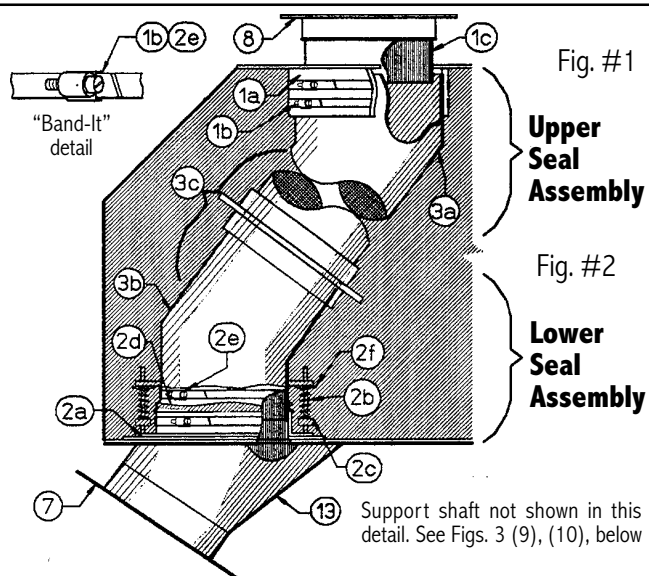
In addition to standard upper and lower turnspout seals, an optional 360°† sliding seal plate is available to minimize dusting and spillage within the turn-head housing. Essmueller’s rotating Bin Vent System (exhaust air manifold) can synchronize dust-laden return air with the turn-head distributor. Explosion proof limit switches and drive are available for use in dusty grain areas.

† Not available in “FB” flat-back distributors.

"Positive-Seal" Turn-Spout Features

Upper Turnspout Seal Fig. #1.

- (1a) Flexible sponge rubber maintains positive contact with outer housing inlet plate.
- (1b) "Band-It" straps with clamps (qty. 2).
- **Turnspout**, #10 ga., Figs. #1–#3: ⁽¹⁾⁽²⁾⁽⁴⁾
 (3a) Upper Rotating Turnspout
 (3b) Lower Turnspout Thimble
 (3c) Center Extension, Angle Rings
- **Lower Seal** Fig. #2. Spring-loaded sliding seal encloses turnspout and active discharge outlet:
 (2a) UHMW seal plate
 (2b) Tensioning Spring (qty. 2)
 (2c) Set collar (adjusts hold-down tension) (qty. 2)
 (2d) Dust sock
 (2e) "Band-It" straps with clamps (qty. 2)
 (2f) Washer (qty. 2)
- **Outlet Thimbles**. Fig. #2 (13). #10 ga. H.R.S. is std. See notes ⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾⁽⁵⁾
- **Weather-Tight Turnspout Housing**, Fig. #3 (5), #14 ga. H.R.S. std. Notes ⁽²⁾⁽³⁾
- **Weather-Tight Drive Housing** with gasketed, bolted access panel. Pg. 4, Fig. #7 (6)⁽³⁾
- **Welded Spout Flanges** factory installed continuous welded angle rings. Option. Fig. #2 (7)⁽⁵⁾

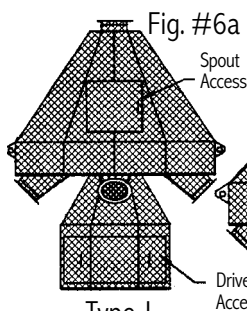


NOTES—Available Options (numbered for this page only):

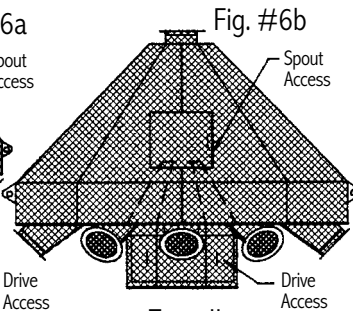
- (1) Wear-resistant liners: rubber, polyurethane, or A.R.S.
- (2) Other gauge metal as required or specified.
- (3) Galvanized or stainless steel fabrication optional
- (4) Recommend wear liner or heavier gauge metal for use with abrasive materials and high-capacity applications.
- (5) Required (1) per outlet.

“ST” and “FB” Turn-Heads

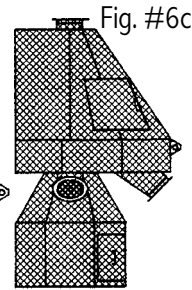
(“ST” any side, “FB” front view)



Type I
Single-Reduction
Drive



Type II
Double-Reduction
Drive



(“FB” may be
Type I or II)

Drive Housing

- Spout Access Panel is hinged and gasketed
- Drive Access Panel is gasketed and bolted

Fig. #7

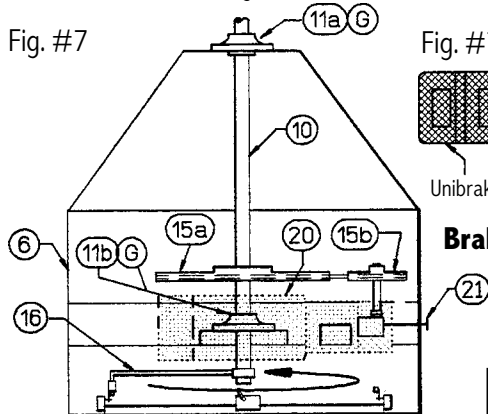
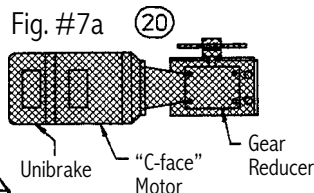
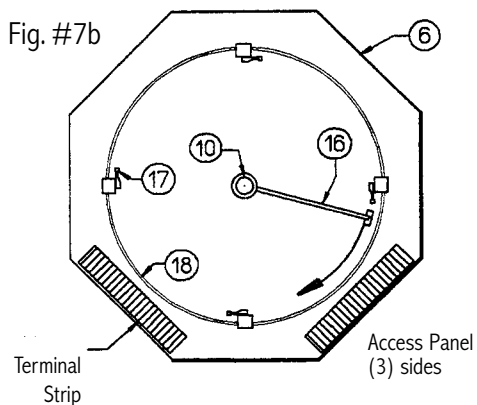


Fig. #7b

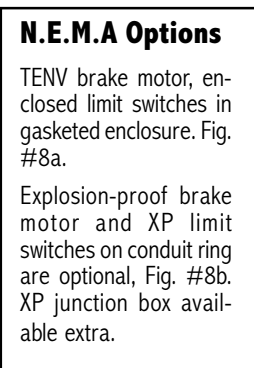


Brake Motor/Reducer

N.E.M.A Options

TENV brake motor, enclosed limit switches in gasketed enclosure. Fig. #8a.

Explosion-proof brake motor and XP limit switches on conduit ring are optional, Fig. #8b. XP junction box available extra.



NOTES on this and following pages:

Items are referenced using: Page No. (other than page with text); Figure No. (Fig #); Item (letter); and Note(s) if applicable⁽¹⁾. Example: Pg. 6 Fig. #13 (c)⁽¹⁾

(1) Varies with Single or Double Reduction Drive, Type I or Type II body style.

(2) Varies with NEMA rating, TE or XP (EP).

(3) Turnspouts, flanges, outer body shell, and drive housing are available in stainless steel or galvanized.

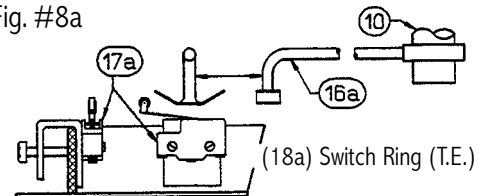
(4) Not available in “FB” models.

- Drive housing, continuous welded, with gasketed, bolted access panel. Type I external, Fig. #6a or Type II with up per cone inside turn-spout housing, Fig. #6b.
- Drive sprockets Fig. #7 (15a), (15b)⁽¹⁾
- Actuator Arm, Figs. #8a (16a), #8b (16b), #8c (16c)⁽¹⁾⁽²⁾
- Limit Switches Figs. #8a (17a), #8b (17b), or Proximity Sensor, Fig. #8c (17c)⁽¹⁾⁽²⁾
- Switch mount: Indexing- or Conduit-Ring, Figs. #8a (18a), #8b (18b), #8c (18c)⁽²⁾
- Brake Motor/Reducer Assembly Fig. #7a(20)⁽²⁾
- Chain Drive Chain Tension Adjustment, Fig. #7 (21).

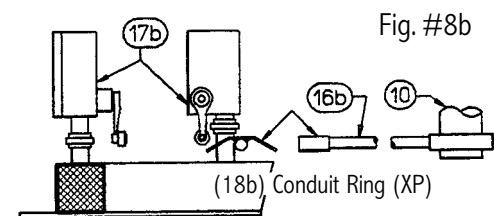
Control Switch Assembly

See Page 11 if Bin Vent is to be installed.

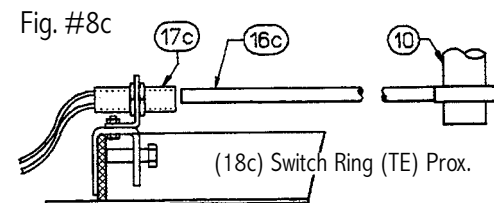
Fig. #8a



Standard Enclosed Switches
used in gasketed housing



XP and customer-specified NEMA classed
switches with conduit ring.



Proximity Sensor Switches

“Full-Seal” Option

Rotating 350° UH.M.W. seal. Pg. 3 Fig. #4 (22) isolates inactive spouts to minimize dusting or possible flash-over⁽⁴⁾ in event of material ignition.

Miscellaneous Components

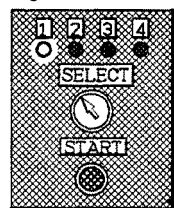
Figs. #1–5 are on Page 3

- A.R.S. inlet w/ angle ring, Fig. #1 (8)
- Female shaft coupling, Fig. #3 (9)
- Control shaft, Figs. #3 (10); Fig. #7b (10); Figs. #8a/#8b/#8c (10). Also see Pgs. 7 and 8.
- Flange ball bearing (upper), Fig. #3 (11), Fig. #7 (11a)
- Flange ball bearing (lower), Fig. #7 (11b)
- **Lifting lugs**, Fig. #4 (12) (for temporary use—installer must attach permanent supports to turn-head bottom plate or vertical side plates).

Rotation Control

Control Panels Are Available with "Totally Enclosed" or "Explosion Proof" NEMA rating. Installation must be done by qualified personnel. Follow wiring instructions. Make sure equipment is properly grounded and follows national and local codes.

Fig. #9

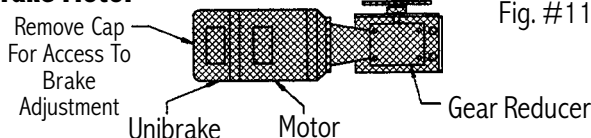


Control Panel

4-outlet model shown; typical for additional outlets, including flat-back models. Illustration is for example only. Actual components may vary.

1. Turn off equipment or close gates to divert material flow from bucket elevator, conveyor, hopper, or other device feeding the distributor.
2. Make sure material flow has stopped and turnspout is empty.
3. Turn selector switch to desired station (outlet). Push Start button. Distributor spout will begin to rotate. Display lamps on control panel will indicate movement of spout. Lamp on selected station will remain lighted when spout reaches desired outlet.
4. Flow of material can be restarted.

Brake Motor



Brake motor assembly. Similar for TE and XP versions.

Unibrakes are spring set, magnetic release, direct acting, disc brakes which stop and hold the turn-spout. Unibrakes have single phase magnetic coils and are factory set for rated retarding torque.

When properly connected, starting the motor energizes brake magnet coil, releasing disc brake and allowing it to rotate freely. Stopping the motor de-energizes brake magnet, forcing rotating disc(s) and stationary plate(s) together, quickly stopping the distributor turnspout at desired location.

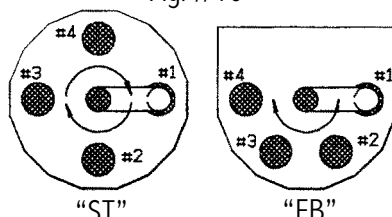
Unibrake magnet coils (A/C) are single phase/dual voltage. Direct current (D/C) brake coils and switch contacts are independent of those which control the motor. Normally, motor and brake contacts are interlocked. A release lever on the Unibrake allows manual rotation of turnspout during maintenance. Engage release by rotating it 90°.

Warning—to prevent injury to personnel or damage to distributor, a visual area check should be made prior to releasing brake.

To prevent ignition in hazardous atmosphere, brake motor should not be installed in an area where vapors, gasses, or dusts having an ignition temperature less than 150° F (165° C) are present.

Disconnect power supply before opening enclosure. Keep drive housing access panel tightly closed when circuits are "live."

Fig. #10



Warning—with covers removed and brake energized "hot" terminals are exposed and can cause shock, burns, or ignition hazard.

Instructions for parts replacement, torque adjustment, wear adjustment, friction disc and magnet coil replacement are available from Essmuller or dealer of supplied component parts. Most parts are available from local industrial suppliers or bearing houses. Brake assembly and motor may vary from Essmuller's supplier, therefore it is important to keep a record of original manufacturer, model, and serial numbers of parts.

Ball Bearings

Turn-head distributors include two or more ball bearings that require periodic re-lubrication. Grease fittings are supplied. It is recommended that a high-grade lubricant be used. Care should be taken to remove dust and contaminants before lubrication is attempted as dirt may be forced into fittings when excessively dirty. Pg. 4 Fig. #7 (11a), (11b).

Limit Switches

A contact switch is required for each discharge station (outlet). Switches are attached to a fixed indexing ring (TE) or conduit ring (XP) inside the drive housing, and are aligned with the turn-spout. They are activated by an actuator arm fixed to turn-spout control shaft. Pg. 4, Figs. #7 (16), #8a (16a), #8b (16b), #8c (16c), and Pg. 6 Figs. #13, #14, Pg. 7 Fig. #15. ⁽¹⁾⁽²⁾

Switches are available rated for splash-proof and explosion-proof applications. Switches are enclosed inside gasketed drive housing to meet minimum T.E. standards. Special switches are available for DPDT, higher NEMA rating, etc.

If replacement is necessary, it is important that the new switch be of same type and class as the old one; that it be replaced at exactly the same location as the old one; and that the roller-lever is adjusted to same angle to prevent damage to switch mechanism. Power should be removed any time switches are opened.

Warning—With covers removed, terminals are exposed and can cause shock and burns. Any sparking that might occur could be an ignition hazard. Gasketed drive housing is integral to enclosure rating of "TE" switches for all-weather applications.

Gear Reducer Lubrication

The turn-head distributor contains one or more motor/brake gear reducer assemblies. Worm gear reducers contain ball or roller bearings, which must be continuously lubricated Non-corrosive, anti-foaming oil should be used.

For reducers operating in ambient temperatures of 40°F (41°C) to 100°F (38°C), it is preferable to use a high-grade, compounded oil having a viscosity(SUV seconds) of 125 to 150 at 210°F (99°C).

The oil should conform to American Gear Manufacturer's Association "Grade 7 compounded." As a substitute, SAE No. 140 is preferred. For reducers operating at ambient temperatures of 15°F (-9°C) to 40°F (4°C), an oil having viscosity (SUV seconds) of 80°F (27°C) to 90°F (32°C) or an SAE No. 90 is suggested.

Gear reducers are filled at the factory with the proper amount of oil. After two weeks of operation the unit should be drained and flushed

and oil replaced or filtered. It is recommended that reducer oil be changed at least every six to eight months, or 2,500 operational hours under normal operating conditions, or more frequently under extreme conditions.

Each reducer has an oil level plug which maintains oil at the proper level. If oil is filled too high the reducer may overheat—if oil level is too low, bearings and gears may fail.

In addition to lubrication the unit should be inspected regularly to determine tightness of bolts and screws, misalignment of connecting shafts, oil leakage, excessive heating, or unusual noise or vibration.

Drives with a jack-shaft (Type II) have a brass bearing. A grease fitting is located behind the reducer mount. See Pg. 8 Fig. #17 (detail "B-B").

Floor Lubricant

The distributor body floor is normally coated with "Slip-Kote," a highly concentrated, durable graphite coating. Periodically, at least annually, the coating should be renewed. This will help keep the turn-spout seal moving freely.

Stop-Point Adjustment

The turnspout stopping point may be "fine tuned" to center the spout over outlet thimbles. Adjustment may be necessary periodically due to normal use.

Distributors With "TE" Components

- Adjust limit switch location on index ring.
- Screws should be periodically checked and tightened as required. Fig. #13.

Distributors With "XP" Components

Adjust angle of limit switch arm. Fig. #14.

Brake Adjustment

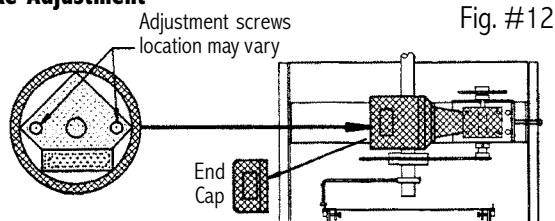


Illustration is for general instruction only and is similar for TE and XP drives. In all cases, refer to manufacturer's instruction sheets shipped with brake motor. Wiring diagrams vary with individual units, and are included with documents and inside brake motor cover-plate.

Precise stop-point adjustment depends on tension of brake disk springs. Normal wear will require eventual brake adjustment.

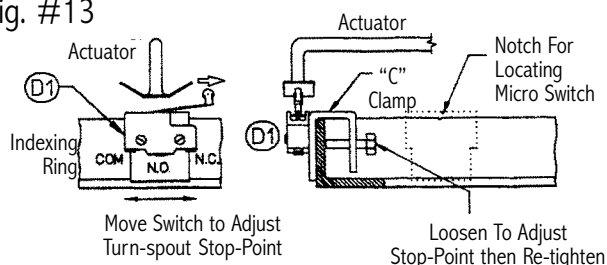
- Remove brake end-cap, find adjustment screws.
- Follow instructions shipped with the brake-motor.
- Note: be sure to turn set screws equal number of turns!

Limit Switches

"Totally-Enclosed" (TE) Switch Mounting

Spout Limit switches are located within the drive housing and are aligned with discharge outlets. Switches are triggered by a rotating actuator arm fixed to turn-spout control shaft. When replacing, care must be taken to correctly position switches to avoid damage by the contact arm.

Fig. #13

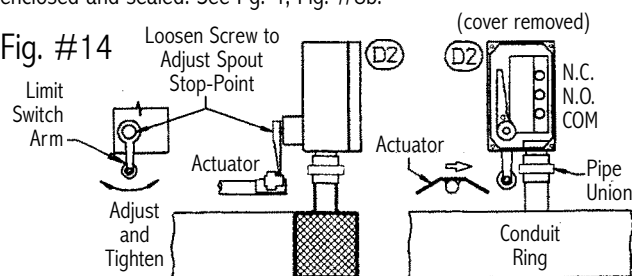


A notch is cut in the index angle ring to indicate where switches are to be positioned. Note: Gasketed drive housing is integral to enclosure of the standard Micro switches. See Pg. 4, Figs. #8a-8b.

"Explosion-Proof" (XP) Switch Mounting

Switches are mounted on an enclosed conduit ring. Conductors are enclosed and sealed. See Pg. 4, Fig. #8b.

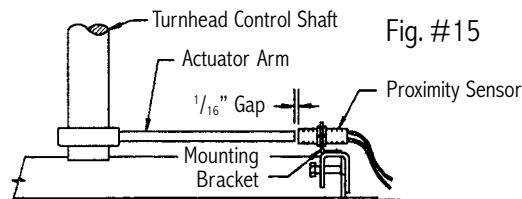
Fig. #14



Proximity Sensor Control

Essmueller now offers proximity sensors in place of electromechanical switches, to activate turn-spout brake-motor. Optional. See Page 6.

Proximity Sensor Mounting



"PEPPERL+FUCHS" Proximity Sensor #NBB5-18GM60-WS 2-wire AC output. self-contained Cable Type, N.O., 5mm Sensing Range with Mount Bracket AB18

Bin Vent Option

Operates similar to turn-head 360° "Full-Seal" option⁽⁴⁾ and controls diversion of dust-laden return air drawn from bins by dust-collection system. Bin Vent Assembly is driven by turn-head turn-spout control shaft. See Page 11.

General Information For All Turn-head Control Panels

General Specifications: Dust-tight panel, including starter for motor, pre-wired for easy installation. Features: easy-to-read dial for positioning turn-spout, pushbutton for starting distributor; lights and labels for each station Hinged cover for easy maintenance access or servicing. Explosion-proof system is available.

Nominal Control Cabinet Size (TE): 12" w × 16" h

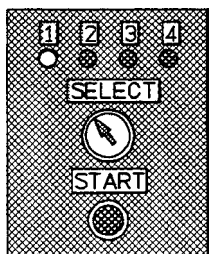


Fig. #18

Control Panel

4-outlet model shown-typical for additional outlets, including Flat-Back models.

Additional components "not" furnished with distributors are available from local suppliers:

- motor-overload protection device
- manual or automatic emergency stop switch
- maintenance lock-out switch
- junction boxes for brake, motor, and control circuits

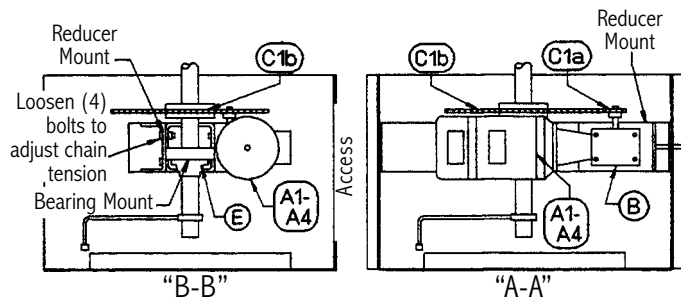
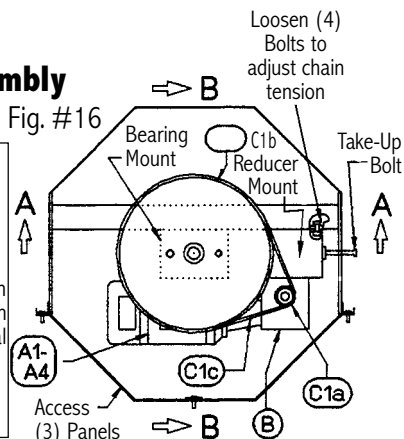
Wiring Notice

Note: brake wiring may vary with various units furnished by brake-motor supplier. See wiring schematic shipped with unit. Terminal block layout will vary. Check connector markings.

Type I Housing Motor/Drive Assembly

Size 00 Magnetic Starter-
110 VAC Coil, Variable Heaters:
1.6/2.4 = 230 VAC
0.8/1.2 = 460 VAC
Other voltages available

Totally Enclosed or Explosion
Proof Connections For Use With
Motors With Inherent Thermal
Protector
Motor 220/440 3-Ph 50/60 Hz
Brake 133/265 1-Ph 50/60 Hz



Notes:

Drive component locations typical for TE and XP; actual parts differ. For switch and contact arm details (DI)(D2), Pg. 4, Figs. 7, #8a-#8d and Pg. 6, Fig. #13, Pg. 7, Fig. #14.

No slack is allowable in chain drives.

Parts List

Type I Body Style ($\phi 1\frac{1}{2}$ " Shaft)

Electric w/ Chain Single-Reduction Drive @ 2 RPM

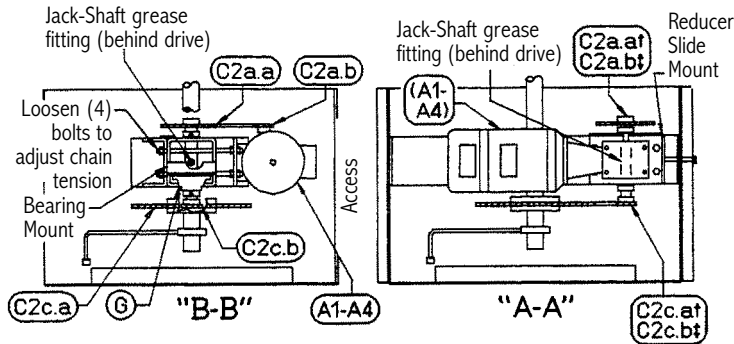
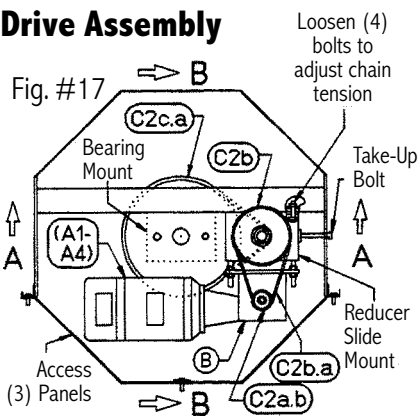
TE Motor

- A1 3-PH Brake Motor, $\frac{1}{2}$ HP, TEFC, 56C Frame, 1725 RPM, 3/50-60/230-480-560 VAC "Baldor" #VBM-3538, or "Lesson" #114159
- A2 1-PH Brake Motor, $\frac{1}{2}$ HP, TE, 56C Frame, 1725 RPM, 1/60/115-230 VAC "Baldor" #KBL-3409 NEMA 9 CLASS II-G XP Motor
- A3 3-PH Brake Motor, Explosion Proof II-G 56C Frame, 1725 RPM, 3/50-60/230-460 VAC. "Reliance" #P-56H5249 (1 HP) or "Baldor" #CBM 7010 ($\frac{3}{4}$ HP)
- A4 1-PH Brake Motor, Explosion Proof II-G 55C Frame, 1725 RPM, 1/60/115-230 VAC.
- B Reducer, 100:1 Ratio, C-Face, "Ohio" #206-56C-Ass'y B-Style U or "Grove" #BMQ 1206-100-2-56C
- C1 Chain Drive Set:
 - a. (1) DriveR Sprocket #50B11 × $\phi 1$ " Bore
 - b. (1) DriveN Sprocket #50B95 × $\phi 1\frac{1}{2}$ " Bore
 - c. (1) Chain #50 (101) Pitches
 - d. (1) Connecting Link #50 (not shown)
- D1 Limit Switch TE (Pg. 5) "Uni-Max" 2HBA5 or 2HBA-1, or "Micro" BZ-2RW-82551-A2
- D2 Limit Switch Explosion Proof II-G (Pg. 6) "Micro" EX-AP, or "Uni-Max" KXL-P
- E1 Bearing $\phi 1\frac{1}{2}$ " Dia. 2-Bolt Flange-Type "Dodge" "SC" Series (Req. 2)

* 1 Per Station (discharge outlet)

Type II Housing Motor/Drive Assembly

Size 00 Magnetic Starter-110 VAC
Coil, Variable Heaters:
1.5/2.4 = 230 VAC
0.8/1.2 = 460 VAC
Other voltages available
Totally Enclosed or Explosion Proof
Connections For Use With Motors With
Inherent Thermal Protector
Motor 220/440 3-Ph 50/60 Hz
Brake 133/265 1-Ph 50/60 Hz



Notes:

Drive component locations typical for TE and XFI actual parts differ. For switch and contact arm details (D1) (D2) See Pg 4, Figs. 7, #8a-#8d and Pg. 5, Fig. #13, Pg. 7, Fig. #4

No slack is allowable in chain drives.

† Front in view

‡ Behind in view

Parts List Type II Body Style (ø2" Shaft)

Electric w/ Chain Double-Reduction Drive @1 RPM

TE Motor

- A1 3-PH Brake Motor, 1/2 HP, TEFC, 56C Frame, 1725 RPM, 3/50-60/230-480-560 VAC. "Baldor" #VBM-3538, or "Lesson" #114159
- A2 1-PH Brake Motor, 1/2 HP, TEFC, 56C Frame, 1725 RPM, 1/60/115-230 VAC "Baldor" #KBL-3409
NEMA 9 CLASS II-G XP Motor
- A3 3-PH Brake Motor, Explosion Proof II-G 56C Frame, 1725 RPM, 3/50-60/230-460 VAC. "Reliance" #P-56H5249 (1 HP) or "Baldor" #CBM 7010 (3/4 HP)
- A4 1-PH Brake Motor, Explosion Proof II-G 56C Frame, 1725 RPM, 1/50/115-230 VAC.
- B Reducer, 100:1 Ratio, C-Face, "Ohio" #206-56C-Ass'y B-Style U or "Grove" #BMQ 1206-100-2-56C

C2a Reducer Drive Package

- a. (1) DriveN Sprkt #50B35 x ø1 1/4" Bore
- b. (1) DriveR Sprkt #50B11 x ø1" Bore

C2b Reducer Chain Drive Set

- a. (46) Pitches, Chain #50

8.

- b. (1) Offset Connecting Link #50
- C2c Jackshaft Drive Package
 - a. (1) DriveN Sprkt #60B60 x ø2" Bore
 - b. (1) DriveR Sprkt #50311 x ø1 1/4" Bore
- C3 Jack-shaft Chain Drive Set
 - a. (69) Pitches, Chain #60
 - b. (1) Offset Connecting Link #60
- D1* Limit Switch TE, Pg. 6) Fig. #13 "Uni-Max" 2HBA5 or 2HBA-1, or "Micro-Switch" BZ-2RW-825551-A2
- D2 Limit Switch Explosion Proof II-G, Pg. 6 Fig. #14, "Micro-Switch" EX-AP, or "Uni-Max" KXL-P
- G Bearing ø2" 2-Bolt Flange-Type "Dodge" "SC" Series, Pg. 4 Fig. #7 (11b), Req. 2.
- * 1 Per Station (discharge outlet)

Standard Components:

Distributor is Available With Totally Enclosed or Explosion Proof Options.

"TE" Distributors

- TEFC/TENV brakemotor
- TE limit switches
- Switch mounting ring

"XP" Distributors

- XF brakemotor
- XP limit switches
- Conduit ring

General Notes:

These notes apply to following schematic wiring diagrams.

- Motor is operated from N.C. side of S.P.D.T. limit switches. Lamps are operated from N.C. side of switches. D.P.D.T. switches are available for customer-specific applications.
- Motor "MUST" be wired to start in CW rotation. If motor is wired to run CCW, it will not reverse, and result in motor failure.
- Installation must be done by qualified personnel. Make sure equipment is properly grounded and follow applicable national and local electrical and safety codes.
- Recommended options by customer:
 - Motor overload protection devices
 - Emergency stop switch
 - Maintenance lock-out switch
 - Junction box (If required)
- Turn-spouts, flanges, upper body shell, drive housing are available in S.S. or galvanized construction.
- Turn-head distributors are fabricated items. Published dimensions cannot be guaranteed to be within close tolerances, however, they will be held within limits as close as practical with current technology.
- Specifications are subject to change without notice.

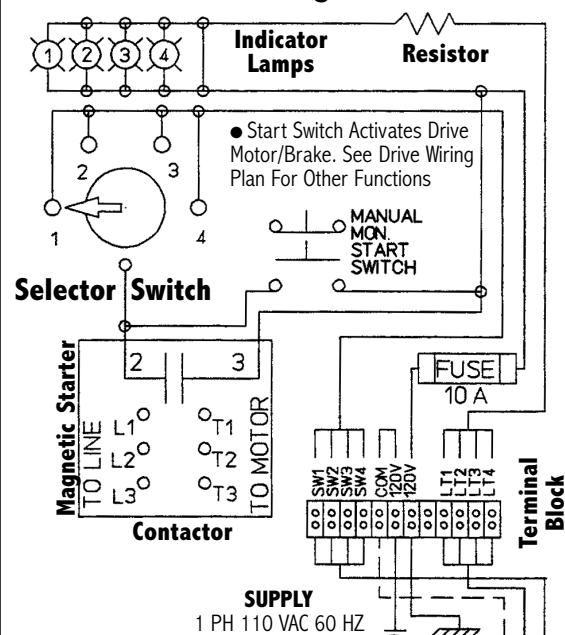
ABBREVIATIONS used in this manual:

A.C. = Alternating Current
A.R.S. = Abrasion Resistant Steel
C = Common lead
CW = Clockwise rotation
CCW = Counter Clockwise rotation
C.R.S. = Cold Rolled Steel
C, CON = Common (electrical lead)
D.C. = Direct Current
D.P.D.T. = Double-Pole Double-Throw (switch)
X.P. (E.P.) = Explosion Proof electrical components

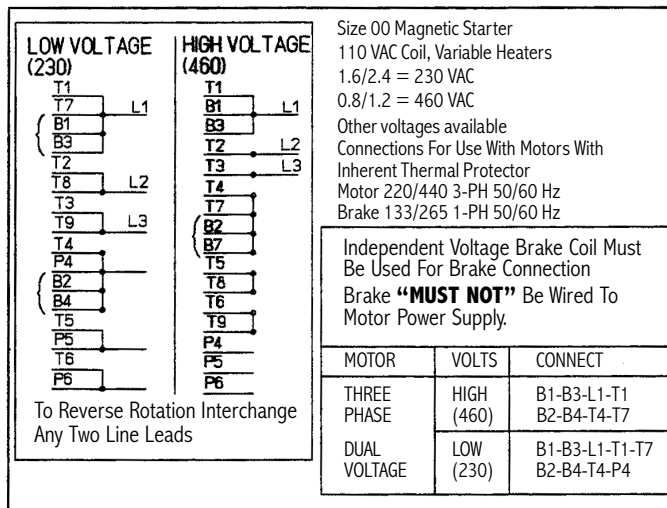
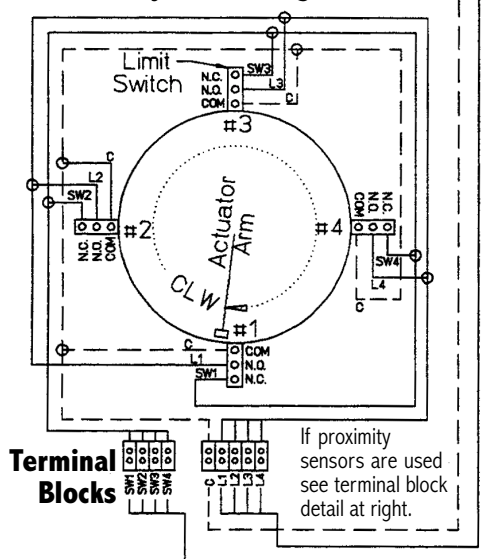
H.R.S. = Hot Rolled Steel
L = Lamp Circuit (NO)
MON = Momentary Contact Starter Switch
N.C. = Normally Closed (switch circuit)
N.O. = Normally open (switch circuit)
S.S. = Stainless Steel
S.P.D.T. = Single-Pole Double-Throw (switch)
SW = Switch Circuit (NC)
T.E. = Totally Enclosed electrical components
T.E.F.C. = Totally Enclosed Fan Cooled motor
T.E.N.V. = Totally Enclosed Non-Vented motor
U.H.M.W. = Ultra High Molecular Weight Polyurethane

360° "ST" Turnhead Motor/Brake Connections POLYPHASE (3-ph) Drive.

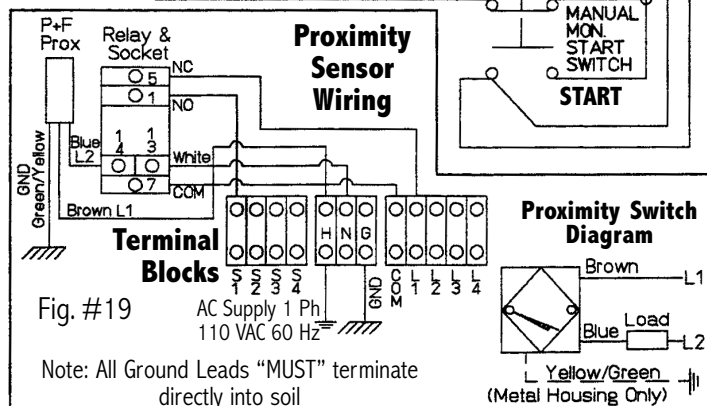
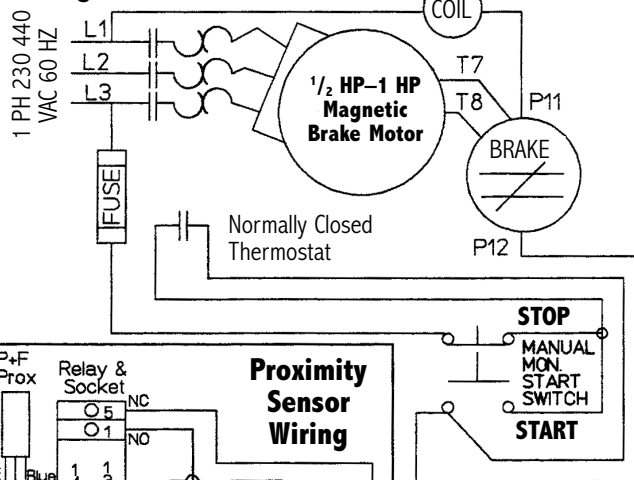
Control Panel Wiring



Control System Wiring



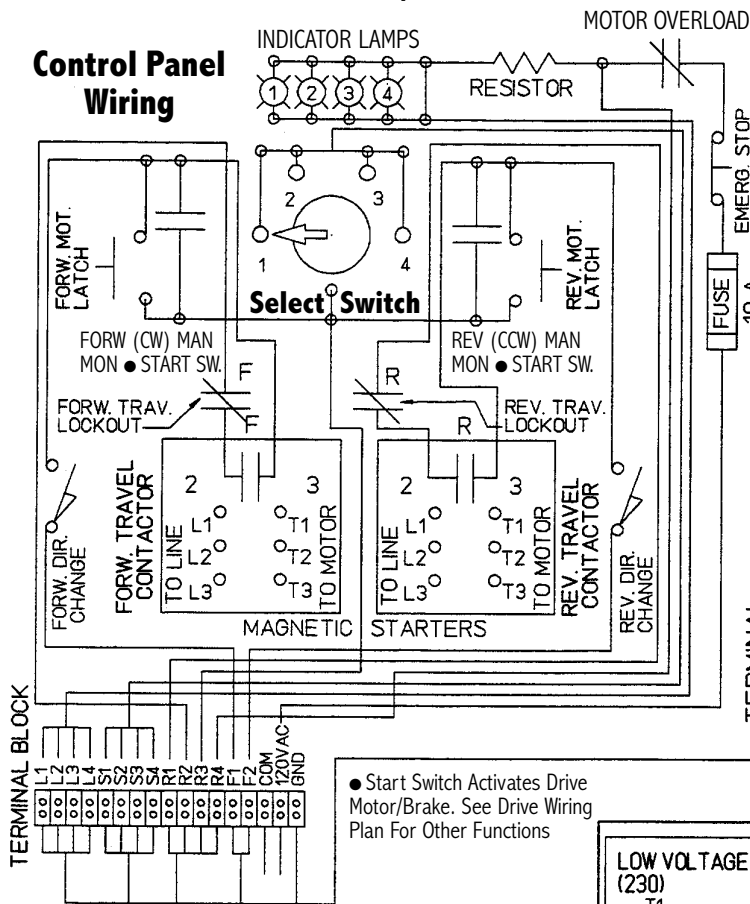
Magnetic Controller



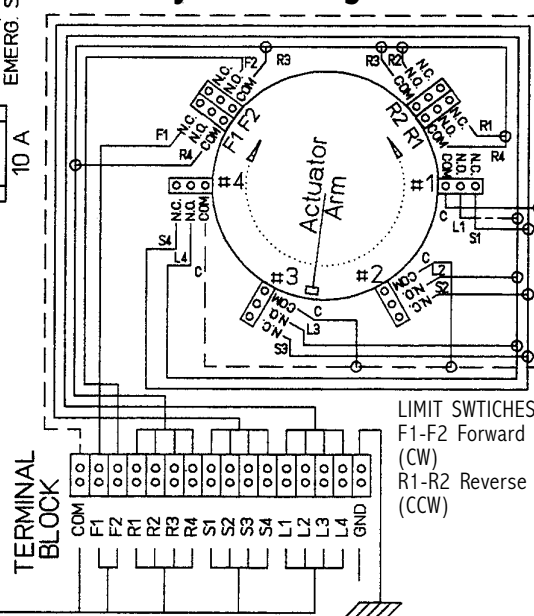
180° "FB" Turnhead Motor/Brake Connections

POLYPHASE (3-ph) Drive — Didirectional Reciprocating control with bidirectional spout engagement

Control Panel Wiring



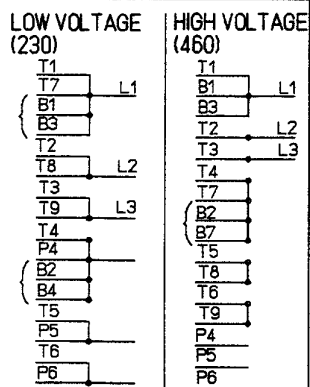
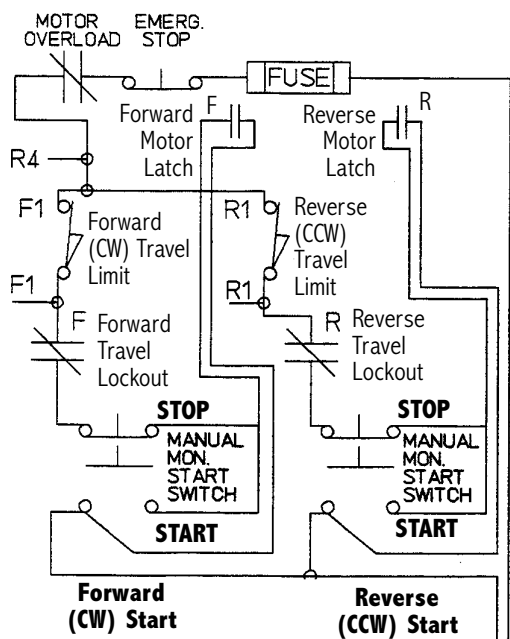
Control System Wiring



• Start Switch Activates Drive Motor/Brake. See Drive Wiring Plan For Other Functions

SUPPLY
1 PH 110 VAC 60 HZ

Magnetic Controller

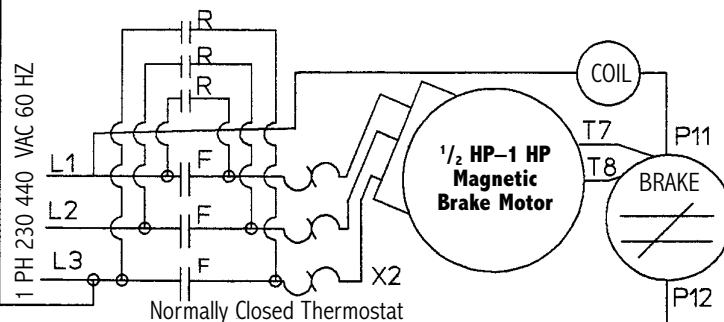


To Reverse Rotation Interchange Any Two Line Leads

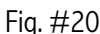
Size 00 Magnetic Starter
110 VAC Coil, Variable Heaters
1.6/2.4 = 230 VAC
0.8/1.2 = 460 VAC
Other voltages available
Connections For Use With Motors With Inherent Thermal Protector
Motor 220/440 3-PH 50/60 Hz
Brake 133/265 1-PH 50/60 Hz

Independent Voltage Brake Coil Must Be Used For Brake Connection
Brake "MUST NOT" Be Wired To Motor Power Supply.

MOTOR	VOLTS	CONNECT
THREE PHASE	HIGH (460)	B1-B3-L1-T1 B2-B4-T4-T7
	LOW (230)	B1-B3-L1-T1-T7 B2-B4-T4-P4

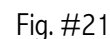


Turn-Head Distributor Bin Vent System (Vacuum Distributor Manifold)



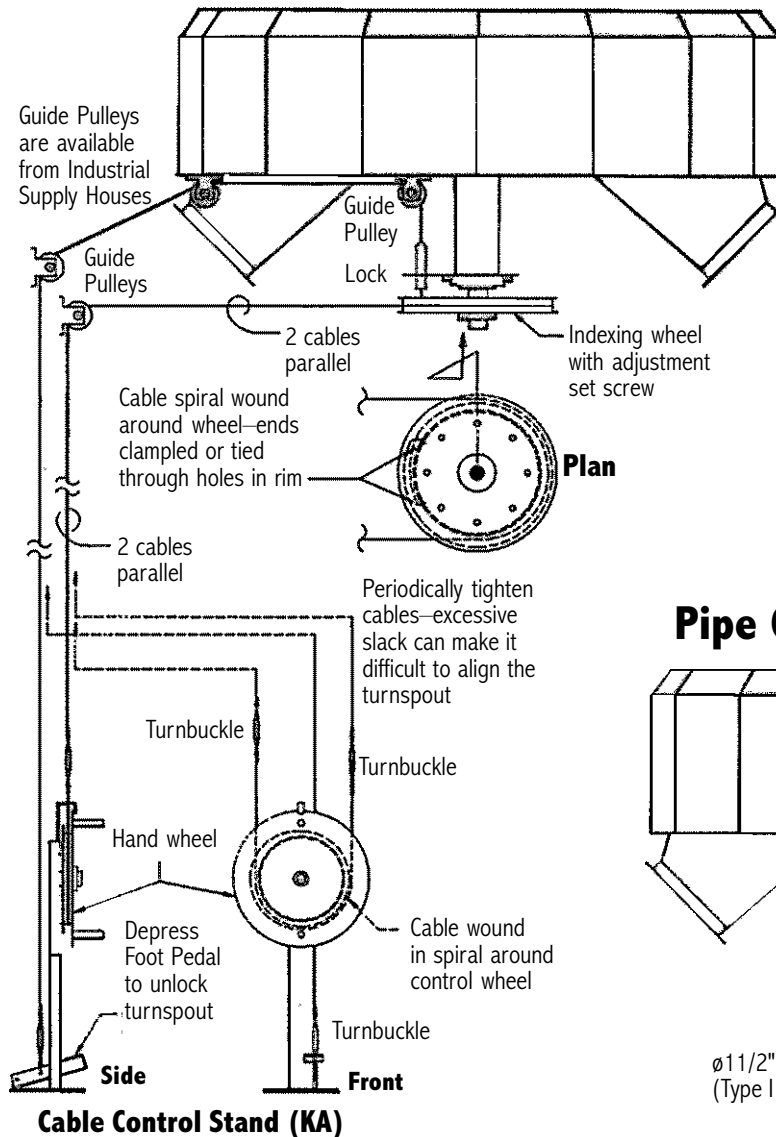
- Align turn-head spout to any discharge outlet. Rotate

WORK SAFELY! Make sure Turn-head and Bin Vent System are properly supported and blocked before attempting to work on them. Use appropriate safety equipment and procedures. Avoid contact with Turn-head drive components and rotating turnspout. Do not insert body parts, or anything else, into Turn-head or Bin Vent spouts.



Bin Vent Installation ToTurn-head Distributor

Cable Control Turn-head



Cable Control Stand (KA)

Operation of Distributor Rotation Feature

Cable and Pipe Control

Make Sure Material Flow Has Been Stopped and Turnspout is Empty.

Release lock by pressing down on foot pedal. Rotate cable wheel or pipe lever to desired location. Release foot pedal to lock. After releasing lock, minor adjustment may be required to "center" the lock pin in index wheel or index plate holes.

Flow of Material Can Then Be Restarted.

Ball Bearings

Turnhead distributors include two flange-type ball bearings. These require periodic re-lubrication—grease fittings are supplied. It is recommended that a high-grade lubricant be used. Care should be taken to remove dust and contaminants before lubrication is attempted as dirt may be forced into fittings when excessively dirty.

Housing Lubricant

The distributor body floor is coated with "slip plate," a highly concentrated, durable graphite coating. Periodically, at least annually, the "slip plate" coating should be inspected and renewed. This will help keep the rotating seat moving freely.

Note: Manual control stands are normally located within a few yards (or meters) of the turnhead distributor. After set-up, many users place a marker on the bottom of the index disk or wheel to help the operator determine the currently active spout.

Cable Parts

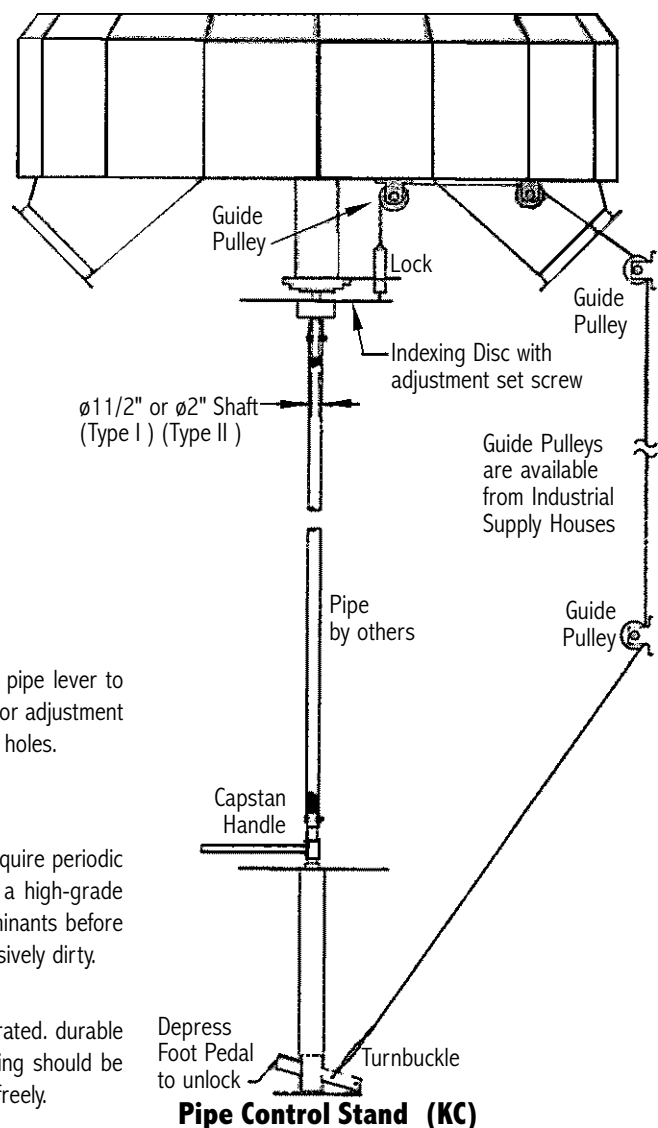
For Cable-Control and Lock
Pipe-Control Lock

$\frac{3}{32}$ " galvanized cable

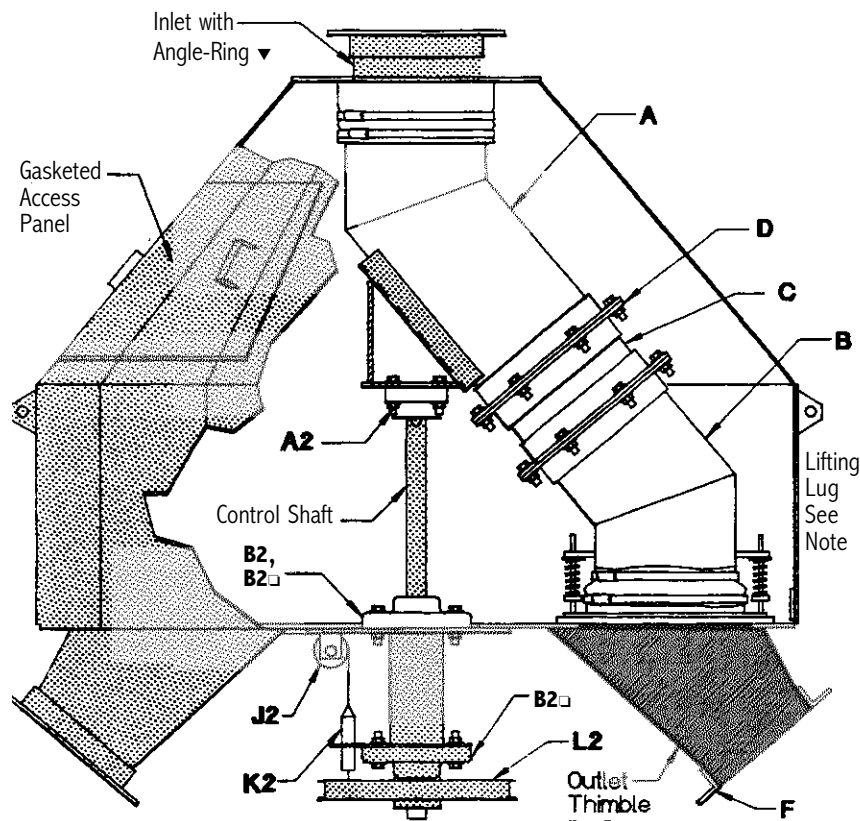
"NICO" press sleeves

$\frac{1}{4}$ " x 4" turnbuckle

Pipe Control Turn-head

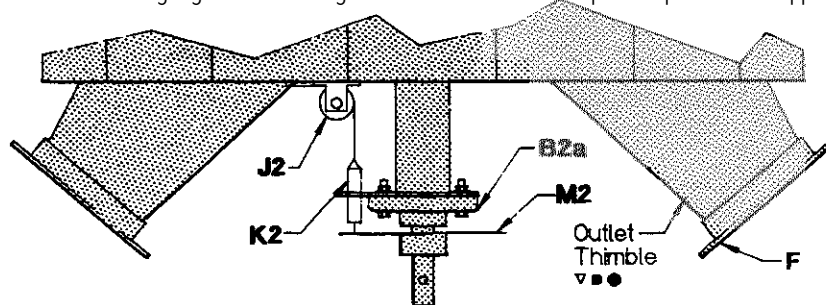


Pipe Control Stand (KC)



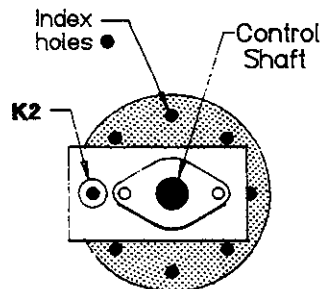
Turn-head With Manual Cable Control

Note: Lifting lugs for use during installation. Installer must provide permanent support.



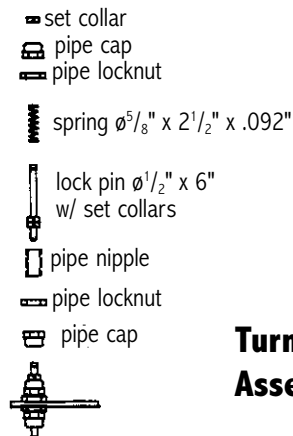
Turn-head With Manual Pipe Control

Parts inside main body are same as in upper detail.

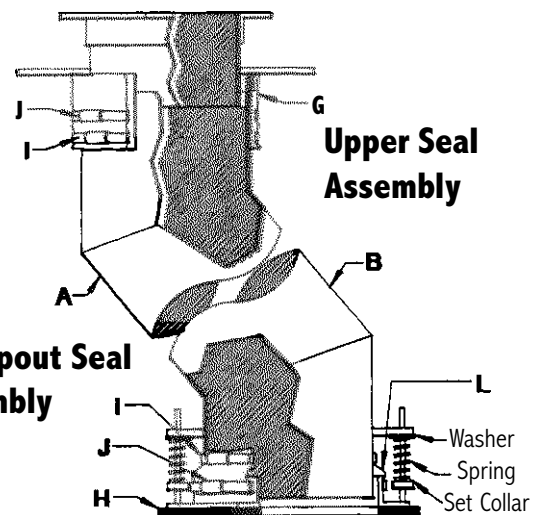


Indexing Assembly

(Plan View)
L2 Index Wheel (cable-control)
or M2 Index disc (pipe-control)



K2 Locking Assembly



Turn-Head Parts

ITEM	QTY	DESCRIPTION
A	1	Turnspout ▲▼■
A2	1	Rigid Cplg Fem Half #R16 w/ Taper Lock bushing #1615 x $\phi 1\frac{1}{2}$ " or $\phi 2$ "
B	1	Elbow Thimble ▲▼■
C	1	Turnspout Extension
D	2-4	Spout Angle-Rings
F	●	Outlet Angle-Rings
G	1	Sponge Rubber Seat
H	1	U.H.M.W. Slcrng Seat
I	4	"Band-It" strap
J	4	"Band-It" clamps
L	1	Dust Sock

Replacement Parts

Type I Body (to $\phi 92$ ")

B2,B2a	2	Bearing $\phi 1\frac{1}{2}$ " □
A2	1	Coupling $\phi 1\frac{1}{2}$ "

Type II Body (over $\phi 92$ ")

B2	1	Bearing $\phi 2$ " □
B2a	1	Bearing $\phi 1\frac{1}{2}$ " □
A2	1	Coupling $\phi 2$ "

Miscellaneous Items

K2	1	Locking assembly
J2	10	Cable guide pulley
KA	10	Cable control stand
KaA	3	Turnbuckle $\frac{1}{4}$ " x 4"
KAb	2	"NICO" press sleeves
KAc	1	Index wheel $\phi 22$ "
KB	per ft	$\phi 3/32$ " galvanized cable
KC	1 ♦	Pipe control stand
L2	1 ♦	Index disc—cable
M2	1 ♦	Index disc—pipe

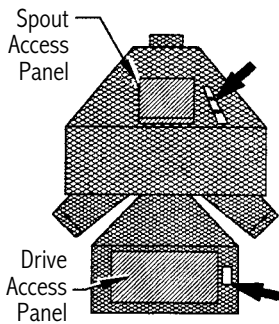
Other items from local suppliers

Abbreviations

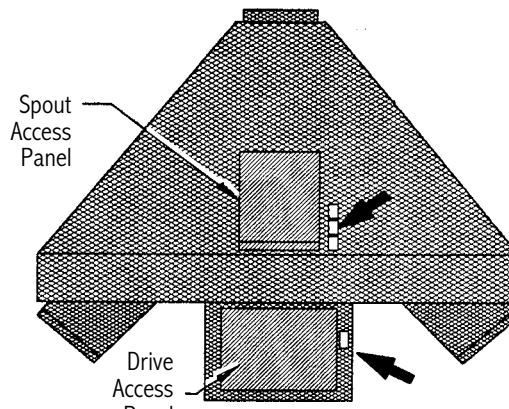
■	opt. lining, rubber, U.H.M.W., A.R.S.
♦	qty, if required or ordered
▲	4, std shown—options available
▼	10 ga A.R.S. std.
□	2-bolt flange bearing, DODGE "SC"
●	per outlet
AR.S.	= Abrasion Resistant Steel
U.H.M.W.	= Ultra-High Molecular Weight Polyurethane

Warning Labels For Turn-Head Distributors

Safety Signs conform to guidelines of Equipment Manufacturers Council of the American Feed Industry Association (AFIA)

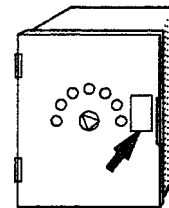
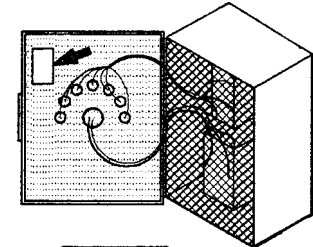


Type I Turn-head Distributor



Type II Turn-head Distributor

Control Panels & Junction Boxes

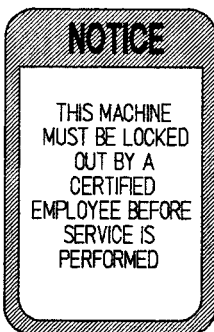


Turnspout Access Panel

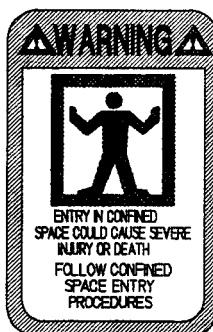
Adjacent to Lower Part of Spout Access Panel
(Right Side Preferred)



Turn-heads w/
Spouts Larger
Than 14" Dia.

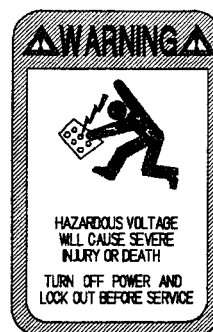


All Turn-heads



All Turn-heads

Drive Access Panel



Also For
Control Panel
If Supplied

← **Sign Locations**

We also manufacture:

- Round-Bottom Conveyors
- Flat-Bottom En-Masse Drag Conveyors
- High-Flite Incline Conveyors
- Heavy-Duty En-Masse Flat-Bottom Conveyors
- Shuttle Conveyors
- Gathering Conveyors
- Bucket Elevators

The Essmuelier Company

"Since 1878"

P.O. Box 1966, Laurel, Mississippi 39441-1966 USA
Anywhere in the United States PHONE TOLL-FREE 1.800.325.7175
FAX 601-649-4320