# MODEL FFD-120-WH SCATTERGRAIN INSTALLATION and OPERATION INSTRUCTIONS

The FFD-120-WH Scattergrain is designed to distribute grain evenly as it enters a storage bin. The unit is compact, heavy-duty, factory-assembled, and weighs 71 lbs. (including crate).

The FFD-120-WH is equipped with a totally enclosed 1/2 HP 115V 1-phase 1750 RPM 6.2 FLA motor that is mounted directly onto a special gearbox assembly.

The 10-to-1 reduction operating speed of the unit is mated with the specially designed blade, to provide low grain velocity for minimal kernel damage.

The gear box is permanently lubricated and sealed. The main output shaft of the unit is supported with sealed, anti-friction bearings to assure long life and trouble-free service.

Maximum grain capacity is 2,500 to 3,000 bushels per hour, depending on type of grain and moisture content.

The unit is equipped with a patented two-way, variable pitch grain thrower blade. With this arrangement, the blade may be tilted, as required, to suit the roof angle, and in addition, may be rotated within the U-bolt slots at the "T" drive, to provide limited tilt in the second plane. This compound angle allows the thrower blade to have a variable bite on the grain. The blade is equipped with adjustable center openings to provide for controlled center filling.

The standard hangers supplied with the unit will adjust to roof openings of 21 to 30 inches. For larger openings, up to 40", order the optional HEK-01 Horizontal Extension Bracket Kit. See the Options box below for more information.

**OPTIONS**

• HEK-01 Horizontal Extension Bracket Kit — Contains (3) extra long horizontal extension hangers that replace the standard hangers supplied with the Scattergrain unit. This kit allows spanning up to a 40" opening.

• VEK-01 Vertical Extension and Adapter Kit — Contains (3) vertical extension hangers and (3) adapter brackets. This kit allows up to a 9" vertical drop of the Scatter-grain unit.

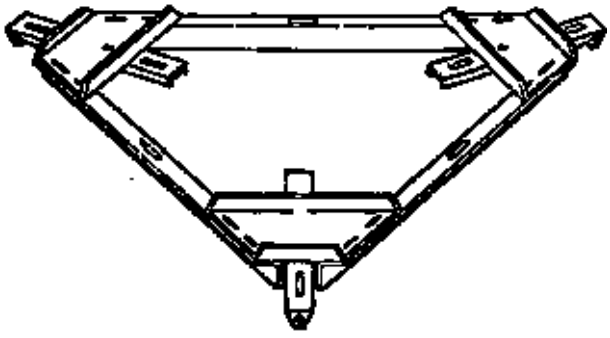
• VEK-02 Vertical Extension Kit — Contains (3) additional vertical extension hangers and may be used with VEK-01 for maximum vertical drop of 18".

**CAUTION:** NO MORE THAN TWO (2) SETS OF VERTICAL EXTENSION HANGERS SHOULD BE USED TOGETHER. THE MAXIMUM RECOMMENDED DROP IS 18".

• Blade Extension — This comes with all Scattergrains but its use is optional, as bins smaller than 36' in diameter should not need it. See Installation and Operation heading for more details.


**Fig. 1 FFD-120-WH Scattergrain assembly**

• A17-123 Flow Diverter Kit — This kit is helpful in providing improved grain leveling for low capacity systems and for special operating conditions where it is difficult to properly center the grain flow into the unit.



**Model 4060 Bin Adaptor Assembly**

• Model 4060 Bin Adapter Assembly — May be used to span openings from 40" to 60" in diameter.

FARM FANS
Division of ffi Corporation
5900 Elmwood Avenue ● Indianapolis, Indiana

Printed in U.S.A.

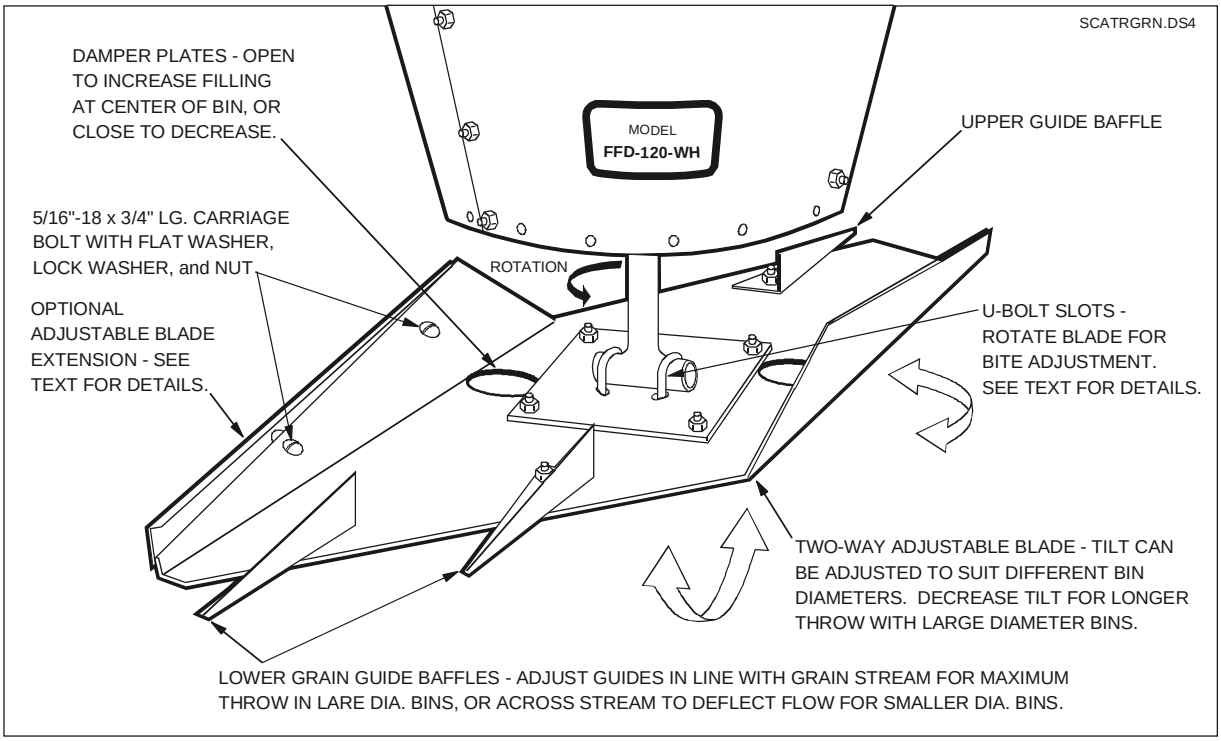



**Fig. 2 Thrower blade adjustment and blade extension details**

## INSTALLATION and OPERATION

Adjust hanger extensions to fit the roof opening and install the Scatter-grain unit. Holes are provided in the ends of the hangers to bolt unit to the hatch collar. After unit is installed, check to make sure it is level. If required, add spacer washers to level the unit.

The Scatter-grain can be adjusted for use with small or large diameter bins. The following text describes how to adjust the tilt, blade extension, and baffles to suit a particular bin diameter.

**LARGE BINS - 36 to 50 Feet**

For large bins, the Scatter-grain blade should be set for the greatest possible throw. This is achieved by DECREASING the tilt of the blade so most of the grain clears the roof angle, and adjusting the blade to provide maximum bite on the grain. To increase the bite, loosen the two U-bolts and rotate the blade to its fully clockwise position within the slots at the "T" drive, as viewed when looking down on the blade. Fully tighten U-bolts.

Adjust the lower grain guide baffles so they are positioned in direct line of the grain stream. Adjust upper guide baffle to restrict flow for reduced center filling.

Adjust the two damper discs so the center openings within the blade are nearly closed, to prevent overfilling center of bin.

For large bin applications (36' to 50' diameter), the blade extension should normally be used. The general rule for adjusting the blade extension is to fully extend it for maximum possible throw. Retracting the extension will allow additional grain to spill over it and provide increased filling at the intermediate diameters.

Because of the increased loading when using the blade extension, it is important that the Scattergrain hanger brackets be securely bolted to the bin opening collar to prevent them from moving or unhooking due to the higher oscillating forces that occurs after the extension is installed.

**SMALL BINS - 24 Feet Or Less**

For small diameter bins, INCREASE THE TILT, as required, so most of the grain clears the roof angle, and adjust blade for MINIMUM BITE on the grain. To obtain minimum bite, loosen U- bolts and rotate the blade fully counterclockwise (as viewed from above) within the slots at the "T" drive. Fully tighten U-bolts.

Adjust lower grain guide baffles so they are positioned across grain stream to direct flow.

Adjust the two damper discs so the center openings within the blade are almost fully open, to provide increased filling at center of bin.

The blade extension is normally not needed for small bin applications.

**INTERMEDIATE BINS - 24 To 36 Feet**

The information within the two previous headings describes the pre-adjustments required for both extremes of bin sizes. For bin sizes between 24 to 36 feet, start with intermediate adjustments, then vary slightly if required.

**POWER SUPPLY**

The FFD-120-WH Scatter-grain requires a 115 volt power supply. Minimum wire size is No. 14 for runs up to 200 feet. Consult an electrician for wire size on longer runs.

**NOTE:** The Scatter-grain motor is equipped with internal automatic-reset type overload protection. However, it is advisable to provide additional protection with 10-amp slow-blow fuses, at the time of installation.

Before connecting and applying power, rotate the thrower blade by hand to make sure it is not obstructed.

Make certain to check direction of rotation. The Scatter-grain should turn COUNTERCLOCKWISE, as viewed from above the unit.

**INCOMING GRAIN FLOW ADJUSTMENT**

Regardless of grain type and bin size, the incoming GRAIN STREAM MUST BE CENTERED directly within the Scattergrain cone to prevent build-up of high and low grain surface areas from one side of the bin to the other.

## SERVICE

After several seasons of normal operation, each of the two motor bearings should be relubricated annually with approximately 10 drops of a good grade SAE 10 oil.

The gear box assembly is permanently lubricated with a special grease at the time of manufacture, and no further lubrication is required, unless seal leakage occurs.

It is advisable to inspect seals and check bearings annually for tightness. A bearing take-up nut is provided externally on the output shaft to keep the tapered bearings and seals snug.

In the event the motor fails to start, disconnect power and check unit for freedom of rotation. Also, make certain power source being supplied is live.

If motor stops operating for no apparent reason, wait approximately five minutes for the automatic overload protection device to reset itself and re-attempt operation (See following CAUTION ). If problem continues, check power supply for proper voltage and the blade assembly for freedom of rotation.

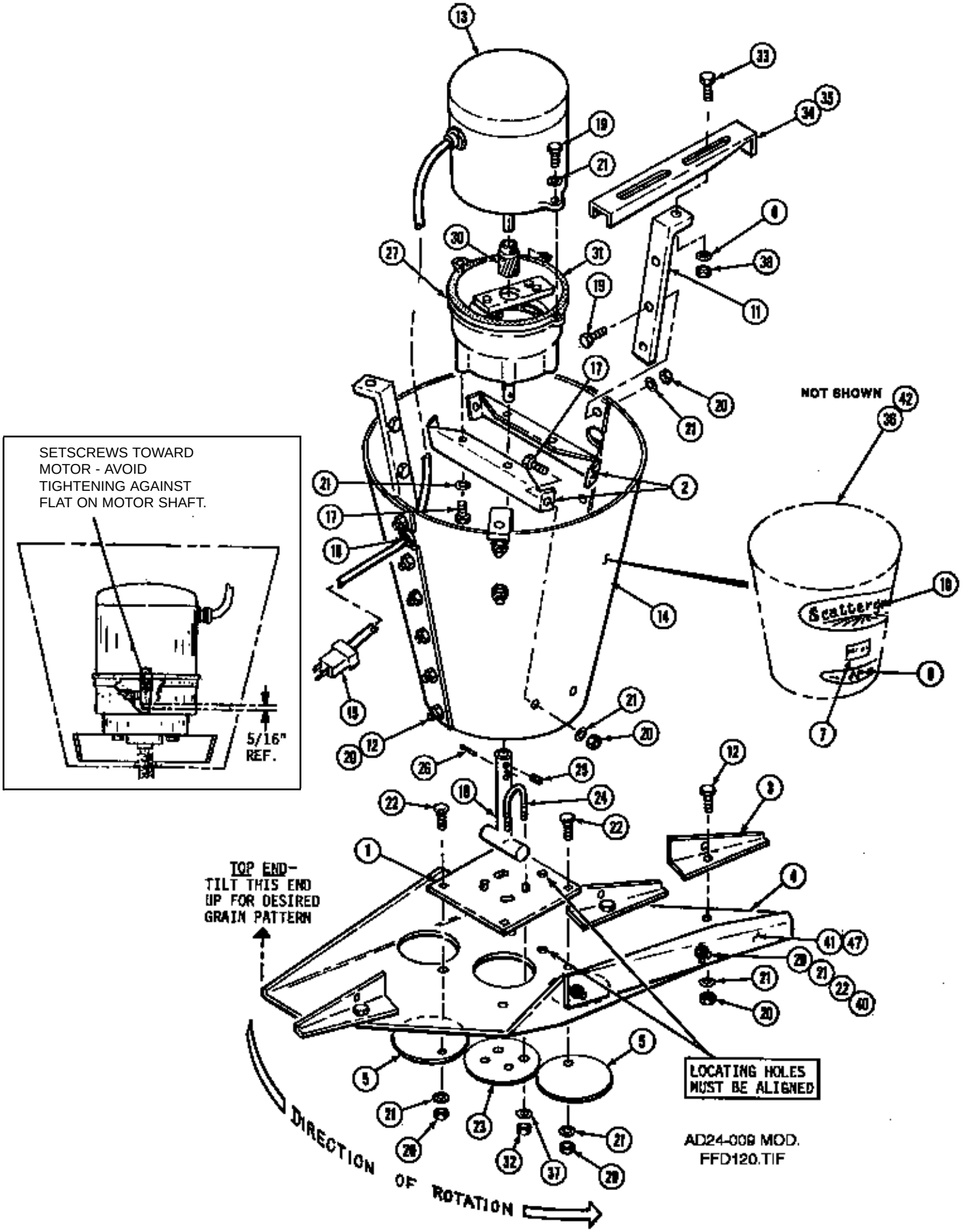
**CAUTION:** The Scattergrain is equipped with an internal overload protection device which is self-resetting. Use extreme caution when attempting to service or check the unit after an unexpected shutdown, as the motor may restart without warning! If unit unexpectedly stops operating, disconnect power supply before attempting any type of servicing.

If motor pinion requires removal for any reason, it must be properly installed and located, as shown in the parts illustration.

## PARTS LIST

### FFD-120-WH Scatter Grain Assy.

| Item | Part No. | Description | Qty. |
|---|---|---|---|
| 1 | 306-1168-5 | SCATTER PLATE BACK-UP | 1 |
| 2 | 306-1169-3 | GEAR BOX MOUNTING BRACKET | 2 |
| 3 | 306-1036-4 | SCATTER PLATE GUIDE | 3 |
| 4 | 306-1167-7 | SCATTER BLADE | 1 |
| 5 | 306-1043-0 | DAMPER PLATE - 4" DIA | 2 |
| 6 | 092-1011-3 | WASHER, FLAT 3/8 | 3 |
| 7 | 420-1346-6 | DECAL - MODEL FFD-120WH | 1 |
| 9 | 420-1082-7 | DECAL - SCATTER GRAIN | 1 |
| 10 | A23-013 | DECAL | 1 |
| 11 | 306-1074-5 | HANGER BRACKET | 3 |
| 12 | 090-1347-5 | HHCS 5/16-18x1/2 5 | 9 |
| 13 | 002-1337-1 | MOTOR, 1/2 HP 1-PH 17 48/64 | 1 |
| 14 | 401-1032-2 | CONE | 1 |
| 16 | 048-1047-9 | STRAIN RELIEF PLUG SR7W-2 | 1 |
| 17 | 090-1070-3 | HHCS 5/16-18x3/4 5 | 8 |
| 18 | 306-1037-2 | DRIVE SHAFT WELDMENT | 1 |
| 19 | 090-1072-9 | HHCS 5/16-18x1 5 | 12 |
| 20 | 091-1037-0 | HEX NUT 5/16-18 | 25 |
| 21 | 092-1027-9 | WASHER, SPLIT-LOCK 5/16 | 25 |
| 22 | 090-1291-5 | CBLT 5/16-18x3/4 5 | 10 |
| 23 | 306-1075-2 | BACK-UP PLATE | 1 |
| 24 | 311-1024-0 | U-BOLT, 3/8-16x1 WIDE x 2-1/4 | 2 |
| 25 | 090-1140-4 | SKCP 5/16-18x1/4 | 2 |
| 26 | 093-1003-8 | ROLL PIN, 1/4 x 1 | 1 |
| 27 | 308-1007-1 | GEAR BOX with IN-LINE SPUR GEAR REDUCERS | 1 |
| 30 | 017-1535-8 | PINION SLEEVE | Ref |
| 31 | 321-1001-7 | GASKET | 1 |
| 32 | 091-1040-4 | HEX NUT 3/8-16 | 7 |
| 33 | 090-1029-9 | HHCS 3/8-16x1-1/4 5 | 3 |
| 34 | 306-1035-6 | HANGER EXT. UP TO 31-3/4 DIA | 3 |
| 36 | 420-1081-9 | DECAL - WARNING (Motor Restart) | 1 |
| 37 | 092-1028-7 | WASHER, SPLIT-LOCK 3/8 | 7 |
| 38 | 000-1042-1 | OPERATION & INSTALLATION INST. | 1 |
| 40 | 092-1008-9 | WASHER, FLAT 5/16 | 2 |
| 41 | 401-1152-8 | SCATTER BLADE EXTENSION | 1 |
| 42 | 420-1079-3 | DECAL - WARNING (Oscillating Load) | 1 |
| 46 | 069-1214-1 | LUBRIPLATE GR-132 GREASE (OZ.) | 10 |
| 47 | 420-1080-1 | DECAL - BLADE EXTENSION | 1 |
| 48 | 013-1059-8 | CLOTH SHIPPING BAG | 1 |
| 49 | 013-1088-7 | CARTON - FFD-120 19.5x25x24.5 | 1 |




**FFD-120-WH Scattergrain Assembly**

FARM FANS