



# ***HURRICANE MIXER***

## **Models #500 and #850**

**IMS #107927**

(MMH1-HM500)

**IMS #107896**

(MMH1-HM850)

**March, 2002**

**IMS Company**

**10373 Stafford Road**

**Chagrin Falls, OH 44023-5296**

**Telephone: (440) 543-1615**

**Fax: (440) 543-1069**

**Email: [sales@imscompany.com](mailto:sales@imscompany.com)**

**Website: [imscompany.com](http://imscompany.com)**



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REVISIONS				
ECN#	REV	DESCRIPTION	DATE	APPROVED
00123-001	001	Update Part Numbers and Misc. Drawings	5/2/00	GDH
00215-002	002	Update Motor HP from ¾ to 1½	8/2/00	GDH
01309-001	003	Change Drawing For Model 500 55° Cone Angle Built Before 9/7/99	11/14/01	GDH
00123-001	004	New Proximity PS1 Part Number	2/15/02	GDH
	005	Update Part Numbers	3/28/02	GDH



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## SAFETY SUMMARY

This manual uses the following signal words to call attention to the safety sign and to designate a degree or level of hazard seriousness.

1. **DANGER:** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.
2. **WARNING:** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
3. **CAUTION:** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. Also used to alert against unsafe practices or property-damage-only accidents.
4. **NOTE:** indicates general safe practices, machine use instructions and information, property damage only hazards, temporary hazards, precaution to avoid a hazard, results of not avoiding a hazard, or any combination of these messages.
5. **SYMBOL/PICTORIAL:** conveys a message without words.
6. **SAFETY ALERT SYMBOL:** indicates a potential personal injury hazard; an exclamation point inside a triangle.

## SAFETY SUMMARY (continued)

The following are examples and type of general alerts that could apply to this machine:

### DANGER

LIVE ELECTRICAL PARTS could cause DEATH or SHOCK.

LOCK OUT AND TAG OUT power before working on any electrical wiring.

Only QUALIFIED ELECTRICIANS are to do electrical work.

### WARNING

MOVING MACHINE PARTS can catch jewelry, clothing, hair, and fingers causing severe injury. Prevent contact with moving belt.

LOCK OUT AND TAG OUT power before trying any repairs or un-jamming on this machine.

ONLY AUTHORIZED PERSONS are allowed to operate machines.

### CAUTION

Keep GUARDS in place.

Do Not Operate IF GUARD IS MISSING

DO NOT MODIFY or use makeshift parts on the machine.

### NOTE

CHANGES made to machine could cause DEATH, INJURY, or DAMAGE.

Do not modify machine with written approval from IMS COMPANY.





# PRODUCT DESCRIPTION

The IMS *Hurricane* Mixer is a blender for plastic material. In this mixer, the operator loads the resin, colorants and additives into the unit's cone shaped bin. A motor driven auger pulls material from the bottom of the pile, carries it upward through a tube and slings it onto the top of the pile. This process evenly mixes the material.

An adjustable paddle at the top of the auger can be set to boost the slinging motion for best mixing or to deflect the slung material downward to keep from forming too much dust.

The mixer is portable and self-contained, with no need for a safety cage.

# SPECIFICATIONS

## MODEL 500

## MODEL 850

Motor: .....	1½ HP, TEFC, 1750 RPM .....	1½ HP, TEFC, 1750 RPM
.....	Voltage: 115/60/1 .....	Voltage: 115/60/1
.....	Amps (full load): 20.0.....	Amps (full load): 20.0
Reducer: .....	Parallel shaft, two-stage,.....	Parallel shaft, two-stage,
.....	spur gear type, 7.63:1 ratio .....	spur gear type, 7.63:1 ratio
Mixing Speed:.....	226 RPM .....	226 RPM
Dimensions: .....	44" wide x 44" deep x 61" high .....	44" wide x 44" deep x 69" high
Loading Height: .....	43" .....	51"
Weight:.....	420 lbs.....	450 lbs
Capacity: .....	11.1 cubic feet.....	19.3 cubic feet
.....	(388 lbs. at 35 lbs./cu. ft.) .....	(675 lbs. at 35 lbs./cu. ft.)



# INSTALLATION

## 1. Inspection and Uncrating

- A. Inspect unit for shipping damage and report any to carrier. Uncrate mixer when you are sure there is no damage.

## 2. Placement

- A. There are three options for locating mixer:

- 1). *On a mixer discharge frame.*
  - a). This is a 52"-high frame available from stock as IMS #107859 (MMXX-MDF52). There is room underneath mixer for a gaylord. Unload mixer directly into gaylord simply by opening slide gate.
  - b). A loading platform IMS #107889 (MMXX-LP920) with a ladder and railing is available to give operators a safe platform to load, inspect and service mixer when mixer is mounted on discharge frame.
  - c). A material storage platform IMS#107913 (MMXX-MSP910) is also available. It offers advantages of loading platform, plus room to store bags of material.
- 2). *On a 10" high mounting frame with a vacuum air take-off unloading kit.*
  - a). Vacuum air take-off kit (including frame) is available to order from IMS Company.
- 3). *On top of a mobile storage hopper.*
  - a). Mobile storage hoppers are available as IMS #107934 (MMXX-MSH1). Mixer legs fit into stacking pads on hopper. Unload mixer directly into hopper by opening slide gate.
  - b). Using a forklift, these hoppers can be stacked on each other, or set on a mixer discharge frame or air take-off mounting frame.



## INSTALLATION (continued)

- B. Use forklift to move mixer into place. Mixer can be moved easily with a forklift. Select location for frame or hopper where there is room for forklift to move mixer, and where mixer can be reached easily for loading and cleaning.
  - C. Make sure that mixer can be loaded and unloaded without exposing personnel to danger from any machines that are in area.
  - D. Mixer has a standard 3-prong, 115 volt grounded plug. There must be a 115/60/1 grounded outlet connected to a fused disconnect near location. 15 amp fusing is best.
  - E. Avoid long wiring runs and long extension cords; motor will draw up to 10.8 amps. Use a 12 gauge wire for lengths up to 25 feet. Use larger wire (smaller gauge number) for longer lengths.
3. Electrical Connection.
- A. Plug mixer into grounded, 115 V, 60 Hz, single-phase outlet connected to a disconnect fused at 15 amps.



# OPERATION

For parts identification, refer to illustrated parts list in back of manual.

1. Mixer must have been installed according to instructions in this manual.
2. Open one lid. Use rubber latch to hold lid up. To do this: pull rubber latch until ball-shaped portion fits into socket of lid; then release latch.
3. Check scatter blade adjustment. It has two positions.
  - A. For best mixing, set blade to line up with auger flights to help sling material.
  - B. To keep from making too much dust, set blade to deflect downward the material being slung off of auger flights.
4. To change scatter blade position:
  - A. Shut off and unplug loader.
  - B. Scatter blade is on vertical shaft. It has two slots that fit over two pins on shaft.
  - C. Raise blade off of pins. You may need to wiggle blade to get it to move.
  - D. Rotate blade 180°; then lower it over pins.
  - E. Close lid.
5. Plug loader in.
6. Check skirt position.
  - A. For very dense materials, skirt should be low to keep material from packing in too tightly in bottom of bin.

## WARNING

AUGER BLADE could cause SEVERE CUTS.

LOCK OUT and TAG OUT POWER before doing any service.

Shut off mixer and let auger stop before opening lid.

## NOTE

Do not use interlock switch to turn mixer on and off.

It is meant to be a **backup safety device** to keep motor from running while a lid is open.

Inspect switch often. See instructions on Page 10.





## OPERATION (continued)

- B. For low-density materials or for large-pellet regrind, the skirt should be fairly high to improve flow.
7. Make sure slide gate is closed. Secure with locking pin.
8. Load mixer. Stop loading a few inches below scatter blade for maximum load.
  - A. Ideal load size for best mixing will vary with material type, pellet size and type of additive.
9. Set timer for mixing time required.
  - A. Ideal mixing time will also vary with the materials and additives used.
10. Turn manual starter ON.
11. To shut down, turn manual starter OFF.
12. To unload:
  - A. Mixer must be OFF. Unplug from outlet.
  - B. Remove locking pin.
  - C. Move slide gate until hole in gate is under hopper. You may need to tap on gate with a soft mallet to get it to move.
  - D. When finished unloading, return slide gate to closed position. Insert locking pin to prevent accidental unloading.

### NOTE

To save mixing time, layer the materials as you load.

Experiment with different load sizes and mixing times to determine the most efficient for the material you are mixing.

Too-large loads will take too long to mix or may not mix well enough. Too-small loads are not efficient.



## REMOVING AUGER

1. Turn manual starter OFF. Unplug mixer from outlet.
2. Unload mixer. Open lids and hold open with rubber latches.
3. Release retaining wire from quick-release pin on auger shaft. Lift up on auger to relieve weight on pin. Remove pin.
4. Lower auger. Remove scatter blade.
5. Lift one side of tube assembly off of tube support and swing out of way.
6. Lift other side and ease tube assembly down. Tilt assembly out of way.
7. Slowly pull tube assembly off of auger.
8. Remove auger.
9. Remove tube assembly, turning it to get it past lid.

### **WARNING**

AUGER BLADE could cause  
SEVERE CUTS.

LOCK OUT and TAG OUT POWER  
before doing any service.

Shut off mixer and let auger stop before  
opening covers.

## INSTALLING AUGER

1. Stand auger in mixer bin.
2. Slide tube assembly over auger, turning tube to get it past lid.
3. Install scatter blade in position where it is going to be needed next.
4. Hold auger up, aligning pinholes. Install pin.
5. Install tube assembly.
6. Slide retaining wire over pin.



# MAINTENANCE

## 1. Gearbox Lube.

- A. Check monthly.
- B. To check: remove fill plug (90° opposite vent plug) from side of gearbox.  
Oil should come to bottom of fill hole. If needed, add 80W90 lube.

## 2. Interlock switch (Proximity).

- A. Check often.
- B. With power switch OFF, open either lid. Turn power switch ON. Mixer should not start.
- C. Turn power switch OFF. Close lid.
- D. Open the other lid. Turn power switch ON.  
Mixer should not start.
- E. Close both lids. Turn power ON. Mixer should start.
- F. While mixer is running, open one lid a couple inches. Mixer should stop.  
Close lid. Mixer should start again.
- G. Open the other lid; mixer should stop.
- H. If interlock does not stop mixer when it should, shut off mixer, unplug it,  
and tag it "Out of Service". Immediately call the IMS Customer  
Service Department at (440) 543-1615.

### NOTE

Except when testing it, do not use interlock switch to turn mixer on and off.

It is meant to be a backup safety device to keep motor from running while a lid is open.

## 3. General Inspection.

- A. Inspect monthly.
- B. Inspect mixer for signs of unusual wear.
- C. Check nuts and bolts for tightness.



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# TROUBLESHOOTING

1. If motor won't run:
  - A. Is mixer plugged in?
  - B. Is there power to outlet where mixer is plugged in?
  - C. Are both lids closed? There is an interlock switch for lids.
  - D. Is manual starter ON?
  - E. Is timer set?
  - F. Is motor starter tripped? Press down on manual starter to reset.
  - G. Has motor overheated? Find reason for overheating: too jammed auger, too stiff material, low oil in gearbox.
  - H. Overload protector will automatically reset when cool.
  - I. Are there any loose connections or frayed wires?
  - J. Check function of electrical components.



# REPLACEMENT PARTS

## (60° Hoppers After 9/7/99)

<u>DESCRIPTION</u>	<u>OLD IMS #</u>	<u>NEW IMS #</u>
Proximity.....	111807.....	127472
Proximity Switch Cable .....	NONE .....	127473
Manual Starter..... (includes overload)	MMZZ-003399 .....	107894
Motor .....	NONE .....	INQUIRE
1½ HP, TEFC,115/60/1		
Timer (60 minute).....	MMZZ-002163 .....	107850
Control Relay .....	MMZZ-011464 .....	107910
Auger (Model 500 only) .....	MMZZ-009804 .....	107959
Auger (Model 850 only) .....	MMZZ-009818 .....	107940
Quick Release Pin.....	MMZZ-010154 .....	107884
Auger Wear Block .....	MMZZ-009982 .....	108547
(set of 3)		
Gear Reducer .....	MMZZ-010139 .....	107899

### OPTIONAL ACCESSORIES

High-Efficiency Slinger.....	Inquire	(not for use with dusty materials)
Dust Separator.....	MMZZ-00882001 .....	111885

REVISIONS					
ECN #	ZONE	REV	DESCRIPTION	DATE	APPROVED
00123-001	ALL	A	UPDATE A-BLOCK AND DWG NO.	05/02/00	GDH
01309-001	ALL	B	CHANGE AUGER PART NUMBER	11/05/01	GDH

MIXERS BUILT BEFORE  
9/7/99  
WITH 55 DEGREE CONE  
ANGLE

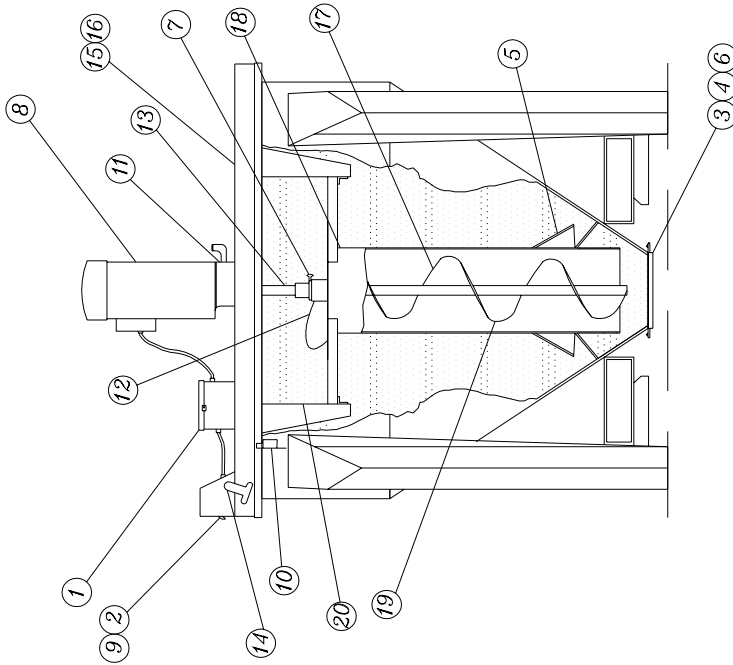
21	INTERLOCK SWITCH (NOT SHOWN)	INQUIRE	MMZZ-SIS
20	ADJUSTABLE TUBE SUPPORT, PLATED	107866	MMZZ-009782
19	AUGER TUBE, PLATED	INQUIRE	MMZZ-009804
18	AUGER TUBE, PLATED	INQUIRE	MMZZ-009881
17	AUGER WEAR BLOCK	106547	MMZZ-009982
16	COVER, L.H. PAINTED	107952	MMZZ-010011
15	COVER, R.H. PAINTED	107860	MMZZ-009999
14	COVER CLAMP	107869	MMZZ-002040
13	DRIVE SHAFT	107935	MMZZ-010088
12	FLIPPER PADDLE ASSEMBLY, PLATED	107914	MMZZ-010126
11	GEAR REDUCER	107899	MMZZ-010139
10	LIMIT SWITCH	107907	MMZZ-003390
9	MANUAL STARTER	107894	MMZZ-003399
8	MOTOR-3/4HP, TERC. 115V, 1ph, 60HZ	107924	MMZZ-003360
7	QUICK RELEASE PIN (PIN BALL CLIP: 5/16 X 2-3/4)	107884	MMZZ-010154
6	RETAINER ANGLE, PLATED	107870	MMZZ-010158
5	SKIRT ASSEMBLY	107854	MMZZ-010179
4	SLIDE GATE, PLATED	107946	MMZZ-010203
3	SLIDE GATE, PLATED	107928	MMZZ-010215
2	TIMER, 60 MINUTE	107850	MMZZ-002163
1	CONTROL RELAY	107910	MMZZ-011464
ITEM	DESCRIPTION		STOCK NO. OLD REF. NO.

<p><b>THIS DRAWING IS THE PROPERTY OF IMS COMPANY AND SHALL NOT BE REPRODUCED, NOR THE PARTS MANUFACTURED WITHOUT WRITTEN PERMISSION FROM IMS COMPANY.</b></p>	
<p>TOLERANCES UNLESS OTHERWISE SPECIFIED                  .XX DECIMALS ±.005                  .XX DECIMALS ±.010                  FRACTIONS ±1/64                  ANGLES ±1/2</p>	<p>IMS COMPANY                  10373 STAFFORD RD.                  CHAGRIN FALLS, OHIO 44023</p>
<p>PART NO. MMH1-HM500</p>	<p>CUSTOMER N/A</p>
<p>SIZE A</p>	<p>DWG NO. MMH1-HM500</p>
<p>DRAWN BY GDH</p>	<p>DRAWN DATE 05/02/00</p>
<p>CHECKED BY DDB</p>	<p>SCALE NONE</p>
<p>REV B</p>	<p>REV B</p>

REVISIONS					
ECN #	ZONE	REV	DESCRIPTION	DATE	APPROVED
00123-001	ALL	A	UPDATE A-BLOCK AND DWG NO.	05/02/00	GDH

MIXERS BUILT BEFORE  
9/7/99 WITH 55  
DEGREE CONE ANGLE



ITEM	DESCRIPTION	STOCK NO.	OLD REF. NO.
21	INTERLOCK SWITCH (NOT SHOWN)	MANZZ-SIS	
20	ADJUSTABLE TUBE SUPPORT. PLATED	107866	MANZZ-009782
19	AUCER PLATED	107940	MANZZ-009818
18	AUCER TUBE. PLATED	107919	MANZZ-009896
17	AUCER WEAR BLOCK	108547	MANZZ-009982
16	COVER, L.H. PAINTED	107952	MANZZ-010011
15	COVER, R.H. PAINTED	107860	MANZZ-009959
14	COVER CLAMP	107869	MANZZ-002040
13	DRIVE SHAFT	107935	MANZZ-010088
12	FLIPPER PADDLE ASSEMBLY. PLATED	107914	MANZZ-010126
11	GEAR REDUCER	107899	MANZZ-010139
10	LIMIT SWITCH	107907	MANZZ-003390
9	MANUAL STARTER	107894	MANZZ-003399
8	MOTOR-3/4HP. TERC. 115V/1ph/60HZ	107924	MANZZ-003360
7	QUICK RELEASE PIN (PIN BALL CLIP: 5/16 X 2-3/4)	107884	MANZZ-010154
6	RETAINER ANGLE. PLATED	107870	MANZZ-010158
5	SKIRT ASSEMBLY	107854	MANZZ-010179
4	SLIDE (TYEAR)	107946	MANZZ-010203
3	SLIDE GATE. PLATED	107928	MANZZ-010215
2	TIMER, 60 MINUTE	107850	MANZZ-002163
1	CONTROL RELAY	107910	MANZZ-011464

	<b>TOLERANCES UNLESS OTHERWISE SPECIFIED</b> .XXX DECIMALS ±.005 .XX DECIMALS ±.010 FRACTIONS ±1/64 ANGLES ±1/2	PART NO. MMH1-HM850 CUSTOMER N/A	DRAWN BY GDH DRAWN DATE 05/02/00 CHECKED BY DDB SCALE NONE	TITLE MODEL 850 HURRICANE MIXER (55deg)
	THIS DRAWING IS THE PROPERTY OF IMS COMPANY AND SHALL NOT BE REPRODUCED, NOR THE PARTS MANUFACTURED WITHOUT WRITTEN PERMISSION FROM IMS COMPANY.	STOCK NO. OLD REF. NO.	REV A	REV A

REVISIONS					
ECN #	ZONE	REV	DESCRIPTION	DATE	APPROVED
00123-001	ALL	A	UPDATE A-BLOCK AND DWG NO.	05/02/00	GDH
01309-001	ALL	B	CHANGE AUGER PART NUMBER	11/05/01	GDH
	ALL	C	UPDATE STOCK NUMBERS	03/28/02	GDH

MIXERS BUILT AFTER  
9/7/99  
WITH 60 DEGREE CONE  
ANGLE

ITEM	DESCRIPTION	INQUIRE	MMZZ-SIS
20	INTERLOCK SWITCH (NOT SHOWN)	107866	MMZZ-009782
19	ADJUSTABLE TUBE SUPPORT, PLATED	INQUIRE	MMZZ-009804
18	AUGER	INQUIRE	MMZZ-009881
17	AUGER WEAR BLOCK	106547	MMZZ-009982
16	COVER, L.H. PAINTED	INQUIRE	MMZZ-010011
15	COVER, R.H. PAINTED	INQUIRE	MMZZ-009999
14	COVER CLAMP	107869	MMZZ-002040
13	DRIVE SHAFT	125829	MMZZ-010088
12	FLIPPER PADDLE ASSEMBLY, PLATED	107914	MMZZ-010126
11	GEAR REDUCER	107899	MMZZ-010139
10	LIMIT SWITCH	107907	MMZZ-003390
9	MANUAL STARTER	107894	MMZZ-003399
8	MOTOR-3/4HP, TERC. 115V, 1ph, 60HZ	107924	MMZZ-003360
7	QUICK RELEASE PIN (PIN BALL CLIP, 5/16 X 2-3/4)	107884	MMZZ-010154
6	RETAINER ANGLE, PLATED	107870	MMZZ-010158
5	SKIRT ASSEMBLY	INQUIRE	MMZZ-010179
4	SLIDE (TYEAR)	INQUIRE	MMZZ-010203
3	SLIDE GATE, PLATED	INQUIRE	MMZZ-010215
2	TIMER, 60 MINUTE	107850	MMZZ-002163
1	CONTROL RELAY	107910	MMZZ-011464
	STOCK NO. OLD REF. NO.		

<p>TOLERANCES UNLESS OTHERWISE SPECIFIED</p> <p>.XXX DECIMALS ±.005 .XX DECIMALS ±.010 FRACTIONS ±1/64 ANGLES ±1/2</p>	<p>PART NO. 107927</p> <p>CUSTOMER N/A</p>	<p>DRAWN BY GDH</p> <p>DRAWN DATE 05/02/00</p> <p>CHECKED BY DDB</p> <p>SCALE NONE</p>	<p>REV C</p>
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<p>MODEL 850 HURRICANE MIXER (60deg)</p>	
<p>STOCK NO. OLD REF. NO.</p>	





REVISIONS			
ECN #	ZONE	REV	DESCRIPTION
00123-001	ALL	A	A-BLOCK, DWG NO., MOTOR SIZE
	ALL	B	UPDATED STOCK NUMBERS
			DATE
			APPROVED
			GDH
			05/02/00
			03/28/02
			GDH

MIXERS BUILT AFTER  
9/7/99 WITH 60 DEGREE  
CONE ANGLE

ITEM	DESCRIPTION	INQUIRE	MAZZ-SIS
21	INTERLOCK SWITCH (NOT SHOWN)	107866	MAZZ-009782
20	ADJUSTABLE TUBE SUPPORT	107866	MAZZ-009782
19	AUCER	107819	MAZZ-009818
18	AUCER TUBE	107819	MAZZ-009896
17	AUCER WEAR BLOCK	108547	MAZZ-009882
16	COVER, L.H. PAINTED	107819	MAZZ-010011
15	COVER, R.H. PAINTED	107819	MAZZ-009999
14	COVER CLAMP	107869	MAZZ-002040
13	DRIVE SHAFT	125829	MAZZ-010088
12	FLIPPER PADDLE ASSEMBLY	107914	MAZZ-010126
11	GEAR REDUCER	107907	MAZZ-010139
10	LIMIT SWITCH	107894	MAZZ-003390
9	MANUAL STARTER	107894	MAZZ-003399
8	MOTOR 1-1/2HP, TERC. 115V/1ph/60HZ	107884	NONE
7	QUICK RELEASE PIN (PIN BALL CLIP: 5/16 X 2-3/4)	107884	MAZZ-010154
6	RETAINER ANGLE, PLATED	107870	MAZZ-010158
5	SKIRT ASSEMBLY	107870	MAZZ-010179
4	SLIDE (TYEAR)	107870	MAZZ-010203
3	SLIDE CATE, PLATED	107870	MAZZ-010215
2	TIMER, 60 MINUTE	107850	MAZZ-002163
1	CONTROL RELAY	107910	MAZZ-011464
	STOCK NO. OLD REF. NO.		

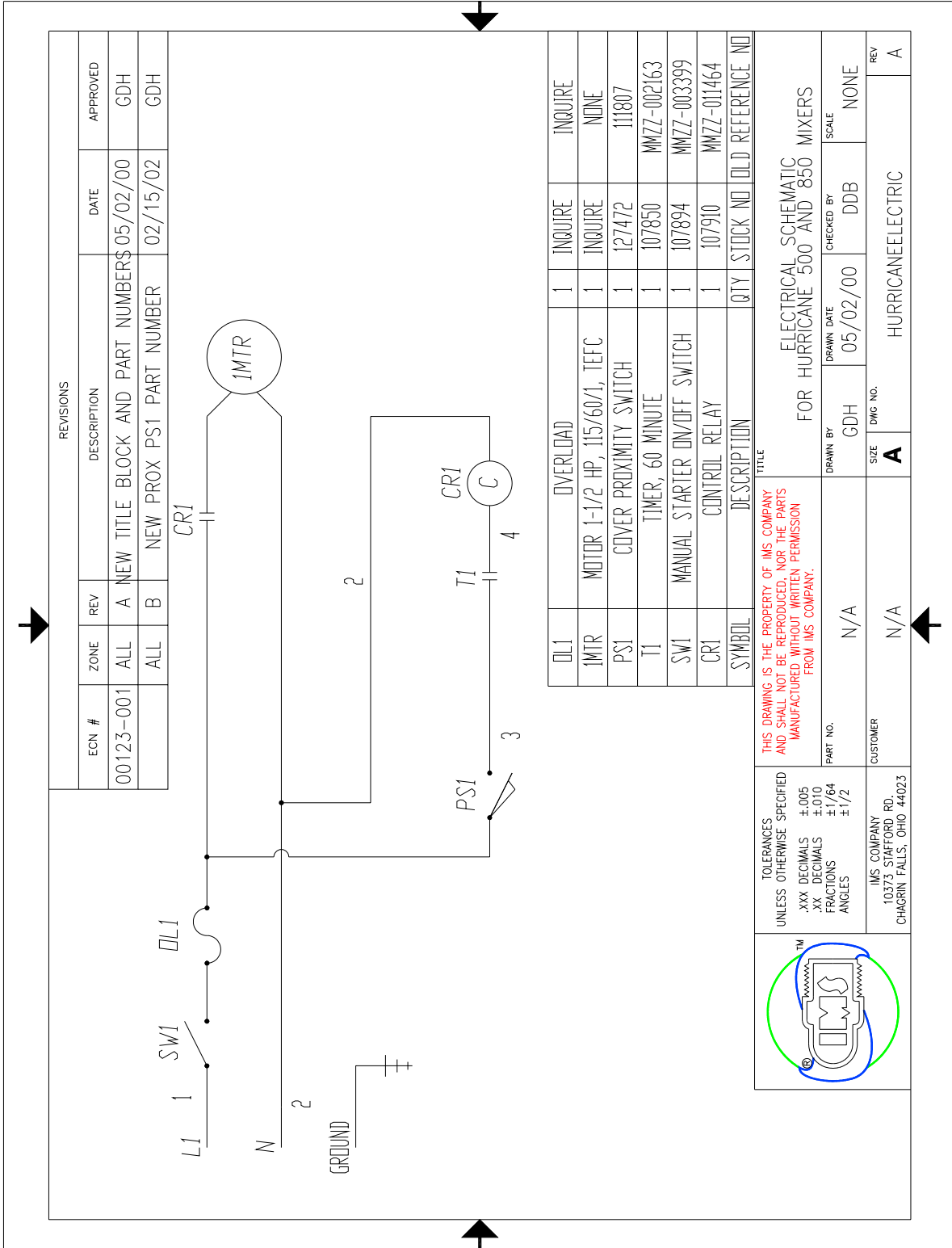
  

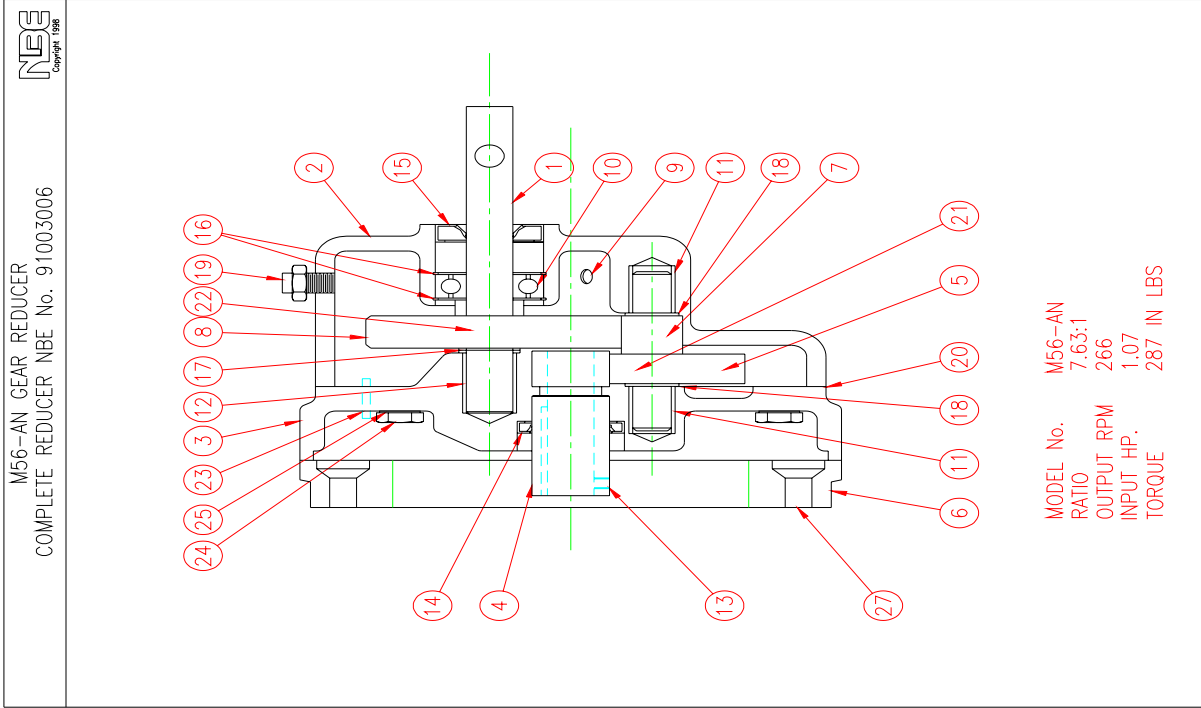
<p>TOLERANCES UNLESS OTHERWISE SPECIFIED</p> <p>.XXX DECIMALS ±.005 .XX DECIMALS ±.010 FRACTIONS ±1/64 ANGLES ±1/2</p>	<p>PART NO. 107896</p> <p>CUSTOMER N/A</p>	<p>DRAWN BY GDH</p> <p>CHECKED BY DDB</p> <p>DRAWN DATE 05/02/00</p> <p>SCALE NONE</p>	<p>REV B</p> <p>DWG NO. 107896</p>
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	<p style="text-align: center;">TITLE</p> <p style="text-align: center;">MODEL 850 HURRICANE MIXER (60deg)</p>
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ITEM	Description	Part No.	No. Req.
1	Shaft, Output	M16-1-N	1
2	Gear, Housing	M16-5	1
3	Backplate	M16-6	1
4	Motor Shaft Sleeve and Pinion	1614-6-S	1
5	Gear, 1st Stage	1638-5	1
6	Adapter, 56C Motor	M16-7	1
7	Pinion and Shaft, 2nd Stage	1616-5	1
8	Gear Output	1645-6	1
9	1/4 NPT Pipe Plug		1
10	Ball Bearing, Output Shaft	No. 202-10	1
11	Journal Brg, 2nd Stage Pinion Shaft	M16-9	2
12	Journal Brg, Output Shaft	M16-10	1
13	1/4-28 x 1/4 Nylock Set Screw		1
14	Oil Seal, Input Sleeve	No. 10515	1
15	Oil Seal, Output Shaft	No. 6372	1
16	Retaining Ring	No. 3000-137	2
17	Spacer, 1.025 OD x 5-1/28 ID x .015	AS REQD.	
18	Spacer, .900 OD x 9/16 ID x .015	AS REQD.	
19	Vent Plug		1
20	Gasket	M16-170	1
21	Woodruff Key (1/2 dia. x 1/8)	No. 3	1
22	Woodruff Key (5/8 dia. x 3/16)	No. 61	1
23	Dowel Pin, 1/8 dia. x 9/16		2
24	5/16 x 7/8 Hex Hd Cap Screw		5
25	5/16 Lock washer		5
26	3/8-16 x 1 Flat Hd Adapter/Backplate		4
27	5/16-18 x 1-1/4 Hex Hd Cap Screw		2
28	5/16 Flat Washer		2
29	3/16 x 3/16 x 3/4 Motor shaft key		1
30			

PART NUMBERS ON THIS CHART ARE ORIGINAL MANUFACTURER'S NOT NBE NUMBERS

NOTE: When ordering replacement parts include:  
 -Model Number  
 -Description and Number as shown on parts list  
 -Quantity Required



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# MAINTENANCE RECORD AND NOTES