



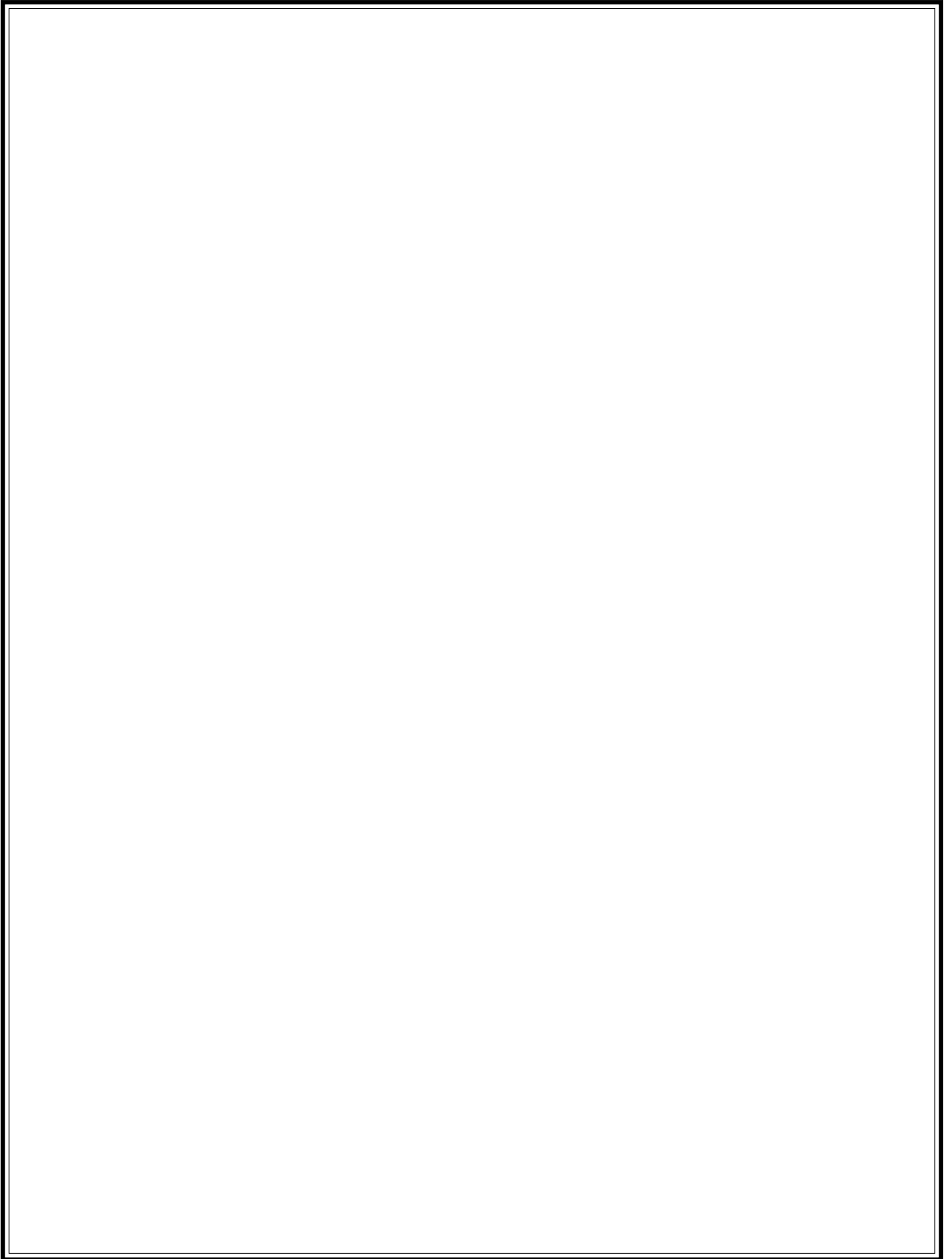
# SERVICE/PARTS MANUAL

## MODELS: 465PM



### CHAMPION® PLASTER MORTAR MIXER

A 100% employee-owned American manufacturer



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465PM

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# User Information

# Foreword/Service Information

These instructions include:

- Safety regulations
- Operating instructions
- Maintenance instructions

**These instructions have been prepared for operation on the construction site and for the maintenance engineer.**

These instructions are intended to simplify operation of the machine and to avoid malfunctions through improper operation.

Observing the maintenance instructions will increase the reliability and service life of the machine when used on the construction site and reduce repair costs and down-times.

**Always keep these instructions at the place of use of the machine.**

**Only operate the machine as instructed and follow these instructions.**

**Observe the safety regulations as well as the guidelines of the civil engineering trade association. Observe safety rules for the operation of equipment and the pertinent regulations for the prevention of accidents.**

Stone Construction Equipment, Inc. is not liable for the function of the machine when used in an improper manner and for other than the intended purpose.

Operating errors, improper maintenance and the use of incorrect operating materials are not covered by the warranty.

The above information does not extend the warranty and liability conditions of business of Stone Construction Equipment, Inc.

1. Machine Type: \_\_\_\_\_  
Machine S/N: \_\_\_\_\_
2. Engine Type: \_\_\_\_\_  
Engine S/N: \_\_\_\_\_
3. VIN: \_\_\_\_\_
4. Purchase Date: \_\_\_\_\_
5. Dealer/Distributor Information:  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone #: \_\_\_\_\_  
Fax #: \_\_\_\_\_
6. Battery  
Manufacturer: \_\_\_\_\_  
Battery Type: \_\_\_\_\_  
Battery S/N: \_\_\_\_\_

**Location of above information:**

1. Information on S/N tag.
2. Information on engine tag.
3. Information on S/N tag - if applicable.
4. Date you purchased machine.
5. Dealer machine was purchased from.
6. Information on battery and battery warranty card.

Stone Construction Equipment, Inc.  
P.O. Box 150, Honeoye, New York 14471  
Phone: (800) 888-9926  
Fax: (716) 229-2363

# Limited Warranty

The Manufacturer warrants that products manufactured shall be free from defects in material and workmanship that develop under normal use for a period of 90 days for concrete vibrators and electric pumps, one year for Rhino®, Bulldog®, WolfPac Rollers™, trowels, Stompers®, saws, forward plates, engine powered pumps, Lift Jockey™, Mortar Lift™ and 6 months for all other products from the date of shipment. The foregoing shall be the exclusive remedy of the buyer and the exclusive liability of the Manufacturer. Our warranty excludes normal replaceable wear items, i.e. gaskets, wear plates, seals, O-rings, V-belts, drive chains, clutches, etc. Any equipment, part or product which is furnished by the Manufacturer but manufactured by another, bears only the warranty given by such other manufacturer. (The Manufacturer extends the warranty period to "Lifetime" for the drum bearings and seals for the mortar equipments, and agrees to furnish, free of charge, the bearings and seals only upon receipt of the defective parts. The warranty is two years for eccentric bearings on the forward plate compactors, mortar and plaster equipment drums, trowel gearboxes and five years on the Bulldog trench roller eccentric bearings.) A Warranty Evaluation Form must accompany all defective parts. Warranty is voided by product abuse, alterations, and use of equipment in applications for which it was not intended, use of non-manufacturer parts, or failure to follow documented service instructions. The foregoing warranty is exclusive of all other warranties whether written or oral, expressed or implied. No warranty of merchantability or fitness for a particular purpose shall apply. The agents, dealer and employees of Manufacturer are not authorized to make modification to this warranty, or additional warranties binding on Manufacturer. Therefore, additional statements, whether oral or written, do not constitute warranty and should not be relied upon.

The Manufacturer's sole responsibility for any breach of the foregoing provision of this contract, with respect to any product or part not conforming to the Warranty or the description herein contained, is at its option (a) to repair, replace or refund such product or parts upon the prepaid return thereof to location designated specifically by the Manufacturer. Product returns not shipped prepaid or on an economical transportation basis will be refused (b) as an alternative to the foregoing modes of settlement - the Manufacturer's dealer to repair defective units with reimbursement for expenses, except labor, and be reviewed with the Manufacturer prior to repair. A Warranty Evaluation Form must accompany all warranty claims.

Except as set forth hereinabove and without limitation of the above, there are no warranties or other affirmations which extends beyond the description of the products and the fact hereof, or as to operational efficiency, product reliability or maintainability or compatibility with products furnished by others. In no event whether as a result of breach of contract or warranty or alleged negligence, shall the Manufacturer be liable for special or consequential damages including but not limited to: Loss of profits or revenues, loss of use of the product or any associated product, cost of capital, cost of substitute products, facilities or services or claims of customers.

No claim will be allowed for products lost or damaged in transit. Such claims should be filed with the carrier within fifteen days.

Effective September 2001.



Stone Construction Equipment, Inc.  
32 East Main Street, P. O. Box 150  
Honeoye, NY 14471-0150

Phone: 1-800-888-9926 • 1-716-229-5141  
Fax: 1-716-229-2363  
www.stone-equip.com • e-mail: [sceny@mcimail.com](mailto:sceny@mcimail.com)

# Technical Data

## 465PM Specifications

<b>Operating Wt.</b>	276 lbs. / 125 kg
<b>Batch Capacity (Bags)</b>	3/4 - 1 bags
<b>Batch Capacity (cu. ft.)</b>	4 cu. ft. / .11 cu. m.
<b>Total Volume</b>	4.3 cu. ft. / .12 cu. m.
<b>L x W x H</b>	58 x 29 x 37 in. / 147 x 74 x 94 cm
<b>Engine</b>	5.5 hp / 4.1 kW B&S 5 hp / 4.1 kW Honda 6 hp / 4.5 kW Robin 3/4 hp / .56 kW Electric 1 hp/.75 kW Electric
<b>Drive and Clutch</b>	V-belt to gears; hand clutch at side
<b>Standard Wheels, bearings &amp; axle</b>	3.00 x 12 ( 12 in diameter semi-pneumatic tires) Sleeve Bearings 3/4 in dia Fixed Axle (1.9 cm)
<b>Mortar Mixer Features: Bag Splitter, Safety Guard, Patented Guard Lifter, Safety Chain</b>	

# Technical Data

## Imperial Torque Chart

### SAE GRADE 5 Coarse Thread

SIZE	PLATED	
1/4 – 20 (.250)	6 ft. lbs.	8 Nm
5/16 – 18 (.3125)	13 ft. lbs.	18 Nm
3/8 – 16 (.375)	23 ft. lbs.	31 Nm
7/16 – 14 (.4375)	37 ft. lbs.	50 Nm
1/2 – 13 (.500)	57 ft. lbs.	77 Nm
9/16 – 12 (.5625)	82 ft. lbs.	111 Nm
5/8 – 11 (.625)	112 ft. lbs.	152 Nm
3/4 – 10 (.750)	200 ft. lbs.	271 Nm
7/8 – 9 (.875)	322 ft. lbs.	436.5 Nm
1 – 8 (1.000)	483 ft. lbs.	655 Nm

### SAE GRADE 8 Coarse Thread

SIZE	PLATED	
1/4 – 20 (.250)	9 ft. lbs.	12 Nm
5/16 – 18 (.3125)	18 ft. lbs.	24 Nm
3/8 – 16 (.375)	33 ft. lbs.	45 Nm
7/16 – 14 (.4375)	52 ft. lbs.	70 Nm
1/2 – 13 (.500)	80 ft. lbs.	108 Nm
9/16 – 12 (.5625)	115 ft. lbs.	156 Nm
5/8 – 11 (.625)	159 ft. lbs.	215 Nm
3/4 – 10 (.750)	282 ft. lbs.	382 Nm
7/8 – 9 (.875)	454 ft. lbs.	615 Nm
1 – 8 (1.000)	682 ft. lbs.	925 Nm

### SAE GRADE 5 Fine Thread

SIZE	PLATED	
1/4 – 28 (.250)	7 ft. lbs.	10Nm
5/16 – 24 (.3125)	14 ft. lbs.	19 Nm
3/8 – 24 (.375)	26 ft. lbs.	35 Nm
7/16 – 20 (.4375)	41 ft. lbs.	56 Nm
1/2 – 20 (.500)	64 ft. lbs.	87 Nm
9/16 – 18 (.5625)	91 ft. lbs.	123 Nm
5/8 – 18 (.625)	128 ft. lbs.	173 Nm
3/4 – 16 (.750)	223 ft. lbs.	302 Nm
7/8 – 14 (.875)	355 ft. lbs.	481 Nm
1 – 12 (1.000)	529 ft. lbs.	717 Nm
1 – 14 (1.000)	541 ft. lbs.	733 Nm

### SAE GRADE 8 Fine Thread

SIZE	PLATED	
1/4 – 28 (.250)	10 ft. lbs.	14Nm
5/16 – 24 (.3125)	20 ft. lbs.	27 Nm
3/8 – 24 (.375)	37 ft. lbs.	50 Nm
7/16 – 20 (.4375)	58 ft. lbs.	79 Nm
1/2 – 20 (.500)	90 ft. lbs.	122 Nm
9/16 – 18 (.5625)	129 ft. lbs.	175 Nm
5/8 – 18 (.625)	180 ft. lbs.	244 Nm
3/4 – 16 (.750)	315 ft. lbs.	427 Nm
7/8 – 9 (.875)	501 ft. lbs.	679 Nm
1 – 12 (1.000)	746 ft. lbs.	1011 Nm
1 – 14 (1.000)	764 ft. lbs.	1036 Nm

# Technical Data

## Metric Torque Chart

### Property Class 8.8

ZINC-PLATED

SIZE	Coarse Thread		Fine Thread	
	Nm	ft. lbs.	Nm	ft. lbs.
M6	9.9	7	10	7
M8	24	18	25	18
M10	48	35	49	36
M12	83	61	88	65
M14	132	97	140	103
M16	200	148	210	155
M20	390	288	425	313
M24	675	498	720	531

### Property Class 10.9

ZINC-PLATED

SIZE	Coarse Thread		Fine Thread	
	Nm	ft. lbs.	Nm	ft. lbs.
M6	14	10	14	10
M8	34	25	35	26
M10	67	49	68	50
M12	117	86	125	92
M14	185	136	192	142
M16	285	210	295	218
M20	550	406	600	443
M24	950	701	1000	738

### Property Class 12.9

ZINC-PLATED

SIZE	Coarse Thread		Fine Thread	
	Nm	ft. lbs.	Nm	ft. lbs.
M6	16.5	12	16.5	12
M8	40	30	42	31
M10	81	60	82	60
M12	140	103	150	111
M14	220	162	235	173
M16	340	251	350	258
M20	660	487	720	531
M24	1140	841	1200	885

Conversion Factor: 1 ft. lb. = 1.3558 Nm



# Health & Safety

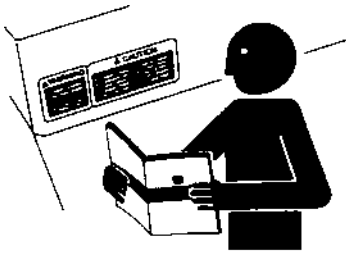
## Safety Precautions

Before using this equipment, study this entire manual to become familiar with its operation. Do not allow untrained or unauthorized personnel, especially children, to operate this equipment. Use only factory authorized parts for service.

When warning decals are destroyed or missing, contact the Manufacturer immediately at 1-800-888-9926 for replacement. For the safety of yourself and others, it is imperative that the following rules are observed. Failure to do so may result in serious injury or death.

### FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages and decals in this manual and on your machine safety signs. Keep decals in good condition. Replace missing or damaged decals. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs and decals are available through your dealer.



Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your dealer.

---

**▲ DANGER**

**▲ WARNING**

**▲ CAUTION**

### UNDERSTAND SIGNAL WORDS

A signal word – DANGER, WARNING, or CAUTION – is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.



This notation appears before warnings in the text. It means that the step which follows must be carried out to avoid the possibility of personal injury or death. These warnings are intended to help the technician avoid any potential hazards encountered in the normal service procedures. We strongly recommend that the reader takes advantage of the information provided to prevent personal injury or injury to others.

### USE COMMON SENSE WHEN HANDLING FUELS



- Transport and handle fuel only when contained in approved safety container.
- Do not smoke when refueling or during any other fuel handling operation.
- Do not refuel while the engine is running or while it is still hot.
- If fuel is spilled during refueling, wipe it off from the engine immediately and discard the rag in a safe place.
- Do not operate the equipment if fuel or oil leaks exist - repair immediately.
- Never operate this equipment in an explosive atmosphere.



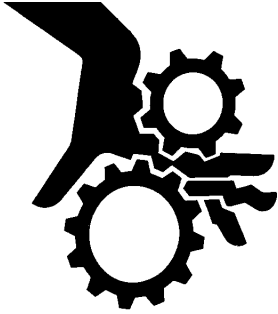
- Always use the proper size grounded extension cord, conforming to the National Electric Code and Local Ordinances.
- Inspect all extensions and electrical cords for cuts, frayed wire and broken connectors before use. Do not use cords if not in good condition.
- Do not route extension cords through standing water.
- Do not operate the mixer in standing water.
- When cleaning the mixer, never spray water over the motor.

## **WARNING**

- Never leave mixer unattended while running.
- Mix only Motor, Plaster, Terrazzo, Fireproofing and Grout.
- Do Not operate machine if rocks, stones, ice or frozen materials are in mix and/or in drum of mixer. The machine could jam, causing damage to the equipment or injury to the operator.

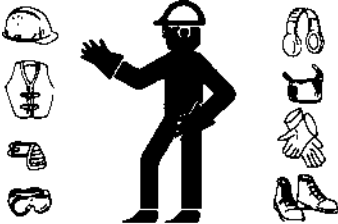
# Health & Safety

## Safety Precautions

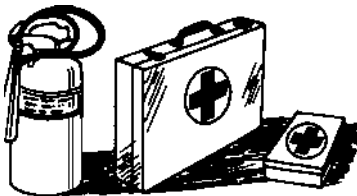


- Never perform any work on the mixer while it is running.
- Before working on the mixer, stop the engine and disconnect the spark plug wire(s) to prevent accidental starting. On electric models, disconnect the electric cord at the mixer.
- Keep cowl closed during the operation, close cowl immediately after starting.
- Keep hands, clothing and jewelry away from all moving parts.
- Keep all guards in place, including drum guards.
- Never stick your hands or any solid object into the drum while the mixer is in operation.

### WEAR PROTECTIVE CLOTHING



- Wear close fitting clothing and safety equipment appropriate to the job.
- Prolonged exposure to loud noise can cause impairment or loss of hearing.
- Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.
- Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



### PREPARE FOR EMERGENCIES

- Be prepared if a fire starts.
- Keep a first aid kit and fire extinguisher handy.
- Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

# Health & Safety

## Safety Precautions

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### Warning-Eye Protection

- Always wear splash goggles when operating mixer.
- 



### HOT SURFACES

- Avoid contact with hot exhaust systems and engines.
  - Allow all components in the engine compartment to cool before performing any service work.
- 



- Starting fluid (ether) is highly flammable, do not use or an explosion or fire may result.
- 



- Never operate unit in a poorly ventilated or enclosed area.
- Avoid prolonged breathing of exhaust gases.
- Engine exhaust fumes can cause sickness or death.

# Health & Safety

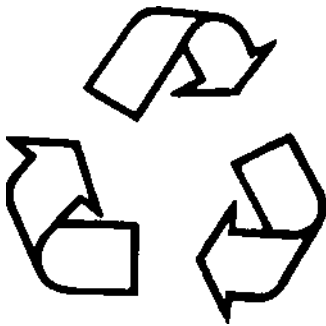
## Safety Precautions



### PRACTICE SAFE MAINTENANCE

- Understand service procedure before doing work. Keep area clean and dry.
- Never lubricate, service or adjust machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.
- Securely support any machine elements that must be raised for service work.
- Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.
- Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

### DISPOSE OF WASTE PROPERLY



- Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.
- Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.
- Do not pour waste onto the ground, down a drain, or into any water source.
- Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.
- Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center.

### SAFETY DECALS - FOR THE SAFETY OF YOURSELF AND OTHERS REPLACE ANY DAMAGED OR MISSING SAFETY DECALS.

- Warning Decal (SN-91) P/N 55010
- Warning Decal (SN-92) P/N 55011
- Safety Instruction Decal (SN-67A) P/N 55013
- Warning Decal (SN-8) P/N 55014
- Safety Chain Decal (Front Post, SN-66) P/N 55121

# Introduction

## Location and Use of Controls

Before operating this unit, it is important to familiarize yourself, and any other personnel who will be using it, with the location and proper use of the controls to insure safe and efficient operation.

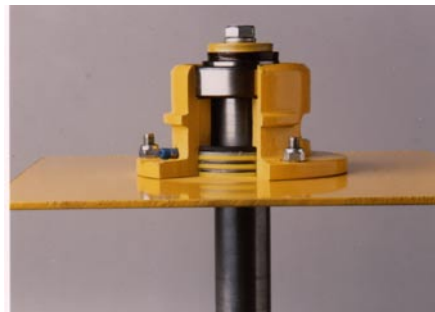
- A. Turn clutch lever to the left to turn paddles or to the right to stop.



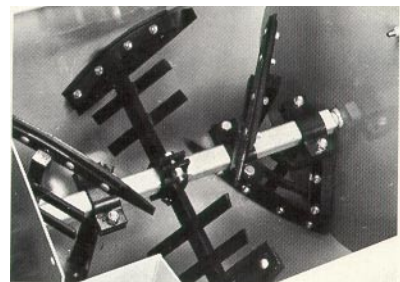
- B. To dump mix from drum, stop paddles and pull dump handle down. Always use caution when dumping mix.



- C. Always grease drum seals (at both ends) as recommended in the maintenance chart. The grease purges dirt, prolonging bearing life.



- D. Always keep drum and paddles clean. Never run machine with hardened mix or foreign objects in drum. Doing so damages paddles and/or engine.



# Maintenance

# Cleaning

## CLEANING

For consistent performance, long life and continued high quality mixing of plaster or mortar, thoroughly clean the mixer inside and out at the end of each day's operation. To prevent lumps of dried plaster from forming and contaminating future batches of plaster or mortar, do not allow build up materials to form on drum guards, around paddles or anywhere inside the drum.

Before cleaning, shut off the engine or motor and disconnect the spark plug wire or electric cord to prevent accidental starting. Spray the mixer with water before the mix dries to remove any accumulations. Dried mix should be scraped out as necessary.

**DO NOT** beat on the drum with a shovel, hammer or other device to break up accumulations of dried mix, as this will dent and damage the drum.

## **WARNING**

**NEVER POUR OR SPRAY WATER OVER THE ENGINE OR MOTOR.**

**NEVER PUT HANDS OR ANY OBJECT INTO THE DRUM WHILE THE ENGINE OR MOTOR IS RUNNING.**

**ALWAYS DISCONNECT THE SPARK PLUG WIRE OR ELECTRIC CORD WHEN CLEANING INSIDE DRUM.**

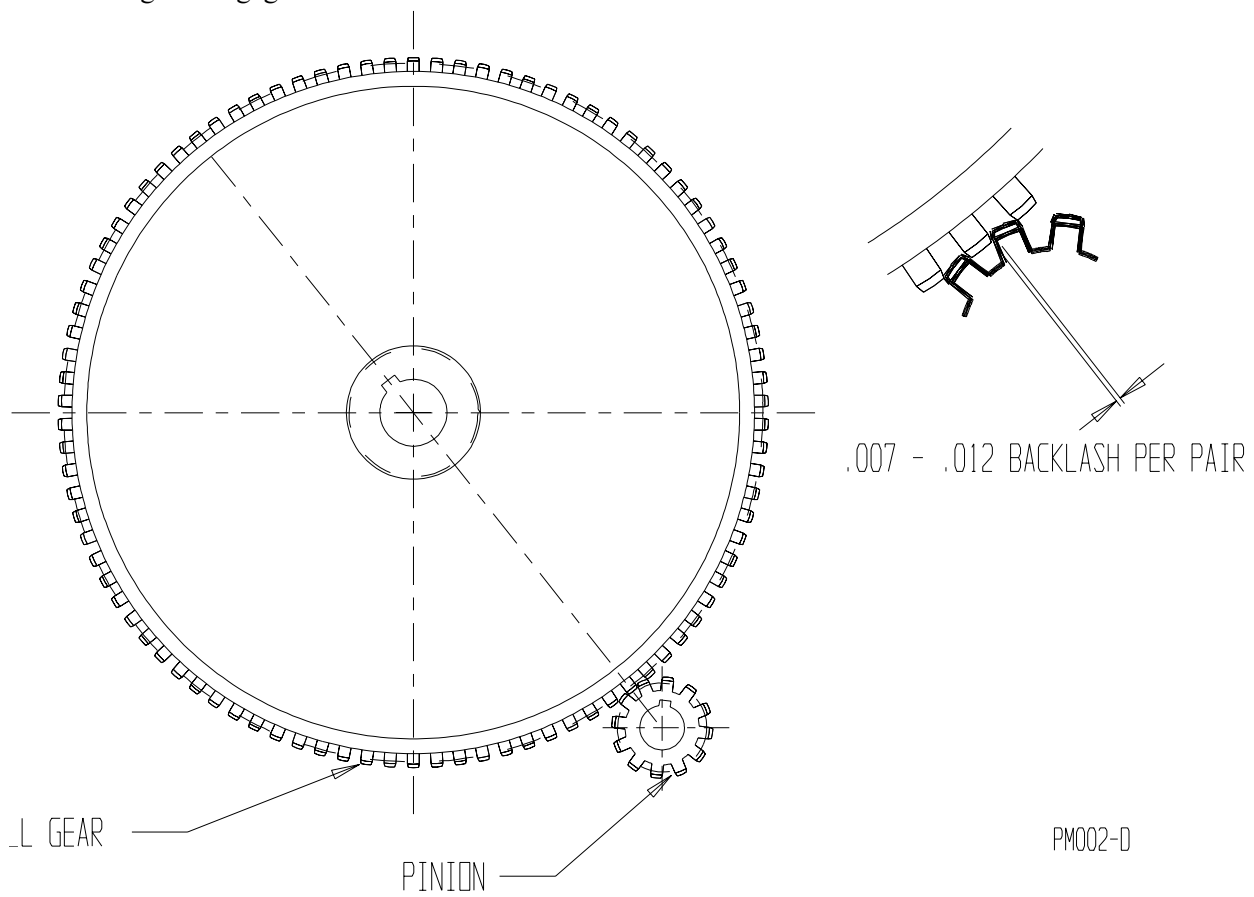
**ALWAYS MAKE SURE GUARD LIFTER IS RECONNECTED TO GUARD BEFORE USING MIXER, DO NOT OPERATE THE MIXER WITH DRUM GUARD OPEN OR REMOVED.**

# Maintenance

## Bull Gear Assembly

### Bull Gear Assembly

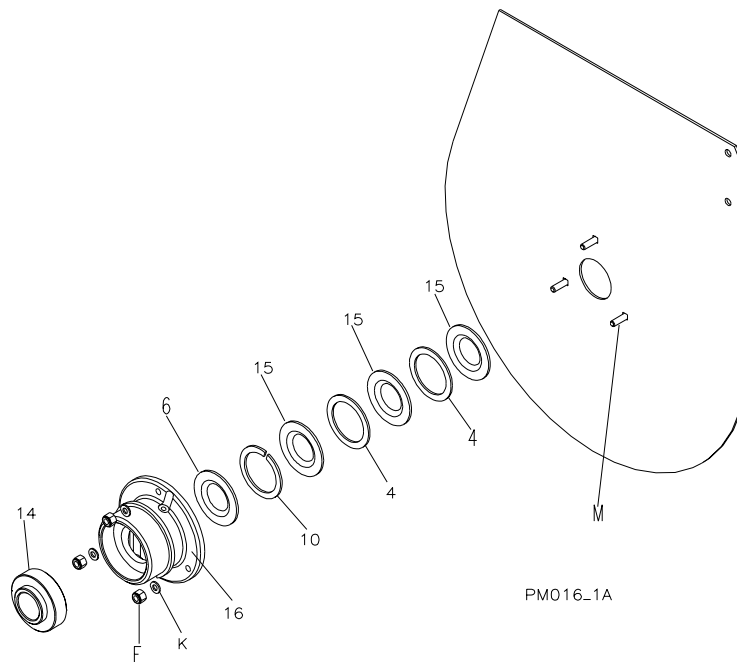
1. Align Bull Gear key way opposite to gear mesh.
2. Adjust pinion for tooth alignment and engagement using .010" feeler gauge.
3. Tighten all four (4) pillow block bolts before removing feeler gage.



PM002-D



**Instructions for Seal & Bearing Assembly Kits  
P/N's 23430 & 23431  
STONE® Mortar Mixers  
465PM, 645PM, 655PM, 755PM, and 855PM**



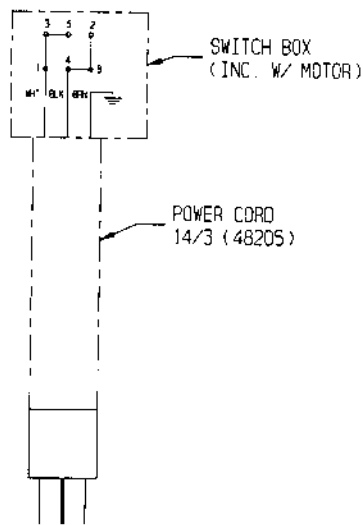
ITEM	P/N	DESCRIPTION	QUANTITY
4	24017	Washer	2
6	24022	Seal Drum Shaft	1
10	25881	Washer Split	1
14	32003	Bearing	1
15	32324	Seal Drum Yellow	3

1. Disassemble drum from frame and remove. Unscrew end bolts from paddle shaft and remove spacers and bull gear.
2. Attach a three-jaw puller to ring on housing, center puller on paddle shaft and remove housing and bearing.
3. Remove worn components and clean shaft and housing as needed.
4. Assemble seals and spacers over paddle shaft, flush with drum end using soapy water mixture as lubricant.
5. Make sure seals are assembled tight up to drum end; inner lip of seals curve inwards towards drum end as illustrated.
6. Insert bearing into housing and slide over shaft and seals as illustrated.
7. Tighten housing evenly to drum end so as not to pinch seals.
8. Reassemble spacer, bull gear (if applicable), washer and bolt to paddle shaft and repeat steps 4-7 on opposite end and reassemble drum to frame.

# Maintenance

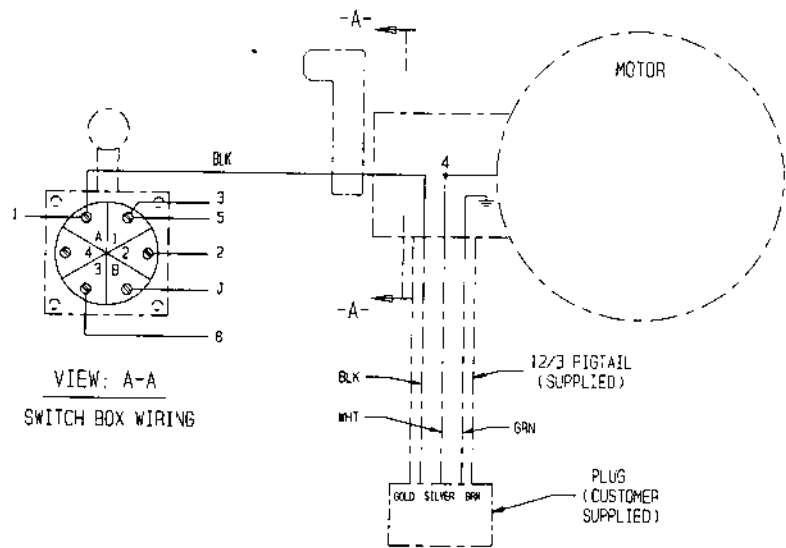
# Electric Wiring

3/4 HP ELECTRIC WIRING  
115 VOLT 10.8 AMP.



USE 12/3 EXTENSION  
CORD OR BETTER FOR  
POWER SUPPLY 115 VAC

1 HP ELECTRIC WIRING / 1 PHASE  
115 VOLT 12.8 AMP.  
230 VOLT 6.4 AMP.



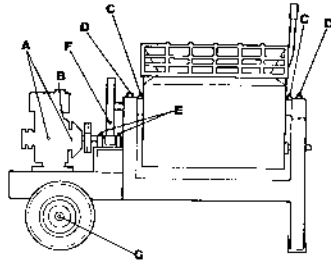
VIEW: A-A  
SWITCH BOX WIRING

USE 12/3 EXTENSION  
CORD OR BETTER FOR  
POWER SUPPLY

# Maintenance

## 465PM Maintenance Schedule

### A. ENGINE



**NOTE:** Cowl removed for clarity.  
Do not operate mixer with cowl removed.

Daily check the oil levels in the engine and engine reduction unit. The engine warranty is **VOID** if run without oil. Since there are many options available on this mixer, consult the ENGINE MANUAL for specific recommendation as to oil level, oil type required and frequency of oil changes required. For maximum service life from the engine, follow those recommendations.

### B. ENGINE AIR FILTER

A supply of clean, unrestricted air is essential for long engine life and maximum performance. Check the air filter daily and clean or replace as necessary, again following the specific instructions found in the ENGINE MANUAL. **NEVER** run the engine without the air cleaner.

### C. DRUM SEALS

Greasing the drum seals is particularly important, as the lifetime warranty on the seal is **VOID** if they are not greased properly.

### D. TRUNNIONS

Grease the trunnion to allow easy turning of the drum.

### E. PILLOW BLOCK BEARINGS

Pillow block bearings need to be greased after each 40-50 hours of operation. Use any grade #1 lithium based grease.

### F. BULL GEAR

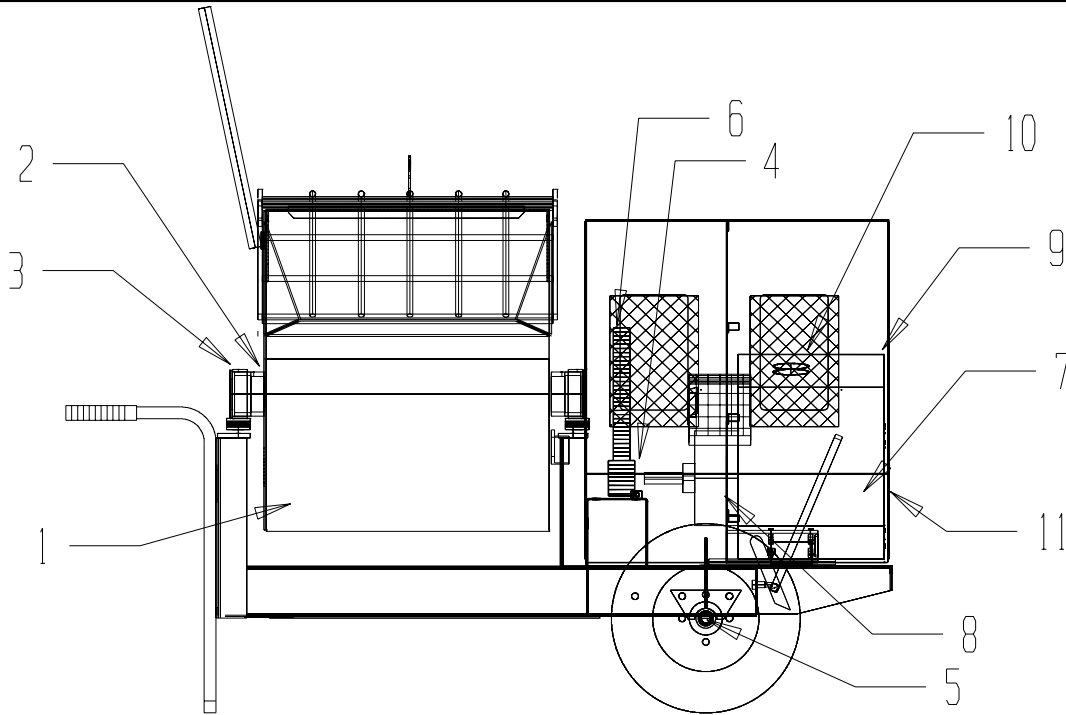
Lightly grease the bull gear and pinion after each 250 hours of operation. Avoid over-greasing as this will attract dirt and accelerate wear.

### G. WHEEL HUBS

Repack (4) tapered roller bearings in wheel hubs and replace wheel seals. Install washer and nut. Torque to 20 ft. lbs., back off one turn, torque to 7 ft. lbs., back off to first slot in nut and insert cotter key.

# Maintenance

## 465PM Maintenance Chart



MIXER MAINTENANCE REFER TO MIXER OWNER'S MANUAL PROVIDED PRIOR TO OPERATING OR SERVICING EQUIPMENT	EVERY 5 HOURS OR DAILY	25 HOURS OR EVERY WEEK	50 HOURS OR EVERY MONTH	100 HOURS OR EVERY YEAR
1. MIXER: CLEAN MIXER INSIDE & OUT/REMOVE ALL BUILD UP	CLEAN			
2. DRUM SEALS: GREASE FITTINGS W/ LITHIUM BASE GREASE		GREASE		
3. TRUNNIONS: GREASE FITTINGS W/ LITHIUM BASE GREASE		GREASE		
4. PILLOW BLOCK BEARINGS: W/ LITHIUM BASE GREASE		GREASE		
5. WHEEL HUBS: REPACK EVERY YEAR W/ WHEEL BRG GREASE				EVERY YEAR
6. BULL GEAR: LIGHTLY GREASE EVERY 250 HRS				
<b>ENGINE MAINTENANCE</b> REFER TO ENGINE OWNER'S MANUAL PROVIDED PRIOR TO OPERATING OR SERVICING EQUIPMENT				
7. OIL LEVEL: 40F-110F SAE 30W SE,SF,SG	CHECK		CHANGE *	
BELOW 40F SAE 10W-30 SE,SF,SG	CHECK		CHANGE *	
8. REDUCTION OIL: SAE 30W SE,SF,SG				CHANGE
9. AIR FILTER: PRE-CLEANER WASH IN SOAP & WATER/APPLY OIL		CLEAN **		REPLACE
ELEMENT CLEAN BY TAPPING		CLEAN **		REPLACE
10. SPARK PLUG: CLEAN OR REPLACE			CLEAN	REPLACE
11. COOLING SYS & AIR SCREEN				CLEAN

\* CHANGE OIL AFTER FIRST 5 HOURS, THEN EVERY 50 HOURS

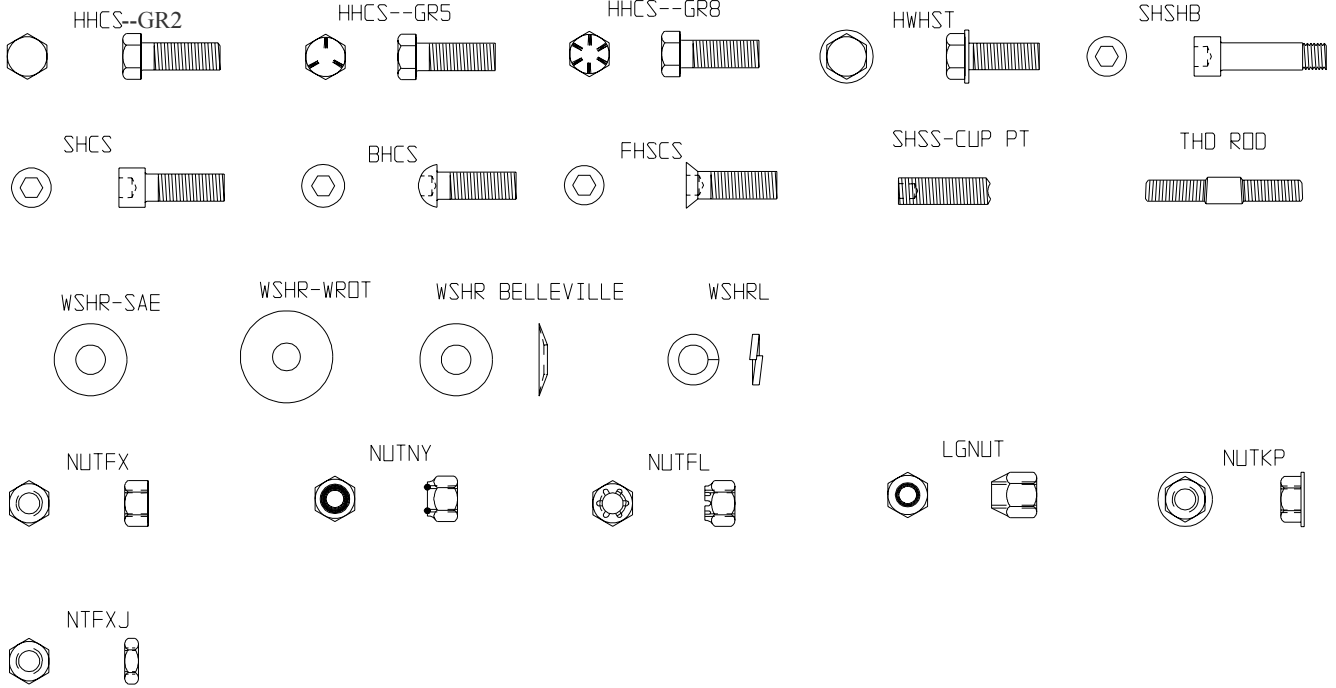
CHANGE OIL EVERY 25 HOURS UNDER HEAVY LOADS OR HIGH TEMPERATURES

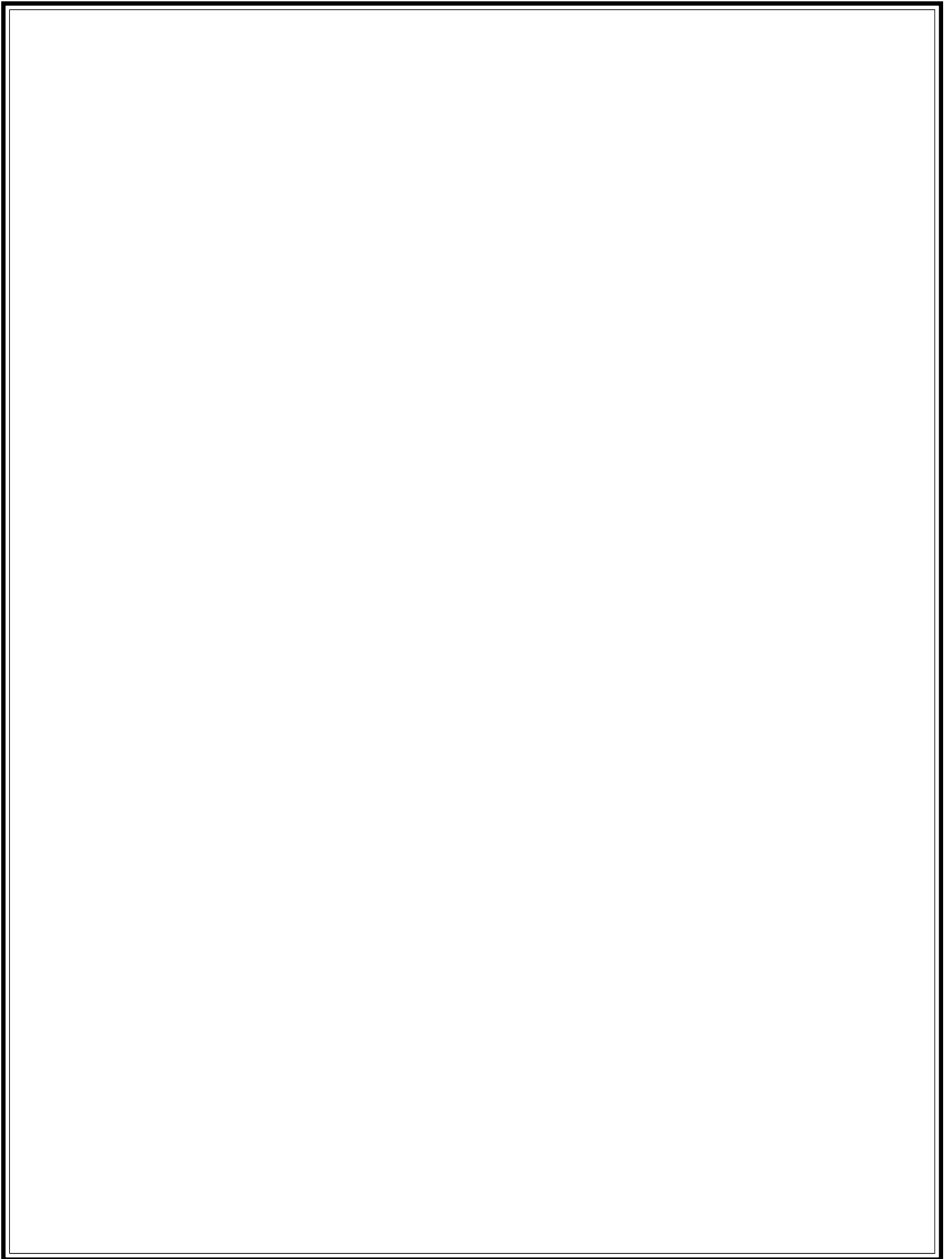
\*\* CLEAN/CHANGE AIR FILTER MORE OFTEN UNDER DUSTY CONDITIONS

SAFETY 1ST DISCONNECT SPARK PLUG OR ELECTRIC CORD BEFORE SERVICING  
DANGER DO NOT REFUEL WHEN ENGINE IS HOT OR SMOKE WHEN REFUELING  
AVOID PROLONGED BREATHING OF EXHAUST GASES PMO03-A

# Maintenance

# Hardware Identification





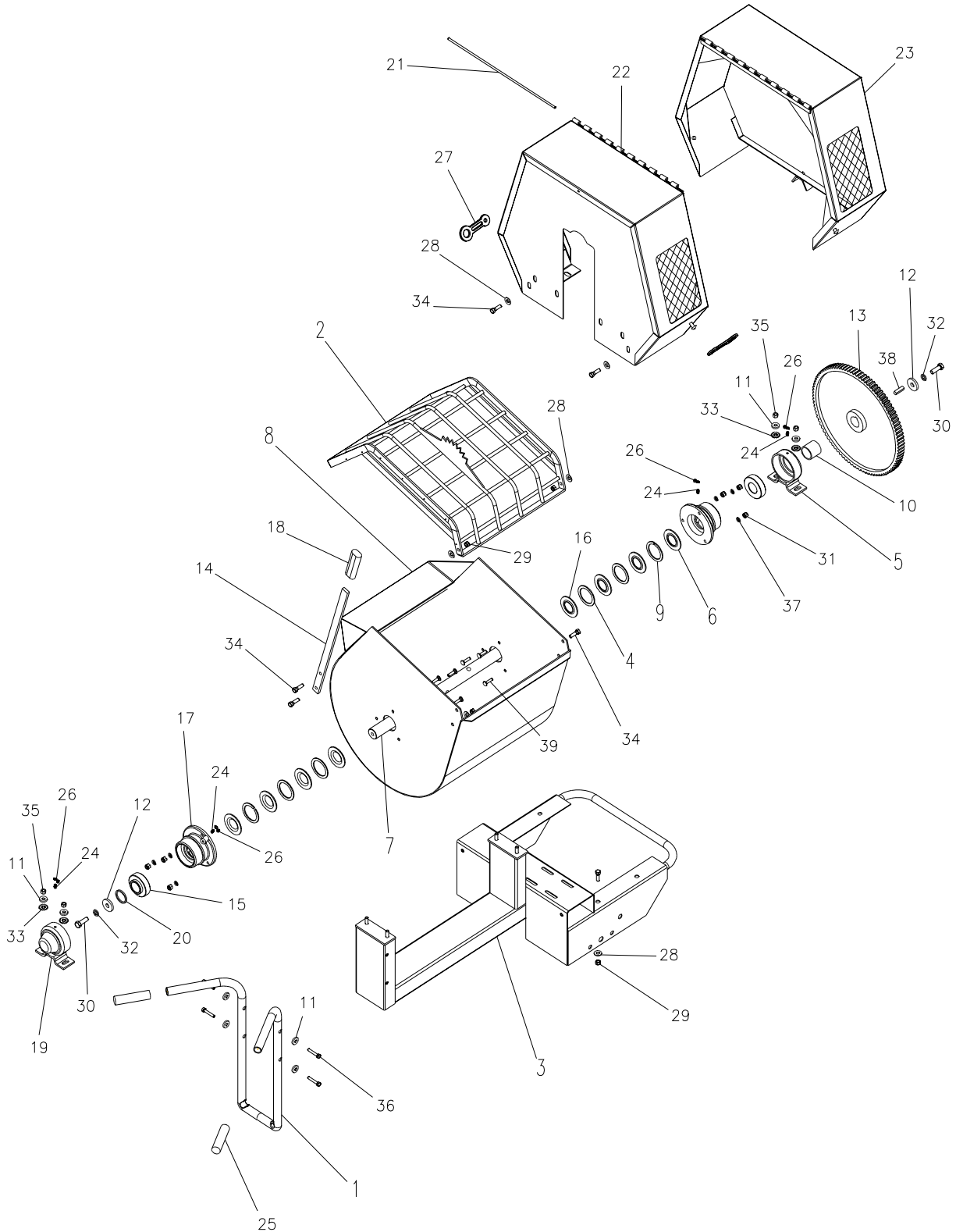
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# Parts List

## Frame and Drum Assembly





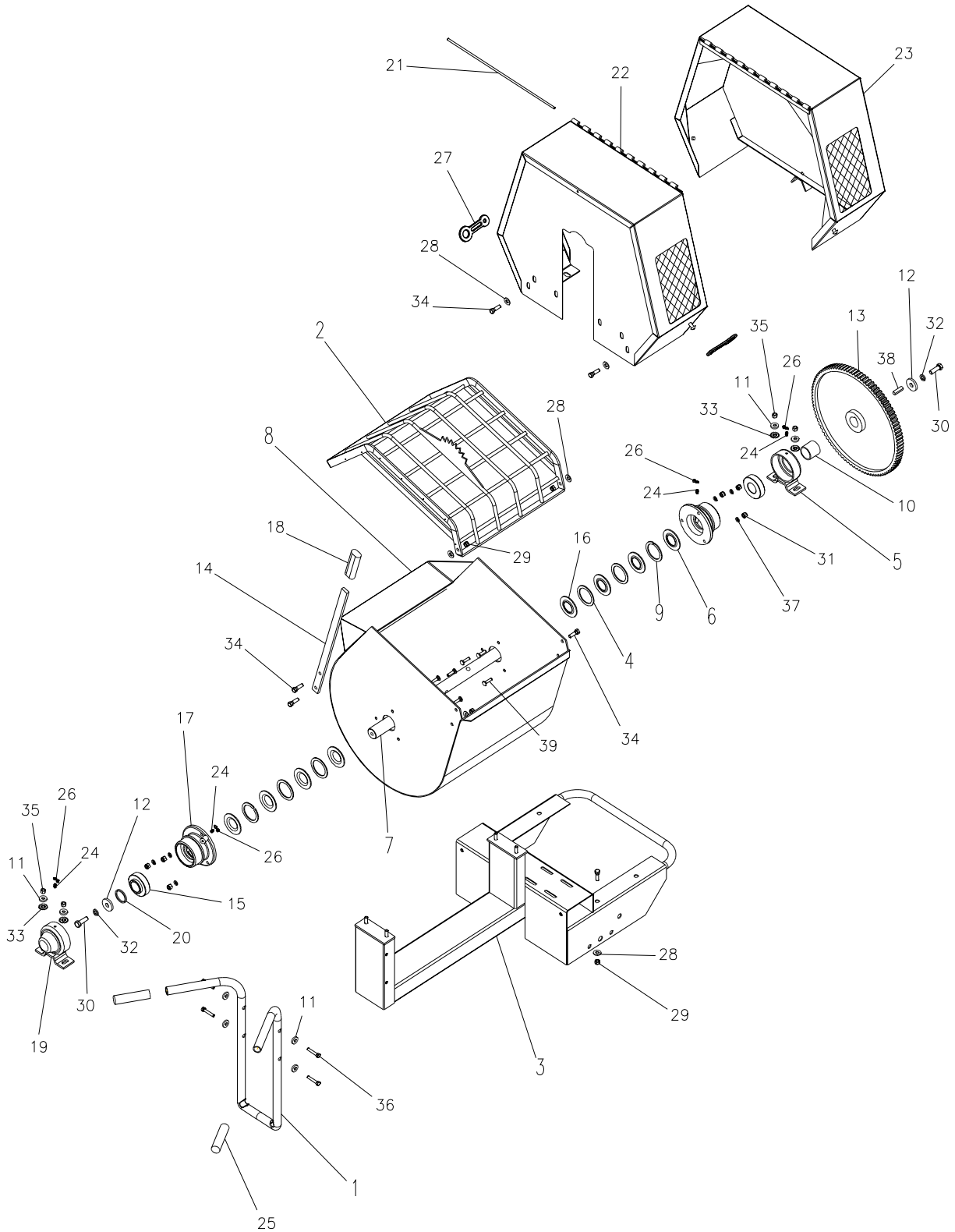
# Parts List

## Frame and Drum Assembly

Item	Part No.	Description	Qty.
1	22111-2	Front Handle	1
2	22422-2	Guard, Drum	1
3	22428-2	Frame	1
4	24017	Washer 2 1/4 x 2 15/16	4
5	24021-2	Trunnion EE	1
6	24022	Seal, Black	2
7	24227	Shaft, Paddle	1
8	25875-2	Drum	1
9	25881	Split Washer	2
10	25882	Spacer Drum Shaft EE	1
11	26325	WSHR .375 ID x 1.00 OD x .187 ZN	8
12	26326	WSHR 9/16 x 1-3/4 x 1/4	2
13	23120	Kit Bull Gear	1
14	22853	Handle Assembly	1
15	32003	Bearing, Drum	2
16	32324	Seal Drum Yellow	6
17	32326	Housing Bearing	2
18	35296	Grip, Dump Handle	1
19	36574-2	Trunnion Capped TPE	1
20	44284	Drum Shaft Spacer TPE	1
21	44368	Pin Hinge	1
22	44405-2	Cowl, STY	1
23	44410-2	Cowl, MVBL	1
24	46042	Fitting, Grease	4
25	47000	Grip, Black	2
26	47001	Cap, Grease Fitting	4
27	47182	Latch, Cowl	2
28	80043	WSHR 3/8 Wrot	10
29	80056	NUTNY 3/8 - 16 ZN	4
30	80075	HHCS 1/2-13x1-1/2 GR5 ZN	2
31	80114	NUTNY 5/16 -18 ZN	6
32	80117	WSHRL 1/2 Med Split ZN	2
33	80119	WSHRLT 3/8 INT/EXT	4
34	80145	HHCS 3/8 - 16 x 1-1/4	6
35	80326	NUTFL 3/8 - 16 (1/2 Height)	4

# Parts List

## Frame and Drum Assembly



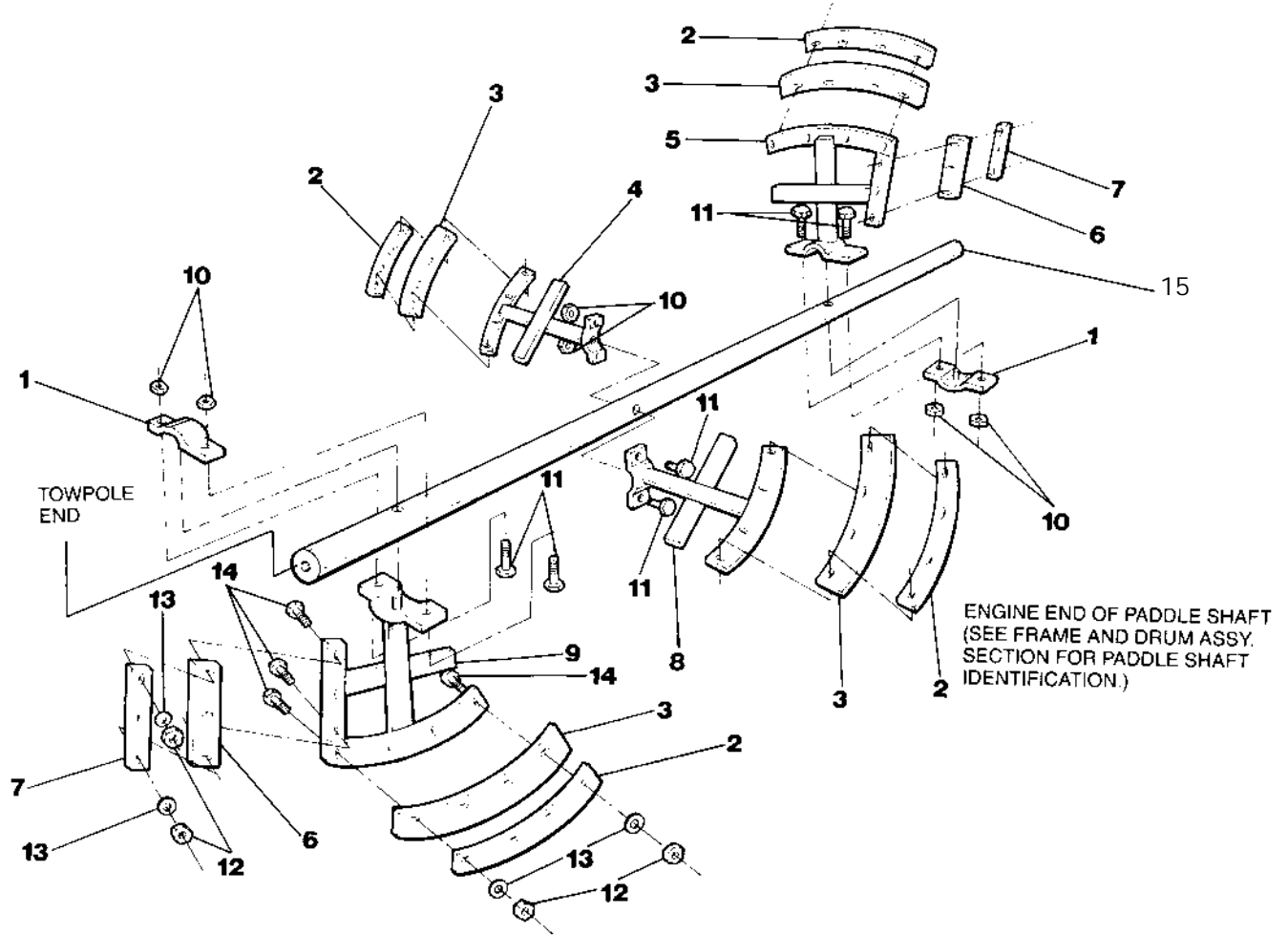
# Parts List

## Frame and Drum Assembly

Item	Part No.	Description	Qty.
36	80475	HHCS 5/16 - 18 x 1-3/4	4
37	80495	WSHR 5/16 SAE ZN	6
38	81060	Key 3/8 x 3/8 x 1-1/2	1
39	81064	CRBLT 5/16 - 18 x 1-1/4	6
40^	23226	Kit Cowl Full (includes 21, 22, 23,27 & Decals	1
41^	23227	Kit Cowl MVBL (includes 21,23,27 & Decals	1
42^	22431	Kit Bearing Seal (includes 4, 6, 9, 15, 16)	
43^	22152	Kit Seal Spacer (includes 4, 6, 9, 16)	1

# Parts List

# Paddle Assembly



# Parts List

## Paddle Assembly

Item	Part No.	Description	Qty.
1	24107-2	Clamp Paddle Weld	2
2	28117-2	Bar Backer Long	4
3	28091	Blade Rubber Long	4
4	22309-2	Paddle CTR EE	1
5	22308-2	Paddle EE	1
6	24033	BLD Rub Short	2
7	28116-2	Bar Backer Short	2
8	22310-2	Paddle CTR TPE	1
9	22311-2	Paddle TPE	1
10	80051	NUTNY 1/2 - 13	6
11	80089	HHCS 1/2 - 13 x 1-1/2 ZN	6
12	80042	NUTFX 3/8 - 16	12
13	80043	WSHR 3/8 WROT	12
14	80041	CRBLT 3/8 - 16 x 1-1/4	12
15	24227	Shaft Paddle	1

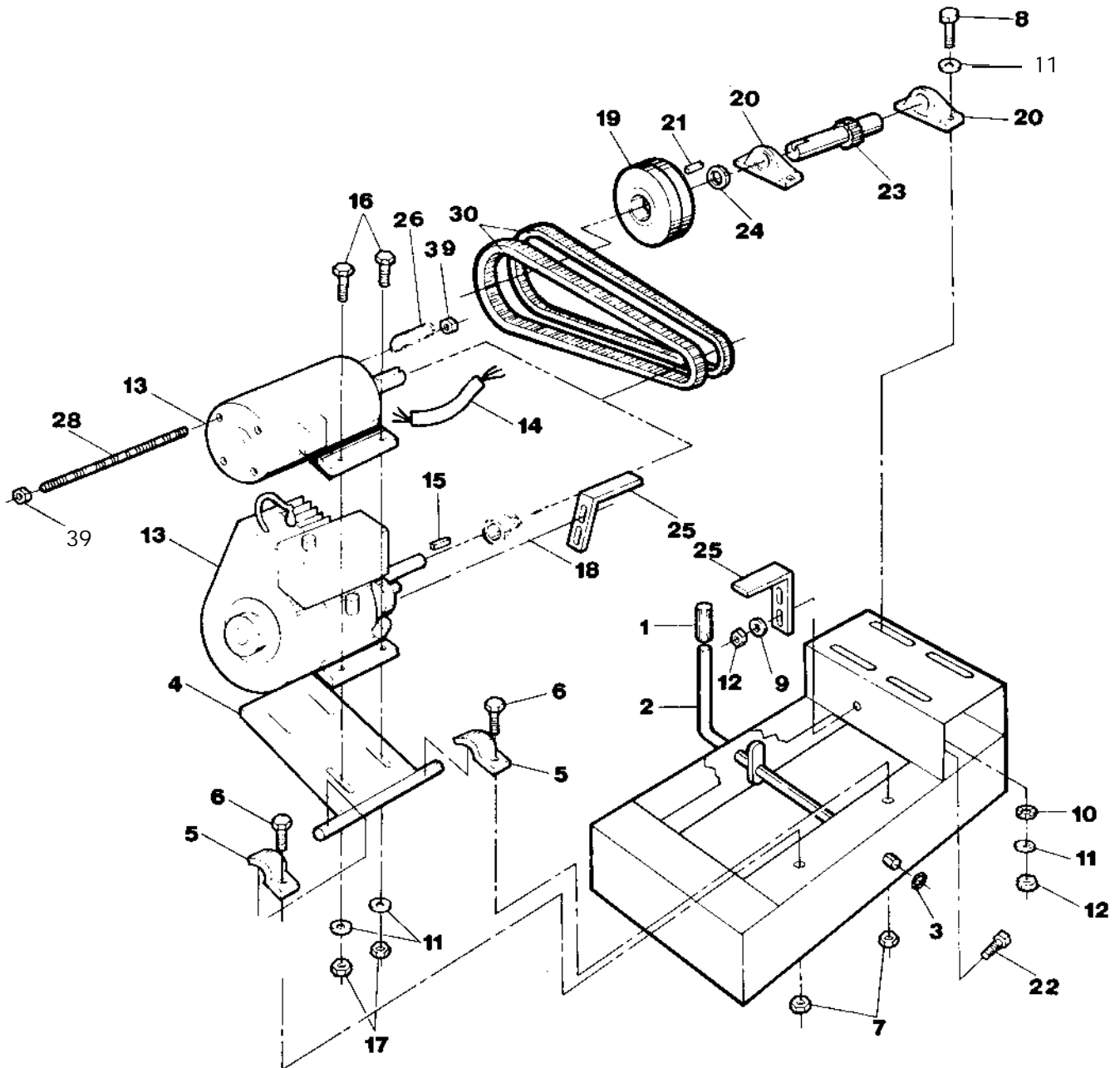
### BLADE AND PADDLE SETS

For convenience, the following Blade and Paddle Sets are available:

<b>22460</b>	<b>Paddle Kit Complete</b> - Includes Items 1 - 14
<b>22328</b>	<b>Paddle Kit, Tow Pole End</b> - Includes Items: 1(1), 2(1), 3(1), 6(1), 7(1), 9(1), 12(4),13(4), 14(4)
<b>22330</b>	<b>Paddle Kit, Engine End</b> - Includes Items: 1(1), 2(1), 3(1), 5(1), 6(1), 7(1), 12(4)13(4), 14(4)
<b>22331</b>	<b>Paddle Kit, Tow Pole End Center</b> - Includes Items 2(1), 3(1), 8(1), 12(2), 13(2),14(2)
<b>22332</b>	<b>Paddle Kit, Engine End Center</b> - Includes Items: 2(1), 3(1), 4(1), 12(2), 13(2),14(2)
<b>22327</b>	<b>Backer Bar Set</b> - Includes Items: 2(4), 7(2)
<b>22112</b>	<b>Rubber Blade Set</b> - Includes Items: 3(4), 6(2)

# Parts List

## Power Train



# Parts List

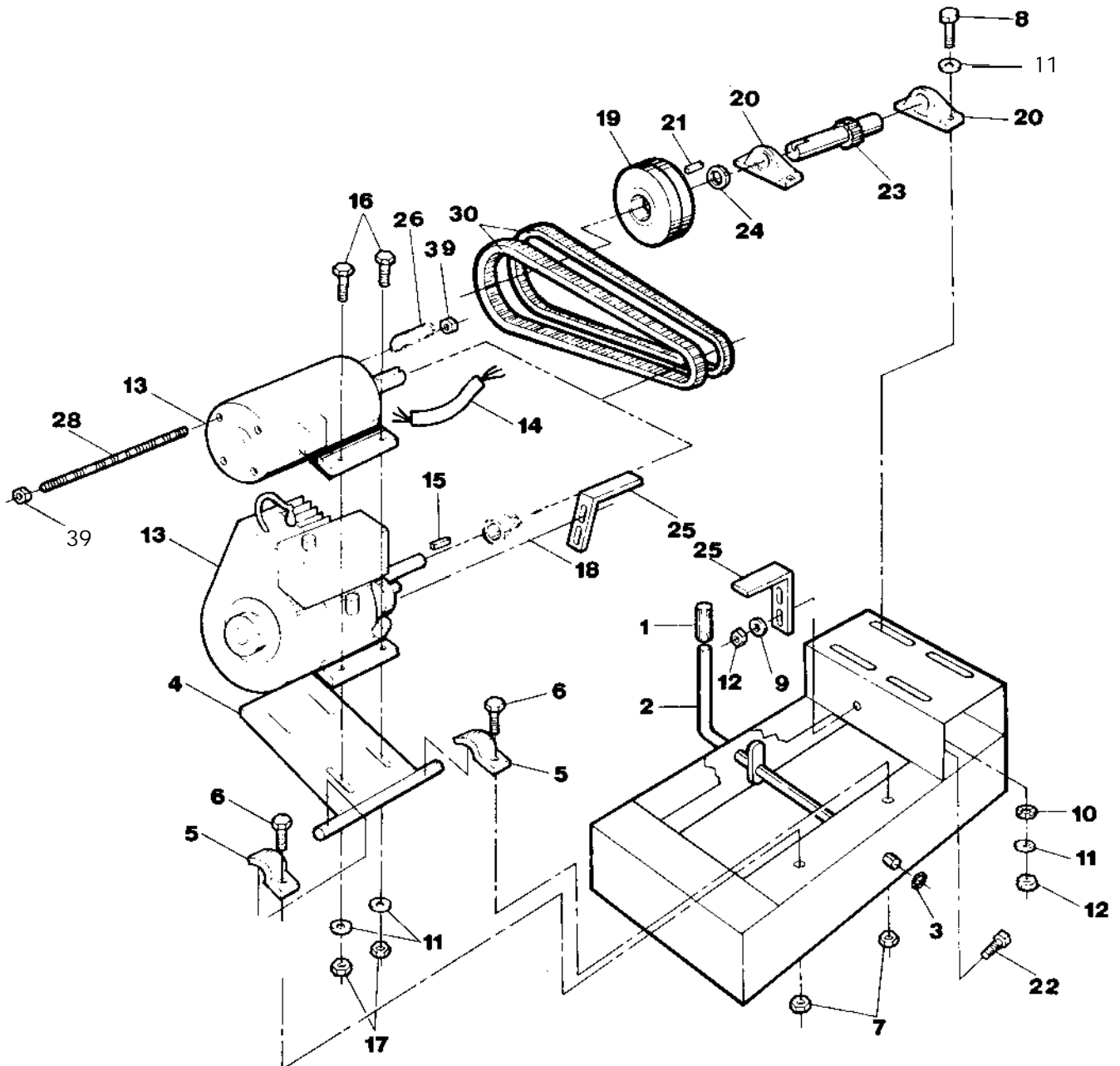
## Power Train

Item	Part No.	Description	Qty.
1	34687	Flex Grip	1
2	22315-2	Assembly Clutch	1
3	80411	Ring Push On 5/8 ZN	1
4	22430-2	Base Motor	1
5	27575-2	Bracket Motor Base	2
6	80075	HHCS 1/2-13 x 1-1/2 ZN	2
7	80051	NUTNY 1/2-13 ZN	2
8	80072	HHCS 3/8-16 x 1-3/4 ZN	4
9	80043	WSHR 3/8 WROT ZN	6
10	80119	WSHRL 3/8 Interior/Exterior	4
11	26325	WSHR Motor Base	12
12	80056	NUTNY 3/18-16	5
13	31202	Motor 3/4 HP Electric	1
13b	21170	Motor 1 HP Electric	1
13c	30072	Engine 5.5 HP B&S	1
13d	30159	Engine 5 HP Honda	1
13e	30599	Engine 6 HP Robin	1
14	48205	Power Cord 3/4 Electric	1
14b	48016	Power Cord 1 HP Electric	1.5 ft.
15	80060	Key 3/16 x 3/16 x 1	1
16	80475	HHCS 5/16-18 x 1-3/4 ZN (Electric Only)	4
16b	80145	HHCS 3/8-16 x 1-1/4 ZN (5.5 B&S, 5 Honda, 6 Robin)	5
17	80114	NUTNY 5/16-18 ZN (Electric Only)	4
17b	80056	NUTNY 3/8-16 ZN (5.5 B&S, 5 Honda, 6 Robin))	4
18	34693	Sheave AK25 x 5/8 (3/4 HP Electric Only)	1
18b	35930	Sheave AK25 x 7/8 (1 HP Electric Only)	1
18c	35924	Sheave 2AK20 x 3/4 (5.5 B&S, 5 Honda, 6 Robin)	1
19	35475	Sheave AK71x 1 (Electric Only)	1
19b	34985	Sheave 2AK94 x 1 (5.5 B&S, 5 Honda, 6 Robin)	1
20	32208	Bearing Pillow Block	2
21	80100	Key 1/4 x 1/4 x 1	1
22	80041	CRBLT 3/8-16 x 1-1/4 ZN	1
23	22334	Pinion Shaft Assembly 6 Tooth	1
24	24622	Washer 1-1/32 x 1-1/2 x 1/8	3
25	28883-2	Guide Belt (Electric Only)	1
25b	28431-2	Guide Belt (5.5 B&S, 5 Honda, 6 Robin)	2

Note:

# Parts List

## Power Train





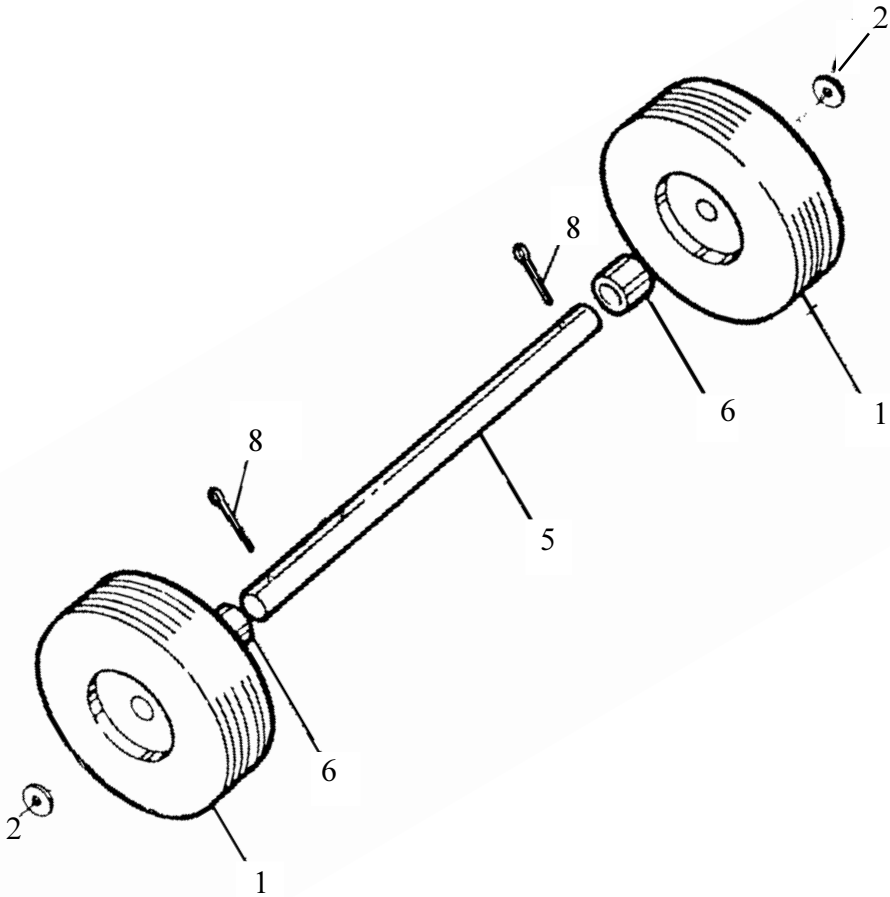
# Parts List

## Power Train

Item	Part No.	Description	Qty.
26	38814	Guide Belt 10-32 (3/4HP Electric Only)	1
28	28826	Rod Thread 1/4-20 x 12" ZN (1 HP Electric Only)	1
30	34664	V-Belt A26 (Electric Only)	2
30b	34052	V-Belt A32 (5.5 B&S, 5 Honda, 6 Robin)	2
39	80236	NUTKP 1/4-20 ZN (1 HP Electric)	2

# Parts List

# Axle Assembly



# Parts List

## Axle Assembly

Item	Part No.	Description	Qty.
1	34019	Tire and Rim Assy 3.00 x 12	2
2	80344	Washer 3/4 SAE ZN	2
5	28645-2	Axle	1
6	28642	Spacer Axle	2
8	80315	Pinct 3/16 x 2	2

Note:

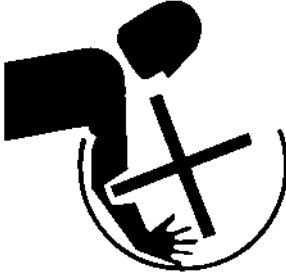
# Parts List

# Decal Identification

**⚠ WARNING**



Do not run machine with cover open.



**⚠ WARNING**

Shut off machine to service or clean.

55010

**⚠ WARNING**

Always stop engine when cleaning or adjusting machine. If electric motor pull plug.

**⚠ CAUTION**



**FOR YOUR SAFETY**

- Read owner's service manual before operating or servicing this machine.
- Always keep unauthorized, inexperienced, untrained people away from this machine.
- Rotating and moving parts will cause injury if contacted. Make sure guards and safety devices are in place before this machine is operated.
- Make sure engine is shut down and spark plug wire disconnected before servicing the machine or approaching the moving parts- if electric motor, disconnect plug.
- Never leave machine unattended when operating. Always stop engine or motor before adding fuel or oil.



**⚠ DANGER**

**GASOLINE**  
Stop engine and extinguish all flames and smoking materials before refueling. Use a safety can.

**NOTICE**

Contact the manufacturer immediately at 1-800-888-9926 if safety or hazard decals or owner's manual are missing from this equipment.

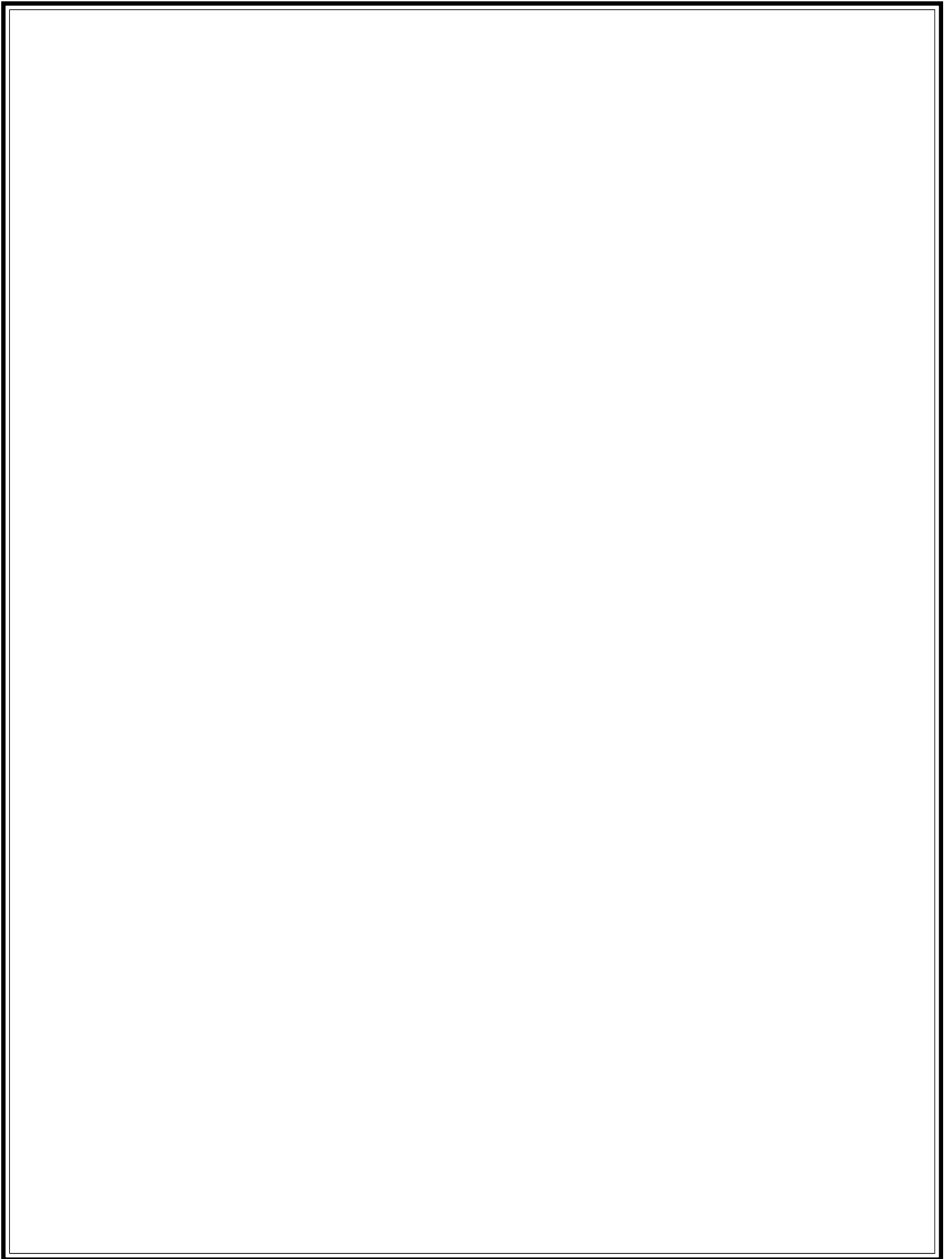
**IDLE ENGINE 5 MINUTES  
BEFORE STOPPING  
TO IMPROVE SERVICE LIFE**

# Parts List

## Decal Identification

Item	Part No.	Description	Qty.
1^	55388	Kit Decals PM & CM Safety	1
2	55010	Decal Warning Shut Off	1
3	55011	Decal Warning Cover	1
4	55127	Decal Warning Stop Engine	1
5	55128	Decal Danger Gasoline	1
6	55156	Decal Notice Missing Decals	1
7	55046	Decal Safety Instructions	1
8^	55417	Decal Engine Idle	1

Note:



**CALIFORNIA PROPOSITION 65 WARNING: Engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.**



*Bred Tough. Technology Born to Work.  
The Way It Ought To Be.*

Stone Construction Equipment, Inc.  
P.O. Box 150, Honeoye, New York 14471  
Phone: (800) 888-9926  
Fax: 716-229-2363  
e-mail: [sceny@mcimail.com](mailto:sceny@mcimail.com)  
www: [stone-equip.com](http://stone-equip.com)

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