Mi-T-M®
CORPORATION

OPERATORS MANUAL FOR Mi-T-M®

PIT CLEANING SYSTEM

PIT CLEANER ASSEMBLY:
RC-0002-0001

SLUDGE CARRIER:
RC-0003-0001

⚠ CAUTION

RISK OF INJURY!

READ MANUAL BEFORE OPERATING!

This manual is an important part of the pit cleaning system and must remain with the unit when you sell it!

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Form #37-0541-092018

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⚠ WARNING

⚠ WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

⚠ WARNING

⚠ WARNING: This product can expose you to chemicals including carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

INTRODUCTION

Congratulations on the purchase of your new Mi-T-M Pit Cleaning system! You can be assured your Mi-T-M Pit Cleaning system was constructed and designed with quality and performance in mind. Each component has been rigorously tested to ensure the highest level of acceptance.

This operator's manual was compiled for your benefit. By reading and following the simple safety, installation, operation, maintenance and troubleshooting steps described in this manual, you will receive years of trouble free operation from your new Mi-T-M Pit Cleaning system. The contents of this manual are based on the latest product information available at the time of publication. Mi-T-M reserves the right to make changes in price, color, materials, equipment, specifications or models at any time without notice.

! IMPORTANT !

These paragraphs are surrounded by a "SAFETY ALERT BOX". This box is used to designate and emphasize Safety Warnings that must be followed when operating this Pit Cleaning system.
Accompanying the Safety Warnings are "signal words" which designate the degree or level of hazard seriousness. The "signal words" used in this manual are as follows:

***DANGER*: Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

***WARNING*: Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

***CAUTION*: Indicates a potentially hazardous situation which, if not avoided MAY result in minor or moderate injury.**






The symbols set to the left of this paragraph are "Safety Alert Symbols". These symbols are used to call attention to items or procedures that could be dangerous to you or other persons using this equipment.

ALWAYS PROVIDE A COPY OF THIS MANUAL TO ANYONE USING THIS EQUIPMENT. READ ALL INSTRUCTIONS BEFORE OPERATING THIS PIT CLEANING SYSTEM AND ESPECIALLY POINT OUT THE "SAFETY WARNINGS" TO PREVENT THE POSSIBILITY OF PERSONAL INJURY TO THE OPERATOR.

Once the unit has been uncrated, inspect for signs of obvious or concealed freight damage. If damage does exist, file a claim with the transportation company immediately. Be sure that all damaged parts are replaced and that the mechanical and electrical problems are corrected prior to operation of the unit. If you require service, contact Mi-T-M Customer Service.

CUSTOMER SERVICE

CALL OUR TOLL-FREE NUMBER

for the Sales or Service Center nearest you!

800-553-9053

Please have the following information available for all service calls:

1. Model Number
2. Date and Place of Purchase

CONTENTS

Carefully unpack your new Mi-T-M Pit Cleaning system. Check the contents against the packing list. Contact the freight line if a damage claim is required on any component. The following items are the basic equipment sent with your Pit Cleaning system.

Pit Cleaner Assembly

1. Suction lance
   a) Main wand assembly
   b) Extension assembly
2. Gun with hose
3. Suction head
4. Flex hose

Sludge Carrier

1. Sludge Carrier Assembly
2. 5 Biodegradable filter bags

SPECIFICATIONS

MAXIMUM FLOW	50 GPM
MAXIMUM FLOW OF PRESSURE WASHER	5 GPM
MAXIMUM PRESSURE OF PRESSURE WASHER	4000 PSI
MINIMUM FLOW OF PRESSURE WASHER	2 GPM
MINIMUM PRESSURE OF PRESSURE WASHER	1000 PSI
DIMENSIONS L x W x H (Inches)	
PIT CLEANER ASSEMBLY	93 x 12 x 4
SLUDGE CARRIER	22 x 29 x 48
NET WEIGHT (lbs.)	
PIT CLEANER ASSEMBLY	25
SLUDGE CARRIER	53

PURPOSE

The Mi-T-M Pit Cleaning System uses your existing Pressure Washer to operate a high volume Sludge Pump. This Sludge Pump will move liquids, sludge, and solid debris from the bottom of a pit, through 1 ½" PVC pipe and hose, into the Sludge Cart where it is deposited into a Filtration Bag. The Filtration Bag may then be disposed of in any manner compliant with EPA standards.

The Pit Cleaner connects to your Mi-T-M pressure washer in place of its standard gun/lance assembly, and uses the force of the high pressure water to create a vacuum to remove debris and sludge from the pit. The Pit Cleaner comes with a #4 nozzle which will work with a variety of pressure washers ranging from 1000-4000 PSI and 2–4 GPM. The Pit Cleaner has a 1:11 flow ratio; a 3 GPM pressure washer will produce a flow of 33 GPM. The more powerful the pressure washer, the higher volume of debris is removed from the pit.

NOTE: The actual output volumes will vary with the weight and particle size of the material being removed and the height and distance that the material is moved. For best results with heavier or larger particles use a pressure and flow nearer to the high end of the suggested pressure and flow.

The following is a chart showing the relationship of pressure and flow for various nozzles in GPM.

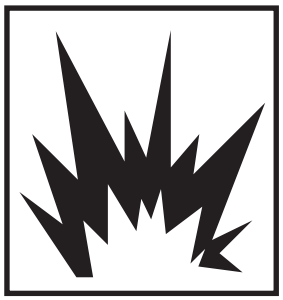
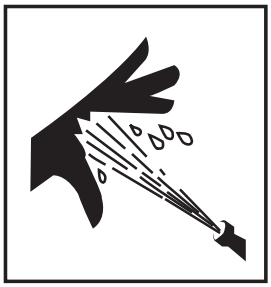
Nozzle Number	1000 PSI	1500 PSI	2000 PSI	2500 PSI	3000 PSI	3500 PSI	4000 PSI
3.0	1.5	1.8	2.1	2.4	2.6	2.8	3.0
4.0	2.0	2.5	2.8	3.2	3.5	3.7	4.0
4.	2.3	2.8	3.2	3.6	3.9	4.2	4.5
5.0	2.5	3.1	3.5	4.0	4.3	4.7	5.0
5.5	2.8	3.4	3.9	4.3	4.8	5.1	5.5
6.0	3.0	3.7	4.2	4.7	5.2	5.6	6.0

0° Replacement Nozzles

Nozzle	Mi-T-M Part #
3.0	18-0149
4.0	18-0045
4.5	18-0111
5.0	18-0046
5.5	18-0010
6.0	18-0047

IMPORTANT SAFETY WARNINGS

WARNING: When using this product, basic precautions should always be observed, including the following:
READ ALL SAFETY WARNINGS BEFORE USING PIT CLEANING SYSTEM

HAZARD	POTENTIAL CONSEQUENCE	PREVENTION
RISK OF BURSTING 	Serious injury or death could occur from bursting. Serious injury may occur if attempting to start the unit when frozen. Serious injury may occur from exploding accessories if incorrect system components, attachments or accessories are used.	Do not use this accessory to pump flammable material! An explosion could occur from a gas vapor buildup inside the system. In freezing temperatures, the unit must always be warm enough to ensure there is no ice formation in the accessory. Do not operate the accessory if it has been in a freezing environment without first allowing to thaw. Use only manufacturer recommended repair parts for the unit.
RISK OF INJECTION OR SEVERE CUTTING INJURY 	Serious injury or death could occur from high pressure spray penetrating the skin.	Keep clear of nozzle and spray! Never put your hand, fingers or body directly over the spray nozzle. Never point the high pressure discharge spray at yourself or anyone else. SEEK EMERGENCY MEDICAL CARE if the spray appears to have penetrated the skin! DO NOT TREAT AS A SIMPLE CUT!! Do not move the unit by pulling on the hose. High pressure hoses should be inspected daily for signs of wear. If evidence of failure exists, promptly replace all suspect hoses to prevent the possibility of injury from the high pressure spray. If a hose or fitting is leaking, NEVER PLACE YOUR HAND DIRECTLY ON THE LEAK. NEVER operate the gun with the trigger wired in the open position. To prevent accidental discharge, the trigger gun should be securely locked when not in use. Before removing the spray nozzle or servicing the unit, ALWAYS shut off the unit and trigger the gun to release trapped pressure. (Even after you shut off the unit, there is high pressure water left in the pump, hose and gun until you release it by triggering the gun.)

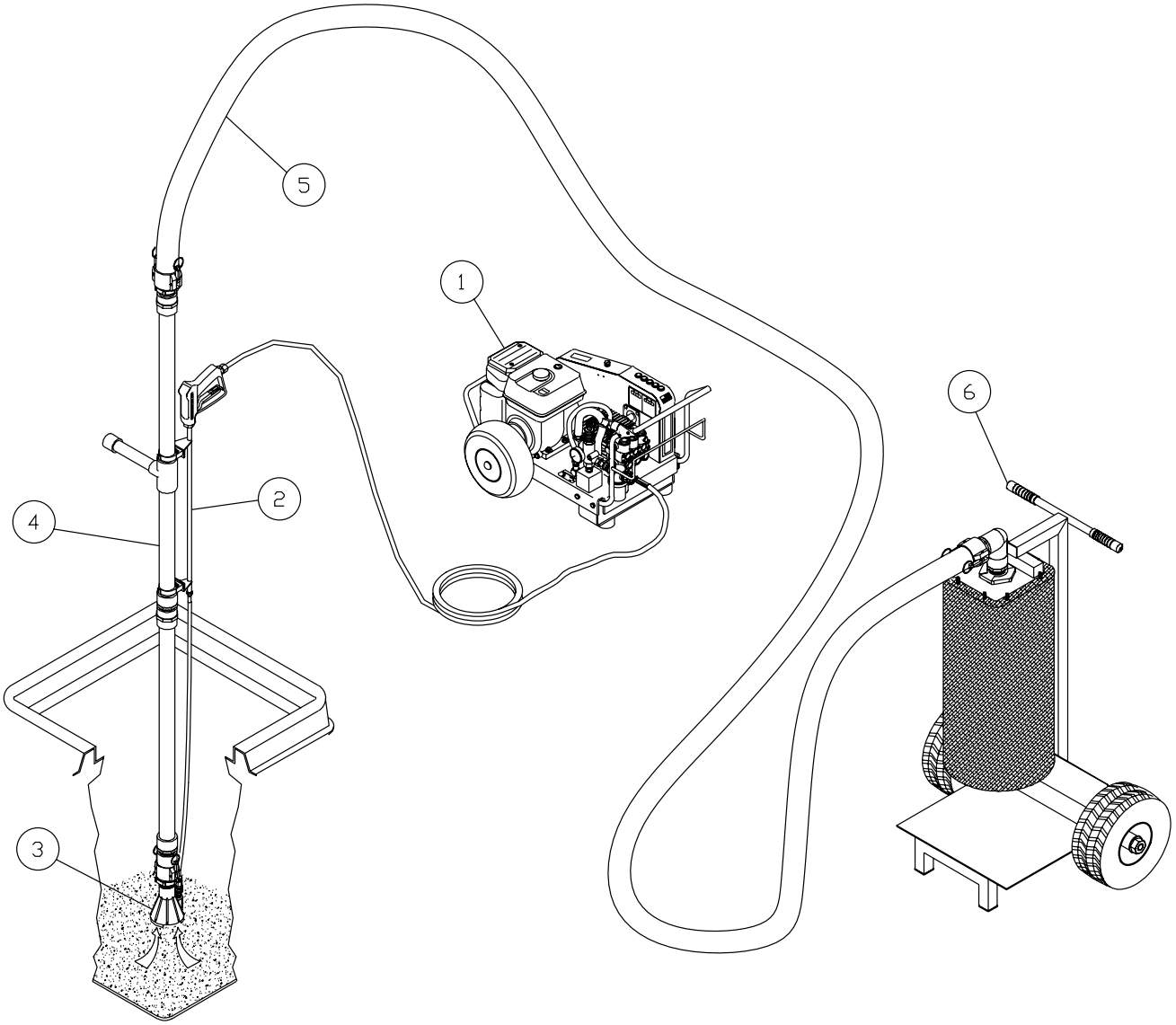
IMPORTANT SAFETY WARNINGS

READ ALL SAFETY WARNINGS BEFORE USING PIT CLEANING SYSTEM

HAZARD	POTENTIAL CONSEQUENCE	PREVENTION
RISK OF BODILY INJURY 	Injury may occur from the unit.	DO NOT DRINK THE WATER IN THE UNIT!! This is non-potable water and is not suitable for consumption. DO NOT allow children to operate this unit. DO NOT overreach or stand on unstable support. Wet surfaces can be slippery, wear protective foot gear and keep good footing and balance at all times. Know how to stop the unit. Be thoroughly familiar with controls. Before servicing, ALWAYS shut off the pressure washer. Consult Material Safety Data Sheets for safe handling of chemicals used with your system, especially oxidizers and acids. SEEK EMERGENCY MEDICAL CARE if the spray appears to have penetrated the skin! DO NOT TREAT AS A SIMPLE CUT!! Be prepared to tell a physician exactly what kind of chemicals you were using by reading the Material Safety Data Sheet (MSDS) provided with your chemical. Never use any solvents, detergents or acid type cleaners with this unit. Protective equipment such as gloves and rubber boots are advisable, especially when using cleaning detergents.
	Serious injury can occur from loose debris being propelled at a high speed from the spray gun.	ALWAYS wear protective goggles when operating the unit to shield the eyes from flying debris. DO NOT direct spray toward fragile materials such as glass for shattering could occur.
	Injury may occur if the operator loses his balance caused by the thrust of water traveling through the spray nozzle.	Stay alert-watch what you are doing. Do not operate the unit when fatigued or under the influence of alcohol or drugs. NEVER squeeze the trigger unless securely braced. NEVER trigger the gun while on a ladder or roof. DO NOT leave pressurized unit unattended. Shut off the pressure washer and release trapped pressure before leaving.

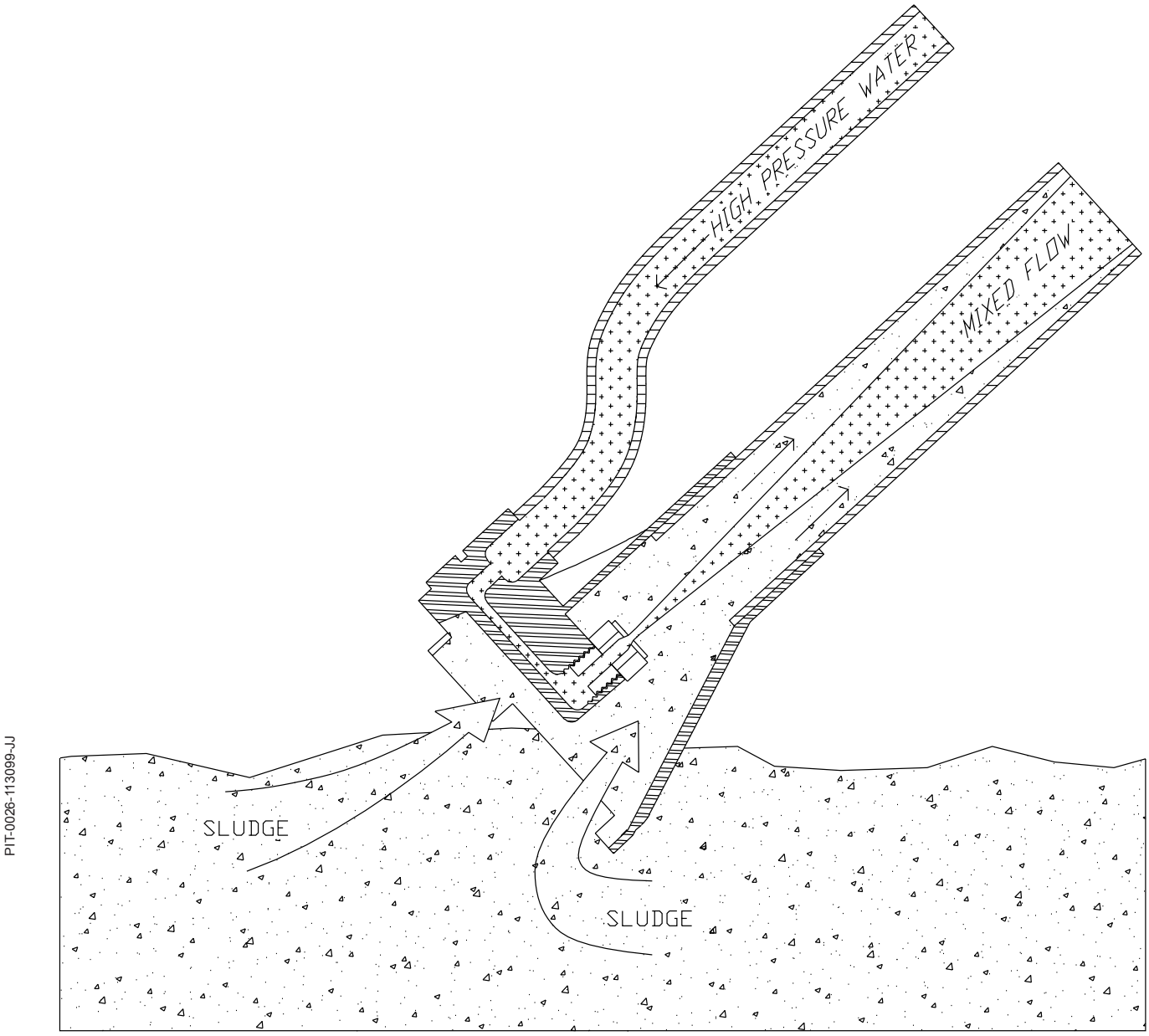
!SAVE THESE INSTRUCTIONS!

PIT CLEANER SYSTEM FLOW CHART



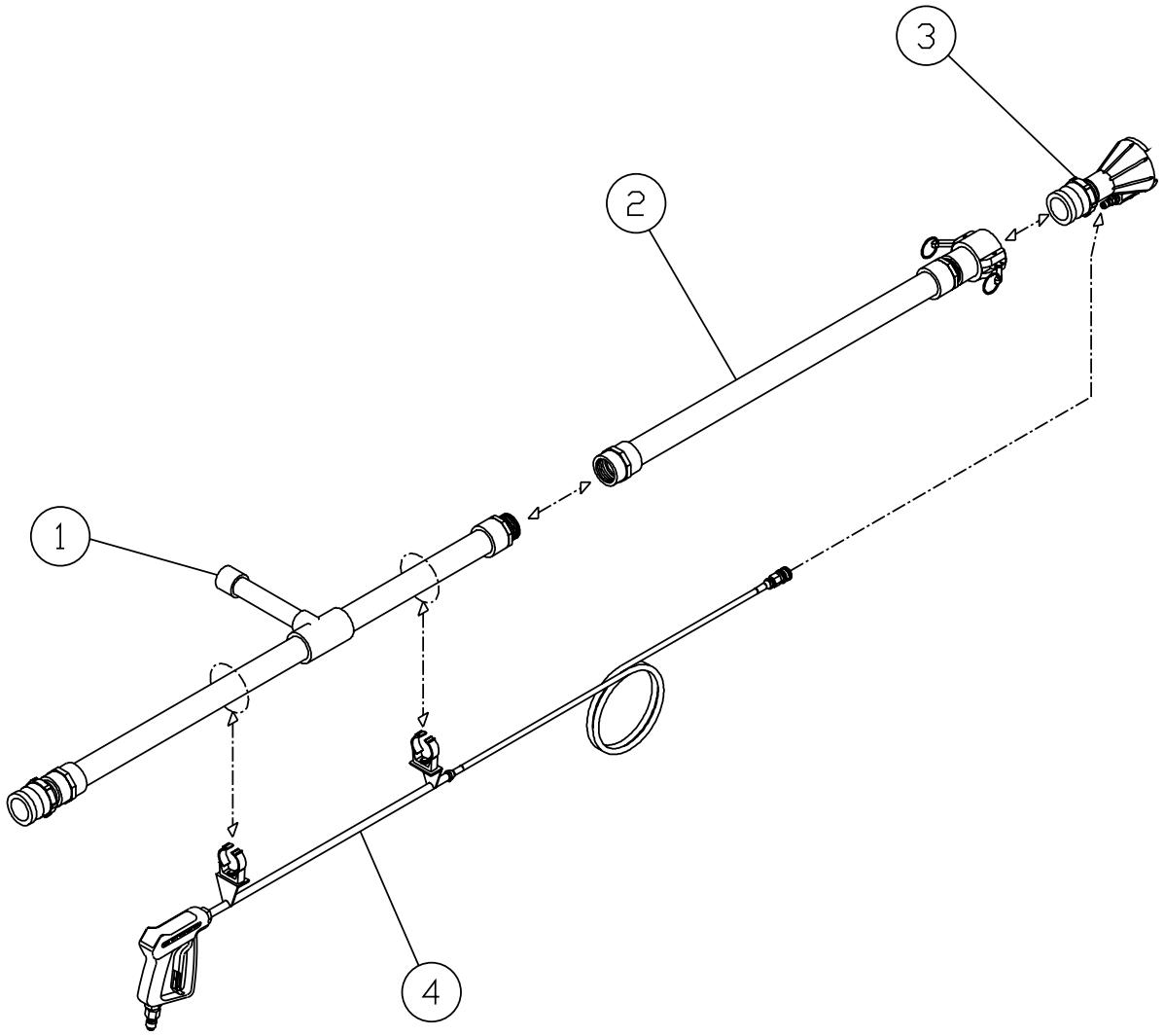
High-pressure water flows from the existing **Pressure Washer (1)** into the **Gun/Lance (2)** of the Pit Cleaner where it is directed into the **Sludge Pump (3)**. The high-pressure stream is directed up into the **PVC Body (4)** of the Pit Cleaner creating a vacuum (venturi effect) at the bottom opening of the Sludge Pump. This vacuum pulls liquids, sludge, and or solids from the bottom of the pit into the **PVC Body (4)** of the Pit Cleaner where it mixes with the high-pressure flow from the **Pressure Washer (1)**. This mix is then forced out through the back end of the Pit Cleaner and into the **PVC Hose (5)**, the hose directs the mixed flow into the **Sludge Cart (6)**. The mixed flow is then deposited into the Filtration Bag where the solids and sludge materials are filtered from the water, and retained in the bag allowing the cleaned water to return to the pit system.

EXPLANATION OF SLUDGE PUMP OPERATION



High-pressure water flows into the Sludge Pump through a 0° nozzle and is injected into the body of the Pit Cleaner. As the high-pressure water is flowing up the PVC body of the Pit Cleaner a vacuum (venturi action) is formed at the bottom end of the Sludge Pump. Debris and Sludge from the pit is pulled up into the high pressure stream and out through the body of the Pit Cleaner.

PIT CLEANER ASSEMBLY INSTRUCTIONS



PIT-0023-111099-JTR

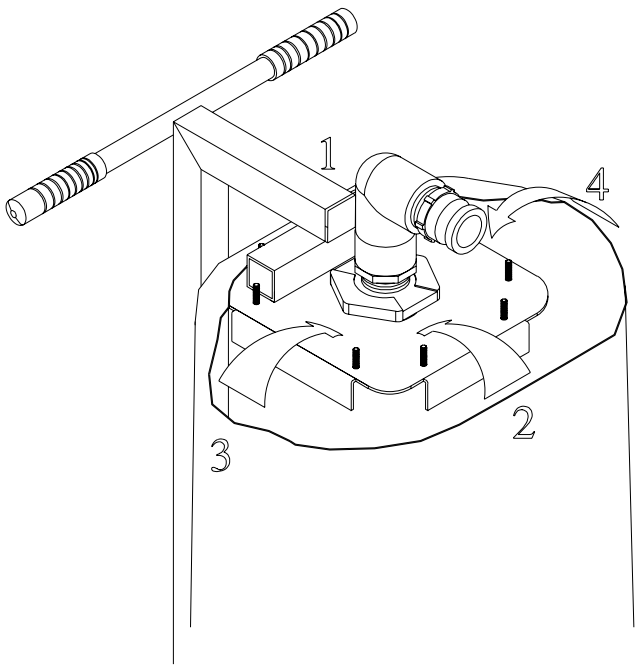
1. Main Wand Assembly
2. Extension Assembly
3. Sludge Pump Assembly
4. Lance Assembly

1. Screw main wand assembly into extension assembly. Make sure there is an adequate amount of Teflon tape on the male adapter of the main wand assembly.
2. Insert the sludge pump assembly into the coupler on the extension assembly and pull the levers back to lock in place.
3. Attach the lance assembly to the main wand assembly by pressing the pipe into the clamps until the clamps are fastened securely (two clicks).
4. Attach the quick connect from the lance assembly to the plug of the sludge pump assembly.

OPERATING INSTRUCTIONS

1. Place the Sludge Carrier on the wash pad so that water will drain to catch basin.
2. Attach one of the Biodegradable filter bags to the Sludge Carrier by pushing the bolts through the burlap weave of the bag. Make sure all eight bolts are pushed through the bag.

PIT0025-JJ



3. Connect one end of the Flex Hose to the cam lock fitting of the Sludge Carrier and the other end to the cam lock fitting on the top of the Pit Cleaner Assembly.
4. Attach the gun of the Pit Cleaner Assembly to the pressure washer with a hose that has a 3/8” female quick-connect fitting.
5. Start the pressure washer
6. To clean the pit, insert the head of the Pit Cleaner Assembly into the sludge at the bottom of the pit and pull the trigger on the gun.
7. The unit is operating correctly when you can feel a surge of fluid through the flex hose and see the sludge dump into the Biodegradable filter bag.
8. If the unit is not working correctly, check the following causes:
   a. The sludge is too thick to pump up the Pit Cleaner Assembly. Move the Pit Cleaner Assembly up and down in the pit to dislodge the sludge or remove it from the pit to flush out the sludge.

NOTE: The pressure washer must be shut off before checking causes "b-d".

   b. An object is lodged in the head of the Pit Cleaner Assembly. Remove the head if necessary to dislodge the object.
   c. Sludge has plugged the Pit Cleaner Assembly or Flex Hose. Undo cam lock fittings and remove obstruction.
   d. The nozzle in the head of the Pit Cleaner Assembly is clogged. Remove the head and use a 9/16” socket to remove and clean out the nozzle.

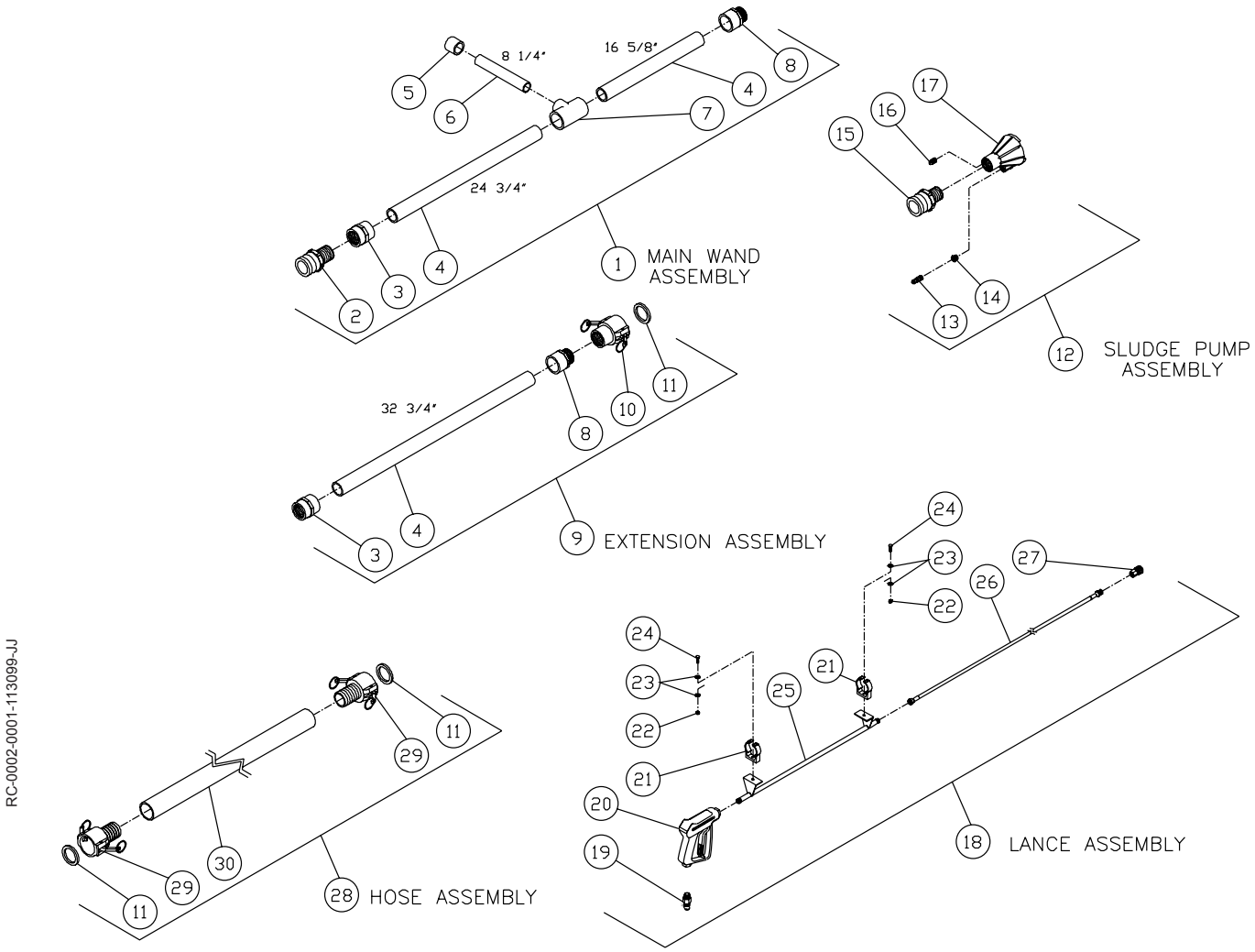
NOTE: Some debris cannot be removed from the pit. It may be necessary to periodically empty the pit and shovel the debris out by hand.

9. When a bag is full, stop cleaning the pit and disconnect the hose from the Sludge Carrier and cart it over to a drainage area. Tie off the bag and remove it from the cart to let it drain. It may take a couple hours to drain the bag.
10. Place the next bag on the Sludge Carrier and continue cleaning, replacing the bag when necessary.

REPLACEMENT PARTS

Biodegradable Filter Bags (Qty. 5) RC-0003-0002
Replacement O-ring for 1/4” Quick Connect 25-0123
Repair Kit for Gun..... 70-0055

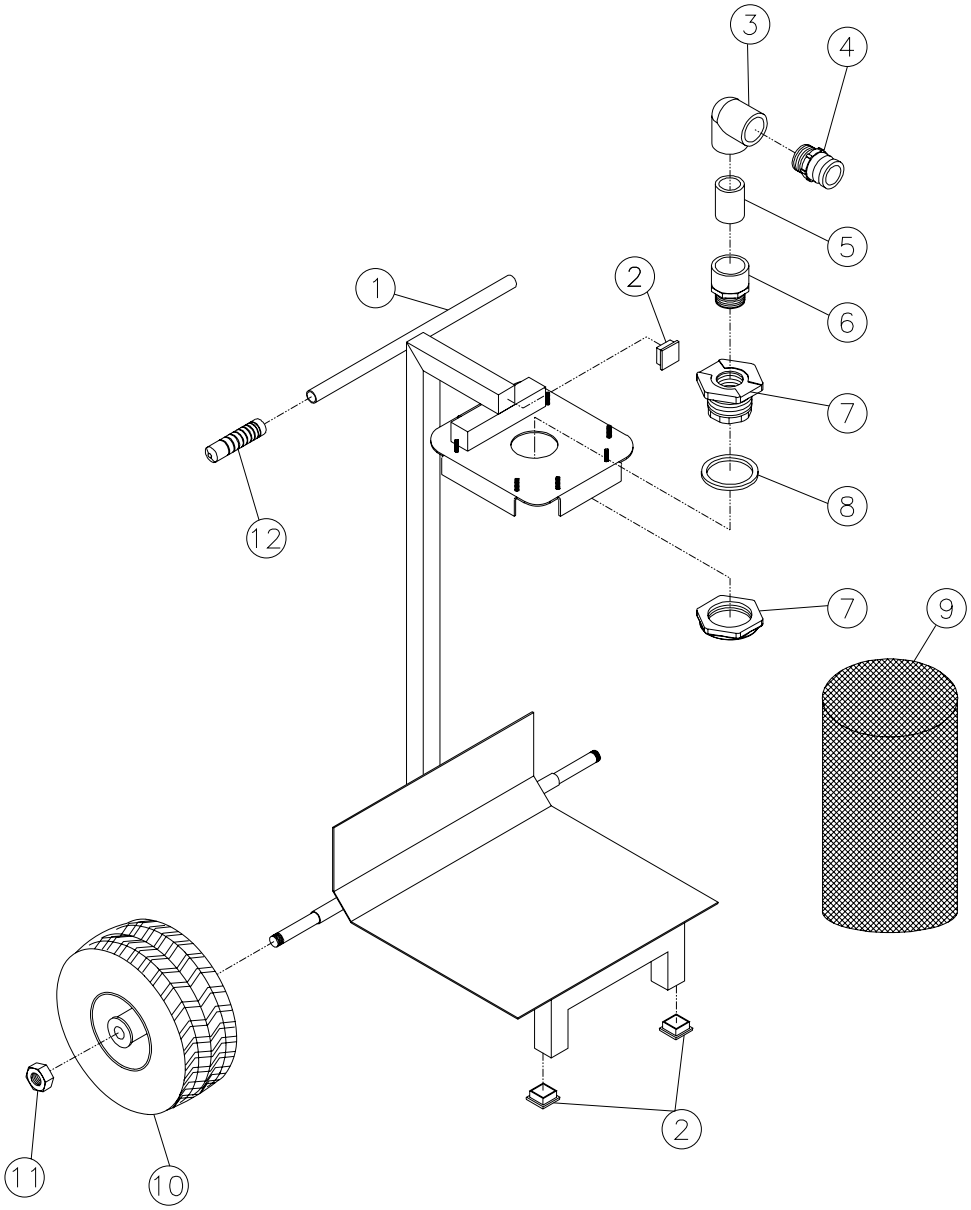
PARTS LIST PIT CLEANER



RC00020001-113099-JJ

PIT CLEANER							
REF. #	**DESCRIPTION**	**PART#**	**QTY.**		**REF. #**	**DESCRIPTION**	**PART#**	**QTY.**
1	Main Wand Assembly	N/A	1		17	Sludge Pump	50-0163	1
2	Adapter-Cam & Groove	55-0024	1		18	Lance Assembly	N/A	1
3	Adapter-Female	55-1621	2		19	Quick Connect Plug	17-0005	1
4	Pipe-1 1/2" *(6.18' required)	55-1600	1		20	Trigger Gun	16-0001	1
5	Cap - 1"	55-1238	1		21	Pipe Clamp	42-0026	2
6	Pipe-1" *(.68' required)	55-1200	1		22	Locknut	30-5202	2
7	Tee	55-1603	1		23	Washer	28-0121	4
8	Adapter-Male	55-1622	2		24	Bolt	27-5016	2
9	Extension Assembly	N/A	1		25	Lance	16-0380A01	1
10	Coupler-Cam & Groove	55-0060	1		26	Hose	15-0216	1
11	Gasket (with 55-0060)	25-0481	3		27	Quick Coupler Socket	17-0001	1
12	Sludge Pump Assembly	N/A	1		28	Hose Assembly	N/A	1
13	Quick Connect Plug	17-0002	1		29	Coupler	55-0053	2
14	Reducer	23-0017	1		30	Flex Hose (20')	15-0212	1
15	Adapter-Cam & Groove	55-0061	1		*Must order in one foot lengths.			
16	Nozzle-0004	18-0045	1					

PARTS LIST SLUDGE CART



RC-0003-0001-022800-JJ

RC-0003-0001-022800-JJ

SLUDGE CART								
REF. #	DESCRIPTION	PART#	QTY.		REF. #	DESCRIPTION	PART#	QTY.
1	Sludge Cart	5-0166-A01	1		8	Gasket	25-0481	1
2	Plug	62-0125	3		9	Filter Bag-Burlap	41-0190	5
3	Elbow Fitting	55-1610	1		10	Wheel	14-0017	2
4	Adapter	55-0024	1		11	Nut	30-0117	2
5	Pipe *(.23' required)	55-1600	1		12	Handle Grips	7-0143	2
6	Fitting	55-1622	1		*Must order in one foot lengths.			
7	Fitting	55-1686	1					

STATEMENT OF WARRANTY

Mi-T-M warrants all parts (except those referred to below) of your new Pit Cleaning system to be free from defects in materials and workmanship for One (1) Year from the date of original purchase.

Defective parts not subject to normal wear and tear will be repaired or replaced at Mi-T-M's option during the warranty period which upon examination is disclosed to have been defective in material or workmanship. In any event, reimbursement is limited to the purchase price paid.

EXCLUSIONS

1. Normal wear parts:
   -Quick Connects
   -Nozzles
   -Trigger Gun Valve Assembly

2. This warranty does not cover parts damaged due to:
   -normal wear, misapplication, modifications/alterations, abuse,
   -operation at other than recommended speeds, pressures or temperature,
   -the use of caustic liquids,
   -chloride corrosion or chemical deterioration,
   -fluctuations in electrical or water supply,
   -operating unit in an abrasive, corrosive or freezing environment.

3. This warranty does not cover parts damaged by failure to follow recommended:
   -installation, operating and maintenance procedures.

4. This warranty does not cover the cost of:
   -normal maintenance or adjustments,
   -labor charges,
   -transportation charges to Service Center,
   -freight damage.

5. The use of other than genuine Mi-T-M parts will void warranty. Parts returned, prepaid to Mi-T-M's factory or to an Authorized Service Center will be inspected and replaced free of charge if found to be defective and subject to warranty. There are no warranties which extend beyond the description of the face hereof. Under no circumstances shall Mi-T-M bear any responsibility for loss of use of the unit, loss of time or rental, inconvenience, commercial loss or consequential damages.

For Service or Warranty consideration, contact
Mi-T-M Corporation, 50 Mi-T-M Drive, Peosta, IA 52068-0050
563-556-7484 / 800-553-9053 / Fax 563-556-1235
Monday-Friday 7:30 a.m. - 5:00 p.m. CST