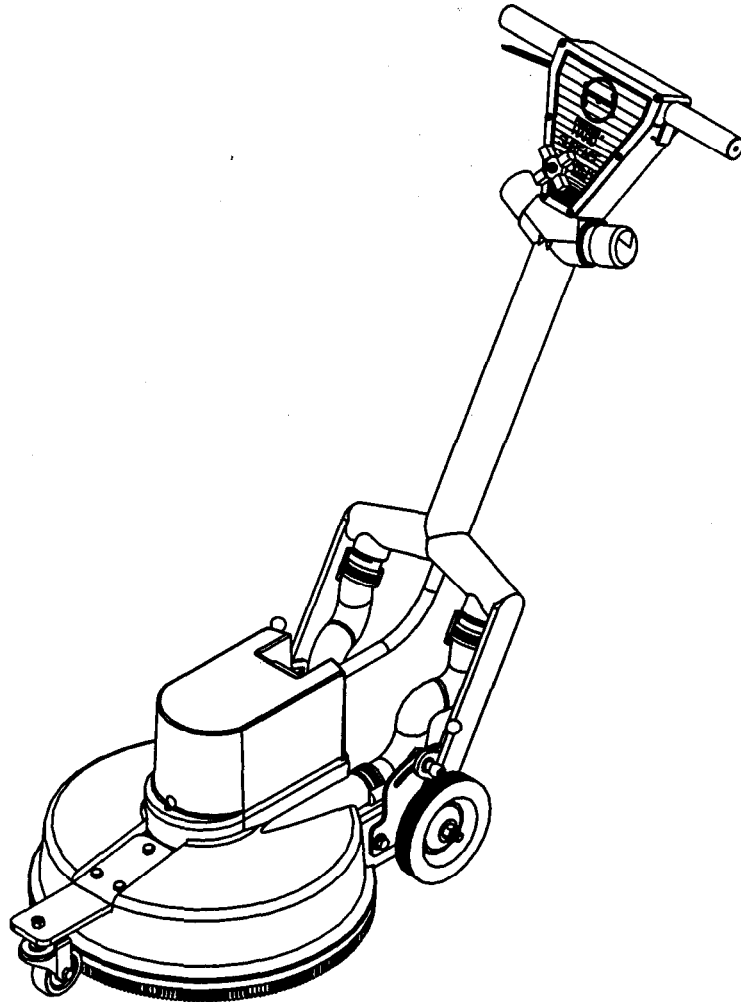


PROCHEM

HARD SURFACE CLEANER



January 2002

INSTRUCTION MANUAL & PARTS LISTING

Welcome...and congratulations on your purchase of the **PROCHEM Hard Surface Cleaner**. This instruction manual is a guide for operating and servicing your Hard Surface Cleaner. **Read this manual completely before operating this unit.**

Proper operation and service are essential to the efficient functioning of this unit. When maintained correctly, this unit will have a long, trouble-free life.

The service methods described in this manual are explained in such a manner that servicing may be performed accurately and safely. Proper service varies with the choice of procedure, the skill of the mechanic, and the tools or parts available. Before attempting any repair, make certain that you are thoroughly familiar with this equipment and equipped with the proper tools. Any questions pertaining to operating or servicing this unit should be directed to your nearest PROCHEM distributor.

The headings: **CAUTION** or **WARNING** are used to warn you that steps must be taken to prevent damage to the unit and/or personal injury. Make certain that you read all instructions entirely before proceeding with the operation of this tool.

MAKE CERTAIN THAT THE WARRANTY CARD IS FILLED OUT BY THE DISTRIBUTOR FROM WHOM YOU PURCHASED THIS UNIT AND RETURNED TO PROCHEM!

The serial number for your unit is permanently attached to the rear of the deck on the Hard Surface Cleaner. Please record your unit serial number in the box below for future reference.

This operation and service manual is written specifically for the **PROCHEM Hard Surface Cleaner** which is manufactured by:

PROFESSIONAL CHEMICALS CORPORATION
325 SOUTH PRICE ROAD
CHANDLER, ARIZONA 85224

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Published by Professional Chemicals Corporation.

Second printing: January 2002
Printed in USA

HARD SURFACE CLEANER MANUAL
67-945417

LIMITED WARRANTY

PROCHEM warrants your machine to be free of defects in material and workmanship. This warranty shall extend to the designated parts for the specific time period listed from the date of delivery to the user. If PROCHEM receives notice of such defects during the warranty period, PROCHEM will either, at its option, repair or replace products which prove to be defective. Any local or distant transportation, related service labor and diagnostic calls are not included.

Swivel-Union _____	1 year
Gauge _____	1 year
All Other Components _____	1 year

Brush, Wheels and other maintenance items are not covered under warranty.

This warranty shall not apply to defects resulting from improper operation, inadequate maintenance by the customer, unauthorized modification, misuse, or a **unit** that is improperly repaired.

To obtain warranty service, products must be returned to a service facility designated by PROCHEM. Customer shall prepay shipping charges for products returned to PROCHEM for warranty service and PROCHEM shall pay for return of the products to customer.

PROCHEM makes no other warranty, either expressed or implied, with respect to this product. PROCHEM disclaims the implied warranties of merchantability and fitness for a particular purpose. Any implied warranty of merchantability or fitness is limited to the specific duration of this limited **warranty**.

This warranty gives you specific legal rights, and you may also have other rights which may vary **from** state to state, or province to province.

The remedies provided herein are the customer's sole and exclusive remedies. In no event shall PROCHEM be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

Your PROCHEM unit is designed to give you years of reliable service. However, if a problem should arise after the warranty period, follow the troubleshooting procedures in the Operation and Service Manual. If you are still unable to determine the cause and solution to the problem, contact your nearest PROCHEM Service Center for details of the services available.

Components provided by PROCHEM, but supplied by other manufacturers, will only be warranted to the extent that they shall be warranted to PROCHEM.

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SECTION 1: GENERAL INFORMATION

SAFETY _____ **2**

SPECIFICATIONS _____ **5**

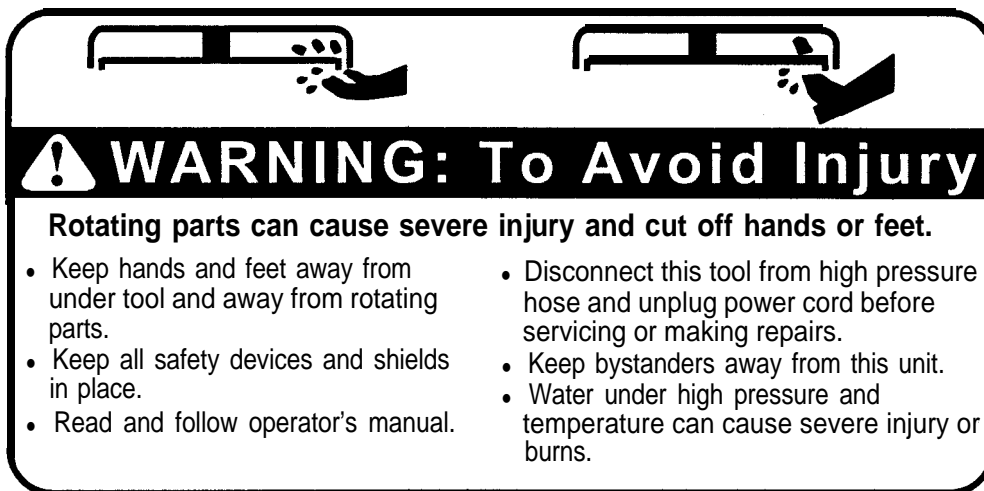
SAFETY:

IMPORTANT

United States Government safety standards have been adopted under the Occupational Safety and Health Act. These standards particularly the General Standards, Part 1910, and the Construction Standards, Part 1926 should be consulted in connection with your use of airless spray equipment.

A WARNING: FOR YOUR SAFETY!

The following **WARNING LABELS** are found on your Hard Surface Cleaner. These labels point out important **Warnings and Cautions**, which should be followed at **all** times. Failure to follow warnings and cautions could result in fatality, personal injury to yourself and/or others, or property damage. Follow these instructions carefully! **DO NOT** remove these labels.



Part #48-941260
Decal, Rotating Head

A

This symbol means **WARNING** or **CAUTION**. Failure to follow warnings and cautions could result in fatality, personal injury to yourself and/or others, or property damage. Follow these instructions carefully!

A WARNING!

Read the operator's manual before using this unit. Failure to adhere to instructions can result in severe personal injury or could be fatal.

We can not anticipate every possible circumstance that might involve potential hazard. The warnings, cautions and safety suggestions in this manual are therefore not all inclusive. If an operating or maintenance procedure not specifically recommended is used, you must satisfy yourself that it is safe for you and other persons. You must *also ensure that the tool will not be damaged or be made unsafe by the procedure you are using.

A WARNING!

Fluids under high pressure spray can be nearly invisible and can penetrate the skin and cause extremely serious injury!

If any fluid appears to have penetrated the skin, get emergency medical care at once! Do not treat as a simple cut. Tell the doctor exactly what fluid was injected. For treatment instructions, have your doctor call the: **National Poison Control Network (412) 681-6669**

1. **NEVER** put hands or fingers over the spray jet(s) while in operation.

2. **NEVER** attempt to stop the rotating tubes and jets with your hands or any other object.
3. **NEVER** tip the Hard Surface Cleaner backwards while in use.
4. **NEVER** attempt machine repairs or adjustments while machine is hot.
5. **NEVER** alter or modify this equipment! Your personal safety as well as the safety of other persons is at stake.
6. **NEVER** use any caustic chemicals or solvents as serious damage to the rotating union may result. If chemicals are used, a thorough flushing with clean waters should immediately follow.
7. **NEVER** attempt to push machine over hose while tubes are spitting.
8. **NEVER** use the Hard Surface Cleaner on any fractured or uneven surfaces as this could cause serious damage to the machine and the operator.
9. **ALWAYS** shut off the pressure washer and trigger the pressure gun to relieve system pressure before removing the spray jets or before performing any machine service.
10. **NEVER** operate the machine if any vibration is present.
11. **NEVER** run over trash, bags, cups, paper or other debris.
12. **ALWAYS** wear full eye protection, protective clothing, gloves and rubber boots when operating the machine to protect yourself from burns caused by hot spray, fluid injection or debris dislodged by high pressure spray.

13. **ALWAYS** operate the machine on level and horizontal surfaces. Never try to use machine on vertical pitched surfaces such as walls or roofs.
 14. **ALWAYS** replace spray jets with factory authorized replacements when necessary.
 15. **NEVER** leave an operating machine unattended. Always shut off the machine and relieve pressure before leaving the machine.
 16. **DO NOT** attempt repairs or modifications you do not understand. Contact your servicing dealer or service center.
 17. **NEVER** exceed the factory pressure or temperature rating of the Hard Surface Cleaner.
 18. **NEVER** operate the Hard Surface Cleaner unless the orifice size of a spray jet in the Hard Surface Cleaner, multiplied by the number of spray jets in use by the **Hard** Surface Cleaner, is equal to or greater than that required to operate the pressure washer at its manufacturer's rated specifications.
 19. **NEVER** operate the Hard Surface Cleaner with different orifice size spray jets.
 20. **NEVER** operate the Hard Surface Cleaner if one or more spray jets are plugged or if spray tubes are damaged.
- 2 1. **NEVER** allow the Hard Surface Cleaner to operate in one spot for extended lengths of time. Damage to the surface may occur.

DISCHARGE HOSE WARNING

The discharge hose supplied with the machine is designed for use on high pressure cleaners and accessories. Special care, handling and maintenance are required to provide proper and safe operation. The following guidelines must be followed to ensure safe operation and provide the maximum hose service life.

1. **DO NOT** route hose in a manner that will cause sharp bending, kinking, cutting, abrasions or other exterior damage.
2. **DO NOT** use the hose if cuts, leaks, abrasions, bulges or coupling damage is evident.
3. **DO NOT** attempt field repairs through an unauthorized hydraulic hose repair shop. Special couplings and crimping specifications are required for steam and high-pressure washer discharge hoses. Contact a qualified pressure washer service representative for repair of damaged hose.
4. **ALWAYS** examine hose couplings and quick disconnect before each operation. If leaking is evident, **do not** use. Contact a qualified pressure washer service representative.

SPECIFICATIONS:

BASE HEIGHT:	13"
OVERALL HEIGHT (in vertical position):	43"
WIDTH (base):	17"
APPROX. WEIGHT:	52 LBS.
CLEANING PATH:	14 1/2"
PRESSURE:	3000 PSI
VACUUM:	275 CFM
MAX. FLOW:	8 GPM
MIN. RECOMMENDED FLOW:	3 GPM
MIN. RECOMMENDED PRESSURE:	1500 PSI
MAX. TEMPERATURE:	210° F
SPEED:	2000 RPM
SPRAY TIPS:	15025 V-Jet Stainless (2)

SECTION 2: SET-UP AND OPERATION

RECEIVING YOUR UNIT _____ 7

PREPARATION & SET-UP _____ 7

OPERATING TIPS & PROCEDURES _____ 8

RECEIVING YOUR UNIT

Every part of your Hard Surface Cleaner unit was carefully checked, tested, and inspected before it **left** the manufacturing plant. Upon receiving the unit, examine the shipping carton and the machine carefully for any hidden damage that may have occurred during shipping. Claims for damage or shortage should be filed immediately with the contract carrier. Remove all loose parts and strapping which were attached to the unit for shipping purposes.

PREPARATION

The Hard Surface Cleaner is designed to be used in conjunction with a hot or cold high pressure washer to quicken the cleaning of large level surfaces. It is not designed for use on vertical or pitched surfaces such as walls or roofs.

A WARNING

The Hard Surface Cleaner is supplied with (2) 15 degree #2.5 orifice spray jets. Be sure that this size is compatible with the flow and pressure specifications of your pressure washer. **Never** allow the Hard Surface Cleaner to be used if the orifice size in the unit, multiplied by the number of arms in use, (in this case (2) #2.5 orifices equal a #5) is less than the orifice size required to operate the pressure washer at its manufacturers specifications. Serious personal injury as well as damage to the pressure washer may result if over pressurization occurs.

Upon removal of your Hard Surface Cleaner from its shipping carton, locate the swivel caster and bracket and the (3) 5/16-18 X 1-1/4 Hex Head Cap Screws and the (3) 5/16-18 Locknuts and attach the caster bracket to the cleaner deck as shown on page A-2.

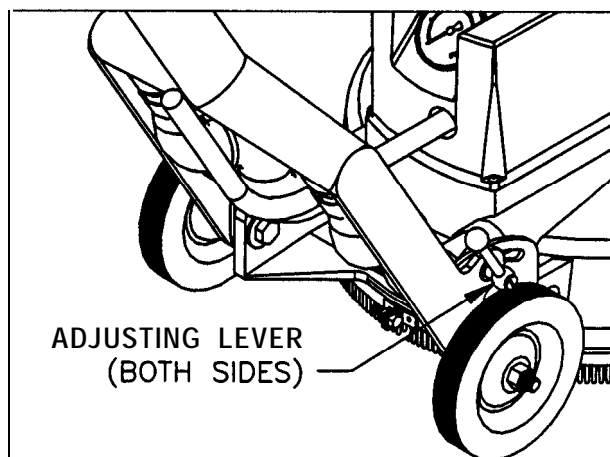
Handle Adjustment:

The height of the Power Glide handle may be adjusted to a comfortable position. To accomplish this, loosen the adjusting levers by pushing them downward. After positioning the handle at a comfortable height, tighten the adjusting levers by pulling them upward into locking position.

Every operator will have an ideal position for the tool handle that is most comfortable for them. Finding a comfortable position will reduce operator fatigue and make the work easier.

If a wheel is interfering with the positioning of either of the adjusting levers, re-positioning the lever is easy. Push the adjusting lever in toward the handle and rotate the lever to a better angle. When the desired angle is reached, let go of the lever and a spring return will lock the lever into its new position.

HANDLE ADJUSTMENT



A CAUTION

This machine operates under high pressure. Check all hose connections for tight fit prior to starting machine.

OPERATING TIPS AND PROCEDURES

1. Identify the surface that is to be cleaned.

There are many different types of surfaces that can be cleaned with the Hard Surface Cleaner. Therefore it is important that before you begin, you properly identify the surface that is to be cleaned. Each surface has its own characteristics that must be taken into account. A typical example would be the difference between a multi-level parking garage and a cement patio. Both are cement, but the parking garage cement typically is three times as strong as the patio. Therefore, if you are using a very high pressure washer, damage to the **softer** concrete may result. In order to avoid what could be a costly mistake, always perform thorough identification and inspection procedures.

There are a number of other items that you must be aware of when inspecting the job site. Potential problems must be identified before beginning work, such as cracked or fractured surfaces, anchor bolts, holes, rocks, uneven surfaces, etc. Any one of these can cause damage to the Hard Surface Cleaner. Therefore, it is recommended that you identify potential problem areas and mark them so that you can avoid damage to your Hard Surface Cleaner.

2. Identify the type of soil to be removed


In order to maximize the performance of the Hard Surface Cleaner, you must properly identify the type of soil that is to be removed. Typical sidewalk soils, such as gum, soda pop, candy and food would require minimal chemical preparation as opposed to degreasing a parking space which would typically require a presoaking with an industrial degreaser. No matter what the circumstances are, thorough identification is important.

3. Determine if a chemical is necessary and if so, which chemical is right for the job.

Once you have determined the type of surface and soil, you must determine if a chemical treatment is necessary. If a chemical is in fact necessary to loosen soil, be sure to include it in the test patch which will be discussed in tip number 5. Once again it is very important to identify the soil and prepare the surface with the proper chemical as this will assist you in maximizing the performance of the Hard Surface Cleaner.

4. Chemical application.

There are two methods of applying chemicals to surfaces. The most common method is by utilizing a Hudson sprayer. This method allows the highest concentration of chemical to be applied directly to the soil. The second method is by pumping the chemical through the Hard Surface Cleaner forcing the chemical onto the soil under high pressure. Either method is acceptable and results will vary from job to job. If you choose to run chemical through the Hard Surface Cleaner, you must flush the system for at least 5 minutes with clean water in order to make certain that there is no chemical remaining in the **union**. Failure to thoroughly clean the system can cause substantial damage to the union and void the warranty. The use of any acids through the Hard Surface Cleaner also voids the warranty.



CHEMICALS ARE CORROSIVE TO OPERATOR AND EQUIPMENT. THOROUGHLY FLUSH EQUIPMENT AFTER USE. IF OPERATOR COMES IN CONTACT RUSH AREA **WITH** CLEAN WATER AND SEEK MEDICAL TREATMENT.

5. Perform a test patch.

Once you have all the information necessary to proceed, pick a small inconspicuous area to perform a test patch. When choosing the test area, make certain that it is consistent with the general area to be cleaned. Next, connect the high pressure hose from the Hard Surface Cleaner to the port of the trigger gun. Pull the trigger to establish flow. With a smooth and steady motion, walk slowly forward approximately 5 feet. Release the trigger assembly and inspect the surface.

REMEMBER: You must include all factors when performing a test. Do not forget to turn on the burner if using hot water. Also apply chemical if inspection determined it is necessary.

6. Establish cleaning pattern.

Just as you would create a **pattern** when mowing a lawn, you should create a pattern with the Hard Surface Cleaner. There are several factors that you must take into consideration when determining the starting point.

- A. Establish a pattern that allows water to flow away from the immediate work area. This will eliminate as much standing water as possible.
- B. If possible, start at the highest point and work toward the lowest point. Do not attempt to operate the Hard Surface Cleaner through standing water as the effectiveness of the spray is dramatically reduced and possible damage to the unit could result.

Helpful Hints:

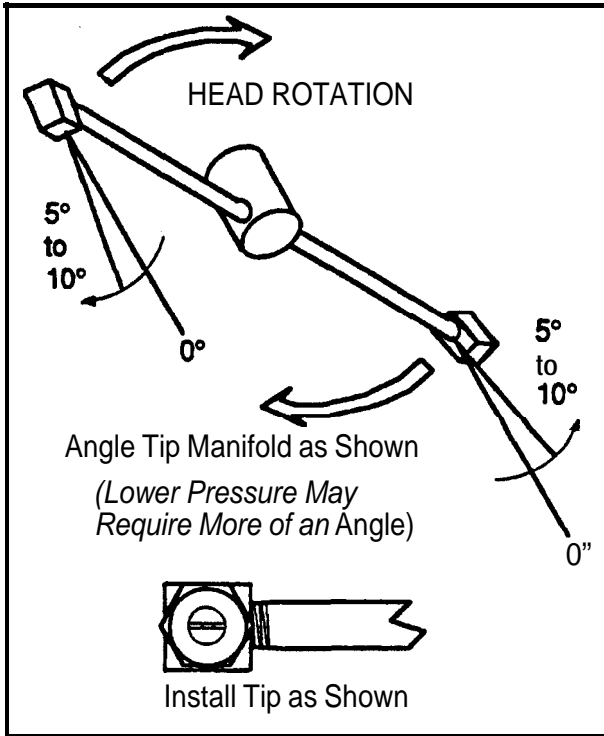
- 1) Try and route the hose so it is always to your back. This will eliminate having to constantly move it out of the way.
- 2) As you complete your first pass, you will most likely turn around and parallel that path back to the starting point. If you turned to the left at the end of the first path, turn right at the end of the second path. This will keep your hose from coiling up.
- 3) An in-line swivel between the hose and the inlet to the unit eliminates most of the coiling problems.

7. Tip adjustment.

- A. Make sure that both tips are of the same type and size.
- B. Make sure the angle of both tip manifolds are equal.
- C. Be sure the tip manifolds are angled in the opposite direction of the head rotation.
- D. Be sure the spray pattern of the tips are parallel to the manifold tube.

A CAUTION

The angle of the spray tips is very important. Too much angle will speed up the rotation of the wash wand and will damage the union!



SECTION 3: ROUTINE MAINTENANCE

SERVICE & MAINTENANCE SCHEDULE _____ 12

DAILY MAINTENANCE

The Hard Surface Cleaner, if properly maintained, will have a long and trouble-free life. We recommend that you make maintenance a part of your daily work schedule.

1. Check the spray tubes **daily** for signs of bending or damage.
2. Check spray angle settings with gauge **daily**. Adjust if necessary.
3. Check wash nozzle **daily** for clogging or damage.
4. Check spray tips **daily**. Clean spray tips if necessary.

WEEKLY MAINTENANCE

1. Check pressure hose **weekly** for wear or damage.
2. Check quick couplers weekly for leakage (if used).
3. Check in-line swivel **weekly** for leakage (if used).
4. Check wheels and grease when necessary.

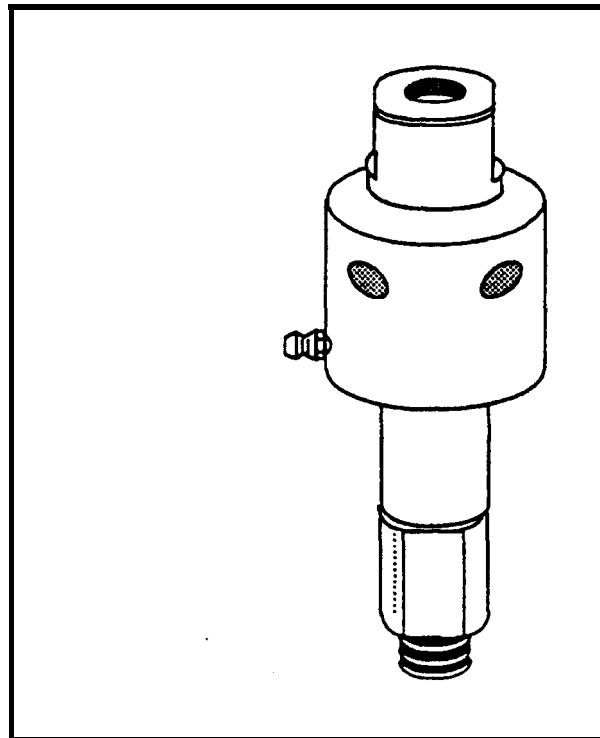
MAINTENANCE

Chevron **SRI** grease is the recommended grease for union maintenance. Lubrication requirements are 12 ounces of grease (3.5 grams) every 50 hours.

The union is pre-greased from the factory so the first lubrication is required at 50 hours.

IMPORTANT:

Over greasing can cause higher torque and slow down the rotation of the wash wand. Too much grease is worse than not enough. This design protects the ball bearings from moisture through the use of labyrinth seals, so frequent lubrication is not required.



SECTION 4: TROUBLESHOOTING

TROUBLESHOOTING _____ 14

A WARNING:

Before attempting any repairs or maintenance, be sure unit is shut-off and disconnected.

TROUBLESHOOTING

Most problems are simple and easily corrected. Check the easiest and obvious things first, and work to correct the problem. After a problem has been corrected, be sure to locate and correct the cause of the problem so that it won't happen again.

Use the troubleshooting guide on the next page to assist you in problem solving. If the information in this manual does not address your particular problem, contact the nearest PROCHEM dealer **and/or** service center for help. **DO NOT** attempt repairs you do not understand.

SPECIFIC PROBLEMS

1. LOSS OF VACUUM

While cleaning, the vacuum is not up to par.

PROBABLE CAUSES	CORRECTIVE ACTION
Vacuum hose(s) is damaged, causing a suction leak.	Inspect the vacuum hose(s). Repair or replace.
Restricted air flow.	Check for obstructions in vacuum tubes.
Clogged vacuum ports.	Remove shroud from deck and clean out debris from underside of deck.
Low vacuum flow from cleaning unit.	Refer to troubleshooting section in equipment manual.

PROBABLE CAUSES	CORRECTIVE ACTION
Nozzle(s) set at improper angle.	Set nozzles to proper and equal setting.
Clogged nozzle(s).	Remove nozzle, inspect for debris, clean and replace nozzle.
Bent tubes.	Inspect manifold assembly for damaged tubes. Replace as necessary.
Worn or damaged union.	Inspect union for play in shaft. Replace union if necessary.
Different size spray nozzles.	Make sure nozzles are of equal orifice size.
Wheels or wheel brackets are loose or damaged.	Inspect and repair as necessary.

PROBABLE CAUSES	CORRECTIVE ACTION
Debris has attached to front or rear wheels.	Inspect wheels for debris and clean if needed.
Lack of adequate lubrication.	Grease rear wheels.

4. NOZZLE WILL NOT SPIN

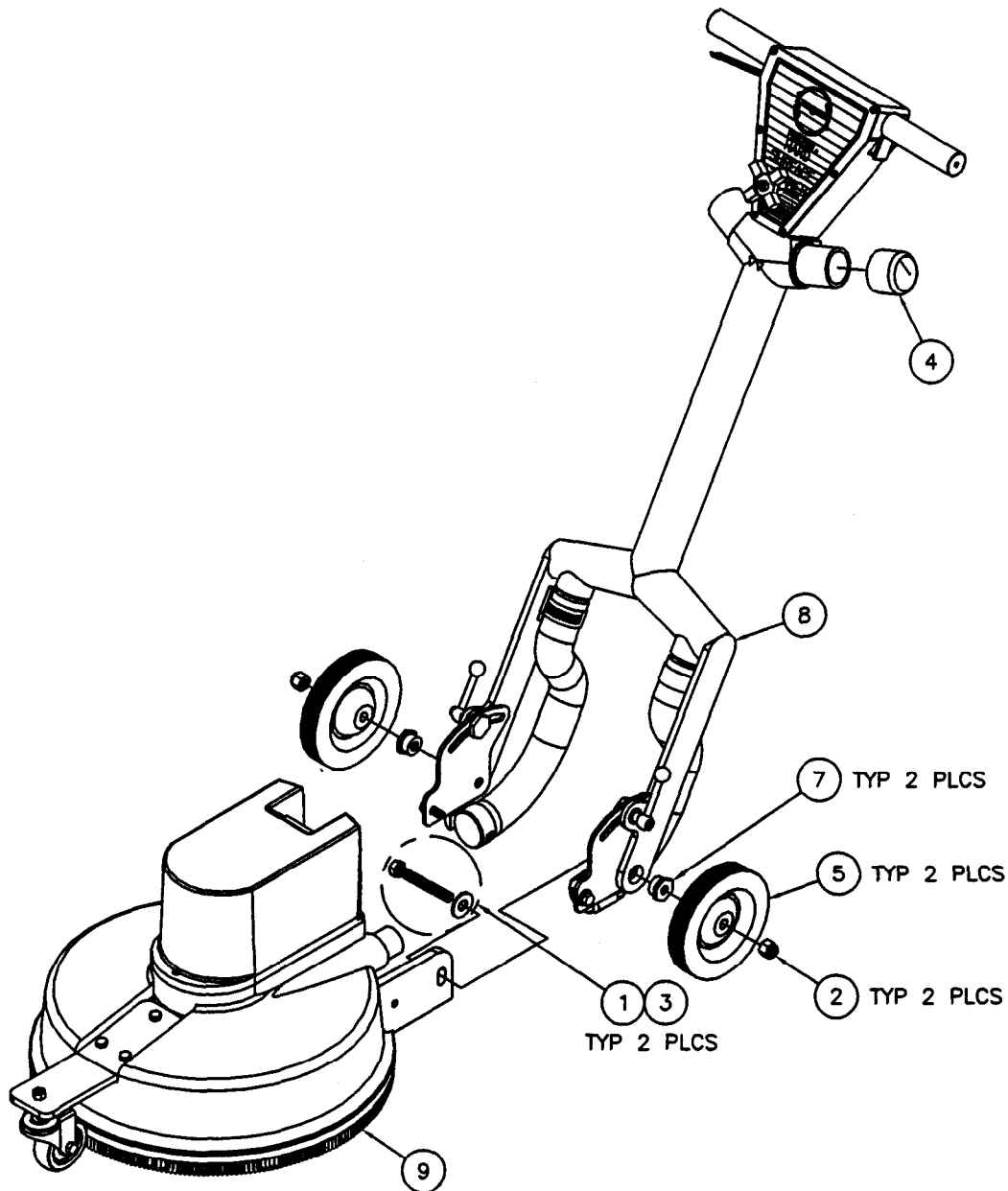
PROBABLE CAUSES	CORRECTIVE ACTION
Nozzle(s) set at improper angle.	Set nozzle(s) to proper and equal setting. (Refer to pages 9 and 10.)
Plugged nozzle(s).	Remove nozzle(s), inspect for debris, clean and replace nozzle(s).
Rotating union has failed.	Inspect union and replace as necessary,
No pressure to unit.	Check for pressure at pressure washer.

ILLUSTRATION INDEX

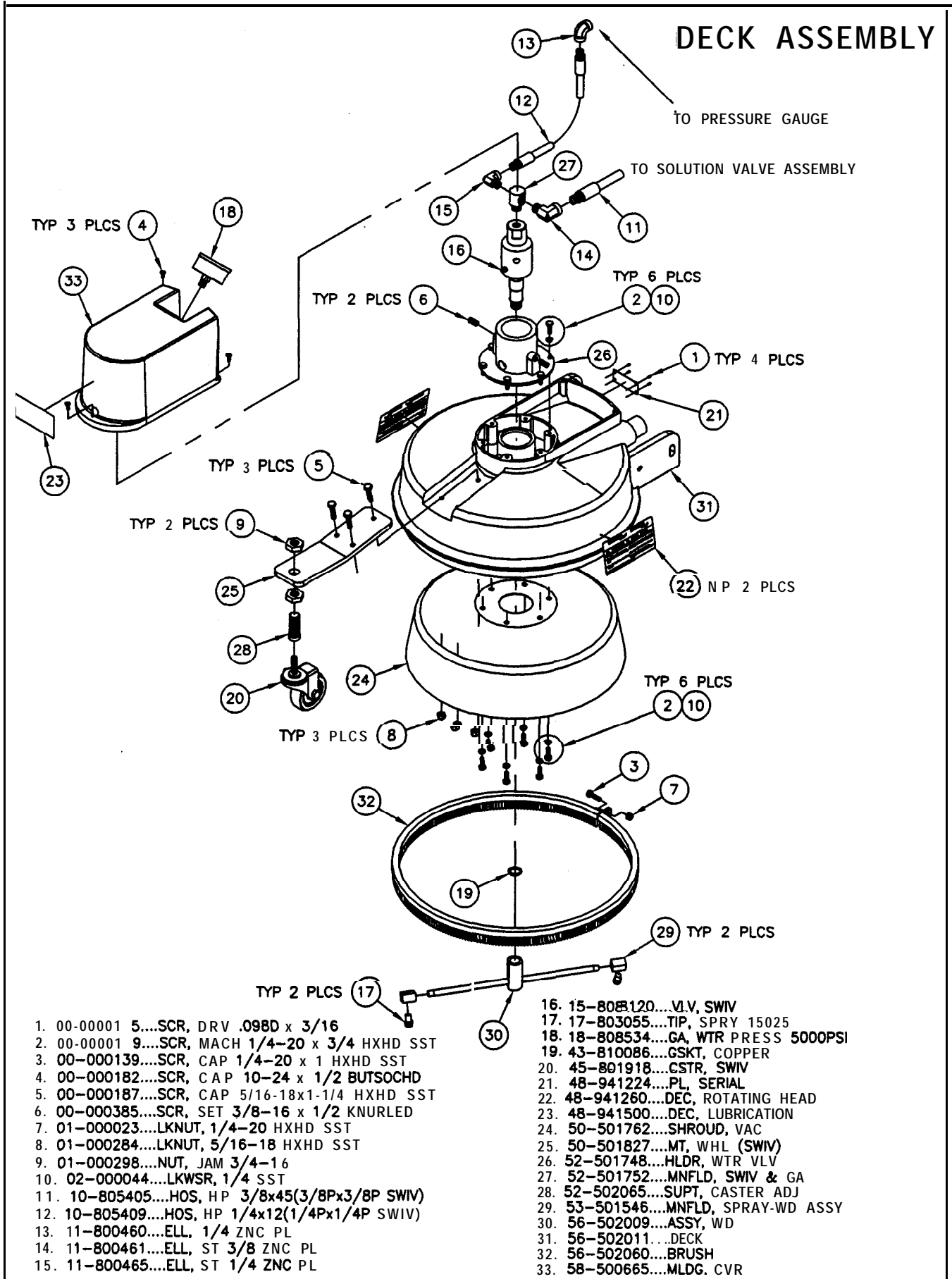
UN-IT ASSEMBLY	A-1
DECK ASSEMBLY	A-2
HANDLE ASSEMBLY	A-3

NOTES

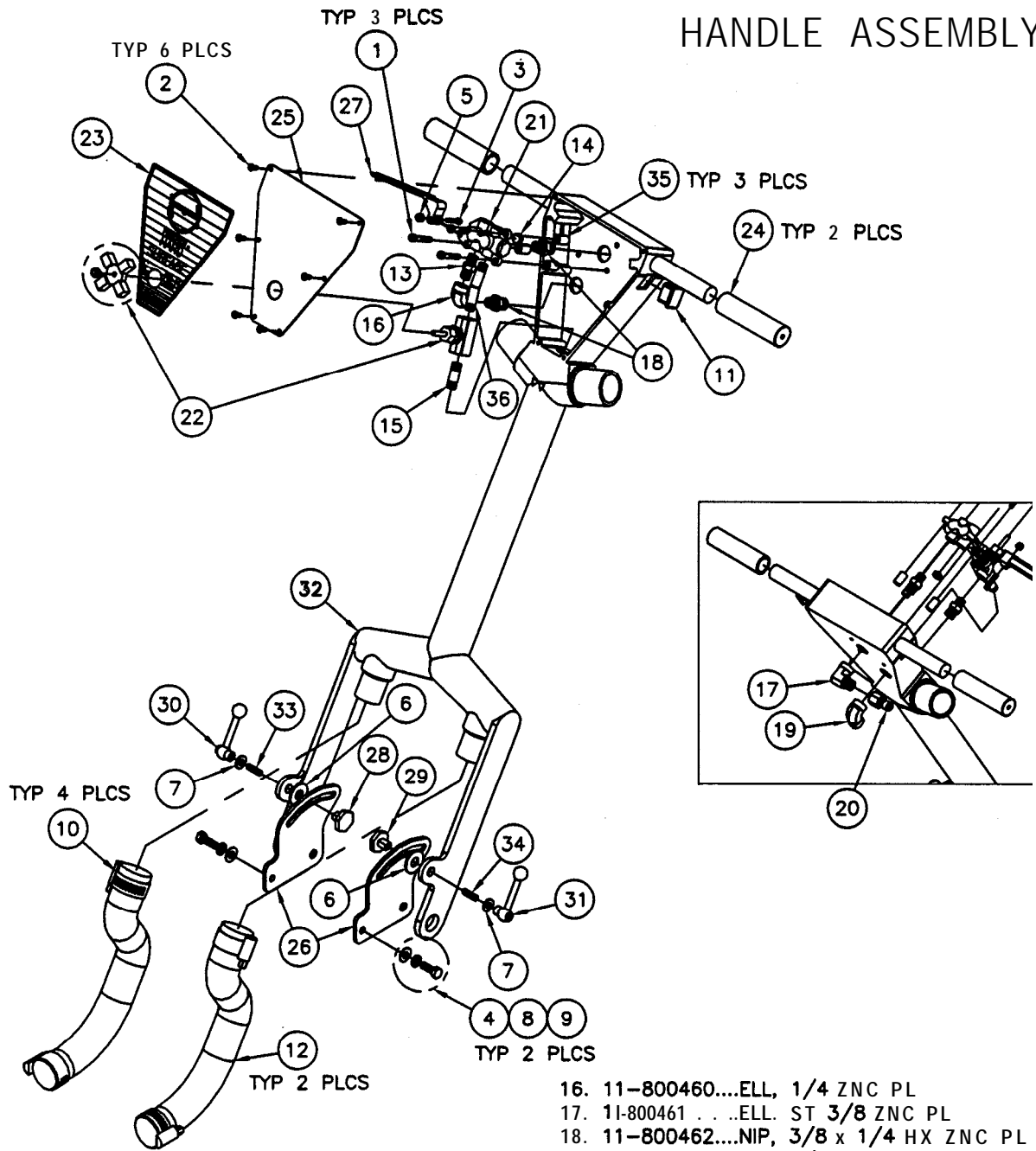
1. PART NUMBERS 6, 10 & 11 NOT SHOWN.

UNIT ASSEMBLY

1. 00-000323....SCR, CAP 1/2-13 x 3-1/2 ALLTHD
2. 01-000283....LKNUT, 1/2-13 NYLOK
3. 02-000058....FLTWSR, 1/2
4. 04-000329....CAP, VAC
5. 45-801915....WHL, 6 "
6. 48-941296....LBL, INSPECTION QC (PINK)
7. 52-501737....BUSH, HDL 5/8
8. 61-951667....ASSY, HANDLE
9. 61-951671 . . .ASSY, DECK
10. 67-945417....MANUAL, INSTRUCT
11. 90-009051 . . .BX, 26-3/4x19-1/2x46



HANDLE ASSEMBLY



- 1. 00-000022....SCR, CAP 1/4-20 x 1-1/2 SOCHD SST
- 2. 00-000182....SCR, CAP 10-24 x 1/2 BUTSOCHD
- 3. 00-000337....SCR, CAP 10-32 x 1 SOCHD SST
- 4. 00-000361....SCR, CAP 3/8-16 x 1 HXHD SST
- 5. 01-000241 . . .LKNUT. 10-32 HXHD SST
- 6 . 02-000058....FLTWSR, 1/2
- 7. 02-000143....FLTWSR, 5/16
- 8. 02-000285....LKWWSR, 3/8 SST
- 9. 02-000293....FLTWSR, 3/8 SST
- 10. 03-0001 10....CLMP, HOS #24 1-1/16MIN 2MAX SST
- 11. 04-000348....CAP, PLUG REC 1 x 1-1/4
- 12. 09-805450....HOS, VAC 1 -1/2 x 12 CLEAR
- 13. 1 1-800128....NIP, 1/4 HX SST
- 14. 11-800345....PLG, 1/4 SOCHD BR
- 15. 11-800374....NIP, 1/4 x 1-1/2 SST

- 16. 11-800460....ELL, 1/4 ZNC PL
- 17. 11-800461 . . .ELL. ST 3/8 ZNC PL
- 18. 11-800462....NIP, 3/8 x 1/4 HX ZNC PL
- 19. 11-800464....ELL, 3/8 ZNC PL
- 20. 13-806033....DSC, 3/8M x 3/8FP(ST) S ST
- 21. 15-808121 . . .ASSY, SOL VLV
- 22. 15-808125....VLV, MET 1/4P (HP)
- 23. 48-941223....DEC, HSC (W/PATENT N O .)
- 24. 49-802527....GRIP, RUB
- 25. 50-501826....CVR, HDL
- 26. 50-502001 . . .BRKT, HDL ADJ
- 27. 52-501718....LVR, VLV
- 28. 52-501729....HLDR, RT HDL ADJ LVR
- 29. 52-501730....HLDR, L HDL ADJ LVR
- 30. 52-501731 . . .LVR. RT HDL ADJ
- 31. 52-501732....LVR, L HDL ADJ
- 32. 52-501868....HDL, UPR&LWR
- 33. 54-501656....RD, 5/16-18 x 31(RT)
- 34. 54-501657....RD, 5/16-18 x 31(L)
- 35. 54-501662....SPCR, VLV
- 36. 55-501798....TB, BYPASS-SOL VLV