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McNeilus®

An Oshkosh Corporation Company

Manual P/N: 1425111

SSP Universal Tap-In Kits

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SSP Universal Tap-In Kits

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FOREWORD

Purpose of Manual

This manual provides safety, installation, pressure settings, troubleshooting and parts information for the SSP Universal Tap-In Kits manufactured by McNeilus® Street Smart Parts and Service™.

The information in this manual will be your guide to operation and maintenance for this equipment.

Scope

This manual provides information for use by the equipment operator and service personnel under the following headings:

- **Safety**
- **Installation**
- **Pressure Settings**
- **Troubleshooting**
- **Illustrations and Parts Lists**

To order a replacement manual or safety warning decals, contact one of the regional McNeilus® Factory Service/Parts locations.

SSP Universal Tap-In Kits

FOREWORD

Branch/Factory Service/Parts Locations

Contact your McNeilus® Street Smart Parts and Service™ location to order parts, receive service information or for other assistance. A listing of locations and phone numbers is given below, sorted alphabetically by state:

State	City	Phone
AZ	Phoenix	602-484-4060
CA	Los Angeles	909-370-2100
CA	Stockton	209-931-4282
CT	Hartford	860-653-5548
FL	Tampa	813-985-4817
GA	Atlanta	770-459-5151
IL	Chicago	630-466-5100
IN	Fort Wayne	260-489-3031
MN	Dodge Center	507-374-6321
NC	High Point	336-887-8740
NV	Las Vegas	702-643-2344
OH	Cincinnati	513-874-2022
OH	Columbus	614-868-0760
PA	Philadelphia	610-286-0400
TX	Dallas	972-225-2313
TX	Houston	713-672-9799
UT	Salt Lake City	801-954-8709
WA	Tacoma	253-904-9400
WI	Oshkosh	920-235-8898

Canada	Phone
Ontario and Western Provinces	800-265-1098
Quebec and Maritime Provinces	800-996-4937

Corporate Headquarters

Contact McNeilus® Street Smart Parts and Service™ directly at our corporate headquarters at the following address, phone numbers and website address:

McNeilus® Street Smart Parts and Service™
615 East Highway Street
P.O. Box 70
Dodge Center, MN 55927

Telephone: (507) 374-6321
Toll Free: (888) 686-7278
(888) MTM-PART
Fax: (507) 374-6306

Website: www.mcneiluscompanies.com

SAFETY

Important Safety Information

⚠ WARNING

Read and understand this entire manual before installing, operating, repairing or adjusting your SSP Universal Tap-In Kits.

Those who use and maintain this equipment must be thoroughly trained and familiar with the product.

If incorrectly used or maintained, this equipment can cause severe injury or death.

Always keep this manual in a location where it is readily available for persons who operate or maintain the product. Additional copies of this manual are available from McNeilus® Street Smart Parts and Service™. Please contact your McNeilus® Factory Service/Parts location to order parts, additional manuals or if you have any questions about the information in this manual, this product or safe operating procedures.

THESE SAFETY PROCEDURES ARE FOR YOUR OWN PROTECTION.

Do not operate this equipment until you have read its contents thoroughly. Please contact McNeilus® Truck and Manufacturing, Inc. if you require assistance!

Should operators of this equipment have a reading or learning disability, dyslexia or other such condition, then they must be assigned a mentor/trainer to read and explain to them the entire contents of this manual as well as the safety guidelines and danger, caution and warning decals on this unit. Such individuals should not be allowed to operate this equipment until they thoroughly understand all of these materials. Failure to do so can result in serious injury or death.

Safety and safe working procedures must be followed at all times.

OSHA LOCKOUT/TAGOUT procedures must be followed during installation or while performing Daily Checks or Scheduled PM on this equipment. If you are unfamiliar with the OSHA LOCKOUT/TAGOUT procedures or any other safety requirements, please contact McNeilus® Street Smart Parts and Service™.

SAFETY

LOCKOUT/TAGOUT Procedure

⚠ DANGER

LOCKOUT/TAGOUT procedures must be followed when working on this equipment including, but not limited to, cylinders being changed or maintained. Failure to heed these instructions/warnings can result in serious personal injury or death.

Before entering Packer, or climbing or getting under truck to perform any work, read and follow OSHA regulations concerning entry and working in “CONFINED SPACE” OSHA 1910.146 AND “LOCKOUT/TAGOUT” OSHA 1910.147.

Follow OSHA regulations while performing any work to the Packer or SSP Universal Tap-In Kits.

Follow all safety instructions in this McNeilus® Street Smart Parts and Service™ SSP Universal Tap-In Kits manual and the OEM manuals for Packer.

Shut off truck engine, lock cab doors and keep key in your pocket before entering or climbing on, or getting under truck to perform any work to the Packer.

Place magnetic “DANGER” signs on both cab doors (McNeilus® part number 0602477).

Lockout supplies are available from McNeilus® Street Smart Parts and Service™. Call (507) 374-6321 for assistance.

SAFETY

Safety Notices

Safety notices are one of the primary ways to call your attention to potential hazards.

THIS SAFETY SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL.

WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS.

BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY OR DEATH.

The following safety notices are used throughout this manual.

DANGER

A hazard that will result in death or serious personal injury.

WARNING

A hazard which may result in death or serious personal injury.

CAUTION

A hazard which may result in personal injury or damage to property or equipment.

SAFETY NOTICE

Procedures that must be performed for safe operation and/or maintenance.

OPERATOR'S INSTRUCTION

Information related to the proper operation and/or maintenance.

The "signal words" of DANGER, WARNING and CAUTION have specific meanings to alert you to the relative level of hazard.

Take the safety warnings seriously. If you do not understand them or have questions about them, call McNeilus® Street Smart Parts and Service™.

SAFETY

Product Safety Information

Read, understand and follow the safety guidelines and heed dangers and warnings listed below and contained in this manual as well as on the SSP Universal Tap-In Kits and Packer itself to promote reliable operation and prevent serious personal injury.

Contact McNeilus® Truck and Manufacturing, Inc. if you require assistance or have questions.

Safety

⚠ WARNING

Immediately replace safety decals if damaged, unreadable or missing. Contact McNeilus® Street Smart Parts and Service™ for no-charge replacement decals when required. Failure to replace decals may result in serious personal injury or death.

⚠ WARNING

The SSP Universal Tap-In Kits must not be modified in any way without authorization from McNeilus® Truck and Manufacturing, Inc. Modifications may not comply with safety standards, including ANSI safety standards, and may result in serious personal injury or death.

Operation

⚠ DANGER

Wear the proper protective clothing when operating or maintaining the SSP Universal Tap-In Kits. Hard hats, safety glasses, gloves and safety shoes should be worn. Reflective clothing is recommended for drivers and employees while operating during darkness. Serious injury or death can result without proper protective gear.

⚠ WARNING

All owners and supervisors should make sure all drivers, operators and maintenance personnel have read and thoroughly understand the decals affixed to the SSP Universal Tap-In Kits as well as the safety information and instructions in the Packer Operator Manual. Owners and supervisors must comply with ANSI Z245.1 regulations.

⚠ WARNING

Never walk or stand behind the Packer while it is backing up.

Failure to heed these instruction/warnings may result in serious personal injury or death.

SAFETY

⚠ WARNING

Always keep hands and feet and other parts of your body clear of revolving or moving parts. Failure to comply can cause serious injury or death.

⚠ WARNING

Be sure everyone is clear of the area around the Packer before operating the SSP Universal Tap-In Kits. Remain attentive at all times when operating the controls. Watch the mirrors for activity. Never back up the Packer unless and until you are completely sure it is safe. Use a spotter/observer and/or get out and check yourself, if necessary, to ensure it is safe to do so. Thoroughly understand the controls before operating the SSP Universal Tap-In Kits. Failure to heed this warning may result in serious personal injury or death.

⚠ WARNING

Never operate the hydraulic system if a leak is present. Serious injury or death may result.

Maintenance

⚠ DANGER

LOCKOUT/TAGOUT procedures must be followed when working on this equipment including, but not limited to, cylinders being changed or maintained. Failure to heed these instructions/warnings can result in serious personal injury or death.

⚠ WARNING

Never wear watches, rings or jewelry while working with electrical and mechanical equipment. These items can be hazardous and can cause serious and painful injuries or death if they come into contact with electrical wires, moving parts or hydraulic equipment.

⚠ WARNING

When working on the Packer, the wheels must be blocked, the parking brake on, LOCKOUT/TAGOUT procedures in effect and the key out of the chassis ignition. Failure to do so may result in serious personal injury or death.

SSP Universal Tap-In Kits

SAFETY

⚠ WARNING

Hydraulic systems operate under high pressure. Only qualified, experienced people properly trained in hydraulic system maintenance should attempt repairs or troubleshoot hydraulic systems. Use the proper tools and equipment when servicing the hydraulic system. Failure to comply can cause serious injury or death.

⚠ WARNING

All hydraulic pressure must be relieved from the hydraulic system prior to removing any components from the system. To relieve the hydraulic pressure from the hydraulic system, turn the chassis engine OFF and operate the Packer controls with the key in the ON position. This will allow the spools to shift and relieve the hydraulic pressure. Failure to comply can result in serious injury or death.

⚠ WARNING

Anytime the Packer hoist is raised in the shop, the hoist must be supported to prevent it from lowering unexpectedly. Never allow anyone to work around or enter the hoist area unless the hoist is properly supported! Failure to follow this procedure can result in serious injury or death.

⚠ WARNING

The hydraulic cylinders can be holding a function in a certain position when the engine is OFF. An example of this would be a function being held in the lift or partial lift position by the cylinders. If a hydraulic line is removed or the hydraulic circuits or controls are being worked on, gravity may allow the function being held in position to drop. All workers and personnel must remain clear of these areas when working on or operating the equipment. Block and secure all applicable devices and functions before beginning work or operation. Failure to comply with this can result in serious injury or death.

⚠ CAUTION

Disconnect battery before welding on body.

Failure to do so may result in personal injury or damage to property or equipment.

SAFETY

Hydraulics

⚠ DANGER

Hydraulic systems operate under very high pressure. Hydraulic fluid escaping from a pressurized system can penetrate unprotected body tissue. Never inspect for hydraulic leaks with bare hands or other exposed body parts. As a minimum, wear leather gloves and use cardboard or wood to inspect for leaks. If leaks are present, relieve pressure and allow system to cool prior to servicing. If injured by escaping hydraulic oil, contact a physician immediately. Serious complications may arise if not treated immediately.

⚠ WARNING

Hydraulic hoses, fittings, tubes and pipes must be inspected on a daily basis for leaks, cuts, abrasions, damage, aging, improper clearance and along the frame for hidden damage. If you find any with these adverse conditions or damage, they must be replaced before the Packer is returned to service! In any event, all hydraulic hoses must be replaced every three (3) years or 7500 hours. Failure to properly inspect and maintain your SSP Universal Tap-In Kits may result in serious personal injury or death.

⚠ WARNING

Hydraulic systems are hot. DO NOT TOUCH! Serious personal injury or death may result from hot oil. When you have completed working on the hydraulic systems, thoroughly clean any spilled oil from the equipment. Do not spill any hydraulic fluid on the ground. Clean any hydraulic fluid from your skin as soon as you have completed your maintenance and repairs. Dispose of used oil and filters as required by law.

⚠ WARNING

Correct hoses, fittings and adapters with the correct SAE rating must be used when replacing hoses to prevent possible serious injury or death. Always replace hoses, fittings and adapters with replacements that have a proper, suitable working pressure rating. Replacement hoses must be of the correct length and must comply with the hose manufacturer's installation guidelines and recommendations. Consult hose and fitting manufacturers for correct specifications.

⚠ WARNING

Hydraulic hoses have the SAE ratings marked on the hose to assist in selecting the correct hose. Replacement hydraulic hose and fitting components must be supplied by the same manufacturer to prevent serious injury. As an example: Brand "A" hose and brand "B" fitting will not normally be compatible.

SSP Universal Tap-In Kits

SAFETY

⚠ WARNING

Any hydraulic tubing that is replaced must conform to SAE J1065 specifications. If incorrect hydraulic tubing is installed, the hydraulic system may fail and serious injury or death can result. Damage or leaking tubing must be replaced before the Packer is returned to service.

⚠ WARNING

Never heat hydraulic tubes or pipes. The carbon content of the steel in the tubes or pipes is such that if heated for bending, and either water or air quenched, the tubes or pipes may lose their ductility and thereby be subject to failure under high pressure or hydraulic shock conditions. Serious injury or death can result. Damaged or leaking tubes or pipes must be replaced before the Packer is returned to service.

⚠ WARNING

Increasing hydraulic pressure beyond the recommendations may result in serious damage to the SSP Universal Tap-In Kits or serious personal injury or death and may void the SSP Universal Tap-In Kits Warranty.

⚠ WARNING

Hydraulic components can be heavy. Use caution while lifting these components. Serious personal injury or death can be avoided with proper handling of the components.

⚠ WARNING

Do not steam clean or pressure wash hydraulic hoses or components. Failure to comply can result in serious injury or death. Steam cleaning, using extremely hot water or pressure washing may damage the hoses and components and shorten the life or cause failure of the components.

⚠ WARNING

Allow no twist when installing hoses. Remember that 7° of twist per foot decreases hose life by 95%. When installing hydraulic hose, use a wrench to hold the hose in its natural position before tightening the fittings. Failure to comply can result in serious injury or death.

⚠ WARNING

When performing hydraulic test procedures, use the proper hydraulic gauges. Installing an incorrect test gauge could result in serious injury or death if the gauge fails. Use properly rated hydraulic hoses with adequate length to allow the test gauge to be used far enough away from moving parts and functions.

SAFETY

⚠ WARNING

Many hose coverings are available. Choose the hose manufacturer's covering which is most resistant to acid wash. Failure to comply can result in serious injury or death. Some hose coverings may retain acid wash and cause premature failure of the hose.

⚠ WARNING

Anticipate a 4% hose shrinkage factor when determining hose length. When a hose pressurizes, it expands and becomes shorter. Hose style shrinkage rates vary among different size and brand hoses. Allowing 4% will prevent the hose from tugging on the fittings when the hose is pressurized. Failure to comply can result in serious injury or death. Example: a 50" hose would have to be 4% longer, or 52" total length.

SAFETY

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INSTALLATION

LOCKOUT/TAGOUT Procedures

Installation of the SSP Universal Tap-In Kits must be performed by skilled service personnel. Safety and safe working procedures must be followed at all times.

OSHA LOCKOUT/TAGOUT procedures must be followed when performing maintenance on this equipment. If you are unfamiliar with the OSHA LOCKOUT/TAGOUT procedures or any other safety requirements, please contact McNeilus® Street Smart Parts and Service™.

SAFETY NOTICE

Before entering Packer body, or climbing or getting under truck to perform any work, read and follow OSHA regulations concerning entry and working in "CONFINED SPACE" OSHA 1910.146 and "LOCKOUT/TAGOUT" OSHA 1910.147.

Follow OSHA regulations while performing any work.

Follow all safety instructions in your SSP Universal Tap-In Kits manual and OEM Packer manual.

Shut off truck engine, lock cab doors and keep key in your pocket before entering or climbing on, or getting under truck to perform any work to the Packer.

Place magnetic "DANGER" signs on both cab doors.

Failure to do so can result in serious personal injury or death.

Installation Guidelines

⚠ WARNING

Before installing the SSP Universal Tap-In Kits, the Packer body must be emptied and the chassis parked on a smooth and level surface.

INSTALLATION

Layout Location of Components

The SSP Universal Tap-In Kits have been designed for mounting on many different Rear Loader models manufactured by various OEMs. The following information is intended to be a general guide to installing the components of the SSP Universal Tap-In Kits. Before starting the installation, read these instructions completely. Always use the proper tools, lift devices and personal protective equipment to prevent injury while performing the installation.

There are two different SSP Universal Tap-In Kits available depending on the number of cart tippers that will be installed. The Single Tap-In Kit (1141074) is designed for use when installing only one (1) cart tipper. The Dual Tap-In Kit (1148515) is designed for use when installing two (2) cart tippers. Different diverter valves are provided in the single (1149264) and dual (1149265) kits. The kits also include hand valve(s), hoses and fittings. The quantities for the hand valve, hoses and fittings are doubled in the Dual Tap-In Kit.

The location of the diverter valve and hand valve(s) is critical for the proper operation of the Tap-in Kit and Packer. The diverter valve must be installed between the ejector/tailgate and slide/sweep control valves. A hand valve is located and mounted on the curb side of the tailgate. A second hand valve is mounted on the street side when installing Dual Tap-In Kit for dual cart tippers.

The installation instructions in this manual are based on a typical installation. If you have any questions at any time, contact McNeilus® Street Smart Parts and Service™ for assistance.

INSTALLATION

Installation of Diverter Valve

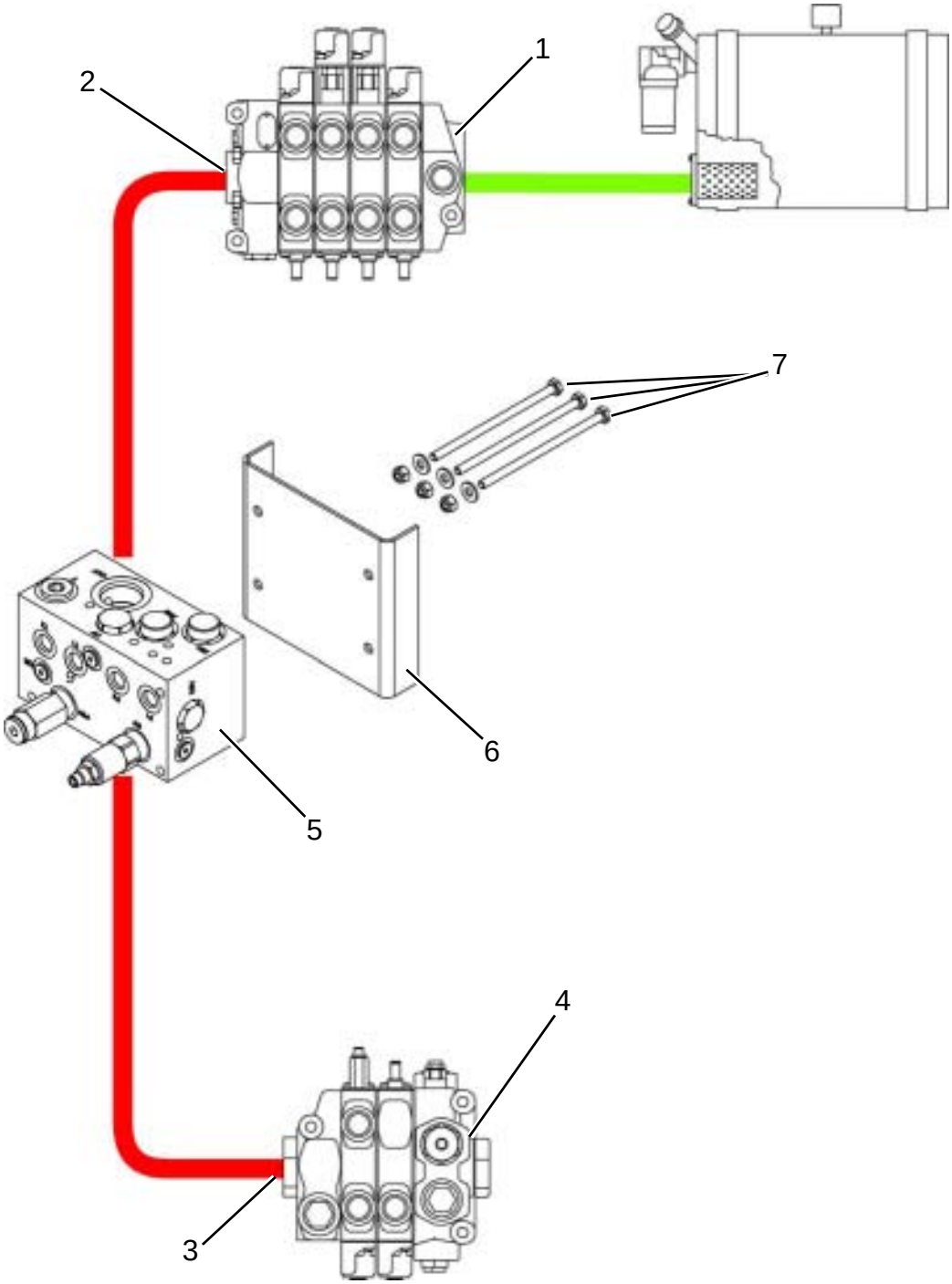

Figure 1

INSTALLATION

Mounting Diverter Valve

- Apply LOCKOUT/TAGOUT procedure to the Packer. Observe all conditions of the Safety Notice concerning “LOCKOUT/TAGOUT Procedures” on page 13.
- Locate the Slide/Sweep control valve **(Figure 1, 1)** in the Packer hydraulic plumbing. The control valve is normally located inside the tailgate.
- Identify the inlet port **(Figure 1, 2)** of the control valve. The inlet port can be identified by the hydraulic pressure port connection for the hydraulic line from the power beyond outlet port **(Figure 1, 3)** of the Ejector/Tailgate control valve **(Figure 1, 4)**. On most Packers, hydraulic hose is used for the hydraulic line.
- Disconnect and remove the pressure hydraulic hose.
- Determine the location to mount the diverter valve **(Figure 1, 5)**. The diverter valve will be installed between the control valves previously identified.

IMPORTANT
On Leach Rear-Loaders with steel lines, the diverter valve will have to be mounted ahead of where the steel pressure line starts.

- Locate and weld the mounting bracket **(Figure 1, 6)** to the Packer.
- Fasten the diverter valve to the mounting bracket using the 1/4" cap screws, washers and lock nuts **(Figure 1, 7)** supplied with kit.

Plumbing Diverter Valve

The SSP Universal Tap-In Kits include the primary components of a diverter valve and hand valve(s) with mounting hardware. The kits also include an assortment of fittings and hoses for making hydraulic connections. Because the SSP Universal Tap-In Kits have been designed for mounting on many different Rear Loader models manufactured by various OEMs, there will be extra fittings that are not used.

INSTALLATION

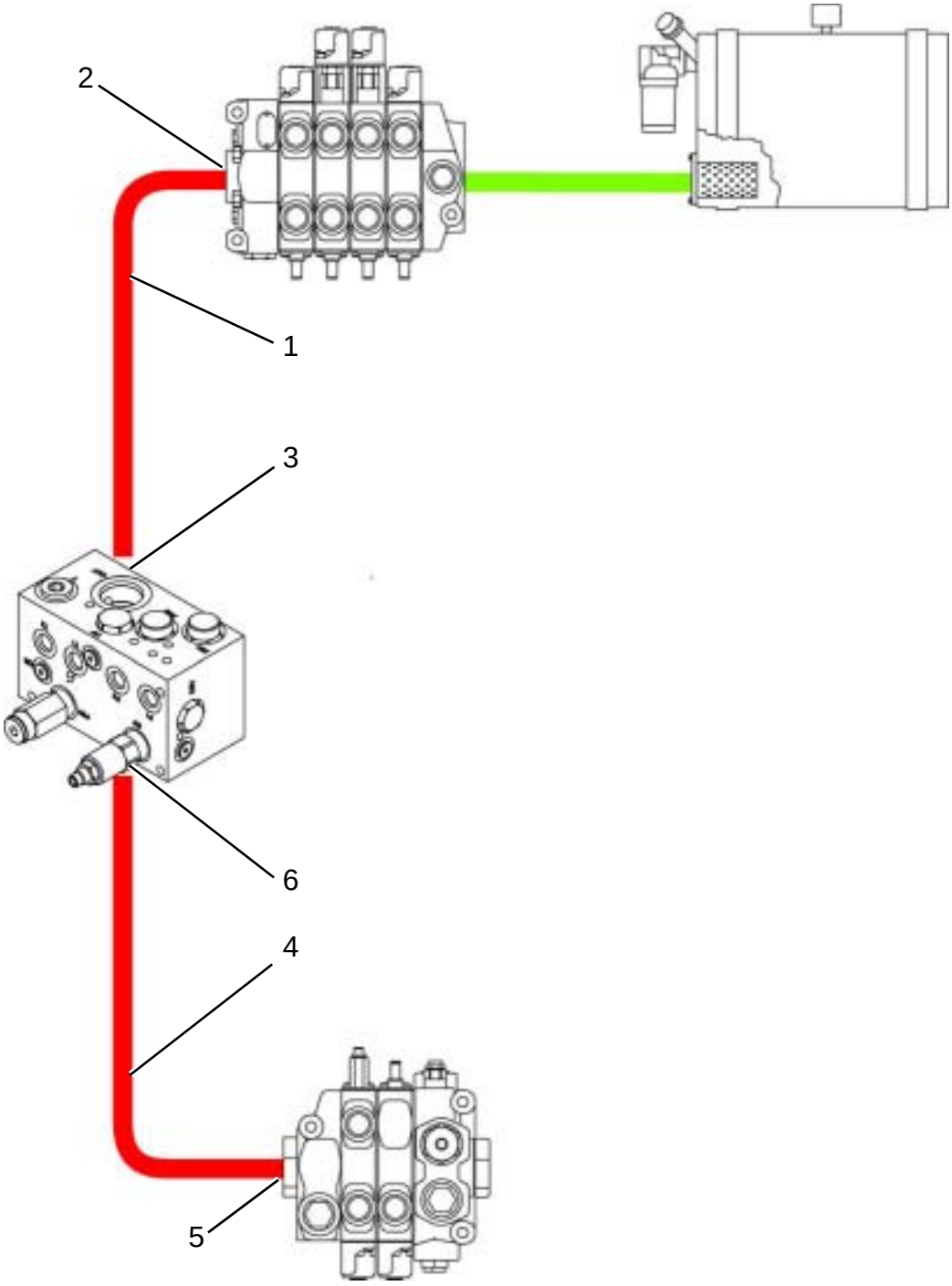

Figure 2

INSTALLATION

- Install pressure hydraulic hose **(Figure 2, 1)** between the inlet port **(Figure 2, 2)** of the Slide/Sweep control valve and "OUT" port **(Figure 2, 3)** of diverter valve.

IMPORTANT
The port sizes for the diverter valve are as follows: • **"IN" and "OUT" Ports - SAE 16** • **"T" Port - SAE 10** • **"P1, P2, P3, P4" Ports - SAE 6**

- The SSP Universal Tap-In Kits contain four (4) adapter fittings for use in the "IN" and "OUT" ports for the diverter valve. The following is a list of fittings with McNeilus® part numbers.

Description	Qty.	MTM Part No.
Adapter, Straight, #16 MORG - #16 MJIC	1	1260436
Adapter, Straight, #16 MORG - #20 MJIC	1	1260438
Adapter, Straight, #16 MORG - #12 MJIC	1	1260433
Adapter, Straight, #16 MORG - #16 FJIC	1	1131682

- Install pressure hydraulic hose **(Figure 2, 4)** between the outlet port **(Figure 2, 5)** of the Ejector/Tailgate control valve and "IN" port **(Figure 2, 6).**
- The following additional fittings are provided in the SSP Universal Tap-In Kits to be used as required for adapting the pressure hydraulic hoses.

Description	Qty.	MTM Part No.
Adapter, Straight, #12 MORG - #12 FJIC	1	1131680
Reducer, #20 FJIC - #16 MJIC	1	1131656
Reducer, #16 MORG - #12 FORG	1	1149270

INSTALLATION

Plumbing of "T" Port (Optional)

Plumbing the "T" port is optional and therefore the fittings and hose assembly required to plumb the "T" port are not included in the SSP Universal Tap-In Kits. When the "T" port is not plumbed, the hydraulic oil from the "T1" and "T2" ports is redirected back into the outgoing flow from the diverter valve through the check valve (CV).

Plumbing the "T" port is recommended to allow downstream functions to operate at the highest possible pressure when pressure is being required. If the "T" port is connected to a tank line, the hydraulic oil will be dumped through the diverter valve at a lower pressure.

IMPORTANT
The operation of the diverter valve does not require the use of a tank line to be connected to the "T" port. However, the efficiency of the diverter valve will be significantly increased if a tank line is installed.

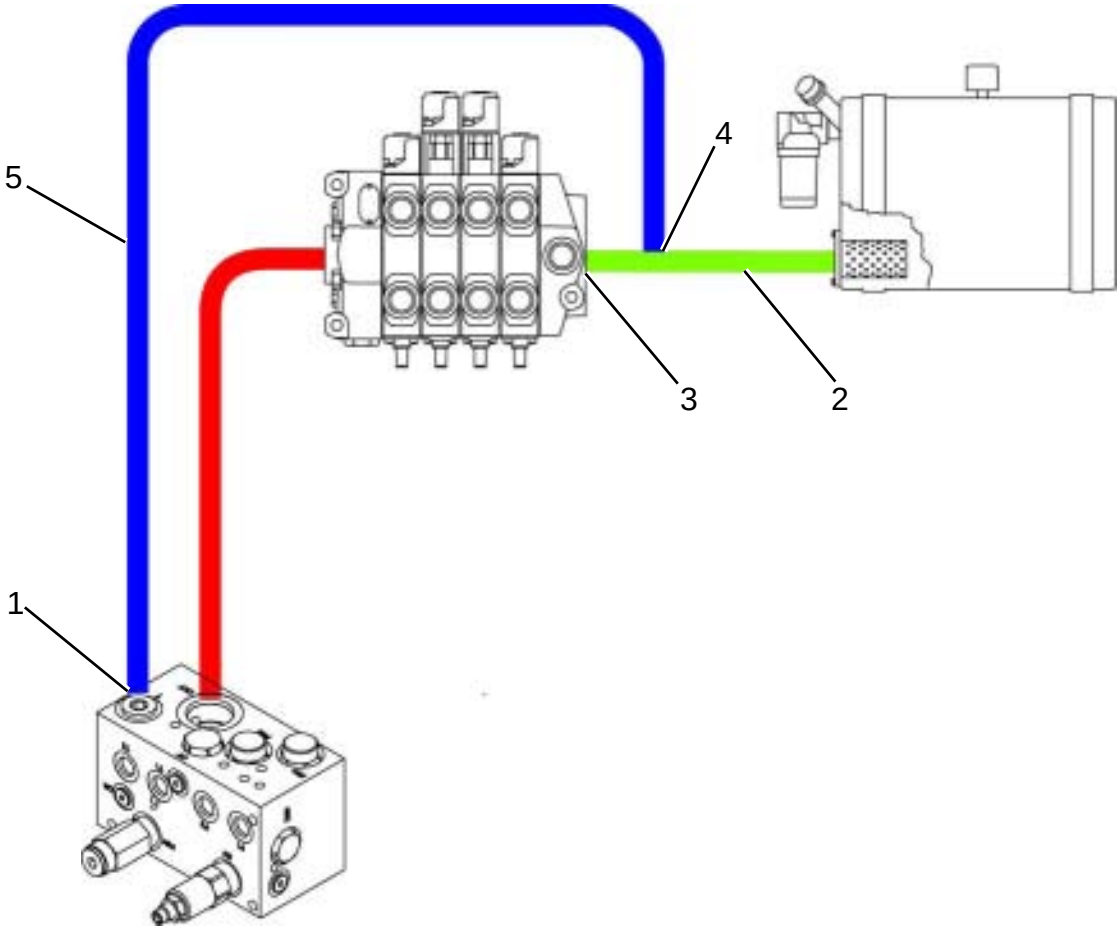

Figure 3

INSTALLATION

A "T" Port Plumbing Kit is available to plumb the "T" port of the diverter valve. Use McNeilus® part number 1424042 to order the kit from your local McNeilus® Street Smart Parts and Service™ location.

Description	Qty.	MTM Part No.
Reducer, #16 FJIC - #12 MJIC	1	1424002
Reducer, #20 FJIC - #12 MJIC	1	1424003
Swivel Run Tee, #12 MJIC	1	1131588
Swivel Run Tee, #16 MJIC	1	1131589
Swivel Run Tee, #20 MJIC	1	1260478
90° Elbow, #10 MORG - #12 MJIC	1	1260518
Hose Assembly, .75" ID x 51.5" LG	1	1318547

- Apply LOCKOUT/TAGOUT procedure to the Packer. Observe all conditions of the Safety Notice concerning “LOCKOUT/TAGOUT Procedures” on page 13.
- Install 90° elbow **(Figure 3, 1)** in the "T" port located on the diverter valve.
- Disconnect existing return hose **(Figure 3, 2)** from fitting located at outlet port **(Figure 3, 3)** of Ejector/Tailgate control valve.
- Identify the size of fitting installed at outlet port of Ejector/Tailgate control valve.
- Install corresponding size swivel run tee **(Figure 3, 4)** onto outlet port fitting.
- Reconnect existing return hose onto fitting located at outlet port of Ejector/Tailgate control valve.
- Install hydraulic hose assembly **(Figure 3, 5)** between the swivel run tee and elbow fittings.
- Check and tighten all hydraulic connections.

INSTALLATION

Installation of Hand Valve(s)

The following procedures are based on the installation of one (1) hand valve on the curb side of Rear Loader tailgate when installing the Single Tap-In Kit. For installation of the Dual Tap-in Kit, the procedures are repeated for installation of a second hand valve on street side of Rear Loader tailgate.

Mounting Hand Valve(s) on Tailgate

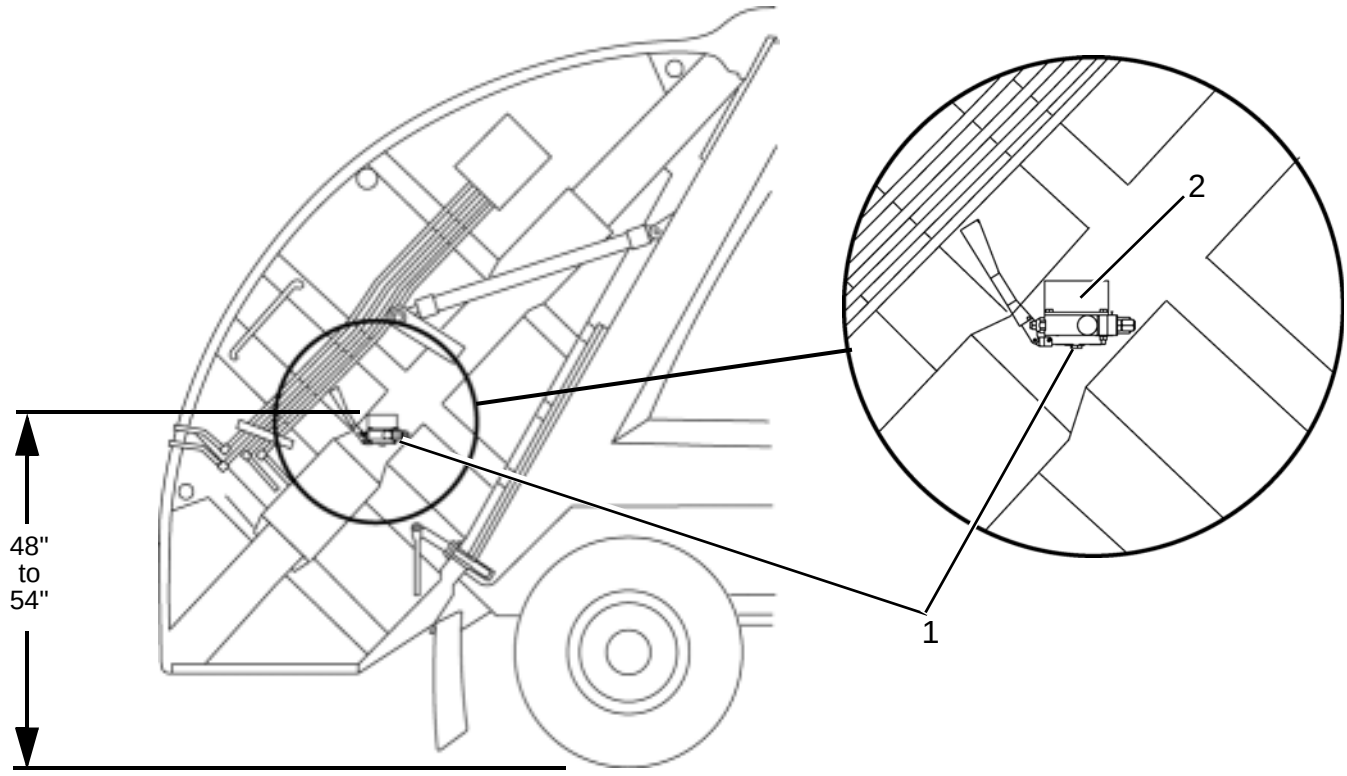

Figure 4

- Determine the location on the curb side of Rear Loader tailgate to install the hand valve **(Figure 4, 1)**. The height of the hand valve should be between 48" and 54" from the ground.
- Weld the hand valve mounting bracket **(Figure 4, 2)** to the tailgate.
- Allow the weld to cool to the touch. Paint the mounting bracket.
- Assemble the hand valve to the mounting bracket.
- For installation of the Dual Tap-In Kit, the procedures are repeated for installation of a second hand valve on street side of Rear Loader tailgate.

INSTALLATION

Plumbing Hand Valve(s)

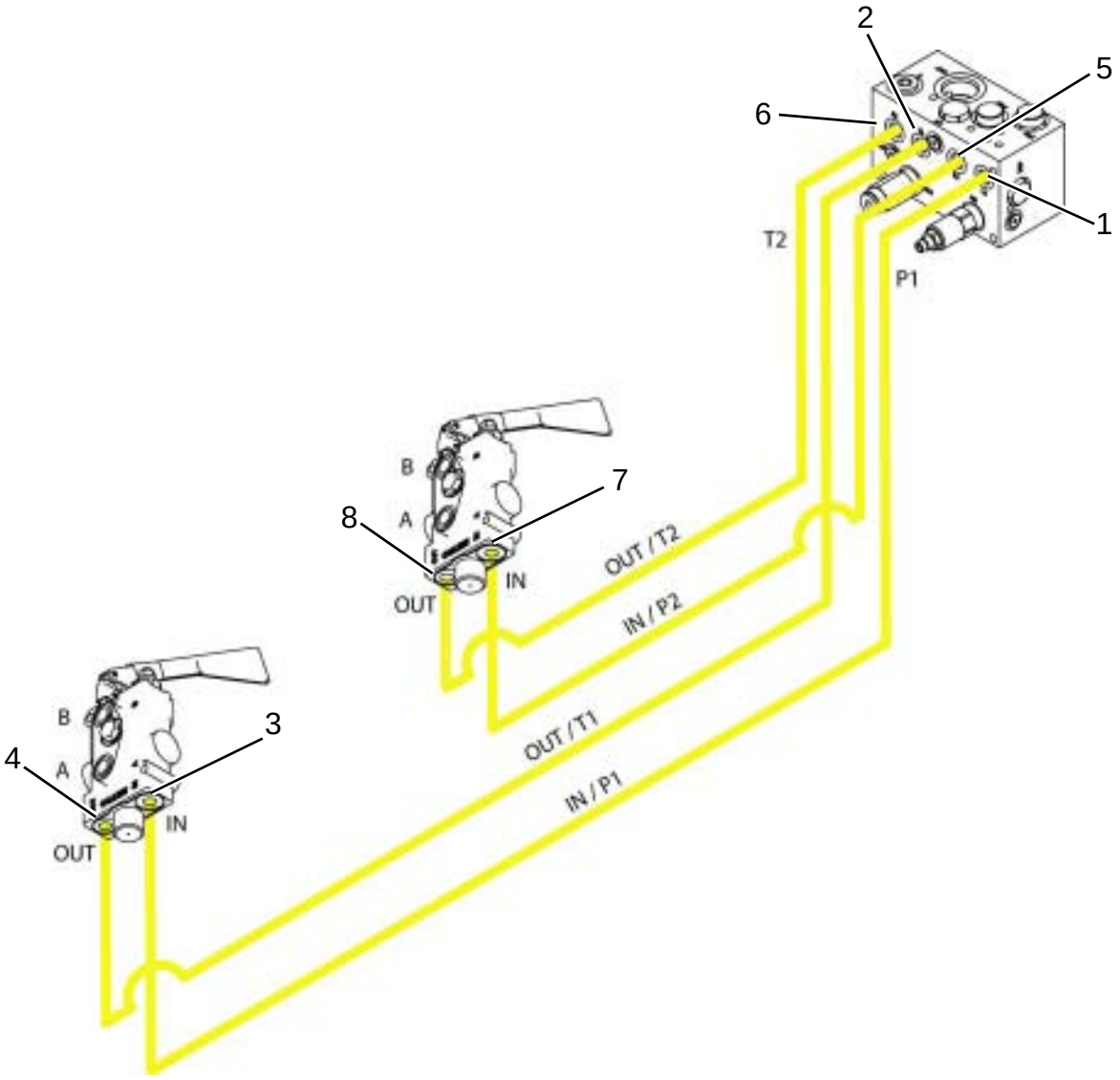

Figure 5

- The SSP Universal Tap-In Kits contain adapter fittings for use in the "P1" and "T1" ports for the diverter valve and "IN", "Out", "A" and "B" ports for the hand valve. The following is a list of fittings with McNeilus® part numbers.

Description	Qty.	MTM Part No.
Adapter, 90° Long, #6 MORG - #6 MJIC	4	1260535
Adapter, Straight, #6 MORG - #6 MJIC	4	1260453

INSTALLATION

- Install adapter fittings in "P1" **(Figure 5, 1)** and "T1" **(Figure 5, 2)** ports of diverter valve.
- Install adapter fittings in "IN" **(Figure 5, 3)** and "OUT" **(Figure 5, 4)** ports of hand valve.
- Route and install hydraulic hose between "P1" port of diverter valve and "IN" port of hand valve.
- Route and install hydraulic hose between "T1" port of diverter valve and "OUT" port of hand valve.
- Locate and weld double Stauff clamps (0101528) as required to secure the hoses in place.
- For installation of the Dual Tap-In Kit, perform the following procedures for installation of a second hand valve on street side of Rear Loader tailgate.
- Install adapter fittings in "P2" **(Figure 5, 5)** and "T2" **(Figure 5, 6)** ports of diverter valve.
- Install adapter fittings in "IN" **(Figure 5, 7)** and "OUT" **(Figure 5, 8)** ports of second hand valve.
- Route and install hydraulic hose between "P2" port of diverter valve and "IN" port of second hand valve.
- Route and install hydraulic hose between "T2" port of diverter valve and "OUT" port of second hand valve.
- Locate and weld double Stauff clamps (0101528) as required to secure the hoses in place.

INSTALLATION

Plumbing Cart Tipper(s)

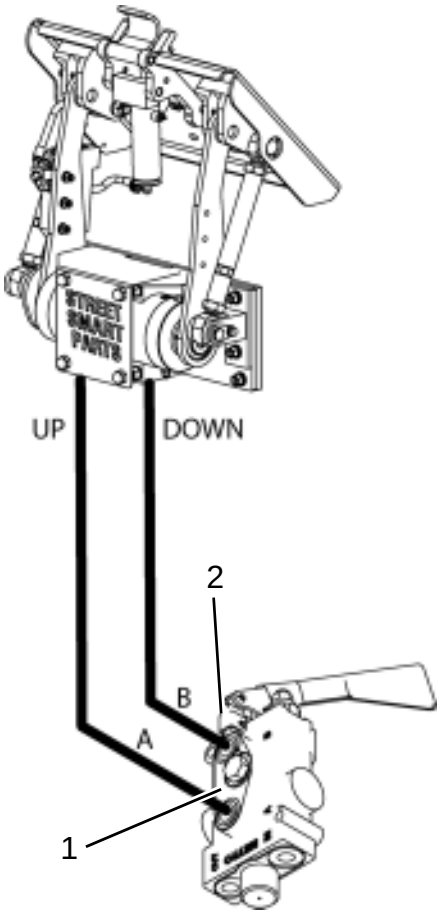

Figure 6

- Install adapter fittings in "A" **(Figure 6, 1)** and "B" **(Figure 6, 2)** ports of hand valve.
- Route and install hydraulic hose between "A" port of hand valve and "UP" port of cart tipper.
- Route and install hydraulic hose between "B" port of hand valve and "DOWN" port of cart tipper.
- Locate and weld double Stauff clamps (0101528) as required to secure the hoses in place.
- For installation of the Dual Tap-In Kit, repeat the previous procedures for installation of a cart tipper on the Rear Loader tailgate.

PRESSURE SETTINGS

This section of the manual describes procedures that may be required for pressure settings of the SSP Universal Tap-In Kits.

LOCKOUT/TAGOUT Procedures

All procedures must be performed by skilled service personnel. Safety and safe working procedures must be followed at all times.

OSHA LOCKOUT/TAGOUT procedures must be followed when performing pressure settings on this equipment. If you are unfamiliar with the OSHA LOCKOUT/TAGOUT procedures or any other safety requirements, please contact McNeilus® Street Smart Parts and Service™.

SAFETY NOTICE

Before entering Packer body, or climbing or getting under truck to perform any work, read and follow OSHA regulations concerning entry and working in "CONFINED SPACE" OSHA 1910.146 and "LOCKOUT/ TAGOUT" OSHA 1910.147.

Follow OSHA regulations while performing any work.

Follow all safety instructions in your SSP Universal Tap-In Kits manual and OEM Packer manual.

Shut off truck engine, lock cab doors and keep key in your pocket before entering or climbing on, or getting under truck to perform any work to the Packer.

Place magnetic "DANGER" signs on both cab doors.

Failure to do so can result in serious personal injury or death.

⚠ WARNING

Components supplied in SSP Universal Tap-In Kits are rated for a maximum pressure of 3,000 psi. Operation at pressures greater than 3,000 psi may result in death or serious personal injury.

PRESSURE SETTINGS

Diverter Valve Operation

The diverter valve provides priority flow to the "P1" and "P2" (for dual kit) port(s) and bypasses the unused flow to the "OUT" port. The "P1" and "P2 for dual kit" port(s) supply oil to the cart tipper hand valves. The "OUT" port supplies flow from the remaining hydraulic oil to the Slide/Sweep control valve for the tailgate functions.

The priority flow for the cart tipper(s) is controlled by the flow regulator cartridge(s) "FR1" and "FR2" (for dual kit) in combination with the differential pressure sensing valve "DPS". This allows the valve to maintain constant flow regardless of changes in load pressure or volume flow rate. The "FR1" and "FR2 for dual kit" are preset to 3.5 GPM.

The logic circuit of the diverter valve will manage the flow of oil returning from the cart tipper hand valve(s). This is primarily controlled with the sequence valve (PSV) which is factory-set and should not be adjusted. All oil returning from the cart tipper hand valve will normally be regenerated into the outgoing flow to ensure that the downstream functions are not slowed in any way.

When the downstream back pressure rises to a predetermined pressure, the diverter valve will redirect the flow to the "T" port to increase the overall efficiency of the diverter valve and reduce the pressure drop through the diverter valve. If the "T" port is connected to a tank line, the oil will be dumped through the diverter valve at a lower pressure. This allows downstream functions to operate at the highest possible pressure when pressure is being required. If the "T" port is blocked, the oil will be redirected back into the outgoing flow through the check valve (CV).

IMPORTANT
The operation of the diverter valve does not require the use of a tank line to be connected to the "T" port. However, the efficiency of the diverter valve will be significantly increased if a tank line is installed.

A relief circuit for the cart tipper function(s) is controlled by a relief valve "RV", which is preset to 2,300 psi. This can be adjusted to limit pressure to the cart tipper(s). This relief valve is more efficient than the relief in the hand valve. The relief in the diverter valve will handle more flow than the hand valve relief.

IMPORTANT
The relief valve adjustment should be the only adjustment that the diverter valve may require.

PRESSURE SETTINGS

The diverter valve supplies the cart tipper hand valve(s) with approximately 3.5 GPM of oil flow. The diverter valve is equipped with a relief valve set at 2,300 psi to prevent the diverter valve from shutting down if a blockage occurs in the cart tipper circuit. There is also a relief valve preset at 1,500 psi in each hand valve to protect the cart tippers from excessive pressure. The relief valves in the diverter valve and hand valve(s) are preset from the factory to operate properly on most Packers with a system pressure of 2,500 psi without any adjustment. A differential of 200 psi must be maintained between all relief valve settings to ensure proper operation.

Pressure Setting Procedures

- Apply LOCKOUT/TAGOUT procedure to the Packer. Observe all conditions of the Safety Notice concerning “LOCKOUT/TAGOUT Procedures” on page 25.
- Install a 3,000 psi hydraulic gauge on the Packer to check the main system pressure. Refer to the Packer OEM manual for the proper location and installation.
- Remove LOCKOUT/TAGOUT and turn battery switch ON.
- Turn the chassis ignition ON and start the chassis engine.
- Engage the Packer hydraulic system.

Packer Main Relief Setting

- Apply a Packer function that does not have a port relief and is protected by only the main relief. Refer to the Packer OEM manual for the main relief specification and procedure to follow.
- Check and record the Packer main relief pressure. The most common main relief OEM specification is 2,500 psi.
- Adjust the main relief if necessary to meet the OEM main relief specification.

PRESSURE SETTINGS

Diverter Valve and Hand Valve Relief Settings

After determining the Packer main relief valve setting, the settings for the diverter valve and hand valve reliefs can be checked and adjusted as required. The relief setting for the diverter valve must be at least 200 psi less than the Packer main relief valve setting. The relief valve setting for the hand valve must be at least 200 psi less than the diverter relief valve setting.

The hand valve relief setting must be increased to check the diverter valve relief setting. Use the lower relief valve setting of 2,300 psi or 200 psi less than the Packer main relief valve setting for the diverter valve relief setting. After checking the diverter valve relief setting, the hand valve relief is lowered and set at 1,500 psi.

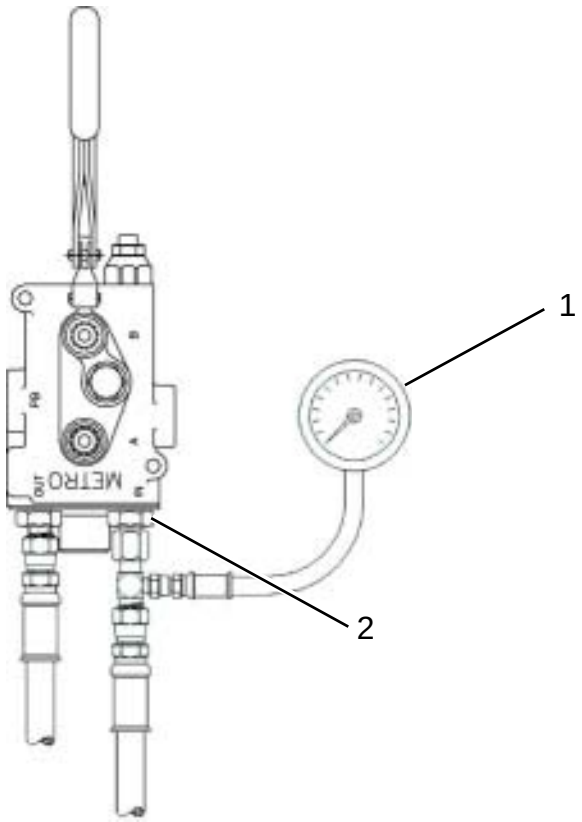

Figure 7

PRESSURE SETTINGS

Setting Diverter Valve Relief

- Apply LOCKOUT/TAGOUT procedure to the Packer. Observe all conditions of the Safety Notice concerning “LOCKOUT/TAGOUT Procedures” on page 25.
- Install 3,000 psi hydraulic pressure gauge **(Figure 7, 1)** with necessary adapters in the hydraulic line connected to the “IN” port **(Figure 7, 2)** of hand valve.
- Remove LOCKOUT/TAGOUT and turn battery switch ON.
- Turn the chassis ignition ON and start the chassis engine.
- Engage the Packer hydraulic system.
- Actuate and hold the hand valve lever in either direction.
- Continue to hold hand valve lever. The pressure indication on the gauge will be the relief valve setting for the hand valve.
- Check and record pressure on gauge. The pressure should read 1500 psi.
- Release hand valve lever.
- Apply LOCKOUT/TAGOUT procedure to the Packer. Observe all conditions of the Safety Notice concerning “LOCKOUT/TAGOUT Procedures” on page 25.

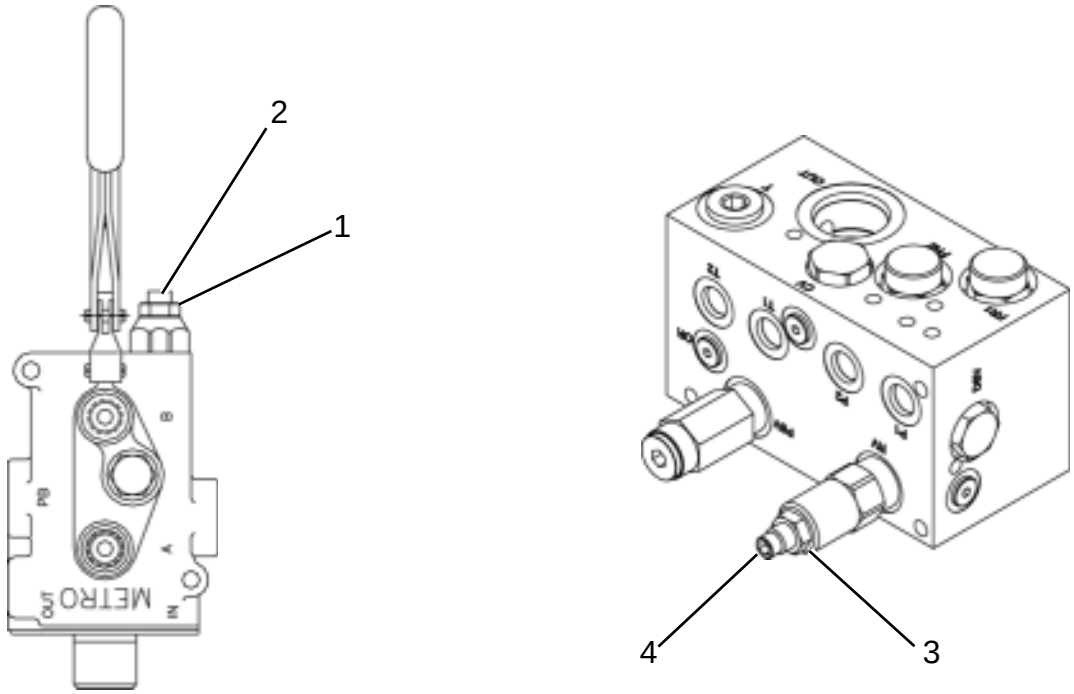

Figure 8

- Loosen jam nut **(Figure 8, 1)** on hand valve relief.
- Turn the relief adjustment **(Figure 8, 2)** clockwise until the adjustment bottoms out.

PRESSURE SETTINGS

- Tighten jam nut to secure hand valve relief adjustment.
- Remove LOCKOUT/TAGOUT and turn battery switch ON.
- Turn the chassis ignition ON and start the chassis engine.
- Engage the Packer hydraulic system.
- Actuate and hold the hand valve lever in either direction.
- Continue to hold hand valve lever. The pressure indication on the gauge will be the relief valve setting for the diverter valve.

IMPORTANT
The "RV" relief valve setting for the diverter valve is preset to 2,300 psi. For the diverter valve to function properly, the relief valve adjustment must be set at least 200 psi less than the Packer main relief valve setting.

- Release hand valve lever.
- Loosen jam nut **(Figure 8, 3)** on diverter valve.
- Turn relief adjustment **(Figure 8, 4)** clockwise to increase or counterclockwise to decrease the diverter relief valve setting.
- Tighten jam nut.
- Again, actuate and hold the hand valve lever in either direction.
- Continue to hold hand valve lever. The pressure indication on the gauge will be the relief valve setting for the diverter valve.
- Release hand valve lever.
- Repeat the above steps until the diverter relief valve setting of 2,300 psi, or 200 psi less than the Packer main relief valve setting, is achieved.

Setting Hand Valve Relief

- Loosen jam nut **(Figure 8, 1)** on hand valve relief.
- Turn the relief adjustment **(Figure 8, 2)** counterclockwise to lower hand valve relief to 1500 psi.
- Actuate and hold the hand valve lever in either direction.
- Continue to hold hand valve lever. The pressure indication on the gauge will be the relief valve setting for the hand valve.
- Check and record pressure reading on gauge. The pressure reading should be 1,500 psi.
- Release hand valve lever.
- Repeat the above steps until the hand valve setting is 1,500 psi.
- Apply LOCKOUT/TAGOUT procedure to the Packer. Observe all conditions of the Safety Notice concerning “LOCKOUT/TAGOUT Procedures” on page 25.
- Remove 3,000 psi hydraulic pressure gauge installed in hydraulic line connected to the "IN" port of hand valve.

PRESSURE SETTINGS

Setting Hand Valve Relief (Dual Hand Valve)

- Apply LOCKOUT/TAGOUT procedure to the Packer. Observe all conditions of the Safety Notice concerning “LOCKOUT/TAGOUT Procedures” on page 25.
- Install 3,000 psi hydraulic pressure gauge **(Figure 7, 1)** with necessary adapters in the hydraulic line connected to the “IN” port **(Figure 7, 2)** of dual hand valve.
- Remove LOCKOUT/TAGOUT and turn battery switch ON.
- Turn the chassis ignition ON and start the chassis engine.
- Engage the Packer hydraulic system.
- Actuate and hold the dual hand valve lever in either direction.
- Continue to hold hand valve lever. The pressure indication on the gauge will be the relief valve setting for the dual hand valve.
- Check and record pressure reading on gauge. The pressure reading should read 1,500 psi.
- Release hand valve lever.
- To adjust, loosen jam nut **(Figure 8, 1)** on dual hand valve.
- Turn relief adjustment **(Figure 8, 2)** clockwise to increase or counterclockwise to decrease the diverter relief valve setting.
- Again, actuate and hold the hand valve lever in either direction.
- Continue to hold hand valve lever. The pressure indication on the gauge will be the relief valve setting for the dual hand valve.
- Release the hand valve lever.
- Repeat the above steps until the dual hand valve setting is 1,500 psi.
- Apply LOCKOUT/TAGOUT procedure to the Packer. Observe all conditions of the Safety Notice concerning “LOCKOUT/TAGOUT Procedures” on page 25.
- Remove 3,000 psi hydraulic pressure gauge installed in hydraulic line connected to the "IN" port of dual hand valve.

PRESSURE SETTINGS

Check Cart Tipper Cycle Time

After the pressure settings for the diverter valve and hand valve have been completed, the cycle time for the cart tipper must be checked. Most manufacturers recommend a complete up and down cycle time of 6-8 seconds. The 6-8 second cycle time will be referenced in the following procedures. Refer to the cart tipper OEM manufacturer's recommendations for the correct cycle time. Substitute the OEM manufacturer's recommendation for cycle time if it differs from the 6-8 seconds.

⚠ CAUTION

Do not operate cart tipper at a faster cycle time than the OEM manufacturer recommends. Operating the cart tipper at a faster cycle time than the OEM manufacturer recommends may void the cart tipper warranty.

Failure to operate cart tipper at the OEM manufacturer's recommendation may result in personal injury or damage to property or equipment.

A flow rate of 3.5 GPM is supplied to the hand valve(s) from the diverter valve. Most cart tippers have an orifice fitting or inline flow control to limit/control the speed of the cart tipper. In most cases, these controls must be removed or adjusted to achieve a cycle time of 6-8 seconds.

Cart Tipper Cycle Time Test

- Remove LOCKOUT/TAGOUT and turn battery switch ON.
- Turn the chassis ignition ON and start the chassis engine.
- Engage the Packer hydraulic system.
- Use a watch to record the cycle time while performing the following procedure.
- Start with the cart tipper completely lowered in the HOME position.
- Begin the tipper cycle by actuating and holding the hand valve lever in the UP direction.
- Continue to hold hand valve lever until the cart tipper quits raising and reaches the DUMP position.
- As soon as the cart tipper quits moving, immediately reverse the hand valve lever down to start lowering the cart tipper.
- Continue to hold hand valve lever down until the cart tipper stops moving and reaches the HOME position.
- As soon as the cart tipper quits moving, immediately release the hand valve lever.
- Check and record the seconds required to perform complete cycle time. The cycle time reading should be between 6 and 8 seconds.

PRESSURE SETTINGS

Cart Tipper Cycle Time Adjustment

If the cycle time is slower than 6 and 8 seconds when performing the previous cycle time test, the cause is usually a flow restriction at the cart tipper. Most cart tippers ship with a flow control or orifice fitting to limit the cart tipper speed when installed.

To increase the cart tipper speed when used with a diverter valve, the flow restriction on the cart tipper must be removed or adjusted. The following is a table that describes the type of flow restriction used by various cart tipper models.

Item	Cart Tipper Manufacturer	Flow Control	Location
1	SSP I and II	Orifice Cavity Block	Dump Cylinder
2	SSP III	Orifice Cavity Block	Bottom of Actuator
3	SSP IV, V and VI	Orifice Fitting	Bottom of Actuator
4	Bayne	Orifice Fitting	Bottom of Actuator
5	Perkins	Adjustable Flow Control	Bottom of Actuator

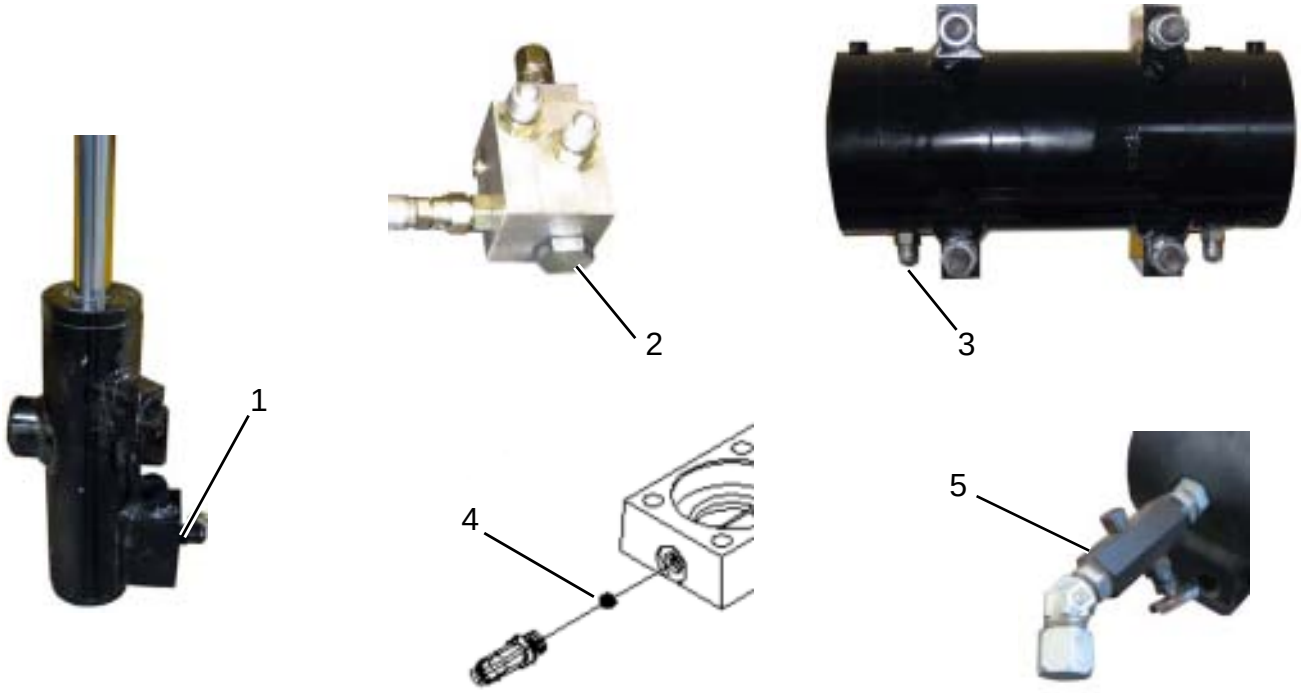

Figure 9

PRESSURE SETTINGS

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TROUBLESHOOTING

When a problem or malfunction occurs, follow these steps. The sequence below will help isolate the problem and often permit a quick repair. If further assistance is required, refer to the applicable section of this manual or contact your McNeilus® Street Smart Parts and Service™ location listed in the Foreword of this manual.

IMPORTANT
Isolate the problem before taking any corrective actions.

1. Unless further damage will occur, repeat the steps that caused the problem. Often a simple step in the standard operating procedure has been forgotten.
2. Refer to the troubleshooting chart. It is designed to help you troubleshoot problems at your location, and is organized in a logical sequence. Look under the appropriate equipment section, and for the specific problem within the chart.
3. Perform the diagnostic procedure and recommendation for how to correct the problem listed within the chart to isolate the problem.
4. If your particular problem is not listed, or the remedial actions provided do not resolve the problem, we suggest that you take the vehicle to a service shop, refer to the appropriate service manual or contact your McNeilus® Street Smart Parts and Service™ location for service assistance.
5. If you have questions or need assistance, contact the nearest McNeilus® Street Smart Parts and Service™ location. A listing of locations and phone numbers sorted alphabetically by state can be found in the Foreword of this manual.

TROUBLESHOOTING

Troubleshooting Table

Possible Causes		How to Correct Problem
A. Cart Tipper will not Pick Up Carts		
	Cart overweight.	Reduce loaded weight of cart.
	Cart tipper system hydraulic pressure too low.	Check and adjust pressure settings for diverter valve and hand valve relief(s). Refer to “Pressure Setting Procedures” on page 27.
	Truck system hydraulic pressure too low.	Check and adjust Packer main relief pressure.
B. Cart Tipper Operation Very Erratic		
	Air trapped in system.	Loosen hydraulic hose connection from Packer controls and operate function control.
	Low oil level.	Check oil level of Packer hydraulic reservoir and add as required.
C. Cart Tipper Operates Slower than OEM Specifications for Cart Tipper		
	A redundant orifice or flow control installed in cart tipper hydraulics.	Adjust/remove flow control or resize/remove orifice as required to increase cart tipper speed. Refer to “Cart Tipper Cycle Time Adjustment” on page 33.
	Pressure settings not correct.	Check and set pressures as required. Refer to “Pressure Setting Procedures” on page 27.
D. Cart Tipper Operates Faster than OEM Specifications for Cart Tipper		
	Engine idle too high.	Adjust engine idle.
	Diverter output to cart tipper is 3.5 GPM.	Adjust flow control or decrease size of orifice for cart tipper to decrease cart tipper speed. Refer to “Cart Tipper Cycle Time Adjustment” on page 33.
E. Rear Loader Tailgate Function not Operating or Operating Extremely Slow		
	Packer hydraulic pressure too low.	Check and adjust Packer hydraulic pressures.
	Packer main relief not functioning properly.	Consult Packer Service Manual.
	Packer hydraulic system flow is being restricted.	Check and evaluate Packer hydraulic system to validate that there are not any restrictions. Remove any restrictions.

ILLUSTRATIONS and PARTS LISTS

How To Use

The pages are arranged so that the illustration and the parts list are on facing pages. The pages are prioritized in order with the assembly first followed by the serviceable components.

1 ITEM	2 Description	3 Footnote	4 Qty.	5 MTM Part No.
	SSP Cart Tipper Assembly		1	1325031
1	1/2-13 UNC x 1.25 BHCS, ZP	F1	2	1332139
2	Torque Arm Retainer		2	1331920
3	Torque Arm Weldment		2	1339155
4	1/4-28 UNF x 0.38 Set Screw		2	1328563
5	Master Cylinder Assembly			1334084
	Master Cylinder Rod Assembly (Includes Items 2, 5, 6 and 9)		1	1332056
2	Rod End Mount		1	NSS
5	Cylinder Rod		2	NSS
6	Cam Roller, 1" OD		1	NSS
9	Dowel Pin, 5/16" x 1-1/4"		1	NSS

F1 Apply Loctite grade 271 or equivalent and torque to 65-75 ft-lb (780-840 in-lb)

Figure 1

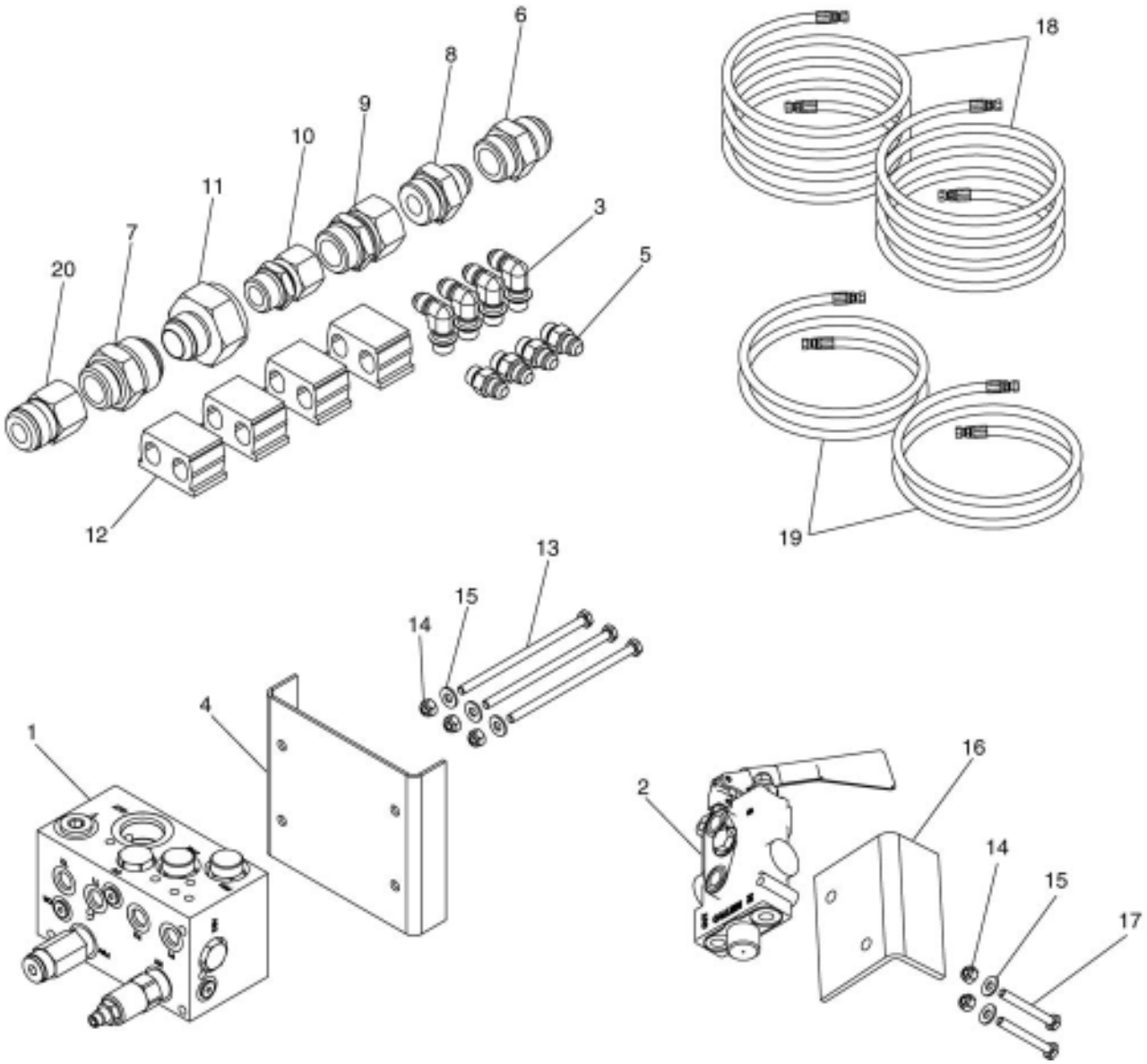
1. **ITEM:** Refers to callout and leader on corresponding illustration.
2. **Description:** Provides a description of item to identify size, type or application. The description is indented **(Figure 1, 6)** to indicate when the component is part of an assembly.
3. **Footnote:** A footnote is used when specific information is required for that item. A footnote is indicated by an “F” accompanied by a number such as F1 **(Figure 1, 7)**. Additional sequential numbers are used when more than one footnote is used on the page.
4. **Qty:** Quantity of the part in the assembly.
5. **MTM Part No.:** The McNeilus® part number to use when ordering replacement parts. When a component part is not available, an NSS is used to indicate that the part is Not Serviced Separately.

SSP Universal Tap-In Kits

ILLUSTRATIONS and PARTS LISTS

Tap-In Kits

Single Tap-In Kit Illustration



ILLUSTRATIONS and PARTS LISTS

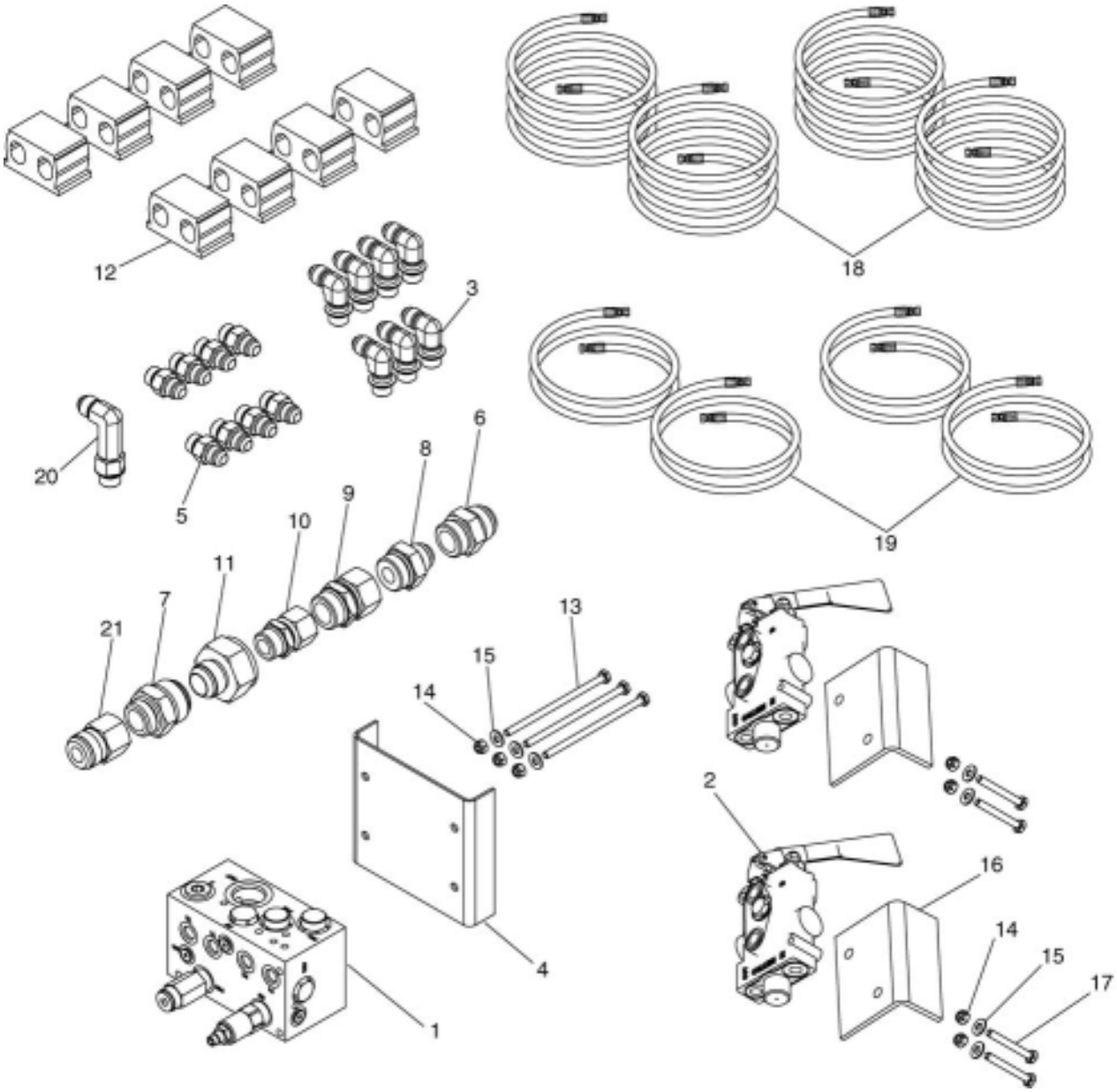
Single Tap-In Kit Parts List

ITEM	Description	Footnote	Qty.	MTM Part No.
	Single Tap-In Kit		1	1141074
1	Diverter Valve, Single		1	1149264
2	Hand Valve, Metro		1	1108237
3	90° Elbow, #6 MORB x #6 MJIC		4	1260535
4	Bracket, Diverter Valve		1	1149269
5	Adapter, Straight, #6 MORG - #6 MJIC		4	1260453
6	Adapter, Straight, #16 MORG - #16 MJIC		1	1260436
7	Adapter, Straight, #16 MORG - #20 MJIC		1	1260438
8	Adapter, Straight, #16 MORG - #12 MJIC		1	1260433
9	Adapter, Straight, #16 MORG - #16 FJIC		1	1131682
10	Adapter, Straight, #12 MORG - #12 FJIC		1	1131680
11	Reducer, #20 FJIC - #16 MJIC		1	1131656
12	Clamp, 5/8" Stauff, Double Weld		4	0101528
13	Hex Cap Screw, .25-20 UNC x 5, G8, Zinc		3	1134391
14	Hex Locknut, .25-20 UNC, G8, Zinc		5	0120175
15	Washer, Flat, .25 x .62 x .06, Zinc, Hardened		5	0100559
16	Bracket, Hand Valve		1	1416955
17	Hex Cap Screw, 1/4-20 x 2.00" LG		2	1134372
18	Hose Assembly, 3/8" ID x 168" LG		2	1149268
19	Hose Assembly, 3/8" ID x 74" LG		2	1149267
20	Reducer, #16 MORG - #12 FORG		1	1149270

SSP Universal Tap-In Kits

ILLUSTRATIONS and PARTS LISTS

Dual Tap-In Kit Illustration



ILLUSTRATIONS and PARTS LISTS

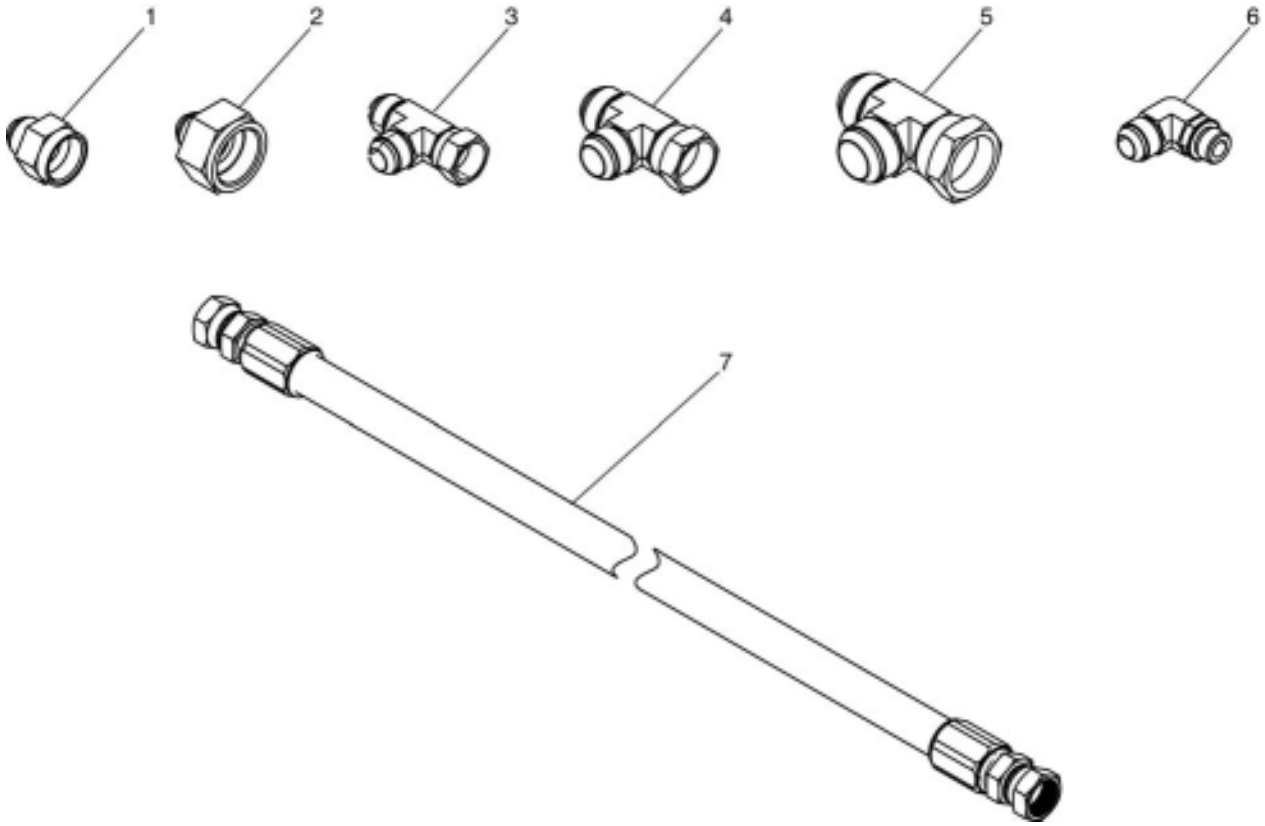
Dual Tap-In Kit Parts List

ITEM	Description	Footnote	Qty.	MTM Part No.
	Dual Tap-In Kit		1	1148515
1	Diverter Valve, Dual		1	1149265
2	Hand Valve, Metro		2	1108237
3	90° Elbow, #6 MORB x #6 MJIC		7	1260535
4	Bracket, Diverter Valve		1	1149269
5	Adapter, Straight, #6 MORG - #6 MJIC		8	1260453
6	Adapter, Straight, #16 MORG - #16 MJIC		1	1260436
7	Adapter, Straight, #16 MORG - #20 MJIC		1	1260438
8	Adapter, Straight, #16 MORG - #12 MJIC		1	1260433
9	Adapter, Straight, #16 MORG - #16 FJIC		1	1131682
10	Adapter, Straight, #12 MORG - #12 FJIC		1	1131680
11	Reducer, #20 FJIC - #16 MJIC		1	1131656
12	Clamp, 5/8" Stauff, Double Weld		8	0101528
13	Hex Cap Screw, .25-20 UNC x 5, G8, Zinc		3	1134391
14	Hex Locknut, .25-20 UNC, G8, Zinc		7	0120175
15	Washer, Flat, .25 x .62 x .06, Zinc, Hardened		7	0100559
16	Bracket, Hand Valve		2	1416955
17	Hex Cap Screw, 1/4-20 x 2.00", G8, Zinc		4	1134372
18	Hose Assembly, 3/8" ID x 168" LG		4	1149268
19	Hose Assembly, 3/8" ID x 74" LG		4	1149267
20	90° Elbow, Long, #6 MORB x #6 MJIC		1	1260544
21	Reducer, #16 MORG - #12 FORG		1	1149270

SSP Universal Tap-In Kits

ILLUSTRATIONS and PARTS LISTS

"T" Port Plumbing Kit Illustration



ILLUSTRATIONS and PARTS LISTS

"T" Port Plumbing Kit Parts List

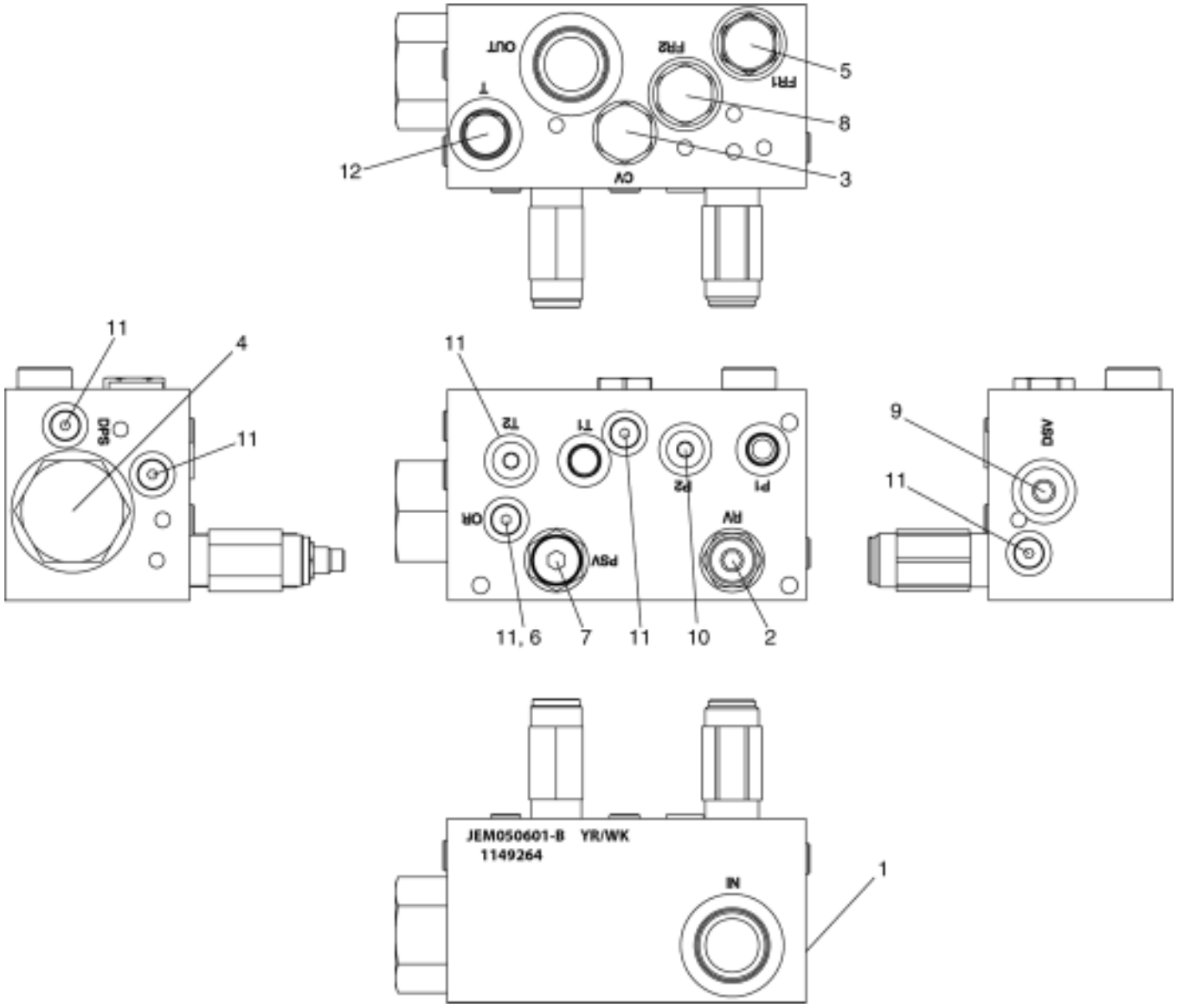
ITEM	Description	Footnote	Qty.	MTM Part No.
	“T" Port Plumbing Kit		1	1424042
1	Reducer, #16 FJIC - #12 MJIC		1	1424002
2	Reducer, #20 FJIC - #12 MJIC		1	1424003
3	Swivel Run Tee, #12 MJIC		1	1131588
4	Swivel Run Tee, #16 MJIC		1	1131589
5	Swivel Run Tee, #20 MJIC		1	1260478
6	Adapter, 90°, #10 MORG - #12 MJIC		1	1260518
7	Hose Assembly, 51.5"		1	1318547

SSP Universal Tap-In Kits

ILLUSTRATIONS and PARTS LISTS

Components

Single Diverter Valve Assembly (JEM050601-B) Illustration



ILLUSTRATIONS and PARTS LISTS

Single Diverter Valve Assembly (JEM050601-B) Parts List

ITEM	Description	Footnote	Qty.	MTM Part No.
	Single Diverter Valve Assembly		1	1149264
1	Manifold Block		1	NSS
2	Relief Valve	F4	1	1373021
3	Check Valve	F4	1	1237688
4	Logic Valve	F6	1	1373017
5	Flow Control	F4, F8	1	1373018
6	Orifice		1	6112020
7	Sequence Valve	F2	1	1373020
8	Cavity Plug	F4	1	NSS
9	Plug, SAE-8	F5	1	NSS
10	Plug, SAE-6	F3	2	NSS
11	Plug, SAE-4	F1	5	NSS
12	Plug, SAE-10	F7	1	NSS
	Kit, Seal for Relief Valve (Reference Item 2)		1	1373023
	Kit, Seal for Check Valve (Reference Item 3)		1	1331869
	Kit, Seal for Logic Valve (Reference Item 4)		1	1373026
	Kit, Seal for Flow Control and Cavity Plug (Reference Items 5 and 8)		2	1329656
	Kit, Seal for Sequence Valve (Reference Item 7)		1	1373022

F1 Torque to 18 ft-lb (216 in-lb) without Loctite.

F2 Torque to 20 ft-lb (240 in-lb) without Loctite.

F3 Torque to 23 ft-lb (276 in-lb) without Loctite.

F4 Torque to 25 ft-lb (300 in-lb) without Loctite.

F5 Torque to 50 ft-lb (600 in-lb) without Loctite.

F6 Torque to 70 ft-lb (840 in-lb) without Loctite.

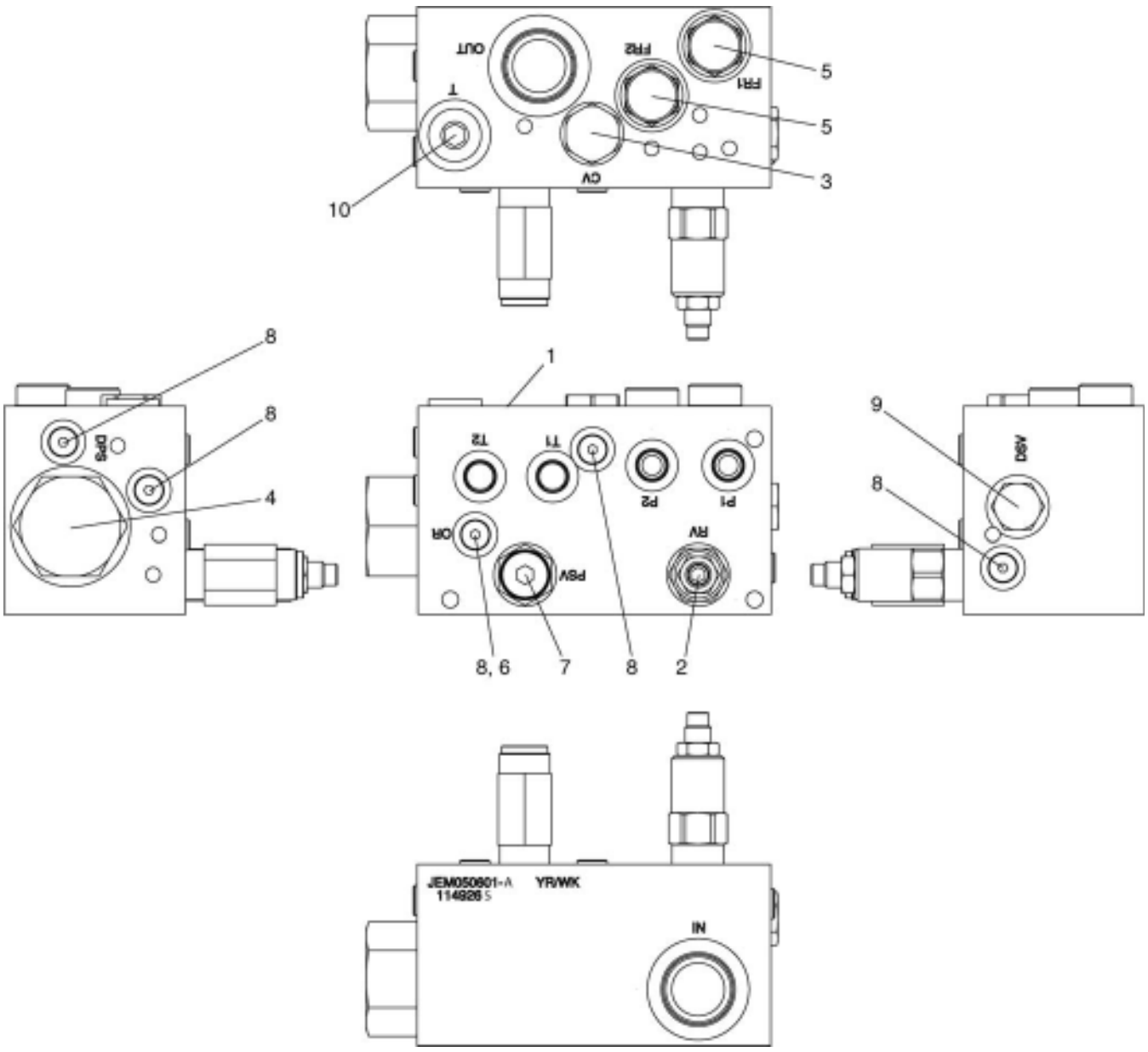
F7 Torque to 75 ft-lb (900 in-lb) without Loctite.

F8 Flow Control is rated at 3.5 GPM and is identified by 3.5 at the end of the part number stamped on cartridge. Early diverter valves used a 2.5 GPM rated flow control identified by 2.5 at the end of the part number. Cart tippers with 25,000 pound actuators require 3.5 GPM to operate at rated cycle time. Replace the flow control with Part No. 1373018 to increase cart tipper speed by increasing flow to 3.5 GPM.

SSP Universal Tap-In Kits

ILLUSTRATIONS and PARTS LISTS

Dual Diverter Valve Assembly (JEM050601-A) Illustration



ILLUSTRATIONS and PARTS LISTS

Dual Diverter Valve Assembly (JEM050601-A) Parts List

ITEM	Description	Footnote	Qty.	MTM Part No.
	Dual Diverter Valve Assembly		1	1149265
1	Manifold Block		1	NSS
2	Relief Valve	F3	1	1373021
3	Check Valve	F3	1	1237688
4	Logic Valve	F4	1	1373017
5	Flow Control	F3, F6	2	1373018
6	Orifice		1	6112020
7	Sequence Valve	F2	1	1373020
8	Plug, SAE-4	F1	5	NSS
9	Shuttle Valve	F2	1	1373019
10	Plug, SAE-10	F5	1	NSS
	Kit, Seal for Relief Valve (Reference Item 2)		1	1373023
	Kit, Seal for Check Valve (Reference Item 3)		1	1331869
	Kit, Seal for Logic Valve (Reference Item 4)		1	1373026
	Kit, Seal for Flow Control (Reference Item 5)		2	1329656
	Kit, Seal for Sequence Valve (Reference Item 7)		1	1373022
	Kit, Seal for Shuttle Valve (Reference Item 9)		1	1373022

F1 Torque to 18 ft-lb (216 in-lb) without Loctite.

F2 Torque to 20 ft-lb (240 in-lb) without Loctite.

F3 Torque to 25 ft-lb (300 in-lb) without Loctite.

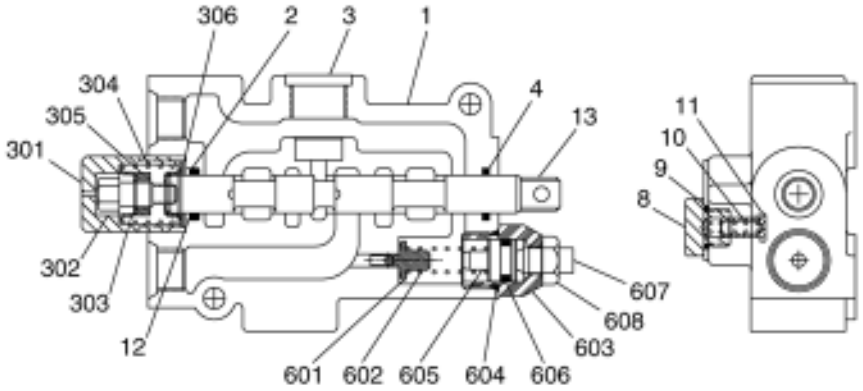
F4 Torque to 70 ft-lb (840 in-lb) without Loctite.

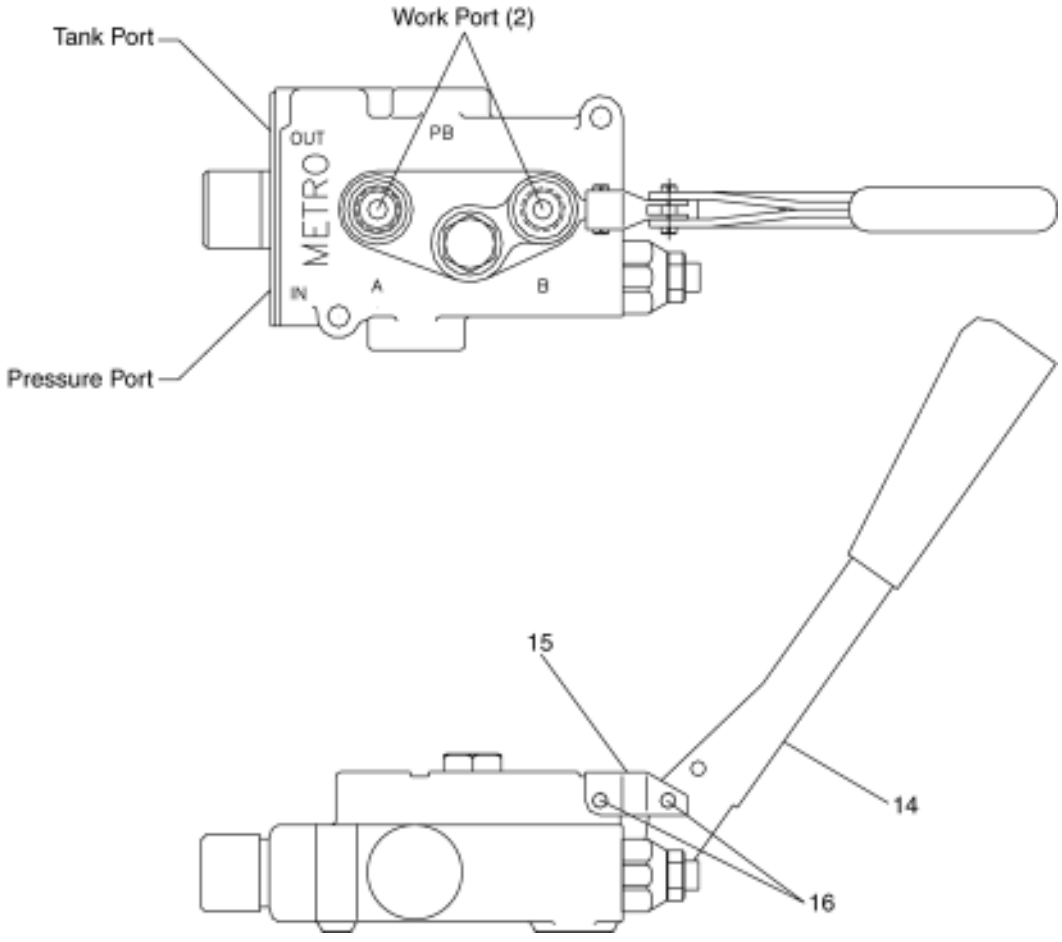
F5 Torque to 75 ft-lb (900 in-lb) without Loctite.

F6 Flow Control is rated at 3.5 GPM and is identified by 3.5 at the end of the part number stamped on cartridge. Early diverter valves used a 2.5 GPM rated flow control identified by 2.5 at the end of the part number. Cart tippers with 25,000 pound actuators require 3.5 GPM to operate at rated cycle time. Replace the flow control with Part No. 1373018 to increase cart tipper speed by increasing flow to 3.5 GPM.

ILLUSTRATIONS and PARTS LISTS

Hand Valve Assembly (Metro) Illustration





ILLUSTRATIONS and PARTS LISTS

Hand Valve Assembly (Metro) Parts List

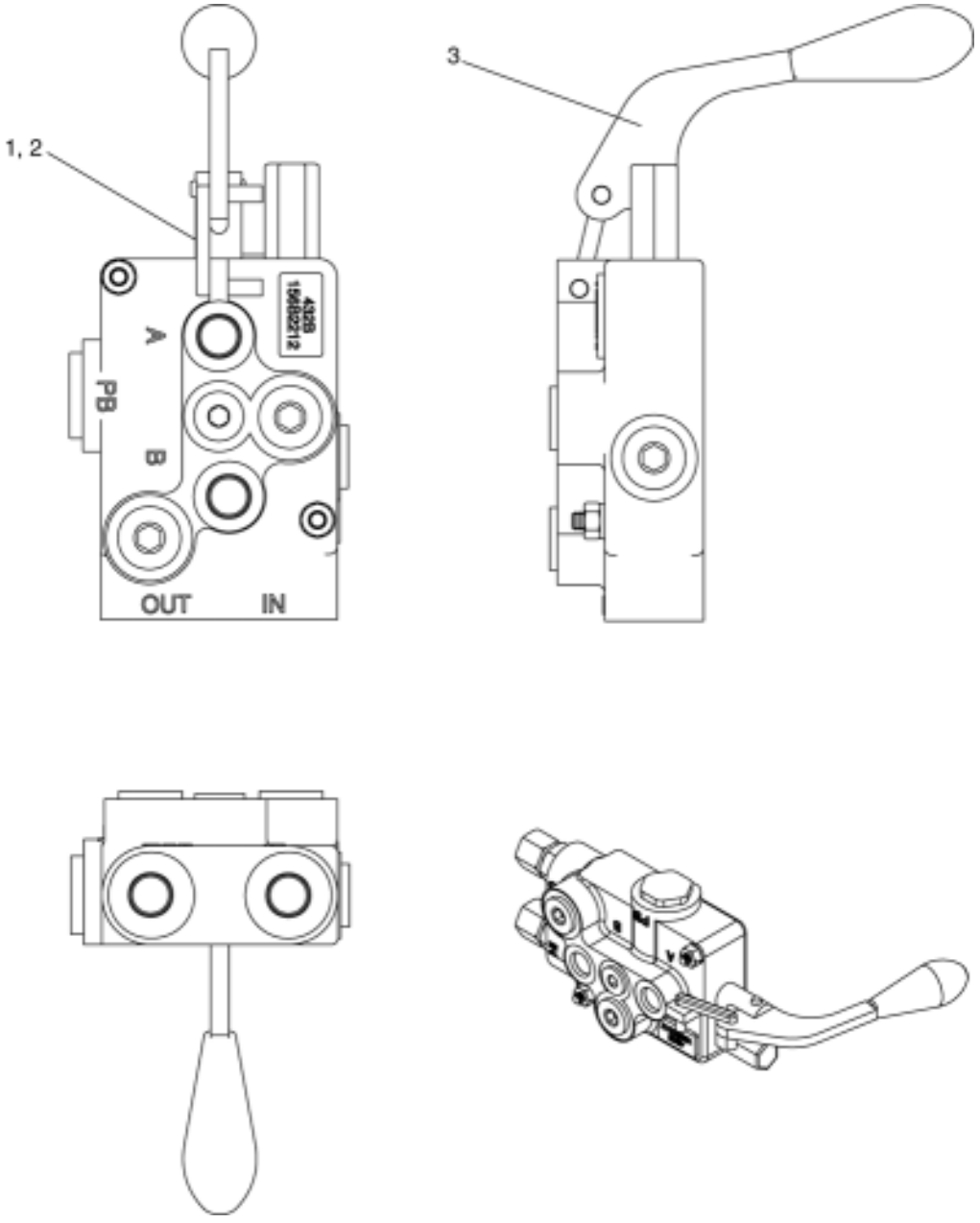
ITEM	Description	Footnote	Qty.	MTM Part No.
	Hand Valve Assembly		1	1108237
	Kit, Seal (Includes items 2, 4, 9, 12, 604 and 606)		1	1108234
	Kit, Handle Assembly (Includes items 14, 15 and 16)		1	1100970
	Kit, Linkage (Includes items 15 and 16)		1	1417245
1	Housing		1	NSS
2	O-Ring		1	NSS
3	Plug		1	NSS
4	O-Ring		1	NSS
8	Check Plug		1	NSS
9	O-Ring		1	NSS
10	Spring		1	NSS
11	Plunger		1	NSS
12	Back-Up Ring		1	NSS
13	Spool		1	NSS
14	Handle		1	NSS
15	Handle Linkage		1	NSS
16	Spring Pins		3	NSS
301	End Cap		1	NSS
302	Spool Stem		1	NSS
303	Spring Seat		2	NSS
304	Spring		1	NSS
305	Spool Stop		1	NSS
306	Washer		1	NSS
601	Pin		1	NSS
602	Spring		1	NSS
603	Adjustable Cap		1	NSS
604	O-Ring		1	NSS
605	Follower		1	NSS
606	O-Ring		1	NSS
607	Set Screw		1	NSS
608	Jam Nut		1	NSS

SSP Universal Tap-In Kits

ILLUSTRATIONS and PARTS LISTS

Obsolete

Hand Valve Assembly (Danfoss) Illustration



ILLUSTRATIONS and PARTS LISTS

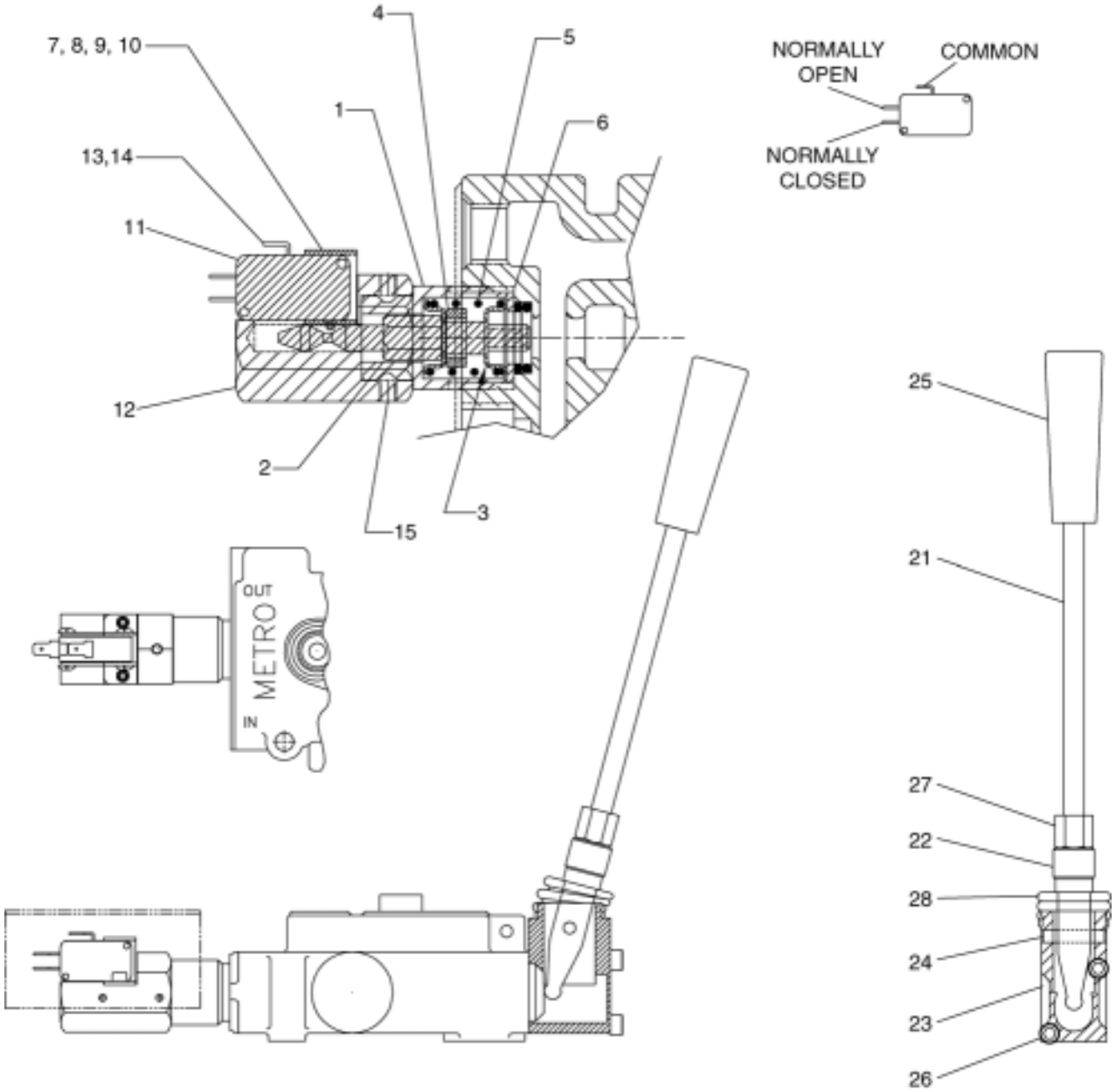
Hand Valve Assembly (Danfoss) Parts List

ITEM	Description	Footnote	Qty.	MTM Part No.
	Hand Valve Assembly, Danfoss	F1	1	NSS
	Kit, Handle Assembly (Includes items 1, 2 and 3)			1108238
	Kit, Seal		1	1425249
1	"C" Hook		1	NSS
2	Spring Pin		3	NSS
3	Handle, Straight		1	NSS

F1 Valve has been obsoleted by vendor and is no longer available.

ILLUSTRATIONS and PARTS LISTS

Hand Valve Assembly (Metro with Microswitch) Illustration



ILLUSTRATIONS and PARTS LISTS

Hand Valve Assembly (Metro with Microswitch) Parts List

ITEM	Description	Footnote	Qty.	MTM Part No.
	Hand Valve, Metro, with Limit Switch	F1	1	1139327
	Hand Valve Assembly, Metro		1	NSS
	Microswitch Assembly		1	1180247
1	End Cap		1	NSS
2	Stem		1	NSS
3	Spring Retainer Cup		2	NSS
4	Spool Stop		1	NSS
5	Spring		1	NSS
6	Washer		1	NSS
7	Screw #8-32 x 1/4		2	NSS
8	Bracket		1	NSS
9	Screw #4-40 x 5/8		2	NSS
10	Nut #4-40		2	NSS
11	Mircroswitch		1	NSS
12	Microswitch Housing		1	NSS
13	Spade		2	NSS
14	16 Ga Wire		2	NSS
15	Screw HS Set Cup	F2	2	NSS
16	Shroud	F3	1	NSS
17	Drive Screw	F3	2	NSS
	Handle Assembly, Metro, NL		1	1425250
21	Lever, Actuator		1	NSS
22	Link, Actuator		1	NSS
23	Housing, Actuator		1	NSS
24	Pin, Dowel		1	NSS
25	Knob, Lever		1	1103426
26	Socket Head Cap Screw, #10-32 x 1-1/2		2	NSS
27	Nut, Support		1	NSS
28	Boot, Actuator		1	NSS

F1	Includes handle and microswitch assemblies
F2	Apply Loctite 271
F3	Item not shown in illustration

ILLUSTRATIONS and PARTS LISTS

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