Pneumatic Division
Richland, Michigan 49083

Installation & Service Instructions: V712P
Kneeling Module Installation & Service
ISSUED: November, 2007
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DOC.# V712P, EN# 070851, Rev 2

⚠ WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- **Disconnect electrical supply (when necessary) before installation, servicing, or conversion.**
- **Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.**
- **Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.**
- **Medium must be moisture-free if ambient temperature is below freezing.**
- **Service according to procedures listed in these instructions.**
- **Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.**
- **After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.**
- **Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.**

Safety Guide

For more complete information on recommended application guidelines, see the Safety Guide section of Pneumatic Division catalogs or you can download the **Pneumatic Division Safety Guide** at: www.parker.com/safety

Visit us at www.parker.com/pneu/kneeling

The Kneeling Module is used for easy entrance of all types of buses, motor coaches and other vehicles where a kneel function is required.

Specific types of kneeling can all be obtained within one single unit. These include, split level kneeling, kneeling left, kneeling right, complete kneeling and high boy function for raising the bus or motor coach to upper position.

Ordering Information

Part Number	Description
KM33NAG47A	3-Station, 12 VDC Coil, Non-override Base
KM33NAG48A	3-Station, 24 VDC Coil, Non-override Base
KM33NANXXA	3-Station, Less Coil, Non-override Base
KM33NDG47A	3-Station, 12 VDC Coil, Override Base
KM33NDG48A	3-Station, 24 VDC Coil, Override Base
KM33NDNXXA	3-Station, Less Coil, Override Base
KM44NAG47A	4-Station, 12 VDC Coil, Non-override Base
KM44NAG48A	4-Station, 24 VDC Coil, Non-override Base
KM44NANXXA	4-Station, Less Coil, Non-override Base
KM44NDG47A	4-Station, 12 VDC Coil,Override Base
KM44NDG48A	4-Station, 24 VDC Coil, Override Base
KM44NDNXXA	4-Station, Less Coil, Override Base

For 3-Station Kneeling Module Installation and Operation, see page 2.
For 4-Station Kneeling Module Installation and Operation, see page 3.
For Service Kits Information, see page 2.

Specifications:

Flow ..... 1.4 Cv

Port Size ..... 1/2" NPT Air Supply, 3/8" NPT to Airbags, 1/4" NPT to Other Ports

Operating Pressure .....60 to 150 PSI (4 to 10 bar)

Temperature ..... -40°F to 158°F (-40°C to 70°C)

Coil Voltage .....12VDC and 24VDC (Other voltages available contact factory)

Materials:

Housing..... Machined Aluminum, Anodized
Covers..... Machined Aluminum, Anodized
Spools..... Machined Aluminum, Anodized
Guidance.....Brass
Seals.....NBR
Fasteners .....Steel Galvanized

Lubrication ..... Factory Pre-Lubrication

Pressure Sensor (PS) Port Application

The Parker Kneeling Module is featured with an integrated pressure switch (PS) port to provide an easy-to-access location for pressure switch / transducer installation. It might be used to monitor airbag pressure for control purposed.

Understanding Ⓐ location (See Figures 2 and 4) to be the best location to monitor air bag pressure, caution is needed if the PS port is used as a kneeling cut-off control. Depending on the application, a pressure differential exists between the air bag and the PS port due to air line volume. For example, when bus kneels. PS port may see 20 PSI while the air bag has 50 PSI Pressure. The pressure differential can be reduced if EXHAUST flow is restricted. In PLC logic, a one-shot input from the pressure switch can be used to cut off the EXHAUST valve only to stop kneeling. Please consult Parker for application details.

⚠ WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.

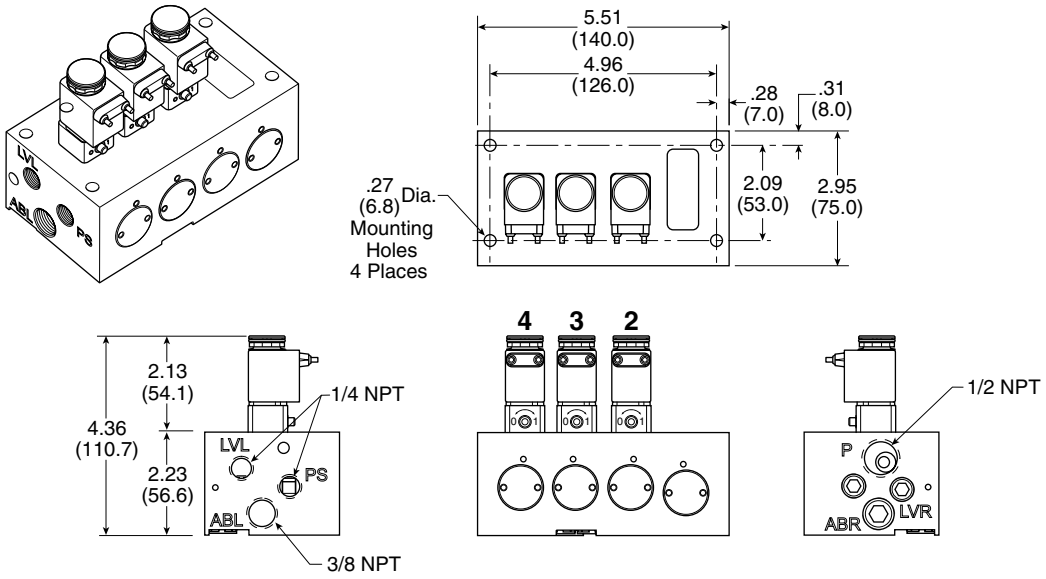

Figure 1
Parker 3-Station Module

Solenoid	Front Wheel			Normal Ride Height
	Kneel	Kneel Hold	Raise	
2	Off	Off	On	Off
3	On	Off	Off	Off
4	On	On	On	Off

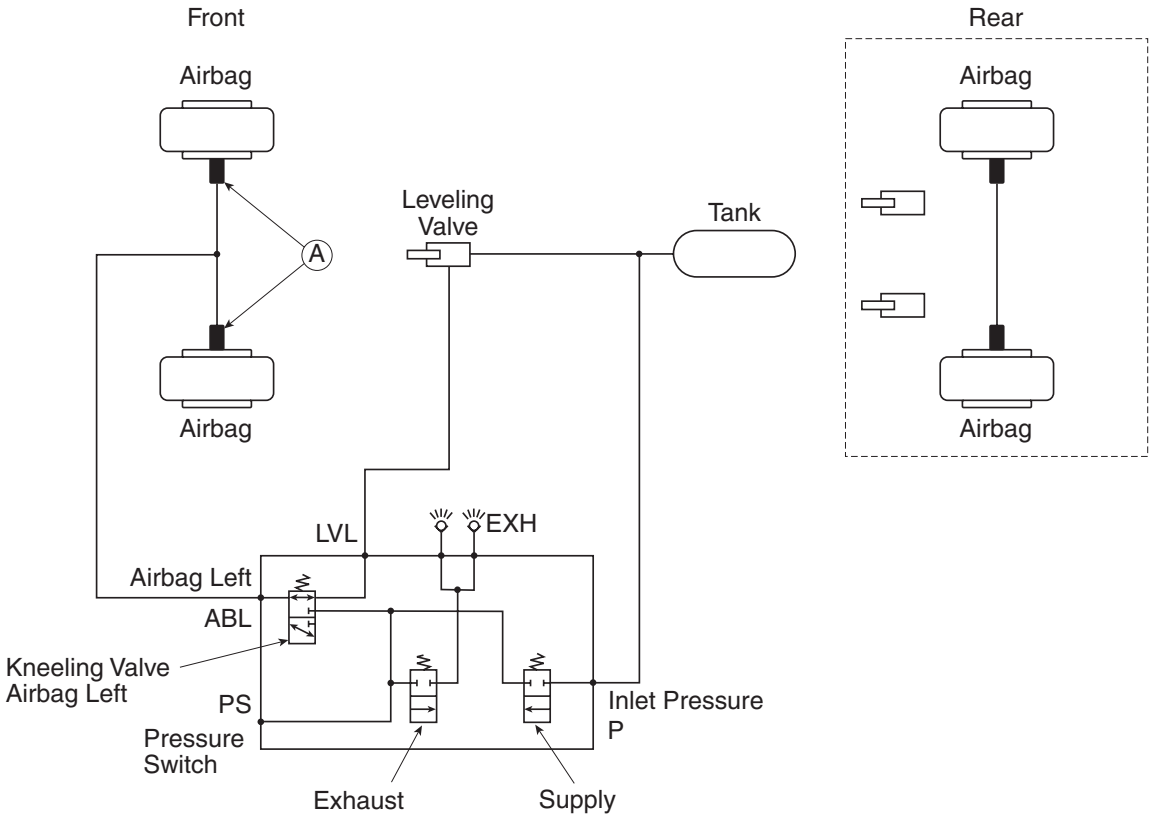

Figure 1
Schematic: 3-Station Module

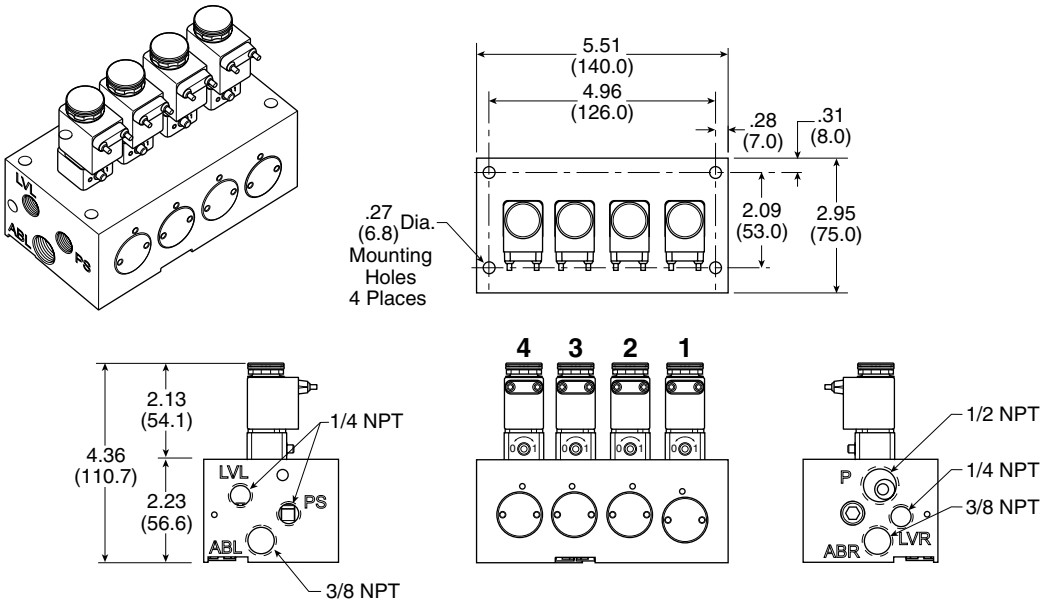

Figure 3
Parker 4-Station Module

Solenoid	Right Side			Left Side			Both Sides			Normal Ride Height
	Kneel	Kneel Hold	Raise	Kneel	Kneel Hold	Raise	Kneel	Kneel Hold	Raise	
1	On	On	On	Off	Off	Off	On	On	On	Off
2	Off	Off	On	Off	Off	On	Off	Off	On	Off
3	On	Off	Off	On	Off	Off	On	Off	Off	Off
4	Off	Off	Off	On	On	On	On	On	On	Off

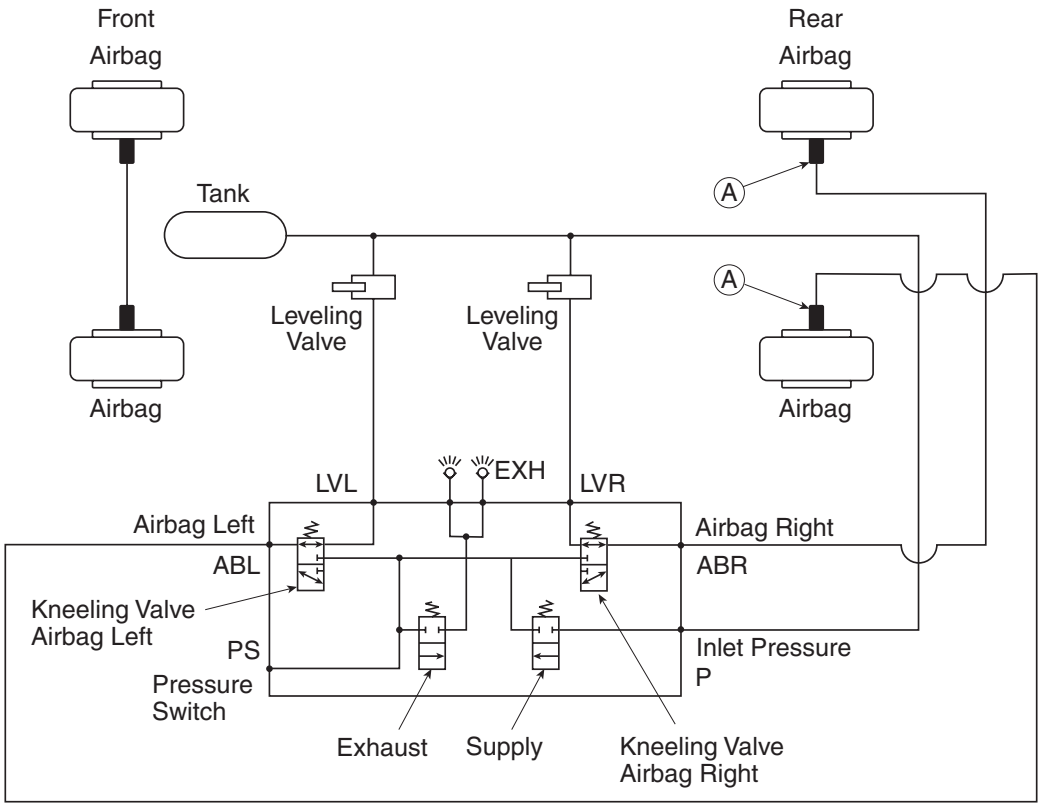

Figure 4
Schematic: 4-Station Module

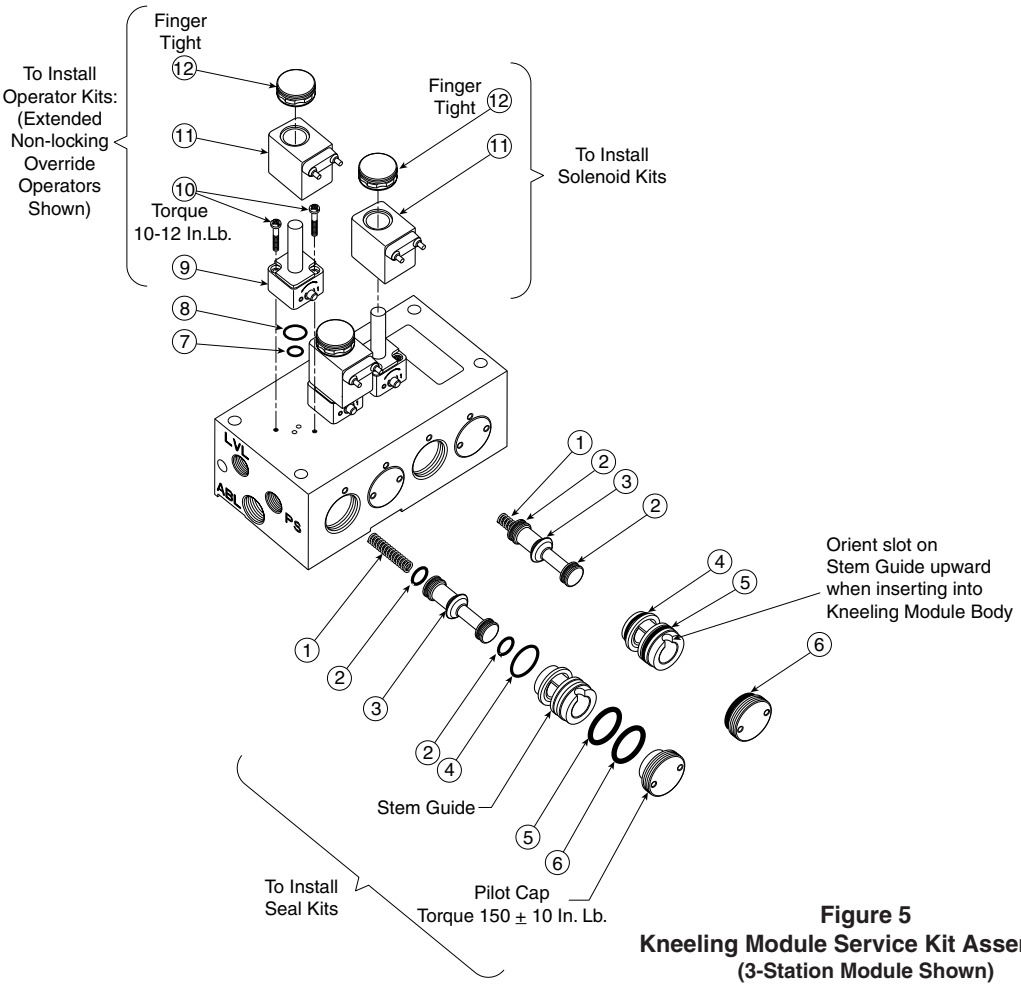

Figure 5
Kneeling Module Service Kit Assemblies
(3-Station Module Shown)

Seal Kit Assembly Procedure (See Figure 5)

1. Apply Christolub MCG to all o-rings.
2. Place two Item 2 to Item 3.
3. Place Item 4 and Item 5 to the Stem Guide as shown.
4. Place Item 6 to the Pil ot Cap.
5. Insert Item 1 into Item 3.
6. Carefully insert Iterm 3 (with o-rings and spring) into the Stem Guide. Orientation a shown.
7. Insert the Stem-Stem Guide sub-assembly into Kneeling Module Body. Make sure the slot on the Stem Guide is orientated as shown (Upward). Press firmly by finger.
8. Screw in the Pilot Cap (with o-rings). Torque to 150 ±10 In.Lb.

Items Included in Seal Kit KM33K84P

Item	Description	Quantity
1	Spring	1
2	O-ring, Stem	2
3	Stem	1
4	O-ring, Stem Guide, Small	1
5	O-ring, Stem Guide, Large	1
6	O-ring, Pilot Cap	1
V712P	Instruction Sheet	1

Solenoid Kits (See Figure 5)

Voltage	Solenoid Kit Number (18" Flying Leads)	Includes Items	Description	Qty.
12VDC	**P2FCG447**	11	Solenoid, 12VDC	1
		12	Nut, Diffuser	1
		V695P	Instruction Sheet	1
24VDC	**P2FCG448**	11	Solenoid, 24VDC	1
		12	Nut, Diffuser	1
		V695P	Instruction Sheet	1

Operator Kits (See Figure 5)

Operator Kit Number	Includes Items	Description	Qty.
P2FP13H4D (Extended Non-locking Override)	7	O-ring, Small	1
	8	O-Ring Large	1
	9	Operator, Non-locking Override	1
	10	Screw	2
	12	Nut, Diffuser	1
	V695	Instruction Sheet	1
P2FP13H4A (No Override)	7	O-ring, Small	1
	8	O-Ring Large	1
	9	Operator, No Override	1
	10	Screw	2
	12	Nut, Diffuser	1
	V695	Instruction Sheet	1