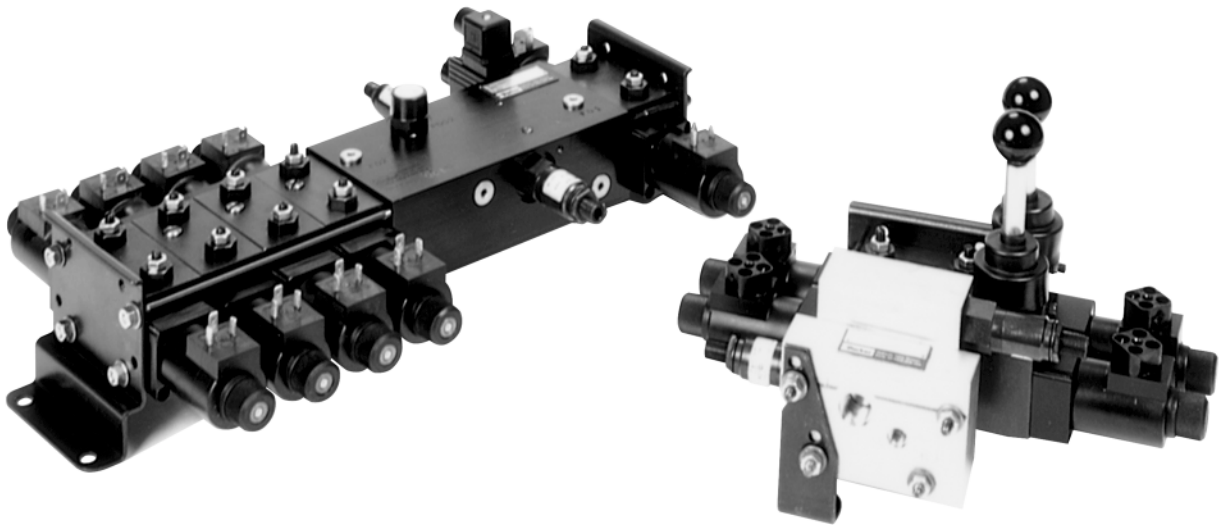




Bulletin 2403-M1/USA
Service Bulletin

Series 6 Mobile Motion Control Valves

Effective: January 6, 1997



 **WARNING**

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Setup Procedure

Setting Series 6 Flow Rates

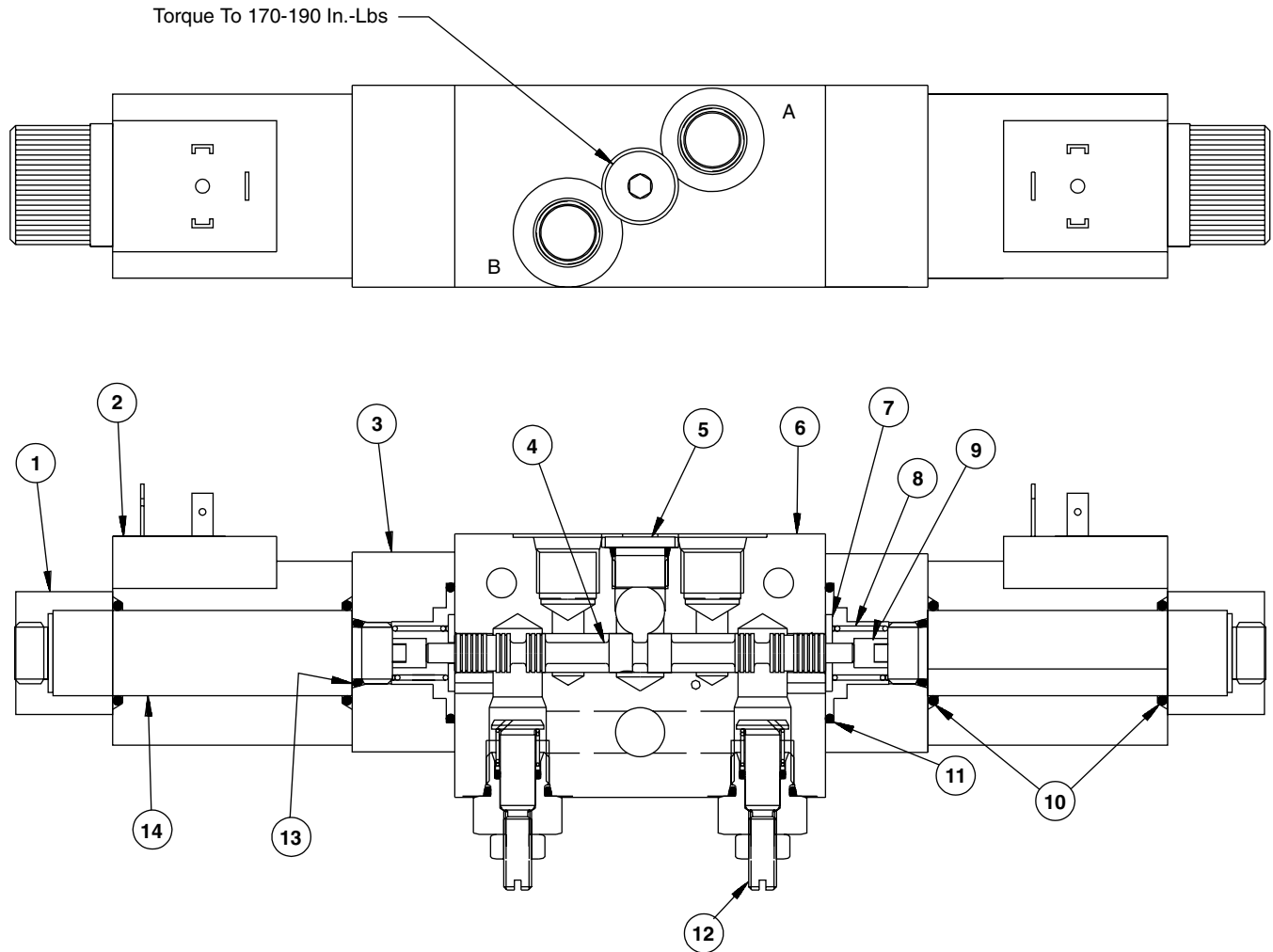
- Set controller maximum amperage output to 1.9 amps for 12 volt system or .95 amps for 24 volt system.
- Adjust workport flows by the following procedure, one port at a time:

To adjust "A" workport's flow, the flow control on the "B" workport's side is either turned in (clockwise) or out (counter-clockwise). Turning the flow control inward reduces flow and turning it outward increases flow. Repeat these steps to adjust "B" workport's flow except, use the flow control on the "A" workport side, instead.

Notes:

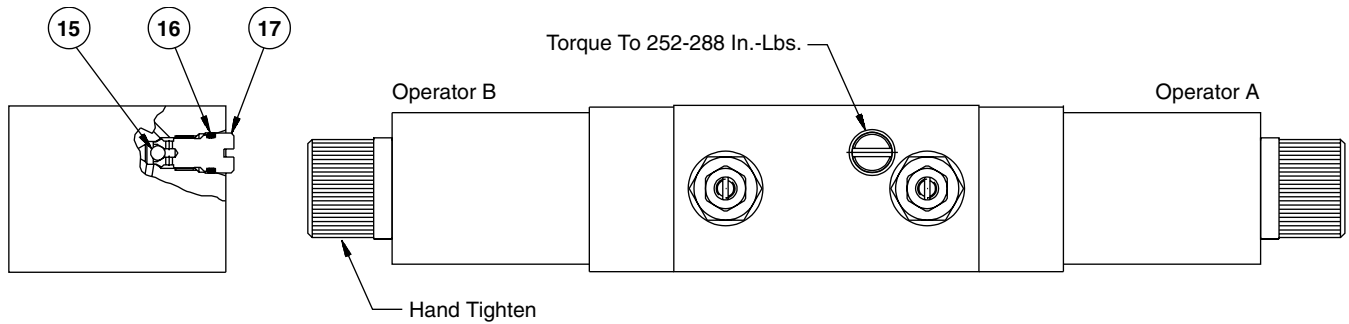
1. In order to provide the best compensation performance, the flow control should be used to adjust maximum flows.
2. It is not recommended to reduce the controller's maximum amperage output to below 75% of specified. (Loss of Resolution and poor low end metering will occur).
3. For flows of 1.5 GPM or less, the low flow spools are recommended.

Standard Cut-A-Way



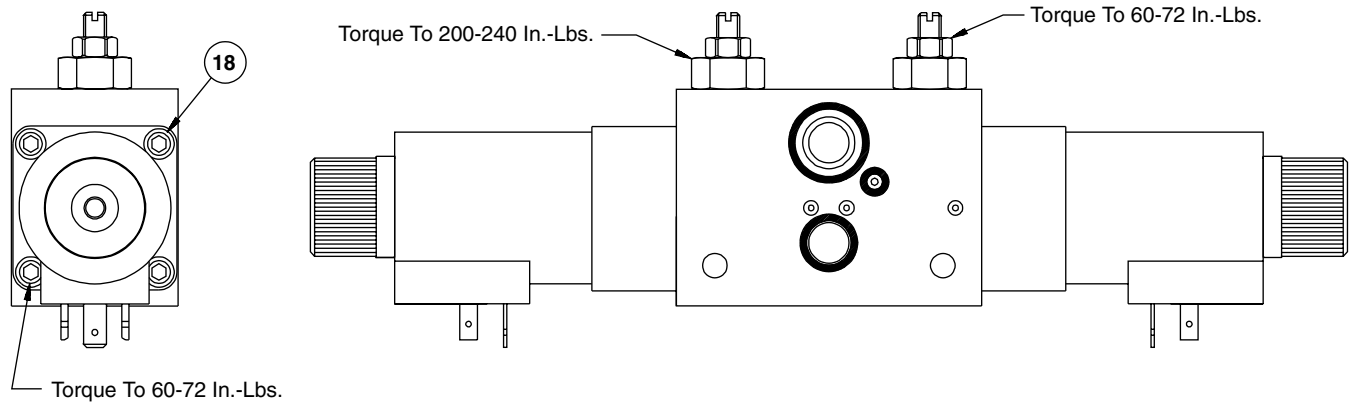
Code Options	Item#	Part Number	Description	Quantity	Code Category Type
S6	1	25226-21	Cap	2	Series
2 4	2	25226-50 25226-52	1.9 Amps Max @ 12 VDC .95 Amps Max @ 24 VDC	2 2	Voltage Voltage
S6	3	15132-06	Adapter	2	Series
C M C M B L B L	4	25155-01 25155-02 25155-03 25155-04 25155-06 25155-08 25155-09 25155-10	Cylinder Spool Motor Spool Cylinder Spool (use w/ Override Lever) Motor Spool (use w/ Override Lever) Bleeder Spool Low Flow Cylinder Spool Bleeder Spool (use w/ Override Lever) Low Flow Cylinder Spool (use w/ Override Lever)	1 1 1 1 1 1 1 1	Spool Type Spool Type Spool Type Spool Type Spool Type Spool Type Spool Type Spool Type
S6	5	5HP50N-S	Plug, 108x5 Hex	1	Series
S A B C	6	75228-01 75228-02 75228-04 75228-05	Body 6 Body 6A Body 6B Body 6C	1 1 1 1	Body Type Body Type Body Type Body Type
S6	7	25115-02	Washer	2	Series
S6	8	25040-57	Spring	2	Series
S6	9	15132-07	Extension	2	Series
S6	10	3910*-9	O-ring	4	Series
AF, AP, BF, BP or ST	11	2121*-9	O-ring	2	Manual Override
S6	12	75227-01*	Flow Control Assembly	2	Series
S6	13	3906*-9	O-ring	2	Series
S6	14	25226-23	Tube	2	Series
S or B	15	98x10	.156 Ball	1	Body Type
S or B	16	2011*-9	O-ring	1	Body Type
S or B	17	25154-00	Shuttle Body	1	Body Type
ST AF, AP, BF or BP AF, AP, BF or BP	18	10x212 10x212 10x336	3/4" Cap Screw 3/4" Cap Screw 2-1/4" Cap Screw	8 4 4	Manual Override Manual Override Manual Override
D or E	19	15000-14	DIN 43650 Connectors	2	Options
AF, AP, BF or BP	20	75246-01	Handle Assembly	1	Manual Override
B or C	21	2012*-9	O-ring	4	Body Type
S6	22	2018*-9	O-ring	1	Series
S6	23	2008*-9	O-ring	1	Series
S6	24	2014*-9	O-ring	1	Series
A or B	25	693975	Insulator Block	2	Options
A or B	26	693979	Screw	2	Options
		SKMEH-16	Seal kit for any S6 4-way, Nitrile	1	
		SKMEH-25	Seal kit for any S6 Inlet, Nitrile	1	
		SKMEH-43	Seal kit for any S6 4-way, Fluorocarbon	1	
		SKMEH-44	Seal kit for any S6 4-way, Cold Seals	1	
		SKMEH-45	Seal kit for any S6 Inlet, Fluorocarbon	1	
		SKMEH-46	Seal kit for any S6 Inlet, Cold Seals	1	

Middle Body With Loadsense Capability



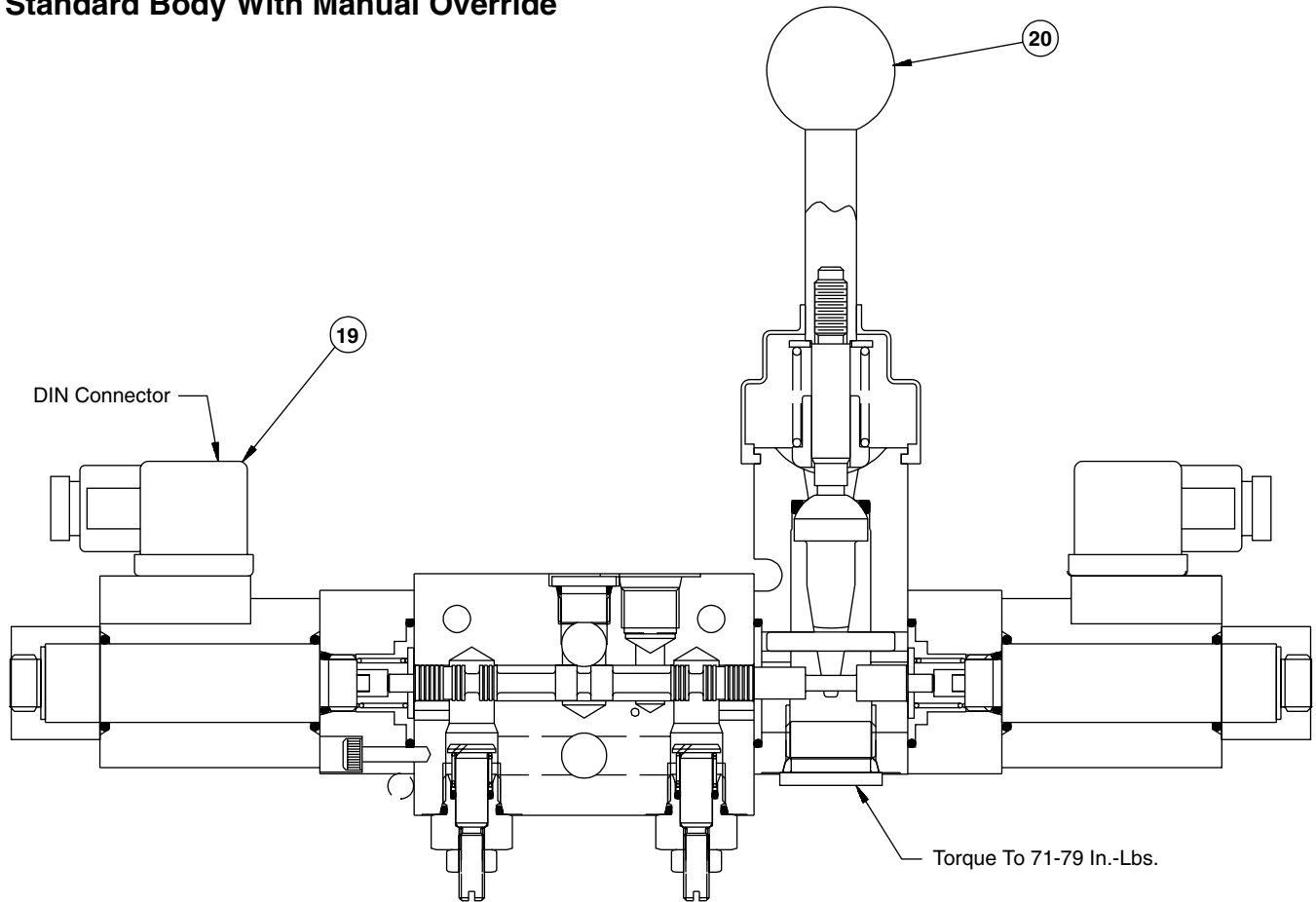
Note: Shuttle Parts And Machining Not In End Body.

Standard Mid Section

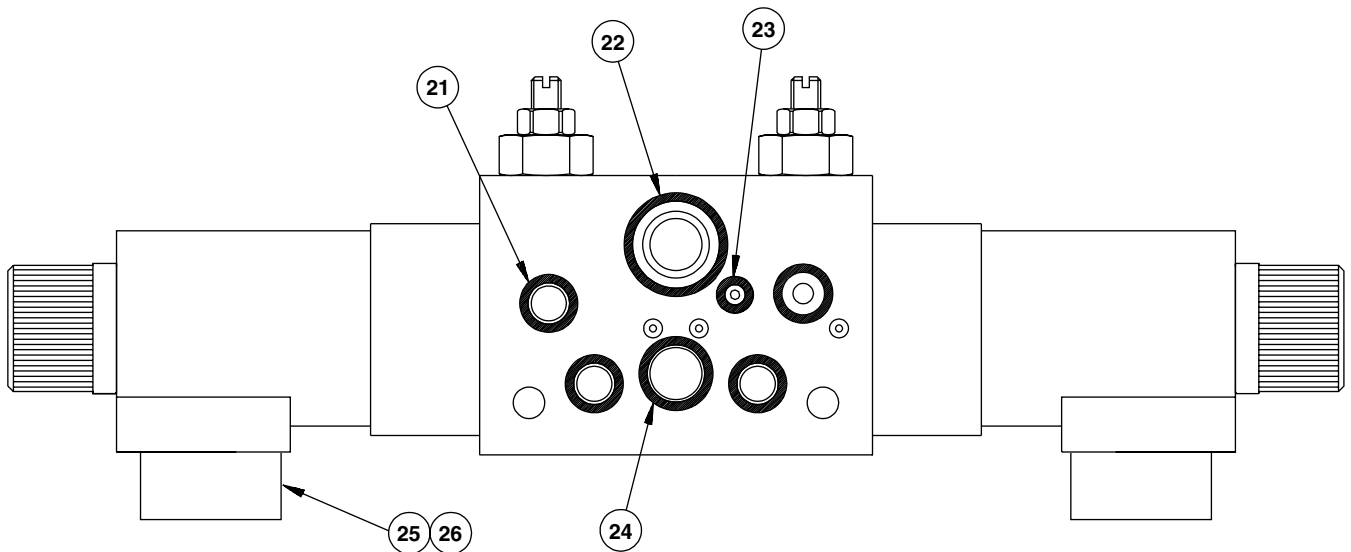


Code Options	Item#	Part Number	Description	Quantity	Code Category Type
S6	1	25226-21	Cap	2	Series
2 4	2	25226-50 25226-52	1.9 Amps Max @ 12 VDC .95 Amps Max @ 24 VDC	2 2	Voltage Voltage
S6	3	15132-06	Adapter	2	Series
C M C M B L B L	4	25155-01 25155-02 25155-03 25155-04 25155-06 25155-08 25155-09 25155-10	Cylinder Spool Motor Spool Cylinder Spool (use w/ Override Lever) Motor Spool (use w/ Override Lever) Bleeder Spool Low Flow Cylinder Spool Bleeder Spool (use w/ Override Lever) Low Flow Cylinder Spool (use w/ Override Lever)	1 1 1 1 1 1 1 1	Spool Type Spool Type Spool Type Spool Type Spool Type Spool Type Spool Type Spool Type
S6	5	5HP50N-S	Plug, 108x5 Hex	1	Series
S A B C	6	75228-01 75228-02 75228-04 75228-05	Body 6 Body 6A Body 6B Body 6C	1 1 1 1	Body Type Body Type Body Type Body Type
S6	7	25115-02	Washer	2	Series
S6	8	25040-57	Spring	2	Series
S6	9	15132-07	Extension	2	Series
S6	10	3910*-9	O-ring	4	Series
AF, AP, BF, BP or ST	11	2121*-9	O-ring	2	Manual Override
S6	12	75227-01*	Flow Control Assembly	2	Series
S6	13	3906*-9	O-ring	2	Series
S6	14	25226-23	Tube	2	Series
S or B	15	98x10	.156 Ball	1	Body Type
S or B	16	2011*-9	O-ring	1	Body Type
S or B	17	25154-00	Shuttle Body	1	Body Type
ST AF, AP, BF or BP AF, AP, BF or BP	18	10x212 10x212 10x336	3/4" Cap Screw 3/4" Cap Screw 2-1/4" Cap Screw	8 4 4	Manual Override Manual Override Manual Override
D or E	19	15000-14	DIN 43650 Connectors	2	Options
AF, AP, BF or BP	20	75246-01	Handle Assembly	1	Manual Override
B or C	21	2012*-9	O-ring	4	Body Type
S6	22	2018*-9	O-ring	1	Series
S6	23	2008*-9	O-ring	1	Series
S6	24	2014*-9	O-ring	1	Series
A or B	25	693975	Insulator Block	2	Options
A or B	26	693979	Screw	2	Options
		SKMEH-16	Seal kit for any S6 4-way, Nitrile	1	
		SKMEH-25	Seal kit for any S6 Inlet, Nitrile	1	
		SKMEH-43	Seal kit for any S6 4-way, Fluorocarbon	1	
		SKMEH-44	Seal kit for any S6 4-way, Cold Seals	1	
		SKMEH-45	Seal kit for any S6 Inlet, Fluorocarbon	1	
		SKMEH-46	Seal kit for any S6 Inlet, Cold Seals	1	

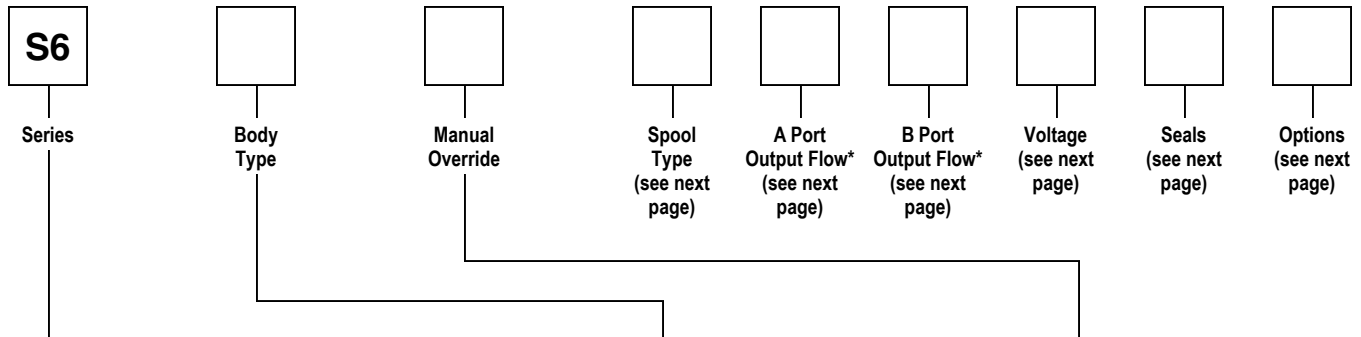
Standard Body With Manual Override



Standard Body With Work Port Relief Capability



Code Options	Item#	Part Number	Description	Quantity	Code Category Type
S6	1	25226-21	Cap	2	Series
2 4	2	25226-50 25226-52	1.9 Amps Max @ 12 VDC .95 Amps Max @ 24 VDC	2 2	Voltage Voltage
S6	3	15132-06	Adapter	2	Series
C M C M B L B L	4	25155-01 25155-02 25155-03 25155-04 25155-06 25155-08 25155-09 25155-10	Cylinder Spool Motor Spool Cylinder Spool (use w/ Override Lever) Motor Spool (use w/ Override Lever) Bleeder Spool Low Flow Cylinder Spool Bleeder Spool (use w/ Override Lever) Low Flow Cylinder Spool (use w/ Override Lever)	1 1 1 1 1 1 1 1	Spool Type Spool Type Spool Type Spool Type Spool Type Spool Type Spool Type Spool Type
S6	5	5HP50N-S	Plug, 108x5 Hex	1	Series
S A B C	6	75228-01 75228-02 75228-04 75228-05	Body 6 Body 6A Body 6B Body 6C	1 1 1 1	Body Type Body Type Body Type Body Type
S6	7	25115-02	Washer	2	Series
S6	8	25040-57	Spring	2	Series
S6	9	15132-07	Extension	2	Series
S6	10	3910*-9	O-ring	4	Series
AF, AP, BF, BP or ST	11	2121*-9	O-ring	2	Manual Override
S6	12	75227-01*	Flow Control Assembly	2	Series
S6	13	3906*-9	O-ring	2	Series
S6	14	25226-23	Tube	2	Series
S or B	15	98x10	.156 Ball	1	Body Type
S or B	16	2011*-9	O-ring	1	Body Type
S or B	17	25154-00	Shuttle Body	1	Body Type
ST AF, AP, BF or BP AF, AP, BF or BP	18	10x212 10x212 10x336	3/4" Cap Screw 3/4" Cap Screw 2-1/4" Cap Screw	8 4 4	Manual Override Manual Override Manual Override
D or E	19	15000-14	DIN 43650 Connectors	2	Options
AF, AP, BF or BP	20	75246-01	Handle Assembly	1	Manual Override
B or C	21	2012*-9	O-ring	4	Body Type
S6	22	2018*-9	O-ring	1	Series
S6	23	2008*-9	O-ring	1	Series
S6	24	2014*-9	O-ring	1	Series
A or B	25	693975	Insulator Block	2	Options
A or B	26	693979	Screw	2	Options
		SKMEH-16	Seal kit for any S6 4-way, Nitrile	1	
		SKMEH-25	Seal kit for any S6 Inlet, Nitrile	1	
		SKMEH-43	Seal kit for any S6 4-way, Fluorocarbon	1	
		SKMEH-44	Seal kit for any S6 4-way, Cold Seals	1	
		SKMEH-45	Seal kit for any S6 Inlet, Fluorocarbon	1	
		SKMEH-46	Seal kit for any S6 Inlet, Cold Seals	1	



Code	Item	Part No.	Qty.	Description
S6	Series 6 (Ø 3/8" Spool)			
	1	25226-21	2	Cap
	3	15132-06	2	Adapter
	5	5HP5ON-S	1	Plug
	7	25115-02	2	Washer
	8	25040-57	2	Spring
	9	15132-07	2	Extension
	10	3910*-9	4	O-ring
	12	75227-01*	2	Flow Cont. Assy.
	13	3906*-9	2	O-ring
	14	25226-23	2	Tube
	22	2018*-9	1	O-ring
	23	2008*-9	1	O-ring
	24	2014*-9	1	O-ring

Code	Item	Part No.	Qty.	Description
ST	Standard Push Pin Override			
	11	2121*-9	2	O-ring
	18	10x212	8	3/4" Cap Screw
AF	Lever, Flow Control Side, A Side			
	11	2121*-9	3	O-ring
	18	10x212	4	3/4" Cap Screw
	18	10x336	4	2-1/4" Cap Screw
20	75246-01	1	Handle Assembly	
BF	Lever, Flow Control Side, B Side			
	11	2121*-9	3	O-ring
	18	10x212	4	3/4" Cap Screw
	18	10x336	4	2-1/4" Cap Screw
20	75246-01	1	Handle Assembly	
AP	Lever, Work Port Side, A Side			
	11	2121*-9	3	O-ring
	18	10x212	4	3/4" Cap Screw
	18	10x336	4	2-1/4" Cap Screw
20	75246-01	1	Handle Assembly	
BP	Lever, Work Port Side, B Side			
	11	2121*-9	3	O-ring
	18	10x212	4	3/4" Cap Screw
	18	10x336	4	2-1/4" Cap Screw
20	75246-01	1	Handle Assembly	

Code	Item	Part No.	Qty.	Description
S	Mid Body With Load Sense Shuttle.			
	6	75228-01	1	Body 6S
	15	98x10	1	.156 Ball
	16	2011*9	1	O-ring
	17	25154-00	1	Shuttle Body
B	Mid Body With Load Sense Shuttle and Work Port Relief Capability.			
				Plug
	6	75228-04	1	Body 6B
	15	98x10	1	.156 Ball
	16	2011*9	1	O-ring
	17	25154-00	1	Shuttle Body
21	2012*-9	4	O-ring	
A	End Body.			
	6	75228-02	1	Body 6A
C	End Body With Work Port Relief Capability.			
	6	75228-05	1	Body 6C
	21	2012*-9	4	O-ring



S6
 Series
 (see previous page)

Body Type
 (see previous page)

Manual Override
 (see previous page)

Spool Type

A Port Output Flow*

B Port Output Flow*

Voltage

Seals

Options

Code	Flow Rate (GPM)
A@	A Port

Code	Flow Rate (GPM)
B@	B Port

*Note: Flow settings available in increments of 0.1 GPM (0.2 - 8.0 GPM)

Code	Item	Part No.	Qty.	Description
C	Cylinder Spool			
	4	25155-01	1	Spool
	4	25155-03	1	Spool (Use With Override Lever)
M	Motor Spool			
	4	25155-02	1	Spool
	4	25155-04	1	Spool (Use With Override Lever)
B	Bleeder Spool			
	4	25155-06	1	Spool
	4	25155-09	1	Spool (Use With Override Lever)
L	Low Flow Cylinder Spool			
	4	25155-08	1	Spool
	4	25155-10	1	Spool (Use With Override Lever)

Code	Description
N	Use Nitrile Seals Replace All '*' With 'N'
V	Use Fluorocarbon Seals Replace All '*' With 'V'
K	Use Cold Seals Replace All '*-9' With 'N304-75' Replace '*' In Item 12 With 'K'

Code	Item	Part No.	Qty.	Description
2	2	25226-50	2	Use With 12VDC Systems
4	2	25226-52	2	Use With 12VDC Systems

Code	Item	Part No.	Qty.	Description
A	Spade Terminals. Work Port Side.			
	25	693975	2	Insulator Block
	26	693979	2	Screw
B	Spade Terminals. Flow Control Side.			
	25	693975	2	Insulator Block
	26	693979	2	Screw
D	DIN 43650 Connectors. Work Port Side.			
	19	15000-14	2	Connector
E	DIN 43650 Connectors. Work Port Side.			
	19	15000-14	2	Connector

Operation

The Series 6, MMV-IPC (Individual Pressure Compensation) valves are controlled by proportional, push-type oil immersed solenoids, which provide precise metering characteristics. Each valve section is individually compensated by means of a return-line sensing orifice, which applies differential pressure to the ends of the main metering spool. Series 6 Mobile Motion Control Valve (MMV) systems are ideal for applications that require precise control of load speed and direction.

Trouble-Shooting

Symptom	Cause	Solution
System pressure too low	<i>Pump compensator</i>	<i>For all systems:</i> Isolate area of low pressure to all functions by testing all the functions. If all functions are at a low pressure, check hydraulic circuit for additional relief valve(s), check pump compensator setting. Adjust, replace as necessary.
	<i>Relief valve</i>	<i>For systems with MUV inlet:</i> With dead-headed load, check relief valve setting, adjust as necessary. Remove relief valve, inspect for damage. Replace external o-rings or replace relief valve as necessary.
Load does not move or moves at low speed	<i>Relief valve</i>	<i>For systems with MUV inlet:</i> Readjust relief valve using a pressure gauge.
	<i>Electrical signal</i>	<i>For all systems:</i> Check electrical signal.
	<i>Return line</i>	Return line flow may be restricted, check for correct plumbing.
	<i>Pump supply</i>	Output flow requirements exceed pump supply. Make appropriate system design modifications.
Load moves erratically and/or system is oscillating	<i>Sticking valve or solenoid</i>	Swap with “good” section(s) to verify problem. Clean, deburr, replace as necessary.
	<i>Air in system</i>	Bleed at as many points as possible. Artificially increase light loads with spring-loaded check valve. Eliminate negative loads with counter-balance valves, brake valves, or pilot operated check valves. Employ counter-balance valve, etc., with pilot ratios of 3:1 or 4:1. High pilot ratios will cause instantaneous pilot pressure collapse, system oscillation and associated noise.
	<i>Demand flow exceeds pump flow</i>	If demand flow exceeds pump flow, pressure compensation is lost. System design modification is recommended.

Continued on next page.

Trouble-Shooting

Symptom	Cause	Solution
Poor Control	<i>Electrical valves</i>	<p>Faulty input signal. Check controller specifications. 200 to 250 Hertz, plus width modulation (PWM), recommended for best proportional control.</p> <p>Faulty solenoid. Swap with “good” solenoid to verify. Replace as necessary.</p> <p>Adjust controller threshold and/or maximum output adjustment for best control from cracking to full flow.</p> <p>Controller ramp adjustment should be set for desired response.</p>
Pump does not destroke	<i>Loadsense/Pressure compensated pumps</i>	<p>Four-way not in neutral position and (verified by seeing pressure at “Y” port or “L.S.” port when solenoids are de-energized). Push on solenoids’ manual overrides to verify that the spool is free. If spool is not free, determine if drag occurs in the solenoid tube or spool/bore fittings. If the spool is free, check shuttle for contamination. (Retorque shuttle body to 252-288 in.-lbs.).</p> <p>Load sense signal does not drain to tank.</p>
Pump does not unload, Pump unloads at high pressure drop	<i>Fixed displacement pumps</i>	<p>(With all four-ways in neutral, fixed displacement pumps will unload across the MUV at approximately 85 psi)</p> <p>Return line flow restricted, high return line pressure. Check for correct plumbing.</p> <p>Four-way spool not in neutral. (See pump does not destroke.)</p>
Flow continues after coils de-energized	<i>Main spool sticking</i>	<p>Remove flow controls and check for contaminants wedged between spool and body lands. Remove contaminants and push on overrides to verify spool centering. Replace flow controls and retest.</p>

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1. Terms and Conditions of Sale: All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

2. Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

3. Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

4. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 18 months from date of shipment from Parker Hannifin Corporation. **THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED.**

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5. Limitation Of Remedy: SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

6. Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges

paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. Buyer's Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property, Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. Indemnity For Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. Patents, U.S. Trademarks, copyrights, trade dress and trade secrets (hereinafter 'Intellectual Property Rights'). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights. If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter 'Events of Force Majeure'). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

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