



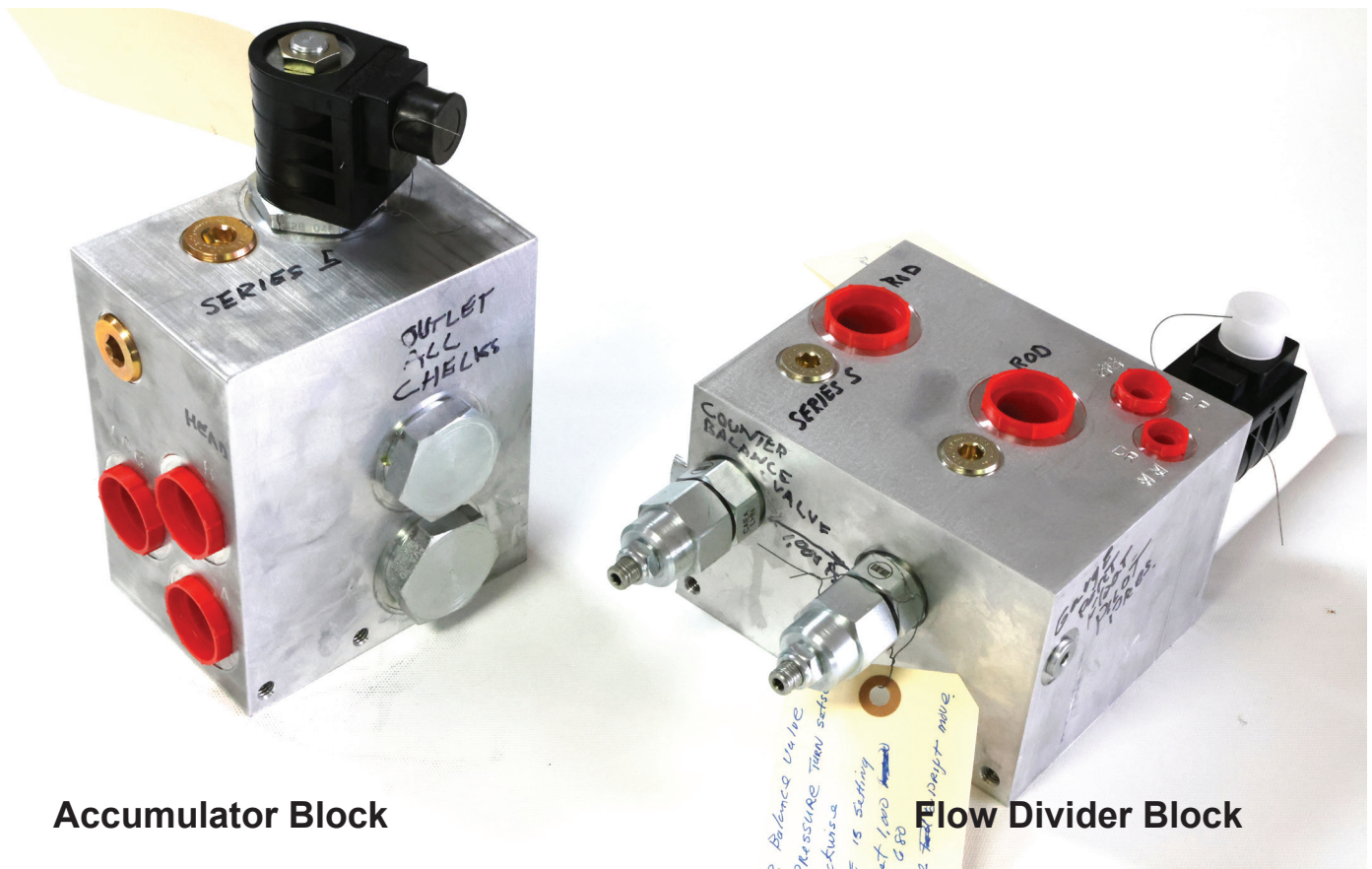
Series 5 - Exactrix® Mustang Flexing Toolbar

Steve Ford - Lead Designer

GJS - Criteria Guidelines

Engineering Document
Non-Public

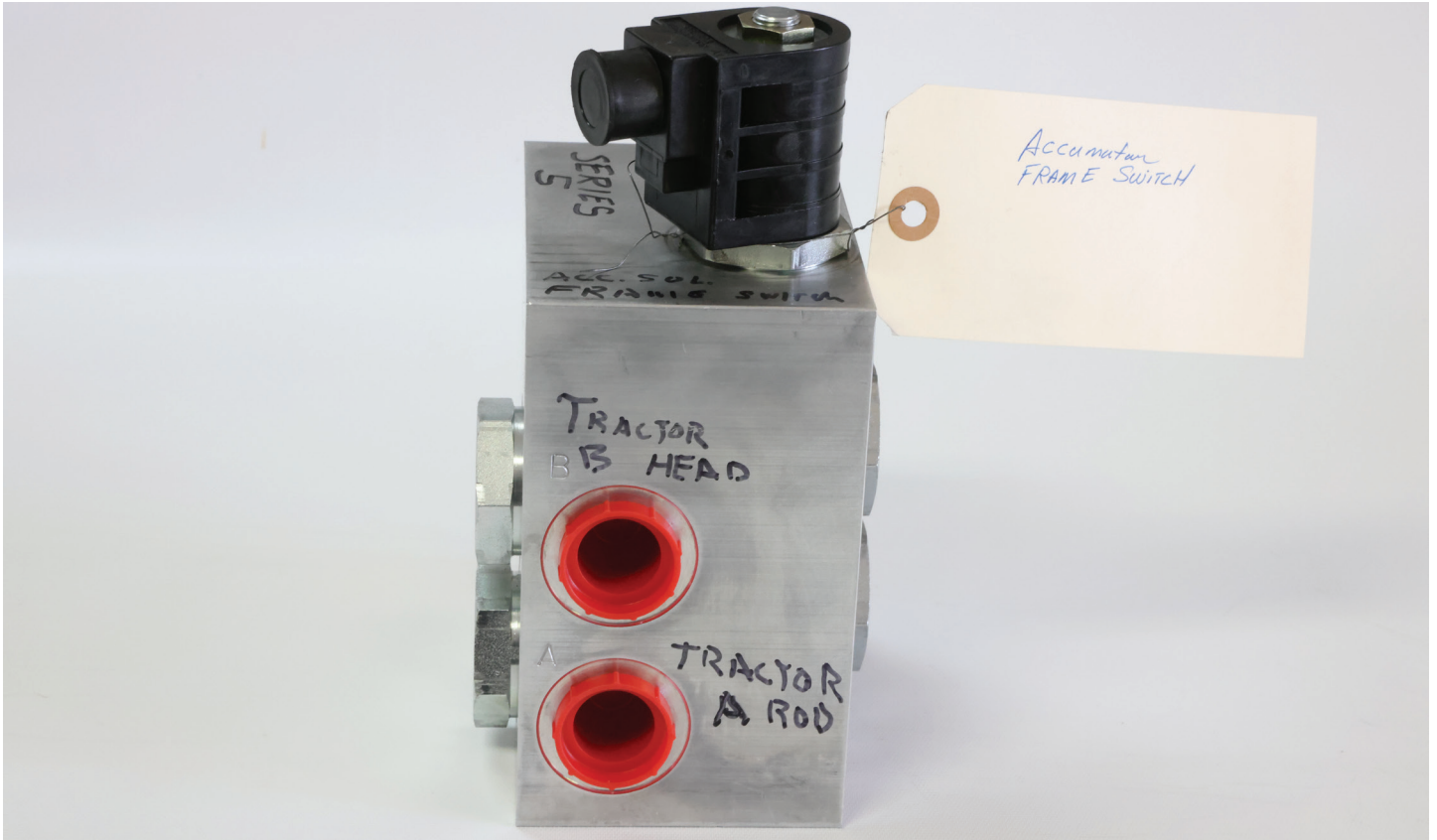
- Accumulator Ride Control
- Positive Down Pressure
- Positive Tool Bar Lock, Smile Feature
- Three Section, Single SCV
- Five Section, Option, Dual SCV
- Feed Back Logic. Visual
- Feed Back Logic. Automatic



Accumulator Block

Flow Divider Block

Image 1



Tractor Hydraulic Line. Hydraulic Ports A + B

Image 2



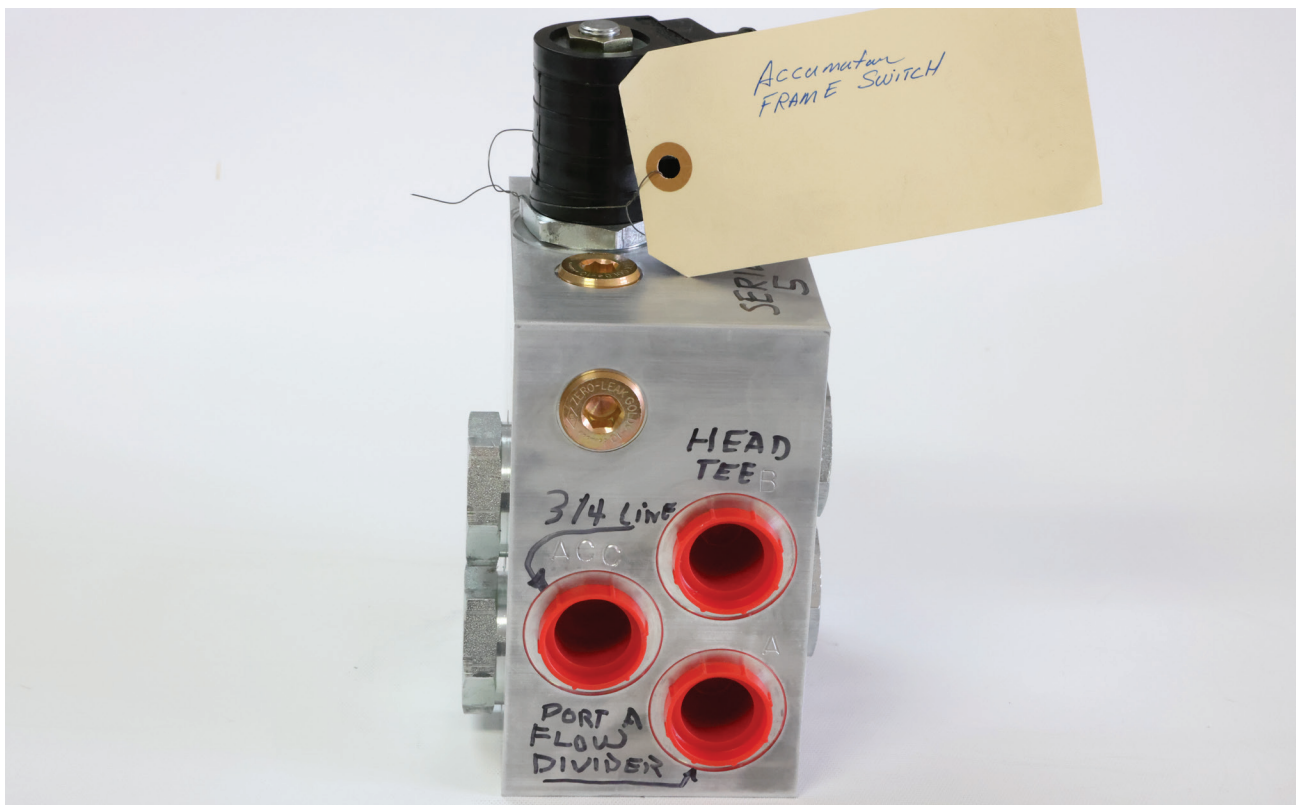
Inlet Checks

Image 3



Outlet Accumulator Checks

Image 4



Accumulator, Flow Divider, Head Tee To Cylinder

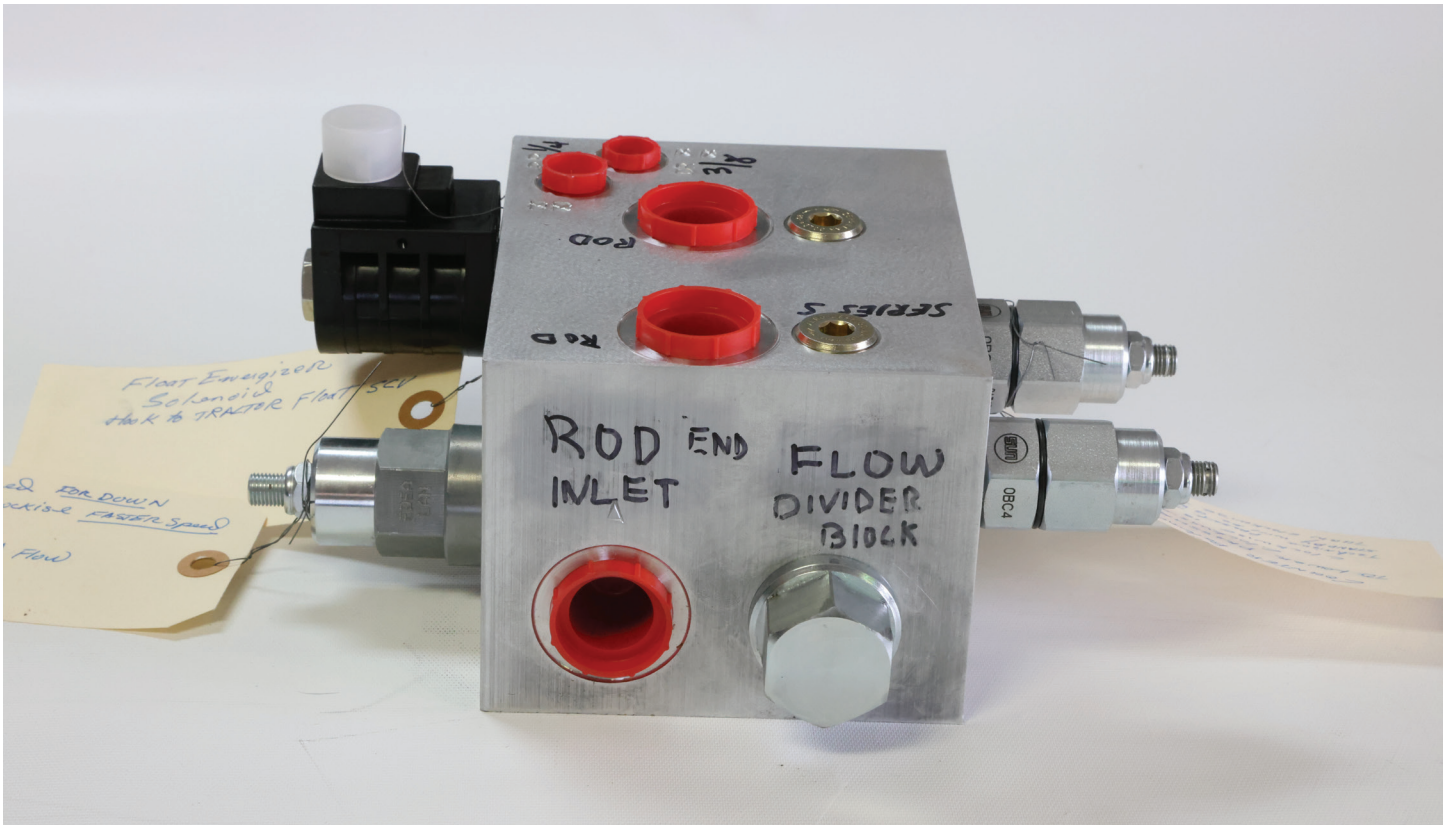
Image 5



Solenoid, Frame Switch - Energize Accumulator

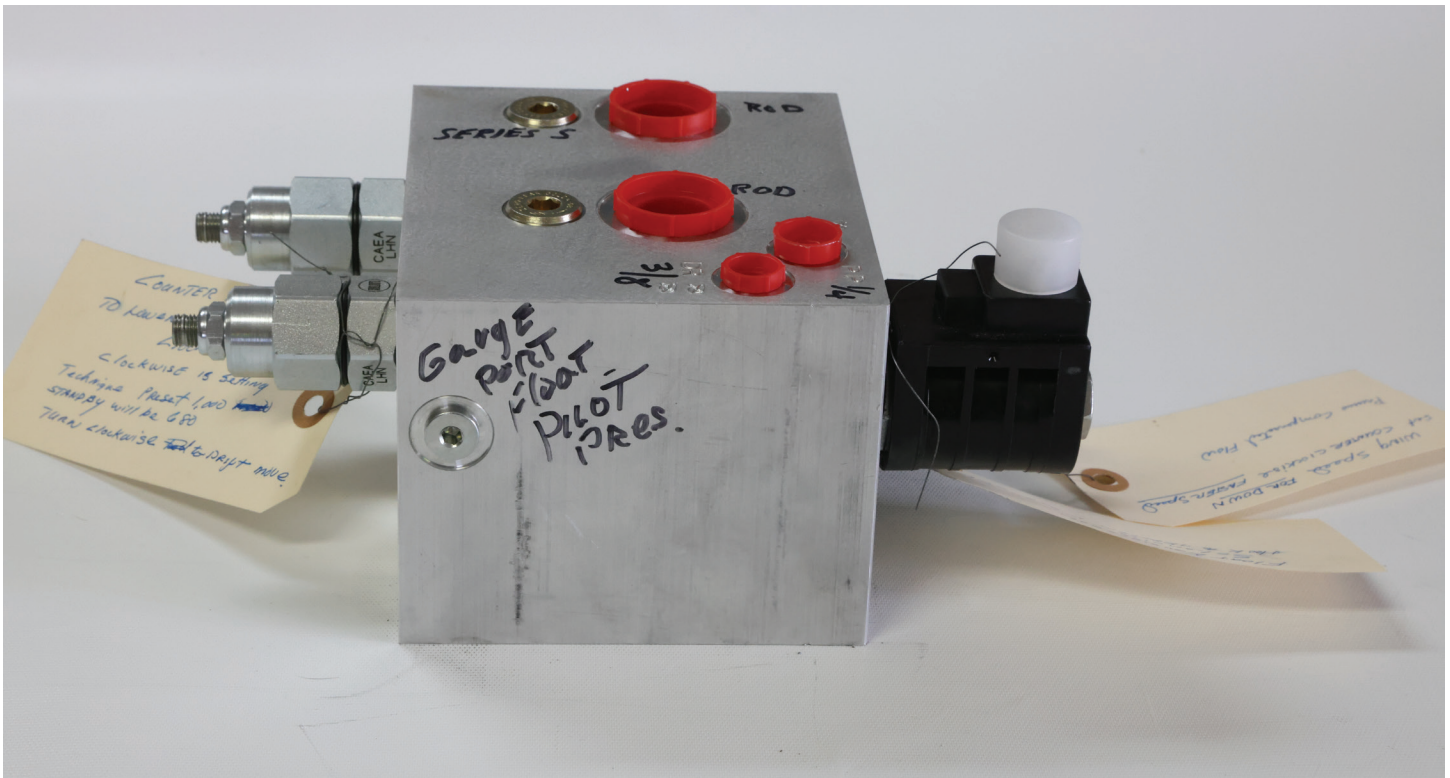
Image 6

Second In Flow - Flow Divider



Flow Inlet From Accumulator

Image 7



Gauge Port Float Pilot Pressure

Image 8



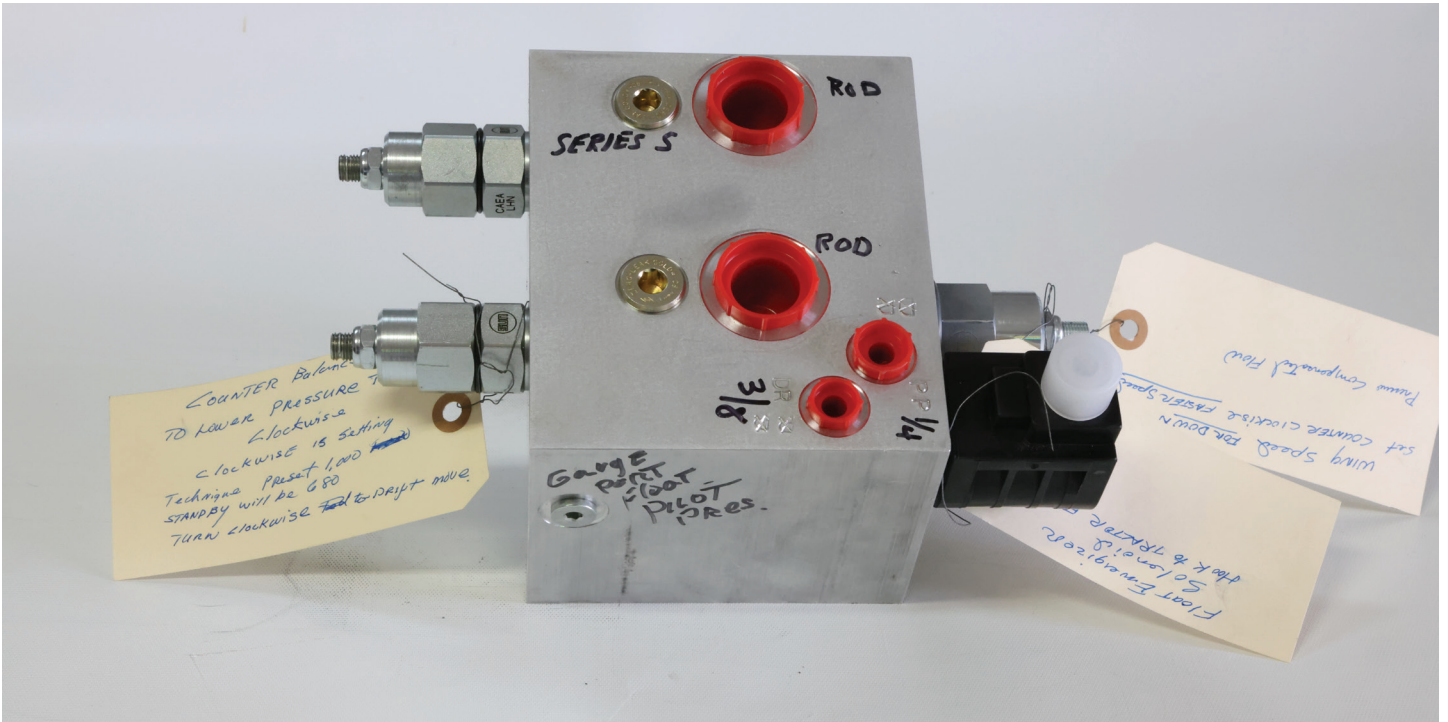
Counter Balance Valves

Image 9



Solenoid Float Energizer - Wing Speed Pressure Compensation Valve

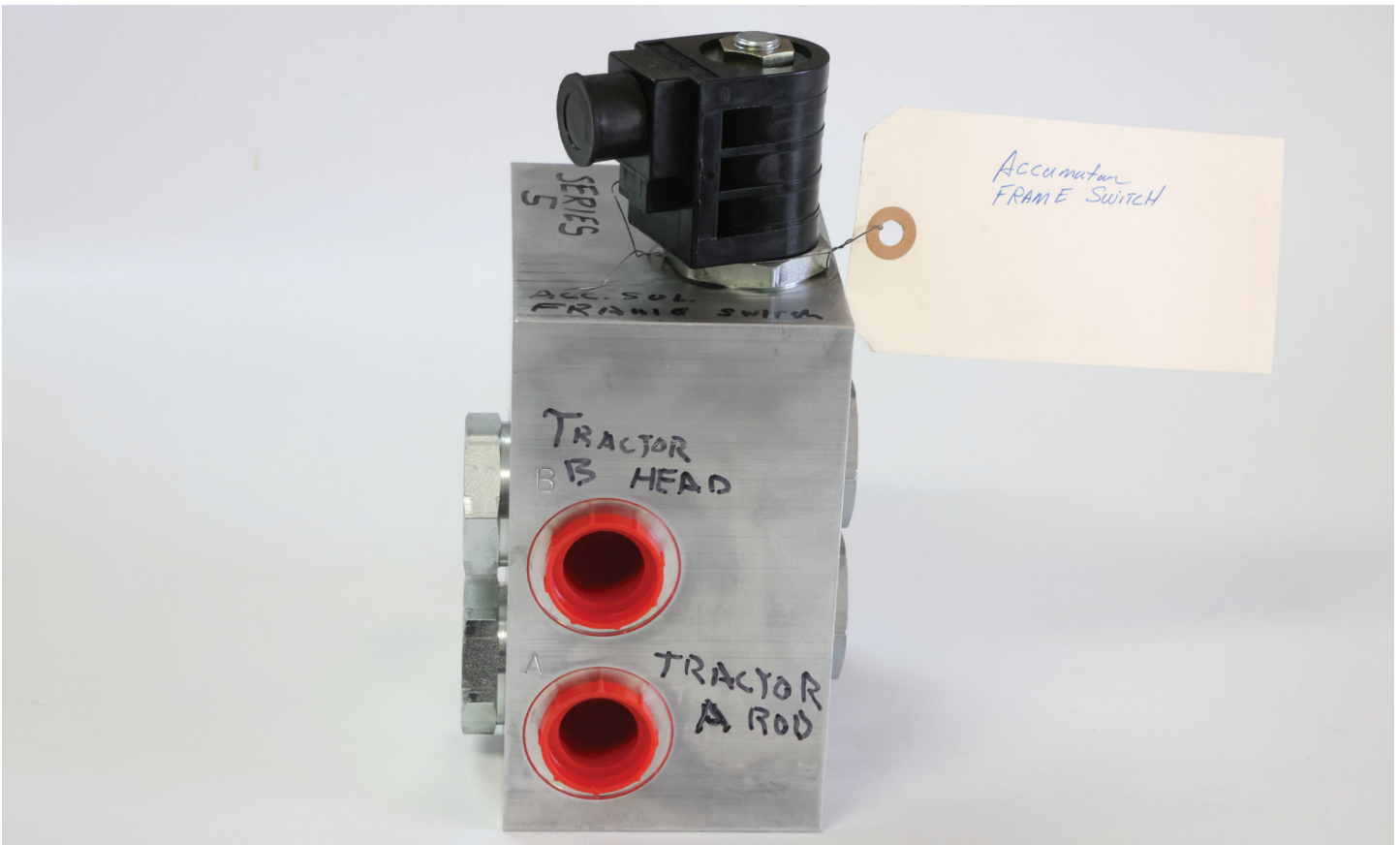
Image 10



**Rod End Ports. Pilot Pressure, Power Beyond On Standby Supply
DR, Case Drain**

Image 6

First In Flow - Accumulator Valve Blocks



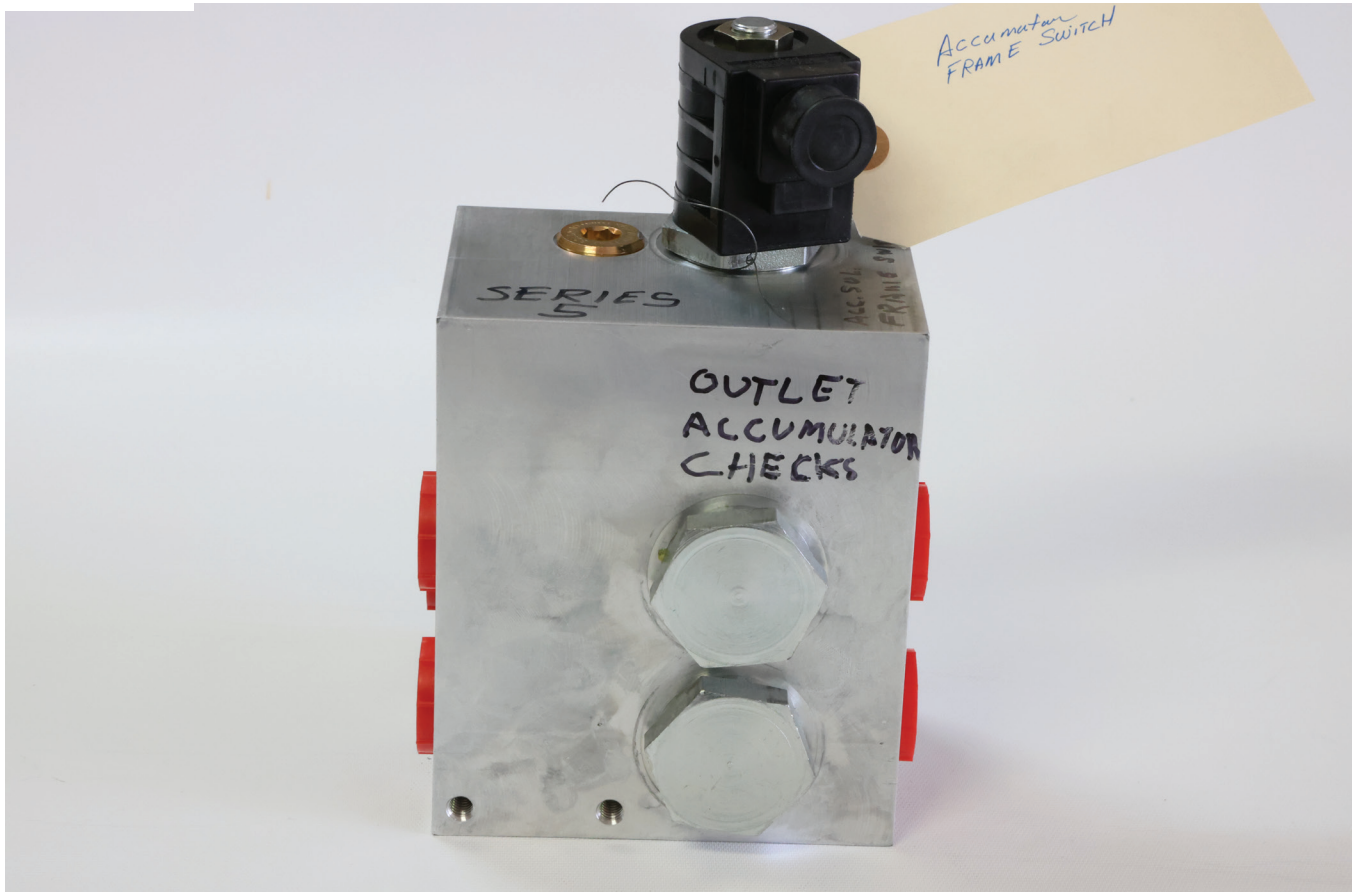
Tractor Hydraulic Line. Hydraulic Ports A + B

Image 7



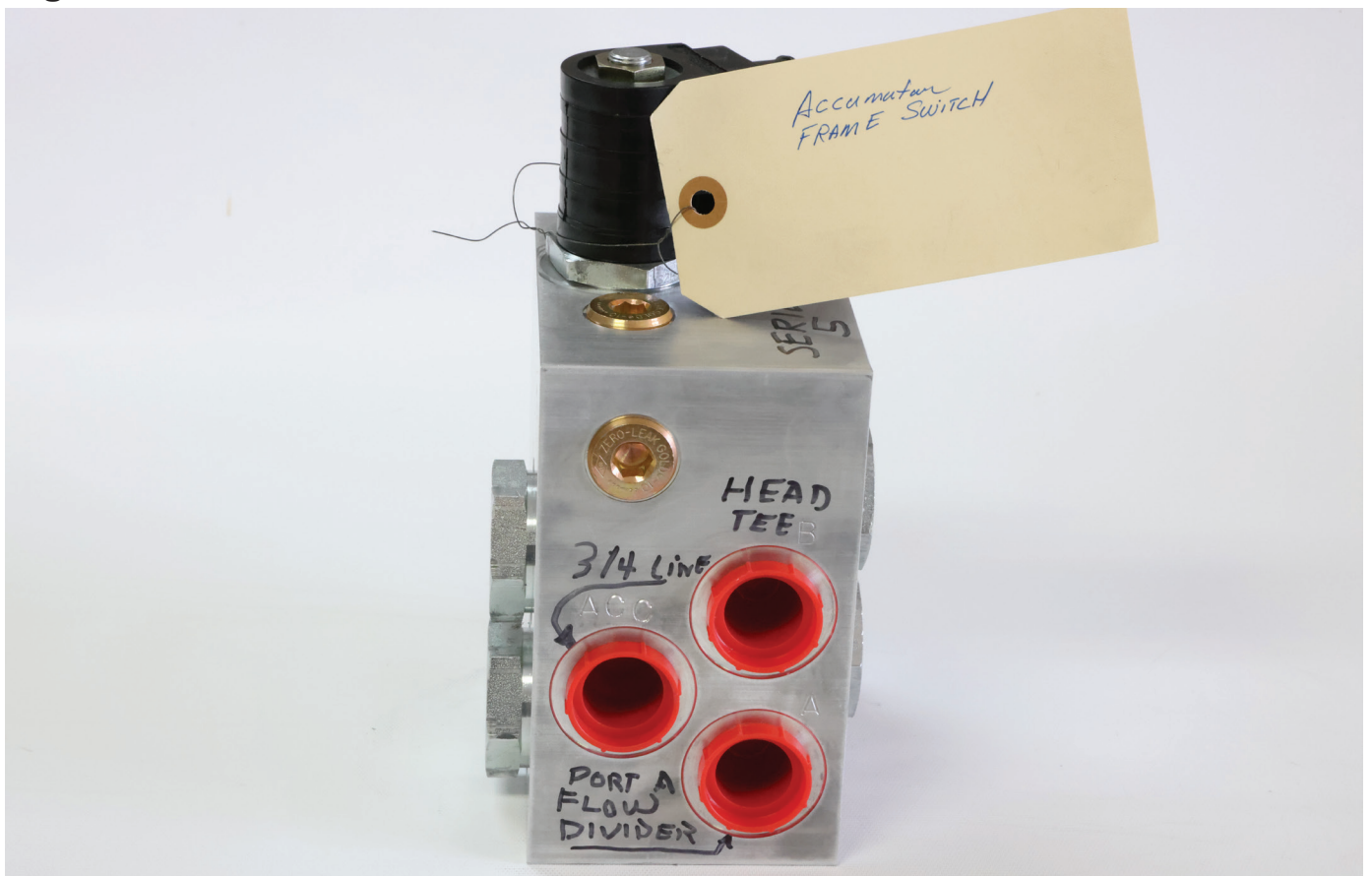
Inlet Checks

Image 8

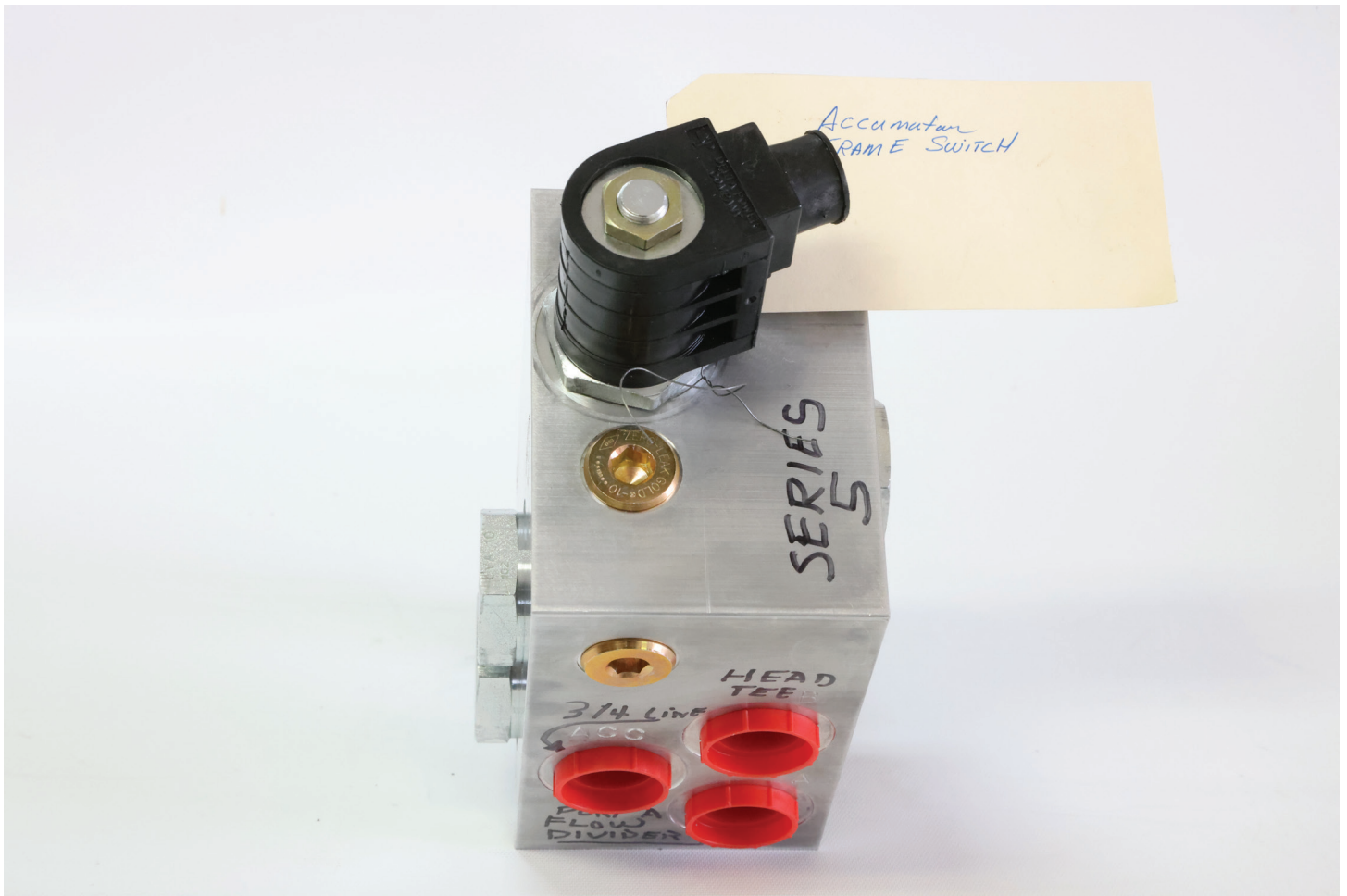


Outlet Accumulator Checks

Image 9



Accumulator, Flow Divider, Head Tee To Cylinder



Solenoid, Frame Switch - Energize Accumulator

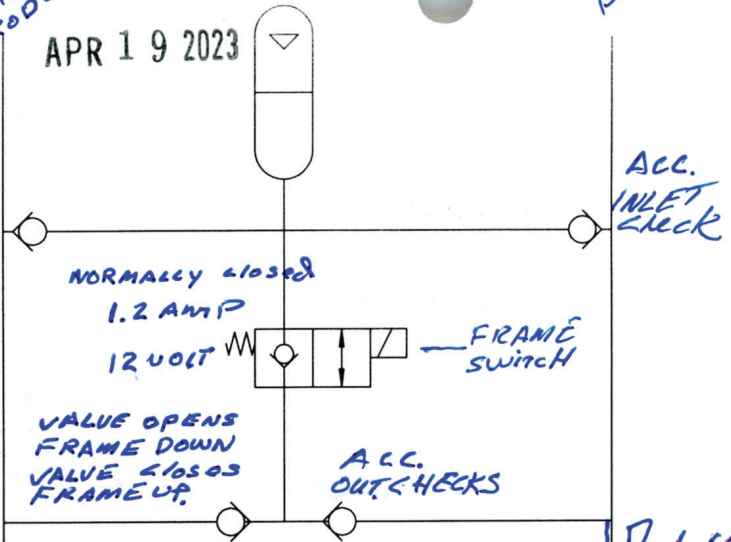
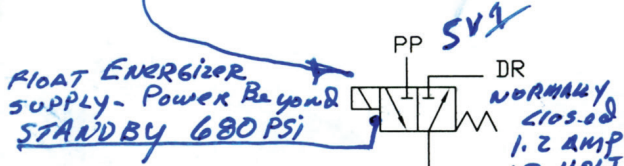
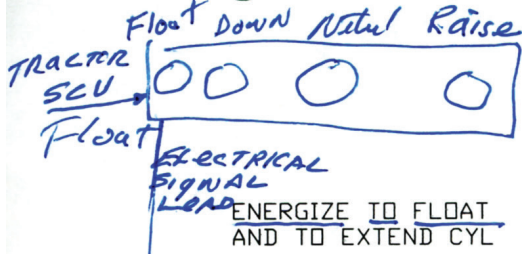
April 17, 2023
 Steve Ford, Guy Swanson
 Spokane

SERIES 5

AHEAD
 ROD END

B PART

APR 19 2023



ACC. INLET CHECK

B HEAD END

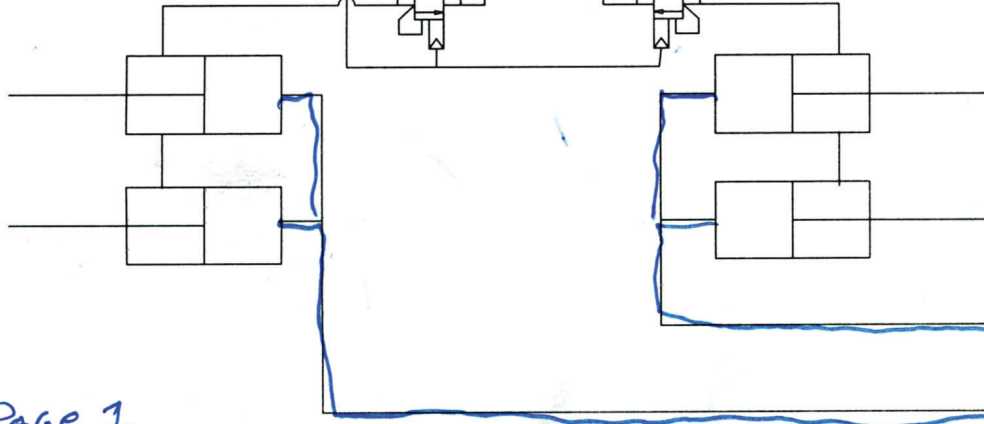
ACTIVATED MINIMUM Gauge (333) 1/3 of Counter Balance Setting PRESET 1,000 PSI

PASS. COMP FLOW CONTROL WITH Acc FLOW FDEA SUN

Wing Speed

FLOW DIVIDER medel FSES SUN SYNCHRONIZING, FLOW DIVIDER COMBINER

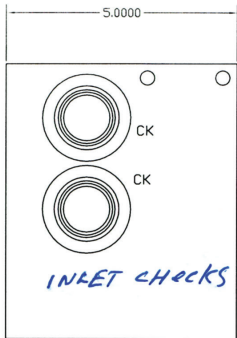
COUNTER Balance VALVE Value SUN CAEA Clockwise is LOWER PROS. SETTING LEFT HAND THREAD



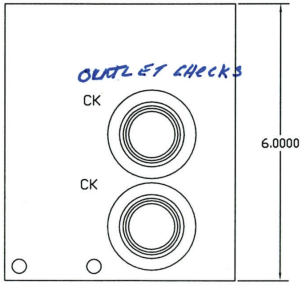
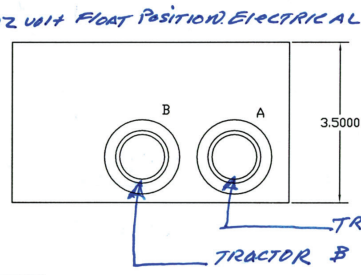
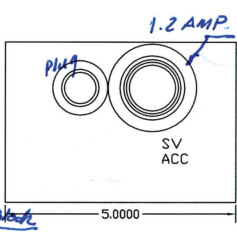
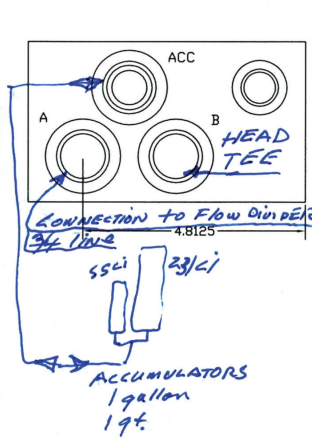
Accumulator Block, Flow is directed to the Flow Divider Block thru Port A... 3/4 hyd line.
 Receives flow the tractors. SAE-oring 16

APR 19 2023

SERIES 5.
 INSIDE WINGS



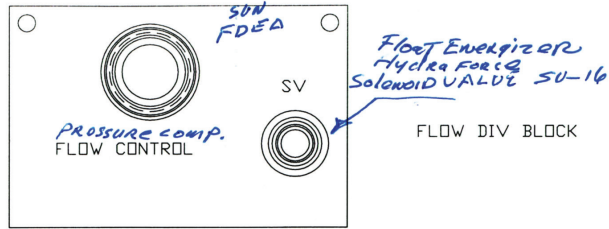
Accumulator Block
 ACC BLOCK
 SOLENOID CONTROL
 CHECKS of ACCUMULATOR



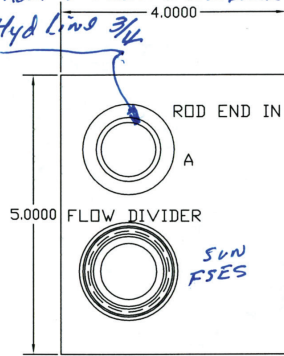
Page 2

FLOW DIVIDER Block

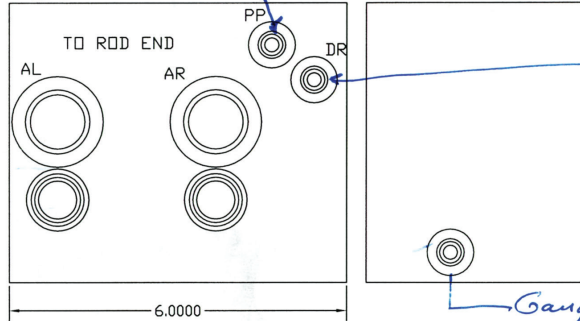
APR 19 2023



FROM ACCUMULATOR Block
Hyd Line 3/4"

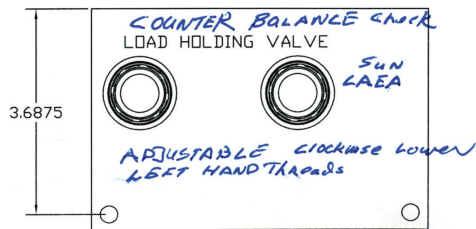


TRACTOR SUPPLY - POWER BEYOND
1/4" LINE TO POWER BEYOND PORT FITTING

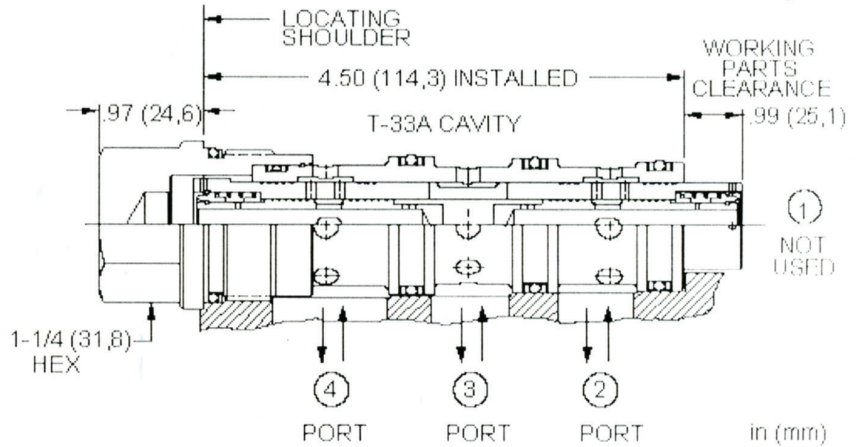
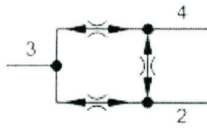


CASE DRAIN
3/8" line
CASE DRAIN FITTING

Gauge Port Float Pilot Pressure



Page 3



Synchronizing flow divider/combiners are sliding-spool, pressure-compensated devices used to split flow in one direction and combine flow in the opposite direction. With a synchronizing feature, these valves can be used to allow two hydraulic cylinders to fully stroke and synchronize at the end of the stroke. When the first cylinder has reached the end of its stroke, a pressure-compensated, reduced flow is metered to or from the second cylinder until it also reaches the end of its stroke.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Cavity	T-33A
Series	3
Capacity	6 - 30 gpm
Maximum Operating Pressure	5000 psi
Divisional Accuracy at Minimum Input Flow	50% ±4.5%
Divisional Accuracy at Max Input Flow	50% ±2.5%
Pressure Drop at Minimum Rated Input Flow	30 psi
Pressure Drop at Maximum Rated Input Flow	350 psi
Valve Hex Size	1 1/4 in.
Valve Installation Torque	150 - 160 lbf ft
Seal kit - Cartridge	Buna: 990033007
Seal kit - Cartridge	Polyurethane: 990033002
Seal kit - Cartridge	Viton: 990033006
Model Weight	1.44 lb.

CONFIGURATION OPTIONS

Model Code Example: FSESXAN

CONTROL	(X) FLOW SPLIT	(A) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	A 50/50	N Buna-N V Viton	Standard Material/Coating /AP Stainless Steel, Passivated

TECHNICAL FEATURES

- All flow divider and divider/combiner cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size).
- Operating characteristics cause the leg of the circuit with the greatest load to receive the higher percentage of flow in dividing mode. If a rigid mechanism is used to tie actuators together, the lead actuator may pull the lagging actuator and cause it to cavitate.
- In combining mode, compensating characteristics will cause the leg of the circuit with the lowest load to receive the higher percentage of flow. If a synchronization feature is not included, an additive accuracy error will be experienced with each full stroke of the actuator.
- In applications involving rigid mechanisms between multiple actuators, operating inaccuracy will cause the eventual lock-up of the system. If the mechanical structure is not designed to allow for the operating inaccuracy inherent in the valve, damage may occur.
- In motor circuits, rigid frames or mechanisms that tie motors together, and/or complete mechanical synchronized motion of the output shaft of the motors, either by wheels to the pavement or sprockets to conveyors, will contribute to cavitation, lock-up and/or pressure intensification.
- Variations in speed and lock-up can be attributed to differences in motor displacement, motor leakage, wheel diameter variance and friction of wheels on the driving surface.
- Extreme pressure intensification can occur on multiple wheel drive vehicles.
- The synchronization feature provides bi-directional static error correction.
- Synchronization flow is approximately 15% of minimum rated input flow.
- Divisional and combining accuracy are equal.
- The synchronizing feature only comes into play when any one of the 3 ports is blocked. At that time, flow may occur between the other two ports.
- Below the minimum flow rating there is not enough flow for the valve to modulate. It is effectively a tee. If flow starts at zero and rises, there will be no dividing or combining control until the flow reaches the minimum rating.
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

PERFORMANCE CURVES

Split	Input Flow		Rated Accuracy	Maximum Possible Flow Variation
	Max	Rated		
50:50	30 gpm	120 L/min	±2.5%	14.2 - 15.8 gpm
				57 - 63 L/min
	6 gpm	23 L/min	±4.5%	2.7 - 3.3 gpm
				10,5 - 12,5 L/min
Synchronizing Flow				0,90 - 1,75 gpm
				3,4 - 6,6 L/min

The maximum possible variation is at 5000 psi (350 bar) differential between legs with the high pressure leg being the higher flow in dividing mode and the lower flow in combining mode.

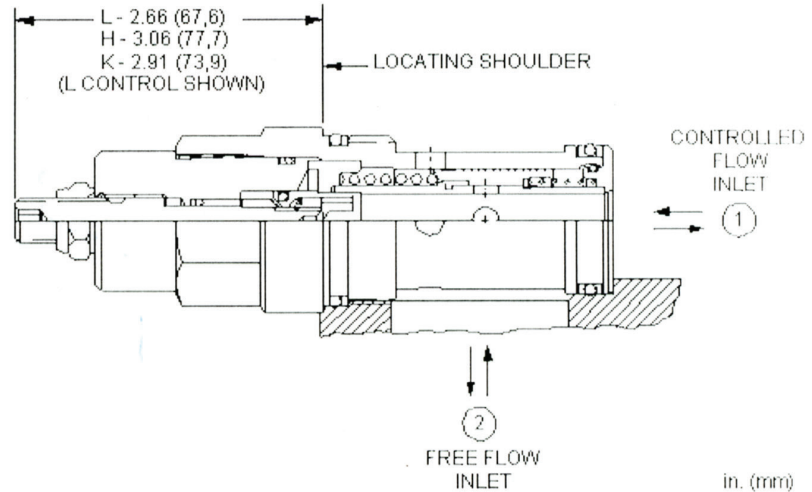
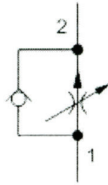


MODEL
FDEA

Fully adjustable pressure compensated flow control valve with reverse flow check
SERIES 3 / CAPACITY: 25 gpm / CAVITY: T-16A



sunhydraulics.com/model/FDEA



Fully adjustable, pressure-compensated flow controls with reverse-flow check provide precise flow regulation for meter-in or meter-out applications where there may be wide pressure fluctuations. They are infinitely adjustable from nearly closed up to the maximum flow. An integral high-capacity check valve provides unrestricted flow from port 2 to port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Cavity	T-16A
Series	3
Capacity	25 gpm
Maximum Operating Pressure	5000 psi
Adjustment - No. of CCW Turns from Fully Closed to Fully Open	5
Valve Hex Size	1 1/4 in.
Valve Installation Torque	150 - 160 lbf ft
Adjustment Screw Internal Hex Size	5/32 in.
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	EPDM: 990016014
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006
Model Weight	1.30 lb.

CONFIGURATION OPTIONS

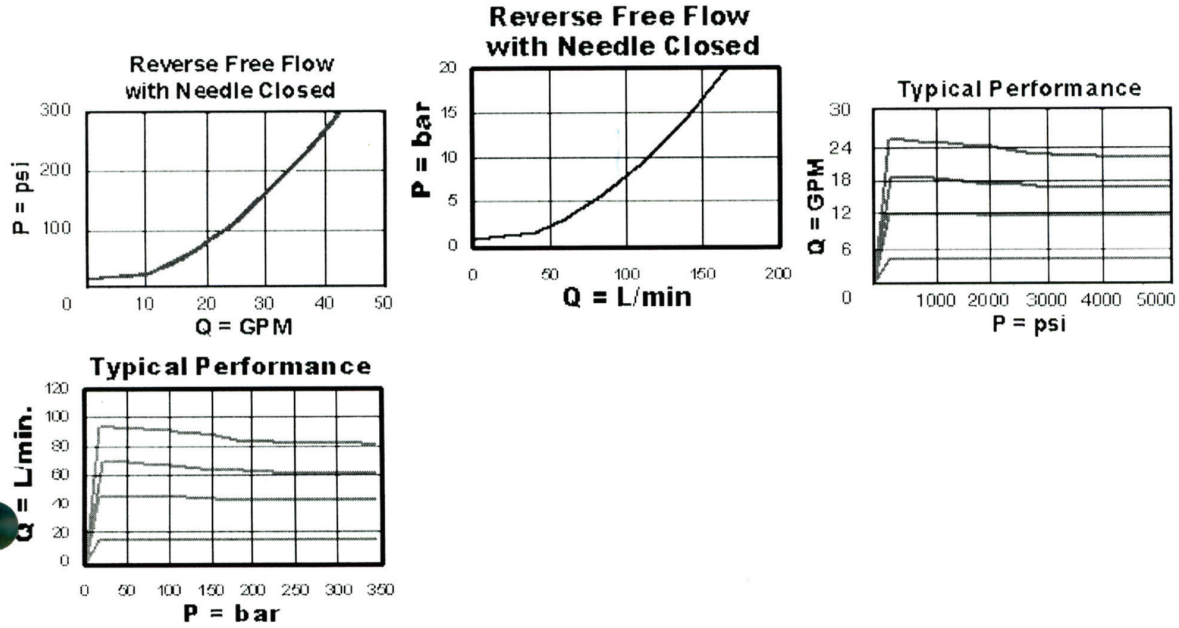
Model Code Example: FDEALAN

CONTROL	(L) ADJUSTMENT RANGE	(A) SEAL MATERIAL	(N) MATERIAL/COATING
L Standard Screw Adjustment	A .2 - 25 gpm (0,8 - 95 L/min.)	N Buna-N	Standard Material/Coating
H Calibrated Handknob with Detent Lock	B .2 - 16 gpm (0,8 - 60 L/min.)	E EPDM	/LH Mild Steel, Zinc-Nickel
K Handknob		V Viton	
Y Tri-Grip Handknob			

TECHNICAL FEATURES

- All 2-port flow control cartridges are physically and functionally interchangeable (i.e. same flow path, same cavity for a given frame size). However, cartridge extension dimensions from the mounting surface may vary.
- A balanced adjustment mechanism allows for easy adjustment even at high pressures.
- The sharp-edged orifice design minimizes flow variations due to viscosity changes.
- Minimum leakage is .2 gpm (0,8 L/min) when the adjustment mechanism is turned to the shut-off position.
- Cartridges configured with EPDM seals are for use in systems with phosphate ester fluids. Exposure to petroleum based fluids, greases and lubricants will damage the seals.

PERFORMANCE CURVES



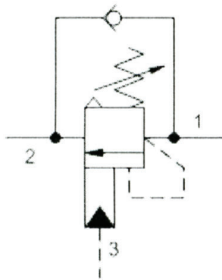


MODEL
CAEA

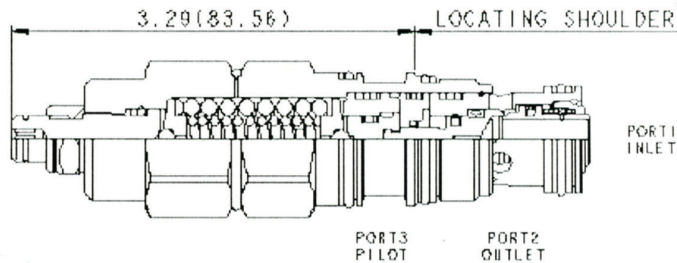
3:1 pilot ratio, vented counterbalance valve - atmospherically referenced
SERIES 2 / CAPACITY: 30 gpm / CAVITY: T-2A



snhy.com/CAEA



3-Port Atmospherically Referenced



Atmospherically vented counterbalance valves with pilot assist are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. Backpressure at port 2 does not affect the valve setting because the spring chamber is atmospherically referenced.

Other names for this valve include motion control valve and over-center valve.

CONFIGURATION

L	Control	Standard Screw Adjustment
H	Functional Setting Range	1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting
N	Seal Material	Buna-N
(none)	Material/Coating	Standard Material/Coating

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Cavity	T-2A
Series	2
Capacity	30 gpm
Pilot Ratio	3:1
Maximum Recommended Load Pressure at Maximum Setting	3075 psi
Maximum Setting	4000 psi
Factory Pressure Settings Established at	2 in ³ /min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Adjustment - No. of CCW Turns from Min. to Max. Setting	5
Operating Characteristic	Standard
Reseat	>85% of setting
Valve Hex Size	1 1/8 in.
Valve Installation Torque	45 - 50 lbf ft
Adjustment Screw Internal Hex Size	5/32 in.
Locknut Hex Size	9/16 in.
Locknut Torque	80 - 90 lbf in.
Seal kit - Cartridge	Buna: 990302007
Seal kit - Cartridge	Viton: 990302006
Model Weight	0.83 lb.

CONFIGURATION OPTIONS

Model Code Example: CAEALHN

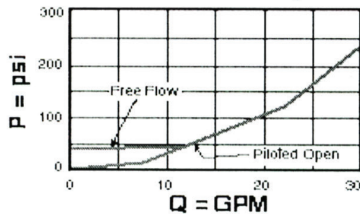
CONTROL	(L) FUNCTIONAL SETTING RANGE	(H) SEAL MATERIAL	(N) MATERIAL/COATING
L Standard Screw Adjustment	H 1000 - 4000 psi (70 - 280 bar), 3000 psi (210 bar) Standard Setting	N Buna-N	Standard Material/Coating
C Tamper Resistant - Factory Set	I 400 - 1500 psi (28 - 105 bar), 1000 psi (70 bar) Standard Setting	V Viton	/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

TECHNICAL FEATURES

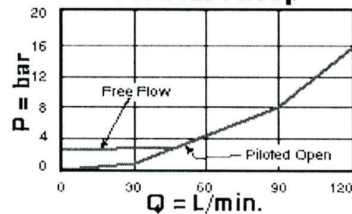
- Counterbalance valves should be set at least 1.3 times the maximum load induced pressure.
- Turn adjustment clockwise to decrease setting and release load.
- Full clockwise setting is 200 psi (14 bar).
- Approximately 1 drop (0,07 cc) of fluid will pass from the pilot area to the vented spring chamber every 4000 cycles.
- Reseat exceeds 85% of set pressure when the valve is standard set. Settings lower than the standard set pressure may result in lower reseat percentages.
- Sun counterbalance cartridges can be installed directly into a cavity machined in an actuator housing for added protection and improved stiffness in the circuit.
- This valve has positive seals between all ports.
- With vented valves, a lower pilot ratio may be required to achieve machine stability compared to non-vented valves.
- Three-port vented valves are atmospherically referenced and considered problem solvers for existing circuits using non-vented valves. Over time, the vented valves may leak externally or allow moisture into the spring chamber. Four-port vented counterbalance valves are recommended for new applications.
- All 3-port counterbalance, load control, and pilot-to-open check cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size).
- Corrosion resistant cartridge valves are intended for use in corrosive environments and are identified by the model code suffix /AP for external stainless steel components, or /LH for external zinc-nickel plated components. See the CONFIGURATION section for all options. For further details, please see the Materials of Construction page located under TECH RESOURCES.
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

PERFORMANCE CURVES

Free Flow and Piloted Open Pressure Drop

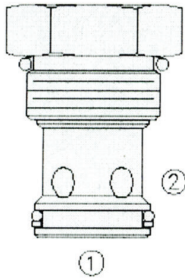


Free Flow and Piloted Open Pressure Drop





Overview



Description

The CV16-20X is a screw-in, cartridge style, hydraulic check valve for use as a blocking or load-holding device.

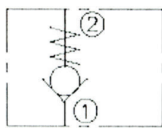
Operation

The CV16-20X allows flow passage from port 1 to port 2, while normally blocking oil flow in the opposite direction. The cartridge valve has a fully guided poppet which is spring biased closed until sufficient pressure is applied at port 1 to open to port 2.

Features

- Hardened seat for long life and low leakage.
- Optional bias springs for back-pressure application flexibility.
- Industry-common cavity.

Symbol



Ratings

Pressure Ratings

Pressure rating 241 bar (3500 psi)

Flow Ratings

Flow rating 151 lpm (40 gpm)

Maximum internal leakage 0.25 ml/min (5 drops/min) - **Note:** At 241 bar (3500 psi)

Temperature Ratings

Operating fluid temperature	-40 to 100 °C (-40 to 212 °F)	- Note: With buna N seals
	-26 to 204 °C (-15 to 400 °F)	- Note: With viton seals
	-54 to 107 °C (-65 to 225 °F)	- Note: With polyurethane seals
Storage temperature	-40 to 70 °C (-40 to 160 °F)	
Ambient temperature	-40 to 70 °C (-40 to 160 °F)	

Operating Parameters

Fluids	Mineral based or synthetic hydraulic fluid with lubricating properties
Fluid viscosity range	7.4 to 420 cSt
Maximum operating contamination level	20/18/14 per ISO 4406

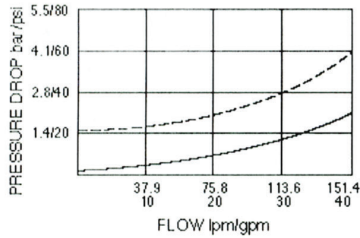
Properties

Unit weight	0.28 kg (0.61 lb)	- Note: (regular)
	0.39 kg (0.87 lb)	- Note: (tall adaptor for 100 psi and 150 psi springs)
	0.57 kg (1.25 lb)	- Note: (tall adaptor for 225 psi spring)
Internal wetted surface area	170 cm ² (26.3 in ²)	- Note: (regular)
	229 cm ² (35.5 in ²)	- Note: (tall adaptor for 100 psi and 150 psi springs)
	286 cm ² (44.4 in ²)	- Note: (tall adaptor for 225 psi spring)

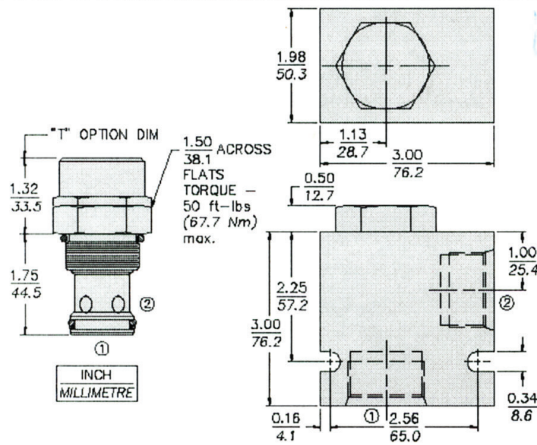


Performance

⊙ to ⊙: 0.34 bar/5 psi spring — ;
 1.72 bar/25 psi spring - - -
 32 cSt/150 sus oil at 40°C



Dimensions



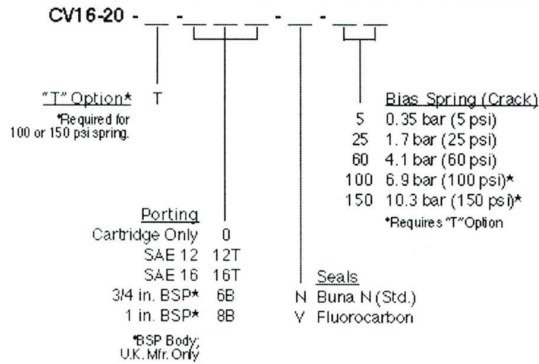
Installation Specifications

Cavity	VC16-2
Cartridge installation torque	62.4 to 73.2 N-m (46 to 54 ft-lb)
Orientation restriction	None

Accessories

Seal kit	SK16-2X-T	- Note: X = seal option
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Order Code



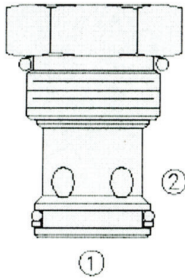
Model Options

CV16-20C-H-J-R

C Tall Cap



Overview



Description

The CV16-20X is a screw-in, cartridge style, hydraulic check valve for use as a blocking or load-holding device.

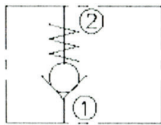
Operation

The CV16-20X allows flow passage from port 1 to port 2, while normally blocking oil flow in the opposite direction. The cartridge valve has a fully guided poppet which is spring biased closed until sufficient pressure is applied at port 1 to open to port 2.

Features

- Hardened seat for long life and low leakage.
- Optional bias springs for back-pressure application flexibility.
- Industry-common cavity.

Symbol



Ratings

Pressure Ratings

Pressure rating 241 bar (3500 psi)

Flow Ratings

Flow rating 151 lpm (40 gpm)

Maximum internal leakage 0.25 ml/min (5 drops/min) - **Note:** At 241 bar (3500 psi)

Temperature Ratings

Operating fluid temperature	-40 to 100 °C (-40 to 212 °F)	- Note: With buna N seals
	-26 to 204 °C (-15 to 400 °F)	- Note: With viton seals
	-54 to 107 °C (-65 to 225 °F)	- Note: With polyurethane seals
Storage temperature	-40 to 70 °C (-40 to 160 °F)	
Ambient temperature	-40 to 70 °C (-40 to 160 °F)	

Operating Parameters

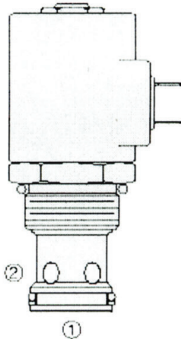
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Fluid viscosity range	7.4 to 420 cSt
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Properties

Unit weight	0.28 kg (0.61 lb)	- Note: (regular)
	0.39 kg (0.87 lb)	- Note: (tall adaptor for 100 psi and 150 psi springs)
	0.57 kg (1.25 lb)	- Note: (tall adaptor for 225 psi spring)
Internal wetted surface area	170 cm ² (26.3 in ²)	- Note: (regular)
	229 cm ² (35.5 in ²)	- Note: (tall adaptor for 100 psi and 150 psi springs)
	286 cm ² (44.4 in ²)	- Note: (tall adaptor for 225 psi spring)



Overview



Description

A solenoid-operated, 2 port, normally closed, poppet-type, screw-in hydraulic cartridge valve, designed to function as a load-holding or blocking valve in applications requiring low internal leakage.

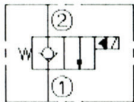
Operation

When de-energized, the SV16-20X acts as a check valve, allowing flow to pass from port 1 to port 2, while blocking flow in the reverse direction. When energized, the poppet lifts to open the port 2 to port 1 flow path. In this mode, flow from port 1 to port 2 is severely restricted.

Features

- Continuous-duty rated coil. Hardened seat for long life and low leakage. Optional coil voltages and terminations. Efficient wet-armature construction. Cartridges are voltage interchangeable. Unitized, molded coil design. Manual override option. Optional waterproof E-Coils rated up to IP69K. Industry-common cavity.

Symbol



Ratings

Pressure Ratings

Pressure rating	241 bar (3500 psi)
Proof pressure	344 bar (5000 psi)
Burst pressure	779 bar (11300 psi)

Flow Ratings

Flow rating	227.4 lpm (60 gpm)	- Note: Based on
	34.4 bar (500 psi)	- Note: Pressure drop, see performance graphs
Maximum internal leakage	5 drops/min	- Note: At rated pressure
Hysteresis per cent	5 %	- Note: Maximum up to 60% of imax
	10 %	- Note: Maximum from 60% of imax up to imax

Temperature Ratings

Operating fluid temperature	-40 to 100 °C (-40 to 212 °F)	- Note: With buna N seals
	-26 to 204 °C (-15 to 400 °F)	- Note: With fluorocarbon seals
	-54 to 107 °C (-65 to 225 °F)	- Note: With polyurethane seals
Storage temperature	-40 to 70 °C (-40 to 160 °F)	
Ambient temperature	-40 to 70 °C (-40 to 160 °F)	

Other Ratings

Corrosion protection	960 hr salt spray per ASTM b117 (gsv16-20)
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Operating Parameters

Fluids	Mineral based or synthetic hydraulic fluid with lubricating properties
Fluid viscosity range	7.4 to 420 cSt
Maximum operating contamination level	20/18/14 per ISO 4406

Properties

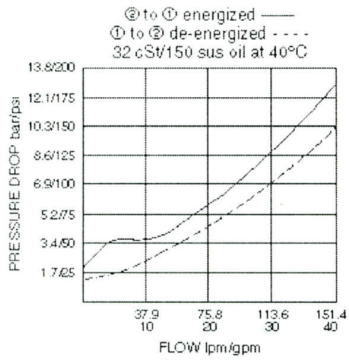
Unit weight	0.32 kg (0.71 lb)
Internal wetted surface area	221 cm ² (34.2 in ²)



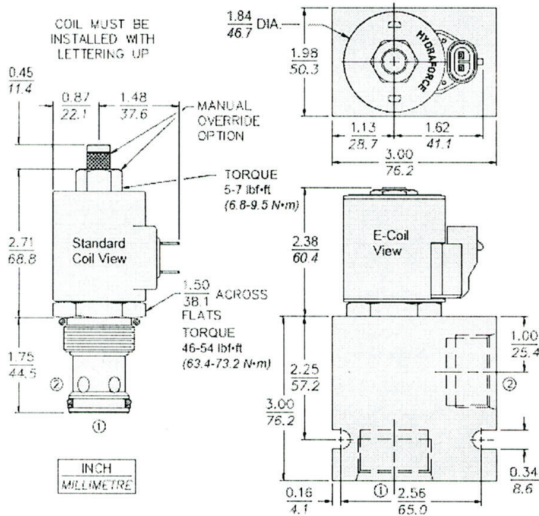
Electrical Parameters

Valve inductance	166 mH	
Maximum control current	1.2 A	- Note: For coil 12 Vdc
Threshold current	0.4 A	- Note: For coil 12 Vdc
Dither PWM frequency	100 to 400 Hz	

Performance



Dimensions



Installation Specifications

Cavity	VC16-2
Cartridge installation torque	62.4 to 73.2 N-m (46 to 54 ft-lb)
Maximum allowable torque	169 N-m (125 ft-lb)
Orientation restriction	None

Accessories

Seal kit	SK16-2X-T	- Note: X = seal option
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Order Code



Option	Voltage	Termination (VDC)
None (Blank)	0 Less Coil**	Std. Coil
Manual Override M	10 10 VDC†	DS Dual Spades
Manual Override Y	12 12 VDC	DG DIN 43650
Manual Override J	24 24 VDC	DL Leadwires (2)
For Manual Override options see page 1.001.1	36 36 VDC	DL/W Leads w/Weatherpaks Connectors
	48 48 VDC	DR Deutsch DT04-2P
	24 24 VAC	Termination (VAC)
Porting	115 115 VAC	Std. Coil
Cartridge Only	230 230 VAC	AG DIN 43650
SAE 16		AP 1/2 in. Conduit
16T		Termination (VDC)
	**Includes Std. Coil Nut	E-Coil
	†DS, DW or DL terminations only.	ER Deutsch DT04-2P (IP69K Rated)
		EY Metri-Pack® 150 (IP69K Rated)
Seals		Coils with internal diode are available. Consult factory.
Buna N (Std.)	E-Coil	
Fluorocarbon	10 10 VDC	
	12 12 VDC	
	20 20 VDC	
	24 24 VDC	

Model Options

SV16-20E-H-J-L

E Manual Override

CODE	DESCRIPTION
BLANK	NONE
J	Momentary Pull Override, #10-32 threads
M	Two Position Override, Red Knurled Knob
Y	Momentary Pull Override, Red Knurled Knob

H Line Body

CODE	DESCRIPTION
0	No Body
12T	Aluminum SAE 12
16T	Aluminum SAE 16
12TD	Ductile Iron SAE 12
16TD	Ductile Iron SAE 16
6B	Aluminum BSPP 3/4" (6)
8B	Aluminum BSPP 1" (8)
8BD	Ductile Iron BSPP 1" (8)

J Seal

CODE	DESCRIPTION
N	Buna-N
V	Fluorocarbon
P	Polyurethane
U	PPDI Urethane

L Coil

CODE	DESCRIPTION
0	No Coil
10DG	10 VDC, D-Coil, DIN 43650
10DL	10 VDC, D-Coil, Dual Lead Wires
10DR/D	10 VDC, D-Coil, Deutsch with Diode
10DS	10 VDC, D-Coil, Dual Spade



CODE	DESCRIPTION
10EL	10 VDC, E-Coil, Dual Lead Wires
10ER	10 VDC, E-Coil, Deutsch
10ER/Z	10 VDC, E-Coil, Deutsch with Zener Diode
12DG	12 VDC, D-Coil, DIN 43650
12DL	12 VDC, D-Coil, Dual Lead Wires, 18 inches long
12DL/36	12 VDC, D-Coil, Dual Lead Wires, 36 inches long
12DL/W	12 VDC, D-Coil, Dual Lead Wires with Weatherpak
12DL/W/D	12 VDC, D-Coil, Dual Lead Wires with Weatherpak with Diode
12DR	12 VDC, D-Coil, Deutsch
12DR/D	12 VDC, D-Coil, Deutsch with Diode
12DR/Z	12 VDC, D-Coil, Deutsch with Zener Diode
12DS	12 VDC, D-Coil, Dual Spade
12EG	12 VDC, E-Coil, DIN 43650
12EJ	12 VDC, E-Coil, AMP Jr.
12EL	12 VDC, E-Coil, Dual Lead Wires, 18 inches long
12EL/36	12 VDC, E-Coil, Dual Lead Wires, 36 inches long
12EL/W/Z	12 VDC, E-Coil, Dual Lead Wires with WeatherPak and Zener Diode
12EL/Z	12 VDC, E-Coil, Dual Lead Wires with Zener Diode
12ER	12 VDC, E-Coil, Deutsch
12ER/Z	12 VDC, E-Coil, Deutsch with Zener Diode
12EY	12 VDC, E-Coil, Metri-Pack 150
12EY/Z	12 VDC, E-Coil, Metri-Pack 150 with Zener Diode
20DR/D	20 VDC, D-Coil, Deutsch with Diode
20DS	20 VDC, D-Coil, Dual Spade
20ER	20 VDC, E-Coil, Deutsch
24AG	24 VDC, D-Coil, DIN 43650
24AP	24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires
24DG	24 VDC, D-Coil, DIN 43650
24DL	24 VDC, D-Coil, Dual Lead Wires
24DL/W	24 VDC, D-Coil, Dual Lead Wires with Weatherpak
24DL/W/D	24 VDC, D-Coil, Dual Lead Wires with Weatherpak with Diode
24DP	24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires
24DR	24 VDC, D-Coil, Deutsch
24DR/D	24 VDC, D-Coil, Deutsch with Diode
24DS	24 VDC, D-Coil, Dual Spade
24EG	24 VDC, E-Coil, DIN 43650
24EJ	24 VDC, E-Coil, AMP Jr.
24EL	24 VDC, E-Coil, Dual Lead Wires, 18 inches long
24EL/36	24 VDC, E-Coil, Dual Lead Wires, 36 inches long
24EL/W/Z	24 VDC, E-Coil, Dual Lead Wires with WeatherPak and Zener Diode
24ER	24 VDC, E-Coil, Deutsch
24ER/Z	24 VDC, E-Coil, Deutsch with Zener Diode

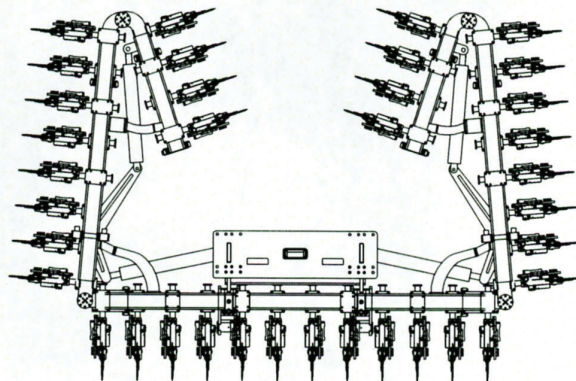
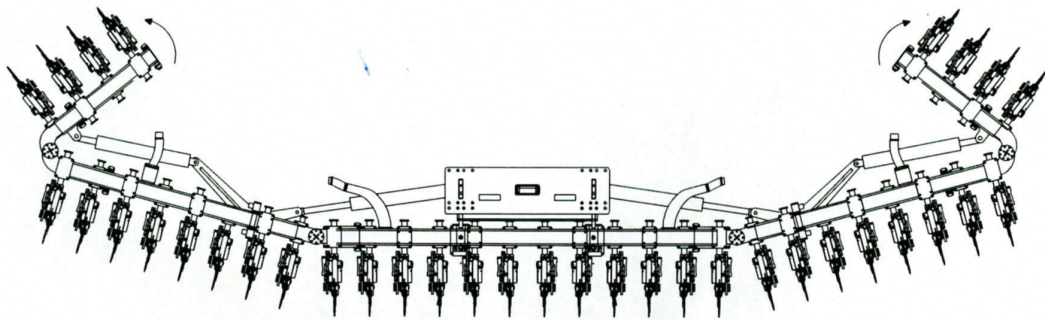
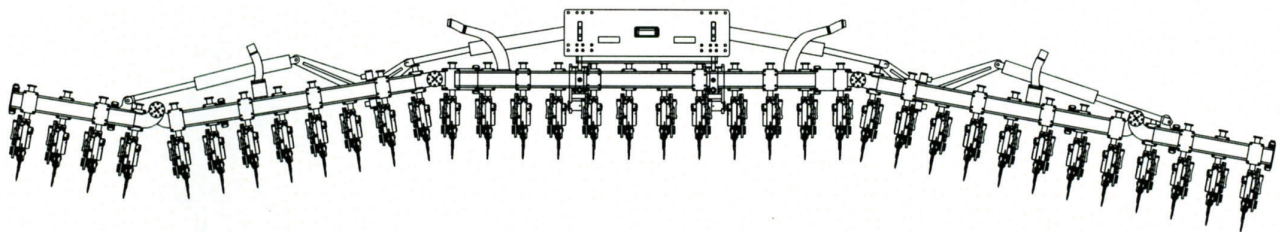
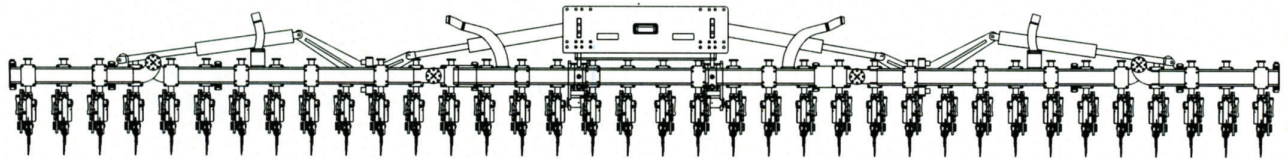


CODE	DESCRIPTION
24EY	24 VDC, E-Coil, Metri-Pack 150
24EY/Z	24 VDC, E-Coil, Metri-Pack 150 with Zener Diode
36DS	36 VDC, D-Coil, Dual Spade
115AG	115 VAC, D-Coil, DIN 43650
115AP	115 VAC, D-Coil, 1/2" Conduit and Dual Lead Wires
230AG	230 VAC, D-Coil, DIN 43650
230AP	230 VAC, D-Coil, 1/2" Conduit and Dual Lead Wires

Exactrix Global Systems
4501 East Trent Spokane Wa 99212
Phone 509-254-6854 Cell 801-808-2120

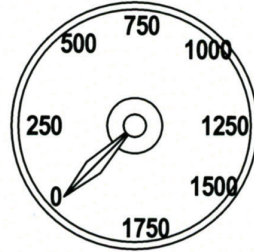
MAY 01 2023

FMTB-45 Tool Bar Gangwish Seed Farm

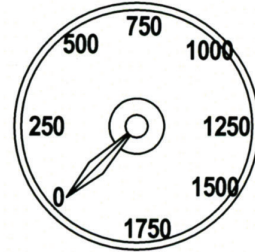


**Position 1
Float**

Hyd Pressure
Cylinder Head A



Hyd Pressure
RodA



SCV Inrider

SCV Outrider

Dynamic Banding

Float



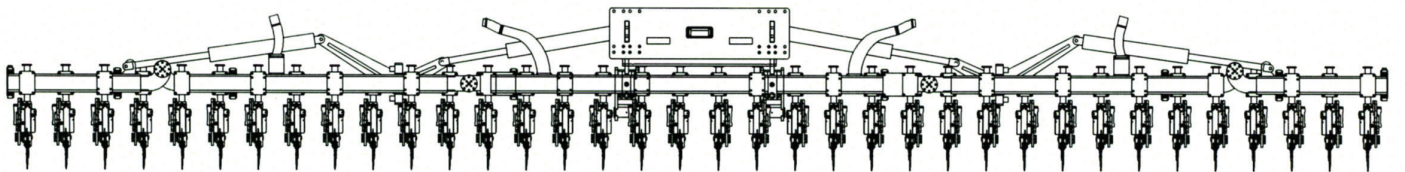
Extend A



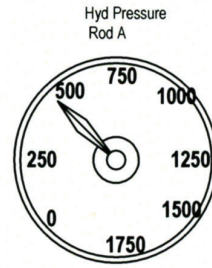
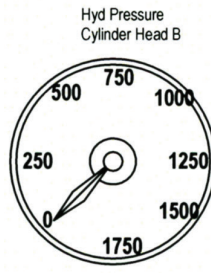
Neutral



Retract B



**Position2
Smile 15***



SCV Inrider

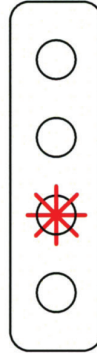
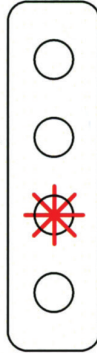
SCV Outrider

Float

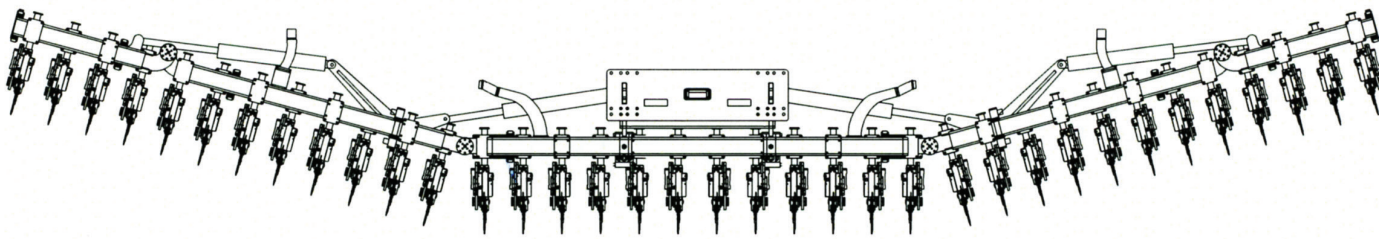
Extend A

Neutral

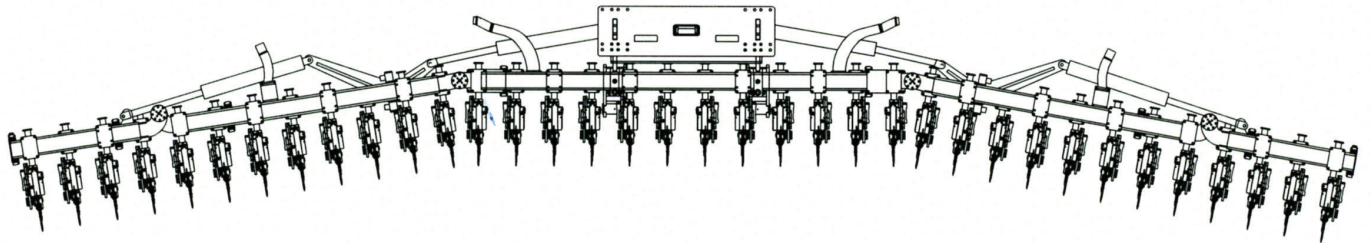
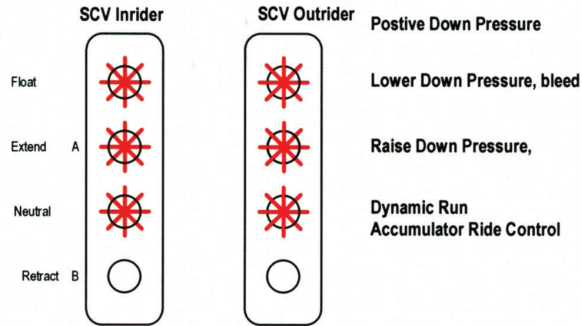
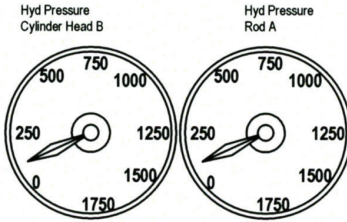
Retract B



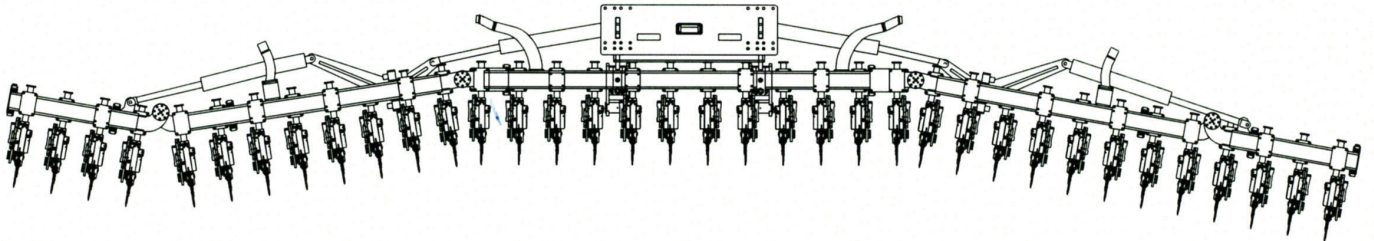
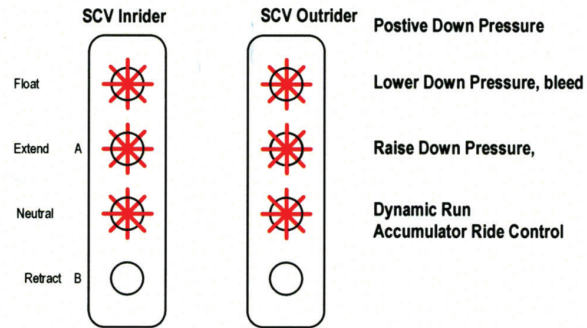
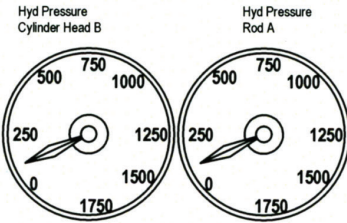
Dynamic Banding



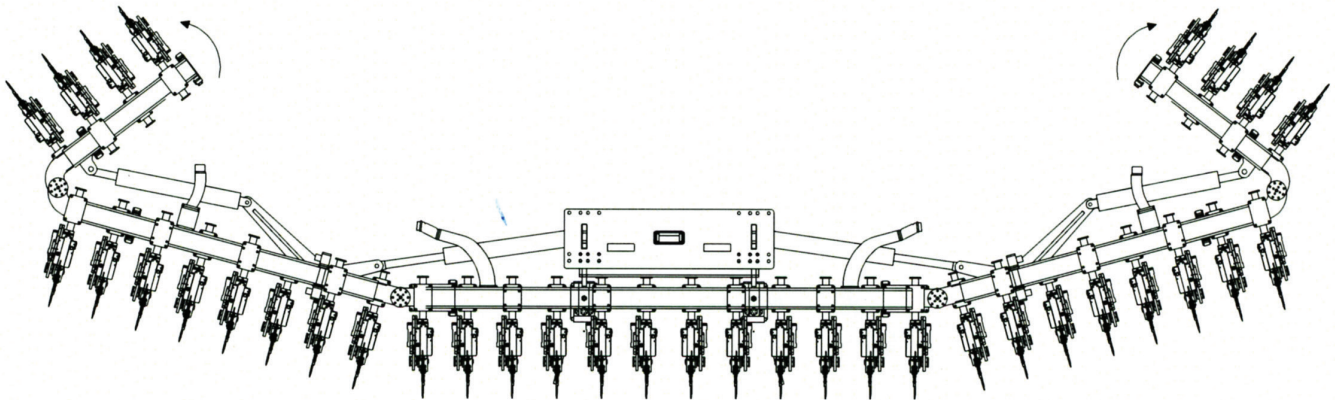
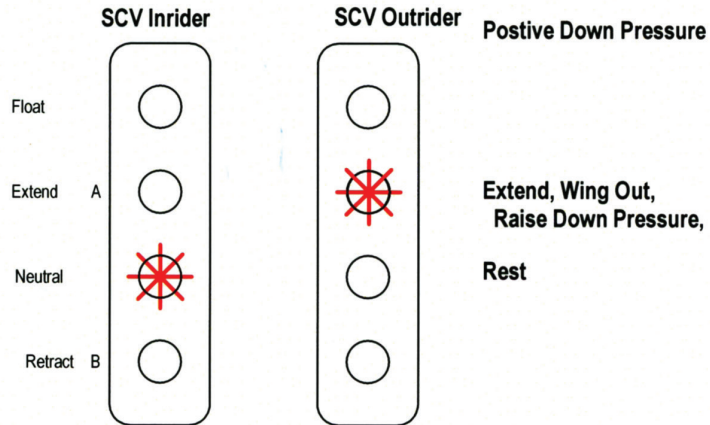
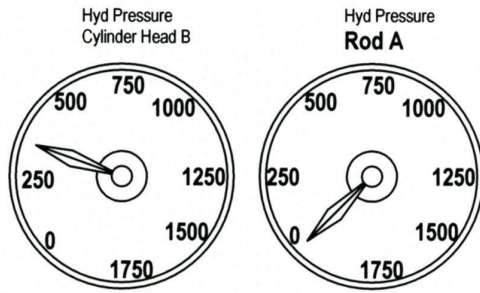
Position 3
Positive Downpressure
Banding,
Accumulator Ride Control.
Rolling Terrain.

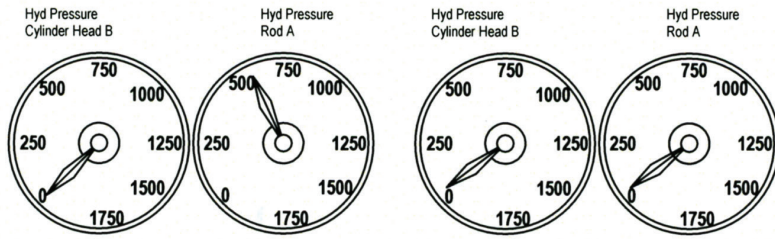


Position 4
Positive Downpressure
Banding,
Accumulator Ride Control.
Rolling Hills and Draws

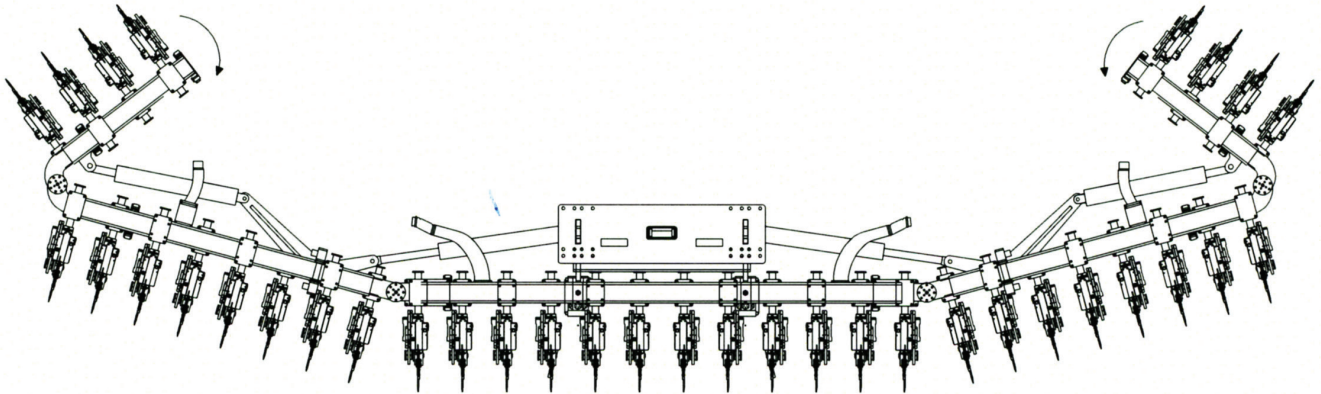
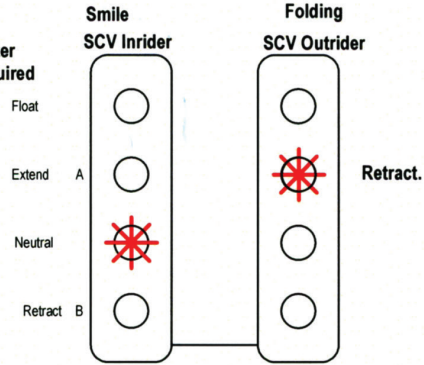


Position 5
Inside wings Smile with
Outrider Wings Folding out.





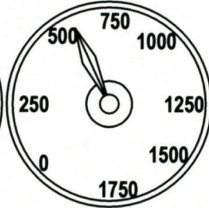
Position 6
Smile Inrider Wings 15°
Outrider Wings over center
folding, Flow control required



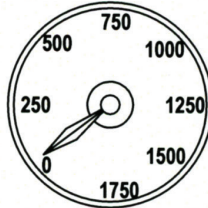
Hyd Pressure
Cylinder Head B



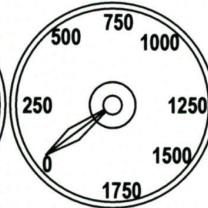
Hyd Pressure
Rod A



Hyd Pressure
Cylinder Head B



Hyd Pressure
Rod A



Position 7
Smile Inrider Wings 15°
Outrider Wings, Folded.

Smile
SCV Inrider

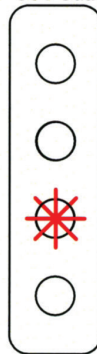
Folding
SCV Outrider

Float

Extend A

Neutral

Retract B



Rest, Full retract to wing stop.

