

Prepared For:
WV Dept. of Transportation
Donald Weese
P. O. Box 610
Buckhannon, WV 26201-
(304)348 - 1750
Reference ID: N/A

Presented By:
BWAB INTERNATIONAL, LLC
Robert M Cochran
408 GOFF MOUNTAIN ROAD
CHARLESTON WV 25313 -
(304)776-5600

Thank you for the opportunity to provide you with the following quotation on a new International truck with WV Tractor Dump Body. I am sure the following detailed specification will meet your operational requirements, and I look forward to serving your business needs.

Model Profile
2009 7300 SFA 4X2 (SA515)

APPLICATION: Front Plow with spreader
MISSION: Requested GVWR: 33000. Calc. GVWR: 36220
 Calc. Start / Grade Ability: 37.80% / 2.41% @ 55 MPH
 Calc. Geared Speed: 75.3 MPH

FUEL ECONOMY: 8.33 MPG @ 55 MPH

DIMENSION: Wheelbase: 160.00, CA: 85.00, Axle to Frame: 41.00

ENGINE, DIESEL: {International MaxxForce DT} 255 HP, 660 lb-ft Torque @ 1400 RPM, 2600 RPM Governed Speed, # 2 Bell Housing

TRANSMISSION, AUTOMATIC: {Allison 3500_RDS_P} 4th Generation Controls; Wide Ratio, 5-Speed, With Overdrive; On/Off Hwy; Includes Oil Level Sensor, With PTO Provision, Less Retarder, With 80,000-lb GVW & GCW Max.

CLUTCH: Omit Item (Clutch & Control)

AXLE, FRONT NON-DRIVING: {Dana Spicer I-140W} Wide Track, I-Beam Type, 14,000-lb Capacity

AXLE, REAR, SINGLE: {Dana Spicer S23-170D} Single Reduction, 23,000-lb Capacity, With Driver Control Locking Differential, With R Wheel Ends Gear Ratio: 5.57

CAB: Conventional

TIRE, FRONT: (2) 11R22.5 G149 RSA/RH (GOODYEAR) 501 rev/mile, load range H, 16 ply

TIRE, REAR: (4) 11R22.5 G338 1AD (GOODYEAR) 496 rev/mile, load range G, 14 ply

SUSPENSION, RR, SPRING, SINGLE: Vari-Rate; 23,500-lb Capacity, With 4500 lb Auxiliary Rubber Spring

PAINT: Cab schematic 100GM
 Location 1: 9219, Winter White (Std)
 Chassis schematic N/A

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WV PURCHASING
DIVISION

Description

Base Chassis, Model 7300 SFA 4X2 with 160.00 Wheelbase, 85.00 CA, and 41.00 Axle to Frame.

TOW HOOK, FRONT (2) Inside Rail, Frame Mounted.

FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.250" x 3.610" x 0.375" (260.4mm x 91.7mm x 9.5mm); 456.0" (11582mm) Maximum OAL

BUMPER, FRONT Omit Item

FRAME EXTENSION, FRONT Integral; 20" In Front of Grille

WHEELBASE RANGE 146" (370cm) Through and Including 195" (495cm)

AXLE, FRONT NON-DRIVING {Dana Spicer I-140W} Wide Track, I-Beam Type, 14,000-lb Capacity

Includes

: PLEASE NOTE: Front Axle Derated to 13,200-lb. GAWR when used in Conjunction with Code 04JBG BRAKES, FRONT, AIR CAM

SUSPENSION, FRONT, SPRING Parabolic, Taper Leaf; 14,000-lb Capacity; With Shock Absorbers

Includes

: SPRING PINS Rubber Bushings, Maintenance-Free

BRAKE SYSTEM, AIR Dual System for Straight Truck Applications

Includes

: BRAKE CHAMBERS, SPRING (2) Rear Parking

: BRAKE LINES Color and Size Coded Nylon

: DRAIN VALVE Twist-Type

: DUST SHIELDS, FRONT BRAKE

: DUST SHIELDS, REAR BRAKE

: GAUGE, AIR PRESSURE (2) Air 1 and Air 2 Gauges; Located in Instrument Cluster

: PARKING BRAKE VALVE Controlled by Yellow Knob, Located on Instrument Panel

: QUICK RELEASE VALVE On Rear Axle for Spring Brake Release: 1 for 4x2, 2 for 6x4

: SLACK ADJUSTERS, FRONT Automatic

: SLACK ADJUSTERS, REAR Automatic

: SPRING BRAKE MODULATOR VALVE

TRAILER CONNECTIONS Four-Wheel, With Hand Control Valve and Tractor Protection Valve, for Straight Truck

DRAIN VALVE {Berg} Manual; With Pull Chain, for Air Tank

AIR BRAKE ABS {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-Channel) With Automatic Traction Control

AIR DRYER {Bendix AD-9} With Heater

BRAKE CHAMBER IDENTITY, SPRING {MGM Type TR-TS Long Stroke}

BRAKES, FRONT, AIR CAM S-Cam; 16.5" x 5.0"; Includes 20 Sq. In. MGM Long Stroke Brake Chambers

BRAKES, REAR, AIR CAM 16.5" x 7.0"; Includes MGM TR3030 Long Stroke Brake Chamber and Heavy Duty Spring Actuated Parking Brake

AIR COMPRESSOR {Bendix Tu-Flo 550} 13.2 CFM Capacity

STEERING COLUMN Tilting

STEERING WHEEL 2-Spoke, 18" Diam., Black

STEERING GEAR {Sheppard M-100} Power

DRIVESHAFT {Dana Spicer} SPL100 in lieu of SPL90 Series

EXHAUST SYSTEM Single, Horizontal, Aftertreatment Device Frame Mounted Right Side Back of Cab; Includes Vertical Tail Pipe And Bright Guard

ENGINE BRAKE, DLOGIC {Diamond Logic} for MaxxFORCE DT Engines; Combination Engine and Exhaust Brake, Electronically Activated

Description

TAIL PIPE (1) Turnback Type, Non-Bright Finish, for Single Exhaust

ELECTRICAL SYSTEM 12-Volt, Standard Equipment

Includes

- : BATTERY BOX Steel with Fiberglass Cover; Mounted Right Side, Back of Cab
- : DATA LINK CONNECTOR For Vehicle Programming and Diagnostics In Cab
- : FUSES, ELECTRICAL SAE Blade-Type
- : HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover
- : HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever
- : HEADLIGHTS (2) Sealed Beam Halogen, 5" X 7" Rectangular, with Chrome Plated Bezels
- : HORN, ELECTRIC Single
- : JUMP START STUD Located on Positive Terminal of Outermost Battery
- : PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light
- : RUNNING LIGHT (2) Daytime, Included With Headlights
- : STARTER SWITCH Electric, Key Operated
- : STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector
- : TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature
- : TURN SIGNALS, FRONT Includes Reflectors and Auxiliary Side Turn Signals, Solid State Flashers; Flush Mounted
- : WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever
- : WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted
- : WIRING, CHASSIS Color Coded and Continuously Numbered

POWER SOURCE Cigar Type Receptacle without Plug and Cord

BATTERY TERMINALS Sealed

ALTERNATOR {Leece-Neville BLP2303H} Brushless; 12 Volt 140 Amp. Capacity, Pad Mounted

BODY BUILDER WIRING Back of Standard Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn

BATTERY SYSTEM {International} Maintenance-Free, (3) 12-Volt 1950CCA Total

RADIO {International} AM/FM Stereo With Weatherband, Clock, Auxiliary Input, Includes Multiple Dual Cone Speakers

Includes

- : SPEAKERS IN CAB (2) Dual-Cone with Deluxe Interior
- : SPEAKERS IN CAB (4) Coaxial with Premium Interior

AUXILIARY HARNESS 3.0' for Auxiliary Front Head Lights and Turn Signals for Front Plow Applications

TRAILER CONNECTION SOCKET 7-Way; Mounted at rear of Frame, Wired for Turn Signals Combined With Stop, Compatible With Trailers That Use Combined Stop, Tail, Turn Lamps

JUMP START STUD Remote Mounted

HORN, AIR Black, Single Trumpet, Air Solenoid Operated, Mounted Behind Bumper on Right Rail

STARTING MOTOR {Delco Remy 38MT Type 300} 12 Volt; less Thermal Over-Crank Protection

INDICATOR, LOW COOLANT LEVEL With Audible Alarm

CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III With Trip Indicators, Replaces All Fuses Except For 5-Amp Fuses

GRILLE Stationary, with Vendor Painted Grille & Headlight Bezels, Argent NAV 8752

BUG SCREEN Front End; Mounted Behind Grille

FRONT END Tilting, Fiberglass, With Three Piece Construction; for 2007 Emissions

PAINT SCHEMATIC, PT-1 Single Color, Design 100

Includes

- : PAINT SCHEMATIC ID LETTERS "GM"

Description

PAINT TYPE Base Coat/Clear Coat, 1-2 Tone

CLUTCH Omit Item (Clutch & Control)

PTO EFFECTS, ENGINE FRONT Less PTO Unit, Includes Adapter Plate on Engine Front Mounted

ENGINE, DIESEL {International MaxxForce DT} 255 HP, 660 lb-ft Torque @ 1400 RPM, 2600 RPM Governed Speed, # 2 Bell Housing

Includes

: AIR COMPRESSOR AIR SUPPLY LINE Naturally-Aspirated
: COLD STARTING EQUIPMENT Intake Manifold Electric Grid Heater with Engine ECM Control
: CRUISE CONTROL Electronic; Controls Integral to Steering Wheel
: ENGINE OIL DRAIN PLUG Magnetic
: ENGINE SHUTDOWN Electric, Key Operated
: FUEL FILTER Included with Fuel/Water Separator
: FUEL/WATER SEPARATOR Fuel/Water Separator and Fuel Filter in a Single Assembly; With Water-in-Fuel Sensor; Engine Mounted
: GOVERNOR Electronic
: OIL FILTER, ENGINE Spin-On Type
: WET TYPE CYLINDER SLEEVES

FAN DRIVE {Borg-Warner SA85} Viscous, Screw On Type

Includes

: FAN Nylon

RADIATOR Cross Flow, Series System; 1228 SqIn Aluminum Radiator Core and 1167 SqIn Charge Air Cooler

Includes

: ANTI-FREEZE Red Shell Rotella Extended Life Coolant -40F (-40C)
: DEAERATION SYSTEM with Surge Tank
: HOSE CLAMPS, RADIATOR HOSES Gates Shrink Band Type; Thermoplastic Coolant Hose Clamps
: RADIATOR HOSES Premium, Rubber

FEDERAL EMISSIONS for 2004; for International VT365, DT466 and DT570 Engines

AIR CLEANER Dual Element

Includes

: GAUGE, AIR CLEANER RESTRICTION Air Cleaner Mounted

THROTTLE, HAND CONTROL Engine Speed Control; Electronic, Stationary, Variable Speed; Mounted on Steering Wheel

FEDERAL EMISSIONS 2007 for International MaxxForce DT Engines (DT466)

ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls; With Ignition Switch Control for International post 2007 Emissions Electronic Engines

BLOCK HEATER, ENGINE {Phillips} 120 Volt/1250 Watt; With "Y" Cord From Socket in Standard Location, With Provision in Oil Pan For a Dealer Installed Oil Pan Heater, With Extended Life Coated Oil Pan, for I6 Engines

Includes

: BLOCK HEATER SOCKET Receptacle Type; Mounted below Drivers Door

EXPANDED ENGINE TEMP EFFECTS to Allow Higher Engine Operating Temperature Range; Includes Nylon Surge Tank and 15 psi Pressure Cap

EMISSION COMPLIANCE Federal, Does Not Comply With California Clean Air Regulations

TRANSMISSION, AUTOMATIC {Allison 3500_RDS_P} 4th Generation Controls; Wide Ratio, 5-Speed, With Overdrive; On/Off Hwy; Includes Oil Level Sensor, With PTO Provision, Less Retarder, With 80,000-lb GVW & GCW Max.

Includes

: OIL FILTER, TRANSMISSION Mounted on Transmission
: TRANSMISSION OIL PAN Magnet in Oil Pan

Description

OIL COOLER, AUTO TRANSMISSION {Modine} Water to Oil, for Allison or CEEMAT Transmission

TRANSMISSION SHIFT CONTROL {Allison} Push-Button Type; for Allison 3000 & 4000 Series Transmission

SHIFT CONTROL PARAMETERS WT-Allison S-1 Performance Programming in Primary and Allison S-4 Economy Programming in Secondary

TRANSMISSION OIL Synthetic; 29 thru 42 Pints

ALLISON SPARE INPUT/OUTPUT for Rugged Duty Series (RDS); General Purpose Trucks, Construction

PTO CONTROL, DASH MOUNTED For Customer Provided PTO; Includes Switch, Electric/Air Solenoid, Piping and Wiring

AXLE, REAR, SINGLE {Dana Spicer S23-170D} Single Reduction, 23,000-lb Capacity, With Driver Control Locking Differential, With R Wheel Ends . Gear Ratio: 5.57

Includes

: REAR AXLE DRAIN PLUG (1) Magnetic, For Single Rear Axle

SUSPENSION, RR, SPRING, SINGLE Vari-Rate; 23,500-lb Capacity, With 4500 lb Auxiliary Rubber Spring

AXLE, REAR, LUBE {EmGard 75W-90} Synthetic Oil; 30 thru 39.99 Pints

FUEL TANK Top Draw; D Style, Steel, 50 U.S. Gal., 189 L Capacity, With Quick Connect Outlet, 16" Tank Depth, Mounted Left Side Under Cab

CAB Conventional

Includes

: ARM REST (2) Molded Plastic; One Each Door

: CLEARANCE/MARKER LIGHTS (5) Flush Mounted

: COAT HOOK, CAB Located on Rear Wall, Centered Above Rear Window

: CUP HOLDERS Two Cup Holders, Located in Lower Center of Instrument Panel

: DOME LIGHT, CAB Rectangular, Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Console, Center Mounted

: GLASS, ALL WINDOWS Tinted

: GRAB HANDLE, CAB INTERIOR (1) "A" Pillar Mounted, Passenger Side

: GRAB HANDLE, CAB INTERIOR (2) "B" Pillar Mounted, One Each Side

: INTERIOR SHEET METAL Upper Door (Above Window Ledge) Painted Exterior Color

: STEP (4) Two Steps per Door

GAUGE CLUSTER English With English Electronic Speedometer

Includes

: GAUGE CLUSTER (6) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter, Washer Fluid Level

: ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout

: WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)

GAUGE, TEMPERATURE, AMBIENT Includes Compass Readout and Wiring and Sensor With Display Unit Mounted in Cluster

GAUGE, AIR CLEANER RESTRICTION {Filter-Minder} With Black Bezel Mounted in Instrument Panel

IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster

SEAT, DRIVER {National 2000} Air Suspension, High Back With Integral Headrest, Cloth, Isolator, 1 Chamber Lumbar, 2 Position Front Cushion Adjust, -3 to +14 Degree Back Angle Adjust

Includes

: SEAT BELT 3-Point, Lap and Shoulder Belt Type

SEAT, PASSENGER {National} Air-Suspension, High Back With Integral Headrest, Cloth, Isolated, 1 Chamber Lumbar, 2 Position Front Cushion Adjustment, -3 to +14 Degree Seat Back Adjustment

Includes

Description

: SEAT BELT 3-Point, Lap and Shoulder Belt Type

MIRRORS (2) {Lang Mekra} Styled; Rectangular, 7.09" x 15.75" & Integral Convex Both Sides, 102" Inside Spacing, Breakaway Type, Heated Heads Thermostat Controlled, Power Both Sides Flat Glass Only, Clearance Lights LED,

GRAB HANDLE Chrome; Towel Bar Type With Anti-Slip Rubber Inserts; for Cab Entry Mounted Left Side Only at "B" Pillar

INSTRUMENT PANEL Center Section, Flat Panel

WINDOW, POWER (2) And Power Door Locks, Left and Right Doors

AIR CONDITIONER {International Blend-Air} With Integral Heater & Defroster

Includes

: FRESH AIR FILTER

: HEATER HOSES Premium

: REFRIGERANT Hydrofluorocarbon HFC-134A

FRESH AIR FILTER for HVAC

STORAGE POCKET, DOOR Molded Plastic, Full Width; Mounted on Passenger Door

CAB INTERIOR TRIM Premium

Includes

: "A" PILLAR COVER Molded Plastic

: CAB INTERIOR TRIM PANELS Cloth Covered Molded Plastic, Full Height; All Exposed Interior Sheet Metal is Covered Except for the Following: with a Two-Man Passenger Seat or with a Full Bench Seat the Back Panel is Completely Void of Covering

: CAB SOUND INSULATION Dash and Engine Cover Insulators

: CAB, INTERIOR TRIM, CLOSEOUT Lower Dash Closeout Panel; Molded Plastic; Under Instrument Panel Driver Side

: CONSOLE, OVERHEAD Molded Plastic; With Dual Storage Pockets with Retainer Nets, CB Radio Pocket, Compass/Temp Display, and Reading Lights

: COURTESY LIGHT (2) Mounted In Front Map Pocket Left and Right Side

: DOOR TRIM PANELS with Cloth Insert on Bolster Driver and Passenger Doors

: FLOOR COVERING Rubber, Black

: HEADLINER Soft Padded Cloth

: INSTRUMENT PANEL TRIM Molded Plastic with Black Center Section

: STORAGE POCKET, DOOR (2) Molded Plastic (Carpet Texture), Full-Length; Driver and Passenger Doors

: SUN VISOR (3) Padded Vinyl, 2 Moveable (Front-to-Side) Primary Visors, Driver Side with Vanity Mirror and Toll Ticket Strap, plus 1 Auxiliary Visor (Front Only), Driver Side

CAB REAR SUSPENSION Air Bag Type

WINDSHIELD WIPER BLADES Snow Type

WHEELS, FRONT DISC; 22.5" Painted Steel, 5 Hand Hole, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With .472" Thick Increased Capacity Disc and Steel Hubs

Includes

: PAINT IDENTITY, FRONT WHEELS White

: WHEEL SEALS, FRONT Oil Lubricated, Includes Wheel Bearings

WHEELS, REAR DUAL DISC; 22.5" Painted Steel, 5 Hand Hole, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With .472" Thick Increased Capacity Disc and Steel Hubs

Includes

: PAINT IDENTITY, REAR WHEELS White

: WHEEL SEALS, REAR Oil Lubricated, Includes Wheel Bearings

PAINT IDENTITY, FRONT WHEELS {Accuride} Disc Front Wheels; With Vendor Applied (PKGRY21) Grey Powder Coat Paint

PAINT IDENTITY, REAR WHEELS {Accuride} Disc Rear Wheels; With Vendor Applied (PKGRY21) Grey Powder Coat Paint

WHEEL GUARDS, FRONT {Accuride} for Metric Hub Piloted Wheels with Flanged Mounting Nuts Mounted Between Hub and Wheel

Description

WHEEL GUARDS, REAR {Accuride} for Metric Hub Piloted Wheels with Flanged Mounting Nuts, Mounted Between Hub & Wheel and Between Dual Wheels

WHEEL BEARING, FRONT, LUBE {EmGard 50W} Synthetic Oil

BDY INTG, REMOTE POWER MODULE Mounted Inside Cab; Up to 6 Outputs & 6 Inputs, Max. 20 amp. per Channel, Max. 80 amp. Total (Includes 1 Switch Pack With Latched Switches)

(4) TIRE, REAR 11R22.5 G338 1AD (GOODYEAR) 496 rev/mile, load range G, 14 ply

(2) TIRE, FRONT 11R22.5 G149 RSA/RH (GOODYEAR) 501 rev/mile, load range H, 16 ply

CROSSMEMBER, FRONT Relocate first crossmember behind cab to allow 23" to 38" of clean area between rails to allow for body shoot

Services Section:

SRV CONTRACT, EXT VEH COVERAGE To 24-Month/Unlimited Mileage; With 90-Day Towing; Covers 100% Parts and Labor, Excludes Extending Warranty for Engine, Transmission, Frame Side Rails, Paint, Perforation or Corrosion of Cab/Cowl Structure

WV Tractor Dump Body per state bid specifications.

Triangle Kit

MEDIUM DUTY LOT&PACK

<u>Description</u>	(USA DOLLAR)	<u>Price</u>
Factory List Prices:		
Product Items	\$87,094.00	
Service Items	\$740.00	
Total Factory List Price Including Options:		\$87,834.00
Total Goods Purchased:		\$390.00
Freight Charge	\$1,650.00	
Total Freight:		\$1,650.00
Total Factory List Price Including Freight:		\$89,874.00
Less Customer Allowance:		(\$27,288.15)
Total Vehicle Price:		\$62,585.85
Total Body/Allied Equipment:		\$46,700.00
Total Sale Price:		\$109,285.85
Total Per Vehicle Sales Price:		\$109,285.85
Net Sales Price:		\$109,285.85

Please feel free to contact me regarding these specifications should your interests or needs change. I am confident you will be pleased with the quality and service of an International vehicle.

Approved by Seller:

Accepted by Purchaser:

Official Title and Date

Firm or Business Name

Authorized Signature

Authorized Signature and Date

**This proposal is not binding upon the seller without
Seller's Authorized Signature**

Official Title and Date

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

VENDOR OWING A DEBT TO THE STATE:

West Virginia Code §5A-3-10a provides that: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:

If this is a solicitation for a public improvement construction contract, the vendor, by its signature below, affirms that it has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the **West Virginia Code**. The vendor **must** make said affirmation with its bid submission. Further, public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the **West Virginia Code** and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the **West Virginia Code** may take place before their work on the public improvement is begun.

ANTITRUST:

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

LICENSING:

Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:

The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.

Under penalty of law for false swearing (**West Virginia Code §61-5-3**), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

Vendor's Name: BWAR INTERNATIONAL

Authorized Signature: [Signature]

Date: 3/25/09

VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with West Virginia Code, §5A-3-37. (Does not apply to construction contracts). West Virginia Code, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the West Virginia Code. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

- 1. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. Application is made for 5% resident vendor preference for the reason checked: Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: BWAB INTERNATIONAL Signed: [Signature]
Date: 3/25/09 Title: VP SALES

*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EQUIPMENT DIVISION

BIDDER'S EVALUATION REPORT

PROCUREMENT SPECIFICATIONS FOR OPEN END CONTRACT
NO. 371-2-G

33,000 GVW CAB AND CHASSIS, STAINLESS STEEL DUMP BODY, AND
PISTON PUMP HYDRAULIC SYSTEM

NOTE TO BIDDER: Procurement Specification No. 371-2-G, Paragraph 2.0 recommends the completion and submittal of this Report with your bid. Purpose of this Report is to enable the West Virginia Division of Highways Evaluation Committee to make full and fair evaluation of the bid. Addendums in order, along with a summary of exception as a separate attachment, should be with Bidder's Evaluation Report. FAILURE TO SUBMIT THIS REPORT, COMPLETE IN ITS ENTIRETY, MAY SUBJECT THE BIDDER TO DISQUALIFICATION.

Reference Requisition No.: 709ECO11

Bidder's Name: BWAB International LLC

Address: 408 Goff Mountain Road Cross Lanes WV 25313

Telephone Number: 304-776-5600

Years Bidder has been registered to do business with the State of West Virginia: 1 YRS.

Years Company has been an authorized dealer for proposed unit: 1 YRS.

X3.2 Have you complied with all mandatory specifications? YES NO

X4.2 DELIVERY:

X4.2.1 Delivery date of completed representative unit: 120 Calendar Days After
Receipt of Purchase Agreement

X4.2.2 Delivery date of balance of completed units: 90 Calendar Days After Receipt of
Purchase Agreement

The "Bidder's Evaluation Report" is available for download on Purchasing's Web site at
www.state.wv.us/admin/purchase

X5.0 AWARD CRITERIA;

X5.1 Prices for units:

1-25 \$109,285.85 per unit

26-50 \$109,285.85 per unit

51 and over \$109,285.85 per unit

X6.0 SPECIFICATIONS - GENERAL

X6.1 Manufacturer, model, series, and date of manufacture of proposed unit:

Cab and Chassis: 7300 SFA 4x2

Dump Body: _____

Piston Pump Hydraulics: _____

Is descriptive literature, fully describing proposed unit attached to your bid? YES NO

If not, why? _____

X6.2 Will the required number of service manuals, and complete parts list be delivered to the Equipment Division at Buckhannon upon completion of delivery of total units?

YES NO

Will the required Equipment Preventive Maintenance Form (Section X6.2 of Bidders Evaluation Report) be provided upon inspection of the pilot unit? YES NO

X6.2
2-10-00

EQUIPMENT PREVENTATIVE MAINTENANCE QUESTIONNAIRE

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY BY SUCCESSFUL BIDDER OR MANUFACTURER'S TECHNICAL REPRESENTATIVE PRIOR TO DELIVERY OF PILOT MODEL TO THE WVDOH.

DESCRIPTION: will provide if awarded MAKE: _____

MODEL: _____ YEAR: _____ PURCHASE AMOUNT: _____

ENGINE: MAKE: _____ MODEL: _____ FUEL TYPE: _____

HORSEPOWER: _____ CYLINDER: _____ ENGINE SERIAL: _____

COOLING SYSTEM CAPACITY: _____

BELTS: DESCRIPTION: _____ PART NUMBERS: _____

GVW: _____ AXLE CAPACITY: _____ FRONT: _____ REAR: _____

TIRES: FRONT MAKE & SIZE: _____

REAR MAKE & SIZE: _____

DIMENSIONS OF UNIT: LENGTH: _____ WIDTH: _____ LENGTH: _____

VENDOR CONTACT PERSON: _____ PHONE: _____

PARTS:

BATTERY MAKE: _____ MODEL: _____ CCA: _____

TOP OR SIDE POST: _____ DIMENSIONS: LENGTH _____ WIDTH _____ HEIGHT _____

SPARK PLUGS OR FUEL INJECTORS MAKE: _____ PART # _____

FUEL PUMP OR INJECTION PUMP MAKE: _____ MODEL: _____

ALTERNATOR MAKE: _____ PART #: _____

STARTER MAKE: _____ PART #: _____

TURBO CHARGER MAKE: _____ PART #: _____

TRANS. MAKE: _____ MODEL: _____ AUTO/MANUAL: _____

HYDRAULIC PUMP MAKE: _____ MODEL: _____

FILTERS	MAKE	PART NO.	LUBRICANT	MANUFACTURER TYPE
OIL	_____	_____	ENGINE	_____
AIR INNER	_____	_____	TRANSMISSION	_____
AIR OUTER	_____	_____	POWER STEERING	_____
FUEL PRIMARY	_____	_____	HYDRAULIC	_____
FUEL SECONDARY	_____	_____	DIFFERENTIALS	_____
COOLANT	_____	_____	BRAKE FLUID	_____
HYDRAULIC	_____	_____	COOLANT	_____
OTHER	_____	_____	OTHER	_____

X6.3 TRAINING:

Will training seminar be conducted on Preventive Maintenance, Operator and Mechanic Training YES NO

Will you conduct training with each purchase order against this open end contract? YES NO

Will training be conducted within 2 working days from the delivery of the pilot unit on the individual purchase order? YES NO

If NO, explain time frame _____

Will an Operator's Manual be furnished directly to Training Academy prior to the delivery of the pilot? YES NO

X6.4 If you are the successful vendor, will you furnish all training aids, i.e., videos, projectors, required in conducting the training? YES NO

X6.4.1 Will all manuals, booklets, etc. explaining preventive maintenance, operator procedures, and service schedule be delivered with each unit? YES NO

If NO, explain will provide CD for each BOH location

X6.5 WARRANTY AND SERVICE POLICY

Will the warranty and service you provide comply with all areas as stated in Section 6.5 of specifications YES NO

Is warranty literature attached? YES NO

Is a minimum two (2) year bumper to bumper basic parts and labor warranty excluding abuse and normal wear items included? YES NO

Describe:

X6.5 WARRANTY AND SERVICE POLICY QUESTIONNAIRE

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY AND SUBMITTED WITH YOUR BID.

(If additional lines are needed, make copies of form.)

1. Define the terms of the standard warranty. If not offered, so state. (Attach copy)

Attached.

2. Define warranty service to be performed at DOH facilities and warranty service to be performed at manufacturer's representative facility. List name and location of manufacturer's representative.

All warranty work to be performed at any International dealership as out lined below

3. List locations for parts inventories that are within the State of West Virginia. Also, list availability levels, if known.

Parts inventories are maintained in Charleston, Beckley, Bluefield and White Sulpher Springs by BWAB and in Elkins by Newlons and in Wheeling by O.S. Hill International.

4. During the term of warranty, list the guarantee discount to manufacturer's published list price for parts that bidder will sell the parts to owner.

A.	Terms: Net 30	Manufacturer's published list price less: _____ % discount	<u>Navistar current</u>
B.	Terms: Net 60	Manufacturer's published list price less: _____ % discount	<u>national fleet</u>
C.	Terms: Net 90	Manufacturer's published list price less: _____ % discount	<u>price</u>

5. During the term of warranty, will all manufacturers or engineering improvements be submitted to Division of Highways? YES NO

6. During the term of warranty, list the guaranteed rates charged for repair to the unit.

A.	Shop Rate	\$ <u>88.00</u> per mechanic hour
B.	Travel Time Charge (Specify if one-way)	\$ <u>88.00</u> per mechanic hour _____ ; port to port _____
C.	Mileage Charge (Specify if one-way)	\$ <u>1.65</u> per vehicle mile _____ ; port to port _____
D.	Field Mechanic Rate	\$ <u>88.00</u> per mechanic hour
E.	Specify period of time that prices are in effect:	<u>1yr</u>
F.	Surcharge for miscellaneous items:	<u>n/a</u> %

X6.6 EVALUATION COMMITTEE REQUIREMENTS

Is all component specifications, product literature, component models provided for Evaluation Committee bid determination? YES NO

X6.7 Will all parts, equipment, accessories, material, design and performance characteristics not specified herein, but which are necessary to provide a complete unit, be furnished with the unit and conform in strength, quality of material, and quality of workmanship to those which are advertised and provided to the market in general by the unit industry? YES NO

X6.7.1 Are all parts and accessories adequate and regularly supplied as standard to be included except those which may be duplications of specifications herein, and except these by specification are not to be furnished? YES NO

X6.7.2 Are all standard safety features that are required by Federal and State statutes of law included? YES NO

X7.0 SPECIFICATIONS OF THE QUOTED UNIT

The bidder should complete the following schedule in order for the Division to compare the actual bid unit to the specifications. Should the bidder except a requirement, then such exception may be only on the basis that such feature is not offered by the manufacturer. The Division will have the sole discretion as to whether the bidder's substitution meets the requirements of the specifications.

X8.0 SPECIFICATIONS – CAB AND CHASSIS

Manufacturer: International Model: 7300 SFA 4x2

X8.1 GVW plate rating: 36,220 Lbs.

X8.2 Cab to axle dimension: 85" Inches.

X8.2.1 Cab to end of frame: 125" inches

X8.3 Wheelbase: 1160 inches, set forward design for our snowplow applications YES NO

X8.4 Frame: Will you provide a frame that meets or exceeds all Federal requirements for GVWR specified that has an integral front frame extension with no frame cutouts except to allow engine installation? YES NO

Will extension extend forward of the grille area a minimum of 12 inches YES NO

Warranty on frame: 5 years and conform to the following:

- X8.4.1 Frame steel: 120,000 PSI yield strength minimum YES NO
- X8.4.2 R.B.M.: 2,134,800 Ins./Lb.
- X8.4.3 Is the truck chassis frame rails free of obstructions inside the frame rails and along the left outside frame rail 23 inches to 38 inches from the back of the cab for installation of the spinner chute YES NO
- X8.4.4 Have you omitted the factory installed bumper and complied with our building of a front bumper YES NO
- X8.5 Cab: Is cab manufacturer's standard steel and/or fiberglass and/or aluminum with premium or manufacturers highest level interior trim with inside noise level rating not to exceed 80 dba in compliance with Federal regulations YES NO
- Does it have an ambient temperature display for outside temperature YES NO
- Is hood a tilt hood and fenders either steel and/or fiberglass YES NO
- Is rear air bag suspension provided YES NO
- Inner fender panels that are adequate to keep materials from engine compartment YES NO
- X8.5.1 Is unit equipped with manufacturers tilt steering column with cruise control feature YES NO
- OR
- Provide locking hand operated throttle YES NO
- X8.5.2 Seats:
 - Driver – Fully adjustable high back with head rest, air ride, bucket style; seat includes air lumbar, hip bolsters, side bolsters, and back bolsters, with full cloth on entire seat YES NO
 - Cloth with vinyl boxing*
 - Material is Modura YES NO OR approved equal: _____
- X8.5.2.1 Passenger seat fully adjustable high back with head rest, air ride, bucket style, cloth covered or cloth insert in vinyl YES NO
- Clearance between drivers and passenger seats 20 inches
- X8.5.3 Floor mats: Rubber floor mats throughout cab area with non-absorbent backing under mats YES NO
- X8.5.4 Heater and defroster: Fresh air type, heaviest duty YES NO

- X8.5.5 Windshield wipers and washers: Manufacturers heaviest duty artic type with intermittent feature
 YES NO
- Wipers equipped with snow type blades
 YES NO
- X8.5.6 Instruments: Are manufacturer's gauges with visual and/or audible, and/or programmable warning to inform driver when operating conditions are exceeded included:
- X8.5.6.1 Voltmeter or ammeter YES NO
- X8.5.6.2 Engine RPM tachometer YES NO
- X8.5.6.3 Speedometer with odometer YES NO
 Are provisions for dual speedometers leads available YES NO
- X8.5.6.4 Air pressure gauge(s) YES NO
- X8.5.6.5 Air filter to be manufacturers heaviest element type YES NO
- X8.5.6.6 Air filter restriction indicator dash mounted YES NO
- X8.5.6.7 Engine hourmeter (controlled by engine operation) YES NO
- X8.5.6.8 Fuel gauge(s) with low fuel warning indicator YES NO
- X8.5.6.9 Is unit equipped with front air intake YES NO
 Is an air actuated or cable control valve provided to enable operator to divert air intake to engine compartment while in snow plowing application
 YES NO
- X8.5.6.10 Oil pressure gauge YES NO
- X8.5.6.11 Temperature gauge YES NO
- X8.5.6.12 Low coolant indicator YES NO
- X8.5.7 Accessories:
- X8.5.7.1 Manufacturers dash mounted extended two (2) cup drink holder
 YES NO
- X8.5.7.2 Air horns with snow shields YES NO
 If cab mounted, adequate clearance for future installation of dump body cab protector
 YES NO
- Single horn without snow shield YES NO
 Mounted downward on frame rail under hood YES NO

- X8.5.7.3 Rearview Mirrors:
 Heated dual, West Coast Type YES NO Size: 7" x 15"
 Power adjustable with convex spot mirror YES NO
 (OR)
 dual flat mirrors (Size: _____) and power adjustable with separate dual
 (Size: _____) convex spot mirrors YES NO
- to include fore and aft breakaway feature with corrosive resistant finish equal to stainless steel, powder coat or aluminum or molded plastic housing and mounting brackets
 YES NO
- X8.5.7.4 Grab Handle:
 Right hand and left hand sides internal or external mounting to rear of door opening
 YES NO
- If inside handles, one (1) outside, left, mounted grab handle with non-slip insert for bed aggregate inspection furnished**
 YES NO
- X8.5.7.5 Glass: Manufacturers tinted safety glass; front, sides, and rear YES NO
- X8.5.7.5.1 Dual power windows YES NO
- X8.5.7.6 Radio: Manufacturers standard AM/FM stereo YES NO
 Weather band radio feature YES NO
- X8.5.7.7 Air Conditioning: Manufacturers fresh air type heaviest duty with APADS or equivalent RCD system to include replaceable fresh air filter YES NO
- X8.5.7.8 **Manufacturers stationary grille or grille with cutout area to allow tilt hood to clear snow plow mount**
 YES NO
Bug screen provided behind grille YES NO
- X8.5.7.9 Front mudflaps manufacturers standard for unit bid YES NO
- X8.5.7.10 Emergency triangle warning kit, with hold down or stowed in the cab
 YES NO
 Make/Model: Strato-Flare 219
- X8.5.7.11 Does unit include kit for front mounted CB radio and all power and ground wiring to include co-ax cable, antenna, speaker, etc. n/a YES NO
All cable and wiring routed using grommets and wire looms
Deleted from specifications on Addendum 3 n/a YES NO
 Radio make and model: n/a
- X8.5.7.12 **Two (2) front frame mounted tow hooks or eyes** YES NO

X8.5.7.13

Accessories included in manufacturers standard cab not listed above:

X8.6 Engine:

Make: International Model: DT466

255 HP. Torque @ 660 Lb. Ft.

X8.6.1 Has engine manufacturer made provisions for front mounted hydraulic pump to crankshaft pulley
 YES NO

X8.6.2 Fuel heater/water separator mounted inside engine compartment YES NO

Manufacturer: International

X8.6.3 Engine block heater watt/ 1250 v rating includes weather proof spring loaded cap over plug YES NO

X8.6.4 Single vertical exhaust pipe with horizontal muffler that meets all Federal noise abatement requirements YES NO

Exhaust frame mounted on the passenger side of unit with heat shield on vertical exhaust YES NO

X8.6.5 Engine equipped with engine brake YES NO

Compression YES NO (or) Compression/Exhaust YES NO (or)
 Exhaust YES NO

Manufacturer: International

X8.6.6 Is engine oil pan zinc nickel plated YES NO

(OR)
 Aluminum YES NO (OR) Non-Corrosive coated YES NO

X8.6.7 Engine provides electronic speed control including throttle and cruise control features YES NO

X8.7 Cooling System:

X8.7.1 Is cooling system capable of maintaining engine temperature within the manufacturers recommended range during continuous winter/summer operation YES NO

Does unit provide an automatic "on-off" fan drive with nylon fan blades YES NO

Manufacturer: Borg Warner

- X8.7.2 Will the system be filled with permanent type extended life coolant Dex-Cool or equivalent rated at a -34°F minimum YES NO
- X8.7.3 Does the radiator provide adequate clearance to facilitate the installation of a crankshaft driven PTO drive shaft YES NO
- The distance between the extreme tip of the radiator fan blade and the centerline of the crankshaft is _____ inches to insure adequate clearance for PTO drive shaft
- Radiator and heater hoses are silicone type or approved equivalent with constant torque clamps or equivalent utilized on radiator hoses to minimize cold water leaks YES NO
- X8.8 Fuel Tank:
- X8.8.1 Capacity: 50 US gallons. Does tank comply with FMVSS YES NO
- Filler Cap is chain tethered YES NO
- X8.9 Electrical System:
- X8.9.1 Type: _____ volt negative ground system includes manual reset circuit breakers (main panel) SAE Type III with trip indicators to replace all fuses except for 5 amp fuses. YES NO
- X8.9.2 Batteries:
- X8.9.2.1 Cold Crank AMPS 1950 AMPS with sealed terminals
- X8.9.2.2 Jump start studs mounted on outside of battery box YES NO
- X8.9.3 Alternator Capacity: 140 AMPS brushless with internal regulator
- X8.9.4 Lighting: All lighting conforms to the West Virginia Motor Vehicle Code YES NO
- Unit features daytime running lights YES NO
- Cab marker lights are LED type with halogen headlamps. YES NO
- X8.9.5 Is auxiliary snow plow lighting package included YES NO
- X8.9.5.1 Will truck vendor eliminate rear taillights _____ YES NO
Is there at least eight (8) foot of wiring bundled at end of frame for body vendor hookup of taillights provided in dump bed body YES NO
- X8.9.6 Will manufacturer _____ YES _____ NO or successful vendor YES _____ NO make provisions for manufacture approved wiring and weatherproof disconnect plug YES _____ NO
- Manufacturer and Part number provided by body company
- Will there be three (3) foot "pigtail" to operate front combination left and right turn/park lights/auxiliary headlights. YES NO

- X8.9.6.1 Is weatherproof disconnect plug located at lower left front grille/bumper area
 YES NO
- Are all wiring connections weatherproof with wiring encased in wire looms
 YES NO
- X8.9.6.2 Are provisions for 7-way trailer connection light socket mounted at rear of truck frame
 YES NO
 Manufacturer and Part number Phillips 48NA23-036
- X8.9.6.3 Will manufacturer provide body builder circuit interface capability with connection Plug located at rear of frame for body builder connection to stop, tail, and marker light circuits, ignition controlled auxiliary feed to ground to provide splice free chassis wiring integrity
 YES NO
- X8.9.6.4 Will manufacturer provide body builder circuits – three (3) switches located in the dash instrument panel with one (1) weather protected body builder connection box or module located at the rear under cab.
 YES NO
- Is this power module 20 amps per channel, 80 amp maximum output
 YES NO
- Do the dash switches control the power module with LED backlighting
 YES NO
- X8.10 Transmission
 Manufacturer: Allison Model: 3500 RDS
- X8.11 Driveline: Dana
 Does it have a greasable main shaft YES NO
- X8.12 Rear Axle:
 X8.12.1 Rated Capacity: 23000 Lbs. Single reduction includes driver controlled main locking differential YES NO
- X8.12.2 Rear Spring Capacity: 23500 Lbs. including 4500 lb. capacity load stabilizer Springs YES NO
- Does it provide sufficient clearance between spring, brake chambers, and tires to operate with single tire chains YES NO
- X8.12.3 Gear ratio: 5.57
 Are vehicles capable of a top speed of 70 MPH YES NO

X8.12.4 Is rear axle differential, transmission, and front wheel lubrication reservoirs filled with synthetic type lubrication and provided with magnetic drain plugs where applicable
 YES NO

X8.13 Front Axle:

X8.13.1 Capacity: 14000 lbs. I-beam type

X8.13.2 Front Spring Capacity: 14000 lbs.; 14000 lbs. rating for use with front plow

X8.13.3 Manufacturers heavy duty shock absorbers YES NO Make: _____

X8.13.4 Front wheel oil lubricated wheel seals YES NO Make: _____

X8.14 Brakes:

X8.14.1 Type: Full air, with manufacturers ABS with traction control in compliance with the most current FMVSS requirements YES NO

X8.14.2 Compressor: Model and Make: Bendix TU-FLO 550 13.2 CFM

X8.14.3 Service Brake Size:

X8.14.3.1 Front: 16.5 x 5

X8.14.3.2 Rear: 16.5 x 7

X8.14.4 Parking Brake: Spring set, air release actuating rear axle service brakes YES NO

Instrument panel control YES NO MGM

X8.4.4.1 Are all brake chambers sealed brake chambers with epoxy exterior coat on front and rear chambers YES NO Make: _____

X8.14.5 Air dryer with heater YES NO Make and Model: _____

X8.14.6 Manufacturer's standard air tanks for service brakes; auxiliary tank for parking brake
 YES NO

X8.14.7 Low air pressure warning light and buzzer YES NO

X8.14.8 Do brakes meet all current Federal and State FMVSS requirements YES NO

X8.14.9 Are brake dust covers installed on all wheels YES NO

X8.14.10 Is unit equipped with tractor protection valve and hand control valve to accommodate installation of glad hands at rear of frame rails to enable unit to pull an air-braked trailer
 YES NO

X8.14.10.1

Are glad hand recessed as not to stick out past end of frame rails

YES NO

X8.15 Tires and Wheels:

X8.15.1

Wheel, Front and Rear 22.5 x 8.25 hub piloted steel disc type, to accommodate specified tire size YES NO

Make and Model: Accuride with 0.472 inches thickness YES NO

All wheels include wheel guard separators YES NO

X8.15.2 Tires: (Describe)

X8.15.2.1 Front: 11R22.5 Goodyear G149 16 ply

X8.15.2.2 Rear: 11R22.5 Goodyear G338 14 ply

X8.16 Manufacturers standard power steering for front axle specified YES NO

Manufacturer: Shepard

X8.17 Features considered as standard equipment not specifically addressed:

PTO plumbing from factory

X8.18 Paint:

X8.18.1 Specify cab exterior and interior color and paint type:

White/Sikrens/Base, Clear grey interior

X8.18.2 Is truck grille manufacturer's standard similar to silver/aluminum in color? YES NO

X8.18.3 Are fuel tanks, steps, air tanks and battery box non-corrosive coated? YES NO

X8.18.3.1 Is wheel paint provided as specified? YES NO

X8.18.4 Detail/Decorative Stripes with Logo:

X8.18.4.1 Are stripes provided 2" type with taper at front of hood? YES NO

X8.18.4.2 Does the conspicuity striping material provided meet requirements of Section 8.18.4.3 through 8.18.4.6 of the specification section? YES NO

Will you install the striping? YES NO

X8.18.4.7 Is your proposed paint plan attached with your bid? YES NO

If not, why? _____

X8.21 Preventive Maintenance and Operator's Training School:

X8.21.1 Will a preventative maintenance and operator's training seminar be provided? YES NO

X8.21.2 If you are the successful vendor, will you furnish all training aids, i.e., videos, projectors, required in conducting the training? YES NO

X8.21.3 Will all manuals, booklets, etc. explain preventive maintenance, operator procedures, and service schedule be delivered with each unit? YES NO
If NO, explain _____

X9.0 SPECIFICATIONS – 304 STAINLESS STEEL COMBINATION DUMP/SPREADER BODY

The bidder should complete the following schedule in order for the Division to compare the actual bid unit to the specifications. Should the bidder except a requirement, then such exception may be only on the basis that such feature is not offered by the manufacturer. The Division will have the sole discretion as to whether the bidder's substitution meets the requirements of the specifications.

Reference Requisition No. on request for proposal: ___709EC011_____

Bidder's Name: ___West Virginia Tractor Company_____

Address: _____P.O. Box 473, Charleston, WV 25322_____

Telephone Number: ___346-5301_____

Years Company has been an authorized dealer for proposed unit: ___5_____ Yrs.

Manufacturer, model, series, and date of manufacture of proposed combination dump/spreader body:

___Viking Proline Model CB1011LW 10' Stainless Steel Combination Body manufactured

___in 2009 or later as ordered_____

Is descriptive literature, fully describing proposed dump/spreader body attached to your bid? YES NO

If NO, why _____

Refer to Section 6.1 of the specification

When will required number of operating manuals, service manuals, and complete parts list be delivered

to the Equipment Division at Buckhannon? prior to delivery of unit or _____

Will combination dump/spreader body have minimum 2 year basis warranty including parts and labor excluding abuse and normal wear items YES NO

X9.1 Body capacity 6 cubic yards water level

X9.2. Sideboard pockets and tailgate height provide additional capacities of 1.5 cubic yard

X9.3 Front body bulkhead 3/16 inch 304 stainless steel YES NO

X9.4 Cab shield has sufficient clearance to ensure shield will not hit exhaust when dumping on uneven terrain? YES NO

X9.5 Two (2) front truck frame mounted tow hooks or eyes accessible through the bumper YES NO

X9.6 Dimensions:

X9.6.1 Inside length of body 120 inches

X9.6.2 Inside width of body 96 inches wide to maximize capacity and lower the center of gravity of the unit

X9.6.3 Outside width of body 102 inches at the integral fenders

X9.6.4 Body spacing from cab 4 inches

X9.6.5 Basic minimum side height 36 inches (measure from the floor to top rail)

X9.6.6 Tailgate minimum height 46 inches (measure from the floor to top rail)

X9.6.7 Body overhang 10 inches to 18 inches (measure from center of hinge pin)

X9.6.8 Cab protector 24 inches x 96 inches with adequate clearance for cab mounted air horns

X9.7 Is cab protector sloped rearward for drainage purposes YES NO

X9.8 Construction of the body sides, front, head, and tailgate conform to the following minimum Specifications

Steel types are 304 stainless steel YES NO

X9.8.1 Floor: 1/4 inch thickness

- X9.8.2 Sides: 3/16 inch thickness**
- X9.8.3 Tailgate plate: 3/16 inch thickness**
- X9.8.4 Top rail: 3/16 inch thickness**
- X9.8.5 Cab protector: 10 gauge**
- X9.8.6 Longitudinal: 12 inch 7 gauge 304 stainless steel formed inner/ 7 gauge 304 stainless steel formed with internal stainless steel gussets every 30 inches**
- X9.8.7 For future potential pre-wet application, will the combination body be capable of accepting frame mounted approximately 75 gallon poly liquid tanks. X YES NO**
- Will the body be designed to allow maximum protection to the tanks X YES NO**
- X9.9 Is all welding inside the body continuous, not skip welded. X YES NO**
- Are all rails and posts continuous welded X YES NO**
- X9.10 Are the rear corner posts full length, one (1) piece construction X YES NO**
- X9.10.1 Is a rear bolt on spreader apron provided X YES NO**
Is it integrated into the rear of the bed YES X NO
- X9.11 Cab protector sides, formed with gussets, extend forward 24 inches. Clearance above highest point of cab is 3 inches**
- X9.12 Is the body a unibody design – no crossmembers X YES NO**
- X9.12.1 Does the body have one (1) piece sides and floor which incorporates a sloping floor to side radius X YES NO**
- Degree of slope to adequately feed material to the conveyor chain. 35**
- X9.12.2 Do the sides of the body slope to the conveyor to facilitate self cleaning of body without raising X YES NO**
- X9.13 The boxed top rail is sloped inward to shed debris X YES NO**
- X9.14 Full length 304 stainless steel integral rear fenders which incorporate prewet liquid reservoirs (75 gallon) X YES NO**
- X9.15 An integrated center conveyor provides the ability of the body to convey granular materials with the body down X YES NO**

The following features are provided:

- X9.15.1 Does the conveyor have no more than 12 inch truck frame to body floor height for lower center of gravity and lower mounting height YES NO
- X9.15.1.1 Have you used wood YES NO Type of material: Poly
- X9.15.2 1/4 inch 304 stainless steel conveyor floor YES NO or 1/4 inch abrasion resistant steel (AR400) YES NO
- X9.15.3 2 inch diameter front and rear shafts with eight (8) tooth sprockets YES NO
- X9.15.4 Drive sprockets are double keyed to shaft YES NO
- X9.15.5 Conveyor width – 25 inches or more YES NO
- X9.15.6 Conveyor is reversible YES NO**
- X9.15.7 Conveyor is driven with 25:1 planetary gearbox drives or equal on both the front and rear shafts with 5.0 CIR hydraulic motors YES NO
- One (1) motor has an integral conveyor speed sensor YES NO
- X9.15.8 Conveyor chain is D667K pintle type (24,500 lb. tensile/strand) with **minimum 3/8 inch x 1 1/2 inch conveyor crossbars welded to every link** YES NO
- X9.15.9 A 10 gauge 304 stainless steel bolt in pan under the conveyor to keep material off chassis frame YES NO
- X9.16 The body has the capability to convey to the front or the rear with a material spinner for distributing material: YES**
- X9.16.1 For front spreading, a front feedgate integrated into the head sheet of the body 8 inches x 24 inches
- X9.16.2 A 304 stainless steel front spinner chute is mounted between chassis frame rails and with the body down be completely enclosed to prevent material from dropping on chassis drive shaft YES NO**
- X9.16.4 Is the rear feed gate lever operated YES NO or screw adjustable YES NO
- Is the feedgate capable of being positively locked into position YES NO
- X9.16.5 Is the front spinner bracket and chute mounted to the truck chassis frame and installed by successful vendor YES NO**
- X9.16.6 The spinner is universal and mounted at the front for delivery and may be used at front or rear YES NO**
- X9.16.7 Spinner assembly is adjustable left to right, and up and down to assure accurate**

placement of material on spinner disc to facilitate control of spread pattern.

YES NO

X9.16.8 10 gauge 20 inch diameter spinner disc has replaceable machined hub YES NO

X9.16.9 Is the spinner 409 or 304 stainless steel YES NO

X9.16.10 If spinner hydraulic motor is mounted on top of spinner disc, is the motor enclosed in a removable material shedding protective cover YES NO

X9.17 Hydraulic Hoist:

X9.17.1 Trunnion Mount YES NO

X9.17.2 Telescopic hoist is no less than N.T.E.A. Class 40 YES NO

X9.17.3 Single hoist cylinder is trunnion mount YES NO

X9.17.4 Single acting hoist cylinder has three (3) stages with 90 inches of stroke with a four (4) inch diameter first Stage YES NO
Manufacturer and part number: MAILHOT CS-90-4-3

X9.17.5 The cylinder has wear and corrosion resistant nitrided cylinder tubes YES NO

X9.17.6 Cylinder warranty: 2 years

X9.17.7 A five (5) degree oscillating cylinder collar protects the cylinder against side stress YES NO

X9.17.8 The body has 6 inch x 8 inch x 1/2 inch structural angle rear hinge assembly installed in the truck chassis frame YES NO

X9.17.9 The rear hinge assembly has cold roll steel hinge pins connecting to 2 1/2 inch hinge blocks with grease zerks YES NO

X9.18 The following features are included:

X9.18.1 Warning light (bed raised) control console mounted YES NO

X9.18.2 Hydraulic oil level reading YES NO

X9.18.3 Safety decals as required YES NO

X9.18.4 304 stainless steel mud guards, 10 gauge x 24 inches x 30 inches permanently attached in front of rear wheels YES NO

Will exhaust stack be aligned for body clearance YES NO

- X9.18.5** 304 stainless steel shovel bracket YES NO
- X9.18.6** 304 stainless steel gussets (board pockets) for 4 inch x 6 inch lumber (rough) located at front and rear and mid-rail YES NO
- 4 inch x 6 inch (rough) oak sideboards supplied and bolted through the gussets YES NO
- Painted aluminum to match the body YES NO
- X9.18.7** Does the unit have air operated tailgate with dual brake chamber air tailgate latches (one on each side) YES NO
- Pivot shafts included stainless steel bushings to eliminate seizing YES NO
- X9.18.9** OSHA approved backup alarm, electronic ambient, adjusts to background noise, 112 dba shock mounted at the rear YES NO
- X9.18.10** OSHA approved body support, both sides YES NO
- X9.18.11** Unit equipped with 49,000 lb. capacity pintle hook centered between rear frame rails YES NO
- Manufacturer and Model: WALLACE FORGE B30
- Height from ground level to center line of pintle "eye": 32 inches
- X9.18.12** Air deflector-hood mounted, blue or smoke YES NO
- Deflector manufacturer's standard width for truck mode YES NO
- Width: approximate_60" determined by truck hood width
- Access to front end hood tilt handle YES NO
- Extra handle YES NO
- X9.18.13** Is screen over hopper provided with 3/8 inch rod across 3/8 inch rod for 2 3/4 inch grid opening (to prevent oversize material from entering hopper during filling) YES NO
- X9.18.14** Is screen frame 1/4 inch by 1 1/2 inch angle iron welded to rods and hinged to 5 inch I-beams YES NO
- X9.19** Lighting: Weather/shock resistant lights LED type with average amp draw between .045 - .72 YES NO
- Manufacturer and Model: TRUCKLITE
- All connections have sure snap plug assemblies and epoxy sealed electronics to protect against shock and vibration YES NO

- X9.19.1 All marker lights 2 1/2 inch diameter flush mount sealed beam lights with integral reflector mounted in rubber base YES NO
- X9.19.2 All ground wires attached with plated steel fasteners YES NO
- X9.19.3 Rear lights shock mounted, recessed oval stop, tail, turn, and recessed oval back up lights mounted in back post YES NO
- Strobe lights marked and switched from dash board location YES NO
- Make and Model: TRUCKLITE #60360Y
- X9.19.4 Center rear I.D. lights three (3) located in truck chassis YES NO
- X9.19.5 Two (2) amber oval LED strobe lights mounted at the front corners of the cab protector, and two (2) amber oval LED strobe lights mounted at each outside corner of the cab protector YES NO
- Make and Model: TRUCKLITE #60360Y
- Strobe lights marked and switched at dash board location YES NO
- X9.19.6 Auxiliary headlights for snowplowing application shock mounted on fender of unit YES NO
- Make and Model: TRUCKLITE _80888
- X9.19.7 Two (2) oval amber LED strobe lights mounted at top of rear corner posts right and left sides and switched in combination with cab protector strobe YES NO
- Manufacturer and Model: TRUCKLITE #60360Y
- X9.19.8 Two (2) rear frame mounted tow hooks YES NO**
- X9.19.9 Lighted license plate bracket YES NO
- X9.20 Are the following at the front or rear both sides of the body:
- X9.20.1 304 stainless steel fold down ladder that locks into position when either in the down or up position YES NO
- X9.20.2 Two (2) 304 stainless grab handles YES NO
- X9.21 Tailgate (304 stainless steel): YES NO
- X9.21.1 Tailgate hinged at top, flame cut hardware, pork chop type off-set hardware to achieve maximum opening of tailgate, but has **provision for pivoting at the bottom** YES NO
- X9.21.2 Flush mount, 1/2 inch flame cut 304 stainless steel tailgate pivots YES NO
- X9.21.3 Heavy duty offset hinge plates, one (1) inch flame cut 304 stainless steel YES NO

- X9.21.4 3/4 inch 304 stainless steel latch hooks with 3/8 inch 304 stainless steel latch plates YES NO
- X9.21.5 Full perimeter 304 stainless steel boxing with all horizontal edges sloped outward YES NO
- X9.21.6 Two (2) 10 gauge 304 stainless steel sloped horizontal braces that are flush with perimeter Boxing** YES NO
- X9.21.7 7 gauge 304 stainless steel 10-12 inch x 24-26 inch rear feedgate** YES NO
- X9.21.8 Cold roll steel upper pins with grease zerks YES NO
- X9.21.9 Top hinge channel has removable, chain tethered keeper pins YES NO
- X9.21.10 Latching action at the bottom of gate operable by the truck driver without leaving the truck cab YES NO
- X9.21.11 Gate is self aligning YES NO
- X9.21.12 Tailgate lower latch pins 304 stainless steel 1 1/4 inch diameter YES NO
- X9.21.13 Body integrated or bolt on 304 stainless steel 15 inch spreader apron YES NO
- X9.22 Design and strength characteristic of the entire body such that the unit structural members and the hoisting system will not suffer any deformation, damage, or structural failure resulting from raising a distributed full payload YES NO
- X9.23 Bumper:
- X9.23.1 Bumper formed out of 1/4 inch roll steel YES NO
Weighs 10.2 lbs. per square foot
- X9.23.2 Bumper face covers all of truck frame (12 inches) with two (2) flanges of 2 1/4 inches top and bottom YES NO
- X9.23.3 Overall width of bumper: 94 inches
- X9.23.4 Bumper straight across front from centerline of truck chassis 21 inches each side of Centerline, making bumper straight 42 inches long in center with ends swept back 30 degrees and 27 inches each side.
- X9.23.4.1 Does bumper have two (2) access holes for utilization of tow hooks YES NO

- X9.23.5 Upper and lower flanges cut and welded solid at point where bumper is bent and ground off smooth YES NO
- X9.23.6 Bumper mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side YES NO
- X9.23.7 Mount angle 1/4 inch x 3 inches x 10 long with four (4) 5/8 inch holes YES NO
- X9.23.8 Paint on front bumper: DARK BLUE
- X9.24 Underbody Tool Box:
- X9.24.1 One (1) tool box mounted under body on right side frame rail YES NO
- X9.24.2 Tool box 18 inches high, 24 inches wide, 18 inches deep cradled by a heavy steel angle frame attached to the truck frame YES NO
- X9.24.3 **Construction** 14 gauge, galvaneal steel with all seams welded YES NO
- X9.24.4 Tool box has horizontal hinged fold down door YES NO
- X9.24.5 Tool box door has cable or chain to hold the door in a horizontal position YES NO
- X9.25 Load covering system electrically or air controlled YES NO
- X9.25.1 Electric motor assembly includes 12 volt direct drive motor with forward and reverse action, cab mounted control switch, resettable circuit breaker YES NO
- X9.25.2 Pivot arm assembly constructed in a two (2) piece bent arm configuration of 1 5/8 inch 1/8 inch gauge steel tubing YES NO
- X9.25.3 Bent arm extensions constructed of 1 3/8 inch 1/4 inch gauge steel tubing**
- X9.25.4 Rear cross constructed of 1 5/8 inch 1/8 inch gauge steel tubing
- X9.25.5 Pivot arm rests included YES NO
- X9.25.6 Underbody spring extension spring DNA inches in length attached to base of pivot arm and of body with articulating spring mounting bracket YES NO
Torsion Spring not extension spring design
- X9.25.7 All steel components finished with manufacturer's recommended rust preventative system with **adequate primer and paint** YES NO
- X9.25.8 Steel cab protector mounted triple bend wind deflector provided YES NO

X9.25.9 Load covering system provided with a 18 oz. black vinyl tarp to fit 10 foot body
 YES NO

X9.25.10 Load covering system supplied with all necessary hardware and delivered to the West Virginia Division of Highways as a complete and operational unit. YES NO

X9.26 Paint: Describe proposed method of painting

X9.26.1 – X9.26.4

 All non stainless steel surfaces will be shot blasted the one coat of primer and one top coat will be
 applied.

X9.27 Detail/Decorative Stripes with Logo:

Will striping and detailing you provide comply with requirements of Section 9.27.1 through 9.27.7
 YES NO

X9.28 All body features considered as standard, but not specifically addressed:

 All included

X9.29 Does the proposed unit meet or exceed the “OSHA OF 1970” and/or subsequent changes
 YES NO

X10.0 SPECIFICATIONS - CENTRAL HYDRAULIC SYSTEM

Is the central hydraulic system designed to operate the following:

A front mounted telescopic dump body hoist cylinder, a hydraulically driven integrated salt and abrasive spreader system requiring the simultaneous operation of two (2) hydraulic motors in two (2) different modes with conveyor reverse, a single acting snowplow lifting cylinder, a snowplow power angle system, and an auxiliary equipment drive circuit
 YES NO

Are provisions made for a future add on hydraulic driven pre-wet system YES NO

Bidder: _____ West Virginia Tractor Company _____

Address: _____ P.O. Box 473 Charleston, WV 25322 _____

Telephone Number: 346-5301 _____

Years company has been an authorized dealer for proposed unit: 5 years

Manufacturer, model, series, and date of manufacture of proposed central hydraulic system:

Component Technology Model SG03040008 West Virginia System Manufactured as required
for contract _____

Is descriptive literature full describing proposed central hydraulic system attached to your bid proposal? YES NO

If NO, refer to specification statement Section 6.6

When will required number of operating manuals, service manuals, and complete parts list be delivered to the Equipment Division at Buckhannon? prior to deliver of unit or At time of delivery

Pre-Wet system:

Does spreader control contain the ability to control a closed loop pre-wet system YES NO

Does system operate using a flow meter feedback circuit YES NO

Does controller software allow for adjustability of pre-wet output by operator, presented in gallons per to Ton YES NO

Is information related to pre-wet application rate and total flow in gallons displayed on the screen while Pre-wet system is active YES NO

Have to stop truck to view operator screen

Will central hydraulic system have minimum 2 year basis warranty including parts and labor excluding abuse and normal wear items YES NO

X10.1 Pump System:

X10.1.1 Pump: Variable volume pressure compensated load sensing axial piston type YES NO

X10.1.2 Front mounting flange and main housing/case of cast iron construction YES NO

Inlet and outlet port section of high strength ductile iron with SAE split flange porting YES NO

- X10.1.3** **Is suction port and associated plumbing sized to allow for minimum inlet restriction between the pump and the suction port on the reservoir** **YES** **NO**
- Does installation comply with pump manufacturers allowable inlet condition specifications** **YES** **NO**
- Is suction plumbing equal to or greater than pump inlet or suction size** **YES** **NO**
- X10.1.4 Is pressure port of the SAE split flange type or ORB side mounted for direct bolt mounting of solenoid shut down valve assembly **YES** **NO**
- X10.1.5 Case drain and load sense signal ports of the SAE O-ring type **YES** **NO**
- Case drain line taken directly to tank without passing through the return line filter **YES** **NO**
- X10.1.6** **Input shaft has a minimum continuous torque rating equal to 200 % of the imposed load when pump is operated at maximum engine rpm, maximum displacement and system pressure** **YES** **NO**
- SAE "C" keyed** **YES** **NO**
- X10.1.7 Front input shaft bearing heavy duty ball or roller type designed for high axial and radial loading **YES** **NO**
- Rear shaft bearing of the high speed and load sleeve type design **YES** **NO**
- Bearings fully lubricated by flooded case oil **YES** **NO**
- X10.1.8 Ramp/swashplate supported by pressure lubricated bearings of the rocker cam or saddle type for high piston load support **YES** **NO**
- Ramp angle positioning by means of dual servo control cylinders for rapid pump response and precise pump output control **YES** **NO**
- X10.1.9 Adjustable load sense and high pressure compensator control valve assembly of the full cartridge or of bolt on housing design for ease of replacement and repair **YES** **NO**
- X10.1.9.1** **System design and components provide flow, pressure and performance requirements with a maximum operating load sense differential pressure of 300 PSI and a maximum standby pressure of 350 PSI for maximum efficiency.**
- If pilot control shifted valving is used, is it designed to be fully functional within this pressure range** **YES** **NO**
- X10.1.9.2 High pressure compensator valve preset to limit the maximum pump output pressure to

maximum required operating pressure plus load sense differential and margin pressure to prevent premature de-stroking of ramp resulting in reduced or insufficient pump output
 YES NO

X10.1.10 Pump Output: Is it capable of providing hoist cylinder extension required for a 50 degree Body dump angle in 13 seconds at 1500 engine RPM at a 1000 PSI system load
 YES NO

X10.1.11 Is the make and model bid in compliance with overall quality of construction, design, and performance of the pump supplied
 YES NO

X10.1.12 Pump:
Manufacturer and Model: REXROTH A10VO71 SERIES 31

X10.1.13 Is pump manufacturers standard product release and design YES NO

X10.1.14 Is pump driveline assembly of the keyed shaft design utilizing a 4 bolt driveshaft flange and matching drive yoke on the pump
 YES NO

X10.1.14.1 Does driveline have a minimum continuous torque rating equal to 200% of the imposed load when pump is operating at maximum system requirements
 YES NO
Manufacturer and Model: SPICER 1310 SERIES

X10.1.14.2 Are dual journals and yokes incorporated to connect the pump shaft and engine drive flange with an angular misalignment no greater than six (6) degrees and not less than two (2) degrees
 YES NO

X10.2 Pump Shutdown System:

X10.2.1 Normally closed, energize to open, solenoid operated control valve of the cartridge and manifold design to be directly bolted to pump pressure port
 YES NO
Normally open, energize to close

Is solenoid electrical connection of the Packard "Weatherpack" type with "SO" cable wiring
 YES NO

X10.2.2 Is valve controlled by a console mounted "Master On" switch with pilot lamp for normal system operation and by a float switch located in hydraulic reservoir to automatically shut off pump pressure port flow to all down stream functions in the event of low hydraulic oil level
 YES NO

X10.2.3 Pressure drop across valve 40 PSI at 40 GPM flow when in the switched position
Nominal valve rating 50 GPM at 3500 PSI

X10.2.4 SAE #6 gauge port equipped with Parker Hannifin Model PD361 diagnostic coupling nipple and protective cap provided for pump output pressure testing to be installed in valve manifold and within an easily accessible mounting position
 YES NO

Installed inline not at manifold

- X10.2.5 Is valve designed to protect the pump from damage when the system is shut down at high pressure and flow operation YES NO
- X10.2.6 Valve manufacturer and model: Certified Power Inc**
- X10.2.7 Central control console mounted audio alarm and warning lamp indicating pump pressure/flow shutdown YES NO
- X10.2.8 Warning lamp press-to-test light and incorporate a switching system into the automatic shutdown assembly to simulate low oil level, shut off pump output flow and test float switch wiring and connection YES NO
- X10.2.9 A console mounted electrical override function switch provided to allow momentary operation of hydraulic functions in emergency situations YES NO
- X10.3 Directional Control Valve Assembly:
- X10.3.1 Valve stacked section type and of closed center circuit design YES NO
- X10.3.2 Each work section pressure and flow compensated with fully integrated load sense network YES NO
- Flow output is relative to spool travel with preset maximum flow rate obtained at maximum spool stroke providing feathering control of operated function YES NO
- X10.3.3 Dump body, snowplow lift, and snowplow power angle section of the manual cable shift type YES NO
- Auxiliary circuit section of the electric solenoid shift type YES NO
- Both ends of each section valve spool sealed with weather resistant caps or cable entry bonnets YES NO
- X10.3.4 Valve assembly flow capacity rating and pressure drop characteristics sufficient to provide for the required pump output and circuit flow rates at the specified maximum load sense differential pressure settings** YES NO
- X10.3.5 All valve ports of the SAE o-ring seal type and of sufficient size to handle required section flow rates at stated load sense differential pressure YES NO
- X10.3.6 Pressure compensation of the spinner and auger sections and also a priority section installed to allow for operation of the plow hoist in any circumstance** YES NO
No priority section
- X10.3.7 Main pressure inlet relief valve provided to reduce system pressure shock loads YES NO

- Is it preset at pressure so as not to interfere with pump pressure compensator and to prevent premature relief opening at system high demand operation YES NO
- X10.3.8 If pilot pressure reducing valve is required for solenoid section control, design meets operating requirements as set forth in Section 10.1.9.1 YES NO**
- Pilot supply and tank venting internal within the valve assembly section YES NO
- X10.3.9 Load sense network high pressure relief provided and preset to limit system maximum operating pressure YES NO
- Set point provides proper pressure margin to pump pressure compensator and high pressure relief valve as to prevent premature loss of required flow rates and pressure capability YES NO
- X10.3.10 SAE #6 gauge port equipped with Parker Hannifin PD361 diagnostic coupling nipple with protective cap for load sense testing to be installed in an easily accessible location YES NO
- X10.3.11 Dump body control section 3-way three (3) position spring centered cylinder spool for operation of a single acting hoist cylinder YES NO
- X10.3.11.1 Full flow workport relief valve installed in power up port YES NO
- Set point to prevent operating pressure from exceeding hoist cylinder normal operating pressure rating YES NO
- X10.3.11.2 Flow limiting system preset at required flow rates provides performance as stated in Section 10.1.10 as maximum for dump body up and down to reduce system over demand operation YES NO
- X10.3.12 Snowplow lift control section is 3-way three (3) position spring centered cylinder spool with float detent for operation of a single acting lift cylinder with pilot controlled load lock valve YES NO
- Does the valve design require a load holding check valve to properly carry the plow weight YES NO
- X10.3.12.1 Full flow workport relief valve preset at maximum required unlock pressure installed in power down workport YES NO
- Workport relief valve installed in power up workport if maximum system pressure output setting exceeds normal operating pressure limit of plow lift cylinder YES NO
- Is a three (3) way valve provided for plow hoist circuit YES NO
- X10.3.12.2 Adjustable flow control installed to limit downward speed of

snowplow YES NO

Flow limiting control system preset for proper plow lift speed to be supplied to reduce over demand operation and to increase system efficiency YES NO

X10.3.13 Snowplow power angle control section is 4 way three (3) position spring centered cylinder spool for operation of worm gear driven type reversing system YES NO

X10.3.13.1 Flow limiting control system preset for proper plow reversing speed to be supplied to reduce over demand operation and to increase system efficiency YES NO

X10.3.14 Auxiliary equipment drive circuit control section 3-way three (3) position spring centered solenoid operated motor spool YES NO

Is the circuit separate and distinct from the spreader control system YES NO

**X10.3.14.1 Flow limiting control system preset to provide 22 GPM at a system load pressure of 2200 PSI.
Pump is capable of supplying this flow rate with engine speed of 1173 RPM
 YES NO**

X10.3.14.2 Is an inline mounted control valve supplied for this operation in place of directional control valve section YES NO

If supplied, is proper interconnections and venting of load sense network system provided YES NO

X10.3.14.3 Is pressure line 3/4" SAE 100R2 hose and manifold mounted at rear of chassis and equipped with Parker Hannifin SH6-62 quick disconnect coupler and protective metal plug YES NO

Is mating nipple SH6-63 with protective cap supplied YES NO

X10.3.14.4 Manufacturer and model of directional and auxiliary circuit valves:

Rexroth MP-18 SERIES

X10.3.15 Is directional control valve assembly with tank in an enclosure to protect it from the elements YES NO

X10.3.16 Pre-Wet Circuit:

X10.3.16.1 Is a separate circuit provided to control an add-on pre-wet system YES NO

X10.3.16.2 Is the hydraulic valve of the sectional type YES OR of the cartridge style contained in a manifold YES

X10.3.16.3 Is a manifold type valve supplied YES NO Is it attached to the main

valve assembly

YES NO

X10.3.16.4

Is all wiring to the pre-wet hydraulic circuit provided as part of the system

YES NO

X10.3.16.5

Is the wiring to control console related to the rest of the pre-wet system (low level float, flow meter connection, etc.) provided as part of the pre-wet package at the time of pre-wet system install

YES NO

X10.4 Spreader Control Valve Assembly:

X10.4.1

Are spinner and conveyor solenoid flow controls of the PWM proportional solenoid type and equipped with manual overrides

YES NO

Are overrides manually adjustable over operating flow range in the event of electrical system failure

YES NO

X10.4.2

Flow control circuits are pressure compensated

YES NO

Provides spinner flow rate of 7 GPM and a conveyor flow rate of 15 GPM

Pressure relief valve system limit circuits to 2200 PSI

X10.4.3

Load sense circuits connected to directional control valve network for proper pump control

YES NO

Does design prevent improper high pressure load sense signal and pressure line loading when spreader valve is not in use and when spreader quick disconnects are uncoupled

YES NO

X10.4.4

Is PWM solenoid control supplied by microprocessor spreader control system

YES NO

Are solenoids capable of 100% PWM signal without failure

YES NO

X10.4.5

Solenoid operated directional control valve and in-cab mounted electrical switch operates spreader conveyor reverse required for front or rear material discharge selection provided

YES NO

X10.4.6

Is electrical switching and indicator light for spreader clogged indication provided

YES NO

X10.4.7

Manufacturer and model of valve: Rexroth MP-18 Series

X10.5 Spreader Control System:

X10.5.1

Dual flow, ground speed oriented spreader control system of the closed loop microprocessor based type with nonvolatile control memory

YES NO

X10.5.2

Automatic calibration and flexibility of programming

YES NO

- X10.5.3 System is capable of operation in ground speed oriented closed loop conveyor feed back, open loop, manual set, blast and unload modes and fully functional in both front and rear material discharge selection** YES NO
- X10.5.4 Automatic switchover with display indication from closed loop to open loop operation in the event of loss of feed rate sensor signal is provided YES NO
- X10.5.5 Control console digital readouts capable of displaying actual application rate, vehicle ground speed, distance of spread route driven and total quantity of material spread YES NO
- X10.5.6 Programming and output cable connection for material and trip information printer and program uploading is provided YES NO
- X10.5.7 Control unit capable of accumulating display information up to 99,999 miles and 999,999 tons of discharged material YES NO
- X10.5.8 Console programming capable of selection, calibration and display of four (4) separate spread materials with independent application rates of each material capable of being set to fixed rates or to rate increments of a preset maximum application rate YES NO
- X10.5.9 A variable digital access code lockout for application rate selection and for system operating parameters is provided YES NO
- Is it a key switch YES NO
- X10.5.10 Backlighted switches and LCD screen utilized for on-board programming and for display readout and application rate selection** YES NO
- Screen is Solid State VFD (Vacuum Fluorescent Display)**
- X10.5.11 **Is material spread width selectable by no less than a 10 position switch with minimum and maximum spinner speed totally programmable through entire flow range** YES NO
- Is spinner speed capable of linking to ground speed for on-off control** YES NO
- X10.5.12 **Does display enunciate error message and sound audio alarm when microprocessor system detects any loss of control or accuracy** YES NO
- X10.5.13 **Will system be fully functional at time of delivery** YES NO
- X10.5.14 Is truck speed sensor compatible with type of speedometer drive system supplied on chassis YES NO
- X10.5.15 Is a built-in ground speed simulator provided either internal to the control or located in the control console YES NO
- X10.5.16 Are all components required for proper installation and operation of control system onto**

truck and spreader units supplied

YES NO

X10.5.17 Manufacturer and model of proposed control system :

Component Technology SG51/SG53 with GL400 Control

X10.6 Central Control Console:

X10.6.1 Mounted between seats within easy access of the driver YES NO

X10.6.1.1 Is warning light (bed raised) control console mounted YES NO

X10.6.2 Will all wiring, valve control cables and electrical harness entry into cab and console sealed with grommets YES NO

X10.6.3 Are remote control valve levers console mounted YES NO

Are all levers clearly marked as to function and operation YES NO

X10.6.3.1 Remote control levers to operate push-pull type cables with .250" diameter stainless steel rod ends YES NO

X10.6.3.2 Is inner cable member 18-8 stainless steel armor wrapped construction with a low resistance nylon liner and polyethylene covered tempered steel wire conduit YES NO

X10.6.3.3 Is cable to valve connection of the weather resistant bonneted type YES NO

X10.6.3.4 Is hoist control lever OSHA compliant (hoist interlock) YES NO

X10.6.4 Are central control console or dash mounted rocker switches with indicator lamps provided for strobe lights, spreader light and plow lights isolated from all hydraulic system control circuits YES NO

X10.6.4.1 Are interconnections and cables installed and ready for operation YES NO

X10.6.4.2 Is hydraulic system automatic shutdown system and control switching relay controlled YES NO

X10.6.4.3 Relay mounted within the cab YES NO

X10.6.4.4 Is an access plate to internal wiring provided YES NO

X10.7 Hydraulic Reservoir and Valve Enclosure Assembly:

X10.7.1 Hydraulic reservoir 40 gallon operated capacity flex mounted to the chassis frame rail and valve enclosure assembly YES NO

X10.7.2 Tank constructed of 7 gauge 304 stainless steel YES NO

- X10.7.3 Tank equipped with a combination oil level sight glass and thermometer YES NO
- X10.7.4 Tank equipped with a pressurized ten (10) micron filler/breather cap with removable 500 micron strainer YES NO
- X10.7.5 Is an internal steel baffle provided within the tank YES NO
- X10.7.6 Tank stenciled with **minimum of 1 1/2" high "Hydraulic Oil"** YES NO
- X10.7.7 Tank level switch connection "SO" type wiring and mounted within tank/valve enclosure to protect it from elements YES NO
- X10.7.8 Pump supply suction port 2 inches NPT and system report port 1 1/4 inches NPT**
- X10.8 Filtration:
- X10.8.1 Manufacturers standard filtration to adequately protect the hydraulic system from damage YES NO
- X10.8.2 Return line filter isolated from reservoir by a full flow non-restrictive type quarter turn brass ball valve if filter is not installed in the reservoir YES NO
- X10.8.3 Each filter equipped with a differential pressure switch to indicate filter clogged condition by means of a console mounted indicator lamp YES NO
- X10.8.4 One (1) extra replacement filter for each assembly is provided for each truck**
 YES NO
- X10.8.5 Filter assemblies positioned as close to reservoir as possible and in an easily accessible service location YES NO
- X10.9 Hoses and Fittings:
- X10.9.1 Each hose assembly (hose with hose ends) except for suction hose is fitted with JIC swivel connections on ends where connection to system component is made YES NO
- X10.9.2 All pressure line hoses meet or exceed SAE Specification 100R2 and are equal to Gates high pressure hose, type C2AT for sizes up to and including 1 inch ID YES NO
- X10.9.3 Suction hose 2 inch nominal ID and meet SAE Specification 100R4, braided fiber, spiral wire reinforced, rubber covered hose with replaceable bolt-on type fittings YES NO
- X10.9.4 All hydraulic hoses fully cleaned on interior, installed, and ready for operation YES NO
- X10.9.5 Are grommets used when routing hoses through steel bracketing or frame members YES NO
- X10.9.6 Snap tite quick disconnects (manifold mounted) supplied for the forward and rear spinner 1/2 Inch pressure and return lines**
 YES NO

- X10.9.7 Are all fittings and connectors steel type designed for high pressure hydraulic system use YES NO
- X10.9.8 Pipe thread ported components and connectors are only used when the specific component is not available with SAE or JIC porting YES NO
- X10.9.9 Are all pipe thread connectors used coated with liquid Teflon pipe sealer prior to assembly YES NO
- X10.9.10 Hoses that run to the front of truck chassis for snowplow functions are manifold mounted behind the front bumper with sufficient access for pump service and snowplow hitch installation YES NO
- X10.9.11 Are snowplow lines equipped with complete 1/2 inch "VH" series Snap-tite quick disconnects (coupler and nipple supplied) and metal caps and plugs YES NO

X10.10 Items not specifically stated but are necessary for proper system installation and operation are supplied and comply with recommended hydraulic industry standards:

X10.11 Will initial servicing and pre-testing of hydraulic system be included for:

- X10.11.1 Initial fill of reservoir with a high grade 32 AW hydraulic fluid to approximately 40 gallon level, marked on sight glass YES NO
- X10.11.2 Start-up and initial run of hydraulic system, checking for leaks, excessive heat, system efficiency YES NO
 - Will you replace any defective component YES NO
 - Will you cover any defects discovered at time of plow installation if equipment is not available at time of initial test of plow circuits YES NO
- X10.11.3 Refill reservoir to the 40 gallon operating level YES NO
- X10.12 If any hydraulic lines are located within 10 inches of exhaust system are they metal lines and insulated YES NO
- X10.13 Are detailed component specifications, product literature, system component layout drawing with bill of materials and full functional hydraulic system schematics in accordance with JIC and ANSI-Y32 format attached with your bid YES NO

X10.14 If successful vendor, will you provide WVDOH with a complete list of all filters required for normal maintenance on proposed unit YES NO

X10.15 Explain your training sessions with each purchase order (based on a purchase 1-25 units) covering the operation, maintenance, trouble shooting and calibration/programming of the hydraulic system and spreader controls and where will they be held:

Three (3) One (1) Day Training Sessions per PO _____

PREBID ADDENDUM #3
OPEN END CONTRACT
709EC011

CHANGES TO BIDDER'S EVALUATION REPORT:

FROM:
TITLE: 33,000 GVW CAB AND CHASSIS, STAINLESS STEEL DUMP BODY, AND
PISTON PUMP HYDRAULIC SYSTEM

TO:
TITLE: MINIMUM 33,000 GVW CAB AND CHASSIS, STAINLESS STEEL DUMP
BODY, AND PISTON PUMP HYDRAULIC SYSTEM

NO CHANGE REQUIRED:
1.0 PURPOSE

NO CHANGE REQUIRED:
X4.2.2 Delivery date of balance of completed units: _____ calendar days after receipt of
purchase agreement

NO CHANGE REQUIRED:
X4.2.1 Delivery date of completed representative unit: _____ calendar days after receipt
of purchase agreement

NO CHANGE REQUIRED:
X6.1 Manufacturer, model, series, and date of manufacture of proposed unit:

Cab and Chassis: INTERNATIONAL 7300 SFA 4X2

Dump Body: _____

Piston Pump Hydraulics: _____

Is descriptive literature, fully describing proposed unit attached to your bid?
✓ YES _____ NO

If not, why? _____

LEAVE AS WRITTEN:

X8.5.2 Seats:

Driver – Fully adjustable high back with head rest, air rides, bucket style; seat includes air lumbar, hip bolsters, side bolsters, and back bolsters, with full cloth on entire seat _____ YES _____ NO

FROM:

X8.5.7.8 **Manufacturers stationary grille or grille with cutout area to allow tilt hood to clear snow plow mount** YES _____ NO
Bug screen provided behind grille YES _____ NO

TO:

X8.5.7.8 **Manufacturer shall provide for stationary grille, grille with cutout area, or a hood which tilts for easy access to the engine to allow tilt hood to clear snow plow mount** YES _____ NO
Bug screen provided behind grille YES _____ NO

DELETE:

X8.5.7.11 Does unit include kit for front mounted CB radio and all power and ground wiring to include co-ax cable, antenna, speaker, etc. **DELETE**
All cable and wiring routed using grommets and wire looms **DELETE**

Radio make and model: **DELETE**

LEAVE AS WRITTEN:

X8.6 Engine:

Make: INTERNATIONAL Model: DT466
255 HP Torque @ 660 lb. ft.

LEAVE AS WRITTEN:

X8.6.2 Fuel heater/water separator mounted inside engine compartment _____ YES _____ NO

Manufacturer: _____

NO CHANGE REQUIRED:

X8.9.2.1 Cold Crank AMPS 1950 AMPS with sealed terminals

LEAVE AS WRITTEN:

X8.9.6.4 Will manufacturer provide body builder circuits – three (3) switches located in the dash instrument panel with one (1) weather protected body builder connection box or module located at the rear under cab YES NO

Is the power module 20 amps per channel, 8- amps maximum output
 YES NO

Do the dash switches control the power module with LED backlighting
 YES NO

FROM:

X9.8.7 For future potential pre-wet application, will the combination body be capable of accepting frame mounted approximately 85 gallon poly liquid tanks
 YES NO

Will the body be designed to allow maximum protection to the tanks
 YES NO

TO:

X9.8.7 For future potential pre-wet application, will the combination body be capable of accepting fender mounted approximately 75 gallon poly liquid tanks
 YES NO

Will the body be designed to allow maximum protection to the tanks
 YES NO

LEAVE AS WRITTEN:

X9.12 Is the body a unibody design – no crossmember YES NO

FROM:

X9.16.5 The front spinner bracket and chute is mounted to the truck chassis frame and for rear spreading capability the rear spinner chute and brackets are installed by the successful vendor YES NO

TO:

X9.16.5 Is the front spinner bracket and chute mounted to the truck chassis frame and installed by successful vendor YES NO

FROM:

X9.16.6 The spinner assembly is universal and may be used at front or rear YES NO

TO:

X9.16.6 The spinner is universal and mounted at the front for delivery and may be used at front or rear YES NO

LEAVE AS WRITTEN:

X9.16.9 Is the spinner 409 or 304 stainless steel YES NO

LEAVE AS WRITTEN:

X9.17.1 Trunnion Mount YES NO

FROM:

X9.17.4 Hoist cylinder has three (3) stages with inches of stroke with a four (4) inch diameter first stage YES NO
 Manufacturer and part number: _____

TO:

X9.17.4 Single acting hoist cylinder has three (3) stages with inches of stroke with a four (4) inch diameter first stage YES NO

Manufacturer and part number: _____

LEAVE AS WRITTEN:

X9.17.7 A five (5) degree oscillating cylinder collar protects the cylinder against side Stress YES NO

X5.0 AWARD CRITERIA;

X5.1 Prices for units:

1-25 _____ per unit
26-50 _____ per unit
51 and over _____ per unit

X6.0 SPECIFICATIONS - GENERAL

X6.1 Manufacturer, model, series, and date of manufacture of proposed unit:

Cab and Chassis: _____

Dump Body: Viking Proline CB10/11 _____

Piston Pump Hydraulics: Component Technology Model SG03040008 West Virginia _____

Is descriptive literature, fully describing proposed unit attached to your bid? YES NO

If not, why? _____

X6.2 Will the required number of service manuals, and complete parts list be delivered to the Equipment Division at Buckhannon upon completion of delivery of total units?

YES NO

Will the required Equipment Preventive Maintenance Form (Section X6.2 of Bidders Evaluation Report) be provided upon inspection of the pilot unit?

YES NO

X6.3 TRAINING:

Will training seminar be conducted on Preventive Maintenance, Operator and Mechanic Training
 YES NO

Will you conduct training with each purchase order against this open end contract?
 YES NO

Will training be conducted within 2 working days from the delivery of the pilot unit on the individual purchase order?
 YES NO

If NO, explain time frame _____

Will an Operator's Manual be furnished directly to Training Academy prior to the delivery of the pilot?
 YES NO

X6.4 If you are the successful vendor, will you furnish all training aids, i.e., videos, projectors, required in conducting the training?
 YES NO

X6.4.1 Will all manuals, booklets, etc. explaining preventive maintenance, operator procedures, and service schedule be delivered with each unit?
 YES NO
If NO, explain _____

X6.5 WARRANTY AND SERVICE POLICY

Will the warranty and service you provide comply with all areas as stated in Section 6.5 of specifications
 YES NO

Is warranty literature attached?
 YES NO

Is a minimum two (2) year bumper to bumper basic parts and labor warranty excluding abuse and normal wear items included?
 YES NO

Describe:
_____ Two years parts and labor bumper to bumper _____

X6.6 EVALUATION COMMITTEE REQUIREMENTS

Is all component specifications, product literature, component models provided for Evaluation Committee bid determination? YES NO

X6.7 Will all parts, equipment, accessories, material, design and performance characteristics not specified herein, but which are necessary to provide a complete unit, be furnished with the unit and conform in strength, quality of material, and quality of workmanship to those which are advertised and provided to the market in general by the unit industry?
 YES NO

X6.7.1 Are all parts and accessories adequate and regularly supplied as standard to be included except those which may be duplications of specifications herein, and except these by specification are not to be furnished?
 YES NO

X6.7.2 Are all standard safety features that are required by Federal and State statutes of law included?
 YES NO

X7.0 SPECIFICATIONS OF THE QUOTED UNIT

The bidder should complete the following schedule in order for the Division to compare the actual bid unit to the specifications. Should the bidder except a requirement, then such exception may be only on the basis that such feature is not offered by the manufacturer. The Division will have the sole discretion as to whether the bidder's substitution meets the requirements of the specifications.

X8.0 SPECIFICATIONS – CAB AND CHASSIS

Manufacturer: _____ Model: _____

X8.1 GVW plate rating: _____ lbs.

X8.2 Cab to axle dimension: _____ Inches.

X8.2.1 Cab to end of frame: _____ inches

X8.3 Wheelbase: _____ inches, set forward design for our snowplow applications YES NO

X8.4 Frame: Will you provide a frame that meets or exceeds all Federal requirements for GVWR specified that has an integral front frame extension with no frame cutouts except to allow engine installation? YES NO

Will extension extend forward of the grille area a minimum of 12 inches YES NO

Warranty on frame: _____ years and conform to the following:

WEST VIRGINIA TRACTOR COMPANY

709EC011 Exceptions to Specifications

- 9.25.6 The load covering system has a torsion spring design in lieu of an extension spring design.

NO CHANGE REQUIRED:

X8.9.2.1 Cold Crank AMPS _____ AMPS with sealed terminals

LEAVE AS WRITTEN:

X8.9.6.4 Will manufacturer provide body builder circuits – three (3) switches located in the dash instrument panel with one (1) weather protected body builder connection box or module located at the rear under cab _____ YES _____ NO

**Is the power module 20 amps per channel, 8- amps maximum output
_____ YES _____ NO**

**Do the dash switches control the power module with LED backlighting
_____ YES _____ NO**

FROM:

**X9.8.7 For future potential pre-wet application, will the combination body be capable of accepting frame mounted approximately 85 gallon poly liquid tanks
_____ YES _____ NO**

**Will the body be designed to allow maximum protection to the tanks
_____ YES _____ NO**

TO:

**X9.8.7 For future potential pre-wet application, will the combination body be capable of accepting fender mounted approximately 75 gallon poly liquid tanks
 x YES _____ NO**

**Will the body be designed to allow maximum protection to the tanks
 x YES _____ NO**

LEAVE AS WRITTEN:

X9.12 Is the body a unibody design – no crossmember x YES _____ NO

FROM:

X9.12.1 The body has one (1) piece sides and floor which incorporates a sloping floor to side radius to adequately feed material to the conveyor chain YES NO

TO:

X9.12.1 Does the body have one (1) piece sides and floor which incorporates a sloping floor to side radius x YES NO

Degree of slope to adequately feed material to the conveyor chain 35 °

LEAVE AS WRITTEN:

X9.13 The boxed top rail is sloped inward to shed debris x YES NO

FROM:

X9.14 Full length 304 stainless steel integral rear fenders which incorporate prewet liquid reservoirs (85 gallon) YES NO

TO:

X9.14 Full length 304 stainless steel integral rear fenders which incorporate prewet liquid reservoirs (75 gallon) x YES NO

LEAVE AS WRITTEN:

X9.15.5 Conveyor width – 25 inches or more x YES NO

LEAVE AS WRITTEN:

X9.15.7 Conveyor is driven with 25:1 planetary gearbox drives or equal on both the front and rear shafts with 5.0 CIR hydraulic motors x YES NO

One (1) motor has an integral conveyor speed sensor x YES NO

DELETE:

X9.16.3 For rear spreading a (DELETE) gauge 304 stainless steel (DELETE) x (DELETE) inch rear feedgate in the body tailgate

LEAVE AS WRITTEN:

X9.18.7 Does the unit have air operated tailgate with dual brake chamber air tailgate latches (one on each side) YES NO

Pivot shafts included stainless steel bushings to eliminate seizing YES NO

DELETE:

X9.18.8 1 ½ inch 304 stainless steel grip strut walk rail installed on both sides of the body (DELETE)

FROM:

X9.25.9 Load covering system provided with a _____ oz. black vinyl tarp to fit 14 foot 6 inch body YES NO

TO:

X9.25.9 Load covering system provided with a 18 oz. black vinyl tarp to fit 10 foot body YES NO

FROM

X10.3.13 Snowplow power angle control section is 4 way three (3) position spring centered motor spool for operation of worm gear driven type reversing system YES NO

TO:

X10.3.13 Snowplow power angle control section is 4 way three (3) position spring centered cylinder spool for operation of a power angle plow YES NO

Directional Control Valve Load Sense Pressure Compensated MP18

RA 64 965/01.05 1/20

Replaces: 10.96

Series 30

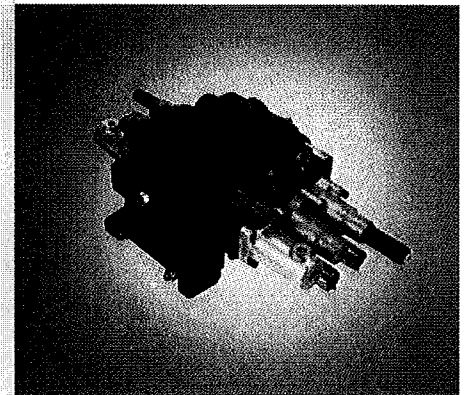
Nominal pressure 3625 psi (250 bar) pump side
Nominal pressure 4200 psi (290 bar) actuator side
Max. flow

— pump side:

- 40 GPM (150 l/min) unloading and priority inlet element
- 50 GPM (189 l/min) standard closed center inlet element

— actuator side:

- 35 GPM (133 l/min) consult factory for higher flow rates



Functional Description

MP18, series 30 mobile stack type valves are load sensing pressure compensated valves. They control the volume, direction of oil flow and maintain a constant flow regardless of changing load pressures.

An advantage of the MP18 is that the starting point for movement of the function always remains the same, i.e., a specified control spool position always has the same metering characteristics. This is accomplished by a compensating spool in each section.

While the main spool is in neutral, the primary shuttle and secondary shuttle are vented to tank. When the main spool is operated, the load pressure is directed via the primary shuttle to the spring end of the pressure compensator spool. The section compensator now moves to the open position. Dependent on the pressure drop between the section compensator and the control spool opening, a specific volume now flows to the function. The load signal also simultaneously communicates to the secondary shuttle and on to the system compensating device. The system compensating device can be either an inlet compensator (open center unloading inlet) in the case of a fixed pump system or a pump compensator control in the case of a variable pump system.

Features

- Parallel and series parallel type valve with wide range of section circuitry including 3-way, 4-way, float, motor control, 3 position and priority. Available with both flow and pressure control spools.
- May be combined with MP18 series 10 sections to provide series parallel circuitry.
- Section compensator allows each section to operate at a predetermined flow rate independent of pump discharge flow and pressure.
- Low spool operating forces possible by elimination of series by-pass circuits through the valve. This lends itself to remote operation of valve spools.
- Variety of main spool operators including manual, hydraulic, electro-hydraulic (proportional or on-off control), and mechanical detents. Electro-hydraulic and hydraulic remote also available with manual handle override.
- Section with pressure regulator or remote regulator port allows each section to operate at a predetermined maximum pressure level independent of pump discharge pressure.
- Low neutral pressure drop with open center inlet section, pressure drop remains constant regardless of number of sections. Pump discharge flow is directed back to the reservoir at low pressure through the unloading valve located within inlet section.
- Primary relief in open center unloading inlet section and priority port relief in priority inlet section which provides accurate pressure control over a wide flow range

Ordering Code

Fluid

Petroleum oil (For operation with other fluids, consult a Rexroth Application Engineer)

MP 18-30 / /

Number of Sections

Directional control sections (8 sections maximum)

Directional Control Valve

Mobile stack valve, pressure compensated, Series 20 **MP 18**

Inlet () Indicate required pressure in bar.

Standard closed center inlet	C	Closed center priority ①	P()
Closed center top port	CT	Open center ①	O()
Closed center top ported with spike relief ①	CG()	Open center with back pressure check ①	OB()
Closed center top ported with plug ①	CQ	Open center with power beyond ①	OP()

Directional Control Section

High Boy Section	HB	High Boy Regenerative	HBR
High Boy Priority	HBP		

Schematic Designation () Indicate limited flow in liters/minute after spool schematic designation.

1	5	9	13
2	6	10	14
3	7	11	
4	8	12	16

All spool designations, except number 6, 10, and 16, are available with flow limited main spools for improved metering characteristics. If flow limited spool is required, add in () the flow in liters/min. after the spool designation. Available flow limited main spools are: 7 gpm (34 lpm), 11 gpm (42 lpm), 15 gpm (57 lpm) and 24 gpm (91 lpm). Consult factory for special customer requirements in main spool design if quantities are justified.

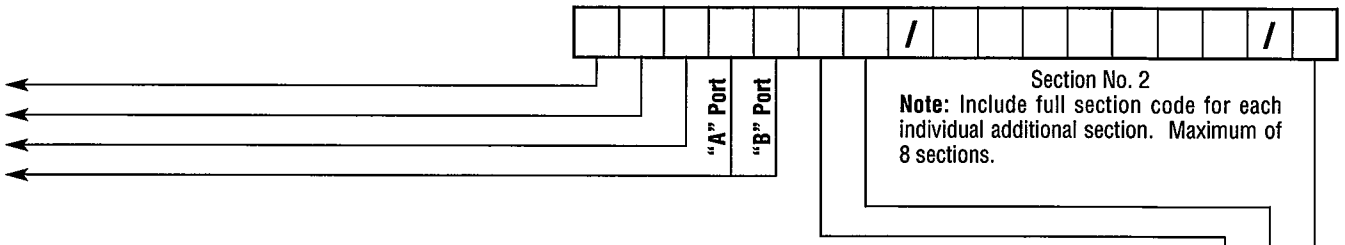
Spool Operation () Indicate required DC voltage (12v or 24v) or pressure release detent setting in bar.

Spring centered	A	Hydraulic pilot operated	H
Spring centered with stroke limiter on A & B	A1	Hydraulic pilot operated with stroke limiters ②	H1()
Spring centered with stroke limiter on A	A2	Hydraulic pilot operated with manual handle override	H2
Mechanical detent A and B	B	Electrical proportional control	L()
Spring centered from A mechanical detent B	B1	Electrical proportional control with stroke limiters ③	L1()
Spring centered from B mechanical detent A	B2	Electrical prop. control with manual handle override ③	L2()
Spring centered from A & B mechanical detent float	B3	Electrical on/off control	M()
Multi-position detent	B4	Electrical on/off control with stroke limiters ④	M1()
Mechanical detent A, B, and float	B5	Electrical on/off control with manual handle override ④	M2()
Mechanical detent A and float spring centered from B	B6		

Port Options () Indicate the required secondary relief setting in bar.

Pilot operated relief & anti-cavitation check valve	G()
Proportional combination pilot operated relief & anti-cavitation check valve	P()
Anti-cavitation check valve	E
Machined for port option, with plug	Q





Section No. 2
Note: Include full section code for each individual additional section. Maximum of 8 sections.

Compensator Option

Standard Compensator	0
Adjustable flow control	1
Fixed-flow hollow compensator. Specify flow in liters/min.: 5 gpm (19 lpm), 10 gpm (38 lpm), 15 gpm (57 lpm), 20 gpm (76 lpm) ⑤	2
Load check	3

Section Compensator Pressure Control Option () Indicate required settings in bar.

No compensator pressure control (standard)	A
Compensator pressure regulator	B()
Port for remote compensator pressure regulation ④	C

End Cover

Standard end cover	L
End cover with pressure reducing valve integral for electro-hydraulic controlled sections.	Q
End cover with external supply pressure port for electro-hydraulic controlled sections.	R
End cover with pressure regulator for pilot supply port.	S
To add P, T or LS ports to end cover, add P, T or L in () after end cover codes L, Q, R or S. Example: L(PTL) would indicate a pressure, tank and load sense carry over ports in the end cover.	()

- ① Please consult factory when ordering.
- ② H1() designate which ports are to be stroke limited (A, B, or A & B).
- ③ All electrical main spool operation codes (L, L1, L2, M, M1, M2) must be sold as complete valve assemblies.
 Codes L1 or M1 designate stroke limiter. Specify which ports are to be stroke limited (A, B, or A & B).
 All electrical sections must be assembled in line from end cover Q or R.
- ④ Compensator pressure options (B, or C) not available in all section assemblies.
 Not available when spool operation codes B–B6 or when used in conjunction with secondary work port options.
 Port for remote compensator pressure regulation not available in electrical solenoid operated sections.
- ⑤ Not available in HBP sections.

Technical Data

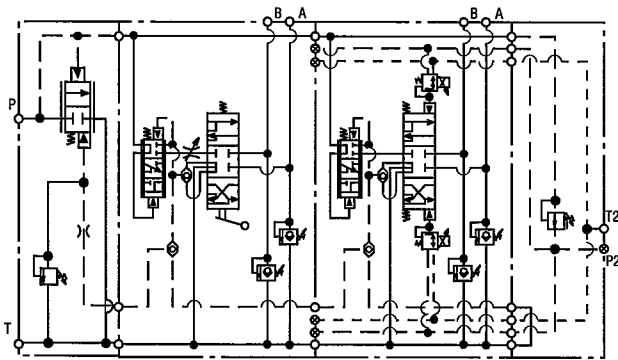
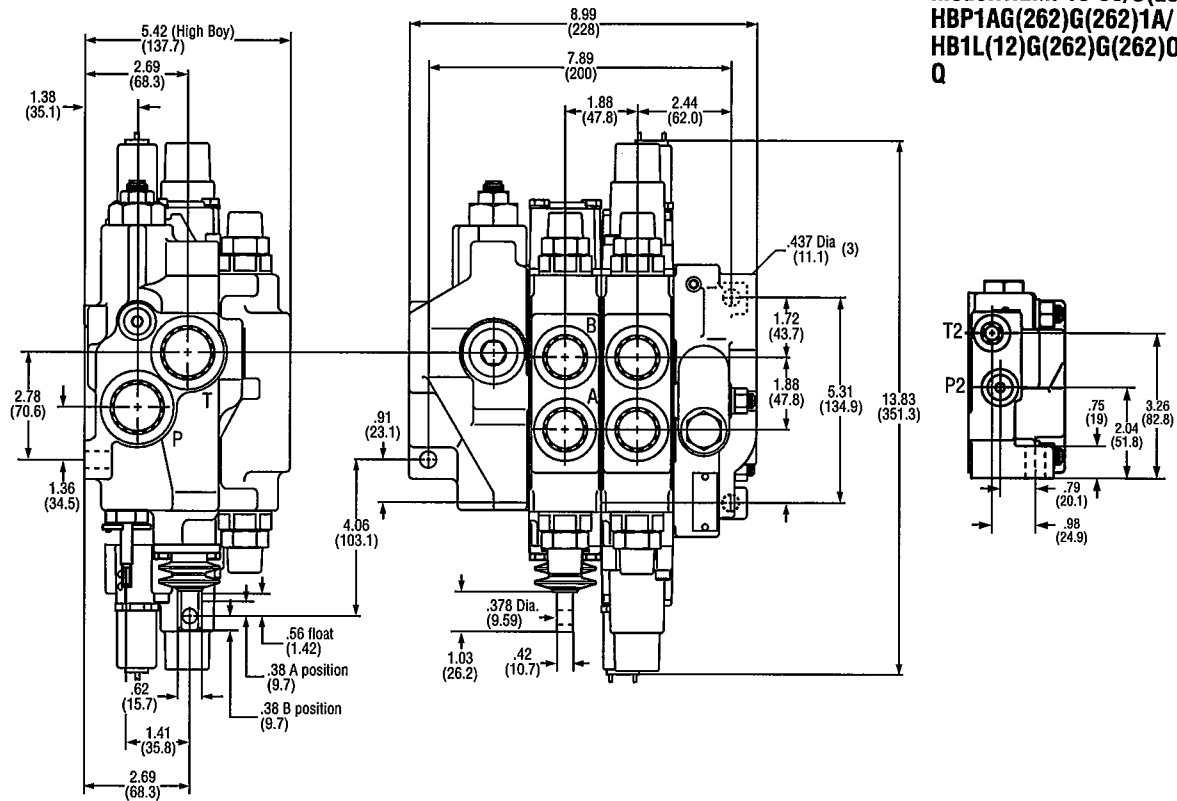
MP18 Specifications

Flow range	GPM (L/min)	35 (133)	<i>Note... Consult factory for higher flow rates</i>
Primary operating pressure	Port T PSI (bar)	290 (20)*	
	Port P PSI (bar)	3625 (250)*	
Secondary relief valve setting	Port A, B PSI (bar)	4200 (290)*	
Hydraulic fluid		Petroleum oils (HM, HL, HLP)	
Fluid temperature range	° F (° C)	t _{min} = -4° F (-20) t _{max} = 158° F (70)	
Viscosity range	SSU (mm ² /s)	35–1760 (10–380) (dependent upon fluid)	
Cleanliness level		19/15 according to ISO 4406	

*For applications outside these parameters, please consult Rexroth

Installation Dimensions

**Model...2MP18-30/O(250)/
HBP1AG(262)G(262)1A/
HB1L(12)G(262)G(262)OA/
Q**



Regen and Top Ported Closed Center Inlets with Standard End Cover

Number of Directional Control Spools	Overall Length A		Bolt Hole Centers B	
	inches	millimeters	inches	millimeters
1	6.60	167.6	5.79	147.0
2	8.48	215.3	7.67	194.7
3	10.36	263.0	9.55	242.5
4	12.24	310.77	11.43	290.2
5	14.11	358.5	13.30	337.9
6	15.99	406.2	15.18	385.7
7	17.87	454.0	17.06	433.4
8	19.75	501.7	18.94	481.1

Closed Center Inlet with Standard End Cover

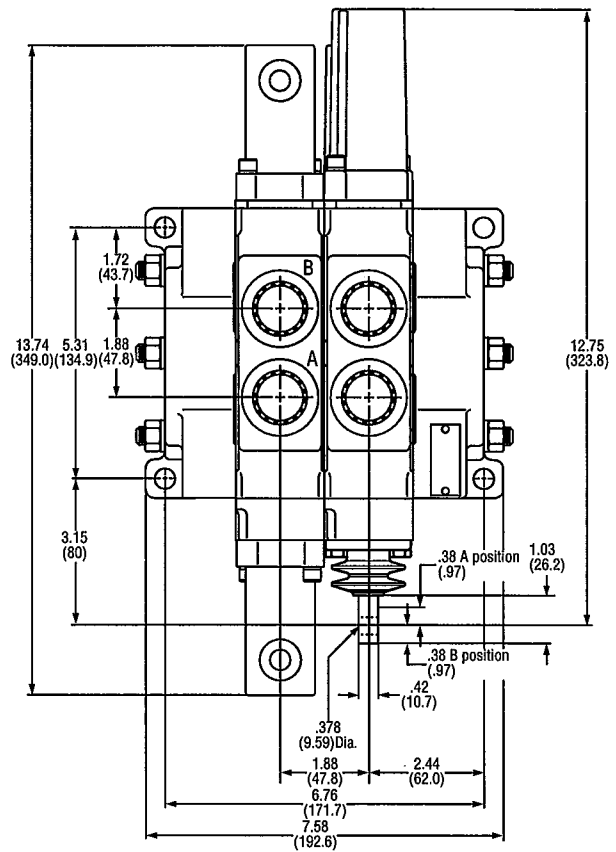
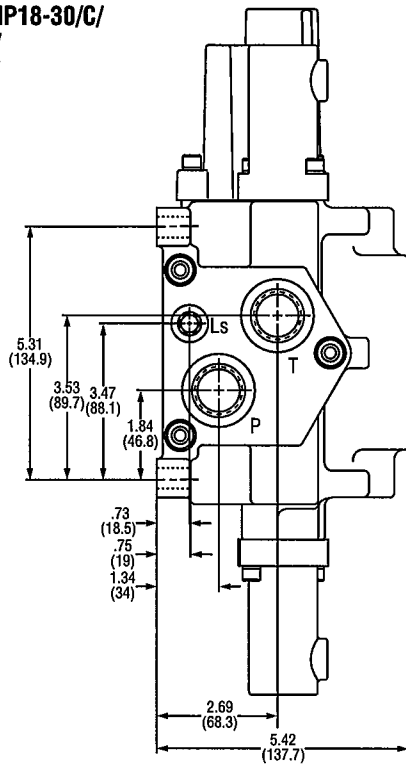
Number of Directional Control Spools	Overall Length A		Bolt Hole Centers B	
	inches	millimeters	inches	millimeters
1	5.70	144.8	4.88	124.0
2	7.58	192.6	6.76	171.7
3	9.46	240.3	8.64	219.5
4	11.34	288.0	10.52	267.2
5	13.22	335.7	12.40	314.9
6	15.10	383.5	14.28	362.6
7	16.98	431.2	16.16	410.4
8	18.86	478.9	18.04	458.0

Priority and all Open Center Inlets with Standard End Cover

Number of Directional Control Spools	Overall Length A		Bolt Hole Centers B	
	inches	millimeters	inches	millimeters
1	6.86	174.3	6.01	152.6
2	8.74	222.0	7.89	200.3
3	10.62	269.8	9.77	248.0
4	12.50	317.5	11.64	295.8
5	14.38	365.2	13.52	343.5
6	16.26	412.9	15.40	391.2
7	18.14	460.7	17.28	438.9
8	20.02	508.4	19.16	486.7

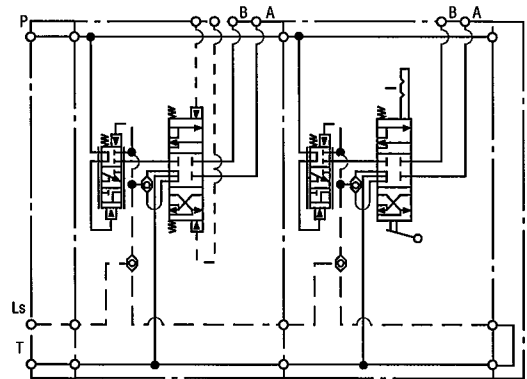
Installation Dimensions

Model...2MP18-30/C/
HB1HZZO/
HB1BZZO/
L



Standard Port Sizes (SAE)

Inlet	P...Inlet	T...Tank	PB	PR	LS	PRLS
C	#12	#12			#6	
C	#16	#16			#6	
CG	#16	#16			#6	
CQ	#16	#16			#6	
P	#16	#16		#12, 8, 6	#6	#6
O	#16	#16				
OB	#16		#12			
OP	#16	#16	#12			
Work Section	A Work Port	B Work Port				
HB	#12	#12				
HBP	#12	#12				
HBR	#12	#12				
End Covers	P...Inlet	T...Tank	LS...Load Sense	P2...Pilot Supply	T2...Pilot Drain	
L(PTL)	#12	#12	#4			
L(PTL)	#16	#16	#6			
Q(PTL)	#16	#16	#6		#4	
R(PTL)	#16	#16	#6	#4	#4	
S(PTL)	#16	#16	#6	#4	#4	
Hydraulic Housing #4 or #6						

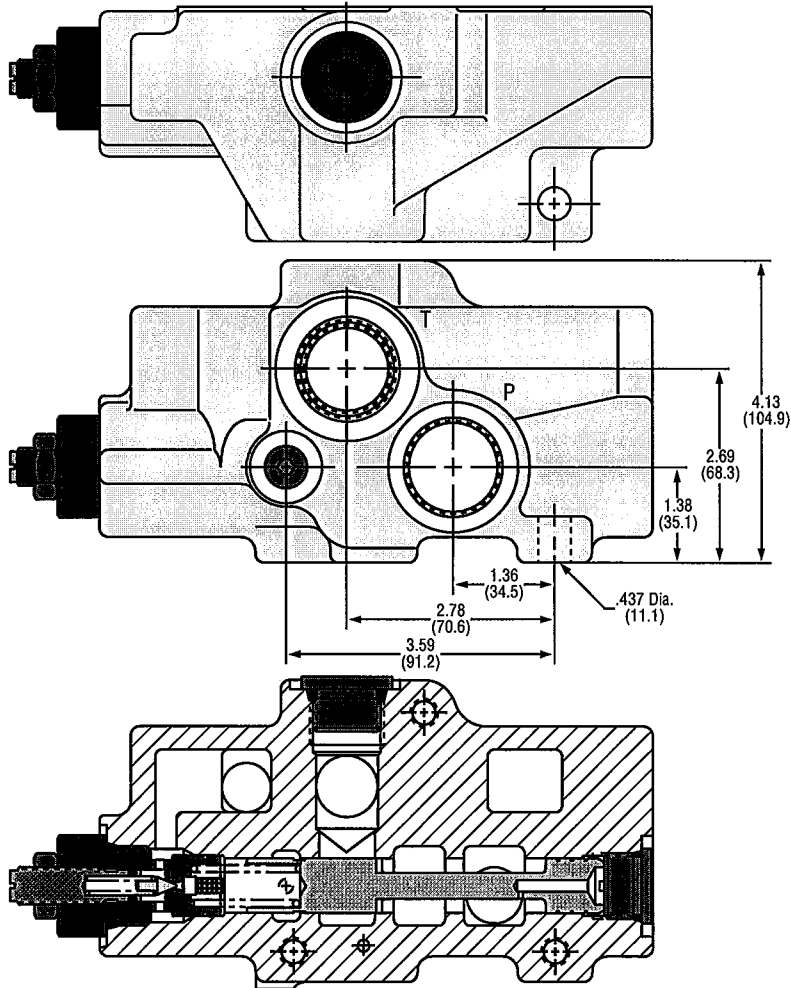


Note: If stack valve assembly has one of the optional end covers (Q, R, or S) the overall length is .250 inches (6.35 mm) longer than the matching valve assembly with standard end cover. Bolt hole mounting dimensions do not change.

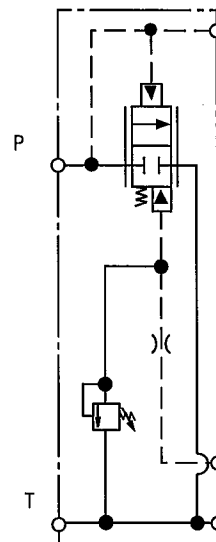
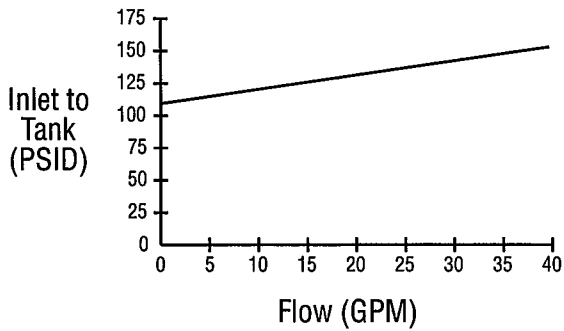
Inlets

Open Center Unloading Inlet

Code...0



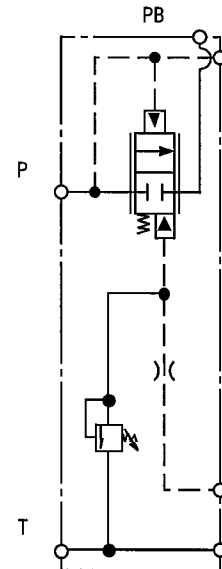
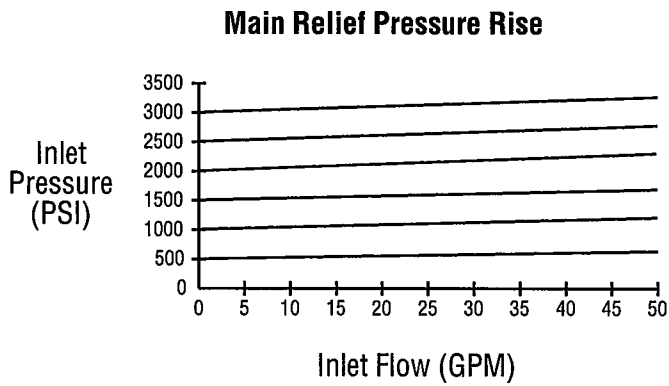
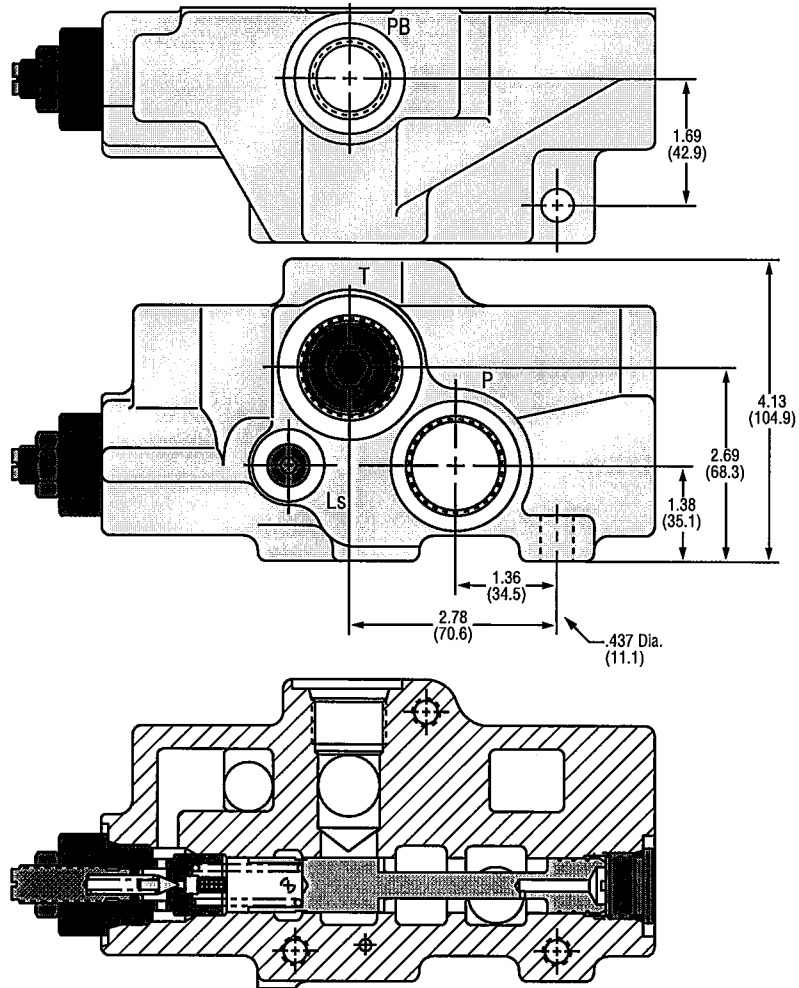
**Neutral Pressure Drop
(Open Center Inlet)**



Inlets

**Open Center Unloading Inlet
with Power Beyond**

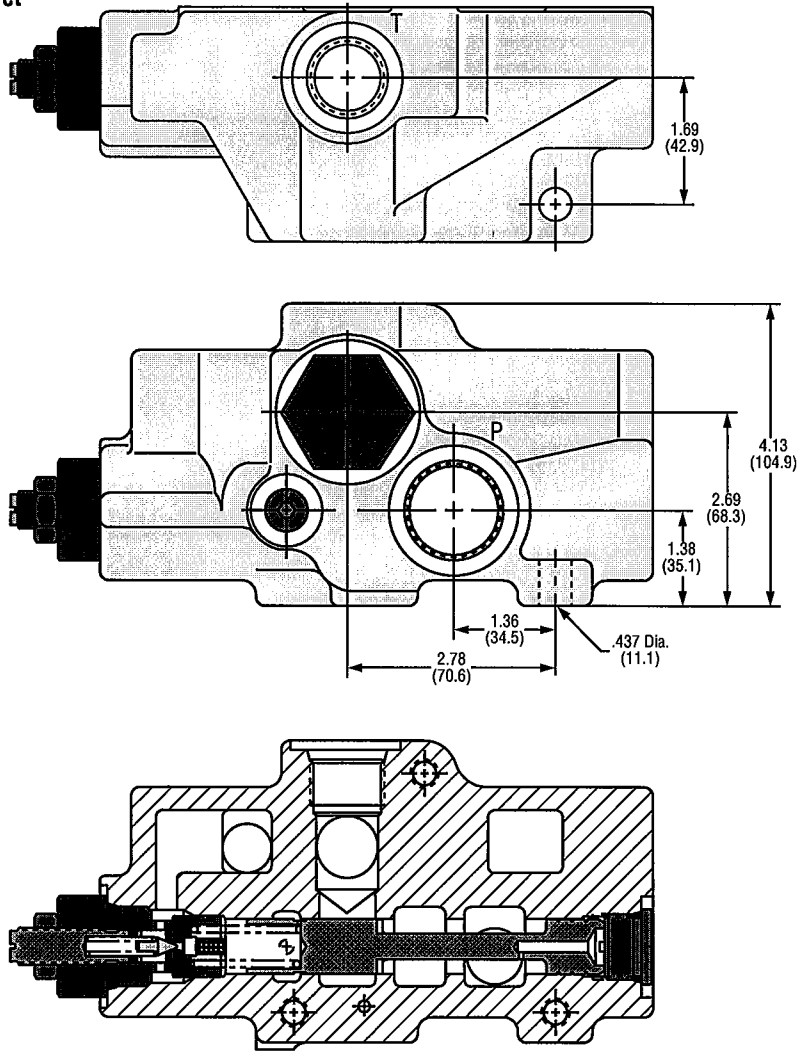
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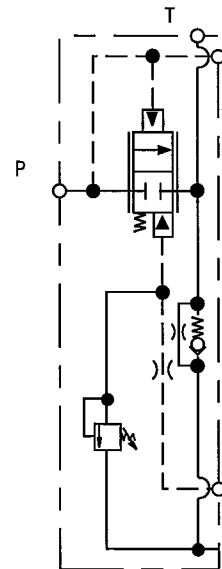
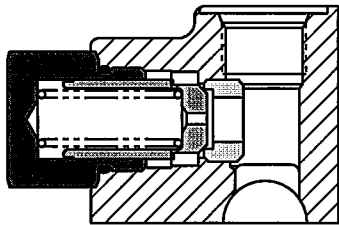
Inlets

Open Center Unloading Inlet
with Back Pressure Check

Code...OB



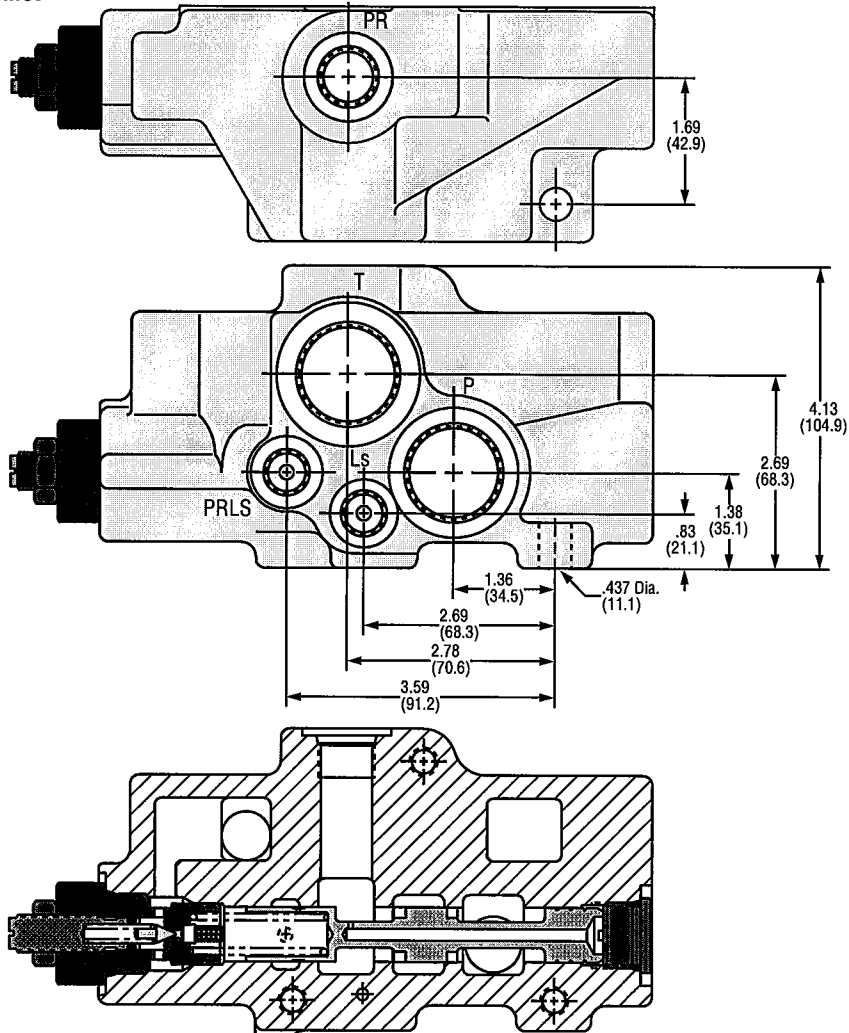
Back Pressure Check



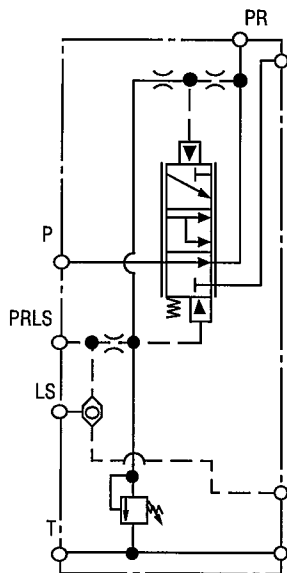
Inlet

Closed Center Priority Inlet

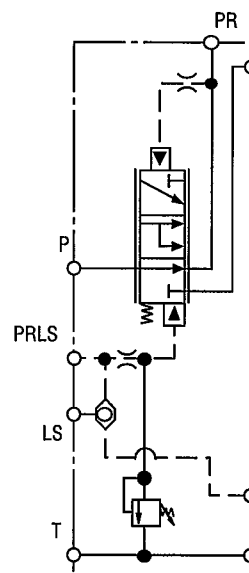
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Dynamic Bleed

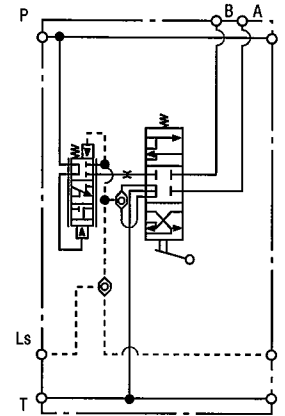
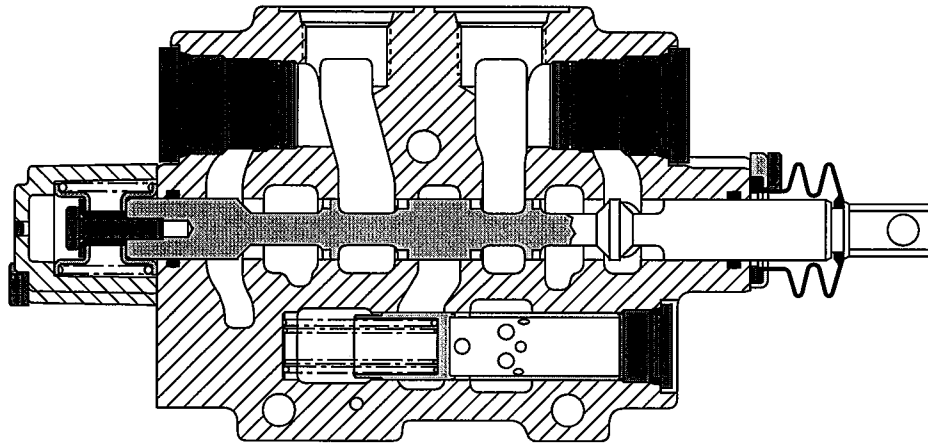


Standard Priority

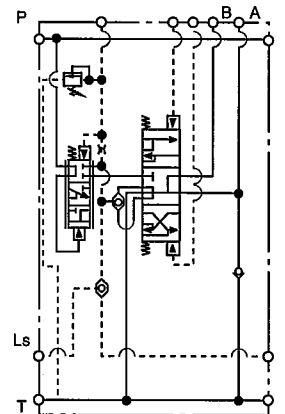
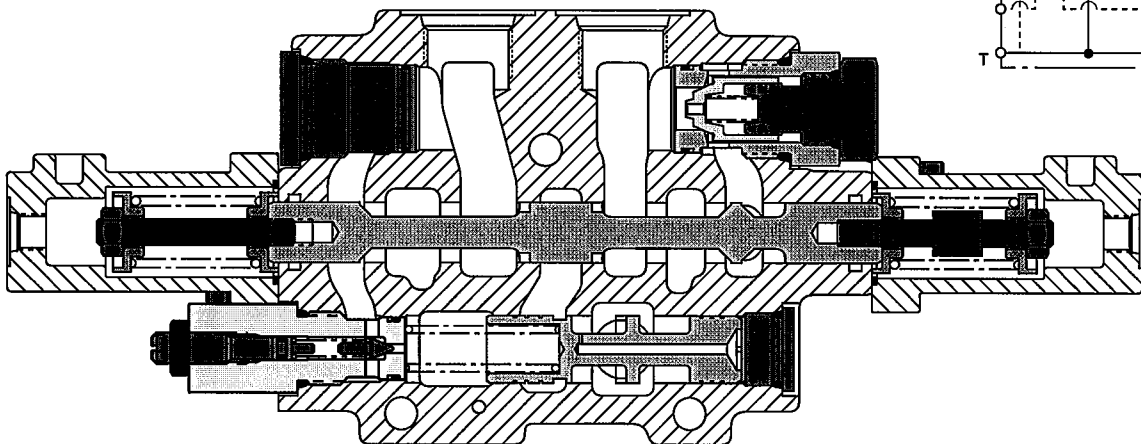


Sectional View

Model...MP18-30/HB1AQQ2(57)A

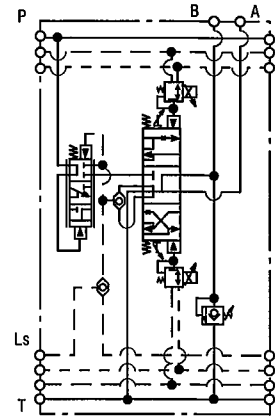
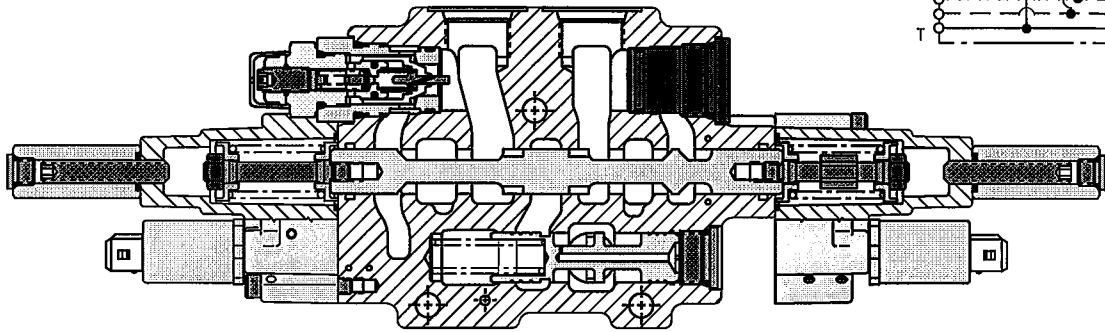


Model...MP18-30/HB3HEQ0B(103)

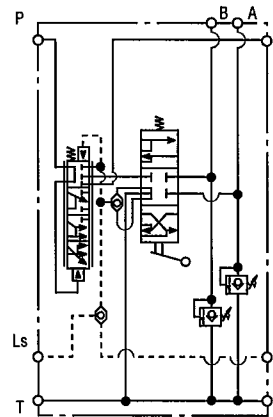
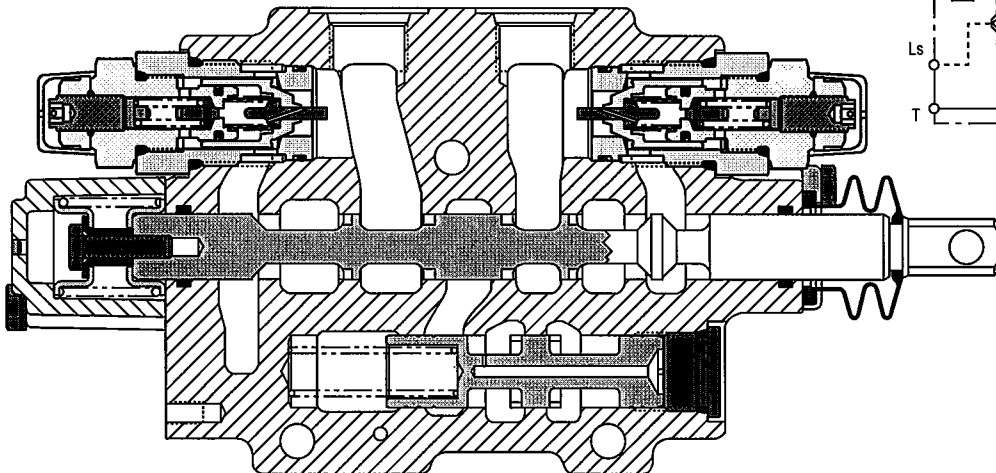


Sectional View

Model...MP18-30/HB3(42)L1QG(203)0A

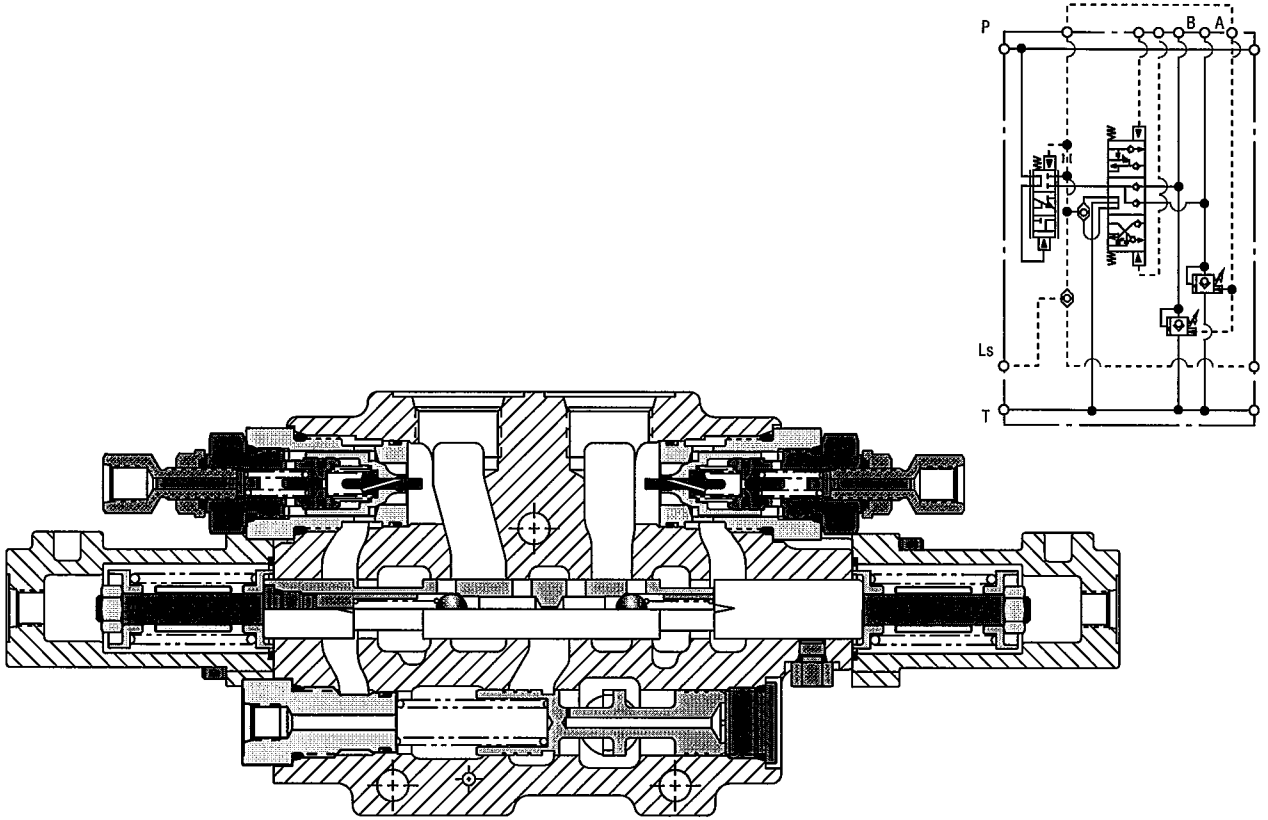


Model...MP18-30/HBP1AG(250)G(250)0A

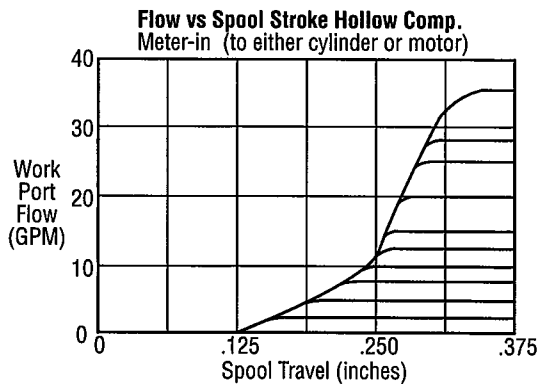
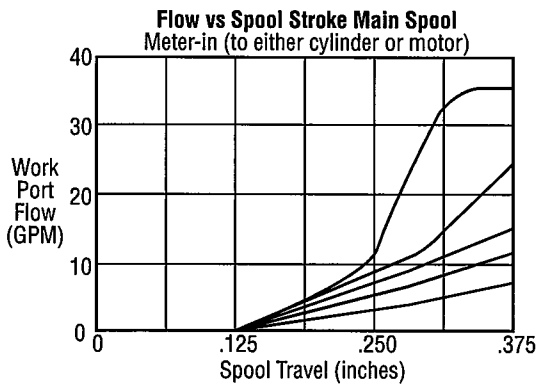
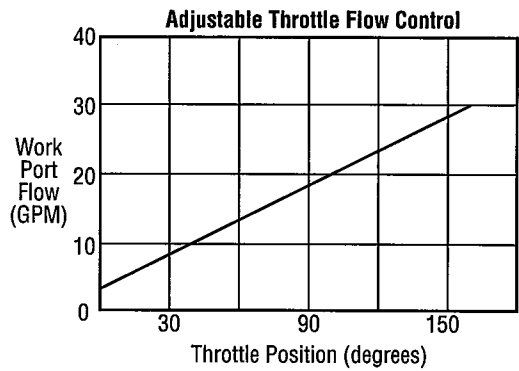
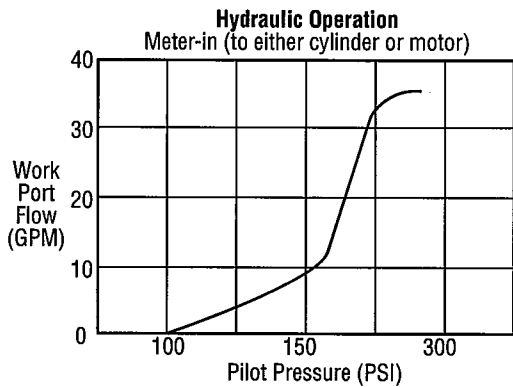
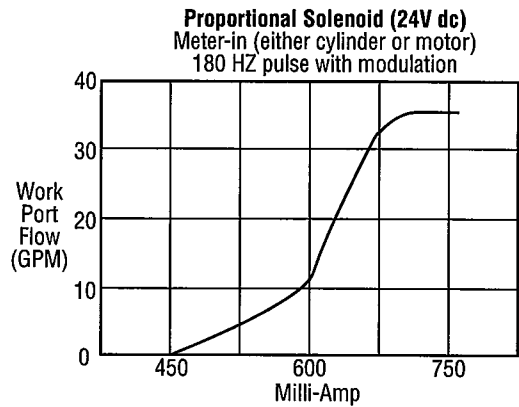
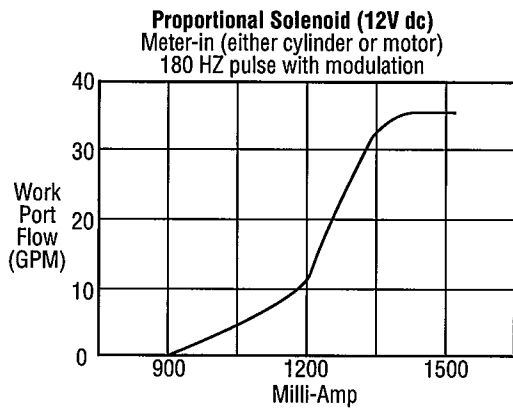
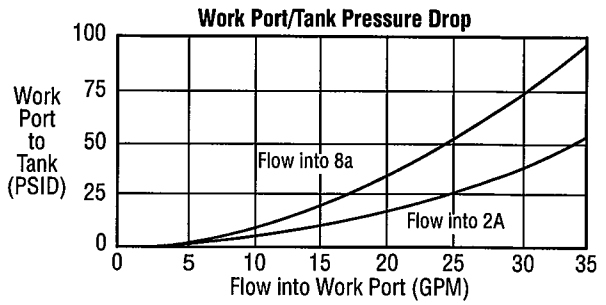
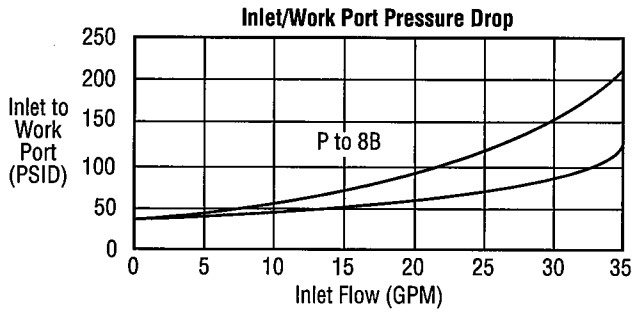


Sectional View

Model...MP18-30/HB16HP(150)P(150)0C



Operating Curves



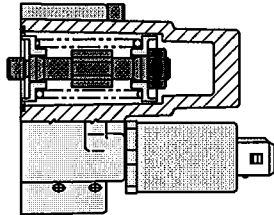
Spool Operation

Electrical Proportional and On/Off Control

Main Spool Operator Codes...L(12), L(24), M(12), M(24).

3 Position Assembly

Internal assembly typical. Housings are not interchangeable. They must be assembled to their proper ends of the sections. Assembly for "A" port end of section

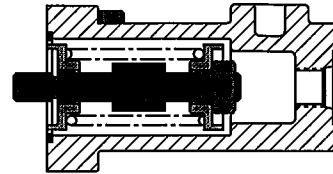


Hydraulic Operated Proportional Control

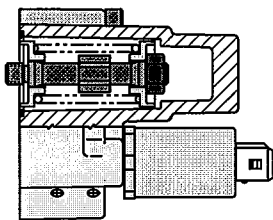
Main Spool Operator Code...H

3 Position Assembly

Housings are interchangeable from "A" to "B" end of section. Assembly for "A" port end of section.

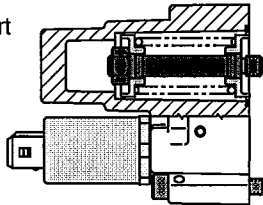


4 Position Assembly

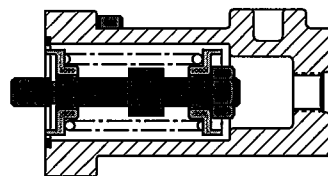


Assembly for "A" port end of section

Assembly for "B" port end of section

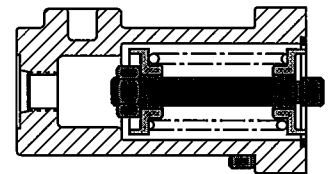


4 Position Assembly



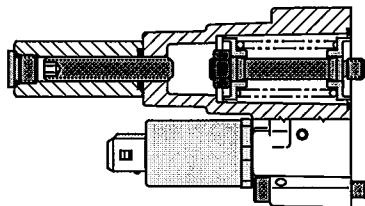
Assembly for "A" port end of section

Assembly for "B" port end of section



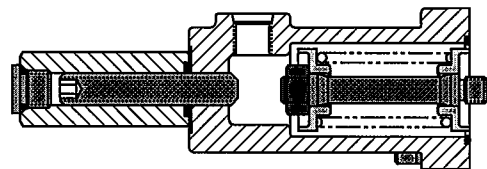
Electrical Proportional and On/Off Control with Stroke Limiter

Main Spool Operator Codes...L1(12), L1(24), M1(12), M1(24).



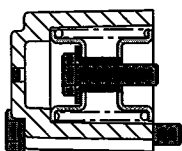
Hydraulic Proportional with Stroke Limiter

Main Spool Operator Code...H1



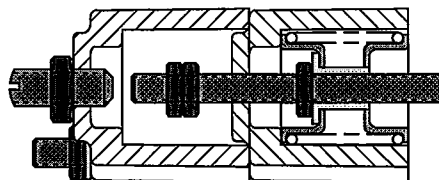
Manual Spring Centered

Main Spool Operator Code...A



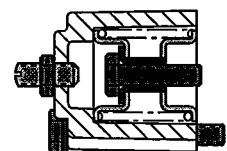
Manual Spring Centered with Stroke Limiter

Main Spool Operator Code...A1



Manual Spring Centered with Stroke Limiter

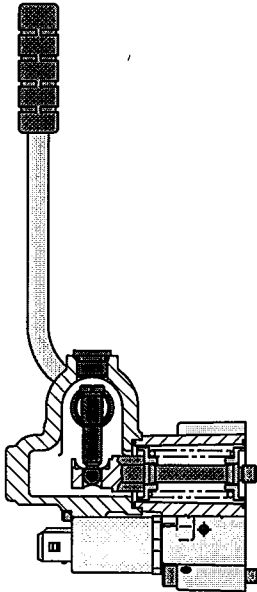
Main Spool Operator Code...A2



Spool Operation

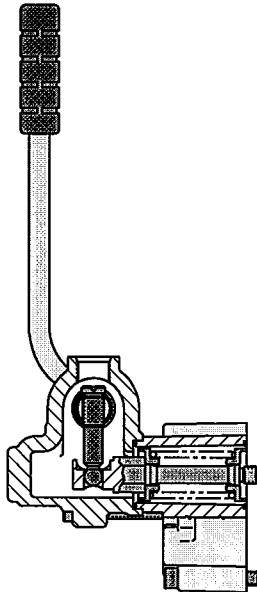
Electrical Proportional and On/Off Control with Manual Override

Main Spool Operator
 Codes...L2(12), L2(24), M2(12), M2(24)
 "B" port assembly
 Kit P/N 1602-635-096



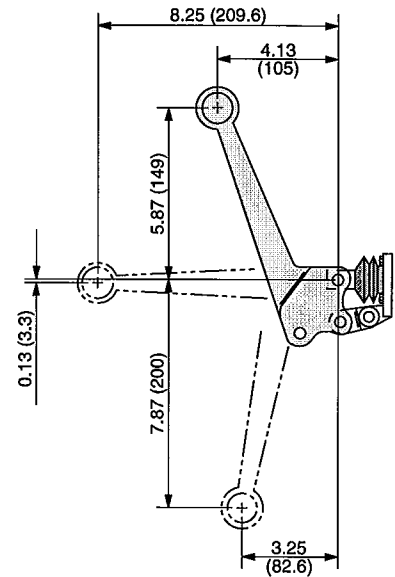
Hydraulic Control with Manual Override

Main Spool Operator Code...H2
 "B" port assembly
 Kit P/N 1602-635-097

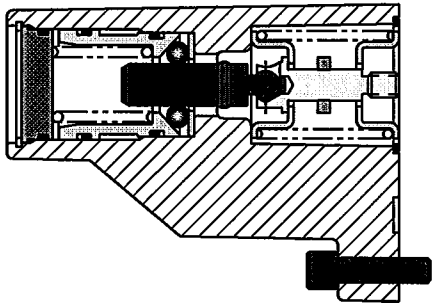


Lever and Dust Boot Assembly

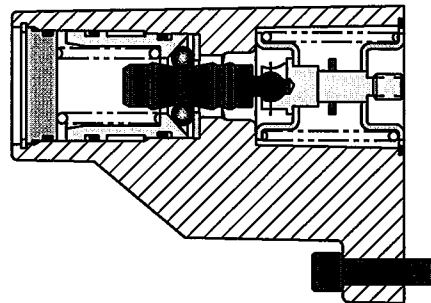
Kit P/N 1601-635-040



3 Position Detent Assembly Code...B3

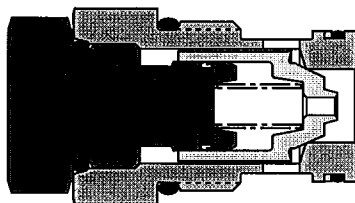


4 Position Detent Assembly Code...B5

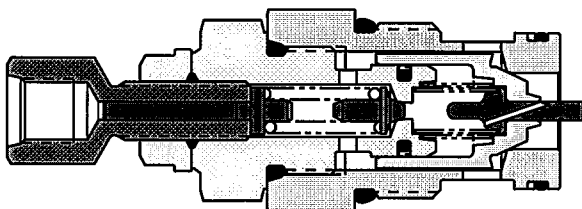


Port Options

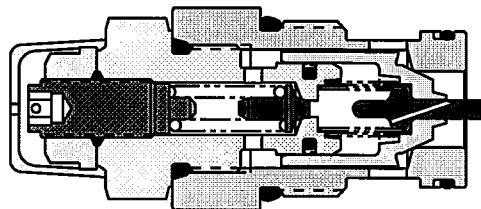
Code...E
1601-566-021



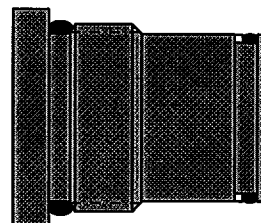
Code...P()
1695-430-001



Code...G()
1697-430-002 (300...1400 psi)
1697-430-001 (1450...4500 psi)

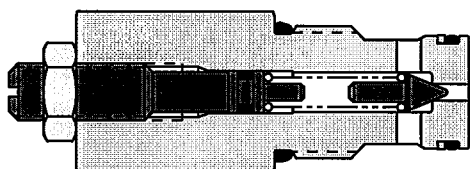


Code...Q
19-76202-019

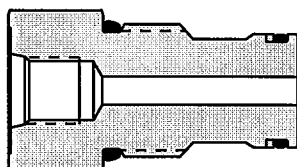


Pressure Compensator Control Options

Code...B()
1602-566-026

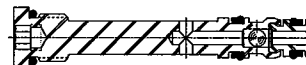


Code...C
1602-566-045

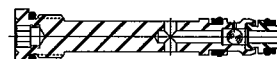


Shuttles

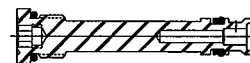
Double Acting Primary Shuttle
1604-566-002



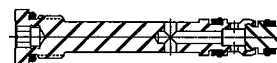
Orificed Primary Shuttle
1604-566-004



Single Acting "A" Only Shuttle
1604-566-009



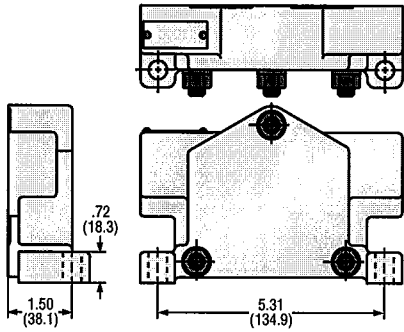
Single Acting "B" Only Shuttle
1604-566-006



End Covers

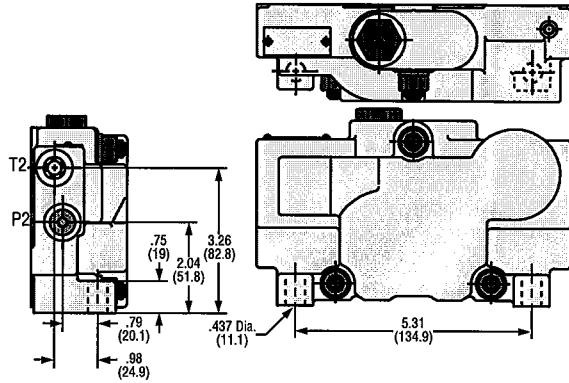
Code...L

Standard End Cover



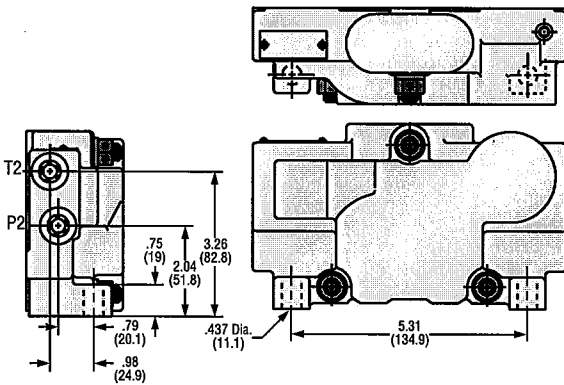
Code...Q

End cover with pressure reducing valve integral for Electro-Hydraulic controlled sections. (Includes drain port T2)



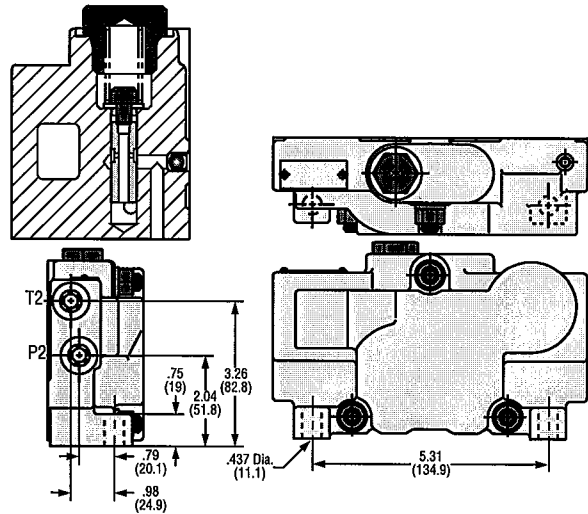
Code...R

End cover w/ external supply pressure port for Electro-Hydraulic controlled sections. (Includes pressure port P2 and drain port T2)

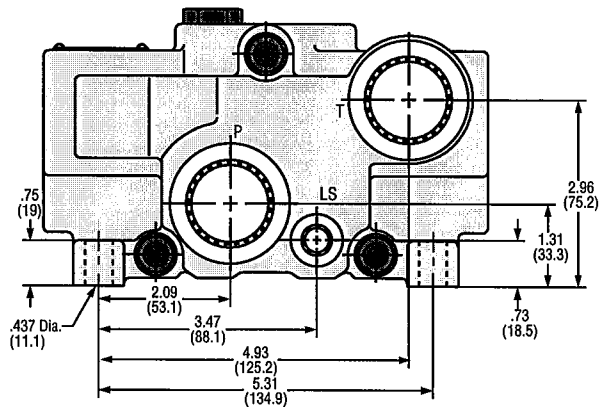
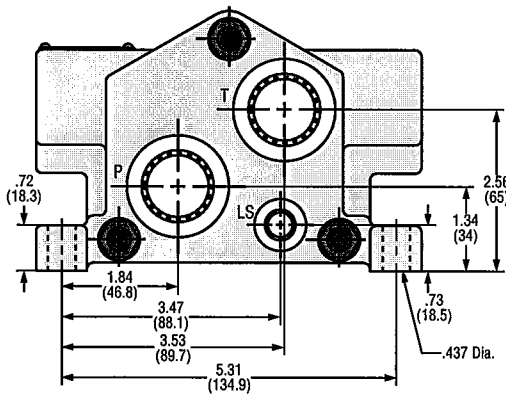


Code...S

End cover w/ pressure reducing valve integral for pilot controller supply. Not to be used with Electro-Hydraulic sections. (Includes pressure port P2 and drain port T2)



To Add Ports P, T, or LS to End Covers, Add Catalog Code (PTL) to End Cover Codes...L, Q, R, or S.



Kit Numbers

Closed Center Tie Bolt Kits

Including shims, o-rings, tie-bolts, nuts, and flat washers.	
1602-635-023	1 section
1602-635-020	2 section
1602-635-021	3 section
1602-635-022	4 section
1602-635-033	5 section
1602-635-034	6 section
1602-635-035	7 section
1602-635-036	8 section

Open Center Tie Bolt Kits

Including shims, o-rings, tie-bolts, nuts, and flat washers.	
1602-635-037	1 section
1602-635-038	2 section
1602-635-039	3 section
1602-635-040	4 section
1602-635-041	5 section
1602-635-042	6 section
1602-635-043	7 section
1602-635-044	8 section

Service Kits

1602-635-031	Face seal kit (seal between sections including shims)
1602-635-061	Seal kit electrical section pilot face seals
1602-635-086	Seal kit electrical section pilot face seals
1602-635-078	Priority inlet seal kit
1602-635-001	Dust boot kit
1601-635-040	MP18 & 22 handle & dust boot kit
1604-566-002	Standard primary shuttle double acting
1604-566-004	Orificed primary shuttle double acting
1604-566-006	Single acting shuttle "B"
1604-566-008	Single acting orificed shuttle "B"
1604-566-009	Single acting shuttle "A"
1604-566-011	Single acting orificed shuttle "A"
1602-566-022	Relief cartridge unloading and priority inlet
1604-635-001	Secondary shuttle kit, with ball
1697-430-002	Combination pilot relief/anti-cavitation port option (300-1400 psi)
1697-430-001	Combination pilot relief/anti-cavitation port option (1450-3625 psi)
1601-566-021	Anti-cavitation check valve
19-76202-019	Port option plug
1697-635-001	Seal kit port option
1602-635-094	Open center inlet back pressure check kit
1602-635-116	Mating Solenoid connector Kit - Cannon Connector "C2"
1602-635-117	Mating Solenoid connector Kit - Junior Rimer (AMP) "C4"

Operation Mechanical Detent Kits

1602-635-071	"B" detent kit
1602-635-072	"B1" detent kit
1602-635-073	"B2" detent kit
1602-635-074	"B3" detent kit
1602-635-075	"B4" detent kit
1602-635-068	"A" standard spring centered kit
1602-635-096	Manual override kit-option "L2" & "M2" without solenoid
1602-635-097	Manual override kit-option "H2"

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Mobile Hydraulics
Mobile Controls, Electronics,
and External Gear Units
1700 Old Mansfield Road
Wooster, OH 44691-0394
Telephone (330) 263-3300
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Subject to change.



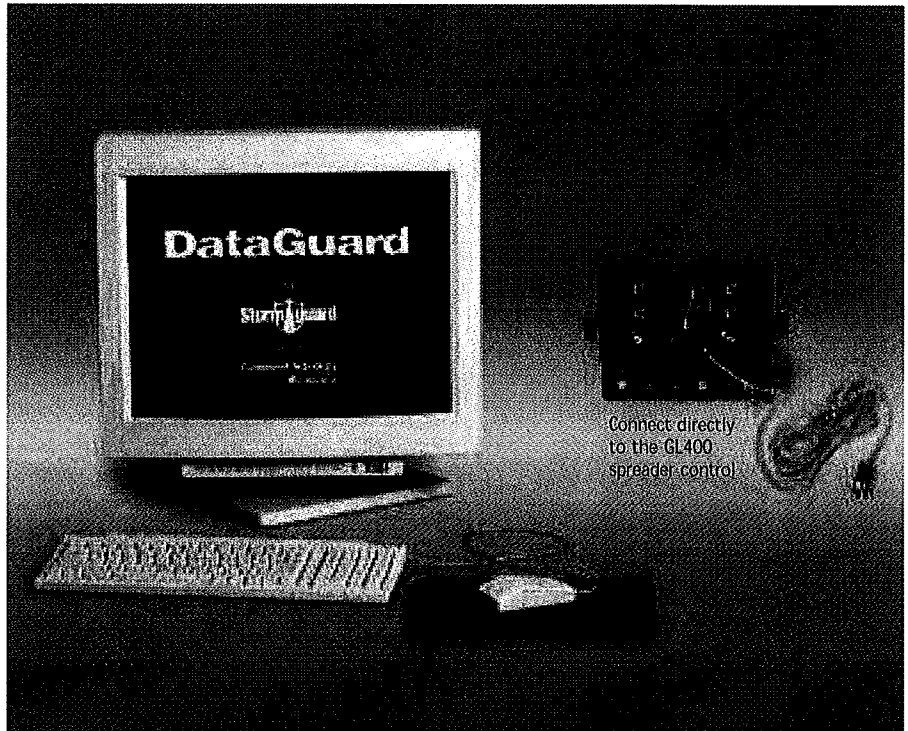
Component Technology

A DIVISION OF
Certified Power Inc.

DataGuard Spreader Control Software

DOWNLOAD UP TO 4 MATERIAL TYPES WITH EACH MATERIAL IDENTIFIED BY NAME.

- TOTAL POUNDS SPREAD
- MILES/GALLONS SPREAD WITH PRE-WET
- TOTAL GALLONS
- TOTAL MILES DRIVEN
- PERCENT OF MILES IN AUTO OR MANUAL MODES
- AVERAGE LBS/MILE SPREAD
- AVERAGE/MAXIMUM MPH
- LAST TIME CLEARED SEPARATE STORAGE FOR CURRENT STORM AND ANNUAL ACCUMULATION



Component Technology's NEW "DataGuard" Data Management Software is the latest breakthrough in Liquid/Granular data management for Snow & Ice removal equipment. The "DataGuard" data management software downloads data directly to your laptop and works directly with the communication port on the StormGuard GL400 spreader control. This software allows you to download up to 4 material types with each material identified by name. The downloads are saved to a file of your choice in a format compatible with Microsoft® Excel. Use Excel to create detailed graphs, reports and spreadsheets. The "DataGuard" is easy-to-use, straightforward and can save you time and money. Simply install the "DataGuard" software and you're ready to go. This software can store unlimited truck calibration settings which can be downloaded directly from your laptop to your desktop, also allowing you to re-enter your information back into the spreader control. This and our on-screen displays allow you to quickly take care of the painstaking task of calibration. The "DataGuard" is compatible with Windows® NT or Windows® 95 or Windows® 98 and is presented in an easy-to-store floppy disk.

"We Know Snow"

Product and System Requirements:

Computer:
80386DX, 20 MHz (or higher) processor

Peripheral:
Mouse or equivalent pointing device

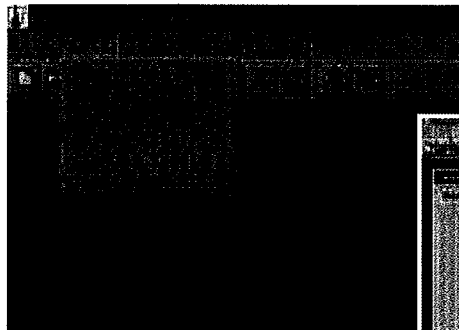
Memory:
4 MB of RAM (minimum);
8 MB (recommended)

Monitor:
VGA (minimum);
Super VGA (recommended)

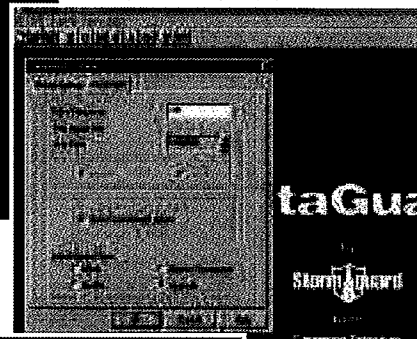
Disk Space:
20 MB of free hard disk space

Software:
Windows® 95, Windows® 98 or
Windows® NT, Microsoft® Excel or
Microsoft® Office

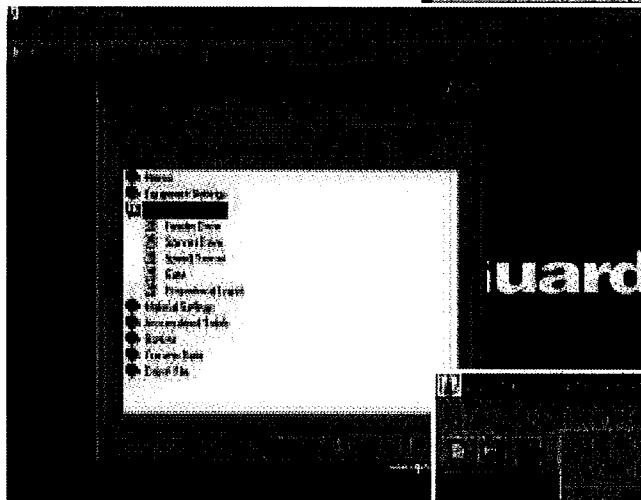
All GL400 menus available



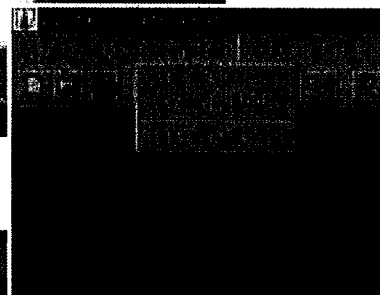
Quickly tab through equipment calibrations



User help menu



Transfer settings and Calibrations



Export data to Microsoft® Excel



For more detailed product information, please contact your local dealer.

Starting A Revolution!

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*or call our corporate
headquarters for a
location near you*

Component Technology

A DIVISION OF
Certified Power Inc.

phone: 847-573-3818
fax: 847-573-3836



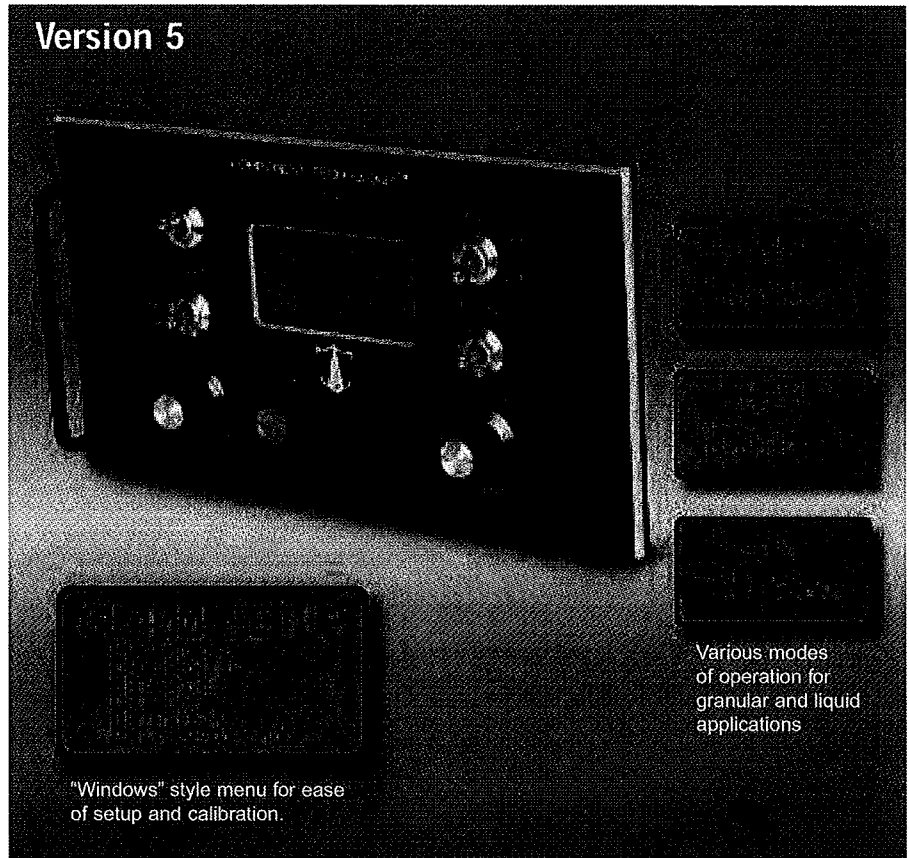
Component Technology

A DIVISION OF
Certified Power Inc.

Granular/Liquid Automatic Spreader Control (GL400)

- STATE OF THE ART
MICRO-PROCESSOR DESIGN
- ADVANCED DATA MANAGEMENT
CAPABILITIES
- OPEN-LOOP OR CLOSED-LOOP
OPERATION
- EASY TO USE BACK LIT
CONTROLS
- LARGE LCD DOT MATRIX
DISPLAY
- WINDOWS MENU BASED
PROGRAMMING
- YOUR CHOICE OF 4 MATERIALS
- ADVANCED TROUBLE SHOOTING
FEATURES
- AUTOMATIC GATE HEIGHT
CALIBRATION
- HYDRAULIC AND ELECTRICALLY
DRIVEN LIQUID PRE-WET
CONTROL
- GPS AND DATA
MANAGEMENT READY

Version 5



The StormGuard GL400 is the one control that does it all! Whether it's granular, liquid, or both you can rely on the GL400 to assist in all aspects of your business including management, operators, and maintenance technicians. You get accurate control of granular and liquid materials as well as measurement and reporting capabilities. All of this in a competitively priced package. Your operators will appreciate the ease of control making long hours on the road safer and more productive. The "Windows" style menus for ease of calibration and self diagnostics will keep your technicians smiling. Another innovative solution from StormGuard, the leader in Snow & Ice control equipment.

"We Know Snow"

Specifications:

Battery Voltage:

10-32 VDC, with reverse polarity protection

Display:

64 x 128 graphic backlit display

Memory:

Calibration and data storage non-volatile

Communication:

RS-232

Inputs:

7 digital, 1 Multi Purpose

Outputs:

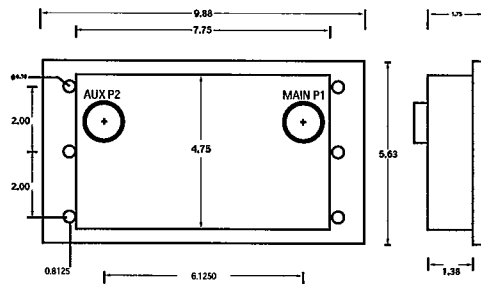
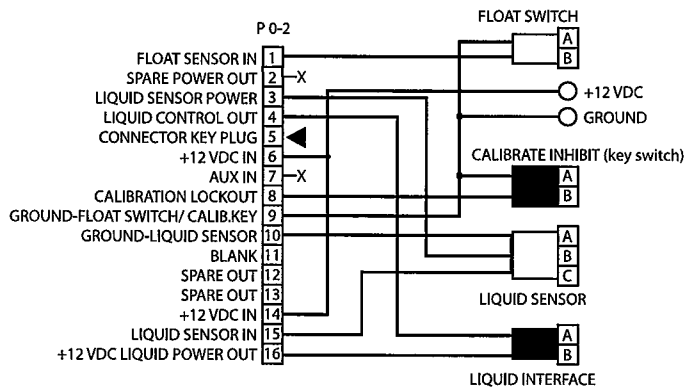
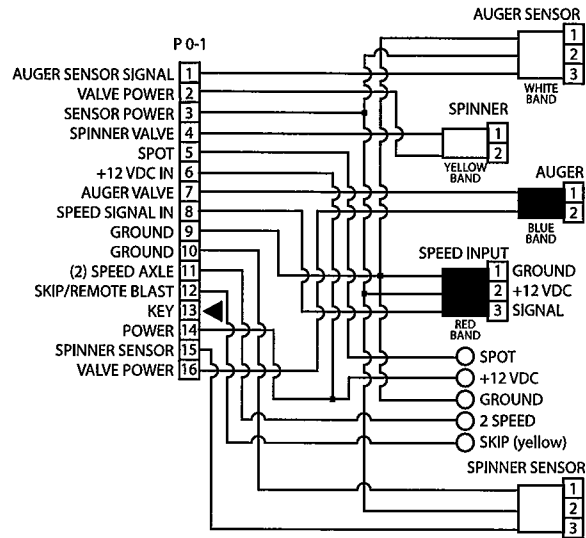
2 Digital
4 high power 3 amp max. per ch. PWM control outputs with short circuit protection

Temperature Range (controlled):

-4°F to 158°F (-20° C to 70° C) storage and operation

Additional Features:

- Closed-loop spinner option
- Anti-Ice control feature



Complete cable sets are available as per system requirements. For more detailed product information, please contact your local dealer.

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A DIVISION OF
Certified Power Inc.

phone: 847-573-3818
fax: 847-573-3836



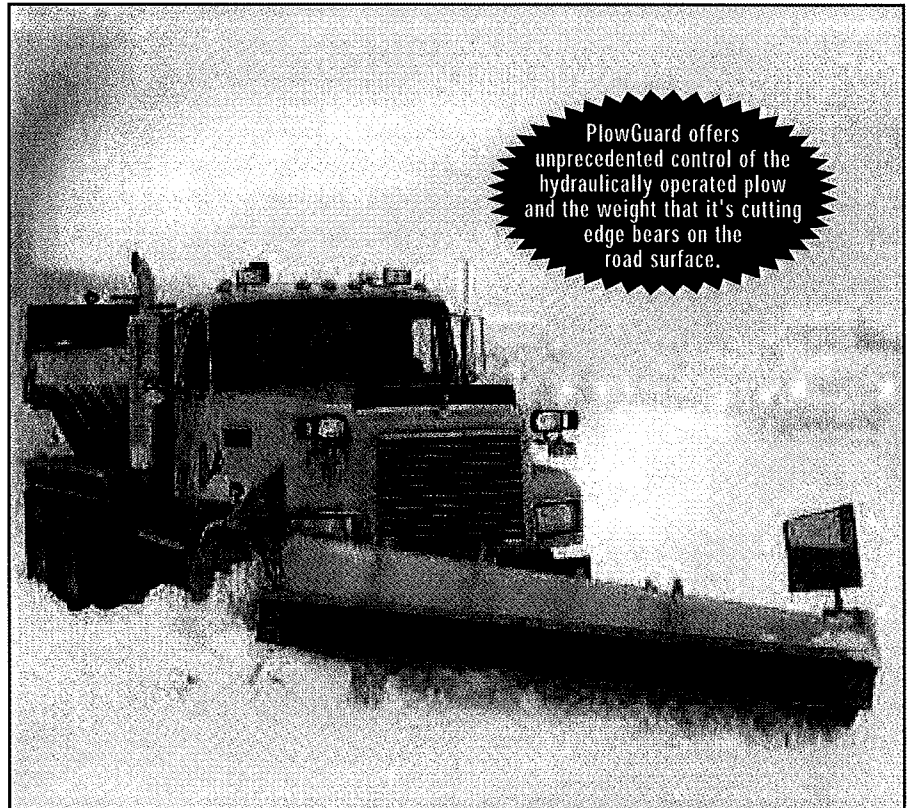
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PlowGuard - Plow Balance System

PlowGuard: DESIGNED FOR MAXIMUM DEPENDABILITY WITH THE FOLLOWING FEATURES:

- LESS PLOW CUTTING EDGE FRICTION ON THE ROAD
- ADDS UP TO 10 TIMES THE CUTTING EDGE LIFE
- DRIVE TRUCK IN A HIGHER GEAR, REDUCE WEAR, SAVE FUEL
- REDUCE DAMAGE TO ROAD LANE MARKERS, PATCHES, AND RAISED SURFACES
- REDUCE THE OPERATOR FATIGUE ASSOCIATED WITH SCRAPING NOISE TRANSMITTED TO THE CAB
- SYSTEM DESIGNS FOR LOAD SENSE AND GEAR PUMP CENTRAL HYDRAULIC SYSTEMS
- FUSED POWER WIRE AND BACK LIGHTING OF MASTER SWITCH, EPOXY-ENCAPSULATED COILS
- AVAILABLE FOR INTEGRATION INTO ANY STORMGUARD CONSOLE OR AS A RETROFIT



PlowGuard plow balance system provides numerous features that benefit snow removal managers, service providers, and equipment operators. The PlowGuard system offers unprecedented control of the hydraulically operated plow and the weight that it's cutting edge bears on the road surface. The PlowGuard system can be operated by means of a simple switch in the truck cab, or integrated into any of our StormGuard control consoles.

Cutting edge life is extended, truck operating efficiency is improved, truck wear is reduced, and road surfaces encounter less damage as the plow edge rides along the road without its full weight bearing down. Even the driver/operator experiences the benefit of less stress as the scraping noise transmitted to the cab is reduced. Available for integration into any StormGuard Console or as a retrofit.

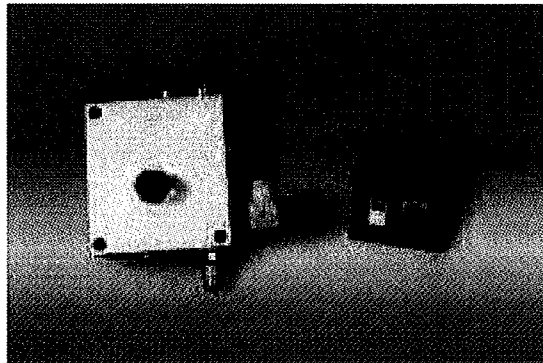
"We Know Snow"

Component Technology is a pioneer in snow and ice removal. We definitely have the experience to do the job. From the operator to the fleet manager we understand what you need. That's why the entire StormGuard product line, top to bottom, is the best available when you compare safety, reliability, durability, and ease of maintenance. Our engineering staff consistently proves that it is the most innovative in the industry. This makes us the best at bringing your ideas to reality. We can help you design systems and controls that will do your job right and do it well. We are here to serve you and believe that our total commitment to your success is the key to our mutual success.

Additional Features of PlowGuard:

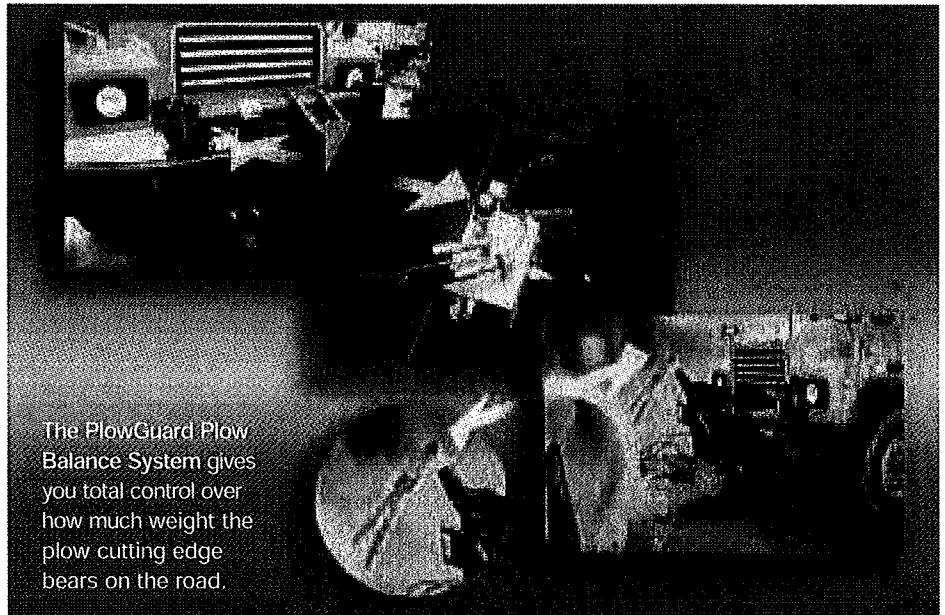
- Reduced damage to asphalt shoulders
- Consumes less than 1/100 HP when in operation

PlowGuard Plow Balance Valve System



The **PlowGuard Plow Balance System** works with gear pump and load sense pump hydraulic systems, to control the amount of weight the plow cutting edge bears on the road surface.

Retrofit installation - approximately 2.5 hrs.



The PlowGuard Plow Balance System gives you total control over how much weight the plow cutting edge bears on the road.

Give us a call and find out where you can get into a demo truck, stop by our booth at one of the many trade shows or contact your local dealer and see first hand the StormGuard advantages of the PlowGuard Plow Balance System.

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NBC 7/03 25K

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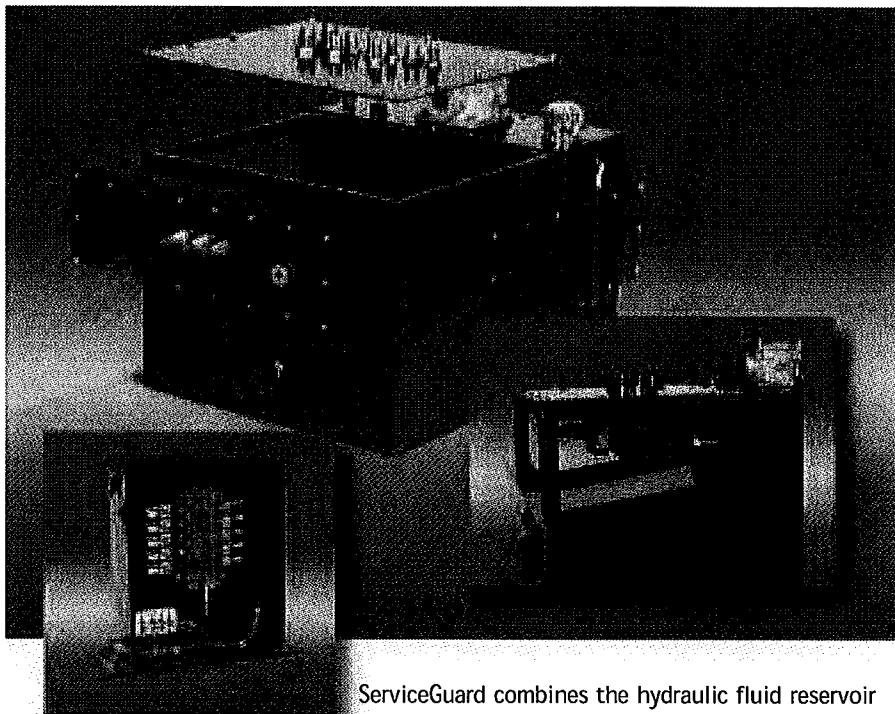
ServiceGuard/ValveGuard Reservoirs and Enclosures

**SERVICEGUARD: DESIGNED FOR
MAXIMUM DEPENDABILITY WITH
THE FOLLOWING FEATURES:**

- FORM FITTED GASKETS FOR ALL PANELS
- SLOPED BOTTOM WITH LARGE DRAIN GREATLY REDUCES RUST DAMAGE
- TOP PLATE MOUNTING ELIMINATES UNNECESSARY PLUMBING AND POSSIBLE FAILURE POINTS
- TANK MOUNTED FILTER WITH CARTRIDGE IS EASIER AND LESS EXPENSIVE TO REPLACE THAN CAN-TYPE FILTER
- 3" PORT ALLOWS FOR EASY USE OF SUCTION DRAINER
- MAGNETIZED PLUG TO ATTRACT METAL PARTICLES FLOATING IN FLUID

**VALVEGUARD GIVE YOU THE
FOLLOWING FEATURES:**

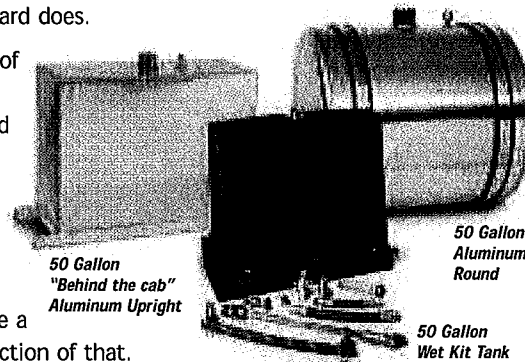
- FORM FITTED GASKET AND 6 STAINLESS STEEL LATCHES WELDED IN PLACE
- MOUNTS DIRECTLY THROUGH STEEL PLATE PANEL TO ELIMINATE INTERNAL PLUMBING



ServiceGuard combines the hydraulic fluid reservoir and valve enclosure into one convenient unit. The new bulkhead design does not require internal tubing and hoses, thereby eliminating several potential leak and service points.

It can be used with practically any valve: manual, electric, hydraulic, or air-controlled. Frame mounted units are subjected to incredible abuse from the truck's rear wheels constantly throwing off corrosive materials: ice, snow, dirt, and road salt. It is essential that the hydraulic fluid and valve assembly be protected from these hazards and that is precisely what ServiceGuard does.

The ServiceGuard unit is constructed of heavy seven gauge steel plating. In addition, ValveGuard and ServiceGuard are also available in stainless steel construction. The valve enclosure is kept weather tight by steel plates bolted over form fitted gaskets. Its design greatly reduces downtime and labor costs during service -- once a four-hour job is now reduced to a fraction of that.



50 Gallon
"Behind the cab"
Aluminum Upright

50 Gallon
Aluminum
Round

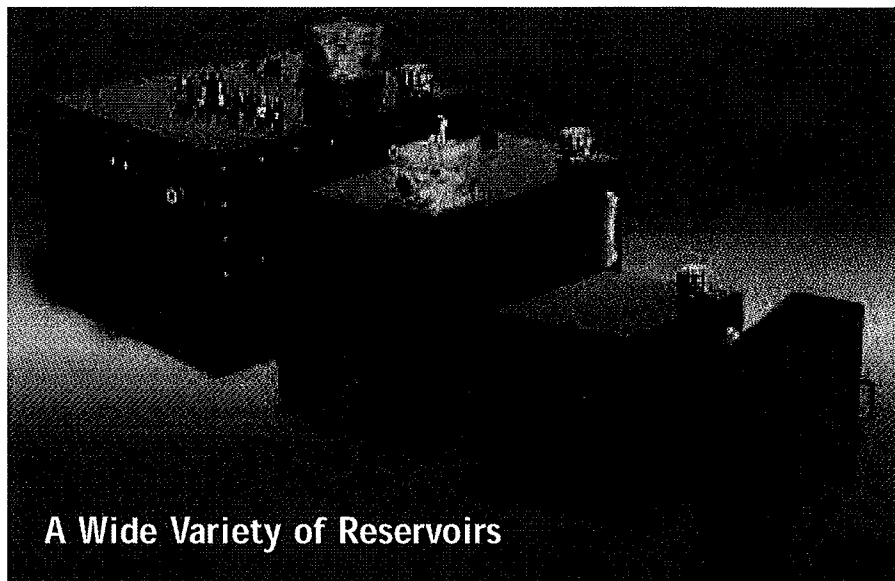
50 Gallon
Wet Kit Tank

"We Know Snow"

Component Technology is a pioneer in snow and ice removal. We definitely have the experience to do the job. From the operator to the fleet manager we understand what you need. That's why the entire StormGuard product line, top to bottom, is the best available when you compare safety, reliability, durability, and ease of maintenance. Our engineering staff consistently proves that it is the most innovative in the industry. This makes us the best at bringing your ideas to reality. We can help you design systems and controls that will do your job right and do it well. We are here to serve you and believe that our total commitment to your success is the key to our mutual success.

Additional Features of ServiceGuard and ValveGuard:

- Works with any type of valve
- Fewer potential failure points for less down time
- Easier accessibility and servicing for lower labor costs
- Designed for a longer trouble-free life
- A superior weather tight seal
- ServiceGuard comes ported to save time, money, and problems



A Wide Variety of Reservoirs

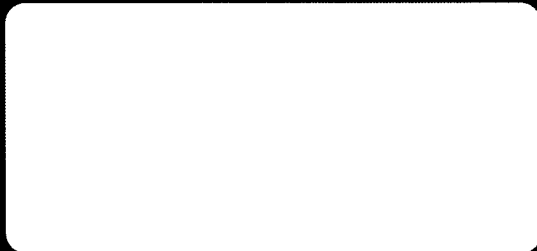
We have designed and built a wide variety of shapes and sizes of reservoirs to fit all the standard applications. However, if you have a unique need, custom reservoirs are not a problem. Steel, stainless, and poly reservoirs are available, all designed for easy mounting and built for a long life. All are pressure tested and delivered in primer allowing the installer to paint with the color of his choice. In addition our reservoirs are available with a powder coated finish, eliminating the need for finish coat painting if desired. We offer a large selection of accessories, which are available individually or as part of a complete system package.

PART NUMBER	DESCRIPTION	L	W	H
CP-RES7S	7 Gal. Side Frame Steel	12"	12"	12"
CP-RES10S	10 Gal. Side Frame Steel	12"	15"	15"
CP-RES15S	15 Gal. Side Frame Steel	16"	16"	16"
CP-RES20S	20 Gal. Side Frame Steel	18"	15"	18"
CP-RES20S-LS	20 Gal. Side Frame Load Sense Steel	18"	15"	18"
CP-RES25S	25 Gal. Side Frame Steel	20"	15"	20"
CP-RES30S	30 Gal. Side Frame Steel	24"	15"	20"
CP-RES30S-LS	30 Gal. Side Frame Load Sense Steel	24"	15"	20"
CP-RES40S	40 Gal. Side Frame Steel	24"	20"	20"
CP-RES40S-LS	40 Gal. Side Frame Load Sense Steel	24"	20"	20"
CP-RES50S	50 Gal. Side Frame	24"	20"	24"
CP-RES50S-FS-LS	50 Gal. Side Frame Load Sense Steel	24"	20"	24"
CP-RES50P-U	50 Gal. Upright Poly	Call for print		
CP-RES50S-U	50 Gal. Upright Steel	36"	14"	34"
CP-RES30S-VMSG	30 Gal. ServiceGuard Steel	24"	30"	18"
CP-RES50S-VMSG	50 Gal. ServiceGuard Steel	24"	30"	23"

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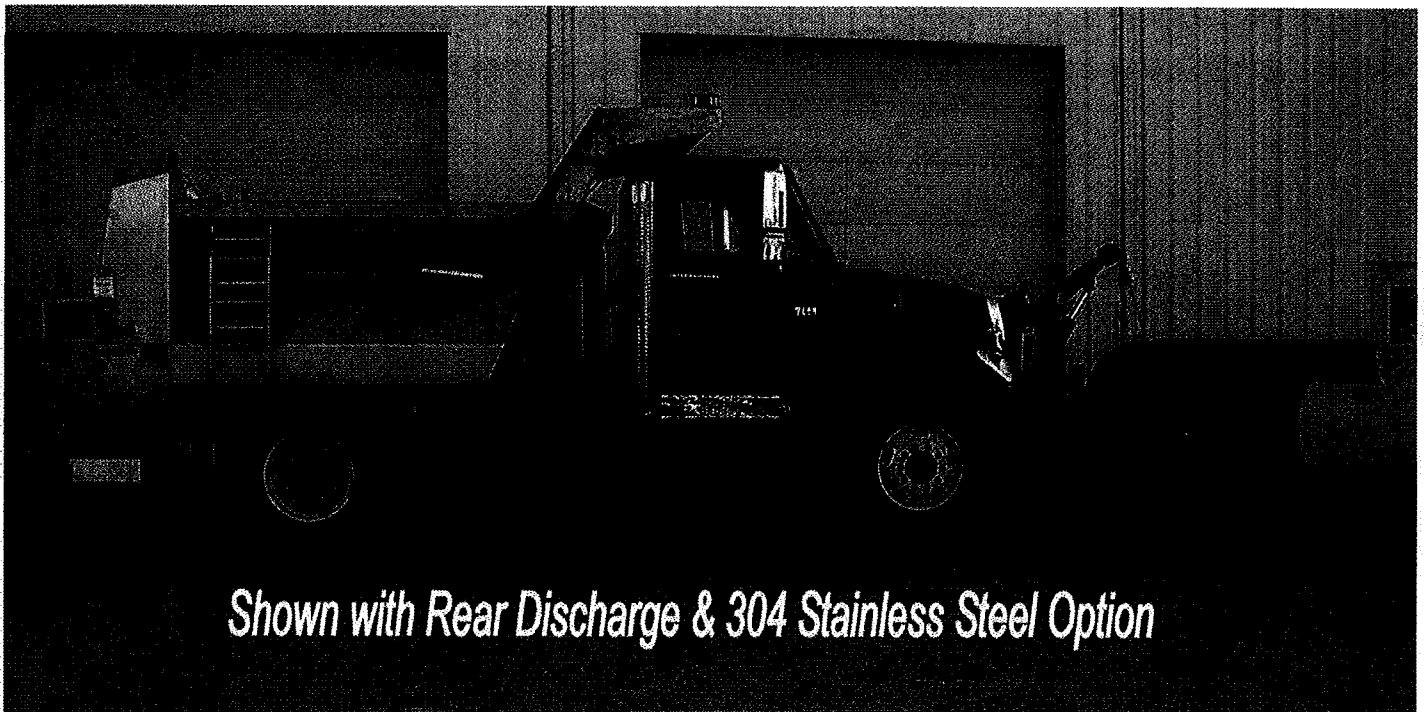
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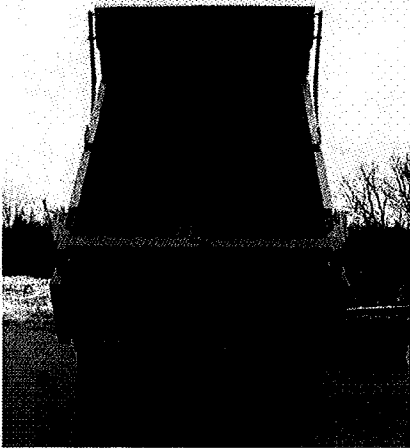
phone: 847-573-3818
 fax: 847-573-3836



FEATURES:

1. All operations controlled from in-cab.
2. Radius design allows for free flow of material to conveyor.
3. Automatic chain tensioning system
4. No hinges, lock pins or moving body parts in sanding mode. Body down during spread operations.
5. Telescopic hoist for dump mode eliminated sub-frame for lower center of gravity.
6. Body available in 10', 11', 13', and 14' lengths.
7. Light weight of body increases payload.
8. Square tailgate is double acting.
9. Main conveyor chain covered except for cross slats. This allows discharge of sand, gravel or cold patch.
10. Fast accurate discharge gate setting with screw adjustment outside body.
11. Positive close and release of tailgate by means of two airbrake maxi chambers with in-cab control.
12. 25:1 planetary gear box gives up to 50,000 in/lbs of torque to start spreading any load.
13. 50 degrees of dump angle assures complete discharge of load while round shape eliminates corners which make material stick. Depending on over hang.





AVAILABLE OPTIONS

- Front Discharge with Cross Conveyor
- Rear Discharge
- Bi-Directional Discharge
- 304 Stainless Steel Construction
- AR400 Construction
- Side Boards
- Bar Flites Every Link
- Poly Liquid Tanks
- Ground Speed Control
- Top Screens
- Twin Spinner Available
- Poly Liner
- Cab Shield 24"
- Air Tarp
- HI-Temp Rubber Belt over Conveyor Chain

Other options available consult your local dealer.

NOTE: Changes in design may occur thru product development.

MODEL	1011LW	1112LW	1314LW	1415LW
Inside Length	10'	11'	13'	14'
CA / CT required with 3" between cab & body	84"	96"	112"	120"
Water Level Capacity	6.0 cu. Yd.	6.6 cu. Yd.	9.9 cu. Yd.	10.7 cu. Yd.
10" Boards	8.1 cu. Yd.	9 cu. Yd.	12.7 cu. Yd.	13.8 cu. Yd.
Side Thickness	3/16	3/16	3/16	3/16
Side Material	Corten	Corten	Corten	Corten
Side Height	38"	38"	45"	45"
Tailgate 3/16. Corten	46"	46"	53"	53"
Front Panel Height	53"	53"	60"	60"
Double Acting Tailgate	Yes	Yes	Yes	Yes
Hoist	Top Lift - 20T Telescopic 3 Stage NTEA 40	Top Lift - 20T Telescopic 3 Stage NTEA 40	Top Lift - 30T Telescopic 3 Stage NTEA 60	Top Lift - 30T Telescopic 3 Stage NTEA 70
Conveyor Width	23"	23"	23"	23"
Conveyor Floor / A R Steel	1/4"	1/4"	1/4"	1/4"
Drive and Idler Shaft	2"	2"	2"	2"
Chain 667X	STD	STD	STD	STD
Cross Flites Every Other Link	STD	STD	STD	STD
Planetary Gear Reduction	25:1	25:1	25:1	25:1
Air Tailgate	STD	STD	STD	STD
Poly Spinner	STD	STD	STD	STD
Poly Return Cover	STD	STD	STD	STD
Conveyor Cover	STD	STD	STD	STD
Fenders	Integral	Integral	Integral	Integral
Ladder - Right Rear	STD	STD	STD	STD
Automatic Chain Tensioning System	STD	STD	STD	STD
Body Weight Installed	4,250	4,450	5,600	5,800



Chain Tensioning Unit



DEALER:

Viking-Cives (USA)
14331 Mill Street
Harrisville, NY 13648
(315) 543-2321
Fax (315) 543-2366

Viking-Cives, Ltd.
P.O. Box 1120, RR#4
Mt. Forest, ONT N0G2L0
(519) 323-4433
Fax (519) 323-4608

Viking-Cives, (USA)
212 North Evans Road
Evansdale, IA 50707
(319) 236-7977
Fax (319) 236-7980

