



625 HDS

CYCLONE VERTICAL FEED MIXER



TRUCK OPERATION AND PARTS MANUAL

**ROTO-MIX LLC
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INTRODUCTION

Congratulations on the purchase of your new Vertical Mixer from ROTO-MIX. With proper operation and preventative maintenance it will last for years.



This SAFETY ALERT SYMBOL indicates important safety messages in the manual. When you see this symbol, be alert to the possibility of PERSONAL INJURY and carefully read the message that follows.

NEVER OPERATE WITHOUT ALL COVERS, SHIELDS AND GUARDS IN PLACE. KEEP HANDS, FEET AND CLOTHING AWAY FROM MOVING PARTS.

⚠ WARNING Some covers and guards have been removed for illustrative/photographic purposes only in this manual. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.

The Guarantee appears in the front of this book along with the Registration and Inspection Certificate.

For information on ordering repair parts, refer to the Repair Parts section at the back of this book.

The serial number plate is located on the driver's side lower front of the main frame. This number should be recorded on the Registration and Inspection Certificate for your reference and for proper identification of your mixer by ROTO-MIX.

You are urged to study this manual and follow the instructions carefully. Your efforts will be repaid in better operation and service as well as a savings in time and repair expense.

Failure to read this manual and understand the safe operation of the mixer could lead to serious injury.

If you do not understand the instructions in this manual contact either your dealer or ROTO-MIX at Dodge City, Kansas 67801.

This supersedes all previous published instructions.



Limited Warranty Statement

ROTO-MIX LLC warrants to the original purchaser all products manufactured by it to be free from defects in material and workmanship under normal use and service.

ROTO-MIX's obligation under this warranty is limited to repairing or replacing, as the company may elect, free of charge and without charge for installation, at the place of business of a dealer or distributor authorized to handle the equipment covered by this warranty or at a ROTO-MIX facility, any parts that prove, in the company's judgment, to be defective in material or workmanship within one (1) year after delivery to the original purchaser, and still owned by the original purchaser. This warranty shall in no way make ROTO-MIX liable to anyone for personal injuries or damages, loss of time, or expense of any kind either direct or indirect resulting from part failure or defect. This warranty is subject to acts of God, fire and existing conditions of supply and demand, or production, or ability or inability to deliver, or for any other valid reason beyond the reasonable control of ROTO-MIX, to obtain materials, manufactured replacement parts, or make delivery thereof. No distributor, dealer, agent, or ROTO-MIX employee (other than the CEO or President in writing) is authorized to extend any other or further express or implied warranty or incur any additional obligation on ROTO-MIX's behalf in connection with the sale of this product.

If ROTO-MIX, or its duly authorized representative, shall find that such returned part or parts are defective and such defects, or defect, are included in and covered by said warranty, then such defective part or parts shall promptly be replaced without charge to the purchaser, F.O.B. the ROTO-MIX plant.

Product Registration - It is a condition of this warranty that the original purchaser must fill out the warranty card furnished by ROTO-MIX and that it be returned to ROTO-MIX within 10 days of purchase and be recorded in ROTO-MIX's owner file for this warranty to be valid. In the event an owner's card is not on file at the ROTO-MIX office, the warranty period will extend only from date equipment was picked up or shipped from the ROTO-MIX plant.

Maintenance - It is the customer's responsibility to maintain their equipment in accordance with the instructions provided in the Operator's Manual. ROTO-MIX recommends that you keep records and receipts; you may be asked to prove that maintenance instructions have been followed.

Operation - It is the customer's responsibility to operate the equipment only for the purpose for which it was designed and in accordance with all safety and operational recommendations contained in the Operators Manual. If a defect in materials or workmanship occurs, it is the customer's responsibility to cease operating the equipment until authorized repairs are made. **Damage, which occurs from continued operation, may not be covered by this warranty.**

What this Warranty Covers

This warranty covers failures caused by defects in materials or workmanship only.

This Warranty does **not** cover failures caused by:

- Improper operation
- Natural calamities
- Unauthorized modifications
- Unauthorized repairs
- Use of Non ROTO-MIX parts
- Neglected maintenance
- The use of PTO Shaft Adaptors
- Usage contrary to the intended purpose of the product

Warranty continues on the next page.

Limited Warranty Statement continued

This Warranty does not cover replacement of Wear or Maintenance Items including, but not limited to.

- | | | | |
|--------------|----------|-------------|----------|
| - Lubricants | - Tires | - Chains | - Blades |
| - Filters | - Augers | - Idlers | - Belts |
| - Hoses | - Wipers | - Batteries | |

This Warranty does not cover:

- Pickup and delivery of the equipment
- Service Calls or Travel Time to and from sites
- Rental of replacement equipment during repair period
- Products that have been declared a total loss and subsequently salvaged
- Overtime labor charges
- ROTO-MIX is not responsible and will not be liable for damage caused to persons or property, commercial loss, loss of time or production, loss of use by reason of the installation or use of ROTO-MIX products or their mechanical failure.

Right to Make Changes

ROTO-MIX reserves the right to make any changes to a ROTO-MIX product at any time without incurring any obligation with respect to any product previously ordered, sold or shipped, with or without notice.

Parts Warranty

ROTO-MIX warrants replacement parts against defects in materials or workmanship for a period of 90 days or the remainder of the product warranty, whichever is longer. Remedy for defective replacement parts for units that are beyond the original product warranty, will be limited to replacement of the failed part. Failures that are due to damage, improper installation, lack of maintenance or improper operation will not be covered.

ROTO-MIX 2205 East Wyatt Earp Blvd., Dodge City, KS 67801 (620) 225-1142 Fax: (620) 225-6370

SCALES WARRANTY & SERVICE POLICY

DIGI-STAR SCALE SYSTEMS

Digi-Star, LLC warrants for a period of one year from date of installation, to correct by repair or replacement, at Digi-Star's option, any defect in material or workmanship in any part of this product. In the event of replacement, Digi-Star's sole obligation shall be to provide replacement products or parts. F.O.B. Digi-Star, LLC, W5527 Hwy 106, Fort Atkinson, WI 53538 USA.

WEIGH-TRONIX SCALE SYSTEMS

WEIGH-TRONIX warrants for a period of one year from date of installation, to correct by repair or replacement, at Weigh-Tronix's option, any defect in material or workmanship in any part of this product. In the event of replacement, Weigh-Tronix's sole obligation shall be to provide replacement products or parts. F.O.B. Avery Weigh-Tronix, 1000 Armstrong Drive, Fairmont, MN 56031-1439 USA.

OPERATOR QUALIFICATIONS

Operation of this mixer shall be limited to competent and experienced persons. In addition, anyone who will operate or work around a mixer must use good common sense. In order to be qualified, he or she must also know and meet all other qualifications, such as:

1. Some regulations specify that no one under the age of sixteen (16) may operate power machinery. It is your responsibility to know what these regulations are in your area and/or situation.
2. Current OSHA regulations state in part: At the time of initial assignment and at least annually thereafter, the employer shall instruct **EVERY** employee in the safe operation and servicing of all equipment with which the employee is, or will be involved.
3. Unqualified persons are to **STAY OUT OF THE WORK AREA.**
4. A person who has not read and understood all operating and safety instructions is not qualified to operate the machinery.

FAILURE TO READ THIS MIXER MANUAL AND ITS SAFETY INSTRUCTIONS IS A MISUSE OF THE EQUIPMENT.



SAFETY

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



THIS SYMBOL MEANS

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED!

SIGNAL WORDS: Note the use of the signal words DANGER, WARNING, and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING: Indicates a potentially hazardous situation that, if not avoided, will result in serious injury or death, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or ROTO-MIX, 2205 E. Wyatt Earp, Dodge City, Kansas, 67801. (Telephone) 620-225-1142 (Fax) 620-225-6370

SAFETY FIRST

REMEMBER: The careful operator is the best operator. Most accidents are caused by human error. Certain precautions must be observed to prevent the possibility of injury or death.



DO NOT ALLOW PERSONNEL OTHER THAN THE QUALIFIED OPERATOR NEAR THE MACHINE.



NEVER START MACHINE UNTIL ALL GUARDS AND SAFETY SHIELDS ARE IN PLACE.



DO NOT CLEAN, ADJUST OR LUBRICATE THE MACHINE WHILE IT IS IN MOTION.



BEFORE STARTING TRACTOR ENGINE, BE SURE PTO SHIELDS TURN FREELY.



LOOSE OR FLOPPY CLOTHING SHOULD NOT BE WORN BY THE OPERATOR.

OPERATING PRECAUTIONS & INSTRUCTIONS:

- A. Check to see that no obstructions are present in the mixer prior to start up.
- B. Before loading, run the mixer empty and check all operations.
- C. Do not overload the mixer. Maximum load for the 625 HDS is 33,500 LB. Maximum load is determined by weight, not volume.
- D. Be sure all shields are in place before operation.
- E. Use common sense when operating.



EQUIPMENT SAFETY GUIDELINES

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufactures build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.

In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If a shield is removed to perform maintenance or make a repair, reinstall the shield after the maintenance or repair is complete.

Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing. Location of such decals are indicated in this manual.

Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. Do not allow persons to operate or perform maintenance or repairs on this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.

Do not paint over, remove or deface any safety signs or warning decals on your equipment. Observe all safety signs and follow the instructions on them.

Never exceed the limits of a piece of machinery, in its ability to do a job, or to do so safely, if safe operation is in question - **DON'T TRY IT.**



LIGHTING AND MARKING

It is the responsibility of the customer to know the lighting and marking requirements of the local highway authorities and to install and maintain the equipment to provide compliance with the regulations. Add extra lights when transporting at night or during periods of limited visibility.



KEEP ALL SHIELDS IN PLACE

Do not operate mixer without safety shields in place.

Rotating parts can crush or dismember causing personal injury or death.

Disconnect PTO driveline before removing shields for adjustment or service.



OPERATE MIXER SAFELY

Rotating parts can entangle or strike people, resulting in personal injury or death.

Never enter a mixer while in operation.

Operate the mixer from the operator's tractor seat only.

Do not exceed load capacity of the mixer. (See loading instructions).

Reduce speed when turning or traveling on rough terrain.

Avoid traveling over loose fill, rocks, ditches or holes.

Keep transmissions in gear when traveling downhill.



KEEP RIDERS OFF MIXER

Keep riders off.

Riders are subject to injury such as being struck by foreign objects and being thrown off. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.





STAY CLEAR OF ROTATING DRIVELINES

Entanglement in rotating driveline can cause serious injury or death.

Keep driveline shields in place at all times. Make sure rotating shields turn freely.

Do not wear loose-fitting clothing which may catch in moving parts. Stop the engine and be sure PTO driveline is stopped before making adjustments, connections, or cleaning out PTO driven equipment.



PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 60°F (16°C).



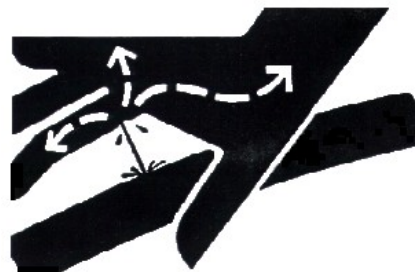
AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury or death.

Avoid this hazard; relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.





SAFETY DECAL CARE

Keep safety decals and signs clean and legible at all times.

Replace safety decals and signs that are missing or have become illegible.

Replaced parts that displayed a safety sign should also display the current sign.

Safety decals or signs are available from your dealer or the ROTO-MIX manufacturing plant.

How to Install Safety Decals:

Be sure that the installation area is clean and dry.

Decide on the exact position before you remove the backing paper of the decal.

Remove the smallest portion of the split backing paper.

Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.

Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.

Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.



IMPORTANT
ALWAYS REDUCE ENGINE SPEED
TO IDLE BEFORE ENGAGING
AND DISENGAGING PTO.
DISENGAGE TRACTOR PTO
BEFORE TURNING.

440801



PRACTICE FIRE PREVENTION

Keep fire extinguishers accessible at all times. Use the extinguisher recommended for the material being processed. It should be rated safe for use on electrical fires.

Never smoke close to combustible material.

Clean the area before welding or other activities which may make sparks.

Keep all components that generate excessive heat clear of oil and other combustible materials.



REMEMBER

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your dealer or the ROTO-MIX plant.

BEFORE OPERATION:

Carefully study and understand this manual.

Do not wear loose-fitting clothing which may catch in moving parts.

Always wear protective clothing and substantial shoes.

Keep wheel lug nuts or bolts tightened to specified torque (220 ft-lb).

Assure that tires are inflated evenly.

Give the unit a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.

Be sure that there are no tools lying on or in the mixer.

Do not use the unit until you are sure that the area is clear, especially clear of children and animals.

Because it is possible that this mixer may be used in dry areas or the presence of combustibles, special precautions should be taken to prevent fires and firefighting equipment should be readily available.

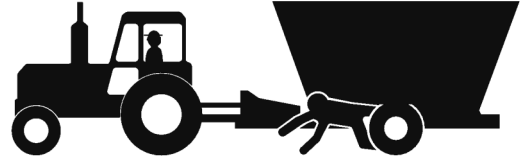
Don't hurry the learning process or take the unit for granted. Become familiar with your new mixer before operating.

Practice operation of your mixer and its attachments. Completely familiarize yourself and other operators with its operation before using.



DURING OPERATION:

Beware of bystanders, **particularly children!** Always look around to make sure that it is safe to start the engine or move the unit. This is very important with higher noise levels and quiet cabs; you may not hear people shouting.



NO PASSENGERS ALLOWED - Do not carry passengers anywhere on, or in equipment, except as required for operation.

Keep hands and clothing clear of moving parts.

Do not clean, lubricate or adjust your mixer while it is moving.

Be observant of the operating area and terrain - watch for holes, rocks or other hidden hazards. Always inspect the area prior to operation.

Do not operate near the edge of drop-offs or banks.

Do not operate on steep slopes as rollover may result.

Operate up and down (not across) slopes. Avoid sudden starts and stops.

Pick a smooth and as level as possible route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.

Be extra careful when working on inclines.

Clear the equipment of brush, twigs or other materials to prevent buildup of dry combustible materials.

Maneuver the vehicle at safe speeds.

Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.

Avoid loose fill, rocks and holes; they can be dangerous for equipment operation or movement. Allow for unit length when making turns.

Do not walk or work under raised components or attachments unless securely positioned and blocked.

Keep all bystanders, pets and livestock clear of the work area.

Operate the towing vehicle from the tractor operator's seat only.

Never attempt to start engine and/or operate machine while standing alongside of unit.



DURING OPERATION (CONT)

Never leave running mixer unattended.

As a precaution, always recheck the hardware on mixer following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.



FOLLOWING OPERATION:

Following operation, set the brakes, disengage all power drives, shut off the engine and remove the ignition keys.

Store the unit in an area away from human activity.

Do not park equipment where it will be exposed to livestock for long periods of time. Damage to equipment and livestock injury could result.

Do not permit children to play on or around the stored unit.

Make sure parked machine is on a hard, level surface and engage all safety devices.

Wheel chocks may be needed to prevent unit from rolling.



HIGHWAY AND TRANSPORT OPERATIONS:

Adopt safe driving practices:

Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.

Reduce speed prior to turns to avoid the risk of overturning.

Avoid sudden uphill turns on steep slopes.

Always keep the vehicle in gear to provide engine braking when going downhill. Do not coast.

Do not drink and drive.



HIGHWAY AND TRANSPORT OPERATIONS (CONT):

Comply with state and local laws governing highway safety and movement of farm machinery on public roads.

Use approved accessory lighting, flags and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport.

The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.

When driving mixer on the road or highway under 20 MPH (40 KPH) at night or during the day, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.

Plan your route to avoid heavy traffic.

Be a safe courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.

Be observant of bridge loading ratings. Do not cross bridges rated lower than the gross weight at which you are operating.

Watch for obstructions overhead and to the side while transporting.

Always operate mixer in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the mixer when making turns, stopping the unit, etc.



PERFORMING MAINTENANCE:

Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

Make sure there is plenty of ventilation. Never operate the engine of the vehicle in a closed building. The exhaust fumes can cause asphyxiation.

Before working on the mixer, stop the vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine and remove the ignition keys.

Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.

Always use a safety support and block the wheels. Never use a jack to support the machine.



PERFORMING MAINTENANCE (CONT):

Always use the proper tools or equipment for the job at hand.

Use extreme caution when making adjustments.

Never use your hands to locate hydraulic leaks on attachments. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate the skin.



When disconnecting hydraulic lines, shut off hydraulic supply and relieve all hydraulic pressure.

Openings in the skin and minor cuts can be infected from hydraulic fluid. If injured by escaping hydraulic fluid, see a doctor at once. Gangrene can result. Without immediate treatment, serious infection and reactions can occur.

Replace all shields and guards after servicing and before moving.

After servicing, be sure all tools, parts and service equipment are removed.

Do not allow grease or oil to build up on any step or platform.

Never replace hex bolts with less than grade five (5) bolts unless otherwise specified.

Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. ROTO-MIX will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.

If equipment has been altered in any way from original design, ROTO-MIX does not accept any liability for injury or warranty.

A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this mixer.

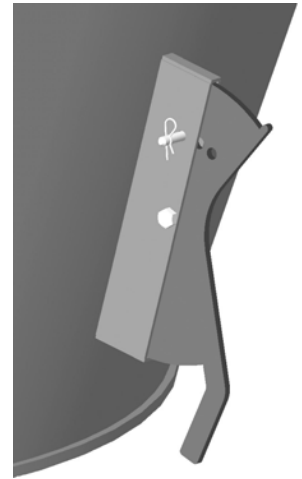
READ THE FOLLOWING BEFORE WELDING ON THIS MIXER

When welding on your mixer, do not allow the current to flow through the ball bearings or the roller chains. Ground directly to the item being welded. Clean the area before welding and have a fire extinguisher accessible at all times.

Always disconnect the scale instrumentation from the weigh bars or load cells and the power source. Be sure the current does not pass through weigh bars or load cells or scale indicator. The vehicle's alternator should always be disconnected before welding on the unit.

LOADING INSTRUCTIONS & PRECAUTIONS

- A. Visually inspect mixer before each load.
- B. Do not overload the mixer. Mixer capacity is determined by weight. An overloaded mixer will not mix correctly, and will pull harder, which could damage your unit. **Maximum mix weight is 21,500 LB for the 625 HDS model.**
- C. Load hay first with machine running: **TRUCK ENGINE RUNNING FROM 1,500 - 1,700 RPM.** Use a slower auger speed if you are using very tender, very fine-stemmed hay that breaks apart very easily. Slower speeds allow for maximum staple length. Increase auger speed (using the hydrostat control handle) as the hay texture changes from very tender, to fine stemmed, to normal good quality hay, to very rough course hay. **If equipped with restrictor plates (dogs),** adjust to fine tune length of cut. Always start with one dog, preferably the rear, engaged one hole and increase until length of cut is correct. **NOTE: engaging dogs an excessive amount will cause mix quality to deteriorate. Remove all twine, wire and/or wrapping before loading bale into mixer.**
- D. Add balance of grain and/or commodities, keeping more fragile ingredients toward the end of the loading sequence as possible. For best results, add concentrates or other dry ingredients of small quantity as close to the middle of the loading sequence as possible.
- E. Load silage, green chop and/or other high moisture products.
- F. Load molasses, animal fat, and/or other liquid supplements last.
- G. Allow mixer three to four minutes to complete mixing after last ingredient is added. (**NOTE:** this time will vary, and could be longer under certain conditions.)
- H. View mixing operation only from observation platform of mixer. Never allow more than two people on platform at one time.
- I. For best results, offload mixed feed at as high a RPM as possible, with door as open as possible.



HAY PREPARATION:

SMALL BALES (60 to 150 lbs., 2 or 3 wire), LARGE SQUARE BALES (3' x 4' x 8' or 4' x 4' x 8') and ROUND BALES.

Remove all twine, wire and/or wrapping and load bale in mixer.

625 HDS CYCLONE VERTICAL MIXER OPERATION

I. Description of Operation:

A trailer mounted tractor PTO driven feed mixer.

Pumps & Motors: Tandem Linde closed loop pumps driving 2 Poclain two speed motors. The motors turn the vertical augers used to mix cattle feed.

Operation feedback inputs: PTO pulse pick up, auger 1 and auger 2 motor speed pulse pickups, and mixing pressure transducers.

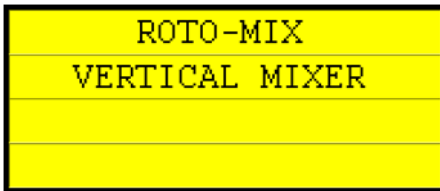
Switch inputs: Low oil level, cooling fan on temp (120°), filter bypass, Warn Temp (180 °), Shut Down Temp (200 °).

Keypad inputs: Mixing ON/OFF, Discharge ON/OFF, Display Screen UP, Display Screen DN, Clean Out ON, Limp ON, and Warm (pressing Clean & Limp).

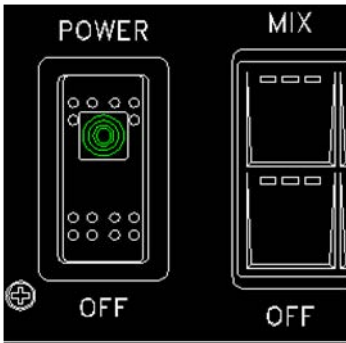
Calibration

Pressure transducers are calibrated in the code. No calibration is required.

Starting operation and PTO speed:

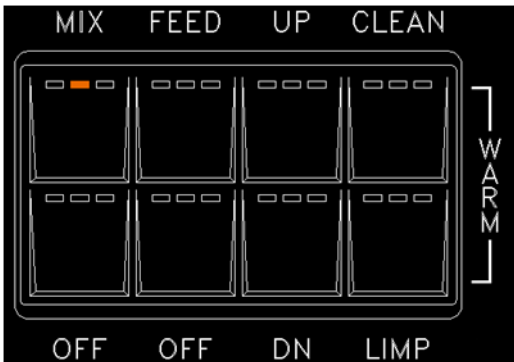


During power up this screen is on; after 5 seconds the screen will switch to operation screen 1.



AUGER 1 RPM	0
AUGER 2 RPM	0
PTO RPM	0
SYSTEM DISABLED	

During power up this screen is on; after 5 seconds the screen will switch to operation screen 1.



Key Pad Operation: (Momentary buttons)

To start mixing operation press MIX; to stop press OFF.

To start feed out operation press FEED; to stop press OFF.

To change display screen page use the UP or DN buttons.

Warm: Hold both Clean and Limp buttons to start warming mode operation until the center LED's blink. Release the buttons and warm will stay on. Push either button momentarily to stop warm.

Clean Out: Push "Clean" button during feed operation at low pressure (below 1500 psi) to start Clean Out.

Limp mode is used in emergency if a sensor is faulted or can be used if there is not a fault. Hold Limp button until the three LED's stay on and release button. Push again to cancel limp.

Note: Shown with the Mix middle LED on during mix operation.

625 HDS CYCLONE VERTICAL MIXER OPERATION

AUGER 1 RPM	0
AUGER 2 RPM	0
PTO RPM	1212
RUN RPM	LOW

If the PTO is below PTO speed, set at 1850 RPM, line 4 will display "RUN RPM LOW". If the Mix or Feed button is held "LOW" will blink.

AUGER 1 RPM	0 F
AUGER 2 RPM	0 L
PTO RPM	1212 T
ENABLE	FALSE

If there is a fault "F,L,T" will blink on the right side of the display. Use the Up switch to go to the last three display pages to see the active fault. See fault section below. Cycle control power to clear a held fault.

Warm Up Operation:

AUGER 1 RPM	10
AUGER 2 RPM	10
PTO RPM	1211
WARM UP	

Press and hold Clean and Limp buttons for 5 seconds. The left and right LED of both switches will blink. When the center LED of both switches start to blink the augers will run at a slow speed. Press either button to shut off warm up.

Mixing Mode Operation:

AUGER 1 RPM	0
AUGER 2 RPM	0
PTO RPM	1145
MIX RPM	OK

When PTO speed is above the PTO RPM required for mix the screen will show "Mix RPM OK" or if above the required feed RPM, it will show "Feed RPM OK".

AUGER 1 RPM	24
AUGER 2 RPM	24
PTO RPM	2058
MIXING FEED	

When PTO speed is above the PTO RPM required to mix, the screen will show "MIX RPM OK".

AUGER 1 RPM	24
AUGER 2 RPM	24
PTO RPM	1980
MIXING FEED	MAX DISP

Press the Mix push button. The augers will start rotation based on the PTO command speed. The center LED will be on during mix. Press Stop button to shut off.

If the PTO RPM drops due to engine droop below the command RPM, set at 1850, the PID will start to reduce the pump output. As engine RPM recovers the PID will increase pump output and auger speed. The motors will start in maximum displacement. If both motors hydraulic pressure are below shift pressure, set at 2000 psi, for a time period set at 5 seconds; control will do a switch to minimum displacement operation. The auger speed PID will maintain 38 to 40 RPM. If either motor hydraulic pressure is working above shift pressure, set at 4000 psi for a time period set at 5 seconds; control will do a switch to maximum displacement operation.

AUGER 1 RPM	39
AUGER 2 RPM	39
PTO RPM	1952
MIXING FEED	MIN DISP

Display page 2: Use Screen Up/Dn Switch to display auger pressure.

LOOP 1 PSI	3746
LOOP 2 PSI	3416

625 HDS CYCLONE VERTICAL MIXER OPERATION

Jam condition:

AUGER 1 RPM	21
AUGER 2 RPM	0
PTO RPM	1952
MIXING FEED	JAM

If one or both motors are jammed the pressure will be at relief and the auger speed will be zero. Display will show jammed condition. After a time delay, set at 12 seconds the control will switch to a reverse operation.

AUGER 1 RPM	10
AUGER 2 RPM	10
PTO RPM	1952
REVERSE AUGERS	

During reverse the commanded pump output is set at 390 this is approximately 39% between the min and max current settings. The reverse on time is set at 5 seconds.

After reverse times out, control switches to forward or mixing direction. If the auger or augers remain jammed the control will switch to a reverse operation for a limited number of attempts, set at 3 times.

AUGER 1 RPM	0 F
AUGER 2 RPM	0 L
PTO RPM	1952 T
REV START JAMED FLT	

After the number of reverse attempts is reached, the pumps are shut off and the jammed fault will be enabled. To clear the fault status cycle control power off then back on.

Feed Mode Operation:

AUGER 1 RPM	18
AUGER 2 RPM	0
PTO RPM	1952
FEED DISCHARGE	

During feed discharge the auger speed is maintained at a speed, set at 22 RPM, with the auger speed PID. When Feed is started auger 1 will turn on first. When the pressure is below a control pressure, set at 2500 psi for a time, set at 5 seconds, then auger 2 will start. Motors shifts to high speed at 2000 psi, same as Mix mode but with speed limited to 30 RPM.

AUGER 1 RPM	29
AUGER 2 RPM	29
PTO RPM	1951
FEED DISCHARGE	

As in Mix mode, after the auger pressure is below shift pressure, set at 2000 psi, for a time period set at 5 seconds, the motors will shift to minimum displacement.

Note: Jammed operation works the same in feed mode except that if it is just operating auger 1 at start of feed it will only reverse auger 1 if jammed. Note: See above section on Jammed Auger Operation.

Clean Out Operation:

AUGER 1 RPM	49
AUGER 2 RPM	49
PTO RPM	1952
CLEAN OUT SPIN	

1. Clean Out can be initiated with the push button as explained above in the key pad section.
2. Clean Out will also start in Feed mode if the auger pressures are below cleanout pressure, set at 1400 psi. Clean Out will **cancel** if the auger pressures are above cancel

Cooler Fan Operation:

- The fans will turn on when the NC temp switch opens and PTO is on.
- Two relays are energized with an output from DVC710.
- After the switch cools to the NC condition a 60 second off timer will continue to operate the fan.

625 HDS CYCLONE VERTICAL MIXER OPERATION

II. Fault Information:

Passive Faults

AUGER 1 RPM	0	B
AUGER 2 RPM	0	Y
PTO RPM	1332	P
RUN RPM	LOW	

Filter Bypass Fault: This fault is true if the fault is active (NC indicator switch) and the system is at fan operating temperature. FLT will blink on the right side page of 1 and display "Filter Bypass" on line 4 of page 2.

LOOP 1 PSI	571	
LOOP 2 PSI	491	
FILTER BYPASS		

AUGER 1 RPM	25	
AUGER 2 RPM	25	
PTO RPM	2045	
TEMP WARNING		

Both page one and two will blink warning temp message. This is true when one or both NC loop temp switches are at 180 degrees and have opened.

LOOP 1 PSI	4391	
LOOP 2 PSI	4494	
TEMP WARNING		

Active Faults

- Jammed auger fault explained above in the Mixing section.
- After correcting a fault condition it may be necessary to cycle power off and back on to clear a fault status.
- Over temp shut down fault

AUGER 1 RPM	0	F
AUGER 2 RPM	0	L
PTO RPM	2040	T
OVER TEMP STOP		

Both page one and two will blink Over Temp Stop condition. The pump outputs will shut off if either NC switch opens at 200 degrees F. Leave the PTO on to circulate flow to the cooler. As the temperature cools down the NC over temp switch will close. The fault condition will be maintained until the system cools down until both warning temp switches close. At this point the over temp condition is cancelled. Note: Over temp condition will be maintained if controller power is cycled off and back on.

LOOP 1 PSI	483	F
LOOP 2 PSI	564	L
		T
OVER TEMP STOP		

- Low fluid level fault

LOOP 1 PSI	51	F
LOOP 2 PSI	58	L
LOW FLUID LEVEL		T

When fluid is low page 1 will show "ENABLE FALSE" on line 4 and "FLT". Page 2 shows LOW FLUID LEVEL blinking and "FLT".

625 HDS CYCLONE VERTICAL MIXER OPERATION

- Input and output faults

MOTOR 1 PSI	FLT
MOTOR 2 PSI	
MOTOR 1 PPU	
MOTOR 2 PPU	

Motor 1 pressure transducer is shown in fault status.

- o Page 3: Fault Page1
- o Display will revert to page 1 operation page after 5 seconds.
- o Motor 1 PSI and Motor 2 PSI: Pressure transducer faulted. Check connection at transducer. Check sensor power and ground.
- o Motor 1 and Motor 2 PPU: With the pump output on and operating at a lower pressure (less than 6000 psi) than a stalled condition; when there is no pulse feedback speed.

PTO PPU	
PUMP PWM 1	
PUMP PWM 2	
MOTOR HIGH SPEED	FLT

Motor high speed solenoid transducer is shown in fault status.

- o Page 4: Fault Page2
- o Display will revert to page 1 operation page after 5 seconds.
- o PTO PPU: When the motors are turning but the PTO PPU is not receiving this input. Can be tested in Warm Up mode.
- o Pump PWM 1 and 2: Pump output is shorted or open.
- o Motor High Speed: Coil for the motor displacement shift to min is open or shorted.

KEYPAD CAN	
HOURS	301.1

J1939 CAN 2 communication is not connected for the keypad.
HOURS and TENTHS of PTO run time.

II. Limp Mode:

AUGER 1 RPM	12 F
AUGER 2 RPM	12 L
PTO RPM	2045 T
LIMP MODE	

LOOP 1 PSI	7500 F
LOOP 2 PSI	2551 L
	T

Shown with Loop 1 pressure in fault condition; open fault.

In a fault condition with a **3 blink code (See note in LED-Error Status)** the augers can be operated in Limp Mode (limp mode can also be operated without a fault):

- o Push and hold the momentary Limp push button. After time delay, set at 5 seconds, the limp operation will begin. Release button and limp stays on. Press again and limp will shut off.
- o Auger motors will operate in maximum displacement.
- o Pump output will be at the limp mode percent setting, set at 80%.

TROUBLE SHOOTING

⚠ WARNING ALWAYS DISCONNECT OR DISENGAGE POWER TAKE OFF AND REMOVE KEYS FROM TRACTOR BEFORE CLEANING, ADJUSTING, LUBRICATING OR SERVICING THIS MACHINE. FAILURE TO FOLLOW THIS RECOMMENDATION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

NOTE: THIS CHART DOES NOT COVER ALL PROBLEMS. CONTACT YOUR DEALERSHIP FOR FURTHER ASSISTANCE.

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Machine Vibration	Universal Joints Are Out Of Alignment.	Check And Realign
	Worn Out Bearing.	Replace Bearing.
Excessive Bearing Failure	Improper Lubrication	Refer To Lubrication Chart.
	Contamination	Check Seal
	Excessive Loads.	Refer To General Information About Machine Loading
Mixing quality poor, not thorough.	Leading edge of bottom flight is not adjusted correctly.	Properly adjust leading edge to make contact with the bottom of mixer & out to come close to the side wall at nearest point.
	Batch has high concentration of light weight ingredients and rotates too fast inside tub for thorough mixing.	Extend restrictor plates (dogs) further into tub as instructed on page 19.
	High concentration of long hay, not being torn apart.	Extend restrictor plates (dogs) further into tub as instructed on page 19.
Hay being added to batch, but not being incorporated into mixture.	Hay not getting shredded by mixing action, batch rotating inside tub too fast.	Install restrictor plates, extend restrictor plates (dogs) further into tub as instructed on page 19.
Too much power being consumed to mix.	Restrictor plates extend too far into tub and retarding rotation of batch.	Move restrictor plates (dogs) away from tub as instructed on page 19.

LUBRICATION

DISENGAGE PTO & SHUT OFF POWER BEFORE LUBRICATING THE MACHINE.

DO NOT WEAR LOOSE FITTING CLOTHING THAT MAY CATCH IN MOVING PARTS.

PTO SHAFTS & U-JOINTS: Grease every 8 hours of operation.

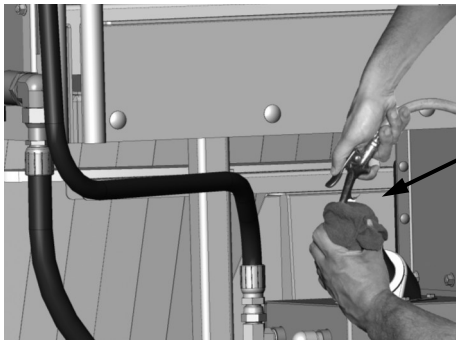
IT IS RECOMMENDED THAT THE HYDRAULIC RESERVOIRS USE: (CITGO Transgard Tractor Hydraulic Fluid - Material Code 633310001) ONLY.

Approximate quantity of oil in the reservoir is 30 gallons. Hydrostat system uses a filter element SE-10, part #362443.

OIL FILTER SERVICE: All filters should be changed the first 24 hours after start up of the system, and thereafter during normal maintenance every 500 hours of service. 10 micron filter elements are recommended. All reservoirs should be checked daily for proper fluid level. Visually check daily for any fluid leakage.

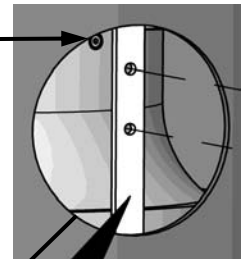
RECOMMENDATION: It is advisable to check the oil level of gearboxes at least once a month. If more than 10% of the total oil capacity has to be added, check for oil leaks.

HYDRAULIC MOTOR CASE BLEED: If the hydraulic system is opened due to a hose or seal leak, air will need to be bled from the hydraulic motor to prevent damage to the motor bearings.

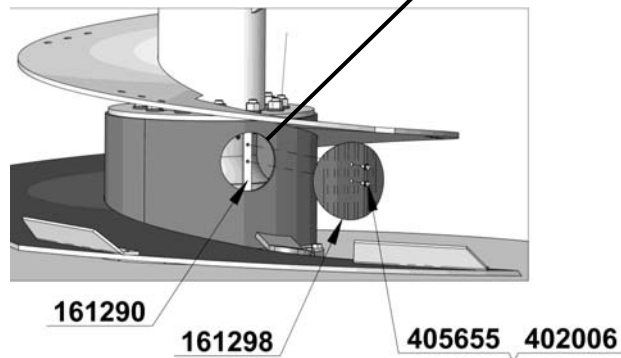


Locate the bleed screw near the top of the hydraulic motor. Remove screw using a 4mm Allen Wrench.

Using rags and air gun, pressurize the hydraulic tank until oil flows from the bleed screw. Re-install screw. Install access cover.



If auger skirt does not have an access hole: Torch a 7" hole in auger skirt and cover with the parts indicated in the illustration to the right.



LUBRICATION CHART

⚠ WARNING ALWAYS DISCONNECT OR DISENGAGE POWER TAKE OFF AND REMOVE KEYS FROM TRACTOR BEFORE ADJUSTING, LUBRICATION OR SERVICING THIS MACHINE. FAILURE TO HEED MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

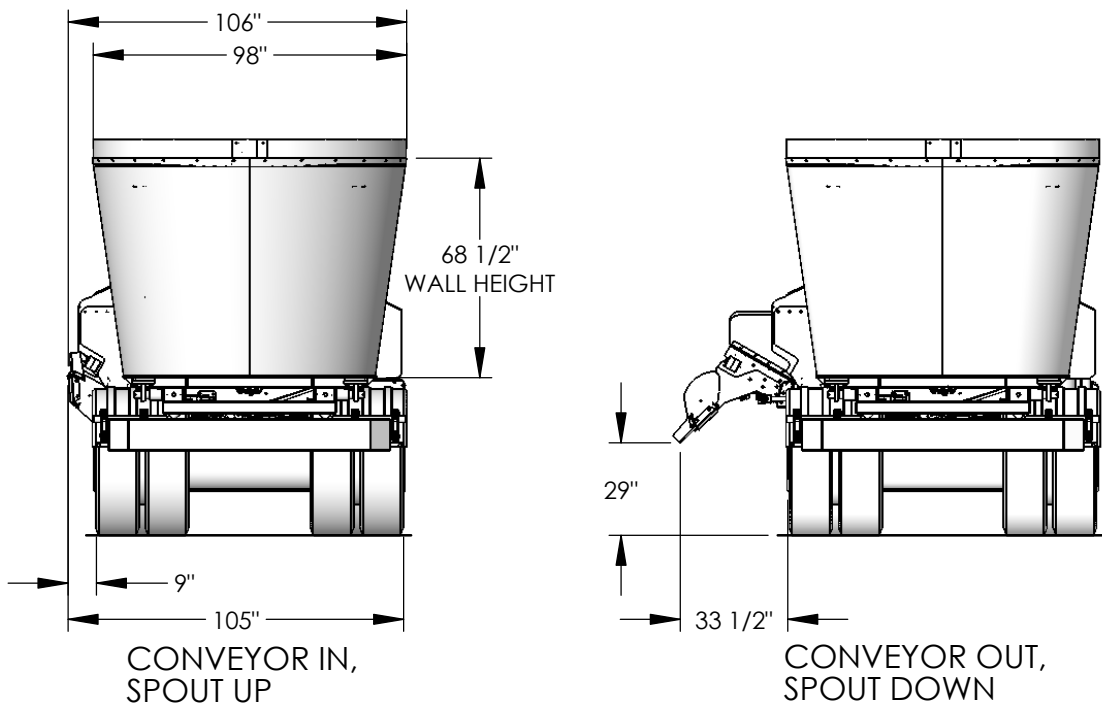
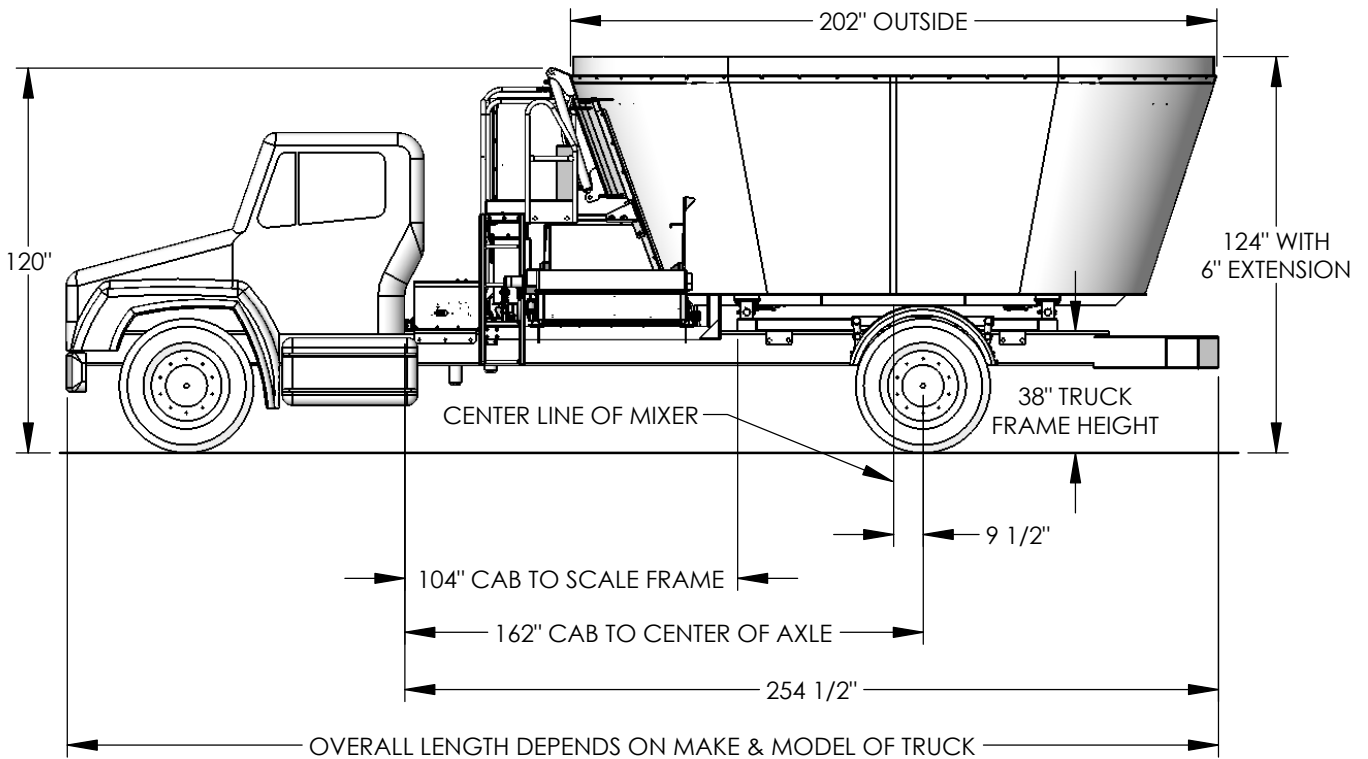
ITEM	LUBRICATION	INTERVAL
Conveyor Chain	Light Weight Oil	Brush or spray on lightly every 40 hours of operation
Conveyor Bearings	Good Quality Grease	One pump every 8 hours of operation
Wheel Bearings	Pack With Lithium Base Grease	Pack every 12 months
U-Joint	Good Quality Grease	Every 8 hours
Hydrostat System	CITGO Transgard Tractor Hydraulic Fluid - Material Code 633310001	Only when the system has been contaminated.
Oil Filters		<ol style="list-style-type: none"> 1. 24 hours after start up of the system. 2. Normal maintenance every 500 hours of service.

625 HDS CYCLONE VERTICAL MIXER SPECIFICATIONS

MODEL DESCRIPTION	625 HDS (Truck)
Mixer Weight without Truck	13,900 lbs.
Maximum Load with Heavy Ration	21,500 lbs.
Length, Mixing Chamber	202"
Transport Width	105"
Overall Height	123"
Recommended PTO Horsepower	225
Discharge Magnets	Optional
Screw Speeds	Variable up to 48 RPM
Conveyor Width	42"
Mixing Capacity, (cu ft)	620
Mixing Capacity, (bushels)	498
Bottom Plate Thickness	5/8"
Side Sheet Thickness	1/4"
Baffle Thickness	1/4"

All Dimensions & Specifications are Approximate and Subject to Change Without Notice.

625 HDS TRUCK DIMENSIONS



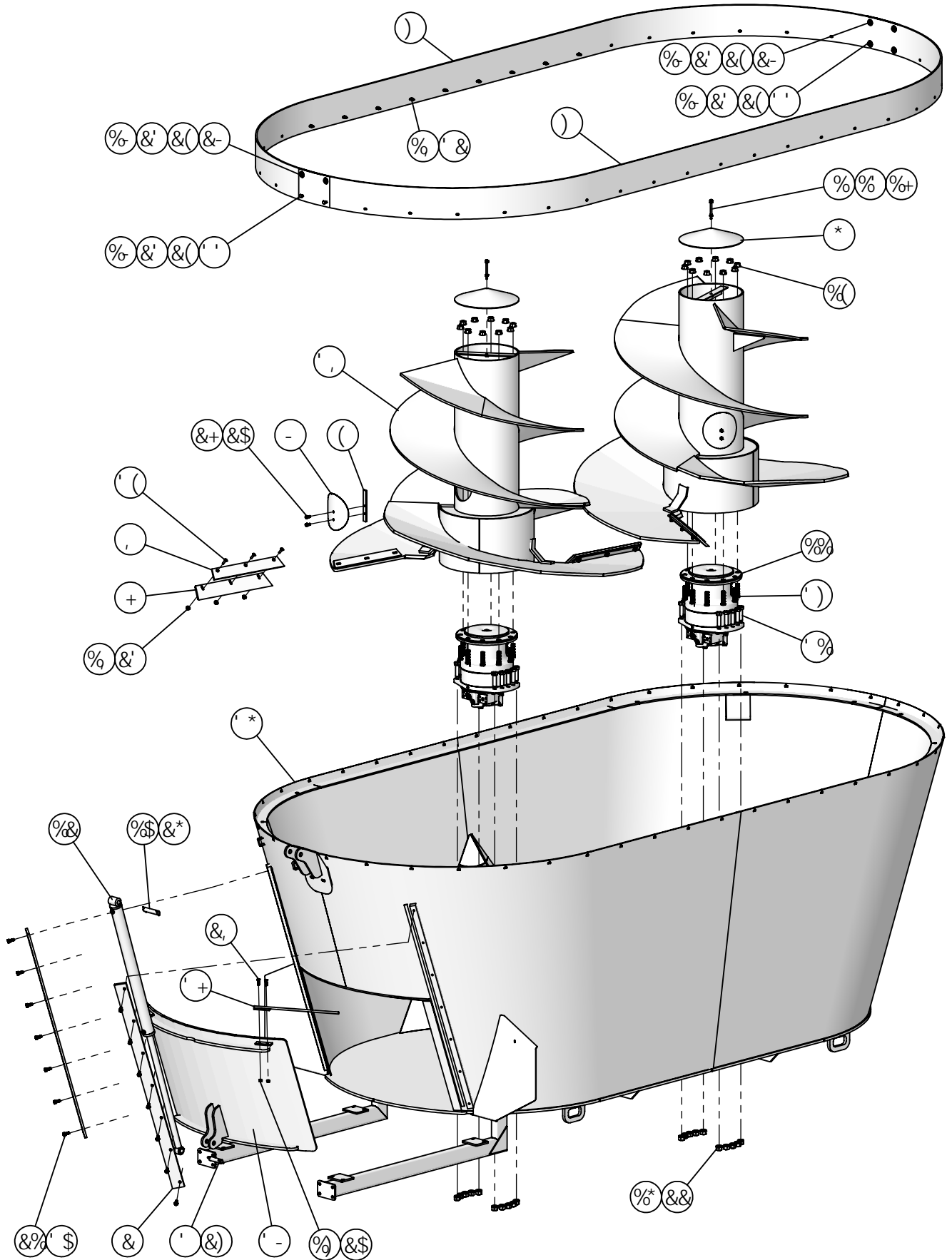
All Dimensions & Specifications are Approximate and Subject to Change Without Notice.

REPAIR PARTS

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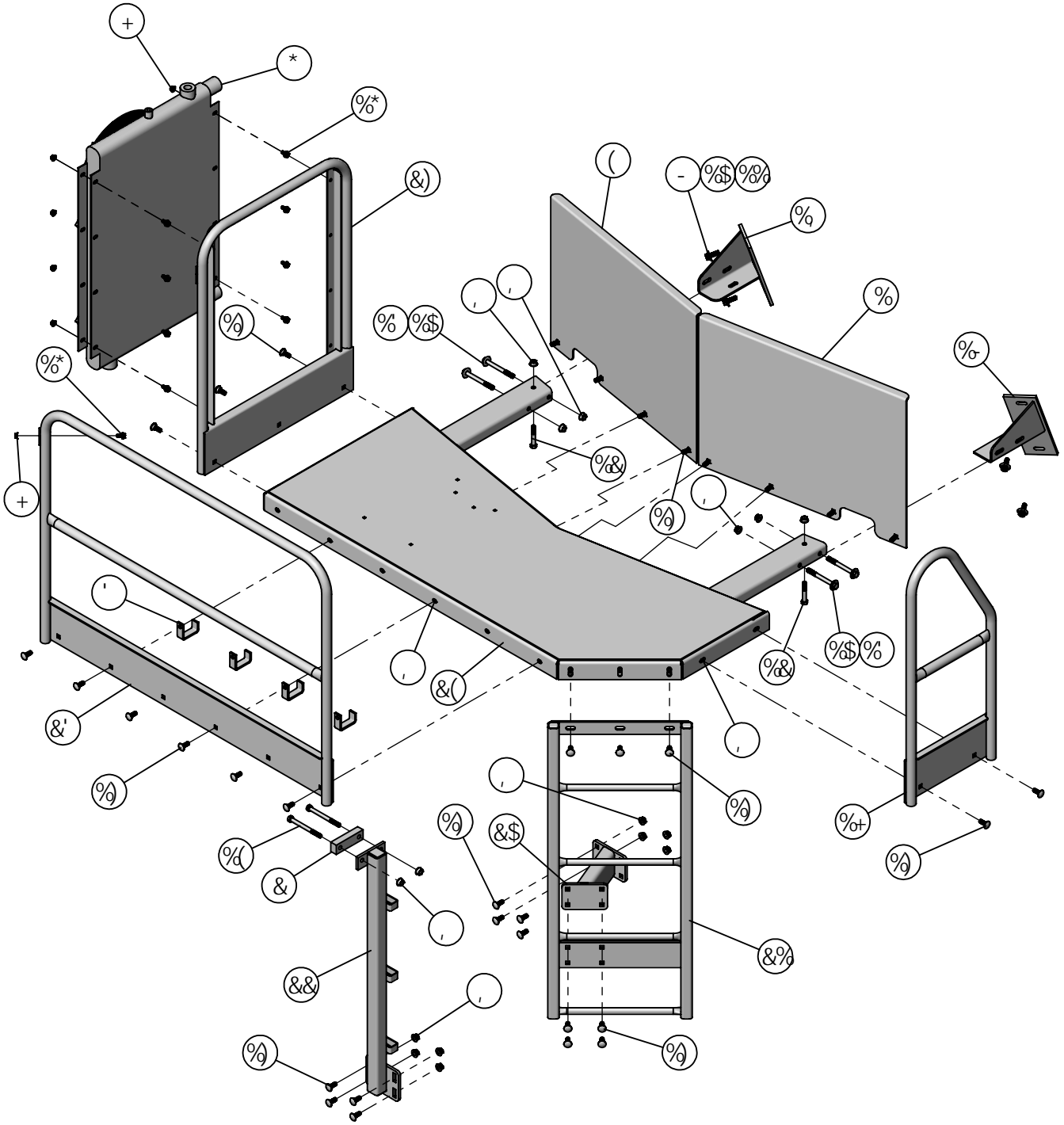
625 HDS MIXER ASSEMBLY



625 HDS MIXER ASSEMBLY

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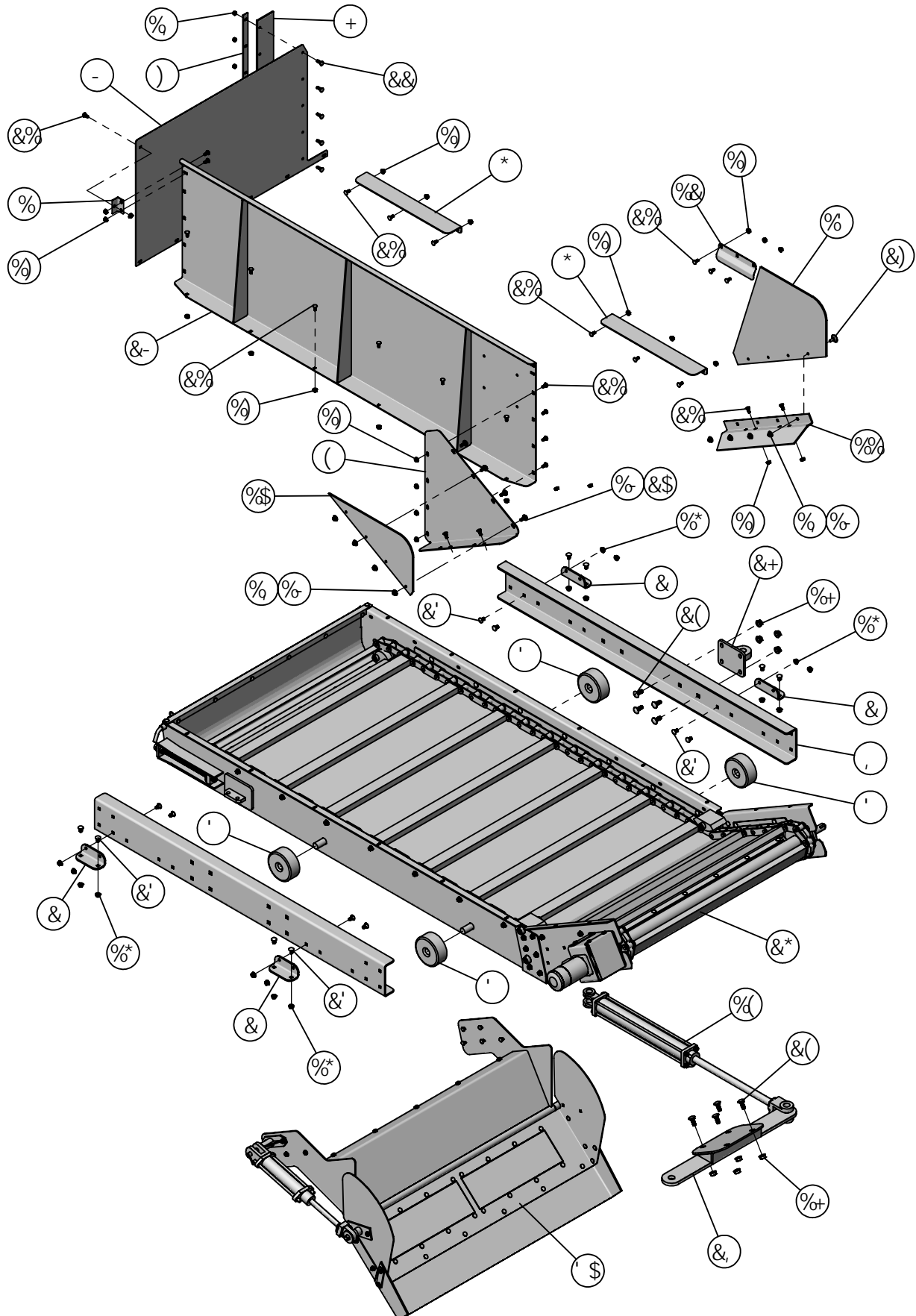
625 TRUCK PLATFORM ASSEMBLY



625 TRUCK PLATFORM ASSEMBLY

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*	' * &), (<95H9L7 <5B; 9F '5GGMK #. 5B	%
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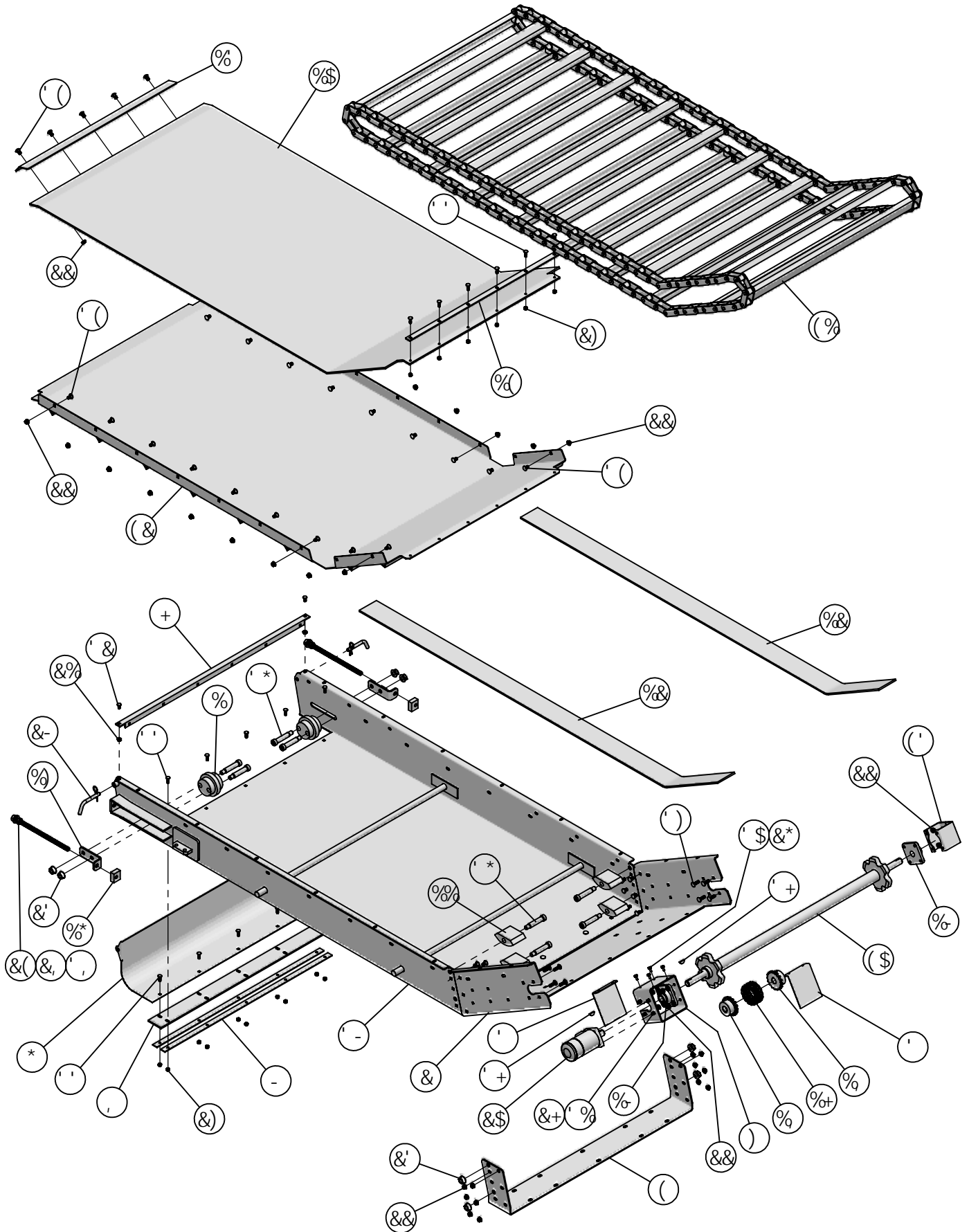
625 HDS TRUCK DOGLEG CONVEYOR ASSEMBLY #660255



625 HDS TRUCK DOGLEG CONVEYOR ASSEMBLY #660255

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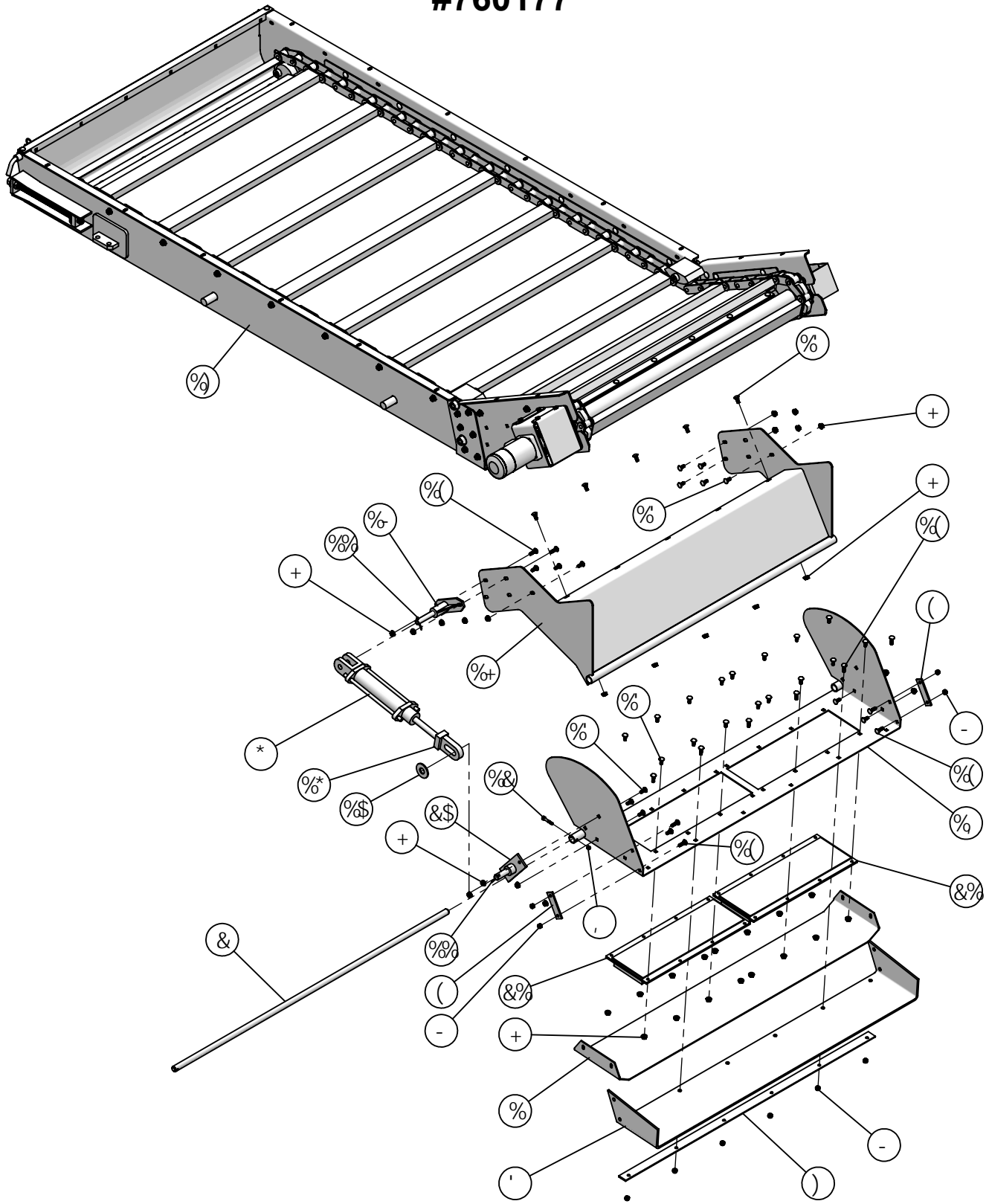
625 HDS TRUCK CONVEYOR SLIDE ASSEMBLY #760172



625 HDS TRUCK CONVEYOR SLIDE ASSEMBLY #760172

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%	%*% \$,	DGH7 '8 @F	&
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%}	%* &\$+(H9B G€ B '6F57?9H	&
%*	%* &\$, +	H5DD98 'H9B G€ B 9F '65F	&
%+	' &\$)%*	7 C I D@F '7 <5 B ') \$I &'F7 '1 %*	%
%	' ' &*\$*	7 C I D@F 'GDFC 7?9H) \$6%* '1 %"	&
%-	' (\$' %*	: @B; 9'695F B; '%''('6C @HF7 >7	&
&\$	' * \$\$\$}	<MBF5I @7 'A C H C F '%"- '7I 'B"	%
&%	(\$\$\$%*	<9L 'BI H) #%'1% 'G9FF5H98 : @B; 9') D@B	&
&&	(\$\$\$%+)	<9L 'BI H) #, '1%* 'G9FF5H98 : @B; 9') D@B	(*
&'	(\$\$\$%}	<9L 'BI H) #, '1%G9FF5H98 : @B; 9') D@B	,
&((\$\$*%\$	<9L '>5A 'BI H) #, '1%%') D@B	&
&)	(\$%%\$)	<9L 'BI H) #%'1% 'B M C 7') D@B	%*
&*	(\$\$\$\$(&	GDF B; @C 7? 'K 5G<9F '%#('D@B	(
&+	(\$\$\$%*	9LH9FB5 @GH5F @C 7? 'K 5G<9F ' #, "	(
&,	(\$%) %\$: @HK 5G<9F ') #, "'G59D@B	(
&-	(\$(&{	D B Z % # &' ' ' ' F 97 9J 9F '<+7 <	&
' \$	(\$) * %\$	<<7 G' %#('1&\$'1) #, "'I GG') D@B"	(
' %	(\$) *) &	<<7 G' #, '1%* '1' #(') D@B	(
' &	(\$+&\$&\$	7 <7 G') #%'1% '1' #(') D@B	&
' '	(\$+&\$%}	7 <7 G') #%'1% '1' %') D@B	%*
' ((\$+' \$' -	7 <7 G' #, '1%* '1' #(') D@B	' ,
')	(\$+' \$(%	7 <7 G' #, '1%* '1' % #(') D@B	,
' *	(\$+' (%%	G<C I @89F '6C @H) #, "'HkF958'1 "' #('8-5'1' "'@	,
' +	(\$- - %*	K C C 8F I :: '?9M%#('1 %"	'
' ,	, * \$(, -	5 @HkF958 'K 5	&
' -	, * %) %&	65G9'7 C B J 9M C F 'K 5' (&'K '89	%
(\$, * \$) %	7 C B J 9M C F '8F 9'9G<5: H(&'K	%
(%	, * \$) &\$, %L '7 C B J 9M C F '7 <5 B 'K 5' (&'I '+-D	%
(&	, * \$) %&	J 9FH7 5 @8C ; @; '7 C B J 9M C F 'D5B 'K 5	%
('	, * \$)' ,	G<5: H7 C J 9F 'K 5	%

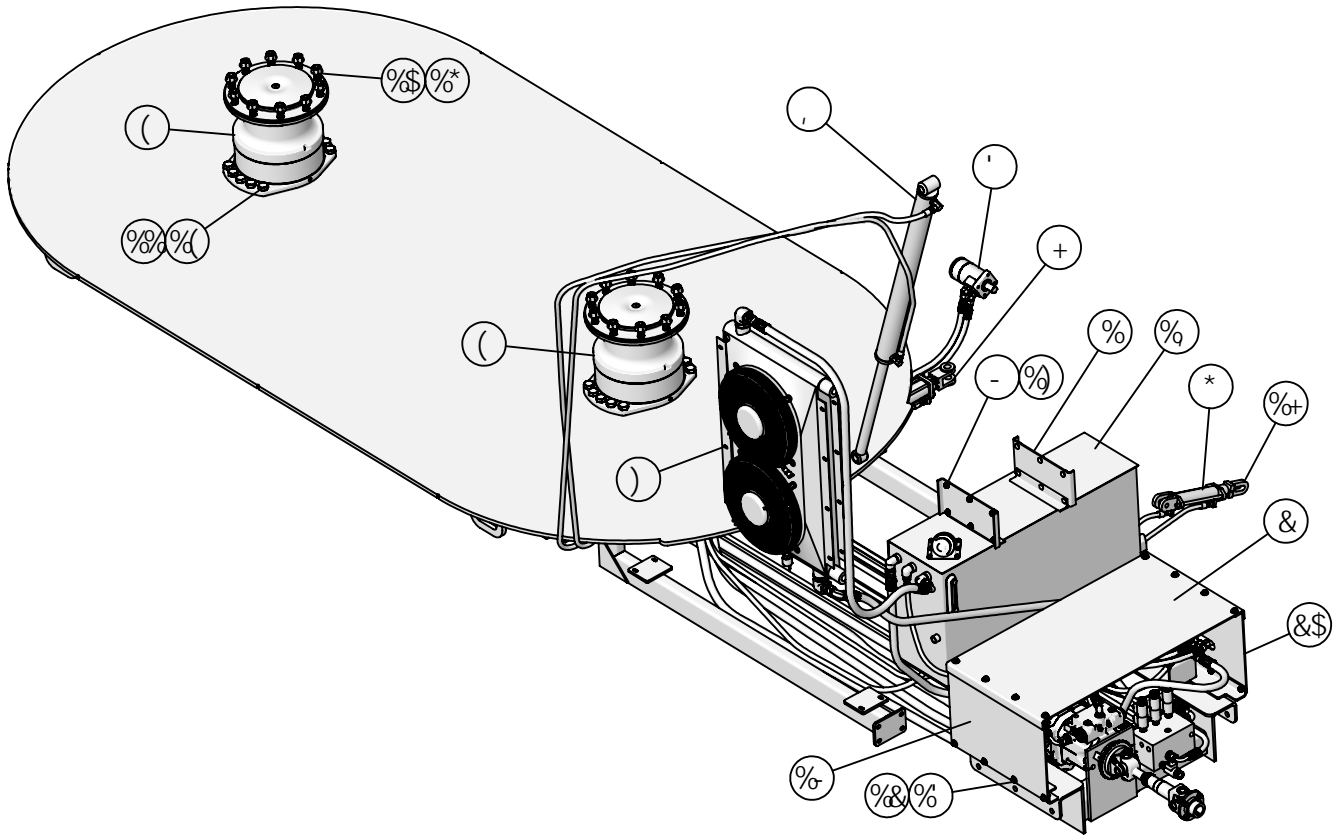
625 HDS TRUCK CONVEYOR SPOUT ASSEMBLY #760177



625 HDS TRUCK CONVEYOR SPOUT ASSEMBLY #760177

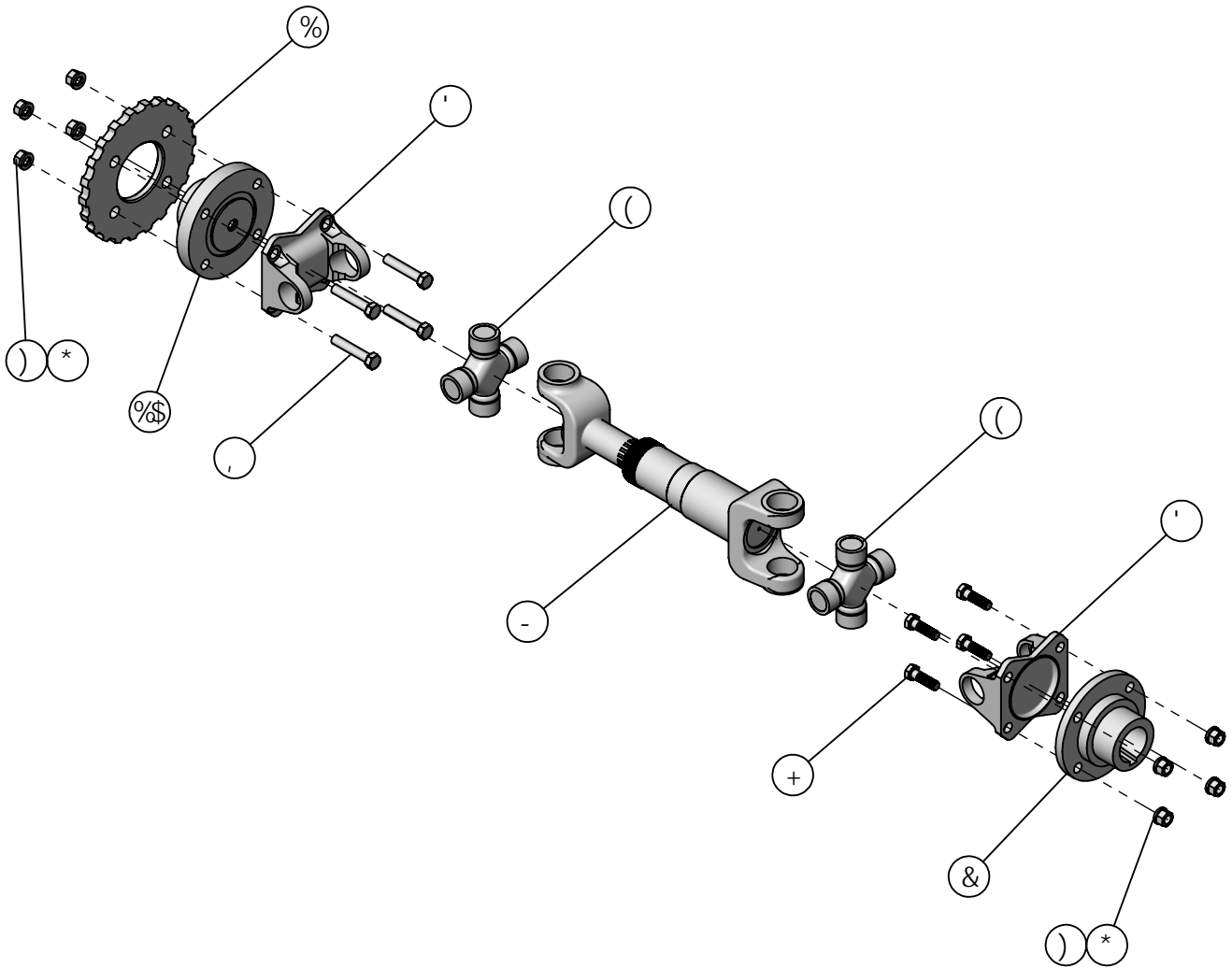
#PA	D5FH	8 9G7 F ðHC B	'E HM'
%	%*%+)	GDC I HA 5; B 9H; I 5F8	%
&	%*%+*	D J C HD-B`(&K`7 C B J 9MC F`GDC I H	%
'	%*&(+	GDC I HF I 669F`(&K`7 C B J	%
(	%*&(,	GDC I HF I 669F`G-8 9`65 F	&
)	%*&(-	GDC I H65 7 ?`I D`5 B; @9	%
*	' * (\$' *	<M8F5I @7`7 M@B 8 9F`%A%#&`"I`*`"%"!%#(``7!7	%
+	(\$%\$*	<9L`BI HZ`)#%*`1%`G9FF5H98`:@5B; 9`.)`D@B	' +
,	(\$%\$(\$	<9L`BI HBMC 7`)%#(`1&\$`.)`D@B	%
-	(\$%\$(\$	<9L`BI HBMC 7`)%#%*`1%`"`.)`D@B	%\$
%\$	(\$&(%&	: @5HK 5G< 9F`" #(`"D@B	%
%%	(\$(\$(\$'	7 C H9F`D-Bž`)#`&`"I`%A%#(`"D@B	&
%&	(\$)*\$*	<< 7 G`)%#(`1&\$`I`%A%#&`"`.)`D@B	%
%	(\$+\$&\$	7 < 7 G`)%#%*`1%`I`" #(`"`.)`D@B`	')
%(`	(\$+\$&%	7 < 7 G`)%#%*`1%`I`%"`"`.)`D@B	%&
%)	+*\$%+&	* &) `< 8 G`HF I 7 ?`7 C B J 9MC F`G@8 9`5 GG9A 6@M	%
%*	,) \$)\$'	GDC I H7 M`@B 8 9F`@ ;`K 5	%
%+	, *\$)+'	GDC I HA C I BHK 5	%
%	, *\$)+(	GDC I HK 5`fI7 C B J`A C I B HZ`(&K`7 C B J	%
%-	, *\$), -	GDC I H7 M`@B 8 9F`@ ;`K 5	%
&\$	, *\$)-\$	GDC I H7 M`@B 8 9F`@ ;`K 5`FC 8`9B 8	%
&%	K %)+&-'	A 5; B 9H`\$`C N	&

625 HDS TRUCK HYDRAULICS



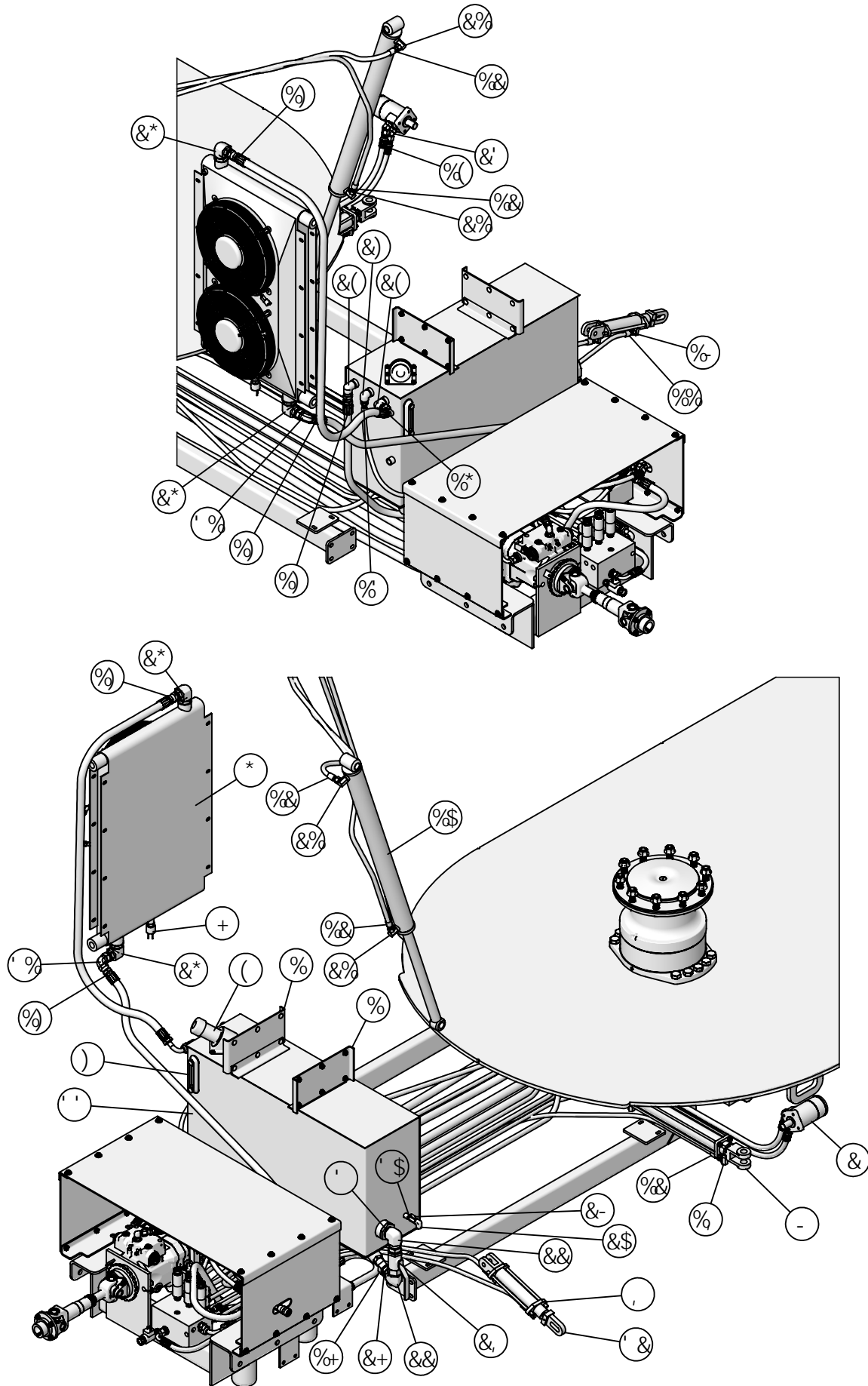
#DA	D5FH	8 9G7 F ðHC B	E HM
%	%* &\$) \$	F 9G9F J C ð A C I BHD @5H9	&
&	%* &\$*)	* &) <MBF5I @7 G7C D7 C J 9F	%
'	' * \$\$%)	<MBF5I @7 A C HC F ' %"- ' 7I ' B"	%
(	' * %%)	A G) ' DC 7 @5 B ' <MB A C HC F	&
)	' * &), (	<95H9L7 <5B; 9F ' 5GGMK #. 5B	%
*	' * (\$' *	<MBF5I @7 ' 7 M @B 8 9F ' % # &" ' I ' * "" %)! # (" ' 7! 7	%
+	' * (\$ '\$	<MBF5I @7 ' 7 M @B 8 9F ' &" ' I ' * "" &*! # (" ' 7 7	%
,	' * (\$',	<MBF5I @7 ' 7 M @B 8 9F ' &! # &" ' I ' ' %) #, ""	%
-	(\$ \$ % \$ +	<9L ' BI H Z' #, ' 1%* ' G9FF5H98 : @5B; 9.) ' D @B	% &
%\$	(\$ \$ % &'	: @5B; 9 ' BI H Z A &\$! %) ž % &"-	&\$
%%	(\$ \$ % &'	<9L ' BI H + #, ' 1- ' .) ' ' D @B	&\$
%&	(\$ & (\$ *	: @5HK 5G <9F Z' #, "" @5' I ' % " C 8 '	%*
%	(\$) *)'	<< 7 G' ' #, ' 1%* ' I ' % " .) ' ' D @B	%*
%&	(\$), \$ *	<< 7 G' + #, ' 1- ' I ' "" .) ' ' D @B	&\$
%@	(\$ + \$ ' -	7 < 7 G' ' #, ' 1%* ' I ' " # (" .) ' ' D @B	% &
%*	(\$ + + %	GH 8 ' 6C @7 A &\$! %) ' I , \$ a a	&\$
%+	,) \$\$)'	GDC I H 7 M @B 8 9F ' @ ; ' K 5	%
%	, * \$) +-	J 9FH 7 5 @ <MBF5I @7 ' F 9G9F J C ð ' K 5 !' '\$; 5 @	%
%-	, * \$) --	<MBF5I @7 G 7 C J 9F ' G 8 9' K 5 ' F <	%
&\$	, * \$ * %	<MBF5I @7 G 7 C J 9F ' G 8 9' K 5 ' @	%

625 HDS TRUCK DRIVELINE



#PA	D5FH	8 9G7 F DHC B	E HM
%	%* &\$\$'	DFC L-A #MD@5H9	%
&	'', (%*	%)\$'7 C A D5B € B : @5B; 9Z%#&'H5 D9F	%
'	'', (&-	GD=7 9F : @5B; 9'MC ?9' !&!%&- %) \$	&
(	'', ('*	GD=7 9F %) \$'7 FC GG? #Z') !%+L	&
)	(\$&\$\$*	<9L 'BI H' #, '1%*') 'D@B	,
*	(\$&\$\$*	K 5G< 9F 'GDF B; '@ 7?' #, "A 98 'D@B	,
+	(\$)*)(	<<7 G' #, '1%*' '1%'#(") 'D@B	(
,	(\$)*)+	<<7 G' #, '1%*' '1%') 'D@B	(
-	+, %(\$%	GD@B 9 G<5: H/ 'G@D'MC ?9'5 GGMfi-B 7 @ 8 9G') 'L	%
%\$	, *\$), '	%)\$'7 C A D5B € B : @5B; 9'K 5	%

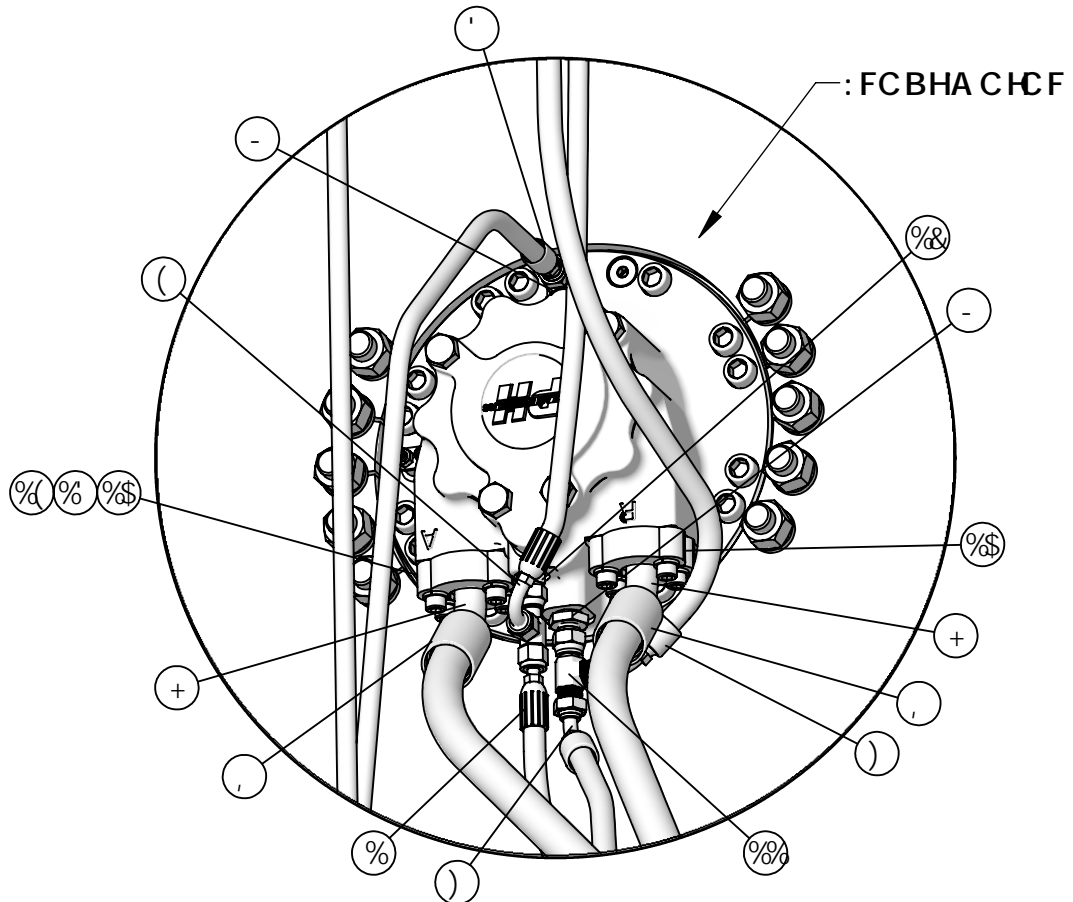
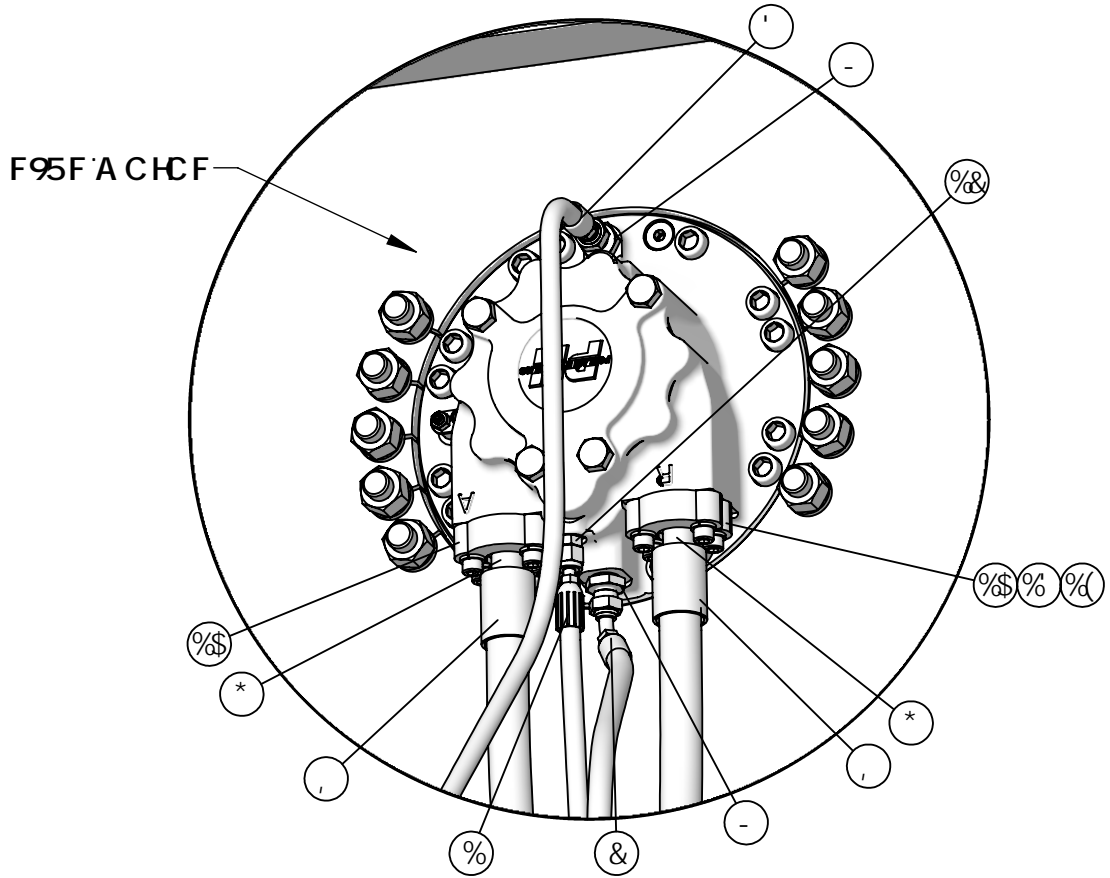
625 HDS TRUCK HYDRAULICS



625 HDS TRUCK HYDRAULICS

#PA	D5FH	8 9G7 F DHC B	E HM
%	%* &\$) \$	F9G9FJ C F 'A C I BHD@5H9	&
&	' * \$\$%)	<MBF5I @7 'A C H C F ' %"- '7I ' B"	%
'	' * &) \$+	GI 7 HC B 'G7 F99B '&"I '%%#("	%
(	' * &)) &	G-8 9: @9F '< #B 97 ? '5 GGM	%
)	' * &)))	G# <H; 5I ; 9)"	%
*	' * &), (	<95H9L7 <5B; 9F '5 GGMK #. 5B	%
+	' * &, %&	GK #7 <ž% \$'8 9; " : 5B 'H 9FA C G-5H	%
,	' * (\$' *	<MBF5I @7 '7 M@B 89F '%%#&"I '* ""%) !%#("'7!7	%
-	' * (\$*\$	<MBF5I @7 '7 M@B 89F '&"I '%* ""&*!%#("'7 7	%
%\$	' * (\$*,	<MBF5I @7 '7 M@B 89F '&'%#&"I ' ' %) #, ""	%
%%	' * +\$(%	<C G97 C I D@B; '%#&"I '%#&"A Dž(; !(A D	&
%&	' * +\$**	<C G97 C I D@B; " #, "I " #, "A D A 9; 57 F A D	(
%	' * +\$+,	<C G97 C I D@B; '*; !, : >L I " #, ""fA 9; 57 F A Dž	&
%{	' * +\$, ,	<C G97 C I D@B; '%#&"A D I '%#&"A 9; 57 F A D	&
%}	' * +%(\$)	<C G97 C I D@B; '%%#%* "" : >L I " # (""fA 9; 57 F A Dž	'
%*	' * +%(\$*	<C G97 C I D@B; '%%#%* "" : >L - \$ I " # (""fA 9; 57 F A Dž	%
%+	' * +%} &	<C G97 C I D@B; '&\$; !&\$: C F L I '%%#(""fA 9; 57 F A Dž	%
%	' *, \$\$+	<MBF5I @7 : #HB; " #, "A D I " #, " : DL - \$ž "%\$- ""C F : 7 9	&
%-	' *, \$%%	<MBF5I @7 : #HB; "%#("A D I '%#(" : DL - \$, '%#%* "C F :	&
&\$	' *, \$%+	<MBF5I @7 '585DH9F '%#("A D I '%#(" : D - \$, fGH99@	%
&%	' *, \$\$%	<MBF5I @7 '585DH9F " #, "A D I " #, " : DL - \$,	&
&&	' *, \$' *	<MBF5I @7 '585DH9F '%%#("A D I '%%#(" : D - \$,	&
&'	' *, \$) &	<MBF5I @7 : #HB; ""#, "A C F I '%#&": DL '() ž	&
&(	' *, \$*\$	<MBF5I @7 '585DH9F ž' # ("A D I '%%#%* "A >7 - \$ž	&
&)	' *, \$*)	<MBF5I @7 '585DH9F " # ("A D I " # (">7 - \$ž	%
&*	' *, \$+-	<MBF5I @7 '585DH9F '%%#%* "A >7 I %) #, "A C F - \$ž	&
&+	' *, % +	<MBF5I @7 '585DH9F '%%#("A D I '%%#%* "" : C F	%
&,	' *,) &+	65 @@J 5 @ 9ž%#(" : D	%
&-	' *,) &,-	65 @@J 5 @ 9%#("D@9	%
' \$	' *, *+(	B @D@9ž%#("D@9 < 9L	%
' %	' *, *+,	<MBF5I @7 '585DH9F '%%#%* "A >I '%%#%* "" : >Lž - \$ž	%
' &	(,) \$\$)'	GDC I H7 M @B 89F @ ; 'K 5	%
' '	(, * \$) +-	J 9FH7 5 @ <MBF5I @7 'F9G9FJ C F 'K 5 !' \$; 5 @	%

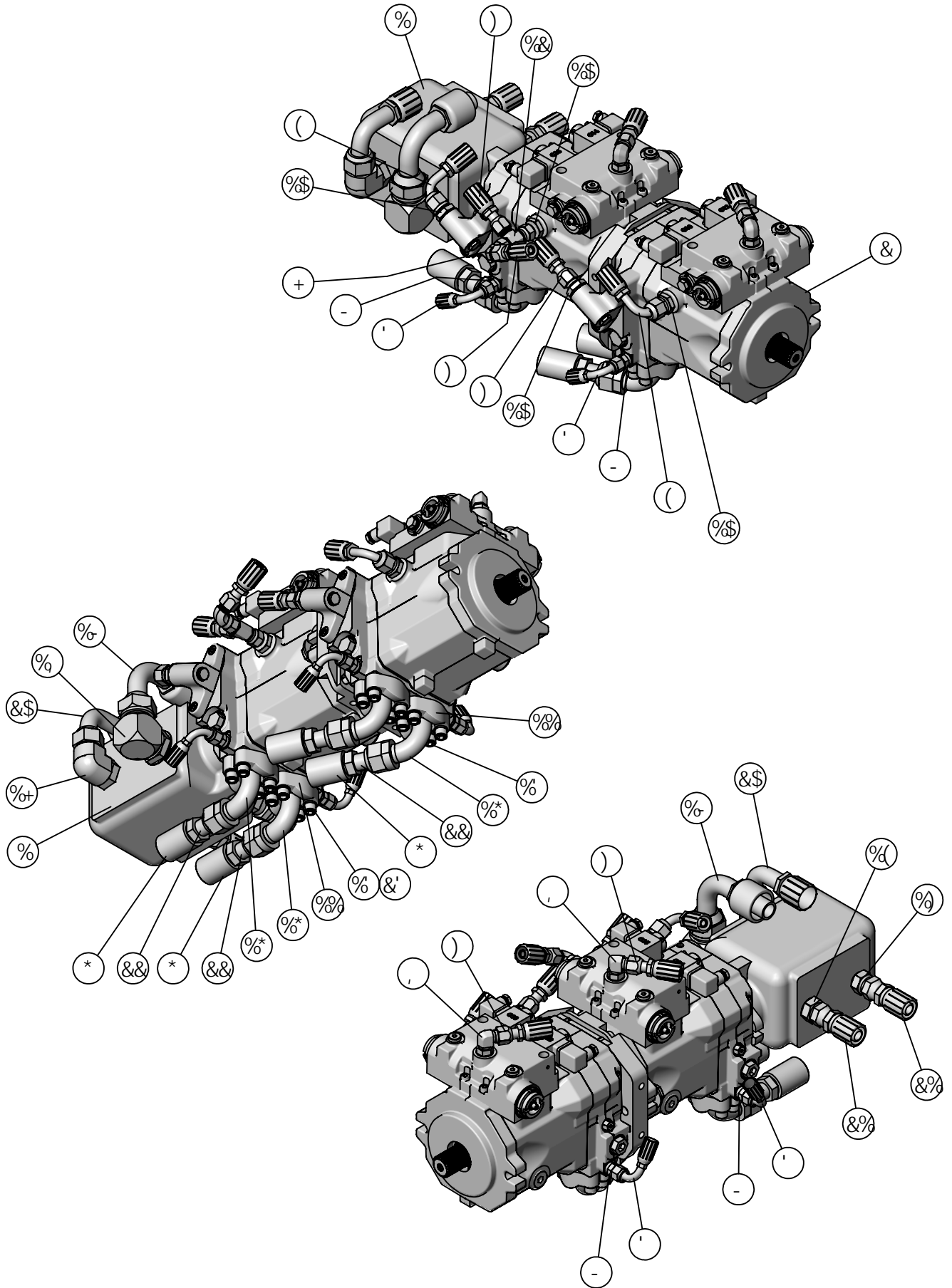
625 HDS TRUCK HYDRAULICS



625 HDS TRUCK HYDRAULICS

#9A	D5FH	89G7 F DHC B	E HM
%	' *+\$'	<C G9'7 C I D@B; " #, "I '*; !*:: C FL	&
&	' *+\$+\$	<C G9'7 C I D@B; " #, "I '*; !, :>L() "	%
'	' *+\$+,	<C G9'7 C I D@B; " #, "I " #(' :>Lž*; !, :>L	&
(	' *+\$, \$	<C G9'7 C I D@B; " #, "I '%/#%*": C FL- \$G	%
)	' *+\$-(	<C G9'7 C I D@B; " #, "I " #(' :>L- \$ž*; !, :L- \$	&
*	' *+%)-	<C G9'GH9A '%I " #(' :@ž%; G%&: @ '7 C 89'* &	&
+	' *+%'	<C G9'GH9A '%I " #(' :@ž%; G%&: @ '7 C 89'* &	&
,	' *+(%)	: 9FFI @ž%; G%!((
-	' *, &%	GHF5 ÷ <H585DH9Fž&&a a 'I ' ' #(' :>A	(
\$\$	' *, ()-	GD@H: @5B; 9?žž' #(' :7 C 89'* &	(
%%	' *, *%	H99ž' #(' :>GK ÷ 9@FI B	%
%&	' *, *, ,	GHF5 ÷ <H585DH9Fž%* a a !%) 'I '%/#%*": C F	&
%	(\$&\$+\$	GDF B; '@ 7? 'K 5G< 9F '+#%* "D@B	%*
%{	(\$+, &*	G<7 GA %\$!%) 'I '(a a '%&"-	%*

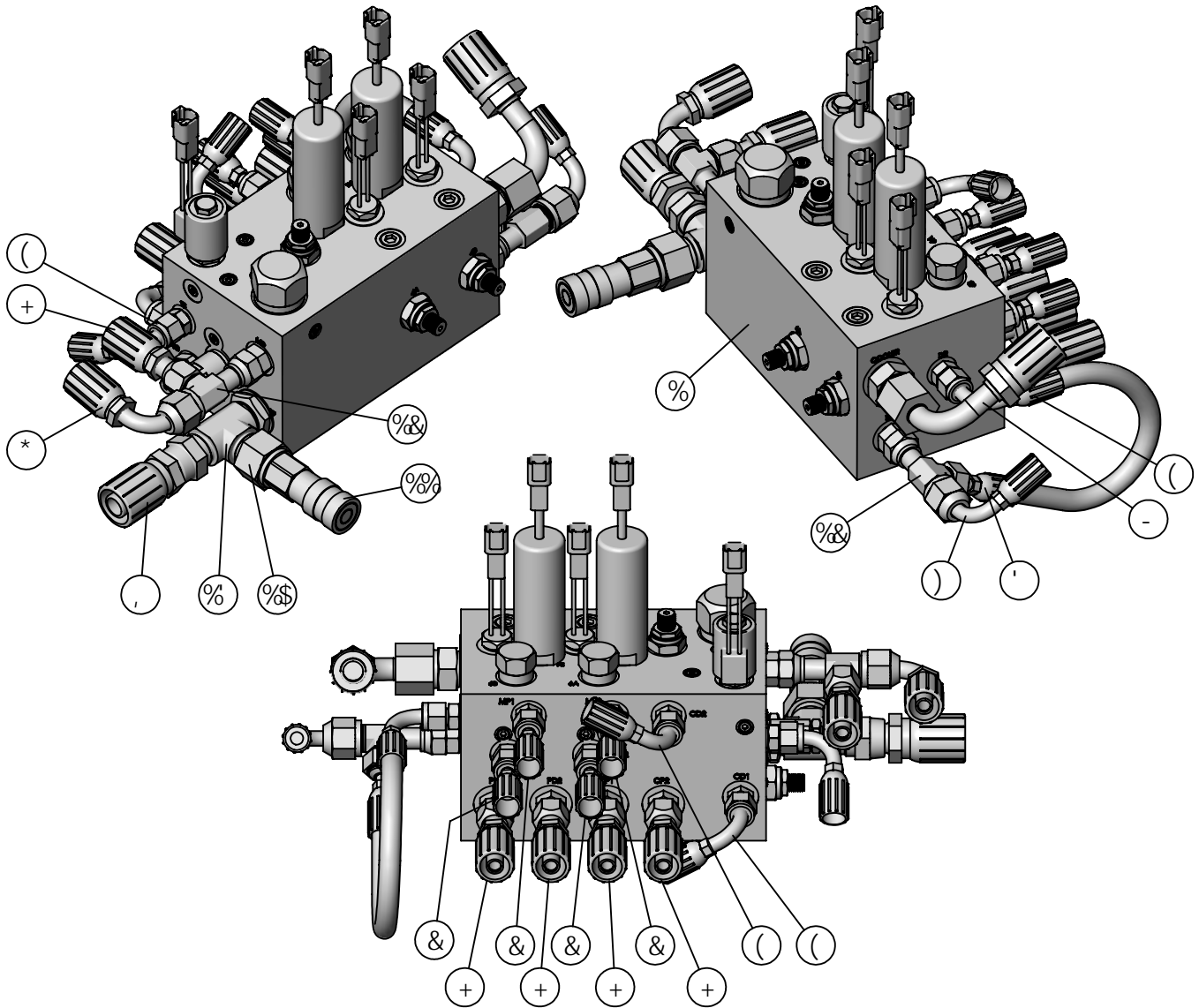
625 HDS PUMP ASSEMBLY



625 HDS PUMP ASSEMBLY

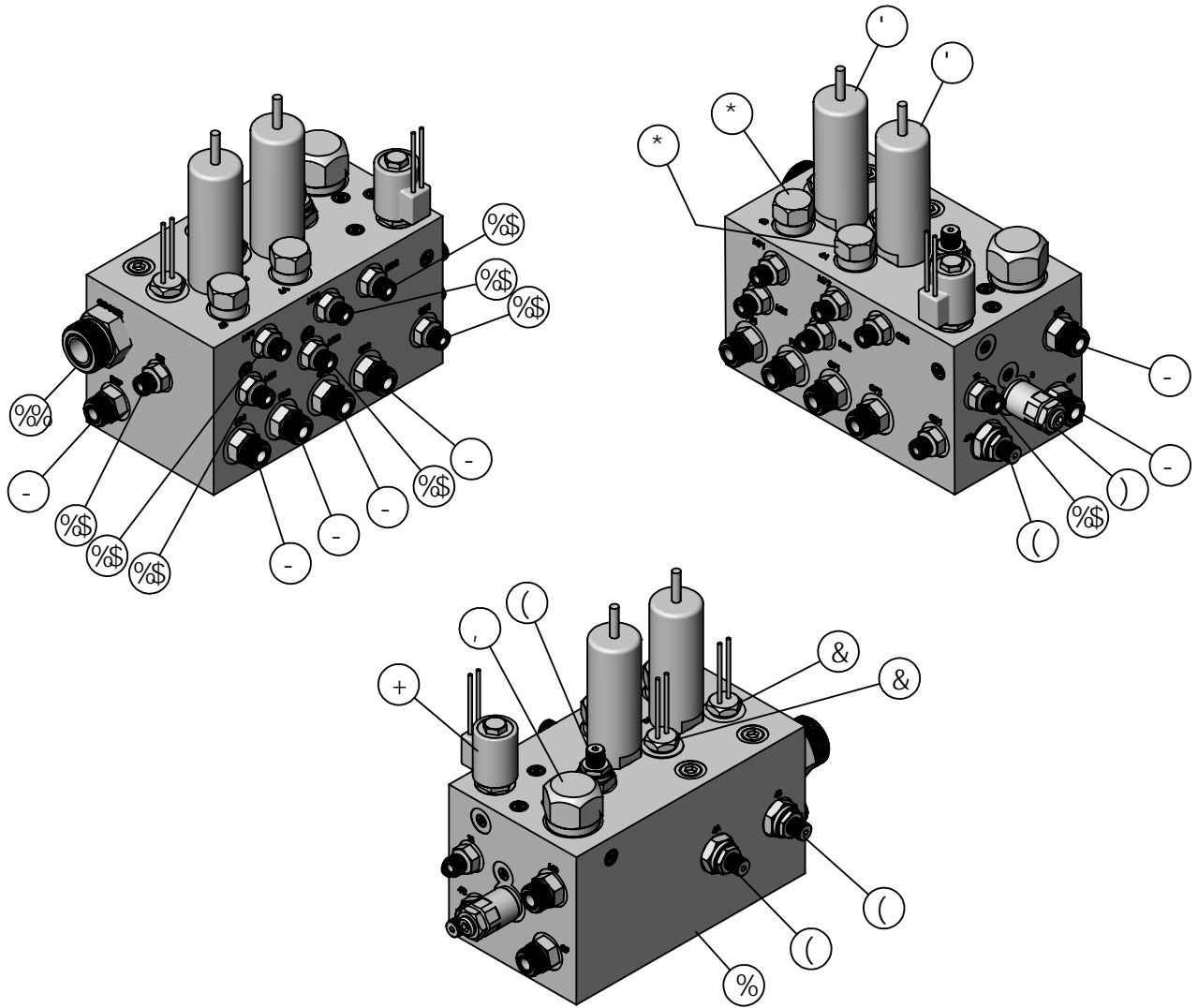
#9A	D5FH	8 9G7 F DHC B	E HM
%	' * &\$()	DI A Dž' ") #&") '7 8 'H5 B 8 9A ; 95 F '% H	%
&	' * &\$*\$	@B 8 9'H5 B 8 9A 'DI A D'5 GG9A 6@M	%
'	' * +\$, \$	<C G9'7 C I D@B; " #, "I '%/#%*"': C FL - \$G	(
(	' * +\$- +	<C G9'7 C I D@B; '%#&"I " #(" ">=7 'fj ; !, : >L - \$Ł	&
)	' * +%\$\$	<C G9'7 C I D@B; '%#&"I " #(" : >L ž ; !, : >L ')
*	' * +(%)	: 9FFI @ž%*; G%!((
+	' *, \$- &	5 8 5 DH9Fž' #("A >'I " #(" : >L - \$,	%
,	' *, &%\$	5 8 5 DH9Fž' &&!%) 'a a 'I " #("A >=7 ' - \$,	&
-	' *, &%%	5 8 5 DH9Fž' (a a !%) 'I '%/#%*"': C F 'GF 5 ÷ <H	(
\$\$	' *, &%	5 8 5 DH9Fž' &&a a 'I " #(" ">=7 A 'GF 5 ÷ <H	(
%%	' *, () %	: @B; 9'G9H%*': << 'GD@H7 * &'f%Ł	(
%&	' *, * %	H99ž' #(" ">=7 'GK 9 9@FI B	%
%	(\$+, &)	G<7 GA %&!%+) 'I '() a a ''%&"-	%*
%{	' *, %* +	5 8 5 DH9Fž' %)#%*"A C F I '%/#%*" '>=7 'GF 5 ÷ <H	%
%}	' *, %*'	5 8 5 DH9Fž' %)#%*"A C F I '%/#%*" '>=7 'GF 5 ÷ <H	%
%*	' *, (* +	: @B; 9'5 8 5 D'%* C F: G'I '%7 C 8 9' * &	(
%+	' *, *, %	5 8 5 DH9Fž' %)#%*"A C F I '%/#%*"': C F - \$Š	%
%	' *, (&-	5 8 5 DH9Fž' %)#, "A C F I '%)#, A >=7 ' - \$,	%
%-	' * +%*(	<C G9'7 C I D@B; '%/#("I '%)#, ""&\$; !&\$: >L - \$A	%
&\$	' * +% -	<C G9'7 C I D@B; '%I '%; !%*': C FL - \$G	%
&%	' * +%(\$)	<C G9'7 C I D@B; " #("I '%/#%*"': >L	&
&&	' * +%)	<C G9'GH9A '%; G%*': C FL 'I ''%	(
&'	(\$\$\$\$+	GDF B; '@ 7 ? K 5 G< 9F '+#%*"D@B	%*

625 HDS MANIFOLD ASSEMBLY



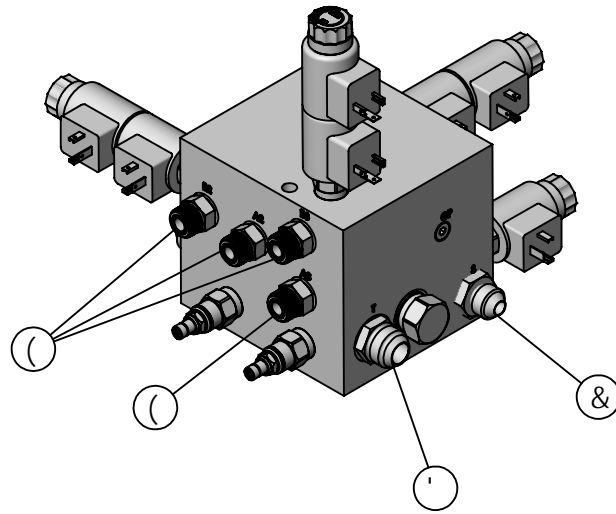
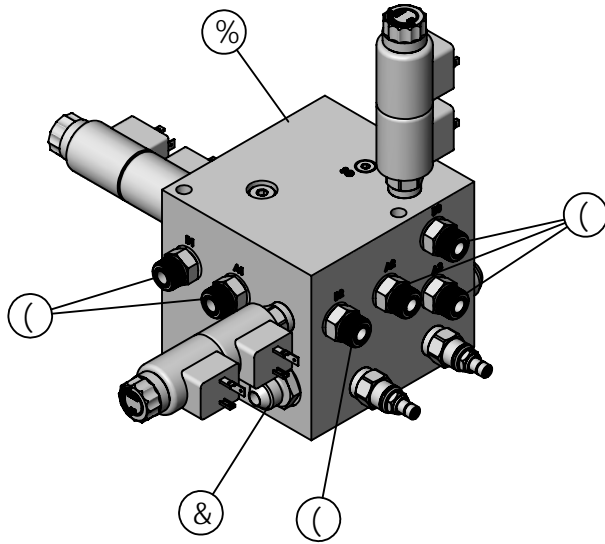
#9A	E HM	D5 FH	8 9G7 F ðH€ B
%	%	' * & ' + *	A 5 B ÷ C @ 8 ž ' %)) ' < 8 G
&	(	' * + \$ *'	< C G 9 7 C I D @ B ; ' # , " ' I ' % # % * " : : C F L
'	%	' * + \$ + %	< C G 9 7 C I D @ B ; ' # , " ' I ' % # % * " : : C F L
(	(	' * + \$ , \$	< C G 9 7 C I D @ B ; ' # , " ' I ' % # % * " : : C F L - \$ G
)	%	' * + \$, &	< C G 9 7 C I D @ B ; ' # , " ' I ' % # % * " : : C F L - \$ G
*	%	' * + \$ - ,	< C G 9 7 C I D @ B ; ' # & " ' I ' % # % * " : : C F L - \$ G
+	)	' * + % \$ \$	< C G 9 7 C I D @ B ; ' # & " ' I ' % # % * " : : C F L
,	%	' * + % \$)	< C G 9 7 C I D @ B ; ' # (" ' I ' % # % * " : : > ÷ L
-	%	' * + % (&	< C G 9 7 C I D @ B ; ' # (" ' I ' % # % * " : : C F L - \$ G
%\$	%	' * , & %)	5 8 5 D H 9 F ' G F 5 ÷ < H % # & " ' A D I ' % # % * " : : > ÷ L
%%	%	' * , & ' +	E I ÷ ? ' 8 - 6 7 C B B 9 7 H : 9 A 5 @ 9 ž % # & " B D H
%&	&	' * , * ' *	H 9 9 F I B ž % # % * " C F : G ' G K ÷ 9 @
%	%	' * , * ' ,	H 9 9 F I B ž + # , " A C F I ' % # % * " : : > ÷

625 HDS MANIFOLD ASSEMBLY



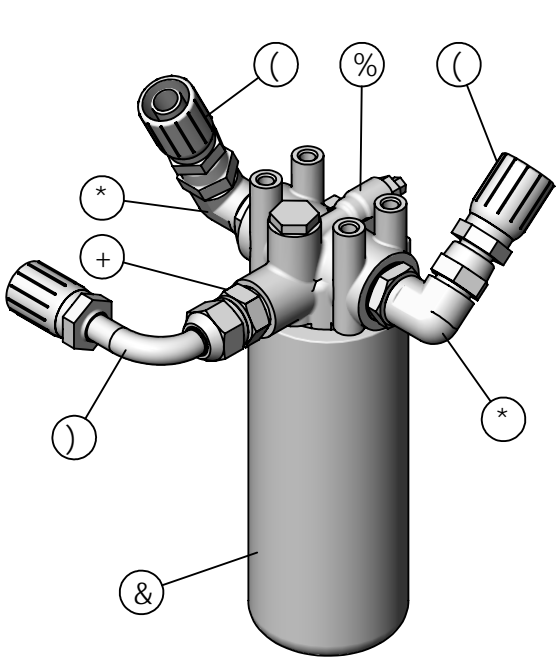
#9A	D5FH	8 9G7 F ðHC B	E HM
%	' * & ' , +	A 5 B ÷ C @ 6 C 8 M: J ! - ' \$ + ! A %	%
&	' * & ' , ,	B 5 GC B 'H9A D'HF 5 BG 8 I 7 9F	&
'	' * & ' , -	; D) \$ 'DF 9GGI F 9'HF 5 BG 8 I 7 9F	&
(	' * & ' - \$	95 HC B 'F 9@9: ' J 5 @ 9	(
)	' * & ' - %	8 5 A D 9 B 9 8 ' F 9@9: ' J 5 @ 9	%
*	' * & ' - &	G < I H @ 9 J 5 @ 9 ' D 5 F ? 9 F	&
+	' * & ' - '	GC @ 9 BC - 8 ' J 5 @ 9 ' 9 5 HC B	%
,	' * & ' - (	@ ; = 7 9 @ 9 A 9 B H F 9 @ 9: ' G H M @ 9	%
-	' * , % (	GHF 5 ÷ < H 5 8 5 DH 9 F Ž % # % * " " C F : G I ' ' # (" " A C F 6	+
%\$	' * , %)	GHF 5 ÷ < H 5 8 5 DH 9 F Ž % # % * " " C F : G I ' - # % * " " A C F	,
%%	' * , (% +	GHF 5 ÷ < H 5 8 5 DH 9 F Ž % # % * " " C F : G I ' % # % * " " A C F 6	%

625 HDS AUXILIARY MANIFOLD ASSEMBLY

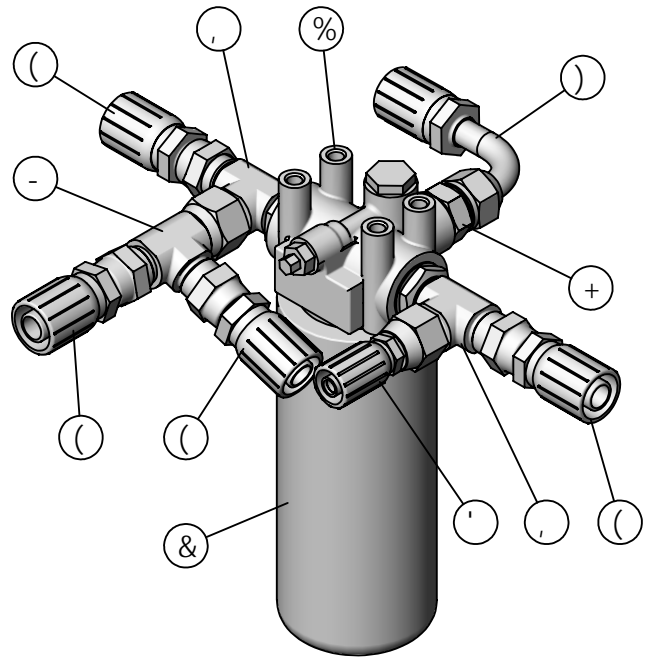


#PA	E HM	D5FH	8 9G7 F DHC B
%	%	' * & ' ++	5 I L @ 5 FMA 5 B ÷ C @ 8 ' 6 C 8 M
&	'	' * , % -	GF ' 5 8 DH ÷ # , ' A C F ' ' + # , ' > = 7
'	%	' * , % + %	GF ' 5 8 DH ÷ # , ' A C F ' ' % # % * ' > = 7
(	*	' * , % (	"GF H ÷ % # % * ' C F : G I ' ' # (' A C F 6

625 HDS CHARGE FILTER & AUXILIARY FILTER ASSEMBLIES



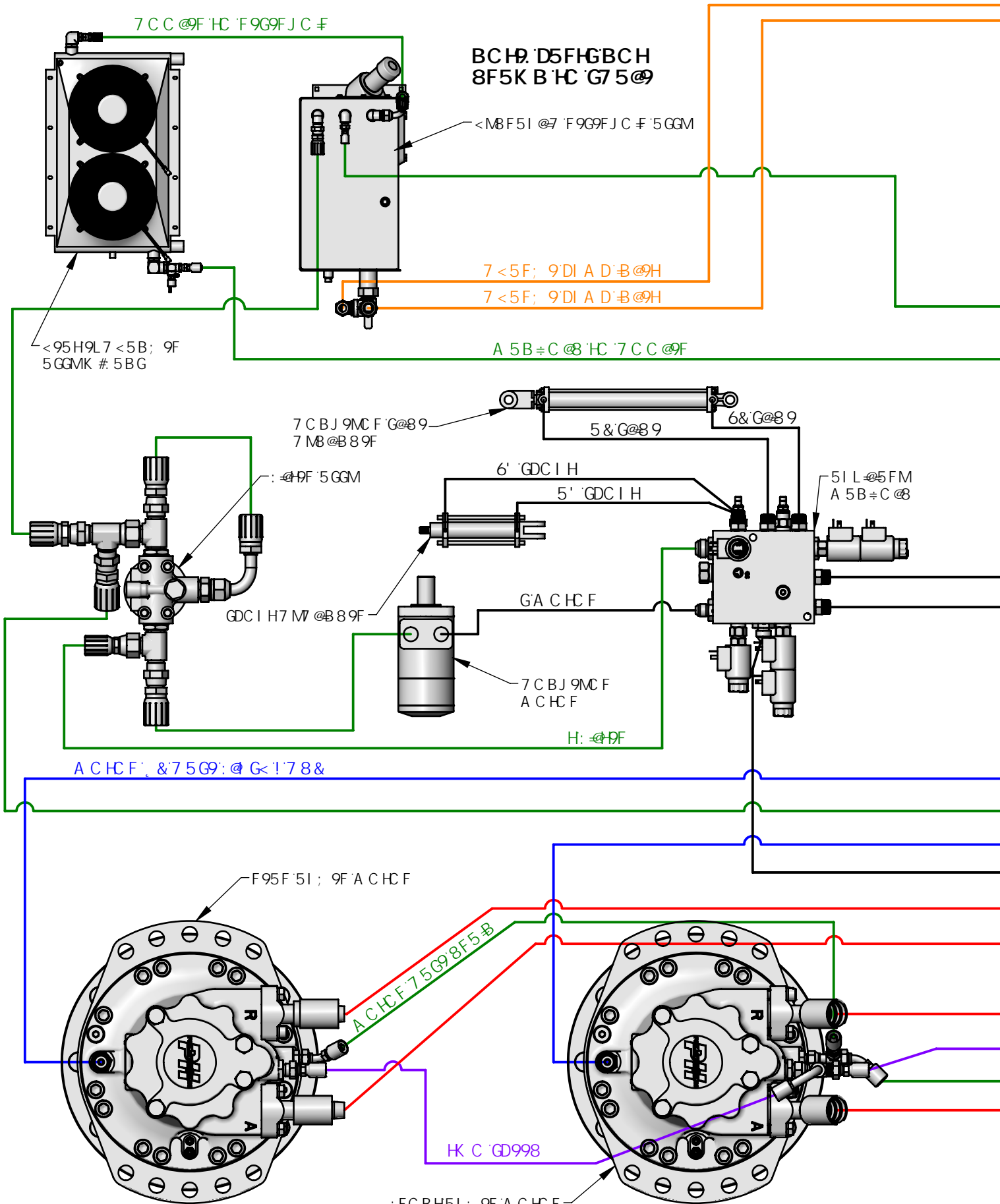
7 < 5F; 9: 4PF 5GG9A 64M



51 L 45FM: 4PF 5GG9A 64M

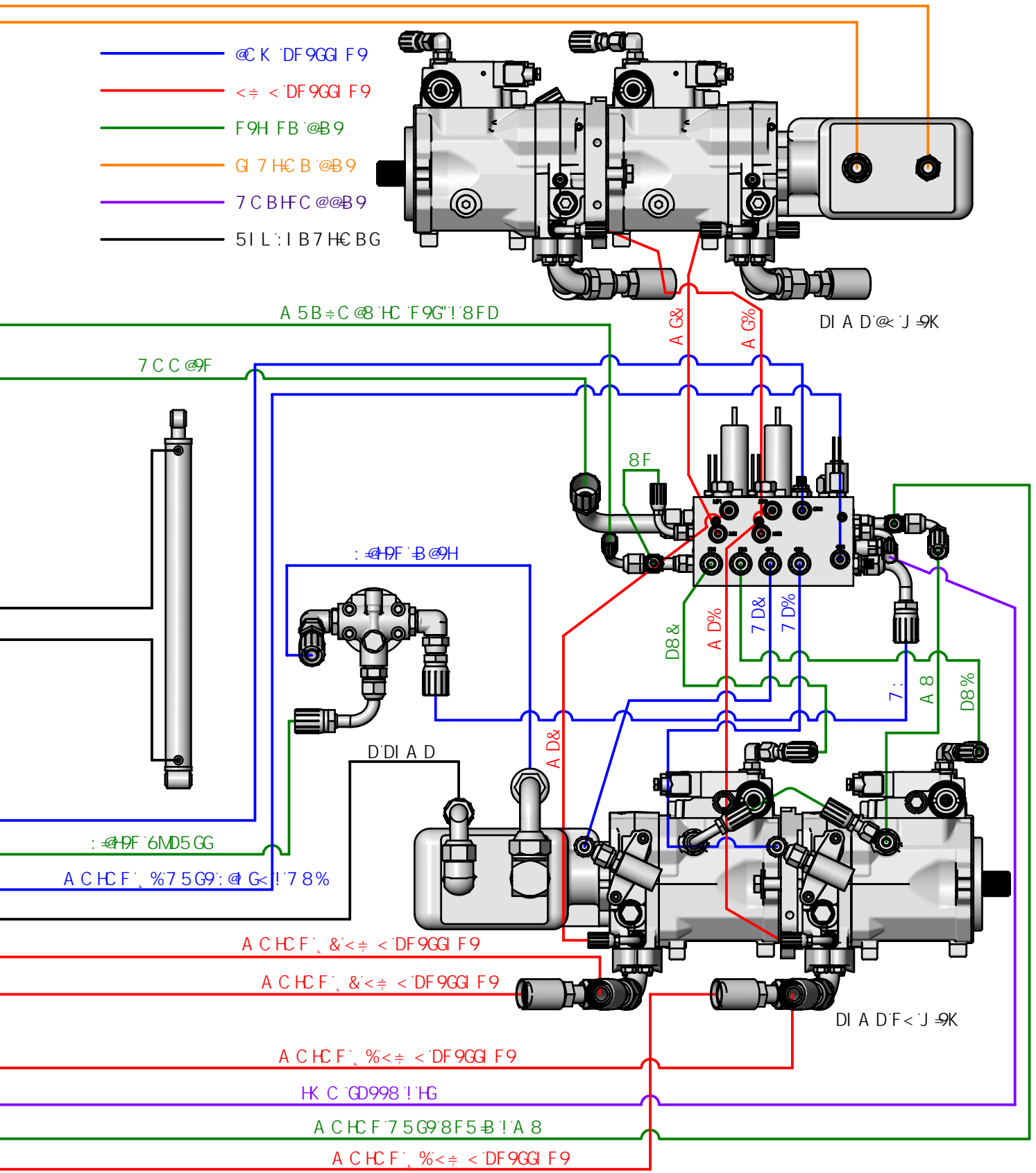
#PA	D5FH	8 9G7 F DHC B	E HM
%	' * & (\$)	: 4PF < 95 8Z%#%* "C!F-B;	&
&	' * & ('	: 4PF '9@9A 9BH' 8C B5@8GC B 'D%*+) - \$	&
'	' * +\$- &	<C G9'7 C I D@B; '%#%#* "': >L 'I '%#&"	%
(	' * +%(\$)	<C G9'7 C I D@B; " #'("I '%#%#* "': >L	*
)	' * +%(\$*	<C G9'7 C I D@B; '%#%#* "': >L - \$'I ' #'("fA 9; 57 F-A DL	&
*	' *, \$, -	<MB '585DH9F '- \$, '%#%#* "A C F I '%#%#* ">=	&
+	' *, %*'	<MB '585DH9F 'GF5 ÷ <H%#%#* "A C F I '%#%#* ">=	&
,	' *, * &	FI B 'H99Z%#%#* "A C F I '%#%#* "I '%#%#* ">=	&
-	' *, *) &	H99Z%#%#* "A C F #%#%#* '>= 'GK ÷ 9@'FI B 'H99"	%

625 HDS TRUCK HYDRAULIC SCHEMATIC

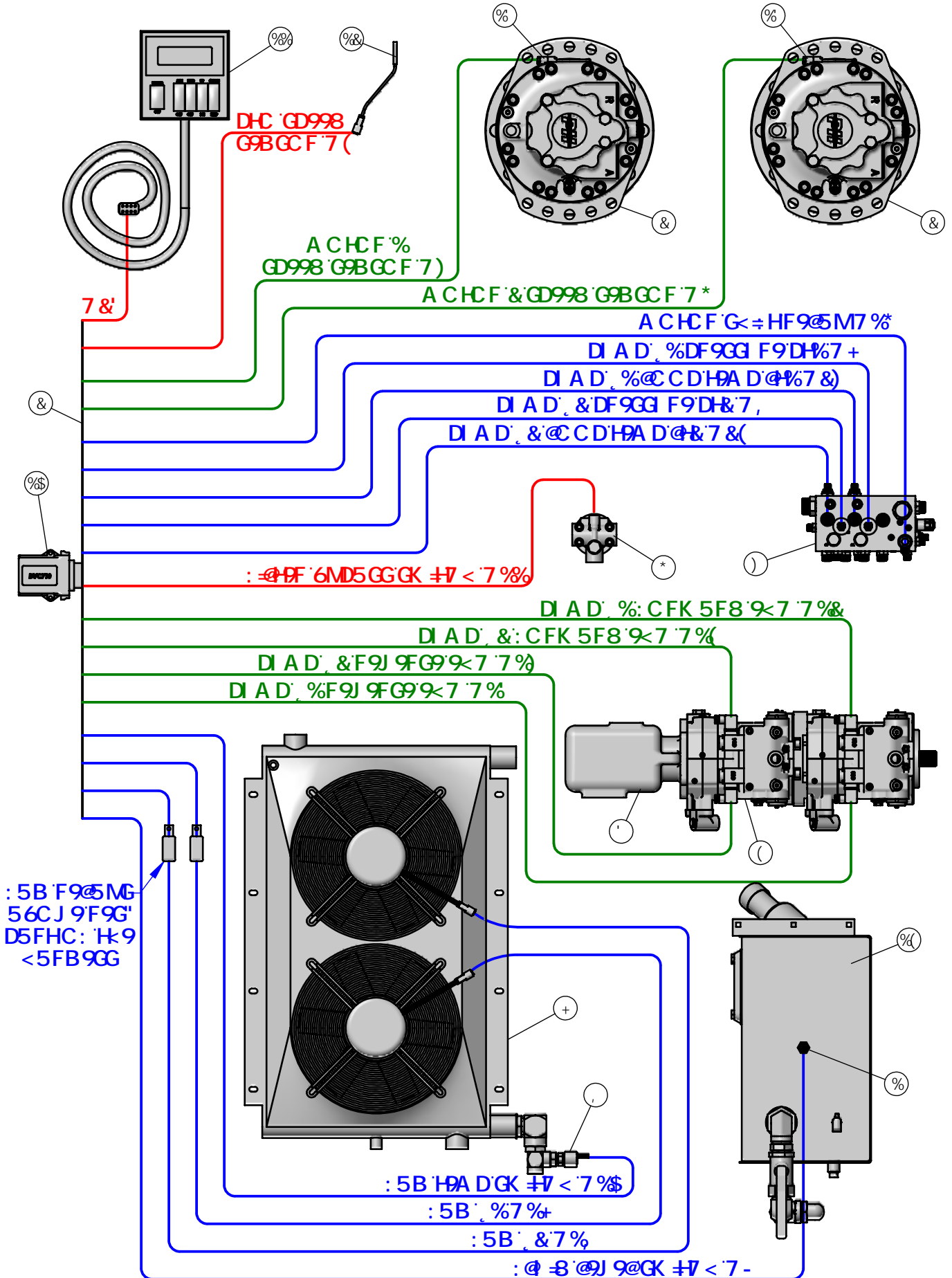


625 HDS TRUCK HYDRAULIC SCHEMATIC

- @ K 'DF9GGI F9
- < ≠ < 'DF9GGI F9
- F9H FB '@B9
- GI 7 HC B '@B9
- 7 CBFC '@B9
- 5I L : I B7 HC BG

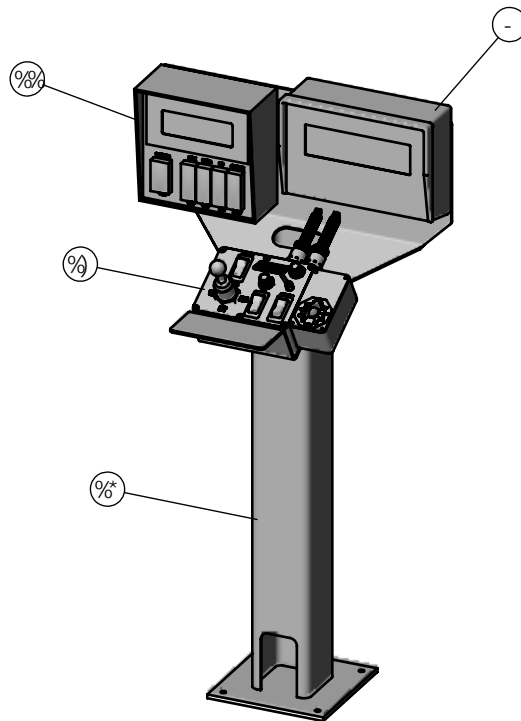


625 HDS TRUCK CONTROL WIRING DIAGRAM

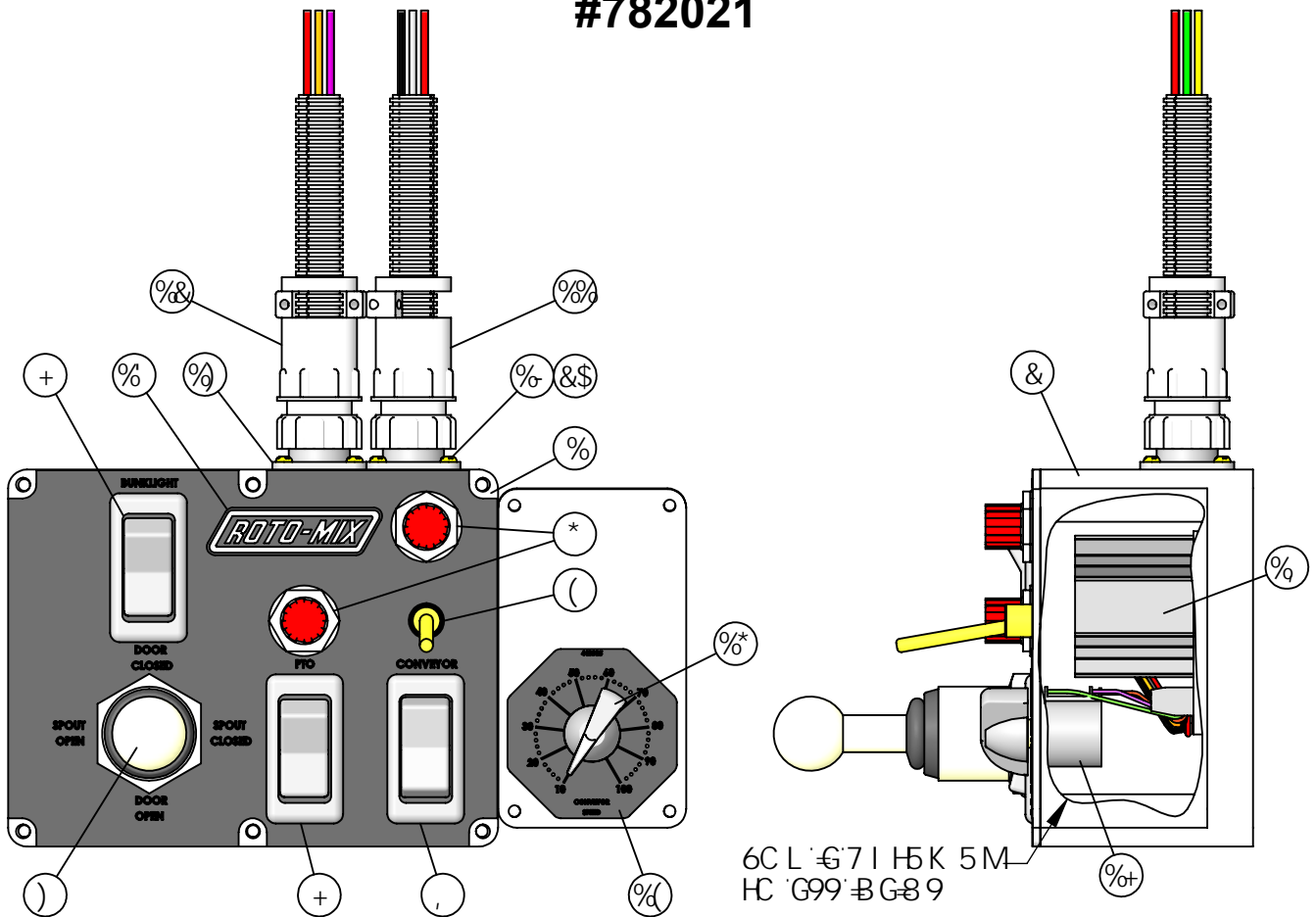


625 HDS TRUCK CONTROL WIRING DIAGRAM

#9A	D5FH	8 9G7 F DHC B	E HM
%	') ++ ('	: @ 8 @J 9@GK #7 <	%
&	' * \$%)	DC 7 @ 5 B < MBF5I @7 ' A C H C F ' A G)	&
'	' * &\$ ('	DI A Dž' ") ' 7 8 ' H5 B 8 9A ; 95 F	%
(	' * &\$* \$	@B 8 9' H5 B 8 9A ' DI A D ' 5 GG9A 6@M	%
)	' * &' + *	A 5 B ÷ C @ ž' %)) < 8 G	%
*	' * & (\$)	: @ 9 F < 95 8 ž' % # % * " C ' F B ;	%
+	' * & , (	< 95 H 9 L 7 < 5 B ; 9 F ' 5 GG MK #. 5 B	%
,	' * & , ' &	GK #7 < ž' % & \$ \$: 5 B	%
-	() % & \$	F 9 A C H 9 ' 8 @ 5 M F 8 & (\$ \$ J	%
%\$	() & \$ + '	< 7 H 8 J 7 + % \$ ' 7 C B H C @ 9 F	%
%%	( ) & \$ + (	7 C B H C @ 6 C L ' 5 GG9A 6@MG5 ! (% ,	%
%&	( ) & * (	H F I 7 ? ' GD998 ' G9B GC F ' G5 ! (% -	%
%	() & *)	DC 7 @ 5 B ' A C H C F ' GD998 ' G9B GC F	&
%(	+ * \$) - *	< MBF5I @7 ' F 9 G 9 F J C F ' 5 GG M	%
%@	+ , & \$ & %	H F I 7 ? ' 7 C B H C @ D 5 B 9 @ 6 C L ' ! * &)	%
%*	, * \$) \$ %	7 C B H C @ G H 5 B 8 ' K 5	%

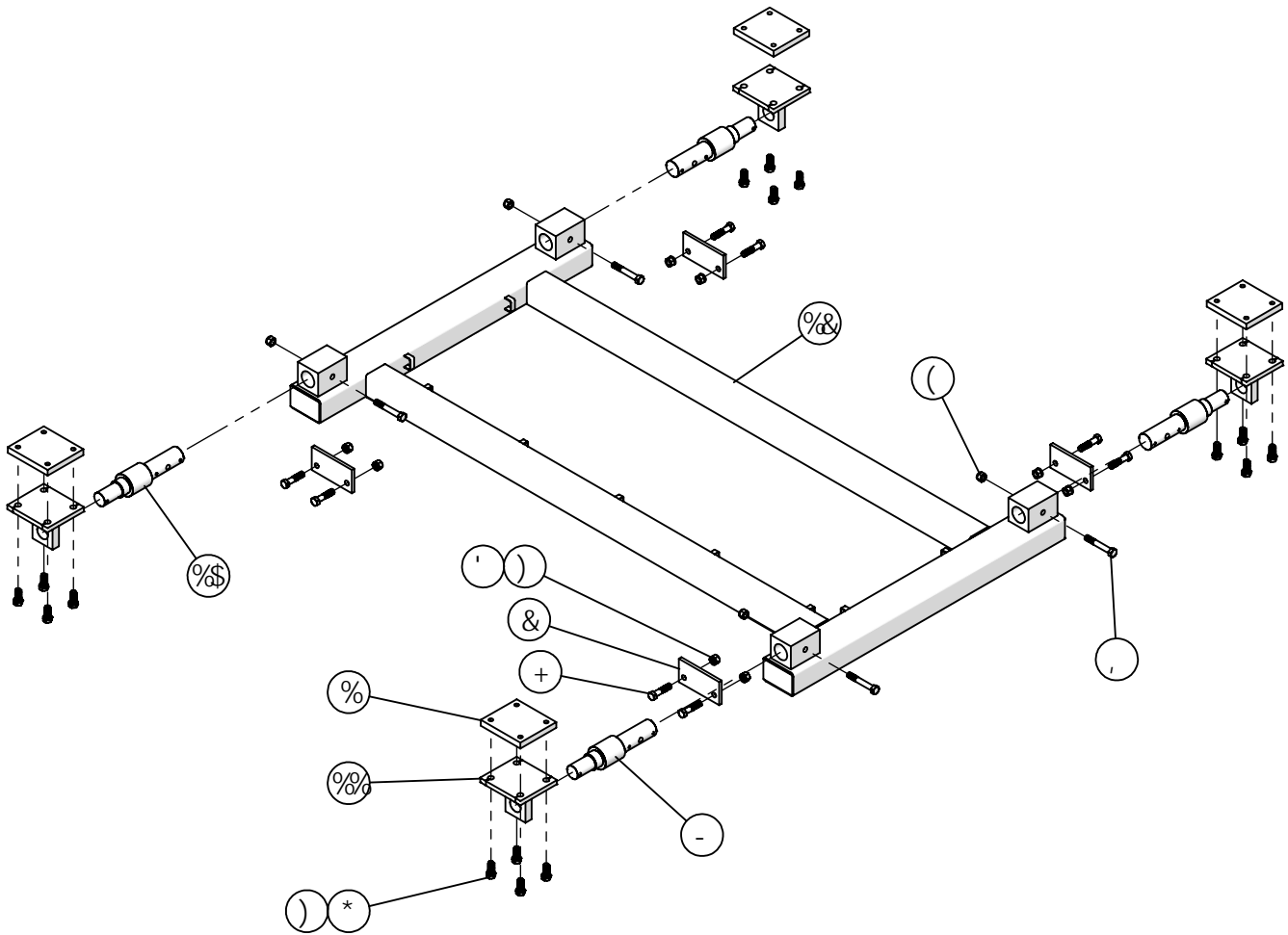


625 HDS TRUCK CONTROL PANEL BOX #782021



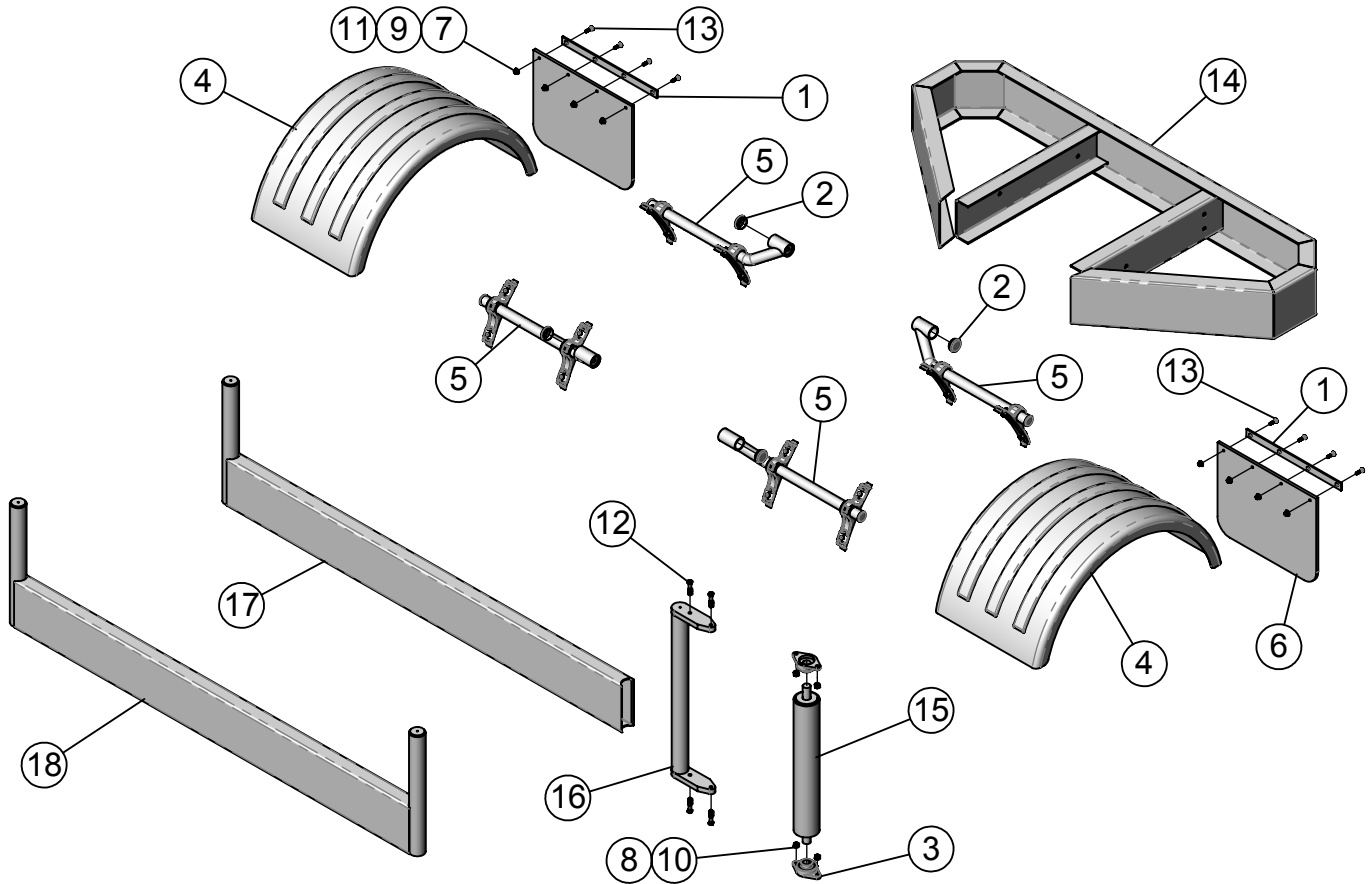
#9A	D5FH	89G7 F DHC B	E HM
%	% \$*) (	9@7 HF 7 5 @6C L 'HC D'D@5H9	%
&	') +(\$*	5@ A -B I A ' I @#B 9A 5 '6C L '+ ' *!\$(%(\	%
'	') +(\$,	5@ A -B I A '6C L	%
(	' ) ++\$ (	HC ; ; @'GK #7 <' <'8") '5A D	%
)	') ++\$)	>C MGH7 ?'ž(!K 5M	%
*	') ++)'	F98 '@; <H-B 8 7 5HC F' #('"8-5"	&
+	') ++**	GK #7 <žFC 7 ?9F 'C B !C :: '* , ' ! \$ % *	&
,	') ++** +	GK #7 <žFC 7 ?9F 'fC B !B C B 9 !fC B !'A C A 9B H 5 FM	%
%%	'), (&	K #9 <5FB 9GGž'H I 7 ? 'HC 'A ± 9F	%
%&	'), (&*	K #9 <5FB 9GGž'H I 7 ? 'DC K 9F	%
%	((\$ - \$	8 9 7 5 @'A ± 9F '7 C B H C @'6C L	%
%(\	((\$ - ,)	7 C B J 9MC F 'GD998 '8 9 7 5 @	%
%)	() ' \$' \$	F 9 7 9DH 7 5 @'5A D 'D-B 'G#%' 'fl £' &\$* + \$) ! %	&
%*	() ' * \$*	?BC 6žC <A #9') %\$'	%
%+	() ' *) +	F <9C G H 5 ž &) K ' ! &) C <A G 'C <A #9' , '&- * ! (&&)	%
%	() ' * - &	<M 8 F 5 I @'7 #9@7 HF 7 'GD998 '7 C B H C @	%
%-	() (%*	A 5 7 <-B 9'G 7 F 9K ' (! (\$ ' " # , 'D 5 B < 9 5 8	,
%&\$	() (%+	<9L 'B I H , (! (\$,

625 HDS TRUCK SCALE FRAME ASSEMBLY #660191



#PA	D5FH	8 9G7 F DHC B	E HM
%	*\$%\$*	G7 5 @ 'D5 8' + '#, " ' + + #, "	(
&	% & - ,	HfI 7 ? : F5A 9 '6F57 ? 9H, "	(
'	(\$\$&%&	< 9L 'BI H' #('1%\$ ') 'D@B	,
(	(\$%&%&	< 9L 'BI H' #('1%\$ 'BMC 7 ') 'D@B	(
)	(\$\$&%&	GD@H@C 7 ? 'K 5G< 9F ' #('D@B	&(
*	(\$) ++-	' #('1%\$ ' ' & " << 7 G ') 'D@B	%*
+	(\$) +, (	' #('1%\$ ' ' !%#(' " << 7 G	,
,	(\$) +, -	<< 7 G ' #('1%\$ ' ') 'D@B	(
-	() \$, &(	K 9 = < '65F ' & !%#&' z & % : H7 C F8 'f1FC BHC : 'A ± 9F L	&
%\$	() \$, ' +	K 9 = < '65F ' & !%#&' z ' \$: H7 C F8 'f657 ? 'C : 'A ± 9F L	&
%%	, *\$ (&*	K 9 = < '65F ' A C I BHK "5 " & !%#&' "	(
%&	, *\$ * %%	& !%#&' G7 5 @ '65F : F5A 9K 5 * &) 'J 9FH	%

625 HDS FRONT & REAR BUMPER & FENDERS



#PA	'E HM'	D5FH	8 9G7 F DHC B
%	&	% '\$, +	A I 8 : @D'GF5D
&	(	' %\$- +)	7 5D@ ; !F 6698!F8 '&' #, "I '&!%#%*"
'	&	' (\$&&&	695F B; ž%' #, "J 7 >H
(	&	' ) (' - %	DC @M: 9B89Fž85I @6I MFG. ',) - \$&()
)	(	' ) (' - &	DC @M: 9B89F 'A C I BHB; '?#ž 'H5B89A '8I 5@G
*	&	' +\$&&&	FC HC !A ± 'A I 8 : @D'& ("I '% !%#&"
+	,	(\$&&&*	<9L 'BI H' #, '1%* ') 'D@B
,	(	(\$&&\$,	<9L 'BI H' #&'!% ') 'D@B
-	,	(\$&&&*	K 5G<9F 'GDF B; '@ 7?' #, "A 98 'D@B
%\$	(	(\$&&\$,	GDF B; '@ 7?' K 5G<9F '%#&" 'D@B
%%	,	(\$&(\$*	: @HK 5G<9F ' #, "D@B
%&	(	(\$) +\$+	<<7 G' #&'!% 'I '&!%#&") 'D@B
%	,	(\$+\$(&	7 <7 G' #, '1%* 'I '% #&') 'D@B
%{	%	+, \$- '\$'	F95F '6I A D9F '%\$"
%)	%	, +&&- -	6I A D9F 'FC @9F 'K 5
%*	%	, +&' \$\$	6I A D9F 'FC @9F '7 C @ A B 'K 5
%+	%	, +&' \$%	6I A D9F 'G '6' K 9@8A 9BH
%	%	, +&+&)	: FC BH6I A D9F 'I 'BC 'FC @9F

