

SalesTraining 2001



Hyster S50XM Versus Toyota 7FGCU25



01/01

The Hyster S-XM Series is the result of specially dedicated team members at Hyster Company who push hard to craft a lift truck with a new look that boasts the latest comfort, serviceability, and diagnostic innovations.

To help enhance the selling skills and product knowledge of the dealer sales force, the following PowerPoint presentation has been created. This presentation compares the features and benefits of the Hyster S50XM Vs. the Toyota 7FGCU25.

Introduction

The Hyster S-XM series cushion tire fork lift trucks 4,000 to 6,500 lbs. offer a wide range of features designed for the operator and the application resulting in a quiet, comfortable, easy-to-drive performer.

The Hyster S-XM series cushion tire fork lift trucks 4,000 to 6,500 lbs. offer a wide range of features designed for the operator and each application. The result is a quiet, comfortable, easy-to- drive performer.

Toyota 7 Series

Cushion Tire Models 3,000-6,500 lbs. Gas/LPG



- 7FGCU15 3,000 lbs.
- 7FGCU18 3,500 lbs.
- 7FGCSU20 4,000 lbs.
- 7FGCU20 4,000 lbs.
- 7FGCU25 5,000 lbs.
- 7FGCU30 6,000 lbs.
- 7FGCU32 6,500 lbs.

Main Vehicle Specifications		Hyster S50XM	Toyota 7FGCU25
Load Capacity	lb.	5000	5000
Load Center	in.	24	24
Tire Type		Cushion	Cushion
Maximum Fork Height (MFH)	in.	131	131.5
Mast Lowered Height	in.	84	83.3
Free Lift	in.	5.5	6.1
Load Distance *	in.	14.8	16.7
Wheelbase	in.	56.3	55.5
Fork Size (T x W x L)	in.	1.5x 4 x 42	1.6 x 5 x 42
Length to Fork Face	in.	89.2	93.7
Overhead Guard Height	in.	84.5	80.7
Tilt Range (FWD/BWD)	deg.	5/8	6/10
Outside Turning Radius	in.	79	77.5
Basic Right Angle Stacking Aisle Width **	in.	93.8	94.3
Overall Width	in.	42	41.9
Carriage Width	in.	38.5	36
*Centerline of front axle to front face of forks. **Add load length and clearance.			

Main Vehicle Specifications (Cont.)				Hyster	Toyota
Speeds	Travel, Max. (FWD)	Full Load	m.p.h.	10.5	10.6
		No Load	m.p.h.	10.8	10.6
	Lifting	Full Load	f.p.m.	108	118
		No Load	f.p.m.	123	126
	Lowering	Full Load	f.p.m.	98.6	98
		No Load	f.p.m.	82.8	98
Gradeability at 1 mph		Full Load	%(tanθ)	26	25
Max. Gradeability		Full Load	%(tanθ)	N/A	31
		No Load	%(tanθ)	N/A	17
Total Weight			lb.	8404	8290
Underclearance		Min. with Load	in.	3.6	2.9
		Center of Wheelbase	in.	4.9	4.3
Transmission		Type		Powershift	Powershift
		Speed (FWD/RVS)		1/1	1/1
Engine	Gasoline/ Diesel	Make/Model		Mazda FE 2.0L	Toyota / 4Y
		Rated Horsepower/r.p.m.	HP	41.5/2800	53/2400
		Rated Torque/r.p.m.	SAE ft.-lb.	104/1600	119/1800
		Number of Cylinders		4	4
		Piston Displacement	cu. in.	181	136
		Tire Sizes		Front	
Rear				16 x 5 x 10.5	16 x 5 x 10.5



(5,000 lbs. Capacity)

Overall Truck Dimensions L* x W x ** H (in.)	
Hyster S50XM	89.2 x 42 x 84
Toyota 7FGCU25	93.7 x 41.9 x 80.7

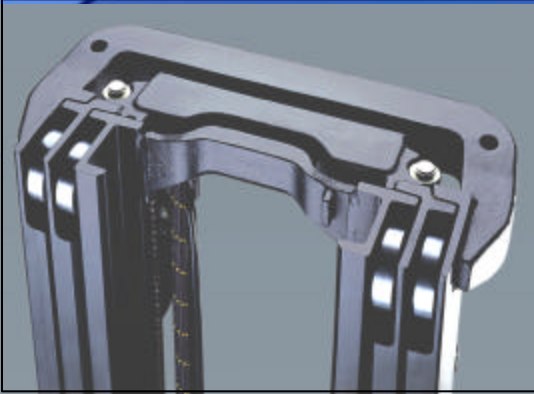
* Length to fork face
** Height of overhead Guard

STYLING:

The Hyster design incorporating the forward slant still sets the pace as a state of the art appearing truck.

The Toyota truck now utilizes a more angular shape than the previous 6-Series with heavy use of plastic in the dash area.

Hyster VISTA Mast



- Nested mast channels are directly aligned and eliminate channel damage caused by forward movement during lowering.
- Full face bearings are canted at three degree angle to allow for full face contact with the mast channels.

The nested mast channels on the Hyster VISTA are compact and reduce the truck's right-angle stacking dimensions and lost load center.

The channels are directly aligned and eliminate channel damage caused by forward movement during lowering. Hydraulic cushioning is provided to allow a smooth, quiet transition between the main lift cylinder and the free lift cylinder when lifting or lowering.

Full face bearings canted at a three degree angle allow for full face contact with the mast channels. Loading is evenly distributed on the roller bearing over a greater area which contributes to increased bearing and mast channel life.

Hyster utilizes premium cast components for greater strength and precision construction. The wrap around brackets, tie bars and chain anchor mountings are cast instead of cut, bent and welded fabrications. The precise construction that results from the use of cast components ensures longer life of the rolling hardware. The Hyster rollers are wider and larger in diameter. Hyster rollers run on a 1" face versus Toyota rollers that run on a .85" face.

Mast



Toyota Mast

- Flush face
- Straight load rollers
- Extrusions formed into channels provide side thrust support

Mast

Hyster



Hyster side of mast 6-3/8"
wide

Toyota



Toyota side of mast 5-7/8"
wide

Hyster is $\frac{1}{2}$ " thicker at the side of the mast than Toyota.

Hyster measured 6-3/8" on the side of the mast.

Toyota measured 5-7/8" on the side of the mast.

Mast

Toyota

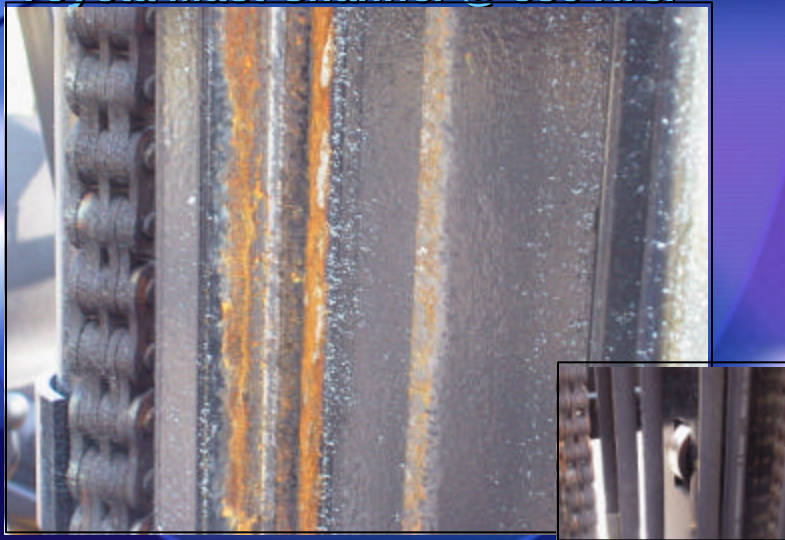


The Extrusion

- To repair a worn extrusion you must replace the channel

Mast

Toyota Mast Channel @ 336 Hrs.



The wear shown here is from a Toyota with only 336 hours.

Mast Visibility

Hyster



Toyota



Note: Hyster is 3 functional vs. Toyota which is 4 functional.

The Toyota hose reeving pulley for the optional side shifter occupies a full 4" x 4" height on top of the cylinder while the thoughtful Hyster design only adds 2.5" width x 6" high offset to the right. This offset design combines on this truck to give the operator 3" + 4" = 7" total forward visibility over the cylinder advantage.

Hyster visibility is better. The operator has a 7" visibility advantage over the top of the free lift cylinder and reeving bracket. Toyota will point to 3" of additional opening inside their mast over the top of their free lift cylinder but Hyster has the edge when looking downward into the immediate area in front of the truck.

Mast Visibility

(Visibility at same truck bed height)

Hyster



Toyota



Note: Hyster is 3 functional vs. Toyota which is 4 functional.

The wide visibility window on the Toyota does not help much when the forks are at truck bed height.

Hyster has several more small ports of visibility looking through the mast when the forks are raised at a 47.5" truck bed height.

Mast



- Toyota has a free lift sensor



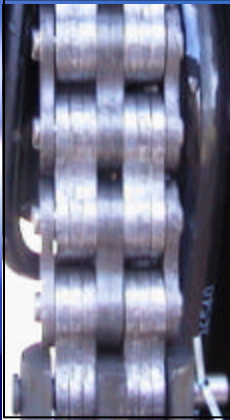
Toyota Free Lift Sensor

Toyota has added extra hardware and software to their Seven Series trucks. They have added sensors, switches, wiring, warning lights, cylinder assembly, grease zerks, button, solenoid, and a computer. You can expect maintenance and service costs to be higher.

A dirty environment may cause problems with solenoids.

Mast Chain

- *Hyster uses a heavier mast chain resulting in smoother, quieter running performance combined with potentially longer life.*



Hyster
10 leaf chain



Toyota
7 leaf chain

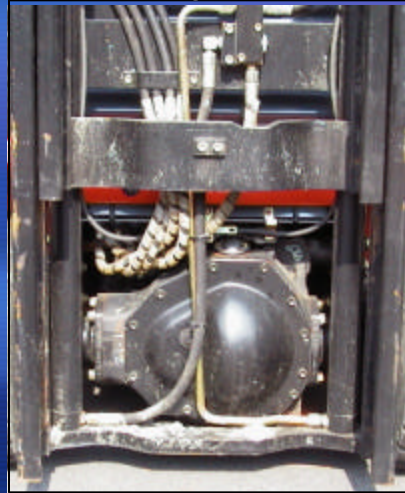
Hyster utilizes a 10-leaf chain versus the 7-leaf design found on the Toyota. The benefit to Hyster users is smoother, quieter running performance combined with potentially longer life.

Protection of Hydraulic Hoses and Fittings

Hyster better protects vital hydraulic hoses and fittings...



Hyster



Toyota

Hyster protects vital hydraulic hoses and fittings...

Raise the mast up so that the carriage is out of the way and you can view the well-protected hoses and fittings on the Hyster. The Hyster high-pressure hose is wire braided and further protected by a metal plate where attached to the cylinder. The Toyota hoses are not wire braided and will not last as long, plus the fittings to the cylinders are exposed posing a costly risk of damage, leaks, and downtime.

Hyster manufactures lift, side shift, power steering and tilt cylinders for its wide product line. Toyota does not manufacture their own cylinders. Hyster users can expect high quality components designed and built expressly for rugged lift truck usage. The free lift cylinder in the center of the Toyota measured 51" high while the Hyster cylinder measures 48". The 3" advantage for Hyster means better forward visibility.

Operator Compartment



	<u>Step Height</u>	<u>Floor to bottom of seat</u>
Hyster	19-19.5"	42.5"
Toyota	15.37"	40"

STYLING:

The Hyster design incorporating the forward slant still sets the mark as a modern appearing truck.

The Toyota truck now utilizes a more angular shape than the previous 6-Series with heavy use of plastic in the dash area.

Operator Compartment

Hyster



Toyota



Hyster has plenty of foot room. The floorboard area is 12% greater compared to the Toyota. The Hyster operator enjoys a large non-skid cushioned rubber floor mat with extra room compared to the Toyota. In addition, the Hyster two pedal layout means even more space for feet to find a comfortable position compared to the Toyota with three pedals.

Hyster utilizes a conventional automotive two pedal design. Hyster operators prefer the single 8" wide combination braking and inching pedal and an accelerator pedal much as in any automatic drive automobile.

Toyota utilizes a separate pedal for braking and a separate pedal for inching adding to complexity.

Hyster's simpler, more modern pedal arrangement means less effort and a more intuitive response to attain the desired function.

Operator Compartment

Hyster



Toyota



Hyster provides a spacious dash compartment. The Hyster compartment is large enough to accommodate a full size clipboard plus extra space for gloves or extra paperwork. The compartment also includes a separate area for writing utensils. The Toyota storage compartment only measures 3-1/4" x 3-1/8".

Hyster S-XM Series Seat



- Standard, non-suspension, vinyl seat provides the operator with low height and easy entry and exit
- Seat mounted, retractable belts are standard
- Optional premium seat is available
- Hip restraints provide better tip over protection



(Optional FLS1500 full suspension seat)

- Seats on Hyster trucks are ergonomically designed for operator comfort, reducing fatigue and increasing productivity.
- A non suspension seat is standard and available in cloth or vinyl. The Hyster exclusive FLS1500 full suspension seat is available as an option. Both include retractable seat belt and hip restraints.
- Both Hyster and Toyota offer seat mounted retractable belts. This type of mounting is optimal for preventing the belt from rubbing into the operator's stomach, and does not restrict the operator. The belt moves with the operator.
- Toyota comes standard with a 4-way adjustable semi-suspension seat with lumbar support. Cloth is optional. A 3-way full suspension seat is also available as an option.

Seat



Standard seat

Toyota

- Wing-back seat
- 4-way adjustable semi-suspension seat is standard
- Seat mounted, retractable belts are standard

- Toyota comes standard with a 4-way adjustable semi-suspension seat with lumbar support. Cloth is optional. A 3-way full suspension seat is also available as an option.
- Seat is adjustable forward and back.
- Seat mounted retractable belts are standard.



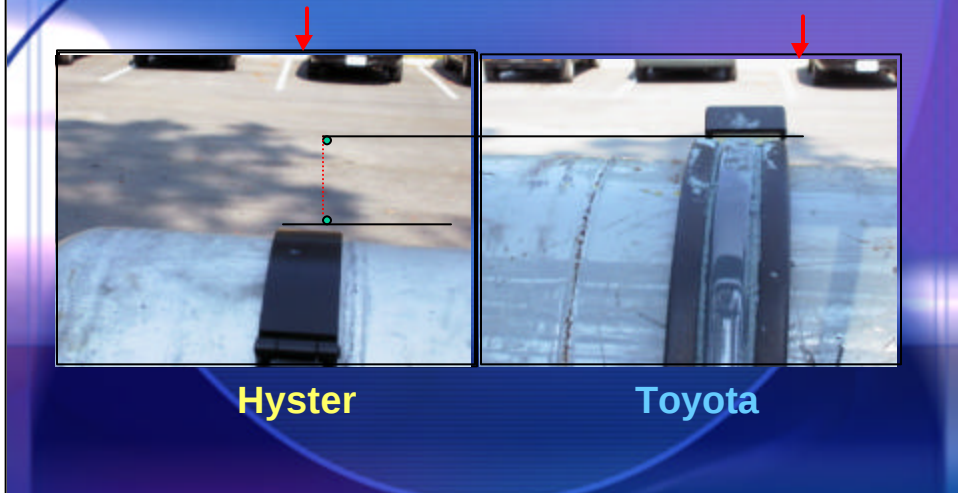
The Hyster recommended procedure in the event a tip over occurs is to stay with the unit. **DO NOT JUMP OFF!** Hyster suggests the operator lean forward toward the cowl, holding onto the steering wheel tightly, brace both feet on floor board and lean away from impact. Leaning forward in the Toyota seat would diminish the effect of shoulder high body restraints.

The Hyster operator hip restraint system was designed to help keep the operators body within the confines of the operator compartment in the unlikely event of a tip over.

Operator Compartment

Rear Visibility

(side by side at same distance)



Visibility rearward is important also and Hyster has a large edge over Toyota. The dimension from the seat bottom to the top of the LPG tank is 24" for Toyota and 18.5" for Hyster. The Hyster advantage is 5.5" for much improved rearward visibility.

The view shown is toward the rear from eye level over the LP tank toward the floor with a 5'7" operator.

These trucks were lined up equal and the reference point was the same.

Operator Compartment

- ✓ The Hyster ComforCab compartment is mounted on elastomeric mounts, which isolate and reduce noise and vibration.

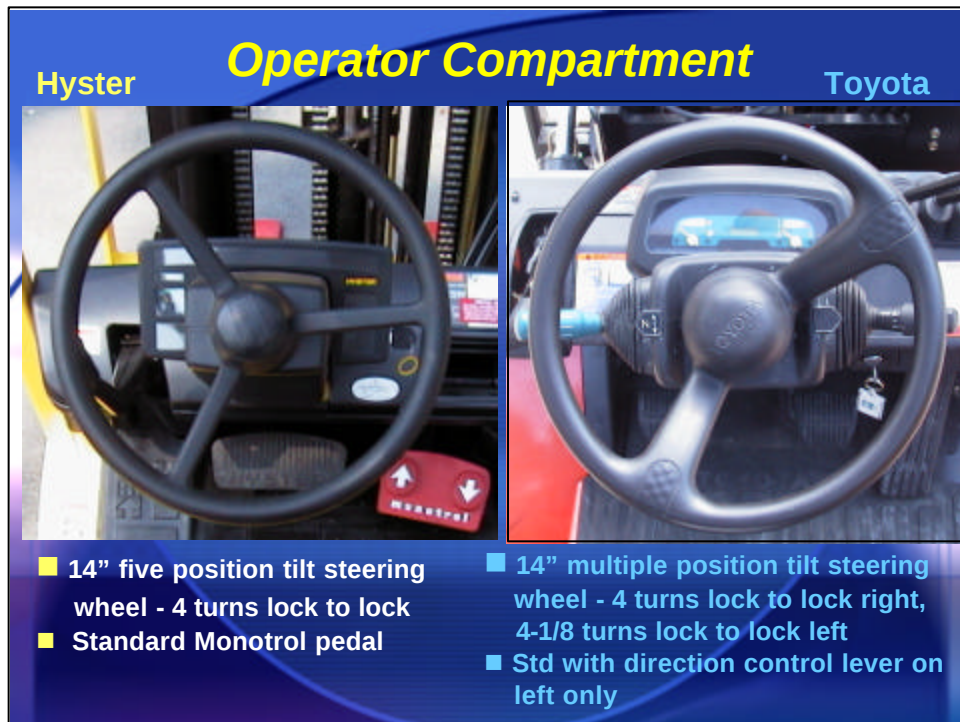
Hyster



The Hyster ComforCab gives Hyster operators a smooth ride...

Hyster's isolated suspended operator compartment is cushion mounted at each of the four corners to contribute to the reduction of vibrations felt by the operator. The entire overhead guard unit complete with floor, compartment covers, and seat is separated from the chassis with rubber blocks. In addition, the engine drive assembly utilizes rubber mounts to reduce vibrations from the engine and transmission. For further comfort, the steering axle is mounted to the frame with two oversized rubber-mounting blocks that reduce road bumps from being transmitted to the operator's compartment.

Toyota only utilizes rubber engine mounting blocks to reduce vibration. They mount their steering axle to the frame by bronze wear bushings and have no separate cushioning of the operator's compartment.



The Hyster and Toyota instrument panels are located just below the steering wheel. Downward visibility for shorter drivers (5'7" or less) could be reduced with the Toyota panel due to the taller profile.

Hyster provides the Monotrol pedal for the operator's convenience. Operators who drive in the reverse direction sometimes turn to their left, sometimes to their right when looking rearward. Controlling the direction with the foot decreases the amount of unnecessary motions over an 8 hour shift.

The Toyota comes equipped with a left side column mounted shift lever.

Hyster's tilt steering is a solid cog gear style. When the operator sets the tilt angle the steer column remains in that position until the operator chooses to change it. The Toyota tilt lever employs a compression nut system of tightening that can come loose under jarring conditions, or if the operator fails to exert enough effort to tighten it properly.

Hyster Instrumentation



- hour meter
- coolant temp gauge
- fuel gauge (gas only)
- engine oil pressure lamp
- charging system lamp
- transmission oil Temp lamp
- seat belt warning lamp

Optional with premium monitoring system:

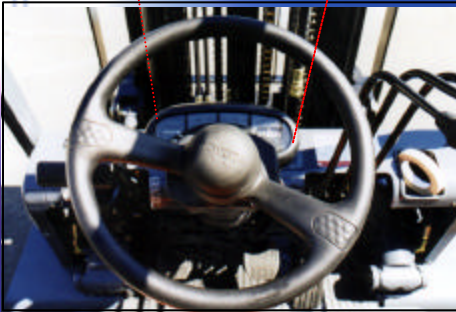
- coolant level warning lamp
- brake fluid level warning lamp
- air cleaner obstruction warning lamp

Hyster gauges provide better visibility over the top. The Hyster instruments are easy to read and do not obstruct forward visibility for shorter operators looking at the fork tips.

Toyota locates their instruments in a pod just beneath the steering wheel. Toyota steering wheel can momentarily obstruct the operator's view of the warning lights and gauges when turning the wheel. In addition, shorter operators may find that they have to scoot forward on the seat to view the fork's tips when attempting to enter loads.

Instrumentation

Toyota



Standard:

- SAS operation monitor
- SAS warning light and alarm
- digital hour meter
- water temperature gauge
- fuel level gauge
- engine oil pressure light
- clogged air filter warning
- charge warning light
- swing lock cylinder light

Optional:

- OK monitor (systems check)
- LPG low-fuel warning light and alarm

Instrumentation is adequate, especially with the premium gauge option.

Operator Compartment Hydraulic Levers

Hyster



Toyota



Hyster hydraulic controls are more convenient to use and require less effort...

The Hyster hydraulic levers are conveniently located at the operator's right hand side. The operator simply allows his arm to fall from the steering wheel in a natural arc, allowing gravity to do most of the work, to locate the handles. Hyster has employed ergonomic consultants who have determined that operating side mounted handles requires less effort, and therefore promotes greater productivity and driver satisfaction.

The Toyota handles require more arm movement and the closest handle to the steering wheel is in the way when palming the steering wheel during quick turns. The operator's fingers can hit the handle causing discomfort.

Operator Compartment Hydraulic Levers

Toyota Tilt Lever Knob Switch



■ With this switch pressed, change tilting from backward to forward and the forks will automatically stop at their horizontal position, mast at vertical.



This system only functions when engaged from the rear tilt position.

You can expect maintenance and service costs to be higher because it is an electronically controlled device.

Service Access



Hyster operators make daily checks because it is easy...

Forklift operators are required by OSHA to check the truck out prior to each shift. The Hyster opens up easy permitting quick and easy checks. The operator on the Hyster dismounts, lifts the floor mat flap and door to gain access to the automatic transmission dipstick, depresses the hood release button to raise hood, swings left side door open, walks to right side of truck, swings right side door with battery open, visually inspects water level, check for leaks, condition of hoses, belts and radiator, pulls both the hydraulic and engine oil dipsticks to complete the under hood inspection. All of these items can be accomplished in seconds without getting dirty.

The Toyota truck, by contrast, takes longer to inspect and the operator is more prone to get dirty. The LP tank must be swung out and the seat slid forward to raise the hood.

Service Access



The following steps are necessary to accomplish what the Hyster operator is able to complete in seconds:

1. Dismount truck.
2. Lift rubber floor mat to access the dipstick door in the floor plate. The floor mat is very often dirty and the rubber can make black marks on the operator's hands and clothes.
3. Walk to rear of truck and loosen LP tank retaining knob. Walk the LP tank around to the opposite side of the truck.
4. Return to the driver's side to move seat to the fully forward position so that it will allow the hood to open all the way.
5. Pull hood lever and open hood.
6. Pull engine oil dipstick on driver's side of engine.
7. Walk around to opposite side of truck and pull hydraulic oil dipstick.
8. Walk to driver's side, once again, to close hood.
9. Walk to rear to swing LP tank back into position and screw down the retaining knob.
10. Walk back to driver's seat and move seat back before mounting truck.

When a task is more difficult to accomplish the tendency is that important steps are omitted or the entire task is ignored. The Hyster truck is more apt to be checked out thoroughly by the operator and the result is that minor problems are caught and corrected before they turn into major ones.

Service Access



Hyster's engine is much more out in the open when the hood is tipped forward and the side doors are swung open. The side doors are also removable.

Toyota's rear tipping clamshell hood impedes access to the components located to the engine's rear.

Transmission Oil Check Access

Hyster



Toyota



Hyster has a convenient “through the floor mat” access to the transmission oil check hatch and dipstick.

To get to the Toyota transmission oil check hatch, the operator must first fold the floor mat over out of the way.

Battery Access

Hyster

- Door swings out of the way making it easier to perform service



Toyota

- Battery is stationary



The service door swings out of the way on the Hyster making it much easier to perform service.

Toyota



- Upside down mounted oil filter can spill oil and create an oily mess if taken off too soon after engine shut-down

Toyota's crowded engine compartment compromises access to the engine oil filter. The filter is mounted upside down with a spill trough under the filter. The problem can be that if you do not wait three minutes or more for the oil to drain from the filter after the engine is shut down, the trough will overflow and create an oily mess.

Toyota LP Tank Bracket



▪To open the hood, the LP tank must first swing out.

▪The seat must be moved all the way forward.

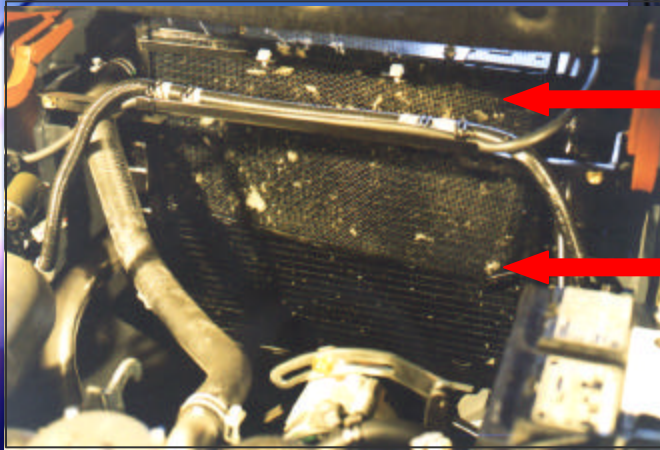
▪The thumbscrew must be loosened first to swing out the LP tank bracket.

▪The thumbscrew must be tightened to secure the LP tank bracket back to the overhead guard leg.



The swing-out LP tank allows the operator to change the tank without lifting the tank over the counterweight.

The Toyota Radiator Screen



Removable
screen to trap
debris
(partially removed)

Debris that
have passed
through
screen

A removable radiator screen is standard.

Fuse Box

Hyster



Fuse box is conveniently located under the left dash

Toyota



Fuse box is located under the hood

The fuse box on the Hyster is conveniently located under the left dash.

The fuse box on the Toyota is located under the hood. You must first go through all of the steps to open the hood before you can get to the fuse box.

Overhead Guard

Hyster



- Hyster increased the OHG height from 84 to 84.5 in.
- additional supports for added strength and durability

Toyota



- Toyota design has wider spacing on the front half with the bars angled down towards the operator; easier for product to fall through. OHG height is 80.7 in.

Steer Axle

Hyster



Toyota



The Hyster steer axle is built to take on the most rugged applications...

The Hyster axle is a durable ductile iron casting. Toyota utilizes a welded fabricated axle. Hyster utilized the welded fabricated design on Hyster products in the '50's and '60's and discontinued it's use. Hyster's research demonstrates that it's casting is a more effective design to ensure highest quality, long lasting life which is designed-in for improved protection and service access for key steer axle components.

The Hyster king pins utilize durable tapered roller bearings as opposed to needle bearings in use on the Toyota.

Toyota requires a total of eight (8) grease fittings on the steer axle as opposed to a total of two (2) on the Hyster.

The Hyster axle is mounted to the frame by virtue of two heavy-duty rubber blocks that serve to cushion the axle from vibrations and help reduce wear on components. The Toyota mounts the axle into the frame with two bronze wear bushings that require frequent lubrication. The rubber blocks may last for the economic life of the Hyster truck while the bushings on the Toyota will likely require replacement and will add to routine maintenance requirements.

Hyster trucks are simpler to maintain...

TOYOTA STABILITY ASSIST SYSTEM:

Toyota has added extra hardware and software to their Seven Series trucks. They have added sensors, switches, wiring, warning lights, cylinder assembly, grease zerks, button, solenoid, and a computer. A partial list of components follows:

1. Tilt angle sensor. A mechanical switch and rod assembly attached to the right hand tilt cylinder.
2. Pressure sensor in external line to the left hand lift cylinder.
3. Speed sensor. Bolted into the front axle housing.
4. Swing sensor. Bolted to the rear steer axle.
5. Height sensor. Mechanical trip switch mounted to mast.
6. Rotary position sensor. Bolted to steer axle.
7. Swing lock cylinder assembly. An additional hydraulic cylinder with an additional grease zerk.
8. Computer/ Controller.
9. Extra lights and buzzer located in dash.
10. Hour meter now includes diagnostic error code capability for the SAS system.

Toyota forks cannot be lowered if the engine is off.

TOYOTA STABILITY ASSIST SYSTEM

The operator's manual for SAS equipped trucks states the following among other things:

"Caution. Should an error code be displayed, park the vehicle at a safe location and receive an inspection by a Toyota dealer".

- **"The SAS, which is electronically controlled, need be initialized after completion of a maintenance operation. Do not unnecessarily remove or modify any SAS features. Whenever an inspection may be necessary, make contact with a Toyota dealer".**
- **"When washing the vehicle, carefully prevent water from splashing directly over the electronics (controller, sensor and switches) employed in the SAS".**
- **"Caution. If you should feel something abnormal even slightly, or when the SAS warning lamp comes to blink, or once an error code has appeared on the hour meter display, immediately stop operating the vehicle and receive an inspection by a Toyota dealer".**

Toyota has no standard grill protection for fan/radiator. (available as an option)



Toyota does offer an option for grill protection on 5,000# trucks.

Hyster

■ Standard with Monotrol pedal



HYSTER: Used in lieu of the column shifter, the Monotrol pedal is a highly productive directional accelerator pedal. One pedal allows the operator to change direction and acceleration without the use of hands reducing operator movement resulting in increased productivity.

Toyota also offers an optional foot direction control pedal.

Toyota Options



- The EZ Pedal lets operators shift between forward and reverse by tapping one side or the other of the large orange pedal, which is part of the accelerator pedal.

Toyota Summary

- Straight load rollers with wear extrusions formed into mast channels.
- Serviceability access to engine components difficult.
- Daily checks are time consuming; must swing-out LPG tank bracket (with thumbscrew latch) required before rear opening hood can be opened.
- Hood release is difficult to find. The instructions on the emblem are not easily seen on the underside of the steer column on the left
- OHG design has wider spacing on the front half with bars angled down toward the operator. Product may fall through more easily.
- Cowl mounted hydraulic levers.
- No hip restraints or padded armrest.