



PALADINTM
POWERFUL ATTACHMENT TOOLS

OPERATOR'S HANDBOOK

PALLET FORKS PATENTED

Signature Series



SERIAL NUMBER: _____

MODEL NUMBER: _____

Original
Part Number: 75663
Rev.

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PREFACE

GENERAL INFORMATION

This product was carefully designed and manufactured to give you many years of dependable service. Only minor maintenance (such as cleaning and lubricating) is required to keep it in top working condition. Be sure to observe all maintenance procedures and safety precautions in this manual and on any safety decals located on the product and on any equipment on which the attachment is mounted.

WARNING! Never let anyone operate this unit without reading the "Safety Precautions" and "Operating Instructions" sections of this manual.



Always choose hard, level ground to park the vehicle on and set the brake so the unit cannot roll.

Unless noted otherwise, right and left sides are determined from the operator's control position when facing the attachment.

NOTE: The illustrations and data used in this manual were current (according to the information available to us) at the time of printing, however, we reserve the right to redesign and change the attachment as may be necessary without notification.

BEFORE OPERATION

The primary responsibility for safety with this equipment falls to the operator. Make sure the equipment is operated only by trained individuals that have read and understand this manual. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer to obtain further assistance. Keep this manual available for reference. Provide the manual to any new owners and/or operator's

SAFETY ALERT SYMBOL



This is the "Safety Alert Symbol" used by this industry. This symbol is used to warn of possible injury. Be sure to read all warnings carefully. They are included for your safety and for the safety of others working with you.

SERVICE

Use only manufacturer replacement parts. Substitute parts may not meet the required standards.

Record the model and serial number of your unit on the cover of this manual. The parts department needs this information to insure that you receive the correct parts.

SOUND AND VIBRATION

Sound pressure levels and vibration data for this attachment are influenced by many different parameters: some items are listed below (not inclusive):

- prime mover type, age, condition, with or without cab enclosure and configuration
- operator training, behavior, stress level
- job site organization, working material condition, environment

Based on the uncertainty of the prime move, operator, and job site, it is not possible to get precise machine and operator sound pressure levels or vibration levels for this attachment.

NOTE: A list of all Paladin Patents can be found at <http://www.paladinattachments.com/patents.asp>.

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SAFETY STATEMENTS



THIS SYMBOL BY ITSELF OR WITH A WARNING WORD THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



DANGER

THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH WILL RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.



WARNING

THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.



CAUTION

THIS SIGNAL WORD IS USED WHERE MINOR INJURY COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

NOTICE

NOTICE INDICATES A PROPERTY DAMAGE MESSAGE.

GENERAL SAFETY PRECAUTIONS

WARNING!

READ MANUAL PRIOR TO INSTALLATION



Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators and maintenance personnel should read this manual, as well as all manuals related to this equipment and the prime mover thoroughly before beginning installation, operation, or maintenance. **FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE PRIME MOVER'S MANUAL(S).**



READ AND UNDERSTAND ALL SAFETY STATEMENTS

Read all safety decals and safety statements in all manuals prior to operating or working on this equipment. Know and obey all OSHA regulations, local laws, and other professional guidelines for your operation. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing, or operating this equipment.



KNOW YOUR EQUIPMENT

Know your equipment's capabilities, dimensions, and operations before operating. Visually inspect your equipment before you start, and never operate equipment that is not in proper working order with all safety devices intact. Check all hardware to ensure it is tight. Make certain that all locking pins, latches, and connection devices are properly installed and secured. Remove and replace any damaged, fatigued, or excessively worn parts. Make certain all safety decals are in place and are legible. Keep decals clean, and replace them if they become worn or hard to read.

GENERAL SAFETY PRECAUTIONS

WARNING!



PROTECT AGAINST FLYING DEBRIS

Always wear proper safety glasses, goggles, or a face shield when driving pins in or out, or when any operation causes dust, flying debris, or any other hazardous material.

WARNING!



LOWER OR SUPPORT RAISED EQUIPMENT

Do not work under raised booms without supporting them. Do not use support material made of concrete blocks, logs, buckets, barrels, or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground level or on blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

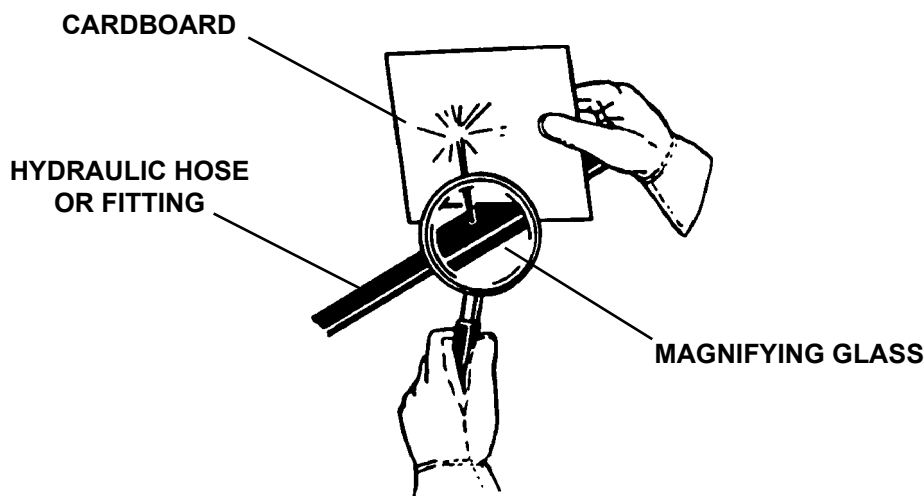
WARNING!



USE CARE WITH HYDRAULIC FLUID PRESSURE

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible. Before connecting or disconnecting hydraulic hoses, read your prime mover's operator's manual for detailed instructions on connecting and disconnecting hydraulic hoses or fittings.

- Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.
- Wear safety glasses, protective clothing, and use a piece of cardboard or wood when searching for hydraulic leaks. **DO NOT USE YOUR HANDS!** **SEE ILLUSTRATION.**



GENERAL SAFETY PRECAUTIONS

WARNING!



DO NOT MODIFY MACHINE OR ATTACHMENTS

Modifications may weaken the integrity of the attachment and may impair the function, safety, life, and performance of the attachment. When making repairs, use only the manufacturer's genuine parts, following authorized instructions. Other parts may be substandard in fit and quality. Never modify any ROPS (Roll Over Protection Structure) or FOPS (Falling Object Protective Structure) equipment or device. Any modifications must be authorized in writing by the manufacturer.

WARNING!



SAFELY MAINTAIN AND REPAIR EQUIPMENT

- Do not wear loose clothing or any accessories that can catch in moving parts. If you have long hair, cover or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well-lit area.
- Use properly grounded electrical outlets and tools.
- Use the correct tools for the job at hand. Make sure they are in good condition for the task required.
- Wear the protective equipment specified by the tool manufacturer.



SAFELY OPERATE EQUIPMENT

Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your machine's manual for these instructions.

- Keep all step plates, grab bars, pedals, and controls free of dirt, grease, debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the prime mover.
- Do not operate the equipment from anywhere other than the correct operator's position.
- Never leave equipment unattended with the engine running, or with this attachment in a raised position.
- Do not alter or remove any safety feature from the prime mover or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.

EQUIPMENT SAFETY PRECAUTIONS

WARNING! KNOW WHERE UTILITIES ARE



Observe overhead electrical and other utility lines. Be sure equipment will clear them. When digging, call your local utilities for location of buried utility lines, gas, water, and sewer, as well as any other hazard you may encounter.

WARNING! EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA DUST ALONG WITH OTHER HAZARDOUS DUSTS MAY CAUSE SERIOUS OR FATAL RESPIRATORY DISEASE.



It is recommended to use dust suppression, dust collection and if necessary personal protective equipment during the operation of any attachment that may cause high levels of dust.

WARNING! REMOVE PAINT BEFORE WELDING OR HEATING



Hazardous fumes/dust can be generated when paint is heated by welding, soldering or using a torch. Do all work outside or in a well ventilated area and dispose of paint and solvent properly. Remove paint before welding or heating.

When sanding or grinding paint, avoid breathing the dust. Wear an approved respirator. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

WARNING! END OF LIFE DISPOSAL



At the completion of the useful life of the unit, drain all fluids and dismantle by separating the different materials (rubber, steel, plastic, etc.). Follow all federal, state and local regulations for recycling and disposal of the fluid and components.



OPERATING THE ATTACHMENT

- Operate only from the operator's station with seatbelt properly latched.
- Do not exceed the recommended lifting capacity of any approved fork tines or prime mover.
- Do not lift round bales without installing the optional three spear bale spike.
- Do not use the fork tines for prying or any purpose other than lifting.
- Reduce speed when driving over rough terrain, on a slope, or turning, to avoid over-turning the vehicle.
- An operator must not use drugs or alcohol, which can change his or her alertness or coordination. An operator taking prescription or over-the-counter drugs should seek medical advice on whether or not he or she can safely operate equipment.
- Secure the load properly. Unsecured loads can fall unexpectedly. When transporting a load, keep the forks as close to the ground as possible.
- Never lift a load with one fork.
- Completely engage load before lifting. Fork length should be at least two-thirds of load length. When backward tilt is required to stabilize the load use extreme caution.
- Before exiting the prime mover, lower the pallet forks to the ground, apply the brakes, turn off the prime mover's engine, and remove the key.

EQUIPMENT SAFETY PRECAUTIONS



TRANSPORTING THE PALLET FORK

- Travel only with the attachment as close to the ground as possible. Drive slowly over rough ground and on slopes.
- When driving on public roads use safety lights, reflectors, Slow Moving Vehicle signs etc., to prevent accidents. Check local government regulations that may affect you.
- Do not drive close to ditches, excavations, etc., cave in could result.
- Do not smoke when refueling the prime mover. Allow room in the gas tank for expansion. Wipe up any spilled fuel. Secure cap tightly when done.



MAINTAINING THE PALLET FORK

- Before performing maintenance, lower the attachment to the ground, apply the brakes, turn off the engine, and remove the key.
- Worn, damaged, or illegible safety decals must be replaced. New safety decals can be ordered from Paladin.
- Never work under a raised attachment.

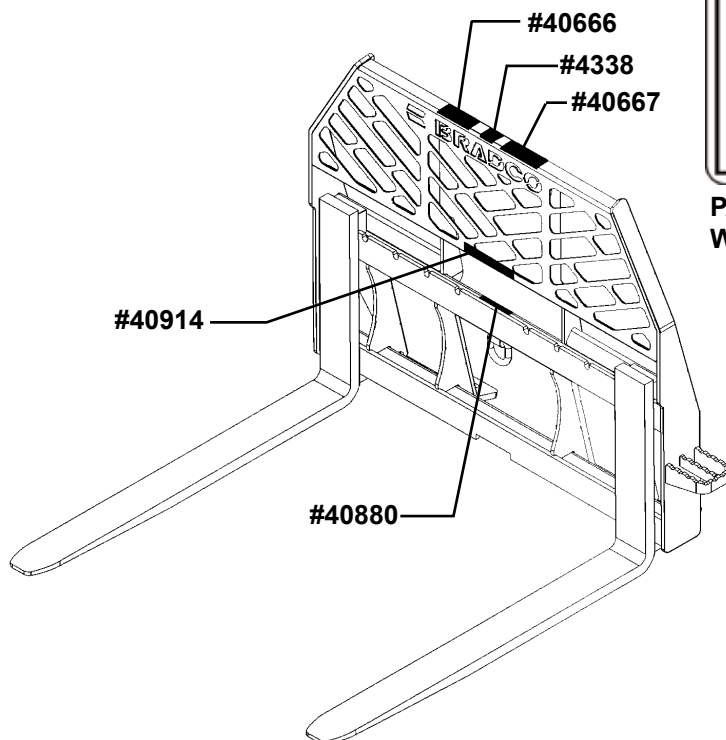
DECALS

GENERAL INFORMATION

The following diagrams show the location of all the decals used on your attachment. The decals are identified by their part numbers, with the reductions of the actual deals shown. Use this information to order replacements for lost or damaged decals. Be sure to read all decals before operating the attachment. They contain information you need to know for both safety and attachment longevity.

IMPORTANT: Keep all safety decals clean and legible. Replace all missing, illegible or damaged safety decals. When replacing parts with safety decals attached, the safety decals must also be replaced.

REPLACING SAFETY DECALS: Clean the area of application with a nonflammable solvent, then wash the same area with soap and water. Allow the surface to dry. Remove the backing from the safety decal, exposing the adhesive surface. Apply the safety decal to the position shown in the diagram, and smooth out any bubbles.

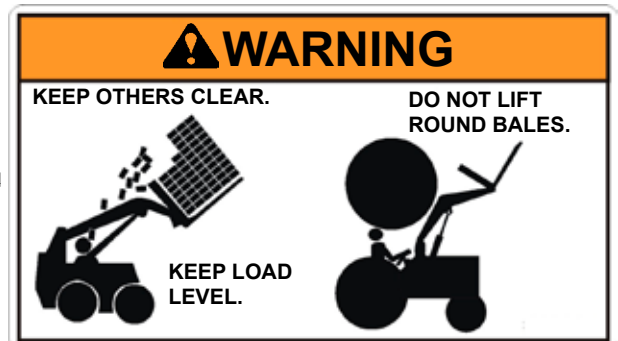


Signature Series

PART #40913
SIGNATURE SERIES DECAL



PART #40666
WARNING DECAL



PART #40667
WARNING



PART #4338
MADE IN U.S.A.

**U.S. PATENT
NO. 6,881,023**
#40880

PART #40880
PATENT #6881023

INSTALLATION

GENERAL INFORMATION

The Paladin Pallet Forks were designed to be easy to use and maintain. The pallet fork mounts to the toolbar/quick attach mechanism for easy installation.

WARNING! Never exceed the recommended lifting capacity of any approved fork tines or the prime mover. Use the correct fork tines for the job at hand.



WARNING! To avoid serious personal injury, make sure the pallet fork is securely latched to the attachment mechanism of your unit. Failure to do so could result in separation of the attachment from the unit.



ATTACHING

Install the pallet fork by following your power unit operator's manual for proper installation of an attachment. Make sure the fork frame is securely latched to the prime mover.

DISCONNECTING PALLET FORK

On firm, level ground, lower the lift arms against the frame and place the pallet fork on the ground.

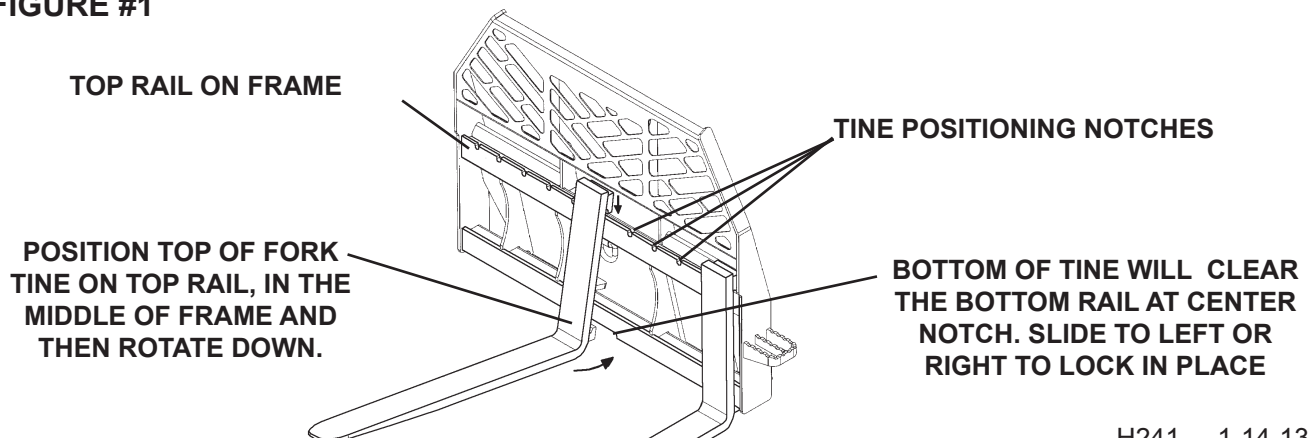
Follow your power unit operator's manual for detaching (removing) an attachment.

IMPORTANT: Follow all safety shutdown procedures listed in your power unit operator's manual before leaving the operator's station.

FORK TINE INSTALLATION

With loader arms lowered and completely rolled back, shut down the power unit following the safety shutdown procedure for your unit. (If installing negative drop tines the loader arms may need to be raised slightly to avoid contacting the ground during installation.) Ensure that the locking assembly on the tine is in the unlocked (UP) position. Place the top of the fork on the top rail in the middle of the frame and rotate down. Slide the fork to the side to seat it on the frame. Using the locking assembly that is on your tine, lock in place. Install all tine(s) in the same fashion. Make sure the locking assembly has been set into a notch on the top rail and therefore securing the tine to the frame. See Figure #1

FIGURE #1



H241 1-14-13-2

INSTALLATION

ADJUSTING THE FORK TINES

With loader arms lowered and completely rolled back, shut down the power unit following the safety shutdown procedure for your unit. (If tines are still in contact with the ground the loader arms may need to be raised just enough to eliminate contact.) From the right side of your pallet fork, adjust the position of the right fork tine by either lifting the lock assembly into the vertical position or turning the knob to the unlock position and sliding the fork tine to the desired location. Restore the locking assembly to either the horizontal position or turn the knob to lock the fork tine in place. Make sure that the latch has been set into a notch and therefore securing the tine to the frame.

Move to the left side of the pallet fork frame and repeat the adjustment procedure to the left fork tine. Make sure that the left tine is the same distance from the center of the frame as the right tine.

FLOATING FORK TINE ADJUSTMENT: Loosen the set screws on the set collars and slide the tines into the desired position making sure that the left and right tines are the same distance from the center of the frame. Tighten set screws to secure the tines in place.

WARNING! Never exceed the recommended lifting capacity of any approved fork tines or the prime mover.



NOTE: Fork tine capacities are pounds per pair at a 24" load center. (The center of gravity of the allowable loads must be applied within the first 24" of the fork tines when measured from the front face of the vertical section of the fork tine out toward the tip of the horizontal section of the fork tine.)

INSTALLATION OF OPTIONAL ASSEMBLIES

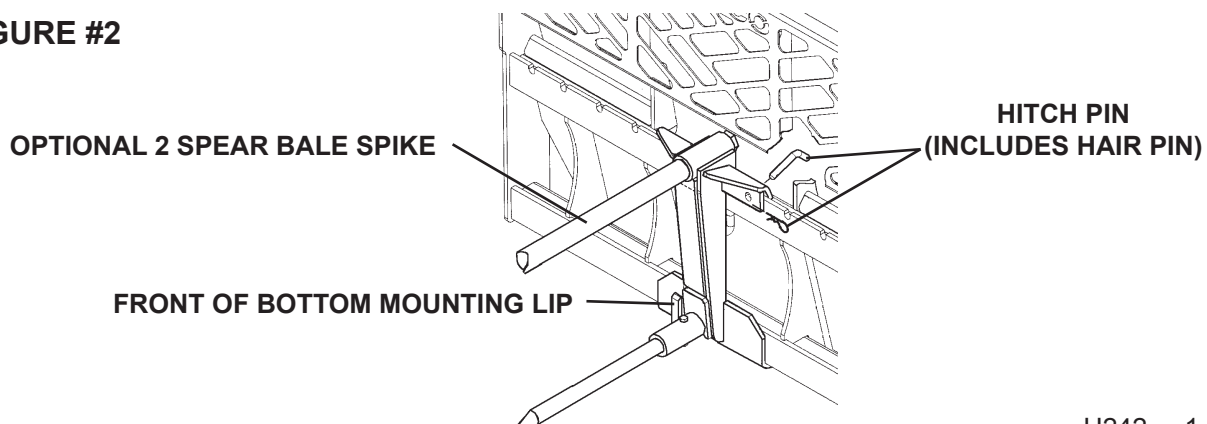
NOTE: Optional assemblies not recommended on compact tool carriers.

When installing the tow hitch, auger mount, 2 spear bale spike or the 3 spear bale spike onto your fork frame you must first remove the existing fork tines.

Position the top lip of the attachment over the top mounting bar on the fork frame with the bottom mounting lip in the center of the frame. Rotate the hitch down and slide sideways to lock the bottom on and then lock into place using the hitch pin provided. See Figure #2

Once the auger mount is attached to the fork frame, bolt the cradle (sold separately) to the auger mount using the hardware supplied. Install the swivel to the mounting using pin provided and then secure the auger drive unit to the swivel with the pivot pin supplied with the drive unit.

FIGURE #2



H242 1-15-13-2

OPERATION

GENERAL INFORMATION

Paladin has various pallet forks designed for compact tool carriers, compact tractors, skid steer loaders, wheel loaders and backhoe applications. Be sure you have the pallet fork designed for your prime mover.

The Signature Series heavy duty brickguard offers see through visibility for tine placement, added strength along with a smooth surface for protection against load damage.

The Signature Series pallet forks include an exclusive (patented) load retention ring for securing pallet fork loads or to pull loads out of trucks as well as many other uses.

Each series pallet fork has various tine options available.

WARNING! Operate the attachment only when properly seated at the operator's station. Any other method could result in serious personal injury or death.



Do not exceed the recommended lifting capacity of any approved fork tines or the prime mover. Keep lifting surface of the forks level at all times. Do not use the fork tines for prying or any purpose other than lifting.

Completely engage load before lifting. Fork length should be at least two-thirds of load length. It is recommended to keep lifting surface of the forks level at all times. When backward tilt is required to stabilize the load use extreme caution.

Do not lift round bales without first installing the optional bale spike, or try to lift a load with one fork.

Reduce speed when driving over rough terrain, on a slope, or turning, to avoid overturning the vehicle.

Secure the load properly. Unsecured loads can fall unexpectedly. When transporting a load, keep the forks as close to the ground as possible.

Before exiting the prime mover, lower the pallet forks to the ground, apply the brakes, turn off the prime mover's engine, and remove the key.

OPERATING INSTRUCTIONS

It is the operator's responsibility to know or be able to estimate the weight and load center of the load you will be lifting. Know the terrain and the route you will need to travel. Adjust travel speed accordingly. Whenever possible avoid double tiered loads, rough terrain, sharp turns, sudden starts and stops.

1. Adjust the spacing of the forks so they engage the pallet or load at its maximum width and then approach the load in such a fashion that the weight will be centered between the fork tines. The heaviest side should be closest to the fork frame and not near the tips of the fork tines.

OPERATION

2. Before lifting make certain the fork tines are completely under the load and level. (Fork length should be at least two-thirds of load length.)

NOTE: A Load Retention “D” Ring is provided on the fork frame for securing loads to prevent them from becoming dislodged unintentionally.

3. Lift the load slightly to make sure the load is stable. If load appears unstable, lower and reposition the tines to achieve full stability.
4. Raise the load to the MINIMUM height required for the terrain.
5. During transportation; keep the fork tines level, gradually accelerate and brake, slow down before turning and avoid any obstacles, bumps or holes. Check load frequently to ensure stability.

NOTE: If placing the load off of the ground there are some important practices that should be followed while lifting the load.

- a. Start lifting slowly and smoothly. Lift speeds can be slightly increased once the load has started moving and appears to be stable.
- b. If the load starts to lean or move, lower to the ground and reposition.
- c. Lower the load gently until the weight of the load is securely resting on the landing point and the forks are free to be retracted from under the load.

IMPORTANT: Before removing the forks from the load check landing point for any indications of overloading. If there is any indication that the landing point cannot handle the weight of the load, pick the load back up and lower it to the ground.

SPECIFICATIONS

COMPACT TOOL CARRIER

ITA CLASS II PALLET FORKS

MODEL	HEIGHT	WIDTH	FORK OPTIONS	
			LENGTH	LIFT CAPACITY
108366	27.75" (705mm)	40.00" (1016mm)	36" (914mm)	2200 lbs (998 kg)
			42" (1067mm)	2200 lbs (998 kg)
			48" (1219mm)	2200 lbs (998 kg)

FLOATING PIN PALLET FORKS

MODEL	HEIGHT	WIDTH	FORKS INCLUDED	
			LENGTH	LIFT CAPACITY
32"	29.00" (737mm)	30.30" (770mm)	32" (813mm)	900 lbs (408 kg)
42"			42" (1067mm)	900 lbs (408 kg)

COMPACT TRACTOR

ITA CLASS II PALLET FORKS

MODEL	HEIGHT	WIDTH	FORK INCLUDED	
			LENGTH	LIFT CAPACITY
36"	29.00" (737mm)	45.00" (1143mm)	36" (914mm)	2300 lbs (1043 kg)
42"			42" (1067mm)	2300 lbs (1043 kg)
48"			48" (1219mm)	2300 lbs (1043 kg)

SKID STEER LOADER

ITA CLASS II SIGNATURE SERIES PALLET FORKS

MODEL	HEIGHT	WIDTH		FORK OPTIONS	
		No Step	With Step		LIFT CAPACITY
45"	38.75" (984mm)	45.88" (1165mm)	50.75" (1289mm)	Standard Tines	4000 lbs (1814 kg)
60"		60.75" (1543mm)	65.75" (1670mm)	Heavy-Duty Tines	5500 lbs (2495 kg)
				Value Tines	3750-5500 lbs (1701-2495 kg)
				Negative Drop Tines	3930 lbs (1792 kg)

WHEEL LOADER AND BACKHOE LOADER

ITA CLASS III PALLET FORKS

MODEL	HEIGHT	WIDTH	FORK OPTIONS	
			LENGTH	LIFT CAPACITY
10022	42.75" (1086mm)	48.00" (1219mm)	42" (1067mm)	10 000 lbs (4536 kg)
10047		60.00" (1524mm)	48" (1219mm)	10 000 lbs (4536 kg)
10021		72.00" (1829mm)	60" (1524mm)	10 000 lbs (4536 kg)

BOLT TORQUE SPECIFICATIONS

GENERAL TORQUE SPECIFICATION TABLES


Use the following charts when determining bolt torque specifications when special torques are not given. Always use grade 5 or better when replacing bolts.

SAE BOLT TORQUE SPECIFICATIONS




NOTE: The following torque values are for use with extreme pressure lubricants, plating or hard washer applications. Increase torque 15% when using hardware that is unplated and either dry or lubricated with engine oil.

Bolt Size		SAE GRADE 5 TORQUE				SAE GRADE 8 TORQUE				Bolt head identification marks as per grade. NOTE: Manufacturing Marks Will Vary
		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		
Inches	Millimeters	UNC	UNF	UNC	UNF	UNC	UNF	UNC	UNF	
1/4	6.35	8	9	11	12	10	13	14	18	
5/16	7.94	14	17	19	23	20	25	27	34	
3/8	9.53	30	36	41	49	38	46	52	62	
7/16	11.11	46	54	62	73	60	71	81	96	
1/2	12.70	68	82	92	111	94	112	127	152	
9/16	14.29	94	112	127	152	136	163	184	221	
5/8	15.88	128	153	174	207	187	224	254	304	
3/4	19.05	230	275	312	373	323	395	438	536	
7/8	22.23	340	408	461	553	510	612	691	830	
1	25.40	493	592	668	803	765	918	1037	1245	
1-1/8	25.58	680	748	922	1014	1088	1224	1475	1660	
1-1/4	31.75	952	1054	1291	1429	1547	1700	2097	2305	
1-3/8	34.93	1241	1428	1683	1936	2023	2312	2743	3135	
1-1/2	38.10	1649	1870	2236	2535	2686	3026	3642	4103	




GRADE 2



GRADE 5






GRADE 8



METRIC BOLT TORQUE SPECIFICATIONS

NOTE: The following torque values are for use with metric hardware that is unplated and either dry or lubricated with engine oil. Reduce torque 15% when using hardware that has extreme pressure lubricants, plating or hard washer applications.

Bolt head identification marks as per grade.		
		

Size of Bolt	Grade No.	Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-54.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6