

# LOADING AND TIEDOWN PROCEDURES FOR CONVENTIONAL AMMUNITION ITEMS ON THE 463L/INTEX PALLET FOR THE APACHE AND COBRA HELICOPTERS

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DEPARTMENT OF ARMY DRAWING			
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DRAWING NUMBER	<i>[Signature]</i> U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL		
DA-111			

DO NOT SCALE

GENERAL NOTES

(GENERAL NOTES CONTINUED)

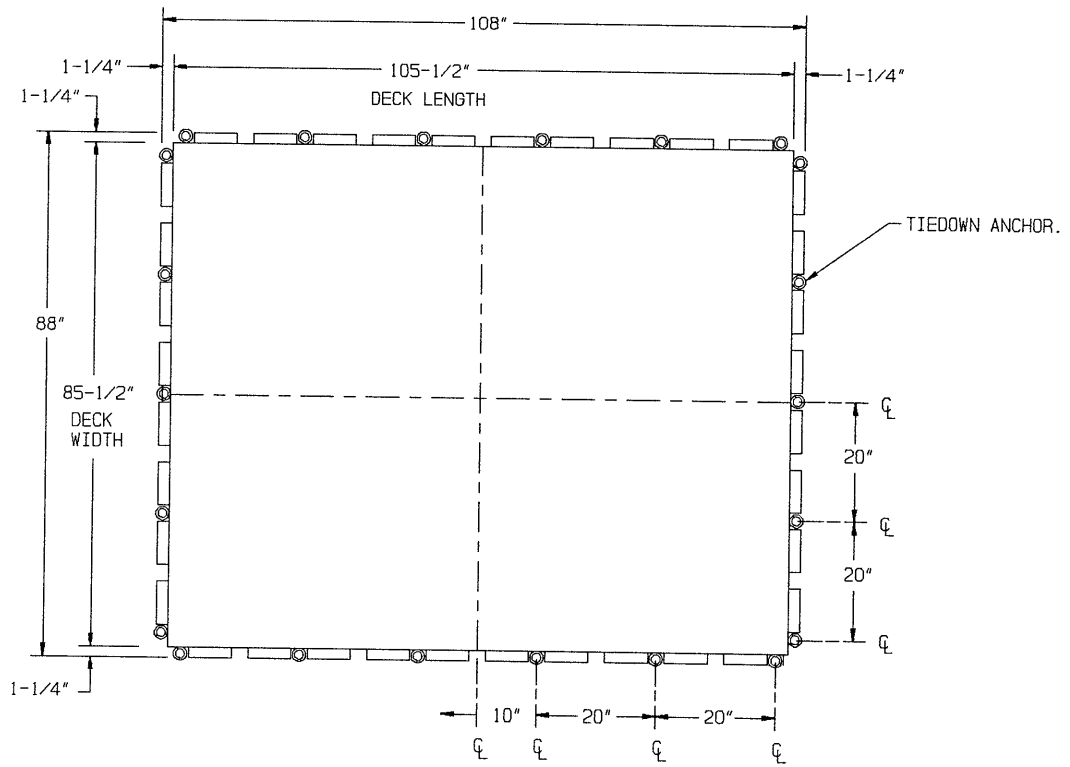
- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1.
- B. THE PROCEDURES HEREIN ARE APPLICABLE TO THE SECUREMENT OF CONVENTIONAL AMMUNITION ITEMS ON THE 463L AND/OR INTEX PALLET, FOR TRANSPORT BY CHINOOK (CH-47D) HELICOPTERS, TO SUPPORT THE APACHE AND COBRA ATTACK HELICOPTER COMBAT OPERATIONS. FOR DETAIL OF THE 463L PALLET, SEE PAGE 2.
- C. LADING DATA:
  - 2.75 INCH ROCKET:  
DIMENSIONS: 66" L X 8.5" W X 9.5" H  
WEIGHT - -: 160 POUNDS (APPROX)
  - TOW MISSILE:  
DIMENSIONS: 58.3" L X 11.6" W X 11.6" H  
WEIGHT - -: 87 POUNDS (APPROX)
  - HELLFIRE MISSILE:  
DIMENSIONS: 76.3" L X 15.5" W X 16" H  
WEIGHT - -: 175 POUNDS (APPROX)
  - 20MM CARTRIDGE (M548):  
DIMENSIONS: 18.6" L X 8.3" W X 14.6" H  
WEIGHT - -: 160 POUNDS (APPROX)
  - 30MM CARTRIDGE (M592):  
DIMENSIONS: 18.1" L X 9.3" W X 14.1" H  
WEIGHT - -: 93 POUNDS (APPROX)
- D. WHEN INSTALLING WEB STRAP TIEDOWN ASSEMBLIES, SEE THE RATCHET/RATCHETING DETAILS ON PAGES 10, AND 11.
- E. ADJUSTABLE SCUFF SLEEVES PROVIDED ON WEB STRAP ASSEMBLIES WILL BE LOCATED TO PROVIDE A PAD WHERE STRAPS PASS OVER SHARP EDGES, OR RATCHETS AND HOOKS ON PREVIOUSLY INSTALLED WEB STRAP TIEDOWN ASSEMBLIES. METAL PARTS OF A STRAP ASSEMBLY SHOULD BE LOCATED SO AS TO AVOID CONTACT WITH METAL ON UNIT BASIC LOAD ITEMS. IF CONTACT CANNOT BE AVOIDED, A SUITABLE ANTI-CHAFING MATERIAL AS LISTED UNDER THE MATERIAL SPECIFICATIONS BELOW MUST BE POSITIONED BETWEEN THE METAL PARTS OF A STRAP ASSEMBLY AND THE METAL ON UNIT BASIC LOAD ITEMS, AND IF NECESSARY, TAPED OR TIED IN POSITION.
- F. WHEN ONE WEB STRAP TIEDOWN ASSEMBLY IS NOT LONG ENOUGH TO SPAN THE DISTANCE DEPICTED, TWO ASSEMBLIES MAY BE HOOKED TOGETHER TO GAIN THE NECESSARY LENGTH.
- G. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM AND ONE POUND EQUALS 0.454KG.
- H. IF THE ITEM BEING LOADED HAS A HEAVY END, ALTERNATE THE CONTAINER ENDS IN EACH LAYER AND/OR STACK FOR A MORE EVEN DISTRIBUTION OF LOAD WEIGHT, WHEN POSSIBLE.

- I. THE MAXIMUM LOAD HEIGHT ABOVE THE PALLET DECK IS 62-1/2".
- J. DO NOT POSITION LOAD BUNDLING STRAPS AT A LOCATION WHERE THEY WILL BE UNDER LOAD HOLD-DOWN STRAPS UNLESS IT CANNOT BE AVOIDED.
- K. WHEN PRE-POSITIONING BUNDLING STRAPS ON THE PALLET DECK, DETERMINE IF THE STRAP RATCHET SHOULD BE LOCATED ON THE SIDE OR TOP OF THE BUNDLE AND MAKE ALLOWANCE FOR THE RATCHETS FINAL LOCATION PRIOR TO LOADING CONTAINERS.
- L. IF THE RATCHET ON THE BUNDLING STRAP IS NOT IN A GOOD LOCATION ON THE SIDE OR TOP OF THE BUNDLE AFTER THE CONTAINERS HAVE BEEN LOADED ON TOP OF THE STRAP, IT CAN BE RE-LOCATED BY PULLING THE STRAP MANUALLY OR WITH A VEHICLE. SECURE THE BOTTOM LAYER OF THE BUNDLE WITH A WEB STRAP, FROM A TIEDOWN ANCHOR ON THE PALLET AROUND THE END OF THE BOTTOM LAYER CONTAINERS TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE PALLET, PRIOR TO PULLING STRAP.
- M. BUNDLES OF CONTAINERS AND/OR LOADS CAN BE RE-POSITIONED ON THE PALLET AFTER LOADING IS COMPLETE BY PUSHING WITH A FORKLIFT OR OTHER VEHICLE. POSITION A PIECE OF LUMBER BETWEEN THE VEHICLE AND THE LOAD TO PREVENT DAMAGE AND USE SMALL INCHING MOVEMENTS.
- N. FOR ADDITIONAL GUIDANCE, SEE THE KEY NUMBERS AND SPECIAL NOTES ON EACH LOAD PAGE.

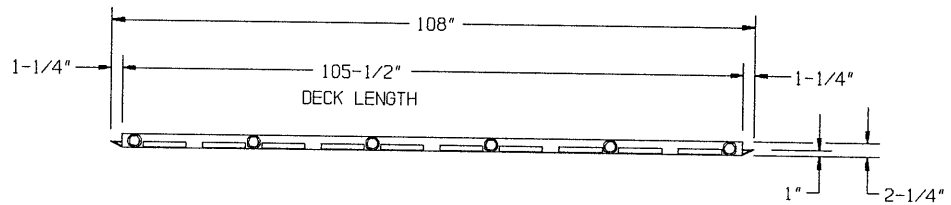
(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

- PALLET - - - - - : HCU-6/E 463L, TYPE I, MIL-P-27443E.
- STRAP - - - - - : WEBBING, UNIVERSAL TIEDOWN, NSN 5340-00-980-9277, PN 10900880; OR NSN 1670-00-725-1437, PN1376-013. ALTERNATIVE: NSN 5340-01-089-4997, PN 11669588, OR NSN 5340-01-204-3009, PN 9392419.
- ANTI-CHAFING MATERIAL - - - - - : CANVAS, BURLAP, TAPE OR ANY OTHER SUITABLE MATERIAL.



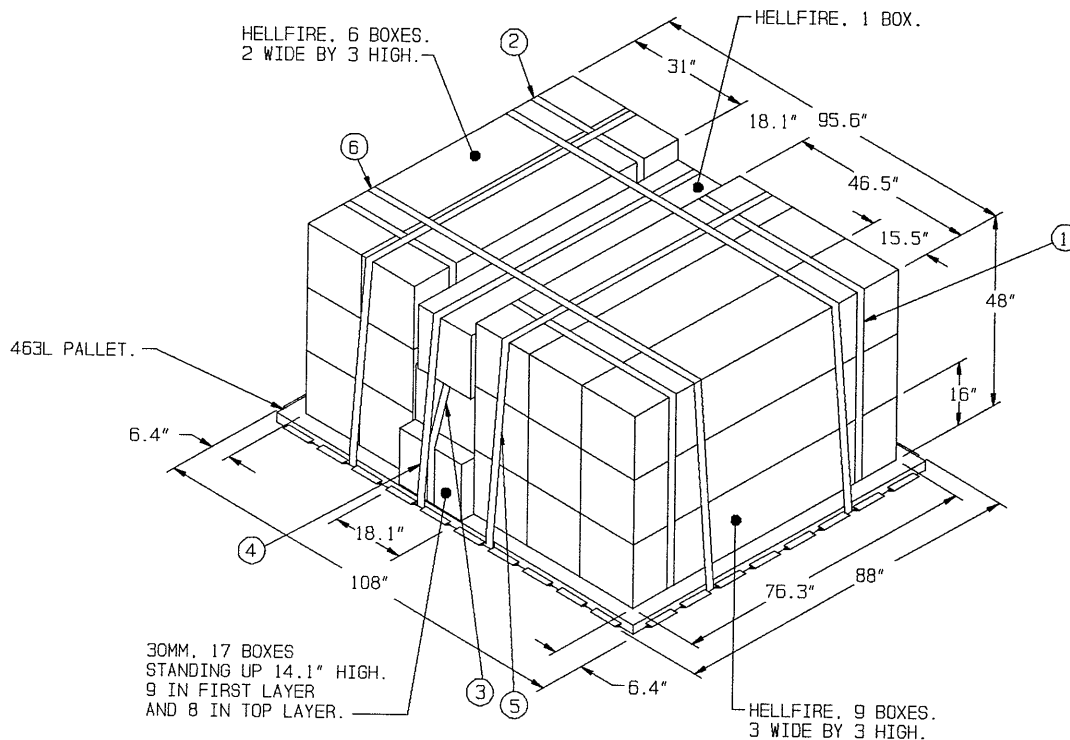
TOP VIEW



SIDE VIEW

463L PALLET SPECIFICATIONS

10,000 POUND LOAD CAPACITY.  
 22 TIEDOWN ANCHORS: 7,500 POUND LOAD STRENGTH EACH ANCHOR.  
 300 POUNDS EMPTY WEIGHT.



**ISOMETRIC VIEW**

LOAD HEIGHT INCLUDING PALLET IS 50.25"

**KEY NUMBERS**

**SPECIAL NOTES:**

1. STARTING AT ONE END OF PALLET, POSITION STACK OF NINE HELLFIRE BOXES. SEE KEY NUMBER ① FOR STRAPPING GUIDANCE.
2. POSITION FIRST LAYER OF NINE 30MM BOXES STANDING UP, WITH 9.3 INCH DIMENSION ACROSS THE PALLET WIDTH AND TIGHT AGAINST THE HELLFIRE BOXES. POSITION THE SECOND LAYER OF 30MM BOXES STANDING UP AND CENTERED ON THE JOINTS OF THE BOTTOM BOXES. SEE KEY NUMBER ③ FOR STRAPPING GUIDANCE.
3. POSITION ONE HELLFIRE BOX ON TOP OF STACK OF 30MM BOXES. SEE KEY NUMBER ④ FOR GUIDANCE.
4. POSITION STACK OF SIX HELLFIRE BOXES TIGHT AGAINST THE 30MM BOXES. SEE KEY NUMBER ② FOR GUIDANCE.
5. A TOTAL OF TEN WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

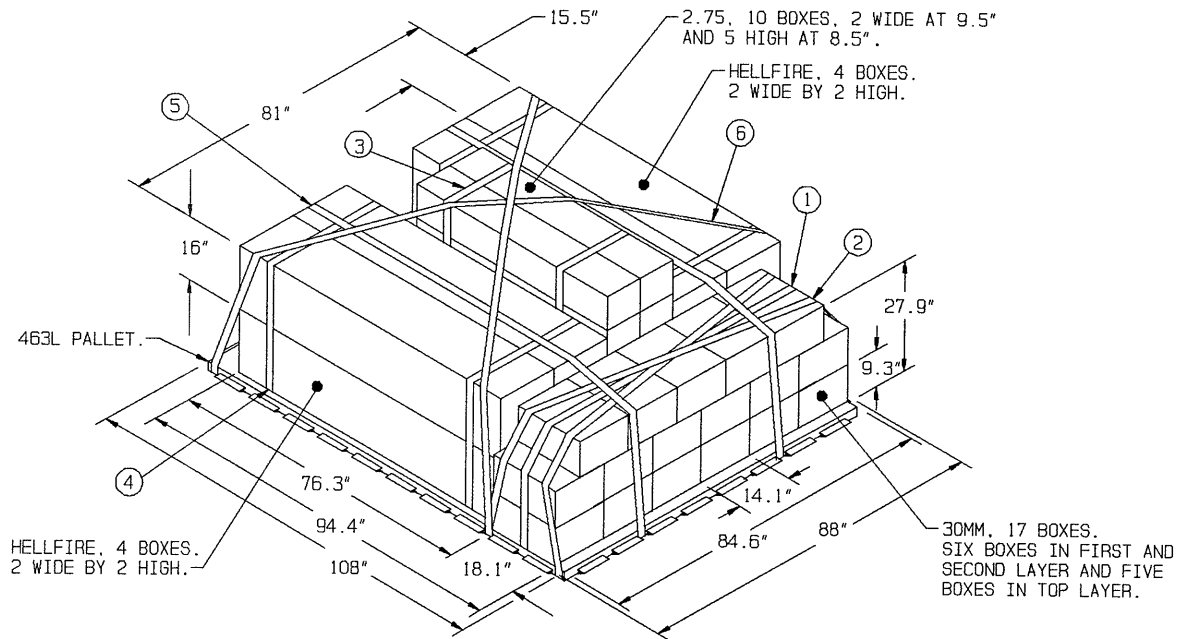
- ① WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL NINE BOXES. PRE-POSITION THESE STRAPS ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT THE STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 1 ON THIS PAGE.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL SIX BOXES. PRE-POSITION THESE STRAPS ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 4 ON THIS PAGE.
- ③ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO ENCIRCLE ALL SEVENTEEN BOXES AT THE APPROXIMATE CENTER OF THE BOXES. PRE-POSITION THIS STRAP ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT THE STRAP LAYS FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 2 ON THIS PAGE.
- ④ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP FROM A TIEDOWN ANCHOR ON PALLET OVER TOP OF 30MM BOXES AND HELLFIRE BOX, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 3 ON THIS PAGE.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON SIDE OF PALLET OVER TOP OF STACK TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT.
- ⑥ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON END OF PALLET OVER TOP OF LOAD TO A TIEDOWN ANCHOR ON OPPOSITE END OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT.

**WARNING**

FOR INTERNAL USE ONLY WITH CH-47D HELICOPTERS EQUIPPED WITH HICHS. DO NOT SLING LOAD EXTERNALLY BENEATH ANY AIRCRAFT, INCLUDING CH-47D.

**463L PALLET LOAD**

ITEM	QUANTITY	WEIGHT (APPROX)
30MM	17 BOXES	1,581 LBS
HELLFIRE	16 BOXES	2,800 LBS
PALLET	1 REQD	300 LBS
STRAPS	10 REQD	50 LBS
TOTAL WEIGHT		4,731 LBS (APPROX)



**ISOMETRIC VIEW**

LOAD HEIGHT INCLUDING PALLET IS 45".

**KEY NUMBERS**

**SPECIAL NOTES:**

1. STARTING AT ONE END OF PALLET, POSITION FIRST LAYER OF SIX 30MM BOXES ACROSS PALLET AND CENTERED BETWEEN THE FIRST AND SECOND TIEDOWN ANCHOR FROM END OF PALLET, TO WHICH STRAPS MARKED ② WILL BE ATTACHED. POSITION THE SECOND LAYER OF SIX 30MM BOXES ON TOP OF THE FIRST LAYER. POSITION THE THIRD LAYER OF FIVE 30MM BOXES TO CENTER ON THE SECOND LAYER. SEE KEY NUMBERS ① AND ② FOR STRAPPING GUIDANCE.
2. POSITION A STACK OF TEN 2.75 BOXES, TWO WIDE BY FIVE HIGH, CENTERED ON PALLET WIDTH AND TIGHT AGAINST STACK OF 30MM BOXES. SEE KEY NUMBER ③ FOR STRAPPING GUIDANCE.
3. POSITION A STACK OF FOUR HELLFIRE BOXES, TWO WIDE BY TWO HIGH, ON EACH SIDE OF THE STACK OF 2.75 BOXES, AND TIGHT AGAINST STACK OF 30MM BOXES. SEE KEY NUMBER ④ FOR STRAPPING GUIDANCE.
4. WHEN TWO STRAPS ARE ATTACHED TO THE SAME TIEDOWN ANCHOR HOOK ONE RATCHET END AND ONE TAIL END, OR TWO TAIL ENDS TO THE TIEDOWN ANCHOR. HOOK BOTH STRAPS TO THE TIEDOWN ANCHOR PRIOR TO RATCHETING STRAPS TIGHT. SEE KEY NUMBERS ② AND ⑥ FOR STRAPPING GUIDANCE.
5. A TOTAL OF FOURTEEN WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

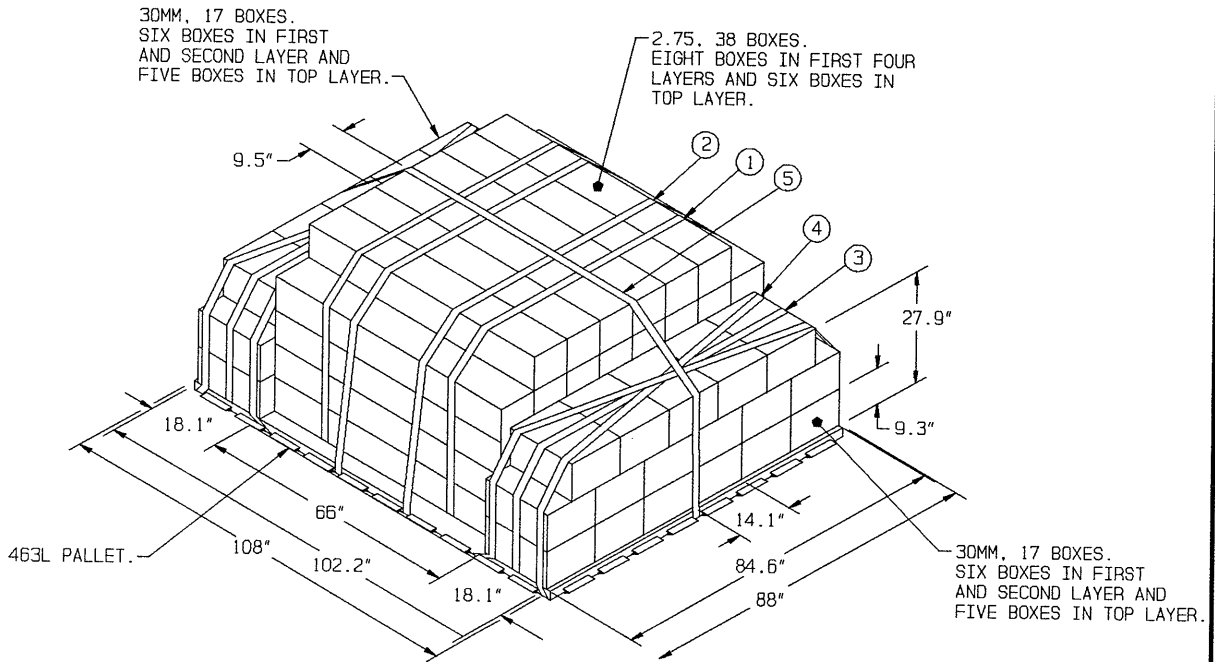
- ① WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO ENCIRCLE ALL SEVENTEEN BOXES AT THE APPROXIMATE CENTER OF THE BOXES. PRE-POSITION THIS STRAP ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT THE STRAP LAYS FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. NOTE: WILL NEED TO HOOK TWO STRAPS TOGETHER TO ENCIRCLE ALL SEVENTEEN BOXES. SEE SPECIAL NOTE 1 ON THIS PAGE.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON PALLET DIAGONALLY OVER TOP OF STACK TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT BOTH STRAPS MARKED ② AT THE SAME TIME. NOTE: STRAPS MARKED ② AND ⑥ WILL BE ATTACHED TO THE SAME TIEDOWN ANCHOR. SEE SPECIAL NOTE 1 ON THIS PAGE.
- ③ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL TEN BOXES. PRE-POSITION THESE STRAPS ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 3 ON THIS PAGE.
- ④ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL FOUR BOXES IN A STACK. PRE-POSITION THESE STRAPS ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 4 ON THIS PAGE.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON PALLET OVER TOP OF 30MM AND HELLFIRE BOXES TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT.
- ⑥ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON PALLET DIAGONALLY OVER TOP OF HELLFIRE AND 2.75 BOXES TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT BOTH STRAPS MARKED ⑥ AT THE SAME TIME. NOTE: STRAPS MARKED ② AND ⑥ WILL BE ATTACHED TO THE SAME TIEDOWN ANCHOR.

**WARNING**

FOR INTERNAL USE ONLY WITH CH-47D HELICOPTERS EQUIPPED WITH HICHS. DO NOT SLING LOAD EXTERNALLY BENEATH ANY AIRCRAFT, INCLUDING CH-47D.

**463L PALLET LOAD**

ITEM	QUANTITY	WEIGHT (APPROX)
30MM	17 BOXES	1,581 LBS
HELLFIRE	8 BOXES	1,400 LBS
2.75	10 BOXES	1,600 LBS
PALLET	1 REQD	300 LBS
STRAPS	14 REQD	70 LBS
TOTAL WEIGHT		4,951 LBS (APPROX)



**ISOMETRIC VIEW**

LOAD HEIGHT INCLUDING PALLET IS 44.75".

**SPECIAL NOTES:**

1. POSITION FIRST LAYER OF EIGHT 2.75 BOXES TO CENTER ACROSS THE 108" DIMENSION OF THE PALLET. POSITION THE SECOND, THIRD, AND FOURTH LAYER OF EIGHT BOXES. POSITION THE FIFTH LAYER OF SIX BOXES TO CENTER ON THE FOURTH LAYER. SEE KEY NUMBERS ① AND ② FOR STRAPPING GUIDANCE.
2. AT EACH END OF PALLET, POSITION FIRST LAYER OF SIX 30MM BOXES ACROSS PALLET AND TIGHT AGAINST STACK OF 2.75 BOXES. POSITION THE SECOND LAYER OF SIX BOXES ON TOP OF THE FIRST LAYER. POSITION THE THIRD LAYER OF FIVE BOXES TO CENTER ON THE SECOND LAYER. SEE KEY NUMBERS ③ AND ④ FOR STRAPPING GUIDANCE.
3. A TOTAL OF FIFTEEN WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

**KEY NUMBERS**

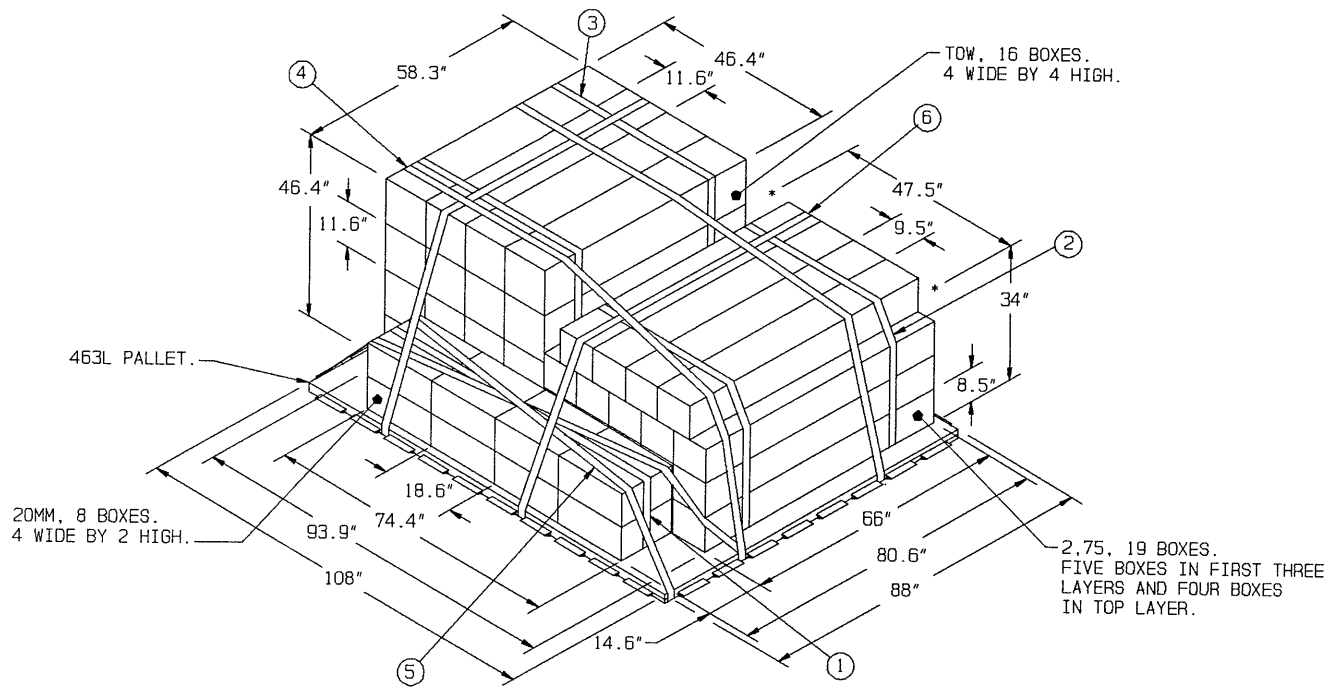
- ① WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL THIRTY-EIGHT BOXES. PRE-POSITION THESE STRAPS ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. NOTE: WILL NEED TO HOOK TWO STRAPS TOGETHER TO ENCIRCLE ALL THIRTY-EIGHT BOXES. SEE SPECIAL NOTE 1 ON THIS PAGE.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON SIDE OF PALLET OVER TOP OF STACK TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 1 ON THIS PAGE.
- ③ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL SEVENTEEN BOXES AT THE APPROXIMATE CENTER OF THE BOXES. PRE-POSITION THIS STRAP ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT THE STRAP LAYS FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. NOTE: WILL NEED TO HOOK TWO STRAPS TOGETHER TO ENCIRCLE ALL SEVENTEEN BOXES. SEE SPECIAL NOTE 2 ON THIS PAGE.
- ④ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON PALLET DIAGONALLY OVER TOP OF STACK TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT BOTH STRAPS MARKED ④ AT THE SAME TIME. SEE SPECIAL NOTE 2 ON THIS PAGE.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON PALLET OVER TOP OF LOAD TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT.

**WARNING**

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**463L PALLET LOAD**

ITEM	QUANTITY	WEIGHT (APPROX)
2.75	38 BOXES	6.080 LBS
30MM	34 BOXES	3.162 LBS
PALLET	1 REQD	300 LBS
STRAPS	15 REQD	75 LBS
TOTAL WEIGHT		9.617 LBS (APPROX)



**ISOMETRIC VIEW**

LOAD HEIGHT INCLUDING PALLET IS 48.65".

**SPECIAL NOTES:**

1. STARTING AT ONE SIDE OF PALLET, POSITION FIRST LAYER OF FOUR 20MM BOXES ACROSS PALLET AND LOCATED TWO-INCHES FROM EDGE OF PALLET. POSITION THE SECOND LAYER OF FOUR 20MM BOXES ON TOP OF THE FIRST LAYER. SEE KEY NUMBERS ① AND ⑤ FOR STRAPPING GUIDANCE.
2. POSITION FIRST LAYER OF FIVE 2.75 BOXES SIX-INCHES FROM EDGE OF PALLET AND TIGHT AGAINST STACK OF 20MM BOXES. POSITION THE SECOND, THIRD, AND FOURTH LAYERS OF FIVE BOXES EACH. SEE KEY NUMBERS ② AND ④ FOR STRAPPING GUIDANCE.
3. POSITION FIRST LAYER OF FOUR TOW BOXES TIGHT AGAINST STACK OF 2.75 BOXES AND STACK OF 20MM BOXES. POSITION THE SECOND, THIRD, AND FOURTH LAYERS OF FOUR BOXES EACH. SEE KEY NUMBERS ③ AND ④ FOR STRAPPING GUIDANCE.
4. A TOTAL OF ELEVEN WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

**KEY NUMBERS**

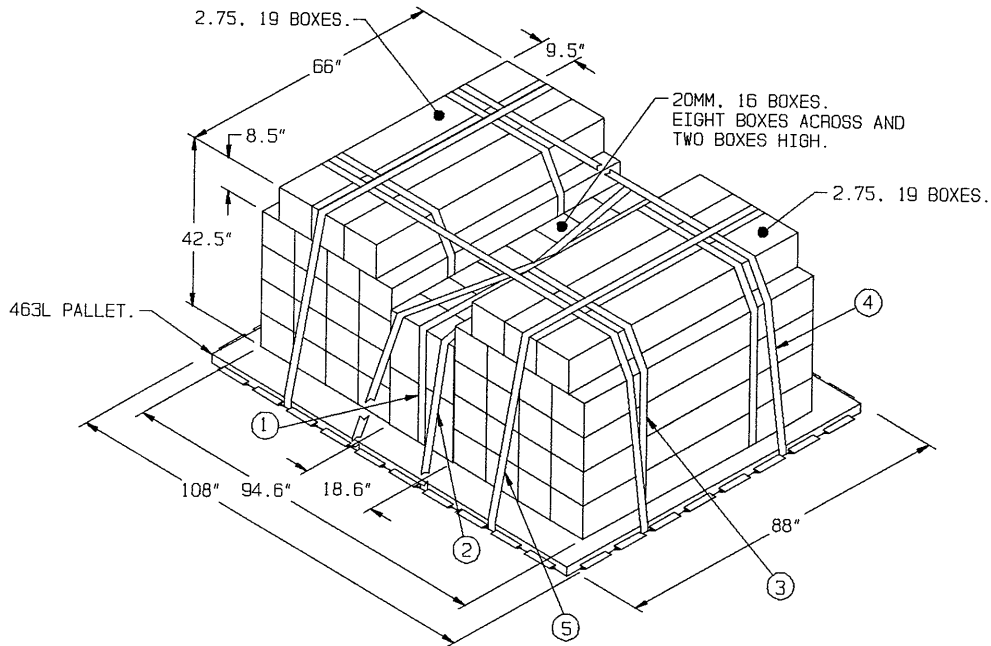
- ① WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO ENCIRCLE ALL EIGHT BOXES AT THE APPROXIMATE CENTER OF THE BOXES. PRE-POSITION THIS STRAP ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT THE STRAP LAYS FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 1 ON THIS PAGE.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL NINETEEN BOXES. PRE-POSITION THESE STRAPS ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 2 ON THIS PAGE.
- ③ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL SIXTEEN BOXES. PRE-POSITION THESE STRAPS ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 3 ON THIS PAGE.
- ④ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON SIDE OF PALLET OVER TOP OF 2.75 AND TOW STACKS TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTES 2 AND 3 ON THIS PAGE.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON PALLET DIAGONALLY OVER TOP OF 20MM STACK TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT BOTH STRAPS MARKED ⑤ AT THE SAME TIME. SEE SPECIAL NOTE 1 ON THIS PAGE.
- ⑥ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL STRAP AT LOCATION SHOWN, FROM A TIEDOWN ANCHOR ON PALLET OVER TOP OF 2.75 STACK AND TOW STACK, UNDER STRAPS MARKED ④, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT.

**WARNING**

FOR INTERNAL USE ONLY WITH CH-47D HELICOPTERS EQUIPPED WITH HICHS. DO NOT SLING LOAD EXTERNALLY BENEATH ANY AIRCRAFT, INCLUDING CH-47D.

**463L PALLET LOAD**

ITEM	QUANTITY	WEIGHT (APPROX)
20MM	8 BOXES	1,280 LBS
TOW	16 BOXES	1,392 LBS
2.75	19 BOXES	3,040 LBS
PALLET	1 REQD	300 LBS
STRAPS	11 REQD	55 LBS
<b>TOTAL WEIGHT</b>		<b>6,067 LBS (APPROX)</b>



**ISOMETRIC VIEW**

LOAD HEIGHT INCLUDING PALLET IS 44.75".

**SPECIAL NOTES:**

1. STARTING AT CENTER OF PALLET LENGTH, POSITION SIXTEEN BOXES OF 20MM ACROSS THE PALLET WIDTH. EIGHT BOXES WITH THE 8.3" DIMENSION ACROSS THE PALLET WIDTH AND TWO HIGH. SEE KEY NUMBERS ① AND ② FOR STRAPPING GUIDANCE.
2. POSITION ONE STACK OF NINETEEN 2.75 BOXES ON EACH SIDE, AND TIGHT AGAINST THE STACK OF SIXTEEN BOXES OF 20MM. FOR BETTER BALANCE, ALTERNATE BOX ENDS WHEN STACKING. SEE KEY NUMBERS ③, ④, AND ⑤ FOR STRAPPING GUIDANCE.
3. A TOTAL OF ELEVEN WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

**KEY NUMBERS**

- ① WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO ENCIRCLE ALL SIXTEEN BOXES AT THE APPROXIMATE CENTER OF THE BOXES. PRE-POSITION THIS STRAP ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT STRAP LAYS FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 1 ON THIS PAGE.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON SIDE OF PALLET DIAGONALLY OVER TOP OF STACK TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF THE PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT BOTH STRAPS MARKED ② AT THE SAME TIME. SEE SPECIAL NOTE 1 ON THIS PAGE.
- ③ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL NINETEEN BOXES. PRE-POSITION THESE STRAPS ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT THE STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 2 ON THIS PAGE.
- ④ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON END OF PALLET OVER TOP OF LOAD, TO A TIEDOWN ANCHOR ON THE OPPOSITE END OF THE PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP SLACK IN STRAP AND THEN RATCHET TIGHT.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON PALLET OVER TOP OF STACK TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT.

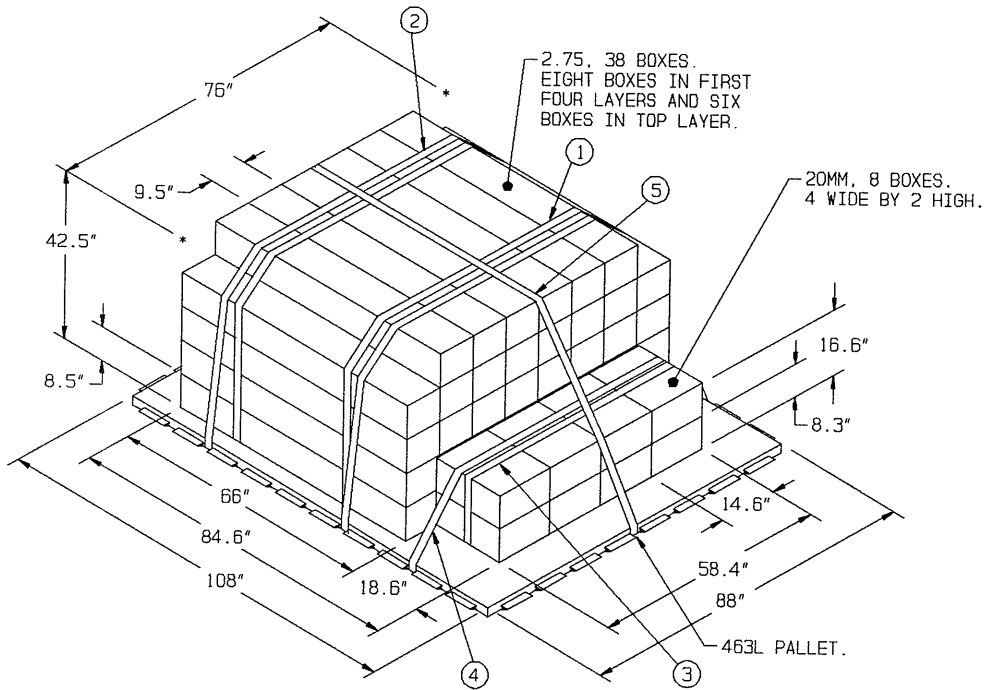
**WARNING**

FOR INTERNAL USE ONLY WITH CH-47D HELICOPTERS EQUIPPED WITH HICHS. DO NOT SLING LOAD EXTERNALLY BENEATH ANY AIRCRAFT, INCLUDING CH-47D.

**463L PALLET LOAD**

ITEM	QUANTITY	WEIGHT (APPROX)
2.75	38 BOXES	6,080 LBS
20MM	16 BOXES	2,560 LBS
PALLET	1 REQD	300 LBS
STRAPS	11 REQD	55 LBS
TOTAL WEIGHT		8,995 LBS (APPROX)





**ISOMETRIC VIEW**

LOAD HEIGHT INCLUDING PALLET IS 44.75".

**SPECIAL NOTES:**

1. STARTING AT ONE END OF PALLET, POSITION THE FIRST LAYER OF EIGHT 2.75 BOXES ACROSS PALLET AND CENTERED BETWEEN THE SECOND AND FOURTH TIEDOWN ANCHOR FROM END OF PALLET, TO WHICH STRAPS MARKED ② WILL BE ATTACHED. POSITION THE SECOND, THIRD, AND FOURTH LAYERS OF EIGHT BOXES EACH. POSITION THE FIFTH LAYER OF SIX BOXES TO CENTER ON THE FOURTH LAYER. SEE KEY NUMBERS ① AND ② FOR STRAPPING GUIDANCE.
2. POSITION THE FIRST LAYER OF FOUR 20MM BOXES TO CENTER ACROSS THE PALLET AND TIGHT AGAINST THE 2.75 STACK. POSITION THE SECOND LAYER OF FOUR BOXES ON TOP OF THE FIRST LAYER. SEE KEY NUMBERS ③ AND ④ FOR STRAPPING GUIDANCE.
3. A TOTAL OF NINE WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

**KEY NUMBERS**

- ① WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL THIRTY-EIGHT BOXES. PRE-POSITION THESE STRAPS ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. NOTE: WILL NEED TO HOOK TWO STRAPS TOGETHER TO ENCIRCLE ALL THIRTY-EIGHT BOXES. SEE SPECIAL NOTE 1 ON THIS PAGE.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON SIDE OF PALLET OVER TOP OF STACK TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 1 ON THIS PAGE. 3
- ③ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO ENCIRCLE ALL EIGHT BOXES AT THE APPROXIMATE CENTER OF THE BOXES. PRE-POSITION THIS STRAP ON THE PALLET DECK PRIOR TO LOADING BOXES. ASSURE THAT THE STRAP LAYS FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER TOP OF STACK AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 2 ON THIS PAGE.
- ④ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP FROM A TIEDOWN ANCHOR ON PALLET OVER TOP OF STACK TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 2 ON THIS PAGE.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON PALLET OVER TOP OF LOAD TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF PALLET. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT.

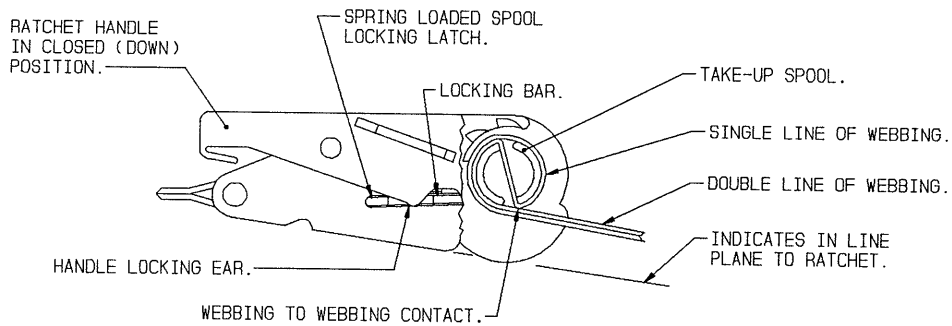
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**463L PALLET LOAD**

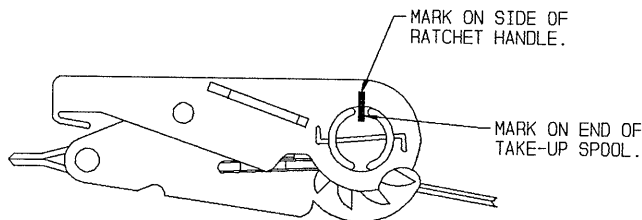
ITEM	QUANTITY	WEIGHT (APPROX)
2.75	38 BOXES	6,080 LBS
20MM	8 BOXES	1,280 LBS
PALLET	1 REQD	300 LBS
STRAPS	9 REQD	45 LBS

TOTAL WEIGHT - - - - - 7,705 LBS (APPROX)



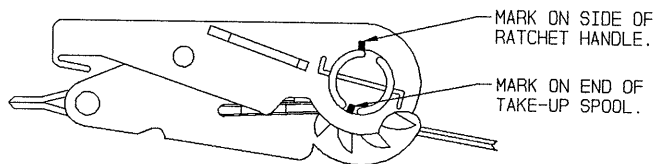
**STEP 1**

IN THIS VIEW PART OF THE RATCHET HOUSING IS SHOWN BROKEN AWAY TO DEPICT WEBBING-TO-WEBBING CONTACT ON THE TAKE-UP SPOOL OF THE RATCHET. WEBBING-TO-WEBBING CONTACT IS ACHIEVED WHEN THE OPERATOR HOLDS THE DOUBLE LINE OF WEBBING IN AN "IN LINE PLANE TO THE RATCHET" AND IT MAKES CONTACT WITH THE SINGLE LINE OF WEBBING.



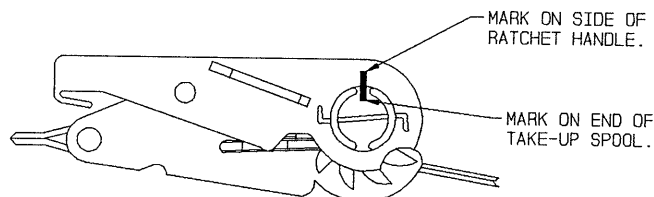
**STEP 2**

THIS VIEW DEPICTS THE LOCATION OF THE FIXED MARK ON THE RATCHETING HANDLE, WITH ANOTHER MATCHING MARK ON THE TAKE-UP SPOOL. AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE.



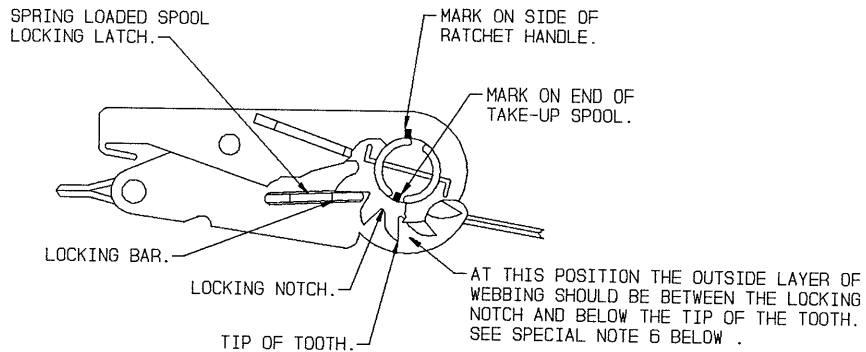
**STEP 3**

THIS VIEW DEPICTS THE LOCATION OF THE MARK ON THE END OF THE TAKE-UP SPOOL AFTER THE SPOOL HAS BEEN ROTATED ONE-HALF TURN. AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE.



**STEP 4**

THIS VIEW DEPICTS THE LOCATION OF THE MARK ON THE END OF THE TAKE-UP SPOOL AFTER THE SPOOL HAS BEEN ROTATED ONE FULL TURN. AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE.



### STEP 5

THIS VIEW DEPICTS THE LOCATION OF THE MARK ON THE END OF THE TAKE-UP SPOOL AFTER THE SPOOL HAS BEEN ROTATED ONE AND ONE-HALF TURNS. AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE. ALSO IN THIS VIEW, PART OF THE RATCHET HANDLE IS BROKEN AWAY TO SHOW THE LOCKING BAR FULLY SEATED IN THE MATCHING LOCKING NOTCH (SPROCKET GEAR TEETH).

#### SPECIAL NOTES:

(SPECIAL NOTES CONTINUED)

1. WEB STRAP TIEDOWN ASSEMBLIES MUST BE SECURELY HOOKED INTO THE D-RING ANCHORS ON THE 463-L PALLET AND FIRMLY TENSIONED. FIRMLY TENSIONED MEANS, WHEN THE OPERATOR PULLS ON THE RATCHET HANDLE BY HAND, THE RATCHET WILL NOT ADVANCE ANOTHER NOTCH. NO TYPE OF MECHANICAL EXTENSION OR LEVER WILL BE USED. EXERCISE CARE DURING STRAP APPLICATION. AVOID TWISTS IN THE STRAP TO THE EXTENT POSSIBLE (IF TIME PERMITS) BUT ENSURE THERE ARE NOT KNOTS IN THE STRAP. ON THE TAKE-UP SPOOL OF THE RATCHET, ENSURE STRAIGHT LAY OF THE STRAP WHEN TENSIONING. AFTER INITIAL WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, BY ROTATING THE TAKE-UP SPOOL UNTIL NO METAL ON THE SPOOL IS SHOWING AND THE STRAP HAS MADE CONTACT WITH ITSELF, THE TENSIONED STRAP MUST FORM AT LEAST 1/2 BUT NOT MORE THAN 1-1/2 WRAPS OF STRAP ON THE TAKE-UP SPOOL OF THE TENSIONING RATCHET. AFTER TENSIONING IS COMPLETED, ENSURE THAT THE SPOOL LOCKING-LATCH IS FULLY SEATED AT BOTH ENDS OF THE SPOOL IN MATCHING LOCKING NOTCHES. TIE BACK THE LOOSE END OF THE STRAP AFTER TENSIONING IS COMPLETED (LOOSE END MAY BE FOLDED AND TAPED OR TIED TO THE TENSION STRAP IF TIME PERMITS).
2. THE REQUIREMENT FOR 1/2 BUT NOT MORE THAN 1-1/2 WRAPS OF STRAP ON THE TAKE-UP SPOOL OF THE TENSIONING RATCHET, AS SPECIFIED IN SPECIAL NOTE 1, ACTUALLY MEANS 1/2 TO 1-1/2 WRAPS OF DOUBLE WEBBING. THE 1/2 TO 1-1/2 WRAPS REQUIRE THAT THE SPOOL MECHANISM BE ROTATED 1/2 TO 1-1/2 TURNS. ALSO THE 1/2 TO 1-1/2 WRAPS (TURNS) ARE TO BE ACCOMPLISHED ONLY AFTER ENOUGH WEBBING HAS BEEN WOUND ONTO THE SPOOL TO ACHIEVE A WEBBING TO WEBBING CONFIGURATION, AS SHOWN IN THE "STEP 1" DETAIL ON PAGE 10.
3. ONE METHOD THAT CAN BE USED TO ENSURE THAT THE 1/2 TO 1-1/2 WRAPS ARE WOUND ONTO THE TAKE-UP SPOOL, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, IS TO PLACE A FIXED MARK (PAINT OR SIMILAR MATERIAL) ON THE SIDE OF THE RATCHETING HANDLE, WITH THE HANDLE IN ITS CLOSED (DOWN) POSITION, AND ANOTHER SHORT MATCHING MARK ON THE END OF THE SPOOL, AS SHOWN IN THE "STEP 2" DETAIL ON PAGE 10. AS THE SPOOL IS ROTATED TO TENSION A TIEDOWN STRAP ASSEMBLY, THE NUMBER OF WRAPS (TURNS) CAN BE DETERMINED VISUALLY BY COMPARING THE "MARK" LOCATION ON THE SPOOL TO THE "MARK" LOCATION ON THE RATCHETING HANDLE WITH THE HANDLE IN CLOSED POSITION. SEE THE "STEP 3" AND "STEP 4" DETAILS ON PAGE 10.
4. ANOTHER METHOD THAT CAN BE USED TO ENSURE THAT THE 1/2 TO 1-1/2 WRAPS ARE ACHIEVED, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, IS TO COUNT THE AUDIBLE CLICKS MADE BY THE RATCHET ASSEMBLY AS A WEB STRAP ASSEMBLY IS BEING TENSIONED. THE RATCHET ASSEMBLY ON MOST WEB STRAP ASSEMBLIES HAVE 11 TEETH ON THE GEARLIKE DEVICE ON EACH END OF THE TAKE-UP SPOOL. SOME OTHER STRAP ASSEMBLIES HAVE ONLY NINE TEETH. THEREFORE, AFTER INITIAL WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, ROTATE (TURN) THE SPOOL THROUGH A MINIMUM OF 6 TO A MAXIMUM OF 16 CLICKS (1/2 TO 1-1/2 WRAPS). WHEN THE GEAR HAS 11 TEETH, AND ROTATE (TURN) THE SPOOL THROUGH A MINIMUM OF 5 TO A MAXIMUM OF 13 CLICKS (1/2 TO 1-1/2 WRAPS) IF THE GEAR HAS 9 TEETH.
5. AFTER A STRAP ASSEMBLY HAS BEEN PROPERLY TENSIONED, CARE MUST BE EXERCISED TO ASSURE THAT THE TAKE-UP SPOOL LOCKING LATCH (SPRING LOADED DEVICE WITH A LOCKING BAR ON EACH SIDE OF THE RATCHET ASSEMBLY) IS FULLY SEATED ON BOTH SIDES IN MATCHING LOCKING NOTCHES, WHICH ARE SIMILAR TO SPROCKET GEAR TEETH, THAT ARE LOCATED ON EACH END OF THE TAKE-UP SPOOL. SEE "STEP 5" DETAIL ABOVE. THE LOCKING LATCH IS "FULLY SEATED" WHEN THE HANDLE WILL CLOSE AND THE LOCKING EAR, OR SIMILAR DEVICE ON THE HANDLE, PREVENTS THE ACCIDENTAL WITHDRAWAL OF THE LOCKING LATCH. SEE "STEP 1" DETAIL ON PAGE 10. IF THE FULLY SEATED CONDITION CANNOT BE ACHIEVED, THE STRAP MUST BE RELEASED AND HAND RETENSIONED AS TIGHT AS POSSIBLE TO ACHIEVE THE FULLY SEATED CONDITION.
6. ANOTHER VISUAL METHOD OF DETERMINING WHEN THERE IS 1/2 TO 1-1/2 WRAPS OF WEBBING ON THE TAKE-UP SPOOL, AFTER INITIAL WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, IS TO LOOK AT THE SPOOL. WHEN A TIEDOWN IS COMPLETE, THE STRAP WEBBING ON THE SPOOL OF THE RATCHET SHOULD BE ABOVE THE LOWER CURVE OF THE LOCKING NOTCH, AND SHOULD BE BELOW THE TIPS OF THE TEETH OF THE RATCHET AS IDENTIFIED IN "STEP 5" ABOVE. IT SHOULD BE NOTED THAT ANY PROCEDURES THAT ENSURE PROPER TENSIONING ARE ACCEPTABLE AND METHODS ON THE DRAWING ONLY PROVIDE SOME METHODS.

(CONTINUED AT RIGHT)

RATCHET/RATCHETING DETAILS

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PROJECT DA 12-92

