



5712 Industrial Park Road • PO Box 347
Winona, MN 55987 USA
Phone 507-454-2996 • 800-843-7648
FAX 507-454-5282
e-mail: info@thern.com
www.thern.com

October 7, 2003

Mr. Bill Taylor
Senior Electronic Tech
National Weather Service
405-366-2961

Subject: Portable Davit Crane model # 5121B

Dear Mr. Taylor:

These davit cranes have been load tested to the ultimate failure point of 2250lbs. This failure point provides an ultimate safety factor of 4.5:1 with a 500lb-load rating.

Respectfully,

A handwritten signature in black ink, appearing to read 'Jeff Wilkowski', with a long horizontal flourish extending to the right.

Jeff Wilkowski
Manager of Engineering

Quality Winches, Cranes and Hoists Since 1948

TOTAL P.01

SUPPORT EQUIPMENT
RECOMMENDATION DATA (SERD)

Contractor Unisys Corporation
Contract No. 50-DMNW-8-00032
End Article Ident NEXRAD System
SE Part/Model No. 1213760-201,202
Fig 1 Page No. 16
Revision No. C
Date 18 April 1991

I Functional Analysis

A method must be provided to lift and lower items to and from the radar tower, at the level of the base of the antenna pedestal. Items to be lifted include LRUs in the antenna pedestal, supplies (e.g. oil), and tools and support test equipment. Most LRUs in the antenna pedestal (e.g. motor, gear drive, etc.) are larger and/or heavier than can be carried tower (i.e. heavier than 10 pounds and/or bulkier than 0.5 cubic feet). Fixture (e.g. davit, tripod, boom) and winch should be installed at the tower, inside of the radome. The fixture should be collapsible or lowerable so that it does not interfere with the rotation of the antenna; does not make access to the pedestal more difficult.

PART II Recommended Solution

Develop a radar Tower Lifting Fixture for incorporation as a permanent installed handling equipment in every NEXRAD radar tower. Include common off the shelf hoist or winch capable of lifting approximately 300 lbs. from the ground to the top of the highest NEXRAD radar tower at 30 meters. Thern's crane, MODEL 512B and winch, model 4021B and 4031B are recommended. They come with galvanized steel aircraft cable. See table below for breakout of parts. The manufacturer's specification sheets are attached.

TABLE II
UNISYS PART NUMBER 1213760

<u>DASH #</u>	<u>DESCRIPTION</u>	<u>VENDOR P/N</u>
	CRANE	5121B
	BASE, CRANE SUPPORT	511
	WINCH, HAND, MARINE GRADE WITH BRAKE	M4021B
	75 FT 1/8 DIA CABLE W/SAFETY HOOK ONE END	PER THIS DWG
		FOR 10 & 15 METER TOWER
	CRANE	5121B
	BASE, CRANE SUPPORT	511
	WINCH, HAND, MARINE GRADE WITH BRAKE	M4031B
	110 FT 3/16 DIA CABLE W/SAFETY HOOK ONE END	PER THIS DWG
		FOR 20, 25 & 30 METER TOWER

ITEM NO.	ITEM NAME
0006	DAVIT CRANE, RDA TOWER

SUPPORT EQUIPMENT RECOMMENDATION DATA

SHEET 1 OF 2

1. CONTRACTOR Unisys Corporation		2. CONTRACT NO. 50-DMNW-8-00032		3. END ARTICLE NOMENCLATURE/MODEL DESIGNATOR Next Generation Weather Radar			
4. SE ITEM NAME DAVIT CRANE, RDA TOWER				5. STATUS CODE		6. RESPONSIBLE AGENCY NAT'L WEATHER SERVICE	
7. SYSTEM NO -	8. DEV/STD STD	9. COM/PEC COM	10. USING SERVICE ALL	11. EI SPEC -	12. CFE/GFE C	13. FEDERAL STANDARD -	
14. SEI -	15. MEA -	16. PREPOS. PPI	17. USEABLE ON A	18. TECH MAN 01	19. RRPL/GAPL	20. MRC -	
21. MATCH INDIC CODE -		22. SPARE FACTOR Q000	23. CALIB REQ'D	24. CALIB ITEM -	25. SM&R CODE PFOZZ	26. INSTALL SIGNIF.	
27. ARTICLE REQUIRING SUPPORT						8. GSE CRITICAL	
27A. MLMC 0	27B. PART NUMBER AND NOMENCLATURE ANTENNA PEDESTAL P/N 1214777			27C. CMRS -		CONTR SERVICE	
30. REASON FOR DELETION/SUPERSEDURE DATA						29. REPROCUREMENT DATA	
31. REMARKS							
32. DATE OF APPROVAL	33. ITEM NO. 0006	33A. PART/MODEL NO. 1213760-201,202	33B. FSCM 12437	33C. DATE 4/18/91	33D. REVISION C	33E. PG. NO. 17	

SUPPORT EQUIPMENT RECOMMENDATION DATA

1. CONTRACTOR Unisys Corporation	2. CONTRACT NO. 50-DMNW-8-00032	3. END ARTICLE NOMENCLATURE/MODEL Next Generation Weather Radar
-------------------------------------	------------------------------------	--

4. SE ITEM NAME DAVIT CRANE, RDA TOWER	34. NATIONAL STOCK NUMBER	35. GOVT TYPE DESIG.
---	---------------------------	----------------------

36. EST. DATE FIRST ARTICLE 05/31/90	37. PROD. LEADTIME 6	38. DEVEL. COST \$20,000	39. REC QTY FACTOR	40. RECUR UNIT PRICE \$5,000	41. TOT REC QUANTITY 175	42. TOT QTY ORDERED	43. TOTAL PRICE
---	-------------------------	-----------------------------	--------------------	---------------------------------	-----------------------------	---------------------	-----------------

44. SPECIFIC AUTHORIZATIONS					
ACTIVITY	QUANTITY	ACTIVITY	QUANTITY	ACTIVITY	QUANTITY
OPERATIONAL SUPPORT FACILITY	1				
TRAINING	0				
DEPOT	0				

45. ALLOWANCE/MLF	46. BASIS OF ISSUE	47. SUPERSEDED ITEM (P/N)	31. REMARKS
			4 EA 1213760-201,202/W M4021 WINCH 4 EA 1213760-210,202/W M4031 WINCH M4021 WINCH HAS 125' OF 1/8" CABLE M4031 WINCH HAS 110' OF 3/1" CABLE

33. ITEM NO. 0006	33A. PART/MODEL NUMBER 1213760-201,202	33B. FSCM 12437	33C. DATE 04/18/91	33D. REVISION C	33E. PG. NO 18
----------------------	---	--------------------	-----------------------	--------------------	-------------------



Marine WINCHES

P.O. BOX 347 5712 INDUSTRIAL PARK RD. WINONA, MN 55987 507-454-2996

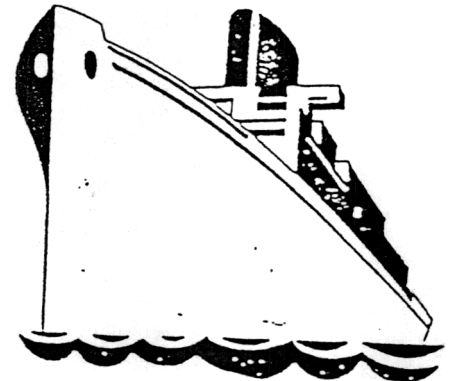
NOT FOR LIFTING PEOPLE,
OR THINGS OVER PEOPLE

MARINE GRADE WINCHES

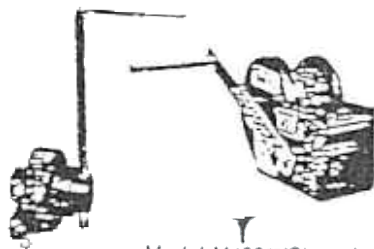
Marine spur gear winches are identical in size and rating to the industrial models, but they have superior corrosion resisting features:

- All marine winches are painted with a primer base coat followed by an enamel finish coat. Excellent resistance to salt spray corrosion.
- Stainless steel fasteners and springs.
- Oil impregnated bronze bushings and sealed ball bearings.
- Therm marine winches have been tested in accordance with the procedures of ASTM Method B117-73 Salt Fog Test.

NOTE: All Therm winches, when used for lifting, lowering or pulling on an incline, must be equipped with a Disc Brake. See Bulletin 40B.



MARINE-GENERAL PURPOSE SPUR GEAR HAND WINCHES

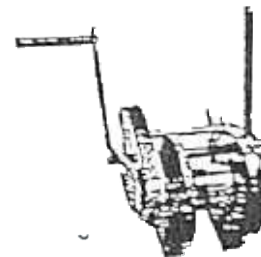


Disc Brake

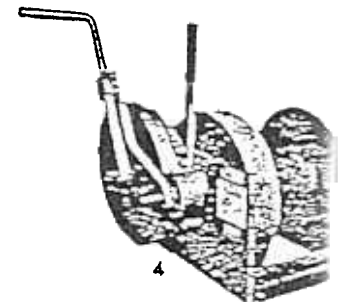
Model M4021 (Shown)—2" Drum
Model M4031—3" Drum



Model M4311—3" Drum
Model M4411 (Shown)—6" Drum



Model M4321 (Shown)—3" Drum
Model M4421—6" Drum



Model M452
Model M492

Complete information on all winches identified as 1, 2, and 3 above is given in Bulletin 40A that of the two models shown at 4 may be seen in Bulletin 40C. For the Disc Brake, refer to Bulletin 40B.

NOTE: Final responsibility for determining suitability of equipment to any particular use is that of the owner and/or user; thus all applicable codes, regulations, and manuals of material handling should be studied.

SPECIFICATIONS

Shaded figures are more commonly used

Model	LOAD RATING				DRUM CAPACITY						GEAR RATIO	*PULL REQ TO LIFT 1000 lbs.	DRUM DIMENSIONS			OVERALL DIMENSIONS			MOUNTING BOLT	NET WT. lbs.	SHIP Wt.			
	2 LAYERS lbs.	FULL DRUM kg	1/8	3/16	1/4	5/16	3/8	1/2	3/4	ID			OD	W	LENGTH	WIDTH	HEIGHT							
M4021	1000	450	300	135	125	55							1.50	4.56	2.00	5.00	7.25	5.75	3/8	10				
M4031	1000	450	300	135	250	110					2.85	55	1.50	4.56	4.00	8.25	8.25	5.75	3/8	12				
M4311	2000	900	850	385	235	105	70	45			3.83	14.7	22	2.50	5.44	3.00	8.50	9.75	7.25	3/8	21			
M4321	2000	900	850	385	235	105	70	45			3.83	14.7	22	2.50	5.44	3.00	8.50	9.75	7.25	3/8	21			
M4411	2000	900	850	385	470	210	140	90			3.83	14.7	22	2.50	5.44	6.00	11.50	9.75	7.25	3/8	21			
M4421	2000	900	850	385	470	210	140	90			3.83	14.7	22	2.50	5.44	6.00	11.50	9.75	7.25	3/8	25			
M452	4000	1800	2000	900	1220	550	290	200	140	80	50	35	4.42	19.54	4.5	4.00	8.50	6.38	16.00	15.00	10.75	1/2	80	8
M492	10000	4500	4000	1800	3300	1500	800	540	380	220	145	100	5.00	25.00	5.4	5.00	12.38	7.62	19.00	20.40	14.00	3/4	156	15

*Handle pull (lbs) required to lift 1000 lbs on an empty drum using maximum handle length.

Add the suffix "B" to any model to specify the addition of the Disc Brake (example: M4021B).



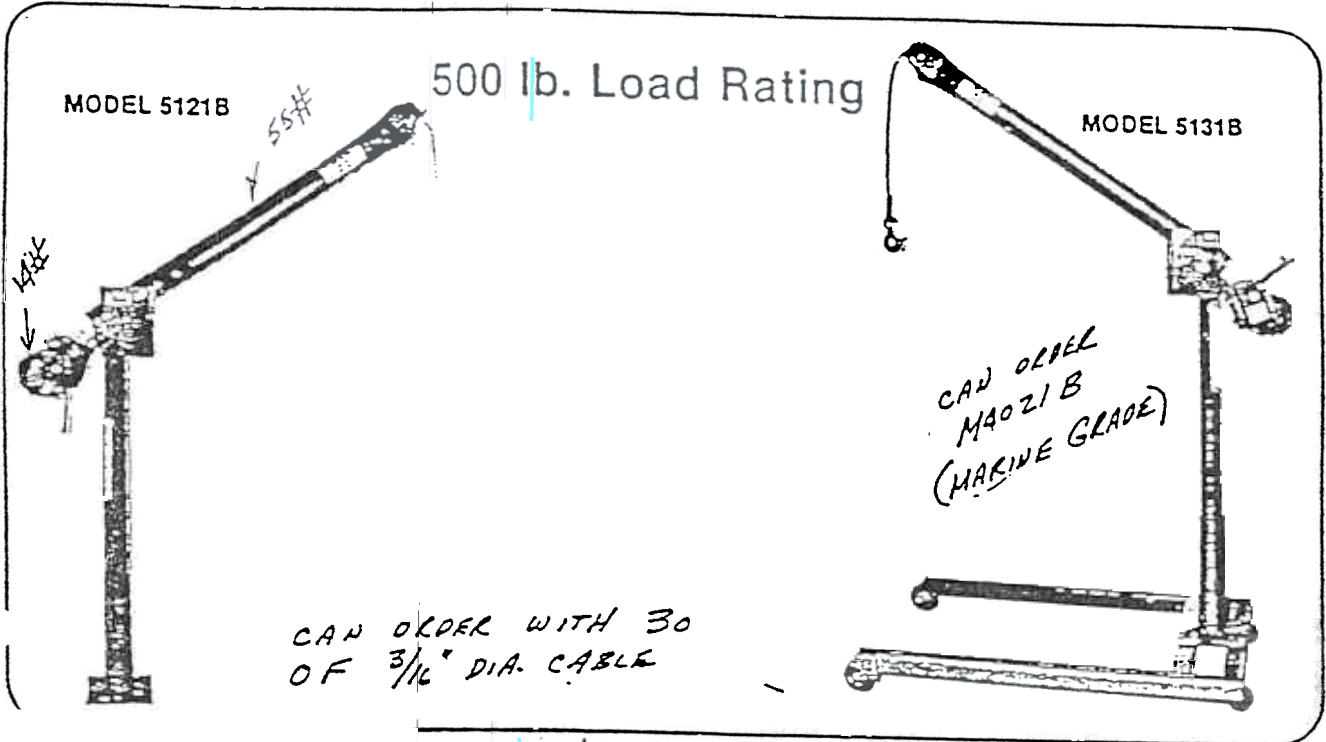
ECONO CRANE FRE ROL PORTACRANE DAVIT CRANES

MAX. CABLE LENGTH 57'

NOT FOR LIFTING PEOPLE,
OR THINGS OVER PEOPLE

ECONO CRANE

DAVIT MODEL 5121B SHOP MODEL 5131B

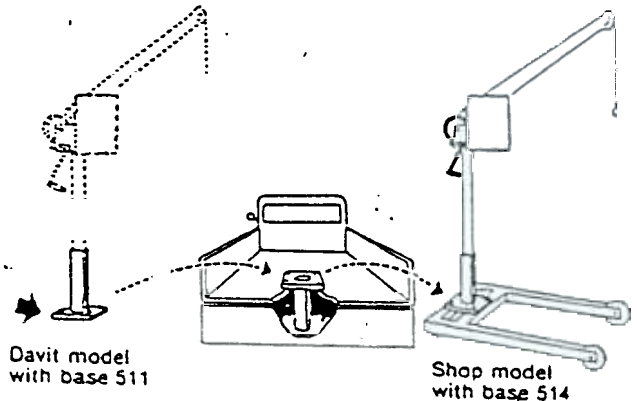
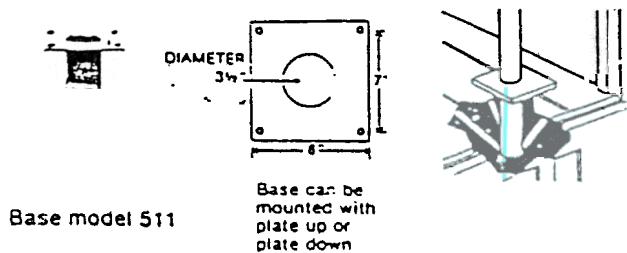


34" REACH

SPECIFICATIONS AND DIMENSIONS		
MODEL	5121B	5131B
Load rating, lbs.	500	500
Load rating, kg.	225	225
Winch model	4021B	4021B
Lift ("Empty), ins.	62	67
*Boom heights or lifts will vary somewhat with loading		
Height of mast, ins.	46	50
Height overall, ins.	70	75
Length when folded, ins.	61 1/4	61 1/4
Reach, mast to cable, ins.	34	34
Cable—size and length	3/16"-16'	3/16"-16'
Boom rotation, degrees	360	—
Distance between legs, ins.	—	25
Anchor bolt size (Use ASTM Gr. 5)	3/8"	—
Model number of base	511	514
Weight, approximate, lbs.	85	142

- By repositioning a pin the Econo Crane can be folded conveniently for handling and storage or to eliminate swinging and rotating of the boom when truck is in travel.
- Use of Davit Crane Model 5121B at various locations is accommodated by installation of additional bases (model 511).
- The two Econo Crane models convert easily from one to the other simply by removing from one base and replacing to the other base. (Example: from Davit base 511 to Wheel base 514.)

NOTE: Final responsibility for determining suitability of equipment to any particular use is that of the owner and/or user; thus all applicable codes, regulations, and manuals of material handling should be studied.



SETD # 6

FSCM 56232 DWG NO. 1213760

SHEET 1 OF 5

APPLICATION

1213760

NHA	USED ON	LTR	DATE	CO ECP O/A	REVISION DESCRIPTION	APVD
1214776	NEXRAD	A	90-04-16	A03493(U)	REVISED & REDRAWN	PSJ 90-06-

SPECIFICATION CONTROL DRAWING

CONTR NO. 50-DMNW-8-00032

UNISYS CORPORATION
SHIPBOARD AND GROUND SYSTEMS GROUP
GREAT NECK, NY 11020

NOMENCLATURE

HOIST, WIRE, ROPE, CRANE

RELEASE DATE
 APVD DATE
 DWN JB 7/29/89 CHK VHB
 QA MVD 7/20/89 ENGRG GB 89-6-7
 STD EVC 7/18/89 MFG DP 7-25-89
 R/M

SIZE	FSCM NO.	DWG NO.	REV
A	56232	1213760	A

SCALE NONE SHEET 1 OF 5

1. GENERAL
- 1.1 INTERPRET DRAWING IN ACCORDANCE WITH DOD-STD-100
- 1.2 IDENTIFICATION OF THE SUGGESTED SOURCE(S) OF SUPPLY HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM DESCRIBED ON THIS DRAWING.
2. REQUIREMENTS
- 2.1 CONSTRUCTION: THIS IS A DAVIT CRANE WITH A MANUALLY ACTUATED SPUR GEAR WINCH, BRAKING DEVICE AND AIRCRAFT-TYPE CABLE WITH SAFETY HOOK.
- 2.2 LIFT: 62 INCHES
- 2.3 HEIGHT OVERALL: 70 INCHES
- 2.4 HEIGHT OF MAST: 64 INCHES
- 2.5 REACH (MAST TO CABLE): 34 INCHES
- 2.6 GEAR RATIO:
- 2.7 BOOM ROTATION: 360 DEGREES
- 2.8 CAPACITY: PER TABLE I
- 2.9 PULL REQUIRED TO LIFT RATED LOAD: PER TABLE I
- 2.10 CRANE AND BASE
- 2.10.1 MATERIAL: STEEL (TYPE OPTIONAL)
- 2.10.2 FINISH: PAINTED (COMMERCIAL)
- 2.10.3 COLOR: ORANGE
- 2.11 WINCH
- 2.11.1 GRADE: MARINE
- 2.11.2 OPERATION: LEFT-HANDED
- 2.11.3 FINISH: ZINC DICHROMATE

SIZE	FSCM NO.	DWG NO.	REV
A	56232	1213760	A

SCALE NONE SHEET 2 OF 5

2.12 CABLE

2.12.1 MATERIAL: 7x19 STEEL AIRCRAFT-TYPE (COMMERCIAL)

2.12.2 FINISH: GALVANIZED (COMMERCIAL)

2.13 IDENTIFICATION: VENDOR TO APPLY IDENTIFICATION AND VENDOR PART NUMBER IN ACCORDANCE WITH MIL-STD-130.

TABLE I		
DASH NO.	CAPACITY (LBS)	PULL REQUIRED TO LIFT RATED LOAD (LBS)
201	400	22
202	500	28

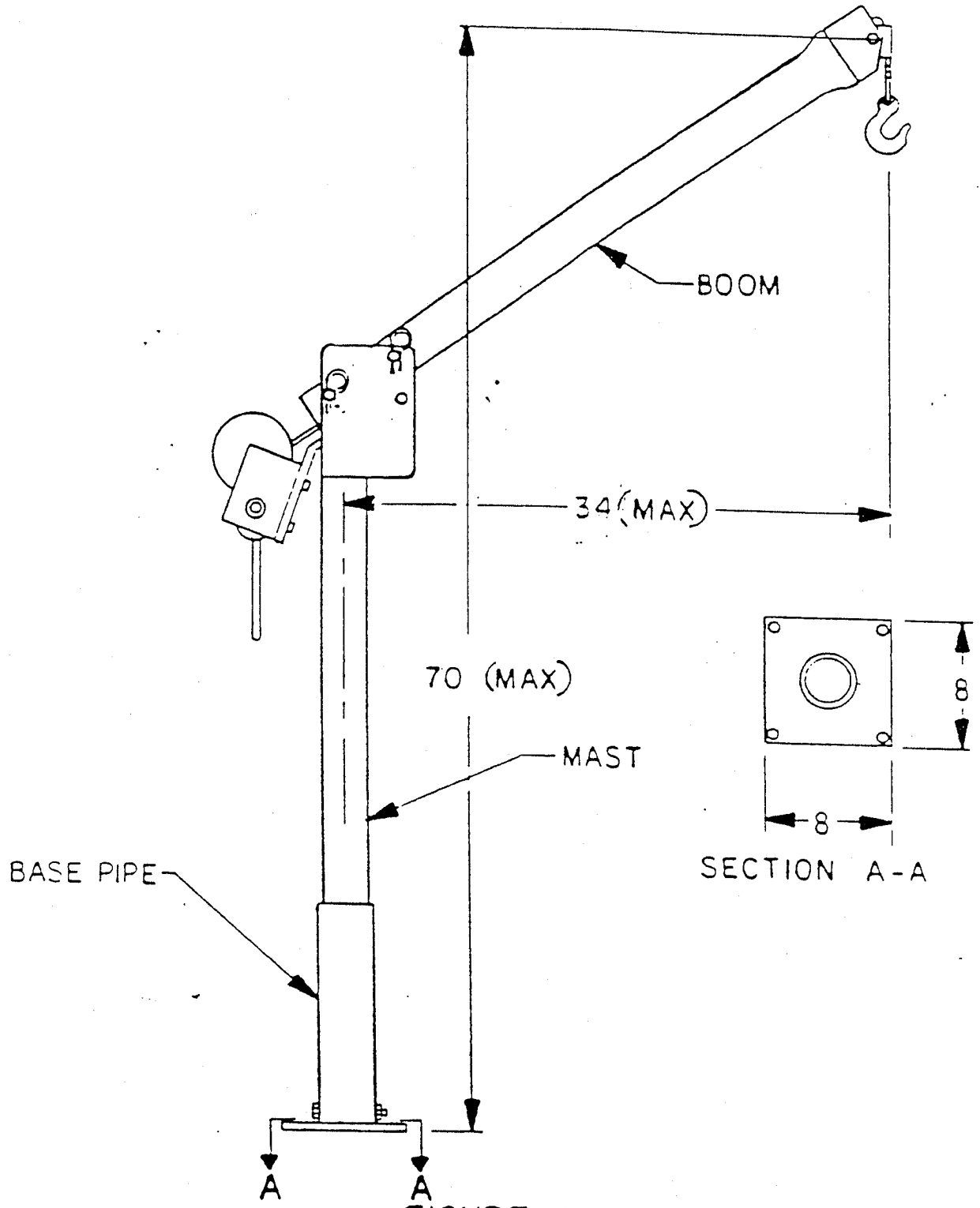


FIGURE I

SIZE	FSCM NO.	DWG NO.	REV
A	56232	1213760	A
SCALE NONE		SHEET 4 OF 5	

SUGGESTED SOURCE(S) OF SUPPLY:

TERN, INC.
WINONA, MINNESOTA

FSCM 12437

PART NO.: SEE TABLE II

TABLE II

DASH NO.	DESCRIPTION	VENDOR PART NO.
201	CRANE	5121B
	BASE, CRANE SUPPORT	511
	WINCH, HAND, MARINE GRADE WITH BRAKE	M4021B
	75 FEET 1/8 DIA CABLE WITH SAFETY HOOK ONE END	PER THIS DWG.
202	CRANE	5121B
	BASE, CRANE SUPPORT	511
	WINCH, HAND, MARINE GRADE, WITH BRAKE	M4031B
	110 FEET 3/16 DIA CABLE WITH SAFETY HOOK ONE END	PER THIS DWG.

SIZE A FSCM NO. 56232 DWG NO. 1213760 REV A

SCALE NONE SHEET 5 OF 5