

DANDY®TILT

Model: DT-350W

(Serial No.L-132721 up)

OPERATION & MAINTENANCE MANUAL

WITH

ILLUSTRATED PARTS LIST

June 1996

Manufactured for
SOUTHWORTH

Soutworth Products Corp P.O Box 1380 Portland, Maine 04014-1380
Phone (207)878-0700

HANAOKA SHARYO CO.,LTD.

TOKYO JAPAN

Safety Rules



Warning

Failure to obey the instructions and safety rules in this manual and the DANDY LIFT Operator's Manual may result in death or serious injury.

Many of the hazards identified in the operating instruction manual are also safety hazards when performed.

Do Not Perform Maintenance Unless:

You are trained and qualified to perform maintenance on this machine.

You read, understand and obey:

- manufacturer's instructions and safety rules
- employer's safety rules and worksite regulations
- applicable governmental regulations

You have the appropriate tools, lifting equipment and a suitable workshop.

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NEW DANDY TILT

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LUBRICATION

INSPECTION & MAINTENANCE

INFORMATION FOR DISTRIBUTOR ONLY

ILLUSTRATED PARTS LIST

Serial numbers and manufactured date which marked on die on each brass plate are registered in manufacture's book. The number and date show individual identity and please keep the record prior to use the unit.

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1. PRIOR TO OPERATING THE MODELS

The Dandy Lift is designed to provide safe operation. By following simple safety rules, the operator should avoid injury to himself or others and also damage to the Dandy Lift, other equipment or structures.

A. WARNING:

1. KEEP NEIGHBORING PERSONS OTHER THAN THE OPERATOR AWAY FROM THE UNIT DURING OPERATION. DO NOT RIDE ON THE BED.
2. DO NOT EXCEED LOAD DIMENSIONS 600MM L X 840MM W X 400MM H.
3. DO NOT EXCEED THE CENTER OF GRAVITY 200MM HEIGHT OF LOAD
4. DO NOT LOAD WITH MORE THAN THE RATED CAPACITY.
5. AVOID ANY PROTRUSION FROM EDGE OF THE BED.
6. DO NOT INSERT HAND/FOOT BETWEEN THE BODY AND THE BED.
7. AVOID RAPID LOWERING OF THE BED WHILE LOAD IS ON THE BED.
8. DO NOT MOVE THE UNIT WHEN LIFTING UP THE BED OR WHEN BED IS ELEVATED POSITION. (THE BED MUST BE LOWERED WHEN THE UNIT IS RUNNING.)
9. DURING LOADING/UNLOADING OPERATION, DO NOT RELEASE PARKING BRAKE.
10. DO NOT RAISE/LOWER THE BED ON A SLOPED OR TILTED SURFACE.
11. DO NOT USE THE UNIT WITH IRREGULAR DOWN SPEED. (ADJUSTING LOWERING SPEED MUST BE IN ACCORDANCE WITH PROVISION 5.)

B. Lowering speed must be in accordance with provision 5-C-2.

C. For safe and efficient use of the unit, lubrication and servicing is necessary. To maintain initial function, lubrication to all required parts in accordance with provision 5 is required.

D. Maintenance and adjustment work must be performed while lift is not loaded, and the use of an appropriate support to avoid accidental lowering is recommended.

2. ASSEMBLING METHOD

A. The lift is packed in a cardboard box. Assembling of the handle with lift-lowering lever and jack up pedal is required.

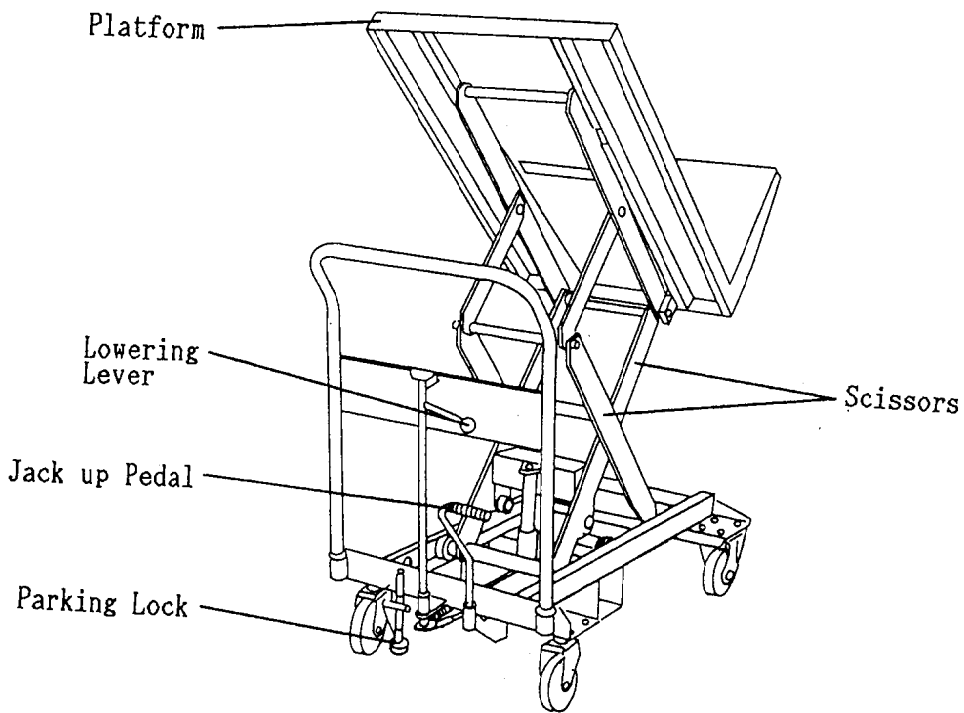
WARNING: ASSEMBLY WORK MUST BE DONE ON A FLAT SURFACE; WHEELS MUST BE CHOKED TO PREVENT ACCIDENTAL ROLLING OF THE UNIT.

To complete assembling of the equipment:

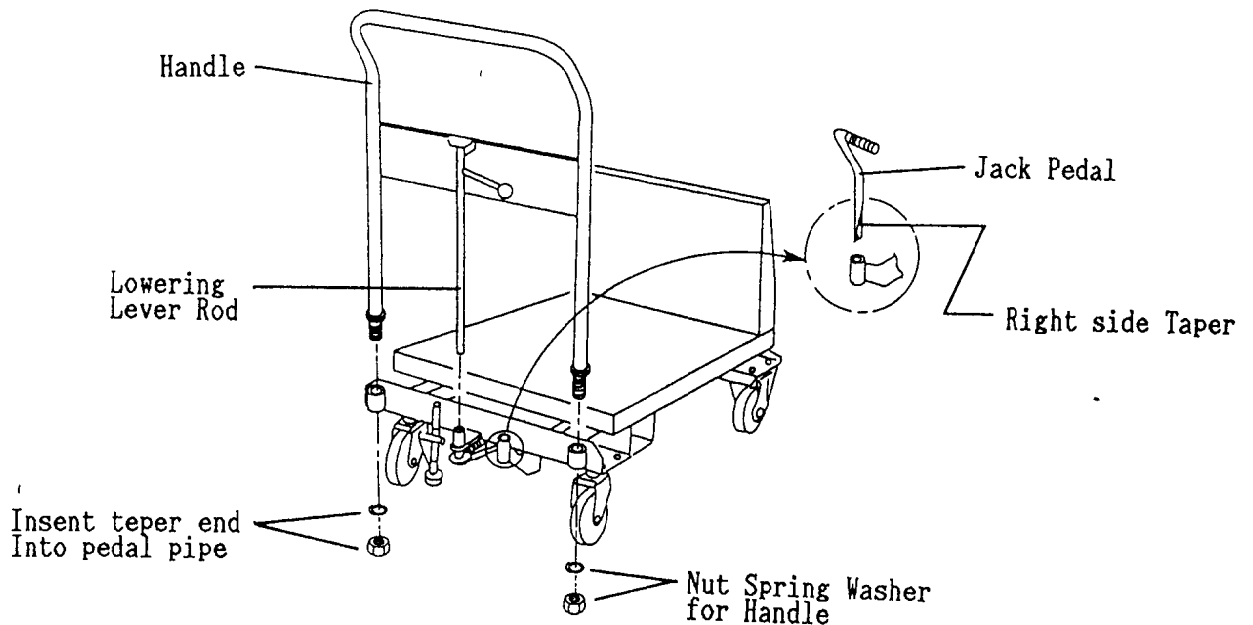
1. Remove nuts and spring washers from the end of handle and insert the handle and lowering lever rod simultaneously into hole on platform and frame. If rod end of lowering lever slips out of the connecting sleeve, adjustment may be required. Tighten handle and lowering lever using removed nuts and washers.

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GENERAL VIEW OF DT-350W



2. Insert pedal to pedal pipe to insert the pedal firmly, position tapered side pedal end to right if the pedal pipe and insert.



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3. SPECIFICATION

MODEL	DT-350W
Capacity	350kgs
Platform lowered	345mm
Height of Platform at an angle of 44°	
Upper	1400mm
Lower	770mm
Gradient of platform	44°
Handle Height	950mm
Platform Size L X W	
Overall	910 x 600mm
Loadable	845 x 600mm
Height of retainer	200mm
Overall Size	1070x600mm
L X W	
Foot Pedal Stroke to Elevate	45
Foot Pedal Force required at lowered position	30kgs
Casters Front	5" Rigid
Casters Rear	5" Swivel
Parking Lock	Floorlock
Color-Platform/ Frame	Yellow/Blue
Tare Weight(kgs)	100

* Casters are rubber except where noted.
Specifications subject to change without notice.

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- B. If air enters the hydraulic pump during transportation or in storage, lift may not be raised even when the pedal is pumped. In this case, Place the unit in normal position and push pedal about ten times repeatedly and check to see that the jack function properly.
- C. Parking brake (floor lock) will require adjustment.
Adjust shoe in accordance with item D in Chapter 4 Operation.

4. OPERATION

A. Raise/Lower

To raise:

Pump jack pedal repeatedly

NOTE: If the platform did not lift up properly, adjustment must be made in accordance with Chapter 5-C.

CAUTION: LOCK PARKING BRAKE SECURELY. DO NOT RAISE/LOWER THE PLATFORM ON A SLOPED SURFACE.

WARNING: DO NOT INSERT HAND OR FOOT BETWEEN THE PLATFORM AND THE FRAME.

To lower (Refer to 5-C-2 for its adjustment)

Turn lowering lever slowly in a clockwise direction.

As soon as the platform starts down, do not turn the lever more -- maintain as is -- the platform will continue lowering smoothly.

The operation must be made slowly.

By turning the lever, lowering speed can be adjusted.

NOTE: When load is on the platform, turn lever only the minimum amount of prevent rapid decent of the platform.

CAUTION: ADJUST STOPPER BOLT WHEN LIFT LOWERS TOO RAPIDLY.

WARNING: DO NOT INSERT HAND OR FOOT BETWEEN THE PLATFORM AND THE FRAME.

B. To maintain the platform at an intermediate point:

-- The platform stops when pumping up pedal is stopped.

-- When the lowering lever is released, the platform stops lowering and will maintain the position.

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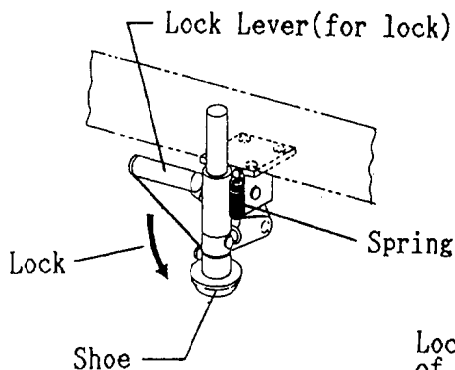
C. Loading/Unloading

CAUTION: DO NOT ALLOW LOAD TO OVERHANG THE EDGE OF THE PLATFORM.
DO NOT LOAD THAN SPECIFIED CAPACITY.

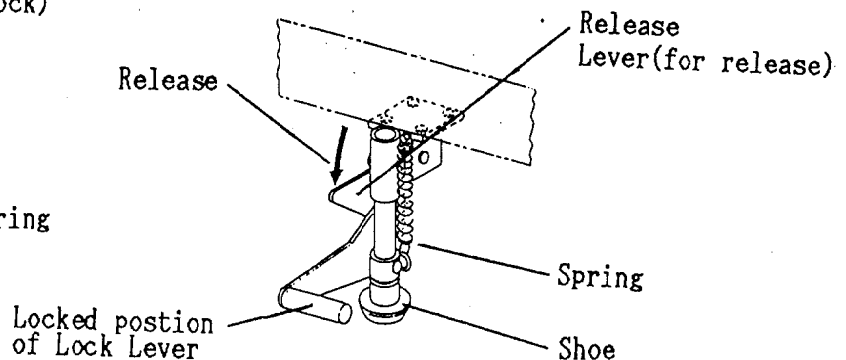
D. Parking Lock

1. Parking brake(floor lock or caster lock) must be actuated during parking and lifting or lowering of the platform.

In Running (brake off)



Parking (brake on)



WARNING: FLOOR LOCK (PARKING BRAKE) IS FIXED TO PREVENT SHOE FROM FALLING OFF DURING SHIPMENT. DO NOT ACTUATE AS IS. FOLLOWING ADJUSTMENT MUST BE MADE AS SOON AS THE UNIT IS ASSEMBLED.

2. Adjustment of shoe on parking brake
 - a) Adjustment work must be done on flat surface.
 - b) Step on lock lever until it clicks actuating the brake.
 - c) Screw shoe down by rotating it in a clockwise direction so that it touched the floor.
 - d) Step on release lever to release the brake.
Then rotate the shoe clockwise an additional two turns to provide firm contact with the floor.

NOTE: By the above adjustment, shoe will compress by 1/8", (3.2mm) assuring firm contact with the floor. If perfect braking is not available, repeat above adjustment once more.

Required pushing force for lock lever will increase, but braking effect will increase.

CAUTION: MAKE SURE FLOOR LOCK IS SET DURING LIFTING OR PARKING.

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5. INSPECTION AND MAINTENANCE

Dandy Tilt do not require special maintenance other than lubrication and periodic inspection.

Inspection and maintenance should be made in accordance with the following procedure for smooth and efficient operation.

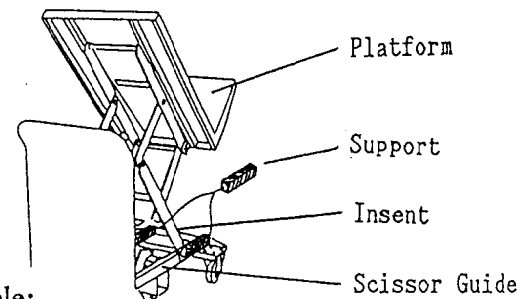
CAUTION: DURING LUBRICATION, INSPECTION AND MAINTENANCE, THE PLATFORM MUST BE EMPTY.

WARNING: IF THE PLATFORM IS RAISED FOR LUBRICATION, INSPECTION OR MAINTENANCE WORK, A SUPPORT MUST BE INSERTED INTO SCISSOR GUIDE IN THE FRONT TO AVOID ACCIDENTAL LOWERING OF THE PLATFORM.

NOTE: The following are recommended as support and must be fixed to the frame using adhesive tape.

Support of the following size are recommended:

DT-350W, 20 x 40 x 230mm



A. Lubrication

Lubrication must be in accordance with the following table:

Lubrication Table

Part	Lubrication Material	Fig. & Item No. To Be Referred
Rail (Frame)	Grease	No.-3
Roller (of Jack Lever)	Grease (Grease Nipple)	No.-9-12
Hinge on Scissor	Machine Oil	No.-2-1
Lifting-up Box (Moving Part)	Machine Oil	No.-2-8 & 15
Parking Lock	Machine Oil	No.-7
Lowering Lever (Moving Part)	Machine Oil	No.-8
Jack Pedal	Grease, One (1) Grease Nipple	No.-9-3

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Other Contacting and Sliding Area	Grease/Machine Oil
Jack Oil	Mitsubishi Hydrofluid EP-32 or Equivalent ("Shell" Tullus L32)

B. Inspection and Maintenance

Prior to use of the unit, check whether any damage, deformation or cracks on the body exist.

Remove foreign substance on scissor guide of the frame and rail. Check lifting performance of the platform in accordance with provision of operation.

- Lifting up performance
- Stopping performance at any desired height
- Lowering speed and performance

NOTE: During inspection the platform must be empty.

C. Adjustment

1. Malfunctioning up/down of the platform.

If the platform does not lift up or hold in any position even while jack is pumped.

- (1) air is in jack unit:
- (2) jack valve does not close perfectly.

1) To bleed jack unit:

Pump for three seconds and repeat a few times, then keep the unit as is for about ten minutes. If air bubbles are not purged yet, repeat above adjustment once more.

2) Valve on jack will not be closed perfectly.

In this case, adjustment is required in accordance with the procedure below:

a) For DT-350W

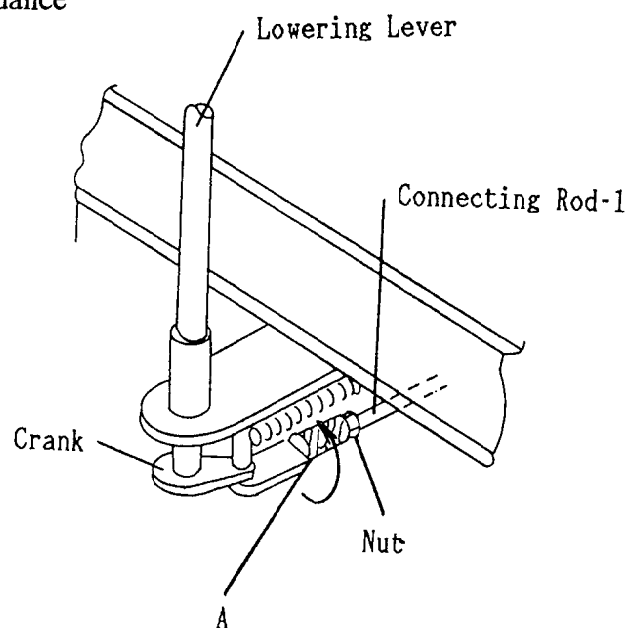
Loosen nut on connecting rod-1 and turn part (A), shown in right figure, in counterclockwise direction one turn.

Tighten the nut preventing turn of above (A).

Check for normal raising and lowering of the platform by pushing pedal.

If the adjustment does not result in normal operation, repeat once more.

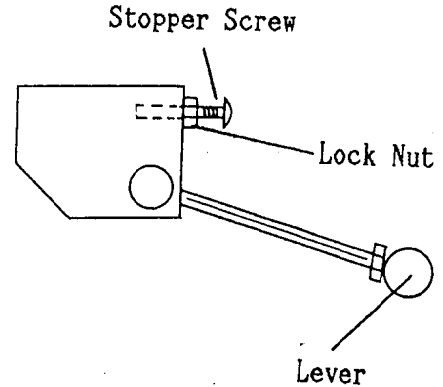
If the unit still does not operate normally, check for problem in other parts.



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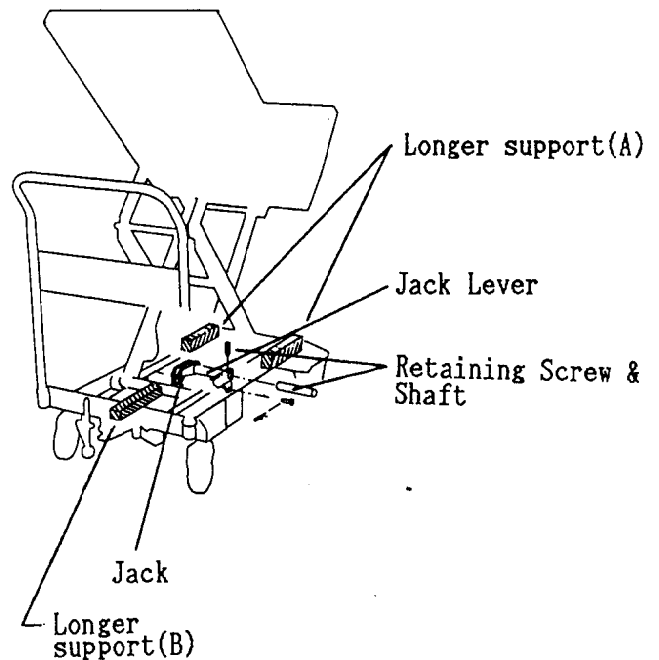
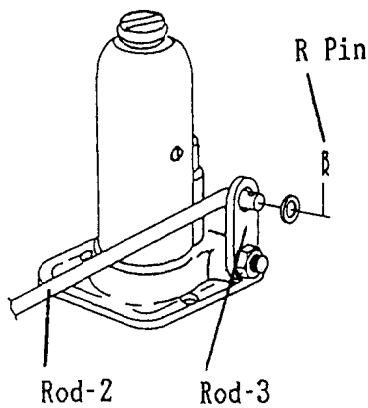
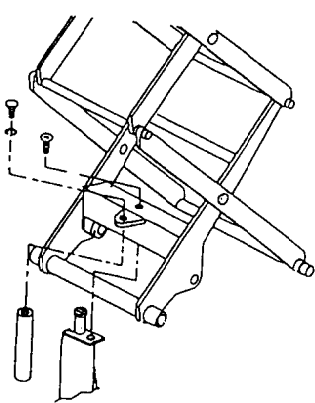
2.Adjustment of lowering speed of the platform. When lowering lever is pulled fully in with no load on the bed, the platform should lower from maximum height to lowest position in about twenty-five seconds. In case the speed is abnormal, adjustment is required as follows:

To increase lowering speed when lowering lever is pulled fully, loosen lock nut and turn stopper screw in clockwise direction. To decrease lowering speed when lowering lever is pulled fully, screw should be turned in clockwise direction. After adjustment completed, tighten lock nut.



D. Removing Scissor Assembly

1. Raise table up to maximum height and insert a maintenance support in scissor guide (Refer to Section 5.)
2. Loosen and remove screw (P/N 0218825) and bolt (P/N 0111020) from lift box.



Longer support	Length	Section
For 350W	A 7"	1"×1 1/2"
	B 3" 1/4	1"×1 1/2"

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3. Remove a support from scissor guide and lower platform to lowest position using lowering lever. Then raise platform again by hands as high as possible, supporting both front and rear edges as shown in above sketch.
Then insert longer support, which are used in above 1., to both front and rear scissor guide and fix these using tape to prevent accidental lowering platform.
(Refer to above sketch)
4. Discouple connecting rod-2 and -3 by removing "R" pin (P/N 0340808) from the end of connecting rod-2 of lowering lever assembly.
5. Prior to removing jack, remove jack lever with following sequence:
 - a) Remove retaining screw(P/N 0212410), For L-150, remove ring "C"
(P/N 0321601)
 - b) Draw out shaft (P/N ND140061)
 - c) Remove jack lever (P/N ND410011)
6. The above disconnects the jack from all connected linkages. Then the jack can be removed by loosening mounting bolts of jack.
7. Reverse the above sequence for installation of jack.

INFORMATION FOR DISTRIBUTOR ONLY

1. GENERAL

Dandy Lift has a device to lift up platform by pumping installed hydraulic jack with power of either foot or electric motor. The hydraulic jack is exclusively developed for Dandy Lift.

As an exceptional case, there is possibility that the platform will not lift up or not stop at designated position.

The reason is one of the followings:

1. Air is entered in jack oil during transportation,
2. Valve on jack does not actuate securely,

As to adjustment of valve on jack, please refer to Adjustment in maintenance manual.

If the jack is still not perfectly operated after adjustment in accordance with Adjustment in manual, the reason will be entering of air in jack oil.

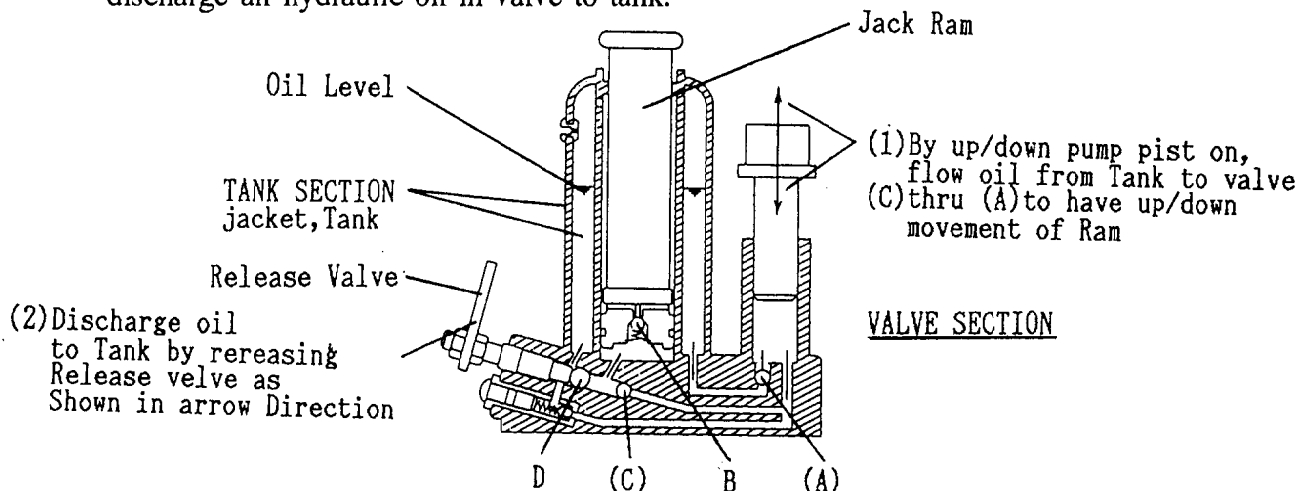
Please make purging air in accordance with following procedures,

2. PRINCIPLE OF PURGING AIR

Referring to illustration below, if air is into hydraulic oil, the jack will not operate as expected.

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To purging those entered air, repeat up/down ram of jack by hands so that hydraulic oil entered air in valve (A) and (B) will be necessary to outside tank and the jack will operate normally. It is necessary to repeat up/down ram about 5 or 6 times to discharge all hydraulic oil in valve to tank.



Therefore, discharging of air in hydraulic oil in accordance with the above principle with satisfy the purpose.

3. CARE TO BE PAID IN PURGING AIR WORKS

1. The platform must be empty during the work.
2. An appropriate stopper must be inserted to specified place as some lift up/down bed works are made by human power.
3. Special care must be paid to avoid injury in holding bed directly by hands in some works.
4. Pay attention to avoid hazard and injury.

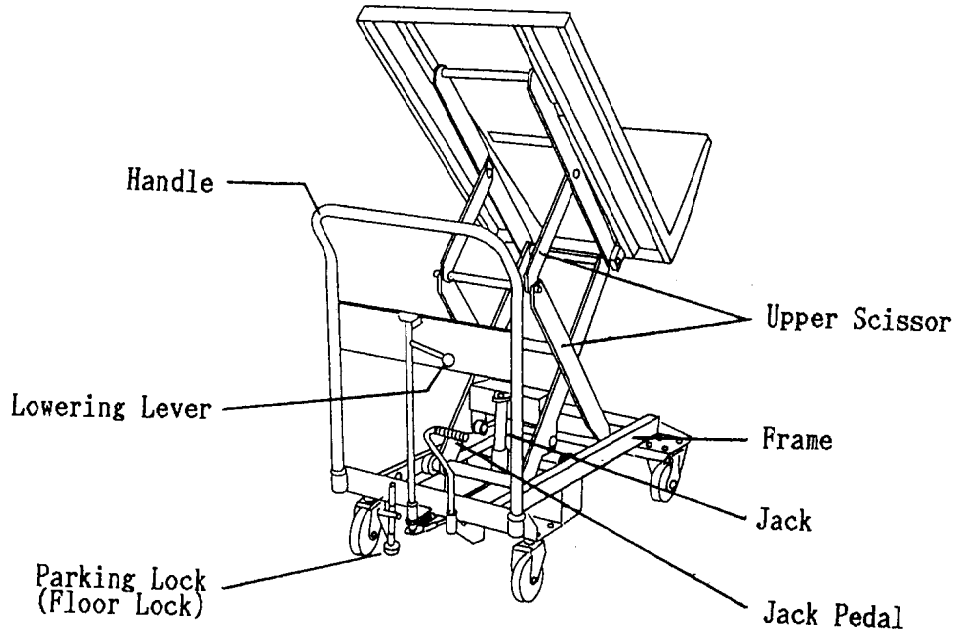
4. PROCEDURE FOR PRELIMINARY WORK

1. Actuate parking brake (floor lock).
- 2* Raise empty platform to maximum height by hands.
Scissor will extend in proportion to raising up platform.
3. Release lowering lever.
- 4* Push platform down rapidly to lowest position by pressing by hand and releasing lowering lever simultaneously.

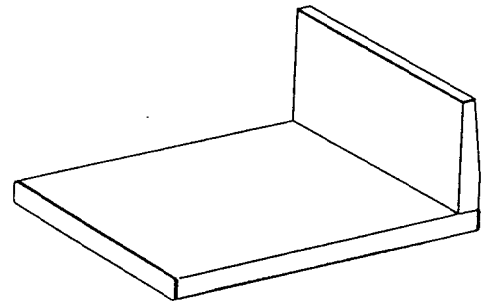
WARNING: DO NOT INSERT PART OF THE BODY SUCH AS HAND OR FOOT BETWEEN PLATFORM AND HANDLE OR IN-BETWEEN FRAME OR SCISSOR.

5. Repeat same work as in the above item 2) to 4) about 5 or 6 times.
6. If still not satisfactory, repeat works item 1) to 5) once more.

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ILLUSTRATED PARTS LIST
DANDY TILT-350W

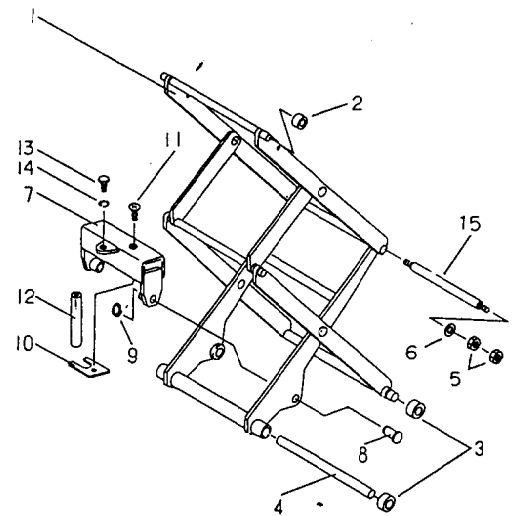


<u>Item NO.</u>	<u>Description</u>	<u>Q'ty</u>	<u>PARTS NO.</u>
1	Platform	1	NP200012



1. Platform

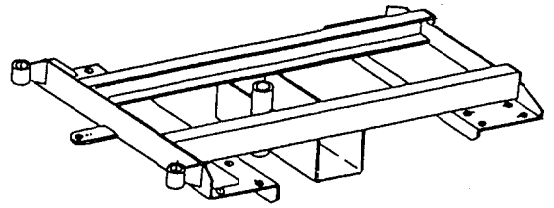
<u>Item NO.</u>	<u>Description</u>	<u>Q'ty</u>	<u>PARTS NO.</u>
2- 1	Scissors	1	NC300000
- 2	Roller(Upper)	2	ND351001
- 3	Roller(Lower)	4	ND361001
- 4	Shaft	1	ND310070
- 5	Nut	4	0811612-03
- 6	Washer	2	0911635
- 7	Lift Box	1	NC340011
- 8	Pin Pivot	2	ND340060
- 9	Ring Retaining C	2	0322001
-10	Jack Plate	1	ND340051
-11	Screw	1	0218825
-12	Shaft(Lift Box)	1	NC190010
-13	Bolt	1	0111020
-14	Spring Washer	1	0981014
-15	Shaft	1	NP320010



2. Scissors

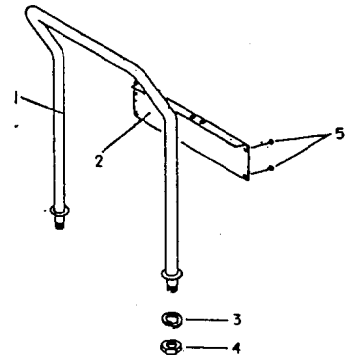
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<u>Item NO.</u>	<u>Description</u>	<u>Q'ty</u>	<u>PARTS NO.</u>
3	Frame	1	NC101001



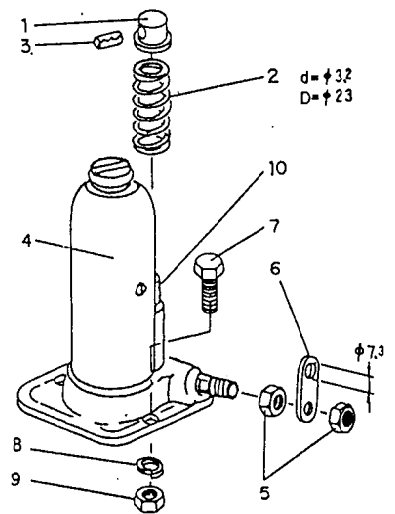
3. Frame

<u>Item NO.</u>	<u>Description</u>	<u>Q'ty</u>	<u>PARTS NO.</u>
4- 1	Handle	1	ND222010
- 2	Name Plate	1	ND222030
- 3	Spring Washer	2	0982057
- 4	Nut	2	0812011
- 5	Tapping Screws	12	0213413



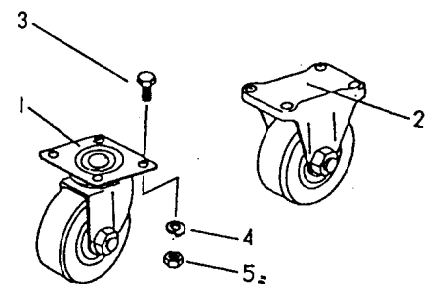
4. Handle Ass'y

<u>Item NO.</u>	<u>Description</u>	<u>Q'ty</u>	<u>PARTS NO.</u>
5- 1	Cap	1	ND540010
- 2	Spring Compression	1	ND531001
- 3	Spring Pin	1	0460820
- 4	Jack	1	ND510000
- 5	Nut U	2	0810881
- 6	Connecting Rod-3	1	ND741010
- 7	Bolt	2	0110825
- 8	Spring Washer	2	0980853
- 9	Nut	2	0810811
-10	Piston	1	ND520010



5. Jack Ass'y

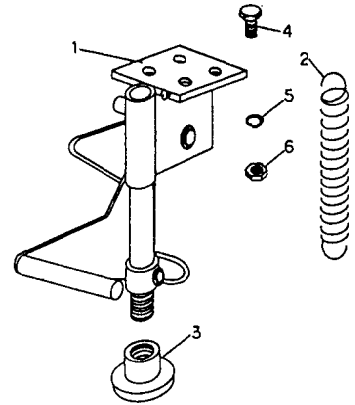
<u>Item NO.</u>	<u>Description</u>	<u>Q'ty</u>	<u>PARTS NO.</u>
6- 1	Front Caster	2	38WK130R
- 2	Rear Caster	2	38WJ130R
- 3	Bolt	16	0141020
- 4	Spring Washer	16	0981064
- 5	Nut	16	0811011



6. Caster

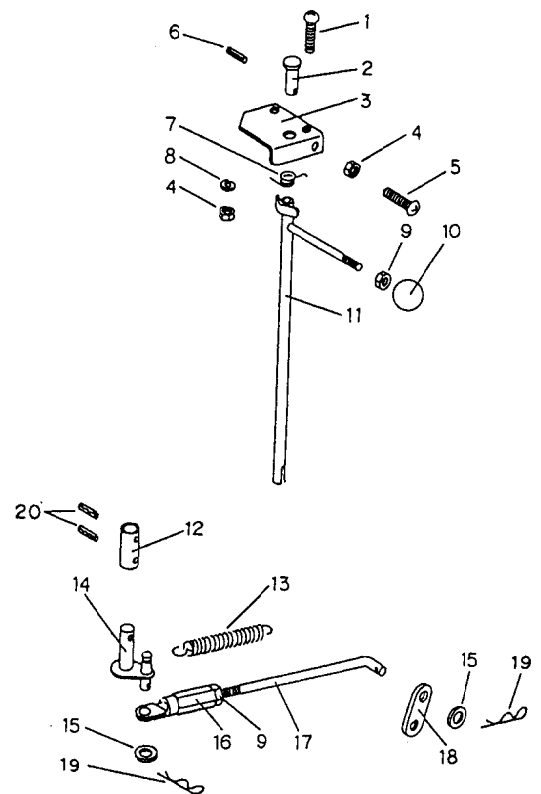
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<u>Item NO.</u>	<u>Description</u>	<u>Q'ty</u>	<u>PARTS NO.</u>
7- 1	Floor Lock	1	ND810000
- 2	Spring Washer	1	ND810220
- 3	Shoe	1	ND810200
- 4	Bolt	4	0110820
- 5	Spring Washer	4	0980853
- 6	Nut	4	0810811



7. Parking Lock

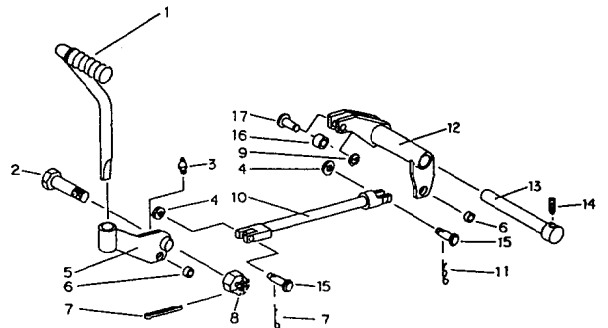
<u>Item NO.</u>	<u>Description</u>	<u>Q'ty</u>	<u>PARTS NO.</u>
8- 1	Screw	2	0216616
- 2	Pin	1	ND720020
- 3	Fixed Support	1	ND720010
- 4	Nut	3	0810611
- 5	Screw(Stopper)	1	0216630
- 6	Pin Spring	1	0460314
- 7	Spring Tension	1	ND730000
- 8	Spring Washer	2	0980652
- 9	Nut	2	0810611
-10	Grip	1	ND710020
-11	Lowering Lever	1	NB710011
-12	Sleeve	1	ND740052
-13	Spring Tension	1	ND760000
-14	Crank	1	ND740031
-15	Washer	2	0910813
-16	Turn Buckle	1	ND750000
-17	Connecting Rod-1/2	1	NC740061
-18	Connecting Rod-3	1	ND741010
-19	Pin R	2	0340808
-20	Pin	2	0460420



8. Lowering Lever Ass'y

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<u>Item NO.</u>	<u>Description</u>	<u>Q'ty</u>	<u>PARTS NO.</u>
9- 1	Pedal Jack	1	ND430010
- 2	Split Cotter Pin	1	0360630
- 3	Grease Nipple	1	0040600
- 4	Washer	2	0910812
- 5	Receiver Pedal-1	2	ND440012
- 6	Bush	2	ND410070
- 7	Split Cotter Pin-2	2	0362520
- 8	Shaft(Bolt)	1	0111675-17
- 9	Ring Retaining C	1	0320605
-10	Connecting Rod	1	NC421012
-11	Pin R	1	0340808
-12	Lever Jack	1	ND410011
-13	Shaft for Lever	1	ND140061
-14	Screw Retaining	2	0212410
-15	Pin-1	2	ND420040
-16	Roller	1	ND410060
-17	Pin-2	1	ND410090



9. Jack Pedal Ass'y