

## Evolution of Scott Tailwheels

The earliest known Scott Tailwheels were the CST-12 and 3-21. Nothing is known about them except they were replaced by the 3000 Series Scott Tailwheels. It is possible the 3-21 was a steerable, non-swiveling tailwheel.

**3000-A1** – Double arm fork, solid rubber tire, and Steerable.

**3000-B2** – Same as above except full-swivel.

There is one major distinguishing feature between the 3000-A1 and –B2 tailwheels. The 2077 style casting which mounts the 3000-B2 assembly to the leaf springs has two quarter round protrusions pointing up on the forward end of the casting. These protrusions will engage the steering arm when the tailwheel is turned beyond about 45° left or right of center. Having engaged the steering arm, it will allow the tailwheel to caster and go into full-swivel. The earlier 3000-A1 series lack these protrusions, thus making a non-swiveling assembly.

**3-24B** – Single arm fork, solid rubber tire, Steerable and full-swivel. Used on many older Pipers, Cessnas, Taylorcrafts and other light aircraft. Bracket was 1 ½ “ wide. A spacer was required for use with 1 ¼” springs.

**3-24BS** – Same tailwheel as 3-24B but bracket was 1 ¾” wide for use on Stinson 108 Series aircraft.

**2000** – This is a later designation for the 3-24B & 3-24B-1 tailwheels. The 3-24B and the 2000 are identical in appearance.

**3200** – 8 inch double arm fork, Steerable, full-swivel tailwheel with an 8” pneumatic tire. Replacement for the earlier 3000 series tailwheels. Machined for 1 ¾” leaf springs. Spacers required for 1 ¼” and 1 ½” leaf springs.

	3200	3200-1	3200-3	3200-5
1 hole attach bracket	X	X		X
2 hole attach bracket			X	
No wheel and tire		X		
No wheel/tire/axle				X

**3250** Same as 3200 except has an “A” frame bracket used to attach the tailwheel on the Swift series aircraft

**3400-1** Same as 3200 except attach bracket is configured to use a 7/8” tubular spring mount as used on Cessna 180 series aircraft.

**3400** Same as the 3400-1 except less wheel, tire and tube.

**The 3425 Series tailwheels** are a steerable heavy duty tailwheel for tubular mount for either 15/16” or 1” tube spring mount. They may or may not have a locking mechanism. The steering are is straight. This series uses either an 8” or 10” wheel. The forks are different on these

assemblies depending on tire size. These tailwheels are used most commonly on the Cessna 180/185 series aircraft.

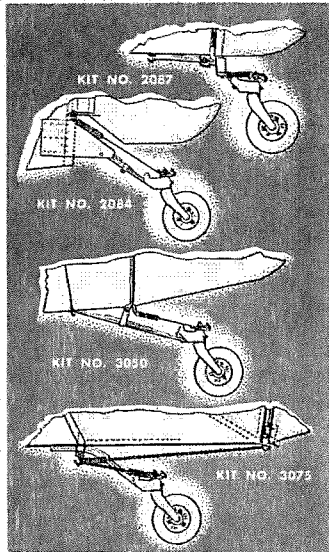
	3425-1	3425-3	3425-5	3425-7	3425-13	3425-15	3425-17
8" tire/wheel fork		X	X		X	X	
10 " tire/wheel fork	X			X			X
Locking type	X	X		X		X	X
15/16" mount	X	X	X	X			
1" mount					X	X	X
No wheel/tire/axle				X			

**3450 Series tailwheels** are similar in design to the 3400 and 3425 tailwheels. Steerable, full-swivel tailwheel that has no provision for locking. They use only the 10" pneumatic tire. They are to be used with a 15/16" or 1" tubular tailspring. The exception is the 3450-23 which has a bracket for leaf springs. The steering arms are also available in straight type or bent upwards.

	3450-1	3450-3	3450-5	3450-7	3450-17	3450-23
Straight steering arm		X		X	X	X
Bent up steering arm	X		X			
15/16" mount	X	X	X	X		
1" mount					X	
Leaf spring mount						X
No wheel/tire/axle			X	X		

**INSTALLATION KITS FOR 3-24B TAIL WHEEL ASSEMBLIES**

Installation kits listed below include all the necessary parts for installing the Scott 3-24B Tail Wheel Assembly on the aircraft models indicated. Drawings illustrate manner in which installation is made.



KIT NUMBER	FOR USE ON	PRICE EACH
3073	Cub J-4	\$9.25
2084	Luscombe series 8	3.00
3050	Porterfield FP64, CP65, CP55	3.00
2087	All Taylorcraft with leaf tail spring	2.25

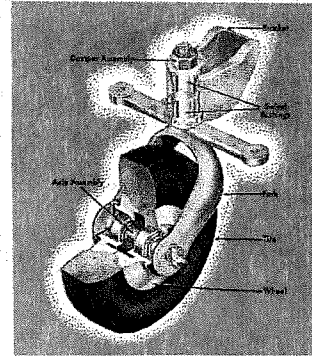
**TAIL WHEEL ASSEMBLIES**  
STEERABLE OR FULL SWIVEL

Scott Steerable or Full Swivel Tail Wheel Assemblies are designed for installation on Aerona, Cub, Luscombe, Rearwin and other light aircraft equipped with spring leaf skids.

Standard adjustable tension spring connectors are attachable to cast rudder arms, except on the Luscombe where built-in rudder arms are used.

Wheels are of strong cast magnesium. Standard ball bearings are furnished; Timken bearings are optional at extra cost. Bracket bushings are bronze and removable. Manganese silicon steel forks possess high strength-weight ratio... high tensile ferrous alloy brackets assure maximum strength.

Assemblies are shipped complete, fully lubricated and ready for installation.



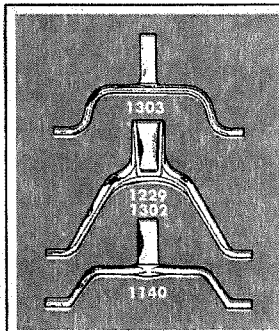
RECOMMENDATION CHART

NAME OF AIRCRAFT	AIRCRAFT MODEL NUMBER	SPRING WIDTH	TAIL WHEEL MODEL NUMBER	
			STEERABLE	FULL-SWIVEL
Aerona	Chief of Trainer	1 1/4"	AST-8	G-5A
Piper Cub	J-3 Trainer	1 1/4"	CST-12	GC-15
Piper Cub	J-4 Coupe	1 1/2"	ASF-8C	GC-15
Piper Cub	J-5 Cruiser	1 1/2"	CST-12	GC-15
Colver	Cadet	1 1/4"	...	GC-15
Luscombe	Silvère or Trainer	1 1/2"	AST-4L*	GLD-19
Rearwin	Ranger	1 1/2"	AST-8R	G-5A
Rearwin	Older Models	1 1/2"	AST-6R	...
Silson	105	1 1/2"	...	ST-7
Taylorcraft		1 1/2"	TA-8B	TA-5

PRICES OF TAIL WHEEL ASSEMBLIES

STEERABLE MODEL NUMBER	PRICE EACH	FULL-SWIVEL MODEL NUMBER	PRICE EACH
AST-8	\$18.50	G-5A	\$14.75
CST-12	18.50	GC-15	14.75
AST-8C	18.50	GLD-19	14.75
AST-4L*	18.50	ST-7	19.50
AST-8R	18.50	TA-5	14.75
AST-6R	18.50		
TA-8B	18.50		

\* Shock Cord Connectors are furnished, to connect directly to Luscombe's present Rudder Horn.



These Scott Rudder Arms are individually designed for each of the aircraft listed below. They fit the ship they were made for, without additional machining or filing. Made of strong ferrous alloy or aluminum alloy, they're light, strong and rugged. Pressed-in steel bushings assure long wear for connector spring holes.

STOCK NUMBER	TYPE OF SHIP	PRICE
1140	Cub J-3, J-4, and J-5	\$1.50
1229	Aerona and Monocoupe	1.50
1302	Rearwin	1.50
1303	Taylorcraft	1.50

ILLUSTRATION 2 (above)

ILLUSTRATION 3 (left)

Luscombe - 3-24 (dwg. 3000) & 3-24B (dwg. 2000)

CAA approval - February 27, 1945  
Model - series 8 airplane

Piper - 3-24B (dwg. 2000)

CAA approval June 6, 1945  
Model - Piper J-3 series

Piper - 3-24 (dwg. 3000) & 3-24B (dwg. 2000)

CAA approval - April 2, 1945  
Model - J-4

Stinson - 3-24BS (Dwg. 3101)

CAA approval - December 5, 1945  
Model 10, 10A, 10B, HW-75

Taylorcraft - 3-24B (Dwg. 2000)

CAA approval - May 24, 1945  
Model L-2 series, BL, BC, & BF

## SECTION I

### INTRODUCTION

1. This Handbook is issued as the basic technical instructions for the Models 3-24B, 3-24BB and 3-24BS Automatic, Full-Swivel & Steerable Tail Wheel Assemblies. This Handbook contains descriptive data and instructions for the installation, operation, maintenance and overhaul of the above-mentioned equipment.
2. A group assembly parts' list and an exploded view of each model is included to facilitate procurement of spare parts.

## SECTION II

### DESCRIPTION

1. The subject models are all of the steerable type, with an automatic full-swivel feature for ease in ground handling.
2. Figure 1 is an assembly view of the model 3-24B and the model 3-24BB; these two assemblies are identical except that the model 3-24B has needle swivel bearings while the model 3-24BB has a bronze bushing for a swivel bearing. The model 3-24BB is recommended for airplanes having a normal static load of 150 pounds or over on the tail wheel.
3. Figure 2 is an assembly view of the model 3-24BS. This model is identical with the model 3-24BB except that the bracket is designed for a tail leaf spring 1 3/4 inches wide.
4. Figure 6 page 13 shows a typical installation for model 3-24B or model 3-24BB tail wheel assemblies.

## SECTION III

### INSTALLATION

1. MODEL 3-24B & 3-24BB.
  - a. Both models are designed for use on specific aircraft having a tail leaf spring 1 1/2 inches wide.
  - b. For installations on a tail leaf spring 1 1/4 inches wide, a spring spacer assembly (#1478) is available to take up the clearance between the tail leaf spring and the tail wheel assembly bracket.
  - c. For installations on tail leaf springs with a 3/8 inch diameter bolt hole, a bolt hole adapter (#1306) is available to take up the clearance between the 7/16 inch diameter bracket hole and the 3/8 inch diameter mounting bolt.

## 2. MODEL 3-24BS.

a. This model is designed for use on specific aircraft having a tail leaf spring 1 3/4 inches wide with a 1/2 inch diameter bolt hole.

## 3. GENERAL.

a. The subject assemblies should be fastened to the tail leaf spring with the mounting bolt inserted from bottom to top. An AN310 nut is recommended and must be cottered securely.

b. The spring connector assemblies should be installed, each with a tension of approximately 25 to 30 pounds. This tension can be obtained by stretching each spring approximately one inch on installation.

c. It is recommended that steering leverage be provided on installation to accomplish 45° of tail wheel travel or steering either right or left from neutral position to the extreme stop position of the rudder.

d. For those installations utilizing a rudder arm, care must be taken that the steering horns or arms are perpendicular to the rudder surface. This is necessary so that the tail wheel will be in line with the rudder in neutral position, and so that an equal amount of tail wheel steering performance will be obtained either to right or to left.

e. For best performance and life of the subject assemblies, the tail wheel spindle bearing should be as nearly perpendicular to the ground line as possible with the airplane at normal static load condition.

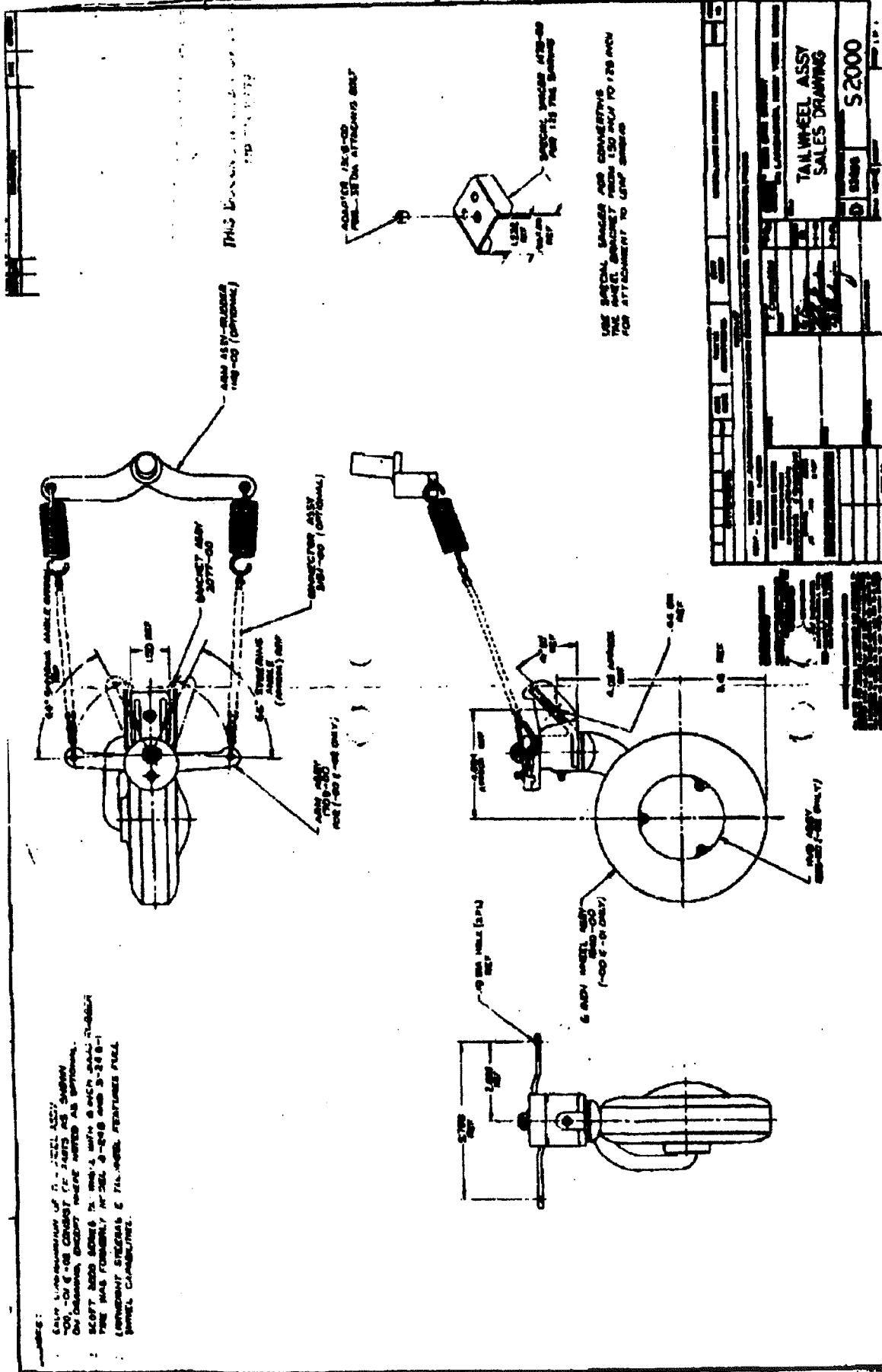
f. Installation kits are available for special installations where the tail leaf spring location and/or angle makes it necessary.

## SECTION IV

### OPERATION

1. The subject tail wheel assemblies provide directional control throughout full rudder travel of the aircraft while the tail wheel is in contact with the ground. The assemblies will automatically full-swivel only well after the maximum point of air rudder control is reached in either direction.

2. The tail wheel steering and release mechanism is so designed that 65° of tail wheel turn (or travel) is provided either right or left from neutral steering position before the mechanism begins to release.



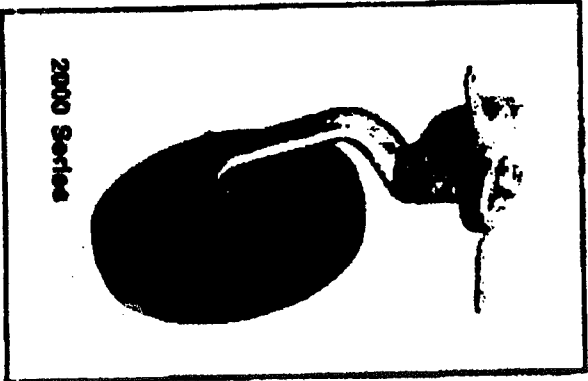
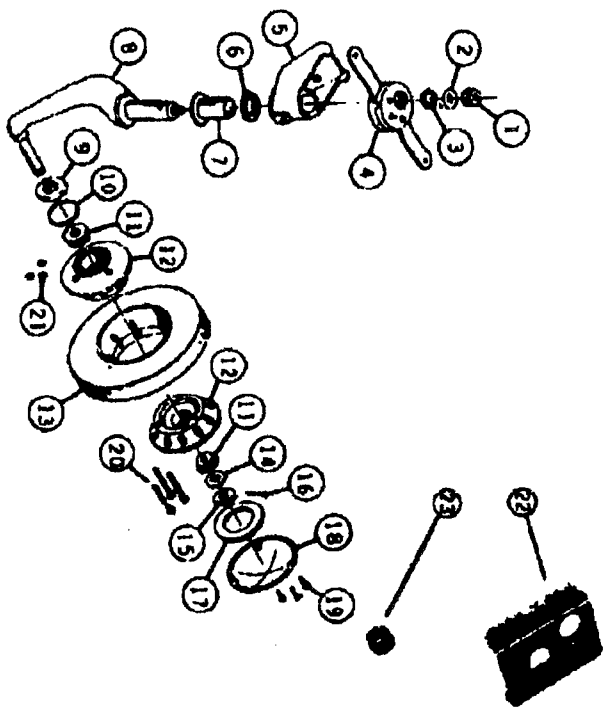
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**2000 Series Tailwheel**  
 The Scott 2000 Series is a high-performance, single-arm assembly with full service capabilities. Tailwheel with 6" solid rubber tire assures rugged reliability for light aircraft at comparatively low cost. This series was formerly designated 3-24B and 3-24B-1.

**Accessories**  
 P/N 2151 Chain Type Tail Wheel Connector Assembly  
 P/N 1840 Wheel Assembly

Item No.	Part No.	Description	No. Required	
			2000-00	2000-01
1	18470	Nut, Self-Locking	1	1
2	2046	Washer	1	1
3	2008	Shim	1	1
4	1709	Arm Assembly	1	1
5	2077	Bracket Assembly*	1	1
6	1781	NOTE: Incl. Items No. 6 & 7	1	1
7	1800	Cap-Beating	1	1
8	2078	Shunting	1	1
9	1803	Port	1	1
10	1802	Pin, Grease	1	1
11	1803-00	Spacer-Grease Retainer	1	1
12	1867	Bearing Set	2	2
		Hub Kit	1	1
		NOTE: Incl. Items No. 20 & 21		
		Tire	1	1
13	1879-00	Weather	1	1
14	18105	Nut	1	1
15	18460	Pin, Collet	1	1
16	18462	Hub Cap Assembly	1	1
17	1882	Bole & Nut Kit	1	1
18	1875	Spacer Assembly	1	1
19	1478	Spacer Assembly	1	1
20	1308	Washer	1	1
21		Shim	1	1
22			1	1
23			1	1

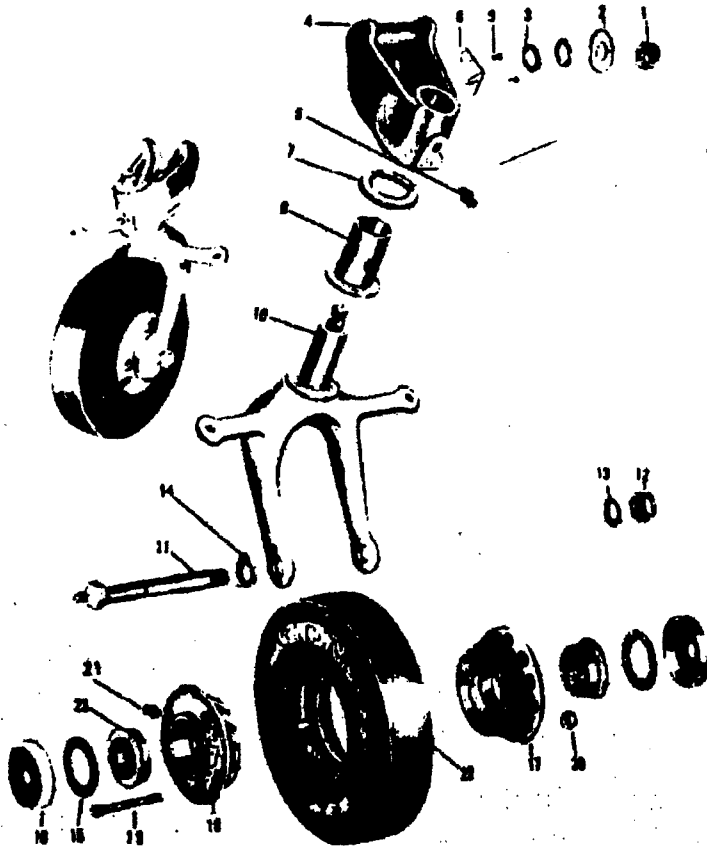
\*Standard bracket is for 1 1/2" landing. If required for use with 1 1/4" landing, use P/N 1478 spacer and P/N 1308 adapter.







# A LOW-COST UTILITY UNIT steerable model 3000-A1



**NOTE**

**3000-A1 Model  
Replaces Scott Models  
CST-12 and 3-21**

**MODEL 3000-A1**

The 3000-A1 has an attaching bracket for 1-1/2" spring leaf. If required for use with 1-1/4" spring leaf, use No. 1478 Spacer and No. 1306 Adapter.

See page 12 for spring connectors.

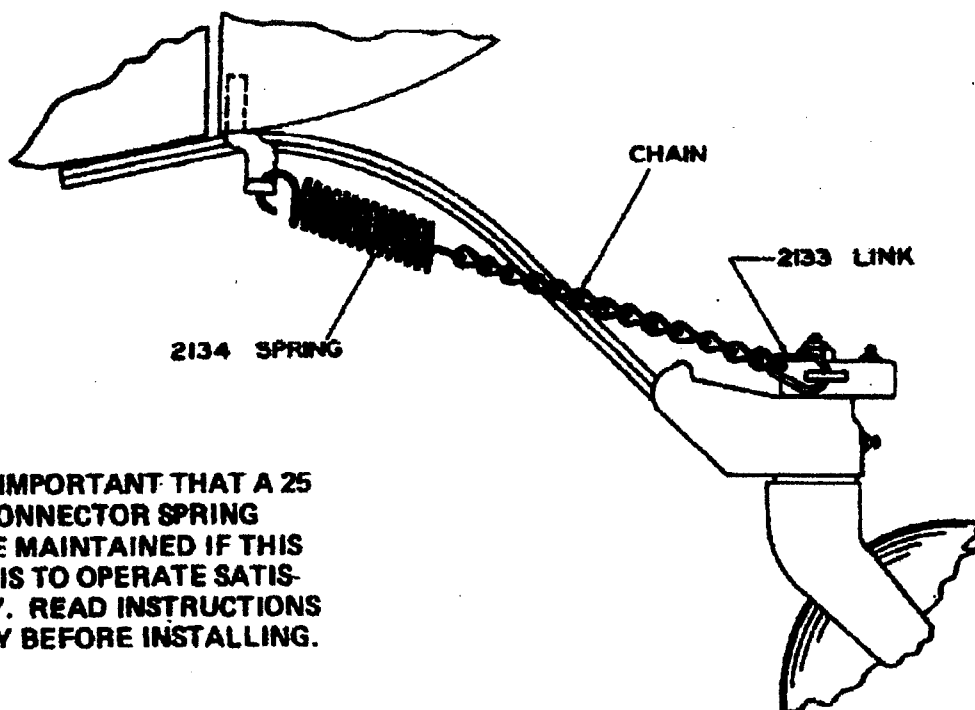
**USES BRONZE SWIVEL BUSHINGS AND KILIAN BALL BEARINGS - RUGGED CAST STEEL CONSTRUCTION**

**PARTS LIST**

Ref. No.	Part No.	Name	No. Req.	Ref. No.	Part No.	Name	No. Req.
1	AN344-720	Nut-Self Locking	1	11	1801	Axle	1
2	2344	Washer-Fork Post	1	11 to 16	1744	Axle Kit	1
3	2085	Shim	1 or 2	15 (Ref.)	1803	Seal-Grease	2
4	2077	Bracket Assembly (includes Ref. Nos. 5, 6 and 7)	1	16 (Ref.)	1364	Cap-Hub	1
5	Com'l Sp'l	Fitting-Grease Alemite 1641	1	17 to 21	1947	Hub Kit	1
6	1800	Bushing	1	-	1865	Wheel Assembly less tire	1
7	1781	Cap-Bushing	1	19-28 (Ref.)	1875	Bolts and Nuts (3 millimeter head bolts and 3 self locking nuts for Scott Cast Wheels)	1
8	1076	Plate-Name	1			Fitting-Grease (Ref.)	1
9	20 x 3/16	Screw-Drive - P. K. Type U	2	21	1306	Tire	1
10	3001	Fork-Steerable	1	22	1879	Tire	1
				23	1421	Ball Bearing 7/16"	2



**SCOTT NO. 2151 UNIVERSAL ADJUSTABLE SPRING  
CONNECTOR ASSEMBLY INSTALLATION INSTRUCTIONS**



**NOTE:**

**IT IS VERY IMPORTANT THAT A 25 TO 30 LB. CONNECTOR SPRING TENSION BE MAINTAINED IF THIS ASSEMBLY IS TO OPERATE SATISFACTORILY. READ INSTRUCTIONS CAREFULLY BEFORE INSTALLING.**

**PROCEDURE**

1. Attach chain to No. 2134 springs (round end of link to closed spring hook as shown).
2. Attach No. 2133 links to tail wheel steering arms, by inserting end of link wire through steering arm hole and rotating until link is attached as shown.
3. Hook springs into rudder steering horns and draw chains back over links No. 2133.
4. Carefully even steering horn arms with rudder horn arms so that connectors will be equal in length.
5. Cut off enough links from each connector chain to stretch spring approximately one inch when installed, (this will produce a tension of approximately 25 to 30 lbs.)
6. Attach flat end of chain to Links No. 2133 as shown; this accomplished by inserting one end of No.2133 link wire through chain link and sliding chain link back until other wire end or hook will enter chain link also.

**NOTE: Count chain links used to make sure connector lengths are equal.**