Challenger Lifts Inc.
P. O. Box 3944
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Louisville, KY 40201-3944
(502) 561-6940

OPERATION & MAINTENANCE MANUAL

FOR

MODEL 28,000 - CHALLENGER 3

CAUTION:

READ OPERATING INSTRUCTIONS COMPLETELY BEFORE OPERATING CAR LIFT

July 1, 1990

01828B

INTRODUCTION:

Take time to acquaint yourself with the features of your new CHALLENGER 3 Hydraulic Lift (Model 28,000):

A) Hydraulic Cylinders located in each column provide reliability and added safety.

B) Full travel safety latch release systems provide a signal to the operator to clear the area before lowering the lift.

C) The manual safety latch release systems provide a signal to the operator to clear the area before lowering the lift.

D) Steel wire rope sheaves are located at each rotational point and are specifically designed for extending the life of the cable.

E) Double synchronizing cable systems assure smooth load transmission and provide added safety during lifting and lowering cycles.

F) Bleeder valves on each cylinder prevent air from entering the hydraulic system.

G) Clear floor provides easy passage of equipment between columns.

H) 5 year warranty.

I) This lift qualifies to the ANSI Specification B153.1-1981. Structural safety is to a factor of three. All fastening devices have a safety factory of four unless they are subject to shock and then they have a factor of eight.

OPERATING INSTRUCTIONS:

To Raise Vehicle:

1. Lower carriages to the floor position.
2. Retract lifting arms to minimum length.
3. Swing arms away from the path of the vehicle.
4. Drive vehicle into postion between the columns.
5. Locate the vehicle -front to back- to assure a balanced load.
6. Position the lifting pads at the ends of lifting arms centrally under the recommended lifting points and adjust lifting pads for uniform contact.

   NOTE: All four arms must be used when lifting a vehicle. Always use the vehicle manufacturer's recommended lifting points. Arms are designed for a 60% front load and a 40% rear load.12

7. Clear area around the lift.
8. Raise the vehicle until the lifting pads are in full contact and make visual check to insure the load is secure.
9. Raise the load off the ground slowly to insure the load is balanced, then proceed with the lift to the desired height.
10. Release push button at up position. **DO NOT OVERDRIVE SYSTEM.**
11. Lower load on the safety latches. The vehicle is now ready for service.

CAUTION:

SHOULD ANY MAJOR WEIGHT COMPONENT BE REMOVED OR ADDED WHILE THE VEHICLE IS RAISED, USE A HIGH HORSE TO SUPPORT THE OVER BALANCED END DURING THE MAINTENANCE PROCEDURE.

TO LOWER VEHICLE:

1. Clear area around and under the lift of obstructions and warn personnel to stand clear.
2. Raise vehicle slightly to remove pressure on the safety latches.
3. Pull out the latch release handles on each carriage.
4. Lower the lift until arms have bottomed and are clear of the lifting points.
5. Swing the lifting arms from beneath the vehicle and fully retract the arms.
6. Remove the vehicle.

IMPORTANT WARNING:

1. Do not operate the lift unless safety latches are functioning as evidenced by the safety latches dropping into the safety ladder slots during the raising motion.
2. Do not operate the lift if the load tilts or binds during the up or down movement.
3. When operating lift with arms unloaded do not swing the arm nearest to the power pack past straight out to side. Damage to power pack may result if the warning is not complied with.
4. Always use all four arms when lifting a vehicle and follow the vehicle manufacturer's guide lines for recommended lifting points.

MAINTENANCE SCHEDULE:

WEEKLY:

1. Check the synchronizing cable assemblies for correct tension. Tighten if necessary.

MONTHLY:

1. Re-torque the anchor bolts to 60 - 80 ft. lbs.

   CAUTION: ALL ANCHOR BOLTS SHOULD TAKE FULL TORQUE. If any of the bolts do not function for any reason, the lift should be shut down until the bolt has been replaced.

2. The slide block tracks on the inside of the columns should be inspected for proper lubrication. Use heavy, viscous, quality grease.

EVERY SIX (6) MONTHS:

1. Make a visual inspection of all moving parts for possible wear, interference or damage.

2. Check all cable sheaves for proper lubrication. If sheave seems to be dragging during lifting or lowering, lightly oil the axle.

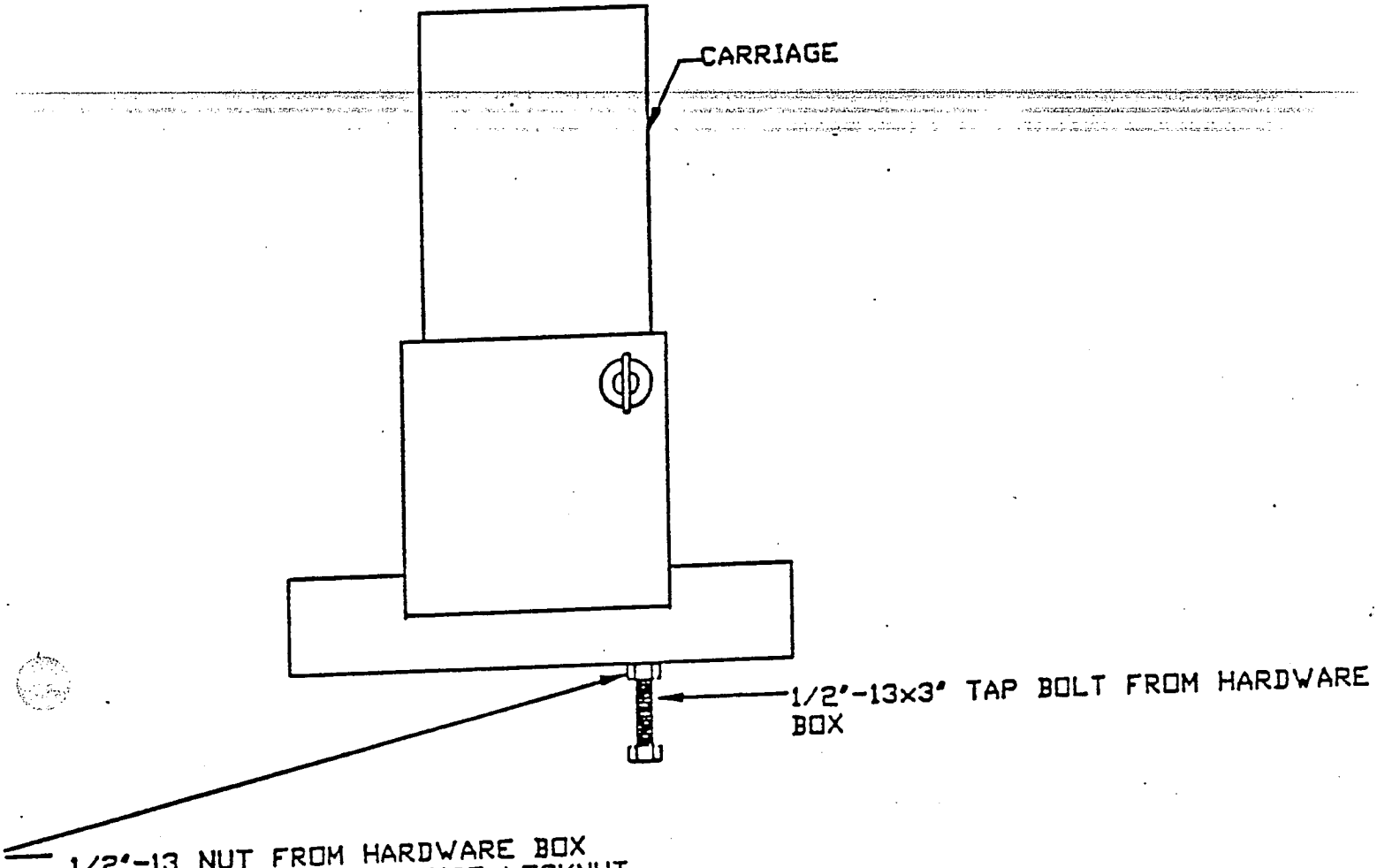
TROUBLE SHOOTING PROCEDURES

PROBLEM	REASON	SOLUTION
I. LIFT WILL NOT GO UP WHEN BUTTON IS PUSHED.	A. Blown fuse.	A. Replace fuse.
	B. Crushed hyd. line.	B. Replace line.
	C. Faulty operation of the micro-switch which actuates the pump motor.	C. Call Mfg. to replace faulty microswitch.
	D. Oil supply is low.	D. Fill with oil.
	E. Lift overloaded.	E. Remove load.
II. THE LIFT WILL NOT STOP TRAVELING UP WHEN THE BUTTON IS RELEASED.	A. Microswitch is sticking.	A. Replace the microswitch.
III. LIFT WILL NOT COME DOWN.	A. The latch release handle has not been pulled out.	A. Raise lift to release pressure on safety latch. Then pull out latch release handle on each side and lower.
	B. The cable is obstructed by a foreign body.	B. Remove obstruction and check for damage to the lift.
IV. THE LIFT JERKS, KNOCKS OR GRINDS WHEN OPERATED.	A. The cable is obstructed by a foreign body.	A. Remove obstruction and check for damage to the lift.
	B. The cable is off of a sheave.	B. Remount cable and check for damage to lift.

PROBLEM	REASON	SOLUTION
THE LIFT TENDS DRIFT DOWN RAPIDLY WHEN STOPPED ON UPWARD TRAVEL.	A. Dirt or lint is stuck in one of the pump valves.	A. Depress the hyd. dump valve and run the pump by pushing the operating button. Repeat until obstruction is cleared.
VI. THE LIFT WILL NOT LIFT VEHICLE TO TOP.	A. Hydraulic system needs oil	A. Add oil.
	B. Safety bar is being actuated.	B. Higher lifting will damage car and lift.
VII. THE MOTOR OVERHEATS AND/OR MAKES LOUD LABORING SOUNDS.	A. The motor system damaged in handling or transit.	A. Determine extent of of damage and repair or call Mfg. for replacement.
	B. The voltage input does not meet pump motor requirements.	B. Correct power source or check voltage drop in long runs and correct.
VIII. LIFTING ARMS WILL NOT GO UNDER ONE SIDE OF VEHICLE.	A. The lifting pads are not in lowest position.	A. Screw lift pads down.
	B. Extend lifting arms are not level when raised together.	B. Adjust synchronizing cable to level arm. NOTE: After arms are level and one carriage will not bottom out, check floor slope between columns. Elevation must be corrected to place columns at the same elevation.

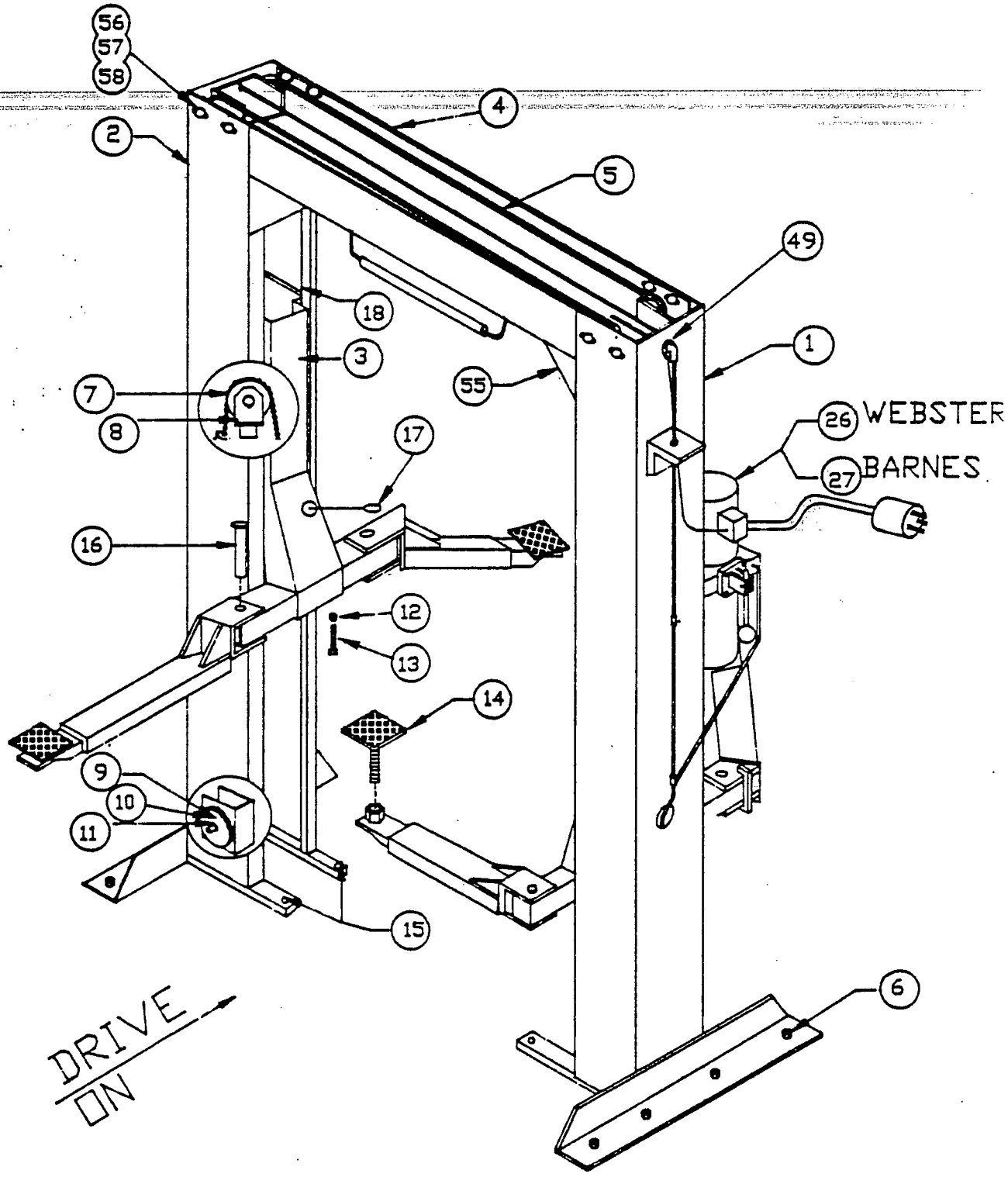
PROBLEM	REASON	SOLUTION
IX. OIL RUNS OUT OF BREATHER VALVE AT TOP OF CYL.	A. The wear ring of the cylinder piston is wearing in.	A. It is normal for the cylinder to seep for a short period during break in.
	B. The seal of the cylinder piston is failing.	B. If leaking continues to increase after 4 weeks call Mfg.

CARRIAGE STOP TO PREVENT ARMS FROM DRAGGING ON FLOOR



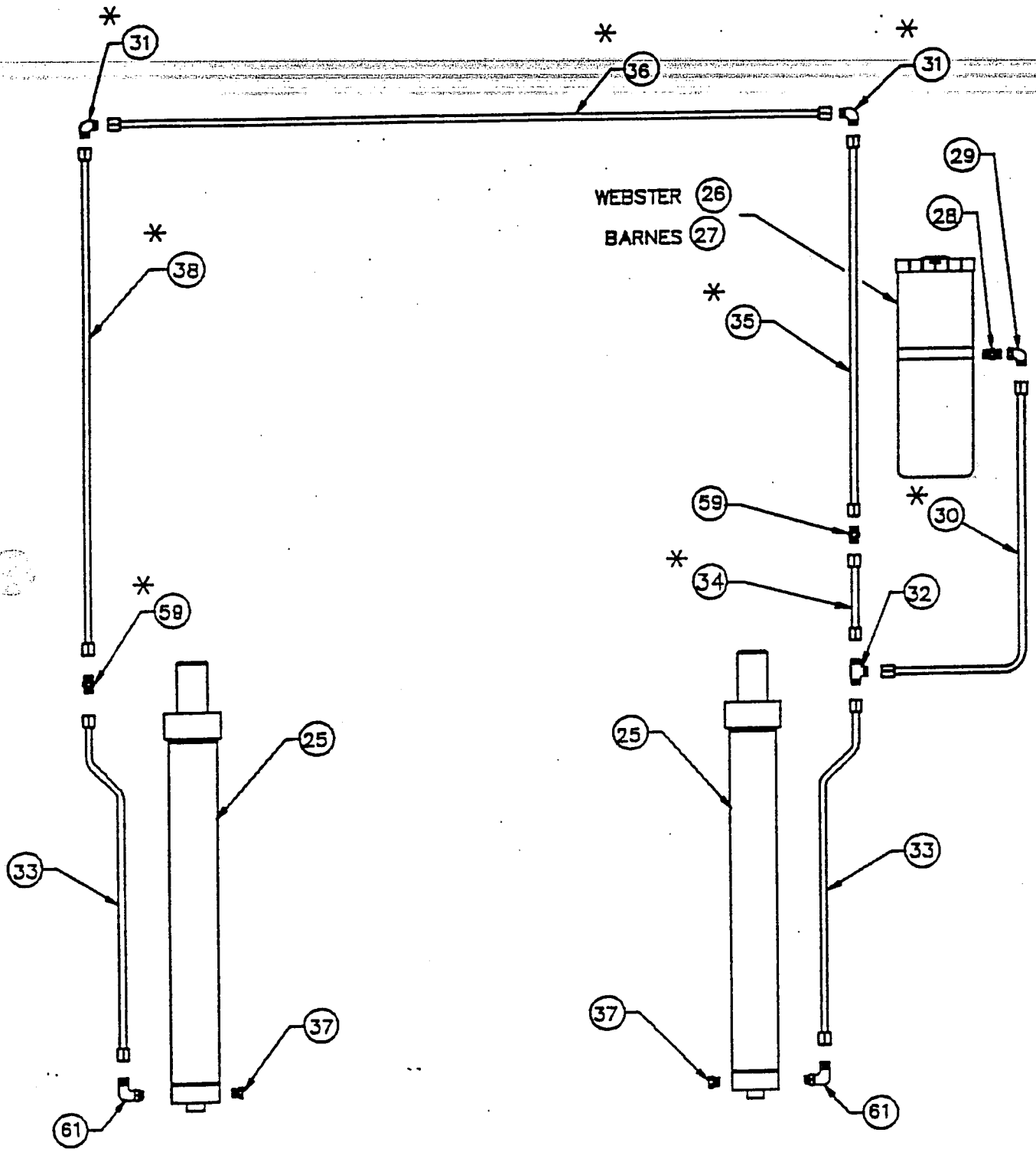
RUN 1/2"-13 NUT FROM HARDWARE BOX ON TO 1/2" TAP BOLT. INSTALL 1/2" TAP BOLT INTO TAPPED HOLE IN BOTTOM OF CROSSARM.

DETERMINE REQUIRED HEIGHT OF CARRIAGE AND ADJUST TAP BOLT TO STOP CARRIAGE AT THAT HEIGHT , HOLD HEAD OF TAP BOLT AND TIGHTEN JAM NUT AGAINST UNDER SIDE OF CROSSARM.

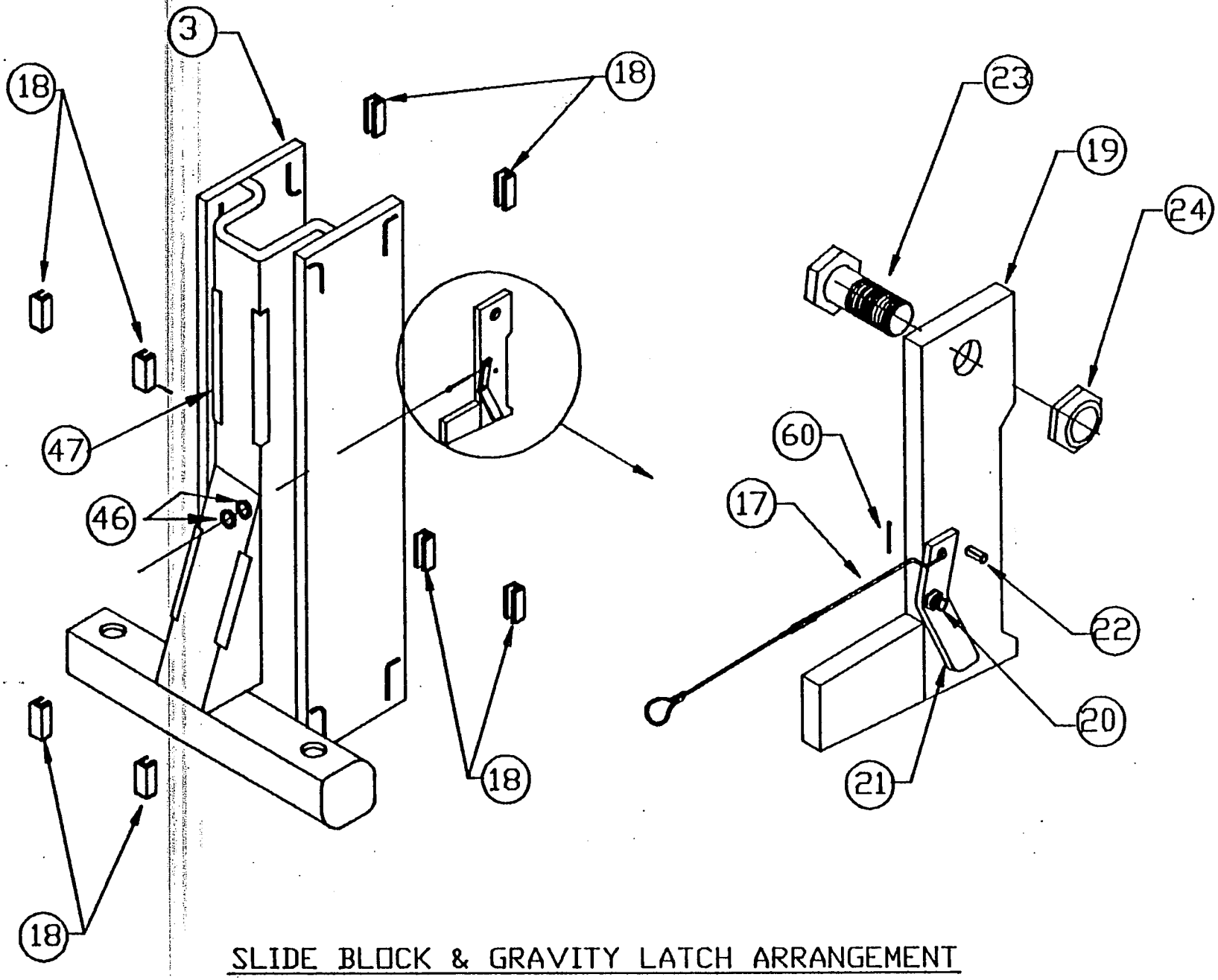


CHALLENGER SPIRIT 3
MODEL 28,000

OVER HEAD HYDRAULIC SYSTEM
MODEL 28,000



PART NO. 280026 HYD. LINE PACKAGE SHIPPED LOOSE IN COLUMN

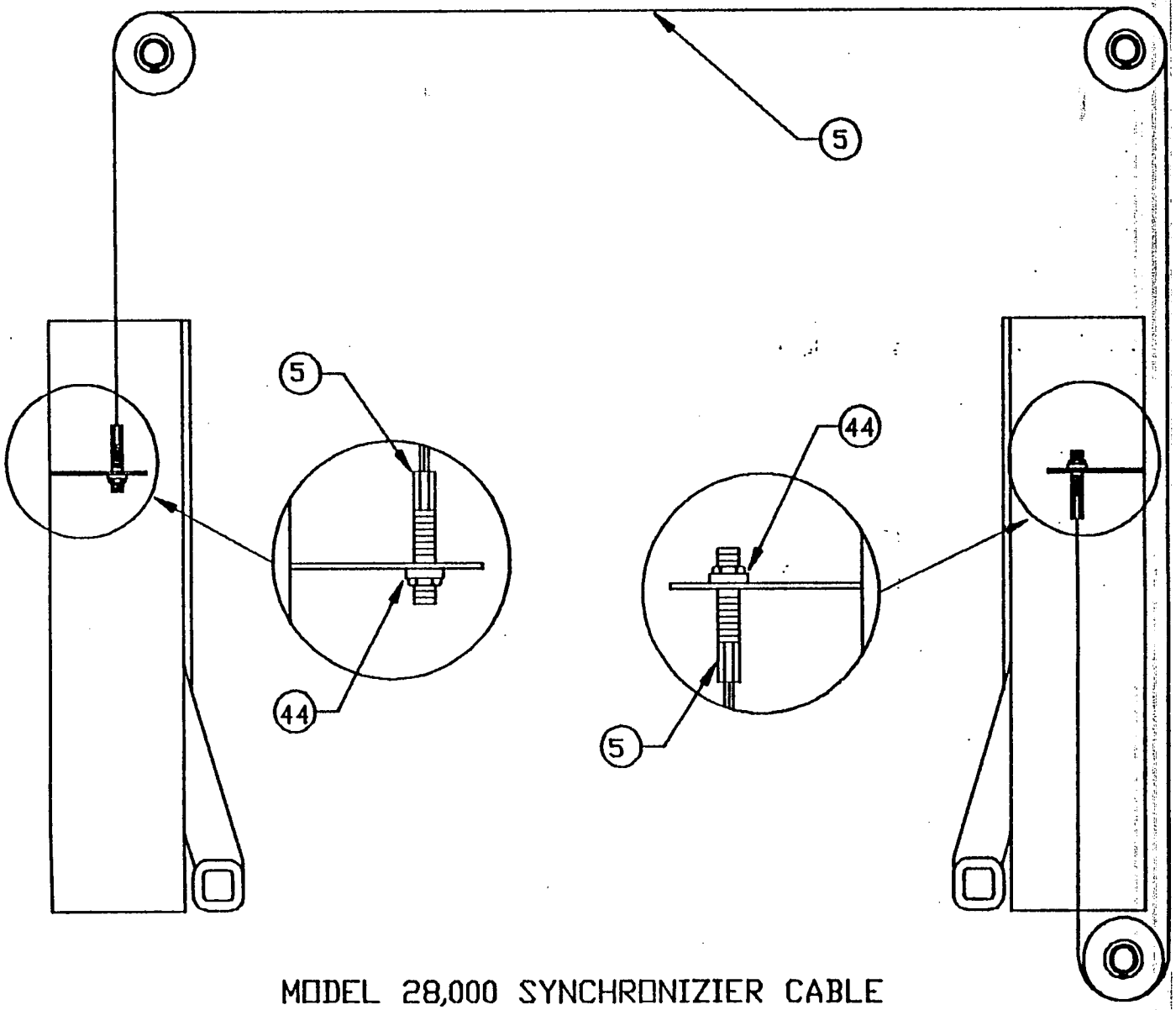


SLIDE BLOCK & GRAVITY LATCH ARRANGEMENT

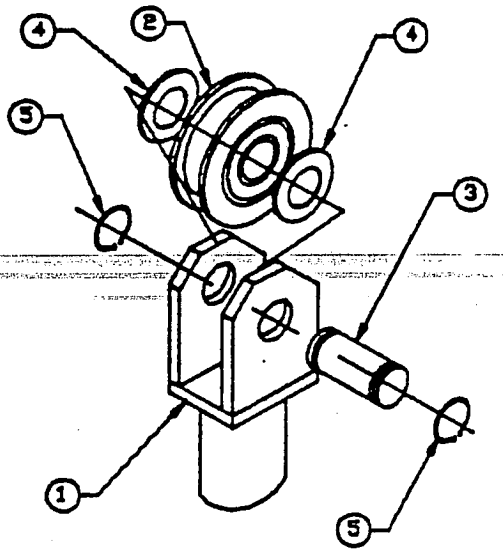
MODEL 28,000

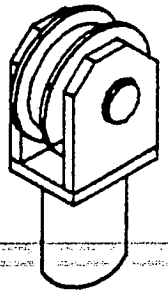
NOTE:

ONE SET CABLE SHOWN.
SECOND CABLE OPPOSITE HAND



MODEL 28,000 SYNCHRONIZIER CABLE





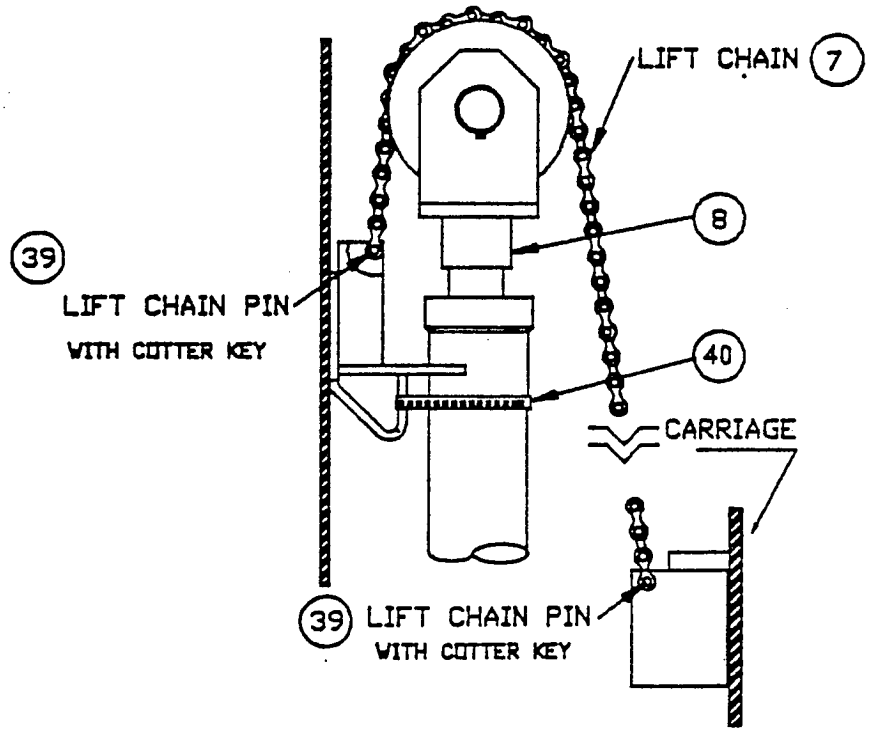
CYLINDER ROD EXTENSION ASS'

PART NUMBER 200032

ITEM ⑧

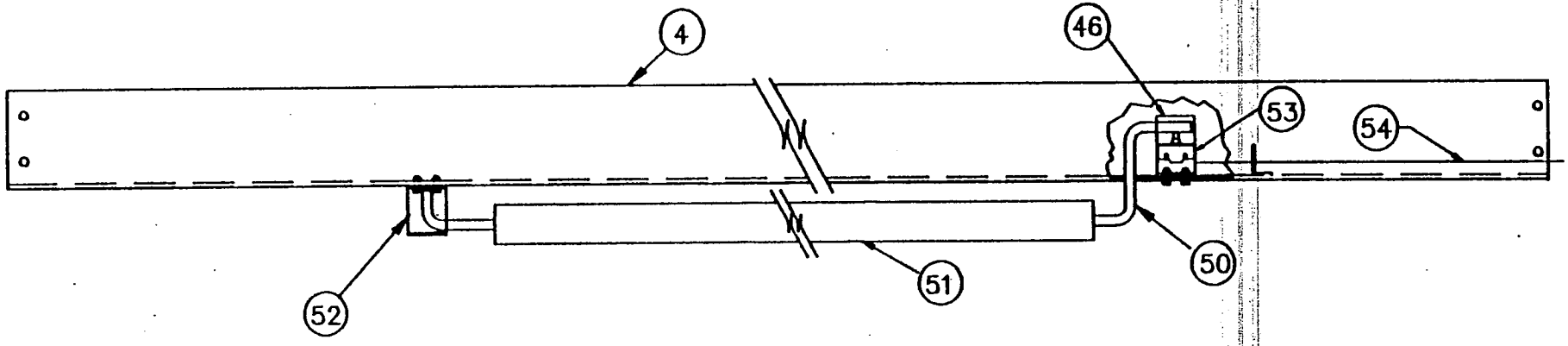
ASS'Y PARTS LIST

NO.	DESCRIPTION	PART NO.
1	TANG WELDMENT	200029
2	ROLLER ASS'Y	200031
3	PIN - ROLLER	200030
4	SPACER WASHER	200144
5	RETAINER RING	200011



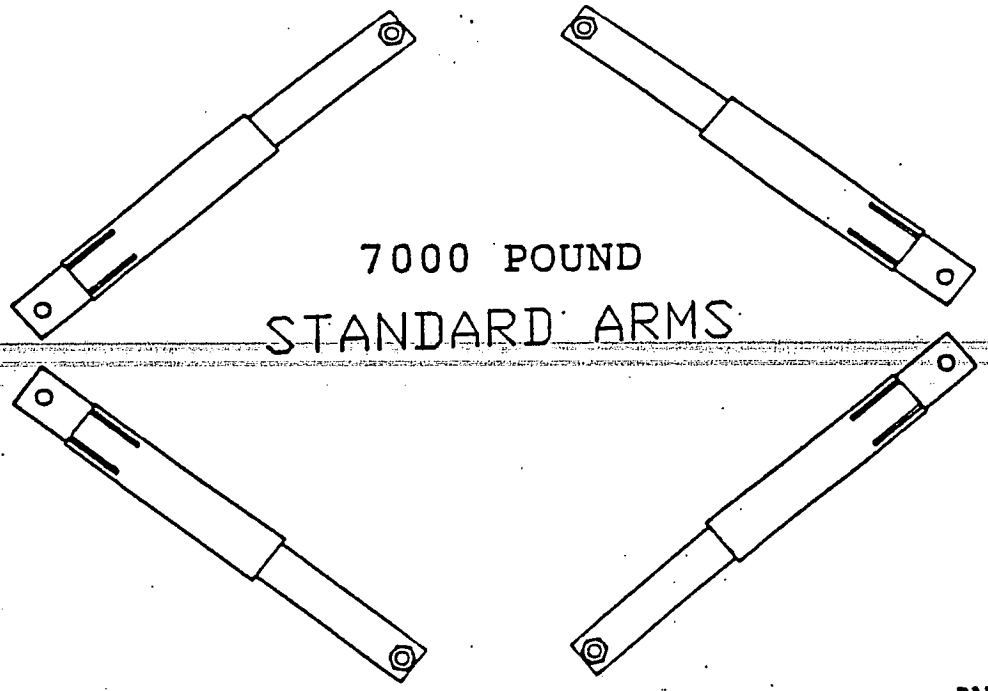
DRIVE CHAIN ASS'Y

MODEL 21,000,28,000,31,000,33,000 & 35,000

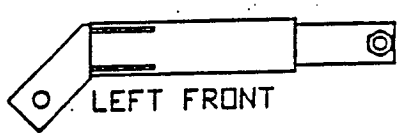


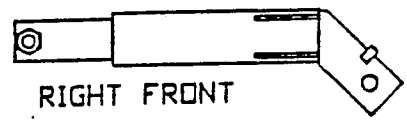
SHUTOFF BAR ASSEMBLY
MODEL 28,000

7000 POUND
STANDARD ARMS

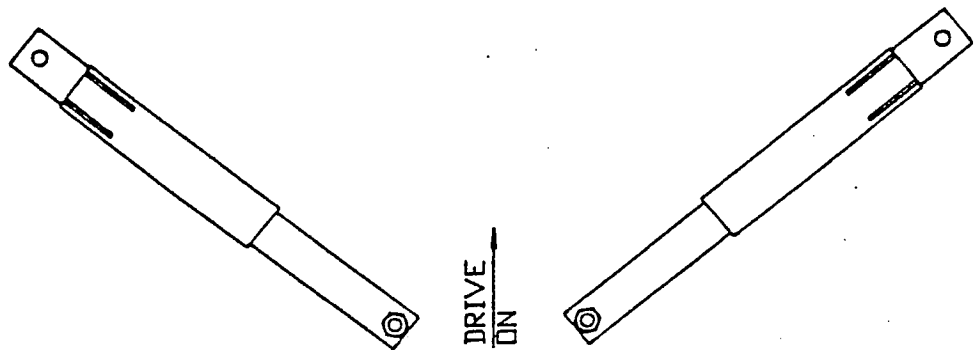


DESCRIPTION	FOOT PAD STYLE	PART NO.
SET 7000# STD. ARMS INCLUDES ARM PINS AND FOOT PADS	3½" STEEL WITH RUBBER INSERT	200199
	3½" FLAT RUBBER PAD	200059
7000# STANDARD ARM ONLY		200048





7000 POUND
ASYMMETRICAL



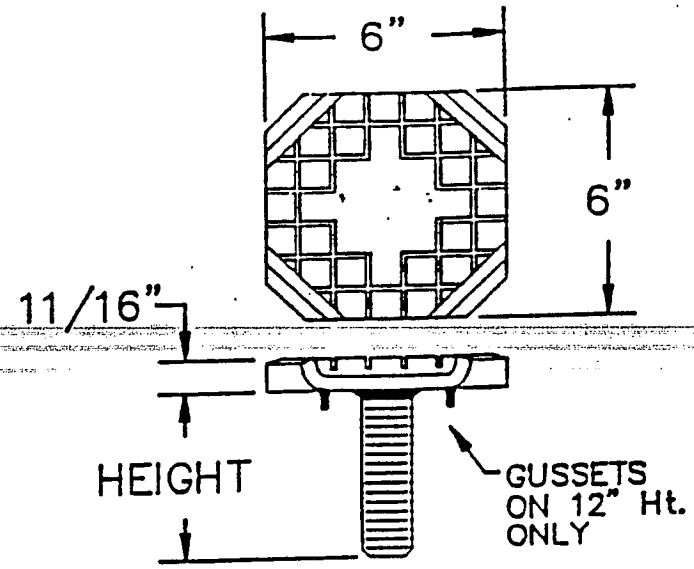
DESCRIPTION	FOOT PAD STYLE	PART NO.
SET 7000# ASYMMETRICAL ARMS INCLUDES ARM PINS & FOOT PADS	3½" STEEL WITH RUBBER INSERT	200198
	3½" FLAT RUBBER PAD	200060
7000# LEFT FRONT ASYM. ARM ONLY		200052
7000# RIGHT FRONT ASYM. ARM ONLY		200051
7000# REAR ASYM. ARM ONLY		200050

CHALLENGER FOOT PADS

STEEL PAD WITH RUBBER INSERT
(REPLACEABLE RUBBER INSERT)

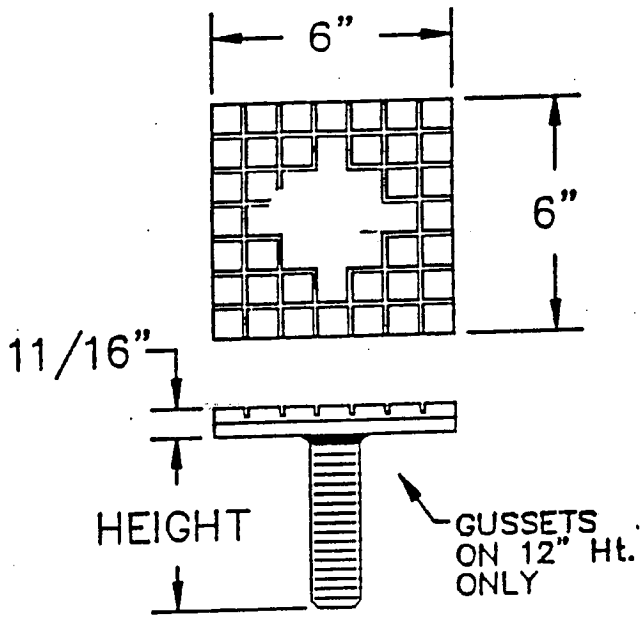
HEIGHT	PART NO.
3.5"	* 200100
4.5"	200079
8"	200083
10"	200084
12"	200085

* STD. WITH NEW LIFT
Replaceable Pad Kit #200086

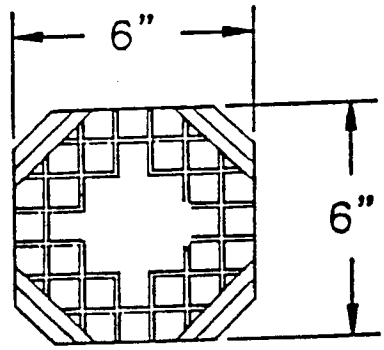


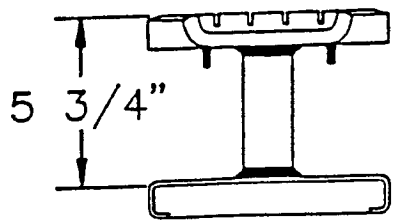
FLAT STYLE RUBBER PAD
(NON-REPLACEABLE RUBBER)

HEIGHT	PART NO.
3.5"	200099
4.5"	200034
8"	200035
10"	200142
12"	200127



SLIP ON EXTENSION PAD
(FITS STEEL PAD WITH RUBBER INSERT)





PART NO. 200188

REPLACEMENT INSERT KIT
PART #200086

CHALLENGER SPIRIT 3
MODEL 28,000

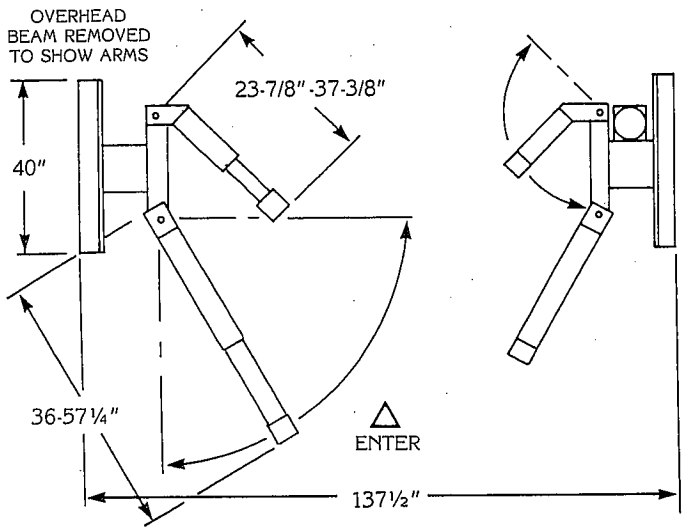
ITEM	PARTS NO.	QTY./LIFT	DISCRIPTION
1	280005	1	POWER SIDE COLUMN COMPLETE
2	280004	1	IDLER SIDE COLUMN COMPLETE
3	280003	2	CARRIAGE ASSEMBLY(INCLUDES GRAVITY LATCH ASSY AN LIFT CHAIN)
	280001		CARRIAGE WELDMENT ONLY WITH DECAL AND GROMMET
4	280009	1	OVERHEAD ASSEMBLY
5	280019	2	SYNCHRONIZIER CABLE OVERHEAD
6	200004	8	ANCHOR BOLTS
7	200046	2	LIFT CHAIN
8	200032	2	CYLINDER ROD EXTENSION ASSEMBLY
9	200144	6	WASHER SPACER
10	280020	6	ROLLER FOR SYNC CABLE
11	280022	6	SNAP RING
12	200202	2	JAM NUT FOR STOP BOLT
13	200166	2	1/2" STOP BOLT
14	200100	4	STD. STEEL PAD WITH RUBBER INSERT(3 1/2" SCREW)
15	210047	4	PLASTIC PLUG FOR BASE
16	200033	4	SWIVEL ARM PIN
17	200039	2	SOFT GRAVITY LATCH RELEASE HANDLE ASSY
18	200013	16	CARRIAGE SLIDE BLOCKS
19	200040	2	GRAVITY LATCH ASS'Y (includes items 20,21,&22)
20	200155	2	GRAVITY LATCH RELEASE BAR LOCKNUT
21	200154	2	GRAVITY LATCH RELEASE BAR
22	200156	2	GRAVITY LATCH RELEASE BAR STOP PIN
23	200151	2	GRAVITY LATCH MOUNTING BOLT
24	200152	2	GRAVITY LATCH MOUNTING LOCKNUT
25	200001	2	HYDRAULIC CYLINDER(SPECIFY SERIAL NUMBER)
26	200072		WEBSTER POWER PACK 230V SINGLE PHASE
27	200002	1	BARNES POWER PACK 230V SINGLE PHASE
	200020	only	BARNES POWER PACK 460/230V THREE PHASE
28	200096	1	HYDRAULIC STRAIGHT CONNECTOR "O" RING X TUBE
29	200025	1	HYDRAULIC 90 SWIVEL ELBOW
30	200241	1	HYDRAULIC LINE POWER PACK TO BACK OF COLUMN
31	200007	1	HYDRAULIC 90 DEG. ELBOW TUBE X TUBE
32	210005	1	HYDRAULIC TEE TUBE X TUBE X TUBE
33	200038	2	HYDRAULIC LINE CYL. TO BACK OF COLUMN

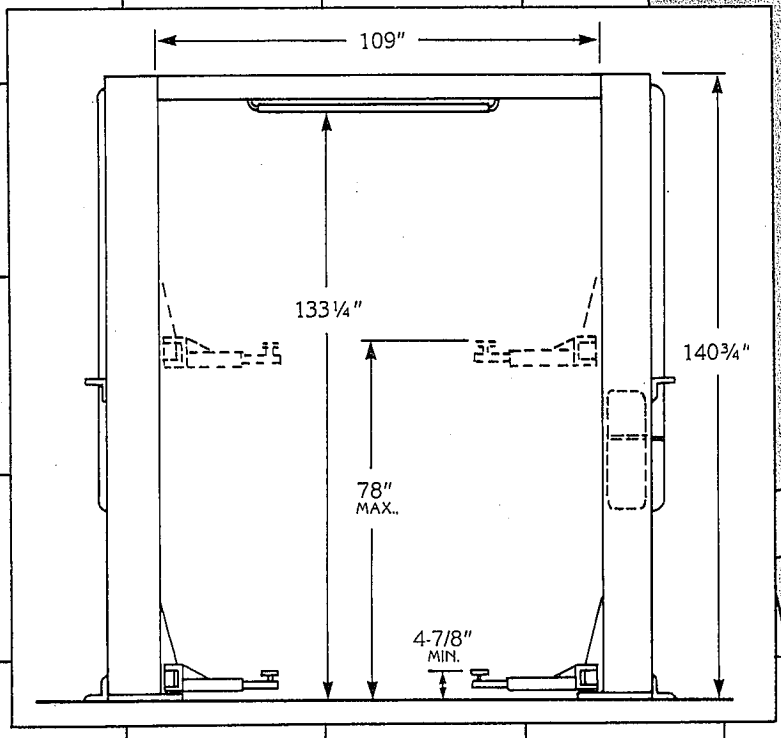
CHALLENGER SPIRIT 3
MODEL 28,000

ITEM	PART NO.	QTY./LIFT	DISCRIPTION
34	210022	1	HYDRAULIC LINE EXTENSION
35	280016	1	HYDRAULIC LINE TEE TO OVERHEAD
36	210007	1	HYDRAULIC LINE OVERHEAD
37	200058	2	HYDRAULIC "O" RING PLUG
38	280017	1	HYDRAULIC LINE OVERHEAD TO BACKSIDE IDLER SIDE
39	200148	4	LIFT CHAIN PIN
40	200047	2	CLAMP FOR HYDRAULIC CYLINDER
44	280018	4	LOCKNUT FOR ADJUSTMENT STUD
45	210045	1	PIVOT BRACKET
46	200134	2	RUBBER GROMMET - CARRIAGE
47	200026	1SET	RUBBER DOOR CUSHION (ONE SET OF 6pcs)
49	210021	2	RUBBER GROMMET FOR OVERHEAD
50	210042	1	SHUTOFF BAR OVERHEAD (WITH CUSHION)
51	210024	1	SHUTOFF BAR CUSHION
52	210044	1	LIMIT SWITCH MOUNTING BRACKET
53	210043	1	LIMIT SWITCH
	210031	1	WIRE OVERHEAD
	210004	2	GUSSET
56	210027	8	BOLT FOR OVERHEAD
57	210028	8	NUT FOR OVERHEAD
58	210029	8	FLAT WASHER FOR OVERHEAD
59	200014	2	HYDRAULIC UNION STRAIGHT
60	200153	2	COTTER KEY FOR GRAVITY LATCH HANDLE
61	200008	2	HYDRAULIC 90 DEG. CONNECTOR "O"RING X TUBE
	280018	1	DECAL SET
	280011	1	HARDWARE BOX
	280025	1	INSTALLATION AND OPERATION MANUAL
	200249	1	A.S.I. LIFTING MANUAL
	280026	1	HYDRAULIC LINE PACKAGE (SHIPPED LOOSE IN COLUMN, INCLUDES ITEMS 30, 31, 34, 36, 38, and 1-59)

3-22-90

Model 28000





SPECIFICATIONS:

Type: Surface Mounted double post with equalized hydraulic cylinders on each side.

Lift Capacity: 5500 lbs. capacity based on ANSIB153.1.

Power: Self-contained 2 H.P. motorpump unit operating on 230 volt, 60 cycle, single phase current. Other motors on request.

Minimum Arm Height: 4-7/8 inches.

Maximum Arm Height: 78 inches.

Overall Height: 140¾ inches.

Overall Width: 137½ inches.

Lifting Speed: Fully raised in 45 seconc

The Challenger is fully warranted to be free from defective materials and workmanship for five years' service from date of installation under normal use and operation; first year parts and labor, four years thereafter, parts. This is provided that the equipment has not been subjected to misuse, abuse, neglect, accident or alteration and that the product has been installed and used according to the manufacturer's specifications.

Manufacturer reserves the right to change componen specifications without notice.

Made in U.S.A.

VBM

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AUTOMOTIVE LIFT INSTITUTE
ALI
MEMBER