

BLACKHAWK®

LIFTING EQUIPMENT

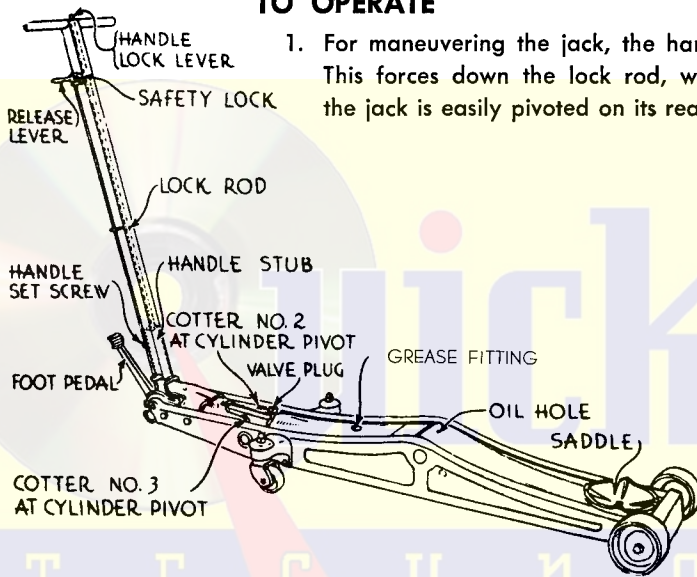
instructions & repair parts

MODEL SJ-20
SERVICE JACK
Capacity 20 Ton

TO ASSEMBLE

1. Check the handle set screw for tightness.
2. Remove and discard the screw from the filler plug. This is very important, as the vent hole must always be kept open so the jack can "breathe."

TO OPERATE



1. For maneuvering the jack, the handle is locked to the frame by depressing the Lock Lever. This forces down the lock rod, which locks the handle in one of two positions, after which the jack is easily pivoted on its rear casters.

2. Having placed the jack in position, the saddle is raised to the load by means of the foot pedal. On cars with independent suspension, it is often advantageous to operate this pedal by hand while watching to assure desired saddle to car contact. Light loads may be lifted with the foot pedal alone, which has quicker action than the handle.
3. Pump with the handle for easy lifting.
4. To lower the load, pull back gently on the release lever.
5. Always use the Safety Lock attached to the release lever to prevent operation of the release either accidentally or carelessly.

TO REFILL

Remove the filler plug and with the saddle DOWN pour in Blackhawk Hydraulic Jack Oil until the level comes up to within $\frac{1}{4}$ " to $\frac{3}{8}$ " below filler hole. Overfilling causes excess to spurt out the vent hole as jack is raised. Insufficient oil causes jack to lift only part way. Always be sure to put in oil only when the saddle is down. Be careful not to let any dirt get into the reservoir while the Filler Plug is out.

TO SERVICE

1. Keep all working parts thoroughly lubricated. Grease Zerk fitting regularly. Oil should also be put in the handle pivot and foot pedal.
2. Packing nuts at the piston and pump plunger should be kept moderately tight. These packings are NOT under high pressure, and should only be tight enough to prevent leakage.
3. Ball valves may be removed for inspection and cleaning by removing the Valve Plug and turning the jack on its side, when they will roll out.

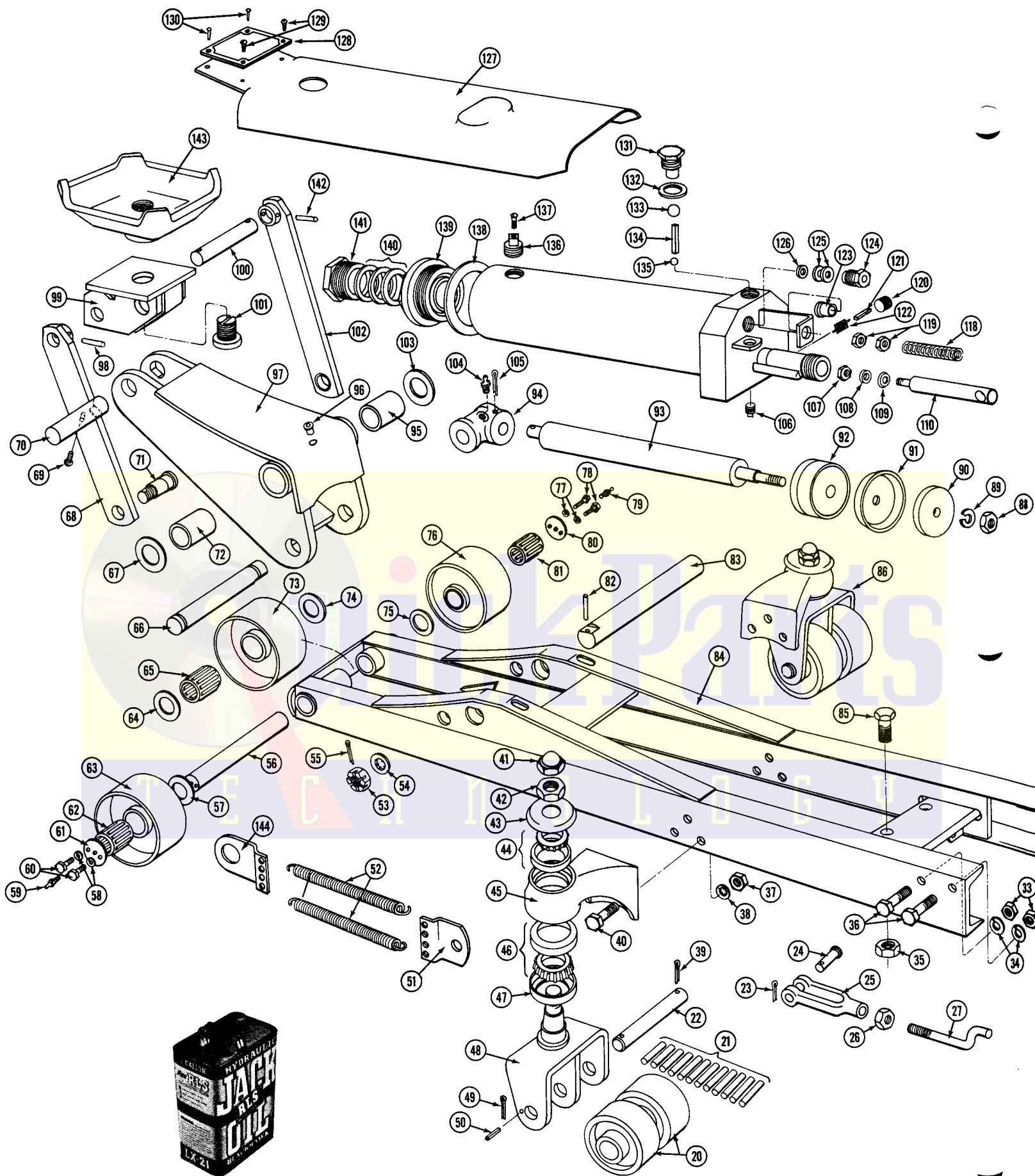
IMPORTANT: Whenever it is necessary to loosen or remove the Valve Plug, the gasket should be replaced

with a new one. Oil leakage at this point is usually caused by trying to use an old gasket over again.

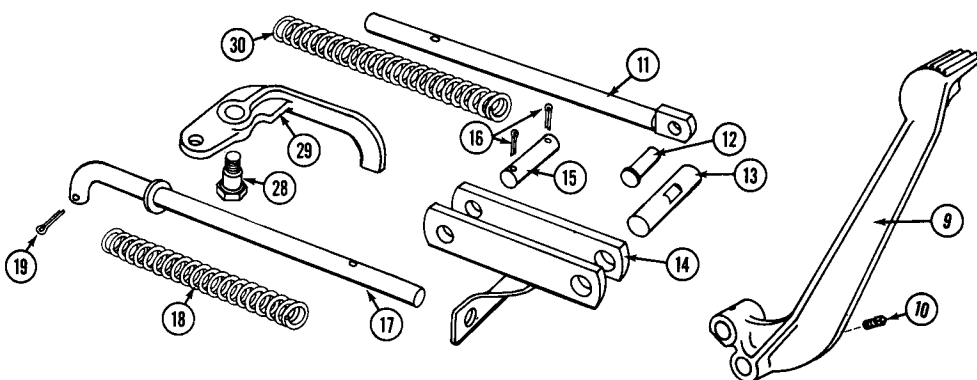
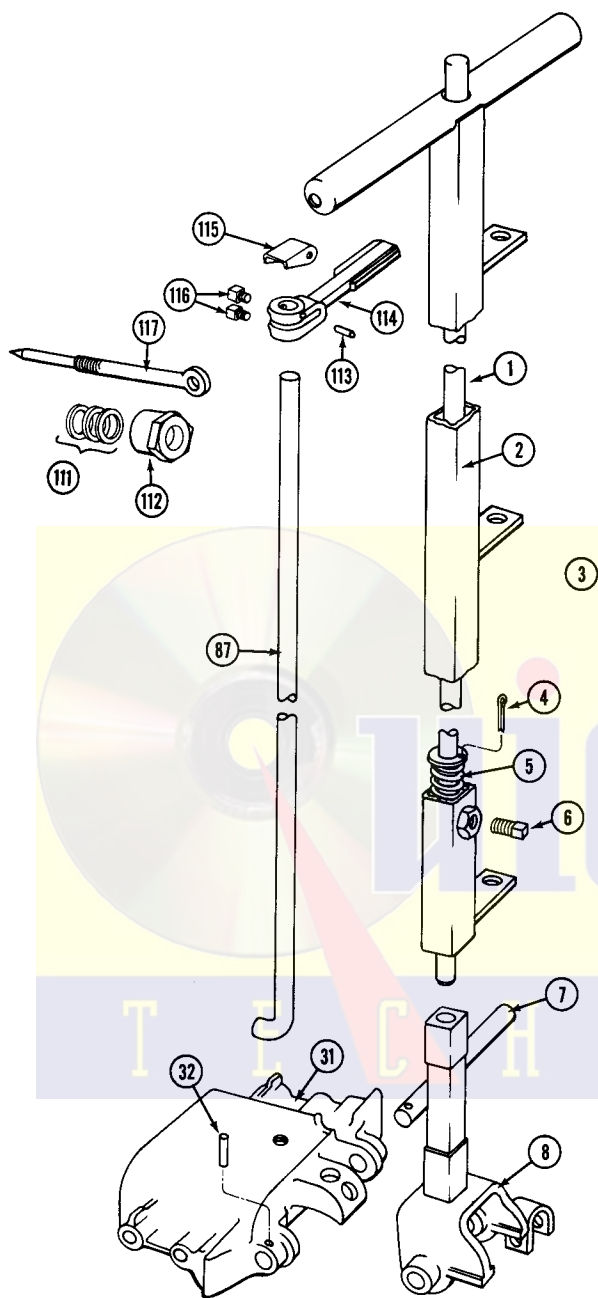
4. If pumping fails to raise the load, the lower ball valve is leaking, and it should be inspected for dirt or other obstruction.
5. If the load raises on the down stroke of the handle and immediately settles back, forcing up the handle, it shows the upper ball valve is leaking.
6. Pumping only on a half stroke of the handle may also be caused by a loose piston packing nut. Be sure this nut is kept tight.

TO RELIEVE WHEN AIR-BOUND

1. Should the oil supply run too low, or in case of air leakage at the Clean Out Plug, the jack may become air-bound and work on only a half-stroke of the handle. Fill the jack with oil, raise the saddle, and then lower the saddle while holding the foot pedal depressed. This will flush out any air in the system, and excess oil may run out of the vent. Be sure jack is properly filled with oil before putting it back in service.



USE ONLY BLACKHAWK
LX-21 JACK OIL AND
GENUINE FACTORY PARTS.



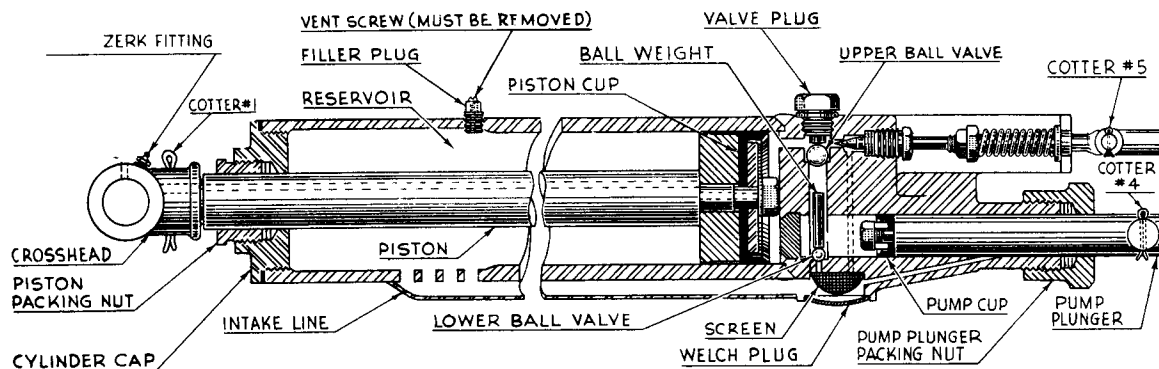
Item No.	Part No.	Description	Item No.	Part No.	Description
1	D468.149	Rod	69	D533.028	Screw
2	D466.135	Handle	70	D532.061	Pin
3	D466.900	Handle Assembly	71	D535.061	Pin
4	D527.061	Cotter Pin	72	D536.039	Bushing
5	D424.183	Spring	73	D541.106	Wheel Center
6	D390.028	Screw	74	D542.108	Washer
7	D469.061	Pin	75	D542.108	Washer
8	D411.133	Yoke	76	D509.106	Front Wheel
9	D412.157	Lever	77	D518.108	Lock Washer
10	D438.028	Screw	78	D420.028	Screw
11	D558.149	Rod	79	D437.188	Fitting
12	D463.061	Pin	80	D501.071	Disc
13	D470.061	Pin	81	D507.107	Bearing
14	D559.062	Link	82	D531.061	Pin
15	D467.061	Pin	83	D563.061	Pin
16	D515.061	Cotter Pin	84	D562.001	Frame
17	D504.149	Rod	85	D561.028	Screw
18	D506.183	Spring	86	D560.154	Caster Assembly
19	D516.061	Cotter Pin	87	D462.149	Rod
20	D398.106	Wheel Caster	88	D571.055	Nut
21	D393.107	Roller	89	D570.108	Lock Washer
22	D553.061	Pin	90	D569.043	Spreader
23	D527.061	Cotter Pin	91	D568.041	Cup
24	D433.061	Pin	92	D567.044	Ring
25	D441.133	Yoke (ADJ)	93	D566.040	Plunger
26	D419.055	Nut	94	D565.264	Head Plunger
27	D557.149	Rod	95	D536.039	Bushing
28	D478.028	Bolt	96	D464.096	Fitting
29	D397.157	Lever	97	D537.103	Lifting Arm
30	D410.183	Spring	98	D531.061	Pin
31	D413.111	Bracket	99	D530.111	Saddle Bracket
32	D528.061	Pin	100	D540.061	Pin
33	D394.055	Nut	101	D538.028	Screw for Saddle
34	D519.108	Lock Washer	102	D534.062	Link
35	D556.055	Nut	103	D461.108	Washer
36	D555.028	Screw	104	D437.188	Fitting
37	D503.055	Nut	105	D564.061	Cotter Pin
38	D418.108	Lock Washer	106	D573.006	Plug
39	D392.061	Cotter Pin	107	D419.055	Nut
40	D554.028	Screw	108	D496.043	Spreader
41	D483.055	Nut	109	D494.041	Cup
42	D423.055	Nut	110	D572.040	Piston
43	D456.020	Cap	111	D495.076	Packing
44	D435.107	Bearing	112	D405.055	Packing Nut
45	D414.111	Bracket	113	D491.061	Pin
46	D436.107	Bearing	114	D400.135	Handle Assem.
47	D513.020	Cap	115	D490.111	Bracket
48	D551.133	Yoke	116	D438.028	Screw (Lock)
49	D392.061	Cotter Pin	117	D447.010	Release Valve
50	D552.061	Pin	118	D427.183	Spring
51	D549.151	Anchor	119	D422.055	Nut
52	D550.183	Spring	120	D581.006	Plug
53	D547.055	Nut	121	D512.999	Magnet
54	D546.108	Washer	122	D580.018	Screen
55	D545.061	Cotter Pin	123	D452.039	Bushing
56	D544.104	Axle	124	D454.055	Nut
57	D542.108	Washer	125	D488.076	Packing
58	D518.108	Lock Washer	126	D498.043	Spreader
59	D437.188	Fitting	127	D582.098	Cover
60	D420.028	Screw	128	SJ20.026	Decal
61	D501.071	Disc	129	D522.028	Screw
62	D507.107	Bearing	130	D523.003	Rivet
63	D543.106	Front Wheel	131	D578.006	Plug
64	D542.108	Washer	*132	D443.167	Gasket
65	D507.107	Bearing	*133	D440.016	Ball
66	D540.061	Pin	134	D465.186	Spacer
67	D461.108	Washer	*135	D430.016	Ball
68	D534.062	Link	136	D457.006	Plug
			137	D522.028	Screw
			*138	D577.161	Gasket
			139	D576.020	Top Cap
			*140	D575.076	Packing
			141	D574.055	Nut
			142	D531.061	Pin
			143	D529.045	Saddle
			144	D548.151	Anchor

ASSEMBLY

SJ20.05A.....Complete Power Unit
Available either as exchange
or outright purchase

*For economy repair, use Jack/Saver Kit
SJ20K-3. Items included in this Kit are
marked with asterisk *.

■ Item No. 114 Includes Item No. 113,
114, 115 and 116.



TO REMOVE CYLINDER

1. Remove the cotter (No. 1) in the cross head.
2. Remove cotters (No. 2 and No. 3) at the cylinder pivot.
3. Remove the cotter (No. 4) and pin in the pump.
4. Remove the cotter (No. 5) and pin in the release yoke.
5. Raise the lifting arm by means of the saddle and place a block of wood between the arm and frame to hold up the arm.
6. This releases the cylinder at the forward end, so that it may be removed as a complete unit, for service or replacement with a factory reconditioned unit.
7. Remove the nut and washer which holds the cup at the end of the piston; put in the new cup, and replace nut and washer.
8. In fitting the new cup into the cylinder, USE GREAT CARE as the cup passes the filler plug hole not to cut or otherwise damage the cup. Then replace the cylinder cap.
9. To replace the small cup on the pump, turn the cylinder unit pump end upward in the vise.
10. Unscrew the packing nut and pull out the pump plunger. Remove the nut that holds cup to end of plunger; insert new cup, and replace nut.
11. Be careful NOT to force the cup through the packing nut, as this will damage the cup. Instead, slip the packing nut over the plunger from the other end. Replace plunger and tighten packing nut moderately — just enough to prevent leakage.
12. Cylinder unit is replaced in jack by inserting five cotters and two pins in reverse order described above. Start with instruction 4, under "To Remove Cylinder" and replace cotters in order — 5, 4, 3, 2, and 1. Release linkage should then be re-adjusted.

TO REPLACE CUP

1. After removing the cylinder unit as described above, place it in a vise. Note that the vise jaws should grip the forging, not the steel cylinder. Set the unit in the vise with the forging downward, and the steel cylinder and piston up.
2. Unscrew the cylinder cap and lift the piston out of the cylinder.

Guarantee

Blackhawk guarantees its Lifting Equipment and Porto-Power Repair Tools against defects in workmanship and material for 90 days from date of delivery to the user. Only exception is chain, which follows the trade custom of its manufacturers and cannot be guaranteed.

When question of warranty arises, the user should send his unit to the nearest Blackhawk Franchised Service Depot for inspection, transportation to be prepaid and evidence of delivery date furnished. Contact Blackhawk Mfg. Co., Milwaukee, Wis., for list of Franchised Service Depots.

If the difficulty comes under the terms of our guarantee, the Franchised Service Depot will *repair or replace parts affected* and return prepaid. Our guarantee does not cover ordinary wear and tear, abuse, misuse, overloading, altered products or use of improper fluid.

Franchised Service Depots



For quality workmanship with genuine Blackhawk parts select a Franchised Blackhawk Service Depot for your repair work. Only repairs performed by a franchised service depot displaying this official franchise service depot sign are backed with full factory guarantee. The Classified Section in your Phone Book lists your nearest Franchised Service Depot.

BLACKHAWK MFG. CO.

MILWAUKEE 46, WISCONSIN

