TROUBLE SHOOTING AIDS

"A" & "J" HYDRAULIC HOLOMATICS (INCLUDING DEEP HOLE MODELS)

Feed rate adjustments at manifold closed. Feed rate adjustments at manifold closed. Tool or spindle binding in external adjustment and support. Advance feed rate adjustment and support and support supply sine. Check adjustments. Check adjustments. Re-adjust. Replace—Ref. Eng. Data Bul. Adjust—Ref. Eng. Data	Trouble	Probable Cause	Check	Remedy
Directional valve at hyd. pump does not actuate. Hyd. supply leaks. No electric power to control circuit. Switches not being actuated. Feed rate adjustments at manifold closed. To lor spindle binding in external advance. Plunger valve assy. on advance side of manifold closed. Advance hyd. polenting. Spindle does not retract. Plunger valve assy. on retract side of manifold closed. Advance hyd. solenoid valve at hyd. pump not working. Spindle fare actuate. Advance hyd. solenoid valve at hyd. pump not working. Spindle does not actuate. Advance hyd. solenoid valve at hyd. pump not working. Spindle does not actuate. Advance hyd. solenoid valve at hyd. pump not working. Spindle does not actuate. Advance hyd. solenoid valve at hyd. pump not working. Spindle fare in manifold closed. Advance hyd. solenoid valve at hyd. pump not working. Switch actuators. Defective "O" rings. Tool or spindle binding in external supply line. Plunger valve assy. Tool or spindle binding in external supply line. Switch actuators. Defective "O" rings. Tool or spindle binding in external supply line. Plunger valve assy. Tool or spindle binding in external supply line. Switch actuators. Defective "O" rings. Tighten or replace. Tighten or replace. Tighten or replace. Tool and filtings. Tighten or replace. Tighten or replace. Tighten or replace. Tighten or replace. Tool and filtings. Tighten or replace. Tighten or replace adjustment at manifold is closed. Adjust—Ref. Eng. Data Bul. Tool and five lose and adjustment at manifold respect and adjustment at manifold respect and adjustment at manifold respect and adjustment in replace. Tool are file refer at adjustment in replace and purple and purple and purple and purple and purpl		No or low hyd. supply pressure.	Hydraulic supply not turned on.	
does not actuate. Hyd. supply leaks. No electric power to control circuit. No electric power to control circuit. Switches not being actuated. Feed rate adjustments at manifold closed. Directional valve at Hyd. pump operates but spinole does not advance. Plunger valve assy. on advance retract. Spinole does not retract. Spinole does not pump not working. Spinole rapid does not retract. Directional valve at hyd. pump not working. Spinole rapid does not retract. Plunger valve assy. on retract side of manifold is closed. Advance hyd. solenoid valve at hyd. pump not working. Spinole rapid does not retract. Plunger valve assy. on retract side of manifold is closed. Advance hyd. solenoid valve at hyd. pump not working. Spinole rapid advance. Directional valve at hyd. pump not working. Spinole rapid advance hyd. solenoid valve at hyd. pump not working. Spinole rapid advance. Directional valve at hyd. pump not working. Spinole rapid advance hyd. solenoid valve at hyd. pump not working. Spinole rapid advance hyd. solenoid valve at hyd. pump not working. Directional valve at hyd. pump not working. Spinole rapid advance hyd. solenoid valve at hyd. pump not working. Spinole rapid advance hyd. solenoid valve at hyd. pump not working. Directional valve at hyd. pump not working. Spinole rapid advance hyd. solenoid valve at hyd. pump not working. Spinole rapid advance hyd. solenoid valve at hyd. pump not working. Spinole rapid advance hyd. solenoid valve and hyd. pump not working. Spinole rapid advance hyd. solenoid valve and hyd. pump not working. Spinole rapid advance hyd. solenoid valve and hyd. pump not working. Spinole rapid advance hyd. solenoid valve and hyd. pump not working. Spinole rapid advance hyd. solenoid valve and hyd. pump not working. Spinole rapid does not retract. Plunger valve assy. and check containing support. Directional valve at hyd. pump not working. Spinole rapid hyd. plunger does not depressibly advanced byd. pump not working. Spinole rapid hyd. plunger hyd. plung				Correct.
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circuit. check fuses. (Solenoid valve action is audible.) Switches not being actuated. Levers & cam bars for proper adjustments at manifold closed. Feed rate adjustments at manifold closed. Directional valve at Hyd. pump operates but spindle beinding in external solution of advance. Plunger valve assy. on advance side of manifold closed. Plunger valve assy. on advance adjustment at manifold closed. Advance feed rate adjustment at adjustment at manifold is closed. Plunger valve assy. on advance adjustment adjustment counterclockwise (clockwise for deep hole units) this action should make the lever arm depress the plunger of the plunger valve assy. Poefective "O" rings. Poefective "O" rings. Plunger valve assy. on retract side of manifold closed. Complete flace and purport. Poefective "O" rings. Plunger valve assy. on retract side of manifold closed. Provided the plunger valve assy. on retract side of manifold closed. Provided the plunger valve assy. Turn retract cam bar knob to make lever arm depress plunger of plunger valve assy. Re-adjust. Re-adjust. Replace—Ref. Cylinder Assy. Bul stream and provide advance and for loosen bracket containing support. Directional valve at hyd. pump port. Directional valve at hyd. pump port. Punger valve assy. on retract side of manifold closed. Plunger valve assy. on retract side of manifold closed. Plunger valve assy. on retract side of manifold closed. Plunger valve assy. on retract side of manifold closed. Provided the provided	_	Hyd. supply leaks.	Check for leaks around fittings.	Tighten or replace.
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support. Advance feed rate adjustment advance. Plunger valve assy. on advance feed rate adjustment adjustment counterclockwise for deep hole units). Plunger valve assy. on advance feed rate adjustment adjustment counterclockwise for deep hole units). Spindle does not retract. Directional valve at hyd, pump operates but spindle does not retract. Plunger valve assy. on advance adjustment counterclockwise for deep hole units). Switch actuators. Defective "O" rings. Directional valve at hyd, pump operates but spindle does not retract. Plunger valve assy. and or directional valve at hyd, pump operates but spindle does not retract. Plunger valve assy. on retract side of manifold closed. Plunger valve assy. on retract side of manifold closed. Plunger valve assy. on retract adjustments. Defectional valve at hyd, pump operates but spindle does not retract. Plunger valve assy. on retract side of manifold closed. Plunger valve assy. on retract true retract and pust advances beyond activate plunger of plunger valve assy. and or bring travel length adjustment adjustment in manifold is closed. Spindle rapid advance feed rate adjustment in manifold is closed. Drive shaft & spindle coupling bind. Seal on hydraulic piston in cylinder assy, and check spilne tube for metal build-up. Spindle rapid advances beyond setting of advance rapid travel length adjustment. Advance plunger assy, in manifold sicks due to defective "O" rings. Oil too heavy in hydraulic system. Dirt in advance plunger valve. Plunger walve assy. on retract feed rate adjustment adjustme				Adjust—Ref. Eng. Data Bul.
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side of manifold closed. adjustment counterclockwise (clockwise for deep hole units) this action should make the lever arm depress the plunger of the plunger valve assy. Ref. Lever Assy. Bul metract. Advance hyd. solenoid valve at hyd. pump not working. Switch actuators. Defective "O" rings. Directional valve at hyd. pump operates but spindle does not retract. Directional valve at hyd. pump operates but spindle does not retract. Directional valve at hyd. pump operates but spindle does not retract. Directional valve at hyd. pump operates but spindle does not retract. Directional valve at hyd. pump operates but spindle does not retract. Directional valve at hyd. pump operates but spindle does not retract. Directional valve at hyd. pump operates but spindle does not retract at hyd. pump operates but spindle does not retract. Directional valve at hyd. pump operates but spindle does not retract side of manifold closed. Directional valve at hyd. pressure should be between 300 to 500 p.s.i. Turn retract cam bar knob to make lever arm depress plunger of plunger valve assy. Retract feed rate adjustment in manifold is closed. Dirive shaft & spindle coupling bind. Spindle rapid advances beyond setting of advancerapid travel length adjustment. Spindle rayel length adjustment. Advance plunger assy. in manifold sticks due to defective "O" rings. Oil too heavy in hydraulic system. Directional valve at pump. Disengage tool and/or loosen. Re-align & cycle. Replace—Ref. Cylinder Assy. Bul still find plunger does not depress—reset cam follower or lever arm or lever assy. Ref. Lever Assy. Bul find plunger valve assy. Replace piston seal Ref. Cylinde Assy. Bul spindle travel, oil leaks into drive shaft area. Advance plunger assy. in manifold sticks due to defective "O" rings. Oil too heavy in hydraulic system. Directional valve at pump. Directional valve at pump. Directional valve at pump. Tool or spindle travel, oil leaks into drive shaft area. Plunger movement should follow lever movement. Directi	spindle does not advance.			Adjust—Ref. Eng. Data Bul.
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support. Support		Defective "O" rings.	"O" ring seals in cylinder assy, and/or directional valve at pump.	Replace—Ref. Cylinder Assy. Bul.
Low hyd. supply pressure. Description Low hyd. supply pressure. Hyd. pressure should be between 300 to 500 p.s.i.	Directional valve at hyd, pump			Re-align & cycle.
side of manifold closed. Retract feed rate adjustment in manifold is closed. Drive shaft & spindle coupling bind. Spindle rapid advances beyond setting of advancerapid travel length adjustment. Spindle rapid advancerapid travel length adjustment. Advance plunger assy. in manifold travel. Advance plunger assy. in manifold travel. Advance plunger assy. in manifold sticks due to defective "O" rings. Side of manifold closed. Turn retract feed rate knob counterclockwise to open. Remove spindle assy. and check spline assy. and check spline tube for metal build-up. Complete lack of control of spindle travel. Scal on hydraulic piston in cylinder assy. is worn or broken. Seal on hydraulic piston in cylinder assy. is worn or broken. Somplete lack of control of spindle travel, oil leaks into drive shaft area. Advance plunger assy. in manifold sticks due to defective "O" rings. Oil too heavy in hydraulic system. Dirt in advance plunger valve Remove & inspect valve for dirt. Set cam follower or lever arm or lever assy. Ref. Lever Assy. Bul Adjust. Turn retract feed rate knob countercles knob counterclockwise to open. Adjust. File drive spline & spline tube fo free slip movement. Lubricate. Complete lack of control of spindle travel. Scomplete lack of control of spindle travel, oil leaks into drive shaft area. Plunger movement should follow lever movement. Seplace—Ref. Cylinder Assy. Bul assy.—Ref. Manifold Assy.—Ref. Manifold Assy.—Ref. Manifold Assy.—Ref. Manifold Assy.—Ref. Manifold Assy.—Ref. Ma	spindle does not retract.	Low hyd. supply pressure.		Regulate.
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Spindle rapid advances beyond setting of advance rapid travel length adjustment. Seal on hydraulic piston in cylinder assy. is worn or broken. Hyd. piston section retaining ring in cylinder assy., loose or broken. Advance plunger assy. in manifold sticks due to defective "O" rings. Oil too heavy in hydraulic system. Seal on hydraulic piston in cylinder assy. is worn or broken. Complete lack of control of spindle travel. Complete lack of control of spindle travel, oil leaks into drive shaft area. Replace—Ref. Cylinder Assy. Bull. Somplete lack of control of spindle travel. Seal on hydraulic piston in cylinder Assy. Bull. Complete lack of control of spindle travel. Seal on hydraulic piston in cylinder Assy. Bull. Replace—Ref. Cylinder Assy. Bull. Replace—Ref. Cylinder Assy. Bull. Replace—Ref. Cylinder Assy. Bull of travel. Somplete lack of control of spindle travel. Seal on hydraulic piston in cylinder Assy. Bull. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic piston seal Ref. Cylinder Assy. Bull of travel. Seal on hydraulic piston in cylinder Assy. Bull of travel. Seal on hydraulic pi	· _			Adjust.
advances beyond setting of advance rapid travel length adjustment. Hyd. piston section retaining ring in cylinder assy., loose or broken. Advance plunger assy. in manifold sticks due to defective "O" rings. Oil too heavy in hydraulic system. Dirt in advance plunger valve der assy. is worn or broken. spindle travel. Assy. Bul. Complete lack of control of spindle travel, oil leaks into drive shaft area. Replace—Ref. Cylinder Assy. Bul. Replace—Ref. Cylinder Assy. Bul spindle travel. Spindle travel. Plunger movement should follow lever movement. Dirt in advance plunger valve Remove & inspect valve for dirt. Replace "O" ring or complete assy.—Ref. Manifold Assy. Bul spindle travel. Replace—Ref. Cylinder Assy. Bul spindle travel. Spindle travel. Replace—Ref. Cylinder Assy. Bul spindle travel. Spindl				File drive spline & spline tube for free slip movement. Lubricate.
Hyd. piston section retaining ring in cylinder assy., loose or broken. Advance plunger assy. in manifold sticks due to defective "O" rings. Oil too heavy in hydraulic system. Dirt in advance plunger valve Hyd. piston section retaining ring somplete lack of control of spindle travel, oil leaks into drive shaft area. Replace—Ref. Cylinder Assy. Bul spindle travel, oil leaks into drive shaft area. Replace—Ref. Cylinder Assy. Bul spindle travel, oil leaks into drive shaft area. Replace—Ref. Cylinder Assy. Bul spindle travel, oil leaks into drive shaft area. Replace—Ref. Cylinder Assy. Bul spindle travel, oil leaks into drive shaft area. Replace—Ref. Cylinder Assy. Bul spindle travel, oil leaks into drive shaft area. Replace—Ref. Cylinder Assy. Bul spindle travel, oil leaks into drive shaft area. Replace—Ref. Cylinder Assy. Bul spindle travel, oil leaks into drive shaft area.	Spindle rapid advances beyond setting of advance-rapid travel length adjustment.			Replace piston seal Ref. Cylinder Assy. Bul.
fold sticks due to defective "O" lever movement, assy.—Ref. Manifold Assy. Bull rings. Oil too heavy in hydraulic system. 150-200 S.U.S. at 100°F hyd. oil Drain & refill. recommended. Dirt in advance plunger valve Remove & inspect valve for dirt. Clean & re-install Ref. Manifold			spindle travel, oil leaks into drive	Replace—Ref. Cylinder Assy. Bul.
recommended. Dirt in advance plunger valve Remove & inspect valve for dirt. Clean & re-install Ref. Manifold		fold sticks due to defective "O"		Replace "O" ring or complete assy.—Ref. Manifold Assy. Bul.
• • • • • • • • • • • • • • • • • • • •		Oil too heavy in hydraulic system.		Drain & refill.
			Remove & inspect valve for dirt.	Clean & re-install Ref. Manifold Assy. Bul.

Trouble	Probable Cause	Check	Remedy
Erratic feed rate.	Advance plunger valve assy. in manifold not closing.	Foreign material fouling valve.	Clean—Ref. Manifold Bul.
		Valve worn.	Replace assy. Ref. Manifold Assy. Bul.
	Advance cam bar worn.	Check.	Replace—Ref. Cam Bar Bul.
Feed rate slows.	Dirt in compensating feed valve assy. in manifold.	Remove and inspect assy. for dirt.	Clean & replace 22093-2 filters— Ref. Manifold Assy. Bul.
· _	Parts of compensating feed valve assy. in manifold worn.	Remove & inspect.	Replace assy. Ref. Manifold Assy. Bul.
_	Feed rate adjustments at manifold closed.	Make sure feed rate adjustment is open 4 or 5 turns.	Adjust—Ref. Eng. Data Bul.
Spindle surges on tool break thru.	Hyd. supply pressure too low.	Supply pressure should be between 300-500 p.s.i.	Regulate.
	Thrust required to advance tool at desired feed rate approaches or exceeds thrust developed by Holomatic.	Consult drilling speed, feed and thrust charts and compare with developed thrust of unit.	Decrease feed rate. Increase input supply pressure. Stagger drill lengths. Decrease size or number of tools.
FOR D	EEP HOLE UNITS ONLY		
Spindle full retracts after each peck feed.	Retract cam bar not adjusted correctly to actuate retract midpoint limit switch.	Check adjustment.	Adjust—Ref. Eng. Data Bul. & Cam Bar Bul.
	Retract midpoint limit switch is malfunctioning.	Check limit switch adjustment.	Replace if defective. Ref. Control Section Bul.
Spindle recycles	Drill.	Check cutting edges.	Replace.
but does not - advance beyond	Advance cam bar friction adjustment.	Check the adjustment.	Adjust—Ref. Cam Bar Bul.
the last stroke.		Worn parts and/or cam bar.	Replace—Ref. Cam Bar Bul.
	_	Check for interference w/driver- sleeve.	Correct or replace Ref. Bul. 21076-00.
-	Low supply pressure.	Supply pressure should be between 300-500 p.s.i.	Regulate.
	Thrust required to advance tool at desired feed rate approaches or exceeds thrust developed by Holomatic.	Consult drilling speed, feed and thrust charts and compare with developed thrust of unit.	Decrease feed rate. Increase input supply pressure. Stagger drill lengths. Decrease size or number of tools.
Spindle peck drills 1 or 2 times then stops in full retract without completing operation.	Retract midpoint limit switch not	Check lever action.	Adjust-Ref. Eng. Data Bul.
	functioning. —	Check limit switch.	Replace.
Feed rate slows.	Drill re-approach clearance setting incorrect.	Check re-approach clearance. This is adjustable but should remain approximately the same thru out the entire stroke.	Adjust—Ref. Eng. Data Bul.—Cam bar replacement may be required.

August, 1978 Bul. 22146-1

MAINTENANCE PROCEDURE HAUSE HYDRAULIC HOLOMATIC POWER FEED UNITS

GENERAL---

"Maintenance" can be an effective tool in keeping Holomatic equipment operational to a degree that will greatly reduce interruptions in the working schedule.

Based on the assumption that most malfunctions and failures are progressive in nature, spot checks of functions and conditions in critical areas can forecast events of this nature. If at all possible, this work should be done by the same qualified personnel, so that meaningful comparisons are possible.

The following is intended as a guide for inspections and space is provided for recording dates.

item		Inspection	Remedy	Date
Spindle		Condition of bearings. Test for proper adjustment —by hand.	Replace bearings or remove assembly for adjustment of nut. (Apply small preload with nut.) By hand.	
		Dry bearing resulting from excessive coolant wash or excessive hi-speed.	12 months re-lubrication interval may extend life. (Push bearing spacer to one side. Fill cavity between bearings and spline tube with grease.)	
Drive Shaft	,	Bearings—same as spindle spline.	No adjustment—tolerate some looseness. 12 months re-lubrication may extend life. (Same procedure as for spindle.)	
Belted Drives	147.1	Belts Check for noise and wear.	Replace worn belts and/or tighten.	
		Pulleys—should be tight run concentric.	Re-tighten pulleys on shafts.	
	*	Gear Reductions—Look for oil leaks.	Repair or replace. Lubricate per manual instruction.	
		Listen for increased noise level from gears and bearings.	Replace and/or lubricate.	

If a breakdown occurs, THE "TROUBLE SHOOTING AIDS" in this Bul. may be helpful.

This Bul. applies specifically to hydraulic, "A" & "J" models. Service manuals also cover most phases of repair work on these.

Supersedes February 15, 1974

HOLOMATIC SERVICE INFORMATION SHEET

Subject: The influence of oil Aniline Points on the volumetric stability of "O" Rings in the Hause Holomatic Units.

General: All "O" ring seals used in Holomatic products are compression moulded of a synthetic rubber selected for stability and resistance to wear.

In certain isolated cases, however, we have found small amounts of volume change (swelling or shrinking) which we attribute to the oil being used in the hydraulic system or injected into the air line for lubrication. When this occurs, we advise the customer to change to an oil that has a controlled aniline point value of between 180°F. and 220°F.

Most commercially available hydraulic fluids have an aniline point value of about 200°F. Normally, these are satisfactory for use in the Holomatic Hydraulic System and also for air lubrication providing they are of a proper viscosity.

As a rule, if swelling occurs, the oil being used has an aniline point value that is too low; and, if shrinking occurs, the oil has an aniline point value that is too high.

Oil companies are aware of these effects and are equipped to provide oils having compatible aniline point values with acceptable non-foaming and lubricating qualities.

More detailed information on the subject is available from "O" ring manufacturers and oil companies.

Recommended Hydraulic Oils for use in Hause Holomatic Equipment

Hause Holomatic Model	Brand Name	Approximate Aniline Degrees F
All J6 and A6 Hyd. Units	Standard Industron #44	211
and air lubricating equipment.	Mobil DTE Light	215
equipments	:Mobil DTE #24	215
All J2 and A2 Air Hyd.	Standard Industron #34	204
Units.	Mobil Velocite Oil #6	205
Air Line Lubricators.	Any of the above—but with adjustment due to viscosity.	