



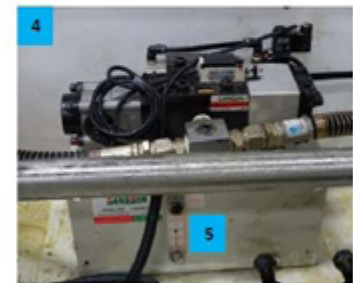
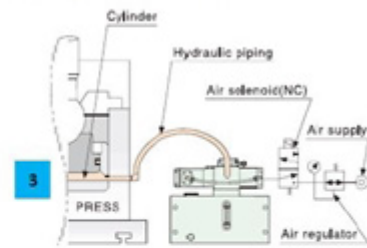
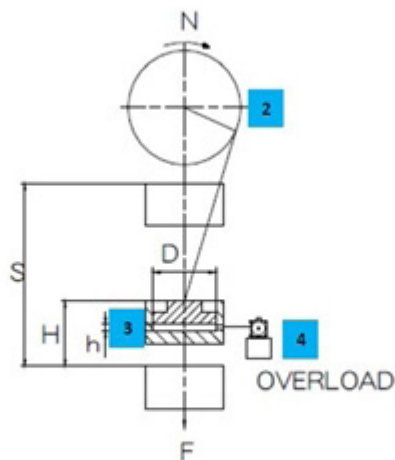
PRESS MAINTENANCE TIP-2

HOLP / HYDRAULIC OVERLOAD 101

**PASS THIS ON TO YOUR MAINTENANCE TEAMS
YOUR PRESSES & CFO WILL BE GLAD YOU DID**

HOLP 101, Hydraulic Overload Systems like regular exercise to be ready for your next overload incident. If your HOLP system is maintained properly it can save you thousands of \$\$ and downtime. Read On for more on HOLP Systems and circulate this to your maintenance teams.

HOLP OVERLOAD SYSTEMS



1. HOLP ON / RELEASE KEY AT MOS / I-PRESS OPERATOR RUN STATION
2. SHOWING CRANK ANGLE OF SLIDE IN DOWNWARD MOVEMENT TOWARD BDC / BOTTOM DEAD CENTER
3. HOLP PISTONS ARE LOCATED UNDER SLIDE ADJUST BALL SCREW INSIDE OF SLIDE
4. HOLP PUMP AND TANK ARE NORMALLY LOCATED INSIDE OF SLIDE BODY ON LARGER PRESSES AND CAN BE MOUNTED OUTSIDE OF SLIDE ON PRESS FRAME
5. TANK SITE GAGE SHOULD BE 3/4 FULL WHEN SYSTEM IS PRESSURIZED, THIS PROVIDE ROOM FOR OIL EVACUATION FROM PISTONS WHEN HOLP IS RELEASED

NOTE: WE RECOMMEND THAT HOLP IS DUMPED AND RE-PRESSURIZED ONCE PER WEEK, (SEE PAGE 29 FOR INSTRUCTIONS)

HOLP 101: Presses equipped with Hydraulic Overload are normally set to protect your press when the press reaches 110% of press capacity. The HOLP system protects or acts like a fuse to prevent damage to ball screws, connecting rods, crank or eccentric shafts and last but not least, prevents frame damage.

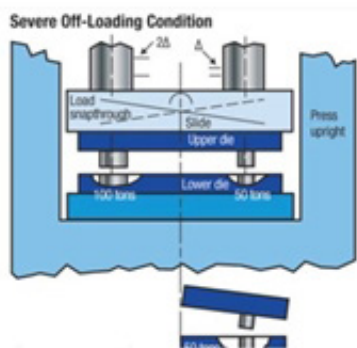
The system is made up of the following components: 1.> A pressurized HOLP piston is located underneath the connection point in your slide that receives all of the downward forces, 2.> High pressure hoses between HOLP piston and HOLP pump, 3.> HOLP pump and tank reservoir, 4.> Solenoid to key selector (on Sutherland & KC presses) located at MOS /Master Operation Station. ** most other builders do not offer this, so you may have to go to pump to manually dump pressure. HOLP System

Key Points:

- Sensitive to air, much like a automobile brake system, if air is present in the system, you may get overloads at less than the preset 110% of press capacity. If this happens a air bleed screw is located on the HOLP pump, CAUTION when bleeding, do not take the set screw all of the way out, just back it off partially to allow oil & air to pass.
- Tank should only be 1/2 full when system is pressurized and working correctly. This is critical, when overload occurs the oil from under the HOLP piston needs to evacuate the piston and flow back to tank.
- HOLP piston seals like lubrication & movement, like any seal in industrial applications, it is best if they remain lubricated. We recommend that the HOLP System is used once a week, release pressure & pressurize system, confirm tank level difference and confirm pump stops pumping when pressure level is reached. If pump keeps pumping, you either have air in the lines which require bleeding, loose hose connection or damaged seals.
- IN NO CASE should you operate the press if the HOLP pump continues to pump and not hold pressure.
- NEVER operate your press when the HOLP system is not working, this will cause excessive damage to suspension / connecting point are in the slide.

If you would like assistance or further training on HOLP systems or other areas of your stamping presses contact Production-Resources Tel 800-863-3164

CAUTION AREAS FOR PRESSES



OFF CENTER LOADS ARE VERY BAD CONDITIONS FOR PRESS SLIDE AND DRIVE SYSTEMS. THEY CAN BE DESIGNED OUT IN THE DIE BUILD PHASE IN MOST CASES

TWO TYPES OF OFF CENTER LOADS CAN BE PRESENT

1 UNEQUAL TONNAGE DISTRIBUTION AS SHOWN ABOVE

2 DIE / MATERIAL CONTACT HEIGHTS VARY GREATLY WHEN ONE SIDE COMES IN CONTACT AND HAS LOAD WHEN THE OTHER SIDE HAS NO LOAD

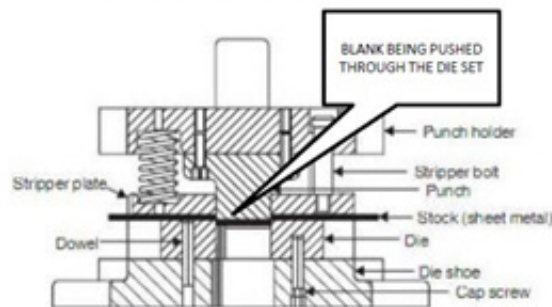
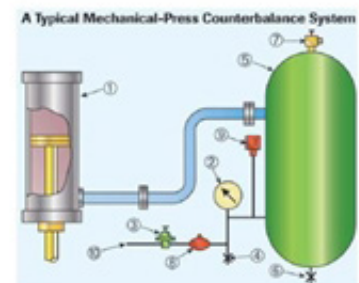


Fig. 5.1 Standard die set with a punch and die mounted in place

BLANKING & REVERSE TONNAGE LOADS ARE VERY BAD CONDITIONS FOR PRESS SLIDE AND DRIVE SYSTEMS. IT CAN BE DESIGNED OUT IN THE DIE BUILD PHASE IN MOST CASES OR PUNCHING DAMPERS SHOULD BE CONSIDERED TO ABSORB THE LOAD

THERE ARE MANY TYPES OF BLANKING, THE MOST SEVERE IS FLAT BLANKING, WITH NO SHEAR ON PUNCHES WILL PRODUCE THE HIGHEST AMMOUNT OF SNAP THRU REVERSE TONNAGE THAT WILL DAMAGE A PRESS OVER TIME.

SEE PAGES 6-8 FOR CAUTIONS ON REVERSE TONNAGE



ACB / AIR COUNTER BALANCE 101

AIR COUNTER BALANCE SYSTEMS ARE ONE OF THE MOST COMMONLY OVERLOOKED SYSTEMS ON A PRESS.

FAILURE TO SET AIR PRESSURE FOR EACH DIFFERENT UPPER DIE WEIGHT CAN CAUSE EXCESSIVE DAMAGE TO PRESS DRIVE SYSTEM.

SEE PAGE 9 FOR ACB 101 BULLET POINTS



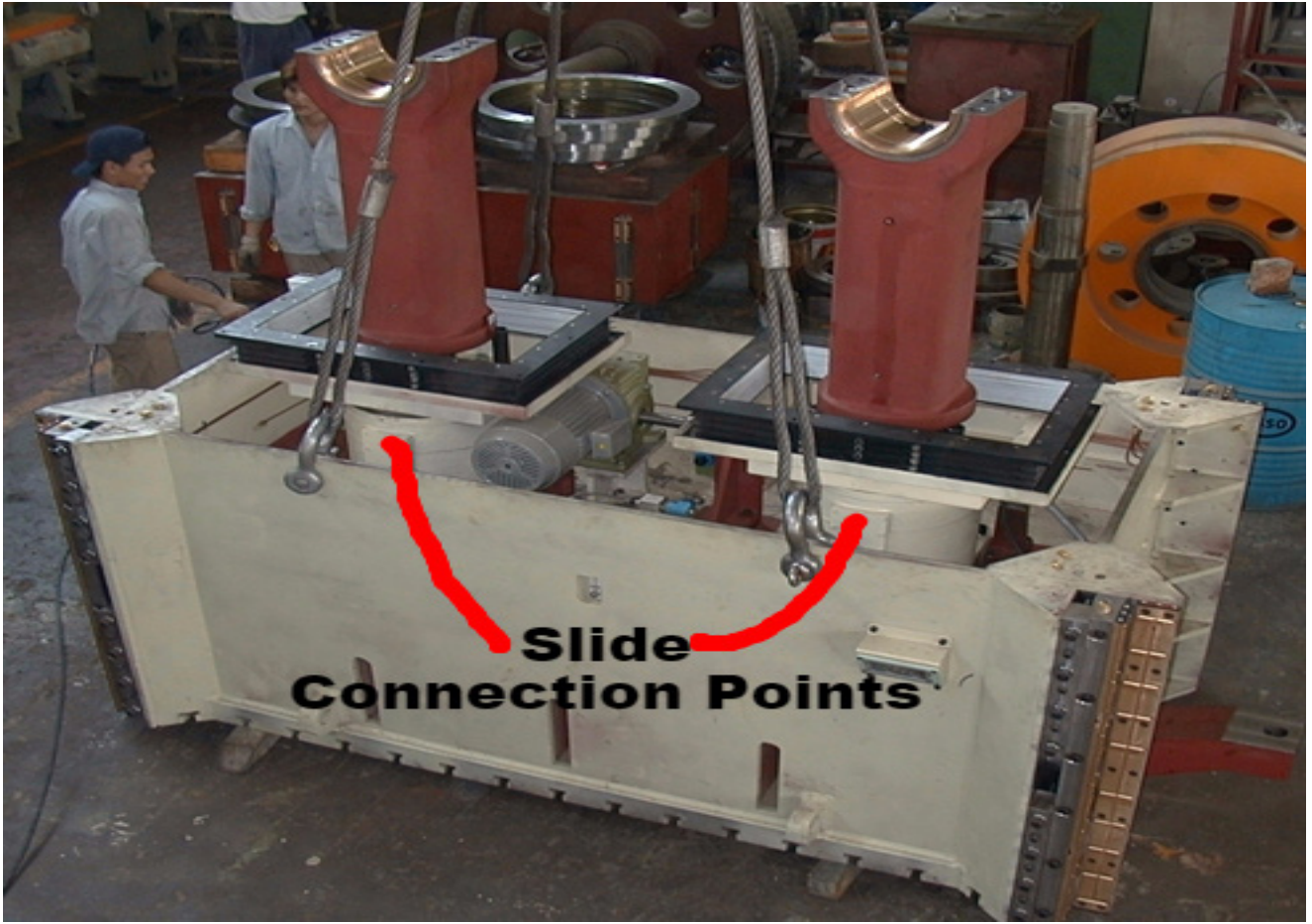


SLIDE SUSPENSION POINT'S are mounted inside of the slide body and house the HOLP piston as mentioned above and the slide adjustment worm shaft and worm gear. Slide adjustment should never be done when you HOLP system is not pressurized to prevent damage to gears.

BALL SCREWS (right) or plunger guides are a critical areas to be taken care of. The lower round portion of the ball screw mates with the ball seat which is the top of the HOLP piston. It is wise to run the slide adjustment all of the way to its upper and lower limits, check thread connection and be sure not to over travel the limits of slide adjustment.



CONNECTING RODS mate with ball screw to suspension point in slide and crank or eccentric shaft in press crown which create the reciprocating up and down motion of the slide. Sutherland recommends that all of the slide connection points be inspected every 6 months to make sure everything is secure and in optimum operating condition.





No matter if your press is new or old, you cannot afford to run your press with improper settings. The old adage of “Penny Wise ~ Pound Foolish” applies to HOLF Systems.

We can come in and perform our PMP and at the same time train or retrain your team on best press practices.

The HDP-121 ton two point small straight side (left) is a good example of how a press should be cared for.

This is one of five that are equipped with our I-PRESS AB PLUS press and automation control. If you would like to upgrade your controls, this is a great option; alternatively we can offer Wintriss Control upgrades. CALL 800-863-3164

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MAINTENANCE SCHEDULE / GOOD HOUSEKEEPING

ONLY PERFORMED BY AUTHORIZED MAINTENANCE TEAM / LOCK OUT - TAG OUT

EVERY DAY

- 1) PRIOR TO STARTING PRESS DO A COMPLETE WALK AROUND INSPECTION, LOOK & LISTEN.
- 2) NO OBSTRUCTIONS IN DIE AREA.
- 3) AREA AROUND PRESS IS CLEAN.
- 4) GUARDS IN PLACE WITH PROPER FUNCTION.
- 5) ALL ELECTRICAL PANELS ARE CLOSED / LOCKED.
- 6) NO AIR LEAKS.
- 7) NO OIL LEAKS.
- 8) NO UNUSUAL ELECTRICAL NOISES.
- 9) AUTO GREASE TANK LEVEL IS CORRECT.
- 10) ACB OIL TANK IS FULL.
- 11) ACB PRESSURE SET UP FOR UPPER DIE WEIGHT.
- 12) TURN SPEED TO MINIMUM BEFORE STARTING MAIN MOTOR.
- 13) PRESS START UP AND CONTROL TEST:
 - INCH MODE
 - SINGLE STROKE MODE
 - CONTINUOUS MODE
 - RAM STOP
 - TOP STOP
 - EMERGENCY STOP
- 14) MAKE SURE SLIDE STOPS AT OR NEAR TDC IN INCH AND SINGLE STROKE MODE.

WEEKLY

- 1) SAME AS EVERYDAY.
- 2) INSPECT AIR LINE LUBRICATOR NEAR DSV VALVE AND CLUTCH AND FILL AS NEEDED (SEE LUBE CHART FOR OIL TYPE).
- 3) DRAIN AIR TANKS OF ANY MOISTURE AND EMPTY COLLECTION TRAY.
- 4) CHECK INLINE AIR FILTER AND DRAIN AS NEEDED.
- 5) RELEASE HOLF / HYDRAULIC OVERLOAD AND RE-PRESURIZE (SEE HOLF INSTRUCTIONS).

MONTHLY

- 1) SAME AS EVERYDAY.
- 2) SAME AS WEEKLY.
- 3) RUN SLIDE ADJUST TO UPPER AND LOWER LIMITS AND BE SURE LIMIT SWITCHES PREVENT OVER TRAVEL AS STAMPED ON INDICATOR. **DO NOT RUN SLIDE ADJUST MOTOR WHEN DIES ARE COMPRESSED** AS THIS WILL DAMAGE THE SLIDE ADJUST SYSTEM AND TRIP THE THERMAL OVERLOAD FOR SLIDE ADJUST MOTOR.
- 4) CHECK ALL AIR HOSES TO CLUTCH & BRAKE AND COUNTER BALANCE CYLINDERS.
- 5) CHECK UPPER LUBRICATION AND DISTRIBUTOR BLOCKS ARE IN NO LEAK CONDITION.

IF YOU WOULD LIKE ANNUAL PREVENTATIVE MAINTENANCE PROGRAMS CALL SUTHERLAND 310-453-6981

EVERY 6 MONTHS

- 1) CHECK AND TIGHTEN INTERNAL SLIDE BOLTS.
- 2) CHECK AND TIGHTEN CON ROD BOLTS.
- 3) ADD OIL TO CONNECTING ROD THREAD THROUGH WEEP HOLE IN FRONT OF CASTING (SAME OIL AS MAIN MAIN TANK).
- 4) CLEAN OUT INTERIOR OF SLIDE.
- 5) CHECK SLIDE GIB AND CRANK BUSHING DISTRIBUTOR BLOCK BEHIND SLIDE AND MAKE SURE IN NO LEAK CONDITION.

EVERY 12 MONTHS

- 1) CHECK PARALLELISM OF SLIDE TO BOLSTER AT 90-18-270 DEGREES.
- 2) CHECK SLIDE GIBS FOR CLEARANCE AND ANY SIGN OF WEAR.
- 3) JACK UP OF OVERALL STACK CLEARANCE TO BE COMPARED TO JIS ST CLASS INSPECTION DOCUMENT FROM WHEN PRESS WAS NEW.
- 4) CHECK FLYWHEEL BELT TENSION.
- 5) CONFIRM CODER MOUNT IS SECURE.
- 6) CONFIRM OVERRUN SENSOR AND MECHANICAL CAM IN ENCODER HOUSING IS SECURE.
- 7) CONFIRM ENCODER BELT, PULLIES AND KEYWAYS ARE SECURE.
- 8) LUBRICATE FLYWHEEL BEARING (SEE LUBE INSTR)
- 9) CLEAN PRESS INSIDE AND OUT.
- 10) CHECK ALL BOLTS AND CAP SCREWS AND MAKE SURE EVERYTHING IS SECURE.

