

MINSTER

A NIDEC PRESS & AUTOMATION CO.

CONTRACT

PRESS UPGRADES & AFTERMARKET OFFERINGS

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CONTRACT PRESS UPGRADES

E2, P2 & P2H Press Speed-Up Options

Increase press strokes per minute (SPM). See reference maximum SPM vs. stroke lengths charts below.

Benefits:

- Increases Production & Press Flexibility.
- Improves Value of Existing Presses.

Press Lines:

- E2, P2 and P2H

Package Includes:

- New Main Data Plate
- Motor Sheave and Belts
- Larger Press Motor
- New Flywheel
- New Main Gears and Pinions
- Larger or Re-Positioned Counterweights
- Conversion to Hydraulic Clutch
- Different Press Mounts
- Flywheel Energy Curve

* Required parts will vary.

E2 PRESSES:

Information based on standard single geared E2's and does not include flywheel driven or double geared E2's.

300 TON		400 TON		600 TON		800-1200 TON	
Stroke	Max. SPM	Stroke	Max. SPM	Stroke	Max. SPM	Stroke	Max. SPM
4-5"	140	4-8"	120	4-9"	100	12"	70
6-8"	120	9-10"	100	10"	90	13-16"	60
9-10"	100	11"	90	11-12"	80	17-20"	50
11-12"	80	12"	80	13-14"	70	20-24"	40
13-14"	70	13-14"	70	15-16"	60		
15-16"	60	15-16"	60	17-18"	50		
				19-20"	40		

P2 GEARED PRESSES:

100 TON		150 TON		200 TON	
Stroke	Max. SPM	Stroke	Max. SPM	Stroke	Max. SPM
3"	150	4"	150	4"	150
4"	150	5"	150	5"	150
5"	150	6"	150	6"	120
6"	150			7"	120
				8"	120

These charts are only intended to serve as a reference. Please contact Nidec Press & Automation with your press serial number to have the maximum press SPM determined. Due to varying press designs, some requests require an engineering study to create an accurate quote.

P2 FLYWHEEL PRESSES:

60 TON		100 TON		150 TON		200 TON	
Stroke	Max. SPM	Stroke	Max. SPM	Stroke	Max. SPM	Stroke	Max. SPM
1"	600	1"	500	1"	450	1"	400
1.5"	500	1.5"	450	1.5"	400	1.5"	350
2"	400	2"	400	2"	350	2"	300
2.5"	375	2.5"	350	2.5"	300	2.5"	275
3"	350	3"	300	3"	250	3"	250
4"	300	4"	250	4"	225	4"	225
		5"	200	5"	200	5"	200
						6"	180

P2H PRESS:

These maximum SPM's are based on standard stroke presses, not adjustable stroke presses.

P2H-63 FW		P2H-100-63		P2H-100-48	
Stroke	Max. SPM	Stroke	Max. SPM	Stroke	Max. SPM
.79"	600	.98"	525	.98"	550
.98"	550	1.18"	475	1.18"	500
1.18"	500	1.57"	425	1.57"	450
1.57"	450	1.97"	375	1.97"	400
1.97"	400	2.56"	325	2.56"	350
2.56"	350	2.95"	275	2.95"	300
2.95"	300	3.94"	250	3.94"	275

P2H-100 FW		P2H-160-63, 160-75		P2H-160 GEARED	
Stroke	Max. SPM	Stroke	Max. SPM	Stroke	Max. SPM
.98"	500	1.18"	400	3.94"	150
1.18"	450	1.57"	400	5.91"	150
1.57"	400	1.97"	350	7.88"	120
1.97"	350	2.95"	300		
2.56"	300	3.94"	250		
2.95"	250	4.92"	200		
3.94"	200	5.91"	200		

These charts are only intended to serve as a reference. Please contact Nidec Press & Automation with your press serial number to have the maximum press SPM determined. Due to varying press designs, some requests require an engineering study to create an accurate quote.

CONTRACT PRESS UPGRADES

E2, P2 & P2H Press Stroke Change Options

Change press stroke length to meet your needs. This change may require a decrease in SPM or allow an increase in press stroke per minute (SPM) depending on length of change.

Benefits:

- Increases Production & Press Flexibility.
- Improves Value of Existing Presses.
- Repurpose an existing press instead of buying new when production needs change.

Packages May Require Some or All, but Not Limited to the Following Items:

- New Crankshaft
- New Connection Assemblies
- New Counterbalance Parts
- Counterbalance Surge Tank
- Larger Clutch
- Larger Press Motor
- New Main Data Plate
- New Shutheight Tags
- Larger or Re-Positioned Counterweights
- Different Press Mounts
- Tonnage Curve
- Fly wheel Energy Curve

Press Lines:

- E2, P2 and P2H

Maximum press stroke lengths are dependent upon crown size and the desired maximum press strokes per minute (SPM). Never change stroke without checking with Nidec Press & Automation first.

E2 PRESSES	
Tonnage	Max. Stroke
300-400	16"
600	20"
800-1200	24"

P2 PRESSES	
Tonnage	Max. Stroke
60	4"
100-150	6"
200	8"

P2H PRESSES	
Tonnage	Max. Stroke
63	2.95"
100	3.94"
160	7.88"

When requesting a change in stroke, please let Nidec Press & Automation know if there is a specific shutheight desired. Nidec Press & Automation can quote the appropriate parts to increase press shutheight. Standard shut height is measured from the press bed to the slide in the stroke down, adjustment up position.

These charts are only intended to serve as a reference. Please contact Nidec Press & Automation with your press serial number to have the maximum press SPM determined. Due to varying press designs, some requests require an engineering study to create an accurate quote.

CONTRACT PRESS UPGRADES

E2 Counterbalance Spherical Washer Package

Ref. Part No. 810-1441

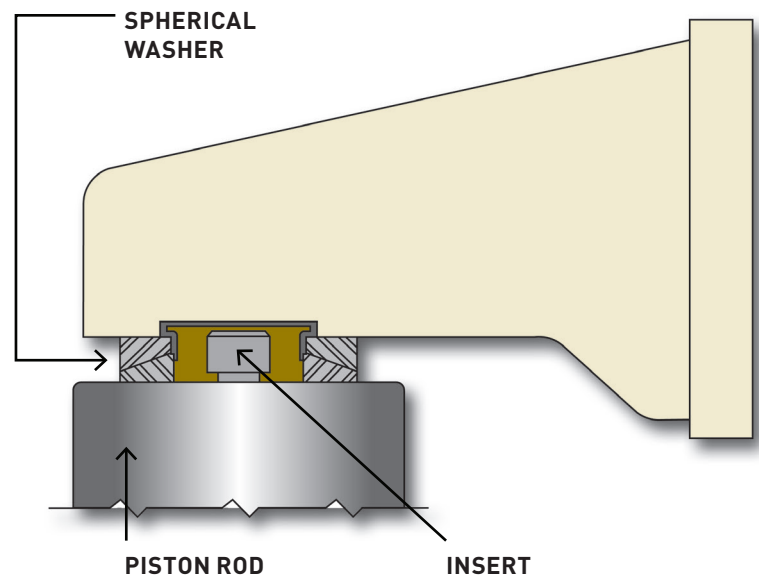
This package allows the piston rod to center itself regardless of slide counterbalance bracket position due to slide tilt or off-center loading.

Benefits:

- Reduces rod temperature and cylinder packing wear.
- Increases bushing life.

Package Includes:

- Spherical washer
- Insert and hardware



E2 Flywheel Brake Facing Upgrade

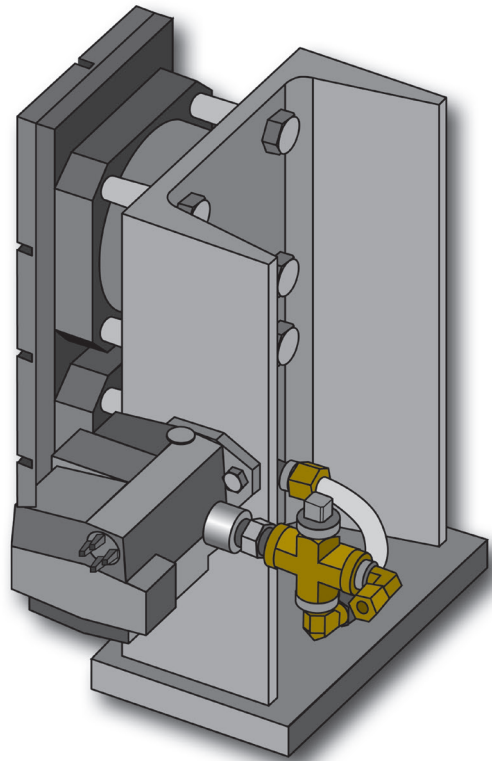
This package replaces the previous style flywheel brake facing with an updated unit with a larger facing for increased brake facing life.

Benefits:

- Reduced costs as a result of less maintenance and fewer brake facing changes.

Package Includes:

- Brake Pistons and Rings
- Facing Back Plate and Hardware
- Large Brake Facing
- Mounting Bracket
- Valves and Fittings (As Needed)
- Pneumatic Diagram
- Installation Instructions



CONTRACT PRESS UPGRADES

E2H Double Geared Center Driveshaft Bearing Upgrade

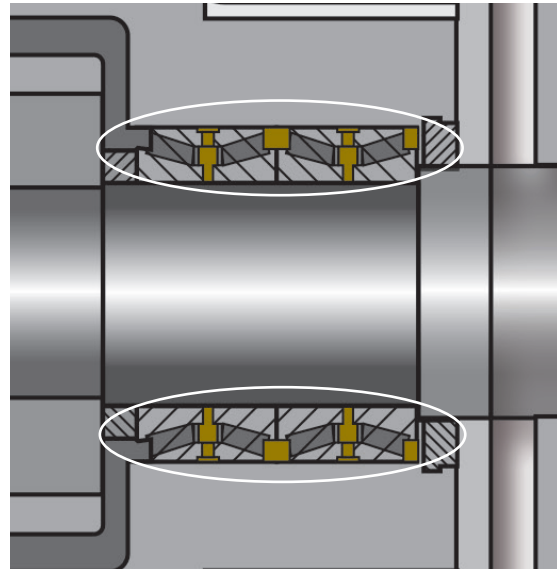
This package adds center bearings to the driveshaft next to the flywheel on double geared E2's. Requires sending driveshaft assembly to Nidec Press & Automation to remachine the bearing housing and driveshaft.

Benefits:

- Reduce load on all driveshaft bearings extending life.
- Improve backlash on pinion for more even wear and extended life.

Package Includes:

- Bearings
- Retainer and spacer
- Necessary mounting and fittings



E2H Counterbalance Piston Rod Upgrade

This package replaces the old counterbalance piston rods with the new style rods and slide mounting blocks.

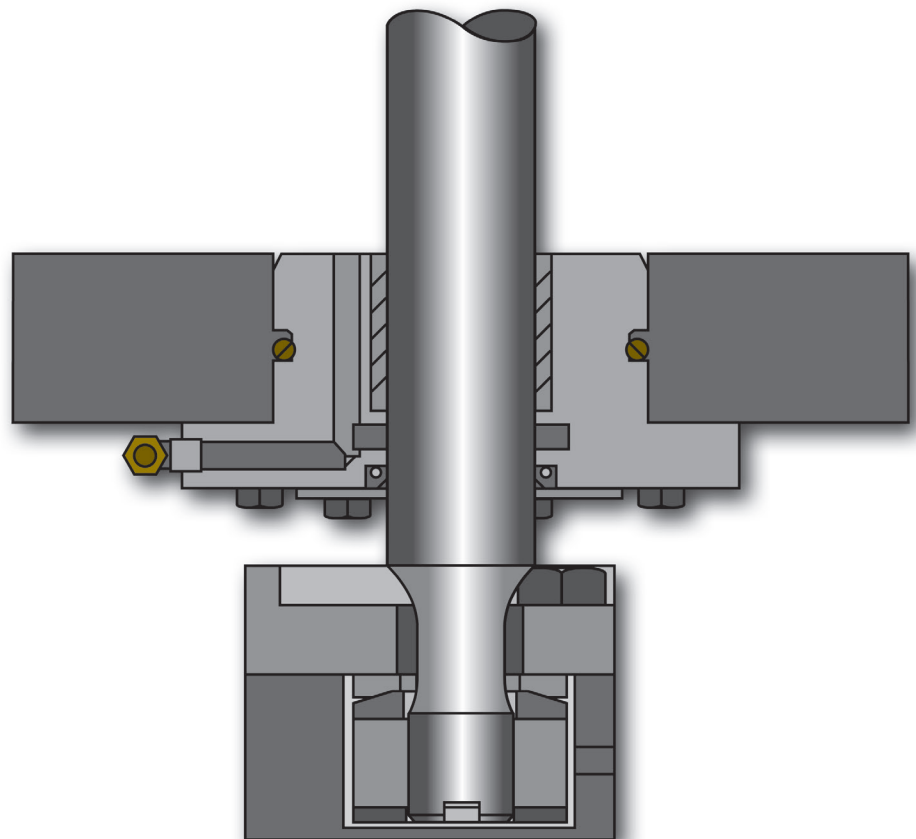
Applicable to E2H presses built prior to 2003.

Benefits:

- The captured nut cannot work loose. The spherical washer prevents any side thrust from the slide from being transferred to the piston rod. The piston nut capture block also catches and drains any counterbalance lube oil that may get past the cylinder seals.

Package Includes:

- Piston rods
- Spherical washers
- Capture blocks
- Piston rod nut and washer
- Mounting hardware



CONTRACT PRESS UPGRADES

E2H Center Driveshaft Bearing Upgrade

Ref. Part No. 810-2097

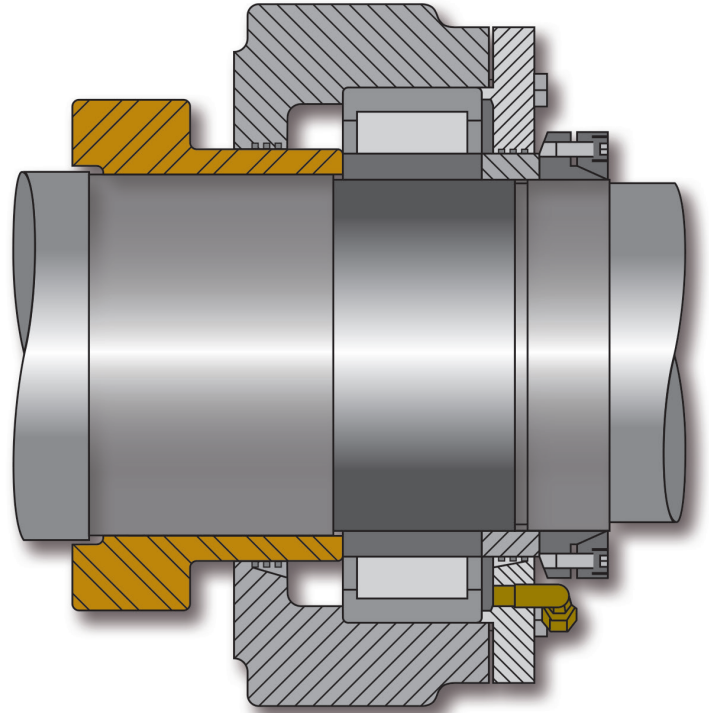
This package upgrades the center driveshaft bearing to a heavier duty wide design.

Benefits:

- Longer lasting bearing means less downtime.

Package Includes:

- Bearing
- Bearing housing
- Retainer
- All necessary mounting hardware and fittings



E2H Connection Pin Upgrade Package

Ref. Part No. 810-2127

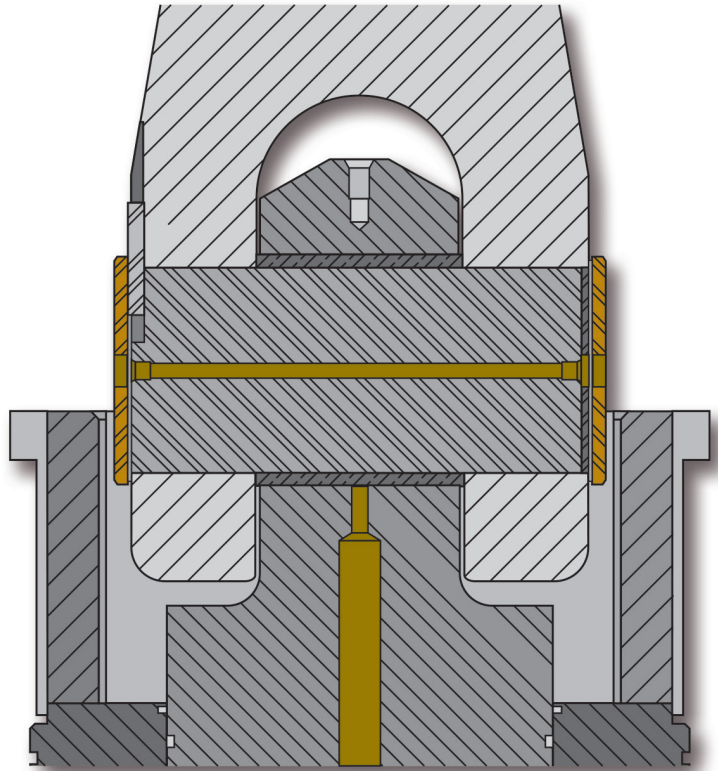
This package adds retainers to the ends of the connection pins to eliminate connection pin movement.

Benefits:

- Prevents pin from working loose in high snap-thru or high vibration applications.
- Reduces excessive wear.
- Increased bushing and pin life.

Package includes:

- Connection pins
- Retainers
- Keys
- Mounting hardware



CONTRACT PRESS UPGRADES

E2H Connection Oil Deflectors

Ref. Part No. 810-2162, 810-2163, 810-2164

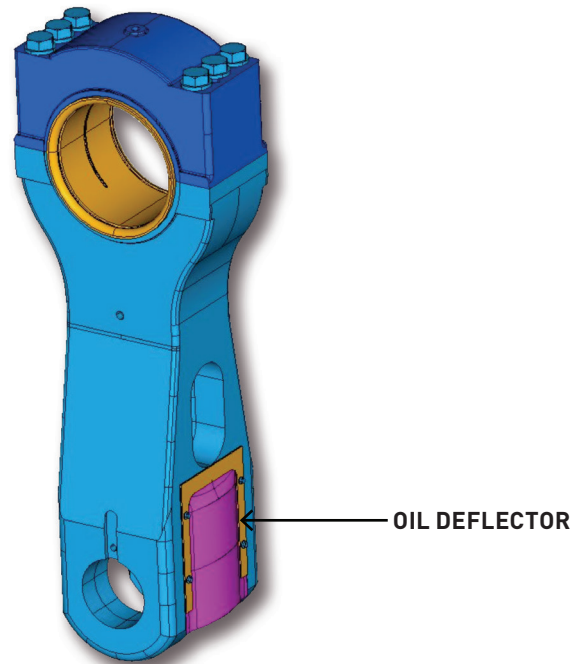
Adds flexible oil deflectors on connection near connection pin.

Benefits:

- Decreases oil splash around wrist pins.

Package includes:

- Oil deflectors for both sides of both wrist pins.
- Mounting hardware.



Counterbalance Wear Band Package

Ref. Part No. 2000010466, 6033-896, and 2000791465

This package provides a wear band to protect both the piston seal and cylinder wall of the counterbalance.

Benefits:

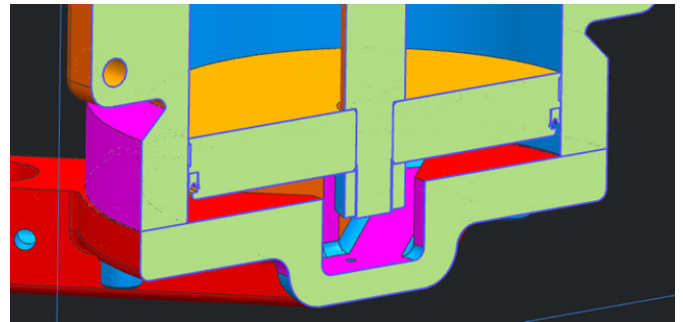
- Enhanced life of the piston seals reduces down time and air leaks
- Improved protection against counterbalance cylinder wall scarring
- Ideal to updated when doing a cylinder rebuild or seal change

Package includes:

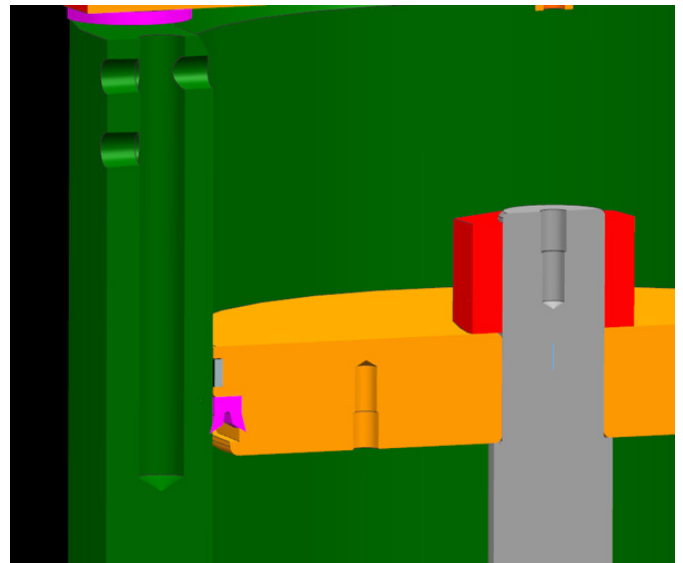
- Piston (It may be possible to rework your existing piston to accept the wear band)
- Wear Band

Press Lines:

- E2, P2, or any presses with counterbalance cylinders



E2 COUNTERBALANCE WEAR BAND



P2 COUNTERBALANCE WEAR BAND

CONTRACT PRESS UPGRADES

P2 Shutheight Indicator Lock Package

Ref. Part No. 810-0226

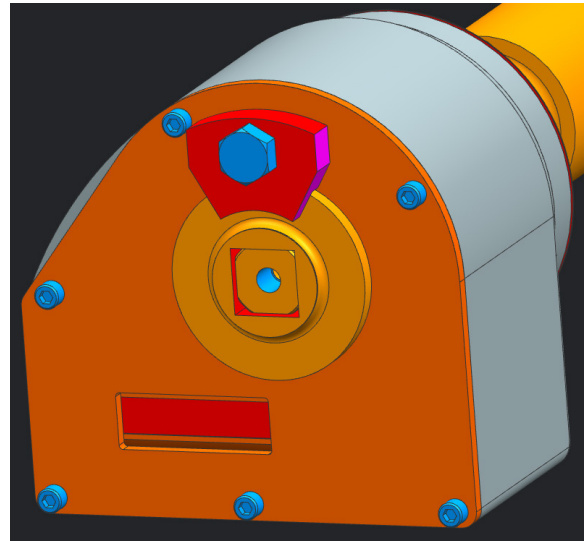
This package eliminates shutheight indicator drift from a set position due to vibration, shock, and snap thru loading of the production operation.

Benefits:

- Decreases maintenance cost of having to replace damaged indicators.
- Increases die life by reducing slide drift.

Package Includes:

- New shutheight indicator
- New shutheight indicator cover
- An anti-rotation clamp
- Shutheight locking sleeve
- Necessary mounting hardware
- Instructions for installation



P2 Safety Spring Counterbalance Cover

Preloaded urethane springs are used to provide a last resort cushion when mounting the counterbalance covers for crown mounted counterbalances. In the unlikely event the pressure switch/transducer, pop safety valve, and fusible plug all fail, pressure can buildup uncontrolled beneath the piston. If a failure were to cause the counterbalance shaft to become detached under such pressurized circumstances, the shaft could be launched out of the top of the counterbalance. These springs will help absorb the energy of such an impact and help prevent damage to the environment and harm to personnel around the press.

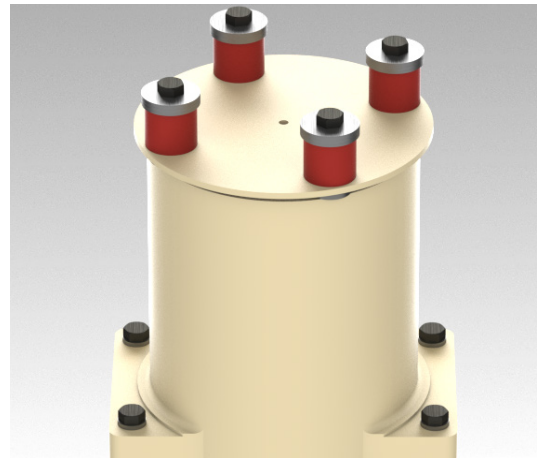
Refer to Tech Bulletin 2427C for operation, maintenance, and safety information on Counterbalance systems.

Benefits:

- Improved safety in the event of a catastrophic counterbalance system failure

Package Includes:

- Urethane springs
- Preload spacer
- Mounting washers
- Mounting screws
- Air cylinder cover



CONTRACT PRESS UPGRADES

P2 Counterbalance Breather Package

Ref. Part No. 1170-840

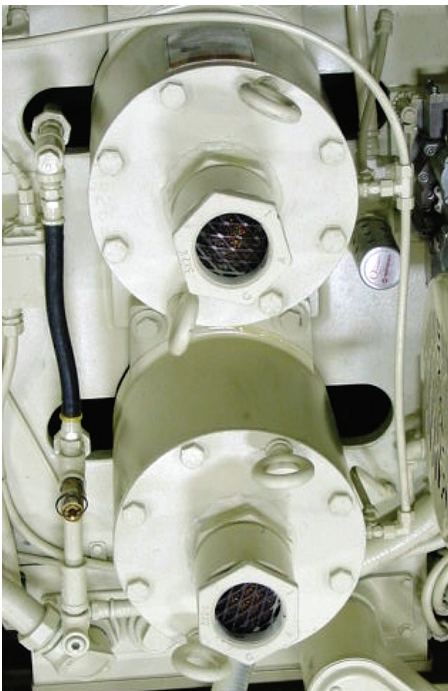
This package uses a knitted plastic mesh ball to help reduce oil mist from escaping through press counterbalance cylinders.

Benefits:

- Cleaner and safer work environment.
- Reduces oil mist that may be escaping through press counterbalance cylinders.

Package Includes:

- New counterbalance cylinder top plate
- Breather assembly
- Installation information



P2H High Energy Drive Package

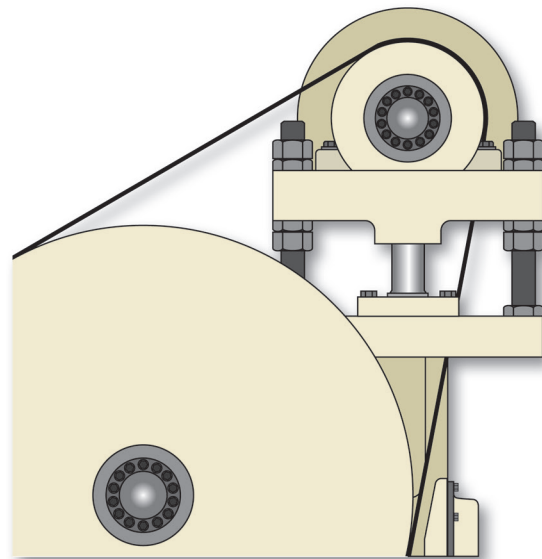
This package adds an auxiliary flywheel to the existing drive.

Benefits:

- The additional energy allows the press to perform low end, low speed operations without stalling concerns.

Package Includes:

- Mounting plate
- Auxiliary sheave and belt
- Auxiliary flywheel
- Adjustment studs and hardware



P2H Slide Adjustment Lock Package

Ref. Part No. 810-0338

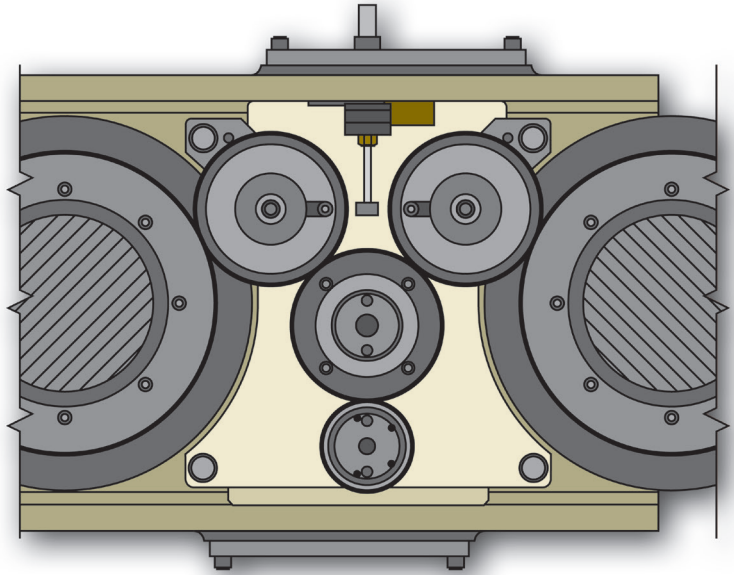
This package provides hydraulic cylinders to clamp the steel slide shutheight adjustment gears. This removes the gear backlash. The new components are designed to handle high shock loads and a new stop is designed to prevent jams at the maximum and minimum shutheight limits.

Benefits:

- Hydraulically-clamped slide shutheight adjustment gears will prevent slide adjustment drift.
- Increased life of slide shutheight adjustment gears by removing gear backlash.
- Improved reliability of slide adjustment operation.
- Reduced maintenance and downtime.

Package Includes:

- Steel slide adjustment drive gears
- Slide adjustment shaft with improved bushing design
- Slide adjustment stop
- Hydraulic lock-down cylinders
- All necessary mounting hardware and hand-held pipe bender



CONTRACT PRESS UPGRADES

P2H Inching Performance Assist Airbag Package

Ref. Part No. 810-0377

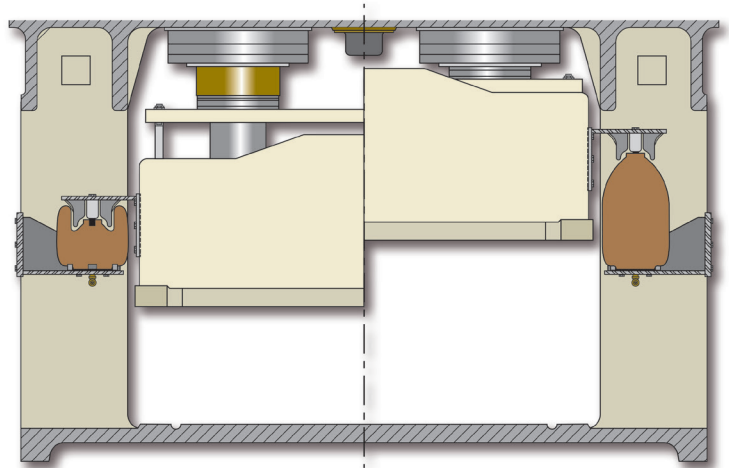
This package adds airbags to the slide to assist with inching during Setup/Auto One cycle. This is especially useful with heavier dies.

Benefits:

- Reduces wear on slide adjust motor and gears.
- Reduces plant air consumption requirements.

Package Includes:

- Airbags
- Upright and slide mounting brackets
- Solenoid and transducer
- Air plumbing parts required for installation
- Installation information



P2H Counterbalance Package

Ref. Part No. 810-0398

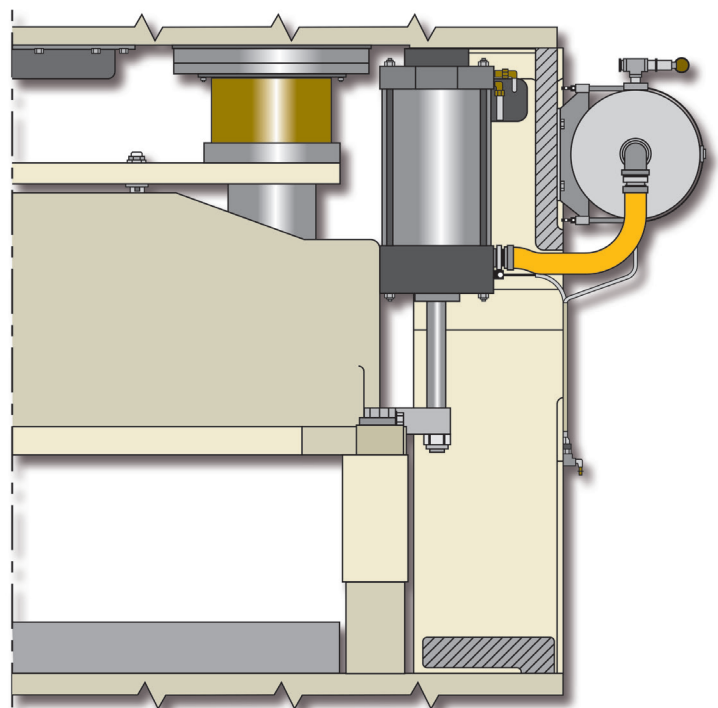
This package adds crown mounted counterbalance cylinders to the slide for presses running dies with weights outside the original press scope.

Benefits:

- Reduces clutch slippage with larger dies.

Package Includes:

- Cylinder assemblies
- Air tanks
- Mounting brackets
- All required fittings and air lines



P2H Slide Contamination Package

Ref. Part No. 810-1556

This package provides parts to cover and protect the slide piston and slide guide posts from harmful contaminants like die lube and flakes that can be produced in the part forming process.

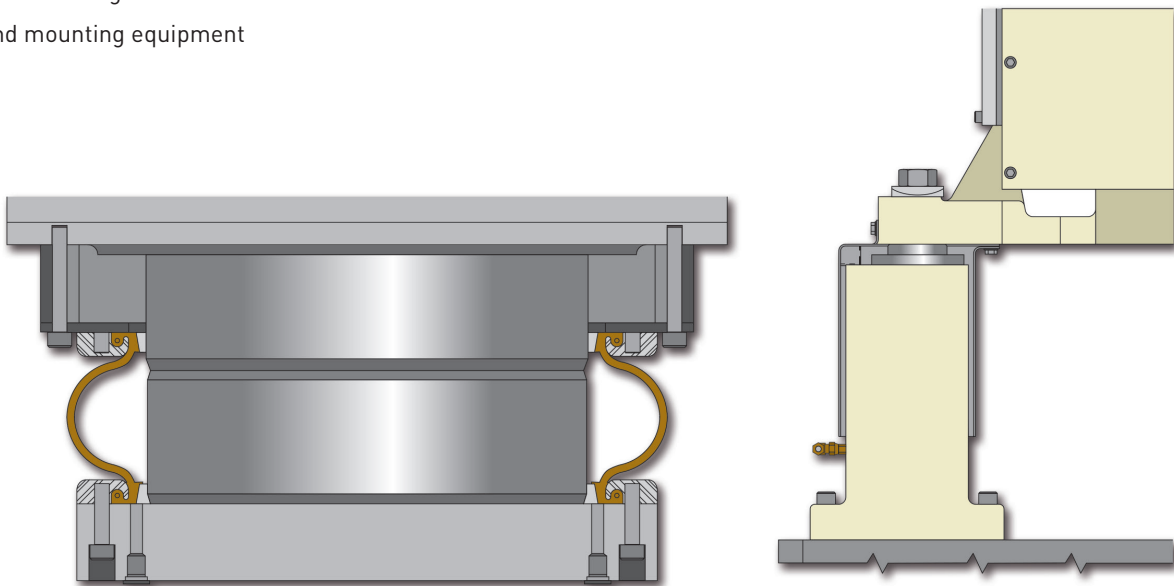
A secondary package is also available that covers the entire top of the slide, protecting the slide adjust gears from unwanted contaminants such as galvanized steel flakes.

Benefits:

- Increases seal and filter life.
- Protects sensitive moving slide parts.
- Reduces untimely downtime due to contaminants in the slide hydraulic system.

Package Includes:

- Flexible slide piston covers
- Piston flange and seal housing
- Slide guide covers
- Slide guide housing
- Seals and mounting equipment



CONTRACT PRESS UPGRADES

P2H Seal Retainer Wiper Upgrade

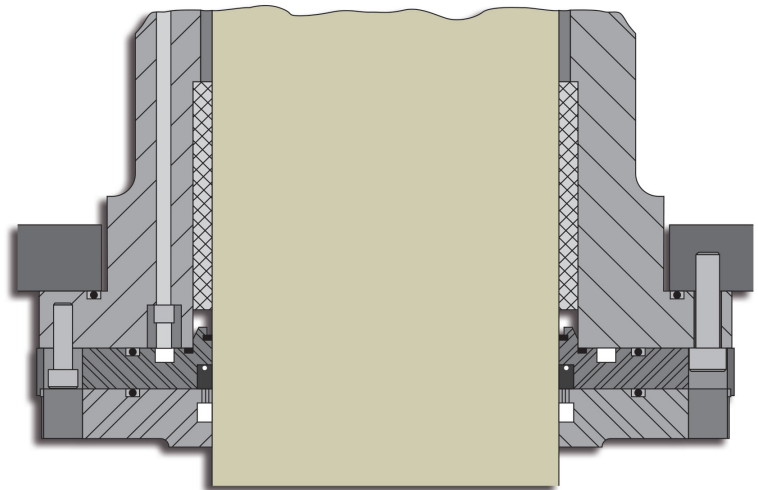
This package adds a wiper ring above the seal to better control the oil before it reaches the seal.

Benefits:

- Extends the life of the seals.
- Minimizes the amount of vacuum needed.
- Better oil control

Package Includes:

- Piston seal housings
- O-rings
- Wiper rings
- Oil seals
- Orifices
- Mounting hardware



P2H Conversion to Flywheel Spherical Bearings

Ref. Part No. 810-2247

This package replaces crankshaft flywheel cylindrical bearings with spherical roller bearings. Flywheel re-work may be required for proper lubrication. This package incorporates the flywheel regrease package.

Benefits:

- Prevents false brinelling.
- Improves bearing life.
- Simplifies installation.
- Flywheel Regrease Package improves the efficiency of the lubrication process.

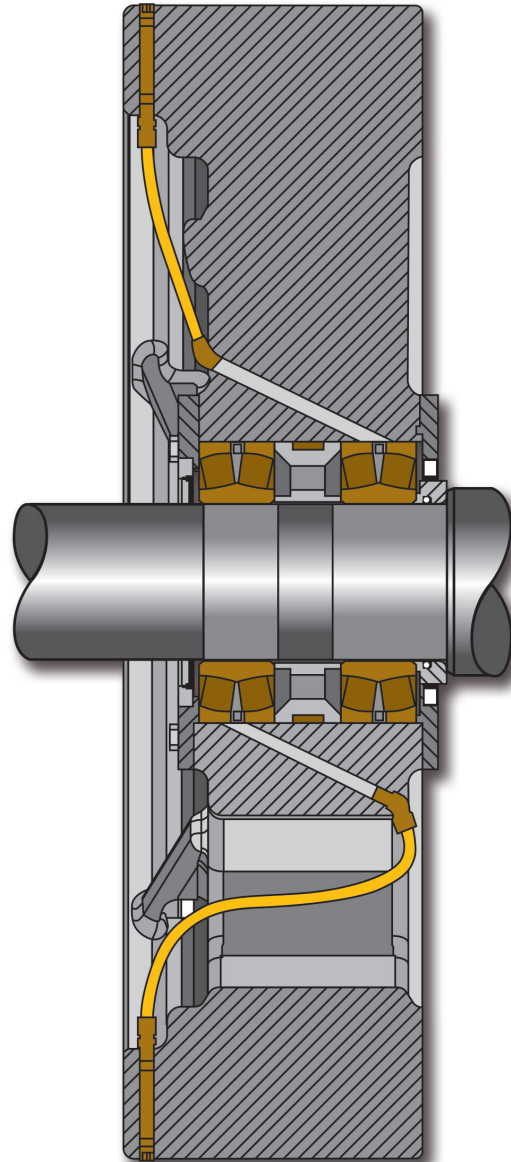
Package Includes:

- Flywheel bearings.
- Bearing and cone spacers.
- Retainers and seals.
- Misc. mounting and lubrication hardware.

Press Lines:

- P2H

(May not be available for some models.)



CONTRACT PRESS UPGRADES

P2H Heat Exchanger Package

Ref. Part No. 810-0251

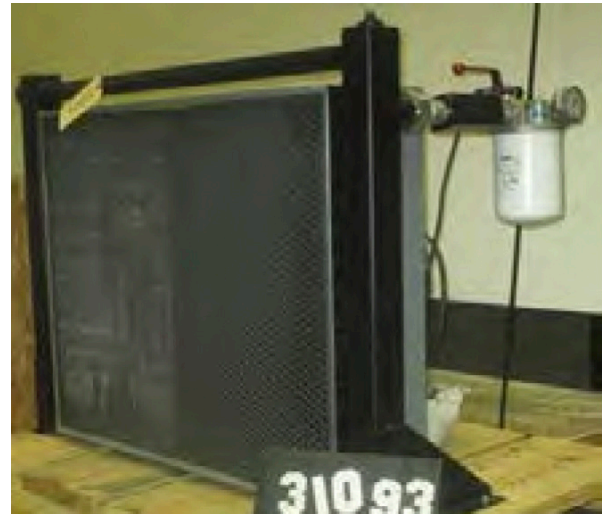
This package incorporates an air/oil cooler heat exchanger into the press sump in order to maintain a consistent press oil temperature. This results in a consistent oil viscosity and increased thermal stability.

Benefits:

- Improves part quality.
 - The slide guiding system effectiveness is increased due to the desired oil pressure being maintained in the slide guide housings as a result of consistent oil viscosity.
- Improves part consistency by better maintaining bottom-dead-center repeatability.
 - Shutheight stability is increased as a result of reduced thermal growth.
- Increases efficiency of press lubrication system and reduces lubrication faults.
 - Consistent operating temperature results in consistent oil viscosity, which improves oil flow

Package Includes:

- Heat exchanger
- Motor, pump and oil filter
- Water control valve
- Thermal probe and thermometer
- Level switch
- Omron temperature controller
- Installation information
- All necessary plumbing, brackets and mounting hardware to add this unit to the press.



P2H Clutch Valve Upgrade

Ref. Part No. 810-1336

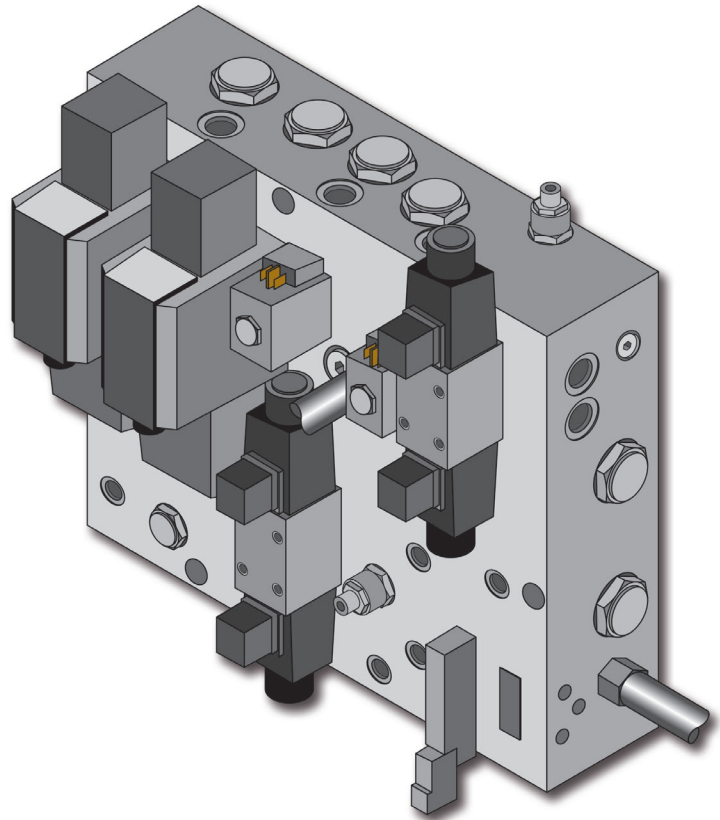
This package replaces smaller clutch valves (250-1099 & 250-9013) with a new manifold assembly with larger clutch valves, new style accumulator and rotary union to reduce stopping time.

Benefits:

- Reduced press stopping time.
- Improved die protection.

Package Includes:

- Manifold assembly w/ clutch valves
- Accumulator w/ brackets
- Rotary union
- Pressure switches
- Miscellaneous mounting and lubrication hardware



CONTRACT PRESS UPGRADES

P2H Hydraulic Overload

A hydraulic overload valve is attached directly to the slide and is pressure activated immediately relieving the overload. In addition, a switch initializes the stop circuit to help protect expensive dies.

Benefits:

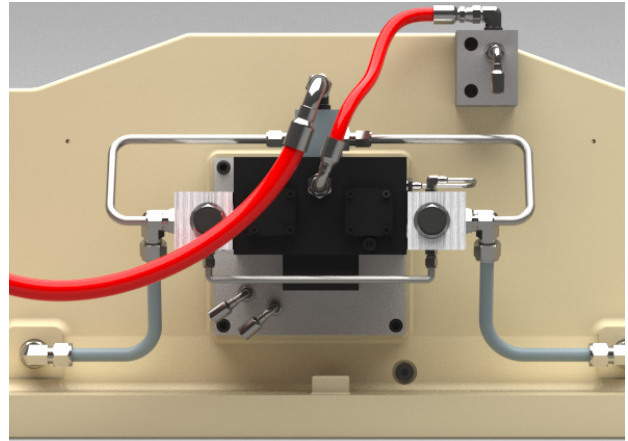
- Help protect dies from being damaged in the event of overloading

Package Includes:

- Hydraulic tubing, hose and fittings
- Hydraulic overload valve
- Mounting plate

Press Lines:

- P2H



OBS / OBI Slide Counterbalance Package

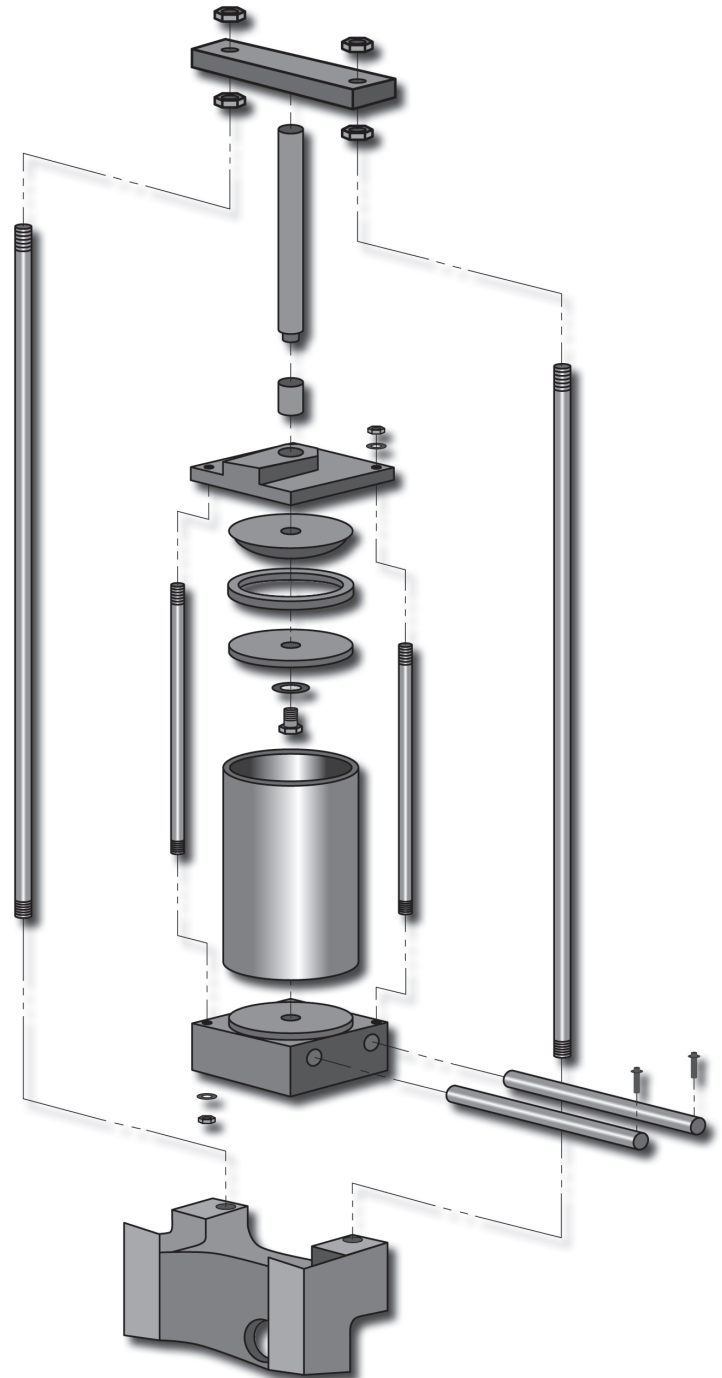
This package adds a pneumatic counterbalance cylinder to existing OBI and OBS slides.

Benefits:

- Counteracts the weight in the upswing of the stroke for improved press stability.
- Allows for easier shutheight adjustment.

Package Includes:

- Counterbalance cylinder
- Reservoir tank
- Pressure switch and valve
- Tubing, fittings and hardware



CONTRACT PRESS UPGRADES

Slide Knock Out Package

This package adds a knock out bar to the existing slide without the need for extensive machining and rework.

Benefits:

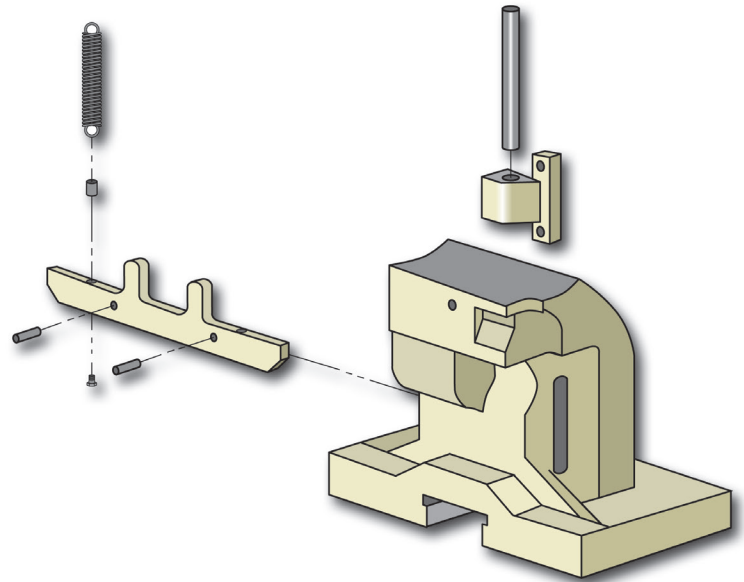
- Fully adjustable knock out bar to assist in the removal of parts, slugs and off fall from the die without the use of secondary equipment.

Package Includes:

- Knock out bar
- Knock out bracket and rod
- Springs and hardware

Press Lines:

- P2, E2, OBI and OBS



Arisa Transfer Retrofit

This package integrates an Arisa 3 axis transfer with the press controls to carry pieces between the different die forming stations.

Benefits:

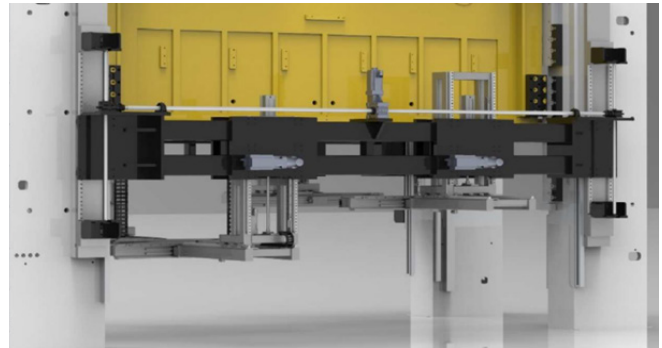
- Fully programmable forward motion, opening and rising along the path and actuation angles for using dies of different sizes and in different quantities.
- An entirely independent motion from that of the press and of variable speed, even with the press sitting idle.
- Automatic bar changeover.

Package Includes:

- Servo motors
- Rack and pinion drives
- Counterbalance system
- Linear guides
- Lubrication pump and monitored progressive distributors

Press Lines:

- E2



CONTRACT PRESS UPGRADES

Conversion to Variable Frequency Drive (VFD)

Conversion of press main drive motor to a press rated, inverter-duty motor with a VFD control.

Benefits:

VFD Controller:

- Provides higher performance throughout the full speed range.
- Reduces operating costs by maintaining an electrical power factor of up to 18% higher than eddy current motors.
- Provides tighter speed/torque control.
- VFD control replacement parts and support is readily available 24/7/365.
- 12-Month warranty as a standard on the VFD control.
- 24-Month extended warranty if the control is installed by a certified Nidec Press & Automation technician.
- Older, outdated models can be upgraded to newer drives with minimal interference.

Press Rated, Inverter Duty Drive Motor:

- 10:1 Torque speed ratio. Motor supplies constant torque from 10% to 100% of full speed.
- Provides longer life than a standard ac motor in VFD applications.
- Shielded motor cable included, increases motor bearing life by reducing electrical noise emissions and their negative effects.
- 36-Month warranty that is backed by Nidec Press & Automation and more than 1000 world wide service outlets.
- Significantly quieter than an eddy current motor.

Package Includes:

- Variable frequency control in wall mountable, NEMA 12 enclosure.
- Motor mounting parts and layout drawing for mounting modifications.
- 50 Feet of shielded motor cable (unless additional is requested by customer)
- Installation and VFD setup information.
- *Options which can be included:*
 - Installation and VFD commissioning by certified Nidec Press & Automation service technicians.
 - New main contractor.
 - Remote fwd/rev selector switch.
 - Remote speed control.
 - Remote speed & load meters.



Converting to a Spin-On Filter Design

Ref. Package No. 1232-059

This package replaces the cartridge type filters utilized on Trabon lubrication systems with an easy replacement, 10 micron spin-on filter.

Benefits:

- Readily available spare pump and motor parts.
- Reduced lubrication system maintenance as a result of:
 - Filtering the oil prior to it's entering the pump.
 - Automatically top stops the press in the event of a clogged filter.
 - Built-in clogged filter indicator light system.
 - Easily replaceable spin-on type filter.

Package Includes:

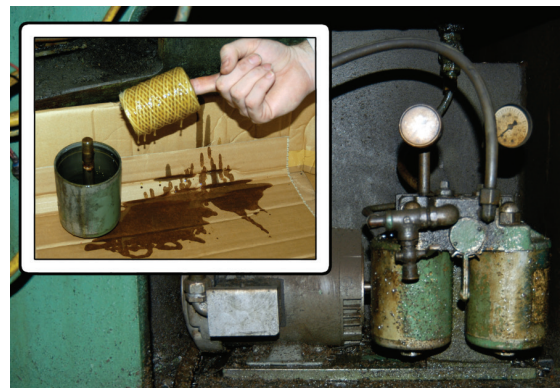
- Filter Base and Mounting Bracket
- 10-Micron Spin-On Type Filter Canister
- Vacuum Switch
- Vacuum Gauge
- Clogged Filter Indicator Light
- Installation Bulletin TB2423

(Customer is responsible for specific plumbing and mounting hardware and installation.)

Press Lines:

- P2H, ECH, SASH and EC
- (May not be available for some models.)*

**ORIGINAL
TRABON
FILTERING
SYSTEM**



**UPDATED
SPIN-ON
FILTERING
SYSTEM**



CONTRACT PRESS UPGRADES

Bodine Motor Lube Unit Replacement Package

Ref. Part No. 810-0197 for 1.88 GPH or Ref. Part No. 810-0790 for 4.66 GPH Lube System

This package replaces press lubrication systems that utilize obsolete Bodine fractional drive lube motors, which includes those with either a 10:1, 36:1 or 72:1 ratio. These motors are no longer supported by the manufacturer. Enhancements included with this replacement package include a spin-on type filtering system, blocked line detection, and a larger lube motor.

Benefits:

- Readily available spare pump and motor parts.
- Three to five times better oil filtration than the older disc design.
- Removal of oil contaminant via the disposable spin-on filter.
- Protection against blocked oil lines.
 - A flow switch will shut down the press in the event of lost oil flow. Note: this switch cannot detect broken oil lines.

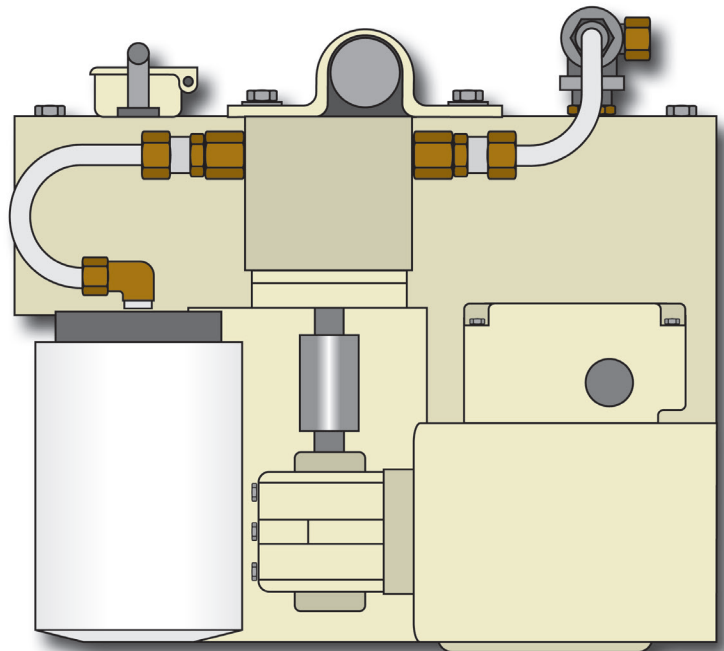
Package Includes:

The lubrication unit is assembled on a steel plate that the customer mounts to the press. This unit includes:

- Lube motor and pump
- Spin-on, 25 micron filter
- Electrical installation information
- Heater and thermal relay
- Flow switch and static switch
- Plastic oil reservoir for oil's

Press Lines:

- E2, P2, P1, G1, S1, S2 and OBI



VFD Capable Lube Unit Update

Ref. Part No. 6122-545

Replaces the lubrication motor/pump unit with an assembly that is VFD capable. The addition of the VFD allows the unit to cover a variety of flow requirements across several press lines and the press sizes there within.

Benefits:

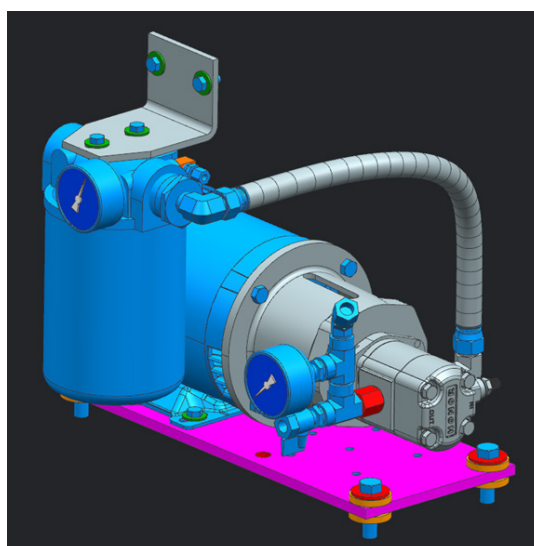
- Commonly stocked parts to reduce cost and replacement lead times.
- One unit can replace several assemblies. The VFD allows you to set up the amount of flow needed for that particular machine.

Package Includes:

- Motor/pump assembly
- Filter
- Isolated mounting plate
- VFD
- Circuit breaker
- Relay
- Cable
- 8953-267 install instructions

Press Lines:

- P2, E2, DAC, S2



CONTRACT PRESS UPGRADES

Internal Locking Assemblies (for Solid Drive Pinions)

Ref. Package No. 1262-749

This package allows the original “keyed” drive pinions to be converted to utilize an internal locking assembly.

Benefits:

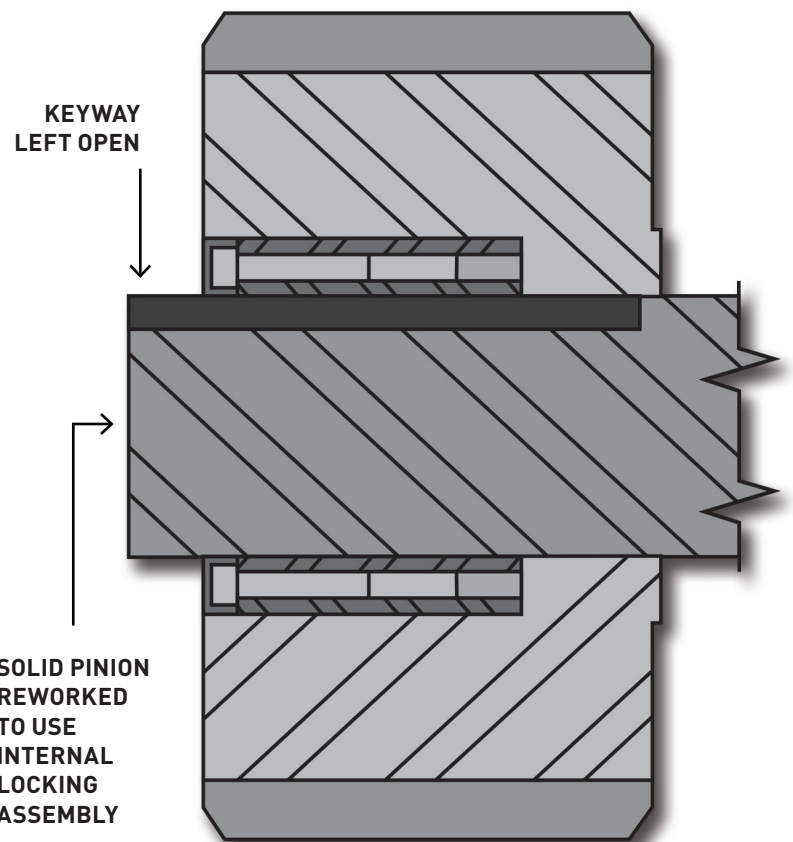
- Eliminates the key and the high stress points keyways create.
- Reduces the possibility of damage to other keys and keyways in the pinions, gears or crankshaft should an overload condition occur.
- Allows for easier and quicker gear train timing and setting of backlash by eliminating the need to fit new keys, reducing downtime from a few days (key setting) to a few hours (torque locking assemblies).

Package Includes:

- Internal locking assemblies
- Drawing for customer to re-machine pinions or pinions can be re-machined by Nidec Press & Automation.

Press Lines:

- E2, DAC and DAS



Hydraulic Tie Rod Package

Ref. Part No. 810-0953

Hydraulic tie rods provide an alternative to the standard tie rod and nut assembly.

Benefits:

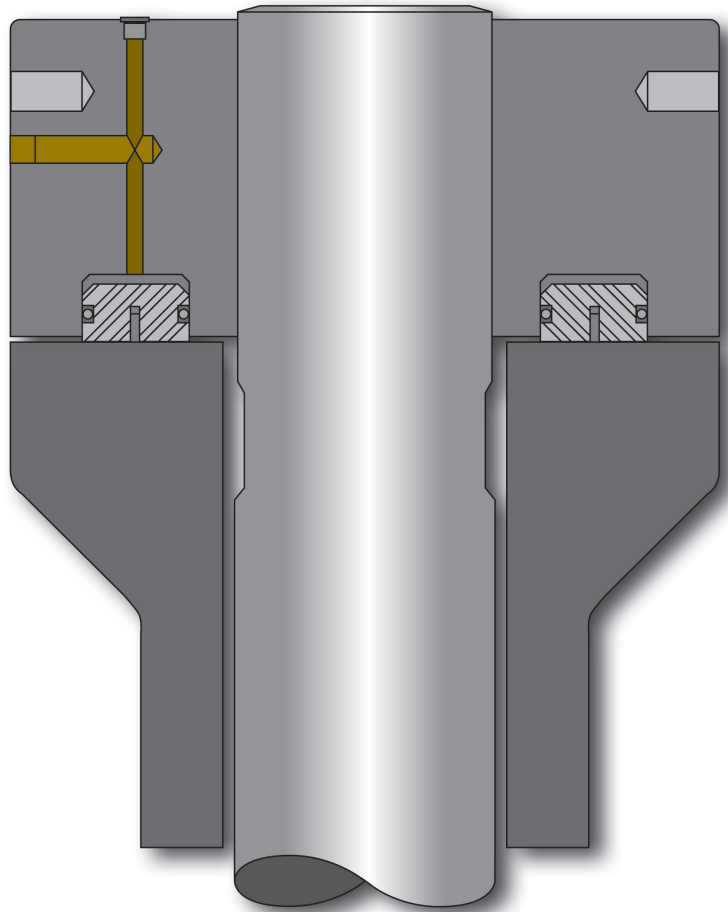
- Allows for faster clamping and unclamping of the press since there is no waiting for the tie rods to either heat up or cool down.
- Reduces downtime from a day or more to a few minutes when coupled with the Hydraulic Tie Rod Pump package .

Package Includes:

- Tie rods and nuts
- Tie rod spacers
- Tie rod pistons
- Seals and shims
- Pump, fittings and hoses
- Installation hardware
- Installation instructions

Press Lines:

- E2 and P2



CONTRACT PRESS UPGRADES

Hydraulic Tie Rod Pump Package

Ref. Part No. 1232-338 for E2's and 6120-246 for P2's

This package provides an air over oil pump assembly that can be used to replace existing hand pumps. The pump assembly uses the flywheel brake air supply as a source of air to power the unit.

Benefits:

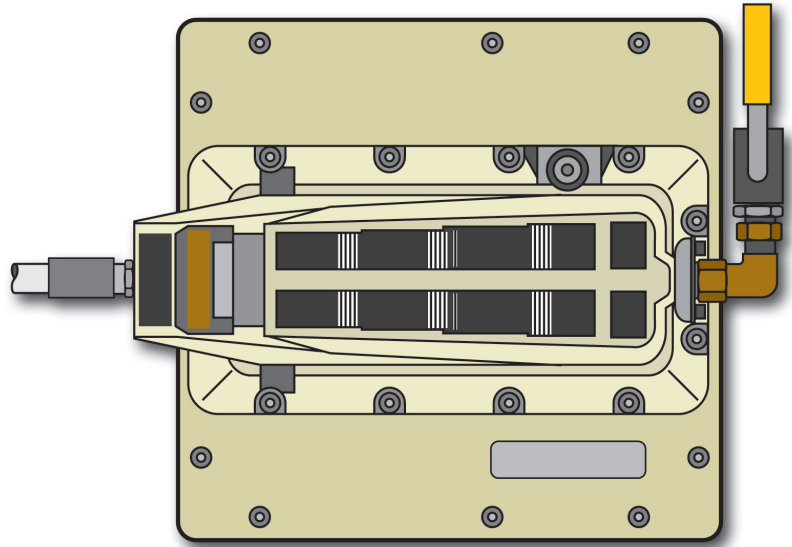
- Reduces unplanned maintenance time required to release a press slide stuck on the bottom of the stroke.
- Allows maintenance to quickly relieve tie rod tension without delays of locating a pump and fittings.

Package Includes:

- Air over oil hydraulic pump
- Hose to connect the pump to the existing manifold block
- Hardware for mounting pump/reservoir unit
- Fittings for connection to all four (4) hydraulic tie rods
- Hose assemblies from manifold to tie rods if existing cannot be re-used
- Installation information

Press Lines:

- All presses with hydraulic tie rods



MonitorFlow® Lubrication Package

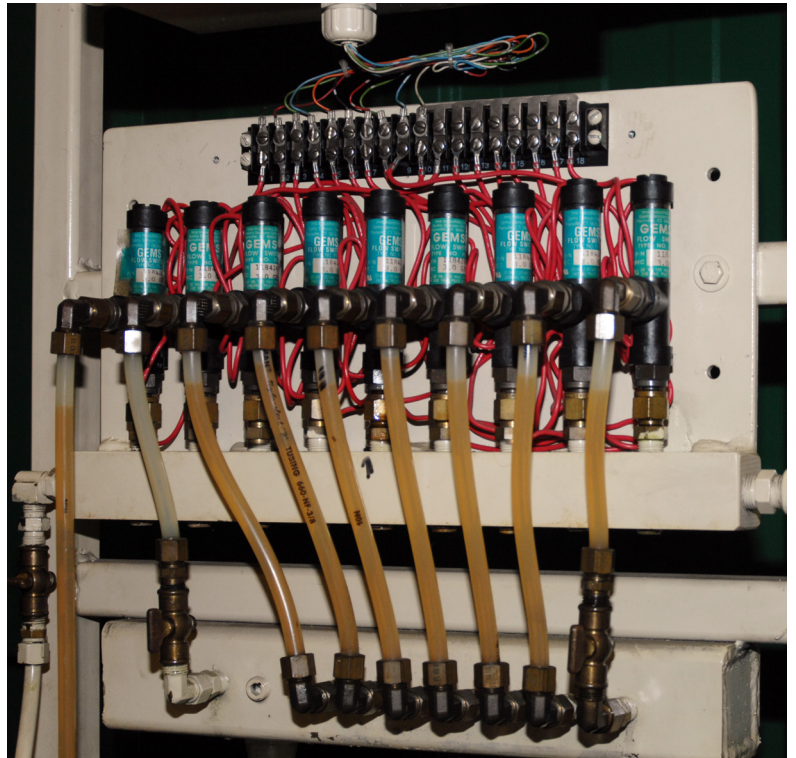
This package allows constant monitoring of lubrication points on the driveshaft and other critical components.

Benefits:

- The system automatically top stops the press operation in the event of a loss of lubrication at one or more of the monitored points to prevent damage of crucial bushings and bearings.
- Not only ensures sufficient flow is getting to each lubrication point, but also monitors for “broken line” conditions.

Package Includes:

- Flow switches and orifices
 - Fittings and tubing
 - Electronic monitoring device or plc module
- *Depending on press vintage, additional parts may be required such as an oil tank or oil control guards.



CONTRACT PRESS UPGRADES

Flywheel Brake Packages

Ref. Part No. 810-0383

This package adds a pneumatic operated brake unit to stop the Flywheel after the press has shut down.

Benefits:

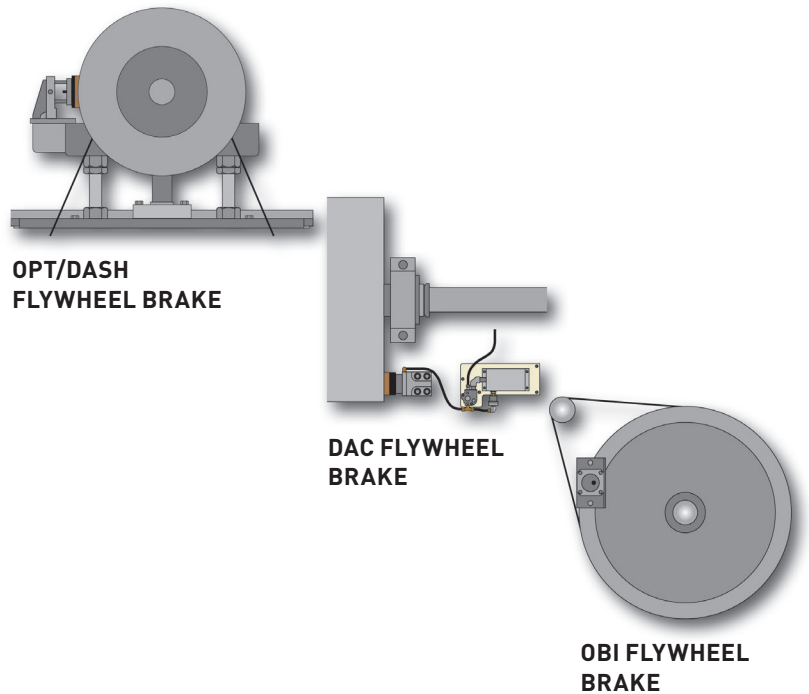
- Quicker access to the press after shutdown.
- Safer for maintenance personnel servicing the press.
- Often necessary when converting from an Eddy Current main drive motor (with EC brake) to a VFD.

Package Includes:

- Mounting bracket
- Brake unit and facings
- Activation valve and pressure switch
- All necessary lines and fittings
- Installation instructions

Press Lines:

- OPTH, DASH, DAC, E2, P2, and OBI



New Style Air Manifold Assembly

Ref. Part No. 810-1653 through 810-1657

Replaces old style Republic manifold assembly that no longer exists. Use off-the-shelf parts that are lower cost and have better lead time.

Benefits:

- Ease of maintenance
- Lower cost
- Better part lead time

Package Includes:

- 1-5 regulators (based on the number of pneumatic lines required per press)
- Filter
- Check valves
- Silencer
- Shutoff valve
- Mounting and plumbing hardware

Press Lines:

- Any presses requiring pneumatics for clutch, flywheel brake or counterbalances



E2 AIR MANIFOLD



P2 AIR MANIFOLD

CONTRACT PRESS UPGRADES

Air Clutch/Brake Unit Facing Upgrade

This kit updates your existing clutch/brake with new, more aggressive facings.

Benefits:

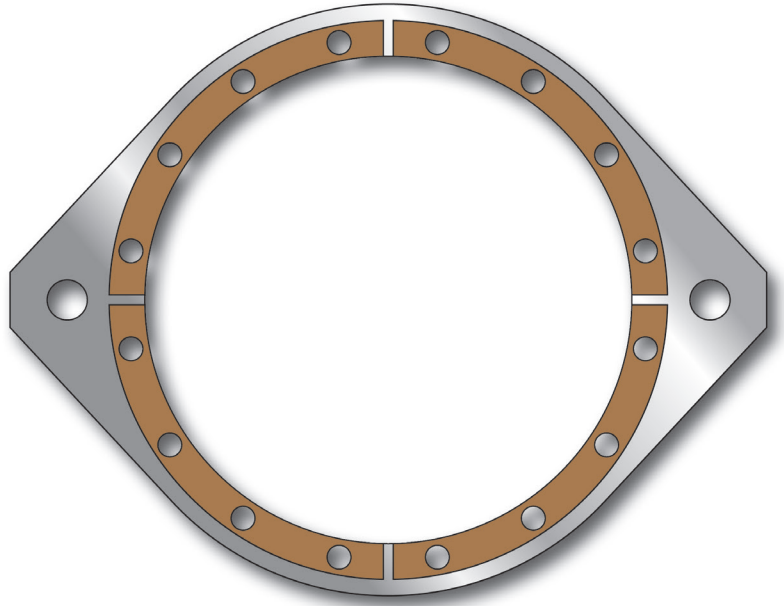
- Increased brake friction for better reaction time.
- Provides increased protection of press and dies.
- Extends the life of your brake facings, reducing downtime for rebuilds

Package Includes:

- New brake facings
- Mounting hardware
- Steel brake disk

Press Lines:

- All presses utilizing the Minster air clutch/brake units.



MC Clutch/Brake Unit Spring Package

This package adds four brake springs to your existing 12-spring MC Clutch/Brake Unit.

Benefits:

- Increased brake torque for faster breaking time.
(Increased brake torque reduces clutch torque.)

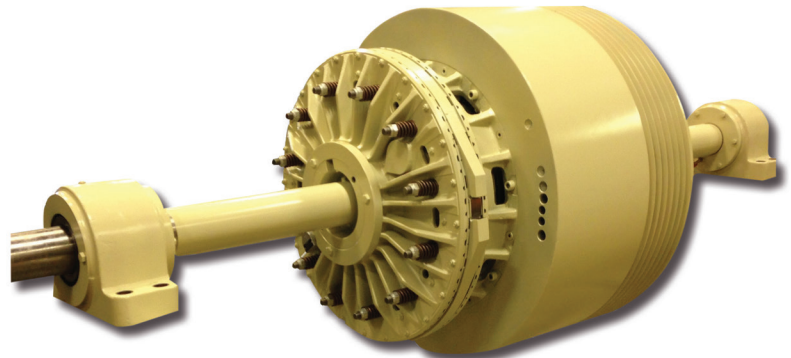
Package Includes:

- Pressure plate*
- Cylinder plate*
- New brake studs
- New brake springs
- Steel brake disk

**Original parts can be reworked to accept four more springs*

Press Lines:

- All presses utilizing the Minster MC clutch/brake unit.



CONTRACT PRESS UPGRADES

Tandem Air Valve Clutch Package

This upgrade replaces the current clutch valve with a tandem air clutch valve.

Benefits:

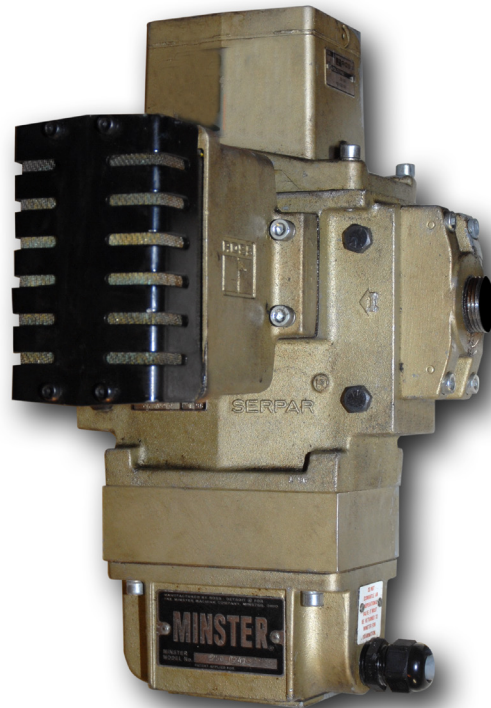
- Minster tandem air clutch valves are connected in a parallel circuit to allow quick de-activation of the clutch in the event that one of the valves should fail mechanically. Available with either mechanical or electronic valve monitoring.

Package Includes:

- New dual air clutch valve
- Connector cables allows for quicker replacement vs. hard wired units.
- Mechanical reset (if applicable)
- All necessary hoses, fittings and tubing

Press Lines:

- All air clutch & brakes utilizing $\frac{3}{4}$ & $1\frac{1}{4}$ clutch valves.



Minster Rotary Union For Air Clutches

Ref. Part No. 810-0343

The new air rotary union package replaces the old slower speed leather seal style rotary air union.

Benefits:

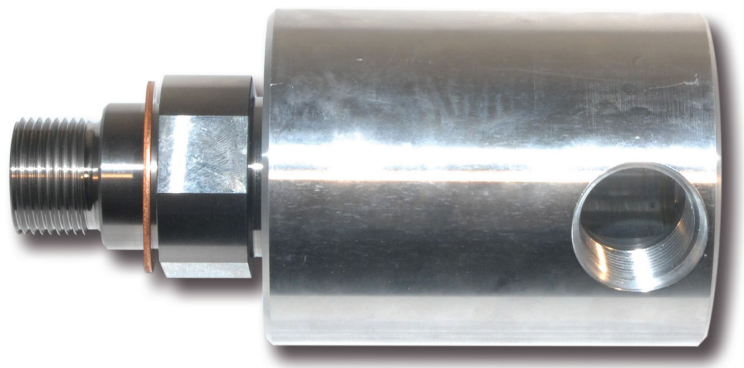
- Applicable to Higher Press Speeds.
- Better part availability.
- Ease of maintenance
- Reduces hours of downtime by eliminating the periodic replacement of the leather seal.

Package Includes:

- Rotary union
- Distributor spindle, seal and adapter
- All necessary plumbing and mounting hardware
- Installation instructions

Press Lines:

- Any Minster press with an air clutch



CONTRACT PRESS UPGRADES

Minster Rotary Union for Hydraulic Clutches

Ref. Part No. 810-1155 for E2's and DAC's

The Minster Rotary Union (MRU) is designed to transfer fluid up to 10,000 psi into rotating machinery at speeds of up to 1,500 rpm. The MRU was designed with hydrodynamic oil film type bearing and high pressure seal arrangement in place of the failure prone face seals and roller bearings utilized in typical rotary unions. The MRU has been the standard for all for Minster hydraulic clutches since 1998.

Benefits:

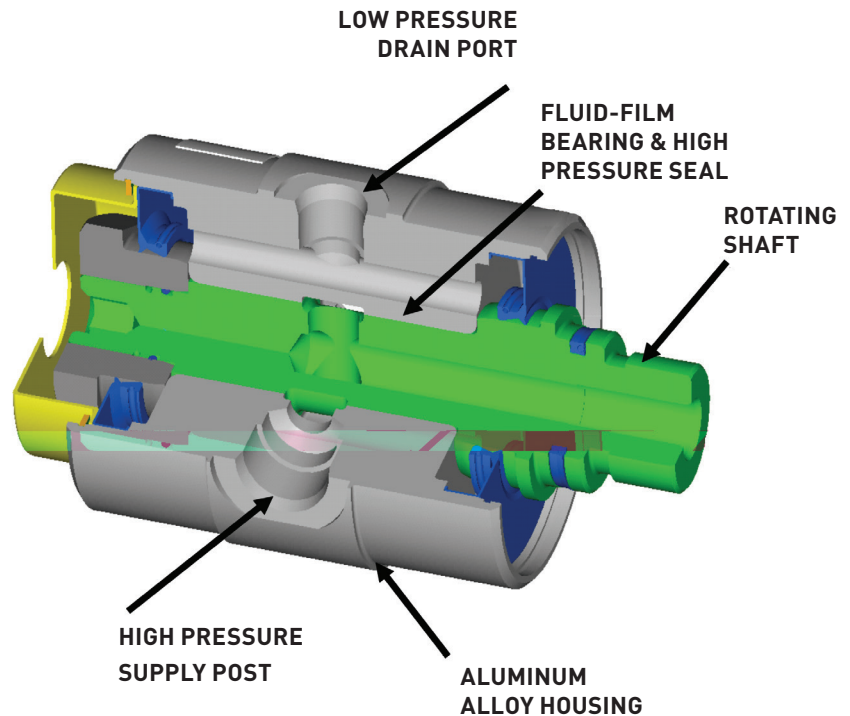
- 3 To 5 times the life of typical rotary unions due to:
 - Elimination of high pressure face seals.
 - Elimination of rolling element bearings.
- Ability to withstand high vibration environments.
- Units can be rebuilt.
- Alternative and custom designs are available.

Package Includes:

- Rotary union
- High pressure hose
- Drain hose
- All necessary plumbing and mounting hardware.

Press Lines:

- Any Minster press with a hydraulic clutch.



Flywheel Bearing Re-Grease Package

This package provides an easily accessible method of replenishing the grease for the flywheel bearings. It also includes new flywheel bearings and bearing spacers that are assembled to tight tolerances. Note, the flywheel typically requires rework to incorporate this new package.

** This package is standard with all Spherical Bearing Upgrades*

Benefits:

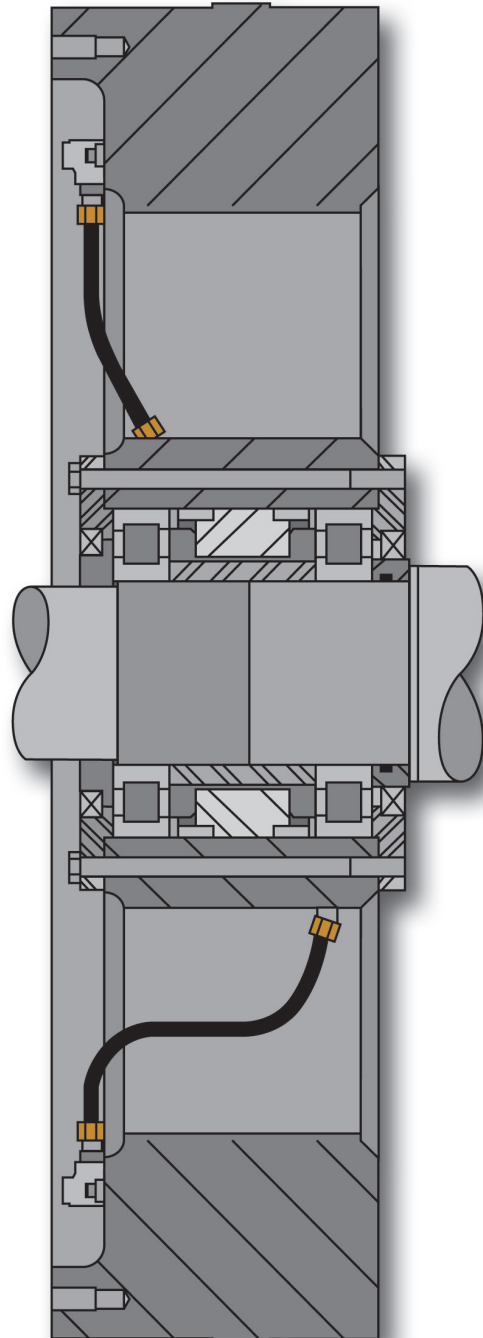
- Increases flywheel bearing life by an average of 250% over non re-grease installations.
 - Re-greasing the bearings allows them to run cooler and more efficient, resulting in prolonged life.
 - Modified bearing installation tolerances optimize bearing life.
 - Allows for easy access to grease both the front and the rear bearings, optimizing efficiency.
- Reduced maintenance costs.
- Reduced unplanned downtime.

Package Includes:

- Flywheel bearings
- Bearing spacers and retainers
- Bearing oil seals
- O-rings
- Fittings and hoses required for installation
- Drawings and instructions for required flywheel modifications

Press Lines:

- ECH, EC, PM3, PM2, P2H, DASH, DAC, DAS, OPTH, SASH and TR2



CONTRACT PRESS UPGRADES

Clutch Sleeve Anti-Fretting Mounting Package

Ref. Part No. 810-1015

This package replaces the existing clutch sleeve with a new clutch sleeve that is designed to incorporate an internal shaft locking device to hold the clutch sleeve in place instead of a key. This device virtually eliminates any fretting that may occur between the clutch sleeve and the crankshaft.

Benefits:

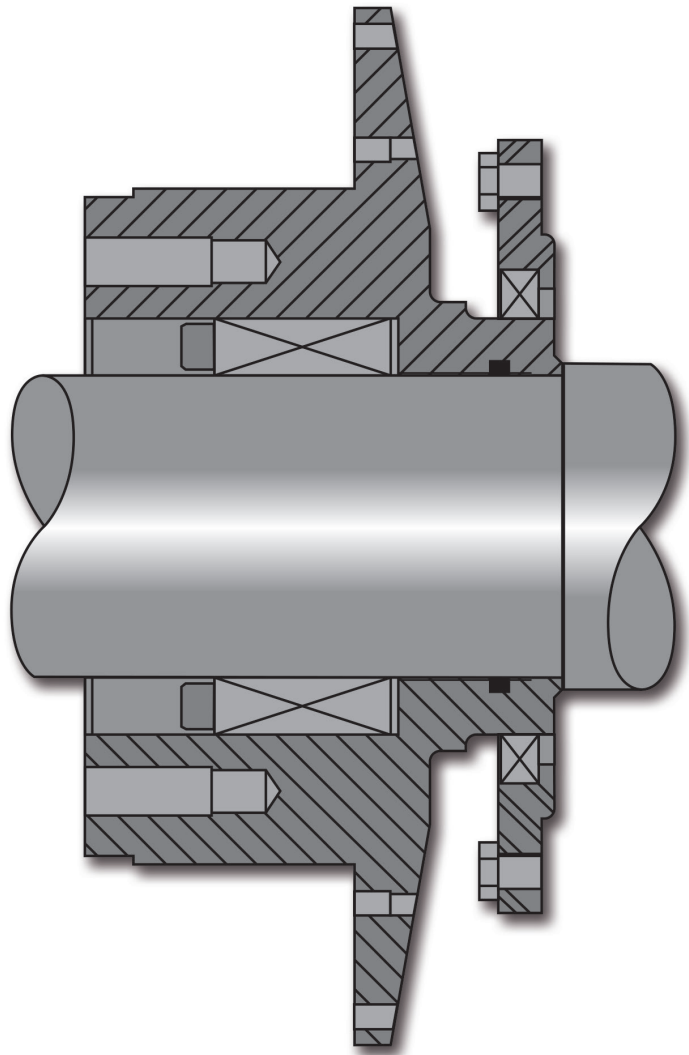
- Reduces risk of extended and unplanned downtime due to crankshaft failure.
 - By reducing crankshaft fretting, the crankshaft life is significantly increased.
- Reduces potential maintenance costs.

Package Includes:

- New clutch sleeve
- Shaft locking assembly
- Oil seal and o-ring
- Installation information

Press Lines:

- ECH, EC, PM3, PM2, P2H, DASH, DACH, OPTH, and SASH



Replaceable Brake Key Linings

This package adds new, more durable brake keys with replaceable linings to existing Minster Clutch/Brake Units.

Benefits:

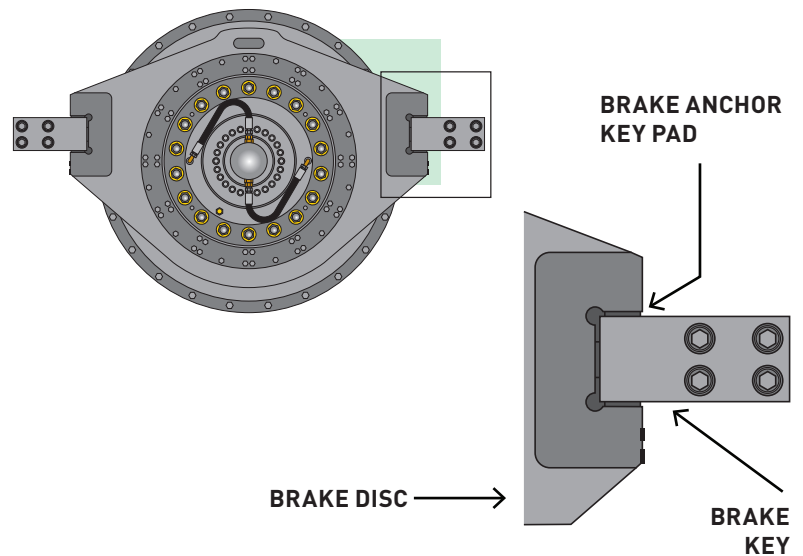
- Reduces damage to the brake disc anchor slot and the brake key incurred during normal operation and single stroke applications.
- Reduce downtime by allowing a quicker maintenance.
- Saves money by being able to replace the linings instead of damaging the brake disc or brake anchor keys.

Package Includes:

- New brake keys
- Brake anchor key pads
- All necessary mounting hardware

Press Lines:

- All presses utilizing the Minster MC, EFHC and MHC clutch/brake units.



CONTRACT PRESS UPGRADES

Automatic Shutheight Adjustment for Slide or Bolster

Ref. Part No. 810-1218)

This package allows for automatic shutheight adjustment using the slide or bolster, from your control pedestal and/or touch screen.

Benefits:

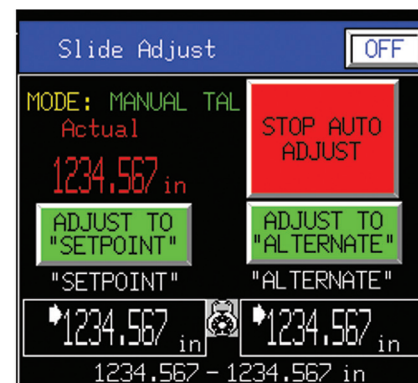
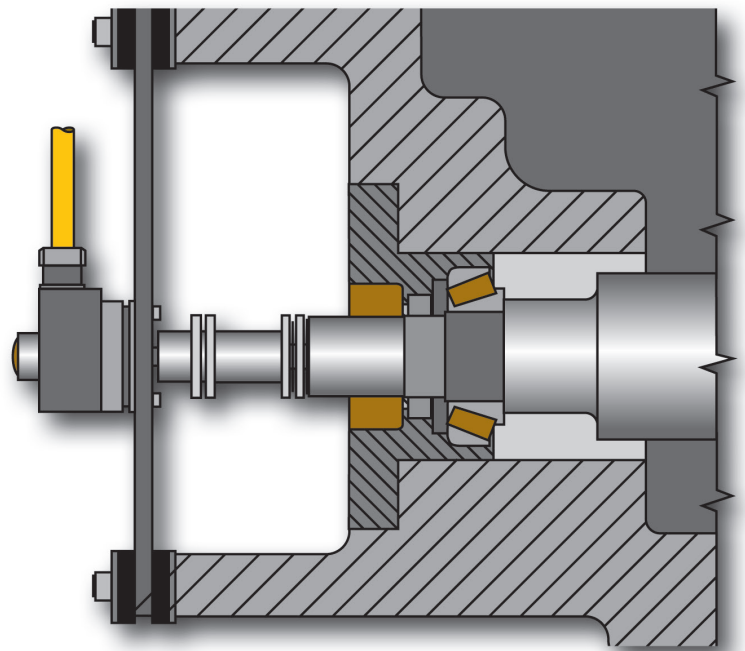
- Allows for accurate adjustment and gauging of shutheight using the slide or bolster from your control pedestal and/or touch screen.
- Can be set to automatically adjust to a pre-determined set point.
- Desired shutheight can be stored in the control "tool storage" screen, reducing the need for paper or written notes.

Package Includes:

- Encoder with mounting bracket
- Drive coupling or pulleys
- All necessary mounting hardware
- Control programming for readout

Press Lines:

- Most Minster presses with slide or bolster height adjustment and production management control (PMC).



Electronic Digital Shutheight Readout Package

Ref. Part No. 810-1918

This package provides an electronic digital shutheight readout to replace the mechanical shutheight indicator.

Benefits:

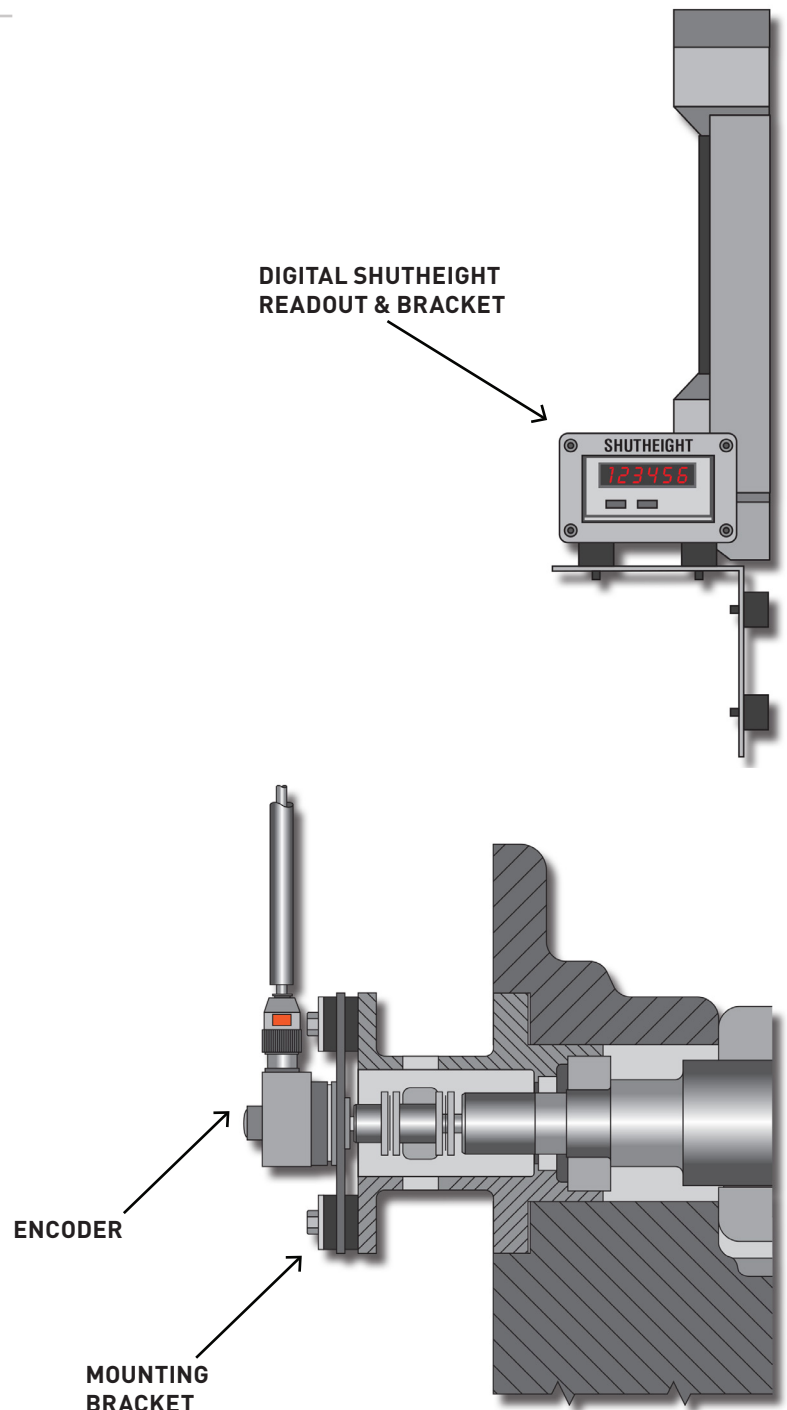
- Remote electronic readout can be placed anywhere on the press for improved line of sight of operator while adjusting press shutheight.
- Can be retrofit to older presses that have no shutheight indicators.
- Replaces obsolete mechanical counters.
- The readout can be integrated into the control with certain version of the Minster production management control (PMC).

Package Includes:

- Encoder with mounting bracket
- Drive coupling or pulley
- Digital readout and mounting bracket
- All necessary mounting hardware

Press Lines:

- Most Minster presses.



CONTRACT PRESS UPGRADES

Quick Die Change Package

Ref. Part No. 100425850

This package offers safe and reliable movement of dies between presses with minimal effort.

Benefits:

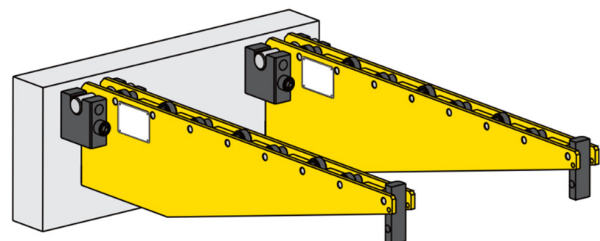
- Shorten die changing time
- Improve safety level

Package Includes:

- Hydraulic power unit
- Rails
- Clamps
- Manifolds
- All required fittings and hydraulic lines
- Consoles
- Hooks
- Mounting hardware

Press Lines:

- All presses



Detachable Slide Adjust Motor Package

Ref. Part No. 810-1856 or 810-1866

Detachable motorized adjustment motor to be used to adjust the press shutheight for die setting. Fastens into a bracket mounted on the press slide yet can be removed for use on other presses after set up is complete.

Benefits:

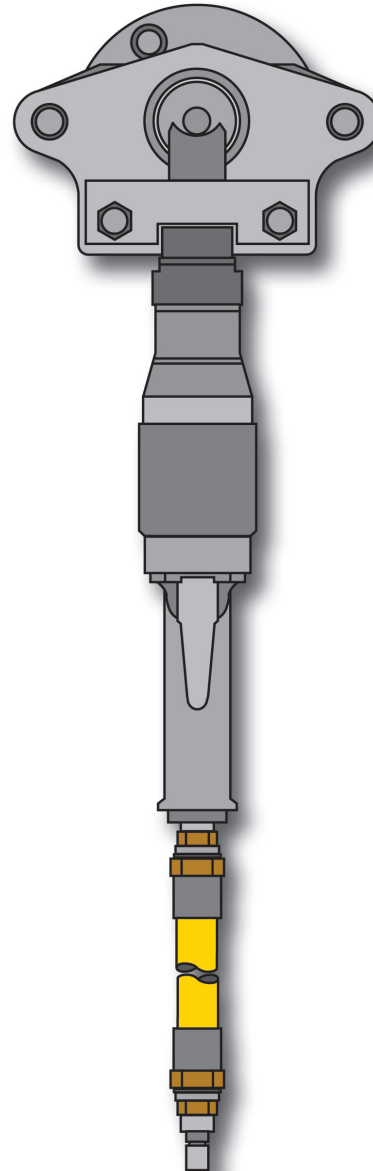
- Reduced die set up time by using this detachable air powered shutheight adjustment motor to adjust press shutheight.
- Easier to use than manual slide adjustment wrenches.

Package Includes:

- Air motor
- Air motor anti-rotation bracket
- Adjust socket
- Air hose
- Quick disconnect coupling
- Installation information

Press Lines:

- P2, DAC and DAS



CONTRACT PRESS UPGRADES

Shutheight Indicator Package

Ref. Part No. 810-1336

This package adds a visible shutheight indicator to the press slide.

Benefits:

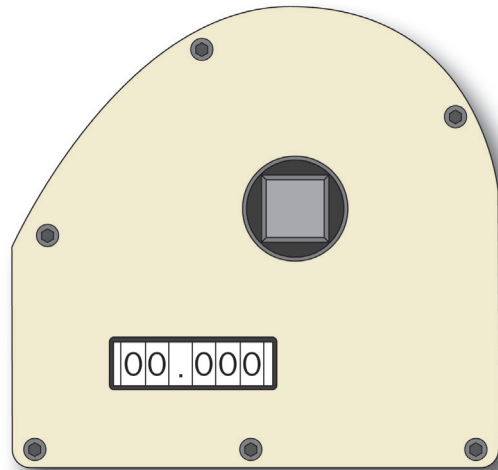
- Allows for accurate gauging of shutheight during die setting or adjustment without special tools or gauges, reducing set-up times.

Package Includes:

- English or metric indicator
- Indicator housing and cover
- All necessary gearing and hardware

Press Lines:

- All Minster presses with slide height adjust with mechanical readout as shown.



Piston Accumulator Package

Ref. Part No. 1262-1259

This package replaces the bladder type hydraulic accumulator with a modern nitrogen charged piston accumulator.

Benefits:

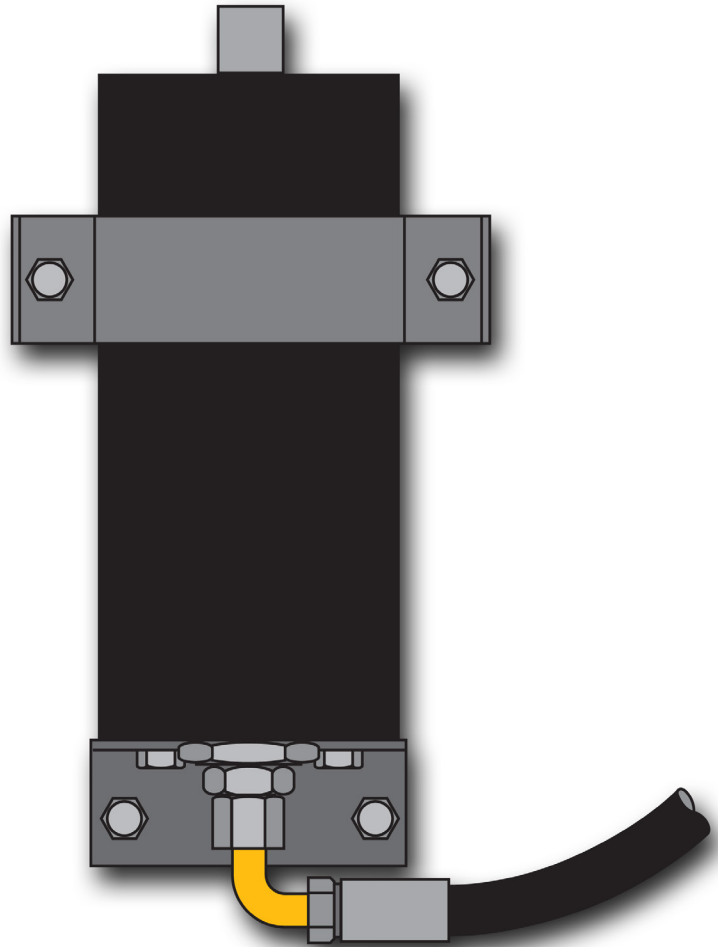
- Improved availability of parts.
- Easier maintenance.
- Constant system pressure during inch and single stroking operations, reducing “clutch slip” during set up.

Package Includes:

- Piston type accumulator
- Mounting bracket and hardware
- All necessary hoses and fittings

Press Lines:

- EC, ECH, OPTH, DASH, SASH, P2H and TR2



CONTRACT PRESS UPGRADES

Slide Control Pendant

Ref. Part No. 810-1336

This package adds a control pendant to the front or/and rear of an existing press. The pendant can be mounted on the bed or hung from the crown. *(Bed version shown)*

Benefits:

- Places control of the press and ancillary equipment in the hand of the operator and allows flexibility during start-up and coil changes by allowing the operator to move with the material during thread up.

Package Includes:

- Control box
- Track and cable tray
- All necessary wiring and connections

Press Lines:

- E2, E2H and P2H



Oil Sump Heaters

Ref. Part No. 810-0562

Heaters are provided to put in the reservoir to heat the oil before it is distributed throughout the press. The heaters are regulated to maintain the proper oil temperature and are activated when the press is **not** cycling.

Benefits:

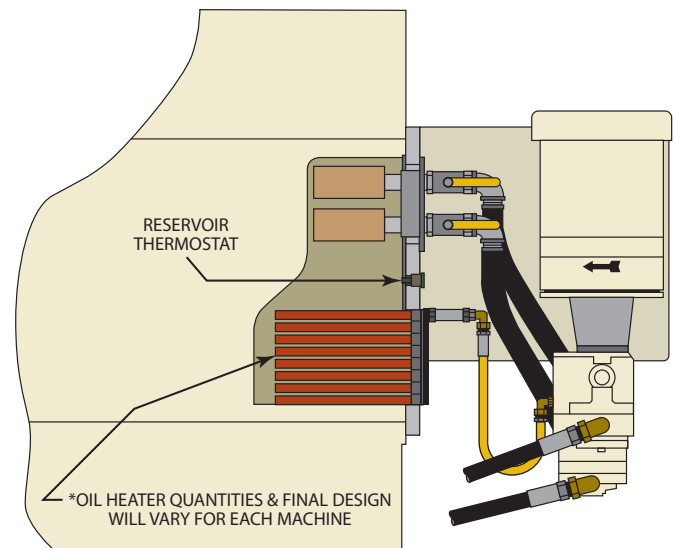
- Will maintain proper oil operating temperature while the press is not cycling, which is especially critical in cooler climates.
- Can be set on a timer to start prior to production start time.
- Allows for faster press start-up saving potential hours of accumulated wait time.

Package Includes:

- Immersion heaters
- Preset thermostat
- Oil reservoir cover(s)
- Installation hardware
- Installation instructions

Press Lines:

- All Minster press lines with proper sump capacity.



CONTRACT PRESS UPGRADES

Piston and Connection Heaters

Ref. Part No. 1218-193

When a press is initially started, it will begin to warm the structure. Until the connections and/or pistons reach a stable operating temperature, the shutheight may vary. By preheating the connections and/or pistons to operating temperature, any changes in shutheight can be minimized.

Benefits:

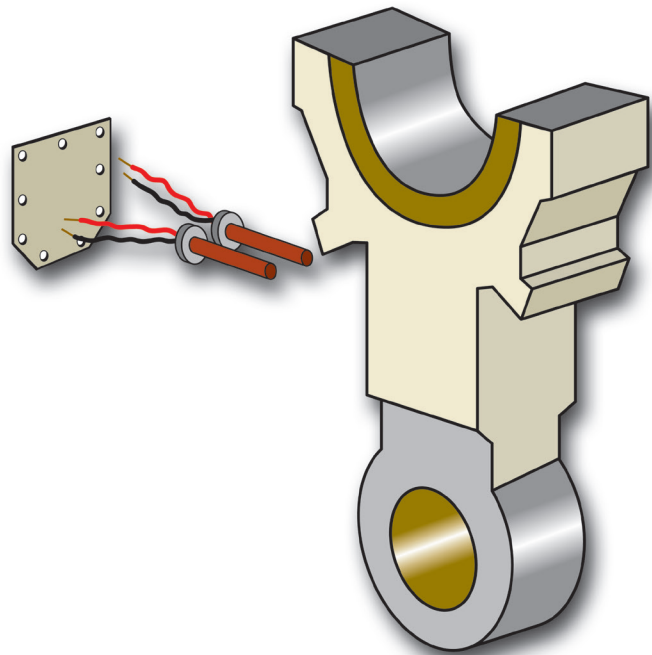
- Helps to limit loss of shutheight due to thermal elongation of the connections and pistons after the press has been running.
- Can be used to maintain the connection temperature whenever the press has been shut down for short periods of time.
- Eliminates scrap by allowing the press to run quality parts immediately rather than waiting for the press to reach the correct thermal level.

Package Includes:

- (2) Cartridge-type heaters per connection or piston.
- Electrical control box
- Connection re-machine print
- Wiring diagram

Press Lines:

- Most Minster press lines



Safety Railing

Ref. Part No. 810-2145

Add crown safety railing with caged ladder access. Lockout devices can be added to ensure press cannot run while personnel are working on the crown.

Benefits:

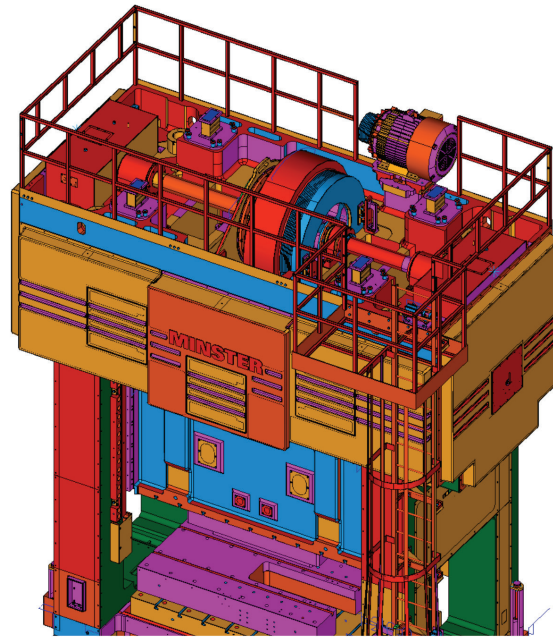
- Can be customized to fit customer's needs.
- Lockout devices can tie into current press control.

Package Includes:

- Safety railing
- Caged ladder
- Safety lockout devices
- Mounting equipment
- Installation instructions

Press Lines:

- E2, E2H and DAC



Die Door Assembly

This package adds front or/and rear die doors on an existing press.

Benefits:

- Die doors provide a no-bypass safety barrier and assist in containment of die lubricant.
- Die doors meet OSHA requirements.

Package Includes:

- Doors and track
- Counter weighted or pneumatically assisted
- Safety switches and hardware

Press Lines:

- P2, E2, PM2, PM3 and P2H



NOT INTENDED AS A PROJECTILE BARRIER

CONTRACT PRESS UPGRADES

Vibration Isolators

This package will provide vibration isolators for each corner of the press.

Benefits:

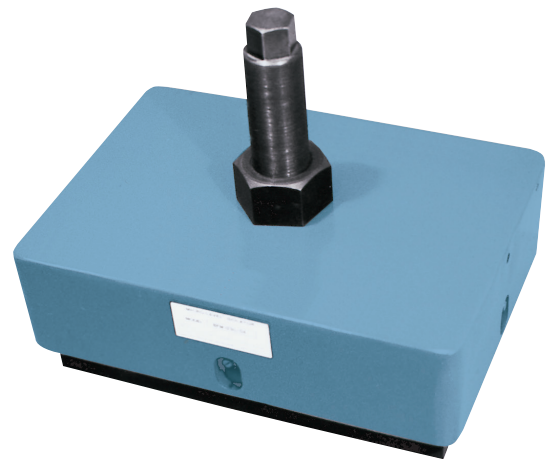
- Reduces transmitted shock and vibration.
- Rebuildable. Purchase new or send in your old units for repair.
- Provides an adjustment means to precisely level, align and properly support your press.
- Can provide the same level of isolation as air mounts but without the same risk of damage or leakage.

Package Includes:

- Isolator assemblies
- Leveling screws

Press Lines:

- All presses



Aluminum Die Safety Blocks

This package is for adding die safety blocks with repetitive shutheights. Each block has a predetermined static load rating and is made to a specific length.

Benefits:

- Strong for static loads and lightweight for handling.
- Can be supplied for a large range of shutheights.
- Meets OSHA regulations.

Package Includes:

- Safety block(s)
- Interlocking plug and receptacle
- Optional safety block holder available

Press Lines:

- All Minster presses



Adjustable Die Safety Block Package

This package simplifies using die safety blocks with frequent shutheight variations. Each block has a predetermined adjustable range and specific load rating.

Benefits:

- Reduces die set up time.
- Versatile for a variety of shutheights.
- Adjustable height feature to eliminate the need for wedges.
- Meets OSHA regulations.

Package Includes:

- Height adjustable safety block
- Interlocking plug and receptacle
- Optional safety block holder available

Press Lines:

- All presses



CONTRACT PRESS UPGRADES

Press Remanufacturing and Component Rebuild

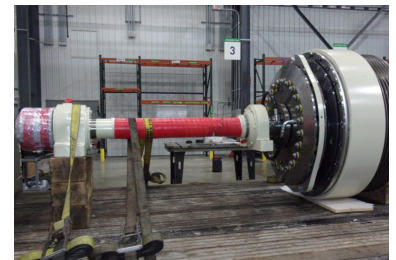
Nidec Press & Automation's Services Division can enhance your equipment to better meet your current requirements. You make the choice whether to recondition, rebuild or remanufacture your equipment. Nidec Press & Automation can handle your project from start to finish including: disassembly, transport, rebuild and install. Nidec Press & Automation's years of experience and skill have been applied to non-Nidec Press & Automation equipment for years. Think Nidec Press & Automation for all your press room equipment needs.

Benefits:

- Minimizes damage by having Nidec Press & Automation do the removal, disassembly and installation.
- Rebuild to suit your unique requirements. Whether you're faced with budget or time constraints, or for any other reason, we will quote the scope of work that makes sense for you.
- Incorporates newer technology and upgrades.
- Bring your outdated controls up to current ANSI and OSHA standards.
- Update your tolerances and clearances to match brand new specifications.
- Repair and cracks or defects using updated weld requirements.

Press Lines:

- Minster press line equipment and most of the other brands equipment.





One Brand: A World of Resources

Nidec Press & Automation is the full service press room provider of choice for businesses in more than 90 countries and on six continents. Comprised of leading press room product brands, we ensure a complete offering of machinery, services and technology to meet your exact needs, enabling you to rely on one source for your press room.

Discover the freedom to achieve, to maximize and to drive your operation to exceed your goals. At Nidec Press & Automation, your success is the core of our focus and how we design our solutions to meet the rigid needs of the metal forming industry.

Choosing to work with us means you gain a constant resource with a global footprint who not only has the brightest minds behind our solutions for you, but also has regionally based OEM support ready to work as a natural extension of your team.

**Our promise to you is simple:
We're with you whenever and wherever
business takes you.**



MACHINERY

Turn Key Systems
Individual Components
System/Tech Upgrades
i4.0 Software Upgrades
Integrated Controls

METAL FORMING PRESS APPLICATIONS

Mechanical
Servo
Transfer
Notching
High-Speed & Electrical
Electrical Vehicle (EV)
Lamination
Container Cupping
Container End-Conversion
Container Shell
Gap/D-Frame

AUTOMATION

Press Tending / Robotics
Integrated Transfer
Systems
High Speed Servo Feeds
High Speed Gripper Feeds
Heavy-Duty Coil Lines

GLOBAL SERVICE NETWORK

Field Service
Emergency Response
Technical Service & Support
OEM Replacement Parts
Machine & Component
Remanufacturing
Technical Training

MINSTER

A NIDEC PRESS & AUTOMATION CO.

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