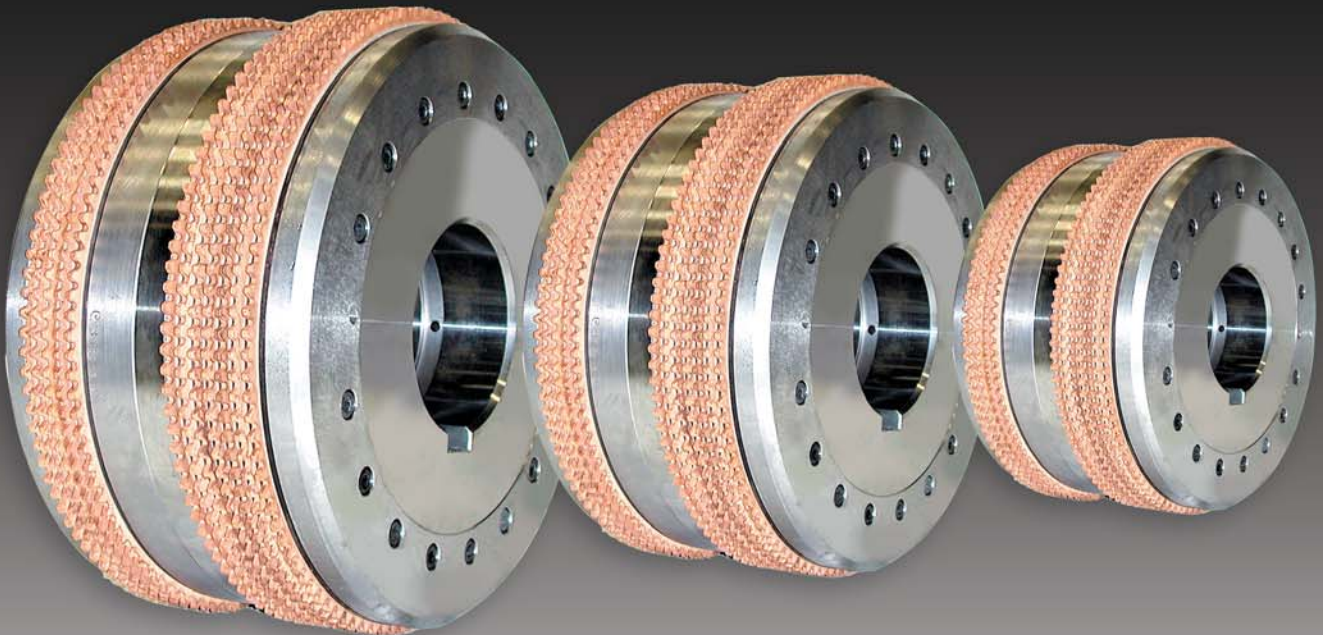


Press Pac[®] 3200

COMBINATION CLUTCH/BRAKE
HYDRAULIC ACTUATION / OIL COOLED PRESS DRIVES



High Performance Press Drives For Metal Forming Presses



Press Pac® 3200 Series Clutch/Brake Systems

Press Pac® Proven Reliability

The original Press Pac® Oil Shear Press Drives were introduced in 1968. Since that time, thousands of our press drive systems are proven in the toughest metal forming applications where reliability and performance of these systems significantly impact production output.

The Press Pac® 3200 Series is the 4th generation of oil shear press drive from Midwest Brake. Designed for use on new, original equipment, the 3200 Series is hydraulically actuated and oil cooled offering increased service life through the advanced oil shear cooling technology.

Industrial production requirements demand higher quality and performance from press drive systems. Press Pac® will increase machine uptime and reliability, lower maintenance requirements and repair costs over the life of your machine.

Press Pac® Applications

- Stamping Presses
- Forging Presses & Upsetters
- Headers
- Press Brakes
- N.C. Turret Punch Press
- Metal Forming Equipment

Press Pac® Benefits

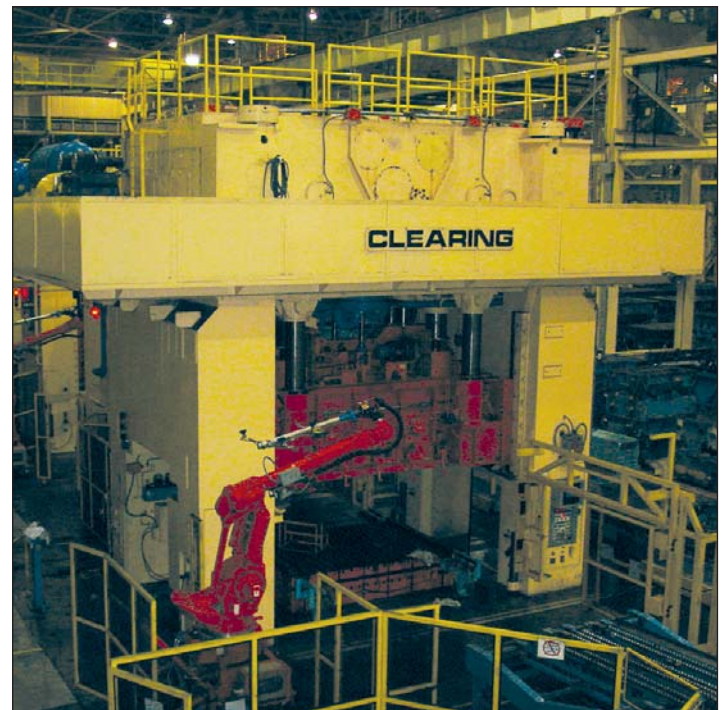
- Increased Production Rates
- Increased Reliability & Machine Uptime
- Reduced Life Cycle Costs
- Simple Installation
- Minimal Maintenance Requirements



Press Pac® 3200 Series
Multiple Disc Clutch/Brake
Shown Without Housing



Tier 1 Automotive Stamping Plant
Retrofitted With Press Pac® Hydraulic Clutch/Brakes



Press Pac® 3294 Series
900/600 Ton Double Action Stamping Press Installation

Oil Shear Press Drives For Metal Forming Equipment

World Class Press Drive Engineering

Midwest Brake® develops, produces and delivers the latest high performance oil shear press drives that deliver innovation and performance to our customers.

Our press drive systems have successfully been in service worldwide for many years and are proven in many of the world's leading automotive facilities and stamping plants.

Midwest Brake® offers custom design and application engineering support, field service support and a network of sales engineers ready to assist you with your press drive requirements.

- Press Drive System Engineering
- Clutch/Brake Design & Manufacture
- Application Engineering Support
- Field Service Support
- Turnkey Installation Services
- Controls & Systems Support

Press Pac® For New Equipment

Midwest Brake® specializes in the design and manufacture of oil shear press drive systems for original equipment manufacturers and new equipment installations.

Our complete line of oil shear clutch/brakes are easily incorporated into new press designs and new equipment. Our team of professional application engineers, sales engineers and customer service personnel are dedicated to providing OEM customers the high level of service and support needed in today's manufacturing environment.



Press Pac® 3294 Series – Hydraulic Actuation / Oil Cooled



Automotive Stamping Plant
Tandem Line Retrofitted With Press Pac® Hydraulic Clutch/Brakes

Midwest Brake® Oil Shear Press Drive History

- 1962** 1st Retrofit of a Stamping Press with an Oil Shear Press Drive
- 1968** Press Pac® 1600 Series – Commercial Introduction Oil Shear Press Drive Pneumatically Actuated/Oil Cooled
- 1986** Press Pac® 2000 – Field Test Oil Shear Press Drive Hydraulically Actuated/Oil Cooled
- 1991** Press Pac® 2100 Series – Commercial Introduction Oil Shear Press Drive Hydraulically Actuated/Oil Cooled
- 1994** 500th Stamping Press – Retrofit
- 1997** Press Pac® 3200 Series – Commercial Introduction Oil Shear Clutch/Brake – OEM Design Hydraulically Actuated/Oil Cooled
- 2002** Over 4000 Stamping Press & Welding Press Drives Successfully Installed Worldwide

Press Pac® 3200 Series Clutch/Brake Systems

Press Pac® 3200 Series Multiple Disc Clutch/Brake

The Press Pac® 3200 Series Oil Shear Clutch/Brake Drive System is a hydraulically actuated / oil cooled, multiple disc, combination clutch/brake for metal forming presses.

This unit is designed for installation on new equipment including stamping & forging presses up to 4000 tons. These high performance drive systems offer precise control, are virtually maintenance free, and eliminate costly downtime by utilizing advanced oil shear design technology.

Press Pac® 3200 Series Features

- Hydraulic Actuation / Oil Cooling
- 7 Standard Clutch/Brake Models
- Reinforced Clutch & Reinforced Brake Models
- Torque Range 2250 Lb-ft thru 160,000 Lb-ft
- Soft Start / Soft Stop Control Package
- Mounted With Keys or Locking Assemblies
- Actuation Pressure of 800 PSI

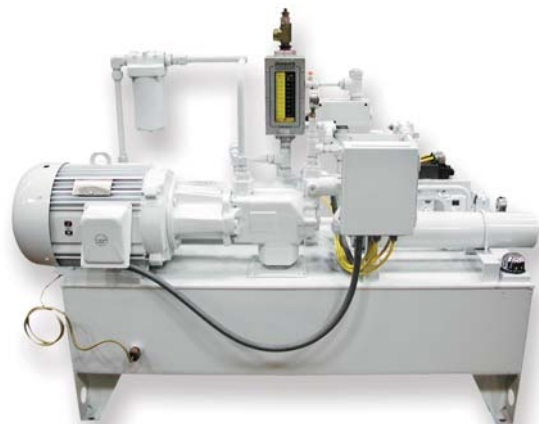


Press Pac® 3200 Series Benefits

- **Longer Clutch/Brake Life** – High Cooling Capacity
 - Circulating Oil System – Dissipates Heat & Cools Oil
 - Friction Discs Are Continually Lubricated
 - Excellent Single Stroke Performance
Rapid Stroke Rate
- **Maintenance Free**
 - No Clutch/Brake Adjustment
 - Virtually No Friction Disc Wear
 - Eliminates Press Downtime
- **Excellent Start / Stop Capability**
 - Consistent Braking Angles
 - Controlled Accel / Decel Available
- **Smooth, Quiet Engagement**
 - Extends Life of Press Parts
 - Cushioned Engagement of Oil Shear
 - Noise Free
 - No Hazardous Dust Lining Exhausted Into Atmosphere
- **Compact Design**
 - Low Inertia
 - High Torque In a Smaller Package

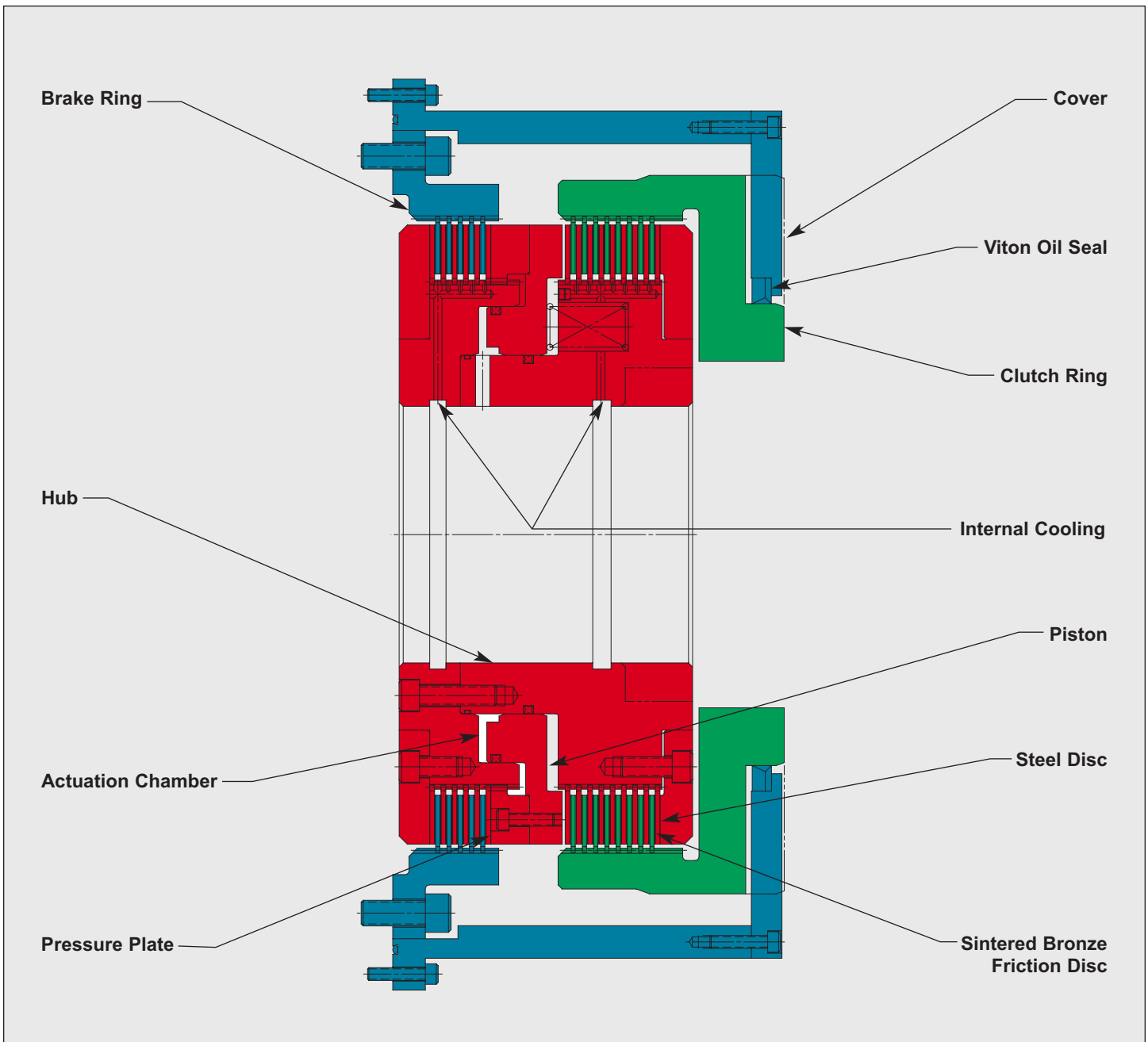
Circulating Oil System

- Oil Tank
- TEFC Motor & Pump
- Relief Valves & Check Valves
- Dual Press Safety Valve
- Heat Exchanger – Oil/Water or Air/Water Option
- Flow Switch
- Temperature Switch
- Gauges & Accumulators
- High Pressure Filter & Low Pressure Filter (10 Micron)
- Manifold Block



Circulating Oil System

Oil Shear Press Drives For Metal Forming Equipment



Press Pac® 3200 Specifications

MODEL NUMBER	STANDARD CLUTCH TORQUE		REINFORCED CLUTCH TORQUE		STANDARD BRAKE TORQUE		REINFORCED BRAKE TORQUE	
	Lb-ft	Nm	Lb-ft	Nm	Lb-ft	Nm	Lb-ft	Nm
3263	2,250	3,051	3,375	4,576	875	1,186	1,312	1,779
3275	4,500	6,101	6,750	9,152	1,750	2,373	2,625	3,559
3280	9,000	12,202	13,500	18,304	3,749	5,083	5,502	7,460
3286	18,000	24,405	27,000	36,607	7,465	10,121	10,989	14,899
3290	36,000	48,810	54,000	73,214	15,000	20,337	22,500	30,506
3294	80,000	108,466	120,000	162,698	50,000	67,791	80,000	108,466
3296	160,000	216,931			100,000	135,582		

Press Pac® 3200 Series Clutch/Brake Systems

Circulating Oil System

Midwest Brake offers a complete controls package for precise control of the Press Pac® 3200 unit. This closed loop system includes a single tank with a single hydraulic pump, dual press safety valve, heat exchanger, valves, gauges, accumulators, temperature switch and oil filtering system. All the control components and gauges are mounted on a central tank for simple inspection and adjustment.

Midwest Brake can furnish the entire circulating oil system to the customer as a turnkey package, or the customer has the option to provide their own oil system using specifications provided by Midwest Brake.

Superior Heat Dissipation

Superior heat dissipation is an inherent feature in the oil shear design. The heat generated during engagement and disengagement of the disc stacks is dissipated in several ways.

First, since the flywheel is rotating continuously during press operation, heat is carried away through the housing and flywheel.

Second, oil is circulated from the tank through the drive cavity, through the friction discs and returned to tank where the oil is cooled through a heat exchanger.

Continuous oil flow through the unit keeps the temperature uniform through the whole system and eliminates "hot spots" where overheating might occur. Normal operating temperature of the unit is approximately 140°F - 180°F.

Over Temperature Switch

An over temperature switch monitors the oil temperature on the oil return line after the oil flows through the unit and returns to tank. Set at 210°F, the over temperature switch is interlocked with the main motor and will shut down the unit in the event of overheating, preventing damage to critical internal parts.

Flow Switch

A flow switch monitors the supply of oil to the unit. If the flow rate drops to a critical level, a signal is sent to shut down the unit to prevent overheating of the clutch/brake and prevent damage to critical components of the unit.

Filtering System

The system uses a 10 micron filtering system for both the actuation oil line and the cooling oil line. The high pressure filter is used to eliminate contaminants from reaching the dual press safety valve and the clutch/brake piston seals. The low pressure filter prevents contaminants from reaching the drive cavity and damaging critical internal components.



Hydraulic Actuation System

The hydraulic actuation system provides precise control and adjustment of the clutch/brake for fine tuning starting and stopping time performance. Precise, repeatable clutch engagement and improved stopping times can be achieved through simple adjustments in control system. Faster cycle times and improved machine productivity can be achieved. This system is included on our standard circulating oil system.

Item 1	Check Valve
Item 2	Orifice Manifold
Item 3	Orifice
Item 4	Gauge
Item 5	Check Valve
Item 6	Accumulator
Item 7	Seat Valve
Item 8	Back Pressure Valve
Item 9	Gauge
Item 10	Flow Switch (Cooling Oil)
Item 11	Heat Exchanger (Oil To Water)
Item 12	Relief Valve (Cooling Oil)
Item 13	Relief Valve Spring
Item 14	Low Pressure Filter
Item 15	Low Pressure Filter Element
Item 16	Relief Valve
Item 17	Vane Pump
Item 18	Strainer
Item 19	TEFC Pump Motor
Item 20	Level Switch
Item 21	Oil Tank
Item 22	Temperature Switch
Item 23	Ball Valve
Item 24	Pilot Check Valve
Item 25	High Pressure Filter
Item 26	High Pressure Filter Element
Item 27	Accumulator
Item 28	Orifice
Item 29	Dual Press Safety Valve
Item 30	Manifold

Press Pac® 3200 Series Clutch/Brake Systems

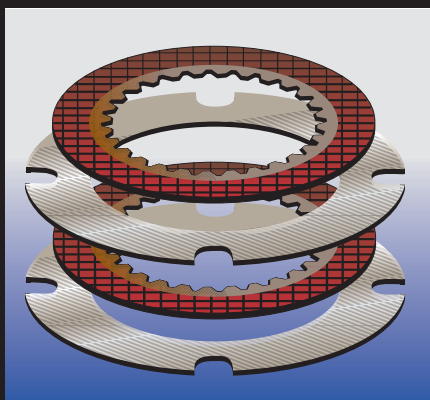
Oil Shear Principle

Press Pac® 3200 transmits torque through the shearing of oil molecules between alternating sintered bronze friction discs and steel wear discs. The viscous shearing of the oil (automatic transmission fluid) dissipates the heat generated from the operation of the Press Pac® and is carried away by the continuous circulation of the oil.

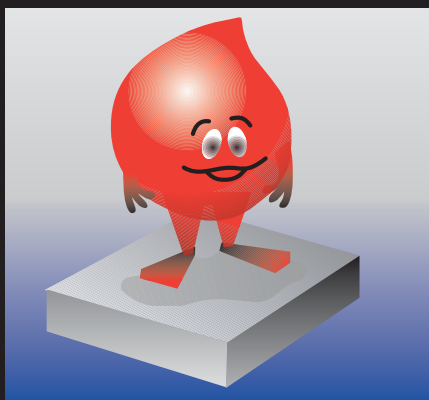
The oil shear principle is the primary reason oil shear clutch/brakes offer extremely long service life and superior reliability.

Press Pac® drive systems incorporate a true oil shear into the design where the friction discs are continuously flooded with oil to lubricate and cool friction disc surfaces. A true oil shear actually cuts across the film of oil molecules that is maintained between the alternating disc surfaces.

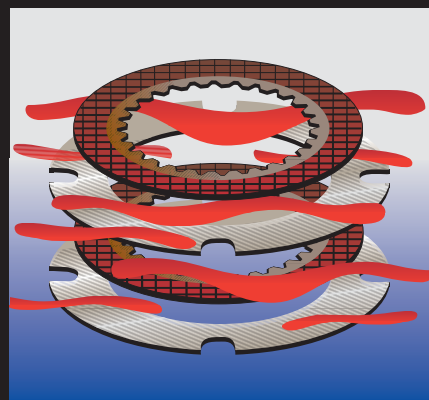
The oil itself acts as efficient power transmission medium, which relieves the mechanical friction surfaces of much of the work. The oil effectively absorbs and dissipates heat while lubricating the clutch/brake.



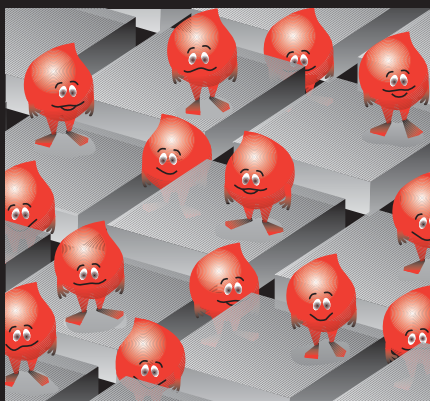
The Press Pac® Clutch/Brake contains a stack of alternating discs. Press Pac® utilizes advanced composite sintered bronze friction discs and steel disc wear plates.



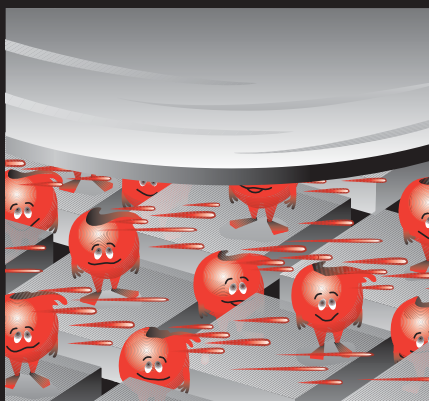
Operation of the Press Pac® Clutch/Brake begins with an oil film which is made up of multiple oil molecules. Molecules of oil are attracted to one another, giving oil defined viscosity.



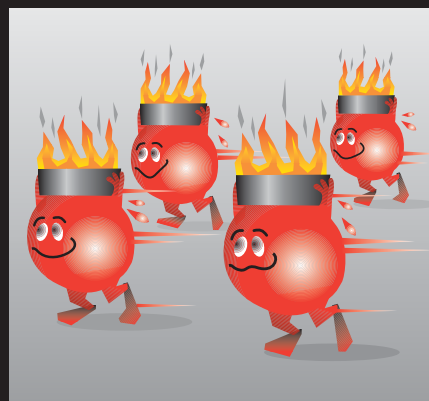
The Press Pac® Clutch/Brake maintains a film of oil between the friction surfaces, through which torque is transferred.



Oil molecules ride on and between the friction discs and act like small hydro dynamic bearings.



As the friction discs begin to rotate, the opposing drive cuts across the film of oil molecules.



The kinetic energy (heat) generated during operation of the Press Pac® Clutch/Brake is carried away by the continuous circulation of the oil molecules.

Oil Shear Press Drives For Metal Forming Equipment

Oil Shear Principle – Press Pac® Drive System

The Press Pac® clutch/brake utilizes a circulating oil system that keeps the housing completely full of oil and continually pumps oil through the clutch/brake system and back to tank. All working parts of the Press Pac® are immersed in a bath of continuously circulated Type F – Automatic Transmission Fluid.

Power from the main motor is transferred from the belt driven flywheel to the drive shaft through a clutch disc stack, which is comprised of an alternating series of sintered bronze friction discs and steel wear discs.

Starting torque initiates the viscous shear of the oil film between the sintered bronze friction discs, which are constantly rotating with the flywheel, and the steel wear discs which are splined to the hub. The hub is mounted on the drive shaft or quill, depending on the clutch/brake model, using keyways or locking assemblies.

At the instant of oil shear, rotation of the sintered bronze friction discs impels the oil film, setting the steel wear discs in motion. Within a split second, synchronous speed is attained. As the hydraulically actuated clutch becomes fully engaged, the discs are firmly clamped together by over 800 PSI of hydraulic pressure. During the lock up of the clutch disc stack, residual oil is expelled from between the alternating discs, eliminating slippage and creating positive power transmission.

Over 90% of the starting inertia is absorbed by a thin, positive oil film between the alternating discs. The oil itself acts as the power transmission medium, which results in very little wear on the sintered bronze friction disc surfaces. During the first “wear in” of approximately one million cycles, there is approximately .001 (.0245mm) per surface wear. After the first wear in is completed, further wear is almost non-existent.

Similarly, braking torque is initiated by the viscous shearing of the oil film. However, the brake pressure is achieved through spring applied pressure, rather than hydraulic applied pressure that is used in clutch actuation.

Oil Shear Principle Advantage

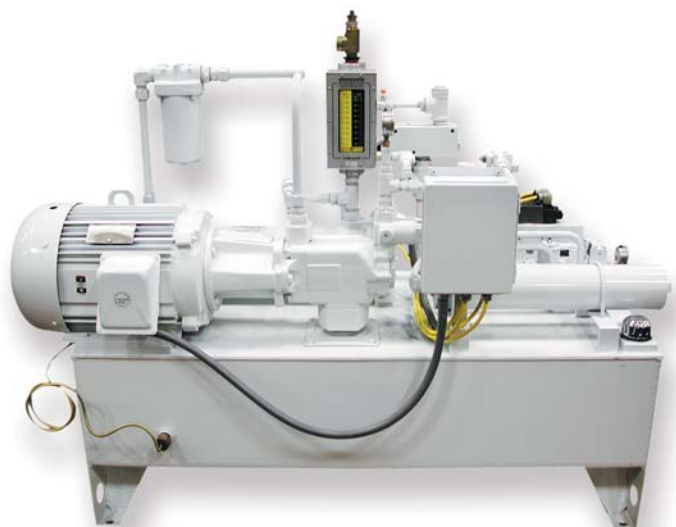
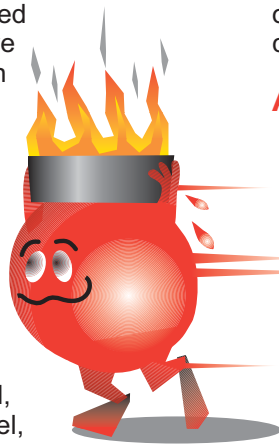
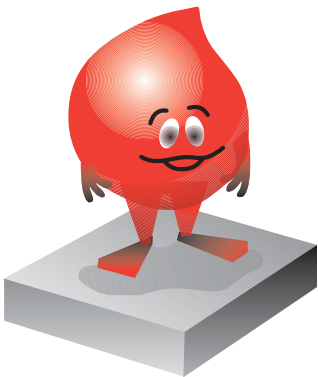
The primary advantage of oil shear technology is to dramatically extend the life of friction surfaces. Friction creates heat, which is inherent in any clutch/brake operation. Direct friction surface contact, which is required for positive torque transfer, causes abrasion and wear on the disc surfaces. Friction discs that are coated with a film of oil are far better suited to withstand the heat and wear because the oil efficiently absorbs heat and protects surfaces from contact abrasion.

Advantages

- Little to no wear of plates in the disc stack
- No brake fade
- More precise operation of the clutch/brake
- Increased clutch/brake reliability
- Increased machine uptime

Oil Shear – Increased Thermal Capacity

A large capacity hydraulic reservoir tank is mounted below the drive unit to pump oil through the clutch/brake and returned to tank where it is cooled and reused. The heat generated from the start/stop inertia of the Press Pac® is absorbed into the oil, circulated from the unit back to the tank where the heat is rapidly dissipated. The Press Pac® circulating oil system uses a state of the art heat exchanger to provide heat dissipation and cool the oil for reuse.



Press Pac® 3200 Series Clutch/Brake Systems

Oil Shear vs. Dry Friction

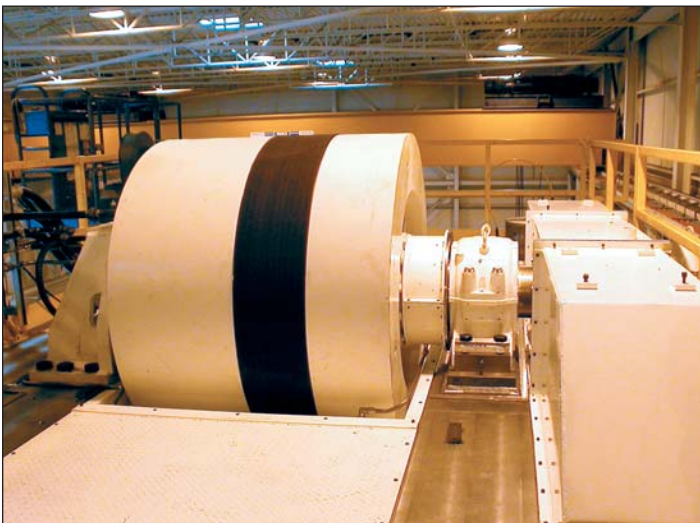
Press Pac® oil shear clutch/brake will outlast dry friction pneumatic clutch/brakes in some cases up to 10 to 1. Dry friction pneumatic clutches utilize the slippage of dry friction surfaces against wear surfaces to absorb inertia and generate torque. Full engagement of the dry friction surface occurs only after considerable slippage and wear occur. This causes wear of both friction material and wear plate surfaces. Without adequate heat dissipation, the friction surface degrades rapidly, requiring frequent adjustment and disc replacement of both friction discs and wear surfaces.

Some dry friction pneumatic clutch/brakes used on presses are mechanically interlocked; meaning one piston both releases the spring set brake and applies clamping force for the clutch. These mechanically interlocked units have most of the clutch/brake mass mounted on the drive shaft and often represent 80 percent of the total inertia of the press that the clutch/brake must stop and start.

Press builders introduced “low inertia” clutch/brake design in the 1940’s in an effort to reduce the start-stop inertia. This type of design requires separate pistons to release the brake and engage the clutch. The start-stop inertia with this type of design is still usually 60 percent or more of the total inertia.

The trip rate of a press equipped with a dry friction clutch/brake is limited because the mass of the unit determines its heat dissipation capacity, but if this mass is increased, the inertia that must be started and stopped is increased. These factors define a closed loop format from which it is impossible to escape when trying to increase the performance of a dry friction clutch/brake system.

Press Pac® 3200 is a compact, very low inertia design that provides superior stopping time performance with precise repeatable performance.



Press Pac Oil Shear Press Drive – Hydraulic Actuation



Dry Friction Pneumatic Clutch/Brake



Sintered Bronze Friction Disc



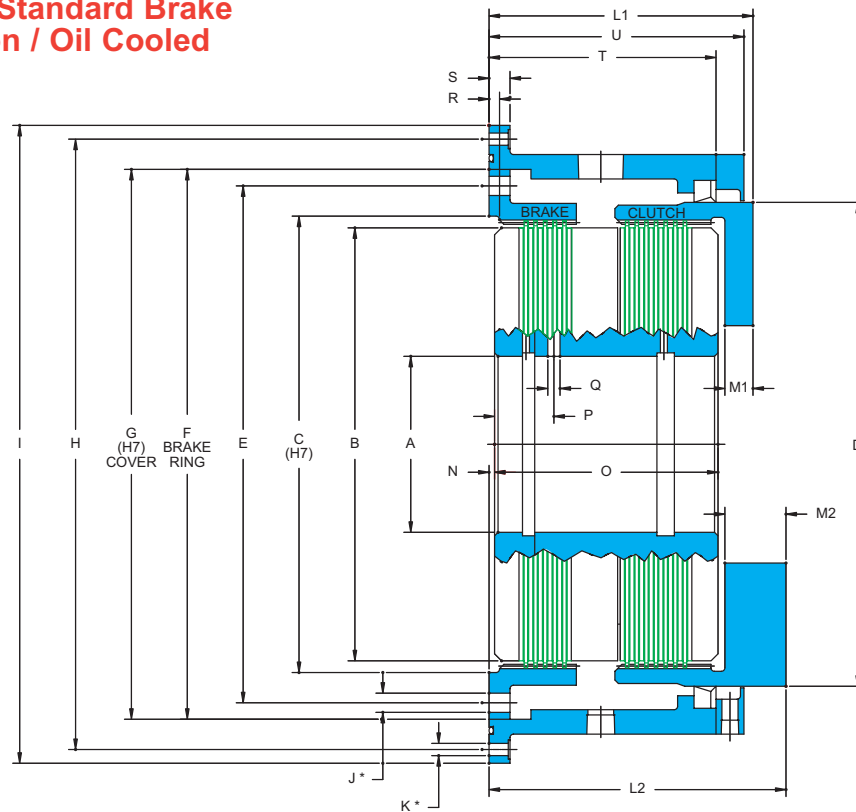
Dry Friction Clutch Disc

Oil Shear Press Drives For Metal Forming Equipment

	Oil Shear	Dry Friction
Transmission of Starting Torque From Flywheel to Drive Shaft	Viscous Oil Shear Between Discs	Slippage of Dry Friction Surfaces Against Each Other
Full Operation	Lockup of Discs – After Most of Work is Done by Oil Shear (Drive Shaft is in Motion Before Discs Engage)	Lockup of Discs – After They Have Slipped For Considerable Time Putting Drive Shaft In Motion
Braking Action	Viscous Oil Shear Between Discs	Slippage of Dry Friction Surfaces Against Each Other
Full Stop of Press	Lockup of Brake Discs – After Press has Decelerated Through Oil Shear	Lockup of Brake Discs – After Disc Slippage has Decelerated Press
Dissipation of Heat	Circulating Oil System with Heat Exchange Flushes Discs Continually	Air Circulation
Maintenance	Little to No Maintenance	Constant Maintenance
Adjustment of Clutch/Brake	Self Adjusting Clutch / Brake	Constant Adjustment Needed
Friction Discs	Sintered Bronze – Long Lasting	Dry Friction – Frequent Reline Needed
Brake Fade	No Brake Fade	Constant Brake Fade
Flywheel Bearings	Self Lubrication – Integral to Flywheel	Manual Lubrication
SPM - Cycle Rate	Up to 90% Single Stroke Rate	Up to 50% Single Stroke Rate
Inching / Jogging	Unlimited	Limited to Heat Dissipation of Friction Material
Installation	Simple Installation Little to No Machining/Modification	Difficult Installation Major Changes to Press Components Machining Needed On Site
Installation Time	7-10 Days	2-4 Weeks
Controls	Accel / Decel Adjustment	Air Is On / Off – Less Controllable
Environment	No Dirty Air Expelled Into Atmosphere No Friction Lining Expelled Into Air	Air Expelled Into Atmosphere Friction Lining is Expelled Into Air
Noise	Quiet Engagement of Clutch/Brake	Noisy, Squealing Engagement of Clutch/Brake
Testing	Unit Fully Tested Before Installation	Press Used as Test Stand During Installation
Responsibility	One Company, One Responsibility	Clutch Manufacturer & Machine Repair Co. Dual Responsibility

Press Pac® 3200 Series Clutch/Brake Systems

Standard Clutch / Standard Brake
Hydraulic Actuation / Oil Cooled

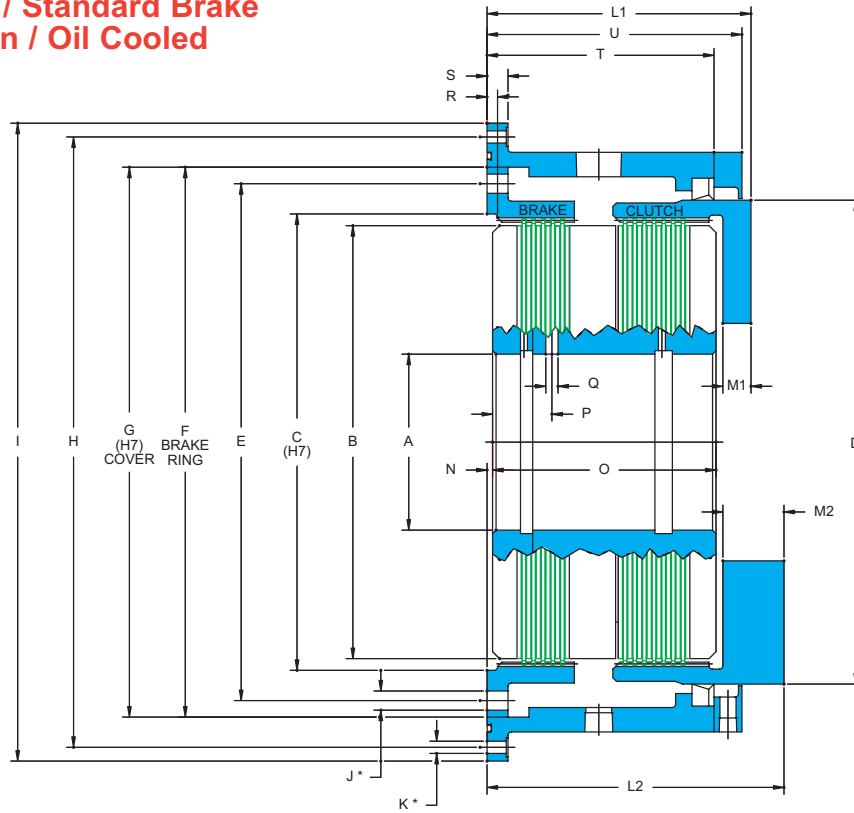


Midwest Brake Model No.	3263	3275	3280	3286	3290	3294	3296
Torque Clutch (Lb-ft)	2,250	4,500	9,000	18,000	36,000	80,000	160,000
Torque Brake (Lb-ft)	875	1,750	3,749	7,465	15,000	50,000	100,000
Frictional Surfaces Clutch/Brake	14/8	14/8	14/10	14/10	16/10	18/14	18/16
Operating Pressure (psi/bar)	774/53.4	801/55.2	762/52.5	785/54.1	784/54.0	773/53.3	781/53.8
Spring Return Pressure (lbs)	3,409	5,588	7,629	12,426	20,496	37,160	52,169
Diameters	A Prebored	45	60	76.2	101.6	152.4	180
	A Max.	80	100	130	160	200	310
	B	206.4	254.0	323.9	393.7	482.6	777.9
	C (H7)	215	275	350	415	530	830
	D	230	290	380	440	560	~
	E (B.C.)	245	310	400	470	590	930
	F	260	330	425	500	630	990
	G (H7)	260	330	425	500	630	990
	H (B.C.)	305	385	480	555	685	~
	I	325	410	505	580	710	~
	J (12) @ 30°	9	11	14	18	22	30
K (12) @ 30°	9*	11*	11*	11	11	13	
Length Dimensions	L1 Standard	136	163	200	240	270	~
	L2 Reinforced	155	185	225	270	305	~
	M1 Standard	16	18	20	22.6	31.4	~
	M2 Reinforced	35	40	45	52.6	66.4	~
	N	4.8	4.8	4.8	5.0	5.0	10.0
	O	109.5	134.9	169.9	203.2	228.6	422.0
	P	31	35.7	47.6	54.0	65.1	139.0
	Q	5.6	7.9	9.5	11.1	11.1	19.1
	R	6.4	6.4	6.4	9.5	12.7	10.3
	S	11.1	12.7	15.9	19.1	25.4	41.3
	T	114.3	139.7	174.6	206.4	235.0	~
U	133.4	158.8	193.7	231.8	260.4	~	

* (8) Holes @ 45°

Oil Shear Press Drives For Metal Forming Equipment

**Reinforced Clutch / Standard Brake
Hydraulic Actuation / Oil Cooled**

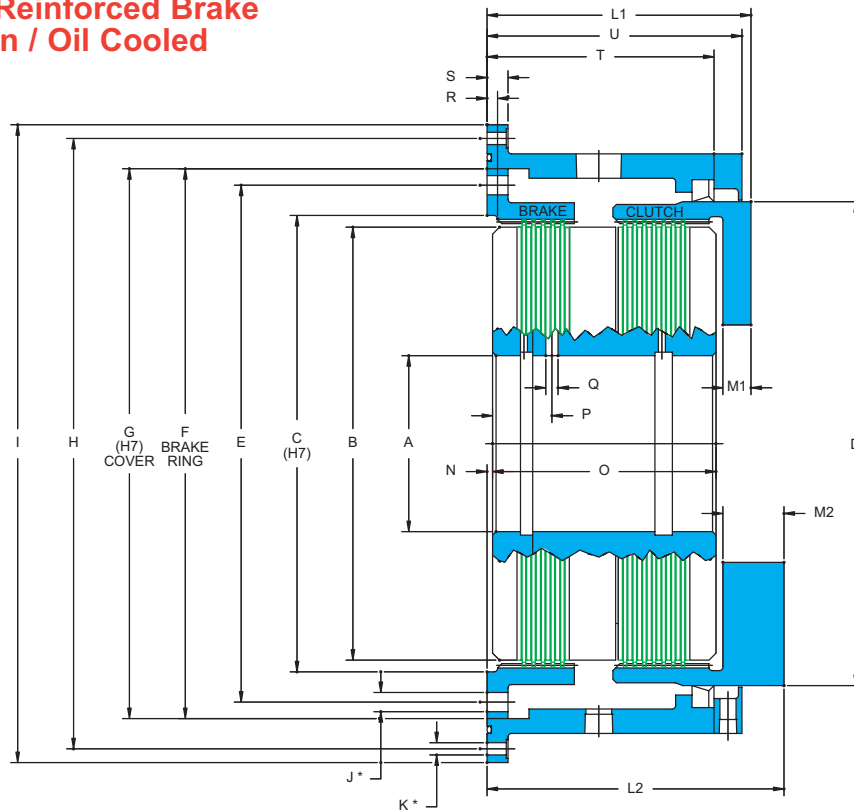


Midwest Brake Model No.	3263	3275	3280	3286	3290	3294	3296	
Torque Clutch (Lb-ft)	3,375	6,750	13,500	27,000	54,000	120,000	~	
Torque Brake (Lb-ft)	875	1,750	3,749	7,465	15,000	50,000	~	
Frictional Surfaces Clutch/Brake	22/8	22/8	22/10	22/10	22/10	24/14	~	
Operating Pressure (psi/bar)	759/52.3	784/54.1	781/53.8	766/52.8	818/56.4	816/56.2	~	
Spring Return Pressure (lbs)	3,409	5,588	7,629	12,426	20,496	37,160	~	
Diameters	A Prebored	45	60	76.2	101.6	152.4	152.4	~
	A Max.	80	100	130	160	200	260	~
	B	206.4	254.0	323.9	393.7	482.6	628.7	~
	C (H7)	215	275	350	415	530	670	~
	D	230	290	380	440	560	710	~
	E (B.C.)	245	310	400	470	590	750	~
	F	260	330	425	500	630	800	~
	G (H7)	260	330	425	500	630	800	~
	H (B.C.)	305	385	480	555	685	865	~
	I	325	410	505	580	710	895	~
	J (12) @ 30°	9	11	14	18	22	30	~
K (12) @ 30°	9*	11*	11*	11	11	13	~	
Length Dimensions	L1 Standard	152	184	226	272	306	444	~
	L2 Reinforced	171	206	251	302	341	489	~
	M1 Standard	16	18	20	22.6	31.4	35.0	~
	M2 Reinforced	35	40	45	52.6	66.4	80.0	~
	N	4.8	4.8	4.8	5.0	5.0	5.6	~
	O	125.4	157.2	196.9	238.1	264.3	390.5	~
	P	31	35.7	47.6	54.0	65.1	112.7	~
	Q	5.6	7.9	9.5	11.1	11.1	12.7	~
	R	6.4	6.4	6.4	9.5	12.7	12.7	~
	S	11.1	12.7	15.9	19.1	25.4	19.1	~
	T	130.2	161.9	201.6	238.1	270.7	395.3	~
U	149.2	181.0	220.7	263.5	296.1	433.4	~	

* (8) Holes @ 45°

Press Pac® 3200 Series Clutch/Brake Systems

Standard Clutch / Reinforced Brake
Hydraulic Actuation / Oil Cooled

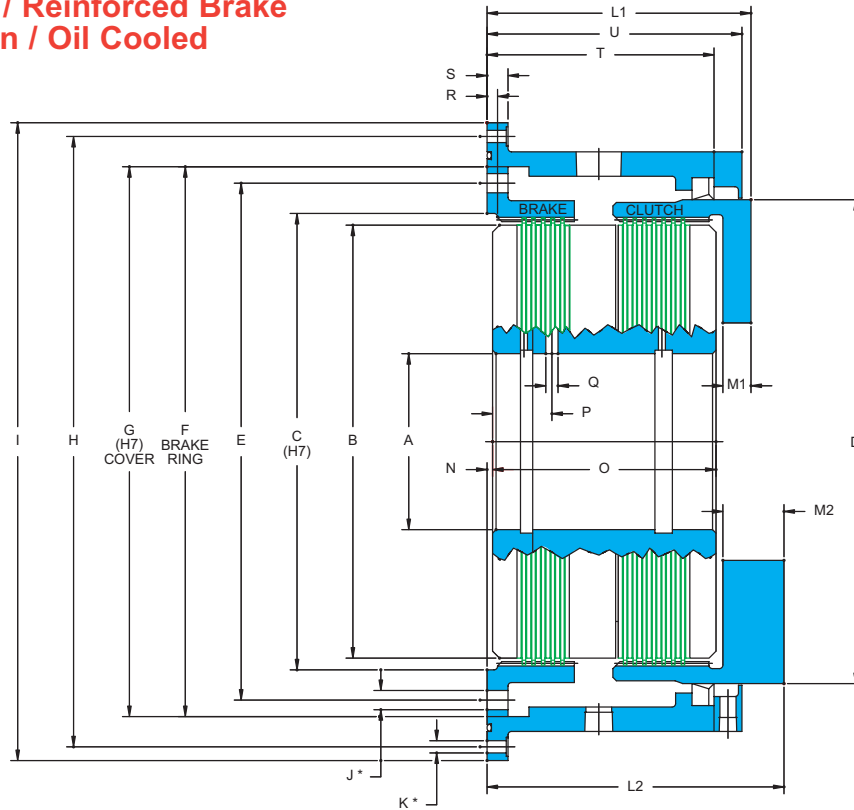


Midwest Brake Model No.	3263	3275	3280	3286	3290	3294	3296	
Torque Clutch (Lb-ft)	2,250	4,500	9,000	18,000	36,000	80,000	~	
Torque Brake (Lb-ft)	1,312	2,625	5,502	10,989	22,500	80,000	~	
Frictional Surfaces Clutch/Brake	14/12	14/12	14/16	14/16	16/16	18/22	~	
Operating Pressure (psi/bar)	774/53.4	801/55.2	736/50.7	759/52.3	762/52.5	780/53.8	~	
Spring Return Pressure (lbs)	3,409	5,588	6,998	11,432	19,215	37,835	~	
Diameters	A Prebored	45	60	76.2	101.6	152.4	152.4	~
	A Max.	80	100	130	160	200	260	~
	B	206.4	254.0	323.9	393.7	482.6	628.7	~
	C (H7)	215	275	350	415	530	670	~
	D	230	290	380	440	560	710	~
	E (B.C.)	245	310	400	470	590	750	~
	F	260	330	425	500	630	800	~
	G (H7)	260	330	425	500	630	800	~
	H (B.C.)	305	385	480	555	685	865	~
	I	325	410	505	580	710	895	~
	J (12) @ 30°	9	11	14	18	22	30	~
K (12) @ 30°	9*	11*	11*	11	11	13	~	
Length Dimensions	L1 Standard	152	184	226	272	306	449	~
	L2 Reinforced	171	206	251	302	341	494	~
	M1 Standard	16	18	20	25.4	31.4	35.0	~
	M2 Reinforced	35	40	45	55.6	66.4	80.0	~
	N	4.8	4.8	4.8	5.0	5.0	5.6	~
	O	125.4	157.2	196.9	238.1	264.3	403.2	~
	P	46.8	57.9	74.6	88.9	100.8	165.1	~
	Q	5.6	7.9	9.5	11.1	11.1	12.7	~
	R	6.4	6.4	6.4	9.5	12.7	12.7	~
	S	11.1	12.7	15.9	19.1	25.4	19.1	~
	T	130.2	161.9	201.6	238.1	270.7	394.3	~
U	149.2	181	220.7	263.5	296.1	433.4	~	

* (8) Holes @ 45°

Oil Shear Press Drives For Metal Forming Equipment

Reinforced Clutch / Reinforced Brake
Hydraulic Actuation / Oil Cooled



Midwest Brake Model No.	3263	3275	3280	3286	3290	3294	3296	
Torque Clutch (Lb-ft)	3,375	6,750	13,500	27,000	54,000	120,000	~	
Torque Brake (Lb-ft)	1,312	2,625	5,502	10,989	22,500	80,000	~	
Frictional Surfaces Clutch/Brake	22/12	22/12	22/16	22/16	22/16	24/22	~	
Operating Pressure (psi/bar)	759/52.3	784/54.1	756/52.1	740/51.0	796/54.9	823/56.7	~	
Spring Return Pressure (lbs)	3,409	5,588	6,998	11,432	19,215	37,835	~	
Diameters	A Prebored	45	60	76.2	101.6	152.4	152.4	~
	A Max.	80	100	130	160	200	260	~
	B	206.4	254.0	323.9	393.7	482.6	628.7	~
	C (H7)	215	275	350	415	530	670	~
	D	230	290	380	440	560	710	~
	E (B.C.)	245	310	400	470	590	750	~
	F	260	330	425	500	630	800	~
	G (H7)	260	330	425	500	630	800	~
	H (B.C.)	305	385	480	555	685	865	~
	I	325	410	505	580	710	895	~
	J (12) @ 30°	9	11	14	18	22	30	~
K (12) @ 30°	9*	11*	11*	11	11	13	~	
Length Dimensions	L1 Standard	168	205	252	304	343	490	~
	L2 Reinforced	187	227	277	334	378	535	~
	M1 Standard	16	18	20	25.4	31.4	35.0	~
	M2 Reinforced	35	40	45	55.6	66.4	80.0	~
	N	4.8	4.8	4.8	5.0	5.0	5.6	~
	O	141.3	179.4	223.8	273.1	300	442.9	~
	P	46.8	57.9	74.6	88.9	100.8	165.1	~
	Q	5.6	7.9	9.5	11.1	11.1	12.7	~
	R	6.4	6.4	6.4	9.5	12.7	12.7	~
	S	11.1	12.7	15.9	19.1	25.4	19.1	~
	T	146.1	184.2	230.2	265.1	299.2	439.7	~
U	165.1	203.2	249.2	290.5	324.6	477.8	~	

* (8) Holes @ 45°

Press Pac® 3200 Series Clutch/Brake Systems

Mounting Configurations Available

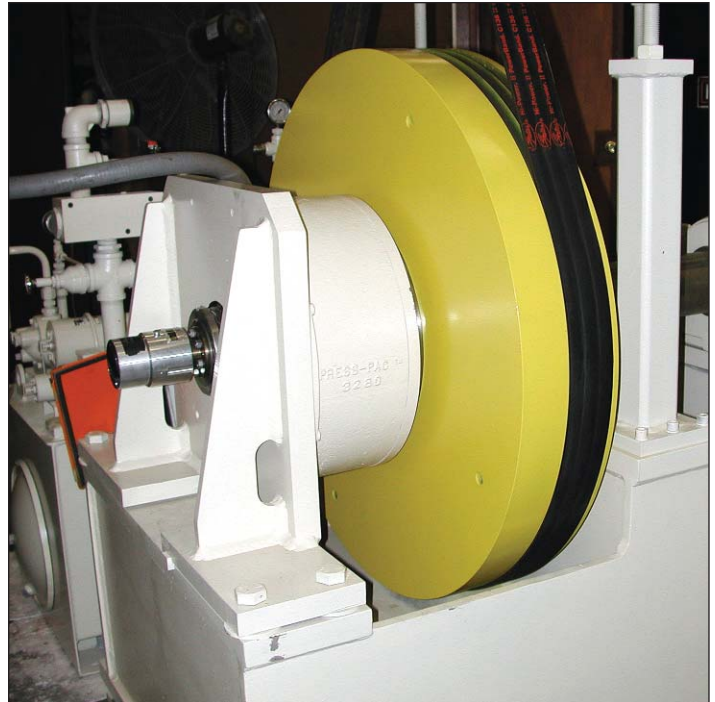
Midwest Brake® offers a variety of mounting configurations Press Pac® 3200 Series Clutch/Brake. The unit can be easily adapted to mount simply in the press drive configuration.

Mounting Options Include:

- Shaft End Installation
- Between Flywheel and Press Frame
- Quill Mounted Installations

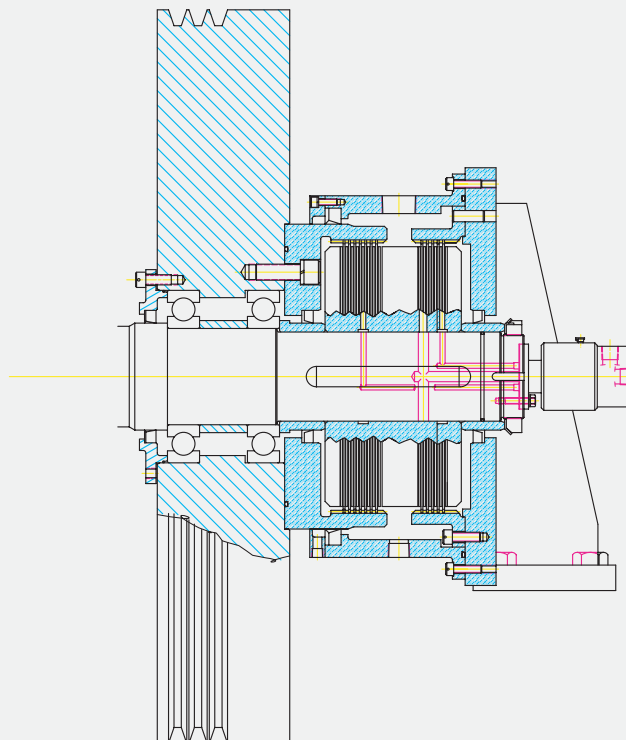
The unit is easily installed using keys or locking assemblies. Mounting adaptor plates can be easily incorporated into the design for simple installation and enhanced performance.

Please contact your Midwest Brake® representative for installation drawings if need. If you require additional mounting configurations that are not shown here, please ask your Midwest Brake representative for assistance.



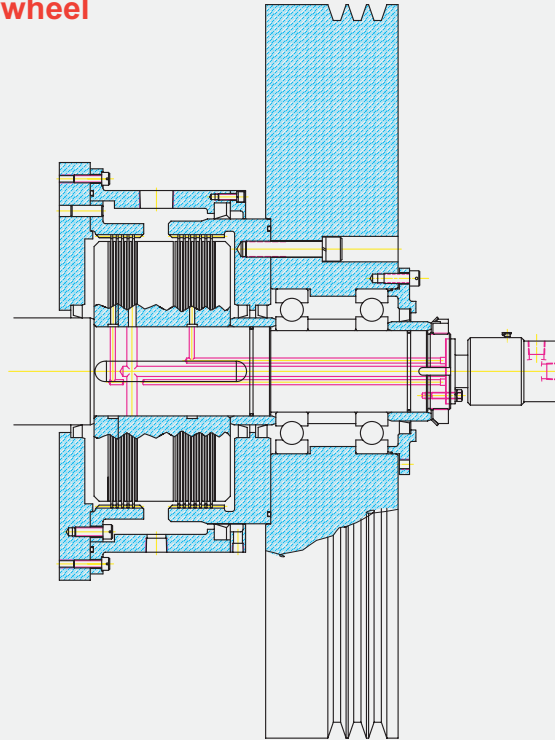
Press Pac® 3280 Mounted Between Flywheel & Bracket

Inboard Mount Mounted on End of Shaft

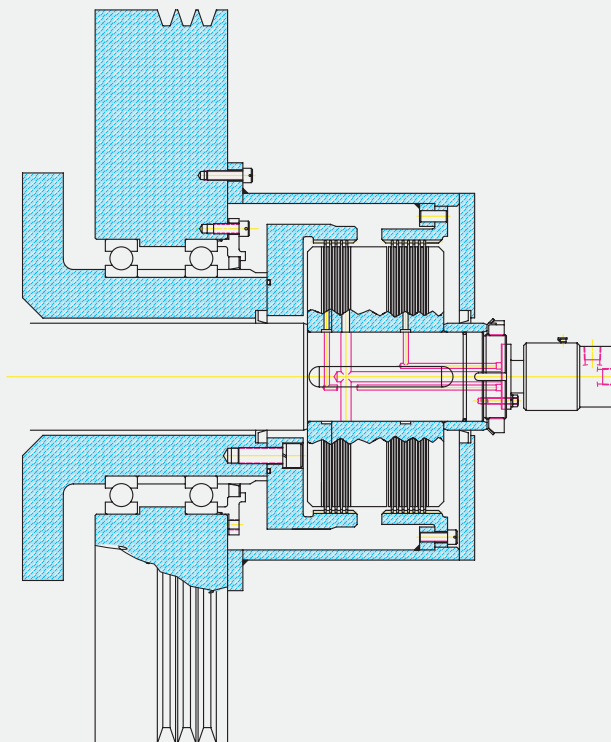


Oil Shear Press Drives For Metal Forming Equipment

**Outboard Mount
Between Press Frame & Flywheel**



**Quill Mount
Rotating Housing**



Press Pac® 3200 Series Field Service Support

Field Service Support

Midwest® Brake maintains a staff of highly skilled and trained technical personnel including field service supervisors and application engineers ready to provide customer support and service.

- Installation & Start Up Services
- Field Service Support
- Troubleshooting & Consultation

Our personnel have many years of experience in the installation, repair, and maintenance of metal stamping presses and the related component assemblies. With this experience, Midwest Brake offers unequalled customer support and field service engineering that will maximize the uptime and reliability of your press drive systems. We offer the following support services:

- Clutch & Brake Inspections
- Hydraulic & Pneumatic Systems Inspection
- Press Inspections
- Preventative Maintenance Programs

Additionally, our state of the art manufacturing facility provides our customers with high quality repair service, assembly and machining on site in the event repairs or clutch/brake rebuilds are required.

- Clutch/Brake Repair & Rebuild
- Service Parts & Service Support
- Machining & Fabrication Services



Clutch and Brake Inspection



Hydraulic and Pneumatic Systems Inspection



Press Pac® 3200 Series Application Data Sheet

Request for Quotation

Midwest Brake® is able to provide a quotation of the Press Pac® drive system with a few basic, simple pieces of information.

This standard form is to be filled out. Using this information, torque requirements can be calculated and the proper model will be selected.

Please visit our website to download brochures and application data sheets.

Contact Information:

Midwest Brake®
26255 Groesbeck Hwy.
Warren, MI 48089

Phone: 586.775.3000
Fax: 586.775.3040

E-mail:

sales@midwestbrake.com

Website:

www.midwestbrake.com

Company _____

Address _____

City _____ State _____ Zip _____

Contact _____ Title _____

Phone _____ Fax _____

Press Manufacturer* _____ Date of Manufacture _____

Type of Press* _____

- Single Action Top Drive Knuckle Joint
 Double Action Bottom Drive Forging Press

Press Model Number _____

Press Serial Number _____

Tonnage* _____ Rated Tonnage Distance* _____

Stroke of Slide* _____

Continuous Strokes Per Minute* _____

Press Gear Ratio _____

Length of Connection (Pitman Length) _____

Flywheel – Outside Diameter* _____

Sheave – Outside Diameter* _____

Main Motor HP* _____

Main Motor RPM* _____

Other information that may be useful: _____

*Required Information



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