

YOUR POWER CONVERSION SOLUTION





WE PUT HORSEPOWER



TWIN DISC HAS MORE WAYS TO CONVERT **POWER TO PRODUCTIVITY**

For nearly a century, we've been putting horsepower to work by designing, engineering and manufacturing rugged-duty industrial products. Our products and our reputation are bolted to the most renowned engine manufacturers and equipment OEMs in the world. Our mission is to make your machines and vehicles more productive, more durable, more operator friendly and more cost effective.

Twin Disc sells industrial products such as power take-offs, mechanical, hydraulic and modulating clutches and control systems to the agricultural, environmental and energy and natural resources markets.

Our off-highway transmission products are used in agricultural, all-terrain specialty vehicle and military applications. We have built a worldwide reputation on our ability to engineer and manufacture products that offer incomparable effectiveness and efficiency under the most grueling conditions.

POWER TO WORK[®]



LAND-BASED PRODUCTS

While there are varying demands for particular applications, each application has a constant set of criteria that must be met — speed, agility and reliability.

Twin Disc industrial products are critical links in the powertrain of a machine or vehicle as well as overall performance and value. Therefore, our products must deliver the right amount of power on command, under all conditions, time and time again.

Mechanical Power Take-Offs

Hydraulic Power Take-Offs

Pump Drives

Air Clutches

Mechanical Power Take-Offs

Twin Disc offers more mechanical PTOs in more capacities than any other manufacturer. Available in sizes up to 533 mm (21 in), these reliable devices are ideal for a high percentage of basic actuation installations.

Where operator access is complicated by machinery configuration, Twin Disc also offers a line of remotely actuated mechanical PTOs, offering safer, easier operation and greater equipment design flexibility.

- **SP Series:** Standard PTO line, up to 8,400 ft-lb. Straddle bearing housing available
- **CA Series:** Standard Inline, up to 400HP
- **C(X) Series:** Standard, available in sizes 6.5" through 11.5"
- **SL Series:** Spring loaded clutch, 11.5" through 14"
- **TC Series:** Spring loaded, automotive style 13" clutch
- **IB(F) Series:** Heavy duty PTO line. Ventilated plates & drive rings. Up to 8,400 ft-lb
- **RB Series:** Rubber block drive, no clutchable disconnect, 11" single row, 14" double row



SP Series

SAE #3 through SAE #00
SAE 11.5" through SAE 21"
Single, double & triple organic drive plate (standard)
Sintered iron available
Capacity from 617 to 11,390 Nm (455 to 8400 lb.ft.)
Side load or in-line applications
Tapered roller bearings on main shaft
Bronze or ball bearing throw out collar



SP-S Series

SAE #1 thru SAE #0
SAE 14" thru SAE 18"
Single, double & triple organic drive plate (standard)
Sintered iron available
Capacity from 3295 to 10,170 Nm (2430 to 7500 lb.ft.)
High side load
No pilot bearing
Ball bearing throw out collar



SP-IL Series

SAE #1 thru SAE #0
SAE 14" thru SAE 18"
Double & triple organic drive plate
Capacity from 2197 to 10,170 Nm (1620 to 7500 lb.ft.)
Sintered iron available
In-line applications only - no side load
Bronze or ball bearing throw out collar
No pilot bearing



CA Series

SAE #4 thru SAE #3
SAE 10"
Single & double organic drive plate
Capacity from 610 to 1220 Nm
(450 to 900 lb.ft.)
Sealed for life main ball bearing
In-line applications only
Bronze throw out collar



C(X) Series

SAE #6 thru SAE #1
SAE 6.5" thru SAE 11.5"
Single organic drive plate - standard
Sintered iron available: 8" thru 11.5"
Capacity from 216 to 525 Nm
(159 lb. ft. to 387 lb. ft.)
Limited side load
Ball bearing on main shaft
Bronze throw out collar



Pump Mount

SAE "A" thru SAE "D" pads
SAE #4 thru SAE #1 housing
SAE 11.5" clutch
Various input options
Shaft clutch



SL Series

SAE #4 thru SAE #1
SAE 11" thru SAE 14"
Single & double organic drive plate
Capacity from 475 to 1356 NM
(350 to 1000 lb.ft.)
Spring loaded clutch eliminates
need for adjustment
Re-greasable main & pilot bearings
Sealed pilot bearing optional
Limited side load



TC Series

SAE #3
13" automotive style clutch
Capacity to 610 Nm (450 lb.ft.)
Spring loaded clutch
Limited side load
Sealed for life pilot bearing
No adjustment required

Mechanical Power Take-Offs (continued)



IB Series

SAE #1 thru SAE #00
SAE 11.5" thru SAE 21"
Single & double organic drive plate
Sintered iron drive plate available
Capacity to 2197 to 11,390 Nm
(1620 to 8400 lb.ft.)
Bronze throw out collar
Ventilated center plates & drive ring
Higher side-load capability
Tapered roller bearings on main shaft



RB Series

SAE #3 thru SAE #1
SAE 11.5" thru SAE 14"
Rubber block drive
11" single row
14" double row
Direct drive - no disconnect
Limited side load



"RO" Series Remote Over-Center

Hydraulic or pneumatic actuation
90 To 100 psi (621 to 689kpa)
engagement pressure
Suitable for side load and in-line
applications
Tapered roller main bearings
Optional sintered iron & composite plates
Standard ball bearing throw out collar
Field conversion kits available
Creates suitable application torque
capacity



Remote Control (RC) Series

Hydraulically actuated
Self-adjusting clutch
Oil lubricated tapered roller main bearings
No pilot bearing required
Advanced controls for high inertia loads
Optional sintered iron and composite
plates
Suitable for side load and in-line
applications

Hydraulic Power Take-Offs

The latest addition to the Twin Disc industrial products line is hydraulic PTOs. These units are available in side-load straddle-bearing clutched models, inline clutched models and non-clutched models.

Applications for hydraulic clutches are similar to those for the mechanical PTOs. Hydraulic clutches can be used wherever a disconnect is required between the driven equipment and the prime mover.

Typical applications include:

- Centrifugal Pumps
- Waterjets
- Propellers
- Generators
- Hydraulic Pumps
- Agitators
- Bow Thrusters
- Winches
- Horizontal Grinders
- Blowers
- Compressors
- Conveyors
- Rock Crushers
- Mud Pumps
- Piston Pumps
- Hammer Mills
- Tub Grinders
- Fans

Hydraulic Wet Clutches

- **HP Series:** Inline or side-load applications to 1,050HP @2,100 RPM
- **HPTO Series:** Inline or side-load applications to 1,500HP @2,750 RPM
- **PFI Series:** Pump mount or shaft output with integrated gerotor oil pump. Up to 510HP

Hydraulic Dry Clutches

- **RC Series:** Remotely actuated via hydraulic circuit
- **RO Series:** Remotely actuated via hydraulic/pneumatic circuit PTO line, up to 8,400 ft-lb. Straddle bearing housing available

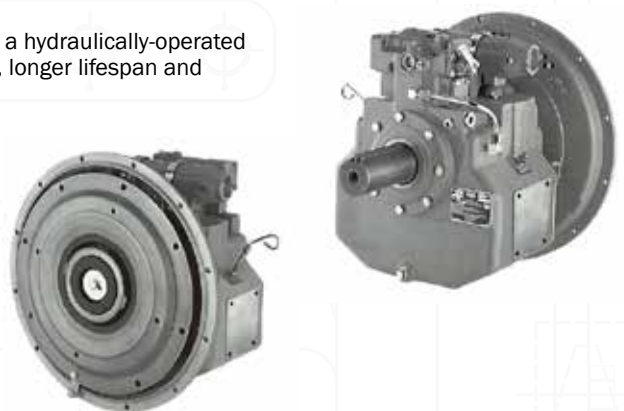


HPTO 140 / HPTO 244 / HPTO 366

This series of compact and lightweight power take offs incorporates a hydraulically-operated clutch. Advantages include improved reliability, increased efficiency, longer lifespan and lower maintenance costs.

- Self Adjustment (no more clutch adjustments)
- Remote Control (Electric or Mechanical)
- Elimination of the Pilot Bearing
- Soft and progressive starts of the load

Designed For: Stone crushers, wood chippers, grinders, marine drives (main propulsion and auxiliaries) and various centrifugal pumps, fans and blowers.



PFI-60 / PFI-120

These power take offs contain an integral bi-directional gerotor oil pump, integral pressure relief valve and SAE pump mount or keyed shaft output.

PFI-60

- 275 horsepower capability
- 12 or 24 Volt DC solenoid
- SAE 3, 2 and 1 pump pad configurations
- 1000kg side load capability

PFI-120

- 510 horsepower capability
- 12 or 24 Volt DC solenoid
- SAE 3, 2 and 1 pump pad configurations
- 1000kg side load capability

Designed For: Direct engine mounting or mounted to AM pump drive and compact applications

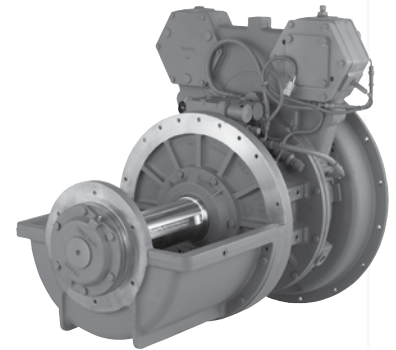


HP610S

The HP610S eliminates the need for manual adjustment and high speed engagement, while eliminating jammed engagements.

- 1,050 HP @2,100 RPM
- SAE #1 and SAE #0
- SAE 14" and SAE 18"
 - Via Torsional Coupling
- Wet Hydraulic Clutch
- In Line or Side Load
- Electronic Control
- Optional Pump Drive Tower
 - 4 Pads
 - To SAE D
- 480 Total HP / 300 HP Each
- 1:1 Ratio

Designed For: Heavy duty side load applications



HP300I

With features similar to the HP610S, the HP300I also eliminates the need for manual adjustment and high speed engagement, while eliminating jammed engagements.

- 1,050 HP @2,100 RPM
- SAE #1 and SAE #0
- SAE 14" and SAE 18"
 - Via Torsional Coupling
- Wet Hydraulic Clutch
- In Line Applications
- Electronic Control
- Optional Pump Drive Tower
 - 4 Pads
 - To SAE D
- 480 Total HP / 300 HP Each
- 1:1 Ratio

Designed For: Heavy duty in line applications



HP1200

The HP1200 is an oil-filled, multiple disc, hydraulically-actuated self-adjusting clutch. The HP1200 has been developed with a number of unique features that offer reliability, productivity and power, including the following listed below.

- Hydraulically actuated and self-adjusting wet clutch
- Suitable for in-line and side-load applications
- Advanced control system for smooth engagement
- Remote actuation via J1939 or switch input
- No pilot bearing
- High side load capability
- Maximum power rating 1243 HP @ 1800 rpm
- Two towers with two pump pads each
 - 400 HP maximum capacity per tower
 - 550 HP maximum capacity for both towers
- Available pump pads:
 - SAE "A", SAE "B", SAE "C", SAE "D", SAE "E"
 - Pump tower rotatable by 0°/45°/90° CW/CCW
- Optional 0.86:1 speed increase on pump tower
- SAE #0 input housing
- SAE 460 (18") input coupling
- Optional integrated reservoir
- Standard charge/lube pump included



Air Clutches

Twin Disc PO Air Clutches, available in sizes up to 1067 mm (42 in), are designed to give the user maximum dependability and lowest possible installation and operating costs. They are used extensively by leading manufacturers of drilling rigs, draw works, rock crushers, tractor winches, pipe-extruding machines, machine tools, pug mills and other industrial equipment. Twin Disc PO Air Clutches are available in triple-plate, double-plate and single-plate construction.



Features

- 8" through 42" clutches
- Single, Double, & Triple Organic Drive Plate
- Capacity from 526 to 280,692 Nm (388 to 207,000 lb.ft.)
- Air actuated clutch
- Integral quick release valve
- Heavy, rugged teeth for long life



Gearboxes

Our gearboxes are built to withstand the most rigorous applications on the planet. Their modular design features cast iron housings, shaved helical gears and case hardened shafts. Twin Disc gearboxes are available with reduction and increaser gear ratios on outputs, along with output rotation options.

Features

- SAE #4 thru SAE #0
 - Independent Mount Available
 - SAE 8" thru SAE 14"
 - Clutch or Rubber Block Drive
 - Keyed or Splined Output Shaft
 - Limited Side Load Capacity
 - Over Speed or Reduction Ratios Available
- *Twin Disc marine transmissions can be used for land-based applications. See Applications Engineering for more details.

Pump Drives

Twin Disc's line of pump drives meets a broad range of hydraulic system set-ups and application needs. These drives are available in a wide variety of gear ratios, including both speed increasing and reducing configurations.

The modular design of these pump drives enables you to choose from several input options, including a rubber block drive or clutch to match your SAE engine flywheel dimensions. Independent mounting is also an option, both direct and with a clutch.

For your pump mounting requirements, Twin Disc offers standard SAE adaptor kits as well as a wide variety of non-SAE adaptations for your special needs.

Features

- Cast iron housings
- Case hardened and ground spur gears, except select models where gears are shaved
- Ball bearings
- Case hardened shafts
- Viton seals on input shaft
- Output rotation opposite the direction of input rotation
- Gear ratios identical on all outputs for each model





	Model	Max. Input Torque Nm (lb-ft)	Max. Input Speed (RPM)	Max. Input Power kW (HP)	Max. Torque / Pad Nm (lb-ft)
Single Pad*	AM110	540 (398)	3200	181 (245)	540 (398)
Dual Pad*	AM216	631 (465)	3200	205 (275)	315 (232)
	AM220	1081 (797)	3200	355 (476)	540 (398)
	AM230	1620 (1195)	2600	431 (577)	810 (597)
	AM232	230 (1696)	2400	566 (758)	1150 (848)
	AM270	3501 (2582)	2600	701 (939)	1751 (1291)
Three Pad*	AM320	631 (465)	3200	205 (275)	315 (232)
	AM330	1081 (797)	3200	355 (476)	540 (398)
	AM345	1620 (1195)	2200	431 (577)	810 (597)
	AM365	2900 (2139)	2200	671 (899)	1500 (1500)
	AM370	3501 (2582)	2600	701 (939)	1751 (1291)
Four Pad*	AM450	2601 (1918)	2400	640 (858)	1300 (959)
	AM480	3801 (2803)	1800	701 (939)	1900 (1401)

*Ratings based upon 1:1 ratio.

Single Pad (Direct Engine Mount)

Flywheel Housing

- SAE #6 to SAE #1

Flywheel Connection

- SAE 6.5" to SAE 11.5"
- Non SAE Mounts Available

Capacity

- SAE 6.5" to SAE 10" = 221 lb. ft. (300 N-m)
- SAE 11-1/2" = 479 lb. ft. (650 N-m)

Pump Mount

- SAE A, B, C & D
- 2 & 4 Bolt Designs
- DIN Standard Available

Pump Spline

- SAE A, B, BB, C, CC & D
- DIN Standard Available
- Keyed Bores Available
- Metric and US Standard

AM100

Maximum input power 783 kW (1.050 HP) for 1:1 ratio @2100 RPM

Features

- Compact design - 1:1 ratio
- Up to 4 pump pads available
- SAE #0 & SAE #1 input/output housings
- SAE 18" & SAE 14" input/output flywheel connection
- SAE "A" through SAE "D" pump pads



Max. Input Power kW (HP)	Max. Input Speed RPM	Pump Tower Capacity		Oil Qty. L (Gal)
		1 Tower (2 Pads) kW (HP)	2 Tower (4 Pads) kW (HP)	
783 (1.050)	2.100	224 (300)	358 (480)	9.46 (2.5)

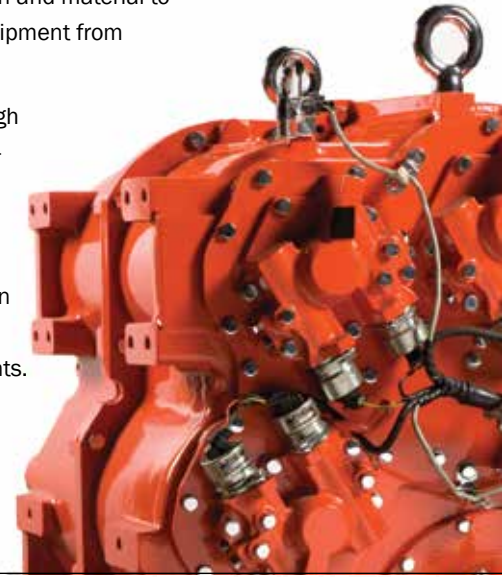
TRANSMISSION PRODUCTS

Twin Disc offers a comprehensive array of sophisticated automatic transmission systems for heavy-duty applications requiring precise propulsion control, power-splitting options or a combination of the two. With their extraordinary ease of operation, these transmission systems, available in sizes up to 2300 kW (3000 hp), expedite and simplify getting vehicles on-mission, even in the most demanding situations.

All-wheel-drive on/off-highway vehicles such as Aircraft Rescue and Fire Fighting (ARFF) vehicles benefit from fast, smooth acceleration and pump-and-roll capability. Oil and gas operations enjoy the reduced stress on drivers and drivelines when their servicing and fracturing rigs traverse rugged territory. And they know they can count on Twin Disc durability to keep productivity high at the well site.

Military vehicles utilize Twin Disc automatic transmissions to confidently deliver men and material to and extract disabled equipment from the battlefield.

If you have a grueling, high horsepower, productivity-critical application, Twin Disc has the experience, the products and the engineering brain trust to solve your transmission requirements.



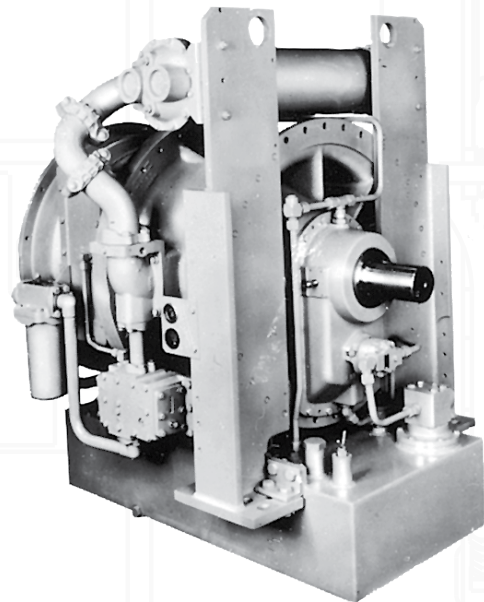
Hydraulic Torque Converters

Twin Disc torque converters minimize engine lugging and stalling and permit engines to operate within their most efficient speed range, producing rated horsepower regardless of load demand. By transmitting torque entirely through fluid mass in motion, mechanical connection is eliminated. Twin Disc torque converters minimize or eliminate entirely the need for shifting, clutching or declutching. The result is more accurate control.

To meet the requirements of diesel installations from 22 to 2610 kW (30 to 3500 hp), Twin Disc has a complete line of single-stage hydraulic torque converters, both stationary and rotating housing, as well as three-stage hydraulic torque converters in a wide range of types, sizes and capacities with a broad variety of input and output combinations.

Features

- 3-Stage
- Series 10 & Series 11.5
- 1-Stage
- Type 4, Type 6 & Type 8 10"-34"



Universal Control Drives

Used primarily to drive centrifugal pumps and fans, Twin Disc Universal Control Drives (UCDs) are regarded by the industry as an effective method of accurately and efficiently controlling various processes. Twin Disc UCDs provide precise control of flow, pressure, speed, torque or power. Twin Disc UCDs are available for power up to 3000 kW (4000 hp), at speeds up to 3000 RPM.



Electronic Shift Control

The TDEC-500 is the latest state-of-the-art full authority microprocessor-based electronic control system for Twin Disc automatic transmission systems used in heavy duty, off-highway applications including military vehicles, ADTs, oil field rigs, heavy-duty off-road vehicles and ARFF vehicles.

More than just a shift control, the TDEC-500 integrates the transmission, engine and other vehicle systems to provide faster shifts, rapid vehicle acceleration and precise control of vehicle speed. It has the flexibility to tailor features and operation for optimum vehicle performance.

Features

- Built-in-test (BIT) diagnostics that feature health and trend capability with fault isolation via user accessible fault and status codes for all operational modes
- Interactive command console and display
- SAE J1939, J1708 CAN Bus and RS232 communication
- Environmentally robust
- Non-volatile memory with real time clock giving time/date stamp for diagnostics





GO WITH WHO YOU KNOW.

With our vast network of locations around the world, Twin Disc offers you unprecedented sales and service support. We can put engineering and service expertise on location virtually anywhere. We'll work with you on your particular application and product to ensure optimum results. We're more than just a name you know, Twin Disc is a name you can trust.

For more information, visit www.twindisc.com



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