

POWERTRAIN **TECHNOLOGY**

RACING CLUTCHES & DRIVETRAIN PRODUCTS

APPLICATION GUIDE

CLUTCHES - STARTERS - FLYWHEELS
FLEXPLATES - BELLHOUSINGS
HYDRAULIC RELEASE
BEARINGS



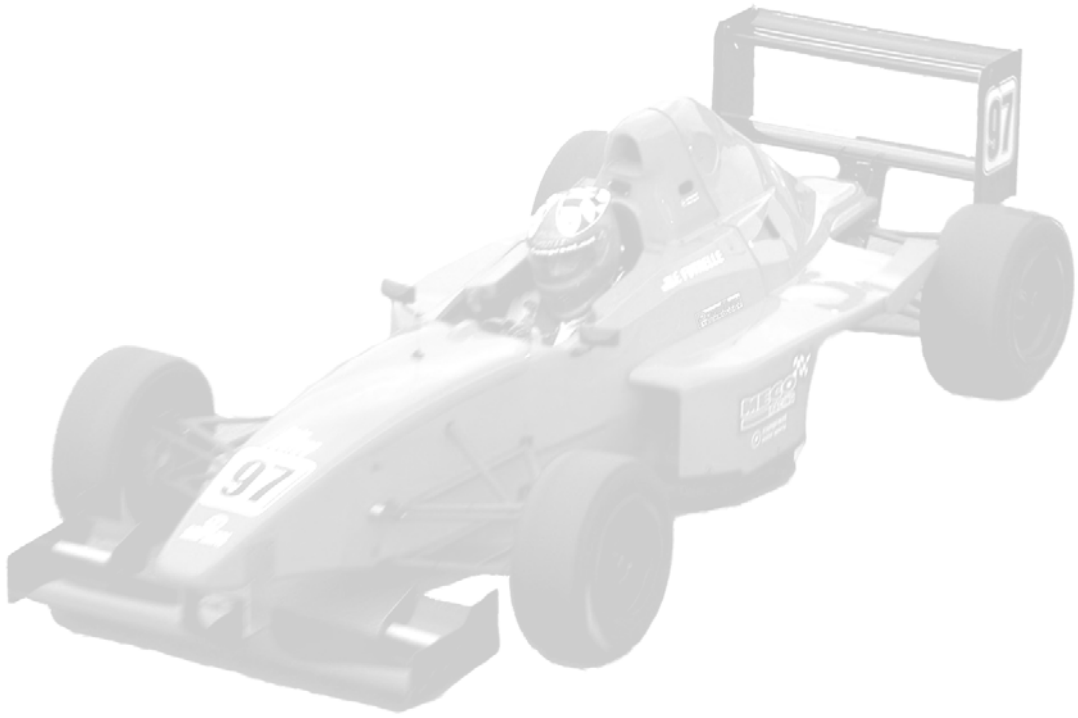


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About PowerTrain Technology

PowerTrain Technology (PTT) was formed in 2002 by Steven Fox. Steve was not new to racing clutches and drivetrain technology. Steve was the Manufacturing & Design Engineer for Quarter Master Industries for close to 20 years. He is a highly qualified machinist, a racer, top shelf mechanic, and has over 45 years of experience in the racing industry. Steve left Quarter Master after the original owner sold the company in 1999. Steve then spent the next year designing and developing the next new generation in low Moment of Inertia (MOI) multi-disc racing clutches now sold by PTT.

All PTT products are engineered and designed with Computer Aided Design (CAD) software and then Computer Numerically Controlled (CNC) machined to exacting tolerances. PTT's prototype products go through rigorous in-house testing to validate the integrity of the design, then tested on the race track before being offered for sale.

PTT's manufacturing process begins with selection of only the highest quality raw materials. All raw materials are selected based on specific chemistry best suited for the part being made from it. PTT parts are machined to tolerances, frequently closer than 0.001" (0.025mm) and continuously checked for accuracy throughout the manufacturing process. After machining, parts are subjected to heat treat, or specific surface finishing designed to increase their toughness, and longevity. Finally, every part we make is labeled with our logo, part number, and production batch code.

Parts are stored, in bulk, in a temperature and humidity controlled environment until they are sold. All clutches are assembled per order, again following rigid assembly and quality assurance procedures. All hydraulic release bearings are assembled in clean room like conditions. Each and every bearing assembly is pressure bled and then pressure tested to twice its normal operating pressure.

PTT clutch components are modular. This means we can assemble components in a wide variety of combinations to fit each specific racer's requirements. Individual, hand assembly per order means PTT can offer you the absolute best clutch for your application, while at the same time achieving a quality level which far surpasses the actual price paid.

Because PTT parts are manufactured to such exacting specifications they normally do not need to be spin balanced. Due to the tight parallelism and run-out tolerances we hold our parts to they have what is called inherent balance.

Involute gear and spline design is a niche specialty at PTT. Properly designed gears transmit power in a very efficient manner with minimal parasitic losses. Properly designed involute gear teeth also provide superior strength. All of PTT's geared products feature high strength tooth forms to give you the advantage you seek on the race track.

PTT offers a complete line of automotive racing driveline products that deliver a competitive advantage. PTT's lightweight line of open style clutches in 4.5", 5.5" & 7.25" diameters are available in 1, 2, 3, or 4 disc configurations. They feature good linear engagement, good friction life and a positive feel. To put it simply: PTT builds racing drivetrain parts that are second to none. Listening to our customers and giving them what they ask for is what drives this company to excellence!

Proudly made in the USA!

Racing Clutch Terminology



CLUTCH COVER ASSEMBLY – The main body of the clutch which all the other clutch parts fit into. The fasteners securing the diaphragm spring should never be disassembled by the end user. The diaphragm spring(s) are installed under load at the factory and cannot be removed or serviced in the field.



PRESSURE PLATE – Steel ring with a 'hump' on one side which contacts the diaphragm spring. The pressure plate is flat on the opposite side which clamps down on the clutch discs.

In a stock clutch, the term pressure plate often refers to the stamped steel clutch cover / pressure plate / diaphragm spring assembly. These components are permanently fastened together in a stock clutch.



FLOATER PLATE – A flat steel separator plate that goes between the clutch discs. Floater plates are available in solid steel or lightweight versions.



CLUTCH PACK or CLUTCH DISCS – Friction disc with steel hub riveted in the center that matches the spline on the transmission input shaft.



BUTTON FLYWHEEL – A 'button style' flywheel is roughly the same diameter as your clutch. It is used in combination with a lightweight flexplate to replace the heavy stock flywheel with the ring gear on it. You can also use a button flywheel in a reverse starter mount bellhousing set up with a small diameter reverse mount ring gear bolted to the top of the clutch.



REVERSE MOUNT RING GEAR (RMRG) – This ring gear is bolted on top of the clutch and is engaged by the starter from the transmission side of the bellhousing. It is used with a reverse starter mount bellhousing. Advantages are: 1) The starter is mounted away from the heat of the headers; 2) The small diameter of the ring gear allow the drivetrain to be mounted lower in the chassis; 3) The smaller overall physical size is more easily packaged in a racecar; 4) Relocating the starter closer to the racecar's polar moment of inertia results in quicker handling and faster turn-in response.



FLEXPLATE – a Low Moment of Inertia (MOI) flexplate is an excellent way of getting a lightweight racing clutch and button flywheel mounted on your engine while using a starter located in the stock location.



HYDRAULIC RELEASE BEARINGS – A hydraulic release bearing (HRB) (also known as an annular slave cylinder) is used to actuate the clutch in most race and street applications. The HRB is located in the bellhousing, between the transmission face and the clutch spring fingers. HRB's used with small diameter racing clutches work best with a 5/8" or 3/4" master cylinder. Street style clutches will typically use a slightly bigger diameter master cylinder.

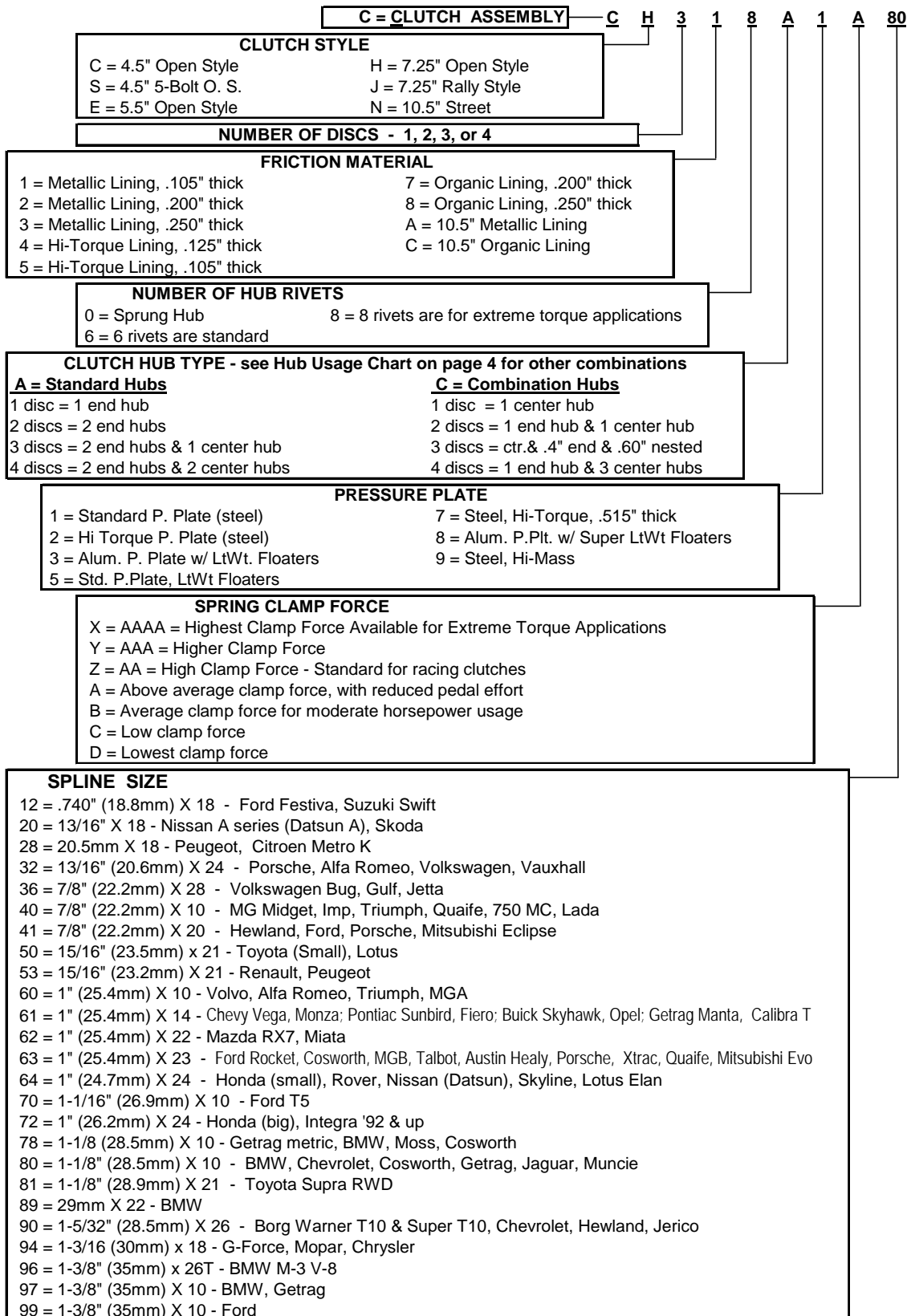
MOMENT OF INERTIA (MOI) – MOI is a measure of an object's angular acceleration. The reduction of MOI in your racecar's drivetrain will pay big dividends in your car's performance. For more information, see PTT's complete discussion of MOI on page 11.



Spline-A-Lign - SPLINE ALIGNMENT TOOL – A spline alignment tool is a lightweight splined shaft which simulates the input shaft of your transmission. It is used to align the splines of the individual clutch discs during the installation of a multi disc clutch. Using a spline alignment tool ensures that the clutch discs are aligned properly so that the transmission input shaft goes smoothly into the clutch hubs when the transmission is installed. Spline-A-Ligns come in a variety of common spline sizes.

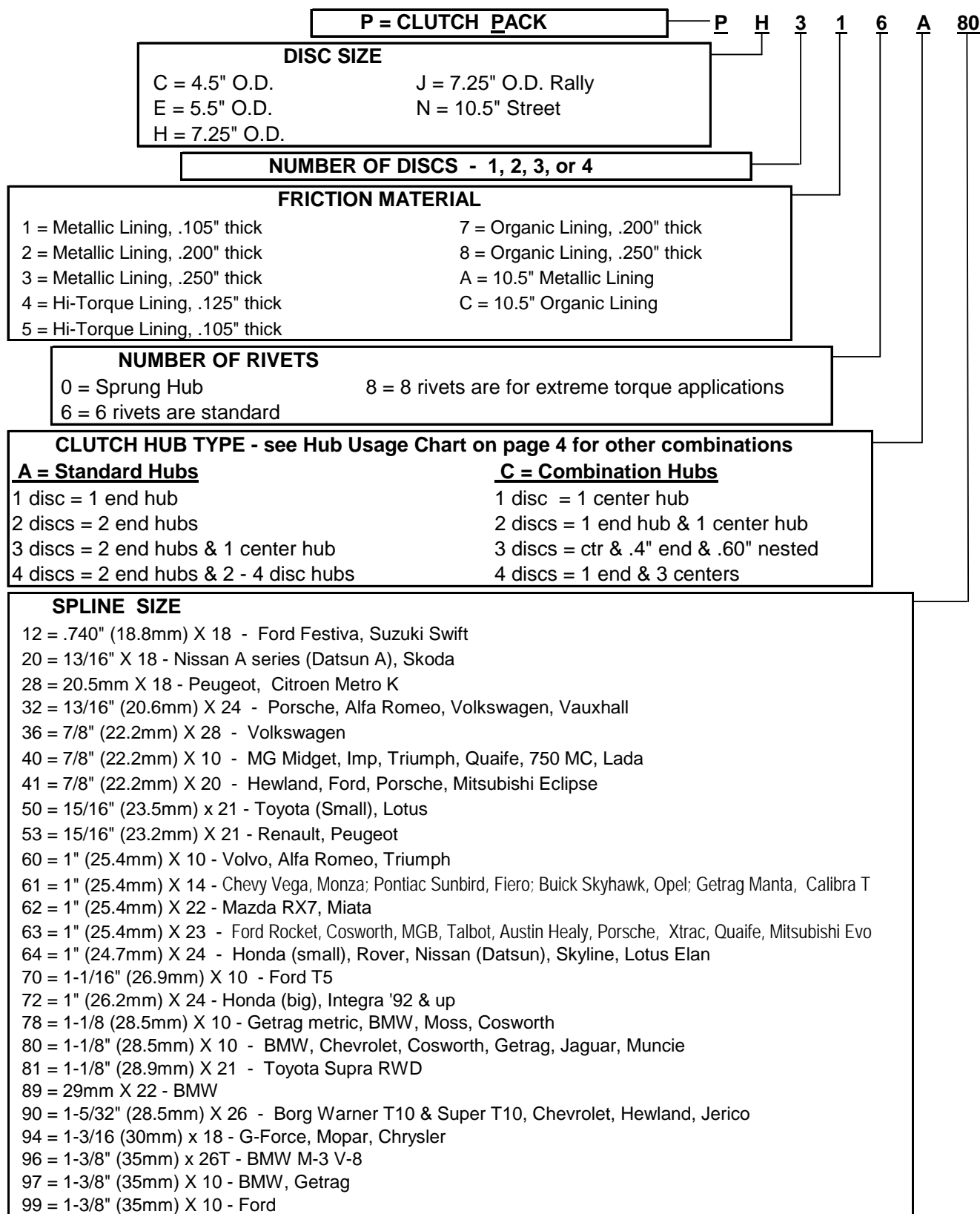
Every digit of PowerTrain Technology (PTT) part numbers represents something. The part numbering chart shown below can be used to identify the correct clutch part number for your application. Please note that not all combinations are available and the following charts are not all inclusive. There may be some additional clutch combinations that are not represented in these charts. Please call PTT at 847.458.2323 for assistance finding your correct part number.

CLUTCH ASSEMBLY PART NUMBERING SYSTEM

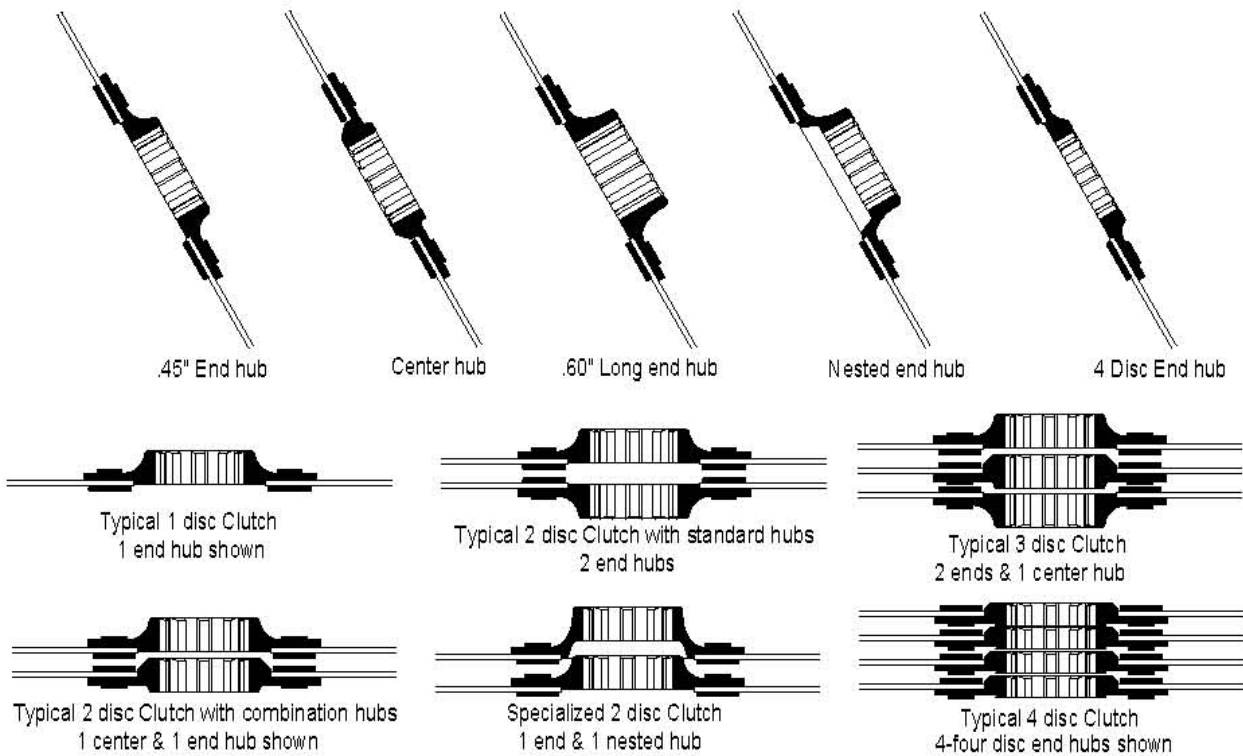


Every digit of PTT's part numbers represents something. The part numbering chart shown below can be used to identify the correct clutch pack part number for your application. Please note that not all combinations are available and the following charts are not all inclusive. There may be some additional clutch combinations that are not represented in these charts. Please call PTT at 847.458.2323 for assistance finding your correct part number.

REPLACEMENT CLUTCH PACK PART NUMBERING SYSTEM



Clutch Hub Types



Clutch Hub Usage Table

		NUMBER OF DISCS & DISC THICKNESS							
Hub	Description	1 x .105	2 x .105	3 x .105	1 x .200	2 x .200	3 x .200	1 x .250	2 x .250
A	Standard Hubs	1 - .45" end hub	2 - .45" end hubs	2 - .45" end hubs & 1 center hub	1 - .45" end hub	2 - .45" end hubs	2 - .45" end hubs & 1 center hub	1 - .45" end hub	2 - .45" ends
C	Combination Hubs	1 Center	1 - .45" end hub & 1 center hub	1 center & 1 - .4" end & 1 - .60" nested	1 - center hub	1 - .45" end & 1 - center hub	1 center & 1 - .45" end & 1 - .60" nested	1 - center hub	1 - .45" end & 1 - center
L	Long End Hubs	1 - .60" end hub	1 - .40" end hub & 1 - .60" end hub	X	1 - .60" end hub	1 - .60" end & 1 - .45" end hub	X	1 - .60" end hub	1 - .60" end & 1 - .45" end
N	.60" Nested Hubs	1 - .60" nested hub	1 - .40" end hub & 1 - .60" nested	X	1 - .60" nested hub	1 - .45" end & 1 - .60" nested	X	1 - .60" nested hub	1 - .45" end & 1 - .60" nested
T	.60" Nested w/ .1" c'bore	X	X	X	1 - .60" T-nested hub	1 - .45" end & 1 - .60" T-nested	X	1 - .60" T-nested hub	1 - .45" end & 1 - .60" T-nested

Clutch Component Wear Limits

Every small diameter racing clutch PTT manufactures has a usable friction material wear limit of 0.030" (0.75mm). This friction material wear limit is for all friction material in the clutch. So... the only disc in a single disc clutch would be allowed to wear a maximum of 0.030" (0.75mm). At that point, the clutch disc's service life is over. The clutch disc will need to be replaced.

The clutch discs on a 2 disc clutch are allowed to wear a maximum of 0.015" (0.38mm) each (0.015" x 2 = 0.030" [0.75mm] total clutch pack wear.) When each clutch disc has worn 0.015" (0.38mm) from their new thickness, their service life is over. The clutch pack needs to be replaced.

The clutch discs on a 3 disc clutch pack are allowed to wear a maximum of 0.010" (0.25mm) each (0.010" x 3 = 0.030" [0.75mm] total clutch pack wear.) When each clutch disc has worn 0.010" (0.25mm) from their new thickness, their service life is over. The clutch pack needs to be replaced.

Yes, if you are running a three disc clutch, and you know a fellow racer who is running a two disc, or a single disc clutch, that racer can make further use of your worn-out clutch discs.

One last thing to consider when discussing wear limits: If the floater plate(s), pressure plate, or flywheel step are worn, the wear amount for these parts must be added to the overall clutch pack wear. Any amount they are worn below the New Thickness shown below will reduce the amount of wear available to the clutch discs. For example, if your floater plate only measures 0.176" (4.47mm) it has 0.004" (0.10mm) of wear. This means that if you are running a 2 disc clutch you should replace the discs when they are worn down to .092" (2.34mm) instead of the normal .090" (2.28mm) per the table below. The easy engagement friction material, which is proprietary to PTT clutches, does not normally wear the mating surfaces of the pressure plate or floater plate(s), but their thickness and flatness must be checked every time the clutch is inspected.

Inspect your clutch at frequent intervals. This interval will vary depending on driver skill level. Replace the clutch disc(s) when they are worn to the minimum thickness. This avoids clutch slippage which leads to excess heat that can permanently damage your clutch. Clutch component wear limits are as follows:

Number of Discs:	Thickness New	Thickness Worn
1	0.105" (2.67mm)	0.075" (1.90mm)
2	0.105" (2.67mm)	0.090" (2.28mm)
3	0.105" (2.67mm)	0.095" (2.41mm)
4	0.105" (2.67mm)	0.097" (2.46mm)
1	0.125" (3.18mm)	0.095" (2.41mm)
1	0.200" (5.08mm)	0.170" (4.32mm)
2	0.200" (5.08mm)	0.185" (4.70mm)
3	0.200" (5.08mm)	0.190" (4.83mm)
1	0.250" (6.35mm)	0.220" (5.59mm)
2	0.250" (6.35mm)	0.235" (5.97mm)
Floater Plate	0.180" (4.57mm)	for all PTT clutches
Pressure Plate	0.535" (13.59mm)	for most PTT clutches
Pressure Plate	0.515" (13.08mm)	for Extreme-Torque clutch

HOW TO SELECT A RACING CLUTCH

Circle track racing clutches are designed to be as light in moment of inertia (MOI) as absolutely possible. You always want to select the lightest clutch and drivetrain components which the rules you race under will allow. The only exception to this has to do with durability. In order to finish first, first you must finish!

The clutch you select will be a fine balance of lightweight and low moment of inertia performance combined with enough durability for your particular car/engine/driver combination. Too heavy, and you will not be competitive. Too light and you might not finish the race. The clutch that you ultimately select is based upon several factors. Here is a step by step guide to selecting the correct clutch for your application. First, let's talk about some clutch basics.

Clutch Basics

The reason for selecting a multi-disc racing clutch is increased torque capacity. If you want to double the torque capacity of a one disc clutch, simply add another clutch disc. Do you want triple the torque capacity? Use three clutch discs. Adding clutch discs is a great way to increase torque capacity, without increasing the diameter (or MOI) of the clutch or increasing the pedal effort

The only other way to increase the torque capacity of a clutch would be to increase the diameter. Increasing the diameter is usually impractical due to size limitations. Doubling the diameter of a clutch will double the torque capacity, but the clutch will have four times the moment of inertia.

CLUTCH SELECTION GUIDE

1. Ensure the clutch you are considering conforms to the rules

The sanctioning body which governs your type of racing usually has a 'clutch rule'. Generally sanctioning bodies like to spell out minimum clutch disc diameters, or limit you to a single disc clutch.

2. Select a clutch with the right torque capacity

The minimum break-away torque capacity of the clutch you select is based upon how much peak torque your engine develops. Clutches only care about torque, NOT horsepower. The rule of thumb PTT uses to properly size a clutch to your application is as follows:

Multiply your engine's peak torque by 1.25 (minimum) and select a clutch that has at least as much or more, torque capacity. For instance, if your engine has a peak torque of 400 lb.ft. multiply 400 by 1.25 ($400 \times 1.25 = 500$). Therefore, in this example, you would select a clutch which has a torque capacity of at least 500 lb.ft. For all wheel drive (AWD) cars, you should use a 1.5 multiplier.

Engines that have unusually high harmonic vibration, such as some inline 4 cylinders, or inline 6 cylinders or engines with extremely light rotating/reciprocating assemblies (light cranks and pistons, titanium rods, no harmonic damper, etc.) should be rated using a 1.5 multiplier. **Please see "Clutch Torque Capacity Conversion Guide" (Table #1) on page 7 to quickly determine how much torque capacity your PTT clutch requires.**

Too much clutch torque capacity can be just as harmful as too little clutch torque capacity. Think of your clutch as a fusible link between your drive wheels and your engine. If the drive wheels rub up against another car (or the wall) or come to an abrupt stop for whatever reason (collision) the clutch will slip and not transmit a harmful torque spike from the drivetrain to the engine. This can save valuable engine components, saving you a considerable amount of money.

TABLE # 1

Clutch Torque Capacity Conversion Guide

Your Car's Engine Torque	Minimum Clutch Torque Capacity (1.25 multiplier)	AWD, 4 cylinder or inline 6 cylinder Clutch Torque Capacity (1.50 multiplier)	Extreme Application Clutch Torque Capacity (1.75 multiplier)	Do not Exceed this Clutch Torque Capacity (2.00 multiplier)
100	125	150	175	200
150	188	225	263	300
200	250	300	350	400
250	313	375	438	500
300	375	450	525	600
350	438	525	613	700
400	500	600	700	800
450	563	675	788	900
500	625	750	875	1000
550	688	825	963	1100
600	750	900	1050	1200
650	813	975	1138	1300
700	875	1050	1225	1400

Remember

It is important to always specify a clutch with more torque capacity than needed. *Always round up* when it comes to selecting a clutch with the proper torque capacity. This avoids the possibility of slippage, which will quickly destroy a racing clutch due to excessive heat buildup. Avoid using a clutch with a torque capacity of 2.0 or more times the engine's peak torque rating (see PTT Clutch Facts: *Too much clutch torque capacity?* on page 9).

3. Select a clutch size matched to your racecar overall weight

Lightweight cars (formula cars, small 4 cylinder cars, etc.) can use the smallest clutches (4.5"). Heavier cars have more kinetic energy, and will need to go up in clutch diameter. Bigger diameter clutches have more mass. This extra clutch mass is needed for cars with more kinetic energy.

4. Gear Ratios

If your racecar has a tall first gear, or a tall final drive ratio (or both), you might want to consider going to a larger diameter clutch than you would normally install. The increased amount of clutch slippage needed to get the car rolling, due to high gear ratios, will generate increased heat in the clutch. More clutch mass is needed to offset this increased slippage.

5. Durability vs. Performance

The primary consideration in selecting the diameter of the clutch comes down to balancing durability against performance. A smaller clutch will give the car better performance. A bigger clutch will give extra durability. All things being equal, a 4.5" clutch has approximately half the MOI of a 5.5" clutch. A 5.5" clutch has about half the MOI of a 7.25" clutch. The performance benefits with a clutch that has half (or one fourth!) the MOI of larger clutches help immensely on the track. **For an estimated clutch size recommendation, see "Clutch Size Selection Guide" (Table #2) on page 9. Please note: For best results, each application must be individually evaluated.**

A word about clutch heat

It is important to understand that the smaller the clutch is, the more sensitive it is to excessive heat build-up. The driver must be very careful and always drive the smaller clutch within its limits. Just as conserving your tires or your brakes is important, so is conserving your clutch!

To help you understand how critical this is, think of a 4.5" clutch as a cup of water, and think of a 5.5" clutch as a quart of water, and a 7.25" clutch as a gallon of water. If you put a cup of water and a gallon of water on the stove to boil, which one will boil sooner? The cup of water boils sooner, due to its lower mass. Think of slipping the clutch as being equivalent to putting the water on the hot stove. Lower mass can be a great help in getting around the race track faster due to lower MOI, BUT you have to be careful to *not overheat the clutch!*

With a small clutch you should always *push* your car around in the pits, *never drive the car on the trailer*, and *avoid slipping the clutch*. In the heat of the battle (leaving the pits under a green flag pit stop, or spinning out in the in-field, it is always better to break the tires loose to get the car going, rather than excessively slipping the clutch.

6. Driver Skill Level

Getting maximum life out of your clutch is an acquired skill. First you must ask yourself, "How good is my driver?" Does he/she have multi-disc racing clutch experience? Can he/she make a racing clutch pack last a full season or longer? If the answer is yes, select the smallest clutch you can afford that meets the torque requirements, vehicle weight, and gear ratio guidelines specified above.

If you have a newer, less experienced driver, here is a trick we often recommend. You may want to add an additional disc to your selected clutch assembly. This will help the clutch withstand more heat abuse (because it now has a little more mass), while still improving the racecar's performance over what is achievable with a larger diameter clutch. If you have the choice of adding a disc to a small diameter clutch or going to the next size larger clutch, adding the extra disc to the smaller size clutch will give you much better performance than the larger clutch *and* give you the extra durability required. Generally the next bigger size clutch roughly doubles the clutch MOI. As the driver's performance (skill with the racing clutch) improves, it is inexpensive to get a shorter clutch cover, and remove one clutch disc and floater plate.

Heat is a racing clutch's mortal enemy

Every time you are slipping the clutch, the clutch friction surfaces are generating heat. You should always try to conserve your equipment by keeping the heat build-up in your racing clutch to an absolute minimum. This is best accomplished by using the minimum engine RPM necessary to get the car launched, and/or slipping the clutch for the shortest amount of time needed to get the car moving. Get your crew to push the car off when leaving the pits or paddock area. Once the car is rolling, and the driver's foot is completely off the clutch (clutch is fully engaged), you can do whatever you want with the throttle.

NEVER drive the car onto the trailer. Use a winch.

Matching engine RPM on downshifts also helps reduce clutch heat build-up (and excessive wear) immensely. You should NEVER slide or 'fan' the clutch coming off a slow corner to make up for a wrong gear ratio. The amount of heat generated doing this to a small multi-disc clutch will damage it in a short time.

TABLE #2 Clutch Size Selection Guide

NOTE: This chart is a preliminary guideline. For best results, each application must be individually evaluated.	Car Weight with Driver	Driver Skill Level	Gear Ratio	Clutch Torque Capacity from Chart 1	Clutch Recommendation		
					4.5"	5.5"	7.25"
NOTE: This chart is a preliminary guideline. For best results, each application must be individually evaluated.	1,000 to 1,500 pounds	New Driver	Tall 1st gear or Tall final ratio	100 lb.ft.	NO	2 disc	1 disc
				150 lb.ft.	NO	2 disc	1 disc
				200 lb.ft.	NO	2 disc	1 disc
				250 lb.ft.	NO	2 disc	1 disc
			Appropriate Gear Ratios	100 lb.ft.	2 disc	1 disc	1 disc
				150 lb.ft.	2 disc	1 disc	1 disc
		200 lb.ft.		2 disc	2 disc	1 disc	
		250 lb.ft.		2 disc	2 disc	1 disc	
		Highly Skilled Driver	Tall 1st gear or Tall final ratio	100 lb.ft.	1 disc	1 disc	1 disc
				150 lb.ft.	1 disc	1 disc	1 disc
				200 lb.ft.	2 disc	2 disc	1 disc
				250 lb.ft.	2 disc	2 disc	1 disc
	Appropriate Gear Ratios		100 lb.ft.	1 disc	1 disc	1 disc	
			150 lb.ft.	1 disc	1 disc	1 disc	
	1,501 to 2,500 pounds	New Driver	Tall 1st gear or Tall final ratio	200 lb.ft.	NO	2 disc	2 disc
				300 lb.ft.	NO	2 disc	2 disc
				400 lb.ft.	NO	3 disc	2 disc
				500 lb.ft.	NO	3 disc	3 disc
			Appropriate Gear Ratios	200 lb.ft.	2 disc	2 disc	1 disc
				300 lb.ft.	3 disc	2 disc	2 disc
		Highly Skilled Driver	Tall 1st gear or Tall final ratio	400 lb.ft.	3 disc	2 disc	2 disc
				500 lb.ft.	3 disc	3 disc	2 disc
				200 lb.ft.	3 disc	2 disc	2 disc
				300 lb.ft.	3 disc	2 disc	2 disc
Appropriate Gear Ratios			400 lb.ft.	3 disc	2 disc	2 disc	
			500 lb.ft.	3 disc	2 disc	2 disc	
2,501 to 3,500 pounds	New Driver	Tall 1st gear or Tall final ratio	300 lb.ft.	NO	3 disc	2 disc	
			400 lb.ft.	NO	3 disc	3 disc	
			500 lb.ft.	NO	3 disc	3 disc	
			600 lb.ft.	NO	3 disc	3 disc	
			700 lb.ft.	NO	3 disc	3 disc	
		Appropriate Gear Ratios	300 lb.ft.	3 disc	2 disc	2 disc	
			400 lb.ft.	3 disc	3 disc	2 disc	
			500 lb.ft.	3 disc	3 disc	3 disc	
			600 lb.ft.	3 disc	3 disc	3 disc	
	Highly Skilled Driver	Tall 1st gear or Tall final ratio	700 lb.ft.	3 disc	3 disc	3 disc	
			300 lb.ft.	3 disc	2 disc	2 disc	
			400 lb.ft.	3 disc	2 disc	2 disc	
			500 lb.ft.	3 disc	3 disc	2 disc	
			600 lb.ft.	3 disc	3 disc	3 disc	
		Appropriate Gear Ratios	700 lb.ft.	3 disc	3 disc	3 disc	
			300 lb.ft.	2 disc	1 disc	1 disc	
			400 lb.ft.	2 disc	2 disc	2 disc	
			500 lb.ft.	3 disc	2 disc	2 disc	
600 lb.ft.	3 disc	3 disc	2 disc				
	700 lb.ft.	3 disc	3 disc	3 disc			

NOTE: Other factors to take into consideration for clutch selection include: Type of racing; Tires; Standing starts; and Event length. This table is not all inclusive.

PTT CLUTCH FACTS

Clutch torque improves over the life of the clutch

The torque capacity of all PTT clutches increase as the clutch wears. As the clutch wears, the clutch will transmit more torque! Once you understand this little known fact, you can rest easy in the knowledge that if the clutch does not slip when it is initially installed then, like a fine wine; it will only get better with age.

Custom torque capacity

PTT clutches can be custom tailored for a lower clutch release force by installing a lighter diaphragm spring. This is frequently done for a couple of reasons. It reduces pedal effort to the driver and it reduces the force on the engine's crank thrust bearing. This helps reduce driver fatigue in longer endurance events, while improving engine durability. Some smaller 4 cylinder engines cannot withstand the excessively high release loads imparted from some aftermarket racing clutches. PTT's clutches with lower release loads eliminate the chance of expensive engine rebuild costs due to 'crank walk'. See our article on crank walk at www.PowerTrainTech.com.

THE TORQUE CAPACITY OF A PTT CLUTCH CAN BE CHANGED IN THREE WAYS:

- 1. Install a high-torque pressure plate instead of a standard pressure plate.** This pressure plate has a reduced diameter fulcrum. Installing a high-torque pressure plate will increase the torque capacity of a clutch with NO increase in spring clamp load or pedal effort.
- 2. Select a different diaphragm spring.** PTT diaphragm springs are rated from 'AA' to 'C'. Standard clutches come with 'A' rated springs. Changing from an 'A' spring to a 'AA' spring will increase the torque capacity as well as pedal effort and thrust bearing load. Conversely, changing from an 'A' spring to a 'B' spring will reduce the torque capacity, pedal effort, and thrust bearing 'stress'. Typically clutch diaphragm springs are changed to accommodate pedal effort requirements just as much as for peak torque capacity fine tuning.
- 3. Select a different friction material.** PTT offers bronze metallic, organic and iron metallic based friction materials. Different friction materials offer different coefficients of friction (Cf). An alternative friction material might be selected for its drivability as well as its ultimate torque capacity.

Maximum clutch release load limits

All PTT clutches are designed to never exceed 800 pounds of force during clutch disengagement (clutch release). Some unknowledgeable clutch manufacturers will install two standard diaphragm springs into a 7.25" clutch cover and call it 'high performance.' This is irresponsible, and demonstrates a lack of good engineering judgment (or no engineering at all!) Although this doubles the torque capacity of the clutch, it also doubles the load on the engine's thrust bearing, causing its early failure and expensive replacement. This 'trick' will also double the force needed to disengage the clutch, causing driver fatigue.

FRICTION MATERIALS

SINTERED BRONZE METALLIC - PTT's standard friction material is a proprietary sintered metallic material that has been custom blended to meet a variety of different requirements. It is also ground to an extremely fine surface finish. This eliminates excessive clutch wear the first time the clutch is used. It also doesn't require bedding-in when first installed. Standard thicknesses available in this material are 0.105", 0.125", 0.200", or 0.250" thick. The thickness of the disc for use in your clutch is determined by the type of use it is put to. Generally, a thicker disc would be selected if the clutch is going to be consistently subjected to higher operating temperatures brought about by lots of slippage. Thinner discs are selected for their lighter MOI, resulting in faster shifting, and longer transmission part life.

Under normal conditions, each 7.25" disc provides 300 lb.ft. of torque capacity. PTT metallic friction materials stand up to extreme heat abuse better than organic friction materials, and do not drop as much Cf as organic materials as the lining temperature goes up.

ORGANIC - Organic friction materials have a softer, more forgiving engagement characteristic. PTT organic discs have a higher coefficient of friction (Cf) than some metallic linings offered. Using a clutch cover with the same clamp load (diaphragm spring), the organic material will deliver a higher clutch torque capacity. GENERALLY, you can plan on approximately 400 lb. ft. of torque per 7.25" disc. Organic friction materials lose Cf as the lining temperature goes up. If you get an organic clutch hot, and it slips, let the clutch cool down to avoid costly damage to the rest of the clutch components due to excessive heat. Organic discs are designed mainly for street driving. Organic clutch discs should not be used in applications over 400 hp or other extreme applications, such as drag racing.

SINTERED IRON METALLIC – PTT's highest Cf friction material. If you have a difficult application, and need every last lb.ft. of torque capacity then this is the material for you! When used in a single disc 7.25" clutch this iron material has a torque rating in excess of 600 lb. ft. In many situations, this clutch will allow you to go from a standard 2 disc clutch to a 1 disc clutch in order to reduce static weight and MOI. This material drops Cf moderately with increased lining temperature. It is also 'grabbier' than our velvety smooth bronze material. Most drivers will initially find iron material more difficult to drive at first.

MOMENT OF INERTIA

Moment of inertia, (MOI) or more properly called angular moment of inertia as it applies to rotating parts (racecar drivetrain parts) deserves important consideration. The reduction of MOI in your racecar's drivetrain will pay big dividends in your car's performance. First let's consider how MOI is calculated. The MOI of rotating parts can be solved by the formula $\frac{1}{2} MR^2$ where M = mass and R = radius. This means that one half the mass of a rotating part times the radius (squared) of the rotating part will give us the MOI of the part expressed in lb./in.². Let's solve for the MOI of a simple flywheel:

Let's say we have a flywheel that weighs 12 pounds and is 10" in diameter.

Mass (M) = 12 lbs. and Radius (R) = 5"

Now let's take our 12 pound flywheel and put it on a diet. Let's turn 4 pounds off of it to reduce its weight down to 8 pounds. (That is a full 1/3 reduction in weight!)

Now, M = 8 lbs. and R = 5"

$$\frac{1}{2} \times 8 \times 5^2 = 100 \text{ lb./in.}^2$$

This shows that a 1/3 reduction in weight results in a 33% reduction in MOI. OK. Good. 1/3 lighter MOI will result in a good performance increase on-track.

To illustrate how important MOI is, let's look at this problem a little differently. Let's reduce the size of the flywheel to a 6" diameter but for comparison sake we will say that it still weighs 12 pounds (just as heavy as our original flywheel).

Now, M = 12 lbs. and R = 3"

$$\frac{1}{2} \times 12 \times 3^2 = 54 \text{ lb./in.}^2$$

This shows that a 50% reduction in size results in a 64% reduction in MOI.

If you reduce the size of the flywheel to a 6" diameter and reduce the weight to 6 pounds you have $\frac{1}{2} \times 6 \times 3^2 = 27 \text{ lb./in.}^2$, a full 82% reduction in MOI!

This example illustrates that you get a bigger reduction in MOI by reducing the rotating diameter than by reducing the rotating weight. So... the next time you are shopping for a new clutch you should not ask how much it weighs. Instead, ask how much MOI does it have. This also clearly illustrates that the MOI of a 5.5", 3 disc clutch (39.4 lb./in.²) will be significantly lower than a 7.25", 2 disc clutch (71.4 lb./in.²).

Reduced MOI shows up as a benefit in your race car in several different ways:

Low MOI Advantage #1

On acceleration the engine's horsepower is more efficiently transmitted to the drive wheels. Due to the fact that this extra power is not being absorbed by having to spin up the excess inertia of the heavier clutch and flywheel, the racecar with the lower MOI driveline parts will out-accelerate a racecar with heavier MOI driveline parts.

Low MOI Advantage #2

On braking when approaching a turn, the racecar with the lower MOI driveline parts decelerates harder, with less stress on the braking system. This is due to the fact that the engine has much less flywheel inertia trying to carry the car deeper into the corner. This increased engine braking can result in less brake pad wear and less stress on the rest of the brake system.

Low MOI Advantage #3

Lower MOI parts take less horsepower to accelerate. This can result in lower fuel consumption. In an endurance event this can add up to a substantial fuel savings. Perhaps enough to alter your pit stop strategy.

Low MOI Advantage #4

Low MOI rotating parts usually also have lower static weight. This allows the racecar designer to reduce the car's weight. If the class has a minimum weight and the car is already under that weight, it allows the designer to put the ballast where it will help the car's handling the most.

Low MOI Advantage #5

Low MOI clutch disc(s) allow for quicker up-shifts and down-shifts. This is a measurable difference in reduced lap times on a road course.

Low MOI Advantage #6

Low MOI clutch discs allow for reduced stress on transmission synchros or dog rings. Because the clutch disc(s) change RPM quicker there is less force applied to synchros or dog rings, resulting in longer life of these critical transmission components.

Q. Is it more important to reduce the static weight of your racecar, or reduce the MOI of your car's rotating parts?

A. It is generally recognized that there is about a ten to one advantage in favor of reducing rotating weight over static weight in a racecar. As an example...if you have the chance to remove just one pound of rotating weight from your flywheel, you will see an immediate and noticeable improvement in the racecar's acceleration. On the other hand if we put a ten pound brick in your racecar without your knowledge, you probably would not even realize it was there.

Every spinning part PTT engineers is built with an eye towards reduced MOI, while still paying critical attention to rugged reliability and quality. It is this low MOI that gives you the unfair advantage over your competition. You may be fast, but PTT racing products can allow you to go faster!

4.5" Open Style Clutch Units

xx = spline size. See spline look-up chart on page 27.

4.5" Clutch (no flywheel)		10-Bolt Clutch		PowerSTAR 5-Bolt Clutch		Spline=xx
		Friction Material		Friction Material		
Application	Number of Discs	Metallic .105" Thick	Hi-Torque .105" Thick	Metallic .105" Thick	Hi-Torque .105" Thick	
All	1	CC116A1Axx	CC158A1Axx	CS116A1Axx	CS158A1Axx	See List
All	2	CC216A1Axx	CC258A1Axx	CS216A1Axx	CS258A1Axx	See List
All	3	CC316A1Axx	CC358A1Axx	CS316A1Axx	CS358A1Axx	See List
All	4	CC416A1Axx	CC458A1Axx	CS416A1Axx	CS458A1Axx	See List

All part numbers shown above are for standard clutch hub configuration.

For additional clutch options see "Clutch Assembly Part Numbering System" on page 2.

4.5" Open Style Clutch & LtWt Button Flywheel Kits

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

4.5" Clutch & Button Fly		10-Bolt Clutch	PowerSTAR 5-Bolt Clutch	Spline
Application	Number of Discs	Metallic .105" Thick	Metallic .105" Thick	
Chevy SB V-8 Early Model	2	KC2128	KS2128	10 Tooth
	2	KC2129	KS2129	26 Tooth
	3	KC3128	KS3128	10 Tooth
	3	KC3129	KS3129	26 Tooth
Chevy SB V-8 Late Model	2	KC2828	KS2828	10 Tooth
	2	KC2829	KS2829	26 Tooth
	3	KC3828	KS3828	10 Tooth
	3	KC3829	KS3829	26 Tooth
Ford SB V-8	2	KC2328	KS2328	10 Tooth
	2	KC2329	KS2329	26 Tooth
	3	KC3328	KS3328	10 Tooth
	3	KC3329	KS3329	26 Tooth

4.5" Open Style Clutch, LtWt Button Fly & Low MOI Flexplate Kit

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

4.5" Clutch, Btn Fly & Flexplate		10-Bolt Clutch	PowerSTAR 5-Bolt Clutch	Spline
Application	Number of Discs	Metallic .105" Thick	Metallic .105" Thick	
Chevy SB V-8 Early Model	2	KC2148	KS2148	10 Tooth
	2	KC2149	KS2149	26 Tooth
	3	KC3148	KS3148	10 Tooth
	3	KC3149	KS3149	26 Tooth
Chevy SB V-8 Late Model	2	KC2848	KS2848	10 Tooth
	2	KC2849	KS2849	26 Tooth
	3	KC3848	KS3848	10 Tooth
	3	KC3849	KS3849	26 Tooth
Ford SB V-8	2	KC2348	KS2348	10 Tooth
	2	KC2349	KS2349	26 Tooth
	3	KC3348	KS3348	10 Tooth
	3	KC3349	KS3349	26 Tooth

4.5" Open Style Clutch Bellhousing Kit

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

Kit includes: Clutch, LtWt Button Flywheel, Reverse Starter Mount Bellhousing, Reverse Mount Starter, Hydraulic Release Bearing with External Bleeder, Reverse Mount Ring Gear, Clutch Bolts & Flywheel Bolts

4.5" Clutch & Bellhousing Kits				All Friction Material is Metallic .105" Thick. Call PTT for other Friction Material options.			
Application	Bellhousing Aluminum or Magnesium	Number of Discs	Spline	HYDRAULIC RELEASE BEARING			
				Hydro-MAX	Tri-MAX	Hydro-MAX	Tri-MAX
				10-Bolt Clutch		PowerSTAR 5-Bolt Clutch	
Chevy SB V-8 Early Model	Aluminum	2	10T	BC2118	BC2128	BS2118	BS2128
	Aluminum	2	26T	BC2119	BC2129	BS2119	BS2129
	Magnesium	2	10T	BC2158	BC2168	BS2158	BS2168
	Magnesium	2	26T	BC2159	BC2169	BS2159	BS2169
	Aluminum	3	10T	BC3118	BC3128	BS3118	BS3128
	Aluminum	3	26T	BC3119	BC3129	BS3119	BS3129
	Magnesium	3	10T	BC3158	BC3168	BS3158	BS3168
	Magnesium	3	26T	BC3159	BC3169	BS3159	BS3169
Chevy SB V-8 Late Model	Aluminum	2	10T	BC2818	BC2828	BS2818	BS2828
	Aluminum	2	26T	BC2819	BC2829	BS2819	BS2829
	Magnesium	2	10T	BC2858	BC2868	BS2858	BS2868
	Magnesium	2	26T	BC2859	BC2869	BS2859	BS2869
	Aluminum	3	10T	BC3818	BC3828	BS3818	BS3828
	Aluminum	3	26T	BC3819	BC3829	BS3819	BS3829
	Magnesium	3	10T	BC3858	BC3868	BS3858	BS3868
	Magnesium	3	26T	BC3859	BC3869	BS3859	BS3869

If you don't see your application here, please call PTT at 847.458.2323 for additional information.

4.5" Flywheels

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

Universal	LtWt, Button Style Flywheel, BLANK (No crank bolt holes & small center bore)	FC001
Chevy SB V-8	LtWt, Button Style Flywheel, Chevy SB V-8 Early Model	FC101
	LtWt, Button Style Flywheel, Chevy SB V-8 Late Model	FC103
Ford SB V-8	LtWt, Button Style Flywheel, Ford SB V-8	FC301
Flywheel Bolts	Chevy, Ford, Chrysler SB V-8	NK407076

4.5" Clutch Bolt Kits - 5/16-24 Bolts, Jet Nuts, and SS Washers

4.5" 10-Bolt Clutch	Bolt Kit, 1 Disc x .105" thick	NK104140
	Bolt Kit, 2 Disc x .105" thick	NK104160
	Bolt Kit, 3 Disc x .105" thick	NK104180
	Bolt Kit, 4 Disc x .105" thick	NK104200
4.5" PowerSTAR 5-Bolt Clutch	Bolt Kit, 1 Disc x .105" thick	NK104145
	Bolt Kit, 2 Disc x .105" thick	NK104165
	Bolt Kit, 3 Disc x .105" thick	NK104185
	Bolt Kit, 4 Disc x .105" thick	NK104205

4.5" Replacement Clutch Spare Parts

10-Bolt Cover Assembly (no discs, floater plates or pressure plate)	Clutch Cover Assembly, 1 Disc X .105"	CC101
	Clutch Cover Assembly, 2 Disc X .105"	CC201
	Clutch Cover Assembly, 3 Disc X .105"	CC301
	Clutch Cover Assembly, 4 Disc X .105"	CC401
5-Bolt Cover Assembly (no discs, floater plates or pressure plate)	Clutch Cover Assembly, 1 Disc X .105"	CS101
	Clutch Cover Assembly, 2 Disc X .105"	CS201
	Clutch Cover Assembly, 3 Disc X .105"	CS301
	Clutch Cover Assembly, 4 Disc X .105"	CS401
Pressure Plates	Pressure Plate, Steel, Std. Fulcrum for 10-bolt clutch	CC031
	Pressure Plate, Steel, Std. Fulcrum for 5-bolt clutch	CC037
Floater Plates	Floater Plate - for 10-bolt clutch	CC041
	Floater Plate - for 5-bolt clutch	CC046
	Floater Plate, LightWeight Drilled - for 5-bolt clutch	CC047

4.5" Replacement Clutch Packs (discs) *xx = spline size. See spline look-up chart on page 27.*

4.5" Clutch Discs		Friction Material		
Application	Number of Discs	Metallic .105" Thick	Hi-Torque .105" Thick	Spline=xx
All	1	PC116Axx	PC158Axx	See List
All	2	PC216Axx	PC258Axx	See List
All	3	PC316Axx	PC358Axx	See List
All	4	PC416Axx	PC458Axx	See List

All part numbers shown above are for standard clutch hub configuration.

For additional clutch pack options see "Replacement Clutch Pack Part Numbering System" on page 3.

5.5" Open Style Clutch Units *xx = spline size. See spline look-up chart.*

5.5" Clutch Units (no fly)		Friction Material				Spline=xx
Application	Number of Discs	Steel Pressure Plate	Alum. P.Pl. w/ LtWt Floaters	Met. .200" Thk	Org. .200" Thk	
All	1	CE116A1Axx	CE116A3Axx	CE126A1Axx	CE176A1Axx	See List
All	2	CE216A1Axx	CE216A3Axx	CE226A1Axx	CE276A1Axx	See List
All	3	CE316A1Axx	CE316A3Axx	CE326A1Axx	CE376A1Axx	See List
All	4	CE416A1Axx	CE416A3Axx	CE426A1Axx	CE476A1Axx	See List

All part numbers shown above are for standard clutch hub configuration.

For additional clutch options see "Clutch Assembly Part Numbering System" on page 2.

5.5" Open Style Clutch & LtWt Button Flywheel Kits

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

5.5" Clutch & Button Fly		All Friction Material is Metallic .105" Thick. Call for other Friction Material options.			
Application	Number of Discs	Steel Pressure Plate	Alum. P.Pl. w/ LtWt Floaters	Alum. P.Pl. w/ LtWt Floaters & Super LtWt Drilled Btn Fly	Spline
Chevy SB V-8 Early Model	2	KE2128	K52128	K52128S	10 Tooth
	2	KE2129	K52129	K52129S	26 Tooth
	3	KE3128	K53128	K53128S	10 Tooth
	3	KE3129	K53129	K53129S	26 Tooth
Chevy SB V-8 Late Model	2	KE2828	K52828	K52828S	10 Tooth
	2	KE2829	K52829	K52829S	26 Tooth
	3	KE3828	K53828	K53828S	10 Tooth
	3	KE3829	K53829	K53829S	26 Tooth

5.5" Open Style Clutch & LtWt Button Flywheel Kits (cont.)

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

5.5" Clutch & Button Fly		All Friction Material is Metallic .105" Thick. Call for other Friction Material options.			
Application	Number of Discs	Steel Pressure Plate	Alum. P.Plt. w/ LtWt Floaters	Alum. P.Plt. w/ LtWt Floaters & Super LtWt Drilled Btn Fly	Spline
Chevy SB V-8 Late Model Ext. Bal. (Crate Motor)	2	KE2928	K52928	K52928S	10 Tooth
	2	KE2929	K52929	K52929S	26 Tooth
	3	KE3928	K53928	K53928S	10 Tooth
	3	KE3929	K53929	K53929S	26 Tooth
Chevy LS1 V-8	2	KE2028	K52028	K52028S	10 Tooth
	2	KE2029	K52029	K52029S	26 Tooth
	3	KE3028	K53028	K53028S	10 Tooth
	3	KE3029	K53029	K53029S	26 Tooth
Ford SB V-8	2	KE2328	K52328	K52328S	10 Tooth
	2	KE2329	K52329	K52329S	26 Tooth
	3	KE3328	K53328	K53328S	10 Tooth
	3	KE3329	K53329	K53329S	26 Tooth

5.5" Open Style Clutch, LtWt Button Fly & Low MOI Flexplate Kit

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

5.5" Clutch, Btn Fly & Flexplate		All Friction Material is Metallic .105" Thick. Call for other Friction Material options.			
Application	Number of Discs	Steel Pressure Plate	Alum. P.Plt. w/ LtWt Floaters	Alum. P.Plt. w/ LtWt Floaters & Super LtWt Drilled Btn Fly	Spline
Chevy SB V-8 Early Model	2	KE2148	K52148	K52148S	10 Tooth
	2	KE2149	K52149	K52149S	26 Tooth
	3	KE3148	K53148	K53148S	10 Tooth
	3	KE3149	K53149	K53149S	26 Tooth
Chevy SB V-8 Late Model	2	KE2848	K52848	K52848S	10 Tooth
	2	KE2849	K52849	K52849S	26 Tooth
	3	KE3848	K53848	K53848S	10 Tooth
	3	KE3849	K53849	K53849S	26 Tooth
Chevy SB V-8 Late Model Ext. Bal. (Crate Motor)	2	KE2948	K52948	K52948S	10 Tooth
	2	KE2949	K52949	K52949S	26 Tooth
	3	KE3948	K53948	K53948S	10 Tooth
	3	KE3949	K53949	K53949S	26 Tooth
Chevy LS1 V-8	2	KE2048	K52048	K52048S	10 Tooth
	2	KE2049	K52049	K52049S	26 Tooth
	3	KE3048	K53048	K53048S	10 Tooth
	3	KE3049	K53049	K53049S	26 Tooth
Ford SB V-8	2	KE2348	K52348	K52348S	10 Tooth
	2	KE2349	K52349	K52349S	26 Tooth
	3	KE3348	K53348	K53348S	10 Tooth
	3	KE3349	K53349	K53349S	26 Tooth

5.5" Open Style Clutch Bellhousing Kit

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

Kit includes: Clutch, LtWt Button Flywheel, Reverse Starter Mount Bellhousing, Reverse Mount Starter, Hydraulic Release Bearing with External Bleeder, Reverse Mount Ring Gear, Clutch Bolts & Flywheel Bolts

5.5" Clutch & Bellhousing Kits				All Friction Material is Metallic .105" Thk - Call for other Friction Material options.					
Application	Bellhousing Aluminum or Magnesium	No. of Discs	Spline	HYDRAULIC RELEASE BEARING					
				Hydro-MAX	Tri-MAX	Hydro-MAX	Tri-MAX	Hydro-MAX	Tri-MAX
				Steel Pressure Plate		Alum. Pressure Plate w/ LtWt Floaters		Alum. P.Plt, LtWt Floaters & Super LtWt Drilled Btn Fly	
Chevy SB V-8 Early Model	Aluminum	2	10T	BE2118	BE2128	B52118	B52128	B52118S	B52128S
	Aluminum	2	26T	BE2119	BE2129	B52119	B52129	B52119S	B52129S
	Magnesium	2	10T	BE2158	BE2168	B52158	B52168	B52158S	B52168S
	Magnesium	2	26T	BE2159	BE2169	B52159	B52169	B52159S	B52169S
	Aluminum	3	10T	BE3118	BE3128	B53118	B53128	B53118S	B53128S
	Aluminum	3	26T	BE3119	BE3129	B53119	B53129	B53119S	B53129S
	Magnesium	3	10T	BE3158	BE3168	B53158	B53168	B53158S	B53168S
	Magnesium	3	26T	BE3159	BE3169	B53159	B53169	B53159S	B53169S
Chevy SB V-8 Late Model	Aluminum	2	10T	BE2818	BE2828	B52818	B52828	B52818S	B52828S
	Aluminum	2	26T	BE2819	BE2829	B52819	B52829	B52819S	B52829S
	Magnesium	2	10T	BE2858	BE2868	B52858	B52868	B52858S	B52868S
	Magnesium	2	26T	BE2859	BE2869	B52859	B52869	B52859S	B52869S
	Aluminum	3	10T	BE3818	BE3828	B53818	B53828	B53818S	B53828S
	Aluminum	3	26T	BE3819	BE3829	B53819	B53829	B53819S	B53829S
	Magnesium	3	10T	BE3858	BE3868	B53858	B53868	B53858S	B53868S
	Magnesium	3	26T	BE3859	BE3869	B53859	B53869	B53859S	B53869S
Chevy SB V-8 Late Model Externally Balanced (Crate Motor)	Aluminum	2	10T	BE2918	BE2928	B52918	B52928	B52918S	B52928S
	Aluminum	2	26T	BE2919	BE2929	B52919	B52929	B52919S	B52929S
	Magnesium	2	10T	BE2958	BE2968	B52958	B52968	B52958S	B52968S
	Magnesium	2	26T	BE2959	BE2969	B52959	B52969	B52959S	B52969S
	Aluminum	3	10T	BE3918	BE3928	B53918	B53928	B53918S	B53928S
	Aluminum	3	26T	BE3919	BE3929	B53919	B53929	B53919S	B53929S
	Magnesium	3	10T	BE3958	BE3968	B53958	B53968	B53958S	B53968S
	Magnesium	3	26T	BE3959	BE3969	B53959	B53969	B53959S	B53969S
Chevy LS1 V-8	Aluminum	2	10T	BE2018	BE2028	B52018	B52028	B52018S	B52028S
	Aluminum	2	26T	BE2019	BE2029	B52019	B52029	B52019S	B52029S
	Magnesium	2	10T	BE2058	BE2068	B52058	B52068	B52058S	B52068S
	Magnesium	2	26T	BE2059	BE2069	B52059	B52069	B52059S	B52069S
	Aluminum	3	10T	BE3018	BE3028	B53018	B53028	B53018S	B53028S
	Aluminum	3	26T	BE3019	BE3029	B53019	B53029	B53019S	B53029S
	Magnesium	3	10T	BE3058	BE3068	B53058	B53068	B53058S	B53068S
	Magnesium	3	26T	BE3059	BE3069	B53059	B53069	B53059S	B53069S

If you don't see your application here, please call PTT at 847.458.2323 for additional information.

5.5" Flywheels

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

Universal	LtWt, Button Style, Blank (No crank bolt holes & small center bore, .84" OAL)	FE001
Chevy SB V-8 Early Model	LtWt, Button Style, Chevy SB V-8 Early Model	FE101
	Super LtWt, Drilled, Button Style, SB V-8 Early Model	FE106
Chevy SB V-8 Late Model	LtWt, Button Style, Chevy SB V-8 Late Model	FE103
	Super LtWt, Drilled, Button Style, Chevy SB V-8 Late Model	FE107
	LtWt, Button Style, Externally Balanced for Crate Motor (needs special bolt kit)	FE1031
	Super LtWt, Drilled Btn, Ext. Bal. for Crate Motor (needs special bolt kit)	FE1071
	Balance Weight Only (needs special bolt kit)	EB103
Chevy LS1 V-8	LtWt, Button Style, Chevy LS1 V-8	FE105
	Super LtWt, Drilled, Button Style, Chevy LS1 V-8	FE108
Chrysler	LtWt, Button Style, Chrysler, 6 Bolt	FE203
Ford SB V-8	LtWt, Button Style, Ford SB V-8	FE301
	Super LtWt, Drilled, Button Style, Ford SB V-8	FE302
Mazda	Button Style, Mazda 4-cylinder, Formula SCCA	501-010-140SB
Flywheel Bolts	Chevy, Ford, Chrysler SB V-8	NK407076
	Chevy LS1 V-8	NK400076
	Mazda 4-cylinder	NK408076

5.5" Clutch Bolt Kits - 5/16-24 Bolts, Jet Nuts, and SS Washers

All Applications	Bolt Kit, 1 Disc x .105" thick	NK105148
	Bolt Kit, 2 Disc x .105" thick	NK105168
	Bolt Kit, 3 Disc x .105" thick or 2 Disc x .200" thick	NK105188
	Bolt Kit, 4 Disc x .105" thick	NK105208
Chevy Crate Motor	Bolt Kit, 2 Disc x .105" thick for externally balanced flywheel	NK105168X
	Bolt Kit, 3 Disc x .105" thick for externally balanced flywheel	NK105188X

5.5" Open Style Replacement Clutch Spare Parts

Cover Assembly (no discs, floater plates or pressure plate)	Clutch Cover Assembly, 1 Disc X .105"	CE101
	Clutch Cover Assembly, 1 Disc X .200"	CE121
	Clutch Cover Assembly, 2 Disc X .105"	CE201
	Clutch Cover Assembly, 2 Disc X .200"	CE221
	Clutch Cover Assembly, 3 Disc X .105"	CE301
	Clutch Cover Assembly, 4 Disc X .105" (or 3 Disc X .200")	CE401
Pressure Plates	Pressure Plate, Steel, Standard Fulcrum (5.0" diameter fulcrum)	CE031
	Pressure Plate, Steel, Hi-Torque Fulcrum (4.9" diameter fulcrum)	CE032
	Pressure Plate, Aluminum, Standard Fulcrum	CE035
Floater Plates	Floater Plate	CE041
	Floater Plate, LtWt drilled	CE042

5.5" Replacement Clutch Packs (discs) *xx = spline size. See spline look-up chart on page 27.*

Application	Number of Discs	Friction Material			Spline=xx
		Metallic .105" Thick	Metallic .200" Thick	Organic .200" Thick	
All	1	PE116Axx	PE126Axx	PE176Axx	See List
All	2	PE216Axx	PE226Axx	PE276Axx	See List
All	3	PE316Axx	PE326Axx	PE376Axx	See List
All	4	PE416Axx	-	-	See List

All part numbers shown above are for standard clutch hub configuration.

For additional clutch pack options see "Replacement Clutch Pack Part Numbering System" on page 3.

7.25" Open Style Clutch Units *xx = spline size. See spline look-up chart on page 27.*

7.25" Clutch (no flywheel)			Pressure Plate				Spline=xx
Application	No. of Discs	Friction Material	Steel Pressure Plate	Alum. P.Plt. w/ LtWt Floaters	Hi-Torque Steel P.Plt.	Hi-Mass Steel P.Plt.	
All	1	Metallic .105" Thick	CH116A1Axx	CH116A3Axx	CH116A7Axx	CH116A9Axx	See List
All	2		CH216A1Axx	CH216A3Axx	CH216A7Axx	CH216A9Axx	See List
All	3		CH316A1Axx	CH316A3Axx	CH316A7Axx	CH316A9Axx	See List
All	4		CH416A1Axx	CH416A3Axx	CH416A7Axx	CH416A9Axx	See List
All	1	Hi-Torg	-	-	CH148A7Axx	-	See List
All	1	Metallic .200" Thick	CJ126A1Axx	-	CJ126A7Axx	CJ126A9Axx	See List
All	2		CJ226A1Axx	-	CJ226A7Axx	CJ226A9Axx	See List
All	3		CJ326A1Axx	-	CJ326A7Axx	CJ326A9Axx	See List
All	1	Metallic .250" Thk	CJ136A1Axx	-	CJ136A7Axx	CJ136A9Axx	See List
All	2		CJ236A1Axx	-	CJ236A7Axx	CJ236A9Axx	See List
All	1	Organic .200" Thick	CJ176A1Axx	-	CJ176A7Axx	CJ176A9Axx	See List
All	2		CJ276A1Axx	-	CJ276A7Axx	CJ276A9Axx	See List
All	3		CJ376A1Axx	-	CJ376A7Axx	CJ376A9Axx	See List
All	1	Organic .250" Thk	CJ186A1Axx	-	CJ186A7Axx	CJ186A9Axx	See List
All	2		CJ286A1Axx	-	CJ286A7Axx	CJ286A9Axx	See List

All part numbers shown above are for standard clutch hub configuration.

For additional clutch options see "Clutch Assembly Part Numbering System" on page 2.

7.25" Open Style Clutch & LtWt Button Flywheel Kits

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

7.25" Clutch & Button Fly		All Friction Material is Metallic .105" Thick. Call for other Friction Material options.			
Application	Number of Discs	Steel Pressure Plate	Alum. P.Plt. w/ LtWt Floaters	Alum. P.Plt. w/ LtWt Floaters and Super LtWt Drilled Btn Fly	Spline
Chevy SB V-8 Early Model	2	KH2128	K72128	K72128S	10 Tooth
	2	KH2129	K72129	K72129S	26 Tooth
	3	KH3128	K73128	K73128S	10 Tooth
	3	KH3129	K73129	K73129S	26 Tooth
Chevy SB V-8 Late Model	2	KH2828	K72828	K72828S	10 Tooth
	2	KH2829	K72829	K72829S	26 Tooth
	3	KH3828	K73828	K73828S	10 Tooth
	3	KH3829	K73829	K73829S	26 Tooth
Chevy SB V-8 Late Model Ext. Bal. (Crate Motor)	2	KH2928	K72928	K72928S	10 Tooth
	2	KH2929	K72929	K72929S	26 Tooth
	3	KH3928	K73928	K73928S	10 Tooth
	3	KH3929	K73929	K73929S	26 Tooth
Chevy LS1 V-8	2	KH2028	K72028	K72028S	10 Tooth
	2	KH2029	K72029	K72029S	26 Tooth
	3	KH3028	K73028	K73028S	10 Tooth
	3	KH3029	K73029	K73029S	26 Tooth
Ford SB V-8	2	KH2328	K72328	K72328S	10 Tooth
	2	KH2329	K72329	K72329S	26 Tooth
	3	KH3328	K73328	K73328S	10 Tooth
	3	KH3329	K73329	K73329S	26 Tooth

7.25" Open Style Clutch, LtWt Btn Fly & Low MOI Flexplate Kit

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

7.25" Clutch, Btn Fly & Flexplate		All Friction Material is Metallic .105" Thick. Call for other Friction Material options.			
Application	Number of Discs	Steel Pressure Plate	Alum. P.Pl. w/ LtWt Floaters	Alum. P.Pl. w/ LtWt Floaters and Super LtWt Drilled Btn Fly	Spline
Chevy SB V-8 Early Model	2	KH2148	K72148	K72148S	10 Tooth
	2	KH2149	K72149	K72149S	26 Tooth
	3	KH3148	K73148	K73148S	10 Tooth
	3	KH3149	K73149	K73149S	26 Tooth
Chevy SB V-8 Late Model	2	KH2848	K72848	K72848S	10 Tooth
	2	KH2849	K72849	K72849S	26 Tooth
	3	KH3848	K73848	K73848S	10 Tooth
	3	KH3849	K73849	K73849S	26 Tooth
Chevy SB V-8 Late Model Ext. Bal. (Crate Motor)	2	KH2948	K72948	K72948S	10 Tooth
	2	KH2949	K72949	K72949S	26 Tooth
	3	KH3948	K73948	K73948S	10 Tooth
	3	KH3949	K73949	K73949S	26 Tooth
Chevy LS1 V-8	2	KH2048	K72048	K72048S	10 Tooth
	2	KH2049	K72049	K72049S	26 Tooth
	3	KH3048	K73048	K73048S	10 Tooth
	3	KH3049	K73049	K73049S	26 Tooth
Ford SB V-8	2	KH2348	K72348	K72348S	10 Tooth
	2	KH2349	K72349	K72349S	26 Tooth
	3	KH3348	K73348	K73348S	10 Tooth
	3	KH3349	K73349	K73349S	26 Tooth

7.25" Open Style Clutch Bellhousing Kits

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

Kit includes: Clutch, LtWt Button Flywheel, Reverse Starter Mount Bellhousing, Reverse Mount Starter, Hydraulic Release Bearing with External Bleeder, Reverse Mount Ring Gear, Clutch Bolts & Flywheel Bolts

7.25" Clutch & Bellhousing Kits				All Friction Material is Metallic .105" Thick. Call for other Friction Material options.					
Application	Bellhousing Aluminum or Magnesium	No. of Discs	Spline	HYDRAULIC RELEASE BEARING					
				Hydro-MAX	Tri-MAX	Hydro-MAX	Tri-MAX	Hydro-MAX	Tri-MAX
				Steel Pressure Plate		Alum. Pressure Plate w/ LtWt Floaters		Alum. P.Pl. LtWt Floaters & Super LtWt Drilled Btn Fly	
Chevy SB V-8 Early Model	Aluminum	2	10T	BH2118	BH2128	B72118	B72128	B72118S	B72128S
	Aluminum	2	26T	BH2119	BH2129	B72119	B72129	B72119S	B72129S
	Magnesium	2	10T	BH2158	BH2168	B72158	B72168	B72158S	B72168S
	Magnesium	2	26T	BH2159	BH2169	B72159	B72169	B72159S	B72169S
	Aluminum	3	10T	BH3118	BH3128	B73118	B73128	B73118S	B73128S
	Aluminum	3	26T	BH3119	BH3129	B73119	B73129	B73119S	B73129S
	Magnesium	3	10T	BH3158	BH3168	B73158	B73168	B73158S	B73168S
	Magnesium	3	26T	BH3159	BH3169	B73159	B73169	B73159S	B73169S
Chevy SB V-8 Late Model	Aluminum	2	10T	BH2818	BH2828	B72818	B72828	B72818S	B72828S
	Aluminum	2	26T	BH2819	BH2829	B72819	B72829	B72819S	B72829S
	Magnesium	2	10T	BH2858	BH2868	B72858	B72868	B72858S	B72868S
	Magnesium	2	26T	BH2859	BH2869	B72859	B72869	B72859S	B72869S
	Aluminum	3	10T	BH3818	BH3828	B73818	B73828	B73818S	B73828S
	Aluminum	3	26T	BH3819	BH3829	B73819	B73829	B73819S	B73829S
	Magnesium	3	10T	BH3858	BH3868	B73858	B73868	B73858S	B73868S
Magnesium	3	26T	BH3859	BH3869	B73859	B73869	B73859S	B73869S	

7.25" Open Style Clutch Bellhousing Kits (Continued)

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

Kit includes: Clutch, LtWt Button Flywheel, Reverse Starter Mount Bellhousing, Reverse Mount Starter, Hydraulic Release Bearing with External Bleeder, Reverse Mount Ring Gear, Clutch Bolts & Flywheel Bolts

7.25" Clutch & Bellhousing Kits				All Friction Material is Metallic .105" Thick. Call for other Friction Material options.					
Application	Bellhousing Aluminum or Magnesium	No. of Discs	Spline	HYDRAULIC RELEASE BEARING					
				Hydro-MAX	Tri-MAX	Hydro-MAX	Tri-MAX	Hydro-MAX	Tri-MAX
				Steel Pressure Plate		Alum. Pressure Plate w/ LtWt Floaters		Alum. P.Pl't, LtWt Floaters & Super LtWt Drilled Btn Fly	
Chevy SB V-8 Late Model Externally Balanced (Crate Motor)	Aluminum	2	10T	BH2918	BH2928	B72918	B72928	B72918S	B72928S
	Aluminum	2	26T	BH2919	BH2929	B72919	B72929	B72919S	B72929S
	Magnesium	2	10T	BH2958	BH2968	B72958	B72968	B72958S	B72968S
	Magnesium	2	26T	BH2959	BH2969	B72959	B72969	B72959S	B72969S
	Aluminum	3	10T	BH3918	BH3928	B73918	B73928	B73918S	B73928S
	Aluminum	3	26T	BH3919	BH3929	B73919	B73929	B73919S	B73929S
	Magnesium	3	10T	BH3958	BH3968	B73958	B73968	B73958S	B73968S
	Magnesium	3	26T	BH3959	BH3969	B73959	B73969	B73959S	B73969S
Chevy LS1 V-8	Aluminum	2	10T	BH2018	BH2028	B72018	B72028	B72018S	B72028S
	Aluminum	2	26T	BH2019	BH2029	B72019	B72029	B72019S	B72029S
	Magnesium	2	10T	BH2058	BH2068	B72058	B72068	B72058S	B72068S
	Magnesium	2	26T	BH2059	BH2069	B72059	B72069	B72059S	B72069S
	Aluminum	3	10T	BH3018	BH3028	B73018	B73028	B73018S	B73028S
	Aluminum	3	26T	BH3019	BH3029	B73019	B73029	B73019S	B73029S
	Magnesium	3	10T	BH3058	BH3068	B73058	B73068	B73058S	B73068S
	Magnesium	3	26T	BH3059	BH3069	B73059	B73069	B73059S	B73069S

7.25" Flywheels

Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.

Universal	LtWt, Button Style, Blank (No crank bolt holes & small center bore, .84" OAL)	FH001
Chevy SB V-8 Early Model	LtWt, Button Style, Chevy SB V-8 Early Model	FH101
	Super LtWt, Drilled, Button Style, SB V8 Early Model	FH106
Chevy SB V-8 Late Model	LtWt, Button Style, Chevy SB V-8 Late Model	FH103
	Super LtWt, Drilled, Button Style, SB V8 Late Model	FH107
	LtWt, Button Style, Externally Balanced for Crate Motor	FH1031
	Super LtWt, Drilled Button Style, Externally Balanced for Crate Motor	FH1071
	Balance Weight Only	EB104
Chevy LS1 V-8	LtWt, Button Style, Chevy LS1 V-8	FH105
	Super LtWt, Drilled, Button Style, Chevy LS1 V-8	FH108
Chrysler	LtWt, Button Style, Chrysler, 6 Bolt	FH203
Ford SB V-8	LtWt, Button Style, Ford SB V-8	FH301
	Super LtWt, Drilled, Button Style, Ford SB V-8	FH302
Flywheel Bolts	Chevy, Ford, Chrysler SB V-8	NK407076
	Chevy LS1 V-8	NK400076

7.25" Clutch Bolt Kits - 5/16-24 Bolts, Jet Nuts, and SS Washers

All Applications	Bolt Kit, 1 Disc x .105" thick (or .200" thick, or .250" thick)	NK105126
	Bolt Kit, 2 Disc x .105" thick	NK105146
	Bolt Kit, 2 Disc x .200" (or 2 Disc x .250" thick) Mitsubishi	NK1051660
	Bolt Kit, 3 Disc x .105" thick (or 2 Disc x .200", or 2 Disc x .250" thick)	NK105166
	Bolt Kit, 4 Disc x .105" thick (or 3 Disc x .200" thick)	NK105186

7.25" Open Style Replacement Clutch Spare Parts

Cover Assembly (no discs, floater plates or pressure plate)	Clutch Cover Assembly, 1 Disc X .105"	CH101
	Clutch Cover Assembly, 1 Disc X .200"	CH121
	Clutch Cover Assembly, 1 Disc X .250"	CH1251
	Clutch Cover Assembly, 2 Disc X .105"	CH201
	Clutch Cover Assembly, 2 Disc X .200"	CH221
	Clutch Cover Assembly, 3 Disc X .105" (or 2 Disc x .250")	CH301
	Clutch Cover Assembly, 4 Disc X .105" (or 3 Disc x .200")	CH401
Pressure Plates	Pressure Plate, Steel, Standard Fulcrum (6.2" diameter fulcrum, .535" tall)	CH031
	Pressure Plate, Steel, Hi-Torque (6.0" diameter fulcrum, .535" tall)	CH032
	Pressure Plate, Aluminum, Standard Fulcrum	CH035
	Pressure Plate, Steel, Hi-Torque, .515" tall for 1 disc hi-torque clutch only	CH037
	Pressure Plate, Steel, Hi-Mass, Standard Fulcrum	CH038
Floater Plates	Floater Plate	CH041
	Floater Plate, LtWt (round holes)	CH042
	Floater Plate, Super LtWt (triangular holes)	CH043

7.25" Replacement Clutch Packs *xx = spline size. See spline look-up chart on page 27.*

7.25" Discs		Friction Material						Spline=xx
Application	Number of Discs	Metallic .105" Thick	Hi-Torque Metallic .125" Thick	Metallic .200" Thick	Metallic .250" Thick	Organic .200" Thick	Organic .250" Thick	
All	1	PH116Axx	PH148Axx	PH126Axx	PH136Axx	PH176Axx	PH186Axx	See List
All	2	PH216Axx	-	PH226Axx	PH236Axx	PH276Axx	PH286Axx	See List
All	3	PH316Axx	-	PH326Axx	-	PH376Axx	-	See List
All	4	PH416Axx	-	-	-	-	-	See List

All part numbers shown above are for standard clutch hub configuration.

For additional clutch pack options see "Replacement Clutch Pack Part Numbering System" on page 3.

7.25" Mitsubishi AWD Twin Disc Clutch Kits

Kit includes 7.25" Clutch, Flywheel & Bearing with collar

Application	Friction Material	Flywheel	Pressure Plate	
			Standard Torque Steel Pressure Plate	Hi-Torque Steel Pressure Plate
7/8" x 20T Eclipse	Metallic .200" thick	6-bolt	KJ2664	KH2664
		7-bolt	KJ2674	KH2674
	Organic .200" thick	6-bolt	KJ6664	KH6664
		7-bolt	KJ6674	KH6674
Request "OPTION1" to add heat treated spline teeth to any set-up				

.250" thick discs are available upon request.

All part numbers shown above are for the standard Mitsubishi clutch hub configuration.

For additional clutch options see "Clutch Assembly Part Numbering System" on page 2.

7.25" Mitsubishi Twin Disc Clutches

Application	Friction Material	Pressure Plate	
		Standard Torque Steel Pressure Plate	Hi-Torque Steel Pressure Plate
7/8" x 20T Eclipse	Metallic .200" thick	CJ226T1X41 (8.9 #)	CJ226T2X41 (8.9 #)
	Organic .200" thick	CJ276T1X41 (8.2 #)	CJ276T2X41 (8.2 #)
1" x 23T EVO	Metallic .200" thick	CJ226T1X63 (8.9 #)	CJ226T2X63 (8.9 #)
	Organic .200" thick	CJ276T1X63 (8.2 #)	CJ276T2X63 (8.2 #)
Request "OPTION1" to add heat treated spline teeth to any set-up			

.250" thick discs are available upon request.

All part numbers shown above are for the standard Mitsubishi clutch hub configuration.

For additional clutch options see "Clutch Assembly Part Numbering System" on page 2.

Mitsubishi AWD Flywheels

7.25", 2.0 ltr. 4G63B engine, I4, 106t, 2 pc., 6 bolt (6.4 #)	FH540
7.25", 2.0 ltr. 4G63B engine, I4, 106t, 2 pc., 7 bolt (6.4 #)	FH541
7.25", EVO 4, 5, 6, 7, & 8 (7.3 #)	FH542

Mitsubishi Bearing

Mechanical Bearing w/ collar, 2D 7.25", Eclipse	RM2550
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7.25" Mitsubishi Clutch Pack - set of 2 - 7.25" discs

Application	Friction Material			
	Metallic .200" thick	Organic .200" thick	Metallic .250" thick	Organic .250" thick
7/8" x 20T Eclipse	PJ226T41	PJ276T41	PJ236T41	PJ286T41
1" x 23T EVO	PJ226T63	PJ276T63	PJ236T63	PJ286T63
Request "OPTION1" to add heat treated spline teeth to any set-up				

All part numbers shown above are for the standard Mitsubishi clutch hub configuration.

For additional clutch pack options see "Replacement Clutch Pack Part Numbering System" on page 3.

10.4" Clutches

10.4" Clutches hold 700 HP at rear wheels with metallic disc

Covers	Aluminum Pressure Plate (13#)	CN101
	Nod. Iron Pressure Plate (17#)	CN102
Discs	Metallic, 6 paddle, solid hub (3#), 10 tooth	PN1A8A80
	Metallic, 6 paddle, solid hub (3#), 26 tooth	PN1A8A90
	Organic, sprung hub (5.3#), 10 tooth	PN1C8S80
	Organic, sprung hub (5.3#), 26 tooth	PN1C8S90
Bolts	10.4" Clutch Bolt Kit, ARP	NK106086

Hydraulic Release Bearings (HRB)

Hydro-MAX drop-in HRB

All units come with an External Bleeder & Installation Kit.	No Supply Line	Supply Line Length			
		18"	24"	30"	40"
Standard Height 2.28" to 3.03" Sleeve ID = 1.385"	RH7101	RH710218	RH710224	RH710230	RH710240
Tall Height 2.78" to 3.53" Sleeve ID = 1.385"	RH7151	RH715218	RH715224	RH715230	RH715240
Ford T5 Standard Height 2.28" to 3.03" Sleeve ID = 1.46" Use with spacer shown below	RH7121	RH710218	RH710224	RH710230	RH710240

Hydraulic Release Bearings (HRB) (Continued)

Hydro-MAX Accessories

All Hydro-MAX units	Installation Kit with shims, washers, studs & -3 to -4 union	RH7111
	External Bleeder Kit, All HRB's (Bleeder line & union)	RH7112
	Rebuild Kit, Hydro-MAX HRB (O-rings, retaining ring & unions)	RH7113
	Replacement Bearing & Sleeve Assy. - Standard Height	RH7110
	Replacement Bearing & Sleeve Assy. - Tall Height	RH7160
	Replacement Bearing & Sleeve Kit - Tall - with shims	RH7161
Ford T5	Replacement Bearing & Sleeve Assy. - Standard Height - Ford T5	RH7122
	Spacer, Ford T5, 1.175" OAL	RH7020

Stainless Steel Braided Clutch Supply Line

Dash 3, Straight female ends, 8" long (bleeder) Teflon lined	RA3008
Dash 3, Straight female ends, 18" long, Teflon lined	RA3018
Dash 3, Straight female ends, 24" long, Teflon lined	RA3024
Dash 3, Straight female ends, 30" long, Teflon lined	RA3030
Dash 3, Straight female ends, 40" long, Teflon lined	RA3040

Tri-MAX bolt-in HRB

Fit recommendations are for Reverse Mount Ring Gear (RMRG) set-up. If using a flexplate, order the next shorter Tri-MAX.

All units come with an External Bleeder & Installation Kit.	No Supply Line	Supply Line Length			
		18"	24"	30"	40"
2.70" OAL w/ 1.65" piston Fits 3D Clutch with Chevy Flywheel & Flexplate	RT73271	RT7327218	RT7327224	RT7327230	RT7327240
2.85" OAL w/ 1.80" piston Fits 3D Clutch with Chevy Flywheel & RMRG	RT73281	RT7328218	RT7328224	RT7328230	RT7328240
3.00" OAL w/ 1.95" piston Fits 3D w/ Chevy Fly & 1/4" Engine Plate & RMRG	RT73301	RT7330218	RT7330224	RT7330230	RT7330240
3.15" OAL w/ 2.10" piston Fits 2D Clutch with Chevy Flywheel & RMRG	RT73311	RT7331218	RT7331224	RT7331230	RT7331240
3.30" OAL w/ 2.25" piston Fits 2D w/ Chevy Fly & 1/4" Engine Plate & RMRG	RT73331	RT7333218	RT7333224	RT7333230	RT7333240
3.45" OAL w/ 2.40" piston Fits 1D Clutch with Chevy Flywheel & RMRG	RT73341	RT7334218	RT7334224	RT7334230	RT7334240
3.60" OAL w/ 2.55" piston Fits 1D w/ Chevy Fly & 1/4" Engine Plate & RMRG	RT73361	RT7336218	RT7336224	RT7336230	RT7336240
3.75" OAL w/ 2.70" piston Fits 1D w/ Chevy Fly & 3/8" Engine Plate & RMRG	RT73371	RT7337218	RT7337224	RT7337230	RT7337240

Tri-MAX Replacement Bearing & Piston Assembly

1.65" Long (Fits Bearing # RT73271)	RT73116
1.80" Long (Fits Bearing # RT73281)	RT73118
1.95" Long (Fits Bearing # RT73301)	RT73119
2.10" Long (Fits Bearing # RT73311)	RT73121
2.25" Long (Fits Bearing # RT73331)	RT73122
2.40" Long (Fits Bearing # RT73341)	RT73124
2.55" Long (Fits Bearing # RT73361)	RT73125
2.70" Long (Fits Bearing # RT73371)	RT73127

Hydraulic Release Bearings (HRB) (continued)

Tri-MAX Accessories

External Bleeder Kit, All HRB's (Bleeder line & union)	RH7112
Rebuild Kit, Tri-MAX HRB (O-rings & unions)	RT7313
Bolt Kit, Tri-MAX Installation Kit w/ -3 to -4 union	NK203053
Union, Dash 3AN (All HRB's)	NA001
Bleeder Screw (All HRB's)	NA010

Stainless Steel Braided Clutch Supply Line

Dash 3, Straight ends, 8" long (bleeder), Teflon lined	RA3008
Dash 3, Straight ends, 18" long, Teflon lined	RA3018
Dash 3, Straight ends, 24" long, Teflon lined	RA3024
Dash 3, Straight ends, 30" long, Teflon lined	RA3030
Dash 3, Straight ends, 40" long, Teflon lined	RA3040

Street-MAX Hydraulic Release Bearings (HRB)

For use with 10.4" Street Stock Clutches.

Chevy Street-MAX HRB

Fits Chevy 1-3/8" trans snout	Street-MAX, Chevy, w/ external bleeder & installation kit, no supply line	RS7201
	Street-MAX, Chevy, w/ ext. bleeder & installation kit & 18" supply line	RS720218
	Street-MAX, Chevy, w/ ext. bleeder & installation kit & 24" supply line	RS720224
	Street-MAX, Chevy, w/ ext. bleeder & installation kit & 30" supply line	RS720230
	Street-MAX, Chevy, w/ ext. bleeder & installation kit & 40" supply line	RS720240
	Installation Kit, Street-MAX, Chevy (Anti-spin studs & shims)	RS7111
	External Bleeder Kit, All Street HRB's (Bleeder line & bleeder screw)	RS7112
	Rebuild Kit, Street-MAX, Chevy (O-rings & unions)	RS7113

Ford Street-MAX HRB

Fits Ford 1-7/16" trans snout	Street-MAX, Ford, w/ external bleeder & installation kit, no supply line	RS3101
	Street-MAX, Ford, w/ ext. bleeder & installation kit & 18" supply line	RS310218
	Street-MAX, Ford, w/ ext. bleeder & installation kit & 24" supply line	RS310224
	Street-MAX, Ford, w/ ext. bleeder & installation kit & 30" supply line	RS310230
	Street-MAX, Ford, w/ ext. bleeder & installation kit & 40" supply line	RS310240
	Installation Kit, Street-MAX, Ford (Anti-spin studs, shims & spacer)	RS3111
	Spacer, Anti-Spin, 1.4375"ID x .7" Thk, Ford	RS3008
	External Bleeder Kit, All Street HRB's (Bleeder line & bleeder screw)	RS7112
	Rebuild Kit, Street-MAX, Ford (O-rings & unions)	RS3113

Chrysler Street-MAX HRB

Fits Chrysler 1-1/4" trans snout	Street-MAX, Chrysler, w/ external bleeder & installation kit, no supply line	RS3301
	Street-MAX, Chrysler, w/ ext. bleeder & installation kit & 18" supply line	RS330218
	Street-MAX, Chrysler, w/ ext. bleeder & installation kit & 24" supply line	RS330224
	Street-MAX, Chrysler, w/ ext. bleeder & installation kit & 30" supply line	RS330230
	Street-MAX, Chrysler, w/ ext. bleeder & installation kit & 40" supply line	RS330240
	Installation Kit, Street-MAX, Chrysler (Anti-spin studs, shims & spacer)	RS3311
	Spacer, Anti-Spin, 1.25"ID x .86" Thk, Chrysler	RS3009
	External Bleeder Kit, All Street HRB's (Bleeder line & bleeder screw)	RS7112
	Rebuild Kit, Street-MAX, Chrysler (O-rings & unions)	RS3313

Bearings, Mechanical, with Collar

Chevy / GM	1 Disc x .105" thick, Long, 7.25" Chevy/GM	RM1050
	1 Disc x .105" thick, 7.25" Chevy/GM	RM1100
	2 Disc x .105" thick, 7.25" Chevy/GM	RM2100
	3 Disc x .105" thick, 7.25" Chevy/GM	RM3100
	4 Disc x .105" thick, 7.25" Chevy/GM	RM4100
Mitsubishi	2 Disc x .200" thick, 7.25" Mitsubishi	RM2550
Jaguar-D	3 Disc x .105" thick, 7.25 (or 2 disc x .250" thick)	RM2500

Bearing only

1.600" contact diameter (40mm ID)	RM001
1.750" contact diameter (40mm ID)	RM002
Street, Flat Face (45mm ID)	RM006

Bellhousings

Aluminum, Chevy SB V-8, for use with Reverse Mount Starter	BR100
Magnesium, Chevy SB V-8, for use with Reverse Mount Starter	BR110
Steel, Chevy SB V-8, SFI approved	BS100
Fork, Clutch, GM	RM010

Flexplate *Early Model = 1985 & earlier, 2 piece rear main seal. Late Model = 1986 to 1997, 1 piece rear main seal.*

Standard Flexplate	Standard Chevy SB V-8 Early Model	FF100
	Standard Chevy SB V-8 Late Model	FF102
	Standard Chevy SB V-8 Late Model with Balance Weight	FF1021
Low MOI Flexplate	Low MOI Chevy SB V-8 Early Model, 153 tooth	FF105
	Low MOI Chevy SB V-8 Late Model, 153 tooth	FF106
	Low MOI Chevy LS1 V-8, 168 tooth	FF107
	Low MOI Ford SB V-8 157 tooth	FF300

Flywheel Bolt Kits (Crank bolts)

Torque crank bolts according to crank manufacturer's recommendation. Typically between 60 - 80 lb. ft.

Chevy, Ford, Chrysler SB V-8 (7/16"-20 x 7/8")	NK407076
Chevy LS1 V-8	NK400076
Mazda, 4 cylinder	NK408076

Ring Gear, Reverse Mount

7.25"	7.25", 1 Disc, 2 Disc & 3 Disc x .105" thick	FR010
	Adapter Kit, 7.25" 1 Disc	FR007
7.25" Jaguar-D	7.25" 3 Disc x .105" thick (or 2 Disc x .250" thick)	FR502
5.5"	5.5", 2 Disc x .105" thick (or 3 Disc x 1.05" w/ 1/4" motor plate)	FR020
	5.5", 3 Disc x .105" thick	FR021
	5.5", 2 Disc x .105" thick with 1/4" motor plate	FR022
4.5"	4.5", 2 Disc x .105" thick	FR030
	4.5", 3 Disc x .105" thick	FR031

Starters

Reverse Mount	Nipon Denso - 8.0#	SR100
	Hitachi - 9.8#	SR200
Chevy	153 tooth flywheel - 8.2#	SS100
Ford	289-302-351 3&4 spd - 8.8#	SS300
Chrysler	Chrysler - 8.2#	SS200

Spline-A-Lign Clutch Alignment Tools

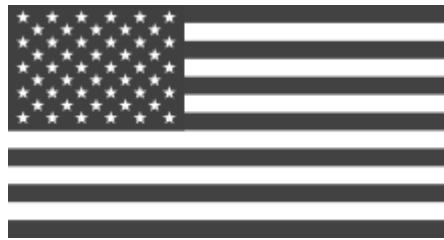
7/8" x 20 spline	TH041
1" x 23 spline	TH063
1-1/16" x 10 spline	TH070
1-1/8" x 10 spline	TH080
1-5/32" x 26 spline	TH090

CLUTCH SPLINE SIZES

Spline Number	O.D. x No. of Teeth	Applications
12	.740" (18.8mm) X 18 tooth	Ford Festiva, Suzuki Swift
20	13/16" X 18 tooth	Nissan A series (Datsun A), Skoda
28	20.5mm X 18 tooth	Peugeot, Citroen Metro K
32	13/16" (20.6mm) X 24 tooth	Porsche, Alfa Romeo, Volkswagen, Vauxhall
36	7/8" (22.2mm) X 28 tooth	Volkswagen
40	7/8" (22.22mm) X 10 tooth	MG Midget, Imp, Triumph, Quaife, 750 MC, Lada
41	7/8" (22.22mm) X 20 tooth	Hewland, Ford, Porsche, Mitsubishi Eclipse
50	15/16" (23.5mm) x 21 tooth	Toyota (small), Lotus
53	7/8" (23.1mm) X 21 tooth	Renault, Peugeot
60	1" (25.4mm) X 10 tooth	Volvo, Alfa Romeo, Triumph
61	1" (25.4mm) X 14 tooth	Chevy Vega & Monza, Pontiac Sunbird & Fiero, Buick Skyhawk, Opel, Getrag Manta, Calibra T
62	1" (25.4mm) X 22 tooth	Mazda RX7 & Miata
63	1" (25.4mm) X 23 tooth	Ford Rocket, Cosworth, MGB, Talbot, Austin Healy, Porsche, Xtrac, Quaife, Healy, Mitsubishi EVO
64	1" (24.7mm) X 24 tooth	Nissan (Datsun), Honda (small), Rover, Skyline, Lotus Elan
70	1-1/16" (26.9mm) X 10 tooth	Ford T5
72	1" (26.2mm) X 24 tooth	Honda (big), Integra '92 & up
78	1-1/8" (28.5mm) X 10 tooth	Getrag metric, BMW, Moss, Cosworth
80	1-1/8" (28.5mm) X 10 tooth	BMW, Chevrolet, Cosworth, Getrag, Jaguar, Muncie
81	1-1/8" (28.9mm) X 21 tooth	Toyota Supra RWD
89	29mm X 22 tooth	BMW
90	1-5/32" (28.5mm) X 26 tooth	Borg Warner T10 & Super T10, Chevrolet, Hewland, Jerico
94	1-3/16" (30mm) x 18 tooth	G-Force, Mopar, Chrysler
96	1-3/8" (35mm) x 26 tooth	BMW M-3 V-8
97	1-3/8" (35mm) X 10 tooth	BMW, Getrag
99	1-3/8" (35mm) X 10 tooth	Ford

All PTT clutches are modular. This means that any spline size can be put into any clutch combination. See page 2 and 3 for PTT's complete clutch and clutch pack part numbering systems, or call PTT at 847.458.2323 for product assistance.

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