DATA FILE:	MAKE:	MODEL:	DATE:	TIME:	TEST:	OPERATOR:	BUILDER:	SERIAL NO.	PART NO.
20090710_011	GM	Turbo 400 Full Man.	07/10/09	9:13 AM	GM TH-400 Full Manual	HG	SD	09190T18	212016
Description	Main Line Pressure(PSI)	Cool Pressure (PSI)	Cooler Flow (GPM)	Output Torque					
Park Max	231	85	2	4.2					
Neutral Max	210	79	2	5.1					
L1 Max	239	87	2	82.3					
L2 Max	236	86	2	79.6					
Drive Max	235	86	2	75.9					

Your New TCI® Transmission Has Been Certified By H.G.

TCI® TRANSMISSION DYNO REPORT REFERENCE TERMS:

PSI = Pounds Per Square Inch GPM = Gallons Per Minute RPM = Revolutions Per Minute

Startup - When test mode begins

Park Min - When transmission is in park and the throttle is not activated (no acceleration)

Park Max - When transmission is in park and throttle is activated (acceleration) wide-open throttle

Reverse Min - When transmission is in reverse and the throttle is not activated (no acceleration)

Reverse Max - When transmission is in reverse and throttle is activated (acceleration) wide-open throttle

Neutral Min - When transmission is in neutral and the throttle is not activated (no acceleration)

Neutral Max - When transmission is in neutral and throttle is activated (acceleration) wide-open throttle

D1 Min - When transmission is in Drive 1 and the throttle is not activated (no acceleration)

D1 Max - When transmission is in Drive 1 and throttle is activated (acceleration) wide-open throttle

D2 Min - When transmission is in Drive 2 and the throttle is not activated (no acceleration)

D2 Max - When transmission is in Drive 2 and throttle is activated (acceleration) wide-open throttle

D3 Min - When transmission is in Drive 3 and the throttle is not activated (no acceleration)

D3 Max - When transmission is in Drive 3 and throttle is activated (acceleration) wide-open throttle

D4 Min - When transmission is in Overdrive and the throttle is not activated (no acceleration)

D4 Max - When transmission is in Overdrive and throttle is activated (acceleration) wide-open throttle

Drive Min - When transmission is in Drive and the throttle is not activated (no acceleration)

Drive Max - When transmission is in Drive and throttle is activated (acceleration) wide-open throttle

D1-2 Pressure Test - When transmission shifts from 1st to 2nd **

Engage TCC in D2 - When torque converter is engaged **

D2-3 Pressure Test - When transmission shifts from 2nd to 3rd **

D3-4 Pressure Test - When transmission shifts from 3rd to 4th **

Disengage TCC in D4 - When torque converter is disengaged **

D4-3 - When transmission downshifts from 4th to 3rd **

D3-2 - When transmission downshifts from 3rd to 2nd **

D2-1 - When transmission downshifts from 2nd to 1st **

D1-2 Pressure Test - Final shift pressure test **

Reduce Speed - When transmission slows down **

Stop - When transmission tests are complete and test data recorded

** References Additional Data For Electronic Transmission

Continued on ot

TCI
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PH: 662.224.8972 • TRANS HELP™ 1.888.776.9824

traction differential

NoSPIN® / detroit locker®

OWNER'S MA

EATON

Tractech Inc.
Eaton Performance Products
26101 Northwestern Highway
Southfield, MI 48076

NoSPIN® / Detroit® Locker

differential

IMPORTANT

1. Be sure to follow installation instructions included. Read "NOTES OF CAUTION" on cover of NoSPIN differential manual.
2. DO NOT DISASSEMBLE this unit. (See other side).

MODEL NO.:

187S 160A

Printed in U.S.A.

CONTROL DOCUMENT
FO285 (4-06) Rev "C"

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TT19652-01 1=K

1036 - Gold
1159 - Chrome

Crossmember center section diagram

Single stud style

2 bolt style

per preload plate must be used.
is not a spacer.)

INVOICE DATE	ORDER DATE	SHIP DATE	INVOICE NUMBER	BL WH	SH WH	CUST TYPE	TAX	CUST PO#	DROP SHIP PO#	BILL OF LADING#
00-00-00	07-01-09	07-13-09		01	01	2	1	6213035	PB FAX CINDY	0819159

ORDER#	SLSM	FRT	SHIPPING INSTRUCTIONS	CUSTOMER TERMS
356111-00	GARY	COL	2?43-UPS FREIGHT	QP 10% BY 10TH NET EOM

ORDERED	SHIPPED	BACK-ORDERED	PART NUMBER	DESCRIPTION	PRICE
1			212016	TH400 CHEVY COMP W/2236/2280	
			**** INSTALL 880019 IN 212016 ****		
1			880019	GM DRIVE 15T GREY STEEL	
			*** 880019 BEING INSTALLED IN TRANS ***		
1			880010	GM DRIVEN 37T RED	
1			880042	TH400 SPEEDO HOUSING 34-39T	

THANK YOU FOR YOUR BUSINESS

***** USE 3RD PARTY BILLING *****

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SHAVED DOOR KIT #40 FROM SPAL USA.

ENGINE	BLOWER	TRANS	DIFFERENTIAL
MOBIL 1 FULLY SYNTHETIC 10W30 5, QRT	VALVOLINE 75W90 W	T.C. MAX SHIFT 1111	LUCAS 90 W 100

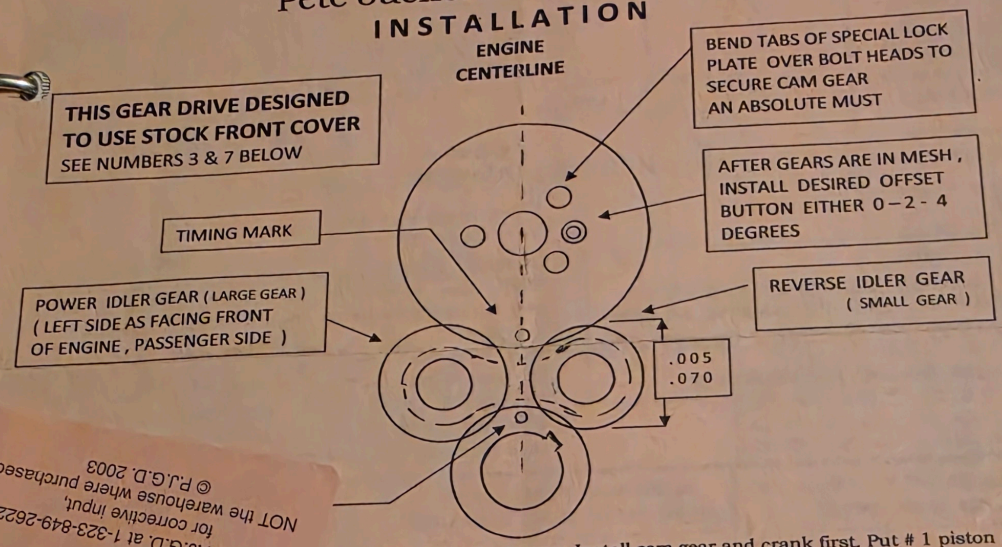
16 OZ DP

LUCAS T.B. ZINC-PLUS

PTJ 327-1CN

Pete Jackson **DUAL IDLER**

INSTALLATION



nze ring on back of cam gear. Install cam gear and crank first. Put # 1 piston at
ng marks on **centerline** of engine.

gear on left as you are facing engine (passenger side), and long part of idler axle

ush timing cover with gasket onto face of block. Pull cover back off. Idler gears should
ı cam and crank gear. With a feeler gauge check clearance between block and back of
ɔ .060 " clearance. Grind off with bench grinder if necessary. The idler gears will ride
time the engine is running, that's why the clearance is between the axles and the block

ıshing on cam dowel pin. If you are not degreeing the cam we recommend the 0° button
e middle) When degreeing cam always turn crank clockwise.

5 . Install lo... ts and washers. Torque to factory specs.
A MUST – BEND ... S OF LOCK PLATE OVER HEADS OF BOLTS

6 . Turn crank clockwise so power idler (larger) gear is in hard mesh with cam and crank gear. You need . 005" - . 070" of up and down movement of reverse idler (small) gear. Check this for 2 full turns of crank gear. If not enough clearance call (323) 849-2622 about an undersize reverse idler gear. Gears will turn blue if you do not have enough clearance.

(7). Install cam thrust button in cam gear. Put clay on end and push front cover with gasket into place. Pull cover back off. You want . 005" to . 010" clearance. If to much clearance install shims (washers) in cam gear before you put button in to get proper clearance. If not enough clearance grind some off button.

8 . Some steel covers flex. To stop this you can install a wedge between cover and water pump. - Big Block Chevy's - Some dampers are straight cut on back side. You need to machine a 45 ° chamfer so it does not interfere with idler gears.

PETE JACKSON
GEAR DRIVES

1207 S. FLOWER ST. BURBANK, CA 91502

65

ATTN: Gear Drive Installer

It takes 16 lifters + 16 pushrods + 16 rocker arms + 16 valve springs, all in good working order to allow gear drive to function properly. If any one of these 64 elements is defective it will cause a click knocking sound from the power idler gear when crankshaft is rotated clockwise.

Phone P.J.G.D. at 1-323-849-2622 for corrective input, NOT the warehouse where purchased.

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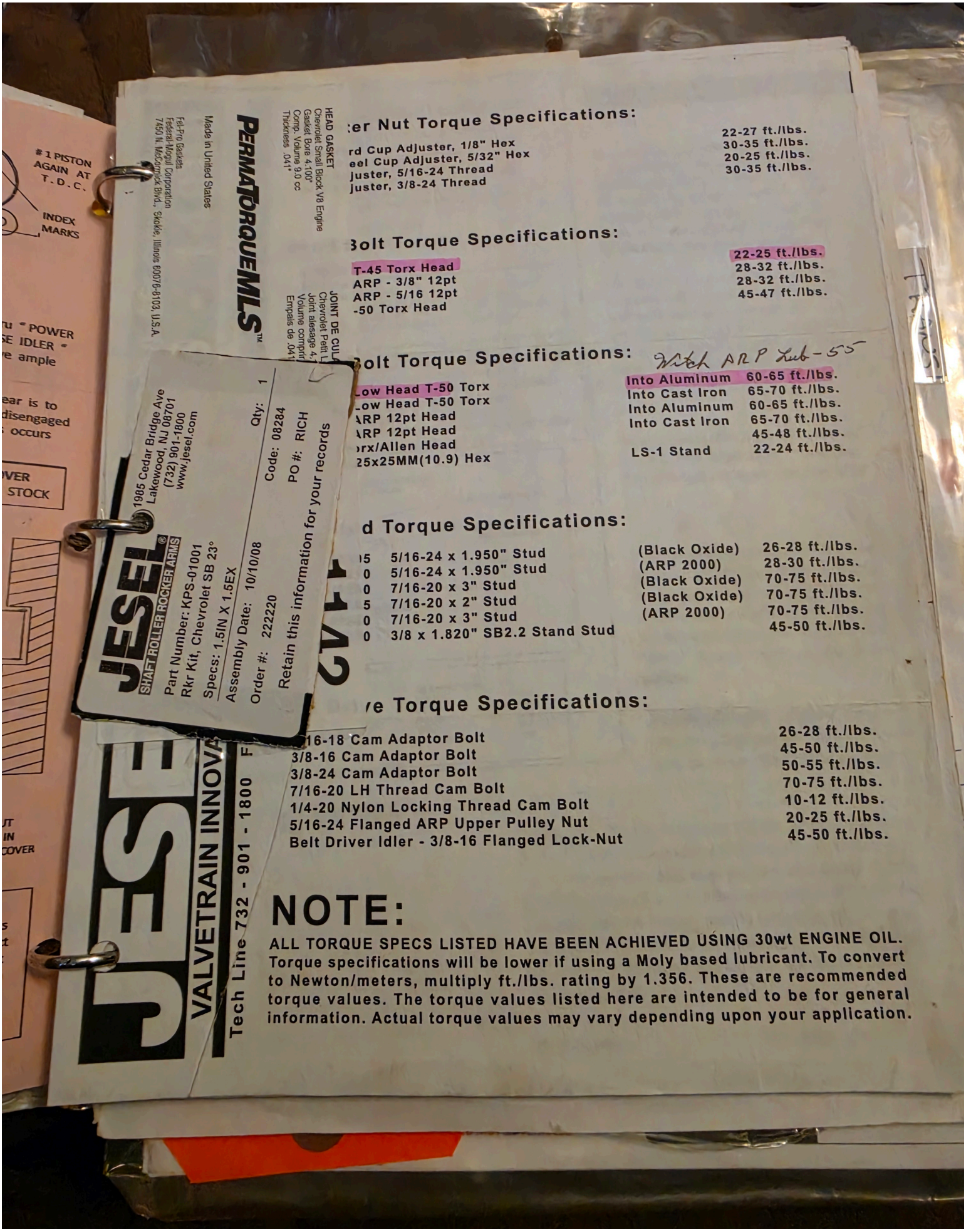
FLUIDAMPR PERFORMANCE
4EFA01
GE...RAL



er Nut Torque Specifications:

rd Cup Adjuster, 1/8" Hex	22-27 ft./lbs.
eel Cup Adjuster, 5/32" Hex	30-35 ft./lbs.
juster, 5/16-24 Thread	20-25 ft./lbs.
juster, 3/8-24 Thread	30-35 ft./lbs.

Bolt Torque Specifications:

T-45 Torx Head	22-25 ft./lbs.
ARP - 3/8" 12pt	28-32 ft./lbs.
ARP - 5/16 12pt	28-32 ft./lbs.
-50 Torx Head	45-47 ft./lbs.

Bolt Torque Specifications: With ARP Lub-55

Low Head T-50 Torx	Into Aluminum 60-65 ft./lbs.
Low Head T-50 Torx	Into Cast Iron 65-70 ft./lbs.
ARP 12pt Head	Into Aluminum 60-65 ft./lbs.
ARP 12pt Head	Into Cast Iron 65-70 ft./lbs.
orx/Allen Head	45-48 ft./lbs.
25x25MM(10.9) Hex	LS-1 Stand 22-24 ft./lbs.

d Torque Specifications:

5	5/16-24 x 1.950" Stud	(Black Oxide) 26-28 ft./lbs.
0	5/16-24 x 1.950" Stud	(ARP 2000) 28-30 ft./lbs.
0	7/16-20 x 3" Stud	(Black Oxide) 70-75 ft./lbs.
5	7/16-20 x 2" Stud	(Black Oxide) 70-75 ft./lbs.
0	7/16-20 x 3" Stud	(ARP 2000) 70-75 ft./lbs.
0	3/8 x 1.820" SB2.2 Stand Stud	45-50 ft./lbs.

ve Torque Specifications:

16-18 Cam Adaptor Bolt	26-28 ft./lbs.
3/8-16 Cam Adaptor Bolt	45-50 ft./lbs.
3/8-24 Cam Adaptor Bolt	50-55 ft./lbs.
7/16-20 LH Thread Cam Bolt	70-75 ft./lbs.
1/4-20 Nylon Locking Thread Cam Bolt	10-12 ft./lbs.
5/16-24 Flanged ARP Upper Pulley Nut	20-25 ft./lbs.
Belt Driver Idler - 3/8-16 Flanged Lock-Nut	45-50 ft./lbs.

NOTE:

ALL TORQUE SPECS LISTED HAVE BEEN ACHIEVED USING 30wt ENGINE OIL. Torque specifications will be lower if using a Moly based lubricant. To convert to Newton/meters, multiply ft./lbs. rating by 1.356. These are recommended torque values. The torque values listed here are intended to be for general information. Actual torque values may vary depending upon your application.

PERMA-TORQUE MLS

Made in United States

Fel-Pro Gaskets
Federal-Mogul Corporation
7450 N. McCormick Blvd., Skokie, Illinois 60076-8103, U.S.A.

HEAD GASKET
Chevrolet Small Block V8 Engine
Gasket Bore 4.100"
Comp. Volume 8.0 cc
Thickness .041"

JOINT DE CULA
Chevrolet Petit L
Joint alesage 4,
Volume compri
Epais de .041

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Part Number: KPS-01001
Rkr Kit, Chevrolet SB 23°
Specs: 1.5IN X 1.5EX
Assembly Date: 10/10/08
Order #: 222220

Qty: 1
Code: 08284
PO #: RICH

Retain this information for your records

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1 PISTON AGAIN AT T.D.C.
INDEX MARKS
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ample
ear is to
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occurs
OVER
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UT
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COMPETITION CARBURETORS
MODEL 4150 HP PRO-SERIES

Installation and Adjustment Instructions

CONGRATULATIONS on your purchase of Holley carburetor! We feel that you have purchased the finest performance carburetor manufactured today. Should you need information or parts assistance, please contact our Technical Service Department at 1-270-781-9741, Monday through Friday, 7 a.m. to 5 p.m. CST. Please have the part number of the product you purchased on hand when you call.

WARNING! These instructions must be read and fully understood before beginning installation. Failure to follow these instructions may result in poor performance, vehicle damage, personal injury, or death. If these instructions are not fully understood, installation should not be attempted.

APPLICATIONS:

P/N	USE	Calibration	CFM	SECONDARIES	BOOSTER TYPE
0-80507-1	Race, NASCAR Approved	Touring Series Style Racing	390	Mechanical	Conventional
0-80540-1	Race	Gasoline	600	Mechanical	Conventional
0-80575	Race, Supercharger	Gasoline	600	Mechanical	Conventional
0-80541-1	Race	Gasoline	650	Mechanical	Conventional
0-80528-1	Race	Gasoline	750	Mechanical	Double -step Down Leg
0-80529-1	Race	Alcohol	750	Vacuum	Double -step Down Leg
0-80535-1	Race	Gasoline	750	Mechanical	Double -step Down Leg
0-80576	Race, Supercharger	Winston Cup Style Racing	750	Mechanical	Double -step Down Leg
0-80509-1	Race, NASCAR Approved	Winston Cup Style Racing	830	Mechanical	Double -step Down Leg
0-80511-1	Race, NASCAR Approved	Gasoline	830	Mechanical	Annular
0-80496-1	Race	Alcohol	950	Mechanical	Double -step Down Leg
0-80498-1	Race	Gasoline	950	Mechanical	Double -step Down Leg
0-80577	Race, Supercharger	Gasoline	950	Mechanical	Double -step Down Leg
0-80513-1	Race	Gasoline	1000	Mechanical	Double -step Down Leg
0-80514-1	Race	Gasoline	1000	Mechanical	Annular

SPECIAL NOTE: Part number 0-80507-1 is shipped from Holley without the high-speed air bleeds to allow for the Touring Series Style racing calibration. See the air bleed section for clarification and identification of the high-speed air bleeds.

NOTE: These carburetors are not legal for use in California on any pollution-controlled motor vehicle.

INTRODUCTION:

Holley Performance Products has written this instruction sheet for the installation of the **Model 4150 HP PRO-SERIES** carburetors. This instruction sheet contains all the information needed to install these carburetors. Please read all the **WARNINGS** and **NOTES**, as they contain valuable information that can save you time and money. Holley Performance Products cannot and will not be responsible for any alleged or actual engine or other damage, or other conditions resulting from misapplication of the carburetor described herein. However, it is our intent to provide the best possible products for our customer; products that perform properly and satisfy your expectations. Should you need information or parts assistance, please contact our Technical Service Department at 1-270-781-9741, Monday through Friday, 7 a.m. to 5 p.m. Central Time; please have the part number of the product you purchased when you call.

GENERAL INFORMATION:

- This instruction sheet cannot contain all of the information, which may be desired by some individuals. Further clarification is available in **HOLLEY CARBURETORS**, published by H.P. books and available at your Holley distributor (P/N 36-73).
- An in-line fuel filter should be installed between the fuel pump and the carburetor.
- Recommended fuel pressure should be set at 7-1/2 psi maximum, 5 psi minimum. Fuel pressures above 7-1/2 psi can create severe fuel control problems and are not recommended.
- Fuel lines should be a minimum of 3/8".
- A Non-restrictive open-element air cleaner kit is recommended (Holley P/N 120-102).
- The pump cam adjustment kit is available under Holley P/N 20-12.
- Slosh tubes for preventing fuel starvation during rapid acceleration are available under Holley P/N 122-5000.
- Vacuum secondary diaphragm springs (if applicable), which vary secondary opening, are available under Holley P/N 20-13. For additional parts and accessories, see the Holley Performance Parts Catalog.

HP FUEL PUMPS
P/N 12-125 and 12-150
Installation Instructions

WARNING! THESE INSTRUCTIONS MUST BE READ AND FULLY UNDERSTOOD BEFORE BEGINNING INSTALLATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN POOR PERFORMANCE, VEHICLE DAMAGE, PERSONAL INJURY, OR DEATH. IF THESE INSTRUCTIONS ARE NOT FULLY UNDERSTOOD, INSTALLATION SHOULD NOT BE ATTEMPTED. PLEASE CONSULT HOLLEY TECH SERVICE OR A QUALIFIED MECHANIC.

APPLICATIONS:

P/N	DESCRIPTION	FLOWS	PRESSURE REGULATOR	ALCOHOL/METHANOL COMPATIBLE	PRESET PRESSURE	SAFETY SWITCH SHUT-OFF
12-125	Billet Aluminum Pump. One 3/8" NPT Inlet, One 3/8" NPT Outlet	125 GPH Free Flow	Built In	Yes	7 PSI max	Recommended (P/N 12-810)
12-150	Billet Aluminum Pump. One 3/8" NPT Inlet, One 3/8" NPT Outlet	150 GPH Free Flow	12-803 included	Yes	17 PSI max	Recommended (P/N 12-810)

INTRODUCTION:

Congratulations on your purchase of the **Holley HP fuel pump.** This instruction sheet contains all the information needed to install this fuel pump. Please read all the **WARNINGS** and **NOTES**. They contain valuable information that can save you time and money. Holley Performance Products cannot and will not be responsible for any alleged or actual engine or other damage, or other conditions resulting from misapplication of the **HP** fuel pumps and fuel pressure regulators described herein. However, it is our intent to provide the best possible products for our customer; products that perform properly and satisfy your expectations. Should you need information or parts assistance, please contact our Technical Service Dept. at 1-270-781-9741, Monday through Friday, 7 a.m. to 5 p.m. Central Time. Please have the part number of the product you purchased when you call.

NOTE: A top quality fuel filter at 70 micron or less, fuel hose and clamps, 12 gauge wire, fuel fittings, assorted terminals, a relay, and an optional safety shut-off switch is required to complete the installation of the **HP** fuel pump. These parts are not included with the **HP** fuel pump.

NOTE: The 12-150 HP fuel pump requires the use of a fuel pressure regulator. Holley P/N 12-803 is included for this reason.

NOTE: For optimum performance and precise fuel control, Holley **ALWAYS RECOMMENDS** using a Fuel Pressure Regulator.

SPECIAL CONSIDERATIONS FOR PUMPS SUBJECTED TO HIGH TEMPERATURES:

In applications where the fuel pump is subjected to high temperatures due to climate, towing, close proximity of exhaust components, high under-car temperatures, etc., Holley highly recommends the use of a bypass style regulator (such as Holley PN 12-803BP) to eliminate potential vapor lock issues that may occur due to the sensitivity of new fuels. If you are experiencing fluctuations in pressure readings or no-flow conditions when temperatures rise, you will need to install a bypass regulator.

PUMP MOUNTING AND INSTALLATION:

The best location for mounting any electric fuel pump is the rear of the vehicle, near the fuel tank and in a position that will allow the fuel to be gravity fed to the pump. The pump should be mounted on a solid member, such as the chassis, in a vertical position with the pump motor on top. Avoid exposure of the pump and fuel lines to moving parts and to any hot areas, such as the exhaust manifold. The pump should not be mounted in an enclosed area, such as the vehicle's trunk. Follow the steps below for mounting the pump.

WARNING! THE PUMP MUST BE PLACED WHERE INTERFERENCE BETWEEN THE VEHICLE'S BODY AND ITS CHASSIS MOVEMENT IS AVOIDED. THE PUMP AND ITS CONNECTING HOSES MUST NOT BE SUBJECTED TO LOW GROUND CLEARANCE, WHERE ANY FLYING ROCKS OR ROAD DEBRIS CAN CAUSE DAMAGE. FAILURE TO AVOID THESE HAZARDS WILL LEAD TO PUMP DAMAGE, WHICH COULD RESULT IN FIRE AND/OR PROPERTY DAMAGE, SERIOUS INJURY, AND/OR DEATH.

1. Select a mounting site as close as possible to the fuel supply and away from possible sources of heat as detailed previously.
2. Use the mounting bracket attached to the pump as a template and drill two clearance holes for 5/16" bolts.
3. Mount the pump in the vertical position (motor on top) using two 5/16 bolts.

NOTE: To ensure pump life and flow efficiency, a quality fuel filter, such as Holley P/N 162-515 must be installed between the tank and each pump inlet. The filter should be supported in such a manner that it does not hang from the fuel lines.

MSD IGNITION ADDENDUM

MSD 6BTM
PN 6462

Additional Parts Supplied:
1 – 2-Pin Weathertight Connector
1 – Control Dial
1 – 3/8" Rubber Bushing
4 – Self Tapping Screws

Note: A length of 1/8" tubing is required.

This is an addendum to the supplied instructions that detail the function and wiring of the MSD 6BTM Ignition Control and other 6 Series Ignitions. Review those instructions first for information and wiring for your application.

INSTALLATION

1. Mount the Boost Control Dial where it can easily be reached by the driver. (Before mounting the unit, ensure that the Boost Control Wiring harness reaches your desired location). Use the adhesive on the back or the four mounting screws (use a 3/16" bit).
2. If an access hole to the engine compartment is not available, use a 3/8" bit to locate a new one. A 3/8" rubber bushing is supplied to route the wires through.
3. Route the wires to the MSD Ignition making sure they are secured away from heat sources and moving parts. Install the supplied 2-pin Weathertight Connector to the two wires. This connection is not polarity sensitive so it does not matter which way the terminals are positioned.
4. Connect the 1/8" tubing to the spigot of the MSD and route it to a port on the intake manifold. Use care when routing this line not to kink it and secure it away from heat sources and moving parts.

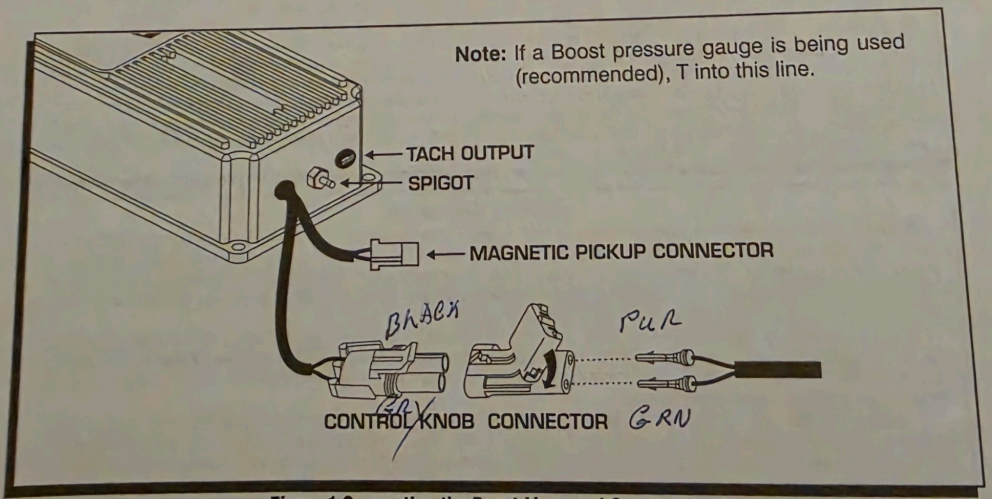


Figure 1 Connecting the Boost Lines and Connector.

MSD IGNITION INSTALLATION INSTRUCTIONS

MSD Blaster HVC-2 Coil
PN 8253

Parts Included:
- 1 - Blaster HVC-2 Coil
- 4 - Vibration Mounts and Hardware
- 2 - Brass Lock Washers
- 2 - Ring Lug Terminals
- 2 - Brass Screws

WARNING: Disconnect the battery during installation. When disconnecting the battery, always remove the negative cable first and install it last.

The Blaster HVC-2 Coil is designed to be used with an MSD 6 Series Ignition Control only.

INSTALLATION

1. The Coil can be mounted in any position, but should be away from direct heat sources. Use the Coil Template (page 3) and mark the location of the mounting holes. Use a 3/16" bit to drill the holes.
2. Install the supplied vibration mounts to the coil and install the coil.
3. The MSD Orange wire connects to coil positive (+). Black connects to coil negative (-).

Note: If the wires need to be lengthened, it is recommended to use 14-Gauge wiring for the primary coil wiring.

4. Connect the coil secondary wire to the coil and distributor cap.

WARNING: Very high voltages are present at the coil when the engine is running. Never connect any test equipment or touch the coil while the engine is cranking or running.

MSD IGNITION INSTALLATION INSTRUCTIONS

MSD Pro-Billet Small Diameter Chevrolet V8 Distributor
PN 8570

Important: Read these instructions before attempting the installation.

Parts Included:
- 1 - Pro-Billet Distributor
- 1 - Rotor, PN 8467
- 1 - Distributor Cap, PN 8431
- 1 - Wire Retainer
- 2 - 1.5" Self Tapping Screws
- 2 - Panhead Phillips Screws
- 1 - Advance Kit
- 1 - Gasket
- 1 - Tube of Gear Lubricant
- 2 - O-Rings

WARNING: Before installing the MSD Distributor, disconnect the battery cables. When disconnecting the battery cables, always remove the Negative (-) cable first and install it last.

Note: The terminals of this Distributor require spark plug style terminals. You may need to change the terminals and boots of your wires. MSD offers two kits, PN 8849 or PN 8848 that are supplied with nine boots and terminals.

Note: If the gear is ever replaced, MSD Gear (PN 8531) is required for replacement due to the .500" diameter shaft.

TIMING FUNCTIONS

Before continuing with the installation, here are a few definitions you should be aware of:

Initial Timing: This is the base timing (also referred to as idle timing) of the engine before the centrifugal advance begins.

Centrifugal Advance: The centrifugal (or mechanical) advance mechanism is made up of weights, springs, advance cams, and an advance stop bushing. The amount and rate of advance that your distributor is capable of is determined by the centrifugal timing. If you ever wish to lock out the centrifugal advance, refer to the centrifugal advance section.

Total Timing: This is the total of the initial timing plus the centrifugal advance added together. Example: 10° Initial + 25° centrifugal = 35° Total Timing. (When checking Total timing, disconnect the vacuum canister and plug the vacuum source.)

Note: MSD Distributors are supplied with the heavy (slow) advance springs installed. This is to prevent detonation in certain applications. Review the information on pages 2-4 to determine the best advance curve for your application.

Set the plug gap at .31 to .35
NGK - R5671-AB

MSD IGNITION INSTALLATION INSTRUCTIONS

MSD 6 Series
6A, 6AL, 6T, 6BTM, 6TN, 6ALN

Parts Included:
1 - MSD 6 Series Ignition
1 - Harness, PN 8860
1 - Harness, PN 8861
1 - 18" Ground Wire
1 - White Jumper
1 - Red Jumper
4 - 45° Faston Terminals
4 - #8 x 3/4" Screws
2 - 10-32 x 1/2" Screws
4 - 10-32 Hex Nuts
6 - #10 Lock Washers
1 - 100V/1A Diode
4 - Wire Splicers
2 - Wire Ties
1 - Faston Receptacle
2 - Faston Straight Terminals

6T, 6TN, 6AL 6ALN, 6BTM, 6-Offroad Only:
4 - Vibration Mounts and Hardware

6AL, 6ALN, 6BTM Only:
4 - RPM Modules, 3,000, 6,000, 7,000, 8,000

WARNING: During installation, disconnect the battery cables. When disconnecting the battery always remove the Negative cable first and install it last.

Note: Solid Core spark plug wires **cannot** be used with an MSD Ignition.
Note: An MSD 6 Series **cannot** be used with distributorless ignition systems (DIS).

THEORY OF 6 SERIES IGNITION

CAPACITIVE DISCHARGE

The MSD 6 Series Ignitions feature a capacitive discharge ignition design. The majority of stock ignition systems are inductive ignitions. In an inductive ignition, the coil must store and step up the voltage to maximum strength in between each firing. At higher rpm, since there is less time to charge the coil to full capacity, the voltage falls short of reaching maximum energy which results in a loss of power or top end miss.
The MSD Ignition features a capacitor which is quickly charged (within one millisecond) with 460 - 480 volts and stores it until the ignition is triggered. With the CD design, the voltage sent to the coil is always at full power even at high rpm.

MULTIPLE SPARKS

The MSD 6 Series produces full power multiple sparks for each firing of a plug. The number of multiple sparks that occur decreases as rpm increases, however the spark series always lasts for 20° of crankshaft rotation. Above 3,000 rpm there is simply not enough "time" to fire the spark plug more than once, so there is only one powerful spark.

REV LIMITER

6AL, 6ALN, 6BTM: These ignitions are equipped with built-in Adjustable Soft Touch Rev Controls. MSD Rev Limiters are adjustable with plug-in modules which are available in 100 rpm increments. The Soft Touch circuitry provides a smooth and accurate rev limit by dropping the spark to individual cylinders. The Soft Touch produces a load-free rev limit that is within 1% of the selected rpm.

DART LITTLE M Iron Small Block - *Technical Notes*

Deck Height	9.025"
Bore	4.00" or 4.125" unfinished
Main Bearing Size	350 (2.45") 400 (2.65")
Weight	205 lbs
Largest Recommended Bore	4.185"
Camshaft Bearing Diameter	SBC - 2.00"
Camshaft Position	Standard SBC
Cylinder Wall Thickness, min.	.275" @ 4.185" bore
Deck Thickness, min	.675"

Torque Specs - Main Caps w/thread lube — 1 - 5 7/16" bolts 65 ft lbs; 1 & 5 3/8" bolts 35 ft lbs

Early stock SBC 2 hole oil filter adaptor is needed.
Standard SBC timing chain, timing cover, gear or belt drive can be used.
Actual deck height will be .005"- .010" taller for additional machining requirements.
Standard SBC oil pan can be used.
Cam bearing OD should be deburred before installation.
When initially removing main caps, the caps & block should be deburred before reinstalling. This will insure that correct main size is maintained.
Standard SBC head studs or bolts may be used.
Head stud holes are blind. They do not go into the water jacket.
A sealant/antiseize *must* be used on the head studs. Loctite # 620 is recommended.
Studs should *never* be torqued into block. They should only be lightly snugged.
It is preferred that a bullet be machined on the end of the head stud where it bottoms in the block to center the stud before tightening.



.350" OD x .150" Deep

Press-in freeze plugs are provided.
Press-in cam plug dia = 2 3/8".
Oil pump dowel pins should be .250" OD. Stock GM pins are only .246" OD.
The block is machined for a left hand dipstick. The boss is provided for a right hand dipstick but it must be drilled if needed.

Dipstick Tube installation: If an oil dipstick tube is used, after installation, fill the engine with oil and remark the dipstick indicator Full mark if necessary. In certain applications you may need to modify or bend tube to properly install it. The tube is a press fit.
Recommended part# - Indicator (dipstick) - GM# 14094756 Tube - GM# 14075615

Honing: Hone block to finished size with 220 grit @ 40 amps of load on sunnen hone.
Make 3 strokes on each cylinder with 280 grit @ 20 amps.
Make 3 strokes on each cylinder with 400 grit @ 20 amps.

When rehoning start with 220 grit, get cylinder straight and round or just deglaze. Then do same procedure as above.

OIL PUMP DRIVESHAFT

On blocks with 400 main size you **MUST** use a 400 oil pump shaft which has a diameter of .425". If you are using an after market HD shaft or a 350 shaft, which are .481" diameter, you **MUST** machine the center of the shaft to .425" to clear the hole in the block. If this is not done, you may experience oil pump and/or distributor gear problems. The 400 main blocks have a hole .062" smaller than a 350 so the shaft hole will not break through to the rear main bore.

Note: Be sure to check distributor to oil pump shaft clearance with distributor, intake manifold and oil pump installed on block.

7/25/2007

TRANS

Billet Specialties

FM 0105PC SBC low mount alternator Bracket

Tools Required:

1/4" Allen Wrench	9/16" Open End Wrench
5/16" Allen wrench	Anti-Seize
1/2" Open End Wrench	3/8-16 Thread Chaser (If necessary)

We recommend applying Anti-Seize to all threads when assembling bracket.

1) Disconnect Battery

2) Clean and prep engine block for installation. Inspect threads in engine block. Run a 3/8" thread chaser if necessary. Thread chasers are available at your local auto parts store or tool dealer and are different from a thread cutting tap.

3) Loosely assemble alternator bracket by inserting the (2) 3/8-16 x 3" socket head cap screws through front bracket. Place 1-7/8" spacer on top bolt. Place in order on bottom bolt 1-3/32" spacer, turn buckle assembly then 5/16" spacer. Thread completed assembly through rear bracket and into engine block. Do not tighten at this time

4) Attach small aluminum ear bracket to back of alternator mount boss with(1) 5/16-18 x 7/8" socket head cap screw and tighten (26 ft./lb.)

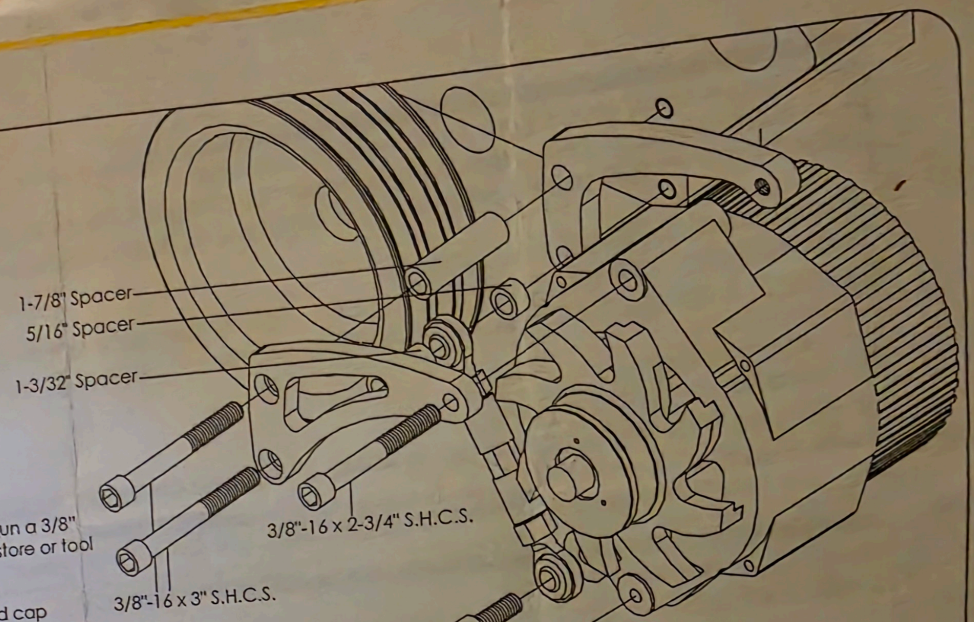
5) Place alternator between front and rear brackets, thread (1) 3/8-16 x 2-3/4" socket head cap screw through front bracket, alternator and into rear bracket. Finger tighten.

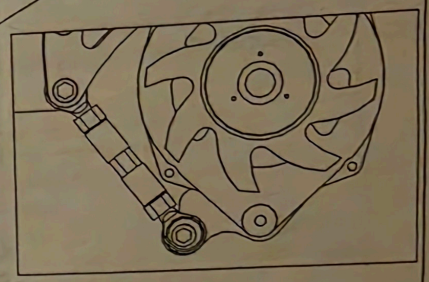
6) Swing turnbuckle assembly up to aluminum ear bracket and thread (1) 3/8-16 x 1" socket head cap screw through turnbuckle and into aluminum ear bracket and tighten (46 ft./lb.)

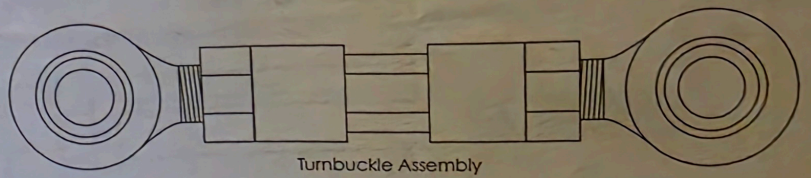
7) Tighten the (2) 3/8-16 x 3" socket head cap screws into engine block at this time. (46 ft./lb.)

8) Route V-Belt over water pump pulley, crank pulley and alternator pulley. Turn turnbuckle until proper belt tension is achieved. Tighten jam nuts on turn buckle. Tighten alternator socket head cap screw at this time. (46 ft./lb.) Re-check belt tension.

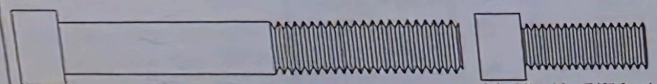
9) Reconnect electrical and test run motor. Re-check belt tension after 100 miles.





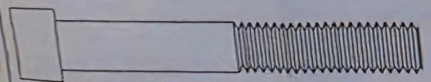


Turnbuckle Assembly

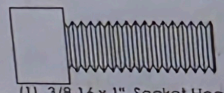


(2) 3/8-16 x 3" Socket Head Cap Screw

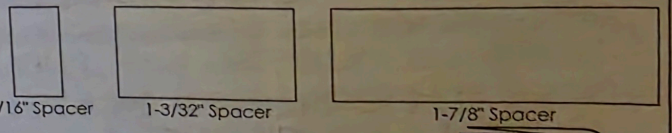
(1) 5/16-18 x 7/8" Socket Head Cap Screw



(1) 3/8-16 x 2-3/4" Socket Head Cap Screw



(1) 3/8-16 x 1" Socket Head Cap Screw



Billet Specialties, Inc. 500 Shawmut Avenue La Grange, Illinois 60526 PH 800.245.5382 Fax 708.588.7181 www.billetspecialties.com

RPM OPERAING RANGE 300-6500

COMP CAMS

PART # 12-704-8 SN#: VA6389-08
ENGINE: CS 300BR-14
[redacted]
GRIND#: CS 300BR-14
SPC INSTR 1:
SPC INSTR 2:

PART#: 12-704-8 SERIAL#: VA6389-08

	INTAKE	EXHAUST
VALVE ADJUSTMENT	.020	.020
GROSS VALVE LIFT	.575	.575
DURATION @ .015 TAPPET LIFT	300	308
VALVE TIMING	OPEN	CLOSE
@ .015 INT:	36 BTDC	84 ABDC
EXH:	88 BBDC	40 ATDC

THESE SPECS ARE FOR CAM INSTALLED @ 110.0 INTAKE CENTER LINE

	INTAKE	EXHAUST
DURATION @ .050	255	262
LOBE LIFT	.3830	.3830
LOBE SEPARATION	114.0	

977-16 SPRINGS REQUIRED
VALVE SPRING SPECS FURNISHED WITH SPRINGS

5 4/8
O 4 3

Set Torque Specs.
rocker arm stud put lock tite on 45 to 50

Head 65 - ~~70~~
Blower to Intake 15
Intake to Heads 30-35

Intake gasket Fel Pro
#1206

body and pump drive hub remain true.

Each unit is then pressurized and subjected to a leak test to confirm the integrity of all the weld seams. Lastly, each unit is computer balanced to reduce annoying and potentially damaging drivetrain vibrations that would occur from an unbalanced torque converter. That's Triple Tested so you can be confident you're getting a torque converter that's ready to roll.

Street/Strip Performance Torque Converter General Application Chart

Torque Converter Series	advertised camshaft duration	rear gear ratio	engine characteristics	expected rpm stall speeds	
				small block	*big block*
Sizzler®	stock to 260°	stock to 3.23	smooth idle, stock comp. ratio	1500 to 1700	1700 to 1900
Saturday Night Special®	stock to 265°	stock to 3.23	smooth idle, stock comp. ratio	1600 to 1800	1800 to 2000
Breakaway®	265° to 280°	3.00 to 3.73	fair idle, mild modifications	2200 to 2400	2400 to 2600
StreetFighter®	280° to 300°	3.55 to 4.56	rough idle, large fuel system, raised comp. ratio	3000 to 3400	3400 to 3600
Super StreetFighter™	280° to 310°	3.73 to 4.88	rough idle, large fuel system, raised comp. ratio top end power	3500 to 3800	3800 to 4000
Ultimate StreetFighter™	290°+	3.73+	1000+ horsepower with power adders	3500+	3800+

* This chart is a guideline. Your stall speed may vary in your application.

See specific application charts with part numbers here.

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StreetFighter®

Designed with the street racer in mind, this torque converter benefits more radically prepared street machines (those with performance cams, aftermarket carbs and higher compression ratios) to bring the launch rpm in line with the performance enhancements. The StreetFighter® lets you take advantage of horsepower gains found in highrer rpm ranges.



Features:
- Furnace-brazed fins
- Needle bearings
- Hardened, pre-ground pump hub
- Computer Balanced
- Installation hardware included

Benefits:
- Higher rpm launches
- Quicker reaction times
- Lower elapsed times
- Better low- and mid-range power
- 1500+ rpm increase in stall over stock

Flexplate must be drilled for 7/16" bolts.

Super StreetFighter ™

This line of performance converters was developed to work with many GM and Ford late model lock-up transmissions. These transmissions can offer many advantages to performance enthusiasts, including lower initial gear ratios and overdrive gear for lower highway rpm and improved mpg. The Super StreetFighter™ lock-up series allows the car owner to have to 4000 rpm stall speeds (depending on application) while still enjoying all the benefits of a mechanical lock-up converter.



Features:
- Furnace-brazed fins
- Needle bearings
- Hardened, pre-ground pump hub
- Computer Balanced
- Installation hardware included

Benefits:
- Higher rpm launches
- Lower elapsed times
- Better low- and mid-range power

Flexplate must be drilled for 7/16" bolts.

New! Ultimate StreetFighter ™

Our latest line of torque converters designed specifically for extreme street machines. Bridging the gap between our competition series units and our Super StreetFighter™ converters, we introduce the Ultimate StreetFighter™ series.



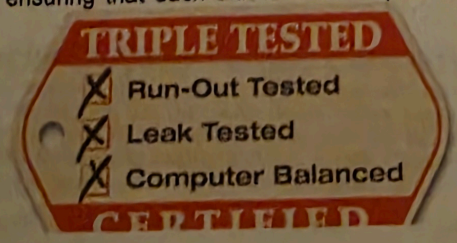
Features:
- Furnace-brazed & hand welded fins
- Cast steel stator
- Needle bearings
- Dual bolt pattern
- Hardened, pre-ground pump hub
- Computer Balanced
- Installation hardware included

Benefits:
- High torque multiplication
- Higher rpm launches
- Lower elapsed times
- Suited for street/strip cars up to 1200 Hp

Flexplate must be drilled for 7/16" bolts.

Triple Tested Quality

TCI® strives to produce the best torque converters in the industry. Part of the process involves ensuring that each unit is built to spec. Regardless of what category or price level it may fall into, every TCI® torque converter is Triple Tested during assembly.



Once all the prep work on the component parts has been completed, the impeller is welded to the front cover. Immediately following this process, a pair of dial indicators are employed on a rotating table to verify that the impeller

TCI - TORQUE CONVERTERS: Application Chart

TH400 #212000-12 #1,486.34

GM Turbo-Hydramatic	1980-up GM TH250C & 350C lock-up		242400 [2] PRICING			242422 PRICING
	1965-91 GM TH400, 425, 375 w/ wide bolt Pattern (except variable pitch)		241501 PRICING	241400 [7,3] PRICING	242000 PRICING 242001 [3] PRICING	242002 [3] PRICING 242022 PRICING
	1965-81 GM TH350, 375 w/ small bolt pattern (except lock-up)	241538 PRICING	241500 PRICING 241502 [6] PRICING	241100 PRICING 241300 [7] PRICING	242100 PRICING 242101 [3] PRICING	242102 [3] PRICING 242122 PRICING
	1965-91 GM TH350, 400 with small pattern			241101 [3] PRICING		
	1965-91 GM TH350, with wide pattern			241200 PRICING		
	1965-91 GM TH350, 400 with dual pattern			240900 PRICING 240901 [3] PRICING	241000 PRICING 241001 [3] PRICING	241002 [3] PRICING 241022 PRICING
GM P/G	1962-73 GM Aluminum case Powerglide		741500 PRICING	741100 PRICING 741101 [10] PRICING 741300 [7] PRICING 741301 [7,10] PRICING	741000 PRICING 741001 [3] PRICING	741002 [3] PRICING 741022 PRICING
GM Elec	1993-1997 GM 4L60E & 1997-2005 GM 4L60E C5 Corvette		242700 [2] PRICING	242800 [2,8] PRICING 243107 [2,18] PRICING 242962 [3,9] PRICING	243105 [2] PRICING 243106 [2,15] PRICING 242963 [3,9] PRICING	243110 [2] PRICING 243111 [2,15] PRICING
	1998-up GM 4L60E F-body LS1/LS2 applications; 1999-up GM 4L60E/4L65E trucks w/ 4.8, 5.3, 6.0 engines		242935 [11,17] PRICING	242938 [11] PRICING	242931 [10,11] PRICING	242932 [10,11] PRICING 242937 [10,11,19] PRICING
	1991-99 GM 4L80E		242900 [2] PRICING		242930 [2] PRICING	

#84100

Footnotes:
1 Built with 7/16" x 20 mounting lugs (Hemi Style).
2 Functional lock-up torque converter only for lock-up transmissions.
3 With heavy duty front anti-ballooning plate for nitrous applications.
4 With 9 3/8" bolt pattern for Mustang II applications.
5 With 11 7/16" bolt pattern but retains case fill overall length.
6 For Buick, Pontiac, Oldsmobile w/small bolt circle and mounting lugs.
7 Special high stall unit, great for light vehicles.
8 12" diameter converter.
9 Non Lock-up (Ford AOD applications **MUST** use TCI 439600 input shaft)
10 Ballooning plate on trans-side.
11 LS1/LS2 applications, 1998 & later except Corvette
12 Must be used with TCI® 439600 non lock-up shaft
13 Flats on hub
14 1.806 pilot
15 10" converter with 12" lock-up assy.
16 11.4" bolt pattern
17 300mm-diameter converter
18 10"-diameter converter
19 Billet steel front cover
20 Low stall configuration

Special Chrysler Torque Converter Balance Weight Information

It is very important when replacing Chrysler torque converters that the correct balance weight be used on your new converters. Chrysler engines with cast crankshafts require balance weights on the torque converter to bring the engine assembly into proper balance. Up until 1977, the factory converter came with two rectangular weights located on each side of the drain plug. There are three types of rectangular weights: A, B & C. In 1977, Chrysler changed to a single button weight. Please refer to the identification chart for the 'B' and 'C' weights. Please refer to the identification