

1970 Pontiac 455 (467ci – 7.65 liter)

(Spring 2007)

Intended Use: Street/Strip Competition Class: Bracket Track Size: ¼ mile

1970 - 455 Pontiac block with Butler Balanced Rotating assembly 467ci

Pro-P455C 4-Bolt Main Caps

[Kaufman Aluminum D-port heads](#) 85cc

Engine: 1970 Pontiac 455 Total Cubic Inches: 467 Cylinders: 8

Compression Ratio: 9:53:1 Bore: 4.181" Stroke: 4.250" Rod Length: 6.8"

Casting Number of Heads: Aftermarket Rocker Ratio: 1.5

Ported Heads: [Ported by Tri-Mark](#) – 85cc

Valve Diameter: Intake – 2.11" Exhaust – 1.77"

Carbureted or Injection: Carbureted

Nitrous: No

Intake Type and Manufacturer: [Edlebrock Performer RPM - Jeg's - 03507156](#)

Piston Brand: [Ross](#) D-Dished (custom to make 9:53 compression ratio)

Transmission type: TH400 ([Bob Unger - Sauk City Wisconsin](#))

Converter Brand: [TCI #240901 Breakaway with Nitrous anti-blooming plate](#)

[Stall Speed: 2400 - 2600](#)

Trans Brake: No

Line Lock: Yes

Rear Axle Ratio: 3.50 Ford 9" from [Quick Performance - Ames Iowa](#)

[31 spline True Track differential with spacer](#)

31 spline 9" Ford Custom Alloy Moser Axles

Tire Size & Type: ?

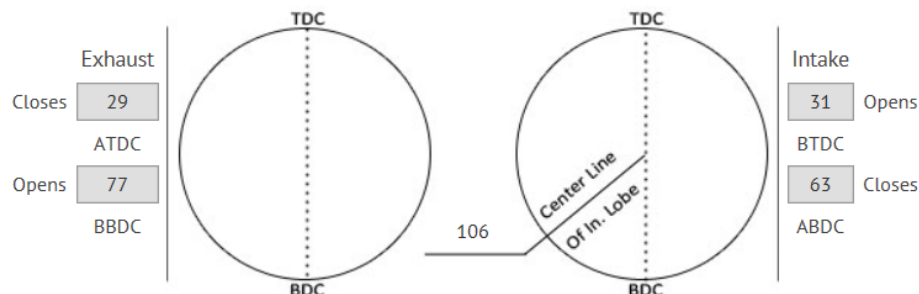
Chassis Style: A Body Year: 1970 Weight: 3641 (standard production weight)

Cam Type: Hydraulic Cam: Comp Cam XE274H

Specifications

			Intake	Exhaust
RPM Range:	1800 to 6000	Valve Lash:	Hyd.	Hyd.
Valve Timing:	0.006	Duration:	274	286
Lobe Separation:	110°	Duration @ .050" Lift:	230	236
Intake Centerline:	106°	Valve Lift:	0.488	0.491
		Lobe Lift:	0.325	0.327

Valve Timing @ 0.006 Lift:





467-474 cu. in. for 428-455

- New Cast Crank 4.250" Stroke - 455-4250 Std/Std Nodular Iron ([Ohio Crankshaft](#))
- 3.250" Main for 428-455 Blocks
- Forged Ross Pistons **4.181"/4.211"** Bore - 427 grams! XL421P ([ROSS Pistons](#)) *Does not require oil support rails*
- .990 Ferrea Pin (Forge Tapered)
- H-Beam 6.800" Rods - CRS68003D2000 Connecting Rods with 230,00 psi bolts
- Pin Fitted
- File Fit Rings - CR3455-35 ([Total Seal](#))
- FM/CL Racing Rod and Main Bearings - 8-7200CH Rod Bearings ([Speed Pro](#))
151M Main Bearings ([Sealed Power](#))
- Balanced Internally

467-474 cu. in. Rotating Assembly		
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Note: Custom Pistons – D-Dish 9.53:1 compression ratio (for use with Kauffman Aluminum D-port heads – 85cc)

Note: Rods with 230,000-psi rod bolts ([APR2000](#))

PRO-P455C	Pontiac 455 Steel 4-Bolt Main Caps with Dowel Pins (Set of 3)					
ARP-194-5601	Main Stud Kit 4 Bolt					
APE-N538	1969-1979 PONTIAC TIMING COVER-11 Bolt 350-455. THIS IS AN EXACT DIECAST REPRODUCTION OF THE OEM GM TIMING COVER.					
GMP-9796347	69 and up Water Pump Sleeves to Timing Cover 69 and up					
GMP-9796349-1	69 and Up Water Pump Plate					
BRW-1649	11-Bolt 1969 1/2-77 Pontiac Hi-Volume Aluminum Water Pump-FlowKooler					
PPR-90020	Pontiac 69-79 SFI Approved Balancer/ 4-bolt					
CCA-51-224-4	Hi-Performance street, very strong mid range headers and mild stall.	274 I - 286 E 230 I - 236 E	.488 I - .491 E	110	1800-6000	
NIC-10120 - .005	Billet Gear Timing Set					
APE-N242A	64-72 GTO/Lemans Mity Mount Steel Reinforced Rubber Engine Mount (Set)					
CAN-15-400	Pontiac 8" High Capacity Oil Pan- 7 Qt.-Requires CAN 15-401 pick-up					
CAN-15-401	Pickup for 15-400 & 15-452 Pans					

Ferrea Ultimate Race Valves

The [6000 series](#) competition valves are designed to provide excellent reliability in an environment of high spring pressures and roller cams, at a budget price. These valves are manufactured using an exclusive two step slow forging process using EV8 stainless steel on both intake and exhaust valves. The valves feature flow improvements, to deliver the power needed for today's sophisticated racing engines.

FER-F6174 2.110 x 5.095 x 45 Deg. Ferrea Comp. Int. Valve (Single) (670, 16, 62, 13, 12, 48, AND 061 HEADS - MAY BE USED IN 4X, 6X, 96, 7K3, AND 5C HEADS FOR TALLER SPRING HEIGHT. MUST USE A LONGER PUSHROD)

FER-F6176 1.770 X 5.110 X45 Deg. Ferrea Comp. Exh. Valve (Single) (670, 16, 62, 13, 12, 48, AND 061 HEADS - MAY BE USED IN 4X, 6X, 96, 7K3, AND 5C HEADS FOR TALLER SPRING HEIGHT. MUST USE A LONGER PUSHROD)

ANG-P1507	1.50 Roller Rockers-Made in the USA	
SBR-5116-9400-16	9.400 X 116 x 5/16 Chromemoly Custom Pushrods (Set)	
CCA-852-16	Std. Pontiac Hyd Lifter	

PEP-PRK-382-16
0070190-4305
03751016

7/16 Rocker Arm Studs
Jeg's - Head Studs Pontiac Ram Air V
Jeg's - Head Gasket Pontiac V8

Doug's Headers by Doug Thorley THE BEST CHOICE FOR MOST PONTIAC APPLICATIONS

DHE-590-C 1968-72 GTO 389-455 with D-Port Heads - 1 3/4" Pipe, 3" Collector (Ceramic Coating)
LeMans
Tempest

055530751 Jeg's Exhaust Cut outs 2.5" (2 each)

Parts from Kauffman Racing Equipment



[Blank set of Kauffman Aluminum Pontiac D-port heads](#) –

[SFI approved Flex Plate](#)

Machining and assembly



This is my second engine built by these guys and so far so good. Both are running strong. 347 stroked Mustang (my son's car) and my 455 Pontiac. Keith and his crew have been helpful and patience with my questions.

Resurface Block
Magnaflux Block and crank (found a crack in the original crank)
Partial Balance assemble (the Butler rotating assembly comes pre-balanced)
Bore Block
Hone
Deburr Block
Install cam bearings
Align Bore
Degrease Block
Pressure test block
Assemble short block
R&R pistons on rods
P-4 [Dura-Bond](#) cam bearing set
M-54F [Melling](#) oil pump
Ks2616 [Felpro](#) gasket set

Machine perches
Size guides
[Performance Engine and Machine sent the heads for port work to:](#)



Performance Heads

506 [PBM](#) chrome-moly retainer set
343530 [PBM](#) valve seals
3300 [PBM](#) valve springs
203 [PBM](#) 10° machined lock set

Spark Plug wire set [Taylor](#) 73053
Fuel Filter [PBM](#) 879060
#6 braided Hose

Miscellaneous Parts not listed above:

Speedometer Cable - NAPA - 6151612

Heater Core - NAPA - 660-3024

Valve Cover Chrome - Summit - MRG-9805

Ultra-Seal VC Gasket Pontiac - Summit - MRG-5869

Pro Torque Starter Olds/Pontiac - Summit - SUM-820311

Spark Plugs - NAPA - NGK Racing plugs heat range 7 (non-projected)

70-72 "455" RKR PNL EMBS, PR - AMES - C103K (Wife got me these for my birthday)

Fuel Pump Pontiac 110GPH Holly - Jeg's - 051012-389-11

Trans Cooler, Super cooler 28,000 GVW - Jeg's - 013070266

Hurst V-Matic Univ 3 Speed shifter - Jeg's - 0530383-8520

Trans Mount H/D-GM-Yellow - Jeg's - 0890952500

Miscellaneous info...

Pontiac block casting number (1970 – 9799140) <http://www.allmusclecars.com/potniac/pbc.htm>

Casting number ?

Front left by deck 0348500

YH (1970 360hp, B body, TH400, L-75, 4 barrel carb, 4 bolt mains, HO)



Front left on side 0P195947

Front left on side GM – 8

D . N

Front right side :455

1 main = 3 holes

#2, 3, 4 mains = 2 holes

Rear Main = 1 hole

Back by distributor 6917