6G74 3.5L Engine Main Swap details:

Last updated 3/11/08

A Specification Comparison Between 6G72, 6G74 & 6G75 engines:

Description:	Symbol/Units	6G72NA	6G72TT	6G74NA	6G75NA	STROKER
Bore:	D / mm	91.1	91.1	93	95	96
Stroke:	S / mm	76	76	85.8	90	95
Crank Offset Radius:	R / mm	38	38	42.9	45.0	47.5
Rod Length:	L / mm	140	140	152	152	145
Piston Compression Height:	mm	31.75	31.75	31.75	29.75mm	?
Deck Height:	mm	210	210	228	228	228
Main Bearing Diameter:	mm	60	60	64	64	64
Rod Bearing Diameter:	mm	50	50	55	55	50
Compression Ratio:		10:1	8:1	9.5:01	8:1?	8:1?
Piston Pin Diameter:	mm	22	22	??	22	22
ROD Ratio(L/S):		1.84	1.84	1.77	1.67	1.56
Engine Size:	cc	2972	2972	3497	3827	4125
Max Piston Acceleration at 7300 RPM:	ft/s*s	92,612	92,612	105,444	111,797	144,524
Max Piston Acceleration at 8300 RPM:	ft/s*s	119,724	119,724	136,311	144,964	155,483

NOTES:
I have verifed the 6G72& 6G74 information BUT All 6G75 information came from threads on 3SI.org.
The "STROKER" engine is an idea for maximum displacement using following components:
6G75 Block Overbored 1mm to 96mm.
6G75 Crankshaft offset ground from 55mm to 50mm so that 6G72 bearings can be used.
Custom connecting rods and pistons.
Offset grinding the crank this much might not be a good idea but 4.1L is 1.1L increase.
THAT would be a fun engine while it lasted:)

Using the JSPEC version of CAPS (Mitsubishi Dealer Parts Program) I was able to get the OEM part numbers for almost every part needed for this swap

Below is a list of Parts only avialable in Japan! so make sure you get these with your JSPEC engine!

Part Description	6G74TT (use these parts)	6G74NA	6G72TT
Lower Intake Manifold	MD183653	MD183653	(MD152648)
Oil pan Upper	MD190219	MD190219	(MD199562)
Oil Pan eng Lower	MD192397	MD192397	(MD199562)
Oil pan baffle	MD187373	MD187373	(NA)
Bracket power steering pump mounting	MD178139	MD178139	(MB636738)
Bracket Alternator (big Bracket)	MD191579	MD191579	MD162824
Pulley power steering belt adj	MD184357	MD184357	(MD172379)
Cover Timing belt Forward	MD174264	MD174264	(MD192110)
Cover Timing belt Lower	MD189482	MD189482	(MD192109)
Cover Timing belt rearward	MD189484	MD189484	(MD188084)
Pipe Water pump, in valley	MD192394	MD192394	(MD146833)
Thermostat housing	MD173506	MD173506	(MD193877)

The Following 6G74 parts are required, but are avaialble at US Dealers

Part Description	6G74TT (use these parts)	6G74NA	6G72TT
timing belt	"MD193875 MD197147"	"MD193875 MD197147"	(MD319040)
Rear main seal and Housing	MD187561	MD187561	(MD178606)
Thrust Bearings 6G74	MD197988	MD197988	?
Short Block Assy	MD182091	MD182091	(MD326222)
Fuel Rail Loop	MD173791	MD173791	(MD162569)
Crankshaft later years(forged?)	MD305941	MD305941	?

3000GT/Stealth Twin Turbo parts required

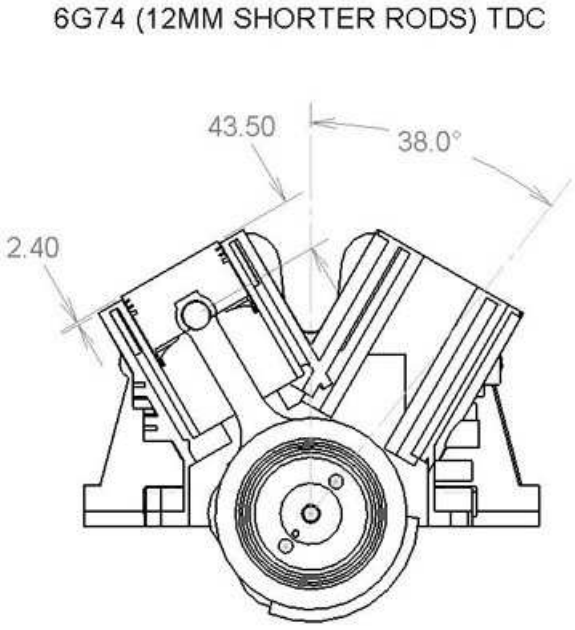
Description	6G74TT (use these parts)	6G74NA	6G72TT
Pulley Timing Belt Tensioner	MD140071	MD140071	MD140071
Pulley Timing Belt Idler	MD319022	MD319022	MD319022
Adjuster Timing belt	MD319040	MD319040	MD319040
Water Pump	MD972005	MD972005	MD972005
Intak to Plenum Gasket	MD143791	MD143791	MD143791
Intake Plenum to head Gasket	MD164701	MD164701	MD164701
Gasket Throttle Body	MD180361	MD180361	MD180361
oil pump / front crank seal & case	MD190982	MD190982	MD190982
Oil Filter Housing	?	?	?
Oil Pump Gasket (not included w/pump)	?	?	?
Bolt Timing Belt Tensioner	MD145360	MD145360	MD145360
Alternator tensioner pulley, on eng mt	MD318474	MD318474	MD318474
Alternator belt adjuster (to tighten belt)	?	?	?
Knock sensor	MD159216	MD159216	MD159216
Rear main seal only	MD372251	MD372251	MD372251
head bolt each	MD065959	MD065959	MD065959
Head Bolt Washer	MD020733	MD020733	MD020733
Turbo Exh Gasket	MD168266	(NA)	MD168266
Waterpump pipe Oring	MD147332	MD147332	MD147332
Insulator Fuel Injector	MD087060	MD087060	MD087060
Valve Cover Gasket perimeter	MD186786	MD186786	MD186786
Spark plug gasket (3)	MD186787	MD186787	MD186787
Dipstick Oring to pan	MD075834	MD075834	MD075834
Washer for cooling eyebolts (8 needed)	MF660064	(NA)	MF660064
Joint Cylinder block (oil feed adpapter rear)	MD161392	(NA)	MD161392
Belt, Power steering	MD172376	MD172376	MD172376
Downpipe to turbo Gasket	MR188537	(NA)	MR188537
Turbo to Manf Bolt	MD168601	(NA)	MD168601
Switch eng oil pressure	MD138993	?	MD138993
Gauge Unit engine oil	MD133273	?	MD133273
Coil Pack	MD152648	MD152648	MD152648
Bracket Alternator (little one)	MD158584	MD158584	MD158584
Gasket Exhaust Manifold (1?,2?)	MD168115	MD168115	MD168115
Valve Cover Rear	MD186132	MD186132	MD186132

Knock Sensor Bracket	MD155544	MD155544	MD155544
sensor Crank positon	?	?	MD187066
sensor Camshaft Postion	?	?	MD187067
Oil Pickup tube and strainer	MD158618	MD158618	MD158618
Bracket A/C compressor Mounting	MR149149	MR149149	MR149149
Plate Transmission to Engine	MD199579	?	MD199579
oil feed tube -RH (Rear?)	MD161898	(NA)	MD161898
oil feed tube -LH (Front?)	MD174793	(NA)	MD174793
Eyebolt Turbo Oil lines	MF650102	(NA)	MF650102
copper gasket oil lines turbo	MF660063	(NA)	MF660063
Water feed Front, (RH)	MD194061	(NA)	MD194061
Water Return Front(RH)	MD153689	(NA)	MD153689
Water Feed Rear (LH)	MD158758	(NA)	MD158758
Water Return Rear(LH)	MD153691	(NA)	MD153691
Eyebolt cooling (4 needed	MS650013	(NA)	MS650013
Fuel Rail	MD319816	MD319816	MD319816
Fuel Pressure Regulator	"MD164615 MD322989"	(MD322988)	"MD164615 MD322989"
Fuel Injector	MD164888	(MD189021)	MD164888
bracket water pump to lower intake	MD133859	MD133859	MD133859
Engine mounting bracket rear	MD166609	(MD190217)	MD166609
Roll stopper drivers alum	MB870005	(MB910818)	MB870005
Stay T/M mount Front	?	MD176109	?
Stay T/M mount Rear	?	MD306884	?

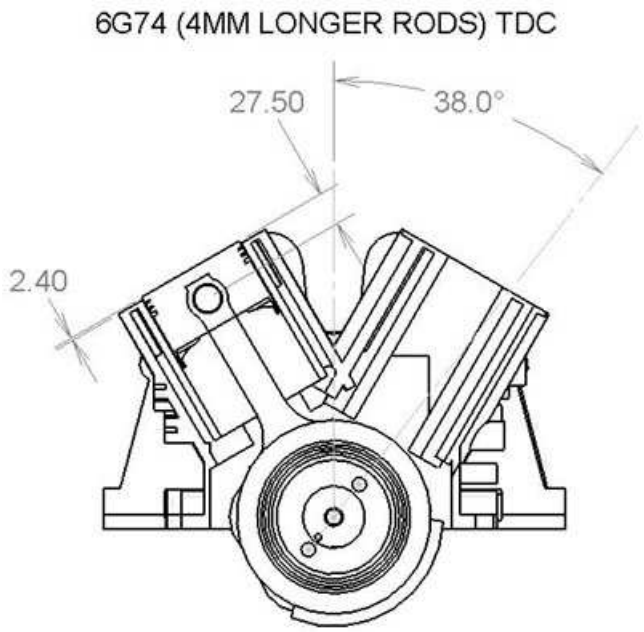
Another advantge of the 6G74 block is that the deck height is 18mm higher. The extra deck height provides extra room for longer connecting rods. Below is a visual model showing how longer rods reduce connecting rod accelleration and increase piston dwell at TDC

The 3 pictures below show 3 rod and pistons combinations.

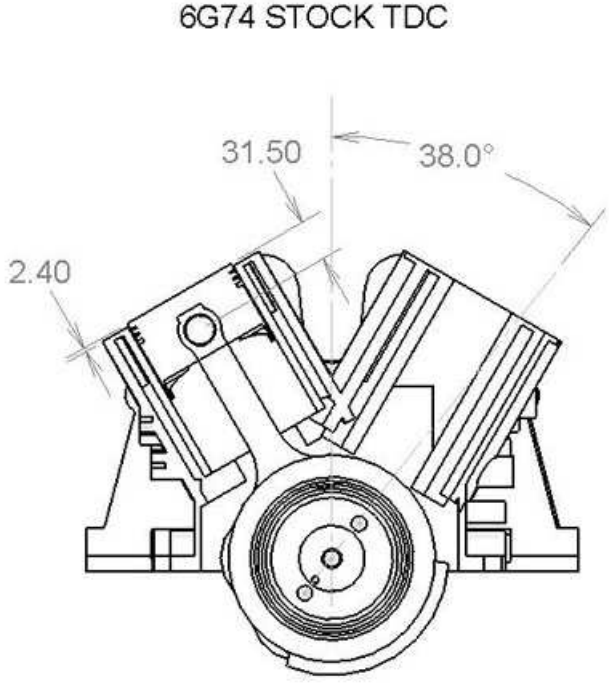
12mm shorter rods (140mm) with 12mm longer wrist pin location (43.5mm)



4mm longer rods (156mm) with 4mm shorter wrist pin location (27.5mm)

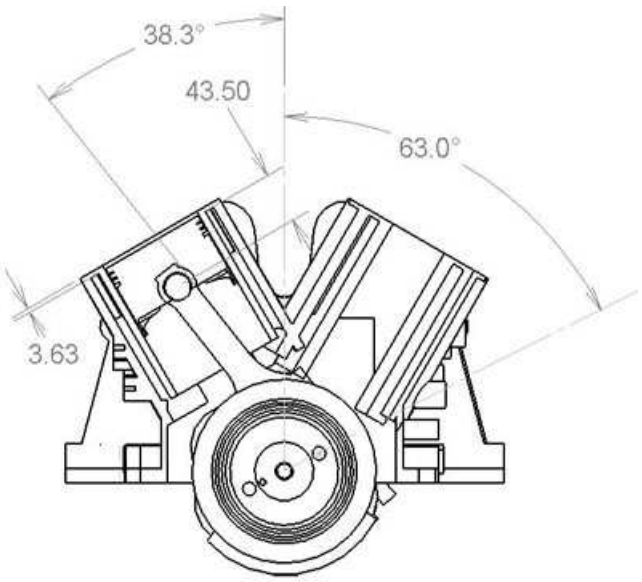


Stock 6G74 rods (152mm) with stock wrist pin location (31.5mm)

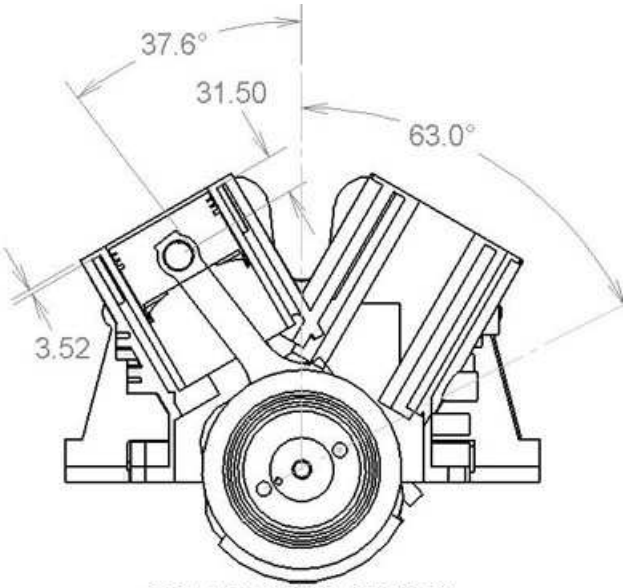


This was just to show that at TDC the piston sticksout above the head 2.4mm in all combinations.

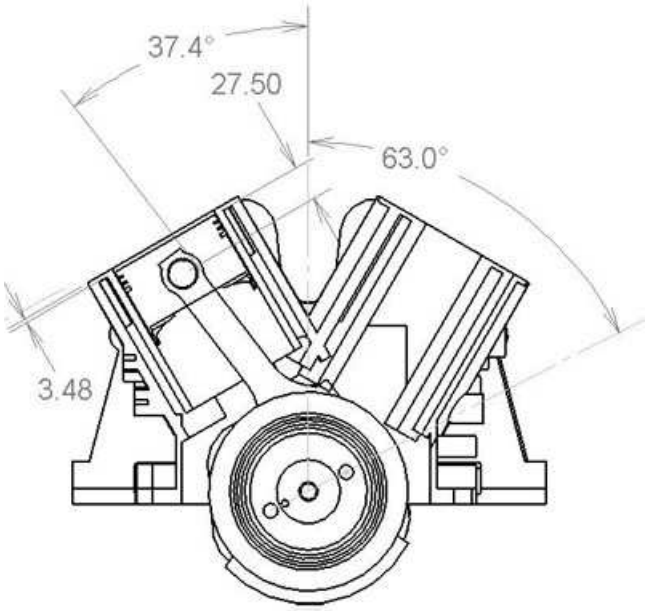
Now I turn the crank 25degrees and discover that in this position the piston has moved more with shorter rods.
You can also see that the rod angle is greater with shorter rods



6G74 (12MM SHORTER RODS) 25DEG



6G74 STOCK 25 DEG



6G74 (4MM LONGER RODS) 25 DEG

COMMENTS:

Piston Acceleration of a 6G74 4.0L Strokers at 7300RPM is very close to 6G72 Engine at 8300RPM

Please Note this Webpage is still under construction!

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