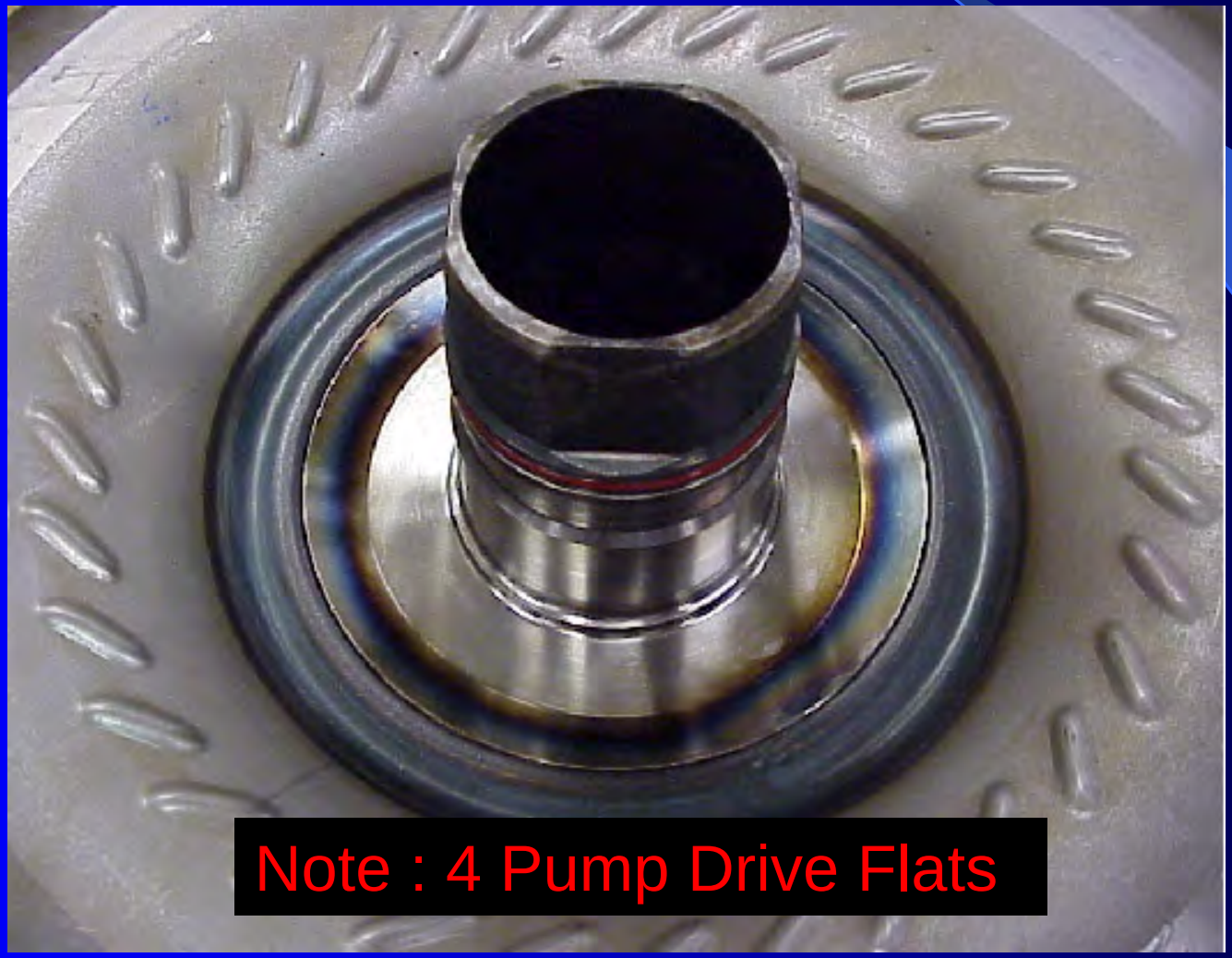
RUBICON

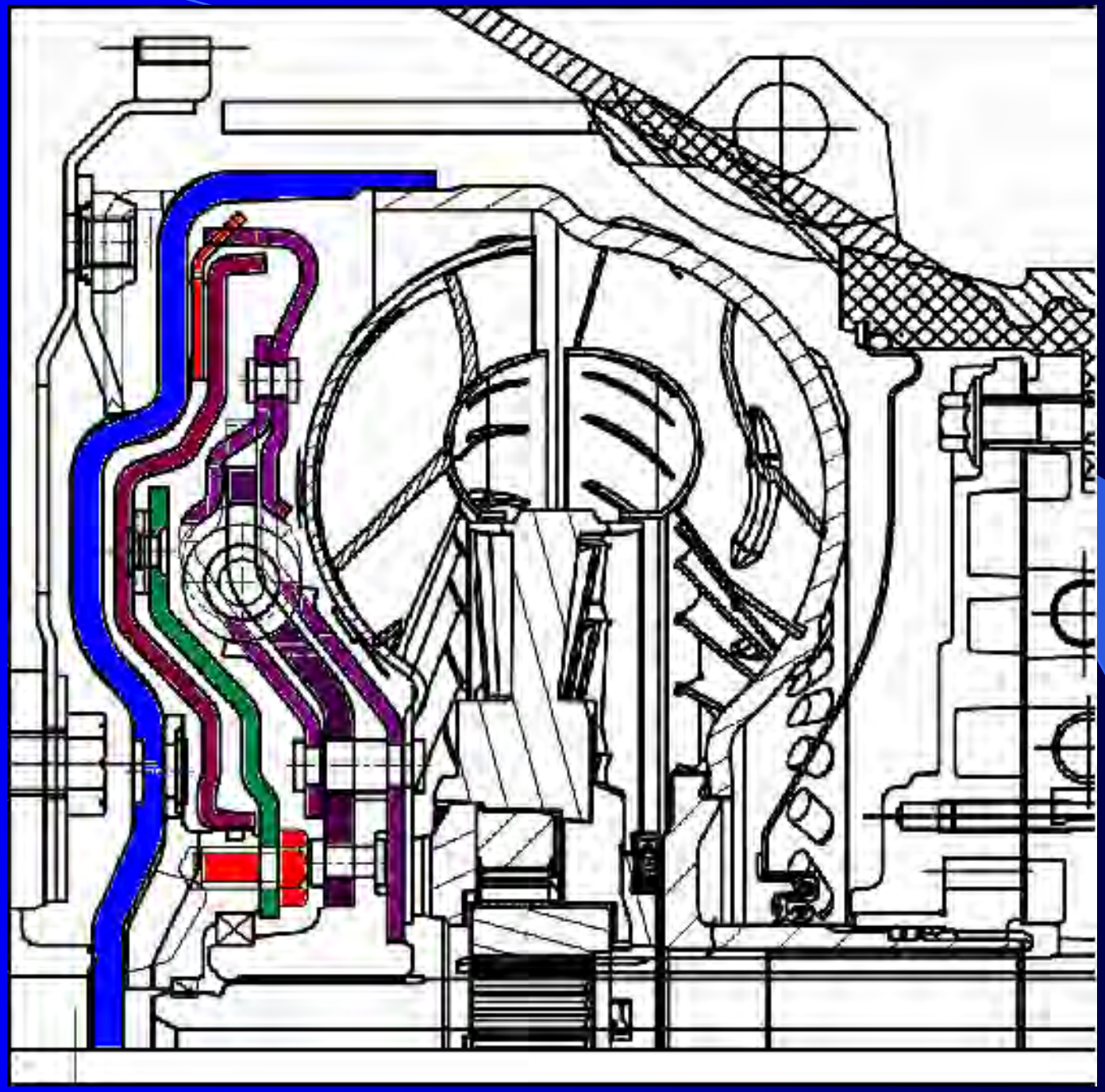
68RFE 6.7L TD Converter

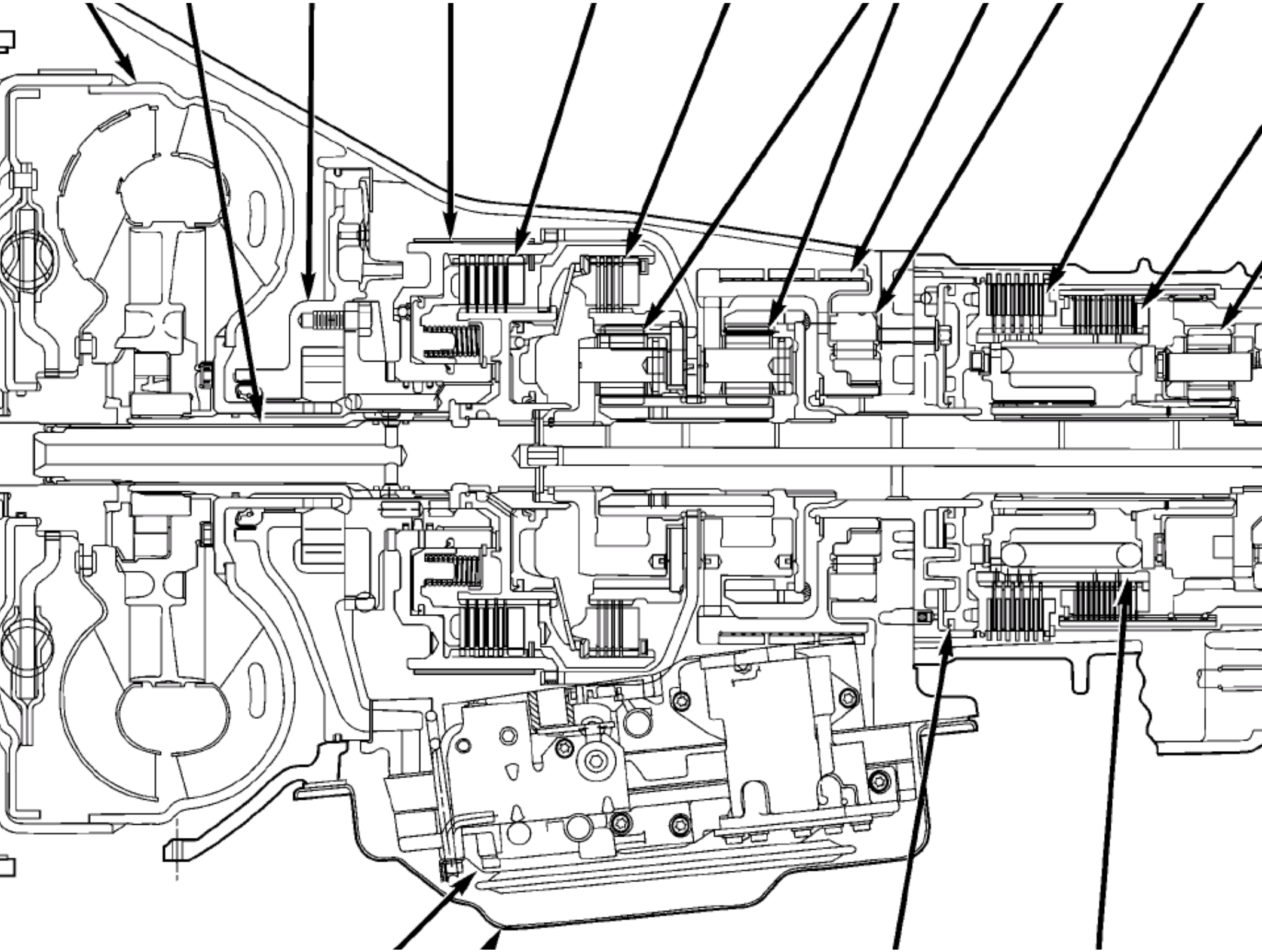
68RFE Impeller Hub



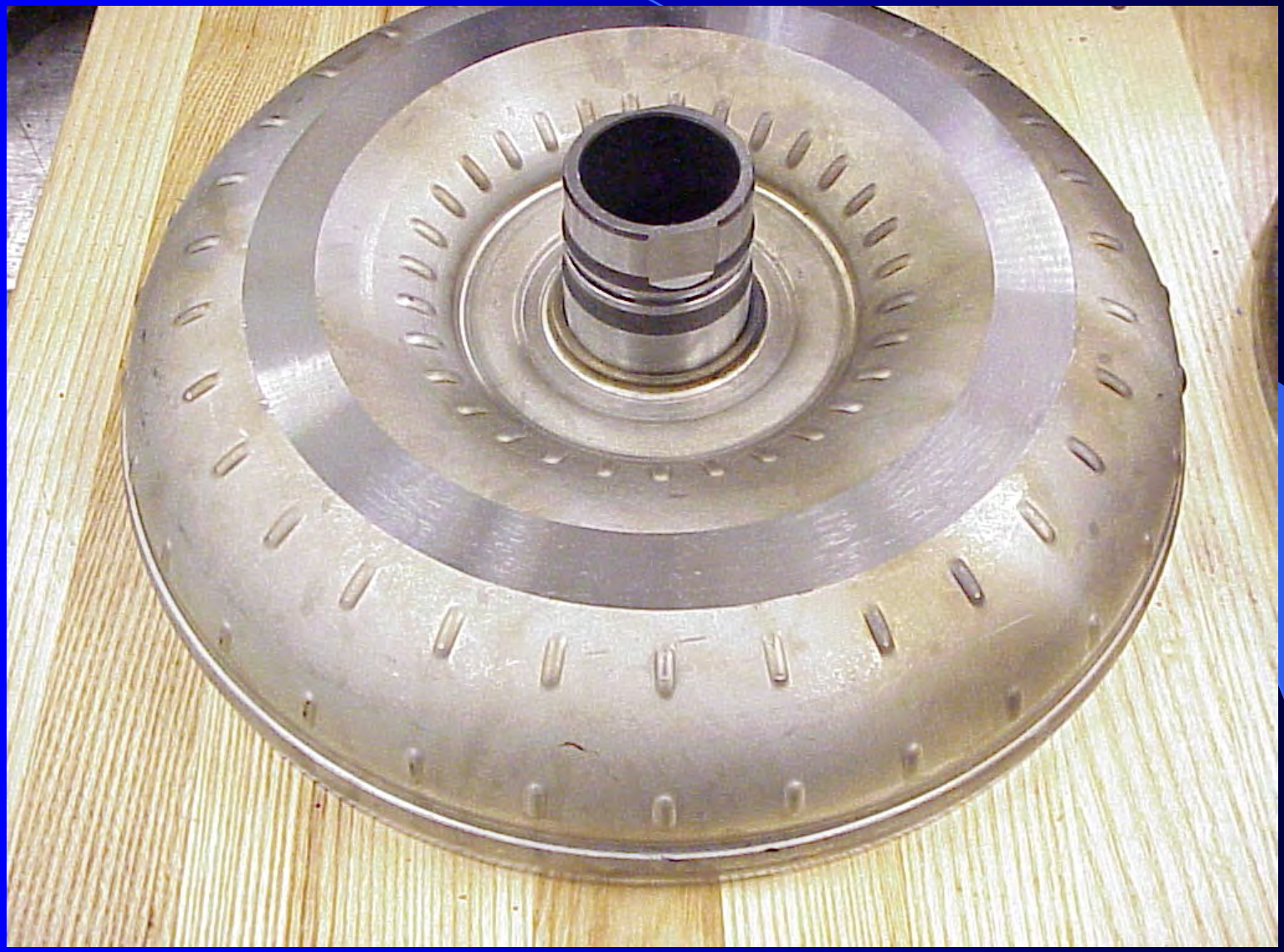
68RFE Lug Ring

Six Lugs Metric Thread M10 x 1.5



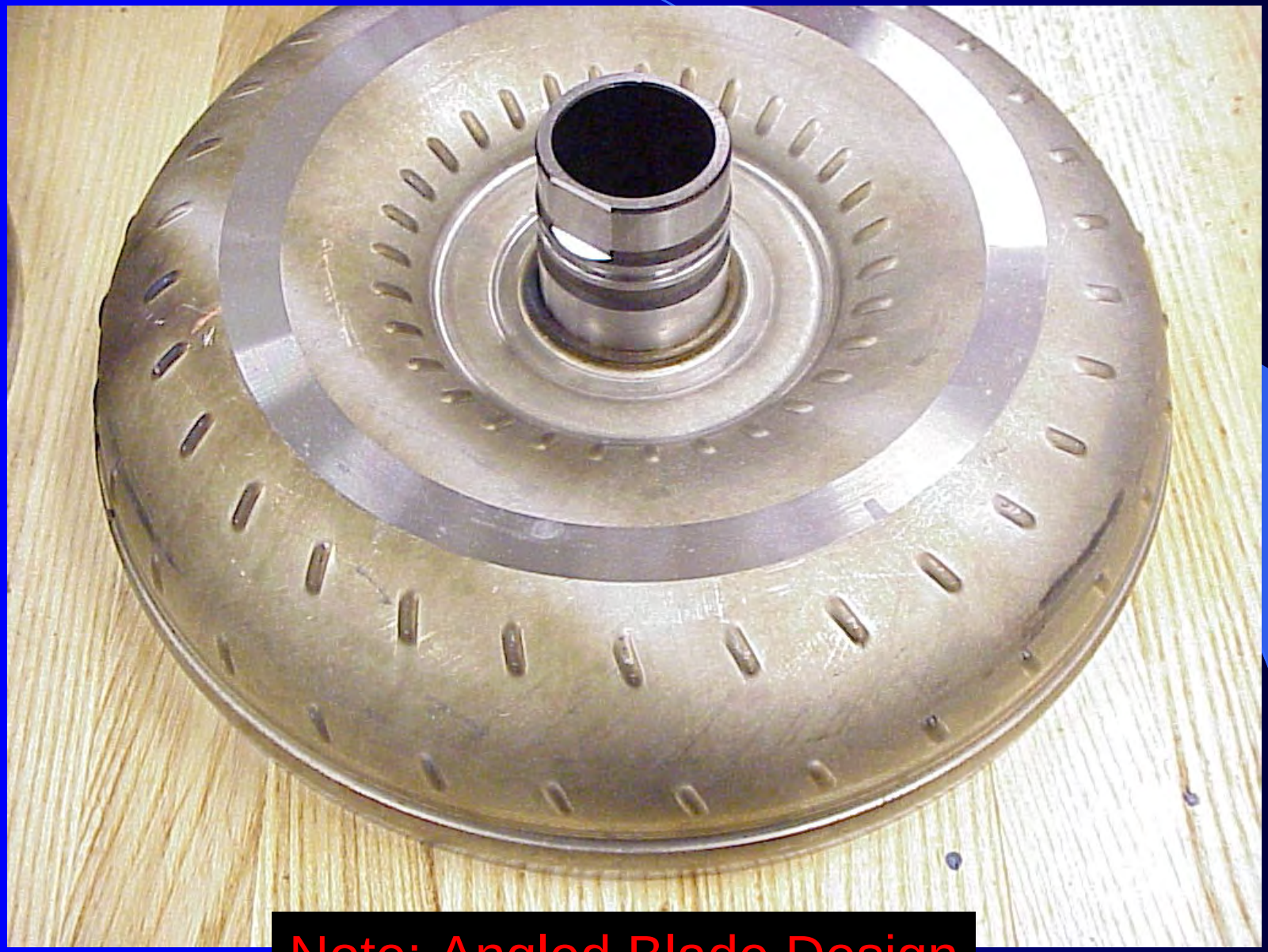


45RFE Impeller Original 144K



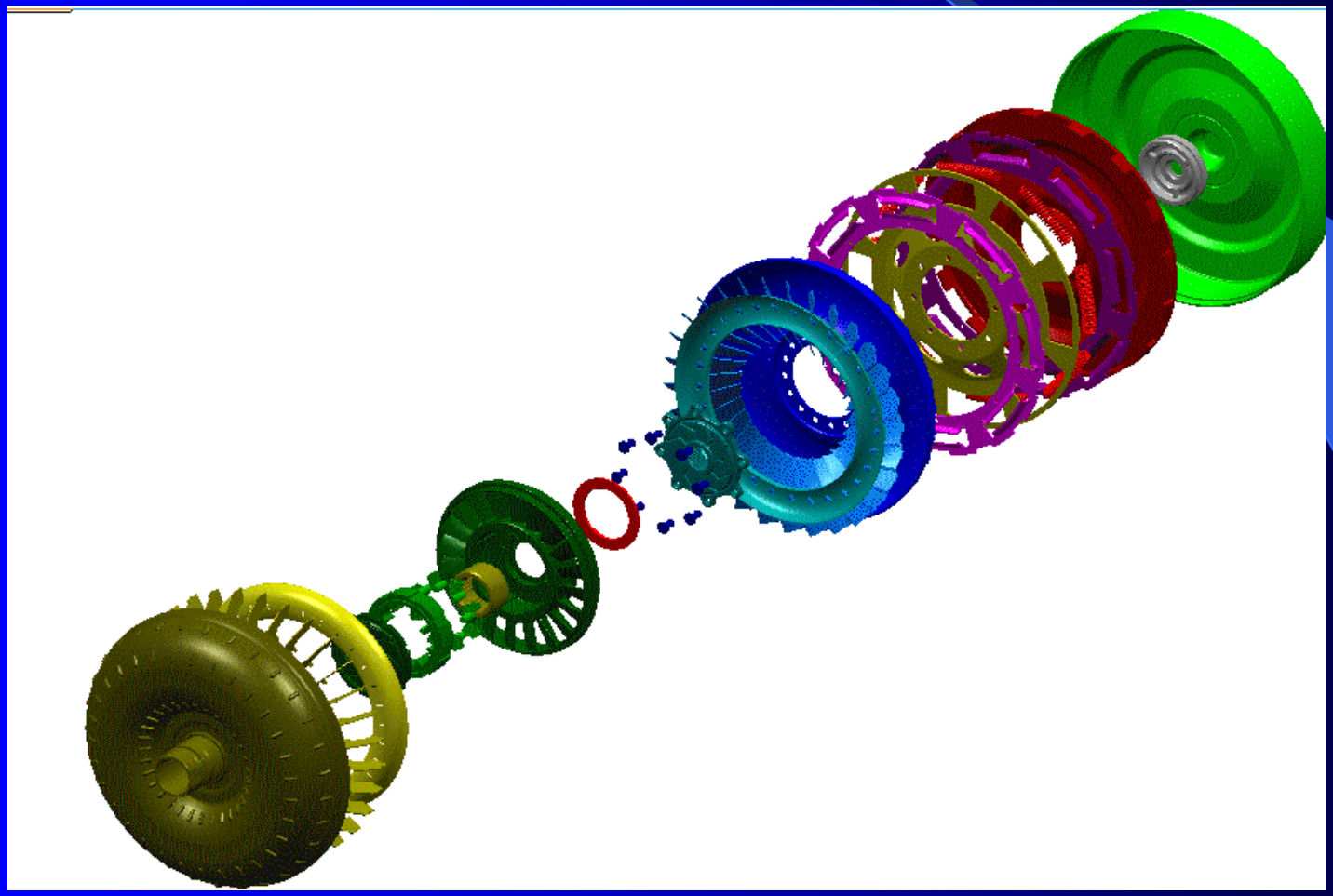
Note: Straight Blade Design

45RFE Impeller Newer Design 130K

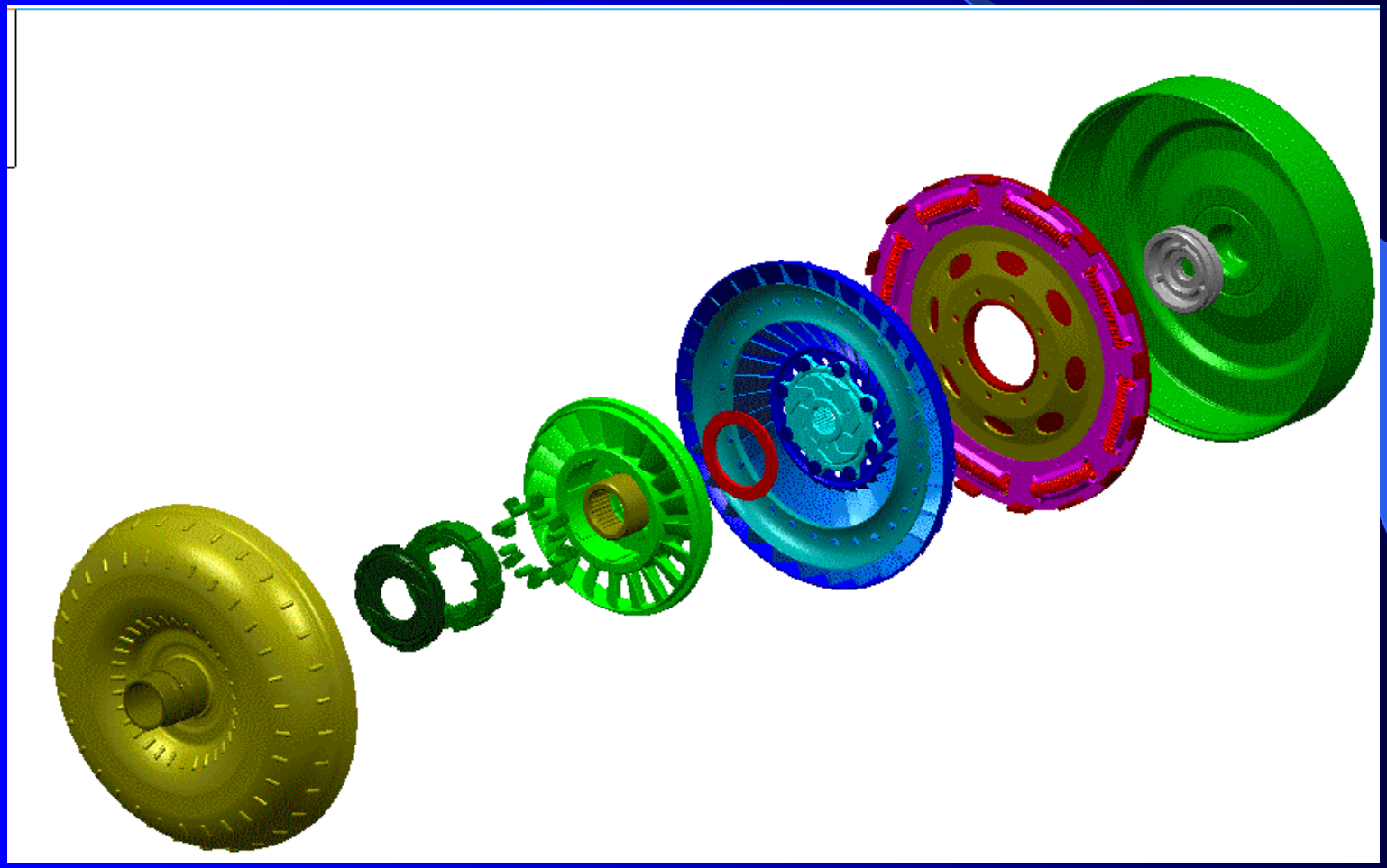


Note: Angled Blade Design

45RFE Torque Converter

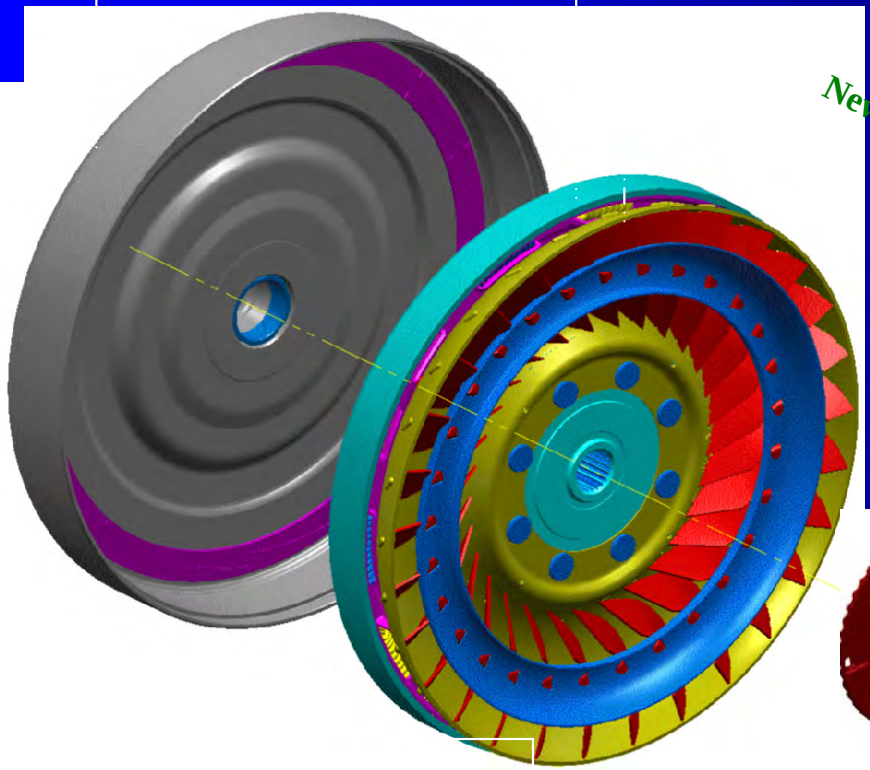


45RFE TMP Damper

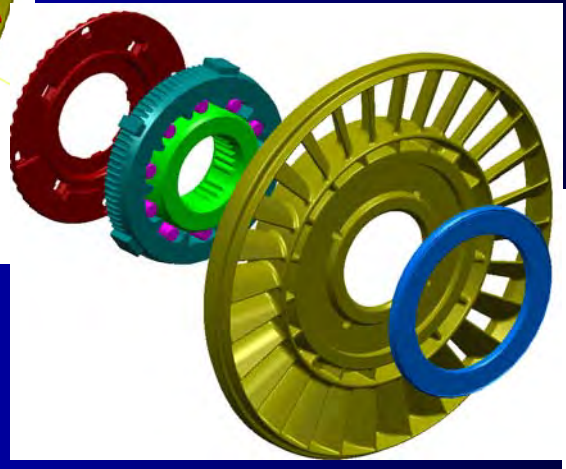


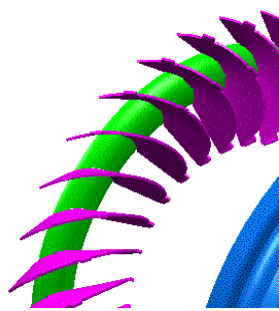
TORQUE CONVERTER DESIGN OVERVIEW

Carryover 10” Components

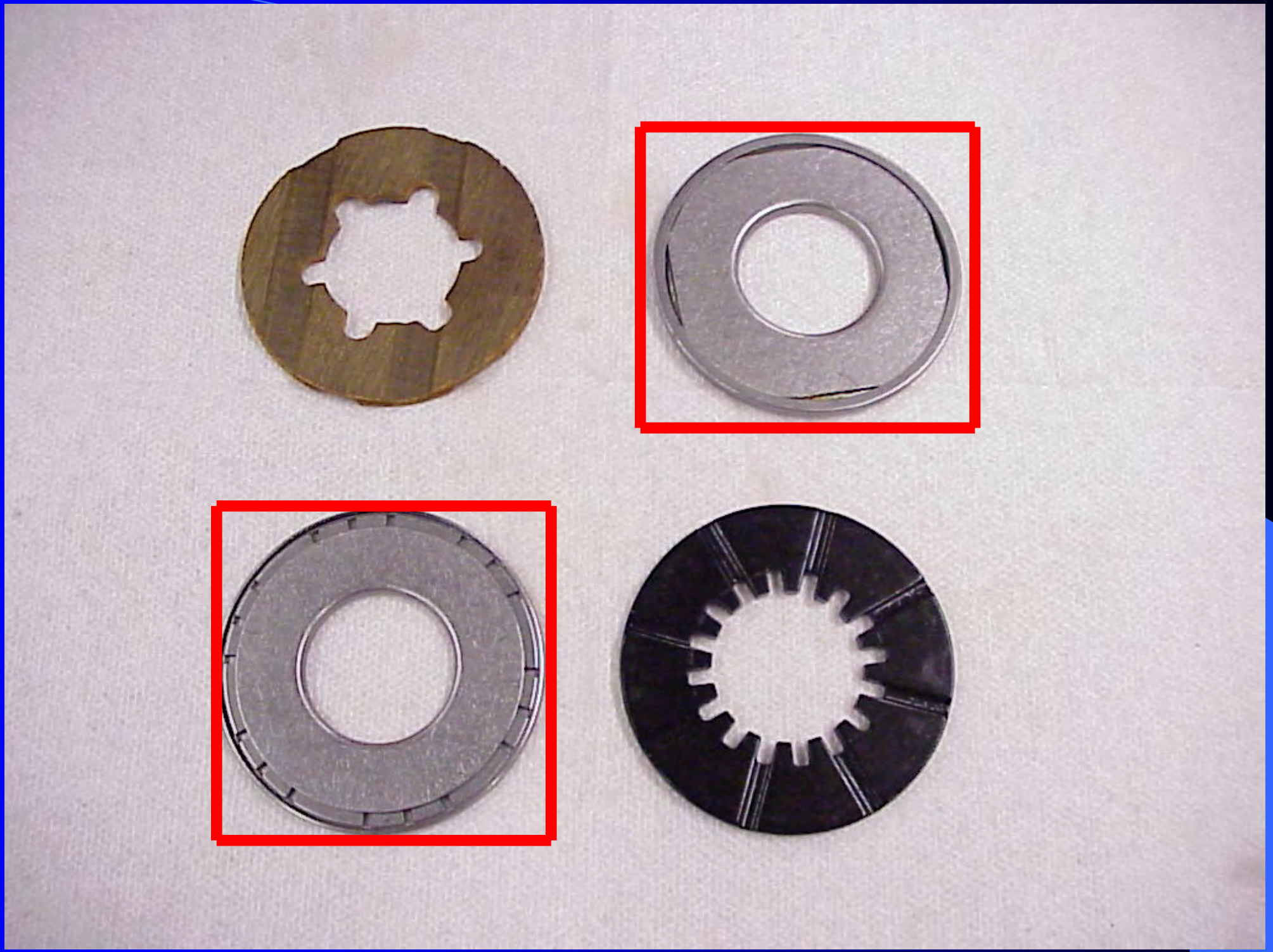


New Components - Unique to 248mm T/C Assembly



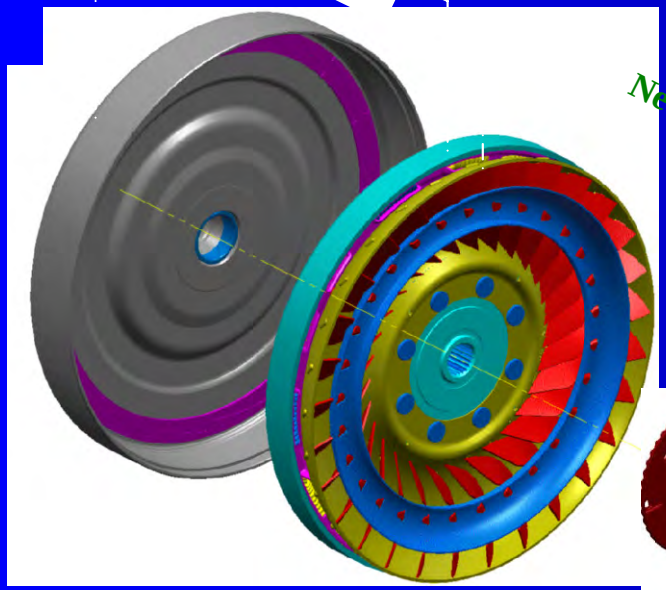


DESCRIPTION OF CHANGES

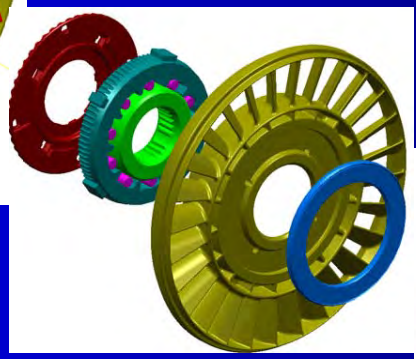


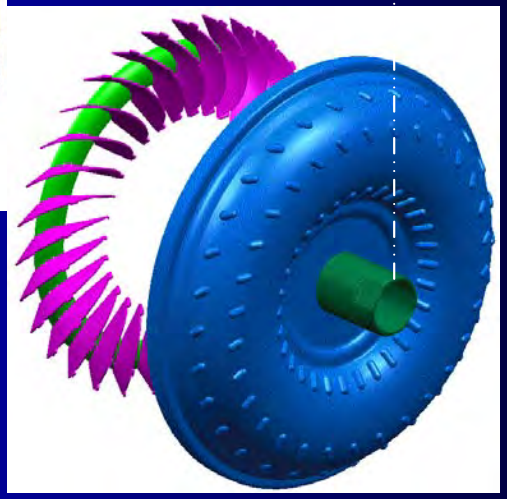
TORQUE CONVERTER DESIGN OVERVIEW

Carryover 10” Components



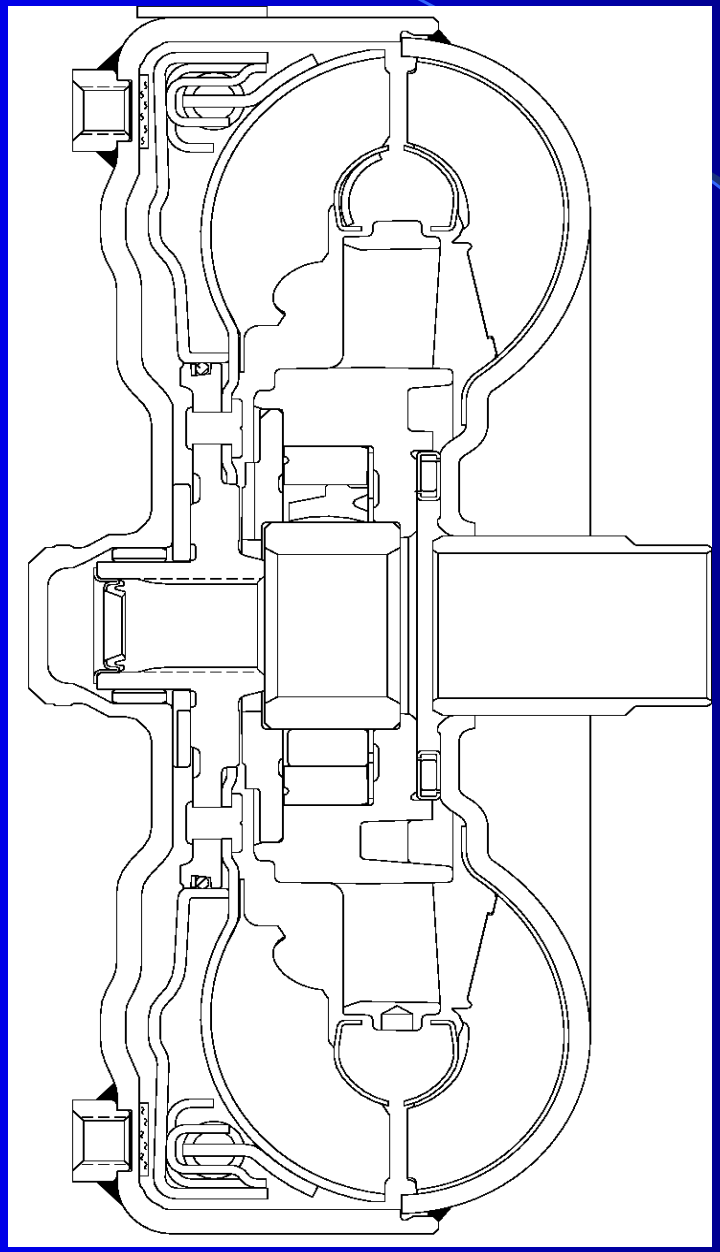
New Components - Unique to 248mm T/C Assembly





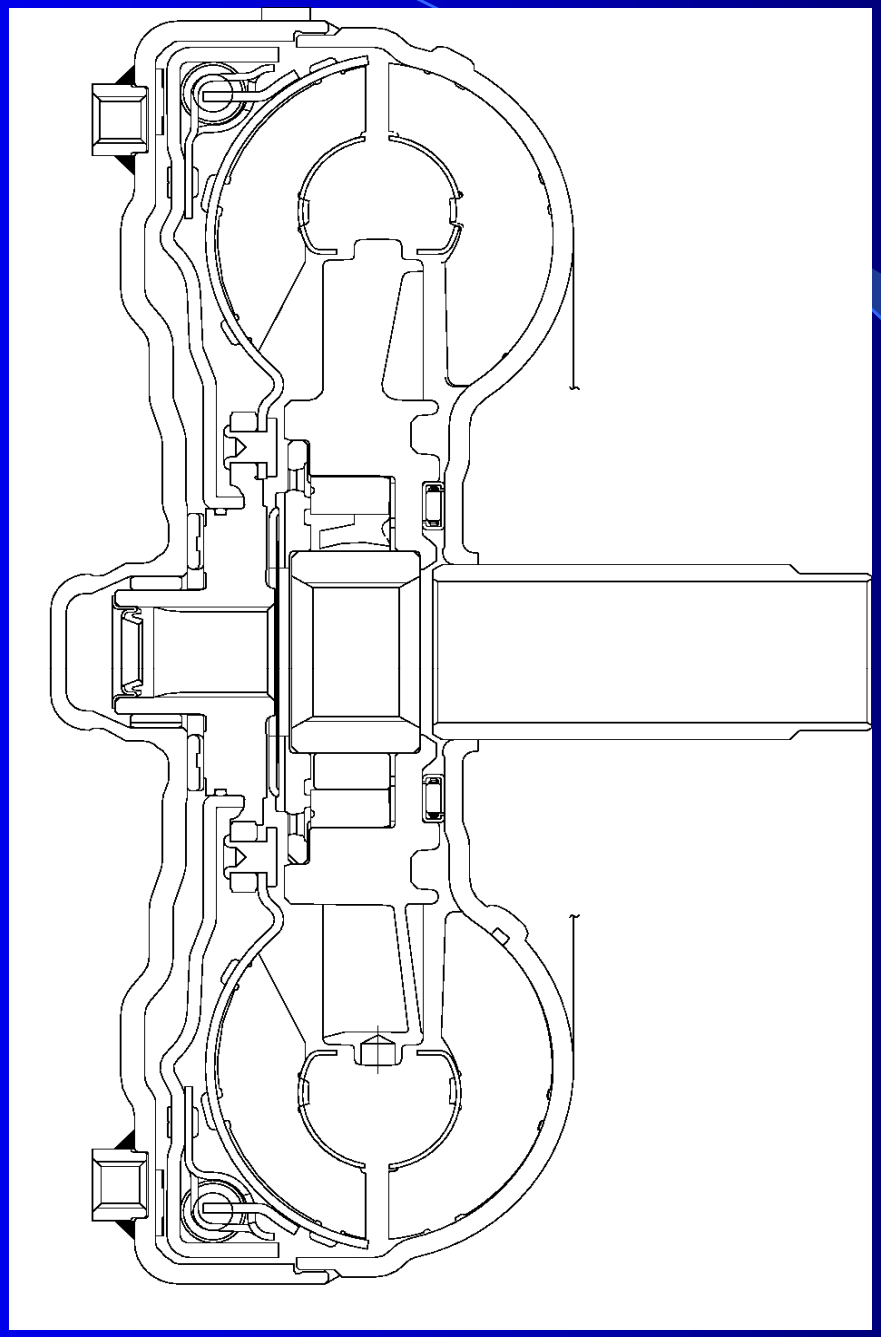
DESCRIPTION OF CHANGES

241mm T/C – 41TE



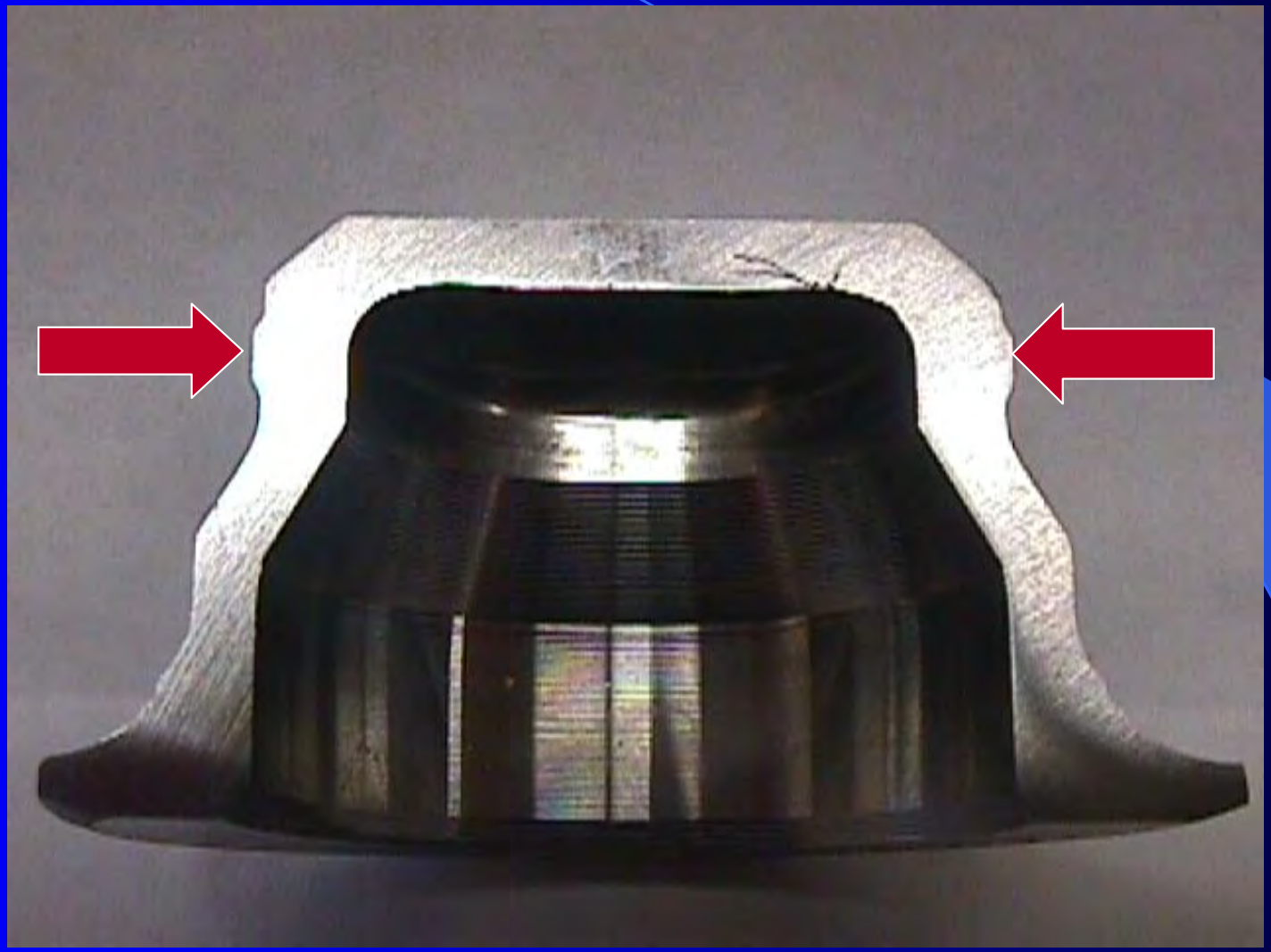
254MM 42RLE Torque Converter

254mm T/C – 42RLE

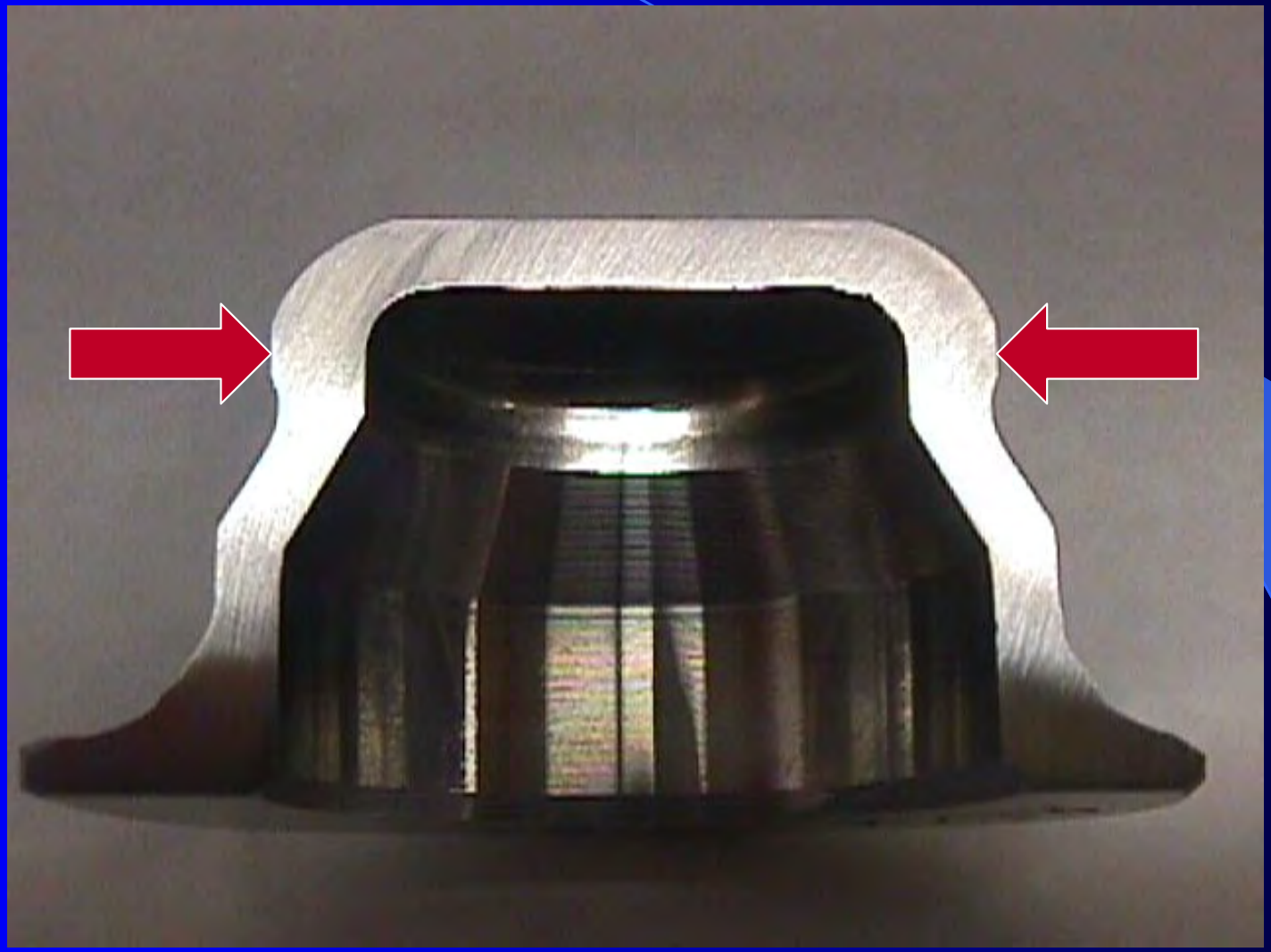


254 MM Front Cover

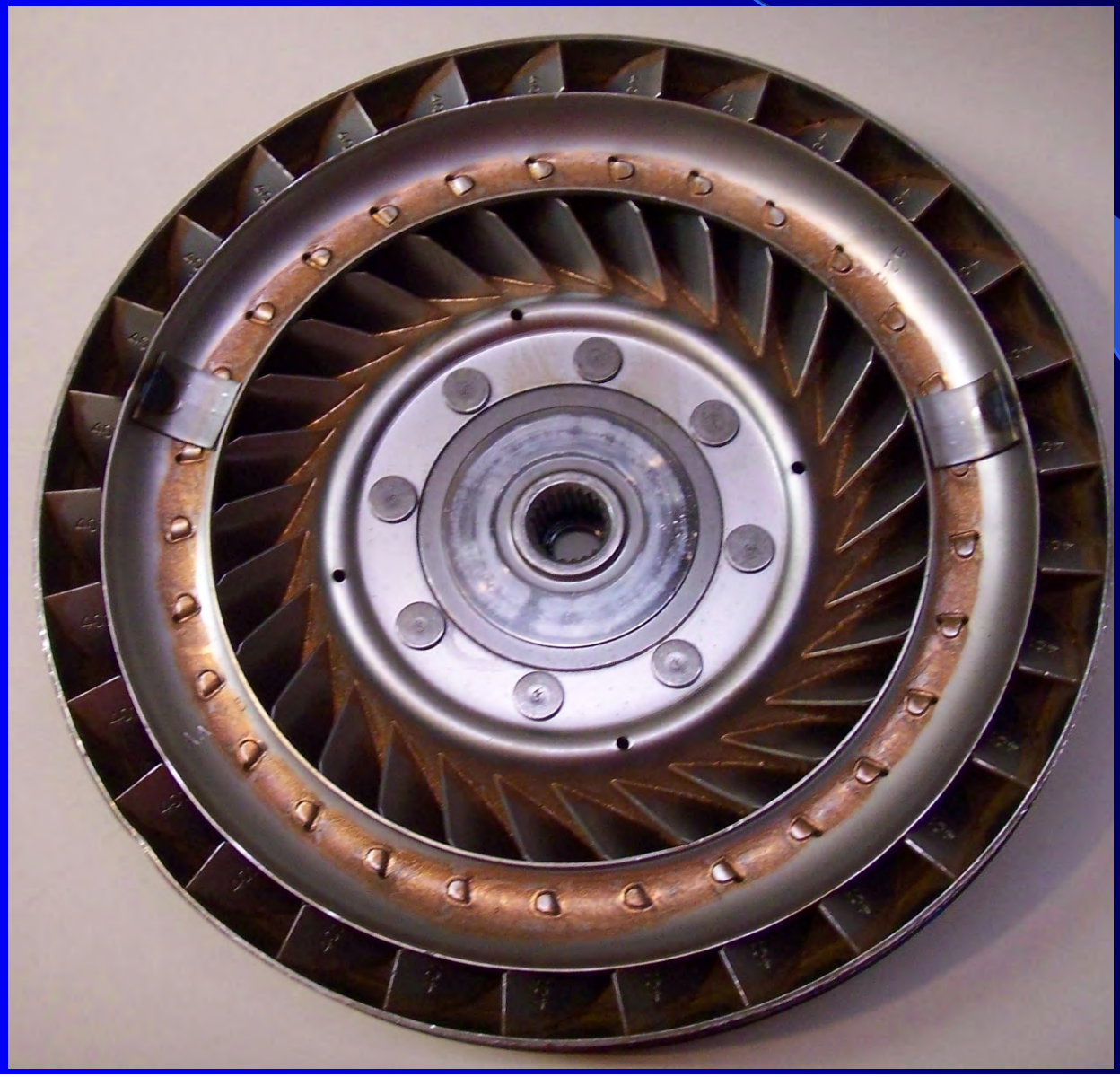
Original FWD Pilot Design



Newer FWD Pilot Design



254 MM Turbine



254 MM Turbine / Piston Assembly

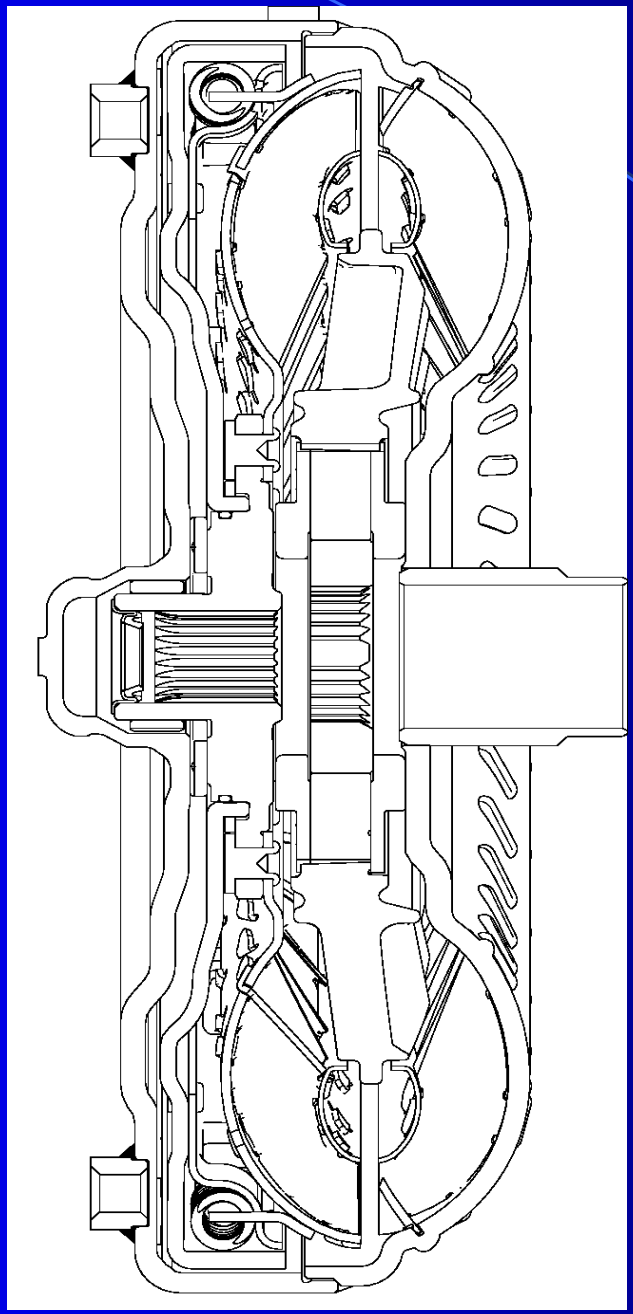
2006 MY Friction Material

2007 MY Friction Material

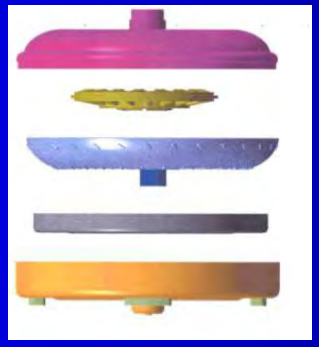
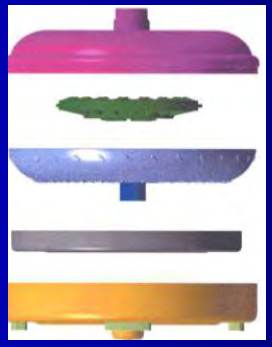
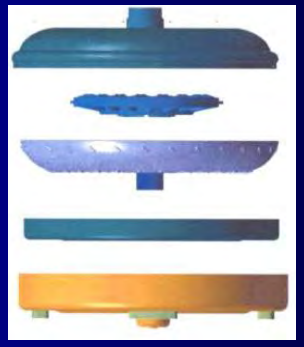
2008 MY Friction Material

248mm T/C – 62TE, 41TES

248mm T/C – 62TE, 41TES



248MM TORQUE CONVERTER OVERVIEW

Part Number	4753556AB	4753557AB	4753534AB
Engine Application	3.8,3.5	2.4L, I-4	2.7L, V-6
K-factor	160	190	220
STR	1.95	2.0	2.35
Torque Converter Assembly Complexity			

2007 MY 248MM Front Cover

2007 MY 248MM Lug

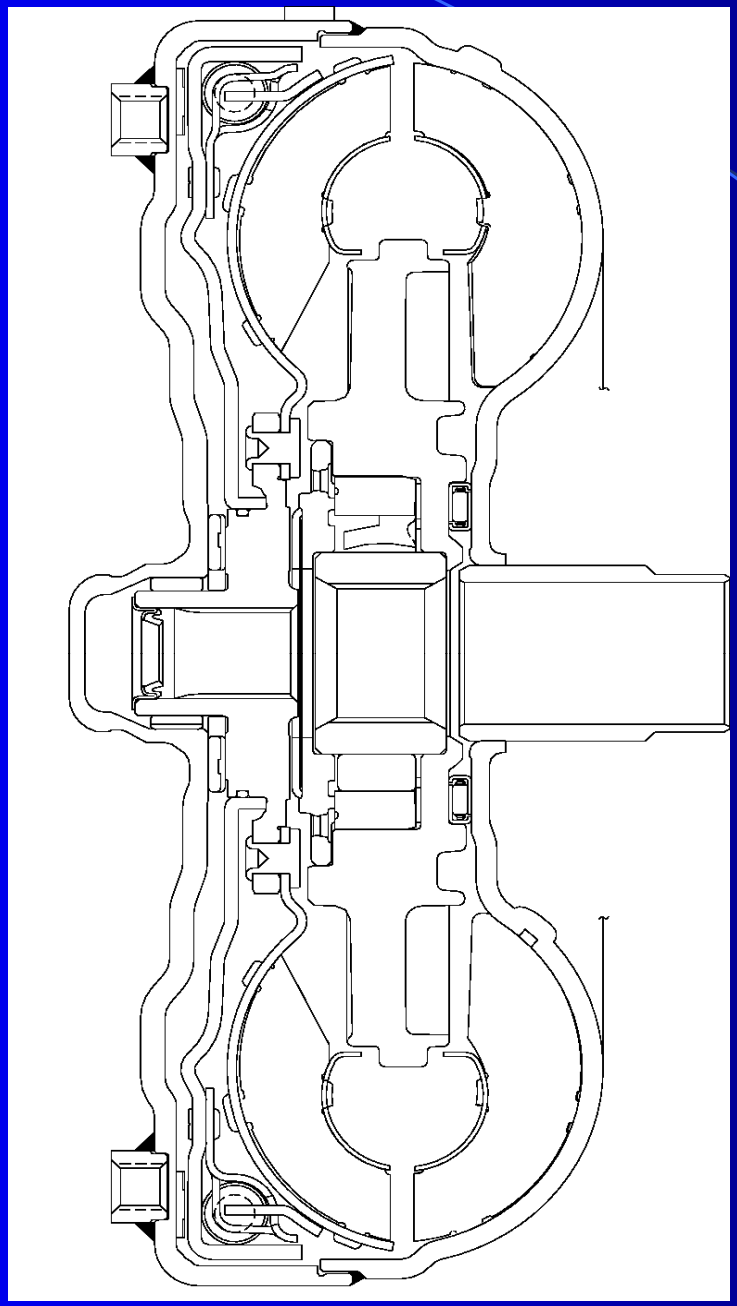
248 MM Turbine / Piston Assembly

248 MM Turbine

254 MM and 248 MM Turbines

254 MM and 248 MM Turbine

254mm T/C – 41TE

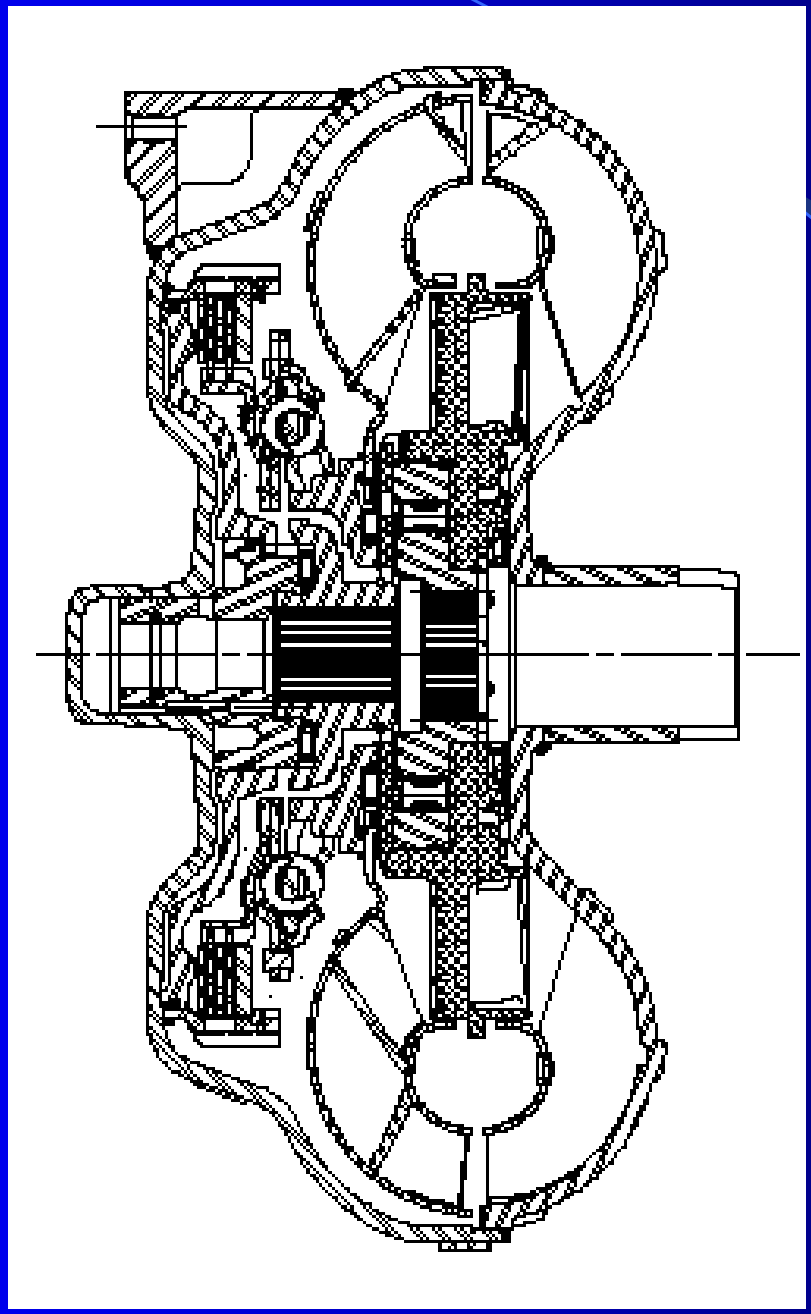


A580 Torque Converter

270mm Torque Converter Assembly Part Numbers per Model Years

	4752580AA 5.7L & 6.1L	4752580AB 5.7L & 6.1L	4752500AA 3.5L	4736489AA 3.5L & 6.1L	4736478AA 3.7L	4752603AA 3.7L	4752447AA 3.7L & 4.0L	4752450AA 2.8L diesel	A209 250 08 02 3.0L Diesel
2009		**135K** with turbine damper (28.5 Nm/deg) LX, LE, L2, LC, ZC, CT, LX_{SRT}, LE_{SRT}, LC_{SRT}, ZC_{SRT}		**175K** w/o turbine damper LX, LE, L2, WK_{SRT}, WH_{SRT}			**175K** with turbine damper (35 Nm/deg) WK, WH, XK, KA, CT	**175K** with turbine damper (15.5 & 83 Nm/deg) KA & KK	**174K** with turbine damper (10 & 75 Nm/deg) WH, XH, LE, CT
2008		**135K** with turbine damper (28.5 Nm/deg) LX, LE, L2, LX_{SRT}, LE_{SRT}, LC_{SRT}		**175K** w/o turbine damper LX, LE, L2, WK_{SRT}, WH_{SRT}			**175K** with turbine damper (35 Nm/deg) WK, WH, XK, KA	**175K** with turbine damper (15.5 & 83 Nm/deg) KA & KK	**174K** with turbine damper (10 & 75 Nm/deg) WH, WK, XH, LE
2007	Obsolete	**135K** with turbine damper (28.5 Nm/deg) LX, LE, L2, LX_{SRT}, LE_{SRT}		**175K** w/o turbine damper LX, LE, L2, WK_{SRT}, WH_{SRT}		Obsolete	**175K** with turbine damper (35 Nm/deg) WK, WH, XK, KA	**175K** with turbine damper (15.5 & 83 Nm/deg) KA	**174K** with turbine damper (10 & 75 Nm/deg) WH, WK, XH, LE
2006	**135K** with turbine damper (20 & 70 Nm/deg) LX, LE, LX_{SRT}, LE_{SRT}	Start of production	Obsolete	**175K** w/o turbine damper LX, LE, WK_{SRT}, WH_{SRT}	Obsolete	**175K** with turbine damper (20 & 70 Nm/deg) WK, XK	Start of production	Start of production	**174K** with turbine damper (10 & 75 Nm/deg) WH, XH, LE
2005	**135K** with turbine damper (20 & 70 Nm/deg) LX, LX_{SRT}		**150K** w/o turbine damper LX	Start of production	**150K** with turbine damper (20 & 70 Nm/deg) WK	Start of production			**174K** with turbine damper (10 & 75 Nm/deg) WH
2004	**135K** with turbine damper (20 & 70 Nm/deg) LX		Start of production		Start of production				Start of production
2003	Start of production								DCS supplied (∠ lug)

A580 Torque Converter



VEHICLE MODEL CODES

1981–1983 CHRYSLER, DODGE, PLYMOUTH

BODY CODE	SERIES	VEHICLE MODEL
E	E	600 (from 1983)
	T	New Yorker (from 1983)
J	S	Cordoba
	X	Mirada
	Y	Imperial
K	C	LeBaron, Town & Country
	D	Aries
	P	Reliant
	V	400
L	M	Horizon, Turismo
	Z	Omni, Charger, Rampage
M	B	Gran Fury
	F	Newport, 5th Avenue
	G	Diplomat
R	E	St. Regis (to 1981)
	J	Gran Fury (to 1981)
	T	Newport, New Yorker (to 1981)

1978–1980 CHRYSLER, DODGE, PLYMOUTH

BODY CODE	SERIES	VEHICLE MODEL
B	R	Fury (to 1978)
	S	Cordoba (to 1978)
	W	Monaco (to 1978)
	X	Charger, Magnum (to 1978)
C	C	Newport, New Yorker (to 1978)
F	H	Volare
	N	Aspen
J	S	Cordoba (from 1980)
	X	Mirada (from 1980)
L	M	Horizon, Turismo
	Z	Omni, Charger, Rampage
M	F	LeBaron
	G	Diplomat
R	E	St. Regis
	J	Gran Fury
	T	Newport, New Yorker

1984–1989 DODGE TRUCKS

BODY CODE	VEHICLE MODEL
B	Full Size Van & Wagon
BB	Premier
D1, 2, 3	Pickup (2WD)
D4	Sport Utility (2WD)
D5, 6, 7	Pickup (4WD)
D8	Sport Utility (4WD)
N1	Midsize Pickup (2WD)
N5	Midsize Pickup (4WD)
T	Cab & Chassis (2WD)

1988–2008 JEEP®/EAGLE PASSENGER CARS AND TRUCKS

BODY CODE	VEHICLE MODEL
B2	Summit
B8	Summit Wagon
B9	Summit
BB	Premier
BD	Talon
BZ	Summit, Summit Wagon
HG	Aspen
JK	Wrangler Unlimited
KJ/KK	Liberty
LH	Vision
MJ	Comanche (RWD & 4WD)
MK	Compass, Patriot
PM	Caliber
SJ	Grand Wagoneer
TJ	Wrangler
WJ	Grand Cherokee
WK	Grand Cherokee
XJ	Cherokee (RWD & 4WD)
XK	Commander
YJ	Wrangler
ZJ	Grand Cherokee

Design of Experiments - DOE

Impeller Hub Run Out

1. Weld size
2. Number of tack welds
3. Size of tack welds

3 Factors
2 Positions

Requires 8 Tests

This is known as a
Full Factorial Design

1	1	1
1	1	2
1	2	1
1	2	2
2	1	1
2	1	2
2	2	1
2	2	2

There Is A Better Way !

An Orthogonal Array

For this Experiment we would use a L4 array

This allows 4 Tests to determine the same results

4 Tests vs. 8 Tests

1	1	1
1	2	2
2	1	2
2	2	1

This works because an orthogonal array is balanced meaning that interaction are balanced between columns

What if you want to test more factors?

Seven factors would lead to **128** tests in a full factorial experiment!

An Orthogonal Array known as a L8 will give you the results required in 8 tests!

HOW DO YOU DO THIS ?

WHERE DO YOU START ?

WHO DO YOU CALL ?

Option 4 LLC

Engineering Consultants

Lou Darling

Lou@option4llc.com

Option 4 LLC

Engineering Consultants

Lou Darling

Lou@option4llc.com