

| DWG # | DESCRIPTION |
|----------|---|
| 25FEB99 | 10 MOST FREQUENTLY ASKED QUESTIONS |
| 18MAR99 | EMC SUPERCHARGER SIZE TABLE |
| 17JUN99 | EMC SUPERCHARGER REVISION LIST |
| BLWTL07A | COMPRESSION RATIO CALCULATIONS WITH BOOST |
| BLWTL05B | COMPRESSION RATIO CALCULATIONS FOR SHIM |
| BLWMN22C | TYPICAL SUPERCHARGER & MOTOR CONFIGURATION |
| BLWBY04A | PRESSURE BYPASS PLUG & SHIM |
| BLWMN41E | INTAKE MANIFOLD DIM OF VARIOUS ENGINES |
| BLWCB34A | PLENUM MOUNTING ASSEMBLY |
| BLWMN22B | GEAR BOX & OIL RESERVOIR |
| BLWBK29C | MOUNT SUPERCHARGER TO HEAD ASSEM |
| BLWDIM1A | ENGINE & SPACER DIMENSIONS |
| BLWBK12B | SUPERCHARGER TO CRANKCASE MTG BKT |
| BLWBK47A | S&S CASING CENTER BOLT ASSEM |
| BLWBK43D | S&S CASING CENTER DIM |
| BLWNT33A | DRIVE SEAL SHIM PROCEDURE |
| BLWNT64B | V-TWIN DRIVE NUT ARRAY |
| BLWNT25A | 80 EVD MOTOR PRIMARY WITH 80 SUPERCHARGER |
| BLWNT26B | 80 EVD MOTOR PRIMARY WITH 80-93 SUPERCHARGER |
| BLWNT27B | 80 EVD MOTOR PRIMARY WITH 107 SUPERCHARGER |
| BLWNT30B | .5 OFFSET PRIMARY FOR 2.5"-4.0" SUPERCHARGER |
| BLWNT31B | .5 OFFSET PRIMARY FOR 2.5"-4.0" SUPERCHARGER |
| BLWNT32B | .5 OFFSET PRIMARY FOR 2.5"-4.5" SUPERCHARGER |
| BLWNT20C | 3" OPEN PRIMARY WITH 2.5"-3.0" 67-80 SUPERCHARGER |
| BLWNT21B | 3" OPEN PRIMARY WITH 3.5" - 93 SUPERCHARGER |
| BLWNT22B | 3" OPEN PRIMARY WITH 4.0" - 107 SUPERCHARGER |

TECHNICAL DATA

DEALERS ONLY

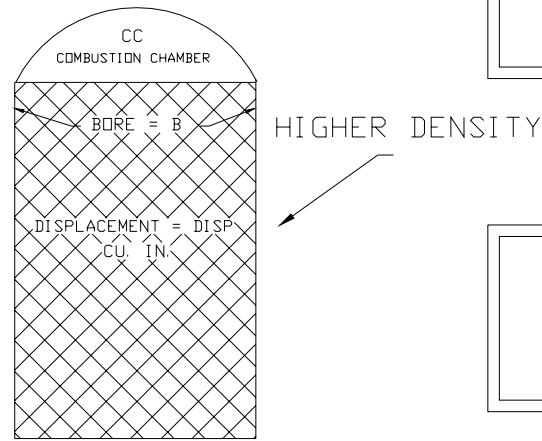
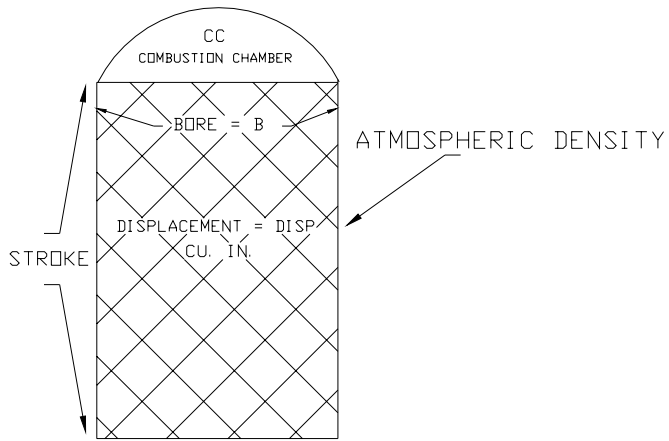
11 OCT 99

THE FOLLOWING TECHNICAL INFORMATION,
DRAWINGS AND RELATED DETAIL DRAWINGS ARE
THE PROPERTY OF EMC EAGLE MOTOR COMPANY

PATENTS PENDING

| | | | | |
|------------------------|-------------|-----------|---|--------------------|
| MATERIAL | | | EMC Eagle Motor Company Cincinnati Oh 45242 | |
| FRAC 1/64 | DEC .002 | ANG XX | DEALER DRAWINGS | |
| DRAWN FWB 29 JAN 99 | | | SHEET NUMBER 1 OF 1 | DWG # BLWTL06 H |
| CHECKED | | | | REV |

NEW COMPRESSION RATIO (NCR) AFTER SUPERCHARGING TO 10 PSI



FORMULA

$$\text{PRESSURE RATIO (PR)} = \frac{\text{ATM} + \text{BOOST}}{\text{ATM}}$$

$$\text{NCR} = \text{PR} * \text{OCR}$$

EXAMPLE

$$\text{PR @ 10 LB BOOST} = \frac{14.7 + 10}{14.7}$$

$$\text{NCR} = 1.68 * 10 = 16.8$$

$$\text{OLD COMP RATIO (OCR)} = \frac{\text{DISP}}{\text{CC}}$$

$$\text{EXAMPLE} = \frac{10}{1}$$

$$\text{NEW COMP RATIO} = \text{NCR}$$

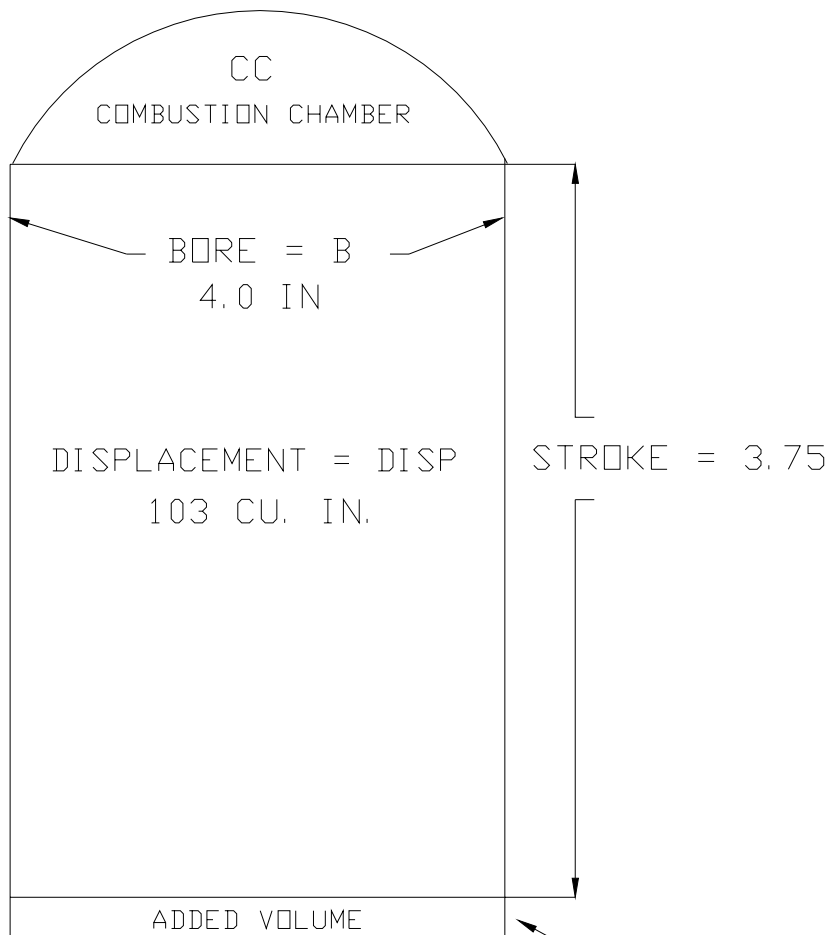
BLWTL05A 29JAN99

| | | | | | |
|-------------|------|-----|---|--|-----------|
| MATERIAL | | | EMC Eagle Motor Company Cincinnati Oh 45242 | | |
| FRAC | DEC | ANG | | | |
| 1/64 | .002 | XX | DRAWN | | |
| CHECKED | | | SHEET NUMBER | | DWG # |
| FWB 29JAN99 | | | 1 OF 1 | | BLWTL07 A |
| | | | | | REV |
| | | | | | A |

CYLINDER SPACER FOR COMP RATIO CHANGE

BLWTL05B 29JAN99

START COMP RATIO = CR1
 END COMP RATIO = CR2



FORMULA

$$\text{HEIGHT CHANGE} = \text{STROKE} * \left(\frac{1}{\text{CR2}} - \frac{1}{\text{CR1}} \right)$$

EXAMPLE

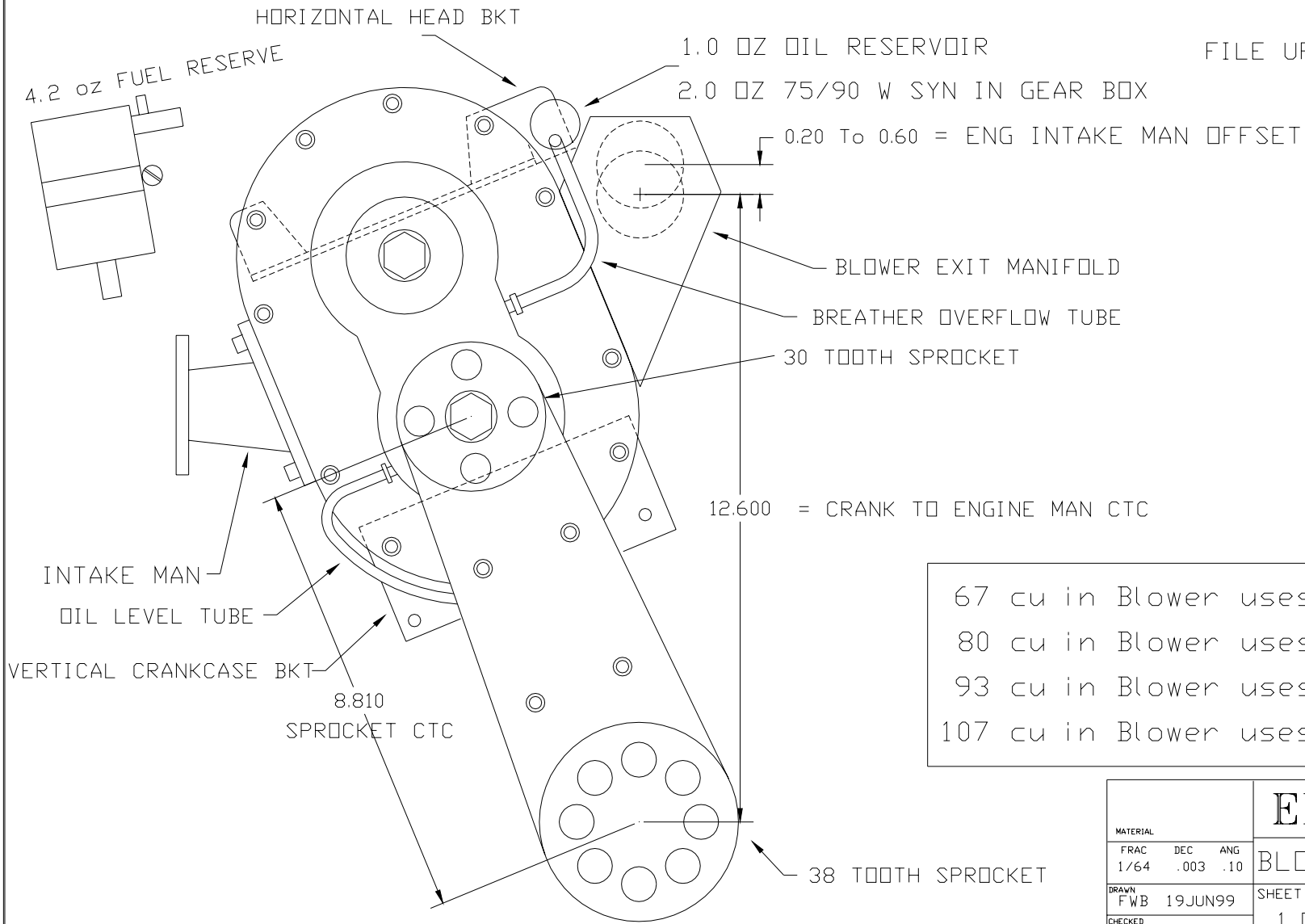
$$\text{CHANGE} = .041 = 3.75 * \left(\frac{1}{9} - \frac{1}{10} \right)$$

ADD SPACER = AS
 HEIGHT CHANGE

| | | | | |
|--------------|-------------|-----------|---|---------------------------|
| MATERIAL | | | EMC Eagle Motor Company Cincinnati Oh 45242 | |
| FRAC 1/64 | DEC .002 | ANG XX | COMP RATIO SPACER | |
| DRAWN FWB | 29JAN99 | CHECKED | SHEET NUMBER 1 OF 1 | DWG # BLWTL05 B REV |

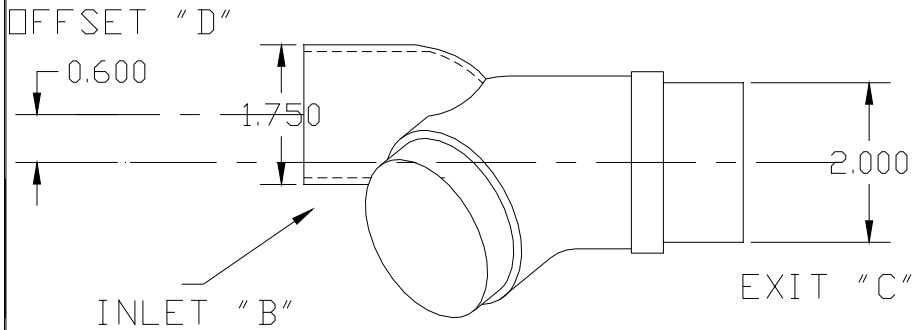
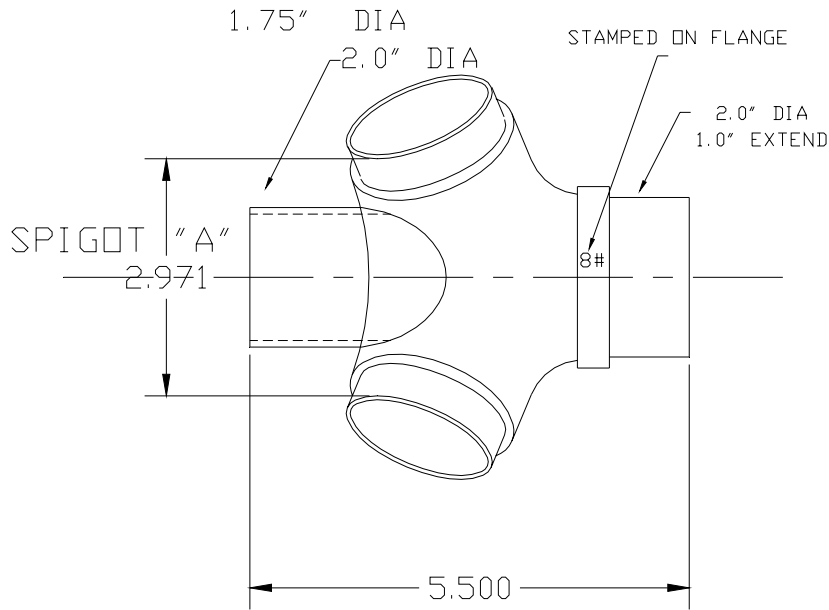
TYPICAL TORQUE MULTIPLIER CONFIGURATION

FILE UPDATED: 26AUG99



67 cu in Blower uses 2.5 In Rotors
 80 cu in Blower uses 3.0 in Rotors
 93 cu in Blower uses 3.5 in Rotors
 107 cu in Blower uses 4.0 in Rotors

| | | | | | |
|----------|------|-----|---|-------------------------------|-----------|
| MATERIAL | | | EMC Eagle Motor Company Cincinnati Oh 45242 | BLOWER & MOTOR DIM | |
| FRAC | DEC | ANG | | | |
| 1/64 | .003 | .10 | SHEET NUMBER | | DWG # |
| DRAWN | | | 1 OF 1 | | REV |
| CHECKED | | | | | BLWMN22 E |



← TO BLOWER

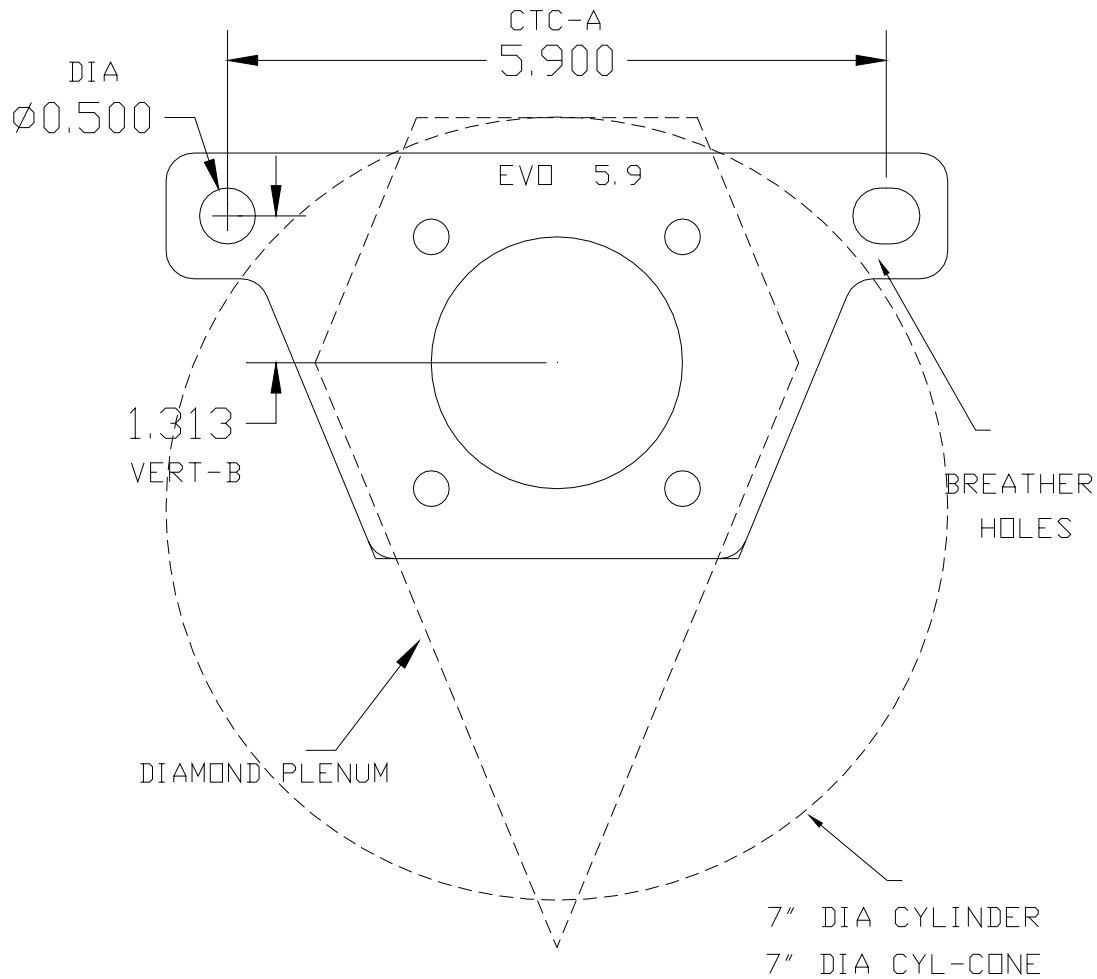
→ TO PLENUM

| SPIGOT MIN "A" | INLET IN "B" | EXIT "C" | OFFSET "D" |
|------------------------------|--------------|----------|------------|
| 883 & 1200 SPORTSTER 2.40" | 1.75 | 2.00 | 0.50 |
| #8 = 80 EVO H/D = 3.10 | 1.75 | 2.00 | 0.20 |
| #9 = 88 TWIN CAM H/D = 3.15 | 1.75 | 2.00 | 0.20 |
| #9 = 94 TWIN CAM H/D = 3.15 | 2.00 | 2.00 | 0.20 |
| #5 = 100 CU IN S&S = 2.95 | 1.75 | 2.00 | 0.60 |
| #6 = 103 CU IN S&S = 3.00 | 2.00 | 2.00 | 0.40 |
| #7 = 113 CU IN S&S = 3.05 | 2.00 | 2.00 | 0.30 |
| #6 = 96 CU IN S&S = 3.00 | 1.75 | 2.00 | 0.20 |
| #6 = 88 CU IN S&S = 3.00 | 1.75 | 2.00 | 0.20 |
| #5 = 120-SHORT MERCH = 2.95 | 2.00 | 2.00 | 0.60 |
| #8 = 120-LONG MERCH = 3.15 | 2.00 | 2.00 | 0.20 |
| #12 = 131 CU IN MERCH = 3.35 | 2.00 | 2.00 | 0.00 |

| | | | | |
|---|--|--|--------------------------------|--|
| <p>EMC Eagle Motor Company Cincinnati Oh 45242</p> | | | <p>INTAKE MANIFOLD DIM</p> | |
| <p>MATERIAL FRAC DEC ANG 1/64 .003 .10</p> | | | <p>SHEET NUMBER 1 OF 2</p> | |
| <p>DRAWN FWB 31AUG98</p> | | | <p>DWG # BLWMN41 E</p> | |
| <p>CHECKED</p> | | | <p>REV</p> | |

LAST CHANGE: 23JUL99

PLENUM MOUNTING PLATE

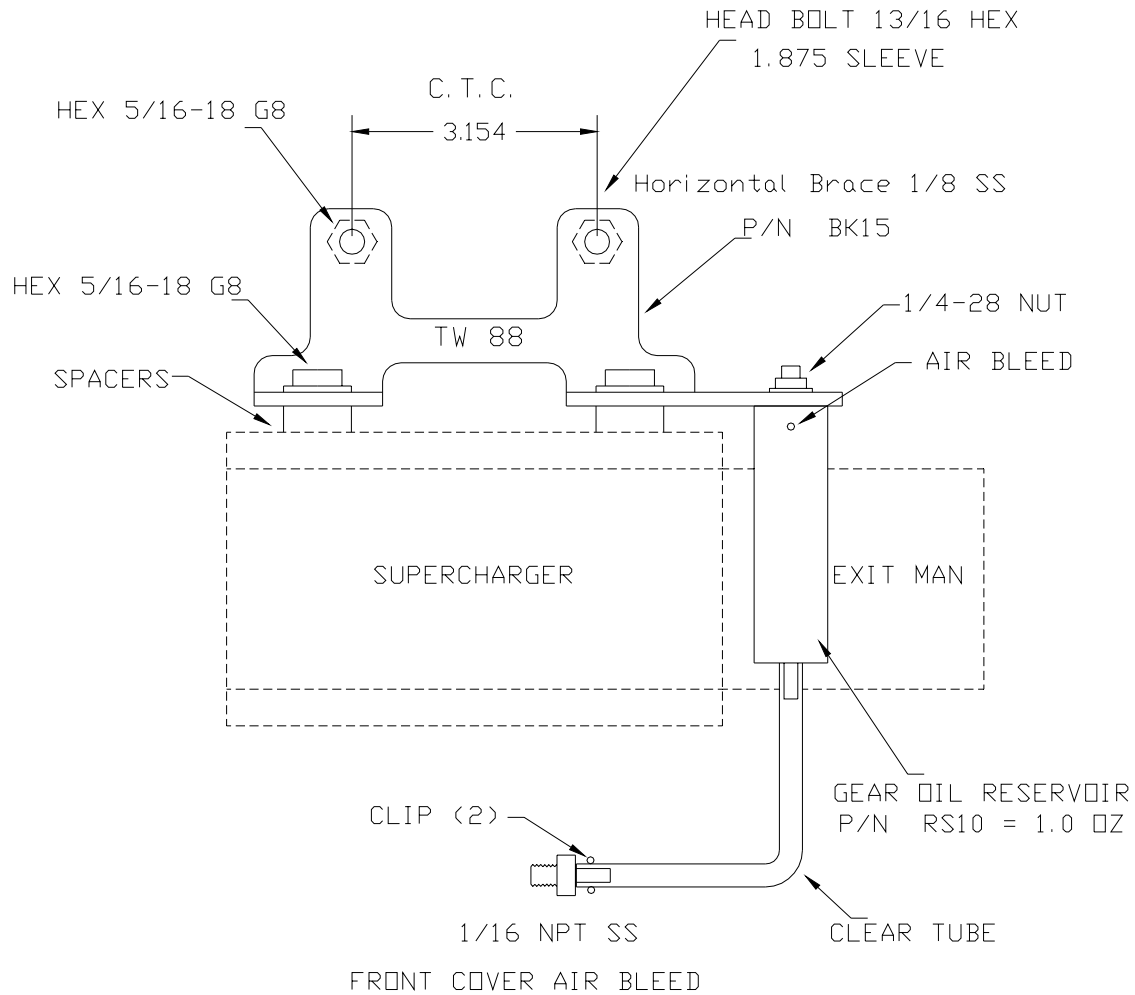


| MOTOR TYPE | CTC-A | VERT-B | DIA |
|----------------|-------|--------|------|
| 883 SPORTSTER | 5.20 | 1.00 | 0.50 |
| EVO 80 CU IN | 5.90 | 1.31 | 0.50 |
| TWIN CAM 88-95 | 5.90 | 1.31 | 0.38 |
| S&S 96 CU IN | 5.90 | 1.31 | 0.50 |
| S&S 100 CU IN | 5.70 | 1.31 | 0.50 |
| S&S 107 CU IN | 5.90 | 1.31 | 0.50 |
| S&S 113 CU IN | 5.90 | 1.31 | 0.50 |
| MERCH 131 | 6.20 | 1.31 | 0.50 |

MATERIAL: 10 GAUGE .140"

| | | | | |
|----------------------|------|-----|---|------------------|
| 10 Ga SS 304 | | | EMC Eagle Motor Company Cincinnati Oh 45242 | |
| MATERIAL | | | PLENUM MTG PLATE | |
| FRAC | DEC | ANG | SHEET NUMBER | DWG # |
| 1/64 | .003 | .10 | | |
| DRAWN FWB 19jun99 | | | 1 OF 2 | REV BLWCB34 B |
| CHECKED | | | | |

HORIZONTAL BLW MOUNT & OIL RESERVOIR



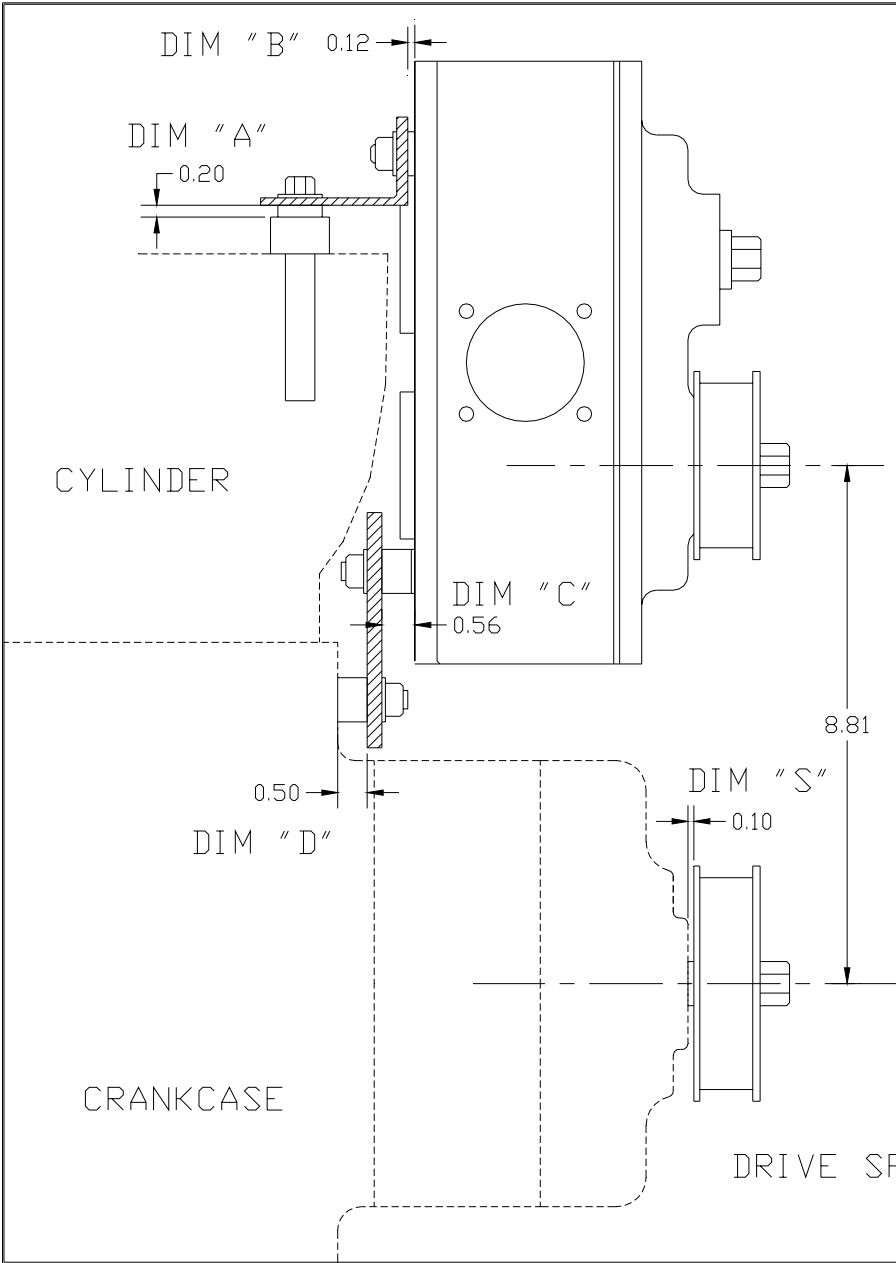
23JUL99

| ENGINE HEAD | HD BLT C.T.C. | HEAD BOLT |
|-------------------|---------------|------------|
| EVO 80 CU IN H/D | 2.933 Inch | 1.875 INCH |
| EVO 883 H/D | 2.933 Inch | 1.875 INCH |
| TWIN CAM 88 CU IN | 3.154 Inch | 1.875 INCH |
| 100,103 S&S | 3.220 Inch | 1.875 INCH |
| 113 S&S | 3.220 Inch | 2.375 INCH |
| 4.5 " BORE MERCH | 3.600 Inch | 1.875 INCH |
| STD 4.25 SIMMS | 3.640 Inch | 1.875 INCH |
| STD-4.0 | 3.050 Inch | 1.875 INCH |

Head Bolt C.T.C. Engine Primary Side

| | | | | |
|---------------------------------|-------------|-----------|---|---------------------------|
| MATERIAL | | | EMC Eagle Motor Company Inc Cincinnati Oh 45242 | |
| FRAC 1/64 | DEC .002 | ANG XX | BLOWER TO HEAD ASSEM | |
| DRAWN FWB 24MAY99 CHECKED | | | SHEET NUMBER 1 OF 1 | DWG # BLWBK29 C REV |

SPACERS DIM FOR VARIOUS MOTORS

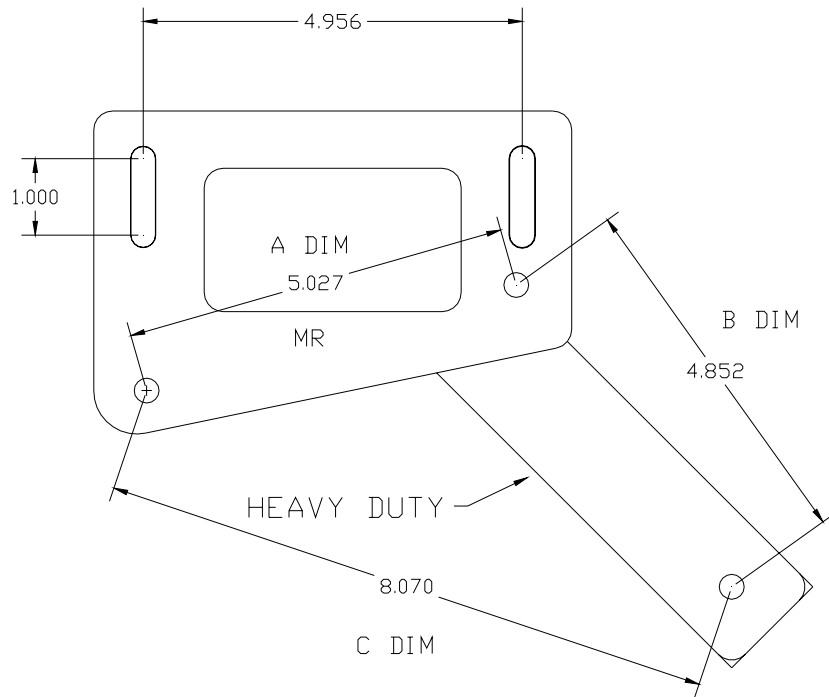


| MOTOR SIZE | BLW | DIM-A | DIM-B | DIM-C | DIM-D | DIM-S |
|-------------------|-------|-------|-------|-------|-------|-------|
| 80 CU IN EVD | 67 | .20 | .50 | 1.0 | 0.5 | 0.1 |
| 80 CU IN EVD | 80 | .20 | 0.0 | 0.5 | 0.5 | 0.1 |
| 88-95 TWIN CAM | 67 | 0.12 | 0.5 | 0.7 | 1.2 | 0.2 |
| 88-95 TWIN CAM | 80 | 0.12 | 0.5 | 0.7 | 1.2 | 0.7 |
| 883-1200 SPOTSTER | 67 | 0.3 | 0.0 | 0.5 | 1.0 | 1.2 |
| 96 CU IN S&S | 80 | DIM-A | DIM-A | DIM-A | DIM-A | DIM-A |
| 100 CU IN S&S | 80 | DIM-A | DIM-A | DIM-A | DIM-A | DIM-A |
| 103 CU IN S&S | 80 | DIM-A | DIM-A | DIM-A | DIM-A | DIM-A |
| 113 CU IN S&S | 93 | DIM-A | DIM-A | DIM-A | DIM-A | DIM-A |
| 120 CU IN MERCH | 93 | DIM-A | DIM-A | DIM-A | DIM-A | DIM-A |
| 131 CU IN MERCH | 107 | DIM-A | DIM-A | DIM-A | DIM-A | DIM-A |
| ENGINE SIZE | DIM-A | DIM-A | DIM-A | DIM-A | DIM-A | DIM-A |
| | | | | | | |

12 JUL 99

| | | | | |
|-----------------|------|-----|--|--------------|
| | | | CCDI Cincinnati Control Dynamics Inc Cincinnati Oh 45242 | |
| MATERIAL | | | SPACER DIMENSIONS | |
| FRAC | DEC | ANG | | |
| 1/64 | .003 | .10 | | |
| DRAWN | | | SHEET NUMBER | DWG # |
| FWB 10 OCT 97 | | | 1 OF 1 | BLWDIM1A |
| CHECKED | | | REV | |

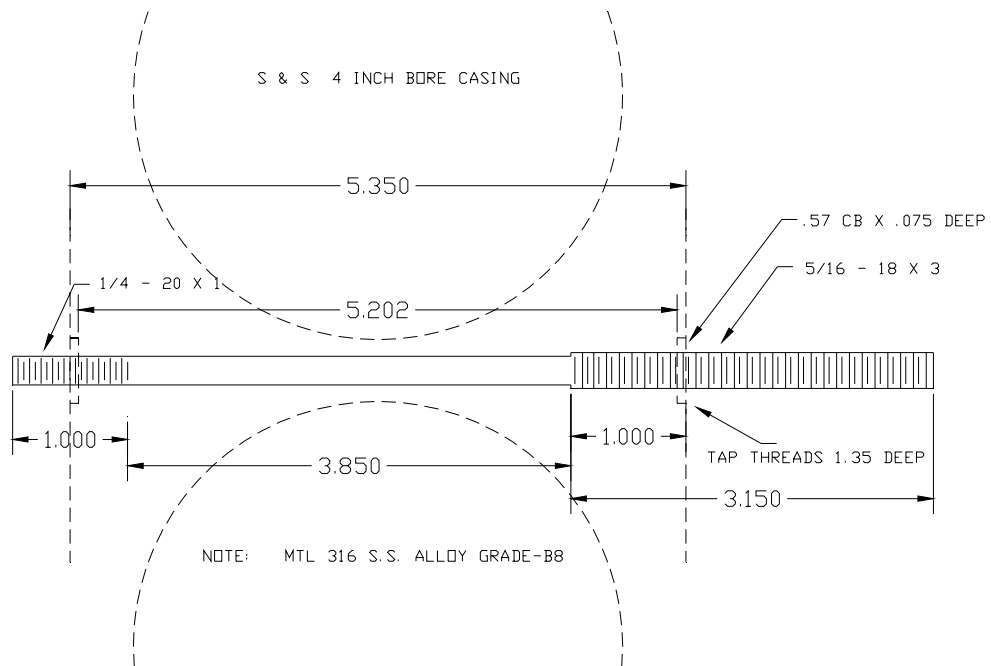
BLOWER TO CRANKCASE BKT




| LABEL | DESCRIPTION | A DIM | B-DIM | C-DIM |
|----------|-----------------------|-------|-------|-------|
| SP | H/D 88 TWIN CAM | 4.720 | - | - |
| SH | H/D 1200 SHOVELHEAD | 4.348 | - | - |
| EV80 | H/D 80 EVOLUTION | 4.348 | - | - |
| TW88 | H/D 1200 SPORTSTER | 4.322 | - | - |
| SS3 | S&S 88-96 CASE | 4.647 | - | - |
| SS4 | S&S 100-107-113 CASE | 4.991 | - | - |
| SS4 | S&S 100-107-113 CASE | 4.991 | 4.933 | 8.414 |
| MR | MERCH 120S,120L & 131 | 5.027 | 4.852 | 8.07 |
| DK | DELKRON CASE | 4.460 | - | - |
| STD40 | STD 4.0 BORE | 4.765 | - | - |
| STD 4.25 | STD 4.25 BORE SIMMS | 5.060 | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |

| | | | | |
|------------------------------------|-------------|-----------|---|--------------------|
| MATERIAL .250 THICK 304 S.S. | | | EMC EAGLE MOTOR COMPANY Cincinnati Oh 45242 | |
| FRAC 1/64 | DEC .002 | ANG XX | | |
| DRAWN FWB | 09MAR99 | CHECKED | SHEET NUMBER 1 OF 1 | DWG # BLWBK12 B |
| | | | REV | B |

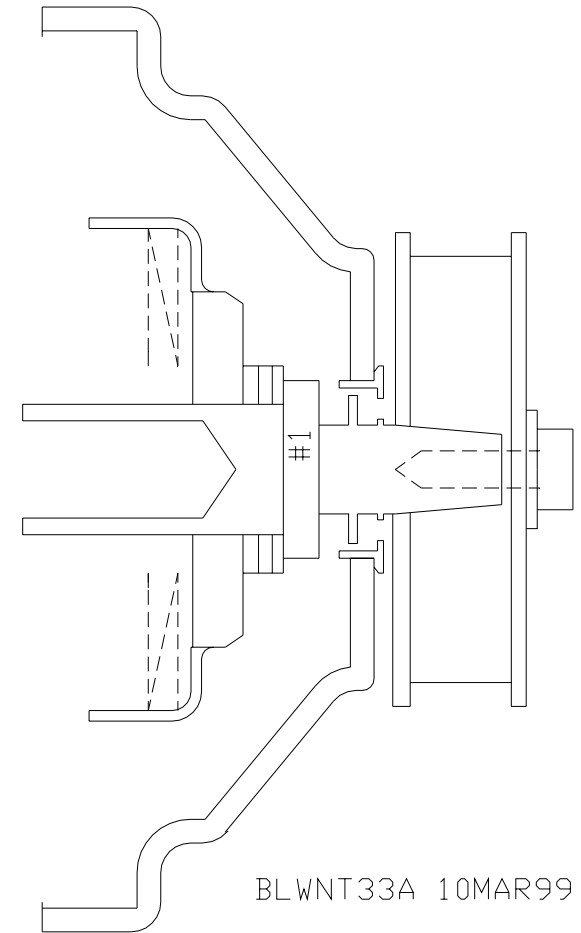
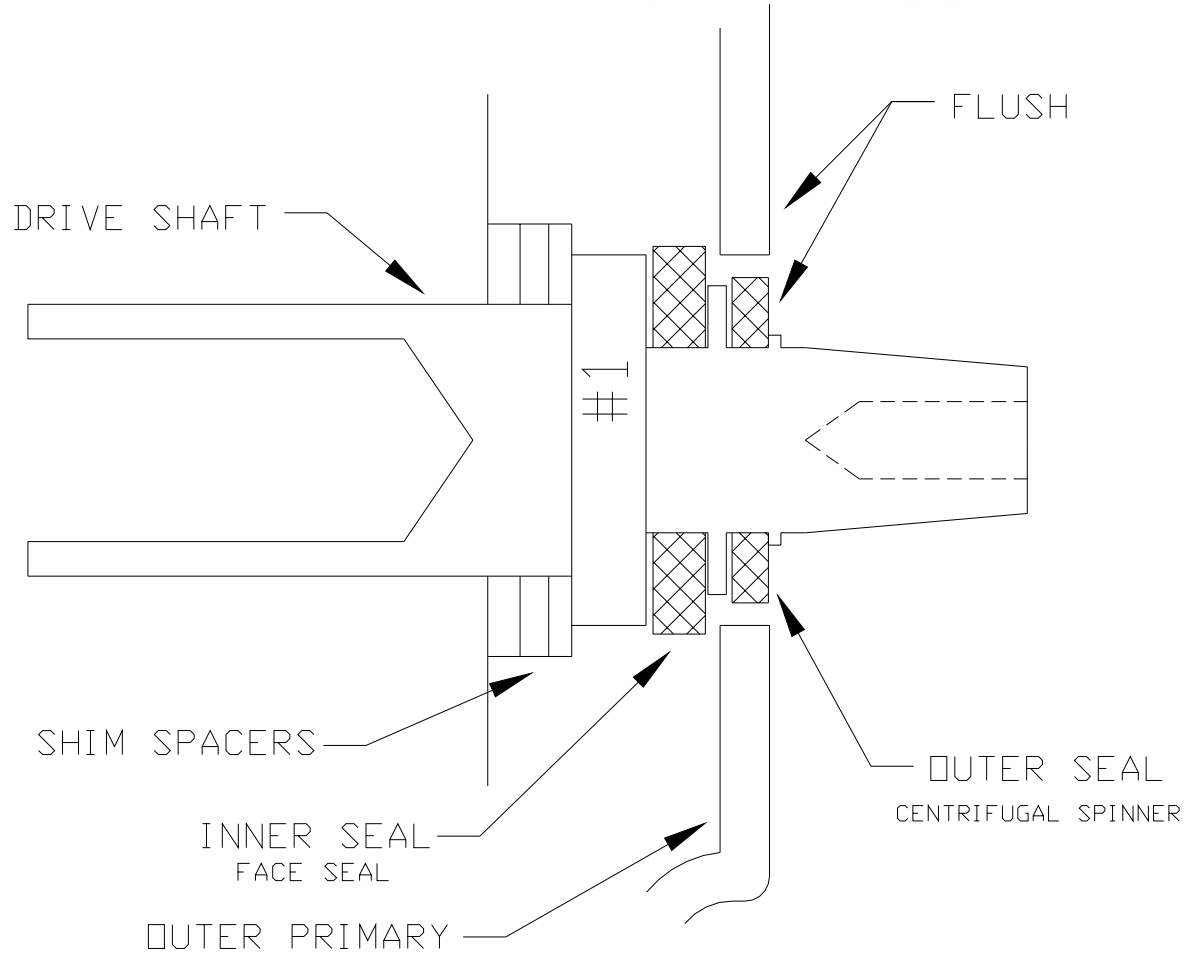
BLWBK43C 14JAN99
 S&S CASING CENTER BOLT



| | | | | | |
|----------|-----------|-----|---|-----------|-----|
| MATERIAL | | |  Eagle Motor Company Cincinnati Oh 45242 | | |
| 316 S.S. | | | | | |
| FRAC | DEC | ANG | S&S CASING CENTER BOLT | | |
| 1/64 | .002 | XX | | | |
| DRAWN | 01 JUL 97 | | SHEET NUMBER | DWG # | REV |
| FWB | | | 1 OF 1 | BLWBK43 C | C |
| CHECKED | | | | | |

DRIVE SHAFT OIL SEAL INSTALLATION

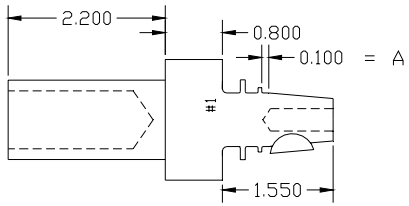
ADD SHIM TO ENSURE OUTER SEAL IS FLUSH WITH COVER
 PRESS THE ALUM SEAL HOUSING WITH HOLE DOWNWARD



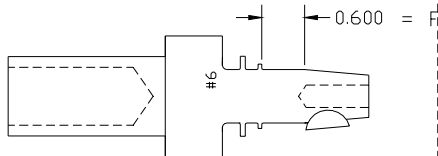
BLWNT33A 10MAR99

| | | | | | |
|--------------|-------------|-----------|--|--------------------|-----|
| MATERIAL | | | EMC Eagle Motor Company Cincinnati Oh 45242 | | |
| FRAC 1/64 | DEC .002 | ANG XX | DRIVE SEAL SHIMMING | | |
| DRAWN FWB | | 01JUL97 | SHEET NUMBER 1 OF 1 | DWG # BLWNT33 A | REV |
| CHECKED | | | | | |

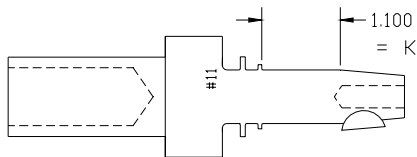
0.8" HEX & EXT NOSE
0.5" Offset Primary



SH22A

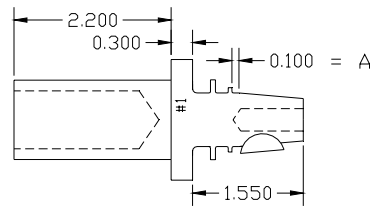


SH22F

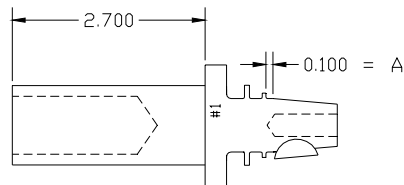


SH22K

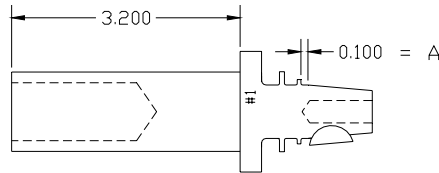
EXTENDED NUT
3.0" Open Primary



SH11A

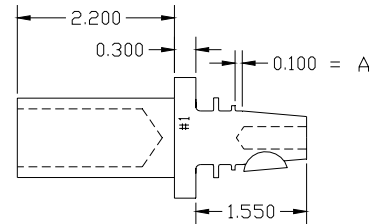


SH12A

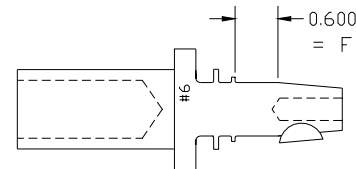


SH13A

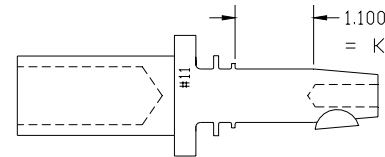
EXTENDED NOSE
.5 & 1" Longer Blower



SH10A

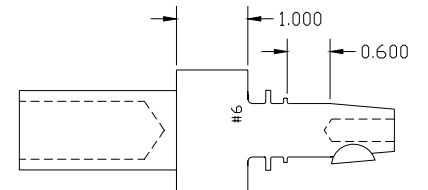


SH10F

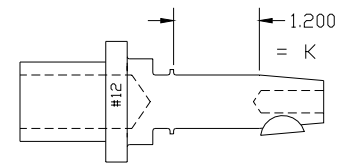


SH10K

OPTIONAL DRIVES



SH40F

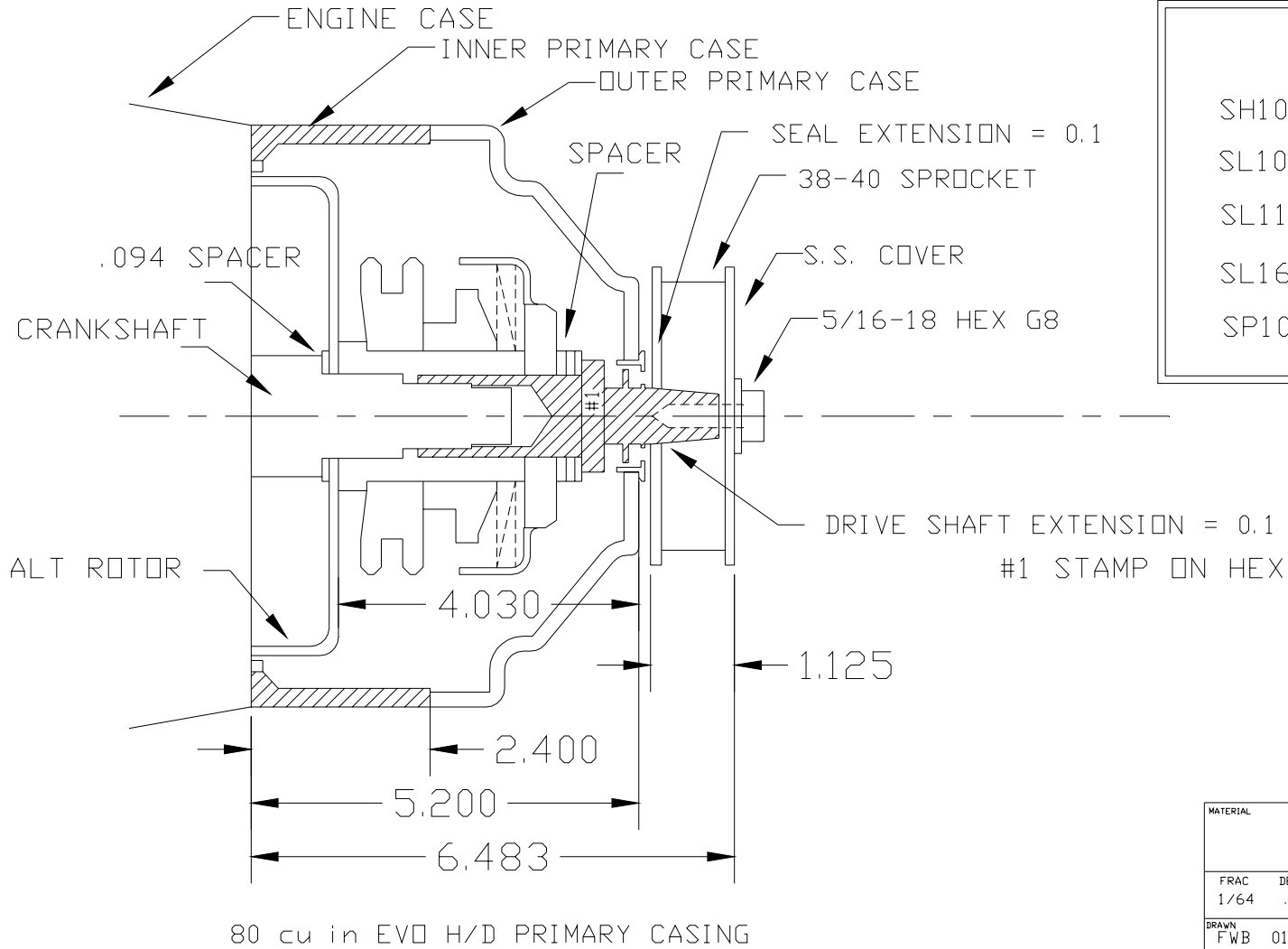


SH30L

| | | | | | |
|----------|---------|--------------|---------|--|--|
| MATERIAL | | 4140 | | EMC Eagle Motor Company Cincinnati Oh 45242 | |
| FRAC | DEC | ANG | | V-TWIN DRIVE NUT | |
| 1/64 | .002 | XX | | | |
| DRAWN | 29JAN99 | SHEET NUMBER | DWG # | REV | |
| FWB | | 1 OF 1 | BLWNT64 | C | |
| CHECKED | | | | | |

STOCK H/D EVO WITH 3.0" SUPERCHARGER
80 CU IN / REV

CRANKSHAFT



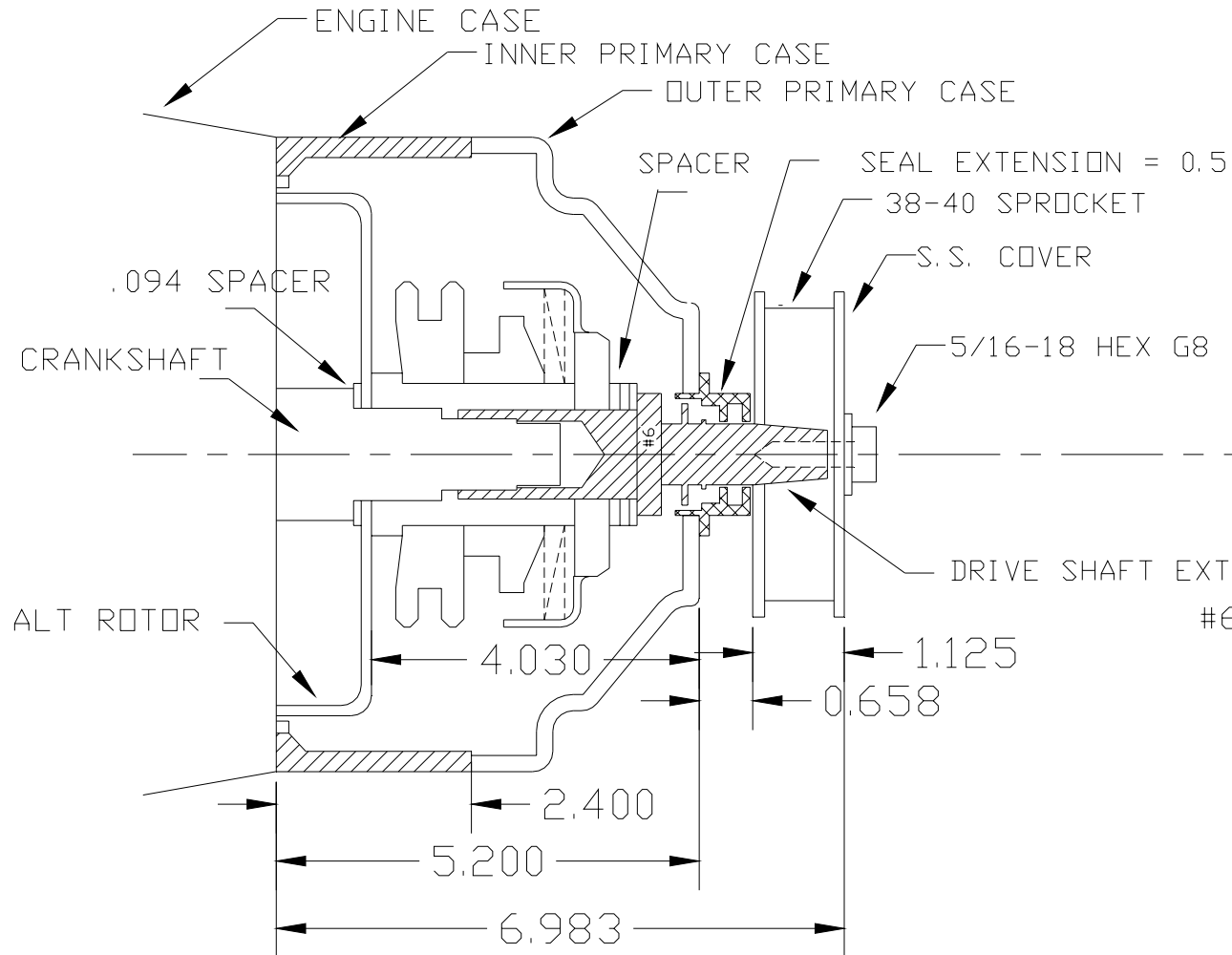
| REQ | PARTS |
|-------|-------------------|
| SH10A | DRIVE SHAFT |
| SL10 | INNER SEAL |
| SL11 | OUTER SEAL |
| SL16B | SHAFT SEAL |
| SP10 | SPACER WASHER (7) |

BLWNT25A 26JAN99

| | | | | |
|----------|------|-----|---|-----------|
| MATERIAL | | | EMC Eagle Motor Company Cincinnati Oh 45242 | |
| FRAC | DEC | ANG | | |
| 1/64 | .002 | XX | | |
| DRAWN | | | SHEET NUMBER | DWG # |
| FWB | | | 1 OF 1 | BLWNT25 A |
| CHECKED | | | | REV |
| | | | | |

80 cu in EVO H/D PRIMARY CASING

STOCK H/D EVO WITH 3.5" SUPERCHARGER
93 CU IN / REV



REQ PARTS

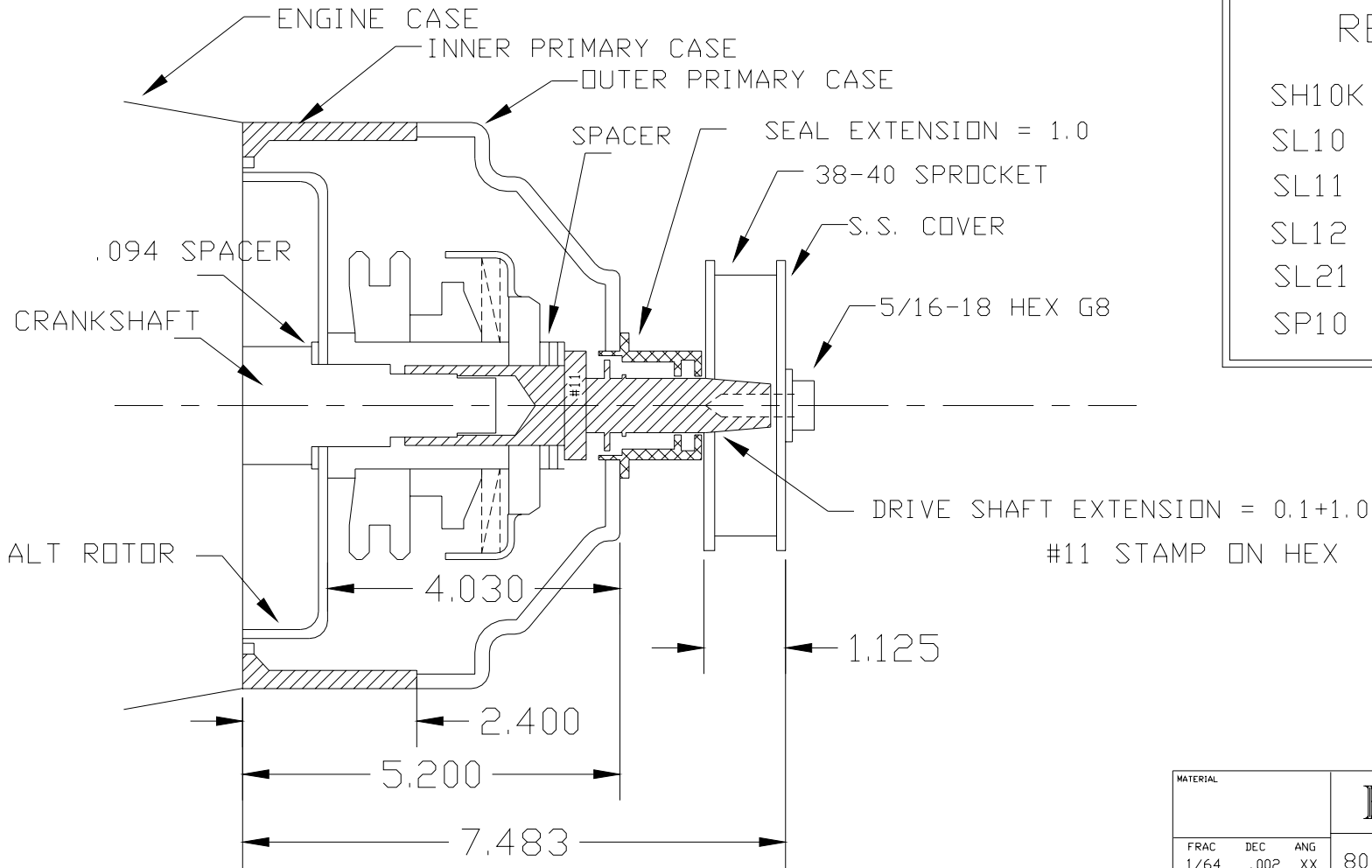
- SH10F DRIVE SHAFT
- SL10 INNER SEAL
- SL11 OUTER SEAL
- SL12 NOSE SEAL
- SL20 EXT .5 SEAL
- SP10 SPACERS (7)

80 cu in EVO H/D PRIMARY CASING

BLWNT26B 26JAN99

| | | | | |
|----------------------|-------------|-----------|---|--------------------|
| MATERIAL | | | EMC Eagle Motor Company Cincinnati Oh 45242 | |
| FRAC 1/64 | DEC .002 | ANG XX | | |
| DRAWN FWB 01JUL97 | | | SHEET NUMBER 1 OF 1 | DWG # BLWNT26 B |
| CHECKED | | | | REV |

STOCK H/D EVO WITH 4.0" SUPERCHARGER
107 CU IN / REV



REQ PARTS

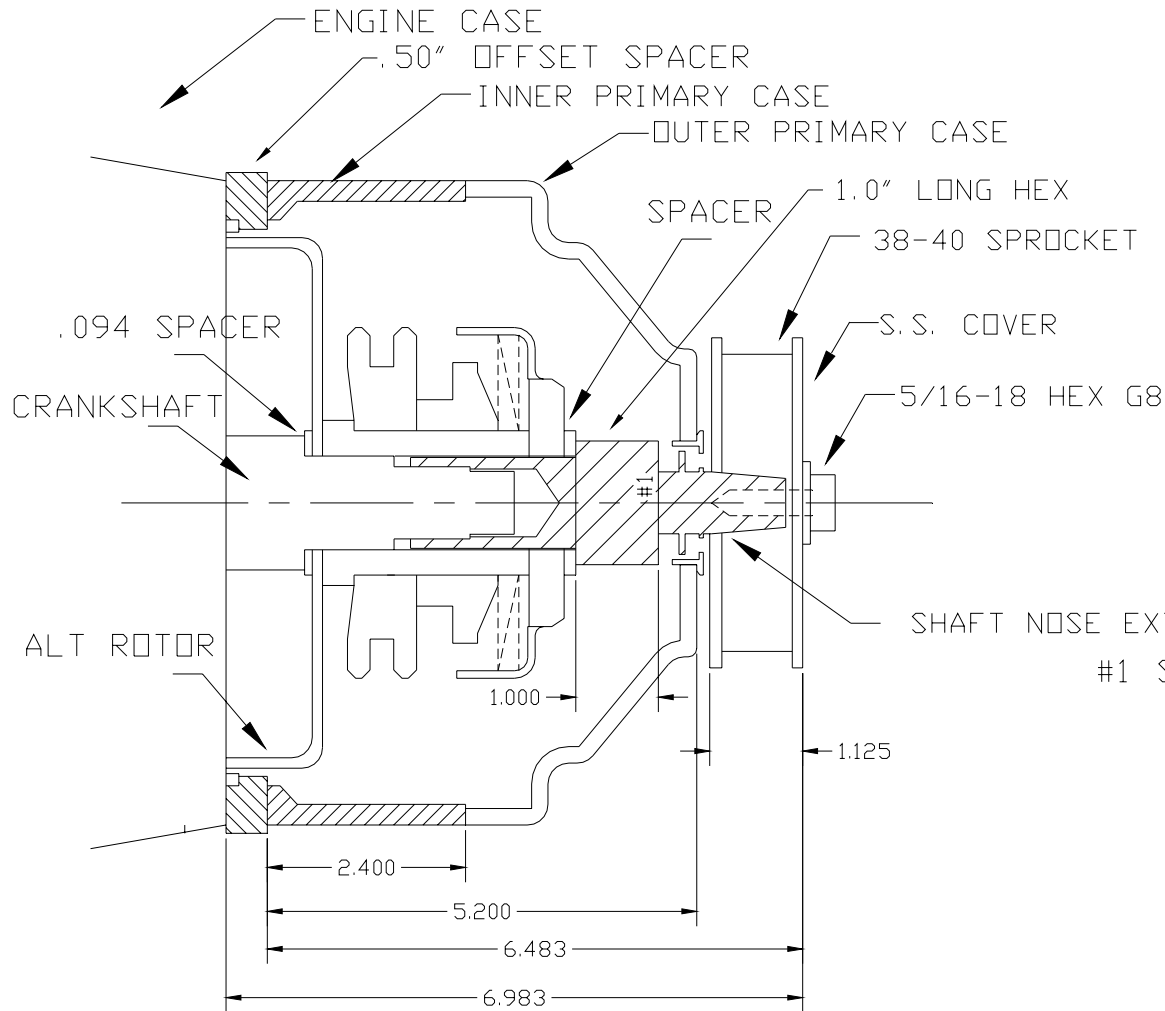
- SH10K DRIVE SHAFT
- SL10 INNER SEAL
- SL11 OUTER SEAL
- SL12 NOSE SEAL
- SL21 EXT 1.0 SEAL
- SP10 SPACERS (7)

80 cu in EVO H/D PRIMARY CASING

BLWNT27B 26JAN99

| | | | | | |
|----------------------|-------------|-----------|--|--------------------|-----|
| MATERIAL | | | EMC Eagle Motor Company Cincinnati Oh 45242 | | |
| FRAC 1/64 | DEC .002 | ANG XX | 80 CU IN EVO H/D PRIMARY | | |
| DRAWN FWB 01JUL97 | | | SHEET NUMBER 1 OF 1 | DWG # BLWNT27 B | REV |
| CHECKED | | | | | |


STOCK H/D EVO .5" OFFSET FOR 2.5"-3.5" SUPERCHARGER
63-93 CU IN / REV



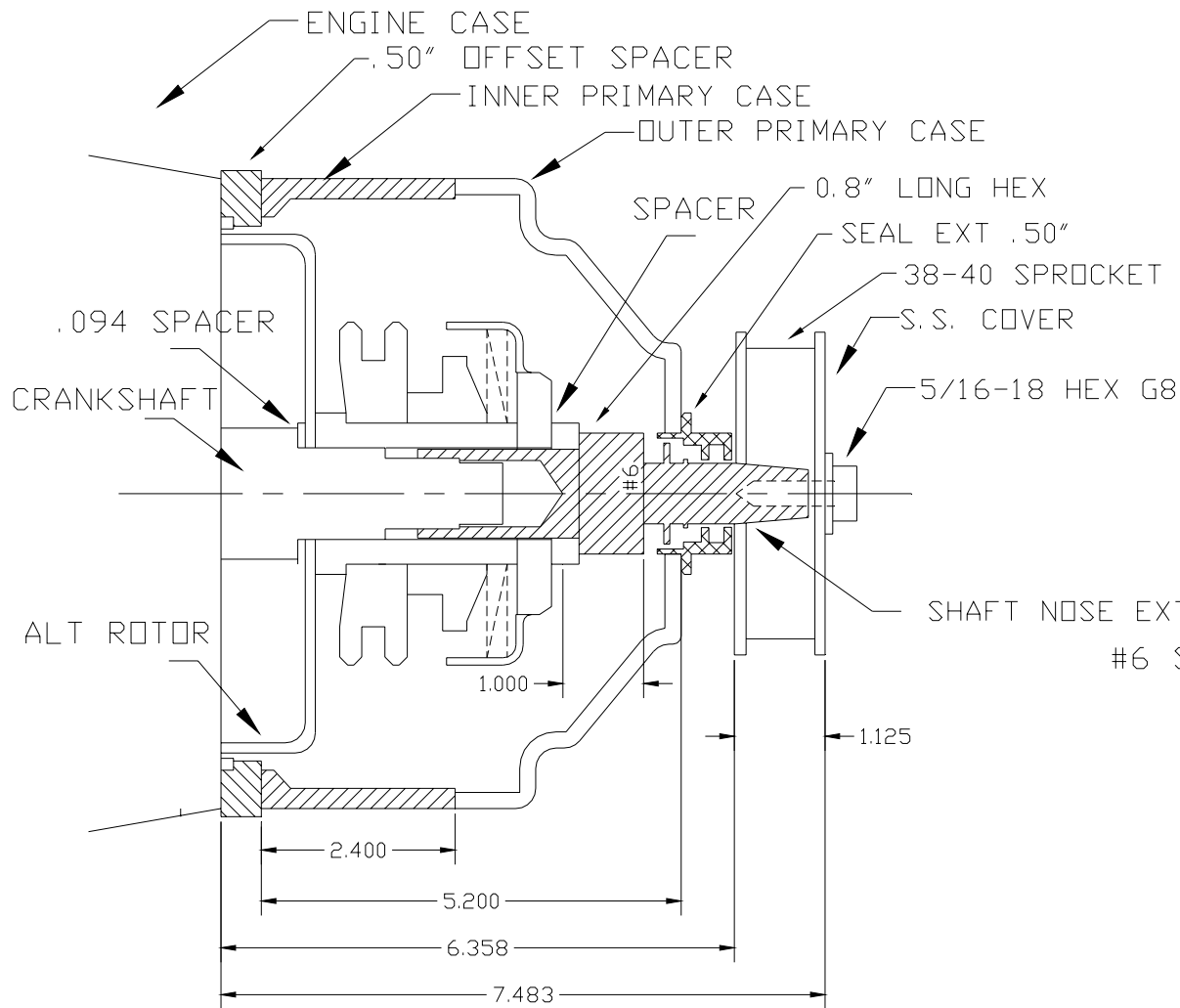
80 cu in EVO H/D PRIMARY CASING

| REQ | PARTS |
|-------|-------------------|
| SH22A | DRIVE SHAFT #1 |
| SL10 | INNER SEAL |
| SL11 | OUTER SEAL |
| SL16B | SHAFT SEAL |
| SP10 | SPACER WASHER (7) |

BLWNT30B 18FEB99

| | | | |
|--------------|-------------|---|---------------------------|
| MATERIAL | |  Eagle Motor Company Cincinnati Oh 45242 | |
| FRAC 1/64 | DEC .002 | ANG XX | 80 CU IN EVO H/D PRIMARY |
| DRAWN FWB | 01 JUL 97 | | SHEET NUMBER 1 OF 1 |
| CHECKED | | | DWG # BLWNT30 B REV |

STOCK H/D EVO .5" OFFSET FOR 2.5"-4.0" SUPERCHARGER
63-107 CU IN / REV



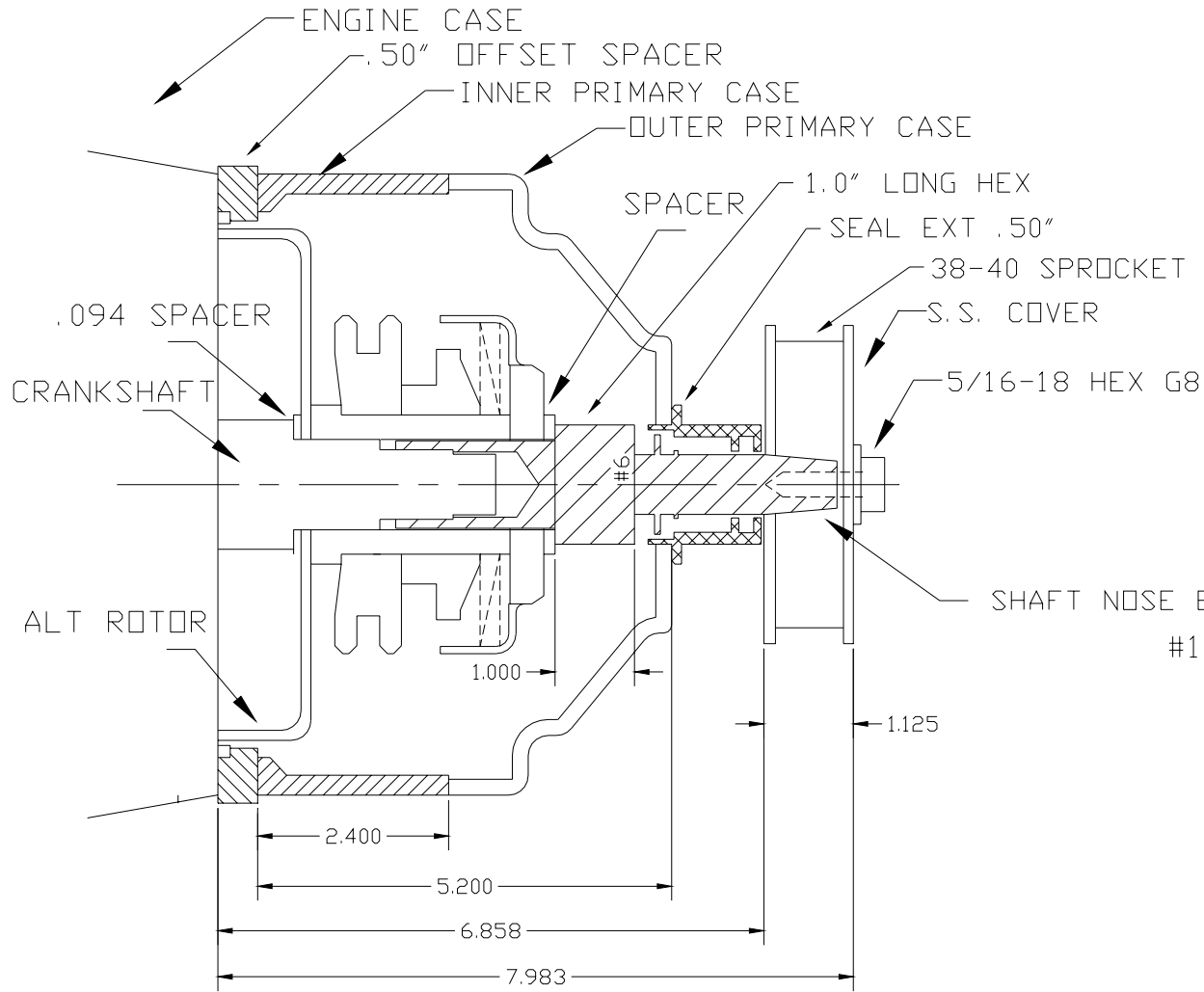
80 cu in EVO H/D PRIMARY CASING

| REQ | PARTS |
|-------|-------------------|
| SH22F | DRIVE SHAFT #6 |
| SL10 | INNER SEAL |
| SL11 | OUTER SEAL |
| SL12 | NOSE SEAL |
| SL20E | SEAL .50' ext |
| SP10 | SPACER WASHER (7) |

BLWNT31A 03FEB99

| | | | |
|--------------|-------------|---|---------------------------|
| MATERIAL | | EMC Eagle Motor Company Cincinnati Oh 45242 | |
| FRAC 1/64 | DEC .002 | ANG XX | 80 CU IN EVO H/D PRIMARY |
| DRAWN FWB | 01 JUL 97 | SHEET NUMBER 1 OF 1 | DWG # BLWNT31 C REV |
| CHECKED | | | |

STOCK H/D EVO .5" OFFSET FOR 2.5"-4.5" SUPERCHARGER
63-120 CU IN / REV



80 cu in EVO H/D PRIMARY CASING

| REQ | PARTS |
|-------|-------------------|
| SH22K | DRIVE SHAFT #11 |
| SL10 | INNER SEAL |
| SL11 | OUTER SEAL |
| SL12 | NOSE SEAL |
| SL20J | SEAL 1.0' ext |
| SP10 | SPACER WASHER (7) |

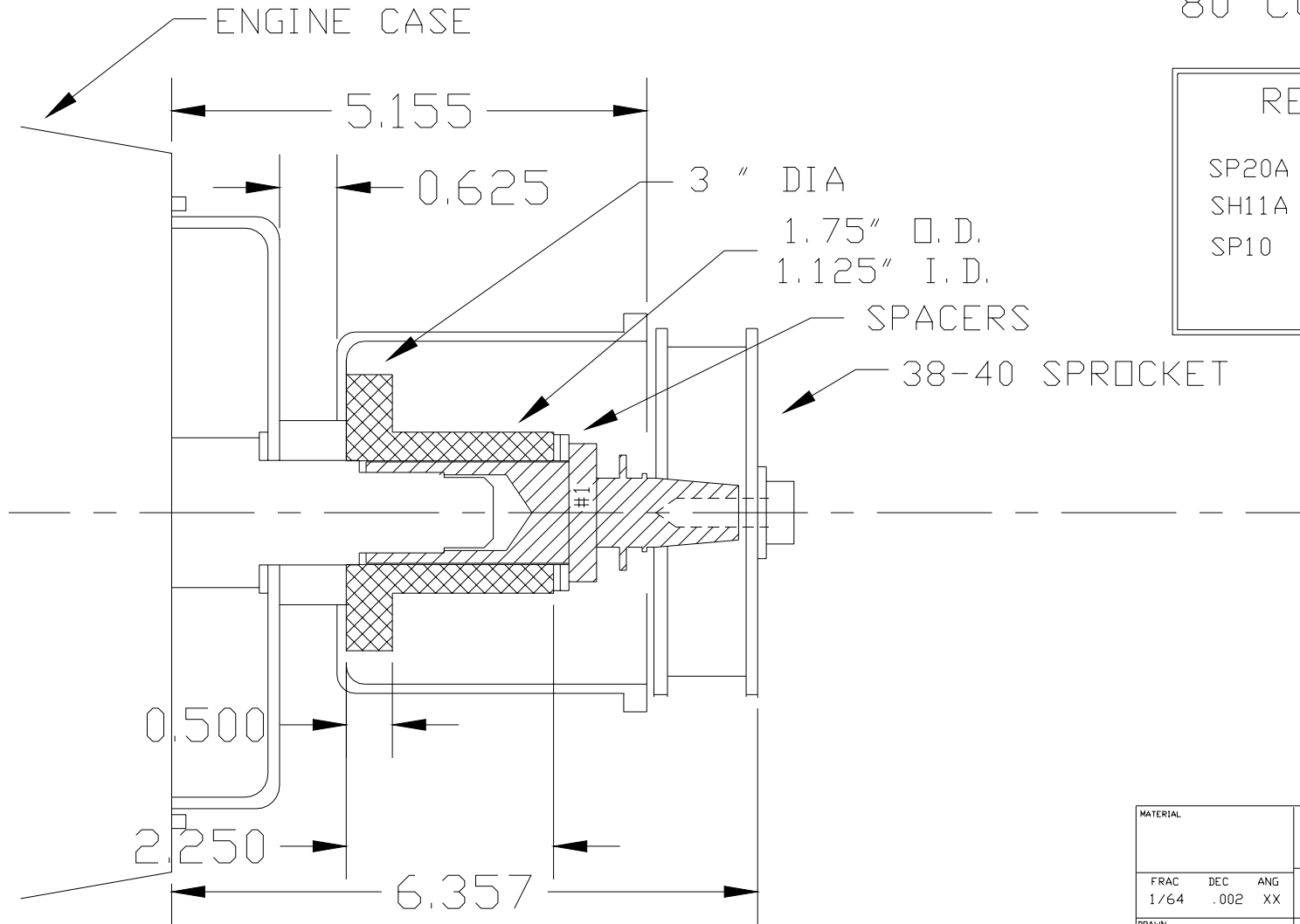
SHAFT NOSE EXTENSION = 1.1'
#11 STAMP ON HEX

BLWNT32A 03FEB99

| | | | | | |
|----------|------|-----------|--|--|----------|
| MATERIAL | | | EMC Eagle Motor Company Cincinnati Oh 45242 | | |
| FRAC | DEC | ANG | 80 CU IN EVO H/D PRIMARY | | |
| 1/64 | .002 | XX | | | |
| DRAWN | | 01 JUL 97 | SHEET NUMBER | | DWG # |
| FWB | | | 1 OF 1 | | BLWNT32 |
| CHECKED | | | | | REV B |

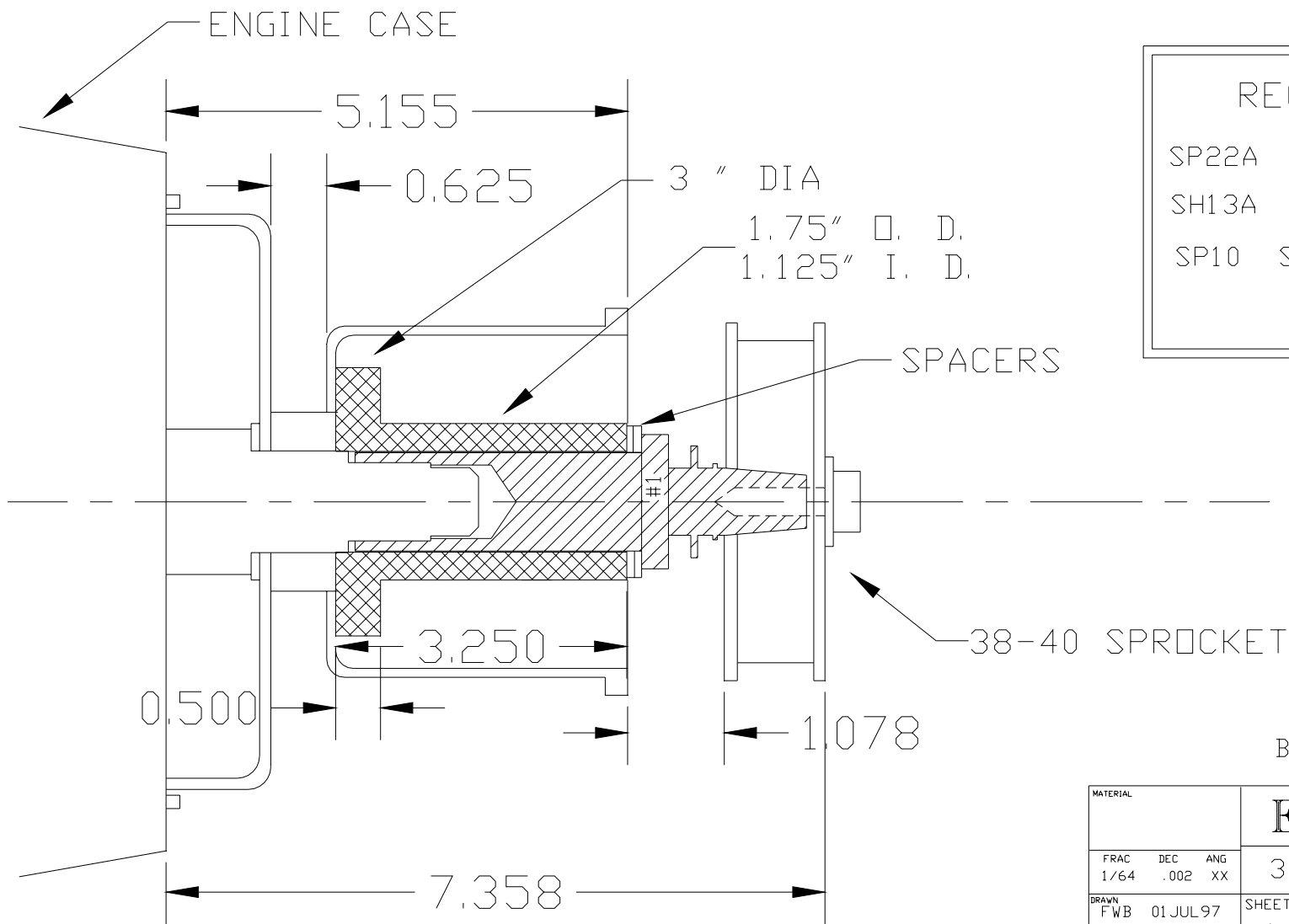
3" BELT 3.0" SUPERCHARGER
80 CU IN / REV

| REQ PARTS | |
|-----------|----------------|
| SP20A | 2.25 SPACER |
| SH11A | DRIVE SHAFT |
| SP10 | WASHER SET (7) |



| | | | | |
|------------------------|------|-----|---|------------------|
| MATERIAL | | | EMC Eagle Motor Company Cincinnati Oh 45242 | |
| FRAC | DEC | ANG | | |
| 1/64 | .002 | XX | SHEET NUMBER | DWG # |
| DRAWN FWB 01 JUL 97 | | | 1 OF 1 | REV BLWNT20 C |
| CHECKED | | | | |

3" BELT + 4.0" SUPERCHARGER
107 CU IN / REV



| REQ PARTS | |
|-----------|---------------|
| SP22A | 3.25 SPACER |
| SH13A | DRIVE SHAFT |
| SP10 | SPACER WASHER |

BLWNT22B 01FEB99

| | | | |
|--------------|-------------|---|--------------------|
| MATERIAL | | EMC Eagle Motor Company Cincinnati Oh 45242 | |
| FRAC 1/64 | DEC .002 | ANG XX | 3" BELT DRIVE HUB |
| DRAWN FWB | 01JUL97 | SHEET NUMBER 1 OF 1 | DWG # BLWNT22 B |
| CHECKED | | | REV |