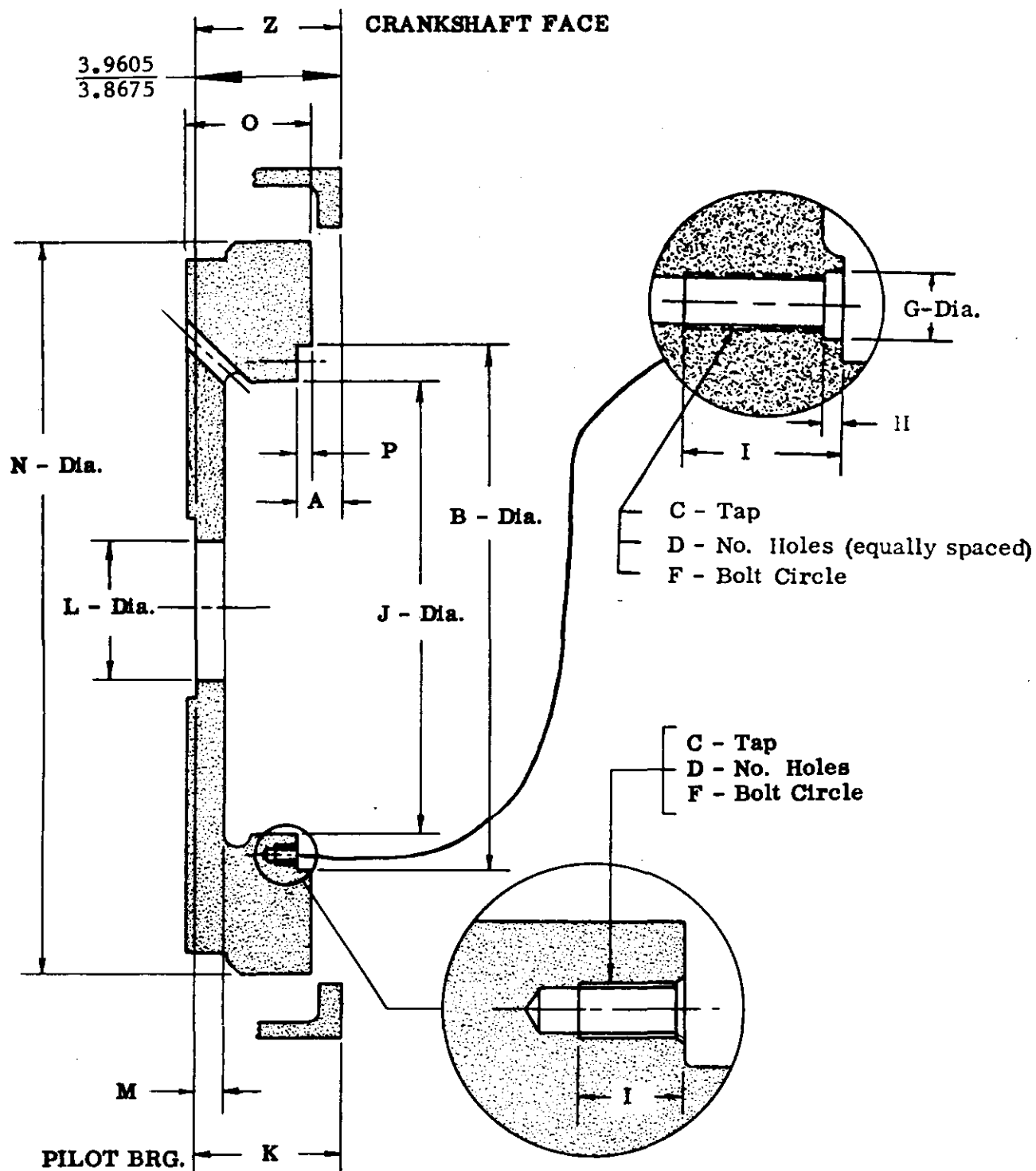


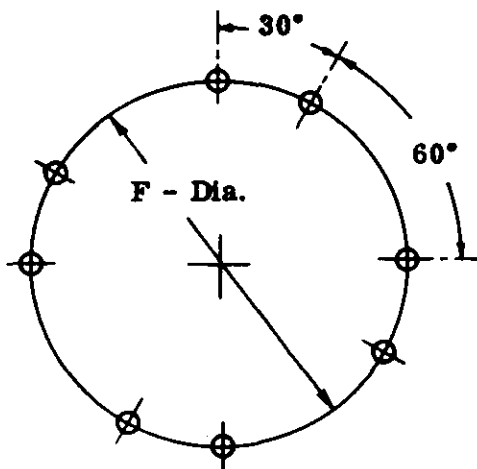


Drive Ring Type
92 - 1A

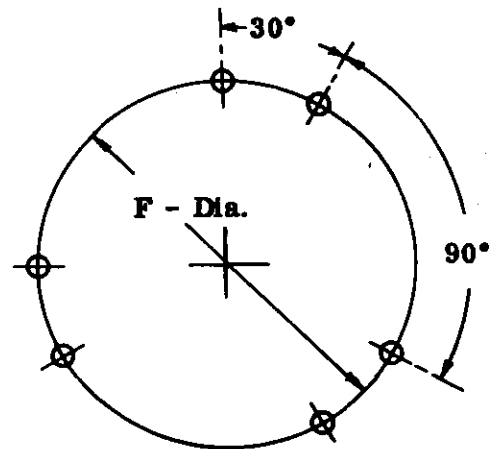
	FLYWHEEL NUMBER						
	5133391	5134086	5131569	5100517(d)	5137170	5138313	5100513(d)
REF.	-	5124452	5189446	5189446	-	5131741	5133717
A	2 23/64	1 23/64	63/64	63/64	2 1/2	63/64	1
B	$\frac{11.004}{11.000}$	$\frac{15.375}{15.377}$	$\frac{18.376}{18.379}$	$\frac{18.376}{18.379}$	$\frac{13.125}{13.127}$	$\frac{18.376}{18.379}$	$\frac{15.251}{15.253}$
C	1/2-13	5/8-11	1/2-13	1/2-13	5/8-18	1/2-13	3/8-16
D	8	16	8	8	8	16	8
F	10.0	14	17-1/4	17-1/4	11.0	17-1/4	14-1/4
G	--	--	--	--	--	--	--
H	--	--	--	--	--	--	--
I	THRU	1 1/4	1.00	1.00	1.00	1.00	3/4
J	7 5/8	11 57/64	14 1/2	14 1/2	8 27/32	14 3/4	12 3/4
K	3 59/64	3 59/64	3 59/64	3 59/64	3 59/64	3 59/64	3 59/64
L	3.00	2 13/16	$\frac{2.8333}{8.8341}$	$\frac{2.8333}{2.8341}$	3.0	$\frac{2.8353}{2.8345}$	$\frac{2.4407}{2.4415}$
M	13/16	13/16	1 1/64	1 1/16	13/16	.81	1.0
N	20	20	20	20	18.80	20	18.51/64
O	1 13/16	3 1/16	3 1/2	3 1/2	2.12	3 1/2	3 27/64
P	3/16	17/64	5/16	5/16	3/16	5/16	1/4

FLYWHEEL NUMBER

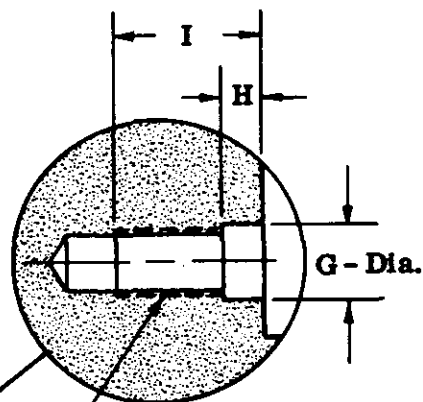
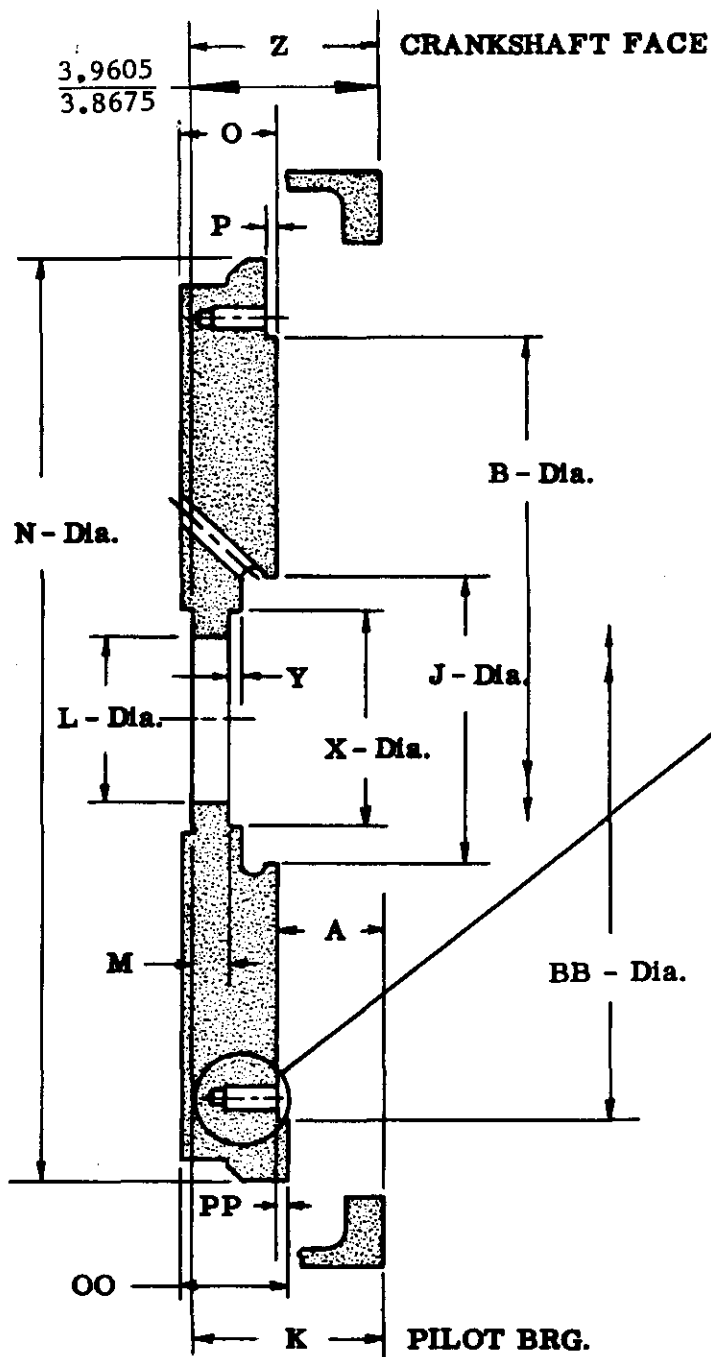
	5100028	5100515(d)	5100514(d)	5100512(d)	5100806(d)	5100807(d)	5100812(d)
REF.	5100027	5137696	5135364 5136224	5129492	5129095	5144443	5168182
A	1/8	63/64	2-47/64	1-53/64	1 37/64	2.38	1 35/64
B	<u>18.500</u> 18.498	<u>18.376</u> 18.379	<u>17.750</u> 17.853	<u>13.876</u> 13.879	<u>13.876</u> 13.879	<u>16.007</u> 16.004	<u>15.002</u> 15.005
C	3/8-16	1/2-13	3/8-16	3/8-16	3/8-16	3/8-16	3/8-16
D	12	16	24	12	8	8	12
F	17-5/8	17-1/4	16-7/8	13-1/8	13-1/8	15.250	16
G	--	--	--	7/16	-	-	
H	--	--	--	1/8	-	-	
I	3/4	7/8	7/8	1.0	3/4	.76	.88
J	14	16-1/4	15-1/2	12.0	12	700	14.97
K	3-59/64	3-51/64	3-59/64	3-59/64	3-59/64	-	
L	2.38	<u>2.8353</u> 2.8345	<u>2.1693</u> 2.1705	2.58	<u>2.8353</u> 2.8345	2.75	1.62
M	1	13/16	23/32	5/8	1 3/16	.75	.75
N	19	20	19-1/8	19-15/16	20	18.76	19.94
O	4-1/4	3-1/2	2	2-5/8	3 1/4	2.12	2.62
P	3/16	1/4	9/16	9/32	21/32	.33	.31



E - Group

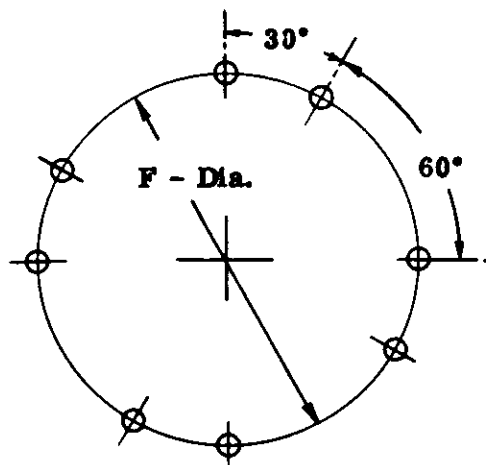


EE - Group

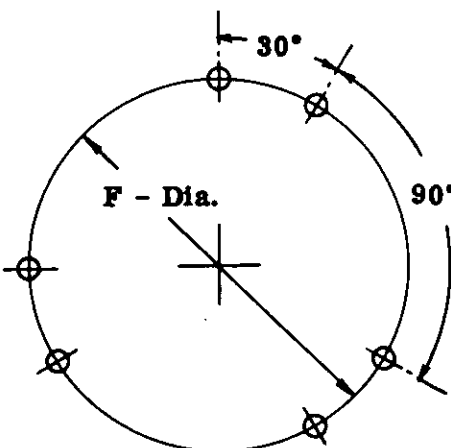


- C - Tap
 - D - No. Holes
 - E - or EE - Hole Grouping (a)
 - F - Bolt Circle
- (a) When E & EE are blank in table, holes D are equally spaced

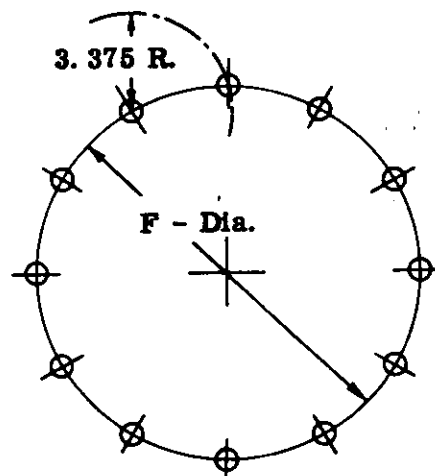
	FLYWHEEL NUMBER						
	5100511 (d)	5108769					
REF.	5127185						
A	2 31/64	1 17/32					
B	--	--					
BB	17.156 17.159	--					
C	7/16 14	1/2 13					
D	12	10					
E	--	--					
EE	--	--					
F	16 5/8	17.120 17.130					
G	--	--					
H	--	--					
I	1 11/16	1 1/8					
J	8 3/4	9					
K	3 59/64	3 59/64					
L	2.8353 2.8345	2 15/16					
M	25/32	57/64					
N	18 13/16	19 19/32					
O	--	2 41/64					
OO	1 51/64	--					
P	--	--					
PP	7/64	--					
X	--	--					
Y	--	--					



E - Group

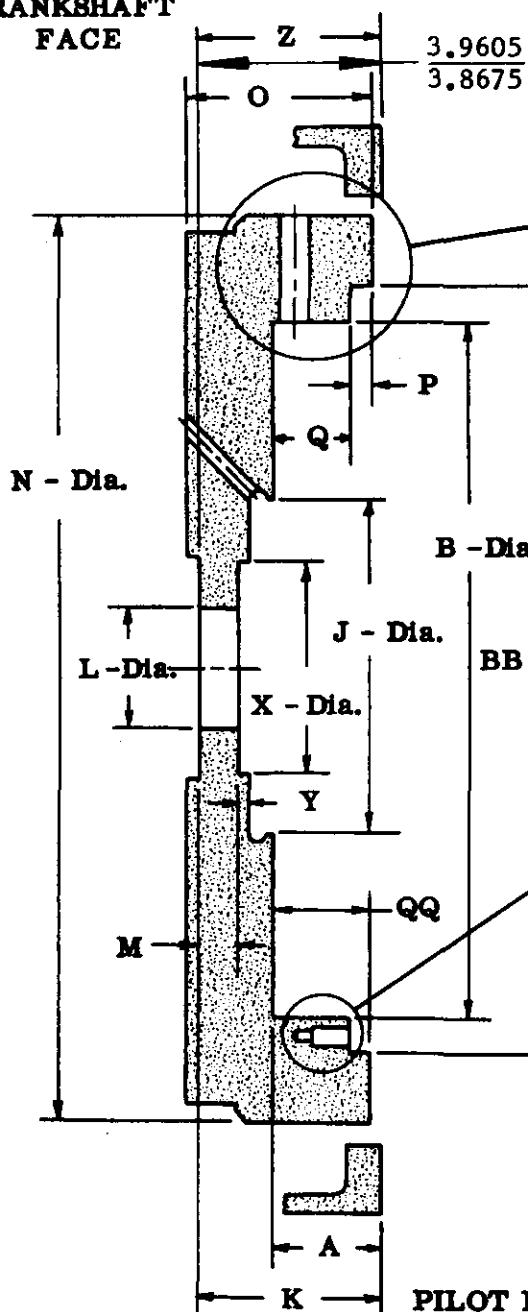


EE - Group

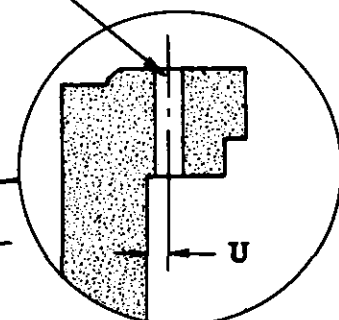


Note: Wheels indicated by (#) in table have 12 holes equally spaced except one as shown.

CRANKSHAFT
FACE

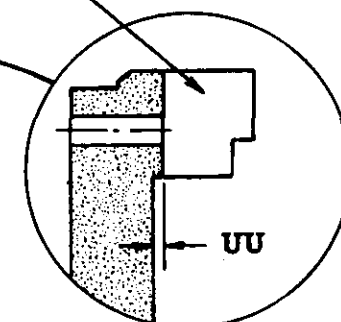


V - Ream
W - No. Holes

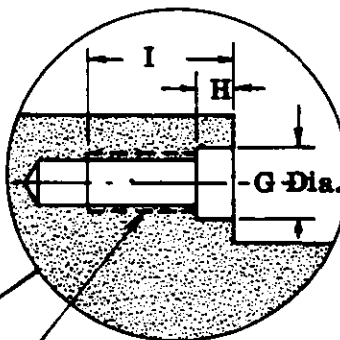


DRIVE PIN HOLE

VV - Slot Width
WW - No. Slots



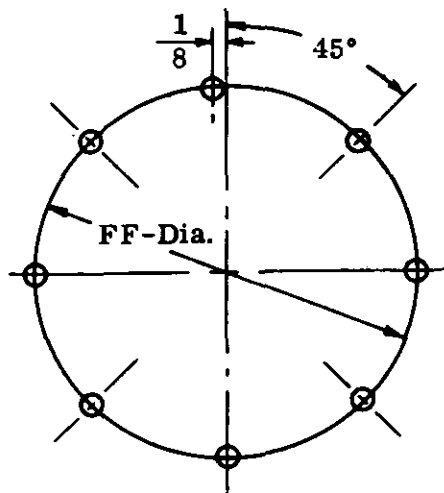
DRIVE LUG SLOT



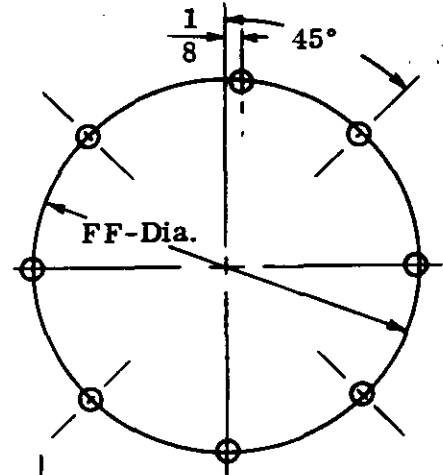
C - Tap
D - No. Holes
E or EE - Hole Grouping (a)
F - Bolt Circle

(a) When E & EE are blank in table, holes D are equally spaced except wheels indicated by (#)

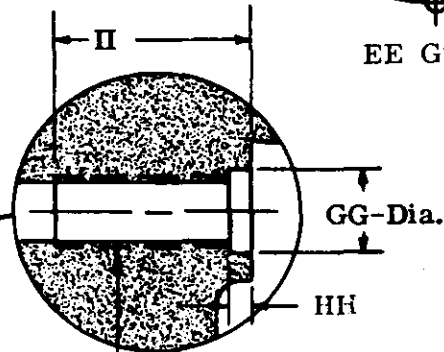
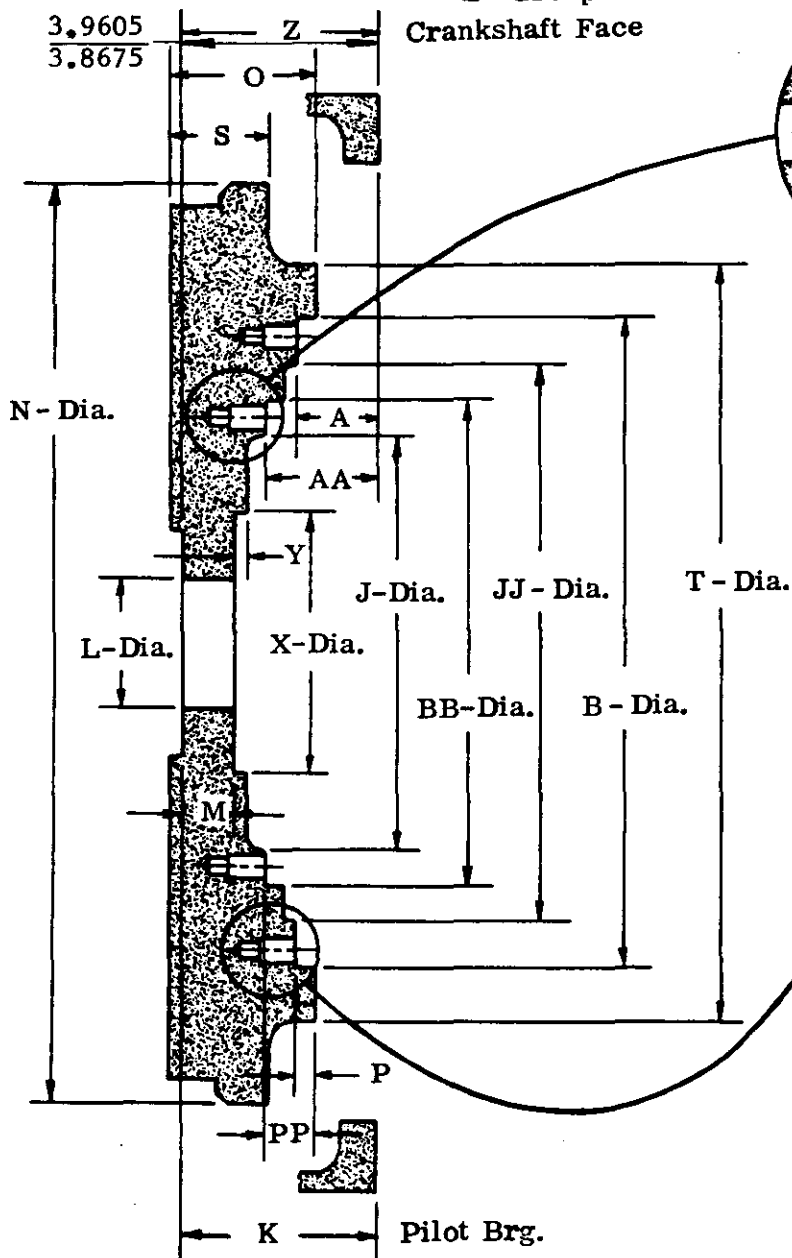
	FLYWHEEL NUMBER						
	5109026(d)	5100510(d)	5100717(d)	5101077(d)			
REF.	5126411	3224290	5137729	5137192			
A	2 31/64	2 31/64	2.62	2.62			
B	<u>14.002</u> 14.005	<u>14.752</u> 14.755	14.38	17.92			
BB	--	--	16.25				
C	3/8-16	3/8-16	3/8-16	3/8-16			
D	12	12	12	--			
E	--	--	--	--			
EE	--	--	--	--			
F	14 3/4	15 1/2	15.62	18.625			
G	--	--	--				
H	--	--	--				
I	11/16	11/16	.76	.88			
J	7	7	7.06	7.12			
K	3 59/64	3 59/64	3.918	3.875			
L	<u>2.8345</u> 2.8353	<u>2.8345</u> 2.8353	<u>2.8353</u> 2.8345	<u>2.4403</u> 2.4409			
M	13/16	13/16	.72	.63			
N	19 1/8	19 1/8	18.78	19.88			
O	4 5/8	4 5/8	2.87	3.11			
P	--	--	.24	--			
Q	--	--	1.08/1.09	--			
QQ	2 15/16	2 15/16	1.32	1.56			
U	11/16	3/4	--	.95			
UU	--	--	.15	.63			
V	<u>.4990</u> .5005	<u>.4990</u> .5005	--	.625/626			
VV	--	--	2.00	2.24			
W	4	12	--	--			
WW	--	--	4	6			
X	--	--	--	--			
Y	--	--	--	--			



E Group
Crankshaft Face



EE Group



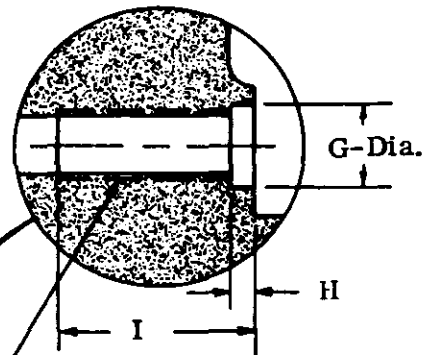
CC - Tap

DD - No. Holes

E or EE - Hole Grouping (a)

FF - Bolt Circle

(a) When E & EE are blank
in table, holes DD are
equally spaced.

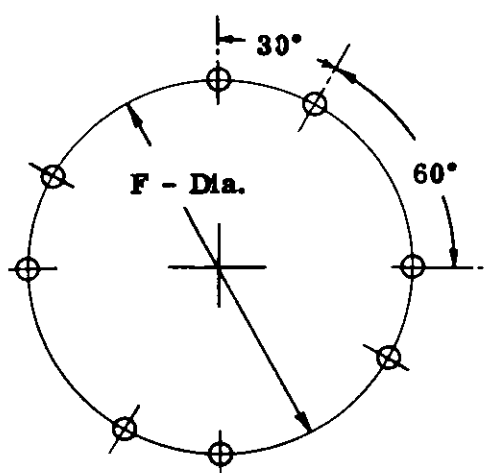


C - Tap

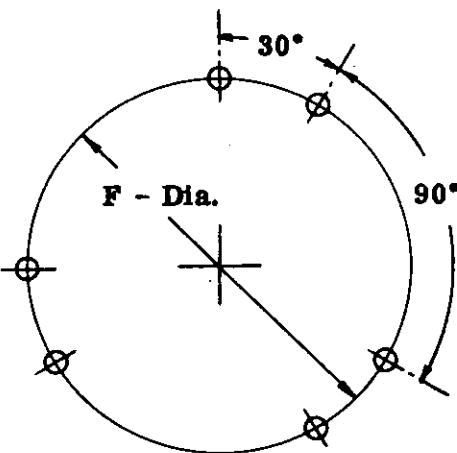
D - No. Holes (equally spaced)

F - Bolt Circle

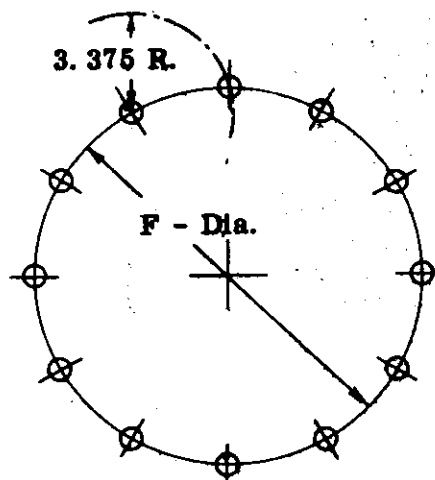
	FLYWHEEL NUMBER						
	5135478	5130583	5100516(d)				
REF.	5132816		5181655				
A	2 1/4	1 49/64	2 25/64				
AA	3	--	--				
B	<u>14.624</u> 14.628	<u>12.002</u> 12.006					
BB	<u>10.876</u> 10.879	--	<u>10.252</u> 10.256				
C	1/2 13	3/8 16	--				
CC	1/2 13	--	3/8 16				
D	8	10	--				
DD	8	--	8				
E	--	--	*				
EE	--	--	--				
F	12	11 1/8	--				
FF	9 7/8	--	9 1/2				
G	--	--	--				
GG	--	--	7/16				
H	--	--	--				
HH	--	--	1/8				
I	1	3/4	--				
II	1 1/4	--	1				
J	8 3/4	10	8 3/4				
JJ	10.94	--	11 1/2				
K	--	3 59/64	3 59/64				
L	2 5/8	3	2 5/8				
M	9/16	13/16	5/8				
N	19	20	19 15/16				
O	2.10	2 53/64	2 5/8				
P	3/16	27/64	--				
PP	.158/155	--	27/32				
S	2	--	--				
T	16 1/4	--	--				
X	5 5/16	--	5 1/2				
Y	1/8	--	1/8				



E - Group

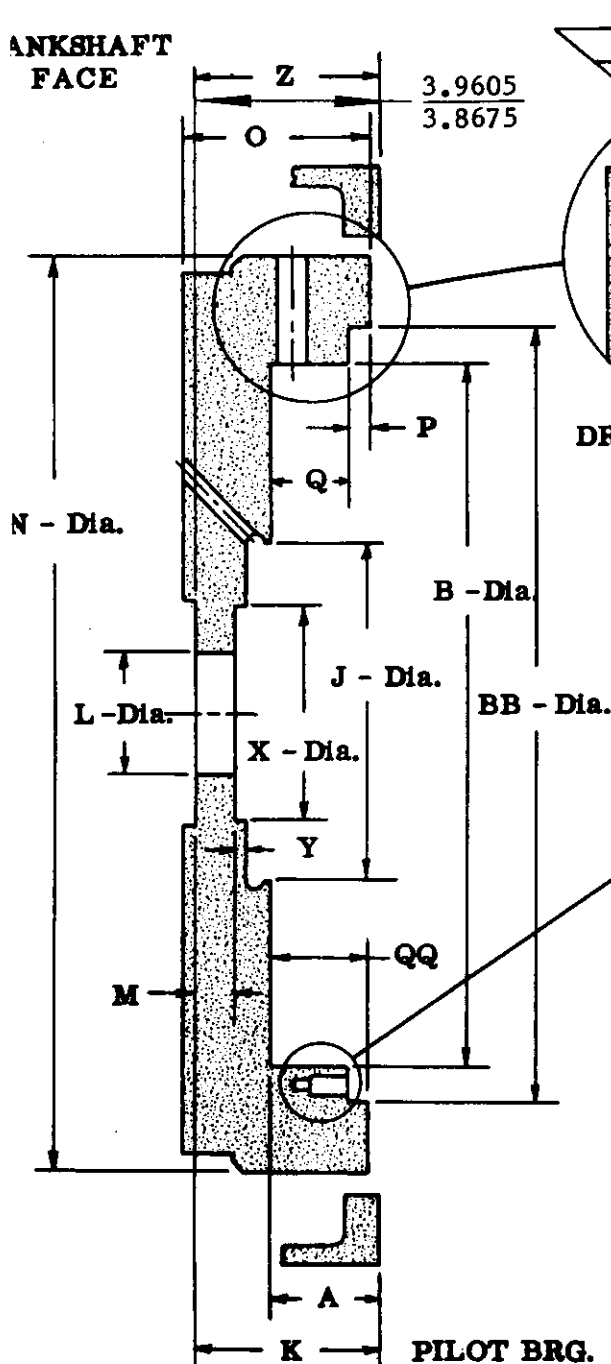


EE - Group

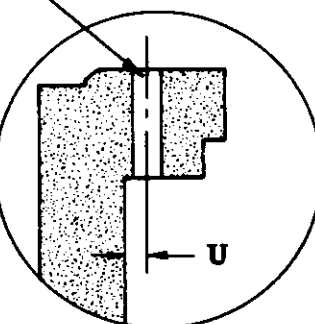


Note: Wheels indicated by (#) in table have 12 holes equally spaced except one as shown.

ANKSHAFT
FACE

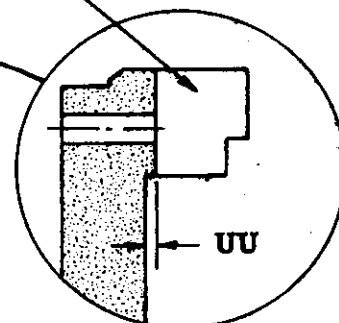


V - Ream
W - No. Holes

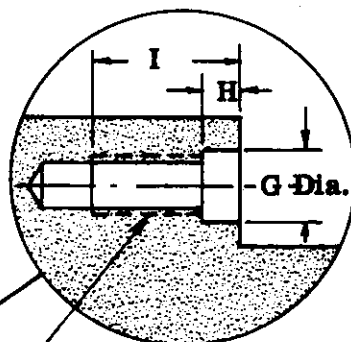


DRIVE PIN HOLE

VV - Slot Width
WW - No. Slots



DRIVE LUG SLOT



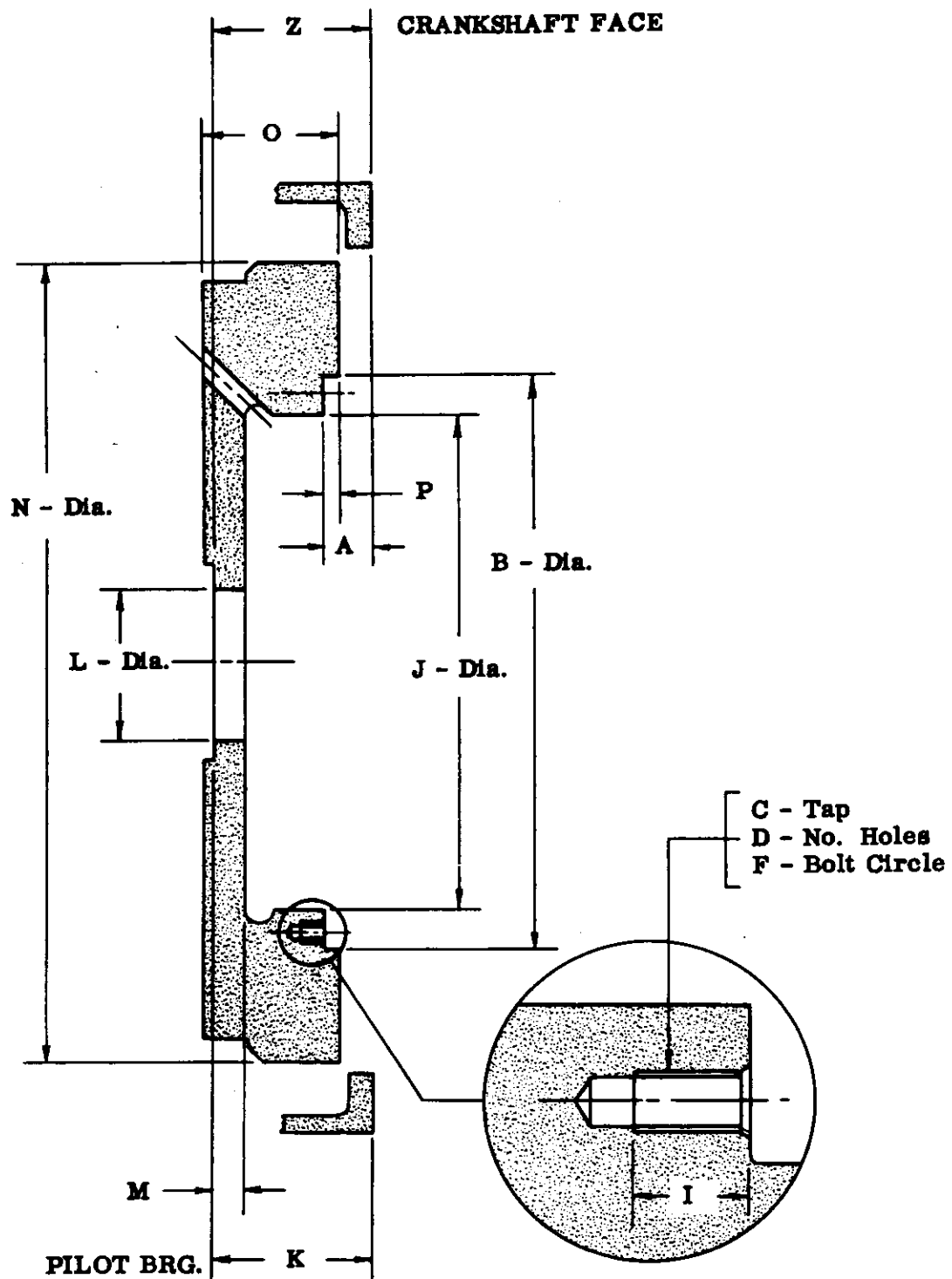
C - Tap
D - No. Holes
E or EE - Hole Grouping (a)
F - Bolt Circle

(a) When E & EE are blank in table, holes D are equally spaced except wheels indicated by (#)

	FLYWHEEL NUMBER						
	5137135						
REF.							
A	--						
B	$\frac{6.244}{6.248}$						
BB	--						
C	1/2 13						
D	12						
F	7 1/4						
I	7/8						
J	--						
K	--						
L	$\frac{2.751}{2.754}$						
M	1.72						
N	18.80						
O	1.97						
P	--						
Q	--						
X	--						
Y	--						

SERIES M
SAE NO. 2

SERIES 110
SAE NO. 1/2



	FLYWHEEL NUMBER						
	5120772(f)	5176674	5187260	5189455	5116775#	5120191	
A	1 1/16	1 1/16	61/64	61/64	1 3/8	2.11/16	
B	$\frac{18.376}{18.379}$	$\frac{18.376}{18.379}$	$\frac{22.501}{22.505}$	$\frac{22.501}{22.505}$	$\frac{15.376}{15.374}$	$\frac{18.380}{18.385}$	
C	1/2-13	1/2-13	5/8-11	5/8-11	5/8-11	1/2-13	
D	8	8	6	6	8	8	
F	17 1/4	17 1/4	21 3/8	21 3/8	14	17 1/4	
I	1	1	1 3/8	1 1/4	1 1/8	1 1/8	
J	16 3/16	16 3/16	18 3/8	18 3/8	10	14 1/2	
K	3 61/64	3 61/64	3 61/64	3 61/16	3 61/64	3 61/64	
L	$\frac{3.1495}{3.1503}$	$\frac{3.1495}{3.1503}$	$\frac{3.1495}{3.1503}$	$\frac{3.1483}{3.1491}$ (b)	$\frac{3.1495}{3.1503}$ (b)	$\frac{3.1483}{3.1491}$	
M	1 13/32	1 13/32	1 13 32	1 5/64	1 13/64	1 5/64	
N	22	22	22 7/8	22 7/8	22	22	
O	3 15/32	3 15/32	3 7/16	3 7/16	3 11/64	3 1/4	
P	19/64	19/64	3/16	3/16	23/64	7/16	
Z	$\frac{3.9860}{3.9094}$	$\frac{3.9860}{3.9094}$	$\frac{3.9860}{3.9094}$	$\frac{3.9860}{3.9094}$	$\frac{3.9860}{3.9094}$	$\frac{3.9860}{3.9094}$	

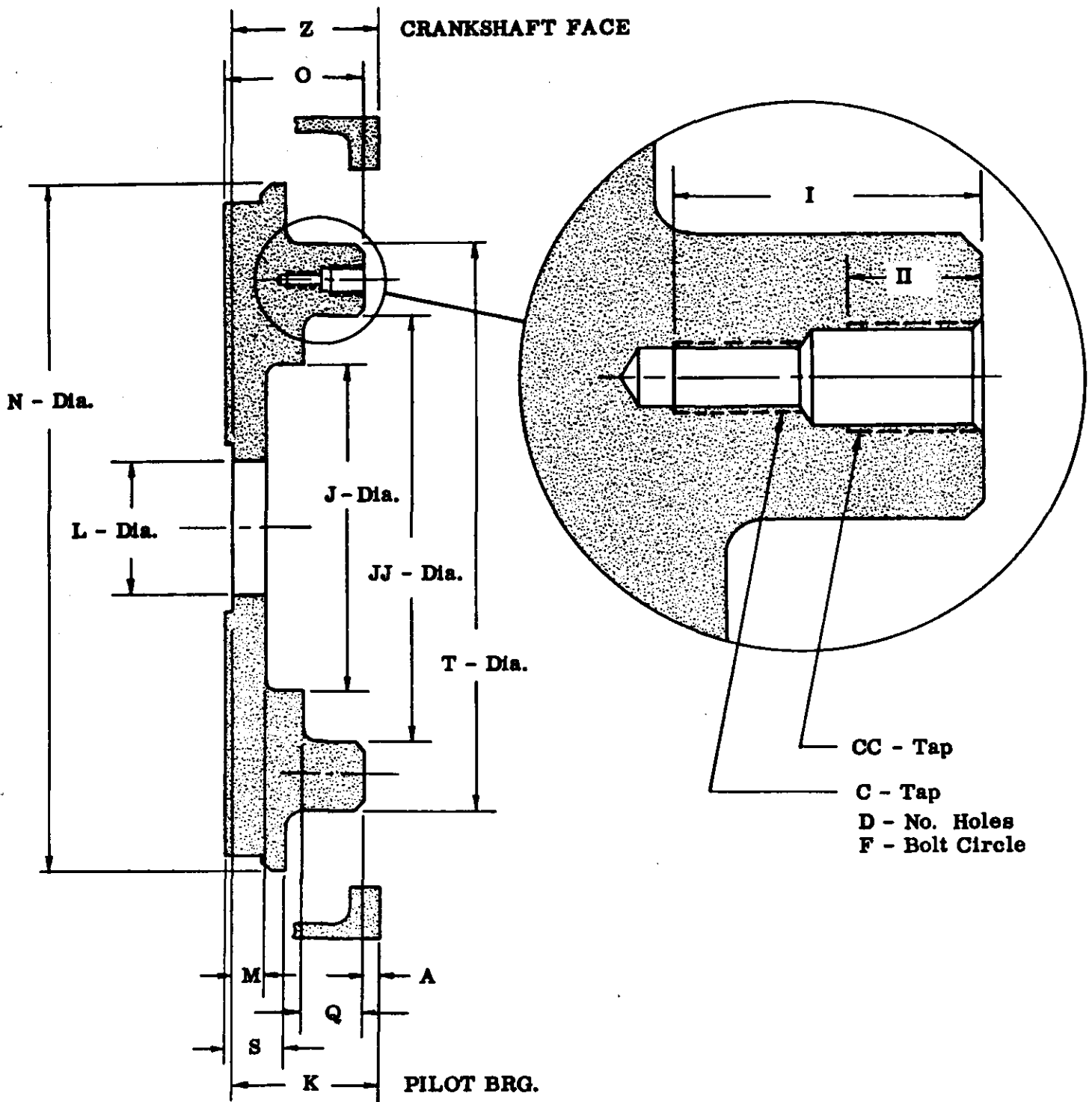
(b) Uses Hyatt Roller Bearing

(f) Machined for Seal Ring at Crankshaft

obsolete

Drive Ring Type

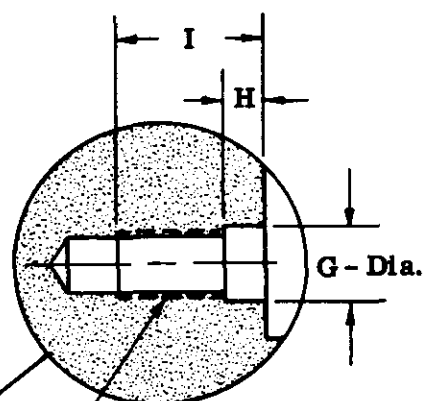
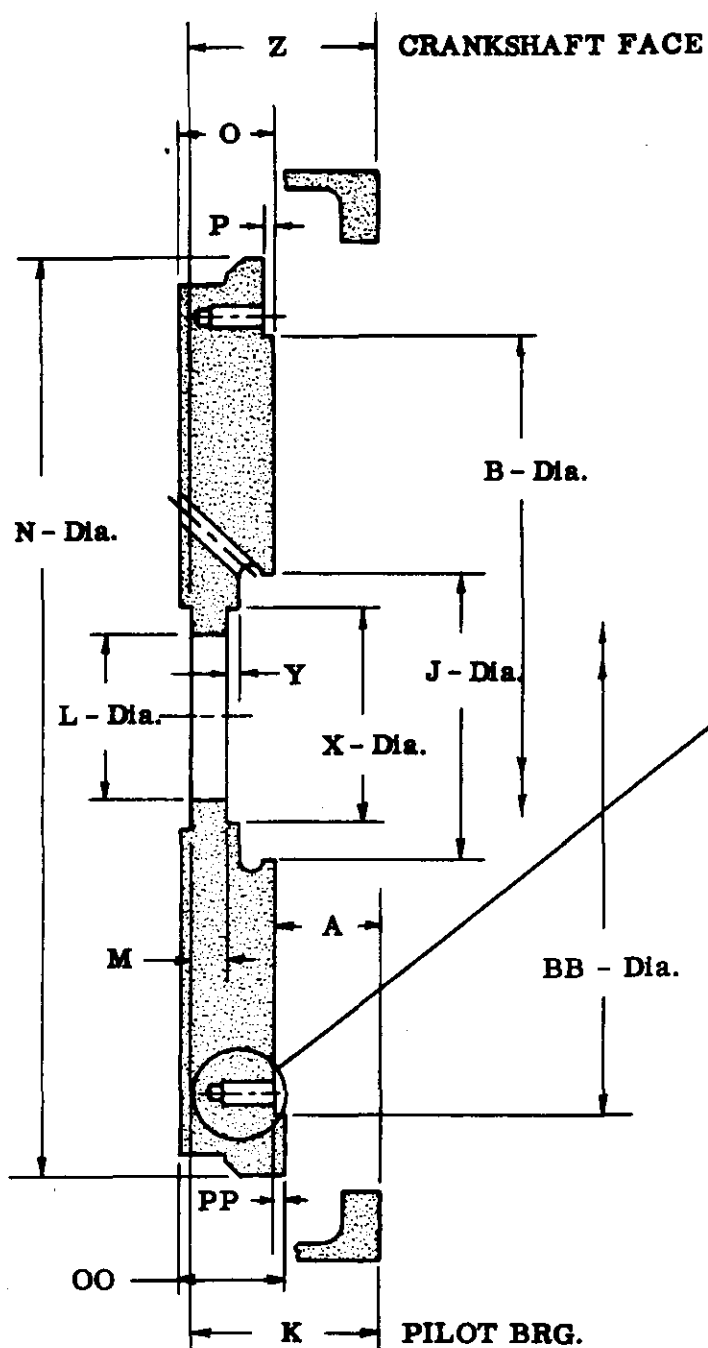
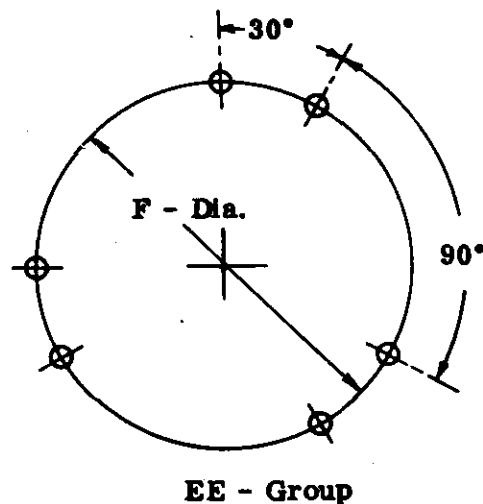
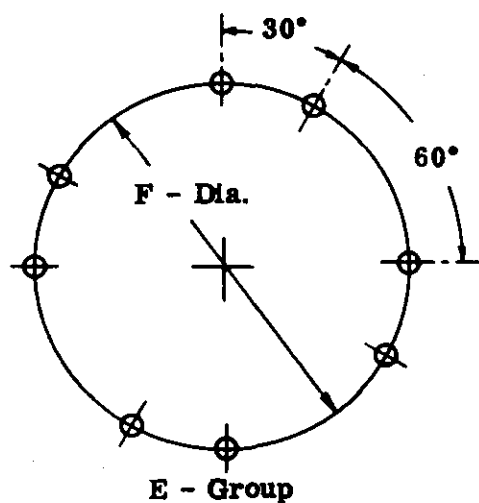
110 - 1/2A1



	FLYWHEEL NUMBER					
	5111141	5189991				
A	1/64(e)	1 11/64(e)				
C	1/2 - 13	1/2 - 13				
CC	-	3/4 - 16				
D	8	8				
F	16	14				
I	1 1/8	2 1/8				
II	-	15/16				
J	7 1/2	9 7/32				
JJ	14 3/4	12				
K	3 61/64	3 1/4				
L	3 1/8	$\frac{3.1495}{3.1503}$				
M	7/8	23/32				
N	21 13/16	22				
O	4 3/16	5 3/8				
Q	2 13/32	3 1/32				
S	2 23/64	3 5/32				
T	17 13/64	15 1/2				
Z	$\frac{3.9860}{3.9094}$	$\frac{3.9860}{3.9094}$				

(e) Protrudes beyond Flywheel Housing

Industrial Clutch
F4-59-80
110-1/2 B1

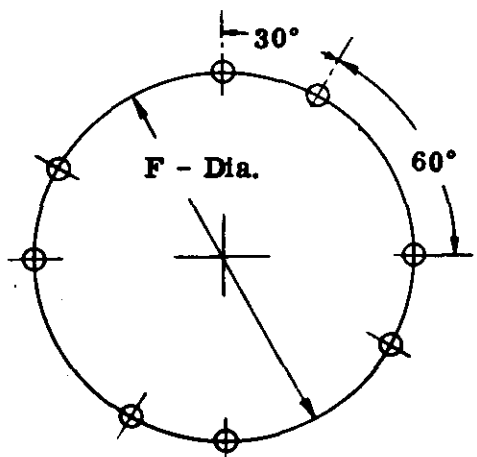


- C - Tap
 - D - No. Holes
 - E - or EE - Hole Grouping (a)
 - F - Bolt Circle
- (a) When E & EE are blank in table, holes D are equally spaced

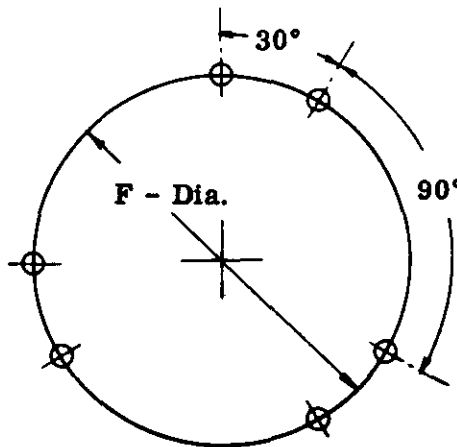
	FLYWHEEL NUMBER						
	5187845						
A	1 1/32						
B	-						
BB	-						
C	1/2 - 13						
D	10						
E	-						
EE	-						
F	17 1/8						
G	-						
H	-						
I	1 1/8						
J	10						
K	3 61/64						
L	$\frac{3.1495}{3.1503}^{(b)}$						
M	1 13/32						
N	22						
O	3 11/64						
OO	-						
P	-						
PP	-						
X	-						
Y	-						
Z	$\frac{3.9860}{3.9094}$						

(b) Uses Hyatt Roller Bearing

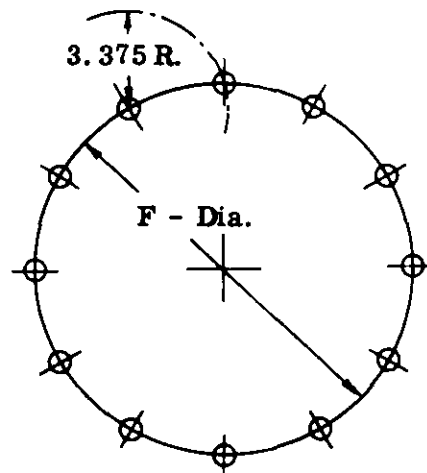
Flat Type
110 - 1/2 C1



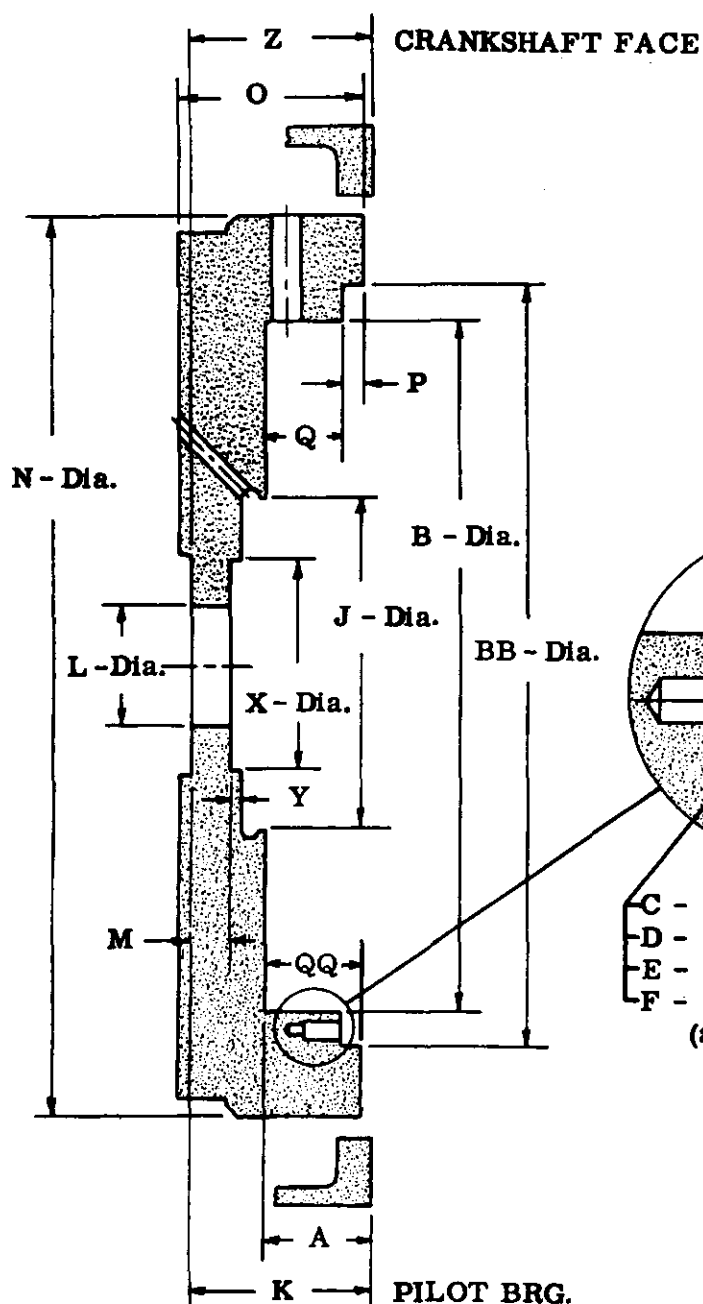
E - Group



EE - Group



Note: Wheels indicated by (#) in table have 12 holes equally spaced except one as shown.



- C - Tap
- D - No. Holes
- E - or EE - Hole Grouping (a)
- F - Bolt Circle

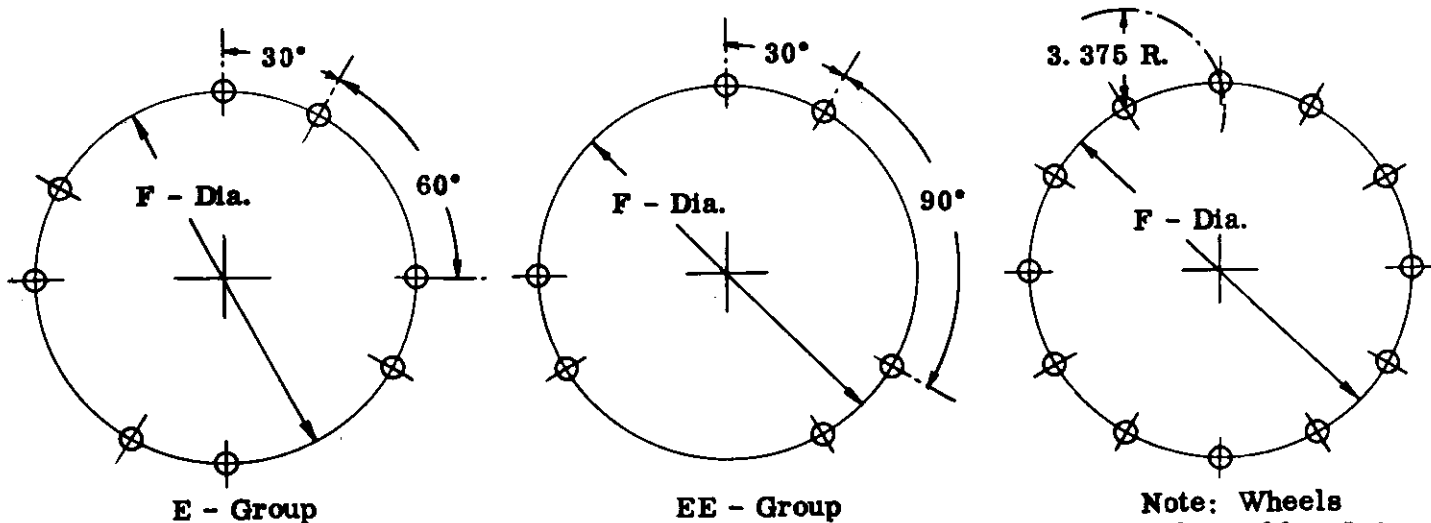
(a) When E & EE are blank in table, holes D are equally spaced except wheels indicated by (#)

Pot Type - Single Plate
110 - 1/2D

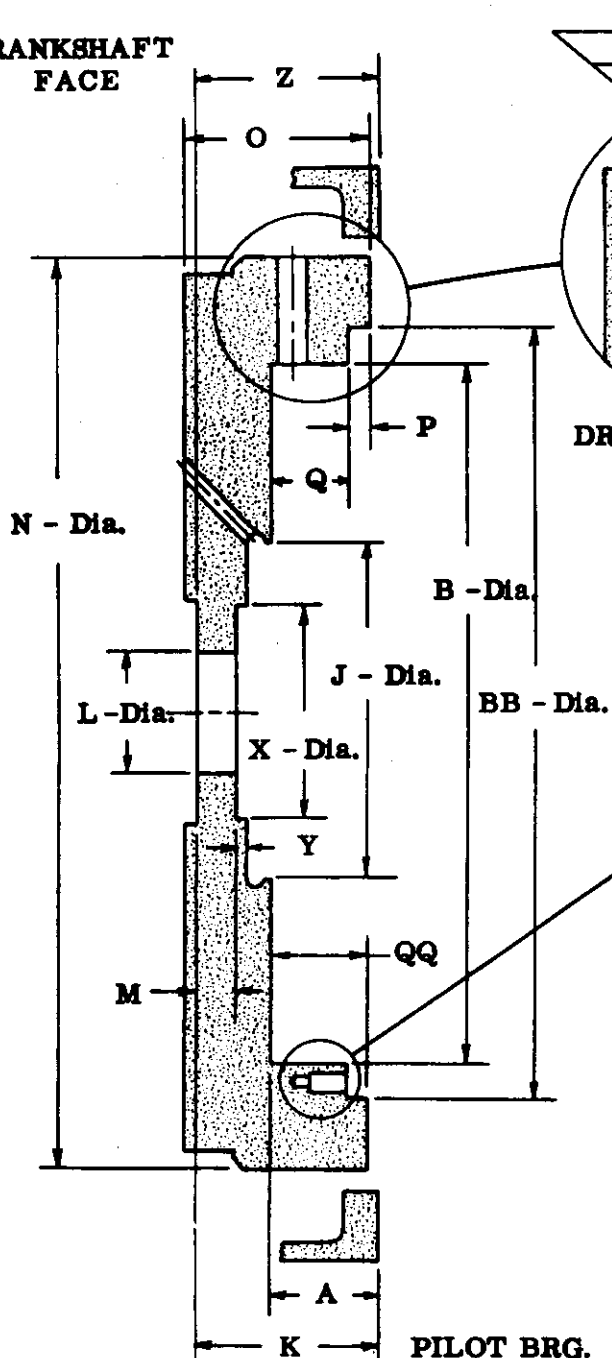
	FLYWHEEL NUMBER						
	5114508	5186682	5187329				
A	1 39/64	2 33/64	2.007				
B	15 1/4	<u>18.001</u> 18.004	16 7/8				
BB	<u>17.250</u> 17.253	-	<u>18.500</u> 18.503				
C	1/2 - 13	3/8 - 16	3/8 - 16				
D	9	12	12				
E	-	-	-				
EE	-	-	-				
F	16 1/4	18 3/4	17 5/8				
G	-	-	-				
H	-	-	-				
I	1	7/8	3/4				
J	8 7/8	6 27/64	9 31/64				
K	3 61/64	3 61/64	3 61/64				
L	<u>2.8333</u> (b) 2.8341	<u>2.8345</u> 2.8353	<u>2.805</u> 2.810				
M	1 1/64	3/4	3/4				
N	21 5/8	22	21 13/16				
O	4 3/16	2 29/32	3 43/64				
P	15/64	-	1/4				
Q	1 39/64	-	1 1/4				
QQ	-	1 7/32	-				
X	6	-	6				
Y	1/4	-	29/64				
Z	<u>3.9860</u> 3.9094	<u>3.9860</u> 3.9094	<u>3.9860</u> 3.9094				

(b) Uses Hyatt Roller Bearing

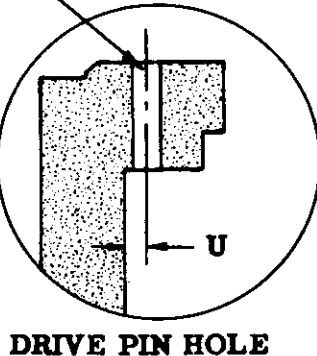
Pot Type - Single Plat.
110 - 1/2 DI



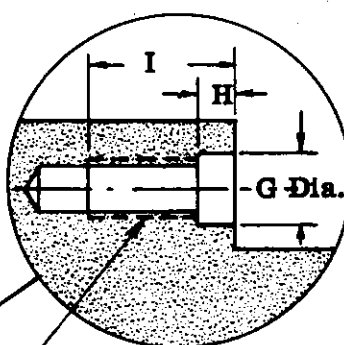
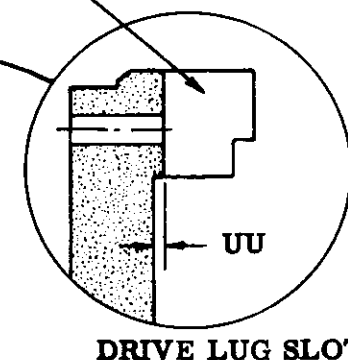
**CRANKSHAFT
FACE**



V - Ream
W - No. Holes



VV - Slot Width
WW - No. Slots

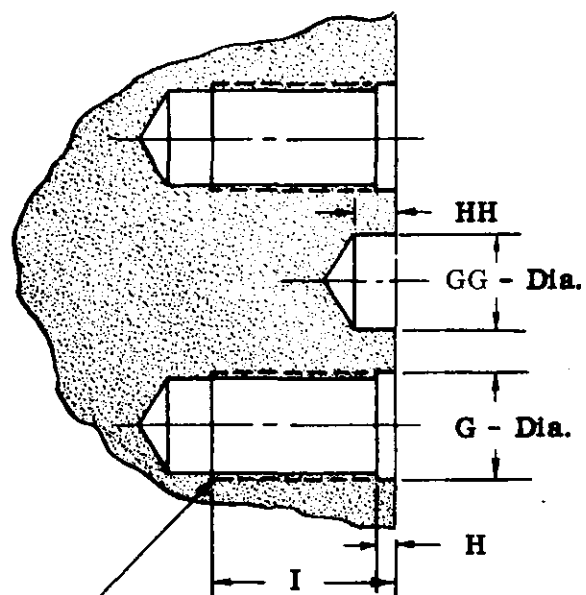
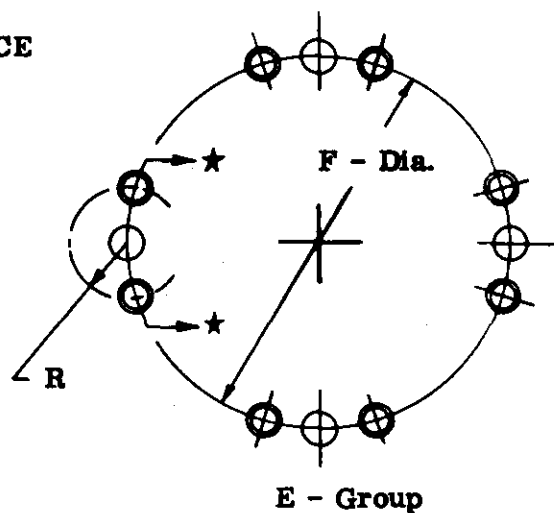
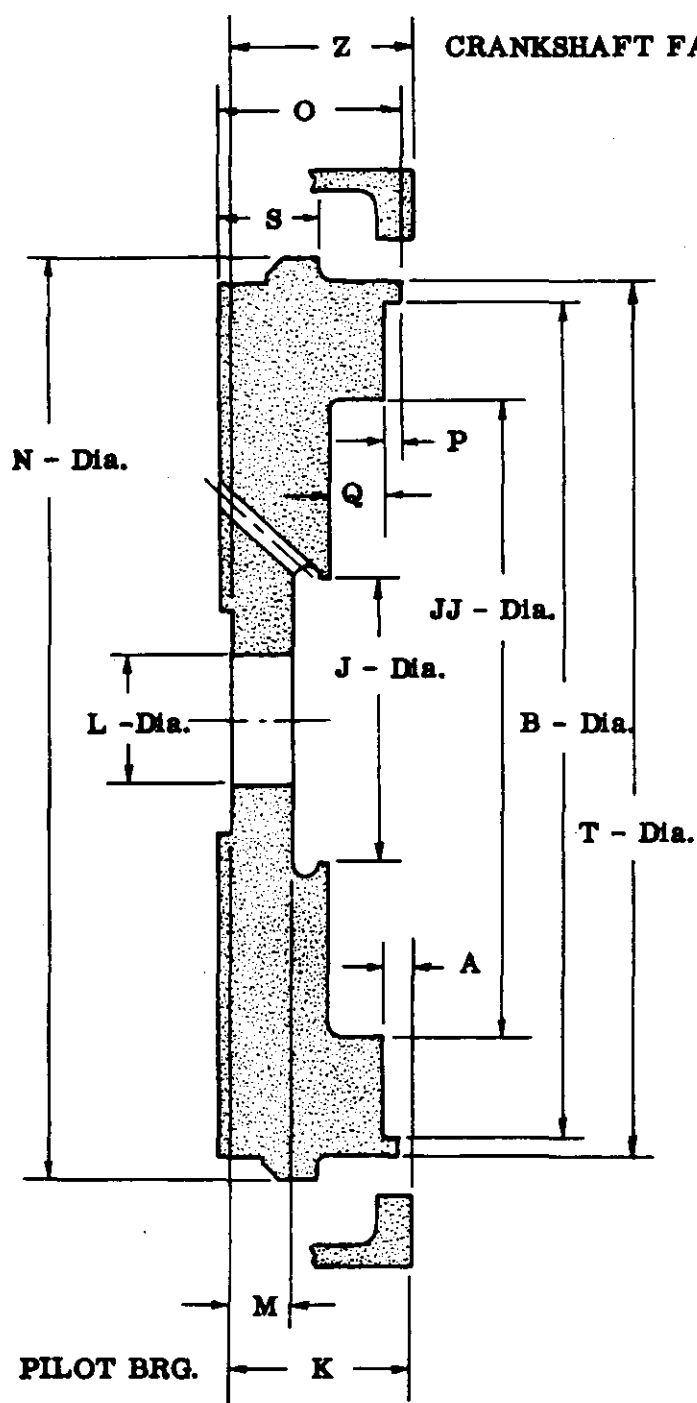


(a) When E & EE are blank in table, holes D are equally spaced except wheels indicated by (#)

Pot Type - Double Plate
110 - 1/2E

	FLYWHEEL NUMBER					
	5113185	5176797				
A	2 3/16	2 3/16				
B	<u>18.000</u> 18.003	<u>18.000</u> 18.003				
BB	-	-				
C	3/8 - 16	3/8 - 16				
D	12	12				
E	-	-				
EE	-	-				
F	18 3/4	18 3/4				
G	-	-				
H	-	-				
I	1 7/32	7/8				
J	9 31/64	9 31/64				
K	3 61/64	3 61/64				
L	<u>2.8338</u> 2.8346	<u>2.8338</u> 2.8346				
M	3/4	3/4				
N	21 13/16	21 13/16				
O	4 11/32	4 11/32				
P	-	-				
Q	-	-				
QQ	2 21/64	2 21/64				
U	13/16	13/16				
UU	-	-				
V	<u>.6245</u> .6255	<u>.6245</u> .6255				
VV	-	-				
W	6	6				
WW	-	-				
X	-	-				
X	-	-				
Y	-	-				
Z	<u>3.9860</u> 3.9094	<u>3.9860</u> 3.9094				

Pot Type-Double Plate
110-1/2E1



VIEW - ★★

- C - Tap
- D - No. Holes
- E - Hole Grouping
- F - Bolt Circle

	FLYWHEEL NUMBER						
	5118593(1)	5178360	5188303	5111528			
A	47/64	47/64	3/32	-1/4 (m)			
B	$\frac{17.755}{17.758}$	$\frac{17.755}{17.758}$	$\frac{15.000}{15.002}$	$\frac{21.375}{21.380}$			
C	5/8 - 11	5/8 - 11	5/8 - 11	5/8 - 11			
D	8	8	8	10			
E	*	*	*	*			
F	15 1/2	15 1/2	13 1/4	19 3/8			
G	21/32	21/32	21/32	-			
GG	11/16	3/4	3/4	3/4			
H	1/8	1/8	1/8	-			
HH	5/16	5/16	3/8	3/8			
I	1 3/16	1 3/16	1 13/64	1 1/8			
J	5 5/8	5 5/8	6 1/8	6 1/8			
JJ	13 1/2	13 1/2	11 7/8	18			
K	3 61/64	3 61/64	3 61/64	3 61/64			
L	3 1/8	3 1/8	3 1/8	3 1/8			
M	3/4	3/4	1 13/32	1 13/32			
N	21 13/16	21 13/16	22	22			
O	3 23/32	3 23/32	4 9/16	5			
P	1/4	1/4	29/64	9/16			
Q	1 23/32	1 23/32	1 9/16	2 9/64			
R	1 1/8	1 1/8	1 1/8	1 1/8			
S	2 23/64	2 23/64	2 51/64	-			
T	19 1/2	19 1/2	16 1/8	-			
Z	$\frac{3.9860}{3.9094}$	$\frac{3.9860}{3.9094}$	$\frac{3.9860}{3.9094}$	$\frac{3.9860}{3.9094}$			

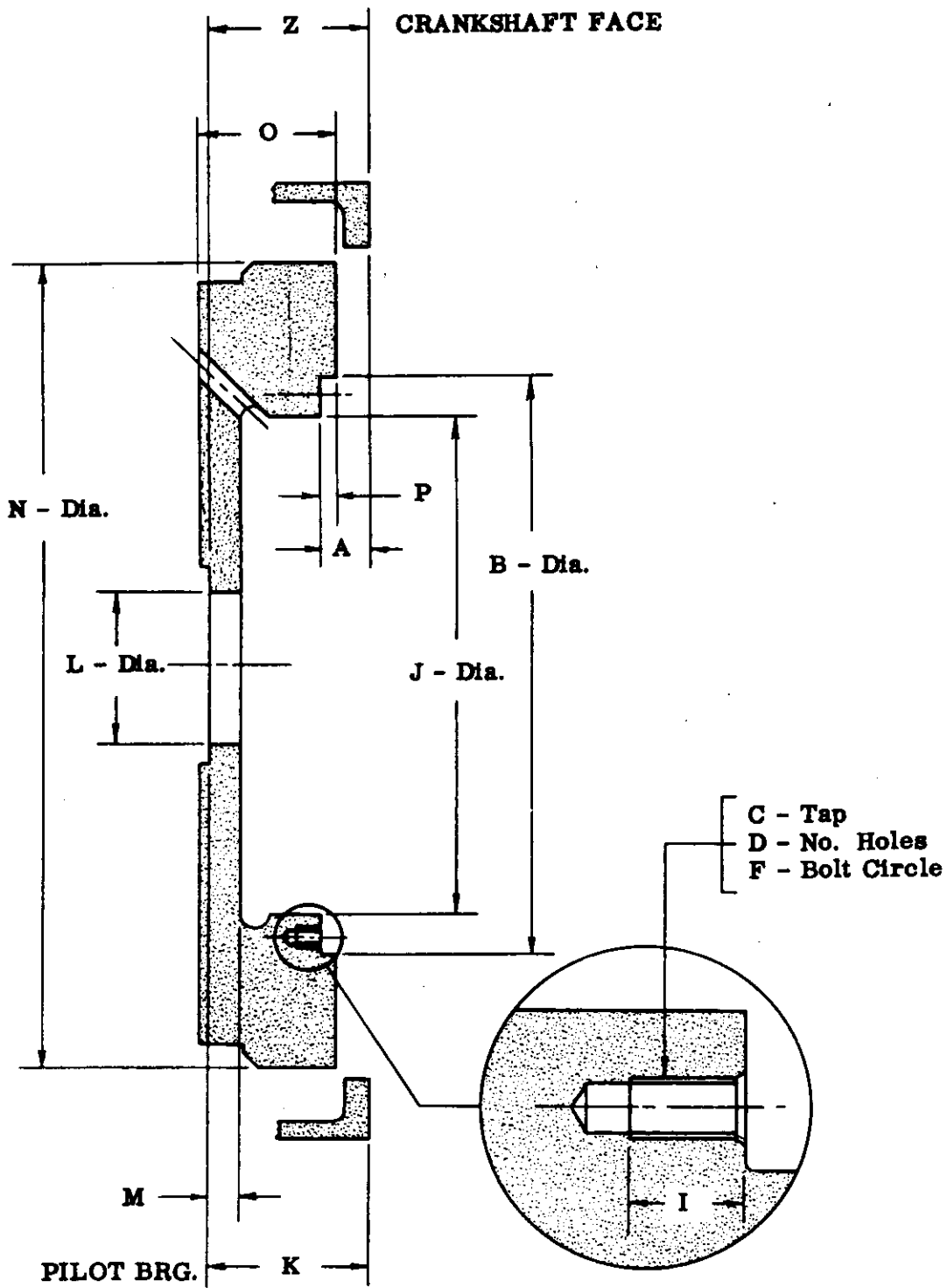
(1) Ni-Resist Cast Iron

* E Hole Group - See 110-1/2G

(m) Protrudes Beyond Bell Face

Generator Type
110 - 1/2 G1

SERIES 110
SAE NO. 1



Drive Ring Type
110 - 1A

	FLYWHEEL NUMBER						
	5124625	5111535	5119969	5181663(a)	5100152	5130920(a)	5131408(a)
A	1 25/64	1 25/64	1 7/32	1	1 51/64	1	1
B	$\frac{18.376}{18.379}$	$\frac{18.376}{18.379}$	$\frac{18.376}{18.379}$	$\frac{18.376}{18.379}$	$\frac{18.500}{18.504}$	$\frac{18.376}{18.379}$	$\frac{18.376}{18.379}$
C	5/8 - 11	1/2 - 13	1/2 - 13	1/2 - 13	3/8 - 16	1/2 - 13	1/2 - 13
D	10	8	8	8	12	8	8
F	17 1/4	17 1/4	17 1/4	17 1/4	17 5/8	17 1/4	17 1/4
I	1	1	1 3/32	1	1	1	1
J	8 55/64	16 55/64	16 1/8	16 1/8	16 3/4	16 1/8	16 1/8
K	4 1/64	4 1/64	3 57/64	3 15/16	4 41/64	3 15/16	3 15/16
L	$\frac{3.1495}{3.1503}$	$\frac{3.1495}{3.1503}$	$\frac{2.8345}{2.8353}$	$\frac{3.1495}{3.1503}$	2 29/32	$\frac{3.1495}{3.1503}$	$\frac{3.1495}{3.1503}$
M	27/32	27/32	3/4	1 11/16	1 15/32	1 11/16	1 11/16
N	19 1/2	19 1/2	20	20	19 1/2	20	20
O	3 11/16	3 11/16	4 1/64	4 13/64	3 5/16	4 13/64	4 13/64
P	3/16	3/16	11/32	5/16	7/32	5/16	5/16
Z	$\frac{4.6860}{4.6094}$	$\frac{4.6860}{4.6094}$	$\frac{4.6860}{4.6094}$	$\frac{4.6860}{4.6094}$	$\frac{4.6860}{4.6094}$	$\frac{4.6860}{4.6094}$	$\frac{4.6860}{4.6094}$

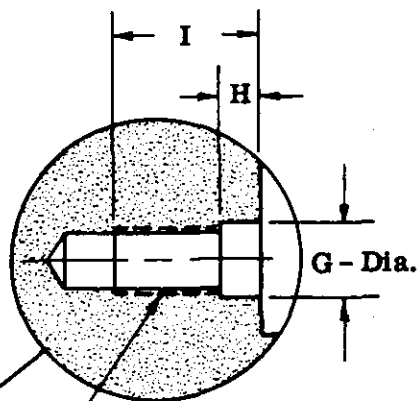
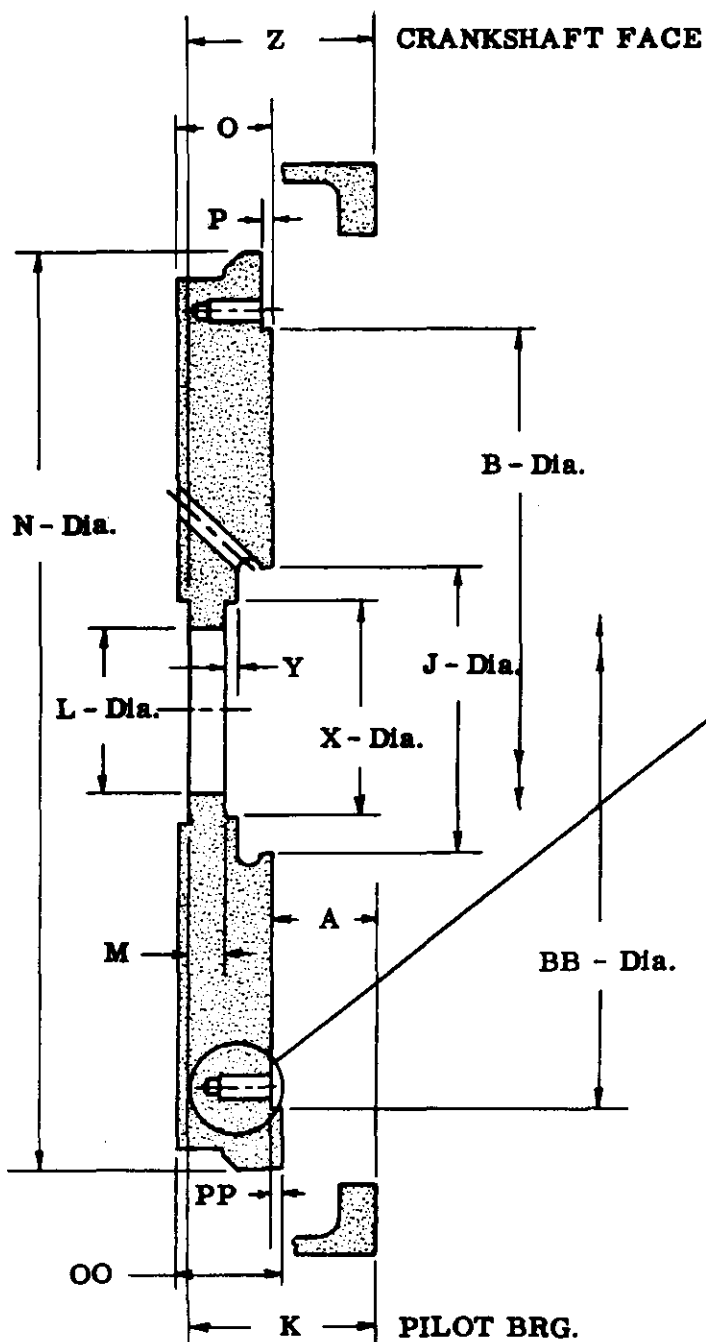
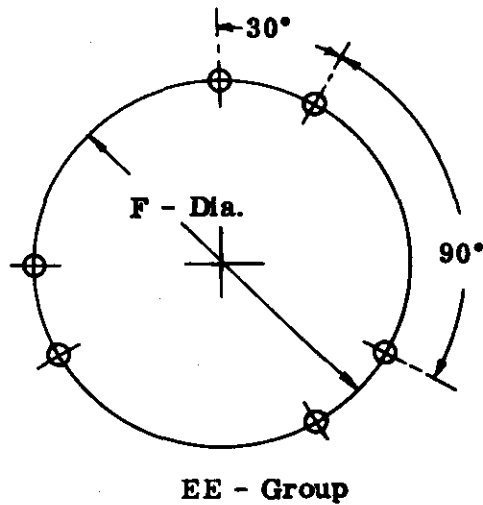
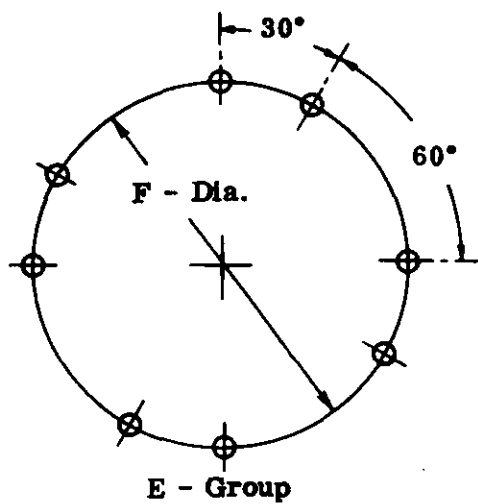
(a) made from 5181663

Drive Ring Type
110 - 1A1

	FLYWHEEL NUMBER						
	5134949	5136256(a)					
A	2-13/16	1					
B	$\frac{14.001}{14.004}$	$\frac{18.376}{18.379}$					
C	1/2-13	1/2-13					
D	8	16					
F	12-3/4	17-1/4					
I	-	1					
J	8-3/4	16-1/8					
K	4-41/64	3-15/16					
L	2 7/8	3-15/16					
L	2 7/8	$\frac{3.1495}{3.1503}$					
M	1-1/32	1-11/16					
N	18.80	20					
O	2-3/8	4-13/64					
P	9/32	5/16					
Z	$\frac{4.6860}{4.6094}$	$\frac{4.6860}{4.6094}$					

(a) - Made from 5181663

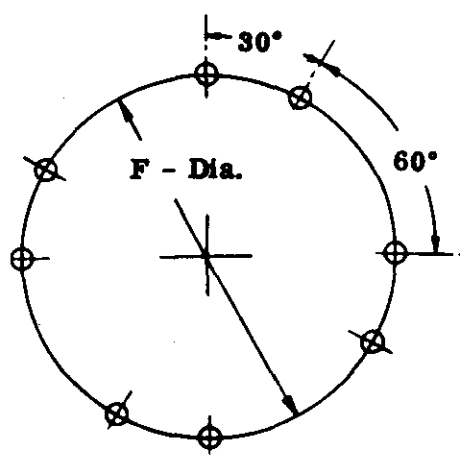
Drive Ring Type
110-1A2



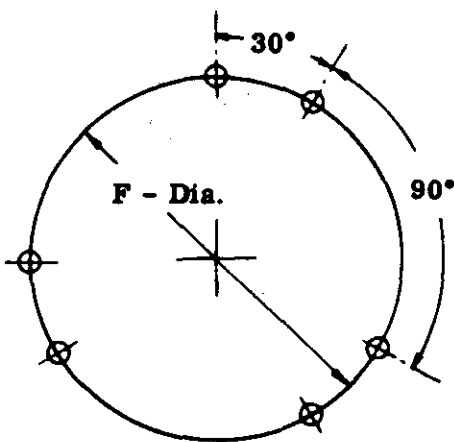
- C -** Tap
 - D -** No. Holes
 - E -** or EE - Hole Grouping (a)
 - F -** Bolt Circle
- (a) When E & EE are blank in table, holes D are equally spaced

	FLYWHEEL NUMBER						
	5181765						
A	2 25/64						
B	$\frac{16.249}{16.252}$						
BB	-						
C	5/16 - 18						
D	12						
E	-						
EE	-						
F	16 29/32						
G	-						
H	-						
I	13/16						
J	8 11/16						
K	4 41/64						
L	$\frac{2.8345}{2.8353}$						
M	1 25/64						
N	18 51/64						
O	2 33/64						
OO	-						
P	5/32						
PP	-						
X	6 1/2						
Y	1/8						
Z	$\frac{4.6860}{4.6094}$						

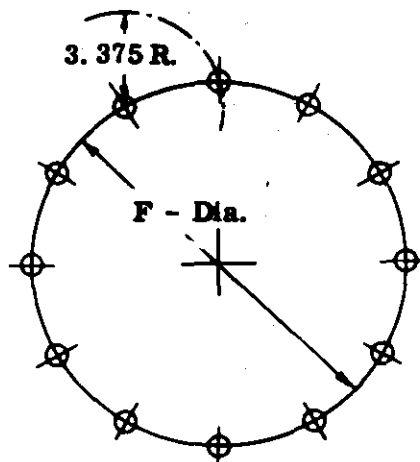
Flat Type
110 - 101



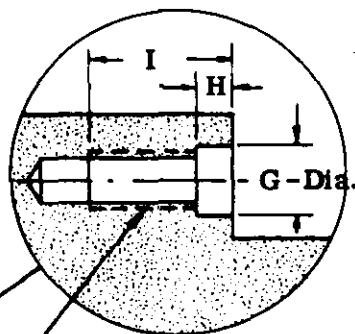
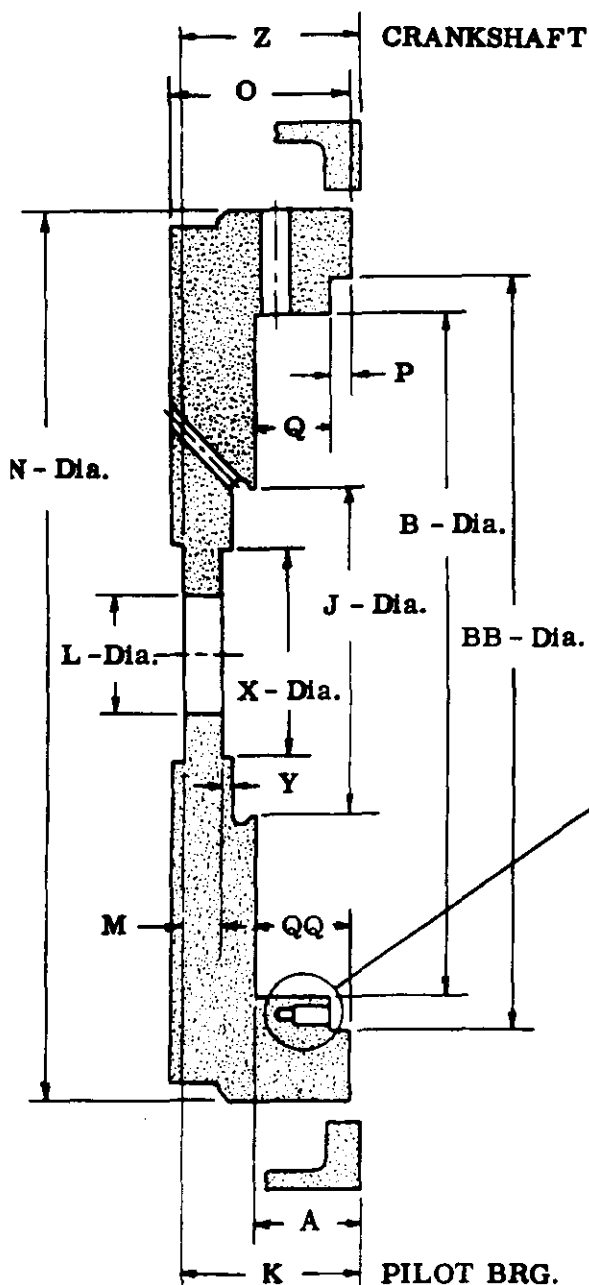
E - Group



EE - Group



Note: Wheels indicated by (#) in table have 12 holes equally spaced except one as shown.



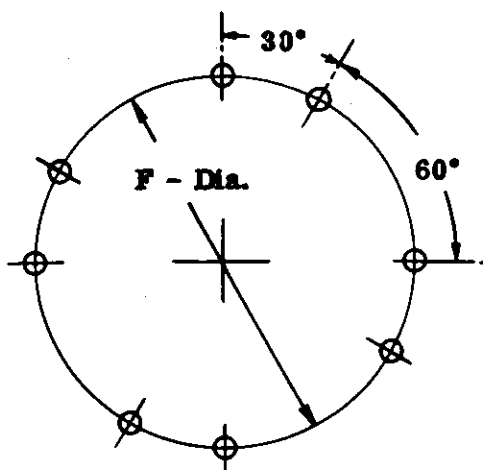
- C - Tap
- D - No. Holes
- E - or EE - Hole Grouping (a)
- F - Bolt Circle

(a) When E & EE are blank in table, holes D are equally spaced except wheels indicated by (#)

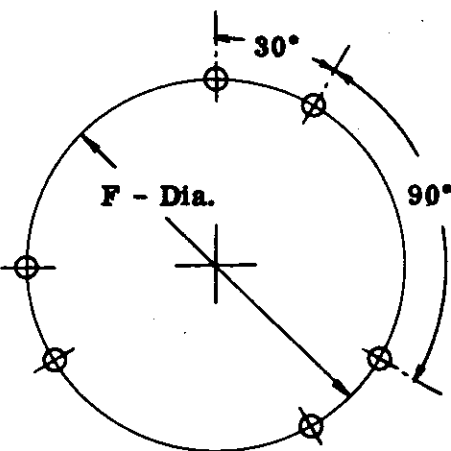
	FLYWHEEL NUMBER						
	5183545(p)	5181683	5189549				
A	2	1 53/64					
B	16 7/8	<u>18.001</u> 18.004	<u>11.002</u> 11.004				
BB	<u>18.500</u> 18.503		17 15/16				
C	3/8 - 16	3/8 - 16	1/2 - 13				
D	12	12	6				
E	-	-	-				
EE	-	-	-				
F	17 5/8	18 3/4	10				
G	-	-	-				
H	-	-	-				
I	3/4	7/8	THRU				
J	9 7/8	6 27/64	6				
K	4 41/64	3 61/64	3 7/8				
L	<u>2.8345</u> 2.8353	<u>2.8345</u> 2.8353	<u>2.8345</u> 2.8353				
M	13/16	3/4	1 1/4				
N	20	19 39/64	19 39/64				
O	3 11/16	3 39/64	3 1/4				
P	1/4	1/4	25/64				
Q	1 1/4	-	-				
QQ	-	1 7/32	1 25/64				
X	6	-	-				
Y	11/32	-	-				
Z	<u>3.9860(p)</u> 3.9094	<u>4.6860</u> 4.6094	<u>4.6860</u> 4.6094				

(p) Requires 5.40 wide flywheel housing

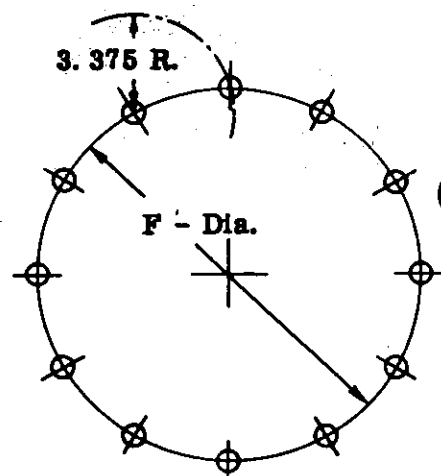
Pot Type-Single Plate
110 - 1D1



E - Group

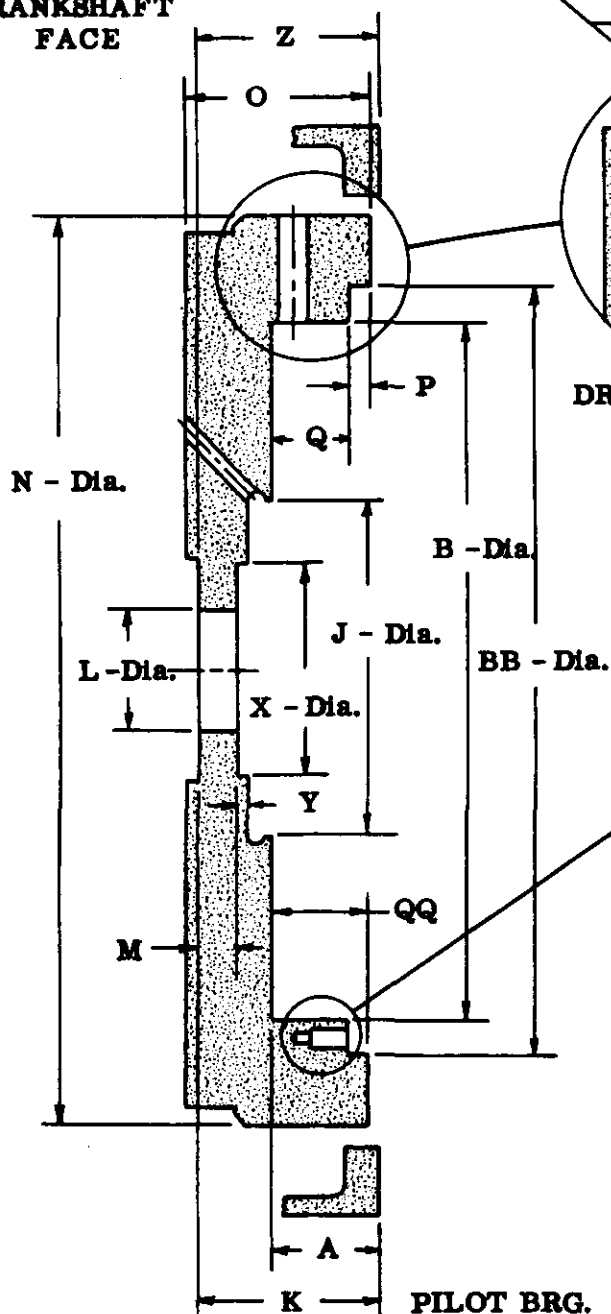


EE - Group

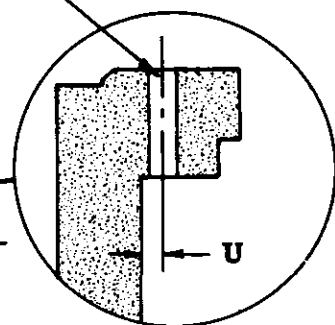


Note: Wheels indicated by (#) in table have 12 holes equally spaced except one as shown.

CRANKSHAFT
FACE

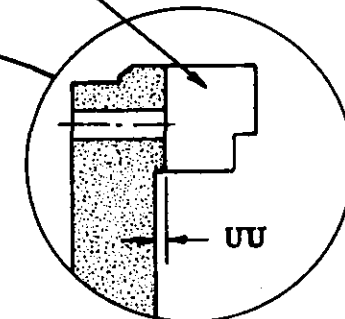


V - Ream
W - No. Holes

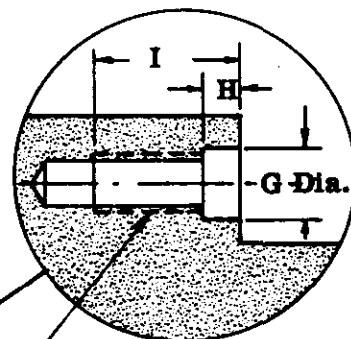


DRIVE PIN HOLE

VV - Slot Width
WW - No. Slots

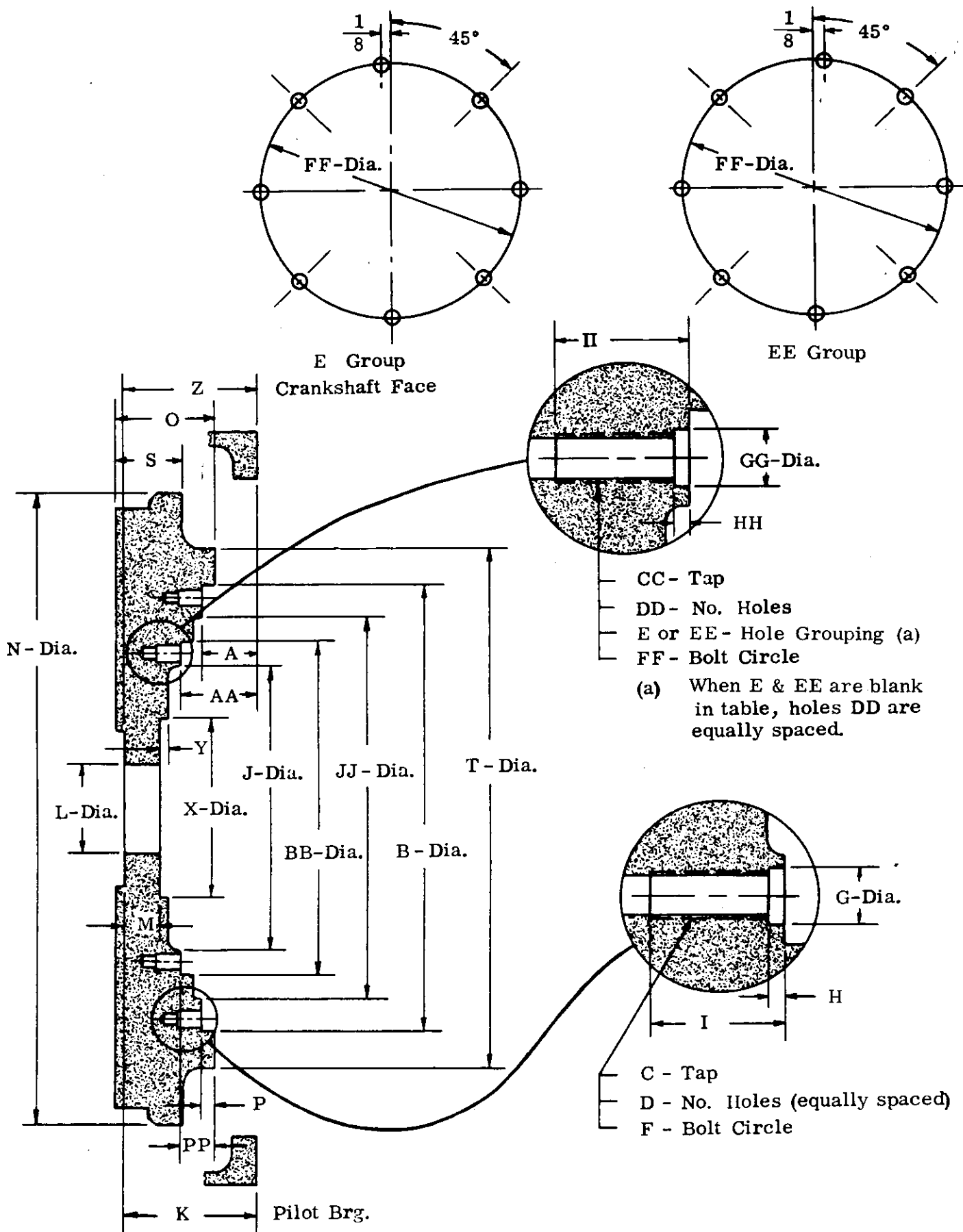


DRIVE LUG SLOT



- C - Tap
 - D - No. Holes
 - E or EE - Hole Grouping (a)
 - F - Bolt Circle
- (a) When E & EE are blank in table, holes D are equally spaced except wheels indicated by (#)

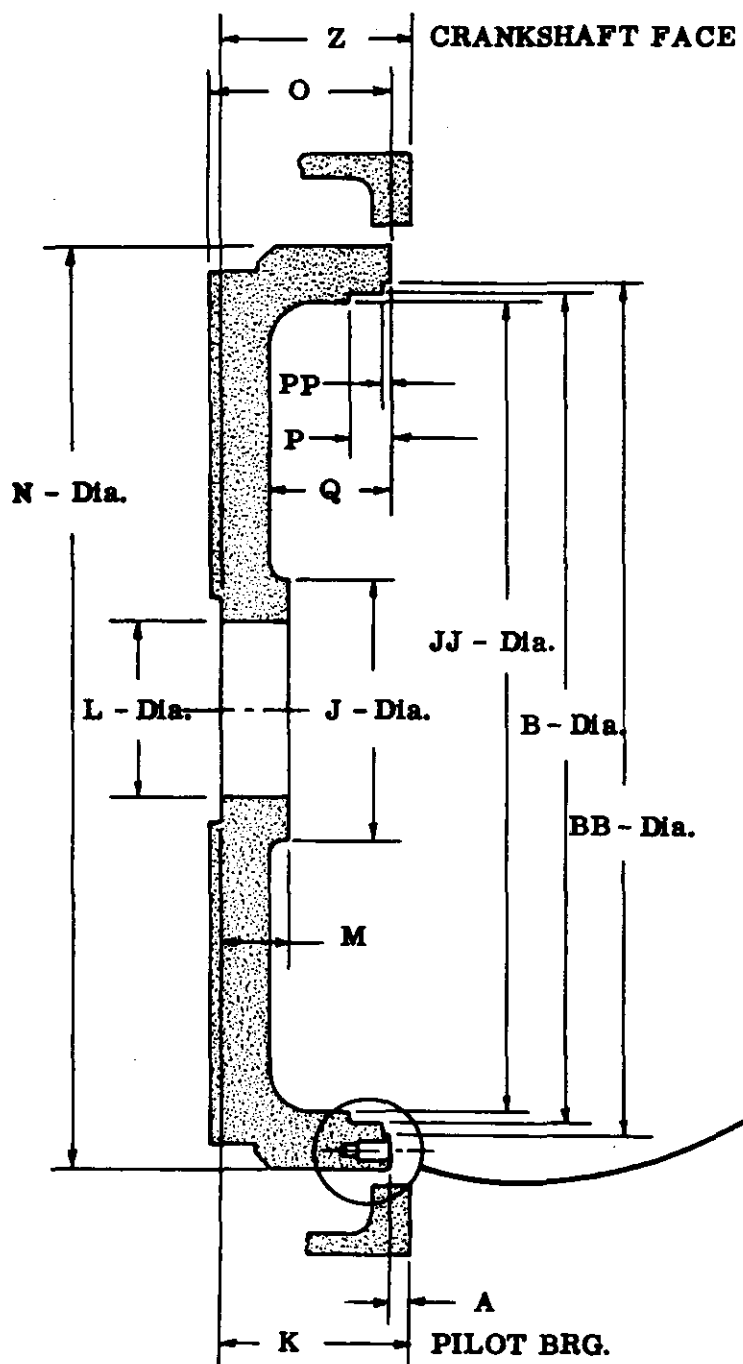
	FLYWHEEL NUMBER						
	5182998	5113988	5162794				
A	2 13/64	2 1/8	2 1/8				
B	<u>15.125</u> 15.128	<u>15.124</u> 15.127	15 1/8				
BB	-	-	<u>16.750</u> 16.752				
C	3/8 - 16	3/8 - 16	-				
D	12	12	12				
E	-	-	-				
EE	-	-	-				
F	15 7/8	15 7/8	15 7/8				
G	-	-	-				
H	-	-	-				
I	2 13/64	1 15/16	1				
J	6 1/2	7	7 5/8				
K	3 53/64	4	3 15/16				
L	<u>2.4401</u> 2.4409	<u>2.8345</u> 2.8353	<u>2.8338</u> 2.8348				
M	41/64	3/4	1 15/32				
N	19 51/64	18 3/4	18 3/4				
O	4 15/16	5 23/32	5 7/8				
P	-	1/4	5/16				
Q	-	-	-				
QQ	2 15/16	2 15/16	3 1/8				
U	3/4	3/4	55/64				
UU	-	-	-				
V	<u>.4995</u> .5005	<u>.4995</u> .5005	<u>.4995</u> .5005				
W	4	4	8				
WW	-	-	-				
X	-	-	-				
Y	-	-	-				
Z	<u>4.6860</u> 4.6094	<u>4.6860</u> 4.6094	<u>4.6860</u> 4.6094				



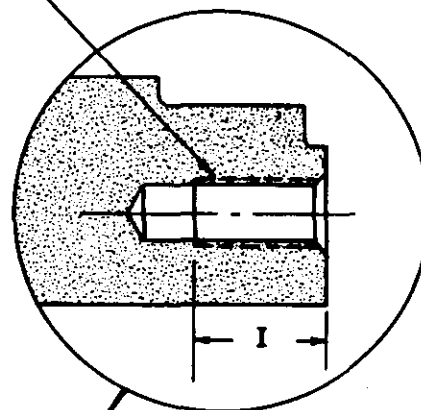
	FLYWHEEL NUMBER						
	5110556						
A	-						
AA	2 5/8						
B	-						
BB	10.252 10.256						
C	-						
CC	3/8 - 16						
D	-						
DD	8						
E	*						
EE	-						
F	-						
FF	9 1/2						
G	-						
GG	7/16						
H	-						
HH	1/8						
I	-						
II	1						
J	8 3/4						
JJ	-						
K	4 41/64						
L	2 7/8						
M	1 1/32						
N	18 3/4						
O	2 3/8						
P	-						
PP	3/32						
S	2 1/8						
T	12						
X	-						
Y	-						
Z	4.6860 4.6094						

* E Hole Group - See 110-1F

Flexible Hub Type
110 - 1F1



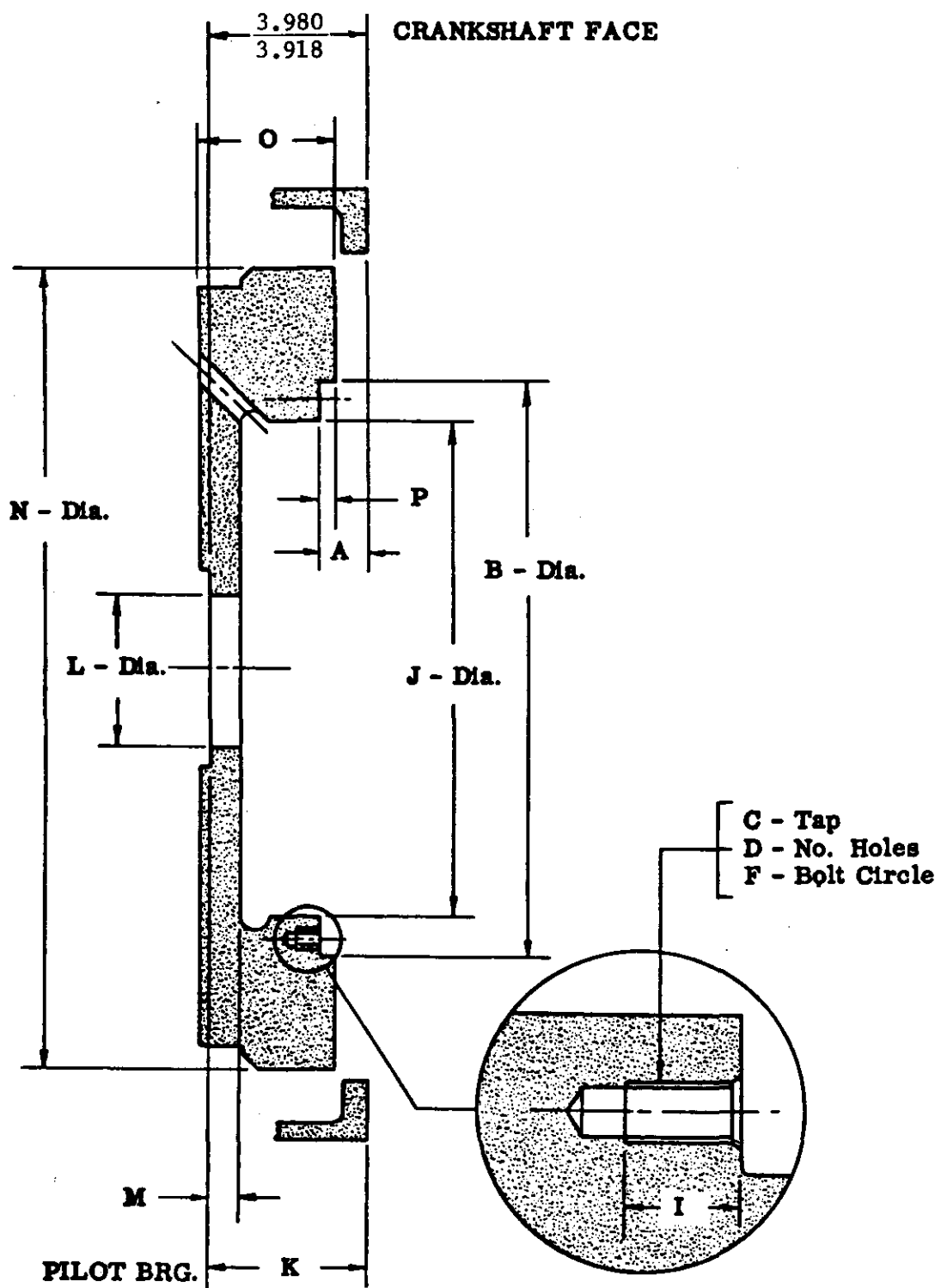
C - Tap
D - No. Holes
F - Bolt Circle



	FLYWHEEL NUMBER						
	5114173						
A	27/64						
B	$\frac{17.625}{17.630}$						
BB	-						
C	3/8 - 16						
D	24						
F	18 3/4						
I	3/4						
J	6						
JJ	-						
K	4 41/64						
L	2 29/32						
M	1 29/64						
N	20						
O	4 31/64						
P	7/8						
PP	-						
Q	2 5/8						
Z	$\frac{4.6860}{4.6094}$						

Hydraulic Coupling
110 - 1H1





Drive Ring Type

149 - OA

	FLYWHEEL NUMBER					
	5141690	5146461		DX-63549		
A	1.39	.63	2.07	2.41		
B	<u>22.501</u> 22.505	<u>22.501</u> 22.505	<u>18.999</u> 19.002	<u>11.129</u> 11.126		
C	5/8-11	5/8-11	3/8-16	5/8 - 11		
D	12	12	12	10		
F	21.375	21.375	18.12	9.751		
I	1.26	1.26	.76	1.06		
J	19.62	19.62	7.25	7.25		
K	-	3.83	3.83	3.83		
L	(a)	<u>3.1483</u> 3.1491	<u>3.1483</u> 3.1491	<u>3.1483</u> 3.1491		
M	.96	.84	.84	.84		
N	24.50	24.50	24.50	24.50		
O	3.31	3.75	3.75	3.75		
P	.50	.18	.19	.26		

(a) has bushing

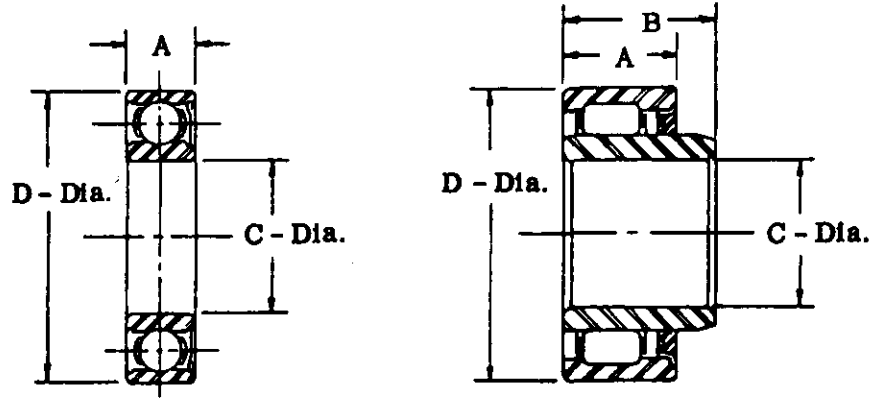
DRIVE RING TYPE
149 - OAL

PLAT
BEARING

TOLERANCES

I.D. +.0000
 -.0004
 A- O.D. +.0000
 .0005

 I.D. +.0000 Radial
 -.0002 Loading
 B- O.D. +.0000 Groove
 -.0004



* Superseded

Superseded by #	Number	PART NO	TYPE	SINGLE or DOUBLE ROW	SHIELD SINGLE or DOUBLE	SEALED	FIT	NOMINAL DIMENSIONS				TOLERANCE
								A	B	C	D	
	1	900532\$	7606810356A	S	S	-	-	.7480	-	1.1811	2.8346	A
	2	904983	Z99505X1C	S	-	Yes	-	.5906	-	.9843	2.0472	A
26	3	905644*	1306L3C	S	No	No	-	.7480	-	1.1811	2.8346	B
	4	906986	Z99506PLR1C	S	-	Yes	Loose	.6299	-	1.1811	2.4409	A
2	5	907060*	77505L1V	S	D	-	-	.5906	-	.9843	2.0472	A
	6	907084	Z99507	S	S	-	-	.6693	-	1.3780	2.8346	-
26	7	907086*	7306L1C	S	S	-	-	.7480	-	1.1811	2.8346	A
	8	907133\$	9606	S	-	-	-	.7480	-	1.1811	2.8346	-
	9	907502\$	7502	S	-	-	-	.4331	-	.5906	1.3780	-
	10	907508\$	7508	S	-	-	-	.7087	-	1.5748	3.1496	-
2	11	954410*	7505	S	-	-	-	.5906	-	.9843	2.0472	-
4	12	954411*	7506LR1C	S	S	-	Loose	.6299	-	1.1811	2.4409	A
6	13	954420*	7505	S	-	-	-	.6693	-	1.3780	2.8346	-
25	14	954421*	7605L1C	S	-	-	-	.6693	-	.9843	2.4409	-
26	15	954422*	7606L1C	S	-	-	-	.7480	-	1.1811	2.8346	A
26	16	954423*	3304	S	-	-	-	.5906	-	.7874	2.0472	-
	17	954425\$	1306	S	-	-	-	.7480	-	1.1811	2.8346	-
	18	954427	5606	D	-	-	-	1.1875	-	1.1811	2.8346	-
	19	954472	5507	D	-	-	-	1.0625	-	1.3780	2.8396	-
	20	954489\$	5607	D	-	-	-	1.3750	-	1.3780	3.1496	-
	21	954497\$	1304	S	-	-	-	.5906	-	.7874	2.0472	-
	22	954554\$	99605	S	-	-	-	.6693	-	.9843	2.4409	-
	23	954360\$	77605X1C	S	D	-	-	.6693	-	.9843	2.4409	A
26	24	907256*	77606	S	-	-	-	.7480	-	1.1811	2.8346	A
	25	907302	Z99605X1978	S	-	Yes	Loose	.6693	-	.9843	2.4409	-
	26	907594	Z99606X1C	S	-	Yes	-	.7480	-	1.1811	2.8346	A
	27	7450568\$	A 1527 WB	Roller	-	1-Side	-	.9650	1.3125	.9843	2.4409	A
	28	7450571\$	A 1528 WB	Roller	-	1-Side	-	1.0000	1.4375	1.1811	2.8346	A
	29	7451462	A-1526-1307TM	Roller	-	-	-	.8263	1.5625	1.3780	3.1496	-
	30	7451256	A-1526-1306 TS	Roller	-	-	-	.748	1.4375	1.1811	2.8346	-
	31	954293	77502X1C	S	D	No	-	.4331	-	.5906	1.378	-
	32	954294	88026X1KE4	S	-	-	-	.6594	-	1.0236	2.0472	A
25	33	904750*						.6693	-	.9843	2.4409	

---- obsolete

Pilot Bearings

11-11-11

STARTER, RING GEAR AND FLYWHEEL HOUSING SELECTIONS

The information in this section is helpful in determining the proper combination of flywheel ring gear and starter pinion to be used with flywheel housings of specific starter mounting hole center distances. Due to the many variables involved, such as starter nose piece to flywheel ring gear clearance, starter and shifting mechanism to engine clearance (such as dipsticks, blowers, oil coolers, lube filters, governors, battery charging generators, etc.), flywheel housing starter mounting pad position (high, low, left or right side of engine), it is not feasible to list the starter part number(s) to be used with the flywheel housing(s) available on each engine series. It is recommended that all new starter applications be cleared through the Electrical Section of Application Engineering.

The information needed to match the starter pinion and flywheel ring gear to the flywheel housing consists of (1) flywheel housing starter mounting pad center distance, (2) starter mounting flange machining - REF. A, B, C, A-B and A-C starter codes, (3) diametral pitch and number of teeth in flywheel ring gear, (4) diametral pitch and number of teeth in starter pinions, and (5) pinion gear tooth form (gear blank size).

In the example at the beginning of this book, flywheel (detail) P/N 5182596 (group 6C3-178) was chosen to drive a Fuller 5A62 transmission with a Lipe Rollway 15 DP clutch that requires an SAE #1 flywheel. We shall use flywheel housing P/N 5136473 having a high mounted starter on the right side of the engine.

A 12 volt overrunning clutch starting motor can be chosen by two methods, i.e.: Method 1 - Referring to the engine model group selection sheets for groups 6B - Flywheel Housing, 6C3 - Flywheel, and 6Y2A - Electrical Starting Motor; or Method 2 - Using the charts in this section.

Method 1 - The coding under group 6C3-178 states that the flywheel ring gear has 118 teeth 6/8 pitch, it is unchamfered, it is to be used with a flywheel housing having 10.854" center distance, and it can be used with the flywheel housing in groups 6B-198, 208, 665, and 684. The flywheel housing P/N 5136473 is in group 6B-198. The description and coding on this group states that this is a No. 1 flywheel housing, the starter is on the right side, the center distance is 10.854", and an "A" starter mounting flange is required. Referring to the 6Y2A groups, 6Y2A-69 contains motor P/N 1114081 that is a 12 volt insulated overrunning clutch motor. The motor has a pinion with 11 teeth on a 12 tooth form (11/12), a 6/8 pitch and a nose housing with an "A" mounting flange. The group 6Y2A-69 is coded for flywheel housing group 6B-198.

Method 2 - Refer to flywheel housing chart No. 5136473, in the housing section, and obtain the starter center distance (10.854") and starter nose piece code (A). With this information, refer to the "Starter Pinion, Flywheel Ring Gear and Flywheel Housing Starter Mounting Hole Center Distance Combination Chart" and locate the flywheel housing size (SAE #1), engine series (71), and center distance (10.854") required on this particular application. Therefore, in this case the ring gear 5184773 should be used and a starter with a pinion having 11 teeth on a 12 tooth form (11/12) and having a 6/8 pitch. Now refer to the Electrical Starter Assembly Chart and locate the voltage required (12 volt), system

STARTER, RING GEAR AND FLYWHEEL HOUSING SELECTIONS

The information in this section is helpful in determining the proper combination of flywheel ring gear and starter pinion to be used with flywheel housings of specific starter mounting hole center distances. Due to the many variables involved, such as starter nose piece to flywheel ring gear clearance, starter and shifting mechanism to engine clearance (such as dipsticks, blowers, oil coolers, lube filters, governors, battery charging generators, etc.), flywheel housing starter mounting pad position (high, low, left or right side of engine), it is not feasible to list the starter part number(s) to be used with the flywheel housing(s) available on each engine series. It is recommended that all new starter applications be cleared through the Electrical Section of Application Engineering.

The information needed to match the starter pinion and flywheel ring gear to the flywheel housing consists of (1) flywheel housing starter mounting pad center distance, (2) starter mounting flange machining - REF. A, B, C, A-B and A-C starter codes, (3) diametral pitch and number of teeth in flywheel ring gear, (4) diametral pitch and number of teeth in starter pinions, and (5) pinion gear tooth form (gear blank size).

In the example at the beginning of this book, flywheel (detail) P/N 5182596 (group 6C3-178) was chosen to drive a Fuller 5A62 transmission with a Lipe Rollway 15 DP clutch that requires an SAE #1 flywheel. We shall use flywheel housing P/N 5136473 having a high mounted starter on the right side of the engine.

A 12 volt overrunning clutch starting motor can be chosen by two methods, i.e.: Method 1 - Referring to the engine model group selection sheets for groups 6B - Flywheel Housing, 6C3 - Flywheel, and 6Y2A - Electrical Starting Motor; or Method 2 - Using the charts in this section.

Method 1 - The coding under group 6C3-178 states that the flywheel ring gear has 118 teeth 6/8 pitch, it is unchamfered, it is to be used with a flywheel housing having 10.854" center distance, and it can be used with the flywheel housing in groups 6B-198, 208, 665, and 684. The flywheel housing P/N 5136473 is in group 6B-198. The description and coding on this group states that this is a No. 1 flywheel housing, the starter is on the right side, the center distance is 10.854", and an "A" starter mounting flange is required. Referring to the 6Y2A groups, 6Y2A-69 contains motor P/N 1114081 that is a 12 volt insulated overrunning clutch motor. The motor has a pinion with 11 teeth on a 12 tooth form (11/12), a 6/8 pitch and a nose housing with an "A" mounting flange. The group 6Y2A-69 is coded for flywheel housing group 6B-198.

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STARTER, RING GEAR AND FLYWHEEL HOUSING SELECTIONS (CONT'D)

ground (insulated), engine series (71), pinion pitch 6/8 and teeth and form (11/12) and starter nose piece code (A). The starting motor for a 6-71RD engine is P/N 1114081.

Although unchamfered ring gears are used with overrunning clutch starters, certain engine applications should use a chamfered ring gear for more reliable starter engagements. A chamfered ring gear is recommended in the following applications:

1. Unattended automatic start engine installations.
2. Remote starting systems where the operator cannot hear the engine cranking.
3. All V-149 engines and air starter applications on other engines.
4. Any other applications where an occasional butt engagement is a problem.

Additional care should be exercised during the selection of the ring gear when an engine with left-hand rotation or a starter with a Bendix pinion assembly is being considered. Both left-hand and right-hand chamfered ring gears are available on most model engines.

STARTER PINION, FLYWHEEL RING GEAR AND FLYWHEEL HOUSING STARTER MOUNTING HOLE CENTER DISTANCE COMBINATION CHART

FLYWHEEL HOUSING		FLYWHEEL RING GEAR			STARTER PINION		
SAE NO. AND ENGINE SERIES	STARTER CENTER DISTANCE	PART NO.	NO. OF TEETH	CHAMFER (3)	NO. OF TEETH	PITCH	TOOTH FORM
0 (V-71)	10.854	5184773	118	No	11	6/8	11/12
0 (149)		5142069	146	No	11	6/8	11/12
0 (149)		5139998	146	Yes (1)	11	6/8	11/12
0 (149)		5146386	146	Yes (2)	11	6/8	11/12
1/2 (V-71)	10.854	5184773	118	No	11	6/8	11/12
1/2 (V-71)	10.854	5166664	118	Yes (1)	11	6/8	11/12
1/2 (110)	12.270	5114370	135	Yes (2)	11	6/8	11/12
1/2 (110)	12.270	5176711	135	No	11	6/8	11/12
1/2 (110)	12.270	5178585	135	Yes (1)	11	6/8	11/12
1 (71, V-71, 110) (8V-53)	10.854	5112743	118	Yes (2)	11	6/8	11/12
1 (71, V071, 110) (8V-53)	10.854	5166664	118	Yes (1)	11	6/8	11/12
1 (71, V-71, 110) (8V-53)	10.854	5184773	118	No	11	6/8	11/12
1 (V-71) (8V-53)	9.520	5188030	102	No	11	6/8	11/12
1 (6V-53)	9.520	5116302	138	No	13	8/10	13/14
1 1/2 (V-71)	9.520	5110893	102	Yes (2)	11	6/8	11/12
1 1/2 (V-71)	9.520	5110894	102	Yes (1)	11	6/8	11/12
2 (53)	9.458	5141586	138	Yes (1)	12	8/10	12/13
2 (53)	9.458	5116302	138	No	12	8/10	12/13
2 (6V-53)	9.520	5116302	138	No	13	8/10	13/14
2 (71, V-71)	9.520	5168693(*)	103(*)	Yes (1)	11(*)	6/8	11/11(*)
2 (71, V-71)	9.520	5181776(*)	103(*)	No	11(*)	6/8	11/11(*)
2 (71, V-71) (8V-53)	9.520	5110893	102	Yes (2)	11	6/8	11/12
2 (71, V-71) (8V-53)	9.520	5110894	102	Yes (1)	11	6/8	11/12
2 (71, V-71) (8V-53)	9.520	5188030	102	No	11	6/8	11/12
2 (71)	9.603(*)	5113402(*)	103(*)	Yes (2)	11	6/8	11/12
2 (71)	9.603(*)	5168693(*)	103(*)	Yes (1)	11	6/8	11/12
2 (71)	9.603(*)	5181776(*)	103(*)	No	11	6/8	11/12
3 (53)	8.701	5136556	126	Yes (1)	12	8/10	12/13
3 (53)	8.701	5116301	126	No	12	8/10	12/13
3 (6V-53)	8.770	5116301	126	No	13	8/10	13/14
3 (71) (8V-53)	8.853	5110841	94	No	11	6/8	11/12
3 (6V-53)	8.770	5109022	93	Yes (2)	11	6/8	11/12
3 (6V-53)	8.770	5130545	93	Yes (1)	11	6/8	11/12
4 (53)	7.775	5116289	111	No	12	8/10	12/13

- (1) SAE Chamfer for Bendix type starter and R.H. rotating engine.
- (2) SAE Chamfer for Bendix type starter and L. H. rotating engine.
- (3) - Overrunning clutch type starters may use no chamfer or SAE chamfer.
- (*) - Inactive for new design and application

DE-2281-226

	STARTER NO.	STARTER SERIES	ENGINE SERIES	DRIVE	PINION DATA					SAE MTG. FLANGE
					PITCH	NO. TEETH	PITCH DIA.	PITCH DIA. (a)	OUTSIDE DIA.	
(1)	5125121 CW	35 Hyd.	12V-71, 16V-71, 12V-149, 16V-149 (two req'd.)	HDOC	6/8	11/12	1.833	2.000	2.250	3 (M)
(1)	5125122 CCW	35 Hyd.	12V-71, 16V-71, 12V-149, 16V-149 (two req'd.)	HDOC	6/8	11/12	1.833	2.000	2.250	3 (M)
(2)	6505065 CW	20 Hyd.	3, 4, 6, 6V, 8V-71, 6-110	HDOC	6/8	11/12	1.833	2.000	2.250	3 (M)
(2)	6505066 CW	20 Hyd.	2, 3, 4-53	HDOC	8/10	12/13	1.500	1.625	1.825	3 (M)
(2)	6505067 CCW	20 Hyd.	3, 4, 6, 6V, 8V-71, 6-110	HDOC	6/8	11/12	1.833	2.000	2.250	3 (M)
(2)	6505068 CCW	20 Hyd.	2, 3, 4-53	HDOC	8/10	12/13	1.500	1.625	1.825	3 (M)
	5125733 CW	20 Hyd.	6V-53	HDOC	8/10	13/14	1.625	1.750		3 (M)
(2)	6505070 CW	20 Hyd.	2, 3-71	HDOC	6/8	11/11	1.833	1.833	2.083	3 (M)
(3)	5126591 CCW	20 BM Air	12V-71, 16V-71, 12V-149,	B	6/8	12	1.833	2.000	2.250	3
(3)	9139306 CW	20 BM Air	12V-71, 16V-71, 12V-149	B	6/8	12	1.833	2.000	2.250	3
	5132585 CCW	150 BM Air	2, 4, 6, 6V, 8V-71 & 16V-149 (two req'd.)	B	6/8	11/12	1.833	2.000	2.250	3 (M)
(4)	5132584	150 BM Air	2, 4, 6, 6V, 8V-71 & 16V-149 (two req'd.)	B	6/8	11/12	1.833	2.000	2.250	3 (M)
	5178355 CCW	Gasoline	4, 6-71	B	6/8	11/12	1.833	2.000	2.250	3
	5178356 CW	Gasoline	3, 4, 6, 8V, 12V-71, 6-110	B	6/8	11/12	1.8333	2.000	2.250	3

(a) - Pitch dia. for layout

(M) - Multiposition

(B) - Bendix Interia Drive

HDOC - Heavy Duty Overrunning Clutch (Delco or Bendix Positork)

(1) - Chart 5125067 -D, 5125088 - R.

(2) - Chart 6505064 - R, 6505053 - R.

(3) - Chart 5126589 - D.

(4) - Chart 5181712 - D.

HYDRAULIC, AIR AND
GASOLINE STARTERS

S3-60-1

ELECTRICAL STARTER ASSEMBLY CHART

STARTER NO. & ROTATION	ENGINE SERIES & ROTATION		DRIVE	VOLT AGE	G	I	PINION DATA		SAE MTG FLANGE	STARTER NOSEPIECE CODE *
							PITCH	TEETH & FORM SIZE		
1113216 CW	2, 3, 4-53	RH	OC	12	X		8/10	12/13	3	W 90
1113228 CCW	2, 3, 4-53	LH	OC	12	X		8/10	12/13	3	W 330
1113229 CW	2, 3, 4-53	RH	OC	12	X		8/10	12/13	3	W 270
(6) 1113236 CW	2, 3, 4-53 Special	RH	OC	12	X		8/10	12/13	3	W 30
1113237 CW	2, 3, 4-53	RH	OC	12	X		8/10	12/13	3	W 330
(2) 1113643 CW	2, 3-71	RH	HDOC	12		X	6/8	11/12	3 (M)	A 315 P
(1) 1114128 CW	8V-71, 8V-53	RH	POCD	12		X	6/8	11/12	3 (M)	A 75S
(1) 1114059 CCW	8V-71, 8V-53	LH	HDOC	12		X	6/8	11/12	3 (M)	A 45 P
(1) 1114161 CW	8V-71, 8V-53	RH	POCD	12		X	6/8	11/12	3 (M)	B 75 P
1114077 CW	6V-53	RH	HDOC	12		X	8/10	13/14	3 (M)	A 45 S
1114078 CW	3, 4, 6-71, 6V-71	RH	HDOC	12		X	6/8	11/12	3 (M)	A 45 P
1114079 CCW	6V-53	LH	HDOC	12		X	8/10	13/14	3 (M)	A 45 P
1114080 CCW	2, 3, 4, 6-71, 6V-71	LH	HDOC	12		X	6/8	11/12	3 (M)	A 315 S
1114081 CW	2, 3, 4, 6-71, 6V-71	RH	HDOC	12		X	6/8	11/12	3 (M)	A 315 S
1114083 CW	3, 4, 6-71, 6V-71	RH	HDOC	12	X		6/8	11/12	3 (M)	C 285 S
1114084 CW	3, 4, 6-71, 6V-71	RH	HDOC	12	X		6/8	11/12	3 (M)	A 285 S
1114085 CW	3, 4, 6-71, 6V-71	RH	HDOC	12	X		6/8	11/12	3 (M)	B 75 P
(5) 1109962 CCW	12, 16V-71, V-149	LH	HDOC	24		X	6/8	11/12	3 (M)	A 45 P
1109971 CW	12V-71	RH	HDOC	24		X	6/8	11/12	3 (M)	B 45 P
(3)(4) 1109972 CW	12, 16V-71, V-149	RH	HDOC	24		X	6/8	11/12	3 (M)	A 75 P
(5) 1109979 CW	12, 16V-71, V-149	RH	HDOC	24		X	6/8	11/12	3 (M)	E 38 P
(3)(4) 1113188 CW	2, 3, 4-53	RH	OC	24	X		8/10	12/13	3	W 330
(3)(4) 1113189 CW	2, 3, 4-53	RH	OC	24	X		8/10	12/13	3	W 30
(3) 1113208 CW	2, 3, 4-53	RH	OC	24	X		8/10	12/13	3	W 330
1113824 CW	2-71 thru 8V-71, 8V-53	RH	HDOC	24		X	6/8	11/12	3 (M)	A 45 P
(3)(4) 1113847 CW	2-71 thru 8V-71, 8V-53	RH	HDOC	24		X	6/8	11/12	3 (M)	A 45 P
(3)(4) 1113854 CW	2-71 thru 8V-71	RH	HDOC	24		X	6/8	11/12	3 (M)	B 285 P
1113872 CW	2-71 thru 8V-71	RH	HDOC	24		X	6/8	11/12	3 (M)	A 75 S
1113873 CW	6V-53	RH	HDOC	24		X	8/10	13/14	3 (M)	A 315 S
1113874 CCW	2-71 thru 8V-71, 8V-53	LH	HDOC	24		X	6/8	11/12	3 (M)	A 45 P
1113876 CW	3, 4, 6-71	RH	HDOC	24		X	6/8	11/12	3 (M)	A 315 S
(3)(4) 1113904 CW	3, 4-53	RH	HDOC	24		X	8/10	12/13	3 (M)	E 278 P
1113938 CW	2-71 thru 8V-71	RH	HDOC	24		X	6/8	11/12	3 (M)	E 292 P
(3) 1113940 CW	6V-53	RH	HDOC	24		X	8/10	13/14	3 (M)	A 315 S
(3)(4) 1113985	6V-53	RH	HDOC	24		X	8/10	13/14	3 (M)	E 292 P
(5) 1109963 CW	12, 16V-71, V-149	RH	HDOC	32		X	6/8	11/12	3 (M)	A 45 P
(5) 1109964 CCW	12, 16V-71, V-149	LH	HDOC	32		X	6/8	11/12	3 (M)	A 45 P
1113870 CCW	6V-53	LH	HDOC	32		X	8/10	13/14	3 (M)	A 45 S
1113871 CW	6V-53	RH	HDOC	32		X	8/10	13/14	3 (M)	A 45 S
1113878 CW	2, 3, 4, 6, 6V, 8V-71,	RH	HDOC	32		X	6/8	11/12	3 (M)	A 45 P
1113889 CCW	2, 3, 4, 6, 6V, 8V-71, 8V-53	LH	HDOC	32		X	6/8	11/12	3 (M)	A 45 P

POCD = Positorq OC Drive

OC = Overrunning Clutch

HDOC = Heavy Duty

G = Grounded I = Insulated. (3) = Fungus & Corrosion resistant

* Refer to drawing 5128467 except for L-53 starters

(M) = Multiposition nosepiece, sealed for wet fly hsg.

(1) = Special high output for truck replacement engine

(2) = Short frame for 2, 3-71

(4) = Submersion proof Military

(5) = Two per engine for 12V, 16V-149

(6) = Sealed for wet fly. hsg.

(C) = Code C Nosepiece Special

(B) = Code B Nosepiece Special



- ### SOLENOID REPOSITIONING PROCEDURE
1. REMOVE SIX SOCKET HEAD SCREWS & TWO RUBBER PLUGS.
 - 2-TURN DRIVE END HOUSING TO ANGLE SHOWN ON APPROPRIATE FIG.
 - 3-INSTALL SIX SOCKET HEAD SCREWS & TWO RUBBER PLUGS AS SHOWN ON APPROPRIATE FIG.
 - 4-TIGHTEN SCREWS TO 7-11 FT. LBS. TORQUE.

[illegible]

NO NET SCALE - ERRORS MUST BE REPORTED
THE FOLLOWING ITEMS APPLY UNLESS OTHERWISE SPECIFIED:
TOLERANCE ON DIMENSIONS LOCATING
FINISHED SURFACES 
FINISH DIAMETERS MAYING COMMER 
CENTERLINE MUST BE CONCENTRIC WITHIN  T.I.R.
FINISH ALLOWANCES: F1 DENOTES RR: F2 - RR: ETC. LOCATING
POINTS (S) MUST BE SMOOTH AND CLEAR. CASTING, POROSIL,
DRILLED AND PUNCHED HOLE TOLERANCES DESCRIBED ON
DRAWING SK-1942. COUNTERSINK ALL TAPPED HOLES EXCEPT
PIPE THREADS. 60° TO 90° LARGER THAN DIAMETER OF THREAD.
SURFACE FINISH BY SPECIFICATIONS (7) ARE IN ARITHMETICAL
AVERAGE UNITS (MICROINCHES). PART MUST BE FREE OF BURRS.

DWG. DATE: 10-18-73	DR. D.E. PARTER	CHK. <i>James</i> 10-20-73
SCALE 1/4"	REFERENCE	APPR.
FIRST USED	1113236 & 3128467	APPR.

NATL. SPEC. _____

NAME INSTRUCTION CHART
ELECTRIC STARTING MOTOR

PART NO. SK 5885

FIG. NO. C

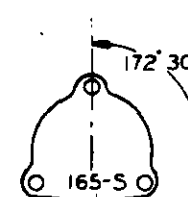


FIG. 6

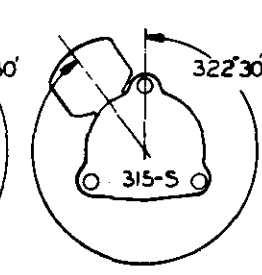


FIG.12



-DRIVE END
HOUSING

SOLENOID REPOSITIONING PROCEDURE

- 1- REMOVE SIX SOCKET HEAD SCREWS(1 SHORT AND 5 LONG SCREWS).
- 2-TURN DRIVE END HOUSING TO ANGLE SHOWN ON APPROPRIATE FIG.
- 3-INSTALL SIX SOCKET HEAD SCREWS SHORT SCREW IN SHALLOW HOLE NEAREST THE SOLENOID.
- 4-TIGHTEN SCREWS TO 13-17 FT. LB. TORQUE.

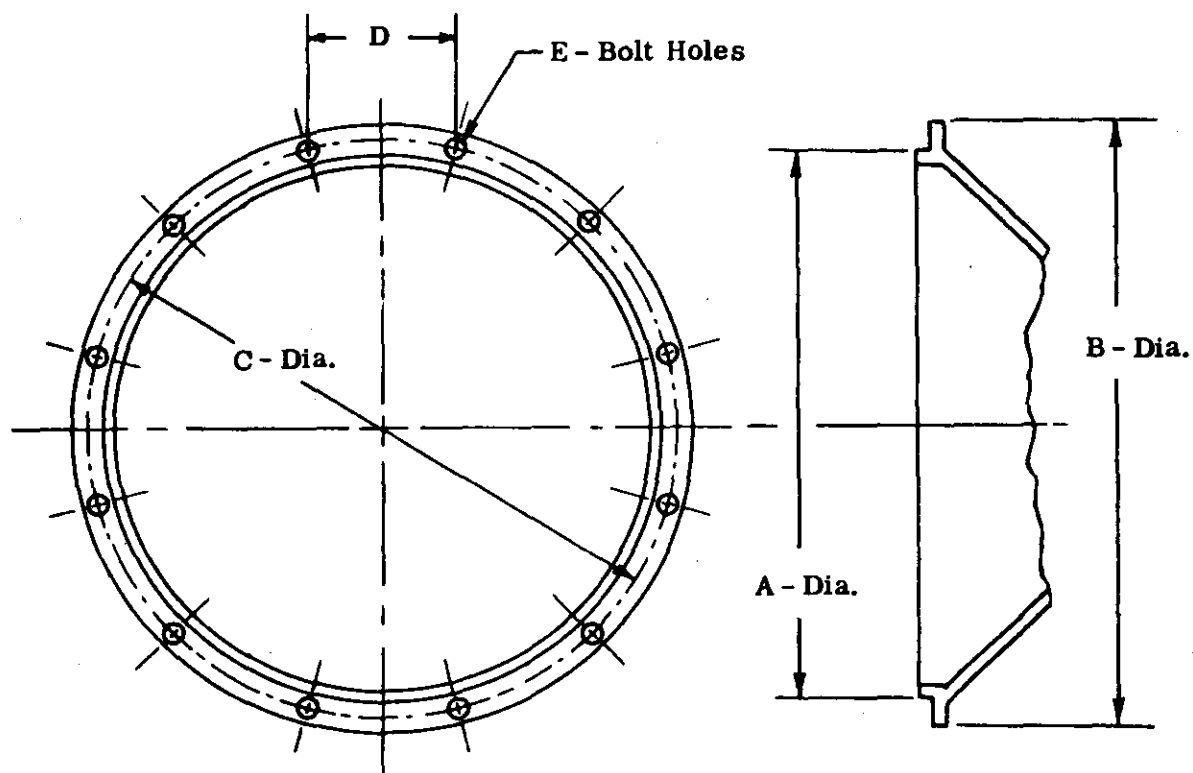
5128467

LATEST
ISSUED DATE 1-12-60

DO NOT SCALE - ERRORS MUST BE REPORTED
USE DIMENSIONING SYSTEMS ONLY UNLESS OTHERWISE SPECIFIED
TOLERANCE ON DIMENSIONS LOCATING
FINISHED SURFACES F T R
FINISHED DIMETERS HAVING COMMON
CENTERLINE MUST BE CONCENTRIC WITHIN F T R
POINT ALLOWANCES: F1 DIMENSIONS: .02; F2 - .06; ETC. LOCATING
POINTS (●) MUST BE SMOOTH AND CLEAR. CASTING, FORGING,
MILLED AND FINISHED HOLE TOLERANCES DESCRIBED ON
DRAWING SEE T-1043. CONTROLLING ALL TAPPER HOLES, ELLIPTIC
HOLES AND HOLES WITH VARYING DIAMETER OF THREADED
SECTION FINISH SPECIFICATIONS (✓) ARE IN MATHEMATICAL
AVERAGE VALUES (MICROINCHES). PART MUST BE FREE OF BURRS.

INST. SPEC.	
INSTRUCTION CHART-ELECTRIC STARTING MOTOR	
PART NO.	5128467
	ENG. NO.

CLUTCH MA.
DIMENSIONS



SAE No.	A	B	C	D(b)	E	
					No.	Size
0	25 1/2	28	26 3/4	5 13/64	16	17/32
1/2	23	25 1/2	24 3/8	6 5/16	12	17/32
1(a)	20 1/8	21 3/4	20 7/8	5 13/16	12	15/32
2	17 5/8	19 3/4	18 3/8	4 3/4	12	13/32
3	16 1/8	17 3/4	16 7/8	4 3/8	12	13/32
4	14 1/4	15 7/8	15	3 57/64	12	13/32

(a) Prior to 1953 the SAE No. 1 Housing specified holes for 3/8 Dia. Bolts.

(b) Nominal Chordal Dimension for reference only.

FLYWHEEL HOUSING DIMENSIONS

Table 1

Lists the standard dimensions for the various sizes and models of flywheel housings used on D.D.A.D. engines.

Table 2

Lists the non-standard dimensions of flywheel housings by size and part number that are different from the standard dimensions as listed in Table 1.

FLYWHEEL HOUSINGS DIMENSIONS
(STANDARDIZED)

TABLE 1

Model	F/W Hsg. SAE No.	F/W Hsg. Length	Face F/W Hsg. To Butt of C/S	Rear Block To Butt of C/S
4-51	3	7.39	3.9391 $\pm$.0442	---
	2	7.93	4.4791 $\pm$.0442	---
2-71	2	6.7500	4.243 $\pm$.0292	2.807 $\pm$.017
3,4, 6-71	3	6.5312	3.924 $\pm$.0365	3.907 $\pm$.017
	2	7.0625	4.455 $\pm$.0365	2.907 $\pm$.017
	1	6.5312	3.924 $\pm$.0365	2.907 $\pm$.017
	1 1/2	6.47	3.863 $\pm$.0365	2.907 $\pm$.017
6-110	1/2	5.40	3.9477 $\pm$.0383	---
	1	6.10	4.6477 $\pm$.0383	---
12107	0	---	4.5629 $\pm$.044	---
V-71	2	7.062	4.446 $\pm$.0465	2.806 $\pm$.017
V-92	1 1/2	6.53	3.914 $\pm$.0465	2.806 $\pm$.017
	1	6.53	3.914 $\pm$.0465	2.806 $\pm$.017
	1/2	7.32	4.704 $\pm$.0465	2.806 $\pm$.017
	0	7.80	5.184 $\pm$.0465	2.806 $\pm$.017
L-53	4	6.30	3.954 $\pm$.048	2.546 $\pm$.024
	3	6.30	3.954 $\pm$.048	2.546 $\pm$.024
	2	6.30	3.954 $\pm$.048	2.546 $\pm$.024
6V-53	3	6.30	3.954 $\pm$.048	2.556 $\pm$.024
	2	6.30	3.954 $\pm$.048	2.556 $\pm$.024
	1	7.80	5.444 $\pm$.048	2.556 $\pm$.024
149	0	8.30	3.949 $\pm$.031	4.351 $\pm$.021

FLYWHEEL HOUSING DIMENSIONS
(NON-STANDARDIZED)

TABLE 2

Model	F/W Hsg. SAE No.	F/W Hsg. Part No.	F/W Hsg. Length	Face Hsg. To Butt Crankshaft	Rear Block To Butt of Crankshaft
2-71	2	5168184	5.8750	3.373 $\pm$.0292	2.807 $\pm$.017
2-53	Spec	5121179	2.36	.014 $\pm$.048	2.546 $\pm$.024
L-53	3	5139568	5.26	2.914 $\pm$.048	2.546 $\pm$.024
L-53	Spec	5125652	2.36	.014 $\pm$.048	2.546 $\pm$.024
L-53	Spec	5140558	2.36	.014 $\pm$.048	2.546 $\pm$.024
6V-53	2	5128794	5.85	3.494 $\pm$.048	2.556 $\pm$.024
6V-53	3	5134270	4.55	2.194 $\pm$.048	2.556 $\pm$.024
L-71	1	5156806	6.78	4.173 $\pm$.0365	2.907 $\pm$.017
L-71	1	5156804	6.78	4.173 $\pm$.0365	2.907 $\pm$.017
	1 1/2	5118943	4.09	1.483 $\pm$.0365	2.907 $\pm$.017
	1 1/2	5188070	4.09	1.483 $\pm$.0365	2.907 $\pm$.017
	1 1/2	5184049	8.22	5.613 $\pm$.0365	2.907 $\pm$.017
	Spec	5183093	7.09	4.483 $\pm$.0365	2.907 $\pm$.017
V-71	0	5143502	8.94	6.324 $\pm$.0385	2.806 $\pm$.017
V-71	1	5134513	4.06	1.444 $\pm$.0385	2.806 $\pm$.017
V-71	2	5122662	4.06	1.444 $\pm$.0385	2.806 $\pm$.017
y-71	Spec	5108483	7.11	4.494 $\pm$.0385	2.806 $\pm$.017
V-71	Spec	5142740	5.00	2.384 $\pm$.0385	2.806 $\pm$.017
V-71	1 1/2	5137694	6.53	3.914 $\pm$.0385	2.806 $\pm$.017