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NATIONAL GEAR BOXES

The (*) asterisk indicates the following:

Original Equipment: These Gearboxes came from the factory with

Straight Outer Race Type with Self Contained Inner Race and Roller Assembly.

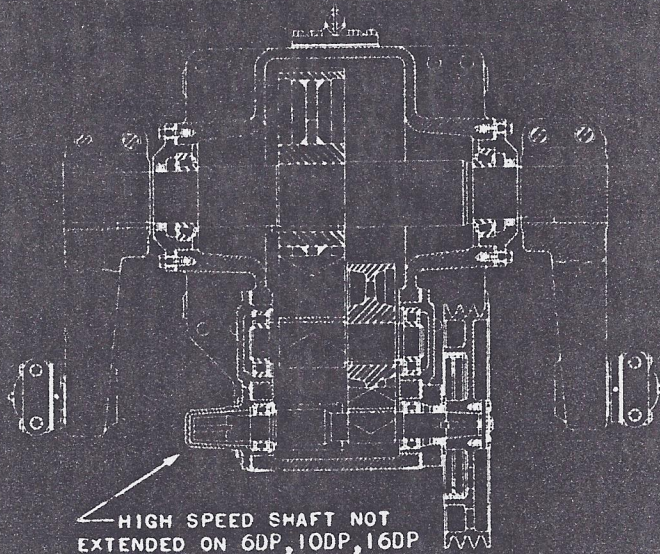
Interchanges are Straight Inner Race Type with Self Contained Outer Race
and Roller Assembly----- Either can be used

Example: *SKF N-321 Interchange MA 1321 E1

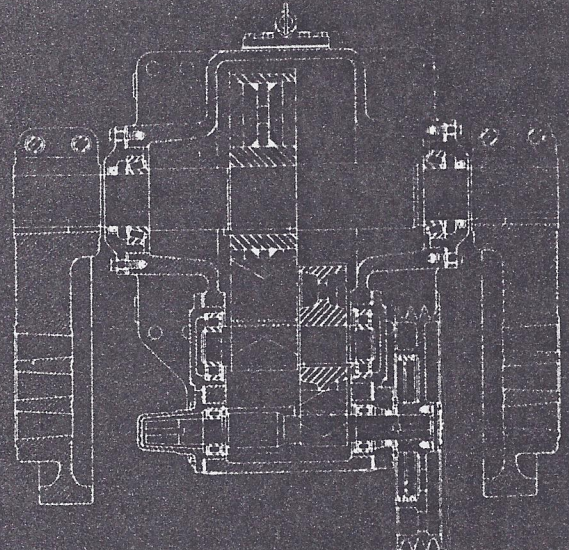
PROPERTY OF
LEAMCO BEARINGS

NATIONAL TYPE "D" PUMPING UNIT
GEAR REDUCER

TYPE DP



TYPE DW



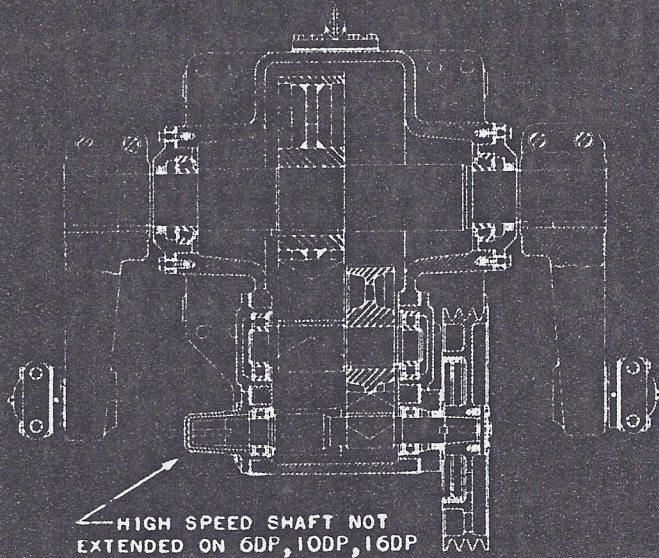
GEAR REDUCER SIZE	6DP	10DP	16DP	25DP	40DP 40DW	57DP 57DW
API PEAK TORQUE RATING, IN-LB	6,400	10,000	16,000	25,000	40,000	57,000
API NOMINAL HORSEPOWER	1.29	2.02	3.23	5.05	8.08	11.52
OVERALL GEAR RATIO	26	29.5	31.85	29.2	29.2	30
CRANK SHAFT DIAM AT BEARING	1 3/4	2 3/8	2 3/4	3 1/4	4	4 1/2
INTERMEDIATE SHAFT DIAM AT BEARING	1 3/8	1 3/8	1 3/16	1 3/4	2 3/8	2 9/16
HIGH SPEED SHAFT DIAM AT BEARING	1 5/8	1 5/8	1 3/8	1 5/16	2	2 3/8
CRANK SHAFT DIAM AT CRANK	1 3/4	2 3/8	2 3/4	3 1/4	3 5/8	4 1/4
LOW SPEED GEAR CENTERS	5.600	7.250	8.375	9.500	11.400	13.000
LOW SPEED GEAR FACE	3	3 1/4	3 11/16	4 1/2	5	5 3/4
HIGH SPEED GEAR CENTERS	4.000	5.150	5.950	6.500	7.250	8.4375
HIGH SPEED GEAR FACE	1 1/2	1 3/4	2	2 1/2	3 1/2	3 1/2
V-BELT SHEAVE STANDARD, PD X GROOVING	12x2-A	12 1/2 x 3-A	16 1/2 x 3-B	18x3-B	18x3-C	18x3-C
V-BELT SHEAVE OPTIONAL, PD X GROOVING		12 1/2 x 2-B		18 1/8 x 3	18x4-B	24x3-C
					21x4-B	
WIDTH OF STANDARD V-BELT SHEAVE	2-A 1 3/8	3-A 2 1/8	3-B 2 1/2	3-B 2 1/2	3-C 3 3/8	3-C 3 3/8
WIDTH OF OPTIONAL V-BELT SHEAVE		2-B 2 1/8		3 2 1/2	4-B 3 1/4	
V-BELT SHEAVE MAXIMUM PD	12	14	16 1/2	18 1/8	21	24
V-BELT SHEAVE MINIMUM PD	5	5	12 1/2	12 1/2	12 1/2	12 1/2
BRAKE DIAM X FACE	NONE	†NONE	11x1 1/2	11x1 1/2	11x1 1/2	11x1 1/2
CRANK SHAFT LENGTH	17	23	25	27	41	43
LENGTH OVERALL (AT BASE)	20 7/8	22	25 1/4	28	32 3/8	35 3/4
WIDTH OVERALL (AT BASE)	8	14	14 1/2	15 1/2	23	25
HEIGHT OVERALL (OVER OIL BREATHER)	14 1/2	18	20 1/4	22	25 1/4	28 1/2
HEIGHT TO Ø CRANK SHAFT	6 1/2	8 1/2	9 3/4	11	12 1/2	13 1/2
HEIGHT TO Ø HIGH SPEED SHAFT	6 1/2	9	10 3/4	11 1/4	13 1/2	16 5/16
Ø CASE TO INSIDE EDGE V-BELT SHEAVE	4 13/16	6 3/16	6 3/8	7 3/8	8 3/8	8 7/8
Ø TO Ø WRIST PIN BEARINGS	19 1/2	26	28 3/4	30 3/8	40DP 45	57DP 47 1/4
					40DW 45 1/2	57DW 49
OIL CAPACITY, GALLONS	1 1/4	2	3	5	8	10
WEIGHT, WITH CRANKS AND STD SHEAVE	280	570	800	1085	40DP 1970	57DP 2620
					40DW 2420	57DW 3180

* MULTI-DUTY GROOVE SHEAVE FOR EITHER A OR B V-BELTS.

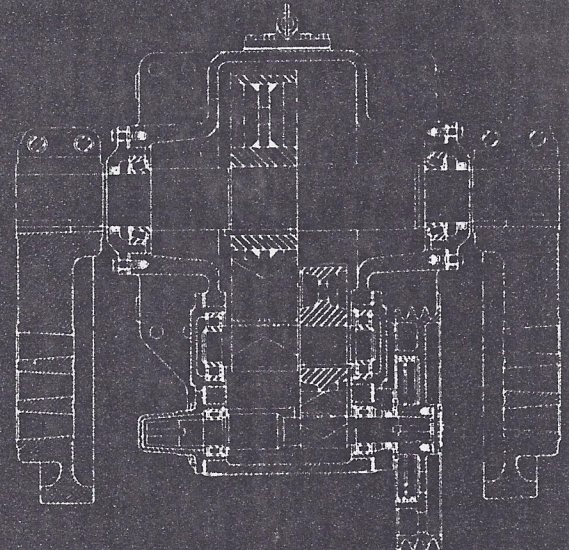
† 11x1 1/2 BRAKE OPTIONAL.

NATIONAL TYPE "D" PUMPING UNIT
GEAR REDUCER

TYPE DP



TYPE DW



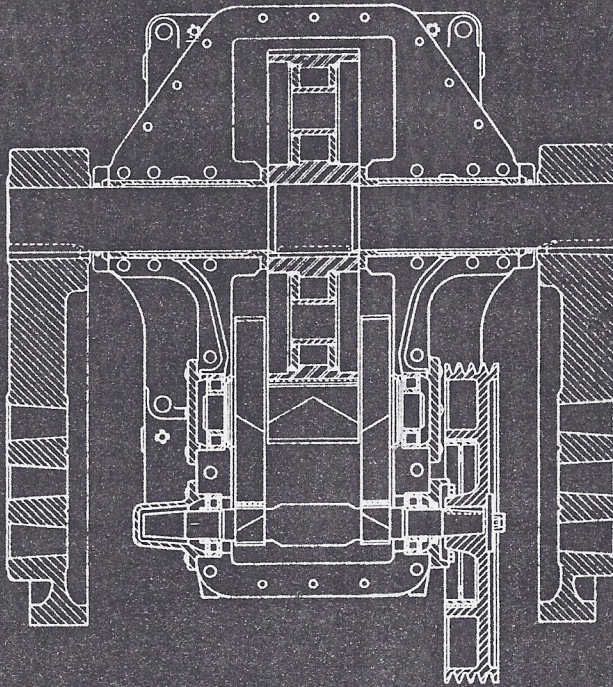
GEAR REDUCER SIZE	6DP	10DP	16DP	25DP	40DP 40DW	57DP 57DW
API PEAK TORQUE RATING, IN-LB	6,400	10,000	16,000	25,000	40,000	57,000
API NOMINAL HORSEPOWER	1.29	2.02	3.23	5.05	8.08	11.52
OVERALL GEAR RATIO	26	29.5	31.85	29.2	29.2	30
CRANK SHAFT DIAM AT BEARING	1 7/8	2 3/8	2 3/4	3 1/4	4	4 1/2
INTERMEDIATE SHAFT DIAM AT BEARING	1 3/8	1 3/8	1 5/8	1 7/8	2 3/8	2 9/16
HIGH SPEED SHAFT DIAM AT BEARING	1 1/2	1 3/8	1 3/8	1 9/16	2	2 3/8
CRANK SHAFT DIAM AT CRANK	1 3/4	2 3/8	2 3/4	3 1/4	3 5/8	4 1/4
LOW SPEED GEAR CENTERS	5.600	7.250	8.375	9.500	11.400	13.000
LOW SPEED GEAR FACE	3	3 1/4	3 11/16	4 1/2	5	5 3/4
HIGH SPEED GEAR CENTERS	4.000	5.150	5.950	6.500	7.250	8.4375
HIGH SPEED GEAR FACE	1 1/2	1 3/4	2	2 1/2	3 1/2	3 1/2
V-BELT SHEAVE STANDARD, PD X GROOVING	12x2-A	12 1/2 x3-A	16 1/2 x3-B	18x3-B	18x3-C	18x3-C
V-BELT SHEAVE OPTIONAL, PD X GROOVING		12 1/2 x2-B		• 18 1/8 x3	18x4-B 21x4-B	24x3-C
WIDTH OF STANDARD V-BELT SHEAVE	2-A 1 3/8	3-A 2 1/8	3-B 2 1/2	3-B 2 1/2	3-C 3 3/8	3-C 3 3/8
WIDTH OF OPTIONAL V-BELT SHEAVE		2-B 2 1/8		3 2 1/2	4-B 3 1/4	
V-BELT SHEAVE MAXIMUM PD	12	14	16 1/2	18 1/8	21	24
V-BELT SHEAVE MINIMUM PD	5	5	12 1/2	12 1/2	12 1/2	12 1/2
BRAKE DIAM X FACE	NONE	†NONE	11x1 1/2	11x1 1/2	11x1 1/2	11x1 1/2
CRANK SHAFT LENGTH	17	23	25	27	41	43
LENGTH OVERALL (AT BASE)	20 7/8	22	25 1/4	28	32 3/8	35 3/4
WIDTH OVERALL (AT BASE)	8	14	14 1/2	15 1/2	23	25
HEIGHT OVERALL (OVER OIL BREATHER)	14 1/2	18	20 1/2	22	25 1/4	28 1/2
HEIGHT TO Ø CRANK SHAFT	6 1/2	8 1/2	9 3/4	11	12 1/2	13 1/2
HEIGHT TO Ø HIGH SPEED SHAFT	6 1/2	9	10 3/4	11 1/4	13 1/2	16 5/16
Ø CASE TO INSIDE EDGE V-BELT SHEAVE	4 1/16	6 3/16	6 3/8	7 3/8	8 3/8	8 7/8
Ø TO Ø WRIST PIN BEARINGS	19 1/2	26	28 1/4	30 3/8	40DP 45 40DW 45 1/2	57DP 47 1/4 57DW 49
OIL CAPACITY, GALLONS	1 1/4	2	3	5	8	10
WEIGHT, WITH CRANKS AND STD SHEAVE	280	570	800	1085	40DP 1970 40DW 2420	57DP 2620 57DW 3180

* MULTI-DUTY GROOVE SHEAVE FOR EITHER A OR B V-BELTS.

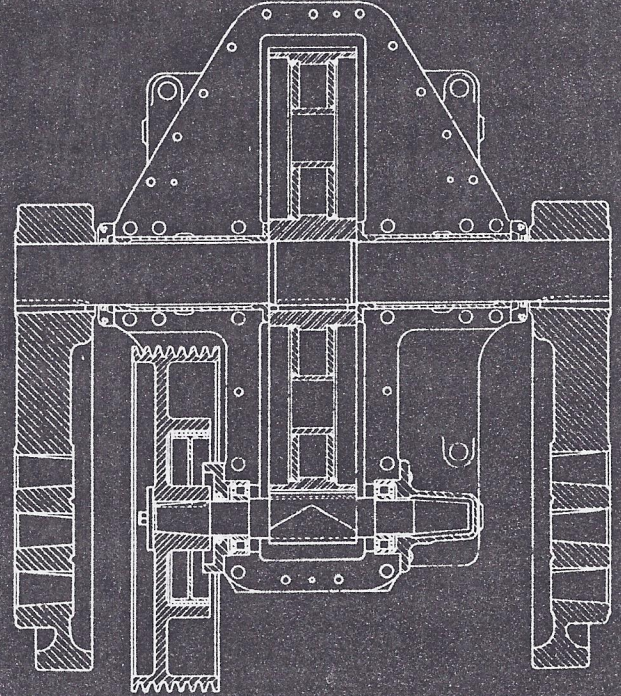
† 11x1 1/2 BRAKE OPTIONAL.

NATIONAL TYPE "D" PUMPING UNIT
GEAR REDUCER

TYPE DW



TYPE SW

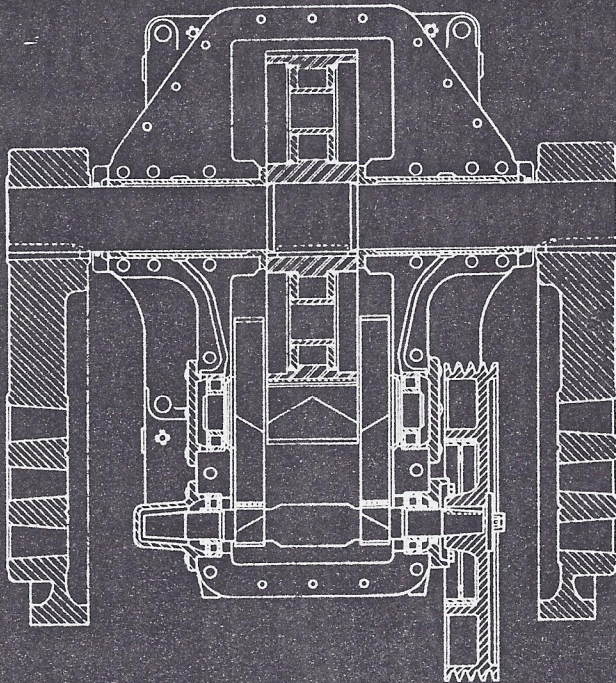


GEAR REDUCER SIZE	80DW	114DW	114SW	160DW	160SW	228DW	228SW	320DW	320SW	456DW
SINGLE OR DOUBLE REDUCTION	DOUBLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE
API PEAK TORQUE RATING, IN-LB	80,000	114,000	114,000	160,000	160,000	228,000	228,000	320,000	320,000	456,000
API NOMINAL HORSEPOWER	16.16	23.03	23.03	32.32	32.32	46.06	46.06	64.65	64.65	92.12
OVERALL GEAR RATIO	29.6	30.8	10.7	29.8	9.73	28.28	9.4	30.0	10.52	30.3
CRANK SHAFT DIAM AT BEARINGS	5	5½	5½	6	6	6½	6½	6½	6½	7
INTERMED SHAFT DIAM AT BRGS	2¾	2½	—	3¾	—	3¾	—	3½	—	4½
HI SPEED SHAFT DIAM AT BRGS	2½	2½	2½	2½	3½	2½	3½	3½	4½	3½
CRANK SHAFT DIAM AT CRANK	5	5½	5½	6	6	6½	6½	6½	6½	7
CRANK SHAFT BEARING LENGTH	12½	13½	13½	16¾	16¾	16¾	16¾	19¾	19¾	20
PROJECTED AREA CRANK BRG, SQ IN	63.5	72.8	72.8	98.25	98.25	106.4	106.4	125.9	125.9	140.0
LOW SPEED GEAR CENTERS	14.200	16.250	21.000	19.428	23.000	21.500	26.000	24.833	30.250	28.000
LOW SPEED GEAR FACE	6¾	7¾	7¾	8½	8½	9	9	10½	10½	11½
HIGH SPEED GEAR CENTERS	8.4375	9.4166	—	11.000	—	13.000	—	14.583	—	15.100
HI SPEED GEAR FACES(EACH HALF)	2½	2½	—	3	—	3¾	—	3½	—	4½
SHEAVE STANDARD, PD X GROOVING	18x4-C	26x4-C	29x4-C	26x6-C	32x10-C	26x7-C	36x7-D	34x8-C	42x9-D	48x8-C
SHEAVE OPTIONAL, PD X GROOVING	26x4-C 28x4-C 18x3-D	32x4-C 23x4-C 18x4-C 18x3-D	29x4-D	34x6-C 18x4-D	31½x6-D	34x7-C 18x5-D	36x11-C	48x8-C 26x6-D 18x6-D		36x5-D 48x5-D
WIDTH OF STD V-BELT SHEAVE	4-C 4¾	4-C 4¾	7-C 7¾	6-C 6¾	10C 10¾	7-C 7¾	7-D 10¾	8-C 8¾	9-D 13½	8-C 8¾
WIDTH OF OPT V-BELT SHEAVE	3-D 4¾	3-D 4¾	4-D 6¾	4-D 6¾	6-D 8½	5-D 7½	11C 11¾	6-D 8½		5-D 7½
V-BELT SHEAVE MAXIMUM PD	28	32	29	34	32	34	36	48	42	48
V-BELT SHEAVE MINIMUM PD	18	18	18	18	9	18	9	18	13	19
BRAKE DIAM X FACE	14x2½	14x2½	15x3½	15x3½	21x4	15x3½	25x4	21x4	31x4	25x4
CRANK SHAFT LENGTH	4'-3"	4'-3"	4'-3"	5'-1"	5'-1"	5'-1"	5'-1"	5'-9"	5'-9"	6'-5"
LENGTH OVERALL (AT BASE)	40¾	43¾	42¼	4'-4½"	4'-4½"	4'-6½"	4'-6½"	5'-4"	5'-2¾"	6'-7½"
WIDTH OVERALL (AT BASE)	28½	28½	29	36½	36½	36½	36½	44½	44½	4'-0½"
HEIGHT OVERALL	31¾	35½	41¾	45½	4'-2¼"	47½	4'-5½"	4'-6½"	5'-1¼"	4'-11¾"
HEIGHT TO ½ OF SHAFTS	18	20	21	27	27	27	27	31	31	34
½ CASE TO INSIDE EDGE SHEAVE	10¼	11	8	13	8¾	13½	9	16	10¾	17
OIL CAPACITY, GALLONS	8	10	7	14	9	17	12	24	14	37
WEIGHT, WITH CRANKS, STD SHV	4310	5100	5200	8100	8500	10,080	11,000	14,250	15,200	19,740

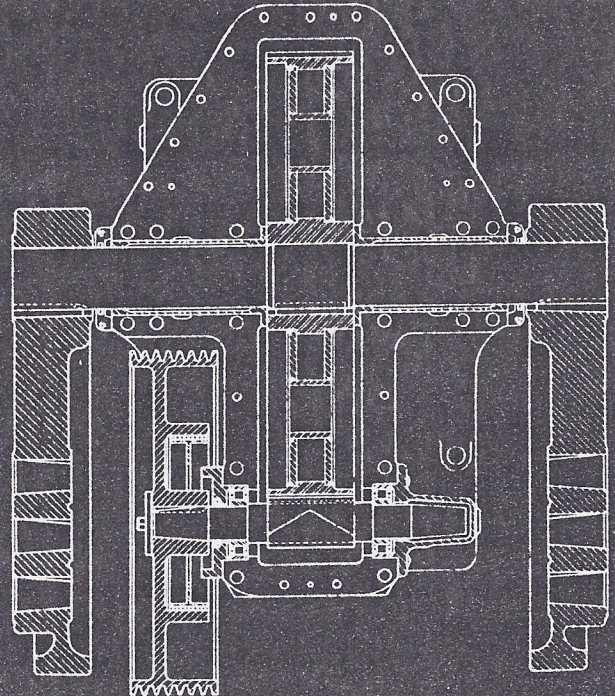
*BAND TYPE BRAKE ON OPPOSITE SIDE OF SHEAVE

NATIONAL TYPE "D" PUMPING UNIT
GEAR REDUCER

TYPE DW



TYPE SW



GEAR REDUCER SIZE	80DW	114DW	114SW	160DW	160SW	228DW	228SW	320DW	320SW	456DW
SINGLE OR DOUBLE REDUCTION	DOUBLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE
API PEAK TORQUE RATING, IN-LB	80,000	114,000	114,000	160,000	160,000	228,000	228,000	320,000	320,000	456,000
API NOMINAL HORSEPOWER	16.16	23.03	23.03	32.32	32.32	46.06	46.06	64.65	64.65	92.12
OVERALL GEAR RATIO	29.6	30.8	10.7	29.8	9.73	28.28	9.4	30.0	10.52	30.3
CRANK SHAFT DIAM AT BEARINGS	5	5 1/2	5 1/2	6	6	6 1/2	6 1/2	6 1/2	6 1/2	7
INTERMED SHAFT DIAM AT BRGS	2 3/4	2 15/16	—	3 3/8	—	3 3/8	—	3 1/2	—	4 1/8
HI SPEED SHAFT DIAM AT BRGS	2 3/8	2 3/8	2 15/16	2 1/4	3 3/8	2 15/16	3 3/4	3 9/16	4 5/16	3 3/4
CRANK SHAFT DIAM AT CRANK	5	5 1/2	5 1/2	6	6	6 1/2	6 1/2	6 1/2	6 1/2	7
CRANK SHAFT BEARING LENGTH	12 1/2	13 1/2	13 1/4	16 3/8	16 3/8	16 3/8	16 3/8	19 3/8	19 3/8	20
PROJECTED AREA CRANK BRG, SQ IN	63.5	72.8	72.8	98.25	98.25	106.4	106.4	125.9	125.9	140.0
LOW SPEED GEAR CENTERS	14.200	16.250	21.000	19.428	23.000	21.500	26.000	24.833	30.250	28.000
LOW SPEED GEAR FACE	6 3/8	7 3/4	7 1/2	8 1/2	8 1/2	9	9	10 15/16	10 15/16	11 1/2
HIGH SPEED GEAR CENTERS	8.4375	9.4166	—	11.000	—	13.000	—	14.583	—	15.100
HI SPEED GEAR FACES (EACH HALF)	2 1/2	2 1/2	—	3	—	3 3/8	—	3 11/16	—	4 1/4
SHEAVE STANDARD, PD X GROOVING	18x4-C 26x4-C	26x4-C 32x4-C	29x7-C 29x4-D	26x6-C 34x6-C	32x10-C 31 3/4x6-D	26x7-C 34x7-C	36x7-D 36x11-C	34x8-C 26x6-D	42x9-D	48x8-C 36x5-D
SHEAVE OPTIONAL, PD X GROOVING	28x4-C 18x3-D	23x4-C 18x4-C 18x3-D	—	18x4-D	—	18x5-D	—	18x6-D	—	48x5-D
WIDTH OF STD V-BELT SHEAVE	4-C 4 3/8	4-C 4 3/8	7-C 7 3/8	6-C 6 3/8	10C 10 3/8	7-C 7 3/8	7-D 10 3/8	8-C 8 3/8	9-D 13 1/2	8-C 8 3/8
WIDTH OF OPT V-BELT SHEAVE	3-D 4 3/8	3-D 4 3/8	4-D 6 1/2	4-D 6 1/2	6-D 8 15/16	5-D 7 1/2	11C 11 3/8	6-D 8 15/16	—	5-D 7 1/2
V-BELT SHEAVE MAXIMUM PD	28	32	29	34	32	34	36	48	42	48
V-BELT SHEAVE MINIMUM PD	18	18	18	18	9	18	9	18	13	13
BRAKE DIAM X FACE	14x2 1/2	14x2 1/2	15x3 1/2	15x3 1/2	*21x4	15x3 1/2	*25x4	*21x4	*31x4	*25x4
CRANK SHAFT LENGTH	4'-3"	4'-3"	4'-3"	5'-1"	5'-1"	5'-1"	5'-1"	5'-9"	5'-9"	6'-5"
LENGTH OVERALL (AT BASE)	40 3/8	43 3/8	42 1/4	4'-4 1/2"	4'-4 1/2"	4'-6 1/2"	4'-6 1/2"	5'-4"	5'-2 3/4"	6'-7 7/8"
WIDTH OVERALL (AT BASE)	28 1/2	28 3/4	29	36 1/2	36 1/2	36 1/2	36 1/2	44 1/2	44 1/2	4'-0 1/2"
HEIGHT OVERALL	31 3/4	35 1/2	41 1/8	45 1/2	4'-2 1/4"	47 1/2	4'-5 5/8"	4'-6 5/8"	5'-1 3/4"	4'-11 3/8"
HEIGHT TO C OF SHAFTS	18	20	21	27	27	27	27	31	31	34
C CASE TO INSIDE EDGE SHEAVE	10 1/2	11	8	13	8 3/4	13 3/8	9	16	10 7/8	17
OIL CAPACITY, GALLONS	8	10	7	14	9	17	12	24	14	37
WEIGHT, WITH CRANKS, STD SHV	4310	5100	5200	6100	6500	10,080	11,000	14,250	15,200	19,740

*BAND TYPE BRAKE ON OPPOSITE SIDE OF SHEAVE

NATIONAL TYPE "D" REDUCERS

UNIT SIZE	TORQUE RATING	RATIO	OIL CAPACITY
6D	6,400	26.0	1 1/4
10D	10,000	29.5	2
16D	16,000	31.85	4 1/2
25D	25,000	29.2	6
40D	40,000	31.482	8
57D	57,000	31.186	10
80D	80,000		8
114D	114,000	31.141	10
160D	160,000	31.297	14
228D	228,000	31.297	17
320D	320,000	30.0	24
456D	456,000	30.3	37

NATIONAL TYPE "E"

E16D	16,000		2 1/2
E25D	25,000		3
E40D	40,000		4
E57D	57,000		7
E80D	80,000		10
E114D	114,000		12
E160D	160,000		21
E228D	228,000		25

NATIONAL "F" SERIES

F40D	40,000		4
F57D	57,000		9
F80D	80,000		9
F114D	114,000		12
F160D	160,000		17
F228D	228,000		22
F320D	320,000		27

NOTE:
 "E" & "F" SERIES
 ARE EXACTLY THE
 SAME,
 ONLY DIFFERENCE
 IS THE BODY "E"
 MODELS HAD MESH
 SEALS & "F" SERIES
 HAD LABRINTH.