FIRST ANGLE PROJECTION (ALL DIMENSIONS IN MILLIMETRES)

05-228/C

MAIN DETAILS

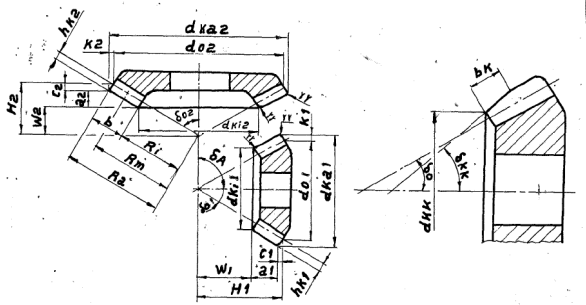
$\delta_A = 60^0$ $\quad \beta = 67,0$ $\quad$ CUTTER MODULE $M_n = 8,10$ $\quad d_{o1} = 215,0$ $\quad \delta_{p1} = 30,0$ $\quad$ OUTTER FACE MODULE $m_{sa} = 11,3158$

$Z_2/Z_1 = 1,0$ $\quad \delta_{o1} = 30^0$ $\quad Z_1/Z_2 = 19/19$ $\quad \beta/M_n = 8,27$ $\quad \delta_{p2} = 30,0$ $\quad m_{na} = 8,66$

$\frac{\text{No. OF TEETH IN DRIVER}}{\text{No. OF TEETH IN DRIVEN}}$ $\quad \delta_{o2} = 30^0$ $\quad d_{o2} = 215,0$ $\quad R_a/\beta = 3,21$ $\quad \omega_K = 0,0$ $\quad$ CUTTER NORMAL MODULE $m_{nn} = 8$

$X_1 = 0,0$ = PROFILE CORRECTION FACTOR OF THE PINION ($= -X_2$) $\quad [\delta_{p1} = \delta_{o1}$ $\quad H_g = 18,22$

$\delta_{p2} = \delta_{o2}$ IF NO ANGLE CORRECTION AS IN MOST CASES]



WHEEL DESIGN DATA FOR MACHINE TYPE 850

$R_a = 215,0$ $\quad R_i = 148,0$ $\quad R_m = 181,50$ $\quad$ No. OF TEETH $Z_p = 38$ $\quad M_D = 188,70$ (M/C SETTING DISTANCE) $\quad P = 166,758$ (FIXED CIRCLE RADIUS OF THE CYCLOIDE)

CUTTER HEAD

RADIUS = 170 $\quad$ No. OF GEAR (SPEED) $Z_{w1} = 5$ $\quad$ No. OF GEAR (SPEED) $Z_{w2} = 5$ $\quad \delta_n = 20$ $\quad$ TOOTH FORM = 1

TURNING DIMENSIONS :

$h_{k1} = 8,10$	$a_1 = 58,02$	$C_1 = 4,06$	$K_1 = 7,01$	$d_{ka2} = 229,03$	$d_{ki1} = 162,03$
$H_1 = 186,20$	$W_1 = 124,12$	$h_{k2} = 8,10$	$a_2 = 58,02$	$C_2 = 4,05$	$K_2 = 7,01$
$d_{ka2} = 229,03$	$d_{ki2} = 162,03$	$H_2 = 186,20$	$W_2 = 124,12$	$Y = 3,5$	

TEETH CROWN THICKNESS

$S_{ki1}/M_n = 0,519$ $\quad S_{Km1}/M_n = 0,753$ $\quad d_{KK} = 162,03$ $\quad \delta_{KK} = 30^0$ $\quad b_K = 0,0$

(S_{ki1} = TOOTH CREST THICKNESS OF PINION AT SMALL DIA) $\quad$ (S_{Km1} = TOOTH CREST THICKNESS OF PINION AT CENTRE)

(STEP UP) GEAR RATIO = ε_s $\quad$ PROFILE UPPER LIMIT = ε_p $\quad$ SPIRAL ANGLE = β

$Z_{n1} = 35,972$ $\quad Z_{n2} = 35,972$ $\quad \varepsilon_s = 1,394$ $\quad \varepsilon_p = 1,273$ $\quad \beta_m = 32^0$ (PITCH CONE ANGLE) $\quad \beta$ DEDENDUM = 23,603 $\quad \beta$ ADDENDUM = 40,043

(Z_{n1}, Z_{n2} = IDEAL No. OF TEETH IN THE NORMAL PLANE AT R_m = CENTRE DISTANCE)

TURNING MOMENT MT ; $\quad$ STARTING FORCE PU ; $\quad$ LOAD CARRYING CAPACITY = P_{BB} AS PER LEWIS

$N = 179,13$ $\quad N_1 = 220$ $\quad DM1 = 181,50$ $\quad V = 2,09$ $\quad Y_1 = 0,1228$ $\quad Y_2 = 0,1228$

(N = POWER IN H.P) $\quad$ (LOAD CAPACITY IN H.P.) $\quad$ (AVERAGE DIA OF PINION AT MEAN CONE DISTANCE) $\quad$ CIRCUMFERENTIAL SPEED AT DM1 IN m/S $\quad$ (TOOTH FORM FACTORS)

$MT = 583,00$ $\quad PU = 6424$ $\quad P_{BB} = 18630$ $\quad S_B = 2,90 = \frac{P_{BB}}{P_U}$

(MT = TORQUE IN K.P.M.) $\quad$ (FORCE IN K.P. CIRCUMFERENTIAL) $\quad$ (LOAD IN KP) $\quad$ (SAFETY FACTOR)

AXIAL FORCES P_A RELATED TO PU $\quad$ PINION DRIVES $\quad$ WHEEL DRIVES

TURNING DIRECTION OF THE PINION IN SPIRAL PATH = P_{A1} 0/0 = 75,6 $\quad P_{A2}$ 0/0 = −32,7 $\quad P_{A1}$ 0/0 = −32,7 $\quad P_{A2}$ 0/0 = 75,6

TURNING DIRECTION OF THE PINION AGAINST SPIRAL PATH = P_{A1} 0/0 = −32,7 $\quad P_{A2}$ 0/0 = 75,6 $\quad P_{A1}$ 0/0 = 75,6 $\quad P_{A2}$ 0/0 = −32,7

THE LOAD BEARING CAPACITY P_{BB} IS CALCULATED FOR THE MATL. WITH A STATISTICAL FRACTURE STRESS $\sigma_B = 120\ Kp/m^2$ CALCULATION, FOR OTHER MATLS. IS IN PROPORTION TO THE CORE BRINELL HARDNESS.

SPIRAL DIRECTIONS WHEEL1 = RIGHT/LEFT

ITEM NO.	DESCRIPTION	DRAWING NO.	MATL CODE	UNIT WT
			MATL SPEC	QTY

Bharat Heavy Electricals Ltd.,
SEAMLESS STEEL TUBE PLANT
TIRUCHIRAPALLI-620 014

	NAME	SIGN	DATE
DRN	R. Kumar		17.4.87
CHD			
APPD	R. Dhanjay		

NO. OF ITEMS

REV	DATE	ALTERED / CHECKED
01		

DEPT / CODE | GRADE OF UNTOL. DIM C/M/F | SCALE 1 | WEIGHT (kg) | REF TO ASSY / OLD DRG 0107047.10.009 | ITEM NO.

TITLE: GEAR DATA (SRM 300) | CARD CODE U 01 | DRAWING NO. 20.ST.115.02.112 | REV 00

Size A2