

5443

SINGLE

61.81 in³

GATING WORKSHEET

WEIGHT OF PART 6.5 LBS LBS.

DENSITY (ALUMINUM) .095 LBS. / CU. IN.

DENSITY (ZINC) .24 LBS. / CU. IN.

VOLUME (PART) = WEIGHT (PART) / DENSITY = 61.81 CU. IN.VOLUME (OVERFLOWS) = 3.71 CU. IN.VOLUME (TOTAL) = 65.52 CU. IN.

**** CONSTANTS FOR GATE CALCULATIONS

WALL THICKNESS (IN.)	FILL TIME (SEC.)	GATE VELOCITY (IN/SEC)
.020	.007	
.030	.010	1800-2160
.040	.014	
.050	.017	1680-2040
.060	.021	
.070	.025	
.080	.029	1560-1920
.090	.031	
.100	.035	1440-1800
.110	.039	
.120	.043	
.130	.046	1320-1680
.140	.050	
.150	.053	
.160	.056	
.170	.059	
.180	.062	1200-1560
.190	.065	
.200	.070	
.200+	ADD .003 PER .010 WALL INCREASE	1080-1344

WALL THICKNESS = .450 IN.FILL TIME = .151 SEC.GATE VELOCITY = 1200 IN. / SEC.FILL RATE = (VOLUME / FILL TIME) = 436.8 CU. IN. / SEC.GATE AREA = (FILL RATE / GATE VELOCITY) = 364 SQ. IN.

2A

12 THICK X 3.00
 .09 THICK X 4.00

TO CONVERT WEIGHT TO VOLUME IN ALUMINUM

$\div .095 \text{ LBS/IN}^3$ IN JOB #

DOUBLE TANGENT FEED WORKSHEET

SYSTEM DETAILS

Gate G_1 _____
 Area $AG =$ _____ sq. in.
 Depth $DG =$ _____ in.
 Width $WG =$ _____ in.

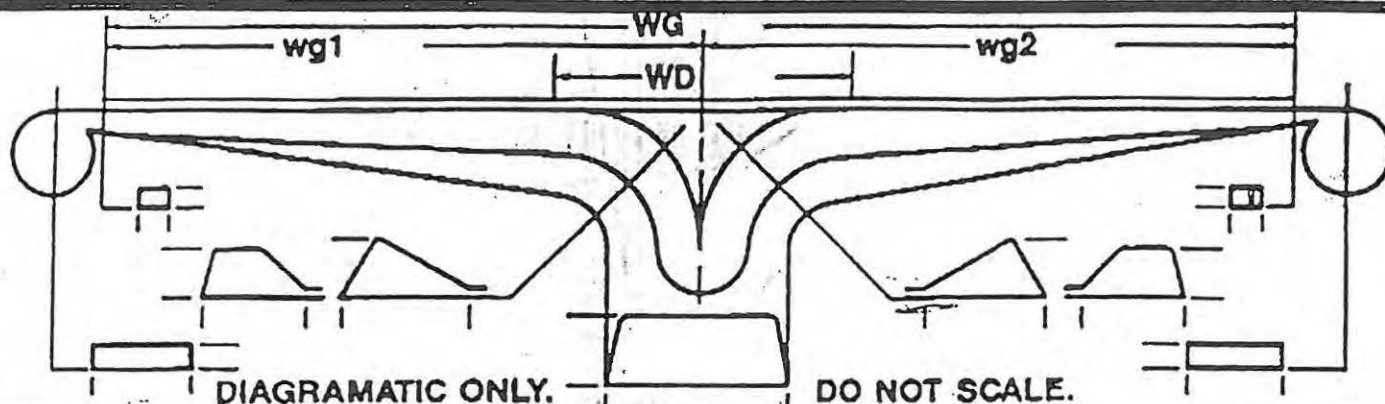
Tangent Runners T_1 _____ T_2 _____
 Total Area $AT =$ _____ sq. in.

Main Runner R_2 _____
 Area $AR =$ _____ sq. in.
 Depth $DR =$ _____ in.
 Width $WR =$ _____ in.

Preferably, use Runner Design System. Alternatively, calculate as shown below

$$AT = AG \times 1.2$$

$$AR = AG \times 1.4$$



OPERATION	LEFT RUNNER - 1	CALCULATION (Shown for left runner only.)	RIGHT RUNNER - 3
Proportion Runners Gate lengths Proportion	$wg1 =$ _____ in. $P1 =$ _____	$P1 = \frac{wg1}{WG}$ 	$wg2 =$ _____ in. $P2 =$ _____
Entr. Runner Start Area Depth Width	$at1 =$ _____ sq. in. $dt1 =$ _____ in. $wt1 =$ _____ in.	$at1 = AT \times P1$ 	$at2 =$ _____ sq. in. $dt2 =$ _____ in. $wt2 =$ _____ in.
Entr. Runner End Area Depth Width	$ae1 =$ _____ sq. in. $de1 =$ _____ in. $we1 =$ _____ in.	$ae1 = at1 \times 0.1$ $de1 = \sqrt{ae1}$ $we1 = \sqrt{ae1}$ 	$ae2 =$ _____ sq. in. $de2 =$ _____ in. $we2 =$ _____ in.
Shock Absorbers Diameter Thickness	$ds1 =$ _____ in. $ts1 =$ _____ in.	$ds1 = we1 \times 4$ $ts1 = de1$ 	$ds2 =$ _____ in. $ts2 =$ _____ in.
Flow Angles Angle (from normal)	$\theta1 =$ _____ deg.	$\theta1 = \tan^{-1} \frac{AG \times P1}{at1}$ 	$\theta2 =$ _____ deg.
Delta Region Width Length Exit Depth	$WD =$ _____ in. $LD =$ _____ in. $DD =$ _____ in.	$WD = WG \times .25$ $LD = WD \times 0.5$ $DD = DG \times 1.5$ 	DG LD DD

GATING WORKSHEET

DOUBLE
26.24 in³

WEIGHT OF PART 2150.55 LBS.

DENSITY (ALUMINUM) .095 LBS. / CU. IN.

DENSITY (ZINC) .24 LBS. / CU. IN.

VOLUME (PART) = WEIGHT (PART) / DENSITY = 26.24 CU. IN.

VOLUME (OVERFLOWS) = 3.5 CU. IN.

VOLUME (TOTAL) = 27.74 CU. IN.

**** CONSTANTS FOR GATE CALCULATIONS

WALL THICKNESS (IN.)	FILL TIME (SEC.)	GATE VELOCITY (IN/SEC)
.020	.007	
.030	.010	1800-2160
.040	.014	
.050	.017	1680-2040
.060	.021	
.070	.025	
.080	.029	1560-1920
.090	.031	
.100	.035	1440-1800
.110	.039	
.120	.043	
.130	.046	1320-1680
.140	.050	
.150	.053	
.160	.056	
.170	.059	
.180	.062	1200-1560
.190	.065	
.200	.070	
.200+	ADD .003 PER .010 WALL INCREASE	1080-1344

WALL THICKNESS = .270 IN.

FILL TIME = .09 SEC.

GATE VELOCITY = 1100 IN. / SEC.

FILL RATE = (VOLUME / FILL TIME) = 308.2 CU. IN. / SEC.

GATE AREA = (FILL RATE / GATE VELOCITY) = .280 SQ. IN.

2A .09 X 3.2

TO CONVERT WEIGHT TO VOLUME IN ALUMINUM $\div .095 \text{ LBS/IN}^3$ IN JOB # _____

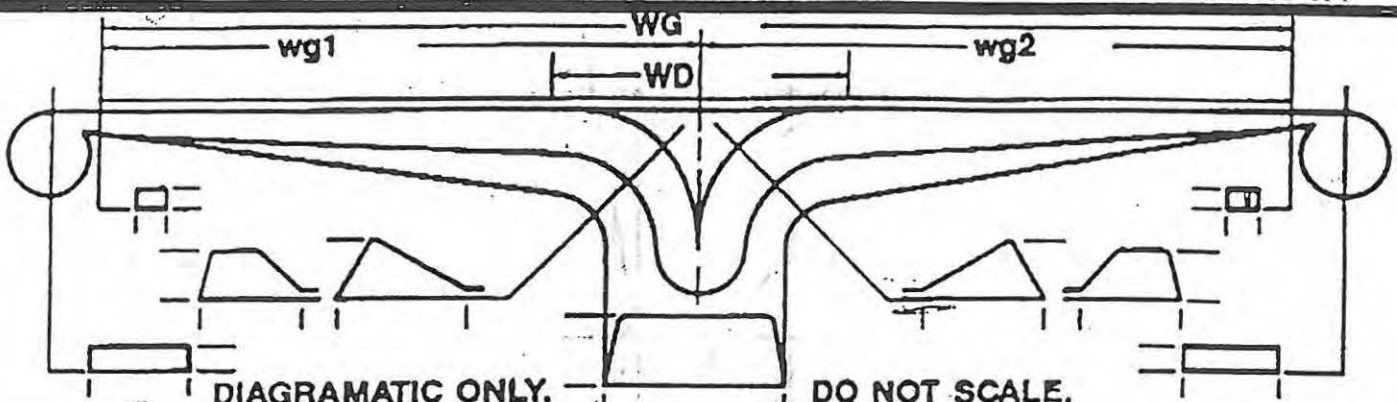


DOUBLE TANGENT FEED WORKSHEET

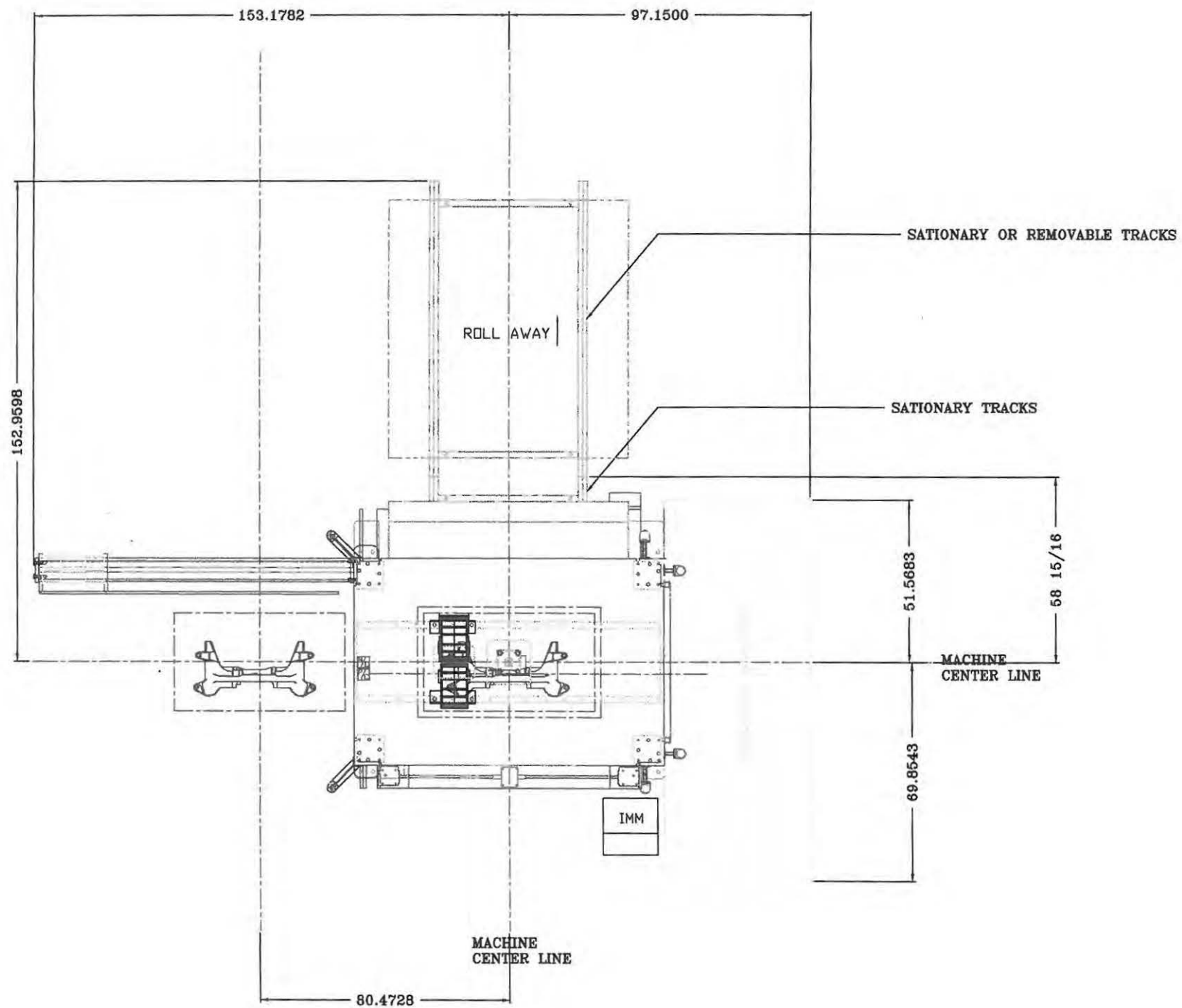
GENERAL SYSTEM DETAILS

Gate G_1 _____	Tangent Runners T_1 _____ T_2 _____	Main Runner R_2 _____
Area $AG =$ _____ sq. in.	Total Area $AT =$ _____ sq. in.	Area $AR =$ _____ sq. in.
Depth $DG =$ _____ in.		Depth $DR =$ _____ in.
Width $WG =$ _____ in.		Width $WR =$ _____ in.

Preferably, use Runner Design System. Alternatively, calculate as shown below
 $AT = AG \times 1.2$ $AR = AG \times 1.4$

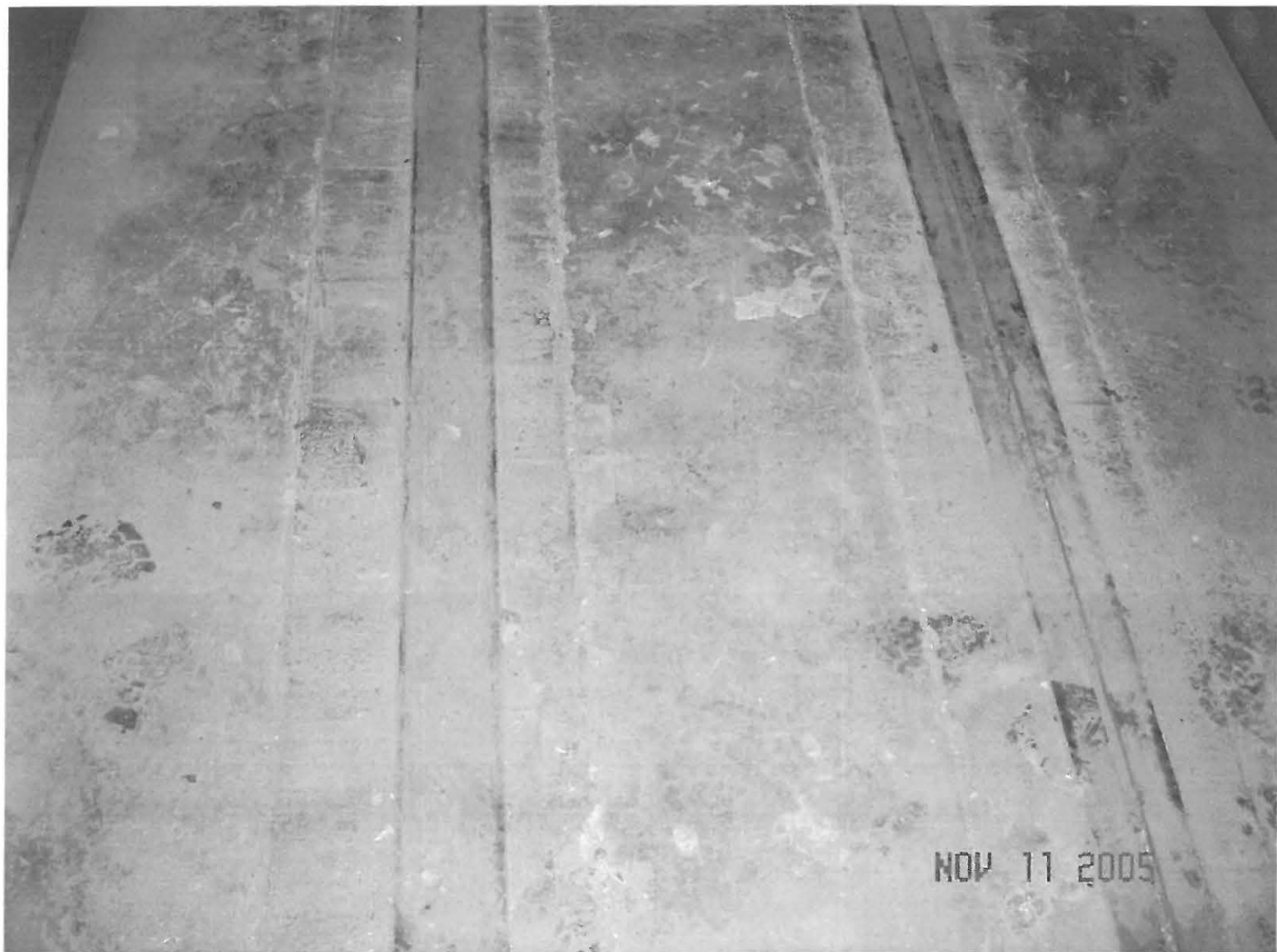


OPERATION	LEFT RUNNER - 1	CALCULATION (Shown for left runner only.)	RIGHT RUNNER - 3
Proportion Runners Gate lengths Proportion	$wg1 =$ _____ in. $P1 =$ _____	$P1 = \frac{wg1}{WG}$ 	$wg2 =$ _____ in. $P2 =$ _____
Tan. Runner Start Area Depth Width	$at1 =$ _____ sq. in. $dt1 =$ _____ in. $wt1 =$ _____ in.	$at1 = AT \times P1$ 	$at2 =$ _____ sq. in. $dt2 =$ _____ in. $wt2 =$ _____ in.
Tan. Runner End Area Depth Width	$ae1 =$ _____ sq. in. $de1 =$ _____ in. $we1 =$ _____ in.	$ae1 = at1 \times 0.1$ $de1 = \sqrt{ae1}$ $d =$ $we1 = \sqrt{ae1}$	$ae2 =$ _____ sq. in. $de2 =$ _____ in. $we2 =$ _____ in.
Shock Absorbers Diameter Thickness	$ds1 =$ _____ in. $ts1 =$ _____ in.	$ds1 = we1 \times 4$ $ts1 = de1$ 	$ds2 =$ _____ in. $ts2 =$ _____ in.
Flow Angles Angle (from normal)	$\theta 1 =$ _____ deg.	$\theta 1 = \tan^{-1} \frac{AG \times P1}{at1}$ 	$\theta 2 =$ _____ deg.
Delta Region Width Length Gate Depth	$WD =$ _____ in. $LD =$ _____ in. $DD =$ _____ in.	$WD = WG \times .25$ $LD = WD \times 0.5$ $DD = DG \times 1.5$ 	DG LD DD



OPERATOR





NOV 11 2005

