

VOLUME = 1.0461891e+06 MM^3
 SURFACE AREA = 4.3748484e+05 MM^2
 AVERAGE DENSITY = 2.9001016e-06 KILOGRAM / MM^3
 MASS = 3.0340546e+00 KILOGRAM
 CENTER OF GRAVITY with respect to DOOSAN_PT coordinate frame:
 X Y Z -1.7392138e+01 -1.0666058e+01 1.4300729e+02 MM

INERTIA with respect to DOOSAN_PT coordinate frame: (KILOGRAM * MM^2)

INERTIA TENSOR:

Ixx Ixy Ixz 9.1539750e+04 -2.4575266e+03 1.1416888e+04
 Iyx Iyy Iyz -2.4575266e+03 9.4291735e+04 6.8901663e+03
 Izx Izy Izz 1.1416888e+04 6.8901663e+03 1.2592517e+04

INERTIA at CENTER OF GRAVITY with respect to DOOSAN_PT coordinate frame:
 (KILOGRAM * MM^2)

INERTIA TENSOR:

Ixx Ixy Ixz 2.9144870e+04 -1.8946926e+03 3.8705792e+03
 Iyx Iyy Iyz -1.8946926e+03 3.1324263e+04 2.2622497e+03
 Izx Izy Izz 3.8705792e+03 2.2622497e+03 1.1329588e+04

PRINCIPAL MOMENTS OF INERTIA: (KILOGRAM * MM^2)

I1 I2 I3 1.0203308e+04 2.9175118e+04 3.2420295e+04

ROTATION MATRIX from DOOSAN_PT orientation to PRINCIPAL AXES:

-0.21046 0.84028 -0.49964
 -0.12276 0.48432 0.86623
 0.96986 0.24365 0.00122

ROTATION ANGLES from DOOSAN_PT orientation to PRINCIPAL AXES (degrees):

angles about x y z -89.919 -29.976 -104.062

RADII OF GYRATION with respect to PRINCIPAL AXES:

R1 R2 R3 5.7990761e+01 9.8060616e+01 1.0337054e+02 MM

MASS PROPERTIES OF COMPONENTS OF THE ASSEMBLY

(in assembly units and the DOOSAN_PT coordinate frame)

DENSITY MASS C.G.: X Y Z

MG0017A0 MATERIAL:
 ERGAL70
 2.81000e-06 2.27934e-01 -2.50690e-02 -2.47574e-02 6.13000e+01
 MG0018A0 MATERIAL:
 ERGAL70
 2.81000e-06 6.44015e-03 1.28784e+01 -7.99318e+01 7.13989e+01
 MG0018A0 MATERIAL:
 ERGAL70
 2.81000e-06 6.44015e-03 -1.28784e+01 -7.99318e+01 7.13989e+01
 ANGLED_FOLDED_BEAM_V1 MATERIAL:
 ERGAL70

	2.81000e-06	2.87045e-02	-2.91953e+01	-6.03939e+01	9.49345e+01
	ANGLED_FOLDED_BEAM_V1		MATERIAL:		
ERGAL70	2.81000e-06	2.87045e-02	2.91953e+01	-6.03939e+01	9.49345e+01
	MG0018A0		MATERIAL:		
ERGAL70	2.81000e-06	6.44015e-03	4.18476e+01	-4.02183e+01	1.22600e+02
	MG0018A0		MATERIAL:		
ERGAL70	2.81000e-06	6.44015e-03	-4.18476e+01	-4.02183e+01	1.22600e+02
	MG0018A0		MATERIAL:		
ERGAL70	2.81000e-06	6.44015e-03	6.27838e+01	5.11189e+01	7.13989e+01
	MG0018A0		MATERIAL:		
ERGAL70	2.81000e-06	6.44015e-03	7.56622e+01	2.88129e+01	7.13989e+01
	ANGLED_FOLDED_BEAM_V1		MATERIAL:		
ERGAL70	2.81000e-06	2.87045e-02	6.69003e+01	4.91307e+00	9.49345e+01
	ANGLED_FOLDED_BEAM_V1		MATERIAL:		
ERGAL70	2.81000e-06	2.87045e-02	3.77050e+01	5.54809e+01	9.49345e+01
	MG0018A0		MATERIAL:		
ERGAL70	2.81000e-06	6.44015e-03	1.39063e+01	5.63502e+01	1.22600e+02
	MG0018A0		MATERIAL:		
ERGAL70	2.81000e-06	6.44015e-03	5.57539e+01	-1.61319e+01	1.22600e+02
	MG0018A0		MATERIAL:		
ERGAL70	2.81000e-06	6.44015e-03	-7.56622e+01	2.88129e+01	7.13989e+01
	MG0018A0		MATERIAL:		
ERGAL70	2.81000e-06	6.44015e-03	-6.27838e+01	5.11189e+01	7.13989e+01
	ANGLED_FOLDED_BEAM_V1		MATERIAL:		
ERGAL70	2.81000e-06	2.87045e-02	-3.77050e+01	5.54808e+01	9.49345e+01
	ANGLED_FOLDED_BEAM_V1		MATERIAL:		
ERGAL70	2.81000e-06	2.87045e-02	-6.69003e+01	4.91307e+00	9.49345e+01
	MG0018A0		MATERIAL:		
ERGAL70	2.81000e-06	6.44015e-03	-5.57539e+01	-1.61319e+01	1.22600e+02
	MG0018A0		MATERIAL:		
ERGAL70	2.81000e-06	6.44015e-03	-1.39063e+01	5.63502e+01	1.22600e+02
	MG0020A0		MATERIAL:		
ERGAL70	2.81000e-06	1.72425e-01	-1.34544e-02	-7.77121e-03	1.32699e+02
	TOP_HALF_TOOL_ASSEMBLY		MATERIAL:		
UNKNOWN	2.81000e-06	1.64166e+00	-3.27176e+01	-1.93464e+01	2.14779e+02
	FT_SENSOR_CONNECTOR_ASSEMBLY		MATERIAL:		
UNKNOWN					

	2.98939e-06	6.56649e-01	-3.42172e-02	-4.91799e-02	1.86820e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	-5.86231e+01	-2.08819e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	-5.86231e+01	-1.13819e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	-4.73958e+01	-4.03281e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	-3.91686e+01	-4.50781e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	5.11198e+01	-2.08819e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	5.11198e+01	-1.13819e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	4.36442e+01	-3.38300e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	3.54169e+01	-3.85800e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	1.12272e+01	6.12100e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	1.94545e+01	5.64600e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	-1.12272e+01	6.12100e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	-1.94545e+01	5.64600e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	5.11198e+01	-2.08819e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	5.11198e+01	-1.13819e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	4.36442e+01	-3.38300e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	3.54169e+01	-3.85800e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					
	7.78000e-06	1.78907e-03	4.73958e+01	-4.03281e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					

	7.78000e-06	1.78907e-03	3.91686e+01	-4.50781e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	5.86231e+01	-2.08819e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	5.86231e+01	-1.13819e+01	1.34412e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	5.11198e+01	-2.08819e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	5.11198e+01	-1.13819e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	4.36442e+01	-3.38300e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	3.54169e+01	-3.85800e+01	1.22267e+02
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	1.55574e+01	-7.50720e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	7.33013e+00	-7.98220e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-1.55574e+01	-7.50720e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-7.33013e+00	-7.98220e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	1.10818e+01	-8.63200e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	1.93090e+01	-8.15700e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-1.93090e+01	-8.15700e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-1.10818e+01	-8.63200e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	5.72356e+01	5.10091e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	6.54628e+01	4.62591e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	7.27929e+01	2.40629e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304					

	7.78000e-06	1.78907e-03	7.27929e+01	3.35629e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	6.92145e+01	5.27571e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	6.09872e+01	5.75071e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	8.02962e+01	2.40629e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	8.02962e+01	3.35629e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-7.27929e+01	2.40629e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-7.27929e+01	3.35629e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-5.72356e+01	5.10091e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-6.54628e+01	4.62591e+01	5.95876e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-8.02962e+01	3.35629e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-8.02962e+01	2.40629e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-6.09872e+01	5.75071e+01	7.17321e+01
	V4-10_UNI5931-ISO4762		MATERIAL:		
AISI304	7.78000e-06	1.78907e-03	-6.92145e+01	5.27571e+01	7.17321e+01