AIRPLANE DIMENSIONS AND AREAS - DESCRIPTION AND OPERATION

1. General

A. This section identifies dimensions and areas of the airplane. Dimensions are selected for pertinent information of measurements to assist operators, maintenance personal and/or ground handling personnel. Dimensions for the 208 and 208 Cargomaster are presented separately from dimensions of the 208B, 208B Super Cargomaster and 208B Passenger. Refer to the respective charts below.

B. Airplane areas are illustrated after Dimensions and Areas information. Refer to Figure 1.

C. Airplane dimensions are illustrated following airplane areas. Refer to Figure 2.

2. Dimensions and Areas - 208 and 208 Cargomaster

AIRPLANE OVERALL	
Length (Overall)	37.58 Feet
Height (Maximum)	14.83 Feet
Wing Span (Overall)	52.16 Feet
Propeller Diameter (Hartzell)	100.0 Inches
Propeller Diameter (McCauley)	106.0 Inches
Propeller Ground Clearance (Nose tire inflated and nose strut fully extended 4.50 inches) (Hartzell)	14.52 Inches
Propeller Ground Clearance (Nose tire inflated and nose strut fully extended 4.50 inches) (McCauley)	11.53 Inches
Landing Gear Track Width (centerline to centerline MLG tire):	
Standard Tires	11.66 Feet
Optional Tires	11.66 Feet
Wheelbase (At static empty weight)	11.62 Feet
FUSELAGE	
Cabin Width (Maximum sidewall to sidewall)	62.00 Inches
Cabin Height (Floorboard to headliner)	51.00 Inches
Cabin Volume (Including rear baggage area)	341.4 Cubic Feet
Cargo Pod	83.7 Cubic Feet
WINGS	
Span	52.16 Feet
Area (Includes cabin top)	279.40 Square Feet
Chord Length and	
Root W.S. 35.00	77.995 Inches
Mean Aerodynamic Chord (W. S. 141.45)	66.398 Inches
Wing Station 308.00	48.108 Inches
Projected Tip (W.S. 310.00)	47.892 Inches
NACA Airfoil Designation and Root W.S. 35.00	NACA 23017.424
Wing Station 308.00	NACA 23012
Incidence and Root W.S. 35.00	+2.62 Degrees
Mean Aerodynamic Chord (at W.S. 141.45)	+1.707 Degrees

Wing Station 308.00	+0.608 Degrees
Leading Edge Fuselage Station and Root W.S. 35.00	151.73 Inches
Mean Aerodynamic Chord W.S. 141.45	157.57 Inches
Wing Station 308.00	166.67 Inches
Sweep Angles and Leading Edge	+3.135 Degrees
Front Spar at 20 Percent Chord	+1.888 Degrees
25 Percent Chord	+1.56 Degrees
50 Percent Chord	0.0 Degrees
Rear Spar at 57.5 Percent Chord	-0.47 Degrees
Trailing Edge	-3.135 Degrees
Wing Loading:	
Landplane at 7300 Pounds	26.1 Pounds per Square Foot
Landplane at 8000 Pounds	28.6 Pounds per Square Foot
Floatplane and Amphibian at 7600 Pounds	27.2 Pounds per Square Foot

FLAPS

Type	Single-Slotted (Type B Nose)
Span (Percent of 310 Inches)	62.9 Percent
Span	16.25 Feet
Inboard Location	W.S. 33.50
Outboard Location	W.S. 228.50
Chord - Projected (Inboard 22.666 Inches)	29 Percent Wing Chord
Chord - Projected (Outboard 16.476 Inches)	29 Percent Wing Chord
Front Spar Location (Percent Flap Chord)	20 Percent
Rear Spar Location (Percent Flap Chord)	65 Percent
Tracks	
Inboard	W.S. 53.158
Center	W.S. 126.658
Outboard	W.S. 214.456
Area (Both)	52.79 Square Foot

AILERONS

Type and 1/4 Chord	Round Nose with Aft Set Hinge Line
Span (Percent of 310 Inches Measured at Hinge Line)	25.387 Percent
Span (Measured at Hinge Line)	6.558 Feet
Inboard Location (Hinge line at ends of aileron)	W.S. 228.924
Outboard Location (Hinge line at ends of aileron)	W.S. 307.25
Hinge Line Location (Percent Wing Chord):	
Outboard W.S. 230.063	77.51 Percent
Inboard W.S. 304.553	78.08 Percent
Chord Length (Percent Wing Chord):	

Inboard Hinge Point	29.27 Percent
Outboard Hinge Point	29.95 Percent
Area	
Aft of Hinge Line (Includes Trim Tab)	6.34 Square Feet
Trim Tab	1.10 Square Feet
Forward of Hinge Line	1.99 Square Feet
Aileron	8.33 Square Feet
Total (Both Ailerons)	16.66 Square Feet

SLOT LIP SPOILERS

Span (Percent of 310 Inches)	18.54 Percent
Span	57.47 Inches (4.79 Feet)
Inboard Location	W.S. 170.72
Outboard Location	W.S. 228.19
Chord:	
Inboard	5.82 Inches along upper surface
Outboard	5.18 Inches along upper surface
Trailing Edge Location:	
Inboard	80.82 Percent
Outboard	80.71 Percent
Area (Both)	4.39 Square Feet

STRUTS

Span (Attach Hole to Attach Hole)	104.354 Inches
Chord Length	8.882 Inches
Airfoil Section Designation	NACA 0033.3 (Modified)

HORIZONTAL TAIL

	Root	MAC	Tip
Stabilizer Station (S.S.)	0.00	56.00	123.00
Leading Edge Fuselage Station	394.270	400.600	408.174
NACA Airfoil	0012		0010
Incidence	-0.75 Degrees	-0.75 Degrees	-0.75 Degrees
Elevator Balance Horn (Ref. Stabilizer/Elevator Chord Line)			-2.50 Degrees
Chord Length	52.00 Inches	41.984 Inches	30.00 Inches
Front Spar (Percent Chord)	20.00 Percent	20.00 Percent	20.00 Percent
Rear Spar (Percent Chord)	61.538 Percent		64.170 Percent
Elevator Hinge Line (Percent Chord)	66.346 Percent		68.650 Percent
Trim Tab Hinge Line (Percent Chord)	86.597 Percent	87.040 Percent	87.139 Percent

Span:			
Stabilizer	20.50 Feet		
Elevator	9.65 Feet		
Trim Tab	5.11 Feet		
Aspect Ratio	6.00		
Taper Ratio	0.577		
Dihedral	0.000 Degrees		
Elevator Trim Tab:			
Inboard Location	S.S. 44.12		
Outboard Location	S.S. 105.460		
Sweep Angles:			
Leading Edge	+6.450 Degrees		
Front Spar	+4.419 Degrees		
25 Percent Chord	+3.88 Degrees		
Rear Spar	+0.539 Degrees		
Elevator Hinge Line	0.00 Degrees		
Trim Tab Hinge Line	-2.411 Degrees		
Trailing Edge	-3.765 Degrees		
Elevator Hinge Locations:	**F.S.**	**W.L.**	**B.L.**
Inboard	428.750	132.625	0.000
Center	428.750	132.625	55.000
Outboard	428.750	132.625	114.026
VERTICAL TAIL	**Root**	**MAC**	**Tip**
Vertical Tail Waterline (Refer to Note 1)	127.50	168.605	225.50
Leading Edge Fuselage Station	385.000	406.776	436.916
NACA Airfoil	0012		009.8
Incidence	0.0 Degrees	0.0 Degrees	0.0 Degrees
Chord Length	72.50 Inches	52.682 Inches	25.251 Inches
Front Spar (Percent Chord)	20.00 Percent	20.00 Percent	20.00 Percent
Rear Spar (Percent Chord)	63.45 Percent		50.209 Percent
Rudder Hinge Line (Percent Chord)	67.862 Percent		55.634 Percent
Span:	98.00 Inches		
Aspect Ratio	1.772		
Taper Ratio	0.401		
Sweep Angles:			
Leading Edge	+27.91 Degrees		
Front Spar	+23.43 Degrees		
25 Percent Chord	+22.26 Degrees		
Rear Spar	+10.45 Degrees		

Rudder Hinge Line	+9.437 Degrees
Trailing Edge	+2.726 Degrees
Dorsal Fin	6.66 Square Feet

CONTROL SURFACE TRAVELS/CABLE TENSION SETTINGS

AILERONS

Aileron Up Travel	25 Degrees, +4 or -0 Degrees
Aileron Down Travel	16 Degrees, +1 or -0 Degree
Aileron Cable Tension:	
Fuselage Loop	20 Pounds, +5 or -5 Pounds
Wing Loop	40 Pounds, +5 or -5 Pounds
Control Wheel Interconnect	30 Pounds, +5 or -5 Pounds
Roll Autopilot Cable:	
KFC-225	12 Pounds, +2 or -2 Pounds
GFC-700	12 Pounds, +2 or -2 Pounds
Aileron Friction Band:	
Without Autopilot	6 Pounds maximum
With Autopilot	8 Pounds maximum
Aileron Trim Tab:	
Right (Up)	15 Degrees, +2 or -2 Degrees
Right (Down)	15 Degrees, +2 or -2 Degrees
Aileron Trim Tab Cable Tension	3 Pounds maximum
Aileron (Right and Left) Servo Tab:	
Servo Tab Up	50 Percent of Aileron Travel, +1 or -1 Degree
Servo Tab Down	50 Percent of Aileron Travel, +1 or -1 Degree

RUDDER

Rudder (Landplane Only):	
Maximum Right Rudder Travel	25 Degrees, +2 or -2 Degrees
Maximum Left Rudder Travel	25 Degrees, +2 or -2 Degrees
Rudder Cable Tension	30 Pounds, +5 or -5 Pounds
Rudder (Floatplane Only):	
Maximum Right Rudder Travel	23 Degrees, +2 or -0 Degrees
Maximum Left Rudder Travel	23 Degrees, +2 or -0 Degrees
Rudder Cable Tension	30 Pounds, +5 or -5 Pounds
Yaw Autopilot Cable:	
KFC-225	20 Pounds, +5 or -5 Pounds
GFC-700	20 Pounds, +5 or -5 Pounds

ELEVATORS

Elevator Up Travel	(Refer to Note 5)
Elevator Down Travel	20 Degrees, +2 or -2 Degrees
Elevator Cable Tension	60 Pounds, +5 or -5 Pounds
Elevator Trim Tab:	
Tab Up (Refer to Note 2)	15 Degrees, +2 or -2 Degrees
Tab Down (Refer to Note 2)	15 Degrees, +2 or -2 Degrees
Elevator Trim Tab Cable Tension	20 Pounds, +5 or -5 Pounds
Pitch Autopilot Cable:	
KFC-225	20 Pounds, +5 or -5 Pounds
GFC-700	20 Pounds, +5 or -5 Pounds
Elevator Friction Bands:	
Without Autopilot	15 Pounds maximum
With Autopilot	20 Pounds maximum
Flap Setting:	
0 Degrees (Refer to Note 3)	0 Degrees, +0 or -0 Degrees
10 Degrees (Refer to Note 3)	10 Degrees, +1 or -2 Degrees
20 Degrees (Refer to Note 3)	20 Degrees, +2 or -2 Degrees
30 Degrees (Refer to Note 3)	30 Degrees, +1 or -2 Degrees
Flap Cable Tension:	
Flaps In Up Position	35 Pounds, +5 or -5 Pounds
Between 0 and 10 Degrees	15 Pounds, +5 or -5 Pounds
SLOT LIP SPOILERS	
Spoiler Up	40 Degrees, +5 or -5 Degrees
Spoiler Down	0 Degrees, +0 or -5 Degrees

NOTE 1:

Adjust the spoiler pushrod as necessary to give a 0.01 to 0.03 inch clearance between the spoiler trailing edge and the top of the flap surface at the minimum clearance position.

NOTE 2:

Model 208 vertical tail tip waterline is 217.50 prior to Serial 20800029 unless modified by SK208-13. Dimensions marked are for extended tail only.

NOTE 3:

Maximum allowable servo with full elevator travel must not exceed 1.0 degree.

NOTE 4:

Left and right flap extension to be symmetrical within 0.5 degree at all positions.

NOTE 5:

Refer to Chapter 27, Elevator System - Inspection/Check for Elevator Up Travel.

3. Dimensions and Areas - 208B, 208B Super Cargomaster and 208B Passenger

AIRPLANE OVERALL

Length (Overall)	41.62 Feet
Height (Maximum)	15.46 Feet
Wing Span (Overall)	52.16 Feet

Propeller Diameter (Hartzell)	100.0 Inches
Propeller Diameter (McCauley)	106.0 Inches
Propeller Ground Clearance (Nose tire inflated and nose strut fully extended 3.625 inches) (Hartzell)	14.28 Inches
Propeller Ground Clearance (Nose tire inflated and nose strut fully extended 3.625 inches) (McCauley)	11.29 Inches
Landing Gear Track Width (centerline to centerline MLG tire):	11.66 Feet
Wheelbase (At static empty weight)	13.29 Feet
FUSELAGE	
Cabin Width (Maximum sidewall to sidewall)	62.00 Inches
Cabin Height (Floorboard to headliner)	51.00 Inches
Cabin Volume (Including rear baggage area)	427 Cubic Feet
Cargo Pod	111.5 Cubic Feet
WINGS	
Span	52.16 Feet
Area (Includes cabin top)	279.40 Square Feet
Chord Length and	
Root W.S. 35.00	77.995 Inches
Mean Aerodynamic Chord (at W.S. 141.45)	66.40 Inches
Wing Station 308.00	48.111 Inches
Projected Tip (W.S. 310.00)	47.892 Inches
NACA Airfoil Designation and Root W.S. 35.00	NACA 23017.424
Wing Station 308.00	NACA 23012
Incidence	
Root W.S. 35.00	+2.62 Degrees
Mean Aerodynamic Chord (at W.S. 141.45)	+1.707 Degrees
Wing Station 308.00	+0.608 Degrees
Leading Edge Fuselage Station	
Root W.S. 35.00	171.73 Inches
Mean Aerodynamic Chord W.S. 141.52	177.57 Inches
Wing Station 308.00	186.67 Inches
Sweep Angles	
Leading Edge	+3.135 Degrees
Front Spar at 20 Percent Chord	+1.888 Degrees
25 Percent Chord	+1.56 Degrees
50 Percent Chord	0.0 Degrees
Rear Spar at 57.5 Percent Chord	-0.47 Degrees
Trailing Edge	-3.135 Degrees
Wing Loading at 8750 Pounds	31.3 Pounds per Square Foot

FLAPS

Type	Single-Slotted (Type B Nose)
Span (Percent of 310 Inches)	62.9 Percent
Span	16.25 Feet
Inboard Location	W.S. 33.50
Outboard Location	W.S. 228.50
Chord - Projected (Inboard 22.666 Inches)	29 Percent Wing Chord
Chord - Projected (Outboard 16.476 Inches)	29 Percent Wing Chord
Front Spar Location (Percent Flap Chord)	20 Percent
Rear Spar Location (Percent Flap Chord)	65 Percent
Tracks:	
Inboard	W.S. 53.158
Center	W.S. 126.658
Outboard	W.S. 214.456
Area (Both)	52.79 Square Foot

AILERONS

Type and 1/4 Chord	Round Nose with Aft Set Hinge Line
Span (Percent of 310 Inches Measured at Hinge Line)	25.387 Percent
Span (Measured at Hinge Line)	6.558 Feet
Inboard Location (Hinge line at ends of aileron)	W.S. 228.924
Outboard Location (Hinge line at ends of aileron)	W.S. 307.625
Hinge Line Location (Percent Wing Chord):	
Outboard W.S. 230.063	77.51 Percent
Inboard W.S. 304.553	78.08 Percent
Chord Length (Percent Wing Chord):	
Inboard Hinge Point	29.3 Percent
Outboard Hinge Point	29.9 Percent
Area	
Aft of Hinge Line (Includes Trim Tab)	6.34 Square Feet
Trim Tab	1.10 Square Feet
Forward of Hinge Line	1.99 Square Feet
Aileron	8.33 Square Feet
Total (Both Ailerons)	16.66 Square Feet

SLOT LIP SPOILERS

Span (Percent of 310 Inches)	18.54 Percent
Span	57.47 Inches (4.79 Feet)
Inboard Location	W.S. 170.72
Outboard Location	W.S. 228.19
Chord:	

Inboard	5.82 Inches along upper surface
Outboard	5.18 Inches along upper surface
Trailing Edge Location:	
Inboard	80.82 Percent
Outboard	80.71 Percent
Area (Both)	4.39 Square Feet

STRUTS

Span (Attach Hole to Attach Hole)	104.354 Inches
Chord Length	8.882 Inches
Airfoil Section Designation	NACA 0033.3 (Modified)

HORIZONTAL TAIL

	Root	MAC	Tip
Stabilizer Station (S.S.)	0.00	56.00	123.00
Leading Edge Fuselage Station	394.270	400.600	408.174
NACA Airfoil	0012		0010
Incidence	0.0 Degrees	0.0 Degrees	0.0 Degrees
Elevator Balance Horn (Ref. Stabilizer/Elevator Chord Line)			-2.50 Degrees
Chord Length	52.00 Inches	41.984 Inches	30.00 Inches
Front Spar (Percent Chord)	20.00 Percent	20.00 Percent	20.00 Percent
Rear Spar (Percent Chord)	61.538 Percent		64.170 Percent
Elevator Hinge Line (Percent Chord)	66.346 Percent		68.650 Percent
Trim Tab Hinge Line (Percent Chord)	86.597 Percent	87.040 Percent	87.139 Percent
Span:			
Stabilizer	20.50 Feet		
Elevator	9.65 Feet		
Trim Tab	5.11 Feet		
Aspect Ratio	6.00		
Taper Ratio	0.577		
Dihedral	0.000 Degrees		
Elevator Trim Tab:			
Inboard Location	S.S. 44.12		
Outboard Location	S.S. 105.460		
Sweep Angles:			
Leading Edge	+6.450 Degrees		
Front Spar	+4.419 Degrees		
25 Percent Chord	+3.88 Degrees		
Rear Spar	+0.539 Degrees		

Elevator Hinge Line	0.00 Degrees		
Trim Tab Hinge Line	-2.411 Degrees		
Trailing Edge	-3.765 Degrees		
Elevator Hinge Locations:	**F.S.**	**W.L.**	**B.L.**
Inboard	476.768	132.240	0.000
Center	476.768	132.240	55.000
Outboard	476.768	132.240	114.026
VERTICAL TAIL	**Root**	**MAC**	**Tip**
Vertical Tail Waterline	127.50	168.605	225.50
Leading Edge Fuselage Station	385.000	406.776	436.916
NACA Airfoil	0012		009.8
Incidence	0.0 Degree	0.0 Degree	0.0 Degree
Chord Length	72.50 Inches	52.682 Inches	25.251 Inches
Front Spar (Percent Chord)	20.00 Percent	20.00 Percent	20.00 Percent
Rear Spar (Percent Chord)	63.45 Percent		50.209 Percent
Rudder Hinge Line (Percent Chord)	67.862 Percent		55.634 Percent
Span:	98.00 Inches		
Aspect Ratio	2.005		
Taper Ratio	0.401		
Sweep Angles:			
Leading Edge	+27.91 Degrees		
Front Spar	+23.43 Degrees		
25 Percent Chord	+22.26 Degrees		
Rear Spar	+10.45 Degrees		
Rudder Hinge Line	+9.437 Degrees		
Trailing Edge	+2.726 Degrees		
Dorsal Fin	6.66 Square Feet		

CONTROL SURFACE TRAVELS/CABLE TENSION SETTINGS

AILERONS

Aileron Up Travel	25 Degrees, +4 or -0 Degrees
Aileron Down Travel	16 Degrees, +1 or -0 Degree
Aileron Cable Tension:	
Fuselage Loop	20 Pounds, +5 or -5 Pounds
Wing Loop	40 Pounds, +5 or -5 Pounds
Control Wheel Interconnect	30 Pounds, +5 or -5 Pounds
Roll Autopilot Cable:	
KFC-225	12 Pounds, +2 or -2 Pounds

GFC-700	12 Pounds, +2 or -2 Pounds
Aileron Friction Band:	
Without Autopilot	6 Pounds maximum
With Autopilot	8 Pounds maximum
Aileron Trim Tab:	
Right (Up)	15 Degrees, +2 or -2 Degrees
Right (Down)	15 Degrees, +2 or -2 Degrees
Aileron Trim Tab Cable Tension	3 Pounds maximum
Aileron (Right and Left) Servo Tab:	
Servo Tab Up	50 Percent of Aileron Travel, +1 or -1 Degree
Servo Tab Down	50 Percent of Aileron Travel, +1 or -1 Degree

RUDDER

Rudder:	
Maximum Right Rudder Travel	25 Degrees, +2 or -2 Degrees
Maximum Left Rudder Travel	25 Degrees, +2 or -2 Degrees
Rudder Cable Tension	30 Pounds, +5 or -5 Pounds
Yaw Autopilot Cable:	
KFC-225	20 Pounds, +5 or -5 Pounds
GFC-700	20 Pounds, +5 or -5 Pounds

ELEVATORS

Elevator Up Travel	25 Degrees, +2 or -2 Degrees
Elevator Down Travel	20 Degrees, +2 or -2 Degrees
Elevator Cable Tension	60 Pounds, +5 or -5 Pounds
Elevator Trim Tab:	
Tab Up (Refer to Note 4)	15 Degrees, +2 or -2 Degrees
Tab Down (Refer to Note 4)	15 Degrees, +2 or -2 Degrees
Elevator Trim Tab Cable Tension	20 Pounds, +5 or -5 Pounds
Pitch Autopilot Cable:	
KFC-225	20 Pounds, +5 or -5 Pounds
GFC-700	20 Pounds, +5 or -5 Pounds
Elevator Friction Bands:	
Without Autopilot	15 Pounds maximum
With Autopilot	20 Pounds maximum
Flap Setting:	
0 Degrees (Refer to Note 5)	0 Degree, +0 or -0 Degrees
10 Degrees (Refer to Note 5)	10 Degrees, +1 or -2 Degrees
20 Degrees (Refer to Note 5)	20 Degrees, +2 or -2 Degrees

30 Degrees (Refer to Note 5)	30 Degrees, +1 or -2 Degrees
Flap Cable Tension:	
Flaps In Up Position	35 Pounds, +5 or -5 Pounds
Between 0 and 10 Degrees	15 Pounds, +5 or - 5 Pounds
SLOT LIP SPOILERS	
Spoiler Up	40 Degrees, +5 or -5 Degrees
Spoiler Down	0 Degrees, +0 or -5 Degrees

NOTE: Adjust the spoiler pushrod as necessary to give a 0.01 to 0.03 inch clearance between the spoiler trailing edge and the top of the flap surface at the minimum clearance position.

NOTE: Left hand and right hand flap extension to be symmetrical within 0.5 degree at all positions.

NOTE: Maximum allowable servo with full elevator travel must not exceed 1.0 degree.

Figure 1 : Sheet 1 : Airplane Areas

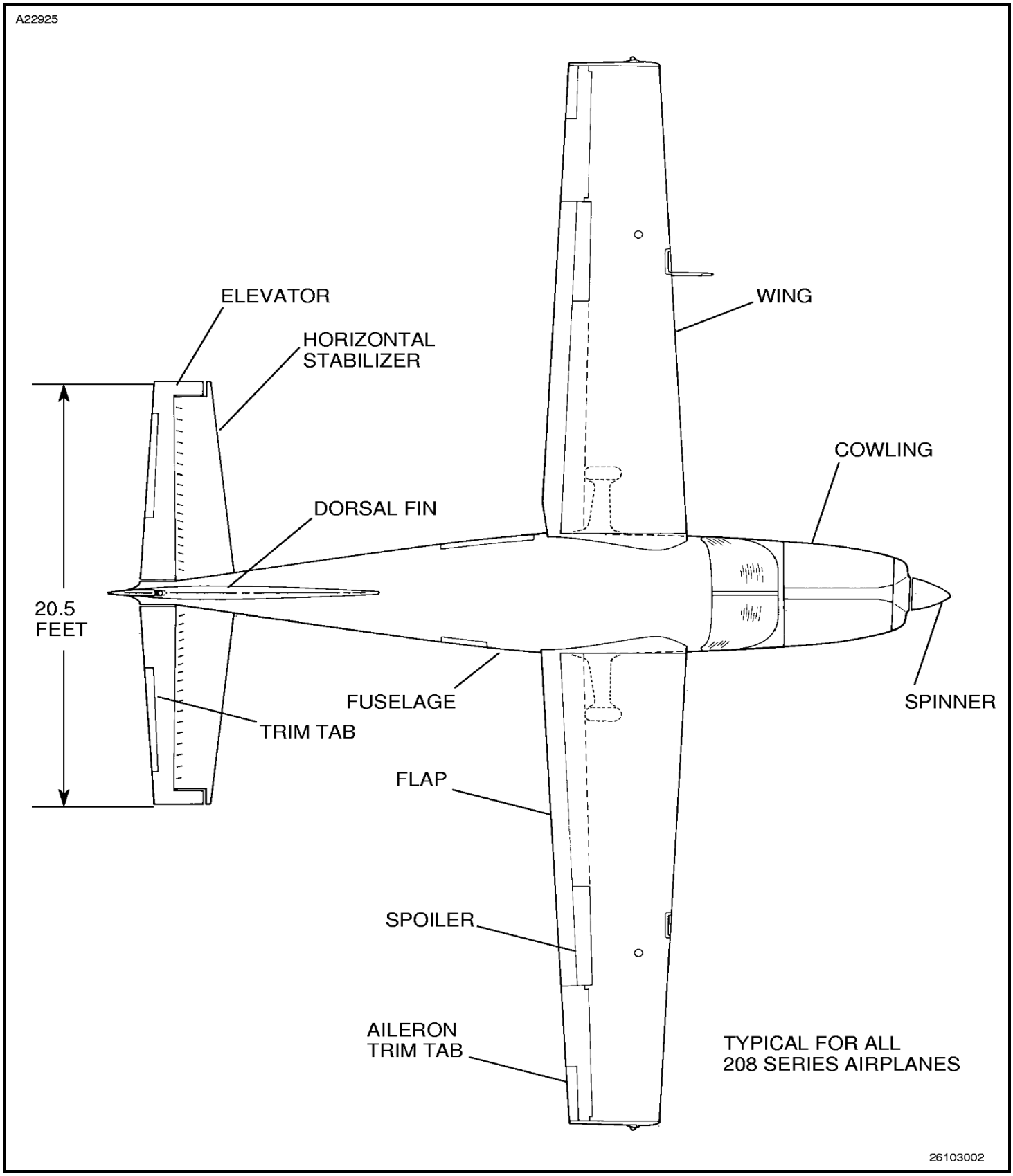
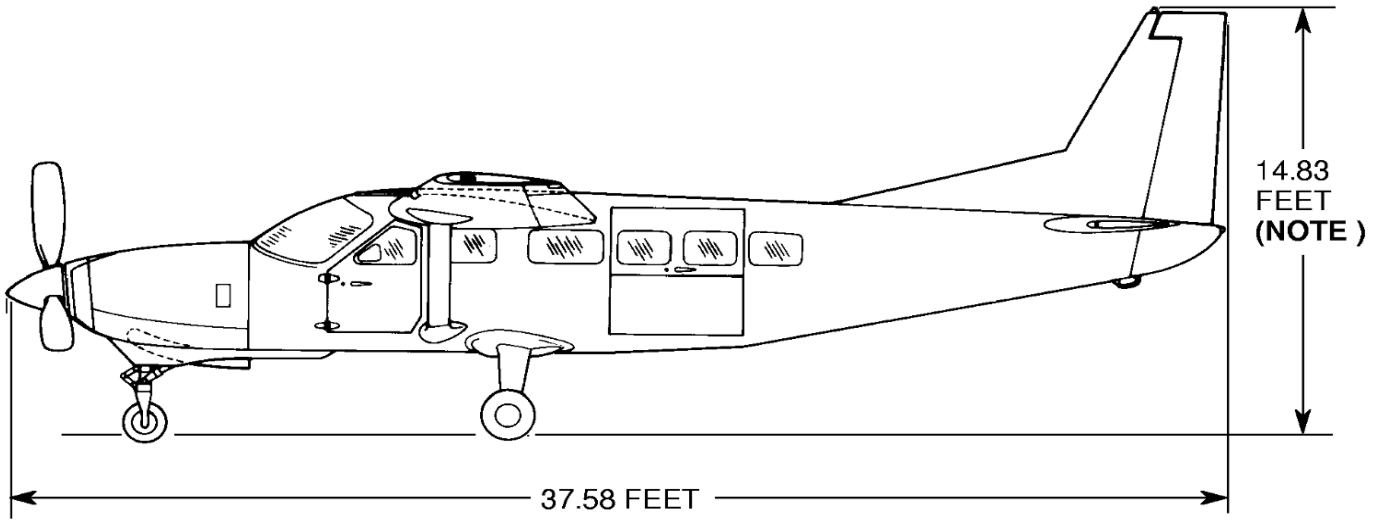
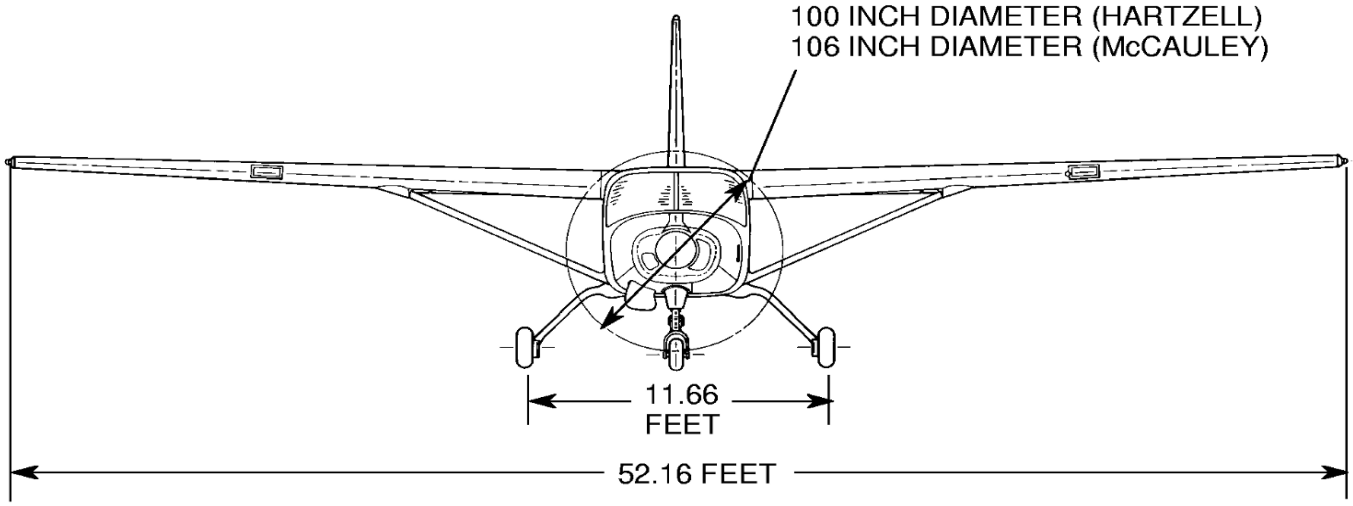


Figure 2 : Sheet 1 : Airplane Dimensions

A22926





NOTE: MODEL 208 HEIGHT PRIOR TO 20800029 IS 14.16 FEET WHEN NOT MODIFIED BY SK208-13

MODEL 208 PASSENGER

26102003
26102004

Figure 2 : Sheet 2 : Airplane Dimensions

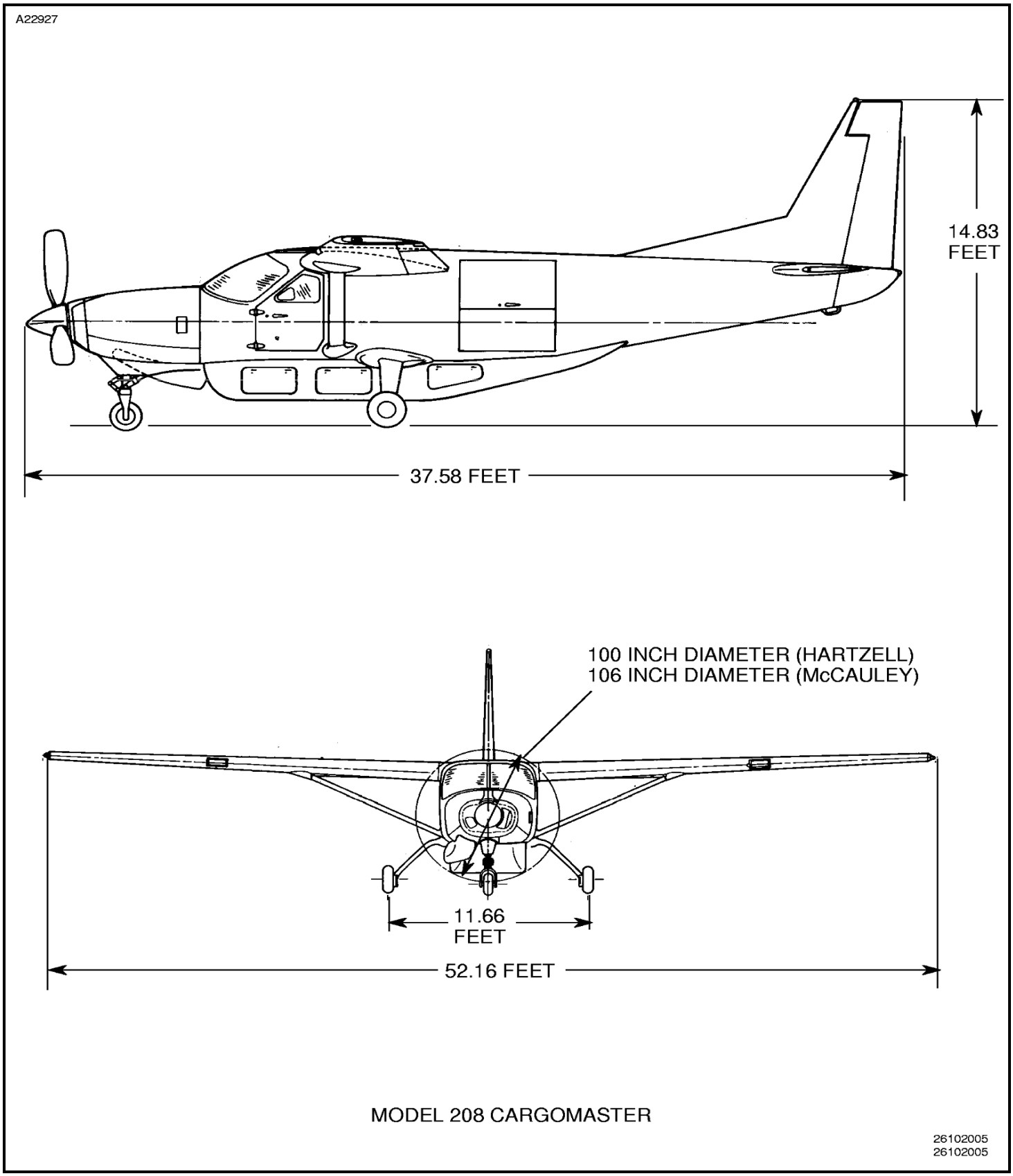


Figure 2 : Sheet 3 : Airplane Dimensions

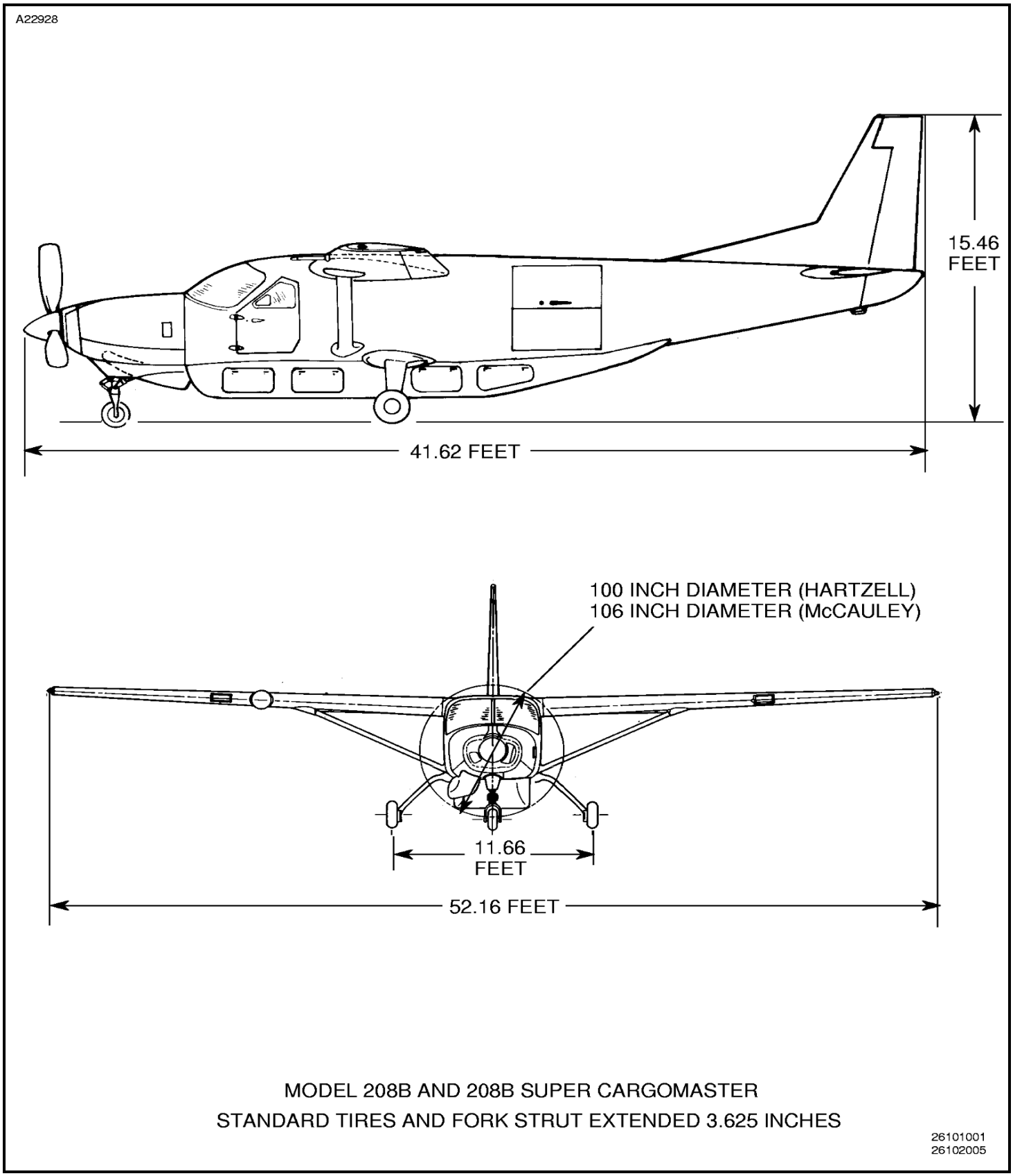


Figure 2 : Sheet 4 : Airplane Dimensions