
5 MPH MAX TOW SPEED

1
00:00:01,001 --> 00:00:01,725
The hardware we are looking at it is

2
00:00:01,760 --> 00:00:03,203
called the MPCV Stage

3
00:00:03,238 --> 00:00:05,044
Adapter. It’s a piece of

4
00:00:05,079 --> 00:00:06,052
hardware that we

5
00:00:06,087 --> 00:00:07,052
are going to use on a test

6
00:00:07,087 --> 00:00:08,372
flight to adapt the Orion

7
00:00:08,407 --> 00:00:10,700
Capsule to a Delta heavy launch

8
00:00:10,735 --> 00:00:12,052
vehicle. So since

9
00:00:12,087 --> 00:00:13,139
this is flight hardware

10
00:00:13,174 --> 00:00:14,628
the moving operations

11
00:00:14,663 --> 00:00:15,891
are very critical, because

12
00:00:15,926 --> 00:00:17,035
it’s only one flight

13
00:00:17,070 --> 00:00:18,147

asset and we want to make

14
00:00:18,182 --> 00:00:19,859
sure that we treat it

15
00:00:19,894 --> 00:00:21,404
and take care of it so we don’t

16
00:00:21,439 --> 00:00:22,524
damage it. So what

17
00:00:22,559 --> 00:00:25,012
we did to flip it is we

18
00:00:25,047 --> 00:00:26,252
put the MSA hardware

19
00:00:26,287 --> 00:00:27,724
on an assembly jig which is

20
00:00:27,759 --> 00:00:28,580
to keep the ring

21
00:00:28,615 --> 00:00:29,844
stable. Then we mounted it

22
00:00:29,879 --> 00:00:31,371
with blocks and then

23
00:00:31,406 --> 00:00:32,955
used a Possi-turner machine to

24
00:00:32,990 --> 00:00:35,004
flip the MSA 108

25
00:00:35,039 --> 00:00:36,820
degrees to be able to put it

26
00:00:36,855 --> 00:00:37,972
on a seven axis milling

27
00:00:38,007 --> 00:00:38,996
machine. All the different

28
00:00:39,031 --> 00:00:40,948
bolts that were used

29
00:00:40,983 --> 00:00:42,972
for the planting mechanism

30
00:00:43,007 --> 00:00:45,123
needed to be clamped to a

31
00:00:45,158 --> 00:00:47,356
specific torque to make sure

32
00:00:47,391 --> 00:00:48,228
that it was

33
00:00:48,263 --> 00:00:50,076
fastened correctly, but at the

34
00:00:50,111 --> 00:00:51,084
same time we don’t

35
00:00:51,119 --> 00:00:52,899
want to over torque it so we

36
00:00:52,934 --> 00:00:54,068
end up damaging the

37
00:00:54,103 --> 00:00:55,755
hardware. So, there is a

38
00:00:55,790 --> 00:00:56,868

specific torque value

39
00:00:56,903 --> 00:00:58,940
that you want to make sure that

40
00:00:58,975 --> 00:00:59,908
it’s safe in

41
00:00:59,943 --> 00:01:01,292
place, but like I say, don’t

42
00:01:01,327 --> 00:01:02,388
damage the hardware!

43
00:01:02,423 --> 00:01:03,500
So my involvement with the

44
00:01:03,535 --> 00:01:04,740
project was the

45
00:01:04,775 --> 00:01:07,699
flipping of the fixture, so the

46
00:01:07,734 --> 00:01:09,187
tool that we used to flip

47
00:01:09,222 --> 00:01:12,748
the MSA was an existing tool

48
00:01:12,783 --> 00:01:16,484
that we had but it had to be modified in

49
00:01:16,519 --> 00:01:17,948
order to accommodate to

50
00:01:17,983 --> 00:01:19,484
the MSA. So I was involved

51
00:01:19,519 --> 00:01:21,796
with the design of

52
00:01:21,831 --> 00:01:23,827
the blocks and the clamps

53
00:01:23,862 --> 00:01:25,355
that were used to put the

54
00:01:25,390 --> 00:01:27,187
MSA on the tool that we used

55
00:01:27,222 --> 00:01:31,668
to flip. So today I

56
00:01:31,703 --> 00:01:32,948
saw some of my work in

57
00:01:32,983 --> 00:01:34,212
operation…it was great

58
00:01:34,247 --> 00:01:36,076
to have something that went

59
00:01:36,111 --> 00:01:37,860
from my design board

60
00:01:37,895 --> 00:01:39,315
to the actual manufacturing

61
00:01:39,350 --> 00:01:40,580
and then to be used on

62
00:01:40,615 --> 00:01:42,467
a piece of flight hardware.

63
00:01:42,502 --> 00:01:46,091

So what they will do on

64
00:01:46,126 --> 00:01:47,123
the milling machine is they

65
00:01:47,158 --> 00:01:48,084
will machine both the

66
00:01:48,119 --> 00:01:49,388
forward and the aft flanges of the

67
00:01:49,423 --> 00:01:50,836
adapter and then they will

68
00:01:50,871 --> 00:01:52,220
put all the flight holes and those

69
00:01:52,255 --> 00:01:54,212
will be used to mount the MSA