

Hydraulic Line Test

Date completed: _____

Performed by: _____

Specifications Tested

Specification Tested	Description	Critical Value	Nominal Value
S5	The limits of travel per each axis must be a minimum of 1 cm	1 cm	> 1 cm
S9	The hydraulic lines shall hold their position within .02 nm for a time span of 1 min	.02 nm/min	<.02 nm/min

Revision History

Revision	Description	Date
1	Creation of Document	10/30/12

Equipment

- _____ Metric scale- Provides conformation of displacement distance
- _____ Microscope- Visualizes physical displacement
- _____ Computer- Drives microscope control software
- _____ Monitor- Displays microscope input
- _____ Stopwatch- Records elapsed time
- _____ Bearing puller- Displaces and holds input shaft at specified location

Sections

- Part I Limits of travel
- Part II System drift
- Part III Assembly limits of travel
- Part IV Assembly system drift

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Part I Limits of travel

- _____ 1. Measure input shaft original length
- _____ 2. Measure output shaft original length
- _____ 3. Manually depress input shaft a specified distance and hold
- _____ 4. Record output shaft length

Summarize data below

Depression length (mm)	Input shaft length (mm)	Output shaft length (mm)	Post depression Input shaft length (mm)	Post depression Input shaft length (mm)	Travel Distance (mm)
0					
5					
10					
>10 ()					

Sign off on section completion before continuing: _____

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Part 2 System drift

- _____ 1. Power up computer, microscope, and corresponding software
- _____ 2. Depress input shaft a specified distance using bearing puller for a secure hold
- _____ 3. Place end of output shaft under microscope with horizontal orientation
- _____ 4. Focus microscope on shaft vertical end
- _____ 5. Align shaft end with origin of software built in scale
- _____ 6. Allow specified time to elapse
- _____ 7. Record shaft end displacement

Summarize data below

Depression length (mm)	Testing time (min)	Output shaft displacement (nm)
5	5	
10	5	
>10 if applicable ()	5	

Sign off on section completion before continuing: _____