

# Extreme pressure (EP) properties of oils Report

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# Test Method and Materials

## Ducom Four Ball Tester



Figure 1. Ducom Four Ball Tester.

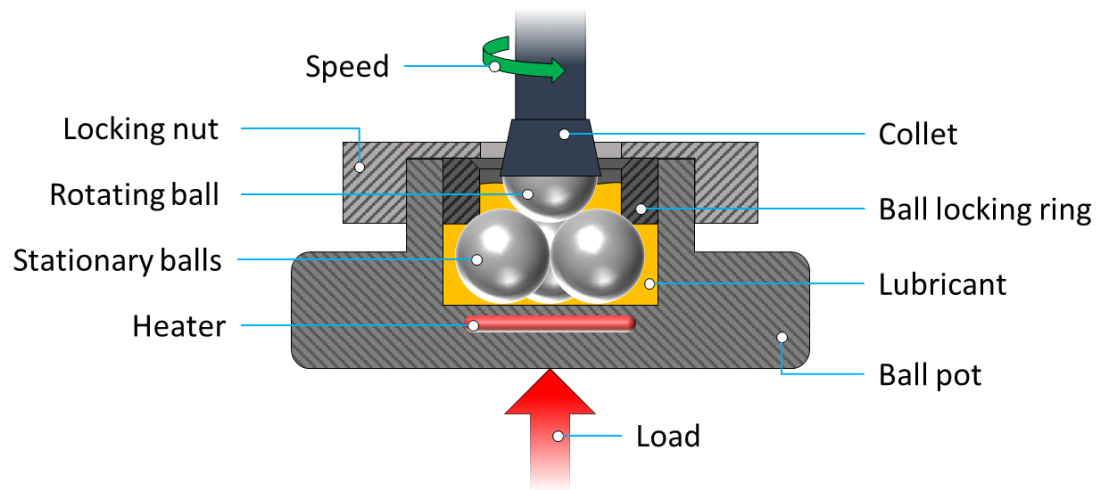


Figure 2. Schematics of the Four Ball Tester test area.

## Test Standards

Table 1. ASTM D2783 test parameters.

Parameter	Unit	Value
Load	N (kgf)	See Table 2
Speed	rpm	1770
Temperature	°C	18 to 35
Duration	s	10

Table 2. ASTM D2783 test loads.

Load	
kgf	N
6	59
8	78
10	98
16	157
20	196
24	235
32	314
40	392
50	490
63	618
80	784
100	981
126	1236
160	1569
200	1961
250	2452
315	3089
400	3922
500	4903
620	6080
800	7845

Table 3. ASTM D4172-B test parameters.

Parameter	Unit	Value
Load	N (kgf)	392 (40)
Speed	rpm	1200
Temperature	°C	75
Duration	min	60

## Materials

ASTM Standard Test Balls (Ø12.7 mm).

## Lubricants

- Shell Helix 5W40
- Slick 50
- TSL
- Yellow Miracle Oil I
- Yellow Miracle Oil II

## Results | Extreme Pressure (EP) Tests

### Loads

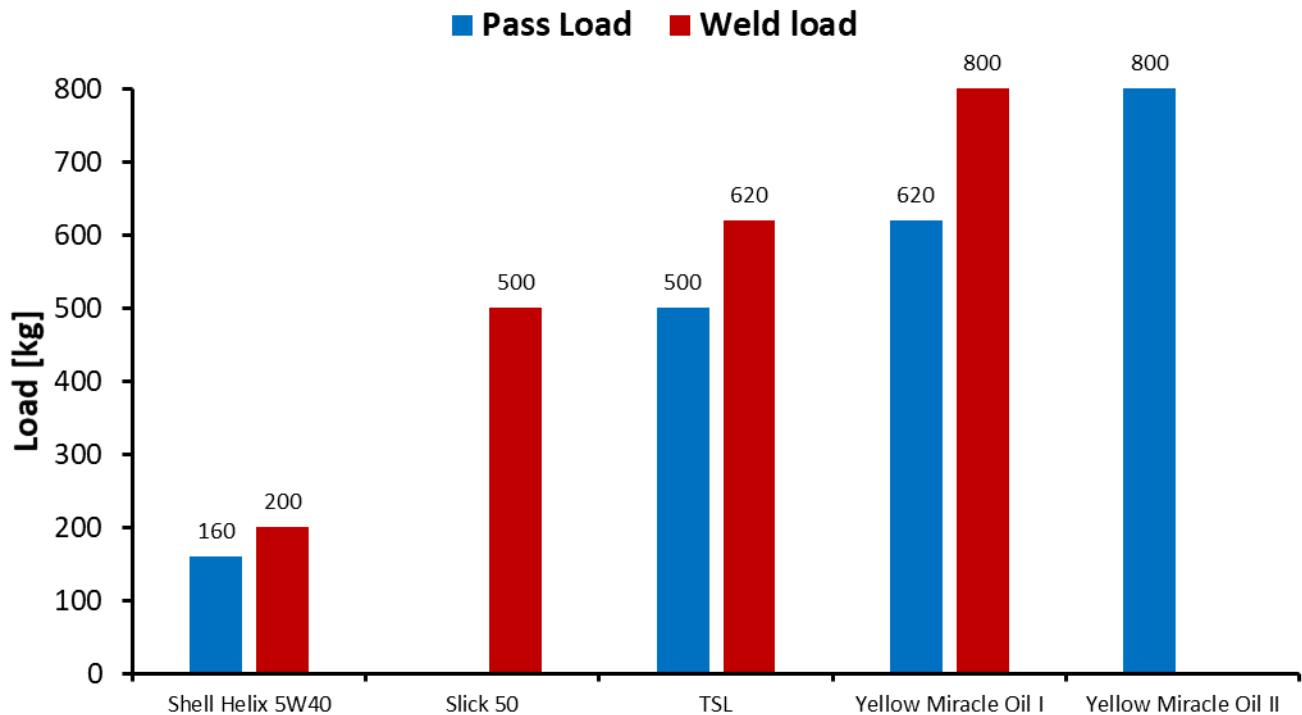


Figure 3. Chart with the highest pass load and weld load for each of the tested oils.

Table 4. Pass load and weld load for each of the tested oils.

	Pass Load		Weld load	
	kg	N	kg	N
<b>Shell Helix 5W40</b>	160	1569	200	1961
<b>Slick 50 (*)</b>	-	-	500	4903
<b>TSL</b>	500	4903	620	6080
<b>Yellow Miracle Oil I</b>	620	6080	800	7845
<b>Yellow Miracle Oil II (**)</b>	800	7845	-	-

(\*) Slick 50 oil was tested only at 500 kg. The test resulted in the welding of the test balls.

(\*\*) The weld load of Yellow Miracle Oil II is not reported since it passed the highest load (800 kg).

## Contact Information

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