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(PYDRAUL SELECTOR 1 and 2)
Page 1

(After section on "Development" put in the following section:)

Reformulation - 10/93/42

The Pydraul fluids in this Selector were reformulated in 1970 to remove polychlorinated biphenyls (PCB's). They are now designated with the letter "A" following the product name and provide equal or superior performance when compared to the original Pydraul fluids.

Because some PCB's have been considered to be persistent in the environment, Monsanto chose to remove these components from Pydraul. We took this action voluntarily in an effort to demonstrate our environmental awareness.

Reformulation of the Pydraul fluids provided us with the opportunity to make a number of product improvements, particularly in the areas of lubricity, pump performance and thermal stability. These improvements give you the benefit of the latest Monsanto technology in fire resistant hydraulic fluids.

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TOWOLDMON0022474

NEW COPY
SET SAME FACES
SAME CAP

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8/20/2005 Sil
Jette

Pydraul Selector 1

Pages 2 and 3

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all CAPS

PHYSICAL PROPERTIES

Appearance	Pydraul 60 Blue Liquid	Pydraul 150-A Blue Liquid	Pydraul 150-B Blue Liquid	Pydraul F9-A Blue Liquid	Pydraul 625-A Blue Liquid
Spec. Gravity 25/25°C	1.088-1.091	1.120-1.131	1.119-1.125	1.20-1.23	1.30-1.34
Neutralization No. (mg KOH/g) max.	0.25	0.30	0.50	0.50	0.50
Moisture (max.) %	0.10	0.10	0.10	0.10	0.10
Viscosity					
centistokes @ 100°F	9.6-10.4cs	29-39cs	32-38cs	48-57cs	125-145cs
@ 210°F	2.3-2.5cs	6.9-8.1cs	4.2-4.6cs	4.7-5.5cs	6.7-7.2cs
SSU @ 100°F	60 SSU	146 SSU	146 SSU	250 SSU	628 SSU
@ 210°F	35 SSU	53 SSU	53 SSU	43 SSU	49 SSU
Absolute SSU @ 100°F	60.5 SSU	163 SSU	163 SSU	302 SSU	829 SSU
(SSU x Density) @ 210°F	35 SSU	56 SSU	56 SSU	52.2 SSU	65 SSU
Pour Point	-70°F	-55°F	-55°F	0°F	+5°F
Bulk Temp Max. (continuous operation)	175°F	150°F 585°F	150°F	225°F	225°F
Boiling Point °F at 760 mm Hg	707°F	647°F	647°F	644°F	770°F
Coefficient of Thermal Expansion per °F	0.00094	0.00042	0.00042	0.00037	0.00048
Specific Heat Btu/lb/°F @ 77°F	0.42	0.40	0.40	0.34	0.30
Thermal Conductivity Btu/in/ft/°F	0.047	0.072	0.072	0.065	0.062
Vapor Pressure mm Hg @ 200°F	0.002	0.01	0.01	0.02	0.004
Bulk Modulus (Room Temp. 1000-6000 psi)	328,000	319,000	319,000	395,000	400,000
Rust Test ASTM D-665	Pass	Pass	Pass	Pass	Pass
Foam Test ASTM D-892	Pass	Pass	Pass	Pass	Pass
Solubility in Water	Negligible	Negligible	Negligible	Negligible	Negligible

NEW INDU (1)
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SAME FORMAT, ETC.

Pydraul Selector 2
Pages 2 and 3
(Top Half of Page)

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205
See Style all PAPS

all PAPS

PHYSICAL PROPERTIES	Pydraul 135-A	Pydraul 230-A	Pydraul 312-A	Pydraul 510-B
Appearance	Clear Green Liquid	Clear Green Liquid	Clear Green Liquid	Clear Green Liquid
Spec. Gravity 25/25°C	1.168-1.182	1.122-1.144	1.105-1.125	1.115-1.135
Neutralization No. (mg KOH/g) max.	0.30	0.30	0.30	0.30
Moisture (max) %	0.10	0.10	0.10	0.10
Viscosity - all PAPS				
centistokes @ 100°F	27.5-30.5	47-53	65-73	111-118
@ 210°F	4.1-4.5	5.2-5.8	6.4-7.1	7.7-8.4
SSU @ 100°F	135 SSU	233 SSU	320 SSU	535 SSU
@ 210°F	40.5 SSU	44.3 SSU	48.9 SSU	52.6 SSU
Absolute SSU @ 100°F	159 SSU	264 SSU	357 SSU	602 SSU
(SSU x Density) @ 210°F	47.6 SSU	50.2 SSU	54 SSU	59.2 SSU
Pour Point	-15°F	-10°F	0°F	+10°F
Bulk Temp Max. (continuous operation)	200°F	200°F	200°F	200°F
Boiling Point °F @ 760 mm Hg	570°F	650°F	662°F	680°F
Coefficient of Thermal Expansion per °F	0.00042	0.00036	0.00036	0.00039
Specific Heat Btu/lb/°F @ 77°F	0.32	0.36	0.37	0.37
Thermal Conductivity Btu/hr/ft/°F	0.067	0.067	0.068	0.068
Vapor Pressure mm Hg @ 200°F	2.1	0.28	0.30	0.26
Bulk Modulus (Room Temp 1000-6000 PSI)	372,000	376,000	365,000	355,000
Rust Test ASTM D-665	PASS	PASS	PASS	PASS
Film Test ASTM D-892	PASS	PASS	PASS	PASS
Solubility in water	Negligible	Negligible	Negligible	Negligible

TOWOLDMON0022476

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PYDRAUL SELECTOR 1 & 2
Page 2 & 3

(
At bottom of page substitute the following for the small print
detail on each fluid:
)

~~Put across the page: (all caps)~~

Following is a partial list of applications for the
Pydraul fluids:

Handwritten: H.A. B.F.

Copy C-1

Diecasting

diecast machines

trim presses

Steel Industry

continuous casters

rolling mills

furnaces

scrap chargers

stripper cranes

arc welders

combustion controls

mobile equipment

Aluminum Industry

stripper cranes

direct chill casters

furnaces

rolling mills

shearers

combustion controls

mobile equipment

Forging and Extrusion

forge presses

extrusion presses

billet manipulators

Foundries

furnaces

molding lines

Fabrication

forming presses

welders

furnaces

7/20/6
93

Set IN FOUR EQUAL
COLS
line for line
continued.

(Set cap lines in B.F.)

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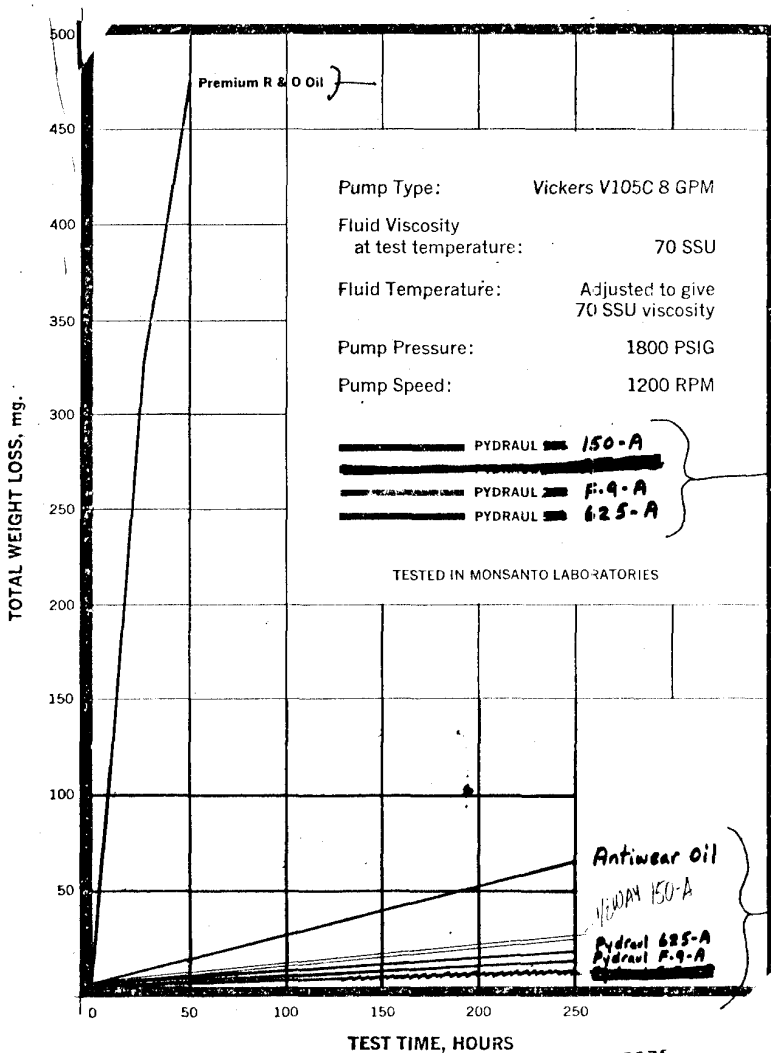
TOWOLDMON0022477

For Selector I, Page 6

Note
Deletion

In a more severe Vickers hydraulic pump test (V-105-C pump), the ~~Pydraul~~ fluids performed as well as commercial antiwear oils and proved far superior to premium R & O oil (rust and oxidation inhibited).

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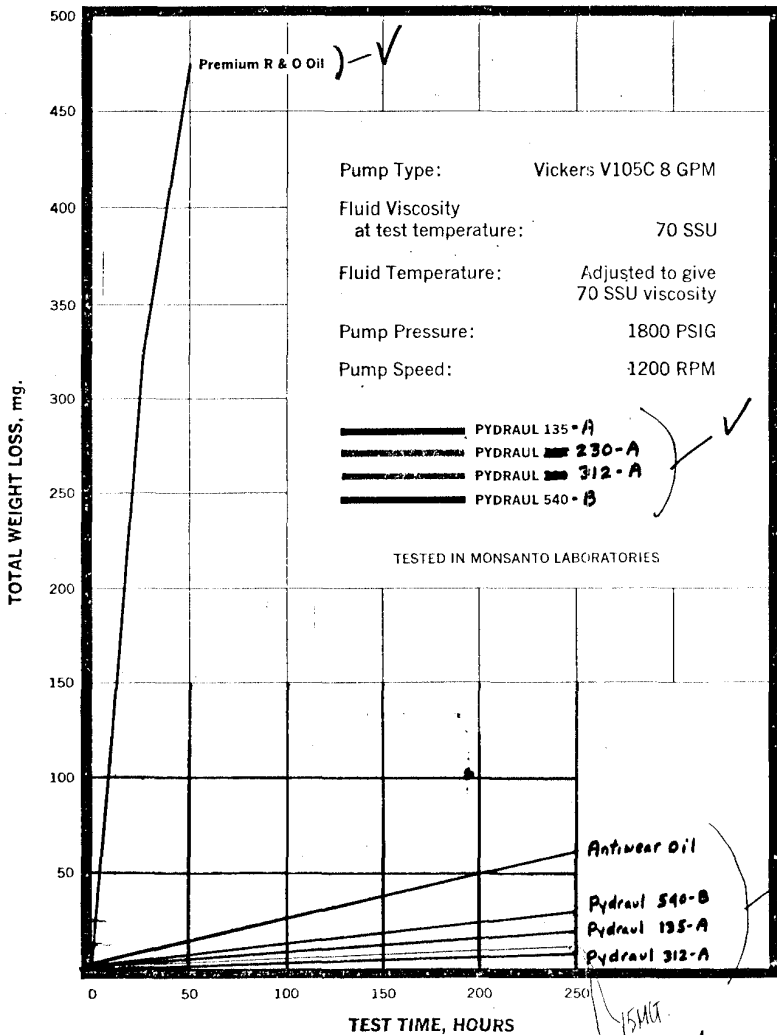
150-A

Pydraul 150-A

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In a more severe Vickers hydraulic pump test (V-105-C pump), the ~~low cost~~ Pydraul fluids performed as well as commercial antiwear oils and proved far superior to premium R & O oil (rust and oxidation inhibited).

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(2200 V-105C)

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15MAY 75B-A

~~Hydraul Selector I~~

24222/H#65

Mixing Compatibility - Set

NEW COPY (D)
SET SAME FACES
SAME FORMAT.

Hydraul With Other Hydraulic Fluids } 10/43

18 ~~6/20/20's~~ see sketch

	<u>60</u>	<u>150-A</u>	<u>150-A</u>	<u>F-9-A</u>	<u>625-A</u>
<u>Fyrquel</u> ® 90	Yes	No	Yes	Yes	Yes
150	Yes	No	Yes	Yes	Yes
220	Yes	No	Yes	Yes	Yes
300	Yes	No	Yes	Yes	Yes
550	Yes	No	Yes	Yes	Yes
<u>Houghto-Safe</u> ® 1010	Yes	No	Yes	Yes	Yes
1055	Yes	No	Yes	Yes	Yes
1120	Yes	No	Yes	Yes	Yes
1130	Yes	No	Yes	Yes	Yes

Fyrquel® is a registered trademark of Stauffer Chemical Company
Houghto-Safe® is a registered trademark of E.F. Houghton Co.

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TOWOLDMON0022480

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 SAME FORMAT

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~~Pydraul Selector~~

~~Mixing Compatibility~~

Pydraul With Other Pydraul Fluids 10/93

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 4/20/94
 205
 see
 steps

	<u>60</u>	<u>150-A</u>	150-B	<u>F-9-A</u>	<u>625-A</u>
135-A	Yes	Yes	Yes	Yes	Yes
230-A	Yes	Yes	Yes	Yes	Yes
312-A	Yes	Yes	Yes	Yes	Yes
540-B	Yes	Yes	Yes	Yes	Yes
60	—	No	Yes	Yes	Yes
150-A	No	—	No	No	No
150-B	Yes	No	Yes	Yes	Yes
F-9-A	Yes	No	Yes	—	Yes
625-A	Yes	No	Yes	Yes	—

NOTE: All of the reformulated Pydraul fluids are compatible with their older counterpart i.e.

150-A is compatible with 150, ~~150-B with 150, etc.~~
 F-9 A with F-9, etc.

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TOWOLDMON0022481

From the desk of

P. DWAIN FOWLKES

SELECTOR

1

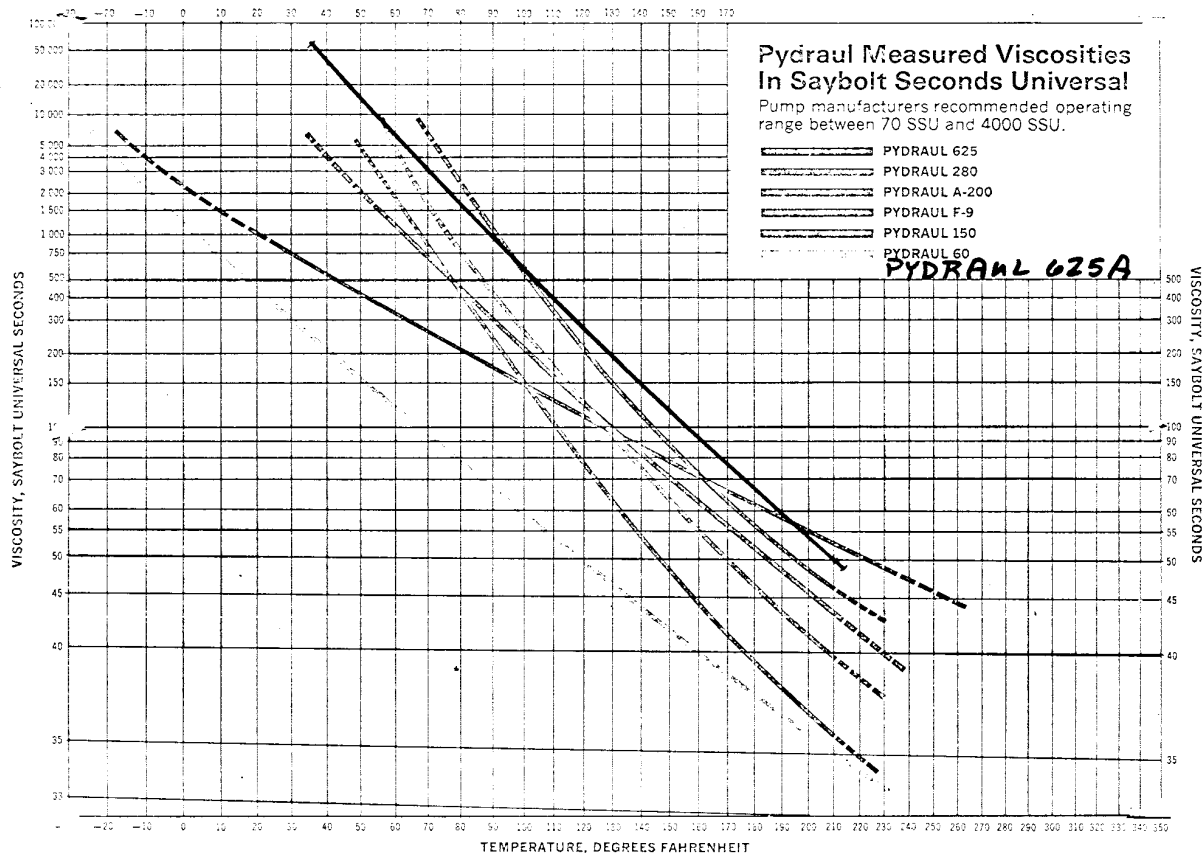
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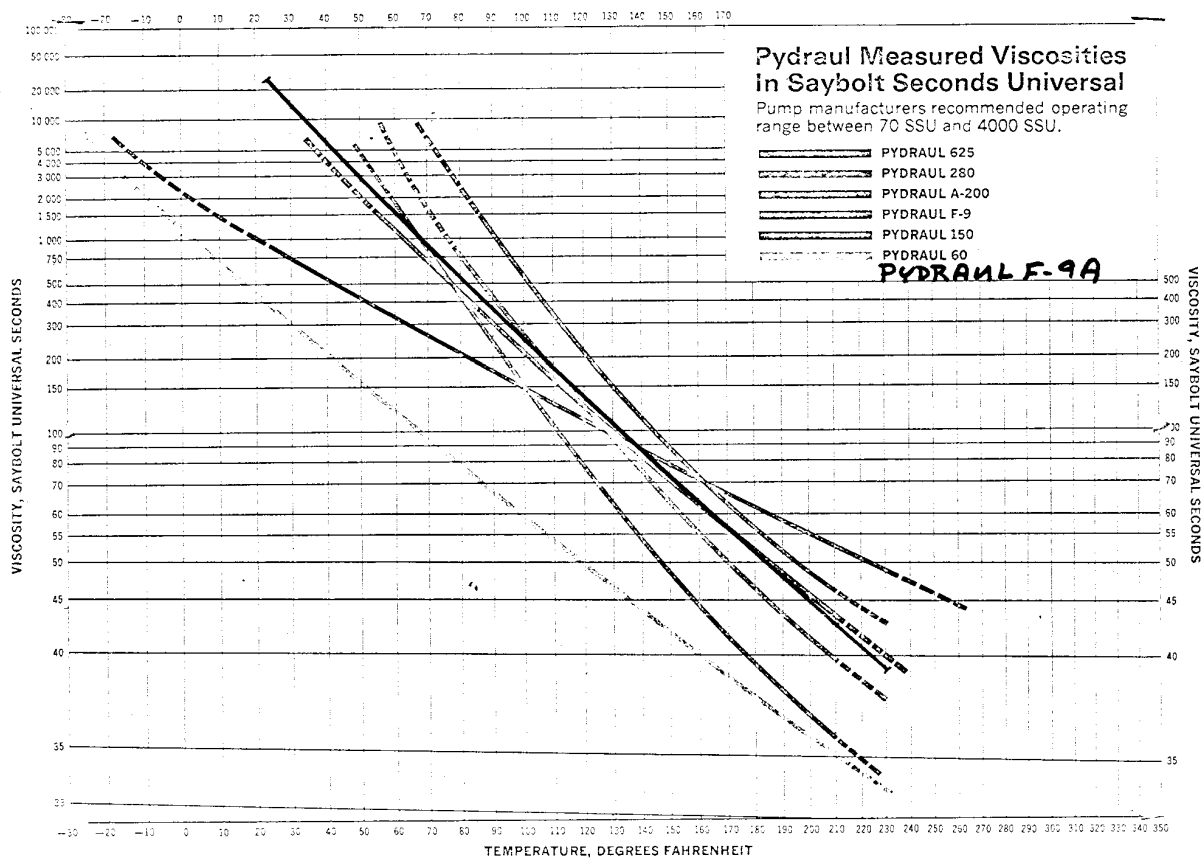
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4



Pydraul Measured Viscosities In Saybolt Seconds Universal

Pump manufacturers recommended operating range between 70 SSU and 4000 SSU.

- PYDRAUL 625
- PYDRAUL 280
- PYDRAUL A-200
- PYDRAUL F-9
- PYDRAUL 150
- PYDRAUL 60

Pydraul 150A

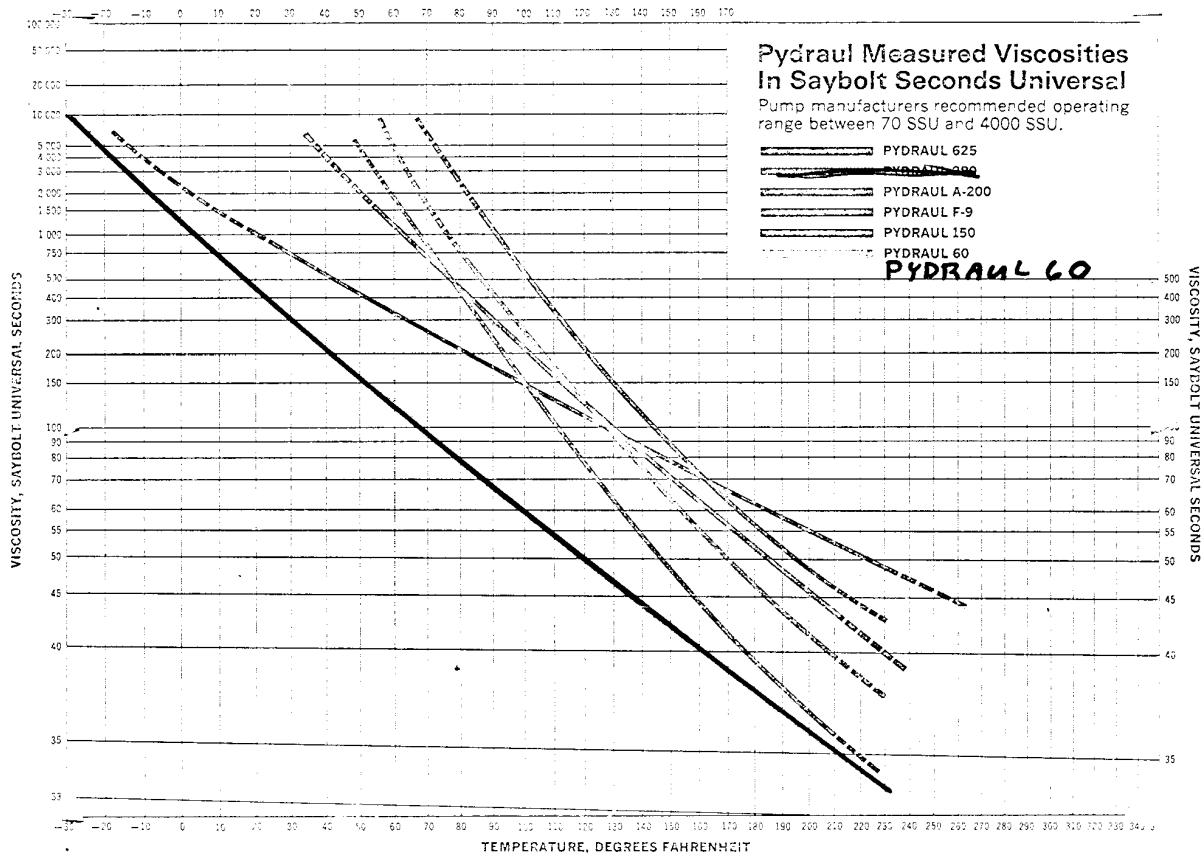
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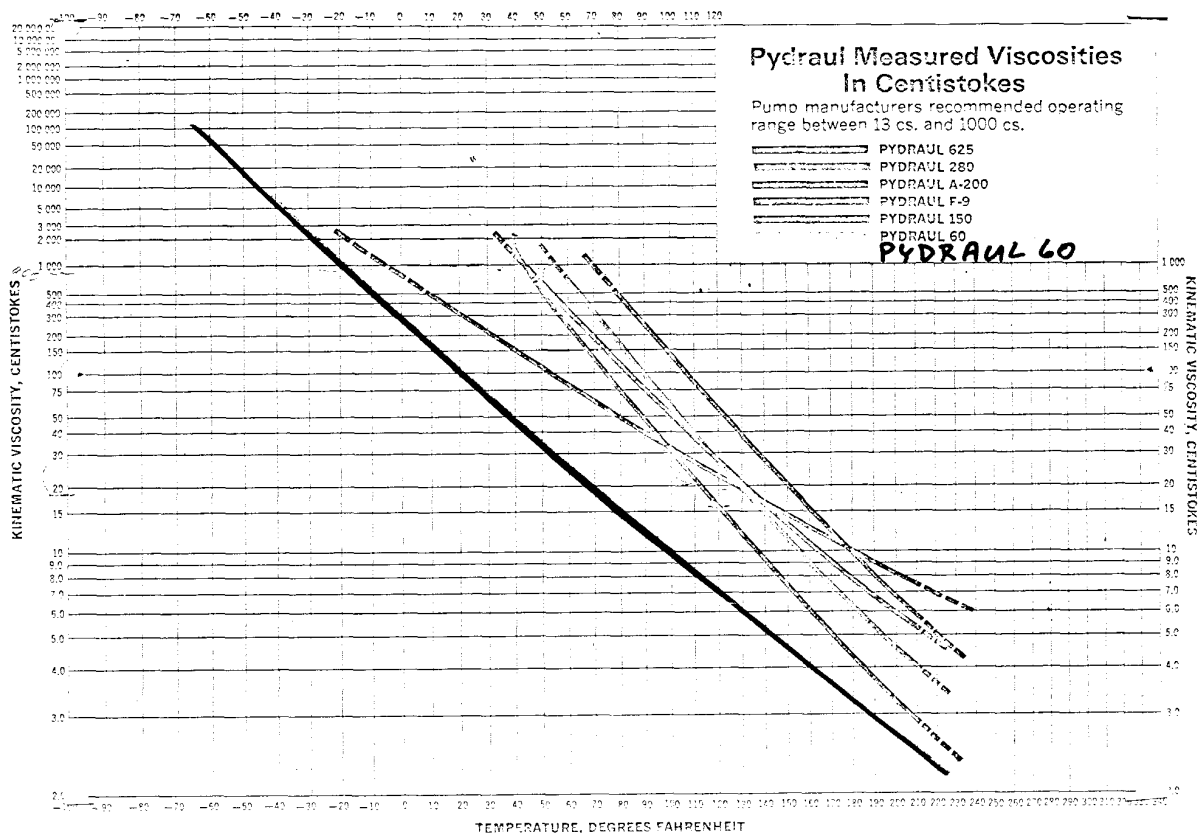
VISCOSITY, SAYBOLT UNIVERSAL SECONDS

VISCOSITY, SAYBOLT UNIVERSAL SECONDS

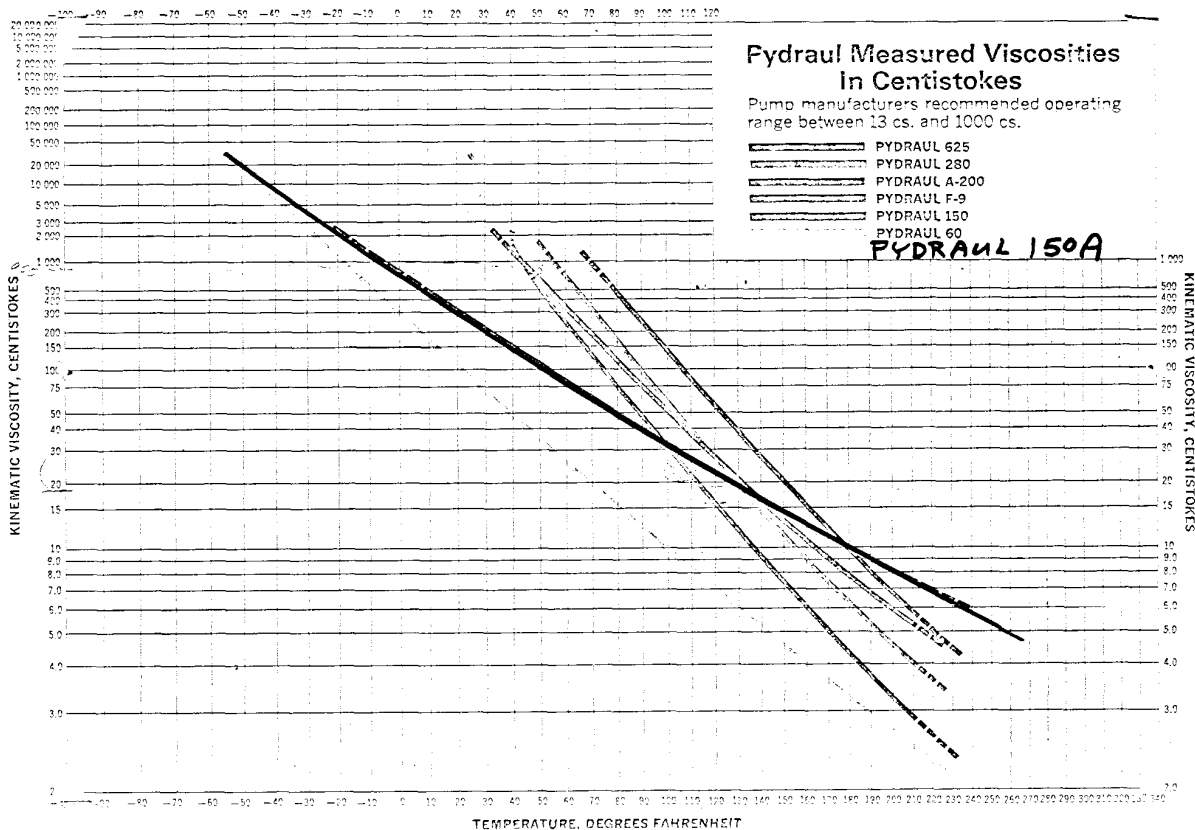
TEMPERATURE, DEGREES FAHRENHEIT

TEMPERATURE, DEGREES FAHRENHEIT



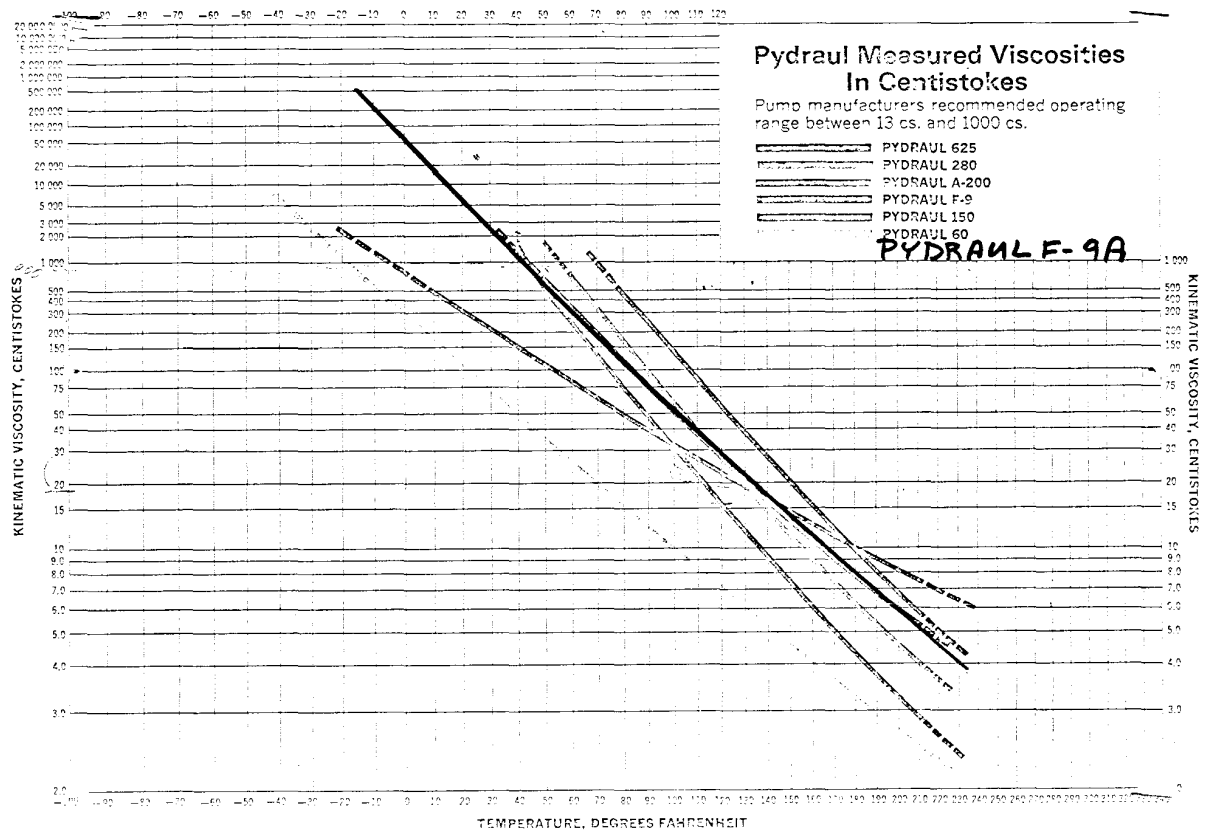


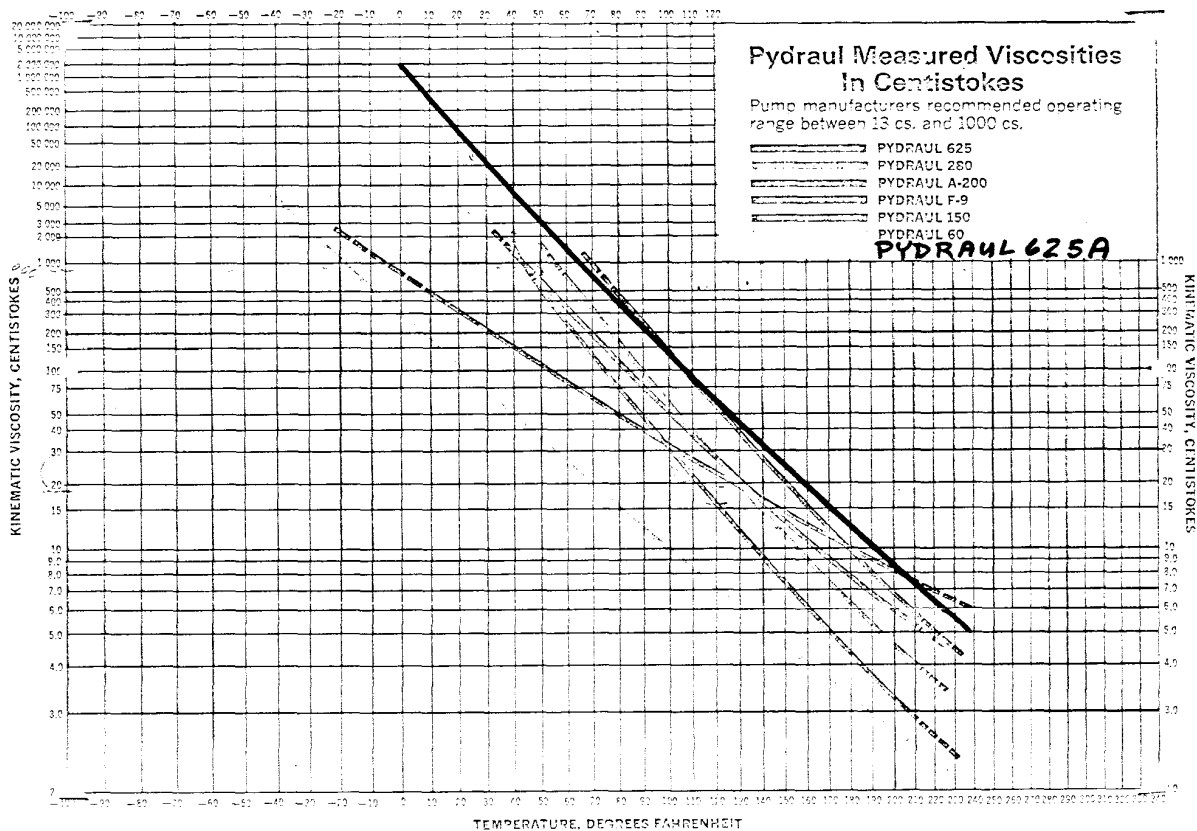
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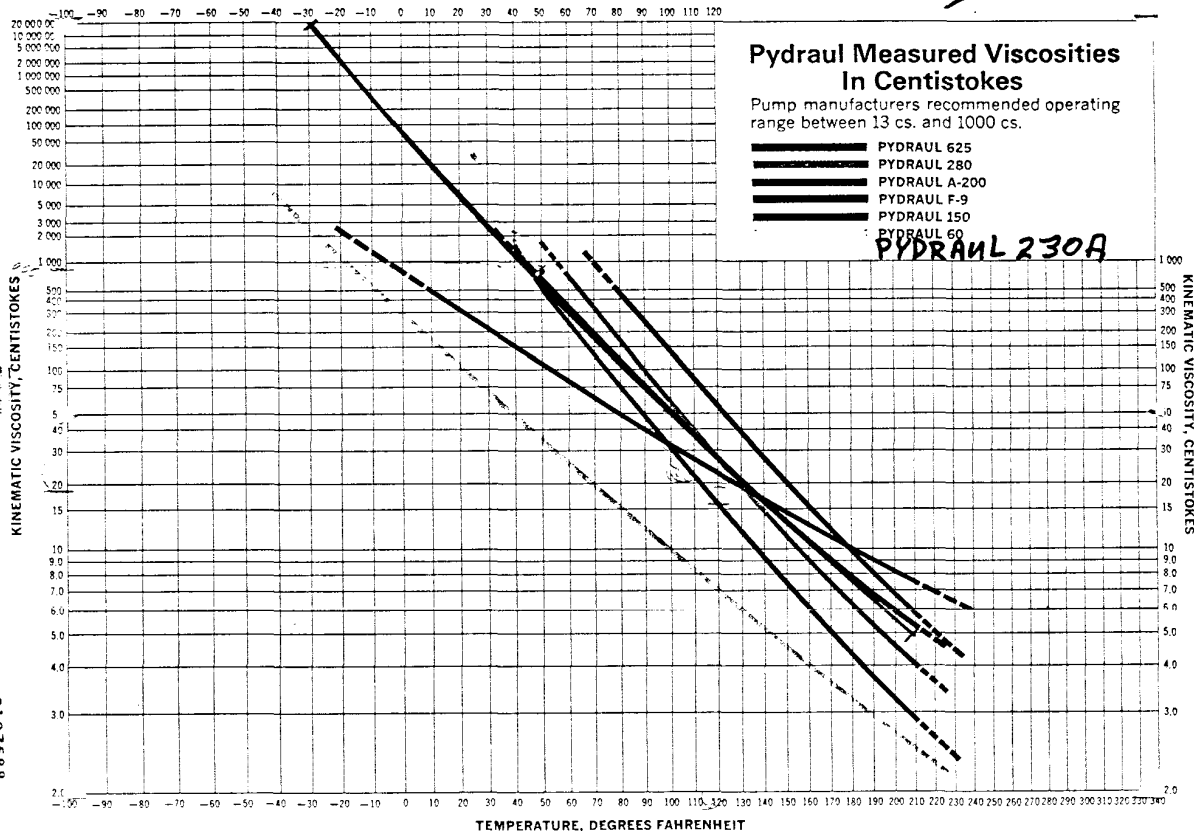
II

Pydraul Measured Viscosities In Centistokes

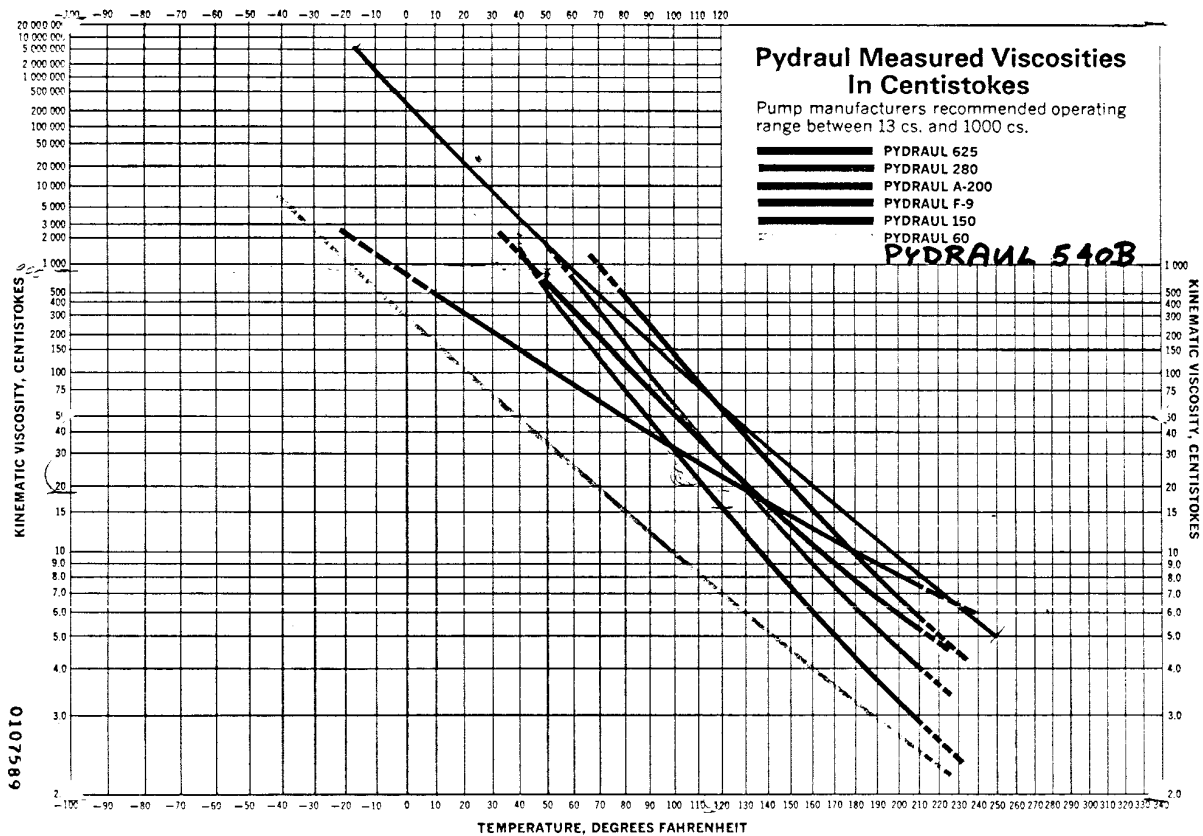
Pump manufacturers recommended operating range between 13 cs. and 1000 cs.

-  PYDRAUL 625
-  PYDRAUL 280
-  PYDRAUL A-200
-  PYDRAUL F-9
-  PYDRAUL 150
-  PYDRAUL 60

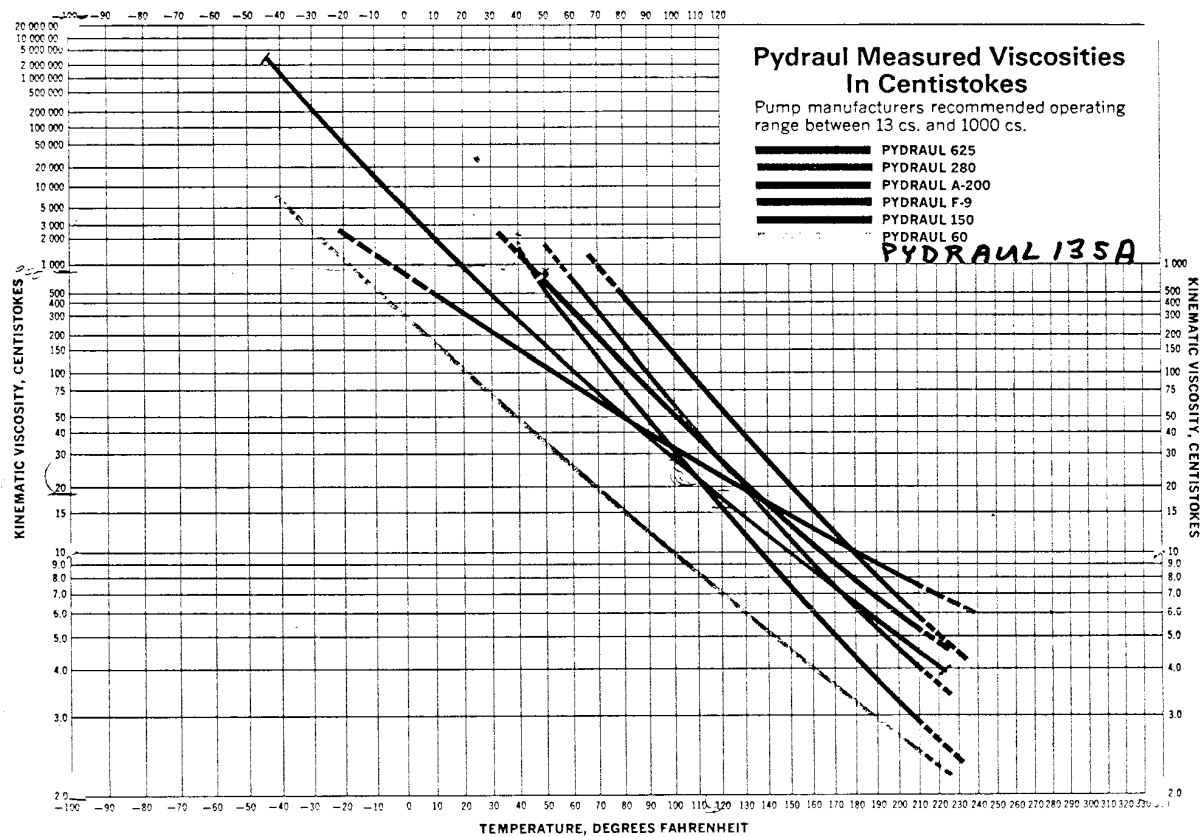
PYDRAUL 230A



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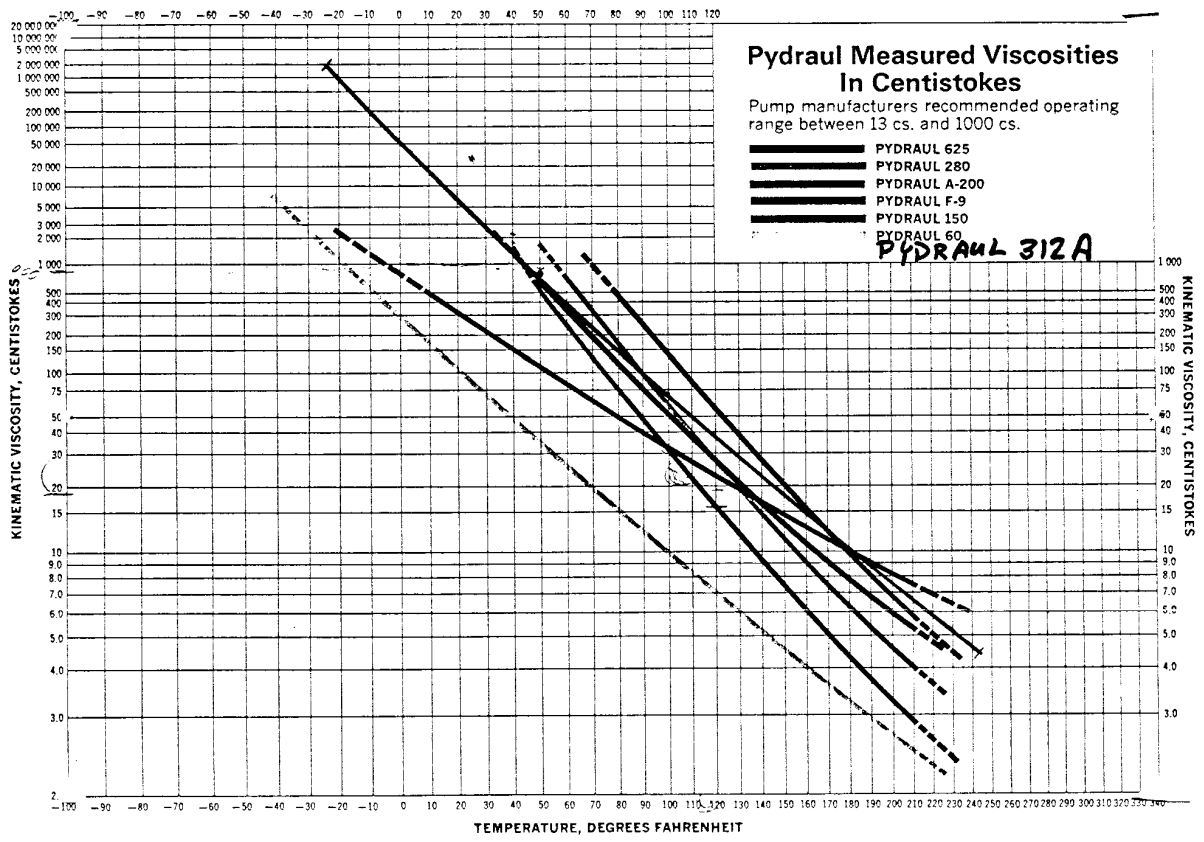


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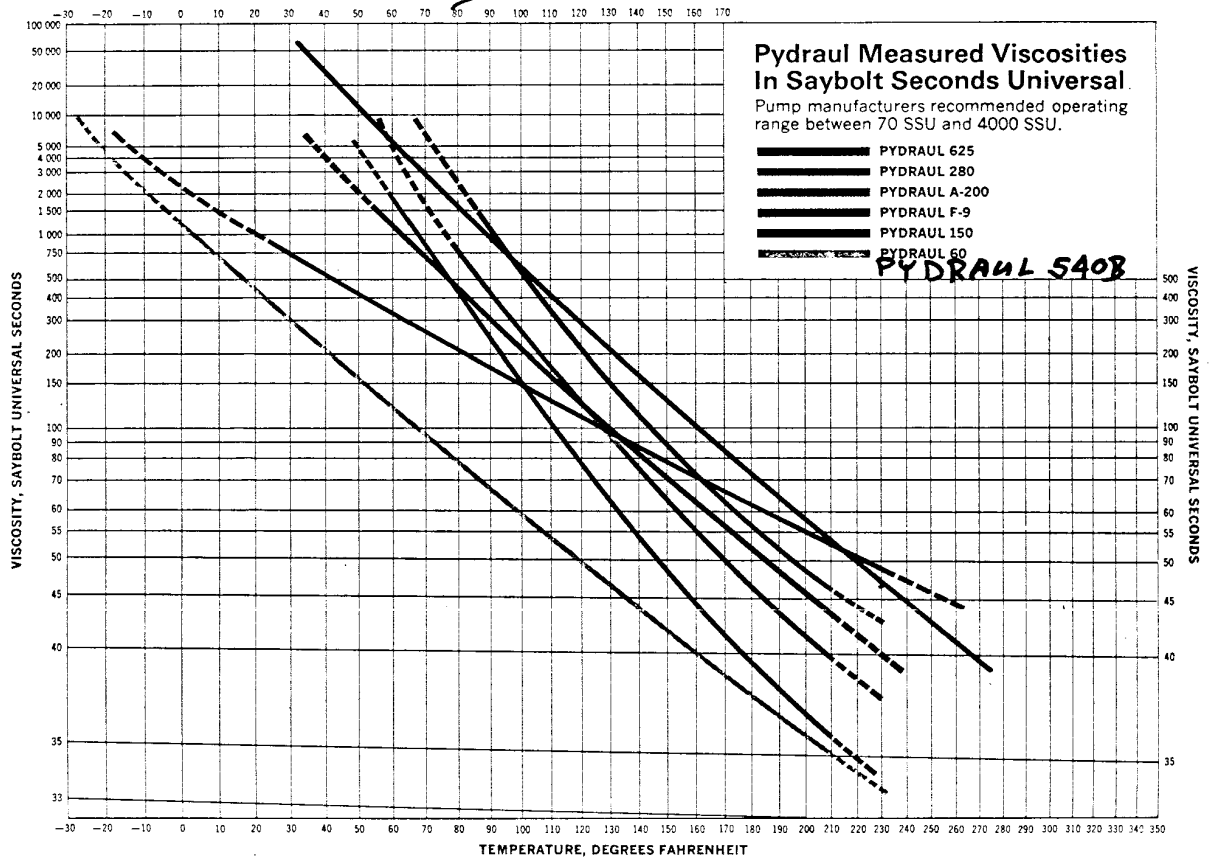


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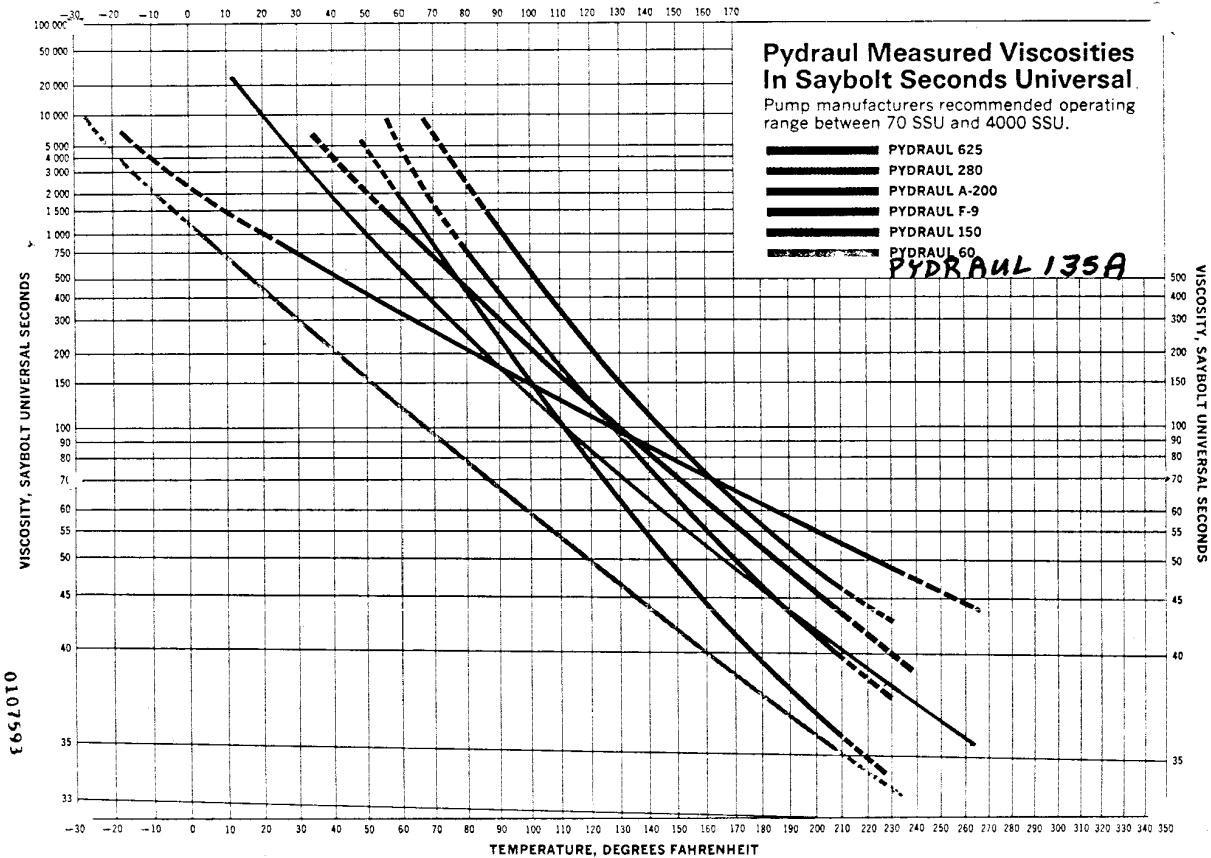
II



VISCOSITY, SAYBOLT UNIVERSAL SECONDS

VISCOSITY, SAYBOLT UNIVERSAL SECONDS

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F.F.D.
 G. GARY
 BINK
 BALK

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