



美國離子能源

Steel Shield Technologies

創業於 1985

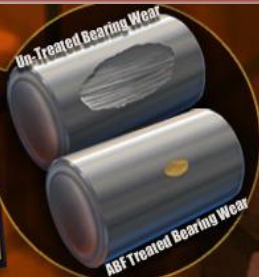
30 載所向披靡 馭懸浮越頂峰

Commitment to Excellence

我們的客戶非泛泛之輩

世界因我們而改變

Energy & Lubricants



ENERGY

能源

美國離子能源

Steel Shield Technologies

於 2013 得到美國 Fennell 家族於1985年在賓夕法尼亞州創辦的

Steel Shield Technologies, Inc.,

授權

成為亞洲太平洋區的唯一官方認可代表機構。

美國離子能源於1996在香港註冊，自此從事能源和潤滑劑生意。



- 美國離子能源專注於燃料油和特種潤滑劑領域，是全球領先供應商之一。出於安全考慮和更好地完善客戶服務，公司以他的兩個聯營公司，即GFI (**Global Fortune Int'l Ltd**) 專責物流方面的安排和SEL (**Sinocham Enterprises HK Ltd**) 專責處理財務方面工作。
- **GFI**是一所在英屬處女島及香港註冊的公司，與中東地區包括伊拉克，阿聯酋，尼日利亞，委內瑞拉和俄羅斯等各大煉油廠有緊密聯絡，在安排燃料油運輸方面有非常豐富經驗。
- **SEL**公司成立於1997年，是榮榮集團的主力經營公司。榮榮集團成立超過30年，在香港主要從事機械代理和銷售，物業及酒店投資。SEL與國際大銀行和金融機構有非常緊密的合作關係，他負責接收客戶的銀行信用證，然後開出銀行信用證給中東和俄羅斯等的煉油廠。

ENERGY



STEEL SHIELD TECHNOLOGIES, INC.

3351 INDUSTRIAL BLVD.
BETHEL PARK, PENNSYLVANIA 15102-2543



Steel Shield Technologies

Workshop 9, 8th/Floor, Goodview Industrial Building, No.11 Kin Fat Street, Tuen Mun, HK



Lubricants

ABF Technology

Ionic Levitation
Motor Oils
Industrial Oils
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supply

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SEL Finance

Russia

M100 10585-75
LPG

SOMO

Light Crude Oil
Basra

UAE

ILCO
SRGO
LPG

NNPC/PPMC

LPFO HPFO E10
BLCO LPG



STRAIGHT RUN 280 CST FUEL OIL

TABLE 1: GENERAL DATA

SPECIFICATION		RESULT	TEST METHOD
SPECIFIC GRAVITY @ 15.56 /15.56 °C		0.9764	ASTM D 4052
API		13.42	ASTM D 1298
SULPHUR CONTENT (Total)	Wt.%	3.19	ASTM D 4294
BASE SEDIMENT & WATER	Vol.%	0.05	ASTM D 1796
WATER CONTENT	Vol.%	<0.05	ASTM D 4006
SALT CONTENT	P.T.B	5	ASTM D 3230
FLASH POINT	° C	83	ASTM D 93
KINEMATIC VISCOSITY @ 40 ° C	mm ² /Sec	628.3	ASTM D 445
" " @ 50 ° C	mm ² /Sec	273.8	ASTM D 445
POUR POINT	° C	6	ASTM D 5853
ASH CONTENT	Wt.%	<0.2	ASTM D 482
ASPHALTENES	Wt.%	3.5	IP 143
WAX CONTENT	Wt.%	8.6	BP 237
DROP MELTING POINT OF WAX	° C	70	IP 133
CARBON RESIDUE CONRADSON	Wt.%	9.6	ASTM D 189
ACIDITY , TOTAL	mgKOH/gr	0.22	UOP 565
CALORIFIC VALUE	Kcal/Kg	10258	ASTM D 240
NICKEL CONTENT	PPm	23	ASTM D 5863
VANADIUM CONTENT	PPm	112	ASTM D 5863
IRON CONTENT	PPm	<1	ASTM D 5863
LEAD CONTENT	PPm	<1	ASTM D 5863
SODIUM CONTENT	PPm	12.0	ASTM D 5863

Sampling date: 17 Tir 1393 (8 July 2014)
Report date: 5 Mordad 1393 (27 July 2014)

T B P DISTILLATION ANALYSIS (ASTM D- 2892 &D- 5236)

STRAIGHT RUN 280 CST FUEL OIL

TABLE: 2

SP. GR @15.56/15.56 °C:

0.9764

FRAC. NO	BOILING RANGE OF FRAC.@ 760 mmHg DEG. C	WEIGHT PERCENT	CUTTING RANGE WT%	SP.Gr. @15.56/ 15.56 °C	VOLUME PERCENT	CUTTING RANGE VOL %
1	IBP-250	3.44	3.44	0.7985	4.21	4.21
2	250-275	1.34	4.78	0.8263	1.58	5.79
3	275-300	1.67	6.45	0.8445	1.93	7.72
4	300-325	2.31	8.76	0.8533	2.64	10.36
5	325-350	2.90	11.66	0.8725	3.25	13.61
6	350-385	5.64	17.30	0.8924	6.17	19.78
7	385-425	7.85	25.15	0.9220	8.31	28.09
8	425-450	6.05	31.20	0.9334	6.33	34.42
9	450-475	5.90	37.10	0.9465	6.09	40.51
10	475-500	5.82	42.92	0.9578	5.93	46.44
11	500-530	7.93	50.85	0.9675	8.00	54.44
12	530-565	8.89	59.74	0.9789	8.87	63.31
13	565+	40.26	100.00	1.0715	36.69	100.00

UAE SOMO SPEC

ABBAS 380 CST FUEL OIL

TABLE 1: GENERAL DATA

SPECIFICATION		RESULT	TEST METHOD
SPECIFIC GRAVITY @ 15.56 /15.56 °C		0.9785	ASTM D 4052
API		13.11	ASTM D 1298
SULPHUR CONTENT (Total)	Wt.%	3.45	ASTM D 4294
BASE SEDIMENT & WATER	Vol.%	0.1	ASTM D 1796
WATER CONTENT	Vol.%	<0.05	ASTM D 4006
SALT CONTENT	P.T.B	11	ASTM D 3230
FLASH POINT	° C	66	ASTM D 93
KINEMATIC VISCOSITY @ 40 ° C	mm ² /Sec	899.2	ASTM D 445
" " @ 50 ° C	mm ² /Sec	377.8	ASTM D 445
POUR POINT	° C	0	ASTM D 5853
ASH CONTENT	Wt.%	0.04	ASTM D 482
ASPHALTENES	Wt.%	5.4	IP 143
WAX CONTENT	Wt.%	3.3	BP 237
DROP MELTING POINT OF WAX	° C	64	IP 133
CARBON RESIDUE CONRADSON	Wt.%	13.5	ASTM D 189
ACIDITY , TOTAL	mgKOH/gr	0.11	UOP 565
CALORIFIC VALUE	Kcal/Kg	10149	CALCULATED
NICKEL CONTENT	PPm	68	ASTM D 5863
VANADIUM CONTENT	PPm	202	ASTM D 5863
IRON CONTENT	PPm	7.5	ASTM D 5863
LEAD CONTENT	PPm	<1	ASTM D 5863
SODIUM CONTENT	PPm	25	ASTM D 5863

Sampling date: 30 Shahrivar 1393 (Sep. 21, 2014)
Report date: 15 Mehr 1393 (7 Oct. 2014)

T B P DISTILLATION ANALYSIS (ASTM D- 2892 &D- 5236)

ABBAS 380 CST FUEL OIL

TABLE: 2

SP. GR @15.56/15.56 °C:

0.9785

FRAC. NO	BOILING RANGE OF FRAC.@ 760 mmHg DEG. C	WEIGHT PERCENT	CUTTING RANGE WT%	SP.Gr. @15.56/ 15.56 °C	VOLUME PERCENT	CUTTING RANGE VOL %
1	IBP-225	4.72	4.72	0.7967	5.80	5.80
2	225-250	7.90	12.62	0.8106	9.54	15.34
3	250-275	3.53	16.15	0.8318	4.15	19.49
4	275-300	1.14	17.29	0.8508	1.31	20.80
5	300-325	0.72	18.01	0.8708	0.81	21.61
6	325-350	0.74	18.75	0.8951	0.81	22.42
7	350-385	0.91	19.66	0.9055	0.98	23.40
8	385-425	1.55	21.21	0.9173	1.65	25.05
9	425-450	1.51	22.72	0.9293	1.59	26.64
10	450-475	3.05	25.77	0.9402	3.17	29.81
11	475-500	5.54	31.31	0.9513	5.70	35.51
12	500-530	6.60	37.91	0.9598	6.73	42.24
13	530-565	9.17	47.08	0.9718	9.23	51.47
14	565+	52.92	100.00	1.0670	48.53	100.00

UAE★SOMO SPEC

LIGHT EXPORT CRUDE OIL

TABLE 1: GENERAL DATA

SPECIFICATION	RESULT	TEST METHOD
SPECIFIC GRAVITY @ 15.56 /15.56 °C	0.8597	ASTM D 4052
API	33.09	ASTM D 1298
SULPHUR CONTENT (Total)	Wt.% 1.33	ASTM D 4294
MERCAPTAN CONTENT	ppm 67	UOP 163
*H2S CONTENT	ppm 24	
NITROGEN CONTENT (Total)	Wt.% 0.12	ASTM D5762
BASE SEDIMENT & WATER	Vol.% <0.05	ASTM D 1796
WATER CONTENT	Vol.% <0.05	ASTM D 4006
SALT CONTENT	P.T.B 5.0	ASTM D 3230
KINEMATIC VISCOSITY @10 °C	mm ² /Sec 16.66	ASTM D 445
" " @ 20 °C	mm ² /Sec 11.22	ASTM D 445
" " @ 40 °C	mm ² /Sec 6.046	ASTM D 445
POUR POINT	°C -18	ASTM D 5853
*R.V.P.	PSI 6.90	ASTM D 323
ASPHALTENES	Wt.% 1.0	IP 143
WAX CONTENT	Wt.% 5.1	BP 237
DROP MELTING POINT OF WAX	°C 56	IP 133
CARBON RESIDUE CONRADSON	Wt.% 4.00	ASTM D 189
ACIDITY , TOTAL	mgKOH/gr 0.09	UOP 565
NICKEL CONTENT	PPm 14	ASTM D 5863
VANADIUM CONTENT	PPm 69	ASTM D 5863
IRON CONTENT	PPm <1	ASTM D 5863
LEAD CONTENT	PPm <1	ASTM D 5863
SODIUM CONTENT	PPm 9	ASTM D 5863
ZINC CONTENT	PPm <1	ASTM D 5863
COPPER CONTENT	PPm <1	ASTM D 5863

* Tested on site

Sampling date: Mordad 1392 (16 Aug. 2013)
Report Date: Shahrivar 1392 (Sep. 2013)

LIGHT EXPORT CRUDE OIL (Winter Case)

TABLE 1: GENERAL DATA

SPECIFICATION	RESULT	TEST METHOD
SPECIFIC GRAVITY @ 15.56 /15.56 °C	0.8545	ASTM D 4052
API	34.1	ASTM D 1298
API (DEBUTANIZED)	33.4	ASTM D 1298
SULPHUR CONTENT (Total)	Wt.% 1.53	ASTM D 4294
*H2S CONTENT	ppm 42	----
MERCAPTAN CONTENT	ppm 85	UOP 163
NITROGEN CONTENT (Total)	Wt.% 0.13	ASTM D5762
BASE SEDIMENT & WATER	Vol.% <0.05	ASTM D 1796
WATER CONTENT	Vol.% <0.05	ASTM D 4006
SALT CONTENT	P.T.B 4.0	ASTM D 3230
KINEMATIC VISCOSITY @10 °C	mm ² /Sec 17.02	ASTM D 445
" " @ 20 °C	mm ² /Sec 12.10	ASTM D 445
" " @ 40 °C	mm ² /Sec 5.703	ASTM D 445
POUR POINT	°C -12	ASTM D 5853
*R.V.P.	PSI 9.85	ASTM D 323
ASPHALTENES	Wt.% 1.17	IP 143
WAX CONTENT	Wt.% 6.2	BP 237
DROP MELTING POINT OF WAX	°C 58	IP 133
CARBON RESIDUE CONRADSON	Wt.% 4.10	ASTM D 189
ACIDITY , TOTAL	mgKOH/gr 0.08	UOP 565
NICKEL CONTENT	PPm 18	ASTM D 5863
VANADIUM CONTENT	PPm 61	ASTM D 5863
IRON CONTENT	PPm <1	ASTM D 5863
LEAD CONTENT	PPm <1	ASTM D 5863
SODIUM CONTENT	PPm <1	ASTM D 5863
ZINC CONTENT	PPm <1	ASTM D 5863
COPPER CONTENT	PPm <1	ASTM D 5863

* Tested on site

Sampling date: 13 Day 1392 (January 3, 2014)
Report Date: 27 Bahman 1392 (February 16, 2014)



UAE SOMO SPEC

TECHNICAL SPECIFICATIONS

FUEL OIL 180 cSt- CATALYTIC CRACKED

Property	Units	ISO Method	Min	Max
Density @ 15°C	Kg/1	ISO 3675		0.991
Kinematic Viscosity @ 100°C	mm ² /s	ISO 3104		25.00
Sulphur Content	%(m/m)	ISO 8754		3.500
Pour Point	°C	ISO 3016		15.00
Flash Point	°C	ISO 2719	60	
Water	%(v/v)	ISO 3733		0.500
Carbon Residue	%(m/m)	ISO 10370		18.00
Ash	%(m/m)	ISO 6245		0.100
Vanadium	Mg/kg	ISO 14597		400
Aluminium plus Silicon	Mg/kg	ISO 10478		80.00
Total sediment, potential	%(m/m)	ISO 1030-2		0.100
Total Sediment, existent	%(m/m)	ISO 10307-2		0.100
Total Sediment, Differential	%(m/m)			0.050
Strong Acid Number	Mg/KOH/g	ISO 6618		NIL
Total Acid number	Mg/KOH/g	ISO 6619		3.00

T B P DISTILLATION ANALYSIS (ASTM D- 2892 &D- 5236)

LIGHT EXPORT CRUDE OIL

TABLE: 2 SP. GR @15.56/15.56 °C: 0.8597

FRAC. NO	BOILING RANGE OF FRAC.@ 760 mmHg DEG. C	WEIGHT PERCENT	CUTTING RANGE WT%	SP.Gr. @15.56/ 15.56 °C	VOLUME PERCENT	CUTTING RANGE VOL %
1	IBP-15	1.25	1.25	0.5558	1.93	1.93
2	15-65	3.43	4.68	0.6419	4.59	6.52
3	65-100	5.14	9.82	0.7114	6.21	12.73
4	100-125	4.10	13.92	0.7419	4.75	17.48
5	125-150	4.04	17.96	0.7652	4.54	22.02
6	150-175	4.25	22.21	0.7795	4.69	26.71
7	175-200	4.00	26.21	0.7888	4.36	31.07
8	200-225	3.70	29.91	0.8095	3.93	35.00
9	225-250	3.92	33.83	0.8211	4.10	39.10
10	250-275	4.08	37.91	0.8314	4.22	43.32
11	275-300	4.19	42.10	0.8427	4.27	47.59
12	300-325	4.26	46.36	0.8525	4.30	51.89
13	325-350	4.10	50.46	0.8666	4.07	55.96
14	350-385	5.57	56.03	0.8835	5.42	61.38
15	385-425	7.08	63.11	0.9108	6.68	68.06
16	425-450	4.66	67.77	0.9195	4.36	72.42
17	450-475	4.08	71.85	0.9371	3.74	76.16
18	475-500	3.75	75.60	0.9481	3.40	79.56
19	500-530	3.46	79.06	0.9608	3.10	82.66
20	530-565	3.86	82.92	0.9705	3.42	86.08
21	565+	17.08	100.00	1.0549	13.92	100.00

UAE SOMO SPEC

LPG GUARANTEED SPECIFICATION

PROPANE

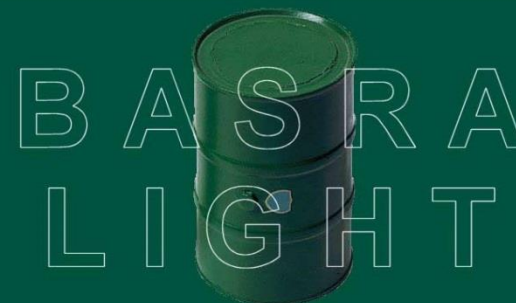
Test Item	Test Method	Specification
Sp. Gr. 15.6/15.6 Deg.C	ASTM D 2598	To be reported
Vapor pressure (psig at 100 Deg.F)	ASTM D 1267 or D 2598	Max 200
Propane content (vol %)	ASTM D 2163	Min 96.0
Ethane content (vol %)	ASTM D 2163	Max 2.0
Volatile residue (Butane+)(Vol %)	ASTM D 2163	Max 2.5
Residue on evaporation of 100ml	ASTM D 2158	Max 0.05
Oil stain observation	ASTM D 2158	Pass
Copper corrosion	ASTM D 1838	No. 1 strip
Sulfur content (ppm)	ASTM D 1266 or D 5453	Max 40
H2S	ASTM D 2420 or IP103	Negative
Moisture	ASTM D 2713 or D 1744	Pass

BUTANE

Test Item	Test Method	Specification
Sp. Gr.15.6/15.6 Deg.C.	ASTM D 2598	To be reported
Vapor Pressure(psig at 100 deg.F)	ASTM D 1267 or D 2598	Max 70
Butane content (vol%)	ASTM D 2163	Min 95.0
Volatile residue (Pentane +)(vol%)	ASTM D 2163	Max 2.0
Copper corrosion	ASTM D 1838	No. 1 strip
Sulfur content(ppm)	ASTM D 1266 or D 5453	Max 80
H2S	ASTM D 2420	Negative
Free water	Visual	None



STATE OIL MARKETING ORGANIZATION (SOMO)



TERM AND CONDITION:

1. COMODITY: IRAQI BASRA LIGHT CRUDE OIL
2. ORIGIN: IRAQ.
3. SPECIFICATIONS: (SEE BELOW)

TO BE ADVISED IN FULL, STANDARD EXPORT QUALITY AS AVAILABLE AT THE LOADING TERMINAL AT THE TIME OF LOADING SEE THE FOLLOWING:

Specific Gravity @ 15.60 c	0.859
API	33.45 MAX
Water and sediment content	0.2% Max
Pour point	.35
Reid vapor pressure	nil
Sulphur content wt%	1.2,1.5
Salt ib 100.00 Brt	8 Max
Carbon residue wt%	nil
Water vol	0.1% vol.
Ash content Wt %	Nil
Asphalt content Wt %	Max 1
ASTM distillation I.B.P C	3.7 deg
Recovery at 50 deg Vm % min	0.8
100 deg	0.8
200 c deg	.37
250 C deg	.37
300 deg	.45

4. INSPECTION: BAY SABOLTS OR SGS QUALITY AND QUANTITY LOADED IN BUYERS TANKERS.
5. DELIVERY TERMS AND LOADING PORT: F. O. B. IRAQ.
6. CONTRACT DURATION: 12 TO 60 MONTHS WITH POSSIBLE EXTENSIONS.
7. PAYMENT: BY AN IRREVOCABLE, REVOLVING, CONFIRM DL/C ISSUE BY PRIME WORLD BANK.

-BANK OPENED TO HE SELLER BANK IN FORMAT ACCEPTABLE TO THE SELLER PAYABLE.
 - PER EACH LIFTED CARGO 100% AT SIGHT AFTER EACH LOADING OF THE BUYERS TANKERS LOADED, AGAINST PRESENTATION OF THE REQUIRED SHIPPING DOCUMENTS.
 -INCLUDING THE SUPERINTENDING CERTIFICATES



NNPC/PPMC BLCO SCHEME

美國離子能源現正致力於重點推廣尼日利亞的“BLCO”輕質原油貿易。我們於尼日利亞的供應商將提供高達每月200萬桶“免費”的BLCO輕質原油給任何合資格和有能力的處理輕質原油提煉的煉油廠，合同可以長達12個月之久，若果合作愉快更可延續下去。若對這個非常有利可圖的方案有興趣，我司將根據客戶的要求披露更詳盡的方案和資料，歡迎垂詢。

SPECIFICATIONS

API	33.35 Min
Specific gravity:	0.8522.
Water and sediment (% max):	0.2% Vol. Max
BSW:	0.6% Vol, max,
Density at 20 c degrees co-cm max.	0.45
Density at 15 c degrees co-cm max.	0.8522
Sulphur content wt.pct mas;	0.14
Colour:	DARK BROWN.
Salinity ptb at;	0.10% MAX.
Acid number;	0.339
Reid vapour psig;	6.52 MAX.
PCT MAX;	1.00
Vanadium wr. PPM	1.00
Nikel wt. PPW	2.00



Customers are meant to come for a reason 我們的客戶非泛泛之輩

*“It is our conviction that total satisfaction is not sufficient,
we are here to help customers to achieve the highest return on investment.”*

公司展望與承諾

Not All Oil is Same

Commitment to Excellence

- 美國神盾 **Steel Shield Technologies Inc** 的唯一目標是製造超越同行品質的產品包括各類潤滑劑、金屬處理劑、添加劑、油脂和潤滑油等等。我美國製造的各類型產品都經過嚴格的測試，其耐極壓和抗磨方面的能力均超越所有在市場上正在售賣的潤滑劑製品，**ABF** 技術擁有無與倫比的優越性能，大幅度節省維修費用，減少停機時間，節約能源和高效提升機器的整體生產效益。
- **Steel Shield “Not Just Oil, It’s Technology”** 美國神盾非市場上隨處可見的常態潤滑劑“它外觀像一般的潤滑油，它的內心卻是一門超級科技”，**ABF** 技術打破傳統，奠立現世代潤滑劑新標準，創造了一個新紀元！
- 美國神盾旨在幫助客戶**獲取最高的投資回報（ROI）率**。美國神盾的**ABF**離子磁浮產品，無論是美國，新加坡或者香港等地供應的皆是在極其嚴謹的品質控制和生產程序監測下製造的。我們致力做到盡善盡美，讓全球客戶得到最佳的服務。

1. 美國神盾歷史及設施
2. 產品發明家— Dr. George C Fennell
3. ABF 離子磁懸浮技術的誕生
4. ABF 離子磁懸浮技術基理
5. ABF 離子磁懸浮技術如何工作
6. ABF 核心技術不靠油
7. 神盾產品亮點和適用行業
8. 神盾技術的 5 大突破 – 能人所不能
9. 神盾特種潤滑劑全線產品
10. 火力 (燃煤) 發電廠
11. 火力 (燃氣) 發電廠
12. 水力發電廠
13. 風力發電廠
14. ECI GECAT 燃氣/柴油機油
15. ECI HD 液壓系統機油
16. ECI CAT GC 壓縮機油
17. 隧道鑽挖工程
18. 海航系統
19. 集體運輸鐵路系統
20. 工業系統
21. 空調系統
22. 商用和民用汽車
23. Steel Shield EPA 神盾極壓油
24. Lithi-Shield Grease 神盾油脂

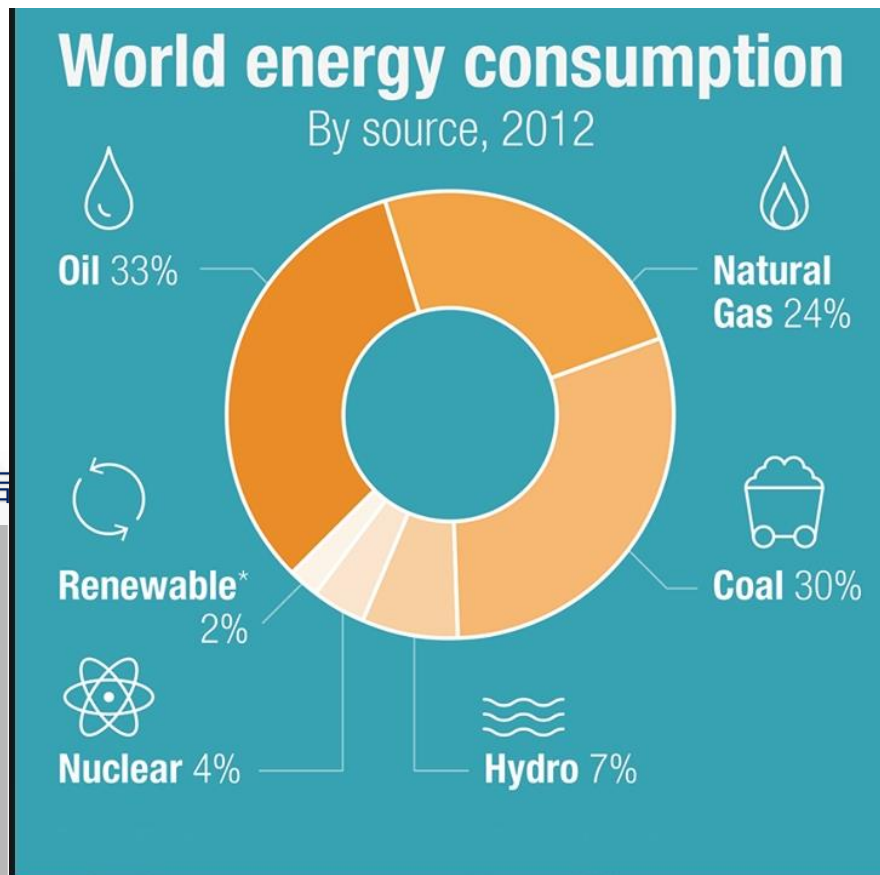
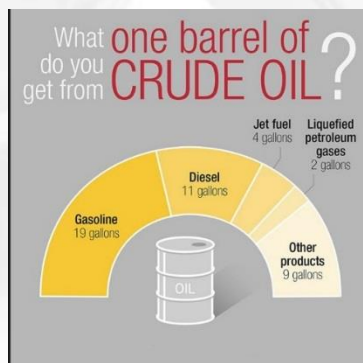


Steel Shield 神盾工業系統

產品使用推荐

LUBRICANTS 資料索引

25. Transmission Shield 神盾變速系統油
26. Truck Shield 神盾重卡車專用油
27. Spray-Shield 神盾除濕去銹油 (噴霧式)
28. Tool-Shield 神盾工具系油
29. Strike Shield 神盾強效萬能油
30. Drill & Tap 神盾金屬加工油
31. SwRI 世界權威西南研究院油脂比拼測試報告
32. SwRI 西南研究院車油比拼測試報告
33. SwRI 西南研究院氣機及壓縮機油比拼測試報告
34. 全球產品責任保險
35. 美軍及西門子感謝函
36. 中國富豪汽車感謝函
37. 顯赫客戶
38. 賽車及活動剪影
39. 格蘭披士賽車剪影
40. 聯絡我們



1. 美國神盾歷史及設施

美國神盾 Steel Shield Technologies Inc 的歷史可以追溯到1985年，當年Dr. George Fennell 連同他的家人在美國賓夕法尼亞州的Butler 地區Fennell Drive成立了他們的第一家公司Muscle Products Corporation (MPC)。父親Richard Fennell是董事長兼首席執行官，兄長Jay Fennell 是總裁和營銷經理，George 本人是執行副總裁兼技術總監。



Richard Fennell



Jay Fennell



George Fennell



Carol Fennell



Business Meeting - 1986

1997年父親退休並且把名下的MPC股份全數轉於他的兩個兒子。1998年間因為突發事件George把公司股份交由時任客戶主任的Sharon Murphy-Dittrich托管，兄長有見公司已經上了軌道亦放手讓Sharon管理。2004年兄長退休讓George全權接手營運，卻發現公司現金在兄弟二人不知情下被人盜用一空，資產更被抵押給銀行。George發起了訴訟，無奈銀行巨額貸款將會使到公司面臨破產，他為了維護家族的聲譽只有放棄訴訟和接受庭外和解。



Original Head Quarter at Fennell Drive, Butler, Pennsylvania, USA.

2006年5月22日George在MPC股東大會上決定退出並且辭去所有職務，從此MPC的MT-10已經變質並且得不到George的認證。同年George Fennell開設了美國神盾Steel Shield Technologies Inc 繼續產品研究和優化，並且擴大其產品線為一更先進的ABF技術專業軍工應用系列。美國神盾Steel Shield現在是官方正品唯一的稱號，別無他家。市上類似的名稱甚至產品皆是抄襲或仿冒品，性能與品質無保證。



美國神盾擁有最先進的製造技術和配套設施，整個生產過程全自動電腦監控，設備使用大量精鋼打造，原料都是美國生產，100%美國製造！神盾自1986年開始是美國國防部的必購品，也是世界上唯一能夠保證槍械不卡的潤滑劑！



美國離子能源
Steel Shield Technologies (Asia Pacific) Ltd 在香港註冊，於2012年獲得美國神盾授權，是整個亞太地區唯一認可的官方代表機構。



About Us



2. 神盾技術發明家 — Dr. George C Fennell



磁浮態之父
天文學和天體物理學博士
所屬組織：
SAE 汽車與宇航工程師學會
ASNE 美國海洋工程師學會
NCMA 國家合同管理協會
STLE 摩擦學和潤滑工程師學會

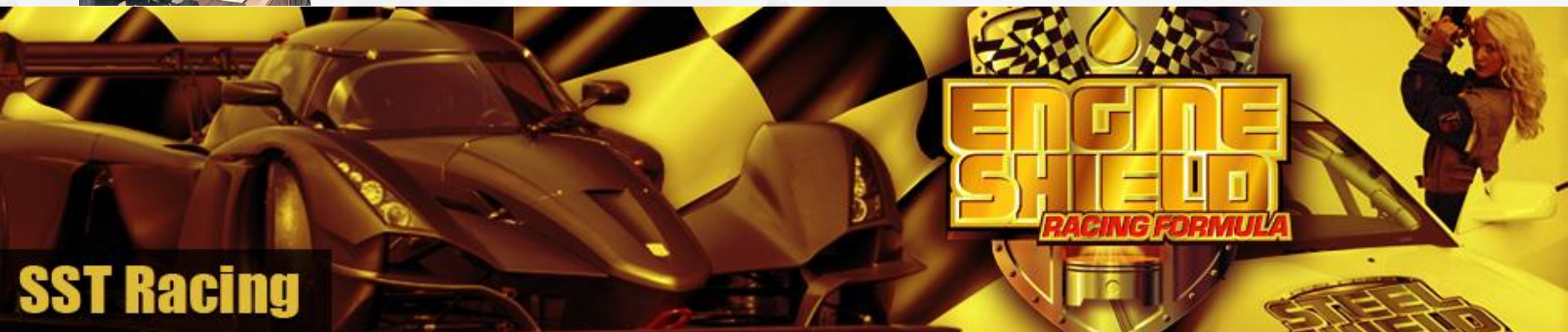


1985 年，Dr. George C Fennell，秉承其父親及祖父在潤滑與摩擦學的科研，成功實現了ABF 磁懸浮的理論，開發出一套嶄新的潤滑程式，屏棄傳統以油為主體的概念，從金屬處理著手獲得超越時空的超強潤滑專案，利用獨特的“離子轉移”技術（RCB 又名 ECI）將金屬表層轉化為正極，法拉第定律“同極相斥”產生磁懸浮效果。自始George被潤滑科學界冠以“磁浮態之父”的美譽。



神盾 ABF 磁懸浮潤滑配方得以研究成功是數代科學家的不解努力、堅持、不滅精神和理念的成果！

自神盾（Steel Shield）推出市場開始，世界各地出現了無數的仿冒者，甚至試圖分解和仿製神盾產品，由於其獨特的生化配方和技術，至今未有成功者。因此迄今為止，Dr. George C Fennell 仍然是磁浮潤滑領域的領導者。



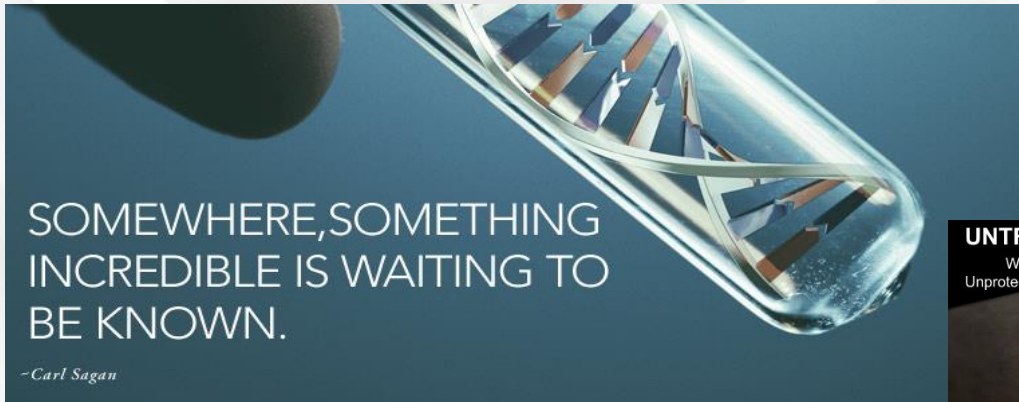
3. ABF離子磁懸浮技術的誕生

二次世界大戰，烽煙四起，由於戰爭需要，德國科學院提出解決重型武器例如裝甲車、坦克車、戰艦等高負荷、低維護、續航力強等等嚴苛潤滑需求的課題。

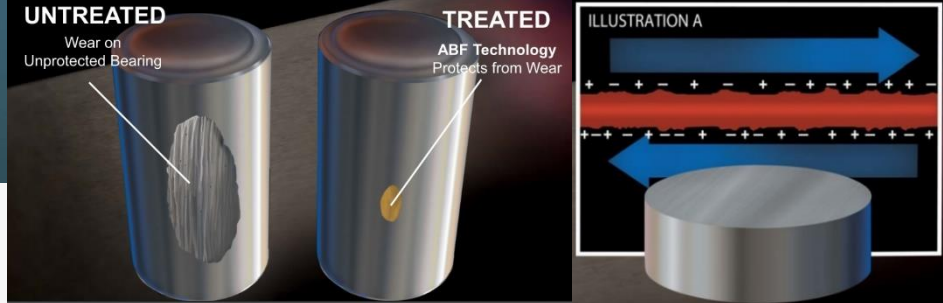
實現零摩擦必須借助 **Magnetic Field Effect** 磁場效應，應用 **Like-Charge-Repel** 同極相斥原理的方式。提出磁懸浮這個概念是早在二次世界大戰時期，但當時僅僅提出了一個磁懸浮的潤滑新概念。

二戰結束大量科學家從歐洲等國移民到美國，其中有位愛爾蘭籍的 **Fennell** 福諾博士，帶著大量研究資料在美國定居並且繼續進行這項技術的科學研究，“持之以恆”最終由其第三代傳人美國物理學博士 **Dr. George C Fennell** 喬治福諾於一九八五 (1985) 年取得了突破，成功研發出 **ECI** 又名 **RCB** 離子鍵轉移技術，創造了世紀獨一無二的 **virtual Zero Friction** 虛擬零摩擦的 **ABF** 「離子磁懸浮」潤滑技術。

它的研製發展過程凝聚了數代科學家的不懈追求，經歷了近半個世紀，由概念到實踐並不斷改良的演變。美國政府為表彰 **Fennell** 家族在美國工業界卓越不凡的貢獻，破天荒地將當時工廠外的一條街道命名為 **Fennell Drive** 福諾大道，以褒揚離子磁懸浮潤滑的發明者。



*Steel Shield –
Bio-Organic Lubrication Technology*



4. ABF 離子磁懸浮技術基理

Steel Shield Technologies' mechanism of operation is based upon Tribology methods that improve lubricity and load carrying capacity by improving surface characteristics and creating a stable chemical, corrosion controlled halide-based boundary film. Steel Shield's active components react with each other and the contacting asperities of the metallic surfaces to provide five mechanisms of improvement.

1. Advanced chemical boundary film formation through reactive chemical bonding.
2. Ring opening, oxirane acid scavenging and advanced corrosion inhibition.
3. Organo-metallic substitution of surface metal and free radical reactionaries.
4. Improved surface smoothness and rolling out of irregular contacting asperities.
5. Re-conditioning and molecular reconstruction of the original contacting metal surfaces.

The process of advanced boundary film formation is accomplished with an advanced combination of halogens that are controlled and rendered non-corrosive to the base metals of the system and pose no threat to the ozone layer or waste oil recovery systems due to their origins and long chain molecular lengths. These halogens initially react under thermal conditions with the organo-metallic reagents to form surface attaching compounds, thereby limiting and controlling the formation of halides from the base metals themselves. These surface attaching reagents or "electro-negative compounds" seek out and affix themselves to the lower surface areas referred to as micro-pores and fissures, as all metals are crystalline in structure and exhibit a lattice type matrix. This complex process also incorporates Van der Waal forces and dipole-dipole surface reactions. During this process, surface lapping and asperity (irregular microscopic contacting and opposing surfaces) roll-out is also achieved, yielding improved spread characteristics of the surfaces themselves. Due to the increase of film strength by the filling of the micro-pores and fissures, along with thermal modification of the asperities, the resulting effect is a gradual rolling out or flattening of the metal asperities rather than a breaking off or chip-away process, which would create metallic debris in the lubricant leading to abrasive wear from wear metal particles. The resulting improvement in the opposing metal surfaces further increases the fluid film strength, which is dependent on the degree of surface roughness and viscosity.

Viscosity, however, is a lesser consideration when incorporating boundary additives or halogenation techniques.

In general, boundary friction and wear consists of two components, a shear or adhesion component and a plowing or deformation component. Considering the following equation:

$$F_s = SAr$$

Where F_s is the shear component, which predominates except when asperities sink too deeply into a boundary lubricant film or a soft opposing surface. When movement or sliding occurs, the shear friction force depends on the shear resistance per unit area, S , of any "boundary film" in the real load-supporting area between asperities. Dividing by the load, W gives the shear contribution to the friction coefficient, becoming independent of total load and apparent area of contact:

$$f_s = S \cdot A_r / W = S / P_p \text{ or } S / P_e$$

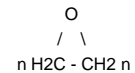
The boundary film shear resistance, S , is assumed equal to the plastic flow shear stress, T_p , of an ideal elastic, plastic solid. Such a solid gives shear stress independent of strain and strain rate at strains sufficiently large enough to cause plastic flow. The conditions that produce the "glass transition" from liquid to plastic-like behavior are dependent on the viscosity of the material at normal temperatures and pressures and the variation of viscosity with temperature and pressure. In other words, glass transition depends strongly on chemical composition.

These results show that liquid lubricants act like plastic solids in the films between asperities. Therefore, $S=T_p$ in the previous equation and the friction coefficient is T_p/P_p or T_p/P_e . Since T_p is a weak function of temperature and pressure, and P_p or P_e are independent of apparent contact load, the frictional coefficient for a given combination of lubricant and sliding surfaces tends to be independent of operating conditions.

Elasto-hydrodynamic lubrication (ELH) on an asperity scale deposits film material between sliding surfaces in "micro-rheodynamic" (micro-RHD) lubrication. As one surface slides, each asperity carries with it an aggregation of SST additive. Sufficient pressure and temperature is developed within the film to elastically deform the asperity and to force the extreme pressure reagent between the surfaces or into the micro-pores and fissures. During this time, high thermal conditions involving pressure and asperity contacts initiate a re-conditioning of the surfaces utilizing the existing oil to quench and cool the surfaces in the same process. A thermal restructuring of these asperity contact areas creates a deviation from the normal crystalline structure of the metal, expanding it into an austenitic crystalline pattern, which is more evenly structured and allows the SST additive to bond to the actual lattice of the metal, endowing it with new and unique properties upon cooling.

Organo-metallic substitution is a technique developed and designed to inhibit the process of halide formation from the base metals of the system under reaction. For example, instead of the halogen reacting with the iron in the system to form iron halides, a boundary surface salt, it reacts with a reagent having very similar properties to the iron atom itself, thereby forming a organo-metallic complex without scavenging the target metal surface itself, and depleting the metal in a chemically corrosive wear syndrome.

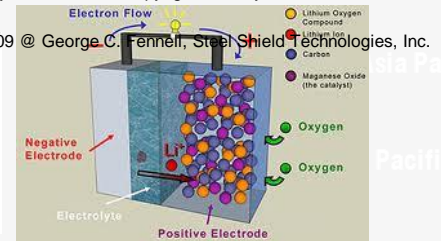
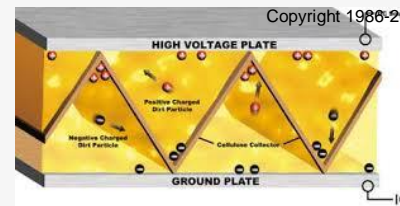
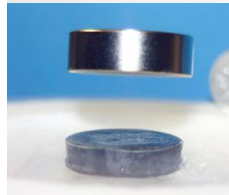
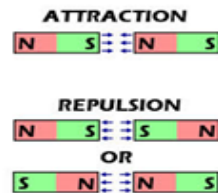
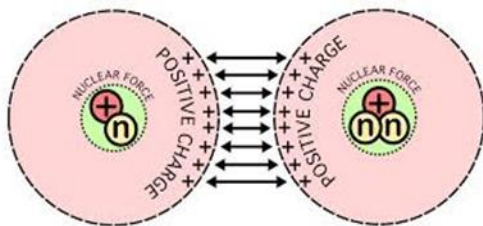
The process is very similar or analogous to the saponification of organo-metallic compounds in the manufacturing of greases. During this reaction or saponification, compounds react at a certain catalytic temperature and exchange characteristic components to form new compounds. These new chemical compounds are then used to aid in a boundary regime by providing an added protection to the actual surfaces being lubricated. Ring opening oxirane acid scavenging and corrosion inhibition is another chemical technique used to neutralize acids and inhibit oxidation and corrosion. This technique involves the use of specifically engineered complex ethylene oxide; oxirane rings, that possess reactive reagents which will cause a cleavage of the ring when encountering acids or strong alkaline. These reactions occur in the presence of both anionic- and cationic-type catalysts. Anionic catalysts can include alkoxide ions, hydroxides, metal oxides, and some organo-metallic derivatives while Lewis acids and protonic reagents initiate cationic reactions.



The lubricity, load carrying capacity, surface improvement, and wear reduction are greatly improved while corrosive aspects of halogenation are virtually eliminated.

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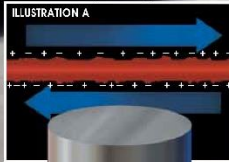
5. ABF 離子磁懸浮技術如何工作

Steel Shield Technologies Has Redefined Lubrication.

Webster's Dictionary defines lubricants as substances capable of reducing friction, heat and wear when introduced between two solid surfaces. From the initial development and use of lubricants, chemical technology has constantly advanced to make them more effective. From changes in refinement processes to the development of additives, the concentration has always been to increase the ability of the lubricant to reduce the friction, heat and wear. **Steel Shield Technologies** has changed the approach to lubrication and, in essence, given new definition to the term. First, there are a few points to consider.

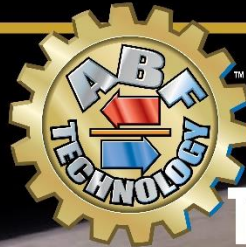
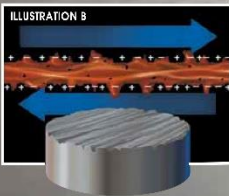
Metal Against Metal

The structure of all metals creates a surface characterized by a series of sharp peaks and valleys, some microscopic and some larger. As two metal surfaces contact each other and move in opposite directions, friction is caused, producing heat and metal deterioration. This friction-causing physical dynamic is heightened by the electromagnetic field created on the surfaces of each metal. The sharp peaks, known as asperities, and valleys, referred to as micro-pores and fissures, have opposite electro-magnetic charges. **Illustration A** shows a new metal with positive-charged asperities and negative-charged micro-pores and fissures. The constant interaction of these opposite-charged features works to weaken the structure of the metal, causing eventual deterioration of the surface of the part.



Normal Lubricants Help

All lubricants help to slow this process to different degrees. **Illustration B** shows the results after a period of time of use of a typical oil lubricant. The constant friction and electro-magnetic interaction has caused the weakened metal to break off or chip away creating metallic debris in the lubricant leading to abrasive wear from wear metal particles. This fact is evidenced in the need to change the engine oil of automobiles frequently as the lubricant "breaks down" due to the heat and metallic debris.

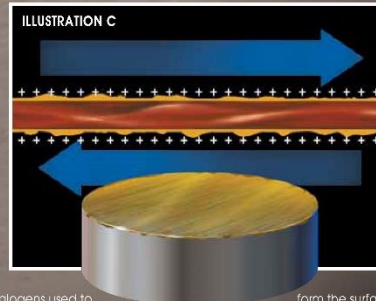


Advanced Boundary Film Technology- There Is No Better Protection Against Wear.

Steel Shield Technologies has redefined lubrication by breaking away from the standard approach to making the lubricant more effective through adjusting the refinement process or through the use of additives. Instead, **Steel Shield Technologies** approaches lubrication by improving the surface characteristics of the metal through the process of **Advanced Boundary Film** formation. This technological breakthrough is accomplished by addressing the naturally formed asperities, micro-pores and fissures and the electro-magnetic charges they create.

Steel Shield products consist of an advanced combination of halogens which react under thermal (heated) conditions to form electro-negative surface attaching compounds. They seek out and affix themselves to the lower surface areas, filling the micro-pores and fissures. As this process is working, the thermal conditions are effecting the asperities. Instead of breaking off because of a weakened metal state, the asperities gradually roll out or flatten. So while the micro-pores and fissures are filling up, the asperities are flattening for an end result of a metal surface that is greatly improved. Created in this process is a total positive state of polarity. When the metal surface polarity becomes uniform in charge, there is a reduction in friction due to the Faraday reaction of like-charges. This electrochemical process continues at the molecular level to form an **Advanced Boundary Film** on the surface of the metal. **Illustration C** shows the end result of the production of the **Advanced Boundary Film** and the resulting uniform positive polarity.

Another aspect of this advanced technology is the organo-metallic substitution which is the chemical process designed to inhibit halide formation. Here, the



halogens used to attaching compounds react with reagents having similar properties to the iron atom. The halogens, therefore, do not scavenge the target metal surface to find iron with which to react, forming halides and creating a chemically corrosive wear syndrome. Instead, an organo-metallic complex is formed as the basis of the **Advanced Boundary Film**.

Industrial Success Comes To The Consumer

Steel Shield Technologies is now bringing this breakthrough technology to the consumer after great success on the industrial level. The level of commitment to the **Steel Shield** product in the railroad industry is an indication of its performance in the most extreme conditions imaginable. This same technology is now available to you.

UNTREATED
Wear On Unprotected Bearing

TREATED
ABF Technology Protects From Wear

See Extreme Condition Lubrication Test At www.steelshieldtech.com

As has been explained, the **Advanced Boundary Film Technology** is a redefining approach to lubrication which provides outstanding benefits to the user.

Practical Elimination Of Metal-To-Metal Wear

Steel Shield Technologies addresses the three areas that cause the weakening and deterioration of the metal surfaces:

- The physical friction of rough surfaces
- The opposite electro-magnetic charges that exist on the metal surface
- The chemical reactions that produce corrosive agents.

Advanced Boundary Film Technology instead strengthens the metal and practically puts an end to metallic debris in the lubricant.

Reduced Operating Temperatures

Friction is reduced so significantly that the operating temperature in treated mechanisms is notably reduced. The end result is a stronger metal that maintains its original specifications and performance level. An example of the reduction of operating temperatures is found in the independent tests that show a drop of an average of 30 Fahrenheit degrees in treated automobile engines.

Increased Effectiveness Of The Lubricant

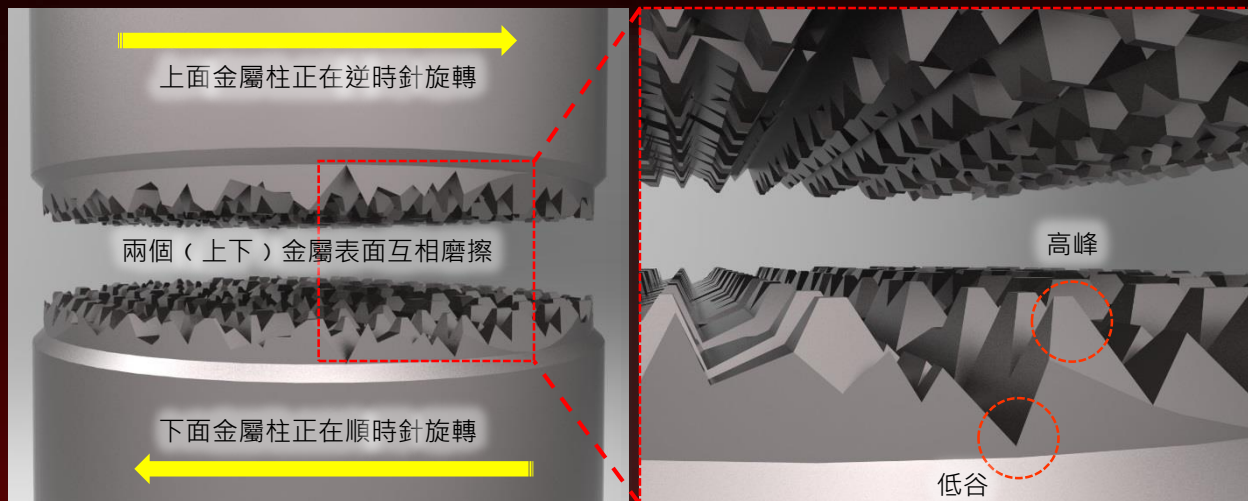
Whatever lubricant is used as the carrier of the **Steel Shield Technologies** additive, that lubricant is allowed to perform at its maximum efficiency. Lubricant flow will be enhanced with the elimination of rough metal surfaces; the reduction of heat and elimination of metal debris will protect the lubricant from "break down."



6. ABF 核心技術不靠油

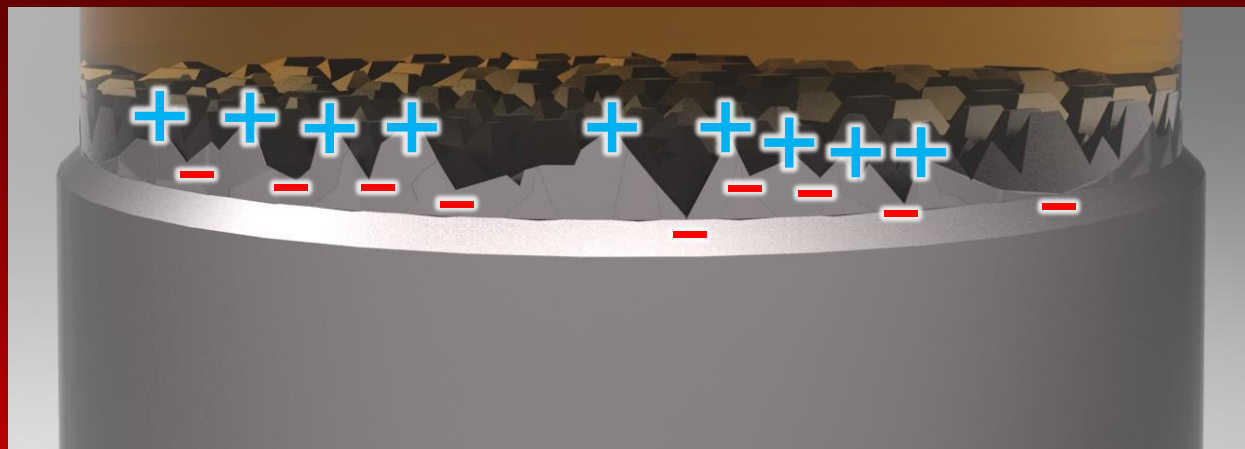
1. 金屬表面

兩面金屬互相磨擦時產生巨大阻力，在顯微鏡下，可看到金屬表面是由“高峰”及“低谷”組成，這就是磨擦阻力的源頭。



2. 表面的極性

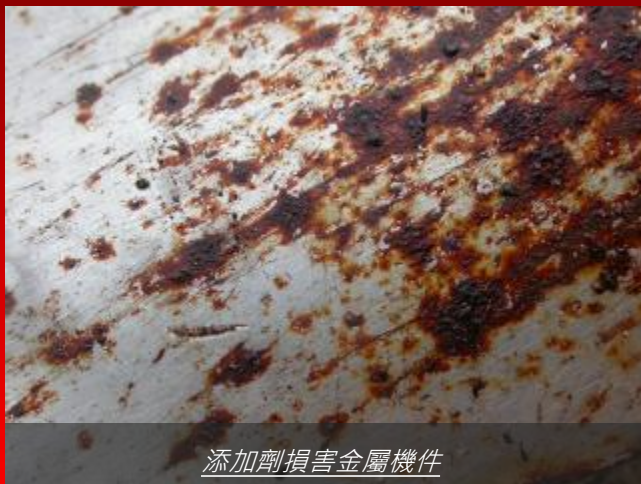
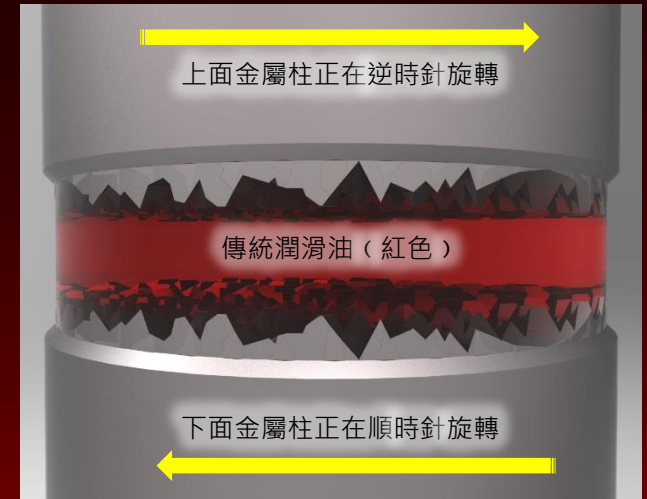
“高峰”是帶正極的，而“低谷”是帶負極的。



6. ABF 核心技術不靠油

3. 傳統潤滑油

無論配方有多完美，都只是利用化學甚至軟金屬元素來改變油品的特性，只能短暫緩和金屬磨損，而且這類元素大多含有不明物質，長期使用有腐蝕機件之嫌，加速金屬解體。傳統潤滑之所謂“金屬平整功能”，就是要機件互相斬砍，讓金屬表面凸出的部份被削平，做成部件的原有質量下降和公差值的改變。機件不停碰撞產生碎屑，正是潤滑油變得越來越多雜質的主因，形成磨損惡性循環的後果。

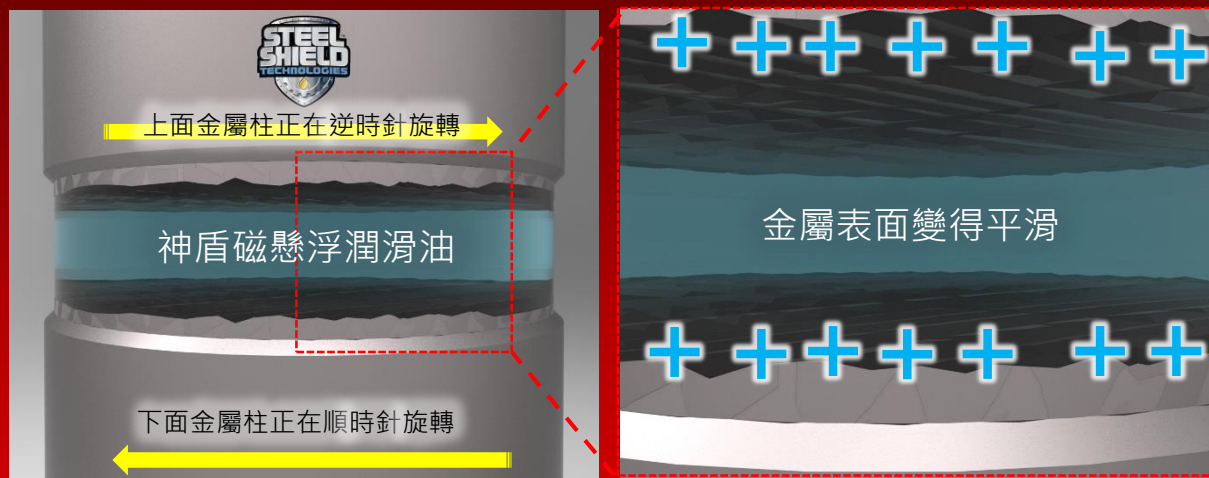


6. ABF 核心技術不靠油

4. 使用神盾磁懸浮潤滑油

透過離子轉移使到金屬表面呈現正極狀態，法拉第定律同極互斥的一股能量於兩面互動金屬面之間形成，這能量會對突出的金屬部分進行徑向擠壓，往周邊微孔和裂縫推填並且撫平其表面，跟常規的縱

向剪切方式完全相反，不但會做成任何金屬本質和公差值改變，而且加固了金屬表層的強度。



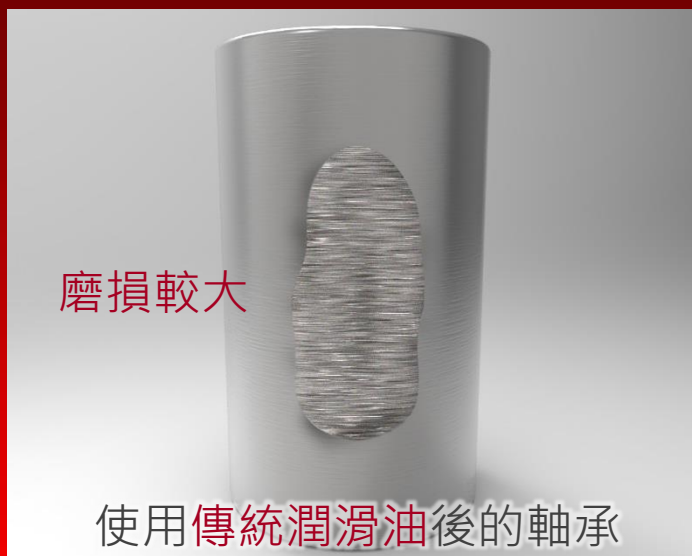
6. ABF 核心技術不靠油

5. 神盾磁懸浮潤滑油與傳統潤滑油的抗磨對決

神盾不會改變或者提升潤滑劑的基本參數和功能，但是它獨有的離子轉移技術確實的改變了兩面金屬的互動常態，產生磁懸浮效應。在磁浮狀態下，負載值与摩擦力之間呈冪函數關係，即在負載達到一定值后，增加負載量對摩擦力值的實質改變是“零”，摩擦力值趨向一恒定值。此時表明，在摩擦接口上，負載已基本上由離子磁場所完全承擔并使摩擦接口保持一定的間隙，而潤滑劑此時的僅有功能只起傳熱作用吧了！



軸承



7. 神盾產品亮點和適用行業

技術基礎

- 范德華力學原理
- 偶極表面反應

亮點

- 減少摩擦及降低磨損
- 讓機器工作更順暢
- 改善潤滑模式
- 無毒、能生物降解、綠色環保
- 優化機器功能
- 優化有功功率及節約能源消耗
- 降低機器工作溫度
- 長效保護活動金屬件
- 消除機器冷啟動的磨損
- 大幅度改善保養需要及減少停機時間
- 提升機件的工作可靠性及延長金屬部件壽命

適用行業

- 海陸空各類型交通工具，重型土方工程機械
- 各類能源設施和發電廠，礦業開採及鑽挖工程
- 升降機，扶手電梯，中央空調及製冷系統
- 工業，農業，建築及土木工程機械
- 戰備設置，國防工業



8. 神盾技術的5大突破 - 能人所不能

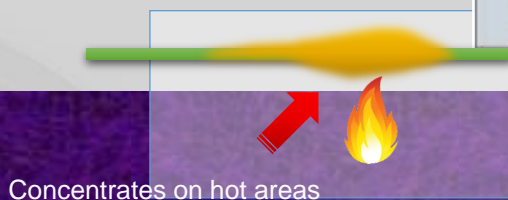
1.) 虛擬零摩擦 - RCB 離子磁懸浮

法拉第定律同極相斥，偶極反應原理



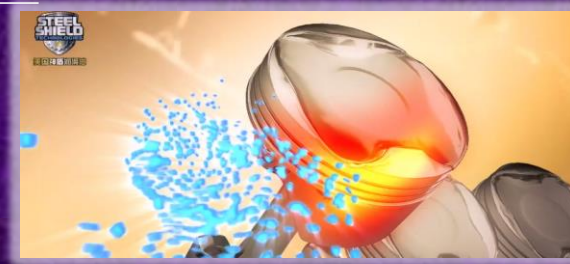
2.) 獨具動態熱轉移大法

獨具活性因子動態追熱功能



3.) 無腐蝕誘導技術物理排污

獨具磁誘導技術徹底清潔金屬碎屑



4.) 獨具金屬表層加固技術

縱向剪切轉為定向擠壓改善表層金屬剛度



5.) 運動中保護，降低系統故障

潤滑非靠油，磁浮才是硬道理



Not Just Oil, It's Technology

9. 神盾特種潤滑劑全線產品



神盾引擎油



神盾變速系統油



神盾燃油淨化除霉油



神盾摩托車專用油



神盾摩托變速箱油



神盾重卡車專用油



神盾船舶專用油



神盾 EPA 極壓油



神盾鐵路設備油



神盾鋰基潤滑脂



神盾強力除濕去銹油



神盾工具油



神盾強效金屬加工油



火盾量子槍油



火盾量子除垢劑



火盾量子槍潤滑脂

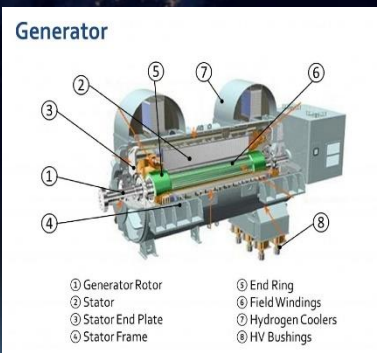
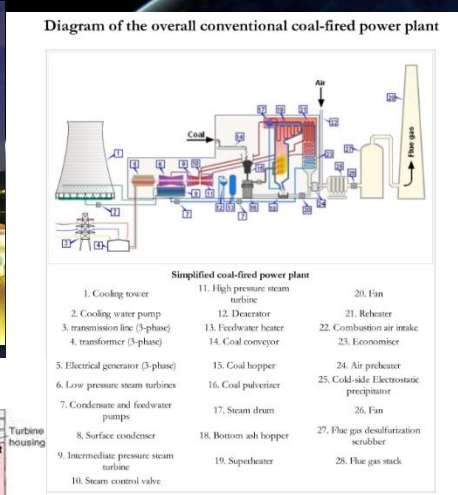
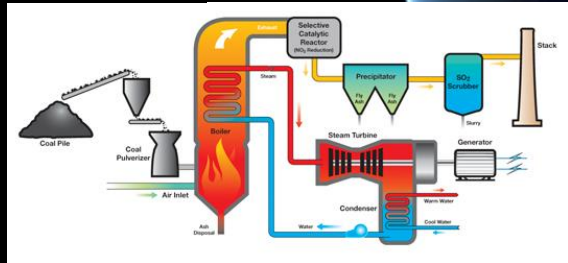
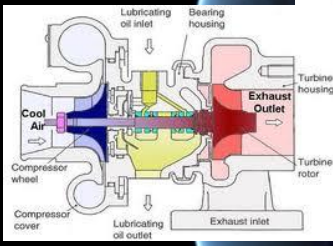


神盾滑輪全能油



神盾強效萬能油

10.火力 (燃煤) 發電廠

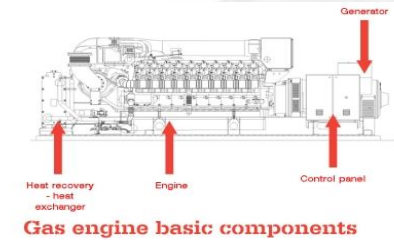


- 1) Air-Compressor Oil
- 2) Back-Up Generator Oil
- 3) Boiler Gear Oil
- 4) Coal Conveyors Oil
- 5) Coal Pulverizers Oil
- 6) Coal Yard Vehicle Oil
- 7) Cooling Tower Oil
- 8) Preheater Oil
- 9) Soot Blower Oil
- 10) Steam Loop-Feed Water Pumps Oil
- 11) Turbine Oil

Steel Shield 美國神盾潤滑劑推介:

- 1.) SST-ECI CAT GC gas compressor oil 氣壓機油
- 2.) SST Air Compressor oil 空壓機油
- 3.) SST Motor oil 各類發動機油
- 4.) SST Hydraulic oil 各類液壓油
- 5.) SST Chain Oil 鍊條油
- 6.) SST Specialty Line Lubricants & Grease 油脂

11.火力 (燃氣) 發電廠



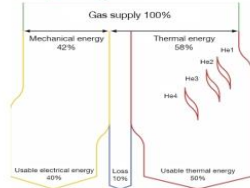
Power Production

GE Jenbacher gas engines can be configured to produce:

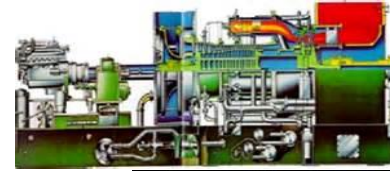
- Electricity only (base-load generation)
- Electricity & heat (cogeneration) / combined heat & power - CHP
- Electricity, heat and cooling water (trigeneration) / combined heat, power & cooling - CCHP
- Electricity, heat, cooling and high-grade carbon dioxide (quadrigenation)
- Electricity, heat and high grade carbon dioxide (greenhouse cogeneration)

Gas engines are typically applied as stationary continuous generation units but can also operate as peaking plants & in conjunction to meet fluctuations in local electricity demand. They can produce electricity in parallel with the local electricity grid, in island mode operation, or for power generation in remote areas.

Gas Engine Energy Balance



• Greases for demanding applications



• Grease for extreme-temperature applications



• Gear and bearing oils



• Oils for booster pumps and air compressors



• Hydraulic fluids



• Oils for gas turbines



• Oils for landfill & biogas gas engines



• Diesel engine oil for severe applications



Steel Shield 神盾產品推介

- 1.) SST ECI GECAT Gas Engine Oil 氣機油
- 2.) SST Hydraulic Oil 液壓油
- 3.) SST Air Compressor Oil 氣壓機油
- 4.) SST Motor Oil 各類發動機油
- 5.) Steel Shield EPA 神盾極壓精油
- 6.) Steel Shield Grease 神盾各類油脂
- 7.) Steel Shield Spray Shield 神盾除濕去銹劑
- 8.) Steel Shield Strike Shield 神盾萬能油
- 9.) Steel Shield Transmission Shield 神盾變速系統精油

12. 水力發電廠

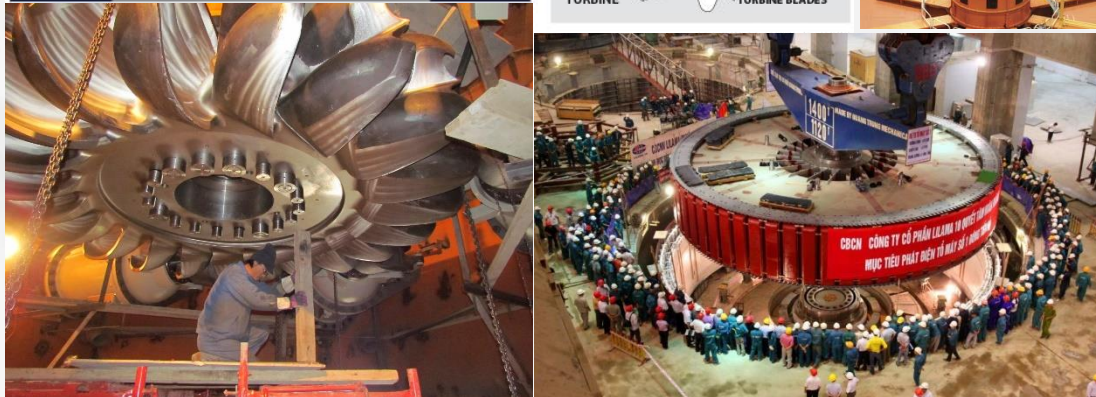
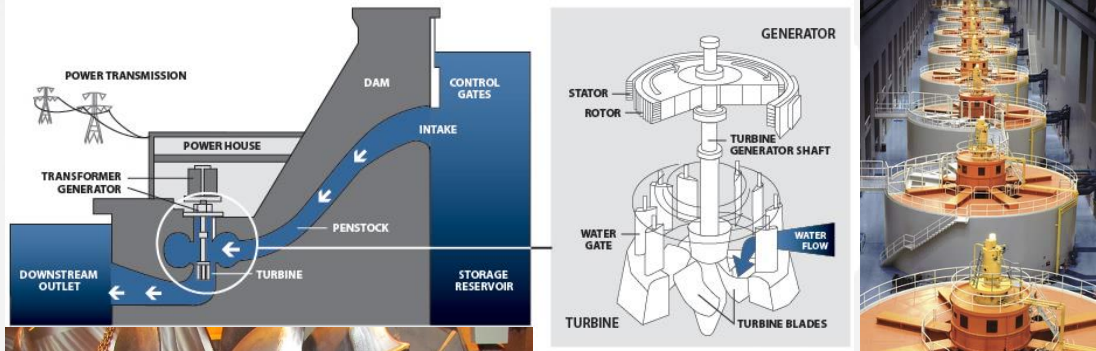


美國神盾服務各行業30年，我們關心地球綠化，相信優良的潤滑劑不但要環保而且不應該在可靠性和功能性方面有任何妥協。我們的產品不僅功能強大而且無毒，環保和可以生物降解。神盾ABF產品可以幫助我們的客戶大量節省維護成本，同時提高了設備的生產效率。

Steel Shield 神盾產品應用

- Lithi-Grease 神盾鋰基潤滑脂 - 阿基米德螺旋軸承
- Transmission Shield 神盾差速系統油 - 圓柱，螺旋和雙曲面，蝸杆齒輪
- Steel Shield EPA 神盾極壓油 - 抗磨抗銹齒輪
- Steel Shield EPA 神盾極壓油 - 汽輪機和發電機軸承
- Steel Shield Hydraulic oils 神盾液壓油 - 各類液壓系統
- Steel Shield Turbine Oil 汽輪機油 - 特別訂購

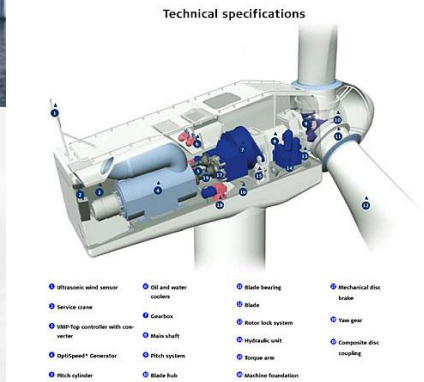
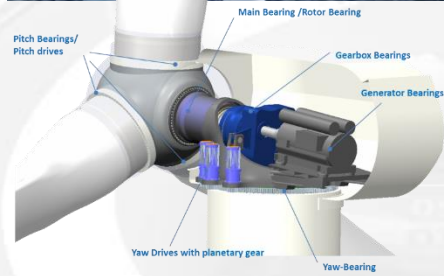
特別適合於潮濕環境中使用，包括冷卻塔，蒸汽，熱水和冷水，出水，氯化的水和污泥等。



效益

- 長效及延長換油時間
- 節省潤滑油及工費
- 強效抗金屬件氧化及銹蝕
- 不含殘餘物質於液壓系統內
- 超級密封，排氣及排濕功能
- 優化機械系統的功能可靠性和延長金屬部件的壽命
- 節省維修保養費及停機時間倍數算

13. 風力發電廠



風力渦輪機的維護所涉及的費用肯定是“現在付還是以後付更多”

風力發電一般都在較偏遠地區，天氣條件惡劣，充滿變數，因此對於風力渦輪機的機械適應力要求會較其它類型的發電機系統更高。當它出現事故後才進行緊急維修的方式是最低效和最昂貴。這種被動方式的維修概念經常出現災難性的嚴重部件破損，需要進行齒輪箱，發電機組和軸承等重要部件的拆卸和更換，費用是非常昂貴的。齒輪箱的破損往往導致其他部件的損壞。

2010年德國政府從1500台風力發電機組收集數據的一項研究發表了如下結果：

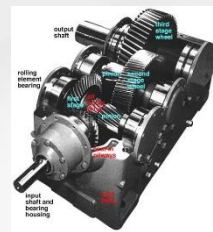
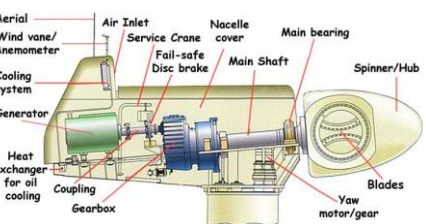
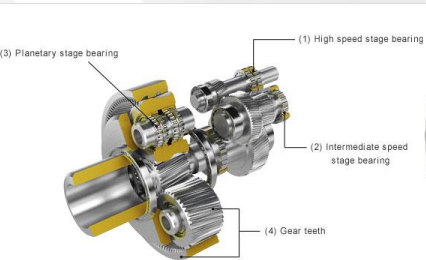
部件故障	故障維修出勤時日
液壓系統	1.3 日
偏航系統	2.5 日
制動裝置	3 日
齒輪組裝置	6.3 日
發電機	5.8 日
驅動系統	6 日

相關維護成本比較 (美元/輸出馬力/年)

被動式：	\$17
恆常式：	\$13 (較被動方式節省24% 費用)
前瞻式：	\$9 (較被動式節省47% 費用)

美國神盾產品不但讓你得到前瞻式的費用節約，實質節省的費用可能更高。

應用：
 葉片軸承
 偏航齒輪組及軸承
 齒輪組裝置
 所有各類軸承部件



Steel Shield Recommendation

- 1.) Lithi-Grease, EPA 各類軸承
- 2.) Transmission Shield 各類齒輪系統
- 3.) Strike Shield, Spray Shield 常態恆常保養



14. STEEL SHIELD ECI GECAT 燃氣/柴油機油

ABF磁懸浮技術，可以讓任何機械實現工作於近乎無摩擦的工作環境。它有效保護及防止燃氣發動機內的活塞劃傷，刮傷和環襯板磨損。

神盾ECI GECAT是世界上最先進和優秀的燃氣機油，性能超越任何市場上有售的同類油，符合高負荷和高溫條件下工作的高輸出四衝程發動機的嚴格要求。

神盾ECI GECAT選用最高品質的基礎油配合ABF技術製造，不僅提供了出色的氧化穩定性，抗硝化和熱穩定性，減少和消除積碳，漆和油泥的形成，讓發動機工作於更清潔的環境，更長的使用壽命，減少維修成本。它有優異的抗泡沫，抗乳化和防腐蝕性能。配方的磷、鋅等含量非常低，適合裝有催化轉化器的發動機使用。它的性能符合廣泛OEM的要求，是各廠牌高速四衝程發動機的最佳選擇。

使用推薦：

- GE-Jenbacher, Caterpillar, Superior, Waukesha, Mitsubishi 等要求低至中灰度油的中高速四衝程設計的自然吸氣及渦輪發動機
- 經常出現閥面及閥座磨損的發動機
- 符合稀燃和化學計量空燃比設計的發動機
- 配備催化轉換器的發動機
- 使用低硫或氮替代燃料的發動機
- 使用酸性氣 (low levels of H₂S)燃料的發動機



特性與效益：

- 優良的抗氧化和抗硝化
- 保持發動機清潔
- 延長換油時效，油過濾器更耐用
- 優化發動機效率及有功輸出
- 超強抗磨損，抗擦傷
- 全效保護活塞，襯板和內缸壁免除劃傷和磨損
- 全載高負荷發動機的終極保護機油
- 節省維修保養和工本費倍數計算
- 超強保護氣門組件
- 超強降低內燃缸的燃灰量
- 延長火星塞的壽命
- 高效防腐蝕保護
- 排除內燃缸部件受到水份，冷媒及酸性物質侵蝕
- 中和因燃燒和油質劣化所帶來的酸性物質
- 優秀的清潔和分散油垢性能
- 降低機器運作噪音（最高 9 dB，亦受環境影響）



15. ECI HD HYDRAULIC OIL 液壓油



Steel Shield Technologies (Asia Pacific) Limited
美國龍子能源有限公司

SST-ECI HD Hydraulic Oil No.32/46/68/100/150

DESCRIPTION

ECI HD Hydraulic Oil is a Heavy Duty general purpose anti-wear hydraulic oils formulated with enhanced A&F technology. The oils possess good anti-wear, anti-corrosion and anti-oxidation properties and meet Park Denison HF-0, HF-2 and DIN 51524 Part I, II specifications.

BENEFITS

- General purpose economy oils
- Excellent protection against wear, rust and corrosion
- Good oxidation stability
- Good filterability
- Reduce downtime 300% and more
- Extends the life of hydraulic components upto 400% (conditional to the physical status)
- Improves efficiency in terms of smoothness

APPLICATION

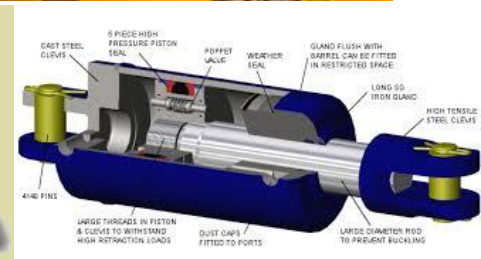
ECI HD Hydraulic Oil is recommended for use in most of the hydraulic systems, particularly for older machines that oil change is more often. They are not suitable for use in systems with silver plated components.

TYPICAL SPECIFICATION

ISO Grade	32	46	68	100	150	
Kinematic Viscosity,						
@ 40°C, cSt ASTM D445	30	45	67	98	145	
@ 100°C, cSt ASTM D445	5.3	6.7	8.6	10.9	14.5	
Viscosity Index	ASTM D2270	99	99	98	97	96
Flash Point (COC), °C	ASTM D92	212	220	228	245	250
Pour Point, °C	ASTM D97	-12	-12	-10	-10	-10

Whilst these characteristics are typical at current production, it may vary in the future subject to Steel Shield's final production specification.

Unit K 11/F1, Leader Industrial Centre, Phase II, 188-202 Texaco Road, Tsuen Wan, New Territories, Hong Kong
香港新界荃灣德士古道 188-202 號立基工業中心二期 11 樓 K 室 Tel (電話): 2545 8029 Fax (傳真): 2545 8030



16. ECI CAT GC COMPRESSOR OIL 壓縮機油



Steel Shield Technologies (Asia Pacific) Limited
美國羅子能源有限公司

SST-ECI CAT GC SAE-40 LOW-ASH GAS COMPRESSOR OILS

DESCRIPTION

CAT GC SAE-40 is a low-ash gas compressor oil where engine and compressor have a common lubrication system. It's formulated with highly refined mineral oils and additives to control wear, oxidation, nitration and bearing corrosion. The oil is enhanced with Steel Shield ABF technology for excellent performance.

The oil demonstrates excellent performance in 4-strokes gas engines operating compressors on gas collection and transmission networks such as Caterpillar etc. The oil meets the requirement of API CF/SF.

BENEFITS

- Ultimate performance against oxidation and nitration
- Good protection against corrosion and wear
- Reduce deposit and maintain compressor cleanliness
- Extended oil drain interval
- Reduce downtime 200+%
- Extends the life of engine parts upto 400% (conditional to the physical status)
- Reduce noise 3db~9db (conditional to compressor condition)
- Improves efficiency

APPLICATION

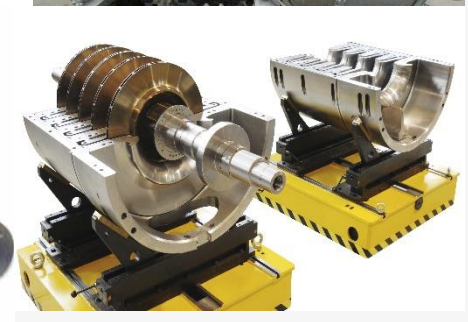
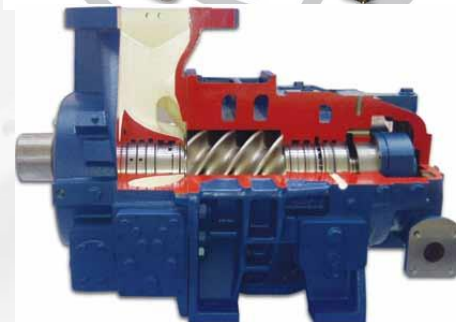
CAT GC SAE-40 is recommended for use in new generation gas compressors requiring low-ash contents.

TYPICAL SPECIFICATION

SAE Grade		40
Density @ 30 °C Kg/l	ASTM D1298	0.886
Kinematic Viscosity,		
@ 40°C, cSt	ASTM D445	125
@ 100°C, cSt	ASTM D445	13.28
Viscosity Index	ASTM D2270	97
Flash Point (COC), °C	ASTM D92	> 218
Pour Point, °C	ASTM D97	≤ -15
Sulphated Ash, % (m)	ASTM D874	0.40
Boiling Point, °C		228

Whilst these characteristics are typical at current production, it may vary in the future subject to Steel Shield's final production specification.

Unit K 11/Fl., Leader Industrial Centre, Phase II, 188-202 Texaco Road, Tsuen Wan, New Territories, Hong Kong
香港新界荃灣德士古道 188-202 號立泰工業中心二期 11 樓 K 室 Tel (電話): 2545 8029 Fax (傳真): 2545 8030



17. TUNNEL BORE ENGINEERING 隧道鑽挖工程

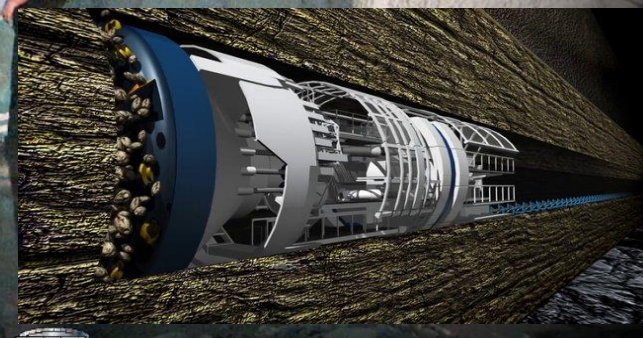
隧道鑽挖機 (TBM) 用於挖掘隧道，通過圓形橫截面對各種土壤和岩石地層進行鑽挖。比較傳統方法TBM可以完成隧道的鑽挖快5倍。但是這機器建造費需要花上億美元以上而且維修保養費極度高昂。



Steel Shield applies to all tunnel bore engineering

STEEL SHIELD 美國神盾有效提升這類龐大的機器的工作效率，得到最優秀的保護，減少停機和維修率：

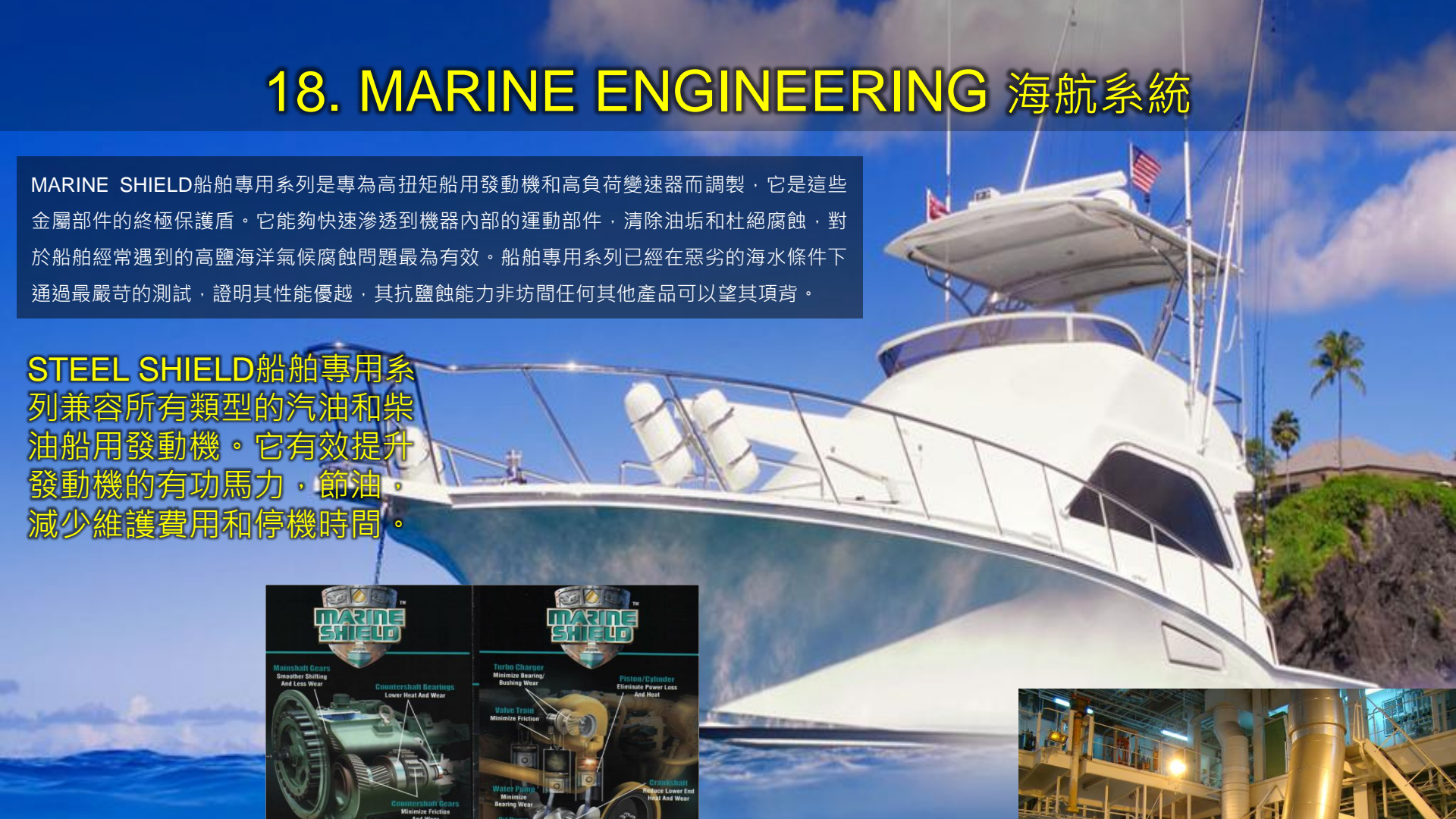
- 動力系統
- 液壓及氣動系統
- 各類齒輪系統
- 各類運輸作業系統



18. MARINE ENGINEERING 海航系統

MARINE SHIELD 船舶專用系列是專為高扭矩船用發動機和高負荷變速器而調製，它是這些金屬部件的終極保護盾。它能夠快速滲透到機器內部的運動部件，清除油垢和杜絕腐蝕，對於船舶經常遇到的高鹽海洋氣候腐蝕問題最為有效。船舶專用系列已經在惡劣的海水條件下通過最嚴苛的測試，證明其性能優越，其抗鹽蝕能力非坊間任何其他產品可以望其項背。

STEEL SHIELD 船舶專用系列兼容所有類型的汽油和柴油船用發動機。它有效提升發動機的有功馬力，節油，減少維護費用和停機時間。



19. Railroad & Mass Transit System 集體運輸鐵路系統

Joe Hendricks
6455 East Commerce
Kansas City, MO 64120
MMEO Central Region

10/01/2003

Marla Carrow
6455 East Commerce
Kansas City, MO 64120

RE: MT-10

Marla:

I want to update you on our progress with the MT-10 product. Sense my last report I have applied MT10 to all of my service units. We use the product in our engines, transmissions, gearboxes and hydraulic tanks thus protecting the entire systems. The product performed as expected. Our failures with these components have decreased even more. Now we are able to work on equipment from the preventative maintenance side instead of a breakdown mode.

We have had cases that I can attribute directly to MT10 and were able to save the company thousands of dollars on the spot. This product proves itself worthy over and over and should be used by all departments to get the maximum savings for the Union Pacific.

Sincerely

Joe Hendricks
Manager M/W Equipment Operations CR
816-245-2733



PORT
AUTHORITY

August 14, 2002

Mark Pushnick
President
Mark Pushnick Enterprises
3351 Industrial Blvd.
Bethel Park, PA 15102-2543

Re: Return on Investment of MT-10 Metal Treatment

Dear Mr. Pushnick:

As you are probably aware, Port Authority of Allegheny County's experiences with MT-10, has been very good. We have been using this product in the gearboxes of our light rail vehicles for approximately 8 of the last 9 years now. One year we discontinued the use of MT-10 and experienced a sharp decline in gearbox reliability and since have resumed the use of its application.

We regularly have oil analysis performed, by an independent testing laboratory and the results of the analysis have indicated that the use of MT-10 has significantly lowered the wear metals that we previously experienced prior to its use. The MT-10 has appreciably extended the service life of our existing gearboxes.

Based on the costs we were incurring prior to the use of the MT-10 product verse the costs we are currently incurring, we have realized a Return On Investment (ROI) of approximately \$45 saved for every \$1 expensed or 45:1 ratio. The most significant factor was the increase in reliability as well as availability. The vehicles were able to perform when needed and the missed trips were lowered to approximately 10% of past history.

As you are also aware, we continue to use the Power Cut (PC-10) and Power Lift (PL-10) grease with similar experiences.

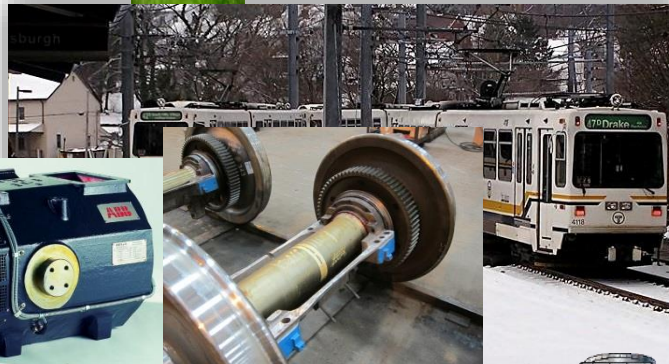
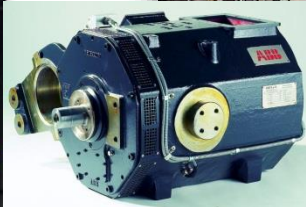
If you have any questions or I can be of any further assistance, feel free to contact me at (412) 566-5149.

美國匹茲堡港務局信內述明
每投入 1 美元購買神盾磁浮
潤滑油，換來他們節省 45
美元維修開支。車輛因機件
故障的失誤比率下降至只有
原來的 10%。

聯合太平洋鐵路局是世界最大
的集體運輸系統，信內述
明神盾產品在聯合太平洋鐵
路公司廣泛被使用。神盾磁
浮產品不斷被證實為物超所
值，備受業界全力推薦。



Joe F. Hendricks
Mgr. M/W Equipment Operations
Central Region
UNION PACIFIC RAILROAD
6455 E. Commerce Ave., Kansas City, MO 64120
ph. (816) 245-2733 c. (816) 804-6880
pgr. 4-48900-143-7243 pm-888996
jfhendri@up.com



Sincerely,

Mark P. Ferrari

Mark P. Ferrari, C.P.M., A.P.P.
Manager of Contract Administration
Bus & Rail



20. Manufacturing 工業系列



STRIKE-SHIELD 神盾萬能油是一種全功能的潤滑滲透劑，它迅速穿透金屬表面，解除因銹蝕引至的部件互相糾結卡死，同一時間，它可以密封銹蝕部份防止生鏽和腐蝕繼續惡化。用於點火導線，電接點，電路板及其他電器可以釋出水份，去潮和防潮。

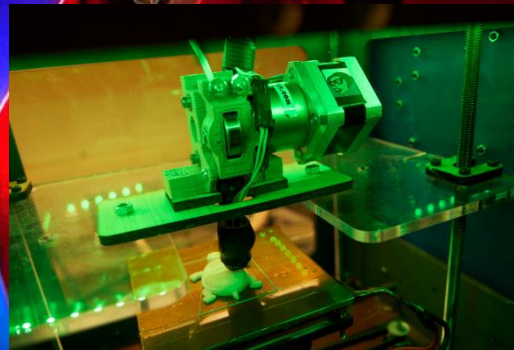
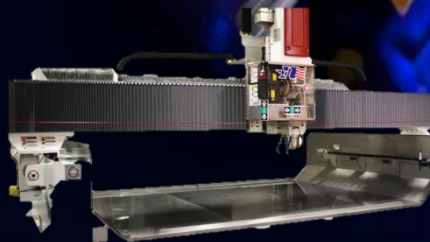


Drill & Tap 金屬加工油是沖床，鑽頭及絲攻潤滑劑。利用最先進的ABF技術，大幅度降低鑽頭，刀具等的發熱和磨損，有效增加生產量。

SPRAY-SHIELD 去濕去銹噴霧劑是一種多用途的產品，它能夠迅速滲透到機器最隱蔽的地區，包括在高腐蝕性和極端潮濕的環境也絲毫無損它的強大潤滑功能。它揮發性低，比市售的WD40在任何應用領域和場合都強大而且效果持久。



TOOL-SHIELD 工具潤滑劑高效保護氣動工具不受摩擦磨損，大幅度降低因極壓，高扭矩，水分和內部污垢引至的故障率。



21. HVAC Application 空調系統

STEEL SHIELD 美國神盾HVAC是專門設計和配製用於幾乎所有類型的空調壓縮機系統。它能無縫地跟製冷劑混合（R22 · R12 · R11 · R114 · R502等），有效提升商廈、商場、賓館、冷庫等的中央式空調系統的有功輸出，節約電能達3%~18% 不等。ABF磁浮技術有效清除和防止酸性有害雜物在蒸發器和冷凝器道管內壁形成，讓空調系統能夠穩定和高效工作。正確使用神盾產品將顯著提高空調系統的性能和降低往後的高昂維護費用。

無論你相信與否，一座設有中央空調的建築物的電費70%以上屬於空調系統，而另外30%是用於照明、電梯、控制等而已。

Steel Shield 神盾HVAC產品

- ✓ 提升製冷效率和功能可靠性
- ✓ 大幅度降低停機率和維護費用
- ✓ 降低空調系統的工作溫度
- ✓ 降磨損，降摩擦，降溫
- ✓ 延長部件使用期 200%甚至更高
- ✓ 節省電耗 3~18% 不等

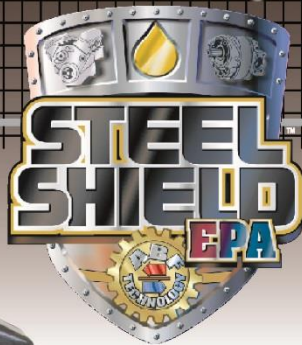
22. MOTOR CARS 商用和民用汽車

美國神盾磁浮車用潤滑油幫助降低發動機的噪音，增加8%~12%的馬力輸出，提速反應特快，電池壽命延長2~3倍，保持發動機清潔。車主客戶無一不驚訝他們的愛車表現就像新的一樣！在高速公路上巡行駕駛可以節省約8~15%的汽油或者4~7%的柴油，以上數字只作參考，實質效果取決於不同路況和駕駛者的習慣。



23. STEEL SHIELD EPA 神盾極壓油

防止金属间
磨损的极致保护



通过先进的边界膜技术制定抗磨与抗极压的标准

精钢盾“极压抗磨”是工业里移动金属零件最强大的保护盾。由于边界条件下的摩擦磨损、极压扭矩、干燥启动和关机，导致发动机、变速箱、差速器、分动箱、液压泵、马达、齿轮箱，以及其他封闭润滑系统的移动金属部件受到摩擦、磨损和高温影响，精钢盾“极压抗磨”利用最先进的边界膜技术来保护这些移动金属部件，使其免受以上伤害。这使得性能提高了，同时大大降低了维护和停机时间。先进边界膜技术，通过降低运行温度，延长零部件的使用寿命，提高零部件的可靠性来使这些性能目标得以实现。

属性

- 保护移动金属部件
- 延长零部件寿命和卡车零件的可靠性
- 大大减少磨损
- 运行起来更平滑
- 提高润滑
- 减少维护和停机时间
- 减少摩擦
- 降低运行温度

STEEL SHIELD EPA™



精钢盾科技的运行机制是基于能改善润滑性能和承载能力的先进的摩擦学方法。相应地，它能在改善表面特性的同时，在任何添加精钢盾产品的设备的金属接触面上创造一个稳定的化学边界膜。先进边界膜的形成过程是通过长链齿烷和其他专有添加剂的单独结合，这些专有添加剂高度稳定，不腐蚀设备的金属部分，并对环境或废机油回收系统不构成威胁。精钢盾在热条件下，通过与金属接触面发生化学反应来形成一个复杂的表面保护膜。精钢盾的特点是“电负性”，这使得精钢盾可以粘附在金属的表面上。在这个过程中，金属表面变得平滑，从而提高了金属表面的延展性。赋予金属相对面极压的属性，使其增加流体膜的强度，甚至大大降低磨损。最终取得摩擦磨损的有效消除和整个润滑区域的显著冷却，从而产生更高的能源节约、减少金属碎片和酸油。这些结果可以在精钢盾先进边界膜技术使用前后的油质分析和油液铁谱中得到大量的证明。

材料安全数据

- 燃点: 226°C
- 无害的
- 不易燃的
- 合成碳氢化合物

物理数据

- 沸点: 238°C
- 蒸发率: <0.01
- 比重: 1.07
- 不溶于水
- 蒸气压: <1@25°C
- 中等至暗黄色

推荐使用

- 发动机
- 变速器
- 差动齿轮
- 液压系统
- 敞式齿轮装置
- 齿轮箱
- 齿轮减速器
- 齿轮联轴器
- 电动机
- 重型机械
- 武器系统

用法说明

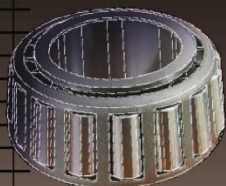
柴油和汽油发动机，按16:1的比例添加；
自动变速器，按32:1的比例添加；
手动变速器和差速器，每升齿轮润滑油/液添加62.5毫升；
齿轮箱，每升液体添加32.5-93.75毫升；
液压系统，按32:1的比例添加。
不含埋废物或清洗剂。含有合成的碳氢化合物和先进的化学添加剂技术。无毒、环保。

产品编号	产品代码	产品型号	装箱数	箱子尺寸	箱子体积	箱子重量	TU/HI
EPA-MT-16	8-94630-00161-8	精钢盾“极压抗磨”金属处理剂-16盎司(473毫升)	12	8.75"wx 8"wx 8"b	.33	7.50	25/7
EPA-MT-32	8-94630-00162-5	精钢盾“极压抗磨”金属处理剂-32盎司(946毫升)	12	9.75"wx 9.5"wx 13.25"b	.71	28.80	12/5
EPA-MT-128	8-94630-00163-2	精钢盾“极压抗磨”金属处理剂-1加仑(3.785升)	4	9.5"wx 12.5"wx 14.5"b	.99	33.60	12/4
EPA-MT-5G	8-94630-00164-9	精钢盾“极压抗磨”金属处理剂-5加仑(18.93升)	1			45.00	
EPA-MT-15G	8-94630-00165-6	精钢盾“极压抗磨”金属处理剂-15加仑(56.78升)	1			133.00	
EPA-MT-55G	8-94630-00166-3	精钢盾“极压抗磨”金属处理剂-55加仑(208升)	1			485.00	
EPA-MT-300G	8-94630-00167-0	精钢盾“极压抗磨”金属处理剂-300加仑(1135升)	1				



24. LITHI-SHIELD 鋰基潤滑脂

防止金属间
磨损的极致保护



通过先进的边界
膜技术制定抗磨与
抗极压的标准

神盾鋰基精油是極壓抗磨複合鋰基潤滑脂里的終結者。它採用添加了極壓抗磨添加劑配方的先進邊界膜技術，使它超越了所有其他複合鋰基潤滑脂。它處理、平整和封閉金屬表面來大大減輕摩擦以及摩擦所引起的熱量和磨損。憑藉其獨特的配方，使用更少數量的神盾鋰基精油，性能就可以超越其他潤滑脂。事實上，神盾鋰基精油的抗氧化性相當卓越，比它最接近的競爭對手高出兩倍。



属性

- 提供最大的保护以防止磨损和极压
- 粘附在金属上，使其展现出最佳的侧倾稳定性
- 给所有部位提供持续的润滑
- 最大限度地减少摩擦
- 防水冲洗

LITHI-SHIELD™



精鋼盾科技的運行機制是基於能改善潤滑性能和承載能力的先進的摩擦學方法。相應地，它能在改善表面特性的同時，在任何添加精鋼盾產品的設備的金屬接觸面上創造一個穩定的化學邊界膜。先進邊界膜的過程是通過長鏈齒代烴和其他專有添加劑的單獨結合，這些專有添加劑高度穩定，不腐蝕設備的金屬部分，並對環境或廢機油回收系統不構成威脅。精鋼盾在熱條件下，通過與金屬接觸面發生化學反應來形成一個複雜的表面保護貼膜。精鋼盾的特点是“電負性”，這使得精鋼盾可以粘附在金屬的表面上。在這個過程中，金屬表面變得平滑，從而提高了金屬表面的延展性。賦予金屬相對面極壓的属性，使其增加流體膜的強度，甚至大大降低磨損。最終取得摩擦磨損的有效消除和整個潤滑區域的顯著冷卻，從而產生更高的能源節約、減少金屬碎片和酸油。這些結果可以在精鋼盾先進邊界膜技術使用前后的油質分析和油液鐵譜中得到大量的證明。

产品规格

- NLGI级别: 2级
- 颜色: 琥珀色
- 增稠剂类型: 复合锂
- 抗磨金属处理: 精钢盾EPA

ASTM测试

D-2265	滴点	556T
D-2266	四球磨擦测试	0.66mm
D-2596	四球金属测试	800Kg/Pass
D-2509	铁姆肯公司的OK负载磅	60
D-5483	抗氧化诱导时间为210℃, 最低11.47	
D-1264	水冲洗@79℃	2.7%

推荐使用

- 所有极压应用
- 万向节
- 旋转机械
- 重型设备
- 铁路设备
- 矿山设备
- 船拖车和海军应用
- 输送机
- 轴承
- 底盘配件
- 泵
- 等速万向节
- 车轴

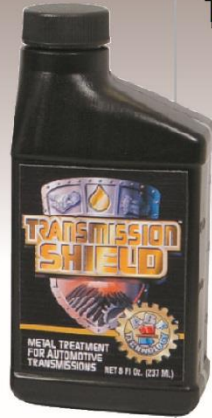
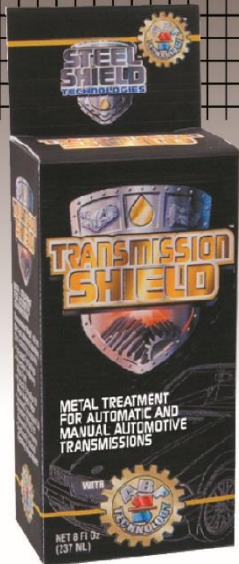
LITHI-SHIELD™

产品编号	产品代码	产品型号	装箱数	箱子尺寸	箱子体积	箱子重量	TU/HL
LS-T	8-94630-00181-6	神盾鋰基精油複合鋰基潤滑脂-59.14毫升/桶	24	9.25"wx 4.75"lx 6.5"l	0.16	1.9	40/8
LS-C	8-94630-00182-3	神盾鋰基精油複合鋰基潤滑脂-414毫升/桶	10	12"wx 19.5"lx 10.75"l	1.45	42.0	6/5
LS-LB	8-94630-00183-0	神盾鋰基精油複合鋰基潤滑脂-473毫升/桶	40	13.5"wx 3.5"lx 6.25"l	0.17	15.2	36/8
LS-5LB	8-94630-00184-7	神盾鋰基精油複合鋰基潤滑脂-2.365升/桶	4	14.125"wx 9.5"lx 6.75"l	0.53	23.4	12/8
LS-P	8-94630-00185-4	神盾鋰基精油複合鋰基潤滑脂-16.5升/桶	1			38.0	
LS-K	8-94630-00186-1	神盾鋰基精油複合鋰基潤滑脂-56.8升/桶	1			132.0	
LS-D	8-94630-00187-8	神盾鋰基精油複合鋰基潤滑脂-189升/桶	1			437.0	



25. TRANSMISSION-SHIELD 變速系統油

防止金属间
磨损的极致保护



通过先进的边界
膜技术制定抗磨与
抗极压的标准

神盾差速精油是你手动和自动变速箱里移动金属零件最强大的保护盾。其利用最先进的边界膜技术来保护移动金属部件，使这些部件免受边界条件、极压转矩、干启动和摩擦关机带来的磨损和破坏。其他好处包括：使换挡更平稳、减少摩擦、增加油流、减少维修和停机时间、延长变速箱零件的使用寿命和平均降低30到50华氏度的运行温度。



属性

- 保护移动技术部件
- 延长零件寿命
- 大大减少磨损
- 使换挡更平稳
- 平均减少30华氏度的运行温度
- 提高润滑
- 减少维修
- 减少磨损
- 提高油流
- 适用于手动和自动变速箱

TRANSMISSION SHIELD™



精钢盾科技的运行机制是基于能改善润滑性能和承载能力的先进的摩擦学方法。相应地，它能在改善表面特性的同时，在任何添加精钢盾产品的设备的金属接触面上创造一个稳定的化学边界膜。先进边界膜的形成过程是通过长链卤代烃和其他专有添加剂的单独结合，这些专有添加剂高度稳定，不腐蚀设备的金属部分，并对环境或废机油回收系统不构成威胁。精钢盾在热条件下，通过与金属接触面发生化学反应来形成一个复杂的表面保护贴膜。精钢盾的特点是“电负性”，这使得精钢盾可以粘附在金属的表面上。在这个过程中，金属表面变得平滑，从而提高了金属表面的延展性。赋予金属相对面极压的属性，使其增加流体膜的强度，甚至大大降低磨损。最终取得摩擦磨损的有效消除和整个润滑区域的显著冷却，从而产生更高的能源节约、减少金属碎片和酸油。这些结果可以在精钢盾先进边界膜技术使用前后的油质分析和油液铁谱中得到大量的证明。

材料安全数据

- 燃点: 226°C
- 无害的
- 不易燃的
- 合成碳氢化合物

物理数据

- 沸点: 238°C
- 蒸发率: <0.01
- 比重: 1.07
- 不溶于水
- 蒸气压: <1@25°C
- 中等至暗黄色

性能

- 减少磨损
- 增加马力
- 降低昂贵的维修费用
- 使换挡更平稳
- 降低运行温度
- 增加燃油的节省量
- 减少摩擦
- 提高油流
- 减少维护
- 增加变速箱寿命
- 减少油中的金属碎片
- 降低链伸展

用法说明

拆下油尺，往油管里添加一瓶8盎司（236毫升）的神盾差速精油。对于更大的变速箱，按32：1的比例来添加。对于手动变速箱和差速器，按每升齿轮润滑油62.5毫升的量来添加。在每次换油的时候应按照上述方法添加以取得最佳的性能。

不含挥发物或溶剂。含有合成的碳氢化合物和先进的化学添加剂技术。无毒、环保。

产品编号	产品代码	产品型号	装箱数	箱子尺寸	箱子体积	箱子重量	TU/HL
TMS-MT-8	8-94830-00106-9	神盾差速精油金属处理剂-8盎司(236毫升)	12	8.75" x 8" x 8"	.33	7.50	25/7



TRANSMISSION SHIELD™



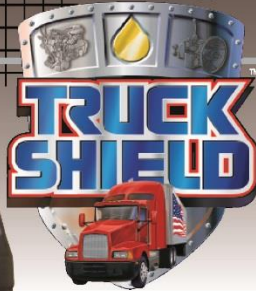
26. TRUCK-SHIELD 重卡車專用油

防止金属间
磨损的极致保护



TRUCK SHIELD™

减少燃油
消耗量



通过先进的边界
膜技术制定抗磨与
抗极压的标准

神盾卡车精油是卡车里移动金属零件最强大的保护盾。其利用最先进的边界膜技术来保护移动金属部件，使这些部件免受边界条件和极压带来的磨损和破坏。其他好处包括：增加燃油的节省量；提高性能；通过降低卡车运行温度，使轻型卡车、重型卡车和设备的零部件使用寿命得到延长，从而减少维修费用和停机时间。



属性

- 降低油耗
- 有效消除金属间的磨损「预防干启动」
- 减少维修和停机时间
- 更平滑和安静地运行
- 降低运行温度
- 延长零部件寿命和卡车零件的可靠性

www.steelshieldtech.com



精钢盾科技的运行机制是基于一能改善润滑性能和承载能力的先进的摩擦学方法。相应地，它能在改善表面特性的同时，在任何添加精钢盾产品的设备的金属接触面上创造一个稳定的化学边界膜。先进边界膜的形成过程是通过长链卤代烃和其他专有添加剂的单独结合，这些专有添加剂高度稳定，不腐蚀设备的金属部分，并对环境或废机油回收系统不构成威胁。精钢盾在热条件下，通过与金属接触面发生化学反应来形成一个复杂的表面保护膜。精钢盾的特点是“电负性”，这使得精钢盾可以粘附在金属的表面上。在这个过程中，金属表面变得平滑，从而提高了金属表面的延展性。赋予金属相对面极压的属性，使其增加流体膜的强度，甚至大大降低磨损。最终取得摩擦磨损的有效消除和整个润滑区域的显著冷却，从而产生更高的能源节约、减少金属碎片和酸油。这些结果可以在精钢盾先进边界膜技术使用前后的油质分析和油液铁谱中得到大量的证明。

材料安全数据

- 燃点: 226°C
- 无害的
- 不易燃的
- 合成碳氢化合物

物理数据

- 沸点: 238°C
- 蒸发率: <0.01
- 比重: 1.07
- 不溶于水
- 蒸气压: <1@25°C
- 中等至暗黄色

性能

- 减少磨损
- 增加马力
- 降低昂贵的维修费用
- 降低运行温度
- 增加燃油的节省量
- 减少摩擦
- 提高油流
- 减少维护
- 增加发动机寿命
- 减少油中的金属碎片

用法说明

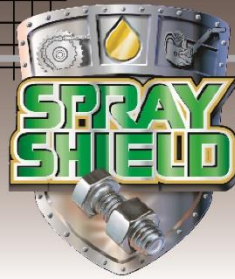
柴油和汽油发动机：刚开始的时候，按16：1的比例添加神盾卡车精油。每次换油的时候，按16：1或32：1的比例添加神盾卡车精油。
自动变速器：每升自动变速箱油添加31.25毫升的神盾卡车精油；手动变速器和差速器：每升齿轮润滑油/液添加62.5毫升的神盾卡车精油。
液压系统：按16：1的比例添加神盾卡车精油；
动力转向：按16：1的比例添加神盾卡车精油；
不会捉废物或溶剂，含有合成的碳氢化合物和先进的化学添加剂技术。无毒、环保。

产品编号	产品代码	产品型号	装箱数	箱子尺寸	箱子体积	箱子重量	T/U/H
TRK-MT-32	8-94630-00168-7	神盾卡车精油金属处理剂-32盎司(946毫升)	12	9.75"wx 9.5"hx 13.25"d	.71	28.80	12/5
TRK-MT-128	8-94630-00169-4	神盾卡车精油金属处理剂-1加仑(3.785升)	4	9.5"wx 12.5"hx 14.5"d	.99	33.60	12/4
TRK-MT-5G	8-94630-00170-0	神盾卡车精油金属处理剂-5加仑(18.93升)	1			45.00	
TRK-MT-15G	8-94630-001119-9	神盾卡车精油金属处理剂-15加仑(56.78升)	1			133.00	
TRK-MT-55G	8-994630-00158-8	神盾卡车精油金属处理剂-55加仑(208升)	1			485.00	



27. SPRAY-SHIELD 強力除濕去銹油

防止金属间
磨损的极致保护



通过先进的边界
膜技术制定抗磨与
抗极压的标准

神盾喷雾精油是多功能润滑剂中的终结者，就算是在容易腐蚀和过度潮湿的环境中，也能以最高的品质渗透到金属的表面。神盾喷雾精油渗透到细微的部位，为不同的应用提供长效的润滑。神盾喷雾精油以最高的效率提供出色的保护与持久的润滑。



属性

- 提供快速，持久润滑
- 防锈和防腐蚀
- 渗透到细微、隐蔽的部位
- 防止自由流动
- 渗透到已剥落和腐蚀的金属机械中

SPRAY SHIELD™



精钢盾科技的运行机制是基于能改善润滑性能和承载能力的先进的摩擦学方法。相应地，它能在改善表面特性的同时，在任何添加精钢盾产品的设备的金属接触面上创建一个稳定的化学边界膜。先进边界膜的形成过程是通过长链烷烃和其他专有添加剂的单独结合，这些专有添加剂高度稳定，不腐蚀设备的金属部分，并对环境或废机油回收系统不构成威胁。精钢盾在热条件下，通过与金属接触面发生化学反应来形成一个复杂的表面保护贴膜。精钢盾的特点是“电负性”，这使得精钢盾可以粘附在金属的表面上。在这个过程中，金属表面变得平滑，从而提高了金属表面的延展性，赋予金属相对面极压的属性，使其增加流体膜的强度，甚至大大降低磨损。最终取得摩擦磨损的有效消除和整个润滑区域的显著冷却，从而产生更高的能源节约、减少金属碎片和酸油。这些结果可以在精钢盾先进边界膜技术使用前后的油质分析和油液铁谱中得到大量的证明。

材料安全数据

- 燃点: 226°C
- 无害的
- 不易燃的
- 合成碳氢化合物

物理数据

- 沸点: 238°C
- 蒸发率: <0.01
- 比重: 1.07
- 不溶于水
- 蒸气压: <1@25°C
- 中等至暗黄色

推荐使用

- 金属机械
- 金属间的表面
- 利用链条传动力的装备
- 拉索
- 套管
- 滑轮
- 铰链
- 工具
- 滑动轴承
- 汽车、工业或商业领域中，任何需要外部重型喷雾润滑剂来进行润滑的隐蔽部位。
- 齿式齿轮装置
- 钢山墙
- 联动装置
- 轮子
- 螺旋钻
- 生锈的螺母和螺栓

用法说明

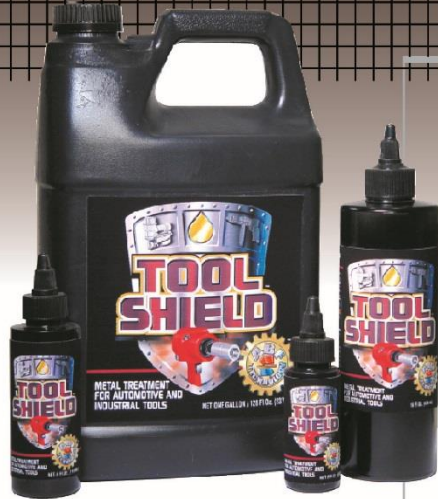
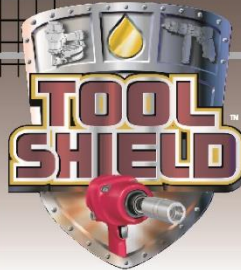
在需要润滑的表面上使用神盾喷雾精油。当出现过度的生锈或腐蚀的情况，应再次使用神盾喷雾精油。不含挥发物或溶剂。含有合成的碳氢化合物和先进的化学添加剂技术。无毒、环保。

产品编号	产品代码	产品型号	装箱数	箱子尺寸	箱子体积	箱子重量	TU/HI
SS-1	8-94630-00148-5	神盾喷雾精油金属处理剂-1盎司 (29.5毫升)	24	8.875"wx 4.625"xd 3.875"l	.07	2.5	48/12
SS-4	8-94630-00148-9	神盾喷雾精油金属处理剂-4盎司 (118毫升)	12	5.5"wx 7.125"xd 7.0"l	.16	3.8	40/8
SS-16	8-94630-00149-6	神盾喷雾精油金属处理剂-16盎司 (473毫升)	12	10.75"wx 8.0"xd 10.75"l	.54	15.0	20/5
SS-128	8-94630-00150-2	神盾喷雾精油金属处理剂-1加仑 (3.785升)	4	9.25"wx 14.5"xd 12.5"l	.97	34.0	12/4
SS-5G	8-94630-00129-8	神盾喷雾精油金属处理剂-5加仑 (18.93升)	1			42	
SS-15G	8-94630-00130-4	神盾喷雾精油金属处理剂-15加仑 (56.78升)	1			125	
SS-55G	8-94630-00150-2	神盾喷雾精油金属处理剂-55加仑 (208升)	1			455	



28. TOOL-SHIELD 工具油

防止金属间
磨损的极致保护



属性

- 提高工具的功率和性能
- 防止生锈
- 保护移动金属部件
- 清理内部污垢
- 排斥空气管路水分
- 延长工具的寿命
- 大大降低金属间的磨损
- 润滑、清洁和保护

通过先进的边界膜技术制定抗磨与抗极压的标准

神盾工具精油是汽车和工业工具里移动金属零件最强大的保护盾。

边界条件下的摩擦磨损、极压扭矩、空气管路水分和内部污垢会引起热量和摩擦磨损，神盾工具精油采用最先进的边界膜技术来保护移动金属部件，使其免受以上伤害。它适用于所有的活塞、回转式空气工具、固定式和手持式电动工具、大部分的手动工具。通过消除工具的污垢，最终提高了功率、性能，并大大减少了磨损。神盾工具精油使用先进边界膜来增加润滑性和边界膜润滑。



TOOL SHIELD™



精钢盾科技的运行机制是基于一能改善润滑性能和承载能力的先进的摩擦学方法。相应地，它能在改善表面特性的同时，在任何添加精钢盾产品的设备的金属接触面上创造一个稳定的化学边界膜。先进边界膜的形成过程是通过长链卤代烃和其他专有添加剂的单独结合，这些专有添加剂高度稳定，不腐蚀设备的金属部分，并对环境或废机油回收系统不构成威胁。精钢盾在热条件下，通过与金属接触面发生化学反应来形成一个复杂的表面保护贴膜。精钢盾的特点是“电负性”，这使得精钢盾可以粘附在金属的表面上。在这个过程中，金属表面变得平滑，从而提高了金属表面的延展性。赋予金属相对面极压的属性，使其增加流体的强度，甚至大大降低磨损。最终取得摩擦磨损的有效消除和整个润滑区域的显著冷却，从而产生更高的能源节约、减少金属碎片和酸油。这些结果可以在精钢盾先进边界膜技术使用前后的油质分析和油液铁谱中得到大量的证明。

材料安全数据

- 燃点: 226°C
- 无害的
- 不易燃的
- 合成碳氢化合物

物理数据

- 沸点: 238°C
- 蒸发率: <0.01
- 比重: 1.07
- 不溶于水
- 蒸气压: <1@25°C
- 中等至暗黄色

推荐使用

- 旋转型气动工具
- 活塞式气动工具
- 冲击扳手
- 空气棘轮扳手
- 自动打磨机
- 气钻
- 空气切割工具
- 气动砂轮机
- 空气订书机
- 空气订书机
- 自动注油器
- 手动工具

用法说明

按照工具制造商的说明书来使用。需要根据工具的使用频率和是否长期使用，来决定每天润滑一次还是数次。不含挥发物或溶剂。含有合成的碳氢化合物和先进的化学添加剂技术。无毒、环保。

产品编号	产品代码	产品型号	装箱数	箱子尺寸	箱子体积	箱子重量	TW/H
TS-1	8-94630-00141-0	神盾工具精油金属处理剂-1盎司 (29.5毫升)	24	6.875"wx 4.625"bx 3.875"l	.07	2.5	48/12
TS-4	8-94630-00143-4	神盾工具精油金属处理剂-4盎司 (118毫升)	12	5.5"wx 7.125"bx 6.5"l	.16	3.8	40/8
TS-16	8-94630-00144-1	神盾工具精油金属处理剂-16盎司 (473毫升)	12	10.75"wx 8.0"bx 10.75"l	.54	15.0	20/5
TS-128	8-94630-00145-8	神盾工具精油金属处理剂-1加仑 (3.785升)	4	9.25"wx 14.5"bx 12.5"l	.97	34.0	12/4
TS-5G	8-94630-00128-7	神盾工具精油金属处理剂-5加仑 (18.93升)	1			42	
TS-15G	8-94630-00127-4	神盾工具精油金属处理剂-15加仑 (56.78升)	1			125	
TS-55G	8-94630-00128-1	神盾工具精油金属处理剂-55加仑 (208升)	1			455	



29. STRIKE-SHIELD 強效萬能油

STRIKE SHIELD™



神盾零摩擦 終極抗磨護航





神盾ABF科技 莫立抗壓抗磨新準則

神盾強效萬能精油STRIKE SHIELD是現世紀最優秀而且萬能的潤滑劑、清潔劑、除濕劑、除塵劑、防銹劑和防護劑。在任何最嚴苛和惡劣的工作環境特別是潮濕的如海洋作業，它的活性分子都可以全時全天候24小時無間斷提供最有效的保護而且保證不失效。

噴灑於任何因潮或者生銹以至失效的機械系統的故障部位，它能快速有效地滲入即使是銹蝕最嚴重的零件上鬆動銹皮以釋放運轉機械。在潮濕的電子電路系統中它快速徹底清除水份，一層活性分子油膜會在凝結的水氣下面形成並且把水份驅向表面使之乾燥以恢復電路正常。神盾強效萬能精油的配方包括了最好的防銹、防氧化劑，能徹底終止銹蝕。在印刷電路板上輕輕噴上一層，用刷子刷去多餘的，它能去除腐蝕與腐蝕機，它那層極薄的離子能量保護油膜能夠有效防止後續腐蝕。

屬性

- 高速滲透、潤滑和釋放被銹蝕而黏結的工業和海洋業的機械設備
- 對點火裝置和電路系統能夠高效去水，起動因受潮以至失效的動力系統
- 邊際膜保護層能夠在最嚴苛的環境包括海洋工業提供多功性各類機械設備高效快速的保護
- 在任何環境下確保金屬部件不會氧化和生銹
- 在潮濕的電子電路系統中快速徹底地清除水份
- 對點火裝置和電路系統能夠高效去水，起動因受潮以至失效的動力系統
- 保護電路板於全時全天候不生銹和受鹹水潮
- 強力除污去塵
- 氣味清新

www.steelshieldtech.com

STRIKE SHIELD™



STRIKE SHIELD

Steel Shield Technologies

(SST)神盾是一套非常先進的摩擦學原理，也可以理解為四維甚至多維的未被人們能夠完全掌控的一股能量-「ABF邊界膜保護層」是一股隱形的離子能量。當兩面金屬移動接觸，配方的活性成份會高速封閉和平整金屬表面，在適當溫度下啟動電化學反應機制，金屬表面呈陽極性，接觸面相鄰生成了一股複雜的正電離子層，Farady's Law同極相斥，一個理想的「零摩擦」離子能量帶(磁浮態相類似)環境狀態呈現，改寫了近世紀人們認為只能是空想的極致潤滑理念的可行性。神盾ABF邊界膜保護層通過RCB程序的長鏈齒代煙偶合其他獨有優化劑產生，高度穩定，不腐蝕任何金屬部分，不構成環境或廢機油回收污染。SST神盾的電氣屬性是“負極性”，可以更緊密粘附在金屬的表面上，金屬表面變得平滑，延展性強化賦予金屬相對面極壓的屬性，強化的液體膜，取得了「近乎零」的摩擦成果，整個潤滑區域的溫度顯著下降和有效降低磨損，大大降低油泥和酸性物質的構成，也同時減低部件相互的運動負載，得到更高的能源節約。這些結果可以在SST神盾產品使用前後後的油質分析和油含鐵量的頻譜中得到大量的證明。

材料安全數據

- 燃點: 61°C PMCC (Pensky-Martens closed-cup測試)
- 無公害
- 可燃
- 合成碳氫化合物
- 皮膚接觸: 用肥皂與水徹底清洗
- 小心放置, 遠離兒童
- 儲存室溫不得高於61°C

物理數據

- 沸點: 186-201°C
- 蒸發率: <0.01
- 比重: 1.02
- 不溶于水
- 氯化壓力: <1@25°C
- 中至深琥珀色

推薦使用

- 釋放黏結的螺母和螺絲
- 釋放黏結的鎖
- 既咬作響的鈹鏈
- 滑動部件如門窗、活頁裝置等
- 齒輪裝置、凸輪
- 輸送帶裝置、聯動裝置
- 電機裝置
- 傳動及機械交換系統
- 任何類型的汽車、航運、農業、工業、商業等的設備需要有效而且快速的滲透、潤滑、防腐防銹、去漏除塵、長效全能保護劑

用法說明:

噴灑或者塗抹於有需要的部件或者部位上，有需要時抹去多餘的，對於銹蝕嚴重的，需要重複使用。

注意：儲存溫度不得高於61°C，不能在通電電路上噴灑，遠離火源，含石油廢膠。

產品編號	產品代碼	產品型號	裝瓶數	箱子尺寸	箱子體積	箱子重量	T/W/H
STKS-4WS	8-94630-00104-5	神盾強效萬能精油-4盎司(毫升)	12	6.625"x5.0"x7.0"	4.0	.13	56/7
STKS-16WS	8-94630-00105-2	神盾強效萬能精油-16盎司(473毫升)	12	10.125"x7.625"x10.0"	14.0	.44	20/5
STKS-12B	8-94630-00109-0	神盾強效萬能精油-1加侖(3.785升)	4	15.625"x8.125"x11.875"	33.5	.17	12/4
STKS-5G		神盾強效萬能精油-5加侖(18.93升)	1		42.5		
STKS-15G		神盾強效萬能精油-15加侖(56.78升)	1		126.5		
STKS-55G		神盾強效萬能精油-55加侖(208升)	1		461.0		



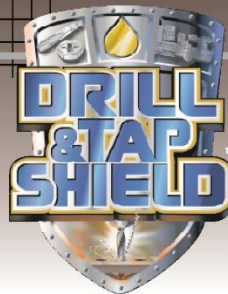
Not Just Oil...
IT'S TECHNOLOGY™





30. DRILL & TAP 金屬加工油

防止金属间
磨损的极致保护



通过先进的边界膜技术制定抗磨与抗极压的标准

神盾钻头&螺丝攻精油是金属加工工具最强大的保护盾。其利用最先进的边界膜技术来保护切削工具，使切削工具免受高温、摩擦和磨损。它的工作原理是运用多金属加工技术，添加了离子粘剂，金属膜强度减速机及润滑增强剂。加上独特的极压添加剂和先进的边界膜技术，神盾钻头&螺丝攻精油已被证明超越市场上所有其他的产物。



属性

- 延长切削工具、钻孔工具、螺丝攻和机床的寿命
- 降低工具头和金属表面温度
- 提高切削速度
- 提高切削进给率
- 提高生产率
- 使生产更顺畅、金属表面更精细
- 每次切削能萃取更多的金属

DRILL & TAP SHIELD™

DRILL & TAP SHIELD



精钢盾科技的运行机制是基于一能改善润滑性能和承载能力的先进的摩擦学方法。相应地，它能在改善表面特性的同时，在任何添加精钢盾产品的设备的金属接触面上创造一个稳定的化学边界膜。先进边界膜的形成过程是通过长链卤代烃和其他专有添加剂的单独结合，这些专有添加剂高度稳定，不腐蚀设备的金属部分，并对环境或废机油回收系统不构成威胁。精钢盾在热条件下，通过与金属接触面发生化学反应来形成一个复杂的表面保护贴膜。精钢盾的特点是“电负性”，这使得精钢盾可以粘附在金属的表面上。在这个过程中，金属表面变得平滑，从而提高了金属表面的延展性。赋予金属相对面极压的属性，使其增加流体膜的强度，甚至大大降低磨损。最终取得摩擦磨损的有效消除和整个润滑区域的显著冷却，从而产生更高的能源节约、减少金属碎片和酸油。这些结果可以在精钢盾先进边界膜技术使用前后的油质分析和油液铁谱中得到大量的证明。

材料安全数据

- 燃点: 226°C
- 无害的
- 不易燃的
- 合成碳氢化合物

物理数据

- 沸点: 238°C
- 蒸发率: <0.01
- 比重: 1.07
- 不溶于水
- 蒸气压: <1@25°C
- 中等至暗黄色

推荐使用

- 直接切割润滑油/冷却液
- 提高不溶性油的性能的添加剂
- 钻头
- 螺丝攻
- 机床
- 切削
- 铣削
- 计算机数控
- 拉削
- 锐磨
- 湿磨

用法说明

神盾钻头&螺丝攻精油可以直接替换目前所使用的切削液和100%未稀释的润滑油或冷却液。注意：神盾钻头&螺丝攻精油与水乙二醇化合物或磷酸三苯酚叔丁基油是不兼容的。

不含挥发物或溶剂。含有合成的碳氢化合物和先进的化学添加剂技术。无毒、环保。

产品编号	产品代码	产品型号	装箱数	箱子尺寸	箱子体积	箱子重量	TI/MI
DTS-1	8-94630-00171-7	神盾钻头&螺丝攻精油金属处理剂-1盎司(29.5毫升)	24	6.875"wx 4.625"hx 3.875"l	.07	2.5	48/12
DTS-4	8-94630-00172-4	神盾钻头&螺丝攻精油金属处理剂-4盎司(118毫升)	12	5.5"wx 7.125"hx 7.0"l	.16	3.8	40/8
DTS-16	8-94630-00173-1	神盾钻头&螺丝攻精油金属处理剂-16盎司(473毫升)	12	10.75"wx 8.0"hx 10.75"l	.54	15.0	20/5
DTS-128	8-94630-00174-8	神盾钻头&螺丝攻精油金属处理剂-1加仑(3.785升)	4	9.25"wx 14.5"hx 12.5"l	.97	34.0	12/4
DTS-5G	8-94630-00175-5	神盾钻头&螺丝攻精油金属处理剂-5加仑(18.93升)	1			42	
DTS-15G	8-94630-00176-2	神盾钻头&螺丝攻精油金属处理剂-15加仑(56.78升)	1			125	
DTS-55G	8-94630-00177-9	神盾钻头&螺丝攻精油金属处理剂-55加仑(206升)	1			455	



DRILL & TAP SHIELD™

31. SwRI 美國西南研究院油脂比拚測試報告

STEEL SHIELD LARGELY OUTPERFORMS REPUTED GREASES MADE BY

Petroleum Products Research Department
 Test Summary Report
 Steel Shield Technologies
 Purchase Order # 114
 October 25, 2013



STEEL SHIELD LITHI

SwRI	Sample ID:	20003	20004
Code:	Sample Identification:	Litho Shield	Yamamoto EP grease
D1264	Water Washout of Grease		
	Avg. Grease Washed Out	Wt % 1.32	0.66
	Test Temp.	*C 79	79
	Dry Temp.	*C 77	77
D1742	Oil Separation from Lubricating Grease	mass % 2.04	* Note
D2265	Dropping Point	*C 258	307
	Oven Temp.	*C 288	316
D2266	Wear Characteristics (Four-Ball Method)		
	Scar Diameter	kgf 0.75	0.47
D2596	Four-Ball Extreme Pressure Properties		
	Corrected Load	kgf 851.1	501.68
	Load-Wear Index	kgf 92.27	66.73
	Weld Point	kgf 800	315
	LNSL	kgf 80	63

* No oil separation occurred for grease sample "Yamamoto EP grease", therefore, sample is considered "outside the scope of the method".



Petroleum Products Research Department
 Test Summary Report
 Steel Shield Technologies
 Purchase Order # 114
 October 25, 2013



SwRI	Sample ID:	20005
Code:	Sample Identification:	Atlas Chisel lube
D1264	Water Washout of Grease	
	Avg. Grease Washed Out	Wt % 1.11
	Test Temp.	*C 79
	Dry Temp.	*C 77
D1742	Oil Separation from Lubricating Grease	mass % ** Note
D2265	Dropping Point	*C 302
	Oven Temp.	*C 316
D2266	Wear Characteristics (Four-Ball Method)	
	Scar Diameter	kgf 0.71
D2596	Four-Ball Extreme Pressure Properties	
	Corrected Load	kgf 302.79
	Load-Wear Index	kgf 41.23
	Weld Point	kgf 315
	LNSL	kgf 50

** No oil separation occurred for grease sample "Atlas Chisel Lube", therefore, sample is outside the scope of the method".

Steel Shield Lithi Shield

TEST ITEMS	Four-Ball Extreme Pressure Properties	Steel Shield Lithi Shield	Yamamoto EP Grease	Atlas Chisel Lube
Loading Ability	Corrected Load	851.1	501.68	302.79
Anti-Wear Ability	Load Wear Index	92.27	66.73	41.23
High Temperature Loading	Weld Point	800	315	315
High Pressure	LNSL	80	63	50

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Industry and the public through innovation.



Steel Shield Technologies



32. SwRI 美國西南研究院車油比拼測試報告

ASTM D2783 FOUR-BALL METHOD TEST REPORTS - ORIGINAL DOCUMENTS

SOUTHWEST RESEARCH INSTITUTE®

6220 CULEBRA ROAD 78238-5166 • P.O. DRAWER 28510 78228-0510 • SAN ANTONIO, TEXAS, USA • (210) 584-5111 • WWW.SWRI.ORG

July 1, 2013

George Fennell
Steel Shield Technologies
3351 Industrial Blvd
Bethel Park, PA 15102-2543
Phone: 1-800-390-1535
Email: gcfennell@steelshieldtech.com

Re: Fuel Analysis Results
Purchase Order# 103
SwRI WO# 68584


Dear Mr. Fennell:

Analyses have been completed on your samples in accordance with the tests requested. Four samples were received in good condition on June 17, 2013 in good condition. The samples were received in one gallon plastic containers. Testing took place by June 29, 2013. Test results and sample identifications are shown in the table attached.

Analyses were performed according to the listed ASTM test procedures with no modifications or deviations. Precision should be consistent with those stated in the ASTM test procedures. Sample aliquots were taken in accordance with the various ASTM test procedures. The analyses above pertain only to the sample received by Southwest Research Institute and represent only that sampling lot. This report shall not be reproduced except in full without the express written permission of Southwest Research Institute.

If there are any questions concerning these analyses, or if you need any additional testing on the samples, please contact me at (210) 522-2071. We appreciate the opportunity to be of service to your firm.

Sincerely,



Robert R. Legg
Fuels Laboratory Manager
Fuels & Lubricants Research Department
Office of Automotive Engineering

OMRRAGA13 68584
Page 2 of 2



Benefiting government, industry and the public through innovative science and technology



Test Summary Report
Steel Shield Technologies
Purchase Order # 103
July 1, 2013

	LabNum		18049	18050	18051	18052
	Sample Code		Mobil 1	Shell Rotella	Steel Shield 5W30 gasoline	Steel Shield 15W-40 diesel
	LabNum		18049	18050	18051	18052
D2783	CorrLoad	Kgf	53	55	228	139
	WearIdx	Kgf	42	42	47	40
	WeldPt	kg	200	200	315	250
	LNSL	kg	100	100	80	80

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OMRRAGA13 68584
Page 2 of 2



33. SwRI 美國西南研究院氣機及壓縮機油比拼測試報告

STEEL SHIELD GAS ENGINE OILS AND COMPRESSOR OILS ASTM D2782 TIMKEN

THE TEST REPORT FROM SOUTHWEST RESEARCH INSTITUTE – Timken ASTM D2782

Test Report
2014 / 11 / 20
Steel Shield Technologies

Report 2

SwRI Lab No.	24564	23728	25252	23727	25250	25251
ASTM D2782 Measurement of Extreme-Pressure Properties of Lubricating Fluids (Timken Method)	SST Gas Engine Oil SAE 40 Ashless Without EPA	Steel Shield Gas Engine Oil GECAT SAE40 Low Ash With EPA	Steel Shield EPA	Steel Shield Compressor Oil ISO #100 / 150	Mobil Pegasus 805 SAE 40 Gas Engine Oil	Mobil Pegasus 801 SAE 40 Gas Engine Oil
Volume (Gallon)	1	1	1	1	1	1
OK Load (lbs)	40	40	75	55	9	9
Score Load (lbs)	45	45	80	60	12	12
Temperature (°C)	38	38	38	38	38	38



Products of the same class



SOUTHWEST RESEARCH INSTITUTE website:
www.swri.org

Results

Steel Shield Wins :

Steel Shield outperforms Mobil in OK LOAD parameter by 444 % and in SCORE LOAD by 375 %.

The SwRI Timken Test report clearly testified Steel Shield products are FAR Superior than Mobil products of the same classes



33. SwRI 美國西南研究院氣機及壓縮機油比拼測試報告

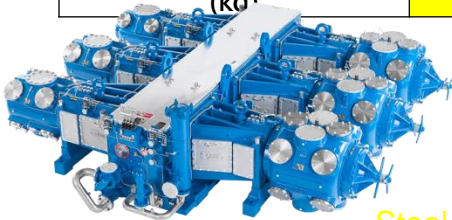
STEEL SHIELD GAS ENGINE OILS AND COMPRESSOR OILS ASTM D2783 FOUR BALL TEST

THE TEST REPORT FROM SOUTHWEST RESEARCH INSTITUTE – 4-Ball ASTM D2783

Test Report
2014 / 11 / 20
Steel Shield Technologies

Report 2

SwRI Lab No.	24564	23728	25252	23727	25250	25251
ASTM D2783 Measurement of Extreme-Pressure Properties of Lubricating Fluids (4-Ball Method)	SST Gas Engine Oil SAE 40 Ashless Without EPA	Steel Shield Gas Engine Oil GECAT SAE 40 Low Ash With EPA	Steel Shield EPA	Steel Shield Compressor Oil ISO #100 / 150	Mobil Pegasus 805 SAE 40 Gas Engine Oil	Mobil Pegasus 801 SAE 40 Gas Engine Oil
Volume (Gallon)	1	1	1	1	1	1
Corrected Load (kgf)	70	109	NA	1	136	74
Load Wear Index (kgf)	35	46	NA	48	34	35
Weld Point (kg)	200	250	>800	250	200	200
Last Non Seizure Load (kg)	80	100	80	100	63	80



Products of the same class



Results

Steel Shield Wins :

Steel Shield outperforms Mobil in the Weld Point (oil strength in resistant to EP) parameter by 129 % and in the Last Non Seizure Load (wear performance in respect to load) by 159 %.

***Remarks: 4-ball test is normally for heavy weight oil and grease.

The SwRI 4-Balls Test testified Steel Shield products are superior than Mobil products of the same classes

SOUTHWEST RESEARCH INSTITUTE website:
www.swri.org



33. SwRI 美國西南研究院氣機及壓縮機油比拼測試報告

STEEL SHIELD GAS ENGINE OILS AND COMPRESSOR OILS ASTM D2782 Timken, Report 2

D2783 4-Ball & D6352 GC – Original Documents

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November 20th, 2014

George Fennell
Steel Shield Technologies
3351 Industrial Blvd
Bethel Park, PA 15102-2543
Phone: 1-800-390-1535
Email:

Re: Fuel Analysis Results
SwRI WO# 71111
PO# 120

Dear Mr. Fennell:

Analyses have been completed on your samples in accordance with the tests requested. Twelve samples were received in good condition between July 21st, 2014 and October 7th 2014 in good condition. Eleven samples were received in one gallon plastic containers and one sample was received in a one quart plastic bottle. Sample Identification and testing requesting is shown in the table on the following page. Testing took place between October 13th and November 11th 2014. Test results and sample identifications are shown in the table attached.

Analyses were performed according to the listed ASTM test procedures with no modifications or deviations. Precision should be consistent with those stated in the ASTM test procedures. Sample aliquots were taken in accordance with the various ASTM test procedures. The analyses above pertain only to the sample received by Southwest Research Institute and represent only that sampling lot. This report shall not be reproduced except in full without the express written permission of Southwest Research Institute.

If there are any questions concerning these analyses, or if you need any additional testing on the samples, please contact me at (210) 522-2071. We appreciate the opportunity to be of service to your firm.

Sincerely,



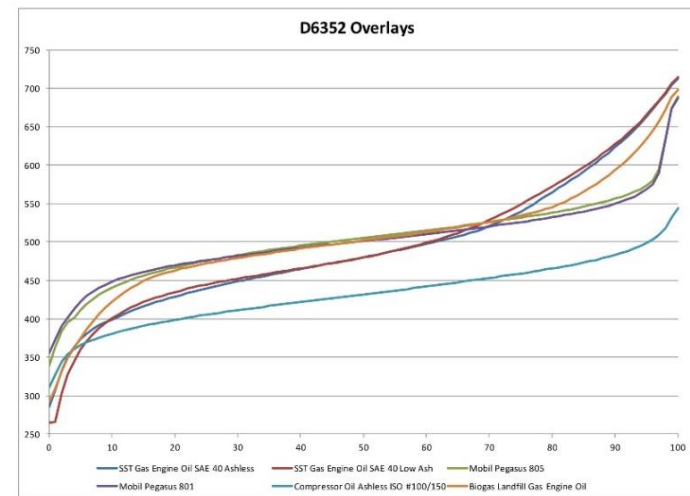
Robert R. Legg
Fuels Laboratory Manager
Fuels & Lubricants Research Department
Office of Automotive Engineering



Benefiting government, industry and the public through innovative science and technology



Test Summary Report
November 20th, 2014
Steel Shield Technologies



In comparing the curves and D6352 chromatography, it is observed that samples SST Gas Engine oil SAE 40 Ashless and SST Gas Engine Oil SAE 40 Low Ash are very similar with the exception that the Low Ash oil appears to have an added component that is somewhat lighter than the rest of the oil. The bulk of this oil is lighter than the others; however it does have a larger proportion of heavier compounds. In general it has broader array of hydrocarbons than the other oils. The Mobil Pegasus 801 and Mobil Pegasus 805 are essentially the same oil with the same boiling distribution. They both are a narrower cut reducing the amount of lighter and heavier hydrocarbon species. The Biogas Landfill Gas Engine Oil has a distribution in between the SST Gas Engine Oils and the Mobil Pegasus Oils. The Ashless Compressor oil is a significantly lighter oil than the rest of the samples.

ORRLAKE4 Steel Shield (a).docx
Page 16 of 16



33. SwRI 美國西南研究院氣機及壓縮機油比拚測試報告

STEEL SHIELD GAS ENGINE OILS AND COMPRESSOR OILS ASTM D2782 Timken, Report 2

D2783 4-Ball & D6352 GC – Original Documents



Test Summary Report
November 20th, 2014
Steel Shield Technologies

SwRI Lab# 24564

SST Gas Engine Oil
SAE 40 Ashless
1 Gallon Plastic Jug

ASTM D2782 Measurement of Extreme-Pressure Properties of Lubricating Fluids (Timken Method)
Okay Load, lbs 40
Score Load, lbs 45
Temperature, °C 38

ASTM D2783 Measurement of Extreme-Pressure Properties of Lubricating Fluids (4-Ball Method)
Corrected Load, kgf 70
Load Wear Index, kgf 35
Weld Point, kg 200
Last Non Seizure Load, kg 80

ASTM D6352 Boiling Range Distribution of Petroleum Distillates from 174 to 700 °C by GC

IBP	285.3	20%	428.8	40%	464.8	60%	497.5	80%	564.9
1%	306.2	21%	431.1	41%	466.4	61%	499.2	81%	570.0
2%	333.2	22%	433.3	42%	467.9	62%	501.1	82%	575.1
3%	351.6	23%	435.4	43%	469.4	63%	503.0	83%	580.6
4%	364.1	24%	437.2	44%	470.9	64%	505.0	84%	586.2
5%	373.5	25%	439.2	45%	472.4	65%	507.1	85%	591.8
6%	380.5	26%	441.2	46%	474.0	66%	509.3	86%	597.5
7%	386.7	27%	443.1	47%	475.6	67%	511.8	87%	603.5
8%	391.9	28%	444.9	48%	477.1	68%	514.5	88%	609.8
9%	396.0	29%	446.7	49%	478.6	69%	517.3	89%	616.3
10%	399.1	30%	448.6	50%	480.2	70%	520.4	90%	623.3
11%	403.0	31%	450.5	51%	481.8	71%	523.7	91%	630.3
12%	406.6	32%	452.1	52%	483.4	72%	527.3	92%	637.6
13%	410.2	33%	453.7	53%	485.1	73%	531.2	93%	645.6
14%	413.5	34%	455.2	54%	486.8	74%	535.3	94%	653.8
15%	416.5	35%	456.9	55%	488.5	75%	539.6	95%	662.7
16%	419.1	36%	458.5	56%	490.2	76%	544.2	96%	672.9
17%	421.8	37%	460.1	57%	492.0	77%	549.2	97%	682.4
18%	424.3	38%	461.7	58%	493.8	78%	554.5	98%	692.4
19%	426.5	39%	463.2	59%	495.7	79%	559.7	99%	704.3
								FBP	713.1

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Test Summary Report
November 20th, 2014
Steel Shield Technologies

SwRI Lab# 23728

Biogas Landfill Gas Engine Oil
SAE 40 (Gecat SAE 40 Low Ash)
1 Gallon Plastic Jug

ASTM D2782 Measurement of Extreme-Pressure Properties of Lubricating Fluids (Timken Method)
Okay Load, lbs 40
Score Load, lbs 45
Temperature, °C 38

ASTM D2783 Measurement of Extreme-Pressure Properties of Lubricating Fluids (4-Ball Method)
Corrected Load, kgf 109
Load Wear Index, kgf 46
Weld Point, kg 250
Last Non Seizure Load, kg 100

ASTM D6352 Boiling Range Distribution of Petroleum Distillates from 174 to 700 °C by GC

IBP	291.8	20%	462.9	40%	491.3	60%	512.8	80%	545.5
1%	308.9	21%	465.1	41%	492.4	61%	514.0	81%	548.7
2%	331.8	22%	467.0	42%	493.5	62%	515.2	82%	552.3
3%	349.1	23%	468.8	43%	494.7	63%	516.5	83%	556.3
4%	362.7	24%	470.4	44%	495.8	64%	517.8	84%	560.5
5%	374.7	25%	472.0	45%	496.9	65%	519.1	85%	565.1
6%	385.9	26%	473.6	46%	497.9	66%	520.4	86%	569.9
7%	396.5	27%	475.1	47%	498.9	67%	521.8	87%	575.0
8%	406.2	28%	476.5	48%	499.9	68%	523.1	88%	580.8
9%	415.0	29%	477.8	49%	500.9	69%	524.5	89%	586.8
10%	422.4	30%	479.1	50%	502.0	70%	526.0	90%	593.2
11%	429.0	31%	480.4	51%	503.0	71%	527.5	91%	599.9
12%	434.9	32%	481.6	52%	504.0	72%	529.0	92%	607.5
13%	440.2	33%	482.9	53%	505.1	73%	530.7	93%	615.4
14%	444.7	34%	484.2	54%	506.1	74%	532.4	94%	624.3
15%	449.2	35%	485.4	55%	507.2	75%	534.2	95%	633.7
16%	452.5	36%	486.6	56%	508.2	76%	536.1	96%	644.5
17%	455.4	37%	487.8	57%	509.3	77%	538.1	97%	656.4
18%	458.3	38%	489.0	58%	510.5	78%	540.4	98%	671.9
19%	460.7	39%	490.1	59%	511.7	79%	542.8	99%	688.2
								FBP	697.9

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33. SwRI 美國西南研究院氣機及壓縮機油比拼測試報告

STEEL SHIELD GAS ENGINE OILS AND COMPRESSOR OILS ASTM D2782 Timken, D2783 4-Ball & D6352 GC – Original Documents

Report 2



Test Summary Report
November 20th, 2014
Steel Shield Technologies

SwRI Lab# 25252

SST-EPA

1 Gallon Plastic Jug

ASTM D2782 Measurement of Extreme-Pressure Properties of Lubricating Fluids (Timken Method)

Okay Load, lbs	75
Score Load, lbs	80
Temperature, °C	38

ASTM D2783 Measurement of Extreme-Pressure Properties of Lubricating Fluids (4-Ball Method)

Corrected Load, kgf	
Load Wear Index, kgf	
Weld Point, kg	>800
Last Non Seizure Load, kg	80

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Test Summary Report
November 20th, 2014
Steel Shield Technologies

SwRI Lab# 23727

Compressor Oil Ashless

ISO #100/150

1 Gallon Plastic Jug

ASTM D2782 Measurement of Extreme-Pressure Properties of Lubricating Fluids (Timken Method)

Okay Load, lbs	55
Score Load, lbs	60
Temperature, °C	38

ASTM D2783 Measurement of Extreme-Pressure Properties of Lubricating Fluids (4-Ball Method)

Corrected Load, kgf	133
Load Wear Index, kgf	48
Weld Point, kg	250
Last Non Seizure Load, kg	100

ASTM D6352 Boiling Range Distribution of Petroleum Distillates from 174 to 700 °C by GC

IBP	310.0	20%	398.6	40%	421.7	60%	442.0	80%	465.5
1%	326.9	21%	400.0	41%	422.7	61%	443.1	81%	466.9
2%	344.5	22%	401.4	42%	423.6	62%	444.1	82%	468.4
3%	354.0	23%	402.7	43%	424.6	63%	445.3	83%	469.9
4%	360.6	24%	404.0	44%	425.6	64%	446.4	84%	471.5
5%	365.4	25%	405.2	45%	426.6	65%	447.5	85%	473.2
6%	369.2	26%	406.4	46%	427.6	66%	448.7	86%	474.9
7%	372.5	27%	407.7	47%	428.6	67%	449.8	87%	476.7
8%	375.5	28%	408.9	48%	429.6	68%	450.9	88%	478.7
9%	378.2	29%	410.1	49%	430.6	69%	452.0	89%	480.7
10%	380.6	30%	411.2	50%	431.6	70%	453.1	90%	483.0
11%	382.8	31%	412.4	51%	432.6	71%	454.2	91%	485.6
12%	384.9	32%	413.4	52%	433.6	72%	455.4	92%	488.3
13%	386.9	33%	414.5	53%	434.6	73%	456.6	93%	491.4
14%	388.9	34%	415.5	54%	435.7	74%	457.8	94%	494.9
15%	390.7	35%	416.6	55%	436.7	75%	459.0	95%	498.8
16%	392.4	36%	417.7	56%	437.7	76%	460.2	96%	503.3
17%	394.0	37%	418.7	57%	438.8	77%	461.5	97%	509.1
18%	395.6	38%	419.7	58%	439.9	78%	462.8	98%	517.6
19%	397.1	39%	420.7	59%	440.9	79%	464.1	99%	531.3
								FBP	544.3

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33. SwRI 美國西南研究院氣機及壓縮機油比拚測試報告

STEEL SHIELD GAS ENGINE OILS AND COMPRESSOR OILS ASTM D2782 Timken, D2783 4-Ball & D6352 GC – Original Documents

Report 2



Test Summary Report
November 20th, 2014
Steel Shield Technologies

SwRI Lab# 25250

Mobil Pegasus
805
1 Gallon Plastic Jug

ASTM D2782 Measurement of Extreme-Pressure Properties of Lubricating Fluids (Timken Method)

Okay Load, lbs	9
Score Load, lbs	12
Temperature, °C	38

ASTM D2783 Measurement of Extreme-Pressure Properties of Lubricating Fluids (4-Ball Method)

Corrected Load, kgf	136
Load Wear Index, kgf	34
Weld Point, kg	200
Last Non Seizure Load, kg	63

ASTM D6352 Boiling Range Distribution of Petroleum Distillates from 174 to 700 °C by GC

IBP	338.1	20%	467.0	40%	495.3	60%	515.0	80%	538.2
1%	363.1	21%	468.9	41%	496.4	61%	516.1	81%	539.6
2%	384.2	22%	470.6	42%	497.4	62%	517.1	82%	541.0
3%	396.2	23%	472.3	43%	498.3	63%	518.1	83%	542.6
4%	401.9	24%	474.0	44%	499.3	64%	519.2	84%	544.2
5%	410.8	25%	475.6	45%	500.3	65%	520.3	85%	545.9
6%	419.2	26%	477.1	46%	501.3	66%	521.4	86%	547.7
7%	426.0	27%	478.6	47%	502.2	67%	522.5	87%	549.7
8%	431.6	28%	480.0	48%	503.2	68%	523.6	88%	551.8
9%	436.1	29%	481.5	49%	504.1	69%	524.7	89%	554.1
10%	440.5	30%	482.9	50%	505.1	70%	525.8	90%	556.5
11%	444.1	31%	484.2	51%	506.0	71%	526.9	91%	558.9
12%	447.6	32%	485.6	52%	506.9	72%	528.1	92%	561.8
13%	450.8	33%	486.9	53%	507.9	73%	529.3	93%	565.0
14%	453.5	34%	488.2	54%	508.9	74%	530.5	94%	568.7
15%	456.1	35%	489.4	55%	509.9	75%	531.7	95%	573.2
16%	458.5	36%	490.6	56%	510.9	76%	533.0	96%	580.2
17%	460.8	37%	491.8	57%	511.9	77%	534.2	97%	594.4
18%	463.0	38%	493.0	58%	512.9	78%	535.5	98%	634.2
19%	465.1	39%	494.1	59%	514.0	79%	536.8	99%	674.3
								FBP	689.6

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Test Summary Report
November 20th, 2014
Steel Shield Technologies

SwRI Lab# 25251

Mobil Pegasus
801
1 Gallon Plastic Jug

ASTM D2782 Measurement of Extreme-Pressure Properties of Lubricating Fluids (Timken Method)

Okay Load, lbs	9
Score Load, lbs	12
Temperature, °C	38

ASTM D2783 Measurement of Extreme-Pressure Properties of Lubricating Fluids (4-Ball Method)

Corrected Load, kgf	74
Load Wear Index, kgf	35
Weld Point, kg	200
Last Non Seizure Load, kg	80

ASTM D6352 Boiling Range Distribution of Petroleum Distillates from 174 to 700 °C by GC

IBP	355.5	20%	469.5	40%	492.3	60%	510.0	80%	532.2
1%	372.7	21%	470.9	41%	493.3	61%	511.0	81%	533.6
2%	391.1	22%	472.3	42%	494.3	62%	511.9	82%	535.1
3%	401.9	23%	473.7	43%	495.2	63%	512.9	83%	536.5
4%	413.3	24%	475.0	44%	496.2	64%	513.9	84%	538.1
5%	422.1	25%	476.2	45%	497.0	65%	514.9	85%	539.7
6%	429.3	26%	477.4	46%	497.8	66%	516.0	86%	541.4
7%	435.4	27%	478.5	47%	498.7	67%	517.0	87%	543.2
8%	440.6	28%	479.7	48%	499.5	68%	518.0	88%	545.2
9%	444.6	29%	480.8	49%	500.4	69%	519.1	89%	547.4
10%	448.3	30%	481.9	50%	501.2	70%	520.2	90%	549.9
11%	451.6	31%	483.1	51%	502.1	71%	521.3	91%	552.7
12%	454.2	32%	484.2	52%	503.0	72%	522.4	92%	555.8
13%	456.7	33%	485.2	53%	503.8	73%	523.5	93%	559.1
14%	459.0	34%	486.3	54%	504.7	74%	524.7	94%	563.1
15%	461.0	35%	487.3	55%	505.5	75%	525.9	95%	568.2
16%	462.9	36%	488.4	56%	506.4	76%	527.1	96%	575.2
17%	464.7	37%	489.4	57%	507.2	77%	528.3	97%	590.1
18%	466.5	38%	490.3	58%	508.1	78%	529.6	98%	633.5
		39%	491.3	59%	509.0	79%	530.9	99%	673.0
								FBP	687.9

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34. 全球產品責任保險 及 無索償證明



		CERTIFICATE OF LIABILITY INSURANCE		DATE (MM/DD/YYYY) 5/14/2014		
THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.						
IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).						
PRODUCER Best Insurance Agency 340 S. Main St., P.O. Box 670 Butler PA 16003-0670		CONTACT NAME: Jamie McDonald PHONE: (724) 283-5670 FAX: (724) 283-1160 E-MAIL: jamie@bestinsurancebutler.com ADDRESS:				
INSURED Steel Shield Technologies Inc 3351 Industrial Blvd / Bethel Park PA 15102		INSURER(S) AFFORDING COVERAGE INSURER A: Cincinnati Insurance Companies INSURER B: INSURER C: INSURER D: INSURER E: INSURER F:				
COVERAGES CERTIFICATE NUMBER: coi 2014 - 15 REVISION NUMBER:		THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.				
INSR LINE	TYPE OF INSURANCE GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PER <input type="checkbox"/> LOC AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> RETENTION WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	ADDL BARR INSR. (REV)	POLICY NUMBER BNP04242014 BNP04242014	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Per occurrence) \$ 100,000 MED EXP (Per person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 COBAMED SINGLE LIMIT (Per accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ WC STATUT. LTD. BENEFIT \$ LTD. BENEFIT \$ EL EACH ACCIDENT \$ EL DISEASE - EA EMPLOYEE \$ EL DISEASE - POLICY LIMIT \$
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 181, Additional Remarks Schedule, if more space is required)						
CERTIFICATE HOLDER Steel Shield Technologies Inc. 3351 Industrial Blvd. Bethel Park, PA 15102		CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 				
ACORD 25 (2010/05) INS025 (2010/05).01						

Best Insurance Agency
 340 S. Main St., P.O. Box 670
 Butler, PA 16003-0670
 (724)283-5670 (724)283-1160 Fax
 Email: Ray@Bestinsurancebutler.com

September 18, 2013

Steel Shield Technologies (Asia Pacific) Limited
 22nd Floor, W. Business Centre
 4 Kam Hong Street
 North Point, Hong Kong

To Whom It May Concern:

Please be advised that Steel Shield Technologies Inc, manufacturer of specialty lubricants and greases, located in Bethel Park, Pennsylvania, USA, has had no claims, claim related incidents or notices of loss under any General Liability policy issued by our office. We have provided them with General Liability coverage continuously since April 24, 2008

If you have any questions or need further information please feel free to contact me. I will be happy to be of further assistance.

Sincerely,

 Raymond A. Rosenbauer
 Vice President



35. 美軍 及 美國西門子 感謝函

Mark W. Pushnick
President & CEO
Steel Shield Technologies, Inc
3351 Industrial Blvd
Bethel Park, PA 15102-2543

07 May 2008

Mark,

I wanted to take time to express my sincere thanks to you and Steel Shield Technologies, Inc. for your support while I was deployed overseas in support of the Global War on Terrorism.

Your product, Weapon Shield, was truly a "life saver"

In my first combat tour to Afghanistan in late 2003, not knowing much about your product, I began to use it for my personal weapon and my crew-served vehicle weapon as a just another oil that I received in my care packages from home. I soon became educated on how this product was head and shoulders above the rest.

In the grueling conditions of southwestern Afghanistan, our weapons were subject to severe heat, dust, and even potential rust due to the humidity in the area. Compared to the other oils that we received, Weapon Shield was the only product that stood up to the battlefield environment and did not cause the bolt of the weapons to become "gummy" or "sticky". Weapon Shield actually acted as a "shield" and as a dust repellent.

When I found out that I was deploying back to Iraq in 2007, one of my first calls was to my father to get my hands on Weapon Shield. While conducting pre-deployment training at Fort Bragg, I introduced my soldiers to this product. When it comes to selling to a tough audience, young enlisted men are some of the toughest to buy into a new idea. Within days, all of the men were carrying this product and were even hoarding bottles within their packs.

When we got to Iraq, Weapon Shield bottles became a part of the combat packing list as assigned by my Detachment Sergeant. Weapon Shield was now the Standing Operating Procedure, a small bottle on each man and tube of grease in each truck.

Weapons Shield brought us through over 25 fire fights with great success when other soldier's from different unit's weapons failed. On one occasion on patrol with another unit, their .50 cal machine gun jammed. One of my gunners tossed a bottle of Weapon Shield to them. They broke down their weapon, applied the shield and quickly got back into the firefight. In our mission after action review, my soldiers quickly commented on how their weapons would only be treated with this product.

The bottom line is this... In two combat tours to both Afghanistan and Iraq, weapons treated with Weapon Shield, NEVER jammed. That saved lives. As a unit commander, my most important job was to complete this mission while bringing all of my soldiers home. Weapon Shield was a great contributor to my unit accomplishing that mission. In combat, the only option is perfect. If you are not, you can die. Weapon Shield was PERFECT every time. Victory!

Craig A. Hickerson
MAJOR, Infantry
USAR



December 10, 2008

Mark W. Pushnick
President & CEO
Steel Shield Technologies, Inc.
3351 Industrial Blvd.

Mark,

I would like to take this opportunity to thank you for introducing us to Steel Shield Technologies line of lubricants and Metal Treatment products. The performance of your products has been overwhelmingly superior to any other lubricants or metal treatments we have used in the past.

We are currently using the Lithi-Shield grease in our shop and it has proven to work very well in our high temperature applications. We have experienced absolutely no down time due to bearing failure on our high temp furnace since we began using the Lithi-Shield grease. In the past all bearings were replaced on a quarterly basis causing a significant amount of downtime and material cost. We also use the grease in our automated welding equipment and anywhere else frequent greasing is needed. It has out performed our previously used grease in every application and we use it as often as possible.

Because of the performance of the Lithi-Shield grease we started using Steel Shield EPA in all of our metalworking equipment. Since its introduction to our machines we have not experienced a significant breakdown of any kind and it has left them running smoother and quieter than ever. The Steel Shield Drill and Tap fluid is also used our shop and has significantly decreased our tooling costs and become a favorite of most of our machinists. The Spray Shield product is used by our maintenance department and it is proving to be superior to anything used here in the past. We are very happy with the cost and performance of Steel Shield Technologies products and I highly recommend them. I am continually looking for ways to reduce costs and downtime Steel Shield products have been a great contributor to our success.

Bob Cavill
Maintenance Department Supervisor
Siemens VAI Services, LLC
2901 Industrial Blvd.
Bethel Park, PA 15102
412-851-6700



35. 中國富豪汽車 感謝函

中沃汽车有限公司



Original

致：美国离子能源有限公司

香港荃湾德士古道 188-202 号

立泰工业中心二期 11 楼 K 室

感谢 贵司提供神盾润滑油予我司作汽车马力输出测试。于是次测试当中，我司将神盾润滑油使用于 4 辆沃尔沃 Volvo 汽车 [型号：沃尔沃 S80]，并将 4 辆汽车分别放上汽车马力输出测试机 (Dyno-Shaft On-Vehicle Dynamometer) 进行测试。测试结果显示，4 辆进行测试的沃尔沃 Volvo 汽车在使用神盾润滑油之后，所输出的马力比起未有使用之前增加了 8%-12%。我司非常乐意向客户推荐神盾润滑油。

顺祝

商祺



电话:0571-86852031



Volvo Car Corporation

8th November, 2013

English

To: Steel Shield Technologies
Unit K, 11/F, Leader Industrial Centre, Phase 2,
188-202 Texaco Road, Tsuen Wan, N.T., H.K.

Dear Ms. Eva Lam,

We would like to express our gratitude to Steel Shield Technologies for providing Steel Shield lubricants for our vehicle horse power tests. In this test, our company applied Steel Shield lubricants to 4 Volvo cars (model: Volvo S80). We mounted the 4 cars on the horse power testing machines (Dyno-Shaft On-Vehicle Dynamometer) and conducted the tests individually.

The results indicate that, **the 4 Volvo cars which had Steel Shield lubricants applied got horse power boosted by 8% - 12% compared with the same 4 cars without Steel Shield lubricants.** Our company will be pleased to recommend Steel Shield to our customers.

Volvo Car Corporation
R/M 1613, 2th Phase, Tongce Square,
3688 Jiangnan Road, Binjiang, Hangzhou, China
www.sinoworldcars.com

This letter states that the horsepower of Volvo vehicles increased by 8% to 12% after using Steel Shield products.



36. 顯赫客戶



US ARMY



SIEMENS



UNION PACIFIC RAILROAD
(NEW YORK STOCK EXCHANGE
NO.: UNP)



DONGJIANG
ENVIRONMENT
(HONG KONG STOCK EXCHANGE
NO.: 895)

37. 60th MACAU GRAND PRIX SPONSORSHIP

賽車及活動剪影

60th Macau Grand Prix (2013)



Hong Kong Motorcycle Festival



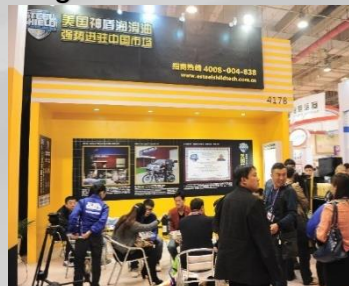
3 hours motorcycle race in Zhuhai



Lubricant Exhibition in Guangzhou



Qingdao Exhibition



Chongqing Exhibition



38. MACAU GRAND PRIX AND EVENTS 格蘭披士賽車剪影

61st Macau Grand Prix (2014) 61屆澳門格蘭披士大賽



Exhibition & Events 展覽活動



39. Contact US 聯絡我們

Steel Shield Technologies
美國離子能源

Not All Oil is Same !

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IT'S TECHNOLOGY™**



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100% Imported From USA