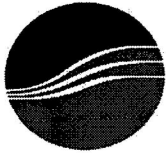


| PUMP DATA SHEET | | | | WORK No. | |
|----------------------|--------------------|---|---|-------------------------------|---|
| | | | | 2HM1600 | |
| 1 | CUSTOMER | EMERSON PROCESS MANAGEMENT ASIA PACIFIC | | DATE 2012/10/25 | |
| 2 | USER | LUKOIL OIL COMPANY | | AUTH. BY | CHKD BY |
| 3 | EQUIP' T NAME | | | T. Shimayoshi | M, M |
| 4 | ORDER No. | JP83014183 | | REV. DATE | LINE No. |
| 5 | JOB No. | | | | |
| 6 | ITEM (PUMP) No. | | | | |
| 7 | PUMP NAME | | | | |
| 8 | QUANTITY | 2 | | | |
| OPERATING CONDITIONS | | | CONSTRUCTION | | |
| 10 | LIQUID | CRUDE OIL | | PUMP TYPE | MP-SP |
| 11 | SLURRY | NONE | | MAGNET TYPE | N40N |
| 12 | | (wt%) | (mm) | BEARING | RADIAL : - THRUST : - |
| 13 | PH | | | AUXILIARY PIPING | - |
| 14 | PUMPING TEMP. | 40~65 (°C) | | NOZZLE | SIZE RATING FACING |
| 15 | SPEC. GRAVITY | @P. T. | 0.884~0.903 | SUCTION | 1" ASME-600 RF |
| 16 | VAPOUR PRESS. | @P. T. | | DISCHARGE | 3/4" ASME-600 RF |
| 17 | VISCOSITY | @P. T. | 16.96~40.07 (CP) | IMPELLER DIA. DES. | φ168 (mm) |
| 18 | CAPACITY | 4 (m3/hr) | 66.7 (l/min) | ROTATION VIEWED FROM CPLG END | <input checked="" type="checkbox"/> CW <input type="checkbox"/> CCW |
| 19 | DISCH. PRESS. | | | PERFORMANCE | |
| 20 | SUCT. PRESS. | | | SPEED | 2950 (rpm) |
| 21 | DIFF. PRESS. | 0.310 (MPa) | | NPSH REQ' D (WATER) | 1.5 (m) |
| 22 | TOTAL HEAD | 35 (m) | | DES. EFF. | 16 (%) |
| 23 | NPSH AVAIL. | | | DES. BHP | 2.2 (kW) |
| 24 | CASE DES. TEMP. | 85 (°C) | PRESS. 8.5 (MPaG) | MIN. CONTINUOUS FLOW | (m3/hr) (l/min) |
| 25 | INSTALLATION | <input type="checkbox"/> INDOOR | <input checked="" type="checkbox"/> OUTDOOR | HYDROSTATIC TEST PRESS. | 12.8 (MPaG) |
| MOTOR | | | MATERIALS | | |
| 27 | TYPE | Exd II BT4, IP65 FORM | | CASING | SCS14 |
| 28 | | | | IMPELLER | SCS14 |
| 29 | SPEED | 3000 (SYN) (rpm) | | SLEEVE (HF) | SiC (-) |
| 30 | VOLTS/CYCLE | 400 (V) | 50 (Hz) | SHAFT (HF) | SUS316 (-) |
| 31 | RATED OUTPUT/POLES | 3 (kW) | 2 (P) | GASKET | V7590T |
| 32 | FRAME | 100L | MFR. LEROY SOMER | O RING | - |
| PUMP PAINTING | | | | | |
| 34 | COLOR BODY: | 2.5PB4/10 | | COVER: | - |
| 35 | REMARKS | | | | |
| 36 | | | | | |
| 37 | | | | | |
| 38 | | | | | |
| 39 | | | | | |
| 40 | | | | | |

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SANWA PUMP

PERFORMANCE CURVE (EXPECTED)

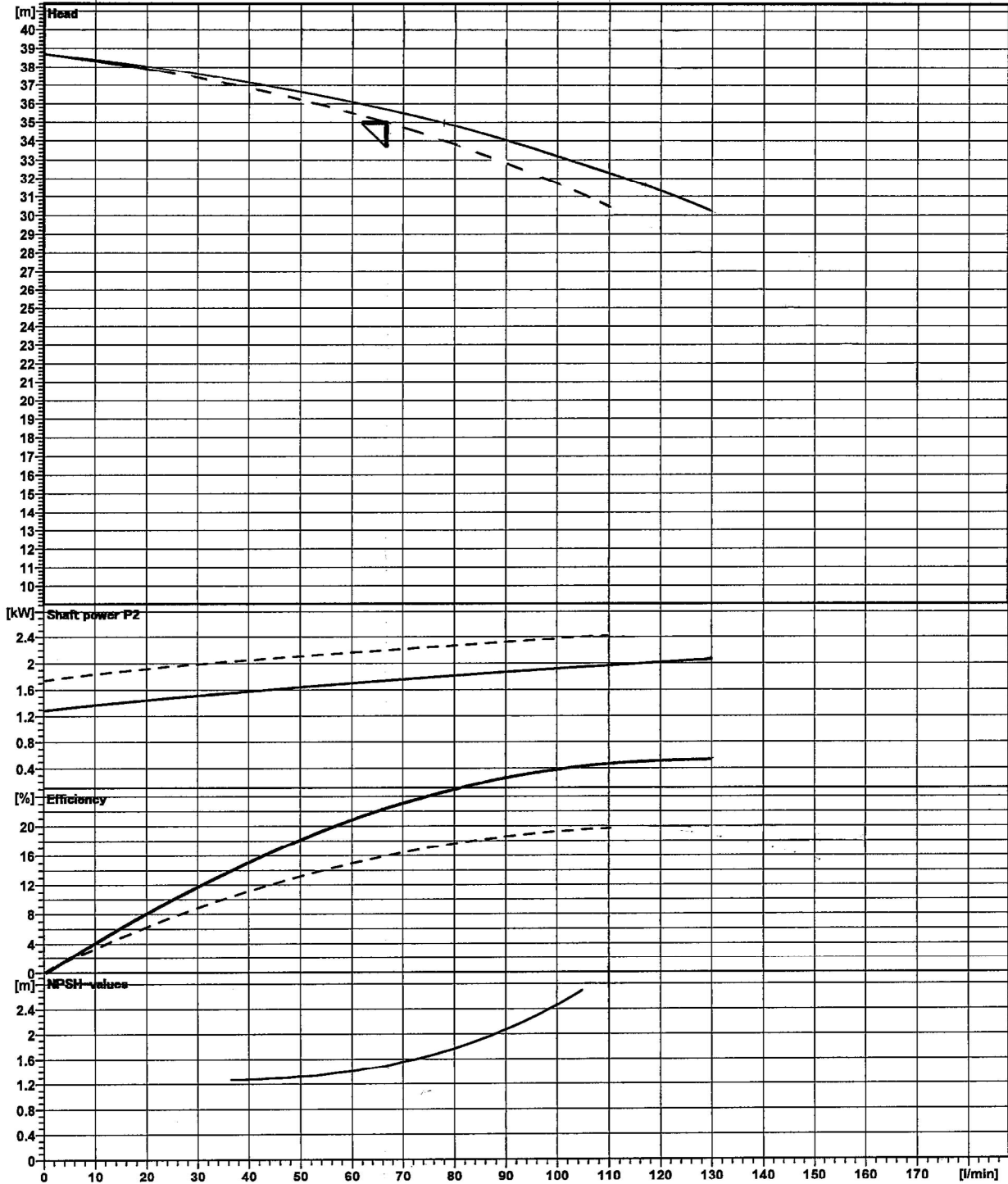
MP-SP 222

Work No. 2HM1600

Item No. _____

TOTAL HEAD 35 m CAPACITY 4 m³/h (66.7 l/min)
 POWER 3.7 kW
 VIS. 40.07 CP S.G. 0.903

SPEED 2950 rpm
 NPSHav/req / 1.5 m



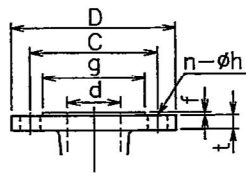
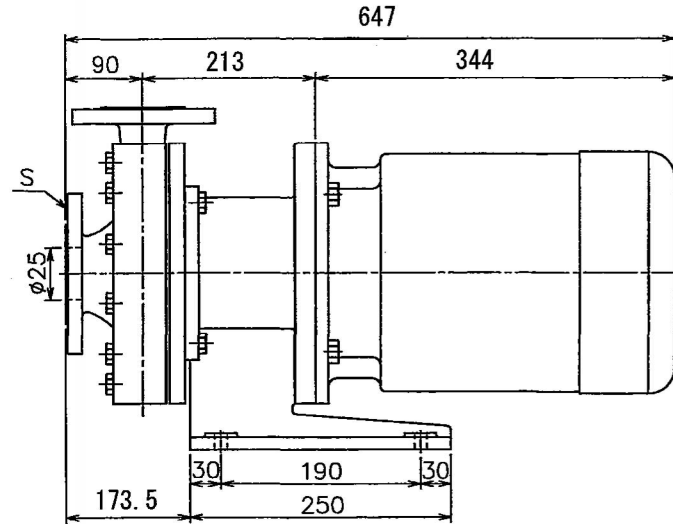
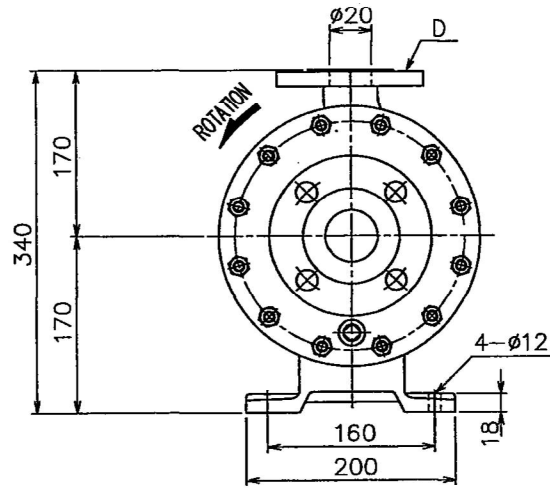
NOTE
 CONTINUOUS LINE : S.G.=1 , VIS.=1mPas (WATER)
 DOTTED LINE : Specified Liquid

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DRAWING No. MP-121600-C APPROVED T.O CHKD M.M DWG K.Nishimura DATE 2012. 10. 23

FD-04-0A3

ALL DIMENSIONS ARE IN mm



FLANGE DIMENSIONS (mm)

| | SIZE | FRAME | D | t | f | g | C | n | h |
|-----------|------|------------|-----|------|---|------|------|---|----|
| SUCTION | 1" | ASME.600RF | 125 | 17.5 | 7 | 50.8 | 88.9 | 4 | 19 |
| DISCHARGE | 3/4" | ASME.600RF | 115 | 15.9 | 7 | 42.9 | 82.6 | 4 | 19 |

(NO SERRATION)

MASS

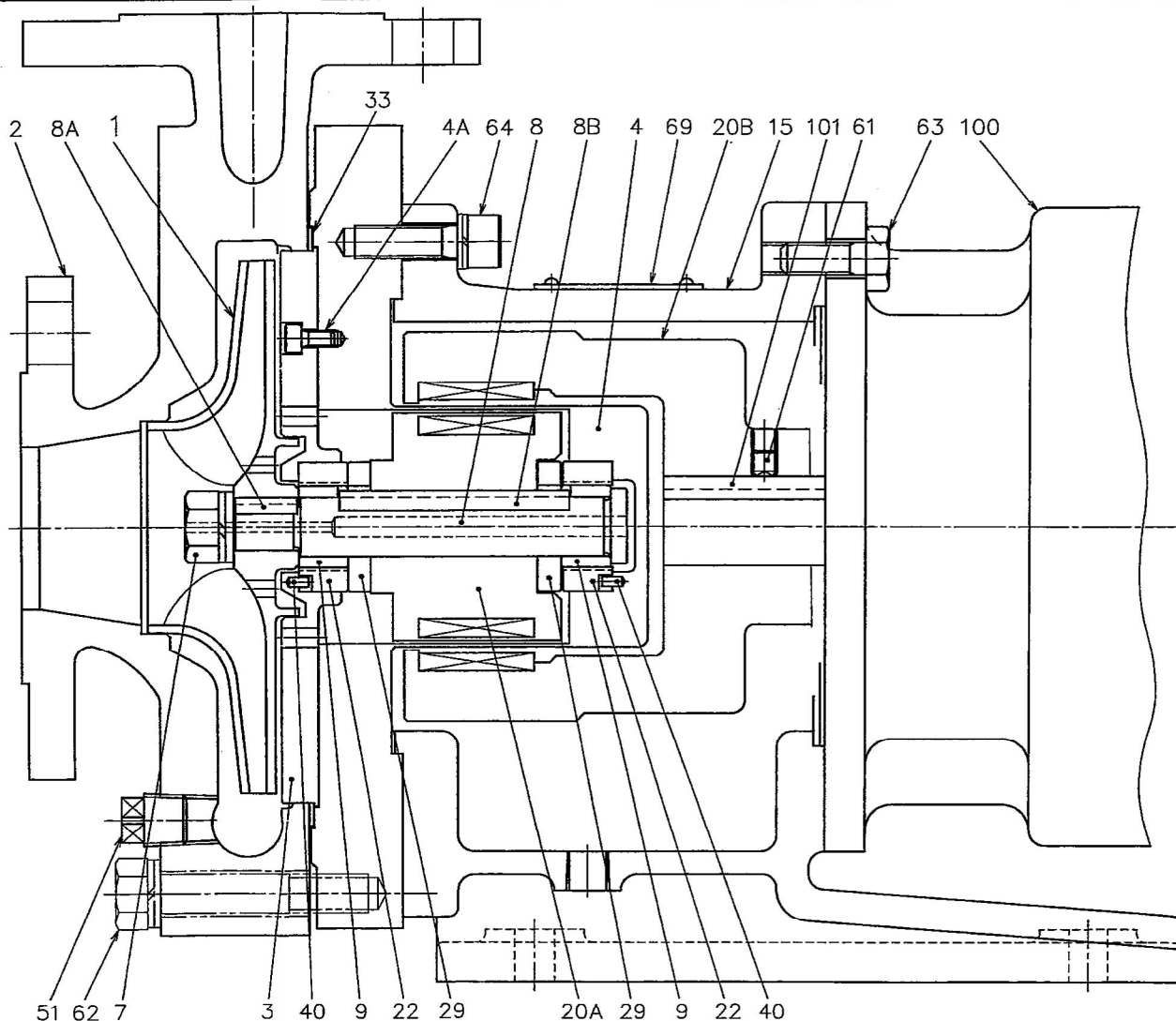
| | |
|-------|-------|
| PUMP | 40 kg |
| MOTOR | 38 kg |
| TOTAL | 78 kg |

| | | |
|----------------------------|--------------------------|----------------|
| REV. | PUMP TYPE | WORK No. |
| | MP-SP 222 | 2HM1600 |
| | MAGNETIC DRIVE | TEST PRESS. |
| | CENTRIFUGAL PUMP | QTY. |
| | OUTLINE DIMENSIONS | WT-12.8 MPcG |
| | 3rd ANGLE PROJECTION | DWG.No. |
| APP'D <i>T. Shimoyoshi</i> | CH. <i>K. Nishimura</i> | REV. 組 |
| CHIEF <i>o</i> | DWN. <i>K. Nishimura</i> | MP-121600-X |
| CH'D <i>M.M</i> | DATE '12.10.25 | SCALE \times |
| SANWA HYDROTECH CORP. | | |

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FD-04-0A3

| | | | | |
|------|-------------------------------|------------|---------------------|---------------|
| 101 | COUPLING KEY | S45C | 1 | |
| 100 | MOTOR | — | 1 | |
| 69 | NAME PLATE | SUS304 | 1 | |
| 64 | HEXAGON SOCKET HEAD CAP SCREW | SUS304 | 4 ^S | WITH WASHER |
| 63 | HEXAGON HEAD BOLT | SUS304 | 4 ^S | |
| 62 | HEXAGON HEAD BOLT | SNB7 | 12 ^S | WITH WASHER |
| 61 | SET SCREW | SCM435 | 1 | |
| 51 | PLUG | SUS316 | 1 | R3/8 |
| 40 | PIN | SUS316 | 2 | φ3x6L |
| 33 | SHEET GASKET | V7590T | 1 | φ170x184x3.2t |
| 29 | THRUST RING | SiC | 2 | |
| 22 | BUSHING | SiC | 2 | |
| | MAGNET | RARE EARTH | 1 ^S | |
| 20B | MAGNET COUPLING(M) | FCD400 | 1 | N40N-SP |
| | MAGNET | RARE EARTH | 1 ^S | |
| 20A | MAGNET COUPLING(P) | SUS316 | 1 | N40N-SP |
| 15 | FRAME ADAPTER | FC200 | 1 | |
| 9 | SLEEVE | SiC-D | 2 | |
| 8B | COUPLING KEY | SUS316 | 1 | |
| 8A | IMPELLER KEY | SUS316 | 1 | |
| 8 | SHAFT | SUS316 | 1 | |
| 7 | IMPELLER NUT | SUS316 | 1 ^S | WITH WASHER |
| 4A | HEXAGON SOCKET HEAD CAP SCREW | SUS316 | 4 | |
| 4 | REAR CASING | SUS316 | 1 | CAN; HAS-C |
| 3 | CASING COVER | SUS316 | 1 | |
| 2 | CASING | SCS14 | 1 | |
| 1 | IMPELLER | SCS14 | 1 | |
| MARK | NAME OF PART | MAT'L | USE SPARE No. REQ'D | REMARK. |



| | |
|-------|---------------|
| REV. | |
| APP'D | T. Shimoyachi |
| CHIEF | M.M. |
| CH'D | M.M. |
| CH. | K. Nishimura |
| DWN. | K. Nishimura |
| DATE | '12.10.25 |

TYPE MP-SP
MAGNET DRIVE
CENTRIFUGAL PUMP
SECTIONAL DRAWING

3rd ANGLE PROJECTION SCALE ∞

SANWA HYDROTECH CORP.

WORK No. 2HM1600

QTY. 2

DWG.No. MP-121600-0

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