

Vickers®

Service Data

Vane Pumps



Vane Type Double Pump

2520VQ Series - 20 Design



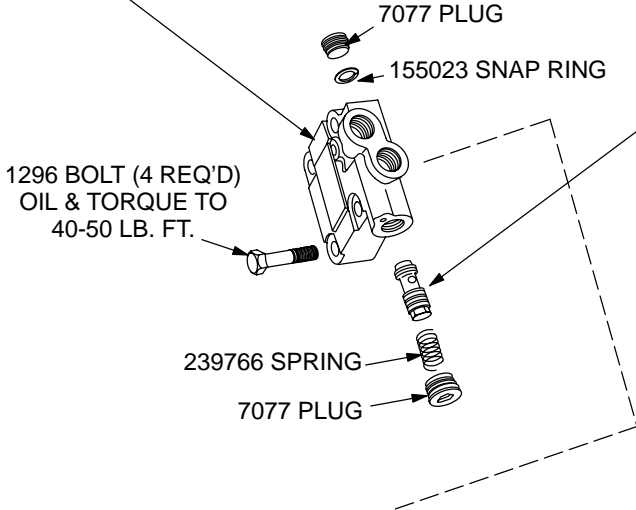
Revised 10-01-89

I-3166-S

| MODEL | COVER TYPE | COVER S/A |
|---------------------|-----------------|-----------|
| 252*VQ*A/F*-****20 | 4-BOLT | 250824 |
| 252*VQ*C/E*-****20 | STRAIGHT THREAD | 252504 |
| 252*VQ*C/E*-**2*20 | FLOW CONTROL | 257560 |
| 252*VQ*C/E*-**4*20 | | 257561 |
| 252*VQ*C/E*-**6*20 | | 257562 |
| 252*VQ*C/E*-**7*20 | | 257563 |
| 252*VQ*C/E*-**8*20 | | 257564 |
| 252*VQ*C/E*-**10*20 | | 257565 |
| 252*VQ*C/E*-**12*20 | | 257999 |

| MODEL | RELIEF VALVE SETTING (PSI) | RELIEF VALVE S/A |
|------------------|----------------------------|------------------|
| 252*VQ***-***C20 | 750 | 232794 |
| 252*VQ***-***D20 | 1000 | 232795 |
| 252*VQ***-***E20 | 1250 | 232796 |
| 252*VQ***-***F20 | 1500 | 232797 |
| 252*VQ***-***G20 | 1750 | 232798 |
| 252*VQ***-***H20 | 2000 | 232799 |
| 252*VQ***-***J20 | 2250 | 233019 |
| 252*VQ***-***K20 | 2500 | 233020 |

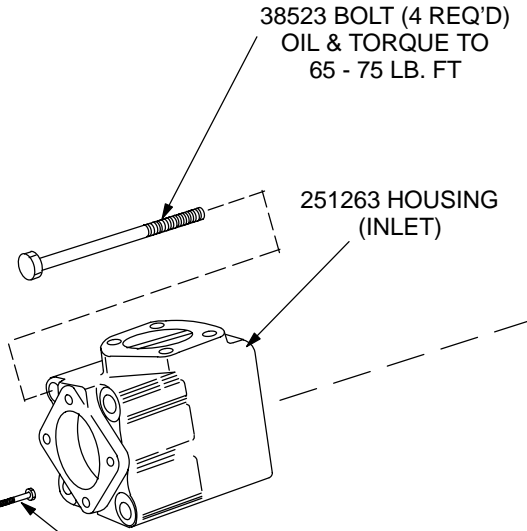
**20VQ MODELS ONLY NOT FOR 12 & 14 RING SIZES.



***NOTE**
INSTALL INTO COVER BEFORE INSTALLATION OF CARTRIDGE KIT.

TORQUE TO 30 ± 5 LB. IN.

NOTE
BRONZE FACES MUST BE INSTALLED TOWARD THE ROTOR.



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| MODEL | ▲ BACK-UP RING | ▲ "O" RING | ▲ SEAL RING | ▲ "O" RING | OUTLET SUPPORT PLATE | ▲ SEAL PACK (4 REQ'D) | ■ FLEX-SIDE PLATE KIT | ROTOR | VANE KIT (10 VANES & 10 INSERTS) | RING | INLET SUPPORT PLATE | PIN (2 REQ'D) | SCREW (2 REQ'D) | CART. KIT | F3 CART. KIT | | | | | | |
|---|----------------|------------|-------------|------------|----------------------|-----------------------|-----------------------|--------|----------------------------------|--------|---------------------|---------------|-----------------|-----------|--------------|--------|--------|--------|--------|--------|--------|
| THESE PARTS ARE INCLUDED IN CARTRIDGE KIT | | | | | | | | | | | | | | | | | | | | | |
| 2*20*** 5** | 588506 | 154026 | 419672 | 154090 | 419500 | 433762 S/A | 923955 | 402690 | 922741 | 333624 | 419502 | 422206 | 416426 | 417053 | 421588 | | | | | | |
| 2*20*** 8** | | | | | | | | | | 333625 | | | | | | 417054 | 421589 | | | | |
| 2*20*** 9** | | | | | | | | | | 374799 | | | | | | 423096 | 423097 | | | | |
| 2*20*** 11* | | | | | | | | | | 333626 | | | | | | 416427 | 421590 | | | | |
| 2*20*** 12* | | | | | | | | 403539 | 922743 | 353901 | 419501 | | | | | 416428 | 421591 | | | | |
| 2*20*** 14* | | | | | | | | | | 353902 | | | | | | 416429 | | 421592 | | | |
| 2*21*** 5**◇ | | | | | | | | 428698 | 922741 | 333624 | 419502 | | | | | 428700 | 428707 | | | | |
| 2*21*** 8**◇ | | | | | | | | | | 333625 | | | | | | 428701 | | 428708 | | | |
| 2*21*** 9**◇ | | | | | | | | | | 374799 | | | | | | 428702 | | 428709 | | | |
| 2*21*** 11**◇ | | | | | | | | | | 333626 | | | | | | 428703 | | 428710 | | | |
| 2*21*** 12**◇ | | | | | | | | | | 428699 | | | | | | 922743 | | 353901 | 419501 | 428704 | 428711 |
| 2*21*** 14*◇ | | | | | | | | | | | | | | | | | | 353902 | | 428705 | |

◇ VQ REPLACEMENT CARTRIDGES FOR THE 2521 SERIES.

● ASSEMBLE SEAL FLUSH TO PILOT FACE WITH SPRING FACING INWARD AS SHOWN.

○ ASSEMBLE SEAL WITH SPRING TOWARD BEARING.

USE THE REPLACEMENT PARTS SHOWN ON THIS DRAWING TO SERVICE A 2520V-10/12 UNIT. CARTRIDGES MUST BE REPLACED AS A KIT. INDIVIDUAL PARTS OF A CARTRIDGE ARE NOT INTERCHANGEABLE.

□ WIPE O.D. OF SEAL WITH OIL BEFORE PRESSING INTO BODY. APPLY GREASE TO SEAL I.D. BEFORE INSTALLATION OF SHAFT.

⊖ INCLUDED IN FOOT BRACKET KIT FB-B-10

| SHAFT NO. | TYPE | SECONDARY SHAFT SEAL | 2*20 SHAFT | 2*21 SHAFT | KEY |
|-----------|------------|----------------------|------------|------------|-----|
| 1 | STR. KEYED | — | 254964 | 252737 | 955 |
| 11 | SPLINE | — | 254848 | 252736 | — |
| 123 | SPLINE | 429283 | 413433 | — | — |

△●□ SECONDARY SHAFT SEAL (SEE TABLE)

▲□○ 394976 PRIMARY SHAFT SEAL

| MODEL | LOCK RING | RETAINING RING | BRG. |
|-------------------|-----------|----------------|--------|
| 252*VQ*****_***20 | 191400 | 120128 | 1705 |
| 252*VQ*****_***20 | | | 232750 |

NOTE
BRONZE FACES MUST BE INSTALLED TOWARD THE ROTOR.

TORQUE TO 45 ± 5 LB. IN.

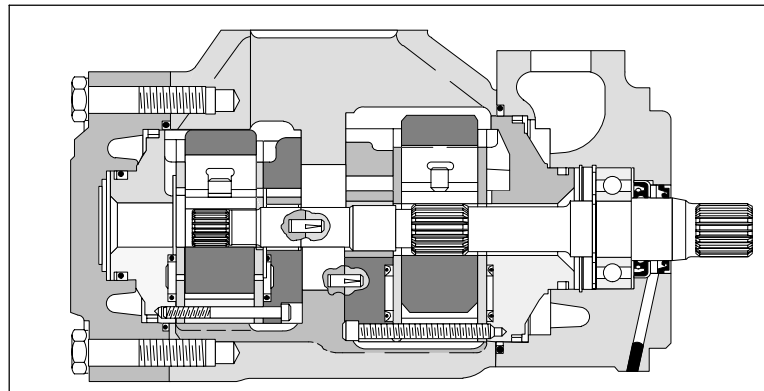
| MODEL | BODY | TYPE |
|------------------|--------|---------|
| 2*2*VQ*A/E*_**20 | 942353 | 4-BOLT |
| 2*2*VQ*C/F*_**20 | 942378 | STR THD |

| STD/F3 SEAL KITS | | | |
|--------------------|---------------------|-----------------|-----------------|
| △ STD SINGLE SHAFT | △▲ STD DOUBLE-SHAFT | F3 SINGLE SHAFT | F3 DOUBLE SHAFT |
| 920040 | 920041 | 920042 | 920043 |

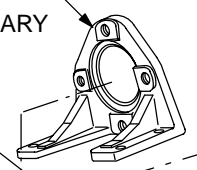
| MODEL | SCREW (2 REQ'D) | PIN (2 REQ'D) | INLET SUPPORT PLATE | ▲ SEAL PACK (4 REQ'D) | ■ FLEX-SIDE PLATE KIT | ROTOR | VANE KIT (10 VANES & 10 INSERTS) | RING | OUTLET SUPPORT PLATE | “O” RING | *▲ SEAL RING | “O” RING | ▲ BACK-UP RING | CART. KIT | F3 CART. KIT |
|---|-----------------|---------------|---------------------|-----------------------|-----------------------|--------|----------------------------------|--------|----------------------|----------|--------------|----------|----------------|-----------|--------------|
| THESE PARTS ARE INCLUDED IN CARTRIDGE KIT | | | | | | | | | | | | | | | |
| 2*2*VQ12 | 413834 | 422207 | 430805 S/A | 433764 S/A | 923956 | 270597 | 922710 | 326984 | 419079 | 154095 | 416973 | 154078 | 588507 | 416439 | 421570 |
| 2*2*VQ14 | | | | | | | | 326985 | | | | | | 416440 | 421571 |
| 2*2*VQ17 | | | | | | | | 326986 | | | | | | 416441 | 421572 |
| 2*2*VQ19 | | | | | | | | 326987 | | | | | | 421232 | 421573 |
| 2*2*VQ21 | | | | | | | | 326988 | | | | | | 416442 | 421574 |

*INSTALL SEAL RING IN BODY OR COVER, THEN INSTALL CARTRIDGE KIT

■ NOTE: FLEX SIDEPLATE KITS INCLUDE (4) F3 SEAL PACKS.

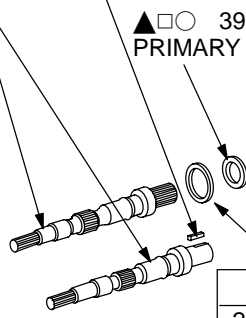


199491 BRACKET



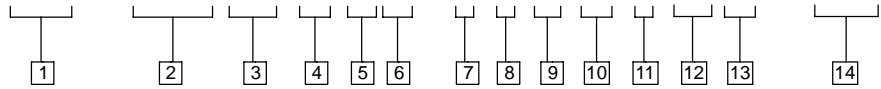
199740 SCREW (2 REQ'D)

190362 WASHER



Model Code

(F3) - 2520 VQ ** A ** - * 1 ** ** * 20 (*) - 28 *



1 Viton seals
(Omit if not required.)

2 Series designation

2520VQ, Double Pump
2620VQ, Double Pump

3 Intra-vane pump

4 USgpm capacity
(Shaft end pump)

SAE rating 1200 rpm–100 psi (7 bar)

| | |
|---------------|---------------|
| 12 – 12 USgpm | 19 – 19 USgpm |
| 14 – 14 USgpm | 21 – 21 USgpm |
| 17 – 17 USgpm | |

5 SAE port connections

Models Without Flow Control

| Code | Inlet | Outlet #1 | Outlet #2 |
|------|------------------|------------------|------------------|
| A – | 4 bolt flange | 4 bolt flange | 4 bolt flange |
| C – | 4 bolt flange | SAE St. Thd. | SAE St. Thd. |
| E – | 4 bolt flange | 4 bolt flange | SAE St. Thd. |
| F – | 4 bolt flange | 4 bolt flange | SAE St. Thd. |

Models With Flow Control

| Code | Inlet | Outlet #1 | Outlet #2 | Tank Return |
|------|------------------|------------------|-----------------|-----------------|
| C – | 4 bolt flange | SAE St. Thd. | SAE St. Thd. | SAE St. Thd. |
| E – | 4 bolt flange | 4 bolt flange | SAE St. Thd. | SAE St. Thd. |

6 USgpm capacity
(Cover end pump)

SAE rating 1200 rpm–100 psi (7 bar)

| | |
|-------------|---------------|
| 5 – 5 USgpm | 11 – 11 USgpm |
| 8 – 8 USgpm | 12 – 12 USgpm |
| 9 – 9 USgpm | 14 – 14 USgpm |

7 Mounting

F – Foot (Single shaft seal)
S – Flange (Double shaft seal)
Omitted – Flange, single shaft seal assembly

8 Shaft type

1– Straight with square key standard
11– Splined
123– Splined

9 Outlet port positions

(Viewed from cover end of pump)

With # 1 outlet opposite inlet:
AA – # 2 outlet – 135° CCW from inlet
AB – # 2 outlet – 45° CCW from inlet
AC – # 2 outlet – 45° CW from inlet
AD – # 2 outlet – 135° CW from inlet

With # 1 outlet 90° CCW from inlet:
BA – # 2 outlet – 135° CCW from inlet
BB – # 2 outlet – 45° CCW from inlet
BC – # 2 outlet – 45° CW from inlet
BD – # 2 outlet – 135° CW from inlet

9 Outlet port positions continued
(Viewed from cover end of pump)

With # 1 outlet inline with inlet:

CA – # 2 outlet – 135° CCW from inlet
CB – # 2 outlet – 45° CCW from inlet
CC – # 2 outlet – 45° CW from inlet
CD – # 2 outlet – 135° CW from inlet

With # 1 outlet 90° CW from inlet:

DA – # 2 outlet – 135° CCW from inlet
DB – # 2 outlet – 45° CCW from inlet
DC – # 2 outlet – 45° CW from inlet
DD – # 2 outlet – 135° CW from inlet

10 Controlled flow rate

(Models with flow control)

| | |
|-------------|---------------|
| 2 – 2 USgpm | 8 – 8 USgpm |
| 4 – 4 USgpm | 10 – 10 USgpm |
| 6 – 6 USgpm | 12 – 12 USgpm |
| 7 – 7 USgpm | |

11 Relief valve setting

(Models with flow control)

| | |
|--------------|---------------|
| C – 750 PSI | G – 1750 PSI |
| D – 1000 PSI | H – 2000 PSI |
| E – 1250 PSI | I – 2250 PSI |
| F – 1500 PSI | J – 2500 PSI* |

* 20V pump only (not for 12 & 14 ring sizes).

12 Design

13 Rotation

(Viewed from shaft end of pump)

L – Left hand (CCW rotation)
Omitted – Right hand rotation

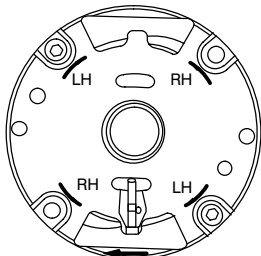
14 Mounting

282 – SAE 2-bolt mounting
283 – Foot mounting

NOTE

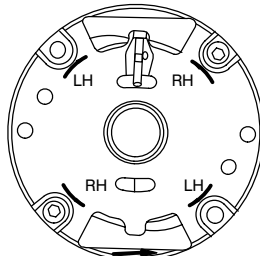
Standard right hand shaft rotation cartridges shown. Reverse for left hand rotation; refer to note.

Cover end cartridge R. H. Rotation



Sharp Edges of Vane Must Lead in Direction of Rotation

Shaft end cartridge R. H. Rotation



Sharp Edges of Vane Must Lead in Direction of Rotation

NOTE

To reverse cartridge kit rotation, remove the two screws and reverse the location of the inlet support plate and the outlet support plate. Reinstall the two screws hand tight. Use pump cover to align all sections of the cartridge. Carefully remove the cover and tighten the screws.

NOTE

For satisfactory service life of these components, use full flow filtration to provide fluid which meets ISO cleanliness code 16/13 or cleaner. Selections from pressure, return, and in-line filter series are recommended.